

# NexBot Robotics 331-005 M12 Inductive Proximity Sensor

NexBot  
Robotics

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> Proximity & Safety Sensors > Inductive Proximity  
Sensors

## Overview

The NexBot Robotics 331-005 is a high-performance M12 inductive proximity sensor designed for reliable, non-contact detection of metallic objects in demanding industrial automation and robotics applications. This sensor provides a crucial feedback mechanism for robot controllers, confirming part presence, verifying correct positioning, and detecting end-of-travel limits for motion systems with exceptional accuracy. Key features of the 331-005 model include its shielded construction, which allows for flush mounting in metal fixtures or robot end-effectors without signal interference. This design protects the sensor from accidental impacts and saves valuable space in compact workcells. With a nominal sensing distance of 4 mm, it is optimized for close-range detection tasks common in assembly, pick-and-place, and machine tending operations. Its high switching frequency of up to 2 kHz ensures dependable performance even in high-speed applications, such as counting parts on a fast-moving conveyor or verifying tool changes. The sensor is housed in a rugged Stainless Steel 316L body, providing excellent resistance to corrosion from industrial coolants and cleaning agents. Its IP67 ingress protection rating guarantees it is completely sealed against dust and can withstand temporary immersion in water, ensuring long-term operational stability in harsh factory environments. Operating on a standard 10-30VDC power supply, it integrates seamlessly into existing control systems. The inclusion of IO-Link protocol offers advanced diagnostic capabilities, allowing for real-time monitoring of sensor status, signal quality, and remote parameterization, which significantly reduces downtime and simplifies maintenance troubleshooting. Installation is straightforward thanks to the industry-standard M12 threaded body and quick-disconnect connector. This sensor is an essential component for enhancing the precision and safety of automated processes, providing the reliable data needed for closed-loop robotic control.

## Technical Specifications

| Parameter         | Value                | Unit |
|-------------------|----------------------|------|
| Weight            | 0.05                 | kg   |
| Material          | Stainless Steel 316L |      |
| Voltage           | 10-30VDC             |      |
| IP Rating         | IP67                 |      |
| Country of Origin | SE                   |      |

| Parameter  | Value       | Unit |
|------------|-------------|------|
| Protocol   | IO-Link     |      |
| Dimensions | M12 x 50 mm |      |

**Safety Notice:** This product must be installed and operated by qualified personnel in accordance with applicable safety standards (ISO 10218, IEC 61508).