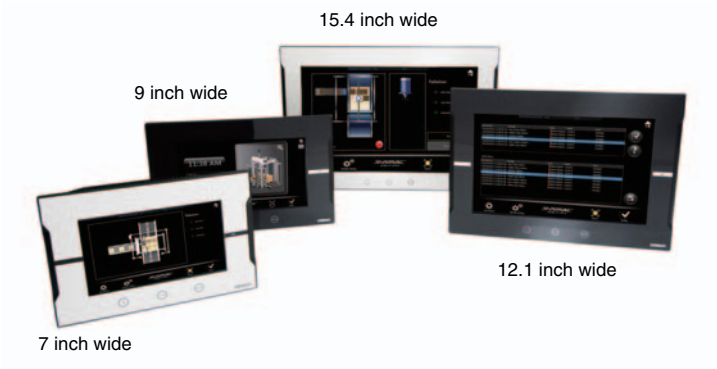
Programmable Terminal

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.



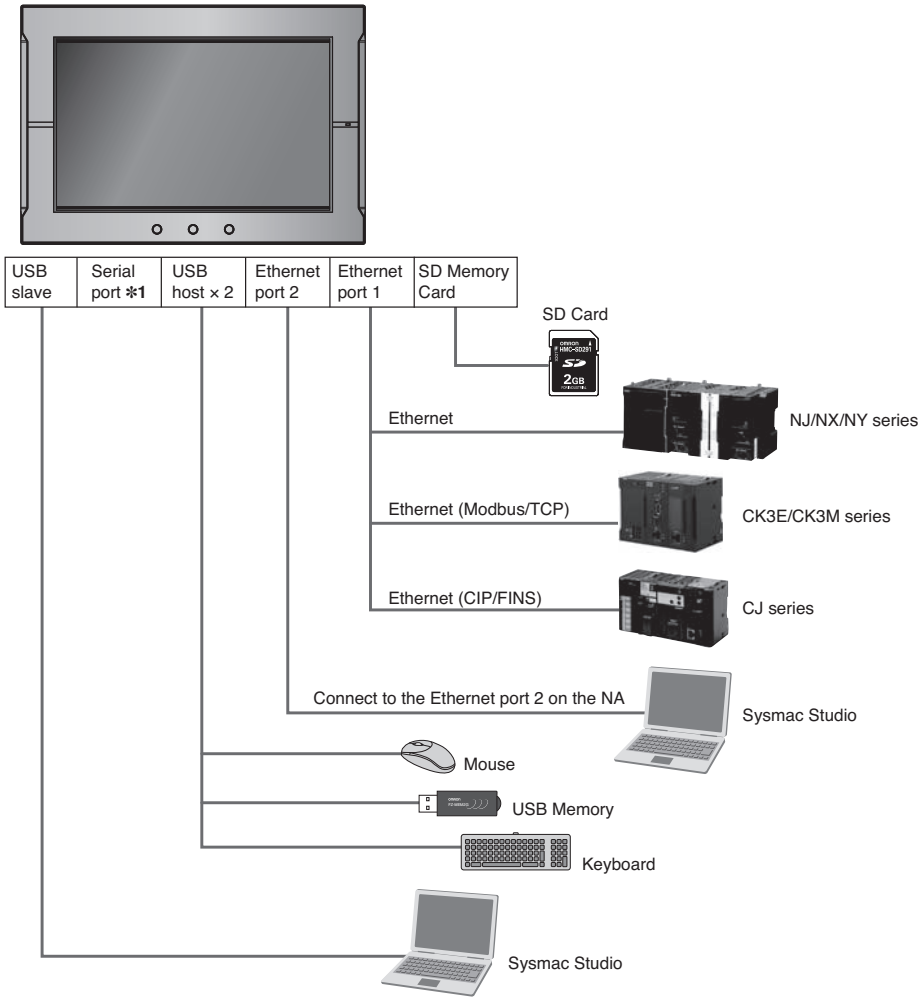
Features

- 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.

