

# Easy Harmony ET6

## User Manual

EIO0000004266.04

05/2026

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The information provided in this document contains general descriptions, technical characteristics and/or recommendations related to products/solutions.

This document is not intended as a substitute for a detailed study or operational and site-specific development or schematic plan. It is not to be used for determining suitability or reliability of the products/solutions for specific user applications. It is the duty of any such user to perform or have any professional expert of its choice (integrator, specifier or the like) perform the appropriate and comprehensive risk analysis, evaluation and testing of the products/solutions with respect to the relevant specific application or use thereof.

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# Safety Information

## Important Information

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

### **DANGER**

**DANGER** indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

### **WARNING**

**WARNING** indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

### **CAUTION**

**CAUTION** indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

### **NOTICE**

**NOTICE** is used to address practices not related to physical injury.

## Please Note

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

# About the Document

## Document Scope

This document describes the specifications, installation, operation, and maintenance of the Easy Harmony ET6, which is an HMI (Human Machine Interface) device used in industrial or factory automation systems.

This document is intended for users who design systems, or install and maintain components.

## Validity Note

This document is valid for the Easy Harmony ET6.

The characteristics of the products described in this document are intended to match the characteristics that are available on [www.se.com](http://www.se.com). As part of our corporate strategy for constant improvement, we may revise the content over time to enhance clarity and accuracy. If you see a difference between the characteristics in this document and the characteristics on [www.se.com](http://www.se.com), consider [www.se.com](http://www.se.com) to contain the latest information.

## Product Related Information

This product has been designed, developed and manufactured for use in industrial or factory automation systems.

- The product is not appropriate for use with aircraft control devices, medical life-support equipment, central trunk data transmission (communication) devices, or nuclear power control devices, due to inherent requirements for extremely high levels of safety and reliability.
- When using the product with transportation vehicles (trains, cars, and ships), disaster and crime prevention devices, safety equipment, or medical devices unrelated to life-support systems, use redundant and/or failsafe system designs to ensure reliability and safety.

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

### **DANGER**

#### **HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Unplug the power cable from both this product and the power supply prior to installing or removing the product.
- Always use a properly rated voltage sensing device to confirm power is off where and when indicated.
- Replace and secure all covers or elements of the system before applying power to this product.
- Use only the specified voltage when operating this product. This product is designed to use 24 Vdc. Always check whether your device is DC powered before applying power.

**Failure to follow these instructions will result in death or serious injury.**

**⚠ DANGER****EXPLOSION HAZARD**

- Do not use this product in hazardous environments.
- Do not connect or disconnect this product unless power has been switched off or the area is known to be non-hazardous.
- Do not attempt to install, operate, modify, maintain, service, or otherwise alter this product except as permitted in this manual.
- Confirm that the USB cable has been attached with the USB cable clamp before using the USB interface.
- Use the USB (micro-B) interface for temporary connection only during maintenance and setup of the device.

**Failure to follow these instructions will result in death or serious injury.**

Critical alarm indicators and system functions require independent and redundant protection hardware and/or mechanical interlocks.

Please design a safety circuit external to this product so that the entire system operates safely even if the external power supply or this product fails or malfunctions.

- Interlocks and other circuits designed to interrupt or prevent equipment operation (such as emergency stops, protective circuits, and opposing action circuits) and circuits that prevent machine damage, such as positioning mechanisms, should be constructed external to the product.
- The product stops operation when it detects an abnormality such as a watchdog timer error. If an error occurs in the input/output control area, which cannot be monitored, it may lead to unexpected input/output behavior. Therefore, it is important to configure an external fail-safe circuit or mechanism.
- Problems with the relay or transistor in the output unit may cause the output to remain either in the ON or OFF state. Install an external monitoring circuit for output signals that may cause a serious accident.

Design the circuit so that power is supplied to the external device or load control power supply connected to this product before it starts.

When you cycle power, wait at least 10 seconds after it has been turned off. If this product is restarted too quickly, it may not operate correctly.

Do not create any switches on the touch panel that may cause personal injury, property damage, or compromise the safety of the equipment. Design the system so that controls for important operations are managed by devices other than this product, or by independent hardware switches.

In the event the screen cannot be properly read, for example, if the backlight is not functioning, it may be difficult or impossible to identify a function. Functions that may present a hazard if not immediately executed, such as a fuel shut-off, must be provided independently of this product.

## ⚠ WARNING

### LOSS OF CONTROL

- The designer of any control scheme must consider the potential failure modes of control paths and, for certain critical control functions, provide a means to achieve a safe state during and after a path failure. Examples of critical control functions are emergency stop and overtravel stop, power outage and restart.
- Separate or redundant control paths must be provided for critical control functions.
- System control paths may include communication links. Consideration must be given to the implications of unanticipated transmission delays or failures of the link.
- Observe all accident prevention regulations and local safety guidelines.
- Each implementation of this product must be individually and thoroughly tested for proper operation before being placed into service.
- The machine control system design must take into account the possibility of the backlight no longer functioning and the operator being unable to control the machine, or making errors in the control of the machine.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

For additional information, refer to NEMA ICS 1.1 (latest edition), "Safety Guidelines for the Application, Installation, and Maintenance of Solid State Control" and to NEMA ICS 7.1 (latest edition), "Safety Standards for Construction and Guide for Selection, Installation and Operation of Adjustable-Speed Drive Systems" or their equivalent governing your particular location.

## ⚠ WARNING

### UNINTENDED EQUIPMENT OPERATION

- The application of this product requires expertise in the design and programming of control systems. Only persons with such expertise should be allowed to program, install, alter, and apply this product.
- Do not use this product as the only means of control for critical system functions such as motor start/stop or power control.
- Do not use this equipment as the only notification device for critical alarms, such as device overheating or overcurrent.
- Use only the software provided with this product. If you use other software, please confirm the operation and safety before use.
- Follow all applicable safety standard, local regulations and directives.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

The following characteristics are specific to the LCD panel and are considered normal behavior:

- LCD screen may show unevenness in the brightness of certain images or may appear different when seen from outside the specified viewing angle. Extended shadows, or crosstalk may also appear on the sides of screen images.
- LCD screen pixels may contain black and white colored spots and color display may seem to have changed.
- When experiencing vibrations within a certain frequency range and vibration acceleration is above what is acceptable, the LCD screen may partially turn white. Once the vibration condition ends, the whitening of the screen is resolved.
- When the same image is displayed on the screen for a long period, an afterimage may appear when the image is changed.

- The panel brightness may decrease when used for a long time in an environment continuously filled with inert gas. To prevent deterioration of panel brightness, regularly ventilate the panel. For more information, please contact customer support.  
[www.se.com/support](http://www.se.com/support)

## ⚠ WARNING

### SERIOUS EYE AND SKIN INJURY

The liquid in the LCD panel contains an irritant:

- Avoid direct skin contact with the liquid.
- Wear gloves when you handle a broken or leaking unit.
- Do not use sharp objects or tools in the vicinity of the LCD panel.
- Handle the LCD panel carefully to prevent puncture, bursting, or cracking of the panel material.
- If the panel is damaged and any liquid comes in contact with your skin, immediately rinse the area with running water for at least 15 minutes. If the liquid gets in your eyes, immediately rinse your eyes with running water for at least 15 minutes and consult a doctor.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

## NOTICE

### REDUCTION OF SERVICE LIFE OF PANEL

Change the screen image periodically and try not to display the same image for a long period of time.

**Failure to follow these instructions can result in equipment damage.**

## General Cybersecurity Information

In recent years, the growing number of networked machines and production plants has seen a corresponding increase in the potential for cyber threats, such as unauthorized access, data breaches, and operational disruptions. You must, therefore, consider all possible cybersecurity measures to help protect assets and systems against such threats.

To help keep your Schneider Electric products secure and protected, it is in your best interest to implement the cybersecurity best practices as described in the [Cybersecurity Best Practices](#) document.

Schneider Electric provides additional information and assistance:

- Subscribe to the Schneider Electric [security newsletter](#).
- Visit the [Cybersecurity Support Portal](#) web page to:
  - Find Security Notifications.
  - Report vulnerabilities and incidents.
- Visit the [Schneider Electric Cybersecurity and Data Protection Posture](#) web page to:
  - Access the cybersecurity posture.
  - Learn more about cybersecurity in the cybersecurity academy.
  - Explore the cybersecurity services from Schneider Electric.

## Product Related Cybersecurity Information

Refer to Cybersecurity, page 11.

## Environmental Data

For product compliance and environmental information, refer to the Schneider Electric Environmental Data Program.

## Available Languages of the Document

The document is available in these languages:

- English (EIO0000004266)
- French (EIO0000004432)
- Chinese (EIO0000004293)

## Related Documents

| Title of documentation       | Reference number                                    |
|------------------------------|-----------------------------------------------------|
| Cybersecurity Best Practices | Refer to General Cybersecurity Information, page 9. |
| HMI/IPC Cybersecurity Guide  | EIO0000004948 (ENG)                                 |

You can download the manuals related to this product, such as the software manual, from the Schneider Electric download center ([www.se.com/ww/en/download](http://www.se.com/ww/en/download)).

## Information on Non-Inclusive or Insensitive Terminology

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# Cybersecurity

## Cybersecurity Guideline

Use this product inside a secure industrial automation and control system. Total protection of components (equipment/devices), systems, organizations, and networks from cyber attack threats requires multi-layered cyber risk mitigation measures, early detection of incidents, and appropriate response and recovery plans when incidents occur. For more information about cybersecurity, refer to the Harmony HMI/iPC Cybersecurity Guide.

<https://www.se.com/ww/en/download/document/EIO0000004948/>

### **⚠ WARNING**

#### **POTENTIAL COMPROMISE OF SYSTEM AVAILABILITY, INTEGRITY, AND CONFIDENTIALITY**

- Change default passwords at first use to help prevent unauthorized access to device settings, controls and information.
- Disable unused ports/services and default accounts, where possible, to minimize pathways for malicious attacks.
- Place networked devices behind multiple layers of cyber defenses (such as firewalls, network segmentation, and network intrusion detection and protection).
- Apply the latest updates and hotfixes to your Operating System and software.
- Use cybersecurity best practices (for example: least privilege, separation of duties) to help prevent unauthorized exposure, loss, modification of data and logs, interruption of services, or unintended operation.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

# Overview

## What's in This Chapter

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## Part Numbers

### Part Number List

| Series           | Part name | Part number |
|------------------|-----------|-------------|
| Easy Harmony ET6 | HMIET6400 | HMIET6400   |
|                  | HMIET6401 | HMIET6401   |
|                  | HMIET6500 | HMIET6500   |
|                  | HMIET6501 | HMIET6501   |
|                  | HMIET6600 | HMIET6600   |
|                  | HMIET6700 | HMIET6700   |

**NOTE:** All part numbers may be followed by any letter or number.

## Part Number Configuration

The following describes the configuration of model numbers.

| Digit position |   |         |   |   |          |                                                         |                                            |   |
|----------------|---|---------|---|---|----------|---------------------------------------------------------|--------------------------------------------|---|
| 1              | 2 | 3       | 4 | 5 | 6        | 7                                                       | 8                                          | 9 |
| HMI            |   | (model) |   |   | (series) | (size)                                                  | (type)                                     |   |
|                |   | ET      |   |   | 6        | 4: 7" Wide<br>5: 10" Wide<br>6: 12" Wide<br>7: 15" Wide | 00: Standard<br>01: SIO (no Ethernet port) |   |

## Package Contents

Verify all items listed here are present in your package.

