Installation Guide: NexBot Drives 342-002 Vibration Sensor

SKU: NXB-SNS-342-002 | Revision: 1.0 | Category: Sensors & Vision > Temperature & Environment Sensors > Vibration Sensors

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

1. Required Tools & Materials

- Torque wrench with appropriate socket
- Adjustable wrench
- Drill and M8x1.25 tap bit
- Wire stripper and crimping tool for M12 connector
- Small flathead screwdriver
- Multimeter
- Non-permanent thread locking compound
- IO-Link Master configuration software

2. Pre-Installation Checks

1. Verify that the product SKU is NXB-SNS-342-002 and inspect the sensor for any signs of shipping damage.
2. Confirm the designated mounting surface is flat, clean, and free of paint, rust, or grease.
3. Ensure all machine power is de-energized and proper Lockout/Tagout (LOTO) procedures are in effect.
4. Verify the control system has an available IO-Link Master port and the power supply can deliver a stable voltage between 18-30VDC.
5. Download the correct IODD (IO-Link Device Description) file for the NXB-SNS-342-002 from the NexBot Robotics support portal.
6. Confirm the sensor cable length is sufficient to reach the IO-Link Master without being under tension.

3. Installation Procedure

Step 1: Prepare Mounting Location

Select a rigid, solid point on the machine as close as possible to the component being monitored (e.g., motor housing, gearbox casing). The surface must be flat to ensure optimal vibration transfer.

Step 2: Drill and Tap Mounting Hole

Drill and tap a mounting hole according to the sensor's mounting thread specification. Ensure the hole is perpendicular to the mounting surface to prevent measurement inaccuracies.

> **Warning:** Wear appropriate personal protective equipment (PPE), including safety glasses, when drilling and tapping metal surfaces.

Step 3: Clean Mounting Surface and Threads

Thoroughly clean the mounting surface and the tapped hole to remove any metal shavings, cutting fluid, or debris. This ensures a solid mechanical connection for accurate data transmission.

Step 4: Mount the Sensor

Apply a small amount of non-permanent thread locking compound to the sensor threads. Hand-tighten the sensor into the mounting hole, then use a torque wrench to tighten to the recommended specification to ensure proper coupling without damaging the sensor.

> **Warning:** Over-tightening can damage the piezoelectric element and lead to false readings. Do not exceed the specified torque.

Step 5: Connect the Sensor Cable

Connect the M12 connector of the sensor cable to the NXB-SNS-342-002 sensor. Ensure the connector is fully seated and the coupling nut is tightened to create an IP67-rated seal.

Step 6: Route and Secure Cabling

Route the sensor cable back to the control cabinet, keeping it clear of moving parts, high-temperature sources, and high-voltage power lines to prevent physical damage and electrical interference. Secure the cable at regular intervals using appropriate cable ties or clamps.

Step 7: Connect to IO-Link Master

Connect the other end of the cable to an available port on your IO-Link Master. Ensure the port is configured for IO-Link communication mode in the control system software.

Step 8: Load IODD File

In your engineering or PLC software, import the IODD file for the NXB-SNS-342-002. This file provides the IO-Link Master with all necessary information about the sensor's parameters, process data, and diagnostics.

4. Post-Installation Verification

1. Remove LOTO and restore power to the machine and control system.
2. Verify that the status indicator LED on the sensor illuminates, indicating it is powered on.
3. Confirm that the IO-Link Master successfully establishes communication and identifies the NXB-SNS-342-002 sensor.
4. Check the control system for any fault codes related to the new sensor installation.
5. Monitor the initial vibration data stream to ensure it is stable and plausible for the machine's idle state.

6. Run the machine through a normal cycle and observe the vibration readings to establish a preliminary operational baseline.

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