Magelis GTU Series Hardware Manual

09/2013

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Schneider Electric

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein. If you have any suggestions for improvements or amendments or have found errors in this publication, please notify us.

All pertinent state, regional, and local safety regulations must be observed when installing and using this product. For reasons of safety and to help ensure compliance with documented system data, only the manufacturer should perform repairs to components.

When devices are used for applications with technical safety requirements, the relevant instructions must be followed.

Failure to use Schneider Electric software or approved software with our hardware products may result in injury, harm, or improper operating results.

Failure to observe this information can result in injury or equipment damage.

Table of Contents

Safety Information

Important Information

NOTICE

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, 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 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 an imminently hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING

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

⚠ CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **can 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 Book

At a Glance

Document Scope

This manual describes how to use this product.

Validity Note

This documentation is valid for this product.

The technical characteristics of the devices described in this document also appear online. To access this information online:

Step	Action
1	Go to the Schneider Electric home page *www.schneider-electric.com*.
2	In the **Search** box type the reference of a product or the name of a product range. ● Do not include blank spaces in the model number/product range. ● To get information on grouping similar modules, use asterisks (*).
3	If you entered a reference, go to the **Product datasheets** search results and click on the reference that interests you. If you entered the name of a product range, go to the **Product Ranges** search results and click on the product range that interests you.
4	If more than one reference appears in the **Products** search results, click on the reference that interests you.
5	Depending on the size of your screen, you may need to scroll down to see the data sheet.
6	To save or print a data sheet as a .pdf file, click **Download XXX product datasheet**.

The characteristics that are presented in this manual should be the same as those characteristics that appear online. In line with our policy of constant improvement, we may revise content over time to improve clarity and accuracy. If you see a difference between the manual and online information, use the online information as your reference.

Registered Trademarks

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Product names used in this manual may be the registered trademarks owned by the respective proprietors.

Related Documents

You can download the manual related to this product, such as the software manual, from our website at www.schneider-electric.com.

Product Related Information

⚠ ⚠ 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 form both this product and the power supply.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace and secure all covers or elements of the system before applying power to this product.
- This product uses 12 to 24 Vdc power. Using any other level of power can damage both the power supply and this product.

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.

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

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. The machine's 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 mistakes in the control of the machine.

⚠ 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.

NOTE: Open Box is a highly configurable device and is not based on a real-time operating system. Changes to the software and settings of the following must be considered new implementations as discussed in the previous warning messages. Examples of such changes include:

- System BIOS
- Operating System
- Installed hardware
- Installed software

⚠ 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.

Follow all local and national safety standards.

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

⚠ WARNING

UNINTENDED EQUIPMENT OPERATION

- 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 another software, please confirm the operation and safety before use.

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 the same image is displayed on the screen for a long period, an afterimage may appear when the image is changed.

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

⚠ CAUTION

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 injury or equipment damage.

Chapter 1
Overview

Introduction

This chapter describes the panels of this product and general topics such as package contents and standards.

What Is in This Chapter?

This chapter contains the following topics:

Part Number Configuration

The following describes the configuration of part numbers.

Box Module

Digit Position	1	2	3	4	5	6
	H	M	I	G	(model)	(type)
					3: Premium 5: Open	U: Universal

Display Module

Digit Position	1	2	3	4	5	6	7	8
	H	M	I	D	(type)	(size)	(resolution)	(screen type)
					T: Touch	3: 7” 5: 10” 6: 12” 7: 15”	3: TFT normal 4: TFT high definition 5: TFT wide	1: Advanced modular 2: Smart modular

Part Numbers

Series		Model Names	Part Numbers
Magelis GTU	Premium Box	HMIG3U	HMIG3U
	Open Box	HMIG5U	HMIG5U
	Smart Display	HMIDT542	HMIDT542
		HMIDT642	HMIDT642
		HMIDT732	HMIDT732
	Advanced Display	HMIDT351	HMIDT351
		HMIDT551	HMIDT551
		HMIDT651	HMIDT651

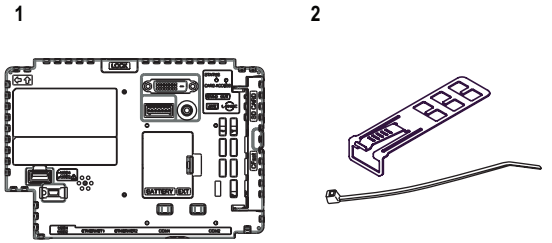
NOTE: You can connect any Display Module to any Box Module.

Package Contents

NOTE: This product has been carefully packed with special attention to quality. However, should you find anything damaged or missing, please contact your local distributor immediately.

Box Module

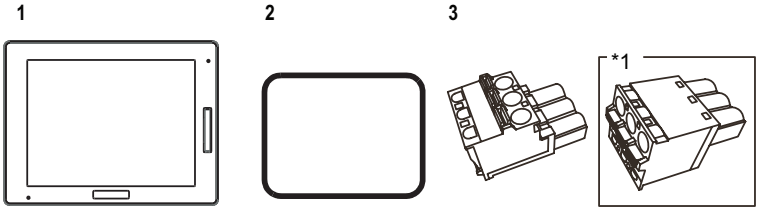
Verify all items listed here are present in your package:



1 Magelis GTU Box Module: 1
2 USB Clamp Type A (1 port): 2 sets for Premium Box, 3 sets for Open Box (1 clip and 1 tie)
3 Magelis GTU (Box Module) Quick Reference Guide: 1
4 Restore DVD: 1
5 MICROSOFT SOFTWARE LICENSE TERMS (only for Open Box): 2

Display Module

Verify all items listed here are present in your package:

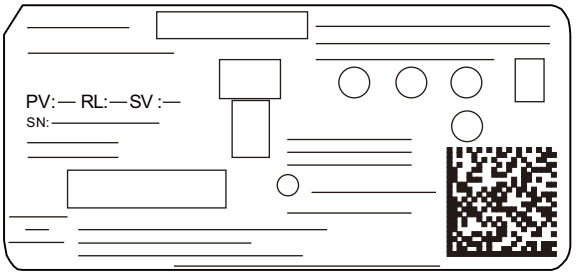


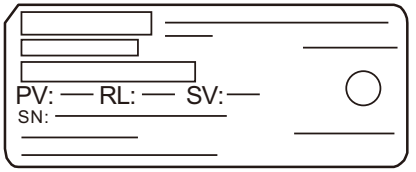
1 Magelis GTU Display Module: 1
2 Installation Gasket: 1 (attached to this product)
3 DC Power Supply Connector (Right-angle[*1]): 1
4 Magelis GTU (Display Module) Quick Reference Guide: 1

*1 Straight type for HMIDT351

Revision

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





Certifications and Standards

NOTE: Some products are not subject to certification and standards. And some products have not received their certification and standards but are scheduled for assessment.

For information on certifications and standards, such as certified models and certificates, see the following product markings.

http://www.schneider-electric.com

Agency Certifications

Schneider Electric submitted this product for independent testing and qualification by third-party listing agencies. These agencies have certified this product as meeting the following standards.

- Underwriters Laboratories Inc., UL 508 and CSA C22.2 N^{o}142, Industrial Control Equipment
- Underwriters Laboratories Inc., ANSI/ISA 12.12.01 and CSA C22.2 N^{o}213, Electrical Equipment for Use in Class I, Division 2 Hazardous (Classified) Locations
- IECEx / ATEX for use in zones 2/22
- EAC certification (Russia, Belarus, Kazakhstan)
- American Bureau of Shipping (ABS)
- Bureau Veritas (BV)
- China Classification Society (CCS)
- Det Norske Veritas (DNV)
- Germanischer Lloyd (GL)
- Lloyd's Register (LR)
- Registro Italiano Navale (RINA)

Compliance Standards

Europe:

CE

- Directive 2006/95/EC (Low Voltage)
- Directive 2004/108/EC (EMC)
  - Programmable Controllers: EN 61131-2 (ED 3)
  - EN61000-6-4
  - EN61000-6-2
- Directive 94/9/EC (ATEX)
  - EN60079-0
  - EN60079-15
  - EN60079-31

Australia

- RCM Mark
  - EN61000-6-4

Korea

- KC Markings
  - KN11
  - KN61000-4 series

Qualifications Standards

Schneider Electric voluntarily tested this product to additional standards. The additional tests performed, and the standards under which the tests were conducted, are specifically identified in Structural Specifications *(see page 55)*.

Hazardous Substances

This product is a device for use in factory systems. When using this product in a system, the system should comply with the following standards in regards to the installation environment and handling:

- WEEE, Directive 2012/19/EU
- RoHS, Directive 2011/65/EU
- RoHS China, Standard SJ/T 11363-2006
- REACH regulation EC 1907/2006

Federal Communication Commission Radio Frequency Interference Statement - For USA

FCC Radio Interference Information

This product has been tested and found to comply with the Federal Communications Commission (FCC) limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial, industrial or business environment. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause or be subject to interference with radio communications. To minimize the possibility of electromagnetic interference in your application, observe the following two rules:

- Install and operate this product in such a manner that it does not radiate sufficient electromagnetic energy to cause interference in nearby devices.
- Install and test this product to ensure that the electromagnetic energy generated by nearby devices does not interfere with the operation of this product.

⚠ WARNING

ELECTROMAGNETIC / RADIO INTERFERENCE

Electromagnetic radiation may disrupt the operation of this product leading to unintended equipment operation. If electromagnetic interference is detected:

- Increase the distance between this product and the interfering equipment.
- Reorient this product and the interfering equipment.
- Reroute power and communication lines to this product and the interfering equipment.
- Connect this product and the interfering equipment to different power supplies.
- Always use shielded cables when connecting this product to a peripheral device or another computer.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this product.

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

Hazardous Location Installation - For USA and Canada

General

This product has been designed with the intention of meeting the requirements of Class I, Division 2 hazardous location application. Division 2 locations are those locations where ignitable concentrations of flammable substances are normally confined, prevented by ventilation, or present in an adjacent Class I, Division 1 location, but where an abnormal situation might result in intermittent exposure to such ignitable concentrations.

While this product is a non-incendive device under ANSI/ISA 12.12.01 and CSA C22.2 N°213, it is not designed for, and should never be used within a Division 1 (normally hazardous) location.

This product is suitable for use in Class I, Division 2, Groups A, B, C, and D hazardous locations or in non-hazardous locations. Before installing or using this product, confirm that the ANSI/ISA 12.12.01 or CSA22.2 N°213 certification appears on the product labeling.

NOTE: Some products are not yet rated as suitable for use in hazardous locations. Always use your product in conformance with the product labeling and this manual.

⚠ DANGER

POTENTIAL FOR EXPLOSION

- Do not use this product in hazardous environments or locations other than Class I, Division2, Groups A, B, C, and D.
- Substitution of any component may impair suitability for Class I, Division 2.
- Do not connect or disconnect this product unless power has been switched off or the area is known to be non-hazardous.
- Always confirm that this product is suitable for use in hazardous locations by checking the ANSI/ISA 12.12.01 or CSA C22.2 N°213 certification appears on the product labeling.
- Do not install any Schneider Electric or OEM components, equipment, or accessories unless these have also been qualified as suitable for use in Class I, Division 2, Groups A, B, C, and D locations.
- Do not attempt to install, operate, modify, maintain, service, or otherwise alter this product except as permitted in this manual. Unpermitted actions may impair the suitability of this product for Class I, Division 2 operation.

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

⚠ DANGER

POTENTIAL FOR EXPLOSION

- Always confirm the ANSI/ISA 12.12.01 or CSA C22.2 N°213 hazardous location rating of your device before installing or using it in a hazardous location.
- To apply or remove the supply power from this product installed in a Class I, Division 2 hazardous location, you must either:
  - Use a switch located outside the hazardous environment, or;
  - Use a switch certified for Class I, Division 1 operation inside the hazardous area.
- Do not connect or disconnect equipment unless power has been switched off or the area is known to be non-hazardous. This applies to all connections including power, ground, serial, parallel, and network connections.
- Never use unshielded / ungrounded cables in hazardous locations.
- Use only non-incendiary USB devices.
- When enclosed, keep enclosure doors and openings closed at all times to avoid the accumulation of foreign matter inside the workstation.

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

⚠ ⚠ 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 form both this product and the power supply.
- Always use a properly rated voltage sensing device to confirm power is off.
- 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. The DC unit is designed to use 12 to 24 Vdc. Always check whether your device is AC or DC powered before applying power.

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

Make sure that this product is properly rated for the location. If the intended location does not presently have a Class, Division and Group rating, then users should consult the appropriate authorities having jurisdiction in order to determine the correct rating for that hazardous location.

Operation and Maintenance

The systems have been designed for compliance with relevant spark ignition tests.

⚠ DANGER

POTENTIAL FOR EXPLOSION

In addition to the other instructions in this manual, observe the following rules when installing this product in a hazardous location:

- Wire the equipment in accordance with the National Electrical Code article 501.10 (B) for Class I, Division 2 hazardous locations.
- Install this product in an enclosure suitable for the specific application. IP66F, IP67F, Type 1, Type 4X [Indoor Use Only], or Type 13 enclosures are recommended even when not required by regulations.

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

NOTE: IP66F and IP67F are not part of UL certification.

European (CE) Compliance

CE Compliance Note

The product described in this manual comply with the European Directives concerning Electromagnetic Compatibility and Low Voltage (CE marking) when used as specified in the relevant documentation, in application for which they are specifically intended, and in connection with approved third-party products.

Chapter 2
Device Connectivity

Introduction

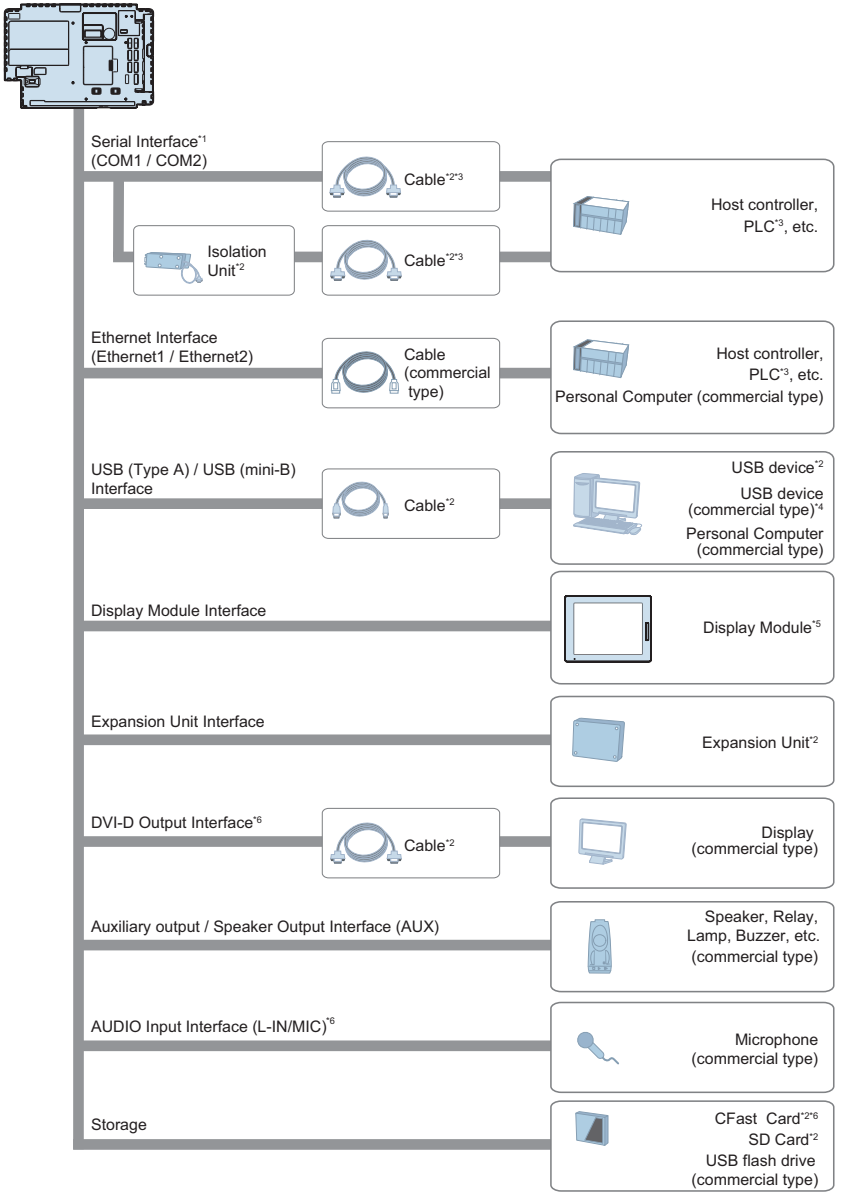
This chapter presents the equipment you can connect to this product.

What Is in This Chapter?

This chapter contains the following topics:

System Design

Box Module



*1 In order to use this as an isolation port, Isolation Unit is required. To use RS-232C isolation unit, set the #9 pin of the COM port to VCC. (Only for COM2)

*2 Refer to Accessories *(see page 28)*.

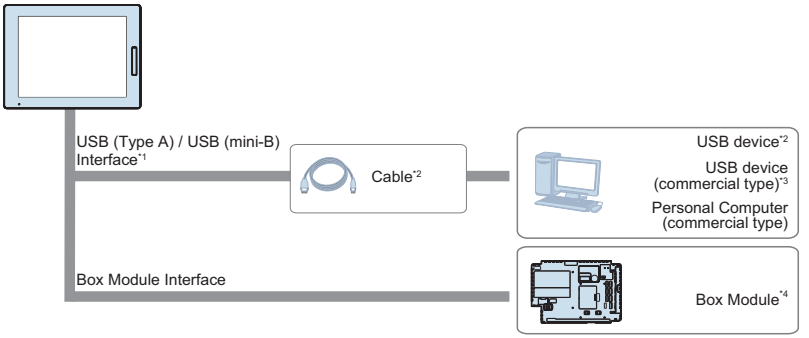
*3 For information on how to connect controllers and other types of equipment, refer to the corresponding device driver manual of your screen editing software.

*4 For supported models, contact your local Schneider Electric support representative.

*5 Refer to the Part Numbers *(see page 15)*.

*6 Only for Open Box.

Display Module



*1 Only for Smart Display. Refer to the Part Numbers *(see page 15)*.

*2 Refer to Accessories *(see page 28)*.

*3 For supported models, contact your local Schneider Electric support representative.

*4 Refer to the Part Numbers *(see page 15)*.

Accessories

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

Product Name		Product Number	Supported Product	Description
Serial Interface	RJ-45 to D-Sub 25 pin Conversion Cable	XBTZG939	Box Module	Connects a D-Sub 25-pin cable to this product (RJ-45).
	9-pin to 25-pin RS-232C Conversion Cable	XBTZG919	Box Module	Connects a standard RS-232C cable (D-Sub 25-pin socket) to this product (D-sub 9 pin plug).
	RS-232C Isolation Unit	XBTZGI232	Box Module	Connects a host controller to this product and provides isolation (RS-232C and RS-422 are switchable).
USB (Type A) Interface	USB Transfer Cable *1	XBTZG935	Box Module Smart Display	Downloads project data via USB Interface.
	USB Front Cable	XBTZGUSB	Box Module	Extension cable attaching USB interface to front panel.
	USB-Serial (RS-232C) Conversion Cable	HMIZURS	Box Module	Cable for converting a USB interface into a serial interface (RS-232C). Allows connection to modems or bar code readers that support RS-232C.
	USB Illuminated Switch	HMIZRA1	Premium Box*2	A unit of 5 illuminated switches with multiple color LED connected to this product via USB.
	Biometric USB Switch	XB5S5B2L2	Box Module*2	Fingerprint recognition unit connected to this product via USB.
	USB Keyboard	HMIZKB1	Premium Box*2 Smart Display	Numpad easily connected with this product via USB.
	USB Tower light Tube Mounting with Fixing Plate	XVGU3SHAV	Premium Box*2	Tower light connected to this product via USB (with Fixing Plate).
	USB Tower light Base Mounting	XVGU3SWV	Premium Box*2	Tower light connected to this product via USB (Base Mounting).