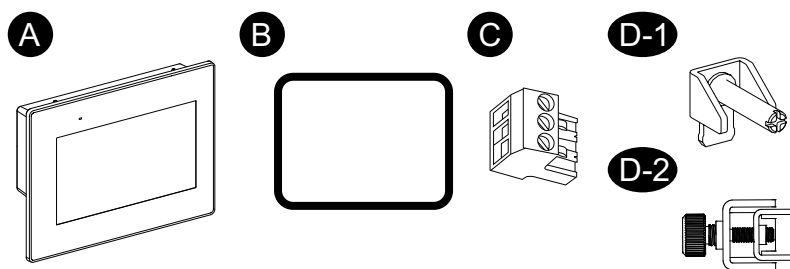
If you find anything damaged or missing, please contact customer support immediately.

### WARNING

#### UNINTENDED EQUIPMENT OPERATION

Do not use damaged products or accessories.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**



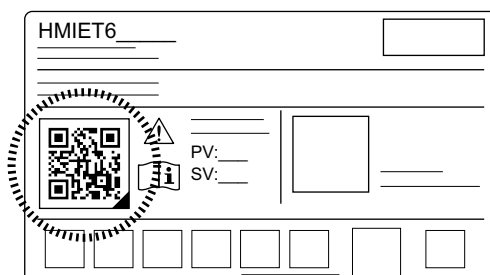
- A. Easy Harmony ET6 x 1
- B. Installation gasket (attached to this product) x 1
- C. DC power connector x 1
- D. (D-1)
  - Installation fasteners x 4 (for HMIET6400/HMIET6401)
  - Installation fasteners x 6 (for HMIET6500/HMIET6501 and HMIET6600)
- (D-2)
  - Installation fasteners x 6 (for HMIET6700)
- E. Instruction sheet x 1

## Revision and QR Code

You can identify the product version (PV), revision level (RL), and the software version (SV) from the product label.

**NOTE:** Depending on the model, the product label may not be marked RL.

You can also check the contents of this manual by using the QR code on the product label. Confirm the location of the QR code below and refer to the manual.



## Certifications and Standards

The certifications and standards listed below may include those that are not yet acquired. Please check the product marking and the following URL for the latest acquisition status.

[www.se.com/ww/en/download](http://www.se.com/ww/en/download)

## Agency Certifications

Underwriters Laboratories LLC., UL 61010-2-201 and CSA C22.2 N°61010-2-201, for Industrial Control Equipment used in Ordinary Locations

## Compliance Standards

Europe:

CE/UKCA

- Directive 2014/35/EU (Low Voltage)
- Directive 2014/30/EU (EMC)

Korea:

- KC

## Hazardous Substances

This product is designed to be compliant with the following environmental regulations, even if the product may not fall directly in the scope of the regulation:

- RoHS, Directive 2011/65/EU and 2015/863/EU
- RoHS China, Standard GB/T 26572
- REACH regulation EC 1907/2006

## End of Life (WEEE)

The product contains electronic boards. It must be disposed of in specific treatment channels. The product contains cells and/or storage batteries which must be collected and processed separately when they have run out and at the end of product life (Directive 2012/19/EU).

Refer to [Maintenance](#), page 48 when extracting cells and batteries from the product. These batteries do not contain a weight percentage of heavy metals over the threshold notified by European Battery Regulation 2023/1542.

## KC Markings

| 기종별                    | 사용자안내문                                                                                    |
|------------------------|-------------------------------------------------------------------------------------------|
| A급 기기<br>(업무용 방송통신기자재) | 이 기기는 업무용(A급) 전자파적합기기로서<br>판매자 또는 사용자는 이 점을 주의하시기<br>바라며, 가정외의 지역에서 사용하는 것을<br>목적 으로 합니다. |

# Device Connectivity

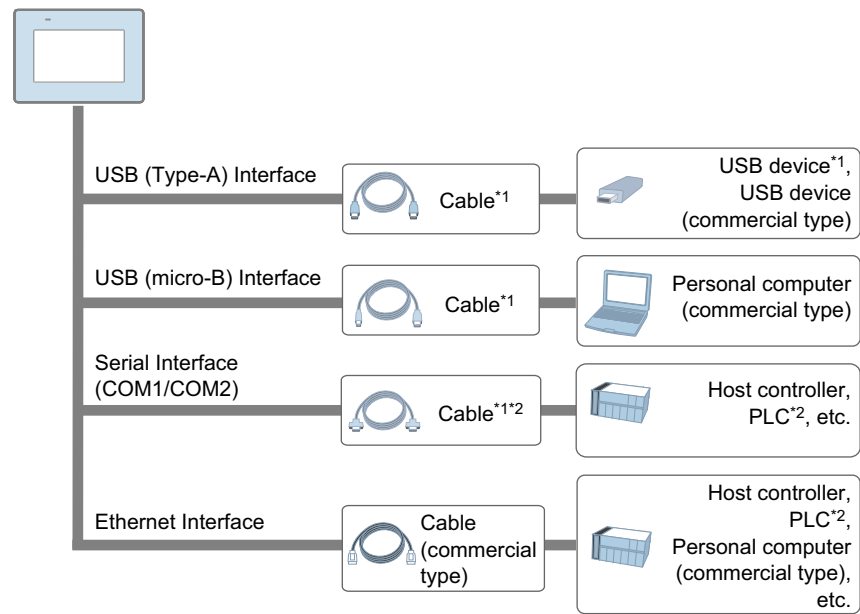
## What's in This Chapter

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## System Design

This section describes the system configuration with this product and peripheral equipment.

**NOTE:** HMIET6401 and HMIET6501 have neither Ethernet nor USB (Type-A) interfaces.



\*1 Refer to Accessories, page 16.

\*2 For information on how to connect controllers and other types of equipment, refer to the corresponding device driver manual of your screen editing software.

To use this product, transferring project data from the screen editing software is required. For details about transfer, refer to the software manual.

When transferring using the USB (micro-B) interface, connect cables in the following order:

1. Attach the transfer cable to the USB (micro-B) interface of this product.
2. Attach the power cable to this product, then connect the power cable to an external power source.
3. Connect the transfer cable to the computer.

**⚠ WARNING**

**UNINTENDED EQUIPMENT OPERATION**

- Do not connect the product to the computer with the USB (micro-B) cable unless the product is powered by the power cable.
- Remove the USB (micro-B) cable before communicating with the host controller and other types of equipment.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

## Accessories

This section introduces optional items that are sold separately.

Products may change or be discontinued without notice. Please check our website for the latest information.

[www.se.com/docs](http://www.se.com/docs)

For host controllers and connection cables, refer to the corresponding device driver manual of your screen editing software.

| Product name                              | Product number | Description                                                                                        |
|-------------------------------------------|----------------|----------------------------------------------------------------------------------------------------|
| <b>USB (micro-B) interface</b>            |                |                                                                                                    |
| USB Transfer Cable                        | HMIZG936       | Cable for transferring screen data from a PC (USB Type-A) to this product (USB micro-B)            |
| USB (micro-B) Front Cable                 | HMIZSUSBB2     | Extension cable that attaches USB interface to front panel.                                        |
| USB Clamp Type mini B*1                   | HMIZSCLP3      | Clamp to prevent disconnection of USB cable (for 1 port, USB Type mini B, 5 pieces/set)            |
| <b>USB (Type-A) interface</b>             |                |                                                                                                    |
| USB Front Cable (1 m)                     | XBTZGUSB       | Extension cable that attaches USB interface to front panel.                                        |
| USB Clamp Type-A (1 port)                 | HMIZGCLP1      | Clamp to prevent disconnection of USB cable (for 1 port, USB Type-A, 5 pieces/set)                 |
| <b>Others</b>                             |                |                                                                                                    |
| Screen Protection Sheet                   | HMIZD66W       | Disposable, dirt-resistant sheet for the display for 12-inch Wide screen (5 sheets/set).           |
| UV Protection Sheet                       | HMIZUV6W       | Sheet to protect the display from dirt and ultraviolet light, for 12-inch Wide screen (1 sheet).   |
| Screen Protection Sheet with UV Protected | HMIZG63W       | Disposable, dirt-resistant and ultraviolet protection sheet for 7-inch Wide screen (1 sheet/set).  |
|                                           | HMIZG65W1      | Disposable, dirt-resistant and ultraviolet protection sheet for 10-inch Wide screen (1 sheet/set). |
|                                           | HMIZG67W       | Disposable, dirt-resistant and ultraviolet protection sheet for 15-inch Wide screen (1 sheet/set). |

\*1 USB Clamp mini-B can be used for optional USB micro-B cables.

