OMRON

FA Integrated Tool Package

CX-One Ver.4

One software for your complete machine

» Easy, Intuitive Programming Software

» Smart Input for Less Programming Work

» Easy Input - Easy Designing - Easy Validation

CX-One

realizing

FA Integrated Tool Package CX-One Version 4.0 : Better Than Ever

Operation has been made as easy and intuitive as possible to reduce the work involved in programming.

The CX-One is an integrated package of Support Software centered around PLC programming applications and including setup applications for networks, PTs, Servo Drives, Inverters, and Temperature Controllers.

New Feature1

A Smart Input Function greatly reduces the work required to input programs

Smart Input

A complete range of intuitive programming functions is provided, including instruction and address input assistance, address incrementing, and address Incremental Copy.
These functions enable waste-free programming with minimal effort.
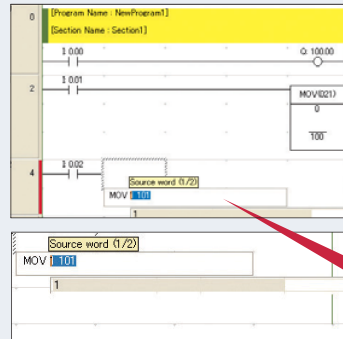
Steps Required to Input Ladder Diagrams
Reduced 50%
Note: In comparison to CX-Programmer version 8.

Guidance display

New Feature2

Easier Preliminary Verification of Position Control Units

Memory Operation Preview

Preliminary Verification of Position Control Units

The memory operation data created on the CX-Programmer for CJ1W-NC□4 Position Control Units can be used to display graphs and motion paths for the position or speed operations of each axis. This enables smoother startup and reduces the work required for preliminary system verification.

*This function will be supported for EtherCAT-compatible Position Control Unit in the near future.
Preliminary Verification for Position Control Units

Memory Operation

Memory Operation Preview

CJ2-CPU

Position Control Unit CJ1W-NC□4

Driver

Servomotor
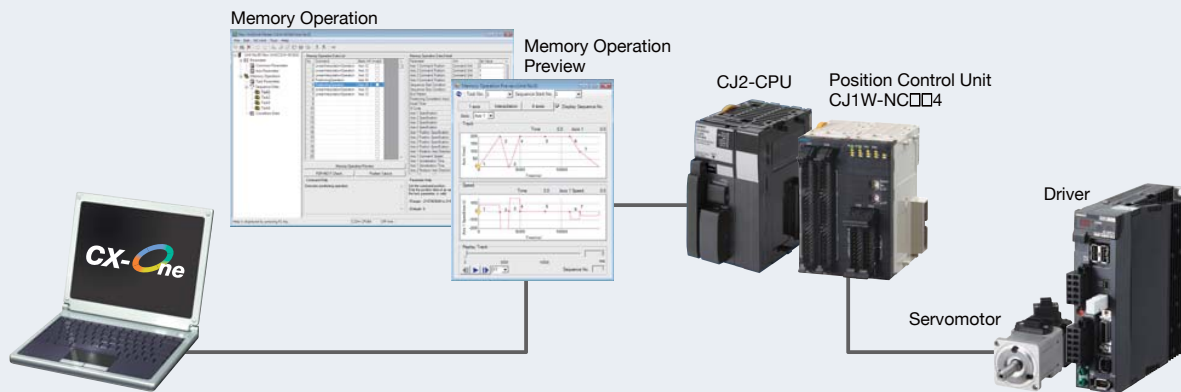
New Feature3

Easier Setting of Tag Data Links for EtherNet/IP

Just drag and drop on the network configuration display of the Network Configurator to create tag data links for EtherNet/IP networks.

2
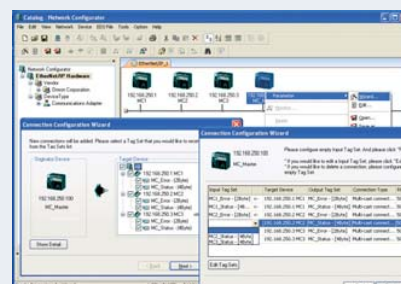
New Feature4

Easily Reuse Legacy Programs

Data Structures

In addition to arrays, which can be used to manage data with the same data type, data structures can be used to manage data with different data types in the same structure. And the data structures are managed using names and data types rather than I/O memory addresses. Using data structures enables building legacy programs for data processing that can be easily reused.

Name	Data Type	Array Size
STR		
Member1	BOOL	
Member2	INT	[5]

Timer and Counter Data Types

Timer and counter data types can now be treated as symbols. You can thus use them as symbols in arrays to build legacy programs that can be easily reused.

Name	Data Type	Address / Value
AutoCnt	COUNTER	C0000 [Auto]
AutoCntDim	COUNTER[10]	C0001 [Auto]
AutoTmr	TIMER	T0000 [Auto]
AutoTmrDim	TIMER[10]	T0001 [Auto]

Support for More Hardware Products

Support for the SYSMAC CJ2M COMING SOON

The following Units are also be supported.
- CP1E-NA20 CPU Units (20 points)
- Compact NV-series NV4W PTs
- CJ1W-AD042/DA042V Analog I/O Units (high-speed models with direct conversion)
- CJ1W-SCU22/SCU32/SCU42 Serial Communications Units (high-speed models)

The following Units will be supported in the near future.
- CP1E-E10/E14/N14/N60 (10/14/14/60 points) COMING SOON
- CJ1W-NC281/NC481/NC881 EtherCAT-compatible Position Control Units COMING SOON

Windows7 is now supported.

CX-One Tools
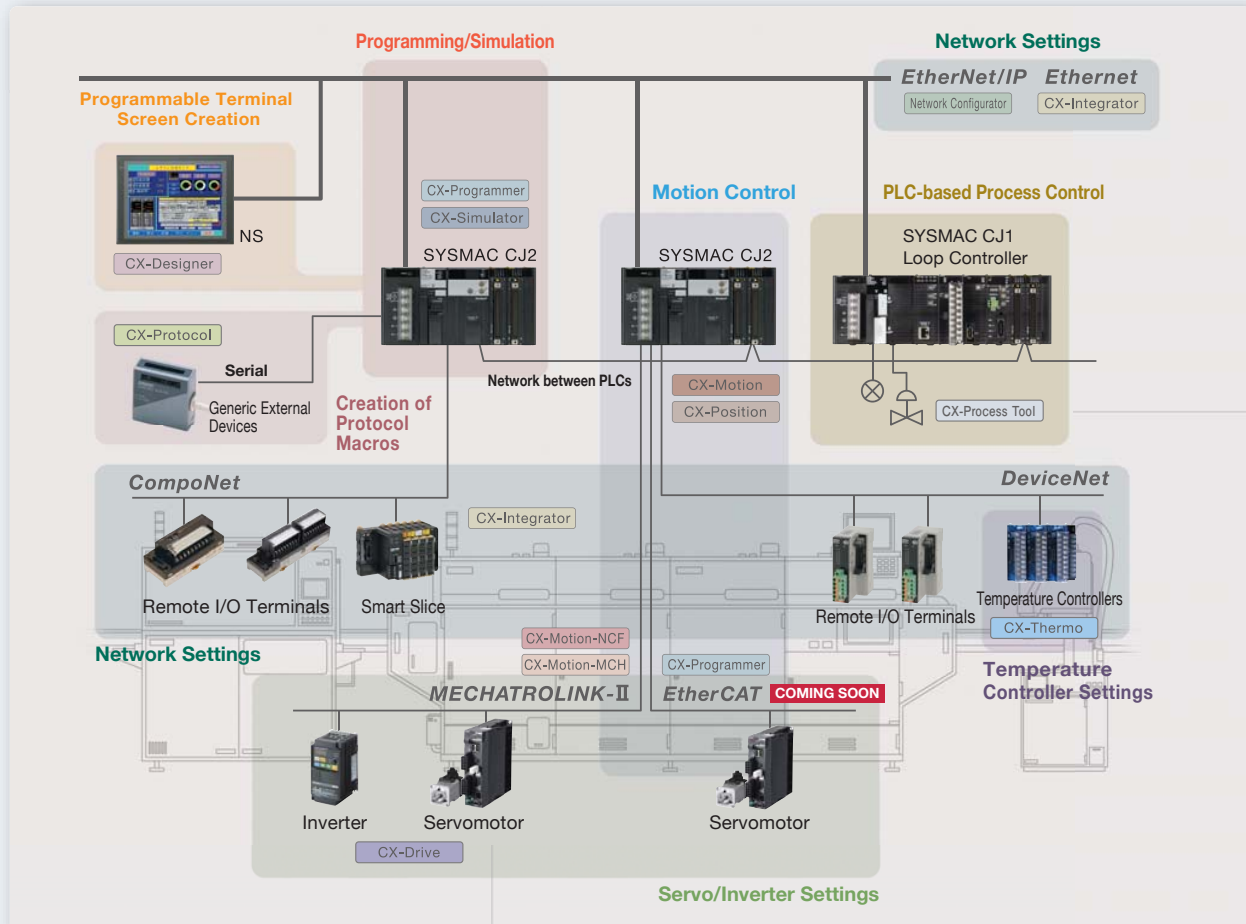
3

Easy Programming | Reusable Designs | Position Control | Network | Debugging | Component Tools | FA Communications Software | Online Web Services | Ordering Information | CX-One Lite

Easy Programming

Steps Required to Input Ladder Diagrams

Reduced 50%

Note: In comparison to CX-Programmer version 8.

Patent Pending

NEW

Input without Wasted Effort !
Use Mnemonics to Input Instructions Directly or Use 1-key Inputs

A Smart Input Function greatly reduces the work required to input programs

Applicable Models : CS/CJ/CJ2/CP Sereis

A new method is now available that lets you input instructions directly using mnemonics.
Other functions include automatic addresses for operands, including input bits and output bits, automatic insertion of connecting lines for output and application instructions, and other smart input functions that greatly reduce the work required to input ladder diagrams.

Instruction and Address Input Assistance

When you begin typing an instruction from the keyboard while in the Ladder Editor Window, suggested instructions are displayed.
All you have to do is select the instruction from the list for easy input even if you do not remember the entire mnemonic.