Product Name		Product Number	Supported Product	Description
USB (mini-B) Interface	USB Transfer Cable (USB Type A/mini-B)[*1]	BMXXCAUSBH018	Box Module Smart Display	Cable for transferring screen data from a PC (USB Type A) to this product (USB mini-B) (1.8 m [5.91 ft]).
	USB Transfer Cable (USB Type A/mini-B)[*1]	BMXXCAUSBH045	Box Module Smart Display	Cable for transferring screen data from a PC (USB Type A) to this product (USB mini-B) (4.5 m [14.76 ft]).
	Remote USB port location for mini-USB	HMIZSUSBB	Box Module	Extension cable that attaches to the USB (mini-B) interface on the front side of the operation panel.
DVI-D Output Interface	DVI-D Cable	HMIYCABDVI1011	Open Box	DVI-D 24 pin male (10 m [32.80 ft]).
Auxiliary output/ Speaker Output Interface	Auxiliary connector for Universal Box	HMIZGAUX	Box Module	AUX connector required in case an external output is used (5 pcs/set).
Storage	SD Memory Card (4 GB)[*3]	HMIZSD4G	Box Module	SD Memory Card (4 GB, CLASS4)
	CFast Card (32 GB)[*3]	HMIZCFA32	Open Box	CFast Card (32 GB, SLC) for CFast Card Slot (Storage)

Product Name	Product Number	Supported Product	Description
10.4-inch Screen Protection Sheet	HMIZG65	10.4-inch Smart Display	Disposable, dirt-resistant sheet for the display (5 sheets/set)
12.1-inch Screen Protection Sheet	HMIZG66	12.1-inch Smart Display	
15-inch Screen Protection Sheet	MPCYK50SPSKIT	15-inch Smart Display	
7.0-inch Wide Screen Protection Sheet	HMIZG63	7.0-inch Wide Display Module	
Scr.protec.sheets for GTU Display 10W	HMIZD65W	10-inch Wide Display Module	
Scr.protec.sheets for GTU Display 12W	HMIZD66W	12-inch Wide Display Module	
XBT ZGCO3 Panel Cut Out Adapter for XBT GT	XBTZGCO3	10.4-inch Display Module	Panel cutout adapter for mounting 10.4-inch Display Module in cutout for XBT F034.
XBT ZGCO4 Panel Cut Out Adapter for XBT GT	XBTZGCO4	10.4-inch Display Module	Panel cutout adapter for mounting 10.4-inch Display Module in cutout for XBT G5330, XBT GT5230, XBT GT6330, XBT GT6340, or HMIGTO6310.
Panel Cut-out adapt. XBTGT4-HMIDT3	HMIZGCO1	7.0-inch Wide Display Module	Panel cutout adapter for mounting 7.0-inch Wide Display Module in cutout for XBT GT4230/4330/4340 or HMIGTO3510/4310
Environmental cover for GTU Display 10.4	HMIZDCOV5	10.4-inch Display Module	Environmental resistant cover for the display (1 piece)
Environmental cover for GTU Display 12.1	HMIZDCOV6	12.1-inch Display Module	
Environmental cover for GTU Display 15	HMIZDCOV7	15-inch Display Module	
Battery for Memory Backup	HMIZGBAT	Box Module	Primary battery for time data backup (1 piece)

*1 You can connect using just one of the available USB interfaces.

*2 Make sure your screen editing software supports the product.

*3 You can also use a commercial type.

Maintenance Accessories

Product Name	Product Number	Supported Product	Description
Gasket for GTU Display 10.4	HMIZD55	10.4-inch Display Module	Provides dust and moisture resistance when this product is installed into a solid panel (1 piece)
Gasket for GTU Display 12.1	HMIZD56	12.1-inch Display Module	
Gasket for GTU Display 15	HMIZD57	15-inch Display Module	
Gasket for GTU Display 7W	HMIZD53W	7.0-inch Wide Display Module	
Gasket for GTU Display 10W	HMIZD55W	10.1-inch Wide Display Module	
Gasket for GTU Display 12W	HMIZD56W	12.1-inch Wide Display Module	
USB Clamp TypeA (1 port)	HMIZGCLP1	Box Module	Clamp to prevent disconnection of USB cable (USB/A, 1 port, 5 clamps/set)
DC Power Supply Connector	HMIZGPWS	Display Module	Connector to connect DC power supply cables (5 pcs/set)
DC Power Supply Connector (Right-angle)	HMIZGPWS2	Display Module (except 7.0-inch Wide Display Module)	Right-angle connector to connect DC power supply cables (5 pcs/set)
CFast card 16 GB memory system	HMIZCFA16S	Open Box	CFast Card (16 GB, MLC) for System Card
SD card 1 GB memory system	HMIZSD1GS	Premium Box	SD Memory Card (1 GB, SLC, Class 6) for System Card

Chapter 3
Parts Identification and Functions

Introduction

This chapter presents the part locations and functions.

What Is in This Chapter?

This chapter contains the following sections:

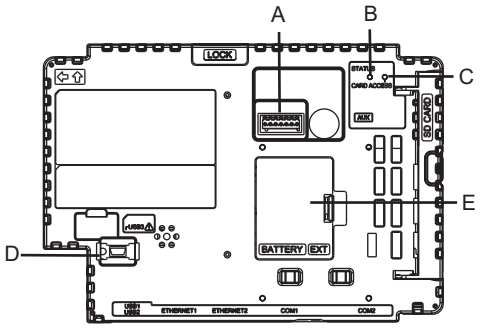
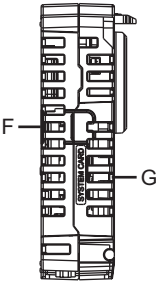
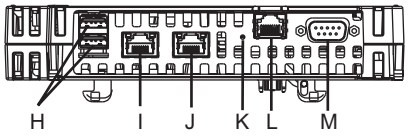
Section 3.1
Box Module

What Is in This Section?

This section contains the following topics:

Premium Box

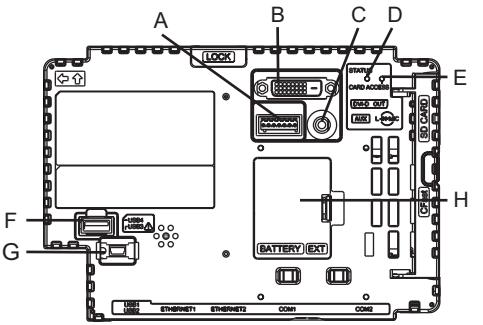
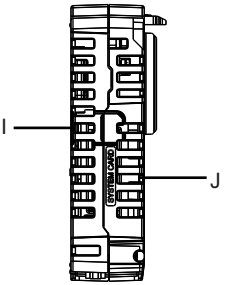
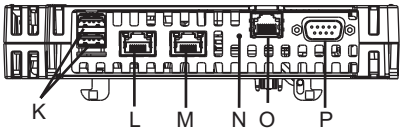
HMIG3U

Side	HMIG3U
Front	
Right	
Bottom	

Part	Name	Description
A	Auxiliary Output/Speaker Output Interface (AUX)	This interface is Alarm Output or Buzzer Output, and Sound Output.
B	Status LED	*(see page 39)*
C	Card Access LED	*(see page 39)*
D	USB (mini-B) Interface	Conforms to USB2.0 (mini-B) x 1. Maximum Communication Distance: 5 m (16.4 ft.).
E	Expansion Unit Interface Cover (EXT)	The Expansion Unit can be embedded in the Expansion Unit Interface Cover open, and Battery for Memory Backup can be connected or replaced.
F	Storage Card Cover	The SD Card is located in the Storage Card Cover open.
G	System Card Cover	The system card is located in the System Card Cover open. You cannot open this cover when the Box Module is in operation.
H	USB (Type A) Interface	Conforms to USB2.0 (Type A) x 2. Power supply voltage: 5Vdc+/-5%. Output Current: 500 mA or less. Maximum communication distance: 5 m (16.4 ft).
I	Ethernet Interface (Ethernet1)	Ethernet transmission interface (10BASET/100BASE-TX/1000BASE-T) Connector: Modular jack (RJ-45) x 1.
J	Ethernet Interface (Ethernet2)	Ethernet transmission interface (10BASET/100BASE-TX/1000BASE-T) Connector: Modular jack (RJ-45) x 1.
K	COM1 LED	*(see page 39)*
L	Serial Interface (COM1)	RS-485 (Isolation) Serial Interface. Connector: Modular jack (RJ-45)x1.
M	Serial Interface (COM2)	RS-232C/422/485 Serial Interface (you can switch the communication method via software). Connector: D-Sub 9 pin (plug) x 1.

Open Box

HMIG5U

Side	HMIG5U
Front	
Right	
Bottom	

Part	Name	Description
A	Auxiliary Output/Speaker Output Interface (AUX)	This interface is Alarm Output or Buzzer Output, and Sound Output.
B	DVI-D Output Interface	DVI-D Output Interface
C	AUDIO Input Interface (L-IN/MIC)	This interface connects a microphone. Use for mini jack connector (∅3.5 mm [0.14 in.]).
D	Status LED	*(see page 39)*
E	Card Access LED	*(see page 39)*
F	USB (Type A) Interface	Conforms to USB2.0 (Type A) x 1. Power supply voltage: 5Vdc+/-5%. Output Current: 500 mA or less. Maximum communication distance: 5 m (16.4 ft.).
G	USB (mini-B) Interface	Conforms to USB2.0 (mini-B) x 1. Maximum Communication Distance: 5 m (16.4 ft.)
H	Expansion Unit Interface Cover (EXT)	The Expansion Unit can be embedded in the Expansion Unit Interface Cover opening, and Battery for Memory Backup can be connected or replaced.
I	Storage Card Cover	The SD and CFast Card is located in the Storage Card Cover open.
J	System Card Cover	The system card is located in the System Card Cover opening. Do not open this cover when the Box Module is in operation.
K	USB (Type A) Interface	Conforms to USB2.0 (Type A) x 2. Power supply voltage: 5Vdc+/-5%. Output Current: 500 mA or less. Maximum communication distance: 5 m (16.4 ft.).
L	Ethernet Interface (Ethernet1)	Ethernet transmission interface (10BASET/100BASE-TX/1000BASE-T). Connector: Modular jack (RJ-45) x 1.
M	Ethernet Interface (Ehternet2)	Ethernet transmission interface (10BASET/100BASE-TX/1000BASE-T). Connector: Modular jack (RJ-45) x 1.
N	COM1 LED	*(see page 39)*
O	Serial Interface (COM1)	RS-485 (Isolation) Serial Interface. Connector: Modular jack (RJ-45) x 1.
P	Serial Interface (COM2)	RS-232C/422/485 Serial Interface (you can switch the communication method via software). Connector: D-Sub 9 pin (plug) x 1.

LED Indications

Status LED

Color	Indicator	HMIG3U	HMIG5U
Green	ON	Offline	
		In operation	
	Flashing	In operation	
Orange	Flashing	Software starting up	
Red	ON	Power is turned ON.	
	Flashing	In operation	
Red/Green	Alternating	Display Module connection error.	
Orange/Red	Alternating	SD Card boot error.	--
--	OFF	Power is turned OFF.	

NOTE: When the HMIG5U is connected and the power cable is connected to the power supply, even if the system is stopped the Display Module's Status LED will display red.

Card Access LED

Color	Indicator	HMIG3U	HMIG5U
Green	ON	Storage Card is being accessed.	Storage Card or System Card (OS) is being accessed.
--	OFF	Storage Card is not inserted or accessed.	Storage Card or System Card (OS) is not accessed.

COM1 LED

Color	Indicator	Description
Yellow	ON	Data transmission is in progress.
--	OFF	No data transmission.

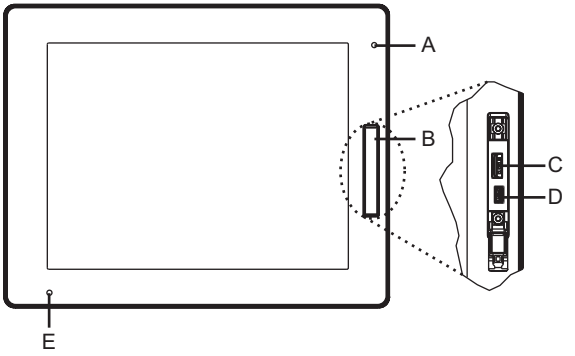
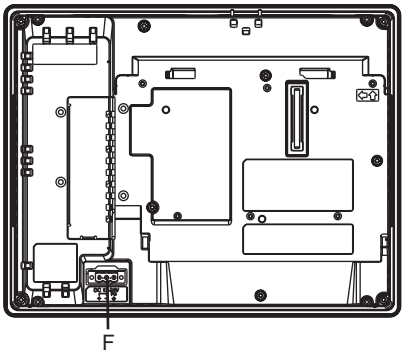
Section 3.2
Display Module

What Is in This Section?

This section contains the following topics:

Smart Display

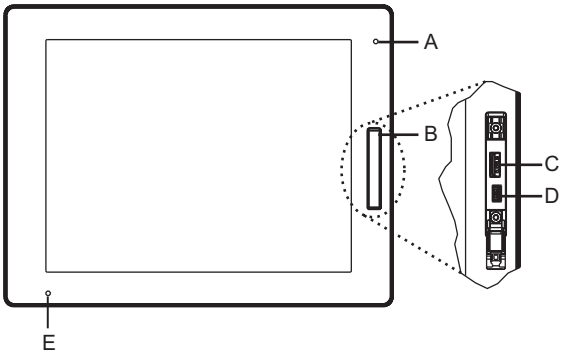
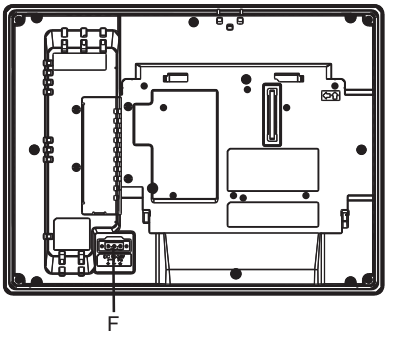
HMIDT542

Side	HMIDT542
Front	
Rear	

Part	Name	Description
A	Brightness Sensor	Brightness sensor which automatically controls the brightness of the backlight.
B	Front USB Cover	USB (Type A) Interface and USB (mini-B) Interface are located in the Front USB Cover open.

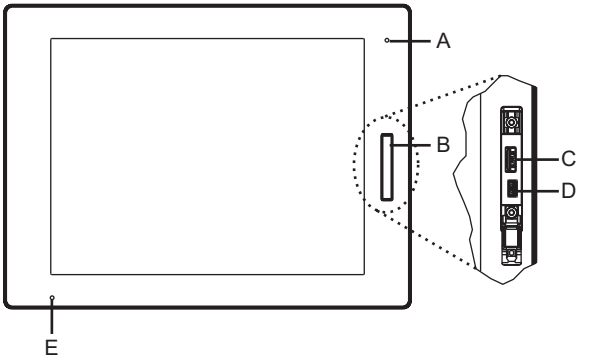
Part	Name	Description
C	USB (Type A) Interface	Conforms to USB2.0 (Type A) x 1. Power supply voltage: 5Vdc+/-5%. Output Current: 500 mA or less. Maximum communication distance: 5 m (16.4 ft.).
D	USB (mini-B) Interface	Conforms to USB2.0 (mini-B) x 1. Maximum Communication Distance: 5 m (16.4 ft.).
E	Status LED	*(see page 48)*
F	Power Plug Connector	-

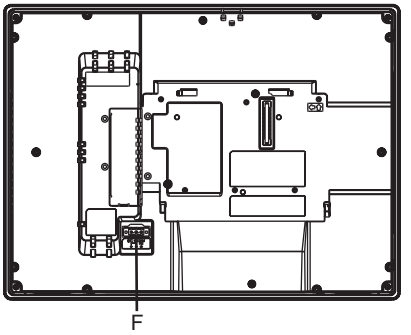
HMIDT642

Side	HMIDT642
Front	
Rear	

Part	Name	Description
A	Brightness Sensor	Brightness sensor to automatically control the brightness of the backlight.
B	Front USB Cover	USB (Type A) Interface and USB (mini-B) Interface are located in the Front USB Cover open.
C	USB (Type A) Interface	Conforms to USB2.0 (Type A) x 1. Power supply voltage: 5Vdc+/-5%. Output Current: 500 mA or less. Maximum communication distance: 5 m (16.4 ft.).
D	USB (mini-B) Interface	Conforms to USB2.0 (mini-B) x 1. Maximum Communication Distance: 5 m (16.4 ft.).
E	Status LED	*(see page 48)*
F	Power Plug Connector	-

HMIDT732

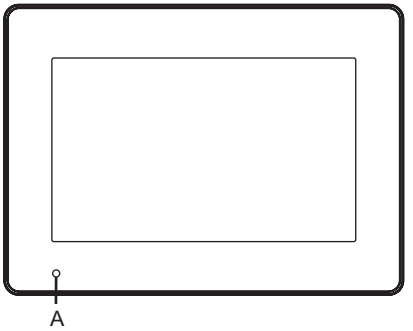
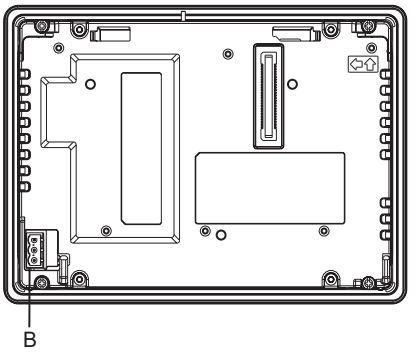
Side	HMIDT732
Front	

Side	HMIDT732
Rear	

Part	Name	Description
A	Brightness Sensor	Brightness sensor to automatically control the brightness of the backlight.
B	Front USB Cover	USB (Type A) Interface and USB (mini-B) Interface are located in the Front USB Cover open.
C	USB (Type A) Interface	Conforms to USB2.0 (Type A) x 1. Power supply voltage: 5Vdc+/-5%. Output Current: 500 mA or less. Maximum communication distance: 5 m (16.4 ft.).
D	USB (mini-B) Interface	Conforms to USB2.0 (mini-B) x 1. Maximum Communication Distance: 5 m (16.4 ft.).
E	Status LED	*(see page 48)*
F	Power Plug Connector	-

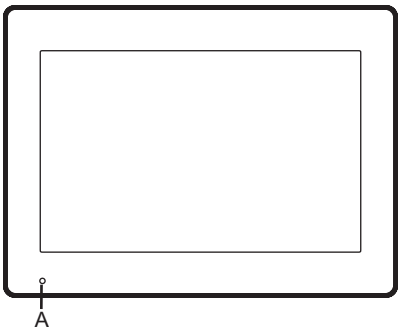
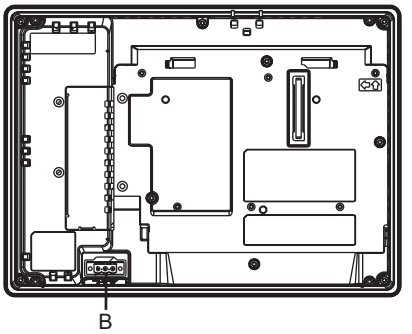
Advanced Display

HMIDT351

Side	HMIDT351
Front	
Rear	

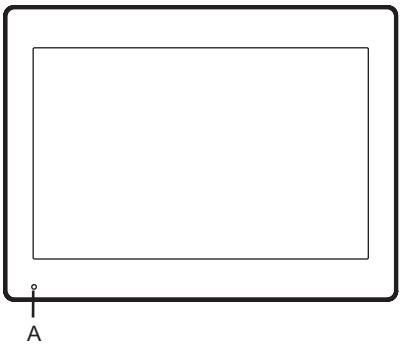
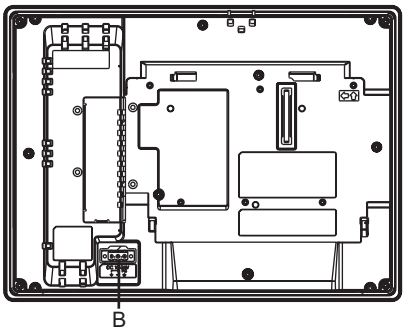
Part	Name	Description
A	Status LED	*(see page 48)*
B	Power Plug Connector	-

HMIDT551

Side	HMIDT551
Front	
Rear	

Part	Name	Description
A	Status LED	*(see page 48)*
B	Power Plug Connector	-

HMIDT651

Side	HMIDT651
Front	
Rear	

Part	Name	Description
A	Status LED	*(see page 48)*
B	Power Plug Connector	-

LED Indications

Status LED

Color	Indicator	Description	
		Connected to HMIG3U	**Connected to HMIG5U**
Green	ON	Offline	
		In operation	
	Flashing	In operation	
	LED fade	Backlight OFF (Standby Mode)	
Orange	Flashing	Software starting up	
Red	ON	Power is turned ON.	
	Flashing	In operation	
Red/Green	Alternating	Box Module connection error.	
Orange/Red	Alternating	SD Card boot error.	--
Orange/Red/Green	Alternating	Display Module connection error.	
--	OFF	Power is turned OFF.	

