8 | Bar Code Settings

This chapter explains about "Barcode Settings" in GP-Pro EX, and the basic operations used to change them.

Please start by reading "8.1 Settings Menu" (page 8-2) and then turn to the corresponding page.
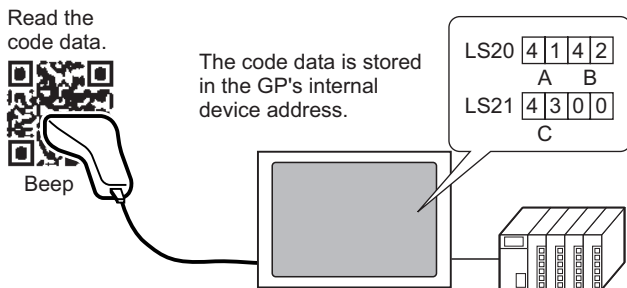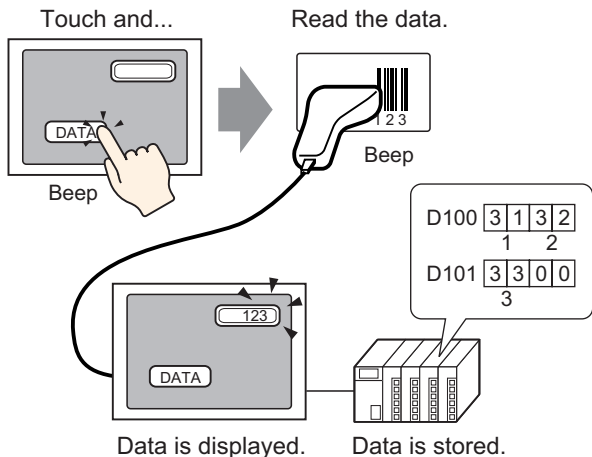
8.1 Settings Menu

Barcode readers are one of the widespread ID system for books, CDs, information devices, etc. You can use a barcode reader with the COM1 or USB interface supplied with the GP series main unit.

NOTE
• One barcode reader can be connected to each the COM1 and USB port, but when connecting two barcode readers at the same time and storing the code data in the Data Display parts or the internal device from both barcodes, the system may not work properly. Set the Data Display part to one barcode reader and the internal device to the other as a storage location.

Connecting a Barcode/Two-dimensional Code Reader

The code data read from a barcode/two-dimensional code reader can be stored in a device/PLC's device address through Data Display parts or can be stored in the GP's Internal Device address.

Touch and...   Read the data.

Beep

Beep

D100 | 3 | 1 | 3 | 2 |
        1   2
D101 | 3 | 3 | 0 | 0 |
            3

DATA   123

DATA

Data is displayed.   Data is stored.

Read the code data.

The code data is stored in the GP's internal device address.

LS20 | 4 | 1 | 4 | 2 |
        A   B
LS21 | 4 | 3 | 0 | 0 |
        C

Beep

) Setup Procedure (page 8-5)
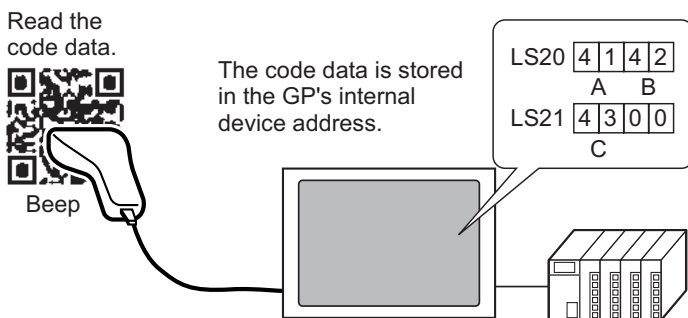
) Details (page 8-4)

8.2 Connecting a Barcode/Two-dimensional Code Reader

8.2.1 Details

The code data read from a barcode reader can be stored in a device/PLC's device address through Data Display parts or can be stored in the GP's internal device address.
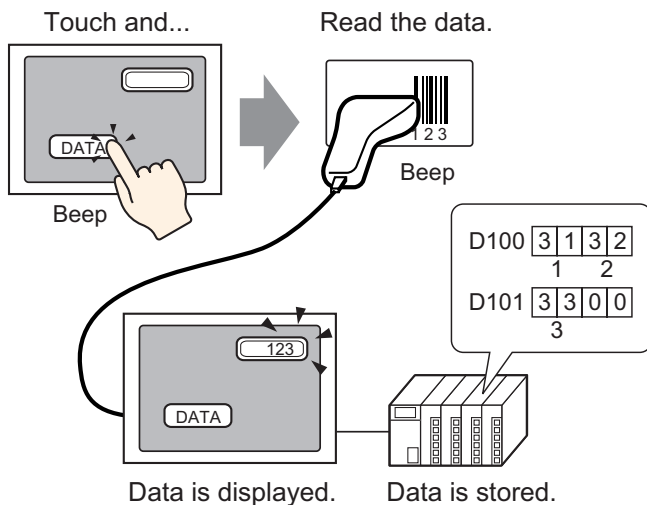
The code data read from a two-dimensional code reader can be stored in a device/PLC's device address through data display parts or can be stored in the GP's internal device address.
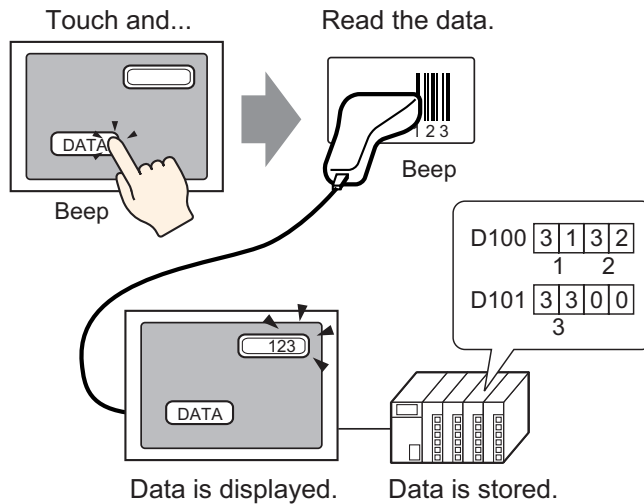
8.2.2 Setup Procedure

