

# Installation Guide: NexBot Safety MA012-008 6-Axis Robot Arm 25kg Payload

SKU: NXB-ROB-MA012-008 | Revision: 1.0 | Category: Robots > Articulated  
Robots > Medium Articulated (10-50kg)

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

## 1. Required Tools & Materials

- Lifting crane or forklift with a minimum 300 kg capacity
- M16 anchor bolt set with washers and nuts
- Calibrated torque wrench (up to 200 Nm)
- Precision machinist's level
- Industrial multimeter (CAT III or higher)
- PROFINET certified Ethernet cable and RJ45 crimping tool
- Metric Allen key set (2mm - 14mm)
- Insulated terminal screwdriver set

## 2. Pre-Installation Checks

1. Verify the concrete mounting foundation is level, fully cured, and engineered to withstand the robot's 275.0 kg static weight and dynamic operational forces.
2. Confirm a stable, grounded 480VAC 3-phase power source is available within 5 meters of the controller location and is protected by an appropriate circuit breaker.
3. Ensure the planned work envelope provides complete clearance for the robot's 1710 mm maximum reach without risk of collision with personnel, equipment, or structures.
4. Upon uncrating, visually inspect the NexBot Safety MA012-008 robot arm and controller for any signs of shipping damage.
5. Check that the ambient operating environment meets the robot's requirements for temperature, humidity, and is free from corrosive elements.

6. Confirm a PROFINET network drop is available and the required IP address and device name for the robot are documented by the network administrator.

### 3. Installation Procedure

#### Step 1: Positioning and Mounting the Robot

Using certified lifting equipment attached to the designated lifting points, carefully position the robot base so its mounting holes align with the anchors in the foundation. The base footprint is 650 x 580 mm; ensure it is seated flat before proceeding.

**Warning:** Improper lifting can cause the 275.0 kg robot to tip, resulting in severe injury or equipment damage. Never stand under a suspended load.

#### Step 2: Securing the Robot Base

Insert and hand-tighten all M16 anchor bolts. Use a precision level to ensure the robot base is perfectly level, using shims if necessary. Tighten the bolts in a star pattern to the torque value specified in the full technical manual.

#### Step 3: Connecting Main Power and Umbilicals

With the main power locked-out and tagged-out, connect the 480VAC supply to the controller's main terminals. Connect the large umbilical cables from the controller to the robot arm base, ensuring the connectors are fully seated and locked to maintain the IP67 seal.

**Warning:** Risk of fatal electric shock. All electrical connections must be performed by a qualified electrician in accordance with local codes. Verify power is off before starting.

#### Step 4: Establishing Network Communication

Connect the PROFINET cable from your network switch to the designated port on the robot controller. Power on the controller and use the teach

pendant to configure the robot's network settings to integrate it into your plant's control system.

### Step 5: Mounting End-of-Arm Tooling (EOAT)

Attach your gripper, sensor, or other end-of-arm tool to the mounting flange on Axis 6. Ensure the combined weight of the tooling and the heaviest workpiece does not exceed the robot's 25 kg payload capacity.

**Warning:** Exceeding the maximum payload will cause premature wear, motor overloads, and a significant reduction in positioning accuracy.

### Step 6: Initial System Power-Up

Clear all personnel from the robot's work area. Remove the lockout/tagout device and energize the system. Observe the teach pendant for any initialization errors or alarms.

**Warning:** The robot may perform a small, unexpected motion on initial power-up. Ensure the entire work envelope is clear.

### Step 7: Verifying Axis Movement

In T1 (Teach) mode and at a low speed (10% or less), manually jog each of the 6 axes using the teach pendant. Confirm smooth motion in both positive and negative directions for each axis.

## 4. Post-Installation Verification

1. Perform a full range-of-motion test at low speed to ensure no cables are snagging or pulling tight.
2. Verify the functionality of all Emergency Stop buttons on the teach pendant, controller, and any external safety devices.
3. Run a test program to confirm the robot can repeatedly reach programmed points within its specified  $\pm 0.04$  mm repeatability.
4. Check the PROFINET communication status to ensure a stable connection with the master PLC or cell controller.
5. Configure and test all safety I/O, such as light curtains or safety gates, to ensure they properly halt robot operation when triggered.

6. Confirm the robot's payload settings are correctly configured to match the installed EOAT and workpiece.

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