

Pro-face

GP3000 Series

User Manual

Preface

Thank you for purchasing Pro-face's GP3000 Series Programmable Operator Interface (Hereafter referred to as the "GP unit").

Before operating your GP unit, be sure to read this manual to familiarize yourself with the GP unit's operation procedures and features.

NOTICE

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Essential Safety Precautions

All safety-related procedures stated in this document must be followed to operate the GP correctly and safely. Be sure to read this and any related documents thoroughly to understand the correct operation and functions of the GP unit.




Safety Icons

Throughout this manual, these icons provide essential safety information for GP operation procedures requiring special attention. These icons indicate the following levels of danger:

 WARNING	Indicates situations where severe bodily injury, death or major equipment damage can occur.
 CAUTION	Indicates situations where slight bodily injury or minor equipment damage can occur.
	Indicates actions or procedures that should NOT be performed.
	Indicates actions or procedures that MUST be performed to ensure correct unit operation.

WARNING

System Design

-  Do not create GP touch panel switches that could possibly endanger the safety of personnel or equipment. A malfunction of the GP unit, its I/O unit(s), cable(s), or other related equipment can cause unexpected output signals, leading to a serious accident. Be sure to design all important machine operation switches so they are operated via a separate control system, and not via the GP.
-  Do not create GP touch panel switches to control machine safety operations, such as an emergency stop switch. Install these switches as separate hardware switches, otherwise severe bodily injury or equipment damage can occur.
-  Be sure to design your system so that a communication fault between the GP and its host controller will not cause equipment to malfunction. This is to prevent any possibility of bodily injury or equipment damage.

- ⊘ Do not use the GP as a warning device for critical alarms that can cause serious operator injury, machine damage or can halt system operation. Critical alarm indicators and their control/activator units must be designed using stand-alone hardware and/or mechanical interlocks. Do not use the GP as a warning device for critical alarms that can cause serious operator injury, machine damage or can halt system operation. Critical alarm indicators and their control/activator units must be designed using stand-alone hardware and/or mechanical interlocks.
- ⊘ Do not use the GP with aircraft control devices, aerospace equipment, central trunk data transmission (communication) devices, nuclear power control devices, or medical life support equipment, due to these devices' inherent requirements of extremely high levels of safety and reliability. Do not use the GP with aircraft control devices, aerospace equipment, central trunk data transmission (communication) devices, nuclear power control devices, or medical life support equipment, due to these devices' inherent requirements of extremely high levels of safety and reliability.
- ⚠ Be sure to design your system so that a communication fault between the GP and its host controller will not cause equipment to malfunction. This is to prevent any possibility of bodily injury or equipment damage.
- ⊘ After the GP unit's backlight burns out the touch panel is still active, unlike the GP unit's "Standby Mode". If the operator fails to notice that the backlight is burned out and touches the panel, a potentially dangerous machine operation error can occur. Therefore, do not create GP unit touch panel switches that may cause injury and/or equipment damage. If your GP unit's backlight suddenly turns OFF, use the following steps to determine if the backlight is actually burned out.
 - 1) If the GP unit's "Backlight Control" is not set and the screen has gone blank, your backlight is burned out.
 - 2) If the GP unit's "Backlight Control" is set to Standby Mode and the screen has gone blank, and touching the screen or performing another input operation does not cause the display to reappear, your backlight is burned out.

Handling

- ⊘ Do not modify the GP unit. Doing so may cause a fire or an electric shock.
- ⊘ Do not operate the GP in an environment where flammable gases are present, since it may cause an explosion.

Wiring

- ⚠ To prevent an electric shock be sure to disconnect your GP unit's power cord from the power supply before wiring the GP.
- ⊘ Do not use voltage beyond the GP unit's specified range. Doing so may cause a fire or an electric shock.

Maintenance

- ⊘ Do not connect or disconnect Host and GP unit communication cables while the GP is turned ON.
- ⊘ Do not replace the GP unit's battery yourself. The GP uses a lithium battery for backing up its internal clock data and the battery may explode if it is replaced incorrectly. When replacement is required, please contact your local GP distributor.

CAUTION

Installation

- ❗ Be sure all cable connectors are securely attached to the GP unit. A loose connection may cause incorrect input or output signals.

Wiring

- ❗ Be sure to ground the GP unit's FG wire separately from other equipment FG lines. Also, be sure to use a grounding resistance of 100. or less and a 2mm² [0.0062inch²] or thicker wire, or your country's applicable standard. Otherwise, electric shock or malfunctions may result.
- ❗ Be sure to use only the designated torque to tighten the GP unit's terminal block screws. If these screws are not tightened firmly, it may cause a short-circuit, fire or incorrect unit operation.
- ❗ Be sure that metal particles and wiring debris do not fall inside the GP unit. They can cause a fire, malfunction or incorrect unit operation.

Maintenance

- ⊘ Be sure to turn the GP unit's CF Card ACCESS switch OFF and confirm that the ACCESS lamp is not lit prior to inserting or removing a CF Card. Otherwise, CF Card internal data may be damaged or lost.
- ⊘ Do not reset or turn the GP OFF, or insert or remove the CF Card while the GP unit's CF Card is being accessed. Create special application screens to perform operations like turning power OFF, resetting the GP or inserting or removing the CF Card.

Unit Disposal

- ❗ When the product is disposed of, it should be done so according to your country's regulations for similar types of industrial waste.

General Safety Precautions

- ⊘ Do not press on the GP unit's display with excessive force or with a hard object, since it can damage the display. Also, do not press on the touch panel with a pointed object, such as the tip of a mechanical pencil or a screwdriver, since doing so can damage the touch panel.

- ⊘ Do not install the GP where the ambient temperature exceeds the specified range. Doing so may cause a unit malfunction.
- ⊘ To prevent abnormally high temperatures from occurring inside the GP, do not restrict or block the GP unit's rear-face ventilation slots.
- ⊘ Do not operate the GP in areas where large, sudden temperature changes can occur. These changes can cause condensation to form inside the GP, possibly causing it to malfunction.
- ⊘ Do not allow water, liquids or metal fragments to enter inside the GP unit's case, since they can cause either a malfunction or an electric shock. The allowable pollution degree is 2.
- ⊘ Do not operate or store the GP in locations where it can be exposed to direct sunlight, high temperatures, excessive dust, moisture or vibration.
- ⊘ Do not operate or store the GP where chemicals evaporate, or where chemicals are present in the air.
Corrosive chemicals: Acids, alkalines, liquids containing salt
Flammable chemicals: Organic Solvents
- ⊘ Do not use paint thinner or organic solvents to remove dirt or oil from the GP unit's surface. Instead, use a soft cloth moistened with a diluted neutral detergent.
- ⊘ Do not use or store the GP in areas with direct sunlight, since the sun's ultraviolet rays may cause the LCD's quality to deteriorate.
- ❗ Do not store the GP in an area where the temperature is lower than that recommended in the GP unit's specifications. Doing so may cause the LCD display's liquid to congeal, which can damage the LCD.
Also, if the storage area's temperature becomes higher than the specified level, the LCD's liquid may become isotropic, causing irreversible damage to the LCD. Therefore, only store the GP in areas where temperatures are within the GP unit's specifications.
- ❗ After turning OFF the GP, be sure to wait a few seconds before turning it ON again. The GP may not operate correctly if it is restarted too quickly.
- ❗ Due to the possibility of unexpected accidents, be sure to back up the GP unit's data regularly.




LCD Panel Usage Precautions

- The LCD panel's liquid contains an irritant. If the panel is damaged and any of this liquid contacts 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.
- The GP unit's LCD screen may show unevenness in the brightness of certain images or at some contrast settings. This is an LCD characteristic and not a product defect.
- The GP unit's LCD screen pixels may contain minute black and white-colored spots. This is an LCD characteristic and not a product defect.

- The color displayed on the GP unit's LCD screen may appear different when seen from outside the specified viewing angle. This is an LCD characteristic and not a product defect.
- When the same image is displayed on the GP unit's screen for a long period, an afterimage may appear when the image is changed. If this happens, turn off the GP, wait 10 seconds and then restart the unit. This is an LCD characteristic and not a product defect.
- To prevent an afterimage:
 - * Set the GP unit's display OFF feature when you plan to display the same screen image for a long period of time.
 - * Change the screen image periodically and try to not display the same image for a long period of time.

Information Symbols

This manual uses the following icons:

	Indicates a warning or a product limitation. Be sure to follow the instructions given with this icon to ensure the safe operation of the GP.
Screen Editor	Indicates the GP-Pro EX software.
PLC	Abbreviation for Programmable Logic Controller.
*	Indicates useful or important supplemental information.
	Contains additional or useful information.
	Indicates pages containing related information.

GP3000 Series Model Names

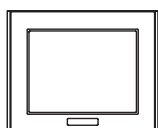
The term "GP3000" Series refers to the following GP model numbers:

Series		Names	Models
GP3000 series	GP-3300 series	AGP-3300L	AGP3300-L1-D24
		AGP-3300S	AGP3300-S1-D24
		AGP-3300T	AGP3300-T1-D24
		AGP-3301L	AGP3301-L1-D24
		AGP-3301S	AGP3301-S1-D24
		AGP-3302B	AGP3302-B1-D24
	GP-3400 series	AGP-3400S	AGP3400-S1-D24
		AGP-3400T	AGP3400-T1-D24
		AGP-3450T	AGP3450-T1-D24
	GP-3500 series	AGP-3500L	AGP3500-L1-D24
		AGP-3500S	AGP3500-S1-AF
			AGP3500-S1-D24
		AGP-3500T	AGP3500-T1-AF
			AGP3500-T1-D24
		AGP-3550T	AGP3550-T1-AF
	GP-3600 series	AGP-3600T	AGP3600-T1-AF
			AGP3600-T1-D24
		AGP-3650T	AGP3650-T1-AF
	GP-3700 series	AGP-3750T	AGP3750-T1-AF

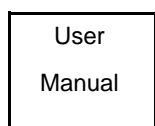
Package Contents

The following items are included in the GP unit's package. Before using the GP, please check that all items listed here are present.

GP Unit: 1

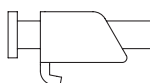


User Manual: 1



Installation Fasteners: 4

(GP-3700 series only: 8)



Installation Gasket: 1

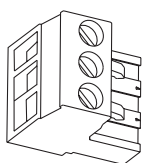
(Attached to the GP unit)



DC Power Connector: 1

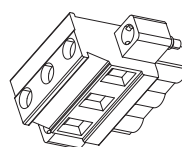
(Use for GP-3300/3400 series)

(Attached to the GP unit for GP-3300 Series)



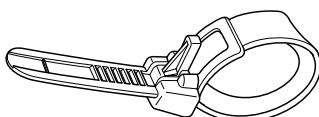
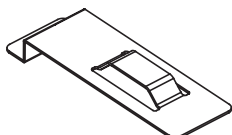
(Use for GP-3500/3600 series)

(Attached to the GP unit)



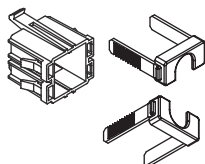
USB Cable Clamp (1 port): 1 set

Holder: 1, Clamp: 1(GP-3300 series only)



USB Cable Clamp (2 port): 1 set

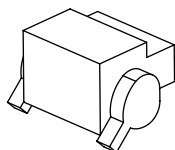
Holder: 1, Cover : 2(GP-3400/3500/3600/3700 series only)



AUX Connector: 1

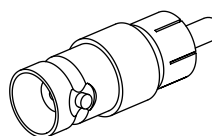
(GP-3400/3500/3600/3700 series only)

(Attached to the GP unit for GP-3500/3600/3700 Series.)



RCA-BNC Converter: 1

(GP-3*50series only)



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

UL/c-UL/CSA Approval

The following units are UL/c-UL/CSA listed products.

(UL File No.E182139, UL File No.E220851, CSA File No.219866)

Product Model No.	UL/CSA Registration Model No.
AGP3300-L1-D24	3280007-03
AGP3300-S1-D24	3280007-02
AGP3300-T1-D24	3280007-01
AGP3301-L1-D24	3280007-13
AGP3301-S1-D24	3280007-12
AGP3302-B1-D24	3280007-24
AGP3400-T1-D24	3280035-01
AGP3400-S1-D24	3280035-02
AGP3450-T1-D24	3280035-31

This product conforms to the following standards:

- UL508 Industrial Control Equipment
- UL1604 Electrical Equipment for use in Class I and II, Division 2, and Class III Hazardous (classified) locations.
- CSA-C22.2 No.14-M95 Industrial Control Equipment
- CSA-C22.2 No.213-M1987 Non-incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations.

The following units are UL/c-UL listed products. (UL File No.E171486, UL File No.E231702)

Product Model No.	UL Registration Model No.
AGP3500-S1-AF	3280024-21
AGP3500-T1-AF	3280035-45
AGP3550-T1-AF	3280035-75
AGP3600-T1-AF	3280024-13
AGP3650-T1-AF	3280024-11
AGP3750-T1-AF	3280024-01

This product conforms to the following standards:

- UL60950-1 Information Technology Equipment - Safety - Part 1
- UL1604 Electrical Equipment for use in Class I and II, Division 2, and Class III Hazardous (classified) locations.

- CAN/CSA-C22.2 No.60950-1-03 (c-UL approval)

Information Technology Equipment - Safety - Part 1

- CSA-C22.2 No.213-M1987 (c-UL approval)

Non-incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations.

The following units are UL/c-UL/CSA listed products.

(UL File No.E220851, UL File No.E210412, CSA File No.219866)

Product Model No.	UL Registration Model No.
AGP3500-L1-D24	3280024-32
AGP3500-S1-D24	3280024-22
AGP3500-T1-D24	3280035-41
AGP3600-T1-D24	3280024-14

This product conforms to the following standards:

- UL508 Industrial Control Equipment
- UL1604 Electrical Equipment for use in Class I and II, Division 2, and Class III Hazardous (classified) locations.
- CSA-C22.2 No.14-M95 Industrial Control Equipment
- CSA-C22.2 No.213-M1987 Non-incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations.

<Cautions>

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

- The GP unit's rear face is not approved as an enclosure. When building the GP unit into an end-use product, be sure to use an enclosure that satisfies standards as the end-use product's overall enclosure.
- The GP unit must be used indoors only.
- Install and operate the GP with its front panel facing outwards.
- If the GP is mounted so as to cool itself naturally, be sure to install it in a vertical panel. Also, it's recommended that
- the GP should be mounted at least 100 mm away from any other adjacent structures or machine parts. The temperature must be checked on the final product in which the GP is installed.
- Serial Interface (COM2) is not LPS (Limited Power Source).

<UL1604/CSA-C22.2, No.213 - Compliance and Handling Cautions>

- (1) Power and input/output wiring must be in accordance with Class I, Division 2 wiring methods - Article 501-4(b) of the National Electrical Code, NFPA 70 within the United States, and in accordance with Section 18-152 of the Canadian Electrical Code for units installed within Canada.

- (2) Suitable for use in Class I, Division 2, Groups A, B, C, and D Hazardous Locations, or Non-Hazardous Locations.
- (3) WARNING: Explosion hazard-substitution of components may impair compliance to Class I, Division 2
- (4) WARNING: Explosion hazard-when in hazardous locations, turn the power OFF before replacing or wiring modules.
- (5) WARNING: Explosion hazard-confirm that the power supply has been turned OFF before disconnecting equipment, or confirm that the location is not subject to the risk of explosion.
- (6) WARNING: Explosion hazard-do not disconnect equipment unless power has been switched off or the area is known to be Non-Hazardous.
- (7) In the case of use in Hazardous Locations, be sure to check that the externally connected unit and each interface (COM1, COM2, EXT1, EXT2, CF Card, AUX) have been fixed with screws and the CF card cover and the AUX connector have been locked. In Hazardous Locations, it's impossible to insert or pull the cable from the applicable port. Be sure to check that the location is Non-Hazardous before inserting or pulling it.

CE Marking

AGP3300-L1-D24/AGP3300-S1-D24/AGP3300-T1-D24/AGP3301-L1-D24/AGP3301-S1-D24/AGP3302-B1-D24/
AGP3400-S1-D24/AGP3400-T1-D24/AGP3450-T1-D24/AGP3500-L1-D24/AGP3500-S1-D24/AGP3500-T1-D24/
AGP3600-T1-D24 is CE marked product that conforms to EMC directives EN55011 Class A, EN61000-6-2.

AGP3500-S1-AF/AGP3500-T1-AF/AGP3550-T1-AF/AGP3600-T1-AF/AGP3650-T1-AF/AGP3750-T1-AF is CE marked product that conforms to EMC directives and the Low-voltage directive EN55011 Class A, EN61000-6-2 and EN60950.

For detailed CE marking information, please contact your local GP distributor.

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1 Introduction

1. System Design
2. Accessories
3. Part Names and Functions

This chapter describes peripheral devices that can be connected to GP Series units along with the name and functions of each part.

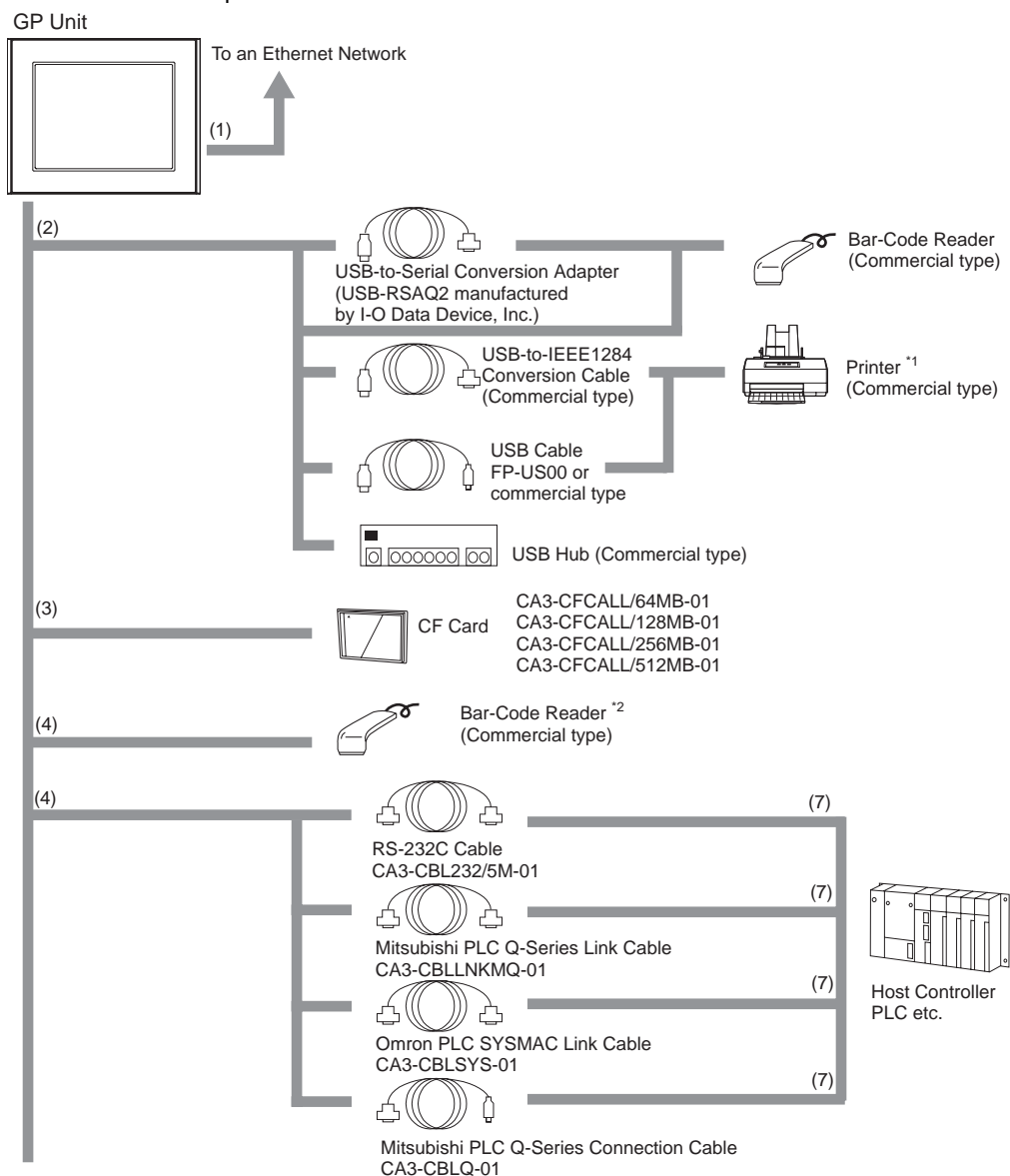
1.1 System Design

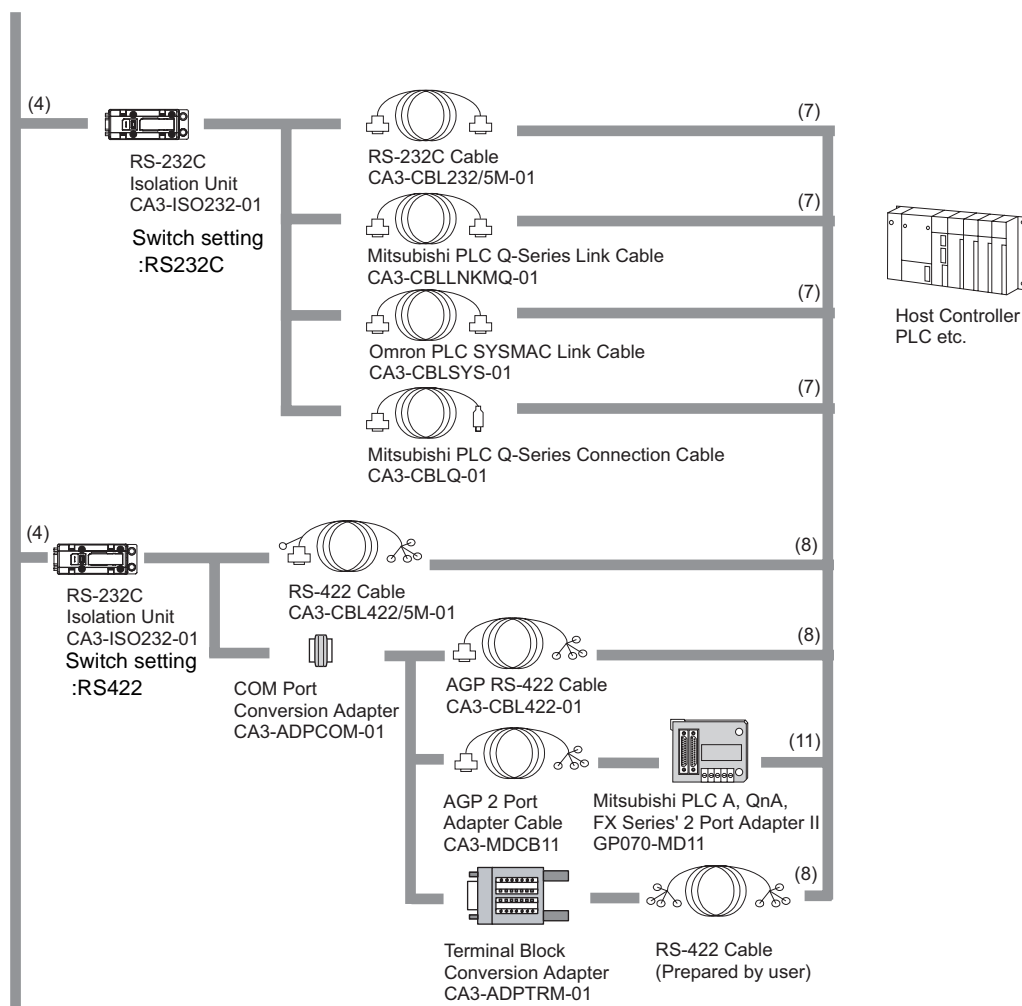
■AGP-3300*/3301* and GP-3400/3500/3600/3700 Series

The following diagram illustrates the standard range of items that can be connected to AGP-3300*/3301* and GP-3400/3500/3600/3700 Series units.

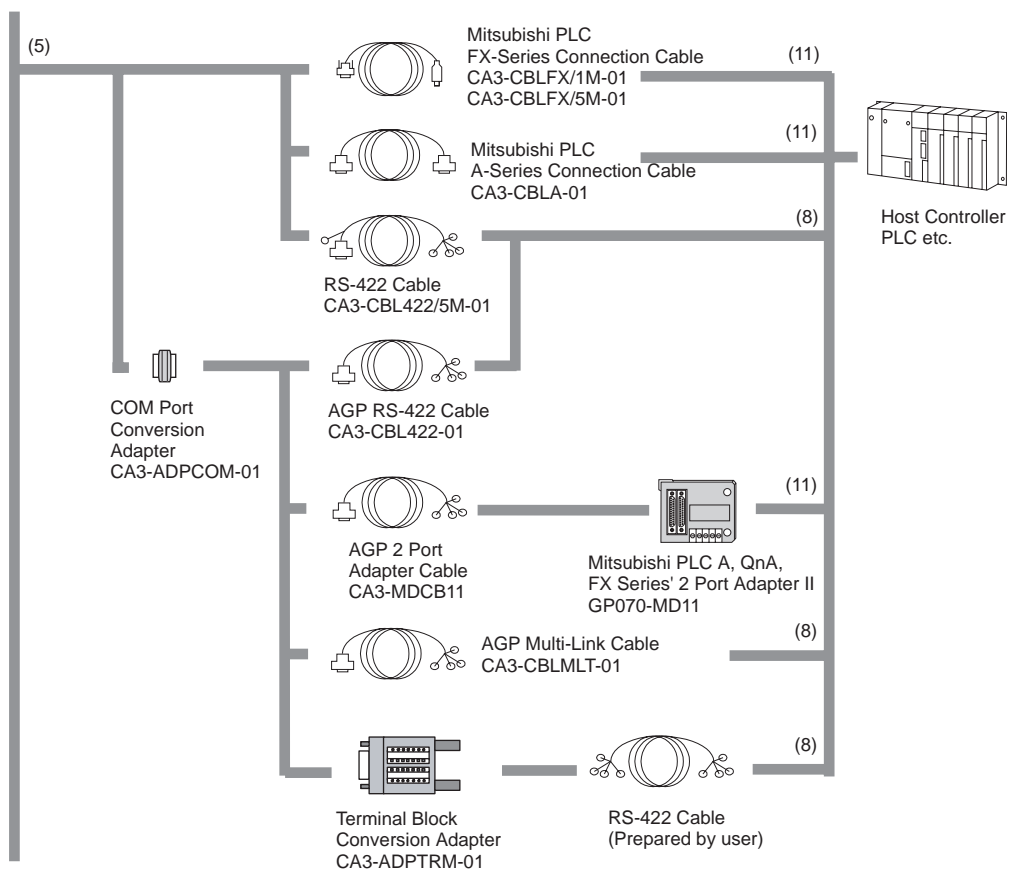
For host controller (PLC, etc.) connection information, refer to the "GP-Pro EX External Device Drivers".

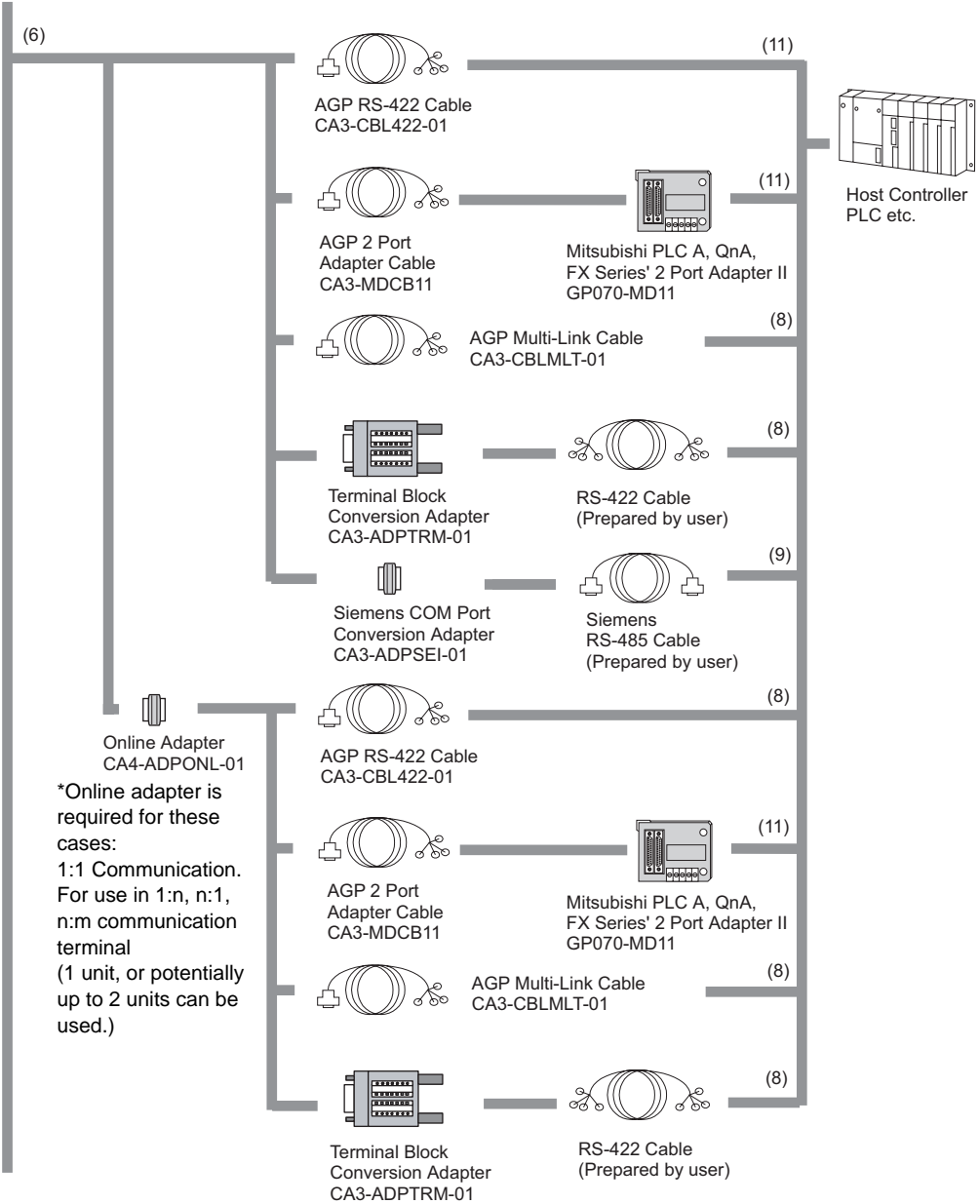
◆GP RUN Mode Peripherals

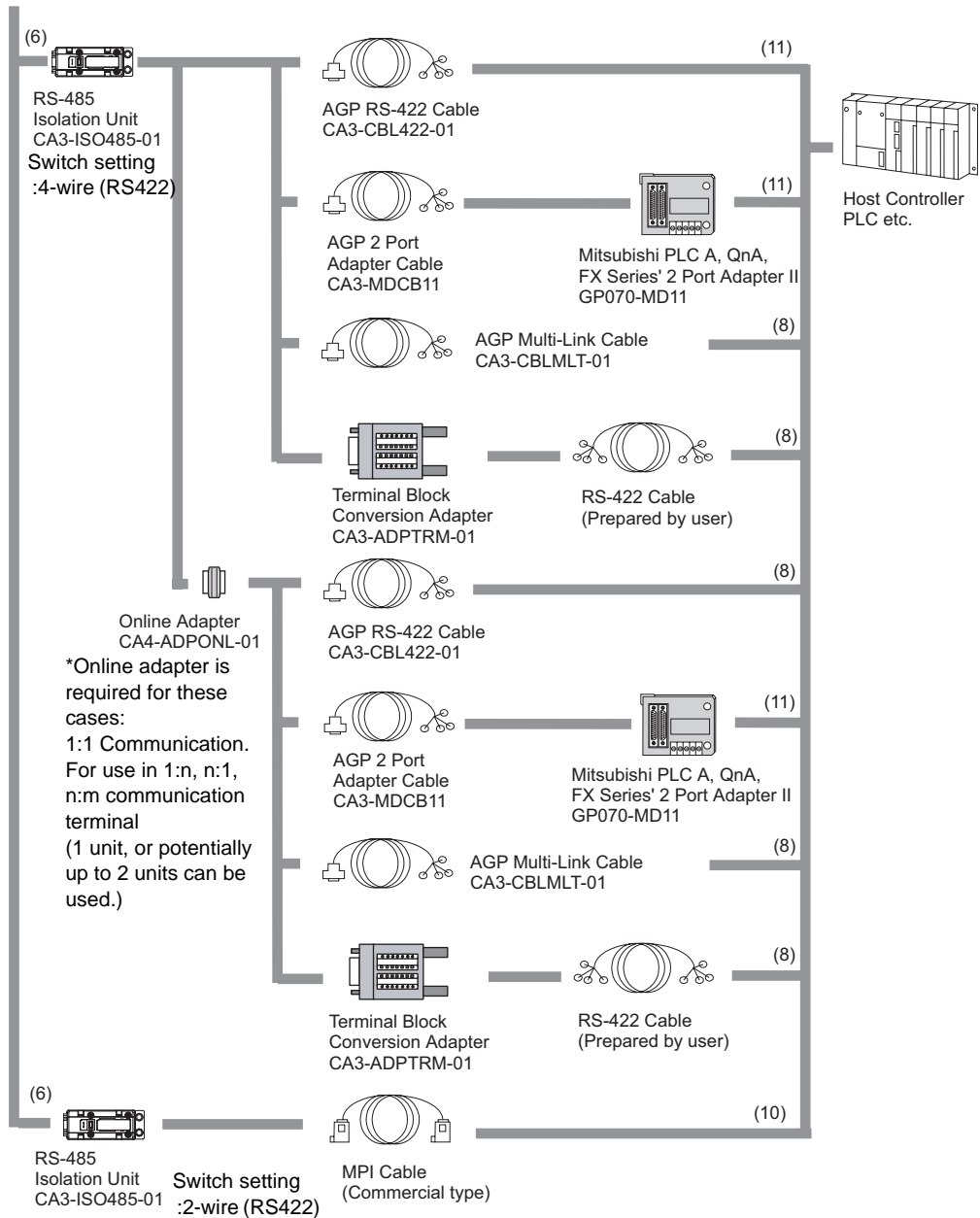


**NOTE**

- When connecting the CA3-ISO232-01, the 9 Pin's setting of COM port is required to be RI/VCC. COM port settings can be set with the GP-ProEX or in GP's offline mode.







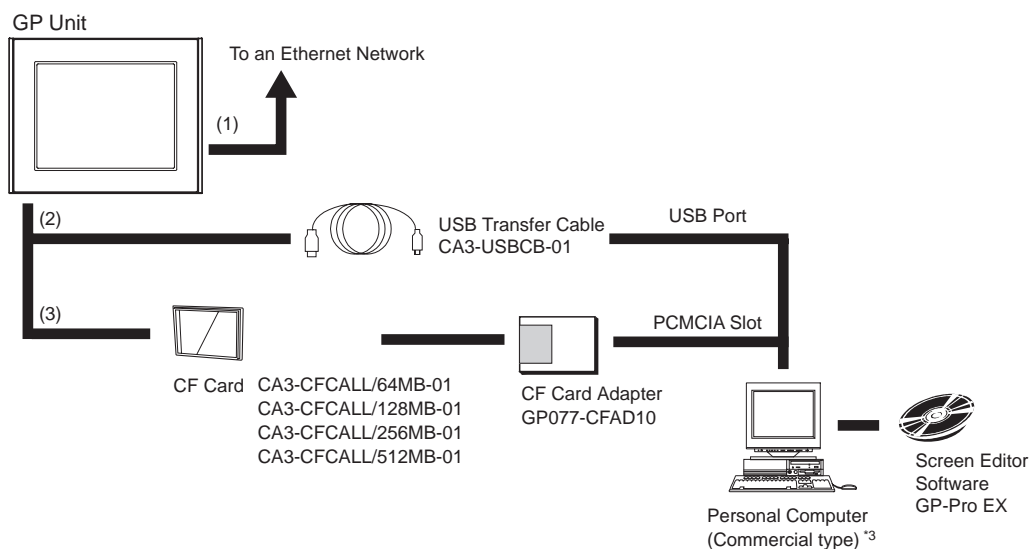
GP Interfaces

- (1) Ethernet Interface
(10BASE-T/100BASE-TX)
Not available with AGP-3301* units
- (2) USB Host Interface
- (3) CF Card Interface
- (4) Serial Interface (COM1)
(RS232C mode)
- (5) Serial Interface (COM1)
(RS422 mode)
- (6) Serial Interface (COM2)

PLC Interfaces

- (7) RS-232C Port
- (8) RS-422 Port
- (9) RS-485 Port
- (10) MPI Port
- (11) Programming Console Port

◆Edit Mode Peripherals



GP Interfaces

- (1) Ethernet Interface
(10BASE-T/100BASE-TX)
Not available with AGP-3301* units
- (2) USB Host Interface
- (3) CF Card Interface

*1 Must be MS-DOS NECPC-PR201/PL, EPSON ESC/P24-J84(C), HP Laser Jet PCL 4 command printer or its equivalent.

Printers using only Windows drivers cannot be used, however, printers using both Windows and DOS drivers may be used. For details, please contact your printer manufacturer or sales outlet.

*2 For a list of recommended units, see page I-11.

SEE → ■ Recommended Units (page I-11)

*3 Certain types and models of PCs cannot be used.

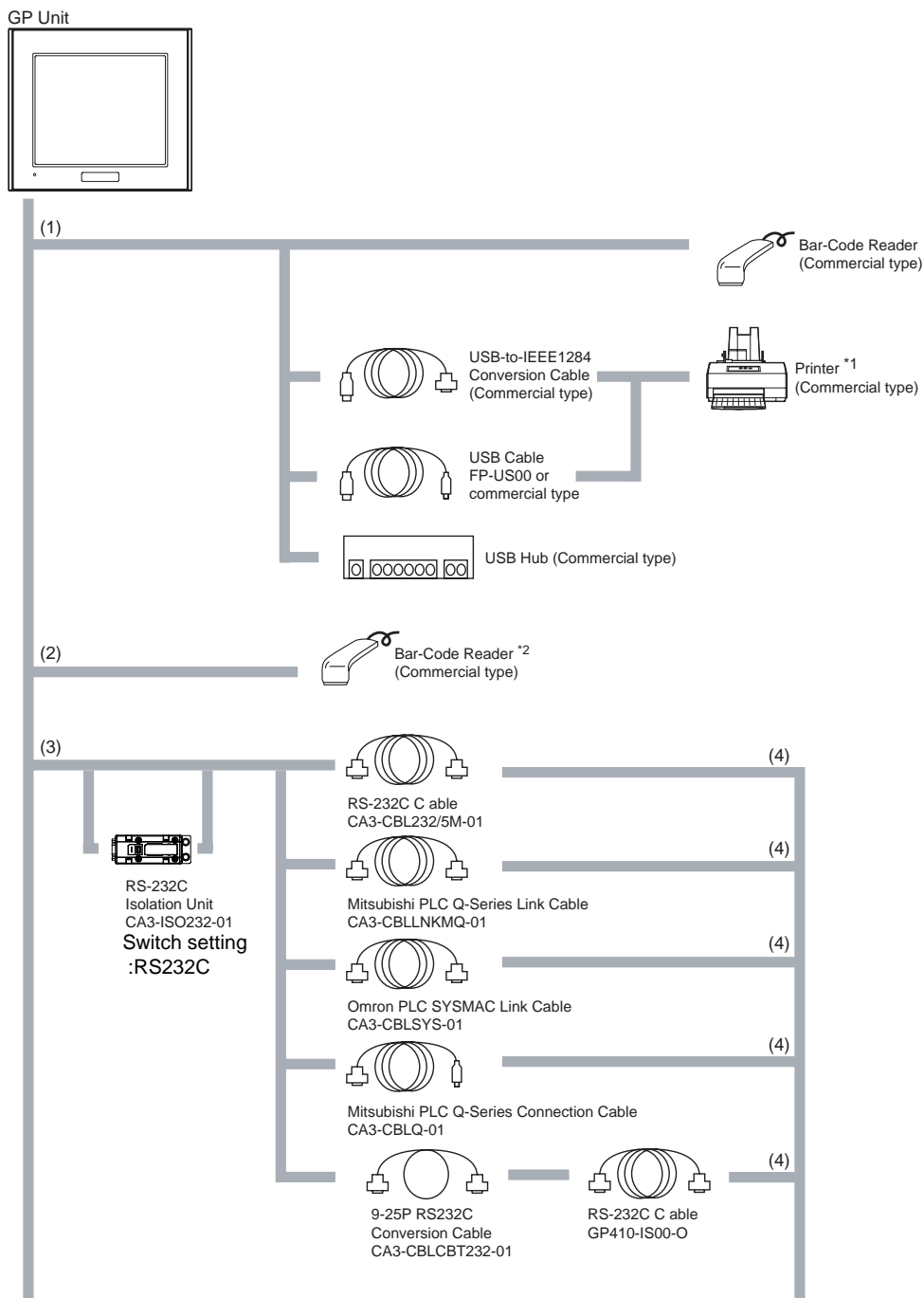
SEE → GP-ProEX Reference Manual

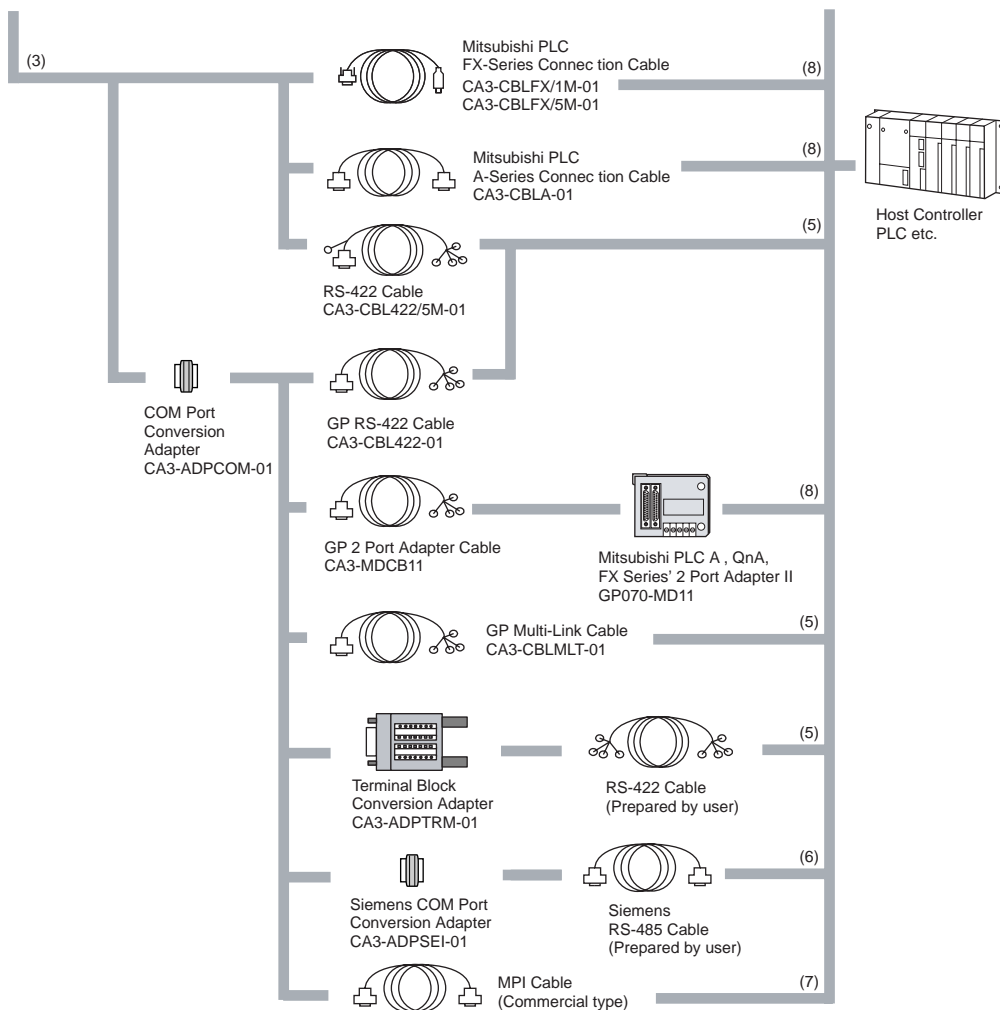
■GP-3302 Series

The following diagram illustrates the standard range of items that can be connected to GP-3302 Series units.

For host controller (PLC, etc.) connection information, refer to the "GP-Pro External Device Drivers".

