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

15.4 inch wide

9 inch wide

12.1 inch wide

7 inch wide
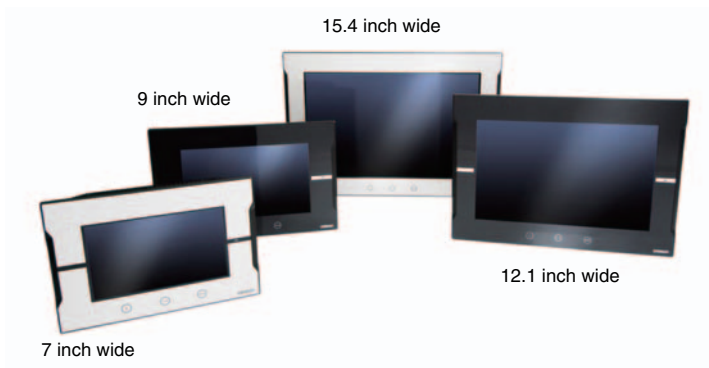
Features

- 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 variables sharing in the NA project and NA application testing with the NJ program via the Simulator to reduce development time
- Many security features including operation authority settings and execution restrictions with IDs
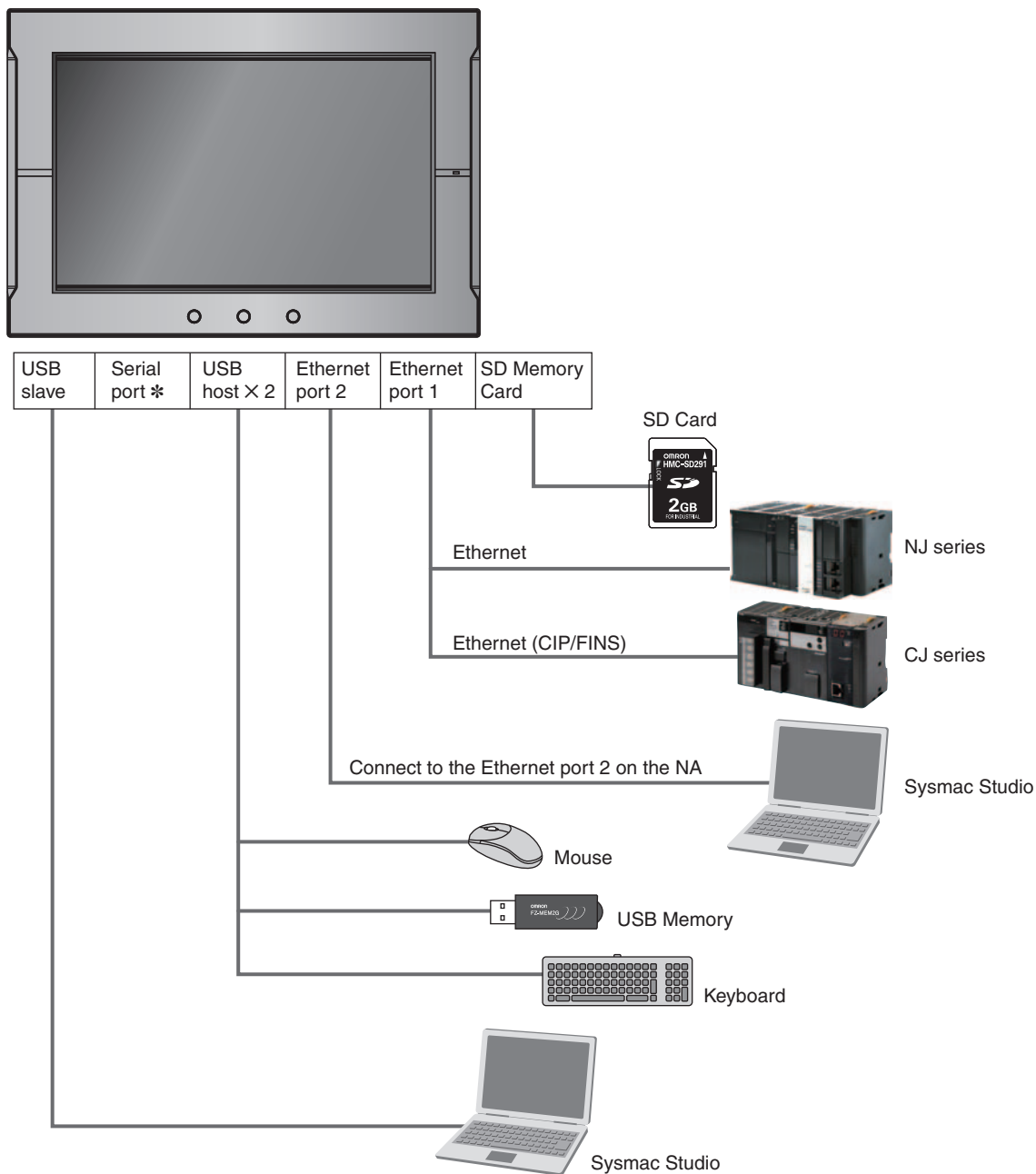- Microsoft Visual Basic for versatile, flexible and advanced programming

