OMRON

Industrial PC Platform

NY-series
NYM Industrial Monitor

User's Manual

NYM12W-C1□□□
NYM15W-C1□□□
NYM19W-C1□□□

Industrial Monitor

Sysmac
always in control

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Introduction

Thank you for purchasing the Industrial Monitor.

Keep this manual in a safe place where it will be available for reference during operation.

Intended Audience

This manual is intended for the following personnel, who must also have knowledge of electrical systems (an electrical engineer or the equivalent).

- Personnel in charge of introducing Factory Automation systems.
- Personnel in charge of designing Factory Automation systems.
- Personnel in charge of installing and maintaining Factory Automation systems.
- Personnel in charge of managing Factory Automation systems and facilities.

Applicable Products

This manual covers the following Industrial Monitor products:

Product	Model
Industrial Monitor, 12 inch	NYM12W-C1□□□
Industrial Monitor, 15 inch	NYM15W-C1□□□
Industrial Monitor, 19 inch	NYM19W-C1□□□

Additional Information

Refer to *1-4 Product Configuration* on page 1-5 for configuration details.

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Manual Information

This section provides information about this manual.

Page Structure

The following page structure is used in this manual.
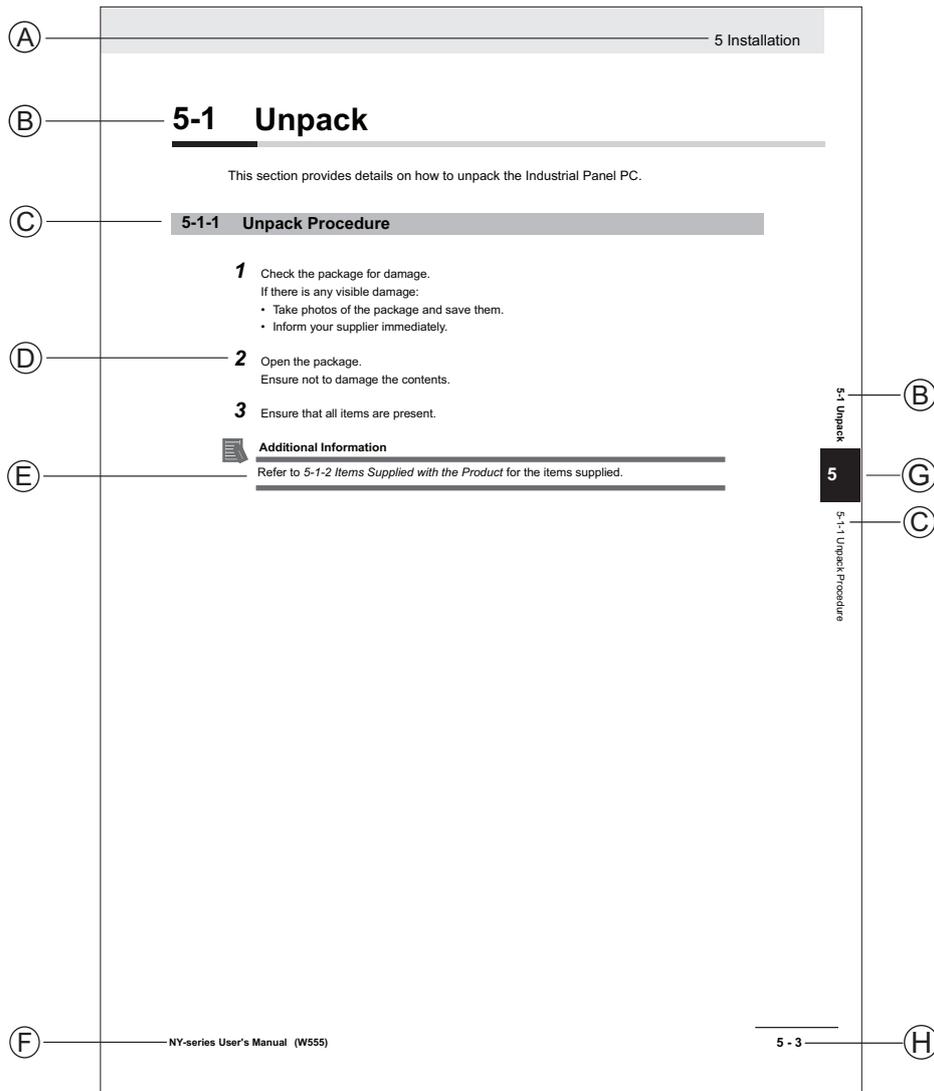
Note: This illustration is provided as a sample. It will not literally appear in this manual.

Item	Explanation	Item	Explanation
A	Level 1 heading	E	Special Information
B	Level 2 heading	F	Manual name
C	Level 3 heading	G	Page tab with the number of the main section
D	Step in a procedure	H	Page number

Special Information

Special information in this manual is classified as follows:

Precautions for Safe Use

Precautions on what to do and what not to do to ensure safe usage of the product.

Precautions for Correct Use

Precautions on what to do and what not to do to ensure proper operation and performance.

Additional Information

Additional information to read as required.
This information is provided to increase understanding or make operation easier.

Version Information

Information on differences in specifications and functionality between different versions.

Terms and Conditions Agreement

Warranty, Limitations of Liability

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Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

Safety Precautions

Definition of Precautionary Information

The following notation is used in this manual to provide precautions required to ensure safe usage of the Industrial Monitor. The safety precautions that are provided are extremely important to safety. Always read and heed the information provided in all safety precautions.
The following notation is used.

⚠ 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.

Symbols

🚫	The circle and slash symbol indicates operations that you must not do. The specific operation is shown in the circle and explained in text. This example indicates prohibiting disassembly.
⚡	The triangle symbol indicates precautions (including warnings). The specific operation is shown in the triangle and explained in text. This example indicates a precaution for electric shock.
⚠	The triangle symbol indicates precautions (including warnings). The specific operation is shown in the triangle and explained in text. This example indicates a general precaution.
❗	The filled circle symbol indicates operations that you must do. The specific operation is shown in the circle and explained in text. This example shows a general precaution for something that you must do.

Warnings

<div style="text-align: center;">

⚠ WARNING

</div>

Disassembly and Dropping

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

Installation

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.

Fail-safe Measures

Do not use the input functions of the touchscreen in applications that involve human life, in applications that may result in serious injury, or for emergency stop switches.

Actual Operation

Water or other liquid present on the touchscreen surface may create false touch behavior and unexpected operation. Wipe away the liquid on the touchscreen before operation.

Cybersecurity

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.

Cautions

⚠ CAUTION

Wiring

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.
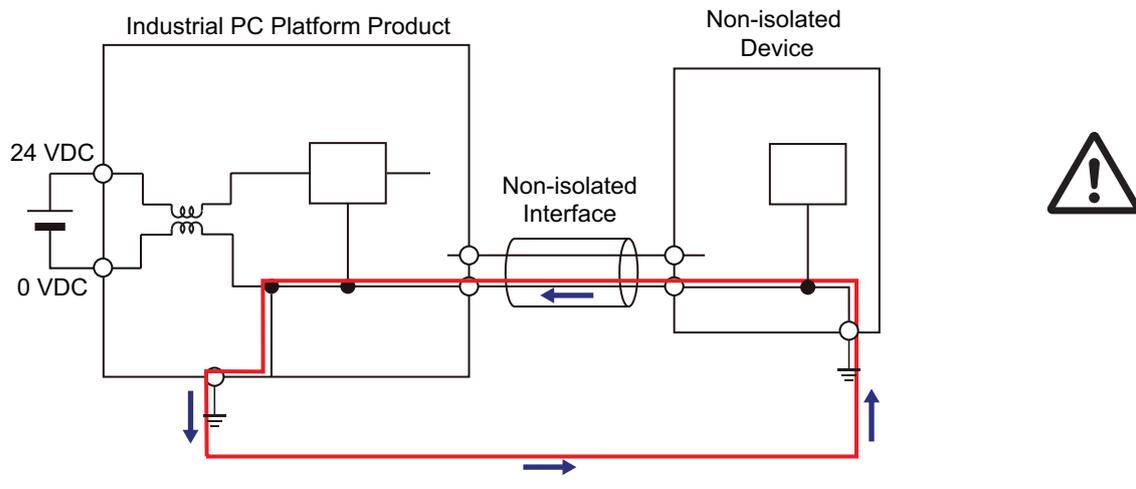
Operation

When using a system with multiple touchscreens, multiple users can perform simultaneous operations. Make sure that this can not result in unintended actions.

Actual Operation

When using a system with multiple touchscreens, multiple users can perform simultaneous operations. Make sure that this can not result in unintended actions.

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.
- The product must be installed in a control panel.
- Always install equipment that is included in the product specifications. Not doing so may result in failure or malfunction.
- 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.
- The mounting panel must be between 1.6 and 6.0 mm thick. Tighten the Mounting Brackets evenly to a torque of 0.6 Nm to maintain water and dust resistance. If the tightening torque exceeds the specified value, or the tightening is not even, deformation of the front panel may occur. Additionally, make sure the panel is not dirty or warped and that it is strong enough to hold the product.
- Do not let metal particles enter the product when preparing the panel. Do not allow wire clippings, shavings, or other foreign material to enter any product. Otherwise, the product burning, failure, or malfunction may occur. Cover the product or take other suitable countermeasures, especially during wiring work.

Wiring

- Follow the instructions in the manual to correctly perform connector wiring and insertion. Double-check all wiring and connector insertion before turning ON the power supply.
- Always ensure connectors and cables are completely locked in place to prevent accidental disconnection.
- 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.
- Use a power cable with a conductor cross-section of 0.5 mm^2 to 2.5 mm^2. Remove 7 mm of sheath before connecting the wires.
- 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.
- 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.

- Emergency stop circuits, interlock circuit, limit circuits, and similar safety measures must be provided in external control circuits.
- 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.
- Do not perform a dielectric strength test.
- Power ON after the DVI cable is connected between the host PC and the product.
- 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.
  - Connecting cables
  - Connecting or disconnecting the connectors
- Use a DC power supply with a slight voltage fluctuation that will provide a stable output even if the input is momentarily interrupted for 10 ms. Use a DC power supply with reinforced insulation or double insulation. The rated power supply voltage of the product is 24 VDC with an allowable range of 19.2 to 28.8 VDC.
- Do not turn ON the power supply to the product when a part of a human body or a conductive object is touching the surface of the touchscreen. Doing so will cause the touchscreen functionality to be disabled. Remove the conductive object and cycle the power supply to restore the touchscreen functionality.

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 host PC.
  - Remove a USB device.
- Confirm the safety of the system before using the touch panel.
- Signals from the touchscreen may not be entered if the touchscreen is pressed consecutively at high speed. Only move on to the next operation after confirming that the product has detected the previous input of the touchscreen.
- Do not accidentally press the touchscreen when the backlight is not lit or when the display does not appear. Confirm the safety of the system before pressing the touchscreen.
- Do not use hard or pointed objects to operate or scrub the touchscreen, otherwise the surface of the touchscreen may be damaged.
- 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 on the product. A difference in electrical potential between the computer and the product may cause failure or malfunction.
- In systems with multiple screens in extended view, an interruption in the video signal of one screen will cause all windows on that screen to be moved to the primary screen. Make sure that this situation is properly handled.

Cleaning, Maintenance and Disposal

- Periodically check the installation conditions in applications where the product is subject to contact with oil or water.
- As the rubber gasket will deteriorate, shrink, or harden depending on the operating environment, periodical inspection is necessary.
- Dispose of the product and batteries according to local ordinances as they apply.

廢電池請回收

- Dispose in accordance with applicable regulations.

VESA Mount Bracket

The VESA Mount Bracket is optional hardware to mount an OMRON Industrial Monitor or Industrial Panel PC.

- Always use an arm construction with sufficient strength to support the Industrial Monitor or Panel PC and the additional forces from making adjustments. Not doing so may lead to system damage or injury.
- Carefully follow the instructions in the manual when mounting or dismounting a unit from the VESA mount bracket, to avoid system damage or injury.
- Check the reliability of the mechanical construction of arm and VESA mount bracket on a regular basis. Doing so will prevent unexpected breakdown of the construction, which might lead to system damage or injury.

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
- 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.
- The backlight has a finite life and if that is exceeded, the product may fail or malfunction. Check the brightness periodically and if necessary, replace the product.

Wiring

- Always ensure the rated supply voltage is connected to the product.
- 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.
- Never ground the 24 VDC side of the power supply. This may cause a short circuit.

Actual Operation and Operation

- The touchscreen supports 5 simultaneous touches. When the number of touches is exceeded, not all touch points will be detected.
- The capacitive touchscreen reacts to contact on its surface. Accidental touching the surface of the touchscreen may cause unintended behavior.
- You can operate the touchscreen even when you wear some gloves. Confirm that you can correctly operate the touchscreen while wearing gloves prior to actual operation.

Cleaning and Maintenance

- Turn OFF the product or disable the touchscreen for cleaning with water.

VESA Mount Bracket

The VESA Mount Bracket is optional hardware to mount an OMRON Industrial Monitor or Industrial Panel PC.

- Make sure to select the correct VESA mount bracket model for your Industrial Monitor or Panel PC. Using an incorrect bracket model will result in an unreliable mechanical construction which might lead to system damage or injury.
- Do not cover the openings of the VESA mount bracket. The purpose of the openings is to provide proper cooling of your Industrial Monitor or Panel PC. Closing them could aversely affect unit performance and life.
- Always fix cables to the VESA mount bracket with cable ties to prevent unexpected disconnection.
- Please be aware that shocks or vibrations of the arm construction may interfere with accurate touchscreen operations.
- Do not suspend other objects to the arm and bracket construction. Doing so may cause the construction to fail, leading to system damage or injury.

Regulations and Standards

Conformance to EU Directives

The Industrial Monitor complies with EU Directives. To ensure that the machine or device in which the Monitor is used complies with EU Directives, the following precautions must be observed:

* The Monitor must be installed within a control panel.
* The Monitor that complies with EU Directives also conforms to the Common Emission Standard. Radiated emission characteristics may vary depending on the configuration of the control panel used, other devices connected to the control panel, wiring, and other conditions. You must therefore confirm that the overall machine or equipment in which the Monitor is used complies with EU Directives.
* This is a Class A product (for industrial environments). In a residential environment, it may cause radio interference. If radio interference occurs, the user may be required to take appropriate measures.

Applicable Directive

EMC Directive

EMC Directive

OMRON devices that comply with EU Directives also conform to the related EMC standards so that they can be more easily built into other devices or the overall machine. The actual products have been checked for conformity to EMC standards.

Applicable EMC (Electromagnetic Compatibility) standards are as follows:

* EMS (Electromagnetic Susceptibility): EN 61131-2
* EMI (Electromagnetic Interference): EN 61131-2

Whether the products conform to the standards in the system used by the customer, however, must be checked by the customer. EMC-related performance of the OMRON devices that comply with EU Directives will vary depending on the configuration, wiring, and other conditions of the equipment or control panel on which the OMRON devices are installed. The customer must, therefore, perform the final check to confirm that devices and the overall machine conform to EMC standards.

Conformance to KC Certification

When you use this product in South Korea, observe the following precautions.

사 용 자 안 내 문
이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

This product meets the electromagnetic compatibility requirements for business use. There is a risk of radio interference when this product is used in home.

Conformance to UL and CSA Standards

Some Industrial PC Platform products comply with UL and CSA standards. If you use a product that complies with UL or CSA standards and must apply those standards to your machinery or devices, refer to this manual. This manual provides the application conditions for complying with the standards. If the product is used in a manner not specified in the Instruction Sheet or in the product manuals then the protection provided by the equipment may be impaired.

Related Manuals

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

Related Industrial PC Manuals

This table contains the related manuals of other Industrial PC products.

Manual name	Cat. No.	Mod-el-ID	Application	Description
Industrial Box PC Hardware User's Manual	W553	NYB	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
Industrial Panel PC Hardware User's Manual	W555	NYP	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
Operating Systems and Software Utilities Manual	W616	NYB NYP	Learning all software related information about the Industrial PC. This includes introductory information, installation, operating procedures and maintenance. Mainly software information is provided.	An introduction to the Monitor is provided along with the following information: • Overview • Software • Specifications • Installation • Operating Procedures • Maintenance

Related IPC Machine Controller Manuals

This table contains the related manuals of other Industrial PC with Machine Automation Control Software products.

Manual name	Cat. No.	Model-ID	Application	Description
Industrial Box PC with Machine Automation Control Software Industrial Box PC Hardware User's Manual	W556	NY512-□1□□□-1□13□ □X	Learning all basic hardware information about the Industrial Box PC with Machine Automation Control Software Industrial Box PC. This includes introductory information with features, hardware overview, specifications, mounting, wiring, connecting, operating and maintaining the Box PC.	An introduction to the Industrial Box PC with Machine Automation Control Software Box PC is provided along with the following information: • Overview • Hardware • Specifications • Installation • Operating Procedures • Maintenance
Industrial Panel PC with Machine Automation Control Software Industrial Panel PC Hardware User's Manual	W557	• NY532-1□00-111□13□ □0 • NY532-1□00-112□13□ □0	Learning all basic hardware information about the Industrial Panel PC with Machine Automation Control Software Industrial Panel PC. This includes introductory information with features, hardware overview, specifications, mounting, wiring, connecting, operating and maintaining the Panel PC.	An introduction to the Industrial Panel PC with Machine Automation Control Software Panel PC is provided along with the following information: • Overview • Hardware • Specifications • Installation • Operating Procedures • Maintenance

Related IPC Programmable Multi Axis Controller Manuals

This table contains the related manuals of other Industrial PC with Programmable Multi Axis Controller products.

Manual name	Cat. No.	Model-ID	Application	Description
Industrial PC with Programmable Multi Axis Controller Hardware User's Manual	W580	• NY512-A □00-1XX □13□□X	Learning all basic information about the Industrial PC with Programmable Multi Axis Controller. This includes introductory information with features, hardware overview, software overview, specifications, mounting, wiring, connecting, operating and maintaining the Industrial PC with Programmable Multi Axis Controller. Mainly hardware information is provided.	An introduction to the Industrial PC with RTOS Controller is provided along with the following information: • Overview • Hardware • Software • Specifications • Installation • Operating Procedures • Maintenance

Terminology and Abbreviations

Industrial PC Platform

Term / Abbreviation	Description
Industrial PC Platform	An integrated range of OMRON products designed for use in any industrial application that will benefit from advanced PC technology
Industrial Monitor	An industrial monitor with a touchscreen as the user interface designed to work in industrial environments
Industrial Panel PC	An industrial PC with an integrated touchscreen monitor designed to work in industrial environments
Industrial Box PC	A box-shaped industrial PC including an OS designed to work in industrial environments
IPC	Industrial PC

Hardware

Term / Abbreviation	Description
DVI	Digital Visual Interface
DVI-D	A Digital Visual Interface with only Digital signals
NYML	NY Monitor Link interface with video signals and USB signals
USB	Universal Serial Bus

Software

Term / Abbreviation	Description
API	Application Programming Interface
Developer	Any person involved with software development
Merge module	A module providing a standard method by which developers deliver shared Windows Installer components and setup logic to their applications
OS	Operating System
SDK	Software Development Kit
Windows	The Windows Operating System

Revision History

A manual revision code appears as a suffix to the catalog number on the front and back covers of the manual.

Cat. No. W554-E2-08

Revision code

Revision code	Date	Revised content
08	July 2024	• Improved NY Monitor Link Cable details • Minor modifications
07	December 2021	• Added VESA mount information • Added image retention information • Minor modifications
06	July 2020	• Added Caution for Actual Operation • Updated Industrial Monitor Utility • Added cleaning material details
05	July 2019	Updated Conformance to KC certification
04	May 2019	• Added 19"monitor • Added Rescue Disk Creator to Overview IPC Support Software for Windows • Modified Suitability of Use • Moved DVI-D Connector pin details to Appendix • Minor text modifications
03	June 2017	• Added NY Monitor Link • Minor modifications
02	December 2016	• UL implementation • KC Standard implementation • Minor modifications
01	September 2016	First release

1

Overview

This section provides general information about the Industrial Monitor.

1-1　Intended Use

The Industrial Monitor is intended to be used as a display and touch interface for the Industrial PC Platform variants. The Industrial Monitor allows the user to interact through touch interactions on the LCD display.
Users of the Industrial Monitor are able to set the brightness settings of both the LCD backlight and the indicator LEDs. This allows the monitor to be configured for the required installation environment. The Industrial Monitor additionally includes a USB hub to allow USB slave devices to be added at the monitor location. Peripheral components such as a keyboard, mouse, or camera can be attached to the monitor and used to control or be controlled by the operating system of the connected Industrial PC.

1-2   Hardware Features

Depending on the product configuration the Industrial Monitor provides the following hardware features.

- LCD touchscreen
  The LCD touchscreen provides high functionality for your PC interface.
  The high resolution and a high brightness provide clarity and high visibility.
- Multi-touch functionality
  Up to 5 simultaneous touches are supported for complex functions.
- Backlit Logo
  The standard product logo is OMRON. Check your sales representative for the possibilities to customize the product logo. The product logo is provided with a controllable backlight to increase visibility.
- Status LED Indicator
  The Monitor includes one multi-color LED indicator on the front of the product. The brightness of the LED indicator is adjustable.
- Brightness control
  Use the Monitor Utilities to control the Monitor's LCD brightness.
- DVI-D visual interface
  The video interface for the Monitor is provided with a DVI connector for connection to the host PC.
- USB Type-B port for host PC
  The USB Type-B port supports USB2.0 specifications. This port allows the host PC to communicate with multiple internal USB devices within the Monitor as well as external devices connected to the two USB Type-A ports. This communication includes the touchscreen functionality.
- NY Monitor Link interface
  The combination of a video interface and a data connection using an NY Monitor Link cable. This interface supports a touchscreen monitor connection over a distance up to 100 meter.
- USB Type-A ports for slave devices
  Two USB Type-A ports are available for connection to external USB devices such as a keyboard, mouse, camera, memory sticks, or other peripheral hardware.

1-3 ID Information Label

The ID information label contains relevant information of your Industrial Monitor.

Item	Name	Description
A	Product name	Industrial Monitor
B	Model *1	Model and configuration details
C	Power rating	Power rating details
D	Custom ID (Optional)	A custom ID [NYC□□□-□□□□□□□□] Only for Industrial Monitors and Industrial Panel PCs with a custom logo *1.
E	Standards and QR code	The standards for the OMRON monitor. Check the label of your monitor for the standards that are applicable to your model. The QR code is for OMRON internal use.
F	LOT number and serial number	Production details, consisting of: • The lot number of the Industrial Monitor in the format DDMYY□. DDMYY with Month number 1 to 9 for January to September, X for October, Y for November, and Z for December. □: For use by OMRON • Serial number (4 digits)

*1. Refer to *1-4 Product Configuration* on page 1-5 for model details.

> **Additional Information**
>
> Refer to *2-1-1 Front and Top of the Industrial Monitor* on page 2-2 for the ID information label location.

1-4 Product Configuration

This section provides an overview of the product configurations available for the Industrial Monitor.

The product configuration is visible in the model-ID that is mentioned on the ID information label of the Monitor.

The structure of the model-ID is: NYM□□□-□□□□□□□.

Each item in the model-ID has a specific meaning.

```
N Y M □□□ - □□□□□
  1   2  3   4 5 6 7 8
```

Item	Description	Option
1	Series name	NYM: NY- series Industrial Monitor
2	Display size (diagonal)	12: 12.1 inch model, 1280 x 800 pixels, 24 bit full color 15: 15.4 inch model, 1280 x 800 pixels, 24 bit full color 19: 18.5 inch model, 1920 x 1080 pixels, 24 bit full color
3	Display ratio	W: Wide
4	Touchscreen	C: Projected Capacitive Touch type
5	Frame type	1: Panel mounted
6	Material finish	0: Aluminum, painted black 1: Aluminum, Nickel plated
7	Build-in options	0: None 6: NY Monitor Link
8	Logo	0: OMRON 2: Customization

1-5 Industrial PC Platform Overview

The Industrial PC Platform is an integrated range of products designed for use in a variety of industrial applications that will benefit from advanced PC technology. The range is scalable, robust and reliable, and is suitable for use with both standard operating system software and proprietary programs for machine control and automation.

