Hyuduo GA25-370

Hyuduo GA25-370 DC Gear Motor with Speed Encoder Instruction Manual

Model: GA25-370 (DC12V 60RPM)

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of the Hyuduo GA25-370 DC Gear Motor with Speed Encoder. Please read this manual thoroughly before using the product to ensure safe and efficient operation.

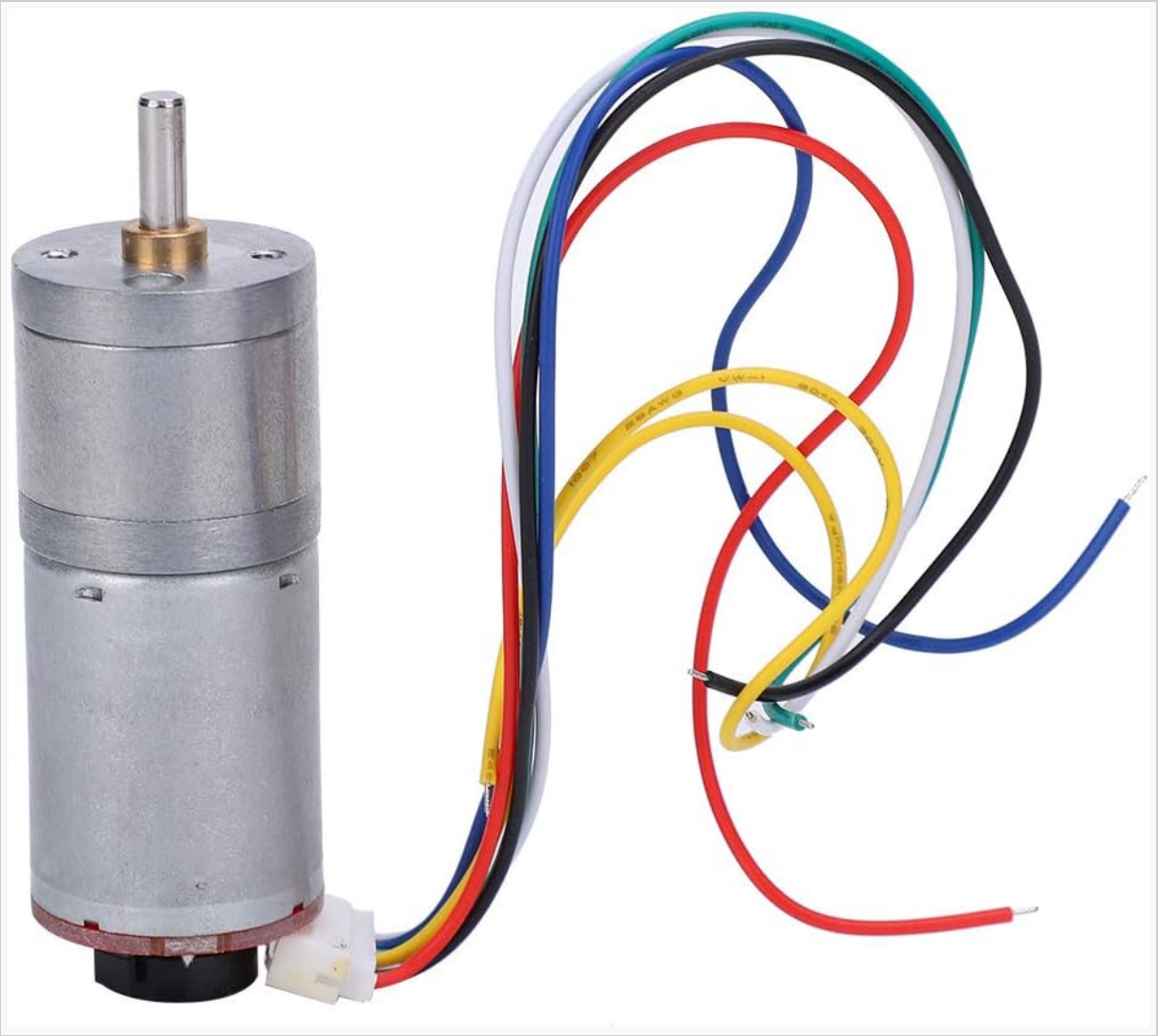

Image 1.1: The Hyuduo GA25-370 DC Gear Motor with its integrated speed encoder and wiring harness.

2. Safety Information

- Ensure the power supply voltage matches the motor's rated voltage (DC12V).
- Disconnect power before making any connections or performing maintenance.
- Avoid exposing the motor to excessive moisture or extreme temperatures.
- Do not attempt to disassemble the motor or gearbox, as this may void the warranty and cause damage.
- Handle with care to prevent damage to the encoder wires.

