Easy Harmony ET5

User Guide

EIO0000005638.00
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www.se.com

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Table of Contents

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 Harmony ET5, 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 Harmony ET5.

The characteristics of the products described in this document are intended to match the characteristics that are available on 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, consider 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.
- 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

⚠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 10.

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 (EIO0000005638)
- Chinese (EIO0000005639)

Related Documents

Title of documentation	Reference number
Cybersecurity Best Practices	Refer to General Cybersecurity Information, page 8.

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).

Information on Non-Inclusive or Insensitive Terminology

As a responsible, inclusive company, Schneider Electric is constantly updating its communications and products that contain non-inclusive or insensitive terminology. However, despite these efforts, our content may still contain terms that are deemed inappropriate by some customers.

Trademarks

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

Part Numbers

Part Number List

Series	Display size	Part number
Easy Harmony ET5	7-inch wide	HMIET5400
	10-inch wide	HMIET5500

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

Part Number Configuration

The following describes the configuration of model numbers.

Digit	Category	Number	Description
1...3	Product line	HMI	-
4...6	Series	ET5	-
7	Display size	4	7" wide
		5	10" wide
8, 9	Type	00	Standard

Package Contents

Verify all items listed here are present in your package.

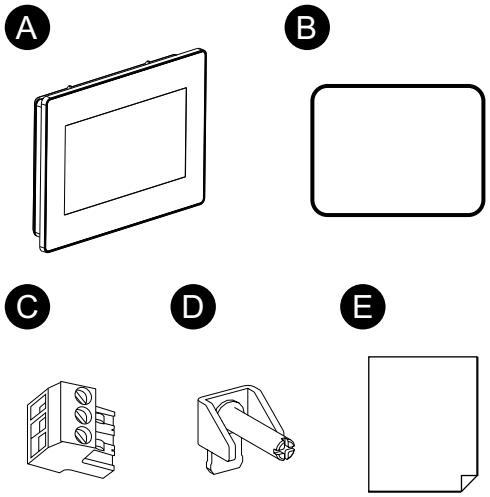
If you find anything damaged or missing, please contact customer support immediately.

⚠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.

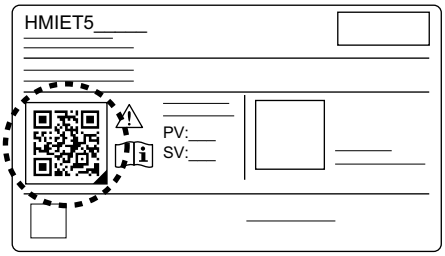


A. Easy Harmony ET5 x 1
B. Installation gasket (attached to this product) x 1
C. DC power connector x 1
D. Installation fasteners
   4 pieces (for 7-inch wide model)
   6 pieces (for 10-inch wide model)
E. Instruction sheet x 1

Product Revision and QR Code

You can identify the product version (PV) and the software version (SV) from the product label.

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

Compliance Standards

Europe:

CE

- Directive 2014/30/EU (EMC)

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).

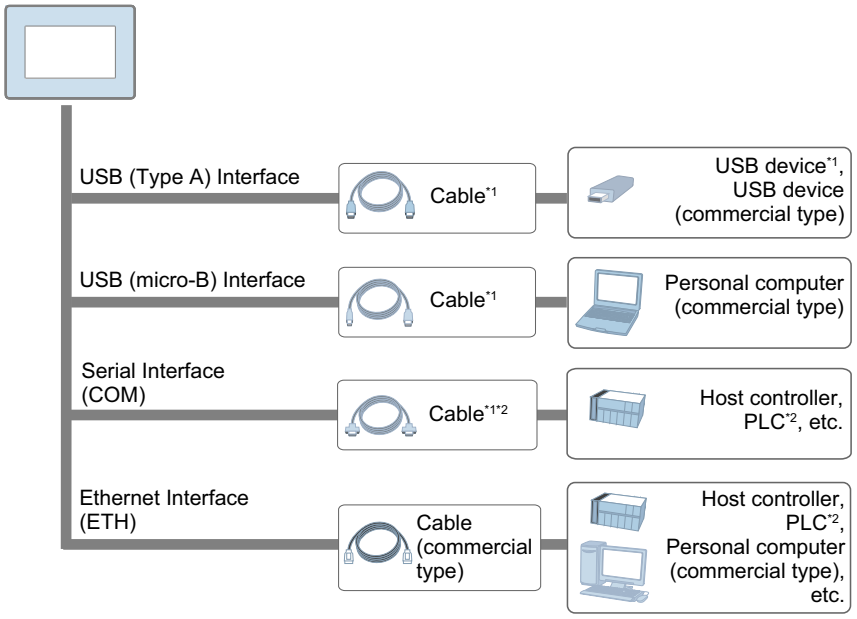
The cells or batteries installed in the product do not contain a weight percentage of heavy metals over the threshold notified by European Battery Regulation 2023/1542.

