OMRON

FA Integrated Tool Package

CX-One Ver.4

One software for your complete machine

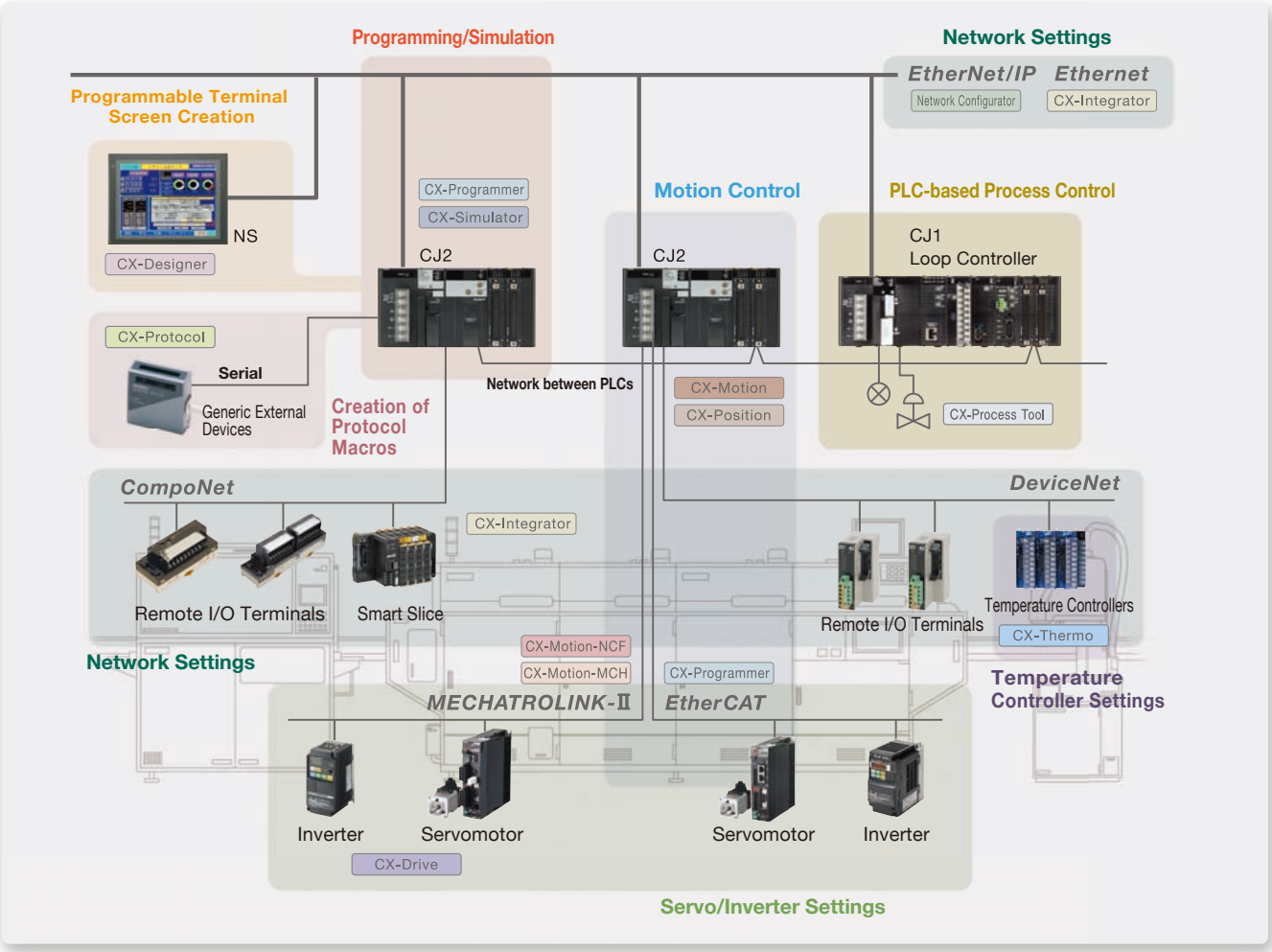
- Easy, Intuitive Programming Software
- Structured Text for Simple programming
- Easy Input - Easy Designing - Easy Validation

realizing

ST programming for further easy and simple programing and configuration of PLC systems

The CX-One is an integrated package of Support Software including setup applications for networks, PTs, Servo Drives, Inverters, and Temperature Controllers as well as programming software of PLCs.

CX-One Tools



Support for New Operating System

Windows 10 is supported

In addition to Windows XP, Vista, and 7, Windows 8 , Windows 8.1, Windows 10 is now supported.
The CX-One runs on the Windows 10 desktop.

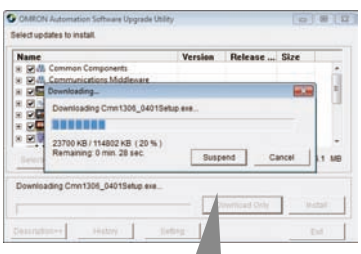
OS
Windows XP (Service Pack 3 or higher, 32-bit version) / Windows Vista (32-bit/64-bit version) / Windows 7 (32-bit/64-bit version) /Windows 8 (32-bit/64-bit version) / Windows 8.1 (32-bit/64-bit version) / Windows 10 (32-bit/64-bit version)

CX-One Lite is available on DVD

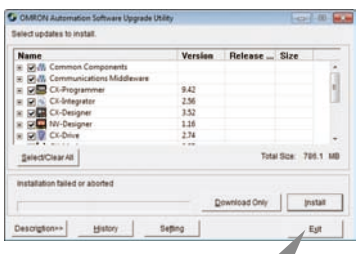
The FA Integrated Tool Package CX-One Lite suitable for Compact PLCs is now available on one DVD instead of four CDs.

Resume Function for Automatic Update

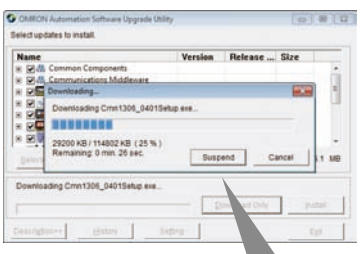
The auto update function using OMRON Automation Upgrade Utility allows you to suspend and resume downloading the version upgrade program. When a download is arbitrarily interrupted or connecting to the server fails during a download, the download can be resumed from the point where it was suspended.



The download can be suspended.



Click the Install Button again.



The download resumes from the point of suspension.

Steps Required to Input Ladder Diagrams
Reduced 50%
Note: In comparison to CX-Programmer version 8.

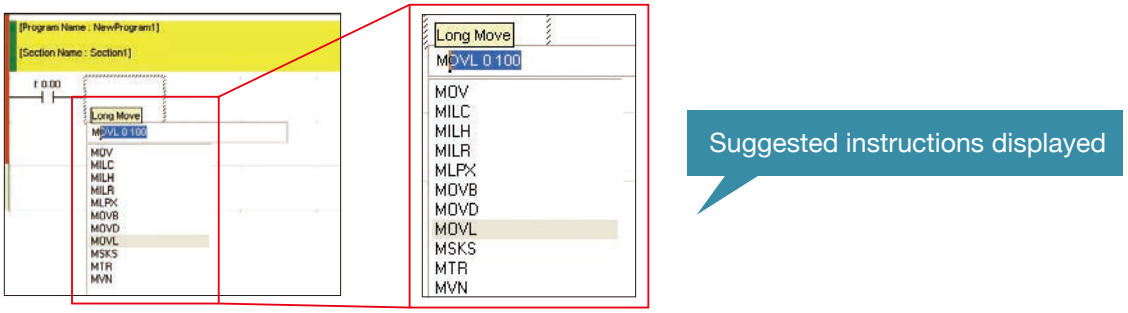
Input without Wasted Effort !
Use Mnemonics to Input Instructions Directly or Use 1-key Inputs

A Smart Input Function Greatly Reduces the Work Required to Input Programs

A new method is 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.
*This function is supported only for ladder diagrams.

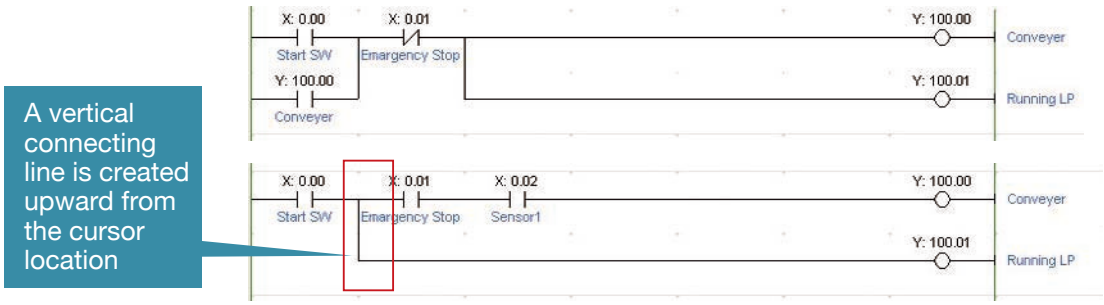
Instruction and Address Input Assistance

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.



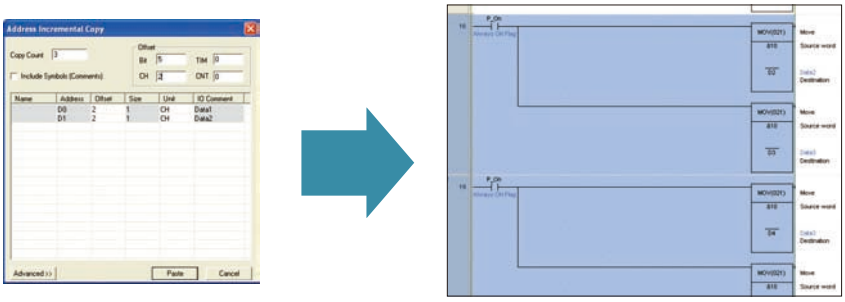
Automatic Insertion of Connecting Lines

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.



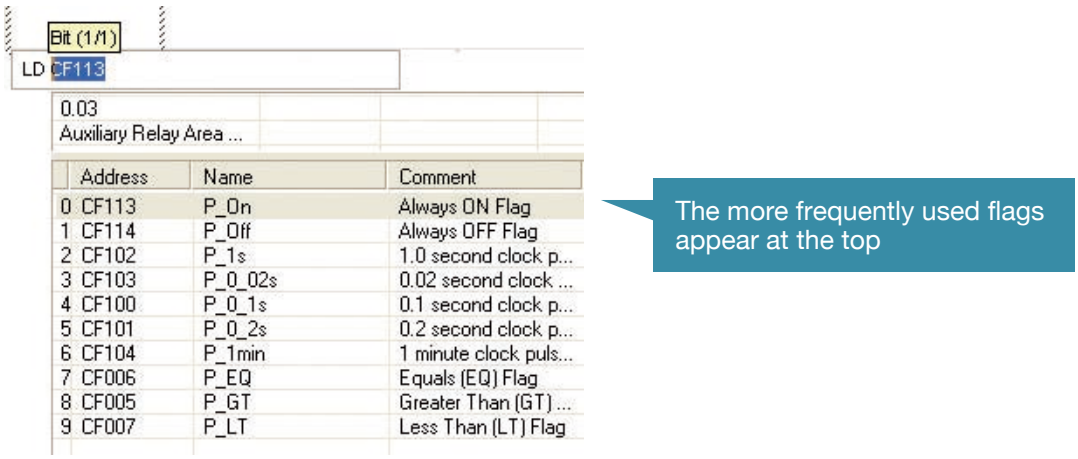
Address Incremental Copy

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.



