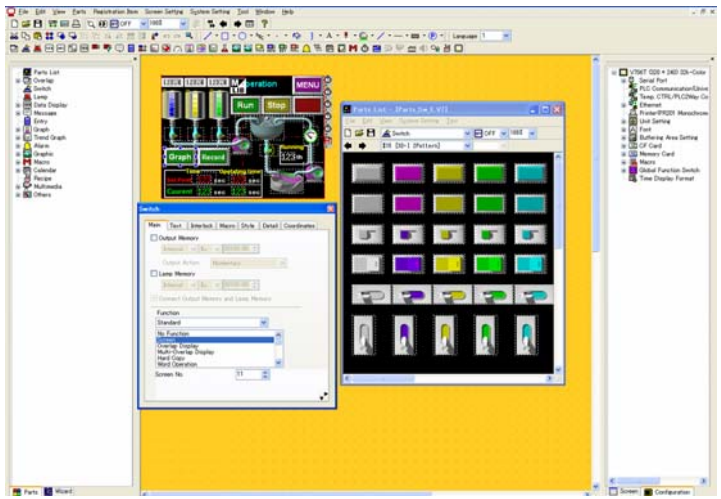
MONITOUCH

V-SFT ver.5 Tutorial



Basic Operation

e-Front runners

Hakko Electronics Co., Ltd.

Contents

The materials used in this Tutorial are:

- V-SFT ver.5
- MONITOUCH V806 color type (QVGA)
- General Modbus RTU driver

1. Preparation

1. Starting V-SFT

   “Edit Model Selection” to “Comm. Parameter” setting

2. Outlook of Ver.5 screen

   Outlook of Ver.5 and customizing

3. Drawing lines and rectangles

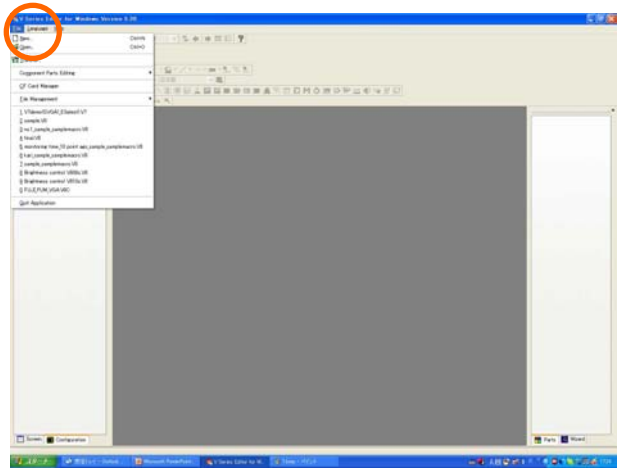
4. Placing “Text”

5. Saving screen data

6. Transferring screen data to MONITOUCH

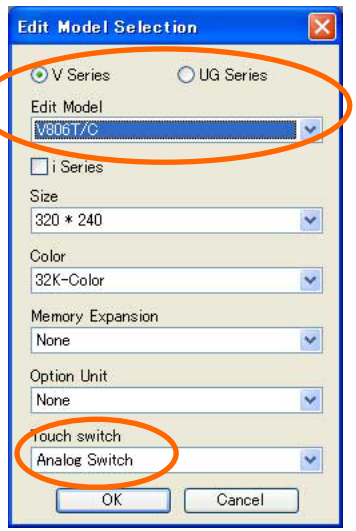
1. Starting V-SFT “Edit Model Selection” to “Comm. Parameter” setting

1) Start V-SFT



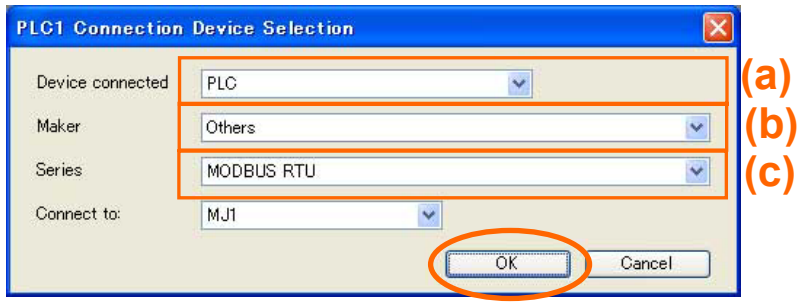
Go to [File] > [New] OR Click [New] icon

