Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

OMRON

Programmable Terminals

NS Series

NS, the HMI brand you can rely on

» Proven Reliability

» Best Match

» Machine Management

realizing

Machine Control at Your Fingertips. On-screen Machine Management.

Expanding markets in emerging countries, short product cycles, and diversifying customer needs are just some of the factors that create drastic changes for the production industry.

To win in severe global market competition, you have to continue to grasp industry changes quickly, understand user needs accurately, and provide diverse forms of added value.

OMRON will help you handle ever-changing customer needs with the three keywords of the NS Series.

Let Your Machines Evolve

Best Match
OMRON has provided even greater compatibility with OMRON PLCs and components to provide an advanced design process that lets you achieve appealing machines.
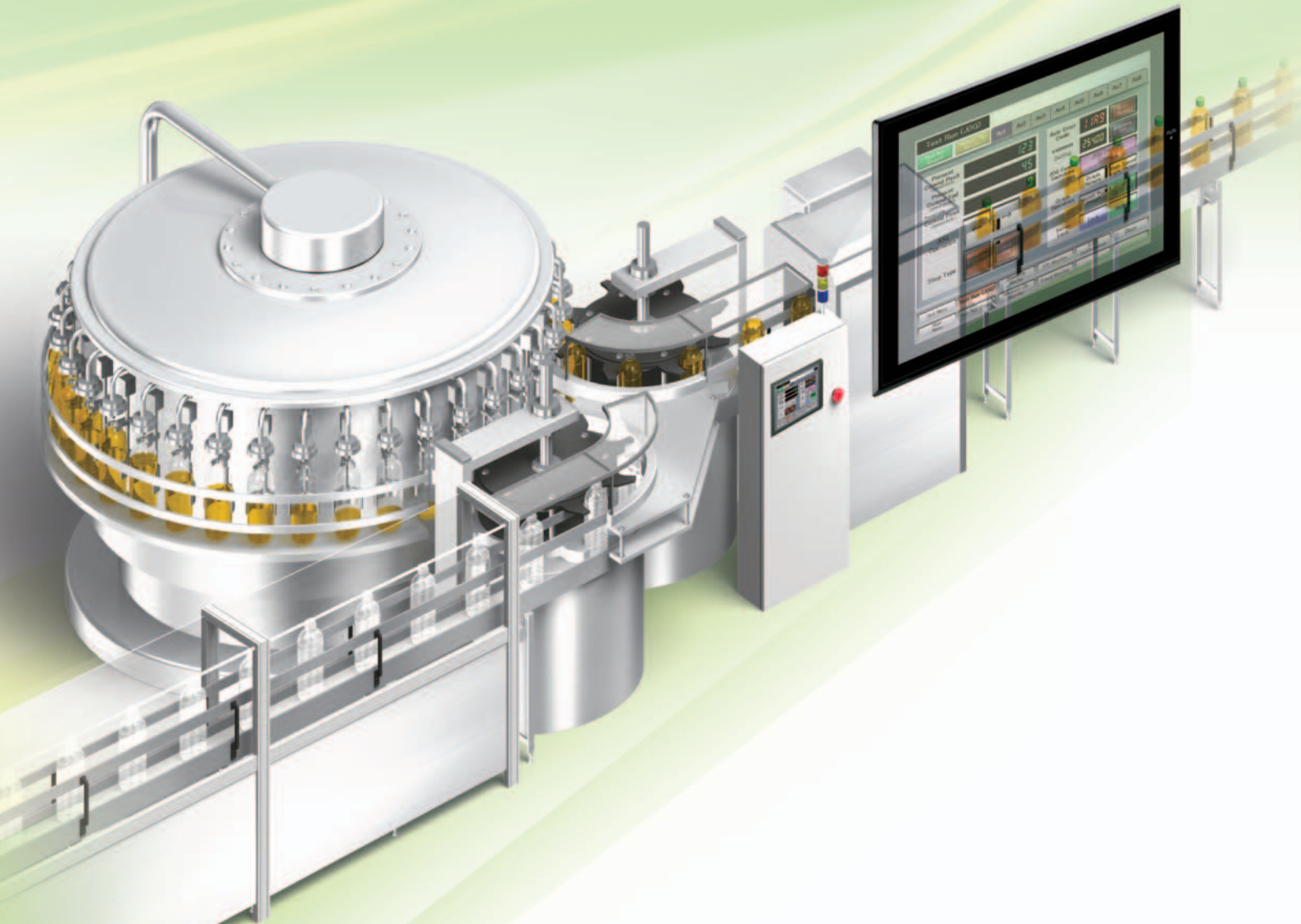
Machine Management
The NS Series transforms machine HMIs from simple operation panels and turns them into machine management tools.

Proven Reliability
The NS-series PTs have a proven track record that will take your machines to a higher level of reliability.

NS Series

The Best Match Possible

The amount of work and cost of connecting to OMRON PLCs and components have been greatly reduced. The results is an incredible range of features that is possible only when unifying to one manufacturer. Connecting to the NJ-series Machine Automation Controller allows the machine designer to quickly achieve the features required by the user through support for improved troubleshooting and structured programming with structures and other new data types.

Machine Management Tool

The machine designer can easily implement PLC troubleshooting, machine troubleshooting, settings for servo drives, temperature controllers, and other control components, status monitoring of connected devices, and uploading/downloading of parameters.

Proven Reliability

In the ten years since initial marketing, OMRON has globally supplied numerous HMI solutions with the highly reliable NS Series at over 200 sales and service centers around the world.

NS Series Lineup

This powerful lineup showcases OMRON's unique value.

Choose from 3 types to match your application and requirements.

NS Series

Standard Models

Plentiful screen variations and diverse functions allow use in a wide variety of applications.

15 inches | Color TFT

NS15-TX
- 32,768 colors
- XGA 1024 x 768 pixels
- Screen memory size: 60 MB

USB Slave	Controller Link
Ethernet	Video (RGB input only)
USB Master	RGB output
RS-232C x 2	Ladder Monitor
RS-422A/485	Memory Card

12.1 inches | Color TFT

NS12-TS
- 32,768 colors
- SVGA 800 x 600 pixels
- Screen memory size: 60 MB

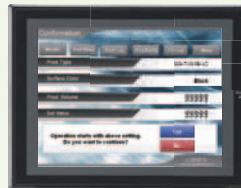| USB Slave | Controller Link |
Ethernet	Video
USB Master	Ladder Monitor
RS-232C x 2	Memory Card

10.4 inches | Color TFT

NS10-TV
- 32,768 colors
- VGA 640 x 480 pixels
- Screen memory size: 60 MB

USB Slave	Controller Link
Ethernet	Video
USB Master	Ladder Monitor
RS-232C x 2	Memory Card

8.4 inches | Color TFT

NS8-TV
- 32,768 colors
- VGA 640 x 480 pixels
- Screen memory size: 60 MB

USB Slave	Video
Ethernet	Ladder Monitor
USB Master	Memory Card
RS-232C x 2	

5.7 inches | Color High-luminance TFT

NS5-TQ
- 32,768 colors
- QVGA 320 x 240 pixels
- Screen memory size: 60 MB

| USB Slave |
| Ethernet |
| RS-232C x 2 |
| Memory Card |

5.7 inches | Color TFT

NS5-SQ
- 32,768 colors
- QVGA 320 x 240 pixels
- Screen memory size: 60 MB

| USB Slave |
| Ethernet |
| RS-232C x 2 |
| Memory Card |

NSH Series

Hand-held Models

A hand-held version of the NS5 is now available to perform operations at the production site.

5.7 inches | Color TFT

NSH5-SQR
- 32,768 colors
- QVGA 320 x 240 pixels

| USB Slave |
| RS-232C/422A |
| Memory Card |

- Equipped with a red switch for an emergency stop input.
- Emergency stop (3 inputs)

5.7 inches | Color TFT

NSH5-SQG
- 32,768 colors
- QVGA 320 x 240 pixels

| USB Slave |
| RS-232C/422A |
| Memory Card |

- Equipped with a gray switch for a stop input.
- Emergency stop (3 inputs)

Hand-held PT Cable

| RS-232C | RS-422A |

NSJ Series

Integrated Controller Models
PT is unified with the Controller into one package to greatly help standardize equipment and reduce size.

