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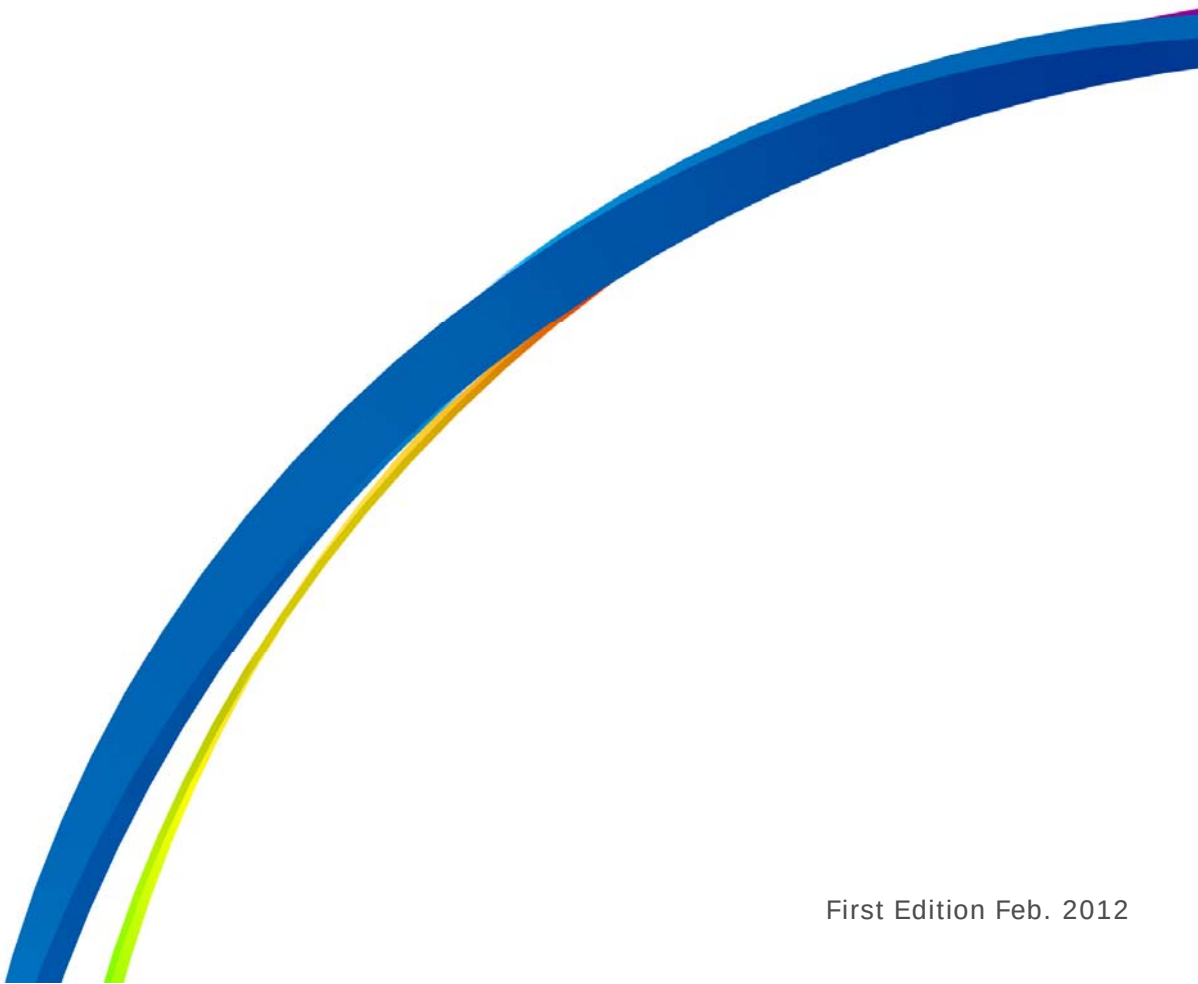
GP-2500/2600→GP4000 Series

Replacement Guidebook



First Edition Feb. 2012

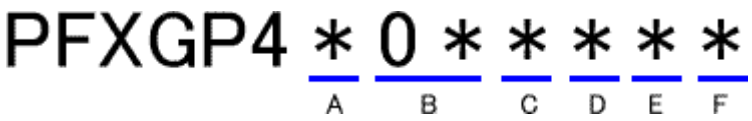
Preface

This guidebook introduces the procedures to replace a unit in GP2500/2600 series with a unit in GP4000 series.

Model in use	Replacement model
GP-2601T	**GP-4601T**
GP-2500S	**GP-4501T**
GP-2500L	
GP-2501T	
GP-2501S	**GP-4501TW**
GP-2501L	

GP4000 Series Model Number

GP4000 series model number partly differs depending on a specification. Before placing an order, please make sure of the model number.



A	2	GP-4200 series (3.5”)
	3	GP-4300 series (5.7”)
	4	GP-4400 series (7.5”/7.0W”)
	5	GP-4500 series (10.4”)
	6	GP-4600 series (12.1”)
B	01	RS-232C/422/485
	03	RS-485 (insulation)
C	T	TFT color LCD
	W	TFT color LCD (Wide Type)
D	A	Analog Resistive Film Touch Panel
	M	Matrix Touch Panel
E	A	AC Type Power Supply
	D	DC Type Power Supply
F	W	Low cost
	C	Coated
	WC	Light + Coated

Contents

Chapter 1 Specification Comparison

1.1 Specifications of GP-2601T and GP-4601T

		GP-2601T	GP-4601T
			
Display Type		TFT Color LCD	
Display Colors, Levels		256 colors (without blink)/ 64 colors (with blink)	**UP!** 65,536 colors (without blink)/ 16,384 colors (with blink)
Display Resolution		SVGA (800x600 pixels)	
Panel Cutout Dimensions (mm)		301.5(W) x 227.5(H)	
External Dimensions (mm)		317(W) x 243(H) x 58(D)	315(W) x 241(H) x 56(D)
Touch Panel Type		Matrix	Resistive film (Analog)/ Matrix →See 2..2
Memory	**Application**	4MB	**UP!** 32MB
	SRAM	128KB	**UP!** 320KB
Backup Battery		Secondary Battery (rechargeable)	**NEW!** Primary Battery (replaceable) →See 2.9
Serial Interface	**COM1**	25 pin D-Sub (female) RS-232C/422	9 pin D-Sub (male) RS-232C →See 2.6.1
	COM2	-	9 pin D-Sub (male) RS-422/485 →See 2.6.1

Ethernet Interface		-	**NEW!** 10BASE-T/100BASE-TX
CF Card Interface		✔	- →See 2.6.4
SD Card Interface		-	**NEW!** ✔
USB I/F	**Type A**	-	**NEW!** ✔ →See 2.5
	Type mini B		
Tool Connector I/F		✔	-
Printer Interface		Centronic-compliant (parallel)	**NEW!** USB(Type A) →See 2.7.2
Auxiliary I/O Interface		✔	- →See 2.6.2

1.2 Specifications of GP-2500S/L and GP-4501T

		GP-2500S/L	GP-4501T
			
Display Type	**GP-2500S**	STN color LCD	**UP!** TFT color LCD
	GP-2500L	Monochrome LCD	
Display Colors, Levels	**GP-2500S**	64 colors	**UP!** 65,536 colors (without blink)/ 16,384 colors (with blink)
	GP-2500L	Monochrome, 2 levels/ monochrome, 8 levels	
Display Resolution		VGA (640x480 pixels)	
Panel Cutout Dimensions (mm)		301.5(W) x 227.5(H)	259(W) x 201(H) →See 2.4
External Dimensions (mm)		317(W) x 243(H) x 58(D)	272.5(W) x 214.5(H) x 57(D)
Touch Panel Type		Matrix	Resistive film (Analog)/ Matrix →See 2.2
Memory	**Application**	4MB	**UP!** 32MB
	SRAM	256KB	**UP!** 512KB
Backup Battery		Secondary Battery (rechargeable)	**NEW!** Primary Battery (replaceable) →See 2.9
Serial Interface	**COM1**	25 pin D-Sub (female) RS-232C/422	9 pin D-Sub (male) RS-232C →See 2.6.1
	COM2	9 pin D-Sub (male) RS-232C	9 pin D-Sub (male) RS-422/485 →See 2.6.1

Ethernet Interface		10BASE-T	**UP!** 10BASE-T/100BASE-TX
CF Card Interface		✔	- →See 2.6.4
SD Card Interface		-	**NEW!** ✔
USB I/F	**Type A**	-	**NEW!** ✔ →See 2.5
	Type mini B		
Tool Connector Interface		✔	-
Printer Interface		Centronic-compliant (parallel)	**NEW!** USB (Type A) →See 2.7.2
Auxiliary I/O Interface		✔	- →See 2.6.2
Sound I/O Interface		✔	- →See 2.6.3

1.3 Specifications of GP-2501T and GP-4501T

		GP-2501T	GP-4501T
			
Display Type		TFT color LCD	
Display Colors, Levels		256 colors (without blink)/ 64 colors (with blink)	**UP!** 65,536 colors (without blink)/ 16,384 colors (with blink)
Display Resolution		VGA (640×480 pixels)	
Panel Cutout Dimensions (mm)		301.5(W) x 227.5(H)	259(W) x 201(H) →See 2.4
External Dimensions (mm)		317(W) x 243(H) x 58(D)	272.5(W) x 214.5(H) x 57(D)
Touch Panel Type		Matrix	Resistive film (Analog)/ Matrix →See 2.2
Memory	**Application**	2MB	**UP!** 32MB
	SRAM	128KB	**UP!** 512KB
Backup Battery		Secondary Battery (rechargeable)	**NEW!** Primary Battery (replaceable) →See 2.9
Serial Interface	**COM1**	25 pin D-Sub (female) RS-232C/422	9 pin D-Sub (male) RS-232C →See 2.6.1
	COM2	-	9 pin D-Sub (male) RS-422/485 →See 2.6.1
Ethernet Interface		-	**UP!** 10BASE-T/100BASE-TX

CF Card Interface		✔	- →See 2.6.4
SD Card Interface		-	**NEW!** ✔
USB I/F	**Type A**	-	**NEW!** ✔ →See 2.5
	Type mini B		
Tool Connector Interface		✔	-
Printer Interface		Centronic-compliant (parallel)	**NEW!** USB (Type A) →See 2.7.2
Auxiliary I/O Interface		✔	- →See 2.6.2

1.4 Specifications of GP-2501S/L and GP-4501TW

		GP-2501S/L	GP-4501TW
			
Display Type	**GP-2501S**	STN color LCD	**UP!** TFT color LCD
	GP-2501L	Monochrome LCD	
Display Colors	**GP-2501S**	64 colors	**UP!** 65,536 colors (without blink)/ 16,384 colors (with blink)
	GP-2501L	Monochrome, 8 levels	
Display Resolution		VGA (640x480 pixels)	
Panel Cutout Dimensoins (mm)		301.5(W) x 227.5(H)	
External Dimensions (mm)		317(W) x 243(H) x 58(D)	315(W) x 241(H) x 56(D)
Touch Panel Type		Matrix	**NEW!** Resistive film (Analog) →See 2.2
Rated Input Voltage	**GP-2501S**	AC100V - 240V	DC 24V
	GP-2501L	DC 24V	
Memory	**Application**	1MB	**UP!** 16MB
	SRAM	128KB	128KB
Backup Battery		Secondary Battery (rechargeable)	**NEW!** Primary Battery (replaceable) →See 2.9

Serial I/F	**COM1**	25 pin D-Sub (female) RS-232C/422	9 pin D-Sub (male) RS-232C →See 2.6.1
	COM2	-	9 pin D-Sub (male) RS-422/485 →See 2.6.1
Ethernet Interface		-	**NEW!** 10BASE-T/100BASE-TX
CF Card Interface		✔	- →See 2.6.4
USB I/F	**Type A**	-	**NEW!** ✔ →See 2.5
	Type mini B		
Tool Connector I/F		✔	-
Printer Interface		Centronic-compliant (parallel)	**NEW!** USB (Type A) →See 2.7.2
Auxiliary I/O Interface		✔	- →See 2.6.2

