

Easy! Smooth! GP-37W2 → GP4000M Series Replacement Guidebook

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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

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Chapter 1 Specification Comparison

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

		GP-37W2	GP-4301TM	
Displ	ау Туре	Monochrome blue mode LCD	NEW! TFT Color LCD	
	iy Colors, evels	Blue mode, no levels	UP! 65,536 colors	
Display	Resolution	QVGA (320x	240 pixels)	
	e Cutout ions (mm)	191.5(W)x141.5(W)	<mark>NEW!</mark> φ22mm -> <u>See 2.4</u>	
External Dimensions (mm)		207(W)x157(H)x58(D)	NEW! 163(W)x129.4(H)x56.5(D) *The main module is included. -> <u>See 2.5</u>	
Touch F	Panel Type	Matrix	NEW! Analog ->See 2.2	
Memory	Application	1MB	UP! 8MB	
wernor y	Backup	96KB	UP! 128KB -> <u>See 2.8</u>	
Rated In	put Voltage	DC 2	24V	
Serial I/F	COM1	D-Sub 25 pin (socket) RS-232C/422	NEW! D-Sub 9 pin (plug) RS-232C/422/485 -> <u>See 2.7</u>	
Ethe	rnet I/F	-	UP! 10BASE-T/100BASE-TX	
USB	Host I/F	-	- NEW! ✔ -> <u>See 2.6</u>	

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

GP-37W2 has monochrome LCD, but GP-4301TM has TFT Color LCD. After replacement, the black and white display changes to the color display. When data of a monochrome model are converted to a color model with GP-Pro EX, the 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

The panel cutout of GP-4301TM is a φ 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 tickness 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



GP-4301TM GP-37W2

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 Memory

GP-4301TM does not have SRAM, but uses a part of application memory as a backup area. Data in the backup area is retained even after power off or reset of GP-4301TM in the same way as SRAM. The functions possible for backup on GP-4301TM are as follows:

- Alarm History (Up to 768)
- Recipe (Filing data)
- Brightness/Contrast values
- * For the functions above, data is saved in the backup area at the time of 'Save'.
- * Sampling and clock data is not backed up.

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 form that of GP-4301TM.

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

For the detailed electric specifications, see the hardware manual.

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	PC in which GP-PRO/PB3 for Windows Ver. 4.0 or later is
receiving screen data	installed (*2)
from GP-37W2 *1	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	PC in which GP-Pro EX Ver.2.71 or later is installed.
converting screen data	A USB data-transfer cable
of GP-37W2 and	(The following three types of cables are available.)
transferring to	• A USB data-transfer cable (model: ZC9USCBMB1)
GP-4301TM	 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/)

*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-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 [<u>3.4 Convert screen data with the Project Converter</u>].

(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].

Transfer Settings	
Send Information ✓ Upload Information ✓ GP System Screen ✓ Filing Data(CF card) ✓ Data Trans Func CSV Data(CF card)	Communications Port
Transfer Method	IP Address 0. 0. 0. 0 Port 8000 C Ethernet: Auto Acquistion
Transfer Mode Iterparation for a transfer and a transfer are made simultaneou It is transferred after preparation for a transfer is finished. Setup Use Extended f Automatic Setup Use Extended f Force System Setup Simulation Do NOT Perform Setup System Sc Setup CFG file : English	Program :
C Japanese C Selection C:\PROGRA~1\Pro-face\PROP8W~1.02\pi OK	Cancel Help

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. Bovice Manager <u>File Action View Help</u> 📧 🎒 😫 🔜 \Rightarrow 🗄 🗟 Monitors 🛨 🧱 Network adapters 🗄 🚽 Ports (COM & LPT) Communications Port (COM1) Pro-face GPW-CB03 (COM2) 🗄 🔿 Processors 🗄 🕘 Sound, video and game controllers 🗄 😨 System devices 🗄 🕰 Universal Serial Bus controllers Intel(R) 82801EB USB Universal Host Controller - 24D2 Intel(R) 82801EB USB Universal Host Controller - 24D4 Intel(R) 82801EB USB Universal Host Controller - 24D4 Intel(R) 82801EB USB Universal Host Controller - 24D4 Intel(R) 82801EB LISB Universal Host Controller - 24D7 🖨 Pro-face GPW-CB03 Contemporary USB Root Hub

(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.