NOTE: When the HMIG5U is connected and the power cable is connected to the power supply, even if the system is stopped the Display Module's Status LED will display red.

Chapter 4
Specifications

Introduction

This chapter presents the product specifications.

What Is in This Chapter?

This chapter contains the following sections:

Section 4.1
General Specifications

What Is in This Section?

This section contains the following topics:

Electrical Specifications

NOTE: The power consumption for the combined unit of Box Module and Display Module equals the sum of power consumption of the two modules.

Box Module

Specification			HMIG3U	HMIG5U
Power Supply	Rated Input Voltage		12 Vdc (Supply from Display Module)	
	Power Consumption (Primary Power Supply [including power loss])	Max	25 W	35 W
		When power is not supplied to external devices	12.5 W or less	22.5 W or less

Display Module

Specification			HMIDT542	HMIDT642	HMIDT732
Power Supply	Rated Input Voltage		12...24 Vdc		
	Input Voltage Limits		10.8...28.8 Vdc		
	Voltage Drop		12 Vdc: 1.25 ms or less 24 Vdc: 5 ms or less		
	Power Consumption (Primary Power Supply [including power loss])	Max (Including Box Module)	50 W	56 W	57 W
		Max (Display Module only)*1	15 W	21 W	22 W
		When power is not supplied to external devices (Display Module only)*1	12 W or less	18 W or less	19 W or less
		When screen turns off the backlight (Standby Mode) (Display Module only)*1	6 W or less		
		When screen backlight 20% (Display Module only)*1	8 W or less	11 W or less	
	In-Rush Current		30 A or less		
Voltage Endurance			1,000 Vac, 20 mA for 1 minute (between charging and FG terminals)		
Insulation Resistance			500 Vdc, 10 MΩ or more (between charging and FG terminals)		

*1 The power consumption for the combined unit of Box Module and Display Module equals the sum of the power consumption for the Modules.

Specification			HMIDT351	HMIDT551	HMIDT651
Power Supply	Rated Input Voltage		12...24 Vdc		
	Input Voltage Limits		10.8...28.8 Vdc		
	Voltage Drop		12 Vdc: 1.25 ms or less 24 Vdc: 5 ms or less		
	Power Consumption (Primary Power Supply [including power loss])	Max (Including Box Module)	41 W	43 W	45 W
		Max (Display Module only)*1	6.5 W	8.5 W	11.5 W
		When power is not supplied to external devices (Display Module only)*1	-		
		When screen turns off the backlight (Standby Mode) (Display Module only)*1	2 W or less	2.5 W or less	
		When screen backlight 20% (Display Module only)*1	4 W or less	5 W or less	6 W or less
	In-Rush Current		30 A or less		
Voltage Endurance			1,000 Vac, 20 mA for 1 min (between charging and FG terminals)		
Insulation Resistance			500 Vdc, 10 MΩ or more (between charging and FG terminals)		

*1 The power consumption for the combined unit of Box Module and Display Module equals the sum of the power consumption for the Modules.

Environmental Specifications

Box Module / Display Module

Physical Environment	Surrounding Air Temperature	0...60 °C (32...140 °F)
	Storage Temperature	-20...60 °C (-4...140 °F)
	Surrounding Air and Storage Humidity	10%...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 (approx. 100 min.)
	Shock Resistance	IEC/EN 61131-2 compliant 147 m/s^2, X, Y, Z directions for 3 times
Electrical Environment	Noise Immunity	Noise Voltage: 1,000 Vp-p Pulse Duration: 1 μs Rise Time: 1 ns (via noise simulator)
	Electrostatic Discharge Immunity	Contact Discharge Method: 6 kV (IEC/EN 61000-4-2 Level 3)

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

Air quality requirements

Do not operate or store the panel where chemicals evaporate, or where chemicals are present in the air:

- Corrosive chemicals: Acids, alkalines, liquids containing salt.
- Flammable chemicals: Organic solvents.

⚠ CAUTION
INOPERATIVE EQUIPMENT 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

Box Module

	HMIG3U	HMIG5U
Cooling Method	Natural air circulation	
External Dimensions	W188 x H131 x D45 mm (W7.4 x H5.16 x D1.77 in.)	
Weight	0.9 kg (1.98 lb) or less	

Smart Display

	HMIDT542	HMIDT642	HMIDT732
Grounding	Functional grounding: Grounding resistance of 100 Ω, 2 mm^2 (AWG 14) or thicker wire, or your country's applicable standard (same for FG and SG terminals).		
Cooling Method	Natural air circulation		
Structure *1	IP66F, IP67F, Type 4X (Indoor Use Only) /13 * on the front panel when properly installed in an enclosure and not using the front panel USB port.		
External Dimensions	W272.5 x H214.5 x D67 mm (W10.73 x H8.44 x D2.64 in.)	W315 x H241 x D67 mm (W12.4 x H9.49 x D2.64 in.)	W397 x H296 x D67 mm (W15.6 x H11.7 x D2.64 in.)
Panel Cut Dimensions	W259 x H201 mm (W10.2 x H7.91 in.)*2 Panel thickness area: 1.6...5 mm (0.06...0.2 in)*3	W301.5 x H227.5 mm (W11.87 x H8.96 in.)*2 Panel thickness area: 1.6...5 mm (0.06...0.2 in)*3	W383.5 x H282.5 mm (W15.1 x H11.12 in.)*2 Panel thickness area: 1.6...5 mm (0.06...0.2 in)*3
Weight	2.7 kg (5.9 lb) or less	3.2 kg (7.1 lb) or less	4.5 kg (9.9 lb) or less

*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 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 plastic 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 (R0.12 in).

*3 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.

Advanced Display

	HMIDT351	HMIDT551	HMIDT651
Grounding	Functional grounding: Grounding resistance of 100 Ω, 2 mm^2 (AWG 14) or thicker wire, or your country’s applicable standard (same for FG and SG terminals).		
Cooling Method	Natural air circulation		
Structure *1	IP66F, IP67F, Type 4X (Indoor Use Only)/13 * on the front panel when properly installed in an enclosure.		
External Dimensions	W203.6 x H148.6 x D36 mm (W8.02 x H5.85 x D1.42 in.)	W268.5 x H198.5 x D67 mm (W10.57 x H7.81 x D2.64 in.)	W308.5 x H230.5 x D67 mm (W12.15 x H9.07 x D2.64 in.)
Panel Cut Dimensions	W190 x H135 mm (W7.48 x H5.31 in)*2 Panel thickness area: 1.6...5 mm (0.06...0.2 in)*3	W255 x H185 mm (W10.04 x H7.28 in)*2 Panel thickness area: 1.6...5 mm (0.06...0.2 in)*3	W295 x H217 mm (W11.61 x H8.54 in)*2 Panel thickness area: 1.6...5 mm (0.06...0.2 in)*3
Weight	1.2 kg (2.6 lb) or less	2.5 kg (5.5 lb) or less	3 kg (6.6 lb) or less

*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 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 plastic 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 (R0.12 in).

[*3] 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.

⚠ CAUTION

EQUIPMENT DAMAGE

- Ensure the panel 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, since it can damage the display. Also, do not press on the touch panel with a pointed object, such as the tip of a mechanical pencil or a screwdriver. since doing so can damage the touch panel.

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

NOTICE

STORAGE AND OPERATION OUTSIDE OF SPECIFICATIONS

- Store the panel in areas where temperatures are within the panel’s specifications.
- Do not restrict or block the panel’s rear-face 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 to keep the initial IP level.
- Change 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.

Section 4.2
Functional Specifications

What Is in This Section?

This section contains the following topics:

Display Specifications

Smart Display

	HMIDT542	HMIDT642	HMIDT732
Display Type	TFT Color LCD		
Display Size	10.4”	12.1”	15”
Resolution	800 x 600 pixels (SVGA)	1,024 x 768 pixels (XGA)	
Resolution input from Box Module*1	640 x 480 pixels (VGA), 800 x 600 pixels (SVGA), 1,024 x 768 pixels (XGA), 1,280 x 1,024 pixels (SXGA)		
Effective Display Area	W211.2 x H158.4 mm (W8.31 x H6.24 in.)	W245.76 x H184.32 mm (W9.68 x H7.26 in.)	W304.1 x H228.1 mm (W11.97 x H8.98 in.)
Display Colors	16 million colors For details about Display Colors, refer to the manual for your screen editing software.		
Backlight	White LED (Not user replaceable. When replacement is required, contact your local distributor.)		
Backlight Service Life	50,000 hours or more (continuos operation at 25 °C [77 °F] before backlight brightness decreases to 50%		
Brightness Control	0...100 (Adjusted with touch panel or software)		

*1 For the resolution settings in your screen editing software, refer to the manual provided with your screen editing software.

Advanced Display

	HMIDT351	HMIDT551	HMIDT651
Display Type	TFT Color LCD		
Display Size	7”	10.1”	12.1”
Resolution	800 x 480 pixels (WVGA)	1,280 x 800 pixels (WXGA)	
Effective Display Area	W154.08 x H95.92 mm (W6.06 x H3.78 in.)	W216.96 x H135.6 mm (W8.54 x H5.34 in.)	W261.12 x H163.2 mm (W10.28 x H6.43 in.)
Display Colors	262,144 colors		
Backlight	White LED (Not user replaceable. When replacement is required, contact your local distributor.)		
Backlight Service Life	50,000 hours or more (continuos operation at 25 °C [77 °F] before backlight brightness decreases to 50%		
Brightness Control	0...100 (Adjusted with touch panel or software)		

Memory

	HMIG3U	HMIG5U
System Card	SD Card 1 GB (operating system, project data, and other data)	CFast Card 16 GB (operating system, project data, application, and other data)
Backup Memory	NVRAM 512 KB	

Clock

± 60 seconds per month (deviation at room temperature and power is OFF). Variations in operating conditions and battery life can cause clock deviations from -380 to +90 seconds per month.

For systems where this level of precision is insufficient, the user should monitor and make adjustments when required.

Backup clock data uses a Supercapacitor (electric double-layer capacitor) for power. When the voltage from the Supercapacitor is low, clock data is lost*1 when this product is turned OFF. The average period for backup is as follows:

Initial: Approximately 100 days

After 5 years: Approximately 30 days (used at ambient temperature of 25 °C [77 °F])

By connecting the Battery for Memory Backup (Part Number HMIZGBAT) accessory, you can set up a backup period of up to 10 years or more.

*1 If clock data is lost, a clock data error message appears when starting up this product. When this happens, leave this product ON for at least 5 minutes, and then set the clock again. Refer to your screen editing software manual on how to set up the clock.

Touch Panel

	Smart Display	Advanced Display
Touch Panel Type	Resistive Film (analog, multi-touch)	Resistive Film (analog)
Touch Panel Resolution	1,024 x 1,024	
Touch Panel Service Life	1 million times or more	

Section 4.3
Interface Specifications

What Is in This Section?

This section contains the following topics:

Specifications

Box Module

		HMIG3U	HMIG5U
Serial Interface COM1	Asynchronous Transmission	RS-485 (isolation)	
	Data Length	7 or 8 bits	
	Stop Bit	1 or 2 bits	
	Parity	None, odd, or even	
	Data Transmission Speed	2,400 (1,200) ...115,200 bps, 187,500 bps (MPI)	2,400 (1,200) ...115,200 bps
	Connector	Modular jack (RJ-45)	
Serial Interface COM2	Asynchronous Transmission	RS-232C/422/485	
	Data Length	7 or 8 bits	
	Stop Bit	1 or 2 bits	
	Parity	None, odd, or even	
	Data Transmission Speed	2,400 (1,200) ...115,200 bps, 187,500 bps (MPI)	2,400 (1,200) ...115,200 bps
	Connector	D-Sub 9 pin (plug)	
USB (Type A) Interface	Connector	USB 2.0 (Type A) x 2	USB 2.0 (Type A) x 3
	Power Supply Voltage	5 Vdc ±5%	
	Maximum Current Supplied	500 mA/port	500 mA/port, 1 A total for 3 ports
	Maximum Transmission Distance	5 m (16.4 ft)	
USB (mini-B) Interface	Connector	USB 2.0 (mini-B) x 1	
	Maximum Transmission Distance	5 m (16.4 ft)	
Ethernet Interface	Standard	IEEE802.3i/IEEE802.3u/IEEE802.3ab, 10BASE-T/ 100BASE-TX/1000BASE-T	
	Connector	Modular jack (RJ-45) x 2	
SD Card Interface	SD Card	SD Card Slot (System) x 1 SD Card Slot (Storage) x 1	SD Card Slot (Storage) x 1
CFast Card Interface	CFast Card	-	CFast Card Slot (System) x 1 CFast Card Slot (Storage) x 1

		HMIG3U	HMIG5U
Expansion Unit Interface	Expansion Unit	Fieldbus Unit x 1	
Video Interface	DVI-D	-	DVI-D OUT
	Connector		DVI-D 24 pin (socket) x 1
Sound Input Interface	Sound Input	-	MIC or LINE input (software switch)
	Connector		MINI-JACK ∅3.5 x 1
Sound Output Interface	Speaker Output	300 mW (Rated Load: 8 Ω, Frequency: 1 kHz)	
	LINE Output	Rated load: 10 kΩ or more	
	Connector	2-piece terminal block (AUX) x 1	
AUX Input/Output Interface	AUX Input/Output	Alarm Output/Buzzer Output	
	Rated Voltage	24 Vdc	
	Rated Current	50 mA or less	
	Connector	2-piece terminal block (AUX) x 1	

Display Module

		Smart Display
USB (Type A) Interface*1	Connector	USB 2.0 (Type A) x 1
	Power Supply Voltage	5 Vdc ±5%
	Maximum Current Supplied	500 mA
	Maximum Transmission Distance	5 m (16.4 ft)
USB (mini-B) Interface*1	Connector	USB 2.0 (mini-B) x 1
	Maximum Transmission Distance	5 m (16.4 ft)

*1 When using the Display Module with the Premium Box, you can connect only one of each type of USB device, such as one USB flash drive, one transfer cable, or one bar code reader. If you connect multiple devices that are the same type, only the first device will work.

Interface Connection

Cable Connections

⚠ DANGER

POTENTIAL FOR EXPLOSION

- Always confirm the ANSI/ISA 12.12.01 or CSA C22.2 N°213 hazardous location rating of your device before installing or using it in a hazardous location.
- To apply or remove the supply power from this product installed in a Class I, Division 2 hazardous location, you must either:
  - Use a switch located outside the hazardous environment, or;
  - Use a switch certified for Class I, Division 1 operation inside the hazardous area.
- Do not connect or disconnect equipment unless power has been switched off or the area is known to be non-hazardous. This applies to all connections including power, ground, serial, parallel, and network connections.
- Never use unshielded / ungrounded cables in hazardous locations.
- Use only non-incendiary USB devices.
- When enclosed, keep enclosure doors and openings closed at all times to avoid the accumulation of foreign matter inside the workstation.

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

Division 2 hazardous location regulations require that all cable connections be provided with adequate strain relief and positive interlock. Use only non-incendive USB devices as USB connections do not provide adequate strain relief to allow the use of the USB connections of this product *(see page 72)*. Never connect or disconnect a cable while power is applied at either end of the cable. All communication cables should include a chassis ground shield. This shield should include both copper braid and aluminum foil. The D-sub style connector housing mush be a metal conductive type (e.g. molded zinc (and the ground shield braid must be terminated directly to the connector housing. Do not use a shield drain wire.

The outer diameter of the cable mist be suited to the inner diameter of the cable connector strain relief so that a reliable degree of strain relief is maintained. Always secure the D-sub connectors to the workstation-mating connectors via the two screws located on both sides.

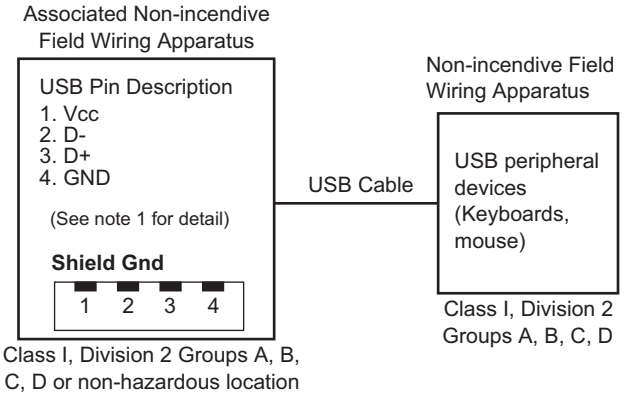
USB Connection

Non-incendive field wiring apparatus (keyboards, mouse) are permitted for use on Front USB port (Type A) of associated field wiring non-incendive Apparatus (this product). Non-incendive field wiring apparatus (this product) are permitted for use on Front USB port (Mini B) of associated field wiring non-incendive apparatus (Computer).

In addition to being non-incendive, any equipment connected to the Front USB ports must satisfy the following criteria.

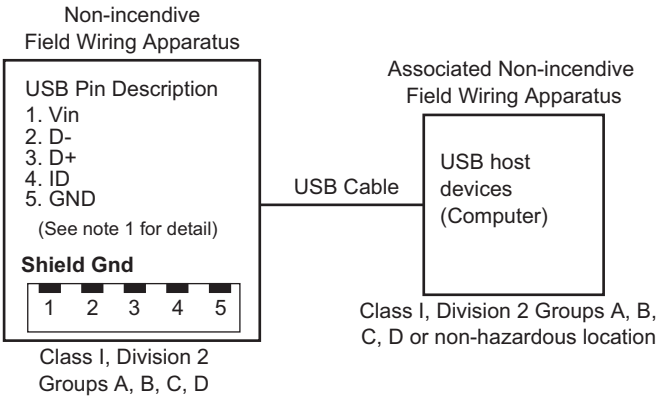
The following figure shows the USB cable wiring:

<Type A>



Circuit Parameters	Front USB (Type A)
Open-circuit voltage = V_{oc}	5.25 V
Short-circuit current = I_{sc}	1300 mA
Associated capacitance = C_a	265 μF
Associated inductance = L_a	16 μH

<mini B>



Circuit Parameters	Front USB (mini B)
Maximum input voltage = V_{max}	5.25 V
Maximum load current = I_{max}	0.1 mA
Internal capacitance = C_i	0.24 μF
Internal inductance = L_i	16 μH

NOTE:

1. The above tables list the Non-incendive Curcuit Parameters:

The Entity Concept allows interconnection of non-incendive apparatus with associated apparatus – not specifically examined combinations – as a system when the approved values of V_{oc} (or U_o) and I_{sc} (or I_o) for the associated apparatus are less than or equal to Vmax (U_i) and Imax (I_i) for the non-incendive apparatus, and the approved values of C_a (C_o) and L_a (L_o) for the associated apparatus are greater than or equal to $C_i + C_{cable}$ and $L_i + L_{cable}$, respectively, for the non-incendive field wiring apparatus.

2. Associated Non-incendive field wiring apparatus and non-incendive field wiring apparatus shall satisfy the following:

Associated Non-incendive Field Wiring Apparatus	-	Non-incendive field wiring apparatus
V_{oc}	≤	V_{max}
I_{sc}	≤	I_{max}
C_a	≥	$C_i + C_{cable}$
L_a	≥	$L_i + L_{cable}$

3. If the electrical parameters of the cable are unknown, the following values may be used:

C_{cable} = 196.85 pF/m (60 pF/ft)

L_{cable} = 0.656 μH/m (0.20 μH/ft)

4. Wiring methods must be in accordance with the electrical code of the country where it is used.

This product must be installed in an enclosure. If installed in a Class I, Division 2 Location, the enclosure must be capable of accepting one or more Division 2 wiring methods.

⚠ DANGER

POTENTIAL FOR EXPLOSION

- Verify the power, input, and output (I/O) wiring are in accordance with Class I, Division 2 wiring methods.
- Substitution of any components may impair suitability for Class I, Division 2.
- 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.
- Suitable for use in Class I, Division 2, Groups A, B, C, D 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.

Serial Interface (RS-485 [Isolation]) for COM1

Introduction

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.

⚠ CAUTION

LOSS OF COMMUNICATION

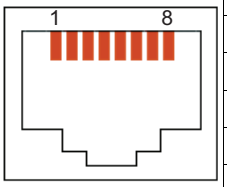
- All connections to the communication ports must not put excessive stress on the ports.
- Securely attach communication cables to the panel wall or cabinet.
- Use a RJ45 connector that has a functional locking tab.