In line with OMRON's established quality standards, each element in the Industrial PC Platform, ranging from the standalone Industrial Box PC to the touchscreen Industrial Monitor, is engineered with long-life components and built to the most advanced design standards.

The following sections introduce Industrial PC Platform products.

1-5-1 Industrial Monitor

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.

Using smart algorithms, the touch controller determines the exact location of each touch for precise control as well as detecting abnormal or illegal actions to protect misuse or false touches.

Industrial Monitor

Industrial Hygienic Monitor

1-5-2　Industrial Box PC

The Industrial Box PC is designed to meet the specific needs of the industrial environment. Design simplification and future-proof architecture minimize the risk of failure. In addition, new PC features can be seamlessly incorporated, without the need for wholesale redesign. Examples are IPCs with a Machine Controller or IPCs designed specifically for an Autonomous Mobile Robot (AMR).

1-5-3　Industrial Panel PC

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.
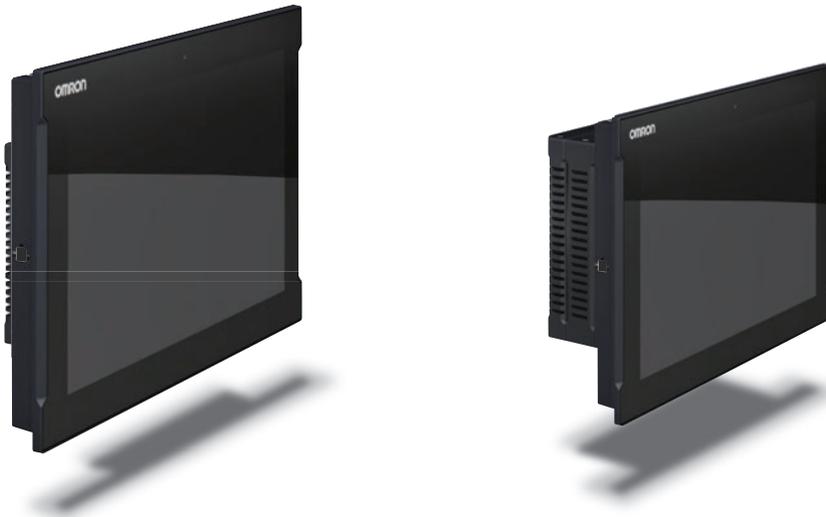
2

Hardware

This section provides an overview of the hardware of the Industrial Monitor.

2-1   Component Names and Functions

This section shows views of the Industrial Monitor with information about all items.

2-1-1   Front and Top of the Industrial Monitor

This section shows the component names and functions for the front and top of the Industrial Monitor.
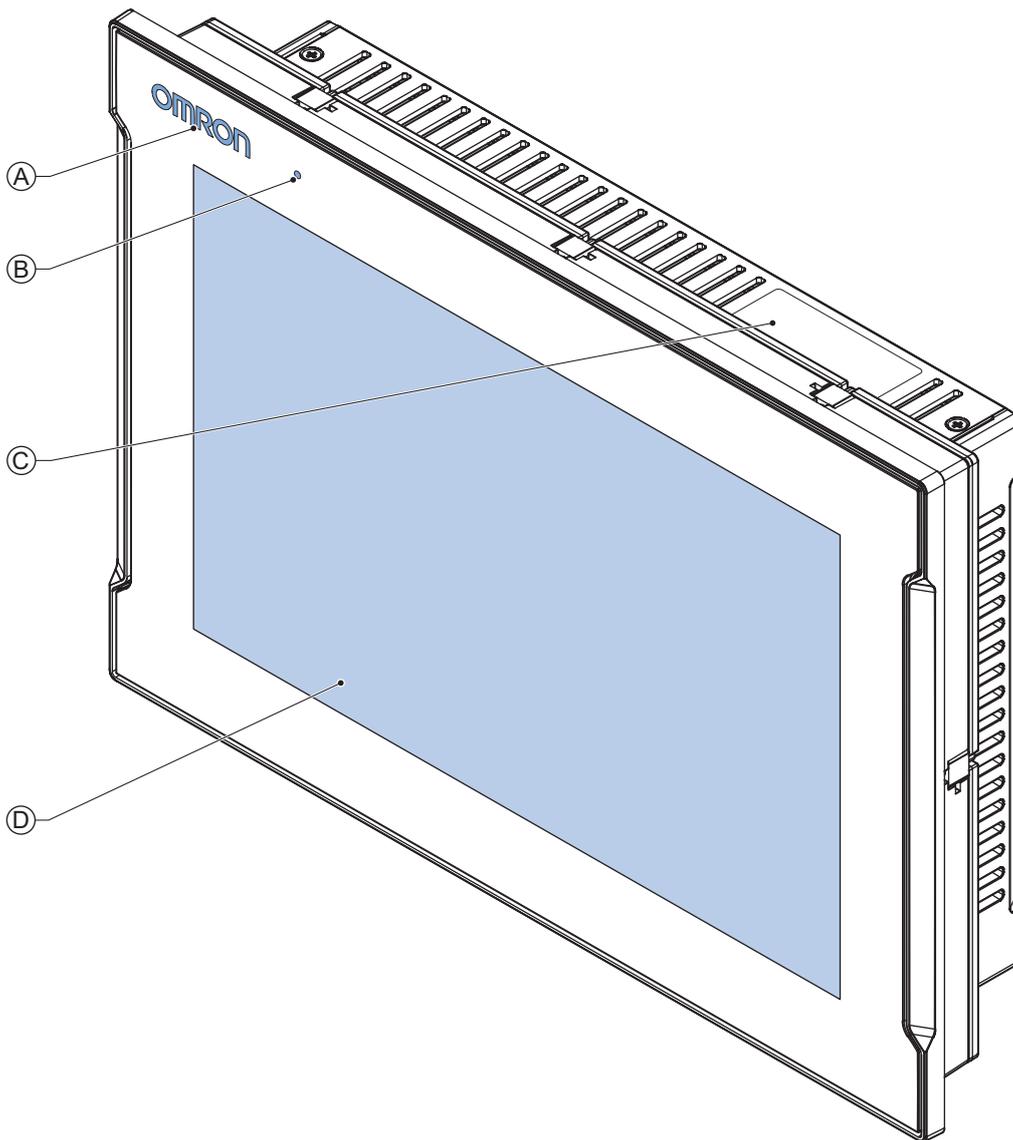
Item	Name	Description
A	Logo	Backlit logo with adjustable brightness
B	Status LED Indicator	Multi-colored LED to indicate power and connection status with adjustable brightness
C	ID Information Label	Label containing Model ID., LOT No. and other product specific information. Refer to *1-3 ID Information Label* on page 1-4 for label details.
D	Touchscreen	Multi-touch LCD display

2-1-2 Bottom of the Industrial Monitor

The monitor is available with a DVI-D connector and with an NYML connector.
For both versions all items on the bottom of the Industrial Monitor are identified here.
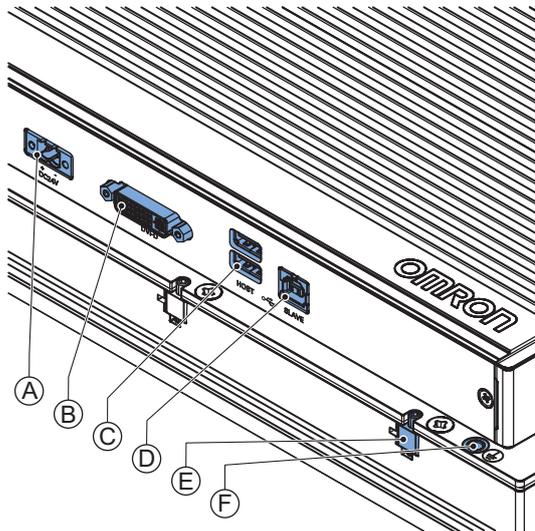
Monitor with DVI-D connector
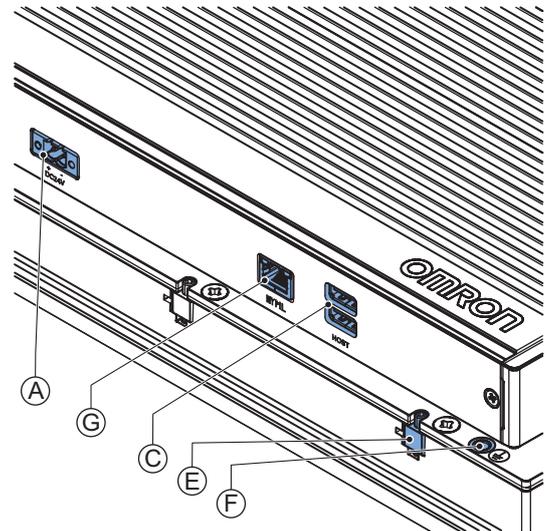
Monitor with NYML connector

Item	Name	Description
A	Power Supply Connector	24 VDC power supply input connector
B	DVI-D Connector [*1]	DVI-D dual link connector for host video connection
C	USB Type-A Connectors	2 USB connectors to connect external USB slave devices
D	USB Type-B Connector	USB connector for connection with the host PC Only for Industrial Monitors with a DVI-D connector.
E	Mounting Brackets	Retractable mounting brackets to secure the Industrial Monitor on a mounting surface
F	Ground Terminal	Terminal connection for grounding of the Industrial Monitor
G	NYML Connector [*1]	NY Monitor Link connector for video and USB communication with the host PC

*1. Refer to *1-4 Product Configuration* on page 1-5 for model details.

2-2 LED Indicators

The Industrial Monitor has two LED indicators on the front of the product.
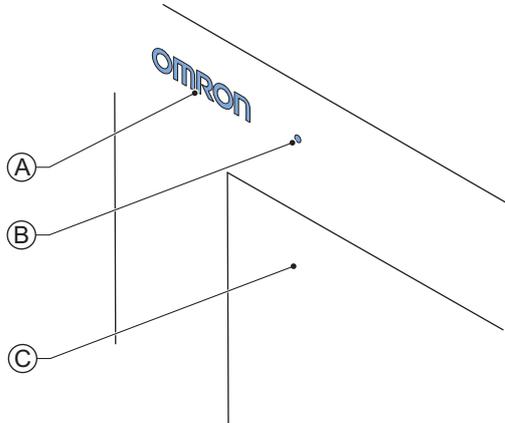
Item	LED	Description
A	Logo LED	LED to backlight the logo
B	Status Indicator LED	Indicates the operating condition of the Industrial Monitor.
C	Touchscreen	Multi-touch LCD display

2-2-1 Logo LED

The Logo LED brightness can be changed with the Industrial Monitor Utility.

> **Additional Information**
>
> The Logo LED brightness is adjustable with the Industrial Monitor Utility.
> Refer to *3-2-2 Industrial Monitor Utility* on page 3-5 for details.

2-2-2 Status LED Indicator

The Status LED indicator provides information about the operating condition of the Industrial Monitor.

Color	Status		Meaning
None	☐	Not lit	The Status LED is not lit in following situations: • The 24 VDC power is not supplied • Normal operation
Green	◩	Blinking	The Status LED is blinking in following situations: • The host PC is in standby mode • No power supply to the host PC • The DVI or the NY Monitor Link cable is not connected
Red	■	Lit	The Status LED is lit with maximum brightness in following situations: • Power supply defective • Monitor internal hardware error

> **Additional Information**
>
> The Status LED indicator's brightness is adjustable with the Industrial Monitor Brightness Utility.
> Refer to *3-2-2 Industrial Monitor Utility* on page 3-5 for details.

2-3 Connectors

This section gives an overview of the connectors located at the base layer of the Industrial Monitor.

2-3-1 Power Connector

The power connector on the Monitor is used to supply 24 VDC power to the Monitor.
The power connector is supplied with the Monitor.
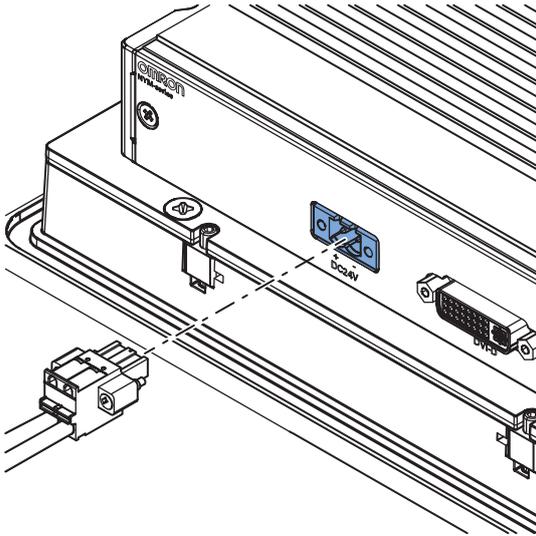
> 📝 **Additional Information**
>
> • Refer to *4-2-1 Power Connector Specifications* on page 4-6 for specifications.
> • Refer to *5-3-2 Wire the Power Connector* on page 5-27 for wiring details.
> • Refer to *5-4 Connect* on page 5-29 for connection details.

2-3-2 DVI-D Connector (Optional)

Depending on the product configuration this DVI-D Connector is available.

The Digital Visual Interface (DVI-D) connector connects a digital video source to the Industrial Monitor.
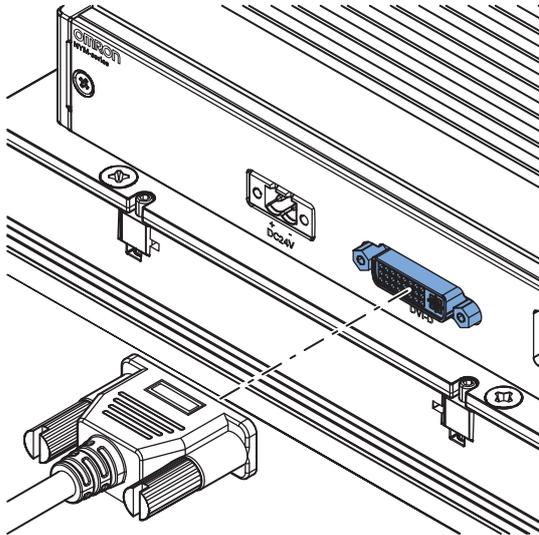
> **Additional Information**
>
> • Refer to *1-4 Product Configuration* on page 1-5 for configuration details.
> • Refer to *4-2-2 DVI-D Connector Specifications* on page 4-7 for specifications.
> • Refer to *5-4 Connect* on page 5-29 for connection details.

2-3-3 NY Monitor Link Connector (Optional)

Depending on the product configuration an optional NY Monitor Link connector is available.

The NY Monitor Link interface connector connects an OMRON Industrial PC to the OMRON Industrial Monitor.
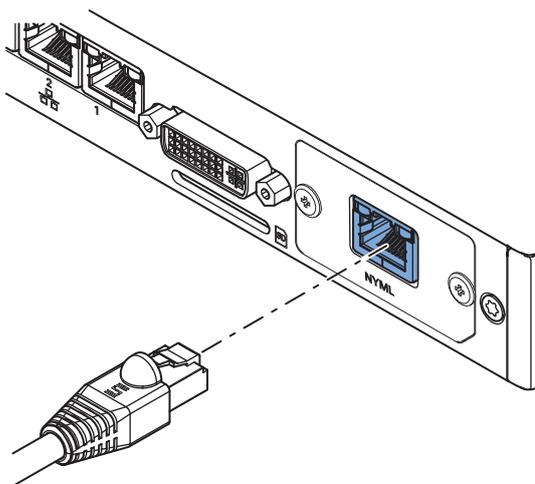
Industrial PC   Industrial Monitor
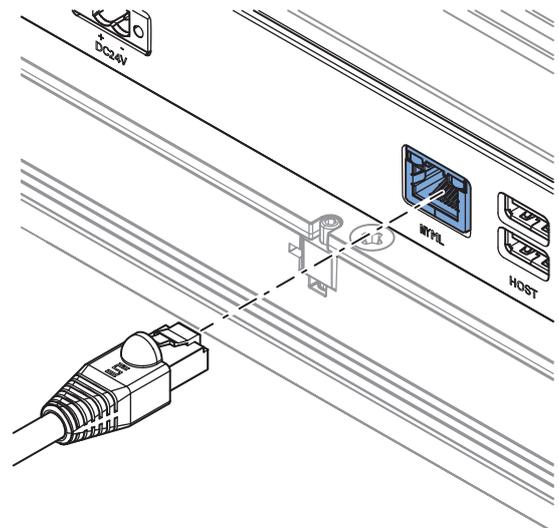
> **Additional Information**
>
> - Refer to *1-4 Product Configuration* on page 1-5 for configuration details.
> - Refer to *4-2-3 NY Monitor Link Connector Specifications* on page 4-8 for specifications.
> - Refer to *5-4 Connect* on page 5-29 for connection details.

2-3-4　USB Type-A Connector

The Universal Serial Bus (USB) Type-A connectors provide a connection point on the Industrial Monitor for USB-A devices.
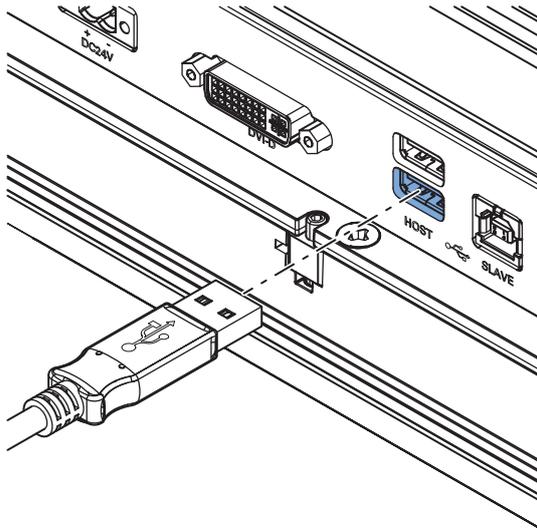
Industrial Monitor

> **Additional Information**
>
> - Refer to *4-2-4 USB Type-A Connector Specifications* on page 4-10 for specifications.
> - Refer to *5-4 Connect* on page 5-29 for connection details.

2-3-5 USB Type-B Connector (Optional)

This USB Type-B connector is only available for product configurations with a DVI-D or DisplayPort connector.

The Universal Serial Bus (USB) Type-B connector connects an Industrial Monitor to a host PC. The host PC uses this interface to access the internal touchscreen functions as well as external devices plugged into the USB Type-A connectors.
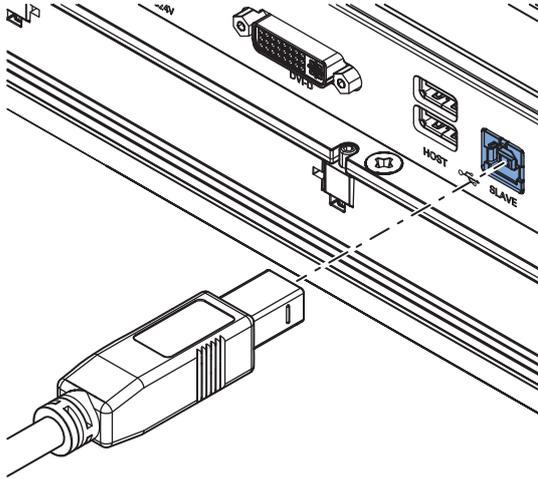

Industrial Monitor

> **Additional Information**
>
> • Refer to *1-4 Product Configuration* on page 1-5 for configuration details.
> • Refer to *4-2-5 USB Type-B Connector Specifications* on page 4-11 for specifications.
> • Refer to *5-4 Connect* on page 5-29 for connection details.

2-4   Spare Parts

The following spare parts for the Industrial Monitor are available.

2-4-1   Connectors

Details for the recommended connector are provided below.
OMRON is not responsible for the operation or performance of any other connector.

Model	Appearance	Specifications
NY000-AK02		Power Connectors for Omron Industrial Monitors. 10 pieces.
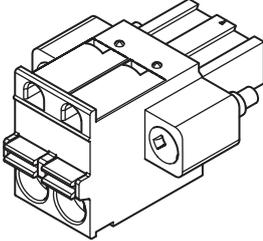
2-5 Optional Hardware

The following optional hardware is available for the Industrial Monitor.

2-5-1 VESA Mount Brackets

VESA Mount brackets and the optional VESA Mount handle are available for different IPC models. The model-ID is available on the ID information label.
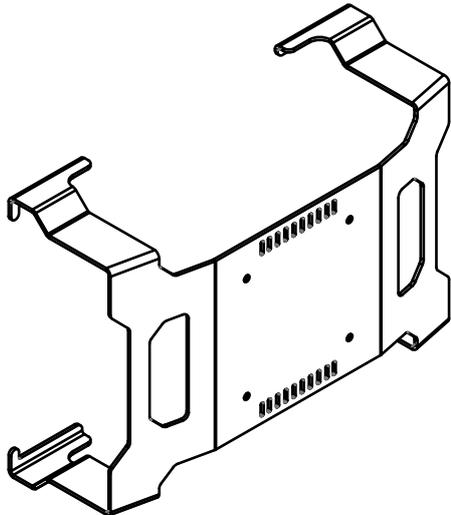
Model	Appearance	Specifications
VESA Mount Bracket		• Material: stainless steel, 2.5 mm • Finish: Black industrial powder coating

The bracket shape can differ depending on the bracket ID.

Model	Appearance	Specifications
VESA Mount Handle		• Material: stainless steel • Finish: Black industrial powder coating • Handle width outside dimension: 205 mm • Handle width inside dimension: 200 mm • Handle diameter 30 mm • Hole pitch from middle hole: 14 mm up 21 mm down

📖 **Additional Information**

Refer to *4-1-3 VESA Mount Brackets and Handle Specifications* on page 4-4 for details.

2-5-2 DVI Cables

DVI cable details are provided below.

OMRON is not responsible for the operation or performance of any other brand of DVI cable.

Model	Appearance	Cable length	Specifications
NY000-AC00 2M		2 m	• Supports DVI-D
NY000-AC00 5M		5 m	• Minimum bend radius: 36 mm

DVI Cable Clearance

The DVI cable requires a minimum clearance of 90 mm from the connector entry to prevent excessive strain on the connector and cable assembly.
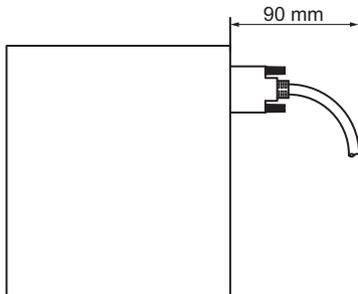
2-5-3 USB Type-A to USB Type-B Cables

USB Type-A to USB Type-B cable details are provided below.

OMRON is not responsible for the operation or performance of any other brand of USB Type-A to USB Type-B cable.

Model	Appearance	Cable length	Specifications
FH-VUAB 2M		2 m	• USB 2.0
FH-VUAB 5M		5 m	• Minimum bend radius: 25 mm

USB Type-A to USB Type-B Cable Clearance

The USB Type-A to USB Type-B cable requires a minimum clearance of 60 mm from the connector entry to prevent excessive strain on the connector and cable assembly.
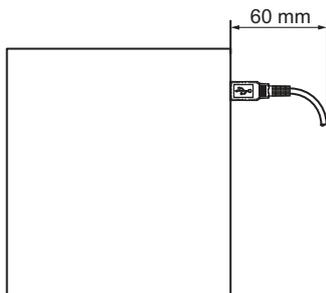
2-5-4 NY Monitor Link Cables

Depending on the installation situation specific cables are recommended for an NY Monitor Link (NYML).

Refer to:
- *NYML Recommendations up to 20 m* on page 2-13 for details.
- *NYML Recommendations up to 100 m* on page 2-14 for details.
- *NYML Recommendations for Custom Cables* on page 2-15 for details.

