Installation Guide: NexBot Drives MD132-002 Multi-Axis Servo Drive

SKU: NXB-SRV-MD132-002 | 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

- Calibrated Torque Screwdriver (for terminals)
- Wire Stripper and Crimping Tool (for ferrules)
- Digital Multimeter
- M5 Hex Driver or Wrench
- Panel Cutout Tool / Drill
- Anti-Static Wrist Strap
- EtherCAT Network Cable Tester
- Fine-tipped Marker for labeling

2. Pre-Installation Checks

1. Verify the received product SKU is NXB-SRV-MD132-002 and inspect for any shipping damage.
2. Ensure the control cabinet provides at least 100mm of clearance above and below the drive for ventilation.
3. Confirm the mounting panel is sufficiently rigid to support the drive's weight of 5.2 kg.
4. Verify the incoming power source is de-energized and locked out, and measures between 400-480VAC 3-Phase.
5. Ensure the EtherCAT ESI (EtherCAT Slave Information) file for the MD132-002 is available for the master controller.
6. Check that motor power and encoder cables are the correct type and length, with appropriate shielding.

3. Installation Procedure

Step 1: Step 1: Mechanical Mounting

Secure the MD132-002 drive vertically to the cabinet's backplate using four M5 screws. Ensure the Anodized Aluminum Housing is flush against the mounting surface for proper heat dissipation.

> **Warning:** Ensure the cabinet is de-energized. The drive's weight is 5.2 kg; use proper lifting techniques to avoid injury.

Step 2: Step 2: Protective Earth (PE) Grounding

Connect the main chassis grounding screw to the central star-grounding point of the control cabinet. Use a low-inductance grounding cable of the specified gauge to ensure safety and noise immunity.

> **Warning:** Proper grounding is critical for safety and system stability. Do not skip this step or use an undersized wire.

Step 3: Step 3: Connect 3-Phase AC Input Power

Connect the 400-480VAC 3-Phase supply lines to the L1, L2, and L3 input terminals. Use a calibrated torque screwdriver to tighten the terminals to the specification printed on the drive housing.

> **Warning:** Incorrect voltage or phase sequence can permanently damage the drive. Verify voltage and phase before connecting.

Step 4: Step 4: Connect Motor Power Cables

Connect the motor phase cables to the U, V, and W output terminals for both Axis 1 and Axis 2. Ensure motor cable shields are properly terminated at the drive's shield clamp.

Step 5: Step 5: Connect Motor Encoder Cables

Plug the encoder cables for each axis into their respective feedback connectors. Ensure the connectors lock securely in place and that the cable shielding makes a 360-degree connection to the connector shell.

> **Warning:** An intermittent encoder connection can cause uncontrolled motor movement. Double-check all connections.

Step 6: Step 6: Connect Safety and I/O Signals

Wire the Safe Torque Off (STO) circuit and any required digital I/O signals to the I/O terminal block. The STO inputs must be correctly wired for the system to be enabled safely.

Step 7: Step 7: Connect EtherCAT Network

Connect the incoming EtherCAT cable to the X1 IN port and the outgoing cable to the X2 OUT port for daisy-chaining. Ensure you hear an audible click when the RJ45 connectors are inserted.

4. Post-Installation Verification

1. Remove all tools, wire clippings, and debris from the control cabinet.
2. Perform a final visual inspection of all wiring, verifying it matches the system schematics.
3. Close and secure the control cabinet door before applying power.
4. Apply power and verify the drive's status LED indicates normal operation (e.g., solid green).
5. Establish communication with the EtherCAT master and verify the MD132-002 is recognized as two separate slave axes.
6. Perform a low-speed, no-load jog of each motor axis to confirm correct phasing and direction of rotation.

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