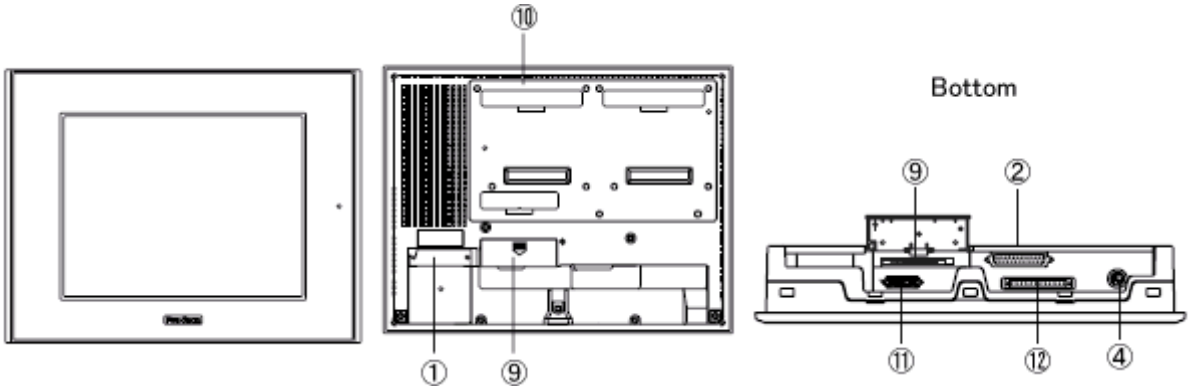
Chapter 2 Compatibility of Hardware

2.1 Locations of connector

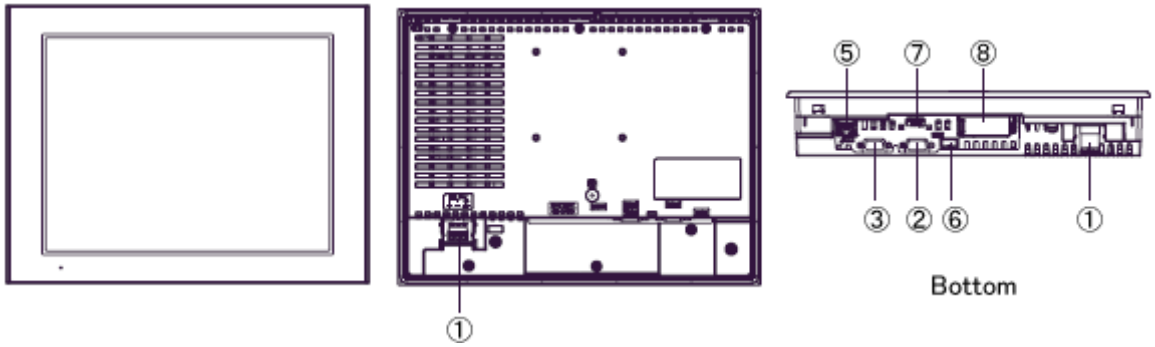
Connector locations on GP2000 series and GP4000 series are as follows:

Connector locations of GP-2601T and GP-4601T

GP-2601T



GP-4601T



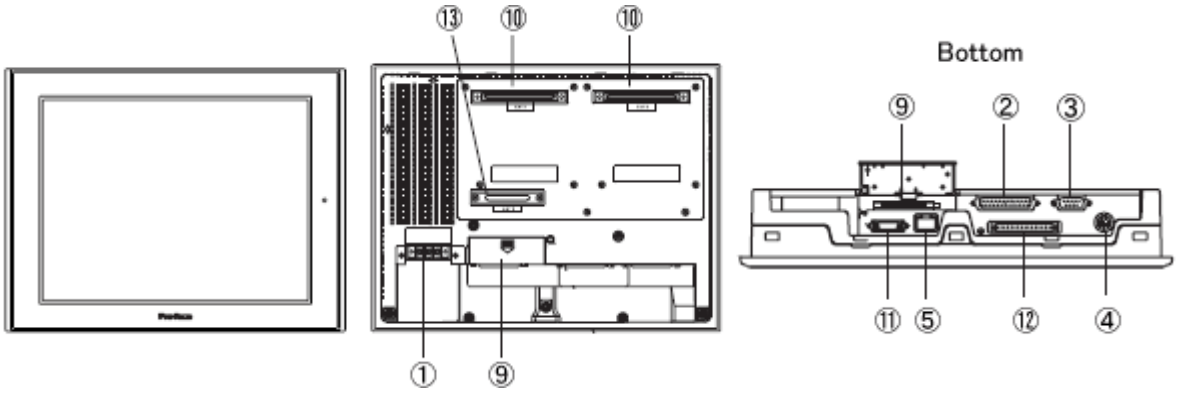
Interface names

	GP-2601T	GP-4601T
1	Power Input Terminal Block	Power Connector
2	Serial I/F (COM1)	
3	-	Serial I/F (COM2)
4	Tool Connector	-
5	-	Ethernet I/F
6	-	USB I/F (Type A)
7	-	USB I/F (Type mini B)
8	-	SD Card I/F

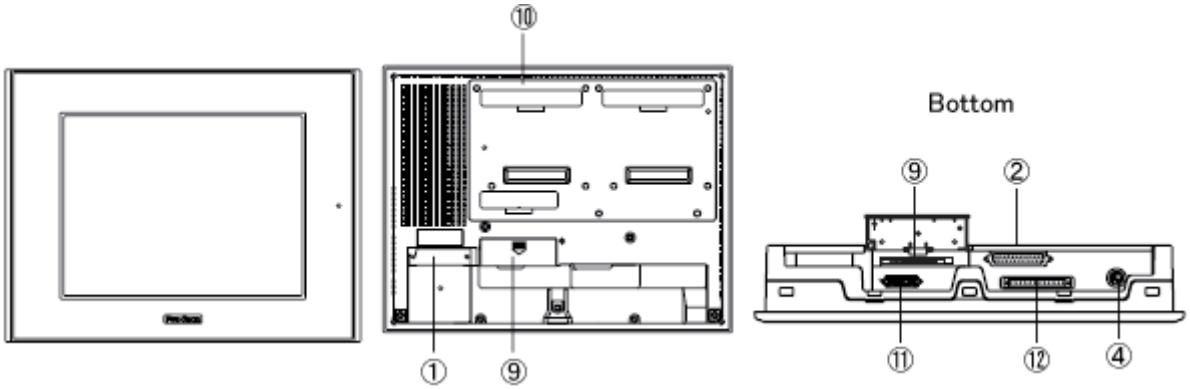
9	CF Card I/F	-
10	Expansion Unit I/F	-
11	Printer I/F	-
12	Auxiliary I/O Interface (AUX)	-

Connector locations of GP-2500S/2500L/2501T and GP-4501T

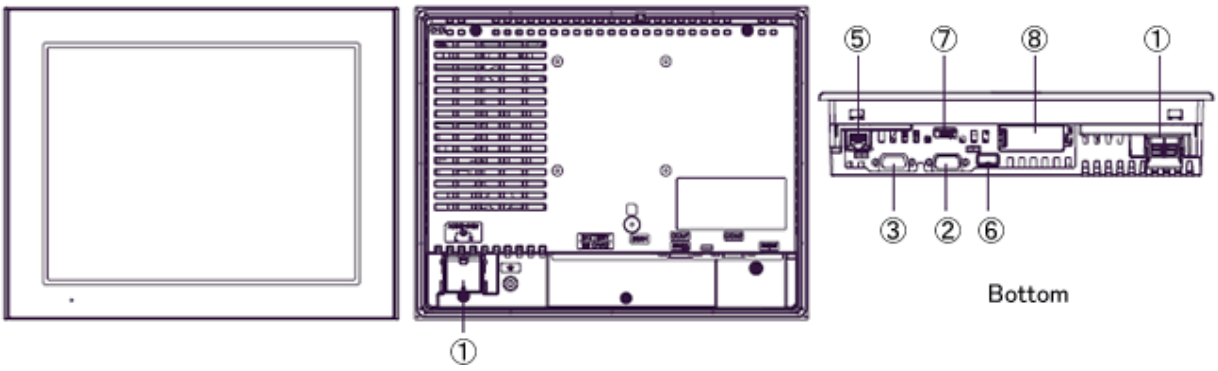
GP-2500S/L



GP-2501T



GP-4501T

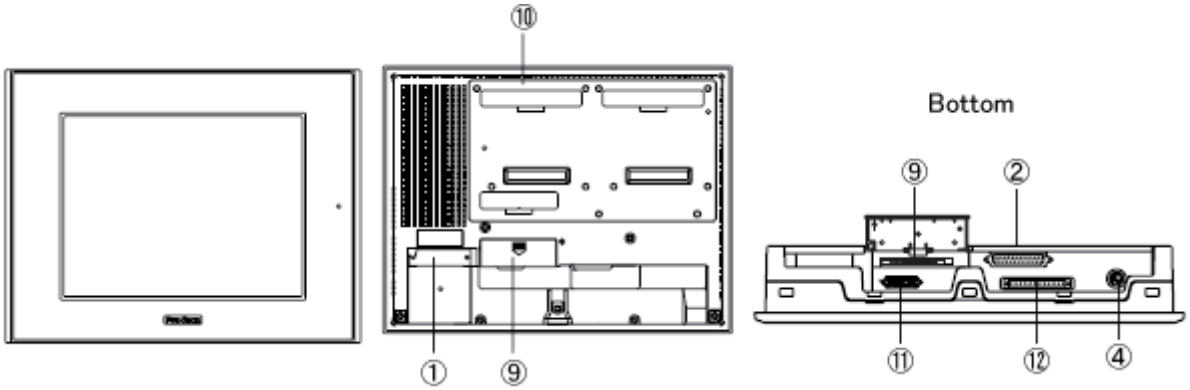


Interface names

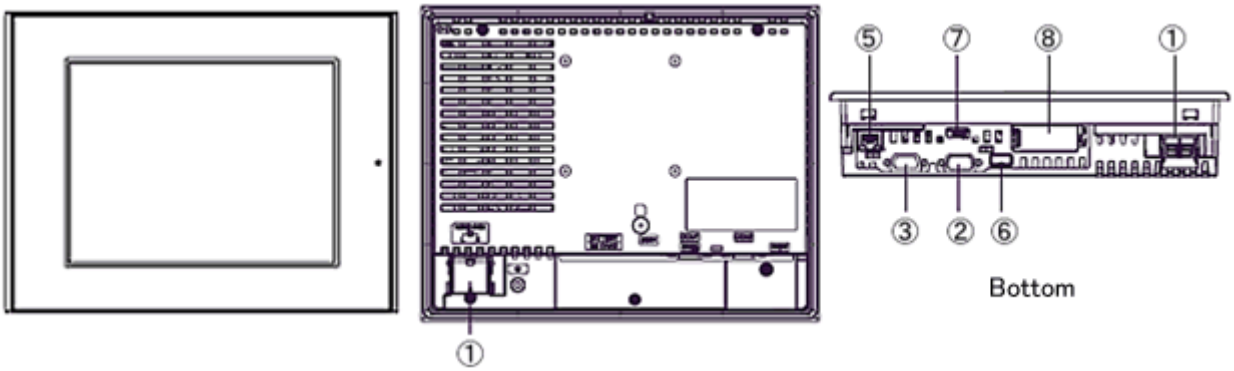
	GP-2500S/L	GP-2501T	GP-4501T
1	Power Input Terminal Block		Power Connector
2	Serial I/F (COM1)		
3	Serial I/F (COM2)	-	Serial I/F (COM2)
4	Tool Connector		-
5	Ethernet I/F	-	Ethernet I/F
6	-		USB I/F (Type A)
7	-		USB I/F (Type mini B)
8	-		SD Card I/F
9	CF Card I/F		-
10	Expansion Unit I/F		-
11	Printer I/F		-
12	Auxiliary I/O Interface (AUX) Sound I/O Interface	Auxiliary I/O Interface (AUX)	-
13	Expansion CF Card I/F	-	-

Connector locations of GP-2501S/L and GP-4501TW

GP-2501S/L



GP-4501TW



Interface names

	GP-2501S/L	GP-4501TW
1	Power Input Terminal Block (AC/DC)	Power Connector (DC)
2	Serial I/F (COM1)	
3	-	Serial I/F(COM2)
4	Tool Connector	-
5		Ethernet I/F
6	-	USB I/F (Type A)
7	-	USB I/F (Type mini B)
8	-	SD Card I/F
9	CF Card I/F	-
10	Expansion Unit I/F	-
11	Printer I/F	-
12	Auxiliary I/O Interface (AUX)	-

2.2 Touch Panel specifications

2.2.1 When replacing GP-2601T/2501T/2500S/2500L

For replacing GP-2601T/2501T/2500S/2500L with GP-4601T/4501T, you can select the Matrix type (2-point touch input at the same time) or the Analog Resistive Film type (1-point touch input) for Touch Panel Type.

For the Analog Resistive Film type, if you touch two points at the same time, only the first touched point is recognized, but the second touched one is not.

If you use the Analog Resistive Film type, change to 1-point touch input setting using the switch delay function of GP-Pro EX.

There's a model number difference between the Analog Resistive Film type and the Matrix type. For details, see GP4000 Series Model Number.

2.2.2 When replacing GP-2501S/L

GP-4501TW adopts the Analog Resistive Film type.

For the Analog Resistive Film type, even if you touch two points at the same time, it's recognized that the coordinates located between these two points are touched.

