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TenNuoDa GA25YN370

TenNuoDa GA25YN370 DC Gear Motor Instruction Manual

Model: GA25YN370 (12V 10RPM Variant)

1. Introduction

The TenNuoDa GA25YN370 is a DC gear motor designed for applications requiring high torque and low speed. It features precision metal gears for stable operation and durability. The motor incorporates a pure copper wire coil, contributing to efficient performance with minimal heat generation and power loss. This motor is suitable for integration into various devices such as electronic locks, robotics, electric curtains, electric doors, micro mixers, monitoring equipment, and pet feeding machines.

Key Features:

- Constructed with high-quality metal gears for durability and impact resistance.
- Offers high transmission accuracy, compact size, and low operational noise.
- Designed for low energy consumption and ease of installation and maintenance.
- Suitable for a wide range of applications including electronic locks, robotics, and automated systems.

2. Safety Information

Please read and understand all safety instructions before installing or operating the motor. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- **Electrical Safety:** Ensure the power supply voltage matches the motor's rated voltage (12V DC). Disconnect power before making any electrical connections or performing maintenance.
- **Mechanical Safety:** Keep hands, hair, and loose clothing away from moving parts during operation. The motor shaft can rotate at high speeds and exert significant torque.
- **Installation Environment:** Install the motor in a dry environment, away from flammable materials, excessive dust, or corrosive substances.
- **Overload Protection:** Do not exceed the motor's rated load or stall torque to prevent damage and overheating.
- **Professional Installation:** If you are unsure about any installation or wiring procedures, consult a qualified technician.

3. Product Overview

The GA25YN370 motor consists of a DC motor coupled with a metal gearbox, providing speed reduction and increased torque. The output shaft extends from the gearbox.



Figure 1: Front view of the TenNuoDa GA25YN370 DC Gear Motor.



Figure 2: Side view of the GA25YN370 motor, indicating its 25mm diameter.



Figure 3: Detailed view of the motor's output shaft and metal gearbox.

4. Specifications

General Specifications:

- **Brand:** TenNuoDa
- **Model:** GA25YN370
- **Rated Power:** 3.5 Watts
- **Material:** Metal
- **Item Weight:** Approximately 0.1 Kilograms (3.52 ounces)
- **Product Dimensions:** 2.76 x 1.57 x 1.57 inches (approx. 70 x 40 x 40 mm)
- **Outer Diameter:** 25 mm (1.0 inch)
- **Shaft Diameter:** 4 mm (0.2 inch)
- **Shaft Length:** 10 mm (0.4 inch)

Performance Specifications (12V DC):

Voltage	Gear Ratio	No Load Speed	No Load Current	Load Speed	Load Current	Load Torque	Stall Current	Stall Torque
12V	1:650	5RPM	≤150MA	3RPM	≤70MA	1150gf.cm	≤2.1A	15.4kgf.cm
12V	1:150	10RPM	≤170MA	7RPM	≤100MA	980gf.cm	≤2.1A	14.8kgf.cm
12V	1:150	30RPM	≤170MA	25RPM	≤100MA	770gf.cm	≤2.1A	12.0kgf.cm
12V	1:200	60RPM	≤170MA	51RPM	≤100MA	750gf.cm	≤2.1A	11.8kgf.cm
12V	1:100	100RPM	≤150MA	73RPM	≤185MA	660gf.cm	≤2.1A	10.5kgf.cm
12V	1:50	200RPM	≤180MA	165RPM	≤105MA	580gf.cm	≤2.1A	8.8kgf.cm
12V	1:30	300RPM	≤190MA	254RPM	≤145MA	180gf.cm	≤2.1A	7.8kgf.cm
12V	1:25	400RPM	≤190MA	344RPM	≤145MA	170gf.cm	≤2.1A	7.7kgf.cm
12V	1:20	500RPM	≤190MA	460RPM	≤145MA	150gf.cm	≤2.1A	7.5kgf.cm
12V	1:10	1000RPM	≤190MA	820RPM	≤145MA	88gf.cm	≤2.1A	7.2kgf.cm

Note: The row highlighted in light blue corresponds to the 12V 10RPM variant of this product.

5. Setup and Installation

Proper installation is crucial for the motor's performance and longevity. Follow these general guidelines:

1. **Mounting:** Securely mount the motor using appropriate fasteners to a stable surface. Ensure there is no undue stress on the motor shaft or housing.
2. **Wiring:** Connect the motor to a 12V DC power supply. Observe polarity; reversing polarity will reverse the direction of rotation. Typically, the motor will have two terminals for power input.
3. **Load Connection:** Connect the load to the output shaft. Ensure the load is balanced and does not introduce excessive radial or axial forces on the shaft. Avoid direct impact on the shaft.
4. **Environmental Considerations:** Ensure adequate ventilation around the motor to prevent overheating, especially during continuous operation or under heavy loads.

6. Operating Instructions

Once installed, operating the GA25YN370 motor is straightforward:

1. **Power On:** Apply 12V DC power to the motor terminals. The motor will begin to rotate at its rated speed.
2. **Direction Control:** To reverse the direction of rotation, reverse the polarity of the DC power supply.
3. **Load Management:** Monitor the motor's performance under load. If the motor struggles, overheats, or draws excessive current, reduce the load or check for obstructions.
4. **Continuous Operation:** While designed for durability, prolonged continuous operation at maximum load may require additional cooling or periodic rest.

7. Maintenance

The TenNuoDa GA25YN370 motor is designed for low maintenance. However, periodic checks can extend its lifespan:

- **Cleaning:** Keep the motor free from dust and debris. Use a soft, dry cloth to wipe the exterior. Avoid using liquids or solvents.
- **Inspection:** Periodically inspect the motor for any signs of wear, damage, or loose connections. Check the output shaft for smooth rotation and ensure the mounting is secure.
- **Lubrication:** The gearbox is factory-lubricated and generally does not require additional lubrication under normal operating conditions. If the motor is exposed to harsh environments or experiences unusual noise, consult a professional.

8. Troubleshooting

If you encounter issues with your GA25YN370 motor, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Motor does not run	No power supply; incorrect wiring; motor stalled due to overload.	Check power connections and voltage; verify wiring polarity; reduce load or remove obstruction.
Motor runs slowly or with reduced torque	Insufficient power supply; excessive load; internal friction/damage.	Ensure stable 12V DC power; reduce load; inspect for mechanical issues or contact support.
Unusual noise or vibration	Loose mounting; damaged gears; foreign object in gearbox.	Tighten mounting screws; discontinue use and contact support if internal damage is suspected.
Motor overheats	Continuous overload; insufficient ventilation; short circuit.	Reduce load or operating time; ensure proper airflow; check wiring for shorts.

9. Support

If you have any questions, suggestions, or require further assistance with your TenNuoDa GA25YN370 DC Gear Motor, please feel free to contact us. We are committed to providing a pleasant experience and will do our best to assist you. For support, please refer to the contact information provided at the point of purchase or visit the official TenNuoDa store page.

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