Harmony GK User Manual

10/2019

Schneider Electric

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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, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

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

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

⚠ DANGER

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

⚠ WARNING

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

⚠ CAUTION

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

NOTICE

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

PLEASE NOTE

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

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

About the Book

At a Glance

Document Scope

This manual describes how to use this product.

Validity Note

This documentation is valid for this product.

For product compliance and environmental information (RoHS, REACH, PEP, EOLI, etc.), go to *www.schneider-electric.com/green-premium*.

The technical characteristics of the devices described in the present document also appear online. To access the 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 reference or 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 datasheet.
6	To save or print a datasheet as a .pdf file, click **Download XXX product datasheet**.

The characteristics that are presented in the present document 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 document and online information, use the online information as your reference.

Registered Trademarks

Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and/or other countries.

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

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

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Unplug the power cable from both this product and the power supply.
- 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. This product is designed to use 24 Vdc. Always check whether your device is DC powered before applying power.

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

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 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.

⚠ 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.
- The panel brightness may decrease when used for a long time in an environment continuously filled with inert gas. To prevent deterioration of panel brightness, regularly ventilate the panel. For more information, please contact your local distributor.
  www.schneider-electric.com
- When experiencing vibrations within a certain frequency range and vibration acceleration is above what is acceptable, the LCD screen may partially turn white. Once the vibration condition ends, the whitening of the screen is resolved.

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

What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Part Numbers	12
Package Contents	13
Certifications and Standards	15
Federal Communication Commission Radio Frequency Interference Statement - For USA	17
Hazardous Location Installation - For USA and Canada	18

Part Numbers

Series	Model name	Part number
Harmony GK	HMIGK2310	HMIGK2310
	HMIGK5310	HMIGK5310

Part Number Configuration

The following describes the configuration of part numbers.

Digit Position	1	2	3	4	5	6	7	8	9
	H	M	I	G	(type)	(size)	(LCD)	(interface)	(free)
					K: Keypad	2: 5.7" 5: 10.4"	3: TFT	1: Ethernet + Serial	0

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.

Verify all items listed here are present in your package:
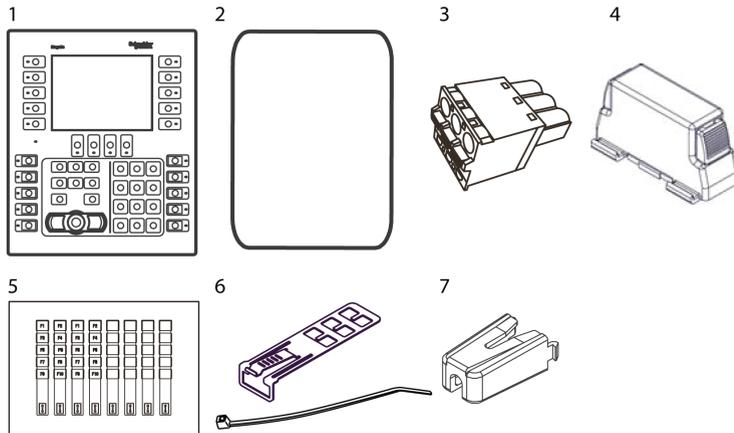
1   Harmony GK: 1
2   Installation gasket: 1 (attached to this product)
3   DC power supply connector (straight type): 1
4   Spring clips: 5 sets for HMIGK2310, 6 sets for HMIGK5310 (2 pieces/set)
5   Insert labels: 1 sheet (2 sets of function key labels and 4 blank labels)
6   USB Clamp Type A (1 port): 1 set (1 clip and 1 tie)
7   USB Clamp mini-B (1 port): 1
8   Quick Reference Guide: 1

Revision

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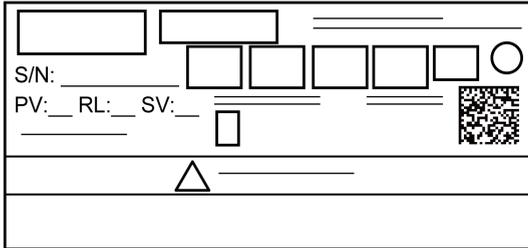
Certifications and Standards

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 product markings or the following URL.
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., UL61010-2-201 and CSA C22.2 N°61010-2-201, Industrial Control Equipment
- Underwriters Laboratories Inc., ANSI/ISA 12.12.01 and CSA C22.2 N°213, Electrical Equipment for Use in Class I, Division 2 Hazardous (Classified) Locations
- EAC certification (Russia, Belarus, Kazakhstan)

Compliance Standards

Europe:

CE
- Directive 2014/35/EU (Low Voltage)
- Directive 2014/30/EU (EMC)
    - Programmable Controllers: EN 61131-2
    - EN61000-6-4
    - EN61000-6-2
    - EN61010-2-201

Australia:
- RCM
    - EN61000-6-4, AS/NZS CISPR11

Korea:
- KC
    - 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 .

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 11364
- REACH regulation EC 1907/2006

European (CE) Compliance

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.

KC Markings

<p align="center">사용자안내문</p>

기 종 별	사 용 자 안 내 문
A급 기기 (업무용 방송통신기자재)	이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적 으로 합니다.

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.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate 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.

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, Division 2, 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-incendive 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 from 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. This product is designed to use 24 Vdc. Always check whether your device is DC powered before applying power.

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

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. IP65, 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.

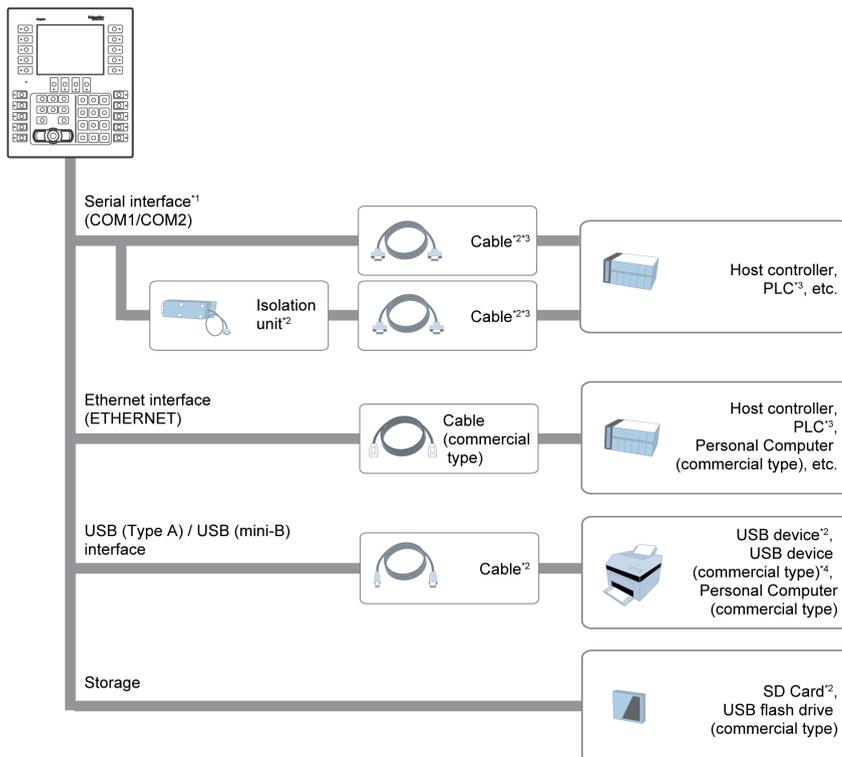**NOTE:** IP65 is not part of UL certification.

Chapter 2
Device Connectivity

What Is in This Chapter?

This chapter contains the following topics:

System Design

Serial interface*1
(COM1/COM2)

Cable*2*3

Isolation
unit*2

Cable*2*3

Host controller,
PLC*3, etc.

Ethernet interface
(ETHERNET)

Cable
(commercial
type)

Host controller,
PLC*3,
Personal Computer
(commercial type), etc.

USB (Type A) / USB (mini-B)
interface

Cable*2

USB device*2,
USB device
(commercial type)*4,
Personal Computer
(commercial type)

Storage

SD Card*2,
USB flash drive
(commercial type)

*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 COM1 port to VCC.

*2 Refer to Accessories *(see page 23)*.

