

# GP-4G01

## Hardware Manual

GP4G01-MM01-PDF\_04  
01/2022

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As part of a group of responsible, inclusive companies, we are updating our communications that contain non-inclusive terminology. Until we complete this process, however, our content may still contain standardized industry terms that may be deemed inappropriate by our customers.



# Table of Contents

	<b>Safety Information</b> .....	<b>5</b>
	<b>About the Book.</b> .....	<b>7</b>
<b>Chapter 1</b>	<b>Overview</b> .....	<b>11</b>
	Package Contents .....	<b>12</b>
	Certifications and Standards .....	<b>13</b>
	Federal Communication Commission Radio Frequency Interference Statement - For USA .....	<b>15</b>
<b>Chapter 2</b>	<b>Device Connectivity</b> .....	<b>17</b>
	System Configuration .....	<b>18</b>
	Accessories .....	<b>20</b>
<b>Chapter 3</b>	<b>Parts Identification and Functions</b> .....	<b>23</b>
	Parts Identification .....	<b>24</b>
	LED Indications .....	<b>26</b>
<b>Chapter 4</b>	<b>Specifications</b> .....	<b>29</b>
4.1	General Specifications .....	<b>30</b>
	Electrical Specifications .....	<b>31</b>
	Environmental Specifications .....	<b>32</b>
	Structural Specifications .....	<b>33</b>
4.2	Functional Specifications .....	<b>34</b>
	Memory, Clock .....	<b>35</b>
4.3	Interface Specifications .....	<b>36</b>
	Interface Specifications .....	<b>37</b>
	Interface Connection .....	<b>38</b>
	Serial Interface .....	<b>39</b>
	Termination Resistor .....	<b>42</b>
<b>Chapter 5</b>	<b>Dimensions</b> .....	<b>45</b>
	External Dimensions .....	<b>46</b>
<b>Chapter 6</b>	<b>Installation and Wiring.</b> .....	<b>47</b>
6.1	Installation .....	<b>48</b>
	Introduction .....	<b>49</b>
	Installation Requirements .....	<b>50</b>
	Installation Procedure .....	<b>51</b>
6.2	Wiring Principles .....	<b>53</b>
	Connecting the DC Power Cord .....	<b>54</b>
	Connecting the Power Supply .....	<b>57</b>
	Grounding .....	<b>59</b>
6.3	USB Clamp .....	<b>60</b>
	Attaching the USB Clamp Type A (1 port) .....	<b>60</b>
6.4	RTC Battery Set .....	<b>62</b>
	Introduction .....	<b>63</b>
	Inserting the SD Card .....	<b>64</b>
	Removing the SD Card .....	<b>65</b>
	Removing the USB Storage .....	<b>66</b>

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<b>Chapter 7 Maintenance</b> .....	<b>67</b>
Regular Cleaning .....	<b>68</b>
Periodic Check Points .....	<b>69</b>
Replacing the Battery .....	<b>70</b>
Ethernet Setting Initialization .....	<b>72</b>
After-sales Service .....	<b>73</b>

# 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” 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.



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# About the Book

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## 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 device(s) described in this manual also appear online at <http://www.pro-face.com/>.

The characteristics presented in this manual should be the same as those that appear online. In line with our policy of constant improvement we may revise content over time to improve clarity and accuracy. In the event that 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 manuals related to this product, such as the software manual, from our support site at <http://www.pro-face.com/trans/en/manual/1001.html>.

### 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 12 to 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, 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 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 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.**



**Cybersecurity Best Practices**

To help keep your Schneider Electric products secure and protected, we recommend that you implement the cybersecurity best practices. Following the recommendations may help significantly reduce cybersecurity risk of your company. For the recommendations, refer to the following URL:

<https://www.se.com/en/download/document/7EN52-0390/>



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# Chapter 1

## Overview

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### What Is in This Chapter?

This chapter contains the following topics:

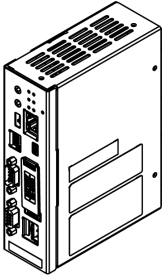
Topic	Page
Package Contents	12
Certifications and Standards	13
Federal Communication Commission Radio Frequency Interference Statement - For USA	15

## Package Contents

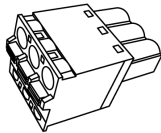
**NOTE:** This product has been carefully packed with special attention to quality. However, should you find anything damaged or missing, please contact customer support immediately.

Verify all items listed here are present in your package:

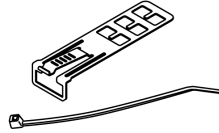
1



2



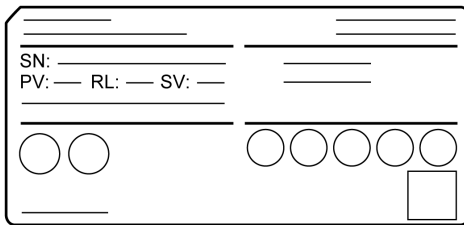
3



- 1 GP-4G01 (model number: PFXGP4G01D): 1
- 2 DC Power Supply Connector: 1
- 3 USB Clamp Type A (1 port): 1 set (1 clip and 1 tie)
- 4 GP-4G01 Installation Guide: 1
- 5 Warning/Caution Information: 1
- 6 License Agreement: 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:** The certifications and standards listed below may include those that are not yet acquired for this product. For the latest certifications and standards that this product has acquired, please check the product marking or the following URL.

<http://www.pro-face.com/trans/en/manual/1002.html>

### 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
- 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

Australia

- RCM
  - EN61000-6-4

Korea

- KC
  - KN11
  - KN61000-6-2

### 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 33*).

### 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 and 2015/863/EU
- RoHS China, GB/T 26572
- REACH regulation EC 1907/2006

**End of Life (WEEE)**

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

Refer to the section Maintenance (see page 67) to extract cells and batteries from the product. These batteries do not contain a weight percentage of heavy metals over the threshold notified by European Directive 2006/66/EU.

**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**

사용자안내문

기종별	사용자안내문
A급 기기 (업무용 방송통신기자재)	이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.

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## **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.





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# Chapter 2

## Device Connectivity

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### What Is in This Chapter?

