

# Machine Interface

NA Series





# 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.





# 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



### 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 NEW

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).

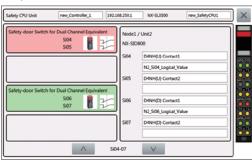
The Safety Input/Output Unit Monitor shows the ON/OFF status of safety I/O units and information on components connected to individual I/O terminals, enabling efficient monitoring of the entire system including safety components.







Safety I/O unit

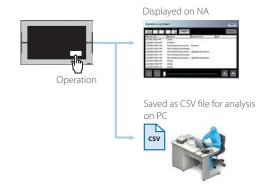


### Logging and displaying operations NEW

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.



### **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

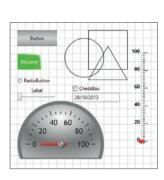
- Your project can be password-protected along with other applications (Control and Safety).
- Transferring data can be protected (disable overwrite or theft).

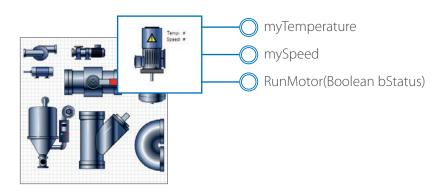
# Simple, but Flexible!

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.





### 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.

1

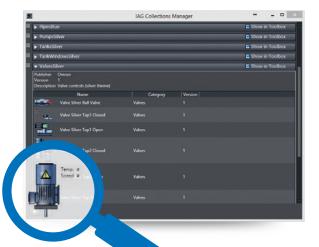
2



### 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.

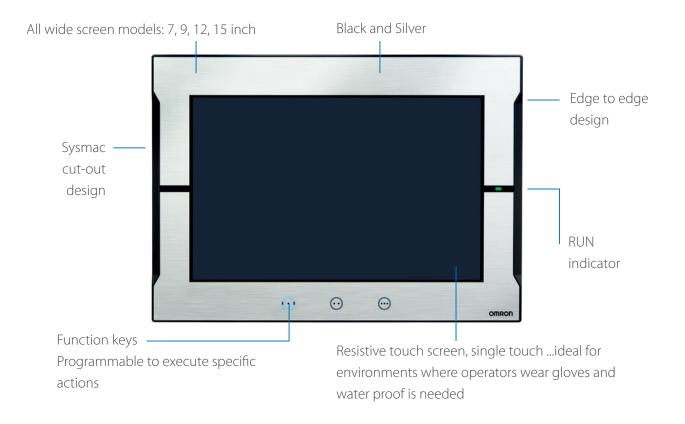




# A range of options that covers every need

### NA5

### Very stylish, very functional



### Widescreens displaying 16,770,000 colors



### Soft-NA



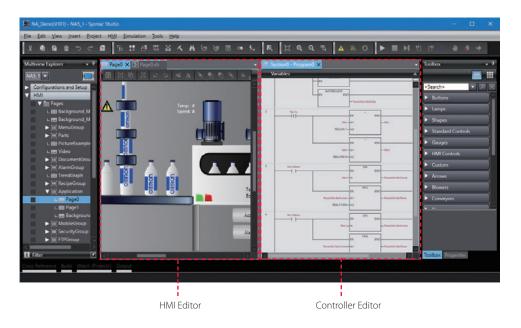
### HMI functions work on Windows to flexibly suit various on-site applications

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.

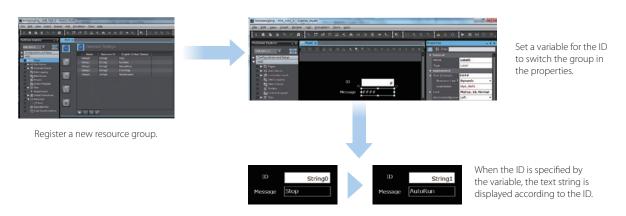




\*1.Contact your Omron representative to obtain Cool Objects.

### 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.

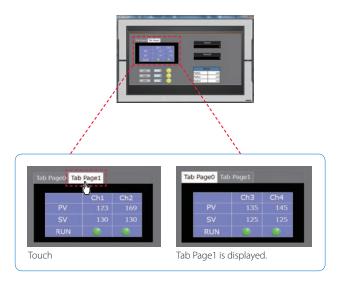


### Tab control

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

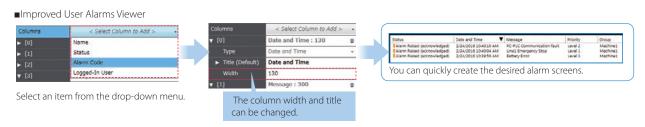
Up to 64 tab pages for a Tab Control object can be created, and up to 10 Tab Control objects can be placed on a screen.

