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- › [Huayong](#) /
- › Huayong AASD-50A AC Servo Motor Driver Instruction Manual

Huayong AASD-50A

Huayong AASD-50A AC Servo Motor Driver Instruction Manual

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of the Huayong AASD-50A AC Servo Motor Driver. This driver is designed for precision control in various automation equipment, including CNC engraving and cutting machines. It offers stable performance, fast response, and robust protection features.



Figure 1.1: Huayong AASD Series AC Servo Motor Drivers

2. SAFETY INFORMATION

Please read and understand all safety instructions before installing, operating, or maintaining the AASD-50A servo motor driver. Failure to comply with these instructions may result in personal injury or equipment damage.

- **Electrical Hazard:** Always disconnect all power sources before performing any installation, wiring, or maintenance. Ensure proper grounding to prevent electric shock.
- **Qualified Personnel:** Only qualified and trained personnel should install, operate, and service this equipment.
- **Environment:** Do not operate the driver in wet, dusty, or explosive environments. Ensure adequate ventilation to prevent overheating.
- **Connections:** Verify all wiring connections are correct and secure before applying power. Incorrect wiring can cause damage to the driver and connected equipment.

- **Handling:** Handle the unit with care. Avoid dropping or subjecting it to strong impacts.

3. PRODUCT FEATURES

The Huayong AASD-50A AC Servo Motor Driver incorporates several advanced features for reliable and high-performance operation:

- **Stable Performance and Fast Response:** Engineered for precise and rapid motor control, ensuring optimal torque and extra smooth motion.
- **Advanced Heat Dissipation Design:** Features an efficient heat dissipation process, including an integrated cooling fan for sustained performance.
- **Strong Anti-Interference Capability:** Robust signal input design ensures reliable operation even in electrically noisy industrial environments.
- **Safety and Reliability:** Includes multiple protection mechanisms such as overheat, overcurrent, undervoltage lockout, and input voltage reversal protection. The motor current is automatically halved at standstill to reduce heat and power consumption.
- **Versatile Application:** Suitable for various small and medium-sized automation equipment, including engraving machines, marking machines, cutting machines, illumination systems, plotters, and CNC machine tools.



Figure 3.1: Side view showing the advanced heat dissipation design with cooling fan.



Figure 3.2: Multiple AASD series drivers, illustrating different models.

4. SETUP AND WIRING

This section details the necessary connections for the AASD-50A AC Servo Motor Driver. Ensure all connections are made correctly and securely before applying power.

4.1 Connection Points

- **Communication Interface:** For connecting to external control systems or programming devices.
- **PC Signal Input:** Dedicated input for PC communication and control signals.
- **Encoder Signal Input:** Connects to the motor's encoder for feedback and precise position control.
- **Control Circuit Power Supply:** Provides power for the driver's internal control logic.
- **Main Circuit Power Supply:** Provides high voltage power for the motor drive. (Input AC220V)
- **External Braking Resistor Interface:** For connecting an external braking resistor, if required, to dissipate regenerative energy.
- **Motor Power Line:** Connects directly to the servo motor.
- **Ground Terminal:** Essential for safety and proper operation. Ensure a solid ground connection.



Figure 4.1: Overview of connection ports on the AASD-50A driver.

5. OPERATING INSTRUCTIONS

The AASD-50A driver features a control panel with several buttons for configuration and monitoring. Familiarize yourself with these controls for effective operation.

5.1 Control Panel Buttons

Button Name	Features
Mode	<ol style="list-style-type: none"> 1. Mode Switching 2. Return To the Upper-Level Directly
Number Increase	Increases the displayed number or parameter value. Long press for a repeating effect.
Decrease	Decreases the displayed number or parameter value. Long press for a repeating effect.
Shift	Moves the cursor position for parameter editing.



Figure 5.1: Control panel with display and buttons.

6. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your AASD-50A servo motor driver.

- **Cleaning:** Regularly clean the exterior of the driver, especially the cooling fan and heatsink fins, to prevent dust accumulation. Use a soft, dry cloth or compressed air. Ensure power is off before cleaning.
- **Connection Checks:** Periodically inspect all wiring connections for tightness and signs of wear or corrosion. Re-tighten any loose connections.
- **Environmental Control:** Maintain the operating environment within specified temperature and humidity ranges. Avoid exposure to corrosive gases or liquids.
- **Fan Inspection:** Check the cooling fan for proper operation and ensure it is free from obstructions. Replace if noisy or not functioning correctly.

7. TROUBLESHOOTING

This section provides general guidance for common issues. For complex problems or issues not listed here, please contact technical support.

- **No Power/Display Off:**
 - Check the main power supply and control circuit power supply connections.
 - Verify the input voltage (AC220V) is within the specified range.
 - Ensure the power switch (if present) is in the ON position.
- **Motor Not Responding/No Movement:**

- Verify the motor power line and encoder signal input connections are secure and correct.
 - Check the communication interface for proper connection to the control system.
 - Ensure the correct operating mode is selected on the driver.
 - Check for any error codes displayed on the driver's panel.
- **Overheat Protection Triggered:**
 - Ensure adequate ventilation around the driver.
 - Clean the cooling fan and heatsink fins to remove any dust or obstructions.
 - Verify that the motor load is within the driver's specifications (3.5KW for AASD-50A).
 - Check ambient temperature.
- **Unstable Motor Operation/Vibration:**
 - Check for strong electromagnetic interference from nearby equipment.
 - Verify the integrity of signal input cables.
 - Ensure motor parameters are correctly configured in the driver.

8. SPECIFICATIONS

The following table outlines the key technical specifications for the Huayong AASD-50A AC Servo Motor Driver:

Specification	Value
Model	AASD-50A
Current	50A
Voltage Input	AC220V
Application for Servo Motor Power	3.5KW
Package Dimensions	1.18 x 0.79 x 0.39 inches
Item Weight	1.1 pounds
Manufacturer	Huayong
Number of Pieces	1

9. WARRANTY INFORMATION

Please refer to your purchase documentation or contact your vendor for specific warranty terms and conditions applicable to the Huayong AASD-50A AC Servo Motor Driver. Typically, Huayong products come with a standard manufacturer's warranty covering defects in materials and workmanship under normal use.

Keep your proof of purchase for any warranty claims.

10. TECHNICAL SUPPORT

For technical assistance, product inquiries, or warranty claims, please contact your vendor or the manufacturer

directly. When contacting support, please provide the following information to ensure faster service:

- Product Model: **AASD-50A**
- Date of Purchase
- Description of the issue or question
- Your contact information