◆GP RUN Mode Peripherals





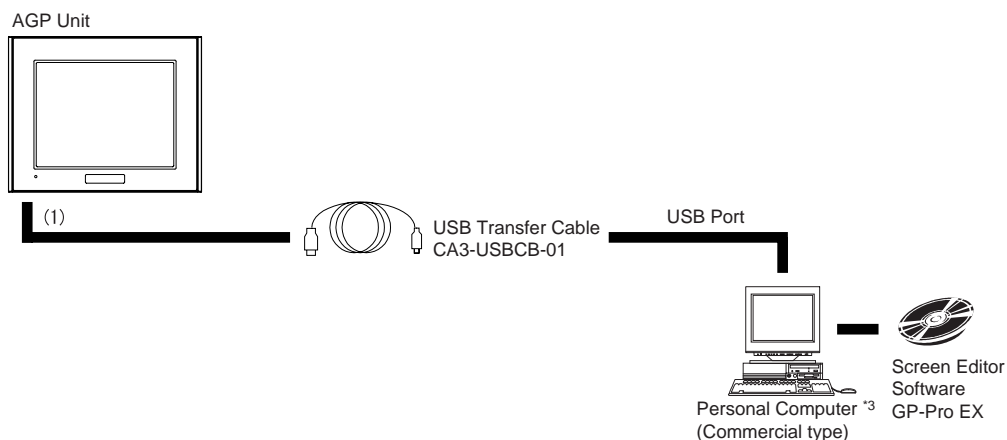
GP Interfaces

- (1) USB I/F
- (2) Serial Interface (COM1)
- (3) Serial Interface (COM2)

PLC Interfaces

- (4) RS-232C Port
- (5) RS-422 Port
- (6) RS-485 Port
- (7) MPI Port
- (8) Programing Console Port

◆Edit Mode Peripherals



GP Interfaces

(1) USB Host Interface

*1 Must be MS-DOS NECPC-PR201/PL, EPSON ESC/P24-J84(C), HP Laser Jet PCL 4 command printer or its equivalent.

Printers using only Windows drivers cannot be used, however, printers using both Windows and DOS drivers may be used. For details, please contact your printer manufacturer or sales outlet.

*2 For a list of recommended units, see page1-11.

SEE → ■ *Recommended Units (page1-11)*

*3 Certain types and models of PCs cannot be used

SEE → *GP-Pro EX Reference Manual*

■ Recommended Units

The following table lists I/O devices that have been tested and confirmed to be compatible with AGP Series units. If you connect a device that is not listed here, be sure to test that your AGP operates normally prior to using it in your system

IMPORTANT Recommended units are subject to change without notice.

◆ Bar Code Reader (Connected via serial interface)

Manufacturer	Model	Type	Remarks
Aimex Corporation	BR-530RS	Pen	Requires separately sold BB-60 for power.
OPT Electronics	OPT-6125-RS	Touch Scanner (Read Width: 65mm)	Requires separately sold DC5300T for power.
Denso Co.	HC36IITR	Touch Scanner (Read Width: 61mm)	Requires separately sold P-200 unit for power. Also requires separately sold KRS-423-XF1K (Sanwa Supply) for connector cable.

◆ USB Bar Code Readers (Support HID-type keyboards)

Manufacturer	Model	Type	Remarks
Aimex Corporation	BR-530UK	Pen	Power supply not required.
OPT Electronics	OPT-6125-USB	Touch Scanner (Read Width: 65mm)	Power supply not required.
Denso Co.	HC36TU-K	Touch Scanner (Read Width: 61mm)	Power supply not required.

1.2 Accessories

All accessories listed here are produced by Digital Electronics Corporation.

■Serial Interface Item

Product Name	Model No.	Description
RS-232C Cable	CA3-CBL232/5M-01 (5m)	Connects Mitsubishi PLC A-Series (or other host controller) to the AGP. (RS-232C)
RS-232C Cable	GP410-IS00-O (5m)	Connects a host controller to the GP. (9-pin to 25-pin RS-232C conversion cable is required.)
RS-422 Cable	CA3-CBL422/5M-01 (5m)	Connects a host controller to the GP. (RS-422)
RS-422 Cable	GP230-IS11-O (5m)	Connects a host controller to the GP. (9-pin to 25-pin RS-422 conversion cable is required.)
Mitsubishi PLC Q-Series Link Cable	CA3-CBLLNKMQ-01 (5m)	Connects Mitsubishi PLC Q-Series (or other host controller) to the AGP. (RS-232C)
Omron PLC SYSMAC Link Cable	CA3-CBLSYS-01 (5m)	Connects Omron PLC SYSMAC Series unit (or other host controller) to the AGP. (RS-232C)
Mitsubishi PLC A-Series Connection Cable	CA3-CBLA-01 (5m)	Connects Mitsubishi PLC A, QnA Series programming console I/F to AGP. (Simultaneous use of programming console is not possible.)
Mitsubishi PLC Q-Series Connection Cable	CA3-CBLQ-01 (5m)	Connects Mitsubishi PLC Q-Series programming console I/F to AGP. (Simultaneous use of programming console is not possible.)
Mitsubishi PLC FX-Series Connection Cable	CA3-CBLFX/1M-01 (1m) CA3-CBLFX/5M-01 (5m)	Connects Mitsubishi PLC FX-Series programming console I/F and AGP. (Simultaneous use of programming console is not possible.)
9-pin-to-25-pin RS-a232C Conversion Cable	CA3-CBLCBT232-01 (0.2m)	Connects a standard RS-232C cable (GP connector:D-sub 25-pin) to the AGP.
9-pin-to-25-pin RS-422 Conversion Cable	CA3-CBLCBT422-01 (0.2m)	Connects a standard RS-422C cable (GP connector:D-sub 25-pin) to the AGP.
GP RS-422 Cable	CA3-CBL422-01 (5m)	Connects a host controller to the GP. (RS-422)
GP 2 Port Adapter Cable	CA3-MDCB11 (5m)	Connects Mitsubishi PLC to the GP using 2 port adapter II (RS-422).
Mitsubishi PLC A, QnA, FX Series 2 Port Adapter II	GP070-MD11	Allows simultaneous use of an GP Series unit and a Mitsubishi PLC A, QnA, FX Series peripheral device.

GP Multi-Link Cable	CA3-CBLMLT-01 (5m)	Connects a host controller to the GP for multi-link (n:1) communication.
Terminal Block Conversion Adapter	CA3-ADPTRM-01	Connects output from a serial interface with an RS-422 terminal block.
COM Port Conversion Adapter	CA3-ADPCOM-01	Connects optional RS-422 communication items to AGP unit's COM1 port.
On-line adapter	CA4-ADPONL-01	Terminal adapter in the case of performing RS-422/RS-485 communication at COM2 port.
Siemens COM Port Conversion Adapter	CA3-ADPSEI-01	Connects Siemens PLCs to the AGP. (for RS-485 communication)
RS-232C Isolation Unit	CA5-ISO232-01	Connects a host controller to the GP and provides isolation.
RS-485 Isolation Unit	CA5-ISO485-01	Connects a host controller to the GP and provides isolation.

■USB Host Interface

Product Name	Model No.	Description
USB Transfer Cable	CA3-USBCB-01 (2m)	Downloads project data created with the Screen Editor via the AGP unit's serial port.
USB Cable	FP-US00 (5m)	Connects a USB printer. (TYPE-B)
USB Front Cable	CA5-USBEXT-01 (1m)	The cable for extending a USB Host Interface of GP.

■CF Card Items (AGP-3302B is not available)

Product Name	Model No.	Description
CF Card (64MB)	CA3-CFCALL/64MB-01	Inserted into the GP unit's CF Card slot.
CF Card (128MB)	CA3-CFCALL/128MB-01	
CF Card (256MB)	CA3-CFCALL/256MB-01	
CF Card (512MB)	CA3-CFCALL/512MB-01	
CF Card Adapter	GP077-CFAD10	Used for read/write of CF Card data via a PC's PCMCIA slot.

■Option Items

Product Name	Model No.	Corresponding GP	Description
Protection Sheet (6 inch)	CA3-DFS6-01	GP-3300 Series	Disposable, dirt-resistant sheet for the GP unit's screen. (5 sheets/ set) (Hard type)
Protection Sheet (8 inch)	PS400-DF00	GP-3400 Series	Disposable, dirt-resistant sheet for the GP unit's screen. (5 sheets/ set) (Hard type)
Protection Sheet (10 inch)	CA5-DFS10-01	AGP-3500T AGP-3550T	Disposable, dirt-resistant sheet for the GP unit's screen. (5 sheets/ set) (Hard type)
Protection Sheet (12 inch)	CA3-DFS12-01	AGP-3500L AGP-3500S GP-3600 Series	Disposable, dirt-resistant sheet for the GP unit's screen. (5 sheets/ set) (Hard type)
Protection Sheet (15 inch)	CA3-DFS15-01	GP-3700 Series	Disposable, dirt-resistant sheet for the GP unit's screen. (5 sheets/ set) (Hard type)

■Maintenance Items

Product Name	Model No.	Corresponding GP	Description
Installation Fastener	CA3-ATFALL-01	GP3000 Series	Used to install the GP into a solid panel.
Installation Gasket (6 inch)	CA3-WPG6-01	GP-3300 Series	Provides dust and moisture resistance when GP is installed into a solid panel.
Installation Gasket (8 inch)	CA5-WPG8-01	GP-3400 Series	Provides dust and moisture resistance when GP is installed into a solid panel.
Installation Gasket (10 inch)	CA5-WPG10-01	AGP-3500T AGP-3550T	Provides dust and moisture resistance when GP is installed into a solid panel.
Installation Gasket (12 inch)	CA3-WPG12-01	AGP-3500L AGP-3500S GP-3600 Series	Provides dust and moisture resistance when GP is installed into a solid panel.
Installation Gasket (15 inch)	CA3-WPG15-01	GP-3700 Series	Provides dust and moisture resistance when GP is installed into a solid panel.
TFT Replacement Backlight (10 inch)	CA5-BLU10T-01	AGP-3500T AGP-3550T	This backlight is used for replacement.
STN Replacement Backlight (10 inch)	PS501S-BU00	AGP-3500S	This backlight is used for replacement.

TFT Replacement Backlight (12 inch)	CA3-BLU12-01	AGP-3600T AGP-3650T	This backlight is used for replacement.
TFT Replacement Backlight (15 inch)	CA3-BLU15-01	AGP-3750T	This backlight is used for replacement.
Connector Cover	CA3-BUSCVR-01	GP3000 Series	Protects the AGP unit's rear face connector.
AUX Connector	CA5-AUXCNALL-01	GP-3400 Series GP-3500 Series GP-3600 Series GP-3700 Series	AUX connector for GP3000 series required in case an external output is used.
USB Cable Clamp (1 port)	CA5-USBATM-01	GP-3300 Series	USB Cable clamp for 1 port products to prevent disconnection.
USB Cable Clamp (2 port)	CA5-USBATL-01	GP-3400 Series GP-3500 Series GP-3600 Series GP-3700 Series	USB Cable clamp for 2 port products to prevent disconnection.
DC Power Supply Connector for Medium-sized Units	CA5-DCCNM-01	GP-3300 Series GP-3400 Series	Connector for attaching power supply to medium-sized units.
DC Power Supply Connector for Large-sized Units	CA5-DCCNL-01	GP-3500 Series GP-3600 Series GP-3700 Series	Connector for attaching power supply to large-sized units.
Panel Cutout Adapter for GP-3300 Series	CA4-ATM5-01	GP-3300 Series	Panel cutout adapter for mounting GP-3300 series in cutout of GP-37W2B.

■Expansion Unit

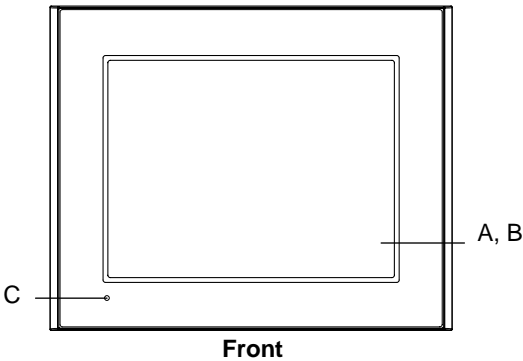
Product Name	Model No.	Description
VM UNIT (for VM-BS)	GP2000-VM41	VM UNIT is a unit for capture of the video image. (This unit supports only TFT color LCD model of GP3500/3600 Series (AGP3500T etc.))
PROFIBUS Slave Unit	CA5-PFSALL/EX-01	Expansion Unit for connecting GP to PROFIBUS network or communicating with a PROFIBUS-DP master.

1.3 Part Names and Functions

Describe of the part names and functions for the GP unit.

1.3.1 GP-3300 Series

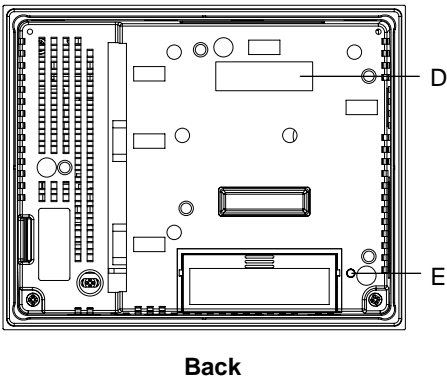
The following images of an GP-3300 unit



A: Display
The GP monitor screen displays the screen setup and corresponding host (PLC) data.

B: Touch Panel
Performs any screen change operations and sends data to the PLC.

C: Status LED
This LED indicates the AGP's status, e.g. power input, firmware RUN status or backlight condition.

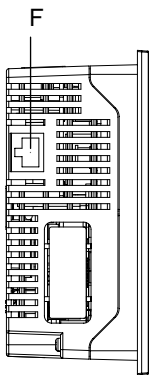


LED	GP Status
Green (lit)	Normal operation (power is ON.) or OFFLINE operation.
Orange (lit)	Backlight burnout is detected.
Orange (blinking)	During software startup
Red (lit)	When power is turned ON.
Not lit	Power is OFF.

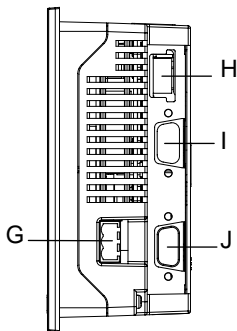
D: Expansion Unit Interface
Connects expansion units with communication features.

E: CF Card Access Lamp
This lamp light up when CF card is inserted and CF card cover is closed. However, opening the CF card cover, in the CF card while accessing it continues to light up.

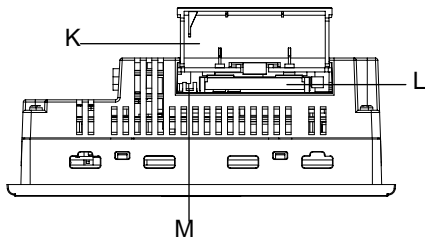
Access Lamp	Indicates
Green ON	The CF Card is inserted and the CF Card Cover is closed. Or, the CF Card is being accessed.
Green OFF	The CF Card is not inserted or is not being accessed.



Right side



Light side



Bottom
(With CF Card Cover open)

**F: Ethernet Interface
(10BASE-T/100BASE-TX)**

The Ethernet transmission interface conforms to IEEE802.3u (10BASE-T/100BASE-TX). An RJ-45 type modular jack connector (8-pole) is used. The LED turns on or off to indicate the current status.

LED	Indicates
Green ON	Data transmission available
Green OFF	No connection or subsequent transmission failure
Yellow ON	Data transmission is occurring.
Yellow OFF	No data transmission

G: Power Plug Connector

Connects the power cable

H: USB Host Interface

Conforms to USB1.1. (TYPE-A conn.) Connects a data transfer cable or USB-compatible printer. The maximum communication distance is 5m.

I: Serial Interface (COM1)

AGP-3300*/3301*:
RS232C/RS422/RS485 serial interface. D-sub 9-pin plug type connector. Communication method is switched via software.
AGP-3302*:
RS232C serial interface. D-sub 9-pin plug type connector.

J: Serial Interface (COM2)

AGP-3300*/3301*:
RS422/RS485 serial interface. D-sub 9-pin socket type connector.
AGP-3302*:
RS422 serial interface. D-sub 9-pin plug type connector.

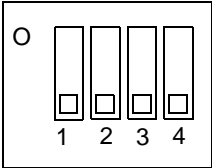
K: CF Card Cover

The CF Card I/F and Dip Switches are located in the CF Card Cover open. This cover must be closed when accessing the CF Card.

L: CF Card Interface

Insert the CF Card in this slot.

M: Dip Switches

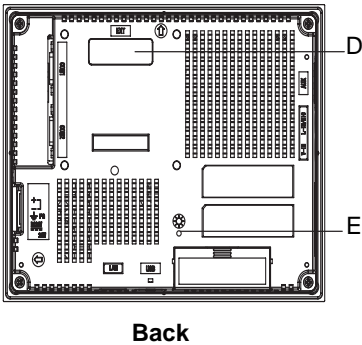
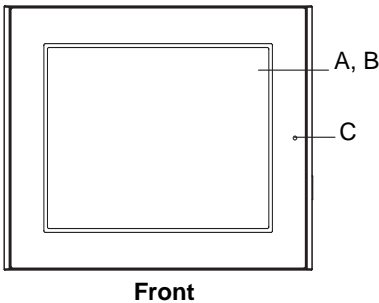


Dip Switches	Function	ON	OFF	Note
1	CF Card Startup Settings (Controls unit startup from the CF Card.)	Startup from CF Card is enabled.	Startup from CF Card is disabled.	CF Card with startup data required.
2*1	Forced Transfer Mode	Forced Transfer Mode: ON	Forced Transfer Mode: OFF	-
3	Booking	-	-	Constantly OFF
4	This setting controls the forced closing of the CF Card cover.	Forced close enabled.	Forced close disabled.	Used when CF Card cover is damaged.

*1 When power supply is turned ON at dip switch 2 is ON, it starts with Transfer Mode.
Usually, use it in OFF.

1.3.2 GP-3400 Series

The following images of an GP-3450T Series unit.



A: Display

The GP monitor screen displays the screen setup and corresponding host (PLC) data.

B: Touch Panel

Performs any screen change operations and sends data to the PLC.

C:Status LED

This LED indicates the AGP's status, e.g. power input, firmware RUN status or backlight condition.

LED	GP Status
Green (lit)	Normal operation (power is ON.) or OFFLINE operation.
Orange (lit)	Backlight burnout is detected.
Orange (blinking)	During software startup
Red (lit)	When power is turned ON.
Not lit	Power is OFF.

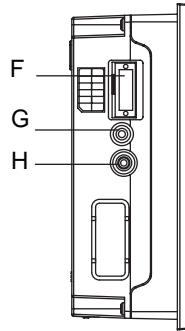
D: Expansion Unit Interface

Connects expansion units with communication features.

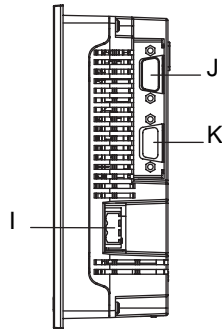
E: CF Card Access Lamp

This lamp light up when CF card is inserted and CF card cover is closed. However, opening the CF card cover, in the CF card while accessing it continues to light up.

Access Lamp	Indicates
Green ON	The CF Card is inserted and the CF Card Cover is closed. Or, the CF Card is being accessed.
Green OFF	The CF Card is not inserted or is not being accessed.



Left side



Right side

F: Auxiliary input/output /Voice Output Interface (AUX)

This interface is External Reset, Alarm Output, Buzzer Output, and sound output.

G: Audio Input Interface (L-IN/MIC) (AGP-3450T only)

This interface is connects a microphone.
Use for mini jack connector ($\Phi 3.5\text{mm}$).

H: Video Input Interface (V-IN) (AGP-3450T only)

This interface is connects a video camera.
NTSC (59.9Hz) / PAL (50Hz) system correspondence.
Use for RCA Connector (75Ω).

I: Power Plug Connector

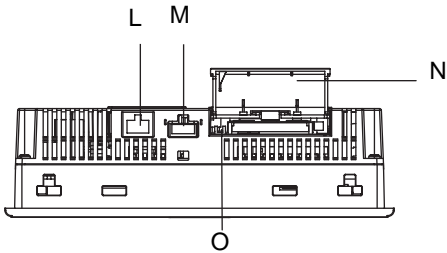
Power cable is connected to this connector.

J: Serial Interface (COM1)

RS232C/RS422/RS485 serial interface.
D-sub 9-pin plug type connector.
Communication method is switched via software.

K: Serial Interface (COM2)

RS422/RS485 serial interface.
D-sub 9-pin socket type connector.



Bottom
(With CF Card Cover open)

L: Ethernet Interface (LAN)

The Ethernet transmission interface conforms to IEEE802.3u (10BASE-T/100BASE-TX). An RJ-45 type modular jack connector (8-pole) is used. The LED turns on or off to indicate the current status.

LED	Indicates
Green ON	Data transmission available
Green OFF	No connection or subsequent transmission failure
Yellow ON	Data transmission is occurring.
Yellow OFF	No data transmission

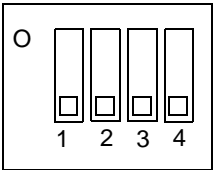
M: USB Host Interface (USB)

Conforms to USB1.1. (TYPE-A conn.) Connects a data transfer cable or USB-compatible printer. The maximum communication distance is 5m.

N:CF Card Cover

The CF Card I/F and Dip Switches are located in the CF Card Cover open. This cover must be closed when accessing the CF Card.

O:Dip Switches

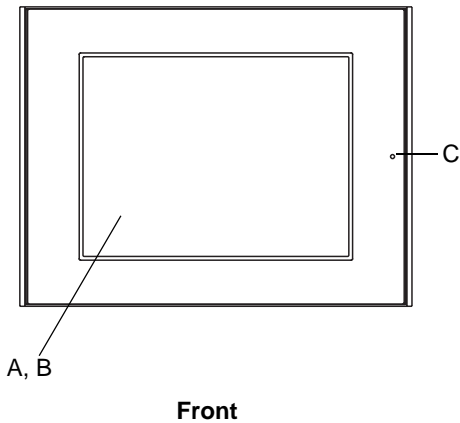


Dip Switches	Function	ON	OFF	Note
1	CF Card Startup Settings (Controls unit startup from the CF Card.)	Startup from CF Card is enabled.	Startup from CF Card is disabled.	CF Card with startup data required.
2*1	Forced Transfer Mode	Forced Transfer Mode: ON	Forced Transfer Mode: OFF	-
3	Booking	-	-	Constantly OFF
4	This setting controls the forced closing of the CF Card cover.	Forced close enabled.	Forced close disabled.	Used when CF Card cover is damaged.

*1 When power supply is turned ON at dip switch 2 is ON, it starts with Transfer Mode. Usually, use it in OFF.

1.3.3 GP-3500 Series

The following images of an GP-3500S (AC type) Series unit.



A: Display

The GP monitor screen displays the screen setup and corresponding host (PLC) data.

B: Touch Panel

Performs any screen change operations and sends data to the PLC.

C: Status LED

This LED indicates the AGP's status, e.g. power input, firmware RUN status or backlight condition.

LED	GP Status
Green (lit)	Normal operation (power is ON.) or OFFLINE operation.
Orange (lit)	Backlight burnout is detected.
Orange (blinking)	During software startup
Red (lit)	When power is turned ON.
Not lit	Power is OFF.

D: Expansion Unit Interface (for internal)

Connects expansion units with communication features.

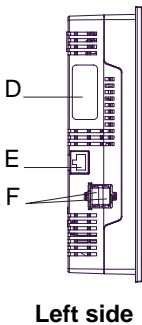
E: Ethernet Interface (LAN)

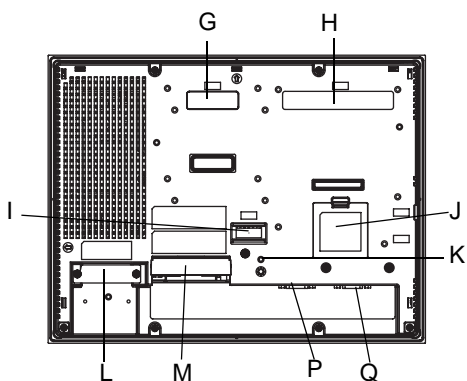
The Ethernet transmission interface conforms to IEEE802.3u (10BASE-T/100BASE-TX). An RJ-45 type modular jack connector (8-pole) is used. The LED turns on or off to indicate the current status.

LED	Indicates
Green ON	Data transmission available
Green OFF	No connection or subsequent transmission failure
Yellow ON	Data transmission is occurring.
Yellow OFF	No data transmission

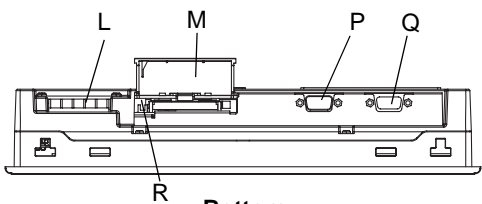
F:USB Host Interface (USB) (X2)

Conforms to USB1.1. (TYPE-A conn.) Connects a data transfer cable or USB-compatible printer. The maximum communication distance is 5m.

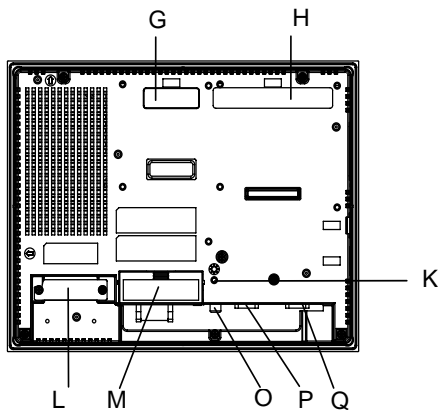




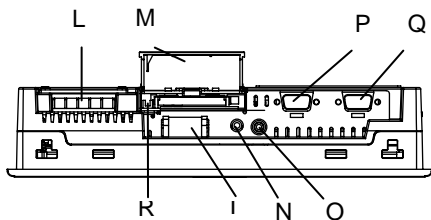
Back
(AGP-3500L/3500S)



Bottom
(AGP-3500L/3500S)



Back
(AGP-3500T/3550T)



Bottom
(AGP-3500T/3550T)

G: Expansion Unit Interface 1^{*1} (for external)
Connects expansion units with communication features.

H: Expansion Unit Interface 2 (AGP-3500T/3550T only)
This interface is equipped with the unit for extending a display function.

I: Auxiliary input/output /Voice Output Interface (AUX)
This interface is External Reset, Alarm Output, Buzzer Output, and sound output.

J: Expansion Memory Interface Cover

K: CF Card Access LED
This lamp light up when CF card is inserted and CF card cover is closed. However, opening the CF card cover, in the CF card while accessing it continues to light up.

Access Lamp	Indicates
Green ON	The CF Card is inserted and the CF Card Cover is closed. Or, the CF Card is being accessed.
Green OFF	The CF Card is not inserted or is not being accessed.

L: Power Input Terminal Block (AC model), Power Plug Connector (DC model)
Connect the power cable.

M: CF Card Cover
The CF Card I/F and Dip Switches are located in the CF Card Cover open. This cover must be closed when accessing the CF Card.

N: Audio Input Interface (L-IN/MIC) (AGP-3550T only)
This interface is connects a microphone. Use for mini jack connector (Φ3.5mm).

O: Video Input Interface (V-IN) (AGP-3550T only)
This interface is connects a video camera. NTSC (59.9Hz) / PAL (50Hz) system correspondence. Use for RCA Connector (75Ω).

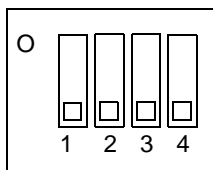
*1 AGP-3500T cannot use the Expansion Unit Interfaces 1 and 2 simultaneously.

P: Serial Interface (COM1)

RS232C/RS422/RS485 serial interface. D-sub 9-pin plug type connector. Communication method is switched via software.

Q: Serial Interface (COM2)

RS422 /RS485 serial interface. D-sub 9-pin socket type connector.

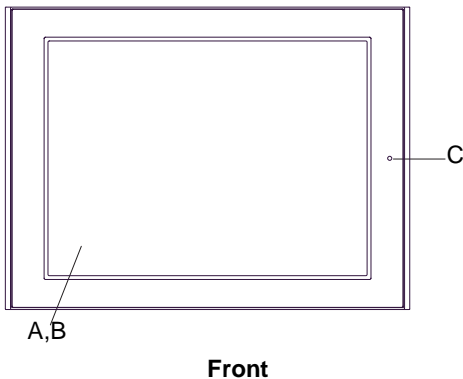
R: Dip Switches1

Dip Switches	Function	ON	OFF	Note
1	CF Card Startup Settings (Controls unit startup from the CF Card.)	Startup from CF Card is enabled.	Startup from CF Card is disabled.	CF Card with startup data required.
2*1	Forced Transfer Mode	Forced Transfer Mode: ON	Forced Transfer Mode: OFF	-
3	Booking	-	-	Constantly OFF
4	This setting controls the forced closing of the CF Card cover.	Forced close enabled.	Forced close disabled.	Used when CF Card cover is damaged.

*1 When power supply is turned ON at dip switch 2 is ON, it starts with Transfer Mode. Usually, use it in OFF.

1.3.4 GP-3600 Series

The following images of an AGP- 3650T (AC type) unit.



A: Display

The GP monitor screen displays the screen setup and corresponding host (PLC) data.

B: Touch Panel

Performs any screen change operations and sends data to the PLC.

C: Status LED

This LED indicates the AGP's status, e.g. power input, firmware RUN status or backlight condition.

LED	GP Status
Green (lit)	Normal operation (power is ON.) or OFFLINE operation.
Orange (lit)	Backlight burnout is detected.
Orange (blinking)	During software startup
Red (lit)	When power is turned ON.
Not lit	Power is OFF.

D: Expansion Unit Interface (for internal)

Connects expansion units with communication features.

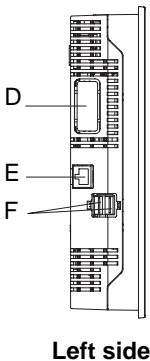
E: Ethernet Interface (LAN)

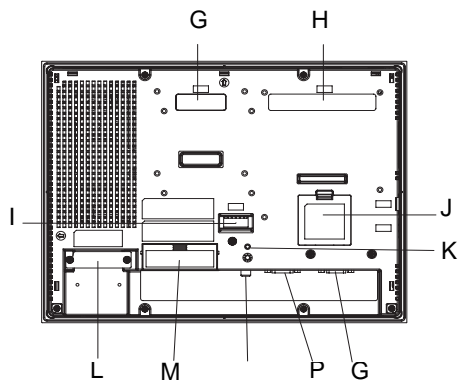
The Ethernet transmission interface conforms to IEEE802.3u (10BASE-T/100BASE-TX). An RJ-45 type modular jack connector (8-pole) is used. The LED turns on or off to indicate the current status.

LED	Indicates
Green ON	Data transmission available
Green OFF	No connection or subsequent transmission failure
Yellow ON	Data transmission is occurring.
Yellow OFF	No data transmission

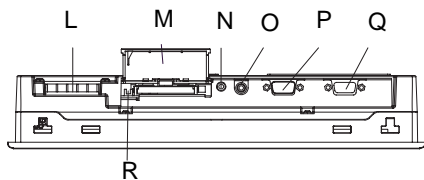
F: USB Host Interface (USB) (X2)

Conforms to USB1.1. (TYPE-A conn.) Connects a data transfer cable or USB-compatible printer. The maximum communication distance is 5m.





Back



Bottom

G: Expansion Unit Interface 1 (for external)
Connects expansion units with communication features.

H: Expansion Unit Interface 2
This interface is equipped with the unit for extending a display function.

I: Auxiliary input/output /Voice Output Interface (AUX)
This interface is External Reset, Alarm Output, Buzzer Output, and sound output.

J: Expansion Memory Interface Cover

K: CF Card Access LED
This lamp light up when CF card is inserted and CF card cover is closed. However, opening the CF card cover, in the CF card while accessing it continues to light up.

Access Lamp	Indicates
Green ON	The CF Card is inserted and the CF Card Cover is closed. Or, the CF Card is being accessed.
Green OFF	The CF Card is not inserted or is not being accessed.

L: Power Input Terminal Block
Connect the power cable.

M: CF Card Cover
The CF Card I/F and Dip Switches are located in the CF Card Cover open. This cover must be closed when accessing the CF Card.

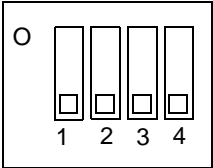
N: Audio Input Interface (L-IN/MIC) (AGP-3650T only)
This interface is connects a microphone. Use for mini jack connector ($\Phi 3.5\text{mm}$).

O: Video Input Interface (V-IN) (AGP-3650T only)
This interface is connects a video camera. NTSC (59.9Hz) / PAL (50Hz) system correspondence. Use for RCA Connector (75Ω).

P: Serial Interface (COM1)
RS232C/RS422/RS485 serial interface. D-sub 9-pin plug type connector. Communication method is switched via software.

Q: Serial Interface (COM2)
RS422/RS485 serial interface. D-sub 9-pin socket type connector.

R: Dip Switches*1

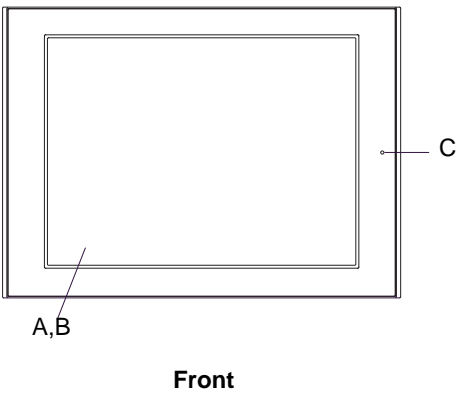


Dip Switches	Function	ON	OFF	Note
1	CF Card Startup Settings (Controls unit startup from the CF Card.)	Startup from CF Card is enabled.	Startup from CF Card is disabled.	CF Card with startup data required.
2*1	Forced Transfer Mode	Forced Transfer Mode: ON	Forced Transfer Mode: OFF	-
3	Booking	-	-	Constantly OFF
4	This setting controls the forced closing of the CF Card cover.	Forced close enabled.	Forced close disabled.	Used when CF Card cover is damaged.

*1 When power supply is turned ON at dip switch 2 is ON, it starts with Transfer Mode. Usually, use it in OFF.

1.3.5 GP-3700 Series

The following images of an AGP-3750 (AC type) unit.



A: Display

The GP monitor screen displays the screen setup and corresponding host (PLC) data.

B: Touch Panel

Performs any screen change operations and sends data to the PLC.

C: Status LED

This LED indicates the AGP's status, e.g. power input, firmware RUN status or backlight condition

LED	GP Status
Green (lit)	Normal operation (power is ON.) or OFFLINE operation.
Orange (lit)	Backlight burnout is detected.
Orange (blinking)	During software startup
Red (lit)	When power is turned ON.
Not lit	Power is OFF.

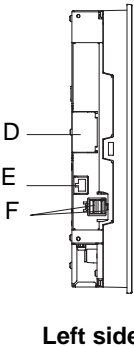
D: Expansion Unit Interface (for internal)

Connects expansion units with communication features.

E: Ethernet Interface (LAN)

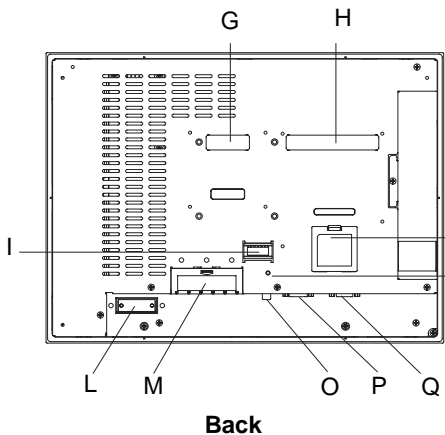
The Ethernet transmission interface conforms to IEEE802.3u (10BASE-T/100BASE-TX). An RJ-45 type modular jack connector (8-pole) is used. The LED turns on or off to indicate the current status.

LED	Indicates
Green ON	Data transmission available
Green OFF	No connection or subsequent transmission failure
Yellow ON	Data transmission is occurring.
Yellow OFF	No data transmission



F: USB Host Interface (USB) (X2)

Conforms to USB1.1. (TYPE-A conn.) Connects a data transfer cable or USB-compatible printer. The maximum communication distance is 5m.



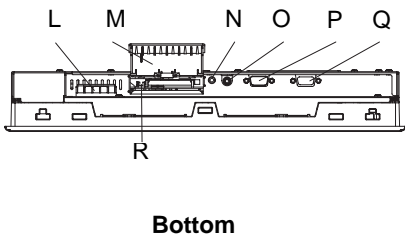
G: Expansion Unit Interface 1 (for external)
Connects expansion units with communication features.

H: Expansion Unit Interface 2
This interface is equipped with the unit for extending a display function.

I: Auxiliary input/output /Voice Output Interface (AUX)
This interface is External Reset, Alarm Output, Buzzer Output, and sound output.

J: Expansion Memory Interface Cover

K: CF Card Access LED
This lamp light up when CF card is inserted and CF card cover is closed. However, opening the CF card cover, in the CF card while accessing it continues to light up.



Access Lamp	Indicates
Green ON	The CF Card is inserted and the CF Card Cover is closed. Or, the CF Card is being accessed.
Green OFF	The CF Card is not inserted or is not being accessed.

L: Power Input Terminal Block
Connect the power cable.

M: CF Card Cover
The CF Card I/F and Dip Switches are located in the CF Card Cover open. This cover must be closed when accessing the CF Card.

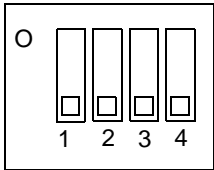
N: Audio Input Interface (L-IN/MIC)
This interface is connects a microphone. Use for mini jack connector ($\Phi 3.5\text{mm}$).

O: Video Input Interface (V-IN)
This interface is connects a video camera. NTSC (59.9Hz) / PAL (50Hz) system correspondence. Use for RCA Connector (75Ω).

P: Serial Interface (COM1)
RS232C/RS422/RS485 serial interface. D-sub 9-pin plug type connector. Communication method is switched via software.

Q: Serial Interface (COM2)
RS422/RS485 serial interface. D-sub 9-pin socket type connector.

R: Dip Switches



Dip Switches	Function	ON	OFF	Note
1	CF Card Startup Settings (Controls unit startup from the CF Card.)	Startup from CF Card is enabled.	Startup from CF Card is disabled.	CF Card with startup data required.
2*1	Forced Transfer Mode	Forced Transfer Mode: ON	Forced Transfer Mode: OFF	-
3	Booking	-	-	Constantly OFF
4	This setting controls the forced closing of the CF Card cover.	Forced close enabled.	Forced close disabled.	Used when CF Card cover is damaged.

*1 When power supply is turned ON at dip switch 2 is ON, it starts with Transfer Mode. Usually, use it in OFF.

2 | Specifications

1. GP-3300 Series
2. GP-3400 Series
3. GP-3500 Series
4. GP-3600 Series
5. GP-3700 Series

This chapter describes the general, functional and interface specifications of the GP as well as its part names and dimensions.

2.1 GP-3300 Series

2.1.1 General Specifications

■Electrical Specifications

		AGP-3300*/3301*	AGP-3302*
Power Supply	Input Voltage	DC24V	
	Rated Voltage	DC19.2 to 28.8V	
	Allowable Voltage Drop	5ms (max.)	10ms (max.)
	Power Consumption	26W (max.)	18W (max.)
	In-Rush Current	30A (max.)	
Voltage Endurance		AC500V 20mA for 1 minute (between charging and FG terminals)	
Insulation Resistance		DC500V 10MΩ (min.) (between charging and FG terminals)	

■Environmental Specifications

Physical	Ambient Operating Temperature	0 to +50°C*1
	Storage Temperature	-20 to +60°C
	Ambient Humidity	10 to 90% RH (Wet bulb temperature: 39°C max. - no condensation.)
	Storage Humidity	10 to 90% RH (Wet bulb temperature: 39°C max. - no condensation.)
	Dust	0.1mg/m ³ and below (non-conductive levels)
	Pollution Degree	Pollution Degree 2
	Atmosphere	Free of corrosive gases
	Air Pressure Vibration Resistance (availment altitude)	800 to 1114hPa (2,000 meters above sea-level and below)
Mechanical	Vibration Resistance	IEC61131-2 compliant 5 to 9Hz single-amplitude 3.5mm 9 to 150Hz constant-accelerated velocity 9.8m/s ² X,Y,Z directions for 10 time (100 minute)
	Concussion Resistance	IEC61131-2 compliant (147m/s ² X,Y,Z directions for 3 time)
Electrical	Noise Immunity	Noise Voltage: 1000V _{P-P} Pulse Duration: 1μs Rise Time: 1ns (via noise simulator)
	Electrostatic Discharge Immunity	6kV (complies with EN 61000-4-2 Level 3)

*1 Extended use in environments where ambient operating temperature is 40°C or higher may degrade the display quality and result in decreased contrast.

■ Structural Specifications

Installation	Grounding	Grounding resistance of 100Ω 2mm ² or thicker wire, or your country's applicable standard. (Same for FG and SG terminals)
	Structure *1	Rating: Equivalent to IP65f NEMA #250 TYPE 4X/13 Installation method: Panel/VESA Arm (Front surface at panel embedding) Feature size: All-in-one Installation configuration: Panel embedding
	Cooling Method	Natural air circulation
	Weight Approx.	1.0kg max[2.2lb]. (unit only)
	External Dimensions	W167.5mm[6.59in] X H135mm[5.31in] X D59.5mm[2.34in]
	Panel Cut Dimensions	W156.0mm[6.14in] X H123.5mm[4.86in]*2

*1 The front face of the GP unit, installed in a solid panel, has been tested using conditions equivalent to the standards shown in the specification. Even though the GP unit's level of resistance is equivalent to these standards, oils that should have no effect on the GP can possibly harm the unit. This can occur in areas where either vaporized oils are present, or where low viscosity cutting oils are allowed to adhere to the unit for long periods of time. If the GP's front face protection sheet becomes peeled off, these conditions can lead to the ingress of oil into the GP and separate protection measures are suggested.

Also, if non-approved oils are present, it may cause deformation or corrosion of the front panel's plastic cover. Therefore, prior to installing the GP be sure to confirm the type of conditions that will be present in the GP's operating environment.

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

*2 As for dimensional tolerance everything $+1/-0$ mm and R in angle are below R3.
Installation board conformity board thickness: 1.6 to 5.0mm

■ Performance Specifications

		AGP-3300*	AGP-3301*	AGP-3302B
Application**1		FLASH EPROM 6MB		
Data Backup		SRAM 320K bite		SRAM 128K bite
		Used lithium battery for backup memory		
Interface	Serial Interface	COM1: RS232C/RS422/RS485 Asynchronous Transmission: Data Length: 7 bite/8 bite Parity: none, Odd or Even Stop Bit: 1bite/2bite Data transmission Speed: 2400 to 115.2Kbps Connector: DSUB-9pin plug COM2: RS422/RS485 Asynchronous Transmission Data Length: 7 bitebite/8 bite Parity: none, Odd or Even Stop Bit: 1bite/2bite Data transmission Speed: 2400 bps to 115.2 Kbps 187.5 Kbps to 12 Mbps Connector: DSUB-9pin plug		COM1: RS232C Asynchronous Transmission Data Length: 7 bite/8 bite Parity: none, Odd or Even Stop Bit: 1bite/2bite Data transmission Speed: 2400 to 115.2Kbps Connector: DSUB-9pin plug COM2: RS422/RS485 Asynchronous Transmission Data Length: 7bite/8bite Parity: none, Odd or Even Stop Bit: 1bite/2bite Data transmission Speed: 2400 to 115.2Kbps Connector: DSUB-9pin plug
	Ethernet Interface	Ethernet (IEEE802.3u,10BASE-T/100BASE-TX) Connector: modular jack connector (RJ-45)	—	
	Expansion Unit Interface	Expansion Unit Interface (external/internal)		Expansion Unit Interface (external only)
	USB Host Interface	USB1.1 Host I/F, USB TYPE-A connector x 1		
	CF Card Interface	Compact Flash CF Card Slot (TYPE-II)		—
Clock Accuracy**2		± 65 seconds/ month (at room temperature)		

*2 The GP's internal clock has a slight error. At normal operating temperatures and conditions, with the GP operating from its lithium battery, the degree of error is 65 seconds per month. Variations in operating conditions and battery life can cause this error to vary from -380 to +90 seconds per month. For systems where this degree of error will be a problem, the user should be sure to monitor this error and make adjustments when required.

NOTE

- A Lithium battery's lifetime is: 10 years when the battery's ambient temperature is 40°C or less. 4.1 years when the battery's ambient temperature is 50°C or less. 1.5 years when the battery's ambient temperature is 60°C or less.

When used for backup:

Approximately 100 days, with a fully charged battery.

Approximately 6 days, with a half-charged battery.

