

Easy! Smooth!

GP-37W2 → GP4000M Series

Replacement Guidebook

Preface

This manual introduces the procedures to replace a GP-37W2 unit with a GP4X01TM unit.

Model in use	Recommended Substitution
GP-37W2	GP-4301TM

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.



Contents

PREFACE	2
CONTENTS	3
CHAPTER 1 SPECIFICATION COMPARISON	5
1.1 SPECIFICATIONS OF GP-37W2 AND GP-4301TM	5
CHAPTER 2 COMPATIBILITY OF HARDWARE	6
2.1 LOCATIONS OF CONNECTORS	6
2.2 TOUCH PANEL SPECIFICATIONS	7
2.3 DISPLAY COLORS	7
2.3.1 BLINK	7
2.3.2 DISPLAY COLORS	7
2.4 PANEL CUTOUT DIMENSIONS	9
2.5 EXTERNAL DIMENSIONS	9
2.6 TRANSFER CABLE	10
2.7 SERIAL INTERFACE	10
2.8 BACKUP MEMORY (SRAM) – (FOR GP-PRO EX EARLIER THAN VER3.1)	10
2.9 PERIPHERAL UNITS AND OPTION UNITS	11
2.9.1 BARCODE READER CONNECTION	11
2.9.2 ISOLATION UNIT	11
2.10 POWER CONNECTOR	12
2.11 POWER CONSUMPTION	12
2.12 CLOCK	12
2.13 OTHER NOTES	12
CHAPTER 3 REPLACEMENT PROCEDURE	13
3.1 WORK FLOW	13
3.2 PREPARATION	14
3.3 RECEIVE SCREEN DATA FROM GP-37W2	15

3.4 CONVERT SCREEN DATA WITH THE PROJECT CONVERTER	19
3.5 TRANSFER SCREEN DATA TO GP-4301TM	27
3.6 DIFFERENCES OF SOFTWARE	31
3.6.1 DIFFERENCES AFTER CONVERSION	31
3.6.2 DIFFERENCES MADE AT THE TIME OF CHANGE TO GP-4301TM	33
<u>CHAPTER 4 COMMUNICATION WITH DEVICE/PLC</u>	<u>34</u>
4.1 DRIVER LIST	34
4.2 SHAPES OF COM PORTS	35
4.3 SIGNALS OF COM PORTS	36
4.4 MULTILINK CONNECTION	38
4.5 INTERNAL 2-PORT FEATURE FOR MITSUBISHI PLC	38
4.6 CABLE DIAGRAM AT THE TIME OF REPLACEMENT	39
4.6.1 WHEN USING A RS-232C CONNECTION CABLE	40
4.6.2 WHEN USING A RS-422 CONNECTION CABLE	41
<u>CHAPTER 5 APPENDIX</u>	<u>45</u>
5.1 WHEN THE DISPLAY UNIT TYPE CANNOT BE CHANGED	45

Chapter 1 Specification Comparison

1.1 Specifications of GP-37W2 and GP-4301TM

		GP-37W2	GP-4301TM
			
Display Type		Monochrome blue mode LCD	NEW! TFT Color LCD
Display Colors, Levels		Blue mode, no levels (with blink)	UP! 65,536 colors (without blink) -> See 2.3.1
Display Resolution		QVGA (320x240 pixels)	
Panel Cutout Dimensions (mm)		191.5(W)x141.5(W)	NEW! φ22mm -> See 2.4
External Dimensions (mm)		207(W)x157(H)x58(D)	NEW! 163(W)x129.4(H)x56.5(D) *The main module is included. -> See 2.5
Touch Panel Type		Matrix	NEW! Analog -> See 2.2
Memory	Application	1MB	UP! 8MB
	Backup	96KB	UP! 128KB -> See 2.8
Rated Input Voltage		DC 24V	
Serial I/F	COM1	D-Sub 25 pin (socket) RS-232C/422	NEW! D-Sub 9 pin (plug) RS-232C/422/485 -> See 2.7
Ethernet I/F		-	UP! 10BASE-T/100BASE-TX

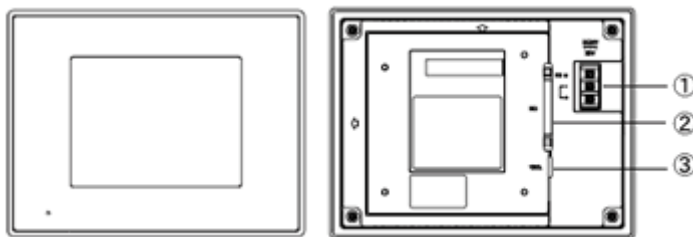
USB Host I/F	-	NEW! ✓ -> See 2.6
---------------------	---	------------------------------------------

Chapter 2 Compatibility of Hardware

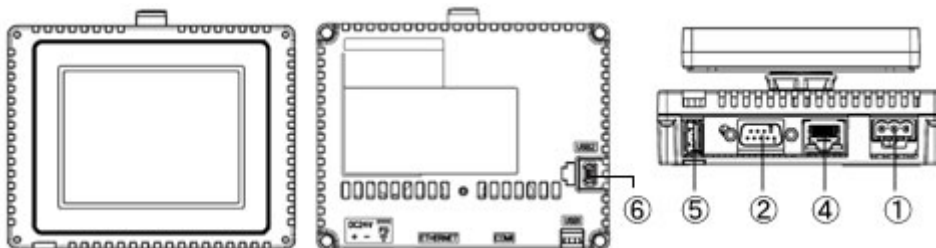
2.1 Locations of connectors

Connector locations on GP-37W2 and GP-4301TM are as follows:

GP-37W2



GP-4301TM



Interface names

	GP-37W2	GP-4301TM
1	Power Input Terminal Block	Power Connector
2	Serial I/F (COM1)	
3	Tool Connector	-
4	-	Ethernet I/F
5	-	USB I/F (Type A)

6	-	USB I/F (miniB)
---	---	-----------------

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-37W2, 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-37W2 with GP-4301TW if the Blink feature is needed.

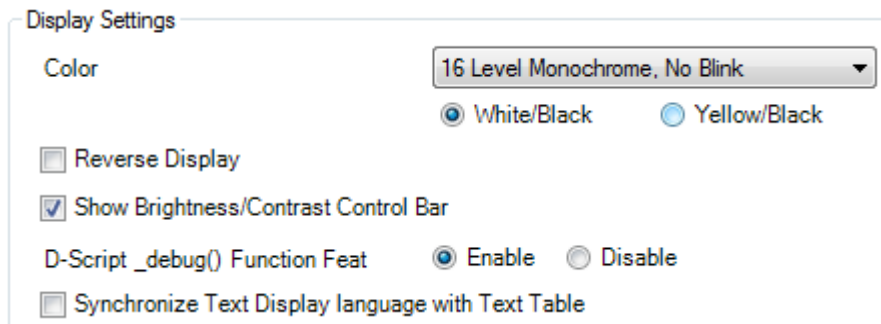
2.3.2 Display Colors

The display color of GP-37W2 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.

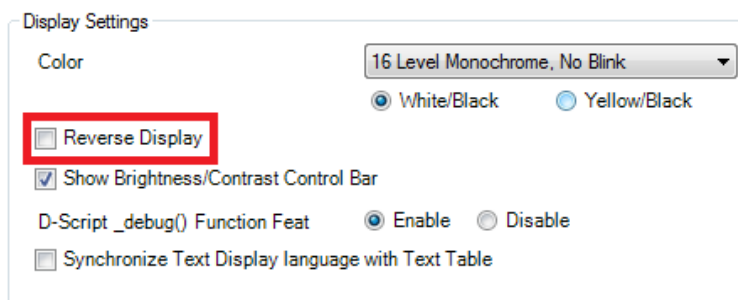
If the display is in colors after the data conversion to GP-4301TM...

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].



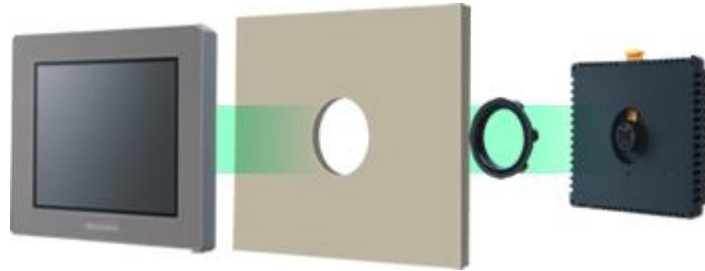
* [Reverse Display] setting is for displaying the screen with black/white reversed. Check on it if needed.