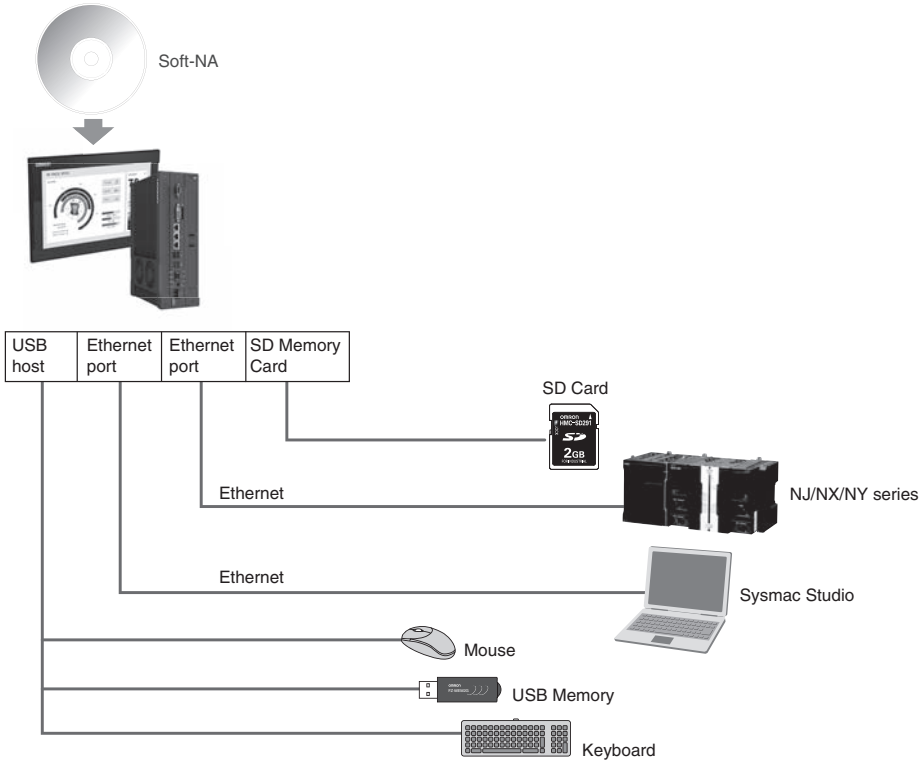
System configuration

NA5



✻1. The serial port is for future expansion.

Soft-NA



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: 1. NA5-□U is no longer available to order.

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

Soft-NA

Product name	Specifications	Number of licenses	Media	Model
Soft-NA	The Soft-NA is software that displays information on FA manufacturing sites while providing safety, reliability, and maintainability as an industrial display on which operations can be performed as necessary. The Soft-NA runs on the following OS: Windows 10 Pro Version 1903 or later 64 bit	- (Media only)	DVD	NA-RTSM
		1 license	USB dongle	NA-RTLD01
		3 licenses		NA-RTLD03
		10 licenses		NA-RTLD10

System Requirements

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 port	USB	USB2.0 Type-A x 2 ✻1
	LAN	Ethernet x 2 ✻1

✻1. 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

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 Failure detection: Broadcast storm and LSI error detection 10/100BASE-TX, Auto-Negotiation	3	No	Power supply connector	0.22	W4S1-03B
		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 CP
		Kuramo Electric Co.	KETH-SB
		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.

Performance Specifications

Display

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

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

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

✻2. The backlight can be replaced at an OMRON maintenance base.

✻3. This is the estimated time before brightness is reduced by half at room temperature and humidity. The life expectancy is drastically shortened if Programmable Terminal is used at high temperatures.

✻4. The brightness of the front panel indicators is also adjustable when you adjust the brightness of the backlight.

Operation

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

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

Data Capacity

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

External Interfaces

Item		Specifications (Same for all models.)
Ethernet ports	Applications	Port 1: Connecting to anything other than the Sysmac Studio, e.g., device connections and VNC clients Port 2: Connecting to the Sysmac Studio in addition to the applications of port 1.
	Number of ports	2 ports
	Compliant standards	IEEE 802.3i (10BASE-T), IEEE 802.3u (100BASE-TX), and IEEE 802.3ab (1000Base-T)
	Transmission media	Shielded twisted-pair (STP) cable: Category 5, 5e, or higher
	Transmission distance	100 m
	Connector	RJ-45 8P8C modular connector
USB host ports ✻1	Applications	USB Memory Device, keyboard, or mouse
	Number of ports	2 ports
	Compliant standards	USB 2.0
	Transmission distance	5 m max.
	Connector	Type-A connector
USB slave port ✻1	Applications	Sysmac Studio connection
	Number of ports	1 port
	Compliant standards	USB 2.0
	Transmission distance	5 m max.
	Connector	Type-B connector
Serial port ✻2	Applications	Device Connection
	Number of ports	1 port
	Compliant standards	RS-232C
	Transmission distance	15 m max.
	Connector	D-DUB 9-pin female connector
SD Memory Card slot	Applications	To transfer or store the project or to store log data.
	Number of slots	1 slot
	Compliant standards	SD/SDHC
Expansion Unit connector ✻2	Applications	Expansion Unit (Connector not included with product lot No. 01818 or later.)
	Quantity	1

✻1. Connection to all USB 2.0-compliant devices is not guaranteed.