Device Connectivity

What's in This Chapter

System Design

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



*1 Refer to Accessories, page 14.

*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.

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

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

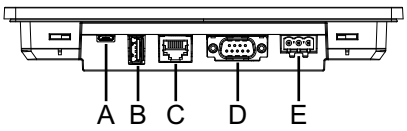
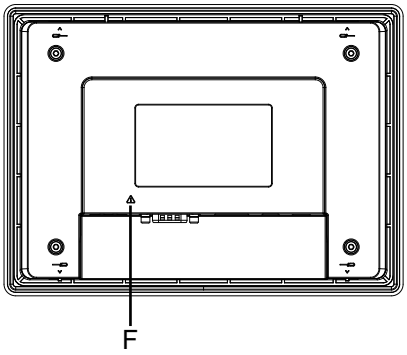
Product name	Product number	Description
USB (micro-B) interface		
USB Transfer Cable	HMIZG936	Cable for transferring screen data from a PC (USB Type A) to this product (USB micro-B).

Parts Identification

What's in This Chapter

Parts Identification

NOTE: The figures below show the HMIET5400.

Bottom	
Rear	

A: USB (micro-B) interface

B: USB (Type A) interface

C: Ethernet interface

D: Serial interface (COM)

E: Power connector

F: Safety alert symbol*1

*1 Identifies the safety messages about the power wiring in Wiring the Power Supply, page 33.

Specifications

What's in This Chapter

General Specifications

Electrical Specifications

	HMIET5400	HMIET5500
Rated input voltage	24 Vdc	
Input voltage limits	19.2...28.8 Vdc	
Voltage dip/short interruption immunity	1 ms or less (at rated input voltage)	
Power consumption	7.7 W	9.1 W
In-rush current	30 A or less	
Dielectric strength	500 Vac for 1 minute (between power terminal and FG terminal)	
Insulation resistance	500 Vdc, 50 MΩ or more (between power terminal and FG terminal)	

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.

Physical environment	
Ambient air temperature	0...50 °C (32...122 °F)
Storage temperature	-20...60 °C (-4...140 °F)
Ambient air and storage humidity	5...90% RH (Non condensing, wet bulb temperature 39 °C [102.2 °F] or less)
Dust	0.1 mg/m^3 (10^{-7} oz/ft^3) 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)
Mechanical environment	
Vibration resistance	IEC/EN 61131-2 compliant 5...9 Hz Single amplitude 3.5 mm (0.14 in) 9...150 Hz Fixed acceleration: 9.8 m/s^2 X, Y, Z directions for 10 cycles (approximately 100 minutes)
Shock resistance	IEC/EN 61131-2 compliant 147 m/s^2, X, Y, Z directions for 3 times
Electrical environment	

Electrical fast transient/burst immunity	IEC 61000-4-4 2 kV: Power port 1 kV: Signal ports
Electrostatic discharge immunity	Contact discharge method: 6 kV Air discharge method: 8 kV (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

	HMIET5400	**HMIET5500**
Grounding	Functional grounding: Grounding resistance of 100 Ω or less, 2 mm^2 (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 33 mm (8.09 x 5.92 x 1.3 in)	270.5 x 200.5 x 34 mm (10.65 x 7.89 x 1.34 in)
Panel cut dimensions (W x H)*2*3	190 x 135 mm (7.48 x 5.31 in) Panel thickness area: 1.6...5 mm (0.06...0.2 in)	255 x 185 mm (10.04 x 7.28 in) Panel thickness area: 1.6...5 mm (0.06...0.2 in)
Weight	450 g (0.99 lb)	830 g (1.83 lb)

