



For customers who use Pro-face products for the first time –

First step of screen creation and settings

GP4100 Series Color Model Quick Guide

4.3-inch
Compact Graphic Operator Interface
GP4100 Series
Color Model



GP4100 Series Color Model

With Pro-face Remote HMI, monitor and control GP4100 color model screen on a smart phone or a tablet. (*GP-4114T only)



The data such as alarms, recipes and sampling are collected via an Ethernet to PC. With Pro-server EX, the data can be freely processed in Excel according to usage. Easily create reports. (*GP-4114T only)

Pro-Server EX
FTP Server, Web Server



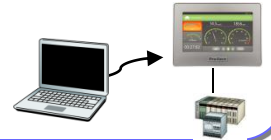
It is possible to set the multilingual change easily.



USB port (Type-A x 1) is standard. It allows screen data transfer via a USB flash drive.

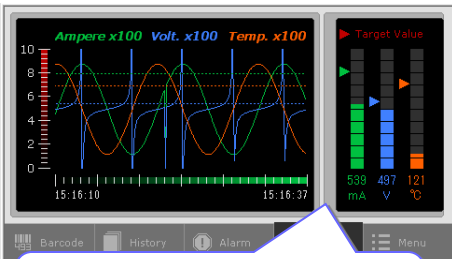


USB port (mini-B x 1) is standard. It allows PLC Ladder to be edited through HMI. (Pass-through feature)

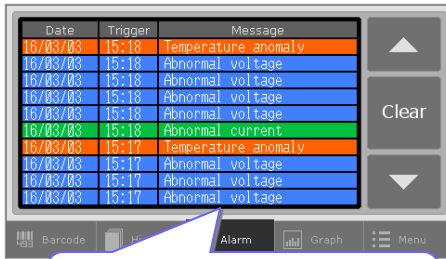


Easy to read small characters on switches.

Easy to read numeric characters even when several values are displayed on the same screen.



A wide variety of graphs are available to provide visual representation of operation status.



Error messages allow you to easily identify what kinds of errors are detected.



Vertical installation is also available.

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>> Let's start!
You will learn how to create screen data and configure settings for the GP4100 Series Color Model Starting on the next page.

How to Get Pro-face Screen Editing Software, GP-Pro EX

GP-Pro EX Ver.4.05 (charged software) or later is required to create HMI screen data for the GP4100 Series Color Model. GP-Pro EX provides simple operation with an enhanced user interfaces.



- Free upgrade service is available to users of GP-Pro EX Ver.4.0 or later from our support site, Pro-face Product Support(Free member registration is required.)
- > <http://www.pro-face.com/otasuke/>

•GP-Pro EX Ver.4.05 Operating Environment

OS (64-bit OS is not supported.)	Windows 10 (Home[32/64-bit], Pro[32/64-bit], Enterprise[32/64-bit]) Windows 8/Windows 8.1 (32/64-bit All Edition) Windows 7 (32/64-bit All Edition) Windows Vista (32-bit All Edition) Windows XP (32/64-bit All Edition [Service Pack 2 or later])
CPU	Windows Vista: Pentium 4 1.3GHz or greater recommended
Memory	Windows 10, Windows 8/Windows 8.1, Windows7, Windows Vista 1GB or greater recommended Windows XP 512MB or greater (1GB or greater recommended)
Hard Disk Space	Pentium IV 1.3 GHz or faster Includes capacity required by the tools, such as Transfer Tool, Version Reverter, and Project Converter, that are also included when you install [GP-Pro EX]. Capacity required by other tools is not included.

How to Install GP-Pro EX



1. Install GP-Pro EX and Transfer Tool

Start the installer, and then “SET UP MENU” appears. Click [GP-Pro EX] to start installing the software. In the Limited Edition, entering a serial number and key code is not required.

After the installation of GP-Pro EX is completed, the installation of Transfer Tool automatically starts.

After the installation of Transfer Tool is completed, restart the PC to activate the Transfer Tool.

Transfer Tool can be solely installed.

If you would like to control editorial authority, install only the Transfer Tool separately on PC at site. This allows operators only to transfer screen data.

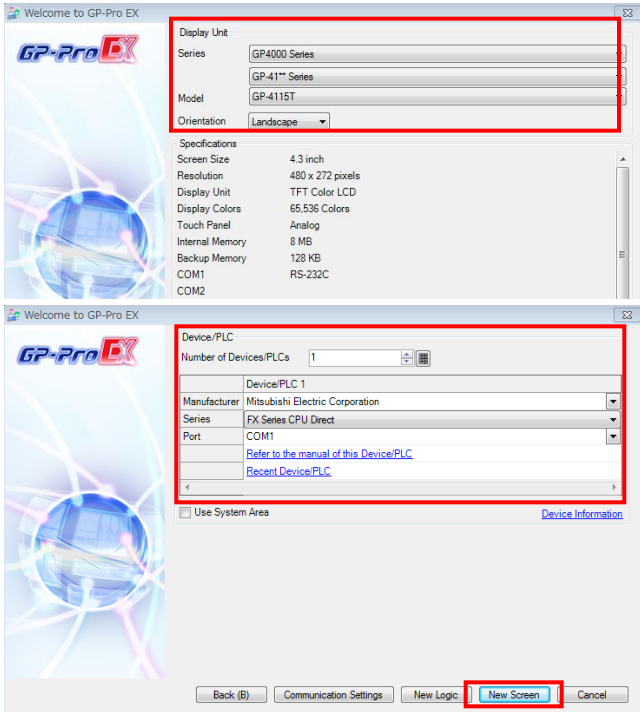


2. Completion of the installation

The GP-Pro EX icon is shown on the desktop of the PC after the installation is completed.

How to Use GP-Pro EX

GP-Pro EX allows you to create HMI screen data and to configure settings for the GP4100 Series Color Model.



1. Start-up and default settings of GP-Pro EX

Double-click the icon on the desktop to start GP-Pro EX. After a pop-up window appears, select [New] and specify [Display Unit] and [Orientation] ("Landscape" or "Portrait").

To create screen data for the GP4100 Series Color Model, select the options for [Display Unit] as follows:
 Series: GP4000 Series and then GP-41** Series
 Model: GP-4114T, GP-4115T or GP-4116T

2. Select a Device/PLC

Select a device or PLC connected.

