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> Kunray Electric DC Motor 48V 2000W Motor Instruction Manual

## Kunray MY 1020

# Kunray Electric DC Motor 48V 2000W Instruction Manual

Model: MY 1020

Brand: Kunray

## 1. INTRODUCTION

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This manual provides detailed instructions for the installation, operation, and maintenance of your Kunray Electric DC Motor 48V 2000W. Designed for various electric vehicle applications such as electric scooters, mini electric motorcycles, DIY engine kits, and go-karts, this brushless motor offers stable performance and high efficiency. Please read this manual thoroughly before use to ensure proper function and safety.



Figure 1.1: Kunray 48V 2000W Electric DC Motor with wiring harness.

## 2. PRODUCT FEATURES

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- **Integrated Temperature Sensing:** Features an MY 1020 motor with 6 mm phase wires, an internal temperature sensor, and a plug designed for direct connection to Fardriver or Kelly controllers, ensuring optimal performance and safety.
- **Powerful Performance:** A 48V 2000W brushless motor delivering stable performance with a rated speed of 4300 RPM and a torque of approximately 5.4 N/M. Capable of handling a load weight of about 100-200 KG.
- **High Quality Construction:** Equipped with a pure copper coil for high energy efficiency and heat resistance. The design allows for faster cooling.
- **Wide Application:** Suitable for a variety of electric vehicles including electric scooters, mini electric motorcycles, DIY engine kits, mid-drive motor systems, and other cycling parts.
- **Durable Heat Dissipation:** Includes a heat sink device and snap-in radiator made of high-quality aluminum alloy, providing fast heat conduction, light weight, and durability. The heat sink is removable for convenient use.

# Smooth experience with powerful motor

- **High quality copper core motor**  
**Provide surging power**



6MM<sup>2</sup> PHASE WIRE

CAR WATERPROOF CABLES 6PIN,

KTY83-120 TEMP SENSOR,

360 FORWARD & REVERSE ROTATION,

Figure 2.1: Internal components of the motor, highlighting the high-quality copper core and integrated temperature sensor.

## 3. SPECIFICATIONS

Specification	Value
Model	MY 1020
Voltage	48 Volts
Horsepower / Rated Power	2000 Watts
Rated Speed	4300 RPM
Max Speed	5700 RPM
Torque	Approx. 5.4 N/M

Specification	Value
Load Weight Capacity	100-200 KG
Product Dimensions	6.37 x 4.13 x 4.12 inches (Motor Diameter: 105mm / 4.13 inches)
Weight	10.36 Pounds
Installation Hole Size	M6, 95mm spacing (front and back)
Phase Wires	6 mm <sup>2</sup> enlarged phase wires
Temperature Sensor	KTY83-120 / KTY84-130
Waterproof Grade	IP57

**>**  
**STRONGER TORQUE**  
**BRUSHLEES MOTORS**

**GO KART ELECTRIC MOTOR**  
**WITH TEMPERATURE SENSING**



**MANGET POLES** 4PAIR/8PCS      **VOLTGGE** 48V      **PATED POWER** 2000W  
**MAXIMUM TORQUE** 5.1N.M      **PEAK POWER** 6KM      **RATED SPEED** 4300RPM  
**RATED CURRENT** 42A      **MAXIMUM SPEED** 5700RPM      **WATERPROOF GRADE** IP57

**SMOOTH EXPERIENCE WITH POWERFUL MOTOR**

Figure 3.1: Key performance specifications of the Kunray motor.

## 4. SETUP AND INSTALLATION

The Kunray MY 1020 motor is designed for straightforward installation, particularly for Razor scooter conversions and other DIY electric vehicle projects. Ensure all components are compatible before beginning installation.

### 4.1. Pre-Installation Checklist

- Verify that your controller (e.g., Fardriver or Kelly controller) is compatible with the motor's plug and temperature sensor.
- Ensure you have the necessary mounting hardware, including M6 screws for the installation holes.
- Confirm the sprocket (T8F 25H) and chain are compatible with your application.

### 4.2. Mounting the Motor

The motor features M6 installation holes with a 95mm spacing on both the front and back, making it versatile for various mounting configurations. The motor diameter is 105mm (4.13 inches).

**M6 95MM INSTALL HOLE**  
**DC MOTOR DIA 105MM/4.13INCH,**  
**FRONT AND BACK WITH 2 M6 INSTALL**  
**HOLE, TWO HOLE SIZE IS 95MM IS OK FOR**  
**RAZOR SCOOTER CONVERSION INSTALL**



**STRONGER TORQUE**  
**MORE STABLE**  
**PERFORMANCE**

**PRODUCT SIZE**  
**EASY TO INSTALL,**  
**MORE CONVENIENT.**

THE INSTALLATION HOLE IS SUITABLE FOR M6 SCREWS



Figure 4.1: Motor dimensions and details of the M6 installation holes.