System configuration

USB slave	Serial port ✱	USB host × 2	Ethernet port 2	Ethernet port 1	SD Memory Card

SD Card

NJ series

Ethernet

Ethernet (CIP/FINS)

CJ series

Connect to the Ethernet port 2 on the NA

Sysmac Studio

Mouse

USB Memory

Keyboard

Sysmac Studio

✱ NA system version 1.00 does not support the serial port. Future expansion is planned.

NA series

Ordering Information

NA

Product name	Specifications	Model
NA5-15W	15.4 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full colour), 1280 × 800 dots, Frame colour : Silver	NA5-15W101S
	15.4 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full colour), 1280 × 800 dots, Frame colour : Black	NA5-15W101B
NA5-12W	12.1 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full colour), 1280 × 800 dots, Frame colour : Silver	NA5-12W101S
	12.1 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full colour), 1280 × 800 dots, Frame colour : Black	NA5-12W101B
NA5-9W	9 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full colour), 800 × 480 dots, Frame colour : Silver	NA5-9W001S
	9 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full colour), 800 × 480 dots, Frame colour : Black	NA5-9W001B
NA5-7W	7 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full colour), 800 × 480 dots, Frame colour : Silver	NA5-7W001S
	7 inch wide screen, TFT LCD, 16,770,000 colors (24 bit full colour), 800 × 480 dots, Frame colour : Black	NA5-7W001B

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-15KBA04
	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-12KBA04
	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-9KBA04
	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-7KBA04

Automation Software

Product name	Specifications	Number of licenses	Media	Model
Sysmac Studio Standard Edition Ver.1.□□	The Sysmac Studio provides an integrated development environment to set up, program, debug, and maintain NJ-series Controllers and other Machine Automation Controllers, as well as EtherCAT slaves. Sysmac Studio runs on the following OS. Windows XP (Service Pack 3 or higher, 32-bit version) / Vista (32-bit version) / 7 (32-bit/64-bit version) / 8(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 Failure detection: Broadcast storm and LSI error detection 10/100BASE-TX, Auto-Negotiation	3	No	Power supply connector	0.08	W4S1-03B
		5	No	• Power supply connector • Connector for informing error	0.12	W4S1-05B
		5	Yes		0.12	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