12.1 inches Color TFT
NSJ12-TS□□-G5D
- 32,768 colors
- SVGA 800 x 600 pixels
- Screen memory size: 60 MB

USB Slave	Controller Link
Ethernet	Ladder Monitor
USB Master	Memory Card
RS-232C x 3	DeviceNet

(Controller Section)
- I/O points: 1,280
- Program capacity: 60K steps
- Data Memory: 128K words

10.4 inches Color TFT
NSJ10-TV□□-G5D
- 32,768 colors
- VGA 640 x 480 pixels
- Screen memory size: 60 MB

USB Slave	Controller Link
Ethernet	Ladder Monitor
USB Master	Memory Card
RS-232C x 3	DeviceNet

(Controller Section)
- I/O points: 1,280
- Program capacity: 60K steps
- Data Memory: 128K words

8.4 inches Color TFT
NSJ8-TV□□-M3D
- 32,768 colors
- VGA 640 x 480 pixels
- Screen memory size: 60 MB

USB Slave	Controller Link
Ethernet	Ladder Monitor
USB Master	Memory Card
RS-232C x 3	DeviceNet

(Controller Section)
- I/O points: 640
- Program capacity: 20K steps
- Data Memory: 32K words

8.4 inches Color TFT
NSJ8-TV□□-G5D
- 32,768 colors
- VGA 640 x 480 pixels
- Screen memory size: 60 MB

USB Slave	Controller Link
Ethernet	Ladder Monitor
USB Master	Memory Card
RS-232C x 3	DeviceNet

(Controller Section)
- I/O points: 1,280
- Program capacity: 60K steps
- Data Memory: 128K words

5.7 inches Color TFT
NSJ5-SQ□□-M3D/-G5D
- 32,768 colors
- QVGA 320 x 240 pixels
- Screen memory size: 60 MB

USB Slave	Controller Link
Ethernet	Memory Card
RS-232C x 3	DeviceNet

(Controller Section)

M3D
- I/O points: 640
- Program capacity: 20K steps
- Data Memory: 32K words

G5D
- I/O points: 1280
- Program capacity: 60K steps
- Data Memory: 128K words

5.7 inches Color High-luminance TFT
NSJ5-TQ□□-M3D/-G5D
- 32,768 colors
- QVGA 320 x 240 pixels
- Screen memory size: 60 MB

USB Slave	Controller Link
Ethernet	Memory Card
RS-232C x 3	DeviceNet

(Controller Section)

M3D
- I/O points: 640
- Program capacity: 20K steps
- Data Memory: 32K words

G5D
- I/O points: 1280
- Program capacity: 60K steps
- Data Memory: 128K words

Software

CX-Designer
Without screen creation and ladder programming, the CX-Designer Screen Design Software is so easy-to-use that anyone can master it.

NS-Runtime
This software enables PLC communications from a personal computer by manipulating PT screens created using the CX-Designer.

A Revolutionary Best Ma

The NS-series PTs provide revolutionary compatibility with the road-proven CS/CJ-series
the new NJ-series Controllers to achieve even greater added value in user machines.

**The NJ-series Machine
Automation Controllers
Revolutionize Productivity**

You can create a flexible, high-speed,
high-precision system based on the NJ-series
Machine Automation Controllers.
Use tags to access any memory areas, or
troubleshoot machines and systems by using
the NS-series PTs to make the most of the
strengths of the NJ-series Controllers and to
manage machines.

EtherNet/IP

EtherCAT

The CS/CJ-series PLCs for the Reliability of a Proven Track Record

Features are provided to easily connect to CS/CJ-series PLCs to take advantage of their proven track record.
Many features that do not require screen creation or programming support everything from design through maintenance to take advantage of the compatibility of OMRON PLCs and PT and to serve as the face of your machines.
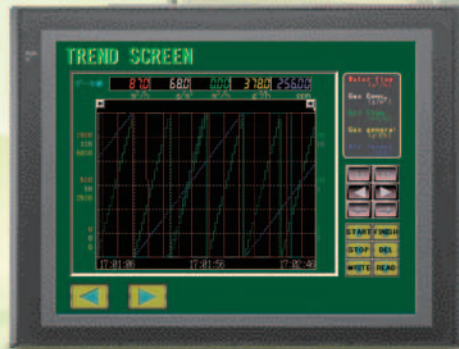
Power Support for All User

From conceptual designs through commissioning, operation, and maintenance, the NS

Design

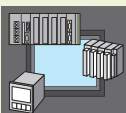**Reduced work**

For Machine Automation Controllers NJ-series P10

- NJ Troubleshooter
- Integrated NS-series PT simulation

Troubleshooter P11

- PLC Troubleshooter
- Machine Troubleshooter

Best Match with OMRON Products P12-P16

- Smart Active Prarts (SAP)
- With EtherNet/IP
- Direct Connection to Temperature Controllers
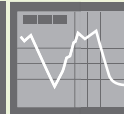- Face Plate Auto-Builder for NS

Multi-language Support P17

Multifunction Objects P18

Plentiful Graphing Functions P19

Screen Data Security Functions P20

Device Data Transfer P20

CI0004 ▲▼ DM0300

NS Screen Templates P21

CX-Designer Screen Design Software P22-P25

Needs

Series supports every user need.

Startup/Operation

Attractive, convenient features for easier operation

260,000-color Video Display	*P*26
Analog RGB Output	*P*26
FTP Function	*P*27
User Security Functions	*P*27
LED backlight	*P*27

Maintenance

Features for reliability and complete maintenance
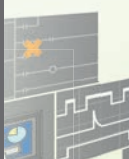
Comparison	*P*28
Single Port Multi Access	*P*28
PLC Data Trace	*P*29
Operating log	*P*29
Ladder Monitor	*P*30-*P*31
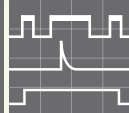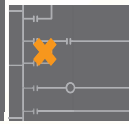
Design

For Machine Automation Controllers NJ-series

Use Integrated NS-series PT simulation or NJ troubleshoot by using the NS-series PTs to make the most of the strengths of the NJ-series Controllers and to manage machines.

NJ Troubleshooter

Controller Errors

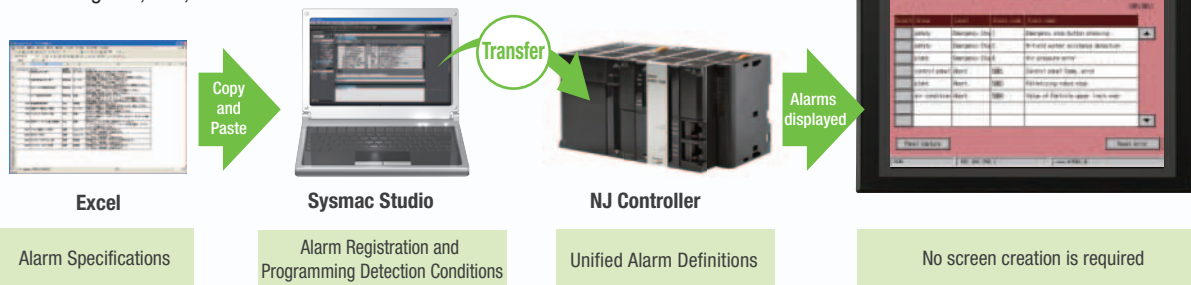### Standard Feature for NJ-series Controllers

Errors are automatically detected and displayed on-screen along with corrective actions for the CPU Unit function modules, EtherCAT slaves, and CJ-series Units that are connected in the NJ-series Controller. Whenever an error might occur, you can recover normal operation quickly to reduce downtime without using user manuals or Support Software on a computer.

NJ Controller

User-defined Errors

No Work Is Required to Create Alarm Screens.

Frames for alarm screens are provided as standard features in the NS-series PTs. You do not need to create screens to complete alarm screens.
Management of the meanings of alarms is unified on the Controller, so you do not have to register, add, or correct addresses on the NS-series PTs.
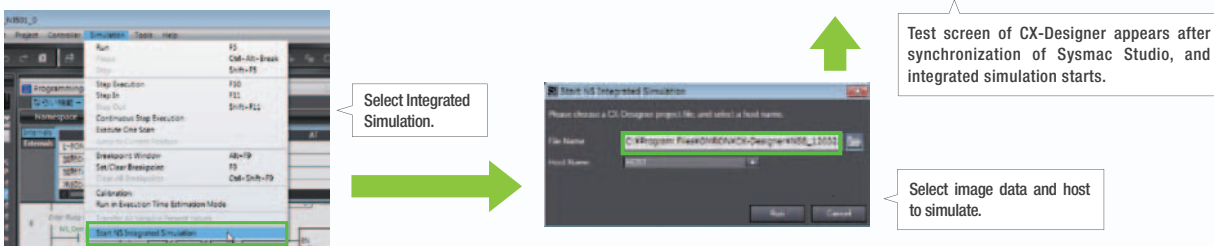
Excel	**Sysmac Studio**	**NJ Controller**	
Copy and Paste →	Transfer →	Alarms displayed →	
Alarm Specifications	Alarm Registration and Programming Detection Conditions	Unified Alarm Definitions	No screen creation is required

Integrated NS-series PT simulation

Improved debugging efficiency

"Integrated simulation" of Sysmac Studio enables offline debugging of the screen data for the NS-series PTs and sequence program for the NJ-series on the computer.

* Sysmac Studio version 1.02 or higher (CX-Designer version 3.41 or higher) is required.

Select Integrated Simulation.

Test screen of CX-Designer appears after synchronization of Sysmac Studio, and integrated simulation starts.

Select image data and host to simulate.

Troubleshooter

A Troubleshooter is provided for the connected OMRON Controller or PLC. This greatly reduces work requirements.

CS/CJ-series PLC Troubleshooter

Constantly monitors PLC errors.

Automatically detects PLC errors and displays the error details and recovery procedure on the screen. Even if a problem occurs, it can be resolved quickly without referring to the manuals.

CS/CJ/CP-series PLC

Note: A special template is required when using this function. The screen template is supplied with CX-Designer of version 2.1 or later. This function is a standard feature in the NSJ-series PTs.

Machine Troubleshooter

Easier Design of Machine Error Screens

Individual error screens that were previously made for each error can now be integrated into one. It is possible to switch only the error details (text and screen) without ladder programming in conjunction with the alarm bit.

With this system, this frame is shared, and the error details in the pink frames are switched with an alarm or other item as the trigger.

Text selection   Image selection

Specific Example

in conjunction with an alarm bit (See note.)