This chapter contains the following topics:

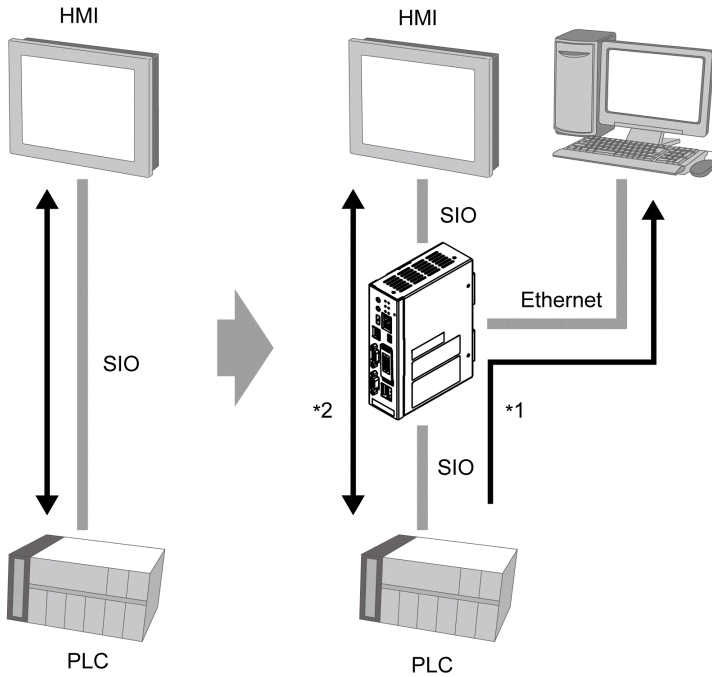
Topic	Page
System Configuration	18
Accessories	20
Workflow up to Operation	21

## System Configuration

### Introduction

This product is designed to connect external devices (PLC, etc.) that do not have their own Ethernet interface to an Ethernet-capable system.

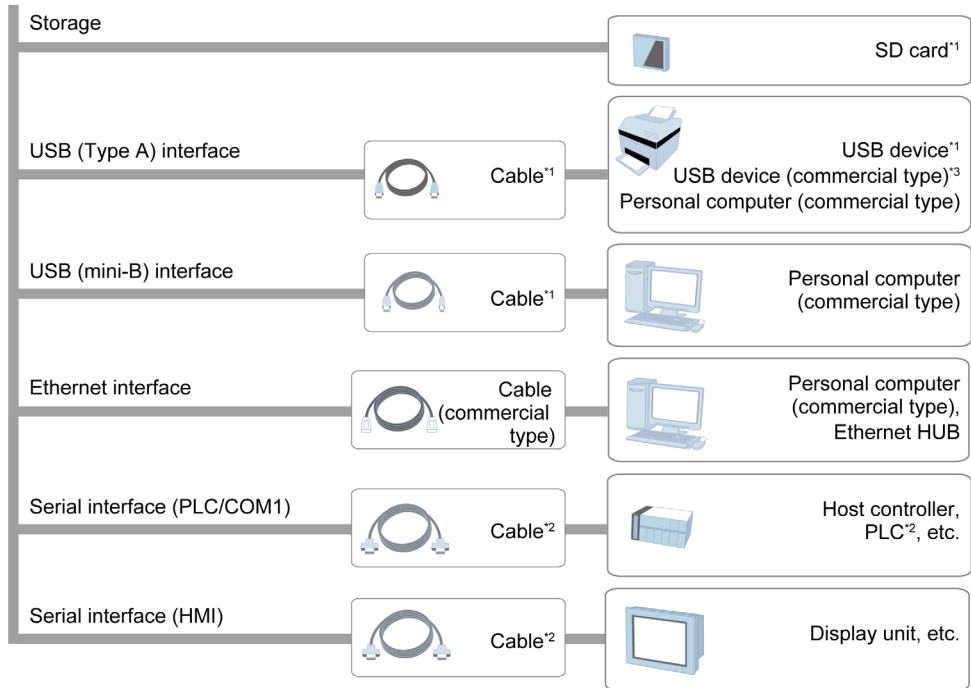
You can connect this product to a serially connected system with display units and external devices (such as PLCs), and get data from the external devices without changing the existing program. This data can then be collected and displayed on a PC.



\*1 When gateway mode is enabled, this product can get data from connected devices while continuing with existing communications between external devices and display units. For details about gateway mode, refer to GP-Pro EX Reference Manual. When display units are not connected to this product, this product gets data from connected devices regardless of whether gateway mode is enabled.

\*2 Even if this product is turned off, communication on the existing system between external devices and display units will continue.

## System Design



\*1 Refer to Accessories (see page 20).

\*2 For information on how to connect controllers and other types of equipment, refer to GP-Pro EX Device / PLC Connection Manual.

\*3 For supported models, refer to our support site at <http://www.pro-face.com/trans/en/manual/1001.html>.

## Accessories

For host controllers and connection cables, refer to GP-Pro EX Device / PLC Connection Manual.

Product name		Product number	Description
USB (Type A) interface	USB Transfer Cable (2 m)	CA3-USBCB-01	Downloads project data via USB Interface.
	USB Cable (5 m)	FP-US00	Connects a USB printer (Type B).
USB (mini-B) interface	USB Transfer Cable (USB Type A/mini-B) (1.8 m)	ZC9USCBMB1	Cable for transferring screen data from a PC (USB Type A) to this product (USB mini-B).
SD Memory Card		PFXZCBSD4GC41	SD Memory Card (4GB, CLASS 4)
Battery for Memory Backup		PFXZCBBT1	Memory/Primary battery for time data back-up (1 piece)

## Maintenance Accessories

Product name	Product number	Description
DC Power Supply Connector	PFXZCBCNDC1	Connector to connect DC power supply cables (5 pcs/set)
USB Clamp Type A (1 port)	PFXZCBCLUSA1	Clamp to prevent disconnection of USB cable (USB/A, 1 port, 5 clamps/set)

## Workflow up to Operation

Step	Action	Reference
1	<b>Product installation and wiring</b> After installing and connecting the Ethernet cable to the product, turn the product on.	Installation ( <i>see page 48</i> ) Wiring Principles ( <i>see page 53</i> )
2	<b>IP address configuration</b> Access the product from the web browser to configure the IP address, subnet mask, and other settings.	Ethernet Local Settings ( <i>see page 21</i> )
3	<b>Software installation</b> Install the screen editing software on the PC.	-
4	<b>Project file creation/transferring</b> Use the screen editing software to create project data, and then transfer the data to the product.	GP-Pro EX manual
5	<b>Cable and device connection</b> Turn off the product's power supply and connect the required cable and device for operation.	Serial Interface ( <i>see page 39</i> ) USB Clamp ( <i>see page 60</i> ) SD Card/USB Storage Insertion/Removal ( <i>see page 62</i> )
6	<b>Operation start</b> Turn on the power to the product.	

### Ethernet Local Settings

Before proceeding with operation, follow the procedure below to configure the IP address and other Ethernet settings.

Step	Action
1	Connect the Ethernet cable to the product.
2	Start a web browser from the computer and type the default IP address for the product (192.168.1.100) into the address bar to access the product.
3	Enter the User Name (the default value: admin) and Password (the default value: Admin!123) on the login screen. The WebConfig screen appears.
4	Configure the Ethernet network settings (IP address, subnet mask, default gateway, etc.).