NYML Recommendations up to 20 m

Connectors Ⓐ and cables Ⓑ with different lengths can be used.
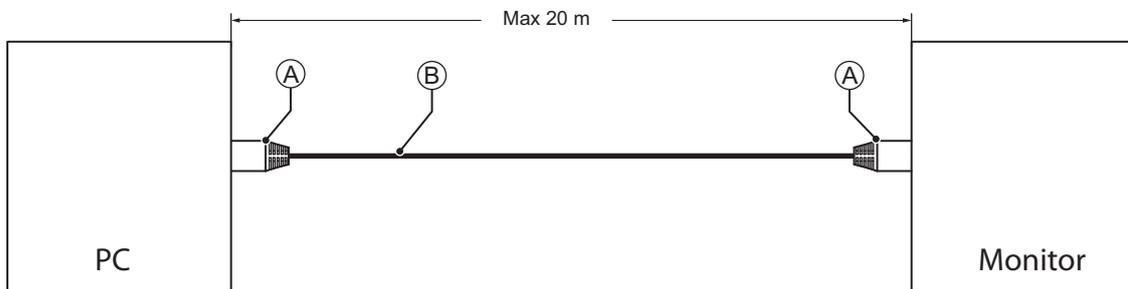
The following table lists the recommended cables and connectors for the NY Monitor Link cable applications up to 20 m.

Item	Length	Specifications	
		ID	Details
Standard Patch cable with straight connectors.	1.5 m	XS6W-6LSZH8SS150CM-[]	Industrial Ethernet cable: RJ45 IP20, RJ45 IP20, Cat.6A, IEC 60332-1 /UL444, LSZH, Molded Connector. Qualified for 10Gb/s, S/FTP
	3 m	XS6W-6LSZH8SS300CM-[]	
	5 m	XS6W-6LSZH8SS500CM-[]	
	10 m	XS6W-6LSZH8SS1000CM-[]	
	15 m	XS6W-6LSZH8SS1500CM-[]	
	20 m	XS6W-6LSZH8SS2000CM-[]	
Patch cable (Flexibility-improved) with straight connectors.	1.5 m	XS6W-6PUR8SS150CM-[]F	Industrial Ethernet cable: RJ45 IP20, RJ45 IP20, Cat.6A, IEC 61156-6, IEC11801, IEC 60332-1, PUR, Molded Connector. Qualified for 10Gb/s, S/FTP
	3 m	XS6W-6PUR8SS300CM-[]F	
	5 m	XS6W-6PUR8SS500CM-[]F	
	10 m	XS6W-6PUR8SS1000CM-[]F	
	15 m	XS6W-6PUR8SS1500CM-[]F	
	20 m	XS6W-6PUR8SS2000CM-[]F	

● NY Monitor Link Cable Clearance

Ensure to prevent excessive strain on the connector and cable assembly.

The minimum clearance from the connector entry consists of the sum of:
- Connector length
- Maximum bending radius of the cable in a fixed position

NYML Recommendations up to 100 m

Patch Cables Ⓐ with different lengths can be used.

Use a DIN rail socket Ⓑ when connecting patch cables to infrastructures.

Use installation cable Ⓒ inside infrastructures.
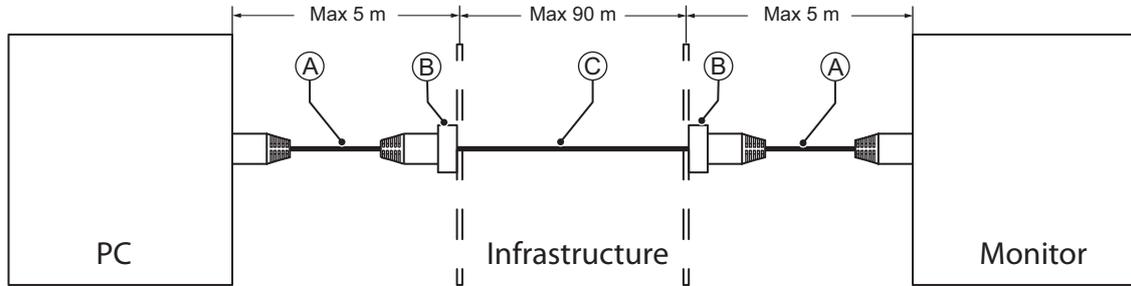
The following table lists the recommended cables and materials for the NY Monitor Link cable applications up to 100 m.

Item	Length	Specifications	
		ID	Details
Ⓐ Standard Patch cable with straight connectors.	1.5 m	XS6W-6LSZH8SS150CM-[]	Industrial Ethernet cable: RJ45 IP20, RJ45 IP20, Cat.6A, IEC 60332-1 /UL444, LSZH, Molded Connector. Qualified for 10Gb/s, S/FTP
	3 m	XS6W-6LSZH8SS300CM-[]	
	5 m	XS6W-6LSZH8SS500CM-[]	
Ⓐ Patch cable (Flexibility-improved) with straight connectors.	1.5 m	XS6W-6PUR8SS150CM-[]F	Industrial Ethernet cable: RJ45 IP20, RJ45 IP20, Cat.6A, IEC 61156-6, IEC11801, IEC 60332-1, PUR, Molded Connector. Qualified for 10Gb/s, S/FTP
	3 m	XS6W-6PUR8SS300CM-[]F	
	5 m	XS6W-6PUR8SS500CM-[]F	
Ⓑ D- DIN rail socket Manufacturer: Weidmuller		IE-XM-RJ45/IDC	Mounting rail outlet, RJ45 module design according to IEC 60603-7-51, for wires with diameters up to 1.6 mm UL
Ⓒ Installation Cable Manufacturer: Lapp		ETHERLINE ® PN Cat.6A FLEX	Industrial Ethernet cable ETHERLINE PN Cat.6A FLEX Cat.6A for flexible use, 4 pairs, PVC or FRNC outer sheath UL 4x2xAWG23/7 Qualified for 10Gb/s

● **NY Monitor Link Cable Clearance**

Ensure to prevent excessive strain on the connector and cable assembly.

The minimum clearance from the connector entry consists of the sum of:

• Connector length
• Maximum bending radius of the cable in a fixed position

NYML Recommendations for Custom Cables

The following table lists the recommended cables and connectors for custom NY Monitor Link cables.

Item		Intra cabinet or light industrial environment	Inter cabinet	Inter cabinet and harsh industrial environment
Maximum length		25 m	100 m	100 m
Manufacturer		Lapp	Lapp	Lapp
Cable type		2170196	2170614	2170466
Category type		Cat 6A	Cat 7	Cat 6A
Cable sheath		Halogen free	Halogen free	Halogen free
Conductor pairs/size/type		4 x 2 x AWG23/1	4 x 2 x AWG23/1	4 x 2 x AWG22/1
Overall shielding		Aluminum foil	Copper braid	Copper braid
Pair shielding		Aluminum foil	Aluminum foil	Aluminum foil
Maximum outer diameter		7.6 mm	7.7 mm	9.0 mm
Maximum bending radius of cable in a fixed position		31 mm	31 mm	90 mm
Maximum temperature for a cable in a fixed position		60°C	60°C	80°C
RJ45 connectors	Manufacturer	Stewart Connector	Stewart Connector	Lapp
	Partnumber	SS39200-027 or SS39200-030	SS39200-027 or SS39200-030	21700600 (T568A) or 21700601 (T568B)
	Connector length	30 mm	30 mm	50 mm

> **Additional Information**
>
> When making cables, connect the shield to the connectors at both ends.

● NY Monitor Link Cable Clearance

Ensure to prevent excessive strain on the connector and cable assembly.

The minimum clearance consists of the sum of:

• Connector length
• Maximum bending radius of cable in a fixed position

2-5-5   Power Supply

Details for the recommended power supply are provided below.

OMRON is not responsible for the operation or performance of any other power supply.

Model	Appearance	Specifications
S8VK-G□□□24 S8VK-X□□□24A-EIP S8VK-S□□□24 S8VK-WA□□□24		Output voltage: 24 VDC

> **Additional Information**
>
> • Refer to *4-1-2 General Electrical Specifications* on page 4-3 for power consumption details.
> • Refer to the OMRON website for specifications and manuals.
>   Note that the power consumption details of the Monitor determine the minimum power rating of your power supply.

3

Software

This section provides software information for the Industrial Monitor.

3-1   Operating Systems

The Monitor does not have an operating system.

To use the Monitor a host PC with an operating system is required. This section provides information about the parts of the operating system that influence the performance, behavior or software of your Monitor.

3-1-1   Touch Functionality

This section provides an overview of the touch functionality of your Industrial Monitor.

Requirements

To use touch functionality
- The Operating System has to support tablet PC features
- Touch functionality drivers have to be installed

Calibration

The touch functionality is calibrated for the default screen resolution.

Calibrate the display when setting a different resolution results in displaying your content on only a part of the display.

> **Additional Information**
>
> - Refer to *4-3 Display Specifications* on page 4-12 for the default resolution.
> - Refer to *Calibrate Touchscreen* on page 7-11 for calibration details.

3-1-2   Determine Your Version of the Windows Operating Systems

This section provides methods to find version details of your Windows Operating System.

Windows 7

Windows 7 is only compatible with 4th generation CPUs.
Refer to *1-4 Product Configuration* on page 1-5 for CPU details.

To determine your version of the Windows Operating System:

1   Select the **Start** Button.

2   Enter *System Information* in the search box.

3   Select **System Information** in the pop-up that appears.

Windows 10

To determine your version of the Windows Operating System:

1   Select the **Search** Button.

2   Enter *System Information* in the search box.

3   Select **System Information** in the pop-up that appears.
An overview of your System Information will appear, including the Windows Operating System details.

3-2   Support Software

This section provides an overview of the support software available for your Industrial Monitor.

3-2-1   Overview IPC Support Software for Windows

This section gives an overview of the software utilities available for all Industrial PC Platform products with a Windows operating system.

Product	Software utility
Industrial Monitor	Industrial Monitor Utility
	Industrial Monitor Brightness Utility [1]
	Industrial PC Tray Utility [1][2][3]
Industrial Box PC	Industrial PC Support Utility
	Industrial PC Tray Utility [1][2][3]
	Rescue Disk Creator
Industrial Panel PC	Industrial Monitor Utility
	Industrial Monitor Brightness Utility [1]
	Industrial PC Support Utility
	Industrial PC Tray Utility [1][2][3]
	Rescue Disk Creator

[1].   Included in the Industrial Monitor Utility installer
[2].   Included in the Industrial PC Support Utility installer
[3].   Together with the Industrial PC Support Utility also Microsoft .NET Framework 4.6 is installed.

The latest versions of utilities are available from the OMRON website.

3-2-2 Industrial Monitor Utility

This section provides an overview of the Industrial Monitor Utility.

Industrial Monitor Utility Overview

The Industrial Monitor Utility provides a user interface to control settings and display details of connected Industrial Monitors.
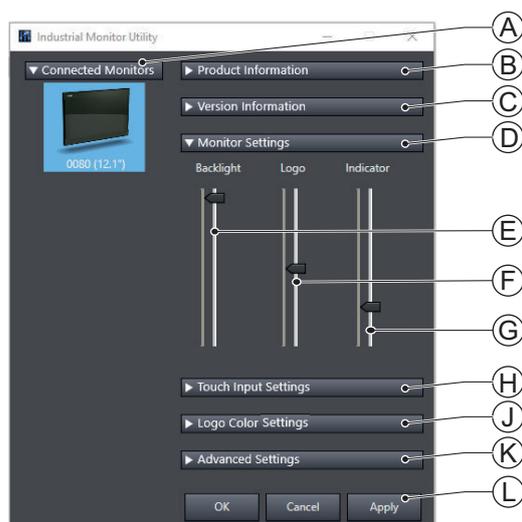
Item	Description	Details
A	Connected Monitors	Shows a list of the connected Industrial Monitors.[1] Select one Industrial Monitor in the list to display the Monitor Details. When selected the LED Indicators of the selected monitor will flash during 3 seconds.
B	Product Information	Provides details of the selected Industrial Monitor. Refer to *Product Information* on page 3-6 for details.
C	Version Information	Provides version details of Industrial Monitor Utility software and firmware details of the connected monitor. Refer to *Version Information* on page 3-6 for details.
D	Monitor Settings	Provides several setting adjustments to control the operation of the selected Industrial Monitor.
E	Backlight Brightness Adjustment [2]	Use the slider to control the brightness of the selected Industrial Monitor.
F	Logo Brightness Adjustment	Use the slider to control the brightness of the Logo LED.
G	Status Brightness Adjustment	Use the slider to control the brightness of the Status LED Indicator on the monitor.
H	Touch Input Settings	Provides details about the touch settings. Refer to *Touch Input Settings* on page 3-7 for details.
J	Logo Color Settings	Provides details about the logo color. Refer to *Logo Color Settings* on page 3-8 for details.
K	Advanced Settings	Provides access to defaults and relevant Windows settings. Refer to *Advanced Settings* on page 3-9 for details.

Item	Description	Details
L	Standard windows buttons	• OK button. Applies changes and closes the window • Cancel button. Exits the utility • Apply button. Applies the changes,

*1.   The Industrial Monitor Utility scans the connected USB devices and shows a list of connected monitors. If an Industrial Monitor is not connected with the USB cable, it will not be found.

*2.   With a very low backlight brightness setting (15%-0%) the displayed information might not be visible in an environment with high ambient light conditions. This prevents brightness adjustments with the Industrial Monitor Utility.

> **Additional Information**
>
> To adjust the backlight brightness when the brightness setting is set too low:
> • Bring the Monitor in a low ambient light environment
> • Lighten the display with a bright flashlight

● **Product Information**

The Product Information part supplies details of the selected connected monitor.

```
▼ Product Information
Serial Number :        22
Screen Size :          18.5"
Model Name :           NYM19W-C1062
Factory Identifier :   OMN
Unit Lot Number :      04817R
Logo Type :            Custom
Video Status :         Ok
Touch Input :          Ok
```

● **Version Information**

The Version Information part supplies version details of the software and of the selected monitor.

Software details:

• The version of the Industrial Monitor Utility
• The version of the Industrial Monitor API

Monitor details:

• The Hardware version of the monitor
• The version of the Firmware Software installed on the monitor
• The version of the Touch Firmware installed on the monitor

```
▼ Version Information
Industrial Monitor Utility :  1.2.9.0
Industrial Monitor API :      1.3.7.0
Hardware Version :            /A
Software Version :            0.15
Touch Firmware :              PM1410.D04.1.0.2   Boot : 5.9
                             PM1410S.D04.1.0.2  Boot : 5.9
```

● **Touch Input Settings**

The Touch Input Settings display the actual settings.
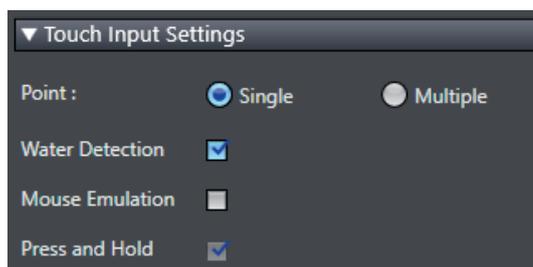
• Point

Set to Single the monitor accepts only one touch point.

Set to Multiple allows more touch points simultaneously.

• Water Detection

When enabled then a message will appear to inform the user when water is detected.

When disabled then no message will appear when water is detected.

• Mouse Emulation

When mouse emulation is enabled the Point setting is disabled and Press and Hold is enabled.

When mouse emulation is disabled the Point setting is enabled and the Press and Hold is disabled.

Additional Information

Do not activate mouse emulation when using multiple industrial monitors in combination with extended mode.


• Press and Hold

When enabled then a right-click mouse action occurs when holding a touch.

When disabled then holding the touch does not trigger the right-click mouse action.

● **Logo Color Settings**

The logo color settings allows you to control the color of the customized logos of the selected Industrial Monitor.

Ⓐ   Ⓑ
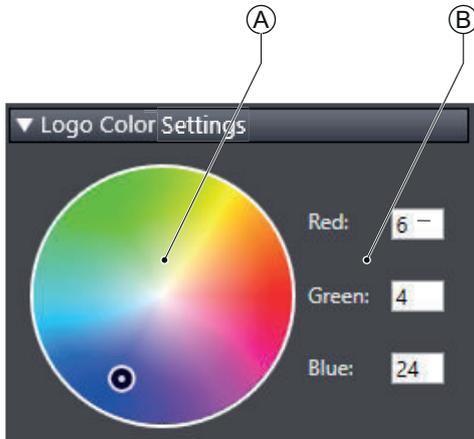
Item	Description	Details
A	Color circle selection	The color overview displaying the selected color. The RGB selection will be updated accordingly
B	RGB selection	Displays the RGB values of the selected color The color circle will be updated accordingly

Move the indicator in the color circle or change the RGB values to change the logo color of the selected monitor.

Activate the Powershell Script to change the logo color of all connected monitors.

Refer to *Powershell Script for Connected Monitors* on page 3-8 for details.

📓 **Additional Information**

The color of the standard OMRON logo can not be changed.
Used with the standard OMRON logo the brightness of the logo will be influenced.

■ **Powershell Script for Connected Monitors**

The powershell script **SetLogoColor.ps1**" is a script to make it convenient to change the logo color of all connected monitors.

Any change of the logo color in the Industrial Monitor Utility will update the powershell script with the newly selected color. This script is available at C:\Omron\PSScript\SetLogoColor.ps1.

Run the powerscript to change the logo color of all connected monitors.

● **Advanced Settings**

Advanced settings gives access to the factory settings and shortcuts to relevant Window settings.

▼ Advanced Settings

Restore Factory Defaults

Tablet PC Settings
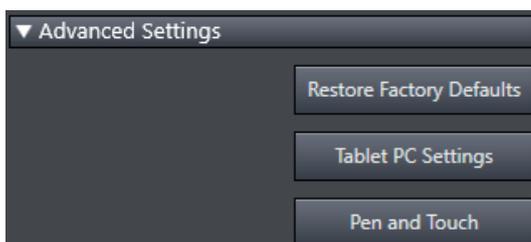
Pen and Touch

- Restore Factory Defaults button

  Resets all settings of the Industrial Monitor to the factory defaults.
- Tablet PC Settings

  Opens the 'Tablet PC Settings'-dialog of Windows.
- Pen and Touch

  Opens the 'Pen and Touch'-dialog of Windows.
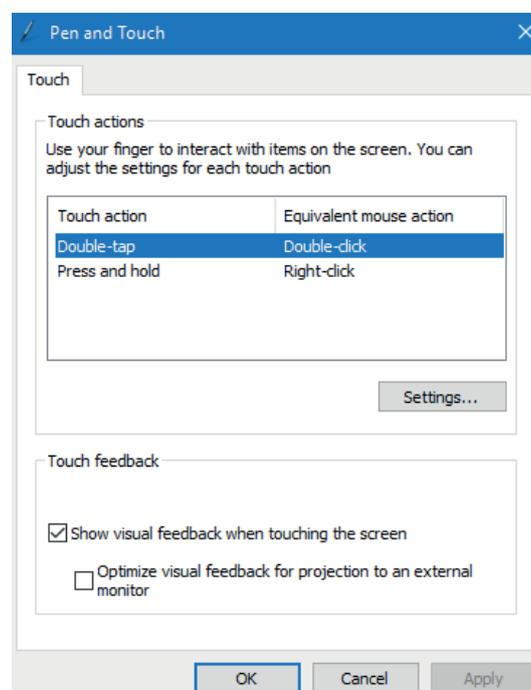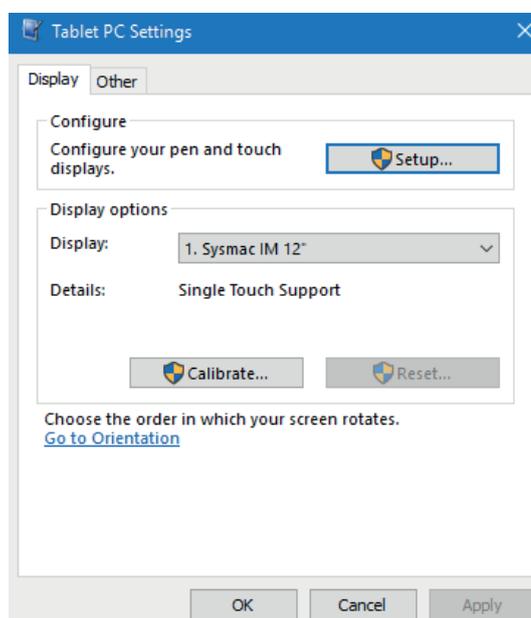
Compatibility

Compatibility with **Operating Systems**

This software utility can be used on an Monitor with Windows 7 or higher.

Compatibility with **related software utilities**

When during startup the error **Could not load plugin: *\OMRON*\Utility*.dll** appears software utilities are not compatible.

Download and install the latest version of the installed software utilities.

Installation

The Industrial Monitor Utility is pre-installed on the Industrial PC if it comes with a Windows operating system installed.

Download the Industrial Monitor Utility from the OMRON website for reinstallation or for installation on another Industrial PC.

The Industrial Monitor Utility is installed onto Windows, and can be accessed via the Windows start menu and the Industrial PC Tray Utility. Installing the Industrial Monitor Utility will also install the Industrial PC Tray Utility.

> **Precautions for Correct Use**
>
> When you use the Industrial Monitor Utility or Industrial Monitor Brightness Utility to adjust the Industrial Monitors, connect the Industrial Monitors to the Industrial PC with a USB cable or an NY Monitor Link cable.

> **Additional Information**
>
> Refer to *3-2-4 Industrial PC Tray Utility* on page 3-15 for Industrial PC Tray Utility details.

Startup

The Industrial Monitor Utility can be started from:
- Windows Start Menu.
  Select **Omron** and then **Industrial Monitor Utility**.
- Industrial PC Tray Utility

Configuration

The Industrial Monitor Utility can be configured with following options:

Configuration item	Description
Language	Follows the Windows language configuration when that language is supported for the Industrial Monitor Utility. The default language English (EN-US) will be used if the language configured in Windows is not supported.
Monitor identification	If enabled, the Status LED indicator on the selected Industrial Monitor will flash for 3 seconds. To enable: 1. Open the Windows registry key HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Omron\IPC\MonitorConfiguration 2. Set the registry value Indicate to value True.

Messages

The Industrial Monitor Utility can use the Industrial PC Tray Utility to display following messages:

Message type	Message	Description
Info	Connected	A new monitor connected • USB cable connected • Monitor powered ON
Warning	Not Connected	Monitor disconnected • USB cable disconnected • Monitor powered OFF
Warning	Video Disconnected	The video signal cable is disconnected
Warning	Serial number: □ Water detected on a monitor Touch may be rejected Check all attached monitors for water	Water is detected on monitor □
Warning	No Signal	The video signal cable is connected but no signal is detected

Logging

There is logging in the Windows event log of the following utilities:

• Industrial Monitor Utility

In the Windows Event Viewer filter for event source *IndMonService*.

• Industrial Monitor Brightness Utility

In the Windows Event Viewer filter for event source *IndMonService*.

• Industrial PC Support Utility

In the Windows Event Viewer filter for event source *IPCServiceHost* or *OMRON Industrial PC Support Utility*.

> **Additional Information**
>
> Refer to *7-2-2 Windows Event Viewer* on page 7-6 for the logged messages.

3-2-3 Industrial Monitor Brightness Utility

This section provides an overview of the Industrial Monitor Brightness Utility.

Industrial Monitor Brightness Utility Overview

The Industrial Monitor Brightness Utility is a software utility that allows you to control the brightness of the screen backlight of all connected Industrial Monitors.
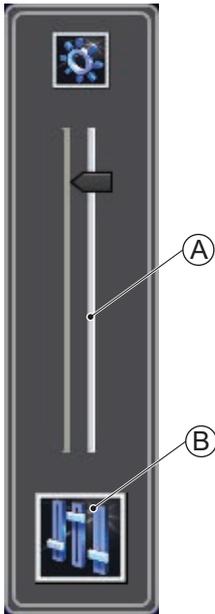
Item	Description	Details
A	Backlight brightness slider	Use the slider to control the display brightness of all connected Industrial Monitors.
B	Industrial Monitor Utility	Button to start the Industrial Monitor Utility.

With a very low backlight brightness setting (15%-0%) the displayed information might not be visible in an environment with high ambient light conditions. This prevents brightness adjustments with the Industrial Monitor Brightness Utility.

Additional Information

To adjust the backlight brightness when the brightness setting is set too low:
- Bring the Monitor in a low ambient light environment
- Lighten the display with a bright flashlight

Compatibility

This monitor utility can be used on any PC that is connected to an OMRON Industrial Monitor.
Compatibility with **Operating Systems**
This software utility can be used on an Monitor with Windows 7 or higher.