*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 representative.

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	RS-232C Isolation Unit	XBTZGI232	All	Connects a host controller to this product with isolation (RS-232C and RS-422 are switchable).
	RS-485 Isolation Unit	XBTZGI485	All	Connects a host controller to this product with isolation (RS-422 and RS-485 are switchable).
	Terminal Block Conversion Adapter	XBTZG949	All	To be used when using RS-232C isolation unit in RS-422 mode or RS-485 isolation unit. (When the isolation unit connects output from a serial interface of the panel [D-sub 9-pin plug] with an RS-422 terminal block).
	COM Port Conversion Adapter	XBTZGCOM1	All	Conversion adapter required when connecting RS-232C isolation unit with terminal block conversion adapter. (When the isolation unit connects optional RS-422 communication items to COM1 port of the panel).
	Online Adapter	XBTZGCOM2	All	Conversion adapter required when connecting RS-485 isolation unit with terminal block conversion adapter. (When the isolation unit connects optional RS-485 communication items to COM2 port of the panel).
	9-pin to 25-pin RS-232C Conversion Cable	XBTZG919	All	Connects a standard RS-232C cable (D-Sub 25 pin socket) to this product (D-sub 9 pin plug).
	RJ45 to D-Sub 25 pin Conversion Cable	XBTZG939	All	Connects a D-Sub 25-pin cable to this product (RJ-45).

Product name		Product number	Supported product	Description
USB (Type A) interface	USB Transfer Cable	XBTZG935	All	Downloads project data via USB interface.
	USB Front Cable	XBTZGUSB	All	Extension cable that attaches USB interface to front panel.
	USB-Serial (RS-232C) Conversion Cable	HMIZURS	All	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 (mini-B) interface	Remote USB Port Location for mini-USB	HMIZSUSBB	All	Extension cable that attaches to the USB (mini-B) interface on the front side of the operation panel.
	USB Transfer Cable (USB Type A/mini-B)	BMXXCAUSBH018	All	Cable for transferring screen data from a PC (USB Type A) to this product (USB mini-B) (1.8 m [5.91 ft]).
SD Memory Card (4 GB)[1] [2]		HMIZSD4G	All	SD Memory Card (4 GB, CLASS4)
DC Power Supply Connector (right-angle)		HMIZGPWS2	All	Right-angle connector to connect DC power supply cables (5 pcs/set).
Screen Protection Sheet		XBTZG68	HMIGK2310	Disposable, dirt-resistant sheet for the display (5 sheets/set).
		XBTZG69	HMIGK5310	

[1] You can also use a commercial type.

[2] SD/SDHC card with up to 32 GB capacity.

Maintenance Accessories

| Product name	Product number	Supported product	Description
Spring Clip Fasteners	XBTZ3002	All	Fasteners to attach this product to the mounting surface.
Installation Gasket	XBTZG58	HMIGK2310	Provides dust and moisture resistance when this product is installed into a solid panel (1 piece)
	XBTZG59	HMIGK5310	
USB Clamp Type A (1 port)	HMIZGCLP1	All	Clamp to prevent disconnection of USB cable (USB/A, 1 port, 5 clamps/set)
USB Clamp mini-B (1 port)	HMIZSCLP3	All	Clamp to prevent disconnection of USB cable (USB/mini-B, 1 port, 5 clamps/set)
DC Power Supply Connector (straight)	HMIZGPWS	All	Connector to connect DC power supply cables (5 pieces/set)
Battery for Memory Backup	HMIZGBAT	All	Primary battery for memory and time data backup (1 piece)
Insert Labels	XBLYGK2	HMIGK2310	Removable labels for identifying function keys.
	XBLYGK5	HMIGK5310	

Chapter 3
Parts Identification and Functions

What Is in This Chapter?

This chapter contains the following topics:

Parts Identification

HMIGK2310/5310

Front	
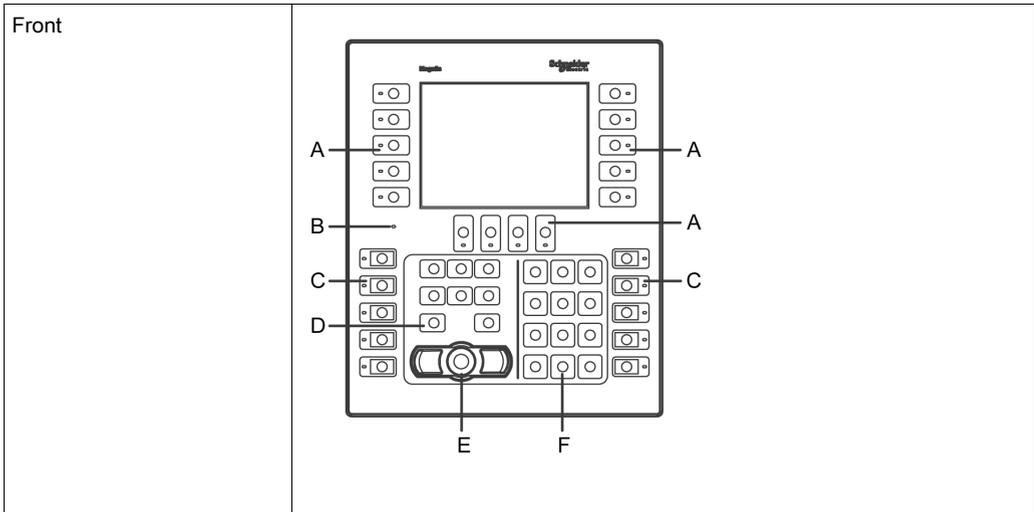
A: Dynamic function keys[*1]

B: Status LED *(see page 33)*

C: Static function keys[*1]

D: Cursor keys

E: Mouse pointer[*2]

F: Alphanumeric keypad

*1 Function keys run the operations defined in your screen editing software. For more information, refer to the associated manual.

*2 The Mouse Pointer controls the cursor and activates objects on the terminal. To move the cursor: Push the Mouse Pointer in the direction you want the cursor to move. To activate an object: Position the cursor above an object and press the Mouse Pointer's right or left button.

NOTE: For more information on key settings and operations, refer to your screen editing software manual.

HMIGK2310

Rear/Right	
Bottom	
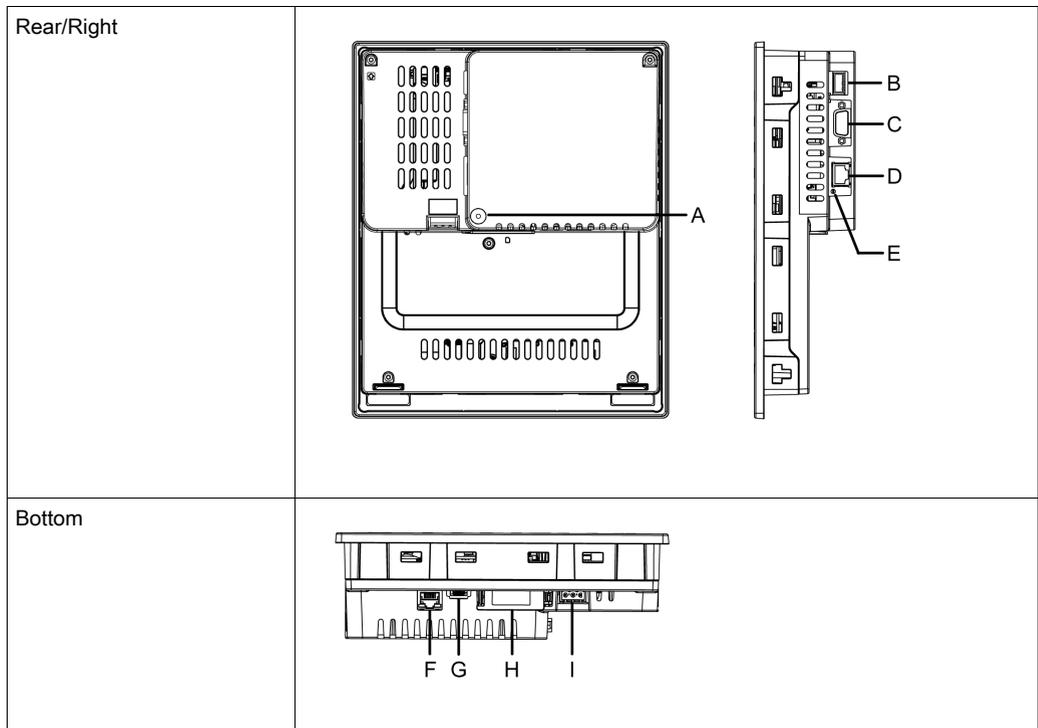
A: SD Card access LED[*1]