*1 The front face of this product, installed in a solid panel, has been tested using conditions equivalent to the standards shown in the specification. Even though this product's level of resistance is equivalent to these standards, oils that should have no effect on this product can possibly harm this product. This can occur in areas where either vaporized oils are present, or where low viscosity cutting oils are allowed to adhere to this product for long periods of time. If this product's front face protection sheet or cover glass peels off, these conditions can lead to the ingress of oil into this product and separate protection measures are suggested. Also, if non-approved oils are present, they may cause deformation or corrosion of the front panel's cover. 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 For dimensional tolerance, everything +1/-0 mm (+0.04/-0 in) and R in angle are below R3 mm (R0.12 in).

*3 Even if the installation wall thickness is within the recommended range for the Panel Cut Dimensions, 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.

Failure to follow these instructions can result in equipment damage.

NOTICE

STORAGE AND OPERATION OUTSIDE OF SPECIFICATIONS

- Store this product in areas where temperatures are within the product's specifications.
- Do not restrict or block the product's ventilation slots.

Failure to follow these instructions can result in equipment damage.

NOTICE

GASKET AGING

- 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

	HMIET5400	HMIET5500
Display type	TFT Color LCD	
Display size	7"	10.1"
Resolution	800 x 480 pixels (WVGA)	1,024 x 600 pixels (WSVGA)
Effective display area (W x H)	153.84 x 85.63 mm (6.06 x 3.37 in)	222.72 x 125.28 mm (8.77 x 4.93 in)
Display colors	16 million colors For details about display colors, refer to the manual of your screen editing software.	
Backlight	White LED (Not replaceable.)	
Backlight service life	20,000 hours or more (continuous operation at 25 °C [77 °F] before backlight brightness decreases to 50%)	
Brightness control	16 levels (Adjusted with touch panel or software)	

Touch Panel

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

The touch panel does not support multi-touch (two-point touch/multi-point touch). If you touch multiple points on the touch panel, it will 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*1	150 MB (operating system, project data, backup data, and other data)
Backup memory*1	128 KB
Local data storage	32 MB

*1 For the usage capacity of each memory, refer to the manual for the screen editing software.

Clock

RTC accuracy	±65 seconds per month (deviation at room temperature of 25 °C [77 °F] and power is OFF).
Clock data backup	Lithium metal battery (primary battery, not replaceable) Battery life: 3 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.

This product uses a primary battery for data backup of the internal clock. If the battery is depleted, the clock data will be lost.

Interface Specifications

Specifications of Each Interface

Use only the SELV (Safety Extra-Low Voltage) circuit to connect the interfaces.

Serial interface (COM)	
Connector	D-Sub 9 pin (plug)
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	
USB (Type A) interface	
Connector	USB 2.0 (Type A) x 1
Power supply voltage	5 Vdc ±5%
Maximum current supplied	500 mA
Maximum transmission distance	3m (9.84 ft) at 12 Mbps
USB (micro-B) interface	
Connector	USB 2.0 (micro-B) x 1
Maximum transmission distance	3m (9.84 ft) at 12 Mbps
Ethernet interface	
Connector	Modular jack (RJ-45) x 1
Standard	IEEE802.3i/IEEE802.3u, 10BASE-T/100BASE-TX

Interface Connection

USB connection

⚠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.
- Use the USB (micro-B) interface for temporary connection only during maintenance and setup of the device.
- Do not use this product in hazardous environments.

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

Serial Interface

Precautions for Connecting Serial Interface

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

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

⚠⚠DANGER

ELECTRIC SHOCK AND FIRE

- Make a direct connection between the FG (frame ground) terminal and ground.
- Do not connect other devices to ground through the FG (frame ground) 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.

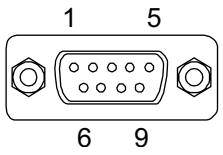
Failure to follow these instructions can result in injury or equipment damage.

NOTE: Use within the rated current.