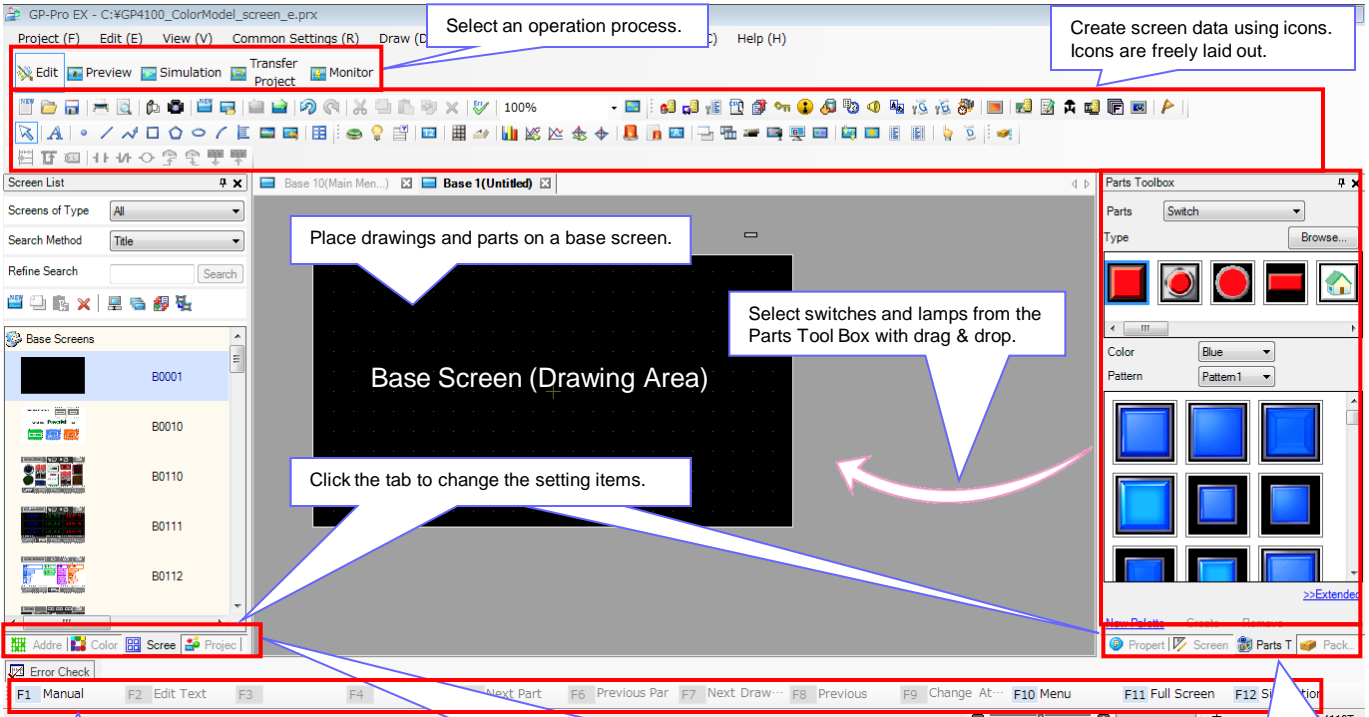
For details on new and updated drivers, please go to our support website, Pro-face Product Support
 → <http://www.pro-face.com/otasuke/>

3. Start the main window

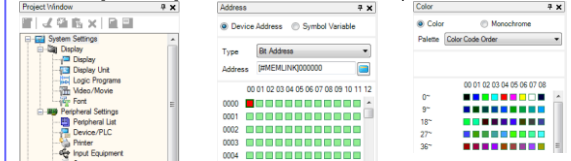
Click [New Screen]. The main window appears.

GP-Pro EX Main Window

Any needed action can be carried out on the main window of GP-Pro EX.



Click the [System Settings] tab to change settings for the display unit and peripherals.
 Click the [Address] tab to see the address map.



Choose a part to place from [Parts Tool Box].

Text and Drawings

A wide variety of Windows fonts (image fonts) to create easy-to-read screens is available. The drawing feature allows for fine layout with various options for lines and graphics.

Small characters are clearly displayed with 200 x 80 pixel resolution.

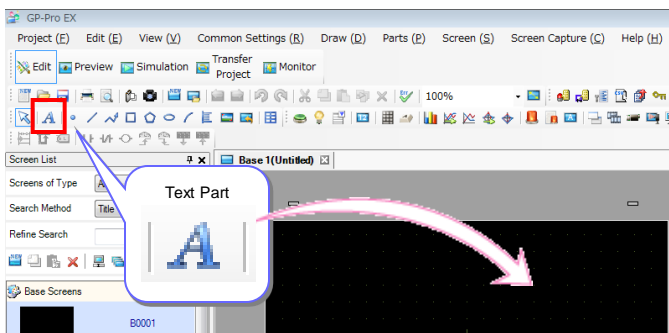
Switches can be easily labeled by setting options for it.

Make use of boxes, lines and circles to create more organized screens.

How to Place Texts and Drawings

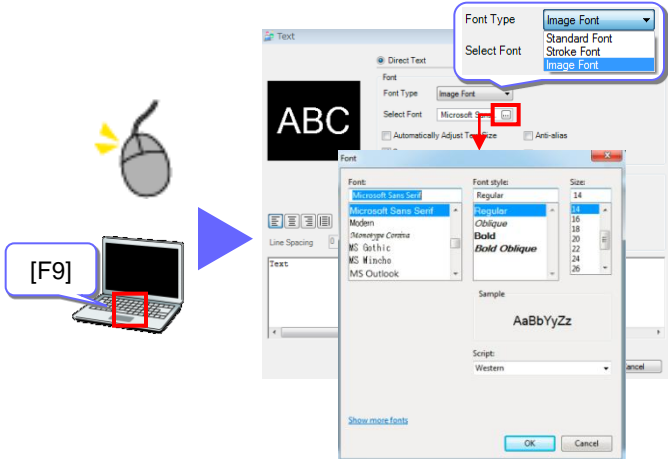
1. Place a text part

Click the icon of a text part on the main window to place the part on the base screen.



2. Specify settings for a text part

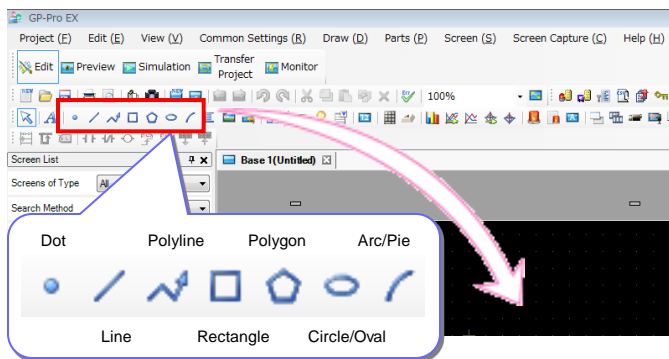
Double-click the placed part or press the [F9] key to show the setting window to specify a font type, size, etc.



* Other than using the icon, text parts can be placed from the [Draw] menu.