* 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

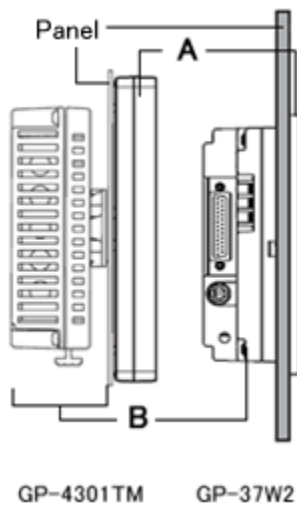
The panel cutout of GP-4301TM is a $\phi 22$ -mm circular hole. The panel cutout shape and dimensions of GP-4301TM are different from those of GP-37W2.



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-37W2, the thickness of the part appearing on the installation panel differs.

	GP-37W2	GP-4301TM
A (the thickness of the front bezel)	6mm	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 A/mini-B). Please note that the cables (GPW-CB02, GPW-CB03, GP430-CU02-M) for GP-37W2 cannot be used for GP-4301TM.

2.7 Serial interface

The COM1 port on GP-4301TM is D-sub 9 pin plug. The COM1 port of GP-37W2 is D-sub 25 pin socket, and the pin assignment and the shape of plug/socket connector are different from those of GP-4301TM. Because of it, the existing PLC connection cables cannot be used as they are. If you use the existing connection cables, see [\[4.5 Cable Diagram at the time of replacement\]](#).

2.8 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.

2.9 Peripheral units and option units

2.9.1 Barcode reader connection

GP-4301TM is not equipped with a tool port. A barcode reader connected from the tool port on GP-37W2 cannot be used. However, GP-4301TM allows you to connect a barcode reader on its USB interface (Type A) or its serial interface.

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.

2.9.2 Isolation Unit

The isolation unit for GP-37W2 (CA2-ISOALL232-01, CA2-ISOALL422-01) cannot be used for GP-4301TM.

2.10 Power Connector

The power connector on GP-4301TM is a screw lock terminal block. If you replace GP-37W2, change the power cable.

2.11 Power Consumption

The power consumption of GP-37W2 is different from that of GP-4301TM.

GP-37W2	GP-4301TM
20W or less	6.8W or less

For the detailed electric specifications, see the hardware manual.

2.12 Clock

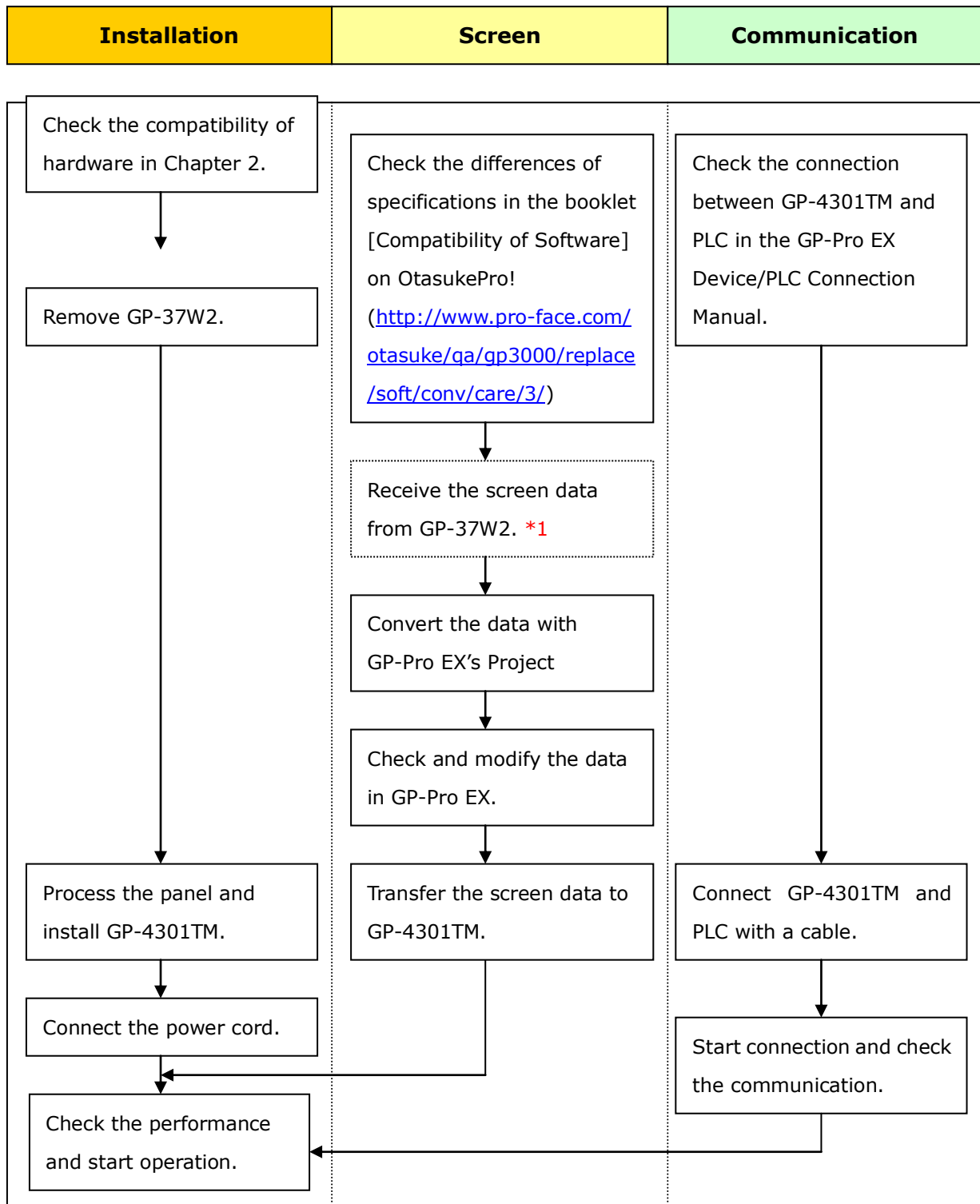
There's no battery in GP-4301TM. When the GP's power is turned OFF, the clock data is reset. Using the Clock Update Settings of GP-Pro EX allows you to take in the clock data of the connected device. For details, refer to 5.2 Adjusting the Time in the GP-ProEX Reference Manual.

2.13 Other Notes

- Do not expose GP4000 series to direct sunlight.
- Do not use GP4000 series outdoors.
- Do not turn on GP4000 series if condensation has occurred inside the device.
- When you are continuously using GP4000 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 GP unit, not in any other device.

3.2 Preparation

Requirements for receiving screen data from GP-37W2 *1	PC in which GP-PRO/PB3 for Windows Ver. 4.0 or later is installed (*2)
	Transfer cable (The following three types of cables are available.) <ul style="list-style-type: none"> · 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-37W2 and transferring to GP-4301TM	PC in which GP-Pro EX Ver.2.71 or later is installed. ※ <u>We recommend you to use GP-Pro EX Ver.3.1 or later.</u> (For earlier than Ver.3.1, there are restrictions on a part of features of GP4000M.)
	A USB data-transfer cable (The following three types of cables are available.) <ul style="list-style-type: none"> · A USB data-transfer cable (model: ZC9USCBMB1) · A commercial USB cable (USB Type A/mini B) * Possible to send/receive a screen with a USB flash drive or via Ethernet.

*1: This step is required if screen data is saved only in the GP 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-37W2 unit.