Alarm bit 10.01 ON
(no paper)

Alarm bit 10.02 ON
(printing error)

Note: Alarms, PLC/PT memory, and other items can be selected for the switching trigger.

11

Best Match with OMRON Products

NS Series is the most suitable HMI for the system that comprises OMRON components. The advantage is the "compatibility (reducing programming and screen data creation work)" which will reduce the amount of designing work.

NS

No Screen Designing / No Programming
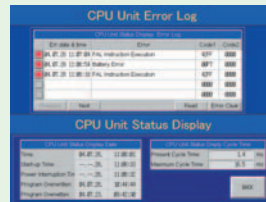
PLC CPU Unit monitoring screen

Device monitor

PLC Data Trace

Temperature Controllers

PLC

CPU Bus Units and Special I/O Units
- SAP Library
- Troubleshooting

Remote I/O Terminal

Inverter

Vision Sensor
- 260,000-color video input

Temperature Controllers

Servomotor Servo Driver

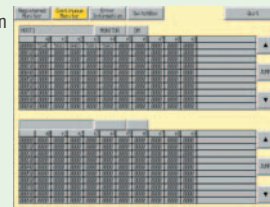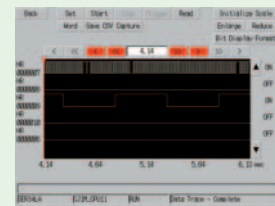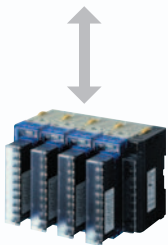Startup/Operation

Maintenance

NS-Runtime

Hand-held PT

Features

Network

System Configuration

Ordering Information

Specifications

Smart Active Parts (SAP Library)

Dramatically reduces the effort required to create ladder programming and screens.

More than 3,000 Library parts (Smart Active Parts) are available, which can directly access OMRON PLCs and components. The objects can just be pasted from the Smart Active Parts (SAP Library) Library to the screen; it is completely unnecessary to create screens and ladder programming.
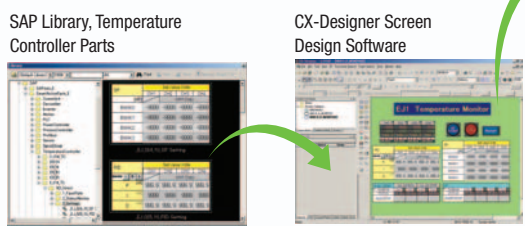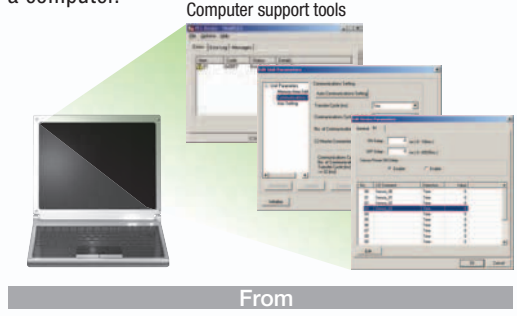
The Temperature Controller's setting and monitor screens are completed in no time.

SAP Library, Temperature Controller Parts

CX-Designer Screen Design Software

ACCESS

ACCESS
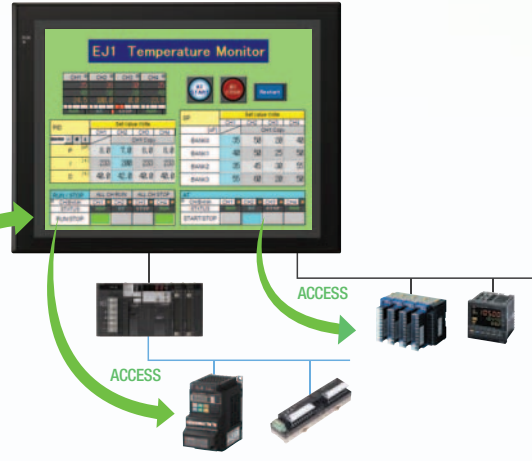
Support tool objects can be incorporated to check for errors and make settings, even without a computer.

Plenty of support tool objects (the Tool Function SAP Library) are available, which can be easily incorporate support tool functions in the NS-series PT. Just paste the support tool objects in the screen to check for errors and make settings, even without a computer.

Example screens using support tool objects (Tool Function SAP Library)

PLC CPU Unit monitoring screen

Computer support tools

NCF Unit setting screen

DeviceNet monitoring screen

From

To

CPU Bus Unit and Special I/O Unit Troubleshooting Can Be Also Performed with the SAP Library.

A Troubleshooter SAP Library is available to troubleshoot each Unit in the PLC. When an error occurs in a Unit, the Troubleshooter SAP Library provides an easy-to-understand explanation of the cause of the error as well as the countermeasures.

Note: The Troubleshooter SAP Library is included as a standard feature for the CX-One and CX-Designer. For details, refer to page 56. Successive development for Ethernet Units and MC Units is planned for the future.

Troubleshooter SAP for a Position Control Unit

Troubleshooter SAP for Basic I/O Unit

13
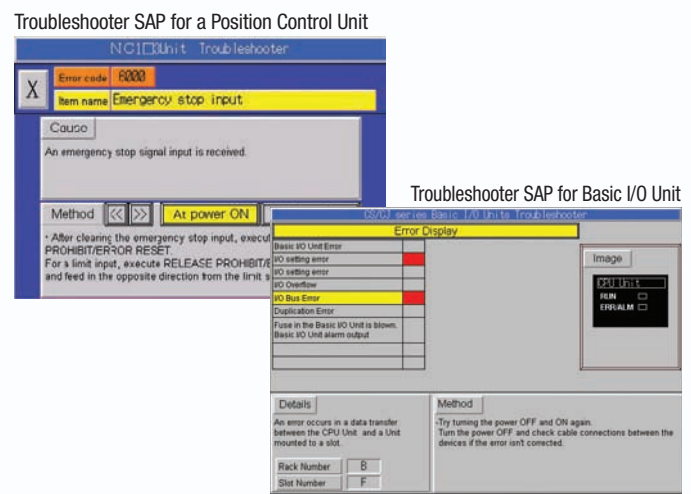
Design

EtherNet/IP

Support for data structures

This special feature is made possible by combining an OMRON CJ2 PLC with an NS-series PT. The data structures that you define on the Programming Tool can be used on the CX-Designer simply by dragging and dropping them.

Note: An EtherNet/IP connection is required.
For CJ2 Series, CX-Designer version 3.2 or later, and NS system version 8.4 or later are required.
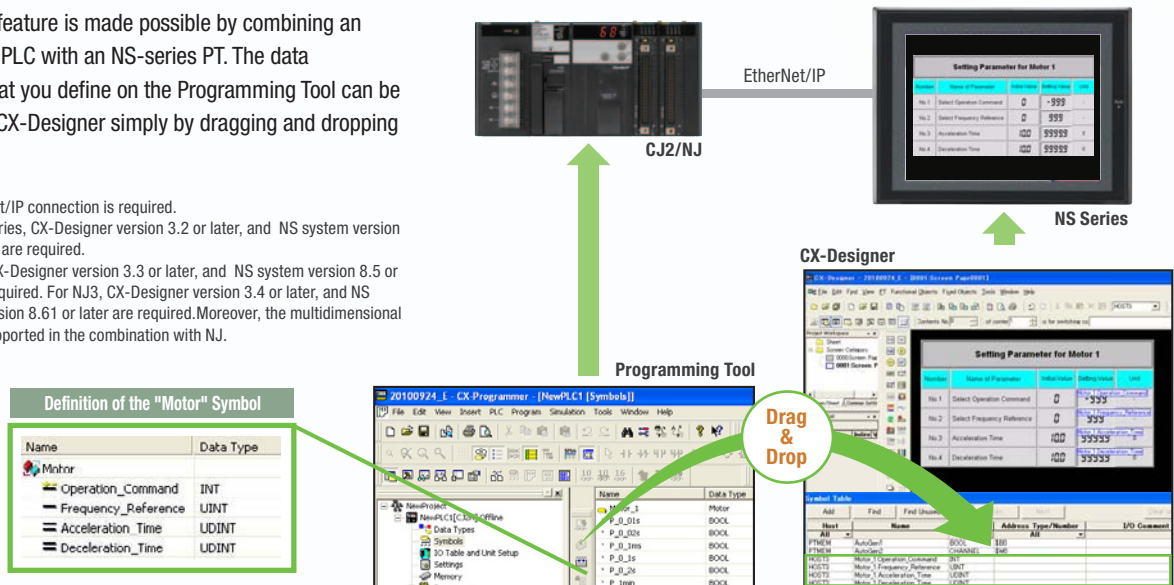For NJ5, CX-Designer version 3.3 or later, and NS system version 8.5 or later are required. For NJ3, CX-Designer version 3.4 or later, and NS system version 8.61 or later are required. Moreover, the multidimensional array is supported in the combination with NJ.