If you have used the 2-point touch input on GP-2501S/L, change to the 1-point touch input setting using the switch delay function of GP-Pro EX.

If you use the Matrix type that enables 2-point touch input at the same time, you can replace GP-2501S/L with GP-4501T.

There's a model number difference between the Analog Resistive Film type and the Matrix type. For details, see GP4000 Series Model Number.

2.3 Display Colors (for GP-2500L and GP-2501L only)

The display type of GP-2500L/2501L is a monochrome LCD, but GP4000 series has a TFT color LCD. After replacement, the 2-color display changes to the color one.

When data of a monochrome model are converted to data of a color model with GP-Pro EX, the converted data may be displayed in colors except black and white depending on a setting of GP-PRO/PBIII. After conversion, please confirm the display colors of the drawing or the parts on the screens just in case.

2.4 Panel Cutout Dimensions (for GP-2500S/L and GP-2501T only)

The size of GP-4501T gets smaller. The panel cutout dimensions of GP-4501T are different from those of GP2500 series. Attachment (model: CA4-ATM10-01) for installing GP-4501T is available and you can use it when replacing GP2500 series with GP-4501T.

For replacing GP-2601T or GP-2501S, there's no change in the panel cutout dimensions.

2.5 Transfer cable

To transfer screen data to GP4000 series, use a USB transfer cable or Ethernet.
The USB cables that can be used for GP4000 series are as follows:

<table>
<tr><th></th><th>Model</th><th>Connector Type</th><th>Connector on GP</th></tr>
<tr><td rowspan="2">Options</td><td>CA3-USBCB-01</td><td> 
</td><td>USB (Type A)</td></tr>
<tr><td>ZC9USCBMB1</td><td rowspan="2"> 
</td><td rowspan="2">USB (Type mini B)</td></tr>
<tr><td>Commercial Item</td><td>-</td></tr>
</table>

Please note that the cables (GPW-CB02, GPW-CB03, GP430-CU02-M) for GP2000 series cannot be used for GP4000 series.

2.6 Interface

2.6.1 Serial Interface

The COM ports (COM1 and COM2) on GP4000 series are D-Sub 9 pin male. The COM1 port of GP2000 series is D-Sub 25 pin female and the COM2 port is D-sub9 pin male, and the pin assignment and the shape of male/female connector are different from those of GP4000 series. Because of it, the existing PLC connection cables cannot be used. If you use the existing connection cables, see [4.5 Cable Diagram at the time of replacement].

And when the both COM1 and COM2 ports on GP-2500S/L have RS-232C setting, if you replace GP-2500S/L with GP4000 series, devices with RS-232C cannot be connected to the COM2 port.

2.6.2 Auxiliary I/O Interface (AUX)

GP-4000 series is not equipped with Auxiliary I/O Feature. External Reset Input and 3 Outputs (RUN Output, System Alarm Output, and External Buzzer Output) that can be used for GP-2401T cannot be used.

2.6.3 Sound Output Interface (for GP2500S/L only)

GP4000 series is not equipped with the sound output function. The sound output function for GP2000 series cannot be used.

2.6.4 CF Card Interface

GP4000 series is not equipped with a CF card slot. But a SD card slot (except GP-4301TW) and a USB interface are installed. In order to use the GP2000 series data saved in the CF card and the functions using the CF card, use a SD card or a USB flash drive instead.

For the GP-PRO/PBIII's 'CF Card output folder' setting, if project data is converted on GP-Pro EX, the setting will automatically change to the one that uses a SD card. To change the setting of the output destination folder, see [Changing the setting of the external media to use].

2.7 Peripheral units and options

2.7.1 Barcode reader connection

GP4000 series is not equipped with a tool port. A barcode reader that used to be connected to the tool port on GP2000 series cannot be used. However, GP4000 series allows you to connect a barcode reader on its USB interface (Type A).

For the models GP4000 series supports, see [OtasukePro!] (http://www.pro-face.com/otasuke/).

2.7.2 Pinrter Connection

GP4000 series is not equipped with Centronics (parallel) Interface for a printer though GP2000 series is equipped with it. If the printer for GP2000 series is used for GP4000 series, a converter that converts USB I/F on GP4000 series to Centronics I/F is required. And GP4000 series allows you to connect a printer on its USB port.

For the models GP4000 series supports, see [OtasukePro!] (http://www.pro-face.com/otasuke/).

2.7.3 Expansion Unit

GP4000 series is not equipped with an expansion unit interface. The expansion unit (each kind of unit like CC-LINK Unit) for GP2000 series cannot be used.

2.7.4 Front Maintenance Unit

The front maintenance unit for GP2000 series (GP077-CFFM10) cannot be used for GP4000 series.

2.7.5 Isolation Unit (except GP-2601T)

The isolation unit for GP2000 series (CA2-ISOALL232-01, CA2-ISOALL422-01) cannot be used for GP4000 series. You can use the isolation unit for GP4000 series (CA3-ISO232-01) instead.

2.8 Power Connector

2.8.1 AC Power Supply Type

The power connector on GP4000 series (AC Type) has the same terminal block as GP2000 series, but the FG location is different.

GP-4501TW has a DC power supply type only. When replacing GP-2501S (AC Type) with GP-4501TW, changing to DC power supply is required.

2.8.2 DC Power Supply Type

The power connector on GP4000 series (DC Type) is a spring lock type. If you replace GP2000 series with GP4000 series, change the power cable.

2.9 Backup Battery

Unlike GP2000 series, GP4000 series does not use rechargeable secondary batteries but replaceable primary ones. (For both a rechargeable type and a replaceable one, contents to be backed up are the same.)

When the time for replacement of backup batteries approaches, the message to urge you to replace the battery, “RAAA053: Running out of power in the backup battery. Please change the battery.” appears. When the message appears, replace the battery referring to the GP4000 series hardware manual.

Replaceable Battery Model
PFXZCBBT1

2.10 Power Consumption

The power consumption of GP2000 series is different from that of GP4000 series.

	AC Type	DC Type
GP-2601T	50VA or lower (AC100V) 85VA or lower (AC240V)	50W or lower
GP-2500S/L	-	
GP-2501T/S/L	50VA or lower (AC100V) 85VA or lower (AC240V)	
GP-4601T	44VA or lower (AC100V) 58VA or lower (AC240V)	17W or lower
GP-4501T		

For the detailed electric specifications, see the hardware manual.

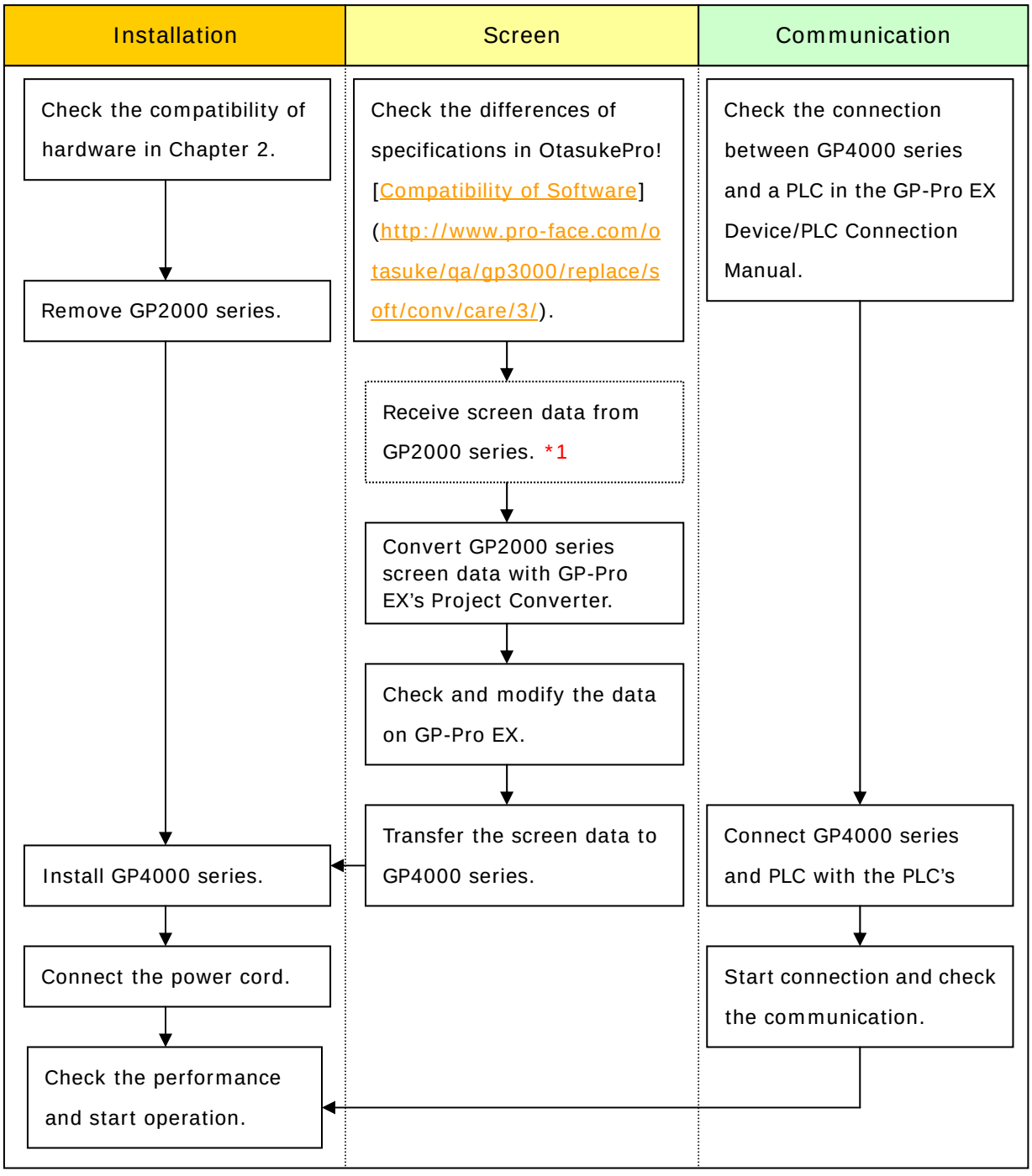
2.11 Materials/Colors of the body

The materials and the colors of GP2000 series and GP4000 series are as follows:

	GP2000 series	GP4000 series
Color	Dark Gray	Light Gray
Material	Resin	Resin with glass

Chapter 3 Replacement Procedure

3.1 Work Flow



*1: This step is required if screen data is saved only in the GP unit, not in any other device.

3.2 Preparation

Requirements for receiving screen data from GP2000 series. *1	**GP-2500S/L, GP-2501T/S:** PC in which GP-PRO/PBIII for Windows C-Package02 V6.0 or later is installed. *2 **GP-2601T, GP-2501L:** PC in which GP-PRO/PBIII for Windows C-Package02 V6.3 or lateris installed. *2
	Transfer Cable (The following three types of cables are available.) ・ GPW-CB02 9 pin D-sub to PC ・ GPW-CB03 USB to PC *3 ・ GP430-CU02-M or GPW-SET 25 pin D-sub to PC *For GP2000 series, it's possible to send/receive a screen with a CF card or on Ethernet (for GP2500S/L only)
Requirements for converting screen data of GP2000 series and transferring the converted data to GP4000 series	PC in which GP-Pro EX Ver.3.01 or later is installed.
	Transfer Cable (The following three types of cables are available.) ・A USB transfer cable (model: CA3-USBCB-01) ・A USB data-transfer cable (model: ZC9USCBMB1) ・A commercial USB cable (USB Type A/mini B) * Possible to send/receive a screen with a SD card (except GP-4501TW), a USB storage device, or on Ethernet.

*1: This step is required if screen data is saved only in the GP unit, not in any other device.

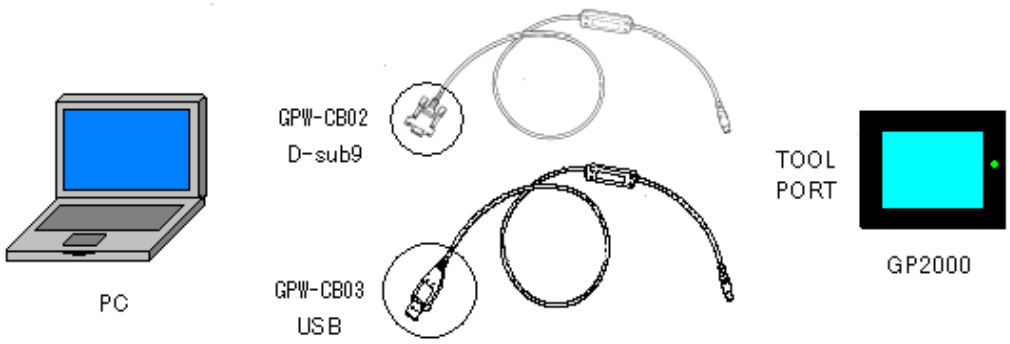
*2: Please use the same version or later as or than that of the software used during creating screens on GP2000 series. If you don't know the version, we recommend you to use the newest version. The newest version is GP-PRO/PBIII for Windows C-Package03 (SP2) V7.29. Those who have GP-PRO/PBIII for Windows C-Package03 V7.0 can download it from our web site called [OtasukePro!] (http://www.pro-face.com/otasuke/).

