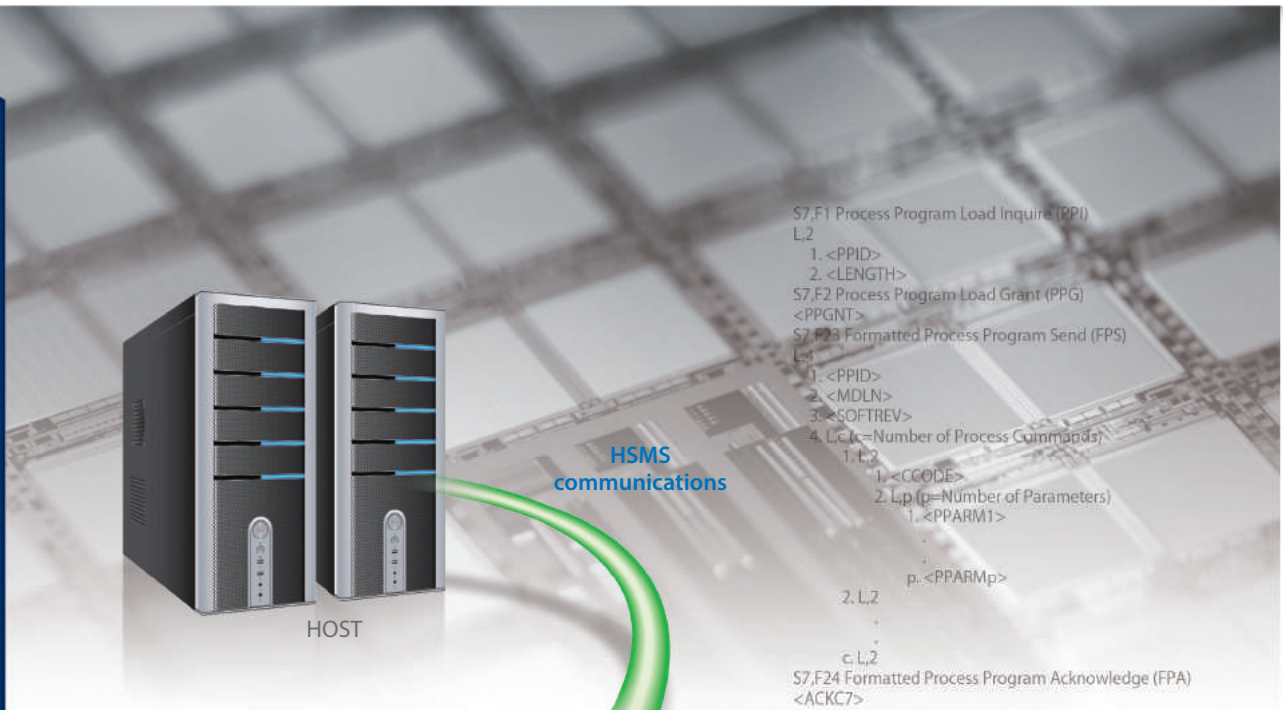


NJ-series Machine Automation Controller SECS/GEM CPU Unit

NJ501-1340



NJ-series Machine Automation Controller with built-in semiconductor industry standard SECS/GEM communications functionality

Cost-effective

The SECS/GEM CPU Unit integrates machine control and host communications, reducing time, cost, and complexity to establish SECS/GEM communications.