Compatibility with **related software utilities**
The Industrial PC Tray Utility, the Industrial PC Support Utility and the Industrial Monitor Utility are re-
lated. When during startup the error **Could not load plugin: *\OMRON*\Utility*.dll** appears software
utilities are not compatible. Download and install the latest version of these software utilities.

> **Additional Information**
>
> The Industrial Monitor Utility does not support 3rd party monitors.

Installation

The Industrial Monitor Brightness Utility is pre-installed on the Industrial PC if it comes with a Windows
operating system installed.
Installation of the Industrial Monitor Brightness Utility is part of the installation of the Industrial Monitor
Utility.
Download the Industrial Monitor Utility from the OMRON website for reinstallation or for installation on
another PC with a compatible operating system.
The Industrial Monitor Brightness Utility is installed onto Windows, and can be accessed via the Win-
dows start menu and the Industrial PC Tray Utility. Installing the Industrial Monitor Utility will also in-
stall the Industrial PC Tray Utility.

> **Precautions for Correct Use**
>
> When you use the Industrial Monitor Utility or Industrial Monitor Brightness Utility to adjust the
> Industrial Monitors, connect them to the Industrial PC with a USB cable in advance.

> **Additional Information**
>
> Refer to *3-2-4 Industrial PC Tray Utility* on page 3-15 for Industrial PC Tray Utility details.

Startup

Start the Industrial Monitor Brightness Utility from the Industrial PC Tray Utility or from the Windows
Start Menu (select **Omron** and then **Industrial Monitor Brightness Utility**).

> **Additional Information**
>
> Refer to *3-2-4 Industrial PC Tray Utility* on page 3-15 for Industrial PC Tray Utility details.

Configuration

Configuration is not required.

This utility will detect and support all connected NY-series Industrial Monitors.

Logging

There is logging in the Windows event log of the following utilities:

- Industrial Monitor Utility

  In the Windows Event Viewer filter for event source *IndMonService*.

- Industrial Monitor Brightness Utility

  In the Windows Event Viewer filter for event source *IndMonService*.

- Industrial PC Support Utility

  In the Windows Event Viewer filter for event source *IPCServiceHost* or *OMRON Industrial PC Support Utility*.

> **Additional Information**
>
> Refer to *7-2-2 Windows Event Viewer* on page 7-6 for the logged messages.

3-2-4 Industrial PC Tray Utility

This section provides an overview of the Industrial PC Tray Utility.

Industrial PC Tray Utility Overview

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.

When running, the Industrial PC Tray Utility is always present as a status icon (A) in the system tray area (B) of Windows.
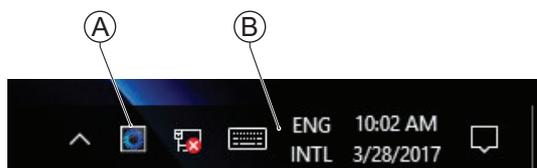

Windows 10

Features

The Industrial PC Tray Utility provides the following features:
- Display the overall state of all installed OMRON software utilities in the icon in the system tray area.
- Display a menu that can start all installed software utilities and show the state of each installed software utility.
- Display notification messages in popup windows that inform the user about the state of applications or hardware. The Industrial PC Tray Utility displays the messages provided by installed software utilities. Refer to the details of a specific software utility for the messages that can be displayed.
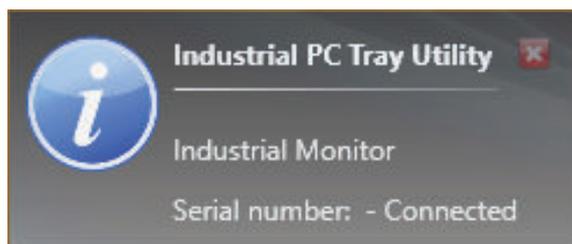

Example:
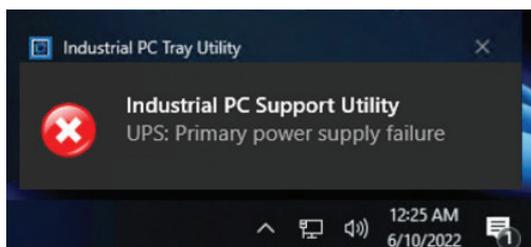
Menu

Select the Industrial PC Tray Utility icon Ⓕ to display the menu.
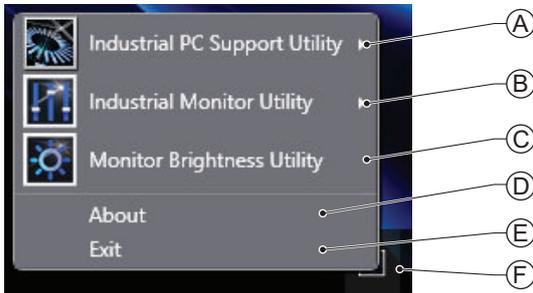
- The application displays the available utilities.
  - Select an entry to launch the associated utility, if applicable.
  - The icons of menu items in the Industrial PC Tray Utility menu will have a warning or error symbol when applicable.
  - The Industrial PC Support Utility Ⓐ is available in the menu when installed.
  - The Industrial Monitor Utility Ⓑ is available in the menu when installed.
  - The Industrial Monitor Brightness Utility Ⓒ is available in the menu when installed.
  - The application area can be configured to show and launch both OMRON and third party utilities.
- The **About** entry Ⓓ shows details of the Industrial PC Tray Utility.

  Refer to *About the Industrial PC Tray Utility* on page 3-16 for details.
- The **Exit** entry Ⓔ closes the utility.

About the Industrial PC Tray Utility

The About window shows the version of the Industrial PC Tray Utility and copyright information.
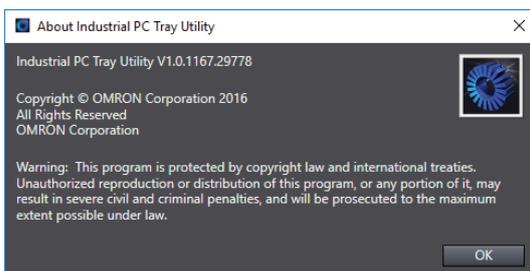
Status Indicators on Icons

The following table provides the indicator details of the Industrial PC Tray Utility.

Overlay type	Icon	Description
None		No OMRON software utility has issued warning or error notifications.
Warning sign		At least one software utility has issued a warning notification.
Error sign		At least one software utility has issued an error notification.

Compatibility

Compatibility with **Operating Systems**
This software utility can be used on an Monitor with Windows 7 or higher.

Compatibility with **related software utilities**
When during startup the error **Could not load plugin: *\OMRON*\Utility*.dll** appears software utilities are not compatible.
Download and install the latest version of the installed software utilities.

Installation

The Industrial PC Tray Utility is pre-installed on the Industrial PC if it comes with a Windows operating system installed.
The Industrial PC Tray Utility is included in the installers of the Industrial PC Support Utility and Industrial Monitor Utility. Install the Industrial PC Support Utility or Industrial Monitor Utility to install the Industrial PC Tray Utility.

Startup

By default the Industrial PC Tray Utility is configured to start automatically at Windows startup.

To manually start the Industrial PC Tray Utility:

1 Locate the Industrial PC Tray Utility using the Windows **Start** menu or the Windows search box.

2 Use the option **Run as administrator** to activate the Industrial PC Tray Utility.

> **Additional Information**
>
> The procedure to use **Run as administrator** is:
> • For Windows 10 using the **Start** menu:
>   Right-click the Industrial PC Tray Utility, select **More** and then **Run as administrator**.
> • For Windows 10 using **Search**:
>   Right-click the Industrial PC Tray Utility in the search results and select **Run as administrator**.
> • For Windows 7 using the **Start** menu or **Search**:
>   Right-click the Industrial PC Tray Utility and select **Run as administrator**.

The Industrial PC Tray Utility started.

3-3 Software for Developers

This section provides information on the software that is available for developers.

3-3-1 Overview IPC Developer Software for Windows

This section gives an overview of the software available for developers using the OMRON Industrial Monitor with an IPC with a windows operating system.

Availability of the developer software:

Product	Developer software
Industrial Monitor	Industrial Monitor SDK
	Industrial Monitor API

Select and download the SDK software from the OMRON website.

A short description of the Industrial Monitor API:

Description	Reference
Controls the hardware features and gets information from connected Industrial Monitors.	Refer to *3-3-2 Industrial Monitor API* on page 3-20 for details.

3-3-2   Industrial Monitor API

This section describes some of the Industrial Monitor API functions.

The Industrial Monitor API allows programmers to create applications that can control the hardware features and retrieve information from connected Industrial Monitors.

The main function of the Industrial Monitor API is to enable the brightness of the backlight and the LEDs of the monitor to be increased or decreased according to the working environment.

The API makes use of the included OMRON Industrial Monitor Service to manage the hardware.

Features

For all connected Industrial Monitors, the Industrial Monitor API can:

• Retrieve product information from the Industrial Monitor or Industrial Panel PC display
• Retrieve product status information
• Set the brightness of the Status LED indicator
• Set the brightness of the backlight
• Set the brightness of the Logo LED
• Set the touch points of the monitor
• Store settings
• Restore to factory defaults

The API makes use of the included OMRON Industrial Monitor Service to manage all Industrial Monitors connected via USB.

Installation

The Industrial Monitor API is part of the Industrial Monitor SDK download.

The Industrial Monitor API is pre-installed on the Industrial Panel PC and Industrial Box PC.

Install the Industrial Monitor SDK to use the Industrial Monitor API on development PCs.

To use the Industrial Monitor API the API needs to be referenced in your development project.

Use the Merge Module to include the Industrial Monitor API in the installer for custom applications.

4

Specifications

This section provides specifications of the Industrial Monitor.

4-1 General Specifications

This section provides general specifications of the Industrial Monitor.

4-1-1 Dimensions and Weight

The following table provides specification details on dimensions and weights.
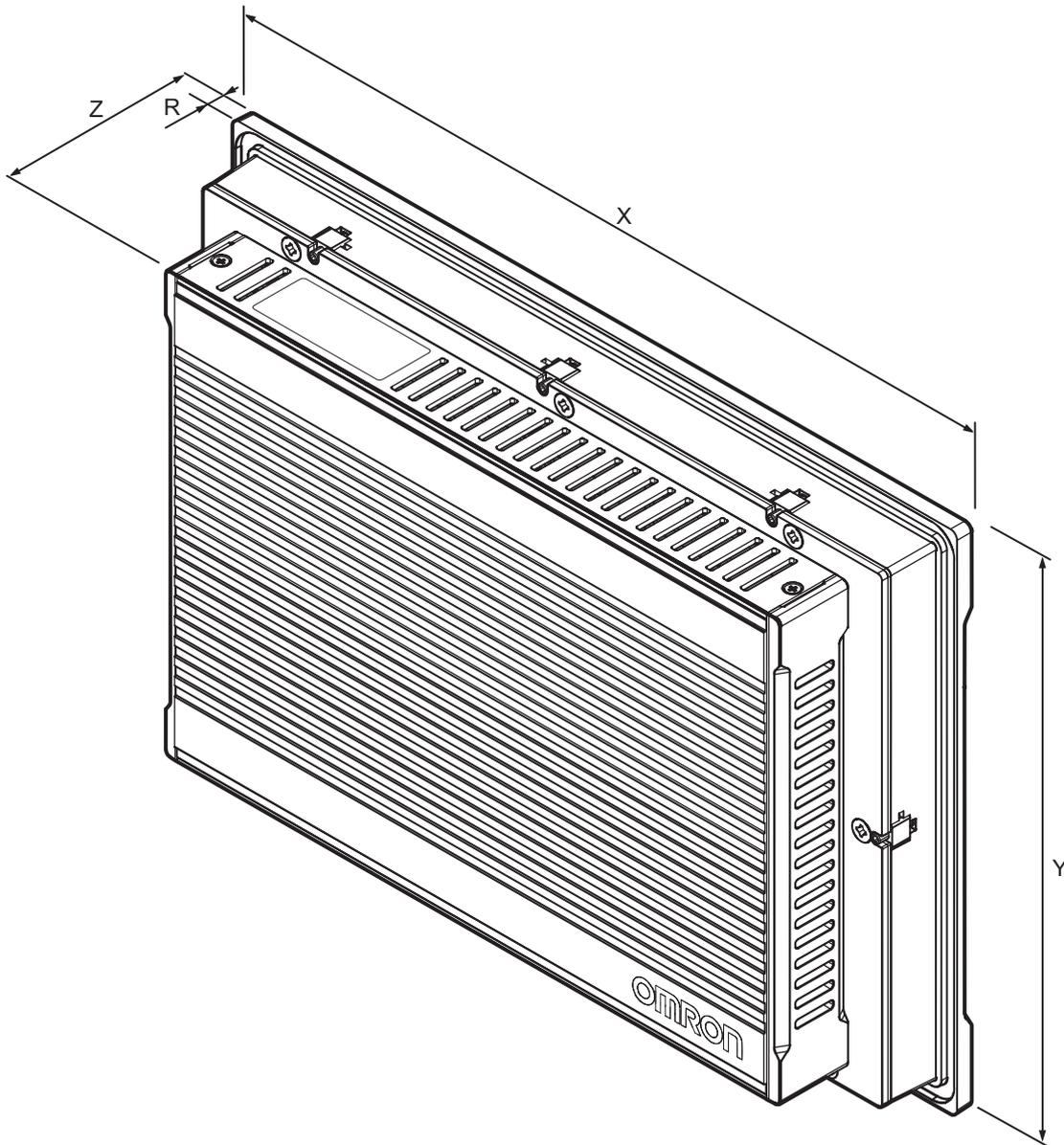
4 Specifications

Item	Specifications		
	12.1 inch [*1]	**15.4 inch [*1]**	**18.5 inch [*1]**
Dimensions	Width X = 332 mm Height Y = 234 mm Depth Z = 66 mm	Width X = 401 mm Height Y = 277 mm Depth Z = 66 mm	Width X = 482 mm Height Y = 304 mm Depth Z = 66 mm
Monitor thickness on top of panel	Rim thickness R = 8.0 mm		
Weight	3.3 kg	4.3 kg	5.3 kg

*1. Refer to *1-4 Product Configuration* on page 1-5 for details.

4-1-2 General Electrical Specifications

The following table provides the general electrical specifications.

Item		Specifications		
		12.1 inch [*1]	**15.4 inch [*1]**	**18.5 inch[*1]**
Rated power supply voltage		24 VDC		
Allowable power supply voltage range		19.2 to 28.8 VDC		
Power supply standard		SELV		
Grounding method		Ground to less than 100 Ω		
Power consumption	With DVI-D interface	25 W max.	25 W max.	37 W max.
	With NYML interface	30 W max.	31 W max.	44 W max.
Inrush current		At 24 VDC: 5 A / 10ms max.		
Overvoltage category		JIS B3502 and IEC 61131-2: Category II		
EMC immunity level		IEC 61131-2: Zone B		

*1. Refer to *1-4 Product Configuration* on page 1-5 for details.

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4-3

4-1-3 VESA Mount Brackets and Handle Specifications

The metal VESA mounting brackets mount your Monitor.

All VESA Mount Brackets and the optional VESA Mount Handle have VESA Standard FDMI MIS-D with hole pattern 100 * 100 mm.

Models 12.1 inch	VESA Mount ID and appearance	Specifications
NYM12	NY000-AB06	• Material: stainless steel, 2.5 mm • Finish: Black industrial powder coating • Width: 328 mm • Height: 237 mm • Depth: 86 mm • Weight: 2.7 kg
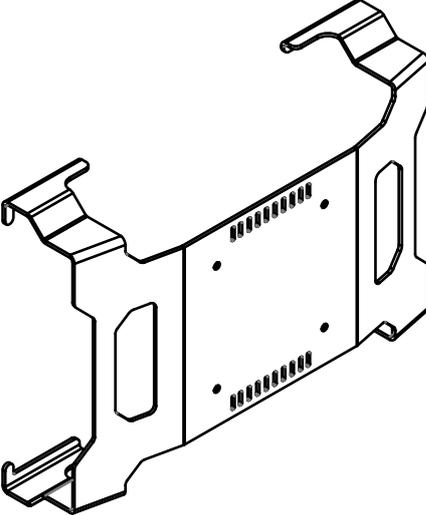
Models 15.4 inch	VESA Mount ID and appearance	Specifications
NYM15	NY000-AB07	• Material: stainless steel, 2.5 mm • Finish: Black industrial powder coating • Width: 397 mm • Height: 280 mm • Depth: 86 mm • Weight: 3.1 kg
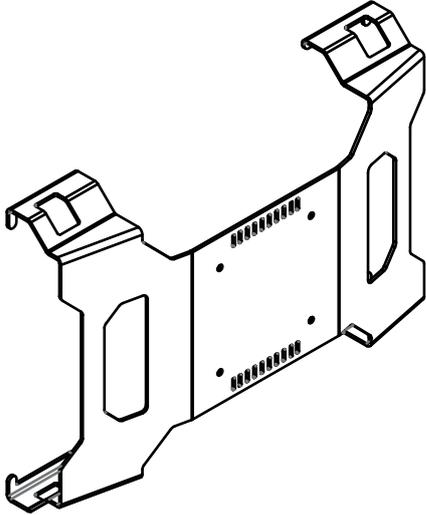
Models 18.5 inch	VESA Mount ID and appearance	Specifications
NYM19	NY000-AB08	• Material: stainless steel, 2.5 mm • Finish: Black industrial powder coating • Width: 478 mm • Height: 306 mm • Depth: 83 mm • Weight: 3.9 kg
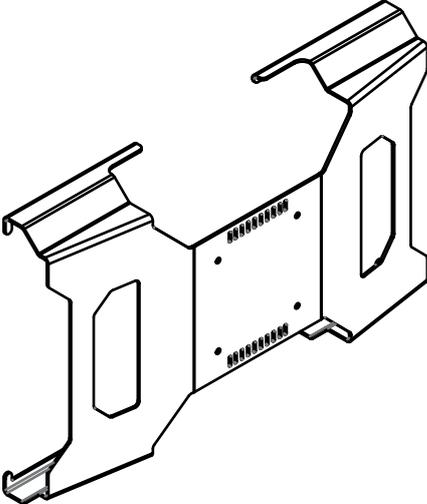
Model	VESA Mount handle ID and appearance	Specifications

Optional VESA Handle for all models with a VESA bracket:
• All NY-series Panel PCs with a VESA bracket
• All NY-series Monitors with a VESA bracket
	NY000-AB12
	Optional VESA Handle
		• Material: stainless steel
		• Finish: Black industrial powder coating
		• Width: 205 mm
		• Height: 318 mm
		• Depth: 164 mm
		• Weight: 2.4 kg
		• Handle diameter: 30 mm
		• Hole pitch from middle hole:
		  14 mm up
		  21 mm down
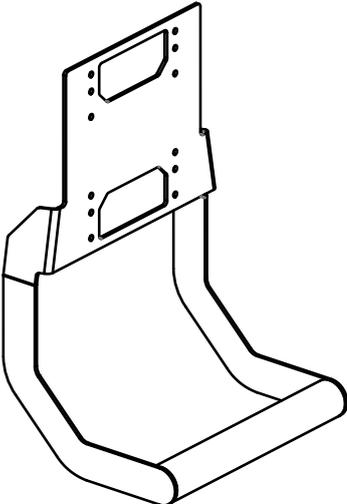
Additional Information

Refer to *5-2-9 VESA Mount Procedure* on page 5-17 for VESA mount details.

4-1 General Specifications

4

4-1-3 VESA Mount Brackets and Handle Specifications

4-2   Connector Specifications

This section provides the connector specifications of the Industrial Monitor.

4-2-1   Power Connector Specifications

The power connector is used to supply 24 VDC power to the Industrial Monitor.

The connector can only be inserted the correct way.

The connector is a Phoenix Contact type FKCT 2,5/ 2-STF-5,08 BK (1711707).
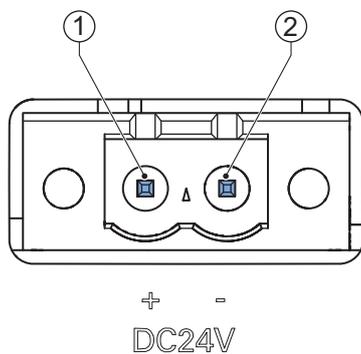
The pin layout represents the power connector on the Industrial Monitor.

Pin	Description
1	24 VDC
2	0 VDC

Item	Specifications
Conductor isolation rating	90°C
Termination rating	90°C

> **Additional Information**
>
> • Refer to *5-3-2 Wire the Power Connector* on page 5-27 for wiring details.
> • Refer to *5-3-1 Ground* on page 5-20 for grounding details.
> • Refer to *5-4 Connect* on page 5-29 for connection details.

4-2-2　DVI-D Connector Specifications

The DVI-D connector is a single-link connection type for connection with the host PC. The connector follows the DVI-D dual-link assembly design.

The connector includes support for the Display Data Channel (DDC) and can transmit the Industrial Monitor's supported display modes to the host PC through this channel.

The Industrial Monitor can detect if the DVI cable is not connected or that the host PC is not powered or the DVI port on the host PC is disabled.
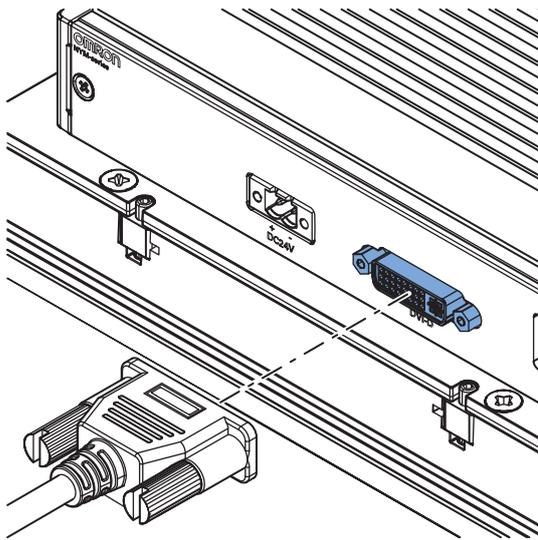
| Item	Specifications
Video interface	Digital only
Resolution	1,280 x 800 pixels at 60 Hz (12", 15") 1,920 x 1,080 pixels at 60 Hz (19")
Maximum DVI cable length	5 m

> **Additional Information**
>
> • Refer to *5-3-1 Ground* on page 5-20 for grounding details.
> • Refer to *5-4 Connect* on page 5-29 for connect details.

4-2-3   NY Monitor Link Connector Specifications

The optional NY Monitor Link connector connects an OMRON Industrial Monitor with an OMRON Industrial PC that has an NY monitor link connector.

The NY Monitor Link communication is a combination of video and USB information.

Item	Specifications
Connector type	RJ45
Transmission media	Twisted pair cable of category 6A or higher (double-shielded straight cable with copper braiding and aluminum foil) Refer to *2-5-4 NY Monitor Link Cables* on page 2-13 for more information.
Maximum cable length between Industrial PC and Industrial Monitor	100 m
Topology	Line (direct) connection only [1]
Video resolution	1,280 x 800 pixels at 60 Hz (12.1", 15.4") 1,920 x 1,080 pixels at 60 Hz (18.5")
USB Data throughput rate	280 Mbps max.

*1.   Use a direct connection between the OMRON Industrial PC and the OMRON Industrial Monitor.
Do not use:
   • Ethernet switches
   • Ethernet hubs

The NY Monitor Link connector locks automatically to prevent unintentional disconnection.

NY Monitor Link Connector LED Indicators

The connector has LED indicators Connected Ⓐ and Video Ⓑ.
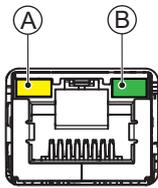
NYML

Item	Indica-tor	Color	Status		Description
A	Con-nected	Yellow		Not lit	Not connected
				Lit	Connected USB communication active
B	Video	Green		Not lit	No video signal
				Blinking	Video signal present
				Lit	Encrypted video signal present Video output is not supported for encrypted video.

