Pro-face

Easy! Smooth!
GP-377S/L->GP4000M Series
Replacement Guidebook

Preface

This guidebook introduces the procedures to replace a GP-377S/L unit with a GP-4301TM unit.

Model in use	Recommended Substitution
GP-377S	**GP-4301TM** (model # : PFXGM4301TAD)
GP-377L	

*1 GP-4301TM is a modular type of HMI that can be attached through a φ22-mm hole. For replacement with a usual type, refer to "GP-377S/377L→GP-4301TW Replacement Guidebook".

Safety Information

HAZARD OF OPERATOR INJURY, OR UNINTENDED EQUIPMENT DAMAGE

Before operating any of these products, be sure to read all related manuals thoroughly. Failure to follow these instructions can result in death, serious injury or unintended equipment damage.

2nd Edition 2016.3

Contents

Chapter 1 Specification Comparison

1.1 Specifications of GP-377S/377L and GP-4301TM

		GP-377S/GP-377L	GP-4301TM
			
Display Type		**GP-377S :** STN color LCD **GP-377L :** Monochrome LCD	NEW! TFT color LCD
Display Colors, Levels		**GP-377S :** 64 colors (with blink) **GP-377L :** Monochrome	UP! 65,536 colors (without blink) → see 2.3
Display Resolution		QVGA (320×240 pixels)	
Panel Cutout Dimensions		W156×H123.5mm	NEW! φ22mm → see 2.4
External Dimensions		W171×H138×D57mm	NEW! W163×H129.4×D56.5mm *The rear module is included. → see 2.5
Touch Panel Type		Resistive film (Matrix)	NEW! Resistive film (Analog) → see 2.2
Memory	**Application**	1MB	UP! 8MB
	Backup	96KB	UP! 128KB → see 2.12
Backup Battery		Rechargeable Lithium battery	- → see 2.11
Serial I/F	**COM1**	D-Sub25P (socket) RS-232C/422	NEW! D-Sub9P (plug) RS-232C/422/485 → see 2.7
Ethernet I/F		-	UP! 10BASE-T/100BASE-TX
Tool connetor		✓	-
USB host	**Type A**	-	NEW! ✓ → see 2.6

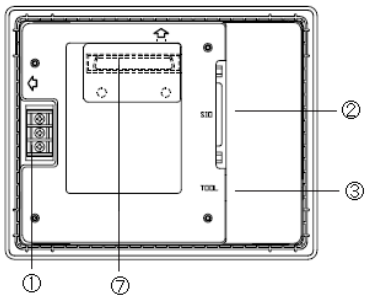
I/F	**Type mini B**	-	
Expansion Unit I/F		✓	-

Chapter 2 Compatibility of Hardware

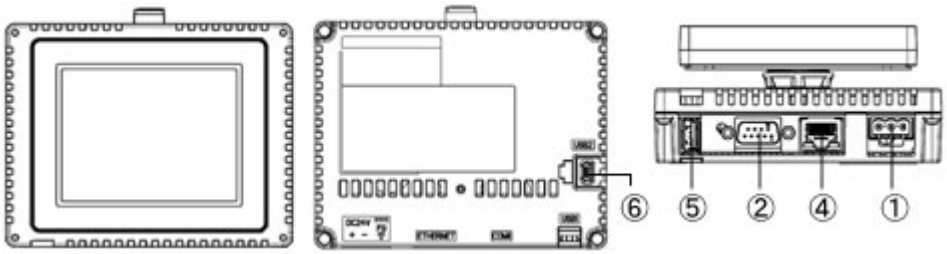
2.1 Locations of connectors

Connector locations on GP-377S/L and GP-4301TM are as follows:

GP-377S/377L



GP-4301TM



Interface names

	GP-377S/377L	GP-4301TM
①	Power Input Terminal Block	Power Connector
②	Serial I/F（COM1）	
③	Tool Connector	-
④	-	Ethernet Interface
⑤	-	USB I/F（Type A）
⑥	-	USB I/F（miniB）
⑦	Expansion Unit Interface	-

2.2 Touch Panel specifications

GP-4301TM adopts the Analog type.

For the Analog 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 applied the two-point touch input on GP-377S/L, we recommend you to change to the one-point touch input using the switch delay function of GP-Pro EX.

2.3 Display Colors

2.3.1 Blink

GP-4301TM does not have a Blink feature. Replace GP-377S/L with GP-4301TW if the Blink feature is needed.

2.3.2 Display Colors（Only GP-377L）

The display color of GP-377L is monochrome, but GP4301TM has a TFT color LCD. After replacement, the display color changes from monochrome to color. When data of a monochrome model is converted to data of a color model with GP-Pro EX, the data may be displayed in colors depending on the version of the Project Converter or settings of the drawing/the parts on the screen.After conversion, please confirm the display colors of the drawing or the parts on the screens just in case.

If the display is in colors after the data conversion to GP-4301TM…

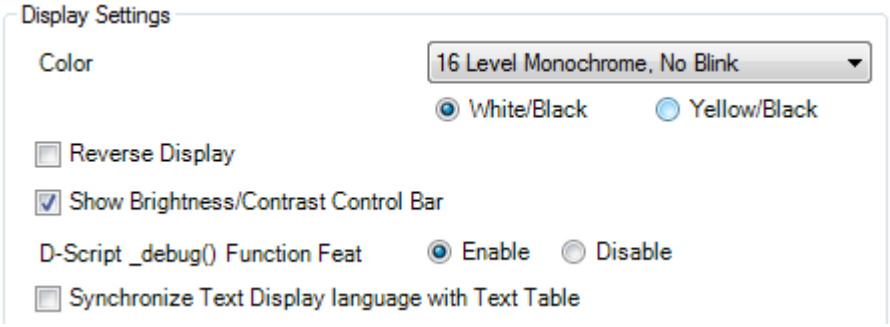
GP-Pro EX Ver. 3.01.200 (Service Pack1) or later supports the function which changes drawing in colors to in monochrome. To change the setting, follow the steps below.

(1) Click [Project]->[System Settings]->[Display Unit].

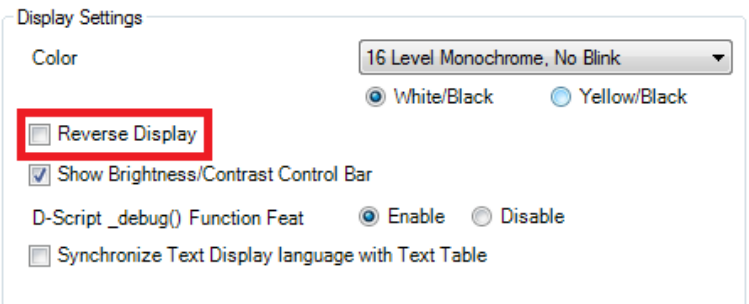
(2) Open the [Display Settings] tab.

(3) Change [Color] setting to "16 Levels Monochrome, No Blink".

(4) Select [White/Black].



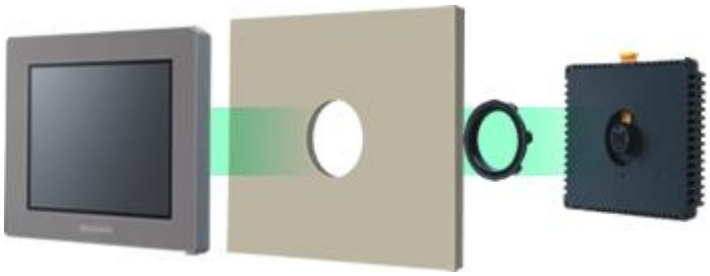
* [Reverse Display] setting is for displaying the screen with black/white reversed. Check on it if needed.



* Please confirm the display colors of the drawing or the parts on the screens after changing the [Color] setting to "16 Levels Monochrome, No Blink".

2.4 Panel cutout dimensions

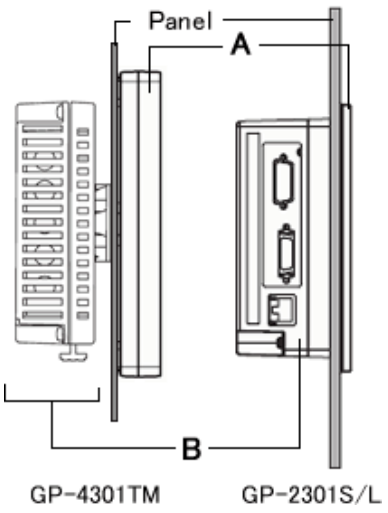
The panel cutout of GP-4301TM is a φ22-mm circular hole. The panel cutout shape and dimensions of GP-4301TM are different from those of GP-377S/L.



2.5 External Dimensions

For GP-4301TM, the front face display module (display part) and the back face main module are separated. Compared with GP-377S/L, the tickness of the part appearing on the installation panel differs.

	GP-377S/377L	GP-4301TM
A (the thickness of the front bezel)	5mm	17.5mm
B (the depth of the back face)	52mm	39mm



2.6 Transfer cable

To transfer screen data to GP-4301TM, use a USB transfer cable or Ethernet. Use a USB data-transfer cable (model: ZC9USCBMB1) or a commercial USB cable (USB Type A/mini-B). Please note that the cables (GPW-CB02, GPW-CB03, GP430-CU02-M) for GP-377S/L cannot be used for GP-4301TM.

2.7 Serial Interface

For the COM ports of GP-377S/L and GP-4301TM, the pin assignment and the shape of plug/socket 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 [4.6 Cable Diagram at the time of replacemet].

2.8 Peripheral units and option units

2.8.1 Barcode reader connection

GP-4301TM is not equipped with a tool port. A barcode reader that was connected from the tool port on GP-377S/L cannot be used. However, GP-4301TM allows you to connect a barcode reader on its USB interface (Type A).

For the models GP-4301TM supports, see [OtasukePro!] (http://www.pro-face.com/otasuke/qa/3000/0056_connect_e.html).

