

Installation Guide: NexBot Vision PWR511-003 Motor Power Cable

SKU: NXB-SRV-PWR511-003 | Revision: 1.0 | Category: Cables & Connectors > Power Cables > Motor Power Cables

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

1. Required Tools & Materials

- Torque wrench with 3 Nm capability
- Insulated gloves (rated for 400VAC or higher)
- Safety glasses
- Digital Multimeter (DMM) with continuity test function
- Cable tie cutters
- Connector cleaning swabs and contact cleaner
- Cable routing tools (e.g., fish tape)
- Lockout/Tagout (LOTO) kit

2. Pre-Installation Checks

1. Verify the part number on the cable packaging matches NXB-SRV-PWR511-003.
2. Visually inspect the entire 3-meter length of the Polyurethane (PUR) jacket for any shipping damage, cuts, or abrasions.
3. Inspect both connectors for bent pins, debris, or signs of contamination.
4. Confirm the target motor and drive are completely de-energized and locked out according to site safety procedures.
5. Ensure the planned cable route is clear of sharp edges, sources of extreme heat, and moving machine parts.
6. Verify the 3-meter cable length is adequate for the intended route without placing the cable under tension.

3. Installation Procedure

Step 1: Step 1: Safety Lockout/Tagout

Before beginning installation, ensure the robotic cell's main power is disconnected and a lockout/tagout device is applied. Verify zero energy state at the drive's power terminals using a calibrated multimeter.

Warning: Failure to de-energize and lock out equipment can result in severe electrical shock, injury, or death. Always verify zero voltage before proceeding.

Step 2: Step 2: Route the Cable

Carefully route the NXB-SRV-PWR511-003 cable from the servo drive location to the motor. Use existing cable trays and avoid sharp bends; maintain a bend radius of at least 10 times the cable diameter.

Step 3: Step 3: Connect to Motor

Align the connector keyway on the cable with the motor's power receptacle. Insert the connector firmly until it is fully seated, then engage the locking mechanism by hand until it is snug.

Warning: Do not force the connection. If resistance is met, withdraw the connector and inspect both the cable and motor receptacles for bent pins or debris.

Step 4: Step 4: Connect to Drive

Align and connect the other end of the cable to the corresponding power output port on the servo drive. Ensure it is fully seated before engaging the locking collar.

Step 5: Step 5: Torque Connector

Using a calibrated torque wrench, tighten the connector's coupling nut at the drive end to the specified torque of 3 Nm. This ensures a

secure, vibration-resistant connection and maintains the IP67 rating.

Warning: Over-tightening can damage the connector threads or housing, while under-tightening can lead to intermittent power loss or moisture ingress.

Step 6: Step 6: Secure Cable Route

Secure the cable along its route using appropriate cable ties or clamps. Ensure there is adequate slack near the motor to allow for its full range of motion without straining the cable or connectors.

Step 7: Step 7: Final Inspection and LOTO Removal

Perform a final visual inspection of the installation. Once confirmed, remove your lockout/tagout device in accordance with established safety procedures before re-energizing the system.

Warning: Ensure all personnel are clear of the robotic cell before applying power.

4. Post-Installation Verification

1. Verify both connectors are fully seated and securely locked.
2. Confirm the cable is not under tension or kinked at any point in its route.
3. Check that the cable is clear of any potential pinch points or abrasive surfaces during robot operation.
4. Ensure the cable does not present a tripping hazard.
5. After re-energizing, perform a low-speed jog of the robot axis to confirm proper motor function.
6. Monitor the connection points for any signs of unusual heat during initial system operation.

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