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].

	💼 Pro-face 🔹 🕨	💮 💼 GP-Pro EX 1.10 🔹 🕨	🛅 Manual (Help) 🔹 🕨
	🥶 Internet Explorer		🍰 GP-Pro EX
	Microsoft Excel		🍪 Project Converter
	👿 Microsoft Word		📄 Readme
	💽 Microsoft Outlook		😭 TransferTool
	🖪 Microsoft PowerPoint		🛃 Uninstall
	🗐 Outlook Express		
	🎕 Windows Movie Maker		
All Programs 👂	📙 Adobe Reader 8		
	Log Off 🚺 Shut Do	wn	
🐉 start 🔰			

(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].

😵 Project C	onverter	
Data Type	Project File(*.PRW)	
Convert-From		Browse
Convert-To		Browse

(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].

😵 Project C	onverter	X
Data Type	Project File(*.PRW)	
Convert-From		Browse
Convert-To		Browse

Open			? 🗙
Look in: 🗀	database 🗾 💌	- 🗈	💣 🎟 •
Product sys	stem A		
File <u>n</u> ame:	Product system A		<u>O</u> pen
Files of <u>type</u> :	Project Files (*.prw)	•	Cancel
🔮 Project C	Converter		
Data Type	Project File(*.PRW)	·	
Convert-From	C:\Program Files\Pro-face\ProPBWin'	\datab	Browse
Convert-To			Browse

(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].

😵 Project C	onverter	
Data Type	Project File(*.PRW)	
Convert-From	C:\Program Files\Pro-face\ProPBWin\datab	Browse
Convert-To		Browse

Save As			? 🔀
Savejn: 🗀 🛙)atabase	- 🗢 🗈	≓≣ *
File <u>n</u> ame:	Product system A		<u>S</u> ave
Save as <u>t</u> ype:	PRX Files (*.prx)	•	Cancel
	4	1	
😵 Project Co	nverter		
Data Type	Project File(*.PRW)	_	
Convert-From	C:\Program Files\Pro-face	e\ProPBWin\datab	Browse
Convert-To	C:\Program Files\Pro-face	e\GP-Pro EX\Datab	Browse

NOTE When a convert-to file exists, the window that confirms whether or not to overwrite the file is displayed. Save As C:\Program Files\Pro-face\GP-Pro EX\Database\Product system A.prx already exists. Do you want to replace it? Yes

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

😂 Project C	onverter	×
Data Type	Project File(*.PRW)	
Convert-From	C:\Program Files\Pro-face\ProPBWin\datab Browse	
Convert-To	C:\Program Files\Pro-face\GP-Pro EX\Datab Browse	
	Option	
		_
	Close <u>H</u> elp	

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



🗞 Project C	onverter	
Data Type	Project File(*.PRW)	
Convert-From	C:\Program Files\Pro-face\ProPBWin\datab	Browse
Convert-To	C:\Program Files\Pro-face\GP-Pro EX\Datab	Browse
	Option	
Converted Pop Converted Pop	0002 0003 0100 3999 0001 0002 0003	
	Convert Close	<u>H</u> elp

If an error message is displayed during conversion...

If an error message is displayed during conversion, refer to [<u>Project Converter</u> <u>Error Message</u>]

(<u>http://www.pro-face.com/otasuke/qa/gp3000/replace/soft/conv/project_con</u> <u>verter_error.html</u>) 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.

Save convert information.	? 🗙
Savejn: 🞯 Desktop 📃 🖛 🛍 📸] -
₩ Documents My Computer My Network Places	
	>
File <u>n</u> ame: S	ave
Save as type: CSV Files (*.csv)	ancel

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.)