■ Barcode

Configure settings to display the code data read from a barcode reader in Data Display parts and store it starting from the device/PLC's D100 address.
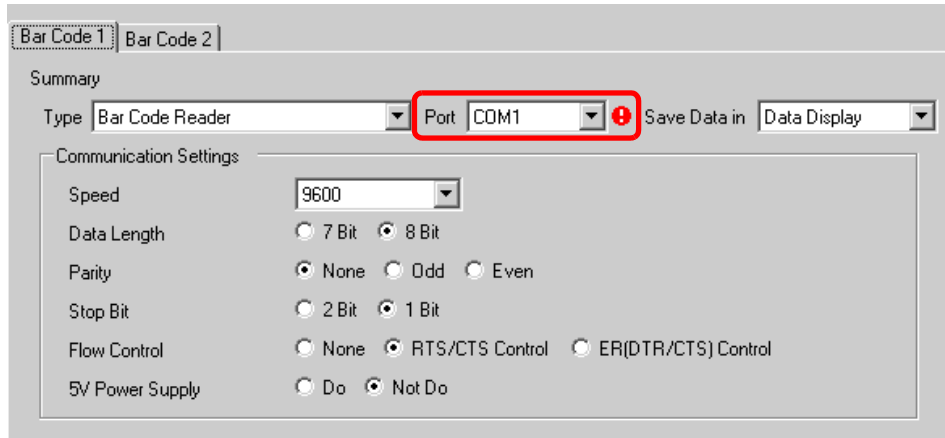
1 Configure settings to communicate with the barcode. Select the [Project (F)] menu - [System Settings (C)] command, or click 🖥 and then the System Settings Window's [Bar Code Settings]. The following [Bar Code Settings] screen is displayed .
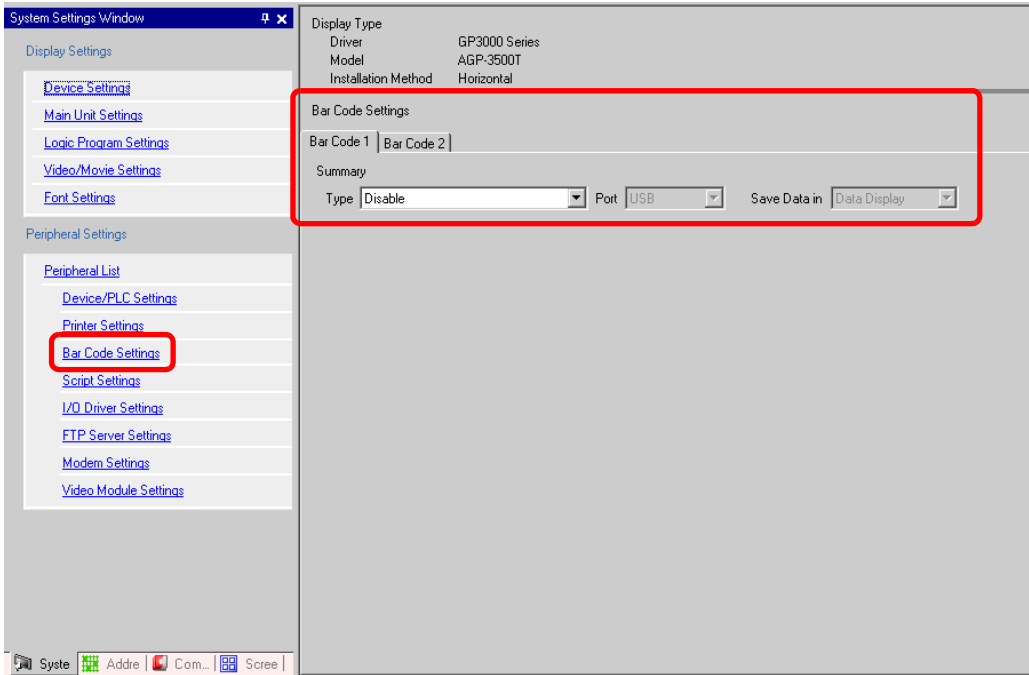
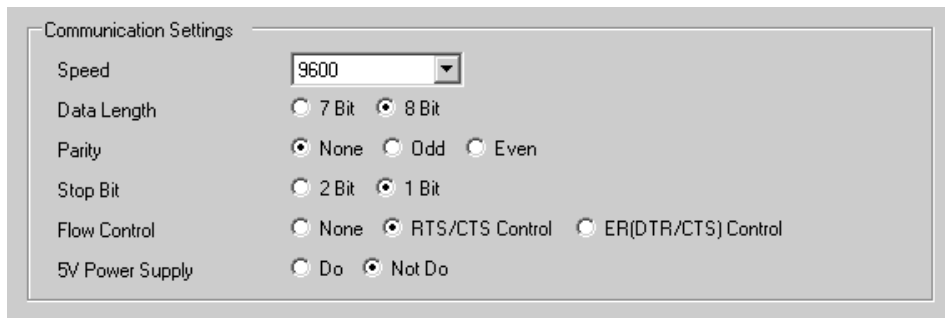2 Select [Bar Code Reader] in [Type].
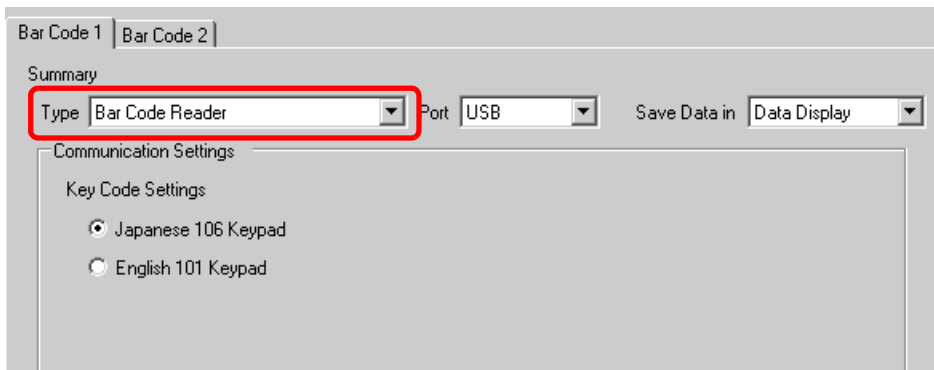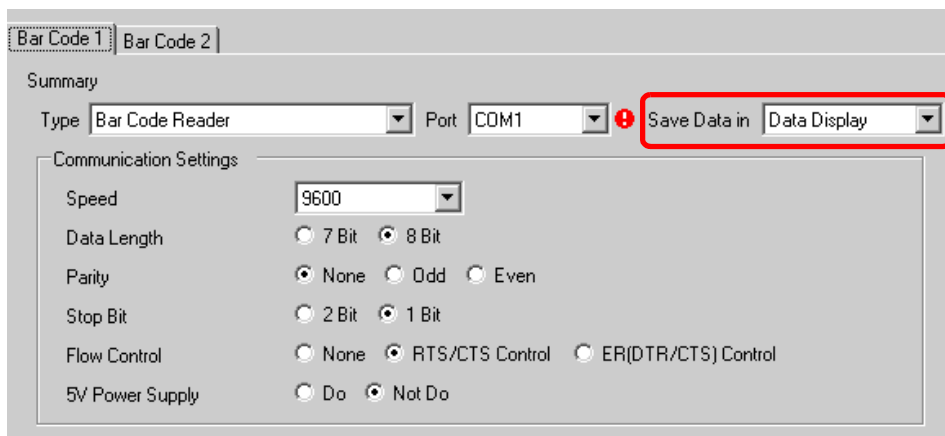
3 Select a port to connect to in [Port].

NOTE
• If the port is also used for other devices/PLCs, is displayed to the right of the [Port] as above.
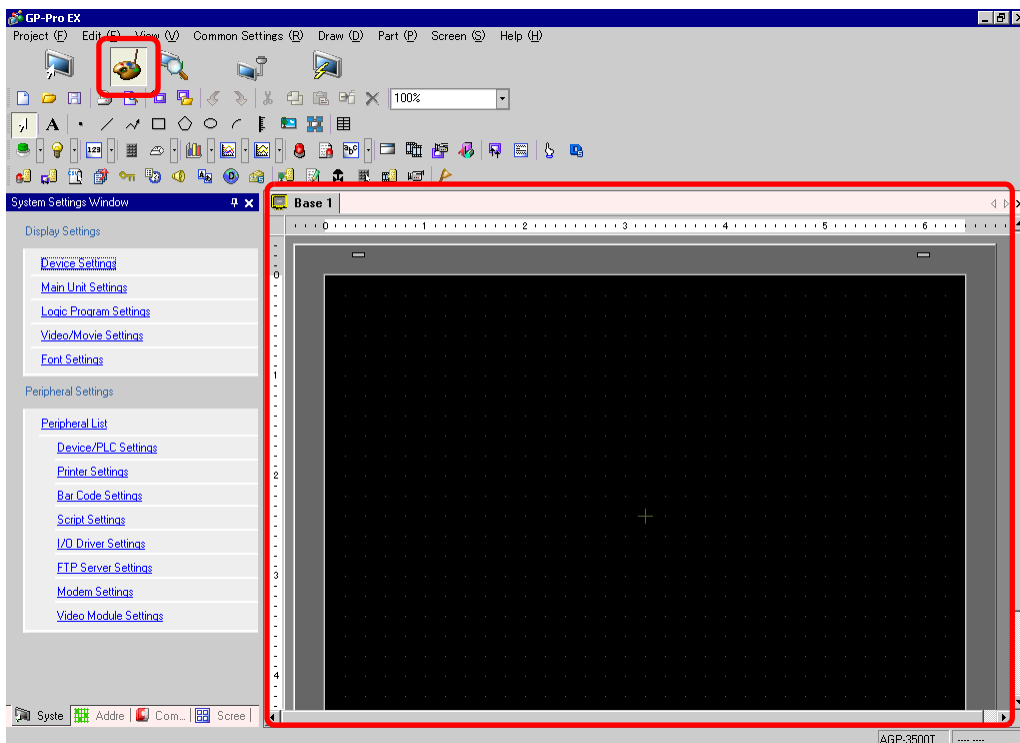
4 In [Communication Settings], set [Speed], [Data Length], [Parity], [Stop Bit], [Flow Control] and [5V Power Supply].

