

NexBot Drives SD312-006 Single-Axis Force Sensor

NexBot
Robotics

SKU: NXB-SNS-SD312-006 | Category: Sensors & Vision > Force/Torque Sensors > Single-Axis Force Sensors

Overview

The NexBot Drives SD312-006 is a high-performance single-axis force sensor designed to provide precise force measurement and control in automated industrial applications. This sensor integrates directly into robotic end-of-arm tooling (EOAT) to give robots a sense of touch, enabling delicate and force-sensitive tasks that would otherwise require manual intervention. Its robust construction and reliable performance make it an essential component for advanced manufacturing, assembly, and quality control processes. The core of the SD312-006 is its durable strain gauge technology, which delivers accurate and repeatable force data with minimal hysteresis. With a nominal capacity of 1000 N (225 lbf), it is well-suited for a wide range of tasks, from inserting components with consistent pressure to performing surface finishing with a uniform tool force. A key benefit is its high overload protection, rated at 500% of nominal capacity, which safeguards the sensor against damage from unexpected impacts or programming errors, reducing downtime and replacement costs. The sensor communicates via the IO-Link protocol, simplifying integration with modern control systems and providing diagnostic data in addition to force readings. Built for demanding industrial environments, the SD312-006 features a compact housing made from anodized aluminum and carries an IP67 rating. This ensures it is fully protected against dust ingress and can withstand temporary immersion in water, making it suitable for use in environments with coolants, dust, or wash-down procedures. Common applications include force-limited assembly of electronics or mechanical parts, robotic grinding and deburring where consistent tool pressure is critical, and automated product testing cycles that require applying and measuring specific forces. Installation is straightforward, with standard mounting patterns compatible with many common robot flanges. The sensor operates on a standard 24VDC power supply, making it easy to integrate into existing machine control cabinets.

Technical Specifications

Parameter	Value	Unit
Weight	0.45	kg
Material	Anodized Aluminum 6061-T6	
Voltage	24VDC	
IP Rating	IP67	
Country of Origin	SE	

Parameter	Value	Unit
Protocol	IO-Link	
Dimensions	75 x 75 x 30 mm	

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