#### NOTE:

- If you have forgotten the IP address, it is possible to revert the Ethernet settings to their defaults. For details, refer to Ethernet Setting Initialization (*see page 72*).
- For details on how to change the User Name and Password, etc... refer to the "GP-Pro EX Reference Manual".



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# Chapter 3

## Parts Identification and Functions

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### What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Parts Identification	24
LED Indications	26

**Parts Identification**

Side	PFXGP4G01D
Front	<p>Diagram showing the front view of the PFXGP4G01D device with callouts A through Q identifying various ports and components.</p> <ul style="list-style-type: none"> <li>A: Top-left circular port</li> <li>B: Second circular port from top-left</li> <li>C: USB Type-C port</li> <li>D: USB Type-A port</li> <li>E: Battery status indicator</li> <li>F: Bottom-left circular port</li> <li>G, H, I, J, K, L: Top-right circular connector</li> <li>M: Ethernet port</li> <li>N: Port below Ethernet</li> <li>O: Port below N</li> <li>P: Port below O</li> <li>Q: Bottom-right circular port</li> </ul>
Left	<p>Diagram showing the left side view of the PFXGP4G01D device with callout R identifying the left edge.</p>
Right	<p>Diagram showing the right side view of the PFXGP4G01D device with callout S identifying the right edge.</p>



Part	Name	Description
A	USB storage eject switch <sup>*1</sup>	Switch for safe removal of the USB storage device. (see page 66)
B	SD card eject switch <sup>*1</sup>	Switch for safe removal of the SD card. (see page 65)
C	RS-232C/RS-422 change switch <sup>*2</sup>	Switch for changing the serial interface communication method.
D	USB (Type A) interface (USB1)	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)
E	Serial interface (PLC/COM1)	RS-232C/422/485 serial interface for connecting the product to external devices. (see page 40) (The RS-232C/RS-422 change switch is used to switch between communication methods.) Connector: D-Sub 9 pin (plug) x 1
F	Serial interface (HMI)	RS-232C/422/485 serial interface for connecting the product to display units. (see page 41) (The RS-232C/RS-422 change switch is used to switch between communication methods.) Connector: D-Sub 9 pin (socket) x 1
G	USB1 storage access LED (USB1)	(see page 27)
H	Status LED (STA)	(see page 26)
I	PLC access LED (PLC)	(see page 26)
J	Error LED (ERR)	(see page 26)
K	HMI access LED (HMI)	(see page 27)
L	SD card access LED (SD)	(see page 27)
M	Power LED (PWR)	(see page 26)
N	Ethernet interface (ETH)	Ethernet transmission interface (10BASE-T/100BASE-TX) Connector: Modular jack (RJ-45) x 1
O	USB (mini-B) interface (USB2)	USB 2.0 (mini-B) x 1 Maximum transmission distance: 5 m (16.4 ft)
P	SD card interface cover / Battery interface cover	Open the cover to insert or remove the SD card. Open the battery interface cover to replace the battery.
Q	Power connector	-
R	Termination resistance cover	(see page 42)
S	License label	Sticker displaying the software license.

\*1 The USB storage eject switch and SD card eject switch can be used to initialize Ethernet settings (see page 72) or to transfer project files using the Memory Loader function. For information on the Memory Loader function and the operation, refer to GP-Pro EX manual.

\*2 Turn off the power supply before changing the communication method.

## LED Indications

### Power LED (PWR)

Color	Indicator	HMI operation	Logic program operation
Green	ON	Offline	-
		In operation	RUN
	Flashing	Waiting to receive initialize Ethernet settings* <sup>2</sup> or process Memory Loader* <sup>1</sup> .	STOP
Orange	Flashing	Software starting up.	
	Flashing (Fast)	Starting up / Processing Memory Loader* <sup>1</sup> .	
Red	ON	Power is turned ON.	
	Flashing	In operation	Major error
-	OFF	Power is turned OFF.	

\*1 For information on the Memory Loader function and the operation, refer to GP-Pro EX manual.

\*2 Refer to Ethernet Setting Initialization (see page 72).

### Status LED (STA)

Color	Indicator	Description
Green	ON	In operation (This product can get data from external devices)
-	OFF	Any status except "In operation". (When this product is offline, only the existing communication between external devices and display units is available.)

### Error LED (ERR)

Color	Indicator	Description
Red	ON	Major error
	Flashing	Minor error
-	OFF	In operation

**NOTE:** If the error LED is on or flashing, start a web browser from a computer connected to this product via the network, and type this unit's IP address to check the error information.

### PLC access LED (PLC)

Color	Indicator	Description
Green	Flashing	In communication with connected device
-	OFF	In idle state or communication is not possible

**HMI access LED (HMI)**

Color	Indicator	Description
Green	Flashing	In communication with display unit
-	OFF	In idle state or communication is not possible

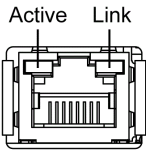
**USB1 storage access LED (USB1)**

Color	Indicator	Description
Green	ON	USB storage is attached.
-	OFF	USB storage is not attached or is not detected.

**SD card access LED (SD)**

Color	Indicator	Description
Green	ON	SD card is inserted.
-	OFF	SD card is not inserted or is not detected.

**Ethernet LED**

	Color	Indicator	Description
	Green (Active)	Flashing	Data transmission is occurring.
		OFF	No data transmission
	Green (Link)	ON	Data transmission is available in 10 BASE-T/100 BASE-TX.
		OFF	No connection or error



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# Chapter 4

## Specifications

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### What Is in This Chapter?

This chapter contains the following sections:

Section	Topic	Page
4.1	General Specifications	30
4.2	Functional Specifications	34
4.3	Interface Specifications	36

# Section 4.1

## General Specifications

---

### What Is in This Section?

This section contains the following topics:

Topic	Page
Electrical Specifications	31
Environmental Specifications	32
Structural Specifications	33

## Electrical Specifications

Power supply	Rated input voltage	24 Vdc	
	Input voltage limits	19.2...28.8 Vdc	
	Voltage drop	5 ms or less	
	Power consumption	Maximum power consumption	11 W or less
		When power is not supplied to external devices	7 W or less
In-rush current	30 A or less		
Voltage endurance		1,000 Vac for 1 minute (between power terminal and FG terminals)	
Insulation resistance		500 Vdc, 10 MΩ or more (between power terminal and FG terminals)	

## Environmental Specifications

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 <sup>3</sup> (10 <sup>-7</sup> oz/ft <sup>3</sup> ) or less (non-conductive levels)
	Pollution degree	For use in Pollution Degree 2 environment
	Corrosive gases	Free of corrosive gases
	Atmospheric pressure (operating altitude)	800...1,114 hPa (2,000 m [6,561 ft] or lower)
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 <sup>2</sup> X, Y, Z directions for 10 cycles (approximately 100 minutes)
	Shock resistance	IEC/EN 61131-2 compliant 147 m/s <sup>2</sup> , 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 this product 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 this product.

