

NY-series

NYB Industrial Box PC



Safety Precautions

Thank you for purchasing an NY-series Industrial Box PC.

To ensure the safe usage of the product, read and understand this document and the manuals for the product.

Contact your OMRON representative and make sure that you use the most recent version of each manual.

Keep this document and all relevant manuals in a safe place, and make sure that they are delivered to the final user of the product.

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Safety Precautions

■ Definition of Precautionary Information



WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury. Additionally, there may be severe property damage.



Caution

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury, or property damage.

■ Safety Precautions



WARNING

Do not attempt to disassemble, repair, or modify the product in any way. Doing so may result in malfunction or fire.



Always connect to a ground of 100 Ω or less when installing the product.



Ensure that installation and post-installation checks of the product are performed by personnel in charge who possess a thorough understanding of the machinery to be installed.



Provide safety measures in external circuits to ensure safety in the system if an abnormality occurs due to malfunction of the product or due to other external factors affecting operation. Not doing so may result in serious accidents due to incorrect operation.



Emergency stop circuits, interlock circuit, limit circuits, and similar safety measures must be provided in external control circuits.



Unintended behavior may occur when an error occurs in internal memory of the product. As a countermeasure for such problems, external safety measures must be provided to ensure safe operation of the system.



The use of an uninterruptible power supply (UPS) allows normal operation to continue even if a momentary power failure occurs, possibly resulting in the reception of an erroneous signal from an external device affected by the momentary power failure. Take external fail-safe measures. Where necessary, monitor the power supply voltage on the system for external devices and use it as an interlock condition.



Security setting adjustments should only be performed by the engineer in charge that possesses a thorough understanding of the security settings. Selecting non-recommended security settings can put your system at risk.



Changing BIOS information is only allowed for the engineer in charge that possesses a thorough understanding of the BIOS settings because it can change the behavior of the product.



To maintain the security and reliability of the system, a robust cybersecurity defense program should be implemented, which may include some or all of the following:



Anti-virus protection

- Install the latest commercial-quality anti-virus software on the computer connected to the control system and keep the software and virus definitions up-to-date.
- Scan USB drives or other external storage devices before connecting them to control systems and equipment.



Security measures to prevent unauthorized network access

- Install physical controls so that only authorized personnel can access control systems and equipment.
- Reduce connections to control systems and equipment via networks to prevent access from untrusted devices.
- Install firewalls to block unused communications ports and limit communication between systems. Limit access between control systems and systems from the IT network.
- Control remote access and adopt multifactor authentication to devices with remote access to control systems and equipment.
- Set strong password policies and monitor for compliance frequently.



Data input and output protection

- Backup data and keep the data up-to-date periodically to prepare for data loss.
- Validate backups and retention policies to cope with unintentional modification of input/output data to control systems and equipment.
- Validate the scope of data protection regularly to accommodate changes.
- Check validity of backups by scheduling test restores to ensure successful recovery from incidents.
- Safety design, such as emergency shutdown and fail-soft operations in case of data tampering and incidents.



Additional recommendations

- When using an external network environment to connect to an unauthorized terminal such as a SCADA, HMI or to an unauthorized server may result in network security issues such as spoofing and tampering.
- You must take sufficient measures such as restricting access to the terminal, using a terminal equipped with a secure function, and locking the installation area by yourself.
- When constructing network infrastructure, communication failure may occur due to cable disconnection or the influence of unauthorized network equipment.
- Take adequate measures, such as restricting physical access to network devices, by means such as locking the installation area.
- When using devices equipped with an SD Memory Card, there is a security risk that a third party may acquire, alter, or replace the files and data in the removable media by removing or unmounting the media.
- Please take sufficient measures, such as restricting physical access to the Controller or taking appropriate management measures for removable media, by means of locking and controlling access to the installation area.
- Educate employees to help them identify phishing scams received via email on systems that will connect to the control network.



Caution

The product has an internal non-isolated DC power supply. Circuit ground (0 VDC) and frame ground are connected together. When connecting a non-isolated device or a non-isolated interface to the product, take appropriate actions to avoid communication failures or damage to the mentioned ports.



Never ground the 24 VDC side of the power supply. This may cause a short circuit.



