

Machine Interface

NA Series



Bringing technology to life

Sysmac - the family that matches every requirement

An HMI that is dynamic, intuitive and predictive makes industrial machines more attractive and competitive. The Omron HMI enables faster, more efficient control and monitoring - and a more natural, proactive relationship between operator and machine. The design has been based on real applications and customer requirements, a future-proofed, scalable platform that will evolve with their ever-changing needs, allowing real time reaction to events. As part of the system family, the NA Series is fully aware of the total machine.

- Proactive operator/ machine relationship
- Design based on real applications and customer requirements
- Future-proof, scalable platform
- Allows quick reaction





G5 servo system

FH Vision System

NX I/O
NX Safety

NJ/NX Machine Automation Controller

Integrating your world

Sysmac Studio is the centrepiece of the Sysmac Platform, bringing together all areas of automation including: logic, motion, vision, safety and now visualisation. The NA series machine interface brings you a clear view in one integrated project.

ONE Tag Database

- Share NJ/NX Variables (Tags) in the machine interface application. “Intelli sense” makes it FAST
- Flexible programming with variables including union and enumeration variables
- 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

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

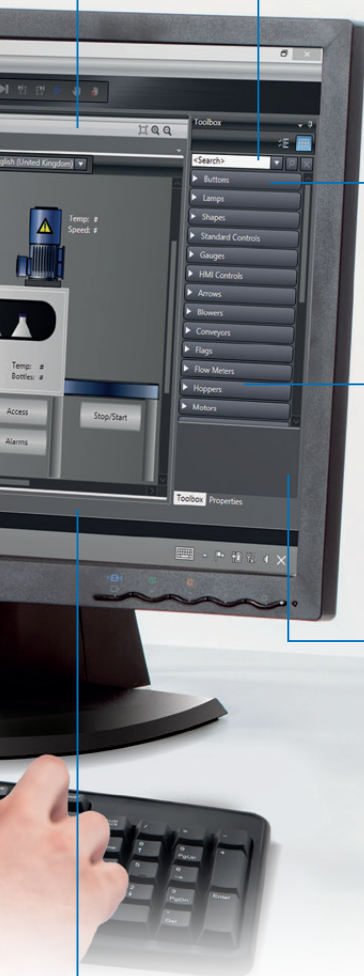
- Write your Visual Basic Script
- Extend the possibilities with Visual Basic

Test it in ONE

- Integrated testing through simulation of motion, logic and visualisation at the same time
- Build confidence before having a single piece of hardware
- Test your machine interface with the NJ/NX Control program via the Simulator in Sysmac Studio

Features for speed

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

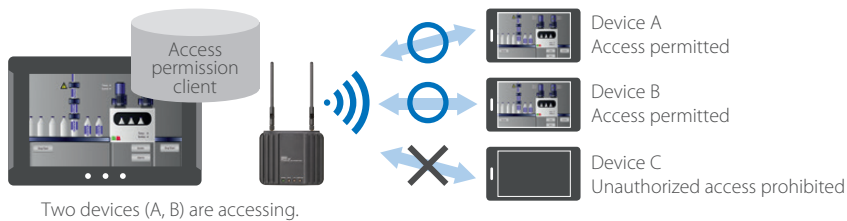


Insight & security maximised ...

The NA series has full security and authentication features that keep your valuable assets secure at all times. And if something unexpected does happen, in your machine you will be able to solve the problem quickly and prevent a reoccurrence.

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.



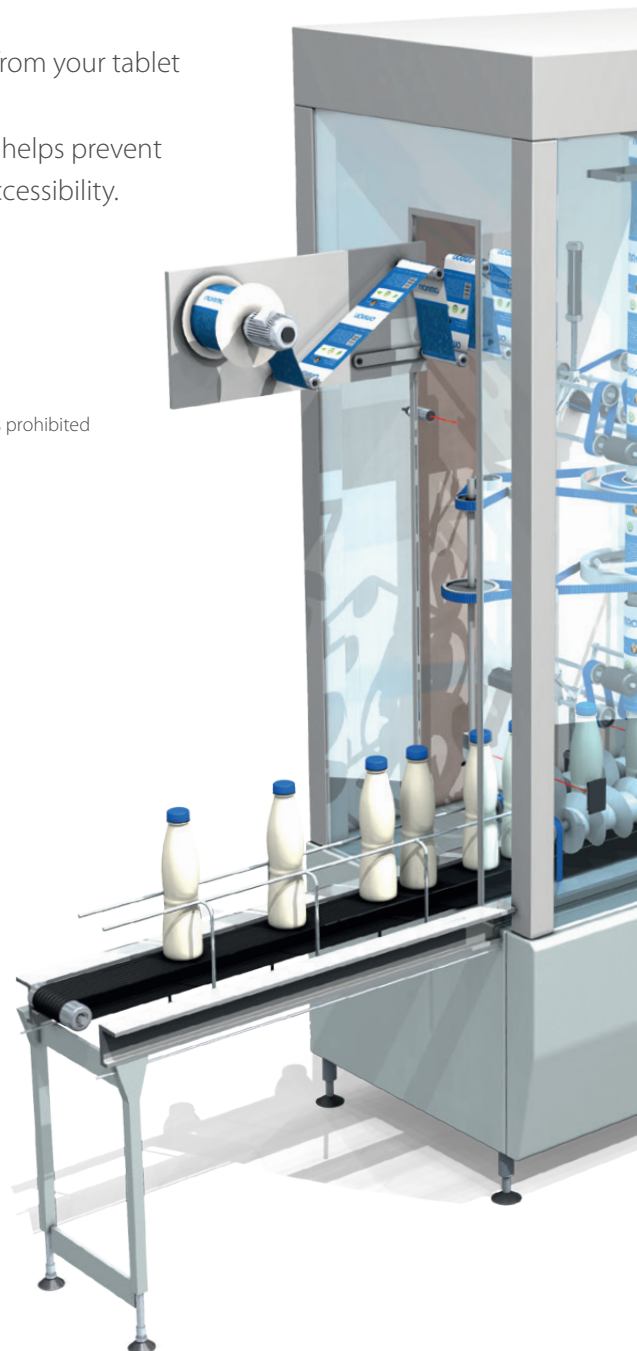
Increased security

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).



... downtime minimised

You can present a machine view that is understandable at a glance. The NA Series brings everything together through rich media including PDF, video, and data to provide an intuitive and proactive machine management tool.



Show your manual in a movie

Imagine actually showing how to perform certain procedures. With the NA Series you have a trained engineer at the operator's side, 24x7.



Show PDFs

You can use whatever visual assets you already have to illustrate how to do things.

Error occurs



NJ/NX troubleshooter



Error details can be checked.



Check the controller

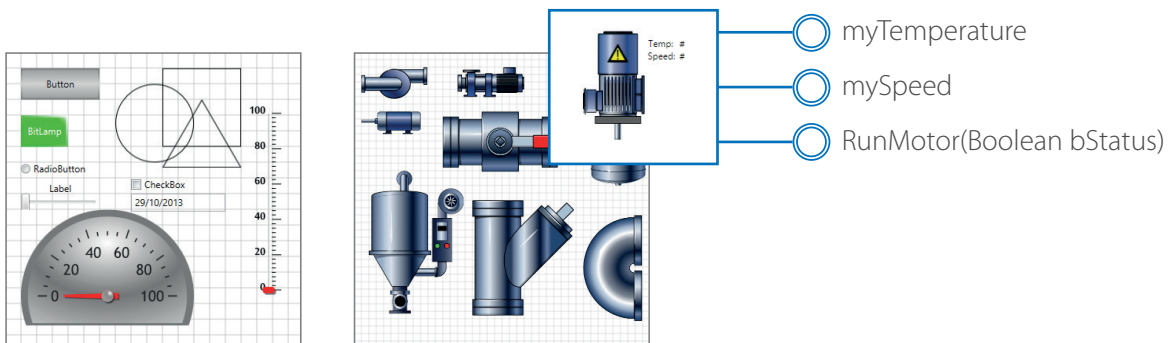
The troubleshooter allows you to monitor and release the NJ/NX Controller errors/events as well as the user-defined errors/events.

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.

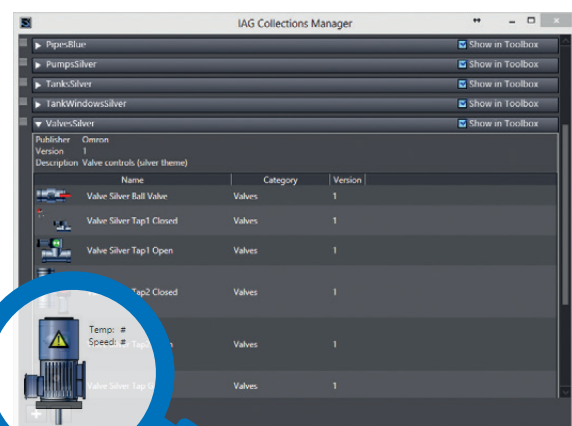


Step 3: Publish and Share

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.