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



## Structural Specifications

Grounding	Functional grounding: Grounding resistance of 100 $\Omega$ , 2 mm <sup>2</sup> (AWG 14) or thicker wire, or your country's applicable standard (same for FG and SG terminals).
Cooling method	Natural air circulation
Structure	Rating <sup>*1</sup> : Equivalent to IP20 Installation configuration: 35 mm (1.38 in) DIN rail or panel mounted (IEC 60715 compliant)
External dimensions	46 x 162 x 126 mm (1.81 x 6.38 x 4.96 in) Refer to Dimensions ( <i>see page 45</i> ).
Weight	700 g (1.54 lb) or less

\*1 Although compliance has been confirmed under the previously mentioned test conditions, usage is not guaranteed for all environments. Be sure to check the conditions of the environment before use.

### **NOTICE**

#### **EQUIPMENT DAMAGE**

- Ensure this product is not in permanent and direct contact with oils.
- Do not expose the device to direct sunlight.

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

### **NOTICE**

#### **STORAGE AND OPERATION OUTSIDE OF SPECIFICATIONS**

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

**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 topic:

Topic	Page
Memory, Clock	35

## Memory, Clock

### Memory

System memory* <sup>1</sup>	Flash EPROM 128 MB Operating system, project data (screen data) and other data.
Backup memory* <sup>1</sup>	SRAM 512 KB* <sup>2</sup>

\*1 For the usage capacity of each memory, refer to the following URL.

<https://www.pro-face.com/trans/en/manual/1082.html>

\*2 Rechargeable lithium battery is used 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:** Backup clock data uses a rechargeable lithium battery for power. If this product is turned off while the battery voltage is low, the clock data will be lost. We recommend to replace the battery regularly every five years after you purchase this product.

# Section 4.3

## Interface Specifications

---

### What Is in This Section?

This section contains the following topics:

Topic	Page
Interface Specifications	37
Interface Connection	38
Serial Interface	39
Termination Resistance	42

## Interface Specifications

Serial interface (PLC/COM1)	Asynchronous transmission	RS-232C/RS-422/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
	Maximum transmission distance	With RS-232: 15 m (49.2 ft) With RS-422 at 115,200 bps: 1,200 m (3,937 ft)
Serial interface (HMI)	Asynchronous transmission	RS-232C/RS-422/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
	Maximum transmission distance	With RS-232: 15 m (49.2 ft) With RS-422 at 115,200 bps: 1,200 m (3,937 ft)
USB (Type A) interface	Connector	USB 2.0 (Type A) x 1
	Power supply voltage	5 Vdc $\pm$ 5%
	Maximum current supplied	500 mA/port
	Maximum transmission distance	Less than 5 m (16.4 ft)
USB (mini-B) interface	Connector	USB 2.0 (mini-B) x 1
	Maximum transmission distance	Less than 5 m (16.4 ft)
Ethernet interface	Connector	Modular jack (RJ-45) x 1
	Standard	IEEE802.3u, 10BASE-T/100BASE-TX
	Maximum transmission distance	100 m (328.1 ft)
SD Card Interface	SD Card	SD Card Slot x 1 SD/SDHC card of up to 32 GB

## Interface Connection

### Introduction

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

### Cable Connections

- USB

When using USB devices, attach the USB clamp to the USB interface to prevent the USB cable from becoming disconnected. For how to attach the USB clamp, refer to USB Clamp (*see page 60*).

- Serial

Refer to Serial Interface (*see page 39*).

## Serial Interface

### Introduction

Use the RS-232C/RS-422 change switch to toggle between RS-232C and RS-422/RS-485 communication.

For information on how to connect controllers and other types of equipment, refer to GP-Pro EX Device / PLC Connection Manual.

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

### DANGER

#### ELECTRIC SHOCK AND FIRE

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

- Verify that a ground 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.**

### WARNING

#### UNINTENDED EQUIPMENT OPERATION

Turn off the power supply before changing the communication method.

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

### CAUTION

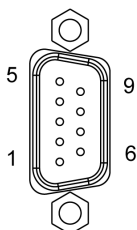
#### LOSS OF COMMUNICATION

- 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 the D-Sub 9 pin connector with lock function.
- Set the retry settings of the serial communication.

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

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

**Serial Interface (PLC/COM1)**



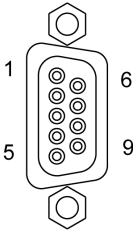
D-Sub 9 pin plug connector  
 Interfit bracket is #4-40 (UNC).

Pin number	RS-232C			RS-422/RS-485		
	Signal name	Direction	Meaning	Signal name	Direction	Meaning
1	CD	Input	Carrier detect	RDA	Input	Receive data A (+)
2	RD(RXD)	Input	Receive data	RDB	Input	Receive data B (-)
3	SD(TXD)	Output	Send data	SDA	Output	Send data A (+)
4	ER(DTR)	Output	Data terminal ready	ERA	Output	Data terminal ready A (+)
5	SG	-	Signal ground	SG	-	Signal ground
6	DR(DSR)	Input	Data set ready	CSB	Input	Send possible B (-)
7	RS(RTS)	Output	Request to send	SDB	Output	Send data B (-)
8	CS(CTS)	Input	Send possible	CSA	Input	Send possible A (+)
9	CI(RI)/VCC	Input/-	Called status display +5 V $\pm$ 5% output 0.25 A <sup>*1</sup>	ERB	Output	Data terminal ready B (-)
Shell	FG	-	Frame ground (common with SG)	FG	-	Frame ground (common with SG)

\*1 You can switch pin #9 between CI (RI) and VCC via the software. To prevent damage or a unit malfunction, use only the rated current.



## Serial Interface (HMI)



D-Sub 9 pin socket connector.

Interfit bracket is #4-40 (UNC).

Pin number	RS-232C			RS-422/RS-485		
	Signal name	Direction	Meaning	Signal name	Direction	Meaning
1	RS(RTS)	Output	Request to send	SDA	Output	Send data A (+)
2	SD(TXD)	Output	Send data	SDB	Output	Send data B (-)
3	RD(RXD)	Input	Receive data	RDA	Input	Receive data A (+)
4	CS(CTS)	Input	Send possible	CSA	Input	Send possible A (+)
5	SG	-	Signal ground	SG	-	Signal ground
6	NC	-	-	ERB	Output	Data terminal ready B (-)
7	NC	-	-	RDB	Input	Receive data B (-)
8	ER(DTR)	Output	Data terminal ready	ERA	Output	Data terminal ready A (+)
9	NC	-	-	CSB	Input	Send possible B (-)
Shell	FG	-	Frame ground (common with SG)	FG	-	Frame ground (common with SG)

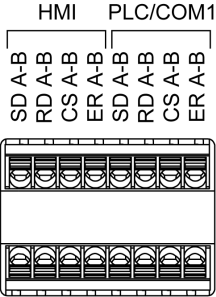
## Termination Resistance

### Introduction


Attach a resistor (commercially available) with the same resistance as the current system's termination resistance to both this product's HMI and PLC/COM1 terminals when communicating via RS-422/RS-485.