EtherNet/IP

CJ2/NJ

NS Series

CX-Designer

Programming Tool

Drag & Drop

Definition of the "Motor" Symbol

Name	Data Type
Motor	
Operation_Command	INT
Frequency_Reference	UINT
Acceleration_Time	UDINT
Deceleration_Time	UDINT

Tag access

A tag is a name given to an address. Tags are managed in the CJ2 CPU Unit, where they are defined as network symbols. The common user-defined tag names are used from Programmable Terminals and host applications to access memory in a CJ2 CPU Unit without knowing the physical address.
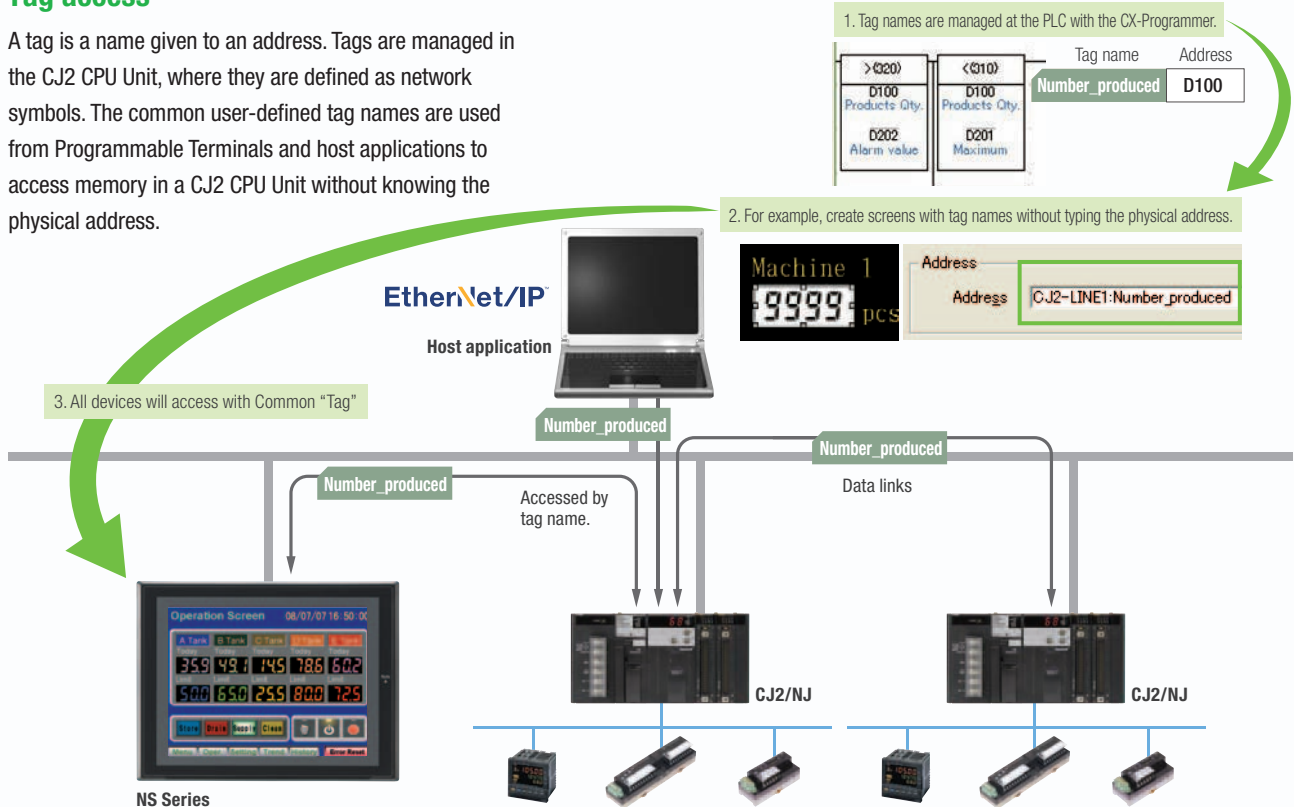
1. Tag names are managed at the PLC with the CX-Programmer.

Tag name	Address
Number_produced	D100

2. For example, create screens with tag names without typing the physical address.

Machine 1
9999 pcs

Address: CJ2-LINE1:Number_produced

EtherNet/IP

Host application

3. All devices will access with Common "Tag"

Number_produced

Number_produced

Number_produced

Number_produced

Accessed by tag name.

Data links

NS Series

CJ2/NJ

CJ2/NJ

Startup/Operation

Maintenance

NS-Runtime

Hand-held PT

Features

Network

System Configuration

Ordering Information
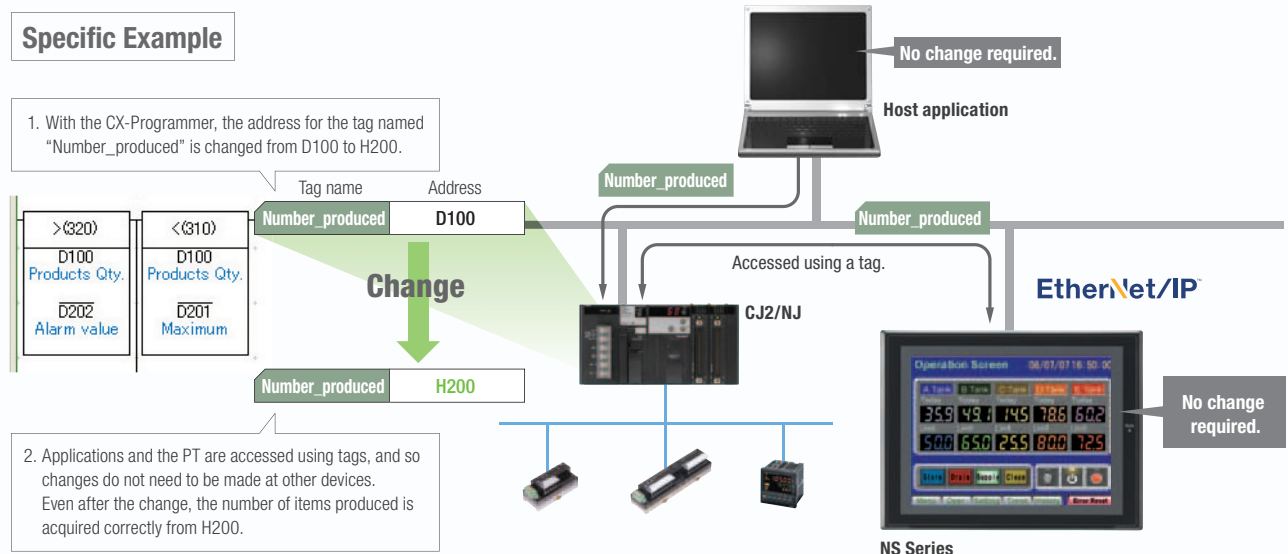
Specifications

Simultaneous and parallel engineering

The host applications can be designed using the tag names of the PLC and PT. Parallel development will shorten the design time.

FROM

Case 1
Previously, the PLC program was first created, and then the ladder program was referenced to create the screens.

Case 2
The screen graphics are created in advance, and then addresses are allocated and checked after the ladder program is completed.

TO

By simply setting tag names, PLC and Programmable Terminal programming can be performed in parallel.

PLC — Ladder program is created. — Programmable Terminal screens are created.

Programmable Terminal

PLC — Ladder program is created. — The addresses are set.

Programmable Terminal screens are created (graphics only). — Addresses are allocated and the allocations are checked

Programmable Terminal — **Programmable Terminal**

Specifications

Tag name	Address
Number_produced	Undetermined
Number_of_times	Undetermined
⋮	⋮

CJ2/NJ

Addresses are determined while creating the ladder program.

Ladder program is created.

Design time is shortened.

EtherNet/IP

The screens are created.

The screens are created with no need to pay attention to addresses.

NS Series

Minimize side effect of address changes

It is possible to access memory with tags, so the PT and host application are not affected even if the address of data in the PLC is changed.

Specific Example

1. With the CX-Programmer, the address for the tag named "Number_produced" is changed from D100 to H200.

No change required.

Host application

Tag name   Address

| Number_produced | D100 |

Number_produced

Number_produced

Accessed using a tag.

Change

CJ2/NJ

EtherNet/IP

| Number_produced | H200 |

2. Applications and the PT are accessed using tags, and so changes do not need to be made at other devices. Even after the change, the number of items produced is acquired correctly from H200.

No change required.

NS Series

Design

Direct Connection to Temperature Controllers

Connect OMRON Temperature Controllers directly to the NS-series PT.

OMRON Temperature Controllers can be connected directly to the NS-series PT's RS-232C port. Data does not pass through the PLC, so ladder programming is not required. Also, there are plenty of objects in the SAP Library for Temperature Controllers, and Temperature Controller screens can be created easily just by pasting objects from the SAP Library to the screens.

Note: An RS-422A Serial Adapter is needed to connect directly to a Temperature Controller. Refer to page 53 for a list of the Temperature Controllers that can be connected. A Conversion Unit is not required to connect to the RS-422A/485 serial interface of the NS15.