And if you connect a barcode reader to GP-4301TM, be sure to supply power to the barcode reader from an external power source (such as a USB hub supporting self-power supply). When no power is supplied from an external power source, if the barcode reader consumes more electricity than expected, operation of GP-4301TM will become unstable and reset may be activated.

2.8.2 Expansion Unit

GP-4301TM is not equipped with an expansion bus unit. The expansion units (such as CC-LINK) used for GP-377S/L cannot be used.

2.8.3 Isolation Unit

The isolation unit for GP-377S/L (CA2-ISOALL232-01, CA2-ISOALL422-01) cannot be used for GP-4301TM.

2.9 Power Connector

The power connector on GP-4301TM is a screw lock terminal block. If you replace GP-377S/L, change the power cable.

2.10 Power Consumption

The power consumption of GP-377S/L is different from that of GP-4301TM.

GP-377S/377L	GP-4301TM
20W or less	6.8W or less

For the detailed electric specifications, see the hardware manual.

2.11 Clock

There's no battery in GP-4301TM. When the GP's power is turned OFF, the clock data is reset. Using the Clock Update Settings of GP-Pro EX allows you to take in the clock data of the connected device. For details, refer to 5.2 Adjusting the Time in the GP-ProEX Reference Manual.

2.12 Backup Memory (SRAM) – (for GP-Pro EX earlier than Ver3.1)

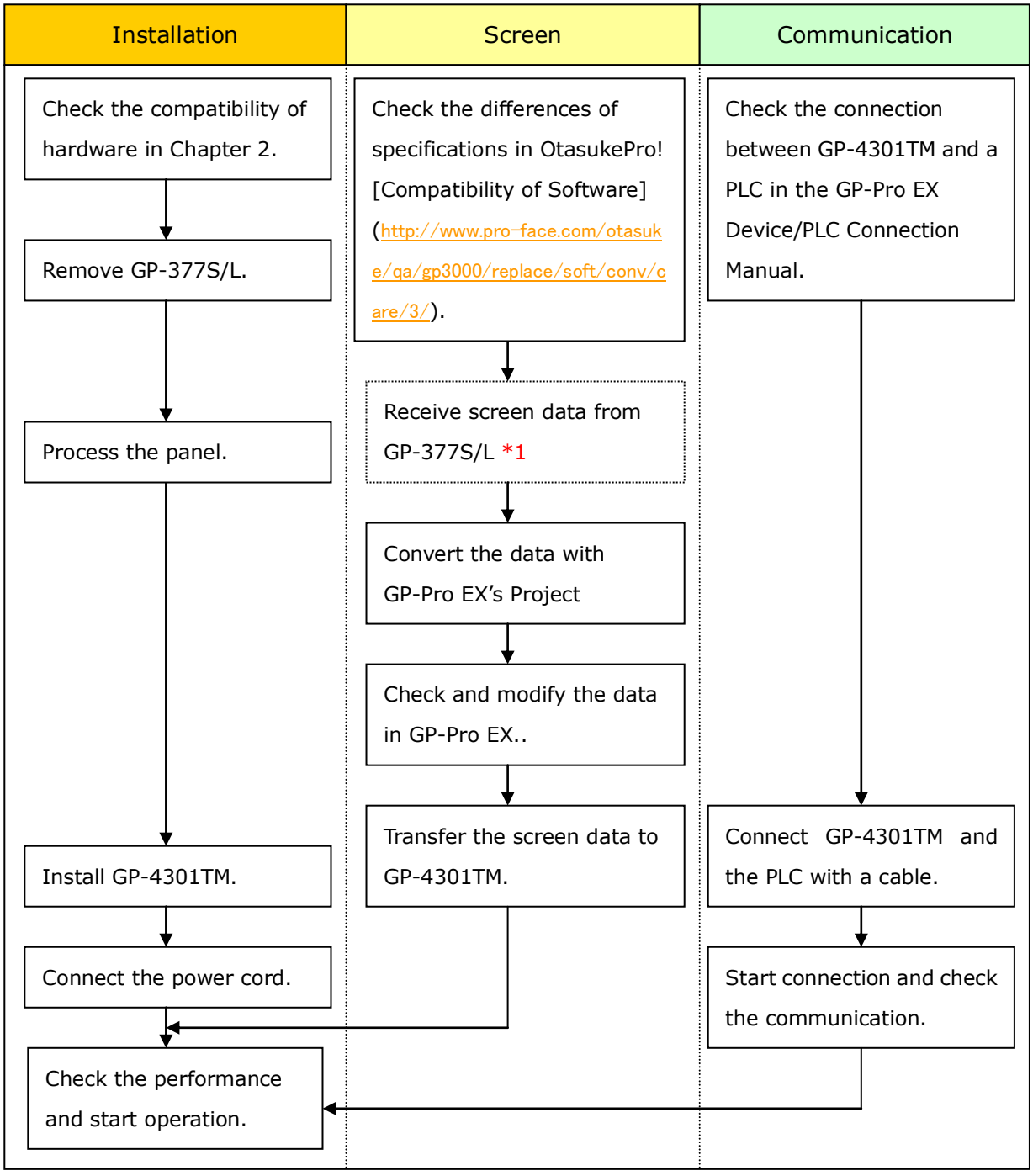
When using GP-Pro EX earlier than Ver3.1, backup of sampled data is not performed. When the GP's power is turned OFF, the sampled data is erased. Please use GP-Pro EX Ver.3.1 or later.

2.13 Other Notes

- Do not expose GP4000M series to direct sunlight.
- Do not use GP4000M series outdoors.
- Do not turn on GP4000M series if condensation has occurred inside the device.
- When you are continuously using GP4000M series without oxygen, the brightness might decrease. Please ventilate the control panel periodically.

Chapter 3 Replacement Procedure

3.1 Work Flow



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

3.2 Preparation

Requirements for receiving screen data from GP-377S/L *1	PC in which GP-PRO/PBIII for Windows C-Package02 V4.0 or later is installed. *2
	Transfer cable (The following three types of cables are available.) ※ GPW-CB02 (D-sub 9-pin to the PC) ・ GPW-CB03 (USB to the PC) *3 ・ GP430-CU02-M or GPW-SET (D-sub 25-pin to PC)
Requirements for converting screen data of GP-377S/L and transferring to GP-4301TM	※ PC in which GP-Pro EX Ver.2.71 or later is installed. ※ We recommend you to use GP-Pro EX Ver.3.1 or later. (For earlier than Ver.3.1, there are restrictions on a part of features of GP4000M.)
	A USB data-transfer cable (model: ZC9USCBMB1) or A commercial USB cable (USB A/mini-B) GP-4301TM also allows you to transfer screen data via USB flash drive or on Ethernet.

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

*2: The software version must be the same or higher than the version that you used when creating screen data for the GP-377S/L unit.

We recommend you upgrade to the latest version, which is GP-PRO/PBIII for Windows C-Package03 (SP2) Ver. 7.29. If the version of GP-PRO/PBIII for Windows C-Package03 that you currently use is version 7.0, upgrade it on our website Otasuke Pro! (http://www.pro-face.com/otasuke/download/update/)

*3: GPW-CB03 is compliant with GP-PRO/PBIII for Windows C-Package02 (SP2) Ver.6.23 or later.

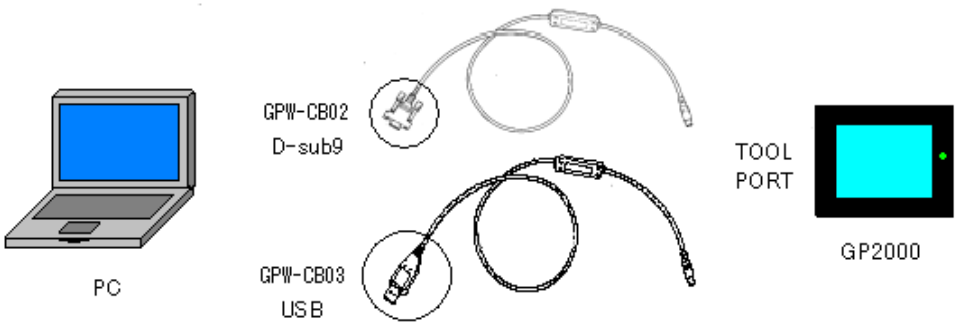
Also, to use it, you may need to install the driver on our website OtasukePro!

(http://www.pro-face.com/otasuke/download/driver/)

3.3 Receive screen data from GP-377S/L

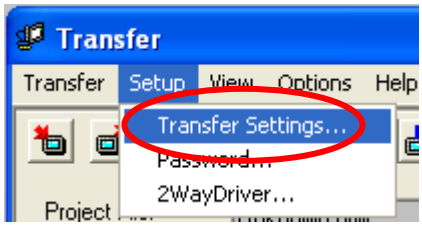
This section explains, as an example, how to receive screen data from GP-377S/L using a transfer cable, GPW-CB02 or GPW-CB03. If you have backed up screen data, this step is unnecessary; skip to the next section [3.4 Convert screen data with the Project Converter].