■Display Specifications

	AGP-3300L AGP-3301L	AGP-3300S AGP-3301S	AGP-3300T	AGP-3302B
Display Type	Monochrome LCD	STN Color LCD	TFT Color LCD	Blue-mode Monochrome LCD
Resolution	W320 X H240 pixels			
Dot pitch	W0.36[0.01in]mm X H0.36mm[0.01in]			
Effective Display Area	W115.2[4.54in]mm X H86.4[3.40in]mm			
Color/Shade level	Black and White (16 Shades)	4,096 Colors	65,536 Colors	16 Shades
Backlight	CCFL (Not user replaceable. When replacement is required, contact your local GP distributor.)			
Brightness control	8 levels of adjustment available via touch panel			
Contrast Adjustment	8 levels of adjustment available via touch panel			
Display Service Life	MTBF value: 50,000hrs. (TYP) (Backlight display service life is not included.)			
Backlight Service Life	58,000hrs. or more (at 25°C and continuous operation - period until backlight brightness decreases to 50% or backlight starts to flicker)	75,000hrs. or more (at 25°C and continuous operation - period until backlight brightness decreases to 50% or backlight starts to flicker)	50,000hrs. or more (at 25°C and continuous operation - period until backlight brightness decreases to 50% or backlight starts to flicker)	58,000hrs. or more (at 25°C and continuous operation - period until backlight brightness decreases to 50% or backlight starts to flicker)
Language Fonts	Japanese: 6962 (JIS Standards 1 & 2)(including 607 non-kanji characters) ANK: 158 (Korean fonts, Simplified Chinese and Taiwanese traditional Chinese fonts are downloadable.			
Text composition	Character Sizes	Standard font: 8X8, 8X16, 16X16 and 32X32 dot fonts Stroke font: 6 to 127dot fonts		
	Font Sizes	Standard font: Width can be expanded up to 8 times. Height can be expanded up to 8 times ^{*1}		
Text	8 X 8 dots	40 Char. X 30 rows		
	8 X 16 dots	40 Char. X 15 rows		
	16 X 16 dots	20 Char. X 15 rows		
	32 X 32 dots	10 Char. X 7 rows		

^{*1} Font Sizes can be set up by software.

■Touch Panel Specifications

Type	Resistive Film (analog)
Resolution	1024 X 1024
Service Life	1,000,000 times or more

2.1.3 Interface Specifications

This section describes the specifications of each interface of the GP Series unit.

IMPORTANT

- The GP unit's serial port is not isolated. When the host (PLC) unit is also not isolated, be sure to connect the #5 SG (Signal Ground) terminal to reduce the risk of damaging the RS232C/RS422/RS485 circuit.
- When connecting an external device to the GP using the SG terminal, be sure to check that no short-circuit loop is created when you setup the system.

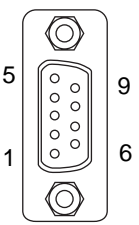
■AGP-3300^{*}/3301^{*}

◆Serial Interfaces (COM1)

This interface is used to connect an RS232C/RS422/RS485^{*1} cable. D-sub 9-pin plug connector is used.

GP Connector	XM2C-0942-502LX <OMRON Co.>
Interfit bracket	#4-40 inch screws are used.
Recommended cable Connector	XM2D-0901 <OMRON Co.>
Recommended cable Cover	XM2S-0913 <OMRON Co.>
Recommended Jack Screw	XM2Z-0073 <OMRON Co.>

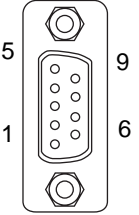
In the case of RS232C

Pin Arrangement	Pin No.	RS232C		
		Signal Name	Direction	Meaning
	1	CD	Input	Carrier Detect
	2	RD(RXD)	Input	Receive Data
	3	SD(TXD)	Output	Send Data
	4	ER(DTR)	Output	Data Terminal Ready
	5	SG	-	Signal Ground
	6	DR(DSR)	Input	Data Set Ready
	7	RS(RTS)	Output	Request to Send
	8	CS(CTS)	Input	Send Possible
	9	CI(RI)/VCC	Input/-	Called status display +5V±5% Output 0.25A ^{*2}
	Shell	FG	-	Frame Ground (Common with SG)

*1 Communication method is switched via software.

*2 The RI/VCC selection for Pin #9 is switched via software. The VCC output is not protected against overcurrent. To prevent damage or a unit malfunction, use only the rated current.

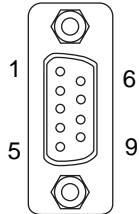
In the case of RS422/RS485

Pin Arrangement	Pin No.	RS422/RS485		
		Signal Name	Direction	Meaning
	1	RDA	Input	Receive Data A(+)
	2	RDB	Input	Receive Data B(-)
	3	SDA	Output	Send Data A(+)
	4	ERA	Output	Data Terminal Ready A(+)
	5	SG	-	Signal Ground
	6	CSB	Input	Send Possible B(-)
	7	SDB	Output	Send Data B(-)
	8	CSA	Input	Send Possible A(+)
	9	ERB	Output	Data Terminal Ready B(-)
	Shell	FG	-	Frame Ground (Common with SG)

◆Serial Interface (COM2)

This interface is used to connect an RS422/RS485 serial cable. A D-sub 9-pin socket connector is used.

GP Connector	XM3B-0942-502LX <OMRON Co.>
Interfit bracket	#4-40 inch screws are used.
Recommended cable Connector	XM2A-0901 <OMRON Co.>
Recommended cable Cover	XM2S-0913 <OMRON Co.>
Recommended Jack Screw	XM2Z-0073 <OMRON Co.>

Pin Arrangement	Pin No.	RS422/RS485		
		Signal Name	Direction	Meaning
	1	TRMRX	-	Termination (Receiver side: 100Ω)
	2	RDA	Input	Receive Data A(+)
	3	SDA	Output	Send Data A(+)
	4	RS(RTS)	Output	Request for Send
	5	SG	-	Signal Ground
	6	VCC	-	+5V±5% Output 0.25A *1
	7	RDB	Input	Receive DataB(-)
	8	SDB	Output	Send Data B(-)
	9	TRMTX	-	Termination (Receiver side: 100Ω)
	Shell	FG	-	Frame Ground (Common with SG)

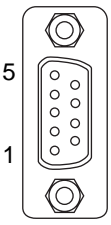
*1 The VCC output for Pin #6 is not protected against overcurrent. To prevent damage or a unit malfunction, use only the rated current.

■AGP-3302

◆Serial Interface (COM1)

This interface is used to connect an RS232C serial cable. A D-sub 9-pin socket connector is used.

GP Connector	XM2C-0942-502LX <OMRON Co.>
Interfit bracket	#4-40 inch screws are used.
Recommended cable Connector	XM2D-0901 <OMRON Co.>
Recommended cable Cover	XM2S-0913 <OMRON Co.>
Recommended Jack Screw	XM2Z-0073 <OMRON Co.>

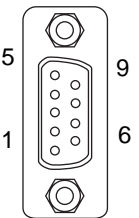
Pin Arrangement	Pin No.	RS232C		
		Signal Name	Direction	Meaning
	1	CD	Input	Carrier Detect
	2	RD(RXD)	Input	Receive Data
	3	SD(TXD)	Output	Send Data
	4	ER(DTR)	Output	Data Terminal Ready
	5	SG	-	Signal Ground
	6	DR(DSR)	Input	Data Set Ready
	7	RS(RTS)	Output	Request to Send
	8	CS(CTS)	Input	Send Possible
	9	CI(RI)/VCC	Input/-	Called status display +5V±5% Output 0.25A *1
	Shell	FG	-	Frame Ground (Common with SG)

*1 The RI/VCC selection for Pin #9 is switched via software. The VCC output is not protected against overcurrent. To prevent damage or a unit malfunction, use only the rated current.

◆Serial Interface (COM2)

This interface is used to connect an RS422 serial cable. A D-sub 9-pin socket connector is used.

GP Connector	XM2C-0942-502LX <OMRON Co.>
Interfit bracket	#4-40 inch screws are used.
Recommended cable Connector	XM2D-0901 <OMRON Co.>
Recommended cable Cover	XM2S-0913 <OMRON Co.>
Recommended Jack Screw	XM2Z-0073 <OMRON Co.>

Pin Arrangement	Pin No.	RS422		
		Signal Name	Direction	Meaning
	1	RDA	Input	Receive Data A(+)
	2	RDB	Input	Receive Data B(-)
	3	SDA	Output	Send Data A(+)
	4	ERA	Output	Data Terminal Ready A(+)
	5	SG	-	Signal Ground
	6	CSB	Input	Send Possible B(-)
	7	SDB	Output	Send Data B(-)
	8	CSA	Input	Send Possible A(+)
	9	ERB	Output	Data Terminal Ready B(-)
	Shell	FG	-	Frame Ground (Common with SG)

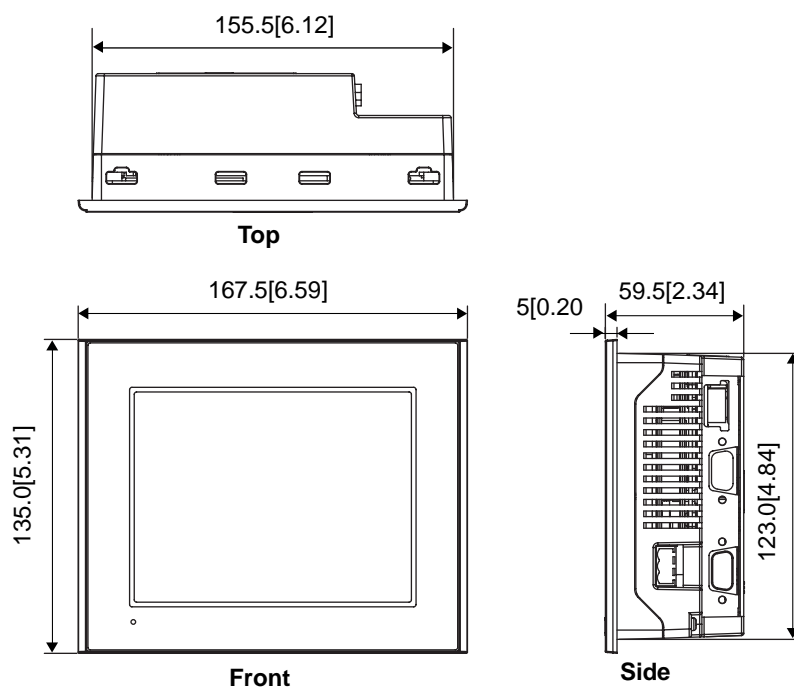
2.1.4 Dimensions

The following dimensions apply to all AGP-3300* Series units.

The dimensions of the AGP-3301*/3302B are the same. The following drawings show the AGP-3300*.

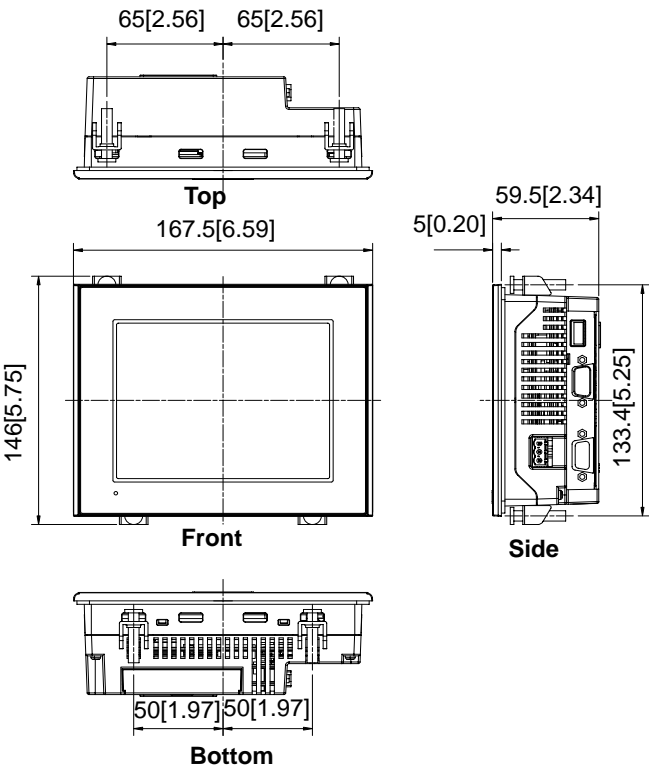
■External Dimensions

Unit: mm[in.]



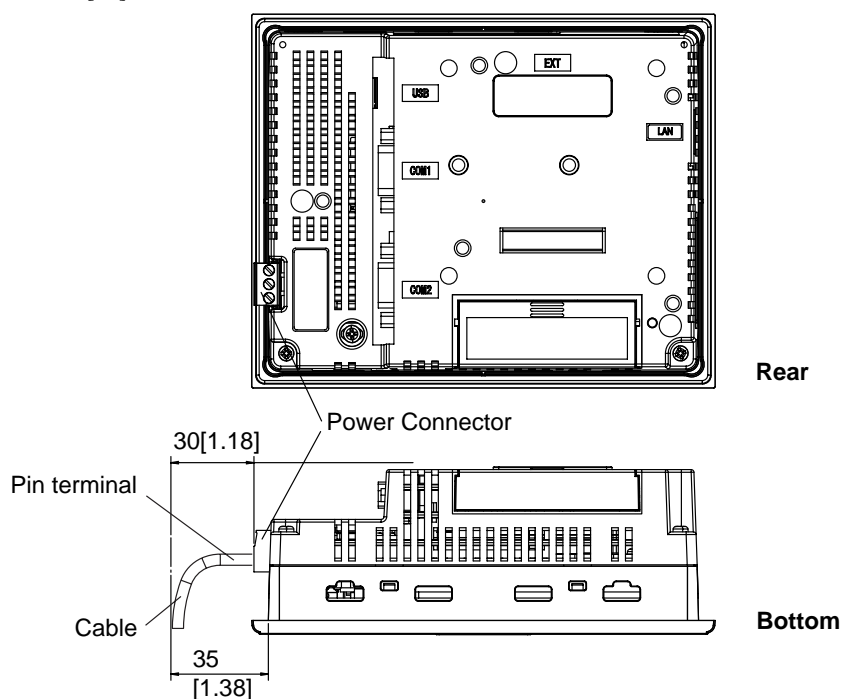
■ Installation Fasteners Attached Dimensions

Unit: mm[in.]



■Connector Attached Dimensions

Unit:mm[in.]

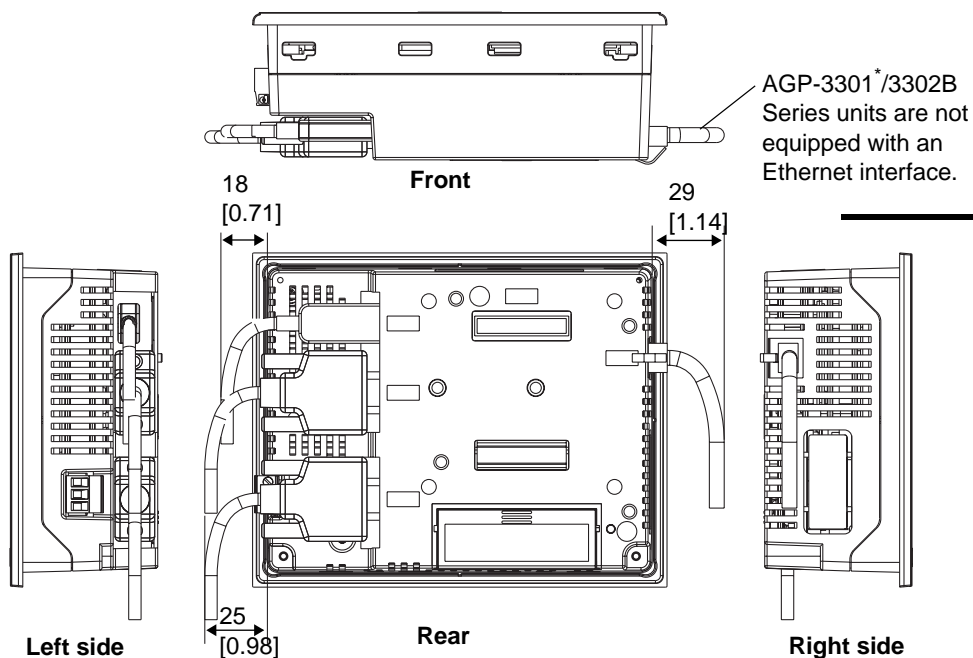


IMPORTANT

- Depending on the type of connection cable used the dimensions shown above will change. The dimensions given here are representative values and are intended for reference only.

■ Cable Installation

Unit: mm[in.]

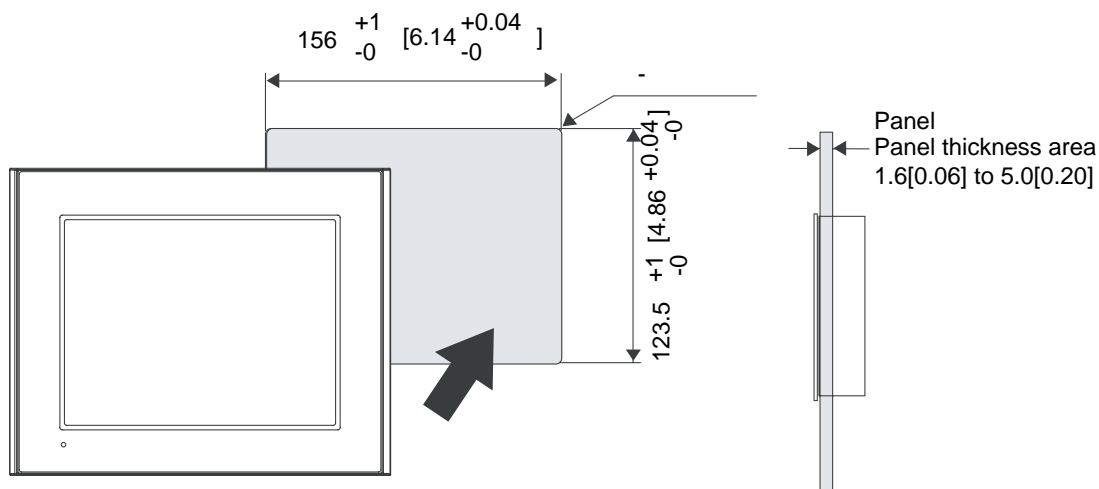


IMPORTANT

- Depending on the type of connection cable used the dimensions shown above will change. The dimensions given here are representative values and are intended for reference only.

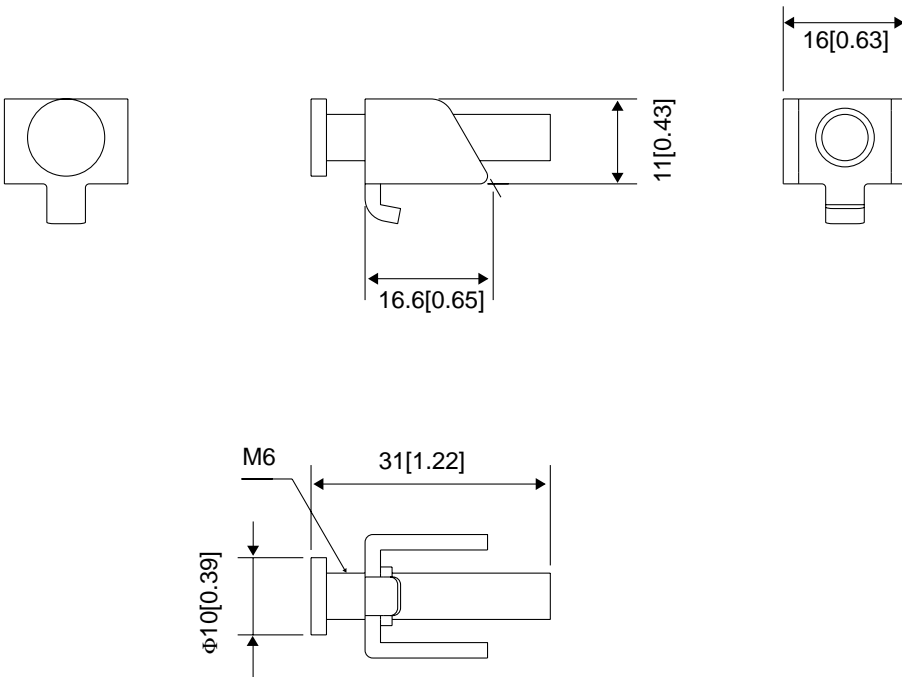
■ Panel Cut Dimensions

Unit: mm[in.]



■ Installation Fasteners

Unit: mm[in.]



2.2 GP-3400 Series

2.2.1 General Specifications

■Electrical Specifications

		GP-3400 Series
Power Supply	Input Voltage	DC24V
	Rated Voltage	DC19.2 to 28.8V
	Allowable Voltage	10m (max.)
	Power Consumption	28W (max.)
	In-Rush Current	30 (max.)
Voltage Endurance		AC500V 20mA for 1 minute (between charging and FG terminals)
Insulation Resistance		DC500V 10M Ω (min.) (between charging and FG terminals)

■Environmental Specifications

Physical	Ambient Operating Temperature	0 to +50°C*1
	Storage Temperature	-20 to +60°C
	Ambient Humidity	10 to 90% RH (Wet bulb temperature: 39°C max. - no condensation.)
	Storage Humidity	10 to 90% RH (Wet bulb temperature: 39°C max. - no condensation.)
	Dust	0.1mg/m ³ and below (non-conductive levels)
	Pollution Degree	Pollution Degree 2
	Atmosphere	Free of corrosive gases
	Air Pressure Vibration Resistance (availment altitude)	800 to 1114hPa (2,000 meters above sea-level and below)
Mechanical	Vibration Resistance	IEC61131-2 compliant 5 to 9Hz single-amplitude 3.5mm 9 to 150Hz constant-accelerated velocity 9.8m/s ² X,Y,Z directions for 10 time (100 minute)
	Concussion Resistance	IEC61131-2 compliant (147m/s ² X,Y,Z directions for 3 time)
Electrical	Noise Immunity	Noise Voltage: 1000V _{P-P} Pulse Duration: 1 μ s Rise Time: 1ns (via noise simulator)
	Electrostatic Discharge Immunity	6kV (complies with EN 61000-4-2 Level 3)

*1 When using STN Color LCD model in an environment where the temperature becomes or exceeds 40°C for an extended period of time, the screen contrast level may decrease from its original level of brightness.

■ Structural Specifications

Installation	Grounding	Grounding resistance of 100Ω 2mm ² or thicker wire, or your country's applicable standard. (Same for FG and SG terminals)
	Structure *1	Rating: Equivalent to IP65f NEMA #250 TYPE 4X/13 Installation method: Panel/VESA Arm (Front surface at panel embedding) Feature size: All-in-one Installation configuration: Panel embedding
	Cooling Method	Natural air circulation
	Weight Approx.	1.8kg[4.0lb]max. (unit only)
	External Dimensions	W215mm[8.46in] X H170mm[6.69in] X D60mm[2.36in]
	Panel Cut Dimensions	W204.5mm[8.05in] X H159.5mm[6.28in]*2

*1 The front face of the GP unit, installed in a solid panel, has been tested using conditions equivalent to the standards shown in the specification. Even though the GP unit's level of resistance is equivalent to these standards, oils that should have no effect on the GP can possibly harm the unit. This can occur in areas where either vaporized oils are present, or where low viscosity cutting oils are allowed to adhere to the unit for long periods of time. If the GP's front face protection sheet becomes peeled off, these conditions can lead to the ingress of oil into the GP and separate protection measures are suggested.

Also, if non-approved oils are present, it may cause deformation or corrosion of the front panel's plastic cover. Therefore, prior to installing the GP be sure to confirm the type of conditions that will be present in the GP's operating environment.

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

*2 As for dimensional tolerance everything $+1/-0$ mm and R in angle are below R3.
Installation board conformity board thickness: 1.6 to 10.0mm

■ Performance Specifications

		AGP-3400*	AGP-3450T
Application**1		FLASH EPROM 8MB	
Data Backup		SRAM 320K bite	
		Used lithium battery for backup memory	
Interface	Serial Interface	COM1: RS232C/RS422/RS485 Asynchronous Transmission: Data Length: 7 bite/8 bite Parity: none, Odd or Even Stop Bit: 1bite/2bite Data transmission Speed: 2400 to 115.2Kbps Connector: D-SUB-9pin plug COM2: RS422/RS485 Asynchronous Transmission Data Length: 7 bitebite/8 bite Parity: none, Odd or Even Stop Bit: 1bite/2bite Data transmission Speed: 2400 bps to 115.2 Kbps 187.5 Kbps to 12 Mbps Connector: DSUB-9pin plug	
	Ethernet Interface	IEEE802.3u,10BASE-T/100BASE-TX Connector: modular jack connector (RJ-45)	
	Expansion Unit Interface	Expansion Unit Interface (external/internal)	
	USB Host Interface	USB1.1 Host I/F, USB TYPE-A connector x 1	
	Expansion Memory Interface	0.6mm pitch 80pin stacking port	
	CF Card Interface	Compact Flash CF Card Slot (TYPE-II)	
	Video Input Interface	-	NTSC: 59.9Hz PAL: 50Hz Connector: RCA 75Ω
	Sound Input Interface	-	MIC input/LINE input (Change with S/W) Connector: MINI-JACK Φ3.5
	Sound Output Interface	Speaker Output 70mW(Rated Load: 8Ω, Frequency: 1KHz) Connector: Two piece type terminal block	
	AUX Input/Output Interface	Alarm Output, RUN Output, Buzzer Output Rated Voltage: DC24V Rated Current: 50mA Remote Reset Input Input Voltage: DC24V Input Current: 6mA Operating Voltage: (When ON) Min.: DC9V, (When OFF) Max. DC2.5V Two piece type terminal block	
Clock Accuracy**2		±65 seconds/ month (at room temperature)	

*1 It is user active capacity.

- *2 The GP's internal clock has a slight error. At normal operating temperatures and conditions, with the GP operating from its lithium battery, the degree of error is 65 seconds per month. Variations in operating conditions and battery life can cause this error to vary from -380 to +90 seconds per month. For systems where this degree of error will be a problem, the user should be sure to monitor this error and make adjustments when required.

SEE →*4.2 Home ■ Time Setting (page4-10)***NOTE**

- A Lithium battery's lifetime is: 10 years when the battery's ambient temperature is 40°C or less.
4.1 years when the battery's ambient temperature is 50°C or less. 1.5 years when the battery's ambient temperature is 60°C or less.

When used for backup:

Approximately 100 days, with a fully charged battery.

Approximately 6 days, with a half-charged battery.

■Display Specifications

		AGP-3400S	AGP-3400T	AGP-3450T
Display Type		STN Color LCD	TFT Color LCD	
Resolution		W640 X H480 pixels		
Dot pitch		W0.237[0.01in]mm X H0.237mm[0.01in]		
Effective Display Area		W153.7[6.05in]mm X H115.8mm[4.56in]		
Color/Shade level		4,096 Colors	65,536 Colors	
Backlight		CCFL		
Brightness control		8 levels of adjustment available via touch panel		
Contrast Adjustment		8 levels of adjustment available via touch panel		
Display Service Life		MTBF value: 50, 000hrs. or more (Backlight display service life is not included.)	MTBF value: 52, 000hrs. or more (Backlight display service life is not included.)	
Backlight Service Life		54,000hrs. or more (at 25°C and continuous operation - period until backlight brightness decreases to 50% or backlight starts to flicker)		
Language Fonts		Japanese: 6962 (JIS Standards 1 & 2)(including 607 non-kanji characters) ANK: 158 (Korean fonts, Simplified Chinese and Taiwanese traditional Chinese fonts are downloadable.		
Text composition	Character Sizes	Standard font: 8X8, 8X16, 16X16 and 32X32 dot fonts Stroke font: 6 to 127dot fonts		
	Font Sizes	Standard font: Width can be expanded up to 8 times. Height can be expanded up to 8 times ^{*1}		
Text	8 X 8 dots	80 Char. X 60 rows		
	8 X 16 dots	80 Char. X 30 rows		
	16 X 16 dots	40 Char. X 30 rows		
	32 X 32 dots	20 Char. X 15 rows		

^{*1} Font Sizes can be set up by software.

■Touch Panel Specifications

Type	Resistive Film (analog)
Resolution	1024 X 1024
Service Life	1,000,000 times or more

2.2.3 Interface Specifications

This section describes the specifications of each interface of the GP Series unit.

IMPORTANT

- The GP unit's serial port is not isolated. When the host (PLC) unit is also not isolated, be sure to connect the #5 SG (Signal Ground) terminal to reduce the risk of damaging the RS232C/RS422/RS485 circuit.
- When connecting an external device to the GP using the SG terminal, be sure to check that no short-circuit loop is created when you setup the system.

■ Serial Interfaces

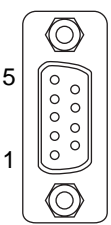
◆ Serial Interface (COM1)

This interface is used to connect an RS232C/RS422/RS485 serial cable. A D-sub 9-pin socket connector is used.

Communication method is switched via software

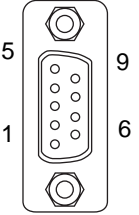
GP Connector	XM2C-0942-502LX <OMRON Co.>
Interfit bracket	#4-40 inch screws are used.
Recommended cable Connector	XM2Z-0073 <OMRON Co.>
Recommended cable Cover	XM2D-0901 <OMRON Co.>
Recommended Jack Screw	XM2S-0913 <OMRON Co.>

In the case of RS232C

Pin Arrangement	Pin No.	RS232C		
		Signal Name	Direction	Meaning
	1	CD	Input	Carrier Detect
	2	RD(RXD)	Input	Receive Data
	3	SD(TXD)	Output	Send Data
	4	ER(DTR)	Output	Data Terminal Ready
	5	SG	-	Signal Ground
	6	DR(DSR)	Input	Data Set Ready
	7	RS(RTS)	Output	Request to Send
	8	CS(CTS)	Input	Send Possible
	9	CI(RI)/VCC	Input/-	Called status display +5V±5% Output 0.25A *1
	Shell	FG	-	Frame Ground (Common with SG)

*1 The RI/VCC selection for Pin #9 is switched via software. The VCC output is not protected against overcurrent. To prevent damage or a unit malfunction, use only the rated current.

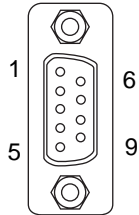
In the case of RS422/RS485

Pin Arrangement	Pin No.	RS422/RS485		
		Signal Name	Direction	Meaning
	1	RDA	Input	Receive Data A(+)
	2	RDB	Input	Receive Data B(-)
	3	SDA	Output	Send Data A(+)
	4	ERA	Output	Data Terminal Ready A(+)
	5	SG	-	Signal Ground
	6	CSB	Input	Send Possible B(-)
	7	SDB	Output	Send Data B(-)
	8	CSA	Input	Send Possible A(+)
	9	ERB	Output	Data Terminal Ready B(-)
	Shell	FG	-	Frame Ground (Common with SG)

◆Serial Interface (COM2)

This interface is used to connect an RS422/RS485 serial cable. A D-sub 9-pin plug connector is used.

GP Connector	XM3B-0942-502LX <OMRON Co.>
Interfit bracket	#4-40 inch screws are used.
Recommended cable Connector	XM2Z-0073 <OMRON Co.>
Recommended cable Cover	XM2A-0901 <OMRON Co.>
Recommended Jack Screw	XM2S-0913 <OMRON Co.>

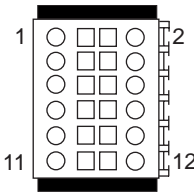
Pin Arrangement	Pin No.	RS422/RS485		
		Signal Name	Direction	Meaning
	1	TRMRX	-	Termination (Receiver side: 100Ω)
	2	RDA	Input	Receive Data A(+)
	3	SDA	Output	Send Data A(+)
	4	RS(RTS)	Output	Request for Send
	5	SG	-	Signal Ground
	6	VCC	-	+5V±5% Output 0.25A ^{*1}
	7	RDB	Input	Receive DataB(-)
	8	SDB	Output	Send Data B(-)
	9	TRMTX	-	Termination (Receiver side: 100Ω)
	Shell	FG	-	Frame Ground (Common with SG)

*1 The VCC output for Pin #6 is not protected against overcurrent. To prevent damage or a unit malfunction, use only the rated current.

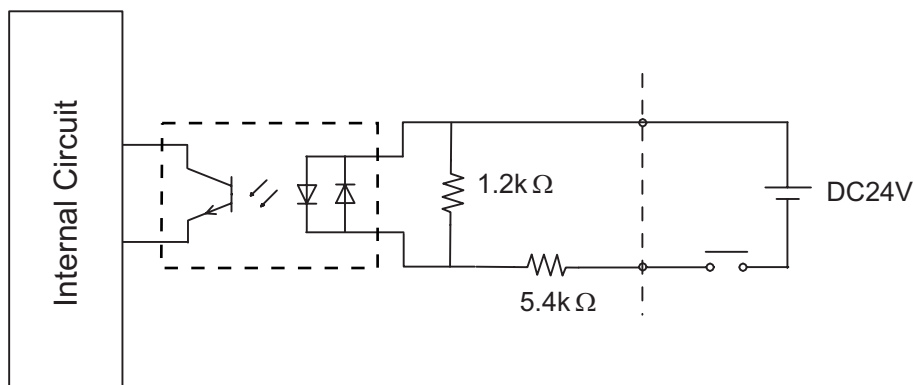
■ Sound Output/AUX Input/Output Interface

This interface is used for external reset, alarm output, buzzer output or sound output.

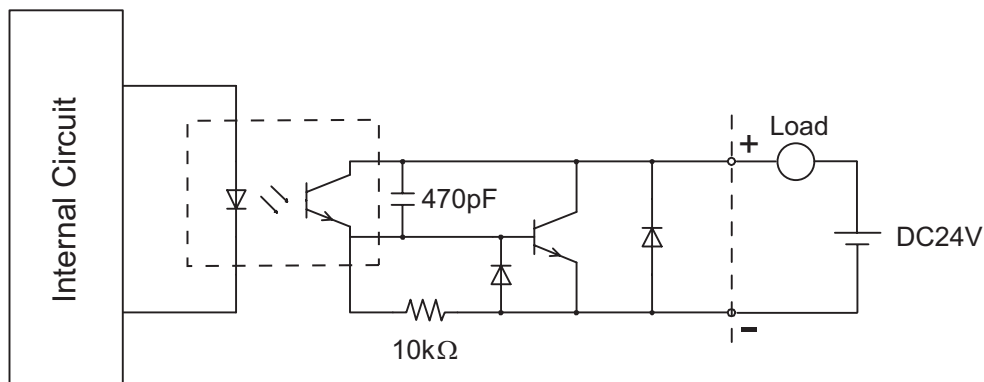
GP Connector	S2L3.5/12/90F <made by Weidmuller>
Terminal Block	B2L3.5/12LH <made by Weidmuller>

Pin Arrangement	Pin#	Signal Name	Direction	Meaning
	1	RESET IN_A	Input	External Reset Input
	2	RESET IN_B	Input	
	3	RUN+	Output	RUN Signal
	4	RUN-	Output	
	5	ALARM+	Output	ALARM Signal
	6	ALARM-	Output	
	7	BUZZER+	Output	Buzzer Signal
	8	BUZZER-	Output	
	9	NC	-	Not Connected
	10	NC	-	Not Connected
	11	SP	Output	Speaker Out
	12	SP_GND	Output	Speaker Ground

• Input Circuit



• Output Circuit



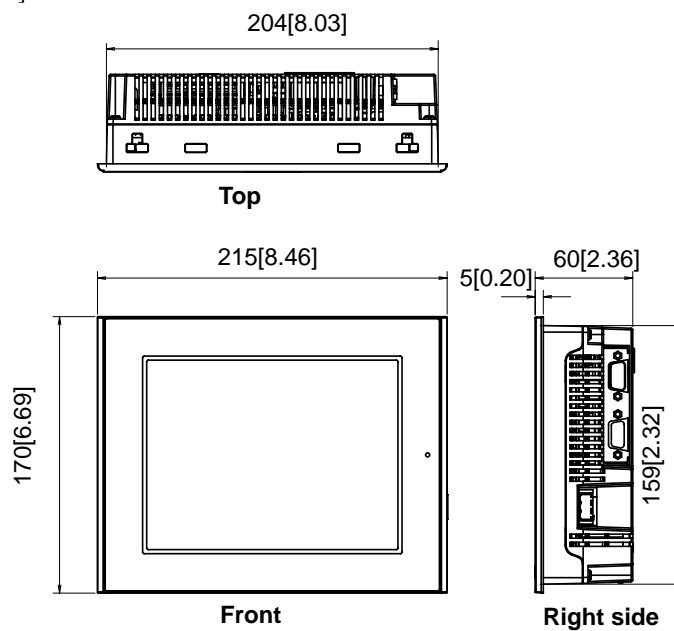
2.2.4 Dimensions

The following dimensions apply to all GP-3400 Series units.

The dimensions of the AGP-3400* are the same. The following drawings show the AGP-3450T.

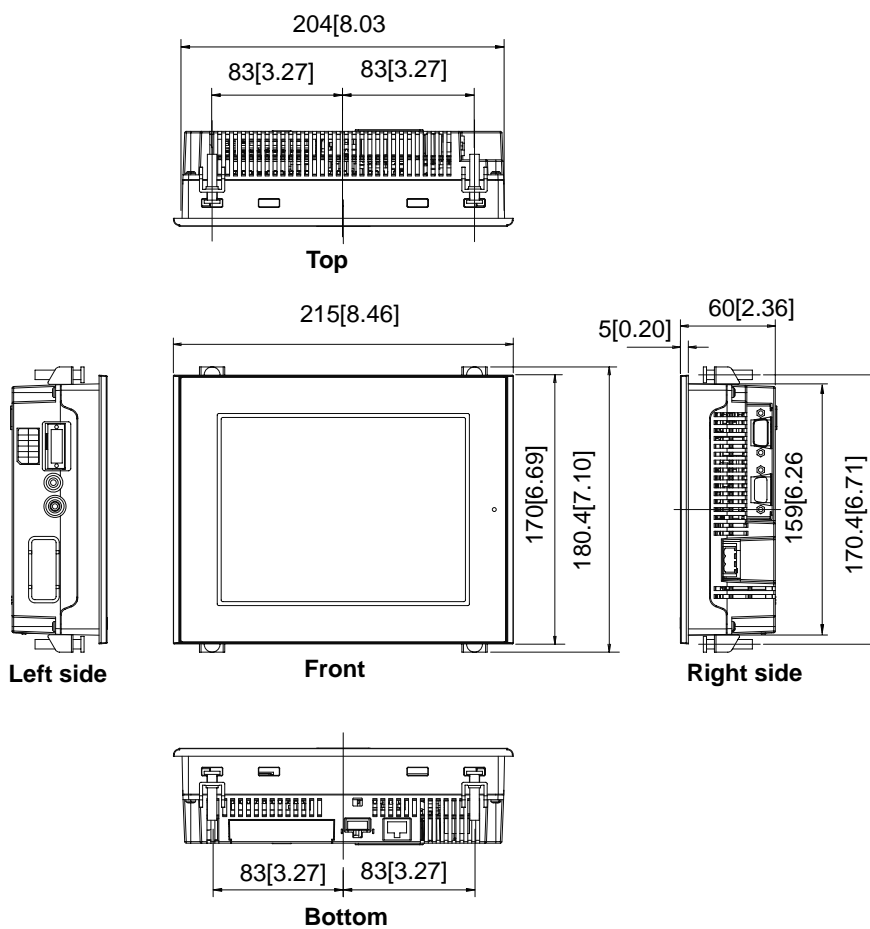
■ External Dimensions

Unit: mm[in.]



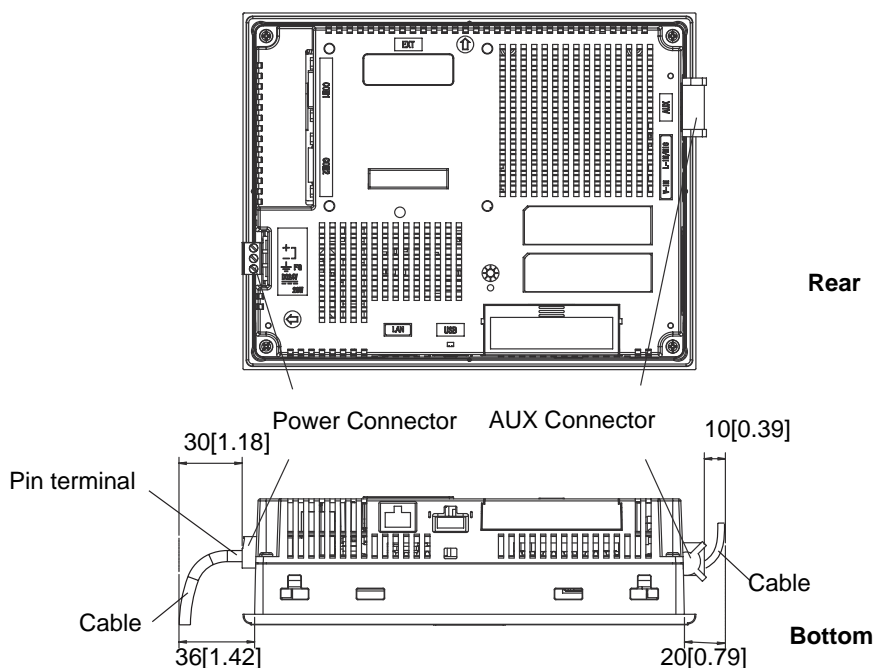
■ Installation Fasteners Attached Dimensions

Unit: mm[in.]



■Connector Attached Dimensions

Unit:mm[in.]

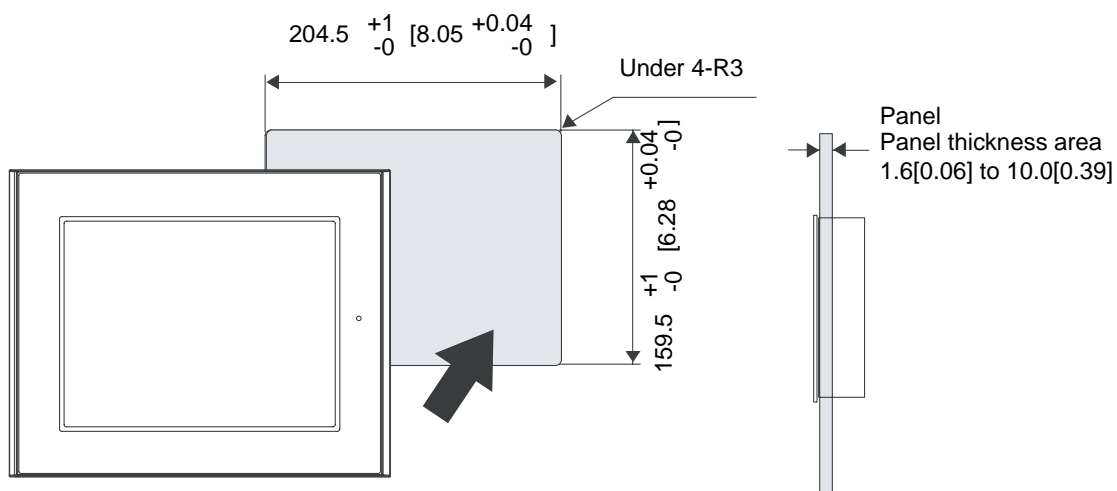


IMPORTANT

- Depending on the type of connection cable used the dimensions shown above will change. The dimensions given here are representative values and are intended for reference only.

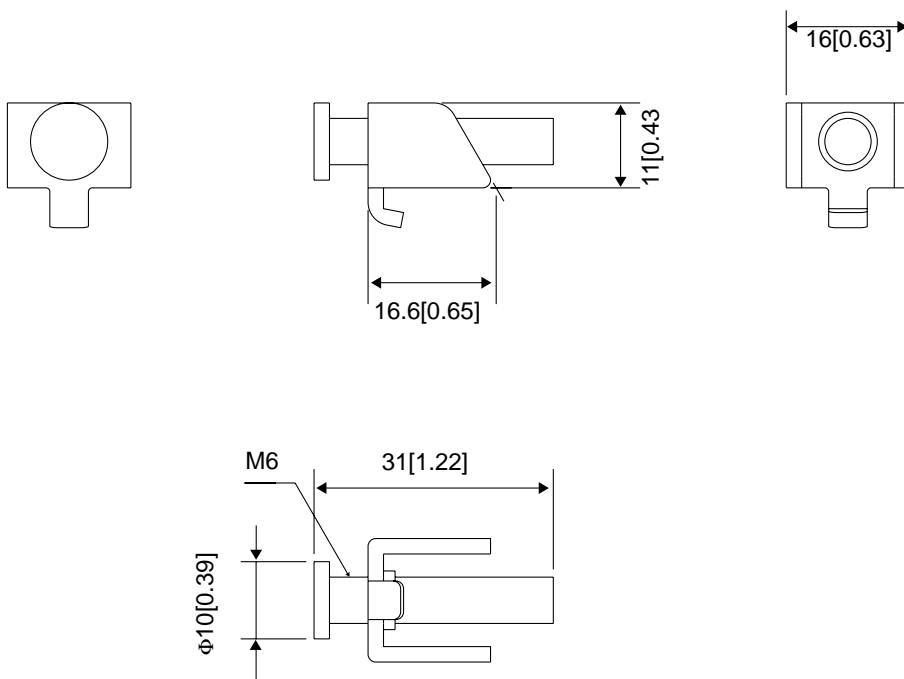
■Panel Cut Dimensions

Unit: mm[in.]



