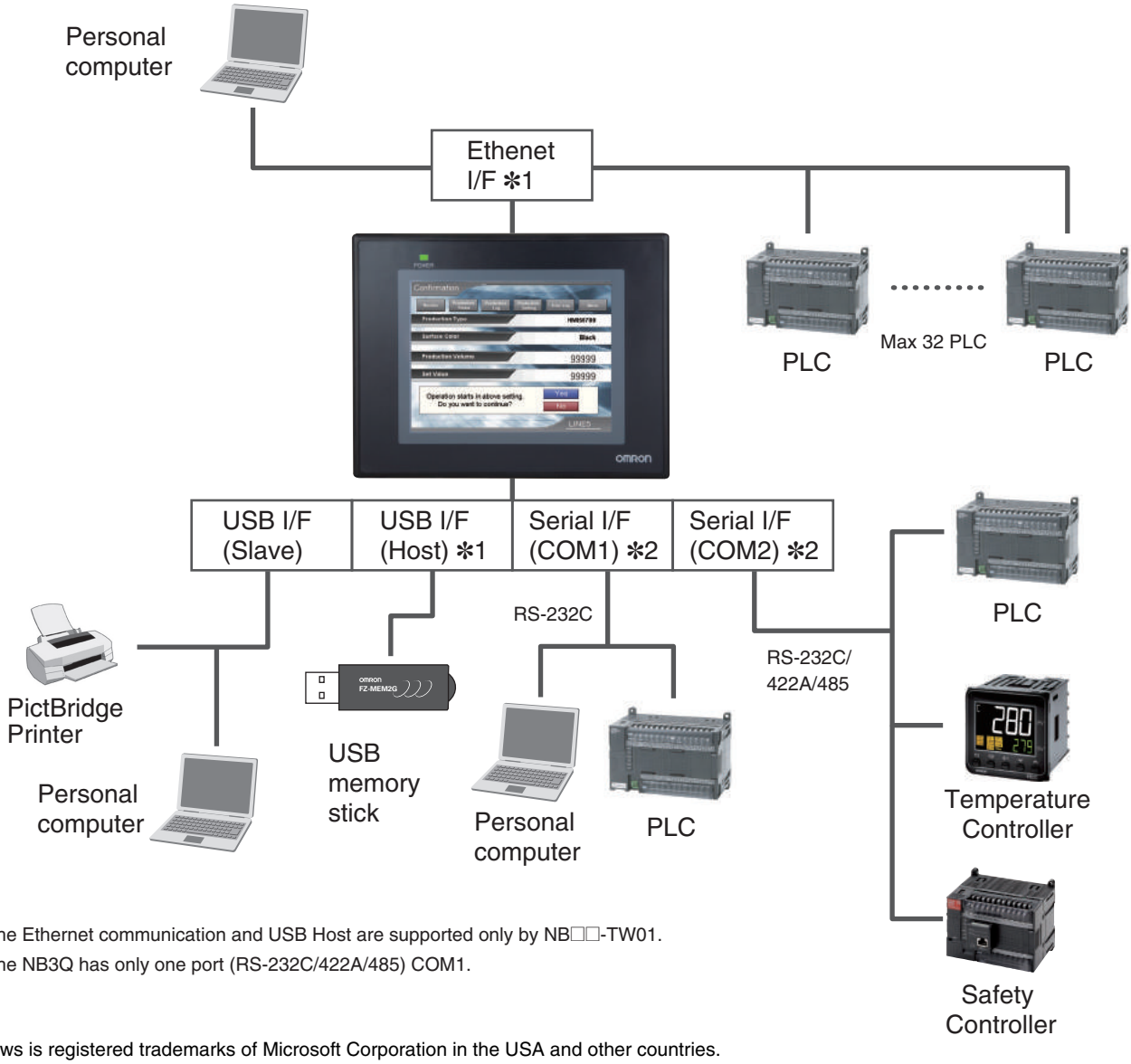
Programmable Terminals

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



✻1. The Ethernet communication and USB Host are supported only by NB□□-TW01.

✻2. The NB3Q has only one port (RS-232C/422A/485) COM1.