1. Connect a transfer cable to the GP-377S/L unit.

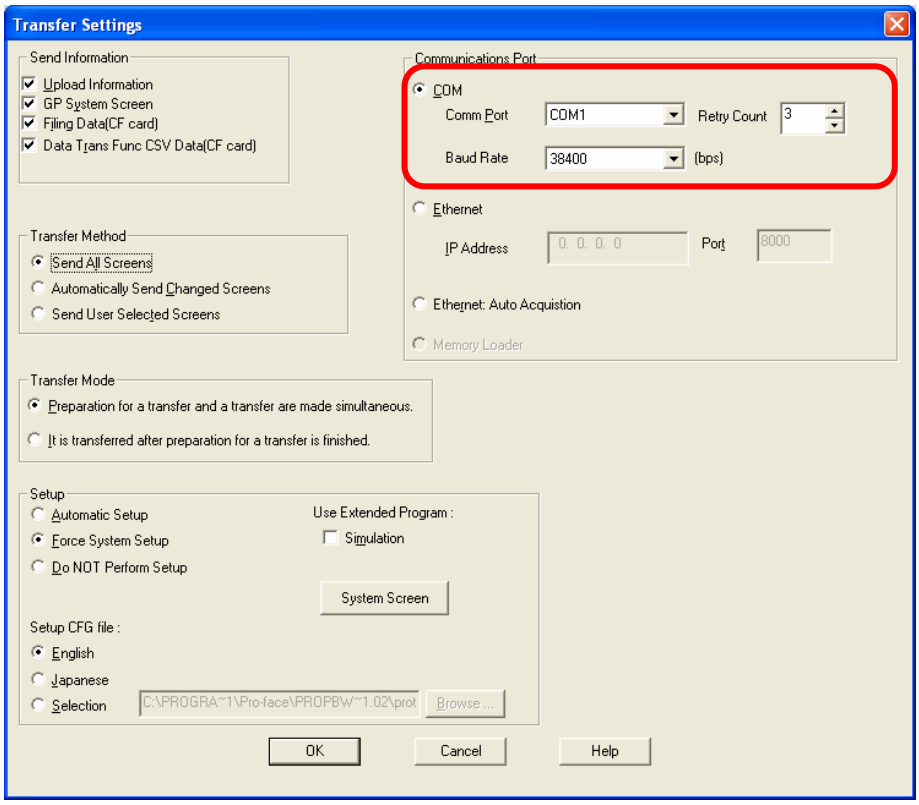


2. Start up GP-PRO/PBIII C-Package and click the [Transfer] icon on the Project Manager. (Specify a desired project file.)

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

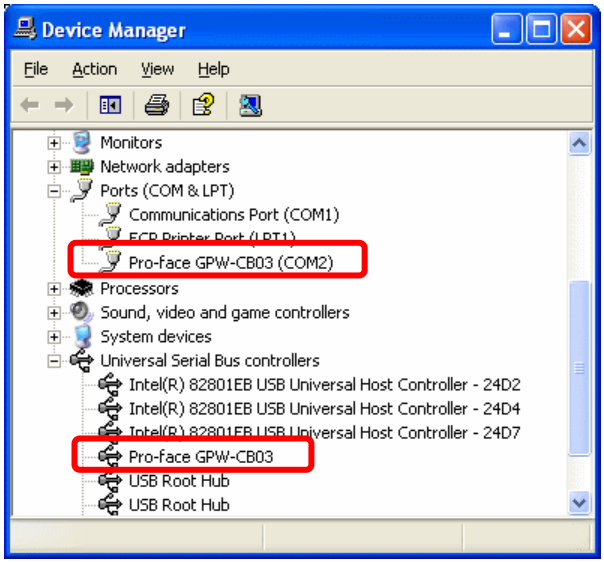


4. In the Communication Port field, select [COM], specify the COM port to which the cable is connected, and click [OK].

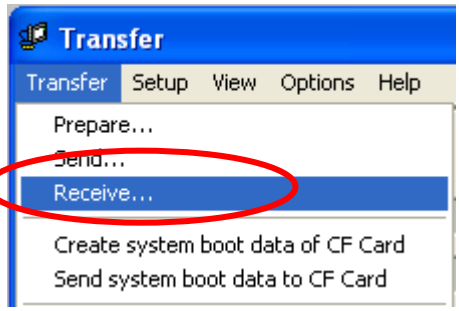


If you use a USB transfer cable (GPW-CB03)

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.



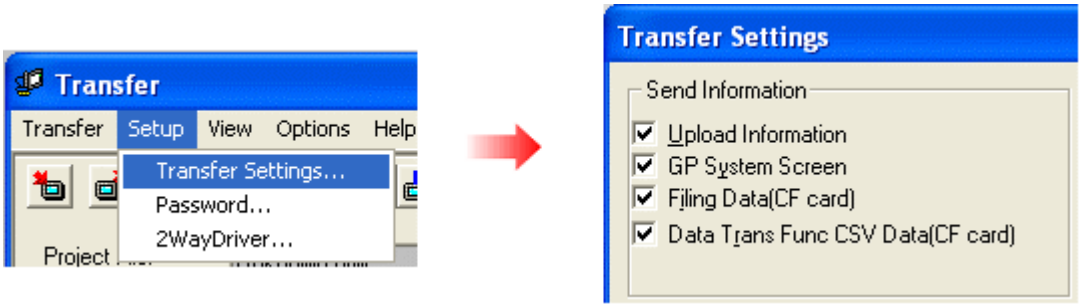
5. Select the [Transfer] menu and click [Receive…].



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

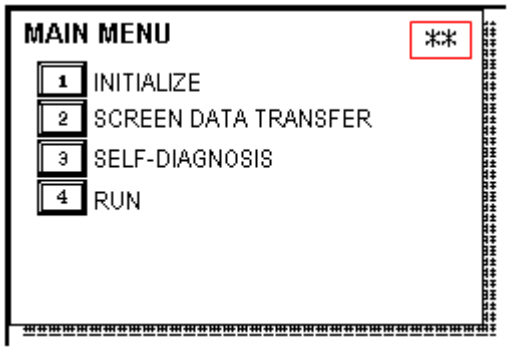
In case there is no Upload Information…

"Upload Information" is necessary to receive screen data from GP-377S/L. 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 if the Upload Information has been sent or not in the following way.

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

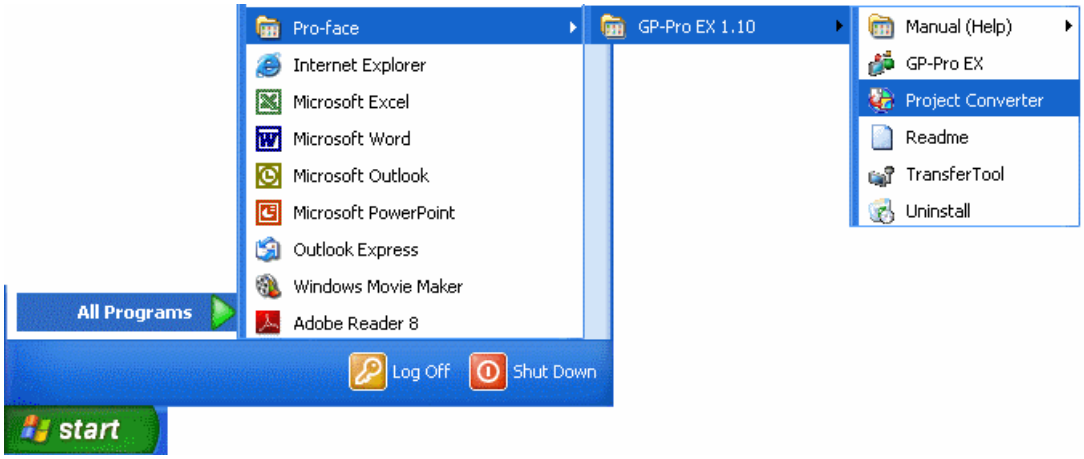


If not, there is no Upload Information sent. In this case, a message, which indicates there is no "Upload Information", appears and you cannot receive the data.

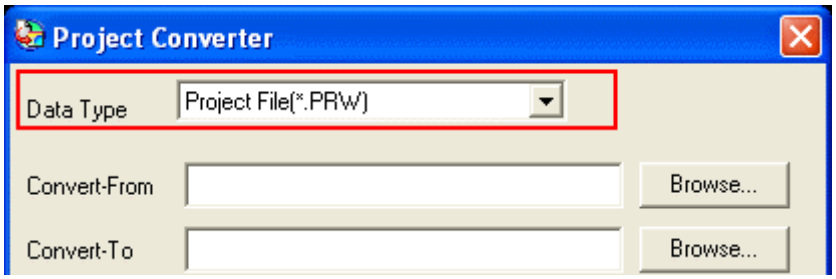
3.4 Convert screen data with the Project Converter

Convert a project file (*.prw) for GP-377S/L with the GP-Pro EX's Project Converter and change the model setting to GP-4301TM.

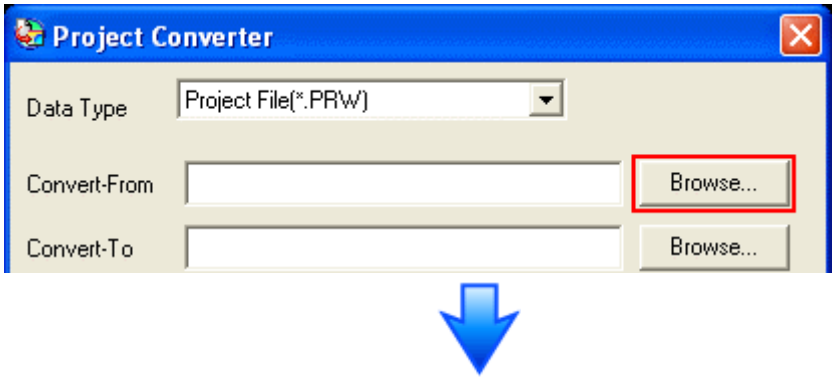
(1) Click the [Start] button, select [All Programs] (or [Programs])-> [Pro-face]-> [GP-Pro EX *.**]->[Project Converter].
(For this part, [*.**], the version of the software you use is displayed.)

