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9imod AM32 80A Brushless ESC Motor Kit

9imod AM32 80A Brushless ESC Motor Kit User Manual

For RC Crawler Cars: Axial SCX10, TRX-4, TRX-6 (1/8, 1/10 Scale)

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your 9imod AM32 80A Brushless ESC and 3542 Brushless Motor Kit. Please read this manual thoroughly before use to ensure proper function and longevity of your product. This kit is designed for 1/8 and 1/10 scale RC crawler cars, including models like Axial SCX10, TRX-4, and TRX-6.

2. Product Overview

The 9imod AM32 80A Brushless ESC Motor Kit offers an efficient power solution for your RC crawler. It features an AM32 80A Electronic Speed Controller and a 3542 Brushless Motor, engineered for intelligent torque output and precise control. The motor is IP67 rated for waterproof and dustproof operation, ensuring reliable performance in various environments.



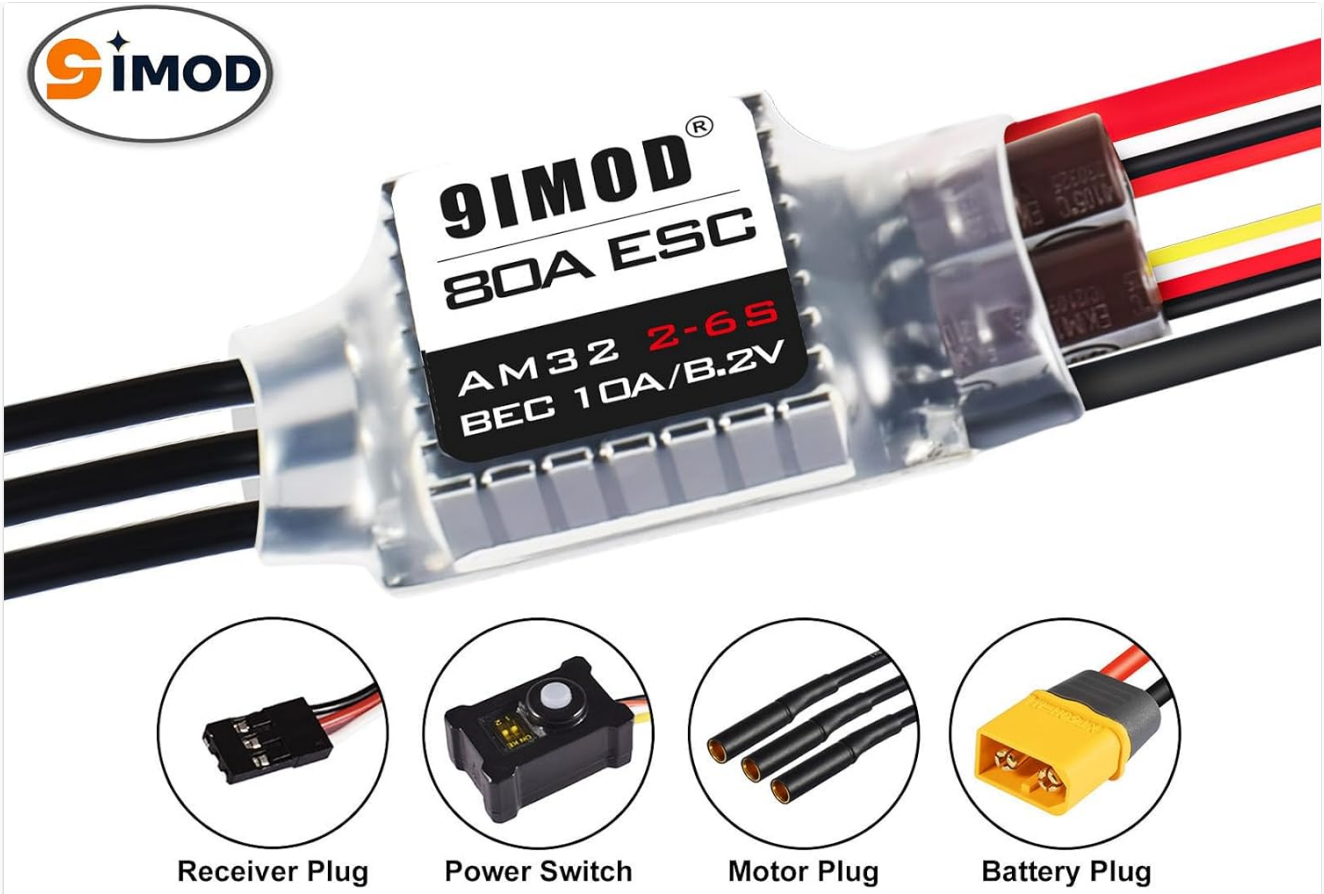
Image 2.1: Overview of the 9imod Outrunner Brushless Power Kit components installed in an RC vehicle.