RS-422/485 (COM)

D-Sub 9 pin plug connector

Product side:



Pin No.	RS-422/RS-485		
	Signal name	Direction	Meaning
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

Pin No.	RS-422/RS-485		
	Signal name	**Direction**	**Meaning**
7	SDB	Output	Send data B (-)
8	NC	–	No connection
9	NC	–	No connection
Shell	FG	–	Frame ground

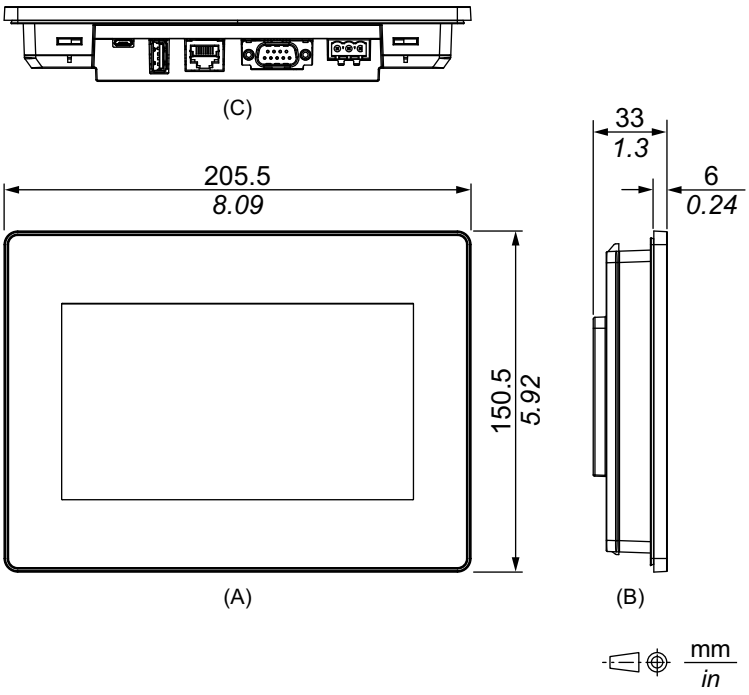
Recommended jack screw is #4-40 (UNC).

Dimensions

What's in This Chapter

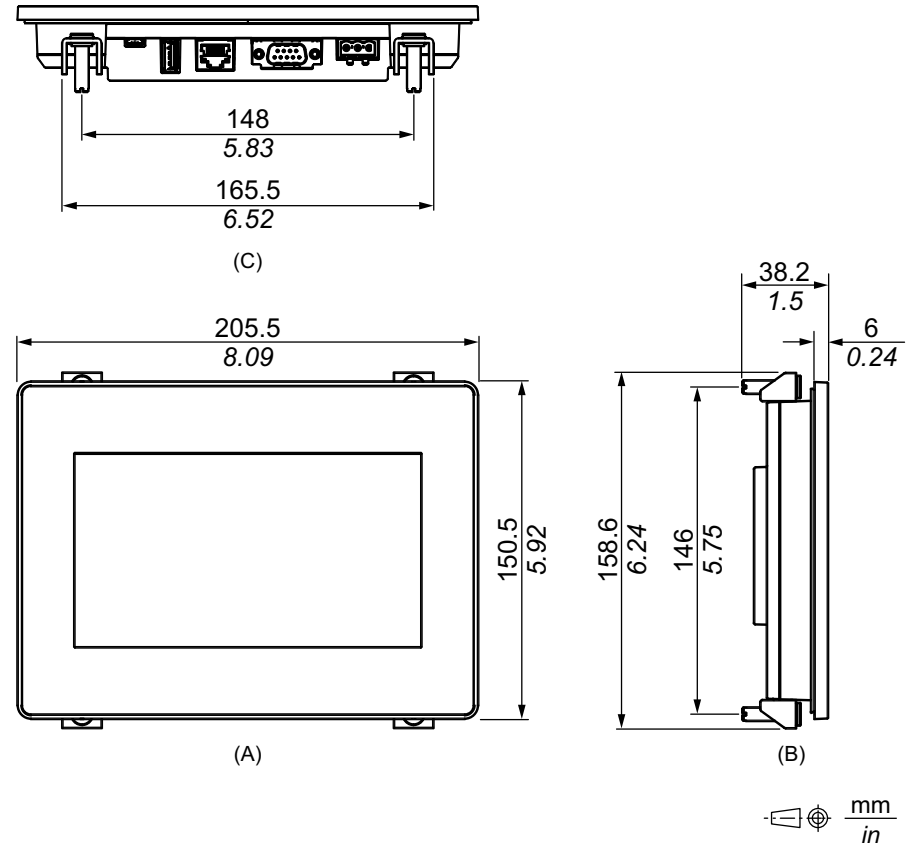
External Dimensions (HMIET5400)