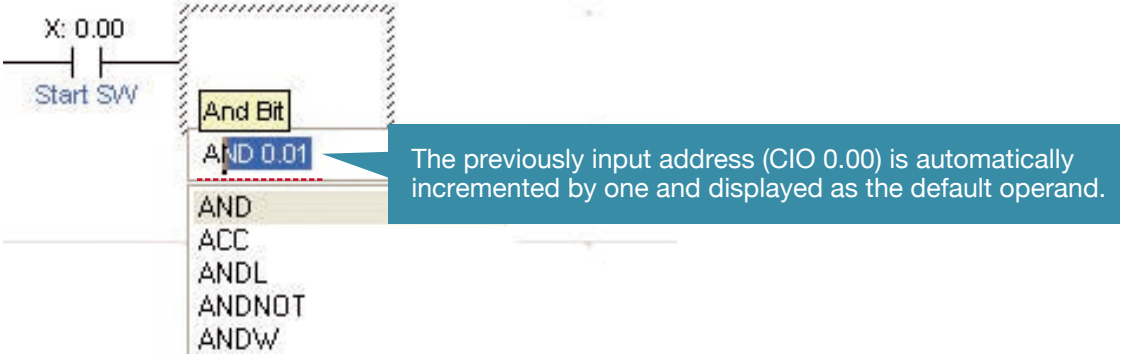
Auxiliary Bit Input from Lists

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



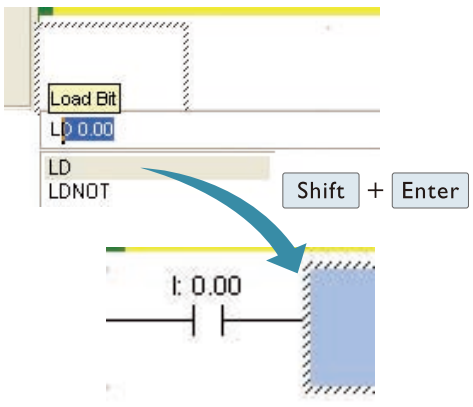
Address Incrementing

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.

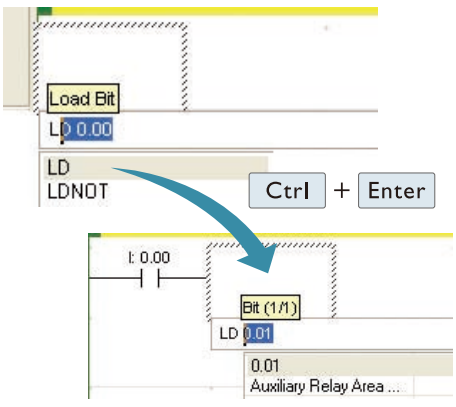


Quick-key Input of Both Instruction and Operands, and Consecutive Input of Instructions

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

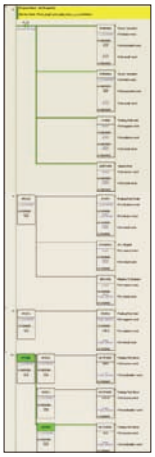
Easily Program Numeric Calculations and Text String Operations with Structured Text

Structured Text for Simple and Easy-to-understand Programming

Structured Text (ST)

Numeric calculations, conditional branching, and text string processing, all of which can be difficult with ladder diagrams, can be easily programmed using ST.

Calculating the Length and Angle from X,Y Coordinates Using Numeric Calculations and Conditional Branching



```
(* ************************************************************************
STSample:Finds length and angle from x/y coordinates.
************************************************************************ *)

Radius := SQRT ( x_coordinate ** 2 + y_coordinate ** 2);

IF x_coordinate > 0.0 THEN          (* When x-coordinate is a positive value *)
    Angle_degree := RAD_TO_DEG (ATAN( y_coordinate /x_coordinate));
ELSIF x_coordinate < 0.0 THEN       (* When x-coordinate is a negative value *)
    Angle_degree := RAD_TO_DEG (ATAN( y_coordinate / x_coordinate )) + 180.0;
ELSE          (* When x-coordinate is 0.0 *)
    IF y_coordinate > 0.0 THEN
        Angle_degree := 90.0;
    ELSIF y_coordinate < 0.0 THEN
        Angle_degree := 270.0;
    ELSE
        Angle_degree := 0.0;
    END_IF;
END_IF;
```

Ladder Diagram

- Work memory is required to temporarily hold the calculation results.
- The control data for each instruction must be understood and suitable numeric values must be set.
- The calculations cannot be written as formulas.

Structured Text

- Work memory, which is required for the ladder diagram, is not required.
- The calculations can be written in numeric form.
- It is not necessary to understand the special ladder instructions of each manufacturer or the control data for the instructions.

Collecting Date Information from the PLC Using Text String Operations

```
(* ************************************************************************
STSample:Gets year/month/Day information from PLC.
************************************************************************ *)

Year := LEFT(WORD_TO_STRING(Year_Month), 2);
Month := RIGHT(WORD_TO_STRING(Year_Month), 2);
Day := LEFT(WORD_TO_STRING(Day_Time), 2);

Month_Date_Year := CONCAT ('20', Year,'Year', Month,'Month', Day,'Day');
```

Ladder Diagram

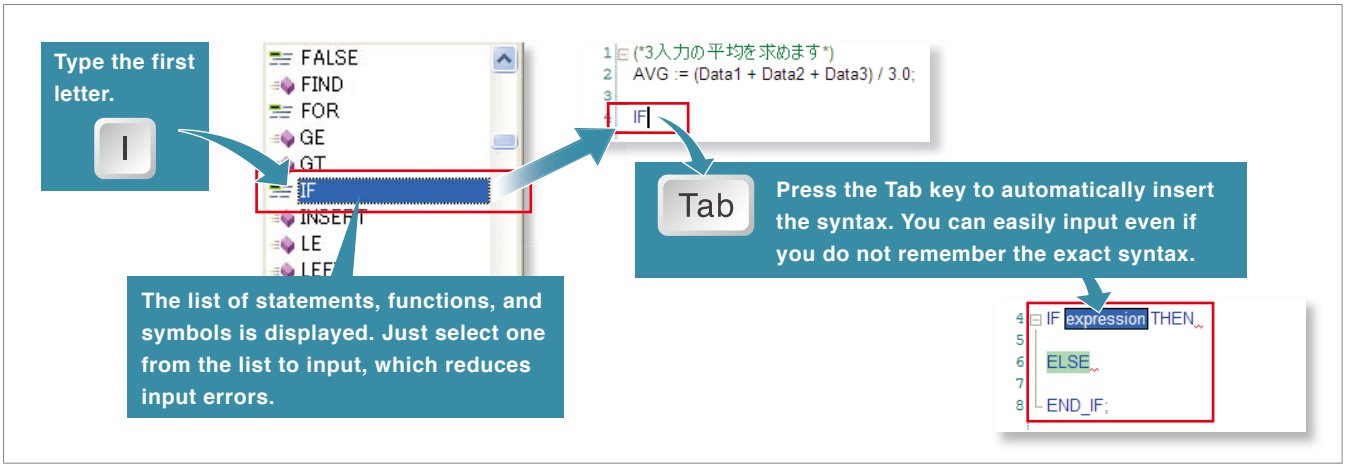
- Work memory is required to join the text strings.
- Text string processing is complex and difficult to understand.

Structured Text

- Work memory, which is required for the ladder diagram, is not required.
- Text string processing can be handled in a high-level programming language.

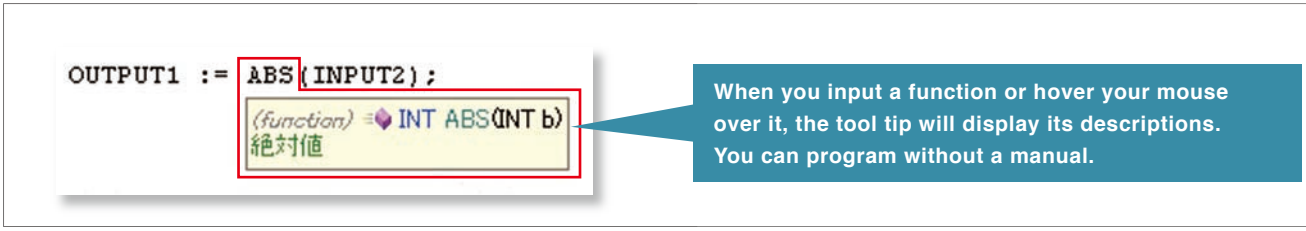
Input Assistance on ST Editor

When you type the first letter of a statement, function, or symbol on the ST Editor, the keyword list is displayed. You do not have to type it all out.



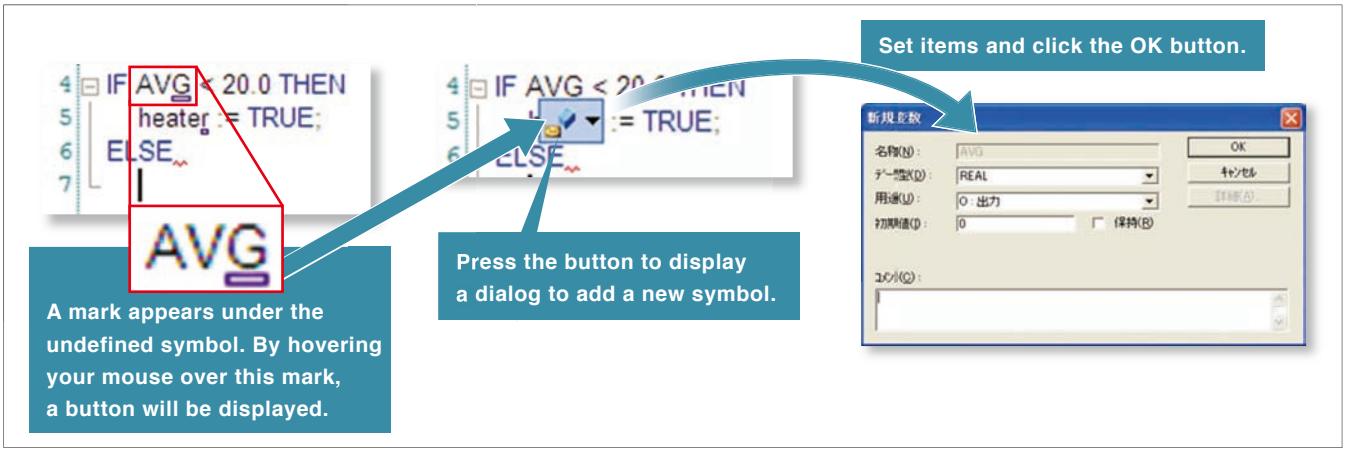
Function Guidance on ST Editor

By hovering your mouse over a function, the tool tip will display the function name, arguments, and return values.
This guidance will help you program without a manual.



Symbol Definition Assistance on ST Editor

If entering an undefined symbol, you will see a mark under the symbol.
You can add a new symbol from the dialog box even during programming.