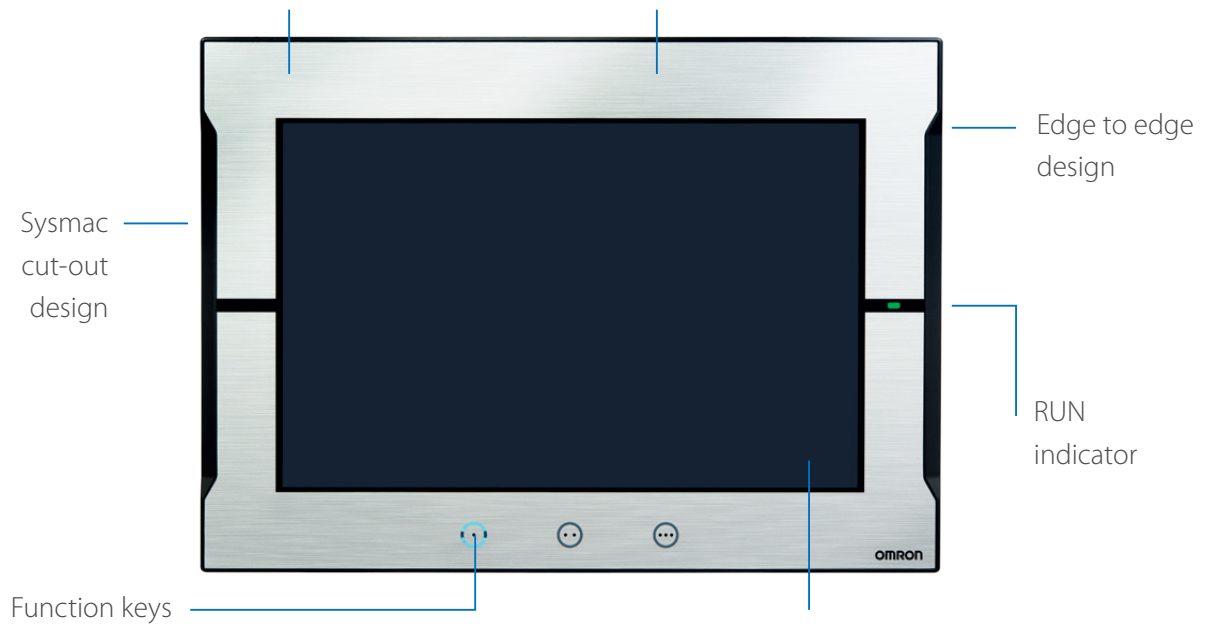
3



A range of options that covers every need

All wide screen models: 7, 9, 12, 15 inch

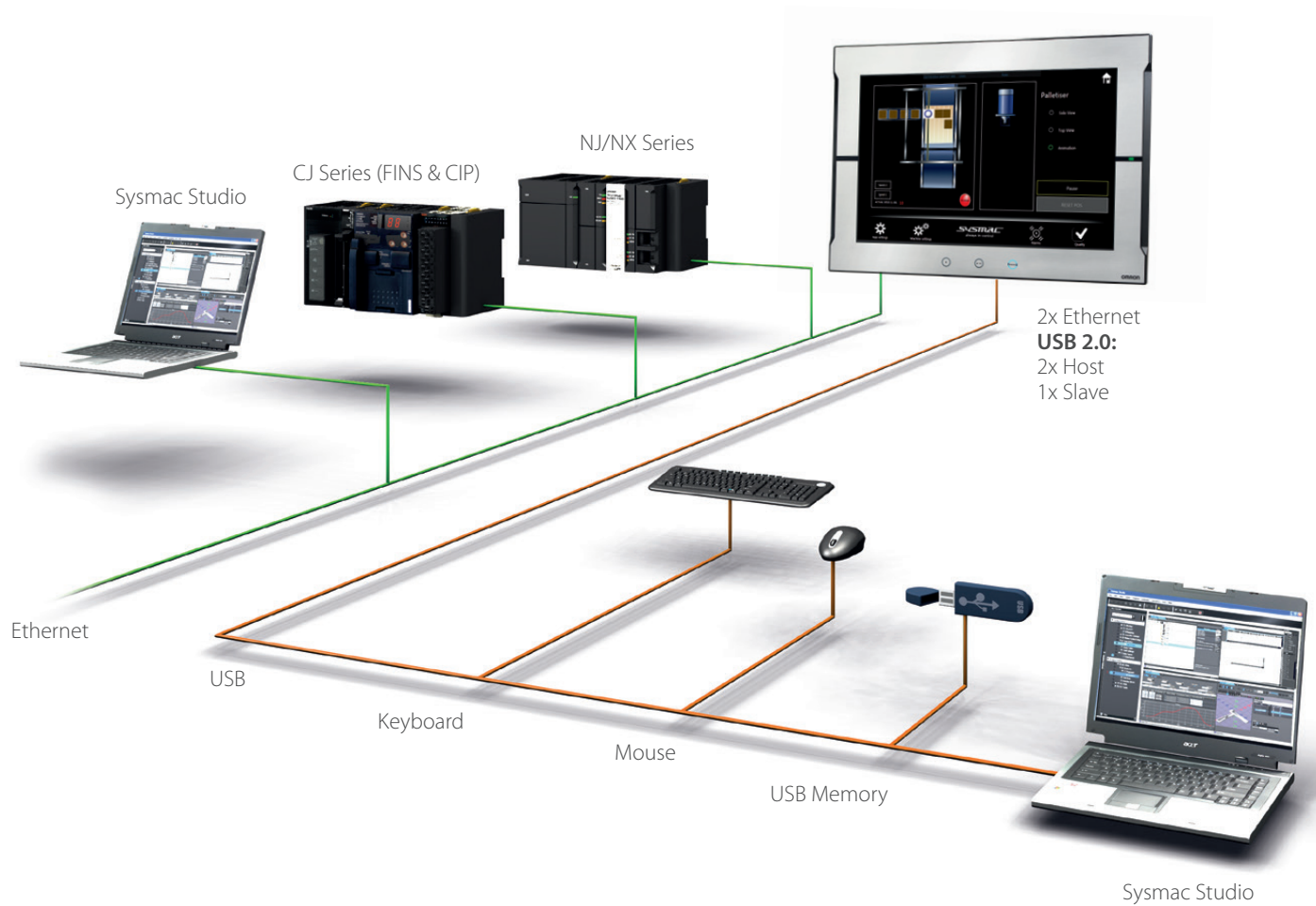
Black and Silver



- 1 USB slave (Tool port)
- 2 2x USB
- 3 1 Serial*

- 4 2 Ethernet ports, one for factory one for office network
- 5 SD Card slot
- 6 24V DC

* The serial port is for future expansion.



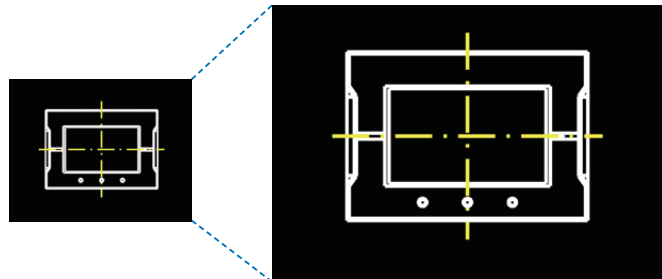
- High speed communications network
- Broad choice of connection possibilities
- USB cable detachable without changing the hardware
- Water and dust proof design

SHOW your machine

- Greater visualization

Vector graphics

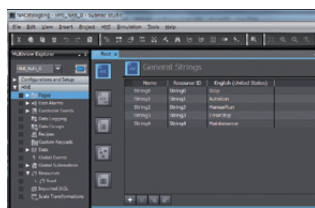
DXF files are supported to display CAD data. Even if the drawing is enlarged or reduced in size, it never loses quality. Supported format: DXF



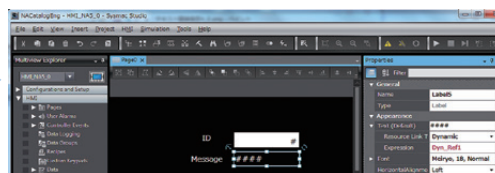
Still smooth even if enlarged!

Indirect reference of text strings

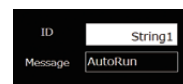
A text string that is displayed on a label object (1 line) or a text box object (1 or more lines) can be switched by indirect reference. The machine operating status and alarm details can be easily displayed.



Register a new resource group.



