OMRON

Machine Interface

NA Series

Bringing technology to life

SYSMAC
always in control

Sysmac - the family that matches every requirement

As part of the Sysmac automation platform, Omron NA HMI transforms machine data into information, shows information and controls devices based on requirements at FA manufacturing sites.
The NA Series enables faster, more efficient control and monitoring.
With a widescreen displaying 16,770,000 colors, the HMI that is dynamic, intuitive and predictive makes industrial machines more attractive and competitive.


NX I/O
NX Safety
FH Vision System
1S AC Servo System
NJ/NX/NY Controller

Integrating your world

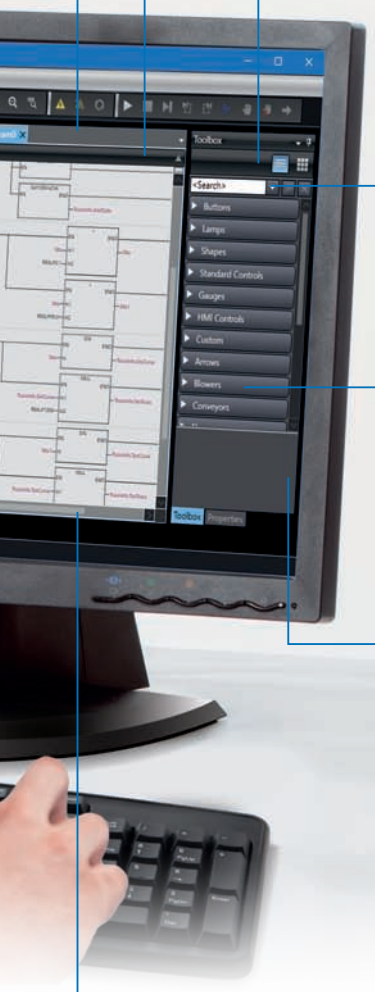
The Sysmac Studio is the centerpiece of the Sysmac platform, bringing together all areas of automation including: logic, motion, vision, safety and visualization.
The NA Series can be programmed alongside the other devices in one integrated project, which speeds up development.

ONE Tag Database

- Share NJ/NX/NY Controller Variables (Tags) in the machine interface application.
- Variables shared with controller reduce the time and complexity of programming.
- Define/use NA data structures in the machine interface application

ONE Learning, ONE Project

- Program your controller and safety systems
- Simultaneously program the NA Series as device in Sysmac Studio
- Program your whole machine in one project
- Work in a familiar way on all devices



Editors in ONE

- Display both controller and HMI editors on one screen for quick design.

Safe and secure

- Configure individual users with multi access levels

SIMPLE

- Clearly and quickly define the View
- Quickly change properties, animations, events and actions
- Powerful page editor to group objects
- Rotate, and resize - all with a simple click

BUT STILL FLEXIBLE

- Write your Visual Basic Script
- Extend the possibilities with Visual Basic

Test it in ONE

- Integrated testing through simulation of programs on controller and HMI at the same time. Checking your device operation at the same time makes debugging quicker and easier.
- Quickly test your device operations via the Simulator.

Features for speed

- Structured programming (through One software)
- Network device insight
- Vision setup
- Machine Controller troubleshooting

Keep Machine Running
- Minimize downtime

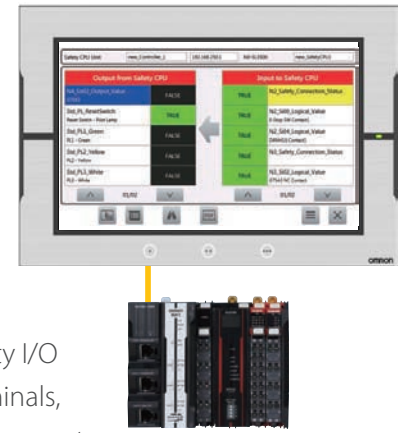
If something unexpected happens in your machine, it is crucial to identify the cause and solve the problem quickly. As part of the Sysmac automation platform, the NA Series helps minimize machine downtime.

Troubleshooter

The Troubleshooter on the NA Series allows you to directly monitor and release the NJ/NX/NY Controller errors and events as well as the user-defined errors and events. There is no need for support software running on a PC.

Safety Monitor

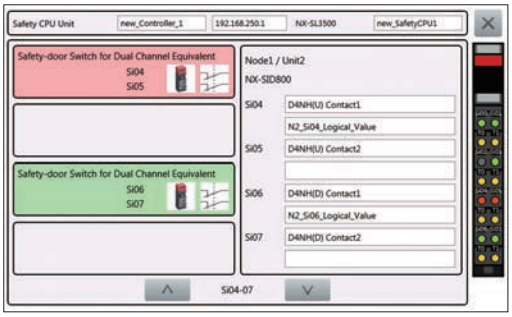
The NA Series can directly access safety CPU units and safety I/O units, which was previously impossible. There is no need to create any special screen to monitor their device variables and I/O settings.
The I/O Matrix Monitor displays device variables and external exposed variables used in safety programs, allowing you to see outputs (error state) and corresponding inputs (causal condition).



The Safety Input/Output Unit Monitor shows the ON/OFF status of safety I/O units and information on components connected to individual I/O terminals, enabling efficient monitoring of the entire system including safety components.

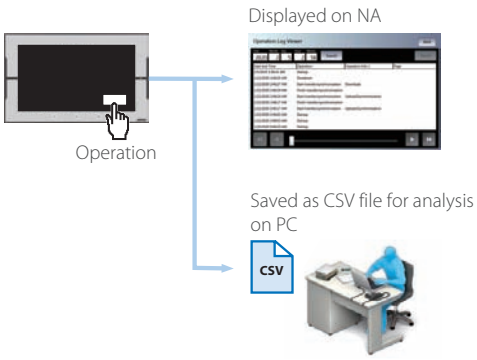
Safety CPU unit

Safety I/O unit



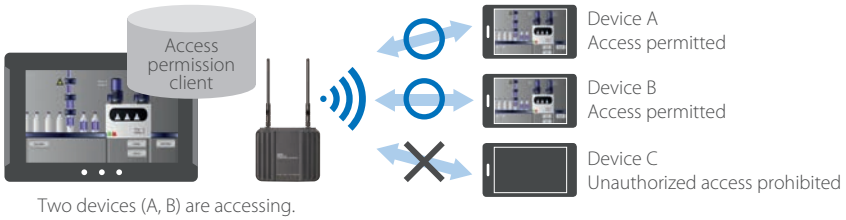
Logging and displaying operations

The system events that the NA Series detects and the operations that operators perform on the HMI can be logged.
The logs can be displayed on the NA Series, and can also be saved as CSV files to display them on your PC.
You can see who and when did what in a chronological order, helping you analyze errors.



Remote access

- You can view and operate the HMI installed at production sites from your tablet using Ethernet or WiFi.
- The access of remote devices can be managed and limited. This helps prevent accidental operation and information leakage, while securing accessibility.



Two devices (A, B) are accessing.

Increased security

The NA Series can be configured to specific staff, with multi access levels with password protection.
This ensures authorised people interact with the machine.

Protecting your assets

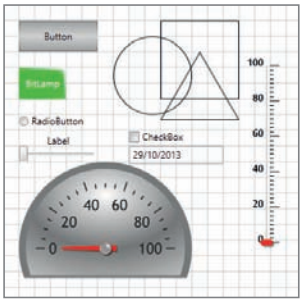
- Your project can be password-protected along with other applications (Control and Safety).
- Transferring data can be protected (disable overwrite or theft).

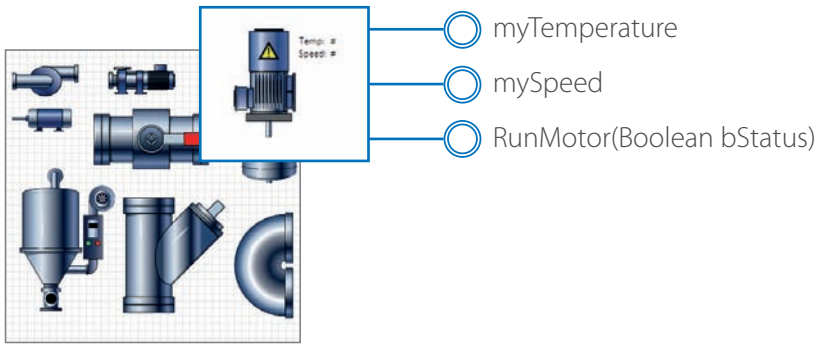
Simple, but Flexible!

The NA Series gives the user the ability to design using IAGs (Intelligent Application Gadgets). IAGs simplify and accelerate the development process through structuring the project and enhancing reuse. From simple graphics to complex objects, you can make your own collections and share them between projects, like a Function Block.

Step 1: Machine Parts, the Visual

Using standard controls, or graphics from the machine parts collection, design your own IAG. Add interface properties and methods to bring the object to life when reused.

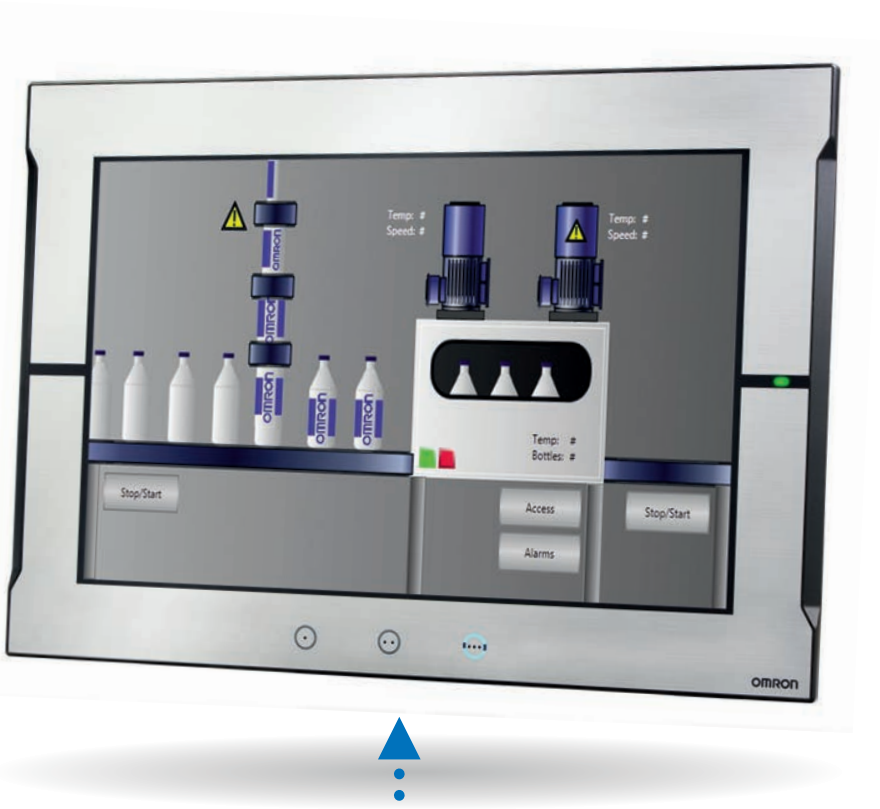





```
'IAG Code behind - Add local subroutines for the IAG.

Public Function RunMotor(bStatus As Boolean) As Double
    'start motor at default speed
    mySpeed = 50
    'return current speed
    RunMotor = 50

End Function

Public Function IncreaseSpeed(nIncrement As Integer) As Double
    ' Increase speed by increment if < 1000
    If mySpeed + nIncrement  < 1000 Then
            mySpeed = mySpeed + nIncrement
        Else
            'Otherwise set to top speed
            mySpeed = 1000
        End If
        'Return new speed
        IncreaseSpeed = mySpeed
End Function
```

Step 2: Extensible with Visual Basic

As well as many graphic IAGs, it is also possible to embed code within an IAG. The code can extend the possibilities of the gadget such as providing special device communication. Thanks to Visual Basic the standard functionality of the NA can be extended as required.