Change a tab page instead of a screen to monitor/ change various data.



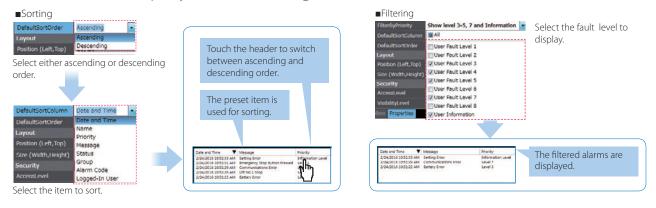
### Setting, sorting, and filtering alarms

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



You can "sort" alarms by the preset item and "filter" by any keyword.

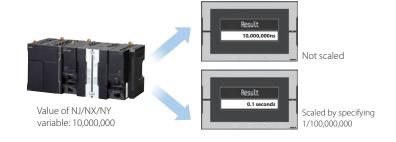
The error location can be quickly identified from a large number of alarms.



### Scaling

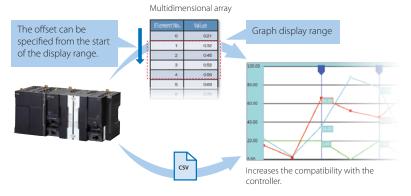
Scaling can be set for Data Display/Data Edit objects and global variables.

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 brokenline 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.

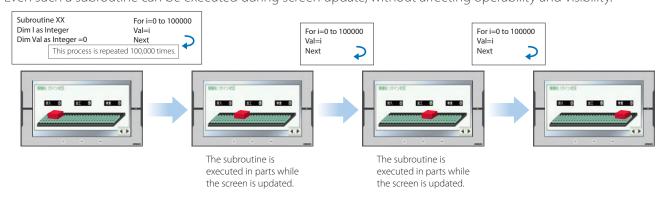
Local languages can be used to input the names of products when new recipes of the food packaging machine



### Executing a subroutine with multiple threads

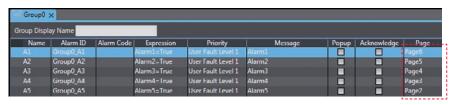
Some subroutines require time due to repeated processing or waiting time.

Even such a subroutine can be executed during screen update, without affecting operability and visibility.



### 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



### 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.

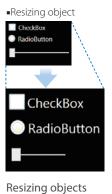




Changing the keypad size
The size can be changed to suit the user's needs.



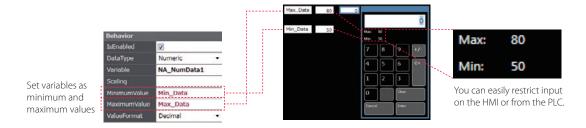
Creating user's own keypad
Only the keys the user needs can be chosen, and the keys to execute specified actions can be customized.



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

### Dynamically changing upper/lower limit value

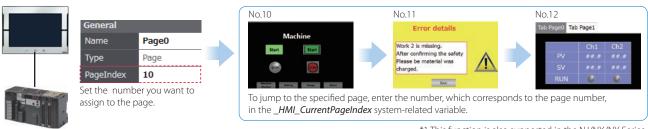
The upper and lower limit values can be dynamically changed by setting variables as maximum and minimum values of a Data Edit object. It is possible to restrict input according to the status of the machine.



### 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



<sup>\*1.</sup> This function is also supported in the NJ/NX/NY Series.

# Usability: Design

# - Simple screen design

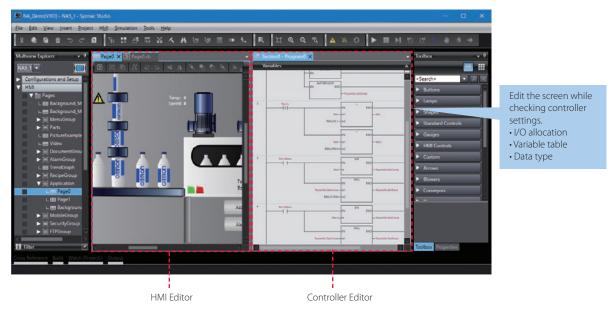
### Integrated development environment

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.