B: USB (Type A) interface (USB1)[*2]

C: Serial interface (COM1)[*2]: RS-232C

D: Serial interface (COM2)[*2]: RS-485

E: COM2 LED[*1]

F: Ethernet interface (ETHERNET)[*2]

G: USB (mini-B) interface (USB2)[*2]

H: SD Card/battery cover

I: Power plug connector

*1 Refer to LED Indications *(see page 33)*.
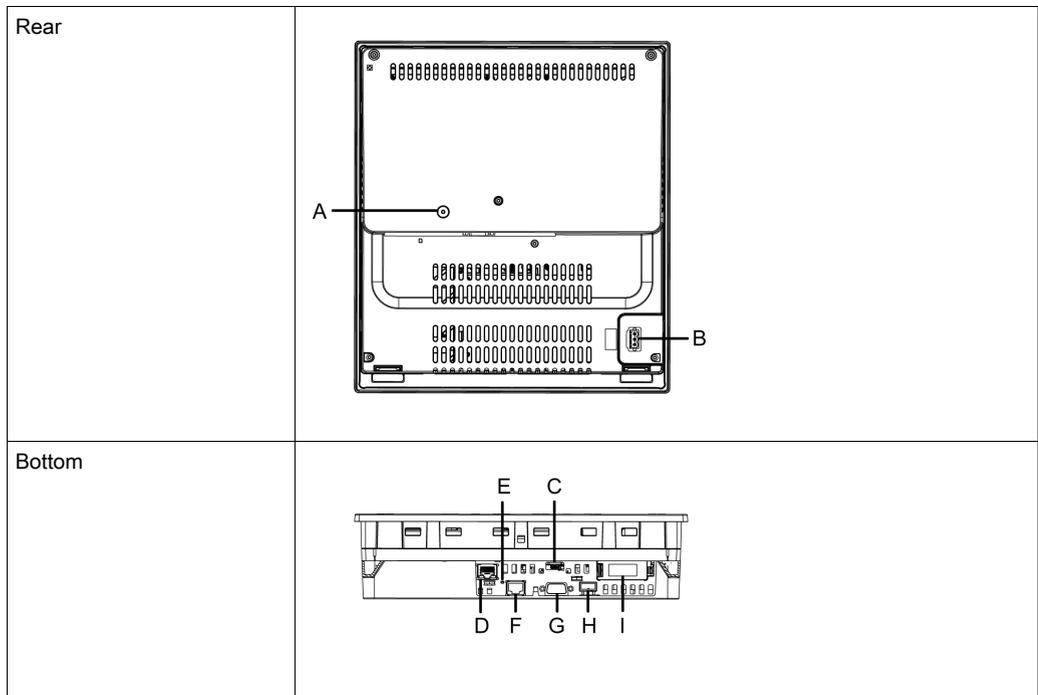
*2 Refer to Interface Specifications *(see page 45)*.

⚠ CAUTION

RISK OF BURNING INJURY

Do not connect the Modbus RJ-45 communication cable to the Ethernet interface.

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

HMIGK5310

Rear	
Bottom	

A: SD Card access LED[1]

B: Power plug connector

C: USB (mini-B) interface (USB2)[2]

D: Ethernet interface (ETHERNET)[2]

E: COM2 LED[1]

F: Serial interface (COM2)[2]: RS-485

G: Serial interface (COM1)[2]: RS-232C

H: USB (Type A) interface (USB1)[2]

I: SD Card/battery cover

*1 Refer to LED Indications *(see page 33)*.

*2 Refer to Interface Specifications *(see page 45)*.

⚠ **CAUTION**

RISK OF BURNING INJURY

Do not connect the Modbus RJ-45 communication cable to the Ethernet interface.

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

LED Indications

Status LED

Color	Indicator	Description
Green	ON	In operation.
Orange	Flashing	Software starting up.
Red	ON	Power is ON.
—	OFF	Power is OFF.

SD Card Access LED

Color	Indicator	Description
Green	ON	SD Card is inserted and available to use.
	Flashing	SD Card is inserted and being accessed.
—	OFF	SD Card is not inserted or accessed.

COM2 LED

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

Chapter 4
Specifications

What Is in This Chapter?

This chapter contains the following sections:

Section	Topic	Page
4.1	General Specifications	36
4.2	Functional Specifications	42
4.3	Interface Specifications	45

Section 4.1
General Specifications

What Is in This Section?

This section contains the following topics:

Electrical Specifications

Specification			HMIGK2310	HMIGK5310
Power supply		Rated input voltage	24 Vdc	
		Input voltage limits	19.2...28.8 Vdc	
		Voltage drop	10 ms or less	
	Power consumption	Maximum power consumption	12.3 W	16.2 W
		When power is not supplied to external devices	7.7 W or less	11.4 W or less
		Backlight OFF (Power is not supplied to external)	4.8 W or less	5.4 W or less
		Brightness 20% (Power is not supplied to external)	5 W or less	5.9 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)	

Environmental Specifications

Physical environment	Surrounding air temperature	0...55 °C (32...131 °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 (approximately 100 minutes)
	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 Air discharge method: 8 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

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]	IP65, Type 1, Type 4X (indoor use only), Type 13 * on the front panel when properly installed in an enclosure.
External dimensions	Refer to Dimensions *(see page 51)*.
Panel cutout dimensions	Refer to Panel Cutout Dimensions *(see page 64)*
Weight	HMIGK2310: 1.8 kg (3.97 lb or less) HMIGK5310: 3.3 kg (7.28 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.

⚠ CAUTION

EQUIPMENT DAMAGE

- Ensure this product is not in permanent and direct contact with oils.
- Do not press on the display of this product with excessive force or with a hard object.
- Do not press on the touch panel with a pointed object, such as the tip of a mechanical pencil or a screwdriver.

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

⚠ CAUTION

EQUIPMENT DAMAGE

Do not expose the device to direct sunlight.

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

NOTICE

STORAGE AND OPERATION OUTSIDE OF SPECIFICATIONS

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

Failure to follow these instructions can result in equipment damage.

NOTICE

GASKET AGING

- Inspect the gasket periodically as required by your operating environment 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:

Topic	Page
Display Specifications	43
Memory, Clock, Touch Panel	44

Display Specifications

	HMIGK2310	HMIGK5310
Display type	TFT Color LCD	
Display size	5.7"	10.4"
Resolution	320 x 240 pixels (QVGA)	640 x 480 pixels (VGA)
Effective display area (W x H)	115.2 x 86.4 mm (4.54 x 3.4 in)	211.2 x 158.4 mm (8.31 x 6.24 in)
Display colors	65,536 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 (continuous operation at 25 °C [77 °F] before backlight brightness decreases to 50%)	
Brightness control	16 levels (Adjusted with touch panel)	

Memory, Clock, Touch Panel

Memory

System memory	Flash EPROM 128 MB (operating system, project data and other data)[1]
Backup memory	SRAM 512 KB[1] [2]

[1] For details on the memory size, refer to the manual for your screen editing software.

[2] Replaceable lithium battery for data backup.

Clock

±65 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.

NOTE: When a message indicating that the battery level is low is displayed, replace the battery.

Touch Panel

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

⚠ WARNING
UNINTENDED EQUIPMENT OPERATION
Do not simultaneously touch two or more points on the panel.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

Section 4.3
Interface Specifications

What Is in This Section?