**NOTE:** Do not add a resistor if the current system does not use termination resistance.

### Specifications

	Serial interface	Direction	
	SDA-B	HMI	between SDA to SDB
	RDA-B	HMI	between RDA to RDB
	CSA-B	HMI	between CSA to CSB
	ERA-B	HMI	between ERA to ERB
	SDA-B	PLC/COM1	between SDA to SDB
	RDA-B	PLC/COM1	between RDA to RDB
	CSA-B	PLC/COM1	between CSA to CSB
	ERA-B	PLC/COM1	between ERA to ERB

### Recommended resistor

Lead wire type	
Length (L)	less than 9 mm (0.35 in)
Diameter (D)	less than 3.5 mm (0.14 in)

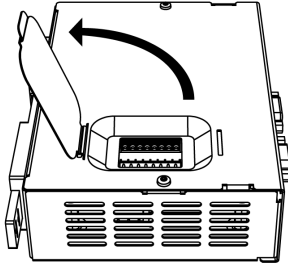
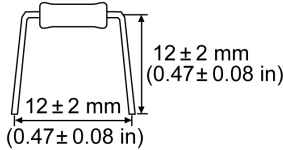
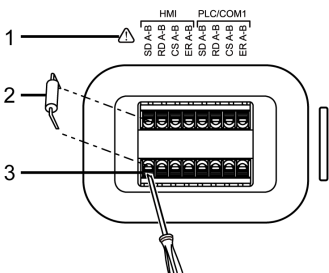
## Installation Procedure

## ⚠ CAUTION

### EQUIPMENT DAMAGE

Use resistor rated for 75 °C (167 °F) or higher.

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

Step	Action
1	Confirm the power cord is not connected to the power supply.
2	Open the termination resistance cover. <div style="text-align: center;">  </div>
3	Set up the resistor's lead wires as shown in the image below. <div style="text-align: center;">  </div>
4	Push the Opening button with a small and flat screwdriver*1 to open the desired hole.
5	Insert lead wire of resistor into its corresponding holder. Release the Opening button to clamp the lead wire in place. <div style="text-align: center;">  </div> <p> <b>1</b> Safety alert symbol (see the safety messages above)  <b>2</b> Resistor  <b>3</b> Opening button         </p> <p>NOTE:</p> <p>Attach resistors so they do not come into contact with each other.          Confirm both ends of the lead wires are inserted in the appropriate holes and all resistors are affixed securely to the terminal.</p>
6	Close the termination resistance cover
7	Confirm the RS-232C/RS-422 change switch is set to RS-422 before powering this product.

\*1 Recommended driver: SZS 0.4x2.5 VDE (1205037) made by Phoenix Contact.



---

# Chapter 5

## Dimensions

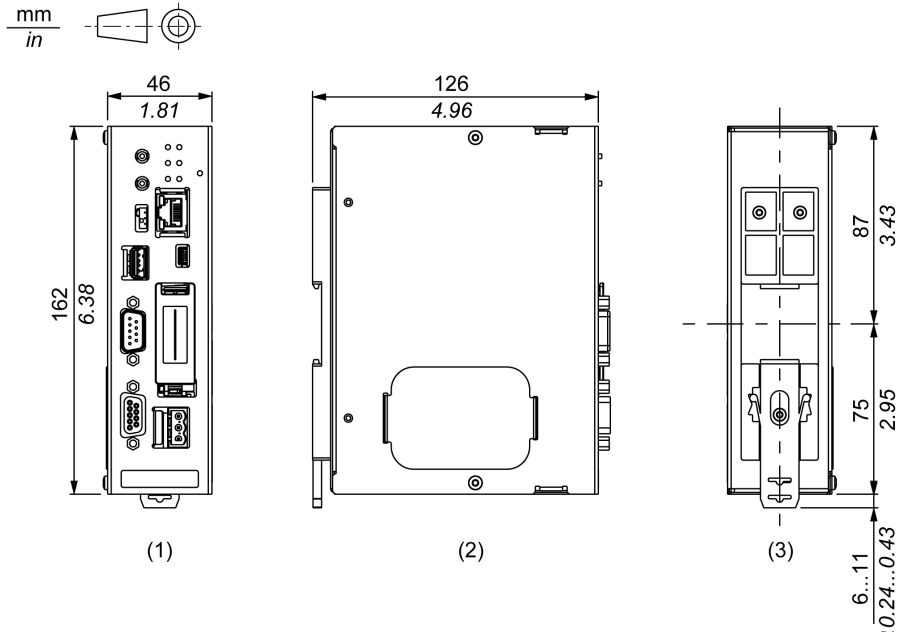
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### What Is in This Chapter?

This chapter contains the following topic:

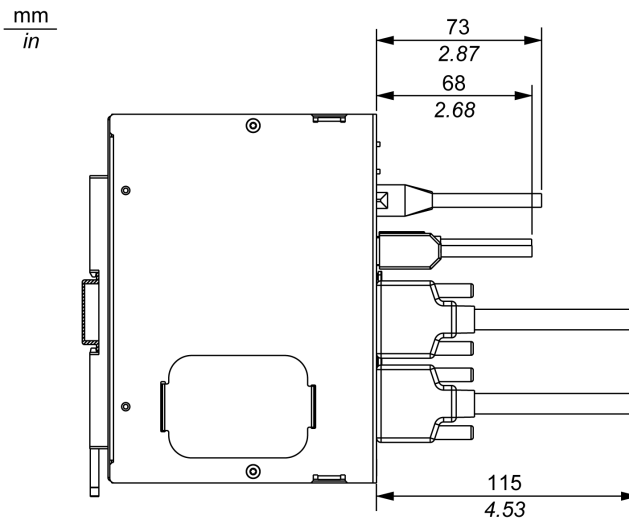
Topic	Page
External Dimensions	46

### External Dimensions



- 1 Front
- 2 Left
- 3 Rear

### Dimensions with Cables



**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

---

### What Is in This Chapter?

This chapter contains the following sections:

Section	Topic	Page
6.1	Installation	48
6.2	Wiring Principles	53
6.3	USB Clamp	60
6.4	SD Card/USB Storage Insertion/Removal	62

# Section 6.1

## Installation

---

### What Is in This Section?

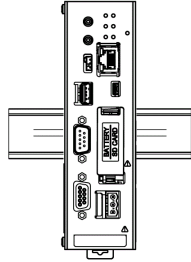
This section contains the following topics:

Topic	Page
Introduction	49
Installation Requirements	50
Installation Procedure	51



## Introduction

You can install this product directly to the DIN rail. Attach this product vertically as shown in the following illustration.