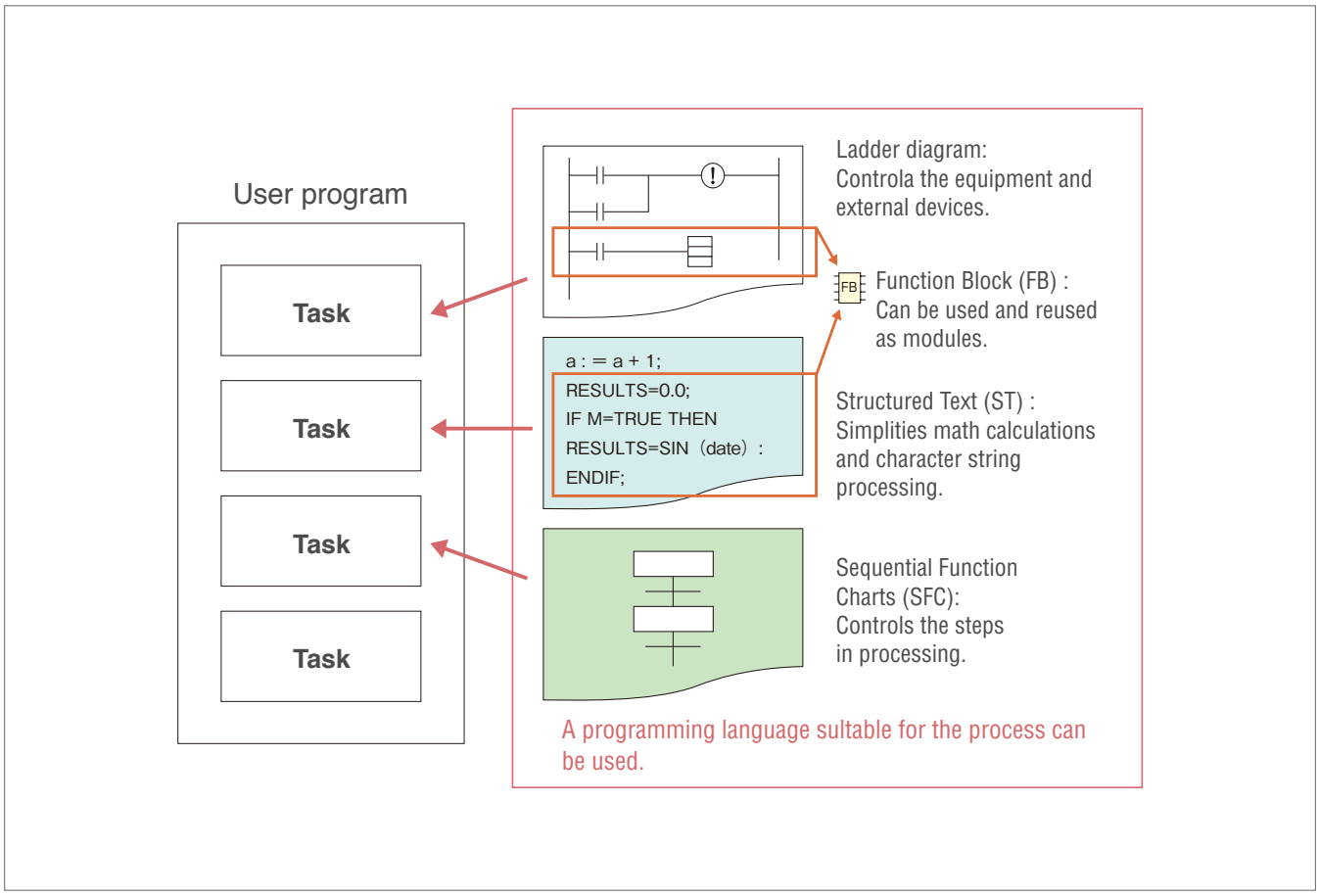


Note. These functions are available in the CX-Programmer version 9.3 or higher.

Modular Function Blocks (FB) and Easy-to-read Structured Text (ST)

FB and ST Facilitate the Reuse of Program Designs

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.



Support for Data Structures, Timer Data Type, and Counter Data Type

Newly Supported Data Types Make Reusing Program Designs Much Easier

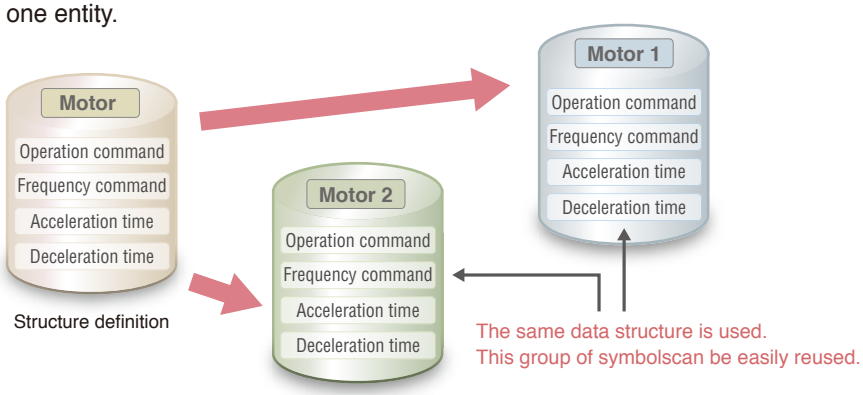
Applicable Models : CJ2

Data Structures

A data structure is a user-defined data type that groups various data together. By grouping the data, large volumes of data handled by a program are made easier to understand and can be registered or changed much easier.

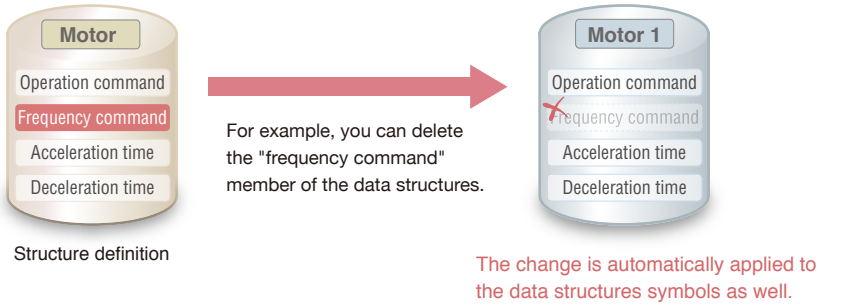
Data can be easily reused as one entity.

If the same pattern is repeated in the data, you can define a data structure to enable easily reusing the data in programming.



Data can be easily changed.

Even if there are changes to the data, the definition of the data structures can be modified to automatically change the data structures symbols in the symbol table as well.



Timer and Counter Data Types

The timer and counter data types can now be used in ST. This enables using timers in ST to perform wait processing.

Example of Processing after a Specified Period of Time Elapses

```
TIMX(In1, MyTimer, 50);

IF MyTimer.CF = TRUE THEN
    Result := Work1 + Work2;
END_IF;
```

```
TIMX(In1, My Timer, 50);
```

- TIMX: 100-MS TIMER
- In1: execution condition
- My Timer: timer address
- 50: timer set value

The addition is executed when the Completion Flag (CF) of MyTimer turns ON in 5 seconds.

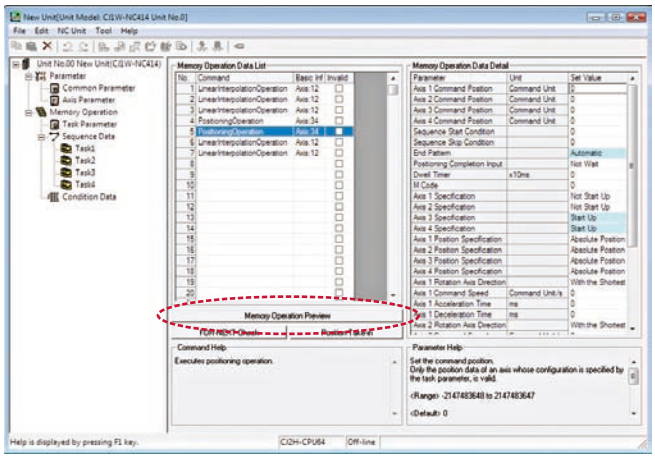
Improved Functionality for Position Control

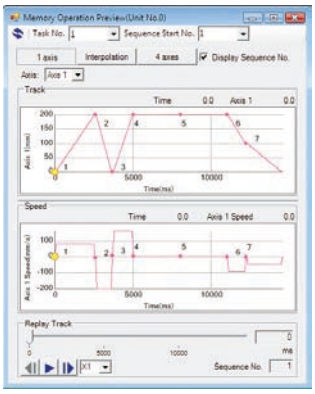
Preliminary Verification of Memory Operation for Position Control

Applicable Models : CJ1W-NC□□4/NC 81

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.



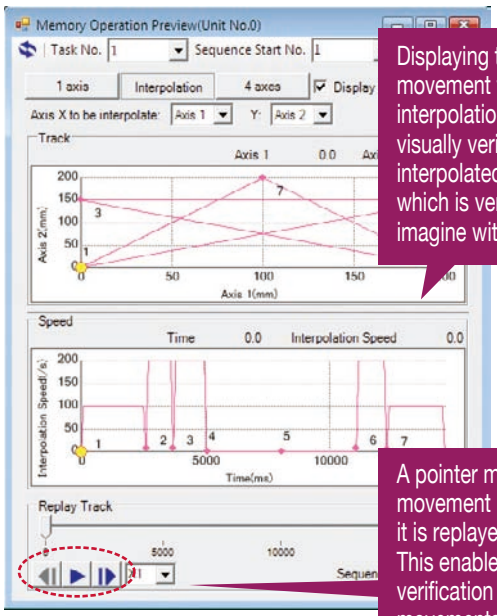


Display graphs of positions or speeds against time.
Easily compare results to data tables using sequence numbers displayed in the graph.