## Maintenance Accessories

| Product name              | Product number | Description                                                                               |
|---------------------------|----------------|-------------------------------------------------------------------------------------------|
| Installation Fastener     | HMIZGFIX3      | Used to install 7-inch, 10-inch and 12-inch Wide model into a solid panel (4 pieces/set). |
|                           | HMIZSFIXTF1    | Used to install 15-inch Wide model into a solid panel (2 pieces/set).                     |
| DC Power Supply Connector | XBTZGPWS1      | Connector for a DC power supply cable.                                                    |

# Parts Identification and Functions

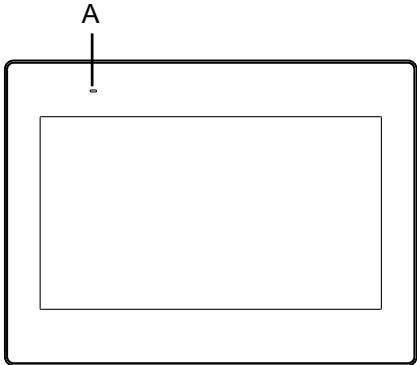
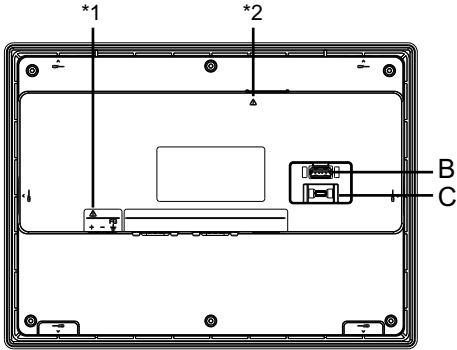
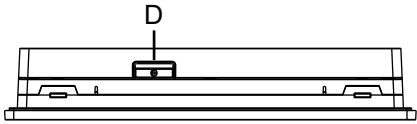
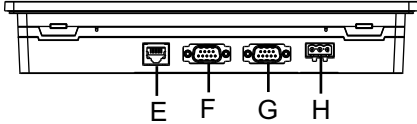
## What's in This Chapter

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## Parts Identification

### HMIET6400 and HMIET6500

**NOTE:** The figures below show HMIET6500.

|        |                                                                                      |
|--------|--------------------------------------------------------------------------------------|
| Front  |   |
| Rear   |  |
| Top    |  |
| Bottom |  |

- A. Status LED
- B. USB (Type-A) interface
- C. USB (micro-B) interface
- D. Battery slot
- E. Ethernet interface
- F. Serial interface (COM2)
- G. Serial interface (COM1)
- H. Power connector

\*1 This mark indicates the safety messages about the power wiring. Refer to *Wiring the Power Supply*, page 40.

\*2 This mark identifies the safety messages about the battery. Refer to *Replacing the Battery*, page 49.

## **WARNING**

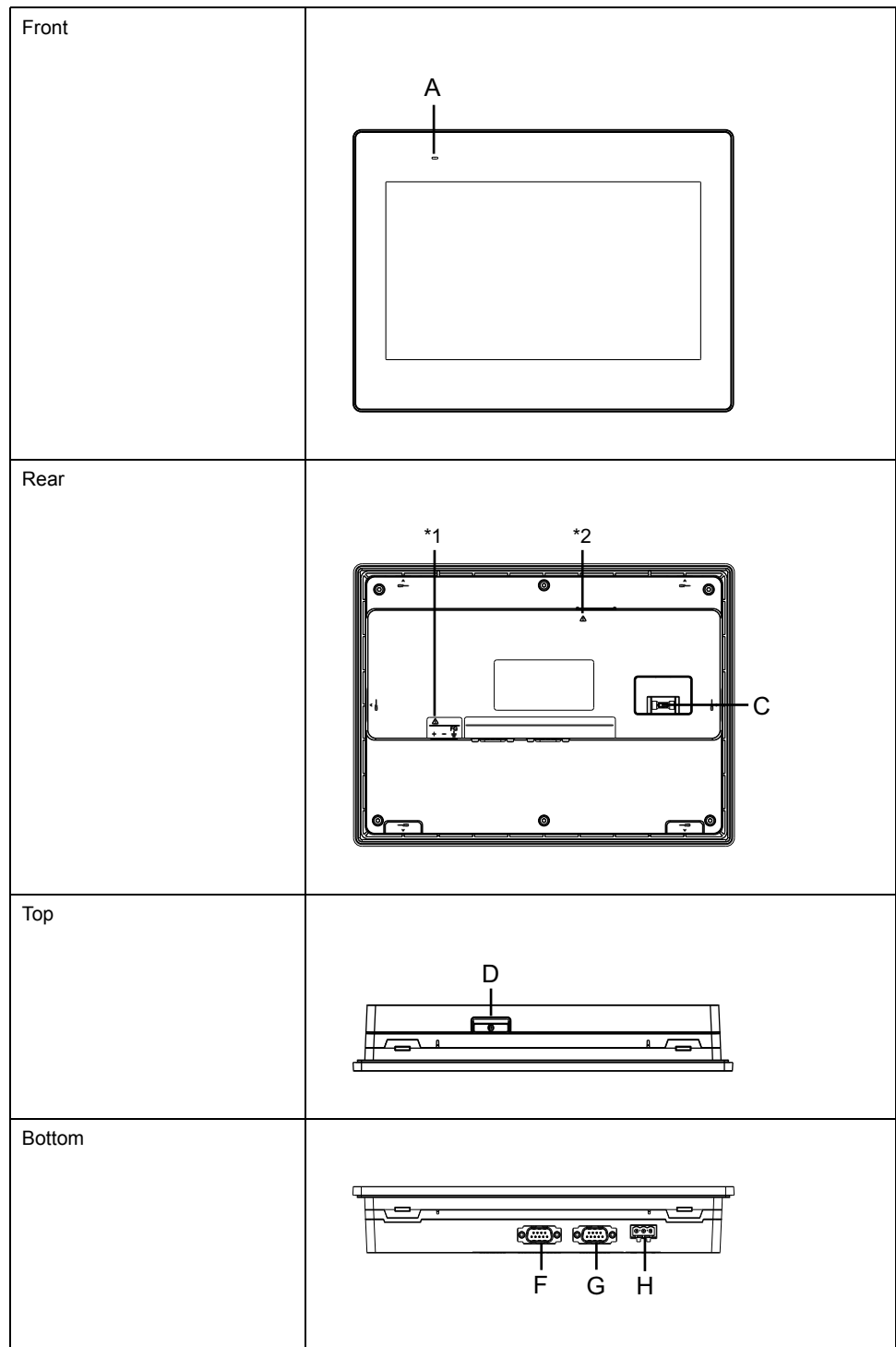
### **UNINTENDED EQUIPMENT OPERATION**

- Do not connect the product to the computer with the USB (micro-B) cable unless the product is powered by the power cable.
- Remove the USB (micro-B) cable before communicating with the host controller and other types of equipment.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

## HMIET6401 and HMIET6501

**NOTE:** The figures below show HMIET6501.



- A. Status LED
- C. USB (micro-B) interface
- D. Battery slot
- F. Serial interface (COM2)
- G. Serial interface (COM1)
- H. Power connector

\*1 This mark indicates the safety messages about the power wiring. Refer to Wiring the Power Supply, page 40.

\*2 This mark identifies the safety messages about the battery. Refer to Replacing the Battery, page 49.

## ⚠ WARNING

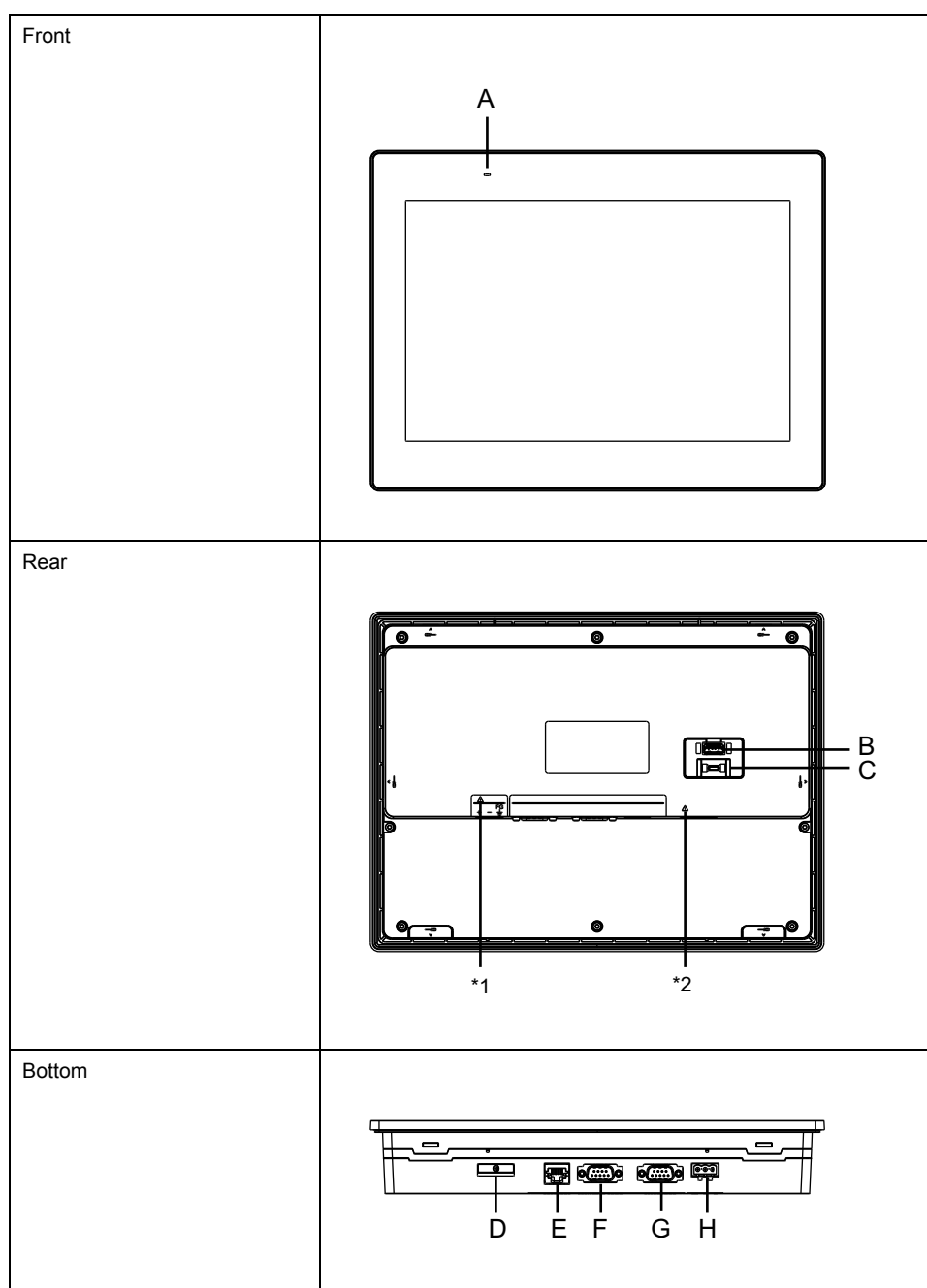
### UNINTENDED EQUIPMENT OPERATION

- Do not connect the product to the computer with the USB (micro-B) cable unless the product is powered by the power cable.
- Remove the USB (micro-B) cable before communicating with the host controller and other types of equipment.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

## HMIET6600 and HMIET6700

**NOTE:** The figures below show HMIET6600.



- A. Status LED
- B. USB (Type-A) interface
- C. USB (micro-B) interface
- D. Battery slot
- E. Ethernet interface
- F. Serial interface (COM2)
- G. Serial interface (COM1)
- H. Power connector

\*1 This mark indicates the safety messages about the power wiring. Refer to [Wiring the Power Supply](#), page 40.

\*2 This mark identifies the safety messages about the battery. Refer to [Replacing the Battery](#), page 49.