5 Select a data storage location in [Save Data in]. The settings to communicate with the barcode are complete.

6 Set the Data Display part to display the data read from the barcode. Click to display the following editing screen.

7 Select the [Part (P)] menu - [Data Display (D)] option - [Text Display] command, or click to place a Data Display part on the screen.

8 Double-click the Data Display Parts, and the settings dialog box will open. Clic [Text Display].

9 Select the Data Display shape from [Select Shape].

10 Click the [Display Settings] tab and set the [No. of Display Char.] from 1 to 100 for the number of single-byte characters. For two-byte characters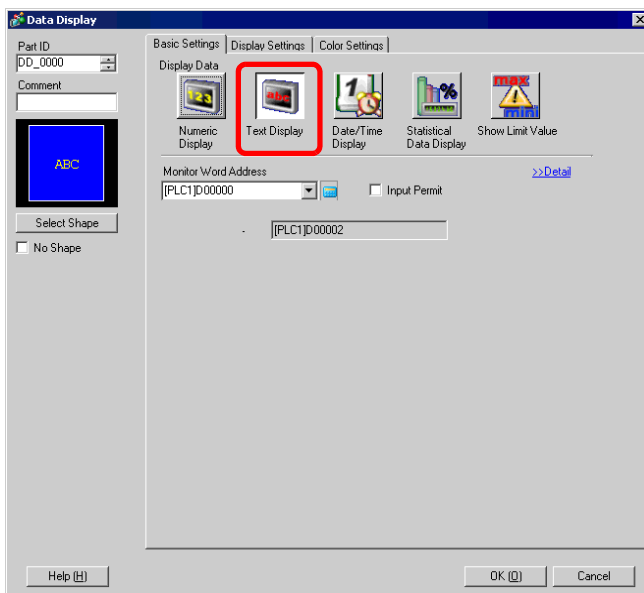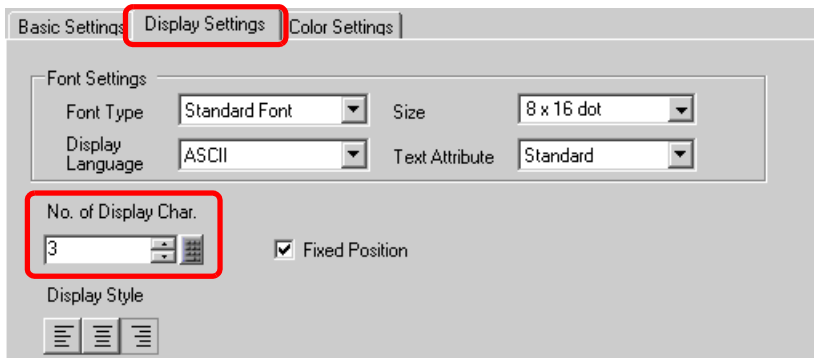, when the number of display characters is 2, it corresponds to one two-byte character. (e.g. No. of single-byte characters "5")

11 Click the [Basic Settings] tab and set the address where the value read from a barcode reader is stored (e.g.: D100) in [Monitor Word Address].
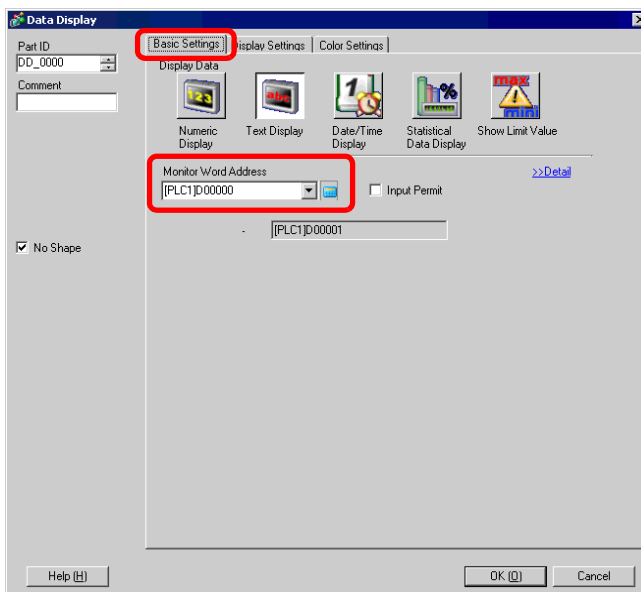
Click the icon to display an address input keypad.

Select device "D", input "100" as the address, and press the "Ent" key.
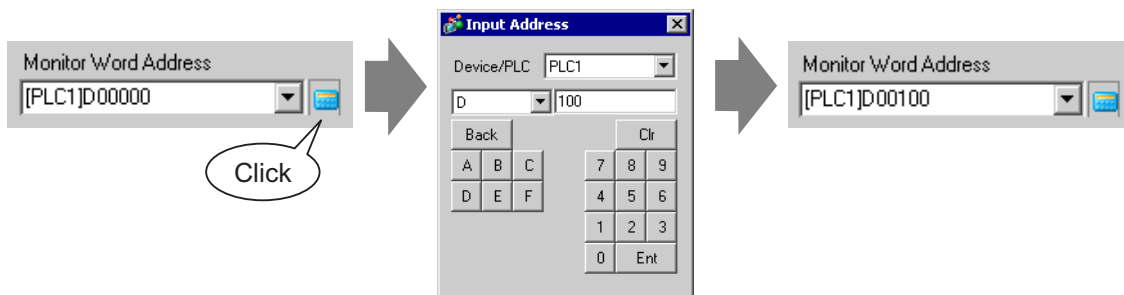
12 The address after the number of display characters used from the [Monitor Word Address] is displayed.
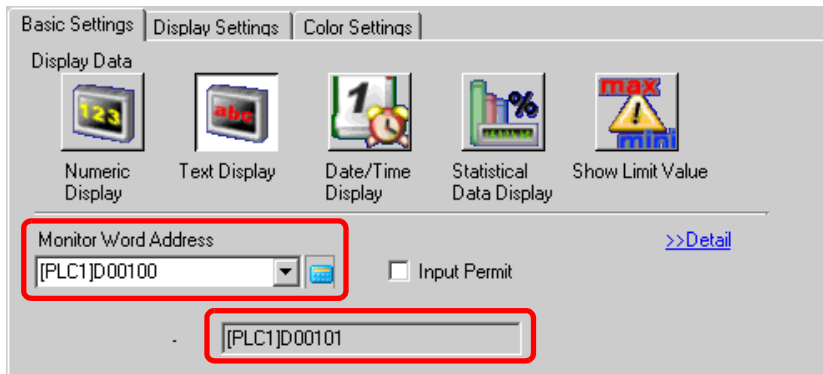
NOTE • One word is used for two single-byte alphanumeric characters or for one-byte character. In the above example, two words will be used because "3" single-byte characters are set to the [No. of Display Char.] in Step 10.

13 Put a check mark next to the [Input Permit] box. If [Input Permit] is checked, the [Input Permit] tab will be displayed for text data input.
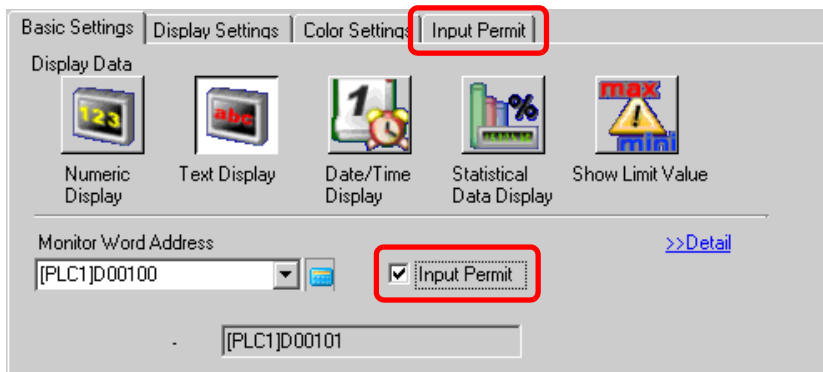
14 Click the [Input Permit] tab, select [Bit] for the input method, and click [Detail].
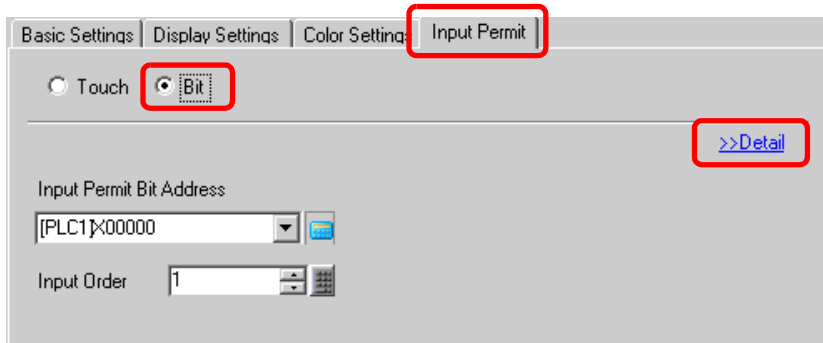
15 Put a check mark next to the [Input Barcode] box.