External Dimensions



A. Front
B. Left
C. Bottom

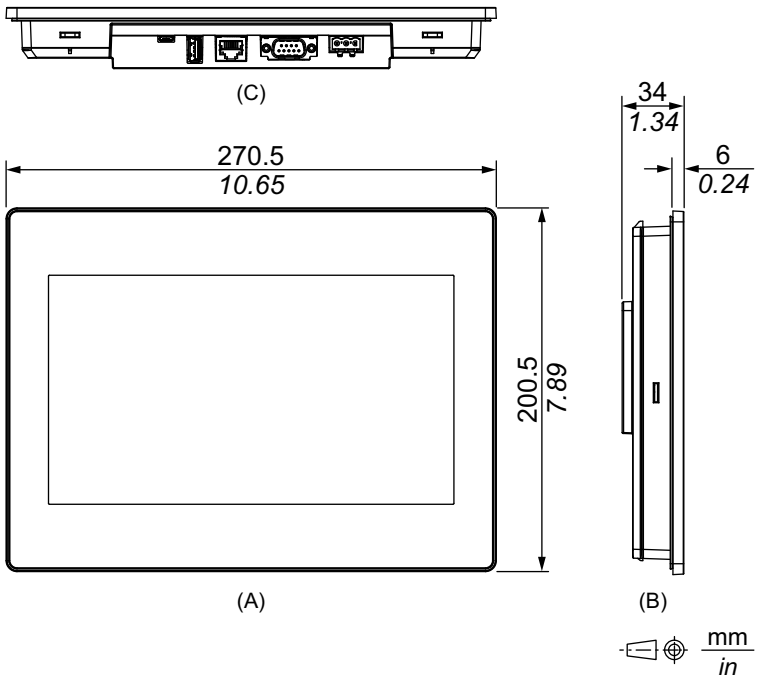
Dimensions with Installation Fasteners



A. Front
B. Left
C. Bottom

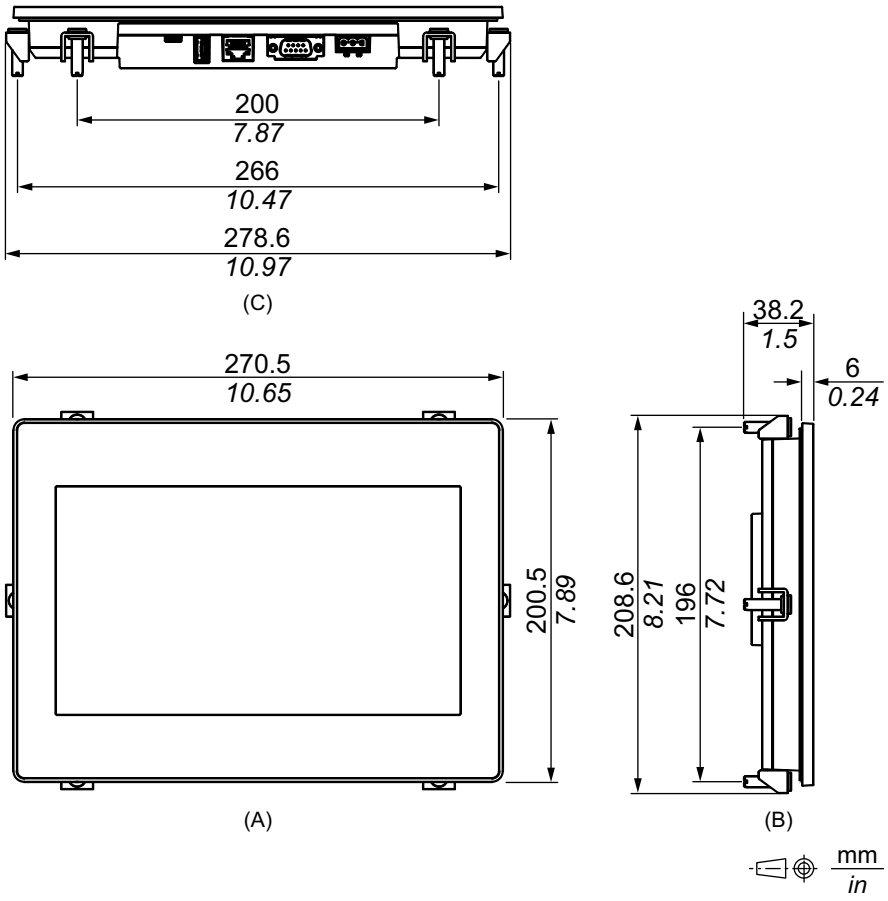
External Dimensions (HMIET5500)