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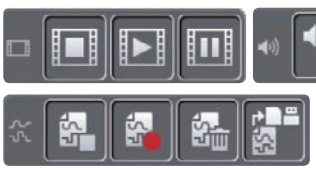
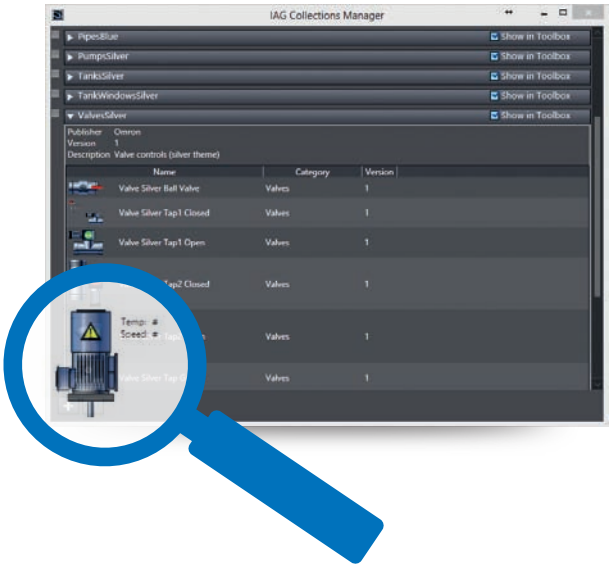
Step 3: Publish and Share

When the IAG is built and tested (using simulation) it can be published and the collection file distributed to be used again and again. Omron will release further IAG collections to extend the functionality of the NA Series.





A range of options that covers every need

NA5

Very stylish, very functional

Widescreens displaying 16,770,000 colors

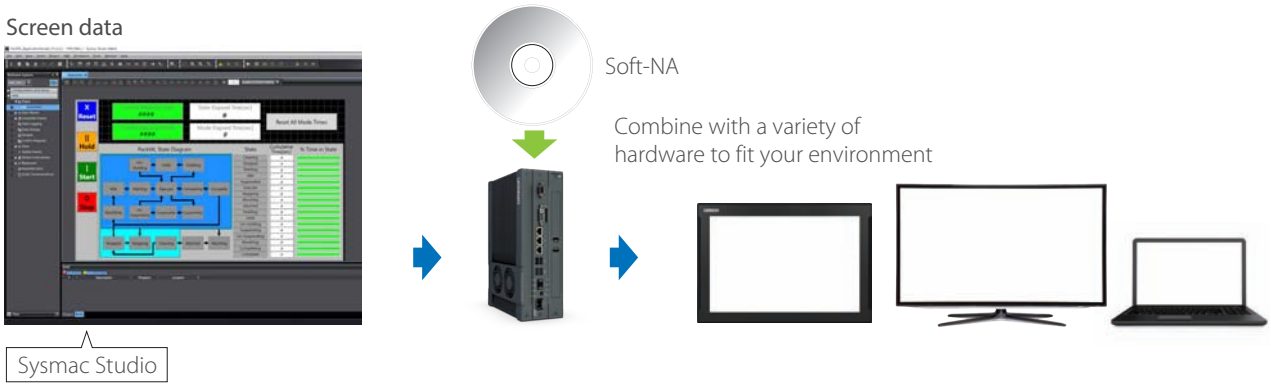
- 16,770,000 display colors (24 bit full colors)
- High-resolution display

1,280 x 800 resolution for 12-inch and 15-inch models
800 x 480 resolution for 7-inch and 9-inch models

Soft-NA

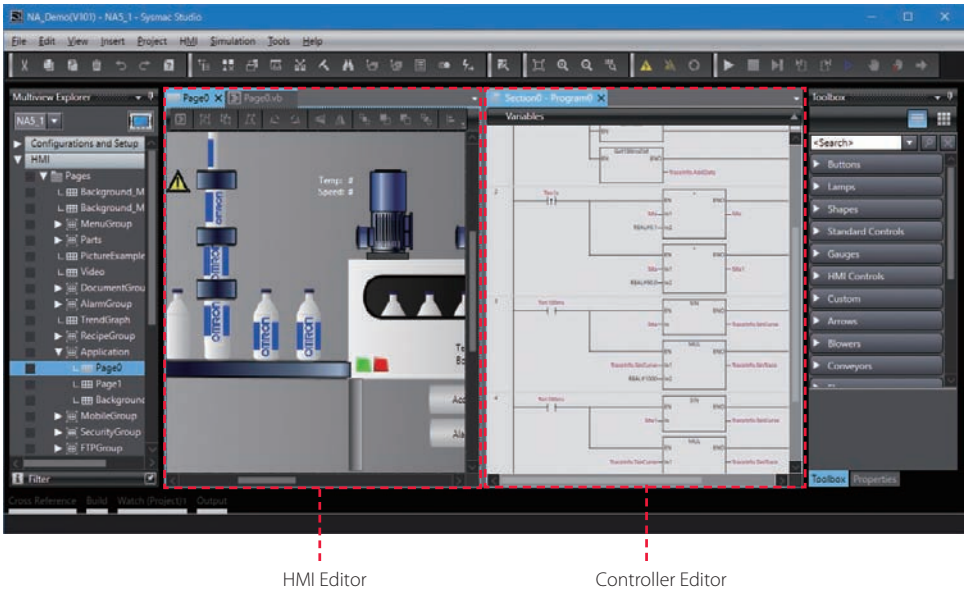
HMI functions work on Windows to flexibly suit various on-site applications

Soft-NA provides equivalent functionality to NA5. This Windows application can be used with a wide variety of hardware including a large monitor and environment-resistant monitor, quickly meeting changing users' needs. Soft-NA runs on an industrial PC or a PC, which allows you to run both your own data collection program and Soft-NA on a PC. Visualization of machine data helps reduce downtime.



One Software, Sysmac Studio, manages all program assets

The advantages of the integrated development environment, such as sharing NJ/NX Controller variables and integrated Simulator, can be used on Soft-NA. Soft-NA also provides the same NJ/NX Troubleshooter as NA5, assisting in minimizing machine downtime. In addition, if you have screen data for NA5, it can be easily converted into screen data for Soft-NA.



SHOW your machine
- Greater visualization

More than 16 million display colors (24-bit full color)

High-resolution bitmap graphics*1 and 67 different types of fonts can be used to create intuitive and good-looking screens. In addition, DXF files are supported to display CAD data. Even if the drawing is enlarged or reduced in size, it never loses quality.

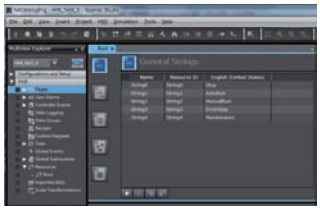
Cool Objects

Various fonts

*1.Contact your Omron representative to obtain Cool Objects.

Indirect reference of text strings

A text string that is displayed on a label object (1 line) or a text box object (1 or more lines) can be switched by indirect reference. The machine operating status and alarm details can be easily displayed.



Register a new resource group.

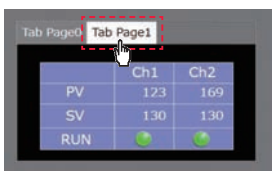
Set a variable for the ID to switch the group in the properties.

When the ID is specified by the variable, the text string is displayed according to the ID.

Tab control

A part of the screen can be used like a notepad.

Up to 64 tab pages for a Tab Control object can be created, and up to 10 Tab Control objects can be placed on a screen.
Change a tab page instead of a screen to monitor/ change various data.



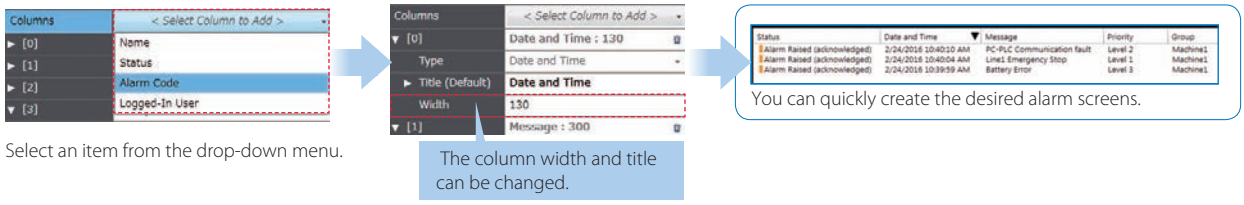
Touch

Tab Page1 is displayed.

Setting, sorting, and filtering alarms

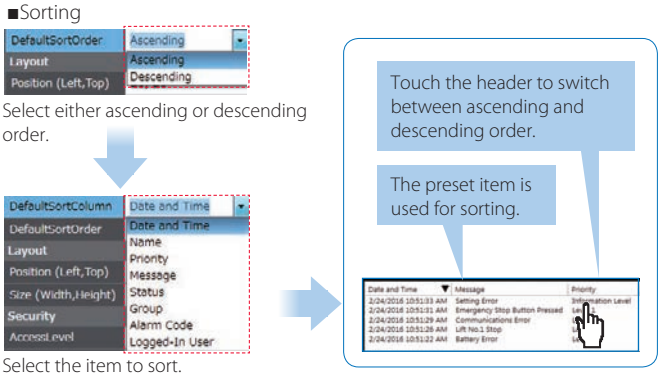
Alarms can be set easily, reducing time and effort required for creating alarm screens.

■Improved User Alarms Viewer

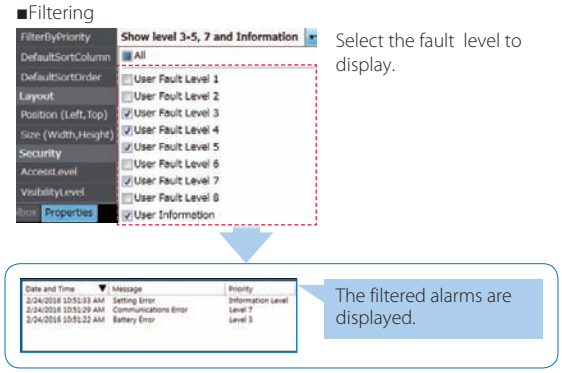


You can "sort" alarms by the preset item and "filter" by any keyword.
The error location can be quickly identified from a large number of alarms.

■Sorting

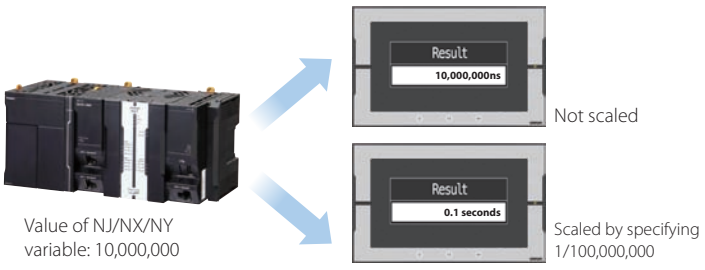


■Filtering



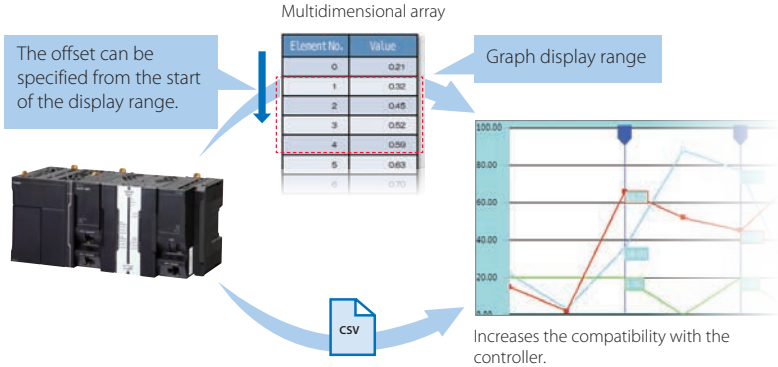
Scaling

Scaling can be set for Data Display/Data Edit objects and global variables.
Values of variables can be converted by specifying conversion expressions, which makes it easy to show data in the controller.