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



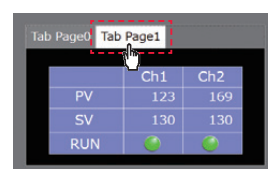
When the ID is specified by the variable, the text string is displayed according to the ID.

Tab control

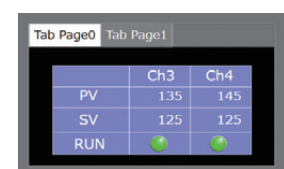
A part of the screen can be used like a notepad.

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.

Usability improvement setting alarm columns, Alarm sort and filter

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

■ Usability improvement setting alarm columns

Select an item from the drop-down menu.

Columns such as "Width" and "Title" can be changed.

You can quickly create the desired 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.

■ Alarm sort

Select either ascending or descending order.

Touch the header to switch ascending/ descending order.

The preset item is used for sorting.

Select the item to sort.

■ Alarm filter

Preselect the event level to display.

Alarms are filtered by specified event level and displayed on the screen.

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.

Value of NJ variable: 10,000,000

Without scaling

Scaling by specifying 1/100,000,000

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 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.

Multidimensional array

The offset can be specified from the start of the display range.

Graph display range

Increases the compatibility with the controller.

OPERATE your machine

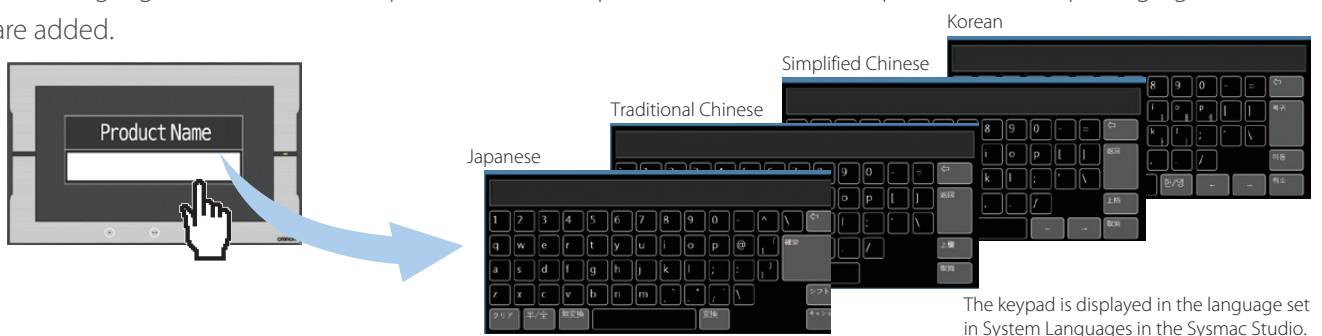
- Comfortable to use

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.

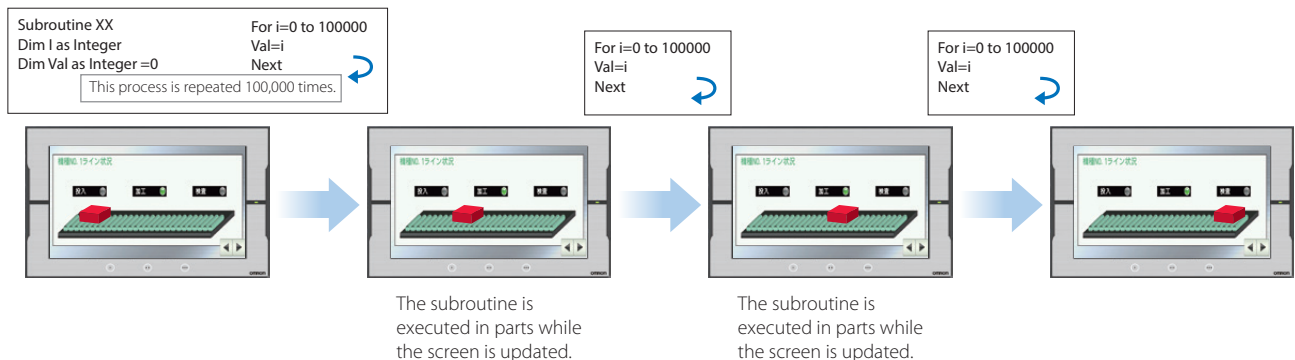
Local languages can be used to input the names of products when new recipes of the food packaging machine are added.



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.



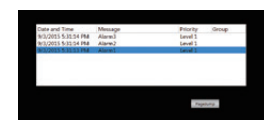
Page jump from user alarm

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

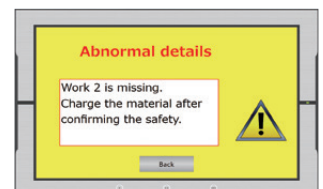
When an alarm occurs, you can check the troubleshooter screen by selecting the displayed alarm.

Group0 x									
Group Display Name									
Name	Alarm ID	Alarm Code	Expression	Priority	Message	Popup	Acknowledge	Page	
A1	Group0_A1		Alarm1=True	User Fault Level 1	Alarm1	<input type="checkbox"/>	<input type="checkbox"/>	Page6	
A2	Group0_A2		Alarm2=True	User Fault Level 1	Alarm2	<input type="checkbox"/>	<input type="checkbox"/>	Page5	
A3	Group0_A3		Alarm3=True	User Fault Level 1	Alarm3	<input type="checkbox"/>	<input type="checkbox"/>	Page4	
A4	Group0_A4		Alarm4=True	User Fault Level 1	Alarm4	<input type="checkbox"/>	<input type="checkbox"/>	Page3	
A5	Group0_A5		Alarm5=True	User Fault Level 1	Alarm5	<input type="checkbox"/>	<input type="checkbox"/>	Page2	

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



Select the alarm and then click the Page Jump Button.



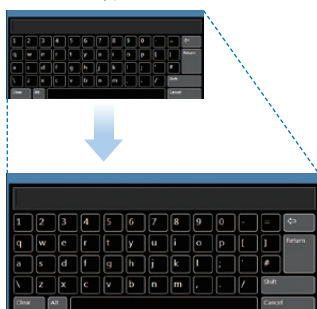
The specified page is displayed.

Custom keypads, Resizing object

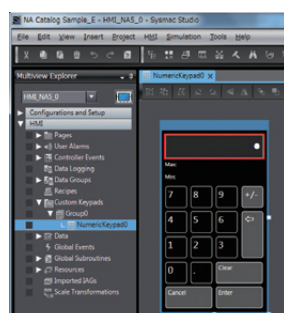
You can change the keypad size, choose only the keys you need, and customize the keys to execute specified actions. Create your own keypad suitable for your applications.

Check boxes, slider buttons, and radio buttons can now be resized. You can greatly improve the usability of your machine by enlarging these objects in size.

Custom keypads

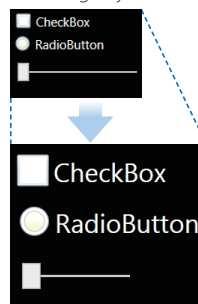


Changing the keypad size
The size can be changed to suit the user's needs.



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



Usability improvement resizing object
The columns for resizing the objects are added. You can resize the objects suitable for your application.

Dynamic max/min value

The maximum and minimum values can be dynamically changed by setting the variables in the corresponding fields of the data input object. Possible to restrict input according to the status of the device.

Set variables in the "MinimumValue" and "MaximumValue" fields.

Behavior	
IsEnabled	<input checked="" type="checkbox"/>
DataType	Numeric
Variable	NA_NumData1
Scaling	
MinimumValue	Min_Data
MaximumValue	Max_Data
ValueFormat	Decimal

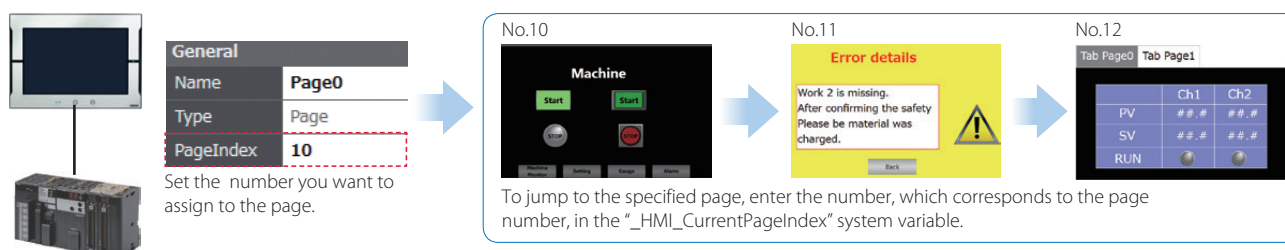
Max: 80
Min: 50

You can easily restrict input on-site or using PLC.

