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### Hobbywing EZRUN 5690SD 1250KV G2 (Model: 30402350)

# HOBBYWING EZRUN 5690SD 1250KV G2 Motor User Manual

**Brand:** Hobbywing | **Model:** EZRUN 5690SD 1250KV G2 (Model: 30402350)

## 1. PRODUCT OVERVIEW

The HOBBYWING EZRUN 5690SD 1250KV G2 Motor represents an advancement in sensored motor technology, designed for high-performance applications. It offers enhanced acceleration linearity and significant explosive power, making it suitable for demanding RC vehicle setups.

This motor achieves perfect compatibility when paired with Hobbywing EZRUN MAX6 G2 or EZRUN MAX5 HV G2 ESCs. This pairing enables the ESC to automatically recognize the motor, establishing a fully sensored power system. This integration provides superior control performance, a more refined control feel, and activates the motor overheat protection function.

Key features include an independent, high-precision encoder that ensures a pure rotor position signal, effectively preventing sensor signal interference and maintaining stable sensored operation. The motor is constructed with a CNC machined aluminum housing, high-purity copper windings, a high-strength explosion-proof rotor, ultrathin silicon steel laminations, a high-quality stainless steel output shaft, and high-precision bearings, all contributing to its durability and smooth operation.

An innovative new sensor interface significantly improves waterproof and dustproof capabilities compared to traditional sensor motors, achieving an overall protection level of IP67. This robust design allows the motor to perform reliably in various weather conditions and harsh environments.

- Supports 3-8S LiPo battery configurations, providing substantial power for diverse vehicle maneuvers.
- Modular structure design facilitates easy cleaning and maintenance, extending the motor's lifespan and efficiency.
- IP67 protection level ensures splash-proof, water-proof, and dust-proof performance.



Figure 1: A detailed view of the HOBBYWING EZRUN 5690SD 1250KV G2 Motor, showcasing its black aluminum housing with white striped cooling fins, the EZRUN 5690 1250KV SENSORED MOTOR branding, and the Hobbywing logo near the output shaft. Multiple black wires extend from the top of the motor.

## 2. SETUP AND INSTALLATION

- 1. Motor Mounting:** Securely mount the motor to your vehicle's motor mount using appropriate screws. Ensure proper gear mesh between the motor pinion and the spur gear to prevent premature wear and maximize efficiency.
- 2. ESC Connection:** Connect the motor's three phase wires (typically A, B, C or U, V, W) to the corresponding output terminals on your Electronic Speed Controller (ESC). For optimal performance and to utilize the full sensed mode, connect the motor's sensor cable to the sensor port on a compatible Hobbywing EZRUN MAX6 G2 or EZRUN MAX5 HV G2 ESC.
- 3. Battery Connection:** Connect your 3-8S LiPo battery pack to the ESC. Ensure correct polarity to avoid damage.
- 4. Initial Calibration:** Refer to your ESC's instruction manual for initial calibration steps, especially for throttle range and sensor recognition. The ESC should automatically recognize the sensed motor.

### 3. OPERATING GUIDELINES

- **Power Supply:** This motor is designed to operate with 3-8 cell LiPo batteries. Always use batteries within this voltage range to prevent damage and ensure optimal performance.
- **Temperature Monitoring:** While the motor has overheat protection when paired with compatible Hobbywing ESCs, it is good practice to monitor motor temperature during operation, especially during initial runs or when adjusting gearing. Excessive heat can reduce motor lifespan.
- **Gearing:** Proper gearing is crucial for motor efficiency and temperature management. Experiment with different pinion and spur gear combinations to find the optimal setup for your vehicle and driving conditions.
- **Sensored Operation:** The sensed design provides smooth low-speed performance and precise control. Ensure the sensor cable is securely connected for full sensed mode operation.

### 4. MAINTENANCE

- **Cleaning:** Due to its modular structure and IP67 protection, the motor can be easily cleaned. After use, especially in dusty or wet conditions, wipe down the exterior to remove dirt and debris. Avoid using harsh chemicals.
- **Inspection:** Regularly inspect the motor for any signs of wear, such as damaged wires, loose screws, or unusual noises from the bearings.
- **Bearing Care:** The motor features high-precision bearings. While designed for durability, extreme conditions or prolonged use may necessitate bearing replacement. Consult Hobbywing support for guidance on bearing maintenance or replacement.
- **Sensor Port:** Ensure the sensor port and cable remain clean and free of debris to maintain reliable sensed operation.

### 5. TROUBLESHOOTING

- **Motor Cogging/Stuttering:**
  - Ensure the sensor cable is securely connected and undamaged.
  - Verify that the ESC firmware is up to date, as some previous versions might have had cogging issues with certain motors (though this motor is designed for optimal compatibility with G2 ESCs).
  - Check battery voltage; low voltage can cause cogging.
- **Motor Overheating:**
  - Check gearing; a too-tall gear ratio can cause excessive heat.
  - Ensure proper airflow around the motor.
  - Verify that the motor's overheat protection is active and functioning with a compatible ESC.
- **Loss of Power/Intermittent Operation:**
  - Inspect all wiring connections (motor to ESC, battery to ESC) for looseness or damage.
  - Check battery charge level and condition.
  - Ensure no foreign objects are obstructing the motor's rotation.

### 6. SPECIFICATIONS

Attribute	Value
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Brand	Hobbywing
Model Name	HWI30402350
Item Model Number	30402350
KV Rating	1250KV
Supported LiPo Cells	3-8S LiPo
Horsepower	1800 Watts
Material	Aluminum
Protection Level	IP67 (Splash-proof, Water-proof, Dust-proof)
Product Dimensions	7.25 x 3 x 4.25 inches
Weight	2.3 Pounds
Manufacturer	Hobbywing Technology
Date First Available	August 7, 2023

## 7. WARRANTY AND SUPPORT

Specific warranty details for the HOBBYWING EZRUN 5690SD 1250KV G2 Motor are not provided in this manual. For comprehensive warranty information, please refer to the official Hobbywing website or contact Hobbywing customer support directly.

For technical support, troubleshooting assistance beyond this manual, or inquiries regarding parts and service, please visit the official Hobbywing support channels or contact their customer service department. Always ensure you are using genuine Hobbywing parts for repairs and replacements.

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