Image 2.2: The AM32 80A ESC and 3542 motor, designed for intelligent torque output and easy control.

2.1. Components

- AM32 80A Brushless Electronic Speed Controller (ESC)
- 3542 Brushless Motor
- Associated wiring and connectors (Receiver Plug, Power Switch, Motor Plugs, Battery Plug)



AM32 80A				
Battery	BEC	MCU	Motor	Signal wire
2~6S Lipo	5.2/6.0/7.4/8.2V	32-bit	Not included	200mm
BEC	Fan	Power wire	Motor end	Electronic switch
Max 10A	Included	14AWGx150mm	14AWGx100mm	125mm

Image 2.3: The AM32 80A ESC showing its various connection points.



Image 2.4: The 3542 Brushless Motor with its key features and dimensions.

3. Specifications

3.1. AM32 80A ESC Specifications

Feature	Specification	Feature	Specification
Battery	2-6S Lipo	MCU	32-bit
BEC Output	5.2V / 6.0V / 7.4V / 8.2V	Motor	Not included (in ESC unit)
Max BEC Current	10A	Signal Wire Length	200mm
BEC Fan	Included	Power Wire Gauge/Length	14AWGx150mm
Electronic Switch	Yes	Motor End Wire Gauge/Length	14AWGx100mm

3.2. 3542 Brushless Motor Specifications

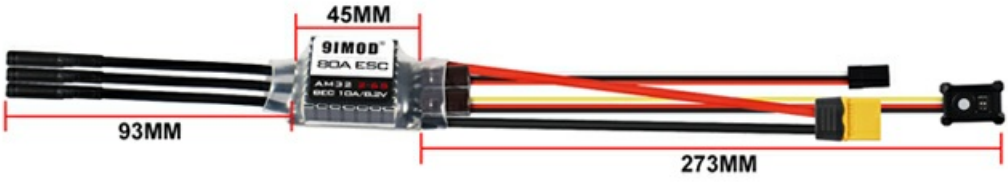
Item	Specification	Item	Specification
Item Number	3542	Max Power	2000 Watts
Stator Diameter	28 mm	Internal Resistance	0.007 Ohms
Stator Thickness	20 mm	Weight	149 Grams
Stator Quantity	12	Outer Diameter	35 mm
Stator Pole	14	Shaft Diameter	3.17 mm
Motor Winding	2+3 Delta	Length	41.8 mm
Wire Diameter	0.29 mm	Overall Length (with shaft)	56.8 mm
Motor KV	2250KV RPM/Volt	Battery Cells	3S
No-load Current (Io/11.1V)	4.5 Amps	Approach Angle	5-14 deg
Max Current	90 Amps	Drive Frequency	7 kHz





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Image 3.1: Specifications and dimensions of the 3542 Brushless Motor.



