Hobbywing EZRUN 56118SD G2-650KV

HOBBYWING EZRUN 56118SD G2 Motor User Manual

Model: EZRUN 56118SD G2-650KV

Introduction

This manual provides essential information for the proper setup, operation, and maintenance of your HOBBYWING EZRUN 56118SD G2 Motor. Please read this manual thoroughly before using the product to ensure optimal performance and longevity.



Image: HOBBYWING EZRUN 56118SD G2 Motor, showcasing its black and silver finned design with cables extending from one end and a drive shaft from the other.

The EZRUN 56118SD G2 Motor features a new waterproof sensor cable and an upgraded sensored system, offering improved acceleration linearity and stronger explosive force. It is designed for perfect compatibility with the Hobbywing EZRUN MAX5 HV G2 ESC, enabling a full sensor mode power system for enhanced control performance and precision. An independent high-precision encoder ensures stable sensor operation by providing a pure rotor position signal, avoiding interference. Constructed with CNC machined aluminum housing, high purity copper windings, and a high-strength explosion-proof rotor, this motor is built for durability and smoothness.

Key Features

- **Sensored Mode Performance:** Strong, explosive power with excellent linearity at low speeds for precise control.
- **Perfect ESC Match:** Optimized for use with EzRun MAX5 HV G2 ESC for a smooth, sensored control experience and overheat thermal protection.
- **High Protection Level:** IP67 rating for excellent waterproof and dustproof performance, suitable for various

weather conditions.

- **New Sensor Wire Interface:** Enhanced motor protection and improved waterproof capabilities compared to traditional interfaces.
- **Detachable Module Design:** Facilitates easy cleaning and maintenance, extending motor lifespan.
- **Durable Construction:** Features high-hardness aluminum CNC shell, quality bearings, ultra-thin silicon steel sheets, high temperature-resistant copper wires, and Kevlar fiber-wound rotors.
- **Functional Heat Dissipation:** Innovative spiral groove heat dissipation structure for effective cooling and aesthetic appeal.

Setup

Proper setup is crucial for the motor's performance and longevity. Follow these steps carefully:

1. **Mounting the Motor:** Securely mount the motor to your vehicle's motor mount using appropriate screws. Ensure the motor is aligned correctly with the drivetrain.
2. **Connecting to ESC:** Connect the motor's three phase wires to the corresponding output wires of your Electronic Speed Controller (ESC). Ensure correct polarity if applicable, though for brushless motors, swapping two wires will only reverse direction.
3. **Sensor Cable Connection:** Connect the waterproof sensor cable from the motor to the sensor port on your Hobbywing EZRUN MAX5 HV G2 ESC. This enables the full sensored mode.
4. **Gearing:** Select the appropriate pinion gear for your vehicle and application. Incorrect gearing can lead to overheating and reduced performance. Consult your vehicle's manual for recommended gearing ratios.
5. **Initial ESC Calibration:** Perform ESC calibration according to your ESC's instruction manual. This ensures proper communication between the ESC and motor.

Operating Guidelines

Adhere to these guidelines for safe and effective operation:

- **Temperature Monitoring:** Regularly monitor the motor's temperature during operation. Excessive heat can damage the motor. If the motor becomes too hot to touch (above 80°C / 176°F), stop operation and allow it to cool.
- **Battery Voltage:** Use batteries within the recommended voltage range for your ESC and motor combination. Over-voltage can cause damage.
- **Water and Dust:** While the motor has an IP67 rating, prolonged submersion or exposure to highly corrosive liquids should be avoided. After operating in wet or dusty conditions, clean the motor thoroughly.
- **Smooth Operation:** Avoid sudden, harsh throttle inputs that can stress the motor and drivetrain. Gradual acceleration and braking contribute to motor longevity.
- **Environmental Conditions:** Operate the motor within reasonable environmental temperatures. Extreme cold or heat can affect performance.

Maintenance

Regular maintenance will prolong the life and performance of your motor:

- **Cleaning:** After each use, especially in dirty or dusty environments, clean the motor's exterior to remove debris. The detachable module design allows for easier access for cleaning. Use a soft brush or compressed air.

- **Bearing Inspection:** Periodically check the motor bearings for smoothness. If they feel rough or noisy, they may need cleaning or replacement.
- **Wire and Connector Check:** Inspect all wires and connectors for signs of wear, fraying, or corrosion. Ensure all connections are secure.
- **Shaft Inspection:** Check the motor shaft for any bends or damage. A bent shaft can cause vibrations and premature wear.
- **Storage:** When not in use, store the motor in a clean, dry place away from extreme temperatures and direct sunlight.

Troubleshooting

If you encounter issues with your motor, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Motor not spinning / No power	Loose wire connections ESC not calibrated Damaged motor or ESC Low battery voltage	Check all connections between motor, ESC, and battery. Recalibrate the ESC. Inspect motor and ESC for visible damage. Charge or replace battery.
Motor overheating	Incorrect gearing (too high) Excessive load on motor Insufficient airflow Damaged bearings	Reduce pinion gear size or increase spur gear size. Reduce vehicle weight or operating intensity. Ensure proper ventilation around the motor. Inspect and replace bearings if necessary.
Motor cogging or stuttering	Loose sensor cable connection Damaged sensor cable ESC timing settings incorrect Motor or ESC fault	Ensure sensor cable is securely connected. Replace sensor cable. Adjust ESC timing settings (refer to ESC manual). Test with another motor/ESC if possible to isolate the issue.

Specifications

Attribute	Value
Model Name	EZRUN 56118SD BLACK G2 Motor
KV Rating	650KV (for this specific variant)
Product Dimensions	7.1 x 3.25 x 4.5 inches
Weight	3.22 Pounds
Item Model Number	30402901 | 30402902 | 30402903

Attribute	Value
Manufacturer	Hobbywing Technology
Material	CNC machined aluminum housing, high purity copper windings, high strength explosion-proof rotor, ultrathin silicon steel laminations, high-quality stainless steel output shaft, high-precision bearing
Protection Level	IP67 (Waterproof and Dustproof)

Warranty and Support

For warranty information and technical support, please contact Hobbywing directly or refer to their official website. Keep your purchase receipt as proof of purchase.
Manufacturer: Hobbywing Technology
Website: www.hobbywing.com *(Note: This is a placeholder URL, please refer to official Hobbywing documentation for actual support contact details.)*

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