OMRON Temperature Controllers

OMRON Temperature Controllers

CJ1W-CIF11 RS-422A Serial Adapter

EJ1 Temperature Monitor
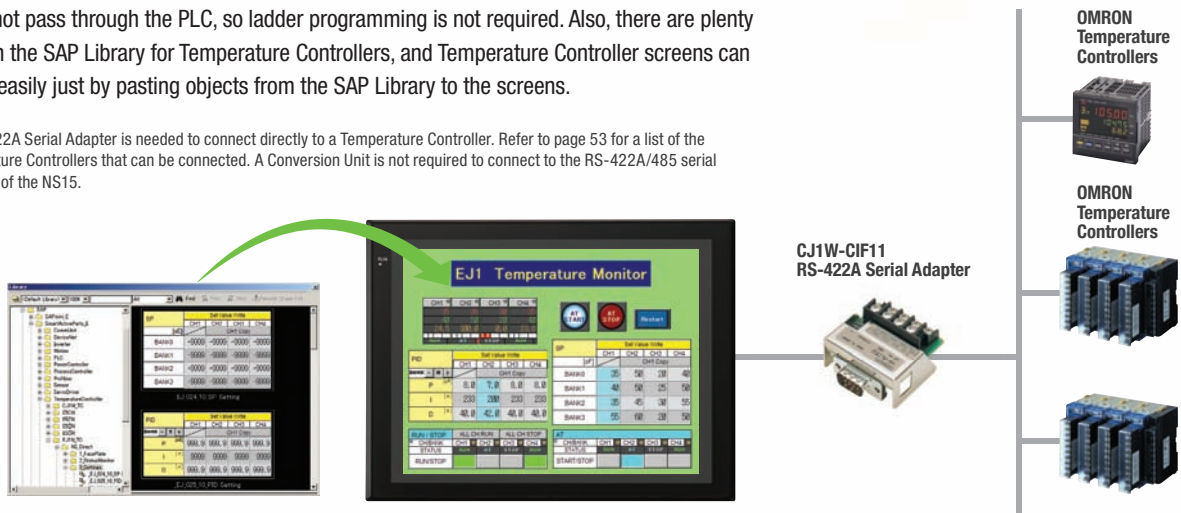
Face Plate Auto-Builder for NS

Screens for Loop Controllers can be easily and automatically created.

Significantly reduces the effort required to combine a Loop Controller with an NS-series PT.

Easy automatic generation of faceplates, such as faceplates for PV monitoring and SV setting, as well as tuning screens, such as screens to set and autotune PID constants.

A total of 17 function blocks are supported, with eleven function blocks, such as Ratio Setting and Motor Manipulators newly supported (version 3 of higher).

Comments are automatically entered for automatically assigned unit and scale settings when a project is generated (version 3 and higher).

CX-Process Tool
(Loop Controller Programming Software)
● Loop Controller program creation (function block method)
● CSV tag file output

CSV tag file for Loop Controller

NS project file

Face Plate Auto-Builder for NS
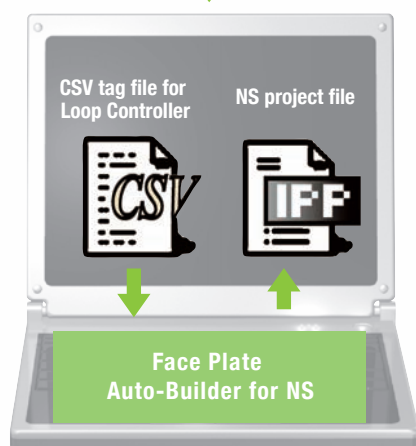
NS Series

Created screens are easily transferred to the NS by using a Memory Card or over the network.

CX-Designer
(NS screen creation software)
● Editing created data
● Creation of other required screens

SYSMAC CS/CJ-series Loop Controller

Note: Refer to the PLC-based Process Control Catalog (Cat. No. P051) and the Loop-control CPU Unit Catalog (Cat. No. R128) for details on Loop Controllers.

Startup/Operation

Maintenance

NS-Runtime

Hand-held PT

Features

Network

System Configuration

Ordering Information

Specifications

Multi-language Support

Support 42 languages and switch the language of the labels among up to 16 languages.

Unicode is supported and 42 Asian and European languages can be combined in screens. Also, it is possible to switch between up to 16 labels using the label switching function, so it is possible to support up to 16 languages in a single screen just by specifying the language to be displayed in each label.

NS Series

Support for 42 International Languages

Thai Displays Also Supported

ราชอาณาจักรไทย

Multi-language CSV data

Import

The labels' text attributes can also be reflected when importing.

When screen data is imported, text attributes can be applied to the specified labels and attributes such as the font and text color can be reflected to other languages labels.
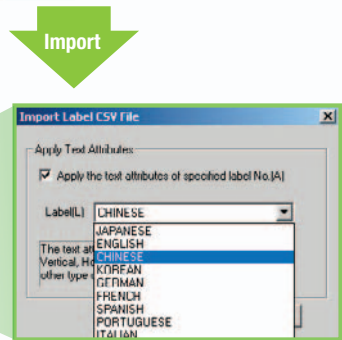
## Multi-language conversion has become much easier.

The screen data in the source language is exported to a CSV file and sent to a translation agency by e-mail for translation. Later, the translated CSV file is just imported to easily provide multi-language support.

Language A screen data

NS project

Language A Excel data

CSV

CSV Attachment

Dual-language screen data

NS project

Language A and B Excel data

CSV or Unicode text

CSV Attachment

Dual-language input in Excel by translation companies and local companies
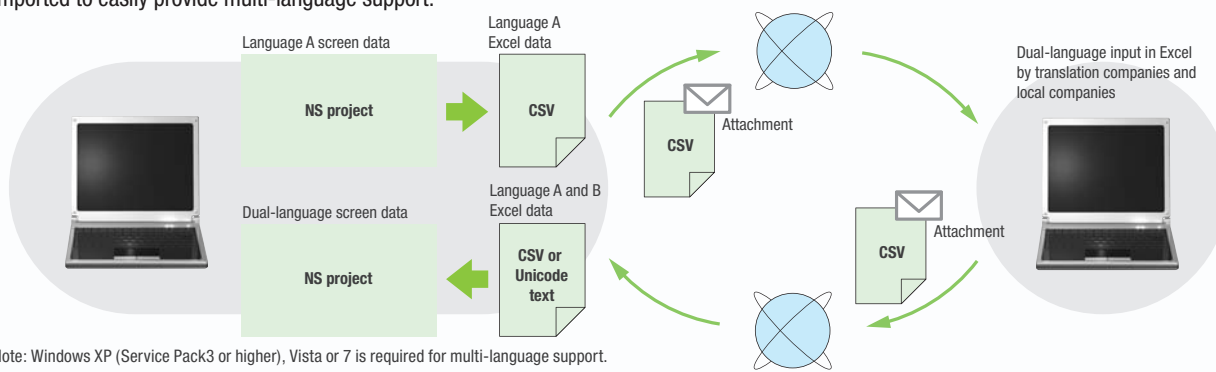
Note: Windows XP (Service Pack3 or higher), Vista or 7 is required for multi-language support.

Multi-language System Messages. Eight Languages Supported as Standard Feature

The system program of NS-series PTs supports Chinese and European languages. All eight languages are a standard feature, including Chinese (traditional and simplified), Spanish, Italian, German, and French, in addition to the previous Japanese and English. Along with maintenance menus, messages for communications errors, communications settings, and screen transfers can be displayed in any of eight languages. Maintenance can be performed in the desired language. The language can be easily set using the NS-series PT or screen data.
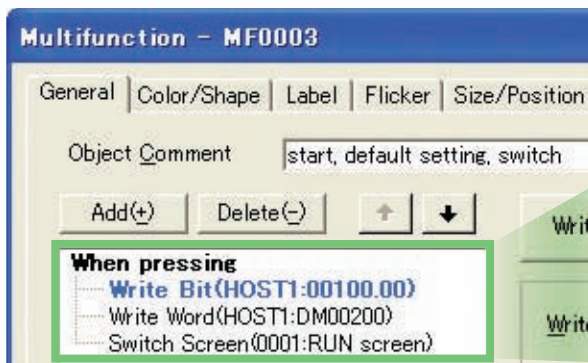
English system menu (maintenance menu)

Chinese

French

Italian

Multi-language messages for communications errors
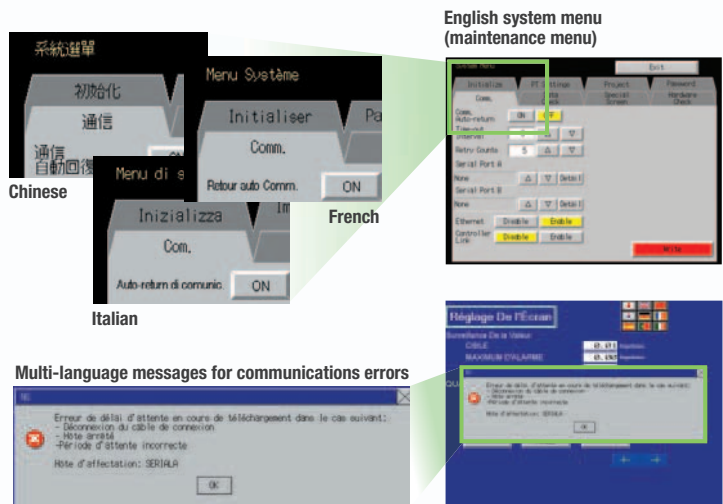
Design

Multiple functions

Execute up to 32 functions with one Multifunction Object
Multifunction Objects support Write Bit, Write Word, object control, and etc

Multifunction Objects combine the functions of multiple objects into one object. Multiple functions can be executed by pressing one button without using troublesome macros. Setup is easy. For example, a setting can be made on-screen using the Support Software to turn ON a bit to start a machine, set a value, and then change the screen.

Multifunction execution with one object

Integration

Execute multiple functions with one button.

Touch

Example:
The bit turns ON.

The word is set.

The screen changes.

Easy On-screen Setup with Support Software!