Broken-line graphs

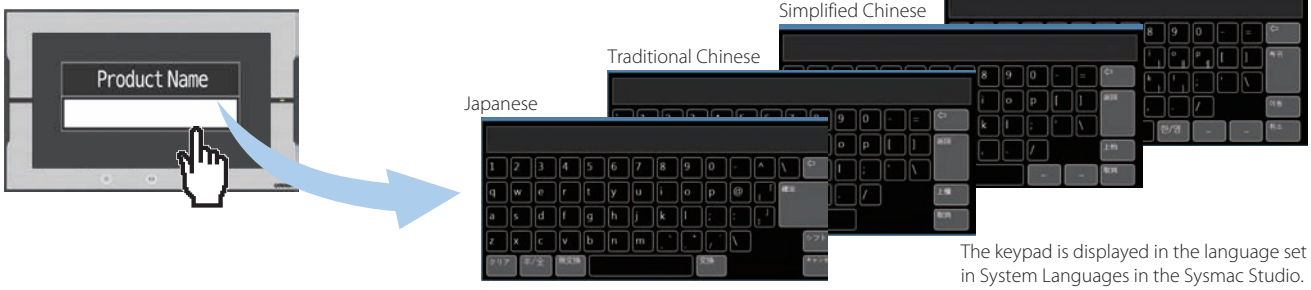
Data of variables and multidimensional arrays in the controller can be displayed as broken-line graphs. Broken-line graphs can also be created from the data in the CSV files saved in the SD card inserted in the NJ/NX/NY Controller by using subroutines (Visual Basic). You can specify the display range of large array data, such as operation log, by setting the offset value.



OPERATE your machine
- Comfortable to use

Supporting Asian languages

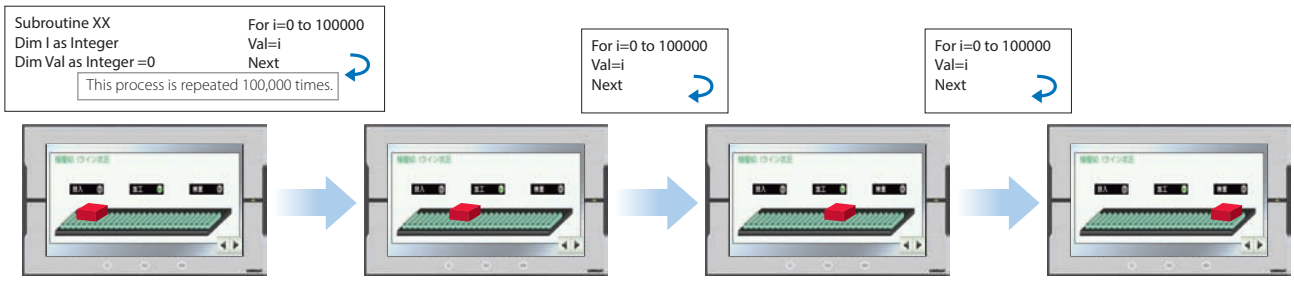
An Asian language - Japanese, simplified Chinese, traditional Chinese, or Korean - can be selected to use in the keypad of the NA Series.
The keypad language changes automatically when the language is changed in the language settings.
Local languages can be used to input the names of products when new recipes of the food packaging machine are added.



The keypad is displayed in the language set in System Languages in the Sysmac Studio.

Executing a subroutine with multiple threads

Some subroutines require time due to repeated processing or waiting time.
Even such a subroutine can be executed during screen update, without affecting operability and visibility.

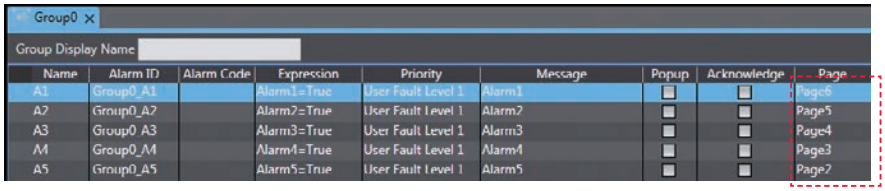


The subroutine is executed in parts while the screen is updated.

The subroutine is executed in parts while the screen is updated.

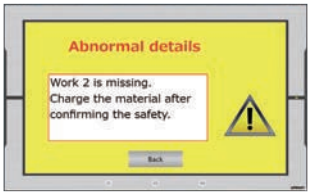
Page jump from user alarm

The page to switch can be specified in each alarm setting.
When an alarm occurs, you can check the troubleshooter screen by selecting the displayed alarm.



The page to switch can be specified in each alarm setting.

Select the alarm and then click the Page Jump Button.



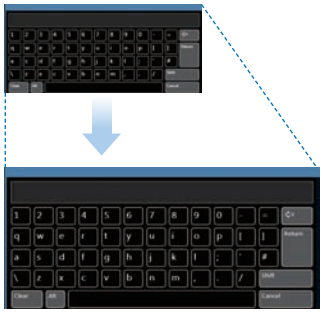
The specified page is displayed.

Customizing keypads and resizing objects

You can change the keypad size, choose only the keys you need, and customize the keys to execute specified actions. Create your own keypad suitable for your applications.

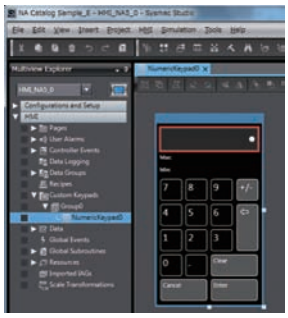
The size of the Check Box, Slider, and Radio Button objects can also be changed. You can greatly improve the usability of your machine by enlarging these objects in size.

▪Custom keypads



Changing the keypad size

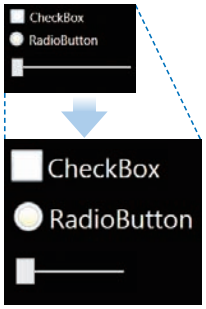
The size can be changed to suit the user's needs.



Creating user's own keypad

Only the keys the user needs can be chosen, and the keys to execute specified actions can be customized.

▪Resizing object



Resizing objects

The properties of the object size are added. You can resize the objects suitable for your application.

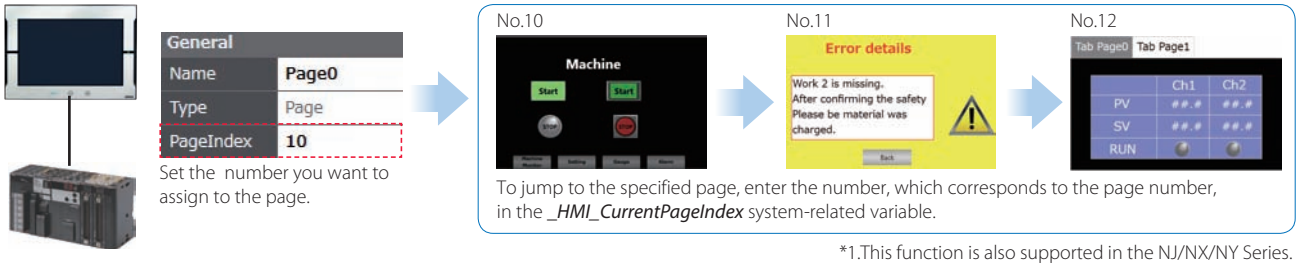
Dynamically changing upper/lower limit value

The upper and lower limit values can be dynamically changed by setting variables as maximum and minimum values of a Data Edit object. It is possible to restrict input according to the status of the machine.

Specifying a page number

By assigning any number to the page, you can easily switch pages from the PLC.

The previously required subroutine is no longer needed for this operation. This feature is particularly helpful when you use the CJ PLC in which pages are frequently specified by number.*1



*1.This function is also supported in the NJ/NX/NY Series.

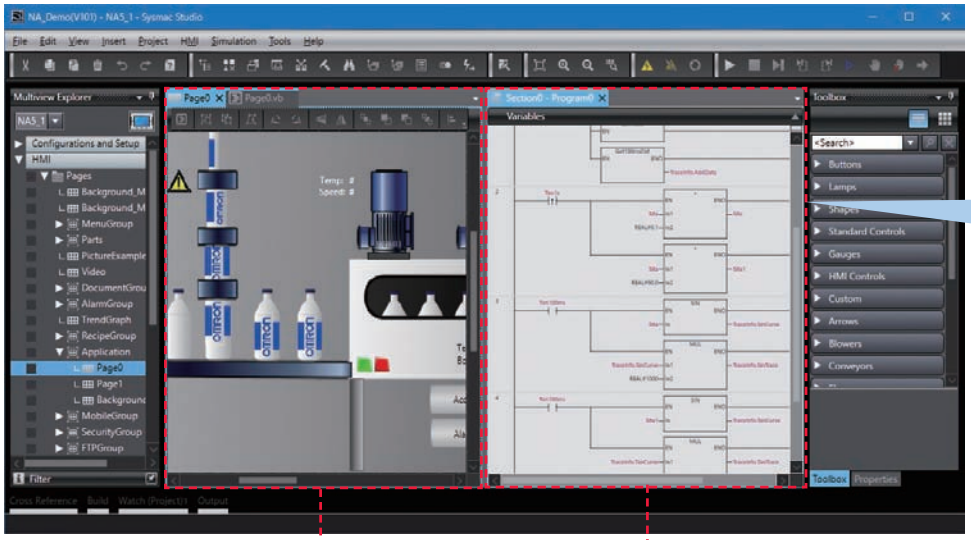
Usability: Design
- Simple screen design

Integrated development environment

Sharing data between the NA Series and the NJ/NX/NY Series in real time on the Sysmac Studio increases design productivity.

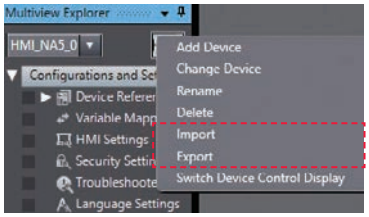
Displaying editors on one screen

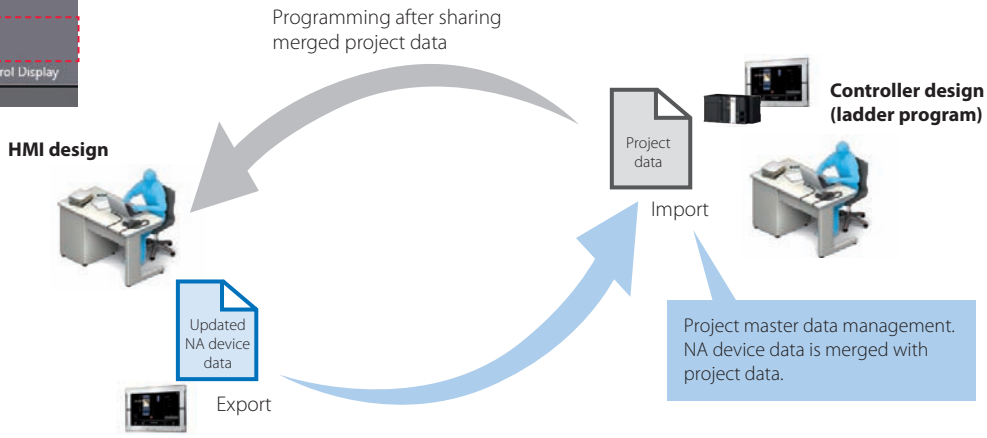
The NA HMI Editor and NJ/NX/NY Controller Editor can be displayed on one screen.
This eliminates the need to switch between screens, making the design easier and faster.



Concurrent development of ladder and HMI

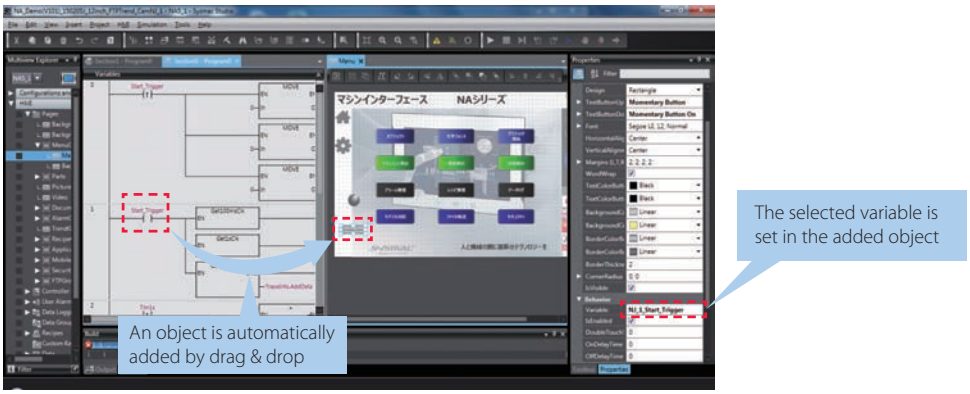
Device data of the NA Series can be imported from and exported to the project file.
When the controller designer and HMI designer develop a machine concurrently, the screen data can be merged with the controller project.