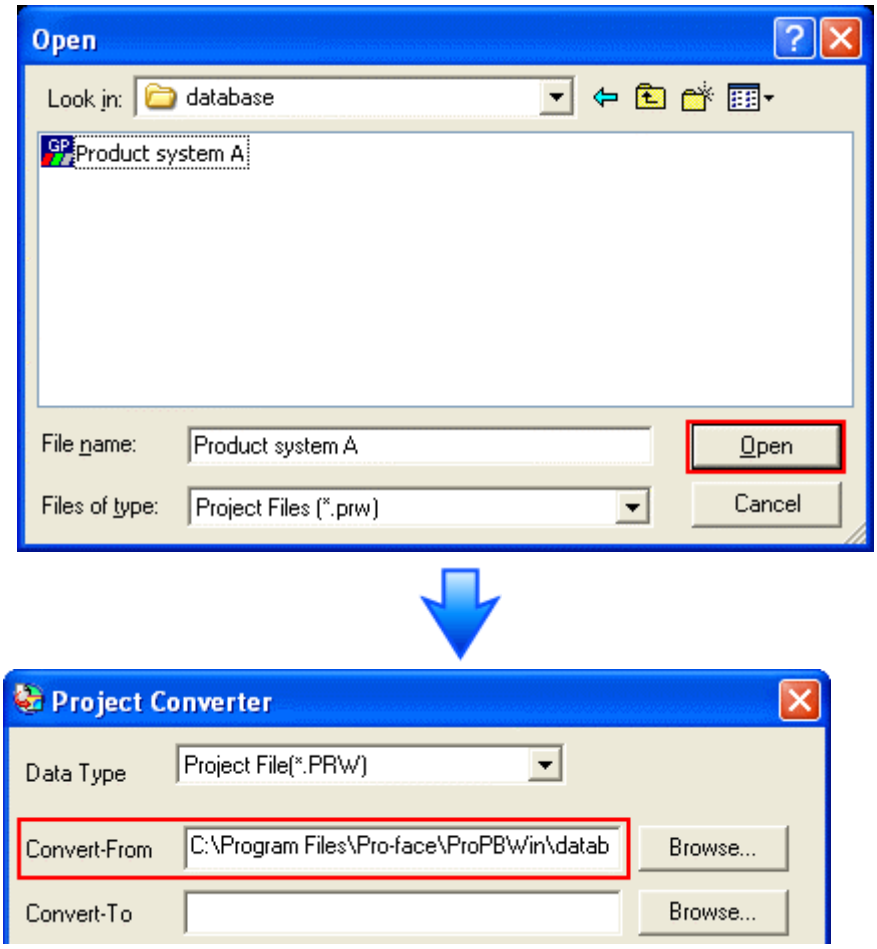


(2) The Project Converter starts up and the [Project Converter] dialog box opens. Select [Project File (*.PRW)] in the [Data Type].

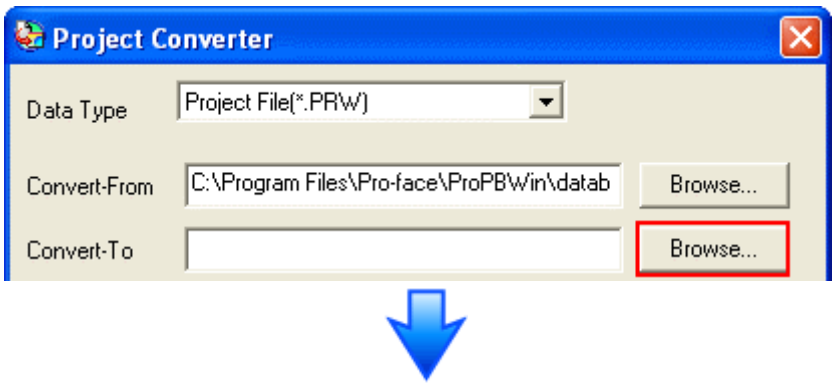


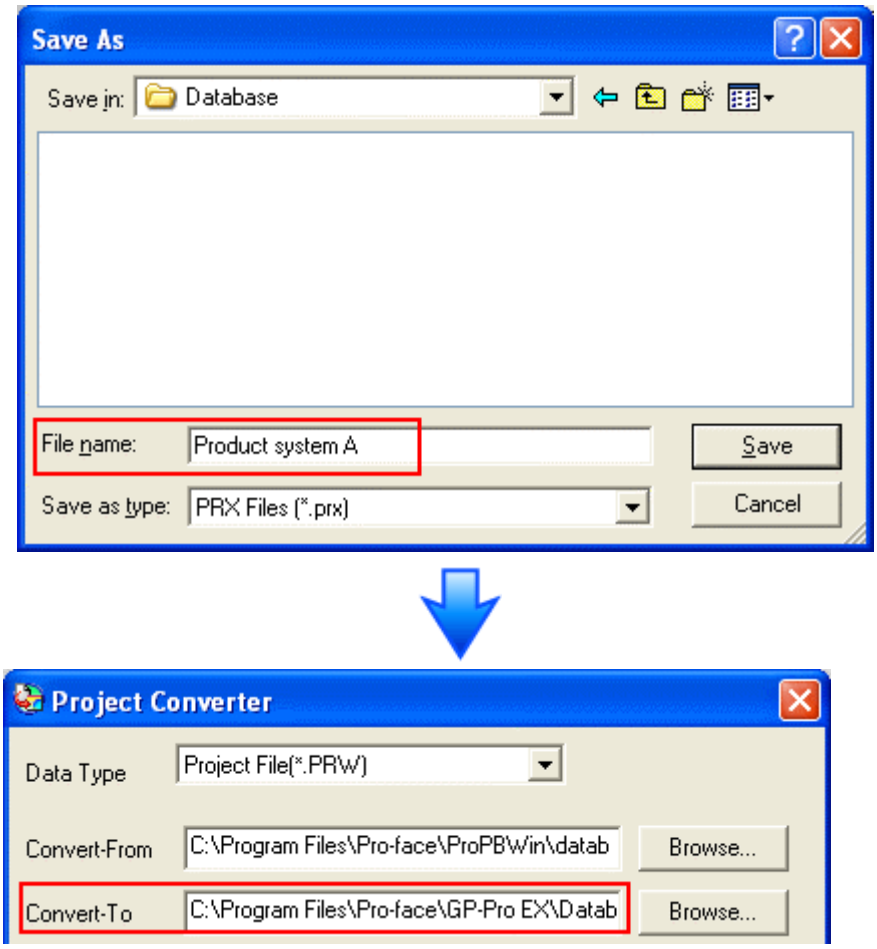
(3) Click the [Browse…] button and select a project file (e.g.: "Project system A.prw"). Click [Open], and the file will be set in [Convert-From].





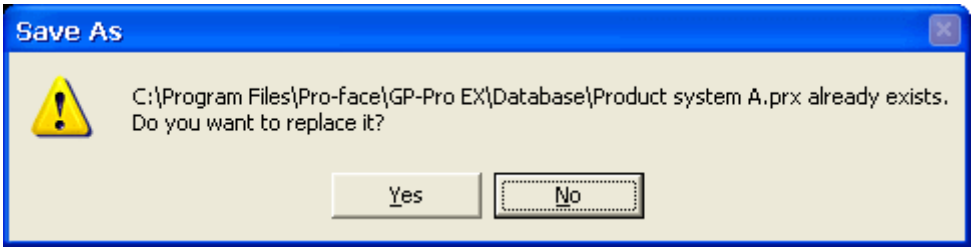
(4) In [Convert-To], designate a GP-Pro EX's project file (*.prx). Click the [Browse…] button and enter a new [File Name] (e.g.: "Product system A.prx"). Click [Save], and a new project file will be set to [Convert-To].



