Powerful. Tough. Future-Proof.

Our NY industrial Box PC has been designed from first principles to be powerful, reliable and scalable, making it ideally suited to visualization, data handling, measuring and controlling. The latest insights in design simplification eliminates faults caused by complexity which, with other unique design features, maximizes uptime and reduces costs. The future will be IT driven: Omron's Industrial PC platform will make you part of it.

Features

- No internal cables to cut faults, maximizes uptime
- Unique simplified thermal design to reduce downtime
- Powerful Intel® Core™ technology for optimized performance
- Three Ethernet ports to increase connectivity
- USB3.0 for fast data-transmission
- Optional DVI port for dual monitor connectivity
- Optional NY Monitor Link interface for connectivity up to 100 m
- Free choice of drive technology: HDD, SSD and built-in SD card slot

OMRON

System Configuration

SCADA MES/ERP

Industrial Box PC

Industrial Monitor

Ethernet

MACHINE LEVEL

Industrial Box PC

Industrial Monitor

PCIe Card

PCIe

Controller

(eg. NY-series)

(eg. NJ, NX, CP, CJ, CS-series)

PWR   I/O   2xUSB3.0   2xUSB2.0   3xEthernet   DVI   DVI or COM   DVI-D, COM or NY Monitor Link ✻

(eg. S8VK-S)

UPS

(eg. S8BA)

KEYBOARD

TOUCHSCREEN

MOUSE / TRACKBALL

AUDIO

Industrial Monitor Software
(eg. brightness control, control setting, etc.)