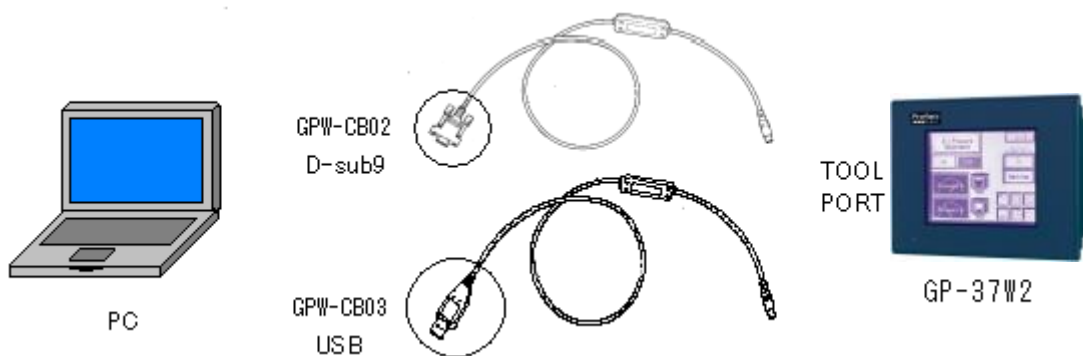
We recommend you upgrade to the latest version, which is GP-PRO/PBIII for Windows C-Package03 (SP2) Ver. 7.29. If the version of GP-PRO/PBIII for Windows C-Package03 that you currently use is version 7.0, upgrade it on our website [Otasuke Pro!]
[\(http://www.pro-face.com/otasuke/download/update/\)](http://www.pro-face.com/otasuke/download/update/)

*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!]
[\(http://www.pro-face.com/otasuke/download/driver/\)](http://www.pro-face.com/otasuke/download/driver/).

3.3 Receive screen data from GP-37W2

This section explains, as an example, how to receive screen data from GP-37W2 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](#)].

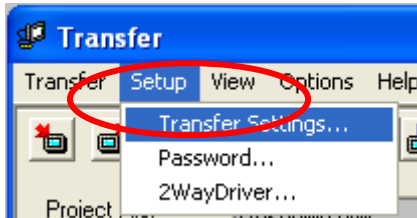
(1) Connect a transfer cable to the GP-37W2 unit.



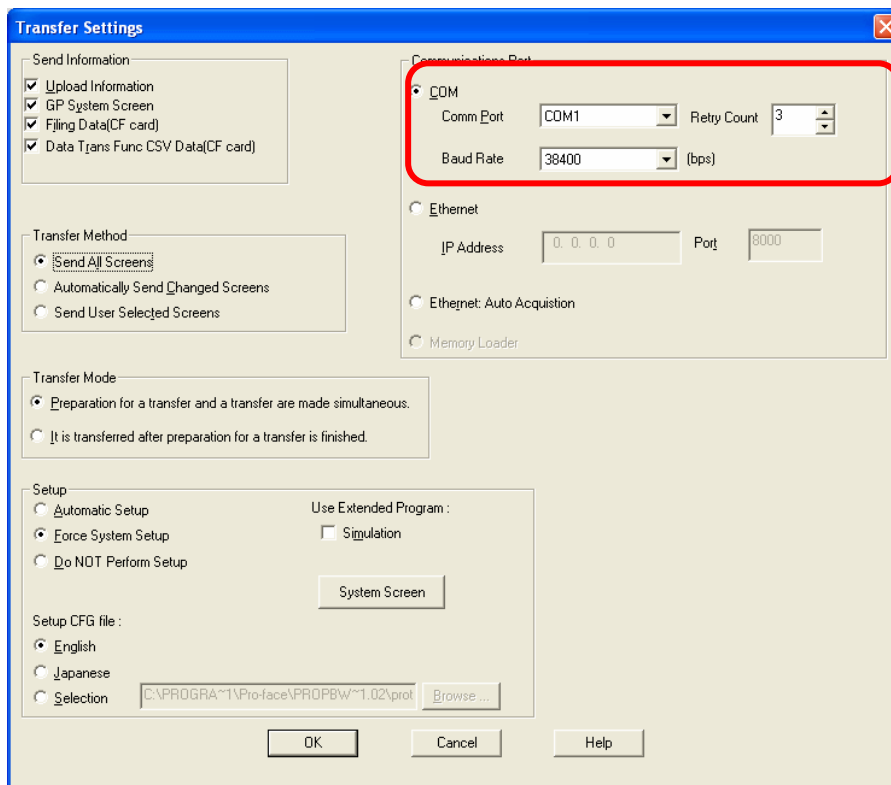
(2) Start up GP-PRO/PBIII for Windows and click the [Transfer] icon on the Project Manager (Specify a desired project file.)



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

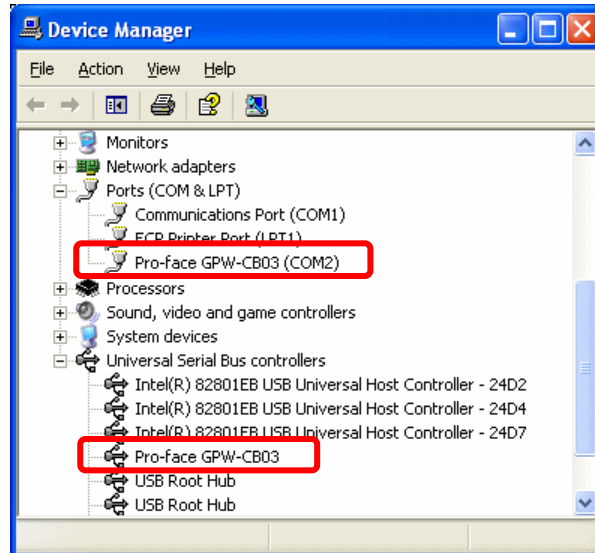


(4) In the Communication Port field, select [COM], specify the COM port to which the cable is connected, and click [OK].

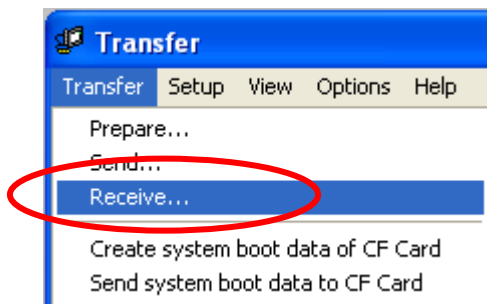


If you use a USB transfer cable (GPW-CB03)

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.



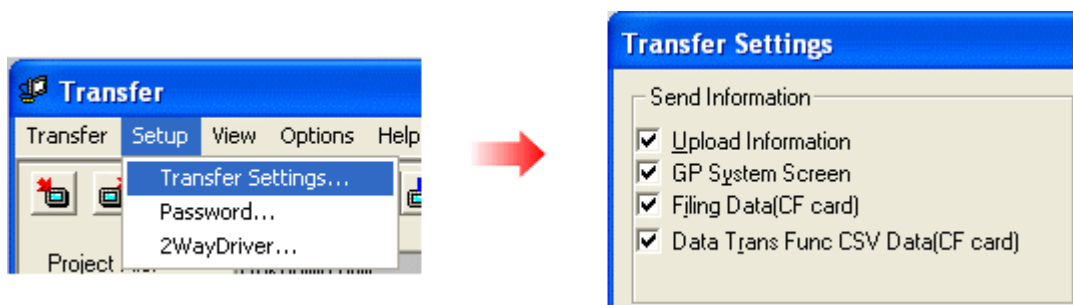
(5) Select the [Transfer] menu and click [Receive...].



(6) Specify the location to save the received screen data 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-37W2. 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 shown below, the Upload Information has been sent.

MAIN MENU **

- 1 INITIALIZE
- 2 SCREEN DATA TRANSFER
- 3 SELF-DIAGNOSIS
- 4 RUN

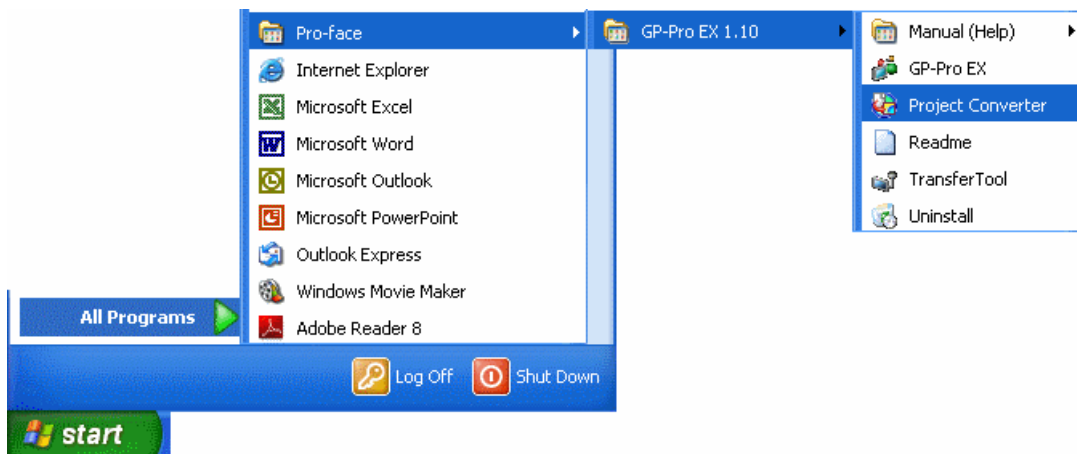
If not, there is no "Upload Information" sent. In this case, a message, which indicates there is no "Upload Information", appears and you cannot receive the data.