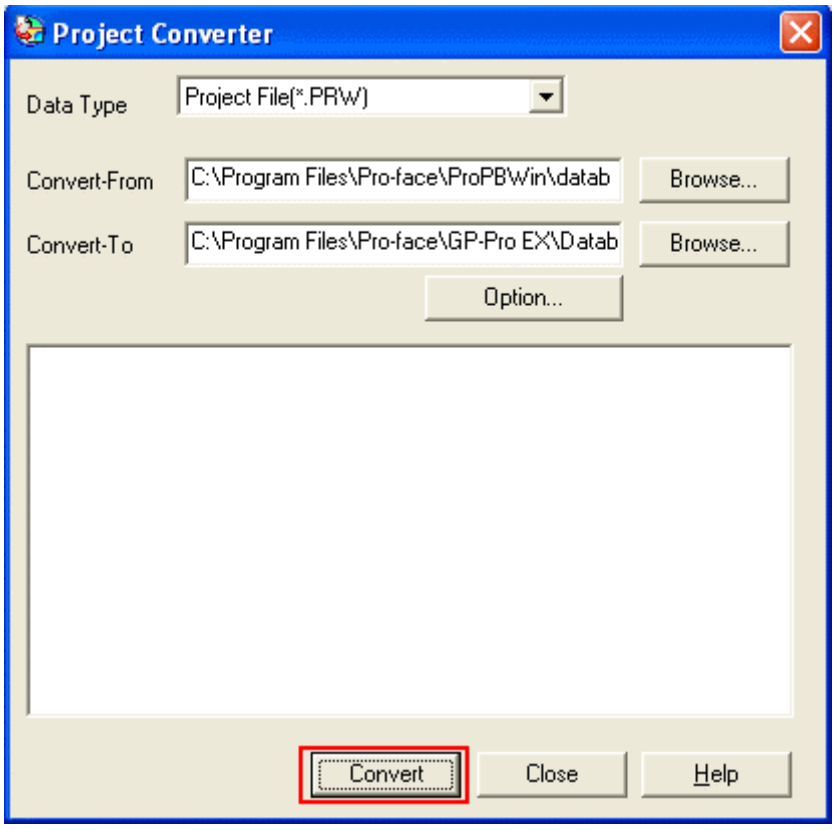


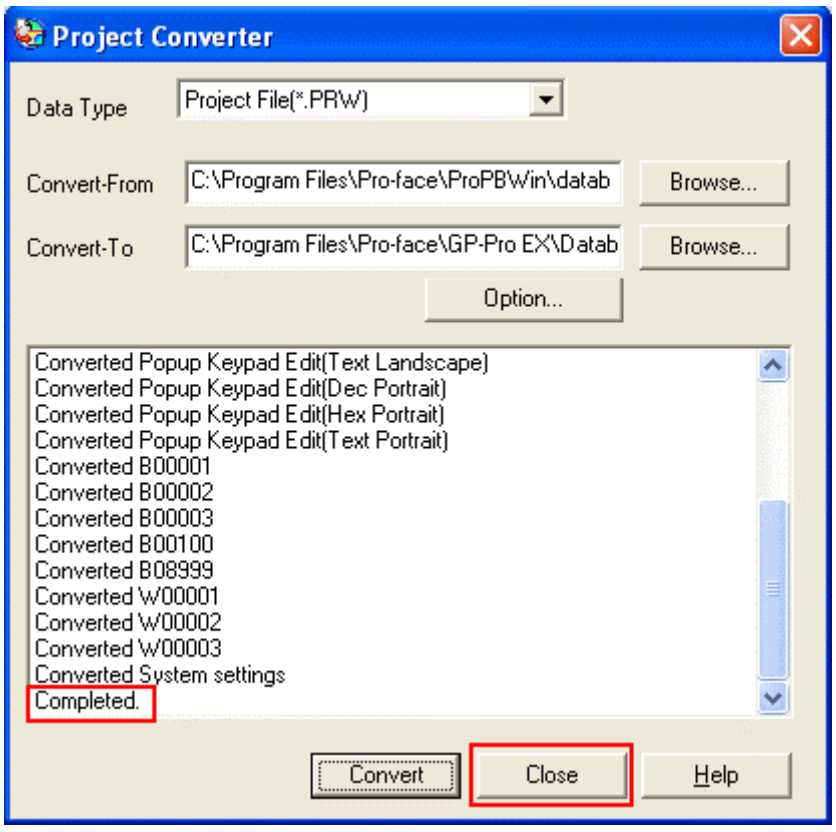
NOTE

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



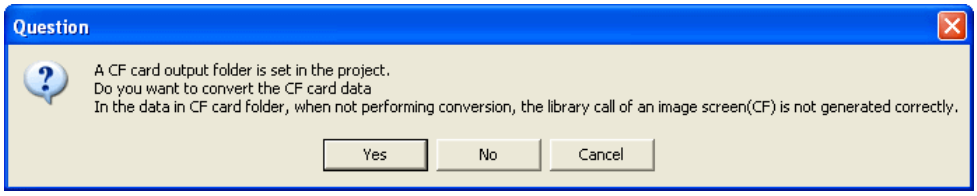
(5) Click [Convert] and start the conversion.



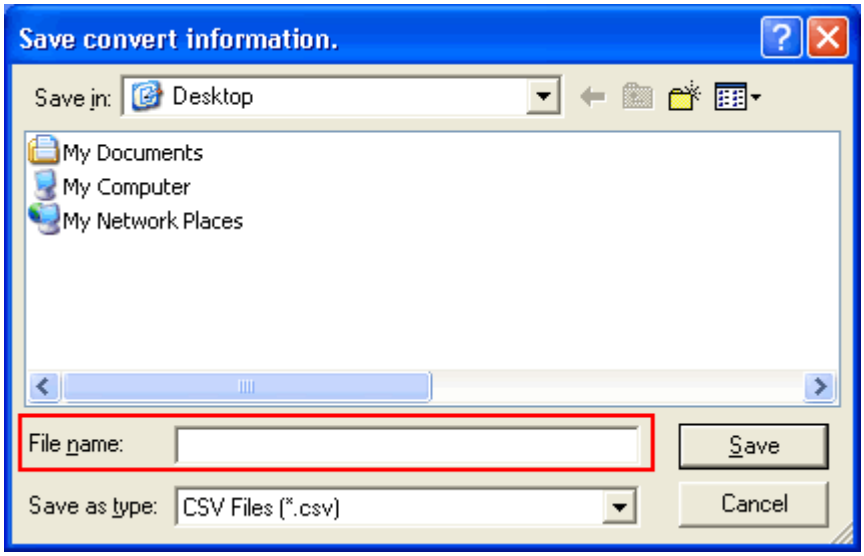


NOTE

- Depending on the model you are converting from, the [Convert Destination] dialog box may appear and you can select the type and the model.
- If the following dialog box appears, CF Card Ouput Folder setting is required. See Convert GP-PRO/PBIII for Windows "Destination CF Card Folder"



(6) 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 saved file, the project file (*.prx) after conversion can be checked and modified according to the conversion information.

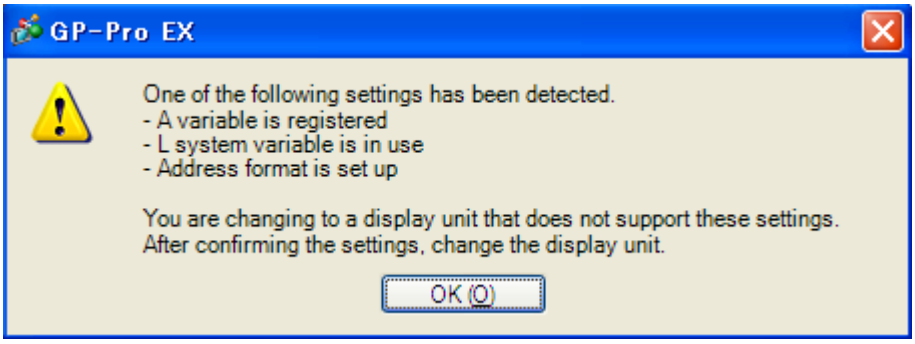
(7) Click [Close] to close the [Project Converter] dialog box.

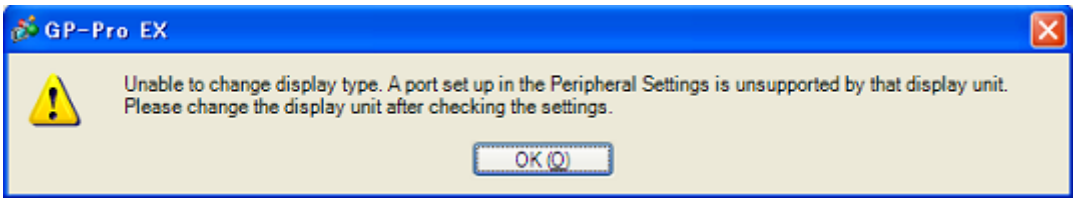
(8) If you double click the project file (*.prx) after conversion, GP-Pro EX will start and the file will open. (At this point, the model setting hasn't changed to GP-4301TM yet.)

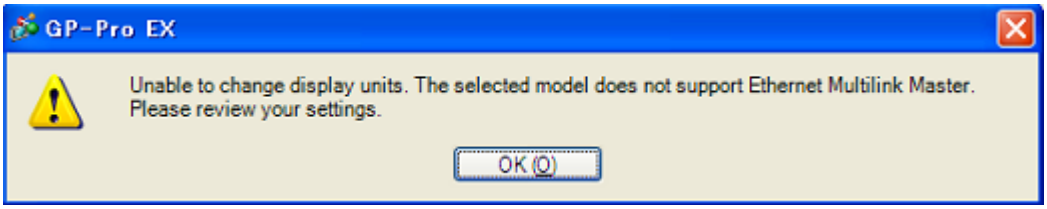
(9) Click [System Settings]->[Display]->[Change Display (Unit)] in [Project] menu and change the Display Unit type to "GP-4301TM".

NOTE

- If you change the Display Unit, the parts or the function settings that do not support GP-4301TM are deleted, initialized, or changed.
  For the functions GP-4301TM doesn't support and the important notes, see [3.6.2 Differences made at the time of change to GP-4301TM].
- Depending on a setting of the project file, the message as shown below appears, the Dispay Unit may not change to GP-4301TM.
  When the message appears, check the cause and the solution in [5.1 When the Display Unit cannot be changed] and then change the Display Unit again.

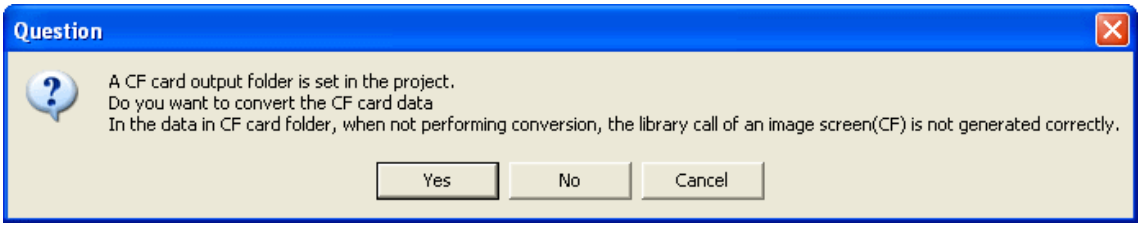






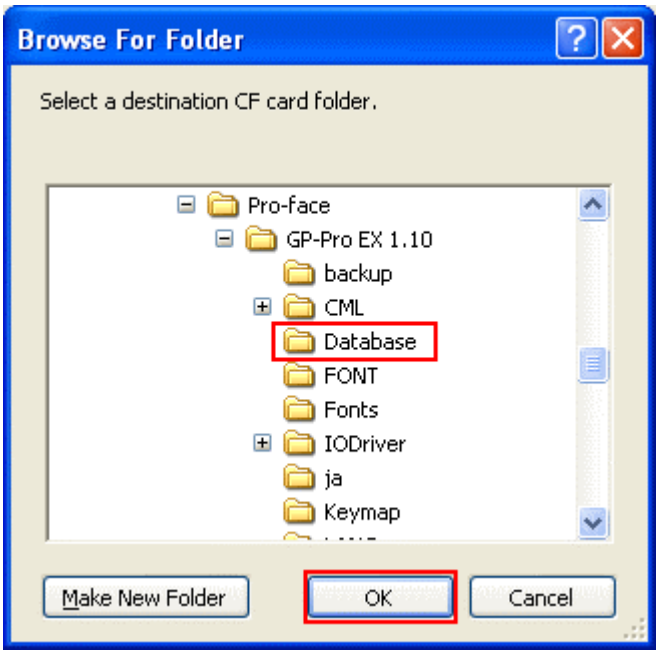
Convert GP-PRO/PBIII for Windows' "Destination CF Card Folder"

If you convert a project file (*.prw) with a destination CF card folder designated in the step 5, the 'Question' dialog box 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.