*3: GPW-CB03 is supported by GP-PRO/PBIII for Windows C-Package02(SP2)V6.23 or later. You need to install a driver from [Download] on our Web site called [OtasukePro!] (http://www.pro-face.com/otasuke/).

3.3 Receive screen data from GP2000 series

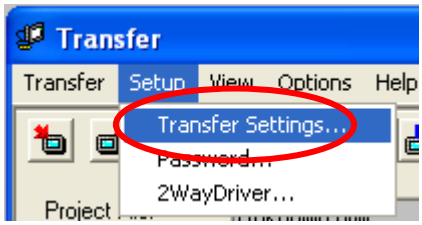
This section explains, as an example, how to receive screen data from GP2000 series using a transfer cable, GPW-CB02 or GPW-CB03. If you have backed up screen data, this step is unnecessary; skip to the next section [3.4 Convert screen data with the Project Converter].

1. Connect a transfer cable to the GP2000 series.

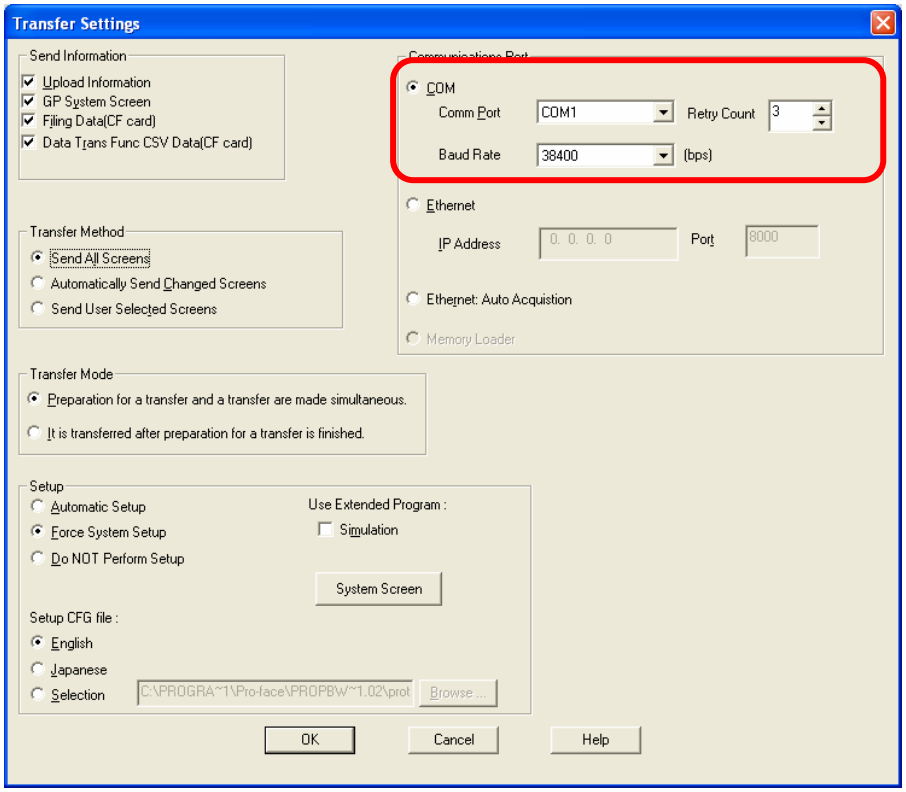


2. Strat up GP-PRO/PBIII for Windows and click the [Transfer] icon on the Project Manager (Specify a desired project file.)

3. On the [Transfer] window, select the [Setup] menu and click [Transfer Settings.]

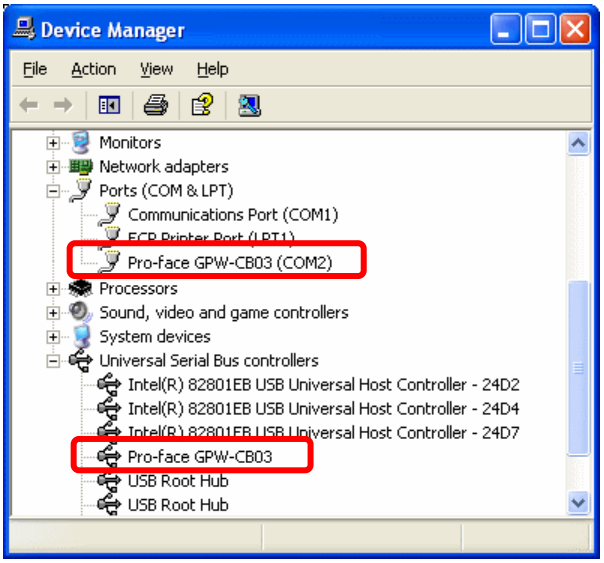


4. In the Communication Port field, select [COM], specify the COM port to which the cable is connected, and click [OK].

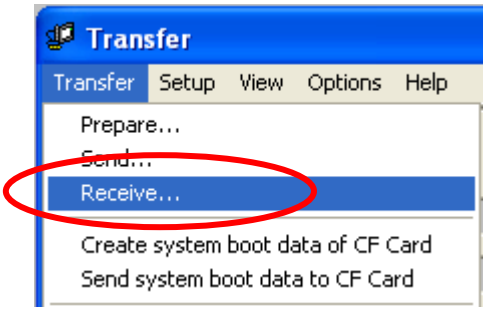


If you use a USB transfer cable (GPW-CB03)...

You can check the COM port for the USB transfer cable (GPW-CB03), which is assigned to the PC, with the Device Manager of Windows.



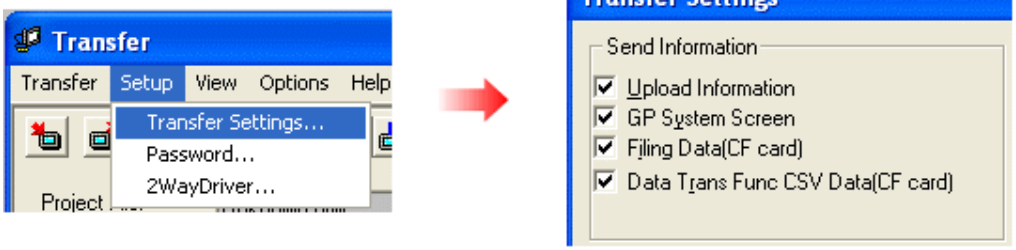
5. Select the [Transfer] menu and click [Receive..].



6. Specify the location to save the received screen data at and the project file name and save them.

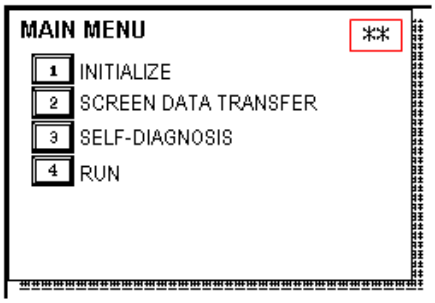
In case there is no Upload Information

"Upload Information" is necessary to receive screen data from GP2000 series. It needs to be included in screen data when transferring screen data to the display unit beforehand. The Upload Information is sent to the display unit by default, however, you may check off the box of Upload Information to prevent screen reception by a third party.



You can check in the following way if the Upload Information has been sent or not.

1. Enter into the GP's Offline mode.
2. If there are 2 asterisk (*) marks in the Main menu as shown below, the Upload Information has been sent.

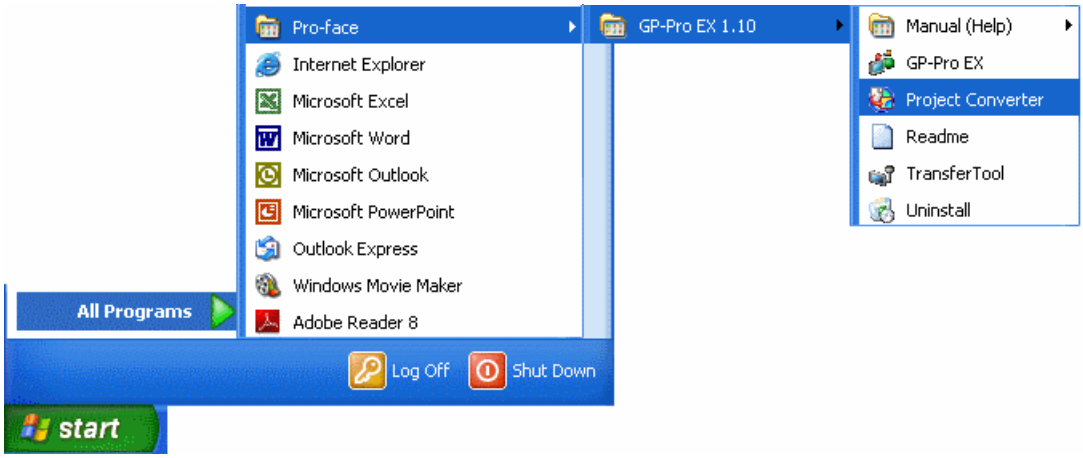


If not, there is no Upload Information sent. In this case, a message, which indicates there is no Upload Information," appears and you cannot receive the data.

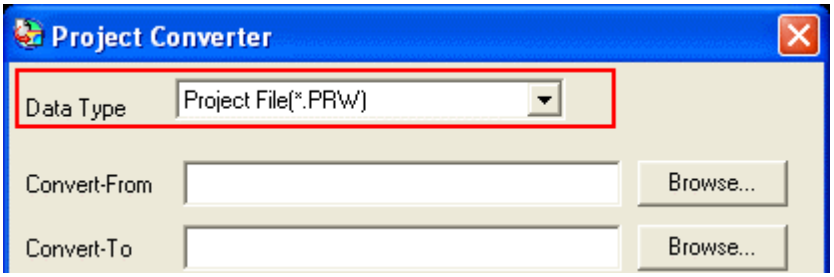
3.4 Convert screen data with the Project Converter

Convert a project file (*.prw) for GP2000 series with the GP-Pro EX's Project Converter.

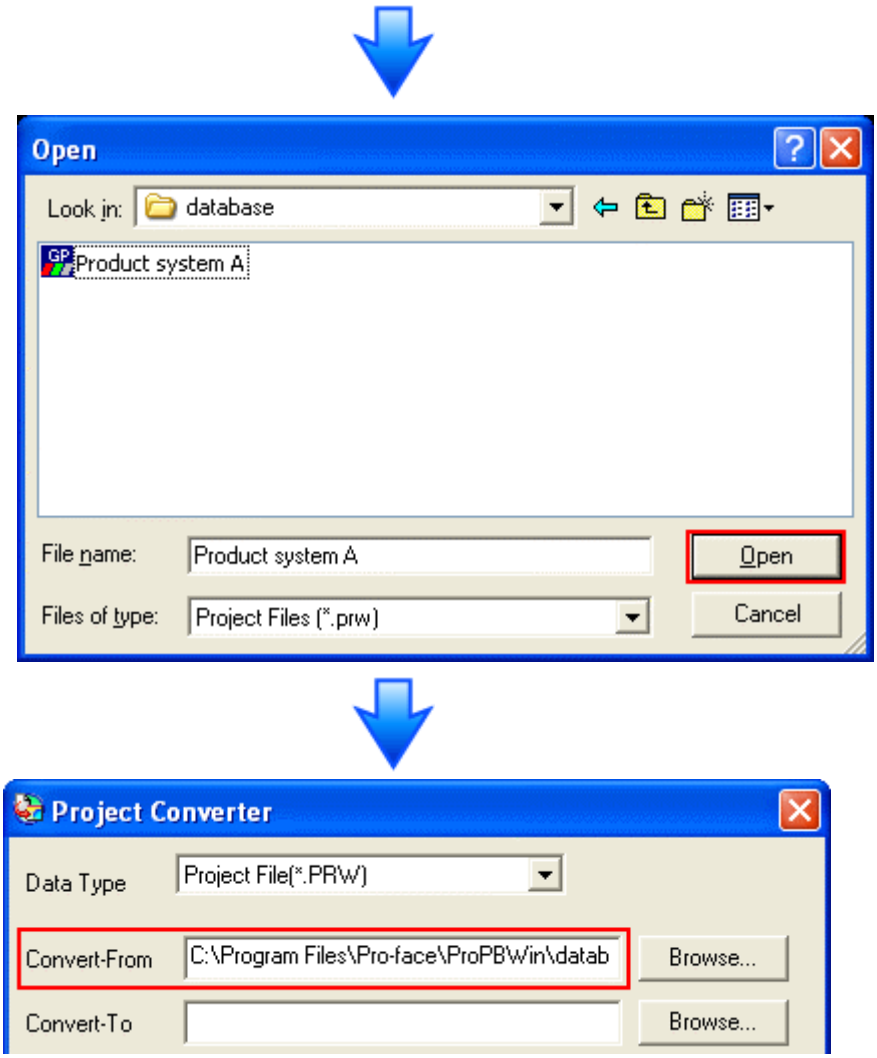
1. Click the [Start] button, select [All Programs] ([Programs]->[Pro-face]->[GP-Pro EX *.**]->[Project Converter]) (For the [*.**] part, the version of the software you use is displayed.)