Adding an object by drag & drop

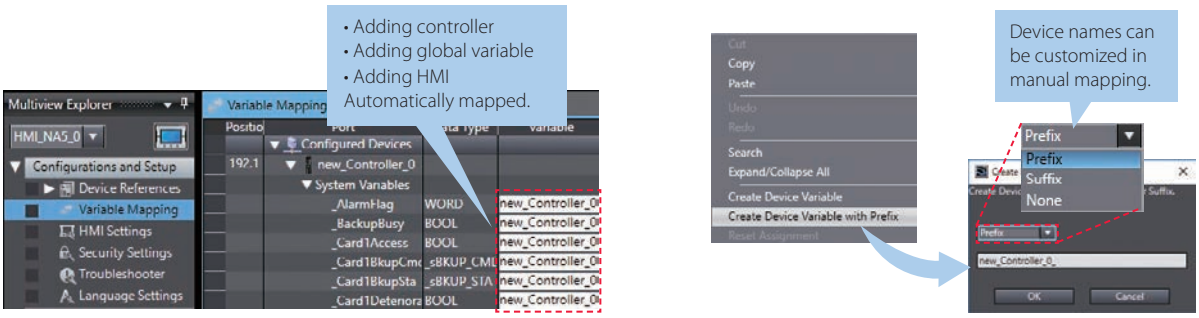
Just drag a variable from the Ladder Editor in the NA Page Editor to add an object. The variable is automatically set in the property of the added object.*
This eliminates the need to create and allocate HMI variables, which facilitates design work.



* When an input is selected, a Button object is added automatically.
When an output is selected, a Lamp object is added automatically.

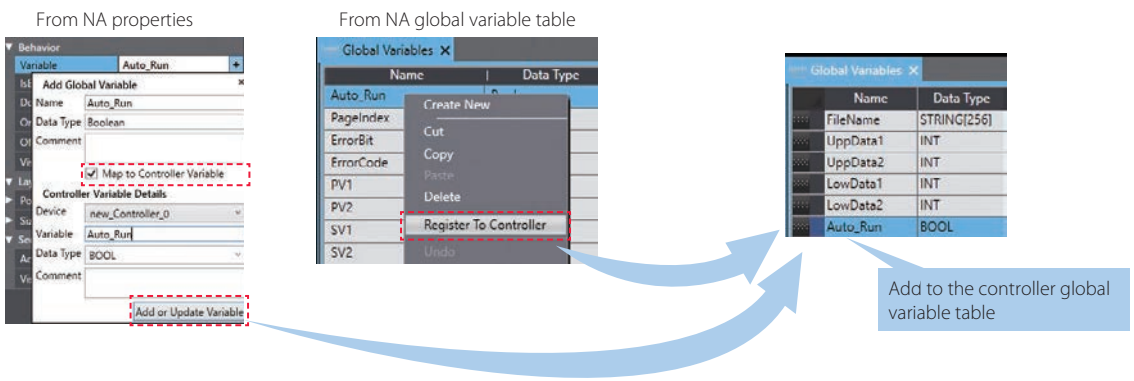
Improved mapping of controller variables to NA Series

- NJ/NX/NY Controller variables can be automatically mapped to the NA HMI.
  This improves design efficiency and ensures that all added variables are mapped.
- The device name generation rule can be customized in manual mapping. Variables can be mapped according to your desired rule.



Easy to add NA variables to controller

Variables added to the NA HMI can be registered and mapped to the controller variable table from the properties for objects or the NA global variable table.
Going back to the controller global variable table to add variables is no longer required, saving your design time.

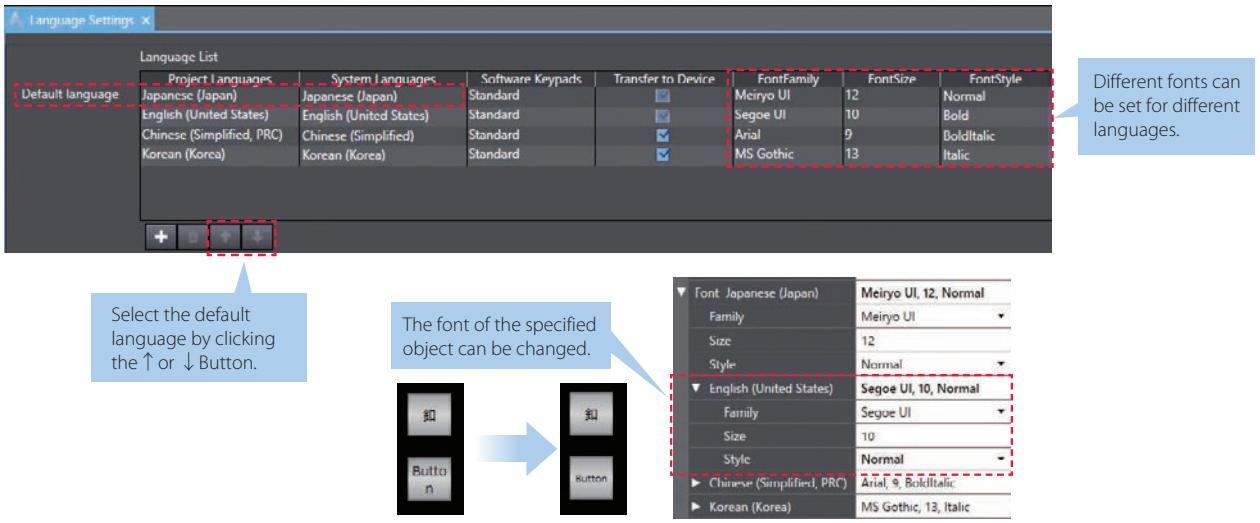


Resource management

Helps install your machines globally and modularize design.

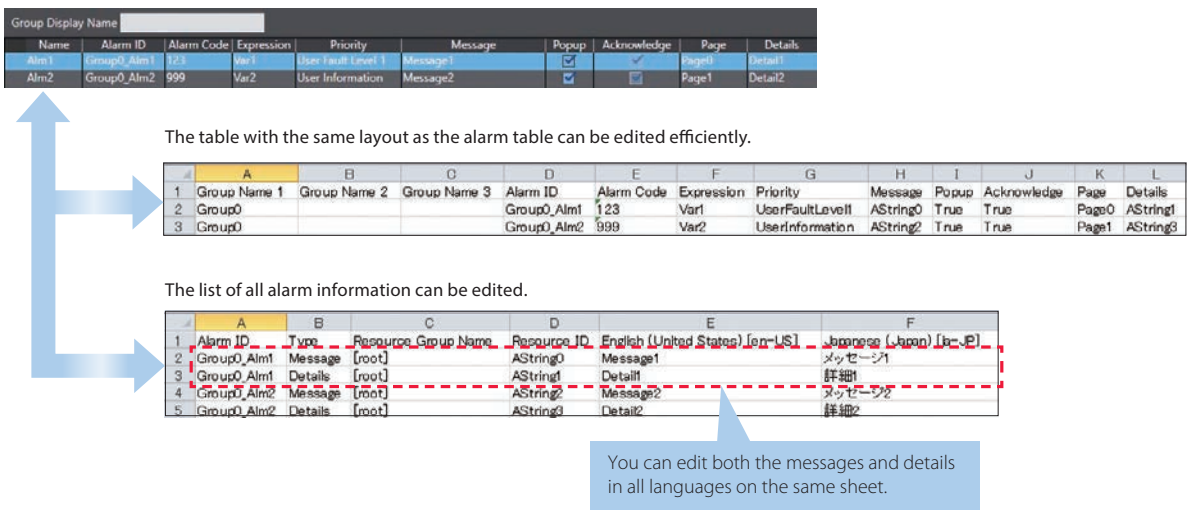
Language Settings

- Different fonts, sizes, and styles can be set for different languages. You can use your specified fonts or fonts suitable for local languages. Also the font of a specified object can be changed according to language.
- The default language can be changed. Properties and alarm groups, as well as screens, are displayed in local language, which makes design faster and easier.



Improved user alarm editing

- User alarms can be exported to and imported from Excel with the same layout as the user alarm table. The table can be sorted or filtered in Excel.
- Both the message and its details are exported to and imported from Excel. They are sorted according to the alarm ID, allowing you to edit text strings while you view all information.



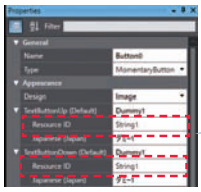
- Even if alarms are grouped, such as by machine module, all alarms can be imported and exported at once.

Improved resource editing

• In addition to entering a text string directly in properties, you can assign an ID first and enter a text string later.
This resource ID-based management enables you to standardize screens first and then enter all text strings edited in Excel to suit machine specifications.

Standardized screen master data

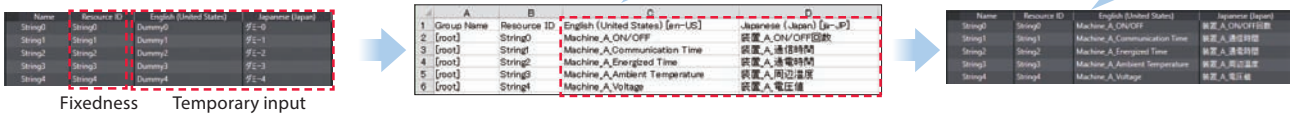
Screen data according to machine specifications



Enter only the ID in the properties.

Edit text strings in Excel during machine design

Import to change



Fixedness　Temporary input

• Even if resources are grouped, such as by machine module, all resources can be imported and exported at once.
• Object properties (e.g., variables and expressions of buttons and lamps, resource IDs, text strings) in all languages on the same page can be imported and exported.
Multiple properties can be edited at once in Excel, making resource editing easier, faster, and more precise.

Standardized screen layout

Copy

Efficiently add pages of the same layout

	A	B	C	D
1	Page Name	Object Name	Property Name	Setting
2	Page0	Label0	Text	String25
3	Page0	Button0	Text	String32
4	Page0	Button0	TextOn	String32
5	Page0	Button0	Variable	BitData1
6	Page0	Button0	FeedbackExpression	

Change multiple variables and resource IDs at once.

Change multiple text strings in different anguages at once.

	A	B	C	D	E	F	G
1	Page Name	Object Name	Property Name	Resource Group Name	Resource ID	英語 (米国) [en-US]	日本語 (日本) [ja-JP]
2	Page0	Label0	Text	[root]	String25	Machine_A	装置_A
3	Page0	Button0	Text	[root]	String32	Self-Diagnosis	自己診断
4	Page0	Button0	TextOn	[root]	String32	Self-Diagnosis	自己診断

Page Editor

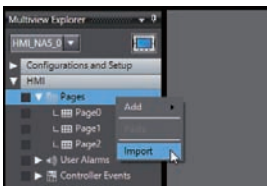
Provides a simple GUI and a full suite of functionality to assist and streamline the design process.

Importing and exporting pages

Pages can be saved as library files and reused individually in other projects.

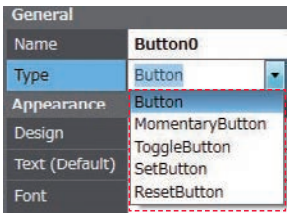
Save and manage as library file

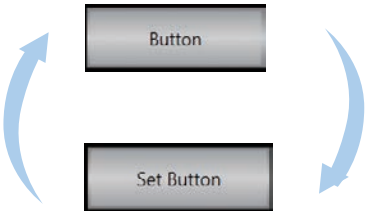
Import to reuse



Changing type of button

The type of the Buttons including Set and Momentary can be changed easily in the properties whenever you want, even during or after designing the Button.





No need to recreate the button to change its type. The settings will be maintained even the type has been changed, reducing the amount of work required for screen creation.

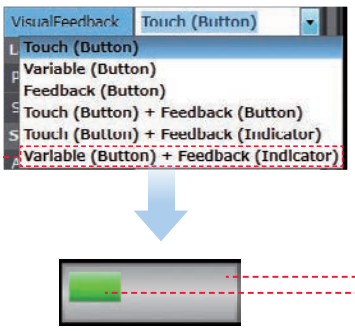
Buttons with the lamp function

You can easily create Buttons with the lamp function.