Precautions for Safe Use

■ Disassembly, Dropping, Mounting, Installation and Storage

- Do not drop the product or subject it to abnormal vibration or shock. Doing so may result in product malfunction or burning.
- When unpacking, check carefully for any external scratches or other damages. Also, shake the product gently and check for any abnormal sound.
- Always use the devices specified in the relevant manual.
- Always install equipment that is included in the product specifications. Not doing so may result in failure or malfunction.
- If the storage period exceeds 6 months, check the performance of the Fan Unit before production starts.
- Install the product in the correct orientation and temperature according to the specifications in the manual to prevent overheating. Not doing so may result in malfunction.
- When connecting peripheral devices to the product, ensure sufficient countermeasures against noise and static electricity during installation of the peripheral devices.

■ Wiring

- Follow the instructions in the manual to correctly perform connector wiring and insertion. Doublecheck all wiring and connector insertion before turning ON the power supply.
- Always ensure connectors, cables, PCIe Cards and Storage devices are completely locked in place to prevent accidental disconnection.
- Before you connect a computer to the product, disconnect the power supply plug of the computer from the AC outlet. Also, if the computer has an FG terminal, make the connections so that the FG terminal has the same electrical potential as the product. A difference in electrical potential between the computer and the product may cause failure or malfunction.
- Do not bend or pull the cables beyond normal limit. Do not place heavy objects on top of the cables or other wiring lines. Doing so may break the cables.
- Always use power supply wires with sufficient wire diameters to prevent voltage drop and burning. Make sure that the current capacity of the wire is sufficient. Otherwise, excessive heat may be generated. When cross-wiring terminals, the total current for all the terminals will flow in the wire. When wiring cross-overs, make sure that the current capacity of each of the wires is not exceeded.
- Be sure that all mounting bracket screws and cable connector screws are tightened to the torque specified in the relevant manuals. The loose screws may result in fire or malfunction.
- Use crimp terminals for wiring.
- For an NY Monitor Link connection, always follow the cable type and connection method specifications in the manual. Otherwise, communications may be faulty.

■ Power Supply Design and Turning ON/OFF the Power Supply

- Always use a power supply that provides power within the rated range in the manual.
- Do not perform a dielectric strength test.
- Always use the recommended uninterruptible power supply (UPS) to prevent data loss and other system file integrity issues caused by unexpected power interruption. Back up the system files in the planned way to prevent data loss and other system file integrity issues caused by incorrect operation.
- Use an Omron S8BA UPS with the correct revision number to prevent improper system shutdown.
- Power ON after connecting the product and an external monitor.
- Always check the power supply and power connections before applying power. Incorrect power connections can damage the product or cause burning.
- Always turn OFF the power supply to system before you attempt any of the following.
 - Inserting or removing PCIe Cards
 - Connecting cables
 - Connecting or disconnecting the connectors
 - Wiring the system
 - Replacing or removing the storage device
 - Replacing the Battery
 - Replacing the Fan Unit

■ Actual Operation

- Choose a OS password that is not obvious to prevent unauthorized access.
- Remember the OS user name and password. The product is inaccessible without it.
- Before operating the system, please make sure the appropriate software is installed and configured. Doing so may prevent unexpected operation.
- Install all updates and ensure the browser stays up-to-date.
- Install all updates and ensure the firewall stays up-to-date.
- Install all updates and ensure virus definitions stay up-to-date.
- Make sure that your OS environment is protected against malicious software and viruses.
- Do not remove the fan cover while the power is ON. Contact with a rotating fan may result in injury.
- Virtual memory settings can affect the performance of the system. Disable the paging file after installation of applications or updates.
- Correctly perform wiring and setting, and ensure that the shutdown by the UPS can be executed.
- Always use the SMART monitoring feature for storage devices that do not comply to the Omron Storage Device Specifications. Monitor the operating temperature and vibrations to ensure they stay within the environmental specifications of the storage device.

■ Operation

- Do not carry out the following operations when accessing a USB device or an SD Memory Card.
 - Turn OFF the power supply of the product.
 - Press the Power Button of the product.
 - Remove a USB device or an SD memory card.
- Do not attempt to remove or touch the fan unit while the product is powered ON or immediately after the power supply is turned OFF. If you attempt to replace the fan unit then, there is a risk of personal injury due to hot or rotating parts.
- Do not touch any product housing when power is being supplied or immediately after the power supply is turned OFF. Doing so may result in burn injury.

■ General Communications

- Separate the machine network segment from the office network to avoid communication failures.

■ Battery and Fan Replacement

Applicable for products with a cooling layer that has a removable cover.

- Dispose of any Battery that has been dropped on the floor or otherwise subjected to excessive shock. Batteries that have been subjected to shock may leak if they are used.
- UL standards require that only an experienced engineer replace the Battery. Make sure that an experienced engineer is in charge of Battery replacement.
- The Battery may leak, rupture, heat, or ignite. Never short-circuit, charge, disassemble, heat, or incinerate the Battery or subject it to strong shock.
- If the storage period exceeds 6 months, check the performance of the fan unit before production starts.

