# imall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from, Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

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# Contact us

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# OMRON

# **Programmable Terminal**

# **NB** Series



- Appealing to see
- Enjoyable to use

# The future-proof, compact HMI

Give more value to your machines with Omron's NB Series: compact range application HMI.

Enjoy his the aesthetic sense and excellent visibility.

Our expertise in Factory automation give you warranty of quality and a total freedom to build up optimal applications.

POWER

Interrupt Function

Newly added remote control features help to reduce the time and work involved in maintenance.

# Enjoyable to use

## **Global support from local site**

- Flexible remote access function NEW
- Powerful remote operation NEW
- On/off-line simulation
- USB memory stick support



# Easily create intuitive operator screens

- Flexible window handling
- Easy animation
- Extensive language support
- Powerful macros





# 



# **Pleasant to program**

# Ready to use functions for your machine

- Always informed about alarms
- Easy data presentation
- Multiple security options

# The perfect partner for Omron devices

- Serial and Ethernet connectivity
- Connection to Omron and non-Omron devices

# Appealing to see in a wide product range

- Screen size from 3.5 to 10.1 inch
- LED backlighted TFT LCD
- Wide viewing angle
- More than 65,000 display colors
- High brilliance



# Enjoyable to use

The newly added remote control features significantly save you time, and the flexible design features make screen creation easier. All these features greatly contribute to your global scale business.

# **Global support from local site**

# Flexible remote access function NEW

Besides conventional web browsers, now NB Series supports faster and secure Virtual network computing (VNC), providing flexible remote access.



# Web browser

Support OSSupport web browserWindowsInternet Explorer 8/9, Google Chrome 32.0., Firefox 27.0iOS 6Safari

Monitoring and operating screens via various PC web browsers.

#### VNC Server - BYOD (Bring Your Own Device)

The VNC client application "HMI Remote Viewer", which is already used for NA Series, can also be used for NB Series.

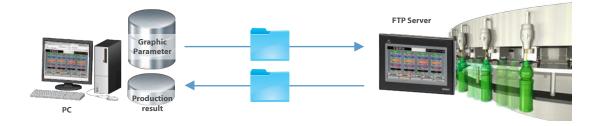




Search by "HMI Remote Viewer' for free download.

# Powerful remote operation NEW

With the newly added features such as FTP Server and CSV data-copying features, you can change machine parameters from remote locations or host PC, and collect production data. Now graphics can be updated even during the operation, and visual can be changed without stopping the HMI following changes in machines and recipes.



# Easily create intuitive operator screens

## Flexible window handling

NB Series easily creates screens for your project. Besides the standard window, you can also create 'window-in window'. Furthermore, it also supports bottom windows and transparency for pop-up windows.

# **Easy animation**

Animations can be created easily. For example, you can show a different status with text and graphics, or move the components while changing them. This easy animation feature makes the operation easier to understand and eliminates the need for expertise.

#### **Extensive language support**

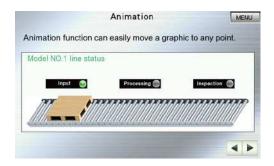
Thanks to the supported 32 languages and Text Library function, you will find it easy to manage texts in multi-language. This allows users to operate the HMI in the language they choose.

# **Powerful macros**

Thanks to its powerful macros, you can perform calculations and comparisons or iterations, and mathematical functions.

It also enables you to do even more.









# Pleasant to program

# Ready to use functions for your machine

The feature-rich NB series has everything you will need for creating applications for a wide range machines and in many industries, for example, packaging, food, plastics and textiles. From a simple lid placing or loading/unloading machine right up to an in-line filling or sealing /labeling packaging machine. Download free of charge NB-Designer software from Omron web site.



## Always informed about alarms

Event monitoring (alarming) is both flexible and easy to use. Not only do you have the possibility to enter bit and word alarms for on/off or on-condition triggering, there is also the possibility to use different fonts and color to indicate varying degrees of status and priorities. Specific alarms are indicated with an audible buzzer sound, as well as by an accompanying text message, and you can even create pop-up alarms for situations where immediate action has to be taken.



# **Easy data presentation**

Graphical representation of real-time and historical data is easy with the NB series. As well as display of time sampling and trending data, you have the option to save sampling data (max. 16 consecutive words) of basic real-time trending data. And you can plot using x/y coordinates, in which case sampling can be done via single or multiple points and with historical data. Furthermore, data can be presented in a variety of ways, such as sampling points using x and y components.



