Installation Guide: NexBot Safety FLR022-008 Collaborative Robot Arm 10kg Payload

SKU: NXB-ROB-FLR022-008 | Revision: 1.0 | Category: Robots > Collaborative Robots > Floor Cobots (5-20kg)

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

1. Required Tools & Materials

- Torque wrench with a range up to 100 Nm
- Metric Allen key set (2mm to 10mm)
- Set of 4x M8, Grade 10.9 or higher bolts for mounting
- Precision bubble level or laser level
- Digital multimeter for voltage verification
- Wire stripper and ferrule crimper for I/O terminals
- Anti-static wrist strap
- Laptop with NexBot Control Suite v2.5 or later installed

2. Pre-Installation Checks

1. Verify the received product SKU is NXB-ROB-FLR022-008 and inspect all components for shipping damage.
2. Ensure the mounting surface is rigid, flat to within 0.5 mm, and capable of supporting at least 150 kg to account for dynamic loads.
3. Confirm a regulated 48VDC power source capable of supplying a minimum of 15A is available within 3 meters of the installation point.
4. Verify the ambient operating environment is within the specified temperature and humidity ranges and compliant with the IP54 rating.
5. Check that the full 1300 mm reach envelope is clear of personnel and obstructions before beginning installation.
6. Ensure a PROFINET network connection point is accessible and the required network addresses are available.

3. Installation Procedure

Step 1: Unpacking and Component Verification

Carefully unpack the NexBot Safety FLR022-008 from its transit case. Cross-reference the contents with the packing list to ensure the robot arm, controller, teach pendant, and cable set are present.

> **Warning:** The robot arm weighs 32.5 kg. Use a certified lifting device or a two-person team to move the arm. Lift only from the designated lift points on the base.

Step 2: Positioning and Securing the Robot Base

Place the robot base on the prepared mounting surface, aligning it with the four mounting holes. Insert the four M8 bolts with washers and hand-tighten to secure the position.

Step 3: Torquing the Mounting Bolts

Using a calibrated torque wrench, tighten the mounting bolts in a star pattern to the recommended torque value specified in the robot's mechanical drawing. This ensures a secure and vibration-free installation.

> **Warning:** Under-torquing can lead to poor repeatability and instability. Over-torquing can damage the robot's base casting.

Step 4: Connecting Power and I/O

Connect the main power cable from the 48VDC power source to the corresponding input on the robot controller. Ensure correct polarity. Connect any required digital or analog I/O wiring to the designated terminal blocks.

> **Warning:** Ensure the main power source is de-energized before making any electrical connections. Reversing polarity can cause permanent damage to the robot's electronics.

Step 5: Connecting Communication Cables

Connect the primary PROFINET cable from your network switch or PLC to the designated port on the robot controller. Attach the teach pendant cable to its dedicated connector, ensuring the locking mechanism engages.

Step 6: Mounting the End-Effector

Attach your desired end-of-arm tooling (EOAT) to the tool flange at the end of Axis 6. Ensure the tooling mass, including the workpiece, does not exceed the 10 kg maximum payload.

> **Warning:** Improperly secured or overweight tooling can become a projectile hazard and will void the warranty.

Step 7: Initial Power-On Sequence

Clear the work area and energize the 48VDC power source. Press the power button on the controller and wait for the system to initialize. The teach pendant should display the main dashboard upon successful startup.

4. Post-Installation Verification

1. Verify that the controller boots up without any critical fault messages displayed on the teach pendant.
2. Check the network status page to confirm a stable PROFINET connection is established with the master device.
3. Using the teach pendant in manual mode at 10% speed, carefully jog each of the 6 axes to their positive and negative limits to verify free movement.
4. Perform a Tool Center Point (TCP) and payload configuration routine to ensure the robot's kinematic model is accurate.
5. Run a simple pre-defined test program at low speed to confirm correct path execution and I/O functionality.
6. Test the emergency stop buttons on both the controller and the teach pendant to ensure they immediately halt all robot motion.

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