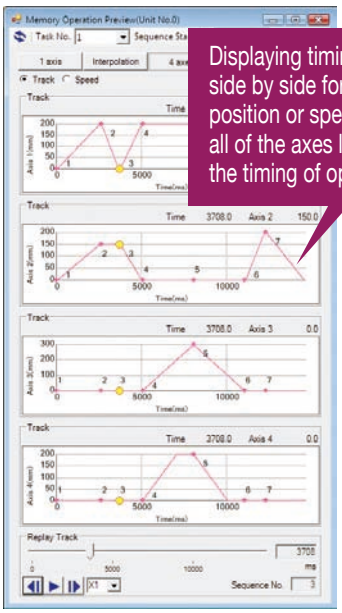
Display Axis Movement Patterns for Two Interpolated Axes or for All Axes

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



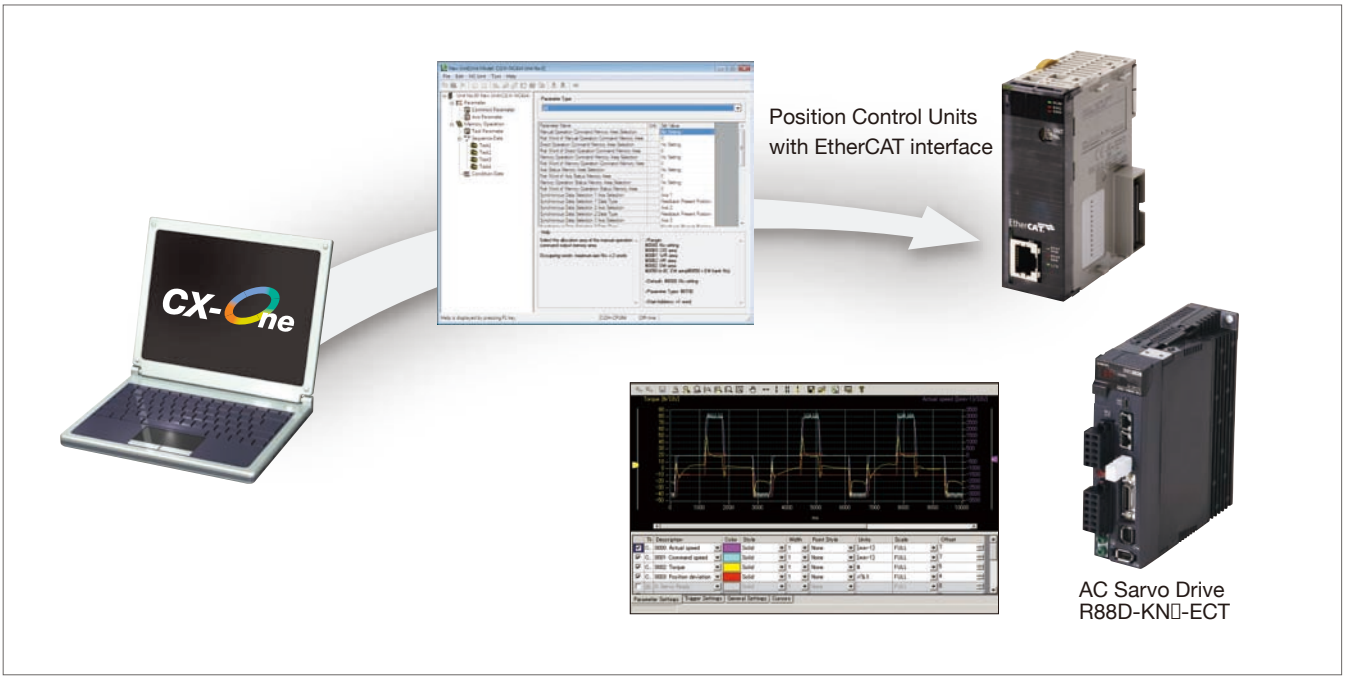
Position Control Unit and Communications Setup Integrated into the CX-Programmer

Easily Achieve Position Control without Wading Through User Manuals

Applicable Models : CJ1W-NC□81

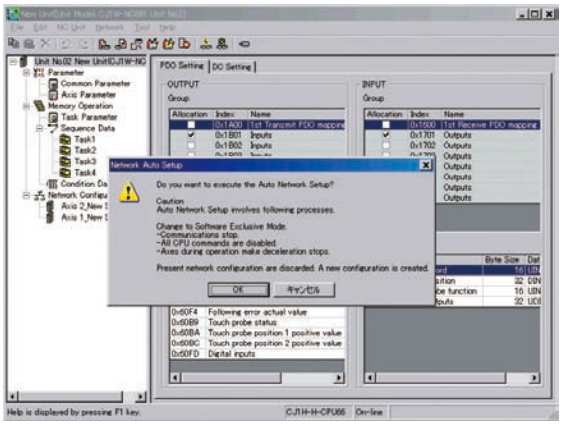
Setup the Position Control Units and Servo Drives from One Connection

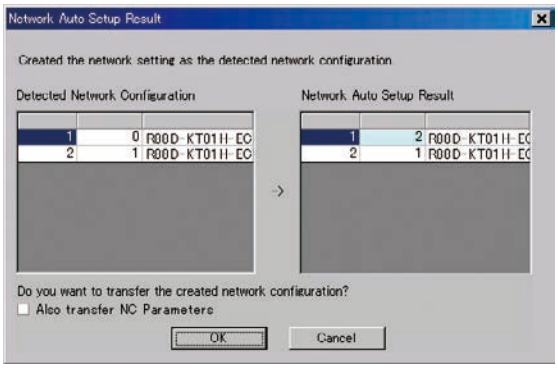
Just connect the computer to a CPU Unit port to set up the Position Control Units with EtherCAT interface and EtherCAT communications.
You can also directly start the CX-Drive Support Software to set the Servo Drives connected to the Position Control Units.



Automatic Network Setup

The communications parameters for Position Control Units with EtherCAT interface 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.

USB and EtherNet/IP Ports Are Available for CJ2 CPU Units

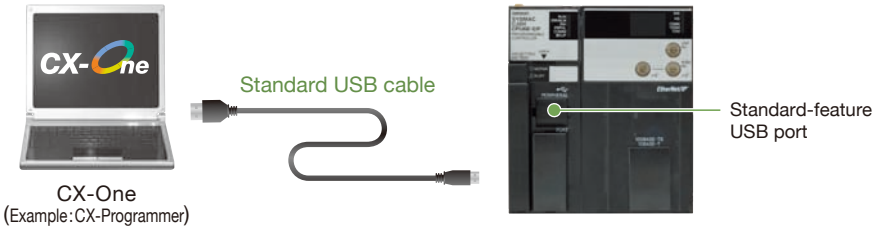
Easier Connection to PLCs

CX-Programmer

Applicable Models : CJ2

Easy Connection with USB

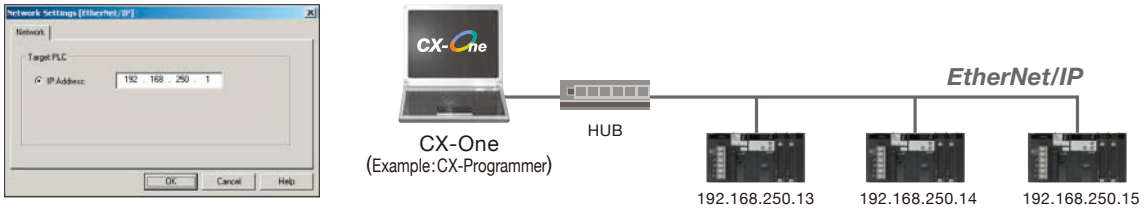
A standard USB cable can be easily connected to the USB port on the front of the CPU Unit.



Easy Connection with EtherNet/IP

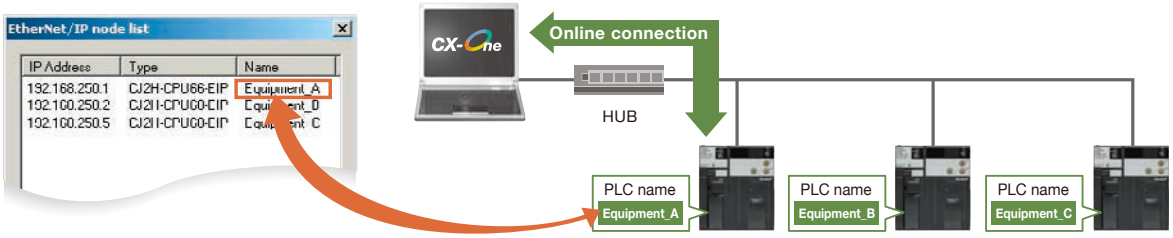
Easy connection by specifying the computer LAN (Ethernet) port and IP address only.

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



Prevent Connection Errors by Verifying PLC Names

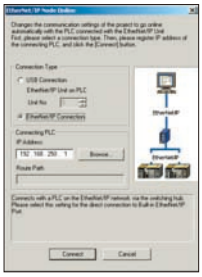
The CJ2 CPU Unit can record a PLC name. Errors in transfers can be prevented ahead of time because the PLC name can be compared with what is in the project file when connecting online.



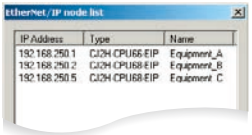
Browse and Connect from the EtherNet/IP Connection List

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.

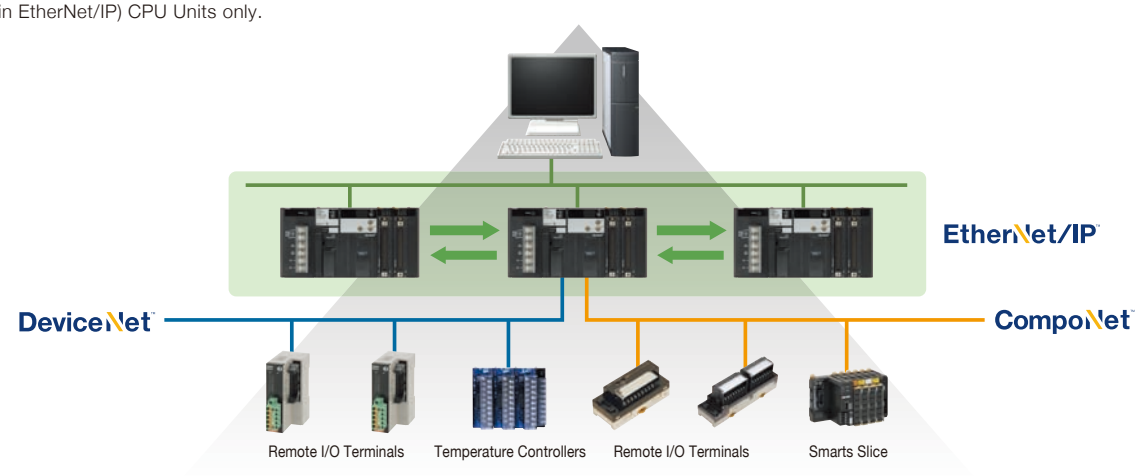


The PLCs connected to the EtherNet/IP network are automatically detected.
Simply select from the list of PLCs and connect.

Integration of Network Construction and Parameter Settings

Easy Setting of Tag Data Links for EtherNet/IP

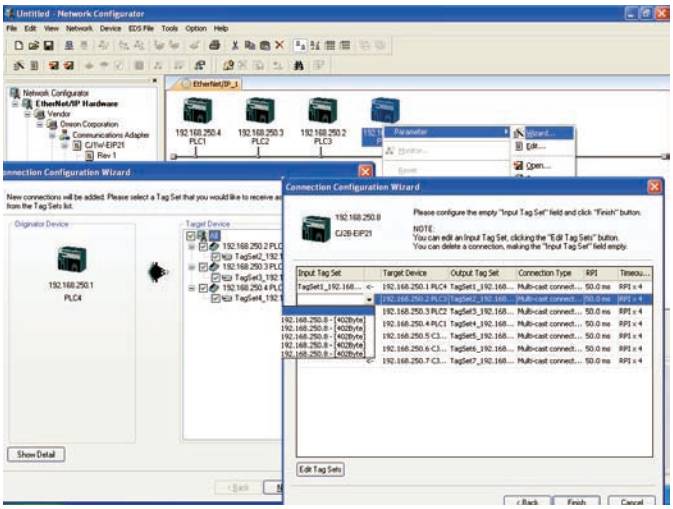
In addition to creating data links with the EtherNet/IP Datalink Tool using I/O memory addresses, you can also use network symbols for tags to easily create the data links.
With EtherNet/IP, high-speed, high-volume data links can be created with different cycle specifications for each applications, regardless of the number of nodes.
*CJ2(built-in EtherNet/IP) CPU Units only.



EtherNet/IP 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.