■ Installation Fasteners

Unit: mm[in.]



2.3 GP-3500 Series

2.3.1 General Specifications

■Electrical Specifications

		DC model	AC model	
Power Supply	Input Voltage		DC24V	AC100 to 240V
	Rated Voltage		DC19.2 to 28.8V	AC85 to 265V
	Rated frequency		-	50/60Hz
	Rated frequency range		-	40 to 72Hz
	Allowable Voltage		10ms or less	Shorter than 1cycle (Instantaneous power failure time: 1s or less)
	Power Consumption	AGP-3500T AGP-3550T	DC24V 2.08A or less (TYP 1.22A)	AC100V 0.9A or less (TYP 0.58A) AC240V 0.45A or less (TYP 0.29A)
		AGP-3500L AGP-3500S	DC24V 2.08A or less (TYP 1.08A)	AC100V 0.90A or less (TYP 0.45A) AC240V 0.45A or less (TYP 0.26A)
	In-Rush Current		30A or less	60A or less
Voltage Endurance		AC500V 20mA 1minute (between charging and FG terminals)	AC1500V 20mA 1minute (between charging and FG terminals)	
Insulation Resistance		10MΩ or higher at DC500V(min.) (between charging and FG terminals)	10MΩ or higher at DC500V(min.) (between charging and FG terminals)	

■Environmental Specifications

Physical	Ambient Operating Temperature	0 to +50°C*1
	Storage Temperature	-20 to +60°C
	Ambient Humidity	10 to 90% RH (Wet bulb temperature: 39°C max. - no condensation.)
	Storage Humidity	10 to 90% RH (Wet bulb temperature: 39°C max. - no condensation.)
	Dust	0.1mg/m ³ and below (non-conductive levels)
	Pollution Degree	Pollution Degree 2
	Atmosphere	Free of corrosive gases
	Air Pressure Vibration Resistance (availment altitude)	800 to 1114hPa (2,000 meters above sea-level and below)
Mechanical	Vibration Resistance	IEC61131-2 compliant 5 to 9Hz single-amplitude 3.5mm 9 to 150Hz constant-accelerated velocity 9.8m/s ² X,Y,Z directions for 10 time (100 minute)
	Concussion Resistance	IEC61131-2 compliant (147m/s ² X,Y,Z directions for 3 time)
Electrical	Noise Immunity	Noise Voltage: 1000V _{P-P} (DC model) 1500V _{P-P} (AC model) Pulse Duration: 1μs Rise Time: 1ns (via noise simulator)
	Electrostatic Discharge Immunity	6kV (complies with EN 61000-4-2 Level 3)

*1 When using STN Color LCD model in an environment where the temperature becomes or exceeds 40°C for an extended period of time, the screen contrast level may decrease from its original level of brightness.

■ Structural Specifications

Installation	Grounding	Grounding resistance of 100Ω 2mm ² or thicker wire, or your country's applicable standard. (Same for FG and SG terminals)
	Structure* ¹	Rating: Equivalent to IP65f NEMA #250 TYPE 4X/13 Installation method: Panel/VESA Arm (Front surface at panel embedding) Feature size: All-in-one Installation configuration: Panel embedding
	Cooling Method	Natural air circulation
	Weight Approx.	AGP-3500T/3550T: 2.5kg[5.5lb] max. (unit only) AGP-3500L/3500S: 3.0kg[6.6lb] max. (unit only)
	External Dimensions	AGP-3500T/3550T: W270.5mm[10.65in] X H212.5mm[8.37in] X D57mm[2.24in] AGP-3500L/3500S: W313mm[12.32in] X H239mm[9.41in] X D56mm[2.20in]
	Panel Cut Dimensions	AGP-3500T/3550T: W259mm[10.20in] X H201mm[7.91in] ^{*2} AGP-3500L/3500S: W301.5mm[11.87in] X H227.5mm[8.96in] ^{*2}

- *1 The front face of the GP unit, installed in a solid panel, has been tested using conditions equivalent to the standards shown in the specification. Even though the GP unit's level of resistance is equivalent to these standards, oils that should have no effect on the GP can possibly harm the unit. This can occur in areas where either vaporized oils are present, or where low viscosity cutting oils are allowed to adhere to the unit for long periods of time. If the GP's front face protection sheet becomes peeled off, these conditions can lead to the ingress of oil into the GP and separate protection measures are suggested.
- Also, if non-approved oils are present, it may cause deformation or corrosion of the front panel's plastic cover. Therefore, prior to installing the GP be sure to confirm the type of conditions that will be present in the GP's operating environment.

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

- *2 As for dimensional tolerance everything +1/-0mm and R in angle are below R3.
Installation board conformity board thickness: 1.6 to 10.0mm

		AGP-3500L/3500S	AGP-3500T	AGP-3550T
Application ^{*1}		FLASH EPROM 8MB		
Data Backup		SRAM 320K bite		
		Used lithium battery for backup memory		
Interface	Serial Interface	COM1: RS232C/RS422/RS485 Asynchronous Transmission Data Length: 7 bite/8 bite Parity: none, Odd or Even Stop Bit: 1bite/2bite Data transmission Speed: 2400 to 115.2Kbps Connector: D-SUB-9pin plug COM2: RS422/RS485 Asynchronous Transmission Data Length: 7 bitebite/8 bite Parity: none, Odd or Even Stop Bit: 1bite/2bite Data transmission Speed: 2400 bps to 115.2 Kbps 187.5 Kbps to 12 Mbps Connector: DSUB-9pin plug		
	Ethernet Interface	IEEE802.3u,10BASE-T/100BASE-TX Connector: modular jack connector (RJ-45)		
	Expansion Unit Interface	Expansion Unit Interface (external/internal)		
	USB Host Interface	USB1.1 Host I/F, USB TYPE-A connector x 2		
	Expansion Memory Interface	0.6mm pitch 80pin stacking port		
	CF Card Interface	Compact Flash CF Card Slot (TYPE-II)		
	Video Input Interface	-	NTSC: 59.9Hz PAL: 50Hz Connector: RCA 75Ω	
	Sound Input Interface	-	MIC input/LINE input (Change with S/W) Connector: MINI-JACK Φ3.5	
	Sound Output Interface	Speaker Output 70mW(Rated Load: 8Ω, Frequency: 1KHz) Connector: Two piece type terminal block		
	AUX Input/ Output Interface	Alarm Output, RUN Output, Buzzer Output Rated Voltage: DC24V Rated Current: 50mA		
Remote Reset Input Input Voltage: DC24V Input Current: 6mA Operating Voltage: (When ON) Min.: DC9V, (When OFF) Max. DC2.5V Two piece type terminal block				
Clock Accuracy ^{*2}		±65 seconds/ month (at room temperature)		

*1 It is user active capacity.

- *2 The GP's internal clock has a slight error. At normal operating temperatures and conditions, with the GP operating from its lithium battery, the degree of error is 65 seconds per month. Variations in operating conditions and battery life can cause this error to vary from -380 to +90 seconds per month. For systems where this degree of error will be a problem, the user should be sure to monitor this error and make adjustments when required.

SEE →*4.2 Home ■ Time Setting (page4-10)***NOTE**

- A Lithium battery's lifetime is: 10 years when the battery's ambient temperature is 40°C or less.
4.1 years when the battery's ambient temperature is 50°C or less. 1.5 years when the battery's ambient temperature is 60°C or less.

When used for backup:

Approximately 100 days, with a fully charged battery.

Approximately 6 days, with a half-charged battery.

■Display Specifications

		AGP-3500L	AGP-3500S	AGP-3500T	AGP-3550T
Display Type		Monochrome LCD	STN Color LCD	TFT Color LCD	
Resolution		W640 X H480 pixels			
Dot pitch		W0.33mm X H0.33mm			
Effective Display Area		W216.0[8.5in]mm X H160.8[6.33in]mm	W215.2mm[8.43in] X H162.3[6.39in]mm	W211.2[8.31in]mm X H158.4[6.24in]mm	
Color/Shade level		Black and White (16 Shades)	4,096 Colors	65,536 Colors	
Backlight		CCFL (Not user replaceable. When replacement is required, contact your local GP distributor.)	CCFL	CCFL	
Brightness control		8 levels of adjustment available via touch panel			
Contrast Adjustment		8 levels of adjustment available via touch panel			
Display Service Life		MTBF value: 50, 000hrs. or more (Backlight display service life is not included.)			
Backlight Service Life		50,000hrs. or more (at 25°C and continuous operation - period until backlight brightness decreases to 50% or backlight starts to flicker)			
Language Fonts		Japanese: 6962 (JIS Standards 1 & 2)(including 607 non-kanji characters) ANK: 158 (Korean fonts, Simplified Chinese and Taiwanese traditional Chinese fonts are downloadable.			
Text composition	Character Sizes	Standard font: 8X8, 8X16, 16X16 and 32X32 dot fonts Stroke font: 6 to 127dot fonts			
	Font Sizes	Standard font: Width can be expanded up to 8 times. Height can be expanded up to 8 times ^{*1}			
Text	8 X 8 dots	80 Char. X 60 rows			
	8 X 16 dots	80 Char. X 30 rows			
	16 X 16 dots	40 Char. X 30 rows			
	32 X 32 dots	20 Char. X 15 rows			

*1 Font Sizes can be set up by software.

■Touch Panel Specifications

Type	Resistive Film (analog)
Resolution	1024 X 1024
Service Life	1,000,000 times or more

2.3.3 Interface Specifications

This section describes the specifications of each interface of the GP Series unit.

IMPORTANT

- The GP unit's serial port is not isolated. When the host (PLC) unit is also not isolated, be sure to connect the #5 SG (Signal Ground) terminal to reduce the risk of damaging the RS232C/RS422/RS485 circuit.
- When connecting an external device to the GP using the SG terminal, be sure to check that no short-circuit loop is created when you setup the system.

■ Serial Interfaces

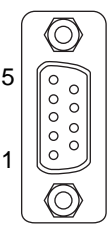
◆ Serial Interface (COM1)

This interface is used to connect an RS232C/RS422/RS485 serial cable. A D-sub 9-pin socket connector is used.

Communication method is switched via software

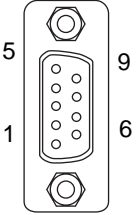
GP Connector	XM2C-0942-502LX <OMRON Co.>
Interfit bracket	#4-40 inch screws are used.
Recommended cable Connector	XM2Z-0073 <OMRON Co.>
Recommended cable Cover	XM2D-0901 <OMRON Co.>
Recommended Jack Screw	XM2S-0913 <OMRON Co.>

In the case of RS232C

Pin Arrangement	Pin No.	RS232C		
		Signal Name	Direction	Meaning
	1	CD	Input	Carrier Detect
	2	RD(RXD)	Input	Receive Data
	3	SD(TXD)	Output	Send Data
	4	ER(DTR)	Output	Data Terminal Ready
	5	SG	-	Signal Ground
	6	DR(DSR)	Input	Data Set Ready
	7	RS(RTS)	Output	Request to Send
	8	CS(CTS)	Input	Send Possible
	9	CI(RI)/VCC	Input/-	Called status display +5V±5% Output 0.25A ^{*1}
	Shell	FG	-	Frame Ground (Common with SG)

*1 The RI/VCC selection for Pin #9 is switched via software. The VCC output is not protected against overcurrent. To prevent damage or a unit malfunction, use only the rated current.

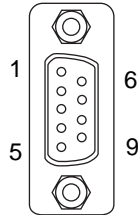
In the case of RS422/RS485

Pin Arrangement	Pin No.	RS422/RS485		
		Signal Name	Direction	Meaning
	1	RDA	Input	Receive Data A(+)
	2	RDB	Input	Receive Data B(-)
	3	SDA	Output	Send Data A(+)
	4	ERA	Output	Data Terminal Ready A(+)
	5	SG	-	Signal Ground
	6	CSB	Input	Send Possible B(-)
	7	SDB	Output	Send Data B(-)
	8	CSA	Input	Send Possible A(+)
	9	ERB	Output	Data Terminal Ready B(-)
	Shell	FG	-	Frame Ground (Common with SG)

◆Serial Interface (COM2)

This interface is used to connect an RS422/RS485 serial cable. A D-sub 9-pin plug connector is used.

GP Connector	XM3B-0942-502LX <OMRON Co.>
Interfit bracket	#4-40 inch screws are used.
Recommended cable Connector	XM2Z-0073 <OMRON Co.>
Recommended cable Cover	XM2A-0901 <OMRON Co.>
Recommended Jack Screw	XM2S-0913 <OMRON Co.>

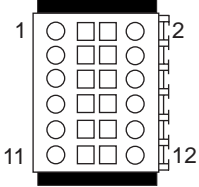
Pin Arrangement	Pin No.	RS422/RS485		
		Signal Name	Direction	Meaning
	1	TRMRX	-	Termination (Receiver side: 100Ω)
	2	RDA	Input	Receive Data A(+)
	3	SDA	Output	Send Data A(+)
	4	RS(RTS)	Output	Request for Send
	5	SG	-	Signal Ground
	6	VCC	-	+5V±5% Output 0.25A ^{*1}
	7	RDB	Input	Receive DataB(-)
	8	SDB	Output	Send Data B(-)
	9	TRMTX	-	Termination (Receiver side: 100Ω)
	Shell	FG	-	Frame Ground (Common with SG)

*1 The VCC output for Pin #6 is not protected against overcurrent. To prevent damage or a unit malfunction, use only the rated current.

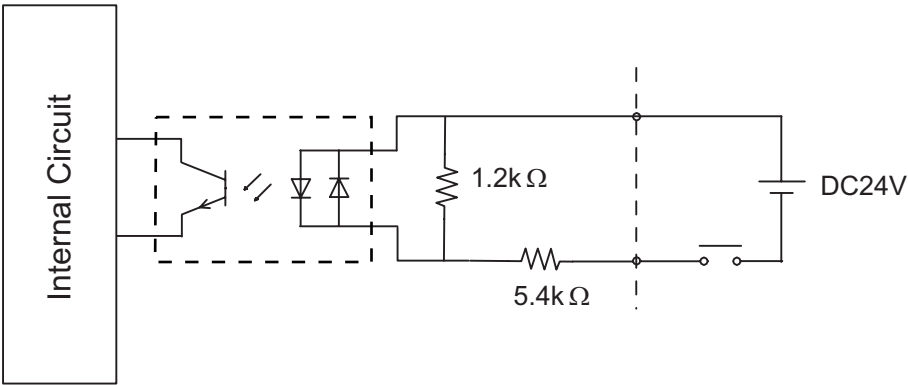
■ Sound Output/AUX Input/Output Interface

This interface is used for external reset, alarm output, buzzer output or sound output.

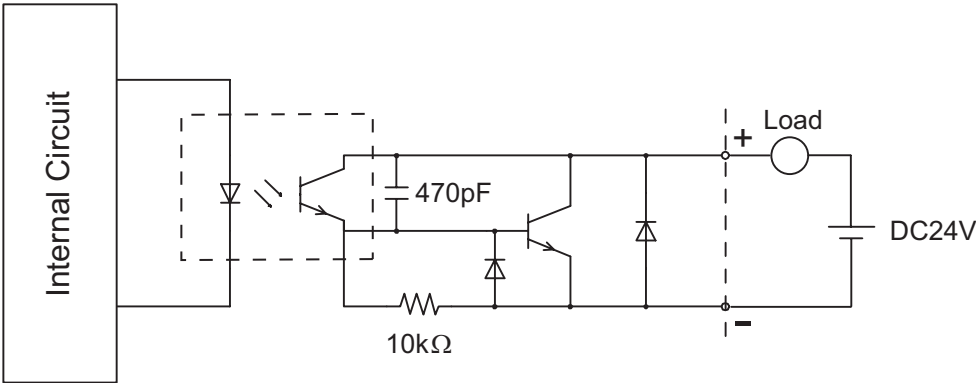
GP Connector	S2L3.5/12/180F <made by Weidmuller>
Terminal Block	B2L3.5/12LH <made by Weidmuller>

Pin Arrangement	Pin#	Signal Name	Direction	Meaning
	1	RESET IN_A	Input	External Reset Input
	2	RESET IN_B	Input	
	3	RUN+	Output	RUN Signal
	4	RUN-	Output	
	5	ALARM+	Output	ALARM Signal
	6	ALARM-	Output	
	7	BUZZER+	Output	Buzzer Signal
	8	BUZZER-	Output	
	9	NC	-	Not Connected
	10	NC	-	Not Connected
	11	SP	Output	Speaker Out
	12	SP_GND	Output	Speaker Ground

• Input Circuit



• Output Circuit



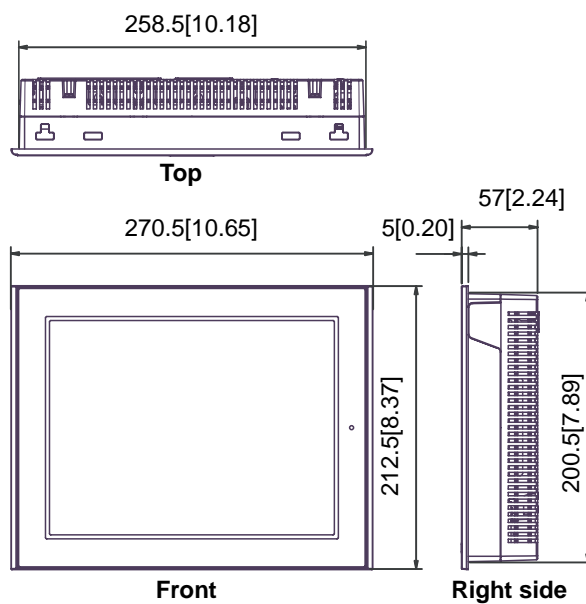
2.3.4 Dimensions

The following dimensions apply to all GP-3500 Series units.

■ External Dimensions

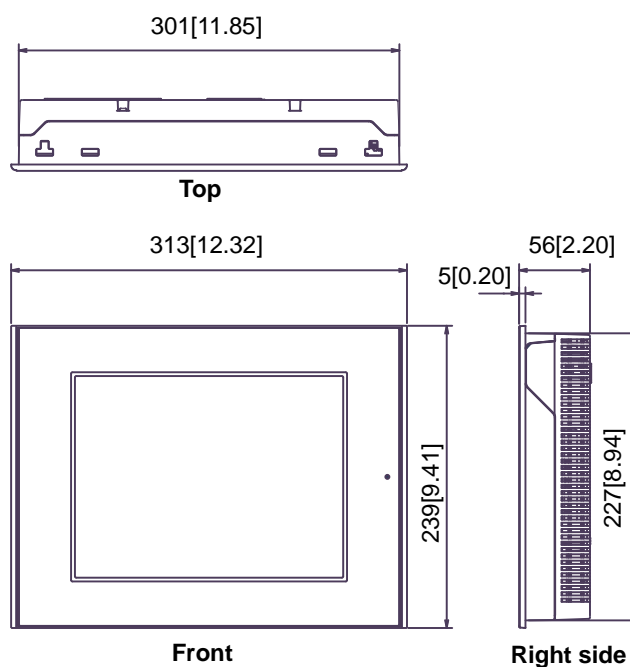
◆ GP-3500T/3550T

Unit: mm[in.]



◆ GP-3500L/3500S

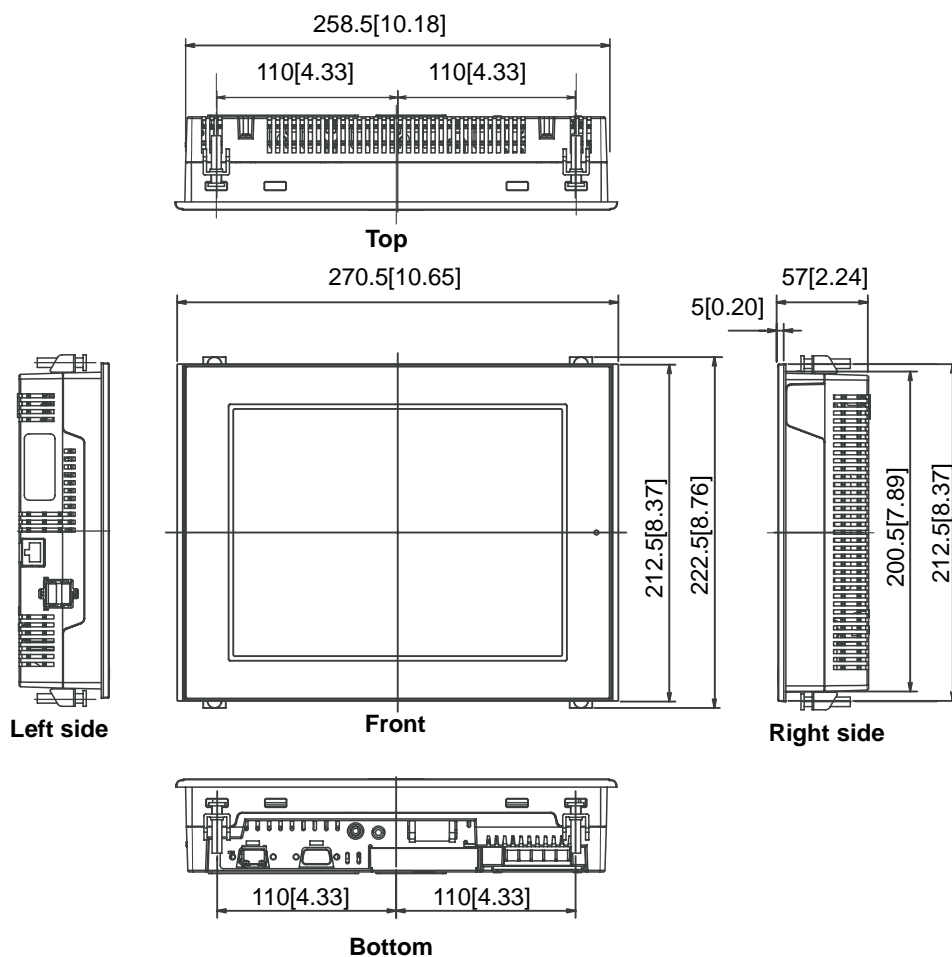
Unit: mm[in.]



■ Installation Fasteners Attached Dimensions

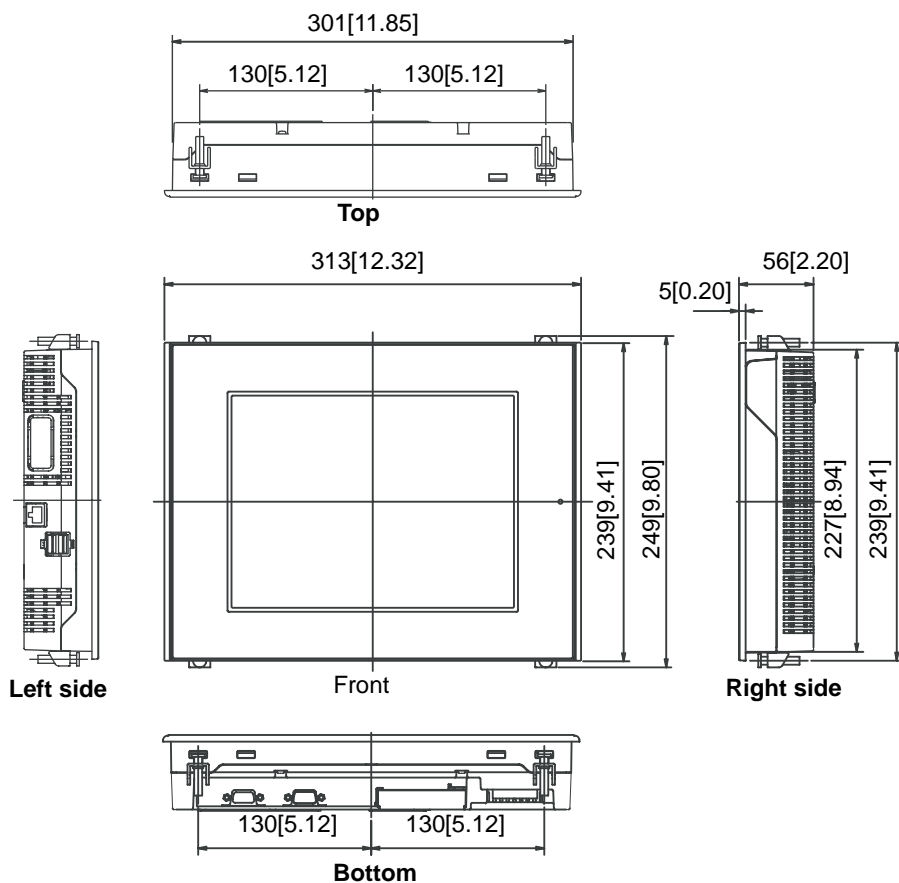
◆ GP-3500T/3550T

Unit: mm[in.]



◆GP-3500L/3500S

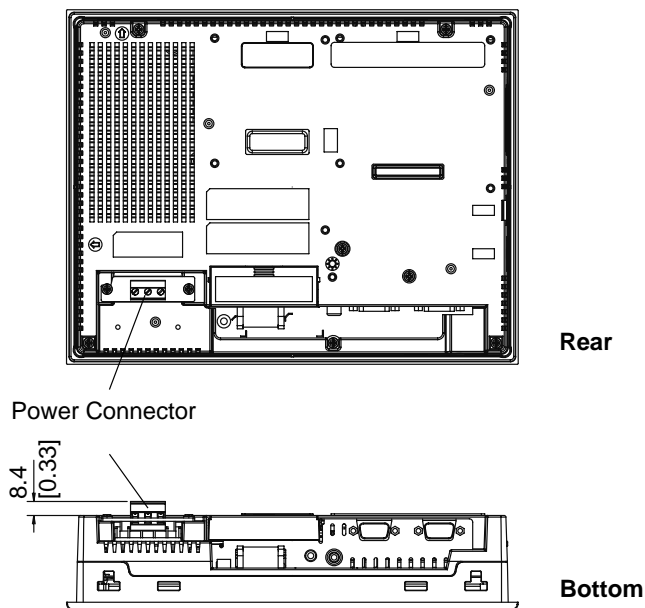
Unit: mm[in.]



■Connector Attached Dimensions

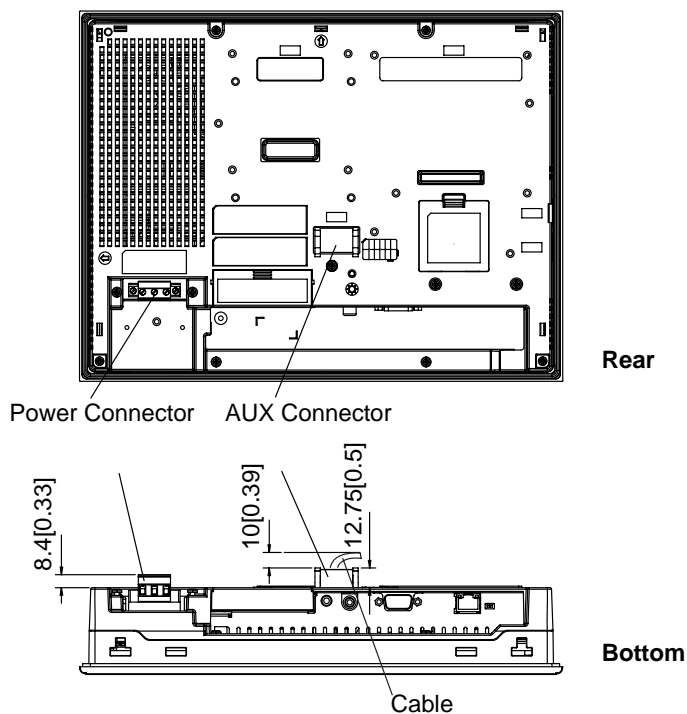
◆GP-3500T/3550T

Unit:mm[in.]



◆GP-3500T/3550T

Unit:mm[in.]



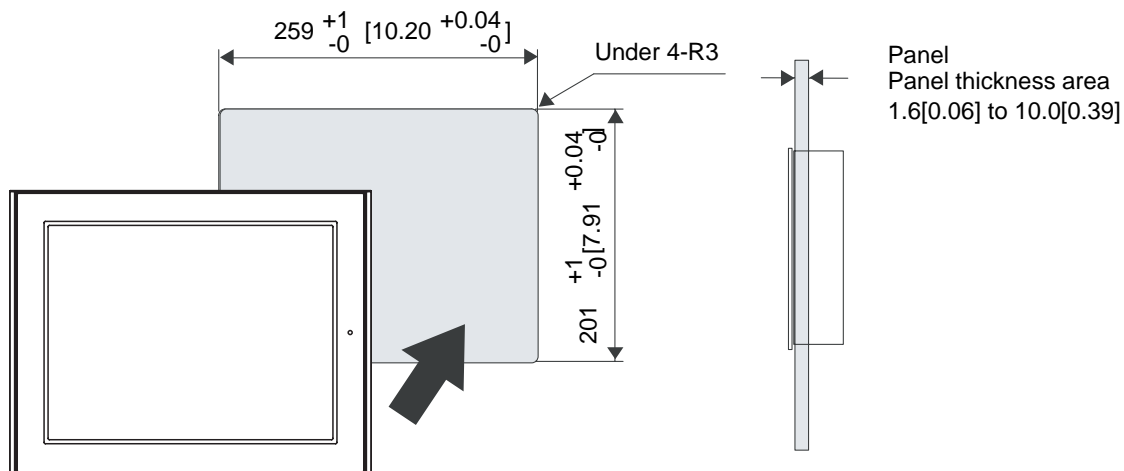
IMPORTANT

- Depending on the type of connection cable used the dimensions shown above will change. The dimensions given here are representative values and are intended for reference only.

■ Panel Cut Dimensions

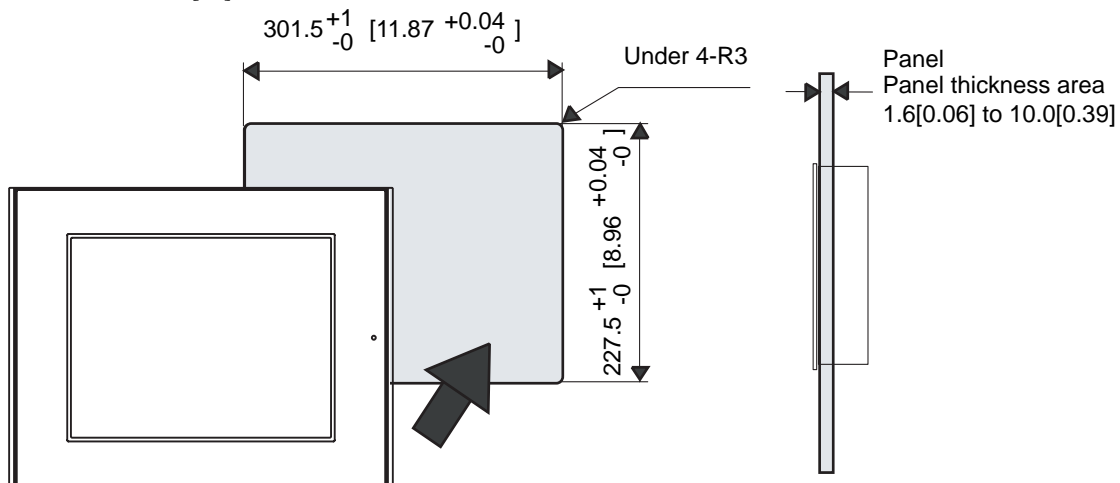
◆ GP-3500T/3550T

Unit: mm[in.]



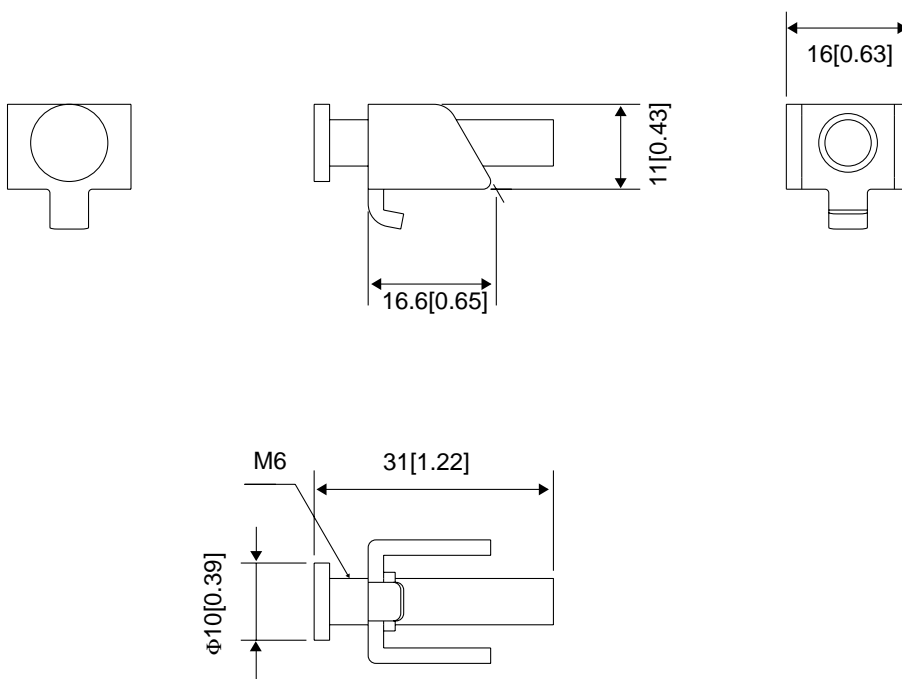
◆ GP-3500L/3500S

Unit: mm[in.]



■ Installation Fasteners

Unit: mm[in.]



2.4 GP-3600 Series

2.4.1 General Specifications

■Electrical Specifications

		DC model	AC model
Power Supply	Input Voltage	DC24V	AC100 to 240V
	Rated Voltage	DC19.2 to 28.8V	AC85 to 265V
	Rated frequency	-	50/60Hz
	Rated frequency range	-	40 to 72Hz
	Allowable Voltage	10ms or less	Shorter than 1cycle (Instantaneous power failure time: 1s or less)
	Power Consumption	DC24V 2.08A or less (TYP 1.30A)	AC100V 0.90A or less (TYP 0.55A) AC240V 0.45A or less (TYP 0.30A)
	In-Rush Current	30A or less	60A or less
Voltage Endurance		AC1000V 20mA 1minute (between charging and FG terminals)	AC1500V 20mA 1minute (between charging and FG terminals)
Insulation Resistance		10MΩ or higher at DC500V(min.) (between charging and FG terminals)	10MΩ or higher at DC500V(min.) (between charging and FG terminals)

■ Environmental Specifications

Physical	Ambient Operating Temperature	0 to +50°C ^{*1}
	Storage Temperature	-20 to +60°C
	Ambient Humidity	10 to 90% RH (Wet bulb temperature: 39°C max. - no condensation.)
	Storage Humidity	10 to 90% RH (Wet bulb temperature: 39°C max. - no condensation.)
	Dust	0.1mg/m ³ and below (non-conductive levels)
	Pollution Degree	Pollution Degree 2
	Atmosphere	Free of corrosive gases
	Air Pressure Vibration Resistance (availment altitude)	800 to 1114hPa (2,000 meters above sea-level and below)
Mechanical	Vibration Resistance	IEC61131-2 compliant 5 to 9Hz single-amplitude 3.5mm 9 to 150Hz constant-accelerated velocity 9.8m/s ² X,Y,Z directions for 10 time (100 minute)
	Concussion Resistance	IEC61131-2 compliant (147m/s ² X,Y,Z directions for 3 time)
Electrical	Noise Immunity	Noise Voltage: 1000V _{P-P} (DC model) 1500V _{P-P} (AC model) Pulse Duration: 1μs Rise Time: 1ns (via noise simulator)
	Electrostatic Discharge Immunity	6kV (complies with EN 61000-4-2 Level 3)

*1 When using STN Color LCD model in an environment where the temperature becomes or exceeds 40°C for an extended period of time, the screen contrast level may decrease from its original level of brightness.

■ Structural Specifications

Installation	Grounding	Grounding resistance of 100Ω 2mm ² or thicker wire, or your country's applicable standard. (Same for FG and SG terminals)
	Structure ^{*1}	Rating: Equivalent to IP65f NEMA #250 TYPE 4X/13 Installation method: Panel/VESA Arm (Front surface at panel embedding) Feature size: All-in-one Installation configuration: Panel embedding
	Cooling Method	Natural air circulation
	Weight Approx.	3.0kg[6.6lb]max. (unit only)
	External Dimensions	W313mm[12.32in] X H239mm[9.41in] X D56mm[2.20in]
	Panel Cut Dimensions	W301.5mm[11.87in] X H227.5mm[8.96in] ^{*2}

^{*1} The front face of the GP unit, installed in a solid panel, has been tested using conditions equivalent to the standards shown in the specification. Even though the GP unit's level of resistance is equivalent to these standards, oils that should have no effect on the GP can possibly harm the unit. This can occur in areas where either vaporized oils are present, or where low viscosity cutting oils are allowed to adhere to the unit for long periods of time. If the GP's front face protection sheet becomes peeled off, these conditions can lead to the ingress of oil into the GP and separate protection measures are suggested.

Also, if non-approved oils are present, it may cause deformation or corrosion of the front panel's plastic cover. Therefore, prior to installing the GP be sure to confirm the type of conditions that will be present in the GP's operating environment.

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

^{*2} As for dimensional tolerance everything +1/-0mm and R in angle are below R3.
Installation board conformity board thickness: 1.6 to 10.0mm

■ Performance Specifications

		AGP-3600T	AGP-3650T
Application *1		FLASH EPROM 8MB	
Data Backup		SRAM 320K bite	
		Used lithium battery for backup memory	
Interface	Serial Interface	COM1: RS232C/RS422/RS485 Asynchronous Transmission: Data Length: 7 bite/8 bite Parity: none, Odd or Even Stop Bit: 1bite/2bite Data transmission Speed: 2400 to 115.2Kbps Connector: D-SUB-9pin plug COM2: RS422/RS485 Asynchronous Transmission Data Length: 7 bitebite/8 bite Parity: none, Odd or Even Stop Bit: 1bite/2bite Data transmission Speed: 2400 bps to 115.2 Kbps 187.5 Kbps to 12 Mbps Connector: DSUB-9pin plug	
	Ethernet Interface	IEEE802.3u,10BASE-T/100BASE-TX Connector: modular jack connector (RJ-45)	
	Expansion Unit Interface	Expansion Unit Interface (external/internal)	
	USB Host Interface	USB1.1 Host I/F, USB TYPE-A connector x 2	
	Expansion Memory Interface	0.6mm pitch 80pin stacking port	
	CF Card Interface	Compact Flash CF Card Slot (TYPE-II)	
	Video Input Interface	-	NTSC: 59.9Hz PAL: 50Hz Connector: RCA 75Ω
	Sound Input Interface	-	MIC input/LINE input (Change with S/W) Connector: MINI-JACK Φ3.5
	Sound Output Interface	Speaker Output 70mW(Rated Load: 8Ω, Frequency: 1KHz) Connector: Two piece type terminal block	
	AUX Input/ Output Interface	Alarm Output, RUN Output, Buzzer Output Rated Voltage: DC24V Rated Current: 50mA Remote Reset Input Input Voltage: DC24V Input Current: 6mA Operating Voltage: (When ON) Min.: DC9V, (When OFF) Max. DC2.5V Two piece type terminal block	
Clock Accuracy *2		±65 seconds/ month (at room temperature)	

*1 It is user active capacity.

- *2 The GP's internal clock has a slight error. At normal operating temperatures and conditions, with the GP operating from its lithium battery, the degree of error is 65 seconds per month. Variations in operating conditions and battery life can cause this error to vary from -380 to +90 seconds per month. For systems where this degree of error will be a problem, the user should be sure to monitor this error and make adjustments when required.

SEE →*4.2 Home ■ Time Setting (page4-10)***NOTE**

- A Lithium battery's lifetime is: 10 years when the battery's ambient temperature is 40°C or less.
4.1 years when the battery's ambient temperature is 50°C or less. 1.5 years when the battery's ambient temperature is 60°C or less.

When used for backup:

Approximately 100 days, with a fully charged battery.

Approximately 6 days, with a half-charged battery.

■Display Specifications

		AGP-3600T	AGP-3650T
Display Type		TFT Color LCD	
Resolution		W800 X H600 pixels	
Dot pitch		W0.3075mm[0.01in] X H0.3075mm[0.01in]	
Effective Display Area		W248mm [9.76in] X H186.5mm[7.34in]	
Color/Shade level		65,536 Colors	
Backlight		CCFL (Service life : 50,000 hrs. at 24 hr. Operation)	
Brightness control		8 levels of adjustment available via touch panel	
Contrast Adjustment		No corresponding function	
Display Service Life		MTBF value: 50, 000hrs. or more (Backlight display service life is not included.)	
Backlight Service Life		50,000hrs. or more (at 25°C and continuous operation - period until backlight brightness decreases to 50% or backlight starts to flicker)	
Language Fonts		Japanese: 6962 (JIS Standards 1 & 2)(including 607 non-kanji characters) ANK: 158 (Korean fonts, Simplified Chinese and Taiwanese traditional Chinese fonts are downloadable.	
Text composition	Character Sizes	Standard font: 8X8, 8X16, 16X16 and 32X32 dot fonts Stroke font: 6 to 127dot fonts	
	Font Sizes	Standard font: Width can be expanded up to 8 times. Height can be expanded up to 8 times ^{*1}	
Text	8 X 8 dots	100 Char. X 75 rows	
	8 X 16 dots	100 Char. X 37 rows	
	16 X 16 dots	50 Char. X 37 rows	
	32 X 32 dots	25 Char. X 18 rows	

*1 Font Sizes can be set up by software.

■Touch Panel Specifications

Type	Resistive Film (analog)
Resolution	1024 X 1024
Service Life	1,000,000 times or more

2.4.3 Interface Specifications

This section describes the specifications of each interface of the GP Series unit.

IMPORTANT

- The GP unit's serial port is not isolated. When the host (PLC) unit is also not isolated, be sure to connect the #5 SG (Signal Ground) terminal to reduce the risk of damaging the RS232C/RS422/RS485 circuit.
- When connecting an external device to the GP using the SG terminal, be sure to check that no short-circuit loop is created when you setup the system.

Serial Interfaces

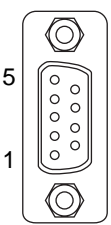
◆Serial Interface (COM1)

This interface is used to connect an RS232C/RS422/RS485 serial cable. A D-sub 9-pin socket connector is used.

Communication method is switched via software

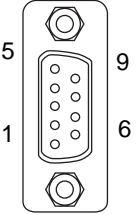
GP Connector	XM2C-0942-502LX <OMRON Co.>
Interfit bracket	#4-40 inch screws are used.
Recommended cable Connector	XM2Z-0073 <OMRON Co.>
Recommended cable Cover	XM2D-0901 <OMRON Co.>
Recommended Jack Screw	XM2S-0913 <OMRON Co.>

In the case of RS232C

Pin Arrangement	Pin No.	RS232C		
		Signal Name	Direction	Meaning
	1	CD	Input	Carrier Detect
	2	RD(RXD)	Input	Receive Data
	3	SD(TXD)	Output	Send Data
	4	ER(DTR)	Output	Data Terminal Ready
	5	SG	-	Signal Ground
	6	DR(DSR)	Input	Data Set Ready
	7	RS(RTS)	Output	Request to Send
	8	CS(CTS)	Input	Send Possible
	9	CI(RI)/VCC	Input/-	Called status display +5V±5% Output 0.25A *1
	Shell	FG	-	Frame Ground (Common with SG)

*1 The RI/VCC selection for Pin #9 is switched via software. The VCC output is not protected against overcurrent. To prevent damage or a unit malfunction, use only the rated current.

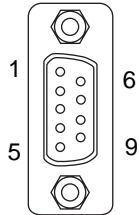
In the case of RS422/RS485

Pin Arrangement	Pin No.	RS422/RS485		
		Signal Name	Direction	Meaning
	1	RDA	Input	Receive Data A(+)
	2	RDB	Input	Receive Data B(-)
	3	SDA	Output	Send Data A(+)
	4	ERA	Output	Data Terminal Ready A(+)
	5	SG	-	Signal Ground
	6	CSB	Input	Send Possible B(-)
	7	SDB	Output	Send Data B(-)
	8	CSA	Input	Send Possible A(+)
	9	ERB	Output	Data Terminal Ready B(-)
	Shell	FG	-	Frame Ground (Common with SG)

◆Serial Interface (COM2)

This interface is used to connect an RS422/RS485 serial cable. A D-sub 9-pin plug connector is used.