Suggested instructions displayed
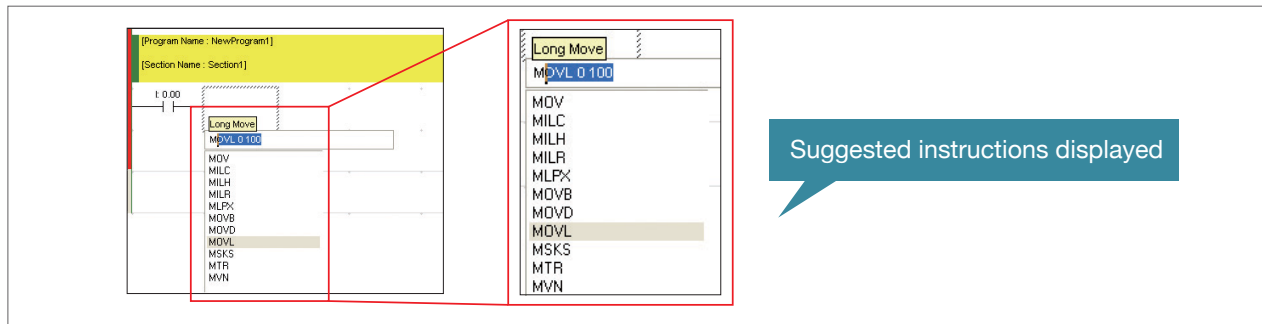
Automatic Insertion of Connecting Lines

When an output or application instruction is input, the required connecting line is inserted automatically starting at the cursor location.
This greatly simplifies the work required to insert lines.

A vertical connecting line is created upward from the cursor location
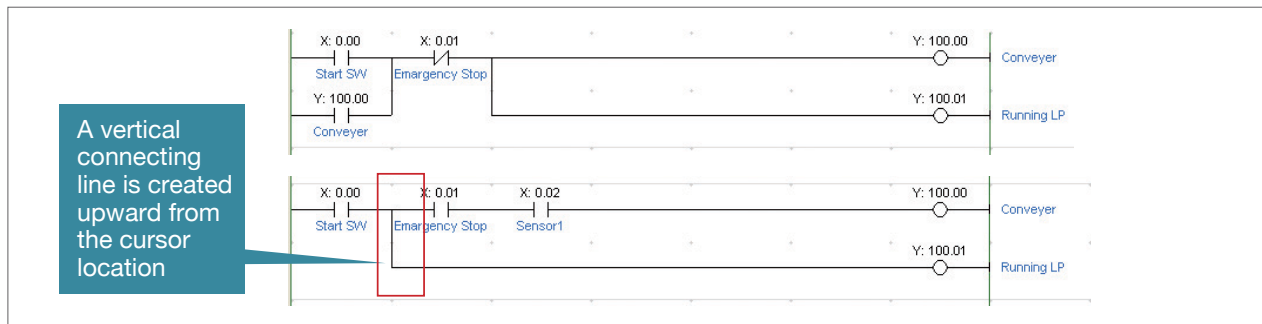
Address Incremental Copy

To create the same group of ladder instructions more than once, the address incremental copy function can be used to reuse the instructions simply by inputting an address offset.Also, address offsets can be set individually and I/O comments can be created automatically.

4
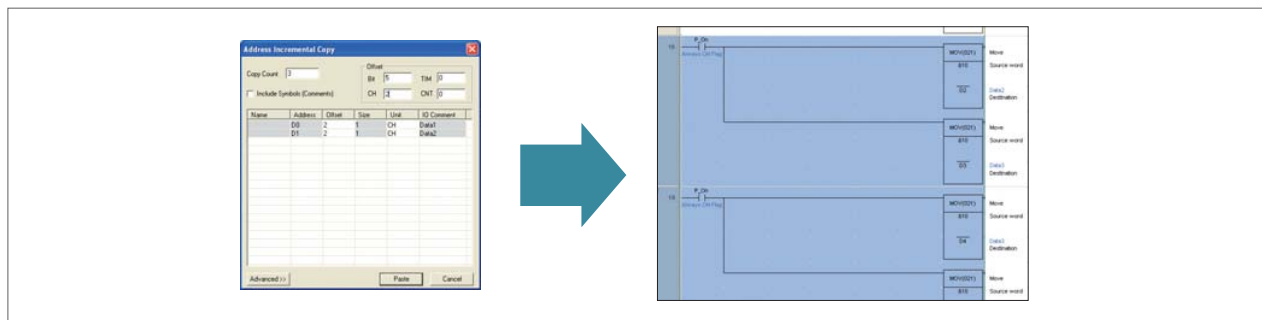
Auxiliary Bit Input from Lists

Clock Pulse Flags, Condition Flags, and other special bits in the Auxiliary can be selected from lists, eliminating the need to remember addresses.

	Address	Name	Comment
0	CF113	P_On	Always ON Flag
1	CF114	P_Off	Always OFF Flag
2	CF102	P_1s	1.0 second clock p...
3	CF103	P_0_02s	0.02 second clock ...
4	CF100	P_0_1s	0.1 second clock p...
5	CF101	P_0_2s	0.2 second clock p...
6	CF104	P_1min	1 minute clock puls...
7	CF006	P_EQ	Equals (EQ) Flag
8	CF005	P_GT	Greater Than (GT) ...
9	CF007	P_LT	Less Than (LT) Flag

The more frequently used flags appear at the top

Address Incrementing

The address of the next operand, including input bits and output bits, is incremented by one and displayed as the default.
This enables easily inputting consecutive addresses.

The previously input address (CIO 0.00) is automatically incremented by one and displayed as the default operand.

Quick-key Input of Both Instruction and Operands, and Consecutive Input of Instructions

When an instruction is displayed with a default operand, just press the Shift + Enter Keys to confirm input of both the instruction and operand.
To input the same instruction consecutively, just press the Ctrl + Enter Keys.
We've eliminated the number of steps for key operations wherever possible.

Quick-key Input of Both Instruction and Operands

Consecutive Input of Instructions

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Comprehensive Programming Environment with 1-key Operation and Flexible Multilingual Support

In addition to practical functions such as 1-key operation that improves the programming efficiency, processing is conducted in the optimal language. Flexible multilingual support and the Smart Libraries enable a comprehensive programming environment.

## Improved Programming Efficiency with 1-key Operation

The CX-Programmer features the "1-key Concept" to increase operability. Apart from inputs to ladder diagrams, history searches, and model jumps, 1-key operation can be used for simulation debugging as well.

### ■ Excellent Operability Makes Programming and Debugging Easy

1-key Inputs

The allocation of shortcut keys can be checked in the guidance for ladder input key operations. Key inputs, such as the C Key for NO input conditions, the O Key for OUTPUT instruction, and the I Key for special instructions are convenient when programming.

Just press the C Key and enter the bit number and comment to complete the input condition. Special instruction can be input as shown in the following figure.
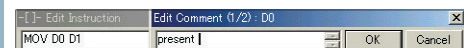
Lines can be easily connected using key operations.
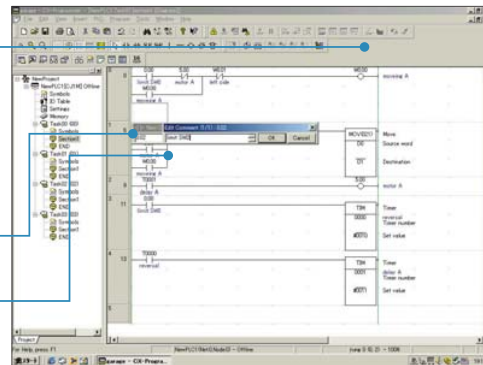
1-key Searches and Jumps

Search functions, such as Find Back (searching for input conditions or outputs with the same address) and Find Address can be executed with 1 key.
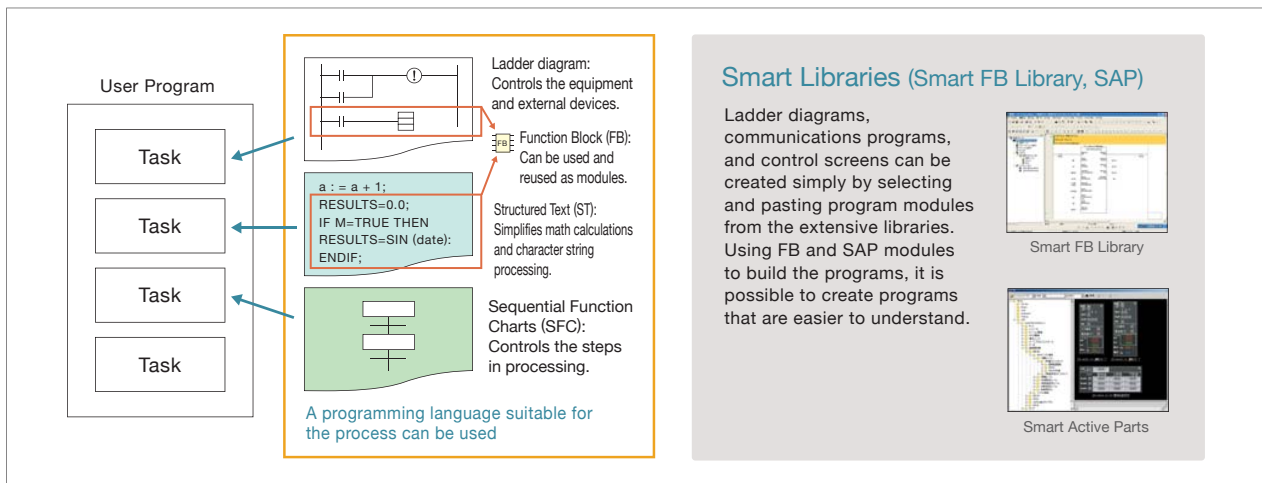
1-key Simulation

Simulation and debugging of a PLC program can also be executed with 1 key. Applications using both a PLC and Programmable Terminal can be debugged using a computer without the actual devices using PLC-PT Integrated Simulation.

Icons for the simulation function can be accessed directly

Multiple Languages Can Be Combined To Make Programming Flexible

The multilingual feature supports IEC 61131-3. Programming is possible in a language that is appropriate for the process by combining ladder diagram and ST languages. Function blocks can be created to make programming even more efficient.

User Program

Task

Task

Task

Task

A programming language suitable for the process can be used

Ladder diagram: Controls the equipment and external devices.

Function Block (FB): Can be used and reused as modules.

```
a : = a + 1;
RESULTS=0.0;
IF M=TRUE THEN
RESULTS=SIN (date):
ENDIF;
```

Structured Text (ST): Simplifies math calculations and character string processing.