Simple connection

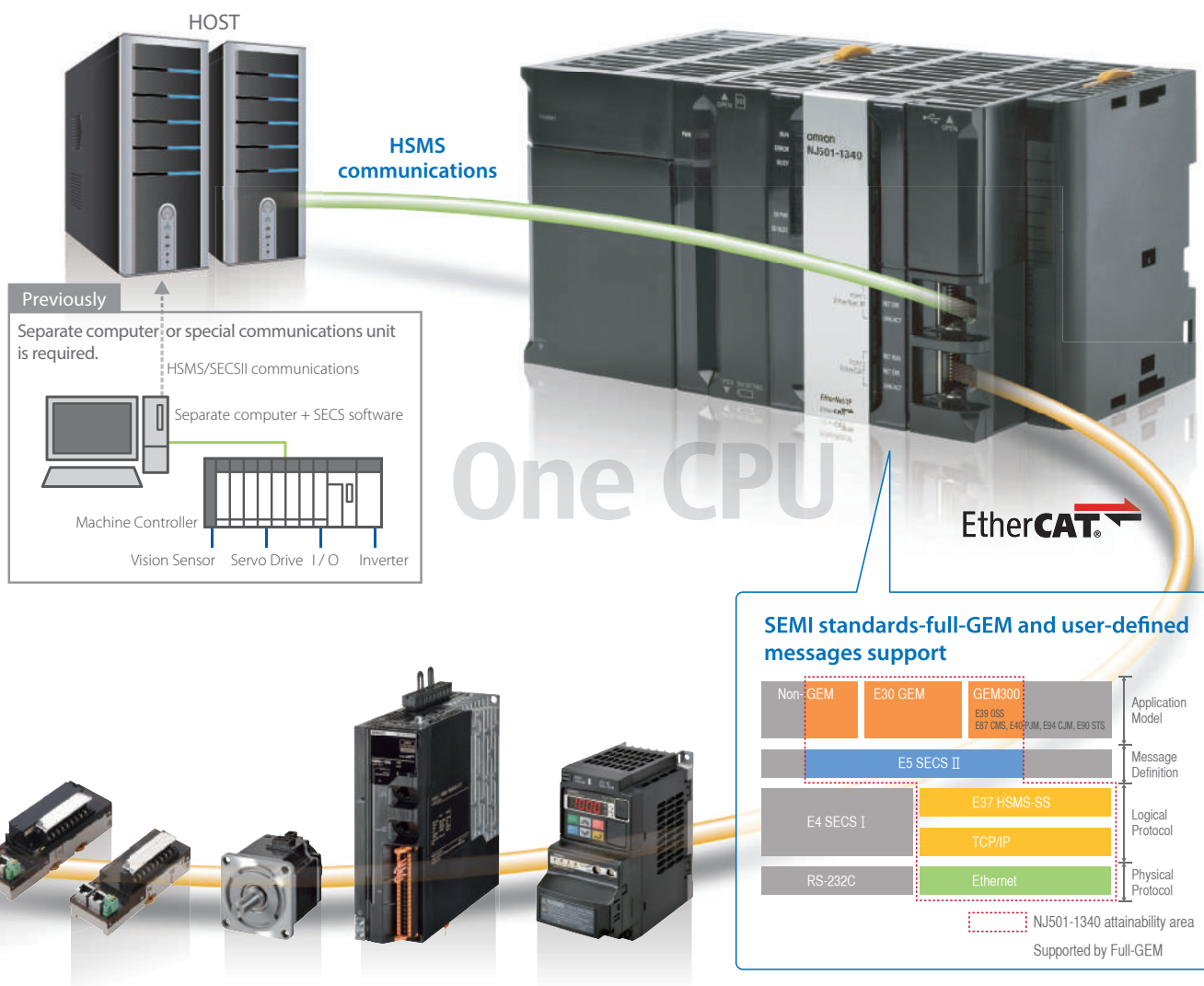
No separate computer, special communications Unit or software required

Save space in equipment

Direct connection of CPU Unit to host

No annual support contract

Reducing the running costs



Easy Design

User-friendly SECS/GEM Configurator facilitates project design.

