

FPBIGCHA K9040

FPBIGCHA K9040 Direct-Drive Servo Motor with Encoder (RS485) User Manual

1. INTRODUCTION

This manual provides essential information for the safe and efficient use of your FPBIGCHA K9040 Direct-Drive Servo Motor with Encoder. This outrunner brushless motor is designed for industrial automation applications, offering precise speed reduction and control. Please read this manual thoroughly before installation and operation to ensure optimal performance and longevity of the product.

2. SAFETY INFORMATION

Always observe the following safety precautions to prevent injury or damage to the motor and associated equipment:

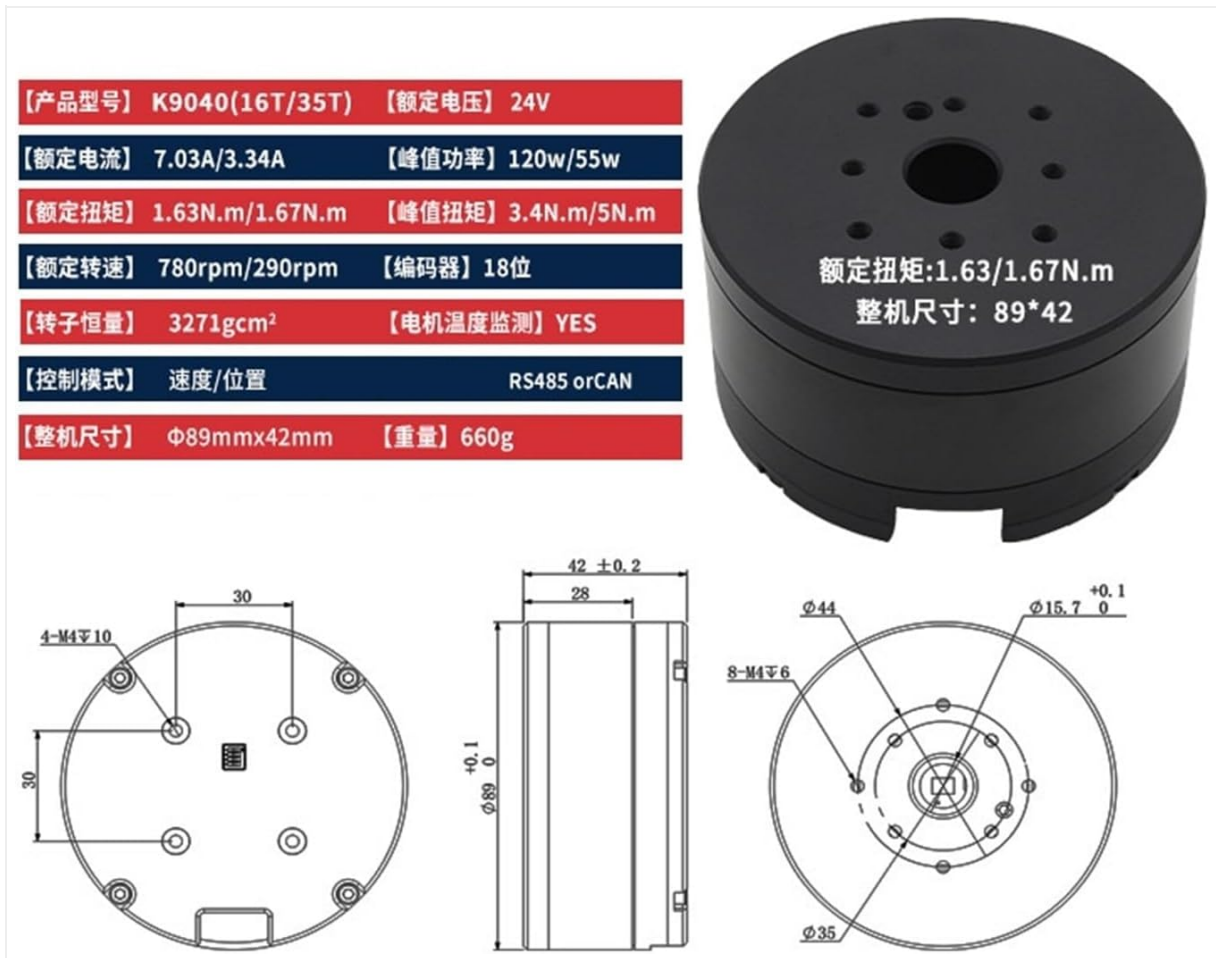
- **Electrical Safety:** Ensure all power connections are made by qualified personnel. Disconnect power before performing any installation, maintenance, or troubleshooting.
- **Proper Installation:** Mount the motor securely to a stable surface. Incorrect mounting can lead to vibration, noise, and premature wear.
- **Environmental Conditions:** Operate the motor within its specified temperature and humidity ranges. Avoid exposure to excessive dust, moisture, or corrosive substances.
- **Handling:** Handle the motor with care. Avoid dropping or subjecting it to strong impacts, which can damage internal components.
- **Overload Protection:** Do not exceed the motor's rated current or torque. Implement appropriate overload protection in your system design.