■ Cleaning, Maintenance and Disposal

- Do not use corrosive substances to clean the product. Doing so may result in the failure or malfunction.
- Dispose of the product and batteries according to local ordinances as they apply.



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- Dispose in accordance with applicable regulations.



- The following information must be displayed for all products that contain primary lithium batteries with a perchlorate content of 6 ppb or higher when shipped to or transported through the State of California, USA. Perchlorate Material - special handling may apply. See <http://www.dtsc.ca.gov/hazardouswaste/perchlorate>.

- The product contains a lithium battery with a perchlorate content of 6ppb or higher. When exporting an end product containing the product to or shipping through California, USA, label all packing and shipping containers appropriately.

Precautions for Correct Use

■ Storage, Installation and Mounting

- Do not operate or store the product in the following locations. Operation may stop or malfunctions may occur.
 - Locations subject to direct sunlight
 - Locations subject to temperatures or humidity outside the range specified in the specifications
 - Locations subject to condensation as the result of severe changes in temperature
 - Locations subject to corrosive or flammable gases
 - Locations subject to dust (especially iron dust) or salts
 - Locations subject to exposure to water, oil or chemicals
 - Locations subject to shock or vibration
 - Locations outdoors subject to direct wind and rain
 - Locations subject to strong ultraviolet light
- Always install the product with sufficient surrounding space to allow for adequate heat dissipation and cooling effect.
- Take appropriate and sufficient countermeasures when installing the product in the following locations
 - Locations subject to strong, high-frequency noise
 - Locations subject to static electricity or other forms of noise
 - Locations subject to strong electromagnetic fields
 - Locations subject to possible exposure to radioactivity
 - Locations close to power lines
- Always touch a grounded piece of metal to discharge static electricity from your body before starting an installation or maintenance procedure.
- Insert USB devices and PCIe devices correctly to avoid the burning, failure or malfunction.
- Ensure the selected operating system supports ACPI to enable operating system shutdown using the power button.
- Download the enhanced Video Driver from the OMRON Download Center and install it on the Industrial PC.

■ Wiring

- Always ensure the rated supply voltage is connected to the product.
- Do not allow wire clippings, shavings, or other foreign material to enter the product. Otherwise, burning, failure, or malfunction may occur. Cover the product or take other suitable countermeasures, especially during wiring work.
- Do not use cables exceeding the maximum specified length. Doing so may cause malfunction.
- Do not connect an AC power supply to the DC power connector.
- Observe the following precautions to prevent broken wires.
 - When you remove the sheath, be careful not to damage the conductor.
 - Connect the conductor without twisting the wires.
 - Do not weld the conductors. Doing so may cause the wires to break with vibration.

■ Actual Operation and Operation

- Ensure the fan is operational to provide adequate cooling while the power is turned ON.
- Storage devices, SD Memory Cards, power buttons, fan units and batteries have finite lives and if those are exceeded, the product may fail or malfunction.
- Do not reset or power OFF the product while the password is being changed. If you fail to save the password there is a possibility that the project will not work.
- If the product experiences a sudden loss of power or disconnecting the cable while saving a setting or transfer of data is underway, the changes may not be stored and unexpected behavior may occur.
- Diagnostic information is not available when the Industrial PC Support Utility is not installed.

■ Battery Replacement

Applicable for products with a cooling layer that has a removable cover.

- Turn ON the power after replacing the battery for a product that has been unused for an extended period of time. Leaving the product unused without turning ON the power even once after the battery is replaced may result in a shorter battery life.

- Make sure to use a battery of the correct type, install the battery properly.
- Apply power for at least five minutes before changing the battery. Mount a new battery within five minutes after turning OFF the power supply. If power is not supplied for at least five minutes, the clock data may be lost. Check the clock data after changing the battery.

■ SD Memory Cards

- Insert an SD Memory Card completely and ensure it is in place.

Software Licenses and Copyrights

This product incorporates certain third party software. The license and copyright information associated with this software is available at http://www.fa.omron.co.jp/nj_info_e/.

Relevant Manuals

Model numbers	Manual name	Cat. No.
NYB□□-□□□□□	NY-series Industrial Box PC Hardware User's Manual	W553

Suitability for Use

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

NEVER USE THE PRODUCT 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 PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

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Note: Specifications subject to change without notice.