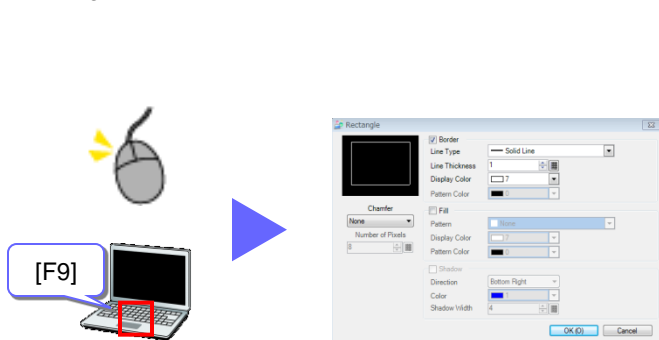
1. Select a drawing type

Click the icon of a desired drawing to place the drawing on the base screen.



2. Specify settings for a drawing

Double-click the placed drawing or press the [F9] key to show the setting window to specify a color and shape of the drawing.



* Other than using the icon, drawings can be placed from the [Draw] menu.

8pt to 72pt available for Windows fonts (image fonts)



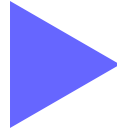
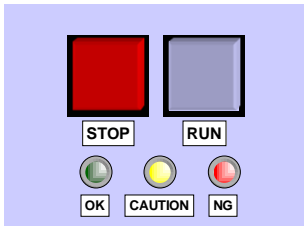
Adjusting text size, more parts can be placed in the 480 x 272 pixel screen.

Arial, actual-size image >

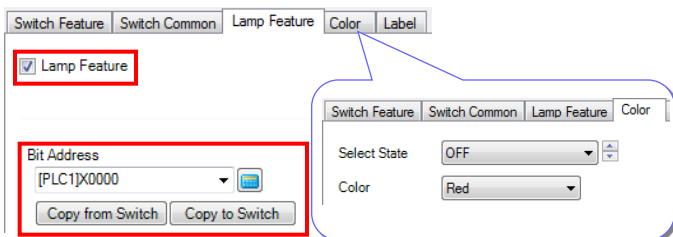
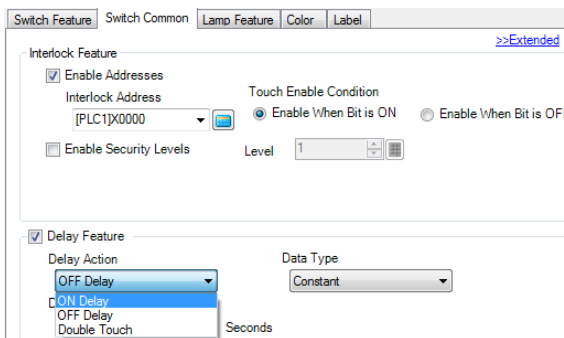
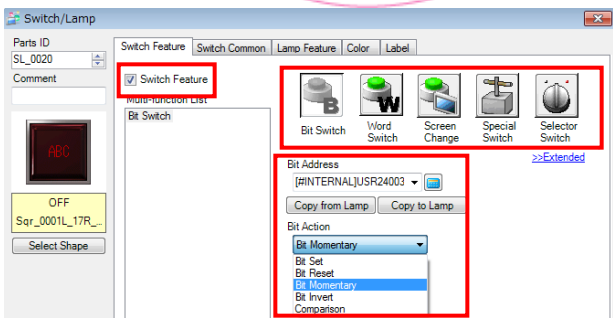
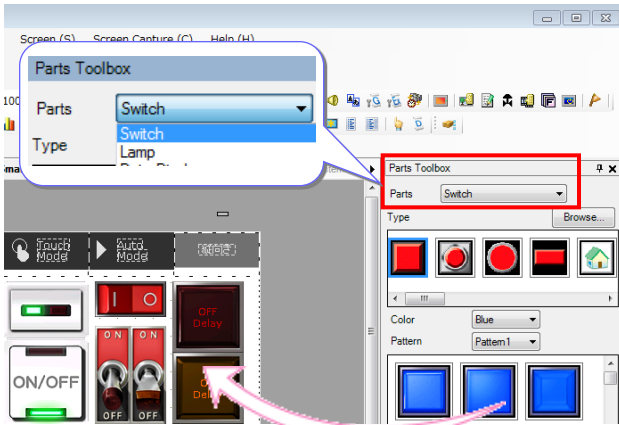


Switch and Lamp

Make your choice from a wide variety of switches and lamps, such as push buttons and toggle switches. It can be freely placed on the screen by one bit.



How to Place Switches and Lamps



1. Place a switch on the base screen

Referring to page 4, display [Parts Tool Box] on the main window.

Select a switch part from the [Parts Tool Box], and drop and drag it on the base screen.

Sample parts downloadable from our support website, "Pro-face Product Support"

2. Specify settings for a switch

Double-click the part to show the setting window.



Click the icon to select a switch type.

If a bit switch is selected, a bit address and bit action should be selected. The default for bit action is "Bit Momentary."

3. Add features to a switch

Click the [Switch Common] tab to add the features to avoid wrong operation by setting conditions of switch action.

- Interlock Feature
Operation is allowed only when a specified bit is ON or OFF.
- Delay Feature
Operation becomes enabled in a certain period of time after a switch is touched.

4. Place a lamp

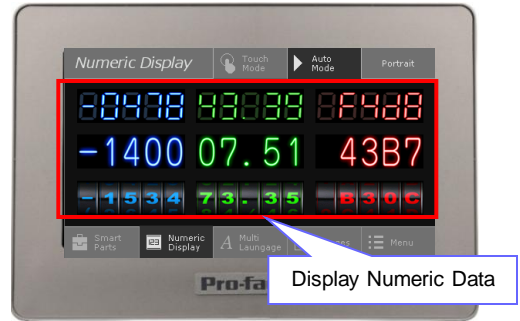
To use a part as a lamp, place a lamp by dragging and dropping from [Parts Tool Box], or check [Lamp Feature] in the [Lamp Feature] tab on the setting window. When the same bit address as the switch has is specified, the lamp reacts at the same time as the switch is touched.

In the [Color] and [Label] tabs, the settings to specify a color when the bit is ON or OFF and texts for the label.

* Other than using the icon, switches can be placed from the [Parts] menu.

Data Display

Values stored in a connected device (such as PLC) can be displayed. It also allows for inputting numeric characters and displaying texts too.



How to Place Data Display

The screenshots illustrate the steps to place and configure a Data Display:

- Parts Toolbox:** A 'Data Display' part is selected from the toolbox.
- Data Display Settings:** The 'Text Display' icon is selected. The 'Monitor Word Address' is set to '[PLC1]D0000' and 'Allow Input' is checked. A callout box notes: "If [Allow Input] is checked, a keyboard can be called to input a value and text by touch." A keyboard icon is shown.
- Display Tab:** The 'Display' tab is selected to configure font settings. The 'Font Type' is set to 'Bitmap Font', 'Model' to '7seg Type1', and 'Color' to 'White'. Other settings include 'Font Size' (Width: 20, Height: 40), 'Total Display Digits' (5), 'Decimal Place Value' (Constant), and 'Decimal Places' (0). A preview shows the number '12345'.