Industrial PC software
(eg. PC support utility, tray utility, etc.)
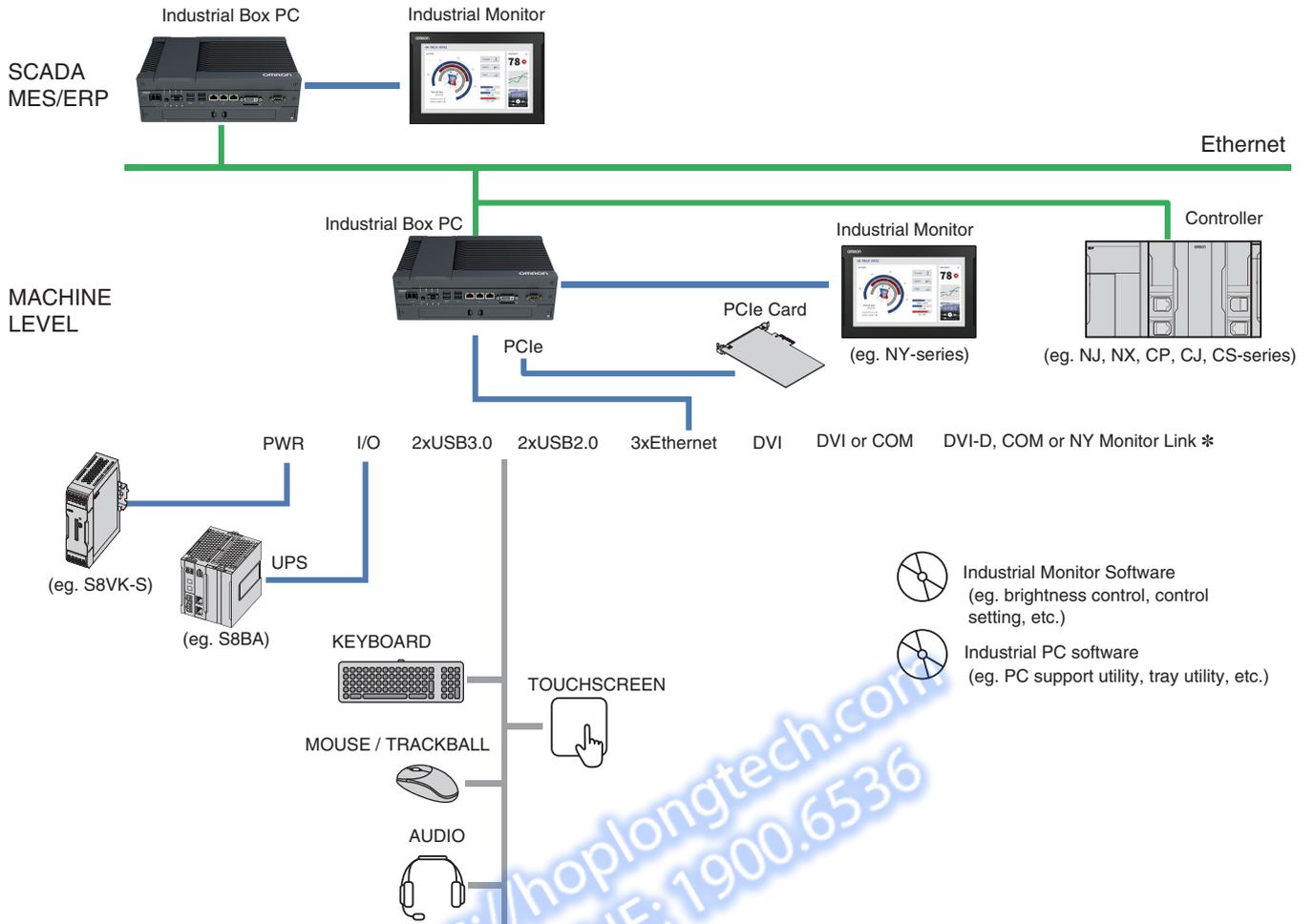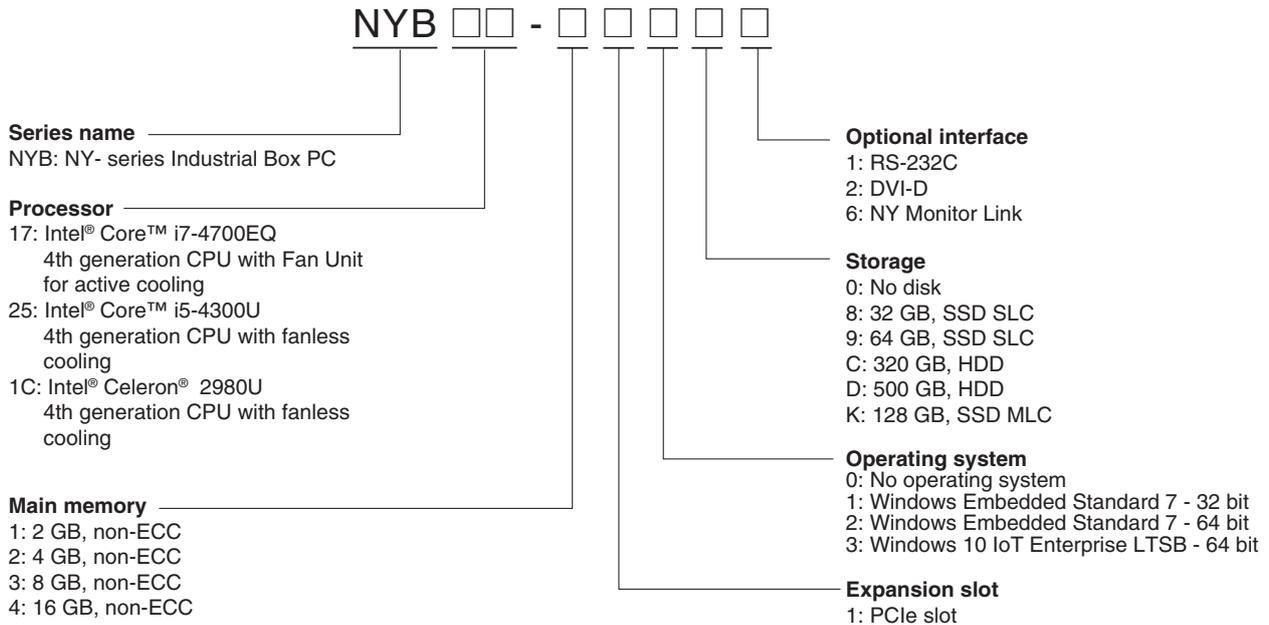
✻ NY Monitor Link option: Connect monitor up to 100 m via standard Ethernet cable.

Model Number Structure

The purpose of this model number legend is to provide understanding of the meaning of specifications from the model number.
Models are not available for all combinations of code numbers.