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

NOTE: Use within the rated current.

RS-485 (Isolation)

RJ-45 connector

Product side	Pin No.	RS-485 (Isolation)		
		Signal Name	Direction	Meaning
	1	NC	–	No connection
	2	NC	–	No connection
	3	NC	–	No connection
	4	Line A	Input/Output	Transfer Data A (+)
	5	Line B	Input/Output	Transfer Data B (-)
	6	RS (RTS)	Output	Request to Send
	7	NC	–	No connection
	8	SG	–	Signal Ground
	Shell	FG	–	Functional Ground

NOTE: The FG and SG terminals are isolated.

Serial Interface (RS-232C and RS-422/RS-485) for COM2

Introduction

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.

You can switch the communication method between RS-232C and RS-422/RS-485 via your screen editing software.

The serial interface is not isolated. The SG (signal ground) and FG (functional ground) terminals are connected inside this product. When the serial interface connector is D-Sub, connect the FG wire to the shell.

⚠⚠ DANGER

ELECTRIC SHOCK AND FIRE

When using the SG terminal to connect an external device to this product:

- Verify that a short-circuit loop is not created when you set up the system.
- Connect the SG terminal to remote equipment when the external device is not isolated. Connect the SG terminal to a known reliable ground connection to reduce the risk of damaging the circuit.

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

⚠ CAUTION

LOSS OF COMMUNICATION

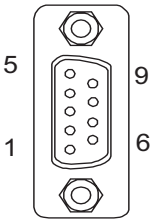
- All connections to the communication ports must not put excessive stress on the ports.
- Securely attach communication cables to the panel wall or cabinet.

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

NOTE: Use within the rated current.

RS-232C

D-Sub 9 pin plug connector

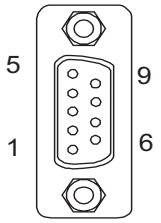
Product side	Pin No.	RS-232C		
		Signal Name	Direction	Meaning
	1	CD	Input	Carrier Detect
	2	RD (RXD)	Input	Receive Data
	3	SD (TXD)	Output	Send Data
	4	ER (DTR)	Output	Data Terminal Ready
	5	SG	–	Signal Ground
	6	DR (DSR)	Input	Data Set Ready
	7	RS (RTS)	Output	Request to Send
	8	CS (CTS)	Input	Send possible
	9	CI (RI)/VCC	Input/–	Called Status Display +5V±5% Output 0.25 A[*1]
	Shell	FG	–	Functional Ground (Common with SG)

*1 You can switch pin #9 between RI and VCC via your screen editing software. The VCC output is not protected against overcurrent. To prevent damage or malfunction, use only within the rated current.

Interfit bracket is #4-40 (UNC).

RS-422/485

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	ERA	Output	Data Terminal Ready A (+)
	5	SG	–	Signal Ground
	6	CSB	Input	Send Possible B (-)
	7	SDB	Output	Send Data B (-)
	8	CSA	Input	Send possible A (+)
	9	ERB	Output	Data Terminal Ready B (-)
	Shell	FG	–	Functional Ground (Common with SG)

Interfit bracket is #4-40 (UNC).

Auxiliary Output/Speaker Output Interface (AUX)

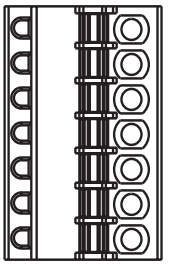
⚠ ⚠ DANGER

ELECTRIC SHOCK AND FIRE

When using the SG terminal to connect an external device to this product:

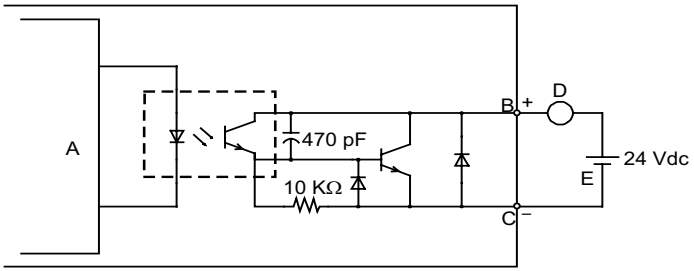
- Verify that a short-circuit loop is not created when you set up the system.
- Connect the SG terminal to remote equipment when the external device is not isolated. Connect the SG terminal to a known reliable ground connection to reduce the risk of damaging the circuit.

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

Cable connection side	Pin No.	Signal Name	Direction	Meaning
	1	LineOut	Output	Line Out
	2	LineOut_GND	Output	Line Out Ground
	3	SP+	Output	Speaker +
	4	SP-	Output	Speaker -
	5	NC	–	No Connection
	6	ALARM+/ BUZZER+	Output	(Can be changed via software)
	7	ALARM-/ BUZZER-	Output	

AUX Connector: HMIZGAUX manufactured by Schneider Electric

Output Circuit



A Internal Circuit
B Pin Number 6: ALARM+/BUZZER+
C Pin Number 7: ALARM-/BUZZER-
D Load
E External Power

DVI-D Output Interface (for HMIG5U)

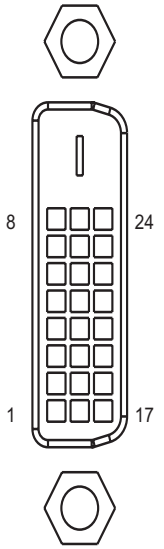
⚠ ⚠ DANGER

ELECTRIC SHOCK AND FIRE

When using the SG terminal to connect an external device to this product:

- Verify that a short-circuit loop is not created when you set up the system.
- Connect the SG terminal to remote equipment when the external device is not isolated. Connect the SG terminal to a known reliable ground connection to reduce the risk of damaging the circuit.

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

Product side	Pin No.	Signal Name	Direction
	1	TMDS DATA 2-	Output
	2	TMDS DATA 2+	Output
	3	TMDS DATA 2 SHIELD	–
	4	NC	–
	5	NC	–
	6	DDC Clock	Output
	7	DDC Data	Input/Output
	8	NC	–
	9	TMDS DATA 1-	Output
	10	TMDS DATA 1+	Output
	11	TMDS DATA 1 SHIELD	–
	12	NC	–
	13	NC	–
	14	+5V Power	–
	15	GND	Ground
	16	NC	–
	17	TMDS DATA 0-	Output
	18	TMDS DATA 0+	Output
	19	TMDS DATA 0 SHIELD	–
	20	NC	–
	21	NC	–
	22	TMDS CLOCK SHIELD	–
	23	TMDS CLOCK+	Output
	24	TMDS CLOCK-	Output
	Shell	FG	Functional Ground

Recommendations:

DVI Cable manufactured by Schneider Electric (HMIYCABDVI1011 <10 m>)

NOTE:

- For noise-free operation, use the recommended DVI-D cable.
- DVI-D output supports the display resolution up to XGA (1,024 x 768). When the screen output mode is set to clone mode, the maximum display resolution of the display module side is the same as the display resolution of DVI-D output side which is XGA (1,024 x 768).
- DVI-D output does not support Hot Plug Detect (HPD). Even when the main unit power is on while connected to an external display, this product outputs the display signal as XGA. If the external display does not support XGA Input, the screen will not display.

Chapter 5
Dimensions

Introduction

This chapter presents the product external dimensions.

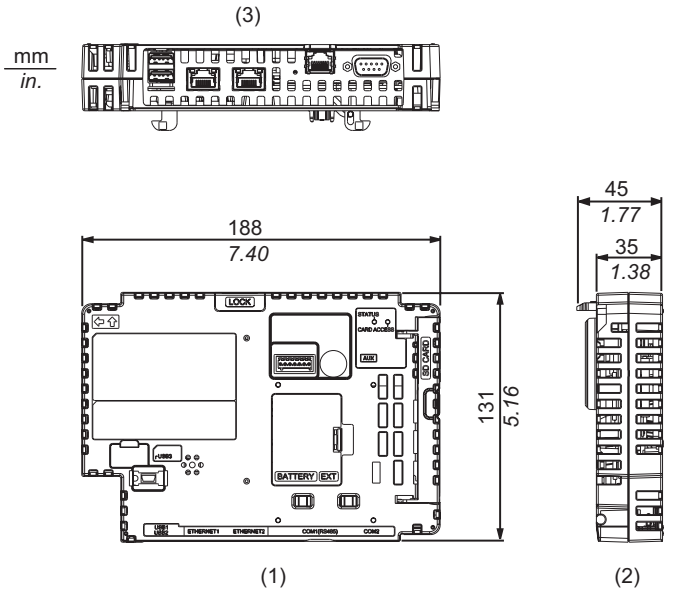
What Is in This Chapter?

This chapter contains the following sections:

Section 5.1
Premium Box

HMIG3U

External Dimensions

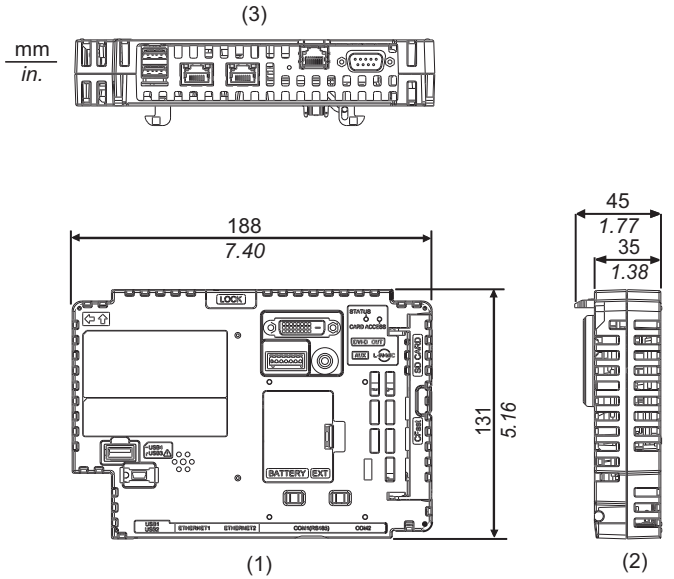


1 Front
2 Left
3 Bottom

Section 5.2
Open Box

HMIG5U

External Dimensions



1 Front
2 Left
3 Bottom

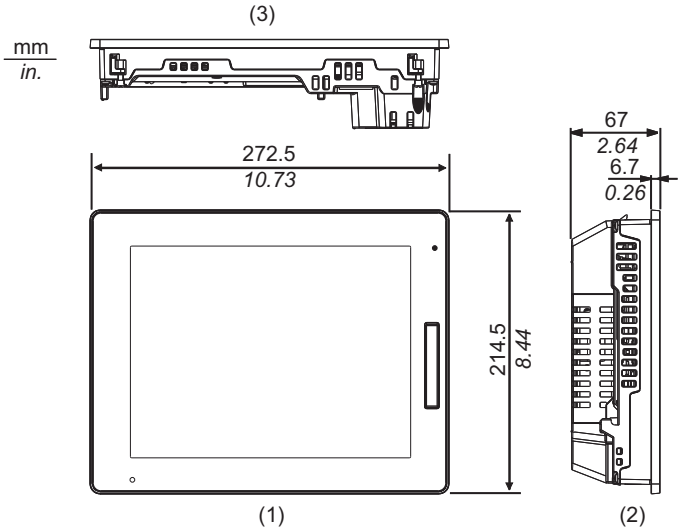
Section 5.3
Smart Display

What Is in This Section?

This section contains the following topics:

HMIDT542

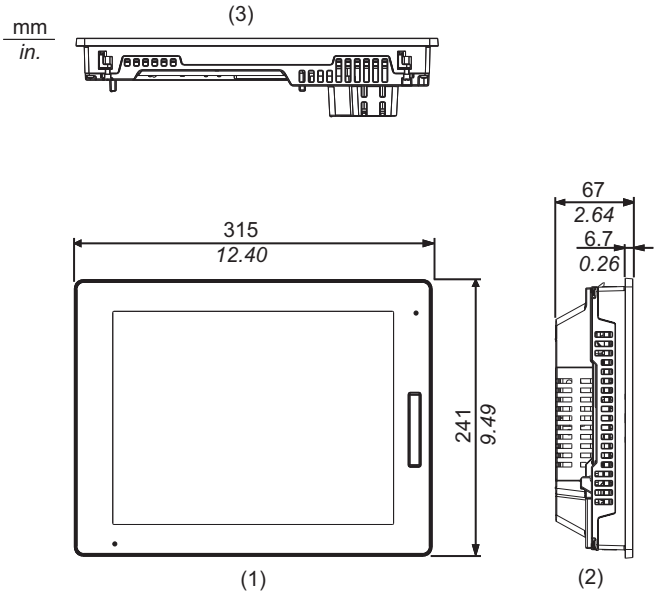
External Dimensions



1 Front
2 Left
3 Bottom

HMIDT642

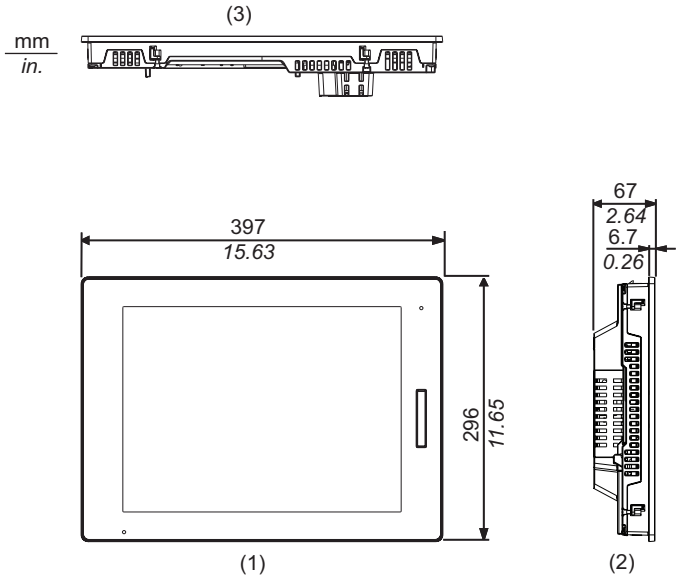
External Dimensions



1 Front
2 Left
3 Bottom

HMIDT732

External Dimensions



1 Front
2 Left
3 Bottom

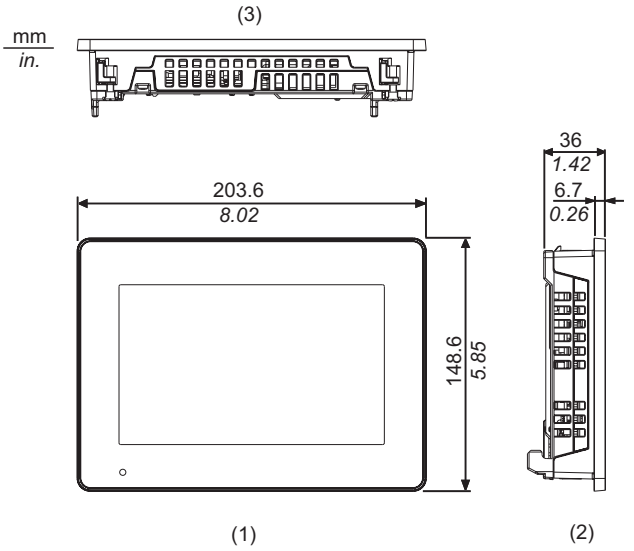
Section 5.4
Advanced Display

What Is in This Section?

This section contains the following topics:

HMIDT351

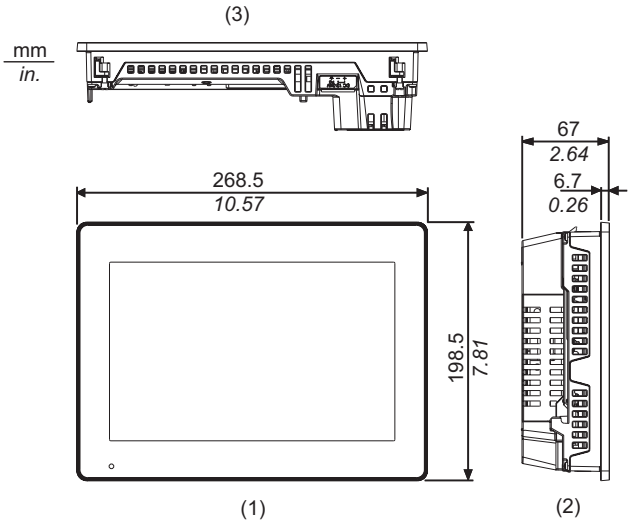
External Dimensions



1 Front
2 Left
3 Bottom

HMIDT551

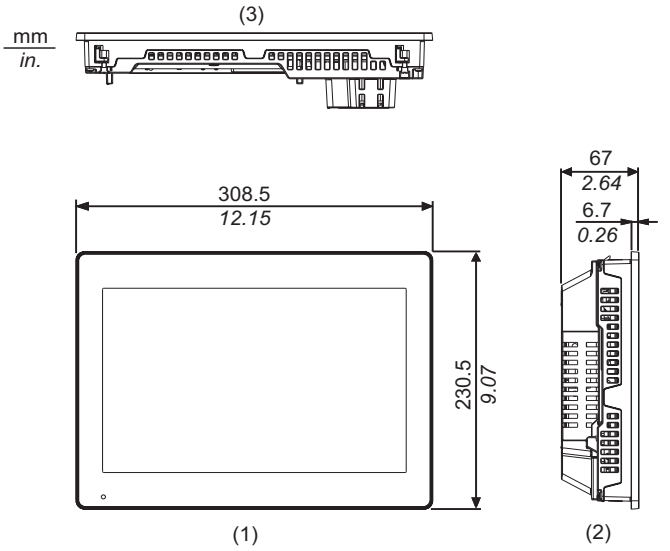
External Dimensions



1 Front
2 Left
3 Bottom

HMIDT651

External Dimensions



1 Front
2 Left
3 Bottom

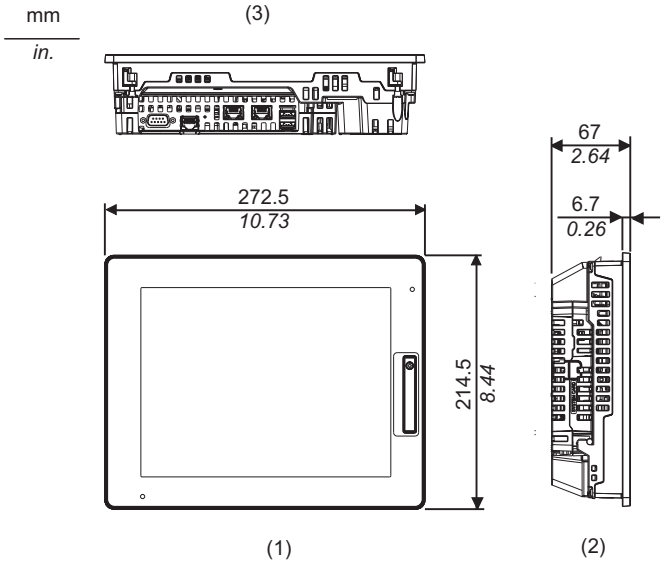
Section 5.5
Box and Display Modules - Combined Dimensions

What Is in This Section?