**NOTE:** HMIET6700 Ethernet 2 interface (ETH2) is not available. Do not remove the RJ-45 port blocker.

## ⚠ WARNING

### UNINTENDED EQUIPMENT OPERATION

- Do not connect the product to the computer with the USB (micro-B) cable unless the product is powered by the power cable.
- Remove the USB (micro-B) cable before communicating with the host controller and other types of equipment.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

## LED Indications

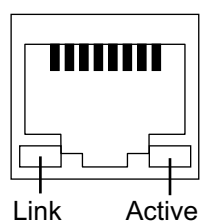
### Status LED

After the power is turned on, the normal status indication by the LED is: red light > blinking orange > green light.

| Color  | Indicator | HMI operation        |
|--------|-----------|----------------------|
| Green  | ON        | In operation/offline |
| Orange | ON        | Software starting up |
| Red    | ON        | Power is ON.         |
| -      | OFF       | Power is OFF.        |

For other LED indications, refer to the manual of your screen editing software.

### Ethernet LED



| Color          | Indicator | Description                     |
|----------------|-----------|---------------------------------|
| Green (Link)   | ON        | Data transmission is available. |
|                | OFF       | No connection or error          |
| Green (Active) | Flashing  | Data transmission is occurring. |
|                | OFF       | No data transmission            |

# Specifications

## What's in This Chapter

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## General Specifications

### Electrical Specifications

|                                         |                                                                                                 |
|-----------------------------------------|-------------------------------------------------------------------------------------------------|
| Rated input voltage                     | 24 Vdc                                                                                          |
| Input voltage limits                    | 19.2...28.8 Vdc                                                                                 |
| Voltage dip/short interruption immunity | 5 ms or less (at rated input voltage)                                                           |
| Power consumption                       | HMIET6400/HMIET6401: 9 W<br>HMIET6500/HMIET6501: 11 W<br>HMIET6600: 14 W<br>HMIET6700: 18.5 W   |
| In-rush current                         | 30 A or less                                                                                    |
| Noise immunity                          | Noise voltage: 1,000 Vp-p<br>Pulse duration: 1 $\mu$ s<br>Rise time: 1 ns (via noise simulator) |
| Dielectric strength                     | 1,000 Vac for 1 minute (between power terminal and FG terminal)                                 |
| Insulation resistance                   | 500 Vdc, 10 M $\Omega$ or more (between power terminal and FG terminals)                        |

## Environmental Specifications

Use and store this product in areas that conform to the specified conditions.

**NOTE:** When using any of the options for this product, check the specifications for special conditions or cautions that may apply to this product.

|                                           |                                                                                                                                                                                               |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Physical environment</b>               |                                                                                                                                                                                               |
| Ambient air temperature                   | 0...50 °C (32...122 °F)                                                                                                                                                                       |
| Storage temperature                       | -20...60 °C (-4...140 °F)                                                                                                                                                                     |
| Ambient air and storage humidity          | 10...90% RH (non-condensing, wet bulb temperature 39 °C [102.2 °F] or less)                                                                                                                   |
| Dust                                      | 0.1 mg/m <sup>3</sup> (10 <sup>-7</sup> oz/ft <sup>3</sup> ) or less (non-conductive levels)                                                                                                  |
| Pollution degree                          | For use in Pollution Degree 2 environment                                                                                                                                                     |
| Corrosive gases                           | Free of corrosive gases                                                                                                                                                                       |
| Atmospheric pressure (operating altitude) | 800...1,114 hPa (2,000 m [6,561 ft] or lower)                                                                                                                                                 |
| <b>Mechanical environment</b>             |                                                                                                                                                                                               |
| Vibration resistance                      | IEC/EN 61131-2 compliant<br>5...9 Hz Single amplitude 3.5 mm (0.14 in)<br>9...150 Hz Fixed acceleration: 9.8 m/s <sup>2</sup><br>X, Y, Z directions for 10 cycles (approximately 100 minutes) |
| Shock resistance                          | IEC/EN 61131-2 compliant<br>147 m/s <sup>2</sup> , X, Y, Z directions for 3 times                                                                                                             |
| <b>Electrical environment</b>             |                                                                                                                                                                                               |

|                                          |                                                                                            |
|------------------------------------------|--------------------------------------------------------------------------------------------|
| Electrical fast transient/burst immunity | IEC 61000-4-4<br>2 kV: Power port<br>1 kV: Signal ports                                    |
| Electrostatic discharge immunity         | Contact discharge method: 6 kV<br>Air discharge method: 8 kV<br>(IEC/EN 61000-4-2 Level 3) |

## ⚠ CAUTION

### INOPERATIVE EQUIPMENT

- Do not operate or store the product where chemicals evaporate, or where chemicals are present in the air. Chemicals refer to the following: A) Corrosive chemicals: Acids, alkalines, liquids containing salt, B) Flammable chemicals: Organic solvents.
- Do not allow water, liquids, metal, and wiring fragments to enter the panel case.

**Failure to follow these instructions can result in injury or equipment damage.**

## Structural Specifications

HMIET6400, HMIET6401, HMIET6500 and HMIET6501

|                                 | HMIET6400/HMIET6401                                                                                                                                    | HMIET6500/HMIET6501                                                                                                |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Grounding                       | Functional grounding: Grounding resistance of 100 $\Omega$ or less, 2 mm <sup>2</sup> (AWG 14) or thicker wire, or your country's applicable standard. |                                                                                                                    |
| Cooling method                  | Natural air circulation                                                                                                                                |                                                                                                                    |
| Structure*1                     | IP65                                                                                                                                                   |                                                                                                                    |
| External dimensions (W x H x D) | 205.5 x 150.5 x 45 mm<br>(8.09 x 5.92 x 1.77 in)                                                                                                       | 270.5 x 200.5 x 47 mm<br>(10.65 x 7.89 x 1.85 in)                                                                  |
| Panel cut dimension (W x H)     | 190 x 135 mm<br>(7.48 x 5.31 in) <sup>2</sup><br>Panel thickness area:<br>1.6...5 mm (0.06...0.2 in) <sup>3</sup>                                      | 255 x 185 mm<br>(10.04 x 7.28 in) <sup>2</sup><br>Panel thickness area:<br>1.6...5 mm (0.06...0.2 in) <sup>3</sup> |
| Weight                          | HMIET6400: 0.61 kg (1.34 lb)<br>HMIET6401: 0.60 kg (1.32 lb)                                                                                           | HMIET6500: 0.99 kg (2.18 lb)<br>HMIET6501: 0.98 kg (2.16 lb)                                                       |

HMIET6600 and HMIET6700

|                                 | HMIET6600                                                                                                                                              | HMIET6700                                                                                                          |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Grounding                       | Functional grounding: Grounding resistance of 100 $\Omega$ or less, 2 mm <sup>2</sup> (AWG 14) or thicker wire, or your country's applicable standard. |                                                                                                                    |
| Cooling method                  | Natural air circulation                                                                                                                                |                                                                                                                    |
| Structure*1                     | IP65                                                                                                                                                   | IP65, Type 4X (indoor use only)                                                                                    |
| External dimensions (W x H x D) | 310.5 x 232.5 x 50 mm<br>(12.22 x 9.15 x 1.97 in)                                                                                                      | 412 x 268 x 50 mm<br>(16.22 x 10.55 x 1.97 in)                                                                     |
| Panel cut dimension (W x H)     | 295 x 217 mm<br>(11.61 x 8.54 in) <sup>2</sup><br>Panel thickness area:<br>1.6...5 mm (0.06...0.2 in) <sup>3</sup>                                     | 394 x 250 mm<br>(15.51 x 9.84 in) <sup>2</sup><br>Panel thickness area:<br>1.6...5 mm (0.06...0.2 in) <sup>3</sup> |
| Weight                          | 1.62 kg (3.57 lb) or less                                                                                                                              | 2.52 kg (5.56 lb) or less                                                                                          |

\*1 The front of this product has been tested to comply with the specified standards when installed in a solid panel. However, it is not intended for use in all environments. In environments where the product is exposed to liquids (including jets and sprays) for extended periods, there is a risk that liquids may enter the

product due to causes such as peeling of the protective sheet or damage to the front glass cover. In such environments, implement appropriate protective measures based on the specific conditions. Therefore, prior to installing this product, be sure to confirm the type of conditions that will be present in this product's operating environment.

If the installation gasket is used for a long period of time, or if this product and its gasket are removed from the panel, the original level of protection cannot be kept. To maintain the original protection level, be sure to replace the installation gasket regularly.

\*2 The dimensional tolerance for the width and height of the panel cutout is +1/-0 mm (+0.04/-0 in). All the corners have a radius of R3 mm (R0.12 in) or less.

\*3 Even if the installation wall thickness is within the specified range, depending on the wall's material, size, and installation location of this product and other devices, the installation wall could warp. To prevent warping, the installation surface may need to be strengthened.

## ***NOTICE***

### **EQUIPMENT DAMAGE**

- Ensure this product is not in permanent and direct contact with oils.
- Do not press on the display of this product with excessive force or with a hard object.
- Do not press on the touch panel with a pointed object, such as the tip of a mechanical pencil or a screwdriver.
- Do not expose the product to direct sunlight.
- Operate and store this product in areas where temperatures are within the product's specifications.

**Failure to follow these instructions can result in equipment damage.**

## ***NOTICE***

### **EQUIPMENT DAMAGE**

- Inspect the gasket periodically as required by your operating environment.
- Replace the gasket at least once a year, or as soon as scratches or dirt become visible.