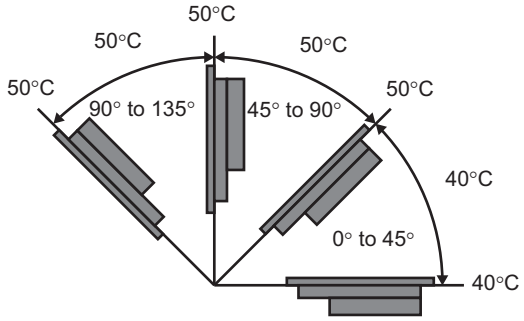
✻2. The serial port and Expansion Unit connector are for future expansion.

General Specifications

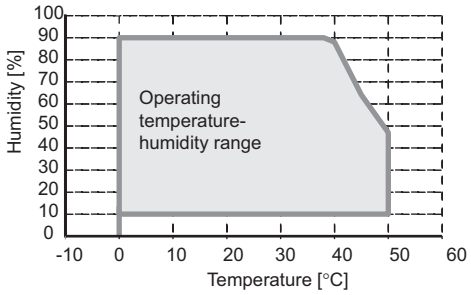
Item	Specification			
	NA5-15W	NA5-12W	NA5-9W	NA5-7W
Rated supply voltage	24 VDC			
Allowable power supply voltage range	19.2 to 28.8 VDC (24 VDC ±20%)			
Allowable momentary power interruption time	Operation for momentary power interruption is not specified.			
Power consumption	47 W max.	45 W max.	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: Meets IEC 61010-2-201.			
Noise immunity	2 kV on power supply line (Conforms to IEC 61000-4-4.)			
Vibration resistance (during operation)	Conforms to IEC 60068-2-6. 5 to 8.4 Hz with 3.5 mm half amplitude and 8.4 to 150 Hz with 9.8 m/s^2 for 100 minutes each in X,Y, and Z directions (Time coefficient of 10 minutes × coefficient factor of 10 = total time of 100 min.)			
Shock resistance (during operation)	Conforms to IEC 60028-2-27. 147 m/s^2 3 times each in X, Y, and Z directions			
Dimensions	420 × 291 × 69 mm (W × H × D)	340 × 244 × 69 mm (W × H × D)	290 × 190 × 69 mm (W × H × D)	236 × 165 × 69 mm (W × H × D)
Panel cutout dimensions	392^{+1}_{0} × 268^{+1}_{0} mm (horizontal × vertical) Panel thickness: 1.6 to 6.0 mm ✻4	310^{+1}_{0} × 221^{+1}_{0} mm (horizontal × vertical) Panel thickness: 1.6 to 6.0 mm ✻4	261^{+1}_{0} × 166^{+1}_{0} mm (horizontal × vertical) Panel thickness: 1.6 to 6.0 mm ✻4	$197^{+0.5}_{0}$ × $141^{+0.5}_{0}$ mm (horizontal × vertical) Panel thickness: 1.6 to 6.0 mm ✻4
Weight	3.2 kg max.	2.3 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 EAC			

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

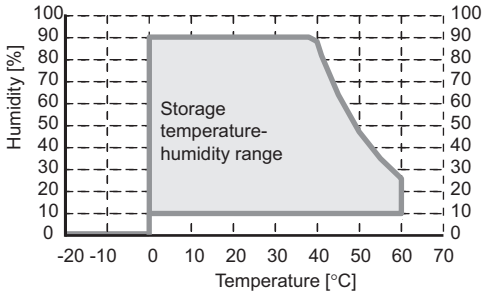
- The ambient operating temperature is 0° to 40°C when the mounting angle is 0° or more and less than 45° to the horizontal.
- The ambient operating temperature is 0° to 50°C when the mounting angle is 45° or more and 90° or less to the horizontal.
- The ambient operating temperature is 0° to 50°C when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