NYB ☐☐ - ☐☐☐☐☐

Series name
NYB: NY- series Industrial Box PC

Processor
17: Intel® Core™ i7-4700EQ
    4th generation CPU with Fan Unit
    for active cooling
25: Intel® Core™ i5-4300U
    4th generation CPU with fanless
    cooling
1C: Intel® Celeron® 2980U
    4th generation CPU with fanless
    cooling

Main memory
1: 2 GB, non-ECC
2: 4 GB, non-ECC
3: 8 GB, non-ECC
4: 16 GB, non-ECC

Optional interface
1: RS-232C
2: DVI-D
6: NY Monitor Link

Storage
0: No disk
8: 32 GB, SSD SLC
9: 64 GB, SSD SLC
C: 320 GB, HDD
D: 500 GB, HDD
K: 128 GB, SSD MLC

Operating system
0: No operating system
1: Windows Embedded Standard 7 - 32 bit
2: Windows Embedded Standard 7 - 64 bit
3: Windows 10 IoT Enterprise LTSB - 64 bit

Expansion slot
1: PCIe slot

Ordering Information

NY-series Industrial PC Platform

Recommended models

The industrial Box PC has extended configuration possibilities to meet your requirements, below an overview of the most used and recommended models. Selecting one of the models below will bring the benefit of faster delivery times.
In case your preferred model is not listed below, please contact your Omron representative to discuss the possibilities.

Product name	Specifications					Model
	Operating system	CPU type	RAM memory (non-ECC type)	Storage size	Interface option	
Industrial Box PC	Windows 10 IoT Enterprise LTSB - 64 bit	Intel® Core™ i7-4700EQ	8 GB	128 GB SSD type (MLC)	RS-232C	**NYB17-313K1**
				320 GB HDD type	RS-232C	**NYB17-313C1**
				64 GB SSD type (SLC)	RS-232C	**NYB17-31391**
		Intel® Core™ i5-4300U	8 GB	128 GB SSD type (MLC)	RS-232C	**NYB25-313K1**
				320 GB HDD type	RS-232C	**NYB25-313C1**
		Intel® Celeron™ 2980U	8 GB	128 GB SSD type (MLC)	RS-232C	**NYB1C-313K1**
				320 GB HDD type	RS-232C	**NYB1C-313C1**
	Windows Embedded Standard 7 - 64bit	Intel® Core™ i7-4700EQ	8 GB	128 GB SSD type (MLC)	RS-232C	**NYB17-312K1**
		Intel® Core™ i5-4300U	8 GB	128 GB SSD type (MLC)	RS-232C	**NYB25-312K1**
		Intel® Celeron™ 2980U	8 GB	320 GB HDD type	RS-232C	**NYB1C-312C1**

Accessories

Optional Hardware

Product name	Specifications	Model
Mounting Brackets *1	Book mount	NY000-AB00
	Wall mount	NY000-AB01
SD Memory Cards	Card type: SD Card Capacity: 2 GB Format: FAT16	HMC-SD291
	Card type: SDHC Card Capacity: 4 GB Format: FAT32	HMC-SD491
USB Flash Drives	Capacity: 2 GB	FZ-MEM2G
	Capacity: 8 GB	FZ-MEM8G
Storage Devices	Storage type: HDD Capacity: 320 GB	NY000-AH00
	Storage type: HDD Capacity: 500 GB	NY000-AH01
	Storage type: SSD SLC Capacity: 32 GB	NY000-AS00
	Storage type: SSD SLC Capacity: 64 GB	NY000-AS01
	Storage type: SSD MLC Capacity: 128 GB	NY000-AS02
USB Type-A to USB Type-B Cables	Cable length: 2 m USB 2.0 Minimum bend radius: 25 mm	FH-VUAB 2M
	Cable length: 5 m USB 2.0 Minimum bend radius: 25 mm	FH-VUAB 5M
DVI Cables	Cable length: 2 m Supports DVI-D Minimum bend radius: 36 mm	NY000-AC00 2M
	Cable length: 5 m Supports DVI-D Minimum bend radius: 36 mm	NY000-AC00 5M
Industrial Monitor	• LCD touchscreen • Multi-touch functionality • Supply voltage: 24 VDC • Up to 1,280 x 800 pixels at 60 Hz • 2 USB Type-A Connectors • Programmable brightness control • Standard and 100 m cable models are available.	NYM1☐W-C10☐☐
Power Supply	• Output voltage: 24 VDC • Push-In Plus terminal blocks	S8VK-S☐☐☐24
UPS *2	Output voltage during backup operation: 24 VDC ± 5%	S8BA
UPS Communication Cable	Cable length: 2 m Signals for • Signal output (BL, TR, BU, WB) • Remote ON/OFF input • UPS Stop Signal input (BS)	S8BW-C02

*1. Select the required type.
*2. Revision number 04 or higher.