3.4 Convert screen data with the Project Converter

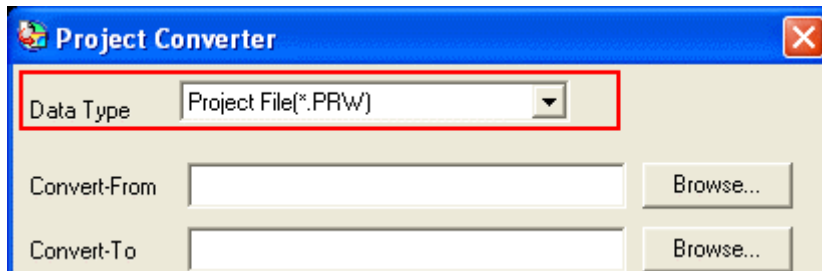
Convert a project file (*.prw) for GP-37W2 with the GP-Pro EX's Project Converter and change the model setting to GP-4301TM.

(1) Click the [Start] button, select [All Programs] (or [Programs])-> [Pro-face]-> [GP-Pro EX *.**]->[Project Converter].

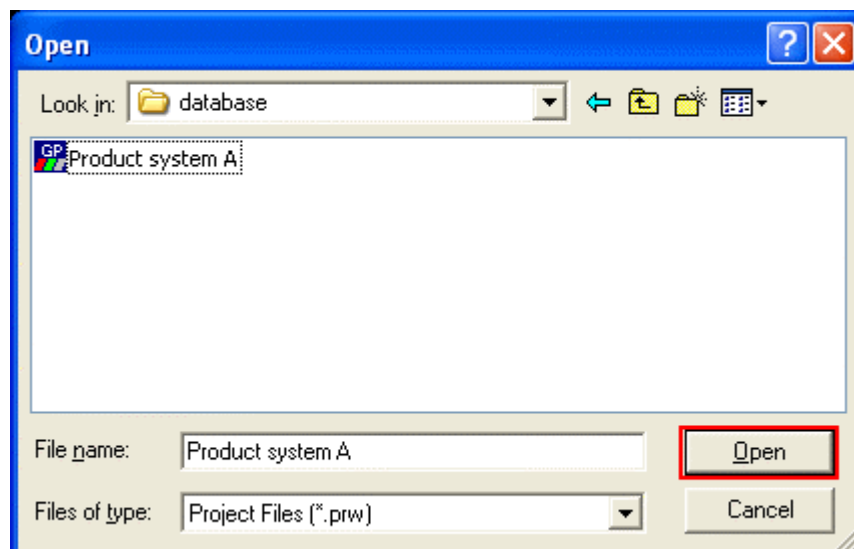
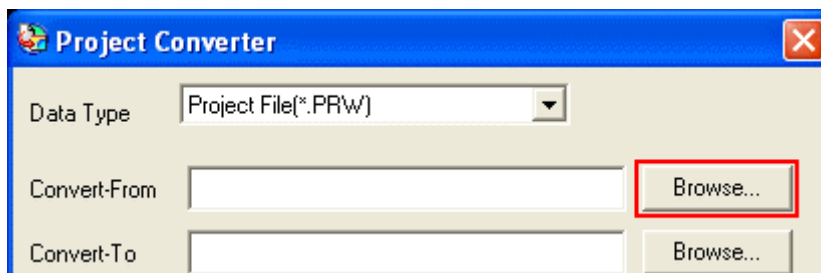
(For this part, [*.**], the version of the software you use is displayed.)

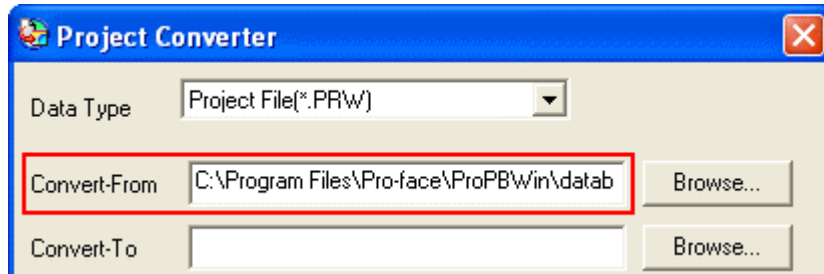


- (2) The Project Converter starts up and the [Project Converter] dialog box opens. Select [Project File (*.PRW)] in the [Data Type].

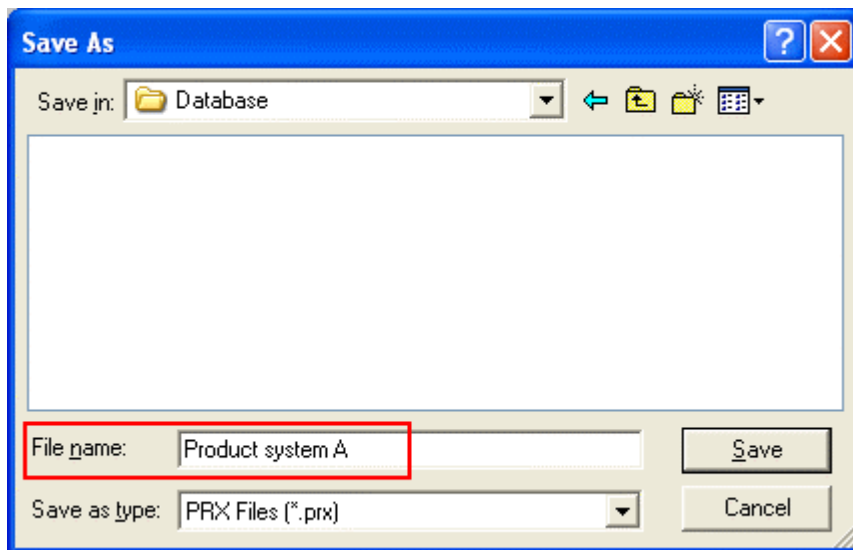
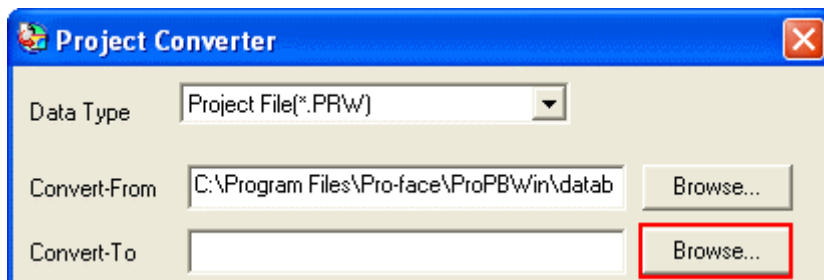


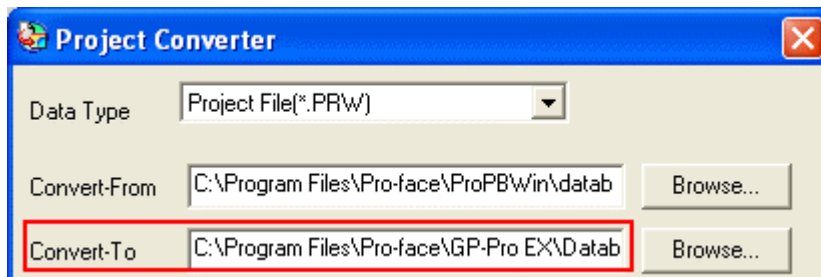
- (3) Click the [Browse...] button and select a project file (e.g.: "Project system A.prw"). Click [Open], and the file will be set in [Convert-From].