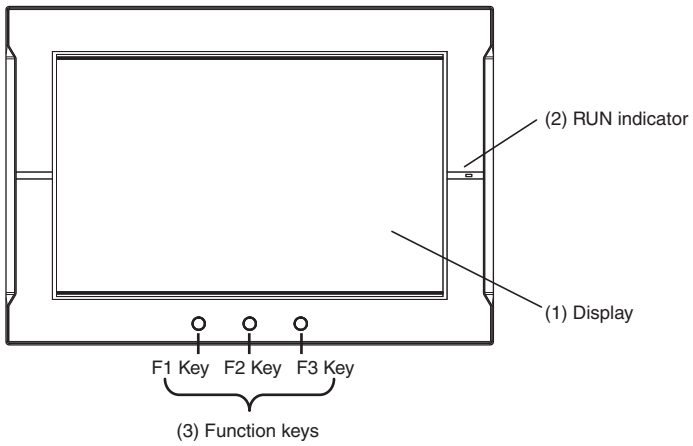
Version Information

NA series and Programming Devices

NA series		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
NA5-15W NA5-12W NA5-9W NA5-7W	1.10 or later	NX-CSG320: 1.00 or later	1.24 or higher
	1.09 or later	NX102: 1.30 or later	1.23 or higher
	1.07 or later	NX1P2: 1.13 or later	1.17 or higher
	1.06 or later	NY512: 1.12 or later NY532: 1.12 or later	1.17 or higher
	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

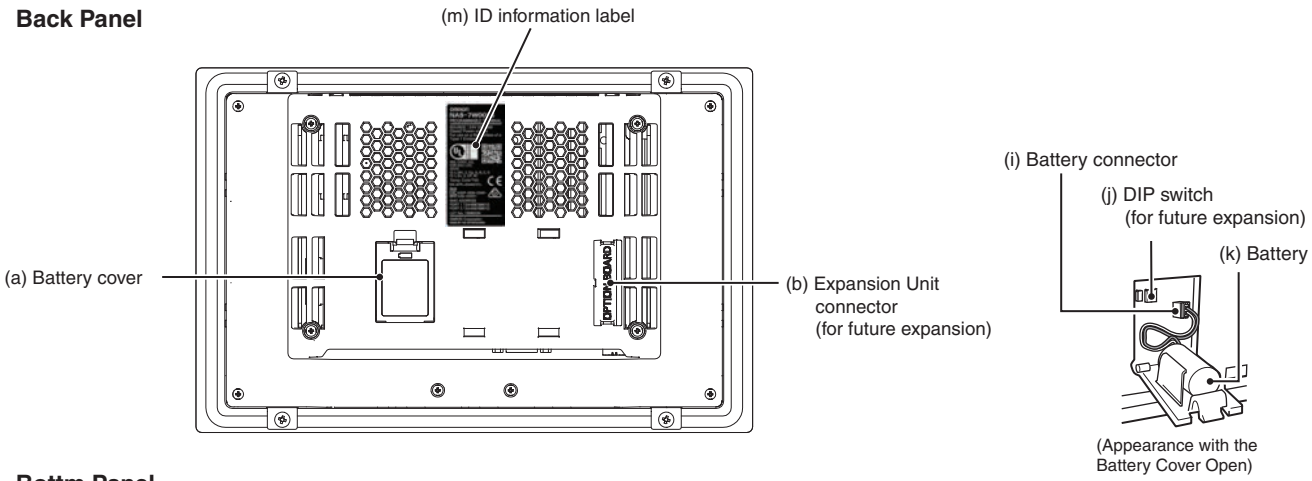
Components and Functions

Front Panel

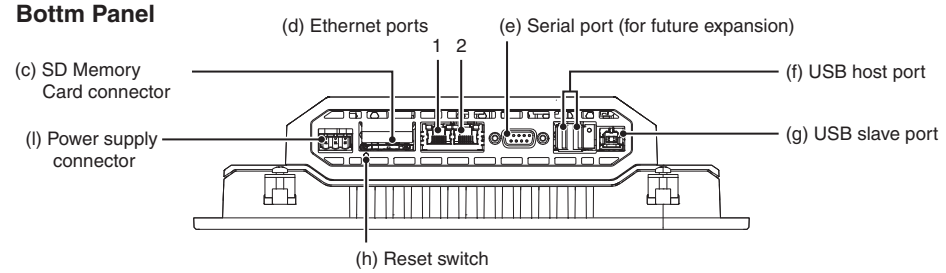


No.	Name	Description
(1)	Display	The entire display is a touch panel that also functions as an input device.
(2)	RUN indicator	The status of the indicator changes according to the status of the NA.
(3)	Function keys	There are three function keys: F1, F2, and F3. : F1 Key, : F2 Key, : F3 Key You can use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



Bottm Panel



No.	Name	Description
(a)	Battery cover	Open this cover to replace the Battery.
(b)	Expansion Unit connector ✻1	For future expansion. (Connector not included with product lot No. 01818 or later.)
(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 ✻1	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 ✻1	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.