1. Place a Data Display on the base screen

Referring to page 4, display [Parts Tool Box] on the main window.

Select a Data Display part from the [Parts Tool Box], and drop and drag it on the base screen.

2. Specify settings for a Data Display

Double-click the part to show the setting window.

If [Text Display] is selected, text data is displayed.

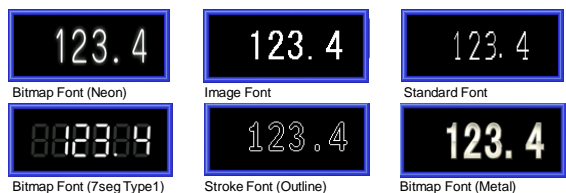
For example, an error code in Hex format stored in a connected device can be displayed as text in ASCII format.

3. Set an address in a connected device

In [Monitor Word Address], input an address of which value is stored in a connected device.

4. Specify a font

Click the [Display] tab to select a font type, a font size and display digits.

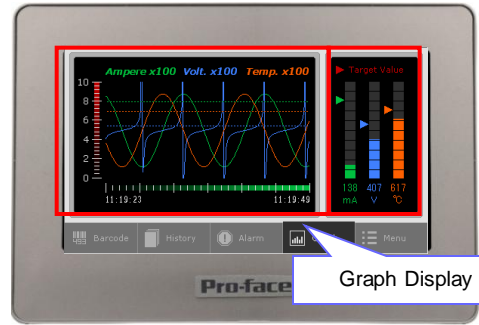
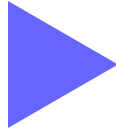


Easy-to-read display of numeric characters using clear bitmap fonts and Windows fonts (image fonts).

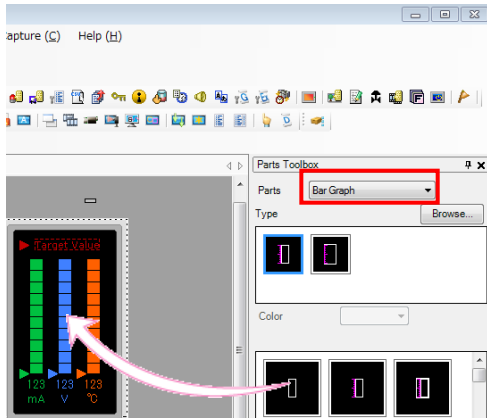
* Other than using the icon, Data Display can be placed from the [Parts] menu.

Graph Display of Operation Status

Visually check operation status on screen with numerical information shown in bar or trend graphs.



How to Place Bar Graphs



1. Place a bar graph on the base screen

Referring to page 4, display [Parts Tool Box] on the main window.

Select a bar graph from the [Parts Tool Box], and drop and drag it on the base screen.

2. Specify settings for a bar graph

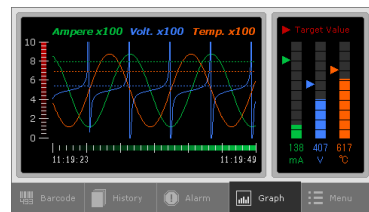
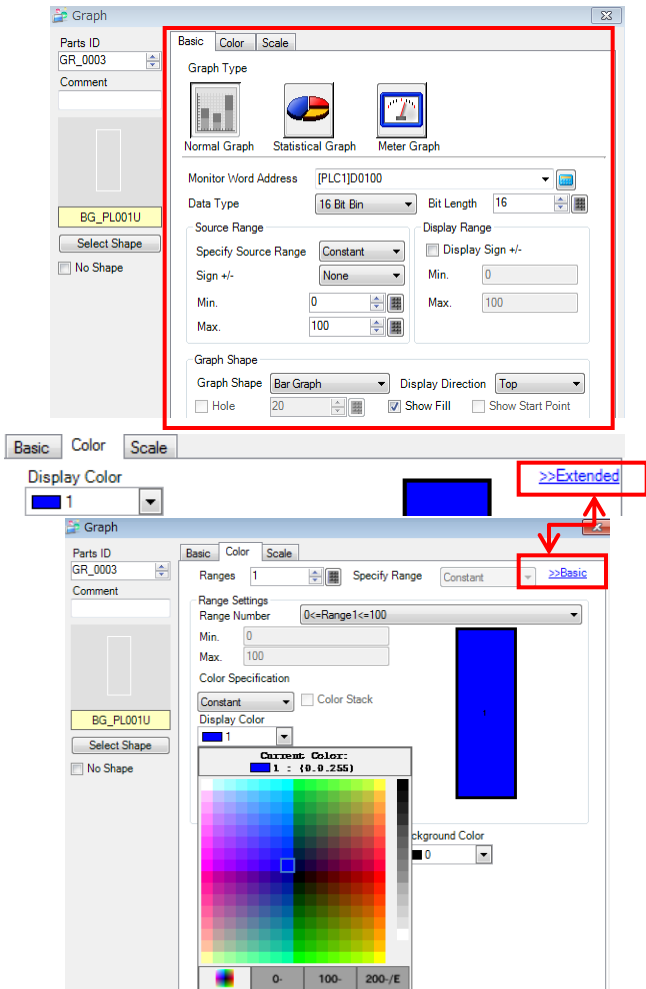
Double-click the part to show the setting window.

- Select a graph type
- Specify [Monitor Word Address]
 - In [Monitor Word Address], input an address of which numeric data is stored in a connected device.
- Data type
 - Select Bin, BCD or Float to display numeric data in the graph.
- Specify the range
 - Display from a minimum value to a maximum value in a graph by percentage.

3. Specify a color

Click the [Color] tab to select a display color.

Click [Extended] to specify details on the color, for example, to change a gradation setting for high visibility.

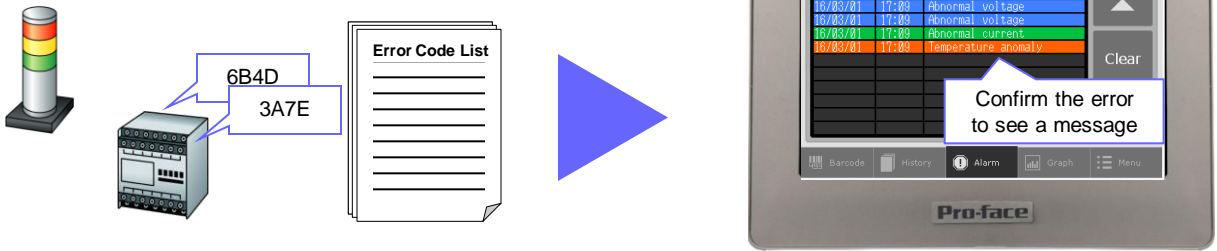


Display graphs making good use of TFT Color LCD. Making good use of solid lines, dashed lines and 16-grayscale display, clearly display multiple channels of trend graphs on one screen.