4-2 Connector Specifications

4

4-2-3 NY Monitor Link Connector Specifications

4-2-4 USB Type-A Connector Specifications

The USB Type-A connectors are used for connection with slave USB devices like USB Memory Device, keyboard or mouse.
Details of the USB-A interface connectors are provided below.
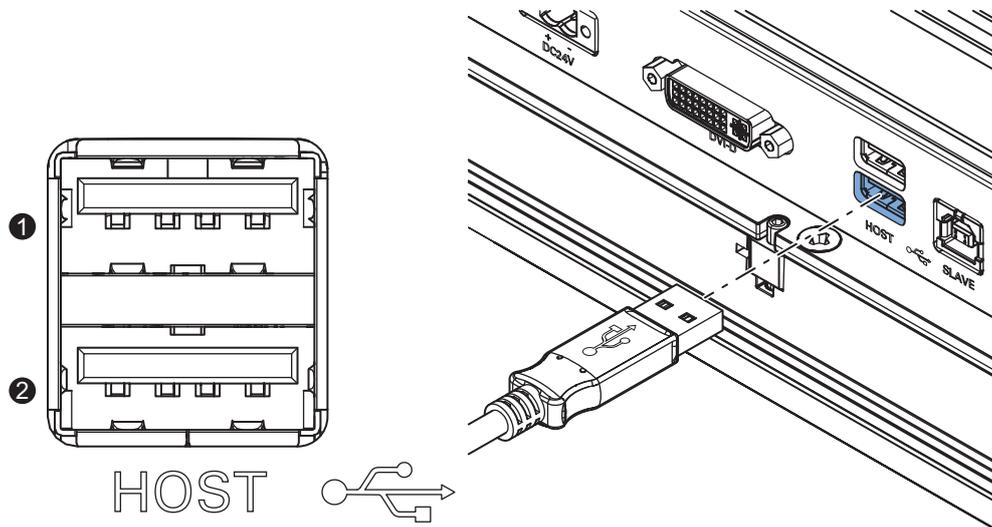
Interface Connector	Details
1	• USB 2.0
2	• 500 mA maximum current
	• 5 m maximum cable length

📝 **Additional Information**

• Refer to *5-3-1 Ground* on page 5-20 for grounding details.
• Refer to *5-4 Connect* on page 5-29 for connection details.

4-2-5 USB Type-B Connector Specifications

The USB Type-B connector is used for connection with the host PC to allow communication to internal and external USB devices. The host PC uses this interface to access the internal touchscreen functions as well as other external devices plugged into the USB Type-A connectors. A connection using the DVI-D or DisplayPort connector is required. Details on the USB Type-B interface connector are provided below.
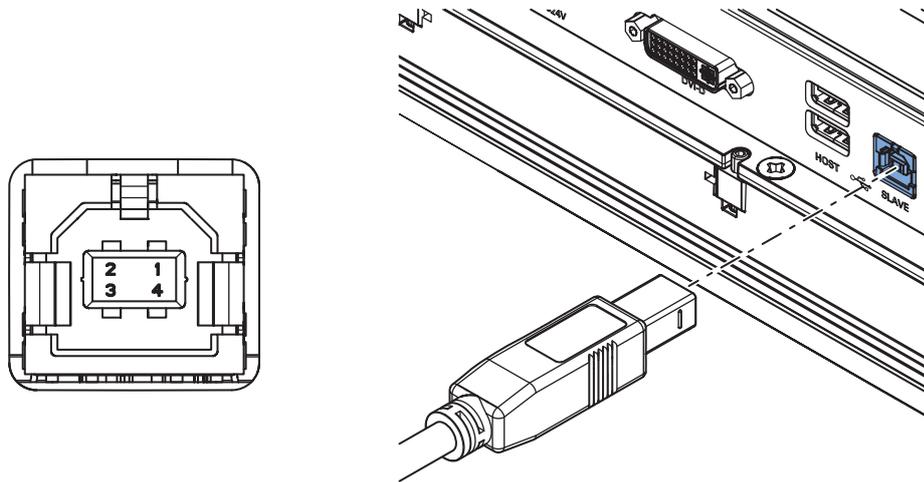
Item	Details
USB Type-B connector	• USB 2.0 • 5 m maximum cable length

Additional Information

- Refer to *5-3-1 Ground* on page 5-20 for grounding details.
- Refer to *5-4 Connect* on page 5-29 for connection details.

4-3   Display Specifications

This section provides the display specifications of the Industrial Monitor.

⚠ WARNING

Do not use the input functions of the touchscreen in applications that involve human life, in applications that may result in serious injury, or for emergency stop switches.   🚫

Precautions for Correct Use

The touchscreen supports 5 simultaneous touches. When the number of touches is exceeded, not all touch points will be detected.

Item		Model Specifications		
		12.1 inch [*1]	15.4 inch [*1]	18.5 inch [*1]
Display panel [*2]	Display device	TFT LCD		
	Screen size	12.1 inch	15.4 inch	18.5 inch
	Surface treatment	Anti glare treatment		
	Surface hardness	Mohs scale 5-6		
	Resolution (horizontal × vertical)	1,280 × 800 pixels at 60 Hz		1,920 × 1,080 pixels at 60 Hz
	Colors	16,770,000 colors (24 bit full color)		
	Effective display area	261 × 163 mm (horizontal × vertical)	331 × 207 mm (horizontal × vertical)	409 × 230 mm (horizontal × vertical)
	View angles	Left: 60°, Right: 60°, Top: 60°, Bottom: 60°		Left: 89°, Right: 89°, Top: 89°, Bottom: 89°
	EMC	Correct touchscreen operation is possible within allowable EMC immunity conditions[*3]		
Touch	Technology	Projected capacitive		
	Touch resolution	Touch accuracy 1.5% (4-5mm)		
	Life	50,000,000 operations minimum		
	Multitouch	Up to 5 simultaneous touches		
	Features	Water detection[*4], hand palm rejection[*5], gloves [*6]		
Backlight	Life	50,000 hours minimum. [*7]		
	Brightness adjustment [*8]	200 levels		

*1.   Refer to *1-4 Product Configuration* on page 1-5 for details.

*2.   There may be some defective pixels in the display. This is not a fault as long as the number of defective light and dark pixels fall within the following standard range: light and dark pixels 10 or less. There must not be 3 adjacent light/dark pixels.

*3.   Refer to *4-1-2 General Electrical Specifications* on page 4-3 for EMC immunity level specifications.

*4.   If water is detected the touch functionality will not be available.

---

*5.   If a palm is detected that specific area is ignored.
*6.   The touchscreen can be operated when wearing gloves. Confirm you can operate the touchscreen with gloves before actual operation.
*7.   This is the estimated time before brightness is reduced by half at room temperature.
       The life expectancy is drastically shortened if used at high temperatures.
*8.   If the brightness is set to very low, it causes flickering or the screen will be too dark to use.

All LCD displays will display image retention effects when used in less optimal conditions.
Refer to *7-1-6 Minimize LCD Image Retention* on page 7-4 for details.

4-4   Environmental Specifications

This section provides environmental specifications of the Industrial Monitor.

4-4-1   Operation Environment Specifications

The following table provides general environmental specifications for the Industrial Monitor.

Item	Specifications		
	12.1 inch [1]	15.4 inch [1]	18.5 inch [1]
Ambient operating temperature	0 to 55°C [2]		
Ambient storage temperature	-20 to 70°C [2]		
Ambient operating humidity	10% to 90% with no condensation [2]		
Ambient storage humidity	10% to 90% with no condensation [2]		
Operating atmosphere	No corrosive gases		
Altitude	2,000 m max.		
Noise resistance (during operation)	Conforms to IEC 61000-4-4, 2kV (power lines)		
Vibration resistance (during operation)	Conforms to IEC 60068-2-6. 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		
Shock resistance (during operation)	Conforms to IEC 60068-2-27. 147 m/s², 3 times each in X, Y and Z directions		
Material finish	Applicable for model-ID NYM□□□-□□1□□ [1] Nickel plated conforms to ASTM B733-15, SC2		
Degree of protection	Front of product: IP65 [3]		
Pollution degree	2 or less: Conforms to JIS B3502 and IEC 61131-2		

*1.   Refer to *1-4 Product Configuration* on page 1-5 for details.

*2.   Refer to *4-4-2 Temperature and Humidity Specifications* on page 4-15 for ambient operating temperature and humidity details.

*3.   The Industrial Monitor may not operate properly in locations subjected to oil splashes for extended periods of time.

4-4-2 Temperature and Humidity Specifications

The allowed ambient temperature and humidity conditions during operation and storage of the Industrial Monitor are specified in the following graphs.

- Operate the Industrial Monitor within the ambient temperature and humidity ranges as shown in following graph.
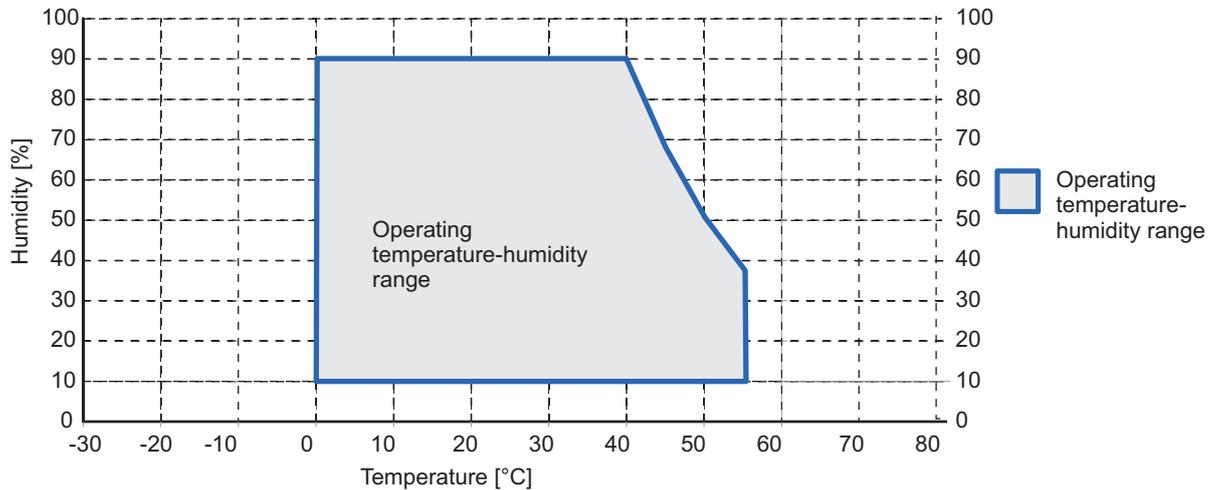
Additional Information

Refer to *Monitor Temperature Specifications* on page 4-16 for specific limitations.

- Store the Industrial Monitor within the ambient temperature and humidity ranges as shown in following graph.
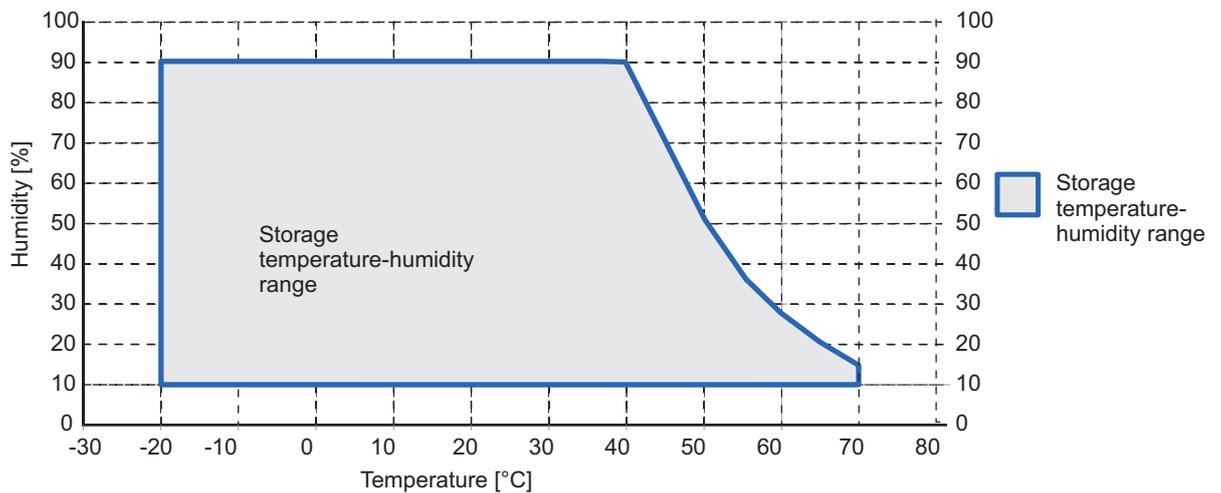
Monitor Temperature Specifications

Ambient operating temperature specifications for a Monitor

Product Orientation	Mounting Angle	Configuration [1]	
		With a DVI-D interface	With an NYML interface
Landscape and Portrait	0° to 45°	0 to 55°C	0 to 50°C (12", 15") 0 to 55°C (19")
Landscape	45° to 90°	0 to 55°C	
	90° to 135°	0 to 55°C	
Portrait	45° to 90°	0 to 55°C	
	90° to 135°	0 to 55°C	

*1.   Refer to *1-4 Product Configuration* on page 1-5 for model details.
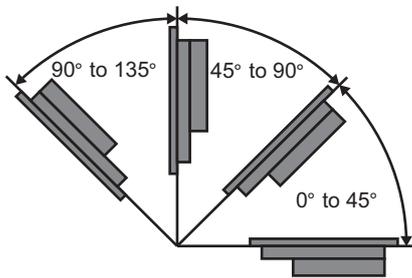
📝 **Additional Information**

Refer to *4-4-2 Temperature and Humidity Specifications* on page 4-15 for graph details.

4-4-3   Recycling Specifications

The following table provides recycling information for the Industrial Monitor.

Part	Recycle Specifications
Boards and other electrical components	Electrical waste

5

Installation

This section provides all installation details for the Industrial Monitor.

5-1   Unpack

This section provides details on how to unpack the Industrial Monitor.

5-1-1   Unpack Procedure

1   Check the package for damage.
If there is any visible damage:
- Take photos of the package and save them.
- Inform your supplier immediately.

2   Open the package.
Ensure not to damage the contents.

3   Ensure that all items are present.

> **Additional Information**
>
> Refer to *5-1-2 Items Supplied* on page 5-3 for the items supplied.

5-1-2   Items Supplied

This section describes the items supplied with your Industrial Monitor.

- Industrial Monitor
- Documentation:
  - Safety Precautions sheets (English and Japanese)
  - EU Compliance sheet
  - Standards and Certifications sheet
- Bag with power connector
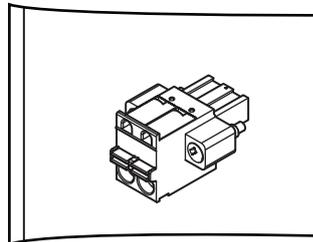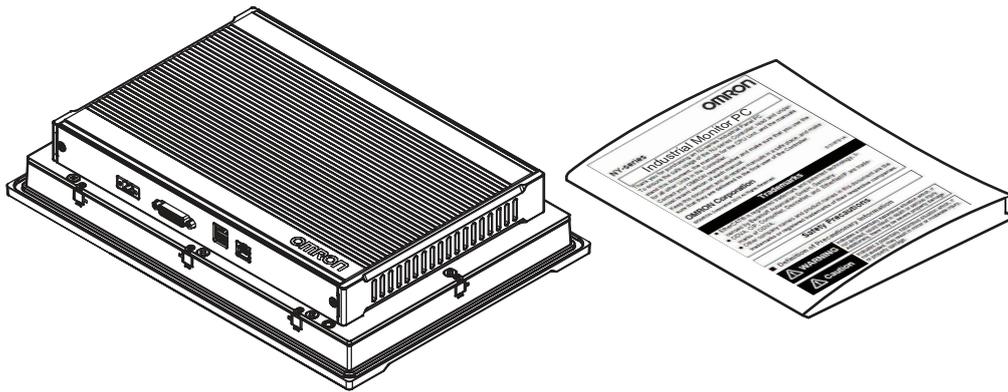
5-2 Mount

This section describes how to mount the Industrial Monitor in a control panel.

⚠ WARNING

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.

5-2-1 Installation Method in Control Panels

The Monitor must be mounted to the outside surface of a control panel.

Consider product orientation, cooling distance, noise resistance, ducts and product replacement when determining the space between the Monitor and other devices.

Precautions for Safe Use

Install the product in the correct orientation and ambient temperature according to the specifications in this manual to prevent overheating. Not doing so may result in malfunction.

Precautions for Correct Use

Do not operate or store the Monitor 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 oil or chemicals
- Locations subject to shock or vibration
- Locations outdoors subject to direct wind and rain
- Locations subject to strong ultraviolet light

Additional Information

- Refer to *5-2-2 Product Orientation* on page 5-5 for orientation details.
- Refer to *5-2-3 Temperature* on page 5-6 for temperature details.
- Refer to *5-2-4 Humidity* on page 5-8 for humidity details.
- Refer to *5-3 Wire* on page 5-20 for wiring details.

5-2-2　　Product Orientation

The Industrial Monitor can be mounted in a landscape Ⓐ or portrait Ⓑ orientation.
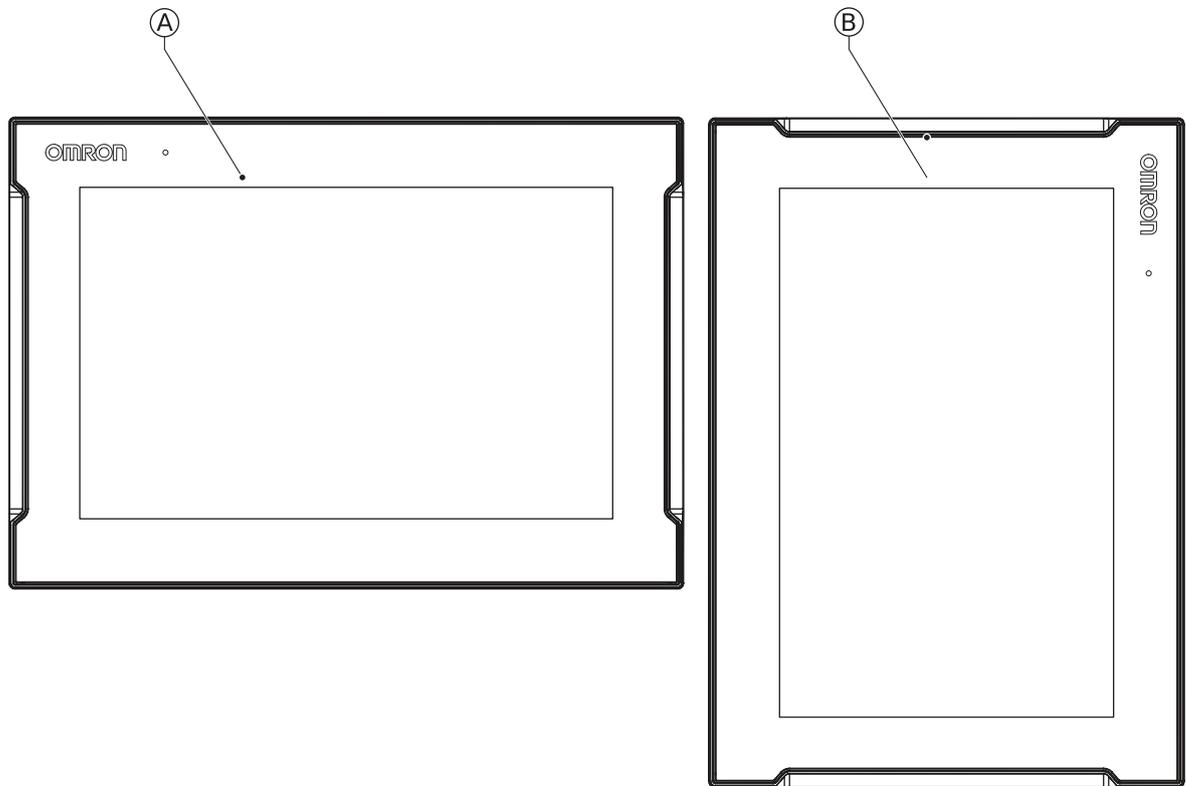
Do not install the Industrial Monitor in any of the following orientations.

5-2 Mount

5

5-2-2 Product Orientation
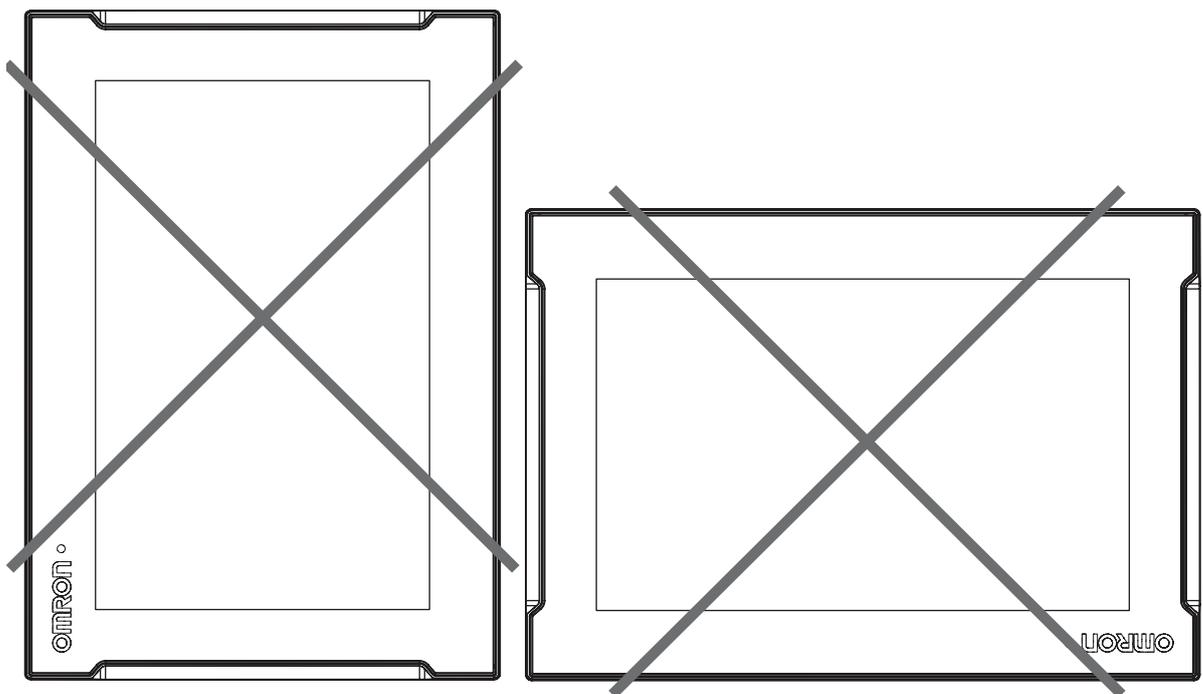
5-2-3　Temperature

The temperature inside a control panel may be at least 10 to 15°C higher than outside the panel. Implement the following measures against overheating at the installation site and in the control panel, and allow a sufficient margin for the temperature.

Distance for Cooling

Adequate airflow around the Industrial Monitor is required.

> **Additional Information**
>
> • The ambient temperature must be within the operating range.
>   Refer to *4-4 Environmental Specifications* on page 4-14 for temperature specifications.
> • Allow space to accommodate for the bending radius of the cables.
>   Refer to:
>   • *2-5-2 DVI Cables* on page 2-12
>   • *2-5-3 USB Type-A to USB Type-B Cables* on page 2-12
>   • *2-5-4 NY Monitor Link Cables* on page 2-13
>   for cable bending requirements.