3. Product Features

- **Brush DC Motor:** Provides stable performance and high efficiency.
- **Integrated Speed Encoder:** Equipped with a two-phase encoder for precise speed feedback and control.
- **Rotation and Reversal Support:** Capable of both forward and reverse operation, enhancing application flexibility.
- **High Torque Gearbox:** Features stable gear transmission, wear resistance, and large transmission torque.
- **Durable Construction:** Made with copper and stainless steel materials for sturdy and long-lasting operation.

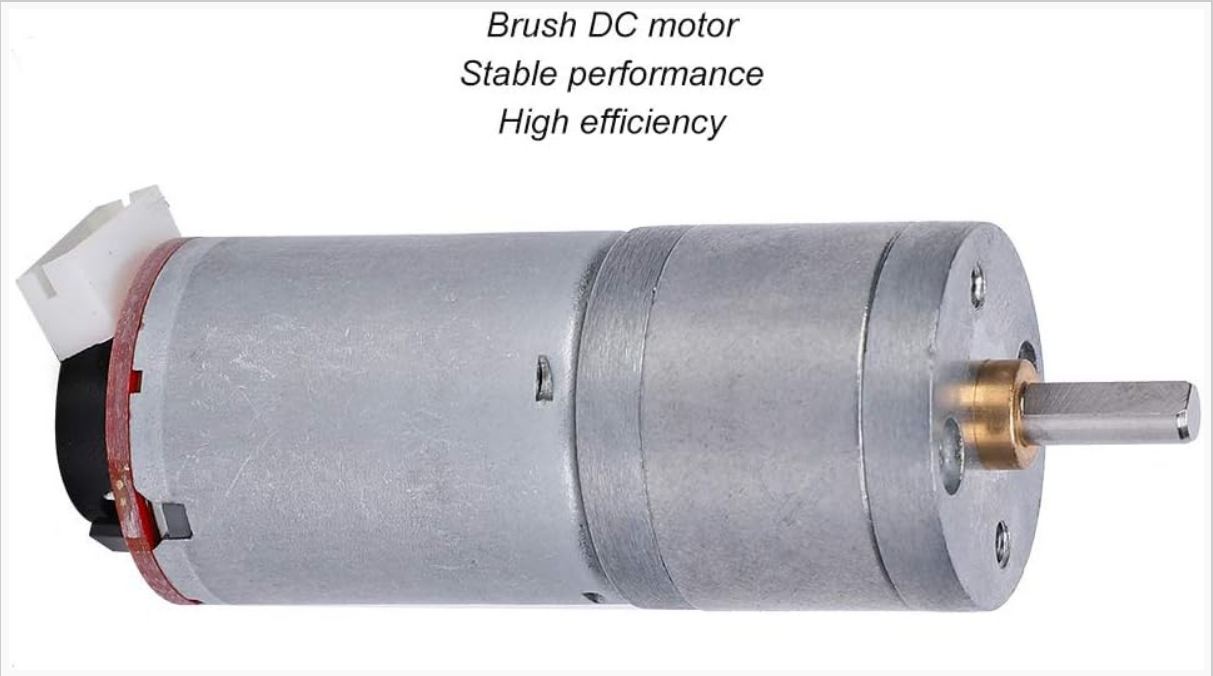

Image 3.1: Side view of the brush DC motor, emphasizing stable performance and high efficiency.

Image 3.2: Angled view showing the gear motor with its two-phase reduction gear and integrated encoder.

4. Specifications

Parameter	Value
Brand	Hyuduo
Model Name	GA25-370

Parameter	Value
Voltage	DC12V
Speed (No Load)	60 RPM
Horsepower	60 Watts
Item Weight	0.1 Kilograms (3.52 ounces)
Encoder Type	Two-phase
Material	Copper, Stainless Steel