The revision number of the UPS can be retrieved from the serial number label on the product and the product packaging.

A3☐ ☐☐☐☐☐☐☐☐ ☐☐ ☐
　1　　　　2　　　　3　4

Item	Description
1	Product code
2	Product period and sequential number
3	Revision number
4	RoHS status

Spare Parts

The following spare parts for the Industrial Box PC are available.

Product name	Specifications	Model
Battery	One battery is supplied with the Industrial Box PC. The battery supplies power to the real-time clock. The battery is located inside the Industrial Box PC. Service life: 5 years at 25°C	CJ1W-BAT01
Fan Unit	The Fan Unit is available for the Industrial Box PC that has active cooling. Service life: 70,000 hours of continuous operation at 40°C with 15% to 65% relative humidity. Shelf life: 6 months This is the storage limitation with no power supplied.	NY000-AF00
Accessory Kit	Accessory Kit containing all accessories supplied with the Industrial Box PC. • Power connector • I/O connector • Drive bracket for drive installation • 4 mounting screws for drive installation • PCIe Card support for PCIe Card installation • PCIe Card clip for PCIe Card installation	NY000-AK00

Installed Support Software

Item	Specifications
Industrial PC Support Utility	The Industrial PC Support Utility is a software utility to assist in diagnosing and resolving problems of the Industrial Box PC. It is pre-installed on the Industrial Box PC and the Industrial Panel PC.
Industrial PC Tray Utility	The Industrial PC Tray Utility is a software utility that provides information about the current state of the Industrial PC, its related devices, and associated software. It is pre-installed on the Industrial Box PC and the Industrial Panel PC.
Industrial PC System API	The Industrial PC System API allows programmers to create programs that can retrieve information or set an indicator status of the Industrial Box PC. The API makes use of the included IPC System Service to manage the hardware. It is pre-installed on the Industrial Box PC and the Industrial Panel PC.
Industrial Monitor Utility	For the optional OMRON Industrial Monitor. The Industrial Monitor Utility provides a user interface to control settings and display details of connected Industrial Monitors. It is pre-installed on the Industrial Box PC and the Industrial Panel PC.
Industrial Monitor Brightness Utility	For the optional OMRON Industrial Monitor. The Industrial Monitor Brightness Utility is a small software utility that allows you to control the brightness of the screen backlight of all connected Industrial Monitors. It is pre-installed on the Industrial Box PC and the Industrial Panel PC.
Industrial Monitor API	For the optional OMRON Industrial Monitor. The Industrial Monitor API allows programmers to create applications that can control the hardware features and retrieve information from connected Industrial Monitors. It is pre-installed on the Industrial Box PC and the Industrial Panel PC.
Industrial PC Rescue Disk Creator	The Industrial PC Rescue Disk Creator creates a USB Rescue Disk which can be used to back-up and restore the Omron IPC Operating System. It is pre-installed on the Industrial Box PC and the Industrial Panel PC.