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□□□□ 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 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
	Connector	RJ-45 8P8C modular connector
USB host ports	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	Applications	Sysmac Studio connection
	Number of ports	1 port
	Compliant standards	USB 2.0
	Transmission distance	5 m max.
	Connector	Type-B connector
Serial port *	Applications	Device Connection
	Number of ports	1 port
	Compliant standards	RS-232C
	Transmission distance	15 m max.
	Connector	D-DUB 9-pin female connector
SD Memory Card slot	Applications	To transfer or store the project or to store log data.
	Number of slots	1 slot
	Compliant standards	SD/SDHC
Expansion Unit connector *	Applications	Expansion Unit
	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 ±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/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/s² 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	$392^{+1}_{0} \times 268^{+1}_{0}$ mm (horizontal × vertical) Panel thickness: 1.6 to 6.0 mm	$310^{+1}_{0} \times 221^{+1}_{0}$ mm (horizontal × vertical) Panel thickness: 1.6 to 6.0 mm	$261^{+1}_{0} \times 166^{+1}_{0}$ mm (horizontal × vertical) Panel thickness: 1.6 to 6.0 mm	$197^{+0.5}_{0} \times 141^{+0.5}_{0}$ mm (horizontal × vertical) Panel thickness: 1.6 to 6.0 mm
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			
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	UL 508/CSA standard C22.2 No.142 *4 EMC Directive (2004/108/EC) EN 61131-2:2007 Shipbuilding standards LR, DNV, and NK IP65 oil-proof, UL type 4X (front panel only) ANSI 12.12.01 Class 1 Division 2/CSA standard C22.2 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.
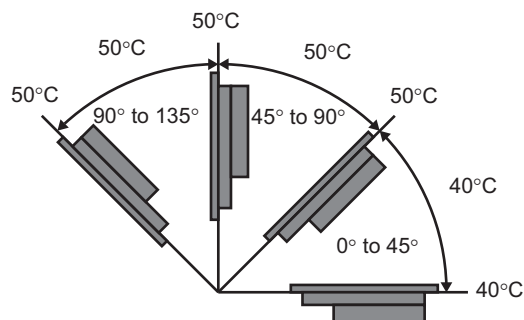
*2. Use the Programmable Terminal within the following temperature and humidity ranges.
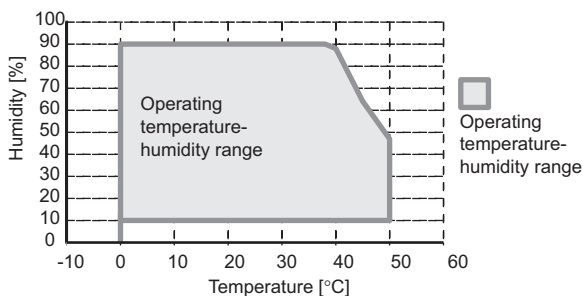
*3. Store the Programmable Terminal within the following temperature and humidity ranges.
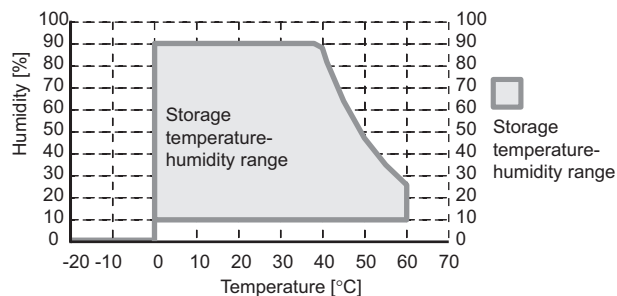
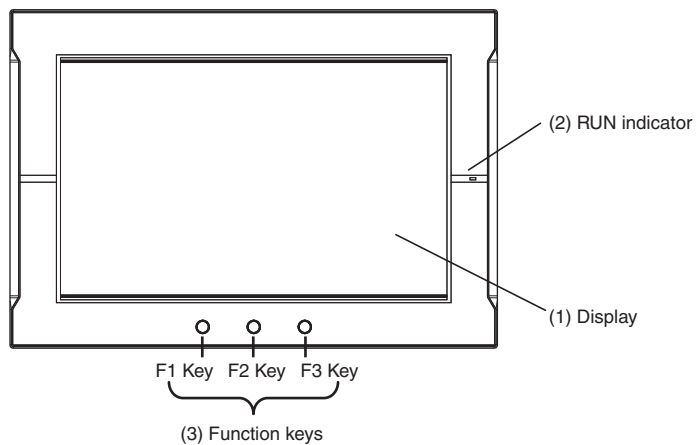*4. Use power supply Class 2 to conform to UL Standards.

