

NEW

OMRON

Programmable Terminals

# NB Series

Wide Display, Color TFT, Easy System Setup, and High Quality



» Easy to connect

» Best match HMI for Omron PLC

» Quality, stable and reliable

realizing

# New NB-series Programmable Terminals

Select from two sizes: 5.6-inch and 7-inch. Let the NB-Series handle your applications.

## 5.6 inch



### NB5Q-TW00B

65,536 colors  
QVGA 320×234

USB  
RS-232C×1  
RS-232C/422A/485×1  
24VDC

## 7 inch



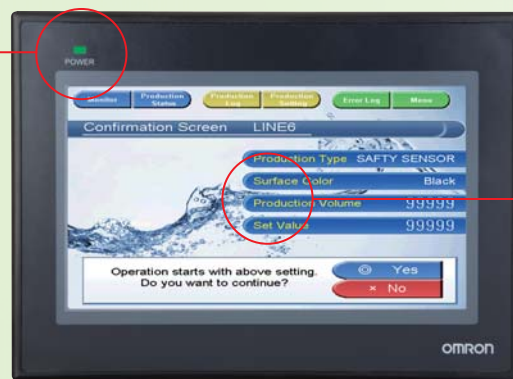
### NB7W-TW00B

65,536 colors  
WVGA 800×480

USB  
RS-232C×1  
RS-232C/422A/485×1  
24VDC

## Wide Display, Color TFT, Long-life LED Backlight

Power indicator shows operating status



NB7W-TW00B

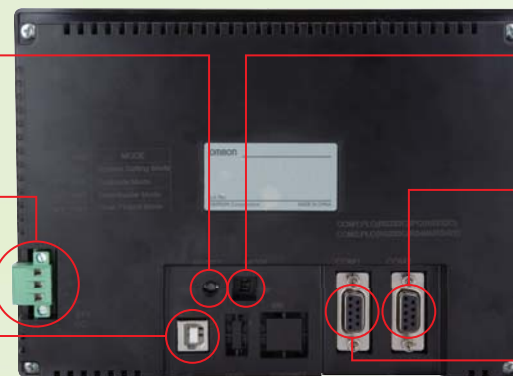
Wide screen and Color TFT. Easy to arrange text and image

## Complete I/O Functions

RESET Button

24-VDC terminals with locks

USB port for high-speed transfer of HMI screens



DIP switch to set HMI mode

COM2 for RS-232C/422A/485

COM1 for RS-232C

## New-generation NB-series PT Features

All NB-series PTs provide 65,536 colors and a TFT LCD with a long-life (50,000 H) LED backlight



Long-life  
**50,000**  
hour

### Connect two communications ports simultaneously

An NB-series PT can communicate through two ports simultaneously so that you can connect two different devices, including a PLC, inverter, temperature controller, or BCR.



### Use standard C-language macros

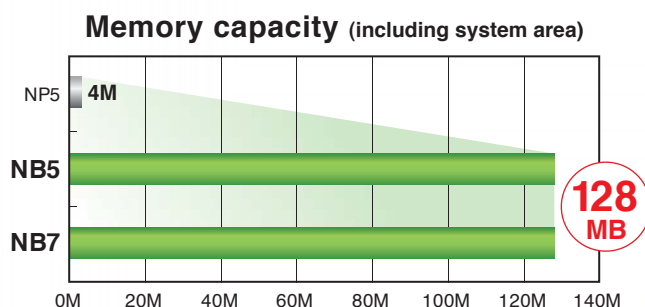
They are easy and quick to learn and use.

```

20 short buf[2]={0};
21 ReadLocal("LW",200,2,(void*)buf,0);
22 WriteLocal("LW",202,2,(void*)buf,0);
23 */
24 int MacroEntry()
25 = {
26     return 0;
    
```

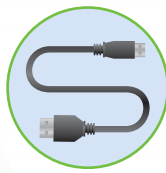
### Large memory

An NB-series PT has 1G bits of FROM so that you can load many screens and the required contents.



## Advanced Functions for Compact Solutions

A USB port enables high-speed uploading and downloading of screens, easy connection and application of the NB-Designer Screen Design Software, and easy building of your system.