Multifunction – MF0003

General | Color/Shape | Label | Flicker | Size/Position

Object Comment   start, default setting, switch

Add(+)   Delete(–)   ↑   ↓

When pressing
— Write Bit(HOST1:00100.00)
— Write Word(HOST1:DM00200)
— Switch Screen(0001:RUN screen)

Write

Write
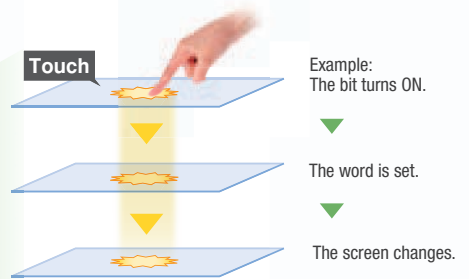
Multifunction Objects support four useful functions
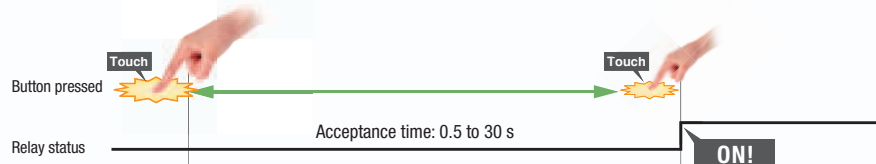
Switches that do not immediately operate when touched can be easily made without ladder programming.

Time the button is pressed.

Time the button is not pressed.
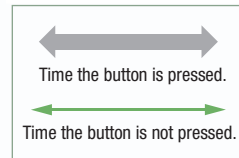
ON delay   Turns ON when the button is pressed for at least a specified time.

Touch

Button pressed

Relay status

Delay: 0.5 to 15 s

ON!
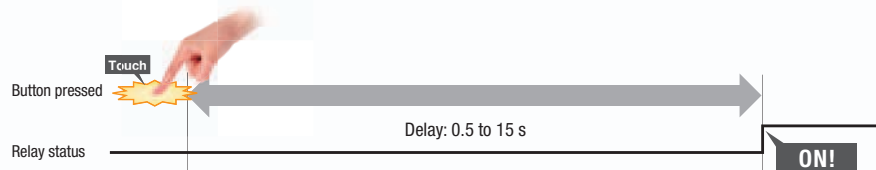
Double-press   Turns ON when the button is pressed twice within the specified time.

Touch   Touch

Button pressed

Relay status

Acceptance time: 0.5 to 30 s

ON!

Simultaneous pressing prohibited   Does not turn ON when the button is pressed at the same time as another button.

OFF delay   Turns OFF after a specified time lapses after the button is released.

Touch

Button pressed

Relay status

Delay: 0.5 to 15 s

OFF!

Design

Startup/Operation

Maintenance

NS-Runtime

Hand-held PT

Features

Network

System Configuration

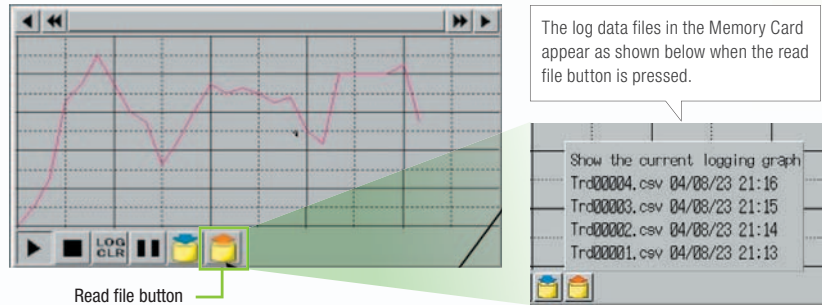Ordering Information

Specifications
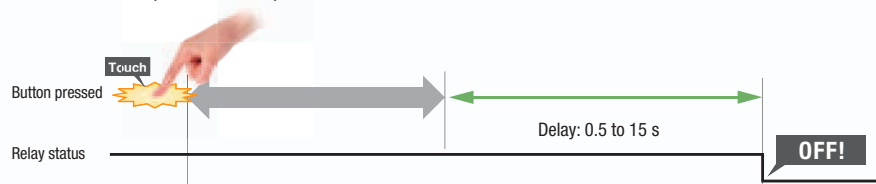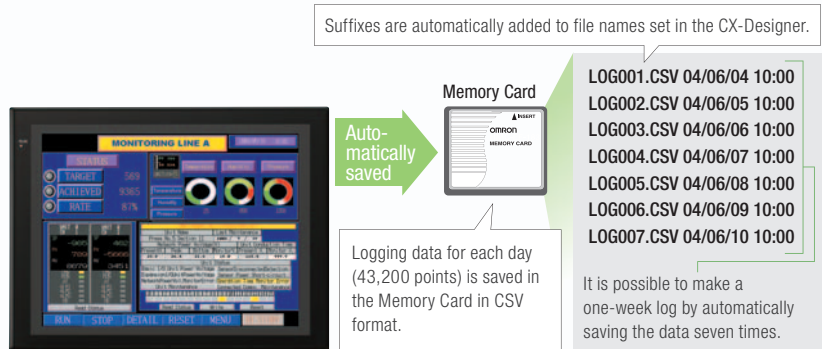
Plentiful Graphing Functions

Data Log Graph (Trend Graph)

Up to 128 data can be collected in the cycle of 500ms. Logging data is stored as a CSV file in the Memory Card inserted in the NS-series PT.

Logging data is stored as a CSV file in the Memory Card mounted in the NS-series PT. The data stored in the Memory Card can be read or deleted from the screen.

The log data files in the Memory Card appear as shown below when the read file button is pressed.

Read file button

Show the current logging graph
Trd00004.csv 04/08/23 21:16
Trd00003.csv 04/08/23 21:15
Trd00002.csv 04/08/23 21:14
Trd00001.csv 04/08/23 21:13

A log can be saved automatically, without any programming, just by selecting the Save the data periodically Option in the Data Log Setting Window.

Suffixes are automatically added to file names set in the CX-Designer.

Memory Card

Automatically saved

Logging data for each day (43,200 points) is saved in the Memory Card in CSV format.

LOG001.CSV 04/06/04 10:00
LOG002.CSV 04/06/05 10:00
LOG003.CSV 04/06/06 10:00
LOG004.CSV 04/06/07 10:00
LOG005.CSV 04/06/08 10:00
LOG006.CSV 04/06/09 10:00
LOG007.CSV 04/06/10 10:00

It is possible to make a one-week log by automatically saving the data seven times.

Line Graph Function

The data logged by the PLC can be displayed in overlapping graphs, so a device's operation can be compared for evaluation and analysis. In addition, up to 1,000 words of consecutive data can be displayed as a line graph, data can be displayed together, and any region can be magnified.
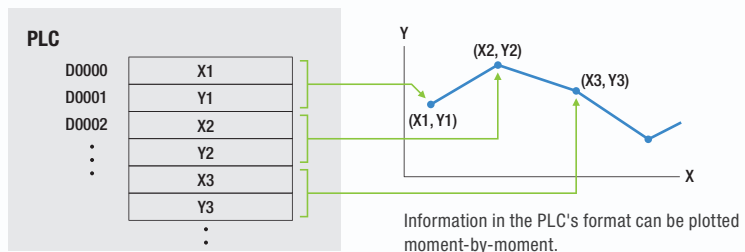
(1) Graphs can be superimposed.
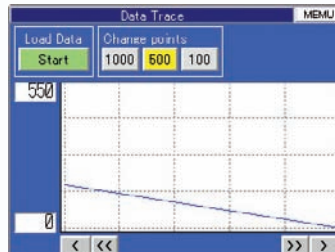
(2) The display can be magnified.

Continuous Line Function

Any position from the host (PLC) can be plotted as a graph. A graph can be plotted in any position by specifying the X and Y coordinates of the vertices. Also, the graph can be moved on the screen by specifying the movements from the PLC.

PLC

D0000	X1
D0001	Y1
D0002	X2
	Y2
	X3
	Y3

(X1, Y1) (X2, Y2) (X3, Y3)

Information in the PLC's format can be plotted moment-by-moment.
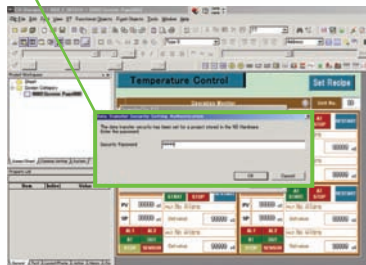
Design

Screen Data Security Functions

Protect important screen data with a password.

If password protection is set in the data transfer security settings when the screen data is designed, a password must be entered to download or upload the screen data, so important screen data can be protected.

Security password

A password between 4 and 64 characters long can be set. The download/upload will start if the user inputs the password that was set when the screen was designed. (Password input will be disabled if the wrong password is input 3 times in a row.)

Download
Upload

Download
Upload

If a password has been set, the password is required to transfer screen data (download or upload) with the Memory Card.

Device Data Transfer

Easy Data Exchange between the PLC and Components

For example, temperature controller alarm values can be transferred to the DM Area of the PLC's CPU Unit. No communications programming or macros are required.

Multi-vendor Support

Devices from multiple vendors are supported. Data can be easily exchanged with PLCs from other companies and Modbus devices.

Easy Settings

To make the settings, simply specify the device and addresses of the transfer source and transfer destination in the CX-Designer. Settings can be made using the same procedure as for setting the addresses for normal components.