NA series

Version Information

NA series and Programming Devices

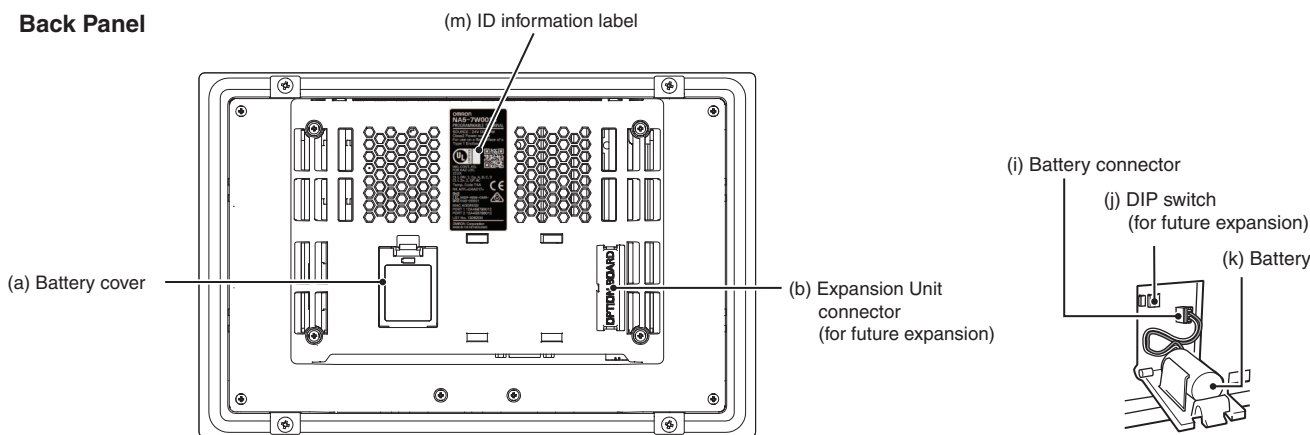| NA series		Corresponding unit versions/version		
Model	NA system version	NJ-series CPU Units NJ501-□□□□ NJ301-□□□□		Sysmac studio
NA5-15W□□□ NA5-12W□□□ NA5-9W□□□ NA5-7W□□□	1.00 or later	NJ501 : 1.01 or later NJ501 Database Connection : 1.05 or later NJ301 : 1.01 or later		1.10 or later

Components and Functions

Front Panel

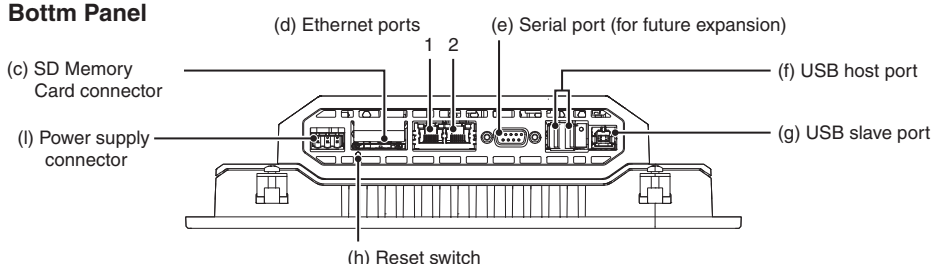| No.	Name	Description
(1)	Display	The entire display is a touch panel that also functions as an input device.
(2)	RUN indicator	The status of the indicator changes according to the status of the NA.
(3)	Function keys	There are three function keys: F1, F2, and F3. ⊙ : F1 Key, ⊙ : F2 Key, ⊙ : F3 Key You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

(m) ID information label

(i) Battery connector

(j) DIP switch
(for future expansion)

(k) Battery

(a) Battery cover

(b) Expansion Unit
connector
(for future expansion)

(Appearance with the
Battery Cover Open)

Bottm Panel

(d) Ethernet ports

(e) Serial port (for future expansion)