Specify page by number

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

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



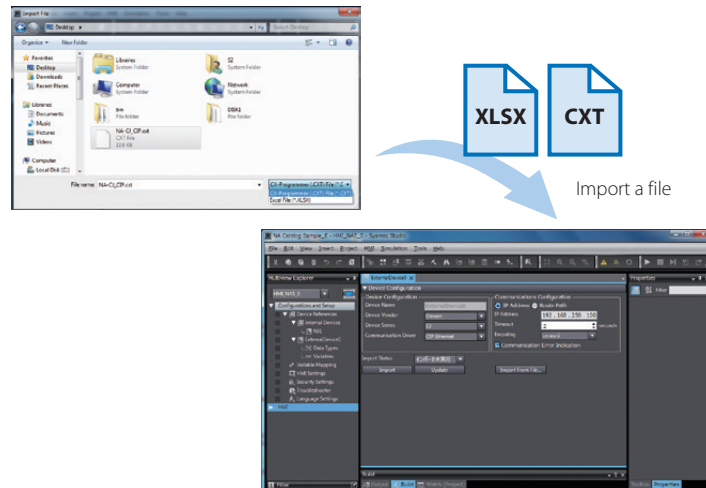
*This function is also supported in the NJ/NX Series.

Usability

- Simple screen design for Debugging

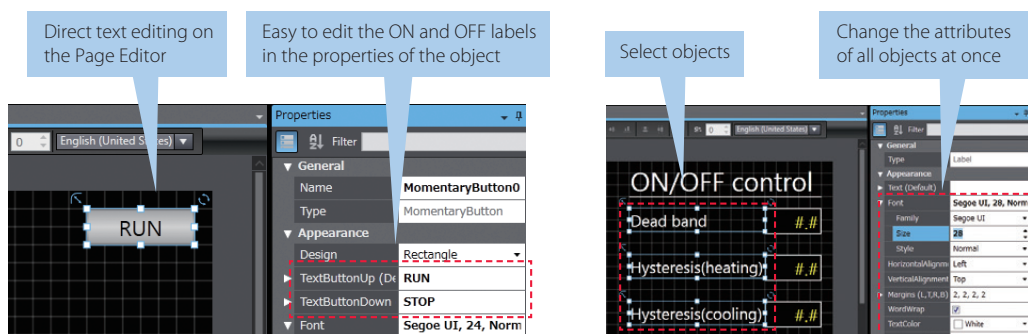
Importing external device variables

External device variables can be imported from an XLSX or CXT file. The CJ variable files and Excel files containing edited variables can be imported. Imported variables facilitate programming including external device settings.



Text editing

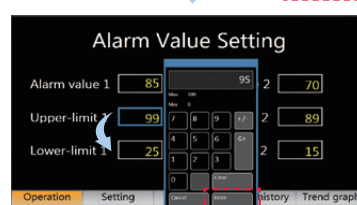
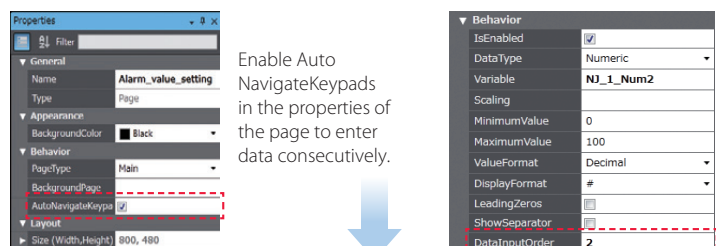
You can edit a label either directly on the Page Editor or in its properties. Editing in the object properties is recommended to edit the ON and OFF labels and change the font attributes at the same time.



In the properties, the font attributes (font type, size, and color) of multiple labels can be changed at the same time.

Data input order

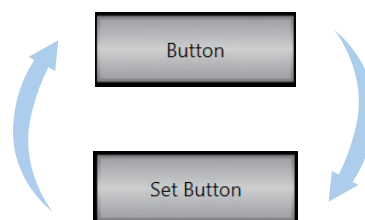
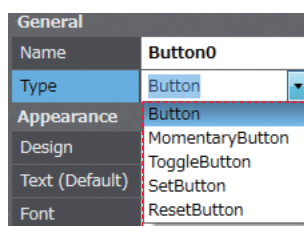
The Data input order can be set. When numeric values are entered consecutively, the focus automatically moves to the next Data Edit object by touching the Enter key. Input errors and input time can be minimized.



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

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.

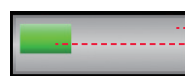
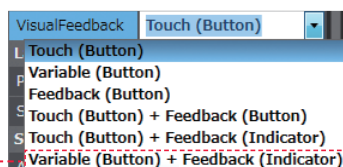
Button/Lamp Object

With one object, you can easily create a button that contains the lamp function.

■Creatable button and lamp objects

Setting	Condition for lightning lamps
Touch(Button)	By pressing button
Variable(Button)	Variable
Feedback(Button)	Feedback Expression
Touch(Button) + Feedback(Button)	By pressing button:Feedback Expression
Touch(Button) + Feedback(Indicator)	Button:by pressing button Indicator:Feedback Expression
Variable(Button) + Feedback(Indicator)	Button:Variable Indicator:Feedback Expression

■Example



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

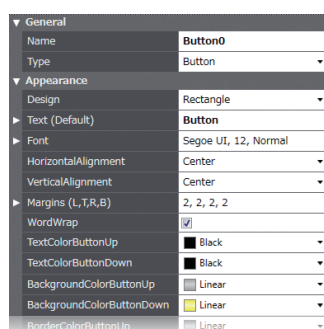
■Conceptual figure for setting objects

Variable	NA_BitData1
IsEnabled	<input checked="" type="checkbox"/>
DoubleTouchTime	0
DelayTime	0
VisualFeedback	Variable (Button) + Feedback (Indicator)
FeedbackExpression	NA_NumData2>=2

Both of button and lamp functions can be realized with one object. This eliminates the need for creating multiple objects, helping create screens faster.

Property localization (Japanese only)

The properties that were previously displayed in English only can now also be displayed in Japanese.



Usability improvement adding variables

When adding variables in the properties, they can be also added to the variable table at the same time.

This greatly saves your time and effort for adding variables to the variable table that was previously required each time.

Click

Add variable

You can also map the variable to the NJ/NX Series Controller variable.

Click the "Add Variable" button

To copy the variable to the variable table, enter the variable name, and then click the "Add Variable" button.

Creating duplicate objects

Based on one object, you can create multiple copies with the same appearance and the same settings by incrementing the variable.

This makes screen creation faster and easier.

Right-click

Set the number of horizontal and vertical objects, and its interval.
In case of using arrays, the number of array elements can also be incremented.

Behavior
Expression DuplicateSample(0)

Behavior
Expression DuplicateSample(4)

Behavior
Expression DuplicateSample(14)

Usability improvement jumping to code editor

You can open the code editor (a page to edit subroutines) with just one click.

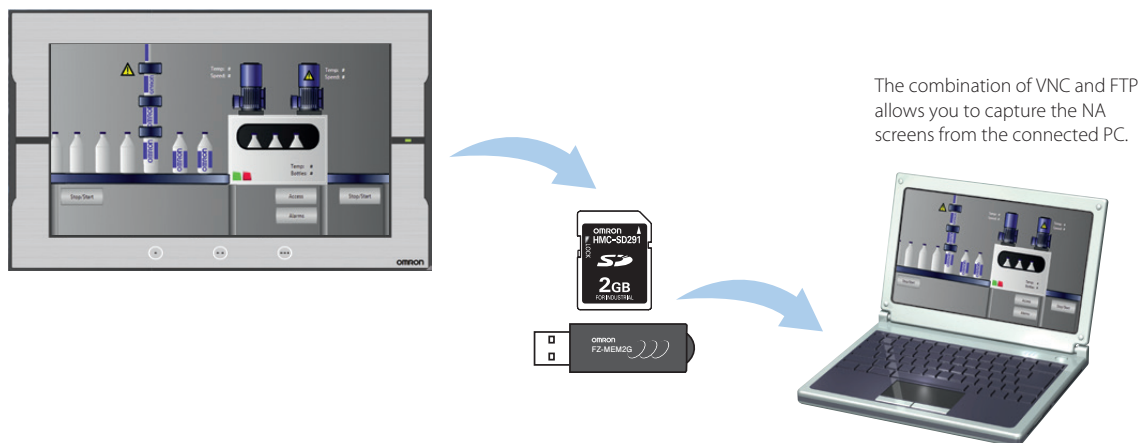
Click the icon added in the Toolbar.

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.