Specifications

Performance Specifications

Item			NYB17-□□□□□	NYB25-□□□□□	NYB1C-□□□□□
Main system	CPU	CPU type	Intel® Core™ i7-4700EQ	Intel® Core™ i5-4300U	Intel® Celeron® Processor 2980U
		Cores / Threads	4 / 8	2 / 4	2 / 2
		CPU base frequency	2.4 GHz	1.9 GHz	1.6 GHz
		Maximum turbo frequency	3.4 GHz	2.9 GHz	–
		Cache	6 MB	3 MB	2 MB
		Cooling details	Requires active cooling (fan)	Passive cooling (fanless)	
	Memory	Memory size	4, 8 or 16 GB	2, 4 or 8 GB	2, 4 or 8 GB
		Memory type	DDR3L (non ECC)		
	Trusted platform module (TPM)		• Ensure the integrity of the platform • Disk encryption • Password protection and other uses of encryption		
	Graphics controller		Intel® HD Graphics. Up to two independent screens.		
			Intel® HD Graphics 4600	Intel® HD Graphics 4400	Intel® HD Graphics
	Watchdog		Yes		
Operating system	Windows OS		Windows Embedded Standard 7 - 32 bit Windows Embedded Standard 7 - 64 bit Windows 10 IoT Enterprise LTSB - 64 bit		
Storage devices	Drives	Hard disk drive	• 320 or 500 GB • Serial ATA 3.0	• 320 GB • Serial ATA 3.0	
		Solid state drive — SLC type	• 32 GB or 64 GB • Serial ATA 3.1		
		Solid state drive — MLC type	• 128 GB • Serial ATA 3.1		
	Drive bays (HDD/SSD) ✳1		2	2	1
Connectors	Power connector		• 24 VDC		
	I/O connector		2 inputs (UPS signal and power OFF control) and 1 output (Industrial Box PC power state)		
	USB2.0 Type-A	Number of ports	2		
		Maximum current	500 mA		
		Maximum cable length	5 m		
	USB3.0 Type-A	Number of ports	2		
		Maximum current	900 mA		
		Maximum cable length	3 m		
	Ethernet connectors	Number of available ports	3		
		Physical layer	10BASE-T, 100BASE-TX or 1000BASE-T		
	DVI-I connector	Video interface	Digital or analog	Digital only	
		Resolution	Up to 1,920 x 1,200 pixels at 60 Hz		
		Maximum DVI cable length	Dependent upon connected monitor type and resolution		
Optional connector (select one per system)	RS-232C		Standard SUBD9 connector (Non-Isolated)		
	DVI-D	Video interface	Digital only		
		Resolution	Up to 1,920 x 1,200 pixels at 60 Hz		
		Maximum DVI cable length	Dependent upon connected monitor type and resolution		
	NY Monitor Link	Video interface	Digital only		
		Resolution	1,280 x 800 pixels at 60 Hz		
		Connector type	RJ45		
		Cable shielding, type and max. length	S/FTP, Cat.6A, 100 m		
		USB data throughput	280 Mbps max.		
PCIe Card Slot	Configuration		X4 (4 lanes) up to Gen 3	X1 (1 lane) up to Gen 2	
	Card height		Standard height cards, 4.20 inches (106.7 mm) ✳2		
	Card length		Half length cards, 6.6 inches (167.65 mm)		
Battery	Model		CJ1W-BAT01		
	Service life		5 years at 25°C		
Fan unit	Model		NY000-AF00		
	Service life		70,000 hours of continuous operation at 40°C with 15% to 65% relative humidity		
LED			PWR, ERR, HDD, RUN		

✳**1.** Depending on the model one or two drives are supported.
✳**2.** Low profile cards, 2.536 inches (64.4 mm) are not supported.

Electrical Specifications

Item			NYB17-□□□□□	NYB25-□□□□□	NYB1C-□□□□□
Rated power supply voltage			24 VDC, non-isolated		
Allowable power supply voltage range			20.4 to 28.8 VDC		
Grounding method			Ground to less than 100 Ω		
Inrush current			At 24 VDC: 12 A / 6 ms max. for cold start at room temperature		
Overvoltage category			JIS B3502 and IEC 61131-2: Category II		
EMC immunity level			IEC 61131-2: Zone B		
RTC accuracy			At ambient temperature of 55°C: -3.5 to +0.5 min error per month At ambient temperature of 25°C: -1.5 to +1.5 min error per month At ambient temperature of 0°C: -3 to +1 min error per month		
Power button life			100,000 operations		
Battery life			5 years at 25°C (for battery CJ1W-BAT01)		
Fan life			8 years of continuous operation at 40°C	–	–
Power consumption ✶	Maximum power consumption including drives and expansions		114 W	75 W	66 W
	Maximum power consumption excluding drives and expansions		81 W	52 W	45 W
	Drives	HDD 320 GB	2 W		
		HDD 500 GB	2 W		
		SSD SLC 32 GB	2 W		
		SSD SLC 64 GB	2 W		
		SSD MLC 128 GB	2 W		
	Expansions	USB	14 W max. ((2 x 500 mA at 5 V) + (2 x 900 mA at 5 V))		
		PCIe	15 W max.	5 W max.	5 W max.