# **Multiple security options**

Protecting your developed project with a password using the NB series is both a simple and secure matter. Among the comprehensive security options is the possibility to define up to 16 minimum security levels on screens, buttons and inputs, and you can set up to 32 specific permission controls for each operator. There is also a register condition (bit/word) control for a check of actual condition against a predefined value, and a standard operator confirmation check to confirm that critical actions have been performed by the operator.

# The perfect partner for Omron devices

Omron Compact controllers perfectly match your specific automation requirement and connection to the NB series is possible via Serial or Ethernet.

Ethernet protocols, FTP or VNC make easy remote access for maintenance or data gathering and allows digitalisation of your machine.



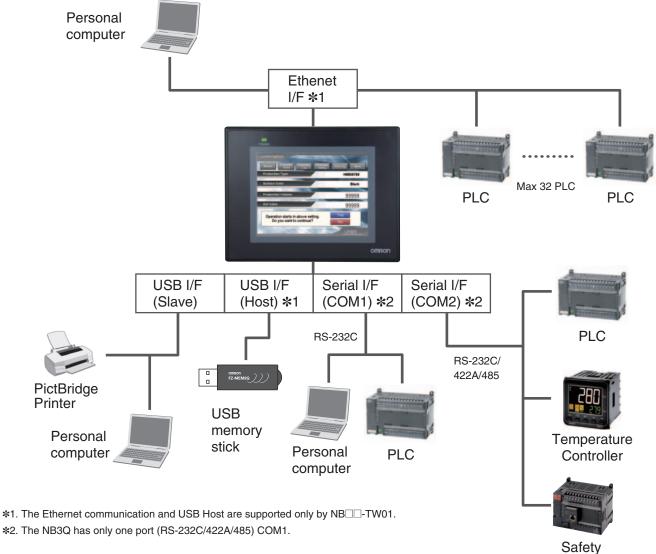
# Programmable Terminals **NB Series**

# The feature-rich, economic programmable terminal

- More than 65,000 display colors TFT, color touch-screen for all models
- Available in sizes ranging from 3 to 10 inches
- Long-life LED backlight
- Serial, USB or Ethernet communication
- USB memory stick support



# **System Configuration**



Controller

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# **Ordering Information**

# **Programmable Terminals**

Product name	Specifications	Model
NB3Q	3.5 inch, TFT LCD, Color, $320 \times 240$ dots	NB3Q-TW00B
	3.5 inch, TFT LCD, Color, $320 \times 240$ dots, USB Host, Ethernet	NB3Q-TW01B
NB5Q	5.6 inch, TFT LCD, Color, 320 × 234 dots	NB5Q-TW00B
	5.6 inch, TFT LCD, Color, 320 × 234 dots, USB Host, Ethernet	NB5Q-TW01B
NB7W	7 inch, TFT LCD, Color, 800 × 480 dots	NB7W-TW00B
	7 inch, TFT LCD, Color, $800 \times 480$ dots , USB Host, Ethernet	NB7W-TW01B
NB10W	10.1 inch, TFT LCD, Color, 800 × 480 dots , USB Host, Ethernet	NB10W-TW01B

# Options

Product name	Specifications	Model
Software	Supported Operating Systems: Windows 10, Windows 8.1, Windows 8, Windows 7, Windows Vista <sup>®</sup> , Windows XP (SP3 or higher). Note: Except for Windows XP 64-bit version Download from Omron's regional websites.	NB-Designer *
NB-to-PLC Connecting cable	For NB to PLC via RS-232C (CP/CJ/CS), 2 m	XW2Z-200T
	For NB to PLC via RS-232C (CP/CJ/CS), 5 m	XW2Z-500T
	For NB to PLC via RS-422A/485, 2 m	NB-RSEXT-2M
	For the NB3Q contains 5 sheets	NB3Q-KBA04
Disular, guata stirre also sta	For the NB5Q contains 5 sheets	NB5Q-KBA04
Display protective sheets	For the NB7W contains 5 sheets	NB7W-KBA04
	For the NB10W contains 5 sheets	NB10W-KBA04
Attachment	Mounting bracket for NT31/NT31C series to NB5Q series	NB5Q-ATT01

Note: Use a standard USB cable (Type A male to Type B male) or standard Ethernet cable (10 BASE-T/100 BASE-TX twisted-pair cable) to connect the NB series to software (personal computer). Use a standard Ethernet cable (10 BASE-T/100 BASE-TX twisted-pair cable) to connect the NB series to a PLC. For detail, refer to the NB

Series Setup Manual (Cat. No. V107).

\* The NB5Q-TW01B and NB7W-TW01B are supported by NB-Designer version 1.10 or higher.