Programming with variables

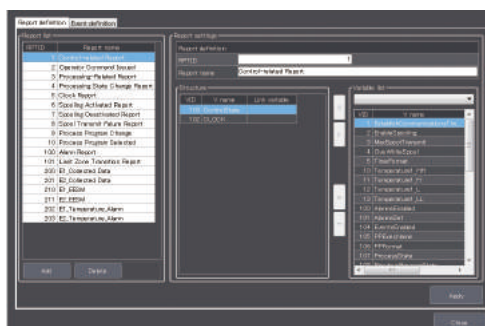
No need to specify memory addresses

One CPU Unit

No communications between separate computer and machine controller required

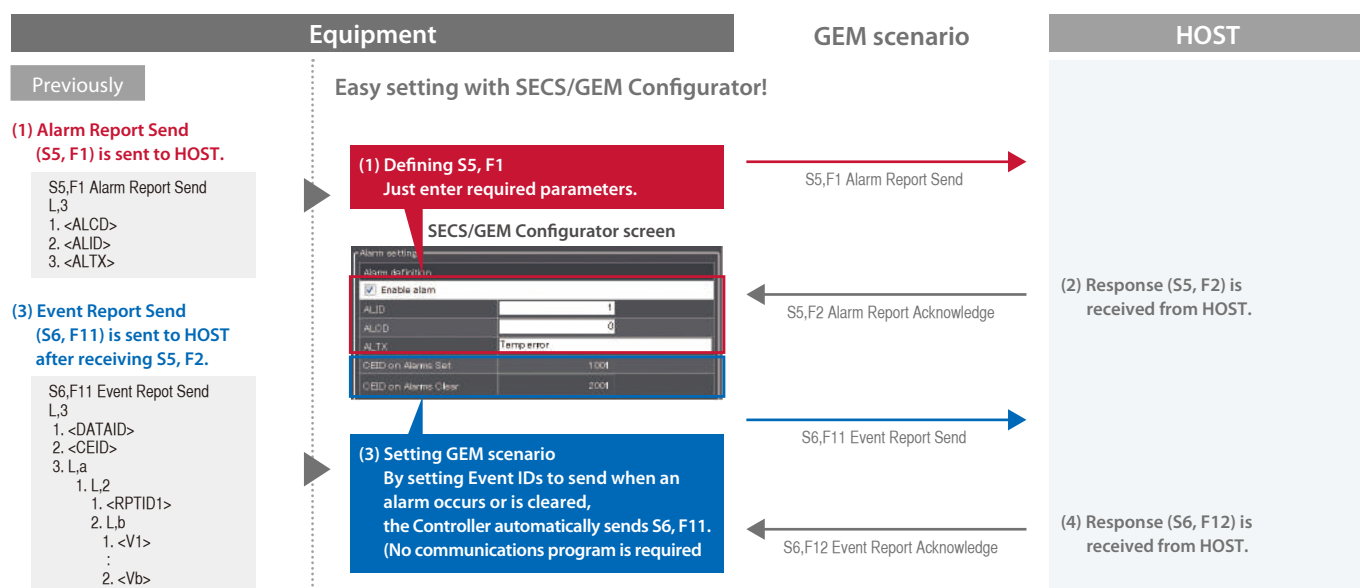
Quick SECS/GEM setting

Easy setting with SECS/GEM Configurator



SECS/GEM Configurator screen

SECS/GEM Setting Example (Alarm Report)



NJ501-1340

Allows SECS/GEM communications in a short time with a simple configuration.

- The NJ501 SECS/GEM CPU Unit is a NJ-series machine automation controller, and has built-in the SECS/GEM communications functions which are the standards in the semiconductor industry.
- It is the high-performance controller that fuses machine control and host communications.



Feature

- The controller is connected directly to the host. No separate computer, special communications Unit or software required.
- SECS/GEM Configurator allows easy operation setup and SECS/GEM command transmission and reception.
- The communications log viewer is equipped to ease communications startup and debugging.

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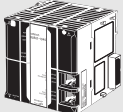
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Ordering Information

International Standards

- The standards are abbreviated as follows: UC1: cULus, N: NK, L: Lloyd, CE: EU Directives, and KC: KC Registration. (Class I Division 2 Products for Hazardous Locations), CU: cUL, N: NK, L: Lloyd, CE: EU Directives, RCM: RCM mark and KC: KC Registration.
- Contact your OMRON representative for further details and applicable conditions for these standards.

