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UMLIFE 20A Brushed ESC

UMLIFE 20A Brushed ESC Instruction Manual

Mini RC Motor Speed Controller for RC Cars, Boats, and Tanks

INTRODUCTION

Thank you for choosing the UMLIFE 20A Brushed Electronic Speed Controller (ESC). This manual provides essential information for the safe and efficient operation of your ESC. This device is designed for use with various RC models, including cars, boats, and tanks, offering precise motor control with forward, reverse, and brake capabilities.

SAFETY INFORMATION

- Always disconnect the battery from the ESC when not in use to prevent accidental operation and potential damage.
- Ensure all connections are secure and correctly polarized before applying power. Incorrect wiring can damage the ESC, motor, or battery.
- Operate RC models in open areas, away from people, animals, and obstacles.
- Do not exceed the specified voltage and current ratings. Overloading can lead to overheating and permanent damage.
- Keep the ESC away from water and moisture unless specifically designed for waterproof operation.
- Adult supervision is recommended for users under 14 years of age.

PRODUCT FEATURES

- **Current Rating:** Constant 20A, Maximum 25A (<30s), Pulsed 50A (<5s).
- **Operating Voltage:** 4.8V - 8.4V (compatible with 2S LiPo batteries).
- **Drive Frequency:** 2kHz.
- **Motor Compatibility:** Supports 130, 180, 260, 280, and 380 brushed motors.
- **Functions:** Forward, Reverse, and Brake.
- **BEC Output:** 5.7V, 1A (for receiver/servo power).
- **Compact Design:** Lightweight and suitable for various mini RC applications.

PACKAGE CONTENTS

- 4 x UMLIFE 20A Brushed ESC Units

SETUP AND WIRING

Proper wiring is crucial for the correct function and longevity of your ESC. Refer to the diagram below for connection points.