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

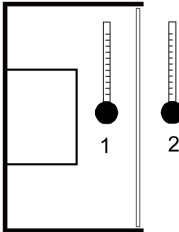
- Install this product in an enclosure with mechanical rigidity.
- This product is not designed for outdoor use. UL certification obtained is for indoor use only.

## 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 installation location, to increase its rigidity.

Depending on the panel's material and design, the panel's installation surface may need to be strengthened. If high levels of vibration are expected and the installation surface of this product (such as operation panel door) can move (open or close), due consideration should be given to the weight of this product.

Check that the ambient air temperature and ambient humidity are within their designated ranges (see page 32). When installing this product in a cabinet or enclosure, consider the surrounding air temperature for both the internal temperature and external temperature.

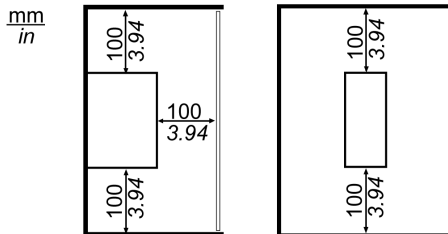


- 1 Internal temperature
- 2 External temperature

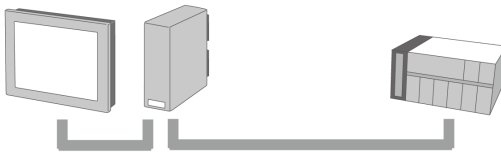
Be sure that heat from surrounding equipment does not cause this product to exceed its standard operating temperature.

Check the vertical direction of this product. Attach this product to the vertical plane.

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 diagram.



The SG and the FG terminals are connected inside this product. In a system where the distance between external devices and the display unit is significant, install this product closer to the display unit, grounded at one point. If this product is installed away from the display unit, depending on the installation environment this product may be strongly affected by noise.



## Installation Procedure

### 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

#### RISK OF INJURY

Do not drop this product when installing or removing it from the DIN rail.

- Hold this product when installing or removing it from the DIN rail.
- Use both hands.

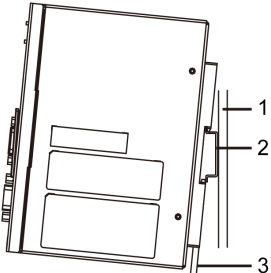
**Failure to follow these instructions can result in injury or equipment damage.**

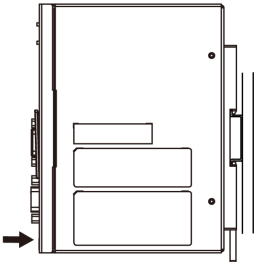
### Installing to DIN Rail

#### NOTE:

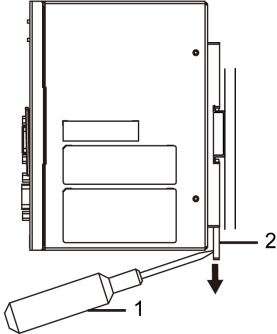
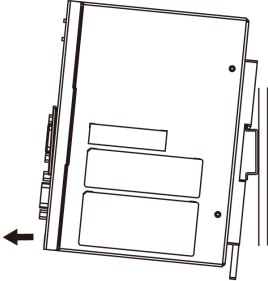
Use the rail compatible with IEC 60715 TH35-7.5 for this product.

In environments where this product will experience extreme vibration and shock, affix this product to the DIN rail with compatible fasteners, as required.

Step	Action
1	<p>Confirm the bottom hook on the back of this product is raised then hook the upper groove onto the DIN rail.</p>  <p>1 Panel 2 DIN rail 3 Hook</p>

Step	Action
2	<p>Push the bottom part onto the rail until you hear a click.</p> 

**Removing from DIN Rail**

Step	Action
1	<p>Using a tool such as a screwdriver, pull the hook in the direction indicated by the arrow.</p>  <p>1 Tool such as a screwdriver 2 Hook</p>
2	<p>Pull the bottom portion of this product forward to remove.</p> 

---

## Section 6.2

### Wiring Principles

---

#### What Is in This Section?

This section contains the following topics:

Topic	Page
Connecting the DC Power Cord	54
Connecting the Power Supply	57
Grounding	59

## 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 12 to 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.**

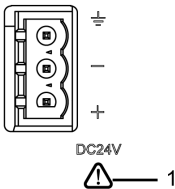
### CAUTION

#### EQUIPMENT DAMAGE

For power cord, use copper wire rated for 75 °C (167 °F) or higher.

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

#### Power Connector



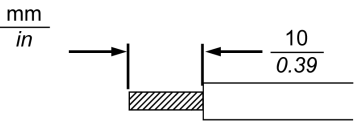
1 Safety alert symbol (See the safety messages above.)

#### 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

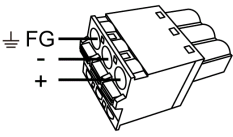
- Make sure the ground wire is either the same or heavier gauge than the power wires.
- Do not use aluminum wires in the power supply's power cord.
- To prevent the possibility of a terminal short, use a pin terminal that has an insulating sleeve.
- If the ends of the individual wires are not twisted correctly, the wires may create a short circuit.
- The conductor type is solid or stranded wire.

Power cord diameter	0.75...1.5 mm <sup>2</sup> (AWG 18...16) <sup>*1</sup>
Conductor type	Solid or stranded wire
Conductor length	
Recommended driver <sup>*2</sup>	SZS 0.6x3.5 (1205053)
Recommended pin terminals <sup>*2</sup>	3201288 AI 0,75-10 GY 3200182 AI 1 -10 RD 3200195 AI 1,5 -10 BK 3202533 AI 2,5 -10 BU
Recommended pin terminal crimp tool <sup>*2</sup>	CRIMPFOX 6

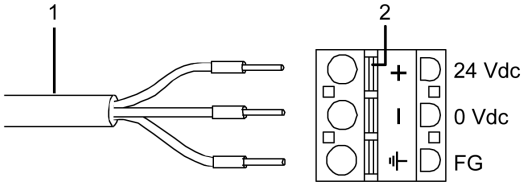
\*1 For UL compatibility, use AWG 14 or AWG 13.

\*2 Items are made by Phoenix Contact.

## DC Power Supply Connector Specifications

	Connection	Wire
	+	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	Remove 10 mm (0.39 in) of the vinyl membrane off the ends of the power cord wires.
4	Push the Opening button with a small and flat screwdriver to open the desired pin hole.
5	<p>Insert each pin terminal into its corresponding holder. Release the Opening button to clamp the pin in place.</p>  <p>1 Power cable 2 Opening button</p> <p>When using stranded wire, do not short with neighboring wires.</p>
6	After inserting all three pins, insert the DC power supply connector (plug) into the power connector on this product.