Provide enough space for good air flow and ensure the following minimum distances are observed around the sides of the Industrial Monitor for landscape Ⓐ and portrait Ⓑ orientations.
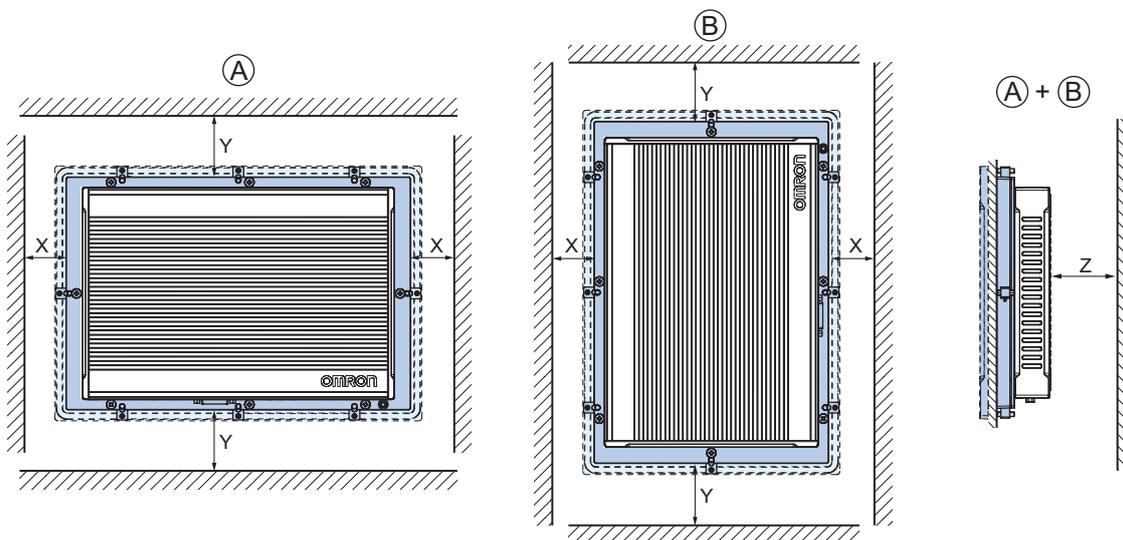
Item	Minimum Distance [*1]
X	50 mm
Y	100 mm
Z	50 mm

*1.　Measure the minimum distances X and Y at the air openings in the sides of the Industrial Monitor.

High Temperatures

Use the following cooling methods as required, taking into account the ambient temperature and the amount of heating inside the panel.

● **Natural Cooling**

Natural cooling relies on natural ventilation through slits in the panel, rather than using cooling devices such as fans or coolers. When using this method, observe the following points.
- Do not install the Monitor at the top of the panel, where hot air tends to stagnate.
- To provide ventilation space above and below the Monitor, leave sufficient distance from other devices, wiring ducts, etc.
- Do not mount the Monitor in the wrong direction (e.g., vertically or upside down). Doing so may cause abnormal heating in the Monitor.
- Do not install the Monitor directly above any heat-generating equipment, such as heaters or transformers.
- Do not install the Monitor in a location exposed to direct sunlight.

Natural Cooling
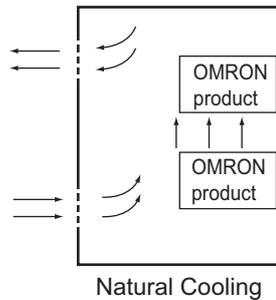
● **Forced Ventilation**

Forced ventilation with a fan in the top of the control cabinet.

Forced Ventilation Method
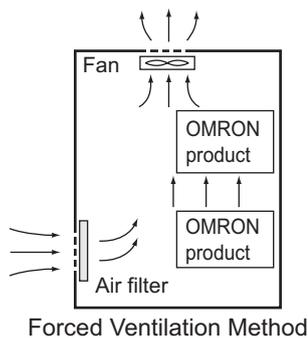
● **Forced Air Circulation**

Forced circulation with a fan inside the closed control cabinet.
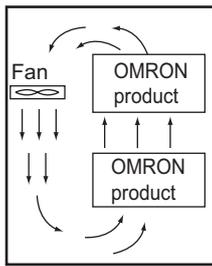
Forced Air Circulation

● **Room Cooling**

Cool the entire room where the control panel is located.
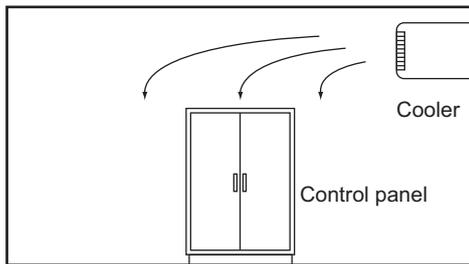
Room Cooling

Low Temperatures

The Monitor may not start normally if the temperature is below 0°C when the power is turned ON.
Maintain an ambient air temperature of at least 5°C by implementing measures such as installing a low-capacity space heater in the panel.
Alternatively, leave the Monitor power ON to keep the Monitor warm.

5-2-4   Humidity

Rapid temperature changes can cause condensation to occur, resulting in malfunctioning due to short-circuiting.
When there is a possibility of this occurring, take measures against condensation, such as leaving the Monitor power ON at night or installing a heater to keep it warmer.
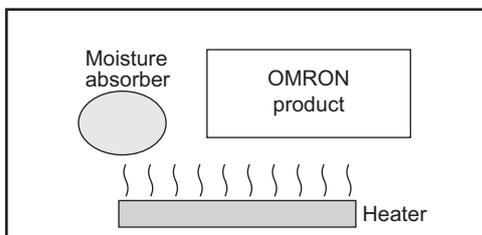
Examples of Measures against Condensation

5-2-5   Vibration and Shock

The Monitor is tested for conformity with the sine wave vibration test method (IEC 60068-2-6) and the shock test method (IEC 60068-2-27) of the Environmental Testing for Electrotechnical Products. It is

designed so that malfunctioning will not occur within the specifications for vibration and shock. If, however, the Monitor is to be used in a location in which it will be directly subjected to regular vibration or shock, then implement the following countermeasures:

- Separate the Monitor from the source of the vibration or shock. Or secure the Monitor with rubber padding to prevent vibration.
- Make the building or the floor vibration-resistant.
- Prevent shocks when other devices, such as electromagnetic contactors, operate. Secure either the source of the shock or the Monitor with rubber padding.

5-2-6   Atmosphere

Using the Monitor in any of the following locations can cause defective contact with connectors and corrosion of components. Implement countermeasures such as purging the air as required.

- In locations exposed to dust, dirt, salt, metal powder, soot, or organic solvents, use a panel with an airtight structure. Be careful of temperature increases inside the panel.
- In locations exposed to corrosive gas, purge the air inside the panel to clear the gas and then pressurize the inside of the panel to prevent gas from entering from outside.
- In locations where flammable gas is present, either use an explosion-protected construction or do not use the Monitor.

5-2-7   Electrical Environment

When installing or wiring devices, make sure that there will be no danger to people and that noise will not interfere with electrical signals.

Installation Location

Install the Monitor as far away as possible from high-voltage (600 V or higher) and power devices to ensure safe operation and maintenance.

Example of Recommended Equipment Arrangement
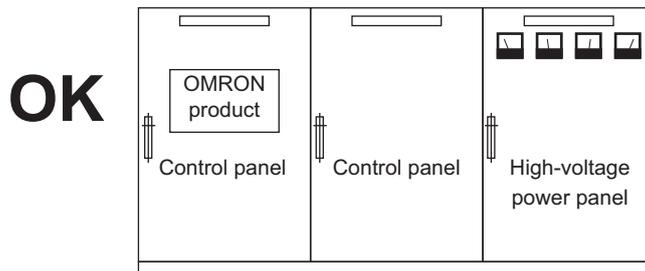
Example of Poor Equipment Arrangement
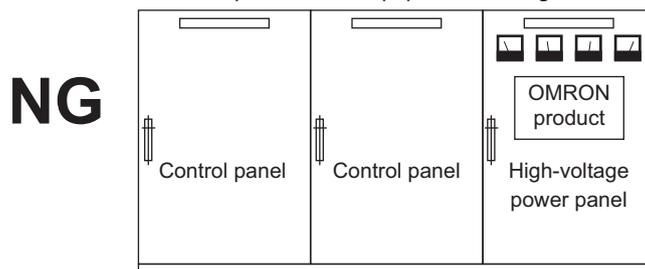
Examples of Equipment Arrangement in Panel with High-voltage Devices

Hardware Arrangement

The coils and contacts in electromagnetic contacts and relays in an external circuit are sources of noise. Do not install them close to the Monitor. Locate them at least 100 mm away from the Monitor.
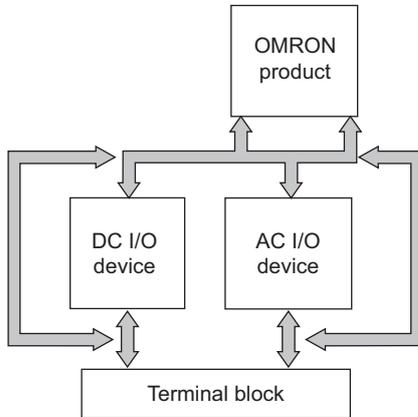

Example of Arrangement in Panel

Wire Layout for the Power Supply

Observe the following points when wiring the power supply system.
- Separate the Monitor power supply from the I/O device power supply and install a noise filter near the Monitor power supply feed section.
- Use an isolating transformer to significantly reduce noise between the Monitor and the ground. Install the isolating transformer between the Monitor power supply and the noise filter, and do not ground the secondary coil of the transformer.
- Keep the wiring between the transformer and the Monitor as short as possible, twist the wires well, and keep the wiring separate from high-voltage and power lines.
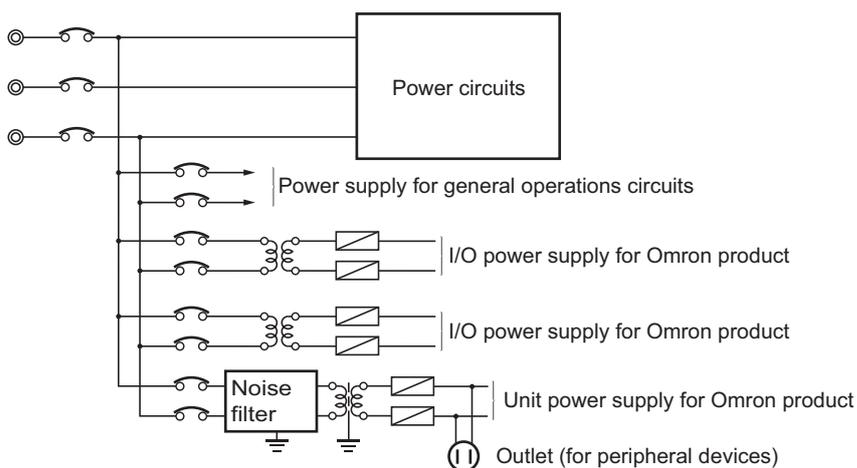
Power Supply System Diagram

External Wiring

Wiring, and noise countermeasures in particular, are based on experience, and it is necessary to closely manage wiring based on experience and information in the manuals.

● Wiring Routes

Each of the following combinations includes different signal types, properties, or levels. They will cause the signal-to-noise ratio to drop due to factors such as electrical induction. As a general rule when wiring, either use separate cables or separate wiring routes for these items. Future mainte-nance operations and changes to the system will also be made easier by carefully organizing the wiring from the start.

- Power lines and signal lines
- Input signals and output signals
- Analog signals and digital signals
- High-level signals and low-level signals
- Communications lines and power lines
- DC signals and AC signals
- High-frequency devices (such as Inverters) and signal lines (communications)

● (Routing of) Wiring

Observe the following points when wiring power supply and signal cables.
- When routing signal cables with differing characteristics through the same duct, always keep them separated.
- As much as possible, avoid routing multiple power supply lines through the same duct. If it can-not be avoided, then construct a partition between them in the duct and ground the partition.
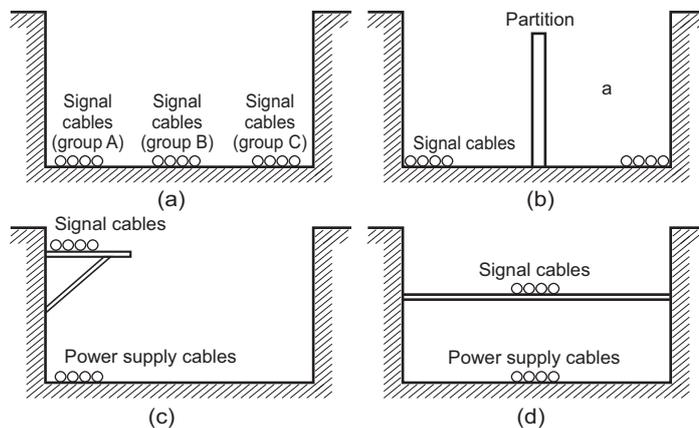
Partitioning Methods for Signal and Power Supply Cables

- To avoid overheating the conduits when using conduits for wiring, do not place wires for a single circuit in separate conduits.
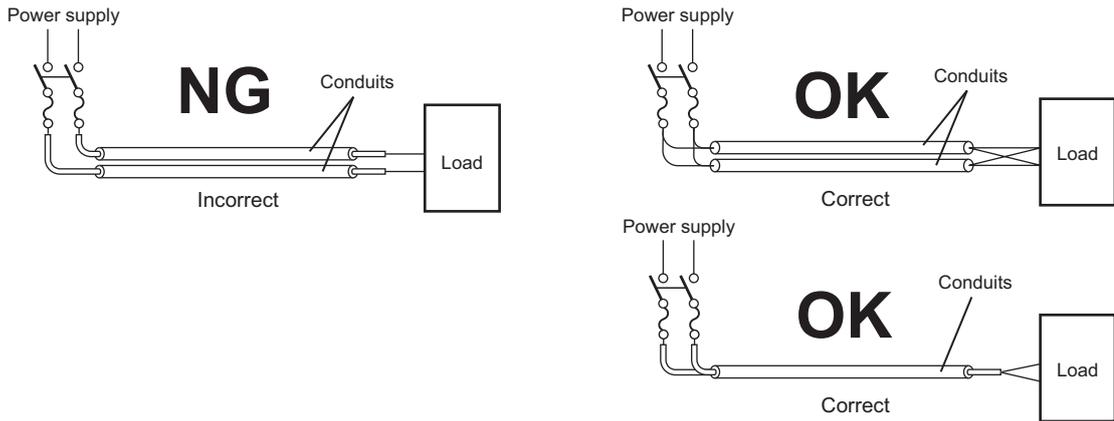
Parallel Wiring (Single Phase)

- Power cables and signal cables adversely affect each other. Do not wire them in parallel.
- Noise induction may occur if the Monitor is installed in a panel that includes high-voltage devices. Wire and install them as far apart as possible.
- Either install the Monitor a minimum of 200 mm away from high-voltage lines or power lines, or place the high-voltage lines or power lines in metal tubing and completely ground the metal tubing to 100 Ω or less.
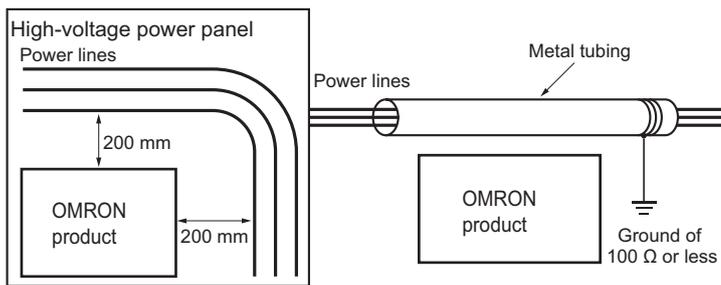
Example: Separating an OMRON product from Power Lines

● **Wiring Ducts**

Whenever possible, route the cables and wires through wiring ducts.

Install the wiring ducts so that it is easy to route the wires from the Monitor directly into the duct.

📓 **Additional Information**

Refer to *Distance for Cooling* on page 5-6 for the minimum required distances.

It is convenient to use wiring ducts that have the same depth as the Monitor.

5-2-8   Panel Mount Procedure

Ensure the panel cut out is ready before beginning the mounting procedure.
Refer to *Prepare the Mounting Surface* on page 5-15 for details.

Tools required: Torque screw driver with hexagon 2 mm bit.

The Industrial Monitor is equipped with 8 (12", 15") or 9 (19") retractable mounting brackets on the back of the Monitor.
These brackets are used to fasten and secure the Monitor to the mounting surface.
Use the following procedure to mount the Monitor to the mounting surface:

1   Ensure all retractable mounting brackets Ⓐ are in the retracted position ❶. If required press

the mounting brackets in the retracted position and hand tighten the allen bolt ❷.
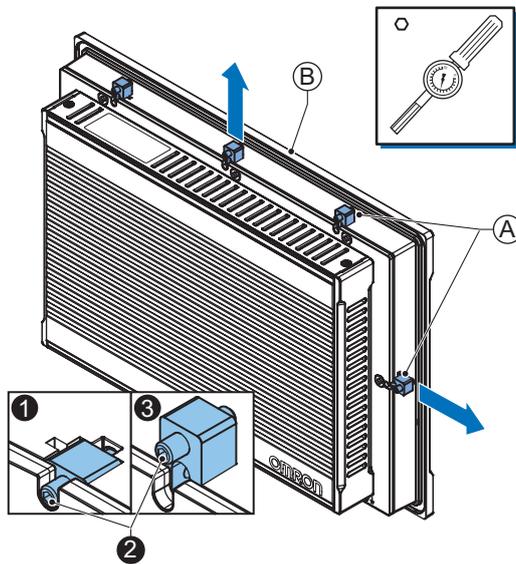
2   Insert the Monitor into the mounting surface cut out so the bezel Ⓑ touches the mounting surface.

3   Loosen the allen bolts ❷ of the mounting brackets.

The mounting brackets are spring loaded and will extend ❸ when loose.

4   Ensure all mounting brackets extend to overlap the mounting surface.

**5**   Tighten all mounting brackets to a torque of 0.6 N·m to maintain water and dust resistance.

Precautions for Safe Use

The mounting panel must be between 1.6 and 6.0 mm thick. Tighten the Mounting Brackets evenly to a torque of 0.6 N·m to maintain water and dust resistance. If the tightening torque exceeds the specified value, or the tightening is not even, deformation of the front panel may occur. Additionally, make sure the panel is not dirty or warped and that it is strong enough to hold the product.

Prepare the Mounting Surface

The Industrial Monitor can be mounted in a landscape or portrait orientation.
The mounting hardware is integrated into the back of the Monitor.

5-2 Mount

Item	Model Specifications		
	12.1 inch [1]	15.4 inch [1]	18.5 inch [1]
Panel cutout dimensions	Width X1 = 314^{-0} $^{+1}$ mm Height Y1 = 216^{-0} $^{+1}$ mm	Width X1 = 383^{-0} $^{+1}$ mm Height Y1 = 259^{-0} $^{+1}$ mm	Width X1 = 463^{-0} $^{+1}$ mm Height Y1 = 285^{-0} $^{+1}$ mm
Panel thickness range [2]	Panel thickness range Z1 = 1.6 to 6.0 mm		
Dimensions	Refer to *4-1-1 Dimensions and Weight* on page 4-2 for X, Y, Z and R dimensions.		

[1]. Refer to *1-4 Product Configuration* on page 1-5 for model details.
[2]. The minimum panel thickness depends on the panel material.
For the most common materials the minimum panel thickness is mentioned in the following steps.

1 Ensure the mounting surface conforms to following requirements.

Standards conformance	Material	Mounting panel requirements
IP65	Steel	Thickness 1.6 to 6.0 mm
	Aluminum	Thickness 2.5 to 6.0 mm

2 Create an opening in the mounting surface.

The table before step 1 gives an overview of the cut out dimensions for the Monitor.
Prepare a rectangular cut out with the dimensions X1 and Y1.

3 Ensure the mounting surface is clean and not warped.

5-2-9 VESA Mount Procedure

Use the following procedure to mount your Monitor using the VESA Mount bracket.

Precautions for Safe Use

- Always use an arm construction with sufficient strength to support the Monitor and the additional forces from making adjustments. Not doing so may lead to system damage or injury.
- Carefully follow the instructions in the manual when mounting or dismounting a unit from the VESA mount bracket, to avoid system damage or injury.
- Check the reliability of the mechanical construction of arm and VESA mount bracket on a regular basis. Doing so will prevent unexpected breakdown of the construction, which might lead to system damage or injury.

Additional Information

- Refer to *5-3-1 Ground* on page 5-20 for grounding details.
- Refer to *2-5-1 VESA Mount Brackets* on page 2-11 for the bracket model.

To mount the Monitor with a VESA bracket:

1 Unpack the product.

Remove the fasteners from the VESA bracket.

Discard the plastic spacer bus, this component is not needed for the VESA mounting.

2 Position the VESA bracket and the optional VESA handle at the desired location with the 4 M4x16 hexagon socket head screws and washers supplied with the VESA bracket.

Position the optional VESA handle between the VESA bracket and the external mounting when applicable. The VESA handle is intended for landscape use.

Use the 4 holes

- at location Ⓐ for 18.5 inch models

- at location Ⓑ for 15.4 inch models

- at location Ⓒ for 12.1 inch models
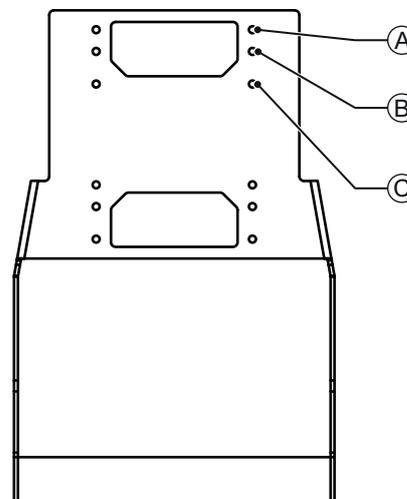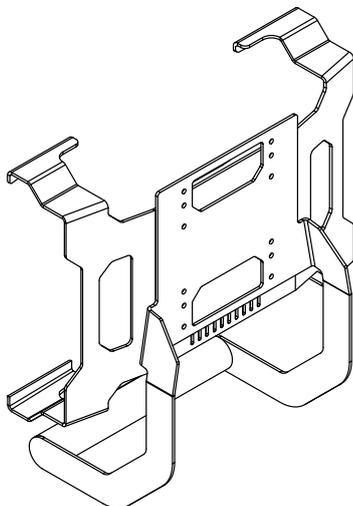
3   Tighten the 4 screws with a torque between 2.5 and 3.0 N m with a hexagon tool.
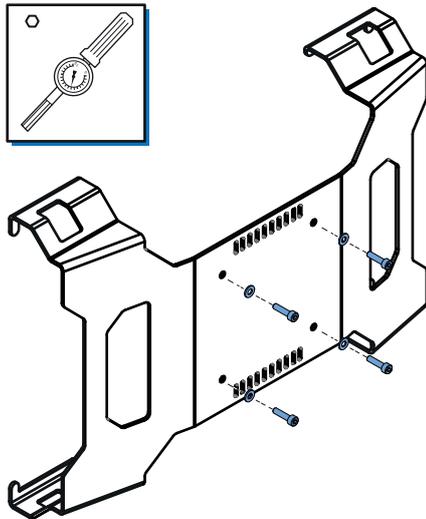
The bracket shape can differ depending on the bracket ID.

4   Mount the ground connection.

Refer to *Ground Connection Details* on page 5-26 for details.

The VESA bracket does not require separate grounding.

5   Loosen the allen bolts ❷ of 4 mounting brackets.

Loosen the bolts of the two mounting brackets on top and bottom that are closest to the cor-

ners. The mounting brackets are spring loaded and will extend ❸ when loose.
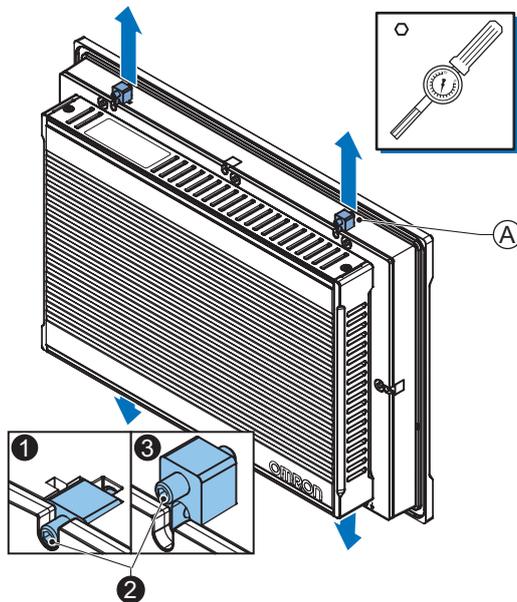
6 Insert the Monitor into the VESA bracket.

Position the Monitor to rest in both bottom arms of the VESA bracket with both extended mounting brackets inside the VESA bracket.