This section contains the following topics:

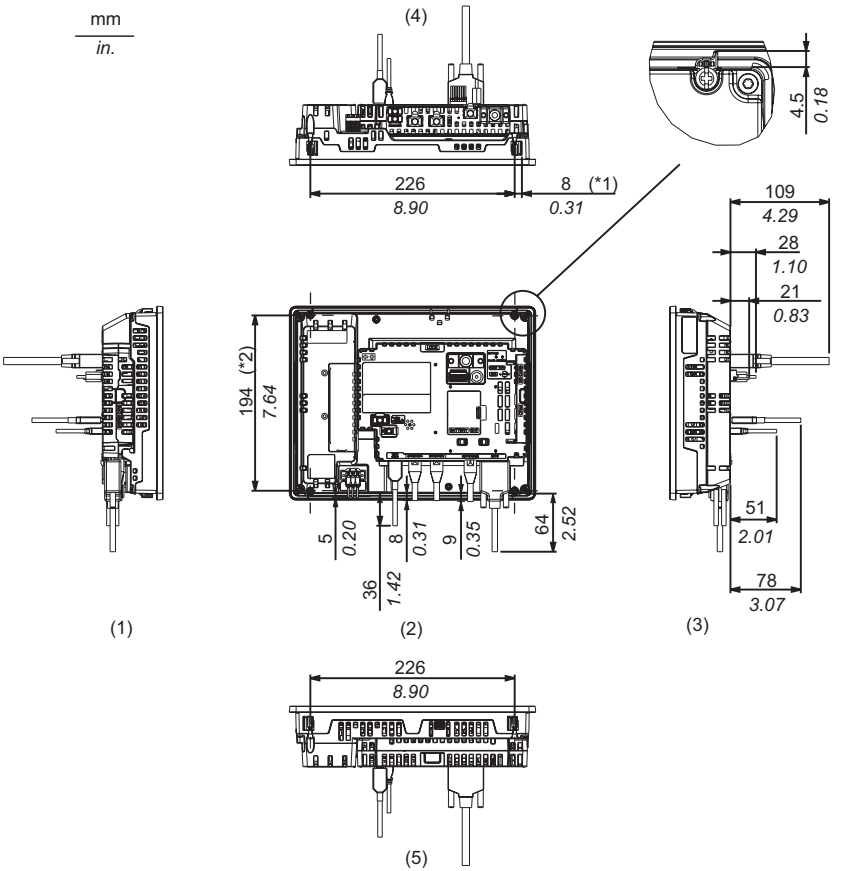
HMIDT542 with Box Module

External Dimensions



1 Front
2 Left
3 Bottom

Dimensions with Cables



***1** Rotation area of the fastener
***2** Pitch of the center of installation fastener screws

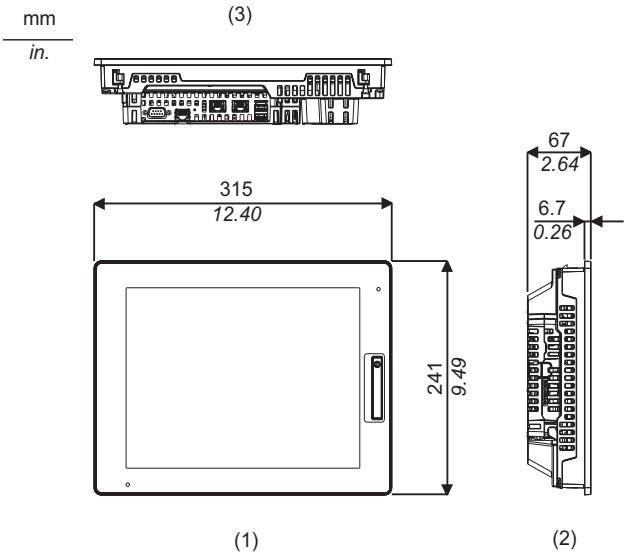
1 Right
2 Front
3 Left
4 Bottom
5 Top

NOTE:

- All the above values are designed with cable bending in mind. The dimensions given here are representative values depending on the type of connection cable in use. Therefore, these values are intended for reference only.

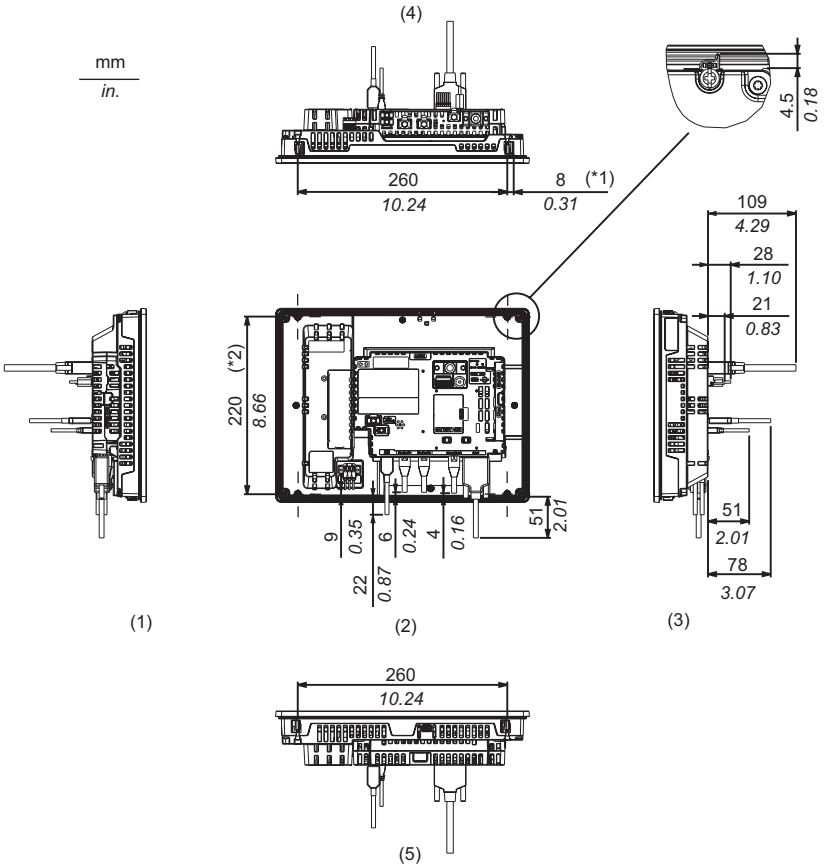
HMIDT642 with Box Module

External Dimensions



1 Front
2 Left
3 Bottom

Dimensions with Cables



***1** Rotation area of the fastener
***2** Pitch of the center of installation fastener screws

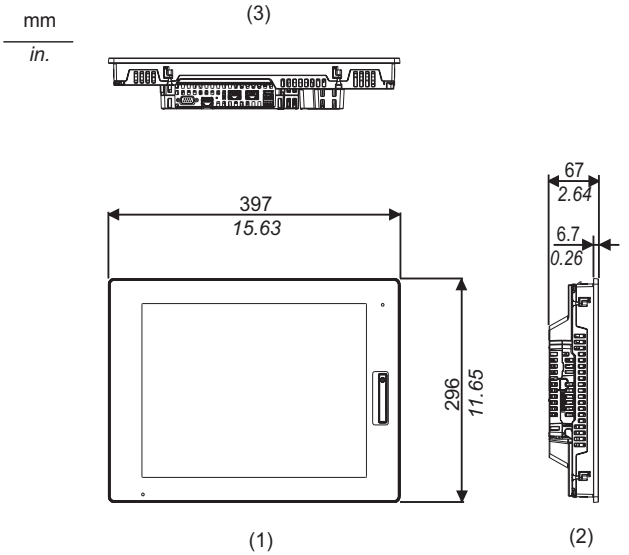
1 Right
2 Front
3 Left
4 Bottom
5 Top

NOTE:

- All the above values are designed with cable bending in mind. The dimensions given here are representative values depending on the type of connection cable in use. Therefore, these values are intended for reference only.

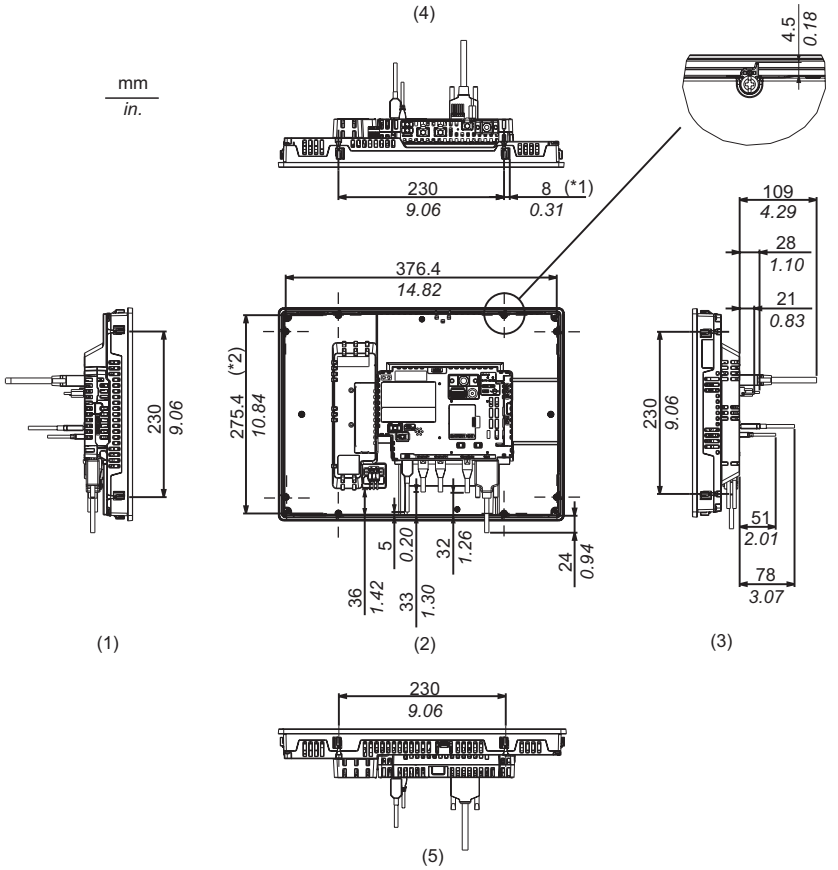
HMIDT732 with Box Module

External Dimensions



1 Front
2 Left
3 Bottom

Dimensions with Cables



***1** Rotation area of the fastener
***2** Pitch of the center of installation fastner screws

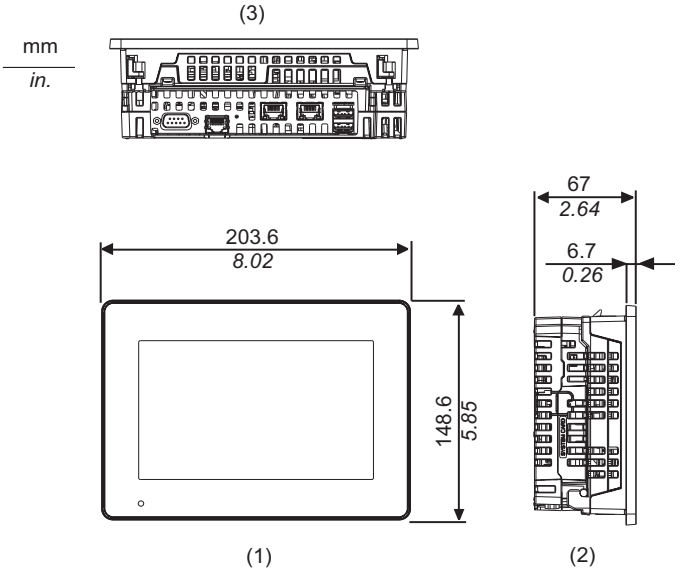
1 Right
2 Front
3 Left
4 Bottom
5 Top

NOTE:

- All the above values are designed with cable bending in mind. The dimensions given here are representative values depending on the type of connection cable in use. Therefore, these values are intended for reference only.

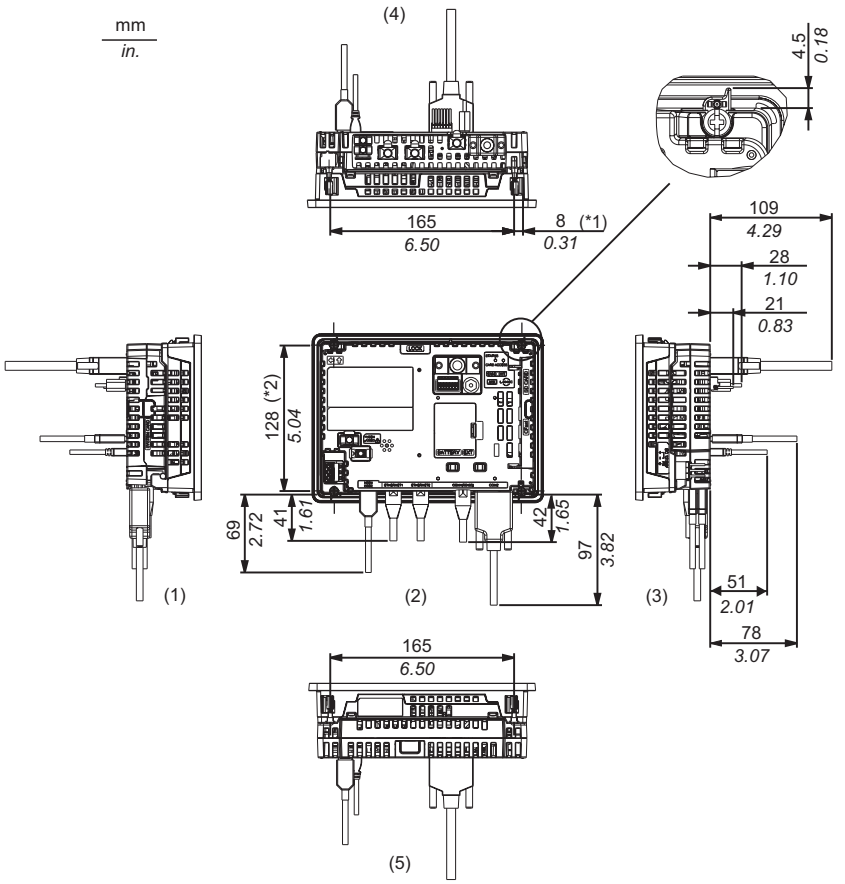
HMIDT351 with Box Module

External Dimensions



1 Front
2 Left
3 Bottom

Dimensions with Cables



***1** Rotation area of the fastener
***2** Pitch of the center of installation fastener screws

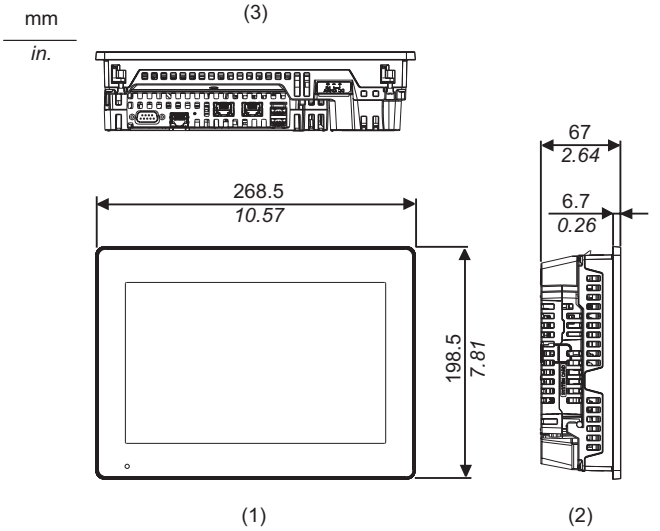
1 Right
2 Front
3 Left
4 Bottom
5 Top

NOTE:

- All the above values are designed with cable bending in mind. The dimensions given here are representative values depending on the type of connection cable in use. Therefore, these values are intended for reference only.

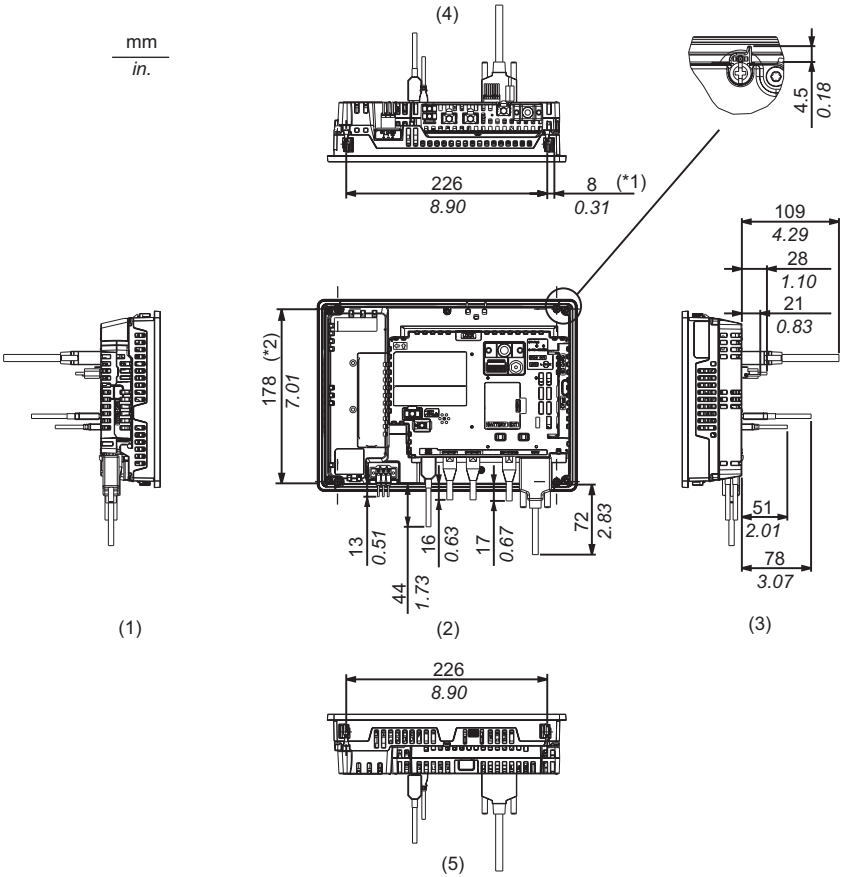
HMIDT551 with Box Module

External Dimensions



1 Front
2 Left
3 Bottom

Dimensions with Cables



***1** Rotation area of the fastener
***2** Pitch of the center of installation fastener screws

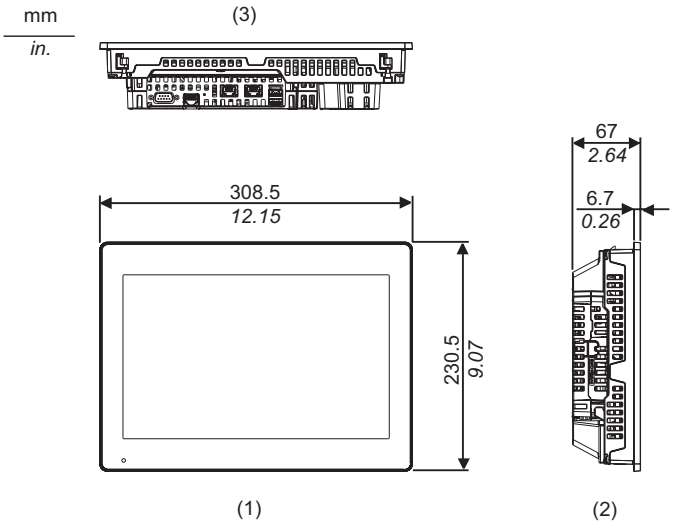
1 Right
2 Front
3 Left
4 Bottom
5 Top

NOTE:

- All the above values are designed with cable bending in mind. The dimensions given here are representative values depending on the type of connection cable in use. Therefore, these values are intended for reference only.

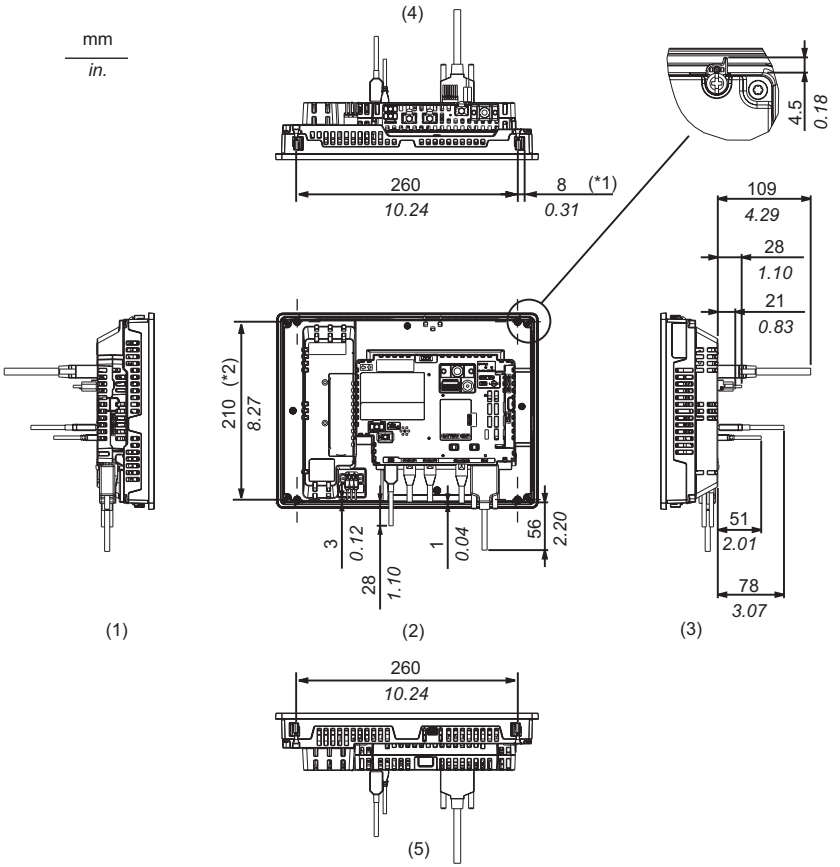
HMIDT651 with Box Module

External Dimensions



1 Front
2 Left
3 Bottom

Dimensions with Cables



***1** Rotation area of the fastener
***2** Pitch of the enter of installation fastener screws

1 Right
2 Front
3 Left
4 Bottom
5 Top

NOTE:

- All the above values are designed with cable bending in mind. The dimensions given here are representative values depending on the type of connection cable in use. Therefore, these values are intended for reference only.