Easier Operation when Combining SAP Library Objects

SAP data can also be exchanged. SAP data can be exchanged by checking the address of the SAP data in the dialog box of the SAP object pasted in the CX-Designer and specifying that address as the transfer source address.
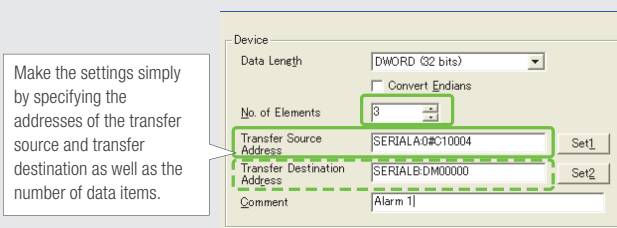
Note 1: EtherNet/IP tags are not supported.
Note 2: CX-Designer version 3.1 or higher is required.
       NS system version 8.2 or higher is required.

Multi-vendor Support

C10004	80
C10005	100
C10006	30

DM0300	80
DM0302	100
DM0304	30

NS   Temperature controller   Modbus device   PLC   PLC from other company

Easy Settings

C10004	80	Alarm value 1
C10005	100	Alarm upper limit value 1
C10006	30	Alarm lower limit value 1

DM0300	80
DM0302	100
DM0304	30

NS   Temperature controller   PLC

CX-Designer Select Device Data Transfer Setting from the PT Menu.

Make the settings simply by specifying the addresses of the transfer source and transfer destination as well as the number of data items.

Device
Data Length   DWORD (32 bits)
☐ Convert Endians
No. of Elements   3
Transfer Source Address   SERIALA:0#C10004   Set1
Transfer Destination Address   SERIALB:DM00000   Set2
Comment   Alarm 1

NS Screen Templates

The CX-Designer of version 3.5 or higher provides the palette to display objects and templates. Refer to the next page for details of the palette.
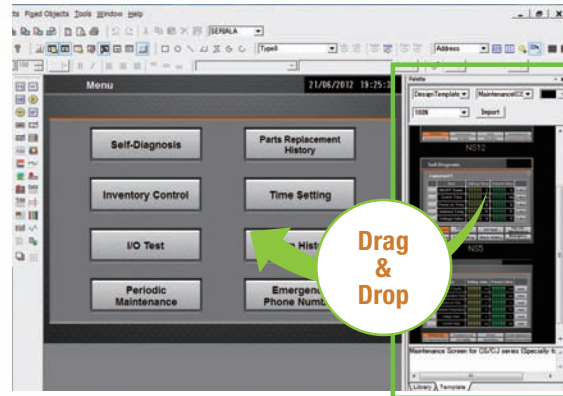
Even Simpler

Templates can be read into the screen by just dragging and dropping thumbnails displayed on the palette.

The template consisting of multiple screens allows multiple screens to be read by dragging and dropping it once.
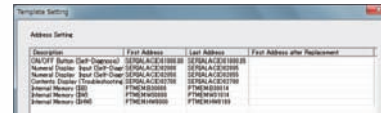
The Address Setting Dialog Box that is displayed to read templates is useful for changing addresses all at once.

Even More Beautiful

The refined templates enable you to use the NS Series with the screens that have a sense of unity in design.

Three different types of templates besides default screens are provided. The design can be changed easily with "Theme Name" that is displayed when dragging and dropping.
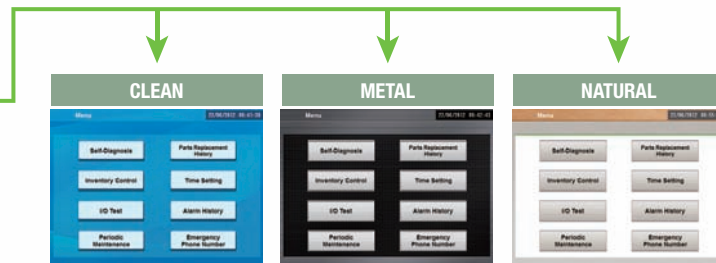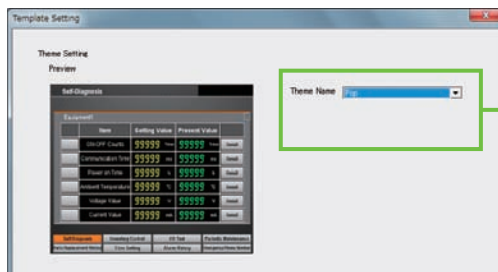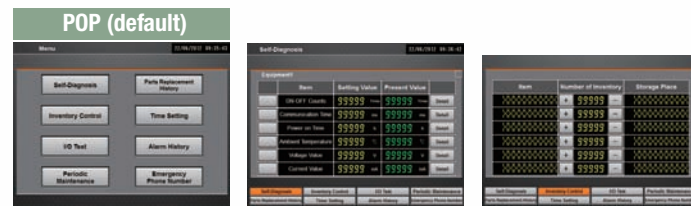
"Cool" Objects

Backgrounds, buttons, labels, message boxes, and other objects are also provided for various themes.

Easy Reading from Palette

Drag & Drop

Palette

Address Setting Dialog Box

POP (default)

CLEAN **METAL** **NATURAL**

Aluminum

Metal

Game

Lighting

Dot Metalplate

Water
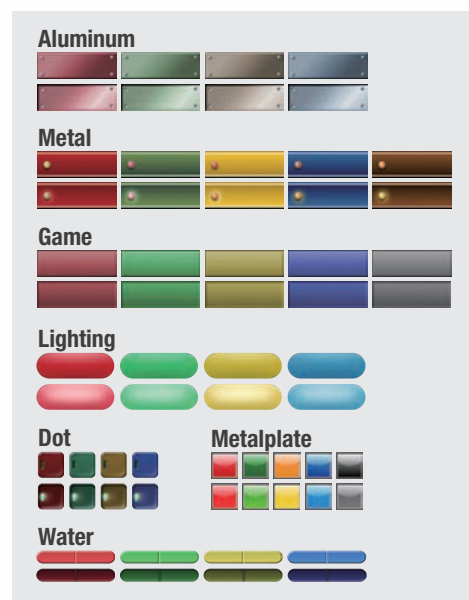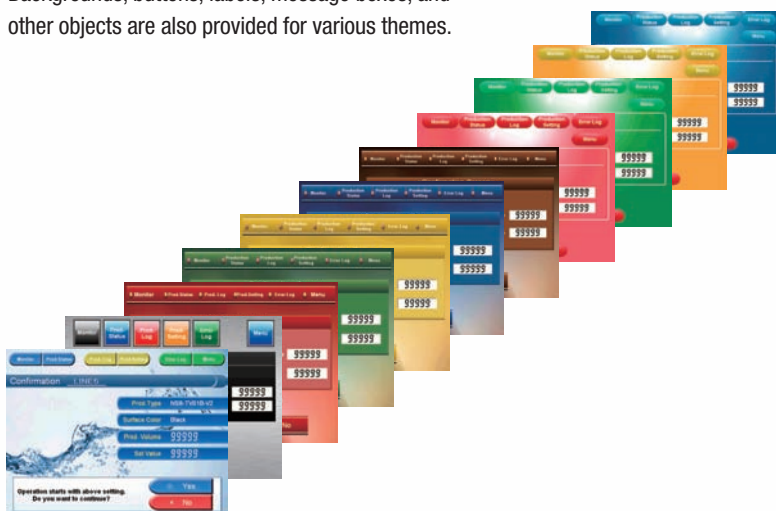
Design

Screen Designer for NS Series, CX-Designer

User-friendly Screen Creation

Without screen creation and ladder programming, the CX-Designer Screen Design Software is so easy-to-use that anyone can master it. Quickly create the required screen by dragging and dropping objects. OMRON's unified development environment lets you drastically reduce the work required to create screens.

Note: The same type of Project Workspace and Output Window as in the CX-Programmer are provided for the user interface.

All addresses and comments can be managed using a single Symbol Table.

Shows a list of addresses, names, and comments used in project screen data. Addresses, names, and I/O comments for the CX-Programmer can also be imported.

Improved Icons and Help

Objects and templates can be selected easily from the palette.

Easy-to-use, well-designed, and super-beautiful objects and templates can be read into the screen by dragging and dropping. Templates can be chosen from four different designs.

The project Workspace enables the user to look through the entire project.

- Screens you want to edit can be opened right away.
- Perform screen management, such as copying or deleting screens, by simply right-clicking.
- Reusing screens from other projects is easy with the CX-Designer.
- Settings for alarms, data logs, communications, and other functions can be easily accessed.

Drastically reduce the number of clicks in the project.

Just click on the object once to display or change properties. Multiple objects can be selected to display and change shared properties all at once.
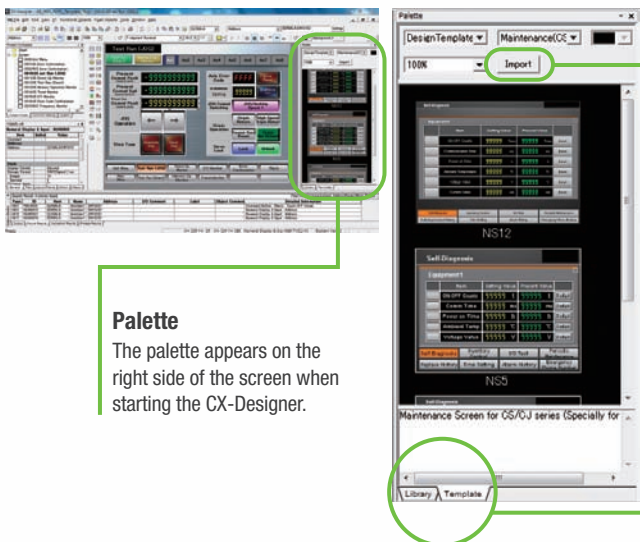
The Output Window shows search results.