3. INSTALLATION AND SETUP

The K9040 motor features a compact design for easy assembly and integration into various systems.

3.1 Physical Installation

Mount the motor using appropriate fasteners through the designated mounting holes. Refer to the dimensional drawing for precise measurements and hole patterns.



3.2 Electrical Connections

Connect the motor to your control system using the appropriate wiring for the RS485 communication interface. Ensure all connections are secure and correctly polarized.



Figure 2: Bottom view of the FPBIGCHA K9040 Direct-Drive Servo Motor, illustrating the connection ports and pinout for control and power. This view is crucial for proper wiring.

4. OPERATION

The K9040 motor operates as a direct-drive servo motor, primarily functioning to reduce the speed of machinery and equipment while providing precise control. It supports RS485 or CAN communication for speed and position control.

- **Control Mode:** The motor can be controlled in speed or position mode via the RS485 or CAN interface. Refer to your specific controller's documentation for programming and command protocols.
- **Power On:** Apply the rated 24V DC power supply. The motor will initialize, and the encoder will provide feedback.
- **Command Execution:** Send commands through the chosen communication interface to set desired speed, position, or other operational parameters.

5. MAINTENANCE

Regular maintenance ensures the longevity and reliable performance of your K9040 servo motor.

- **Cleaning:** Keep the motor free from dust, debris, and moisture. Use a soft, dry cloth for cleaning.

Avoid using solvents or abrasive materials.

- **Connection Checks:** Periodically inspect all electrical connections for tightness and signs of wear or corrosion.
- **Environmental Monitoring:** Ensure the operating environment remains within the specified temperature and humidity limits.
- **Bearing Inspection:** Listen for unusual noises from the motor, which could indicate bearing wear. Contact support if such noises occur.

6. TROUBLESHOOTING

If you encounter issues with your K9040 servo motor, refer to the following common problems and solutions:

- **Motor Not Starting:**
 - Check power supply connections and voltage (should be 24V).
 - Verify control signal and communication settings (RS485/CAN).
 - Ensure no mechanical obstruction is preventing rotation.
- **Unusual Noise or Vibration:**
 - Check for loose mounting bolts.
 - Inspect for foreign objects or damage to the motor.
 - Verify proper alignment with the driven load.
- **Overheating:**
 - Ensure the motor is not operating under excessive load.
 - Check ambient temperature; ensure it's within specifications.
 - Verify proper ventilation around the motor.
- **Inaccurate Position/Speed Control:**
 - Check encoder connections and functionality.
 - Review control system parameters and tuning.
 - Inspect for mechanical backlash in the system.

If problems persist, contact customer support for further assistance.

7. TECHNICAL SPECIFICATIONS

Parameter	Value
Product Model	K9040 (16T/35T)
Rated Voltage	24V
Rated Current	7.03A / 3.34A
Rated Power	120W / 55W
Rated Torque	1.63 N.m / 1.67 N.m

Parameter	Value
Peak Torque	3.4 N.m / 5 N.m
Rated Speed	780 rpm / 290 rpm
Encoder Resolution	18-bit
Rotor Inertia	3271 gcm ²
Motor Temperature Monitoring	Yes
Control Mode	Speed / Position
Communication Interface	RS485 or CAN
Overall Dimensions	Φ89mm x 42mm
Item Weight	660 Grams (1.32 pounds)
Package Dimensions	1.18 x 0.79 x 0.39 inches
Manufacturer	FPBIGCHA
ASIN	B0DWDH53Q7

8. WARRANTY AND CUSTOMER SUPPORT

For warranty information and customer support, please refer to the documentation provided with your purchase or contact FPBIGCHA directly. Keep your purchase receipt as proof of purchase for any warranty claims. For technical assistance or inquiries, please reach out to the manufacturer's support channels.