Chapter 6
Installation and Wiring

Introduction

This chapter describes the installation procedures and wiring principles for this product and peripheral devices.

What Is in This Chapter?

This chapter contains the following sections:

Section 6.1
Installation

Installation Procedures

Introduction

This product is designed for use on flat surfaces of Type 1, Type 4X (Indoor Use Only) or Type 13 Enclosure.

Mount this product in an enclosure that provides a clean, dry, robust and controlled environment (IP66F*1, IP67F*1, Type 1, Type 4X [Indoor Use Only], or Type 13 Enclosure).

For Advanced Display, the front surface is IP66F*1, IP67F*1, Type 1, Type 4X (Indoor Use Only) or Type 13 Enclosure.

For Smart Display, the front surface is IP66F*1, IP67F*1, Type 1, Type 4X (Indoor Use Only) or Type 13 Enclosure, but when the Front USB Cover*2 is open, the front surface is Type 1 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.
- This product must be used indoors only.
- Install and operate this product with its front panel facing outward.

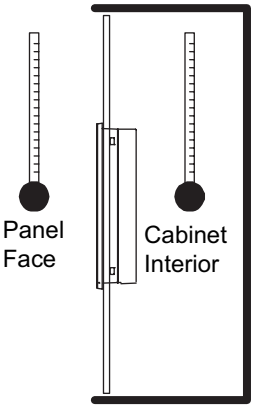
*1 IP66F and IP67F are not part of the UL certification.

*2 The necessary torque is 0.5 N•m (4.4 lb•in).

Installation Requirements

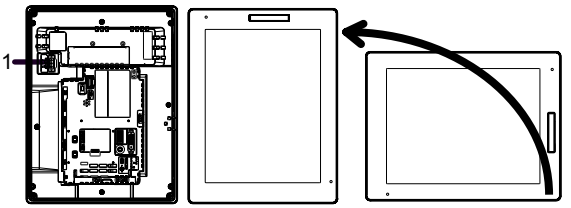
Check that the installation wall or cabinet surface is flat, in good condition and has no jagged edges. Metal reinforcing strips may be attached to the inside of the wall, near the panel-cut, to increase its rigidity.
Decide on the thickness of the enclosure wall, based on the level of strength required: 1.6...5 mm (0.06...0.2 in.). 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.

Be sure that the surrounding air temperature and the ambient humidity are within their designated ranges. Surrounding air temperature: 0 to 60 °C (32 to 140 °F) (please see the Environment Specifications for this product); ambient humidity: 10 to 90% RH; wet bulb temperature: maximum 39 °C [102 °F]. When installing this product in a cabinet or enclosure, the surrounding air temperature is the cabinet's or enclosure's internal temperature.



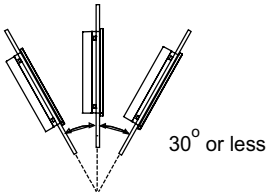
Be sure that heat from surrounding equipment does not cause this product to exceed its standard operating temperature.

When mounting this product vertically, ensure that the right side of this product faces up. In other words, the DC power connector should be at the top.



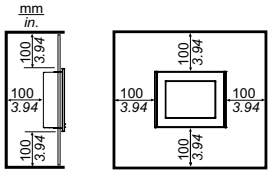
1 Power connector

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



When installing this product in a slanted position with an incline more than 30°, the ambient temperature must not exceed 40 °C (104 °F). You may need to use forced air cooling (fan, A/C) to ensure the ambient operating temperature is 40 °C or less (104 °F or less).

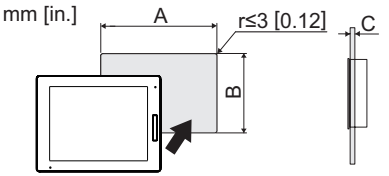
For easier maintenance, operation and improved ventilation, install this product at least 100 mm (3.94 in.) away from adjacent structures and other equipment as shown in the following illustration:



Please ensure you have enough space to insert and remove the storage card.

Panel Cut Dimensions

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



Model Name	A	B	C
HMIDT542	259 mm (+1/-0 mm) (10.2 in. [+0.04/-0 in.])	201 mm (+1/-0 mm) (7.91 in. [+0.04/-0 in.])	1.6...5 mm (0.06...0.2 in.)
HMIDT642	301.5 mm (+1/-0 mm) (11.87 in. [+0.04/-0 in.])	227.5 mm (+1/-0 mm) (8.96 in. [+0.04/-0 in.])	
HMIDT732	383.5 mm (+1/-0 mm) (15.1 in. [+0.04/-0 in.])	282.5 mm (+1/-0 mm) (11.12 in. [+0.04/-0 in.])	
HMIDT351	190 mm (+1/-0 mm) (7.48 in. [+0.04/-0 in.])	135 mm (+1/-0 mm) (5.31 in. [+0.04/-0 in.])	
HMIDT551	255 mm (+1/-0 mm) (10.04 in. [+0.04/-0 in.])	185 mm (+1/-0 mm) (7.28 in. [+0.04/-0 in.])	
HMIDT651	295 mm (+1/-0 mm) (11.61 in. [+0.04/-0 in.])	217 mm (+1/-0 mm) (8.54 in. [+0.04/-0 in.])	

Installing onto Display Module

⚠⚠ 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 the Display Module and the power supply.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace and secure all covers or elements of the system before applying power to the Display Module.

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

NOTICE

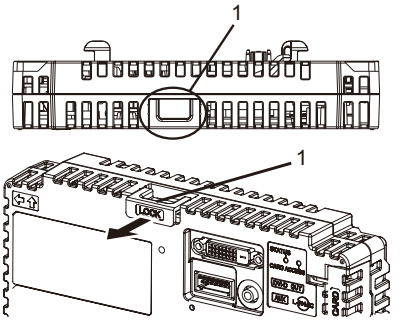
EQUIPMENT DAMAGE

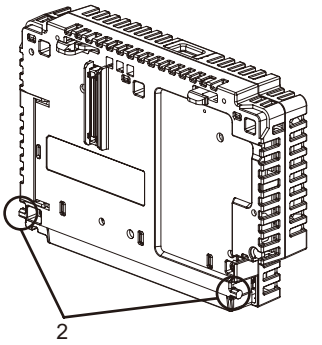
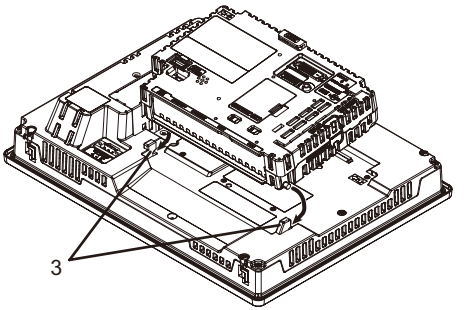
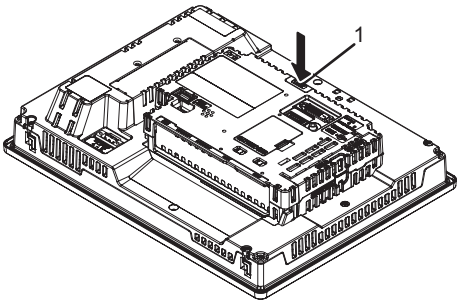
When mounting this product vertically, first install the Box Module onto the Display Module before attaching the Display Module to the panel. When installing the Box Module onto the Display Module, place the Display Module on a clean and level surface with the screen facing downward.

Failure to follow these instructions can result in equipment damage.

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

- 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.
- This product must be used indoors only.

Step	Action
1	Pull the LOCK forward on the top of the Box Module to release the lock as illustrated.  **1** LOCK

Step	Action
2	Insert the protruding points on the bottom left and right of the Box Module into the two holes on the back of the Display Module to attach the Box Module and Display Module together.   **2** Protruding points **3** Holes for insertion
3	Fully push on the LOCK on the top of the Box Module to mount the Box Module on the Display Module.  **1** LOCK

NOTE: For instructions on how to mount the Display Module to the panel, refer to Installing to the Panel *(see page 114)*.

Removing from Display Module

⚠⚠ 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 the Display Module and the power supply.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace and secure all covers or elements of the system before applying power to the Display Module.

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

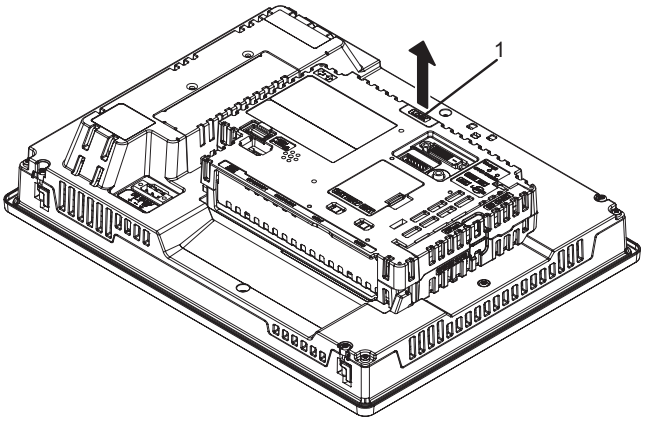
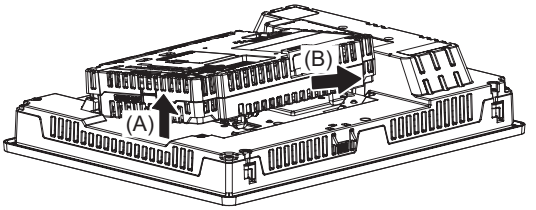
NOTICE

EQUIPMENT DAMAGE

When this product is mounted vertically, first remove the Display Module from the panel, then remove the Box Module from the Display Module.

Failure to follow these instructions can result in equipment damage.

Step	Action
1	When mounting this product vertically, remove the Display Module from the panel and place the Display Module on a clean and level surface with the screen facing down *(see page 117)*.

Step	Action
2	Release the LOCK on the top of the Box Module as illustrated.  **1** LOCK
3	Lift up the Box Module in the direction indicated by arrow (A) in the diagram and remove it by sliding in the direction indicated by arrow (B). 

⚠ CAUTION

RISK OF INJURY

Do not drop the Box Module when you install or remove it from the Display Module.

- Hold the unit in place after removing the fasteners.
- Use both hands.

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

Installing 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 the Display Module and the power supply.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace and secure all covers or elements of the system before applying power to the Display Module.

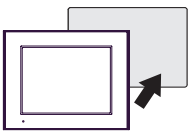
Failure to follow these instructions will result in death or serious injury.

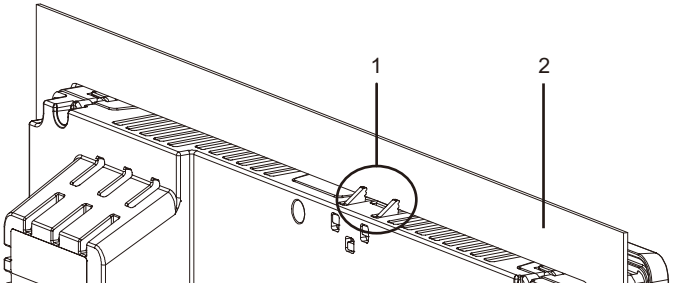
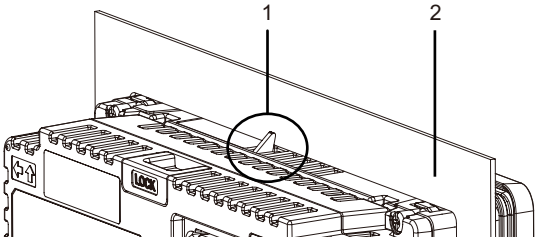
NOTICE

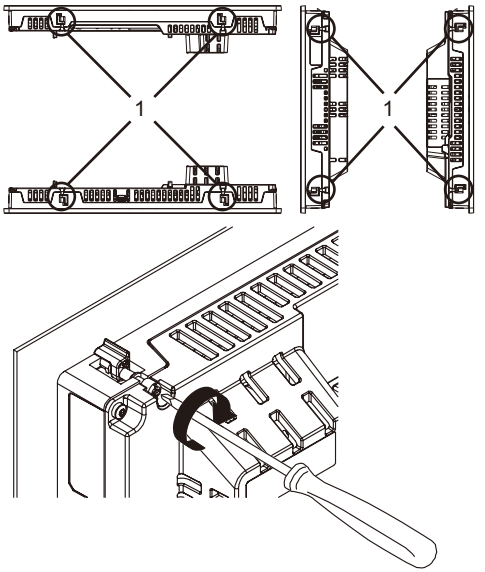
EQUIPMENT DAMAGE

- When mounting this product vertically, first install the Box Module onto the Display Module before attaching the Display Module to the panel.
- 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.

Step	Action
1	When mounting this product vertically, place the Display Module on a clean and level surface with the screen facing down and mount the Box Module to the Display Module *(see page 109)*.
2	Check that the Display Module's gasket is seated securely into the gasket'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. For the procedure on replacing the installation gasket, refer to Replacing the Installation Gasket *(see page 158)*.
3	Based on the Display Module's panel cut dimensions *(see page 108)*, open a mount-hole on the panel and attach the Display Module to the panel from the front side. 

Step	Action
4	Confirm that the anti-drop lock on the top of the Display Module are attached to the panel. Except for HMIDT351  HMIDT351  **1** Anti-drop lock **2** Panel

Step	Action
5	Please tighten the screws little by little for each installation fastener in a diagonal fashion. The necessary torque is 0.5 N•m (4.4 lb•in). Tighten the installation fasteners on the top, bottom, left and right of the Display Module in the right direction using a Phillips screwdriver.  **1** Installation fastener **Number of Installation Fasteners** 15-inch models: ● Top - 2 ● Bottom - 2 ● Right - 2 ● Left - 2 Models less than 12-inch: ● Top - 2 ● Bottom - 2 ● Right - none ● Left - none **NOTE:** ● If the Display Module is not mounted properly, it may fall.

NOTICE

BROKEN ENCLOSURE

Do not exert more than 0.5 N•m (4.4 lb•in) of torque when tightening the fastener's screws.

Failure to follow these instructions can result in equipment damage.

Removing 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 the Display Module and the power supply.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace and secure all covers or elements of the system before applying power to the Display Module.

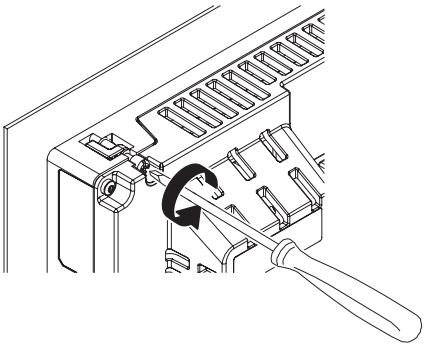
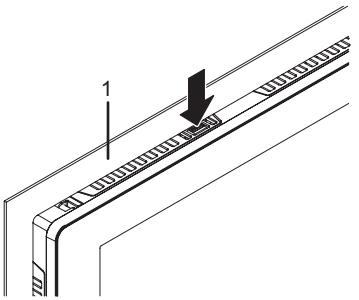
Failure to follow these instructions will result in death or serious injury.

NOTICE

EQUIPMENT DAMAGE

- When this product is mounted vertically, first remove the Display Module from the panel, then remove the Box Module from the Display Module.
- 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.

Step	Action
1	Loosen the installation fasteners on the top, bottom, left, and right of the Display Module by turning the Phillips screwdriver to the left until the installation fastener fits into the main unit. Slowly loosen each installation fastener screw in a diagonal fashion.  **NOTE:** For the number of installation fasteners on your model, see Number of Installation Fasteners in Step 6 of Installing to the Panel *(see page 114)*.
2	While pushing on the anti-drop lock on the top of the Display Module with a tool, slowly remove the Display Module from the panel.  **1** Panel

⚠ CAUTION

RISK OF INJURY

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

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

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

NOTICE

EQUIPMENT DAMAGE

To avoid damage, remove this product while pushing the anti-drop lock or by making sure the lock does not touch the panel.

Failure to follow these instructions can result in equipment damage.

Section 6.2
Wiring Principles

What Is in This Section?

This section contains the following topics:

Connecting 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.
- Replace and secure all covers or elements of the system before applying power to this product.
- This product uses only 12...24 Vdc power. Using any other level of power can damage both the power supply and this product.
- 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.

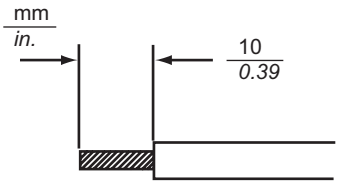
NOTE:

- The SG (signal ground) and FG (functional ground) terminals are connected internally in this product.
- When the FG terminal is connected, be sure the wire is grounded. Not grounding this product can result in excessive Electromagentic Interference (EMI).

DC Power Cord Preparation

- 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.
- To prevent the possibility of a terminal short, use a pin terminal that has an insulating sleeve.
- 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.
- Field wiring terminal marking for wire type (75 °C [167 °F] copper conductors only).

Power Cord Diameter	0.75...2.5 mm^2 (18...13 AWG)[*1]
Conductor type	Solid or stranded wire

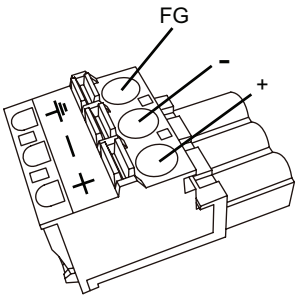
Conductor length	

*1 For UL compatibility, use AWG14 or AWG13.

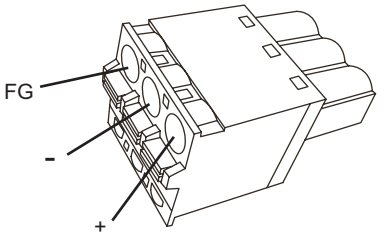
DC Power Supply Connector (Plug) Specifications: Spring Clamp Terminal Blocks

Models except for HMIDT351 come with the Right-angle type power connector, and the HMIDT351 comes with the Straight type power connector.

Right-angle type



Straight type

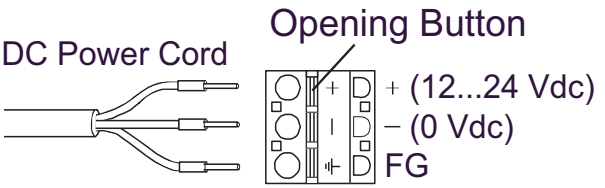


Connection	Wire
+	12...24 Vdc
-	0 Vdc
FG	Grounded terminal connected to the panel chassis.

NOTE:

- You cannot connect the Righ-angle type to the HMIDT351.
- Right-angle type: HMIZGPWS2 manufactured by Schneider Electric.
  Straight type: HMIZGPWS manufactured by Schneider Electric.

How to connect the DC Power Cord

Step	Action
1	Confirm the power cord is not connected to the power supply.
2	Check the rated voltage and remove the “DC24V” sticker on the DC power supply connector.
3	Connect each wire from the power cable to a pin terminal.
4	Push the Opening button with a small and flat screwdriver to open the desired pin hole.
5	Insert each power cord wire into its corresponding hole. Release the Opening button to clamp the wire in place.  When using stranded wire, do not short with neighboring wires.
6	After inserting all three power cord wires, insert the DC power supply connector into the power connector on this product.

NOTE:

- Do not solder the wire directly to the power crimp pin.

Connecting the Power Supply

Precautions

Excessive stress on the power connection or attempting to install this product with the power cables connected may disconnect or cause damage to the power connections. This can cause short circuits, fire or unintended equipment operation.

⚠ WARNING

SHORT CIRCUIT, FIRE, OR UNINTENDED EQUIPMENT OPERATION

Avoid excessive force on the power cable to prevent accidental disconnection

- Securely attach power cables to an installation panel or cabinet.
- Use the designated torque to tighten this product's terminal block screws.
- Install and fasten the this product on installation panel or cabinet prior to connecting power supply and communication lines.