16 In [Input Style], select the processing method to overwrite the read code data.

17 If necessary, set the Data Display part's color in the [Color Settings] tab or text in the [Display Settings] tab, and click [OK].

NOTE
• You have to set the bit switch to permit input to Data Display parts.
) "11.3 Inverting a Bit ON/OFF" (page 11-7)
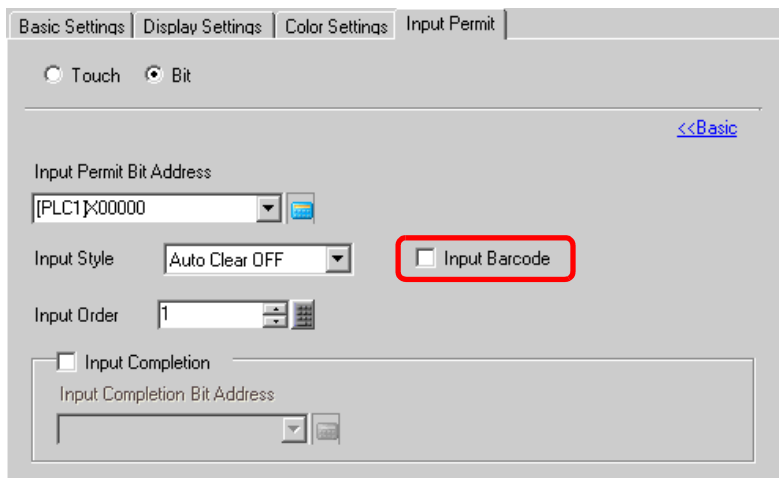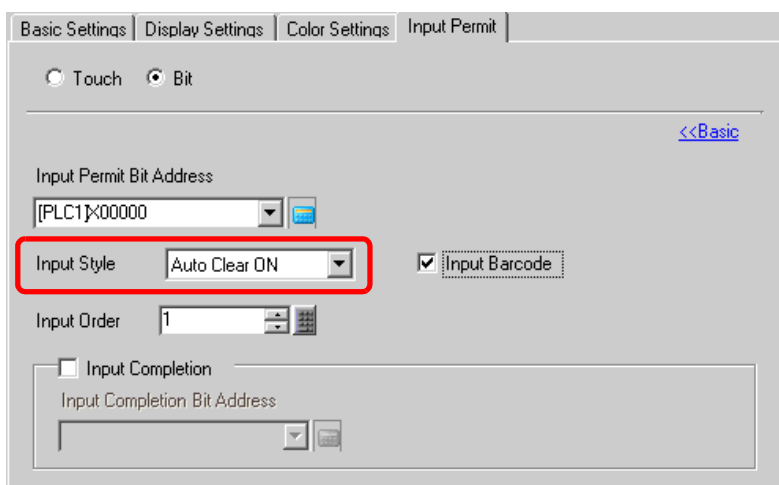• One barcode reader can be connected to each the COM1 and USB port, but when connecting two barcode readers at the same time and storing the code data in the Data Display parts or the internal device from both barcodes, the system may not work properly.Set the Data Display part to one barcode reader and the internal device to the other as a storage location.
• If [Input Barcode] is not set in the [Input Permit] tab for the Data Display part, the read code data is not written to the Data Display part.
• If the number of the read code data exceeds the [No. of Display Char.] set in a Data Display part, the data cannot be properly displayed on the Data Display part. The maximum number of display characters that can be set in a Data Display part is 100 (single-byte) characters.

■ **Two-Dimensional Code Reader**

Configure settings to store the code data read from a two-dimensional code reader from LS20 in the GP.

NOTE
- For more details, refer to the settings guide.
  ☞ "8.4.1 [Bar Code Settings] Setting Guide" (page 8-20)

Read the
code data.

The code data is stored
in the GP's internal
device address.

LS20 | 4 | 1 | 4 | 2 |
       A   B
LS21 | 4 | 3 | 0 | 0 |
            C

Beep
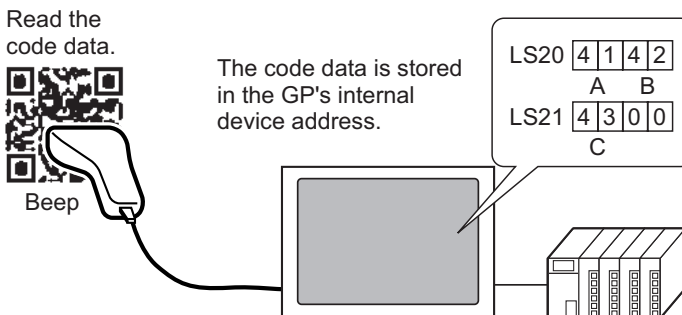
1 Select the [Project (F)] menu - [System Settings (C)] command, or click 🖥 and then the System Settings Window's [Bar Code Settings]. The following [Bar Code Settings] screen is displayed.
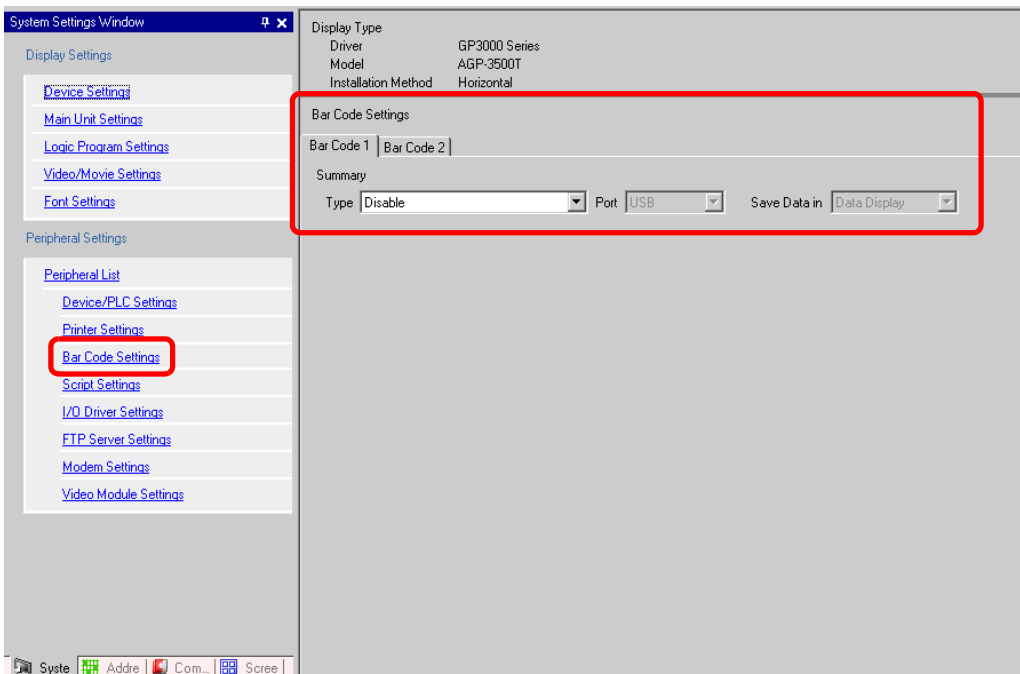
2 Select [Two-Dimensional Code Reader] in [Type].
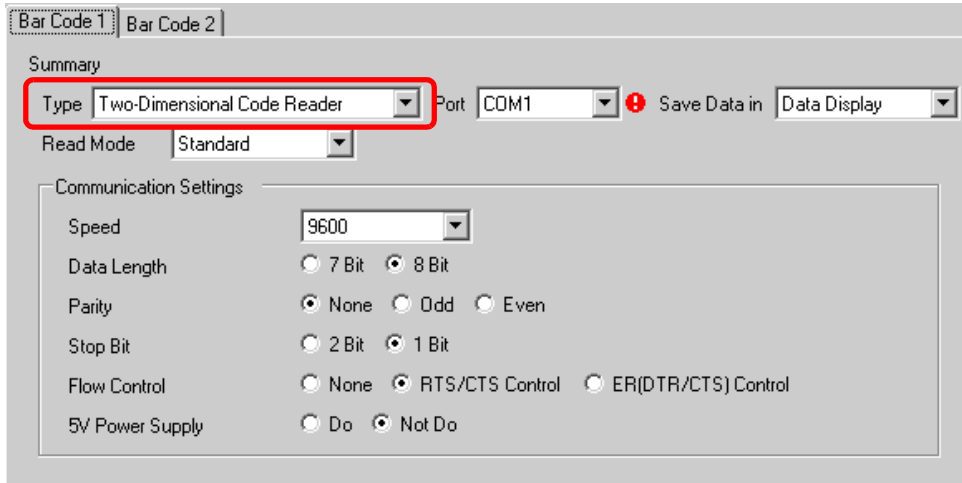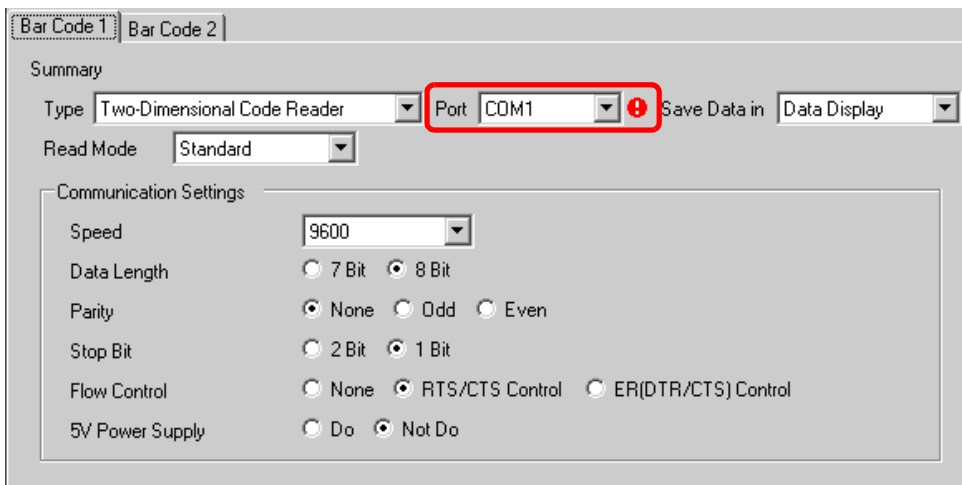
3 Select a port to connect to in [Port].