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

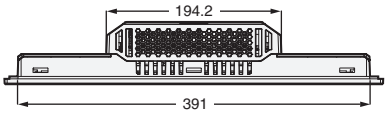
Supported Devices

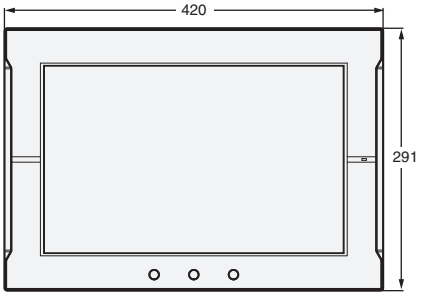
Manufacturer	Models	Connection method	Communications driver
OMRON	CK3E-1□10 CK3M-CPU1□1	Built-in Ethernet port	Modbus/TCP
	NX701-□□□□ NY512-□□□□ NX102-□□□□ NY532-□□□□ NX1P2-□□□□ NJ501-□□□□ NX-CSG320 NJ301-□□□□ NJ101-□□□□	Built-in EtherNet/IP port	Ethernet
	CJ2H-CPU64/65/66/67/68-EIP CJ2M-CPU31/32/33/34/35	Built-in EtherNet/IP port	CIP Ethernet
	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	

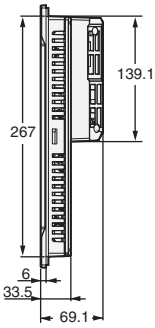
Dimensions

(Unit: mm)