This section contains the following topics:

Interface Specifications

Serial interface COM1	Asynchronous transmission	RS-232C
	Data length	7 or 8 bits
	Stop bit	1 or 2 bits
	Parity	None, odd, or even
	Data transmission speed	2,400...115,200 bps
	Connector	D-Sub 9 pin (plug) x 1
Serial interface COM2	Asynchronous transmission	RS-485
	Data length	7 or 8 bits
	Stop bit	1 or 2 bits
	Parity	None, odd, or even
	Data transmission speed	2,400...115,200 bps, 187,500 bps (MPI)
	Connector	Modular jack (RJ-45) x 1
USB (Type A) interface	Connector	USB 2.0 (Type A) x 1
	Power supply voltage	5 Vdc ±5%
	Maximum current supplied	500 mA/port
	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	IEEE802.3u, 10BASE-T/100BASE-TX
	Connector	Modular jack (RJ-45) x 1

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-incendive USB devices.
● Confirm that the USB cable has been attached with the USB clamp before using the USB host interface.
● Use the USB (mini-B) interface for temporary connection only during maintenance and setup of the device.
● 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. 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 must be a metal conductive type (for example, 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 must 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.

Serial Interface

Introduction

The serial interface is not isolated. The SG (signal ground) and the FG (functional ground) terminals are connected inside this product.

Use only the SELV (Safety Extra-Low Voltage) circuit to connect the COM, USB, and LAN interfaces.

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

⚠ ⚠ DANGER

ELECTRIC SHOCK AND FIRE

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

● Do not put excessive stress on the communication ports of all connections.
● Securely attach communication cables to the panel wall or cabinet.
● Use a RJ-45 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-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 5 Vdc ±5% Output 0.2 A[*1]
	Shell	FG	–	Functional ground (common with SG)
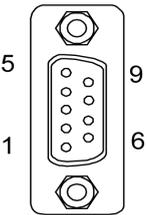
*1 You can switch pin #9 between RI and VCC via your screen editing software. The VCC output is not protected against overcurrent. To prevent damage or malfunction, use within the rated current only

Interfit bracket is #4-40 (UNC).

RS-485

RJ-45 connector

NOTE: When setting up RS-485 communication, the cable diagram for some equipment may require polarization on the terminal side. This terminal does not require any special setting as it handles polarization automatically.

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
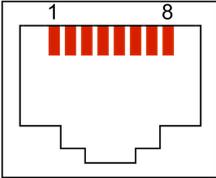
Chapter 5
Dimensions

External Dimensions

HMIGK2310

mm
in

208.3
8.2

(3)

220.3
8.67

74.15
2.92

265
10.43

70
2.76

6.7
0.26

68.15
2.68

242.3
9.54

(1)   (2)
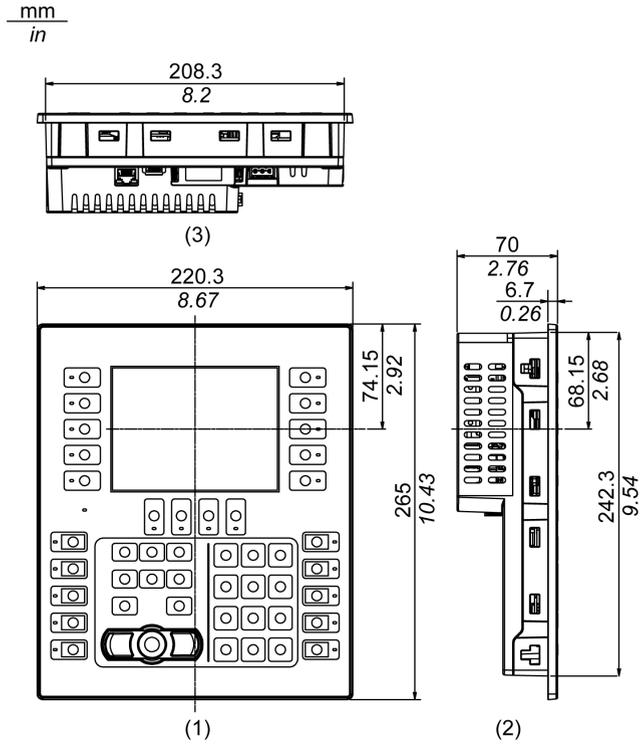
1 Front
2 Left
3 Bottom

HMIGK5310

mm
in

284.3
11.19

(3)

296
11.65

109.2
4.3

332
13.07

(1)

76
2.99

6.7
0.26

103.35
4.07

308.3
12.14

(2)
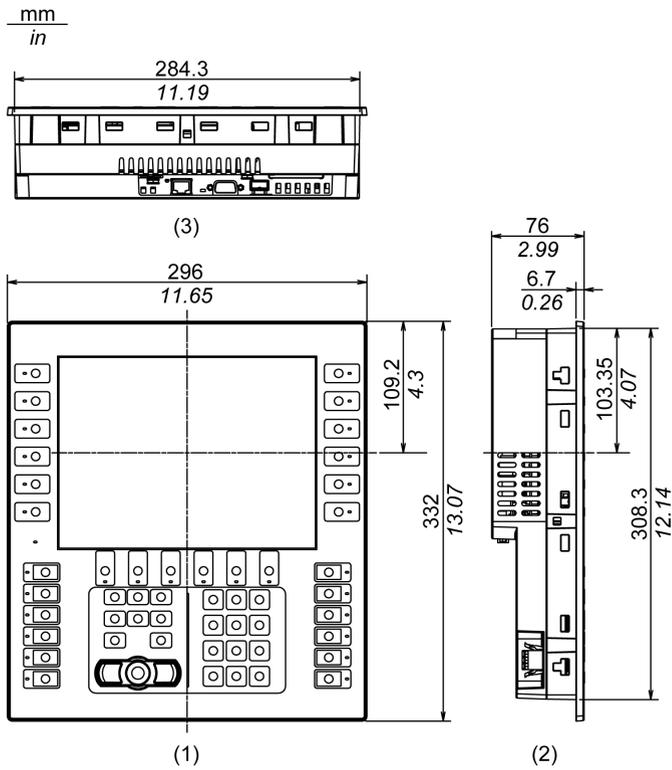
1 Front
2 Left
3 Bottom

Spring Clip

$$\frac{mm}{in}$$

24.5 / 0.96

53.25 / 2.1

4 / 0.16

37.5 / 1.48
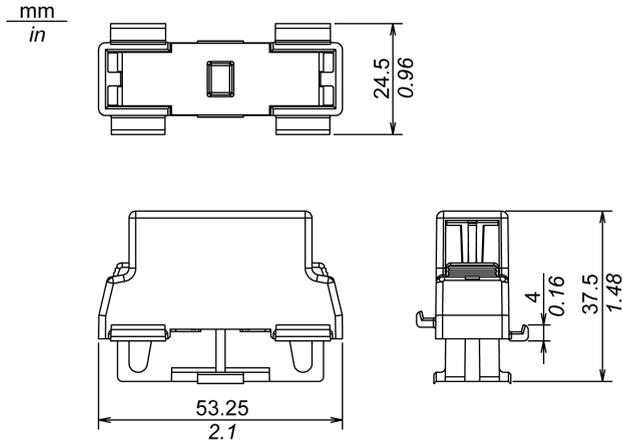
Dimensions with Cables

HMIGK2310
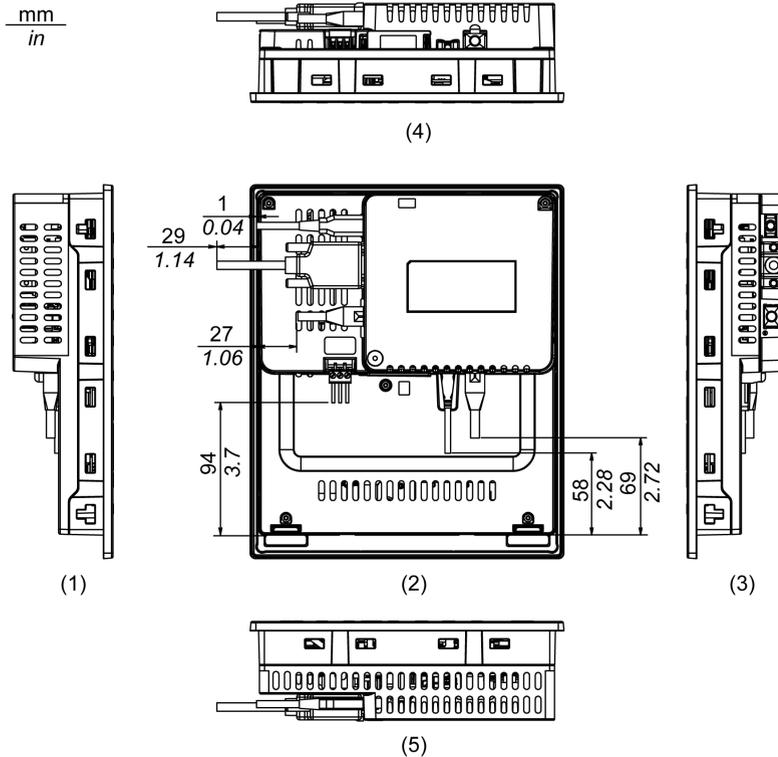
1 Right
2 Front
3 Left
4 Bottom
5 Top

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.