External Dimensions



A. Front
B. Left
C. Bottom

Dimensions with Installation Fasteners



A. Front
B. Left
C. Bottom

Installing and Wiring

What's in This Chapter

Installation

Precautions for Building into an End-use Product

This product is designed for use on flat surfaces of enclosures. The front surface is rated for IP65 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.
- Install and operate this product with its front panel facing outward.

  NOTE: The necessary torque is 0.5 N•m (4.4 lb-in).

Installation Requirements

⚠CAUTION

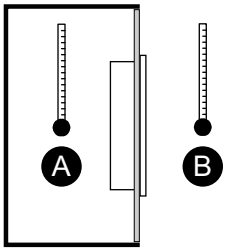
RISK OF BURNING INJURY

Do not touch the bezel or rear chassis during operation.

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

- 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 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.

- Check that the ambient air temperature and the ambient humidity are within their specified ranges in Environmental Specifications, page 16. When installing this product in a cabinet or enclosure, the ambient air temperature is the cabinet's or enclosure's internal and external temperature.

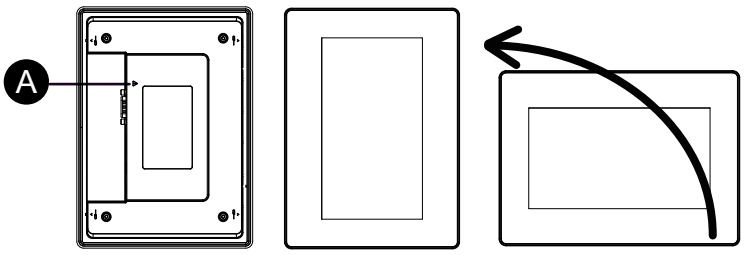


A. Internal temperature

B. External temperature

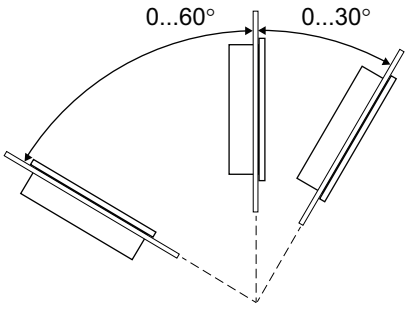
- Be sure that heat from surrounding equipment does not cause this product to exceed its standard operating temperature.
- When mounting this product in portrait orientation, ensure that the right side of this product faces up. In other words, the DC power connector should be at the top.

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

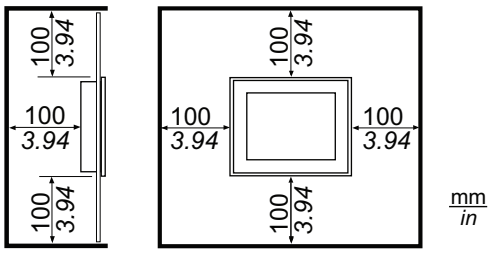


A. Power connector

- When installing this product in a slanted position, the product face should not incline over the angle range -60 to 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:



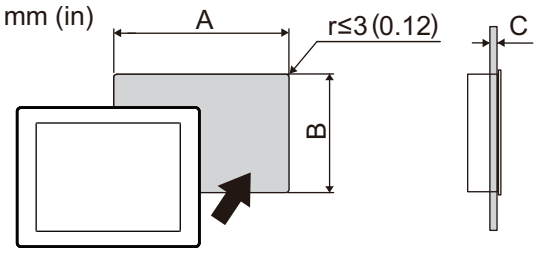
Pressure Differences

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:

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

Panel Cut Dimensions

Based on the panel cut dimensions, open a mount hole on the panel.