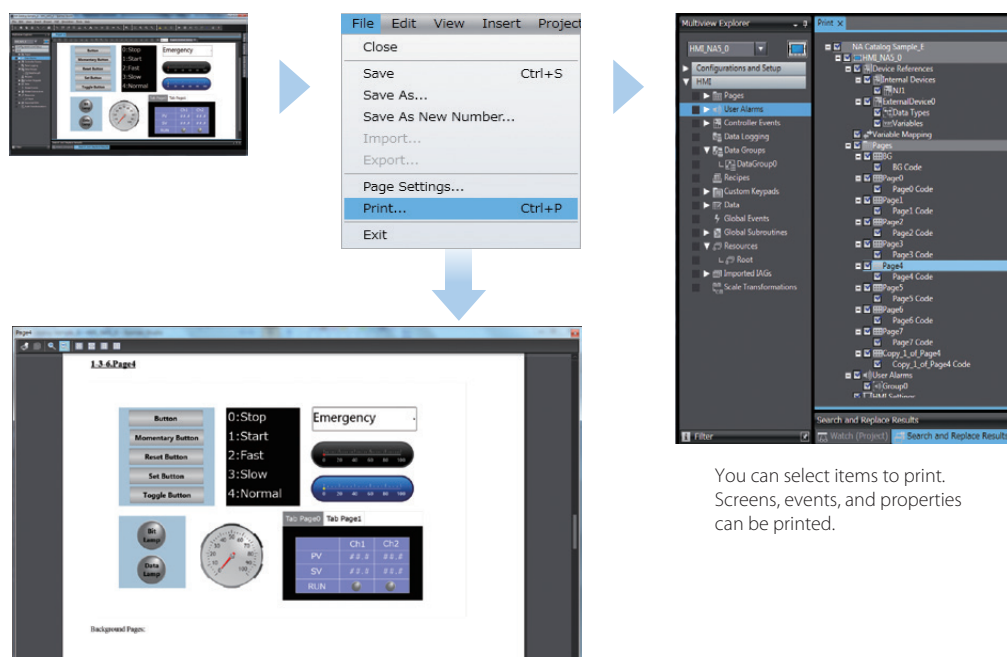
- When a screen of the NA Series is required to create a machine operation manual
- When the current screen is required to save as proof of a trouble

Supported format: PNG



Sysmac Studio printing

Project information including screens and properties can be printed from the Sysmac Studio. This function is useful when you create machine manuals.



You can select items to print. Screens, events, and properties can be printed.

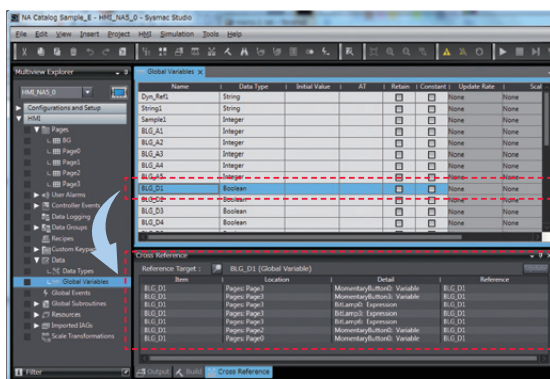
Usability

- Simple screen design for Debugging

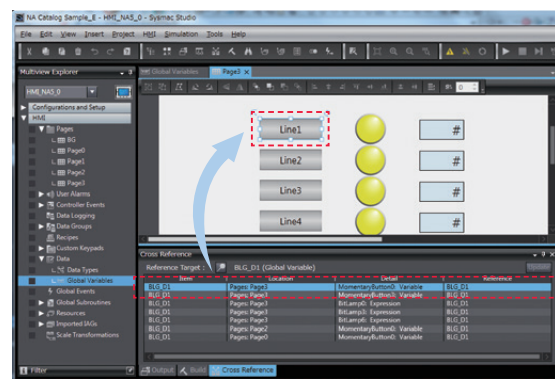
Cross references

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

When the variable to search 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. You can access the object or subroutine where the variable is used by clicking the location, which 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.

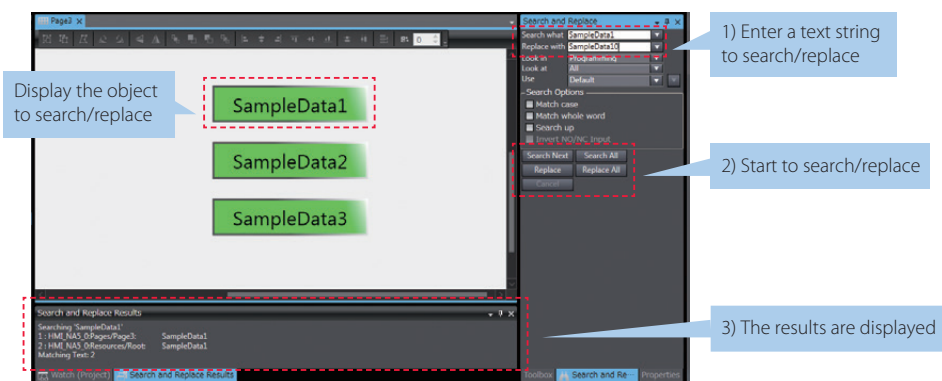


Click the location to access the object where the variable is used.

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.



Watch Tab Page

The same GUI as the NJ/NX 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.

(Broken-line Graph and Trend Graph objects cannot be used for simulations.)

Name	Online value	Modify	Comment	Data type	AT	Display format
NJ_1_ALM1	True	TRUE FALSE		Boolean	NJ_1.AL1	Boolean
NJ_1_ALM2	False	TRUE FALSE		Boolean	NJ_1.AL2	Boolean
NJ_1_Lamp	True	TRUE FALSE		Boolean	NJ_1.Lamp	Boolean
NJ_1_Start	False	TRUE FALSE		Boolean	NJ_1.Start	Boolean
NJ_1_Num1	123	123		Short	NJ_1.Num1	Decimal

Change to TRUE

Check the alarm
with the Simulator

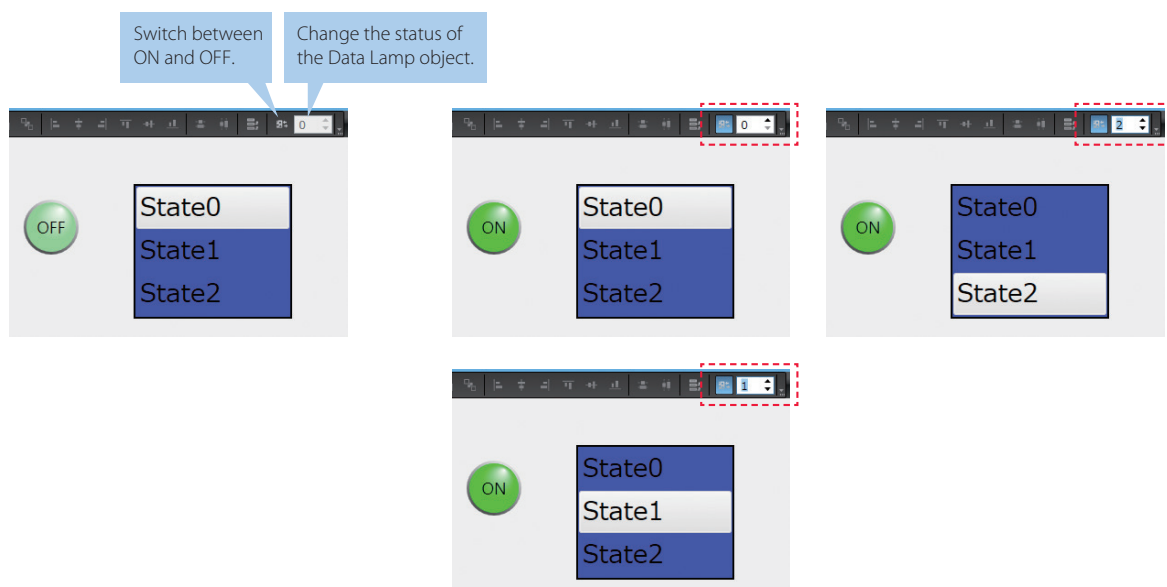


Displaying object status

The ON/OFF status of the object placed on the Page Editor can be switched.

You can check the ON/OFF status of a Lamp or other object without starting the Simulator.

Not only the ON/OFF status of a Bit Lamp object but also all status of a Data Lamp object can be checked.



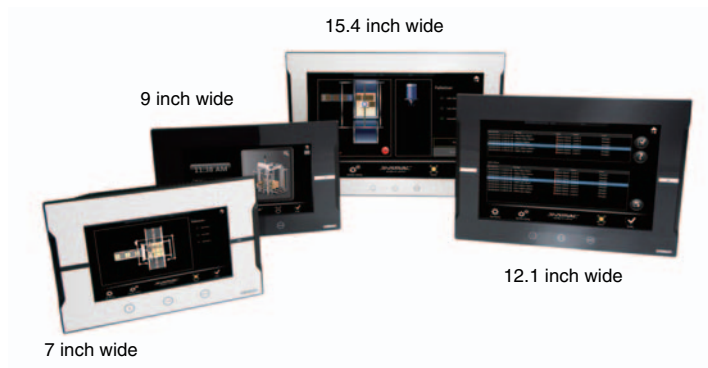
Programmable Terminal

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-series Machine Automation Controller and the Automation Software Sysmac Studio, allows you to simply and flexibly create sophisticated user interfaces to suit your machines.

