

# Installation Guide: NexBot Robotics SA011-004 6-Axis Robot Arm 10kg Payload

SKU: NXB-ROB-SA011-004 | Revision: 1.0 | Category: Robots > Articulated Robots > Small Articulated (≤10kg)

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

## 1. Required Tools & Materials

- Torque Wrench with sockets for M12 bolts
- Metric Hex Key Set (5mm - 14mm)
- Industrial Precision Spirit Level
- Certified Lifting Straps (rated for 150 kg minimum)
- Digital Multimeter
- PROFINET Cable Termination Kit
- Wire Stripper and Crimping Tool
- Safety Glasses and Steel-Toed Boots

## 2. Pre-Installation Checks

1. Verify the mounting foundation is rigid, level, and capable of supporting the robot's 65.0 kg static weight plus dynamic forces.
2. Confirm the availability of a dedicated, de-energized 400VAC 3-Phase power source with appropriate circuit protection.
3. Inspect the installation area to ensure it is free of obstructions and provides adequate clearance for the robot's full 1100 mm working envelope.
4. Unpack all crates and visually inspect the robot arm (SKU: NXB-ROB-SA011-004), controller, and cables for any signs of shipping damage.
5. Ensure ambient temperature and humidity levels are within the specified operating range for the robot and controller.

6. Verify that the PROFINET network infrastructure is in place and a network drop is available near the controller location.

### 3. Installation Procedure

#### Step 1: Position and Mount Robot Base

Using certified lifting straps and appropriate lifting equipment, carefully hoist the 65.0 kg robot arm and position it on the prepared mounting surface. Align the mounting holes on the robot base with the holes in the foundation.

**Warning:** Never lift the robot by its arm. Always use the designated lifting points on the robot base to prevent damage and ensure stability.

#### Step 2: Secure Robot Base

Insert all required mounting bolts and washers. Hand-tighten the bolts initially, then use a calibrated torque wrench to tighten them in a star pattern to the specification listed in the service manual.

#### Step 3: Connect Main Umbilical Cable

Carefully route the main robot power and signal umbilical from the robot base to the robot controller. Securely fasten the connectors at both ends, ensuring the locking mechanisms are fully engaged.

**Warning:** Do not apply power to the controller until all cables are securely connected. Mating or unmating connectors under power can cause electrical arcing and damage.

#### Step 4: Connect Main Power

With the main disconnect in the OFF position, connect the 400VAC 3-Phase power supply lines to the L1, L2, and L3 terminals in the robot controller. Connect the protective earth (PE) line to the designated grounding stud.

**Warning:** All electrical work must be performed by a qualified electrician in accordance with local codes. Ensure power is locked out and tagged out before beginning.

### **Step 5: Connect PROFINET Communication**

Connect the plant's PROFINET network cable to the designated port on the robot controller. Ensure the cable is properly shielded and grounded to prevent communication interference.

### **Step 6: Mount End-of-Arm Tooling (EOAT)**

Mount the desired gripper or tool to the robot's wrist flange. Ensure the total weight of the EOAT and the workpiece does not exceed the maximum payload of 10 kg.

**Warning:** Use correctly sized bolts and tighten them to the specified torque. An improperly secured tool can detach during operation, creating a severe hazard.

### **Step 7: Connect Teach Pendant**

Connect the teach pendant cable to the port on the front of the robot controller. Drape the cable in a way that prevents tripping hazards and entanglement during operation.

## **4. Post-Installation Verification**

1. Apply power to the robot controller and verify that status indicator lights show normal operation (e.g., green status LED).
2. Check the teach pendant display for any startup errors or alarms.
3. Establish communication with the robot over the PROFINET network and verify that it appears as a node in the PLC or engineering tool.
4. In manual mode and at very low speed (10% or less), jog each of the 6 axes individually to confirm correct movement and direction.
5. Perform a mastering or homing procedure to calibrate the robot's absolute position.

6. Run a test program without a workpiece to verify the robot can move through its programmed path smoothly and without vibration.

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