Sequential Function Charts (SFC): Controls the steps in processing.

Smart Libraries (Smart FB Library, SAP)

Ladder diagrams, communications programs, and control screens can be created simply by selecting and pasting program modules from the extensive libraries. Using FB and SAP modules to build the programs, it is possible to create programs that are easier to understand.

Smart FB Library

Smart Active Parts

NEW
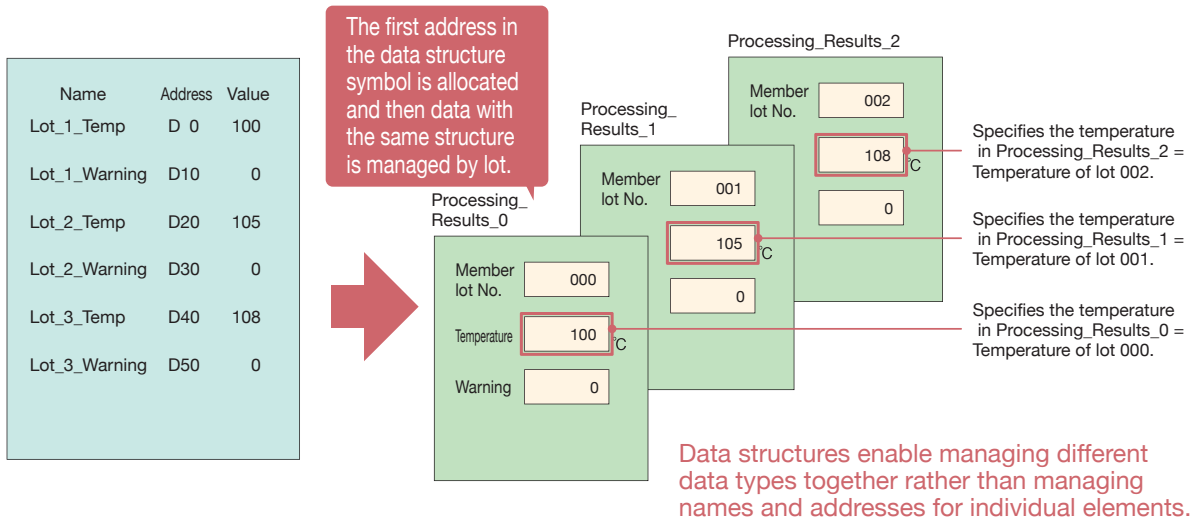
Data Structures, Timer Data Type, and Counter Data Type

Support for data structures, a timer data type, and a counter data type makes reusing program designs much easier

Applicable Models : CJ2

Data Structures

In addition to arrays, which can be used to manage data with the same data type, data structures can be used to manage data with different data types in the same structure. And the data structures are managed using names and data types rather than I/O memory addresses. Using data structures enables building legacy programs for data processing that can be easily reused.
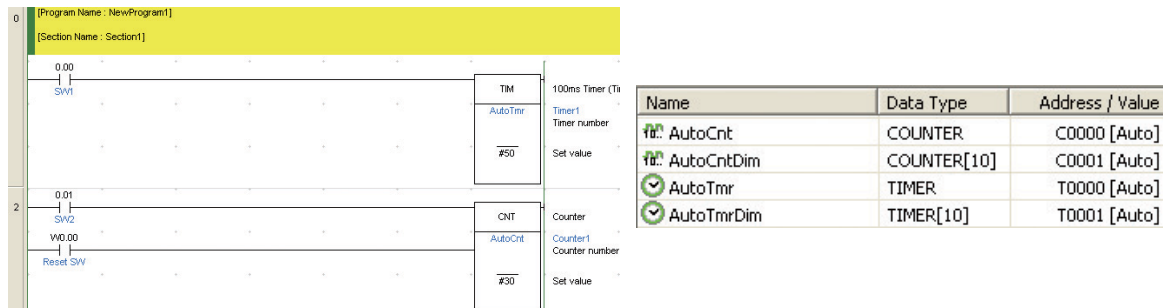
■ When handling a large amount of data with the same structure,
such as the processing results for production lots, data structures can be used to simplify data management.

Name	Address	Value
Lot_1_Temp	D 0	100
Lot_1_Warning	D10	0
Lot_2_Temp	D20	105
Lot_2_Warning	D30	0
Lot_3_Temp	D40	108
Lot_3_Warning	D50	0

The first address in the data structure symbol is allocated and then data with the same structure is managed by lot.

Processing_Results_2

Member lot No. 002
108 °C
0

Processing_Results_1

Member lot No. 001
105 °C
0

Processing_Results_0

Member lot No. 000
Temperature 100 °C
Warning 0

Specifies the temperature in Processing_Results_2 = Temperature of lot 002.

Specifies the temperature in Processing_Results_1 = Temperature of lot 001.

Specifies the temperature in Processing_Results_0 = Temperature of lot 000.

Data structures enable managing different data types together rather than managing names and addresses for individual elements.

Timer and Counter Data Types

Timer and counter data types can now be treated as symbols.
You can thus use them as symbols in arrays to build legacy programs that can be easily reused.

■ Define timer and counter data types as symbols to enable easily reusing programs that contain timers and counters.

[Program Name : NewProgram1]

[Section Name : Section1]

0.00 SW1 — TIM — 100ms Timer (Ti
AutoTmr — Timer1 — Timer number
#50 — Set value

0.01 SW2 — CNT — Counter
W0.00 Reset SW — AutoCnt — Counter1 — Counter number
#30 — Set value

Name	Data Type	Address / Value
AutoCnt	COUNTER	C0000 [Auto]
AutoCntDim	COUNTER[10]	C0001 [Auto]
AutoTmr	TIMER	T0000 [Auto]
AutoTmrDim	TIMER[10]	T0001 [Auto]

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Position Control

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Improved Functionality for Position Control

Preliminary Verification of Memory Operation for Position Control

Applicable Models : CJ1W-NC214/234/414/434
*This function will be supported for EtherCAT-compatible Position Control Unit in the near future

Use Memory Operation Previews for Smoother Startup

Verifying operation before transferring the memory operation data to the Unit enables smoother startup and reduces the work involved in system verification.

Display graphs of positions or speeds against time.
Easily compare results to data tables using sequence numbers displayed in the graph.

Display Axis Movement Patterns for Two Interpolated Axes or for All Axes

You can verify movements by axis for each task. (Up to four axes can be displayed for each task.) Just click to switch the frame of reference for confirming operating patterns between one/two-axis interpolation, all axes, and pulse output instructions.

Displaying Two Interpolated Axes

Displaying All Axes

Displaying the movement for two-axis interpolation enables visually verifying the interpolated operation, which is very difficult to imagine with table data.

Displaying timing changes side by side for changes in position or speed over time for all of the axes lets you verify the timing of operations.

A pointer moves on the movement pattern when it is replayed.
This enables preliminary verification of movements.

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NEW COMING SOON

Position Control Unit and Communications Setup Integrated into the CX-Programmer

Easily Achieve Position Control without Wading Through User Manuals

Applicable Models : CJ1W-NC□81

Setup the Position Control Units and Servo Drives from One Connection

Just connect the computer to a CPU Unit port to set up the EtherCAT-compatible Position Control Units and EtherCAT communications.
You can also directly start the CX-Drive Support Software to set the Servo Drives connected to the Position Control Units.

EtherCAT-compatible Position Control Units
COMING SOON

AC Servo driver R88D-KN□-ECT
COMING SOON
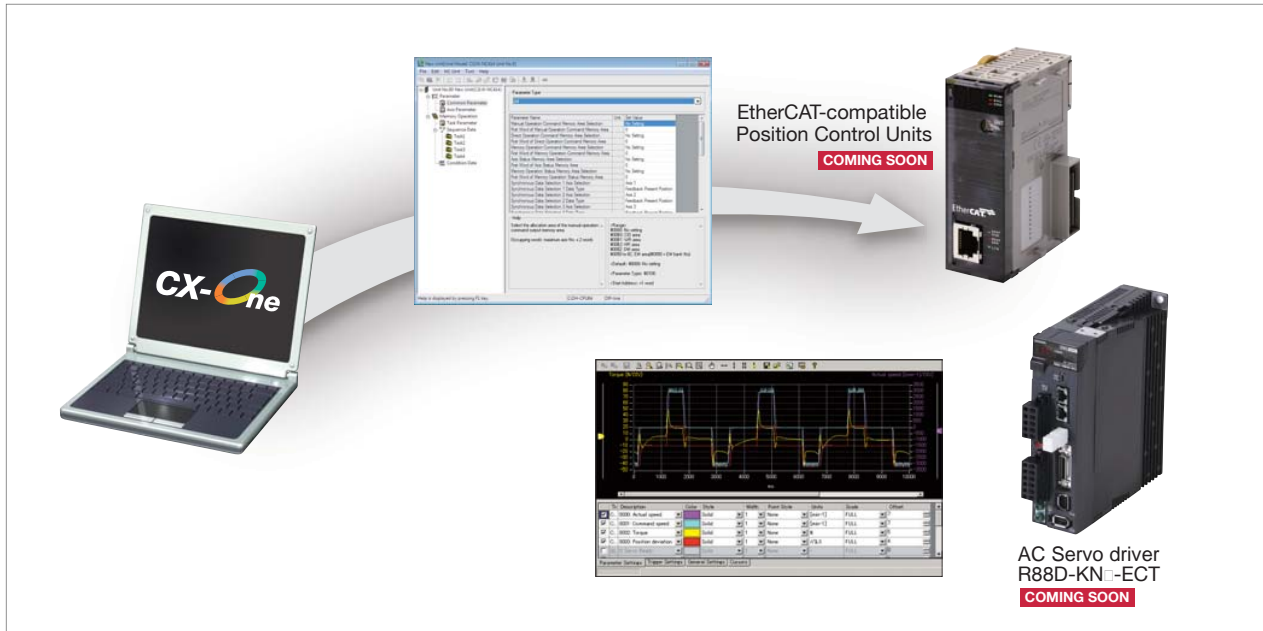
Automatic Network Setup

