



Industrial Robotics BOM Sensor & Actuator Checklist 2026

Component Identification & Documentation

Verification of part numbers, manufacturer specifications, and CAD integration for all sensors and actuators within the BOM.

Part Number Verification

Manufacturer Name

Component Category

- ☐ Proximity Sensor
- ☐ Servo Motor
- ☐ Rotary Encoder
- ☐ Pneumatic Actuator
- ☐ Pressure Sensor
- ☐ Other

Technical Specifications Summary

Write something...

Datasheet/Technical Drawing Upload

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BOM Revision Date

Enter date...

Technical Specification Alignment

Validation of electrical ratings, torque capacities, precision tolerances, and signal interface compatibility against design requirements.

Sensor Precision Tolerance Requirement

Write something...

Operating Voltage Range

Enter a number...

Communication Protocol

- ☐ EtherCAT
- ☐ PROFINET
- ☐ IO-Link
- ☐ Modbus TCP
- ☐ CANopen

Required Environmental Certifications

- ☐ IP67 Waterproofing
- ☐ ATEX Explosion Proof
- ☐ UL Listed
- ☐ ISO 13849-1 Safety Rated

Datasheet Verification

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Discrepancy Notes

Write something...

Supplier & Lead Time Verification

Audit of approved vendor lists (AVL), procurement lead times, and availability of critical motion control components to prevent production delays.

Primary Supplier Status

- ☐ Approved Vendor
- ☐ New/Unverified Vendor
- ☐ Secondary/Backup Vendor

Expected Delivery Date

Enter date...

Estimated Lead Time (Weeks)

Enter a number...

Supplier Risk Assessment Notes

Write something...

Supplier Quote/Contract Attachment

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Procurement Officer Approval

Compliance & Regulatory Standards

Ensuring all robotic components meet 2026 safety standards, including CE, UL, and RoHS compliance for electronic sensors.

Required Compliance Certifications

☐ CE Marking

☐ UL Certification

☐ RoHS Compliance

☐ REACH Compliance

☐ ISO 9001 Standards

☐ IP Rating (Ingress Protection)

Regulatory Standard Reference Number

Write something...

Certificate Expiration Date

Enter date...

Upload Compliance Documentation

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Compliance Officer Approval

Environmental & Operational Durability

Assessment of IP ratings (Ingress Protection), temperature resistance, and vibration tolerance for sensors in industrial environments.

Required IP (Ingress Protection) Rating

- ☐ IP20 (Basic Protection)
- ☐ IP54 (Dust & Splash Resistant)
- ☐ IP65 (Dust-tight & Water Jet Resistant)
- ☐ IP67 (Immersion Resistant)
- ☐ IP69K (High-Pressure Washdown)

Minimum Operating Temperature (°C)

Enter a number...

Maximum Operating Temperature (°C)

Enter a number...

Environmental Stress Factors Present

- ☐ High Humidity
- ☐ Corrosive Chemical Exposure
- ☐ Extreme Vibration
- ☐ High Dust/Particulate Matter
- ☐ Oil/Lubricant Mist
- ☐ Electromagnetic Interference (EMI)

Durability Mitigation Strategy

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Environmental Certification Documents

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Interconnectivity & Communication Protocols

Checklist for compatibility with industrial bus systems such as EtherCAT, PROFINET, or IO-Link for sensor-to-controller communication.

Primary Communication Protocol

- ☐ EtherCAT
- ☐ PROFINET
- ☐ EtherNet/IP
- ☐ Modbus TCP/RTU
- ☐ IO-Link
- ☐ CANopen
- ☐ Other

Supported Data Interface Types

- ☐ Analog (4-20mA / 0-10V)
- ☐ Digital (Discrete I/O)
- ☐ Serial (RS-232/RS-485)
- ☐ Wireless (Bluetooth/Zigbee/5G)

Signal Sampling Rate (Hz)

Write something...

Communication Configuration Notes

Write something...

Protocol Communication Map / Wiring Diagram



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Technical Lead Verification

Lifecycle & Obsolescence Risk Assessment

Review of End-of-Life (EOL) status for micro-actuators and sensors to ensure long-term maintainability of the robotic system.

Component Lifecycle Status

- ☐ Active
- ☐ Near End-of-Life (EOL)
- ☐ Obsolete
- ☐ Discontinued

Estimated EOL Date

Enter date...

Recommended Replacement Part Number

Write something...

Obsolescence Mitigation Strategy

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Risk Impact Areas

- ☐ Supply Chain Disruption
- ☐ Increased Maintenance Cost
- ☐ Redesign Requirement
- ☐ Safety Compliance Risk

Manufacturer EOL Notice/Datasheet

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Procurement Manager Approval

Quality Control & Testing Protocols

Defined procedures for incoming inspection, calibration requirements, and functional testing of motion-critical components.

Testing Methods Performed

- ☐ Visual Inspection
- ☐ Electrical Continuity Test
- ☐ Signal Accuracy Calibration
- ☐ Stress/Load Testing
- ☐ Environmental Chamber Test

Measured Tolerance Deviation

Inspection Date

Calibration Certificate Upload

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Discrepancy Notes & Observations

Quality Assurance Inspector Signature

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✔ Finish

✎ Generate Sample Report