* Other than using the icon, bar graphs can be placed from the [Parts] menu.

Display Error Messages (1)

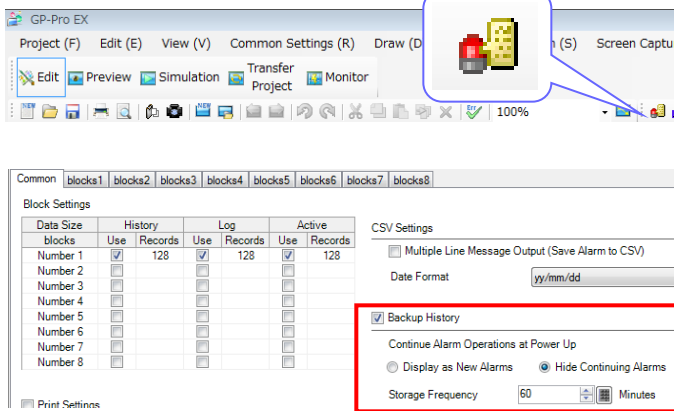
Specify alarm settings to display error messages shown by changes of bit address or data in a connected device.



How to Set Alarms: Register a corresponding message to each bit address

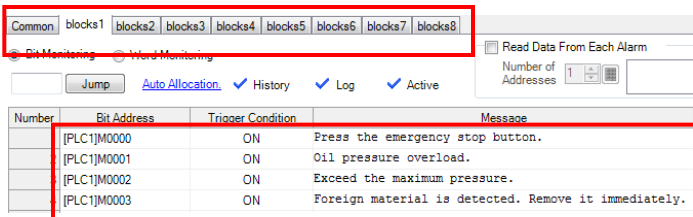


- When the address M0000 is ON, display "Press the emergency stop button."
- When the address M0001 is ON, display "Oil pressure overload."
- When the address M0002 is ON, display "Exceed the maximum pressure."
- When the address M0003 is ON, display "Foreign material is detected. Remove it immediately."



1. Show the alarm setting screen
Click the icon to show the alarm setting screen.

2. Specify a backup history
If [Backup History] is checked, alarm records remain saved even after a GP4100 Series Color Model unit is turned OFF.



3. Specify settings for an alarm
Register bit addresses, trigger conditions and messages. The registered alarm information can be grouped into up to 8 blocks by setting addresses and messages in each block.

If [Word Monitoring] is selected, messages are registered to be shown on screen in accordance with changes of data values in a connected device.

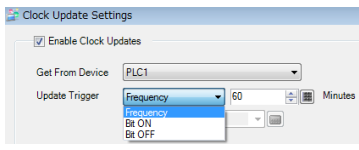
Bit Monitoring
 Word Monitoring

If [Bit Monitoring] is selected, messages are registered to be shown on screen in accordance with changes of corresponding bit addresses.

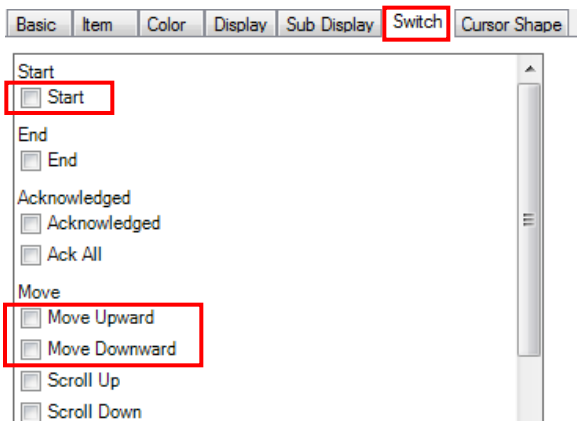
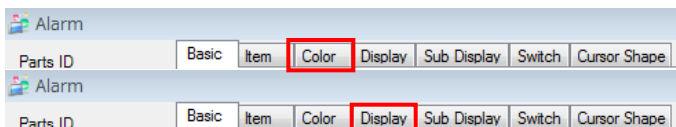
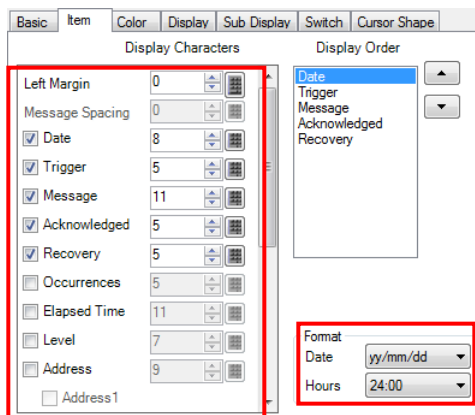
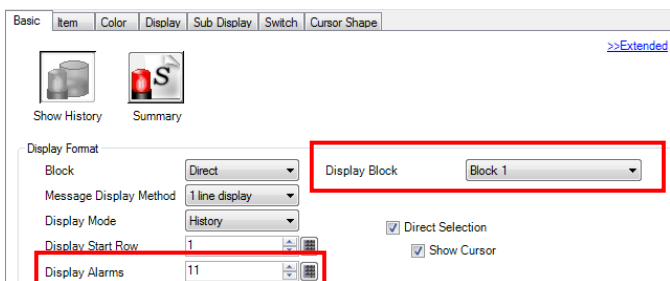
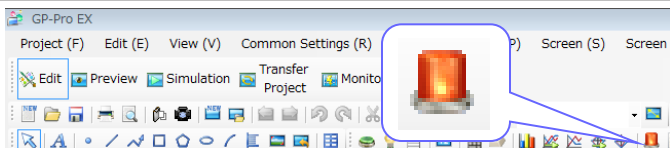
* Other than using the icon, alarm settings can be made from the [Common Settings] menu.

Display Error Messages (2)

If the [Clock Update Setting] icon is clicked, a GP4100 Color Model unit synchronizes its clock with that in a connected device.



How to Set Alarms: Specify how to display messages



1. Place an Alarm Display

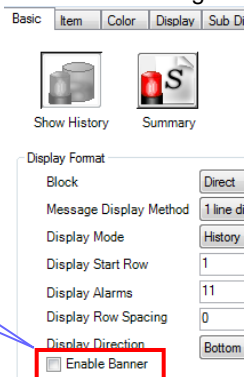
Click the [Alarm] icon to place an Alarm Display on the base screen. Double-click the placed part to show the setting window.

2. Specify settings for an Alarm Display

Select a block in which necessary alarm information is registered in [Display Block]. In [Display Alarms], select the number of alarm messages to be displayed at once.

3. Specify the number of characters

Select the number of characters for one line in each item to be displayed. If any one of [Date], [Trigger], [Acknowledged] and [Recovery] is selected, it is displayed in a selected format according to the alarm triggered.



4. Specify settings for display

Select a color, font and frame for an Alarm Display to display an easy-to-read message using image fonts.