HMIGK5310
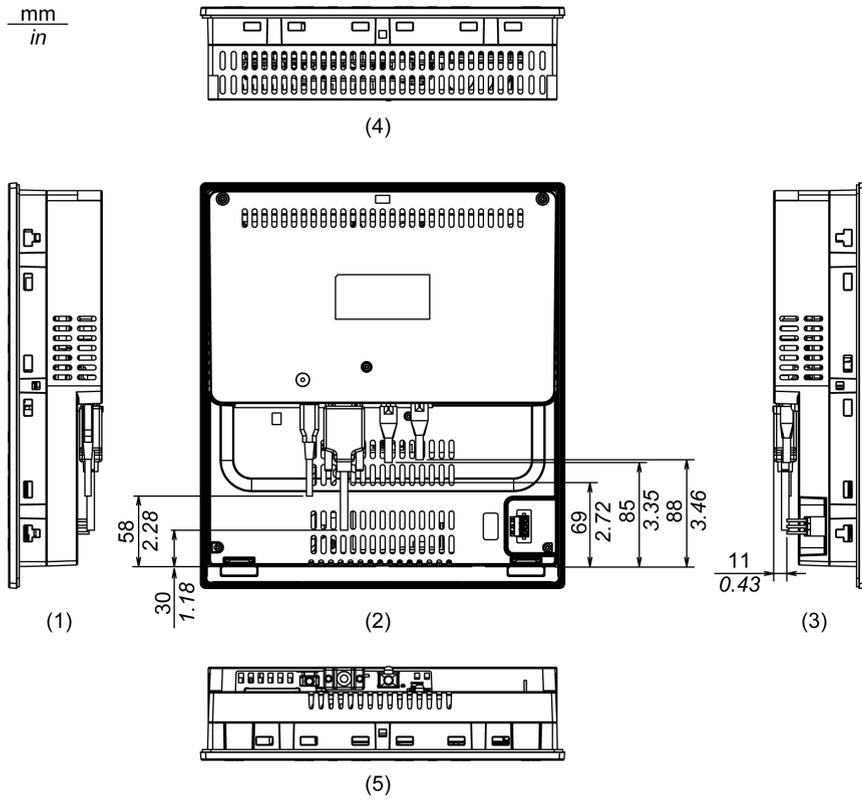
1 **Right**
2 **Front**
3 **Left**
4 **Bottom**
5 **Top**

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.

Dimensions with Spring Clips

HMIGK2310

mm
in
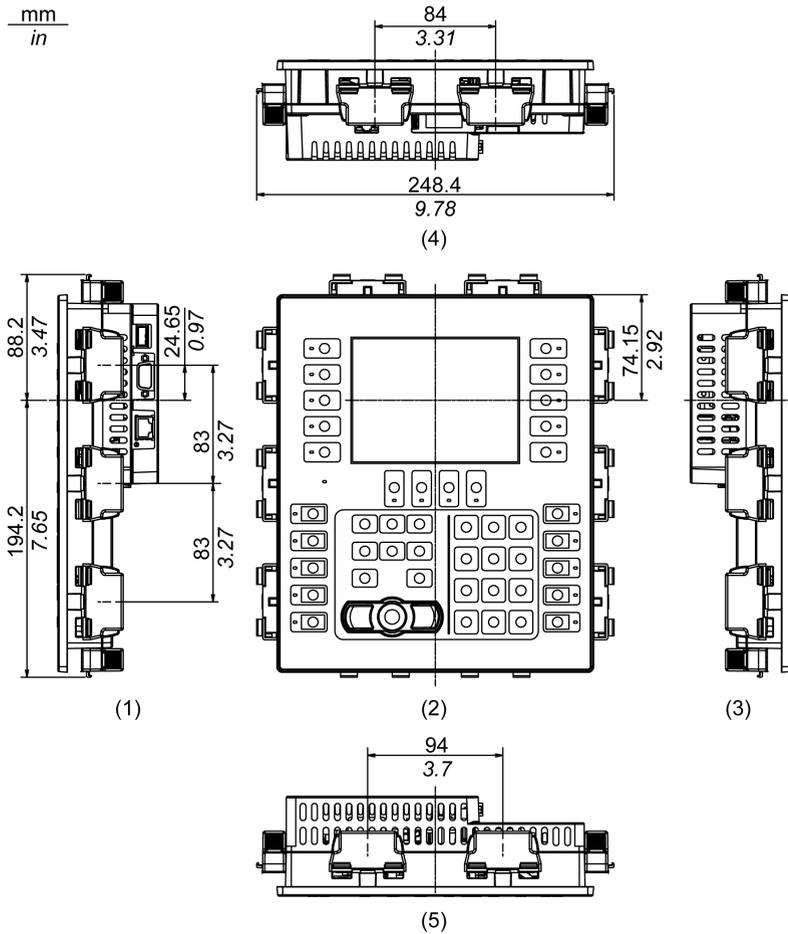
1 Right
2 Front
3 Left
4 Bottom
5 Top

HMIGK5310

$\dfrac{mm}{in}$
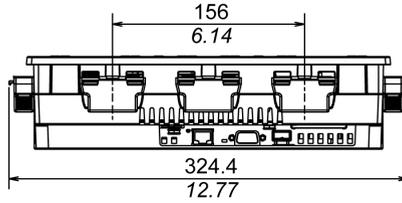
(4)
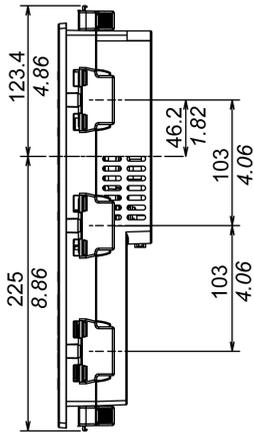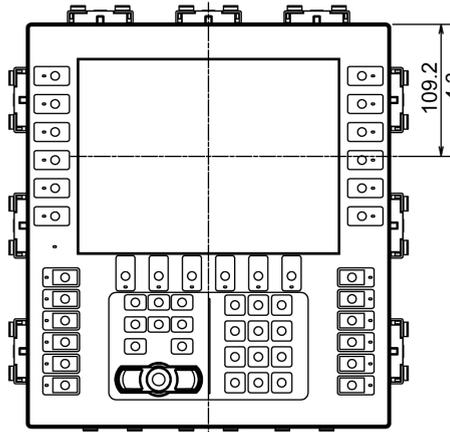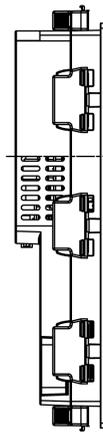
(1)   (2)   (3)
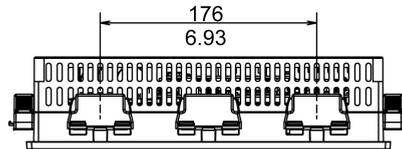
(5)

1 Right
2 Front
3 Left
4 Bottom
5 Top

Chapter 6
Installation and Wiring

What Is in This Chapter?

This chapter contains the following sections:

Section	Topic	Page
6.1	Installation	60
6.2	Wiring Principles	70
6.3	USB Clamp	79
6.4	SD Card Insertion/Removal	85
6.5	Insert Labels	91

Section 6.1
Installation

Introduction

This product is designed for use on flat surfaces of Type 1, Type 4X (indoor use only), Type 13 Enclosure, or IP65.

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

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

NOTE: IP65 is not part of the UL certification.