Use the USB port for high-speed uploading and downloading of HMI screens.



The new NB-Designer Support Software lets you make HMI screens easily and quickly.

## OMRON design and manufacturing technology produces high-quality products

The NB5/NB7 PTs are manufactured with the same technology, processes, and infrastructure as our highly reliability PLCs and Sensors.

Omron HMI is manufactured as same production line and manufacturing process as PLC with clean and prevent static electric environment.



Quality check at final stage of NB PTs manufacturing



PC board mounting process at NB PTs assembly line of Omron factory



PCB of NB PTs

## Ordering Information

### International Standards

- The standards are abbreviated as follows: U: UL, U1: UL (Class I Division 2 Products for Hazardous Locations), C: CSA, UC: cULus, UC1: cULus (Class I Division 2 Products for Hazardous Locations), CU: cUL, N: NK, L: Lloyd, CE: EC Directives, and KC: KC Registration.
- Contact your OMRON representative for further details and applicable conditions for these standards.

### Programmable Terminals

Product name	Specifications	Model	Standards
NB5Q	5.6 inch, TFT LCD, Color, 320×234 dots	NB5Q-TW00B	CE, KC
NB7W	7 inch, TFT LCD, Color, 800×480 dots	NB7W-TW00B	CE, KC

### Options

Product name	Specifications	Model	Standards
PT-to-PLC Connecting cable	For NB to PLC via RS-232C (CJ2/CS1/CP1), 2m	XW2Z-200T	-
	For NB to PLC via RS-232C (CJ2/CS1/CP1) , 5m	XW2Z-500T	
Software	NB-Designer runs on the following OS. OS: Windows XP (Service Pack 1 or higher), Vista or 7 <b>Note:</b> Except for Windows XP 64-bit version Download from Omron's regional websites.	NB-Designer	
Display protective Sheets	For the NB5Q contains 5 sheets	NB5Q-KBA04	
	For the NB7W contains 5 sheets	NB7W-KBA04	
Attachment	NT31/C series to NB5Q	NB5Q-ATT01	

## Specifications

Item	Specifications	
	NB5Q-TW00B	NB7W-TW00B
Rated Power supply	24 VDC	
Operating voltage range	20.4 to 27.6 VDC (24 VDC -15 to 15%)	
Power consumption	6 W	7 W
Ambient operating temperature	0 to 50 °C	
Ambient storage temperature	-20 to 60 °C	
Ambient operating humidity	10% to 90% RH (without condensation)	
Ambient storage humidity	10% to 90% RH (without condensation)	
Operating environment	No corrosive gases.	
Noise immunity	2,000 Vp-p with IEC61000-4-4 (power supply terminals)	
Vibration resistance	10 to 57 Hz with 0.075 mm-single amplitude, 57 to 150 Hz with 9.8 m/s <sup>2</sup> for 30 minutes each in X, Y, and Z directions	
Shock resistance	147 m/s <sup>2</sup> for 3 times each in X, Y, and Z directions with each time lasting for 11 ms	
Dimensions	184(W)×142(H)×46(D) mm	202(W)×148(H)×46(D) mm
Panel Cutout Dimensions	172.4(W)×131.0(H) mm Applicable panel thickness: 1.6 to 4.8 mm	191.0(W)×137.0(H) mm Applicable panel thickness: 1.6 to 4.8 mm
Weight	620 g max.	710 g max.
Resistance to environment	IP65 (at initial state) Dust proof and drip proof only from the front of the panel	
Battery life expectancy	Battery life expectancy: 5 years (at 25 °C)	
Applicable standards	EC Directives, KC	
Host Link communication	COM Port	COM1: RS-232C, Transmission distance: 15 m Max., Connector: D-Sub 9-pin
		COM2: RS-232C/422A/485 (not isolated), Transmission distance: 15m Max. (RS-232C), 500m Max. (RS-422A/485), Connector: D-Sub 9-pin
Support Software communications	Tool Port	COM1: RS-232C
	USB Port	USB 2.0 full speed device, type B, Transmission distance: 5m
Display	Display device	5.6" TFT LCD
	Number of dots	320×234 (H×V)
	Display color	65,536
	Effective area	113×85 mm (5.6" ) (H×V)
Backlight	Service Life	50,000 hours of operating time at the normal temperature (25 °C)*
Front-side LED	ON: power connected, OFF: power disconnected	
Touch switches	Analog resistance membrane, resolution 1024×1024, life: 1 million touch operations	

\* This is the estimated time when the luminous intensity is decreased by 50% per LED at room temperature and humidity. It is a typical value.