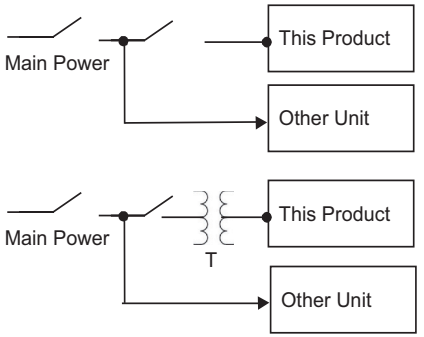
Failure to follow these instructions can result in death, serious injury, or equipment damage.

Improving Noise/Surge

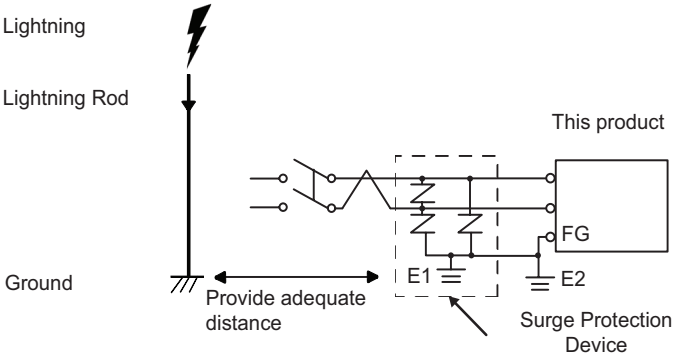
- This product's power supply cord should not be bundled with or kept close to main circuit lines (high voltage, high current), power lines, or input/output lines, and their various systems should be kept separate. When power lines cannot be wired via a separate system, use shielded cables for input/output lines.
- Make the power cord as short as possible, and be sure to twist the ends of the wires together (i.e. twisted pair cabling) from close to the power supply unit.
- If there is an excess amount of noise on the power supply line, connect a noise reducing transistor before turning on the power.
- Connect a lightning surge absorber to handle power surges.
- To increase noise resistance, attach a ferrite core to the power cable.

Power Supply Connections

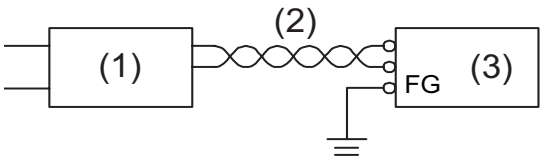
- When supplying power to this product, separate the input/output and power lines as shown below.



- Branch Circuit Protective device shall be used for rating 20 A for 12 to 24 Vdc input device on the models except for HMIDT351.
- You must use DC input with an isolating source for the models except for HMIDT351.
- You must use DC input with a Class 2 power supply for HMIDT351.
- The following shows a surge protection device (SPD) connection:

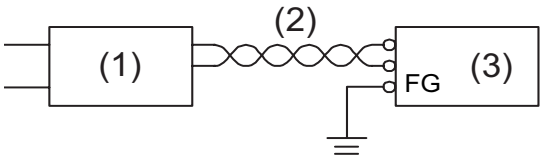


- Attach a surge device (SPD) to prevent damage to this product as a result of a lightning-induced power surge from a large electromagnetic field generated from a direct lightning strike. We also strongly recommend to connect the crossover grounding wire of this product to a position close to the ground terminal of the surge protection device (SPD).
  It is expected that there will be an effect on this product due to fluctuations in grounding potential when there is a large surge flow of electrical energy to the lightning rod ground at the time of a lightning strike. Provide adequate distance between the lightning rod grounding point and the surge protection device (SPD) grounding point.
- If the voltage variation is outside the prescribed range, connect a regulated power supply.



1 Regulated power supply
2 Twisted-pair cord
3 This product

- Select a power supply low in noise for between the line and ground. If there is an excessive amount of noise, connect an insulating transformer.
  Use isolating transformers with capacities exceeding the maximum power consumption, including that of the Box Module. Refer to the Electrical Specification for the Display Module *(see page 51)*.



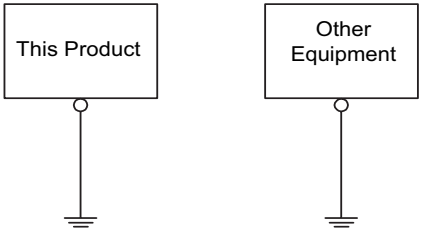
1 Insulating transformer
2 Twisted-pair cord
3 This product

Grounding

Exclusive Grounding

When supplying power to this product, separate the input/output and power lines as shown below.

Connect the functional ground (FG) terminal on the power plug to an exclusive ground.



Precautions

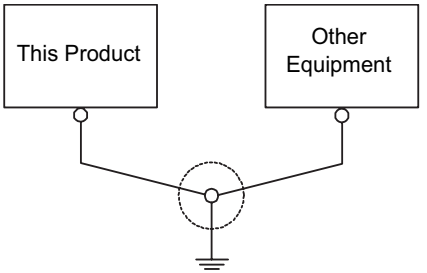
- Check that the grounding resistance is 100 Ω or less.*1
- The FG wire should have a cross sectional area greater than 2 mm^2 (AWG14)*1. Create the connection point as close to this product as possible, and make the wire as short as possible. When using a long grounding wire, replace the thin wire with a thicker wire, and place it in a duct.
- The SG (signal ground) and FG (functional ground) terminals are connected internally in this product. When connecting the SG line to another device, be sure that no shorting loops are formed.

*1 Observe local codes and standards.

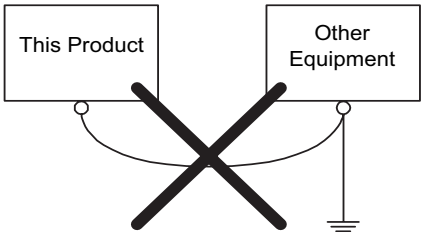
Common Grounding

Electromagnetic Interference (EMI) can be created if devices are improperly grounded. EMI can cause loss of communication. If exclusive 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



Incorrect grounding



Section 6.3
USB Cable Clamp

USB Cable Clamp Type A (1 port)

Introduction

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

⚠ DANGER

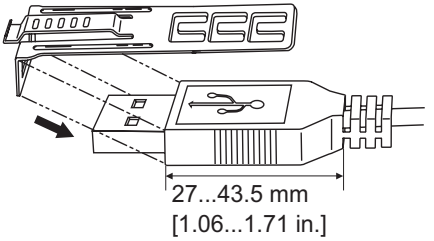
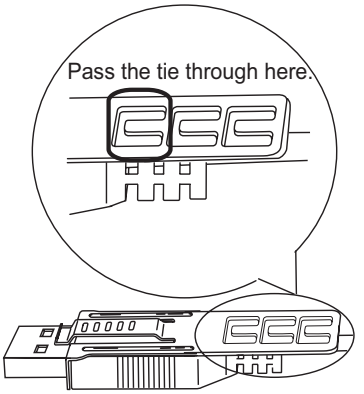
POTENTIAL FOR EXPLOSION

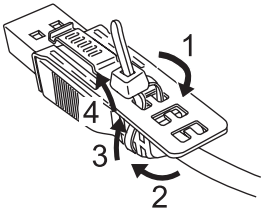
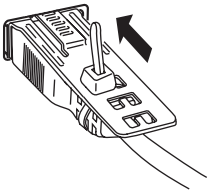
- Verify the power, input, and output (I/O) wiring are in accordance with Class I, Division 2 wiring methods.
- Substitution of any components may impair suitability for Class I, Division 2.
- Do not disconnect equipment while the circuit is live or unless the area is known to be free of ignitable concentrations.
- 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.
- Suitable for use in Class I, Division 2, Groups A, B, C, D 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.

Attaching USB Clamp Type A (1 port)

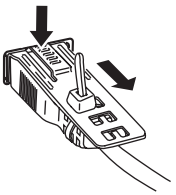
NOTE: Watch your fingers. The edge of the clip is sharp.

Step	Action
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.  **NOTE:** When installing clamps to reduce cable stress onto both USB1 and USB2, at USB1 overlay the clip on the side with the USB mark, and on USB2 the side without the USB mark. Make sure the ties do not interfere with the other.
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. 

Step	Action
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‘ (manufactured by Schneider Electric), 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. 

Removing USB Cable Clamp Type A (1 port)

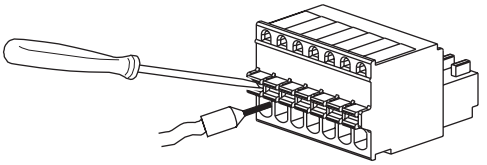
Remove the USB cable while pushing the grip section of the clip.



Section 6.4
AUX Connector

Introduction

⚠ CAUTION
ELECTRIC SHOCK ● Remove the AUX connector from this product prior to wiring. ● Strip wires only to the required length. ● Do not solder the wire itself. **Failure to follow these instructions can result in injury or equipment damage.**

Step	Action
1	Insert the screwdriver into the opening button. This will open the wire's round-shaped hole.
2	Hold the screwdriver and insert the wire into the wire's round-shaped hole.
3	Take out the screwdriver from the opening button. The round-shaped hole will then close, and the wire will be held securely in place. To remove the wire, re-insert the screwdriver into the opening button and when the wire's spring clamp releases, pull the wire out. 
4	Insert the wired AUX connector into the Auxiliary Output/Speaker Output Interface (AUX) of this product.

Recommendations:
- AUX Connector: HMIZGAUX manufactured by Schneider Electric
- Screwdriver: Be sure the screwdriver has the following dimensions:
  - point depth: 0.4 mm [0.02 in.]
  - point height: 2.0 mm [0.08 in.]
  Point shape should have isolation properties meeting DIN 5264 and EN60900.

NOTE:

- Wire should be AWG 28 to AWG 20 thick and twisted.
- Applicable wire sizes are Style 1015 and Style 1007.
- Be sure to strip 8.0 mm (0.31 in.) of cover from the wire.

Section 6.5
SD Card Insertion/Removal

What Is in This Section?

This section contains the following topics:

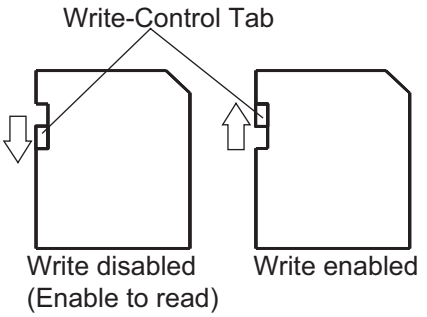
Introduction

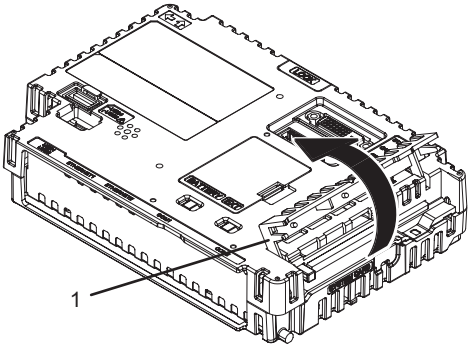
NOTICE
LOSS OF DATA When using this product and a SD Card, observe the following to avoid losing valuable data: ● We recommend regular backup of the SD Card data, since the SD Card has a life span and accidental data loss can occur at any time. Once the data is lost, it cannot be recovered. ● While a SD Card is accessed, do not turn OFF or reset this product, and do not insert or remove the SD Card. Doing so could damage the SD Card, or corrupt its data. ● Before removing the SD Card from this product, stop all operations on the SD Card. ● Before using the SD Card, familiarize yourself with the SD Card's front and rear face orientation, as well as the position of the SD Card connectors. If the SD Card is not positioned correctly when inserted into this product, the card's internal data and this product could be damaged. **Failure to follow these instructions can result in equipment damage.**

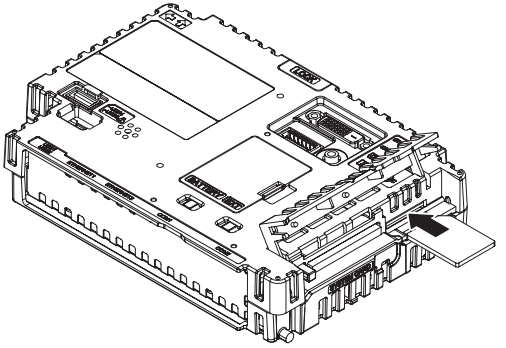
NOTICE
LOSS OF DATA When handling the SD Card, follow the instructions below to prevent internal data on the SD Card from being destroyed or a SD Card malfunction from occurring: ● Avoid storing the SD Card where there is static electricity or electromagnetic waves. ● Avoid storing the SD Card in direct sunlight, near a heater, or other locations where high temperatures can occur. ● Do not bend the SD Card. ● Do not drop or strike the SD Card against another object. ● Keep the SD Card dry. ● Do not touch the SD Card connectors. ● Do not disassemble or modify the SD Card. ● Use the SD Card initialized by this product. You may not be able to use the SD Card initialized by other devices. **Failure to follow these instructions can result in equipment damage.**

Inserting the SD Card

NOTE: As shown in the image below (example on the left-hand side), you can set the Write-Control Tab to prevent write operations to the SD Card. Push the tab up, as shown in the example on the right-hand side, to release the lock and enable writing to the SD Card. Before using a commercial-type SD Card, read the manufacturer's instructions.



Step	Action
1	Open the Storage Card Cover.  **1** Storage Card Cover

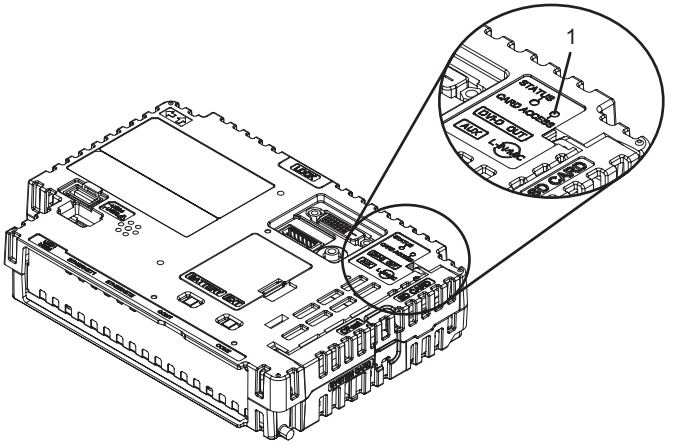
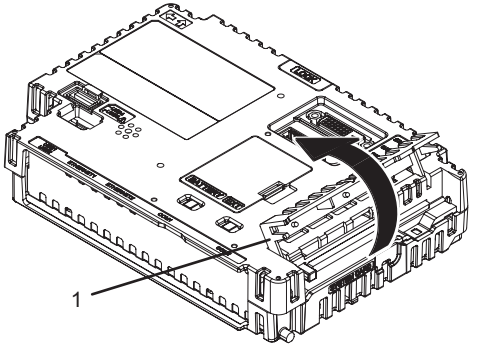
Step	Action
2	Insert the SD Card into the SD Card Slot with the terminal face of the SD Card facing down, and push until you hear it “click”. 
3	Close the Storage Card Cover.

Removing the SD Card

If you remove the SD Card while it is in use, you risk corrupting your data. Before removing the SD Card from this product, stop all operations on the SD Card.

For instructions on removing the SD Card safely, refer to the corresponding topic in the manual of your screen editing software.

When using the Open Box, use Windows® hardware removal tool to safely remove the SD Card.

Step	Action
1	Make sure the Card Access LED is off.  **1** Card Access LED
2	Open the Storage Card Cover.  **1** Storage Card Cover

Step	Action
3	Push the SD Card once to release, and pull out the card. After removing the card, close the cover. **NOTE:** After using the SD Card, store the SD Card in its case or other safe location.
4	Close the Storage Card Cover. **NOTE:** After using the SD Card, store the SD Card in its case or other safe location.

SD Card Data Backup

To make your backups, you can either insert the SD Card directly into the SD Card Slot on your computer, or use a commercially available SD Card reader.

Section 6.6
CFast Card Insertion/Removal

What Is in This Section?

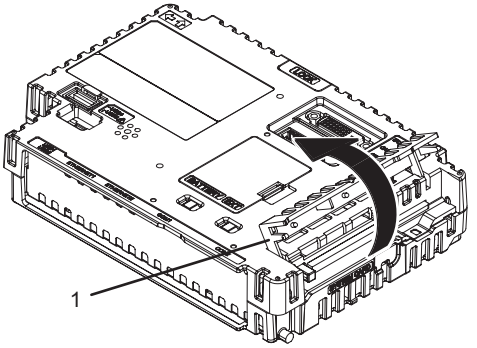
This section contains the following topics:

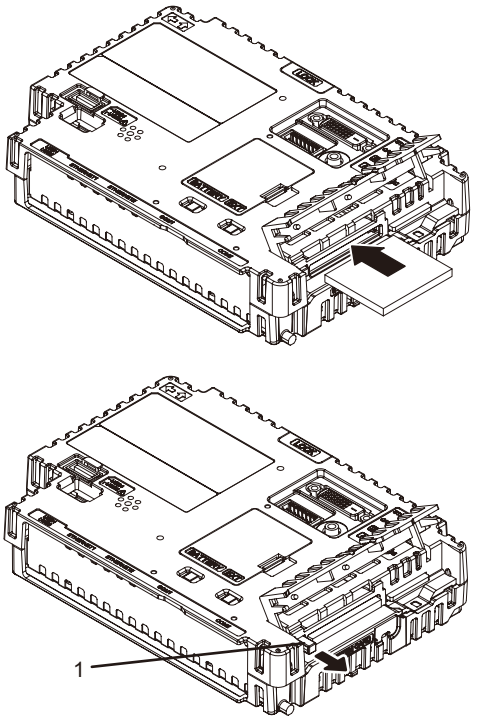
Introduction

NOTICE
LOSS OF DATA When using this product and a CFast Card, observe the following to avoid losing valuable data: ● We recommend regular backup of the CFast Card data, since the CFast Card has a life span and accidental data loss can occur at any time. Once the data is lost, it cannot be recovered. ● While a CFast Card is accessed, do not turn OFF or reset this product, and do not remove the CFast Card. Doing so could damage the CFast Card, or corrupt its data. ● Turn OFF this product when inserting or removing the CFast Card. ● Before using the CFast Card, familiarize yourself with the CFast Card's front and rear face orientation, as well as the position of the CFast Card connectors. If the CFast Card is not positioned correctly when inserted into this product, the card's internal data and this product could become damaged. **Failure to follow these instructions can result in equipment damage.**

NOTICE
LOSS OF DATA When handling the CFast Card, follow the instructions below to prevent internal data on the CFast Card from being destroyed or a CFast Card malfunction from occurring: ● Avoid storing the CFast Card where there is static electricity or electromagnetic waves. ● Avoid storing the CFast Card in direct sunlight, near a heater, or other locations where high temperatures can occur. ● Do not bend the CFast Card. ● Do not drop or strike the CFast Card against another object. ● Keep the CFast Card dry. ● Do not touch the CFast Card connectors. ● Do not disassemble or modify the CFast Card. ● The CFast Card is not initialized at the time of shipment. Use the CFast Card initialized by this product. You may not be able to use the CFast Card initialized by other devices. **Failure to follow these instructions can result in equipment damage.**

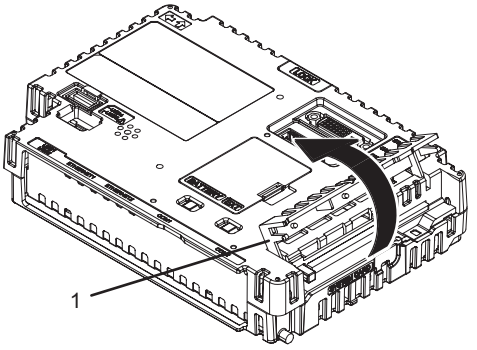
Inserting the CFast Card

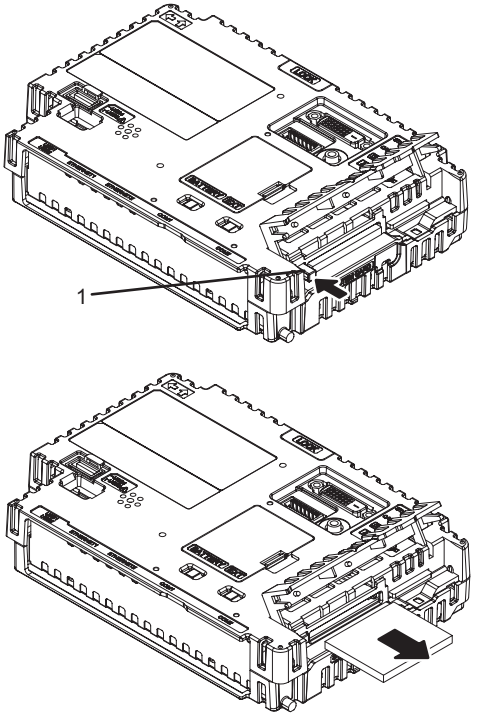
Step	Action
1	Open the Storage Card cover.  **1** Storage Card Cover

Step	Action
2	Insert the CFast Card into the CFast Card Slot with the front face of the CFast Card facing up, and push until the eject button comes out.  **1** Eject button
3	Close the Storage Card Cover.