Ordering Information

Programmable Terminals

Product name	Specifications	Model
NB3Q	3.5 inch, TFT LCD, Color, 320 × 240 dots	NB3Q-TW00B
	3.5 inch, TFT LCD, Color, 320 × 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 × 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®, 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
Display protective sheets	For the NB3Q contains 5 sheets	NB3Q-KBA04
	For the NB5Q contains 5 sheets	NB5Q-KBA04
	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 × 600 and 16-bit high color (1024 × 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	NB3Q		NB5Q		NB7W		NB10W
	TW00B	TW01B	TW00B	TW01B	TW00B	TW01B	TW01B
Display type	3.5" TFT LCD		5.6" TFT LCD		7" TFT LCD		10.1" TFT LCD
Display resolution (H × V)	320 × 240		320 × 234		800 × 480		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 × 1024, life: 1 million touch operations						
Dimensions in mm (H × W × D)	103.8 × 129.8 × 52.8		142 × 184 × 46		148 × 202 × 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 40% per LED at room temperature and humidity. It is a typical value. Omron accepts NB Programmable Terminals, including the HMI, for repair and analysis within five years of the manufacture date. Repair products (excluding battery replacement) will be replaced with a new substitute product. Analysis will be performed to identify the cause of failure for each module. (Fees apply for out-of-warranty work.)

Functionality

Specifications	NB3Q		NB5Q		NB7W		NB10W
	TW00B	TW01B	TW00B	TW01B	TW00B	TW01B	TW01B
Internal memory	128 MB (including system area)						
Memory interface	---	USB Memory	---	USB Memory	---	USB Memory	USB Memory
Serial (COM1)	RS-232C/422A/485 (not isolated), Transmission distance: 15 m Max. (RS-232C), 500 m Max. (RS-422A/485), Connector: 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/485), Connector: D-Sub 9-pin				
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 base-T

General

Specifications	NB3Q		NB5Q		NB7W		NB10W
	TW00B	TW01B	TW00B	TW01B	TW00B	TW01B	TW01B
Line voltage	20.4 to 27.6 VDC (24 VDC −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)						

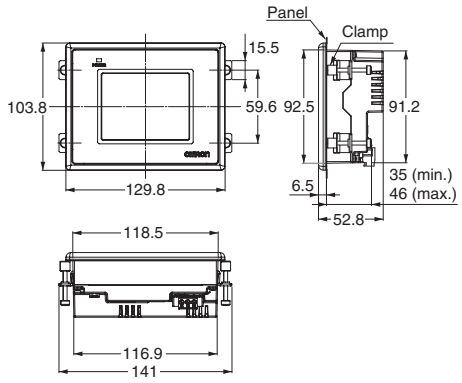
Note: Flash memory can be written to up 100,000 times.

✻ In-factory battery replacement is available for the NB10W only within 5 years of the date of manufacture. Battery replacement is not available for the NB3Q/5Q/7W.

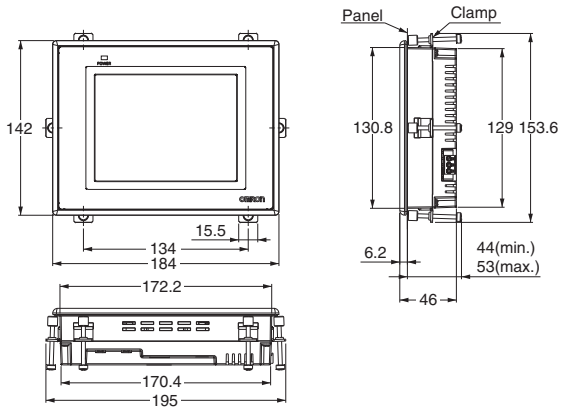
Dimensions

(Units: mm)

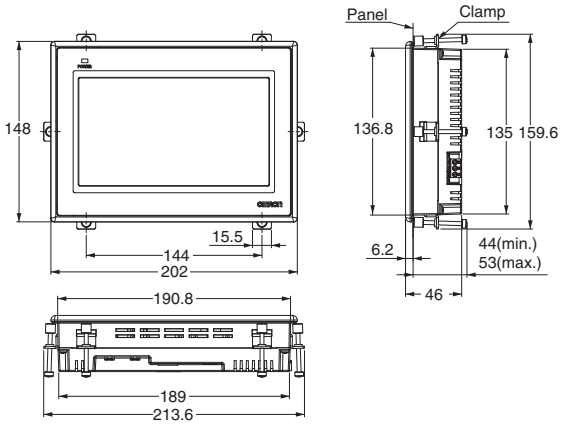
NB3Q



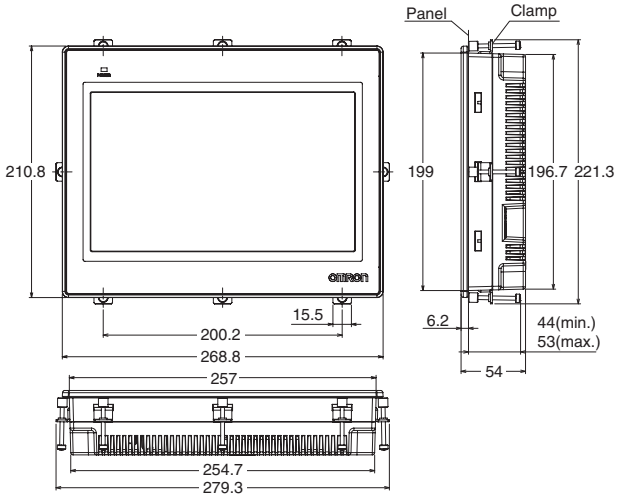
NB5Q



NB7W



NB10W



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)