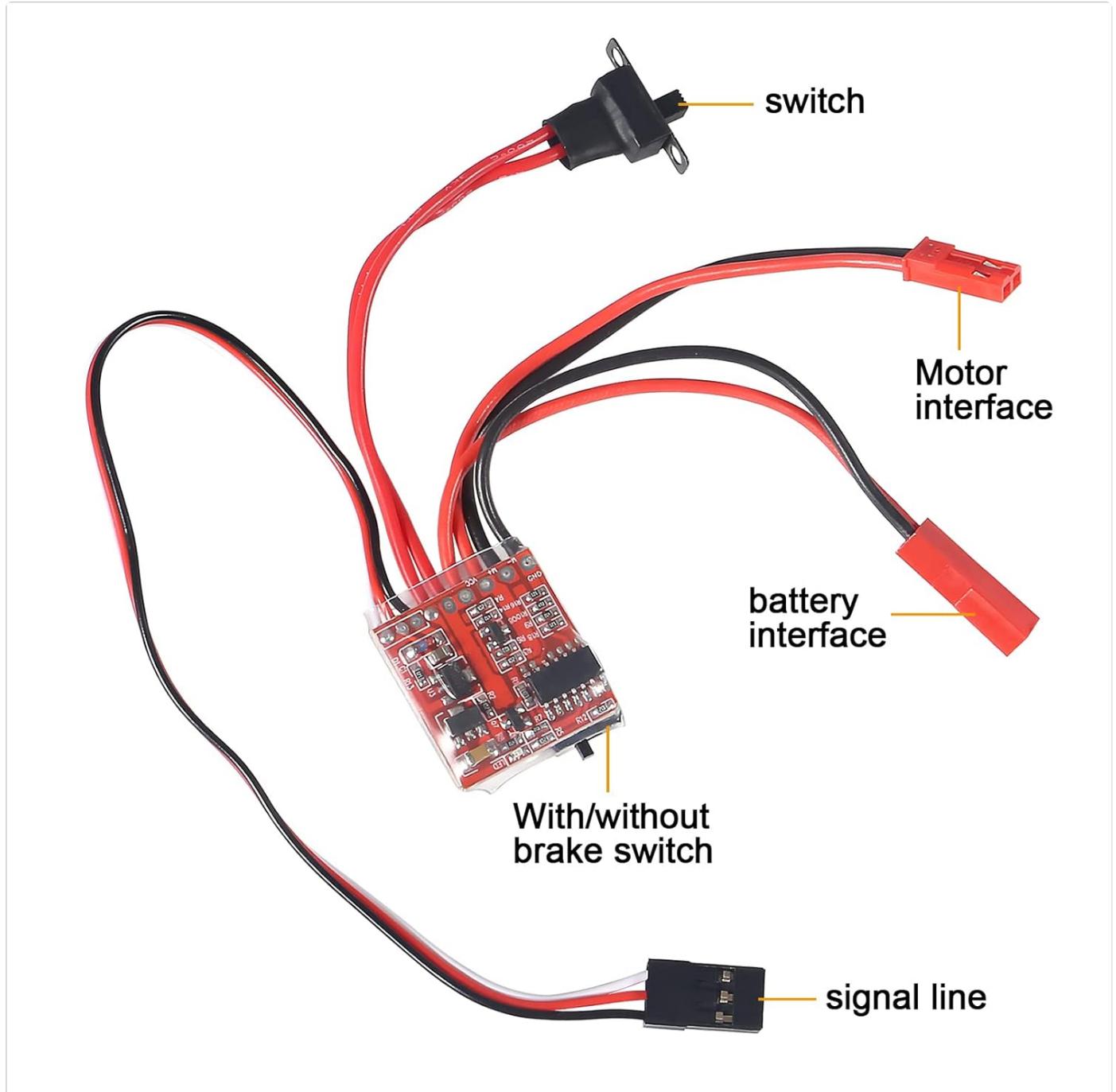


Image: Wiring diagram for the 20A Brushed ESC. This image illustrates the connection points for the signal line (to receiver), battery interface (power input), motor interface (power output to motor), and the physical switch for power on/off. It also highlights the "With/without brake switch" setting on the ESC board.

1. **Connect to Receiver:** Plug the signal line (black, red, white wires) from the ESC into the throttle channel of your RC receiver. The white wire is typically signal, red is positive (BEC output), and black is negative.
2. **Connect to Battery:** Connect your battery pack to the battery interface (red and black wires with a connector, typically JST or similar). Ensure correct polarity: red to positive (+), black to negative (-). The ESC supports 2S LiPo or 4-7 cell Ni-MH/Ni-Cd batteries (4.8V-8.4V). *Do not use 3S LiPo batteries as this can damage the ESC.*
3. **Connect to Motor:** Connect your brushed motor to the motor interface (red and black wires). The polarity here determines the motor's rotation direction. If the motor spins in the wrong direction, reverse the motor wires. The ESC is compatible with 130, 180, 260, 280, and 380 brushed motors.
4. **Brake Switch Setting:** The ESC features a small switch on the board to enable or disable the brake function. Adjust this

switch according to your preference for braking behavior. Refer to the image for the location of this switch.

5. **Power Switch:** Use the external power switch to turn the ESC on or off.

OPERATING INSTRUCTIONS

Once all connections are made and verified:

1. Turn on your RC transmitter first.
2. Then, turn on the power switch on the ESC.
3. The ESC will initialize. Wait for any calibration tones or LED indicators to confirm it's ready.
4. Use the throttle stick on your transmitter to control the motor.
 - **Forward:** Push the throttle stick forward.
 - **Reverse:** Pull the throttle stick backward from the neutral position.
 - **Brake:** If the brake function is enabled via the onboard switch, moving the throttle stick to neutral after a forward or reverse input will engage the brake.
5. After operation, turn off the ESC power switch first, then turn off your transmitter.

MAINTENANCE

- Keep the ESC clean and free from dust, dirt, and debris.
- Regularly inspect all wires and connectors for signs of wear or damage. Replace any damaged components immediately.
- Store the ESC in a dry, cool environment when not in use.
- Avoid exposing the ESC to extreme temperatures or direct sunlight for prolonged periods.

TROUBLESHOOTING

- **Motor not responding:**
 - Check all wiring connections (battery, motor, receiver signal).
 - Ensure the battery is charged and connected with correct polarity.
 - Verify the transmitter is on and properly bound to the receiver.
 - Confirm the motor is compatible with the ESC (brushed type, within current limits).
- **Motor spins in wrong direction:**
 - Reverse the two motor wires connected to the ESC.
- **No brake function:**
 - Check the position of the onboard brake switch. Ensure it is set to the "with brake" position.
 - Verify your transmitter's throttle trim and sub-trim settings are centered.
- **ESC or motor overheating:**
 - Ensure the motor is not undersized for the application or experiencing excessive load.
 - Check for any binding in the drivetrain that could cause extra strain.
 - Confirm the battery voltage is within the specified range (4.8V-8.4V). Using higher voltage (e.g., 3S LiPo) will damage the ESC.

SPECIFICATIONS

Brand	UMLIFE
Model	20A Brushed ESC
Constant Current	20A
Maximum Current	25A (<30s), Pulsed 50A (<5s)
Working Voltage	4.8V - 8.4V (2S LiPo / 4-7 cell Ni-MH/Ni-Cd)
Drive Frequency	2kHz
BEC Output	5.7V, 1A
Motor Compatibility	130 / 180 / 260 / 280 / 380 Brushed Motors
Dimensions (L x W x H)	3.81 x 2.29 x 0.76 cm (approx. 1.5 x 0.9 x 0.3 inches)
Weight	50 g
Material	PCB + Rubber

WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please contact the manufacturer or your point of purchase. Keep your purchase receipt as proof of purchase.