ΟΤΕ	
• If you c	hange 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
[<u>3.6.2</u> [Differences made at the time of change to GP-4301TM].
 Depend 	ling on a setting of the project file, the message as shown below appears
the Disp	pay Unit may not change to GP-4301TM.
When th	he message appears, check the cause and the solution in [5.1 When th
<u>Display</u>	Unit cannot be changed] and then change the Display Unit again.
💋 GP-Pr	ro EX
1	One of the following settings has been detected. - A variable is registered - L system variable is in use - Address format is set up
	You are changing to a display unit that does not support these settings. After confirming the settings, change the display unit.
💰 GP-Pro	EX 🔀
	Unable to change display type. A port set up in the Peripheral Settings is unsupported by that display unit. Please change the display unit after checking the settings.
	OK (Q)
💰 GP-Pro	• EX 🛛
	Unable to change display units. The selected model does not support Ethernet Multilink Master. Please review your settings.

3.5 Transfer screen data to GP-4301TM

Thransfer 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.



(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.

transfer Tool	
File (F) Transfer (T) Settings (S) Help (H)	
Send Project	Project Information 😕 Select Project
Receive Project	Project File Name [Unitiled2 prv] [Display Unit Model :] Comment
Compare Project	0 Date (12/3/2010 3:34 PM)
Display Unit Information	Designer (kenichiroo)
CF Card Connection	Password for send and receive
📄 🔶 👸 Memory Loader	Transfer Information
Send Web ste	Device [US8]
	Transfer Project [Automatic]
	Transfer system [Automatic]
	Close

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].

Transfer Setti	195
amsfer Settings	Site Settings
Communication	Port Settings
USB	
C LAN	
C Modem	
C COM	

(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.

🔊 USB			×
?	Transferring all pr Is that OK?	ojects will be executed.	
	Yes	No	

(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.)

Send Project			도미 X	
Display Unit USE(A to A)	Status Transferri	Convecting to display unit.		
00001010	ingenerit,	During passwaf check, Passwaf in nit sit up. Passwaf check congletis. During to check non time version. Run time version check congletis. Check project. During to transfer firmware. Threatmark firmware completis.		Display Screen
		Starting to bandler run time. Weiting.		Data Transfer
				Data transfer is in progress. Please do NOT turn off the machine until complete.
			13	
			Abort	

(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.

Display Unit	Status	USB
59	Tamile congt.	Convectings to disclay unit. Starting pairmond check. Password check. Oreck posient. Starting to brancher man. Transferring filmware complete. Starting to Staruler Rumike. Transferring Rumiters complete. Starting to staruler Rumike. Did not send the UO Diver. Did not send the UO Diver. Disclay the United the UO diver. Disclay
		1008

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					
9	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				
25					
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.				
29	(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.

S	ettings o	n GP-PRO/PBIII	Settings on GP-Pro EX
Tags	Тад	Operation details	Part Name
	Name		
	A Tag	Alarm Summary (Text)	Text Alarm
		Display	
	a tag	Alarm Summary Display	Alarm
	v tag	Video Window Display	VM Unit Display
		Expansion Funciton	
Parts	Part Nam	e	
	FilingData	a Display	Special Data Display
	Logging [Display	Sampling Data Display
	Data Trar	ns Display	Special Data Display
	CSV Disp	lay	Special Data Display
	File Manager Display		Special Data Display
The	Sound Se	ettings	Sound Setting
other	CSV Data	Transfer Settings	Transfer CSV Data on Recipe
functions	Data Log	ging Settings	Sampling Setting *1

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

*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] (<u>http://www.pro-face.com/product/soft/gpproex/driver/driver.html</u>).