5. Place and specify a special switch to scroll a message list

Use an alarm history switch to scroll up/down multiple alarm messages.

If one of following options is selected, scrolling up/down messages is available.

[Start] : To enable an alarm history switch.
[Move Upward/Downward]: Scroll up/down messages by touch

* An alarm history switch also can be placed from the [special switch].
* Other than using the icon, alarms can be placed from the [Parts] menu.

Additional Features for Screen Creation

The Header/Footer feature allows for reduction of development time.
 Register a start-up screen to utilize a waiting time during the start-up.
 Text Table is available for easy creation of screens in multiple languages.

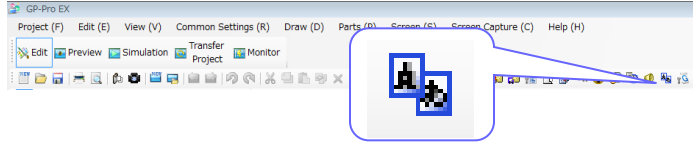
1. Change language settings at once

Change Language	Select Table	Preferences	Utility
1. Japanese Table 1	2. ASCII Table 2	3. Chinese(Simplified) Table 3	4. Korean Table 4
戻る	Back	上面	위로
次へ	Next	下面	下一个
文字表示	Text Display	文字表示	문자 표시
多言語に切り替えてもきれいに!	Clearly display any language!	显然显示任何语言!	분명히 어떤 언어를 표시!
設定温度を10度あげてください	Raise the temp. to 10C	请提高10度设定温度!	설정 온도를 10도 올려주세요
圧力弁を開放します	Open the pressure valve	为了减轻压力阀	압력 밸브를 개방합니다
タイマーを初期値に戻します	Set the timer to default	返回计时器初始值	타이머를 초기 값으로 되돌립니다



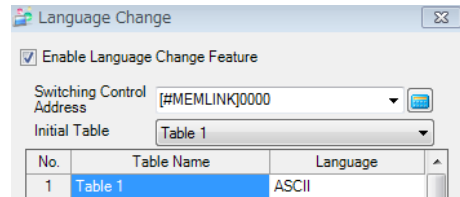
1. Set a text table

Click the [Text Table] icon to register messages in each language.



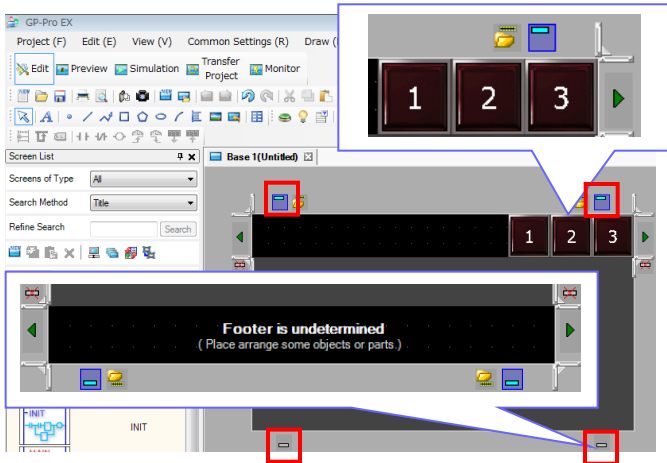
2. Language change settings

Specify a switching control address in where the table number is stored for language change.



* Other than using the icon, a text table can be registered from the [Common Settings] menu.

2. Register frequently used parts in header/footer for common use with other screens



1. Set a header and footer

Click [] on the screen to change to the editing screen for header/footer.
 Click [] again to return to the base screen.

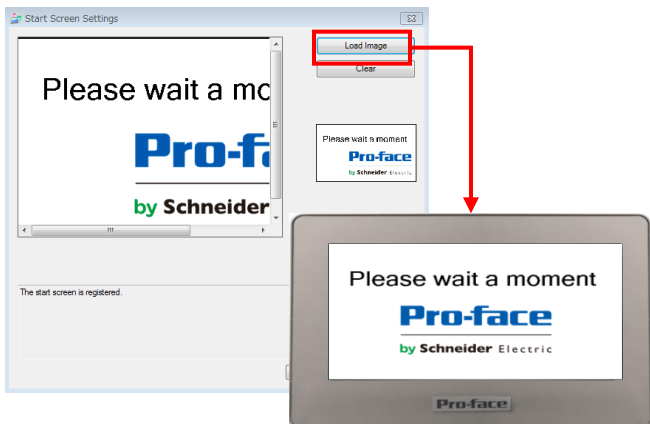
2. Specify common parts

Place on the header/footer editing screen texts and parts such as a change screen switch which are likely to be used on multiple screens.



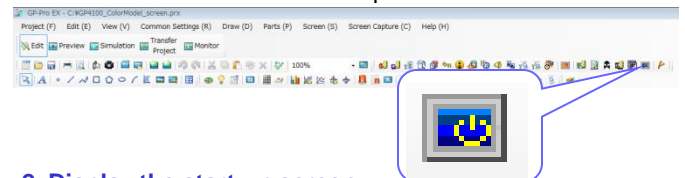
Up to 20 headers and 20 footers can be registered.

3. Register an original start-up screen



1. Register a start-up screen

Click the [Register Start Screen] icon to register a start-up screen.
 The screen size is W480 x H272 pixels.



2. Display the start-up screen

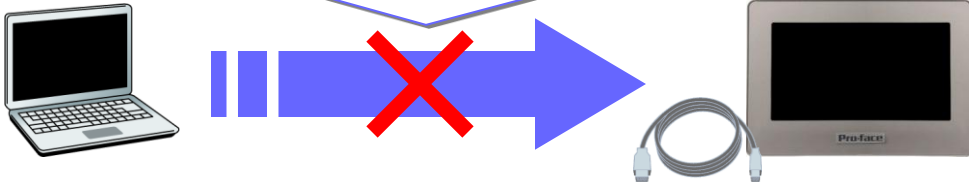
The start-up screen is displayed when a GP4100 Color Model unit is turned ON.

* Other than using the icon, a start-up screen can be registered from the [Common Settings] menu.

Screen Operation Check on PC (Simulation)

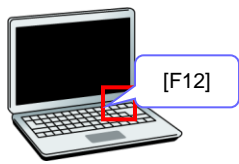
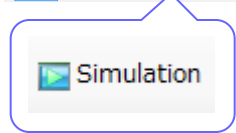
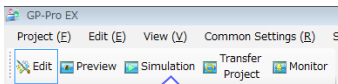
Screen operations can be tested on a PC before HMI software application is transferred to a GP4100 unit.

Neither a GP4100 Color Model unit nor a USB Transfer Cable is required for the simulation.