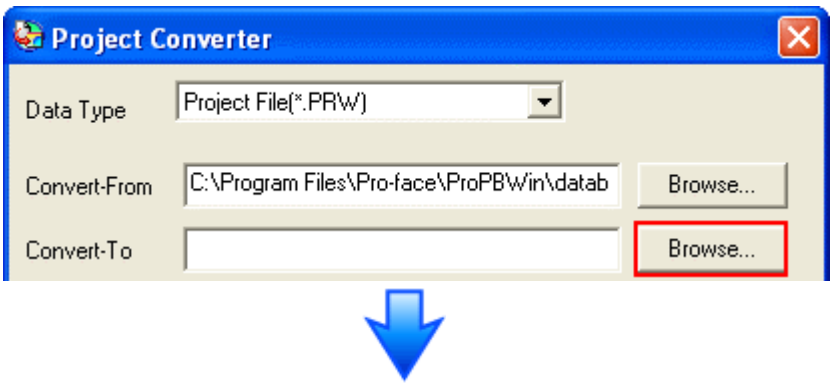
2. The Project Converter starts up and the [Project Converter] dialog box opens. Select [Project File (*.PRW)] in the [Data Type].

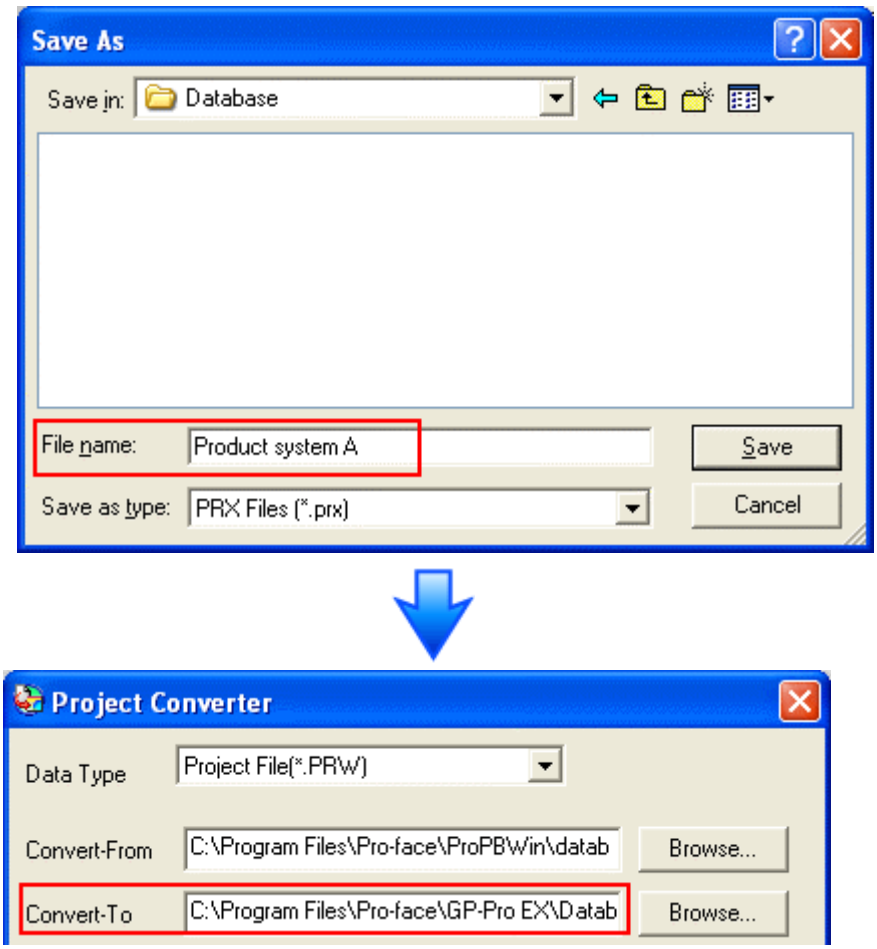


3. Click the [Browse...] button and select a project file (e.g.: "Project system A.prw"). Click [Open], and the file will be set in [Convert-From].



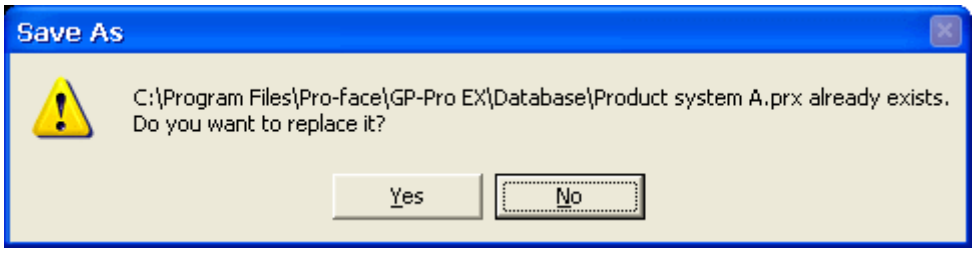
4. In [Convert-To], designate a GP-Pro EX's project file (*.prx). Click the [Browse...] button and enter a new [File Name] (e.g.: "Product system A.prx"). Click [Save], and a new project file will be set to [Convert-To].



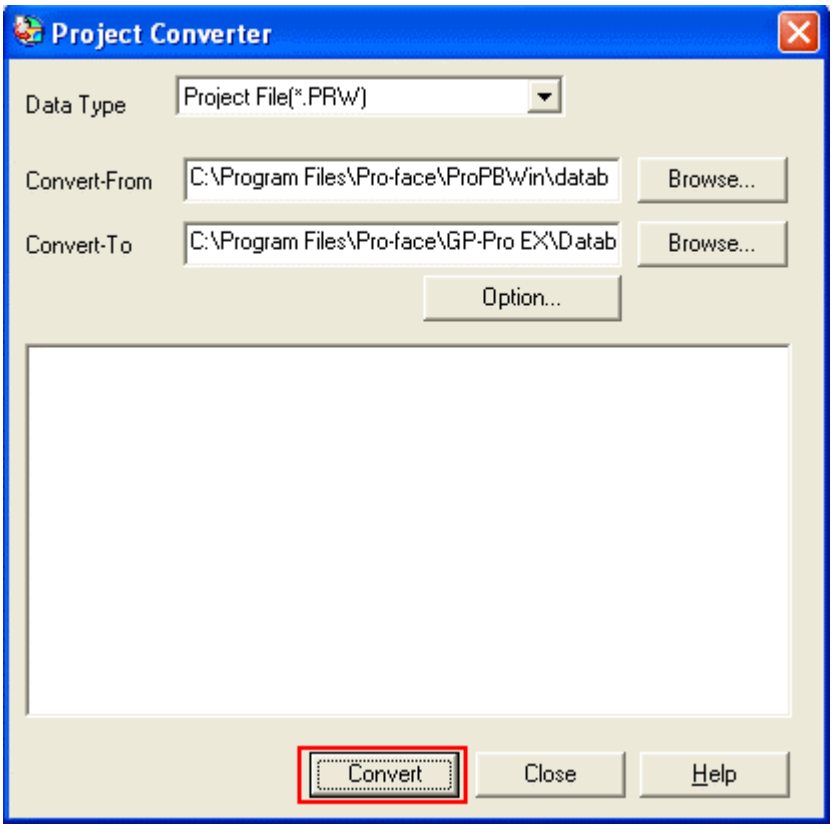


NOTE

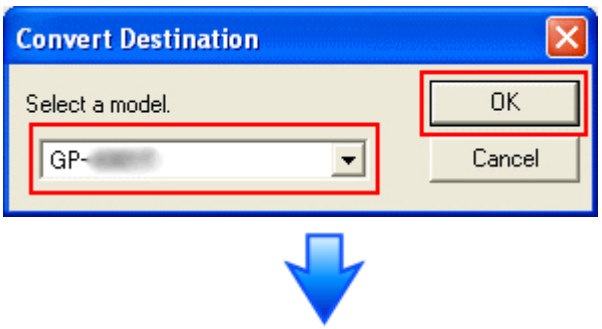
When a convert-to file exists, the window that confirms whether or not to overwrite the file is displayed.

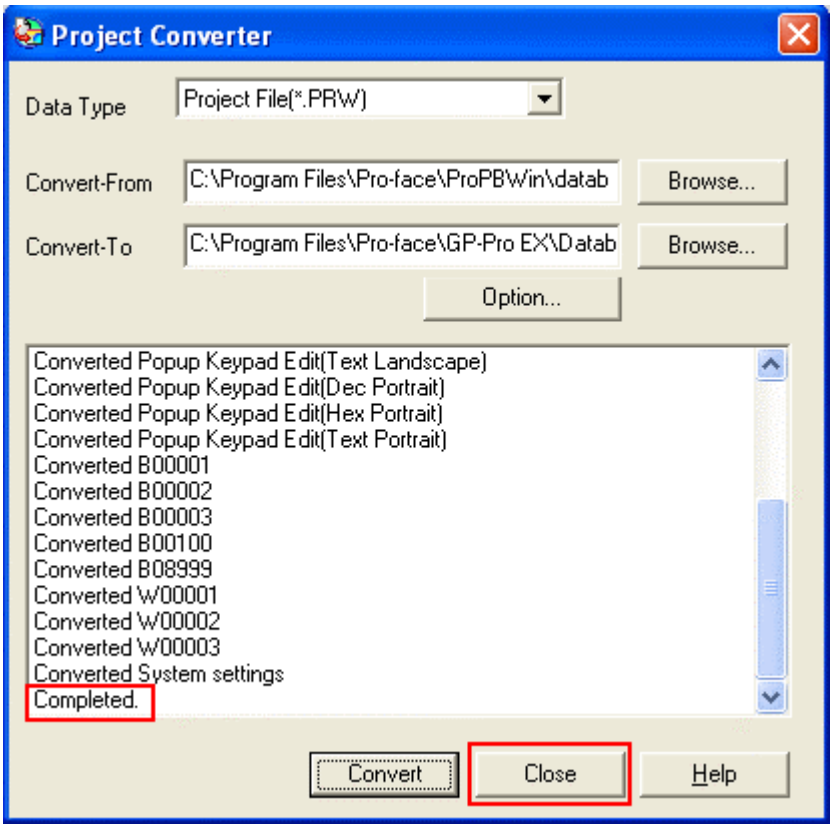


5. Click [Convert] and start the conversion.

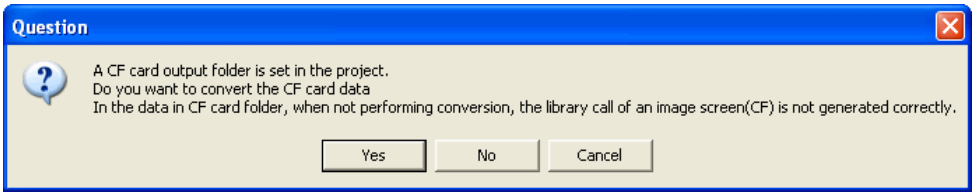


6. If you are asked about the [Convert-To] type as shown below, select a replacement model's name on the pull-down menu. Click [OK].

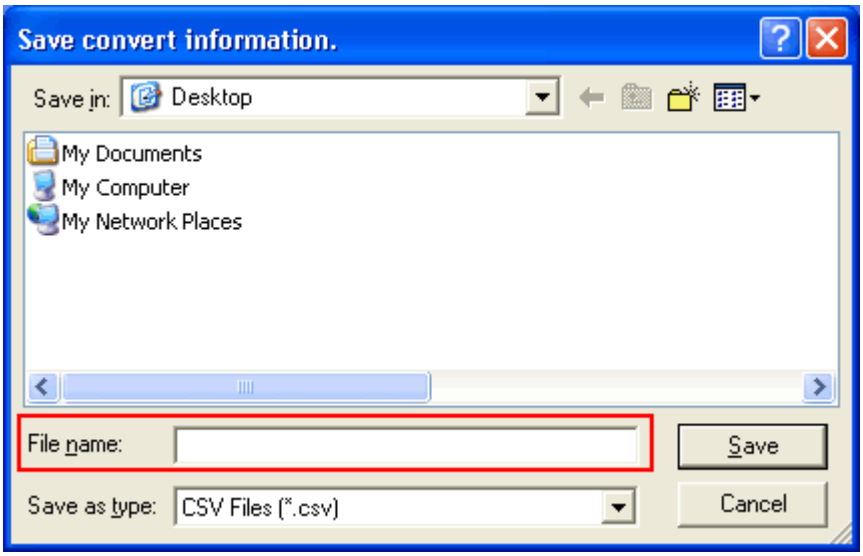




If an error message is displayed during conversion
If an error message is displayed during conversion, refer to [Project Converter Error Message] (http://www.pro-face.com/otasuke/qa/gp3000/replace/soft/conv/project_converter_error.html) on our Web site called [OtasukePro!] for the cause and the solution.