### 4.3. Wiring Connections

Connect the motor to your controller using the provided wiring harness. Pay close attention to the color coding for correct connections. The motor includes 6mm<sup>2</sup> enlarged phase wires and a car waterproof connector for reliable operation.

- **Motor Phase Wires:** Connect the U, V, W phase wires (typically Yellow, Green, Blue) to the corresponding motor phase outputs on your controller.
- **Hall Sensor Wires:** Connect the Hall sensor wires (Green: Hall V, Blue: Hall W, Yellow: Hall U) along with +5V (Red) and GND (Black) to the controller's Hall sensor input.
- **Temperature Sensing Wire:** Connect the White wire for temperature sensing (KTY84-130 or KTY83-120 sensor) to the appropriate input on your controller.

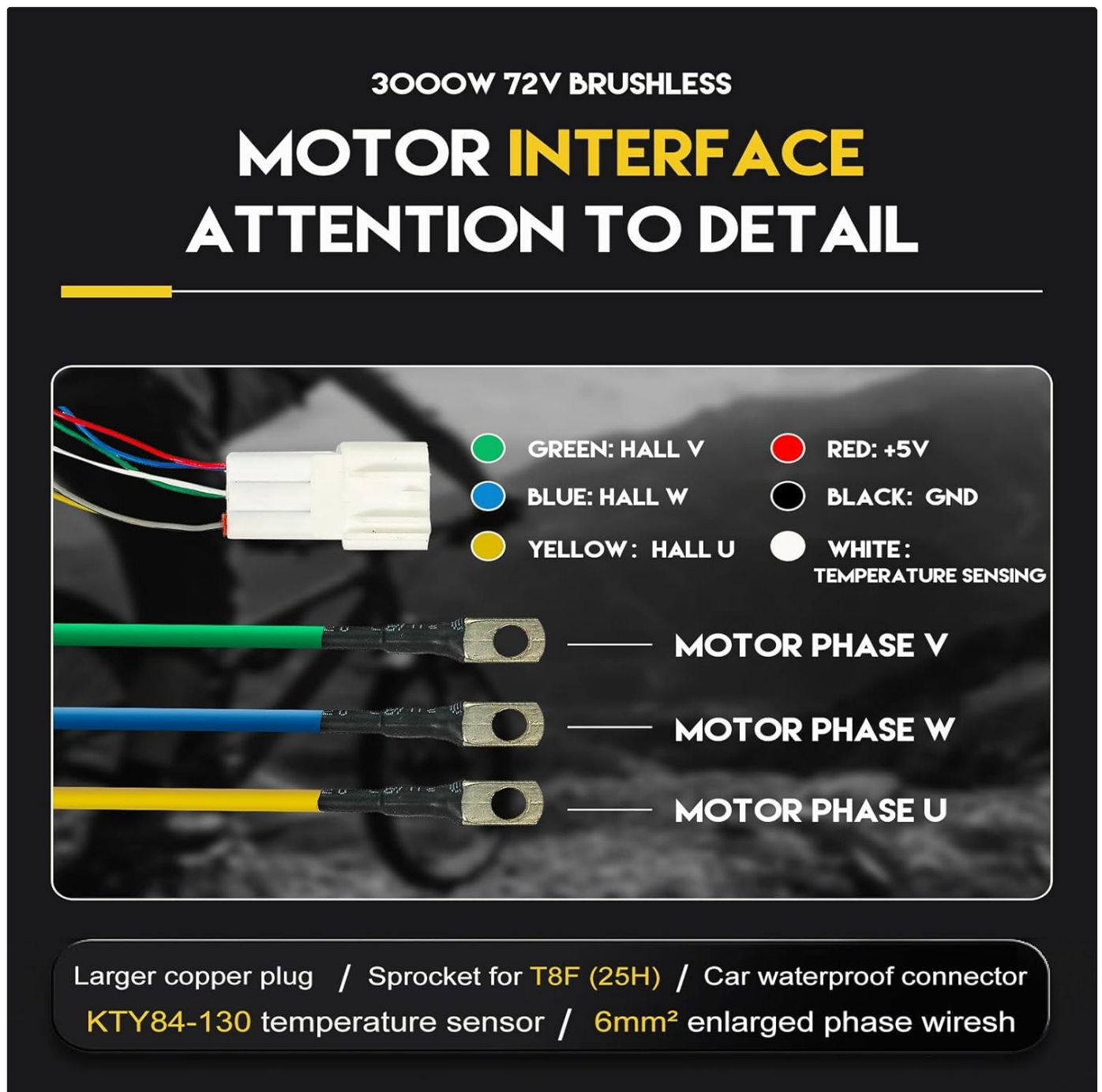


Figure 4.2: Detailed wiring interface for the motor, showing connections for phase wires, Hall sensors, and temperature sensing.

