# NJ501-R Series

## Controller that covers functions and high-speed processing required for machine control and safety, reliability and maintainability.

- Integration of Robotics, Logic, and Motion in one CPU
- Conforms to IEC 61131-3 (JIS B 3503) standard programming and traditional V+ scripting for robot and motion control
- Programming with variables allows users to create complex programs efficiently.
- Offers speed without compromising on reliability and robustness expected from PLCs.
- Complete RAS Functions: Transmission frame error check, timeout, bus diagnosis, Watchdog (WDT), memory check, and topology check, etc.
- Offers speed without compromising on reliability and robustness expected from PLC
- Linear and circular interpolation.
- Electronic gear and cam synchronization
- Fast and accurate control by synchronizing all EtherCAT devices, such as vision, servos, robots, and IO with the controller.

## Specifications

| Item | | Product Description |
|---|---|---|
| Product Name | | NJ501-R[ ][ ][ ] |
| Description | | Machine controller with sequence, motion, and robotics functionality |
| Software | | Sysmac Studio |
| Programming | | IEC 61131-3 (Ladder, Structured Text, Function Blocks) eV+ Scripting |
| Program Capacity | | 20 MB |
| Memory Card | | SD/SDHC memory card |
| Variable Capacity | No retain attribute | 4 MB |
| | Retain attribute | 2 MB |
| Built-in Ports | | EtherCAT, Ethernet/IP, USB 2.0 |
| Number of EtherCAT slaves | | 192 |
| Max Number of robots | | 8 |
| Max Number of Axes | | 64, 32, 16 |
| Ordering Information | | P072 Sysmac Catalog |

## Part Number List

| Type | Part Number |
|---|---|
| Integrated Controller (16 Axis, NO Database) | NJ501-R300 |
| Integrated Controller (32 Axis, NO Database) | NJ501-R400 |
| Integrated Controller (64 Axis, NO Database) | NJ501-R500 |
| Integrated Controller (16 Axis, WITH Database) | NJ501-R320 |
| Integrated Controller (32 Axis, WITH Database) | NJ501-R420 |
| Integrated Controller (64 Axis, WITH Database) | NJ501-R520 |

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*Authorized Distributor:*

**Controllers & I/O**
• Machine Automation Controllers (MAC) • Motion Controllers
• Programmable Logic Controllers (PLC) • Temperature Controllers • Remote I/O

**Robotics**
• Industrial Robots • Mobile Robots

**Operator Interfaces**
• Human Machine Interface (HMI)

**Motion & Drives**
• Machine Automation Controllers (MAC) • Motion Controllers • Servo Systems
• Frequency Inverters

**Vision, Measurement & Identification**
• Vision Sensors & Systems • Measurement Sensors • Auto Identification Systems

**Sensing**
• Photoelectric Sensors • Fiber-Optic Sensors • Proximity Sensors
• Rotary Encoders • Ultrasonic Sensors

**Safety**
• Safety Light Curtains • Safety Laser Scanners • Programmable Safety Systems
• Safety Mats and Edges • Safety Door Switches • Emergency Stop Devices
• Safety Switches & Operator Controls • Safety Monitoring/Force-guided Relays

**Control Components**
• Power Supplies • Timers • Counters • Programmable Relays
• Digital Panel Meters • Monitoring Products

**Switches & Relays**
• Limit Switches • Pushbutton Switches • Electromechanical Relays
• Solid State Relays

**Software**
• Programming & Configuration  • Runtime