Installation Guide: NexBot Drives SA011-006 6-Axis Robot Arm 10kg Payload

SKU: NXB-ROB-SA011-006 | 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

- Calibrated torque wrench with socket set (metric)
- Industrial lifting hoist or crane (minimum 250 kg capacity)
- Certified lifting straps
- Laser level or precision machinist's level
- Digital multimeter
- Terminal block screwdriver set (insulated)
- PROFINET network cable tester
- Drill and appropriate mounting hardware for foundation

2. Pre-Installation Checks

1. Verify that the delivered product SKU (NXB-ROB-SA011-006) matches the order confirmation.
2. Inspect the robot and controller for any signs of shipping damage before uncrating.
3. Confirm the mounting foundation is level, rigid, and capable of handling the robot's 125.0 kg static weight and dynamic operational forces.
4. Ensure a dedicated 400-480VAC 3-Phase power source with an appropriate circuit breaker is available within 3 meters of the controller location.
5. Check that the planned work envelope provides sufficient clearance from walls, machinery, and personnel pathways.
6. Confirm availability of a dedicated earth ground connection point near the controller.

3. Installation Procedure

Step 1: Uncrating and Positioning

Carefully remove the shipping crate and packaging materials. Attach certified lifting straps to the designated lifting points on the robot body and use a hoist to carefully lift the 125.0 kg unit and position it over the mounting surface.

> **Warning:** Never lift the robot by its arm or wrist. Use only the designated lifting points indicated in the hoisting diagram to prevent equipment damage and ensure personnel safety.

Step 2: Mounting the Robot Base

Align the robot base with the mounting holes on the prepared foundation. Insert and hand-tighten all mounting bolts, then use a calibrated torque wrench to tighten them in a star pattern to the specified torque value to ensure a secure and level installation.

Step 3: Connecting Main Power and Grounding

With the main power source locked out, connect the 400-480VAC 3-Phase power lines to the designated terminals in the robot controller. Connect the chassis grounding screw to the facility's earth ground using the specified gauge of wire.

> **Warning:** All electrical work must be performed by a certified electrician. Failure to properly ground the robot can result in a severe electrical shock hazard.

Step 4: Connecting the Robot to the Controller

Connect the main robot umbilical cable from the base of the SA011-006 to the corresponding port on the NexBot controller. Ensure the connectors are fully seated and locked to maintain signal integrity and proper IP rating.

Step 5: Connecting PROFINET Communications

Connect the shielded PROFINET network cable from your plant network or PLC to the designated port on the robot controller. Ensure proper network

settings, such as IP address and device name, are configured according to your automation scheme.

Step 6: Mounting End-of-Arm Tooling (EOAT)

Mount the desired gripper, sensor, or other end-of-arm tool to the wrist flange. Ensure the combined weight of the tooling and workpiece does not exceed the maximum 10 kg payload capacity.

> **Warning:** Exceeding the 10 kg payload limit can cause excessive wear, motor faults, and inaccurate positioning.

Step 7: Initial Power-Up Sequence

Ensure all personnel are clear of the robot's work envelope. Unlock the main power disconnect, then turn on the controller. Wait for the system to initialize and verify that no critical errors are displayed on the teach pendant.

> **Warning:** The robot may perform a slight motion on initial power-up as brakes release and encoders initialize. Keep a safe distance.

4. Post-Installation Verification

1. Verify that the teach pendant displays the correct robot model (SA011-006) and serial number.
2. Check for any active alarms or fault codes on the controller status screen.
3. Confirm successful PROFINET communication with the master PLC or network controller.
4. Perform a low-speed manual jog of all 6 axes to ensure free and correct movement.
5. Test all external safety circuits, including emergency stops and safety gates, to confirm they stop robot motion as expected.
6. Calibrate the Tool Center Point (TCP) for the installed end-of-arm tooling to ensure positional accuracy.

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