**Failure to follow these instructions can result in equipment damage.**

# Functional Specifications

## Display Specifications

HMIET6400, HMIET6401, HMIET6500 and HMIET6501

|                                | <b>HMIET6400<br/>HMIET6401</b>                                                                              | <b>HMIET6500<br/>HMIET6501</b>         |
|--------------------------------|-------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Display type                   | TFT Color LCD                                                                                               |                                        |
| Display size                   | 7" Wide                                                                                                     | 10.1" Wide                             |
| Resolution                     | 800 x 480 pixels                                                                                            | 1,024 x 600 pixels                     |
| Effective display area (W x H) | 154.08 x 85.92 mm<br>(6.07 x 3.38 in)                                                                       | 222.72 x 125.28 mm<br>(8.77 x 4.93 in) |
| Display colors                 | 16 million colors<br>For details about display colors, refer to the manual of your screen editing software. |                                        |
| Backlight                      | White LED (Not replaceable.)                                                                                |                                        |
| Backlight service life         | 50,000 hours or more (continuous operation at 25 °C [77 °F] before backlight brightness decreases to 25%)   |                                        |
| Brightness control             | 16 levels (Adjusted with touch panel or software)                                                           |                                        |

HMIET6600 and HMIET6700

|                                | <b>HMIET6600</b>                                                                                            | <b>HMIET6700</b>                        |
|--------------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Display type                   | TFT Color LCD                                                                                               |                                         |
| Display size                   | 12.1" Wide                                                                                                  | 15.6" Wide                              |
| Resolution                     | 1,280 x 800 pixels                                                                                          | 1,366 x 768 pixels                      |
| Effective display area (W x H) | 261.12 x 163.2 mm<br>(10.28 x 6.43 in)                                                                      | 344.23 x 193.54 mm<br>(13.55 x 7.62 in) |
| Display colors                 | 16 million colors<br>For details about display colors, refer to the manual of your screen editing software. |                                         |
| Backlight                      | White LED (Not replaceable.)                                                                                |                                         |
| Backlight service life         | 50,000 hours or more (continuous operation at 25 °C [77 °F] before backlight brightness decreases to 25%)   |                                         |
| Brightness control             | 16 levels (Adjusted with touch panel or software)                                                           |                                         |

## Touch Panel

|                          |                         |
|--------------------------|-------------------------|
| Touch panel type         | Resistive film (analog) |
| Touch points             | Single touch            |
| Touch panel resolution   | 1,024 x 1,024           |
| Touch panel service life | 1 million times or more |

The touch panel does not support multi-touch (two-point touch/multiple-point touch). If you touch multiple points on the touch panel, it may operate as if you touched the center-point of the multiple touches. For example, if you touch two or more points on the touch panel and at the center of the touches is a switch for a drive system, even though you did not directly touch that switch, it may function as if you did.

**⚠ WARNING****UNINTENDED EQUIPMENT OPERATION**

Do not touch two or more points on the touch panel.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**

## Memory

|                    |                                                                      |
|--------------------|----------------------------------------------------------------------|
| System memory      | 256 MB (operating system, project data, backup data, and other data) |
| Backup memory      | 128 KB                                                               |
| Local Data Storage | 32 MB                                                                |

## Clock

|                   |                                                                                                      |
|-------------------|------------------------------------------------------------------------------------------------------|
| RTC accuracy      | Deviation of $\pm 60$ seconds per month (at 25 °C [77 °F] and power is OFF).                         |
| Clock data backup | Lithium metal battery (non-rechargeable battery, replaceable)<br>Battery life: 5 years (approximate) |

Variations in operating conditions and battery life can cause clock deviations from -380 to +90 seconds per month. If you use this product in a system where timing is critical, adjust the clock at regular intervals.

If the battery is depleted or removed, the clock data will be lost. To replace the battery, refer to [Replacing the Battery](#), page 49.

# Interface Specifications

## Specifications of Each Interface

**NOTE:** HMIET6401 and HMIET6501 have neither Ethernet nor USB (Type-A) interfaces.

|                                |                                            |
|--------------------------------|--------------------------------------------|
| <b>Serial interface COM1</b>   |                                            |
| Asynchronous transmission      | RS-232C                                    |
| Data length                    | 7 or 8 bits                                |
| Stop bit                       | 1 or 2 bits                                |
| Parity                         | None, odd, or even                         |
| Data transmission speed        | 2,400...115,200 bps                        |
| Connector                      | D-Sub 9 pin (plug)                         |
| <b>Serial interface COM2</b>   |                                            |
| Asynchronous transmission      | RS-422/485                                 |
| Data length                    | 7 or 8 bits                                |
| Stop bit                       | 1 or 2 bits                                |
| Parity                         | None, odd, or even                         |
| Data transmission speed        | 2,400...115,200 bps                        |
| Connector                      | D-Sub 9 pin (plug)                         |
| <b>USB (Type-A) interface</b>  |                                            |
| Connector                      | USB 2.0 (Type-A) x 1                       |
| Power supply voltage           | 5 Vdc $\pm$ 5%                             |
| Maximum current supplied       | 500 mA                                     |
| Maximum transmission distance  | 3 m (9.84 ft) at 1.5/12/480 Mbps           |
| <b>USB (micro-B) interface</b> |                                            |
| Connector                      | USB 2.0 (micro-B) x 1                      |
| Maximum transmission distance  | 3 m (9.84 ft) at 1.5/12/480 Mbps           |
| <b>Ethernet interface</b>      |                                            |
| Standard                       | IEEE802.3i/IEEE802.3u, 10BASE-T/100BASE-TX |
| Connector                      | Modular jack (RJ-45) x 1                   |

## Serial Interface

The serial interface is not isolated. The SG (signal ground) and FG (frame ground) terminals are separated inside this product.

**⚠ ⚠ DANGER****ELECTRIC SHOCK**

- Make a direct connection between the frame ground (FG) terminal and ground.
- Do not connect other devices to ground through the frame ground (FG) terminal of this device.
- Install all cables according to local codes and requirements. If local codes do not require grounding, follow a reliable guide such as the US National Electrical Code, Article 800.

**Failure to follow these instructions will result in death or serious injury.**

**⚠ CAUTION****LOSS OF COMMUNICATION**

- Do not put excessive stress on the communication ports of all connections.
- Securely attach communication cables to the panel wall or cabinet.
- Use a D-Sub 9 pin connector that has jack screws.

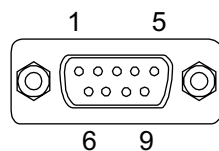
**Failure to follow these instructions can result in injury or equipment damage.**

**NOTE:** Use within the rated current.

**Serial Interface COM1 RS-232C**

D-Sub 9 pin plug connector

Product side:

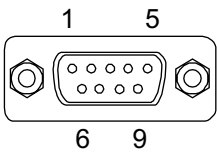


| Pin No. | RS-232C     |           |                     |
|---------|-------------|-----------|---------------------|
|         | Signal name | Direction | Description         |
| 1       | CD          | Input     | Carrier Detect      |
| 2       | RD (RXD)    | Input     | Receive Data        |
| 3       | SD (TXD)    | Output    | Send Data           |
| 4       | ER (DTR)    | Output    | Data Terminal Ready |
| 5       | SG          | -         | Signal Ground       |
| 6       | DR (DSR)    | Input     | Data Set Ready      |
| 7       | RS (RTS)    | Output    | Request To Send     |
| 8       | CS (CTS)    | Input     | Clear To Send       |
| 9       | NC          | -         | No connection       |
| Shell   | FG          | -         | Frame Ground        |

Recommended jack screw is #4-40 (UNC).

Serial Interface COM2 RS-422/485

D-Sub 9 pin plug connector  
Product side:



| Pin No. | RS-422/RS-485 |           |                    |
|---------|---------------|-----------|--------------------|
|         | Signal name   | Direction | Description        |
| 1       | RDA           | Input     | Receive Data A (+) |
| 2       | RDB           | Input     | Receive Data B (-) |
| 3       | SDA           | Output    | Send Data A (+)    |
| 4       | NC            | -         | No connection      |
| 5       | SG            | -         | Signal Ground      |
| 6       | NC            | -         | No connection      |
| 7       | SDB           | Output    | Send Data B (-)    |
| 8       | NC            | -         | No connection      |
| 9       | NC            | -         | No connection      |
| Shell   | FG            | -         | Frame Ground       |

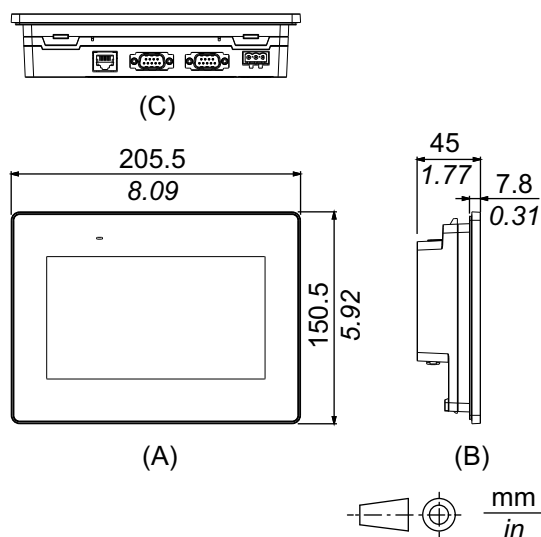
Recommended jack screw is #4-40 (UNC).

# Dimensions

## What's in This Chapter

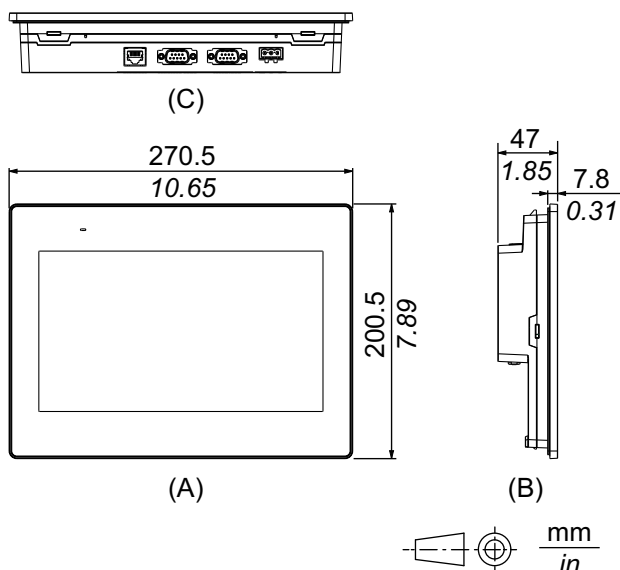
|                                                  |    |
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| HMIET6500 and HMIET6501 External Dimensions..... | 31 |
| HMIET6600 External Dimensions.....               | 32 |
| HMIET6700 External Dimensions.....               | 33 |