2) Edit Model Selection



Select [V806T/C] > Click [OK]

3) PLC select



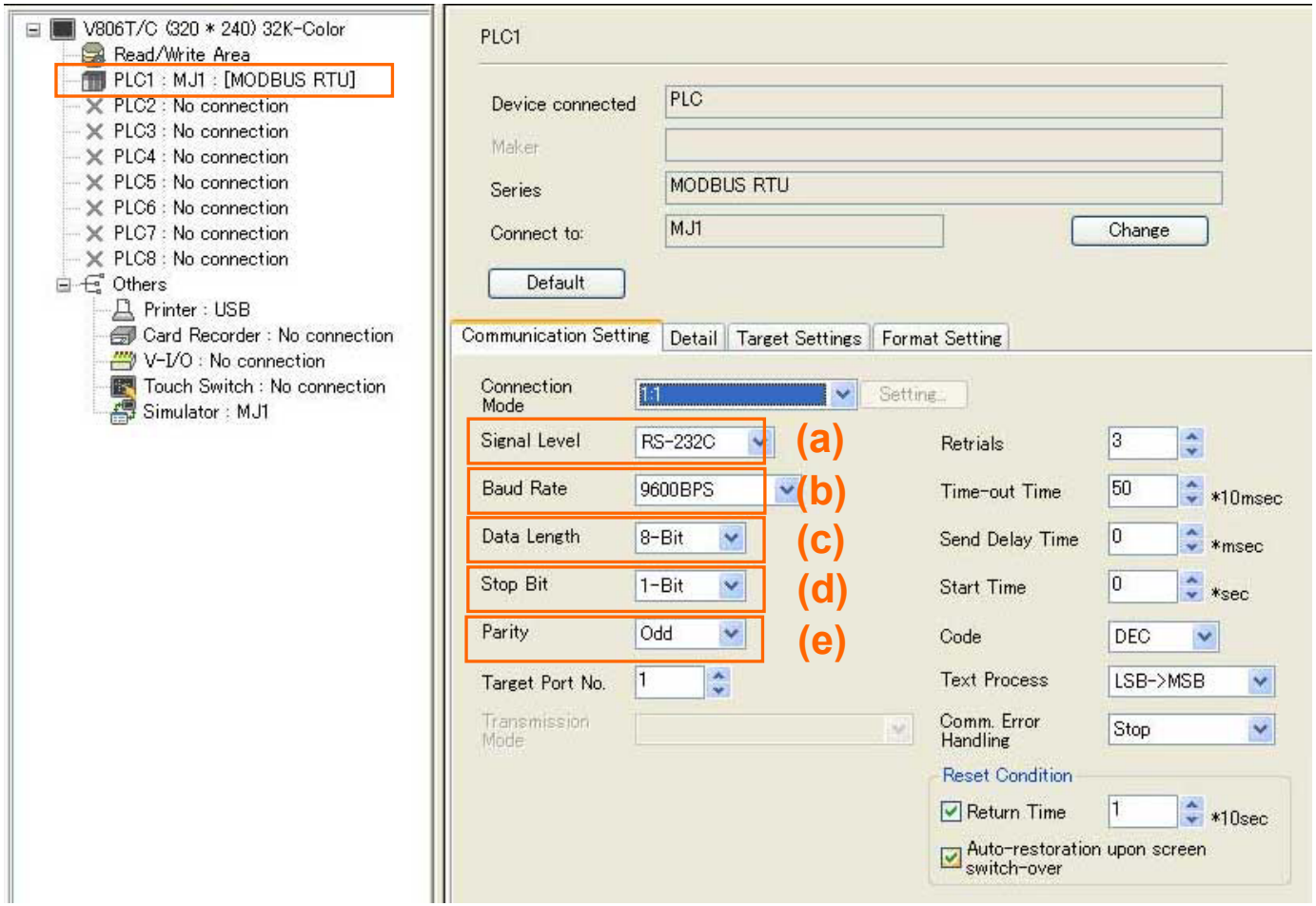
(a) Device Connected□ PLC