Installation Requirements

⚠ **CAUTION**
RISK OF BURNING INJURY
Do not touch the rear chassis during operation.
Failure to follow these instructions can result in injury or equipment damage.

Check that the installation wall or cabinet surface is flat, in good condition and has no jagged edges. Metal reinforcing strips may be attached to the inside of the wall, near the panel cutout, to increase its rigidity.
Decide on the thickness of the enclosure wall *(see page 64)*, based on the level of strength required. Even if the installation wall thickness is within the recommended range for the panel cutout 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.
Confirm that the surrounding air temperature and the ambient humidity are within their designated ranges. Surrounding air temperature: 0 to 55 °C (32 to 131 °F); ambient humidity: 10 to 90% RH; wet bulb temperature: maximum 39 °C (102 °F) *(see page 38)*. When installing this product in a cabinet or enclosure, the surrounding air temperature is the cabinet's or enclosure's internal temperature.   **1** Cabinet interior **2** Panel face
Confirm that heat from surrounding equipment does not cause this product to exceed its standard operating temperature.
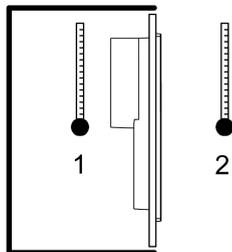
When installing this product in a slanted position, the product face should not incline more than 30°.

0...30°   0...30°
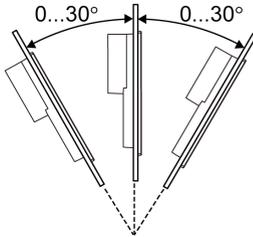
When installing this product in a slanted position with an incline more than 30°, the ambient temperature must not exceed 40 °C (104 °F). You may need to use forced air cooling (fan, A/C) to ensure the ambient operating temperature is 40 °C or less (104 °F or less).

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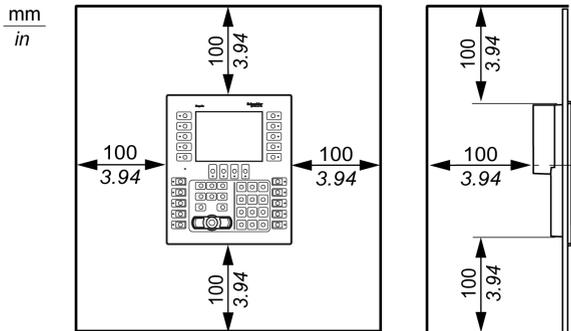
Please ensure you have enough space to insert and remove the storage card.

Panel Cutout Dimensions

Based on the panel cutout dimensions, open a mount hole on the panel.
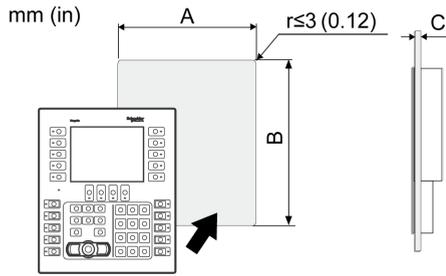
Model name	A	B	C
HMIGK2310	$209^{\pm 0.4}$ mm ($8.23^{\pm 0.01}$ in)	$243^{\pm 0.4}$ mm ($9.57^{\pm 0.01}$ in)	Spring clips (Position 1): 1.5...4 mm (0.06...0.16 in) Spring clips (Position 2): 4...6 mm (0.16...0.24 in) **NOTE:** For the positions, refer to the Installation Procedure *(see page 65)*.
HMIGK5310	$285^{\pm 0.4}$ mm ($11.22^{\pm 0.01}$ in)	$309^{\pm 0.4}$ mm ($12.17^{\pm 0.01}$ in)	

Installation Procedure

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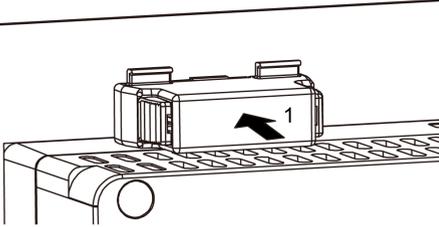>
> **Failure to follow these instructions will result in death or serious injury.**

> ### ⚠ CAUTION
>
> **SPRING LOADED MECHANISM**
>
> Do not release the spring clip mechanism near your face.
>
> **Failure to follow these instructions can result in injury or equipment damage.**

> ### NOTICE
>
> **EQUIPMENT DAMAGE**
>
> Keep this product stabilized in the panel-cut while you are installing or removing the spring clips.
>
> **Failure to follow these instructions can result in equipment damage.**

Step	Action
1	Place this product on a clean and level surface with the screen facing down.
2	Check that this product's gasket is seated securely into the bezel's groove, which runs around the perimeter of the display 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 98)*.
3	Based on this product's panel cutout dimensions *(see page 64)*, open a mount hole on the panel and attach this product to the panel from the front side.
4	Press the spring clip hooks into the insertion slots on this product. Adjust the spring clips for the panel thickness by turning it over: ● Position 1 1.5 mm (0.059 in) ≤ panel thickness ≤ 4 mm (0.157 in). ● Position 2 4 mm (0.157 in) ≤ panel thickness ≤ 6 mm (0.236 in). Side of the spring clip **1** Hook for position 1 **2** Hook for position 2
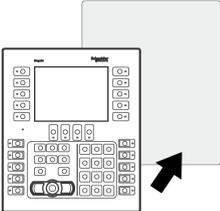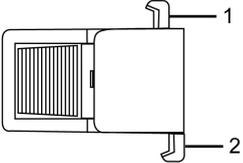
Step	Action
5	Lock the spring clips by simultaneously pressing the top and bottom of the clip. **1** Spring clip **2** Click **Number of spring clips** HMIGK2310 ● Top - 2, Bottom - 2, Right - 3, Left - 3 HMIGK5310 ● Top - 3, Bottom - 3, Right - 3, Left - 3
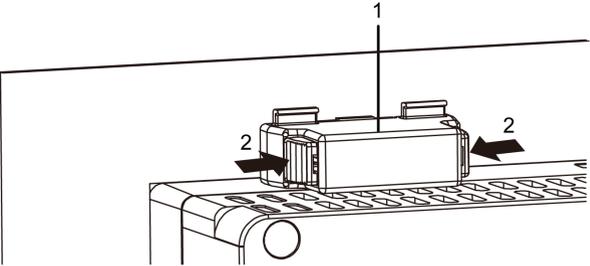
Removing from the Panel

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

NOTICE
EQUIPMENT DAMAGE
Keep this product stabilized in the panel-cut while you are installing or removing the spring clips.
Failure to follow these instructions can result in equipment damage.

Step	Action
1	Remove the spring clips. First unlock the clips by pressing on the back of the clip until you hear a click. **1** Click
2	Remove this product slowly from the panel.

⚠ CAUTION

RISK OF INJURY

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

● Hold this product in place after removing the spring clips.
● Use both hands.
● While pushing on the projection, be careful not to hurt your fingers.

Failure to follow these instructions can result in injury or 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.   ● Use only the specified voltage when operating this product. This product is designed to use 24 Vdc power. Always check whether your device is DC powered before applying power.   ● Since this product is not equipped with a power switch, be sure to connect a power switch to the power supply.   ● Be sure to ground this product's FG terminal.
Failure to follow these instructions will result in death or serious injury.

NOTE:
● The SG (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 electromagnetic interference (EMI).

DC Power Cord Preparation

- Confirm 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.
- Use copper wire rated for 75 °C (167°F).

Power cord diameter	0.75...2.5 mm^2 (AWG 18...13)[1]
Conductor type	Solid or stranded wire
Conductor length	$\dfrac{mm}{in}$ $\dfrac{10}{0.39}$

*1 For UL compatibility, use AWG 14 or AWG 13.

DC Power Supply Connector Specifications

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

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 holder. Release the Opening button to clamp the wire in place. Opening Button DC Power Cord + (24 Vdc) − (0 Vdc) FG 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.
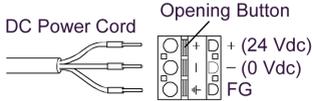
NOTE:
● Do not solder the wire directly to the power crimp pin.
● You can also connect the right-angle connector (part number: HMIZGPWS2) to the HMIGK5310.