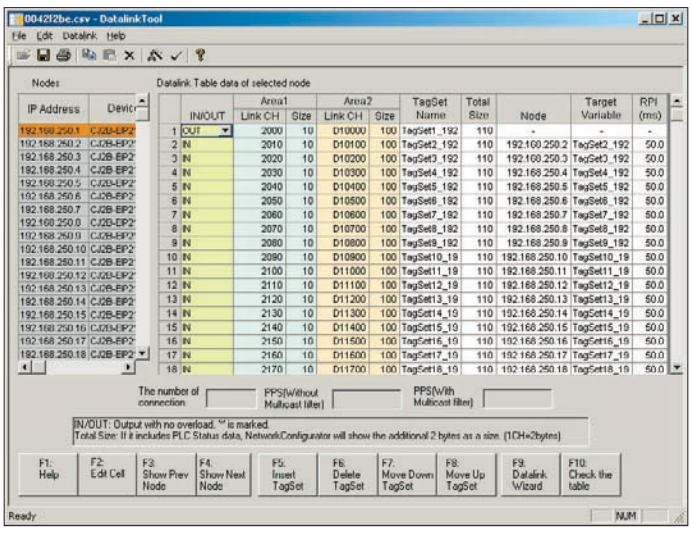
Network Configurator



EtherNet/IP Datalink Tool

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

Network Configurator



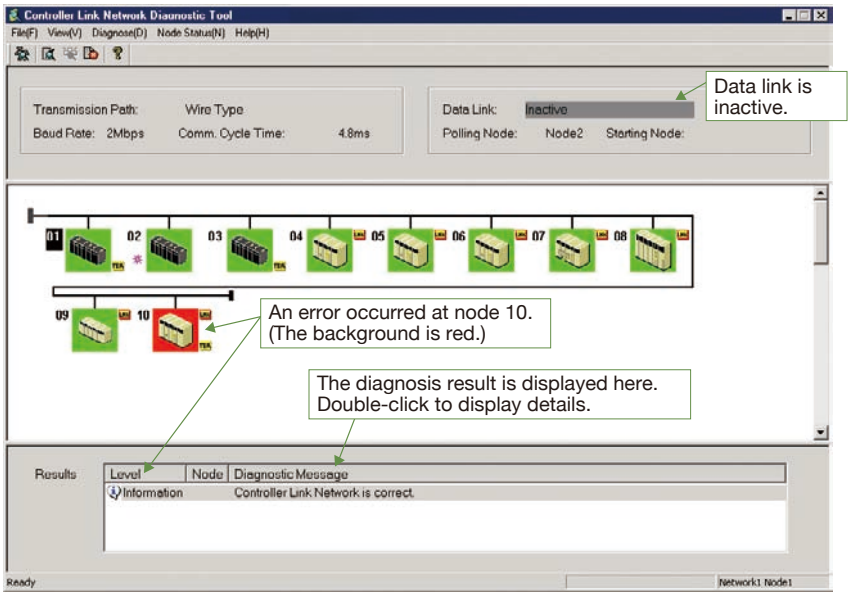
Monitors Nodes on Controller Link Network, Suggests Troubleshooting Measures, and Checks Errors in Settings

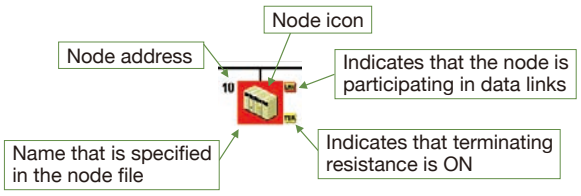
Total Diagnosis of a Controller Link Network

The Controller Link Network Diagnostic Tool can check the network status, node status, node settings, disconnections, and transmission status. This tool can be started from the CX-Integrator.

Network Status Diagnosis

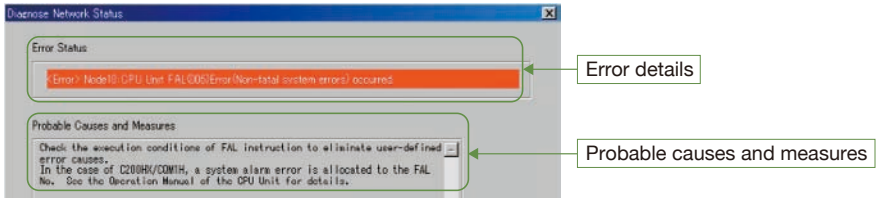
- The network status diagnosis results show the status of the specified Controller Link network (transmission path type, baud rate, communications cycle time, data link status (automatic/manual, active), polling node, and starting node) and the status of the nodes participating in the specified Controller Link network (participating in data links, errors, names, etc.).
  Any differences between the nodes registered in the specified node file and the actual nodes will be displayed.
- The operating status of the CPU Units and Controller Link Units/Boards is checked. Error information will be displayed if any errors occur.





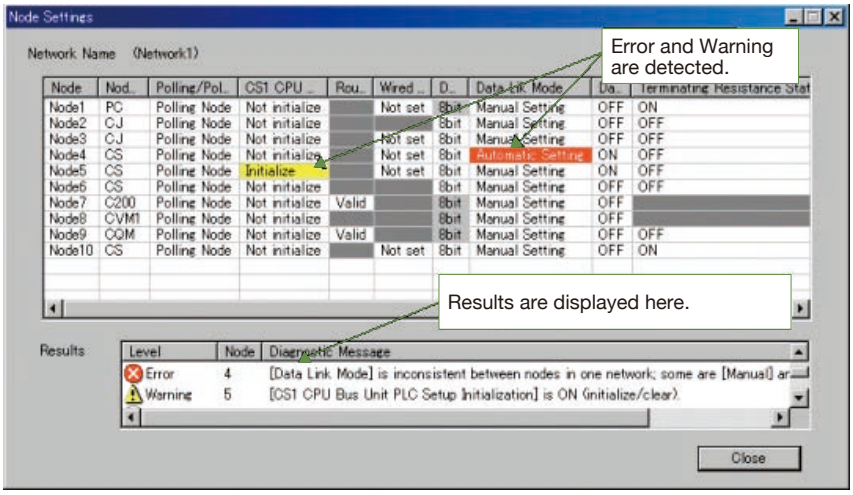
Double-click the diagnostic message in the diagnostic results area to view the current error details, probable causes, and measures.

Example)



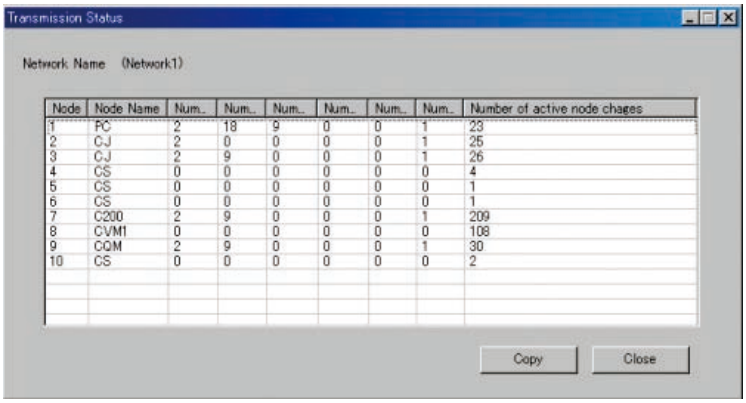
Node Settings Diagnosis

- The settings in the DM parameter area and other settings of all nodes participating in the specified network are read, and the integrity of the overall network is checked.
- The diagnosis results are displayed in three levels: Error, Warning, and Information.



Transmission Status Diagnosis

- The transmission status counters for all nodes participating in the specified network can be displayed.



Transmission status counter items: Number of CRC errors, number of token re-sends, number of token returns, number of token timeouts, number of polling timeouts, number of controller changes, number of active node changes

Error Log Collection

- The error status and error logs for all nodes on the specified network can be collected and stored in one file.
- This function enables sending files collected on remote systems as email attachments for later analysis.

CX-Programmer CX-Integrator

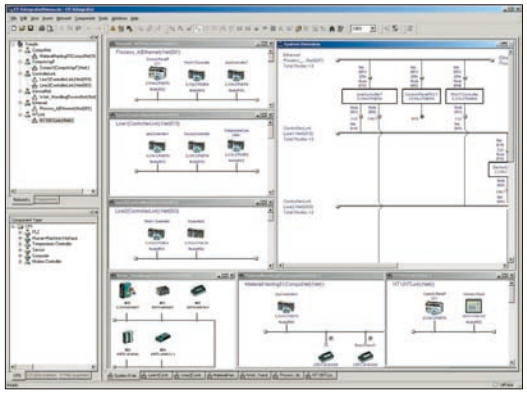
Comprehensive Debugging for Networks

Time Required for Onsite Startup and Debugging Has Been Significantly Reduced

With CX-One version 3.0, debugging is efficient with simultaneously monitoring and management of multiple networks and PLCs.

Management of Multiple Networks

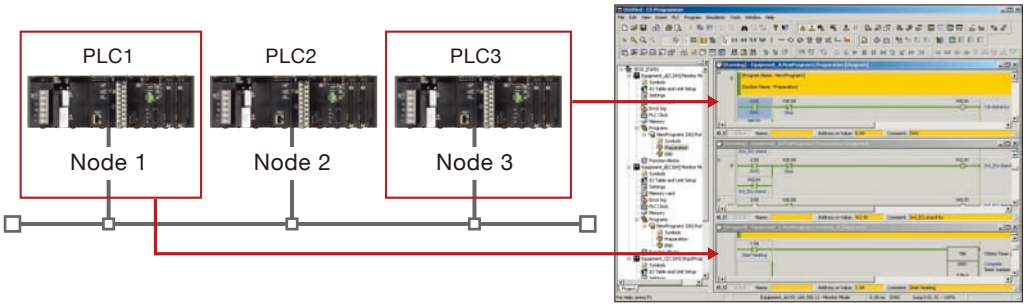
The operation of networks with configurations consisting of multiple networks including PLC networks such as EtherNet/IP™ and Controller Link, field networks such as DeviceNet™ and CompoNet™, and networks for Programmable Terminals and Serial Devices, can be restored simultaneously from the CX-One. Onsite 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.

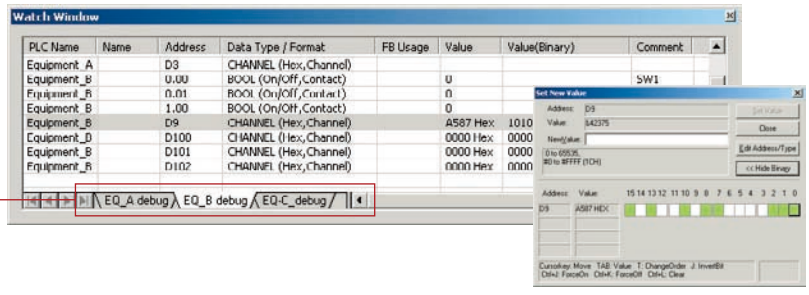


CX-Programmer

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.



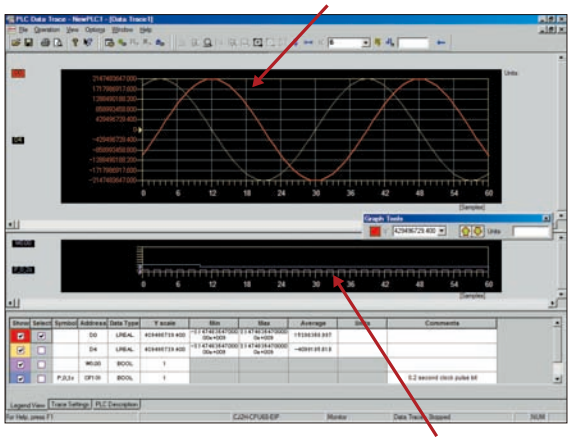
CX-Programmer

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.



