

# User Manual: NexBot Robotics SD131-001 Single-Axis Servo Drive 400VAC

SKU: NXB-SRV-SD131-001 | Version: 1.0 | Brand: NexBot Robotics

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## 1. Safety Information

**READ ALL SAFETY INSTRUCTIONS BEFORE OPERATION.** Failure to follow safety procedures may result in serious injury or equipment damage.

## 2. Product Overview

The NexBot Robotics SD131-001 is a compact, high-performance single-axis servo drive engineered for demanding motion control applications in automated systems. This drive provides precise, dynamic control of a single servo motor axis, making it an integral component for articulated, SCARA, and collaborative robots where accuracy and speed are critical. Its primary function is to interpret command signals from a robot controller and deliver the necessary power to the motor to achieve the desired position, velocity, and torque. Key features of the SD131-001 include a sophisticated digital signal processor (DSP) that enables advanced auto-tuning and vibration suppression algorithms. This significantly reduces commissioning time and optimizes machine performance by compensating for mechanical resonances in real-time. The drive's high power density allows for a compact footprint, saving valuable space within control cabinets. For seamless system integration, the unit operates on a versatile 400VAC three-phase power supply, making it suitable for a wide range of industrial environments. This protocol ensures minimal latency and high bandwidth, which is essential for complex robotic tasks such as coordinated path following in welding

or high-speed pick-and-place operations. The SD131-001 also incorporates a Safe Torque Off (STO) function, compliant with industry safety standards, to help create safer machine designs. Installation is streamlined with a DIN rail mountable chassis and accessible, front-facing connectors for power, motor, and I/O. Onboard diagnostic LEDs provide immediate visual feedback on drive status, simplifying troubleshooting and maintenance procedures. The robust die-cast aluminum housing ensures effective heat dissipation for reliable operation under continuous load. This servo drive is an ideal choice for new system builds or as a direct replacement part to maintain the performance and reliability of compatible NexBot Robotics systems.

### 3. Getting Started

### 4. Operation

### 5. Maintenance Schedule

Interval	Task	Notes
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### 6. Troubleshooting

Symptom	Possible Cause	Solution
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### 7. Technical Specifications

Parameter	Value	Unit
Weight	2.1	kg
Material	Die-cast Aluminum	
Voltage	400VAC 3-Phase	
IP Rating	IP20	
Country of Origin	IT	
Protocol	EtherCAT	
Dimensions	210 x 75 x 180 mm	
Torque	1 Nm	