\* The NB3Q-TW0 B and NB10W-TW01B are supported by NB-Designer version 1.20 or higher.

## **System Configuration**

Items	Minimum Configurations
Operating System (OS)	Microsoft Windows XP (SP3 or higher) Microsoft Windows Vista (32-bit or 64-bit edition) Microsoft Windows 7 (32-bit or 64-bit edition) Microsoft Windows 8 (32-bit or 64-bit edition) Microsoft Windows 8.1 (32-bit or 64-bit edition) Microsoft Windows 10 (32-bit or 64-bit edition)
CPU	Windows computers with CPU recommended for OS
Memory	512 MB or more
Hard Disk	2.5 GB or more, with the disk space more than 800 MB at least
Display	Supports the display with resolution of $800 \times 600$ and 16-bit high color (1024 $\times$ 768 and 32-bit true color are recommended.).
Communication ports	RS-232C Port, USB Port, Ethernet Port

# **Recommended USB Memory**

Product name	Specifications	Model
USB memory stick	Capacity: 2 GB	FZ-MEM2G
	Capacity: 8 GB	FZ-MEM8G

# **NB Series**

# Specifications

#### HMI

Specifications	NB	3Q	NB	5Q	NB7W		NB10W
Specifications	TW00B	TW01B	TW00B	TW01B	TW00B	TW01B	TW01B
Display type	3.5" TI	T LCD	5.6" TI	FT LCD	7" TFT LCD		10.1" TFT LCD
Display resolution ( $H \times V$ )	320	× 240	320	× 234	800 × 480 800 ×		800 × 480
Number of colors	65,536						
Backlight	LED						
Backlight lifetime	50,000 hours of operating time at the normal temperature (25°C)*						
Touch panel	Analog resistive membrane type, resolution $1024 \times 1024$ , life: 1 million touch operations						operations
Dimensions in mm (H $\times$ W $\times$ D)	103.8 × 12	29.8×52.8	142 × 1	$148 \times 202 \times 46$			210.8 × 268.8 × 54.0
Weight	300 g max.	305 g max.	620 g max.	627 g max.	710 g max.	715 g max.	1525 g max.

\* 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.

## Functionality

Specifications	NE	33Q	NB5Q		NB7W		NB10W	
Specifications	TW00B	TW01B	TW00B	TW01B	TW00B	TW01B	TW01B	
Internal memory			128 N	IB (including sy	rstem area)			
Memory interface		USB Memory		USB Memory		USB Memory	USB Memory	
Serial (COM1)	(not is) Transmissi 15 m Max. 500 m Max. (F	/422A/485 olated), on distance: (RS-232C), RS-422A/485), D-Sub 9-pin	RS-232C, Transmission distance: 15 m Max., Connector: D-Sub 9-pin					
Serial (COM2)		RS-232C/422A/485 (not isolated), Transmission distance: 15 m Max. (RS-232C), 500 m Max. (RS-422A/4 Connector: D-Sub 9-pin			<i>, , , , , , , , , ,</i>			
USB Host		Equivalent to USB 2.0 full speed, type A, Output power 5 V, 150 mA						
USB Slave		Equivalent to USB 2.0 full speed, type B, Transmission distance: 5 m						
Printer connection		PictBridge support						
Ethernet		10/100 base-T	10/100 base-T 10/100 base-T 10/100 bas				10/100 base-T	

#### General

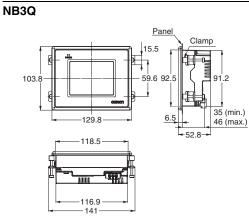
Specifications	NB	NB3Q		5Q	NB7W		NB10W
	TW00B	TW01B	TW00B	TW01B	TW00B	TW01B	TW01B
Line voltage			20.4 to 27	7.6 VDC (24 VE	DC -15 to 15%)		
Power consumption	5 W	9 W	6 W	10 W	7 W	11 W	14 W
Battery lifetime	5 years (at 25°C) *						
Enclosure rating (front side)	Front operation part: IP65 (Dust proof and drip proof only from the front of the panel)						
Obtained standards	EC Directives, KC, cUL508						
Operating environment	No corrosive gases.						
Noise immunity	Compliant with IEC61000-4-4, 2 KV (Power cable)						
Ambient operating temperature	0 to 50°C						
Ambient operating humidity	10% to 90% RH (without condensation)						

**Note:** Flash memory can be written to up 100,000 times. \* OMRON accepts NB unit including the display device for repair and analysis within five years of the manufacture date.