Connecting the Power Supply

Precautions

⚠ ⚠ DANGER
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.
● Install and fasten this product on installation panel or cabinet prior to connecting power supply and communication lines.
Failure to follow these instructions will result in death or serious injury.

Improving Noise/Surge Resistance

- 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 surge protection device 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, connect the power as shown below.
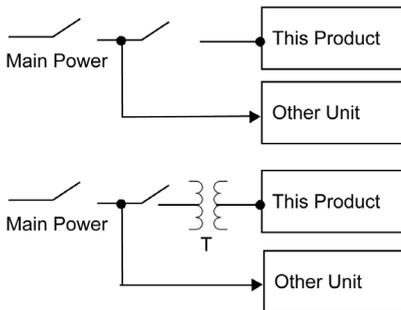
- Use SELV (Safety Extra-Low Voltage) circuit and LIM (Limited Energy) circuit for DC input.
- The following shows a surge protection device connection:
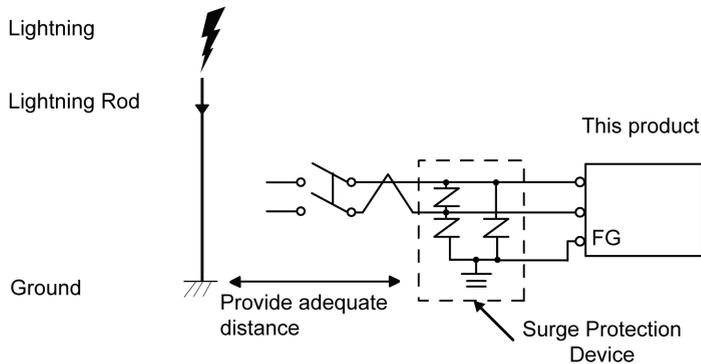
- Attach a surge protection device to prevent damage to this product as a result of a lightning-induced power surge from a large electromagnetic field generated from a direct lightning strike. We also strongly recommend to connect the crossover grounding wire of this product to a position close to the ground terminal of the surge protection device.
  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 grounding point.
- If the voltage variation is outside the prescribed range, connect a regulated power supply.
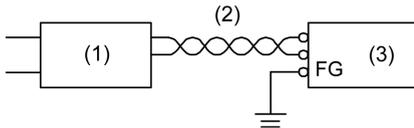
1 Regulated power supply
2 Twisted-pair cord
3 This product

- 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 *(see page 37)*.
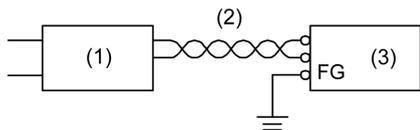
1 Insulating transformer
2 Twisted-pair cord
3 This product

Grounding

Exclusive Grounding

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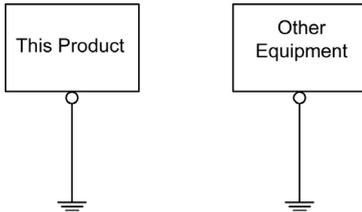
Precautions

- 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 ground loop is formed.

[1] Observe local codes and standards.

Common Grounding

Electromagnetic Interference (EMI) can be created if devices are improperly grounded. EMI can cause loss of communication. If 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
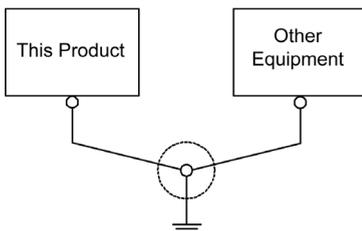
Incorrect grounding
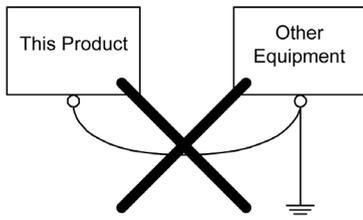
Section 6.3
USB Clamp

What Is in This Section?

This section contains the following topics:

Topic	Page
USB Clamp Type A (1 port)	80
USB Clamp mini-B (1 port)	83

USB Clamp Type A (1 port)

Introduction

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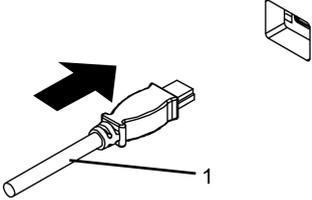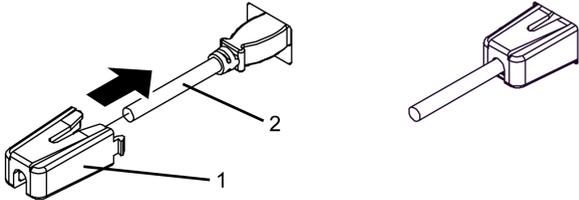

## ⚠ DANGER

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 clamp before using the USB interface.

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

Attaching USB Clamp Type A

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.

Step	Action
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. Pass the tie through here.
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. Confirm 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. Confirm the clip tab is secured to the USB cable attached to this product.
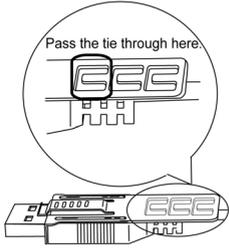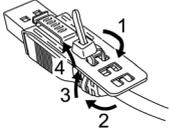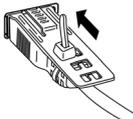
Removing the USB Clamp Type A

Step	Action
1	Remove the USB cable while pushing the grip section of the clip.
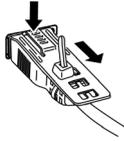
USB Clamp mini-B (1 port)

Introduction

When using a USB device, you can attach a USB clamp to the USB (mini-B) 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.
- Confirm that the USB cable has been fixed with the USB clamp before using the USB interface.
- Remove power before attaching or detaching any connectors to or from this product.
- Use the USB (mini-B) interface for temporary connection only during maintenance and setup of the device.

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

Attaching USB Clamp mini-B

Step	Action
1	Insert the USB cable into the USB (mini-B) interface. **1** USB cable
2	Attach the USB clamp to fix the USB cable in place. Insert the USB clamp into the USB (mini-B) interface. **1** USB clamp **2** USB cable

Removing USB Clamp mini-B

Step	Action
1	Remove the USB clamp by pressing the tabs from the sides.
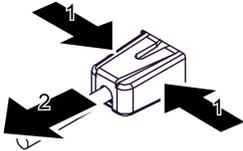
Section 6.4
SD Card Insertion/Removal

What Is in This Section?

This section contains the following topics:

Introduction

NOTICE
LOSS OF DATA
When using a SD Card: ● Make sure you regularly back up the SD Card data since the SD Card has a life span and accidental data loss can occur at any time. ● While a SD Card is accessed, do not turn OFF or reset this product, and do not insert or remove the SD Card. ● Before removing the SD Card from this product, stop all operations on the SD Card. ● Make sure of the SD Card's orientation before inserting it into the SD Card slot.
Failure to follow these instructions can result in equipment damage.

NOTICE
LOSS OF DATA
When handling the SD Card: ● 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.
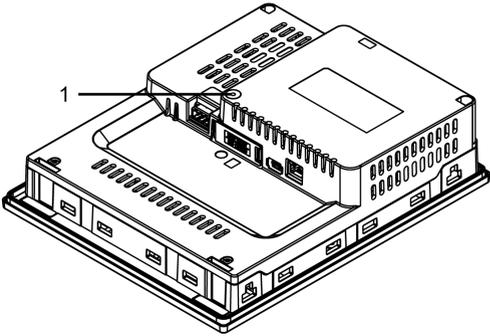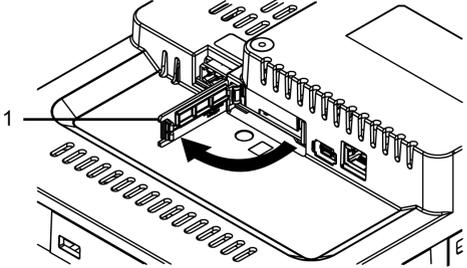

Write-Control Tab

Write disabled
(Enable to read)

Write enabled
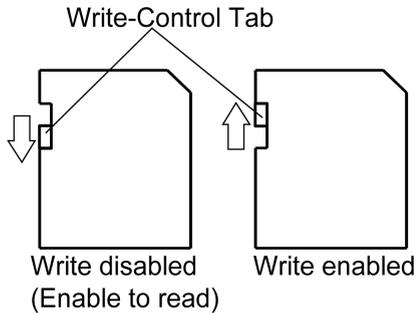
Step	Action
1	Push down the tab on the SD Card/battery cover, then pull open the cover. **1** SD Card/battery cover

Step	Action
2	Insert the SD Card into the SD Card Slot with the front face of the SD Card facing up and push until you hear it "click". **1** SD Card
3	Close the SD Card/battery cover.
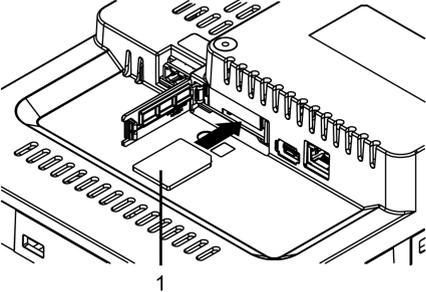
Removing the SD Card

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.