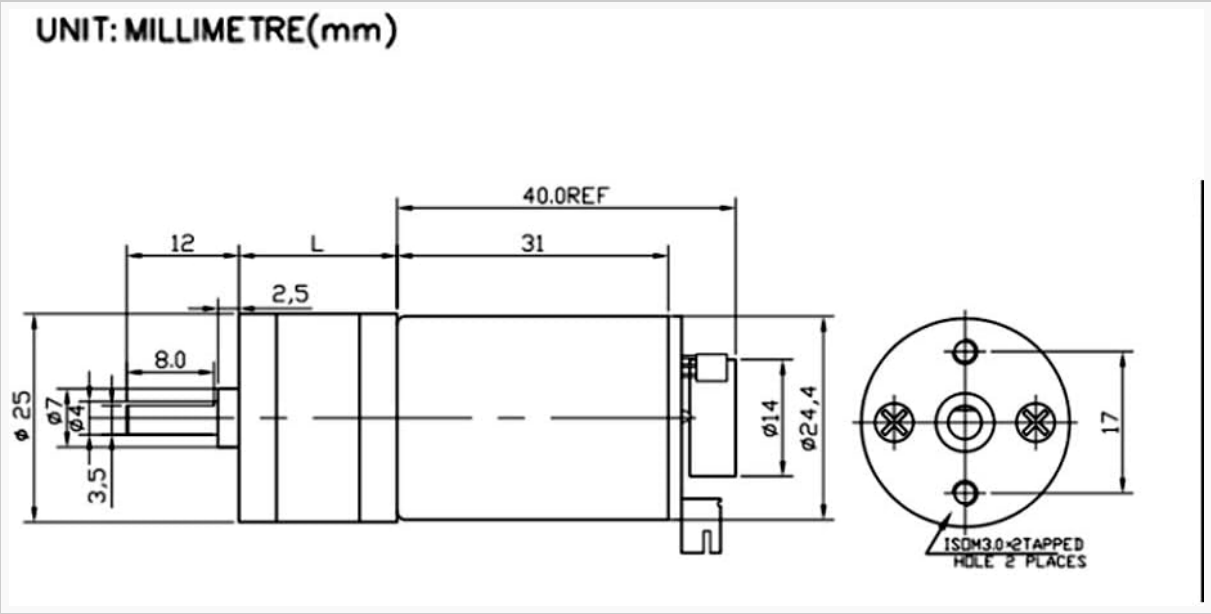

Image 4.1: Technical drawing illustrating the dimensions of the GA25-370 motor in millimeters.

5. Setup and Wiring

Proper wiring is crucial for the correct function of the motor and encoder. Refer to the diagram below for connections.

Red: Motor power + positive (change can control motor forward and reverse)
Black: Encode power - negative (positive and negative can not be connected incorrectly 3.3-5V)
Yellow: Signal feedback (11 signals from the motor)
Green: Signal feedback (11 signals from the motor)
Blue: Encoder power + positive (positive and negative can not be connected incorrectly 3.3-5V)
White: Motor power - negative (change can control motor forward and reverse)

Image 5.1: Close-up of the motor's wiring harness, showing individual wire colors and their functions.

5.1 Wiring Connections:

- **Red Wire:** Motor power terminal (+)
- **White Wire:** Motor power terminal (-)
- **Blue Wire:** Quad encoder +5Vcc (Power for encoder, typically 3.3-5V)
- **Black Wire:** Quad encoder Ground (Ground for encoder)
- **Yellow Wire:** Quad encoder A signal (Signal feedback)
- **Green Wire:** Quad encoder B signal (Signal feedback)

Note: Reversing the Red and White motor power connections will change the motor's direction of rotation. Ensure correct polarity for the encoder power (Blue and Black wires) to avoid damage.

6. Operating Instructions

6.1 Basic Operation:

1. Connect the motor power wires (Red and White) to a DC12V power supply.
2. Connect the encoder wires (Blue, Black, Yellow, Green) to your control circuit (e.g., microcontroller) for speed and position feedback.
3. Apply DC12V to the motor power terminals. The motor will begin to rotate.

6.2 Direction Control:

To change the direction of rotation, reverse the polarity of the power supply connected to the Red and White motor wires. For example, if Red is connected to +12V and White to GND for forward rotation, connect Red to GND and White to +12V for reverse rotation.

6.3 Speed Feedback (Encoder):

The integrated two-phase encoder provides pulse signals (A and B) that can be read by a microcontroller to determine the motor's speed and rotational position. The Yellow wire provides the A signal, and the Green wire provides the B signal. These signals are typically used in quadrature decoding to track movement.

7. Maintenance

- Keep the motor clean and free from dust and debris.
- Periodically check all wiring connections to ensure they are secure.
- Avoid applying excessive force to the motor shaft or housing.
- The motor is designed for long service life and typically requires no internal lubrication.

8. Troubleshooting

Problem	Possible Cause	Solution
Motor does not run	No power, incorrect wiring, faulty power supply.	Check power connections, ensure DC12V is supplied, verify wiring polarity.
Motor runs in wrong direction	Motor power wires (Red/White) are reversed.	Reverse the connections of the Red and White motor power wires.
Encoder not providing feedback	Incorrect encoder wiring, no power to encoder, faulty encoder.	Verify Blue (+5Vcc) and Black (Ground) encoder power connections. Check Yellow and Green signal wires.
Motor makes unusual noise	Mechanical obstruction, damaged gears, motor overload.	Check for obstructions. Reduce load if overloaded. If noise persists, contact support.

9. Warranty and Support

Hyuduo products undergo quality inspection before leaving the factory. If you encounter any issues or have questions regarding your GA25-370 DC Gear Motor, please contact Hyuduo customer support for assistance. Refer to your purchase documentation for specific warranty terms and contact information.
For further assistance, you may visit the official Hyuduo store:Hyuduo Store on Amazon.