Note: Refer to the *Industrial Box PC User's Manual* (W553) for detail.
✶ The total power consumption is the sum of the power consumption of all items that are installed in your Industrial Box PC.
To guarantee S8BA UPS operation in combination with our IPC, the specified combination of UPS and power-supply must be used.
The required supply specifications for an Industrial Box PC with an Intel® Core™ i7-4700EQ CPU.

Item	Minimum power requirements
Power supply	240 W
UPS	120 W

The required supply specifications for an Industrial Box PC with an Intel® Core™ i5-4300U CPU or Intel® Celeron® 2980U CPU.

Item	Minimum power requirements
Power supply	120 W
UPS	120 W

Components and functions

The intent behind our IPC platform is to empower engineers to become unstoppable in developing machines and factories that are better, faster and safer by giving them the freedom and flexibility to explore the opportunities provided by modern IT. In line with Omron's traditional quality standards, the Industrial Box PC is designed to meet the demands of industrial users for maximum robustness and reliability.
All maintenance sensitive products (HDD/SDD, fan, battery, and PCIe Card) can be easily reached from the outside of the system. No need to open the electronics compartment, less risk on failure.

Optional connection
RS-232C, DVI-D or NY Monitor Link.
NY Monitor Link allows high speed video and data communication over 100 m via standard Ethernet cable.

DVI-D video
Digital, up to 1,920 x 1,200 pixels at 60 Hz
(Intel® Core™ i7: DVI-I (Digital or analog))

3x High speed Ethernet
10BASE-T, 100BASE-TX or 1000BASE-T

2x USB2.0
500 mA maximum current
Maximum cable length: 5 m

2x USB3.0
900 mA maximum current
Maximum cable length: 3 m

Indication LEDs

Robust Mechanics
Full metal housing with black industrial coating

Industrial Design
Winner of the 2016 Red Dot design award✲ for excellent industrial design

1x PCIe slot
Half Length Cards 6.6 inches
Standard Height Cards 4.2 inches
Easy PCIe mounting drawer

Intel® Core™ i7: X4 (4 lanes)
Other CPUs: X1 (1 lane)

1x SD Memory Card slot
SDHC type (SD 2.0 specification)
Up to 32 GB capacity

Storage
2.5 inch Solid State Drive (SSD) or Hard Disk Drive (HDD), 7 mm height

I/O (UPS connection)
Input:
Power sequence signal
Output:
SPST-NO contact configuration
24 VDC at 2 A switching capacity (resistive load)

Power switch

24 VDC Power
24 VDC non isolated
Lockable power connector

✲ The Red Dot design award has been presented by the Design Zentrum Nordrhein Westfalen since 1955. It is one of the best-respected design competitions in the world, along with the iF award (Germany) and IDEA (the United States).

Environmental Specifications

Item		Specifications
Operation environment	Ambient operating temperature *1	0 to 55°C
	Ambient storage temperature *1	-20 to 70°C
	Ambient operating humidity *1	10% to 90% with no condensation
	Ambient storage humidity *1	10% to 90% with no condensation
	Operating atmosphere	No corrosive gases
	Altitude	2,000 m max.
	Noise resistance (during operation)	Conforms to IEC61000-4-4, 2kV (power lines)
	Vibration resistance (during operation)	Conforms to IEC 60068-2-6. For a product with an SSD: 5 to 8.4 Hz with 3.5 mm single amplitude and 8.4 to 150 Hz with 9.8 m/s² for 10 times each in X, Y and Z directions. For a product with a HDD the vibration resistance depends on the mounting orientation *2.
	Shock resistance (during operation)	Conforms to IEC 60068-2-27. 147 m/s², 3 times in each X, Y and Z directions
	Installation method	Book mount, Wall mount
	Pollution degree	2 or less: Conforms to JIS B3502 and IEC 61131-2.
Applicable standards *3		EU Directives: EMC Directive 2014/30/EU (EN 61131-2) and RoHS Directive KC Registration, RCM, cULus

*1. The allowed ambient operating temperature and ambient humidity depend on product type, CPU type, mounting orientation, and storage device type.
*2. Vibration resistance depends on the Industrial Box PC's mounting orientation and storage device type:

Mounting orientation	SSD	HDD
Book	9.8 m/s²	2.5 m/s²
Wall		4.9 m/s²

*3. Refer to the OMRON website (www.ia.omron.com) or contact your OMRON representative for the most recent applicable standards for each model.