A	B	C
HMIET5400		
190 mm (+1/-0 mm) (7.48 in [+0.04/-0 in])	135 mm (+1/-0 mm) (5.31 in [+0.04/-0 in])	1.6...5 mm (0.06...0.2 in)
HMIET5500		
255 mm (+1/-0 mm) (10.04 in [+0.04/-0 in])	185 mm (+1/-0 mm) (7.28 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.
- 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.

NOTICE

EQUIPMENT DAMAGE

- Always use the installation gasket.
- Keep this product stabilized in the panel cut while you are installing or removing the screw fasteners.

Failure to follow these instructions can result in equipment damage.

NOTICE

BROKEN ENCLOSURE

Do not exert more torque than the amount specified.

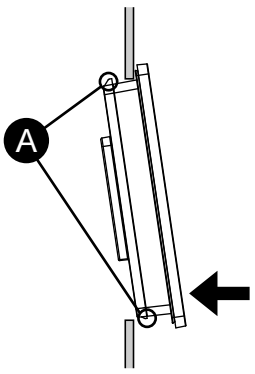
Failure to follow these instructions can result in equipment damage.

1. Check that this product's gasket is seated securely into the bezel's 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.

2. Based on this product's Panel Cut Dimensions, page 29, open a mount-hole on the panel and attach this product to the panel from the front side.

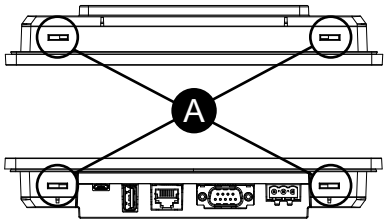
   NOTE: This product has hooks to prevent it from falling. Insert this product into the panel at an angle to avoid hitting the hook.



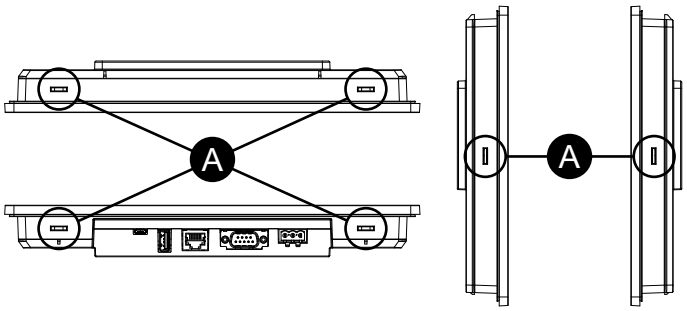
A. Hook

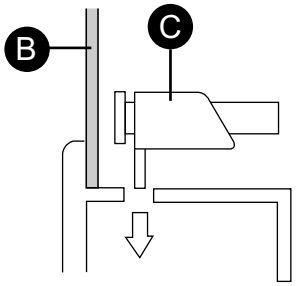
3. Insert the installation fastener into the insertion slots of this product.

HMIET5400



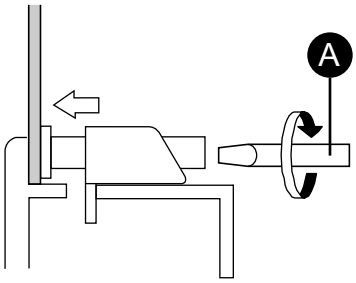
HMIET5500





A. Insertion slots
B. Installation panel
C. Installation fastener

4. In a clockwise direction, tighten the installation fastener's screws with a screwdriver. The necessary torque is 0.5 N•m (4.4 lb-in).



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.

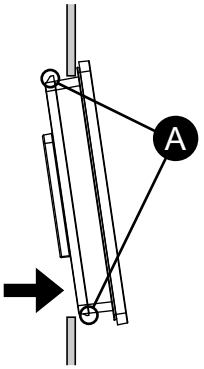
NOTICE

EQUIPMENT DAMAGE

- Keep this product stabilized in the panel cut while you are installing or removing the screw fasteners.
- To avoid damage, 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. Dislodge the bottom part of the product from the panel, then slide out the product at an angle to avoid hitting the hook.



A. Hook

Wiring the Power Supply

DC Power Cord Preparation

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

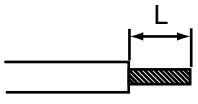
- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Remove power before wiring this product's power terminals.
- Always use a properly rated voltage sensing device to confirm power is off 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).