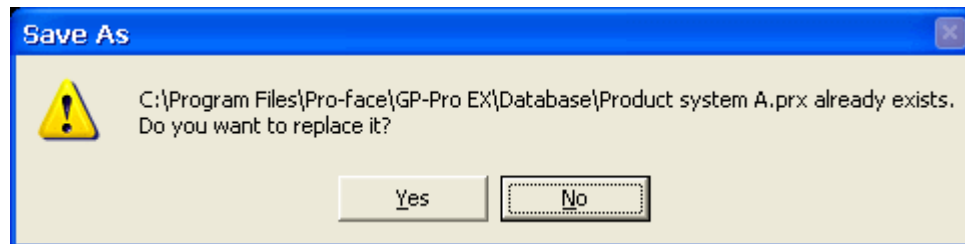
(4) In [Convert-To], designate a GP-Pro EX's project file (*.prx). Click the [Browse...] button and enter a new [File Name] (e.g.: "Product system A.prx"). Click [Save], and a new project file will be set to [Convert-To].



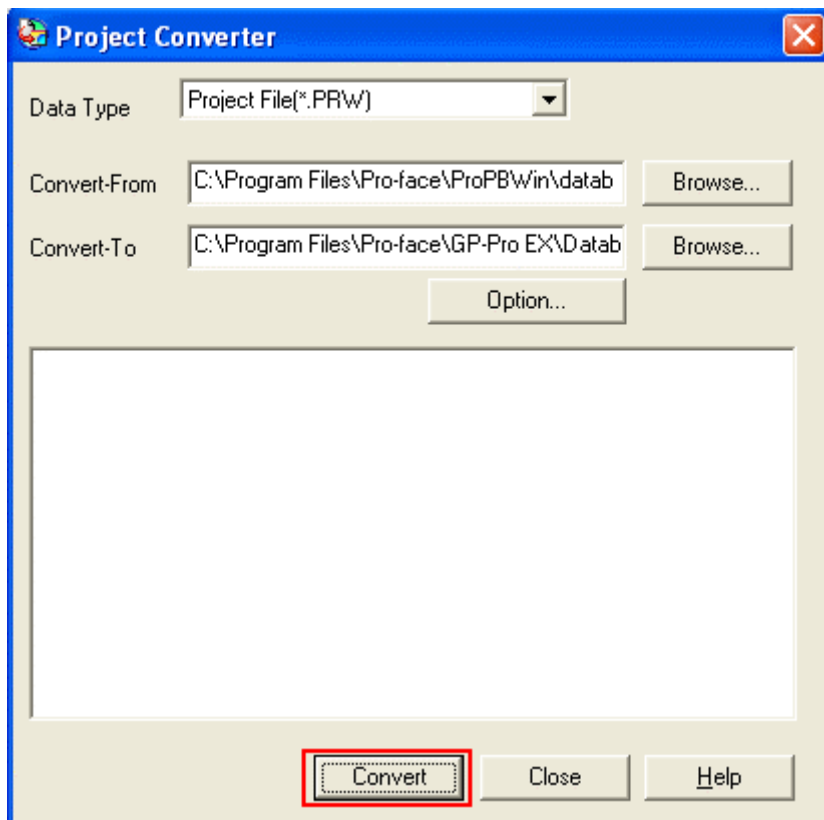


NOTE

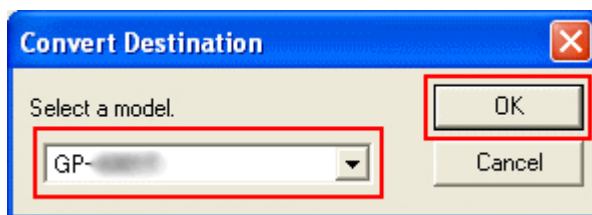
When a convert-to file exists, the window that confirms whether or not to overwrite the file is displayed.

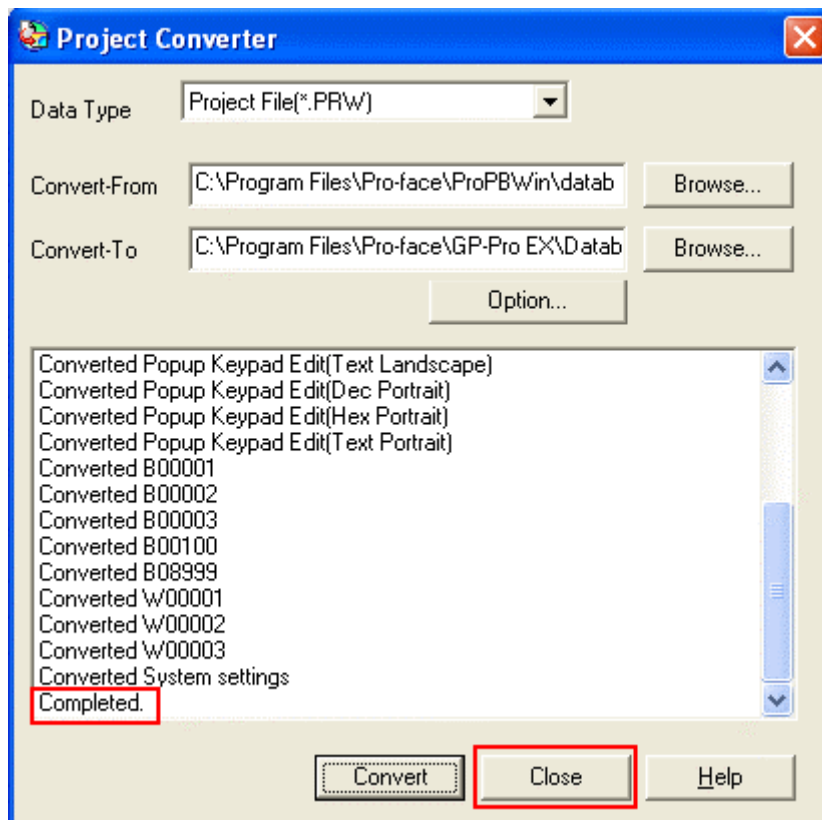


(5) Click [Convert] and start the conversion.



(6) If you are asked about the [Convert-To] type as shown below, select [GP-4301TM] on the pull-down menu. Click [OK].

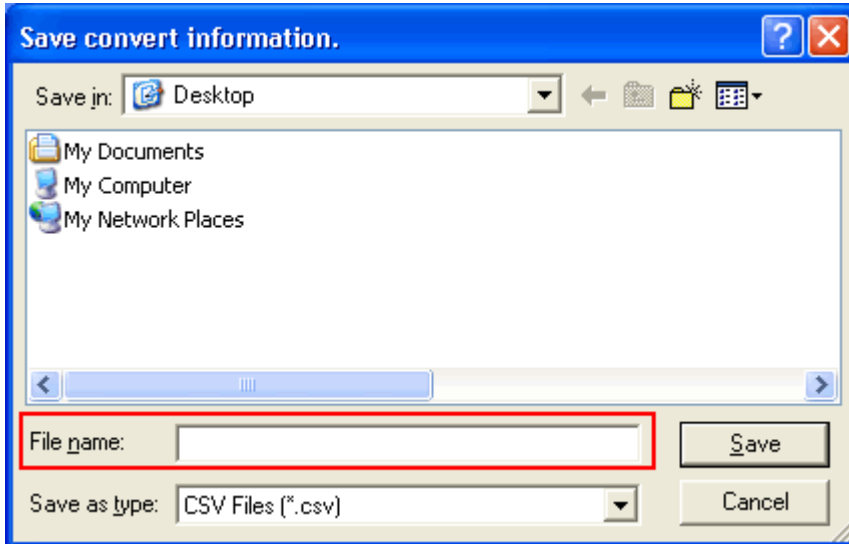




If an error message is displayed during conversion...

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.