Removing the CFast Card

If you remove the CFast Card while it is in use, you risk corrupting your data. Turn OFF this product when inserting or removing the CFast Card.

Step	Action
1	Make sure that this product is turned OFF.
2	Open the Storage Card Cover.  **1** Storage Card Cover

Step	Action
3	Push the eject button to release, and pull out the card.  **1** Eject button
4	After removing the card, close the cover. **NOTE:** After using the CFast Card, store the CFast Card in its case or other safe location.

CFast Card Data Backup

To make your backups, you can either insert the CFast Card directly into the CFast Card Slot on your computer, or use a commercially available CFast Card reader.

Section 6.7
Front USB Cover

Opening the Front USB Cover

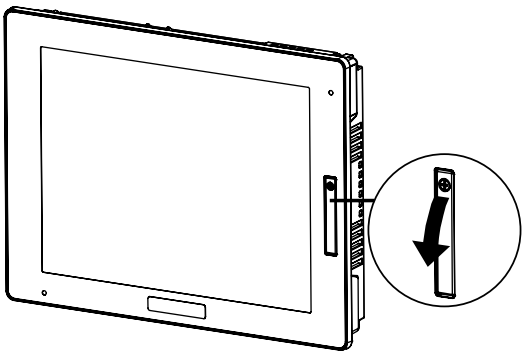
For Smart Display, the front surface is IP66F[*1], IP67F[*1], Type 1, Type 4X (Indoor Use Only) or Type 13 Enclosure, but when the Front USB Cover[*2] is open, the front surface is Type 1 Enclosure.

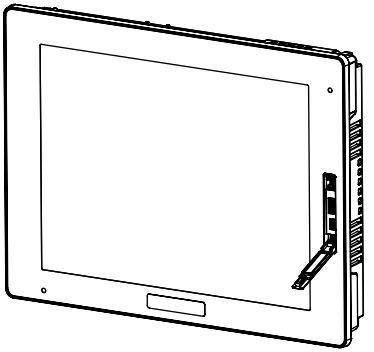
NOTE: The Advanced Display does not have a front USB port.

⚠ CAUTION
RISK OF INJURY When opening the Front USB Cover, be careful not to injure your fingers. **Failure to follow these instructions can result in injury or equipment damage.**

*1 IP66F and IP67F are not part of the UL certification.

*2 The necessary torque is 0.5 N•m (4.4 lb•in).

Step	Action
1	Loosen the screws on the top of the Front USB Cover with a Phillips screwdriver.  **NOTE:** The required torque is 0.5 N•m (4.4 lb•in).

Step	Action
2	The USB interface can be seen once you pull down the Front USB Cover. 

NOTICE

BROKEN ENCLOSURE

Do not exert more than 0.5 N•m (4.4 lb•in) of torque when tightening the screw.

Failure to follow these instructions can result in equipment damage.

Section 6.8
Isolation Unit

What Is in This Section?

This section contains the following topics:

Introduction

NOTE: For details such as settings when using the Isolation Unit, refer to the product manual.

⚠ ⚠ DANGER

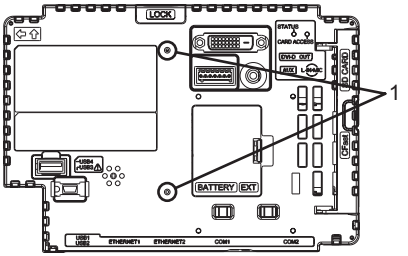
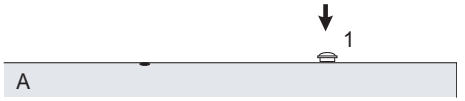
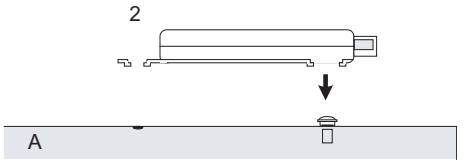
HAZARD OF ELECTRIC SHOCK OR EXPLOSION

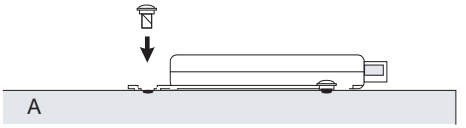
To avoid an electric shock, prior to connecting the Isolation Unit to this product, confirm that this product's power supply is completely turned OFF.

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

Installing to the Box Module

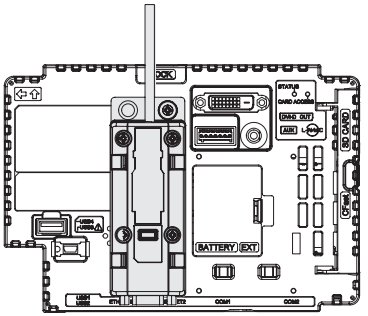
You can install the Isolation Unit to the back of the Box Module or to the panel. For more information on how to attach the Isolation Unit to the panel, please refer to the Isolation Unit Quick Reference Guide.

Step	Action
1	Check the locations of two screw holes on the front of the Box Module.  **1** Hole
2	Install one of the two Attachment Screws included in the Isolation Unit to the back of the Box Module. Use a torque of 0.5 N•m (4.4 lb•in).  **1** Attachment Screw **A** Box Module
3	Attach the Isolation Unit to the Box Module.  **2** Isolation Unit **A** Box Module

Step	Action
4	Slide the Isolation Unit in the direction of the arrow so the Isolation Unit is hooked by the screw from Step 2.  **A** Box Module
5	Secure the Isolation Unit in place with another Attachment Screw. Use a torque of 0.5 N•m (4.4 lb•in).  **A** Box Module

NOTE:

- Attach the Isolation Unit to a stable surface. Do not leave the Isolation Unit hanging by its cord.
- Be careful with wire placement. Overlapping cords may cause noise.
- When attaching the Isolation Unit to the Box Module, be careful with the attachment position.
- See the illustration below for recommended installation.



Chapter 7
Maintenance

Introduction

This chapter explains how to maintain this product.

What Is in This Chapter?

This chapter contains the following topics:

Regular Cleaning

Cleaning the display

NOTICE
EQUIPMENT DAMAGE ● Power off this product before cleaning it. ● Do not use hard or pointed objects to operate the touch panel as you may damage the panel surface. ● 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 the surface or the frame of the display gets dirty, soak a soft cloth in water with a neutral detergent, wring the cloth tightly and wipe the display.

Periodic Check Points

Operation Environment

- Is the operating temperature within the allowable range? (0...60 °C [32...140 °F])
- Is the operating humidity within the specified range? (10%RH to 90%RH, dry bulb temperature of 39 °C [102.2 °F] or less)
- 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? (10.8...28.8 Vdc)

- Are all power cords and cables connected properly? Are there any loose cables?
- Are all mounting brackets 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.

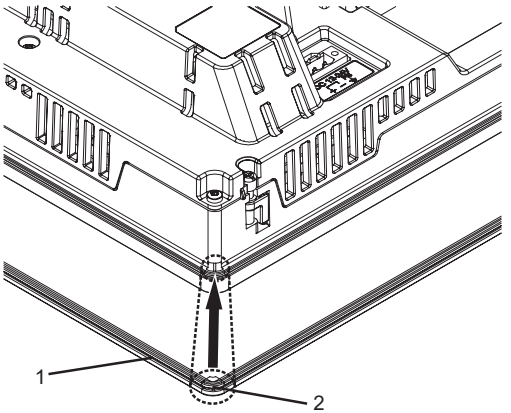
Replacing the Installation Gasket

Introduction

The installation gasket provides protection against dust and moisture.

NOTICE
GASKET AGING ● Inspect the gasket periodically as required by your operating environment to keep the initial IP level. ● Change 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.**

Installing the Installation Gasket

Stage	Description
1	Place the Display Module on a flat, level surface, with the display face pointing down.
2	Remove the gasket from the Display Module.
3	Attach the new gasket to the Display Module. Insert the protrusions from the four corners of the gasket into the corresponding holes in the corners of the Display Module. **NOTE:** When using a tool to insert the gasket, make sure the tool does not catch the rubber gasket and cause a tear.  **1** Installation Gasket **2** Protruding point

The gasket must be inserted correctly into the groove for moisture resistance for the Display Module.

⚠ CAUTION

EQUIPMENT DAMAGE

Since the gasket is flexible but not elastic, be careful not to stretch it unnecessarily.

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

Replacing the Primary Battery

Introduction

Backup clock data uses a Supercapacitor (electric double-layer capacitor) for power. When the voltage from the Supercapacitor is low, clock data is lost[*1] when this product is turned OFF. The average period for backup is as follows:

Initial: approximately 100 days

After 5 years: approximately 30 days (used at ambient temperature of 25 °C [77 °F])

By connecting the Battery for Memory Backup (Part Number HMIZGBAT) accessory, you can set up a backup period of up to 10 years or more.

*1 If clock data is lost, a clock data error message appears when starting up this product. When this happens, please set up the clock again. Refer to your screen editing software manual on how to set up the clock.

NOTE:

- The lithium battery's lifetime is: 10 years when the battery's ambient temperature is 40 °C (104 °F) or less, 4.1 years when the battery's ambient temperature is 50 °C (122 °F) or less, and 1.5 years when the battery's ambient temperature is 60 °C (140 °F) or less.
  When used for backup:
  Approximately 100 days, with a fully charged battery.
  Approximately 6 days, with a half-charged battery.

⚠ ⚠ 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 form both this product and the power supply.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace and secure all covers or elements of the system before applying power to this product.
- This product uses 12 to 24 Vdc power. Using any other level of power can damage both the power supply and this product.

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

⚠ DANGER

EXPLOSION, FIRE, OR CHEMICAL HAZARD

- Use only the replacement battery manufactured by Schneider Electric.
- Do not cause a short circuit.
- Recycle or properly dispose of used batteries.

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

NOTICE

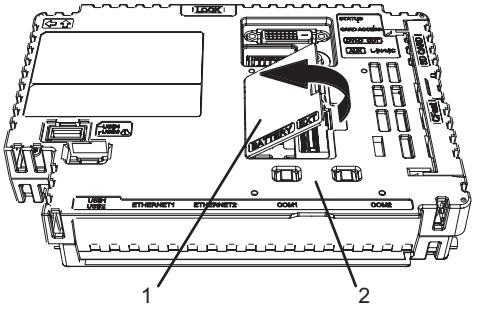
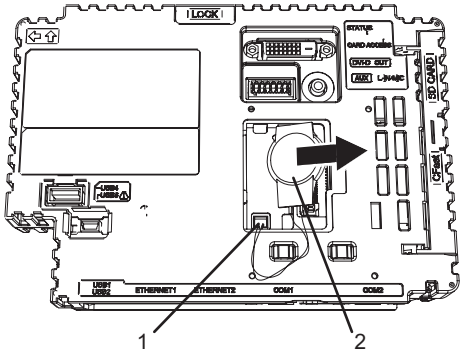
LOSS OF DATA

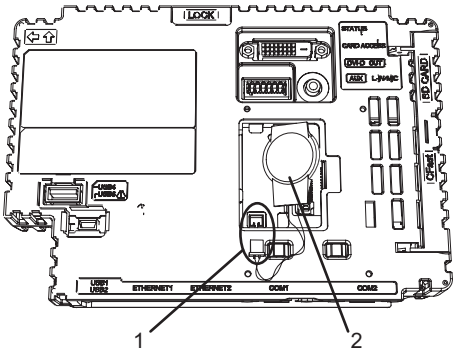
When the voltage of the Supercapacitor drops at the same time as the Battery for Memory Backup's voltage drops, clock data is lost when power is disconnected. If the clock data error message appears while the Battery for Memory Backup is connected, the Battery for Memory Backup is low and requires replacement.

- Before replacing the Battery for Memory Backup, supply power to the Box Module for 5 minutes or more.
- Complete replacing the battery within ten minutes of shutting down this product. Otherwise, backup data may be lost.
- Replace the Battery for Memory Backup regularly every five years after you purchase this product.
- Only qualified personnel can change the Battery for Memory Backup.

Failure to follow these instructions can result in equipment damage.

Step	Action
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 the Box Module on a flat, level surface, with the front side pointing up.

Step	Action
4	Open the Expansion Unit Interface Cover on the Box Module.  **1** Expansion Unit Interface Cover **2** Box Module
5	If the Battery for Memory Backup is already installed, slide the Battery for Memory Backup in the direction of the arrow as illustrated. Unplug the cable from the connector.  **1** Connector **2** Battery for Memory Backup

Step	Action
6	Insert a new Battery for Memory Backup and the connector all the way. Either side of the battery can face top or bottom.  **1** Connector **2** Battery for Memory Backup
7	Close the Expansion Unit Interface Cover. **NOTE:** Make sure the cable is inserted completely inside the enclosure. Otherwise, you can damage the cable when you close the cover
8	Reconnect the power supply to this product. **NOTE:** After reconnecting the power supply, set up the clock again. Refer to your screen editing software manual on how to set up the clock.

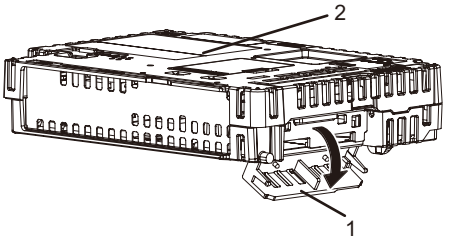
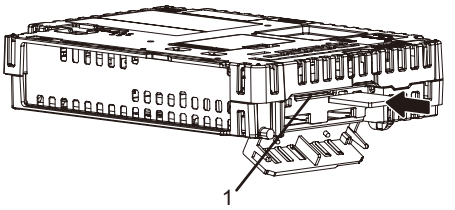
Replacing the System Card (SD Card)

The System Card is an SD Card with the operating system installed on it.

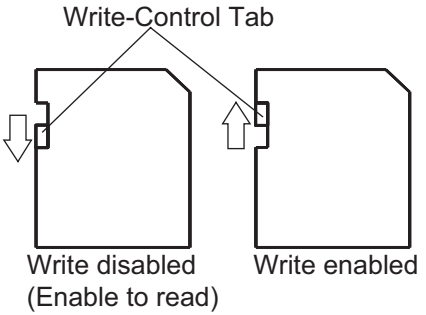
To replace the System Card, use a SD Card manufactured by Schneider Electric. See the Accessories *(see page 28)*.

NOTICE
LOSS OF DATA When using a SD Card, observe the following to avoid losing valuable data: ● We recommend regular backup of the SD Card data, since the SD Card has a life span and accidental data loss can occur at any time. Once the data is lost, it cannot be recovered. ● While a SD Card is accessed, do not turn OFF or reset this product, and do not insert or remove the SD Card. Doing so could damage the SD Card, or corrupt its data. ● Before using the SD Card, familiarize yourself with the SD Card's front and rear face orientation, as well as the position of the SD Card connectors. If the SD Card is not positioned correctly when inserted into this product, the card's internal data and this product could be damaged. **Failure to follow these instructions can result in equipment damage.**

NOTICE
LOSS OF DATA When handling the SD Card, follow the instructions below to prevent internal data on the SD Card from being destroyed or a SD Card malfunction from occurring: ● Avoid storing the SD Card where there is static electricity or electromagnetic waves. ● Avoid storing the SD Card in direct sunlight, near a heater, or other locations where high temperatures can occur. ● Do not bend the SD Card. ● Do not drop or strike the SD Card against another object. ● Keep the SD Card dry. ● Do not touch the SD Card connectors. ● Do not disassemble or modify the SD Card. **Failure to follow these instructions can result in equipment damage.**

Step	Action
1	Turn OFF this product.
2	Remove the Box Module from the Display Module. **NOTE:** Refer to Installation *(see page 106)*
3	As illustrated, open the System Card Cover in the direction of the arrow.  **1** System Card Cover **2** Box Module
4	Push the SD Card once to release, and pull out the card. **NOTE:** After using the SD Card, store the SD Card in its case or other safe location.
5	Insert the SD Card into the System Card Slot with the terminal face of the SD Card facing up, and push until you hear it “click”.  **1** System Card Slot
6	Close the System Card Cover.
7	Mount the Box Module on the Display Module.

NOTE: As shown in the image below (example on the left-hand side), you can set the Write-Control Tab to prevent write operations to the SD Card. Push the tab up, as shown in the example on the right-hand side, to release the lock and enable writing to the SD Card.



Replacing the System Card (CFast Card)

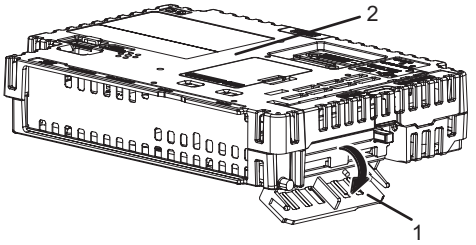
The System Card is a CFast Card with the operating system installed on it.

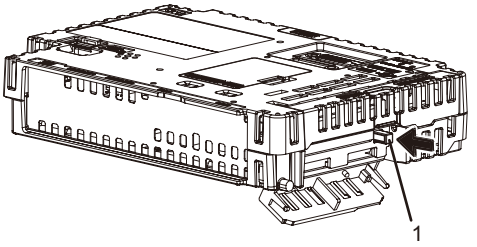
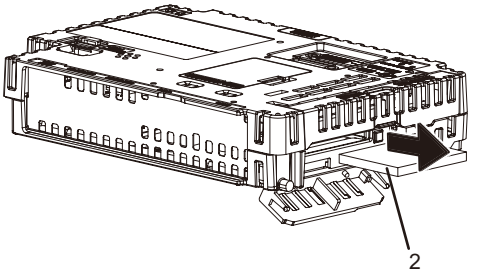
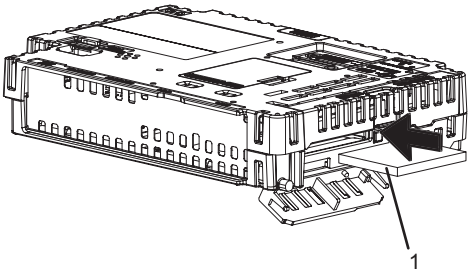
To replace the System Card, use CFast Card manufactured by Schneider Electric. See the "Accessories *(see page 28)*".

NOTICE
LOSS OF DATA When using a CFast Card, observe the following to avoid losing valuable data: ● We recommend regular backup of the CFast Card data, since the CFast Card has a life span and accidental data loss can occur at any time. Once the data is lost, it cannot be recovered. ● While a CFast Card is accessed, do not turn OFF or reset this product, and do not insert or remove the CFast Card. Doing so could damage the CFast Card, or corrupt its data. ● Before using the CFast Card, familiarize yourself with the CFast Card's front and rear face orientation, as well as the position of the CFast Card connectors. If the CFast Card is not positioned correctly when inserted into this product, the card's internal data and this product could become damaged. **Failure to follow these instructions can result in equipment damage.**

NOTE: For backing up your data, use a commercially available system backup software.

NOTICE
LOSS OF DATA When handling the CFast Card, follow the instructions below to prevent internal data on the CFast Card from being destroyed or a CFast Card malfunction from occurring: ● Avoid storing the CFast Card where there is static electricity or electromagnetic waves. ● Avoid storing the CFast Card in direct sunlight, near a heater, or other locations where high temperatures can occur. ● Do not bend the CFast Card. ● Do not drop or strike the CFast Card against another object. ● Keep the CFast Card dry. ● Do not touch the CFast Card connectors. ● Do not disassemble or modify the CFast Card. **Failure to follow these instructions can result in equipment damage.**

Step	Action
1	Turn OFF this product.
2	Remove the Box Module from the Display Module. **NOTE:** Refer to Installation *(see page 106)*.
3	As illustrated, open the System Card Cover in the direction of the arrow.  **1** System Card Cover **2** Box Module

Step	Action
4	Push the eject button once to release, and pull out the card.   **NOTE:** After using the CFast card, store the CFast Card in its case or other safe location. **1** Eject button **2** System Card
5	Insert the CFast Card into the System Card Slot with the front face of the CFast Card facing down, and push until the eject button comes out.  **1** System Card
6	Close the System Card Cover.
7	Mount the Box Module on the Display Module.

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