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

Connectable Devices

NB Series

NB3Q/NB5Q/NB7W/NB10W

Ethernet I/F	Serial I/F (COM1) RS-232C *	Serial I/F (COM2) RS-232C/422A/485 *

* The NB3Q has one serial port COM1 (RS-232C/422A/485) only.

[Ethernet Communications]

OMRON
- CP Series
- CJ/CJ2/CS/NJ/NX1/NX1P Series

Mitsubishi
- L Series (CPU Ethernet port)
- QnU Series (CPU Ethernet port)
- QnUDV Series (CPU Ethernet port)
- Q Series/L Series (Ethernet Communication Unit)
- FX Series (Communication expansion board)

KEYENCE
- KV Series (KV-5000)

Siemens
- S7-200 (Smart) Series
- S7-300 Series
- S7-1200 Series

Allen-Bradley (Rockwell)
- MicroLogix Series

Modbus
- Modbus TCP Slave

[Serial Communications]

OMRON
- CP Series
- CJ/CJ2/CS/NJ/NX1P Series
- C Series
- G9SP Series

Mitsubishi
- FX Series (CPU)
- FX Series (Communication expansion board)
- Q Series (CPU)
- QnU Series (CPU)
- Q Series/L Series (Serial Communication Unit)

KEYENCE
- KV Series (KV-3000)

Panasonic
- FP Series

Siemens
- S7-200 Series
- S7-300/400 Series

Allen-Bradley (Rockwell)
- SLC500/MicroLogix Series
- CompactLogix/ControlLogix Series

Schneider
- TSX-Micro/Premium/Nano Series
- Twido Series

GE Fanuc
- Series 90-30
- VersaMax/VersaMax Micro & Nano Series

Delta
- DVP Series

LG (LS)
- Master-K Series
- XGT Series

Modbus
- Modbus ASCII
- Modbus RTU
- Modbus RTU Slave
- Modbus RTU Extend

--- OMRON: Temperature Controller E5CC/E5EC, Inverter 3G3MX2-V1 or later

Company	Series	Model	
		Ethernet communication	Serial communication
OMRON	CP Series	CP1L-EL/-EM, CP2E-N (Built-in Ethernet port) CP1H-X/-XA/-Y, CP1L-L/-M, CP1E-N/-N□□S/-NA (Option Board required)	CP1E-N/-N□□S/-NA, CP2E-S/-E (Built-in serial port) CP1L-EL/-EM/-L/-M, CP1H-X/-XA/-Y, CP2E-N (Option Board required)
	CJ/CJ2/CS/NJ/NX1/NX1P Series	CJ1W-ETN21/EIP21 CS1W-ETN21/EIP21 CJ2H-□□□-EIP, CJ2M-CPU3□ NJ□01 NX102-□□□□ NX1P2-□□□□	CJ1□, CJ2□, CS1□ NJ□01 (Serial communication unit required) NX1P2-□□□□ (Option Board required)
	C Series	---	C200HX/HG/HE(-Z) CQM1H CPM1□/2□
	G9SP Series	---	G9SP-N□□□ (CP1W-CIF01 Option Board required)
	✻ For connectable OMRON PLC models, refer to the *Appendices* in the *NB Series NB-Designer Operation Manual* (Cat. No. V106).		
Mitsubishi	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
	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
Siemens	S7-200 Series	CP243-1, CP243-1 IT, SMART CPU CR40, SMART CPU SR20	CPU212/214/215/216 CPU221/222/224/226
	S7-300/400 Series	CP343-1, CP343-1 IT, CPU315-2 PN/DP, CPU317-2 PN/DP, CPU319-3 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
GE Fanuc	Series 90-30	---	IC693CPU/CSE
	VersaMax/ VersaMax Micro & Nano Series	---	CPU001/002/005/E05 IC200UAL/UDD/UDR/UAA/UAR
Delta	DVP Series	---	DVP-□□ES/EX/SS DVP-□□SA/SX/SC DVP-□□EH/EH2/SV
LG (LS)	Master-K Series	---	K120s, K200s
	XGT Series	---	XGB
Modbus	Modbus	Modbus TCP Slave	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).

2. Including models whose production were discontinued.