NOTE
If the following dialog box appears, CF Card Ouput Folder setting is required. Please refer to Convert GP-PRO/PBIII for Windows'"Destination CF Card Folder" 

7. After conversion, the [Save convert information] dialog box appears. If you click [Save], you can save the conversion information in a CSV file format.



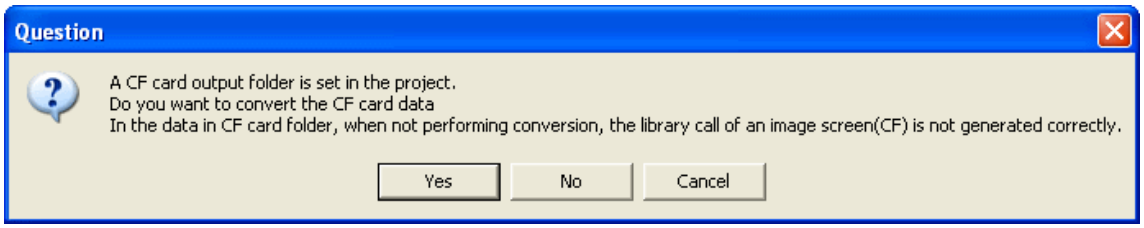
NOTE
Because the differences made at the time of conversion from GP-Pro/PBIII for Windows are described in the CSV saved file, the project file (*.prx) after conversion can be checked and modified according to the conversion information.

8. Click [Close] to close the [Project Converter] dialog box.
9. If you double click the project file (*.prx) after conversion, GP-Pro EX will start and the file will open.

MEMO
For replacement with a model with analog resistive film, select the [Display] setting on [System Settings] of GP-Pro EX and change the display type to an analog resistive film type there.

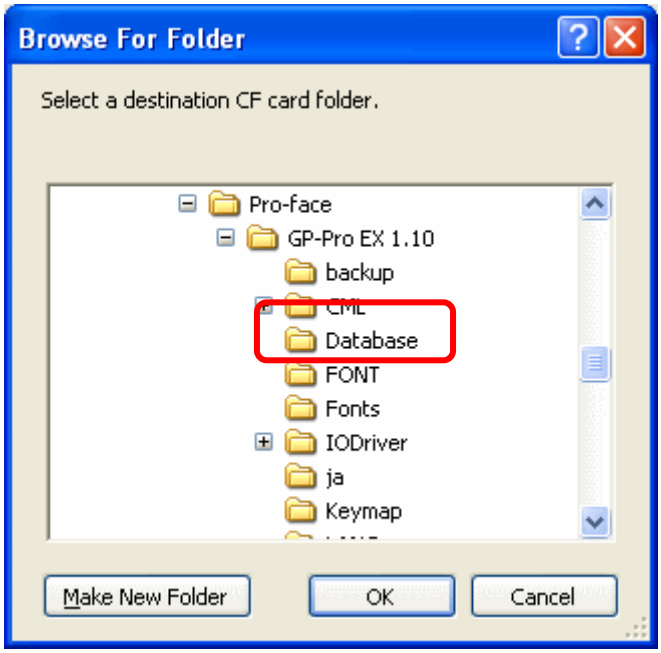
Convert GP-PRO/PBIII for Windows “Destination CF Card Folder”

If you convert a project file (*.prw) with a destination CF card folder designated in the step 6, the Question dialog box asking whether or not to designate the destination CF card folder for the convert destination appears again.



Select a folder (e.g.: “Database”) and click [OK].

If you click the [Make New Folder] button, you can create a new folder at any location.



IMPORTANT

- In the [Question] dialog box, be sure to select [Yes] and specify the destination folder. If you select [No], images will not be called correctly.

- GP4000 series that is a replacement model is not equipped with a CF card slot. If a destination folder is created in the work above, a CF card will be automatically replaced with a SD card for the external device setting.
  To check or change the destination folder setting, see [Changing the setting of the external media to use]

3.5 Transfer screen data to GP4000 series

Transfer the project file after conversion to GP4000 series.

You can transfer data to GP4000 series via

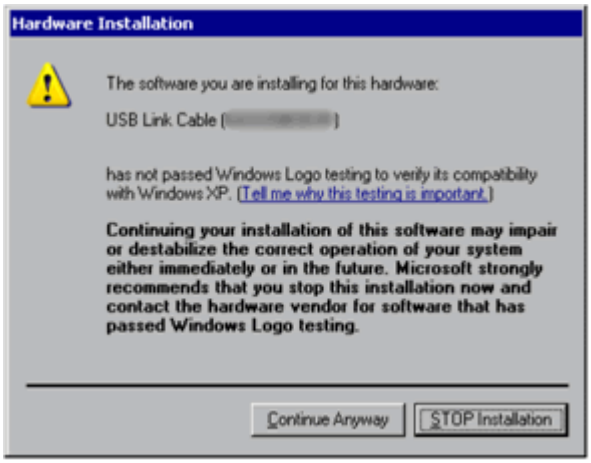
- A USB transfer cable (model: CA3-USBCB-01)
- A USB data transfer cable (model: ZC9USCBMB1)
- A commercial USB cable (USB Type A/mini B)
- A SD card/A USB storage device
- Ethernet

But this section explains, as an example, how to transfer screen data with a USB transfer cable (model: CA3-USBCB-01).

1. Connect your PC and GP4000 series with a USB transfer cable (model: CA3-USBCB-01). If the driver of the cable has not been installed on you PC yet, a dialog box will appear. Please follow the instructions.

NOTE

The “Hardware Installation” dialog box as shown below may appear during installing the USB driver depending on the security level of Windows® XP. Click [Continue Anyway] to start installing the driver. When installation is completed, click [Finish].



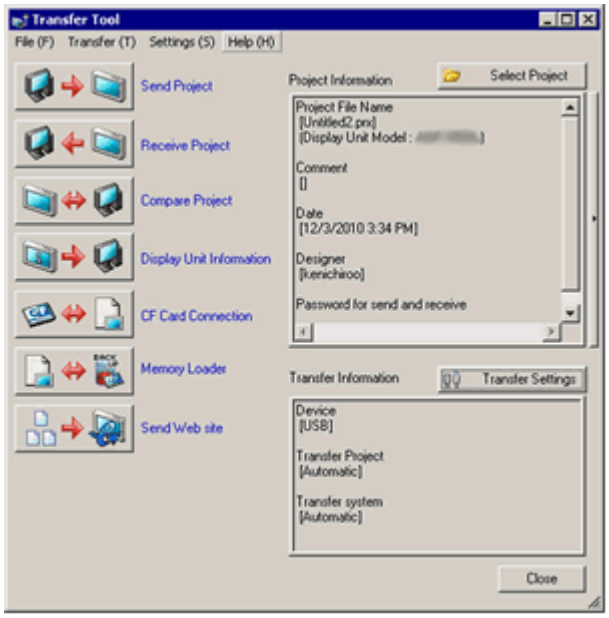
NOTE

If the following symptoms appear on Microsoft Windows® 7, go to updating “USB Data Transfer Driver” on OtasukePro! (http://www.pro-face.com/otasuke/) for download.

- An error occurs when GP-Pro EX or Transfer Tool is installed
- An error occurs when data is transferred via a USB transfer cable (model: CA3-USBCB-01).

2. Turn on the power of GP4000 series. The “Initial Start Mode” screen will appear on the display unit. After transferring a project file once, this screen will not appear again.

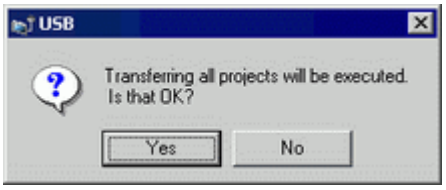
3. On the GP-Pro EX’s State Toolbar, click the [Transfer Project] icon to open the Transfer Tool.



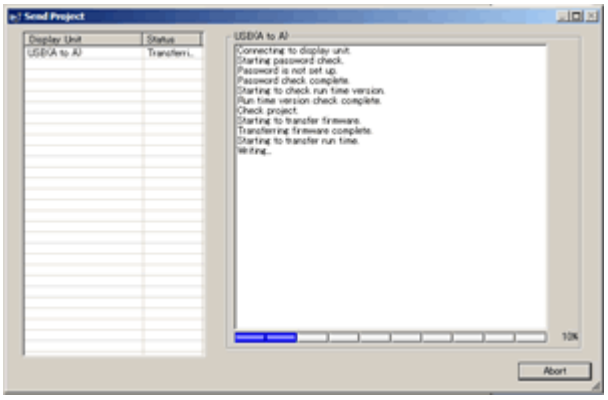
To transfer a different project file, click the [Select Project] button and select a project file.

4. Make sure that the [Device] in the “Transfer Settings Information” is set to [USB]. If not, click the [Transfer Setting] button to open the “Transfer Setting” dialog box. Select [USB] in the Communication Port Settings field and click [OK].

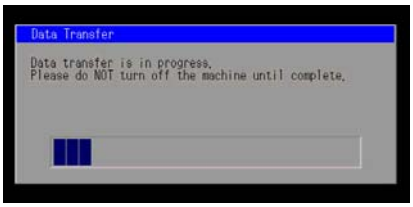
5. Click [Send Project] to start transfer. When the following dialog box appears, click [Yes]. This dialog box doesn’t appear when the same project file is sent again.



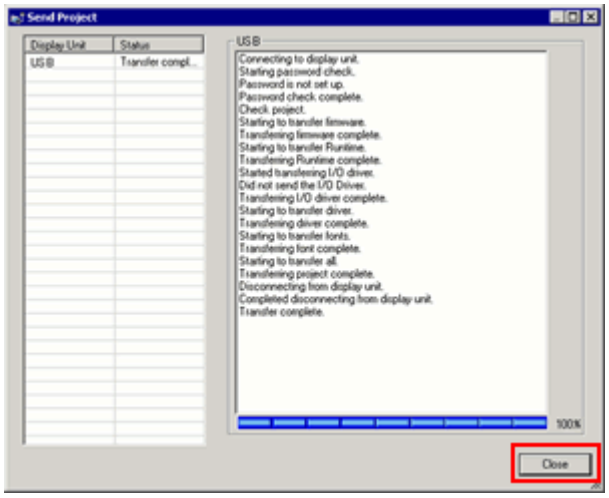
6. The following dialog box appears during transfer and you can check the communication status. (The display unit enters the Transferring mode and communication with the device such as a PLC is terminated.)



Display Screen



7. When transfer is completed, the status displayed in the dialog box will change from [Transferring] to [Complete Transfer]. Click [Close] to close the dialog box.



The display unit will be reset and a screen of the transferred project file will be displayed.

8. Close the Transfer Tool.
9. Click the [X] mark on top right of the screen or [Project]->[Exit] to close GP-Pro EX.

3.6 Differences of software

3.6.1Differences after conversion

Check the differences of screen data after conversion from GP-PRO/PBIII to GP-Pro EX. For the details of each item, refer to our website.

http://www.pro-face.com/otasuke/qa/gp3000/replace/soft/conv/care/3/

Differences of Software

1	Touch Panel Type
2	Compatibility of Bit Switch
3	Compatibility of Alarm
4	Compatibility of Trend Graph
5	Compatibility of K tag (Input Order)
6	Compatibility of K tag (difference of Writing)
7	Compatibility of K tag (Indirect Setting)
8	Compatibility of N tag
9	Precautions for using the switch for [History Data Display] of Trend Graph on the window
10	About window display on a momentary switch during momentary operation
11	About the performance when a display area of the system window is overlapping
12	Change of Tag Process
13	About the display when a fixed Draw is placed on a Part
14	Compatibility of Text
15	Compatibility of Fill
16	Compatibility of CF Card Data
17	Precautions for conversion when filing data is saved in a CF card
18	Precautions for setting “Color Settings” to [256 Colors without blinking]
19	Precautions for loading a part with “L Tag (Library Display)”
20	Compatibility of MRK files and CPW files
21	Compatibility of V Tag/v tag and Video Screen
22	Compatibility of Extended SIO Script
23	Compatibility of Sound Data
24	Compatibility of Device Monitor

25	Compatibility of Ladder Monitor
26	Compatibility of J Tag and R Tag
27	Converting Screen Data of DOS
28	Compatibility of Standard Font
29	D Script starts right after screen change or power on. (Compatibility of D Script Trigger Condition)
30	The position shifts when loading a window screen (Compatibility of U Tag)
31	Precautions for using Screen Level Change
32	Compatibility of H tag

Chapter 4 Communication with Device / PLC

4.1 Driver list

IMPORTANT
The followings are information as of October 2011. More connectable drivers will be added. Please check our website “Otasuke Pro!” for the latest information. For the devices/PLC each driver supports, see [Connectable Devices] (http://www.pro-face.com/product/soft/gpproex/driver/driver.html).