(b) Maker□ Others

(c) Series□ Modbus RTU

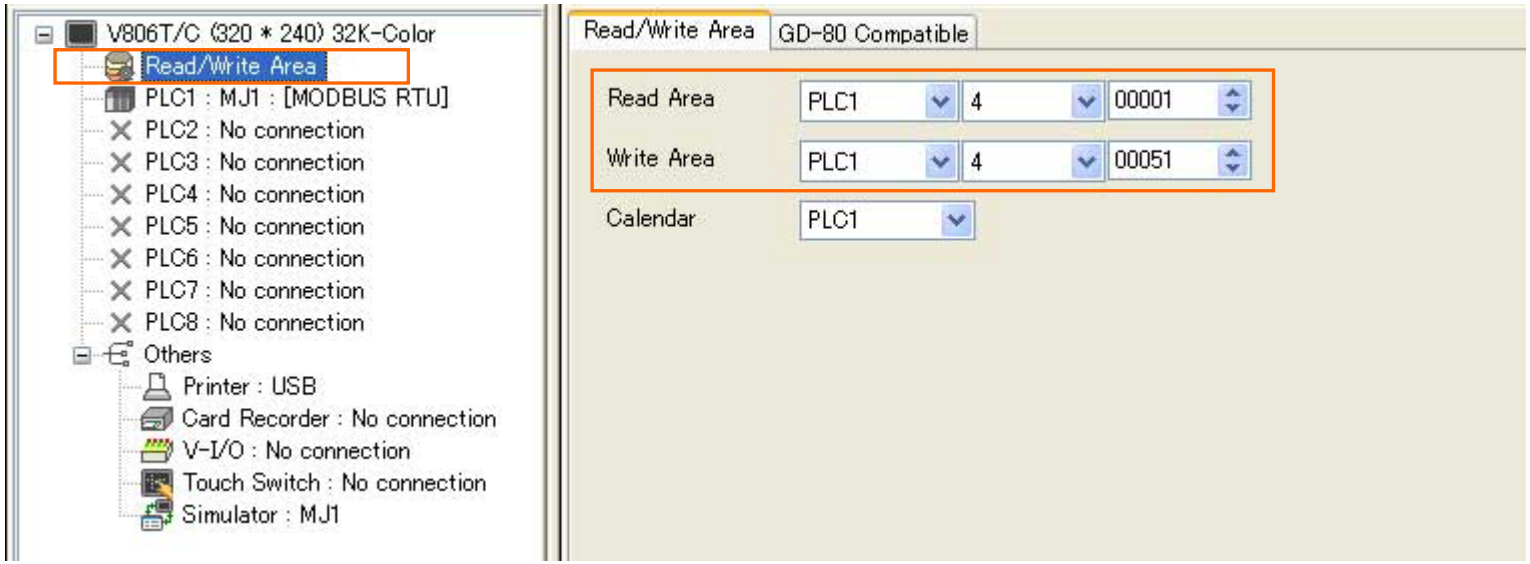
> Click [OK]

4) Device connection setting [PLC1]