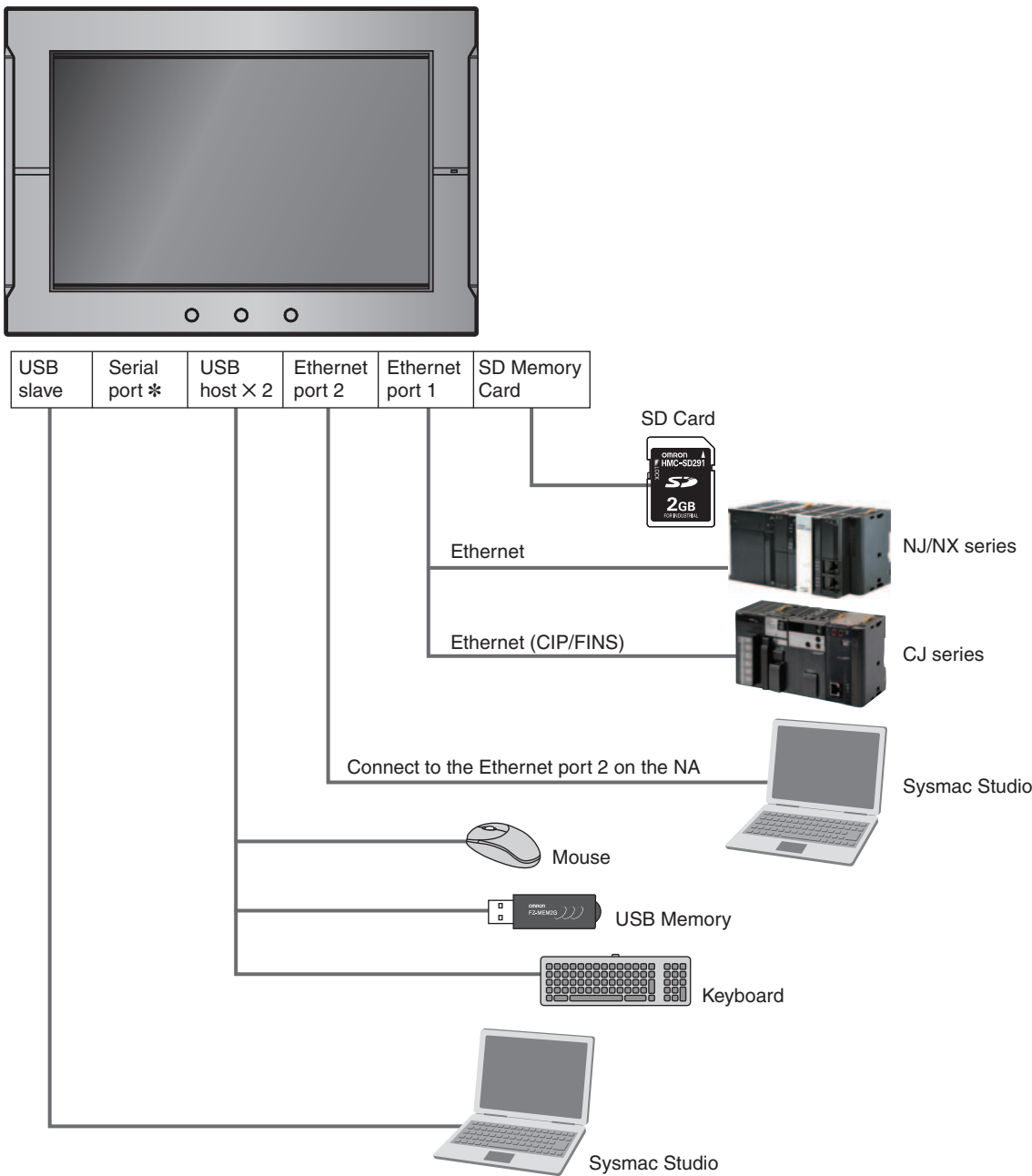


Features

- 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
- 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 variables sharing in the NA project and NA application testing with the NJ/NX 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

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System configuration



* The serial port is for future expansion.

NA series

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
	15.4 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full color), 1280 × 800 dots, Frame color : Black	NA5-15W101B
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
	12.1 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full color), 1280 × 800 dots, Frame color : Black	NA5-12W101B
NA5-9W	9 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full color), 800 × 480 dots, Frame color : Silver	NA5-9W001S
	9 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full color), 800 × 480 dots, Frame color : Black	NA5-9W001B
NA5-7W	7 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full color), 800 × 480 dots, Frame color : Silver	NA5-7W001S
	7 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full color), 800 × 480 dots, Frame color : Black	NA5-7W001B
High-pressure Waterproof Attachment for NA5-□W	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. This attachment can be used for the NA5-□W, but not for the NA5-□U.	NA-15WATW01
		NA-12WATW01
		NA-9WATW01
		NA-7WATW01

Note: The NA5-□U is also available. Contact your OMRON representative for details.

Options

Product name	Specifications	Model
SD memory card	2 GB	HMC-SD291
	4 GB	HMC-SD491
USB Memory	2 GB	FZ-MEM2G
	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

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)	– (Media only)	DVD	SYSMAC-SE200D
		1 license	–	SYSMAC-SE201L
		3 licenses		SYSMAC-SE203L
		10 licenses		SYSMAC-SE210L
		30 licenses		SYSMAC-SE230L
		50 licenses		SYSMAC-SE250L

Note: Site licenses are available for users who will run Sysmac Studio on multiple computers. Ask your OMRON sales representative for details.

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

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
		Kuramo Electric Co.		KETH-SB
		SWCC Showa Cable Systems Co.		FAE-5004
	RJ45 Connectors	Panduit Corporation		MPS588
Wire Gauge and Number of Pairs: 0.5 mm, 4-pair Cable	Cables	Fujikura Ltd.		F-LINK-E 0.5mm × 4P
	RJ45 Connectors	Panduit Corporation		MPS588

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

NA series

Performance Specifications

NA5-□W and NA5-□U have the same specifications and performance characteristics of hardware and software.

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

*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 resistance membrane (pressure sensitive)			
	Resolution	16,384 × 16,384			
	Life	1,000,000 operations			
Function keys *		3 inputs (capacitance inputs)			

* 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			
USB host ports	Connector	RJ-45 8P8C modular connector			
	Applications	USB Memory Device, keyboard, or mouse			
	Number of ports	2 ports			
	Compliant standards	USB 2.0			
	Transmission distance	5 m max.			
USB slave port	Connector	Type-A connector			
	Applications	Sysmac Studio connection			
	Number of ports	1 port			
	Compliant standards	USB 2.0			
	Transmission distance	5 m max.			
Serial port *	Connector	Type-B connector			
	Applications	Device Connection			
	Number of ports	1 port			
	Compliant standards	RS-232C			
	Transmission distance	15 m max.			
SD Memory Card slot	Connector	D-DUB 9-pin female connector			
	Applications	To transfer or store the project or to store log data.			
	Number of slots	1 slot			
	Compliant standards	SD/SDHC			
	Expansion Unit connector *	Expansion Unit			
Expansion Unit connector *	Quantity	1			

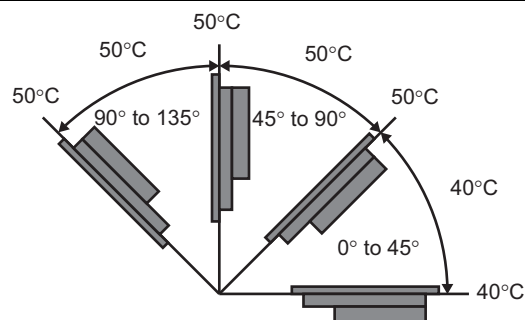
* The serial port and Expansion Unit connector are for future expansion.