(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

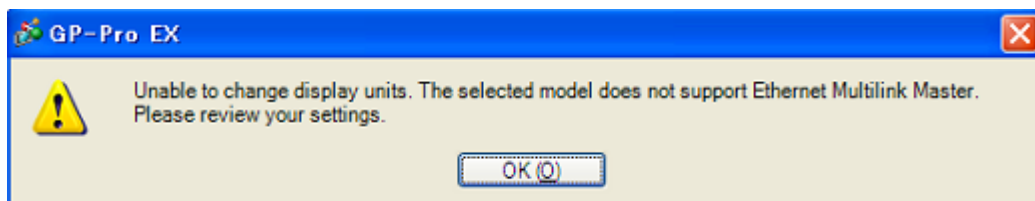
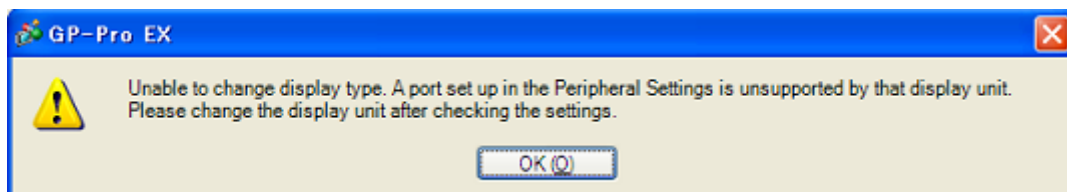
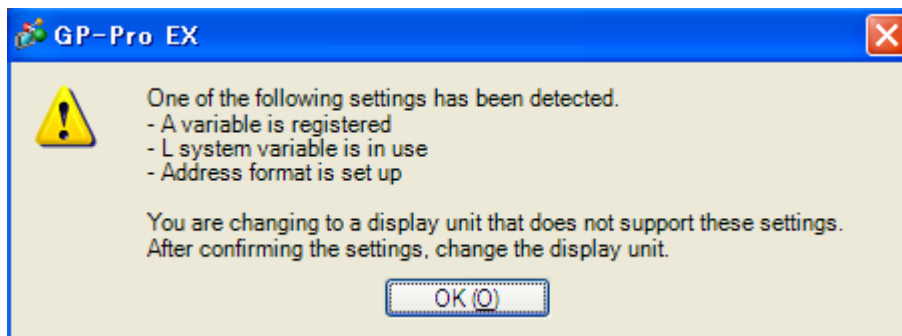
Because the differences made at the time of conversion from GP-Pro/PBIII for Windows are described in the saved file, the project file (*.prx) after conversion can be checked and modified according to the conversion information.

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

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.)

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 Display 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.



3.5 Transfer screen data to GP-4301TM

Transfer the converted project file to GP-4301TM. Although you can transfer data to GP-4301TM via a USB transfer cable (model: ZC9USCBMB1), a commercial USB cable (USB A/mini-B), a USB flash drive, or Ethernet, this section explains, as an example, how to transfer screen data with a USB transfer cable (model: ZC9USCBMB1).



- (1) Connect your PC and GP-4301TM with a USB transfer cable (model: ZC9USCBMB1). If the driver of the cable has not been installed on your PC yet, a dialog box will appear. Please follow the instructions.

NOTE

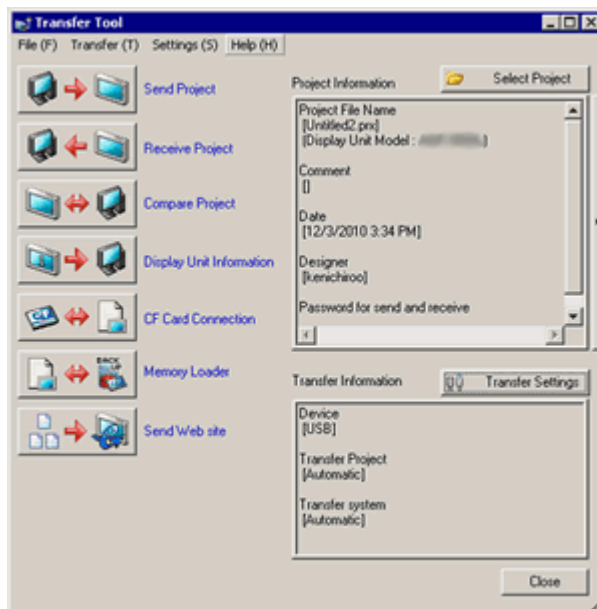
The "Hardware Installation" dialog box as follows may appear during installing the driver of a USB depending on the security level of Windows® XP. Click [Continue Anyway] to start installing the driver. When installation is completed, click [Finish].

The screenshot shows a Windows XP dialog box titled "Hardware Installation". It features a yellow warning triangle icon. The text inside reads: "The software you are installing for this hardware: USB Link Cable (CA3-USBCB-01) has not passed Windows Logo testing to verify its compatibility with Windows XP. [Tell me why this testing is important.] Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing." At the bottom, there are two buttons: "Continue Anyway" and "STOP Installation".

- (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.

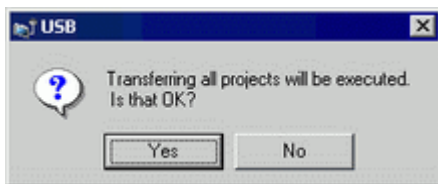


To transfer a different project file, click the [Select Project] button and select a project file.

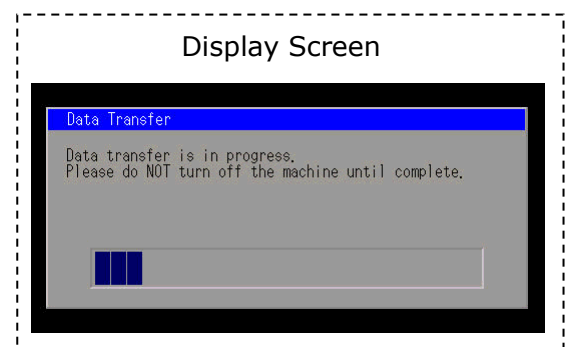
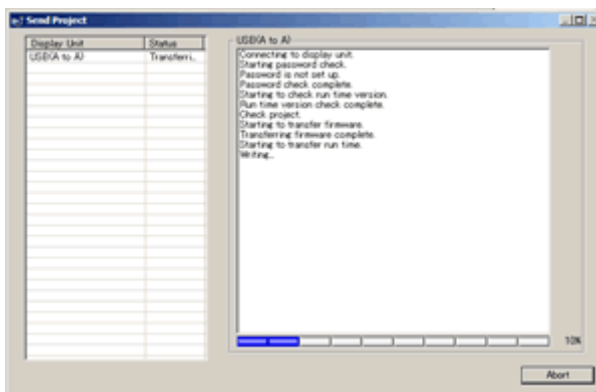
- (4) Make sure that the [Device] in the "Transfer Settings Information" is set to [USB]. If not, click the [Transfer Setting] button to open the "Transfer Setting" dialog box. Select [USB] in the Communication Port Settings field and click [OK].



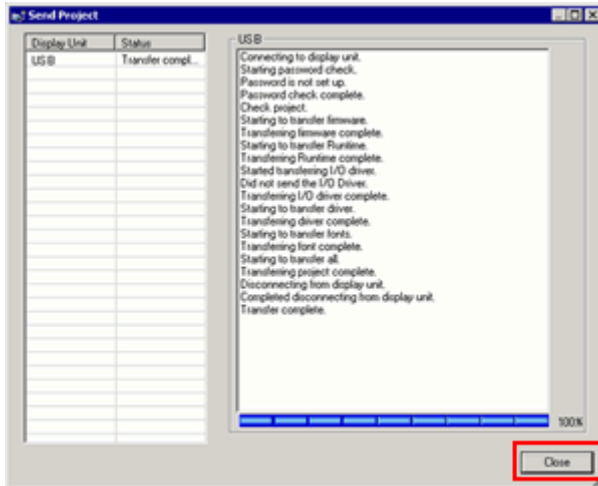
- (5) Click [Send Project] to start transfer. When the following dialog box appears, click [Yes]. This dialog box doesn't appear when the same project file is sent again.



- (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.)



- (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/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

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
	A Tag	Alarm Summary (Text) Display
	a tag	Alarm Summary Display
	v tag	Video Window Display Expansion Function
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 Manager 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/me>)

[rgedProjects/welcome/welcome_rr_gm4000.htm](#)).