NOTE
• If the port is also used for other devices/PLCs, ⊕ is displayed to the right of the [Port] as above.
• A two-dimensional code reader can be set only to COM1.

4 Set the [Read Mode].
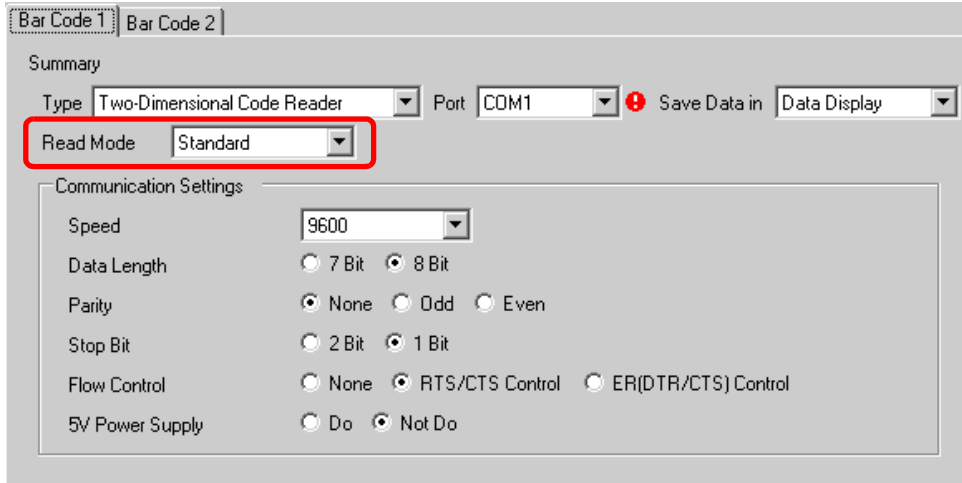
5 In [Communication Settings], set [Speed], [Data Length], [Parity], [Stop Bit], [Flow Control] and [5V Power Supply].
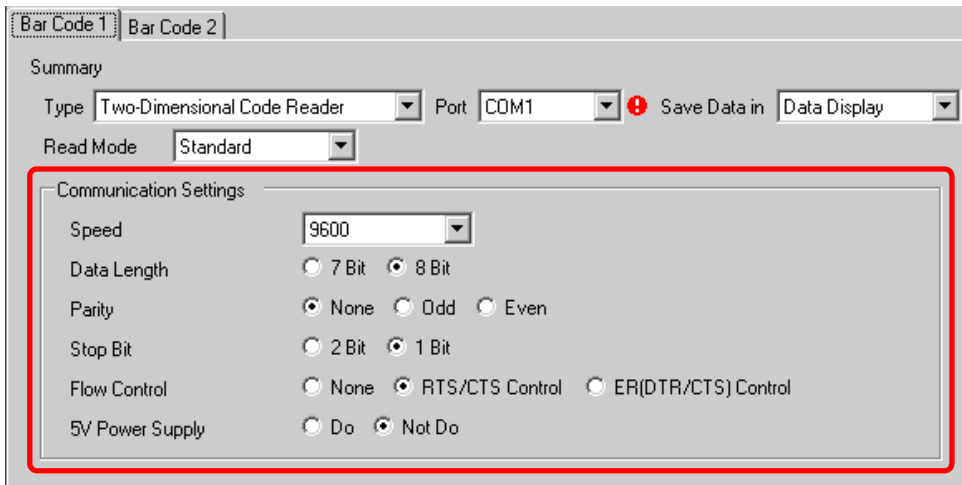
6 Select a data storage location in [Save Data in].
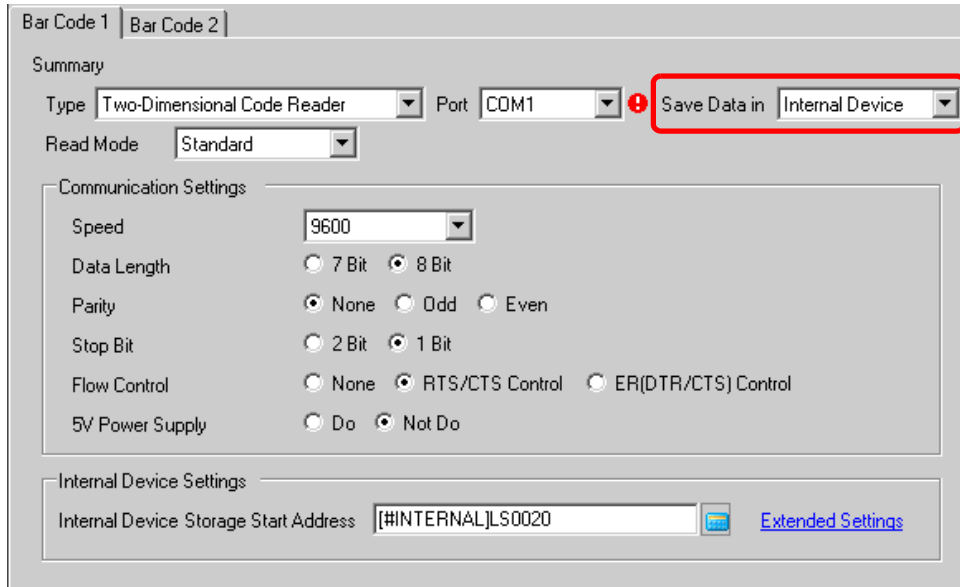
7 In [Internal Device Storage Start Address], set the data storage internal device's start address (e.g.: LS20).