▪Types of Buttons with the lamp function

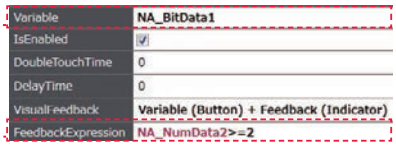
Setting	Condition for lightning lamps
Touch(Button)	Pressing Button
Variable(Button)	Variable
Feedback(Button)	Feedback Expression
Touch(Button) +Feedback(Button)	Pressing Button + Feedback Expression
Touch(Button) +Feedback(Indicator)	Button: Pressing Button Indicator: Feedback Expression
Variable(Button) +Feedback(Indicator)	Button: Variable Indicator: Feedback Expression

▪Example



A lamp (indicator) can be set on a button.

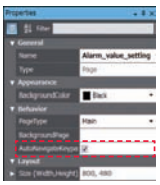
▪Conceptual figure for setting objects



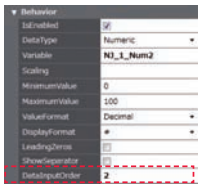
One object that has both button and lamp functions can be created. This eliminates the need for creating multiple objects, helping create screens faster.

Data input order

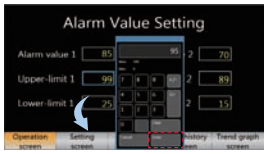
The data input order can be set.
When numeric values are entered consecutively, the focus automatically moves to the next Data Edit object by touching the Enter key. Input errors and input time can be minimized.



Enable AutoNavigateKeypads in the properties of the page to enter data consecutively.



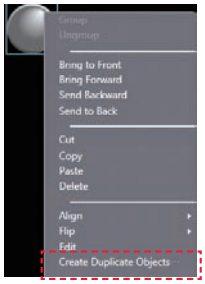
The data input order can be set in the property of the Data Edit object.



The focus automatically moves to the next object by touching the Enter key.

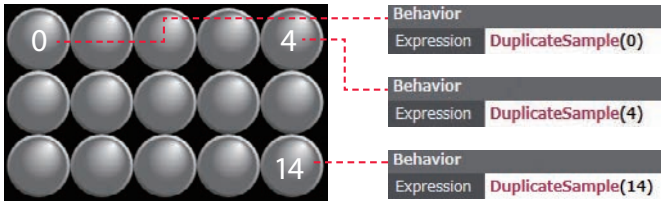
Creating duplicate objects

Based on one object, you can create multiple copies with the same appearance and settings by specifying an off set value for an array variable. This makes screen creation faster and easier.



Right-click

Set the number of horizontal and vertical objects, and their spacing.
When an array variable is specified, you can duplicate the object by adding the specified offset value to the element number.



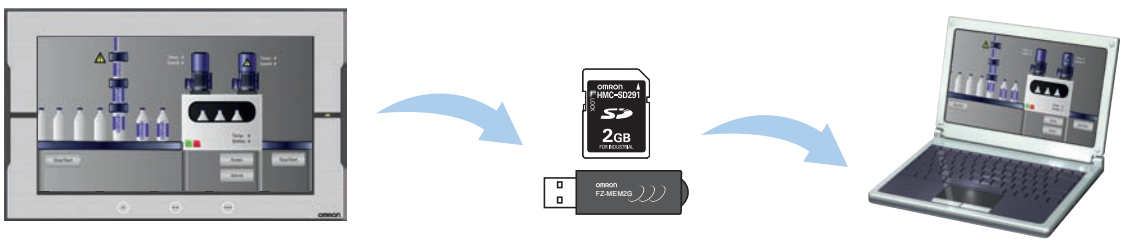
NA screen capture

The screens displayed on the NA Series can be captured and saved in the SD card inserted in the NA Series or the USB memory connected to the NA Series.

- When a screen of the NA Series is required to create a machine operation manual
- When the current screen is required to save as proof of a trouble

Supported format: PNG

The combination of VNC and FTP allows you to capture the NA screens from the connected PC.

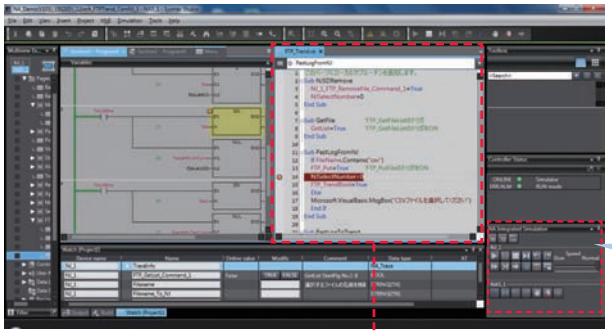


Usability: Debugging

- Easy and fast debugging in integrated development environment

Integrated Simulator

The NJ/NX/NY Controller Simulator and NA HMI Simulator can be displayed on one screen. You can quickly debug the controller program and the HMI application at the same time.



Operations, such as stop and step execution, can be performed for both HMI and controller simulations.

Switchable to the screen for desining.

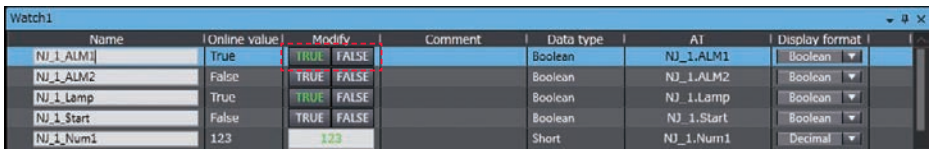
- You can display the selected page and change properties without stopping the Simulator. Immediate debugging during simulation before building will prevent you from forgetting to correct errors and reduce the frequency of building.

Errors found during simulation can be corrected immediately.

Pages and languages can be changed anytime.

Watch Tab Page

The same GUI as the NJ/NX/NY Controller is used. Register the variable to monitor/change and then change its value on the Watch Tab Page to easily debug screens with the NA Simulator without the physical HMI.

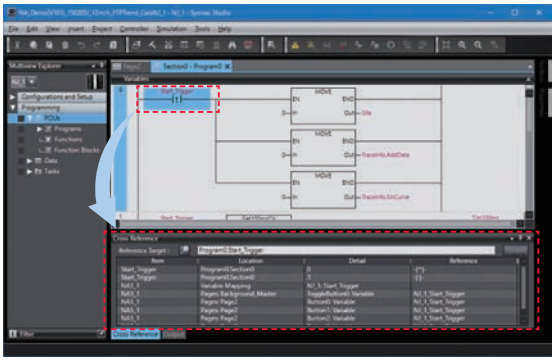


Change to TRUE

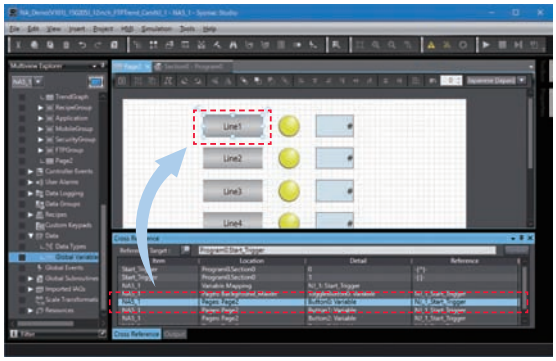
Check the alarm with the Simulator

Cross references

The same GUI for the cross reference function as the NJ/NX/NY Controller can be used.
When a variable is clicked in the global variable table, a list of the locations where the variable is used is displayed in the Cross Reference Tab Page.
By clicking the location, you can access the object, subroutine, or ladder program where the variable is used across the entire project. This makes screen design and debugging quicker and easier.



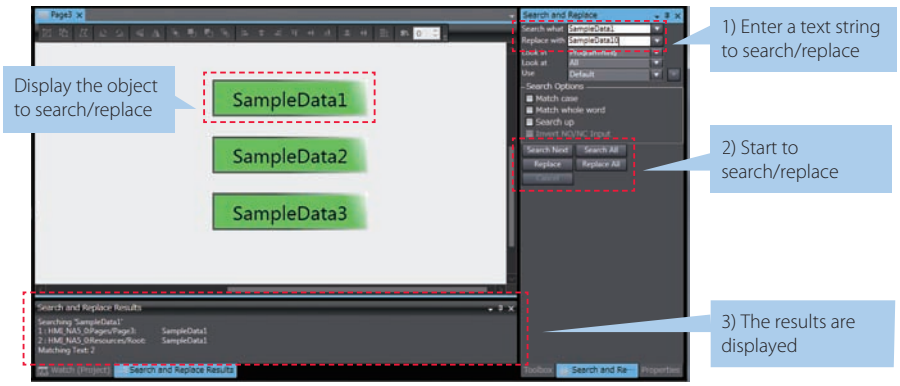
Click the variable in the global variable table to show a list of the locations where the variable is used in the Cross Reference Tab Page.



Click the location to access the object where the variables is used.

Search and Replace

You can search and replace text strings in all subroutines (Visual Basic), objects, and variables within a project.
It is quick and easy to edit and debug variable names and switch labels.



Programmable Terminal
NA series

Bringing technology to life

The NA-series Programmable Terminal transforms machine data into information, shows information and controls devices based on requirements at FA manufacturing sites.

The NA Series, together with the NJ/NX/NY-series Controller and the Automation Software Sysmac Studio, allows you to simply and flexibly create sophisticated user interfaces to suit your machines.

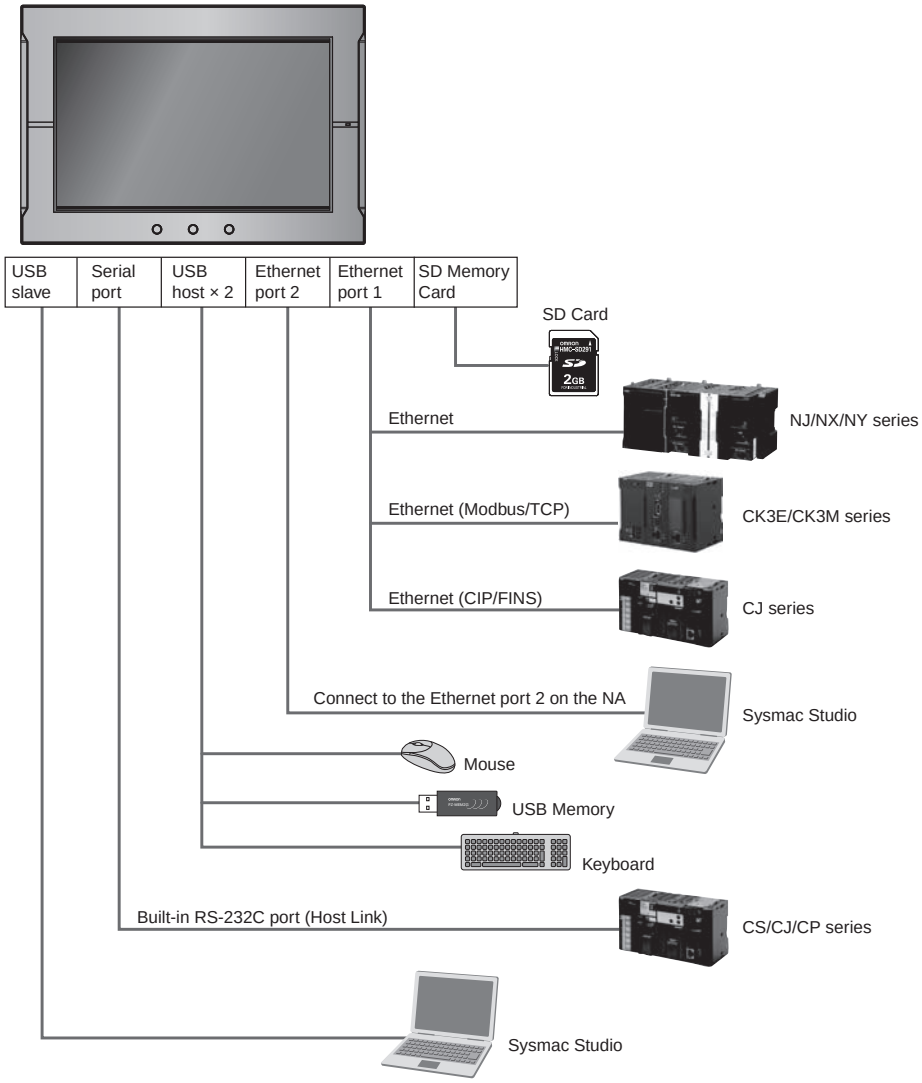
Features

- Widescreen in all models: 7, 9, 12, and 15 inches
- More than 16 million color display for all models and 1280 x 800 high resolution display for the 12 and 15-inch models
- Multimedia including video and PDF ✻**1**
- 2 Ethernet ports capable of simultaneous access from both the control device and maintenance segments by separating the segments
- Sysmac Studio providing an Integrated Development Environment
  NJ/NX/NY variables sharing in the NA project and NA application testing with the NJ/NX/NY program via the Simulator to reduce development time
- Many security features including operation authority settings and execution restrictions with IDs
- Microsoft Visual Basic for versatile, flexible and advanced programming
- Software providing NA5-equivalent functionality on a PC or panel PC

