Installation Guide: NexServo AC30 Servo Motor

SKU: NXB-SRV-AC-030-A | 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

- Torque wrench with metric sockets
- Metric hex key set (Allen wrenches)
- Digital Multimeter
- Wire strippers and crimping tool for power connectors
- PROFINET M12 D-coded cable assembly tool
- ESD wrist strap
- Safety glasses
- Lint-free cloths

2. Pre-Installation Checks

1. Verify the received product SKU matches NXB-SRV-AC-030-A on the order.
2. Inspect the Anodized Aluminum motor housing and shaft for any signs of shipping damage.
3. Ensure the mounting surface is clean, flat, and free of burrs to guarantee proper thermal contact.
4. Confirm that the drive system's power supply is de-energized and locked out before beginning.
5. Verify the power supply output is regulated at 48VDC, matching the motor's voltage specification.
6. Check that the mechanical load coupling is compatible with the motor's shaft diameter and keyway.

3. Installation Procedure

Step 1: Step 1: Mechanical Mounting

Carefully position the NexServo AC30 motor onto the mounting flange. Align the mounting holes and insert the appropriate grade mounting bolts. Ensure there is adequate clearance around the motor's 142 x 87 x 87 mm dimensions for ventilation.

> **Warning:** Do not strike the motor shaft. Applying impact force can damage the internal encoder and bearings.

Step 2: Step 2: Torque Mounting Bolts

Tighten the mounting bolts in a star pattern to the torque value specified in the machine's assembly manual. Uneven tightening can cause flange stress and mechanical misalignment.

Step 3: Step 3: Connect Power Cable

Connect the 48VDC power leads to the motor's power connector. Ensure correct polarity is observed. Use the specified wire gauge to handle the required current for delivering up to 30 Nm of torque.

> **Warning:** Reversing the power supply polarity will cause permanent damage to the motor's internal electronics.

Step 4: Step 4: Connect Encoder Cable

Attach the feedback encoder cable to the designated signal connector on the motor. Ensure the connector is fully seated and secured to maintain signal integrity.

Step 5: Step 5: Connect PROFINET Cable

Connect the PROFINET network cable to the M12 communication port. Ensure the connection is secure to maintain the IP65 rating and reliable network communication.

> **Warning:** Do not route communication cables parallel to high-voltage power lines to avoid electromagnetic interference.

Step 6: Step 6: Chassis Grounding

Connect a dedicated grounding wire from the motor's chassis grounding point to the system's main earth ground. A proper ground connection is critical for safety and noise immunity.

Step 7: Step 7: Couple Mechanical Load

Attach the load to the motor shaft using a suitable high-torque coupling. Verify shaft alignment carefully to prevent premature wear on bearings and reduce vibration.

> **Warning:** Ensure the coupling is rated to handle the motor's 30 Nm peak torque to prevent slippage or failure.

4. Post-Installation Verification

1. Double-check all electrical connections are secure and correctly polarized.
2. Use a multimeter to check for short circuits between power lines and ground before applying power.
3. Remove all tools and debris from the work area.
4. Power on the servo drive and controller, then verify the motor appears on the PROFINET network.
5. Perform a low-speed, no-load jog command to confirm correct motor rotation direction.
6. Listen for any unusual noises or vibrations during the initial test run.

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