## Applicable PLCs

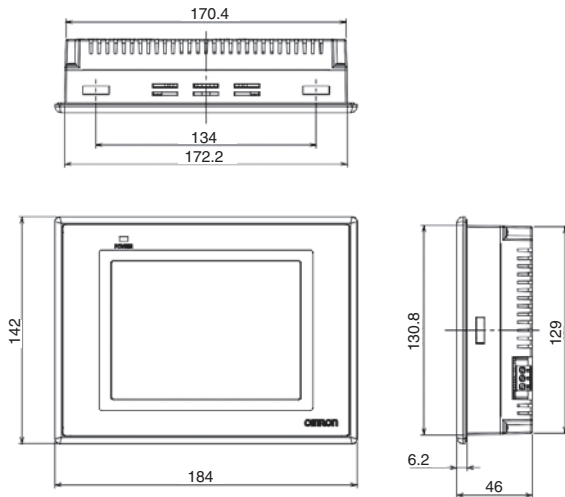
PLC maker	NB-Designer display
<b>OMRON</b>	Omron C Series Host Link
	Omron CP/CJ/CS Series Host Link
<b>Mitsubishi</b>	Mitsubishi Q_QnA (Link Port)
	Mitsubishi FX-485ADP/422BD (Multi-station)
	Mitsubishi FX0N/1N/2N/3G
	Mitsubishi FX1S
	Mitsubishi FX2N-10GM/20GM
	Mitsubishi FX3U
	Mitsubishi Q series (CPU Port)
	Mitsubishi Q00J (CPU Port)
Mitsubishi Q06H	
<b>Panasonic</b>	FP series
<b>Siemens</b>	Siemens S7-200
	Siemens S7-300/400 (PC Adapter Direct)

PLC maker	NB-Designer display
<b>Schneider</b>	Schneider Modicon Uni-TelWay
	Schneider Twido Modbus RTU
<b>Delta</b>	Delta DVP
<b>LG (LS)</b>	LS Master-K Cnet
	LS Master-K CPU Direct
	LS Master-K Modbus RTU
	LS XGT CPU Direct
	LS XGT Cnet
<b>Modbus</b>	Modbus ASCII
	Modbus RTU
	Modbus RTU Slave
	Modbus RTU Extend

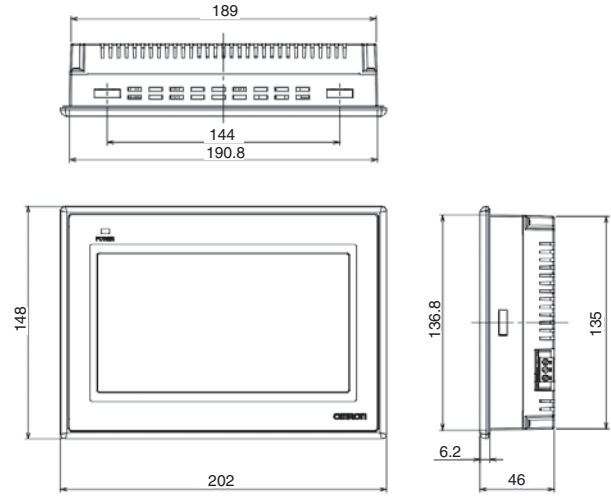
## Dimensions

(Units: mm)

### NB5Q-TW00B



### NB7W-TW00B



Model	Panel cutout (H×V mm)
<b>NB5Q-TW00B</b>	172.4 (+0.5/-0) × 131.0 (+0.5/-0)
<b>NB7W-TW00B</b>	191.0 (+0.5/-0) × 137.0 (+0.5/-0)