3.5 Transfer screen data to GP-4301TM

Transfer the project file after display unit type change to GP-4301TM.

You can transfer data to GP-4301TM via;

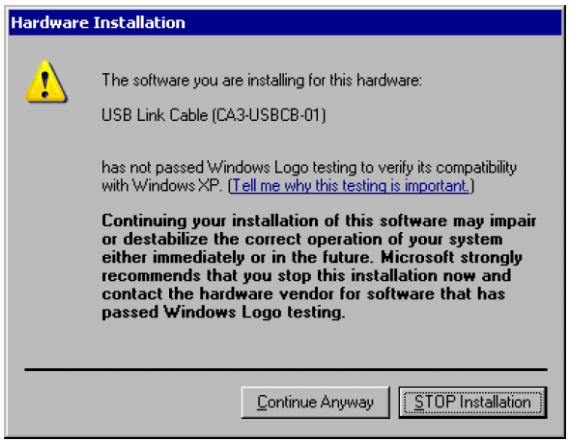
- An USB data transfer cable (model: ZC9USCBMB1)
- A commercial USB cable (USB Type A/mini B)
- USB storage device
- Ethernet

But this section explains, as an example, how to transfer screen data with a USB transfer cable (model: ZC9USCBMB1).

(1) Connect your PC and the GP unit with an USB transfer cable (model: ZC9USCBMB1). If the driver of the cable has not been installed on you PC, a dialog box will appear. Please follow the instructions.

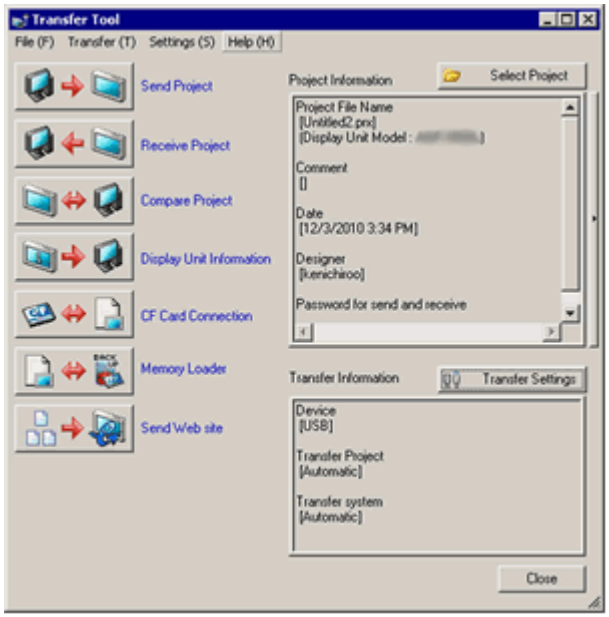
NOTE

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



(2) Turn on the power of GP-4301TM. The "Initial Start Mode" screen will appear on the display unit. After transferring a project file once, this screen will not appear again.

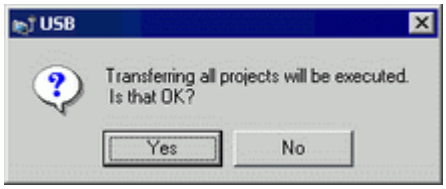
(3) On the GP-Pro EX's State Toolbar, click the [Transfer Project] icon to open the Transfer Tool.



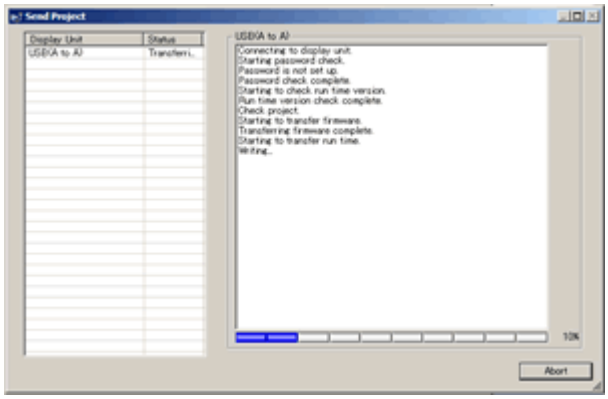
To transfer a different project file, click the [Select Project] button and select a project file.

(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].

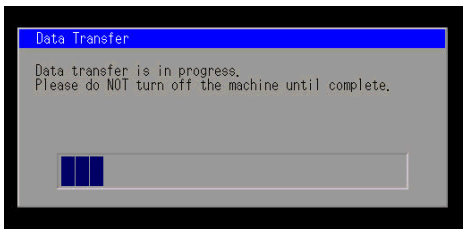
(5) Click [Send Project] to start transfer. When the following dialog box appears, click [Yes]. This dialog box doesn't appear when the same project file is sent again.



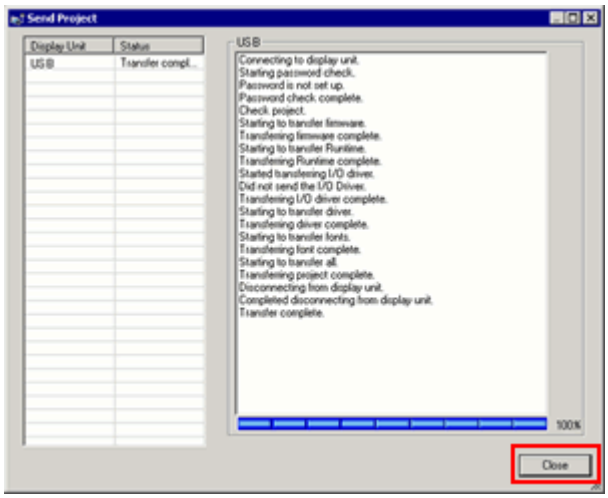
(6) The following dialog box appears during transfer and you can check the communication status. (The display unit enters the Transferring mode and communication with the device such as a PLC is terminated.)



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

3.6.1 Differences 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.htm

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

3.6.2 Differences made at the time of change to GP-4301TM

If you change the Display Unit to GP-4301TM after data conversion from GP-PRO/PBIII to GP-Pro EX, the function settings GP-4301TM does not support are deleted from the project file.

The functions to be deleted from the GP-Pro EX's project files

Settings on GP-PRO/PBIII			Settings on GP-Pro EX
Tags	Tag Name	Operation details	Part Name
	A Tag	Alarm Summary (Text) Display	Text Alarm
	a tag	Alarm Summary Display	Alarm
	v tag	Video Window Display Expansion Funciton	VM Unit Display
Parts	Part Name		
	FilingData Display		Special Data Display
	Logging Display		Sampling Data Display
	Data Trans Display		Special Data Display
	CSV Display		Special Data Display
	File Nanager Display		Special Data Display
The other functions	Sound Settings		Sound Setting
	CSV Data Transfer Settings		Transfer CSV Data on Recipe
	Data Logging Settings		Sampling Setting *1

*1: In the Sampling settings, only the [Display/Save As CSV, Printing Language] setting that is not supported by GP-4301TM is deleted.

NOTE

For details of GP-Pro EX's parts and functions that cannot be used or have restrictions on GP-4301TM, refer to [For Those Using GP-4*01TM] in the GP-Pro EX Reference Manual.
(http://www.pro-face.com/otasuke/files/manual/soft/gpproex/new/refer/mergedProjects/welcome/welcome_rr_gm4000.htm).

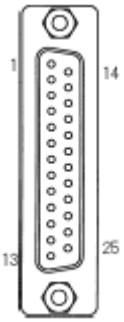
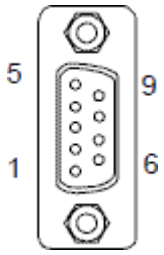
Chapter 4 Communication with Device/PLC

4.1 Drivers

More connectable drivers will be added.

For the devices/PLC each driver supports, see [Connectable Devices] (http://www.pro-face.com/product/soft/gpproex/driver/driver.html).

4.2 Shapes of COM ports

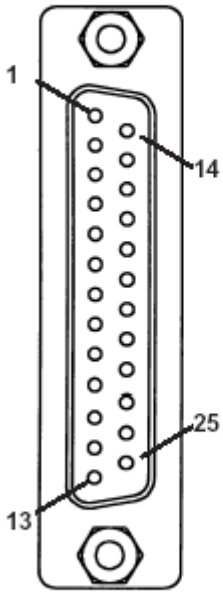
	GP-377S/377L	GP-4301TM
COM1	D-Sub25 pin (socket) RS-232C/422	D-Sub 9 pin (plug) RS-232C/422/485
		

NOTE
The COM1 port of GP-4301TM has D-Sub 9 pins (plug). The COM1 port of GP-377S/377L has D-Sub 25 pins (socket). The pin array and the shape of socket and plug differ between GP-377S/L and GP-4301TM. Be careful when using an existing PLC connection cable. When using an existing connection cable, see "4.5 Cable Diagram at the time of replacement".

4.3 Signals of COM ports

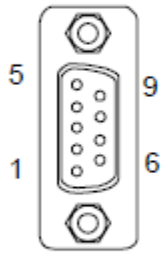
◆GP-377S/377L

RS-232C or RS-422 (socket)

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)

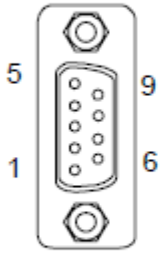
◆GP-4301TM

RS-232C (plug)

Pin Arrangement	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)	Input	Called status display
	Shell	FG	-	Frame Ground (Common with SG)

* Unlike GP-377S/L, there's no VCC output.

RS-422/485 (plug)

Pin Arrangement	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

There are some communication drivers that do not support multi-link connection (n:1) with RS-422 in GP-4301TM.

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

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 Internal 2-Port feature for Mitsubishi PLC

For GP-4301TM, the internal 2-Port feature for Mitsubishi PLC cannot be used.