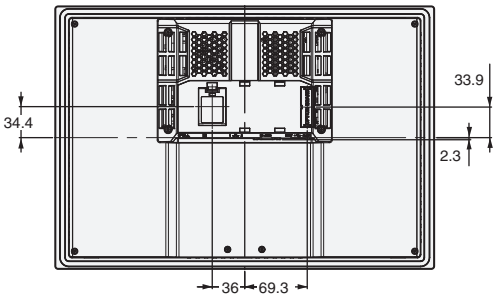
NA5-15W101S/-15W101B

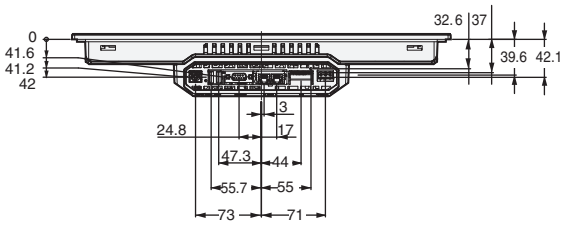




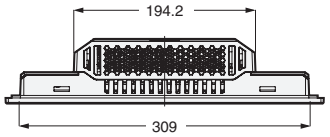


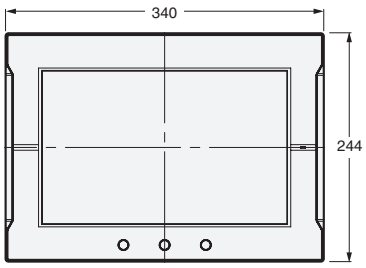
Cable Connection Dimensions

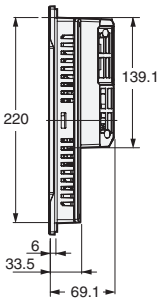




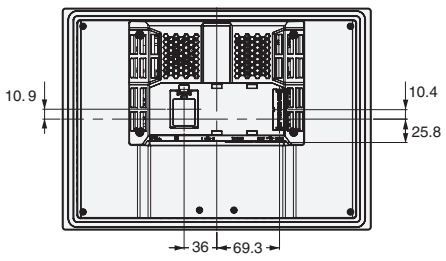
NA5-12W101S/-12W101B

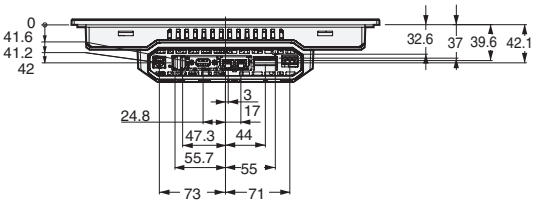






Cable Connection Dimensions





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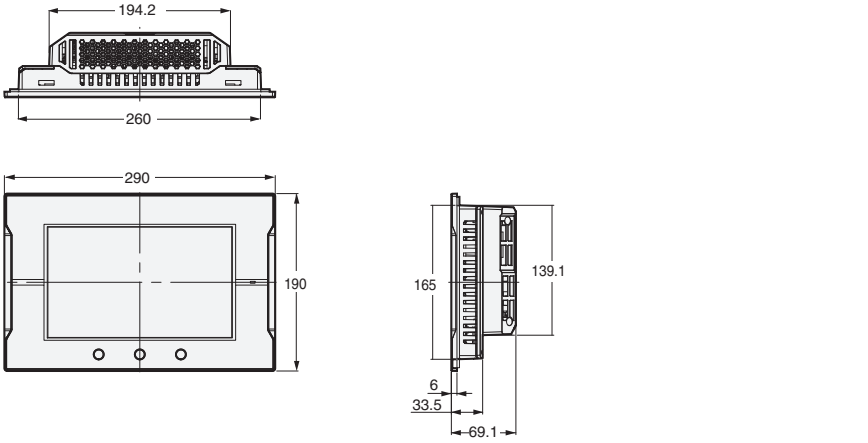

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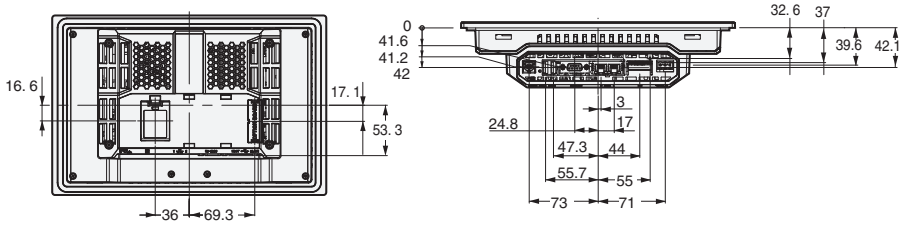

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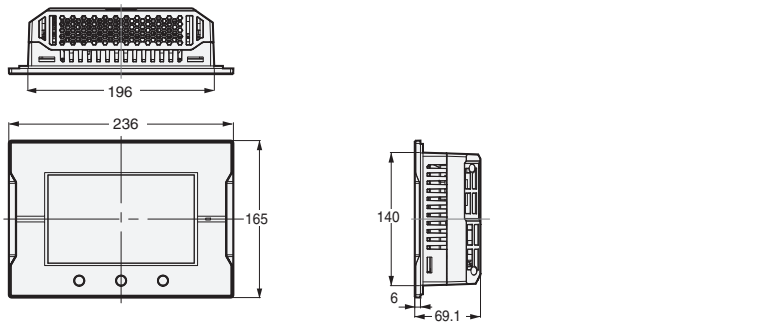

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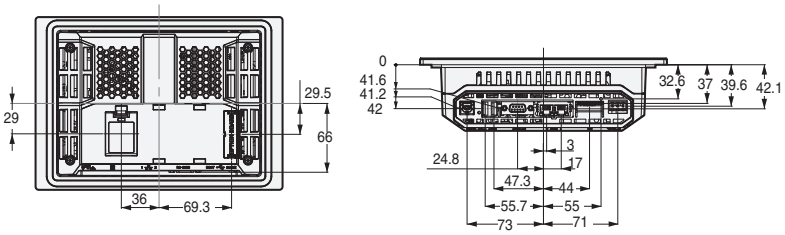

Related Manuals

Cat. No.	Model number	Manual
V117	NA5-15□101□ NA5-12□101□ NA5-9□001□ NA5-7□001□	NA-series Programmable Terminal Hardware User's Manual
V118	NA5-15□101□ (-V1) NA5-12□101□ (-V1) NA5-9□001□ (-V1) NA5-7□001□ (-V1) NA-RTLD□□	NA-series Programmable Terminal Software User's Manual
V119	NA5-15□101□ (-V1) NA5-12□101□ (-V1) NA5-9□001□ (-V1) NA5-7□001□ (-V1) NA-RTLD□□	NA-series Programmable Terminal Device Connection User's Manual
V120	NA5-15W□□□□ NA5-12W□□□□ NA5-9W□□□□ NA5-7W□□□□	NA-series Programmable Terminal Startup Guide
V126	NA-RTLD□□□	NA-series Programmable Terminal Soft-NA User's Manual

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