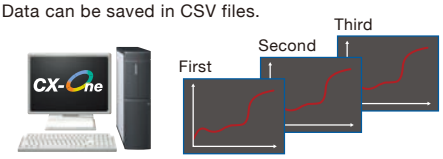
The traced waveforms can be displayed as layers.

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.



Data is collected in the computer at a specified interval

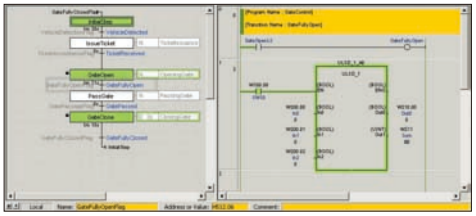
High-speed sampling to the PLC trace memory

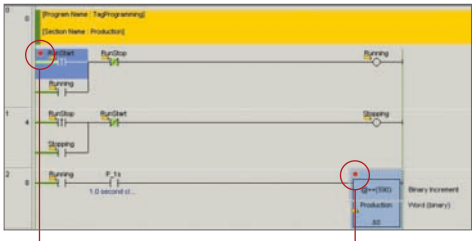
CJ2

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





Breakpoints

Forced set/reset

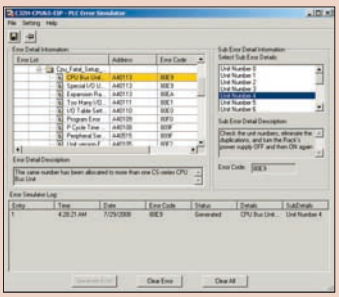
Can be used for SFC steps and transitions.

Breakpoints

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

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.

Debugging

CX-Programmer | CX-Integrator

View and Change Values of PLC I/O Memory with Comments

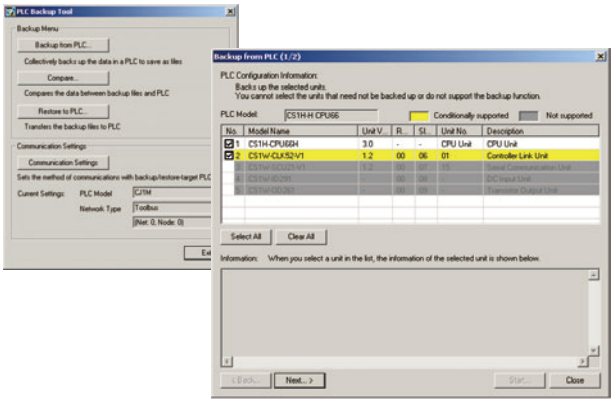
The SwitchBox Utility helps you debug PLCs by allowing you to monitor and change values of I/O memory in CPU Units.
This utility software displays values of I/O memory (words and bits) with comments on a PC.
Function keys can be used to set/reset bits, force-set/force-reset bits, select a monitored group, and work the CX-Simulator.

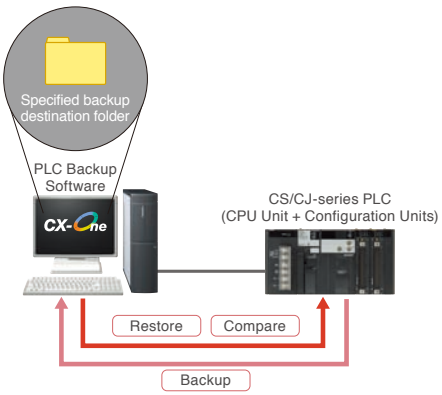
- Bits and words to monitor can be registered as an address group. You can easily change the addresses to monitor by selecting a registered address group. Up to 100 address groups can be registered.
- The SwitchBox Utility can import addresses with I/O comments from the memory card mounted to the PLC, global symbol table of the CX-Programmer, tab-delimited text file, or clipboard.
  It can also export addresses with I/O comments to a tab-delimited text file or clipboard.

PLC Backup Tool Batch Backup

Batch Backup/Restore with a Computer

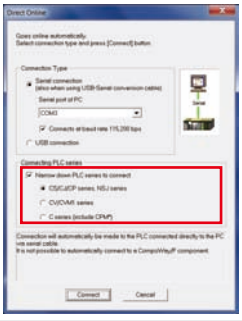
A computer can be used to backup, compare, or restore data for all or specific PLC Units when connected online. Backup information is automatically tagged with a date stamp. It is thus possible to return to the state before an error occurred. It is also easy to identify the file for restoring data when an error occurs.





Easy Online Connection

With the improved automatic online connection function, all you need to do is select the PLC series to connect.
There is no need to set the PLC model and protocol, greatly reducing setting time.



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

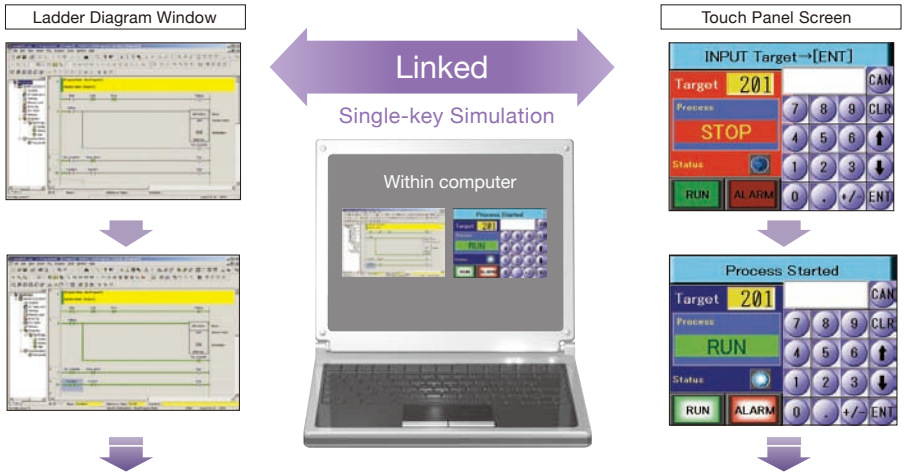
The time required for designing can be significantly reduced because of the compatibility with CJ-series PLCs. The process of designing screens is easier with expanded function.

Applicable Models :
NS Series NSJ Series

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

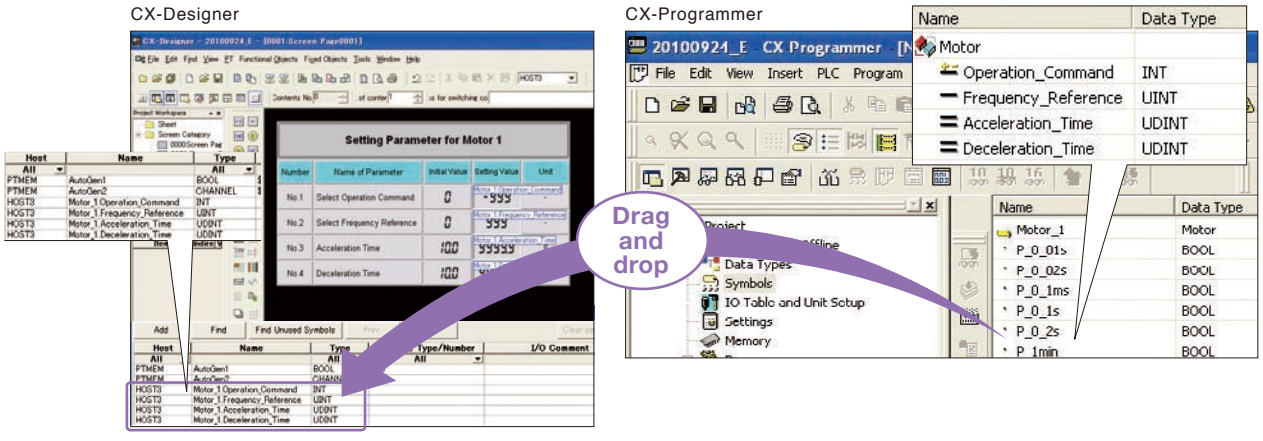


Using CJ2 Data Structures Can Improve System Design Efficiency

Special function which can be used for a system with Omron PLC CJ2 and NS-series programmable terminal.
Just drag the data structures on the CX-Programmer and drop it on the CX-Designer.

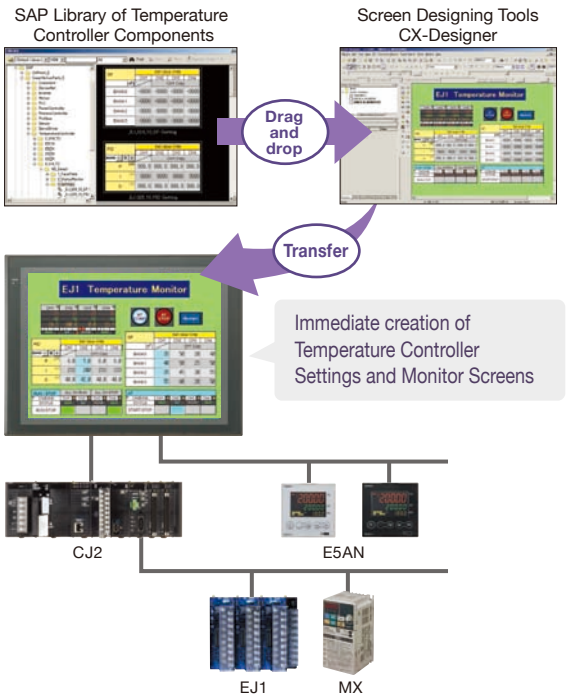
■ Data structures can be shared between the PLC ladder program and screen editor of programmable terminal.

Note1: To use CJ2 data structure, prepare CX-Designer Ver.3.2 or higher and NS system program Ver.8.4 or higher.
Note2: This function can be used when the PLC and programmable terminal are connected via EtherNet/IP.



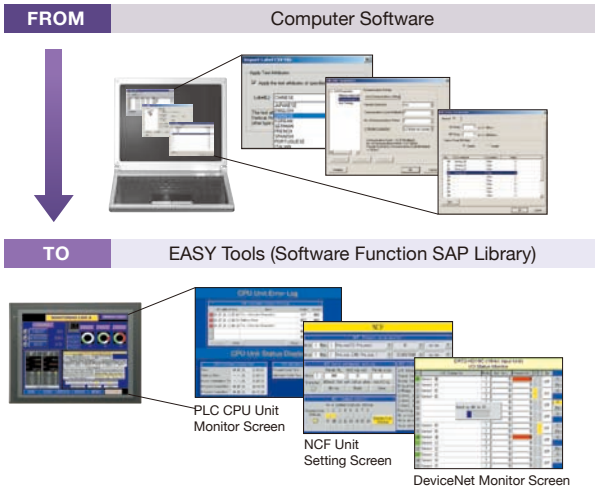
Communications Components and the Smart Active Parts(SAP)Library Significantly Reduces the Time Required to Create Ladder Diagrams and Screens

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.