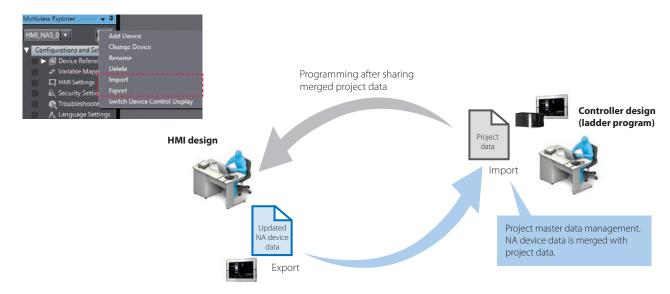
This eliminates the need to switch between screens, making the design easier and faster.



### 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.

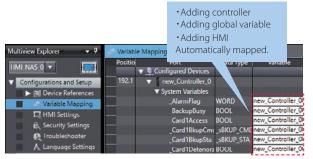


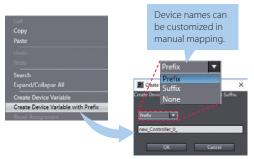
\* When an input is selected, a Button object is added automatically. When an output is selected, a Lamp object is added automatically.

### 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.

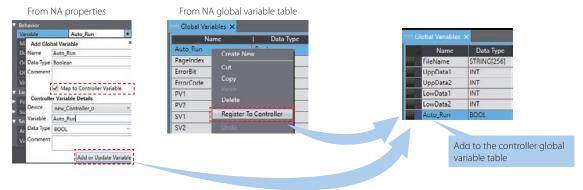




### Easy to add NA variables to controller

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.

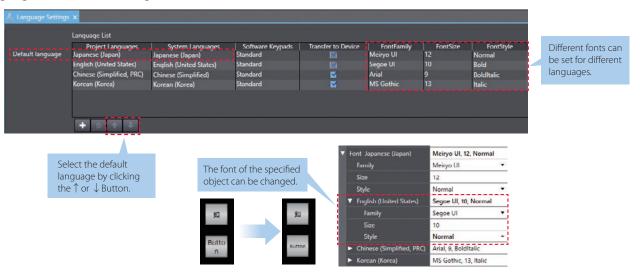


Resource management

Helps install your machines globally and modularize design.

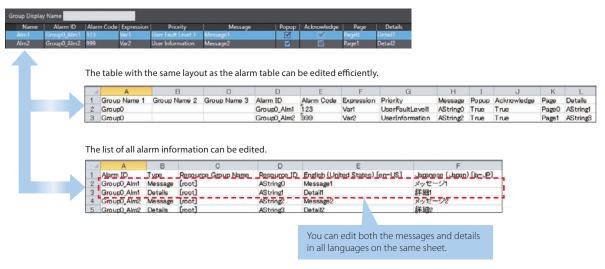
### **Language Settings**

- 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.

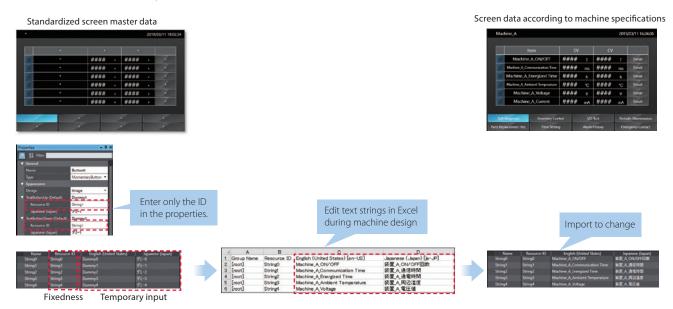


• Even if alarms are grouped, such as by machine module, all alarms can be imported and exported at once.

### Improved resource editing

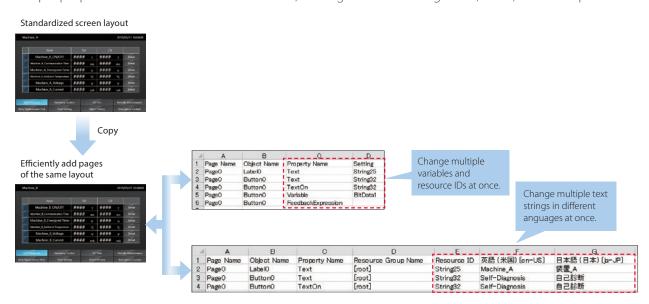
• In addition to entering a text string directly in properties, you can assign an ID first and enter a text string later.