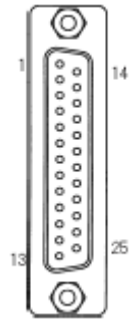
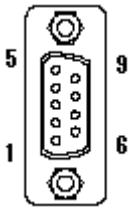
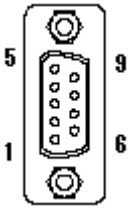
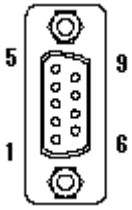
PLC	
Manufacturer	**Series**
OMRON Corporation	C/CV Series HOST Link CS/CJ Series Ethernet CS/CJ Series HOST Link CS/CJ/NJ Series EtherNet/IP
KEYENCE Corporation	KV-700/1000/3000/5000CPU Direct KZ10_80R/T Series CPU Direct KZ-10_80R/T Series CPU Direct KV-700/1000/3000/5000 Ethernet
Koyo Electronics Co., Ltd.	KOSTAC/DL Series CCM SIO KOSTAC/DL Series MODBUS TCP
JTEKT Corporation (Formerly Toyoda Machine Works)	TOYOPUC CMP-LINK SIO TOYOPUC CMP-LINK Ethernet
Sharp Manufacturing Systems Corporation	JW Series Computer Link SIO JW Series Computer Link Ethernet
TOSHIBA Machine Co., Ltd.	TC Series (TCmini/TC200)
Panasonic Electric Works SUNX Co., Ltd. (Formerly Matsushita Electric Works, Ltd)	FP Series Computer Link SIO
Hitachi Industrial Equipment Systems Co., Ltd	H Series Serial H Series Ethernet
HITACHI Ltd	S10 Series SIO S10V Series Ethernet
FANUC Corpration	Power Mate Series

Fuji Electric Co.,Ltd.	MICREX-F Series SIO MICREX-SX Series SIO MICREX-SX Series Ethernet
Mitsubishi Heavy Industories Ltd	DIASYS Netmation MODBUS TCP MHI STEP3 Ethernet
Mitsubishi Electric Corporation	A Series CPU Direct A Series Computer Link A Series Ethernet FX Series Computer Link FX Series CPU Direct FX Series Ethernet Q Series CPU Direct Q Series QnU CPU Ethernet Q/QnA Serial Communication Q/QnA Series Ethernet QnA Series CPU Direct QUTE Series CPU Direct
Meidensha Corporation	UNISEQUE Series Ethernet
YASKAWA Electric Corporation	MEMOBUS SIO MP Series SIO (Extension) MEMOBUS Ethernet MP/SERVO Ethernet
YOKOGAWA Electric Corporation	Personal Computer Link SIO MODBUS SIO Master Personal Computer Ethernet MODBUS TCP Master
Fatek Automation Corp.	FB Series SIO
GE Intelligent Platforms	Series 90-30/70 SNP Series 90-30/70 SNP-X Series 90 Ethernet
LS Industrial Systems	MASTER-K Series Cnet XGT Series Cnet XGT Series Fenet

Rockwell Automation Inc.	DF1 DH-485 EtherNet/IP
Saia-Burgess Controls Ltd.	Saia S-Bus SIO
Schneider Electric SA	MODBUS SIO Master MODBUS Slave MODBUS TCP Master Uni-Telway
Siemens AG	SIMATIC S7 MPI Direct SIMATIC S7 3964(R)/RK512 SIMATIC S5 CPU Direct SIMATIC S5 3964(R) SIMATIC S7 Ethernet
Siemens Building Technologies	SAPHIR SIO
Temperature Controller	
Manufacturer	**Series**
OMRON	Controller CompoWay/F
Shinko Technos Co., Ltd.	Controller SIO
CHINO Corporation	Controller MODBUS SIO
Fuji Electric Co., Ltd	Controller MODBUS SIO
Yamatake Corporation	Digital Controller SIO MODBUS SIO Master MODBUS TCP Master
YOKOGAWA Electric Corporation	Personal Computer Link SIO
RKC Instrument Inc.	Controller MODBUS SIO Temperatuer Controller
Inverter / Servo / Industrial Robot	
Manufacturer	**Series**
Hitachi Industrial Equipment Systems Co., Ltd	Inverter ASCII SIO Inverter MODBUS RTU
Fuji Electric Co., Ltd	Inverter SIO
Sanmei Electronics Co., Ltd	Si/CutyAxis Series SIO
Mitsubishi Electric Corporation	FREQROL Inverter

YASKAWA Electric Corporation	Inverter/Servo SIO MP/Servo Ethernet
IAI Corporation	Robo cylinder MODBUS SIO X-SELController
Hyundai Heavy Industries	Hi4 Robot
Other Devices	
Manufacturer	**Series**
Digital Electronics Corporation	General Ethernet General SIO Memory Link
Cognex Corporation	In-Sight Vision System
Modbus-IDA	General MODBUS RTU SIO Master General MODBUS TCP Master
ODVA (Open DeviceNet Vendor Association, Inc.)	EtherNet/IP Explicit Messaging

4.2 Shapes of COM ports

<table>
<tr><th></th><th>GP-2601T
GP-2501T/S/L</th><th>GP-2500S/L</th><th>GP4000 series</th></tr>
<tr><td rowspan="2">COM1</td><td colspan="2">25 pin D-Sub (female)
RS-232C/422</td><td>9 pin D-Sub (male)
RS-232C</td></tr>
<tr><td colspan="2"> 
</td><td> 
</td></tr>
<tr><td rowspan="2">COM2</td><td rowspan="2">-</td><td>9 pin D-Sub (male)
RS-232C</td><td>9 pin D-Sub (male)
RS-422/485</td></tr>
<tr><td> 
</td><td> 
</td></tr>
</table>

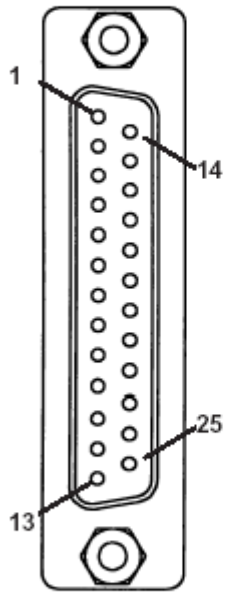
NOTE
For the COM ports of GP2000 series and GP-4000 series, the pin assignment and the shape of male/female connector are different. Because of it, the existing PLC connection cables cannot be used as they are. If you use the existing connection cables, see [4.5 Cable Diagram at the time of replacemet].

4.3 Signals of COM ports

4.3.1 Signals of COM1

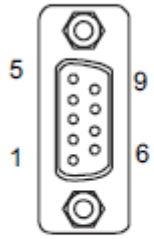
For GP2000 series

RS-232C or RS-422 (female)

Pin Assignments	Pin #	Signal Name	Condition
(D-Sub 25pin female) SIO  	1	FG	Frame ground
	2	SD	Send data (RS-232C)
	3	RD	Receive data (RS-232C)
	4	RS	Request send (RS-232C)
	5	CS	Clear send (RS-232C)
	6	DR	Data Set Ready (RS-232C)
	7	SG	Signal ground
	8	CD	Carrier detect (RS-232C)
	9	TRMX	Termination (RS-422)
	10	RDA	Receive data A (RS-422)
	11	SDA	Send data A (RS-422)
	12	NC	No connection (Reserved)
	13	NC	No connection (Reserved)
	14	VCC	5V±5% output 0.25A
	15	SDB	Send data B (RS-422)
	16	RDB	Receive data B (RS-422)
	17	RI	Ring Indicate (RS-232C)
	18	CSB	Clear send B (RS-422)
	19	ERB	Enable receive B (RS-422)
	20	ER	Enable receive (RS-232C)
	21	CSA	Clear send A (RS-422)
	22	ERA	Enable receive A (RS-422)
	23	NC	No connection (Reserved)
	24	NC	No connection (Reserved)
	25	NC	No connection (Reserved)

For GP4000 series

RS-232C (male)

Pin Connection	Pin No.	RS-232C		
		Signal Name	Direction	Meaning
 (GP unit side)	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: RI and VICC of Pin 9 are switched on the software.

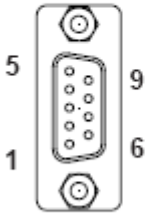
VCC Output is not protected from overcurrent.

Please follow the current rating to avoid false operation or breakdown.

4.3.2 Signals of COM2

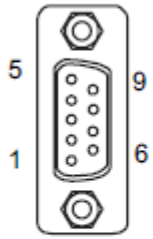
For GP2000 series (*for GP-2500S/L only)

RS-232C (male)

Pin Assignments	Pin No.	Signal Name	Signal Direction	Condition
(D-Sub 9pin male) 	1	CD	Input	Carrier detect (RS-232C)
	2	RD	Input	Receive data (RS-232C)
	3	SD	Output	Send data (RS-232C)
	4	ER	Output	Enable receive (RS-232C)
	5	SG	———	Signal Ground
	6	DR	Input	Data Set Ready (RS-232C)
	7	RS	Output	Request Send (RS-232C)
	8	CS	Input	Clear send (RS-232C)
	9	RI/VCC	Input/Output	Ring Indicate (RS-232C) +5V±5% 0.25A

For GP4000 Series

RS-422/485 (male)

Pin Connection	Pin No.	RS-422/RS-485		
		Signal Name	Direction	Meaning
 (GP unit side)	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)

4.4 Multilink Connection

For GP4000 series, some communication drivers do not support multi-link connection (n:1) via RS-422.

When converting the project file with the setting of the communication driver that does not support multi-link connection (n:1) via RS-422, the connection is automatically converted to (1:1).

For the communication drivers that support serial multi-link, see [Which drivers support serial multilink communication?] (http://www.pro-face.com/otasuke/files/manual/gpproex/new/device/com_mlnk.htm).

4.5 Cable Diagram at the time of replacement

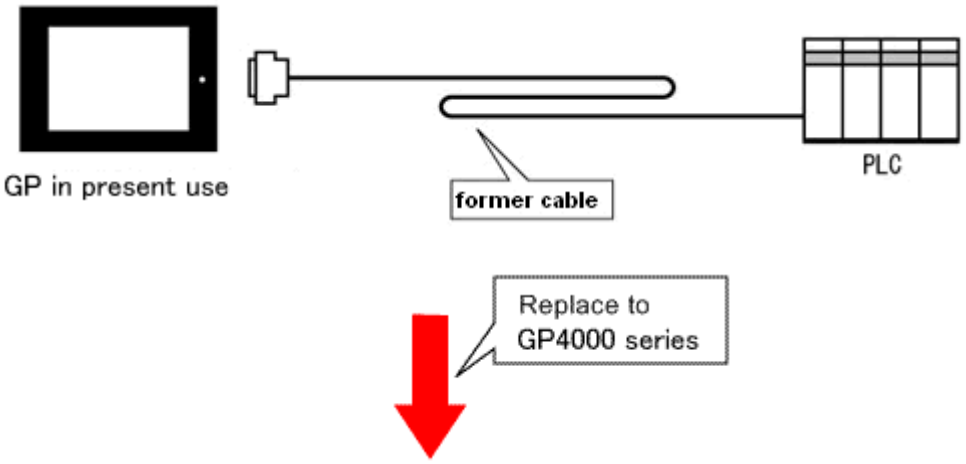
The connection cable for GP2000 series can be used for GP4000 series.

But please note that there are precautions and restrictions as described below.

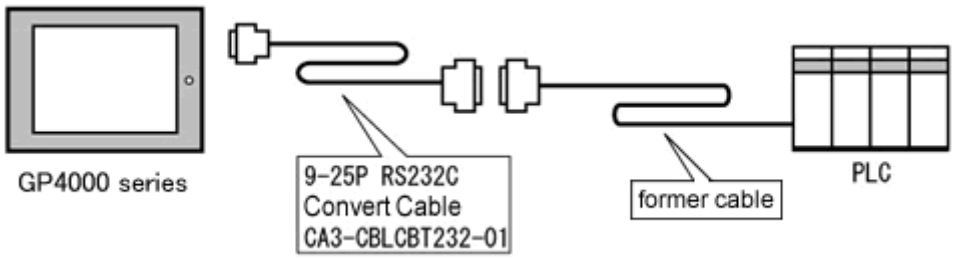
IMPORTANT
・Please check the connection configurations GP4000 series supports with GP-Pro EX Device/PLC Connection Manual before using a connection cable. (http://www.pro-face.com/otasuke/files/manual/gpproex/new/device/index.htm) ・**The Siemens MPI connection cable** cannot be used. Please refer to the above-mentioned GP-Pro EX Device/PLC Connection Manual and prepare a connection cable for GP4000 series newly.