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

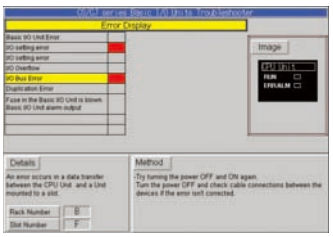
There are many software components in the Software Function SAP Library that can be easily incorporated into the NS-series Programmable Terminals. Simply select and paste software components on the screen. Device errors can be checked and parameters set without a computer.



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.

Easily Built Intelligent Motion Control

Optimum Motion System Support for Applications with Motion Networks or Generic Interfaces

Support from system starting to Maintenance. Also Provides EtherCAT Compatibility

CX-Drive

Easy Setup and Adjustment

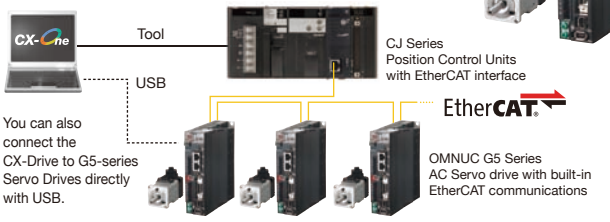
Parameters
Servo Drive or Inverter parameters can be set as easily as with a digital operator. With an EtherCAT system, Servo Drive parameters can be set and status can be monitored through the PLC.

Simple Gain Adjustment
You can use a wizard to complete gain adjustment in five minutes or less per axis simply by entering the machine configuration and the target set time.

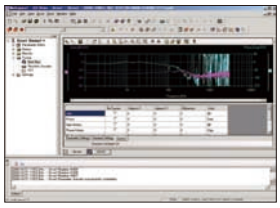
Measurement, Analysis, and Monitoring

Simple FFT
You can measure the frequency characteristics of the system and diagnose resonant frequencies. Apply the notch filter to resonant frequency to achieve higher responsivity.

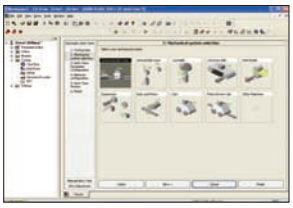
Status Monitoring
Data traces can be used to monitor the speed or torque as easily as with an oscilloscope.



Simple FFT



Simple Gain Adjustment



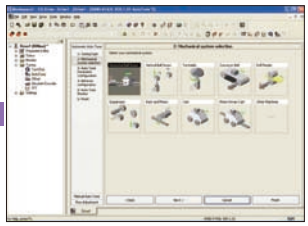
Stand alone CX-Drive (WS02-DRVC1) version is Ver.2.92.

Quickly adjust the gain using a wizard.

The autotuning feature provided with the CX-Drive makes it easy to adjust the Servo Drive gain. You can use a wizard to complete gain adjustment in approximately five minutes or less per axis simply by selecting the machine configuration and entering the target set time.

Gain adjusted in 5 minutes per axis.

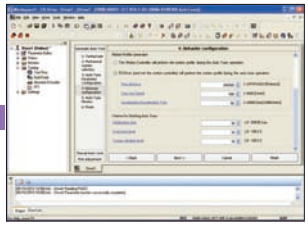
Autotuning



Machine Configuration

Although previously the machine configuration was set using parameters, it can now be selected from ball screws, turntables, belts, and other devices.

Automatic Adjustment

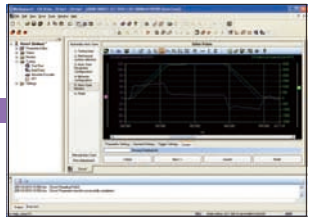


Setting for automatic adjustment and conditions after completing automatic adjustment.

Autotuning

Implement auto-tuning until reaching to a target value.
Stabilization time, overshooting amount and efective load rate can be monitored.

Autotuning Completed



After completing autotuning, the results can be checked using the data tracing.

Applicable Models : Servo G5/G/W Series
SMARTSTEP 2/SMARTSTEP Junior/SMARTSTEP A Series *
Inverter MX2/MX2-V1/RX/RX-V1/JX/MX Series
3G3JV/3G3MV/3G3RV/3G3RV-V1

* Discontinuation models in March 2013.

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

Settings can be modified while connected

Easily set, transfer, and verify parameters.

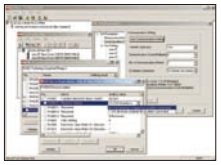
Wiring can be checked while connected

Monitor status and present values.
Simultaneously monitor the Servo Drives for up to four axes.

Operation can be checked while connected

Execute servo locks, jogging, and error resetting. Display error codes and ON/OFF status for each axis. Monitor present values and busy status.

Parameters that can be edited



Position Control Unit axis settings and Servo Drive Parameters

Position Control Units with MECHATROLINK-II interface

Applicable Models : CS1W/CJ1W-NCF71/NC271/NC471

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

Programming Is Easy

Easily set, transfer, and verify tasks and axis parameters.
Perform syntax checks for motion programs.

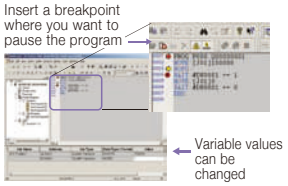
Debugging Programs Is Easy

Execute servo locks, jogging, stepping, origin searches, origin returns, force-setting the origin, error resetting, absolute origin setting, and teaching.
Display error codes and I/O ON/OFF status for each axis.
Use breakpoints to easily debug programming.

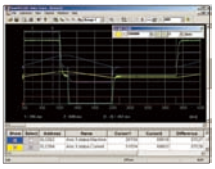
Checking Operation Is Easy

Use data tracing to trace variables in the Motion Control Unit.
Display the results in graphs to easily check operation and make adjustments.

Debugging motion programs



Data trace results



Motion Control Units with MECHATROLINK-II interface

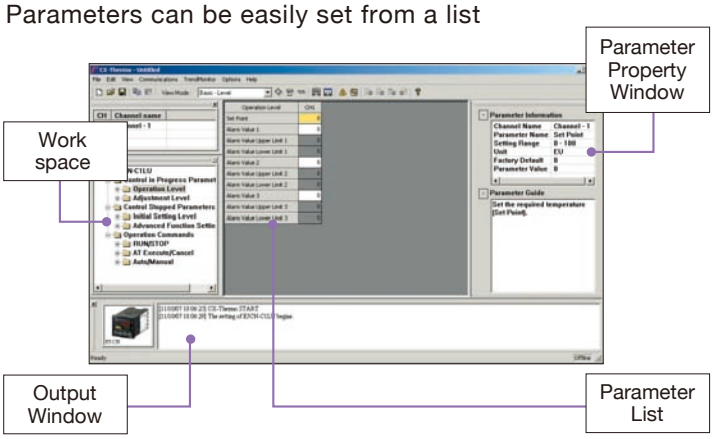
Applicable Models : CS1W/CJ1W-MCH71

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



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.)

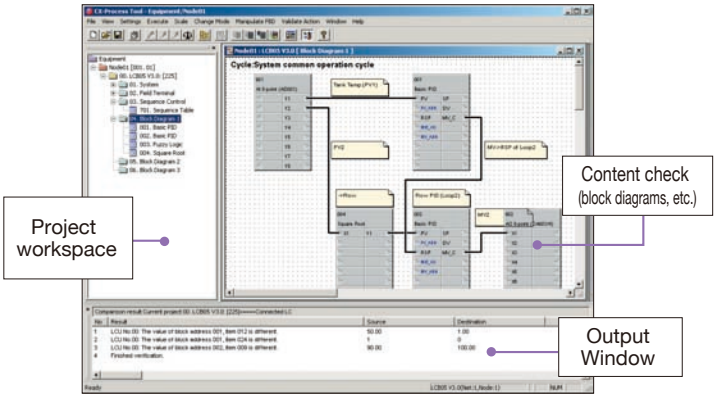
Displays Only What Is Used

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

Applicable Units :
E5CC/E5EC/E5AC/E5DC/E5GN/E5CN/ E5CN-H/E5CN-HT/E5EN/E5EN-H/E5EN-HT/ E5AN/E5AN-H/E5AN-HT/E5ER/E5ER-T/ E5AR/E5AR-T/EJ1/E5ZN
※The DeviceNet type is excluded

Programming for the Process Controller Is Easier CX-Process Tool

Control Programs Can Be Constructed By Pasting Function Blocks



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
* Discontinuation models in March 2012.

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.

FA Communications Software

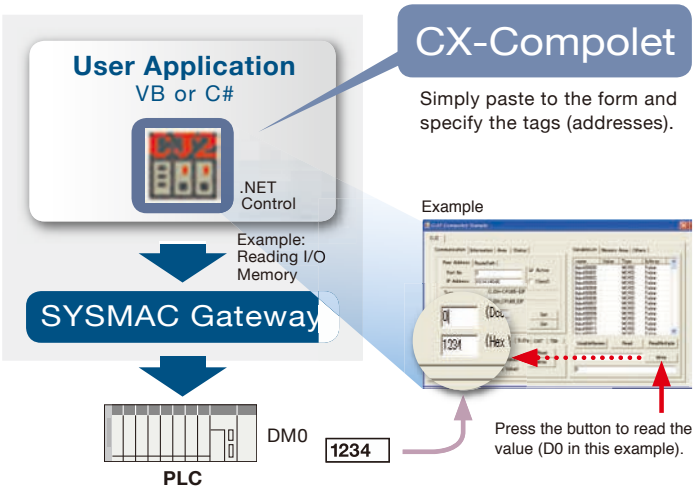
Note. CX-One Version 4.☐ does not include CX-Compolet and SYSMAC Gateway.

Easily Write Programs to Read and Write PLC Data with VB or C#.

CX-Compolet

Easy to Use without Any Technical Knowledge

- Provides software components that help you easily and quickly develop PLC communications.
- Read and write PLC data without the need to consider differences between networks.
- Supports Microsoft Visual Studio 2015.
- For the CJ2 with EtherNet/IP functionality, I/O memory in the PLC can be accessed by using tag names rather than addresses.
- Array and structure variable access is possible.