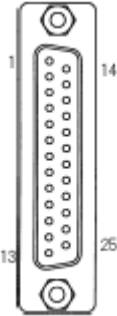
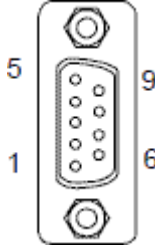
Chapter 4 Communication with Device/PLC

4.1 Driver list

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-37W2	GP-4301TM
	D-Sub 25 pin (socket) RS-232C/422	D-Sub 9 pin (plug) RS-232C/422/485
COM1		

NOTE

The COM1 port on GP-4301TM is D-Sub 9-pin plug. The COM1 port on GP-37W2 is D-Sub 25-pin socket. The pin assignment and the shape of plug/socket connector are different from those of GP-4301TM. Because of it, the existing PLC connection cables cannot be used as they are. If you use the existing connection cables, see [\[4.5 Cable Diagram at the time of replacemet\]](#).

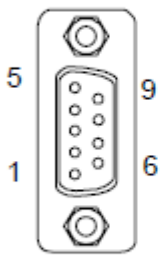
4.3 Signals of COM ports

For GP-37W2

RS-232C or RS-422 (socket)

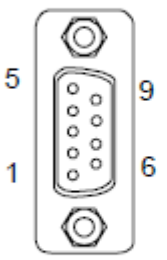
Pin Arrangement	Pin #	Signal Name	Meaning
	1	FG	Frame ground
	2	SD	Send data (RS-232C)
	3	RD	Receive data (RS-232C)
	4	RS	Request send (RS-232C)
	5	CS	Clear send (RS-232C)
	6	NC	No connection
	7	SG	Signal ground
	8	CD	Carrier detect (RS-232C)
	9	TRMX	Termination (RS-422)
	10	RDA	Receive data A (RS-422)
	11	SDA	Send data A (RS-422)
	12 **	RESERVE	Reserved
	13 **	RESERVE	Reserved
	14	VCC	5V±5% output 0.25A
	15	SDB	Send data B (RS-422)
	16	RDB	Receive data B (RS-422)
	17	NC	No connection
	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	BUZZ GND	External buzzer ground
	24	NC	No connection
	25	BUZZ OUT	External buzzer output

For GP-4301TM
RS-232C (plug)

Pin Arrangement	Pin No.	RS-232C		
		Signal Name	Direction	Meaning
 <p>(GP unit side)</p>	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-37W2, there's no VCC output.

RS-485 (422) (plug)

Pin Arrangement	Pin No.	RS-422/RS-485		
		Signal Name	Direction	Meaning
 <p>(GP unit side)</p>	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.

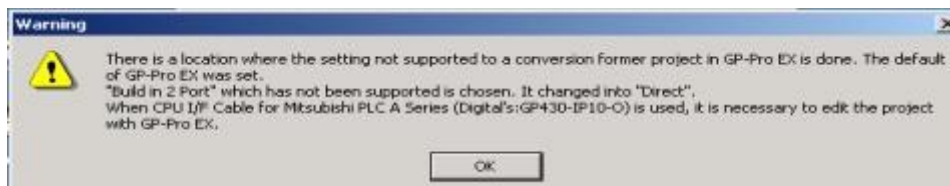
For the communication drivers that support serial multi-link, see [[Which drivers support serial multilink communication?](#)]

(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]->[Internal 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.



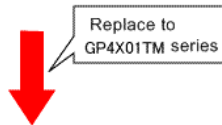
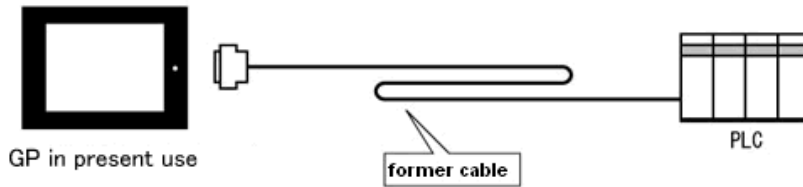
4.6 Cable Diagram at the time of replacement

The connection cable used for GP-37W2 can be also used for GP-4301TM. But, please note that there are precautions and restrictions as described below.

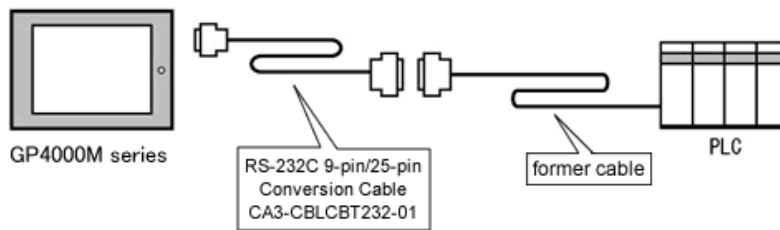
IMPORTANT

- 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-4301TW newly.
- When using Mitsubishi PLC A/QnA series (CPU Direct), please refer the following notes,
 - When using GP430-IP10-O/ GP430-IP11-O,
Unlike GP-2301S/L, GP-4301TM doesn't have VCC output. because of it, GP430-IP10-O/ 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-37W2 System Configuration



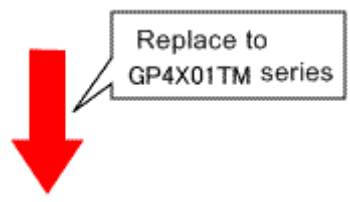
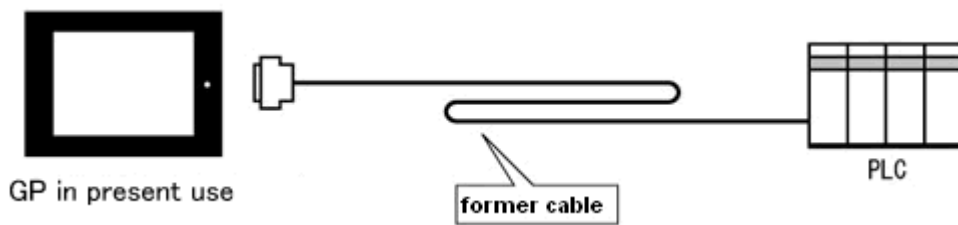
GP-4301TM System Configuration



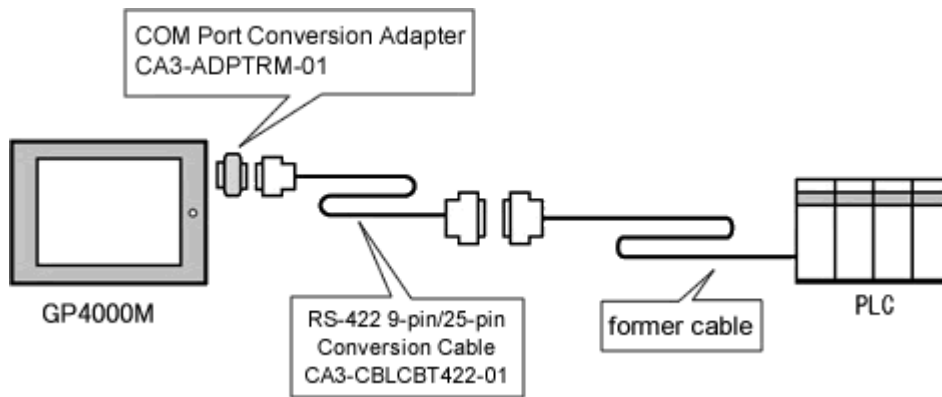
To replace GP-37W2 with GP-4301TM, prepare the following thing.

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-37W2 System Configuration



GP-4301TM System Configuration

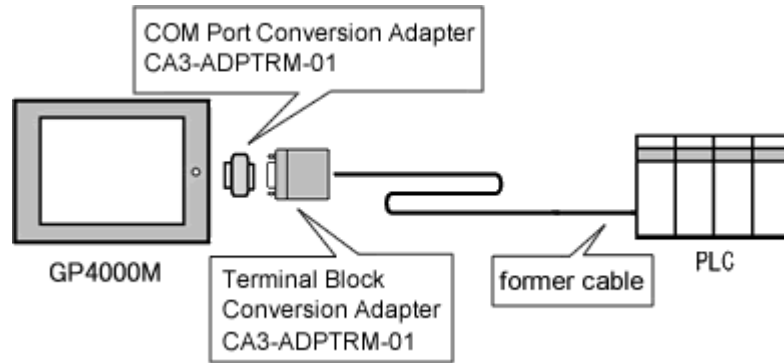


To replace GP-37W2 with GP-4301TM, prepare the following things.