4.2 Shapes of COM ports

	GP-37W2	GP-4301TM
	D-Sub 25 pin (socket)	D-Sub 9 pin (plug)
	RS-232C/422	RS-232C/422/485
COM1	1 2 0 0 0 0 0 0 0 0 0 0 0 0 0	5 5 1 0 0 0 0 0 0 0 0 0 0 0 0 0

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)
SIO	4	RS	Request send (RS-232C)
	5	CS	Clear send (RS-232C)
$\left(\bigcirc \right)$	6	NC	No connection
	7	SG	Signal ground
	8	CD	Carrier detect (RS-232C)
	9	TRMX	Termination (RS-422)
0 0 14	10	RDA	Receive data A (RS-422)
000	11	SDA	Send data A (RS-422)
	12 ^H	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)
13	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			
	1	CD	Input	Carrier Detect			
	2	RD(RXD)	Input	Receive Data			
5	3	SD(TXD)	Output	Send Data			
S 8 9	4	ER(DTR)	Output	Data Terminal Ready			
	5	SG	-	Signal Ground			
1 6	6	DR(DSR)	Input	Data Set Ready			
loj	7	RS(RTS)	Output	Request to Send			
	8	CS(CTS)	Input	Send Possible			
(GP unit side)	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			
	1	RDA	Input	Receive Data A(+)			
	2	RDB	Input	Receive Data B(-)			
5	3	SDA	Output	Send Data A(+)			
5 6 9	4	ERA	Output	Data Terminal Ready A(+)			
°°° C	5	SG	-	Signal Ground			
1 6	6	CSB	Input	Send Possible B(-)			
	7	SDB	Output	Send Data B(-)			
	8	CSA	Input	Send Possible A(+)			
(GP unit side)	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?]

(<u>http://www.pro-face.com/otasuke/files/manual/gpproex/new/device/com_mlnk.ht</u> <u>m</u>).

4.5 Cable Diagram at the time of replacement

The connetion 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. (<u>http://www.pro-face.com/otasuke/files/manual/gpproex/new/device/index.htm</u>)

• When using the following connection methods or connection cables, the cable cannot be used. Please check the GP-Pro EX Device/PLC Connection Manual stated above and prepare a connection cable for GP-4301TM newly.

Siemens MPI Connection

Mitsubishi A Series Programming Console I/F Cable

(Model: GP430-IP10-O)

Mitsubishi A Series Direct Cable

(Model: GP2000-CBLA/5M-01)

Mitsubishi FX Series Programming Console I/F Cable

(Model: GP430-IP11-O, GP2000-CBLFX/5M-01, GP2000-CBLFX/1M-01)

4.5.1 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

4.5.2 When using a RS-422 connection cable

GP-37W2 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



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



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-4301TM.



[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 Programs Setting, [Address Format] is selected. -> Solution (1)-5

💑 GP-Pro EX					
⚠	Unable to change display type. A port set up in the Peripheral Settings is unsupported by that display unit. Please change the display unit after checking the settings.				
	<u>OK (Q)</u>				

[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

💰 GP-P	🕉 GP-Pro EX						
1	Unable to change display units. The selected model does not support Ethernet Multilink Master. Please review your settings.						
	OK (Q)						

[Cause]

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

[Solutions]

(1)-1: Logic settings are made.

Because GP-4301TM 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-4301TM 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.

🕺 Cross Reference 📃 📃 🕅								
Target	Device/PLC Ty		ype					
Al	*	Symb	ol Variable 🗸 🗸	A	1 🗸	·	Export	Address Block Conversion
Address	Screen		Location				Feature	
#H_CurrentYear	Logic Syste	em (F			-			
#H_CurrentMonth	Logic Syste	em (F			•			
#H_CurrentDay	Logic Syste	em (F	-		-			
#H_CurrentHour	Logic Syste	em (F						
#H_CurrentMinute	Logic Syste	em (F			-			
#H_CurrentSecond	Logic Syste	em (F						
#H CurrentDavofTheW	Logic Syste	em (F						
#L_Maintaille	Beerit		6., mail	_	decignment of	_		

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

GP-4301TM 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-4301TM 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-4301TM 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-4301TM, only one communication driver can be set. (But, <u>if [Enable Ethernet</u> <u>Multilink] is selected</u>, and GP-4301TM 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-4301TM 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-4301TM, see [4.1 Driver_List].

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

COM1 is the only one port that GP-4301TM 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-4301TM 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].

Ethemet Multilink Settings			
Enable Ethernet M	lultilink		
Action Mode	Master Slave		
Master IP Address	0 0 0	. 0	Filtering