Installation Guide: NexBot Vision AC111-003 Ac Servo Motor 3.5 Nm

SKU: NXB-SRV-AC111-003 | Revision: 1.0 | Category: Drive Systems > Servo Motors > AC Servo Motors

> **DANGER:** Disconnect all power sources before beginning installation. Follow lockout/tagout (LOTO) procedures per OSHA 1910.147.

1. Required Tools & Materials

- Metric Hex Key Set (e.g., 4mm, 5mm, 6mm)
- Torque Wrench with Metric Sockets
- Calibrated Digital Multimeter
- Wire Stripper and Crimping Tool for Power Connectors
- Insulated Electrician's Screwdrivers
- PROFINET Cable Termination Tool (RJ45)
- Safety Glasses and Insulated Gloves
- Dial Indicator or Laser Alignment Tool

2. Pre-Installation Checks

1. Verify the received product SKU NXB-SRV-AC111-003 matches the packing list and project requirements.
2. Inspect the motor housing and shaft for any signs of damage incurred during shipping.
3. Ensure the mounting surface is clean, flat, and rigid enough to support the motor's 2.8 kg weight and operational torque.
4. Confirm the servo drive and control cabinet power is disconnected and locked-out/tagged-out (LOTO).
5. Verify the main power supply matches the motor's 480VAC rating before making any connections.
6. Check that all required cables (power, encoder, PROFINET) are the correct type and length.

3. Installation Procedure

Step 1: Mechanical Mounting

Secure the NexBot Vision AC111-003 motor to the mounting flange using appropriately sized high-tensile bolts. Ensure the 80 x 80 mm motor face is flush against the mounting surface to guarantee proper heat dissipation and alignment.

> **Warning:** Ensure mounting bolts are torqued to the specifications listed in the servo drive manual to prevent loosening from vibration.

Step 2: Shaft Coupling

Attach the load to the motor shaft using a high-quality, zero-backlash coupling. Use a dial indicator or laser alignment tool to ensure the motor shaft and the load shaft are precisely aligned to prevent premature bearing wear and vibration.

> **Warning:** Never hammer a coupling onto the motor shaft. Use a proper press-fit tool or a clamp-style coupling to avoid damaging the motor's internal bearings and encoder.

Step 3: Power Cable Connection

Connect the three-phase 480VAC power leads (U, V, W) and the protective earth (PE) ground wire to the designated motor power connector. Ensure all connections are secure and properly crimped to handle the motor's rated current.

> **Warning:** HIGH VOLTAGE. This motor operates at 480VAC which can cause severe injury or death. All electrical work must be performed by qualified personnel with power locked out.

Step 4: Encoder Feedback Connection

Connect the feedback encoder cable from the motor to the corresponding input on the servo drive. The connectors are keyed to prevent incorrect insertion; do not force the connection.

Step 5: PROFINET Network Connection

Connect a shielded PROFINET-rated Ethernet cable to the motor's communication port. Ensure the cable is properly terminated and routed away from high-voltage power lines to prevent signal interference.

> **Warning:** Improper network cable shielding can lead to communication dropouts and unpredictable system behavior.

Step 6: Chassis Grounding

Verify that the motor's aluminum alloy chassis has a low-impedance path to the system's central earth ground. This is critical for both safety and noise immunity.

Step 7: Cable Management and Strain Relief

Secure all cables (power, encoder, PROFINET) using appropriate clamps and routing channels. Ensure there is adequate strain relief at the motor connection points to prevent damage from machine movement and vibration.

4. Post-Installation Verification

1. Double-check that all electrical and mechanical connections are secure and properly torqued.
2. Remove all tools and foreign objects from the work area.
3. Remove the Lockout/Tagout device according to your facility's safety procedures.
4. Apply power to the servo drive and verify it initializes without errors.
5. Establish communication with the motor over PROFINET and verify its status in the control software.
6. Perform a low-speed, low-torque 'jog' command to confirm the direction of rotation and smooth operation before enabling full production speed.

Note: For technical support, contact your authorized service provider or visit https://robotics.barca.group/support.