GP Connector	XM3B-0942-502LX <OMRON Co.>
Interfit bracket	#4-40 inch screws are used.
Recommended cable Connector	XM2Z-0073 <OMRON Co.>
Recommended cable Cover	XM2A-0901 <OMRON Co.>
Recommended Jack Screw	XM2S-0913 <OMRON Co.>

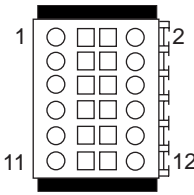
Pin Arrangement	Pin No.	RS422/RS485		
		Signal Name	Direction	Meaning
	1	TRMRX	-	Termination (Receiver side: 100Ω)
	2	RDA	Input	Receive Data A(+)
	3	SDA	Output	Send Data A(+)
	4	RS(RTS)	Output	Request for Send
	5	SG	-	Signal Ground
	6	VCC	-	+5V±5% Output 0.25A ^{*1}
	7	RDB	Input	Receive DataB(-)
	8	SDB	Output	Send Data B(-)
	9	TRMTX	-	Termination (Receiver side: 100Ω)
	Shell	FG	-	Frame Ground (Common with SG)

^{*1} The VCC output for Pin #6 is not protected against overcurrent. To prevent damage or a unit malfunction, use only the rated current.

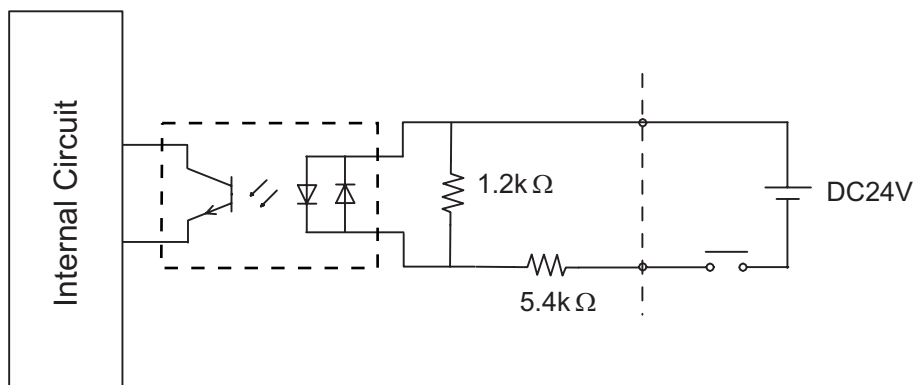
■ Sound Output/AUX Input/Output Interface

This interface is used for external reset, alarm output, buzzer output or sound output.

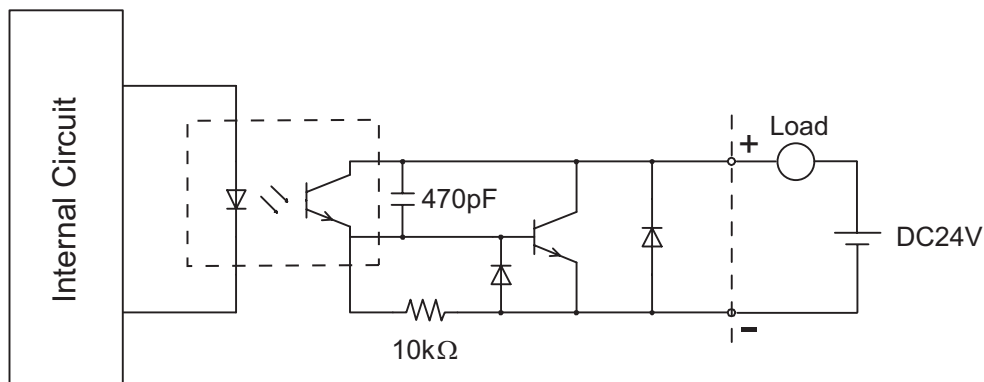
GP Connector	S2L3.5/12/180F <made by Weidmuller>
Terminal Block	B2L3.5/12LH <made by Weidmuller>

Pin Arrangement	Pin#	Signal Name	Direction	Meaning
	1	RESET IN_A	Input	External Reset Input
	2	RESET IN_B	Input	
	3	RUN+	Output	RUN Signal
	4	RUN-	Output	
	5	ALARM+	Output	ALARM Signal
	6	ALARM-	Output	
	7	BUZZER+	Output	Buzzer Signal
	8	BUZZER-	Output	
	9	NC	-	Not Connected
	10	NC	-	Not Connected
	11	SP	Output	Speaker Out
	12	SP_GND	Output	Speaker Ground

• Input Circuit



• Output Circuit



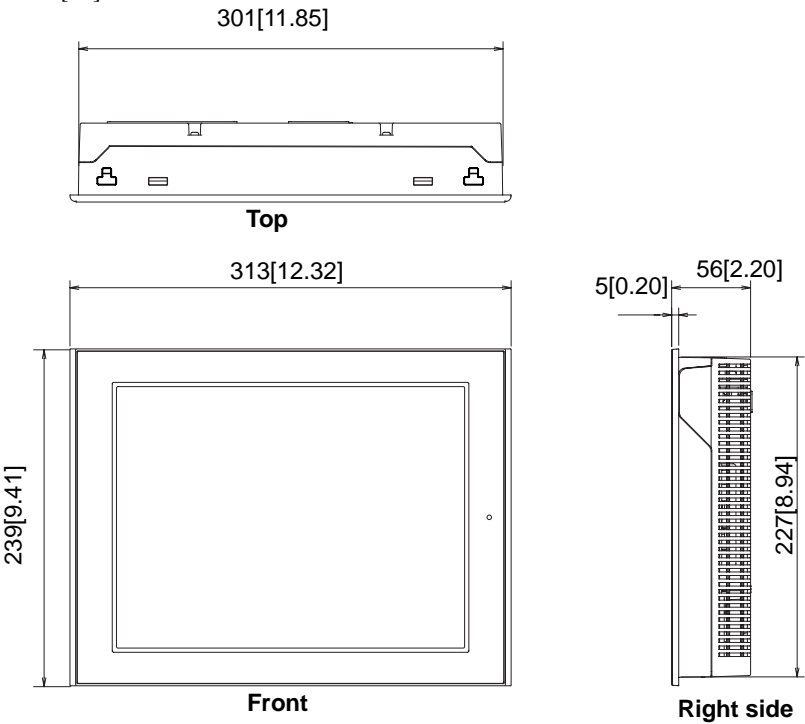
2.4.4 Dimensions

The following dimensions apply to all GP-3600 Series units.

The dimensions of the AGP-3600* are the same. The following drawings show the AGP-3650T.

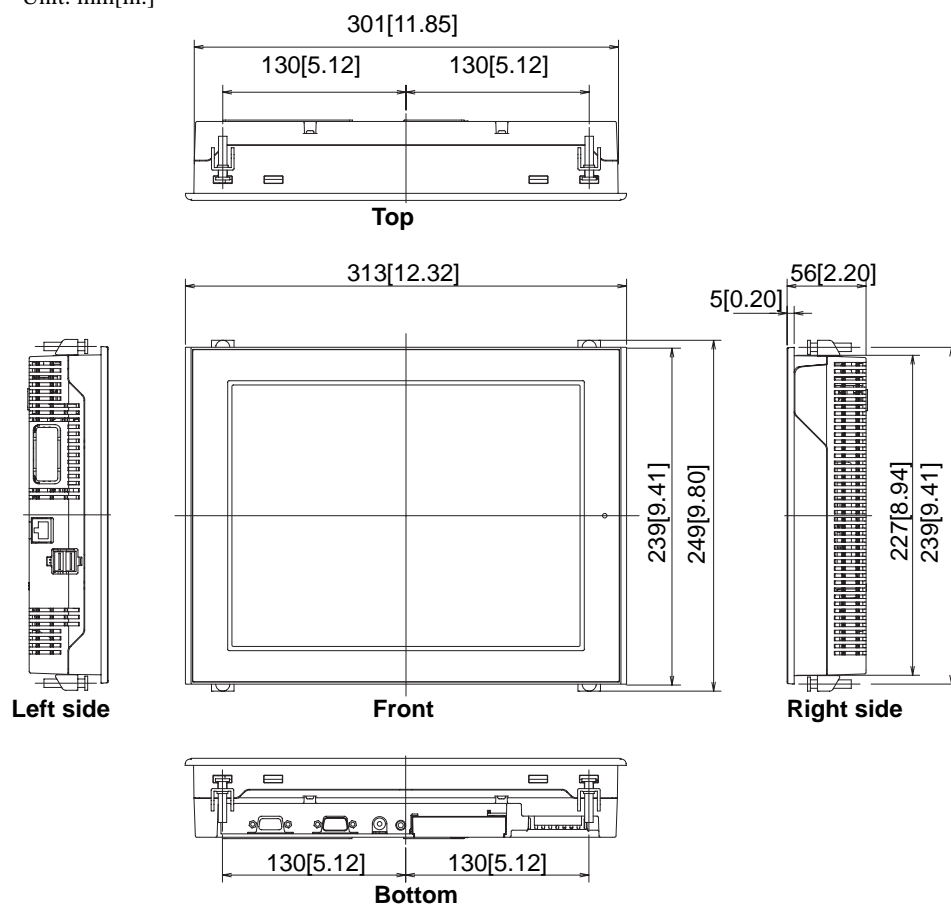
■External Dimensions

Unit: mm[in.]



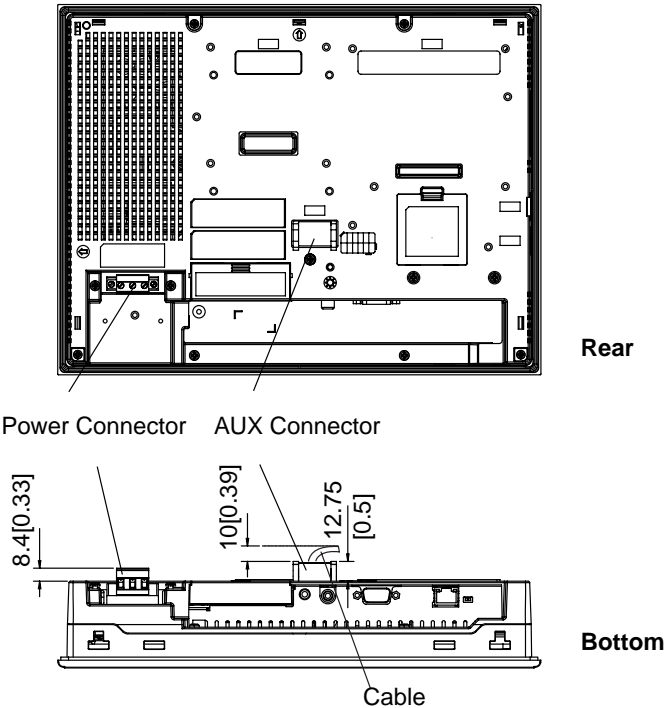
■ Installation Fasteners Attached Dimensions

Unit: mm[in.]



■Connector Attached Dimensions

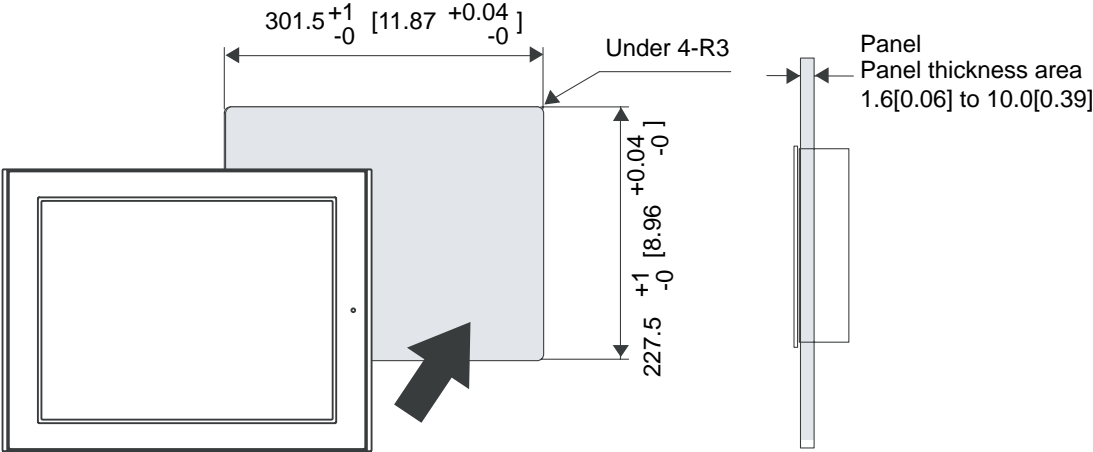
Unit:mm[in.]



IMPORTANT • Depending on the type of connection cable used the dimensions shown above will change. The dimensions given here are representative values and are intended for reference only.

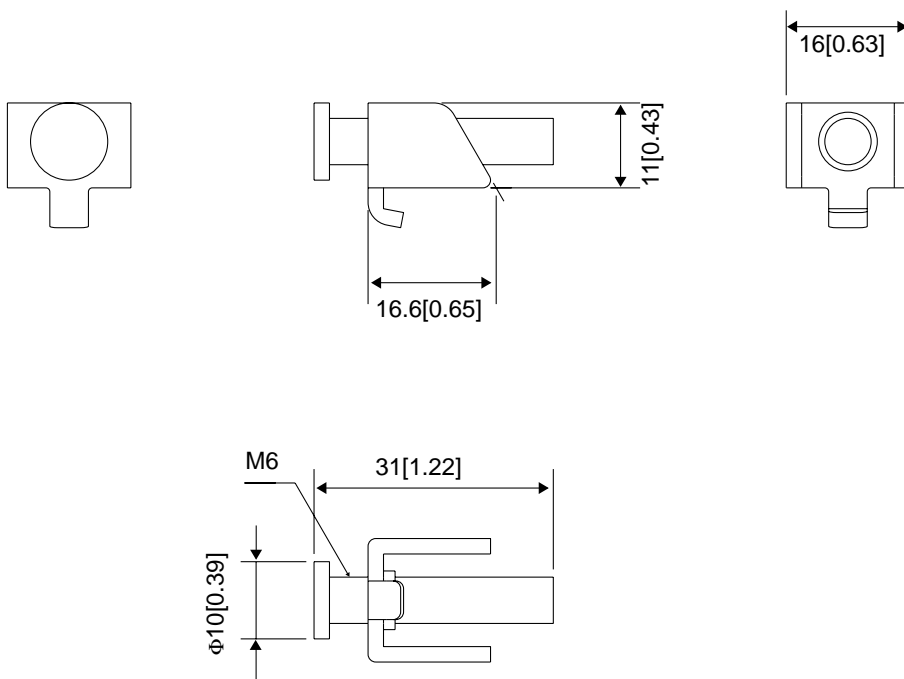
■Panel Cut Dimensions

Unit: mm[in.]



■ Installation Fasteners

Unit: mm[in.]



2.5 GP-3700 Series

2.5.1 General Specifications

■Electrical Specifications

Power Supply	Input Voltage	AC100 to 240V
	Rated Voltage	AC85 to 265V
	Rated frequency	50/60Hz
	Rated frequency range	40 to 72Hz
	Allowable Voltage	Shorter than 1cycle (Instantaneous power failure time: 1s or less)
	Allowable ripple ratio	5% or less
	Power Consumption	AC100V 1.1A or less (TYP0.75A) AC240V 0.7A or less (TYP0.44A)
	In-Rush Current	60A or less
Voltage Endurance		AC1500V 20mA 1minute (between charging and FG terminals)
Insulation Resistance		10MΩ or higher at DC500V (min.) (between charging and FG terminals)

■ Environmental Specifications

Physical	Ambient Operating Temperature	0 to +50°C*1
	Storage Temperature	-20 to +60°C
	Ambient Humidity	10 to 90% RH (Wet bulb temperature: 39°C max. - no condensation.)
	Storage Humidity	10 to 90% RH (Wet bulb temperature: 39°C max. - no condensation.)
	Dust	0.1mg/m ³ and below (non-conductive levels)
	Pollution Degree	Pollution Degree 2
	Atmosphere	Free of corrosive gases
	Air Pressure Vibration Resistance (availment altitude)	800 to 1114hPa (2,000 meters above sea-level and below)
Mechanical	Vibration Resistance	IEC61131-2 compliant 5 to 9Hz single-amplitude 3.5mm 9 to 150Hz constant-accelerated velocity 9.8m/s ² X,Y,Z directions for 10 time (100 minute)
	Concussion Resistance	IEC61131-2 compliant (147m/s ² X,Y,Z directions for 3 time)
Electrical	Noise Immunity	Noise Voltage: 1500V _{P.P} Pulse Duration: 1μs Rise Time: 1ns (via noise simulator)
	Electrostatic Discharge Immunity	6kV (complies with EN 61000-4-2 Level 3)

*1 When using STN Color LCD model in an environment where the temperature becomes or exceeds 40°C for an extended period of time, the screen contrast level may decrease from its original level of brightness.

■ Structural Specifications

Installation	Grounding	Grounding resistance of 100Ω 2mm ² or thicker wire, or your country's applicable standard. (Same for FG and SG terminals)
	Structure ^{*1}	Rating: Equivalent to IP65f NEMA #250 TYPE 4X/13 Installation method: Panel/VESA Arm (Front surface at panel embedding) Feature size: All-in-one Installation configuration: Panel embedding
	Cooling Method	Natural air circulation
	Weight Approx.	5.6kg[12.3lb]max. (unit only)
	External Dimensions	W395mm[15.55in] X H294mm[11.57in] X D60mm[2.36in]
	Panel Cut Dimensions	W383.5mm[15.10in] X H282.5mm[11.12in] ^{*2}

^{*1} The front face of the GP unit, installed in a solid panel, has been tested using conditions equivalent to the standards shown in the specification. Even though the GP unit's level of resistance is equivalent to these standards, oils that should have no effect on the GP can possibly harm the unit. This can occur in areas where either vaporized oils are present, or where low viscosity cutting oils are allowed to adhere to the unit for long periods of time. If the GP's front face protection sheet becomes peeled off, these conditions can lead to the ingress of oil into the GP and separate protection measures are suggested.

Also, if non-approved oils are present, it may cause deformation or corrosion of the front panel's plastic cover. Therefore, prior to installing the GP be sure to confirm the type of conditions that will be present in the GP's operating environment.

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

^{*2} As for dimensional tolerance everything +1/-0mm and R in angle are below R3.
Installation board conformity board thickness: 1.6 to 10.0mm

2.5.2 Performance Specifications

■Performance Specifications

		AGP-3750T
Application ^{*1}		FLASH EPROM 8MB
Data Backup		SRAM 320K bite
		Used lithium battery for backup memory
Interface	Serial Interface	COM1: RS232C/RS422/RS485 Asynchronous Transmission: Data Length: 7 bite/8 bite Parity: none, Odd or Even Stop Bit: 1bite/2bite Data transmission Speed: 2400 to 115.2Kbps Connector: D-SUB-9pin plug COM2: RS422/RS485 Asynchronous Transmission Data Length: 7 bitebite/8 bite Parity: none, Odd or Even Stop Bit: 1bite/2bite Data transmission Speed: 2400 bps to 115.2 Kbps 187.5 Kbps to 12 Mbps Connector: DSUB-9pin plug
	Ethernet Interface	IEEE802.3u,10BASE-T/100BASE-TX Connector: modular jack connector (RJ-45)
	Expansion Unit Interface	Expansion Unit Interface (external/internal)
	USB Host Interface	USB1.1 Host I/F, USB TYPE-A connector x 2
	Expansion Memory Interface	0.6mm pitch 80pin stacking port
	CF Card Interface	Compact Flash CF Card Slot (TYPE-II)
	Video Input Interface	NTSC: 59.9Hz PAL: 50Hz Connector: RCA 75Ω
	Sound Input Interface	MIC input/LINE input (Change with S/W) Connector: MINI-JACK Φ3.5
	Sound Output Interface	Speaker Output 70mW(Rated Load: 8Ω, Frequency: 1KHz) Connector: Two piece type terminal block
	AUX Input/ Output Interface	Alarm Output, RUN Output, Buzzer Output Rated Voltage: DC24V Rated Current: 50mA
		Remote Reset Input Input Voltage: DC24V Input Current: 6mA Operating Voltage: (When ON) Min.: DC9V, (When OFF) Max. DC2.5V Two piece type terminal block
Clock Accuracy ^{*2}		±65 seconds/ month (at room temperature)

^{*1} It is user active capacity.

- *2 The GP's internal clock has a slight error. At normal operating temperatures and conditions, with the GP operating from its lithium battery, the degree of error is 65 seconds per month. Variations in operating conditions and battery life can cause this error to vary from -380 to +90 seconds per month. For systems where this degree of error will be a problem, the user should be sure to monitor this error and make adjustments when required.

SEE →*4.2 Home ■ Time Setting (page4-10)***NOTE**

- A Lithium battery's lifetime is: 10 years when the battery's ambient temperature is 40°C or less.
4.1 years when the battery's ambient temperature is 50°C or less. 1.5 years when the battery's ambient temperature is 60°C or less.

When used for backup:

Approximately 100 days, with a fully charged battery.

Approximately 6 days, with a half-charged battery.

■Display Specifications

		AGP-3750T
Display Type		TFT Color LCD
Resolution		W1024 X H768 pixels
Dot pitch		W0.297mm[0.01in] X H0.297mm[0.01in]
Effective Display Area		W306.2mm[12.06in] X H230.1[9.06in]mm
Color/Shade level		65,536 Colors
Backlight		CCFL (Service life : 50,000 hrs. at 24 hr. Operation)
Brightness control		8 levels of adjustment available via touch panel
Contrast Adjustment		No corresponding function
Display Service Life		MTBF value: 50, 000hrs. or more (Backlight display service life is not included.)
Backlight Service Life		50,000hrs. or more (at 25°C and continuous operation - period until backlight brightness decreases to 50% or backlight starts to flicker)
Language Fonts		Japanese: 6962 (JIS Standards 1 & 2)(including 607 non-kanji characters) ANK: 158 (Korean fonts, Simplified Chinese and Taiwanese traditional Chinese fonts are downloadable.
Text composition	Character Sizes	Standard font: 8X8, 8X16, 16X16 and 32X32 dot fonts Stroke font: 6 to 127dot fonts
	Font Sizes	Standard font: Width can be expanded up to 8 times. Height can be expanded up to 8 times ^{*1}
Text	8 X 8 dots	128 Char. X 96 rows
	8 X 16 dots	128 Char. X 48 rows
	16 X 16 dots	64 Char. X 48 rows
	32 X 32 dots	32 Char. X 24 rows

*1 Font Sizes can be set up by software.

■Touch Panel Specifications

Type	Resistive Film (analog)
Resolution	1024 X 1024
Service Life	1,000,000 times or more

2.5.3 Interface Specifications

This section describes the specifications of each interface of the GP Series unit.

IMPORTANT

- The GP unit's serial port is not isolated. When the host (PLC) unit is also not isolated, be sure to connect the #5 SG (Signal Ground) terminal to reduce the risk of damaging the RS232C/RS422/RS485 circuit.
- When connecting an external device to the GP using the SG terminal, be sure to check that no short-circuit loop is created when you setup the system.

■ Serial Interfaces

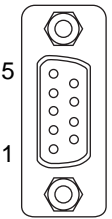
◆ Serial Interface (COM1)

This interface is used to connect an RS232C/RS422/RS485 serial cable. A D-sub 9-pin socket connector is used.

Communication method is switched via software

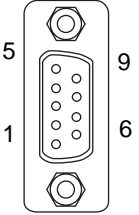
GP Connector	XM2C-0942-502LX <OMRON Co.>
Interfit bracket	#4-40 inch screws are used.
Recommended cable Connector	XM2Z-0073 <OMRON Co.>
Recommended cable Cover	XM2D-0901 <OMRON Co.>
Recommended Jack Screw	XM2S-0913 <OMRON Co.>

In the case of RS232C

Pin Arrangement	Pin No.	RS232C		
		Signal Name	Direction	Meaning
	1	CD	Input	Carrier Detect
	2	RD(RXD)	Input	Receive Data
	3	SD(TXD)	Output	Send Data
	4	ER(DTR)	Output	Data Terminal Ready
	5	SG	-	Signal Ground
	6	DR(DSR)	Input	Data Set Ready
	7	RS(RTS)	Output	Request to Send
	8	CS(CTS)	Input	Send Possible
	9	CI(RI)/VCC	Input/-	Called status display +5V±5% Output 0.25A ^{*1}
	Shell	FG	-	Frame Ground (Common with SG)

*1 The RI/VCC selection for Pin #9 is switched via software. The VCC output is not protected against overcurrent. To prevent damage or a unit malfunction, use only the rated current.

In the case of RS422/RS485

Pin Arrangement	Pin No.	RS422/RS485		
		Signal Name	Direction	Meaning
	1	RDA	Input	Receive Data A(+)
	2	RDB	Input	Receive Data B(-)
	3	SDA	Output	Send Data A(+)
	4	ERA	Output	Data Terminal Ready A(+)
	5	SG	-	Signal Ground
	6	CSB	Input	Send Possible B(-)
	7	SDB	Output	Send Data B(-)
	8	CSA	Input	Send Possible A(+)
	9	ERB	Output	Data Terminal Ready B(-)
	Shell	FG	-	Frame Ground (Common with SG)

◆Serial Interface (COM2)

This interface is used to connect an RS422/RS485 serial cable. A D-sub 9-pin plug connector is used.

GP Connector	XM3B-0942-502LX <OMRON Co.>
Interfit bracket	#4-40 inch screws are used.
Recommended cable Connector	XM2Z-0073 <OMRON Co.>
Recommended cable Cover	XM2A-0901 <OMRON Co.>
Recommended Jack Screw	XM2S-0913 <OMRON Co.>

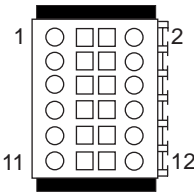
Pin Arrangement	Pin No.	RS422/RS485		
		Signal Name	Direction	Meaning
	1	TRMRX	-	Termination (Receiver side: 100Ω)
	2	RDA	Input	Receive Data A(+)
	3	SDA	Output	Send Data A(+)
	4	RS(RTS)	Output	Request for Send
	5	SG	-	Signal Ground
	6	VCC	-	+5V±5% Output 0.25A ^{*1}
	7	RDB	Input	Receive DataB(-)
	8	SDB	Output	Send Data B(-)
	9	TRMTX	-	Termination (Receiver side: 100Ω)
	Shell	FG	-	Frame Ground (Common with SG)

*1 The VCC output for Pin #6 is not protected against overcurrent. To prevent damage or a unit malfunction, use only the rated current.

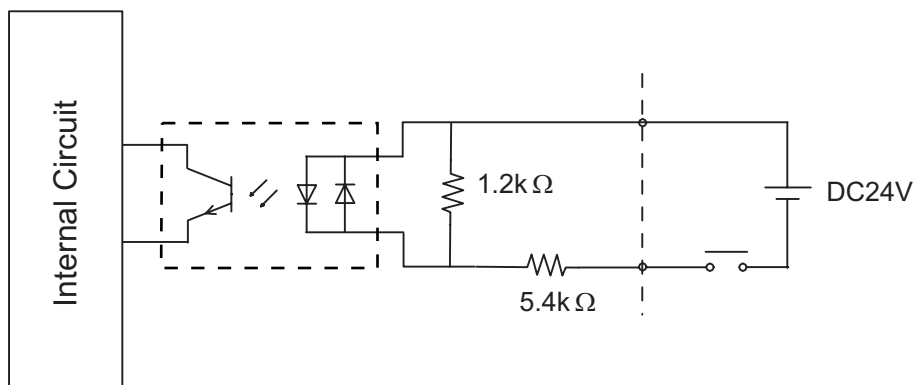
■ Sound Output/AUX Input/Output Interface

This interface is used for external reset, alarm output, buzzer output or sound output.

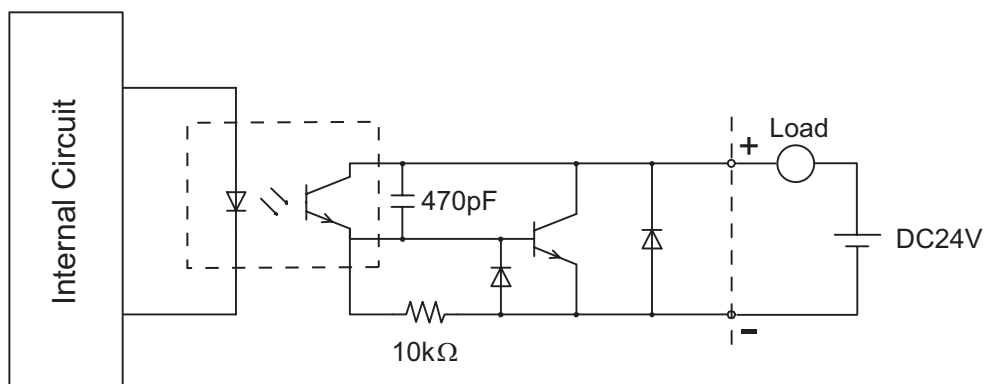
GP Connector	S2L3.5/12/180F <made by Weidmuller>
Terminal Block	B2L3.5/12LH <made by Weidmuller>

Pin Arrangement	Pin#	Signal Name	Direction	Meaning
	1	RESET IN_A	Input	External Reset Input
	2	RESET IN_B	Input	
	3	RUN+	Output	RUN Signal
	4	RUN-	Output	
	5	ALARM+	Output	ALARM Signal
	6	ALARM-	Output	
	7	BUZZER+	Output	Buzzer Signal
	8	BUZZER-	Output	
	9	NC	-	Not Connected
	10	NC	-	Not Connected
	11	SP	Output	Speaker Out
	12	SP_GND	Output	Speaker Ground

• Input Circuit



• Output Circuit



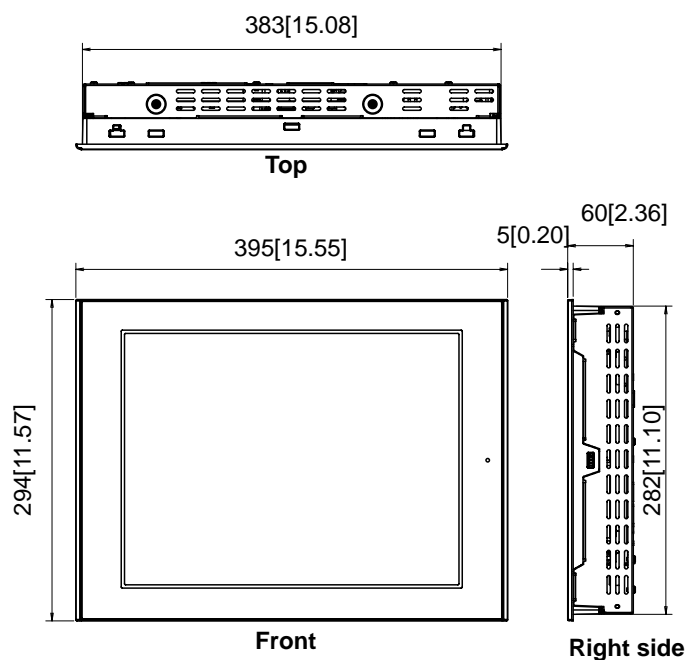
2.5.4 Dimensions

The following dimensions apply to all GP-3700 Series units.

The following drawings show the AGP-3750T.

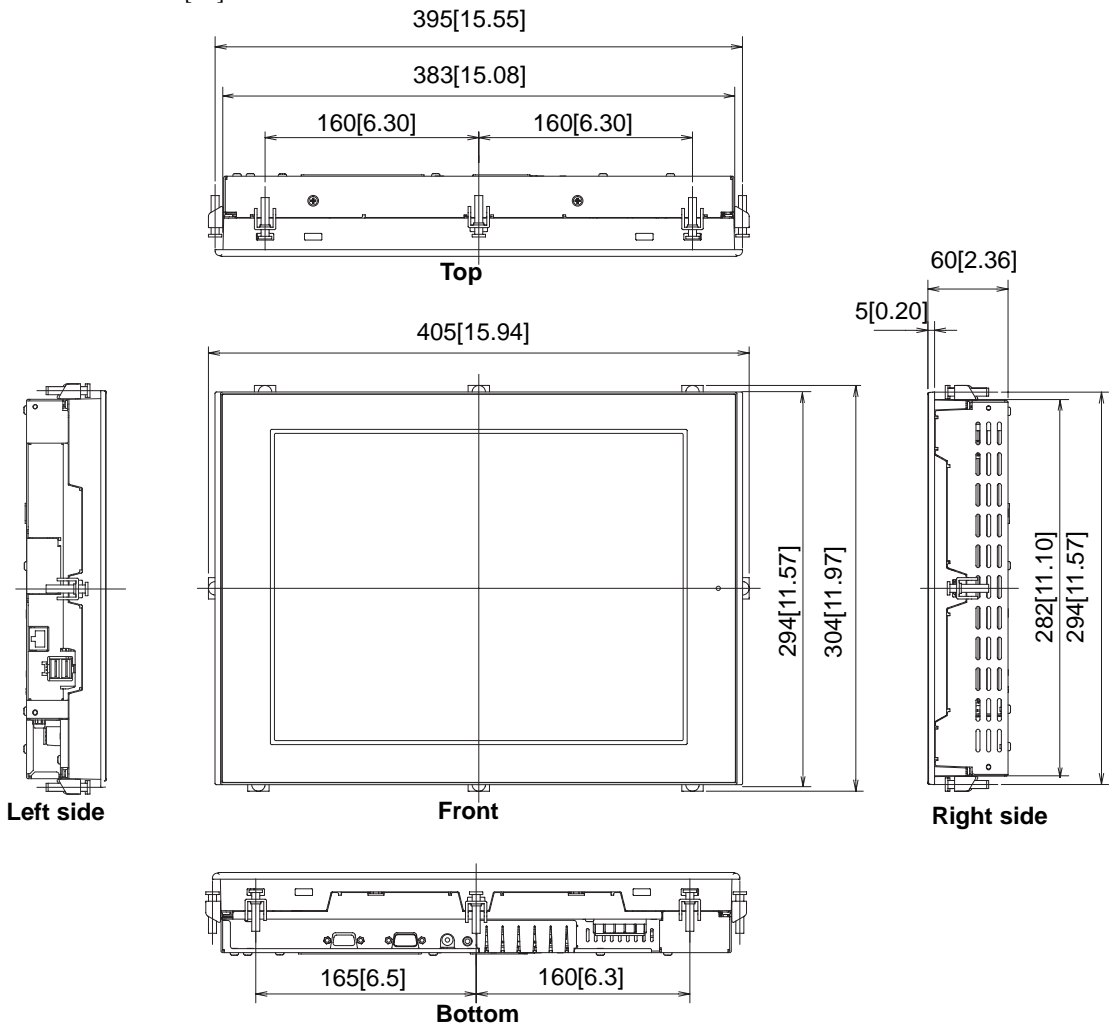
■ External Dimensions

Unit: mm[in.]



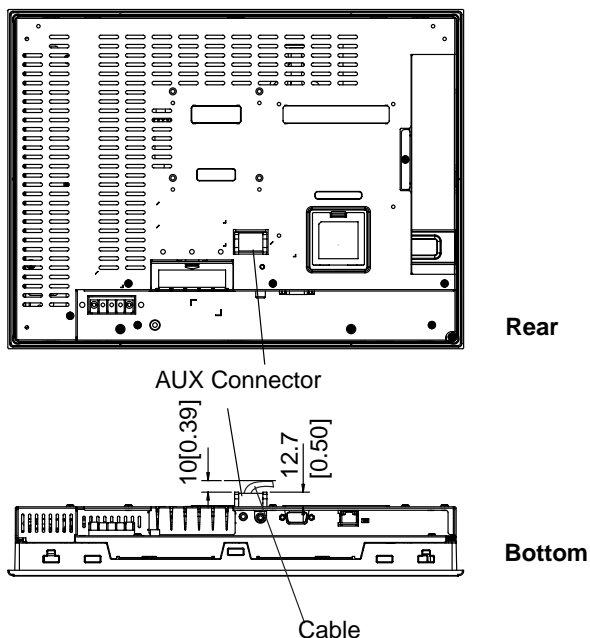
■ Installation Fasteners Attached Dimensions

Unit: mm[in.]



■ Installation Fasteners Attached Dimensions

Unit: mm[in.]

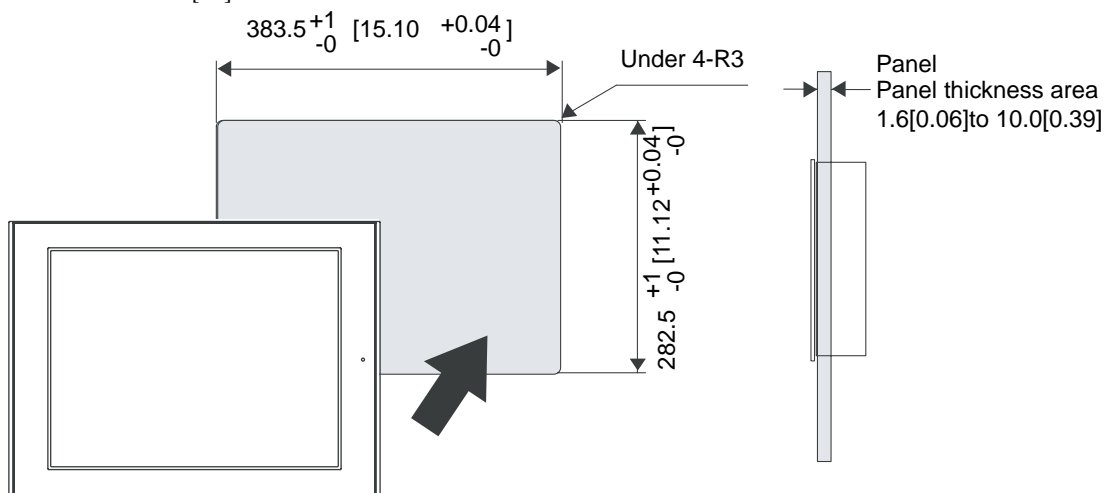


IMPORTANT

- Depending on the type of connection cable used the dimensions shown above will change. The dimensions given here are representative values and are intended for reference only.

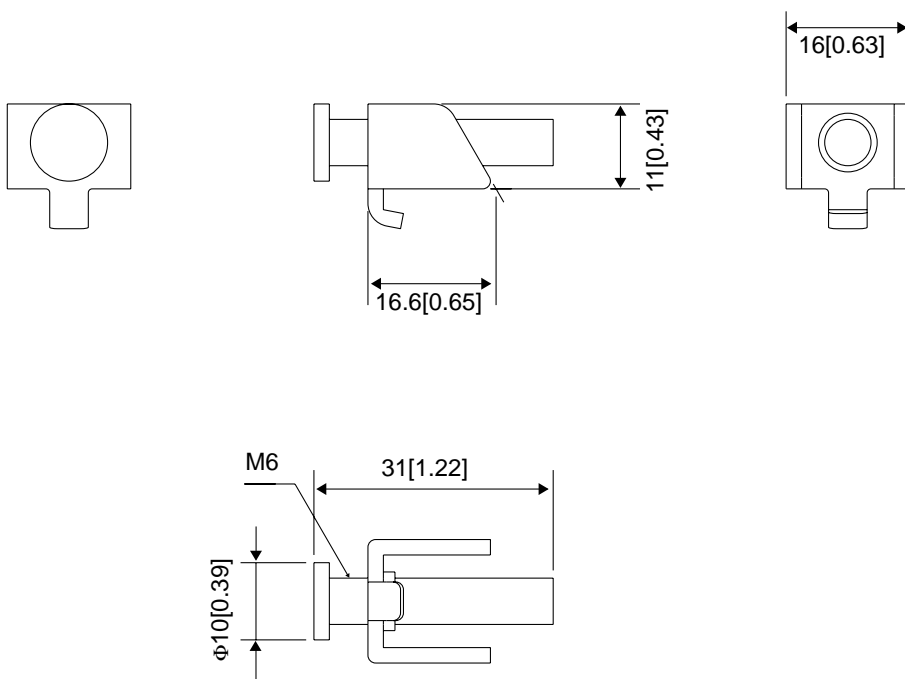
■ Panel Cut Dimensions

Unit: mm[in.]



■ Installation Fasteners

Unit: mm[in.]



3

Installation and Wiring

1. Installation
2. Wiring Precautions
3. CF Card Insertion/Removal
4. USB Cable Clamp (1 port) Attachment/Removal
5. USB Cable Clamp (2 port) Attachment/Removal
6. AUX Connector Installation

3.1 Installation

This section describes the procedures and precautions for installing the GP Series units.

3.1.1 Installation Procedures

■ Check the Installation Gasket's Seating

It is strongly recommended that you use the installation gasket, since it absorbs vibration in addition to repelling water.

For the procedure for attaching the installation gasket, refer to "[6.3 Replacing the Installation Gasket](#)".

SEE → [6.3 Replacing the Installation Gasket \(page6-4\)](#)

IMPORTANT

- Before installing the GP into a cabinet or panel, check that the installation gasket is securely attached to the unit.
- A gasket which has been used for a long period of time may have scratches or dirt on it, and could have lost much of its dust and drip resistance. Be sure to change the gasket periodically (or when scratches or dirt become visible).

■ Creating a Panel Cut

Create the correct sized opening required to install the GP, using the installation dimensions given.

The installation gasket and the installation fasteners are required when installing the GP.

SEE →

GP-3300 Series

■ *Panel Cut Dimensions (page2-14)*

GP-3400 Series

■ *Panel Cut Dimensions (page2-41)*

GP-3500 Series

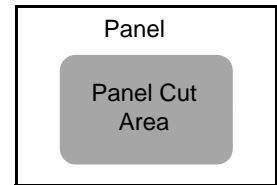
■ *Panel Cut Dimensions (Page 2-41, Page 2-42)*

GP-3600 Series

■ *Panel Cut Dimensions (page2-54)*

GP-3700 Series

■ *Panel Cut Dimensions (page2-67)*

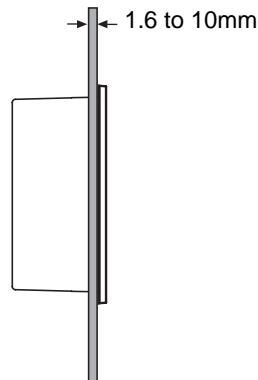


NOTE

- Check that the installation panel or cabinet's surface is flat, in good condition and has no jagged edges. Also, if desired, metal reinforcing strips can be attached to the inside of the panel, near the Panel Cut, to increase the panel's strength.

IMPORTANT

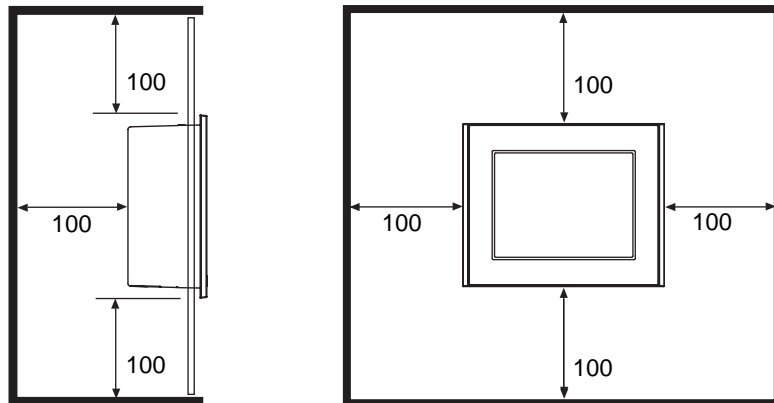
- Panel thickness should be from 1.6mm [0.06 in.] to 10.0mm [0.4 in.] (GP-3300 series: 1.6mm [0.06 in.] to 5.0mm [0.2 in.]). Decide the panel's thickness based on the level of panel strength required.



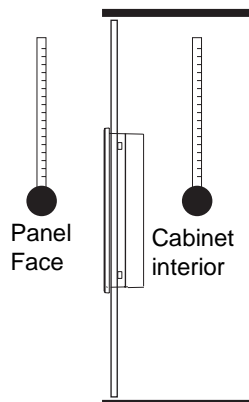
IMPORTANT

- For easier maintenance, operation, and improved ventilation, be sure to install the GP at least 100 mm [3.94 in.] away from adjacent structures and other equipment.

Unit: mm

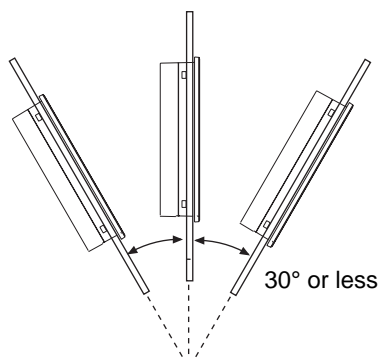


- Be sure that the ambient operation temperature and the ambient humidity are within their designated ranges. (Ambient operation temperature: 0 to 50°C, Ambient humidity: 10 to 90%RH, Wet bulb temperature: 39°C max.) When installing the GP on the panel of a cabinet or enclosure, "Ambient operation temperature" indicates both the panel face and cabinet or enclosure's internal temperature.



- Be sure that heat from surrounding equipment does not cause the GP to exceed its standard operating temperature.