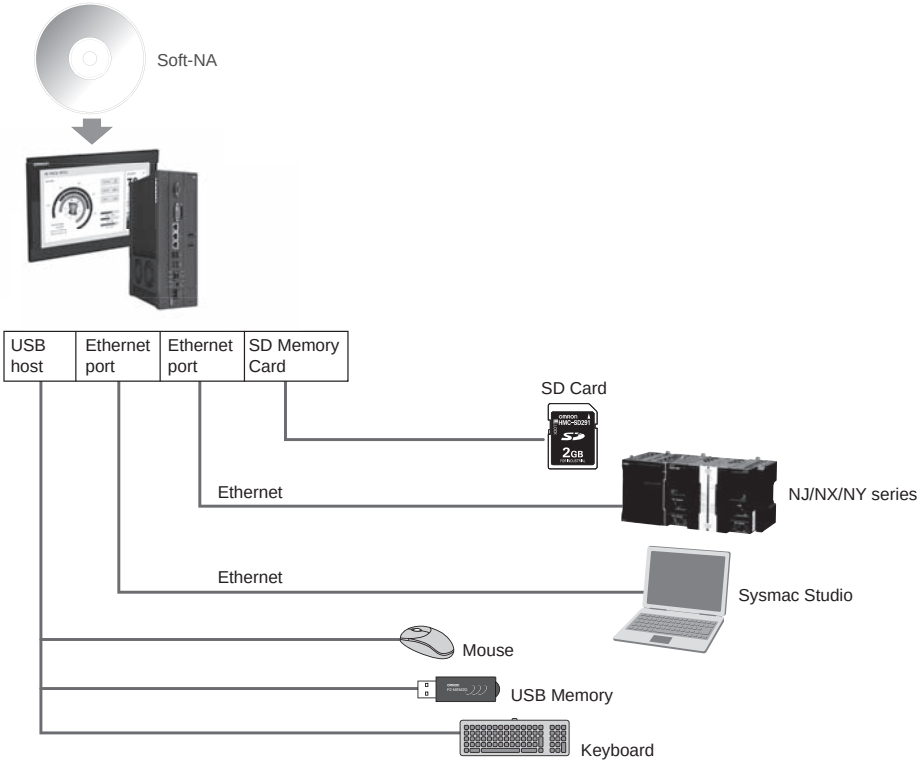
✻**1.** Version 1.5 or higher of pdf file is not supported.

System configuration

NA5



Soft-NA


Soft-NA
USB host
Ethernet port
Ethernet port
SD Memory Card
SD Card
Ethernet
NJ/NX/NY series
Ethernet
Sysmac Studio
Mouse
USB Memory
Keyboard

Ordering Information

NA5-□W

Product name	Specifications	Model
NA5-15W	15.4 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full color), 1280 × 800 dots, Frame color : Silver	NA5-15W101S-V1
	15.4 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full color), 1280 × 800 dots, Frame color : Black	NA5-15W101B-V1
NA5-12W	12.1 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full color), 1280 × 800 dots, Frame color : Silver	NA5-12W101S-V1
	12.1 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full color), 1280 × 800 dots, Frame color : Black	NA5-12W101B-V1
NA5-9W	9 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full color), 800 × 480 dots, Frame color : Silver	NA5-9W001S-V1
	9 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full color), 800 × 480 dots, Frame color : Black	NA5-9W001B-V1
NA5-7W	7 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full color), 800 × 480 dots, Frame color : Silver	NA5-7W001S-V1
	7 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full color), 800 × 480 dots, Frame color : Black	NA5-7W001B-V1
High-pressure Waterproof Attachment	This metal frame is for high-pressure waterproofing. Install it to conform to UL Type 4X standards. UL Type 4X is the rating for high-pressure wash-down applications with a flow rate of 246 liter/min.	NA-15WATW01
		NA-12WATW01
		NA-9WATW01
		NA-7WATW01

Options

Product name	Specifications		Model
SD memory card	2 GB		HMC-SD292
	4 GB		HMC-SD492
	16 GB		HMC-SD1A2
USB Memory	2 GB		FZ-MEM2G
	16 GB		FZ-MEM16G
Replacement Battery	Battery life: 5 years (at 25°C). This Battery is provided as an accessory.		CJ1W-BAT01
RS-232C Connecting Cable	D-sub, 9-pin plug to D-sub, 9-pin plug	Length: 2m	XW2Z-200T
		Length: 5m	XW2Z-500T
	D-sub, 9-pin plug to discrete wire	Length: 2m	XW2Z-200T-3
		Length: 5m	XW2Z-500T-3
Anti-reflection Sheets	For the NA5-15W. Attach a Sheet to the screen to protect against diffused reflections and dirt. The entire Sheet is colorless and transparent. Five Sheets are provided in one set.		NA-15WKBA04
	For the NA5-12W. Attach a Sheet to the screen to protect against diffused reflections and dirt. The entire Sheet is colorless and transparent. Five Sheets are provided in one set.		NA-12WKBA04
	For the NA5-9W. Attach a Sheet to the screen to protect against diffused reflections and dirt. The entire Sheet is colorless and transparent. Five Sheets are provided in one set.		NA-9WKBA04
	For the NA5-7W. Attach a Sheet to the screen to protect against diffused reflections and dirt. The entire Sheet is colorless and transparent. Five Sheets are provided in one set.		NA-7WKBA04

Soft-NA

Product name	Specifications	Number of licenses	Media	Model
Soft-NA	The Soft-NA is software that displays information on FA manufacturing sites while providing safety, reliability, and maintainability as an industrial display on which operations can be performed as necessary.	- (Media only)	DVD	NA-RTSM
		1 license	USB dongle	NA-RTLD01
		3 licenses		NA-RTLD03
		10 licenses		NA-RTLD10

System Requirements

■When using a commercially-available PC

Item		Requirement	
OS		Windows 10 Pro Version 1903 or later 64 bit	Windows 11 Pro Version 24H2 or later
Processor		Intel Atom® x5-E3940 equivalent or higher processor ✻1	Intel Celeron® N4000 equivalent or higher processor ✻1
RAM		4 GB or more	
Free space in the hard drive necessary for installation		1 GB or more	
Optical disk drive		DVD-ROM drive ✻2	
Communication port	USB	USB2.0 Type-A x 2	
	LAN	Ethernet x 2	

✻1.ARM-based processors are not supported.
✻2. It is required when installing using NA-RTSM.

■When using the industrial PC platform NY-series

The supported models are shown below.

- NYB□□-□□3□□ ✻1
- NYB□□-□□4□□ ✻1
- NYP□□-□□3□□-□□□□□□□□ ✻1
- NYP□□-□□4□□-□□□□□□□□ ✻1
- NYE□□-□□N□□-□□□□□□□□ ✻1
- NY5□□-1□00-□□□44□□□□ ✻1

✻1. Need to be supported only when used on the OS installed during factory dispatch.

Automation Software Sysmac Studio

The Sysmac Studio is the software that provides an integrated environment for setting, programming, debugging and maintenance of machine automation controllers including the NJ/NX-series CPU Units, NY-series Industrial PC, EtherCAT Slave, and the HMI.

For details, refer to your local OMRON website and *Sysmac Studio Catalog* (Cat. No. P138).

USB Cable

Product name	Specifications
USB Cable	Use commercially available USB cable. Specifications: USB 2.0 cable (A connector - B connector), 5.0 m max.

Recommended Network Devices

Industrial Switching Hubs

Product name	Functions	No. of ports	Accessories	Current consumption (A)	Model
Industrial Switching Hubs	Quality of Service (QoS): EtherNet/IP control data priority 10/100BASE-TX, Auto-Negotiation	5	Power supply connector	0.07	W4S1-05D

Recommended Ethernet Communications Cables

Use STP (shielded twisted-pair) cable of category 5 or higher

Product name		Recommended manufacturer	Model
Wire Gauge and Number of Pairs: AWG24, 4-pair Cable	Cables	Hitachi Metals, Ltd	NETSTAR-C5E SAB 0.5 × 4P CP
		Kuramo Electric Co.	KETH-SB
	RJ45 Connectors	Panduit Corporation	MPS588

Note: 1. We recommend you to use above cable and RJ45 Connectors together.

Performance Specifications

Display

Item		Specification			
		NA5-15W	NA5-12W	NA5-9W	NA5-7W
Display panel ✻1	Display device	TFT LCD			
	Screen size	15.4 inches	12.1 inches	9.0 inches	7.0 inches
	Resolution	1,280 × 800 dots (horizontal × vertical)		800 × 480 dots (horizontal × vertical)	
	Colors	16,770,000 colors (24 bit full colors)			
	Effective display area	331 × 207 mm (horizontal × vertical)	261 × 163 mm (horizontal × vertical)	197 × 118 mm (horizontal × vertical)	152 × 91 mm (horizontal × vertical)
	View angles	Left: 60°, Right: 60°, Top: 60°, Bottom: 60°			
Backlight ✻2	Life	50,000 hours min. ✻3			
	Brightness adjustment	200 levels			
	Type	LED			
Front panel indicators ✻4	RUN	Lit green: Normal operation Lit red: Error			

✻1. There may be some defective pixels in the display. This is not a fault as long as the numbers of defective light and dark pixels fall within the following standard ranges.

Model	Standard range
NA5-15W□□□□-V1 NA5-12W□□□□-V1 NA5-9W□□□□-V1 NA5-7W□□□□-V1	Number of light and dark pixels: 10 or less. (There must not be 3 consecutive light/dark pixels.)

✻2. The backlight can be replaced at an OMRON maintenance base.
✻3. This is the estimated time before brightness is reduced by half at room temperature and humidity. The life expectancy is drastically shortened if Programmable Terminal is used at high temperatures.
✻4. The brightness of the front panel indicators is also adjustable when you adjust the brightness of the backlight.

Operation

Item	Specification			
	NA5-15W	NA5-12W	NA5-9W	NA5-7W
Touch panel	Method: Analog resistive membrane type			
	Resolution: 16,384 × 16,384			
	Life: 1,000,000 operations			
Function keys ✻1	3 inputs (capacitance inputs)			

✻1. Each function key has blue indicator. The brightness of the function key indicators is also adjustable when you adjust the brightness of the backlight.

Data Capacity

Item	Specification			
	NA5-15W	NA5-12W	NA5-9W	NA5-7W
User data capacity	256 MB			

External Interfaces

Item		Specifications (Same for all models.)
Ethernet ports	Applications	Port 1: Connecting to anything other than the Sysmac Studio, e.g., device connections and VNC clients Port 2: Connecting to the Sysmac Studio in addition to the applications of port 1.
	Number of ports	2 ports
	Compliant standards	IEEE 802.3i (10BASE-T), IEEE 802.3u (100BASE-TX), and IEEE 802.3ab (1000Base-T)
	Transmission media	Shielded twisted-pair (STP) cable: Category 5, 5e, or higher
	Transmission distance	100 m
	Connector	RJ-45 8P8C modular connector
USB host ports ✻1 ✻2	Applications	USB Memory Device, keyboard, or mouse
	Number of ports	2 ports
	Compliant standards	USB 2.0
	Transmission distance	5 m max.
	Connector	Type-A connector
USB slave port ✻1	Applications	Sysmac Studio connection
	Number of ports	1 port
	Compliant standards	USB 2.0
	Transmission distance	5 m max.
	Connector	Type-B connector
Serial port	Applications	Device Connection
	Number of ports	1 port
	Compliant standards	RS-232C
	Transmission distance	15 m max.
	Connector	D-DUB 9-pin female connector
SD Memory Card slot	Applications	To transfer or store the project or to store log data.
	Number of slots	1 slot
	Compliant standards	SD/SDHC

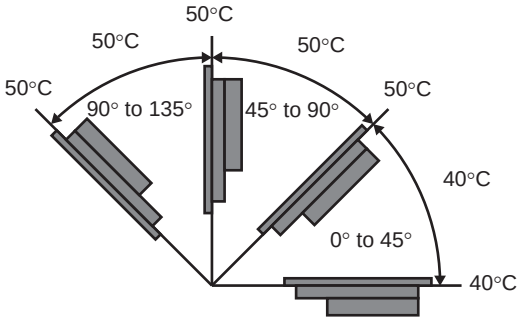
✻1. Connection to all USB 2.0-compliant devices is not guaranteed.
✻2. Use a USB memory for temporary applications such as transferring data.