Internal Device Storage Start Address [#INTERNAL]LS0020

Click the icon to display an
address input keypad.

Click

Input Address

Device/PLC #INTERNAL

LS | 20

Back | Clr

7 8 9
4 5 6
1 2 3
0 Ent

Select the device " LS ", input
" 20 " in the address, and
press the " Ent " key.

Internal Device Storage Start Address [#INTERNAL]LS0020
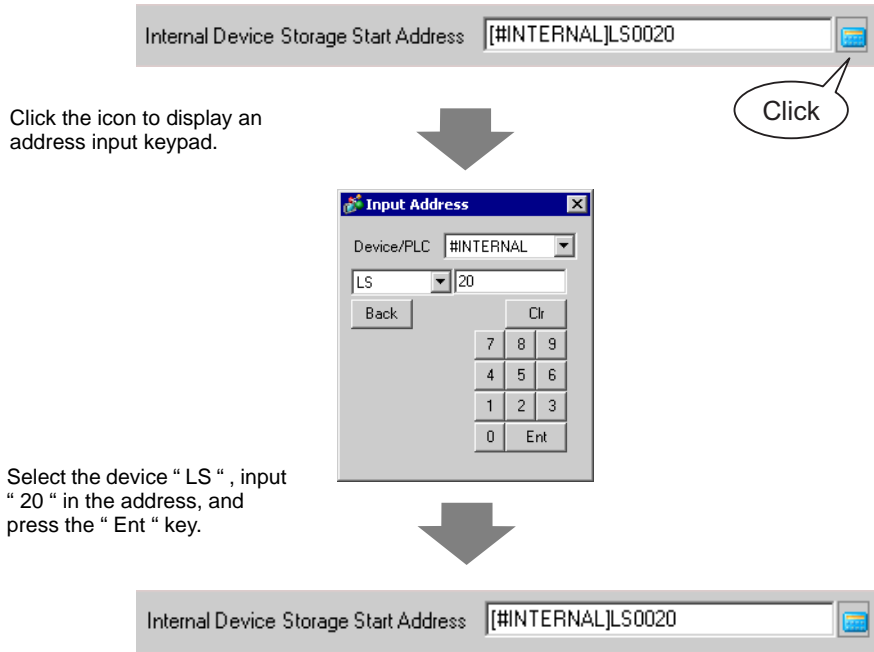
NOTE
• For the internal device's address setting range, refer to"8.3 Structure ■ Storing
Code Data in the GP Internal Device Address ◆ The Range of Internal Device
Addresses" (page 8-19).

8 Click [Extended Settings] to display the [Extended Settings] dialog box, and set [Read Completion Bit], [Data Size] and [Initialization Settings].
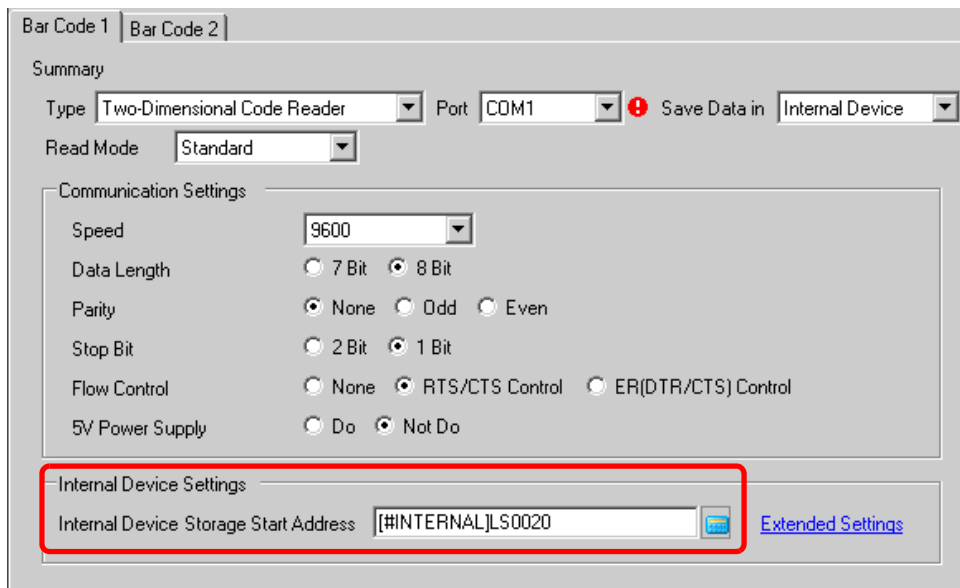
Extended Settings

Read Completion Bit
□ Enable   Bit Address

Data Size
⊙ Unlimited   ○ Specified Size   1

Initialization Settings
⊙ None   ○ Zero Clear   ○ Space Clear

OK (O) | Cancel
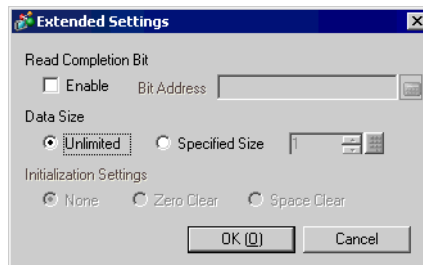
NOTE
• When [Read Completion Bit] is not set, the data is overwritten if read
continuously.
• If [Read Completion Bit] is set, turn OFF the [Read Completion Bit] when input
is complete. The GP will not read code data if trying to read the next code data
without turning the completion bit OFF.

8.3 Structure

■ When storing the code data in the connected device's device address

Sets the Data Display part and stores the read code data in the Monitor Word Address that has been set to the Data Display part.

Touch and...   Read the code data.

Beep

Beep

Code data is displayed.

The code data is stored in the PLC's device address.

123

DATA

D100 | 3 | 1 | 3 | 2
　　　　　1　　　2
D101 | 3 | 3 | 0 | 0
　　　　　3
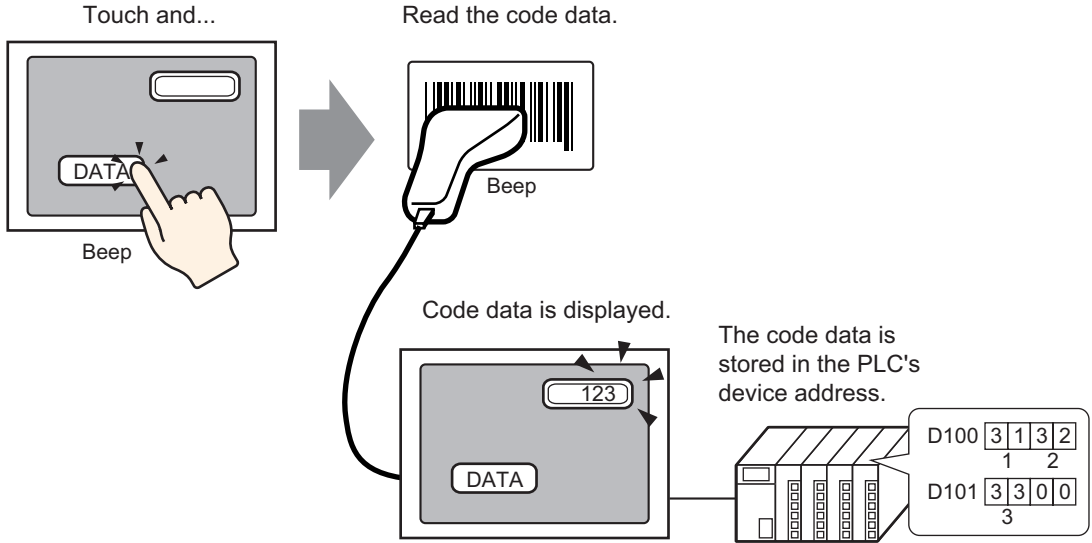
NOTE
• If [Bar Code Settings] is not set to [Input Permit] in the Data Display part, the read code data is not written to the Data Display part.