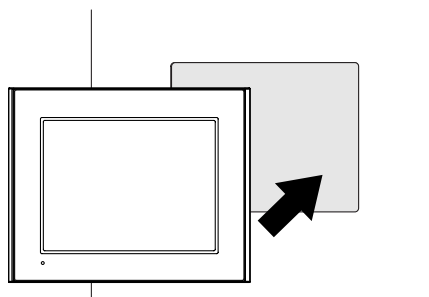
- IMPORTANT**
- When installing the GP in a slanted panel, the panel face should not incline more than 30°



- When installing the GP in a slanted panel, and the panel face inclines more than 30°, the ambient temperature must not exceed 40°C. You may need to use forced air cooling (fan, A/C) to ensure the ambient operating temperature is 40°C or below.
- The GP Series unit does not support longitudinal mounting.

■ Installing the GP

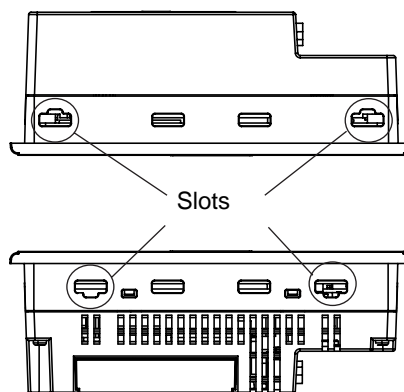
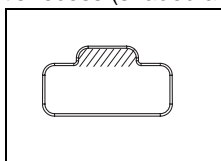
- (1) Insert the GP into the panel cut, as shown.



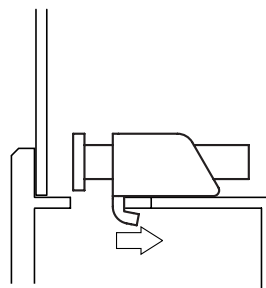
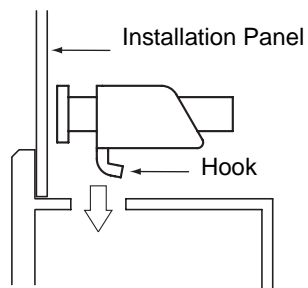
- (2) Insert the installation fasteners into the GP insertion slots, at the top and bottom of the unit. (total: 4 slots)

IMPORTANT

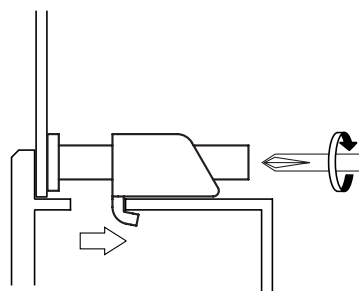
- Insert each installation fastener securely into the slot's recess (shaded area).



- (3) Insert each of the fasteners shown below.
Be sure to pull the fastener back until it is flush with the rear of the attachment hole.



- (4) Use a Phillips screwdriver to tighten each fastener screw and secure the GP in place.

**IMPORTANT**


- Tightening the screws with too much force can damage the GP unit's plastic case.
- The torque required to tighten these screws is 0.5 N•m.


3.2 Wiring Precautions


This section describes the procedures and precautions for wiring power cords.


3.2.1 Connecting the Power Cord

WARNING

 To avoid an electric shock, prior to connecting the GP unit's power cord terminals to the power terminal block, confirm that the GP unit's power supply is completely turned OFF, via a breaker, or similar unit.

 Supplying a power voltage other than that specified will damage the power source and the GP unit.

 Since there is no power switch on the GP unit, be sure to attach a breaker-type switch to its power cord.

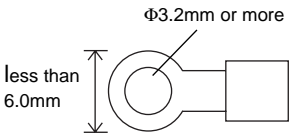
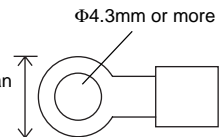
 When the FG terminal is connected, be sure the wire is grounded.

IMPORTANT

- When the FG terminal is connected, be sure the wire is grounded. Not grounding the GP unit will result in excess noise and vibration.
- The SG and FG terminals are connected internally in the GP unit.
When connecting the SG wire to another device, be sure that the design of the system/connection does not produce a shorting loop.

■When the AC type

Power Cord Specifications

	AC Power Cord	Grounding Wire
Power Cord	Double-insulated Wire 1.25 to 2.0mm ² (16-14AWG)	1.25 to 2.0mm ² (16-14AWG)
Recommended Ring Terminal *1	J.S.T. Mfg. Co., Ltd V2-MS3 compatible <div style="text-align: center;">  </div>	J.S.T. Mfg. Co., Ltd V2-P4 compatible <div style="text-align: center;">  </div>

*1 In order to prevent a short circuit caused by loose screws, make sure to use a crimp-type terminal with insulating sleeve.

Connecting the Power Cord

When connecting the AC type power cord, be sure to follow the procedures given below.

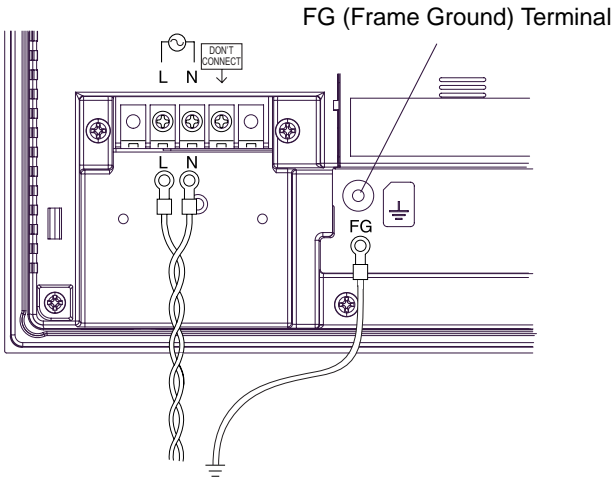
- (1) Be sure that the GP's power cord is not plugged in to the power supply.
- (2) Remove the Terminal Strip's clear plastic cover.
- (3) Remove the screws from the two (2) terminals (L, N) and FG (Frame Ground) Terminal, position the Ring Terminals and reattach the screws. (Check each wire to make sure the connections are correct.)

IMPORTANT

- The torque required to tighten these screws are as follows:

Terminal Block: 0.5 to 0.6N•m

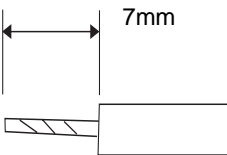
FG (Frame Ground) Terminal: 0.6 to 0.7N•m



- (4) Reattach the Terminal Strip's clear plastic cover.

■When the DC Type

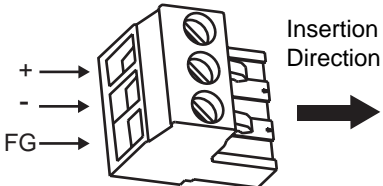
iPower Cord Specifications

Power Cord Diameter	0.2 to 2.5mm ² (24-12AWG)
Conductor Type	Simple or Twisted Wire
Conductor Length	

- IMPORTANT**
- If the Conductor's end (individual) wires are not twisted correctly, the end wires may either short against each other, or against an electrode.

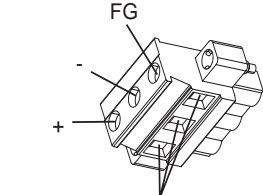
Power Connector Specifications

When the GP-3300/3400

	+	24V
	-	0V
	FG	FG Grounding Terminal connected to the GP

- NOTE**
- The power supply connector is CA5-DCCNM-01 (made by Pro-face) or MSTB2,5/3-ST-5,08 (made by Phoenix Contact^{*1}).

When the GP-3500/3600/3700

 Power Cord Insertion Holes	+	24V
	-	0V
	FG	FG Grounding Terminal connected to the GP

- NOTE**
- The power supply connector is CA5-DCCNL-01 (made by Pro-face) or GMVSTBW2, 5/3-STF-7, 62 (made by Phoenix Contact^{*1}).

*1 For details, please contact your local Phoenix Contact distributor.

Phoenix Contact Co. Ltd. Yokohama central office

Call: 045-471-0030

<http://www.phoenixcontact.co.jp>

Wiring

When connecting the Power Cord, use the following items when performing wiring. (Items are made by Phoenix Contact.)

Recommended Driver	SZF 1-0.6x3.5 (1204517)
Recommended Pin Terminals	AI 0.25-6BU (3201291) AI 0.34-8TQ (3200865) AI 0.5-8WH (3200014) AI 0.75-8GY (3200519) AI 1-8RD (3200030) AI 1.5-8BK (3200043) AI 2.5-8BU (3200522)
Recommended Pin Terminal Crimp Tool	CRIMPFOX ZA3 (1201882)

Connecting the Power Cord

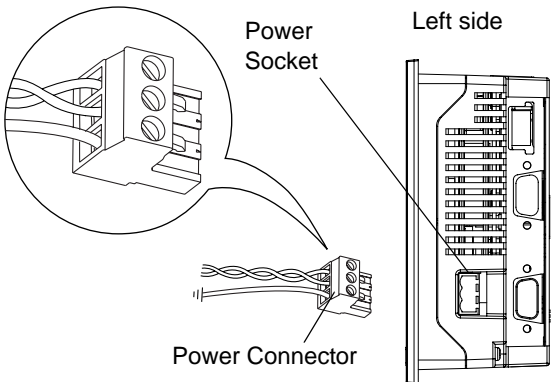
When the GP-3300/3400

- (1) Confirm that the power cord is unplugged from the power supply.
- (2) When using GP-3300 Series, remove the power connector from the main unit.
(When using GP-3400 Series, the power connector is packaged with other accessories.)
- (3) Strip the membrane of the power cord, twist the wire ends, and connect them to the Power Connector.

IMPORTANT

- Use a flat-blade screwdriver (Size 0.6 X 3.5) to tighten the terminal screws.
The torque required to tighten these screws is 0.5 to 0.6N²m.
- Do not solder the cable connection.

- (4) Reattach the Power Connector.



NOTE

- Be sure to twist the power cords together, up to the power connector.

When the GP-3500/3600/3700

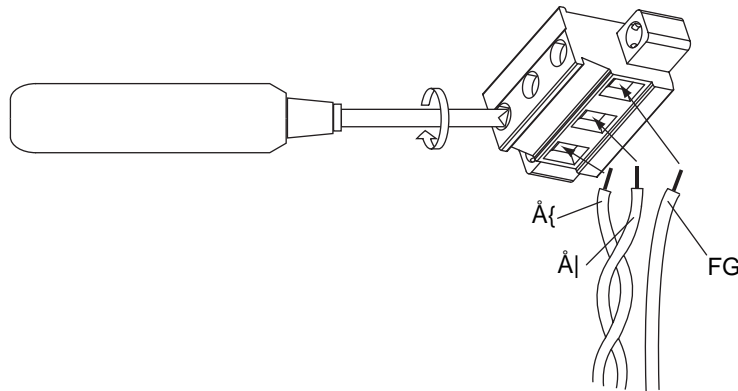
- (1) Confirm that the power cord is unplugged from the power supply.
- (2) Remove the power connector from the main unit.
- (3) Loosen the three screws in the center of the Power Connector.
- (4) Strip the membrane of the power cord, twist the wire ends, and connect them to the Power Connector.
- (5) Fix it with screws.

IMPORTANT

- Use a flat-blade screwdriver to tighten the terminal screws.
The torque required to tighten these screws is 0.5 to 0.6N•m.
- Do not solder the cable connection.

NOTE

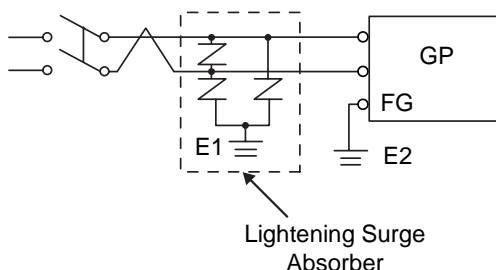
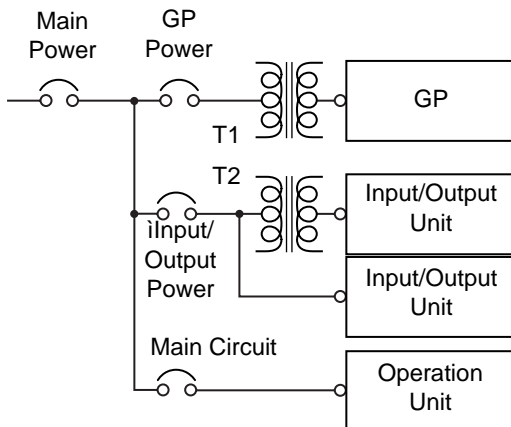
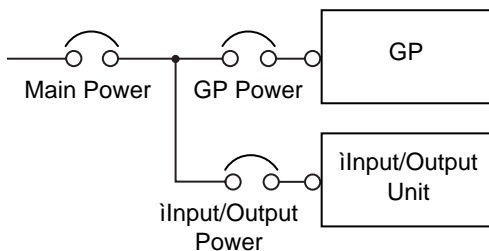
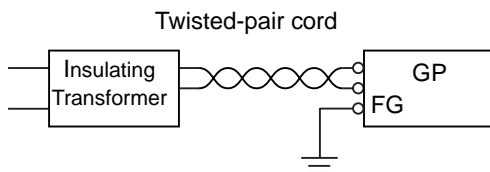
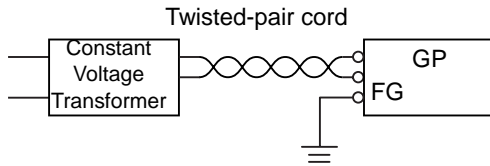
- Be sure to twist the power cords together, up to the power connector.



- (6) Attach the Power Plug to the GP and fix it to the GP main unit with right/left tightening screws.

3.2.2 Connecting the Power Supply

This section describes the precautions for supplying a power voltage.



- If the supplied voltage exceeds the GP unit's range, connect a constant voltage transformer..

SEE →

Chapter 2 Specifications (page 2-1)

- For between the line and ground, select a power supply that is low in noise. If there is an excess amount of noise, connect a insulating transformer.

IMPORTANT

- Use constant voltage and insulating transformers with capacities exceeding Power Consumption value.

- When supplying power to the GP unit, be sure to separate the input/output and power lines, as shown.
- To increase the noise resistance quality of the power cord, simply twist each power wire before attaching the Ring Terminal.
- The power supply cable must not be bundled or positioned close to main circuit lines (high voltage, high current), or input/output signal lines.
- Connect a lightening surge absorber, as shown in the diagram, to deal with power surges.
- To avoid excess noise, make the power cord as short as possible.
- 24V DC input unit is must be used with a Class 2 power supply.

IMPORTANT

- Be sure to ground the surge absorber (E1) separately from the GP unit (E2).
- Select a surge absorber that has a maximum circuit voltage greater than that of the peak voltage of the power supply.

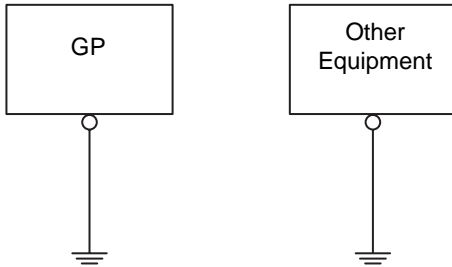
3.2.3 Grounding

This section describes the precautions for grounding the GP unit.

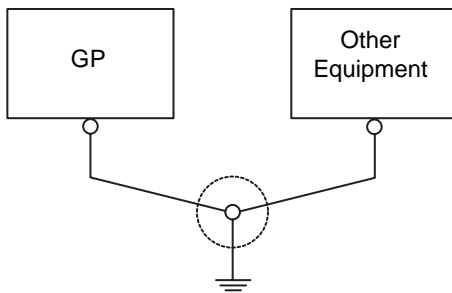
⚠ CAUTION

❗ Do not use common grounding, since it can lead to an accident or machine breakdown.

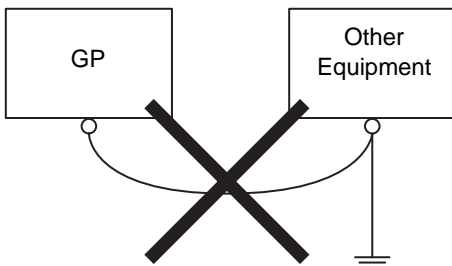
(a) Exclusive Grounding (BEST)



(b) Exclusive Grounding (OK)



(c) Common Grounding (Not OK)



• When supplying power to the GP unit, be sure to separate the input/output and power lines, as shown. [diagram (a)]

IMPORTANT

- Check that the grounding resistance is less than 100Ω.

- FG and SG terminals are internally connected in the GP. When connecting an external device to the GP using the SG terminal, be sure to check that no short-circuit loop is created when you setup the system.

- The grounding wire should have a cross sectional area greater than 2mm²

Create the connection point as close to the GP unit 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.

- If exclusive grounding is not possible, use a common connection point. [diagram (b)]

NOTE

- If the equipment does not function properly when grounded, disconnect the ground wire from the FG terminal.

3.2.4 I/O Signal Line Placement

- Input and output signal lines must be separated from the power control cables for operating circuits.
- If this is not possible, use a shielded cable and connect the shield to the GP unit's frame.







3.3 CF Card Insertion/Removal

This section describes how to insert and remove a CF Card.



CAUTION

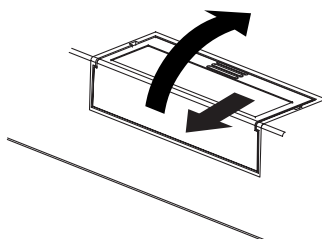
When using the GP Unit and a CF Card, observe the following precautions:

-  Prior to inserting or removing a CF Card, be sure to turn the AGP unit's CF Card ACCESS switch OFF and to confirm that the ACCESS lamp is not lit. If you do not, CF Card internal data may be damaged or lost.
-  While a CF Card is being accessed (Status LED: Blinking in green), NEVER turn OFF or reset the GP, or insert or remove the CF Card. If you do not, CF Card internal data may be damaged or lost.
-  Prior to inserting a CF Card, familiarize yourself with the CF Card's front and rear face orientation, as well as the CF Card connector's position. If the CF Card is not correctly positioned when it is inserted into the Multi Unit, the CF Card's internal data and the GP unit may be damaged or broken.
-  Be sure to use only CF Cards manufactured by the Digital Electronics Corporation. The CF Card's internal data may be damaged when using another manufacturer's CF Card.
-  Once GP data is lost, it cannot be recovered. Since accidental data loss can occur at any time, be sure to back up all GP screen and CF Card data regularly.
-  Be sure to follow the instructions given below to prevent the CF Card's internal data from being destroyed or a CF Card malfunction from occurring:
 - DO NOT bend the CF Card.
 - DO NOT drop or strike the CF Card against another object.
 - Keep the CF Card dry.
 - DO NOT touch the CF Card connectors.
 - DO NOT disassemble or modify the CF Card.

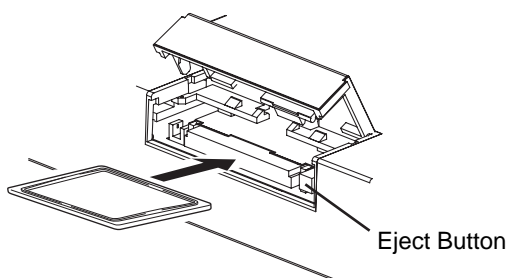
3.3.1 Inserting the CF Card

Use the following steps to insert the CF Card in the GP.

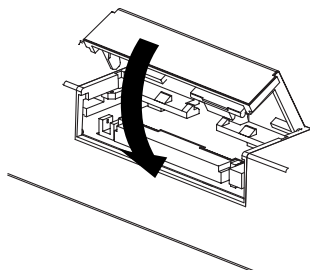
- (1) Pull the CF Card Cover frontward and then open it upward.



- (2) Insert the CF Card in the CF Card Slot, until the eject button is pushed forward.



- (3) Close the cover. (As shown.)

**NOTE**

- Make sure that the CF Card cover is closed only accessing the CF Card.

3.3.2 Removing the CF Card

Simply reverse the steps shown in the previous “Inserting CF Card” explanation. Prior to pressing the eject button to remove the CF Card, confirm that the CF Card Access LED is turned OFF.

3.3.3 CF Card Handling

The CF Card has a data overwrite limit of approximately 100,000 times. Therefore, be sure to back up all CF Card data regularly to another storage media. (100,000 times assumes the overwriting of 500KB of data in DOS format.) Two methods are available for backing up data. After using either method (1) or method (2), use your personal computer to save your data to the CF Card.

(1) If your PC is equipped with a PC Card Slot

To view CF Card data on a personal computer, first, insert the CF Card into a CF Card Adapter (GP077-CFAD10).

(2) If your PC is NOT equipped with a PC Card slot

Use a commercially available PC Card Reader, or a CF Card Reader.

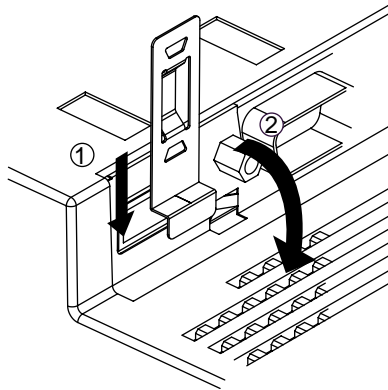
3.4 USB Cable Clamp (1 port) Attachment/Removal

This clamp is used to prevent the USB cable connected to the USB Host Interface on the bottom of the GP unit from being unplugged due to vibration or other causes.

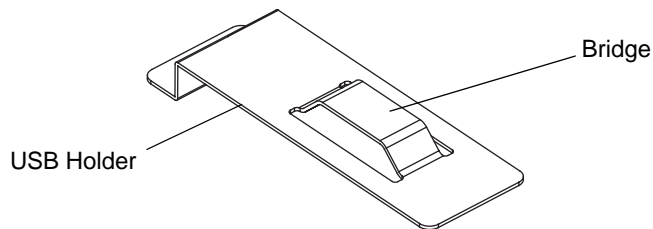
USB cable clamp (1 port) can be use GP-3300 series.

■ Attachment

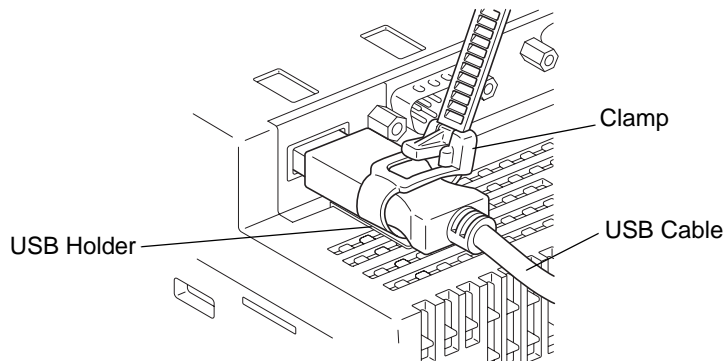
- (1) Insert the USB holder into the slot in front of the AGP unit's USB port and pull it down and forward.



- (2) Pass the band of the USB cable clamp through the bridge of the USB holder.

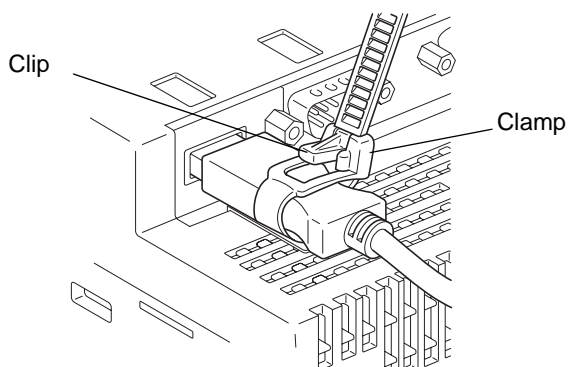


- (3) Insert the USB cable into the port. Fasten the band around the plug and secure it with the clamp.



■ Removal

To remove the clamp from the USB cables, push down on the clamp strap's clip to release it while pulling up on the clamp.



3.5 USB Cable Clamp (2 port) Attachment/Removal

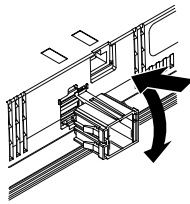
This clamp is used to prevent the USB cable connected to the USB Host Interface on the bottom of the GP unit from being unplugged due to vibration or other causes.

USB Cable Clamp (2 port) can be use GP-3400/3500/3600/3700 series.

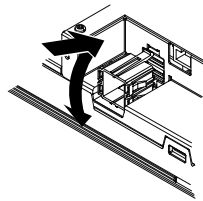
■ Attachment

- (1) Attach the USB Holder to the USB Host Interface part of the main unit. Hook the upper pick of the USB holder to the attachment hole of the main unit and then insert the lower pick as shown below to fix the USB holder.

GP-3400/3500/3600 series

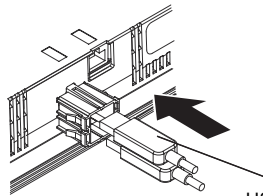


GP-3700 series

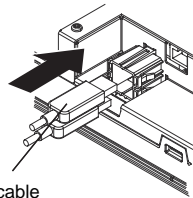


- (2) Insert the USB cable into the USB Host Interface.

GP-3400/3500/3600 series



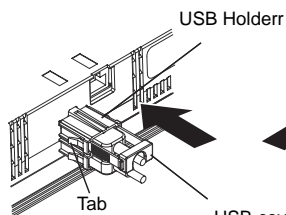
GP-3700 series



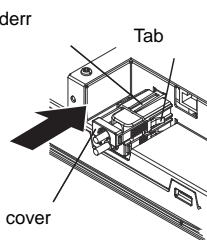
USB cable

- (3) Attach the USB cover to fix the USB cable. Insert the USB cover into the tab of the USB Holder.

GP-3400/3500/3600 Series



GP-3700 series



In case of installing the second USB cable, repeat the steps (2) and (3).

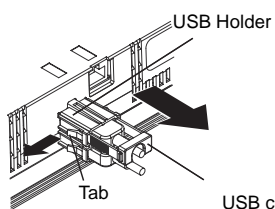
IMPORTANT

- When attaching the USB holder, be sure to attach all the 2 USB covers.

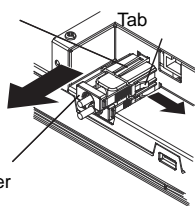
■Removal

- (1) Lift up the tab of the USB Holder and then remove the USB cover as shown below.

GP-3400/3500/3600 Series



GP-3700 series

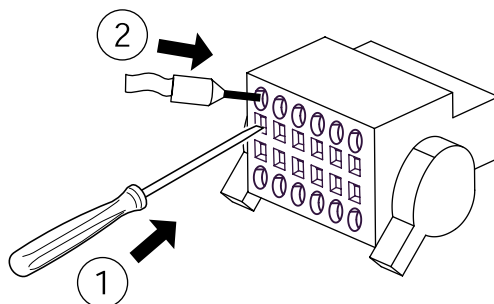


- (2) After removing the USB cable, remove the picks pushing the USB Holder from both top and bottom.

3.6 AUX Connector Installation

Connect the cable to the AUX Connector. This allows you to perform an external reset input or a speaker output etc..

- (1) Insert a driver into the square-shaped hole.
- (2) Insert the cable into the circle-shaped hole and pull out the driver. Then the cable is fixed.



- (3) Insert the AUX Connector into the AUX Input/Output and Sound Output Interface.

4 | Settings

1. Offline Mode
2. Home
3. Main Unit Settings
4. Peripheral Settings
5. Password Settings
6. Initialization Settings
7. Maintenance Menu
8. Transfer

The content and the setting of an off-line mode are subjected to variation by the upgrade of run time and the communication driver, etc.

4.1 Offline Mode

Off-line mode does system setting and self diagnostic etc. Before operating, it prepares here.

IMPORTANT

- OFFLINE mode is unavailable in a completely new GP until the necessary GP system data has been transferred from GP screen editor software.

To do this, be sure the GP's power cord is plugged in and when transfer screen data from GP screen editor software to the GP, GP's system data will be automatically sent.

For more information about data transfer



GP-Pro EX Reference Manual

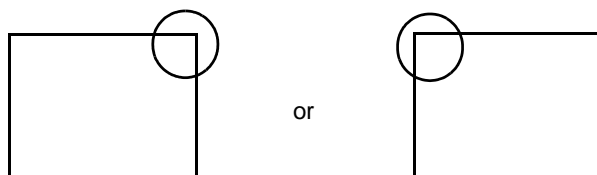
4.1.1 Entering OFFLINE Mode

There is offline mode for various setup required at use in GP. There are two ways to enter OFFLINE mode.

First, is immediately after plugging in the GP's power cord, and second, by using the Forced Reset feature.

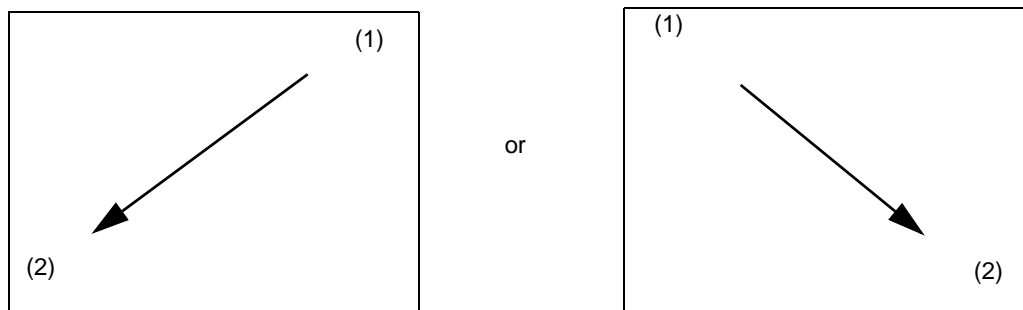
■After Plugging in the Power Cord

Touch the upper right-hand corner or upper left-hand corner (within 40 pixels of every direction) of the panel within 3 seconds of plugging in the GT's power cord and the GT will change to OFFLINE mode.



■When Operating

Touch either the upper right and lower left corners, or the upper left and lower right corners (within 40 pixels of every direction) of the panel in this order within 0.5 second.



System menu is displayed, it touches "Offline".



NOTE

- If a Password has been entered in the Password Settings area, before entering the OFFLINE mode, the Password Settings screen appears. Here, enter the password, then touch Set to enter OFFLINE mode.

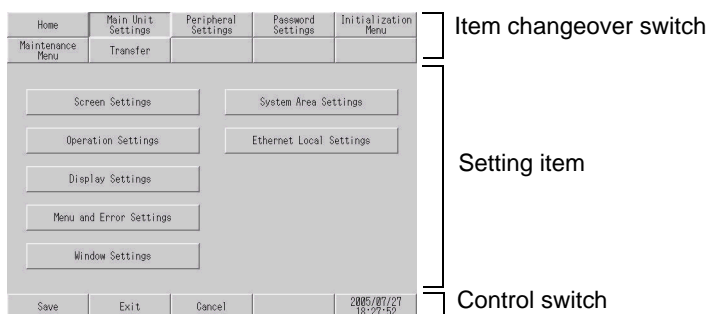


Password: 4.5 Password Settings (page4-27)

Entering number: 4.1.3 Operation in offline mode (page4-4)

4.1.2 Screen constitution of offline mode

The screen constitution of offline mode is as follows. (When the screen pixels is above the 640x480 pixels.)



■Item changeover switch

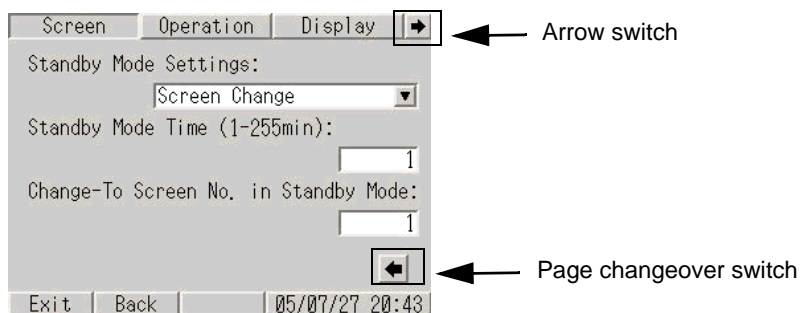
The setting item displayed is changed.

The arrow switch is displayed on the right end of a switch, when all switches cannot display at once.

The remaining switch by touching the arrow switch is displayed.

NOTE

- The arrow switch is displayed when the screen pixels is the 320x240 pixels model.



■Setting item

The necessary item is set up when the using GP.

The page changeover switch is displayed on the lower right end of a setting item, when all items cannot display at once. The remaining items by touching the page changeover switch is displayed. (Refer to the above-mentioned screen.)

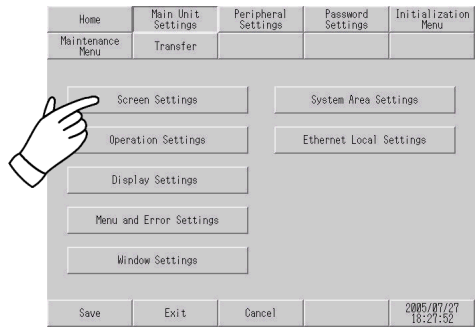
■Control switch

- This button performs "Save", "Cancel", "Exit", and "Back" in offline mode.
- Each function is as follows.
- Save A setup of the changed item is saved.
- Cancel A setup of the changed item is returned to the state where it saved last time.
- Exit..... Offline mode is ended.
- Back It returns to the screen of hierarchy on one.

4.1.3 Operation in offline mode

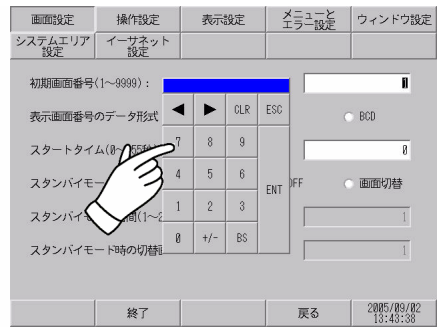
■Selecting a menu

Touch the menu item.



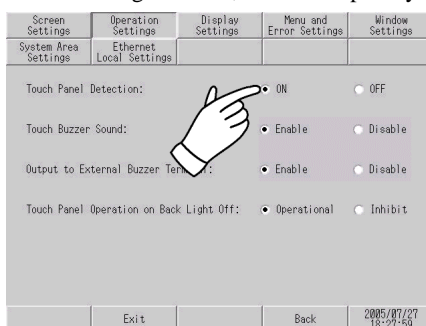
■Entering numbers

After selecting an input field by touching it, use the numeric touch keys located at the screen to enter numeric values. After inputting each value, touch the [SET] key to define the value.



■ Selecting setup conditions

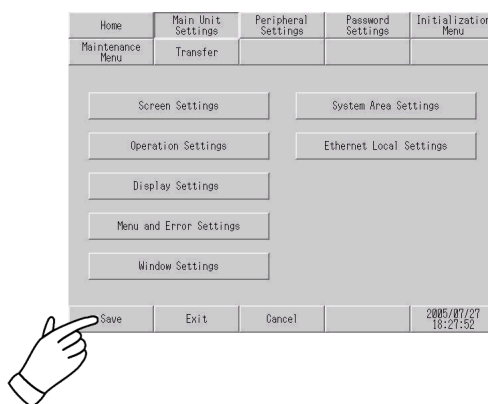
After selecting a menu item and entering that area, touch the option you would like to setup.



■ After all setting data is entered

Touch the lower [Save] button.

If you wish to exit the screen without saving the changes, touch the [Cancel] button.

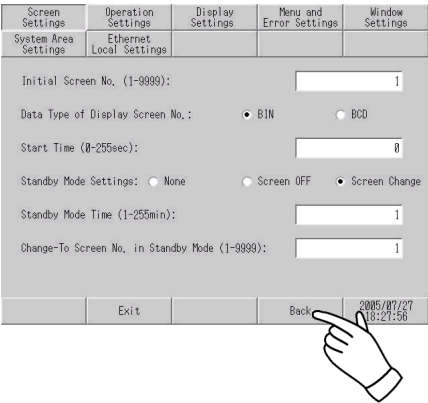


IMPORTANT

- Touch the [Save] button to write the setup conditions onto the internal FEPROM, which may take some time, causing a delay in returning to the previous screen. Therefore, do not touch the screen until the previous menu display returns.
- Try not to turn off the GP's power supply while saving the setup conditions. Otherwise, the contents of the internal FEPROM might get damaged.
- Touch the [Save] button to write the Setup conditions onto the Internal FEPROM, and touch the [Cancel] button to not write the setup conditions onto the internal FEPROM and return to the previous menu.

■Return to the hierarchy on one

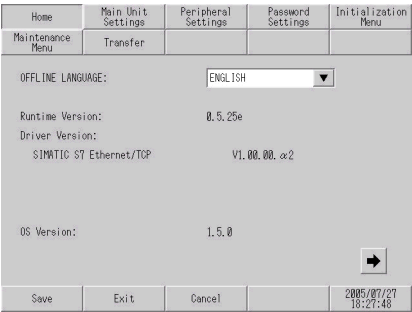
Touch the [Back] button.



4.1.4 Setting item in offline mode

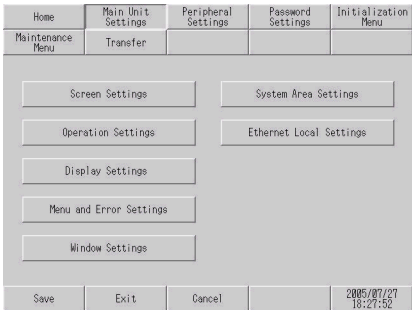
The item which can be set up in offline mode is as follows.

■Home



The information of GP and a project is displayed.

■Main Unit Aettings



Setup for creating the system environment of GP.

- Screen Settings
- Operation Settings
- Display Settings
- Meni and Error Settings
- Window Settings
- System Area Settings
- Ethernet Local Settings

■Peripheral Settings

Home	Main Unit Settings	Peripheral Settings	Password Settings	Initialization Menu
Maintenance Menu	Transfer			
<div>Device/PLC Settings</div> <div>Printer Settings</div> <div>Bar Code Settings</div> <div>USB</div> <div>Script Settings</div>				
Save	Exit	Cancel		2005/07/27 18:28:52

A setup about communication and a setup about peripheral device are mainly explained.

- Device/PLC Settings
- Printer Settings
- Bar Code Settings
- USB
- Script Settings

■Password Settings

Home	Main Unit Settings	Peripheral Settings	Password Settings	Initialization Menu
Maintenance Menu	Transfer			
<div>System Password</div> <div>Security Password</div>				
Save	Exit	Cancel		2005/07/27 18:28:09

Prevents from changing a setup of a password.

- System Password
- Security Password

■Initialization Menu

Home	Main Unit Settings	Peripheral Settings	Password Settings	Initialization Menu
Maintenance Menu	Transfer			
<div>Initialize User Memory</div> <div>Initialize CF Card</div> <div>Initialize Backup SRAM</div>				
Save	Exit	Cancel		2005/07/27 18:28:33

Initialize the GP data and CF card.

- Initialize User Memory
- Initialize CF Card
- Initialize Backup SRAM

■Maintenance Menu

Home	Main Unit Settings	Peripheral Settings	Password Settings	Initialization Menu
Maintenance Menu	Transfer			
<div>Check Display Pattern</div> <div>Check Font</div> <div>Check Touch Panel</div> <div>Calibrate Touch Panel</div> <div>Check COM1/COM2/LAN</div> <div>Memory Info</div> <div>Change Color Tone</div>				
Save	Exit	Cancel		2005/07/27 18:28:45

Check the GP display and interface operate.

- Check Display Pattern
- Check Font
- Check Touch Panel
- Calibrate Touch Panel
- Check COM/COM2/LAN
- Memory Info
- Change Color Tone

■Transfer

Home	Main Unit Settings	Peripheral Settings	Password Settings	Initialization Menu
Maintenance Menu	Transfer			
<div>Transfer Project File</div> <div>Transfer from CF to SRAM</div> <div>Transfer from SRAM to CF</div>				
Save	Exit	Cancel		2005/07/27 10:08:25

Transfer the project file and backup SRAM.

- Transfer Project File
- Transfer from CF to SRAM
- Transfer from SRAM to CF

4.2 Home

The information of GP and a project is displayed.

Home	Main Unit Settings	Peripheral Settings	Password Settings	Initialization Menu
Maintenance Menu	Transfer			
OFFLINE LANGUAGE: ENGLISH ▼				
Runtime Version:		0.5.25e		
Driver Version:		SIMATIC S7 Ethernet/TCP V1.00.00.α2		
OS Version:		1.5.0		
				➡
Save	Exit	Cancel	2005/07/27 18:27:48	

■OFFLINE LANGUAGE

Setting the language used in offline mode.

■Runtime Version

Display the runtime version.

■Driver Version

Display the protocol driver version.

4 drivers of active maximum amount are displayed. In case of the GP-3300 series 2 drivers of active maximum amount are displayed.

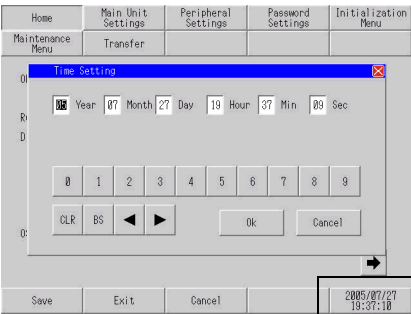
■OS Version

Display the OS version.

■Time Setting

Setting the date and time.

Setting the GP's internal clock.



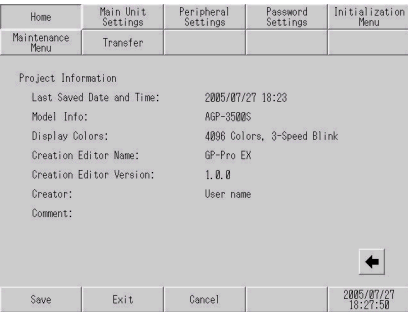
A touch of the time display area of a control switch, displays a time setting dialog box.

IMPORTANT

- The GP's internal clock has a slight error. At normal operating temperatures and conditions, with the GP operating from its lithium battery, the degree of error is 65 seconds per month. Variations in operating conditions and battery life can cause this error to vary from +90 to -380 seconds per month. For systems where this degree of error will be a problem, the user should be sure to monitor this error and make adjustments when required.

■Project Information

Display the project information downloaded to GP.



Last Saved Date and Time

Display the last saving day and time of project.

Model Info

Display the setting GP model.

Display Colors

Display the setting colors.

Creation Editor Name

Display the editor name which created the project.

Creation Editor Version

Display the editor version which created the project.

Creator

Display the creator name of project.

Comment

Display the comment of project.

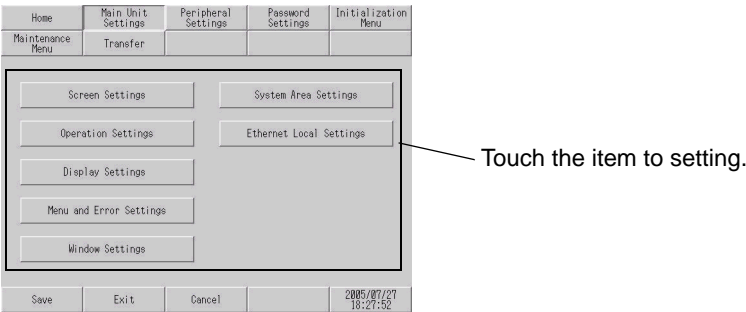
4.3 Main Unit Settings

These settings allow you to adjust the GP's operation environment.

Main Unit Settings includes the "Screen Settings", "Operation Settings", "Display Settings", "Meni and Error Settings", "Window Settings", "System Area Settings", and "Ehernet Local Settings" screens. Touch the item to setting.

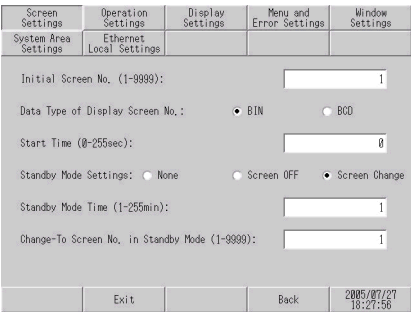
NOTE

• "Ehernet Local Settings" is not displayed when it is GP without a LAN interface.



4.3.1 Screen Settings

The initial screen display upon powering up and standby mode are setup here.



■Initial Screen No.

Set up the screen file number that will display first upon powering up. If the BIN option for DATA TYPE OF SCREEN NO in SYSTEM SET UP had been selected, enter a number from B1 to B9999. Or, if BCD was the option set up, then input a number from B1 to B7999.

■Data Type of Display Screen No.

This setup controls whether BIN or BCD format numbers are used when making screen changes.

■ Start Time

This setup determines the start-up time of the GP. Use this setup to adjust the power up sequence so that the GP starts up after the PLC.

■ Standby Mode Settings

To extend the life of the GP's backlight, the GP is equipped with a screen saver function that automatically turns the unit's backlight (s) OFF when no operations have occurred for a designated period of time.

■ Standby Mode Time

To extend the life of the ST's backlight, the ST is equipped with a screen saver function that automatically turns the unit's backlight (s) OFF when no operations have occurred for a designated period of time. A "0" entered in this field causes a normal display, i.e. the screen is cleared after the ST's standard default time elapses.