How to Use the Simulation Feature

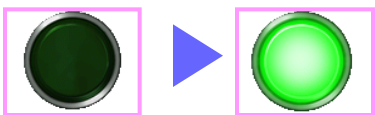
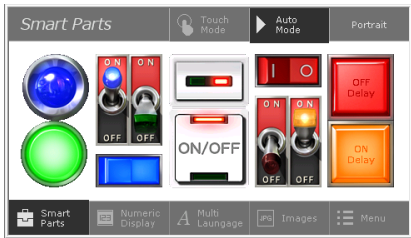
To start a simulation, click the [Simulation] icon or press the [F12] key on PC.



Object	Number	ID/Num...	Function	Address	State
Current Screen	110				
System Area					
Device/PLC					
All Items					
Base Screen	Base 110	DS_00000	16bit	[#MEMLINK]0015_110	<input type="checkbox"/> (OFF)
Window Screen	Base 110	DS_00000	bit	B0110_SW	
Image Unit Window	Base 110	DS_00001	16bit	[#INTERNAL]USR2_114	
Header/Encoder	Base 110	DS_00001	16bit	[#INTERNAL]USR2_184	
Alarm	Base 110	DS_00001	16bit	[#INTERNAL]USR2_185	
Sampling Settings	Base 110	DS_00001	16bit	[#INTERNAL]USR2_2	

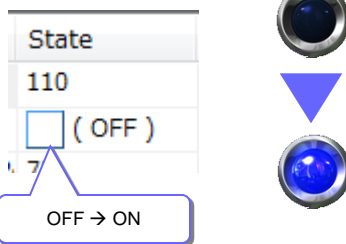
1. Switch Operation

Switch operation can be confirmed with a mouse click.

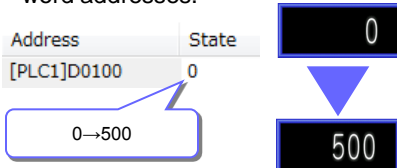


2. Lamp ON/OFF Operation

Lamp operation can be confirmed by changing the status of registered bit addresses.

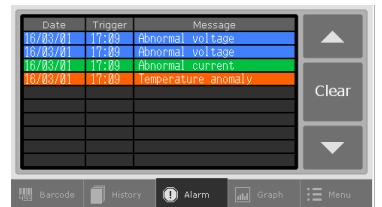


Operations of Data Displays and graphs can be confirmed by changing values of registered word addresses.



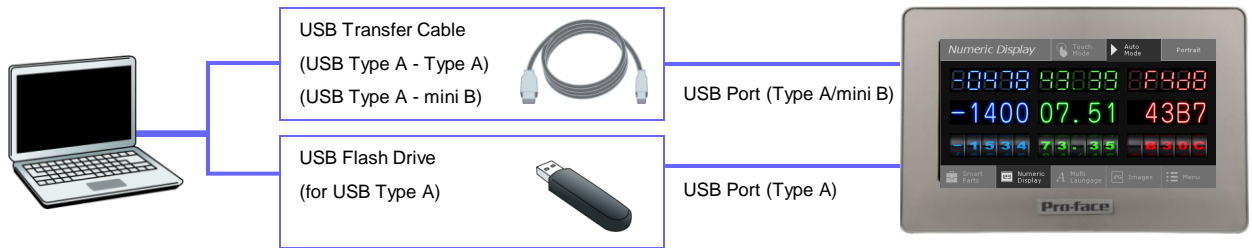
3. Alarm Messages

Alarms can be confirmed by changing the status of registered addresses.



Screen Transfer to GP4100 Series Color Model

Transfer screen data to a GP4100 Color Model unit using a USB Transfer Cable or USB flash memory.



Transfer with USB Transfer Cable

1. Start Transfer Tool

Click the [Transfer Project] icon to show the Transfer Tool window.

2. Transfer screen data

Click the [Send Project] icon to start the transfer. The transfer status is shown during the transfer.

Transfer with USB Flash Drive

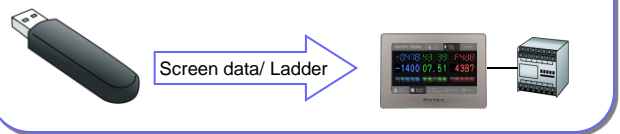
1. Start Transfer Tool

Click the [Transfer Project] icon to show the Transfer Tool window.

2. Save screen data to a USB flash drive

Click the [Memory Loader] icon to [Create Backup File]. Select the destination (a drive name) on PC to create the data to transfer.

If Toshiba Machine's PLC (TC mini/TC200) is connected, a ladder program in a USB flash drive can be transferred via a GP4100 Color Model unit.



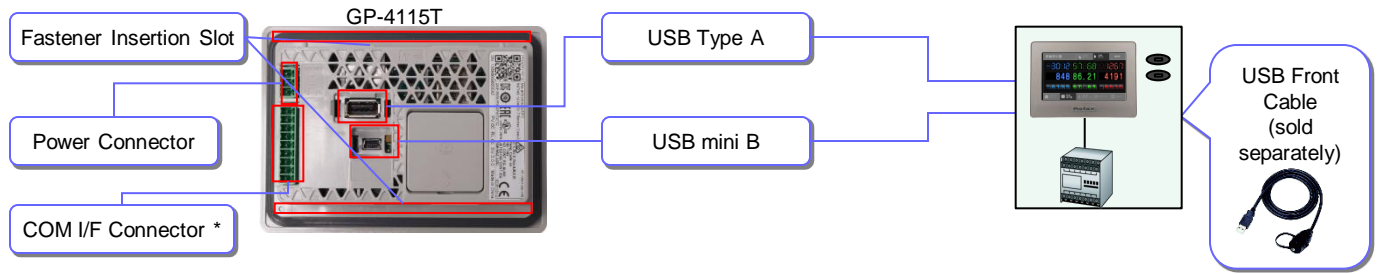
3. Download the data in a USB flash drive to a GP4100 Color Model unit

Open the System Menu on a GP4100 Color Model unit to download the screen data in a USB flash drive. The System Menu is shown at the bottom of the screen if each of two corners of the unit opposing each other are alternately pressed.

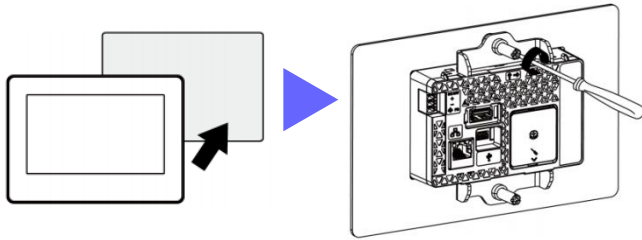
Precautions for Installation

Use an installation fastener to install a GP4100 unit on a operation panel and make wire connections for power and communication cables.

(Caution: To prevent electric shock, please make sure the power is not supplied while the above installations are made.)