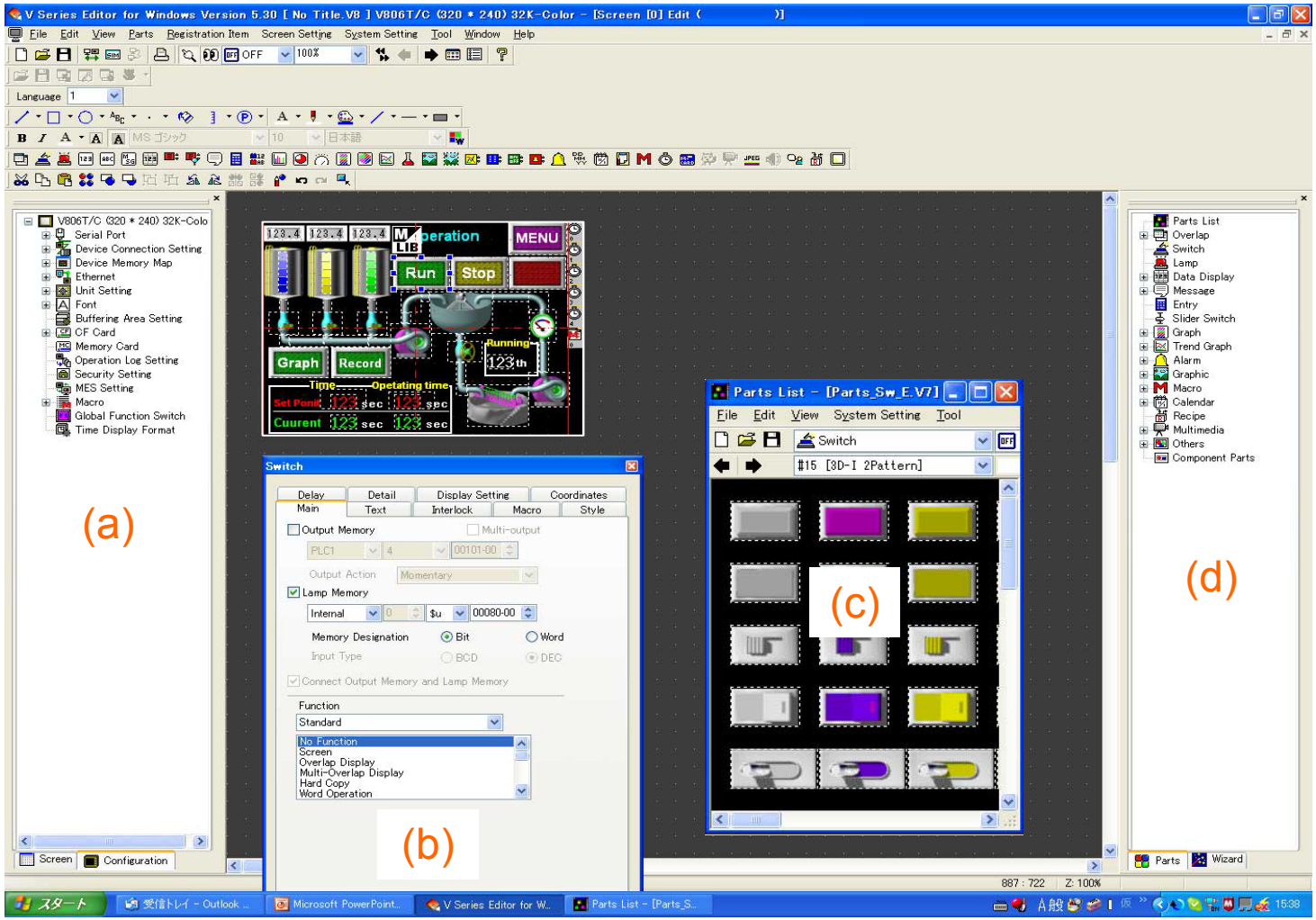
(a)Signal Level
(b)Baudrate
(c)Data Length
(d)Stop Bit
(e)Parity