If [GP Setup]->[Mode Settings]->[Option]->[Inernal 2 port] is selected on GP-PRO/PBIII, the following message will appear when converting the project file with the GP-Pro EX Project Converter.

4.5 Cable Diagram at the time of replacement

The connetion cable used for GP-377S/L can be also used for GP-4301TM. But, please note that there are the precautions and restrictions as described below.

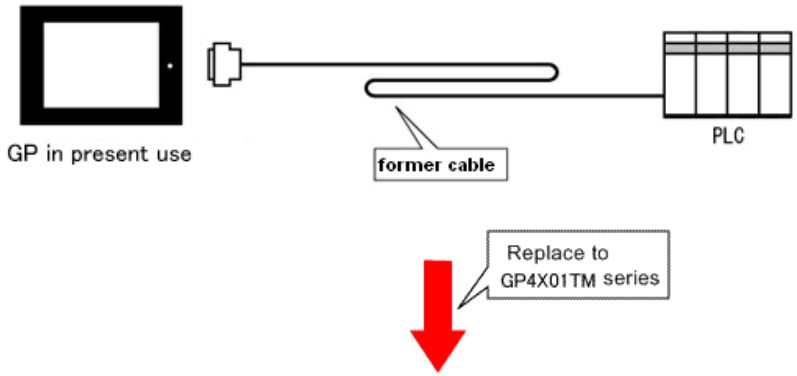
IMPORTANT

- Please check the connection configurations GP-4301TM supports with GP-Pro EX Device/PLC Connection Manual before using the connection cable. (http://www.pro-face.com/otasuke/files/manual/gpproex/new/device/index.htm)
- **The Siemens MPI connection cable, MPI adapter (GP070-MPI-41)** cannot be used.
  Please refer to the above-mentioned GP-Pro EX Device/PLC Connection Manual and prepare a connection cable for GP-4301TM newly.

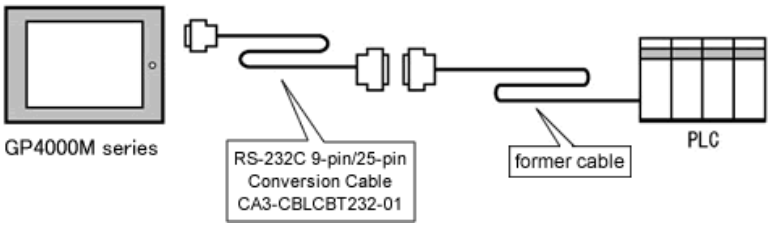
- When using Mitsubishi PLC A/QnA series (CPU Direct), please refer the following notes,
  - **When using a CPU direct cable called GP430-IP10-O or GP430-IP11-O,**
    Because the COM port of GP4000M series does not have VCC Output, GP430-IP10-O and GP430-IP11-O cannot be used.
  - When using GP2000-CBLA/5M-01 (* including User-created cable)
    Refer > 4.6.2 When using a RS-422 connection cable > When using Mitsubishi A/QnA series （CPU Direct） connection cable（GP2000-CBLA/5M-01）
  - When using GP2000-CBLFX/5M-01, GP2000-CBLFX/1M-01(* including User-created cable)
    Refer > 4.6.2 When using a RS-422 connection cable > When using Mitsubishi FX series （CPU Direct） connection cable（GP2000-CBLFX/5M-01, GP2000-CBLFX/1M-01）

4.6.1 When using a RS-232C connection cable

GP-377S/L System Configuration



GP-4301TM System Configuration

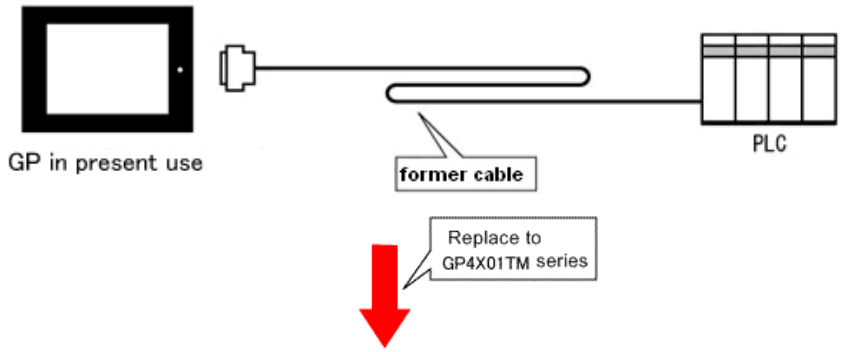


To replace GP-377S/L with GP-4301TM, prepare the following thing.

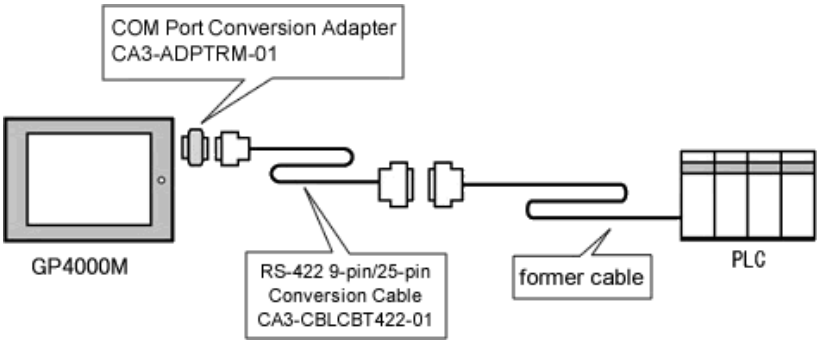
Product Name	Model
RS-232C 9-pin/25-pin Conversion Cable (20cm)	CA3-CBLCBT232-01

4.6.2 When using a RS-422 connection cable

GP-377S/L System Configuration



GP-4301TM System Configuration

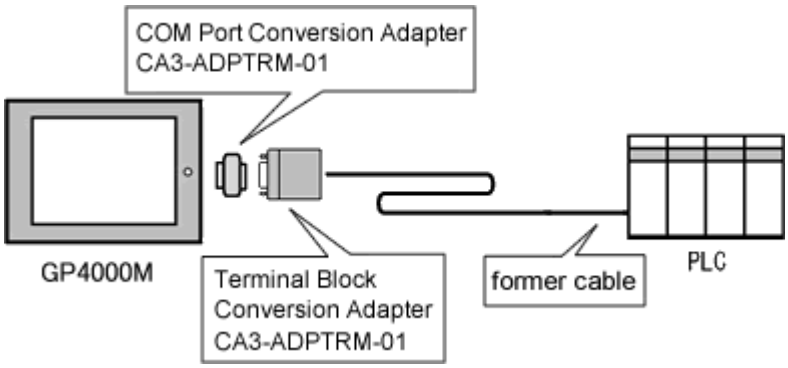


To replace GP-377S/L with GP-4301TM, prepare the following things.

Product Name	Model
RS-422 9-pin/25-pin Conversion Cable (20cm)	CA3-CBLCBT422-01
COM Port Conversion Adapter	CA3-ADPCOM-01

NOTE

When using a terminal block adapter (GP070-CN10-O), we recommend you to use a connector terminal adapter (CA3-ADPTRM-01) for replacement.



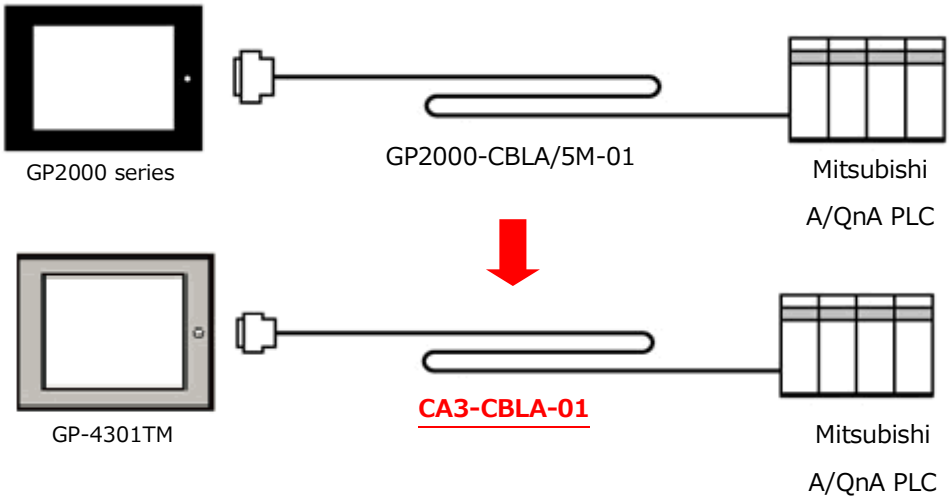
For replacement in this connection method, prepare the following things.

Product Name	Model
Terminal Block Conversion Adapter	CA3-ADPTRM-01
COM Port Conversion Adapter	CA3-ADPCOM-01

When using Mitsubishi A/QnA series（CPU Direct） connection cable （GP2000-CBLA/5M-01） * Including User-created cable

9/25-pin Conversion Cable cannot be used.

Please replace to Mitsubishi A connection cable by Pro-face (CA3-CBLA-01).