## Related Manuals

Cat.No	Model	Name
V106	NB-Designer	NB Series NB-Designer Operation Manual
V107	NB5Q, NB7W	NB Series Setup Manual
V108	NB5Q, NB7W	NB Series Host Connection Manual
V109	NB5Q, NB7W	NB Series Startup Guide

Related product

# Programmable Controller CP1E

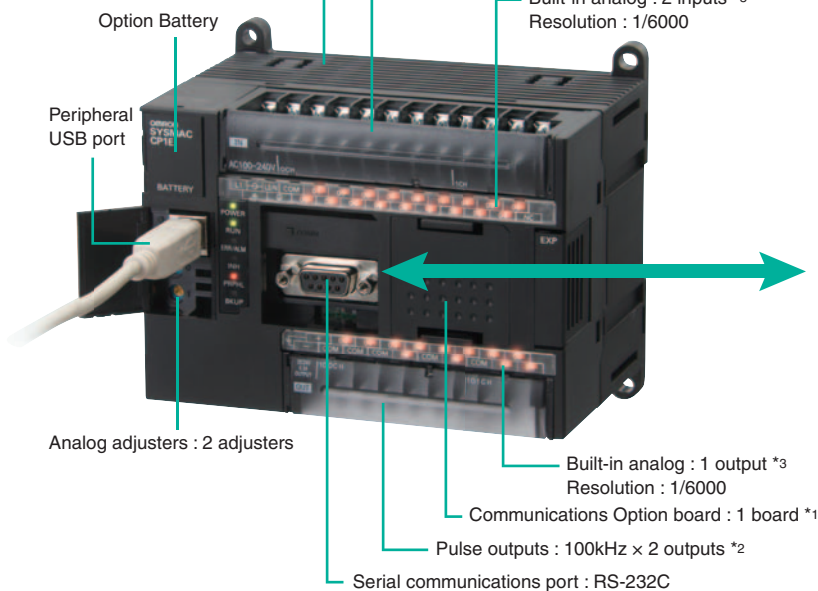
- N/NA-type CPU Units for small-scale systems.
- Option Board for increased expandability.
- Compatible with small Programmable Terminals and inverter-controlled position control.

## CP1E-N/NA-type

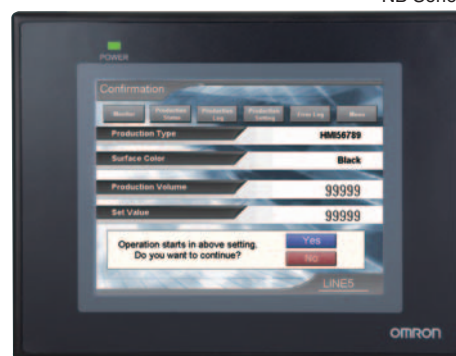
Program capacity : 8 Ksteps  
DM Area capacity : 8 Kwords  
Timers/Counters : 256 each

High-speed counters : 100 kHz × 2 inputs and  
10 kHz × 4 inputs

Built-in analog : 2 inputs \*3  
Resolution : 1/6000



NB Series




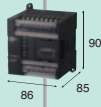
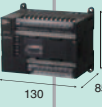


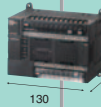
\*1. N-type CPU Units (30, 40, or 60 points)

NA-type CPU Units (20 points)

\*2. Models with transistor outputs.

\*3. NA-type CPU Units (20 points)

### Lineup

Program capacity	N-type CP1E CPU Units Application Models					NA-type Built-in Analog I/O	
	8K steps	 CP1E-N14D□□□	 CP1E-N20D□□□	 CP1E-N30D□□□	 CP1E-N40D□□□	 CP1E-N60D□□□	 CP1E-NA20D□□□
	10	14	20	30	40	60	20
	Number of I/O points						Built-in analog : 2 inputs / 1 output

## 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.

## Warranty and Limitations of Liability

### WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

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## Application Considerations

### SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products.

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The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

### PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

## Disclaimers

### CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

### DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

### PERFORMANCE DATA

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