Step	Action
1	Make sure the SD Card access LED is off. **1** SD Card access LED
2	Push down the tab on the SD Card/battery cover, then pull open the cover. **1** SD Card/battery cover
3	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.
4	Close the SD Card/battery cover.

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 6.5
Insert Labels

What Is in This Section?

This section contains the following topics:

Topic	Page
Introduction	92
Inserting Insert Labels	93

Introduction

You can print blank labels from your screen editing software. For more information, refer to the manual of the screen editing software. Remove the protective layer from label sheets before printing.

⚠ WARNING
UNINTENDED EQUIPMENT OPERATION
Make sure that the text/symbols on your insert label always correspond to what is configured for this product in your screen editing software.
Failure to follow these instructions can result in death, serious injury, or equipment damage.

⚠ CAUTION
EQUIPMENT DAMAGE
● Insert the labels, align them properly, and slide the flap into the chassis slit. ● Do not pinch the flap between the product and the panel.
Failure to follow these instructions can result in injury or equipment damage.

Function Key Label

Blank Label
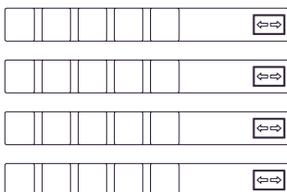
Inserting Insert Labels

Step	Action
1	Insert the insert labels as illustrated below.
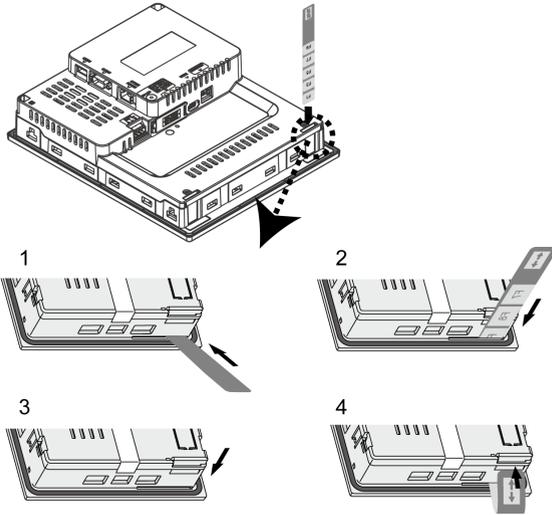
Chapter 7
Maintenance

What Is in This Chapter?

This chapter contains the following topics:

Regular Cleaning

Cleaning this product

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

When this product gets dirty, soak a soft cloth in water with a neutral detergent, wring the cloth tightly and wipe this product.

Periodic Check Points

Operation Environment

- Is the operating temperature within the allowable range? (0...55 °C [32...131 °F])
- Is the operating humidity within the specified range? (10...90%RH, wet bulb temperature of 39 °C [102.2 °F] or less)
- Is the operating atmosphere free of corrosive gases?

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

Electrical Specifications

- Is the input voltage appropriate? (19.2...28.8 Vdc)
- Are all power cords and cables connected properly? Are there any loose cables?
- Are all spring clips 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

Overview

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 panel on a flat, level surface, with the display face pointing down.
2	Remove the gasket from the panel.
3	Attach the new gasket to the panel. Position the gasket in the installation groove so that the gasket seam is at the bottom of the panel. First, insert the gasket into the 4 corners, in the order shown in the image below. Then, insert the rest of the gasket into the installation groove. **NOTE:** When using a tool to insert the gasket, make sure the tool does not catch the rubber gasket and cause a tear. **A** Gasket seam

Stage	Description
4	The upper surface of the gasket should protrude approximately 2.0 mm (0.08 in) from the groove. Check the gasket is inserted correctly before installing this product into a panel.
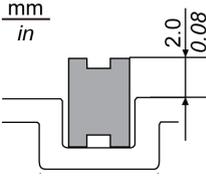
The gasket must be inserted correctly into the groove for moisture resistance for this product.

⚠ CAUTION

EQUIPMENT DAMAGE

- Since the gasket is flexible but not elastic, be careful not to stretch it unnecessarily.
- Make sure the gasket seam is not inserted into any of the panel corners.
- Insert the gasket in the installation groove.

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

Replacing the Primary Battery

Introduction

The replacement battery HMIZGBAT (sold separately) for the primary battery in this product is available from Schneider Electric.

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

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

⚠ DANGER

EXPLOSION, FIRE, OR CHEMICAL HAZARD

- Use this product's replacement battery only.
- Do not cause a short circuit.
- Recycle or properly dispose of used batteries.

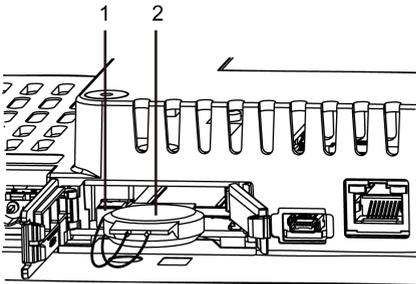**Failure to follow these instructions will result in death or serious injury.**

NOTICE

LOSS OF DATA

- The primary battery is non-rechargeable, and is used for data backup of memory and the internal clock. If the primary battery is depleted, the backup data is lost. One month before the primary battery is completely depleted, a message will appear to indicate it is time to replace the primary battery.
- Replace the battery within one month after the message appears. Otherwise, backup data may be lost.
- Complete replacing the battery within ten minutes of shutting down this product.
- The primary battery replacement time (within a month after the message appears) is only a guideline.
- When backup SRAM data and clock data is lost after the message appears, Schneider Electric does not perform data recovery/retrieval. Schneider Electric does not accept any responsibility for the loss of data.
- Replace the primary battery regularly every five years after you purchase this product.

Failure to follow these instructions can result in equipment damage.

Replacing the Battery

Step	Action
1	Disconnect the power supply from this product.
2	Touch the housing or ground connection (not the power supply) to discharge any electrostatic charge from your body.
3	Open the SD Card/battery cover by pressing its tab. Next, open the replacement battery insertion cover by pressing its tab. **1** Safety alert symbol (see the safety messages in Introduction) **2** SD Card/battery cover **3** Replacement battery insertion cover
4	Remove the battery and connector. **1** Connector **2** Battery
5	Attach the new battery and connector.
6	First close the replacement battery insertion cover, then close the SD Card/battery cover. **NOTE:** Make sure the cables are inserted completely inside the enclosure. Otherwise, you can damage the cables when you close the cover.
7	Reconnect the power supply to this product.
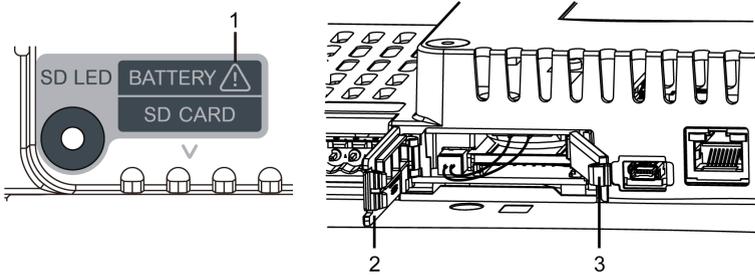
Replacing the Backlight

Not user replaceable. When replacement is required, contact your local distributor.

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