General Specifications

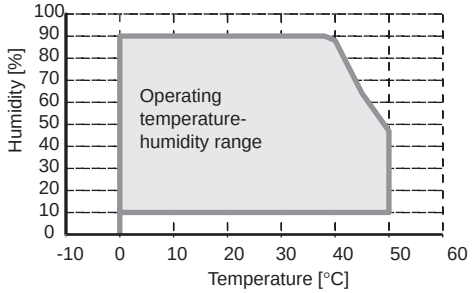
Item	Specification			
	NA5-15W	NA5-12W	NA5-9W	NA5-7W
Rated supply voltage	24 VDC			
Allowable power supply voltage range	19.2 to 28.8 VDC (24 VDC ±20%)			
Allowable momentary power interruption time	Operation for momentary power interruption is not specified.			
Power consumption	29 W max.	25 W max.	23 W max.	19 W max.
Ambient operating temperature	0 to 50°C ✻1 ✻2			
Ambient storage temperature	–20 to +60°C ✻3			
Ambient operating humidity	10 to 90% ✻2 Must be no condensation.			
Atmosphere	Must be free from corrosive gases.			
Pollution degree	2 or less: Meets IEC 61010-2-201.			
Noise immunity	2 kV on power supply line (Conforms to IEC 61000-4-4.)			
Vibration resistance (during operation)	Conforms to IEC 60068-2-6. 5 to 8.4 Hz with 3.5 mm half amplitude and 8.4 to 150 Hz with 9.8 m/s^2 for 100 minutes each in X,Y, and Z directions (Time coefficient of 10 minutes × coefficient factor of 10 = total time of 100 min.)			
Shock resistance (during operation)	Conforms to IEC 60028-2-27. 147 m/s^2 3 times each in X, Y, and Z directions			
Dimensions	420 × 291 × 69 mm (W × H × D)	340 × 244 × 69 mm (W × H × D)	290 × 190 × 69 mm (W × H × D)	236 × 165 × 69 mm (W × H × D)
Panel cutout dimensions	392^{+1}_{0} × 268^{+1}_{0} mm (horizontal × vertical) Panel thickness: 1.6 to 6.0 mm ✻4	310^{+1}_{0} × 221^{+1}_{0} mm (horizontal × vertical) Panel thickness: 1.6 to 6.0 mm ✻4	261^{+1}_{0} × 166^{+1}_{0} mm (horizontal × vertical) Panel thickness: 1.6 to 6.0 mm ✻4	$197^{+0.5}_{0}$ × $141^{+0.5}_{0}$ mm (horizontal × vertical) Panel thickness: 1.6 to 6.0 mm ✻4
Weight	3.2 kg max.	2.4 kg max.	1.8 kg max.	1.4 kg max.
Degree of protection	IP65 oil-proof type, UL Type 4X ✻4 (Front-panel controls) To reinstall the NA Unit in a panel, contact your OMRON representative for replacement of the rubber packing.			
Battery life	Battery life: 5 years at 25°C The RTC will be backed up for 5 days after the battery runs low. The RTC will be backed up by a super capacitor for 5 minutes after removing the old battery. (This assumes that the power is first turned ON for at least 5 minutes and then turned OFF.)			
International standards ✻5 ✻6	EU UKCA Shipbuilding standards LR, DNV, and UK IP65 oil-proof, UL Type 4X ✻4 (Front-panel controls) cULus KC RCM			

✻1. The ambient operating temperature is subject to the following restrictions, depending on the mounting angle.

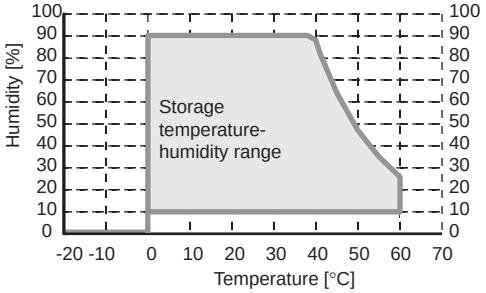
- The ambient operating temperature is 0° to 40°C when the mounting angle is 0° or more and less than 45° to the horizontal.
- The ambient operating temperature is 0° to 50°C when the mounting angle is 45° or more and 90° or less to the horizontal.
- The ambient operating temperature is 0° to 50°C when the mounting angle is 90° or more and 135° or less to the horizontal.



✻2. Use the Programmable Terminal within the following temperature and humidity ranges.



✻3. Store the Programmable Terminal within the following temperature and humidity ranges.



✻4. Use the NA-□WATW01 High-pressure Waterproof Attachment (sold separately) to conform to UL Type 4X.
When the NA-□WATW01 High-pressure Waterproof Attachment is used, the panel thickness is between 1.6 to 4.5 mm.

✻5. Check with your OMRON representative or refer to the following OMRON website for the latest information on the applicable standards for each model: www.ia.omron.com.

✻6. Use power supply Class 2 to conform to UL Standards.

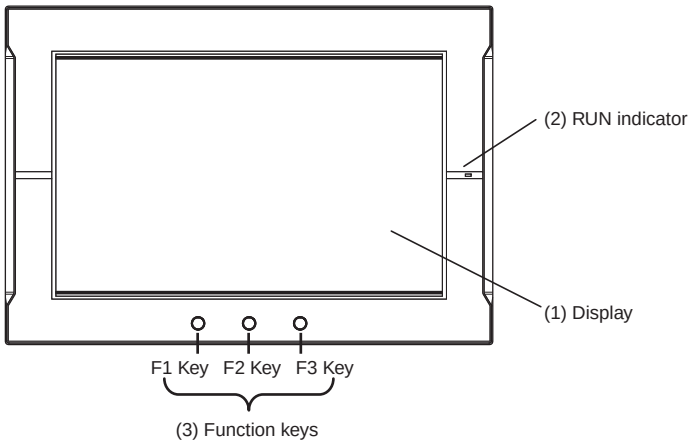
Version Information

NA series and Programming Devices

NA series		Corresponding unit versions/version	
Model	NA system version	NJ/NX/NY-series Controller NX701-□□□□ NY512-□□□□ NX502-□□□□ NY532-□□□□ NX102-□□□□ NJ501-□□□□ NX1P2-□□□□ NJ301-□□□□ NX-CSG320 NJ101-□□□□	Sysmac studio
NA5-□□□□□□-V1	1.17 or later	NX502: 1.60 or later	1.54 or higher
	1.10 or later	NX-CSG320: 1.00 or later	1.24 or higher
	1.09 or later	NX102: 1.30 or later	1.23 or higher
	1.08 or later	NX1P2: 1.13 or later NY512: 1.12 or later NY532: 1.12 or later NX701: 1.10 or later NJ101: 1.10 or later NJ501: 1.01 or later NJ501 Database Connection: 1.05 or later NJ301: 1.01 or later	1.40 or higher

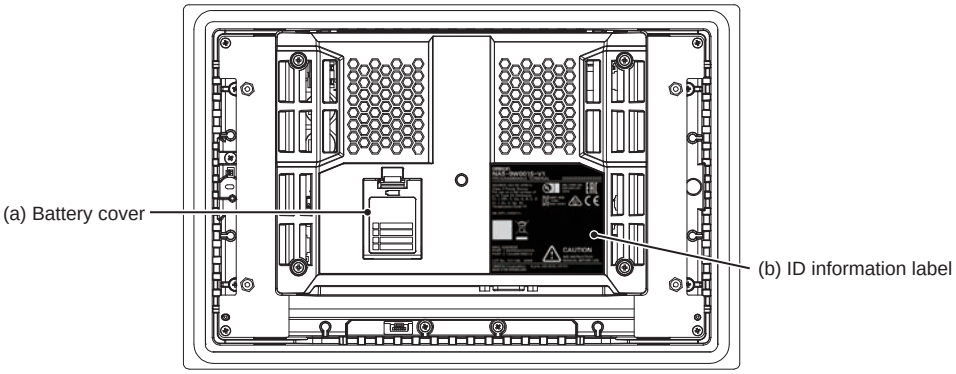
Components and Functions

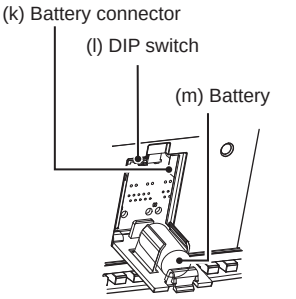
Front Panel



No.	Name	Description
(1)	Display	The entire display is a touch panel that also functions as an input device.
(2)	RUN indicator	The status of the indicator changes according to the status of the NA.
(3)	Function keys	There are three function keys: F1, F2, and F3.  : F1 Key,  : F2 Key,  : F3 Key You can use the function keys as execution conditions for the actions for global or page events. You can also use the function keys for interlocks.

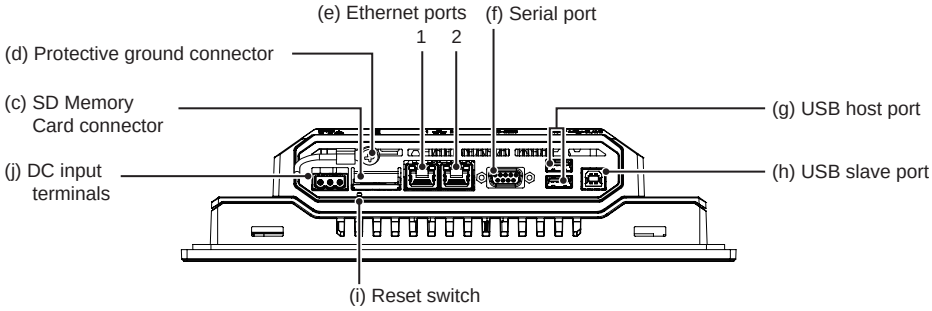
Back Panel





(Appearance
with the Battery Cover Open)

Bottm Panel



No.	Name	Description
(a)	Battery cover	Open this cover to replace the Battery.
(b)	ID information label	You can check the ID information of the NA Unit.
(c)	SD Memory Card connector	Insert an SD Memory Card here.
(d)	Protective ground terminal	Use for protective grounding.
(e)	Ethernet port 1	Connect a device other than the Sysmac Studio.
	Ethernet port 2	Connect mainly the Sysmac Studio.
(f)	Serial port	Connect devices.
(g)	USB host port	Connect this port to a USB Memory Device, keyboard, mouse, etc.
(h)	USB slave port	Connect the Sysmac Studio or other devices.
(i)	Reset switch	Use this switch to reset the NA Unit.
(j)	DC input terminals	These are the power supply terminals. Connect the accessory power supply connector and supply power.
(k)	Battery connector	Connect the connector on the backup Battery here.
(l)	DIP switch	Used for system recovery. (The DIP switch is on a PCB that is accessed by opening the Battery cover.) In other cases, do not change any of the factory settings of the pins on the DIP switch.
(m)	Battery	This is the battery to backup the clock information in the NA Unit.