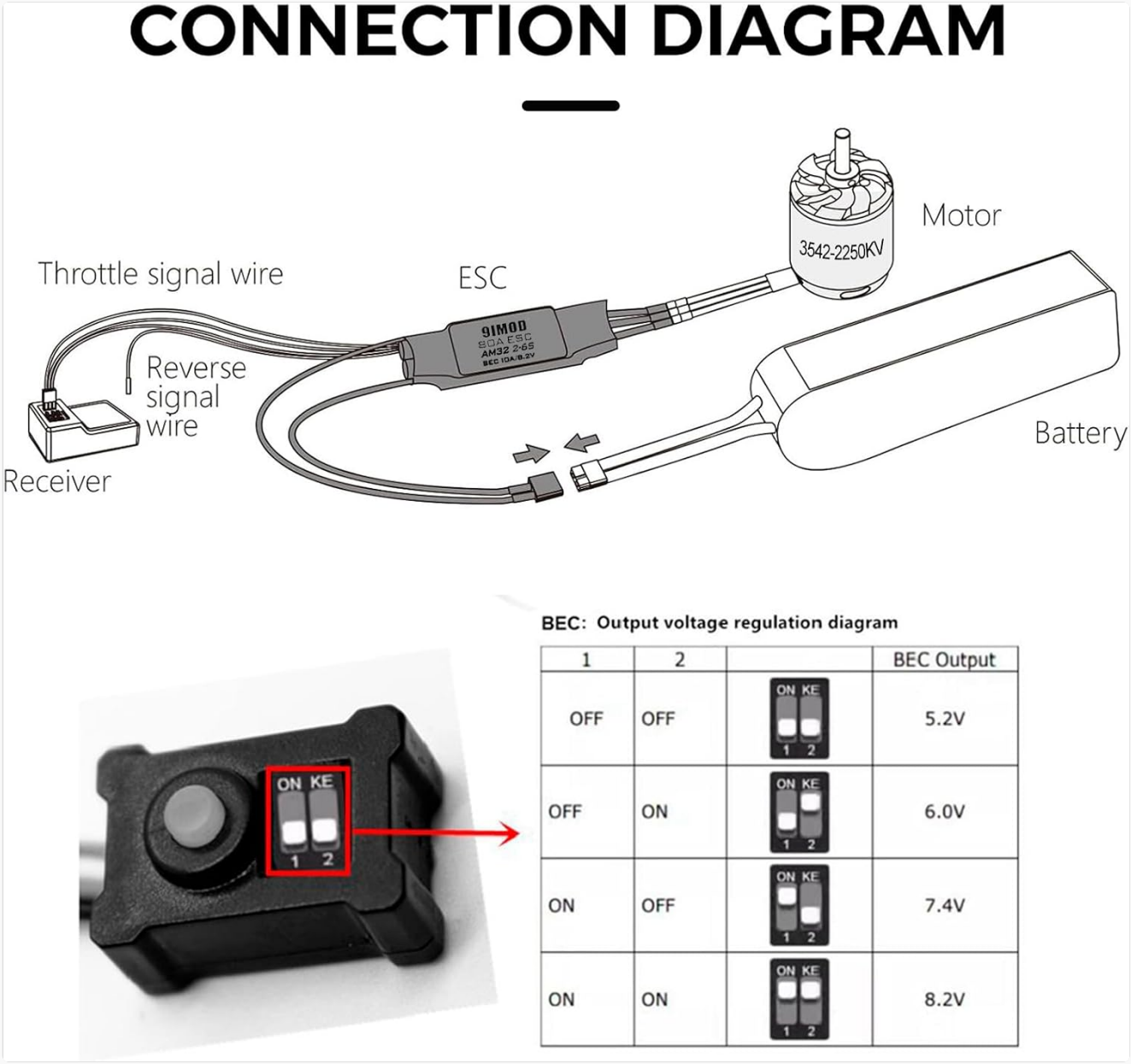
AM32 80A				
Battery	BEC	MCU	Motor	Signal wire
2~6S Lipo	5.2/6.0/7.4/8.2V	32-bit	Not included	200mm
BEC	Fan	Power wire	Motor end	Electronic switch
Max 10A	Included	14AWGx150mm	14AWGx100mm	125mm

Image 3.2: Specifications and dimensions of the AM32 80A ESC.

4. Setup & Installation

4.1. Connection Diagram

Follow the diagram below to correctly connect the ESC, motor, battery, receiver, and servo. Ensure all connections are secure before powering on the system.