This resource ID-based management enables you to standardize screens first and then enter all text strings edited in Excel to suit machine specifications.



- 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.

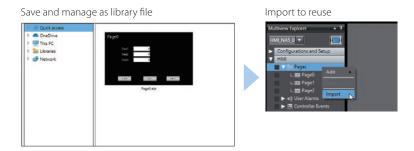


Page Editor

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

### Importing and exporting pages NEW

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



### 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.



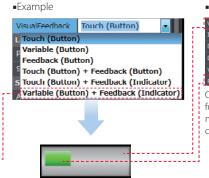


No need to recreate the button to change its type. The settings will be maintained even the type has been changed, reducing the amount of work required for screen creation.

### Buttons with the lamp function

You can easily create Buttons with the lamp function.

■Types of Buttons with the lamp function **Condition for lightning lamps** Setting Touch(Button) Pressing Button Variable(Button) Variable Feedback(Button) Feedback Expression Touch(Button) Pressing Button + Feedback Expression +Feedback(Button) Touch(Button) +Feedback(Indicator) Button: Pressing Button Indicator: Feedback Expression Variable(Button) Button: Variable +Feedback(Indicator) Indicator: Feedback Expression



Conceptual figure for setting objects

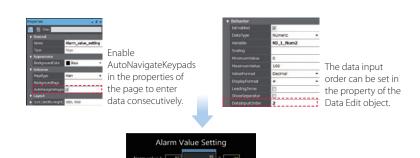


One object that has both button and lamp functions can be created. This eliminates the need for creating multiple objects, helping create screens faster.

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

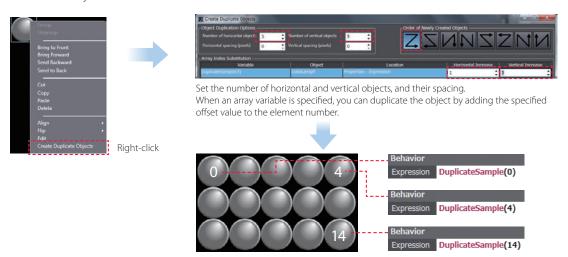
### Data input order

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.



### 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.



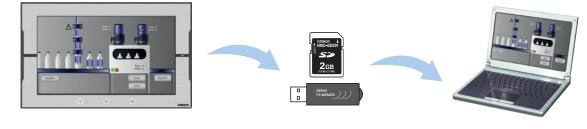
### NA screen capture

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.

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

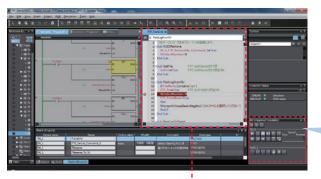


# Usability: Debugging

# - 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.

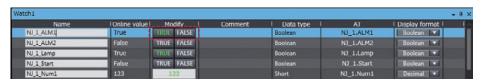


Errors found during

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

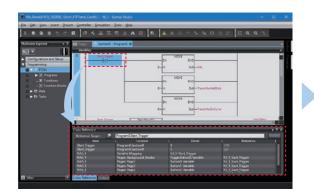


### Cross references

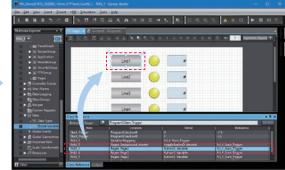
The same GUI for the cross reference function as the NJ/NX/NY Controller can be used.

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.

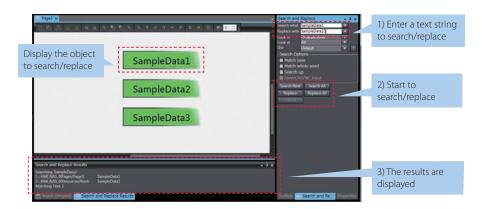


Click the location to access the object where the variables is used.

