

Installation Guide: NexBot Drives MD132-006 Dual-Axis Servo Drive

SKU: NXB-SRV-MD132-006 | Revision: 1.0 | Category: Drive Systems > Servo Drives > Multi-Axis Servo Drives

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

1. Required Tools & Materials

- Torque screwdriver with insulated bits (2.5-5.0 Nm range)
- Wire stripper and crimping tool for power and signal terminals
- Digital Multimeter (DMM) with CAT III rating or higher
- M5 hex driver or Allen key for mounting screws
- Laptop with Ethernet port for configuration
- Standard shielded EtherCAT cable (RJ45)
- Anti-static wrist strap
- Panel knockout punch or drill for cable entry

2. Pre-Installation Checks

1. Verify the product SKU on the packaging matches the order: NXB-SRV-MD132-006.
2. Inspect the MD132-006 unit for any signs of shipping damage, such as a dented chassis or broken connectors.
3. Ensure the mounting panel is clean, flat, and robust enough to support the drive's weight of 3.5 kg.
4. Confirm the incoming three-phase supply voltage is within the 480VAC +/- 10% tolerance specified for the drive.
5. Check that the control cabinet has adequate ventilation space, allowing at least 50mm clearance on all sides of the drive.
6. Have all motor power cables, encoder cables, and I/O wiring prepared and labeled according to the system wiring diagram.

3. Installation Procedure

Step 1: Mounting the Drive

Securely mount the MD132-006 drive vertically to the cabinet backplate using four M5 screws. Ensure the drive is oriented with the cooling fans at the top and bottom for proper airflow. The compact 255 x 85 x 210 mm dimensions allow for high-density mounting.

Warning: Ensure the mounting panel is properly grounded before installing the drive. The drive chassis must have a low-impedance connection to earth ground.

Step 2: Chassis Grounding

Connect the main protective earth (PE) terminal on the drive to the central cabinet ground point using a short, heavy-gauge (min. 10 AWG) green/yellow wire. This is critical for operator safety and noise immunity.

Warning: Failure to properly ground the drive can result in a serious electric shock hazard and may cause unpredictable system behavior.

Step 3: Connecting 480VAC Main Power

Connect the three-phase 480VAC power lines to the L1, L2, and L3 terminals. Use appropriately sized wiring for the motor load and ensure connections are torqued to the specified value printed on the drive housing.

Warning: Lethal voltage is present. Disconnect and lock out all incoming power at the source before wiring the power terminals.

Step 4: Connecting Motor Power

Wire the Axis 1 motor phases to the U1, V1, W1 terminals and the Axis 2 motor phases to the U2, V2, W2 terminals. Use shielded motor cables to minimize electromagnetic interference (EMI).

Step 5: Connecting Motor Encoders

Connect the feedback cables from the Axis 1 and Axis 2 servo motors to the X11 and X12 encoder input ports, respectively. Ensure the cable shield is properly terminated at the drive-side connector housing.

Warning: Improper encoder wiring can lead to uncontrolled motor movement upon power-up. Double-check pinouts against the motor and drive documentation.

Step 6: Connecting EtherCAT Network

Connect the incoming EtherCAT cable from the master controller to the X1 (EtherCAT IN) port. If this drive is not the last device in the chain, connect an outgoing cable from the X2 (EtherCAT OUT) port to the next slave device.

Step 7: Connecting STO (Safe Torque Off)

Wire the machine's safety circuit (e.g., E-Stop relay) to the STO input terminals. This hardware-based safety function is crucial for preventing unexpected motor startup during maintenance or emergencies.

Warning: Do not bypass or jumper the STO inputs. This is a critical safety feature required for safe machine operation.

4. Post-Installation Verification

1. Verify all terminal screws, including power, motor, and ground, are tightened to their specified torque values.
2. Use a multimeter to check for short circuits between power phases and between power phases and ground.
3. Ensure all protective covers and cable clamps are reinstalled correctly.
4. Apply power to the drive and confirm that the status LED indicates normal operation (e.g., solid green) without any fault codes.
5. Establish communication with the drive over the EtherCAT network using the NexBot configuration software.
6. Perform a low-speed jog test for each axis individually without a mechanical load to confirm correct motor phasing and direction of rotation.

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