The communications parameters for EtherCAT-compatible Position Control Units can be set simply by selecting a menu command.
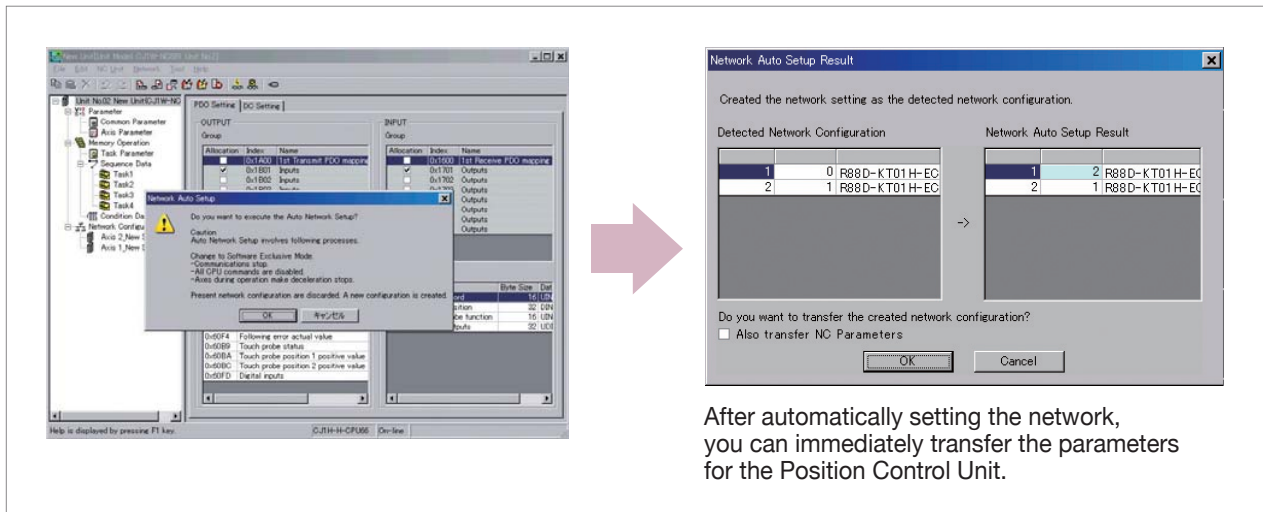
After automatically setting the network, you can immediately transfer the parameters for the Position Control Unit.

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NEW

USB and EtherNet/IP Ports are Standard Features for SYSMAC CJ2 CPU Units

Easier Connection to PLCs

CX-Programmer

Applicable Models : CJ2

Easy connection with USB

A standard USB cable can be easily connected to the USB port on the front of the CPU Unit.

Standard USB cable

Standard-feature USB port

CX-One
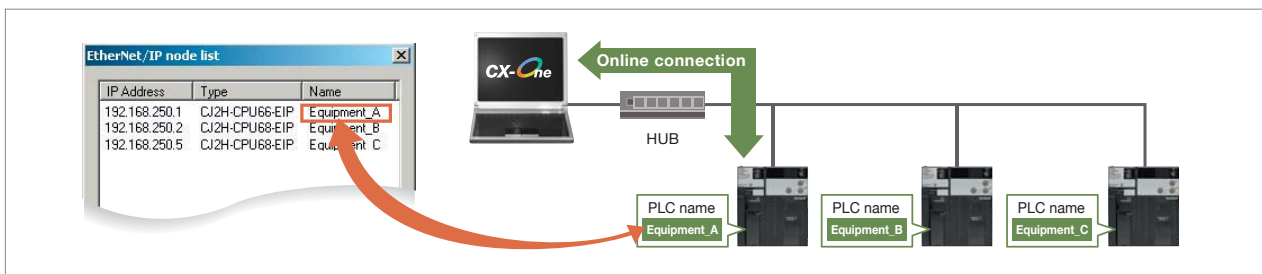(Example: CX-Programmer)
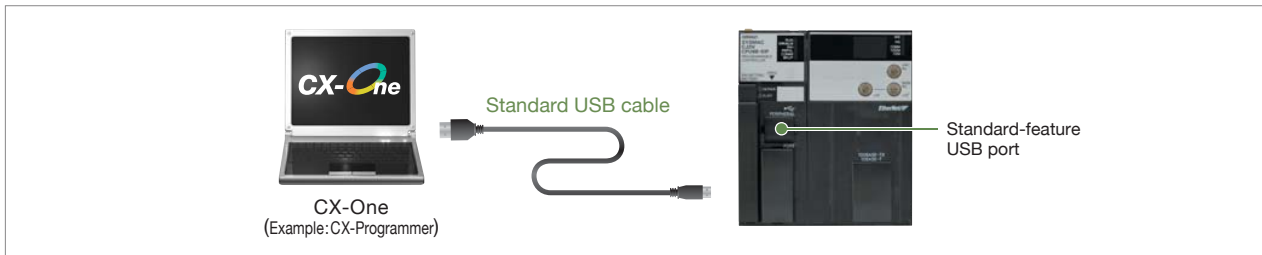
Easy Connection with EtherNet/IP

Easy connection by specifying the computer LAN (Ethernet) port and IP address only.   *CJ2(built-in EtherNet/IP) CPU Units only.

EtherNet/IP

CX-One
(Example: CX-Programmer)

HUB

192.168.250.13   192.168.250.14   192.168.250.15
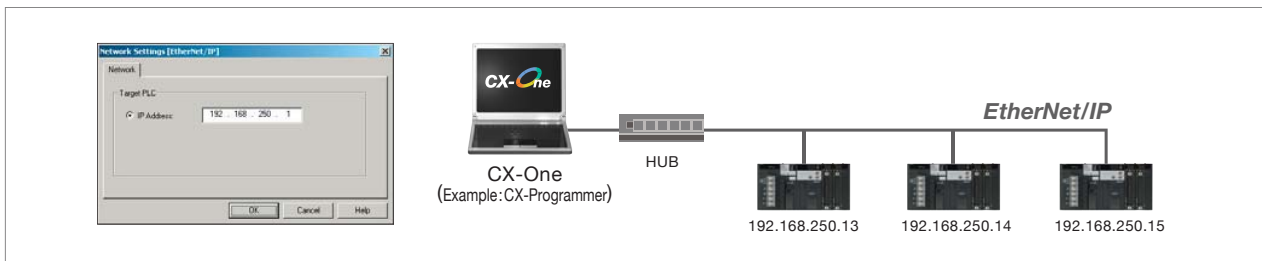
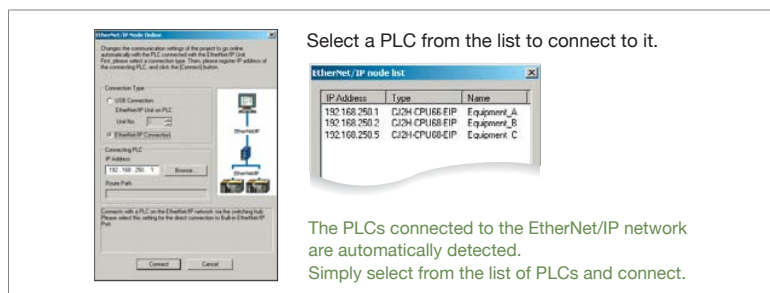## Prevent Connection Errors by Verifying PLC Names

The CJ2 CPU Unit can record a PLC name. Errors in transfers can be prevented ahead of time because the PLC name can be compared with what is in the project file when connecting online.

EtherNet/IP node list

IP Address	Type	Name
192.168.250.1	CJ2H-CPU66-EIP	Equipment_A
192.168.250.2	CJ2H-CPU68-EIP	Equipment_B
192.168.250.5	CJ2H-CPU68-EIP	Equipment_C

Online connection

HUB

PLC name
Equipment_A

PLC name
Equipment_B

PLC name
Equipment_C

Browse and Connect from the EtherNet/IP Connection List

Even if the IP address is unknown, you can browse a list of PLCs connected to the EtherNet/IP and select one to connect to it. With this, remote debugging and maintenance can be conducted smoothly on site.

*CJ2(built-in EtherNet/IP) CPU Units only.

Select a PLC from the list to connect to it.

EtherNet/IP node list

IP Address	Type	Name
192.168.250.1	CJ2H-CPU66-EIP	Equipment_A
192.168.250.2	CJ2H-CPU68-EIP	Equipment_B
192.168.250.5	CJ2H-CPU68-EIP	Equipment_C

The PLCs connected to the EtherNet/IP network are automatically detected.
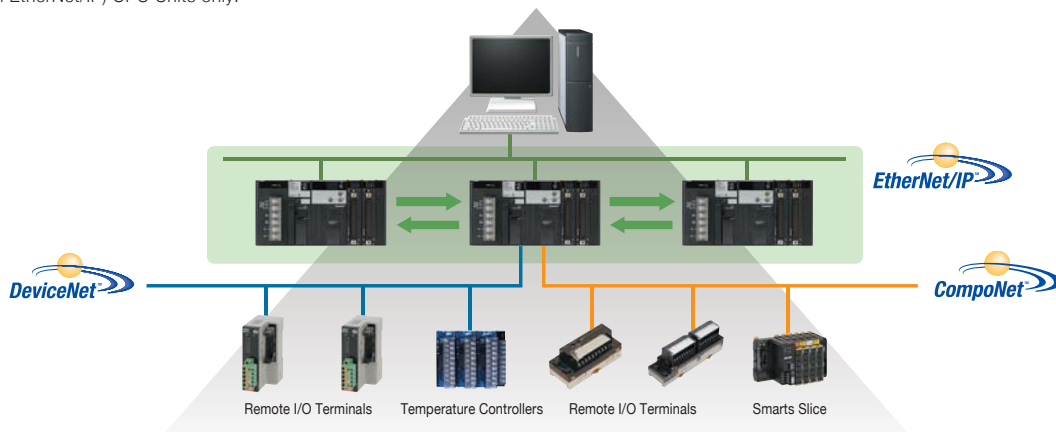Simply select from the list of PLCs and connect.

NEW

Integration of Network Construction and Parameter Settings

Easy Setting of Tag Data Links for EtherNet/IP

In addition to creating data links with the EtherNet/IP Datalink Tool using I/O memory addresses, you can also use network symbols for tags to easily create the data links.