In addition to addresses and I/O comments used in screen data, labels can also be used as search strings and the results can be displayed.

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Palette

Switches, lamps, and templates are registered in the palette.
Just drag and drop them on the new or existing screen to add.

Note. CX-Designer version 3.5 or higher is required.

Import
The Import button allows new objects and templates to be added to the palette.

Library and Template tabs at the bottom left of the palette

Library
Parts list of switches and lamps is displayed.

Template
Templates are displayed in thumbnailed form.

Palette
The palette appears on the right side of the screen when starting the CX-Designer.

Library

Switches and lamps are registered in the library. Select a switch, lamp, or other object from the pull-down menu. You can register switches you created or other objects you often use in "User-defined".
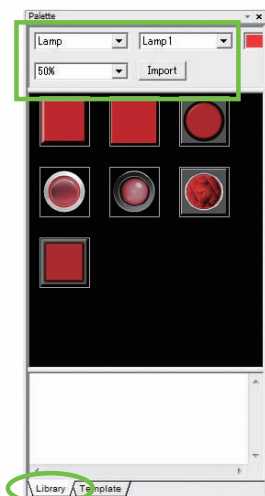
Color Setting
Display colors of objects registered in the library can be changed easily by selecting colors from pull-down menus.

Change display color to blue.
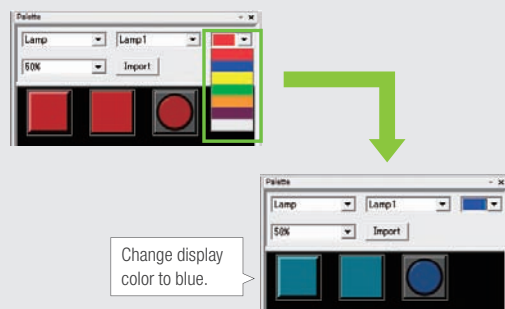
Template

Templates include design templates and device templates.

• Design Template
Design templates are the screen templates designed professionally. Addresses can be changed with "Address Setting Dialog Box".

• Device Template
As well as SAP (Smart Active Parts), addresses on the screen are automatically updated by changing unit number of Temperature Controller or Special I/O Unit with "Unit No Dialog Box".

A template consists of multiple screens. Multiple screens are pasted on the screen by dragging and dropping a thumbnail on the screen.
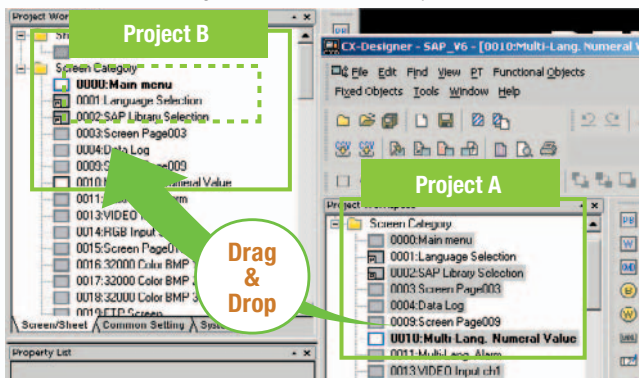
Drag & Drop

23
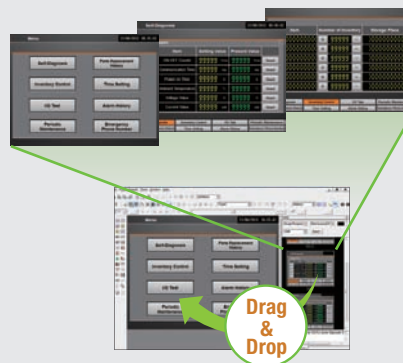
Design

Reading Another Project's Screens and Objects

Resources from another project can be easily reused by just selecting the screen or objects that you want to read and dragging and dropping it, so screens can be created intuitively.

**Example screen 1** — Select the screen that you want to read, drag it to the destination, and drop it.

Example screen 2 — Select the part that you want to read, drag it to the destination, and drop it.
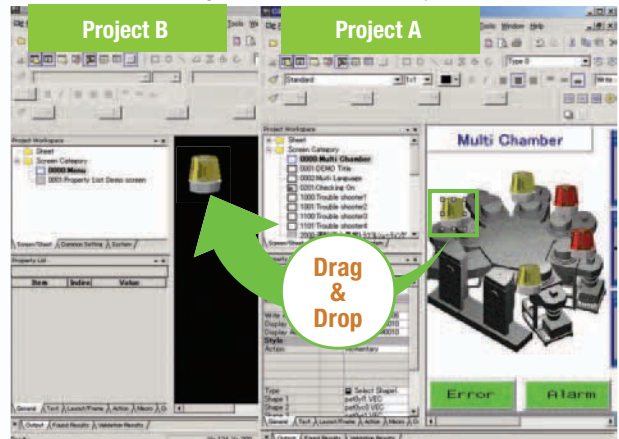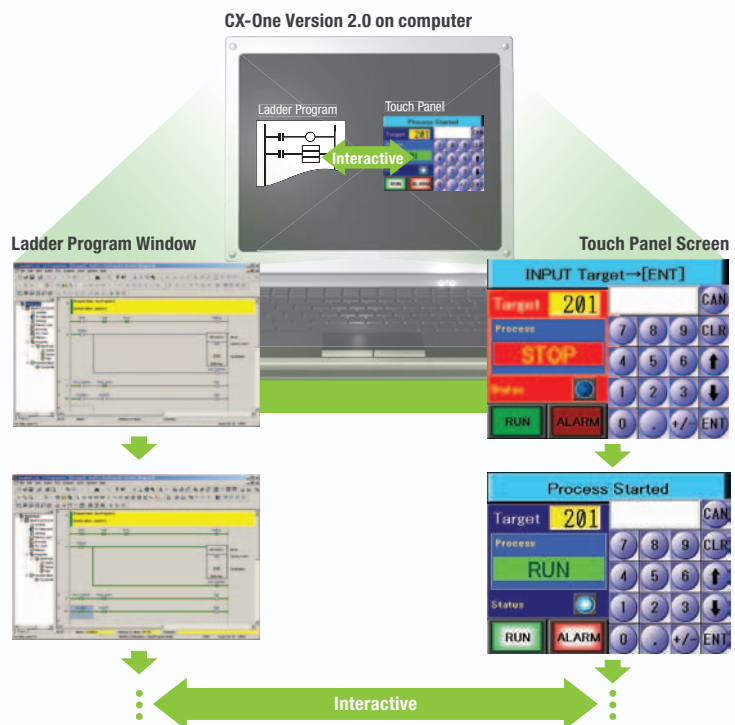

Reading CAD Files

It is possible to import DXF files by dragging and dropping them. The files are read as a diagram, and so less capacity is used than with images. It is also easy to customize the diagram by changing the shape or color.
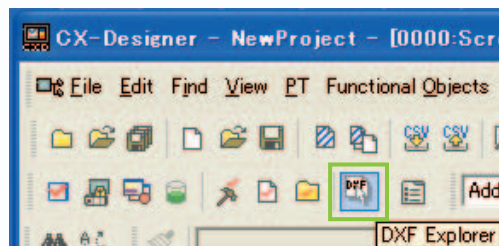
The screen data and ladder program can be checked simultaneously in the computer.

The CX-Designer and CX-Programmer interconnects the test functions in the computer through the CX-Simulator. The screens and ladder program checks are performed simultaneously, which significantly increases debugging efficiency. The CX-Programmer also has a new button for integrated simulation. And, work efficiency is further improved with the ability to keep required work screens pinned on front and to zoom in or out as desired.

CX-One Version 2.0 on computer

Design

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Specifications

Reading the Symbol Table

The symbol table created in the CX-Programmer during ladder programming can be read into the CX-Designer by dragging and dropping, so it isn't necessary to manually data such as input addresses and I/O comments. Tags (i.e., network symbols) can also be read into the CX-Designer.

Note: Version 8.0 or higher of the CX-Programmer support tags (i.e., network symbols).

CX-Programmer's symbol table

Drag & Drop

CX-Designer's symbol table

The CX-Programmer's symbol table can be dragged and dropped!
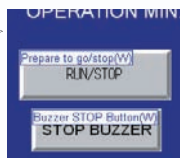
Example of Reading the Symbol Table

The symbol table read from the CX-Programmer can be directly dragged and dropped to the touch switch and lamp.

(1) Create a switch on the screen.

STOP BUZZER

(3) Allocations for buttons and lamps can also be checked on the screen using comments imported from the CX-Programmer.

Example of Easy Address Allocation

(2) Check the comment then drag-and-drop the symbol from the symbol table to the property list.

GreenLight	BOOL	00010.02	Go
STOP_BUZZER	BOOL	00010.03	Buzzer STOP Button
RedTimerDone	BOOL	TU00001	

Drag & Drop

Example of Reading I/O Comments

If Use I/O comment is selected in advance for the Use symbol text as label, the I/O comments are automatically used as labels when addresses are dragged and dropped from the symbol table. (If Use symbol names is selected, the symbol names are used as the labels.)

Drag & Drop

The I/O comment is used as the label.