## 5. OPERATING INSTRUCTIONS

Once properly installed and connected, the Kunray 48V 2000W motor is ready for operation. This brushless motor

provides smooth and powerful performance for your electric vehicle.

## 5.1. Initial Power-Up

- Ensure all electrical connections are secure and insulated.
- Turn on the power supply to your controller.
- Gradually apply throttle to test motor response.

## 5.2. Direction of Rotation

The motor supports 360-degree forward and reverse rotation, which can be controlled via your motor controller settings. Refer to your controller's manual for specific instructions on changing rotation direction.

## 5.3. Performance Characteristics

The motor's rated speed is 4300 RPM, with a maximum speed capability of 5700 RPM. The torque output is approximately 5.4 N/M, suitable for propelling vehicles with a load capacity of 100-200 KG. Monitor motor temperature during extended operation, especially under heavy loads, using the integrated temperature sensor.



Figure 5.1: Illustration of motor speed measurement.

## 6. MAINTENANCE

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Regular maintenance ensures the longevity and optimal performance of your Kunray DC motor. The motor's design, featuring a pure copper coil and an aluminum alloy heat sink, contributes to its durability and heat management.

### 6.1. Heat Management

The motor is equipped with a heat sink device and a snap-in radiator to effectively reduce heat. The heat sink is removable for easy cleaning and inspection. Ensure the heat sink fins are free from dirt and debris to maintain efficient cooling.



A heat sink device was added, the snap-in radiator can reduce the heat of the motor.

Made of high-quality aluminum alloy material, it has fast heat conduction, light weight, and durability.

Removable heat sink for use.

Figure 6.1: The motor's heat sink design for efficient heat dissipation.

## 6.2. General Care

- Keep the motor clean and free from excessive dust, dirt, and moisture.
- Periodically check all electrical connections for tightness and signs of wear.
- Inspect the motor for any physical damage or unusual noises during operation.

## 7. TROUBLESHOOTING

This section provides guidance for common issues you might encounter with your Kunray Electric DC Motor. For problems not listed here, please contact customer support.

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
Motor does not run	No power to controller; Loose wiring connections; Faulty controller; Motor damage.	Check power supply and fuses. Verify all wiring connections are secure. Test controller functionality. Inspect motor for visible damage.
Motor runs intermittently or with reduced power	Poor electrical contact; Overheating; Low battery voltage; Controller issue.	Check all connections, especially phase and Hall sensor wires. Ensure adequate ventilation and heat sink cleanliness. Verify battery charge. Consult controller manual.
Unusual noise from motor	Loose mounting; Bearing wear; Internal obstruction.	Tighten mounting bolts. If noise persists, professional inspection may be required.
Motor overheating	Excessive load; Insufficient cooling; Faulty temperature sensor.	Reduce load. Clean heat sink and ensure proper airflow. Check temperature sensor connection.

## 8. WARRANTY AND SUPPORT

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Kunray is committed to providing high-quality products and excellent customer service.

### 8.1. Customer Support

If you require a motor with different power specifications or have any questions regarding your Kunray Electric DC Motor, please do not hesitate to contact us. We are dedicated to assisting you.

For further assistance, you may visit the official Kunray store on Amazon: [Kunray Store](#)

### 8.2. Product Applications

The Kunray 48V 2000W motor is an upgraded brushless motor designed to enhance the performance of various electric vehicles. It can be used in multiple situations, including electric scooter upgrades, electric off-road vehicle parts replacement, and DIY projects.

# PRODUCT DISPLAY DIAGRAM

UPGRADED BRUSHLESS MOTOR,  
PERFORMANCE WILL BE GREATLY IMPROVED,  
WILL BRING YOU ENDLESS FUN.

THIS PRODUCT CAN BE USED IN MULTIPLE SITUATIONS:  
ELECTRIC SCOOTER UPGRADES,  
ELECTRIC OFF-ROAD VEHICLE PARTS REPLACEMENT



Figure 8.1: Examples of electric vehicles compatible with the Kunray motor.