Storage Device Specifications

Item	Specifications				
Model	NY000-AS00	NY000-AS01	NY000-AS02	NY000-AH00	NY000-AH01
Capacity	32 GB	64 GB	128 GB	320 GB	500 GB
Type	SSD (SLC)		SSD (MLC)	HDD	
S.M.A.R.T. support	Yes				
Rotation speed	–	–	–	5,400 r/min	
Interface	Serial ATA 3.1			Serial ATA 3.0	
Sustained standard read speed	Up to 160 MB/s		Up to 430 MB/s	–	
Sustained standard write speed	Up to 150 MB/s		Up to 190MB/s	–	
Operating temperature	0 to 70°C			5 to 55°C	
Operating humidity	10% to 95% (with no condensation)			• 10% to 95% (with no condensation) • 29°C wet-bulb temperature max.	
Storage temperature	-40 to 100°C			-40 to 65°C	
Storage humidity	10% to 95% (with no condensation)			• 8% to 90% (with no condensation) • 40°C wet-bulb temperature max.	
Life	1,500 TB written / 11 years at a daily workload of 350 GB	3,000 TB written / 23 years at a daily workload of 350 GB	114 TB written / 3 years at a daily workload of 100 GB	Approximately 5 years or 20,000 powered-ON hours (whichever comes first) under the following conditions: • 25°C at 101.3 kPa • Less than 333 powered-ON hours/month *1 • Less than 20% operation while powered-ON *2 • Less than 1.30 x 10⁶ seeks/month	

*1. Powered-ON hours include sleep and standby modes.
*2. Operation includes seeking, writing, and reading functions.

Dimensions
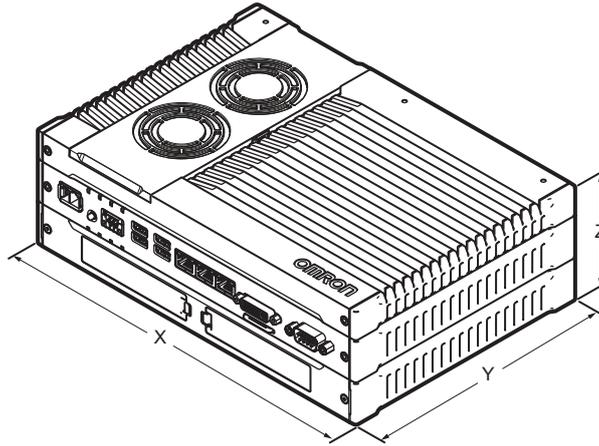
Item	Specifications
Dimensions	Width X = 282 mm Depth Y = 195 mm. Y = 200 mm including the DVI connectors. Height Z = 88.75 mm
Weight	3.8 kg

Bracket Specifications

The metal mounting brackets mount your Industrial Box PC and they are the connection for the functional ground.
Use metal screws with a diameter of 4 mm or 5 mm to mount the brackets.
Mounting screw locations for book mount and wall mount orientation:

(Unit: mm)

