

Installation Guide: NexBot Robotics MD132-001 Multi-Axis Servo Drive 400V

SKU: NXB-SRV-MD132-001 | 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 (for control terminals)
- Torque wrench (for power terminals and mounting bolts)
- Wire stripper and crimper
- Digital multimeter
- Phillips and flat-head screwdrivers
- Anti-static wrist strap
- EtherCAT network cable tester

2. Pre-Installation Checks

1. Verify the product SKU on the packaging is NXB-SRV-MD132-001.
2. Inspect the servo drive for any signs of physical damage sustained during shipping.
3. Confirm the control cabinet provides adequate clearance around the drive's dimensions (220 x 75 x 180 mm) for proper ventilation.
4. Ensure the incoming three-phase power supply is rated for 400VAC.
5. Check that servo motor and encoder feedback cables are compatible with the MD132-001 connectors.
6. Download the latest version of the NexBot DriveSuite configuration software and the corresponding ESI file.

3. Installation Procedure

Step 1: Safety Lockout/Tagout

Before beginning installation, completely de-energize the main power supply to the control cabinet. Apply a lockout/tagout device to the main disconnect switch to prevent accidental power-up.

Warning: Failure to de-energize the system can result in severe electrical shock, injury, or death.

Step 2: Mounting the Drive

Securely mount the 2.5 kg MD132-001 drive vertically onto a DIN rail or control panel backplane. Ensure the mounting is stable and maintains the specified minimum clearance on all sides for proper heat dissipation.

Step 3: Protective Earth (PE) Grounding

Connect the drive's PE terminal to the main cabinet ground bus using a low-impedance conductor of the specified gauge. This connection is critical for safety and for reducing electromagnetic interference (EMI).

Warning: Improper grounding can create a safety hazard and lead to unreliable system performance.

Step 4: Connecting 400VAC Input Power

Connect the three-phase AC input lines to the L1, L2, and L3 terminals on the drive. Use appropriately sized wiring and torque the terminal screws to the specification listed in the hardware manual.

Step 5: Connecting Motor Power Cables

Connect the motor power cables for Axis 1 and Axis 2 to their respective U, V, and W output terminals. Ensure the phase sequence is correct to achieve the desired direction of rotation.

Step 6: Connecting Encoder Feedback

Connect the feedback cables from the servo motors to the corresponding Axis 1 and Axis 2 encoder input ports. Ensure the cable shields are properly terminated at the drive for noise immunity.

Step 7: Connecting EtherCAT Network

Connect the incoming EtherCAT cable from the master or previous slave device to the X1 IN port. If connecting more devices, use the X2 OUT port to continue the network chain.

Step 8: Connecting Safe Torque Off (STO)

Wire the STO circuit (terminals STO1 and STO2) according to your system's safety design requirements. This connection is essential for implementing safety functions.

Warning: The STO function must be wired and tested by qualified personnel to ensure it performs as expected in a safety-critical situation.

4. Post-Installation Verification

1. Visually inspect all wiring to ensure connections are secure and there are no stray wire strands.
2. Confirm that all protective covers and terminal shields are correctly installed on the drive.
3. Remove the lockout/tagout device and carefully apply power to the control cabinet.
4. Observe the drive's status LEDs and verify they indicate a normal power-on sequence without any initial fault codes.

5. Establish communication between the drive and the NexBot DriveSuite software over the EtherCAT network.
6. Perform a 'no-load' jog test for each axis to confirm correct motor rotation and basic functionality before coupling the load.

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