Supported Devices

NA5-□□□□□□-V1

Manufacturer	Models	Connection method	Communications driver
OMRON	NX102-□□□□ NX1P2-□□□□ NX502-□□□□ NX701-□□□□ NJ501-□□□□ NJ301-□□□□ NJ101-□□□□ NY512-□□□□ NY532-□□□□ NX-CSG320	Built-in EtherNet/IP port	Ethernet
	NX502-□□□□	NX-EIP201	
	CJ2H-CPU64/65/66/67/68-EIP CJ2M-CPU31/32/33/34/35	Built-in EtherNet/IP port	CIP Ethernet
	CJ2H-CPU64/65/66/67/68 CJ2M-CPU11/12/13/14/15	CJ1W-EIP21S	
	CJ2H-CPU64/65/66/67/68-EIP CJ2M-CPU31/32/33/34/35	CJ1W-EIP21 ✻1	
	CJ2H-CPU64/65/66/67/68-EIP CJ2M-CPU31/32/33/34/35	Built-in EtherNet/IP port	FINS Ethernet
	CJ1H-CPU65H/66H/67H CJ1H-CPU65H/66H/67H-R CJ1G-CPU42H/43H/44H/45H CJ1M-CPU11/12/13/21/22/23 CJ2H-CPU64/65/66/67/68(-EIP) CJ2M-CPU11/12/13/14/15 CJ2M-CPU31/32/33/34/35	CJ1W-ETN21 ✻1 CJ1W-EIP21 ✻1	
	CJ2H-CPU64/65/66/67/68 CJ2M-CPU11/12/13/14/15	CJ1W-EIP21S	
	CS1G-CPU42H/43H/44H/45H CS1H-CPU63H/64H/65H/66H/67H	CS1W-ETN21 ✻1 CS1W-EIP21 ✻1	
	CS1G-CPU43H/44H/45H CS1H-CPU63H/64H/65H/66H/67H	CS1W-EIP21S	
	CS1D-CPU65H/67H/67HA/68HA/44SA/67SA	CS1W-ETN21 ✻1 CS1D-ETN21D CS1W-EIP21 ✻1 CS1W-EIP21S	
	CP1H-□□□□□-□	CP1W-CIF41	
	CP1L-□□□□□-□ CP2E-N□□D□-□	Built-in Ethernet port CP1W-CIF41	
	CK3E-1□10 CK3M-CPU1□1	Built-in Ethernet port	Modbus/TCP
	CS1G-CPU42H/43H/44H/45H CS1H-CPU63H/64H/65H/66H/67H CS1D-CPU65H/67H/67HA/68HA/44SA/57SA	Built-in RS-232C port CS1W-SCB21-V1 CS1W-SCB41-V1 CS1W-SCU21-V1 CS1W-SCU31-V1	Host Link
	CJ2H-CPU64/65/66/67/68(-EIP) CJ2M-CPU11/12/13/14/15/31/32/33/34/35	Built-in RS-232C port CJ1W-SCU22 CJ1W-SCU32 CJ1W-SCU42	
	CP1L-□□□□□-□ CP1H-□□□□□-□	CP1W-CIF01 CP1W-CIF11 CP1W-CIF12-V1	
	CP2E-□□□D□-□	Built-in RS-232C port CP1W-CIF01 CP1W-CIF11 CP1W-CIF12-V1 CP2W-CIFD1 CP2W-CIFD2	

✻1. Product no longer available to order.

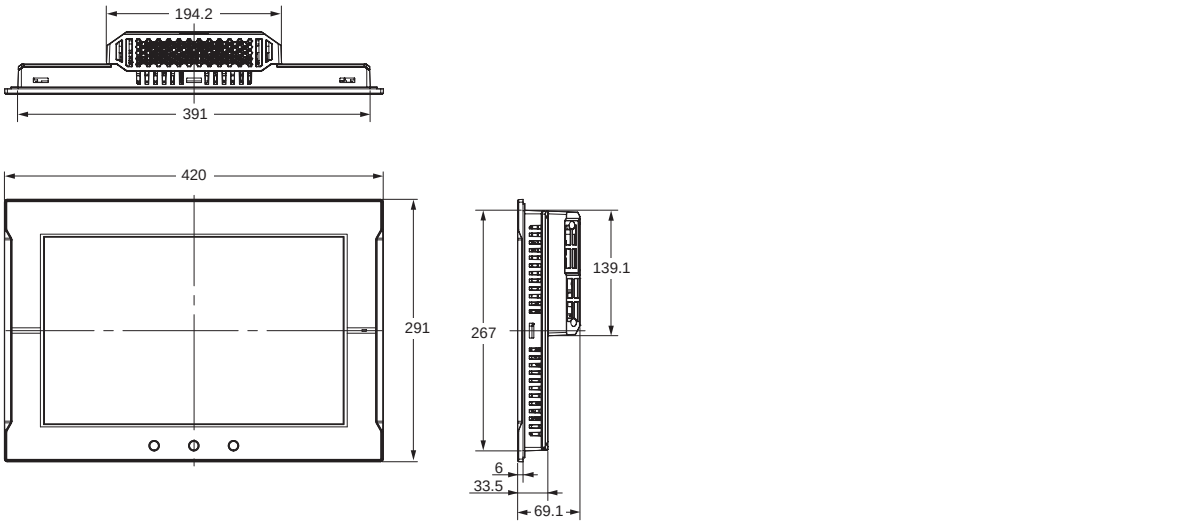
NA-RTLD□□

Manufacturer	Models	Connection method	Communications driver
OMRON	NX102-□□□□ NX1P2-□□□□ NX502-□□□□ NX701-□□□□ NJ501-□□□□ NJ301-□□□□ NJ101-□□□□ NY512-□□□□ NY532-□□□□ NX-CSG320	Built-in EtherNet/IP port	Ethernet
	NX502-□□□□	NX-EIP201	

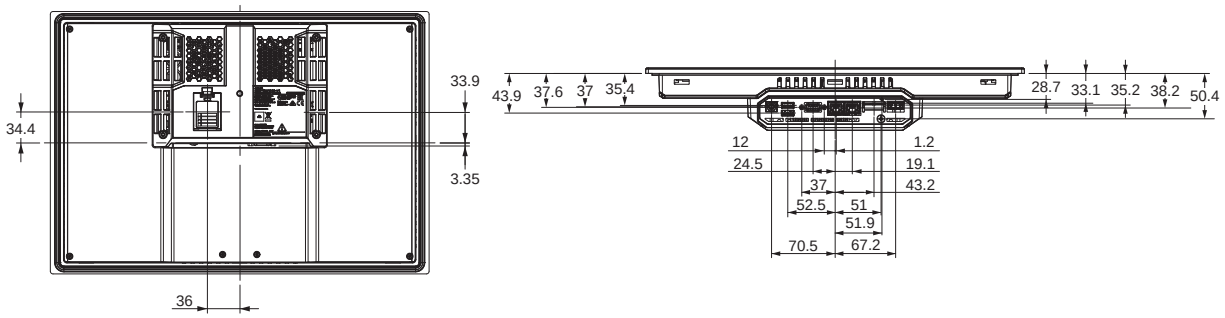
Dimensions

(Unit: mm)

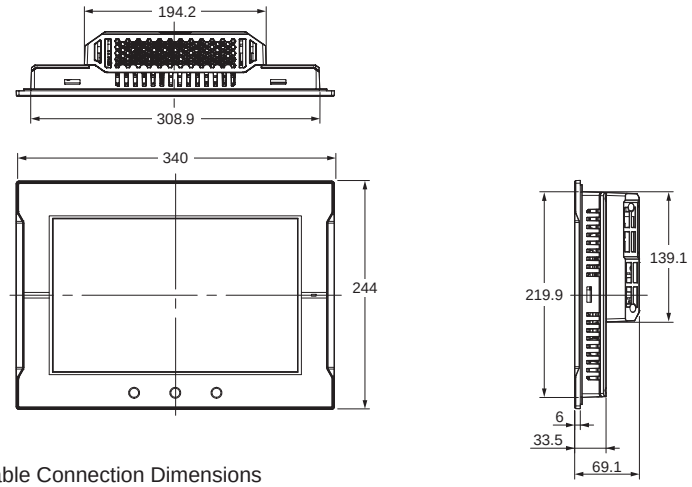
NA5-15W101S-V1/-15W101B-V1



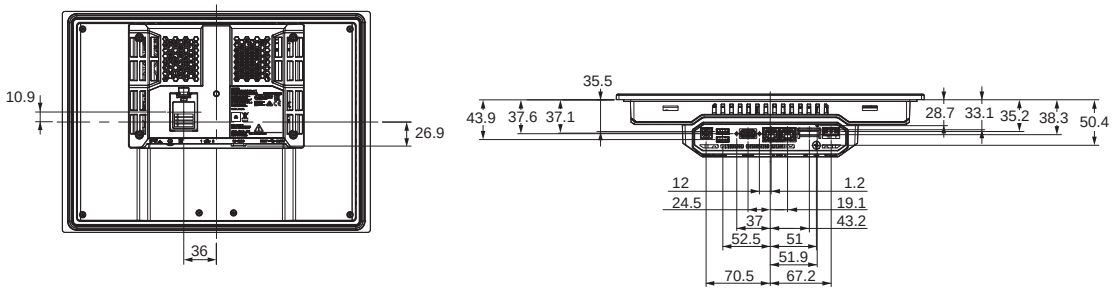
Cable Connection Dimensions



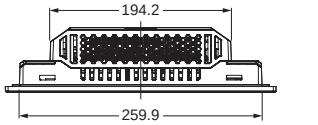
NA5-12W101S-V1/-12W101B-V1

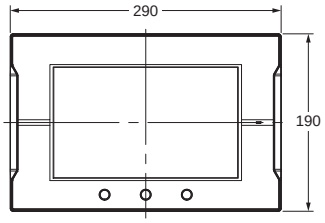


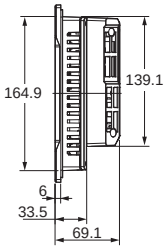
Cable Connection Dimensions



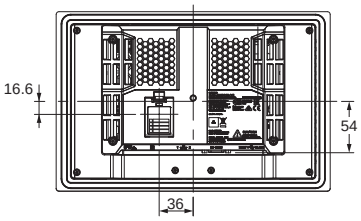
NA5-9W001S-V1/-9W001B-V1

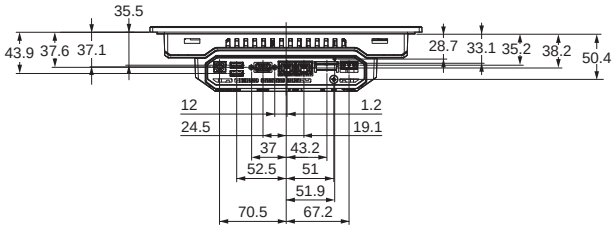




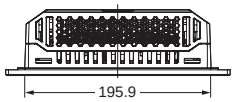


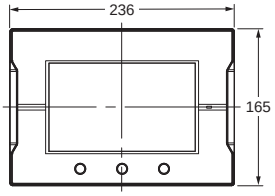
Cable Connection Dimensions

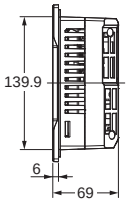




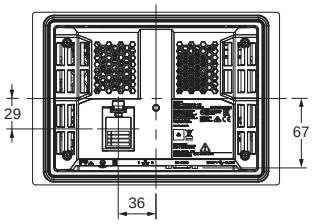
NA5-7W001S-V1/-7W001B-V1

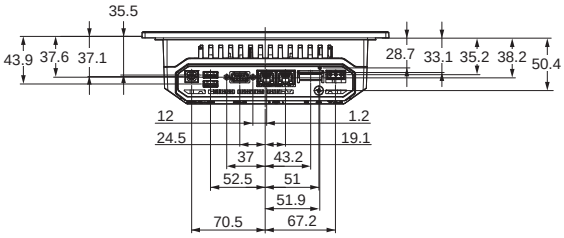






Cable Connection Dimensions





Related Manuals

Cat. No.	Model number	Manual
V125	NA5-15□101□-V1 NA5-12□101□-V1 NA5-9□001□-V1 NA5-7□001□-V1	NA-series Programmable Terminal Hardware (-V1) User's Manual
V118	NA5-15□101□ (-V1) NA5-12□101□ (-V1) NA5-9□001□ (-V1) NA5-7□001□ (-V1) NA-RTLD□□	NA-series Programmable Terminal Software User's Manual
V119	NA5-15□101□ (-V1) NA5-12□101□ (-V1) NA5-9□001□ (-V1) NA5-7□001□ (-V1) NA-RTLD□□	NA-series Programmable Terminal Device Connection User’s Manual
V120	NA5-15W□□□□ NA5-12W□□□□ NA5-9W□□□□ NA5-7W□□□□	NA-series Programmable Terminal Startup Guide
V126	NA-RTLD□□□	NA-series Programmable Terminal Soft-NA User's Manual

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