■ Storing Code Data in the GP Internal Device Address

Sets the [Internal Device Storage Start Address] and stores the code data that has been read sequentially from it.
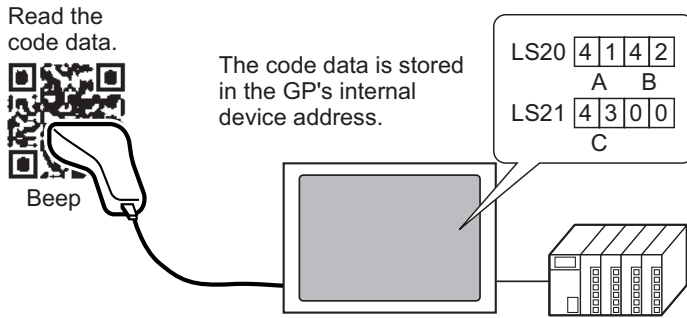
◆ Internal Device Storage Start Address

The read code data is stored from the [Internal Device Storage Start Address] in the following order.

No. of Read Data (No. of Bytes)   : The number of read data is stored by the number of bytes.

Status   : If the code data is not read normally or is not written to the internal device address, an error code is stored.
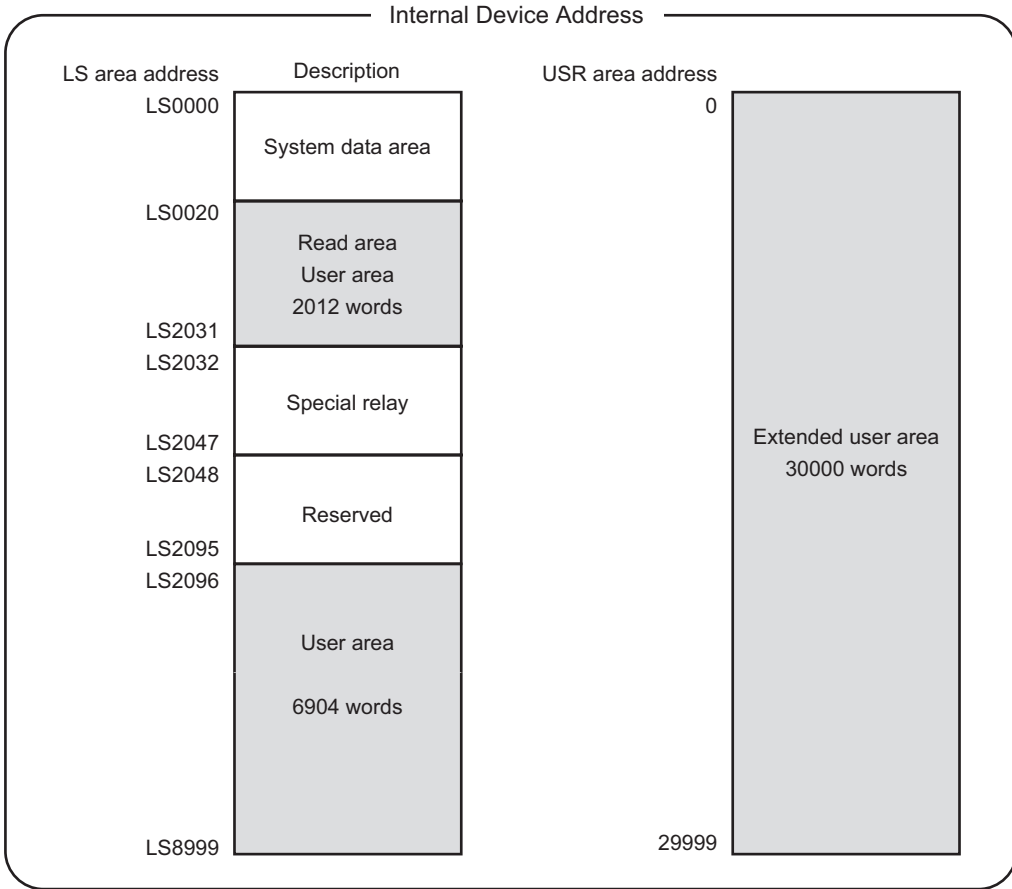
Error Contents

0000h	-
0001h	Read succeeded normally.
0002h	Code data read error. Not stored in internal device address.
0003h	Received code data exceeding the maximum number of bytes that the internal device address can store. The bytes of code data set in the [Extended Settings] - [Data Size] - [Assigned Size] is stored in the internal device address. In this case, the read completion bit address (when Yes is set) turns ON. The portion of code data exceeding the range is not written to the internal device address.

NOTE

• The read two-dimensional code data is stored according to the [Text Data Mode] set in the GP.

☞ "5.13.6 [System Settings Window] Settings Guide ■ [Device/PLC Settings] Settings Guide" (page 5-124)
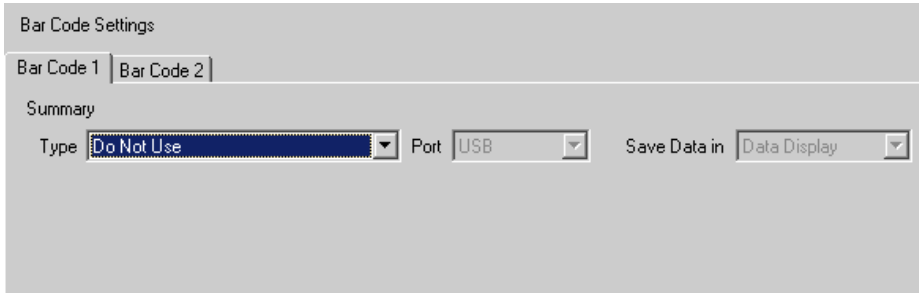
◆ The Range of Internal Device Addresses

Internal Device Address

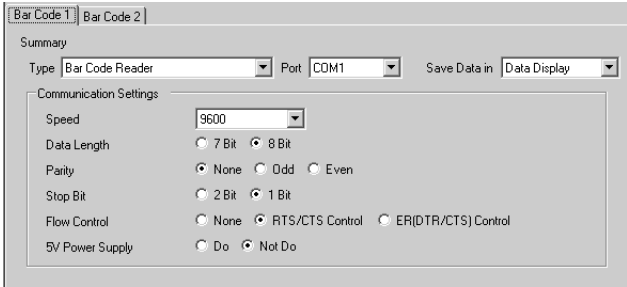| LS area address	Description	USR area address
LS0000	System data area	0
LS0020	Read area User area 2012 words	
LS2031		
LS2032	Special relay	
LS2047		Extended user area 30000 words
LS2048	Reserved	
LS2095		
LS2096	User area 6904 words	
LS8999		29999

NOTE
• If the number of read code data is outside the above-mentioned range, the code data within the shaded range is written to the internal device address. However, the status is 0003h (Received code data exceeding the maximum number of bytes allowed for LS storage).
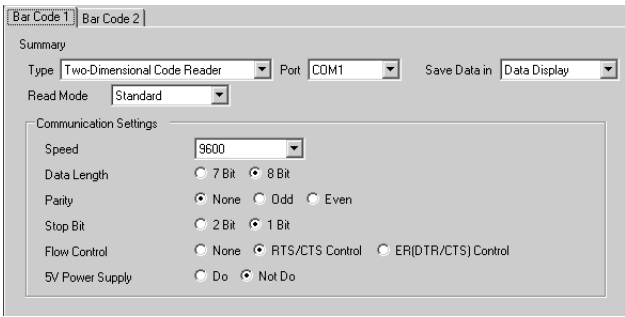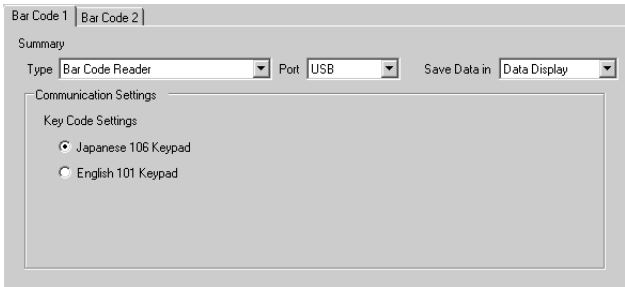
8.4 Settings Guide

8.4.1 [Bar Code Settings] Setting Guide

Bar Code Settings

Bar Code 1 | Bar Code 2 |

Summary

Type [Do Not Use ▼] Port [USB ▼] Save Data in [Data Display ▼]

