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TenNuoDa GA25-370 (DC12V 10RPM)

TenNuoDa GA25-370 Brush DC Gear Motor Instruction Manual

Model: DC12V 10RPM

1. Product Overview

The TenNuoDa GA25-370 is a brush DC gear motor designed for applications requiring stable gear transmission, wear resistance, and high torque. This model features a two-phase reduction gear motor with an integrated encoder, enabling precise control over rotation and reverse functions.

Constructed from high-quality copper and stainless steel, the motor ensures durability and a long service life. Its design focuses on stable performance and high efficiency, making it suitable for various projects.

Key Features:

- **Stable Gear Transmission:** Ensures consistent power delivery and reduced wear.
- **Integrated Encoder:** Provides two-phase signal feedback for accurate speed and position control.
- **Reversible Operation:** Supports both forward and reverse rotation.
- **Durable Construction:** Made from copper and stainless steel for extended reliability.
- **High Efficiency:** Optimized design for effective power conversion.



Image 1.1: Side view of the GA25-370 Brush DC Gear Motor, highlighting its compact design and robust construction.

2. Setup and Wiring

Proper wiring is essential for the correct function of the GA25-370 motor and its encoder. Refer to the diagram and pinout description below for connection instructions.

Wiring Diagram and Pinout:



Image 2.1: Detailed wiring diagram showing the color-coded connections for the motor and its integrated encoder.

Red Wire: Motor power + positive. Changing the polarity of the motor power (Red and White wires) controls the motor's forward and reverse rotation.

Black Wire: Encoder power - negative. Connect to the negative terminal of a 3.3-5V power supply. Ensure correct polarity to avoid damage.

Yellow Wire: Signal feedback (Channel A). Provides 11 signals per motor revolution.

Green Wire: Signal feedback (Channel B). Provides 11 signals per motor revolution.

Blue Wire: Encoder power + positive. Connect to the positive terminal of a 3.3-5V power supply. Ensure correct polarity to avoid damage.

Motor power - negative. Changing the polarity of the motor power (Red and White wires) controls the motor's forward and reverse rotation.

Important: Always verify power supply voltage and polarity before connecting to prevent damage to the motor or encoder. The encoder requires a separate 3.3-5V power supply.



Image 2.2: The GA25-370 motor and its corresponding wiring harness, ready for connection.

3. Operating Instructions

Once correctly wired, the GA25-370 motor can be operated by applying the specified voltage to the motor power leads (Red and White). The integrated encoder provides feedback for precise control applications.

Motor Control:

- **Direction:** The motor's direction of rotation is determined by the polarity of the voltage applied to the Red (+) and White (-) motor power wires. Reversing the polarity will reverse the motor's direction.
- **Speed:** The motor speed is primarily controlled by the input voltage (within the specified range of 12V).

Encoder Usage:

The two-phase encoder provides digital signals (Yellow and Green wires) that can be read by a microcontroller or other control system to determine the motor's rotational speed and position. Each channel provides 11 pulses per revolution of the motor shaft.

4. Maintenance

To ensure the longevity and optimal performance of your TenNuoDa GA25-370 motor, follow these general maintenance guidelines:

- **Keep Clean:** Regularly clean the exterior of the motor to prevent dust and debris buildup, which can affect cooling and moving parts.
- **Avoid Overloading:** Do not operate the motor beyond its specified torque and speed limits to prevent premature wear of the gears and motor windings.

- **Check Connections:** Periodically inspect all wiring connections to ensure they are secure and free from corrosion. Loose connections can lead to intermittent operation or damage.
- **Environmental Conditions:** Operate the motor within appropriate temperature and humidity ranges as excessive conditions can degrade performance and lifespan.

5. Troubleshooting

If you encounter issues with your GA25-370 motor, consider the following troubleshooting steps:

- **Motor Not Running:**
  - Verify that the power supply for the motor is connected correctly (Red and White wires) and providing the specified 12V.
  - Check for any loose or disconnected wires.
  - Ensure there is no mechanical obstruction preventing the motor shaft from turning.
- **Incorrect Rotation Direction:**
  - Reverse the polarity of the motor power connections (swap Red and White wires).
- **Encoder Not Providing Feedback:**
  - Ensure the encoder is powered correctly with 3.3-5V (Blue and Black wires).
  - Check the connections of the Yellow and Green signal wires to your control system.
- **Unusual Noise or Vibration:**
  - Inspect for any foreign objects or damage to the motor or gearbox.
  - Ensure the motor is securely mounted.

6. Specifications

The following table details the technical specifications for the TenNuoDa GA25-370 Brush DC Gear Motor (DC12V 10RPM model):

Specification	Value
Brand	TenNuoDa
Model	GA25-370
Motor Type	Brush DC Motor
Rated Voltage	12 Volts
Rated Speed	10 RPM
Horsepower	10 Watts
Material	Copper, Stainless Steel
Item Weight	0.13 Kilograms
Encoder Signals	11 signals per motor revolution (2-phase)

Specification	Value
Encoder Power	3.3-5V

7. Warranty and Support

TenNuoDa is committed to providing quality products. If you have any questions, suggestions, or require technical assistance regarding your GA25-370 Brush DC Gear Motor, please do not hesitate to contact us. Our support team is available to assist you.

While specific warranty periods may vary by region and retailer, we strive to ensure a pleasant shopping experience and stand by the quality of our products. Please retain your proof of purchase for any warranty claims or support inquiries.

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