With EtherNet/IP, high-speed, high-volume data links can be created with different cycle specifications for each applications, regardless of the number of nodes.
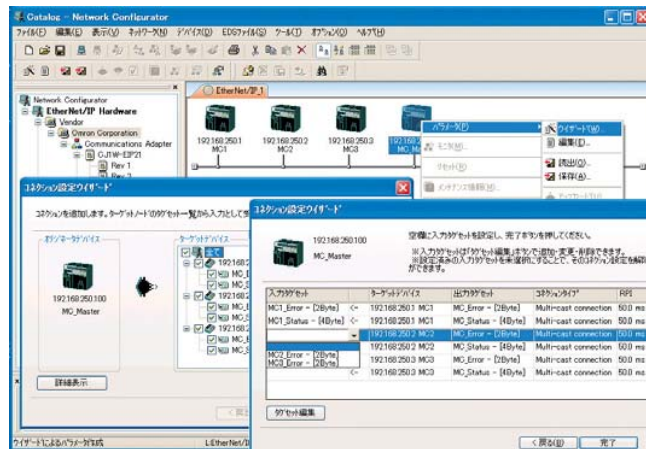
*CJ2(built-in EtherNet/IP) CPU Units only.

EtherNet/IP

DeviceNet

CompoNet

Remote I/O Terminals   Temperature Controllers   Remote I/O Terminals   Smarts Slice

EtherNet/IP Tag Data Link Setting Wizard

A wizard can be used to easily set the tag data links for Ethernet/IP by importing the network symbols for tags from the CX-Programmer.
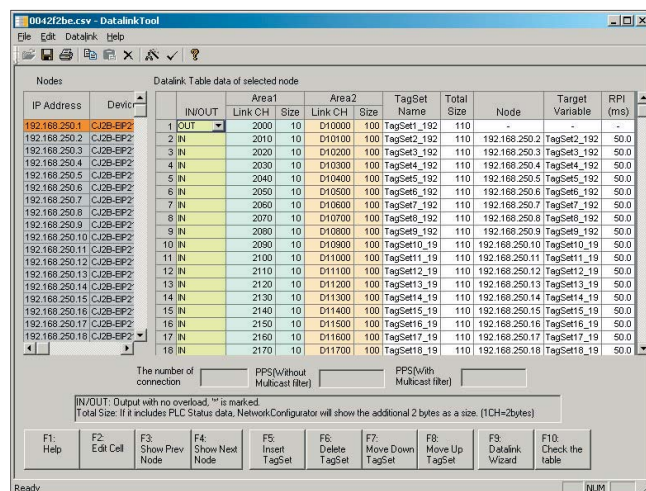
Network Configurator

EtherNet/IP Datalink Tool

EtherNet/IP data links can be easily created by setting I/O memory addresses in data link tables.

Network Configurator

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Easy Programming

Reusable Designs

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CX-One Lite

CX-Programmer CX-Integrator

Comprehensive Debugging for Networks

Time Required for Onsite Startup and Debugging Has Been Significantly Reduced

With CX-One version **4.0**, debugging is efficient with simultaneously monitoring and management of multiple networks and PLCs.

Management of Multiple Networks

The operation of networks with configurations consisting of multiple networks including PLC networks such as EtherNet/IP and Controller Link, field networks such as DeviceNet and CompoNet, and networks for Programmable Terminals and Serial Devices, can be restored simultaneously from the CX-One. Onsite start up and debugging can be conducted efficiently and without errors because PLCs and devices can be selected from the window to transfer programs and parameter data to the computer during operation.
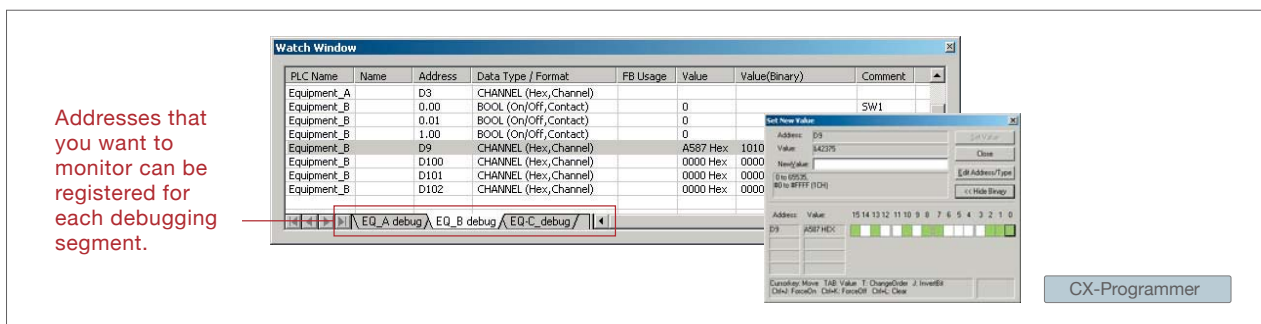
CX-Integrator
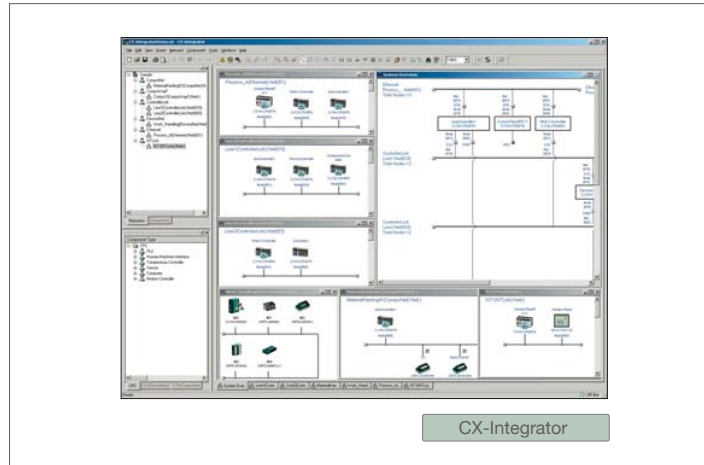
Ladder diagram Monitoring for Multiple PLCs

Multiple PLCs can be monitored by displaying them in series on the screen. This way it is easy to debug data links between PLCs and monitor the inputs and outputs of different PLCs.

PLC1 PLC2 PLC3
Node 1 Node 2 Node 3

CX-Programmer
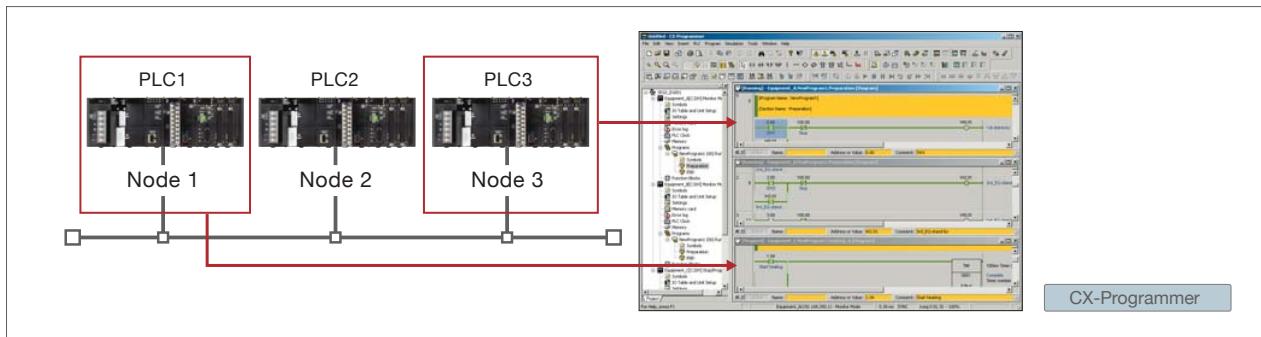
Group Monitoring of Multiple PLC Input/Outputs in the Watch Window
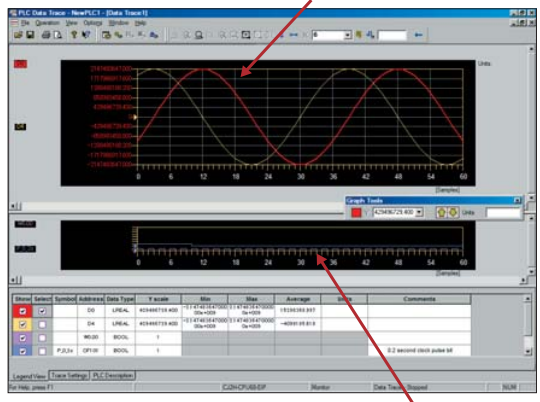
The desired I/O data can be selected for multiple PLCs, such as input bits, output bits, and word I/O data, and monitored simultaneously. There are also functions such as the Binary Monitor and Forced Set/Reset functions that enables graphical monitoring the ON/OFF status of word data. All of these monitoring functions are easy to use.

Addresses that you want to monitor can be registered for each debugging segment.

CX-Programmer

Time Require for Debugging and Maintenance Has Been Reduced with the Comprehensive Data Trace Function

Functionality and operability has been significantly upgraded compared to the previous data trace function. The new data trace function provides comprehensive debugging, such as I/O comment display of sampled addresses, specification using symbols, checking the measurement time between two selected points, and layering waveforms. Furthermore, data sampled from the CPU Unit's trace memory can be saved to a file on the computer at a specified frequency. This can be used as for long-term logging of data.
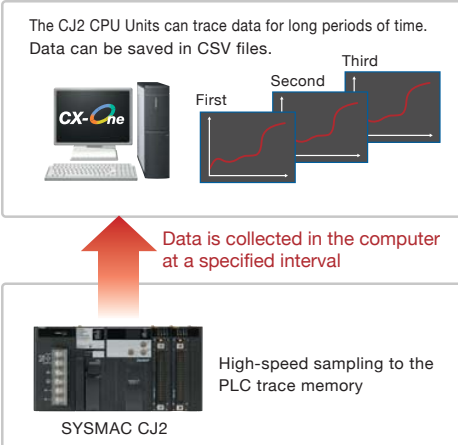
Data Trace Function

Sampled values from a specific word will be displayed.

The traced waveforms can be displayed as layers.

Sampled value from a specific input bit will be displayed.

Continuous Data Trace Logging

Applicable Models : CJ2

The CJ2 CPU Units can trace data for long periods of time. Data can be saved in CSV files.

First Second Third
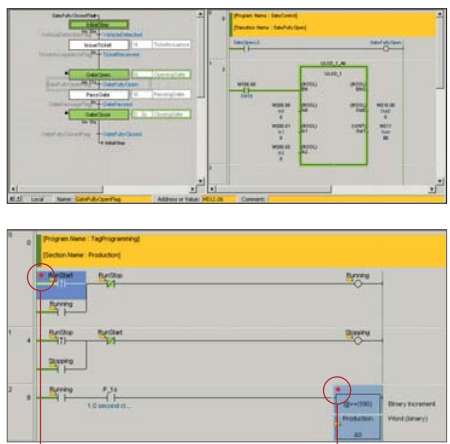
Data is collected in the computer at a specified interval

High-speed sampling to the PLC trace memory

SYSMAC CJ2

Simulation Debugging

Programs can be debugged using a computer without the actual PLC. A wide range of languages, such as ladder diagram, sequential function charts (SFC), structured text (ST), and programs within function blocks are supported. Furthermore, programs can be edited online, bits can be force-set/reset, breakpoints can be set, and a PLC error simulator can be used.