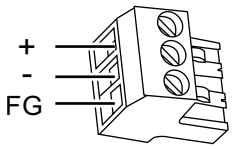
- Make sure the ground wire is either the same or heavier gauge than the power wires.
- Do not use aluminum wires in the power supply's power cord.
- Use copper wire rated for 75 °C (167 °F) or higher.
- The conductor type of DC power cord is solid or stranded wire.
- If the ends of the individual wires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

DC power cord	
Power cord cross sectional area	0.75...2.5 mm^2 (18...13 AWG)*1
Conductor type	Solid or stranded wire
Conductor length	7 mm (0.28 in) 
Recommended screwdriver	Flat-head screwdriver (size 0.6 x 3.5 mm)

*1 Thick wires are recommended to minimize voltage drops in the wire.

How to Connect the DC Power Cord

DC Power Connector



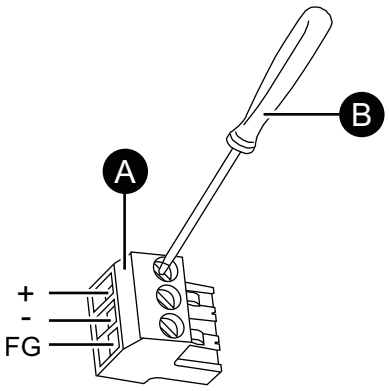
+	24 Vdc
-	0 Vdc
FG	Functional ground (Connect the FG terminal properly to ground.)

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 cable connection.



   A. DC power connector

   B. Flat-blade screwdriver (size 0.6 x 3.5 mm)

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

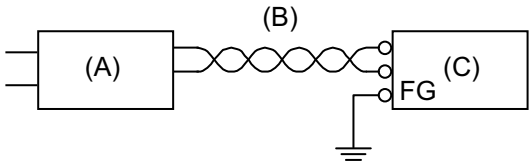
- Install and fasten this product in an installation panel or cabinet prior to connecting power supply and communication lines.
- Securely attach power cables to an installation panel or cabinet.
- Avoid excessive force on the power cable.

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

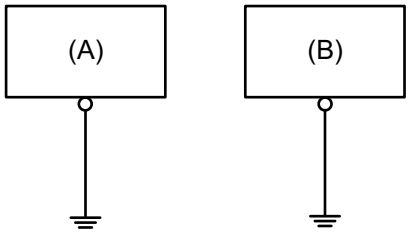


A. Regulated power supply
B. Twisted-pair cord
C. This product

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

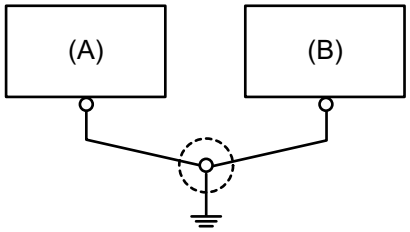
- Check that the grounding resistance is 100 Ω or less or your country's applicable standard.*1
- The FG wire should have a cross sectional area 2 mm^2 (AWG14) or greater*1. Create the connection point as close as possible to this product, and make the wire as short as possible. When using a long grounding 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

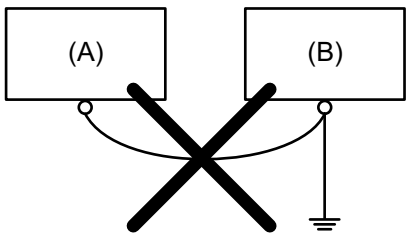
Electromagnetic Interference (EMI) can be created if devices are improperly grounded. EMI can cause loss of communication. If independent grounding is not possible, use a common grounding point as shown in the configuration below. Do not use any other configuration for common grounding.

Correct grounding



A. This product
B. Other device

Incorrect grounding



A. This product
B. Other device

Maintenance

What's in This Chapter

Regular Cleaning

Cleaning This Product

NOTICE
EQUIPMENT DAMAGE • Power off this product before cleaning it. • Do not use hard or pointed objects to operate the touch panel. • Do not use paint thinner, organic solvents, or a strong acid compound to clean the unit. **Failure to follow these instructions can result in equipment damage.**

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 16.
- Is the ambient air humidity within the specified range? Refer to Environmental Specifications, page 16.
- Is the operating atmosphere free of corrosive gasses?

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 16.
- 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.

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