### 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.



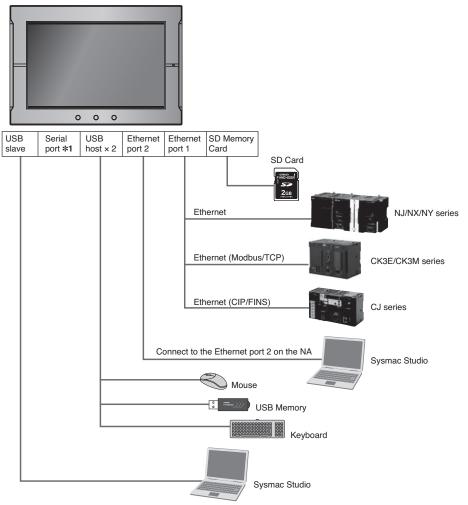
### **Features**

- 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.

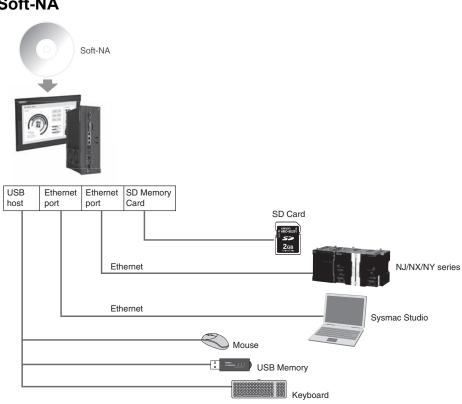
## **System configuration**

### NA5



\$1. The serial port is for future expansion.

### Soft-NA



### **NA** series

## **Ordering Information**

### NA5-□W

Product name	Specifications	Model *1
NAE 45W	15.4 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full color), 1280 × 800 dots, Frame color : Silver	NA5-15W101S-V1
NA5-15W	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
NAS-12VV	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
NA5-9W	9 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full color), 800 × 480 dots, Frame color : Black	NA5-9W001B-V1
	7 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full color), 800 × 480 dots, Frame color : Silver	NA5-7W001S-V1
NA5-7W	7 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full color), 800 × 480 dots, Frame color : Black	NA5-7W001B-V1
		NA-15WATW01
High-pressure Waterproof Attachment	This metal frame is for high-pressure waterproofing. Install it to conform to UL Type 4X standards.	NA-12WATW01
	UL Type 4X is the rating for high-pressure wash-down applications with a flow rate of 246 liter/min.	NA-9WATW01
		NA-7WATW01

<sup>\*1.</sup> For information on the product whose model number does not end with -V1, refer to the Programmable Terminal NA Series Datasheet (Cat. No. V413).

### **Options**

Product name	Specifications	Model
CD mamani and	2 GB	HMC-SD291
SD memory card	4 GB	HMC-SD491
UOD Marrare	2 GB	FZ-MEM2G
USB Memory	8 GB	FZ-MEM8G
Replacement Battery	Battery life: 5 years (at 25°C). This Battery is provided as an accessory.	CJ1W-BAT01
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
	The Soft-NA is software that displays information on FA manufacturing sites	- (Media only)	DVD	NA-RTSM
Soft-NA	while providing safety, reliability, and maintainability as an industrial display on which operations can be performed as necessary.  The Soft-NA runs on the following OS:	1 license		NA-RTLD01
		3 licenses	USB dongle	NA-RTLD03
	Windows 10 Pro Version 1903 or later 64 bit	10 licenses		NA-RTLD10

### **System Requirements**

2000					
Item		Requirement			
OS		Windows 10 Pro Version 1903 or later 64 bit			
Processor		Intel Atom® x5-E3940 equivalent or higher processor			
RAM		4 GB or more			
Free space in the hard drive necessary for installation		1 GB or more			
Optical disk drive		DVD-ROM drive			
Communication	USB	USB2.0 Type-A x 2 <b>*1</b>			
port	LAN	Ethernet x 2 *1			

<sup>\*1.</sup> Since one port is for project transfer, it is not required unless the corresponding path is used.

### **Automation Software**

Product name	Specifications	Number of licenses	Media	Model
Sysmac Studio Standard Edition Ver.1.□□	The Sysmac Studio is the software that provides an integrated environment for setting, programming, debugging and maintenance of machine automation controllers including the NJ/NX Series, EtherCAT Slave, and the HMI.  Sysmac Studio runs on the following OS. Windows XP (Service Pack 3 or higher, 32-bit version) / Windows Vista (32-bit version) / Windows 7 (32-bit/64-bit version) / Windows 8 (32-bit/64-bit version) / Windows 8.1 (32-bit/64-bit version) / Windows 10 (32-bit/64-bit version) *1	– (Media only)	Sysmac Studio (32-bit) DVD	SYSMAC-SE200D
		- (Media only)	Sysmac Studio (64-bit) DVD	SYSMAC-SE200D-64
		1 license	_	SYSMAC-SE201L
		3 licenses		SYSMAC-SE203L
		10 licenses		SYSMAC-SE210L
		30 licenses		SYSMAC-SE230L
		50 licenses		SYSMAC-SE250L

Note: 1. Site licenses are available for users who will run Sysmac Studio on multiple computers. Ask your OMRON sales representative for details. \*1. Model "SYSMAC-SE200D-64" runs on Windows 10 (64 bit).