When SYSTEM DATA AREA's SCREEN DISPLAY OFF^{*1} data is 0000h, and the following operations are not performed on the screen for the User's designated period of time, the ST's current display is turned OFF.

- Change Screen
- Touch Screen
- Alarm Messages (scrolling display)
- Error Message Display
- Menu Bar (for forced reset) display AScreen

■ Changr-To Screen No. in Standby Mode

The screen number displayed at the time of the standby mode shift , when select "Screen Change" of "Standby mode settings".

*1 When using the Direct Access or the Memory Link formats, the object address becomes +9 or +12, respectively. (Only when all items are set within the System Data Area.)

4.3.2 Operating Settings

Setup the touch panel.

Screen Settings	Operation Settings	Display Settings	Menu and Error Settings	Window Settings
System Area Settings	Ethernet Local Settings			
Touch Panel Detection:		<input checked="" type="radio"/> ON	<input type="radio"/> OFF	
Touch Buzzer Sound:		<input checked="" type="radio"/> Enable	<input type="radio"/> Disable	
Output to External Buzzer Terminal:		<input checked="" type="radio"/> Enable	<input type="radio"/> Disable	
Touch Panel Operation on Back Light Off:		<input checked="" type="radio"/> Operational	<input type="radio"/> Inhibit	
Exit		Back		2005/09/20 16:26:47

■Touch Panel Detection

Setup the touch detect timing.

ON: Touch is detected when a touch is pushed.

OFF: Touch is detected when the finger leaves from the screen.

In momentary operation, it is detected when touched regardless of a Touch Panel Detection setting.

In repeat operation, Touch Panel Detection setting becomes invalid.

■Touch Buzzer Sound

Setup whether or not the GP beeps when pressed.

■Output to External Buzzer Terminal

It is a setup of whether to output a BUZZ signal from auxiliary I/O interface of GP. It sets up, when connecting an external buzzer.

■ Touch Panel Operation on Back Light OFF

This option designates whether touch-operation is disabled or not when the backlight burns out.

If this selection is set to “Inhibit“, touch-operation will be disabled when the backlight burns out, which prevents the GP from sending input signals to the PLC.

NOTE

- When the backlight burns out, the Status LED's orange light turns ON.
 - The GP3000 series models use two backlights (CCFL). The GP detects backlight burnout when one of the two backlights burns out, and disables touchoperations.
 - When the backlight burns out, the System Data Area's "Status" bit 10^{*1} will turn ON.
 - If the “Show System Menu“ option is set to “Lower Part” or “Upper Part“, only "System Reset" can still be performed by touch-operation in case of backlight burnout.
 - If the backlight burns out when the GP is OFFLINE, touch-panel operation is enabled, regardless of these settings.
- *1 Bit +6 (when using the Direct Access method), and bit +11 (when using the Memory Link method), will turn ON.



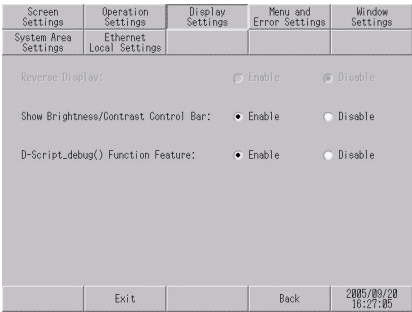
GP-PRO/PBIII for Windows PLC Connection Manual (included with screen creation software)

IMPORTANT

- Normally, the GP unit detects a backlight burnout by monitoring the backlight's current flow, however, the GP may fail to detect this condition, depending on the type of backlight problem, and also the GP may detect the condition before the backlight burns out.

4.3.3 Display Settings

Setup the panel display.



■ Reverse Display

To reverse the screen display colors, setting “Exist”. This function setting only monochrome LCD model (AGP-3300L etc.)

■ Show Brightness/Contrast Control Bar

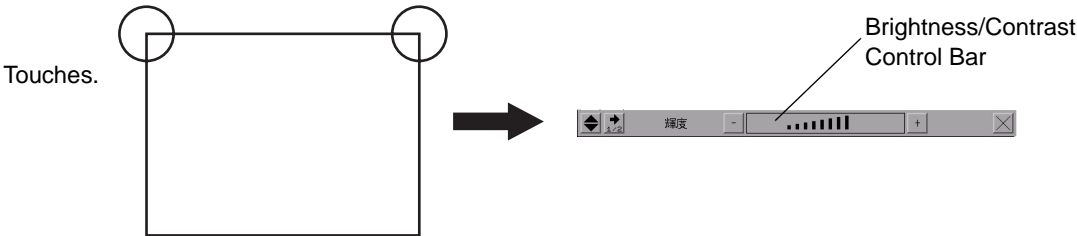
When set to "EXIST", Brightness/Contrast Control Bar can be displayed.

Display the Brightness/Contrast Control Bar

IMPORTANT

- This mode cannot be entered while waiting for GP to start up.
- This operation can be made even in the middle of RUN mode (PLC<-->GP communication).

Touch either the upper right and upper left corners, or the upper left and upper right corners (within 40 pixels of every direction) of the panel in this order within 0.5 second.



[+] and [-] of Brightness/Contrast Control Bar are touched, strength is set up, [x] is touched, and adjustment is ended. Only Brightness setting is applicable when using TFT color LCD model (AGP3500T etc.)

To end Brightness/Contrast Control mode

Touch the [x] of Brightness/Contrast Control Bar

■ D-Script_debug () Function Feature

It sets up whether a display is confirmed or not, when a _degug () function is used with D script.

SEE →

GP-Pro EX Reference Manual

4.3.4 Menu and Error Settings

A system menu, the display position of an error message, etc. are set up.

Screen Settings	Operation Settings	Display Settings	Menu and Error Settings	Window Settings
System Area Settings	Ethernet Local Settings			
System Language Settings: JAPANESE ▼				
Show System Menu: <input type="radio"/> Not Display <input checked="" type="radio"/> Lower Part <input type="radio"/> Upper Part				
Show Error Online: Clear at Recovery ▼				
Error Display Position: <input type="radio"/> Upper Part <input checked="" type="radio"/> Lower Part				
Auto Recovery on System Error: <input checked="" type="radio"/> Enable <input type="radio"/> Disable				
Exit		Back		2005/07/27 16:28:13

■System Language Settings

The language of the character string displayed with an error message, a system menu, etc. is set up.

■Show System Menu

The display position of a system menu is set up. The lower part or the upper part of a panel can be selected.

A system menu is not displayed, when “No Display” is selected.

■Show Error Online

The timing which eliminates the error message displayed at operation is set up.

NoneThe error message is not displayed.

Clear at RecoveryThe error message is eliminated at error recovery.

Even when “Clear at Recovery” is selected, the error message is eliminated at screen change.

Clear at Screen ChangeThe error message is eliminated at screen change. After error recovery continues being displayed until a screen changes.

■Error Display Position

The display position of an error message when an error occurs is set up. The lower part or the upper part can be selected. After an error is displayed, it can also be made to move to the upper part or the lower part.

■Auto Recovery on System Error

When a system error occurs, it selects whether restores automatically.

When the “ Enable “ is selected, from error occurrence GP restarts after approximately 20 seconds.

SEE → GP-Pro EX Reference Manual “30.4 Error Displayed on GP ■System error“

4.3.5 Window Settings

The GLOBAL WINDOW SETUP is described here. GP series can display Global Window at any one time.

Screen Settings	Operation Settings	Display Settings	Menu and Error Settings	Window Settings
System Area Settings	Ethernet Local Settings			
Global Window Operation: <input type="radio"/> Disable <input checked="" type="radio"/> Direct <input type="radio"/> Indirect				
Window Screen No. (1-2000): <input type="text" value="1"/>				
Display Position X-Coordinate: <input type="text" value="320"/>				
Display Position Y-Coordinate: <input type="text" value="240"/>				
Exit		Back		2005/07/27 18:26:18

Global window direct specification

Screen Settings	Operation Settings	Display Settings	Menu and Error Settings	Window Settings
System Area Settings	Ethernet Local Settings			
Global Window Operation: <input type="radio"/> Disable <input type="radio"/> Direct <input checked="" type="radio"/> Indirect				
Data Type: <input checked="" type="radio"/> BIN <input type="radio"/> BCD				
Exit		Back		2005/07/27 18:26:20

Global window indirect specification

■Global Window Operation

DisableWhen not using a global window, it selects "Disable."

If you select "Disable", ignore the items described below.

DirectA window display position is specified directly.

When set as "Direct", the REGISTRATION NO. and LOCATION selections are fixed to the values entered here.

Indirect.....A window display position is specified indirectly.

When set to "Indirect", the WINDOW REG. NO.'s word address is used by the SYSTEM AREA as a variable. This means the REGISTRATION NO. written to it changes and, as a result, can call up multiple window screens as Global windows. You can also use this method to adjust the Global window's position by writing the desired X,Y coordinates to the SYSTEM AREA's LOCATION word addresses.

■Data Type

Setup whether the REGISTRATION NO. and the LOCATION values are BIN or BCD values. This field is related only to indirect values.

■Window Screen No.

Enter the Window Screen Number used by the Global Window. This field is enabled only when GLOBAL WINDOW ACCESS is set to direct.

■Display Position X Coordinate/Y Coordinate

Enter the value used for the (Global WINDOW) LOCATION. This field is enabled only when GLOBAL WINDOW ACCESS is set to direct. Use this setting to designate the top left coordinate on the screen registered as a Global Window. If you are installing the GP vertically, i.e. in portrait not landscape mode, designate the bottom left coordinate instead

4.3.6 System Area Settings

A setup in the case of synchronizing the internal memory (system data area) of GP and the device (memory) of connection equipment is performed. When it is made to synchronize, a screen change and global window display of GP can be performed by the rudder program of connection equipment etc.

Screen Settings	Operation Settings	Display Settings	Menu and Error Settings	Window Settings
System Area Settings	Ethernet Local Settings			
System Area Device: PLC1 System Area Start Address: DB1.DBW0 Read Area Size (0-256): 0 System Data Area: <input type="radio"/> Do Not Use <input checked="" type="radio"/> Use				
➡				
Exit		Back		2005/07/27 18:28:26

■System Area Start Address

Setup the System Data Area's Start Address. Device addresses that can be allocated will differ depending on the type of PLC used..

SEE → *GP-Pro EX Device/PLC Connection (included with screen creation software)*

■Read Area Size

Setup the System Data Area's Start Address. Device addresses that can be allocated will differ depending on the type of PLC used..

NOTE • If you are not using the Reading Area, leave the 0 default values intact. This will allow you to perform high speed data communication.

■System Data Area

The System Data Area is used by the PLC to control its GP-related data, and is contained in the PLC. The types of devices that can be set up in the System Data Area differ depending on the PLC type.

SEE → *GP-Pro EX Device/PLC Connection (included with screen creation software)*

When the GP uses Memory Link format, this setting is unnecessary.

Screen Settings	Operation Settings	Display Settings	Menu and Error Settings	Window Settings
System Area Settings	Ethernet Local Settings			
LS0 Current Screen No.	#0			#10
LS1 Error Status	#1			#11
LS6 Status	#2			#12
LS10 Clock Data (Setting)	#3			#13
LS11 Clock Data (Setting)	#4			#14
LS12 Clock Data (Setting)	#5			#15
LS13 Clock Data (Setting)	#6			#16
LS17 Window Screen No.	#7			#17
	#8			#18
	#9			#19
<input checked="" type="checkbox"/> Current Screen No.	1Word	<input checked="" type="checkbox"/> Clock Data (Setting)	4Words	
<input checked="" type="checkbox"/> Error Status	1Word	<input type="checkbox"/> Control	1Word	
<input type="checkbox"/> Clock Data (Current)	4Words	<input type="checkbox"/> Reserved (Read)	1Word	
<input checked="" type="checkbox"/> Status	1Word	<input type="checkbox"/> Window Screen No.	1Word	
<input type="checkbox"/> Reserved (Write)	1Word	<input checked="" type="checkbox"/> Window Position	2Words	➡
<input type="checkbox"/> Change-To Screen No.	1Word			
<input type="checkbox"/> Screen Display ON/OFF	1Word			
Exit		Back		2005/07/27 18:28:42

Press the item, and when the item is attached check, it has been selected.

System Area Size

This field displays the total number of words used for the items selected from the SYSTEM AREA SETUP.

- NOTE**
- These settings are enabled only when using Direct Access format.
 - The selected System Area items, as displayed on the screen, become the SystemData Area.

When these five items, "Current Screen Number", "Error Status", "Clock Data (Current)", "Change Screen Number", and "Display ON/Off", have been selected, word addresses are assigned to each item, in order, as shown here.

Screen Settings	Operation Settings	Display Settings	Menu and Error Settings	Window Settings
System Area Settings	Ethernet Local Settings			
LS0	Current Screen No.	H0		H10
LS1	Error Status	H1		H11
LS2	Clock Data (Current)	H2		H12
LS3	Clock Data (Current)	H3		H13
LS4	Clock Data (Current)	H4		H14
LS5	Clock Data (Current)	H5		H15
LS6	Change-To Screen No.	H6		H16
LS7	Screen Display ON/OFF	H7		H17
		H8		H18
<input checked="" type="checkbox"/>	Current Screen No.	Word	<input type="checkbox"/> Clock Data (Setting)	dWords
<input checked="" type="checkbox"/>	Error Status	Word	<input type="checkbox"/> Control	Word
<input checked="" type="checkbox"/>	Clock Data (Current)	dWords	<input type="checkbox"/> Reserved (Read)	Word
<input type="checkbox"/>	Status	Word	<input type="checkbox"/> Window Control	Word
<input type="checkbox"/>	Reserved (Write)	Word	<input type="checkbox"/> Window Screen No.	Word
<input checked="" type="checkbox"/>	Change-To Screen No.	Word	<input type="checkbox"/> Window Position	2Words
<input checked="" type="checkbox"/>	Screen Display ON/OFF	Word		
	Exit		Back	2005/09/13 15:11:50

In the screen above, the device address used for [SET UP OPERATION SURROUNDINGS]’s “SYSTEM AREA START DEV / START ADR” is “+0”.

Thus, in the example shown above, when the “SYSTEM AREA START DEV / START ADR” is “D00200”, and the [CHANGE SCREEN NO.] has been designated, the address is shown as “+6” and you will need to then enter “D00206” (i.e.”D00200” + 6) to use this address.

4.3.7 Ethernet Local Settings

This menu is for Ethernet settings. This information is used as setting data during GP setup or screen transfer, or, if the Pro-Server software is used, for the 2-Way Driver.

Screen Settings	Operation Settings	Display Settings	Menu and Error Settings	Window Settings
System Area Settings	Ethernet Local Settings			
Local Name:				
IP Address:				
Subnet Mask:				
Port:				
Gateway:				
Auto Recognition:				
Speed Settings:				
Duplex Settings:				
	Exit		Back	2005/09/20 16:27:18

- IMPORTANT**
- Enter the “ETHERNET SETUP” settings after receiving information from your network’s system administrator.
 - Be sure to enter a unique IP address, not one used for other GPs or by the host.

■Local Name

The name used on a network is inputted in the half width of less than 32 characters.

■IP Address

Sets up the GP's IP address. The IP address is 32 bits and designated in four 8-bit units, entered in decimal.

■Subnet Mask

Sets the subnet mask. If you are not using a subnet mask, designate 101.

■Port

They are "8000" fixation at forced transfer.

"8000" is specified when performing automatic search by LAN.

Local Port No. using a value from 1024 to 65535. Starting from the value entered here, a total of 10 consecutive ports can be used. The default setting is "8000".

■Gateway

Sets up the gateway's IP address. Only a single gateway can be set up. If you are not using a gateway, enter "0".

■Auto Recognition

It sets up whether network automatic recognition is confirmed. When not performing automatic recognition, "Speed Settings" and "a Duplex Settings" are set up manually.

■Speed Settings

A network speed is selected from "100M" and "10M."

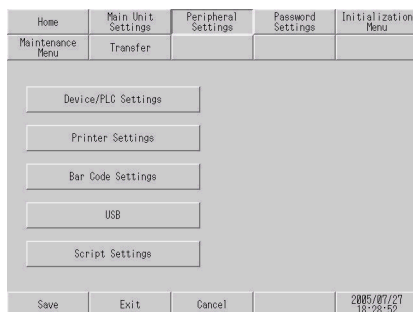
■Duplex Setting

A network communication system is selected from "Half" and "Full."

4.4 Peripheral Settings

A setup about communication and a setup about peripheral equipment are mainly explained.

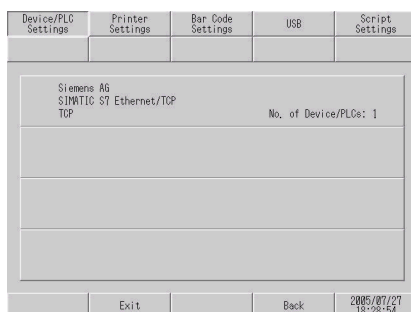
There are "Device/PLC Settings", "Printer Settings", "Bar Code Settings", "USB", and "Script Settings" as "Peripheral Settings."



4.4.1 Device/PLC Settings

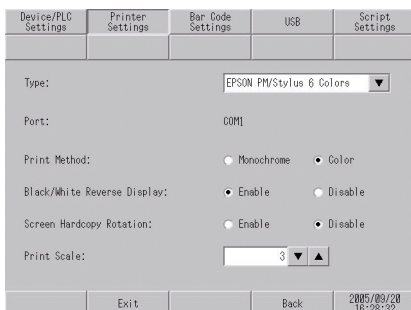
A setup about communication of connection equipment (PLC is a host etc.) is performed. Please unite with a communication setup of connection equipment. A setting item changes with selected connection equipment.

SEE → *GP-Pro EX Device/PLC Connection (included with screen creation software)*



4.4.2 Printer Settings

The model and the printing method of the printer linked to GP are set up. To perform a printer setup in offline mode, it is necessary to make it a setup which uses a printer with screen creation software beforehand.



■Type

Printers that are compatible with NECPC-PR201/PL , EPSON ESC/P24-J84(C), HP Laser Jet PCL 4 commands, EPSON PM/Stylus (6-color ink), and EPSON Stylus (4-color ink) printers can be used.

NOTE

- There is no difference in the quality and printing speed between EPSON ESC/P (High Speed) and EPSON ESC/P (High Quality) when the GP (corresponding to 64 colors or more) is used to print out hard copy of screen images.

◆EPSON PM Series / EPSON Stylus Series

Restrictions for using EPSON PM / EPSON Stylus Series printers

- When printing using an EPSON PM/Stylus (6-color) or an EPSON Stylus (4-color) printer, GP screen updating (tag processing, etc.) will be slower.

About the hard copy of a screen

- A magnification value of 1 to 4 can be specified while printing out screen hard copy. With GP-2601T units, a magnification value of 4 may cause the printout to exceed the width of an A4 size paper.
- When screen data printout uses levels of shading, printout from these printers will differ from a different type printer (PR201, etc.). This is because colors are recognized based on shading level patterns and not on the density of shading.

■Port

The connection method of a printer is displayed.

A setup of a port is set up with screen creation software.

■Print method

Two selections [GREY SCALING] and [COLOR] are available.

NOTE

- With the [GREY SCALING] feature, printing patterns are reduced to 5 levels of gray from 256 or 64 colors. Colors that do not appear in the printout are ones that have been converted to white.

■Black/White Reverse Display

This setting is used for reversing the background and display color black/white color attributes.

<e.g.> When the background color is black and the display color is white.



When "BLACK/WHITE REVERSE" is selected.



When "BLACK/WHITE REVERSE" is not selected.

NOTE

- This setting is enabled only when a screen display is printed.

■Screen Hardcopy Rotation

This setting designates the direction of the screen copy printout (horizontal or vertical).

■Print Scale

It touches "▼" "▲" of the screen, sets optional magnification ratio.

Touching the numerical part, it is possible also to input directly.

4.4.3 Bar Code Setting

The communication method of a bar code linked to GP is set up. To perform a bar code setting in offline mode, it is necessary to make it a setup which uses a bar code with screen creation software beforehand.

Device/PLC Settings	Printer Settings	Bar Code Settings	USB	Script Settings
<div> <div>Bar Code 1 ▼</div> <div> <div>Type:</div> <div>Save Data in:</div> <div>Speed (bps): 9600</div> <div>Data Length:</div> <div>Parity: • None</div> <div>Stop Bit: • 1</div> <div>Flow Control: RTS/CTS Control ▼</div> <div>5V Power Supply: • Enable • Disable</div> </div> <div> <div>Port: COM1</div> <div>Bar Code Reader</div> <div>Data Display ▼</div> <div> <div>7bit • 8bit</div> <div>Even • Odd</div> <div>1 • 2</div> <div>Enable • Disable</div> </div> </div> </div>				
Exit		Back		2005/09/28 16:31:26

■Bar Code

The bar code to set up is selected from "Bar Code 1" and "Bar Code 2."

■Speed

The transmission speed between connection equipment and GP is selected.

■Data Length

The length (bit) of the data which communicates is selected from "7" and "8."

■Parity

The method of a parity check is selected from "Non", "Even", and "Odd."

■Stop Bit

The length (bit) of a stop bit is selected from "1" and "2."

■Flow Control

The system of the communication control which prevents overflow of transmission data and which is performed for accumulating is chosen from "nothing", "ER (DTR/CTS) control", and "RTS/CTS control."

■ 5V Power Supply

It select from GP whether 5V power supply is supplied.

4.4.4 USB

The information (a manufacture name and product name) on the USB device linked to GP is displayed.

Device/PLC Settings	Printer Settings	Bar Code Settings	USB	Script Settings				
<table border="1"> <thead> <tr> <th>Maker</th> <th>Product Name</th> </tr> </thead> <tbody> <tr> <td colspan="2" style="height: 100px;"></td> </tr> </tbody> </table>					Maker	Product Name		
Maker	Product Name							
Exit		Back		2005/07/27 18:29:01				

4.4.5 Script Setting

A communication setup of the connection equipment used with a script is performed. To perform a script setting in offline mode, it is necessary to make it a setup which uses a bar code with screen creation software beforehand.

Device/PLC Settings	Printer Settings	Bar Code Settings	USB	Script Settings
<div> <div>Script 1 ▼</div> <div> Port: COM1 </div> <div> SIO Type: RS232C ▼ </div> <div> Speed (bps): 9600 ▼ </div> <div> Data Length: <div> <input type="radio"/> 7bit <input checked="" type="radio"/> 8bit </div> </div> <div> Parity: <div> <input checked="" type="radio"/> None <input type="radio"/> Even <input type="radio"/> Odd </div> </div> <div> Stop Bit: <div> <input checked="" type="radio"/> 1 <input type="radio"/> 2 </div> </div> <div> Flow Control: RTS/CTS Control ▼ </div> <div> 5V Power Supply: <div> <input type="radio"/> Enable <input checked="" type="radio"/> Disable </div> </div> </div>				
Exit		Back		2005/09/20 16:33:28

■Script

The script to set up is selected from "Script 1" and "Script 2."

■SIO Type

The communication system which communicates with connection equipment is selected from "RS232C", "RS422/485 (2 line type)", and "RS422/485 (4 line type)."

■Speed (bps)

The transmission speed between connection equipment and GP is selected.

■Data Length

The length (bit) of the data which communicates is selected from "7" and "8."

■Parity

The method of a parity check is selected from "Non", "Even", and "Odd."

■ Stop Bit

The length (bit) of a stop bit is selected from "1" and "2."

■ Flow Control

The system of the communication control which prevents overflow of transmission data and which is performed for accumulating is chosen from "nothing", "ER (DTR/CTS) control", and "RTS/CTS control."

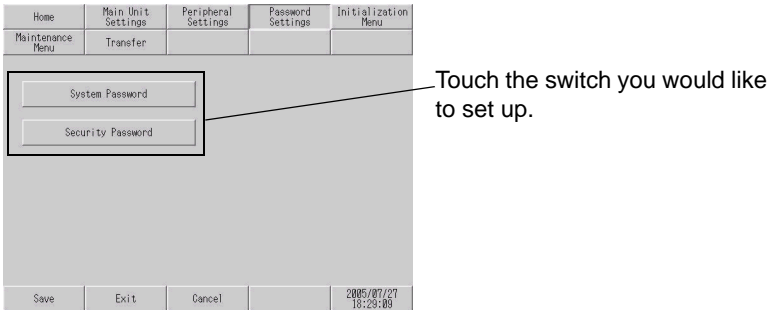
■ 5V Power Supply

It select from GP whether 5V power supply is supplied.

4.5 Password Settings

The password setting is used when changing to the Initialize Memory or OFFLINE mode Screens.

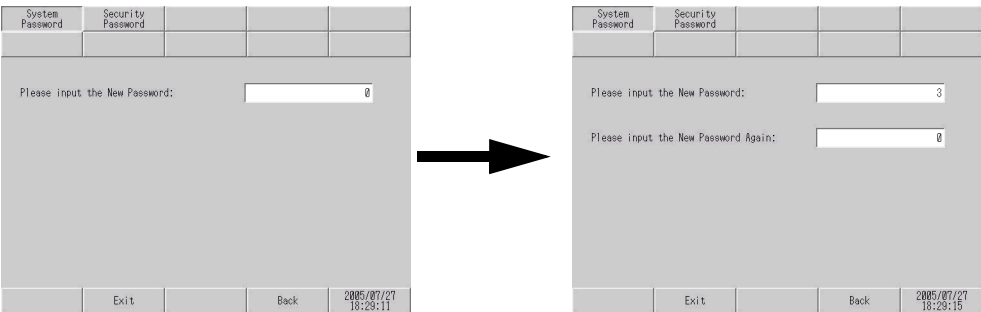
There are a "System Password" and a "Security Password" in "Password Setting." In addition, with a security password, the password of the security function used during operation can be changed.



4.5.1 System Password

The password setting is used when changing to the Initialize Memory or Initialize (OFFLINE mode) Screens.

The password (from 0 to 99999999) ensures protection of the GP settings, since the use of OFFLINE mode is controlled. If you do not wish to use this feature, enter the default value, 0.



4.5.2 Security Password

If the password of a level 15 is inputted, the password from level 1 to level 15 can be changed. In case the password of each level is changed, after inputting the password set up now is entered. A password is inputted by 8 figures of half-width alphanumeric characters. To set up a security password in offline mode, it is necessary to attach the check "uses a security function" with screen creation software beforehand, and to set up the password of a level 15.

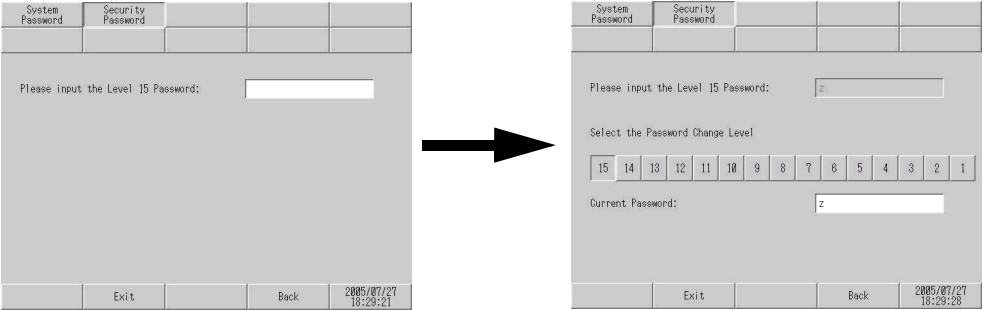
IMPORTANT

- When the security password of a level 15 is not set up with screen creation software, setting change of a security password cannot be performed in offline mode.



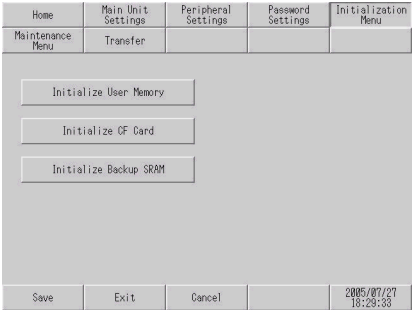
GP-Pro EX Reference Manual

A level to set up from [Select the Password Change Level] is touched, and a security password is inputted.



4.6 Initialization Settings

This section explains how to initialize the GP's internal data or a CF card inserted in the GP. Select one of the menu items, "Initialize User Memory", "Initialize CF Card", and "Initialize Backup SRAM" selections in the "Initialization Settings" menu.



4.6.1 Initialize User Memory

All the data in GP user memory is initialized.

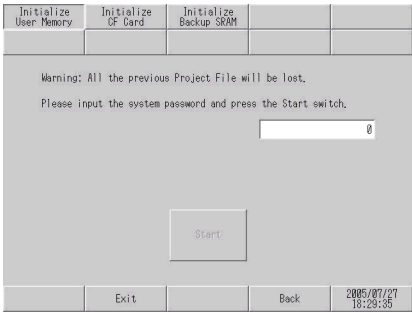
IMPORTANT

- You cannot cancel the Initialization procedure after pressing the Start key.
- All backed up data in SRAM is lost.
- Initialization does not erase the SYSTEM SET UP, the SIO protocol, or the internal clock settings.

To initialize the internal memory, enter the "1101" (when the system password is not set), or the password entered in the "System Password" screen.

NOTE

- The time required for Initialization is between 10 and 20 seconds.



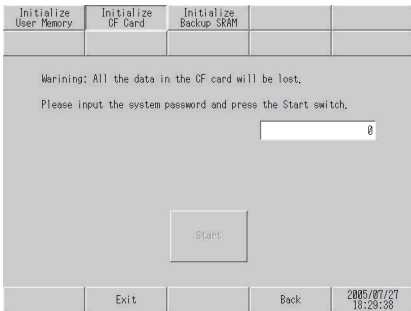
4.6.2 Initialize CF Card

Deletes all data in the CF Card installed in the GP.

IMPORTANT

- Initialization cannot be canceled once the START switch is touched.

To initialize the CF Card, enter the “1101” (when the system password is not set) or the password you designated in the "System Password" screen.



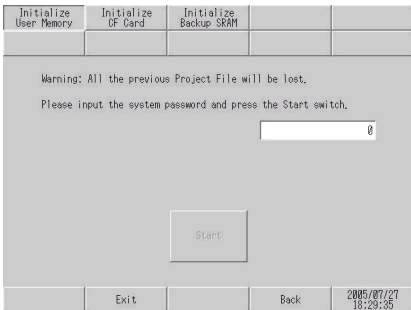
4.6.3 Initialize Backup SRAM

All the data in GP’s backup SRAM is initialized.

IMPORTANT

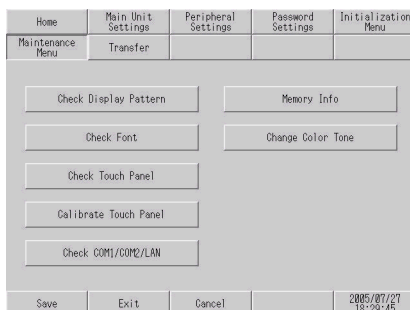
- You cannot cancel the Initialization procedure after pressing the Start key.
- All backed up data in SRAM is lost.
- Initialization does not erase the SYSTEM SET UP, the SIO protocol, or the internal clock settings.

To initialize the GP’s backup SRAM, enter the “1101” (when the system password is not set) or the password you designated in the "System Password" screen.



4.7 Maintenance Menu

The system and interface of GP confirm whether to operate normally. The "Maintenance Menu" has "Check Display Pattern", "Check Font", "Check Touch Panel", "Calibration Touch Panel", "Check COM1/COM2/LAN", "Memory Info", and "Check Color Tone."

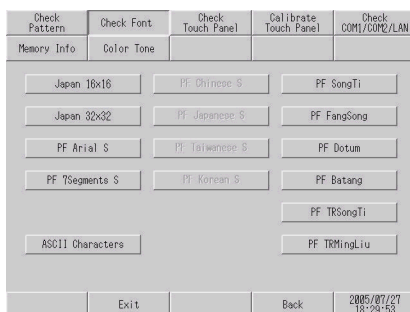


4.7.1 Check Display Pattern

It is the check of a drawing function. It is confirmed whether a liquid crystal display is displayed correctly.

4.7.2 Check Font

The font pattern of installed font is displayed.



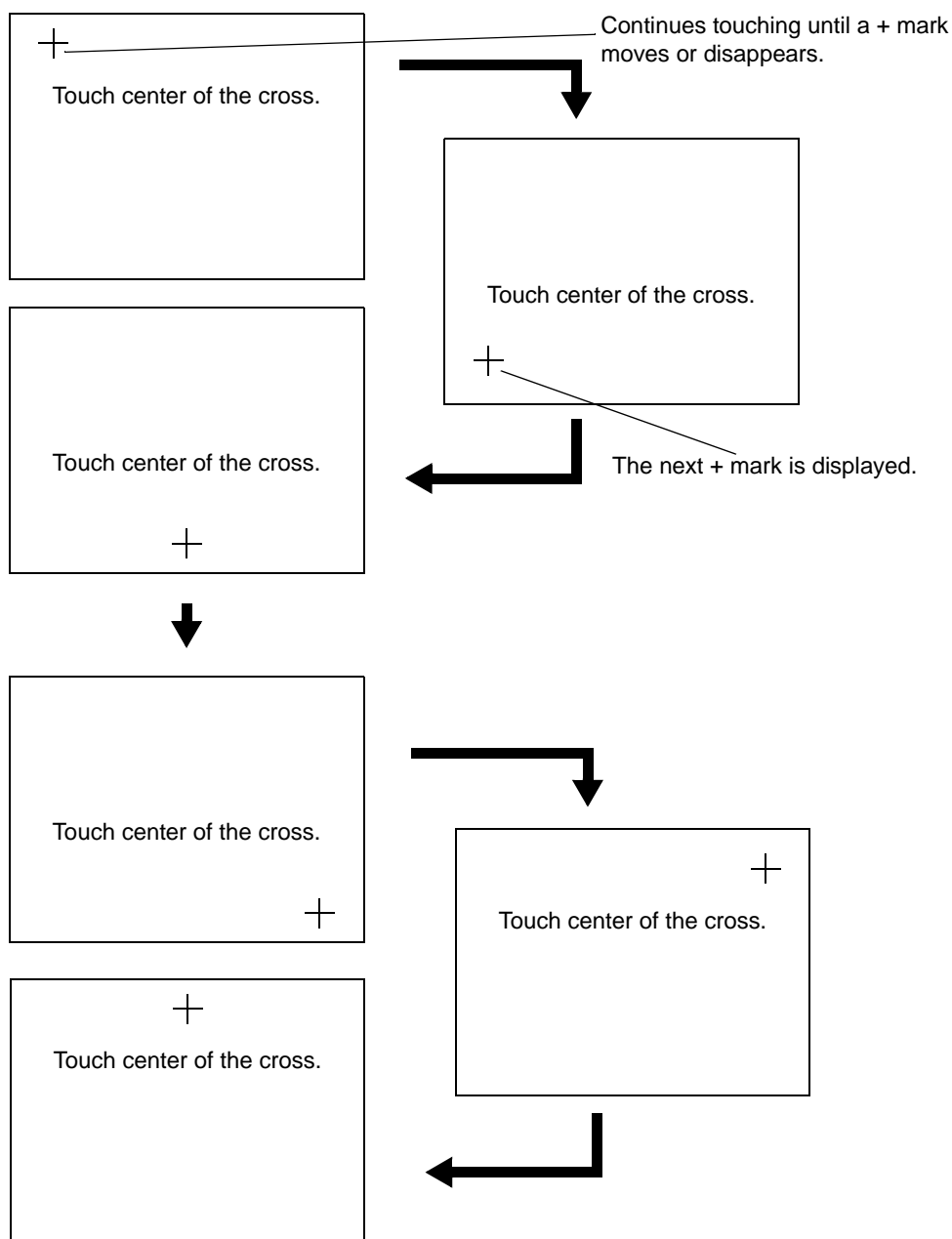
4.7.3 Check Touch Panel

■ Touch Panel

It is the check of touch panel. Check the touched part lights up correctly.

4.7.4 Calibration Touch Panel

Correct an analog touch panel. (setup of a calibration)



NOTE

- If the part distant from the round mark is touched, it is judged as an incorrect input and calibration mode cannot be ended normally.

When all touches (six points) are able to input correctly, the last point (center of the upper) is touched, and after calibration mode is ended.

4.7.5 Check COM1/COM2/LAN

■Communication Check Menu

Check the sending and receiving line of RS-232C, RS-485 and LAN.

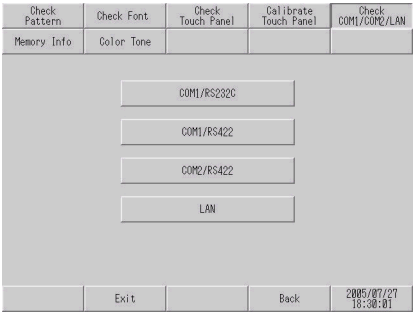
Usually when abnormality occurs, it checks. It selects check item from the menu.

When it checks RS-232C and RS-422, connection of the SIO cable is necessary.

SEE → 5.2 SELF TEST (page5-6)

In normal case: "OK" is displayed.

When there is an abnormality: Error message is displayed.



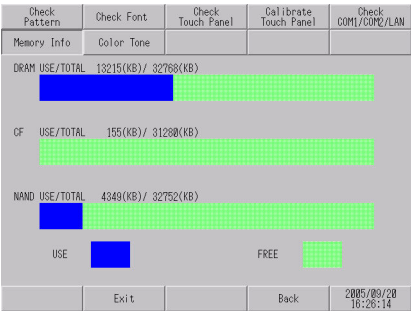
LAN

Check the loop back inside GP.

Sum check of MAC address is done, if the normality "OK", abnormality "NG" is displayed.

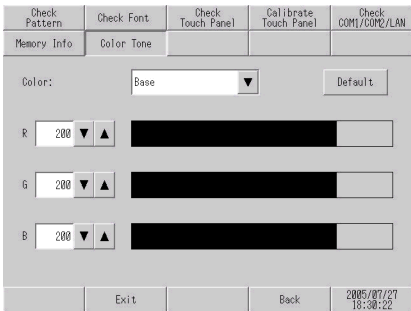
4.7.6 Memory Info

The memory total and memory usage of GP are displayed.



4.7.7 Check Color Tone

The color tone in offline mode can be changed.



■Color

The change part of a color tone select from "Base", "Text", and "BackGround."

■RGB

The color tone of the part selected by [Color] is changed. There are three methods in change of RGB each element.

Inputs numerically Touch the numerical value, and value of each element is input with the displayed keyboard.

Input drum button Numerical value is modified with the drum button of numeric field side.
It changes +5 or -5 each.

Input directly Touch the histogram of each element directly, it modifies numerical value.

■Default

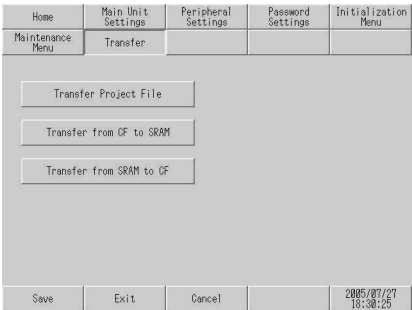
Returns to an initial condition.

4.8 Transfer

The transmission method of data has "Transfer Project File", "Transfer CF->SRAM", and "Transfer SRAM->CF."

IMPORTANT

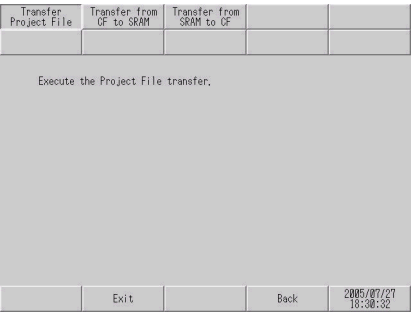
- Please format CF card used by GP in FAT format. CF card formatted in NTFS format cannot be recognized.



4.8.1 Transfer Project File

When the project file is transferred at offline mode, it is necessary to shift GP to a transfer waiting state.

After a "Execute the Project File transfer." is displayed, please transfer with screen creation software.

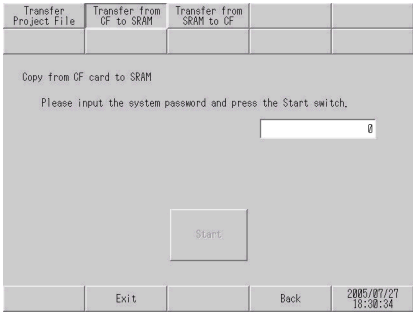


4.8.2 Transfer CF->SRAM

The data of CF card is transferred to the internal memory (SRAM).
The data of an internal memory is eliminated and the data of CF card is overwritten.
When transferring, a system password is entered, and [Start] is touched.

SEE → 4.5.1 System Password (page4-27)

When the system password is not set, input "1101" and touches "Start".

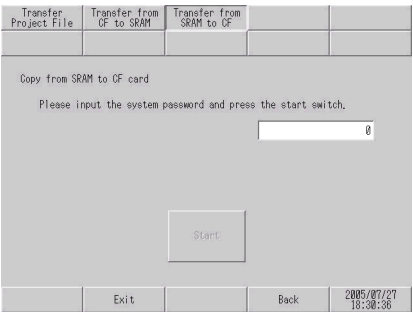


4.8.3 Transfer SRAM->CF

The data of internal memory (SRAM) is transferred to the CF card.
The data of CF card is eliminated and the data of internal memory is overwritten.
When transferring, a system password is entered, and [Start] is touched.

SEE → 4.5.1 System Password (page4-27)

When the system password is not set, input "1101" and touches "Start".



5 | Troubleshooting

1. Troubleshooting Checklists
2. SELF TEST

This section explains how to find and correct GP unit problems.

The GP unit can be connected to a wide range of devices, including a host (PLC), however, this manual can not discuss every possible device, or problem. Therefore, regarding problems not directly related to the GP unit, refer to that device's manual.

5.1 Troubleshooting Checklists

The primary GP unit problems that occur are:

- (1) The panel display is blank.
- (2) Connected devices cannot be used.

When a problem occurs, be sure to first read each checklist item and follow the instructions given.

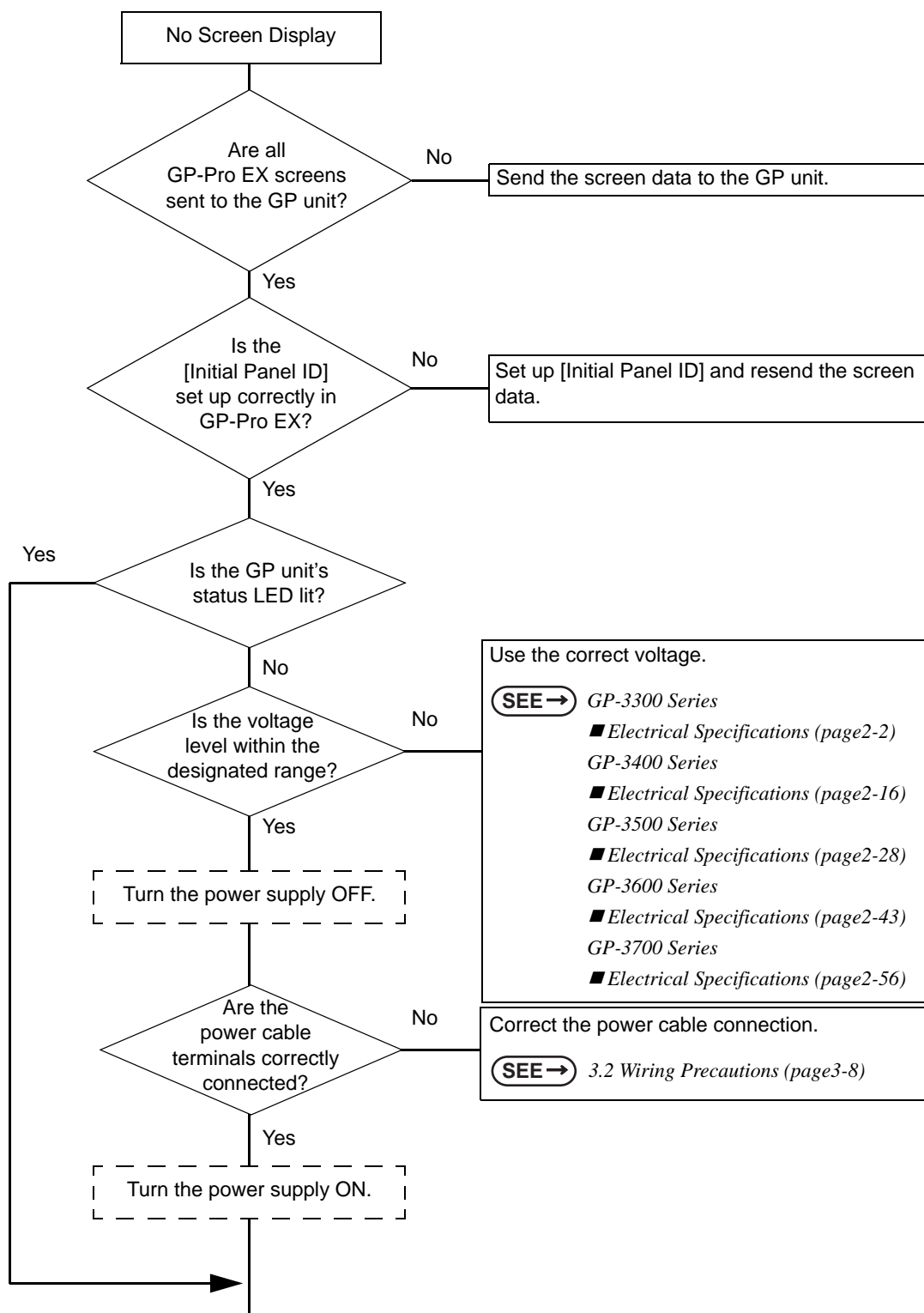
If this does not solve the problem, please contact your local GP distributor.