BEC: Output voltage regulation diagram

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

Image 4.1: Main connection diagram and BEC voltage adjustment.

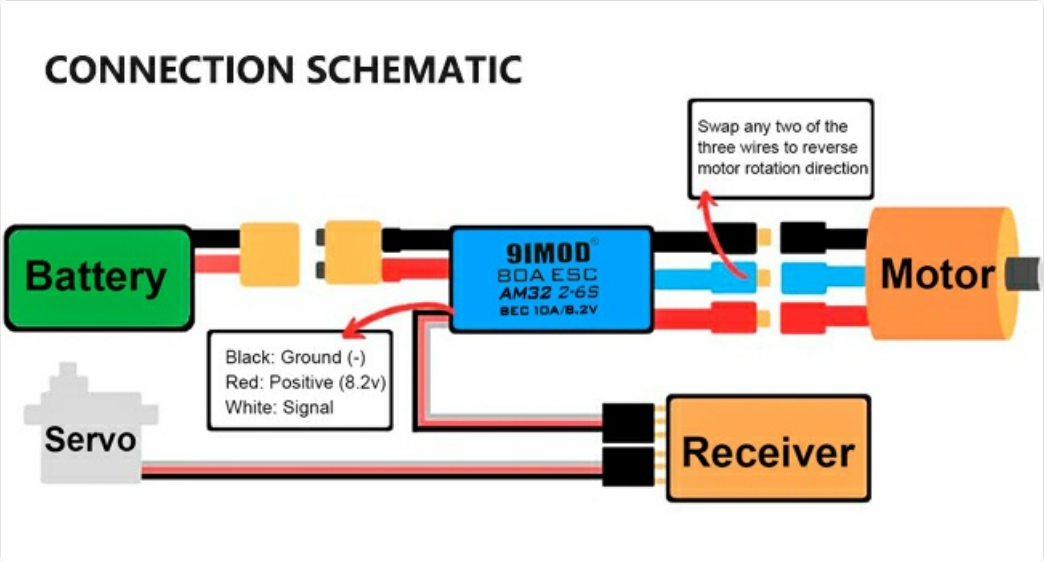


Image 4.2: Detailed connection schematic. To reverse motor rotation, swap any two of the three motor wires.

4.2. BEC Output Voltage Regulation

The AM32 80A ESC features an adjustable BEC output voltage. Use the switches on the BEC unit to select the desired voltage (5.2V, 6.0V, 7.4V, or 8.2V) for your receiver and servo. Refer to the diagram in Image 4.1 for switch settings.

4.3. Initial Setup Note

Important: The remote control's throttle trim must be adjusted to the neutral position before connecting the ESC to ensure proper calibration and safe operation.

5. Operating Instructions

5.1. General Operation

Once all connections are made and the remote control is set to neutral, power on your RC vehicle. The ESC will initialize. You can then control the motor via your remote control's throttle. Always ensure your battery is adequately charged for optimal performance.

5.2. Firmware Upgrade and Programming

The AM32 ESC firmware is designed for AT32 ARM processors, offering smooth and rapid start with linear throttle. It is suitable for various vehicle types and flight controllers. The ESC supports firmware upgrades and configuration via a USB link.

1. For AM32/BL32, connect the ESC to a computer for configuration or firmware upgrade.
2. To connect, simply plug the ESC signal plug into the USB Type-C cable, connect the cable to a computer, and install the VCP driver.