**NOTE:** Do not solder the wire directly to the power receptacle pin.



## 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 this product on DIN rail prior to connecting power supply and communication lines.

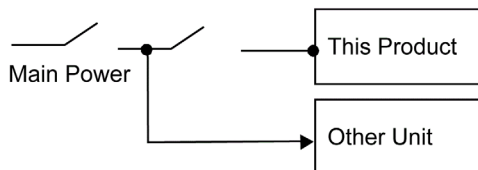
**Failure to follow these instructions will result in death or serious injury.**

### Improving Noise/Surge Resistance

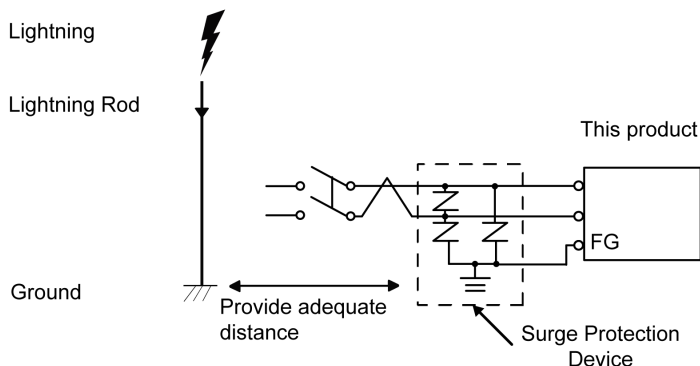
- This product's power supply cord should not be bundled with or kept close to main circuit lines (high voltage, high current), power lines, or input/output lines, and their various systems should be kept separate. When power lines cannot be wired via a separate system, use shielded cables for input/output 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, reduce the noise with a noise filter 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

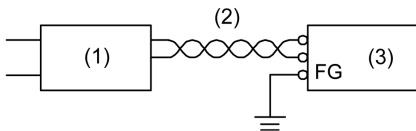
- Use SELV (Safety Extra-Low Voltage) circuit and LIM (Limited Energy circuit) for DC power.
- When supplying power to this product, connect the power as shown below.



- 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.

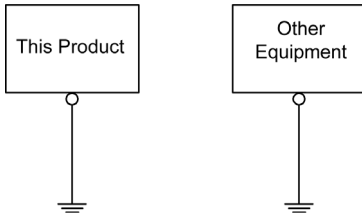


- 1 Regulated power supply
- 2 Twisted-pair cord
- 3 This product

## 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

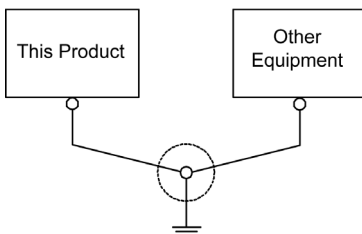
- Check that the grounding resistance is 100  $\Omega$  or less.\*1
- The FG wire should have a cross sectional area greater than 2 mm<sup>2</sup> (AWG14)\*1. Create the connection point as close to this product as possible, and make the wire as short as possible. When using a long grounding wire, replace 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.

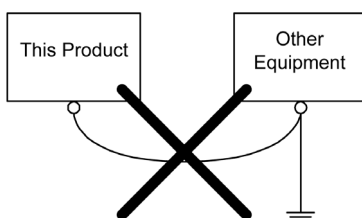
### Common Grounding

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


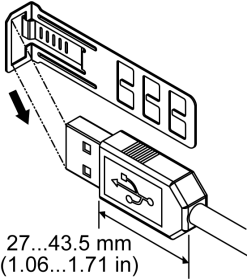
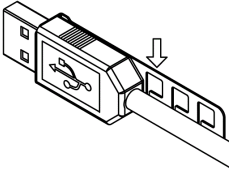
## USB Clamp

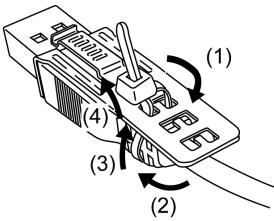
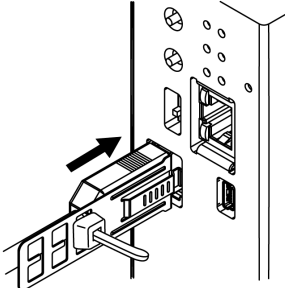
### Introduction

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

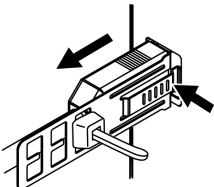
### Attaching the USB Clamp Type A (1 port)

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

Step	Action
1	<p>On the side without the USB mark , mount the USB cable connector shell to the clip so they overlap. The clip matches the 27 to 43.5 mm (1.06 to 1.71 in) length of the USB connector.</p> 
2	<p>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.</p> 

Step	Action
3	<p>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.</p>  <p><b>NOTE:</b> 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 PFXZCBCLUSA1 (by Pro-face) or other commercially available ties with a width of 4.8 mm (0.19 in) and thickness of 1.3 mm (0.05 in).</p>
4	<p>While pressing the grip on the clip, insert the cable from step 3 all the way into the USB (Type A) interface. Make sure that the clip tab is secured to the USB cable attached to this product.</p> 

### Removing the USB Clamp Type A (1 port)

Step	Action
1	<p>Remove the USB cable while pushing the grip section of the clip.</p> 

## Section 6.4

### SD Card/USB Storage Insertion/Removal

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#### What Is in This Section?

This section contains the following topics:

Topic	Page
Introduction	63
Inserting the SD Card	64
Removing the SD Card	65
Removing the USB Storage	66

## Introduction

### ***NOTICE***

#### **LOSS OF DATA**

When using a SD Card/USB Storage:

- SD cards and USB storages are products with a service life. In addition, accidental loss of data can occur at any time. Be sure to back up data on SD cards and USB storages regularly.
- Do not turn off/reset the product or remove the SD card or USB storage while accessing the SD card or USB storage.
- Before removing the SD Card/USB Storage from this product, stop all operations on the SD Card/USB Storage.
- 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**

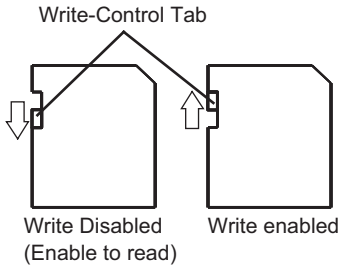
When handling the SD Card/USB Storage:

- 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 only SD Cards/USB storage formatted using FAT or FAT32. This product does not recognize NTFS formatted SD Cards/USB storage.