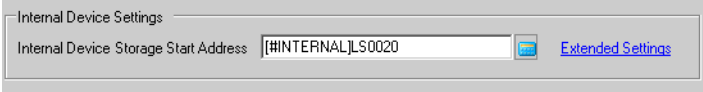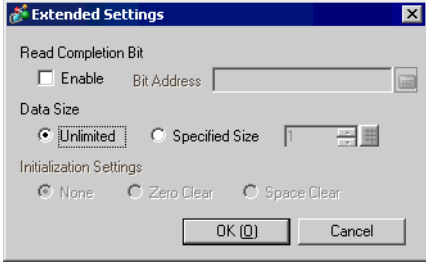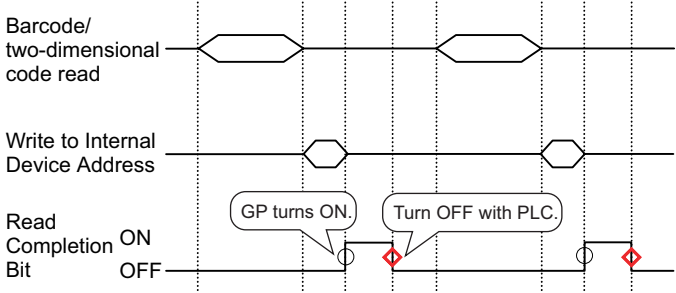| Setting	Description

Type	Select the barcode type to connect.
	• Do Not Use
	  Select this when not connecting a barcode reader.
	• Bar Code Reader
	  Select this when using a barcode reader.
	• Two-dimensional Code Reader
	  Select this when using a two-dimensional code reader.

Do Not Use	Select this when not using a barcode/two-dimensional code reader.
Bar Code Reader	Select this when using a barcode reader.
Port	Select the port to connect from [COM1] or [USB].
COM1	Select this when connecting to COM1.

Continued

Setting						Description
Type	Bar Code Reader	Port	COM1	Communica-tion Settings		Configure communication settings.
					Speed	Select a communication speed from [2400], [4800], [9600], [19200], [38400], [57600] or [115200].
					Data Length	Choose the communication data length from [7 bit] or [8 bit].
					Parity	Select the communication parity bit from [Even], [Odd] or [None].
					Stop Bit	Choose the communication stop bit length from [1 bit] or [2 bit].
					Flow Control	Select the communication control method from [None], [RTS/CTS Control], or [ER(DTR/CTS) Control].
					5V Power Supply	Designate whether or not to set the 5V power supply.
			USB			Select this when connecting to the USB port.
				Communica-tion Settings		Configure communication settings.
					Key Code Settings	Select the text type that the barcode reader reads from [Japanese 106 Keypad] or [English 101 Keypad].
		Two-Dimensional Code Reader				Select this when using a two-dimensional code reader.
			Port			Set the port to connect to2dimentional code readercan be set only to COM1.
				COM1		Select this when connecting to COM1.

Continued

Setting					Description
Type		Port	COM1	Communica-tion Settings	Configure communication settings.
				Speed	Select a communication speed from [2400], [4800], [9600], [19200], [38400], [57600] or [115200].
				Data Length	Choose the communication data length from [7 bit] or [8 bit].
				Parity	Select the communication parity bit from [Even], [Odd] or [None].
				Stop Bit	Choose the communication stop bit length from [1 bit] or [2 bit].
				Flow Control	Select the communication control method from [None], [RTS/CTS Control], or [ER(DTR/CTS) Control].
				5V Power Supply	Designate whether or not to set the 5V power supply.
	Two-Dimensional Code Reader	Read Mode			Select the read mode from [Standard], [DENSO], or [Tohken]. • Default

| Code Data | Terminator (CR) |

In [Standard] mode, binary data cannot be handled. In this mode, other makers' two-dimensional code readers can read data in the above setting. • DENSO QR Code Reader

Header	Code Mark	No. of Digits (4 bytes)	Code Data	Terminator	BCC
STX (Fixed)	Has code	Has code	—	CR (Fixed)	Has code

In [DENSO QR Code Reader] mode, binary data can be handled. But in this case, the above communication format needs to be set to a two-dimensional code reader as well. • Tohken Code Reader

Header	Code Data	Terminator
STX (Fixed)	—	CR+LF (Fixed)

In [Tohken Code Reader] mode, the above communication format needs to be set to a two-dimensional code reader as well. Binary data cannot be handled in [Tohken Code Reader] mode. Unlike DENSO's, the Tohken code reader does not check the number of digits or BBC and determines that the code data ends at the CR+LF code in the code data. |
| Save Data in | | | | | Select the read code data storage location from [Data Display] or [Internal Device]. |
| | Data Display | | | | Stores the read code data in the [Monitor Word Address] set on the Data Display part.
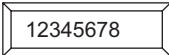
Save Data in [Data Display ▼] |

Continued

Setting						Description
Save Data In	Internal Device					Store the read code data in the Internal Device Address. Save Data in [Internal Device ▼]
		Internal Device Settings				Configure settings to store the read code data in the internal device. Internal Device Settings Internal Device Storage Start Address [#INTERNAL]LS0020 ▦ Extended Settings
			Internal Device Storage Start Address			Set the internal device address to store the read code data.
			Extended Settings			Extended Settings ☒ Read Completion Bit ☐ Enable Bit Address [ ] ▦ Data Size ⦿ Unlimited ○ Specified Size [1 ⇅] ▦ Initialization Settings ⦿ None ○ Zero Clear ○ Space Clear [OK (O)] [Cancel]
				Read Completion Bit	Enable	Designate whether or not to turn ON the read completion bit address if the entire code data has been written to the internal device address. **NOTE** • When [Read Completion Bit] is not set, the code data is overwritten if read continuously.
					Bit Address	Set the read completion bit address. **NOTE** • Return this bit to OFF after input has been completed.The GP will not read code data if trying to read the next code data without turning the read completion bit OFF. • The barcode/two-dimensional code's read timing and the [Read Completion Bit Address]'s action are as follows: Barcode/two-dimensional code read Write to Internal Device Address Read Completion Bit GP turns ON. Turn OFF with PLC. ON OFF ○ =GP turns ON. ◇=Return the bit to OFF.

Setting						Description
Save Data In	Internal Device	Internal Device Settings	Extended Settings	Data Size	Unlimited	Set the code data size stored in the internal device address at read time to unlimited. **NOTE** • If the read code data exceeds the enabled area, the excess data will not be written.
					Specified Size	Set the code data size stored in the internal device address at the read time from 1 to 9999. **NOTE** • If the read code data exceeds the [Specified Size], the excess data will not be written to the internal device address.

<div align="right">Continued</div>

Setting					Description
Save Data In	Internal Device	Internal Device Settings	Extended Settings	Initialization Settings	Select the processing method when overwriting the read data code data from [None], [Zero Clear] or [Space Clear]. e.g.) If the code data "ABCDE" is stored to the previously stored code data "12345678", the [Data Size] is 8 bytes. Previous Display: The 8-byte code data "12345678" is stored. Current Display: Reads the 5-byte code data "ABCDE". • For [None] • For [Zero Clear] (data clear with Null) • For [Space Clear]

8.5 Restrictions

- If the [Save Data in] is set to [Internal Device] and [Read Completion Bit] is set, turn OFF the [Read Completion Bit] when input is complete. The GP will not read code data if trying to read the next code data without turning the read completion bit OFF.
- When the [Parity]is[None] and the communication speed settings for the barcode reader are different from those of the GP, the system may read invalid data because it cannot detect errors. Use the same communication settings for both the devices.
- When [Read Completion Bit Address] is not set, the code data is overwritten if read continuously.
- If switching between screens while inputting, the switching process takes priority and the data being input is ignored.
- If [Bar Code Settings] is not set in the [Input Permit] tab for the Data Display part, the read code data is not written to the Data Display part.
- If the number of the read code data exceeds the [No. of Display Char.] set in a Data Display part, the data cannot be properly displayed on the Data Display part. The maximum number of display characters that can be set in a Data Display part is 100 (single-byte) characters.
- One barcode reader can be connected to each the COM1 and USB port, but when connecting two barcode readers at the same time and storing the code data in the Data Display parts or the internal device from both barcodes, the system may not work properly.Set the Data Display part to one barcode reader and the internal device to the other as a storage location.