General Specifications

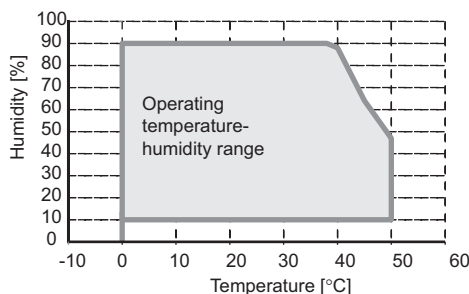
Item	Specification			
	NA5-15W	NA5-12W	NA5-9W	NA5-7W
Rated supply voltage	24 VDC			
Allowable power supply voltage range	19.2 to 28.8 VDC (24 VDC $\pm 20\%$)			
Allowable momentary power interruption time	Operation for momentary power interruption is not specified.			
Power consumption	47 W max.	45 W max.	40 W max.	35 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: JIS B 3502, IEC 61131-2			
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 \times 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 \times 291 \times 69 mm (W \times H \times D)	340 \times 244 \times 69 mm (W \times H \times D)	290 \times 190 \times 69 mm (W \times H \times D)	236 \times 165 \times 69 mm (W \times H \times D)
Panel cutout dimensions	392 ⁺¹ ₀ \times 268 ⁺¹ ₀ mm (horizontal \times vertical) Panel thickness: 1.6 to 6.0 mm *4	310 ⁺¹ ₀ \times 221 ⁺¹ ₀ mm (horizontal \times vertical) Panel thickness: 1.6 to 6.0 mm *4	261 ⁺¹ ₀ \times 166 ⁺¹ ₀ mm (horizontal \times vertical) Panel thickness: 1.6 to 6.0 mm *4	197 ^{+0.5} ₀ \times 141 ^{+0.5} ₀ mm (horizontal \times vertical) Panel thickness: 1.6 to 6.0 mm *4
Weight	3.2 kg max.	2.3 kg max.	1.7 kg max.	1.3 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	UL 508/CSA standard C22.2 No.142 *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) ANSI 12.12.01 Class 1 Division 2/CSA standard C22.2 No. 213-M1987 (R2013) RoHS Directive (2002/95/EC) KC Standards KN 61000-6-2: 2012-06 for EMS and KN 61000-6-4: 2012-06 for EMI RCM			

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

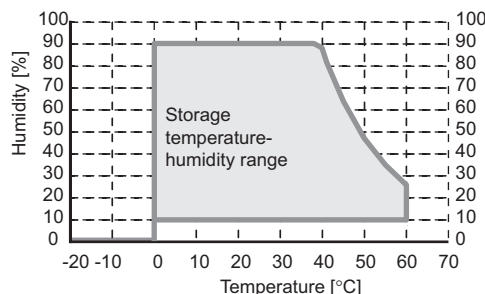
- The ambient operating temperature is 0° to 40°C when the mounting angle is 0° or more and less than 45° to the horizontal.
- The ambient operating temperature is 0° to 50°C when the mounting angle is 45° or more and 90° or less to the horizontal.
- The ambient operating temperature is 0° to 50°C when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

*7. Use the NA-□WATW01 High-pressure Waterproof Attachment (sold separately) to conform to UL Type 4X.

NA series

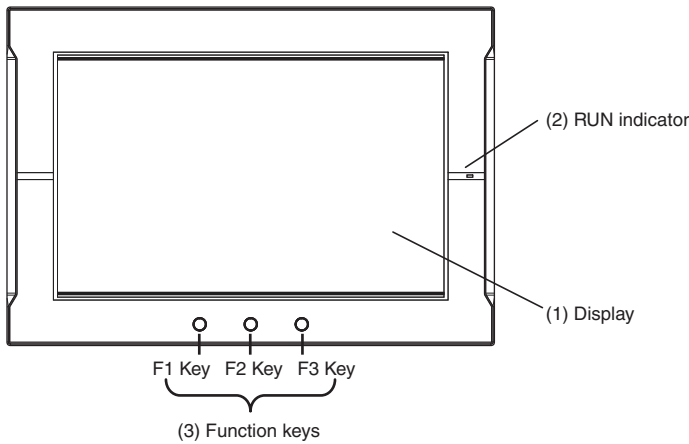
Version Information




NA series and Programming Devices

NA series		Corresponding unit versions/version	
Model	NA system version	NJ/NX-series CPU Units NX701-□□□□ NJ501-□□□□ NJ301-□□□□ NJ101-□□□□	Sysmac studio
NA5-15W NA5-12W NA5-9W NA5-7W	1.02 or later	NX701: 1.10 or later NJ101: 1.10 or later	1.13 or higher
	1.01 or later	NJ501 : 1.01 or later NJ501 Database Connection : 1.05 or later NJ301 : 1.01 or later	1.11 or higher

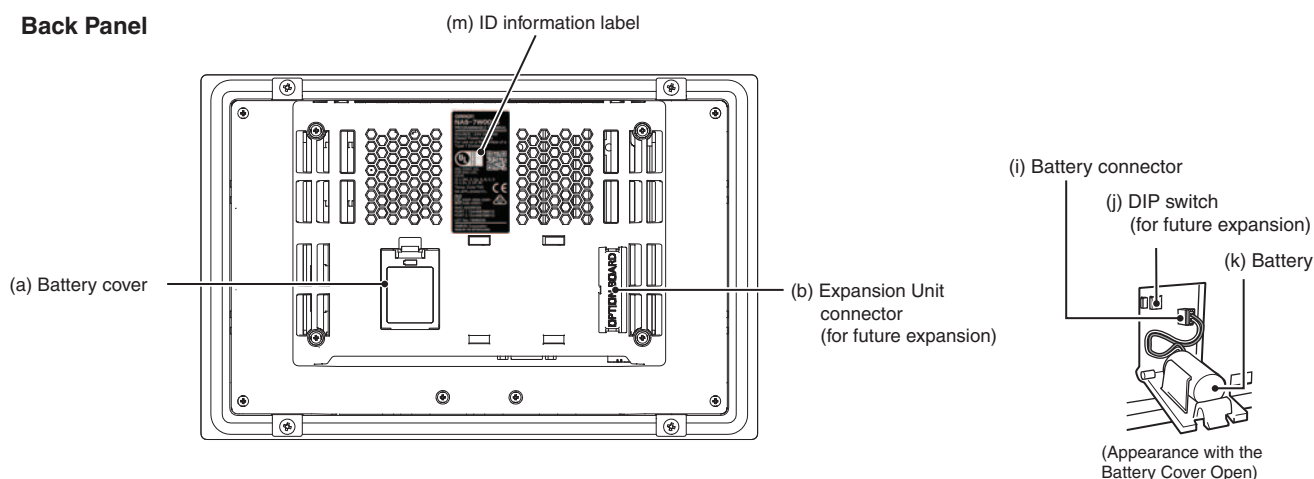
Components and Functions

Front Panel

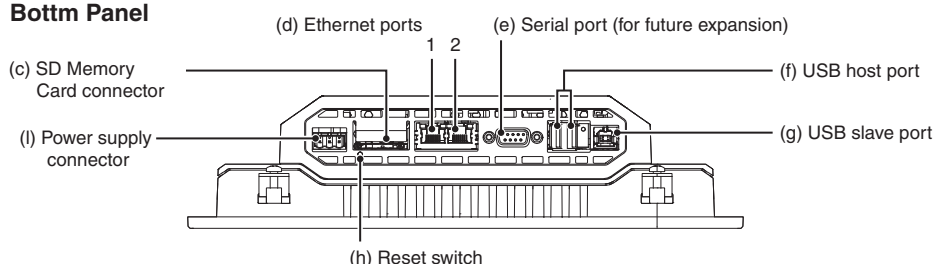


No.	Name	Description
(1)	Display	The entire display is a touch panel that also functions as an input device.
(2)	RUN indicator	The status of the indicator changes according to the status of the NA.
(3)	Function keys	<p>There are three function keys: F1, F2, and F3.</p> <p> : F1 Key,  : F2 Key,  : F3 Key</p> <p>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.</p>

Back Panel



Bottom Panel



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

* The DIP switch, Expansion Unit connector, and serial port are for future expansion.