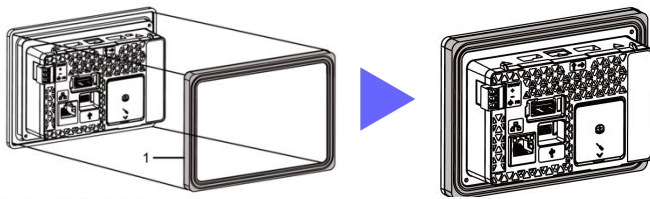


Precaution for Fastener



- Panel thickness acceptable: 1.5mm - 6.0mm [0.06 – 0.24in]

Precaution for Installing to panel for Monochrome Model (GP-410*)



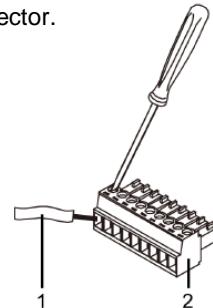
1 Panel Cutout Adapter

- The Panel Cutout Adapter (model number: PFXZCFAD31) is required.

Precaution for Communication Cable Connection

Cable connection side	Pin No.	RS-232C		
		Signal name	Direction	Meaning
	1	CI (RI)	Input	Called status display
	2	CD	Input	Carrier detect
	3	CS (CTS)	Input	Send possible
	4	RS (RTS)	Output	Request to send
	5	SG	-	Signal ground
	6	DR (DSR)	Input	Data set ready
	7	ER (DTR)	Output	Data terminal ready
	8	RD (RXD)	Input	Receive data
	9	SD (TXD)	Output	Send data

- Always disconnect the connector from this product before wiring the connector.



- 1 Communication cable
- 2 COM I/F Connector

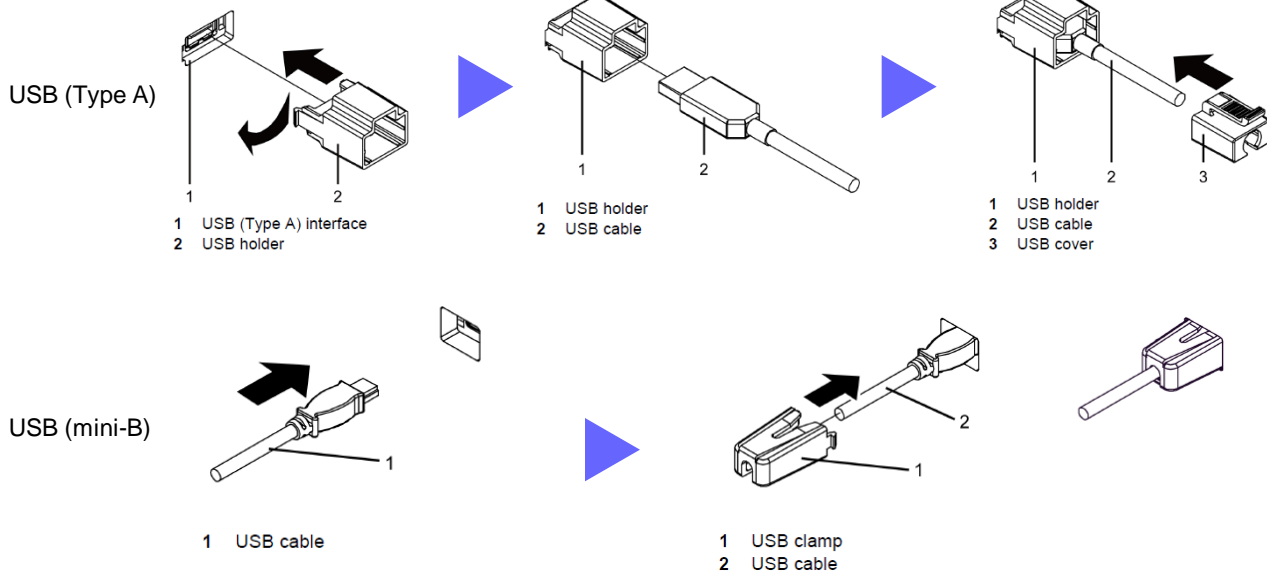
Cable connection side	Pin No.	RS-422/RS-485		
		Signal name	Direction	Meaning
	1	CSB	Input	Send possible B (-)
	2	CSA	Input	Send possible A (+)
	3	ERB	Output	Data terminal ready B (-)
	4	ERA	Output	Data terminal ready A (+)
	5	SG	-	Signal ground
	6	RDB	Input	Receive data B (-)
	7	RDA	Input	Receive data A (+)
	8	SDB	Output	Send data B (-)
	9	SDA	Output	Send data A (+)

Communication cable diameter	0.14...1.5 mm ² (AWG 28...16)
Conductor type	Simple or Stranded Wire
Conductor length	

Precaution for USB Cable Clamp (sold separately)

Two types of USB Cable Clamp: for Type A and for mini B.

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



Precaution for USB Front Cable (sold separately)

USB Front Cable allows for the use of USB interface without opening an operation panel.

USB Flash Drive (USB Type A)

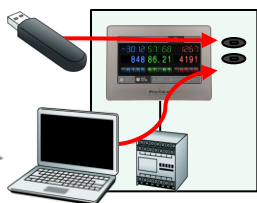
- Screen Transfer
- Ladder Transfer (Supporting only PLC of Toshiba Machine)

PC (USB mini B)

- Screen Transfer
- Ladder Transfer (Pass-through)

Easy data reading by easy settings of connecting a USB code reader to a USB port (Type A).

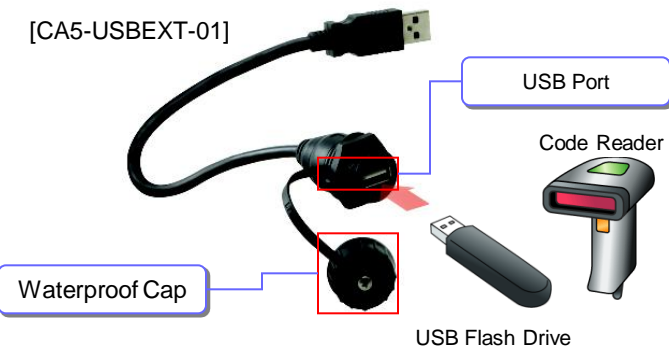
* When a USB code reader is used, the power should be supplied via a self-powered hub.



- Only if the waterproof cap is attached to this cable, IP65f is applied only to the front side.

- Fasten the waterproof cap tightly.

[CA5-USBEXT-01]



GP4100 Series Color Model Main Units

■ Units

Product Name	Model No.	Backlight	Display Type	Serial (COM1) / Ethernet	Input Voltage
GP-4114T	PFXGP4114T1D PFXGP4114T2D	White LED (Not user replaceable. When replacement is required, contact your local distributor)	4.3" TFT Color LCD	Ethernet	DC24V
GP-4115T	PFXGP4115T1D PFXGP4115T2D			RS-232C	
GP-4116T	PFXGP4116T1D PFXGP4116T2D			RS-422/485	

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