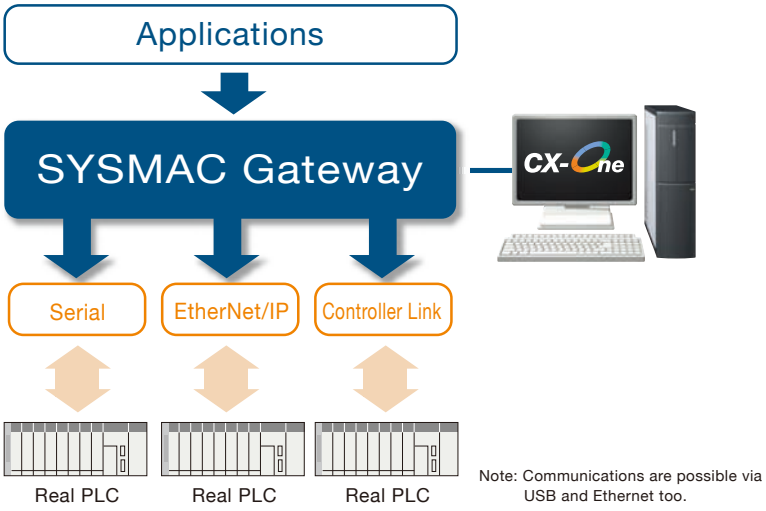
Communications Middleware to Connect a Computer and PLCs

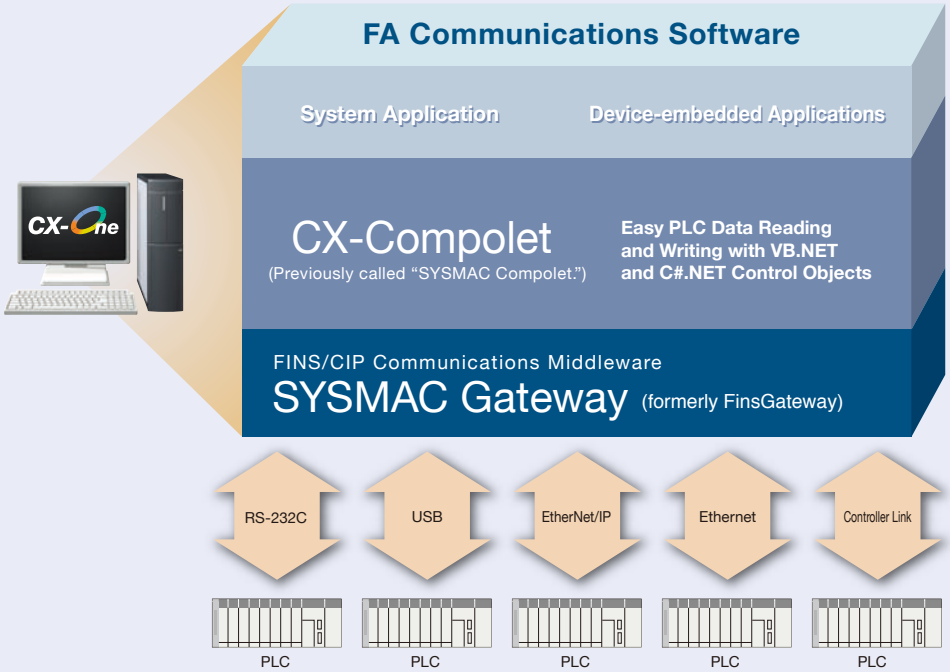
SYSMAC Gateway

Direct Connection of the Industrial Ethernet: EtherNet/IP

Direct Access to High-speed and High-capacity Networks

- In addition to FINS communications, SYSMAC Gateway supports EtherNet/IP communications.
- Absorbs differences in the physical layer between RS-232C, USB, Ethernet, EtherNet/IP, and Controller Link.
- Just install the software on the computer to enable data communications for controls and information.





Product Positioning

CX-Compolet

CX-Compolet software enables easily reading and writing PLC data using Visual Basic and C#.
It is the successor to SYSMAC Compolet.

SYSMAC Gateway

SYSMAC Gateway can be used as the communications driver on most networks. It is the successor to FinsGateway and has inherited all FinsGateway functionality.

Web Support Services for CX-One

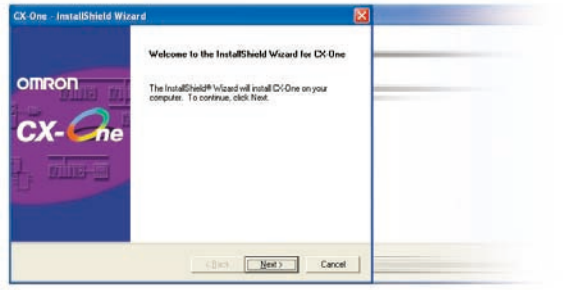
OMRON'S CX-One offers many service options in the Internet environment so that engineers and online support is available from anywhere in the world 24 hours a day.

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.

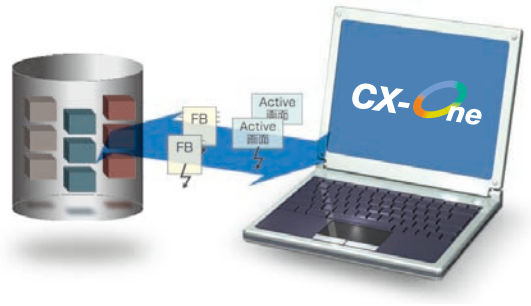
Automatic Update

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.



Ordering Information

Product name	Specifications	Number of licenses	Media	Model	Standards
FA Integrated Tool Package CX-One Ver. 4.□	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 XP (Service Pack 3 or higher, 32-bit version) / Windows Vista (32-bit/64-bit version) / Windows 7 (32-bit/64-bit version) / Windows 8 (32-bit/64-bit version) / Windows 8.1 (32-bit/64-bit version) / Windows 10 (32-bit/64-bit version)	– (Media only) *1	DVD	**CXONE-AL00D-V4**	–
		1 licenses	DVD	**CXONE-AL01D-V4**	–
		3 licenses	DVD	**CXONE-AL03D-V4**	–
		10 licenses	DVD	**CXONE-AL10D-V4**	–
		30 licenses	DVD	**CXONE-AL30D-V4**	–
		50 licenses	DVD	**CXONE-AL50D-V4**	–
		Unrestricted *2 (Site license)	DVD	Ask your OMRON representative for details.	–

*1 The CXONE-AL00D-V4 contains only the DVD installation media for users who have purchased the CX-One Version 4.□ and does not include the license number. Enter the license number of the CX-One Version 4.□ when installing.
(The license number of the CX-One Version 3.□ or lower cannot be used for installation.)
*2 This is a site license for users who want to use CX-One on many computers.
- The number of users is unrestricted for the same company and site.
- Only one license number must be managed.
- All computers that use the site license can take advantage of automatic updates and software downloads.

System Requirements

Item	Requirement
Operating system (OS) (See note1,2.)	Windows XP (Service Pack 3 or higher, 32-bit version) / Windows Vista (32-bit/64-bit version) / Windows 7 (32-bit/64-bit version) / Windows 8 (32-bit/64-bit version) / Windows 8.1 (32-bit/64-bit version) / Windows 10 (32-bit/64-bit version)
CPU	Processor recommended by Microsoft.
Memory (See note3.)	Memory recommended by Microsoft.
Hard disk	Approx. 4.0 GB or more of available memory is required to install all of the CX-One.
Display	XGA (1024×768), High Color (16-bit) or higher
Disk drive	DVD-ROM drive
Communications ports	RS-232C port, USB port, or Ethernet port (See note4.)
Other	To register online as a user using the Internet, hardware for a connection (such as a modem) and access to the Internet are required.

Note1. CX-One Operating System Precaution :
System requirements and hard disk space may vary with the system environment.

2. Restrictions apply to operation of some applications when CX-One is used with Microsoft Windows Vista / Windows 7 / Windows 8 / Windows 8.1. / Windows 10 (32-bit/64-bit version)
Restrictions apply to operation of some applications. Refer to the Setup Manual for details.

3. 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.

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

Support Software in CX-One Version 4.□

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

Support Software in CX-One	Outline
CX-Programmer	Application software to create and debug programs for 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 and Position Control Units with EtherCAT interface.
CX-Integrator	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	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	Application software to create protocols (communications sequences) between CS/CJ/CP/NSJ-series or C200HX/HG/HE Serial Communications Boards/Units and general-purpose external devices.
CX-Simulator	Application software to simulate CS/CJ/CP/NSJ-series CPU Unit operation on the computer to debug PLC programs without a CPU Unit.
CX-Position	Application software to create and monitor data for CS/CJ-series Position Control Units.(except for High-speed type)
CX-Motion-NCF	Application software to create and monitor data for CS/CJ-series Position Control Units with MECHATOLINK-II (NC□71).
CX-Motion-MCH	Application software to create data and motion programs and to monitor data for CS/CJ-series Motion Control Units with MECHATOLINK-II (MCH71).
CX-Motion	Application software to create data for CS/CJ-series, C200HX/HG/HE, and CVM1/CV-series Motion Control Units, and to create and monitor motion control programs.
CX-Drive	Application software to set and control data for Inverters and Servos.
CX-Process Tool	Application software to create and debug function block programs for CS/CJ-series Loop Controllers (Loop Control Units/Boards, Process Control CPU Units, and Loop Control CPU Units).
Faceplate Auto-Builder for NS	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	Application software to create screen data for NS-series PTs.
NV-Designer	Application software to create screen data for NV-series small PTs.
CX-Configurator FDT	Application software for setting various units by installing its DTM module.
CX-Thermo	Application software to set and control parameters in components such as Temperature Control Units.
CX-FLnet	Application software for system setting and monitoring of CS/CJ-series FI-net Units.
Network Configurator	Application software to set up and monitor tag data links for CJ2 (Built-in EtherNet/IP) CPU Units and EtherNet/IP Units.
CX-Server	Middleware necessary for CX-One applications to communicate with OMRON components, such as PLCs, Display Devices, and Temperature Control Units.
Communications Middleware	Middleware necessary to communicate with CP1L CPU Units with built-in Ethernet port.
PLC Tools	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.

Ordering Information

Related Products

FA Communications Software

Pruduct name	Specifications	Model	Standards
CX-Compolet ⋆1	Software components that can make it easy to create programs for communications between a computer and controllers. This packaged product bundles SYSMAC Gateway. Development environment: Visual Studio 2005/2008/2010/2012/2013/2015 Development languages: Visual Basic, C#	**WS02-CPLC1**	–
SYSMAC Gateway ⋆2	Communications middleware for personal computers running Windows. Supports CIP communications and tag data links (EtherNet/IP) in addition to FinsGateway functions.	**WS02-SGWC1**	–

Note: One license is required per computer. Refer to the CJ2 CPU Unit Catalog (Cat. No. V302) for details.

⋆1. You can also purchase the CX-Compolet without the SYSMAC Gateway. Order WS02-CPLC2.

⋆2. SYSMAC Gateway includes Fins Gateway. A software development kit called the SYSMAC Gateway SDK is also available to write communications programs for the SYSMAC Gateway.

Correspondence between supported OS & Connected Networks

Yes : Supported, No : Not Supported

			Ethernet		RS-232C	USB	Controller Link		SYSMAC LINK
			Ethernet (FINS)	EtherNet/IP			PCI	ISA	
Supported OS	Client	Windows Vista (32bit)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		Windows 7 (32bit)	Yes	Yes	Yes	Yes	Yes	No	No
		Windows 7 (64bit)					No		
		Windows 8 (32bit/64bit)	Yes	Yes	Yes	Yes	No	No	No
		Windows 8.1 (32bit/64bit)							
		Windows 10 (32bit/64bit)	Yes	Yes	Yes	Yes	No	No	No
	Server	Windows Server 2003 (32bit)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		Windows Server 2008 (32bit)	Yes	Yes	Yes	Yes	Yes	No	No
		Windows Server 2008/R2 (64bit)					No		
		Windows Server 2012/R2 (64bit)	Yes	Yes	Yes	Yes	No	No	No

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.

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 *	CX-Designer
CX-Integrator	NV-Designer
Switch Box Utility	CX-Thermo
CX-Simulator	Network Configurator
CX-Drive	CX-Server

* 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.□	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 XP (Service Pack 3 or higher, 32-bit version) / Windows Vista (32-bit/64-bit version) / Windows 7 (32-bit/64-bit version) / Windows 8 (32-bit/64-bit version) / Windows 8.1 (32-bit/64-bit version) / Windows 10 (32-bit/64-bit version)	1 license	DVD	CXONE-LT01D-V4	—

Note: The CX-One is also available on CD (CXONE-LT01D-V4).

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