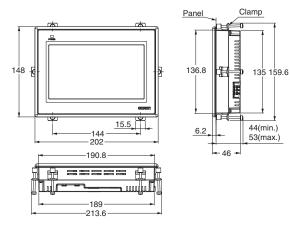
# **NB Series**

# (Units: mm)

# Dimensions

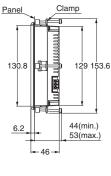


NB7W

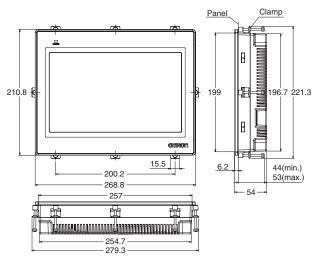


Model	Panel cutout (H × V mm)
NB3Q	119.0 (+0.5/–0) × 93.0 (+0.5/–0)
NB5Q	172.4 (+0.5/–0) × 131.0 (+0.5/–0)
NB7W	191.0 (+0.5/-0) × 137.0 (+0.5/-0)
NB10W	258.0 (+0.5/-0) × 200.0 (+0.5/-0)

# NB5Q 142 15.5 134 184 172.2 ..... 飴 fi fi ղլ 170.4 -195



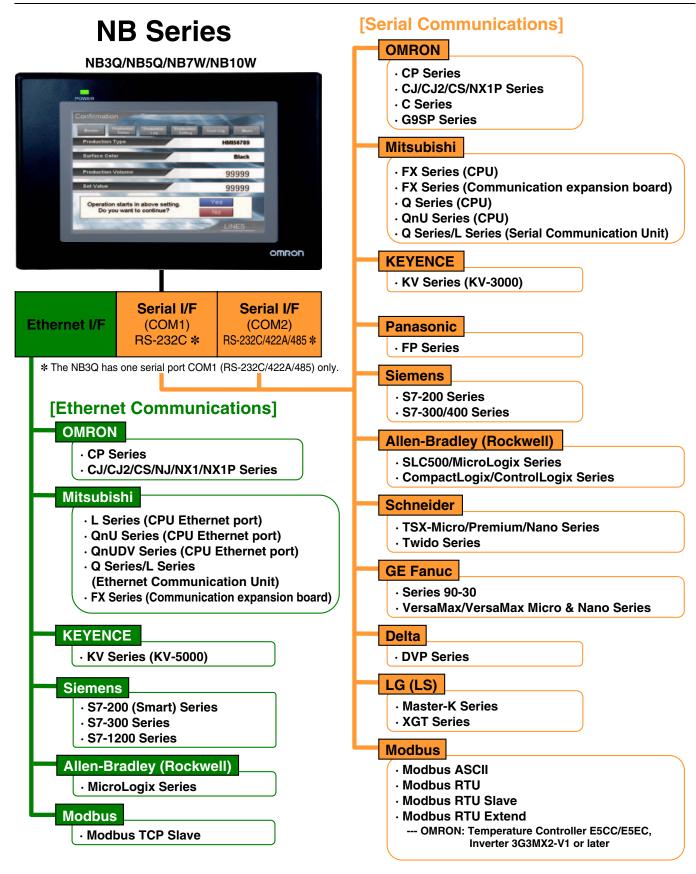
NB10W



Applicable panel thickness: 1.6 to 4.8 mm

# **Related Manuals**

Cat. No	Model	Name
V106	NB-Designer	NB Series NB-Designer Operation Manual
V107	NB3Q, NB5Q, NB7W, NB10W	NB Series Setup Manual
V108	NB3Q, NB5Q, NB7W, NB10W	NB Series Host Connection Manual
V109	NB3Q, NB5Q, NB7W, NB10W	NB Series Startup Guide