## HMIET6400 and HMIET6401 External Dimensions



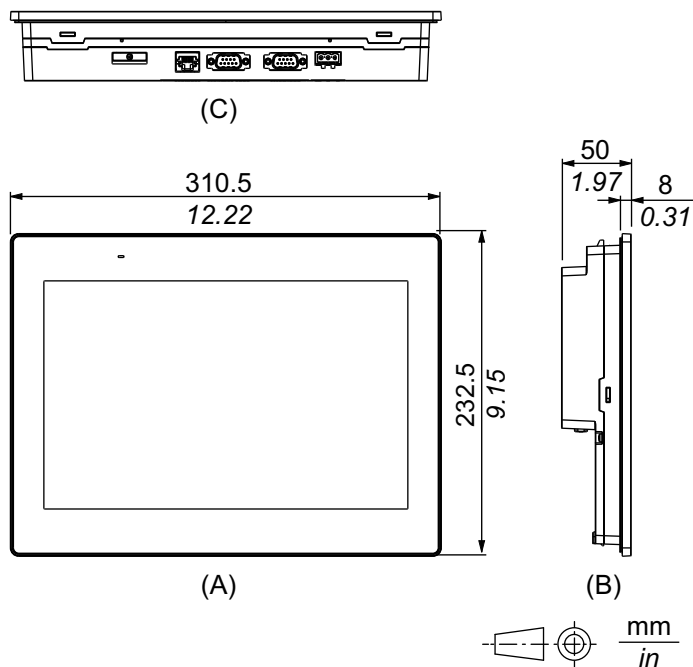
- A. Front
- B. Left
- C. Bottom

## HMIET6500 and HMIET6501 External Dimensions



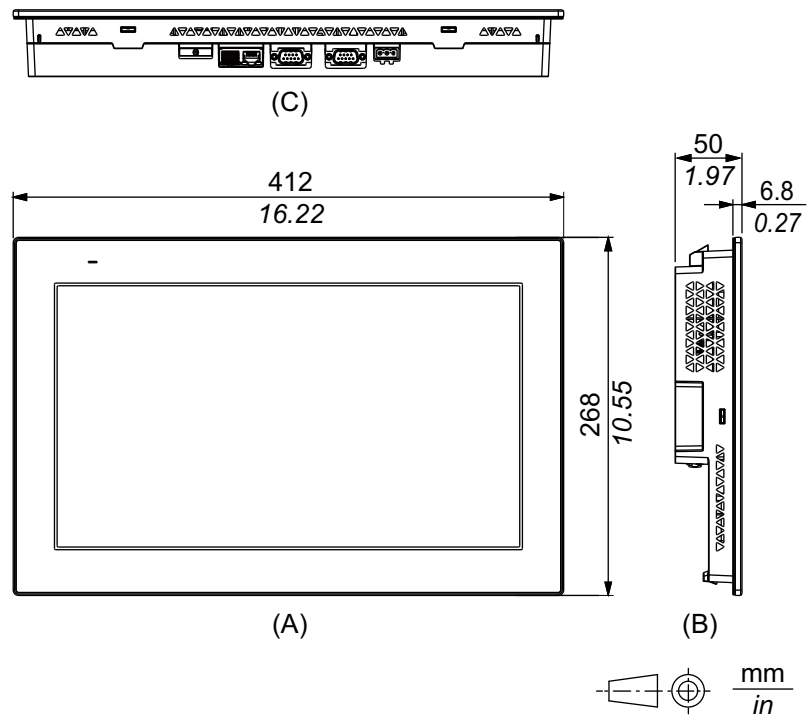
- A. Front
- B. Left
- C. Bottom

## HMIET6600 External Dimensions



- A. Front
- B. Left
- C. Bottom

# HMIET6700 External Dimensions



- A. Front
- B. Left
- C. Bottom

# Installing and Wiring

## What's in This Chapter

|                               |    |
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| USB Cable Clamp .....         | 44 |

## Installation

### Precautions for Building into an End-use Product

This product is designed for use on flat surfaces of enclosures.  
For HMIET6400, HMIET6401, HMIET6500, HMIET6501 and HMIET6600, the front surface is rated for IP65 enclosure.  
For HMIET6700, the front surface is rated for IP65 and Type 4X (indoor use only) enclosure.

Be aware of the following when building this product into an end-use product:

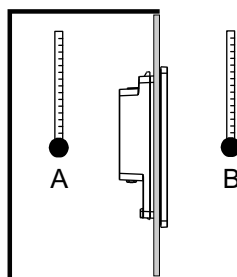
- The rear face of this product is not approved as an enclosure. When building this product into an end-use product, be sure to use an enclosure that satisfies standards as the end-use product's overall enclosure.
- Install this product in an enclosure with mechanical rigidity.
- This product is not designed for outdoor use. UL certification obtained is for indoor use only.
- Install and operate this product with its front panel facing outward.

**NOTE:** IP65 is not part of the UL certification.

### Installation Requirements

- Check that the installation wall or cabinet surface is flat, in good condition and has no jagged edges. Metal reinforcing strips may be attached to the inside of the wall, near the panel-cut, to increase its rigidity.
- Decide on the thickness of the enclosure wall, based on the level of strength required. Even if the installation wall thickness is within the recommended range for the Panel Cut Dimensions, depending on wall's material, size, and installation location of this product and other devices, the installation wall could warp. To prevent warping, the installation surface may need to be strengthened.

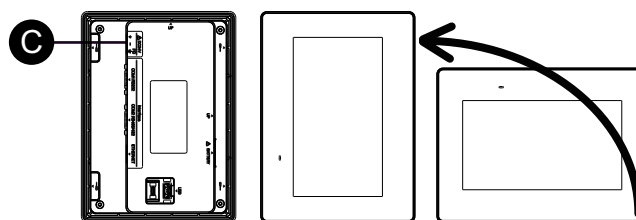
- Check that the ambient air temperature and the ambient humidity are within their specified ranges in *Environmental Specifications*, page 23. When installing this product in a cabinet or enclosure, the ambient air temperature is the cabinet's or enclosure's internal and external temperature.



- A. Internal temperature
- B. External temperature

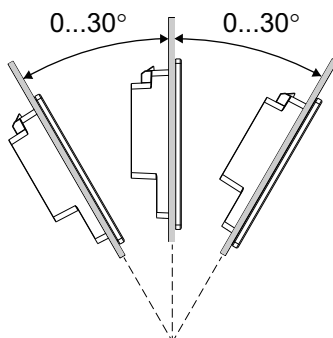
- Be sure that heat from surrounding equipment does not cause this product to exceed its standard operating temperature.
- When mounting this product in portrait orientation, ensure that the right side of this product faces up. In other words, the DC power connector should be at the top.

**NOTE:** For portrait orientation mounting, make sure your screen editing software supports the function.

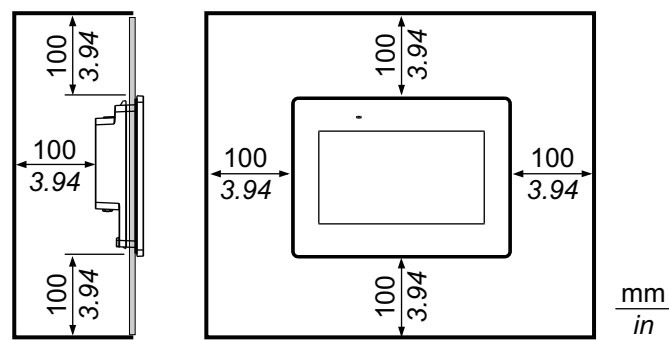


- C. Power connector

- When installing this product in a slanted position, the product face should not incline more than 30°.



- For easier maintenance, operation and improved ventilation, install this product at least 100 mm (3.94 in) away from adjacent structures and other equipment as shown in the following illustration:



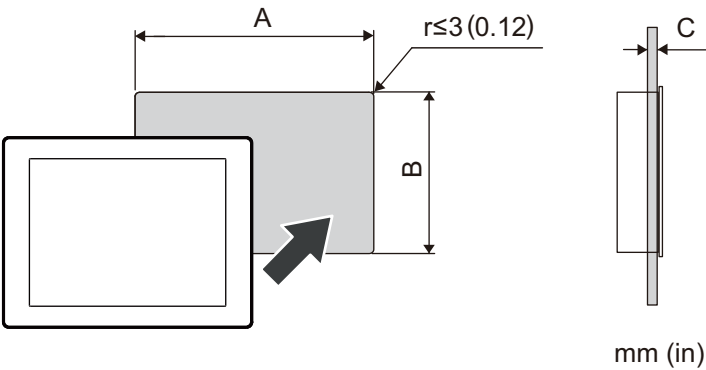
Pressure Differences

When applying and installing this product, it is important that steps are taken to eliminate any pressure difference between the inside and the outside of the enclosure in which this product is mounted. Higher pressure inside the enclosure can cause delamination of the front membrane of the display. Even a small pressure difference inside the enclosure will act on the large area of the membrane and can result in sufficient force to delaminate the membrane and thus cause failure of the touch capability. Pressure differences can often occur in applications where there are multiple fans and ventilators moving air at different rates in different rooms. Please follow these techniques to ensure that this product's function is not impacted by this mis-application:

- Seal all conduit connections inside of the enclosure, especially those that lead to other rooms that may be at a different pressure.
- Where applicable, install a small weep hole at the bottom of the enclosure to allow equalization of the internal and external pressure.

Panel Cutout Dimensions

Based on the panel cutout dimensions, open a mounting hole on the panel.



| Model Name                                    |                                              |                            |
|-----------------------------------------------|----------------------------------------------|----------------------------|
| A                                             | B                                            | C                          |
| HMIET6400/HMIET6401                           |                                              |                            |
| 190 mm (+1/-0 mm)<br>(7.45 in [+0.04/-0 in])  | 135 mm (+1/-0 mm)<br>(5.31 in [+0.04/-0 in]) | 1.6...5 mm (0.06...0.2 in) |
| HMIET6500/HMIET6501                           |                                              |                            |
| 255 mm (+1/-0 mm)<br>(10.04 in [+0.04/-0 in]) | 185 mm (+1/-0 mm)<br>(7.28 in [+0.04/-0 in]) | 1.6...5 mm (0.06...0.2 in) |

| Model Name                                    |                                              |                            |
|-----------------------------------------------|----------------------------------------------|----------------------------|
| A                                             | B                                            | C                          |
| <b>HMIET6600</b>                              |                                              |                            |
| 295 mm (+1/-0 mm)<br>(11.61 in [+0.04/-0 in]) | 217 mm (+1/-0 mm)<br>(8.54 in [+0.04/-0 in]) | 1.6...5 mm (0.06...0.2 in) |
| <b>HMIET6700</b>                              |                                              |                            |
| 394 mm (+1/-0 mm)<br>(15.51 in [+0.04/-0 in]) | 250 mm (+1/-0 mm)<br>(9.84 in [+0.04/-0 in]) | 1.6...5 mm (0.06...0.2 in) |

## Installation Procedure

This section describes how to install this product to the panel.

### **DANGER**

#### **HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Unplug the power cable from both this product and the power supply prior to installing or removing the product.
- Always use a properly rated voltage sensing device to confirm power is off where and when indicated.
- Replace and secure all covers or elements of the system before applying power to this product.

**Failure to follow these instructions will result in death or serious injury.**

### **NOTICE**

#### **EQUIPMENT DAMAGE**

- Always use the installation gasket.
- Keep this product stabilized in the panel cutout while you are installing or removing the screw fasteners.
- Do not exert more torque than the amount specified.