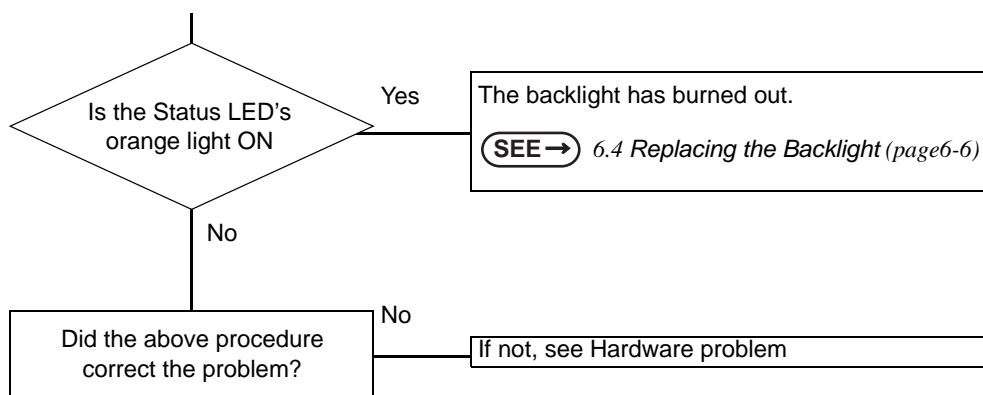
■ TOUCH PANEL

For hardware and software problems, please contact your local GP distributor.

5.1.1 No display

Use the flowchart below when the screen does not display when powering up, or if the screen turns OFF by itself during RUN mode.

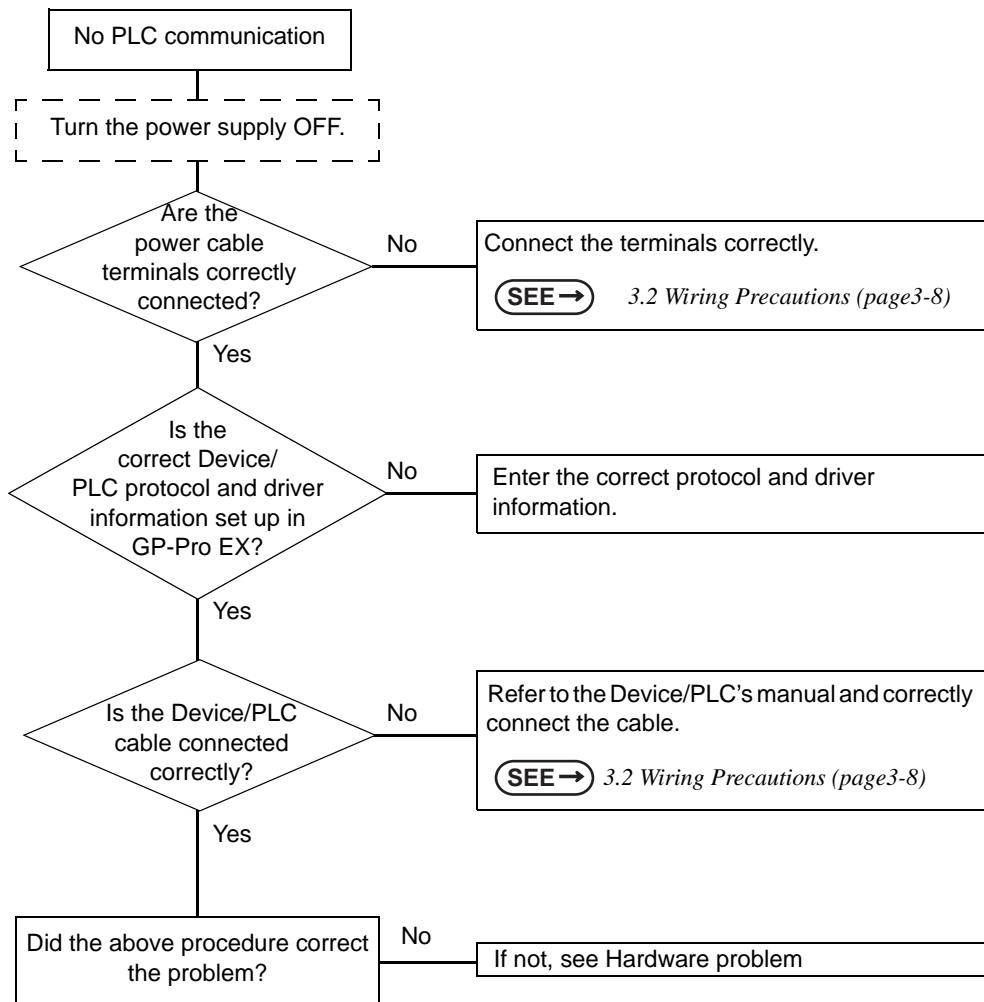




5.1.2 No GP/Host Communication

When the AGP cannot communicate with the host PLC, follow the flowchart below to find the cause of the problem and the solution.

Or, if an error message displays on the screen, check the error code to find the appropriate solution.



5.2 SELF TEST

The GP unit is equipped with a number of self diagnosis features that can be used to check its System and Interfaces for possible problems.

5.2.1 SELF TEST item list

ホーム	本体設定	周辺機器設定	パスワード設定	初期化メニュー
メンテナンスメニュー	転送			

表示パターンチェック	メモリ情報			
フォント表示チェック	色調変更			
タッチパネルチェック				
タッチパネルのキャリブレーション				
COM1/COM2/LANチェック				
保存	終了	取消		2005/07/27 18:14:39

The SELF TEST items are as follows:

Char. Pattern, Disp. Pattern, Touch Panel

COM 1^{*1}, COM 2^{*1}, LAN, Video Memory

The following pages explain each item in detail.

5.2.2 SELF TEST - details

This section explains the SELF TEST selections.

■Char. Pattern

Character pattern check of each font (Japanese, Korean, Taiwanese, Chinese and European languages).

Checks each language's font image.

For Korean, Taiwanese and Chinese, this check is available only for the fonts which the user has downloaded.

■Disp. Pattern

Used when the device contents will not display correctly to check the drawing function.

■Touch Panel

Touch Panel check. Checks if each touch cell highlights when pressed.

■COM1/COM2/LAN

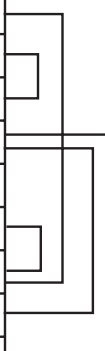
Checks the RS-232C and RS-422 SIO lines for areas where communication problems develop. To perform the check, connect an SIO cable. If all is normal, [OK] displays; if there is a problem, an error message appears.

The SIO cable's wiring is as shown below.

◆GP3000 Series Units (eliminate the AGP-3302B)

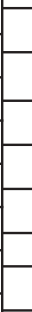
COM1 RS232C mode

Pin	Signal name
1	CD
2	RD
3	SD
4	ER
5	SG
6	DR
7	RS
8	CS
9	RI




COM1 RS422 mode

Pin	Signal name
1	RDA
3	SDA
2	RDB
7	SDB
4	ERA
8	CSA
9	ERB
6	CSB



COM2

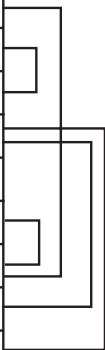
Pin	Signal name
2	RDA
3	SDA
7	RDB
8	SDB



◆AGP-3302B Units)


COM1

Pin	Signal name
1	CD
2	RD
3	SD
4	ER
5	SG
6	DR
7	RS
8	CS
9	RI



COM2

Pin	Signal name
1	RDA
3	SDA
2	RDB
7	SDB
4	ERA
8	CSA
9	ERB
6	CSB



■Memory

Usage condition of memory appears. Use this feature when your screen display is not correct.

MEMO

6

Maintenance

1. Cleaning the Display
2. Periodic Check Points
3. Replacing the Installation Gasket
4. Replacing the Backlight

This chapter explains cautions and inspection criteria that will ensure trouble-free use of the GP.

6.1 Cleaning the Display

When the surface or frame of the display become dirty, soak a soft cloth in water with a neutral detergent, wring the cloth tightly, and wipe the display.

IMPORTANT

- Do not use paint thinner, organic solvents, or a strong acid compound to clean the unit.
- Do not use hard or pointed objects to operate the touch-screen panel, since it can damage the panel surface.

6.2 Periodic Check Points

To keep your GP unit in its best condition, please inspect the following points periodically.

■GP Operation Environment

- ☐ Is the operating temperature within the allowable range (0°C to 50°C)?
- ☐ Is the operating humidity within the specified range (10%RH to 90%RH, dry bulb temperature of 39°C or less)?
- ☐ Is the operating atmosphere free of corrosive gasses?

When using the GP unit inside a panel, the ambient environment refers to the interior of the panel.

■Electrical Specifications

- ☐ Is the input voltage appropriate?

AC100 to 240V 50/60Hz

DC19.2 to 28.8V

■Related Items

- ☐ Are all power cords and cables connected properly? Have any become loose?
- ☐ Are all mounting brackets holding the unit securely?
- ☐ Are there many scratches or traces of dirt on the installation gasket?

6.3 Replacing the Installation Gasket

The installation gasket provides protection against dust and moisture.

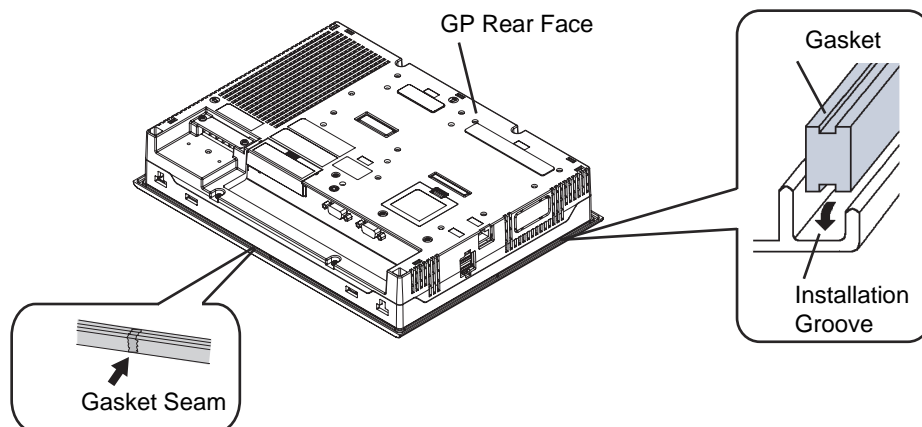
IMPORTANT

- A gasket which has been used for a long period of time may have scratches or dirt on it, and could have lost much of its water resistance. Be sure to change the gasket at least once a year, or when scratches or dirt become visible.
- The GP unit installation gasket's model number is as follows.

GP-3300 Series	CA3-WPG6-01
GP-3400 Series	CA5-WPG8-01
GP-3500T/3550T	CA5-WPG10-01
GP-3500L/3500S	CA3-WPG12-01
GP-3600 Series	CA3-WPG12-01
GP-3700 Series	CA3-WPG15-01

■ Installation Gasket Attachment Procedure

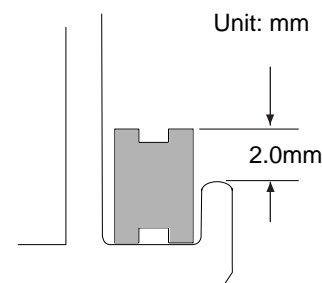
- (1) Place the GP on a flat, level surface facing the display face downwards.
- (2) Remove the gasket from the GP.
- (3) Attach the new gasket to the GP. Be sure to insert the gasket into the GP's groove so that the gasket's groove sides are vertical.



- (4) Check that the gasket is attached correctly to the GP.

IMPORTANT

- The gasket must be inserted correctly into the groove for the GP's moisture resistance to be equivalent to IP65f.
- Since the gasket is flexible but not elastic, be careful not to stretch it unnecessarily, as doing so could tear the gasket.
- Be sure the gasket's seam is not inserted into any of the unit's corners, only in the straight sections of the groove. Inserting it into a corner may lead to its eventually tearing.
- To ensure stable resistance against dust and moisture, insert the gasket so that the seam is at the bottom of the GP unit.
- The upper surface of the gasket should protrude approximately 2.0 mm out from the groove. Be sure to check that the gasket is correctly inserted before installing the GP into a panel.



6.4 Replacing the Backlight

IMPORTANT

- The GP-3300/3400's backlight and AGP-3500L's backlight cannot be replaced by the user.
- When the backlight needs to be replaced, please contact your local GP-3300/3400 and AGP-3500L distributor.

6.4.1 AGP-3500T/3550T

■Preparation

Please have the following ready beforehand.

- Replacement backlight (Model: CA5-BLU10T-01)
- One pair of clean (preferably new) cotton gloves.
- Phillips screwdriver (no.2)

About the Backlight

GP units use a CFL, long-life type backlight. The actual life of the backlight however, will vary depending on the GP's operating conditions, and replacement may be required.

A backlight life refer to “■ Display Specifications (page2-33)“, when the backlight is lit continuously (time required for brightness to fall to half its normal level.)

NOTE

- If the backlight or the display unit is damaged, the screen display will go out. Even if the screen goes out, however, there is a possibility that the touch panel is still operating correctly. Therefore, since any type of touch panel contact could have an unexpected or dangerous effect or result, be sure not to touch the screen when this condition occurs.



WARNING



[Electric shock]

- Whenever changing the backlight, be sure the GP's power cord has been disconnected and that the unit is cooled down.
- When the GP's power cord is connected and the GP is ON, high voltage runs through the wires in the backlight area do not touch them!



[Burn]

- When the GP's power has just been turned OFF, the backlight area is still very hot! Be sure to wear gloves to prevent being burned.



[Glass]

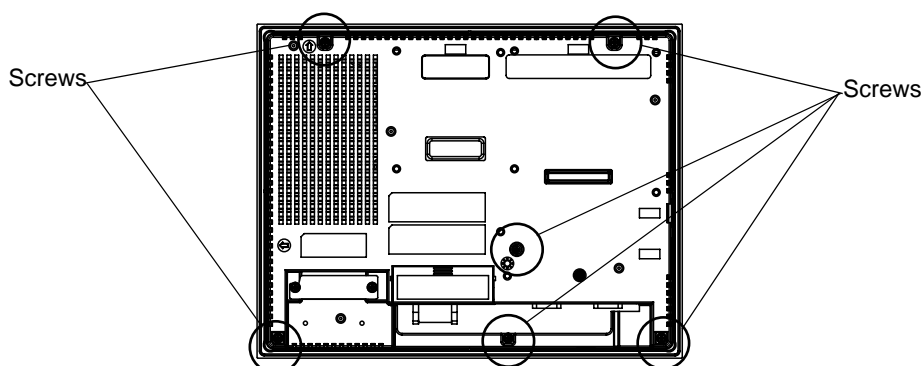
- The backlight is very fragile. Do not touch the glass tube directly or try to remove its power cord. If the glass tube breaks you may be injured.

■ Procedure for replacing the backlight

- (1) Unplug the power cord from the main power supply.

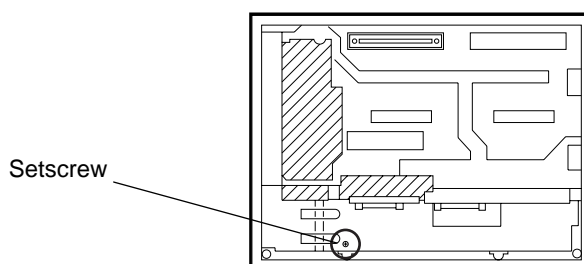
- IMPORTANT**
- Remove the GP unit from the equipment to which the unit has been incorporated, and work with the GP unit with the display surface facing downward. Be sure to perform the backlight changeover on a flat, level surface. This will prevent damage to the GP unit and the accidental cutting of any of its power cord.
 - Be sure to protect the display surface to prevent damage during the operations.

- (2) Remove the retaining screws (6) on the rear cover.

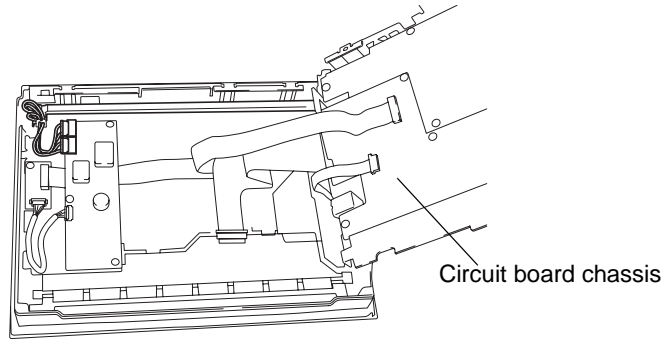


- IMPORTANT**
- Do not let the attachment screws fall inside the GP

- (3) The top face of the rear cover uses four (4) alignment tabs. Open the rear cover from the bottom of the unit to free these tabs.
- (4) Remove the setscrew (1) on the circuit board chassis.

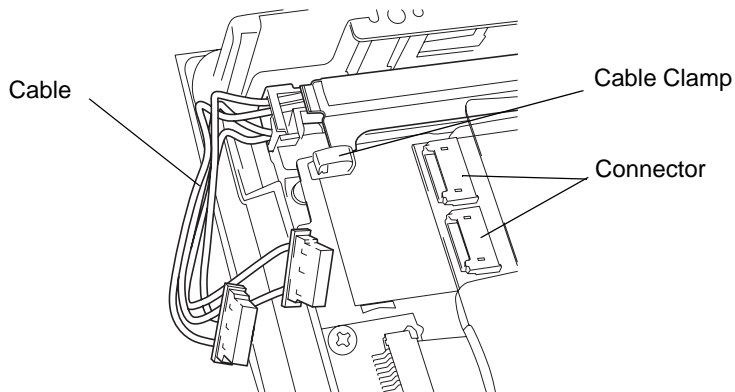


- (5) Open the circuit board chassis.

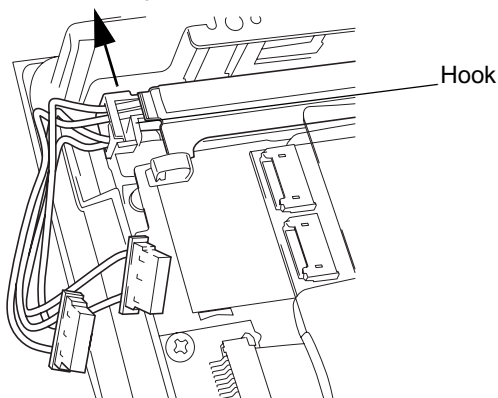


IMPORTANT • A hot circuit board chassis can burn you. Be sure the chassis has cooled completely prior to replacing the backlights.

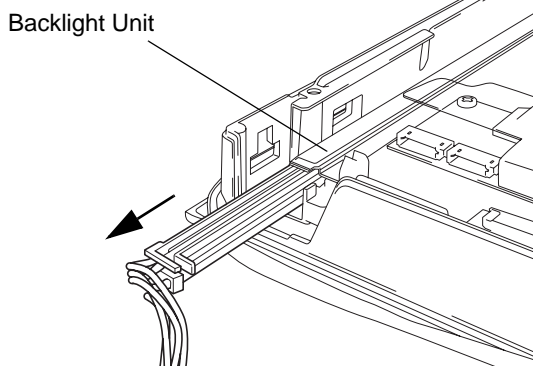
- (6) Disconnect the Backlight Unit cable from the connector on the inverter board, and then remove the cable from the cable clamp.



- (7) Remove the hook from the Backlight Unit.



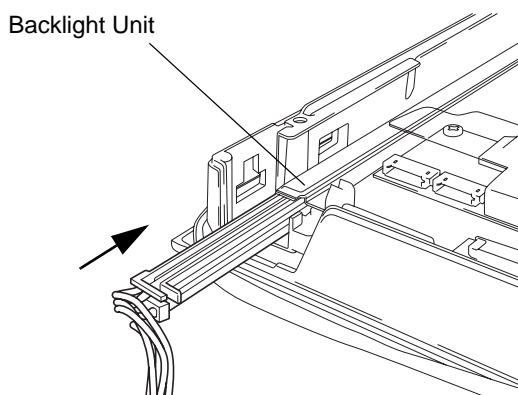
- (8) Remove the Backlight Unit while sliding it along the groove.



- (9) Insert a new Backlight Unit while sliding it along the groove.

IMPORTANT

- Be careful that no dust or dirt adheres to the backlight surface or to the backlight holder.
- Be careful not to soil the Backlight with moisture, oil content or finger prints; otherwise, the life duration of the Backlight will be shortened.



- (10) Insert the Backlight Unit cable to the connector on the inverter board, and secure the cable with the cable clamp.

IMPORTANT

- Be sure the cable is inserted completely into the backlight connector. Failure to do so may cause arcing, which can damage the connector.

- (11) Return the circuit board chassis to the original position, and reattach the setscrew. The necessary torque is 0.5N•m.
- (12) Return the rear face cover to the original position, and secure the cover in place using the mounting screws (6). The necessary torque is 0.5N•m.

IMPORTANT

- The cable clamp is used to prevent the cable from being caught inside in the GP unit and possibly damaged. Be sure to insert the cable in the cable clamp around the cable before replacing the rear cover.
- If any of the screws is missing, check if it fell inside the GP unit's chassis. If the power is turned ON while a screw is inside, it may cause an accident or fire.

NOTE

- After backlight replacement is completed, turn the GP unit's power ON and check if the screen's display is normal. If the display is not correct, please contact the GP distributor from whom you purchased the backlight unit.

6.4.2 AGP-3500S

■Preparation

Please have the following ready beforehand.

- Two (2) Replacement backlight: (Model: PS501S-BU00)
- One pair of clean (preferably new) cotton gloves.
- Phillips screwdriver (no.2)

About the Backlight

GP units use a CFL, long-life type backlight. The actual life of the backlight however, will vary depending on the GP's operating conditions, and replacement may be required.

A backlight life refer to “■ Display Specifications (page2-33)“, when the backlight is lit continuously (time required for brightness to fall to half its normal level.)

NOTE

- If the backlight or the display unit is damaged, the screen display will go out. Even if the screen goes out, however, there is a possibility that the touch panel is still operating correctly. Therefore, since any type of touch panel contact could have an unexpected or dangerous effect or result, be sure not to touch the screen when this condition occurs.

⚠ WARNING



[Electric shock]

- Whenever changing the backlight, be sure the GP's power cord has been disconnected and that the unit is cooled down.
- When the GP's power cord is connected and the GP is ON, high voltage runs through the wires in the backlight area do not touch them!



[Burn]

- When the GP's power has just been turned OFF, the backlight area is still very hot! Be sure to wear gloves to prevent being burned.



[Glass]

- The backlight is very fragile. Do not touch the glass tube directly or try to remove its power cord. If the glass tube breaks you may be injured.

■ Procedure for replacing the backlight

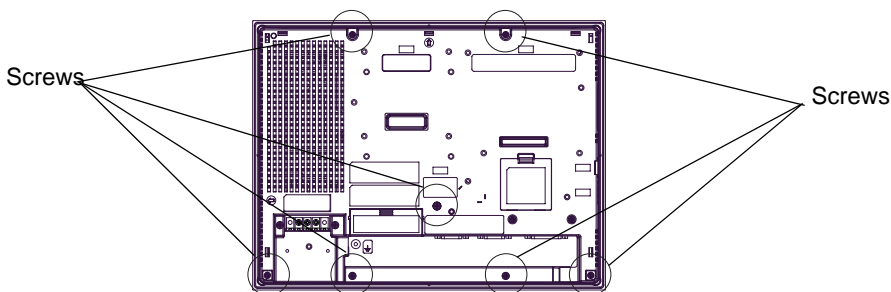
There are two backlight of AGP-3500S.

- (1) Unplug the power cord from the main power supply.

IMPORTANT

- Remove the GP unit from the equipment to which the unit has been incorporated, and work with the GP unit with the display surface facing downward. Be sure to perform the backlight changeover on a flat, level surface. This will prevent damage to the GP unit and the accidental cutting of any of its power cord.
- Be sure to protect the display surface to prevent damage during the operations.

- (2) Remove the I/F cover and retaining screws (7) on the rear cover.



IMPORTANT

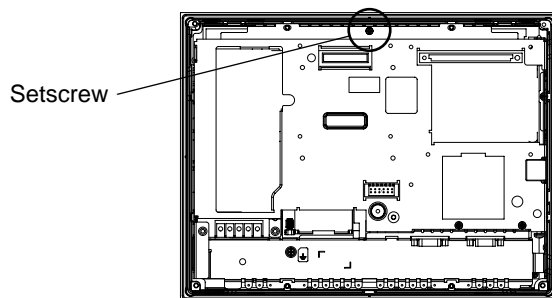
- Do not let the attachment screws fall inside the GP

- (3) The top face of the rear cover uses two (2) alignment tabs. Open the rear cover from the bottom of the unit to free these tabs.

IMPORTANT

- Be sure to open the cover from the bottom of the GP. Attempting to open the cover from the top of the GP could damage the alignment tabs.

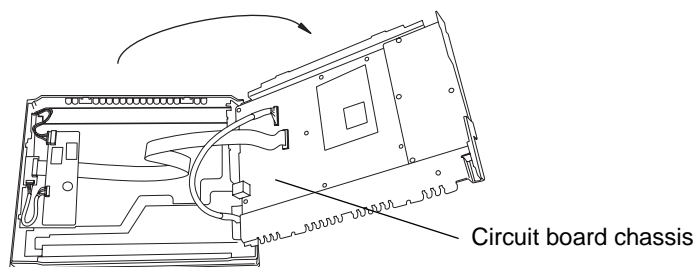
- (4) Remove the setscrew (1) on the circuit board chassis.



NOTE

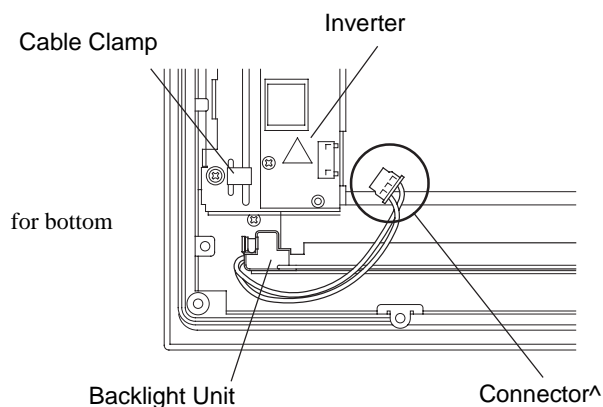
- The Setscrews are not attached to all DC model of GP.

- (5) Open the circuit board chassis, it's turn left to right.

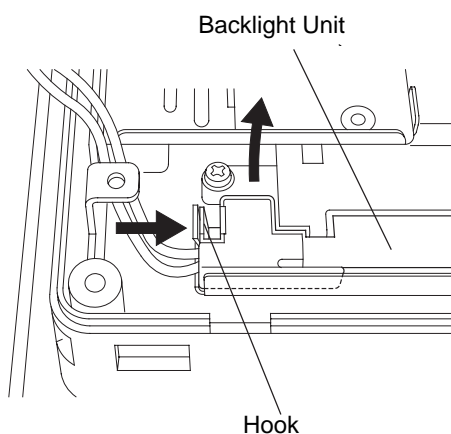


IMPORTANT • A hot circuit board chassis can burn you. Be sure the chassis has cooled completely prior to replacing the backlights.

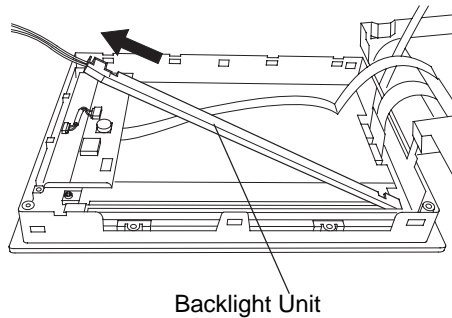
- (6) Disconnect the Backlight Unit cable from the connector on the inverter board, and then remove the cable from the cable clamp.



- (7) As shown here, push the backlight unit's attachment clip to the right to release the backlight unit.



- (8) Insert the new lower backlight unit into the backlight holder as shown here. After the backlight is completely inserted and the attachment clip clicks into place, lower the unit into the GP.



IMPORTANT • Be careful that no dust or dirt adheres to the backlight surface or to the backlight holder. Be sure to handle the replacement backlight unit carefully, since it can be easily damaged or broken.

- (9) Confirm that the backlight unit is securely in place and reattach the backlight unit power connector.

IMPORTANT • When replacing the Backlight unit, be sure not to catch any wiring on the edge of the unit. If a wire is caught and becomes cut, it could cause a fire.

- (10) Replace the upper backlight unit by repeating the procedures shown in steps (6) to (9).

- (11) Return the circuit board chassis to its original position and reattach the rear cover by reversing steps (1) to (5).

IMPORTANT • The cable clamp is used to prevent the cable from being caught inside in the GP unit and possibly damaged. Be sure to insert the cable in the cable clamp around the cable before replacing the rear cover.

- If any of the screws is missing, check if it fell inside the GP unit's chassis. If the power is turned ON while a screw is inside, it may cause an accident or fire.

NOTE • After backlight replacement is completed, turn the GP unit's power ON and check if the screen's display is normal. If the display is not correct, please contact the GP distributor from whom you purchased the backlight unit.

6.4.3 AGP-3600T/3650T

■Preparation

Please have the following ready beforehand.

- Replacement backlight (Model: CA3-BLU12-01)
- One pair of clean (preferably new) cotton gloves.
- Phillips screwdriver (no.2)

About the Backlight

GP units use a CFL, long-life type backlight. The actual life of the backlight however, will vary depending on the GP's operating conditions, and replacement may be required.

A backlight life refer to “■ Display Specifications (page2-48)“, when the backlight is lit continuously (time required for brightness to fall to half its normal level.)

⚠ WARNING



[Electric shock]

- Whenever changing the backlight, be sure the GP's power cord has been disconnected and that the unit is cooled down.
- When the GP's power cord is connected and the GP is ON, high voltage runs through the wires in the backlight area do not touch them!



[Burn]

- When the GP's power has just been turned OFF, the backlight area is still very hot! Be sure to wear gloves to prevent being burned.



[Glass]

- The backlight is very fragile. Do not touch the glass tube directly or try to remove its power cord. If the glass tube breaks you may be injured.

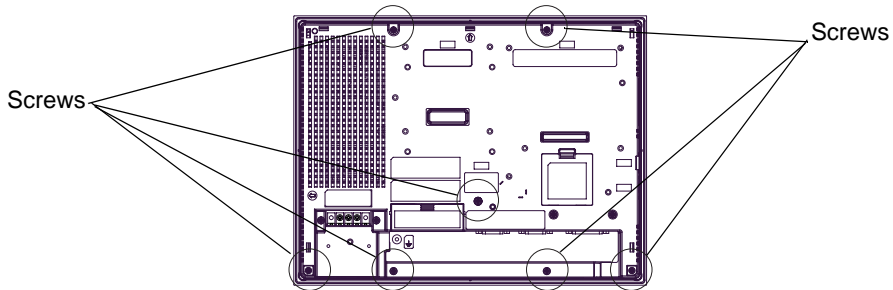
■Procedure for replacing the backlight

- (1) Unplug the power cord from the main power supply.

IMPORTANT

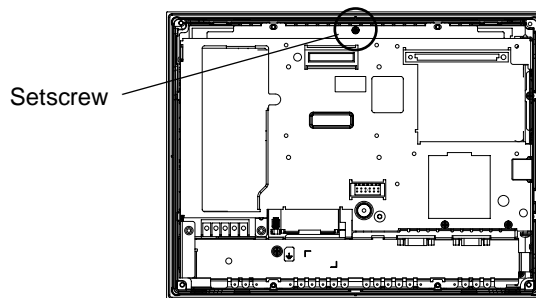
- Remove the GP unit from the equipment to which the unit has been incorporated, and work with the GP unit with the display surface facing downward. Be sure to perform the backlight changeover on a flat, level surface. This will prevent damage to the GP unit and the accidental cutting of any of its power cord.
- Be sure to protect the display surface to prevent damage during the operations.

- (2) Remove the retaining screws (7) on the rear cover

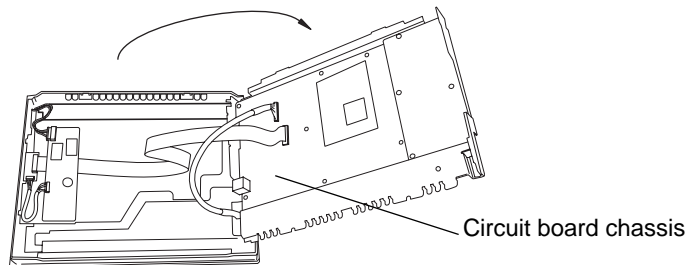


IMPORTANT • Do not let the attachment screws fall inside the GP

- (3) Remove the setscrew (1) on the circuit board chassis.

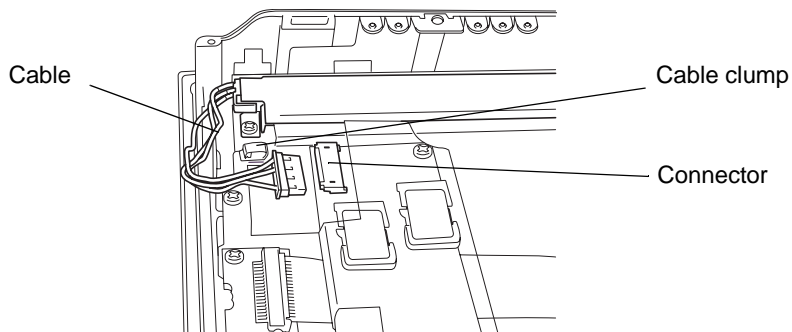


- (4) Open the circuit board chassis.



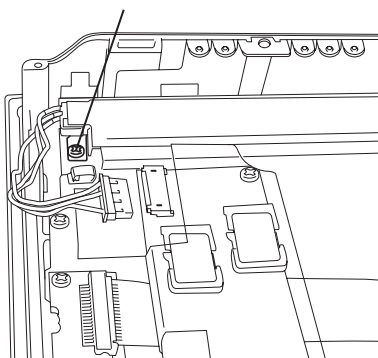
IMPORTANT • A hot circuit board chassis can burn you. Be sure the chassis has cooled completely prior to replacing the backlights.

- (5) Disconnect the Backlight Unit cable from the connector on the inverter board, and then remove the cable from the cable clamp.



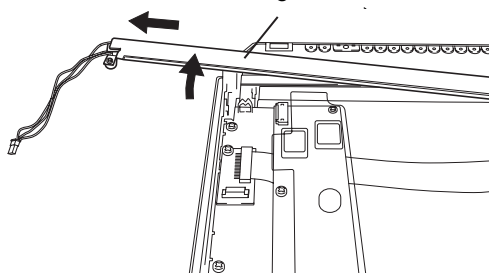
- (6) Remove the Setscrew from the Backlight Unit

Setscrew for the Backlight Unit



- (7) Lift the edge of the Backlight Unit, and remove the unit while sliding it along the groove

Backlight Unit

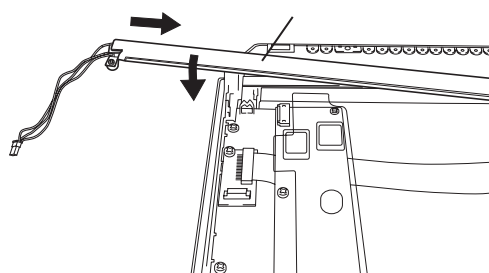


- (8) Insert a new Backlight Unit while sliding it along the groove.

IMPORTANT

- Be careful that no dust or dirt adheres to the backlight surface or to the backligh holder.
- Be careful not to soil the Backlight with moisture, oil content or finger prints; otherwise, the life duration of the Backlight will be shortened.

Backlight Unit



- (9) Fasten the setscrew for the backlight unit. The necessary torque is $0.147\text{N}\cdot\text{m}$.
- (10) Insert the Backlight Unit cable to the connector on the inverter board, and the secure the cable with the cable clamp.

IMPORTANT

- Be sure the cable is inserted completely into the backlight connector. Failure to do so may cause arcing, which can damage the connector.

- (11) Return the circuit board chassis to the original position.

- (12) Return the rear face cover to the original position, and secure the cover in place using the mounting screws (6). The necessary torque is 0.5N•m.

IMPORTANT

- The cable clamp is used to prevent the cable from being caught inside in the GP unit and possibly damaged. Be sure to insert the cable in the cable clamp around the cable before replacing the rear cover.
- If any of the screws is missing, check if it fell inside the GP unit's chassis. If the power is turned ON while a screw is inside, it may cause an accident or fire.

NOTE

- After backlight replacement is completed, turn the GP unit's power ON and check if the screen's display is normal. If the display is not correct, please contact the GP distributor from whom you purchased the backlight unit.

6.4.4 AGP-3750T

■Preparation

Please have the following ready beforehand.

- Two (2) Replacement backlight (Model: CA3-BLU15-01)
- One pair of clean (preferably new) cotton gloves.
- Phillips screwdriver (no.2)

About the Backlight

GP units use a CFL, long-life type backlight. The actual life of the backlight however, will vary depending on the GP's operating conditions, and replacement may be required.

A backlight life refer to “■ Display Specifications (page2-61)“, when the backlight is lit continuously (time required for brightness to fall to half its normal level.)

⚠ WARNING



[Electric shock]

- Whenever changing the backlight, be sure the GP's power cord has been disconnected and that the unit is cooled down.
- When the GP's power cord is connected and the GP is ON, high voltage runs through the wires in the backlight area do not touch them!



[Burn]

- When the GP's power has just been turned OFF, the backlight area is still very hot! Be sure to wear gloves to prevent being burned.



[Glass]

- The backlight is very fragile. Do not touch the glass tube directly or try to remove its power cord. If the glass tube breaks you may be injured.

■Procedure for replacing the backlight

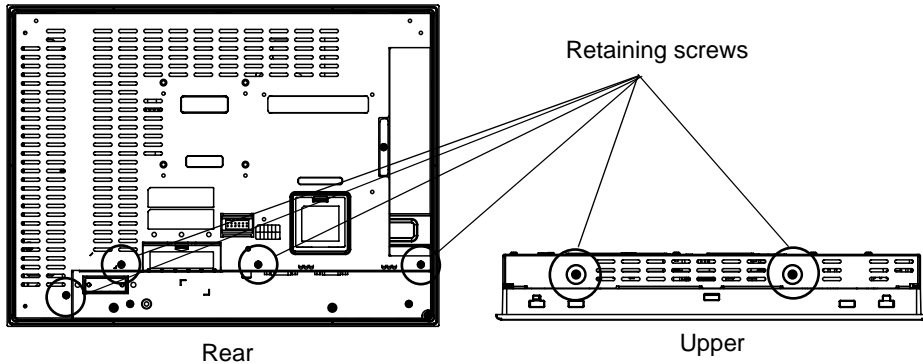
There are two backlight of AGP-3750T.

- (1) Unplug the power cord from the main power supply.

IMPORTANT

- Remove the GP unit from the equipment to which the unit has been incorporated, and work with the GP unit with the display surface facing downward. Be sure to perform the backlight changeover on a flat, level surface. This will prevent damage to the GP unit and the accidental cutting of any of its power cord.
- Be sure to protect the display surface to prevent damage during the operations.

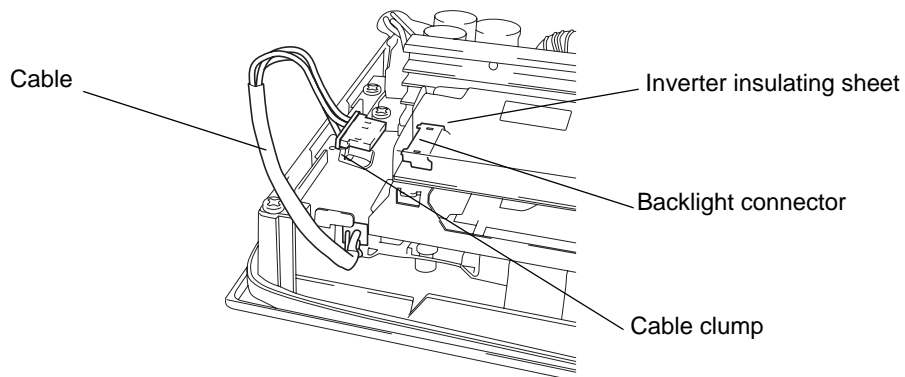
- (2) Remove the retaining screws (6) on the rear cover, and detach the cover from the main unit.



IMPORTANT • Do not let the attachment screws fall inside the GP.

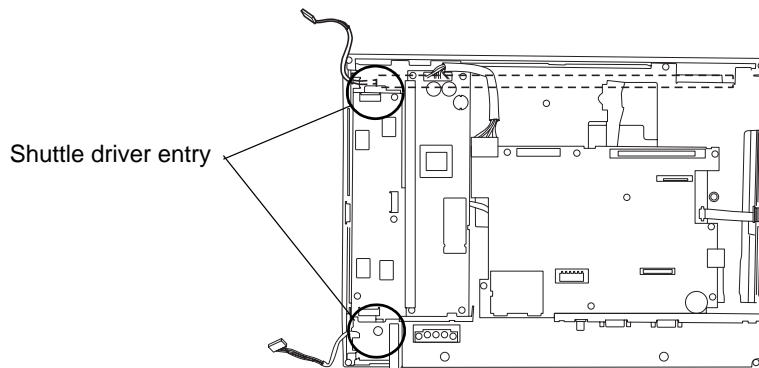
- (3) Pull out cable from inverter insulating sheet, and remove from cable clump.

Remove cable from backlight connector on inverter circuit board.

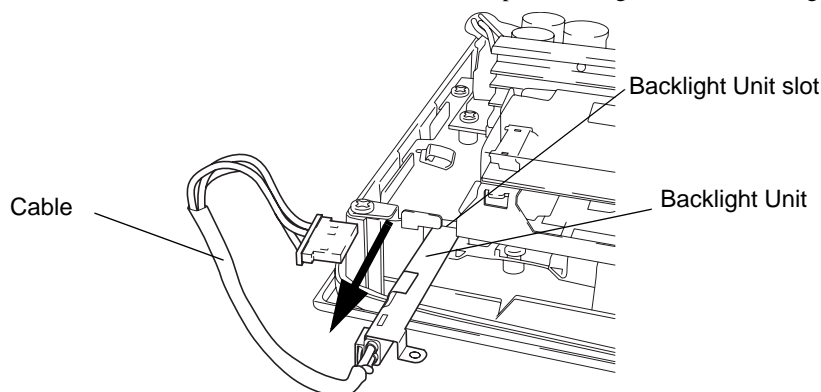


IMPORTANT • A hot circuit board chassis can burn you. Be sure the chassis has cooled completely prior to replacing the backlights.

- (4) Insert shuttle driver to circular hole, and remove backlight setscrew. There are two circular hole.



- (5) Drawn out the cable in the direction of an arrow. Creep out backlight unit from backlight unit slot.



IMPORTANT • Replace backlight the whole backlight unit.

- (6) Insert a new backlight unit in backlight unit slot.

Secure the backlight setscrew. The necessary torque is 0.147N•m. (The procedure of opposite to procedure 4.)

- (7) Insert the cable to backlight connector.

Secure the cable with the cable clamp, and put in inverter insulating sheet.

(The procedure of opposite to procedure 3.)

IMPORTANT • Be sure the cable is inserted completely into the backlight connector. Failure to do so may cause arcing, which can damage the connector.

- Backlight has used 1 each of top and bottom LCD. The case of exchange 2 please exchange simultaneously.

- (8) Return the rear face cover to the original position, and secure the cover in place using the mounting screws (7). The necessary torque is 0.5N•m

IMPORTANT • The cable clamp is used to prevent the cable from being caught inside in the GP unit and possibly damaged. Be sure to insert the cable in the cable clamp around the cable before replacing the rear cover.

- If any of the screws is missing, check if it fell inside the GP unit's chassis. If the power is turned ON while a screw is inside, it may cause an accident or fire.

NOTE • After backlight replacement is completed, turn the GP unit's power ON and check if the screen's display is normal. If the display is not correct, please contact the GP distributor from whom you purchased the backlight unit.

Memo