12

Company	Series	Model					
Company	Series	Ethernet communication	Serial communication				
	CP Series	CP1L-EM/-EL (Built-in Ethernet port) CP1H, CP1L, CP1E (CP1W-CIF41 Option Board required)	CP1H, CP1L, CP1E				
OMRON	CJ/CJ2/CS/NJ/NX1/NX1P Series	CJ1W-ETN21/EIP21 CS1W-ETN21/EIP21 CJ2H-00-EIP, CJ2M-CPU30 NJ001 NX102-000 NX102-000	CJ1 , CJ2 , CS1 NX1P2- C (NX1W-CIF Option Board required)				
	C Series		C200HX/HG/HE(-Z) CQM1H CPM1□/2□				
	G9SP Series		G9SP-N C (CP1W-CIF01 Option Board required)				
	* For connectable OMRON PLC m Manual (Cat. No. V106).	* For connectable OMRON PLC models, refer to the Appendices in the N					
	FX Series (Port built into CPU)		FX1N/1NC/2N/2NC/3G/3GC FX1S FX3U/3UC/3S				
	FX Series (Communication expansion board)	FX3U-ENET-L	FX-485ADP/485BD/232BD				
	Q Series (Port built into CPU)		Q00, Q00J, Q01, Q02, Q02H, Q06H, Q12H, Q25H				
Mitsubishi	QnU Series (Port built into CPU)	Q03UDE, Q04UDEH, Q06UDEH, Q10UDEH, Q13UDEH, Q20UDEH, Q26UDEH, Q50UDEH, Q100UDEH	Q00UCPU, Q01UCPU, Q02UCPU, Q03UD, Q04UDH, Q06UDH				
	QnUDV Series (Port built into CPU)	Q26UDV					
	Q Series (Communication Unit)	QJ71E71-100	QJ71C24/-R2 QJ71C24N/-R2/-R4				
	L Series (Port built into CPU)	L02CPU/-P, L06CPU/-P, L26CPU/-P/-BT/-PBT					
	L Series (Communication Unit)	LJ71E71-100	LJ71C24/-R2				
KEYENCE	KV Series (Port built into CPU)	KV-5000	KV-3000				
Panasonic	FP Series		FP, FP0, FP1, FP2, FP3, FP2SH, FP10S/SH, FP-M, FP-e, FP-X				
	S7-200 Series	CP243-1, CP243-1 IT, SMART CPU CR40, SMART CPU SR20	CPU212/214/215/216 CPU221/222/224/226				
Siemens	S7-300/400 Series	CP343-1, CP343-1 IT, CPU315-2 PN/DP, CPU317-2 PN/DP, CPU317-3 PN/DP	CPU312/313/314/315/316/318 CPU412/413/414/416/417				
	S7-1200 Series	CPU1211C, CPU1214C					
Allen-Bradley (Rockwell)	SLC500/MicroLogix Series	MicroLogix 1100/1400 (Built-in Ethernet port), MicroLogix 1000/1200/ 1400/1500 (1761-NET-ENI Unit)	MicroLogix1000/1200/1400/1500 SLC 5				
, ,	CompactLogix/ControlLogix Series		1756-L61/63 1769-L20/30/31/32E/35E				
Schneider	TSX-Micro/Premium/Nano Series		TSX 37/P57/07				
	Twido Series		TWD LCAA/LMDA				
05 5	Series 90-30		IC693CPU/CSE				
GE Fanuc	VersaMax/ VersaMax Micro & Nano Series		CPU001/002/005/E05 IC200UAL/UDD/UDR/UAA/UAR				
Delta	DVP Series		DVPES/EX/SS DVPSA/SX/SC DVPEH/EH2/SV				
LG (LS)	Master-K Series		K120s, K200s				
	XGT Series		XGB				
Modbus			Modbus ASCII Modbus RTU Modbus RTU Slave Modbus RTU Extend OMRON:Temperature Controller etc.				

Note: 1. OMRON does not guarantee the normal operation of all PLCs in each series. The NB series can be connected to temperature controllers, inverters, and other devices. For details, refer to the *NB Series Host Connection Manual* (Cat.No V108).
 Including models whose production were discontinued.

# Providing components for designing screens with NB-series

Omron provides components for designing the screens with NB-series.

Use of components allows customers to easily and neatly create the HMI screens.

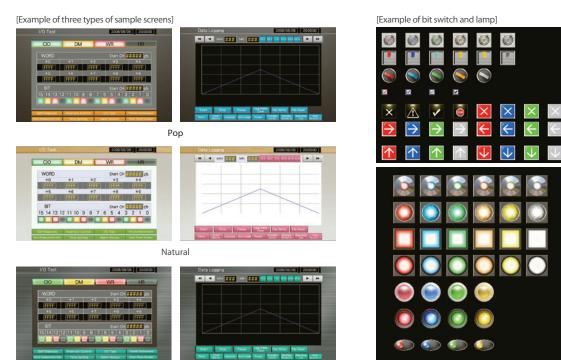
# **Cool objects**

Sample screens, bit switches, and bit lamps are provided in three types such as

"Pop", "Natural", and "Metal".Buttons can be used for labels,

or as ON/OFF buttons in combination with gray buttons.

You can choose components that meet your application from objects in different sizes and colors.



Metal

MEMO

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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.

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

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# Kyoto, JAPAN

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