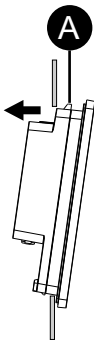
**Failure to follow these instructions can result in equipment damage.**

1. Place this product on a clean and level surface with the screen facing down.
2. Check that the gasket is seated securely into the bezel groove, which runs around the perimeter of the display panel frame.

**NOTE:** Always use the installation gasket, since it absorbs vibration in addition to repelling water.

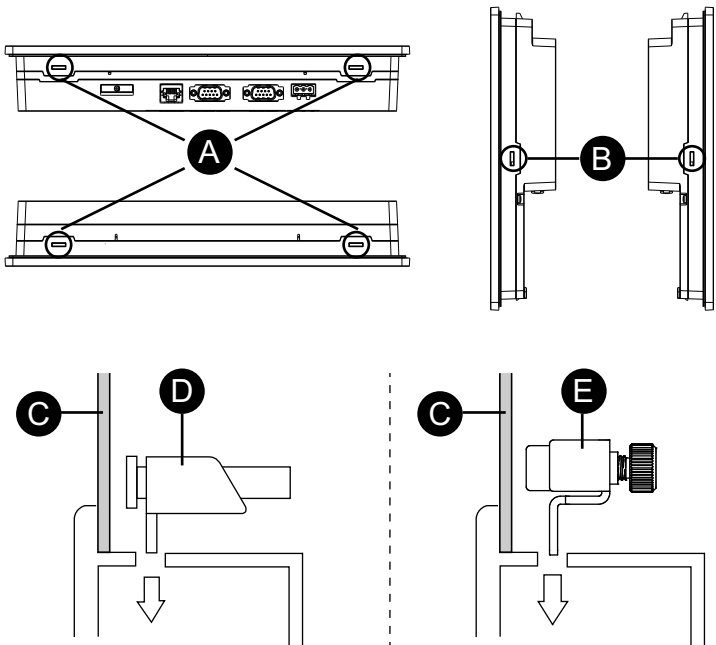
3. Based on this product's [Panel Cutout Dimensions](#), page 36, open a mount-hole on the panel and attach this product to the panel from the front side.

**NOTE:** This product has a hook at the top to prevent it from falling. Insert the bottom part of the product into the panel opening, and then insert the top part while pushing the hook down.



A. Hook

4. Insert the installation fasteners into the panel's insertion slots of this product.



- A. Insertion slots  
B. Insertion slots (except for the HMIET6400/HMIET6401)  
C. Panel  
D. Installation fastener for HMIET6400/HMIET6401, HMIET6500/HMIET6501 and HMIET6600  
E. Installation fastener for HMIET6700

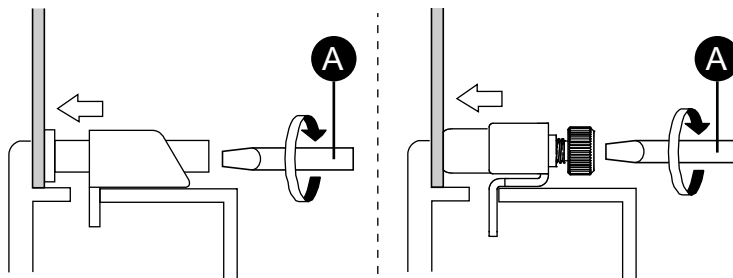
The number of installation fasteners for each model is as follows.

|                                              |                                          |
|----------------------------------------------|------------------------------------------|
| HMIET6400/HMIET6401                          | Top - 2, Bottom - 2                      |
| HMIET6500/HMIET6501, HMIET6600 and HMIET6700 | Top - 2, Bottom - 2, Left - 1, Right - 1 |

5. Tighten the installation fastener's screws with a screwdriver.

**NOTE:**

- The necessary torque is 0.5 N•m (4.4 lb-in).
- The installation fasteners for HMIET6700 can be screwed by hand too.
- If the fasteners are not correctly attached, the panel may shift or fall out.



A. Screwdriver

## Removal Procedure

This section describes how to remove this product from the panel.

### **⚠️ DANGER**

#### **HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Unplug the power cable from both this product and the power supply prior to installing or removing the product.
- Always use a properly rated voltage sensing device to confirm power is off where and when indicated.

**Failure to follow these instructions will result in death or serious injury.**

### **⚠️ CAUTION**

#### **RISK OF INJURY**

Do not drop this product when you remove it from the panel.

- Hold this product in place after removing the fasteners.
- Use both hands.
- While pushing on the hook, be careful not to hurt your fingers.

**Failure to follow these instructions can result in injury or equipment damage.**

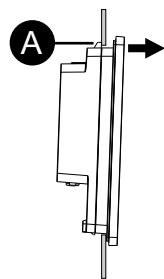
### **NOTICE**

#### **EQUIPMENT DAMAGE**

- Keep this product stabilized in the panel cutout while you are installing or removing the installation screws or fasteners.
- Remove this product while pushing the hook or by making sure the lock does not touch the panel.

**Failure to follow these instructions can result in equipment damage.**

1. Loosen the screws of the installation fasteners and remove them.
2. While pushing the hook on the top of this product, slowly remove this product from the panel.



A. Hook

## Wiring the Power Supply

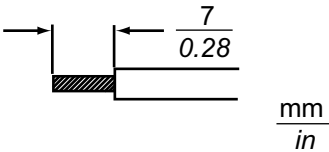
### DC Power Cord Preparation

#### ⚠ CAUTION

##### WIRING REQUIREMENT

- Make sure the ground wire is either the same or heavier gauge than the power wires.
- Do not use aluminum wires in the power supply's power cord.
- If the ends of the individual wires are not twisted correctly, the wires may create a short circuit.
- The conductor type is solid or stranded wire.
- Use copper wire rated for 75 °C (167 °F) or higher.
- Use the SELV (Safety Extra-Low Voltage) circuit and LIM (Limited Energy) circuit for DC input.

**Failure to follow these instructions can result in injury or equipment damage.**

|                     |                                                                                                   |
|---------------------|---------------------------------------------------------------------------------------------------|
| Power cord diameter | 0.75...2.5 mm <sup>2</sup> (18...13 AWG)* <sup>1</sup>                                            |
| Conductor type      | Solid or stranded wire* <sup>2</sup>                                                              |
| Conductor length    | <br>mm<br>in |
| Recommended driver  | Flat-head screwdriver (size 0.6 x 3.5 mm)                                                         |

\*1 For UL compatibility, use AWG 14 or AWG 13. Thick wires are recommended to minimize voltage drops in the wire.

\*2 You can crimp pin or ferrule terminals onto the wires and then insert them into the connector.

## How to Connect the DC Power Cord

### **⚡⚡ DANGER**

#### **HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

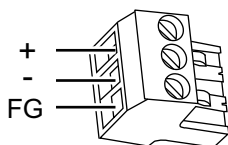
- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Remove power before wiring this product's power terminals.
- Always use a properly rated voltage sensing device to confirm power is off where and when indicated.
- Replace and secure all covers or elements of the system before applying power to this product.
- Use only the specified voltage when operating this product. This product is designed to use 24 Vdc. Always check whether your device is DC powered before applying power.
- Since this product is not equipped with a power switch, be sure to connect a power switch to the power supply.
- Be sure to ground this product's FG terminal.

**Failure to follow these instructions will result in death or serious injury.**

#### **NOTE:**

- The SG and FG terminals are separated internally in this product.
- When the FG terminal is connected, be sure the wire is grounded. Not grounding this product can result in excessive electromagnetic interference (EMI).

#### **DC Power Connector**



|    |                                                                |
|----|----------------------------------------------------------------|
| +  | 24 Vdc                                                         |
| -  | 0 Vdc                                                          |
| FG | Functional ground. Connect the FG terminal properly to ground. |

**NOTE:** Part number XBTZGPWS1

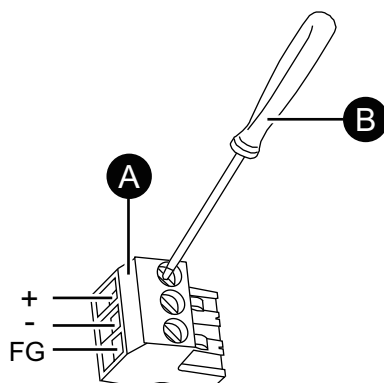
#### **Connection Procedure**

1. Confirm the power cord is not connected to the power supply.
2. Check the rated voltage.
3. Strip the membrane of the power cord, and twist the wire ends.

4. Insert each power cord wire into its corresponding hole. Fasten the screws of the DC power connector to clamp the wire in place.

**NOTE:**

- The necessary torque is 0.56 N•m (5 lb-in).
- Do not solder the stranded wires.



- A. DC power connector  
B. Flat-blade screwdriver (size 0.6 x 3.5)

5. After inserting all three power cord wires, insert the DC power connector into the power connector on this product.

## Power Supply Precautions

### **⚠ DANGER**

#### **SHORT CIRCUIT, FIRE, OR UNINTENDED EQUIPMENT OPERATION**

- Install and fasten this product in an installation panel or cabinet prior to connecting power supply and communication lines.
- Securely attach power cables to an installation panel or cabinet.
- Avoid excessive force on the power cable.

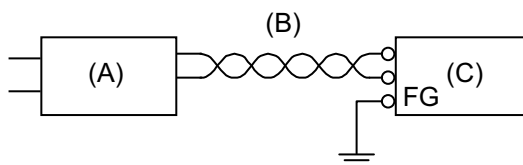
**Failure to follow these instructions will result in death or serious injury.**

- This product's power cord should not be bundled with or kept close to main circuit lines (high voltage, high current), power lines, or input/output lines, and their various systems should be kept separate. When power lines cannot be wired via a separate system, use shielded cables for input/output lines.
- An independent DC power supply is recommended for this product. (The DC power supply should be located close to the product, with twisted pair cabling as short as possible.)
- To increase noise resistance, attach a ferrite core to the power cable.

## Power Supply Connections

- Use the SELV (Safety Extra-Low Voltage) circuit and LIM (Limited Energy) circuit for DC input.

- If the voltage variation is outside the prescribed range, connect a regulated power supply.

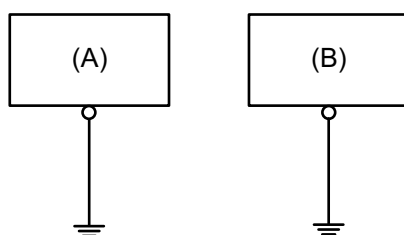


- A. Regulated power supply
- B. Twisted-pair cord
- C. This product

## Grounding

### Independent Grounding

Always ground the FG (functional ground) terminal. Be sure to separate this product from the FG of other devices as shown below.