Rotate the top of the Monitor towards the top arms of the VESA bracket. Push down both mounting brackets to get them inside the VESA bracket, they will extend automatically when the Monitor is correctly positioned.
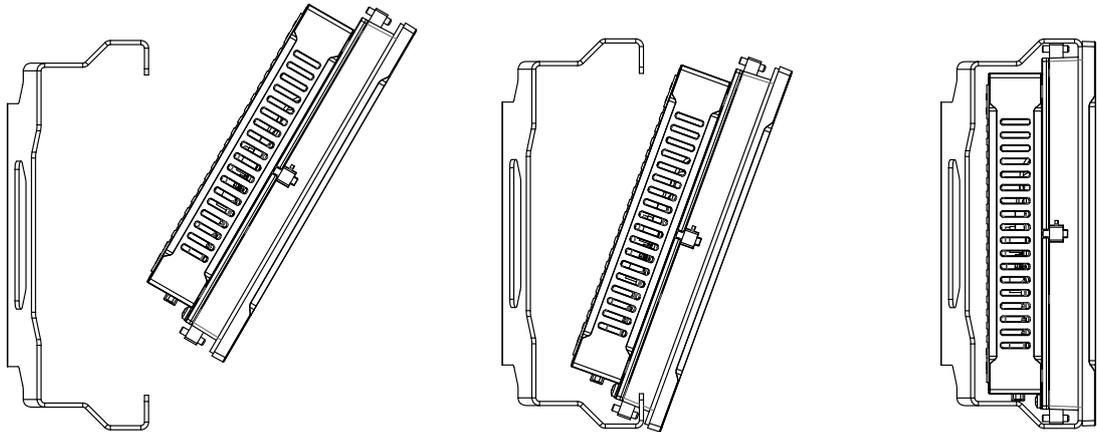
The bracket and the Monitor can differ depending on the product configuration.

7 Tighten all four mounting brackets with a torque of 0.6 N·m and ensure the frontside of each allen bolt overlaps the surface at the inside of the VESA bracket.

8 Connect the connectors and wiring.

Fix the cables Ⓑ against the bracket Ⓒ using cable ties Ⓐ and the 10 fixation slots on the bottom of the bracket.
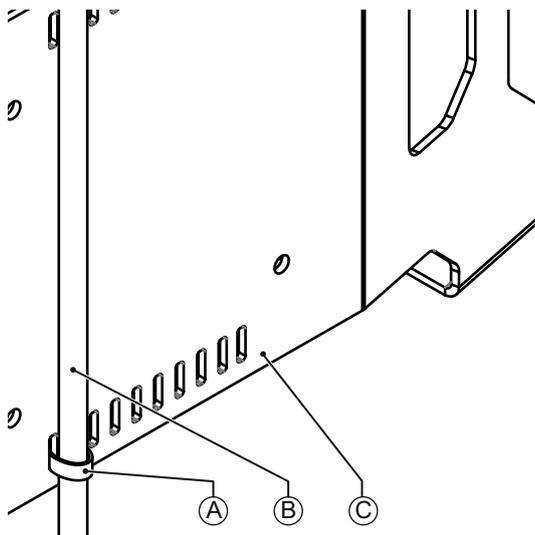
The Monitor is mounted.

5-3   Wire

This section describes how to wire the Industrial Monitor.

5-3-1   Ground

This section describes how to ground the Industrial Monitor.

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

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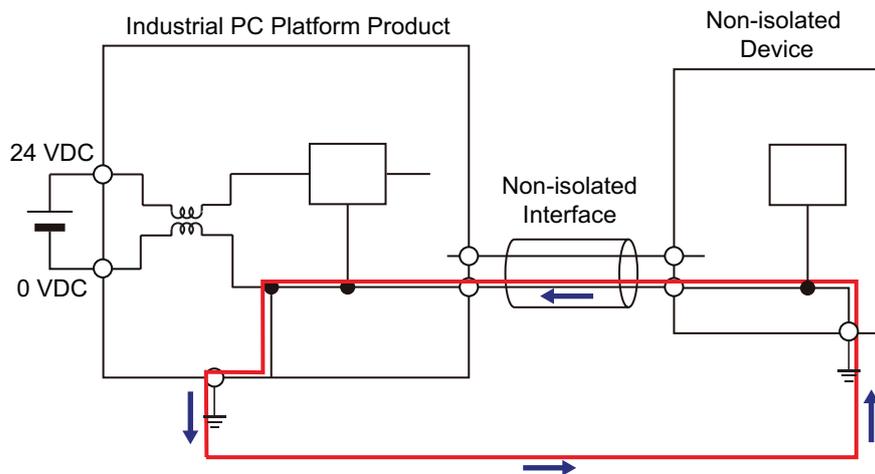
⚠ CAUTION
Never ground the 24 VDC side of the power supply. This may cause a short circuit.

The shielding of the communication connectors are directly bonded to the case and to the ground of the Monitor.

The shield of a communication cable should be terminated to ground at both ends of the cable with a low impedance connection. A large surface area surrounding the entire cable shield ensures a low impedance connection, avoid the use of pigtails.

Potential differences between the two connected communicating devices might cause an equipotential current to flow through the shielding connected at both ends.

To avoid equipotential currents on the cable shields, an additional equipotential bonding conductor must be installed.

Refer to IEC 61918 for guidelines regarding conductor sizing and length to prevent a voltage offset between two communicating devices exceeding 1 V.
Make sure to run the bonding conductor in close proximity to the communication cable.

The Monitor has a protection ground connection because the metal part of the Monitor outside of the enclosure must be part of the protection grounding of that enclosure (for example a cabinet). There are no power supply voltages used in the Monitor which require protection grounding.

Considerations for Earthing Methods

Local potential fluctuations due to lightning or noise occurred by power devices will cause potential fluctuations between ground terminals of devices. This potential fluctuation may result in device malfunction or damage. To prevent this, it is necessary to suppress the occurrence of a difference in electrical potential between ground terminals of devices. You need to consider the earthing methods to achieve this objective.

The recommended earthing methods for each usage condition are given in the following table.

Specification of communications cables	Earthing methods		
	Equipotential bonding system	Star earthing	Daisy chain
The cable shield connected to the connector hood at both ends of the communications cable	Recommended	Not recommended	Not recommended

Additional Information

- In a country or region where the earthing method is regulated, you must comply with the regulations. Refer to the applicable local and national ordinances of the place where you install the system, or other international laws and regulations.
- Ethernet switches are used with the EtherNet/IP. For information on the environmental resistance of the Ethernet switch to use, the grounding between Ethernet switches, or the specifications of cables, ask the Ethernet switch manufacturer.

Each of these earthing methods is given below.

Equipotential Bonding System

Equipotential bonding is an earthing method in which steel frames and building structures, metal ducts and pipes, and metal structures in floors are connected together and make connections to the earth trunk line to achieve a uniform potential everywhere across the entire building. We recommend this earthing method.

The following figure shows an example of an equipotential bonding system.

Connect the main earthing terminal and building structures together with equipotential bonding conductors and embed the mesh ground line in each floor.

Connect the ground line of each control panel to the equipotential bonding system.
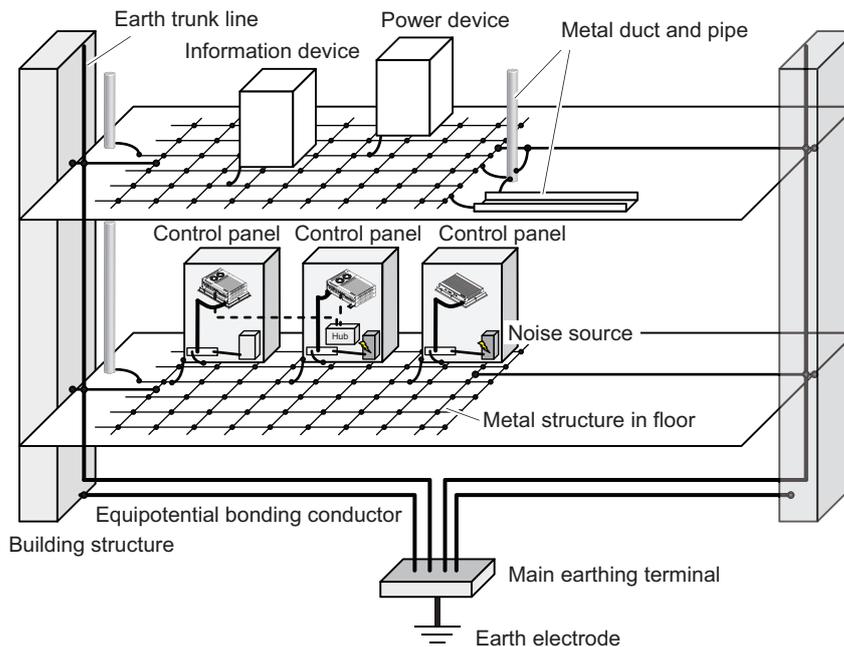
Star Earthing

If the earthing method used for the building is not equipotential bonding or the earthing system is unknown, choose (a) from among the earthing methods given below.

a. Connecting devices and noise sources to separate earth electrodes

This is an earthing method to separately ground an earth electrode of the device that is connected with a communications cable or other devices and an earth electrode of a high-power device that could be a noise source, such as a motor or inverter.

Each earth electrode must be ground to 100 Ω or less.

Connect the ground lines of the device that is connected with a communications cable and other devices as a bundle to a single earth electrode. Be sure that the earth electrode is separated by a minimum of 10 m from any other earth electrode of a device that could be a noise source.
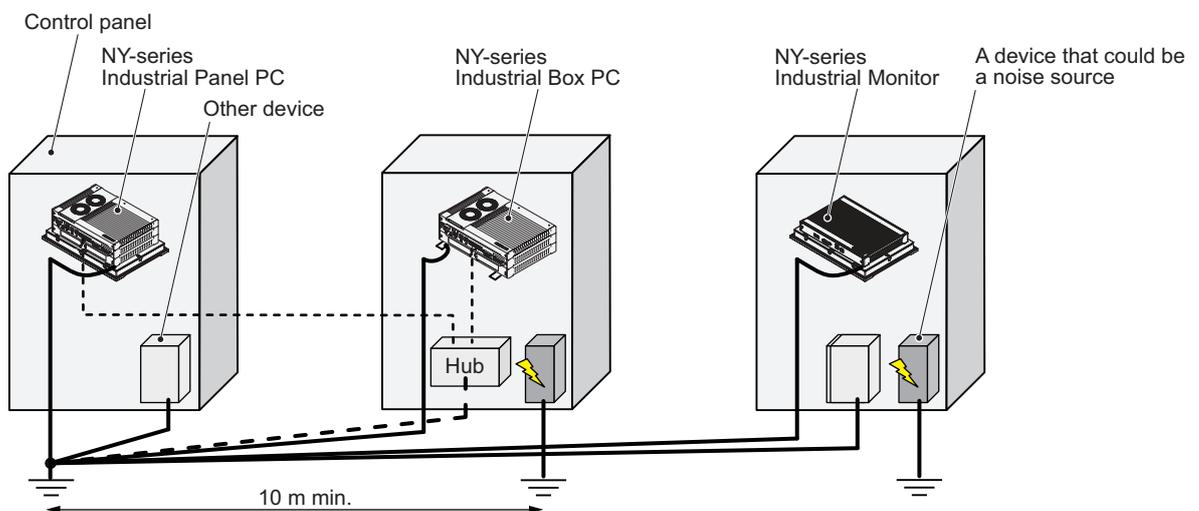
b. Connecting devices and noise sources to a common earth electrode

This is an earthing method to connect the device that is connected with a communications cable, other devices, and a device that could be a noise source, to a common earth electrode.

This earthing method is not recommended because the device that could be a noise source may interfere electromagnetically with other devices.
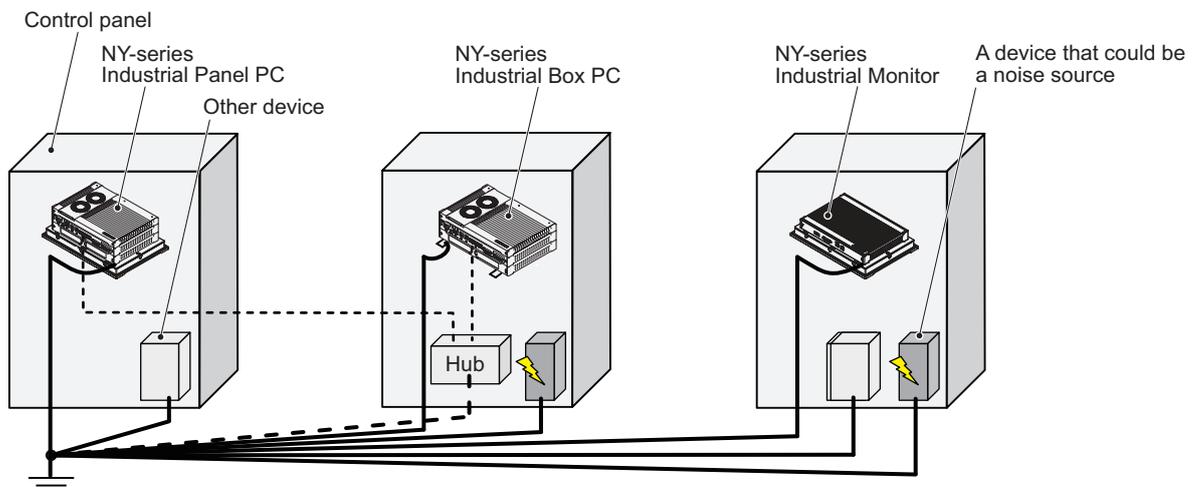
Daisy Chain

This is an earthing method to connect the device that is connected with a communications cable, other devices, and a device that could be a noise source using a daisy chain topology to a common earth electrode.

This earthing method is not recommended because the device that could be a noise source may interfere electromagnetically with other devices.
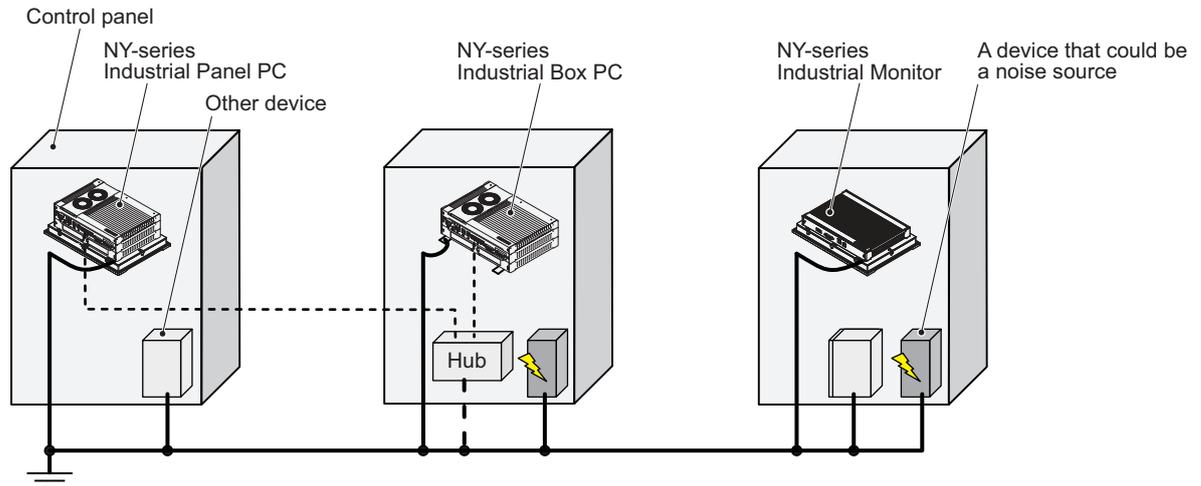
Ground Connection Details

This section provides details about the ground connection.

Use the ground terminal to ground your Monitor.

The washers and screw Ⓐ are pre-mounted at the Monitor.
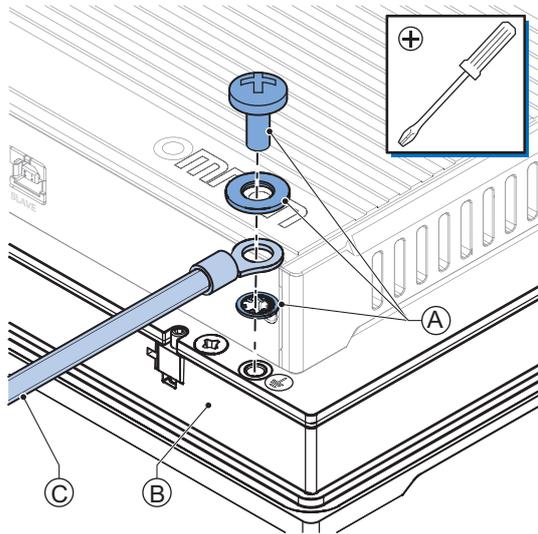
Grounding the Monitor

Remove the pre-mounted washers and screw Ⓐ

and then mount the ground connection wire Ⓒ to

the Monitor Ⓑ using the washers and screw Ⓐ.

Tighten the screw with a torque of 1.2 N·m max.

● **Crimp terminals**

Use crimp terminals with dimensions X = M4 and Y = 8 mm max.

5-3-2 Wire the Power Connector

This section describes how to wire the power connector.

> **Precautions for Safe Use**
>
> • Do not perform a dielectric strength test.
> • Do not let metal particles enter the product when preparing the panel. Do not allow wire clippings, shavings, or other foreign material to enter any product. Otherwise, the product burning, failure, or malfunction may occur. Cover the product or take other suitable countermeasures, especially during wiring work.

> **Additional Information**
>
> • The selected conductor size must match with the used maximum power supply capacity or an overcurrent protection device must be used.
> • The used wires and the overcurrent protection device must meet the applicable national standards. Standards are:
>   • NEC (National Electric Code)
>   • CEC (Canadian Electrical Code)
>   • international applicable standards
> • Refer to *4-1-2 General Electrical Specifications* on page 4-3 for electrical specifications.

Power Connector Wiring Materials

Use the power supply connector that was supplied to connect the power supply to the Industrial Monitor.

• Select power supply conductors with consideration to the voltage drop and heat generation for the cable length at the installation environment.

• Always use twisted wires to minimize the occurrence of electrical disturbance.

• Recommended power supply conductor sizes for the connector are provided in the table.

Wire type	Conductor cross-section
Solid conductor	0.5 to 2.5 mm^2
Flexible conductor	
Flexible conductor, with ferrule and no plastic sleeve	
Flexible conductor, with ferrule and plastic sleeve	
Minimum AWG according to UL/CUL	24
Maximum AWG according to UL/CUL	13

• Power Supply Connector
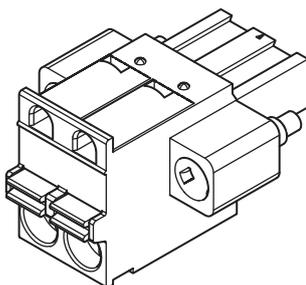
DC Power Supply

The OMRON S8VK-series power supply is recommended for use with the Industrial Monitor.

Additional Information

- Refer to *2-5-5 Power Supply* on page 2-16 for more information.
- Refer to *4-1-2 General Electrical Specifications* on page 4-3 for power consumption details.

Power Connector Wiring Procedure

Use the following procedure to wire the power connector.

**1** Remove the sheath from the power supply wires.

7 mm

Precautions for Safe Use

Observe the following to 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.

2 Insert a screwdriver in the small orange groove above the cable opening ❶. Push the screw-

driver ❶ to unlock the cable entry and then push the wire all the way to the back of the cable

opening ❷.
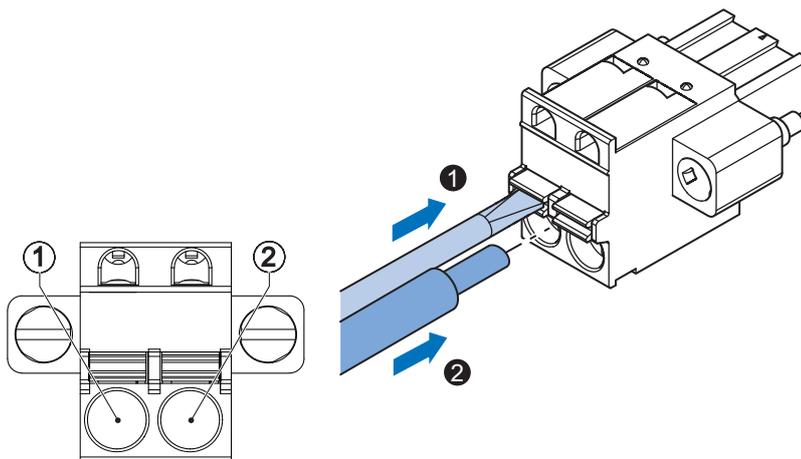
Pin	Description
1	24 VDC
2	0 VDC

3 Remove the screwdriver.

Do not apply stress to the cable after you have connected the wires.

5-4   Connect

This section describes how to connect the Industrial Monitor.

5-4-1   Connector Identification

The Industrial Monitor connections are shown below.
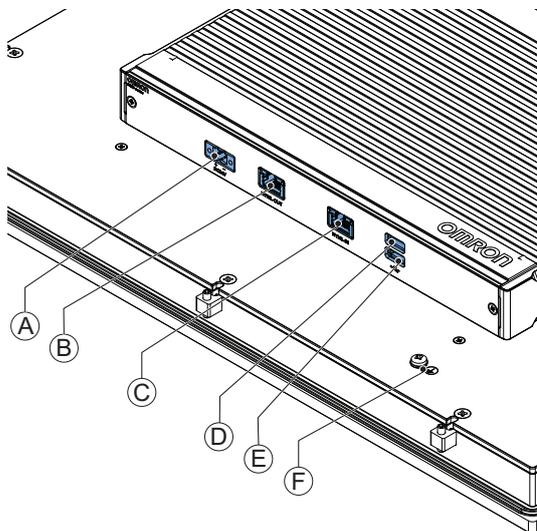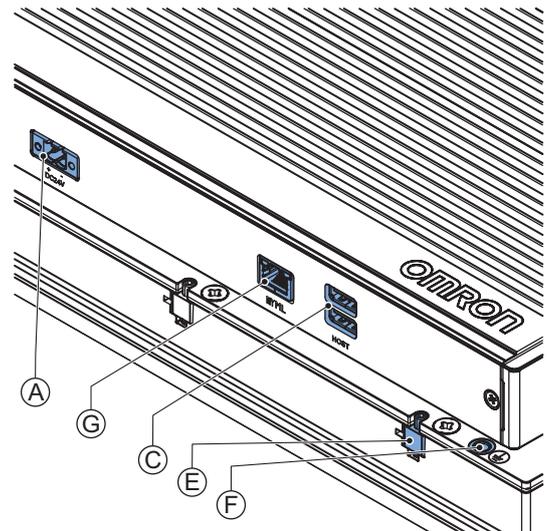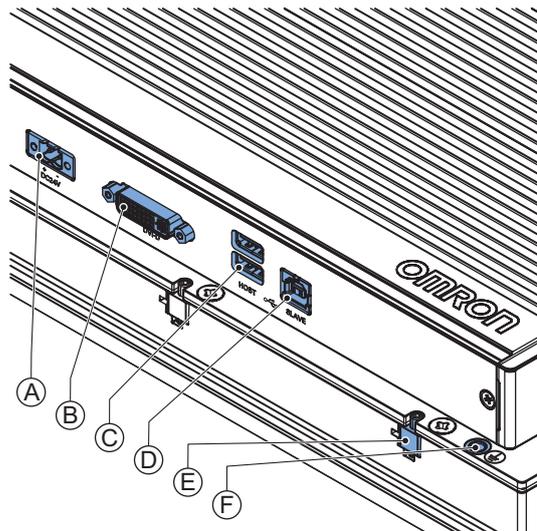
Monitor with DVI-D connector   Monitor with NYML connector

Item	Name	Description
A	Power Supply	Power connector with screw fixing
B	DVI-D	Digital Visual Interface connector
C	USB-A	USB Type-A connectors
D	USB-B	USB Type-B connector
E	- - -	no connector
F	Ground Terminal	The ground terminal
G	NYML	NY Monitor Link connector

5-4-2   Connection Procedure

Use the following procedure to connect the Industrial Monitor.

Ensure the Monitor is securely fastened to the mounting surface.

Ensure the mounted Industrial Monitor can be connected to power and peripheral devices. Remove dust covers where applicable and store them in a safe place.