OMRON 10
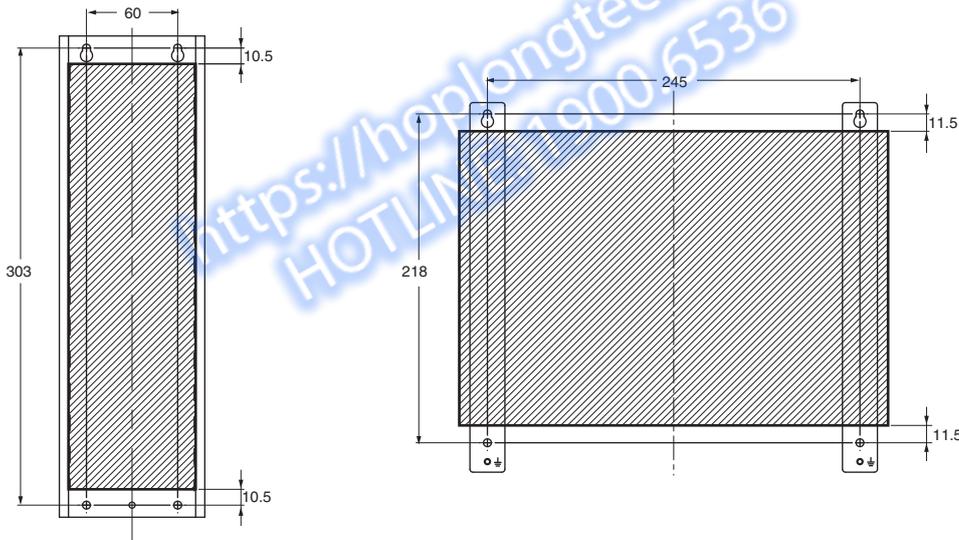
Recommended Related Products

Industrial Monitor
NY-series

The Industrial Monitor is of key importance at the interface between operator and system. The Industrial Monitor is efficient, effective and highly visible with an attractive design.

Industrial Panel PC
NY-series

The Industrial Panel PC intelligently combines the functionality of the Industrial Box PC and Industrial Monitor. No cables are used between the two components, which ensures optimal signal distribution and reliable operation in industrial environments.

UPS
S8BA-series

The OMRON S8BA UPS protects the Industrial Box PC from power failures, voltage variations and instantaneous voltage drops.

Related Manuals

The following manuals are related. Use these manuals for reference.

Manual name	Cat. No.	Model numbers	Application	Description
Industrial Box PC User's Manual	W553	NYB17-□1□□□ NYB25-□1□□□ NYB1C-□1□□□	Learning all basic information about the Industrial Box PC. This includes introductory information with features, hardware overview, software overview, specifications, mounting, wiring, connecting, operating and maintaining the Industrial Box PC.	An introduction to the Industrial Box PC is provided along with the following information: • Overview • Hardware • Software • Specifications • Installation • Operating Procedures • Maintenance
NY-Series Industrial Box-PC without OS User's Manual	W586	NYB17-□10□□ NYB25-□10□□ NYB1C-□10□□	Learing about the Omron Industrial PC functionality without an installed Operating System	An introduction to the Industrial Box PC is provided along with the following information: • Overview • Hardware • Software • Specifications • Installation • Operating Procedures • Maintenance
Industrial Monitor User's Manual	W554	NYM15W-C10□□ NYM12W-C10□□	Learning all basic information about the Industrial Monitor. This includes introductory information with features, hardware overview, specifications, mounting, wiring, connecting, operating and maintaining the Industrial Monitor.	An introduction to the Industrial Monitor is provided along with the following information: • Overview • Hardware • Software • Specifications • Installation • Operating Procedures • Maintenance
Industrial Panel PC User's Manual	W555	NYP17-□1□□□-15WC100□ NYP17-□1□□□-12WC100□ NYP25-□1□□□-15WC100□ NYP25-□1□□□-12WC100□ NYP1C-□1□□□-15WC100□ NYP1C-□1□□□-12WC100□	Learning all basic information about the Industrial Panel PC. This includes introductory information with features, hardware overview, software overview, specifications, mounting, wiring, connecting, operating and maintaining the Industrial Panel PC.	An introduction to the Industrial Panel PC is provided along with the following information: • Overview • Hardware • Software • Specifications • Installation • Operating Procedures • Maintenance

Manual name	Cat. No.	Model numbers	Application	Description
NY-Series Industrial Panel-PC without OS User's Manual	W587	NYP17-□10□□-15WC100□ NYP17-□10□□-12WC100□ NYP25-□10□□-15WC100□ NYP25-□10□□-12WC100□ NYP1C-□10□□-15WC100□ NYP1C-□10□□-12WC100□	Learing about the Omron Industrial PC functionality without an installed Operating System	An introduction to the Industrial Panel PC is provided along with the following information: • Overview • Hardware • Software • Specifications • Installation • Operating Procedures • Maintenance
UPS S8BA User's Manual	U702	S8BA	Learning the information that is necessary to use the Uninterruptible Power Supply (UPS) Unit.	An introduction to the UPS is provided along with the following information: • Overview • Preparation • Installation and Connection • Check and Start Operation • Maintenance and Inspection • Shutdown Processing • I/O Signal Functions • Troubleshooting

Terms and Conditions Agreement

2017.9

In the interest of product improvement, specifications are subject to change without notice.

OMRON Corporation
Industrial Automation Company

http://www.ia.omron.com/