**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	<p>Open the SD Card Interface Cover by pressing its tab.</p> <p>The diagram shows the rear panel of a device with various ports. An arrow points to the SD card slot, which is labeled '1'. A separate cover, labeled '2', is shown to the right of the slot, with an arrow indicating it is being pushed away from the slot.</p> <p>1 SD Card 2 SD Card Interface Cover</p>
2	<p>Insert the SD card into the SD card slot and push until you hear it “click”.</p>
3	<p>Close the SD Card Interface Cover.</p>



## 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.

Step	Action
1	Press and hold the SD card eject switch for at least 3 seconds. Once it is safe to eject the SD card, the buzzer will sound and the SD card access LED will turn off.
2	Make sure the SD card access LED is off, and push down the tab on the SD card interface cover, then pull open the cover. <div style="text-align: center;"> </div> <ul style="list-style-type: none"> <li>1 SD card eject switch</li> <li>2 SD card access LED</li> <li>3 SD card</li> <li>4 SD card interface cover</li> </ul>
3	Push the SD card once to release, and pull out the card. <b>NOTE:</b> After using the SD card, store the SD card in its case or other safe location.
4	Close the SD card interface cover.

## Removing the USB Storage

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

Step	Action
1	Press and hold the USB storage eject switch for at least 3 seconds. Once it is safe to eject the USB storage, the buzzer will sound and the USB1 storage access LED will turn off.
2	Make sure the USB storage access LED is off, and remove the USB storage.

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# Chapter 7

## Maintenance

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### What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Regular Cleaning	68
Periodic Check Points	69
Replacing the Battery	70
Ethernet Setting Initialization	72
After-sales Service	73

## Regular Cleaning

### Cleaning this product

<b><i>NOTICE</i></b>
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<b>EQUIPMENT DAMAGE</b>
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- |   |
|---|
| <ul style="list-style-type: none"><li>● Power off this product before cleaning it.</li><li>● Do not use paint thinner, organic solvents, or a strong acid compound to clean the unit.</li></ul> |
|---|

<b>Failure to follow these instructions can result in equipment damage.</b>
---

When this product gets dirty, 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? (*see page 32*)
- Is the operating humidity within the specified range? (*see page 32*)
- 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? (*see page 31*)
- Are all power cords and cables connected properly? Are there any loose cables?

### Unit Disposal

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

## Replacing the Battery

### Introduction

This product is equipped with a replaceable battery (non-rechargeable). The battery is required to enable backing up of internal clock data and data obtained from external devices. If the voltage from this battery falls, the backup data will be lost.

### **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.**

### **DANGER**

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

Follow these instructions for the lithium batteries:

- Use this product's replacement battery only.
- Protect battery from any potential short circuit.
- Recycle or properly dispose of used batteries.
- Do not recharge, disassemble or heat above 80 °C (176 °F).
- Use your hands or insulated tools to remove or replace the battery.

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

### **NOTICE**

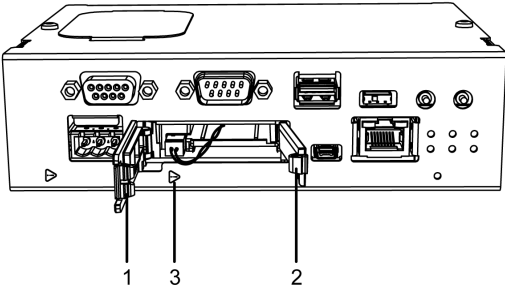
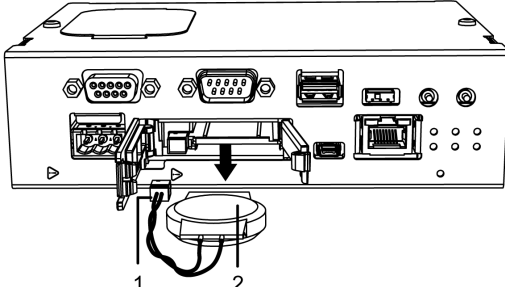
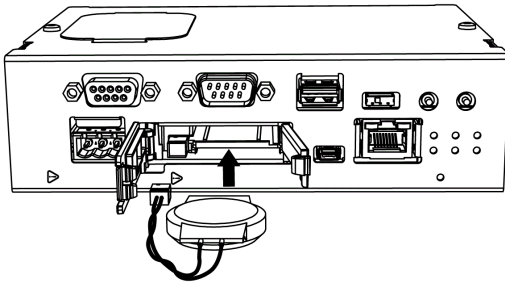
#### **LOSS OF DATA**

- Replace the battery regularly every five years after you purchase this product.
- Allow only qualified personnel to change the battery.
- Before replacing the battery, turn on this product for at least 5 minutes.  
Additionally, replace the battery within 5 minutes of turning off the power to this product.

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

## Replacement Procedure

Use only the replacement battery (model number: PFXZCBBT1).

Step	Action
1	Disconnect the power supply from this product and detach cables from this product's serial interface.
2	Touch the housing or ground connection (not the power supply) to discharge any electrostatic charge from your body.
3	Open the SD card interface cover by pressing its tab. Next, open the battery interface cover by pressing its tab. <div style="text-align: center; margin: 10px 0;">  </div> <ol style="list-style-type: none"> <li>1 SD card interface cover</li> <li>2 Battery interface cover</li> <li>3 Safety alert symbol (see the safety messages on the previous page)</li> </ol>
4	Remove the battery and connector. <div style="text-align: center; margin: 10px 0;">  </div> <ol style="list-style-type: none"> <li>1 Connector</li> <li>2 Battery</li> </ol>
5	Insert the replacement battery and connector all the way. Either side of the battery can face top or bottom. <div style="text-align: center; margin: 10px 0;">  </div>
6	First close the replacement battery cover, then close the SD card interface cover. <b>NOTE:</b> Insert the battery connector cables completely inside the enclosure.

**NOTE:** After reconnecting the power supply, set up the clock again. Refer to GP-Pro EX manual on how to set up the clock.

## Ethernet Setting Initialization

### Procedure

If you have forgotten the IP address, follow the procedure below to revert the Ethernet settings to their defaults (192.168.1.100).

Step	Action
1	Remove all cables other than the power supply cable.
2	Press and hold both the USB1 storage eject switch and the SD card eject switch at the same time for at least 3 seconds. A buzzer will sound when 3 seconds has passed, and the power LED will flash green.
3	Release the switches once, and then, within 30 seconds, press and hold the SD card eject switch again for at least 3 seconds. A buzzer will sound when 3 seconds has passed.
4	Release the switch to initialize the Ethernet settings. A buzzer will sound to notify completion of the process, and the power LED will return to a solid green.

**NOTE:** Reconfigure the Ethernet settings following initialization (see *page 21*).



## **After-sales Service**

### **Information**

For details on after-sales service, refer to our website at  
<http://www.pro-face.com/trans/en/manual/1001.html>