> **Additional Information**
>
> - Refer to *5-2 Mount* on page 5-4 for mounting details.
> - Refer to the applicable cable details in *2-5 Optional Hardware* on page 2-11 for cable bending radius details.
> - Refer to individual cable specifications for acceptable bending radius and connector clearance.

Use the following procedure to connect the Industrial Monitor:

1 Ensure the ground terminal is connected.

Refer to *5-3-1 Ground* on page 5-20 for ground connection details.

2 Connect the power connector and tighten the screws with a torque of 0.3 N·m max. using a screwdriver.

3 Connect the monitor cable to the host PC.

Choose the DVI connector or the NY Monitor Link connector.

DVI

Connect the DVI-D connector to a host PC and tighten the fastening screws to the host PC.

Connect the USB Type-B port to a host PC to enable touchscreen functionality.

NY Monitor Link

Connect the NYML connector of the host PC to the NYML-IN connector of the monitor.

4 Connect the optional USB devices to the USB Type-A ports as needed.

> **Precautions for Safe Use**
>
> Power ON after the DVI-D cable is connected and the connected between the host PC and the Industrial Monitor.

The Industrial Monitor is connected.

5-5 Initial Power ON

This section describes how to Power ON the Industrial Monitor for the first time.

⚠ **WARNING**

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. ⓘ

5-5-1 Initial Power ON Procedure

Use the following procedure to power ON the Industrial Monitor for the first time.

1 Ensure the following conditions are present before applying power for the first time:
- The Industrial Monitor is securely fastened to the mounting surface.
- The Industrial Monitor is connected to ground.
- All connectors are securely fastened.

2 Supply power to the Industrial Monitor.
The Status LED will blink green while the host PC has no power.

🔊 **Precautions for Safe Use**

Always check the power supply and power connections before applying power. Incorrect power connections can damage the product or cause burning.

3 Supply power to the host PC.
Windows drivers will automatically install upon detection of the Industrial Monitor.
The Logo LED will become lit.
The monitor will display content from the host PC.

4 Verify that the host PC is responding to finger touches on the touchscreen of the Industrial Monitor.

5 Install the Industrial Monitor Utility and Industrial Monitor Brightness Utility if necessary.

6 Open the Industrial Monitor Utility and adjust the backlight, Logo LED, and Status LED brightness to desired levels and then save the settings.
The Industrial Monitor is ON and ready for operation.

📝 **Additional Information**

The Industrial Monitor Utility and Industrial Monitor Brightness Utility are pre-installed on the Industrial Box PC and Industrial Panel PC products.
Refer to *3-2-2 Industrial Monitor Utility* on page 3-5 and
refer to *Industrial Monitor Brightness Utility Overview* on page 3-12 for details about downloading, installation and use of these utilities for other host PCs.

6

Operating Procedures

This section provides the operating procedures for the Industrial Monitor.

6

6-1   Touchscreen Operation

Touchscreen operation is specific for the type of touchscreen installed.

Refer to *6-1-1 Touchscreen Operation - Capacitive Touch* on page 6-2 for details.

⚠ CAUTION

When using a system with multiple touchscreens, multiple users can perform simulta-
neous operations. Make sure that this can not result in unintended actions.

6-1-1   Touchscreen Operation - Capacitive Touch

⚠ WARNING

Water or other liquid present on the touchscreen surface may create false touch be-
havior and unexpected operation. Wipe away liquid on the touchscreen before opera-
tion.

Precautions for Correct Use

The touchscreen supports 5 simultaneous touches. When the number of touches is exceeded,
not all touch points will be detected.

Capacitive touchscreens have a glass screen. These touchscreens detect a touch using conductivity.
The touchscreen supports projected capacitive technology for the touch operation. Only light pressure
is required to activate the touch function.

The touchscreen supports following operations:

- Up to 5 simultaneous touches can be detected.
- Multiple simultaneous touch points can be supported in software for advanced touch functions such
  as zoom, rotation and multiple user interaction.
- The touchscreen can ignore hand-palm touches while still accepting additional correct touches.
- The touchscreen can be operated when wearing gloves. Check correct usage of the gloves before
  using them.
- When water is detected on the touchscreen, the touch functions will be blocked to prevent errone-
  ous touches.

Additional Information

Refer to *7-1-2 Clean the Touchscreen Surface* on page 7-3 for cleaning details.

6-2   Power ON / Power OFF / Standby

There is no power button on the Industrial Monitor.

The Monitor will detect the power supply and the video-signal and then the status of the Monitor will change accordingly.

Precautions for Safe Use

Do not turn ON the power supply to the product when a part of a human body or a conductive object is touching the surface of the touchscreen. Doing so will cause the touchscreen functionality to be disabled. Remove the conductive object and cycle the power supply to restore the touchscreen functionality.

Signals, status and operation are provided in the table below.

Item	Product Status	LED status	
		Logo LED	**Status LED**
No Power	OFF		☐
Power but no video signal	Standby		◪
Power and video signal	ON		☐

6

6-3 Support Software and Product Information

OMRON support software is available for the Industrial Monitor to provide product information.

> **Additional Information**
>
> - Refer to *3-2-3 Industrial Monitor Brightness Utility* on page 3-12 for Brightness Slider details.
> - Refer to *3-2-2 Industrial Monitor Utility* on page 3-5 for Industrial Monitor Utility details.
> - Refer to *3-3-2 Industrial Monitor API* on page 3-20 for Industrial Monitor API details.

The connected Industrial Box PC can use the Industrial PC Tray Utility to display the status of the PC but also of the Industrial Monitor.

> **Additional Information**
>
> - Refer to *3-2-4 Industrial PC Tray Utility* on page 3-15 for Industrial PC Tray Utility details.
> - Refer to *6-4 React to Product Messages* on page 6-5 for status details.

6-4   React to Product Messages

The Industrial Monitor uses the Industrial PC Tray Utility icon Ⓐ in the system tray area Ⓑ of Windows to present Warnings and Errors.

Ⓐ   Ⓑ

ENG 10:02 AM
INTL 3/28/2017
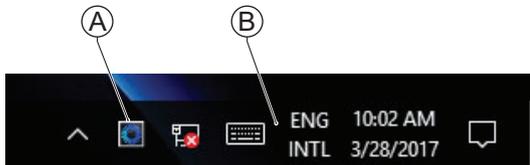
Check the Industrial PC Tray Utility icon for a Warning or Error symbol.
A Warning or Error symbol displayed on the Industrial PC Tray Utility icon indicates a product message.

To react to a product message:

1   Select the Industrial PC Tray Utility icon.
A pop-up window will appear.

2   Read the message available in the pop-up.

3   Refer to *7-2-1 Warning and Error Messages* on page 7-5 for all details on the message.
Perform the actions presented for the message until the Warning or Error is resolved.

The product messages for the Industrial Monitor are resolved.

7

Maintenance

This section provides an overview of all maintenance tasks for the Industrial Monitor.

7

7-1   Preventive Maintenance

Preventive Maintenance covers all actions that prevent downtime.

7-1-1   Preventive Maintenance Schedule

Prevent unscheduled downtime with the following preventive maintenance schedule.

Daily	Reference
Check Industrial Monitor status	Refer to *2-2 LED Indicators* on page 2-4 for Industrial Monitor status.
Clean the display	Refer to *7-1-2 Clean the Touchscreen Surface* on page 7-3 for display cleaning details.

Weekly	Reference
Clean the Industrial Monitor	Refer to *7-1-3 Clean the Monitor* on page 7-3 for Industrial Monitor cleaning details.
Ensure you have the latest software updates	Refer to *7-1-5 Keep Software Updated* on page 7-4 for update details.

Periodically but at least every 6 months	Reference
Check the gasket behind the monitor rim	Refer to *7-1-4 Check the Gasket Seal* on page 7-4 for gasket details.
Check the ambient environment: • Temperature and humidity within specifications • Noise sources not close to the Industrial Monitor	Refer to *4-4 Environmental Specifications* on page 4-14 for environmental specifications.
Check installation: Industrial Monitor mounted securely	Refer to *5-2 Mount* on page 5-4 for installation details.
Check wiring and connections: • Cable connectors fully inserted and locked • No damaged wiring or connectors	Refer to *5-3 Wire* on page 5-20 for wiring details. Refer to *5-4 Connect* on page 5-29 for connection details.
Check the display: • Brightness is sufficient • No touch offset	Refer to *4-3 Display Specifications* on page 4-12 for display specifications. Refer to *3-2-2 Industrial Monitor Utility* on page 3-5 for brightness details. Refer to *Calibrate Touchscreen* on page 7-11 for calibration details.

7-1-2 Clean the Touchscreen Surface

Clean the touchscreen surface of the Monitor when necessary to keep it in the best operating condition.

- Ensure the Monitor is OFF before cleaning.
- Wipe the Monitor daily with a dry, soft cloth. If the touchscreen is very dirty and you try to clean it with a dry cloth, you may scratch the surface. Use a damp cloth first to remove the dirt.
- When a spot cannot be removed with a dry cloth, dampen the cloth with a neutral cleanser, wring out the cloth and wipe the touchscreen surface.
- Remove all residue from gum, vinyl or tape when cleaning.

Precautions for Correct Use

Turn OFF the product or disable the touchscreen for cleaning.

Additional Information

Allowed cleaning materials for the touchscreen surface:
- Isopropyl alcohol
- Detergents between pH 5 and pH 8
  Rinse with demineralized water after cleaning
- Demineralized water

7-1-3 Clean the Monitor

Clean the Monitor periodically in order to keep it in the best operating condition.
Wipe the Monitor with a dry, soft cloth.

Precautions for Safe Use

Do not use corrosive substances to clean the product.
Doing so may result in the failure or malfunction.

7-1-4   Check the Gasket Seal

The gasket prevents liquid from penetrating the mounting surface.
A damaged gasket can lead to Monitor or other hardware failures.

Check the gasket on all 4 sides of the Monitor.
The gasket should be visible as a thin black line that has no dents or damage.
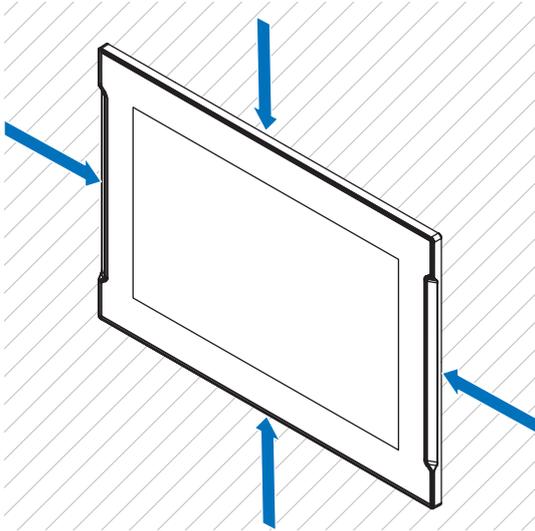
Precautions for Safe Use

As the rubber gasket will deteriorate, shrink, or harden depending on the operating environment, periodical inspection is necessary.

7-1-5   Keep Software Updated

Always keep the software of the host PC at the latest released version to ensure stable operation.
It is specifically important for:
• The operating system.
• The OMRON utilities for the monitor.

Additional Information

Refer to *3-2 Support Software* on page 3-4 for details on the OMRON utilities.

7-1-6   Minimize LCD Image Retention

All LCD displays will display image retention effects when used in less optimal conditions.

To minimize the effects of image retention:
• Prevent static text and static images with high contrast
• Switch OFF the display when not in use
• Use a screen saver

7-2　Corrective Maintenance

Corrective maintenance covers all actions to correct problems that cause downtime.

⚠ WARNING

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

Contact your local OMRON representative if the corrective maintenance actions did not solve the problem.

7-2-1　Warning and Error Messages

There are no WARNING or ERROR messages for the Industrial Monitor, there are only status messages *Connected* and *Disconnected*.
The Industrial Monitor Utility on the host PC can display these status messages in the Industrial PC Tray Utility.

The following message channels are available.

LED Indicators

The Status LED indicator provides information on warnings and errors.

> **Additional Information**
>
> Refer to *2-2-2 Status LED Indicator* on page 2-5 for Status details.

Industrial PC Tray Utility

The Industrial PC Tray Utility provides information on warnings and errors.

The Industrial PC Tray Utility can provide:
• Status information of a connected Industrial Monitor.
• Information from a custom application that uses the Industrial Monitor API.

> **Additional Information**
>
> • Refer to *3-2-4 Industrial PC Tray Utility* on page 3-15 for Industrial PC Tray Utility details.
> • Refer to *3-3-2 Industrial Monitor API* on page 3-20 for Industrial Monitor API details.

7-2-2   Windows Event Viewer

The Windows Event Viewer displays logged events.
These logged events can support you in corrective maintenance.

1 Select the Windows **Start** Button.

2 In the search field, input *Event*.

3 Select **View event logs**.
The Event Viewer opens.
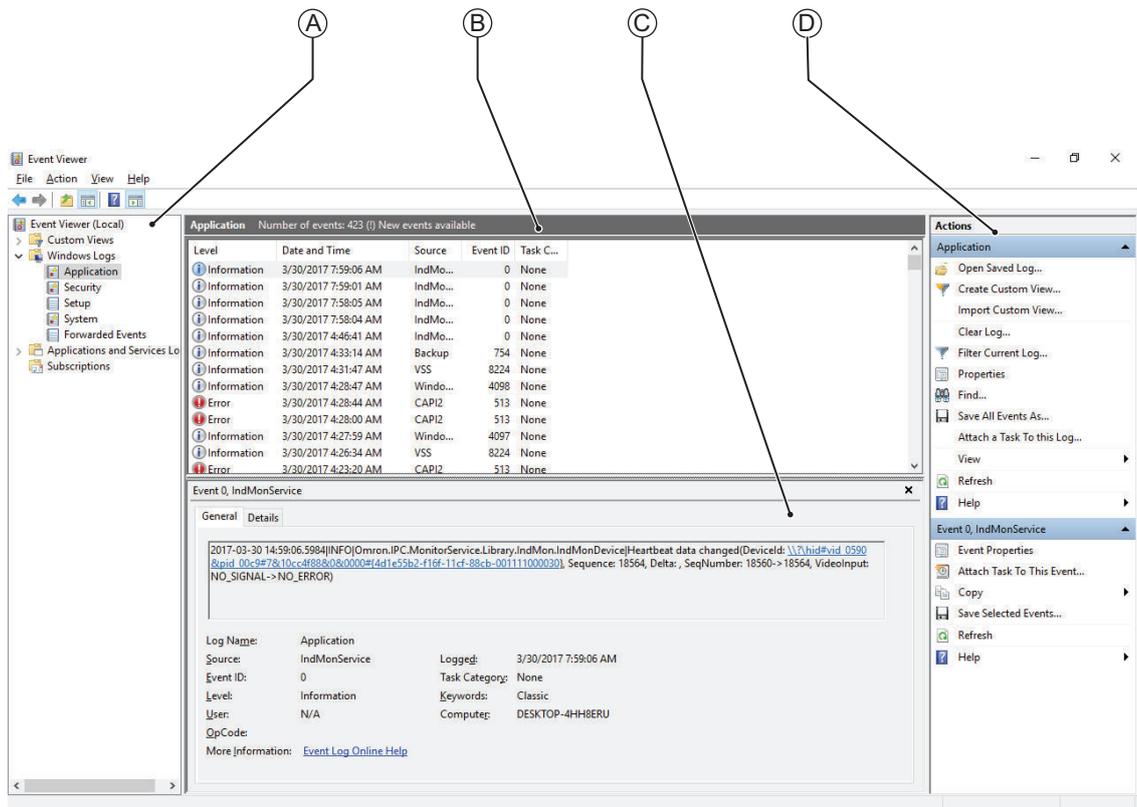
Item	
A	Selection tree
B	Event list
C	Event details
D	Action list

4 In the Selection tree expand **Windows Logs** and select **Application**.
The Event list will display the Events.

5 Select the heading **Source** to sort the event messages per application.

6 Scroll to the event you want to investigate.
Refer to the section 'Logging' of a specific utility for more details.

7 Select the event to display details in the Event details window or to take action in the Action overview window.

Filter Events and Event Details

This procedure explains how to filter events in the Windows event log.
To filter the events:

1 Open the Windows Event Viewer.
Refer to *7-2-2 Windows Event Viewer* on page 7-6 for details.

2 In the *Actions list* select *Filter Current Log*.
The Filter Current Log page opens.

3 Input the desired filters and select **OK**.

4 The filtered events will appear in Event list of the Event Viewer.
Select an event in the Event list to display Event details in the Event details part of the Event Viewer.
The filtered events are available including the details per event.

7-2-3 Correct Display Functionality when Nothing is Displayed

When it seems the display is not functional check the power status, the connections and the Status LED.

Check the Status LED.
- If the Status LED is OFF
  - Check if the power supply is present.
    Refer to *4-1-2 General Electrical Specifications* on page 4-3 for power supply specifications.
  - Check if the brightness setting is not too low.
    Refer to *3-2-2 Industrial Monitor Utility* on page 3-5 for brightness details.
- If the Status LED is blinking
  - Check if the host PC is ON and not in standby mode.
  - Check if the DVI cable or NY Monitor Link cable is connected.NY Monitor Link cables are connected to the host PC or to the NYML-OUT connector of the previous daisy chain monitor.
- If the Status LED is ON
  - Check if the power supply voltage is inside specifications.
    Refer to *4-1-2 General Electrical Specifications* on page 4-3 for power supply specifications.
  - Check if the ambient temperature is inside specifications.
    Refer to *4-4 Environmental Specifications* on page 4-14 for temperature specifications.

7-2-4   Correct Touchscreen Functionality

The touchscreen functionality can have several unwanted situations.

In this section more details and sollutions for touchscreen problems.

No Touch Functionality

When the touch functionality is not functional:
- Check for water present on the display surface.
  Wipe the display surface with a dry lint free cloth.
- When using gloves, ensure to use gloves that are functional with this touchscreen.
- For an Industrial Monitor with a DVI-D connector: Check the connection between the USB Type-B cable and the host PC.
  This cable transfers the touch functionality signals between host PC and Monitor.

Calibrate Touchscreen

When the resolution of the touchscreen monitor is changed the touch functionality might not scale accordingly. The result is that touching the touchscreen monitor will display the touch at incorrect locations.

Use the following procedure to calibrate the touchscreen functionality of your Industrial Monitor.

1 Select the Windows **Start** Button.

2 In the search field, input *Tablet*.

3 Select **Tablet PC Settings**.
The Tablet PC Settings window opens.
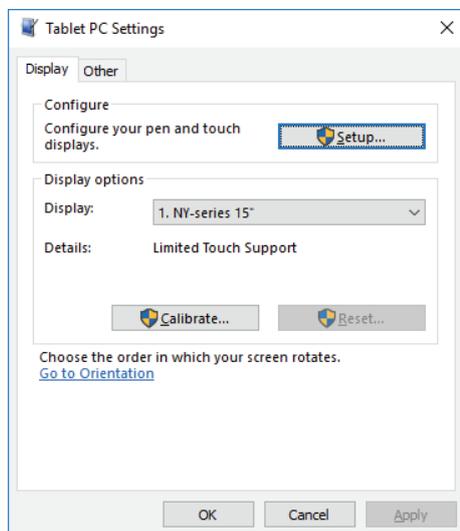
4 Select the **Calibrate** Button.
A window with lines and a touch indicator will appear.

5 Touch the indicator on all locations where it appears.
When finished a window appears with the question *Do you want to save the calibration data?*

6 Select the **Yes** Button.

7 Check the touchscreen functionality.

The touchscreen functionality is calibrated.

If the Touchscreen can not be corrected then restore the factory settings.
Select the **Reset** button in the **Tablet PC Settings** window to restore the factory settings.

Correct Touchscreen Functionality with Multiple Monitors

When more than one monitor is connected then Windows can not determine which monitor has the touch functionality. The result is that touching the touchscreen monitor can result in actions on a different connected monitor.

Check if the USB cable is connected to the host PC when using the DVI-D connector.

Use the following procedure to correct the touchscreen functionality on your Industrial Monitors.

1 Select the Windows **Start** Button.

2 In the search field, input *Tablet*.

3 Select **Tablet PC Settings**.
The Tablet PC Settings window opens.
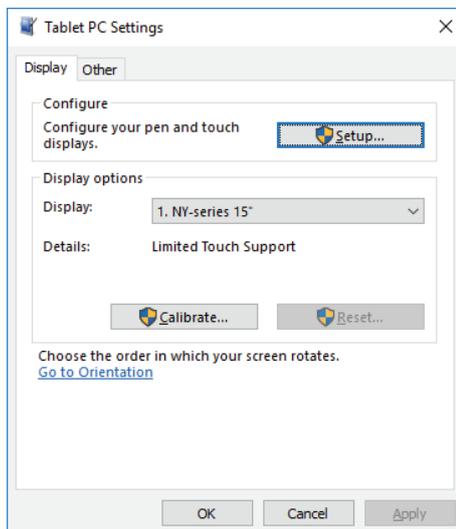
4 Select the **Setup** Button.
An empty screen appears with only the message *Touch this screen to identify it as the touchscreen. If this is not the Table PC screen, press Enter to move to the next screen. To close the tool, press Esc.*
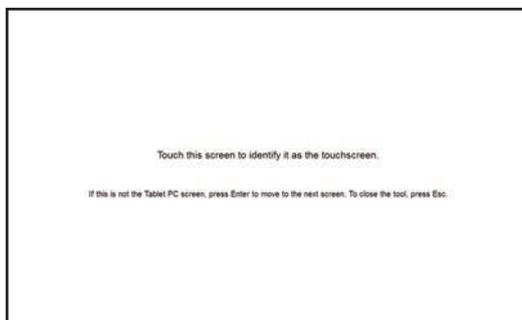
5 Select **Enter** to move the message to the connected monitor with touch functionality.

6 Touch the screen to indicate it is the correct monitor with touch functionality.

The message appears *Press Enter to proceed to the next step to complete your configuration.*

7 Select the **Enter** key.

8 Check the touchscreen functionality.
Calibrate the touch functionality if the touch indicator does not appear at the location that you touch.
Refer to *Calibrate Touchscreen* on page 7-11 for calibration details.

The touchscreen functionality is available on the correct monitor.

A

Appendices

A

A-1 DVI-D Connector Pin Details

Pin details of the DVI-D connector.
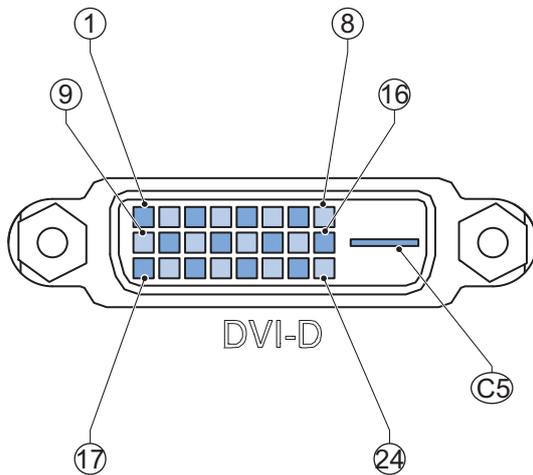
The pin layout represents the DVI connector on the Industrial Monitor.

Pin numbers increase from left to right for every row.

Pin	Signal Name	Function
1	TMDS data 2−	Digital red− (link 1)
2	TMDS data 2+	Digital red+ (link 1)
3	0 VDC	TMDS data 2/4 shield
4	Not connected	---
5	Not connected	---
6	DDC clock	DDC clock
7	DDC data	DDC data
8	Not connected	---
9	TMDS data 1−	Digital green− (link 1)
10	TMDS data 1+	Digital green+ (link 1)
11	0 VDC	TMDS data 1/3 shield
12	Not connected	---
13	Not connected	---
14	+5 V	Power for monitor DDC interface
15	0 V	Return for pin 14
16	HPD	Hot plug detect
17	TMDS data 0−	Digital blue− (link 1) and digital sync
18	TMDS data 0+	Digital blue+ (link 1) and digital sync
19	0 VDC	TMDS data 0/5 shield
20	Not connected	---
21	Not connected	---
22	0 VDC	TMDS clock shield
23	TMDS clock+	Digital clock+
24	TMDS clock−	Digital clock−
C5	Not connected	---

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