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.



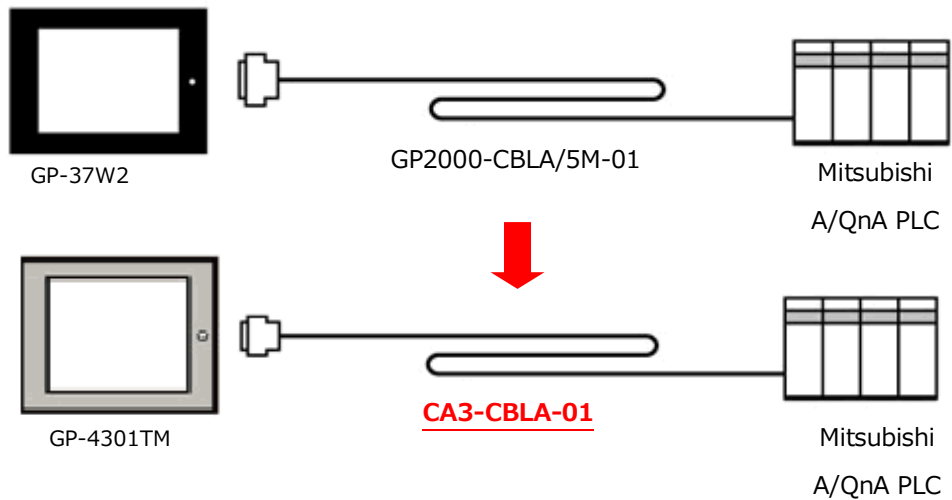
For replacement in this connection method, prepare the following things.

Product Name	Model
Connector terminal 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)

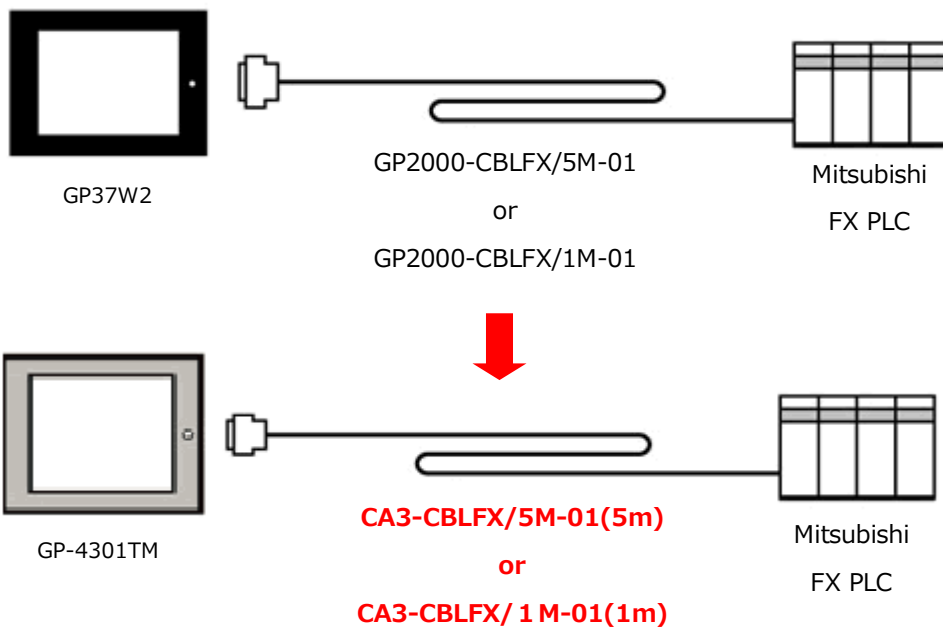
+ RS-422 9/25-pin Conversion Cable (20cm) (CA3-CBLCBT422-01)

When using Mitsubishi FX 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)

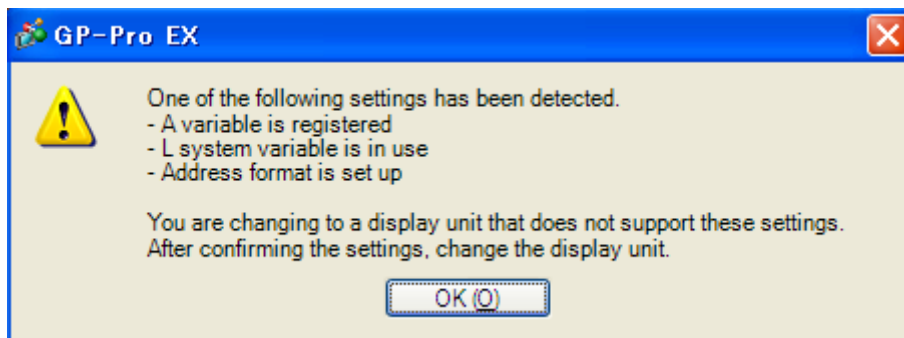
COM Port Conversion Adapter (CA3-ADPCOM-01)

+ RS-422 9/25-pin Conversion Cable (20cm) (CA3-CBLCBT422-01)

Chapter 5 Appendix

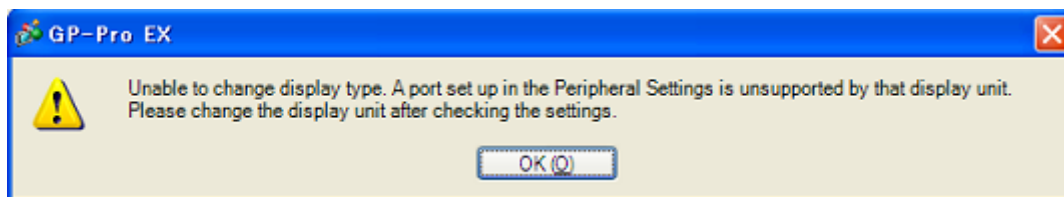
5.1 When the Display Unit type cannot be changed

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.



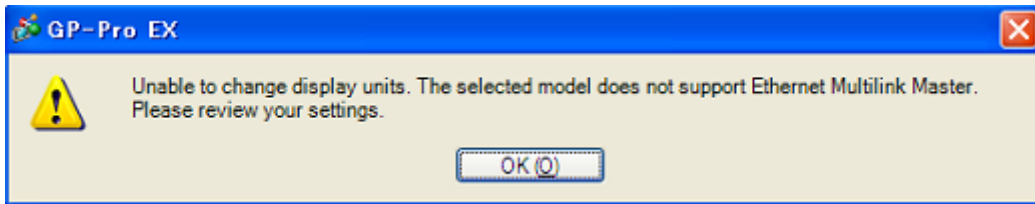
[Cause]

- 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.

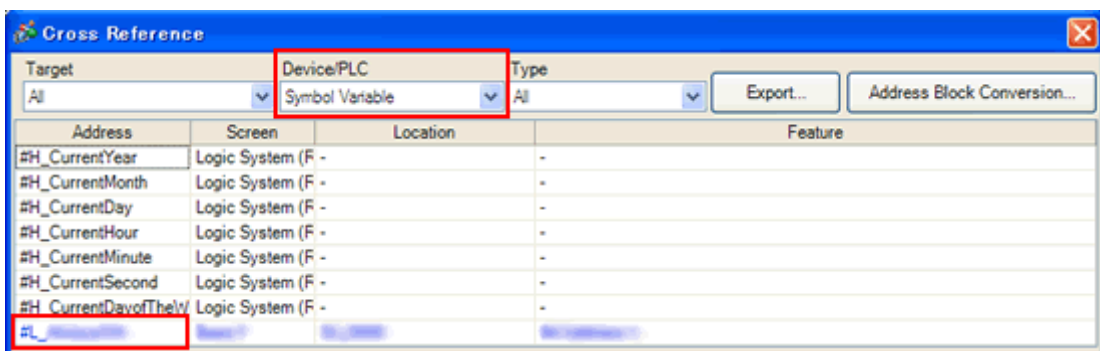
(1)-2: L system variables are used.

[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 communication driver that cannot be used for GP-4X01TM is set, the Display Unit cannot be changed.

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 Ethernet Multilink].