NJ-series CPU Unit

Product Name	Specifications				Current consumption (A)		Model	Standards
	I/O capacity/ Maximum number of configuration Units (Expansion Racks)	Program capacity	Memory capacity for variables	Number of motion axes	5 VDC	24 VDC		
NJ501 SECS/GEM CPU Unit 	2560 points/40 Units (3 Expansion Racks)	20 MB	2 MB: Retained during power interruptions 4 MB: Not retained during power interruptions	16	1.90	---	NJ501-1340	UC1, N, L, CE, RCM, KC

Automation Software

Please purchase a DVD and licenses the first time you purchase the Sysmac Studio. DVDs and licenses are available individually. The license does not include the DVD.

Product Name	Specifications	Current consumption (A)		Model	Standards
		Number of licenses	Media		
Sysmac Studio Standard Edition version 1.□□	The Sysmac Studio is the software that provides an integrated environment for setting, programming, debugging and maintenance of machine automation controllers including the NJ/NX-series CPU Units, NY-series Industrial PC, EtherCat Slave, and the HMI. Sysmac Studio runs on the following OS. Windows 7 (32-bit or 64-bit edition), Windows 8 (32-bit or 64-bit edition), Windows 8.1 (32-bit or 64-bit edition), or Windows 10 (32-bit or 64-bit edition)	--- (media only)	DVD	SYSMAC-SE200D	---
	The Sysmac Studio Standard Edition DVD includes Support Software to set up EtherNet/IP Units, DeviceNet slaves, Serial Communications Units, and Support Software for creating screens on HMIs (CX-Designer). For details, refer to the Sysmac Integrated Catalogue (P072).	1 license *	---	SYSMAC-SE201L	---

* Sysmac Studio with multiple licenses is also provided (with 3, 10, 30, or 50 licenses).

SECS/GEM Configurator

Please purchase the required number of SECS/GEM Configurator licenses and a Sysmac Studio Standard Edition DVD the first time you purchase the SECS/GEM Configurator.

The Sysmac Studio Standard Edition DVD includes the SECS/GEM Configurator. The license does not include the DVD.

Product Name	Specifications	Current consumption (A)		Model	Standards
		Number of licenses	Media		
SECS/GEM Configurator Ver.1.□□	The SECS/GEM Configurator is the software to make HSMS, SECSII and GEM settings for NJ501 SECS/GEM CPU Units. The SECS/GEM Configurator runs on the following OS. Windows XP (Service Pack3 or higher, 32-bit edition), Windows Vista (32-bit edition), or Windows 7 (32-bit or 64-bit edition) The software is included in the Sysmac Studio Standard Edition DVD.	1 license	---	WS02-GCTL1	---

Recommended Communications Cables for EtherCAT and EtherNet/IP

Refer to the data sheet of the Machine Automation Controller NJ/NX-Series for the recommended cables for EtherCAT and EtherNet/IP.

NJ501-1340

CPU Unit Accessories

The following accessories are provided with a CPU Unit.

Item	Specification
Battery	CJ1W-BAT01
End Cover	CJ1W-TER01 (Needs to be attached to the right of the CPU Rack.)
End Plate	PFP-M (2 pieces)
SD Memory Card (Flash Memory 2 GB)	HMC-SD291

General Specifications

Refer to the data sheet of the Machine Automation Controller NJ/NX-Series for the specifications common for NJ-series NJ501 CPU Units.

Performance Specifications

Refer to specification for NJ501-□□□□ in the data sheet of the Machine Automation Controller NJ/NX-Series for the specifications common for NJ-series NJ501 CPU Units.

Functional Specifications

Refer to specification for NJ501-□□□□ in the data sheet of the Machine Automation Controller NJ/NX-Series for the specifications common for NJ-series NJ501 CPU Units.

Functions Supported Specifically with NJ501-1340

Besides functions of the NJ501-1300, functions supported by the NJ501-1340 are as follows.