Simulation of SFC, Ladder Diagrams, and Function Blocks

Forced set/reset

Can be used for SFC steps and transitions.
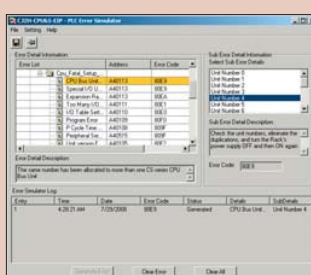
Breakpoints

Breakpoints can be inserted anywhere in the program, such as for input bits, output instructions, special i nstructions, or function blocks.

Breakpoints

Error Simulation

It is easy to debug errors that are difficult to generate with the actual PLC. Debug contents can be saved and used in test document.

No Size Restrictions for Online Editing of Function Blocks and Sequential Function Charts

Applicable Models : CJ2

There are no size restrictions for the function blocks and SFC that can be edited online.

Easy Programming

Reusable Designs

Position Control

Network

Debugging

Component Tools

FA Communications Software

Online Web Services

Ordering Information

CX-One Lite

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Products Are Highly Compatible and Easy to Use Because They Are from a Comprehensive PLC Manufacturer
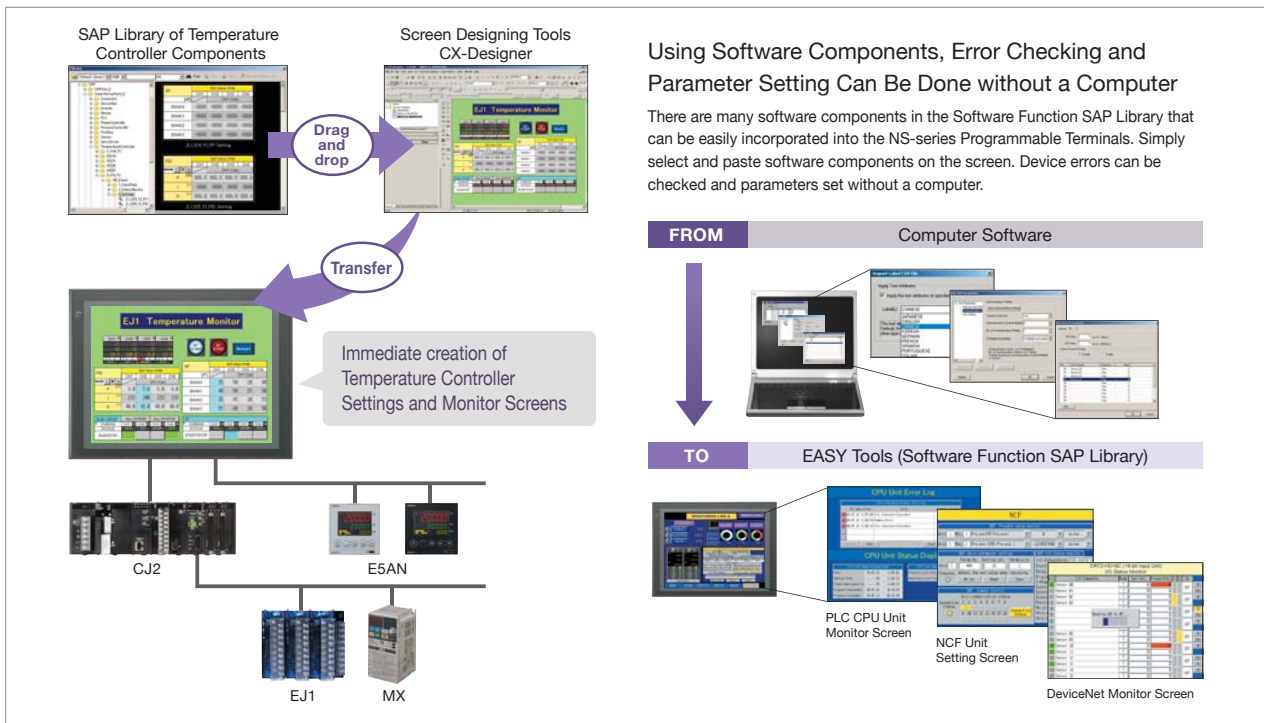
The CX-Designer Simplifies the Processes from Screen Design to Debugging for the NS-series Programmable Terminals

The time required for designing can be significantly reduced because of the compatibility with SYSMAC CJ-series PLCs. The process of designing screens is easier with expanded functionality.

**Applicable Units :
NS Series   NSJ Series**

Communications Components and the Smart Active Parts(SAP)Library Significantly Reduces the Time Required to Create Ladder Diagrams and Screens

There are over 3,000 Smart Active Parts that can directly access OMRON PLCs and components. Simply select and paste a part from the SAP library onto the screen. Detailed screens and ladder diagrams do not need to be created.

SAP Library of Temperature Controller Components

Screen Designing Tools CX-Designer

Drag and drop

Transfer

Immediate creation of Temperature Controller Settings and Monitor Screens

CJ2

E5AN

EJ1

MX

Using Software Components, Error Checking and Parameter Setting Can Be Done without a Computer

There are many software components in the Software Function SAP Library that can be easily incorporated into the NS-series Programmable Terminals. Simply select and paste software components on the screen. Device errors can be checked and parameters set without a computer.

FROM Computer Software

TO EASY Tools (Software Function SAP Library)

PLC CPU Unit Monitor Screen

NCF Unit Setting Screen

DeviceNet Monitor Screen

The Troubleshooter SAPs Can Be Used Onsite without Computers or Manuals

There is a troubleshooter SAP library that covers all PLC Units. If there is a PLC error, the troubleshooter SAP library explains the cause and how to implement countermeasures in a way that it is easy to understand.
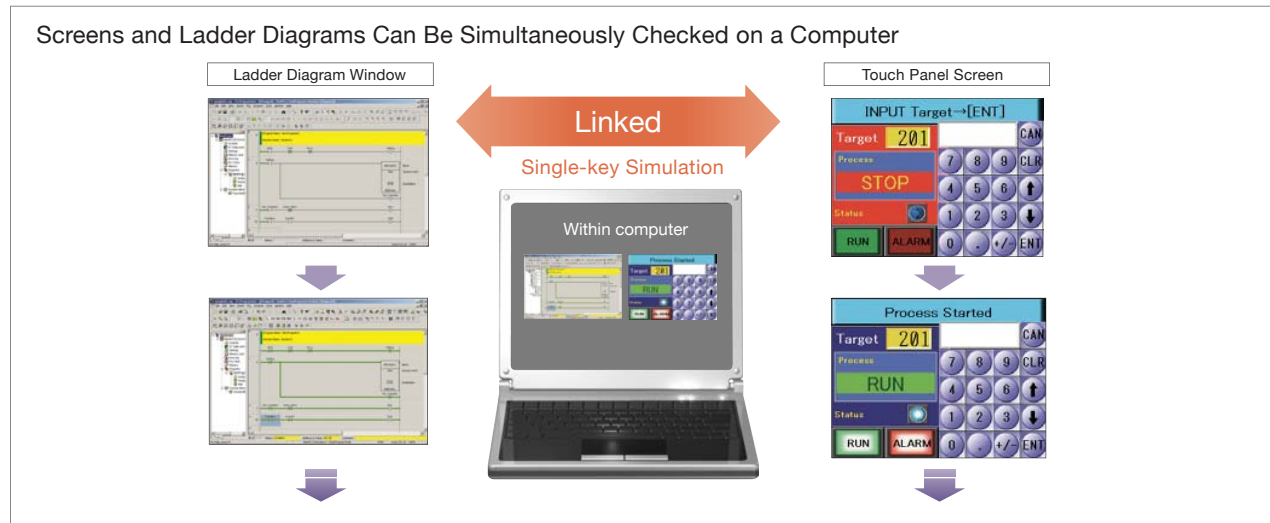
Position Control Unit Troubleshooter SAP

Basic I/O Unit Troubleshooter SAP

Improved Troubleshooter SAP Library

In addition to the DeviceNet Units and Position Control Units, the CX-Designer also includes Basic I/O Unit, Analog I/O Units, Serial Communications Units, High-speed Counter Units, Controller Link Unit, and ID Sensor Units. Including the EtherNet Units and Motion Control Units is planned in future development stages.
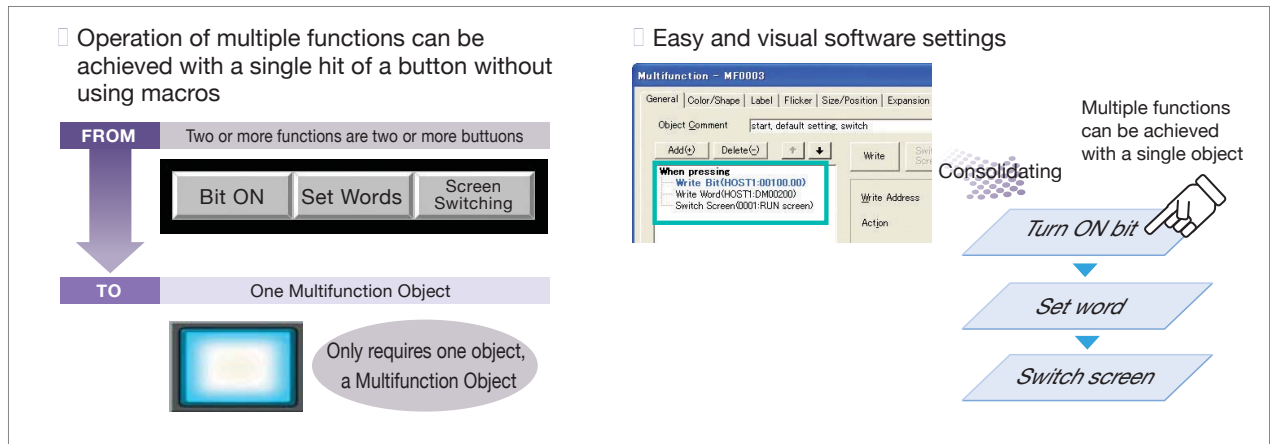
Integrated Simulation with the PLC Ladder Diagrams

Test functions for the CX-Designer and CX-Programmer are linked through the CX-Simulator on a computer. This enables screens and ladder diagrams to be checked simultaneously, significantly improving the debugging efficiency. A new Integrated Simulation Button has been added to the CX-Programmer. Furthermore, work efficiency has been significantly improved with the function that enables work windows to be pinned in front, and a flexible zoom function.