- A. This product
- B. Other device

## Precautions

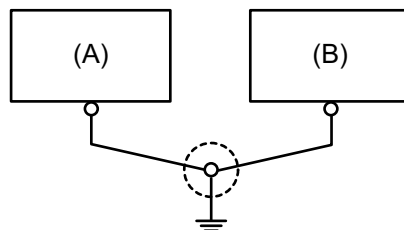
- Check that the grounding resistance is 100  $\Omega$  or less.\*1
- The FG wire should have a cross sectional area 2 mm<sup>2</sup> (AWG 14) or greater\*1. Create the connection point as close as possible to this product, and make the wire as short as possible. When using a long grounding wire, replace the thin wire with a thicker wire, and place it in a duct.
- The SG and FG terminals are separated internally in this product. When connecting the FG and SG, be sure that no ground loop is formed.

\*1 Observe local codes and standards.

## Common Grounding

Electromagnetic Interference (EMI) can be created if devices are improperly grounded. EMI can cause loss of communication. If independent grounding is not possible, use a common grounding point as shown in the configuration below. Do not use any other configuration for common grounding.

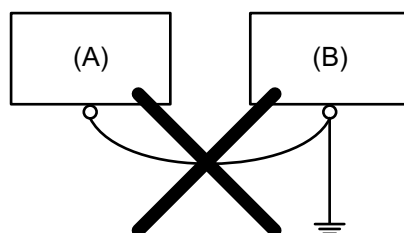
## Correct grounding



A. This product

B. Other device

## Incorrect grounding



A. This product

B. Other device

## USB Cable Clamp

### Attaching USB Clamp Type-A

When using a USB device, attach a USB cable clamp to the USB interface to prevent the USB cable from being disconnected.

#### **⚠ DANGER**

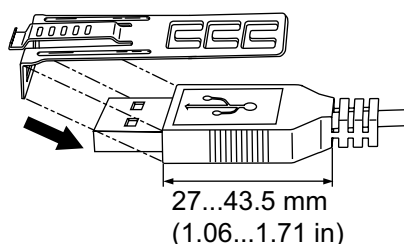
##### **EXPLOSION HAZARD**

- Do not disconnect equipment while the circuit is live or unless the area is known to be free of ignitable concentrations.
- Remove power before attaching or detaching any connectors to or from this product.
- Ensure that power, communication, and accessory connections do not place excessive stress on the ports. Consider the vibration in the environment when making this determination.
- Securely attach power, communication, and external accessory cables to the panel or cabinet.
- Use only commercially available USB cables.
- Use only non-incendive USB configurations.
- Do not use the USB interface in hazardous locations.
- Confirm that the USB cable has been attached with the USB cable clamp before using the USB interface.

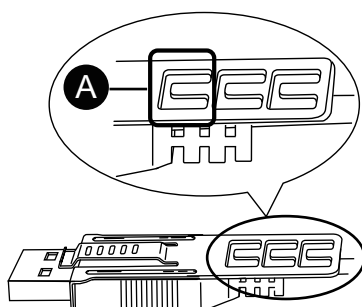
**Failure to follow these instructions will result in death or serious injury.**

**NOTE:** Watch your fingers. The edge of the clip is sharp.

1. Mount the clip to the USB mark  connector shell so that it overlaps. The clip matches the 27 to 43.5 mm (1.06 to 1.71 in) length of the USB connector.

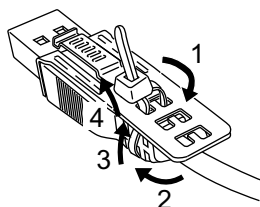


2. Align the clip and the USB cable connector shell. Adjust the position of the holes where the clip is attached. To ensure stability, select the clip-hole position that is closest to the base of the connector shell.



A. Hole for tie to pass through

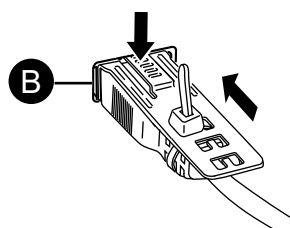
3. As shown, pass the tie through the clip hole. Next, turn the tie and pass it through the head so that the USB cable can pass through the center of the tie loop. The clip is now attached to the USB cable.



**NOTE:**

- Check the direction of the head beforehand. Make sure the USB cable is through the center of the tie loop and that the tie can pass through the head.
- You can substitute the tie provided with HMIZGCLP1, or other commercially available ties with a width of 4.8 mm (0.19 in) and thickness of 1.3 mm (0.05 in).

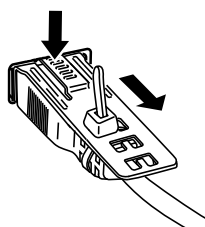
4. While pressing the grip on the clip, insert the cable from step 3 all the way into the USB host interface. Make sure that the clip tab is secured to the USB cable attached to this product.



B. USB Type-A interface

## Removing USB Clamp Type-A

Remove the USB cable while pushing the grip section of the clip.



## Attaching USB Clamp mini-B

When using the USB micro-B cable (option), you can use the USB mini-B clamp (sold separately) to prevent the cable from being disconnected.

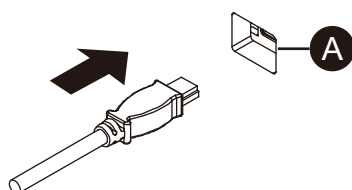
### **⚠ DANGER**

#### **EXPLOSION HAZARD**

- Confirm that the USB cable has been fixed with the USB clamp before using the USB interface.
- Remove power before attaching or detaching any connectors to or from this product.
- Use the USB (micro-B) interface for temporary connection only during maintenance and setup of the device.
- Do not use the USB interface in hazardous locations.

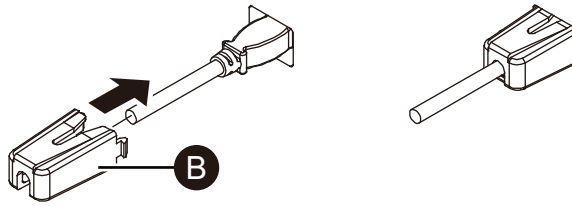
**Failure to follow these instructions will result in death or serious injury.**

1. Insert the USB cable into the USB (micro-B) interface.



A. USB interface

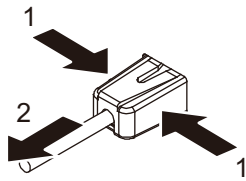
2. Attach the USB clamp to fix the USB cable in place. Insert the USB holder into the USB (micro-B) interface.



B. USB clamp

## Removing USB Clamp mini-B

Remove the USB clamp by pressing the tabs from the sides.



# Maintenance

## What's in This Chapter

|                             |    |
|-----------------------------|----|
| Regular Cleaning .....      | 48 |
| Periodic Check Points ..... | 48 |
| Replacing the Battery ..... | 49 |

## Regular Cleaning

### Cleaning the Product

|                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b><i>NOTICE</i></b>                                                                                                                                                                                                                                                                                                                                                         |
| <b>EQUIPMENT DAMAGE</b> <ul style="list-style-type: none"><li>• Power off this product before cleaning it.</li><li>• Do not use hard or pointed objects to operate the touch panel.</li><li>• Do not use paint thinner, organic solvents, or a strong acid compound to clean the unit.</li></ul> <b>Failure to follow these instructions can result in equipment damage.</b> |

When this product gets dirty, wipe this product with a soft, dry cloth or a soft cloth soaked in only water and wrung tightly.

**NOTE:** When the product is very dirty, soak the soft cloth in water with a neutral detergent, wring the cloth tightly and wipe the product while avoiding the product label.

## Periodic Check Points

### Operation Environment

- Is the ambient air temperature within the allowable range? Refer to Environmental Specifications, page 23.
- Is the ambient air humidity within the specified range? Refer to Environmental Specifications, page 23.

When this product is inside a panel, the ambient environment refers to the interior of the panel.

## Electrical Specifications

- Is the input voltage appropriate? Refer to Electrical Specifications, page 23.
- Are all power cords and cables connected properly? Are there any loose cables?
- Are all installation fasteners holding the unit securely?
- Are there scratches or traces of dirt on the installation gasket?

## Unit Disposal

When disposing this product, dispose it in a manner appropriate to, and in accordance with, your country's industrial machinery disposal/recycling standards.

## Replacing the Battery

This product uses a primary (non-rechargeable) battery for data backup of the internal clock. If the battery is depleted, the clock data will be lost. Use only one of the following specified commercial batteries as a replacement:

- BR2032 or CR-2032/BN (manufactured by Panasonic Corporation)
- CR2032 (manufactured by Renata SA)
- CR2032 (manufactured by VARTA Microbattery GmbH)

### **DANGER**

#### **HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

- Follow the procedures step by step to replace the battery correctly and safely.
- Before replacing the battery, turn off this product's power.

**Failure to follow these instructions will result in death or serious injury.**

### **DANGER**

#### **EXPLOSION, FIRE, OR CHEMICAL HAZARD**

- Use only the identical replacement battery for this product.
- Do not cause a short circuit.
- Recycle or properly dispose of used batteries.
- Do not recharge, disassemble or heat above 70 °C (158 °F).
- Use your hands or insulated tools to remove or replace the battery.
- Maintain proper polarity when inserting and connecting a new battery.

**Failure to follow these instructions will result in death or serious injury.**

### **NOTICE**

#### **LOSS OF DATA**

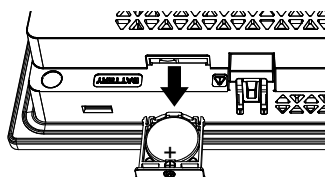
- Replace the battery regularly every five years after you purchase this product.
- Insert the battery before reconnecting the power supply.
- Allow only qualified personnel to replace the battery.

**Failure to follow these instructions can result in equipment damage.**

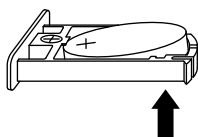
#### **NOTE:**

- Insert the battery before reconnecting the power supply. Otherwise, the clock will not work properly.
- After reconnecting the power supply, set up the clock again. Refer to your screen editing software manual on how to set up the clock.
- The product contains cells and/or storage batteries which must be collected and processed separately when they have run out and at the end of product life. When disposing the battery dispose it in a manner appropriate to, and in accordance with, your country's industrial machinery disposal/recycling standards.

1. Disconnect the power supply from this product.
2. Touch the housing or ground connection to discharge any electrostatic charge from your body.
3. Place this product on a flat, level surface, with the front side pointing up.
4. Open the battery slot on the top or bottom of this product.



1. Battery slot
2. Safety alert symbol (see the safety messages stated on the previous page)
5. Remove the spent battery from the tray by touching the battery from the bottom.



6. Put the new battery on the tray in accordance with the polarity markings in the tray and on the battery.
7. Insert the tray into the battery slot.
8. Reconnect the power supply to this product.



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As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.

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