### **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**

	Specifications						
Product name	Functions	No. of ports	Failure detection	Accessories	Current consumption (A)	Model	
Industrial Switching Hubs	Quality of Service (QoS): EtherNet/IP control data priority Failure detection: Broadcast storm and LSI error	3	No	Power supply connector	0.22	W4S1-03B	
		5	No	Power supply connector	0.22	W4S1-05B	
	detection 10/100BASE-TX, Auto-Negotiation	5	Yes	Connector for informing error	0.22	W4S1-05C	

### **Recommended Ethernet Communications Cables**

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

Product name		Recommended manufacturer	Model
		Hitachi Metals, Ltd	NETSTAR-C5E SAB 0.5 × 4P CP
Wire Gauge and Number of Pairs:	Cables	Kuramo Electric Co.	KETH-SB
AWG24, 4-pair Cable		SWCC Showa Cable Systems Co.	FAE-5004
	RJ45 Connectors	Panduit Corporation	MPS588

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

### **NA** series

### **Performance Specifications**

### **Display**

ltem		Specification					
		NA5-15W	NA5-12W	NA5-9W	NA5-7W		
	Display device	TFT LCD	-		-		
	Screen size	15.4 inches	12.1 inches	9.0 inches	7.0 inches		
Display panel <b>*</b> 1	Resolution	1,280 × 800 dots (horizontal × vertical) 800 × 480 dots (horizontal × vert			tal × 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°					
	Life	50,000 hours min. *3					
Backlight *2	Brightness adjustment	200 levels					
	Туре	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
	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				
item	NA5-15W	NA5-12W	NA5-9W	NA5-7W	
	Method: Analog resistive membrane type				
Touch panel	Resolution: 16,384 × 16,384				
	Life: 1,000,000 operations				
Function keys *1	is)				

<sup>\*1.</sup> 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			
item	NA5-15W	NA5-12W	NA5-9W	NA5-7W
User data capacity	256 MB			

### **External Interfaces**

Item		Specifications (Same for all models.)		
	Applications	Port 1: Connecting to anything other than the Sysmac Studio, e.g., device connections and VNC clier Port 2: Connecting to the Sysmac Studio in addition to the applications of port 1.		
	Number of ports	2 ports		
Ethernet 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		
	Applications	USB Memory Device, keyboard, or mouse		
	Number of ports	2 ports		
USB host ports *1 *2	Compliant standards	USB 2.0		
	Transmission distance	5 m max.		
	Connector	Type-A connector		
	Applications	Sysmac Studio connection		
	Number of ports	1 port		
USB slave port *1	Compliant standards	USB 2.0		
	Transmission distance	5 m max.		
	Connector	Type-B connector		
	Applications	Device Connection		
	Number of ports	1 port		
Serial port *3	Compliant standards	RS-232C		
	Transmission distance	15 m max.		
	Connector	D-DUB 9-pin female connector		
	Applications	To transfer or store the project or to store log data.		
SD Memory Card slot	Number of slots	1 slot		
	Compliant standards	SD/SDHC		

<sup>\*1.</sup> Connection to all USB 2.0-compliant devices is not guaranteed.

<sup>\*2.</sup> Use a USB memory for temporary applications such as transferring data.

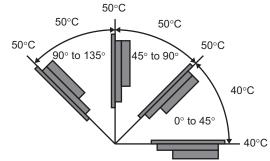
**<sup>\*3.</sup>** The serial port is for future expansion.

Note: 1. For information on the product whose model number does not end with -V1, refer to the Programmable Terminal NA Series Datasheet (Cat. No. V413).

