

Installation Guide: NexBot PROFINET Patch Cable, 2m

SKU: NXB-CBL-NET-002 | Revision: 1.0 | Category: Cables & Connectors > Signal Cables > Fieldbus Cables

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

1. Required Tools & Materials

- Safety Glasses
- Insulated Gloves
- Cable Ties / Zip Ties
- Flush Cutters / Side Snips
- Isopropyl Alcohol Wipes
- M12 Torque Wrench (optional, for precise sealing)
- Cable Labeling Machine
- Digital Multimeter (for advanced diagnostics)

2. Pre-Installation Checks

1. Verify the part number on the packaging matches NXB-CBL-NET-002.
2. Visually inspect the cable and its anodized aluminum M12 connectors for any signs of shipping damage, such as cracks, dents, or bent pins.
3. Ensure all machinery and control panels connected to the target ports are fully de-energized and follow lock-out/tag-out (LOTO) procedures.
4. Confirm the 2-meter length is adequate for the intended cable path, allowing for service loops and adherence to minimum bend radius requirements.
5. Inspect the device-side PROFINET ports for dirt, debris, or moisture. Clean gently with isopropyl alcohol wipes if necessary.

6. Review the planned cable route to ensure it is clear of high-voltage power lines, sources of extreme heat, sharp edges, and high-traffic areas.

3. Installation Procedure

Step 1: Unpack and Inspect Cable

Carefully remove the NXB-CBL-NET-002 cable from its packaging. Perform a final visual inspection of the cable jacket and both M12 connectors to ensure they are free from defects.

Step 2: Confirm Equipment Power-Off State

Before proceeding, double-check that all associated equipment is de-energized. Use a multimeter to verify zero voltage at the connection points as per your facility's safety protocols.

Warning: Failure to de-energize equipment can result in severe electrical shock, equipment damage, and unexpected machine motion.

Step 3: Route the Cable

Carefully route the cable from the source device to the destination device along the pre-planned path. Avoid pulling the cable with excessive force or routing it over sharp corners that could damage the jacket.

Step 4: Connect First M12 Connector

Align the keyway on the M12 connector with the corresponding slot on the device port. Gently push the connector in and hand-tighten the anodized aluminum coupling nut until it is snug.

Warning: Do not force the connection. If it does not seat easily, retract and check for pin or keyway misalignment.

Step 5: Secure Connector for IP67 Rating

To ensure an IP67-rated seal, tighten the coupling nut an additional quarter-turn past the hand-snug point. If using a torque wrench, tighten to the device manufacturer's specified value (typically 0.4-0.6 Nm). This action compresses the internal O-ring, creating a watertight and dust-tight seal.

Step 6: Connect Second M12 Connector

Repeat the connection and securing process for the M12 connector at the other end of the cable run. Ensure both connectors are fully seated and secured to maintain network and environmental integrity.

Step 7: Secure the Cable Run

Use cable ties to secure the NXB-CBL-NET-002 cable within the cable tray or along structural members. Leave a small service loop near each connector to prevent strain and facilitate future maintenance.

Warning: Do not over-tighten cable ties, as this can compress the cable and degrade signal performance.

Step 8: Apply Labels

Apply appropriate identification labels to both ends of the cable according to your plant's wiring schematic. This is critical for efficient troubleshooting and maintenance in the future.

4. Post-Installation Verification

1. Visually confirm that both M12 connectors are fully seated and secured.
2. Check that the cable is not under tension, kinked, or bent tighter than the recommended minimum bend radius.
3. Ensure the cable route does not present a trip hazard or interfere with moving equipment.

4. After removing LOTO and re-energizing the equipment, check the network status LEDs on both connected devices. A solid green light typically indicates a successful link.
5. Log into the machine controller or engineering station to verify the PROFINET device is online and communicating without errors.
6. Update system documentation and schematics to reflect the installation of the new NXB-CBL-NET-002 cable.

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