Supported Devices

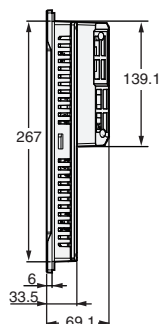
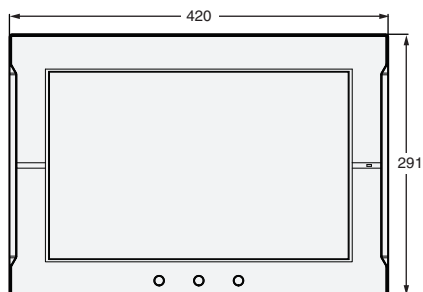
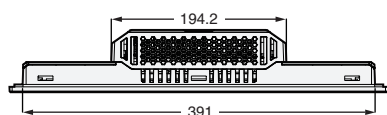
Manufacturer	Models	Connection method	Communications driver
OMRON	NX701-□□□□ NJ501-□□□□ NJ301-□□□□ NJ101-□□□□	Built-in EtherNet/IP port	Ethernet
	CJ2H-CPU64/65/66/67/68-EIP CJ2M-CPU31/32/33/34/35	Built-in EtherNet/IP port	CIP Ethernet
	CJ2H-CPU64/65/66/67/68-EIP CJ2M-CPU31/32/33/34/35	CJ1W-EIP21	
	CJ2H-CPU64/65/66/67/68-EIP CJ2M-CPU31/32/33/34/35	Built-in EtherNet/IP port	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 CJ1W-EIP21	

NA series

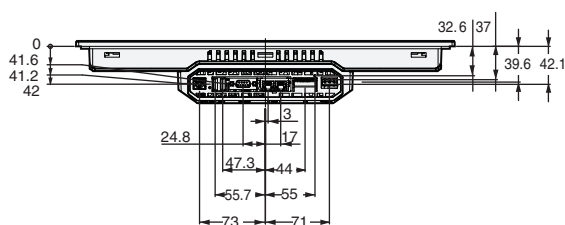
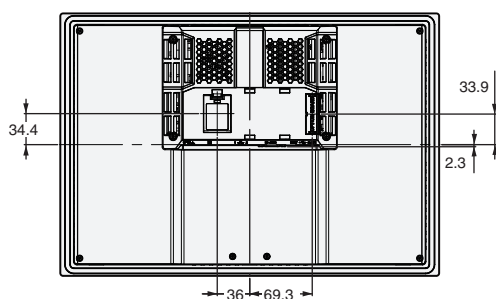
Dimensions

(Unit: mm)

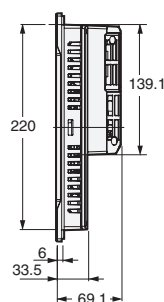
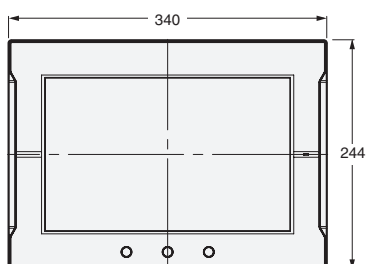
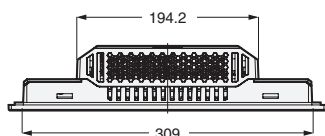
NA5-15W101S/-15W101B



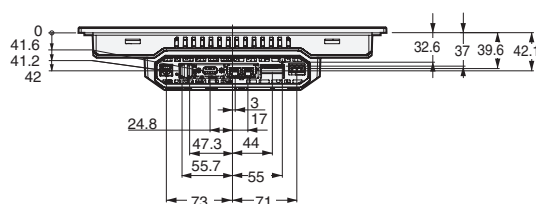
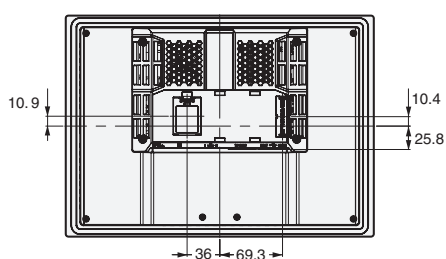
Cable Connection Dimensions



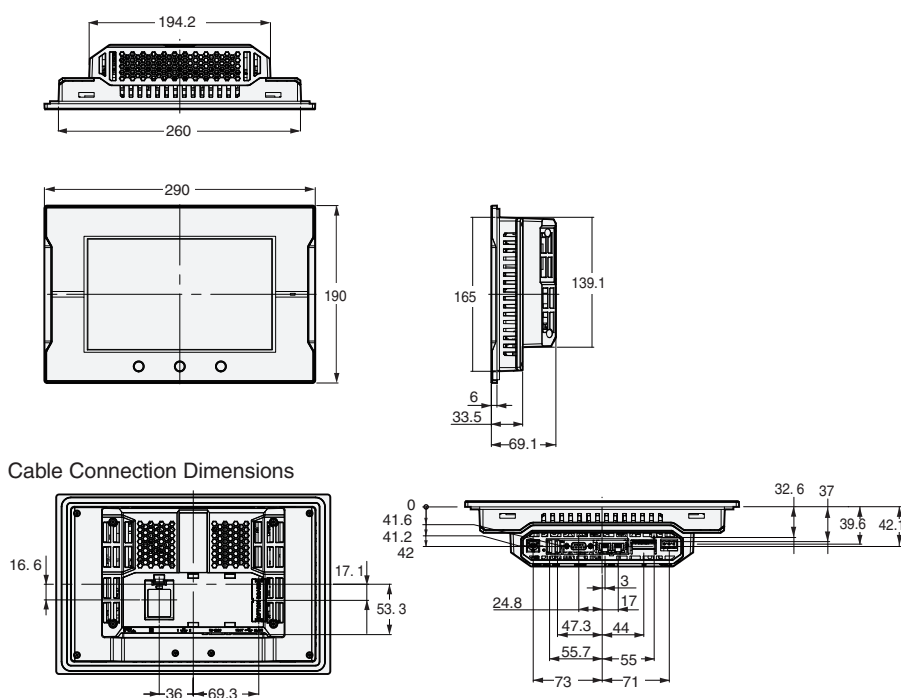
NA5-12W101S/-12W101B



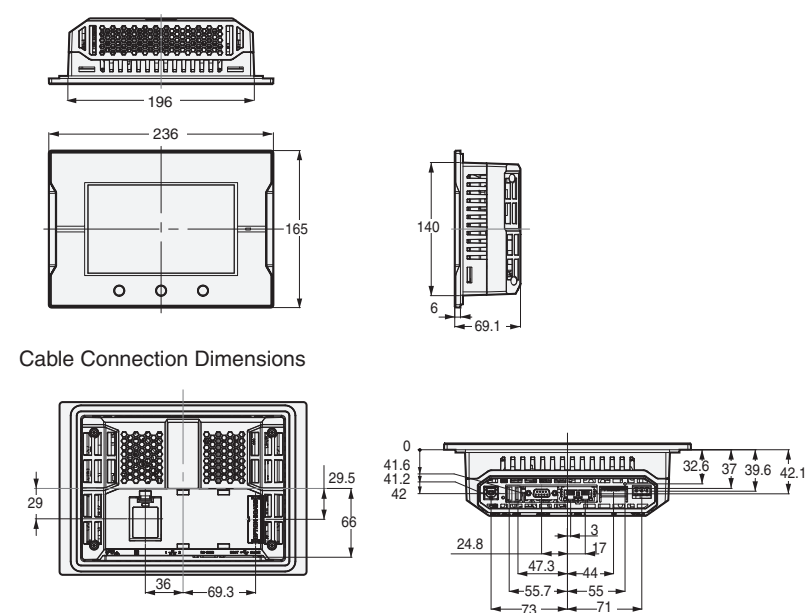
Cable Connection Dimensions



NA5-9W001S/-9W001B



NA5-7W001S/-7W001B



NA series

Related Manuals

Cat. No.	Model number	Manual
V117	NA5-15W□□□□ NA5-12W□□□□ NA5-9W□□□□ NA5-7W□□□□	NA-series Programmable Terminal Hardware User's Manual
V118	NA5-15W□□□□ NA5-12W□□□□ NA5-9W□□□□ NA5-7W□□□□	NA-series Programmable Terminal Software User's Manual
V119	NA5-15W□□□□ NA5-12W□□□□ NA5-9W□□□□ NA5-7W□□□□	NA-series Programmable Terminal Device Connection User's Manual
V120	NA5-15W□□□□ NA5-12W□□□□ NA5-9W□□□□ NA5-7W□□□□	NA-series Programmable Terminal Startup Guide

Terms and Conditions Agreement

Read and understand this catalog.

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

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- (a) Exclusive Warranty. Omron's exclusive warranty is that the Products will be free from defects in materials and workmanship for a period of twelve months from the date of sale by Omron (or such other period expressed in writing by Omron). Omron disclaims all other warranties, express or implied.
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Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

Errors and Omissions.

Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

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

OMRON Corporation Industrial Automation Company
Kyoto, JAPAN

Contact: www.ia.omron.com

Regional Headquarters

OMRON EUROPE B.V.

Wegalaan 67-69, 2132 JD Hoofddorp
The Netherlands
Tel: (31)2356-81-300/Fax: (31)2356-81-388

OMRON ELECTRONICS LLC

2895 Greenspoint Parkway, Suite 200
Hoffman Estates, IL 60169 U.S.A.
Tel: (1) 847-843-7900/Fax: (1) 847-843-7787

OMRON ASIA PACIFIC PTE. LTD.

No. 438A Alexandra Road # 05-05/08 (Lobby 2),
Alexandra Technopark,
Singapore 119967
Tel: (65) 6835-3011/Fax: (65) 6835-2711

OMRON (CHINA) CO., LTD.

Room 2211, Bank of China Tower,
200 Yin Cheng Zhong Road,
PuDong New Area, Shanghai, 200120, China
Tel: (86) 21-5037-2222/Fax: (86) 21-5037-2200

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Cat. No. V413-E1-06

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