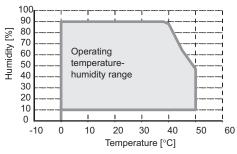
### **General Specifications**

W	Specification			
Item	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 <b>*1 *</b> 2		•	•
Ambient storage temperature	−20 to +60°C <b>*</b> 3			
Ambient operating humidity	10 to 90% *2 Must be no condensation.			
Atmosphere	sphere 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/s² 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 <sup>2</sup> 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 ° × 268 ° mm (horizontal × vertical) Panel thickness: 1.6 to 6.0 mm *4	310 ° × 221 ° 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 × 141 0.5 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	Front-panel controls: IP65 oil-proof type, UL Type 4X (at initial state) 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	UL61010-2-201/CSA C22.2 NO.61010-2-201:14 *6 EMC Directive (2004/108/EC) EN 61131-2:2007 Shipbuilding standards LR, DNV, and NK IP65 oil-proof, UL Type 4X *7(front panel only) UL 121201, 9th Edition/CSA C22.2 NO.213-2017 EAC IEC61131-2:2007 KC Standards KN61131-2 2018 RCM EN61000-6-4:2007+A1:2011			

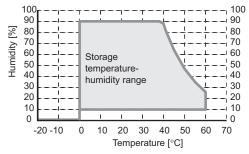
- \*1. The ambient operating temperature is subject to the following restrictions, depending on the mounting angle.
  - The ambient operating temperature is 0° to 40°C when the mounting angle is 0° or more and less than 45° to the horizontal.
  - The ambient operating temperature is 0° to 50°C when the mounting angle is 45° or more and 90° or less to the horizontal.
  - The ambient operating temperature is  $0^\circ$  to  $50^\circ$ C when the mounting angle is  $90^\circ$  or more and  $135^\circ$  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. When the NA-\Box 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.
- **\*7.** Use the NA-□WATW01 High-pressure Waterproof Attachment (sold separately) to conform to UL Type 4X.
- Note: 1. For information on the product whose model number does not end with -V1, refer to the Programmable Terminal NA Series Datasheet (Cat. No. V413).

### **NA** series

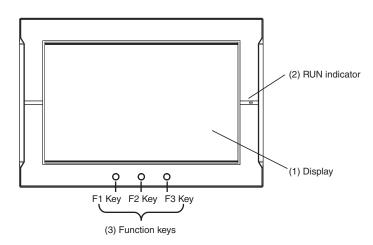
### **Version Information**

NA series and Programming Devices

NA s	eries	Corresponding unit versions/version		
Model	NA system version	NJ/NX/NY-series Controller NX701-□□□□ NY512-□□□□ NX102-□□□□ NY532-□□□□ NX1P2-□□□□ NJ501-□□□□ NX-CSG320 NJ301-□□□□ NJ101-□□□□	Sysmac studio	
	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	
NA5-0000-V1	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	

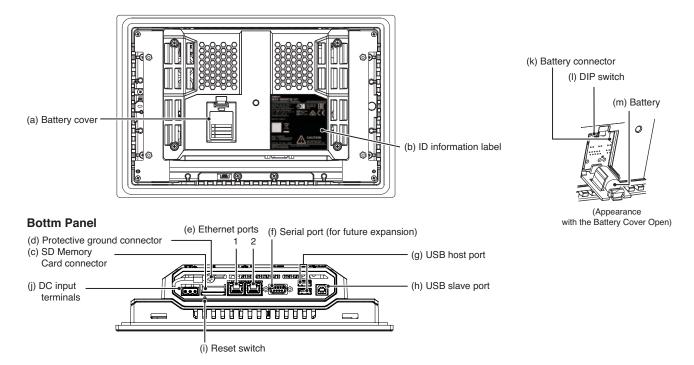
## **Components and Functions**

### **Front Panel**



No.	Name	Description	
(1)	Display	he 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**



No.	Name	Description	
(a)	Battery cover	Open this cover to replace the Battery.	
(b)			
(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.	
( <del>e</del> )	Ethernet port 2	Connect mainly the Sysmac Studio.	
(f)	Serial port *1 For future expansion.		
(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)	(i) Reset switch Use this switch to reset the NA Unit.		
(j)			
(k)	(k) Battery connector Connect the connector on the backup Battery here.		
		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)	n) Battery This is the battery to backup the clock information in the NA Unit.		

\*1. The serial port is for future expansion.