1 2

(c) SD Memory
Card connector

(f) USB host port

(l) Power supply
connector

(g) USB slave port

(h) Reset switch

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

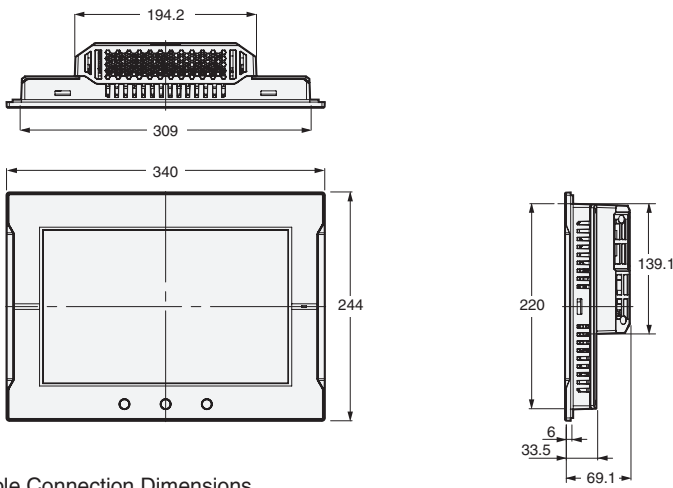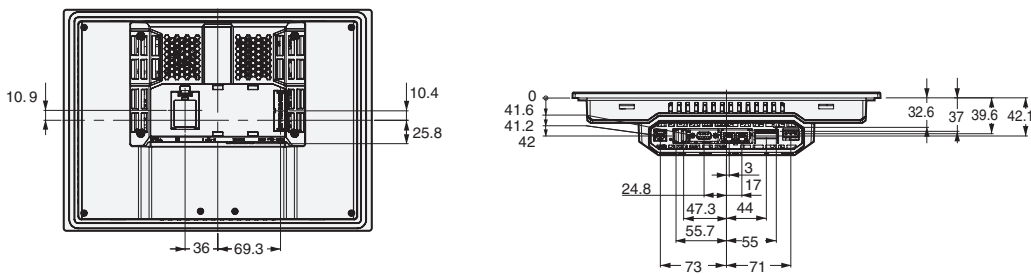| Manufacturer	Models	Connection method	Communications driver
OMRON	NJ501-□□□□ NJ301-□□□□	Built-in EtherNet/IP port	Ethernet
	CJ2H-CPU64/65/66/67/68-EIP CJ2M-CPU31/32/33/34/35	Built-in EtherNet/IP port	CIP Ethernet
	CJ2H-CPU64/65/66/67/68-EIP CJ2M-CPU31/32/33/34/35	CJ1W-EIP21	
	CJ2H-CPU64/65/66/67/68-EIP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