4.5.1 When using a RS-232C connection cable,

GP2000 series System Configuration (connecting to COM1)



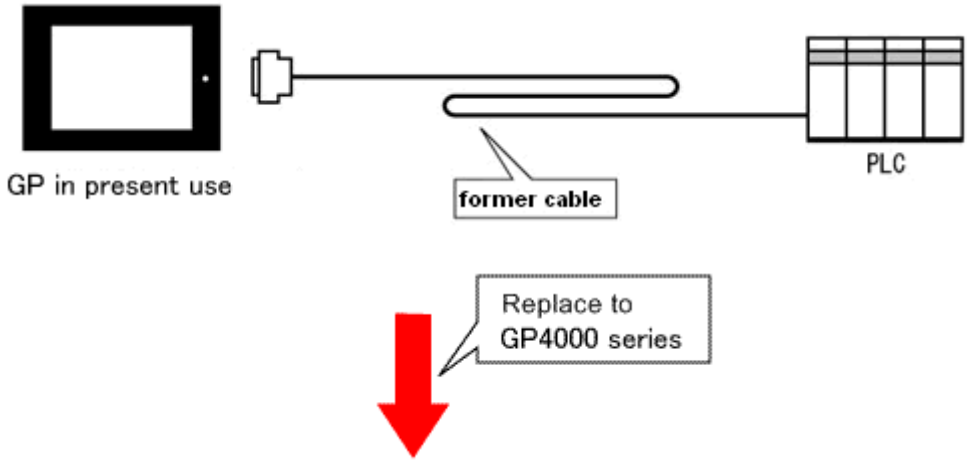
System Configuration (connecting to COM1) after replaced with GP4000 series



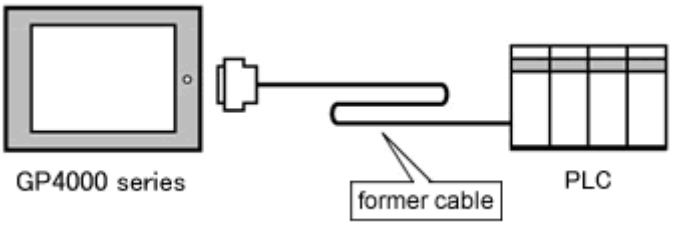
To replace GP2000 series with GP4000 series, prepare the following item.

Product Name	Model
RS-232C 9pin-25pin Conversion Cable (20cm)	CA3-CBLCBT232-01

GP2000 series System Configuration (connecting to COM2)



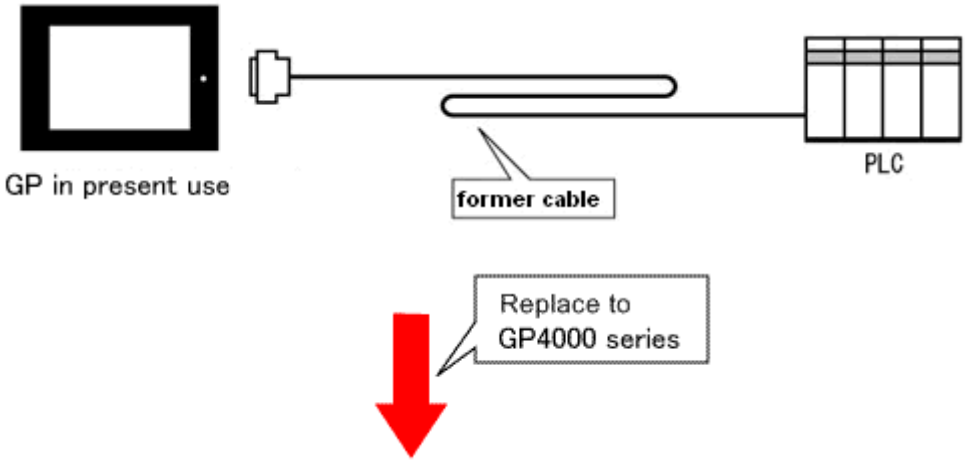
System Configuration (connecting to COM1) after GP2000 series is replaced with GP4000 series



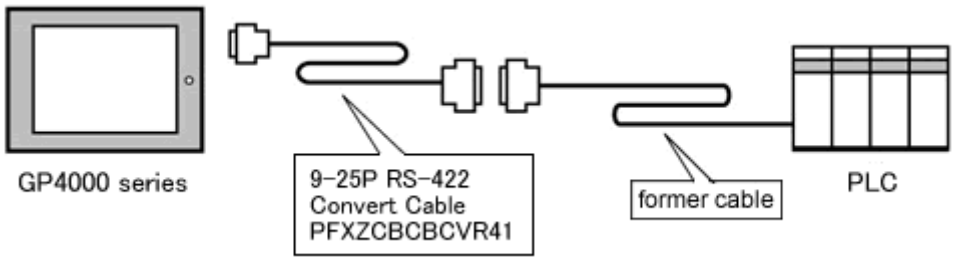
*The same cable can be used.

4.5.2 When using a RS-422 connection cable,

GP2000 series (connecting to COM1) System Configuration



System Configuration (connecting to COM2) after GP2000 series is replaced with GP4000 series



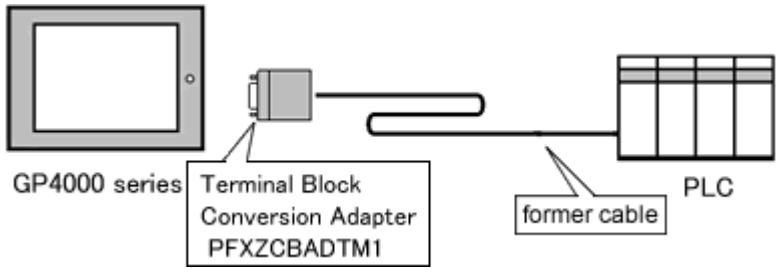
*Before connecting to GP4000 series, be sure to change the port setting to [COM2] on Device/PLC Setting. Please check the communication setting with GP-Pro EX Device/PLC Connection Manual just in case.

To replace GP2000 series with GP4000 series, prepare the following item.

Product Name	Model
RS-422 9pin-25pin conversion cable (20cm)	PFXZCBCBCVR41

NOTE

When using a terminal block adapter (GP070-CN10-O), we recommend you to replace it with a terminal block conversion adapter (PFXZCBADTM1) for GP4000 series.



For replacement in this connection method, prepare the following item.

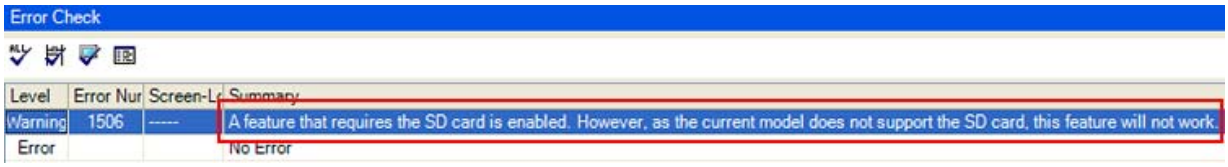
Product Name	Model
RS-422 Terminal Block Conversion Adapter	PFXZCBADTM1

Chapter 5 Appendix

5.1 Changing the setting of the external media to use

If a CF card has been used for GP-PRO/PBIII, after GP2000 series is replaced with GP4000 series with GP-Pro EX, “a CF card” is automatically replaced with “a SD card” for the external media setting.

(1) After conversion of the project file data, at GP-Pro EX Error Check, if the message, “The project contains features that require a SD card. However, the selected display does not support SD cards so these features will not run.” appears,



<Cause>

The model without a SD card slot has the setting that uses a SD card.

->Solution 1

(2) To use a USB storage device instead of a SD card ->Solution 1

(3) To check or change the SD card’s data output destination folder setting

->Solution 2

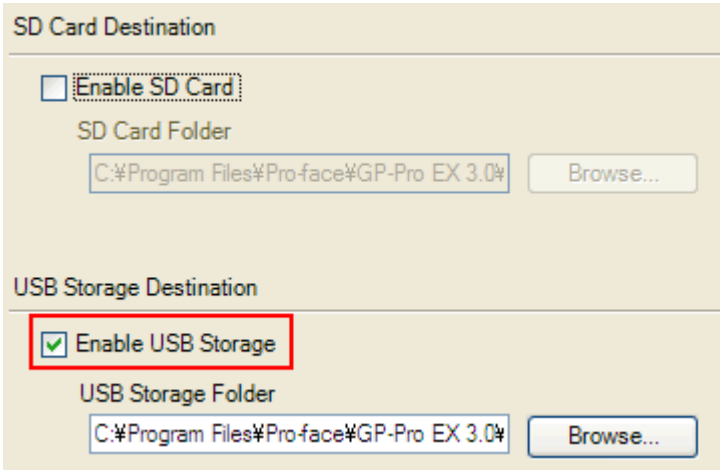
[Solution]

1.Change the SD Card setting to the USB storage setting following the steps below.

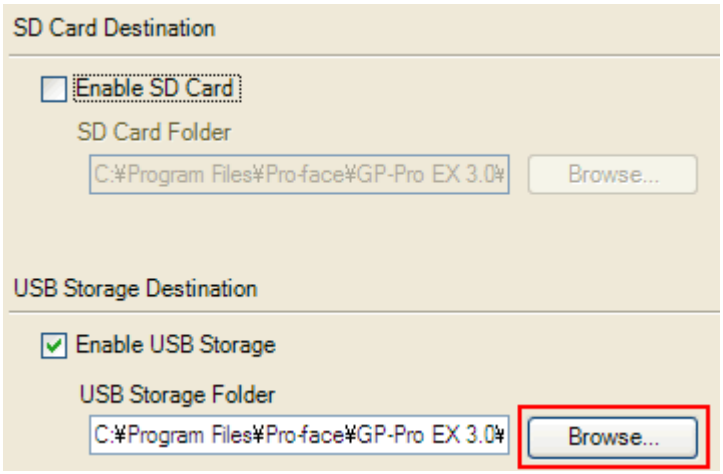
<Procedure>

i. Click [Project]->[Information]->[Destination Folder].

ii. Uncheck “Enable SD Card” and check “Enable USB Storage.



iii. Click the [Browse] button and specify a destination folder.



iv. Click [OK] to confirm the setting.

v. Click [Project]->[Save] to save changes.

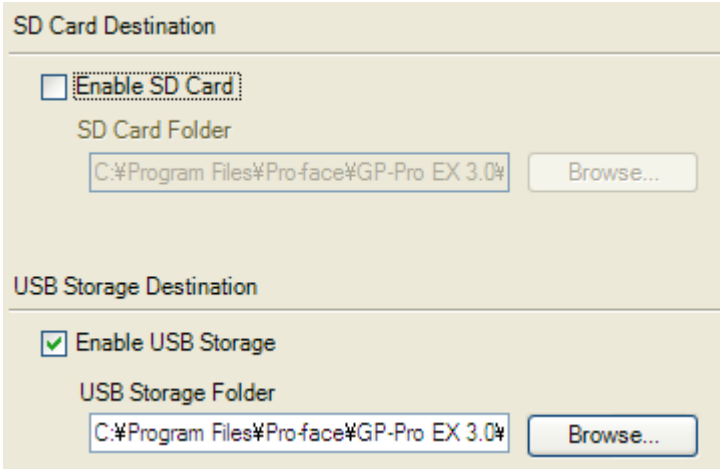
vi. Check each function that uses the CF card and replace [SD Card] with [USB Storage] for the media setting.

NOTE
・To see how the tags or the parts of GP-PRO/PBIII for Windows are replaced on GP-Pro EX, refer to [OtasukePro!] (http://www.pro-face.com/otasuke/) "Feature Comparison between GP-PRO/PBIII and GP-Pro EX" (http://www.pro-face.com/otasuke/qa/gp3000/replace/soft/conv/care/3/compare.htm) ・To check each function setting of GP-Pro EX, refer to GP-Pro EX Reference Manual.

2. Check and change the destination folder setting following the steps below.

   i. Click [Project]->[Information]->[Destination Folder].

   ii. The current setting is displayed.



   iii. After changing it, click [OK] to confirm the setting.

   iv. Click [Project]->[Save] to save changes.