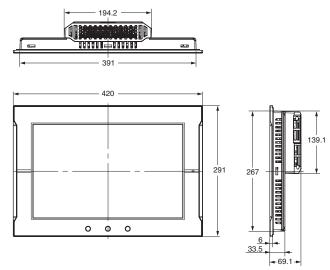
Note: 1. For information on the product whose model number does not end with -V1, refer to the Programmable Terminal NA Series Datasheet (Cat. No. V413).

## **Supported Devices**

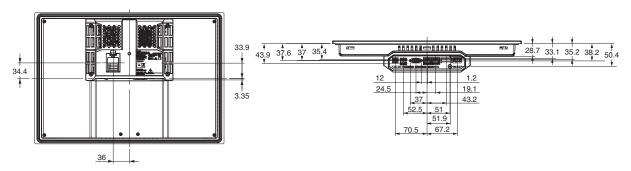
Manufacturer	Models	Connection method	Communications driver
	CK3E-1□10 CK3M-CPU1□1	Built-in Ethernet port	Modbus/TCP
	NX701-□□□□ NY512-□□□□ NX102-□□□□ NY532-□□□□ NJ501-□□□□ NX-CSG320 NJ301-□□□□ NJ101-□□□□	Built-in EtherNet/IP port	Ethernet
	CJ2H-CPU64/65/66/67/68-EIP CJ2M-CPU31/32/33/34/35	Built-in EtherNet/IP port	CIP Ethernet
OMRON	CJ2H-CPU64/65/66/67/68-EIP CJ2M-CPU31/32/33/34/35	CJ1W-EIP21	
	CJ2H-CPU64/65/66/67/68-EIP CJ2M-CPU31/32/33/34/35	Built-in EtherNet/IP port	
	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 CJ1W-EIP21	FINS Ethernet

Dimensions (Unit: mm)

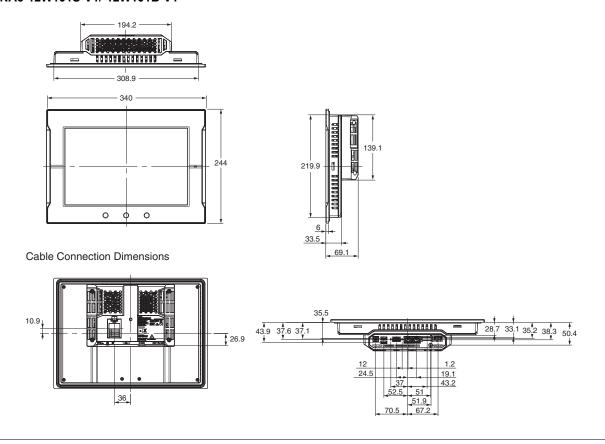
### NA5-15W101S-V1/-15W101B-V1



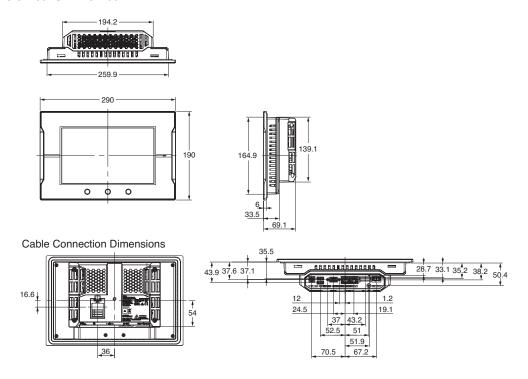
### Cable Connection Dimensions



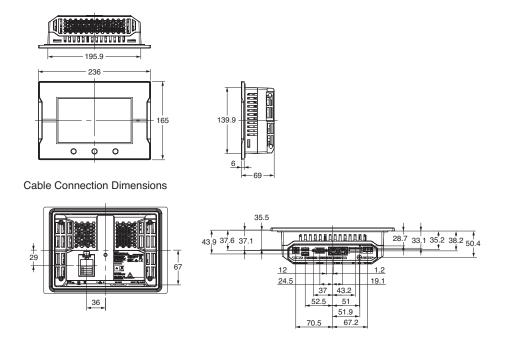
### NA5-12W101S-V1/-12W101B-V1



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



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



Note: 1. For information on the product whose model number does not end with -V1, refer to the Programmable Terminal NA Series Datasheet (Cat. No. V413).

### **NA** series

### **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	NA-series Programmable Terminal Startup Guide	
V126	NA-RTLD	NA-series Programmable Terminal Soft-NA User's Manual	

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Note: Do not use this document to operate the Unit.

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CSM\_2\_1

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