NA5-15W101S/-15W101B
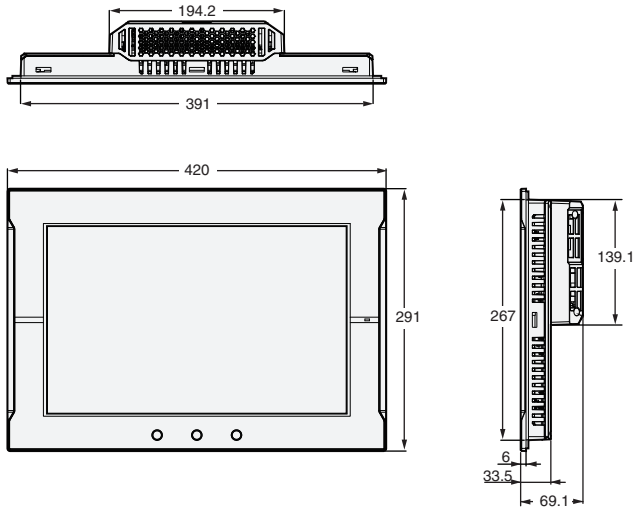
Cable Connection Dimensions
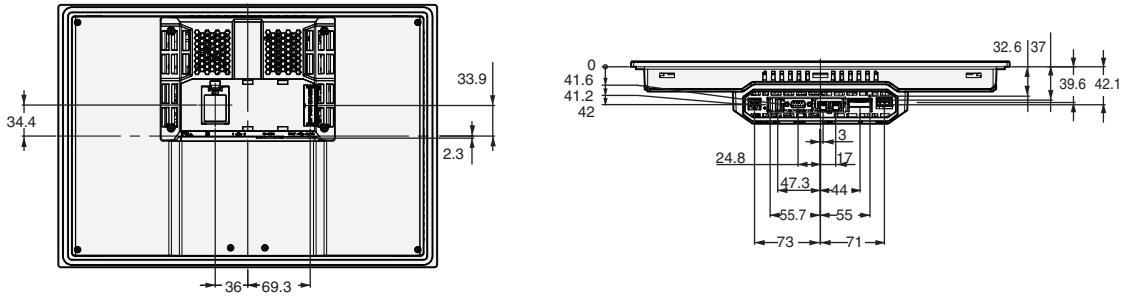
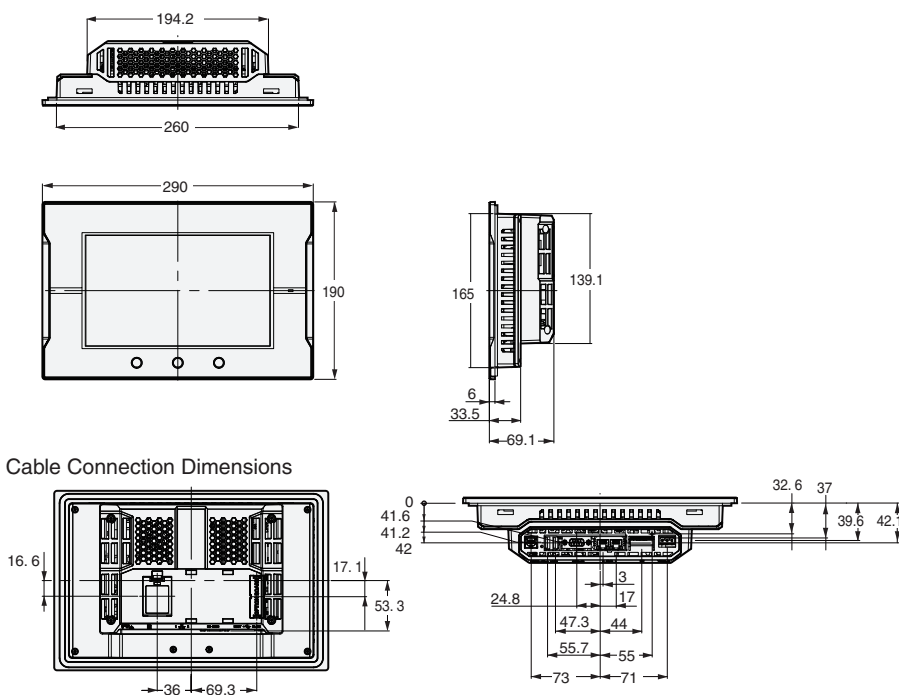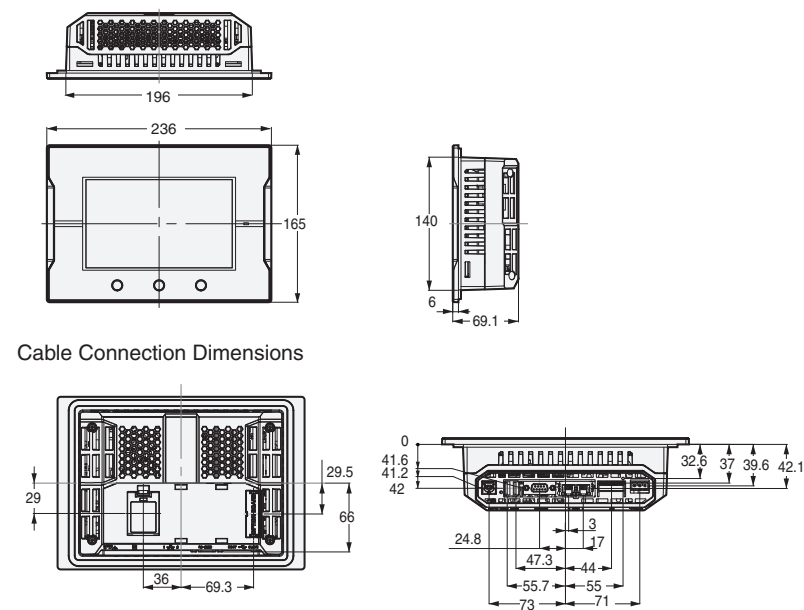### NA5-12W101S/-12W101B

Cable Connection Dimensions

NA5-9W001S/-9W001B

194.2
260
290
190
165
139.1
6
33.5
69.1

Cable Connection Dimensions

16. 6
17. 1
53. 3
36
69.3

32. 6
37
0
41.6
41.2
42
39.6
42.1
24.8
3
17
47.3
44
55.7
55
73
71

NA5-7W001S/-7W001B

196
236
165
140
6
69.1

Cable Connection Dimensions

29.5
29
66
36
69.3

32. 6
37
39.6
42.1
0
41.6
41.2
42
24.8
3
17
47.3
44
55.7
55
73
71

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

OMRON