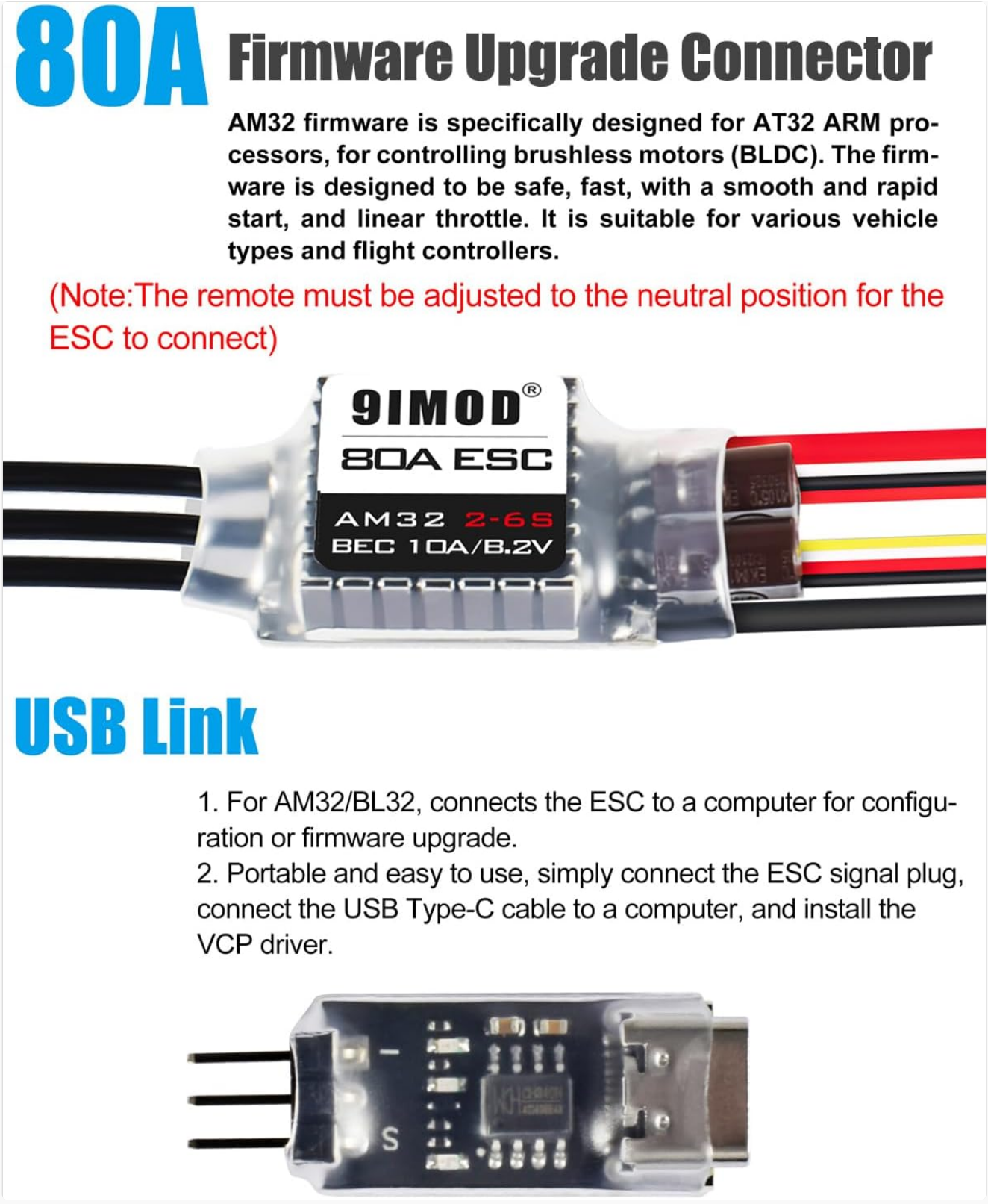
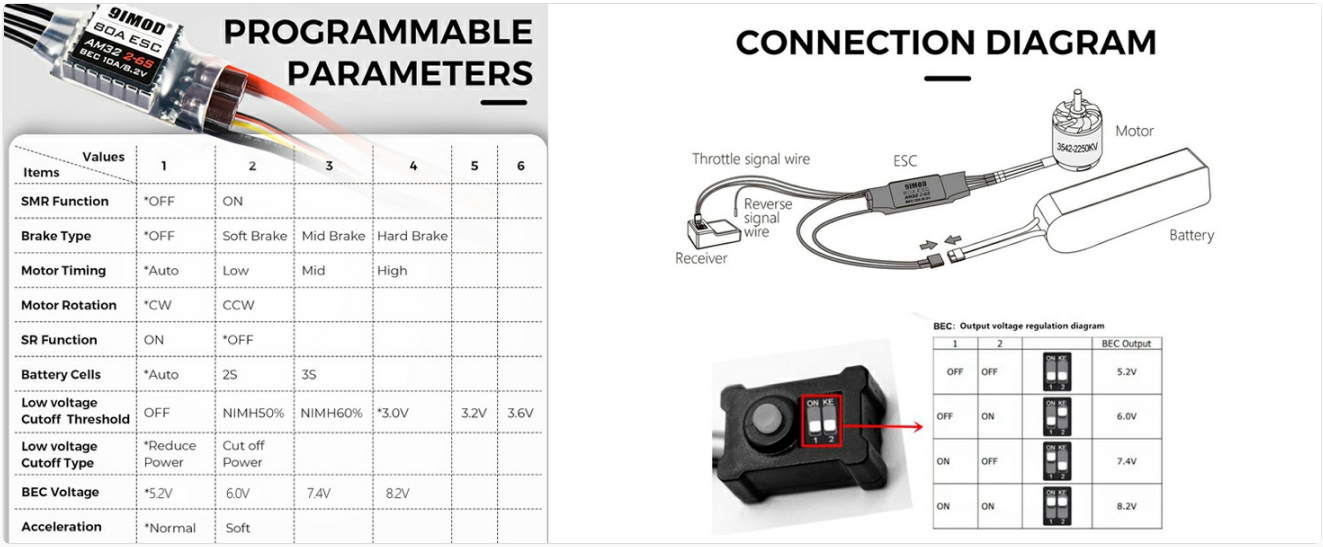