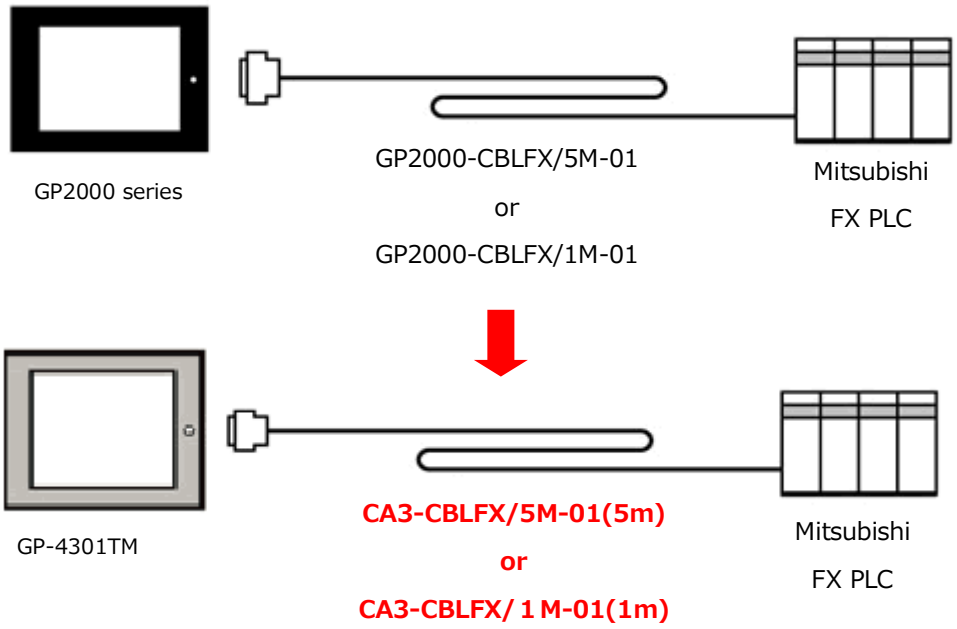


Not available options for GP-4301TM
RS-422 9/25-pin Conversion Cable（20cm）(PFXZCBCBCVR41)
COM Port Conversion Adapter（CA3-ADPCOM-01） + RS-422 9/25-pin Conversion Cable（20cm）(CA3-CBLCBT422-01)

When using Mitsubishi A/QnA series（CPU Direct） connection cable
（GP2000-CBLFX/5M-01, GP2000-CBLFX/1M-01）
*** Including User-created cable**

9/25-pin Conversion Cable cannot be used.

Please replace to Mitsubishi FX connection cable by Pro-face
（CA3-CBLFX/5M-01(5m) or CA3-CBLFX/１M-01(1m)）.

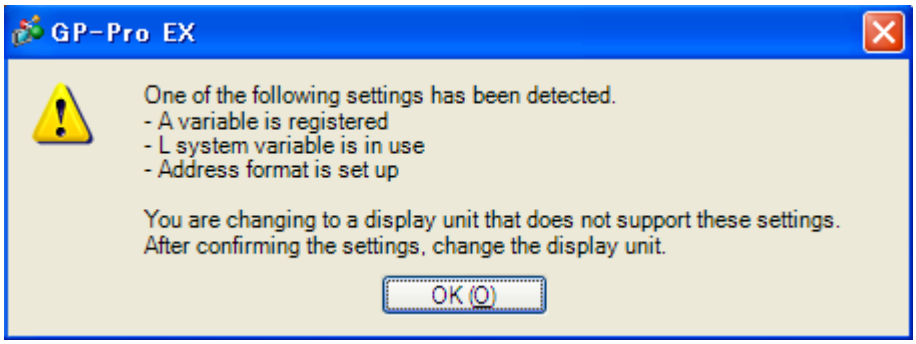


Not available options for GP-4301TM
RS-422 9/25-pin Conversion Cable（20cm）（PFXZCBCBCVR41）
COM Port Conversion Adapter（CA3-ADPCOM-01） ＋ RS-422 9/25-pin Conversion Cable（20cm）(CA3-CBLCBT422-01)

Chapter 5 Appendix

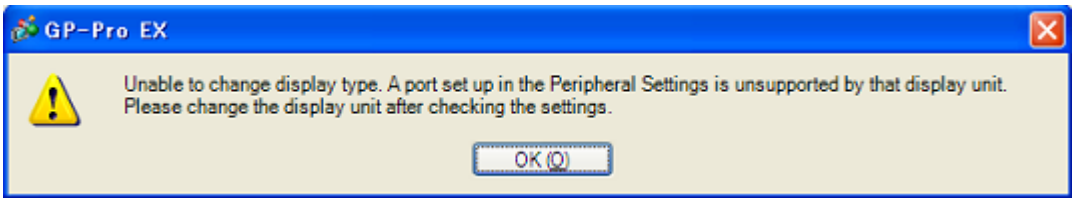
5.1 When the Display Unit type cannot be changed

Depending on a project file's function setting, the following message may appear and the Display Unit may not be able to be changed to GP-4X01TM.



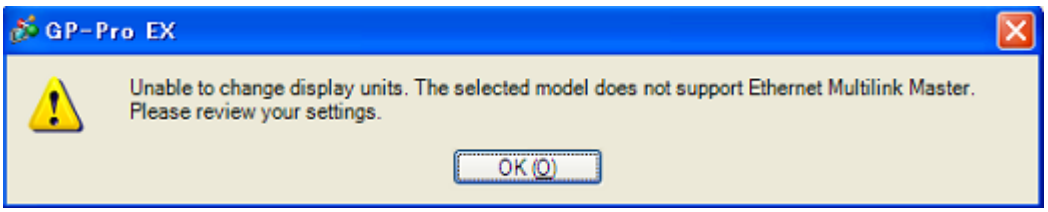
[Cause]

- Logic settings are made.->Solution (1)-1
- L system variables are used.->Solution (1)-2
- I/O Settings are made.->Solution (1)-3
- Unsupported variables are registered in Symbol Variable Setting ->Solution (1)-4
- In logic Program Setting, [Address Format] is selected.->Solution (1)-5



[Cause]

- In Device/PLC Setting, multiple communication drivers are registered
  -> Solution (2)-1
- A communication driver that is not supported is set.-> Solution (2)-2
- The function using the unsupported port (COM2) is set-> Solution (2)-3



[Cause]

[Master] is selected in [Ether Multilink Settings].-> Solution (3)-1

[Solutions]

(1)-1: Logic settings are made.

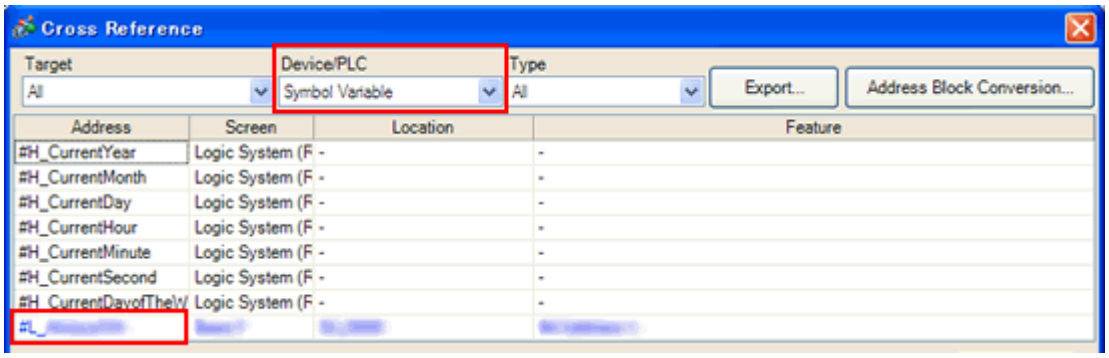
Because GP-4X01TM does not support Logic Function, if logic settings are made, the Display Unit cannot be changed. Open the logic screens, check the logic settings, and delete them.

(1)-2: L system variables are used.

[L System Variable] is a logic variable starting with [#L_].

Because GP-4X01TM does not support Logic Function, [L System Variable] cannot be used. When [L System Variable] is used, the Display Unit cannot be changed. Check where the address is used and delete it or replace it with another address.

1. Click [Project]->[Utility]->[Cross Reference].
2. Select [Symbol Variable] for [Device/PLC].
   If a L system variable is used, an address starting with [#L_] is displayed.



(1)-3: I/O settings are made.

GP-4X01TM does not support I/O Connection. If I/O Settings are made, the Display Unit cannot be changed.

Click [Project]->[System Settings]->[I/O Driver] and check the displayed I/O settings.

(1)-4: Variables that do not support Symbol Variable Setting are registered.

GP-4X01TM supports only the variables of [Word Address] or [Bit Address].

Click [Common Settings]->[Symbol Variable]. If variables except [Word Address] or [Bit Address] are registered, the Display Unit cannot be changed. If a variable except these 2 types is registered, change the type to [Word Address] or [Bit Address], or replace it with another address.

(1)-5: In Logic Programs Setting, [Address Format] is selected.

GP-4X01TM does not support Logic Function. When [Address Format] is selected for [Register Variable] in the Logic Programs Setting, even if no logic setting is made, the Display Unit cannot be changed.

Click [Project]->[System Settings]->[Logic Programs]. If [Address Format] is selected for [Register Variable], change it to [Variable Format].

(2)-1: In Device/PLC Setting, multiple communication drivers are registered.

For GP-4X01TM, only one communication driver can be set. (But, if [Enable Ethernet Multilink] is selected, and GP-4X01TM is used as a slave, up to 2 can be set.) If the Device/PLC setting exceeds the upper limit, the Display Unit cannot be changed.

Click [Project]->[System Settings]->[Device/PLC]. Check the displayed Device/PLC setting.

(2)-2: A communication driver that is not supported is set.

If a communicaton driver that cannot be used for GP-4X01TM is set, the Display Unit cannot be chagned.

Click [Project]->[System Settings]->[Device/PLC] and check the displayed Device/PLC setting and change the communication driver setting.

For the communication drivers that are supported by GP-4X01TM, see [4.1 Driver List].

(2)-3: The function using the unsupported port (COM2) is set.

COM1 is the only one port that GP-4X01TM has. If COM2 is selected for [Port] in the [Script] setting, the Display Unit cannot be changed.

Click [Project]->[System Settings]->[Script]. Check the displayed port setting of Script.

(3)-1: [Master] is selected in [Ether Multilink Settings].

GP-4X01TM cannot be a master at the time of Ether multilink connection (can be a slave only.). If [Master] is selected in [Ether Multilink Settings], the Display Unit cannot be changed.

After disabling the Ether multilink setting, change the Display Unit.

1. Click [Project]->[System Settings]->[Display Unit].
2. In [Ether Multilink Settings] in the [Extended Settings] tab, uncheck [Enable Ether Multilink].