Screens and Ladder Diagrams Can Be Simultaneously Checked on a Computer

| Ladder Diagram Window		Touch Panel Screen
	Linked	
	Single-key Simulation	
	Within computer	

The Comprehensive Screen Designing Software Makes for Easy Creation of Multifunction Screens

A Multifunction Object is a collection of the functions of various objects. Multiple functions can be operated with a single press of a button without using cumbersome macros. Setting Multifunction Objects is easy. For example, you can visually create a setting like "Change the screen when the device operation start bit turns ON and the value is set" using the software.

Operation of multiple functions can be achieved with a single hit of a button without using macros

Easy and visual software settings

FROM Two or more functions are two or more buttuons

| Bit ON | Set Words | Screen Switching |

TO One Multifunction Object

Only requires one object, a Multifunction Object

Multiple functions can be achieved with a single object

Consolidating

Turn ON bit

Set word

Switch screen

Use the NV-Designer to Easily and Quickly Design Screens for the NV Series of Compact PTs

Applicable Units : NV Series
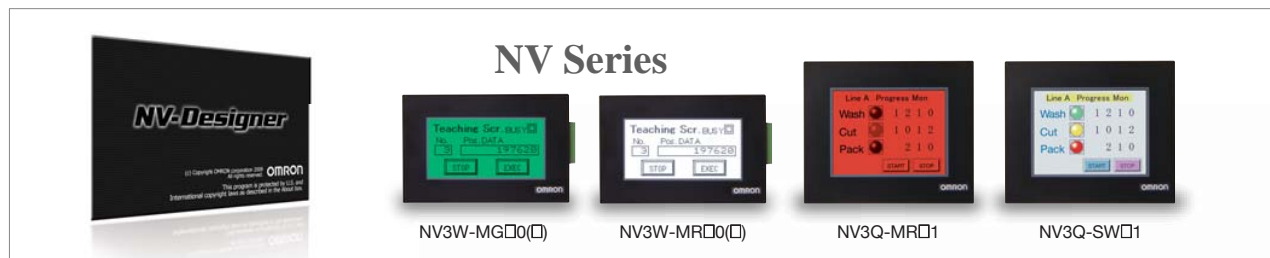
NV Series

| NV3W-MG 0( ) | NV3W-MR 0( ) | NV3Q-MR 1 | NV3Q-SW 1 |

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Easy High-level Servomotor Control

The CX-Motion Supports MECHATROLINK-II Servo Systems

Improve productivity of motion network servo systems using MECHATROLINK-II for design, startup, and maintenance.

Easy Management of Parameters While Still Connected to PLCs CX-Motion-NCF

Settings can be modified while connected

Editing Parameters
Parameters for the Position Control Unit and Servo Drive can be edited easily.

Transferring and Comparing Parameters
Parameters for the Position Control Units and the connected Servo Drive can be transferred.

Wiring can be checked while connected

Monitoring
The status and present values of data for the Position Control Unit and the connected Servo Drive can be monitored. Data can be monitored for up to four axes simultaneously.
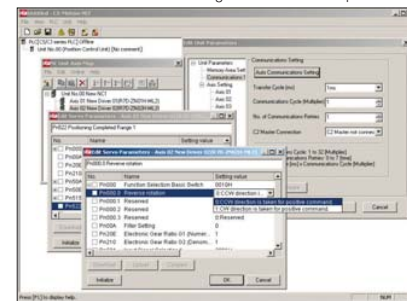
Operation can be checked while connected

Trial Operation
It is possible to lock the Servo, jog an axis, or reset an error. The error code and ON/OFF status of each axis can be displayed. Present values and busy status can also be monitored.

Parameters that can be edited

Position Control Unit axis settings and Servo Driver parameters

Applicable Units : CS1W/CJ1W-NCF71 NC271/NC471

Even Easier to Start Up a System CX-Motion-MCH

Programming Is Easy

Editing Parameters
Task and axis parameters can be edited easily.

Checking Program Edits and Syntax
The motion program can be created and edited. Syntax can be checked and lines that require correction can be displayed with correction details.

Transferring and Comparing Parameters
Parameters and programs of Servo Drive connected to the Motion Control Unit can be transferred. Parameters and programs in the PLCs and in the software can be compared.

Debugging Programs Is Easy

Trial Operation
The servo lock, jog, step, origin search, origin reset, forced origin, error reset, absolute origin setting, and teaching functions can be used. Error codes and the ON/OFF status of axis I/O can also be displayed. Because of this, device startup and adjustments can be made easily.

Debugging Motion Programs
Motion programs can be executed using the software. It is easy to debug and make corrections using breakpoints.
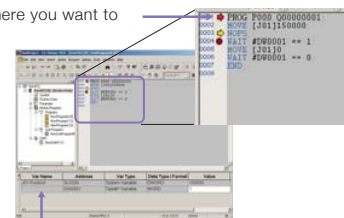
Checking Operation Is Easy

Data Trace Function
The values of each variable in the Motion Control Unit can be traced.
The results are displayed in a graph and can be used for checking operation or making adjustments.
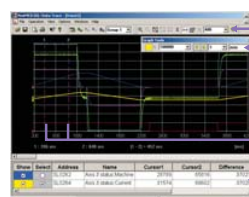
Debugging motion programs

Insert a breakpoint where you want to pause the program

Variable values can be changed

Data trace results

The graph can be zoomed in or out

The scale can be changed, display position moved, and data displayed or hidden

Displays the difference of between the curser position and the value

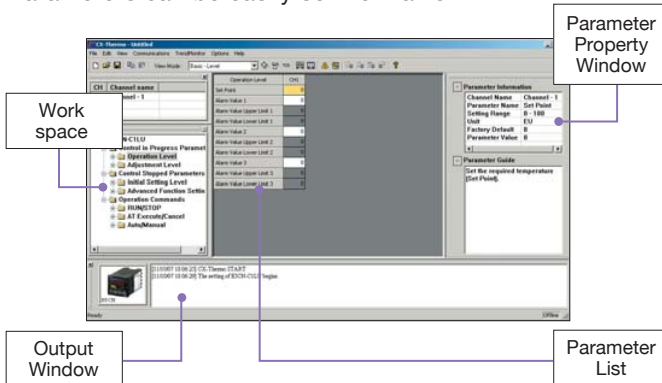**Applicable Units : CS1W/CJ1W-MCH71**

From Parameter Settings to Temperature Data Management

The CX-Thermo/CX-Process Tool Software Supports High-level Temperature Control

Setting Temperature Controller Parameters Is Easier **CX-Thermo**

Parameters can be easily set from a list

Parameter Property Window

Work space

Output Window

Parameter List

Easy Parameter Settings

Parameters can be set even for Temperature Controllers that do not support communications.
Parameters can be saved, and then copied, or reused and edited (Parameters can be exported in CSV or HTML format.)

Displays Only What Is Used

To avoid unintentional use of parameters, unused parameters can be masked (i.e., hidden)

Applicable Units :
E5GN/E5CN/E5CN-H/E5AN/E5AN-H/E5EN/
E5EN-H,EJ1,E5ZN,E5AR/E5AR-T/
E5ER/E5ER-T   The DeviceNet type is excluded

Programming for the Process Controller Is Easier **CX-Process Tool**

Control Programs Can Be Constructed By Pasting Function Blocks

Project workspace

Content check (block diagrams, etc.)

Output Window
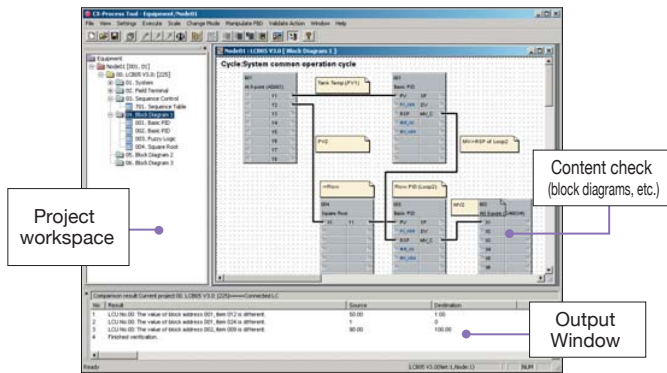
Control Can Be Customized

Control programs can be constructed by pasting function blocks and connecting them. They can be used for simple PID control, program control, and cascade control.

Easy Creation of an HMI

Screens for the NS-series PTs (NS runtime screen) are automatically generated from the function block programs. Standard control screens and tuning screens do not need to be created manually.

Applicable Units :
CJ1G-CPU4 P/CPU4 P-GTC,
CS1W-LCB01/LCB05/LCB05-GTC,
CS1W-LC001,CS1D-CPU6 P

CX-Thermo/CX-Process Tool Support Software

Adjusting Parameters While Monitoring Trends

PID parameters can be adjusted while monitoring the present value (PV), setting point (SP), and manipulated variable (MV). Trend data can be saved in CSV format.
(CX-Thermo Trend Viewer, CX-Process Tool Support Software Tuning Screen)

Controlling with a Reliable Control Algorithm (See note.)

The execution of the autotuning (AT) function that calculates the PID constants and the fine tuning (FT) function that improves controllability exactly as required are made easy with an intuitive user interface. The interference overshooting adjustment function is supported to adjust overshooting when interference occurs, and the gradient temperature control function achieves constant internal temperatures for multi-point temperature control with interference.

Note: Supported functions depends on the product being used. Refer to product manuals for details.

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Web Support Services for CX-One

OMRON'S CX-One offers many service options in the Internet environment so that engineers and online support is available from anywhere in the world 24 hours a day.