Item	Description
Supported port	Built-in EtherNet/IP port
Supported standard *1	The Unit conforms to the following SEMI standards: E37-0303, E37.1-0702, E5-0707, and E30-0307
Fundamental GEM requirement	State Model, Equipment Processing State, Host-initiated S1, F13/F14 Scenario, Event Notification, On-Line Identification, Error Message, Control (Operator Initiated), Documentation
Additional GEM capability	Establish Communications, Dynamic Event Report Configuration, Variable Data Collection, Trace Data Collection, Status Data Collection, Alarm Management, Remote Control, Equipment Constant, Process Recipe Management *1, Material Movement, Equipment Terminal Service, Clock, Limit Monitoring, Spooling *2, Control (Host Initiated)
User-defined message	You can create non-GEM compliant communications messages and have host communications.
GEM specific instruction	The Unit supports 29 instructions to perform the following: <ul style="list-style-type: none">• Changing the GEM Service status.• Setting HSMS communications.• Reporting events and reporting alarms.• Acknowledging host commands and enhanced remote commands.• Changing equipment constants.• Uploading and downloading process programs.• Sending and acknowledging equipment terminal messages.• Requesting to change time.• Sending user-defined messages.• Getting SECS communications log.
GEM Service log *2	Can record the following information. <ul style="list-style-type: none">• HSMS communications log: Keeps log of HSMS communications operations.• SECS message log: Keeps log of SECS-II communications messages.• Execution log: Keeps log of executions of GEM instructions.
Shutting down the GEM Service	Saves the spool data and GEM Service log records into an SD Memory Card and ends the GEM Service.

*1 E42 recipes, large process programs, and E139 recipes are not supported.

*2 The capability is not available when no SD Memory Card is mounted.

Conformance to Fundamental GEM Requirements and Additional Capabilities

Fundamental GEM requirements	GEM-compliant
State Model	Yes
Equipment Processing State	
Host-initiated S1, F13/F14 Scenario	
Event Notification	
On-Line Identification	
Error Message	
Control (Operator Initiated)	
Documentation	

Additional capabilities	GEM-compliant
Establish Communications	Yes
Dynamic Event Report Configuration	
Variable Data Collection	
Trace Data Collection	
Status Data Collection	
Alarm Management	
Remote Control	
Equipment Constant	
Process Recipe Management	Process program: Yes E42 recipes: No E139 recipes: No
Material Movement	Yes
Equipment Terminal Service	
Clock	
Limit Monitoring	
Spooling	
Control (Host Initiated)	

Unit Version

Unit	Model	Unit version
NJ-series SECS/GEM CPU Unit	NJ501-1340	Ver.1.09 or later

Unit Versions, GEM Service Versions and Corresponding Sysmac Studio Versions

Unit version of CPU Unit	Corresponding version of Sysmac Studio	Version of GEM Service
Ver.1.12	Ver.1.16	Ver.1.01
Ver.1.11	Ver.1.15	
Ver.1.10	Ver.1.14 Ver.1.13 Ver.1.12	Ver.1.00
Ver.1.09	Ver.1.11	

External Interface

Refer to the data sheet of the Machine Automation Controller NJ/NX-Series for the external interface.

Dimensions

Refer to the data sheet of the Machine Automation Controller NJ/NX-Series for the dimensions.

NJ501-1340

Related Manuals

The following manuals are related to this product. Use these manuals for reference.

Cat. No.	Model number	Manual name	Application	Description
W528	NJ501-1340	NJ-series SECS/GEM CPU Unit User's Manual	Learning about the SECS/GEM CPU Unit and how to use it.	Functional outline, GEM instructions, settings with the GEM Configurator and so on are provided.
W504	SYSMAC-SE□□□	Sysmac Studio Version 1 Operation Manual	Learning about the operating procedures and functions of the Sysmac Studio.	Describes the operating procedures of the Sysmac Studio.

Refer to the data sheet of the Machine Automation Controller NJ/NX-Series for the related manuals of NJ-series NJ501 CPU Units with the common specifications.

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