Image 5.1: AM32 80A ESC Firmware Upgrade Connector and USB Link.

5.3. Programmable Parameters

The AM32 ESC offers several programmable parameters to fine-tune its performance. These can be adjusted via the USB link and software.



Items \ Values	1	2	3	4	5	6
SMR Function	*OFF	ON				
Brake Type	*OFF	Soft Brake	Mid Brake	Hard Brake		
Motor Timing	*Auto	Low	Mid	High		
Motor Rotation	*CW	CCW				
SR Function	ON	*OFF				
Battery Cells	*Auto	2S	3S			
Low voltage Cutoff Threshold	OFF	NIMH50%	NIMH60%	*3.0V	3.2V	3.6V
Low voltage Cutoff Type	*Reduce Power	Cut off Power				
BEC Voltage	*5.2V	6.0V	7.4V	8.2V		
Acceleration	*Normal	Soft				

Image 5.2: Programmable parameters for the AM32 ESC.

6. Maintenance

- **Keep Clean:** Regularly clean the ESC and motor to prevent dirt and debris buildup, which can affect performance and cooling.
- **Check Connections:** Periodically inspect all wiring and connectors for signs of wear, corrosion, or loose connections. Secure any loose connections.
- **Motor Inspection:** Check the motor shaft and bearings for smooth operation. The 3542 motor is IP67 rated, providing protection against water and dust, but avoid prolonged submersion.
- **Storage:** Store the kit in a dry, cool place away from direct sunlight and extreme temperatures.



Image 6.1: The 3542 Motor features IP67 waterproof and dustproof protection.

7. Troubleshooting

- **No Power:** Ensure the battery is charged and correctly connected. Check all power connections for continuity.
- **Motor Not Responding:** Verify the receiver is powered and correctly bound to the remote. Check the signal wire connection between the ESC and receiver. Ensure the remote's throttle trim is at neutral.
- **Motor Runs in Wrong Direction:** If the motor spins in the opposite direction, swap any two of the three motor wires connecting the ESC to the motor.

- **Erratic Operation:** Check for loose connections, interference, or a low battery. Recalibrate the ESC if necessary.
- **Overheating:** Ensure adequate airflow around the ESC and motor. Reduce load or adjust motor timing if consistent overheating occurs.

8. Warranty and Support

For warranty claims, technical support, or further assistance, please contact the manufacturer directly through their official channels. Keep your proof of purchase for any warranty-related inquiries.

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