Online User Registration

When you register online as a user of CX-One, all CX-One software components can be registered at once. The online registration website can be accessed from Japan, North America, South America, Central America, Europe, Africa, Asia, China, Taiwan, and Korea. You can access the Internet services from anywhere once you have registered.
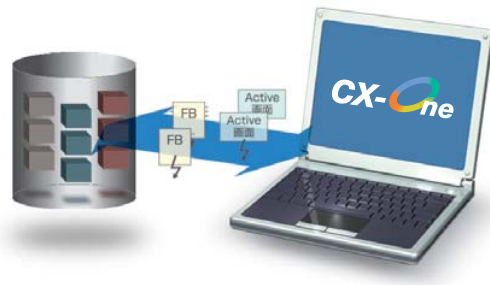

Automatic Update

With the automatic update function of CX-One, the latest update information for your computer environment can be searched for and applied using the network environment. Your CX-One can be constantly updated to the latest state. It is also possible to update only the necessary tools.
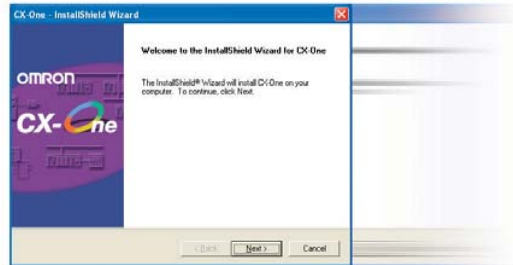
Download Services

Control devices that were made available after you purchased the Support Software can be used if you download the latest Smart Libraries from the Internet. A customized library can be made by downloading the Smart FB Library and Smart Active Parts for the hardware that you require. Programming is also easy by selecting and pasting the necessary parts.

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Ordering Information

Product name	Specifications	Number of licenses	Media	Model	Standards
FA Integrated Tool Package CX-One Ver. 4.0	The CX-One is a comprehensive software package that integrates Support Software for OMRON PLCs and components. CX-One runs on the following OS. Windows 2000 (Service Pack 4 or higher), XP, or Vista / 7 *Except for 64-bit version.	1 licenses	CD	CXONE-AL01C-V4	–
			DVD	CXONE-AL01D-V4	
		3 licenses	CD	CXONE-AL03C-V4	–
		10 licenses	CD	CXONE-AL10C-V4	–
		30 licenses	CD	CXONE-AL30C-V4	–
		50 licenses	CD	CXONE-AL50D-V4	–

Note 1. Site licenses are available for users who will run CX-One on multiple computers. Ask your OMRON sales representative for details.

System Requirements

Item	Requirement	
Operating system (OS) (See note1.) Japanese or English system	Microsoft Windows 2000 (Service Pack 4 or higher) or XP	MicrosoftWindows Vista / 7 (See note4.)
Computer	IBM PC/AT or compatible with a Pentium II 333 MHz or faster processor (Pentium III 1 GHz or faster recommended.)	IBM PC/AT or compatible with a processor recommended by Microsoft. (1 GHz or faster recommended)
Memory	512 MB min. recommended (See note2.)	1 GB min. recommended
Hard disk	Approx. 2.8 GB or more available space is required to install the complete CX-One package	
Display	SVGA (800 × 600) or better high-resolution display with 256 colors min	
Disk drive	CD-ROM drive or DVD-ROM drive	
Communications ports	RS-232C port, USB port, or Ethernet port (See note3.)	
Other	Internet access is required for online user registration,including a modem or other hardware connection method	

Note1. Precaution on CX-One operating system: The system requirements and hardware disk capacity depend on the system environment. The 64-bit operating systems cannot be used.

2. The amount of memory required varies with the Support Software used in CX-One for the following Support Software. Refer to user documentation for individual Support Software for details.
CX-Programmer, CX-Designer, CX-Thermo, CX-Simulator, CX-Protocol, CX-Motion, CX-Drive, CX-Process Tool, and Faceplate Auto-Builder for NS.

3. Refer to the hardware manual for your PLC for hardware connection methods and cables to connect the computer and PLC.

4. The following restrictions apply when CX-One is used with Microsoft Windows Vista / 7 .
   1) Some Help files cannot be accessed.
   The Help files can be accessed if the Help program distributed by Microsoft for Windows Vista (WinHlp32.exe) is installed. Refer to the Microsoft homepage listed below or contact Microsoft for details on installing the file.
   (The download page is automatically displayed if the Help files are opened while the user is connected to the Internet.)
   http://support.microsoft.com/kb/917607/en-us
   2) Restrictions apply to operation of some applications. Refer to the Setup Manual for details.

Support Software in CX-One Version 4.0

The following tables lists the Support Software that can be installed from CX-One

Support Software in CX-One		Outline
CX-Programmer	Ver.9.0	Application software to create and debug programs for SYSMAC CS/CJ/CP/NSJseries, C-series, and CVM1/C-series CPU Units. Data can be created and monitored for high-speed-type Position Control Units.
CX-Integrator	Ver.2.4	Application software to build and set up FA networks, such as Controller Link, DeviceNet, CompoNet, CompoWay, and Ethernet networks. The Routing Table Component and Data Link Component can be started from here. DeviceNet Configuration functionality is also included.
Switch Box Utility	Ver.1.6	Utility software that helps you to debug PLCs. It helps you to monitor the I/O status and to monitor/change present values within the PLC you specify.
CX-Protocol	Ver.1.9	Application software to create protocols (communications sequences) between SYSMAC CS/CJ/CP/NSJ-series or C200HX/HG/HE Serial Communications Boards/Units and general-purpose external devices.
CX-Simulator	Ver.1.9	Application software to simulate SYSMAC CS/CJ/CP/NSJ-series CPU Unit operation on the computer to debug PLC programs without a CPU Unit.
CX-Position	Ver.2.5	Application software to create and monitor data for SYSMAC CS/CJ-series Position Control Units.(except for High-speed type)
CX-Motion-NCF	Ver.1.9	Application software to create and monitor data for SYSMAC CS/CJ-series Position Control Units with MECHATOLINK-II (MC 71).
CX-Motion-MCH	Ver.2.2	Application software to create data and motion programs and to monitor data for SYSMAC CS/CJ-series Motion Control Units with MECHATOLINK-II (MCH71).
CX-Motion	Ver.2.3	Application software to create data for SYSMAC CS/CJ-series, C200HX/HG/HE, and CVM1/CV-series Motion Control Units, and to create and monitor motion control programs.
CX-Drive	Ver.1.9	Application software to set and control data for Inverters and Servos.
CX-Process Tool	Ver.5.2	Application software to create and debug function block programs for SYSMAC CS/CJ-series Loop Controllers (Loop Control Units/Boards, Process Control CPU Units, and Loop Control CPU Units).
Faceplate Auto-Builder for NS	Ver.3.1	Application software that automatically outputs screen data as project files for Ns-series PTs from tag information in function block programs created with the CX-Process Tool.
CX-Designer	Ver.3.1	Application software to create screen data for NS-series PTs.
NV-Designer	Ver.1.1	Application software to create screen data for NV-series small PTs.
CX-Configurator FDT	Ver.1.1	Application software for setting various units by installing its DTM module.
CX-Thermo	Ver.4.2	Application software to set and control parameters in components such as Temperature Control Units.
CX-FLnet	Ver.1.0	Application software for system setting and monitoring of SYSMAC CS/CJ-series FI-net Units.
Network Configurator	Ver.3.1	Application software to set up and monitor tag data links for CJ2 (Built-in EtherNet/IP) CPU Units and EtherNet/IP Units.
CX-Server	Ver.4.3	Middleware necessary for CX-One applications to communicate with OMRON components, such as PLCs, Display Devices, and Temperature Control Units.
PLC Tools (Installed automatically.)		A group of components used with CX-One applications, such as the CX-Programmer and CX-Integrator. Includes the following: I/O tables, PLC memory, PLC Setup, Data Tracing/Time Chart Monitoring, PLC Error Logs, File Memory, PLC clock, Routing Tables, and Data Link Tables.

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CX-One Lite

CX-One Lite

The Ideal Software Package for Compact PLCs

Simplified setting operations are ensured by Micro PLC Edition CX-Programmer (the ideal PLC programming software for small-scale systems), along with Support Software to set NS/NV-series PTs, Temperature Controllers, and Servo Drives.

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CX-One Lite

Features

● Simplified setting operations are ensured by Micro PLC Edition CX-Programmer (the ideal PLC programming software for small-scale systems), along with Support Software to set NS/NV-series PTs, Temperature Controllers, and Servo Drives.
● Total lead time until the system is up and running is reduced.

Support Software in CX-One

The following tables lists the Support Software that can be installed from CX-One

Micro PLC Edition CX-Programmer *	Ver.9.	CX-Designer	Ver.3.
CX-Integrator	Ver.2.	NV-Designer	Ver.1.
Switch Box Utility	Ver.1.	CX-Thermo	Ver.4.
CX-Simulator	Ver.1.	Network Configurator	Ver.3.
CX-Drive	Ver.1.	CX-Server	Ver.4.

* Applicable models: CP1 , CPM , SRM1
* The CX-One and CX-One Lite cannot be simultaneously installed on the same computer.

Ordering information

Product name	Specifications	Number of licenses	Media	Model	Standards
FA Integrated Tool Package CX-One Lite Ver.4.0	CX-One Lite is a subset of the complete CX-One package that provides only the Support Software required for micro PLC applications. CX-One Lite runs on the following OS. Windows 2000 (Service Pack 4 or higher), XP, or Vista / 7 *Except for 64-bit version.	1 license	CD	CXONE-LT01C-V4 *NEW*	—

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    d. Delivery and shipping dates are estimates only; and
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18. **Miscellaneous.** (a) **Waiver.** No failure or delay by Omron in exercising any right and no course of dealing between Buyer and Omron shall operate as a waiver of rights by Omron. (b) **Assignment.** Buyer may not assign its rights hereunder without Omron's written consent. (c) **Law.** These Terms are governed by the law of the jurisdiction of the home office of the Omron company from which Buyer is purchasing the Products (without regard to conflict of law principles). (d) **Amendment.** These Terms constitute the entire agreement between Buyer and Omron relating to the Products, and no provision may be changed or waived unless in writing signed by the parties. (e) **Severability.** If any provision hereof is rendered ineffective or invalid, such provision shall not invalidate any other provision. (f) **Setoff.** Buyer shall have no right to set off any amounts against the amount owing in respect of this invoice. (g) **Definitions.** As used herein, "including" means "including without limitation"; and "Omron Companies" (or similar words) mean Omron Corporation and any direct or indirect subsidiary or affiliate thereof.

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Cat. No. R134-E3-08   11/09   Specifications are subject to change without notice.