5) Read/Write Area



2. Outlook of ver.5 screen

Outlook of ver.5 and customizing



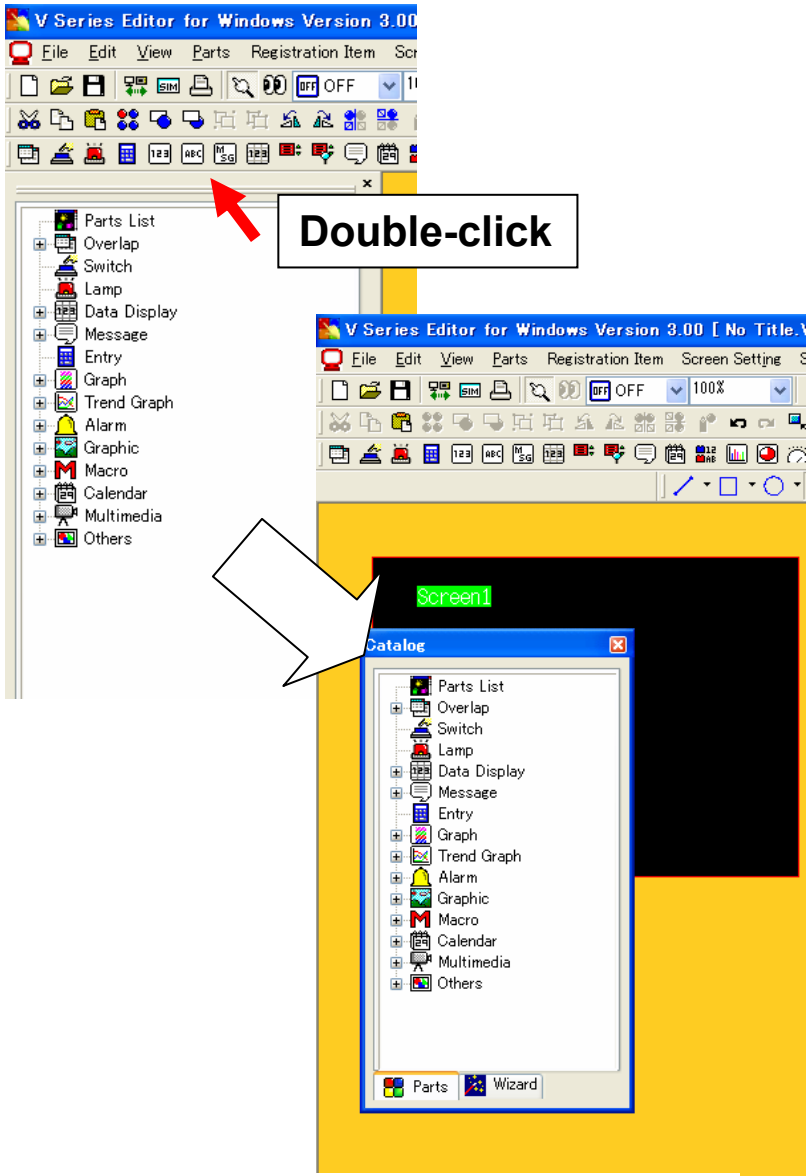
(a) Project View

(b) Item View

(c) Parts List

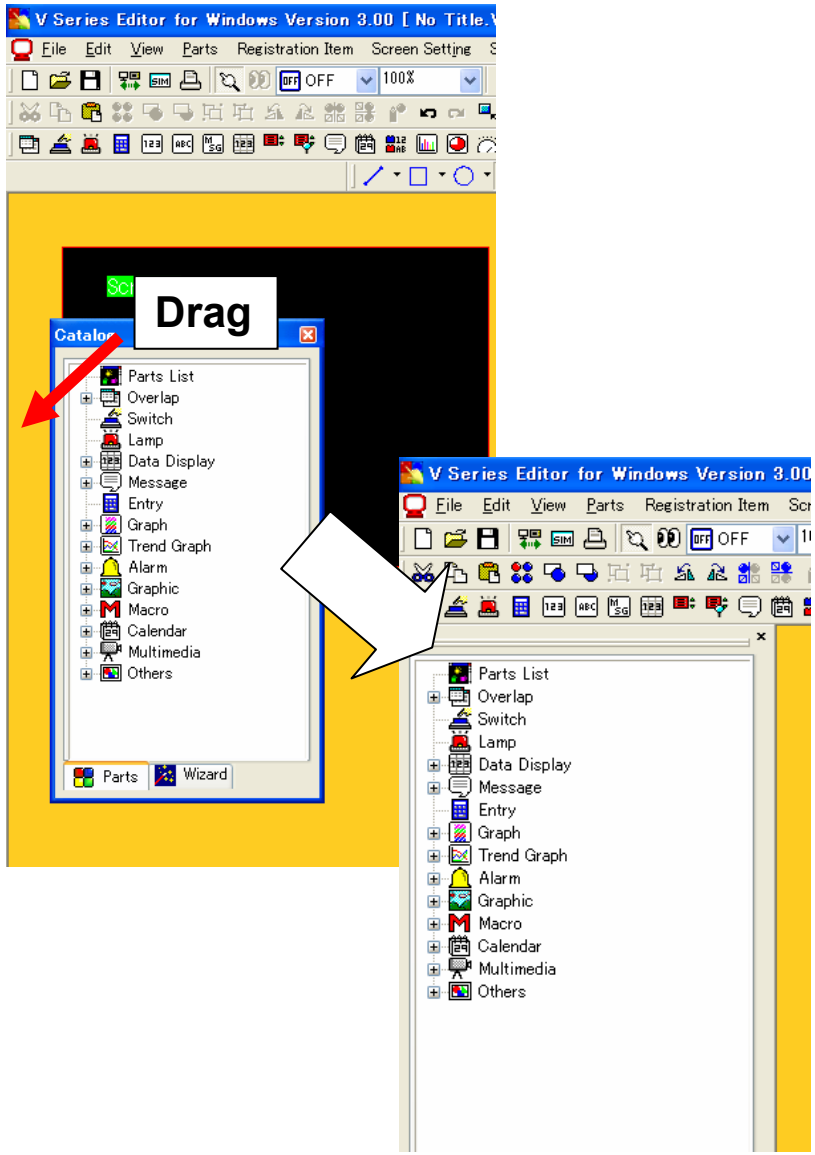
(d) Catalog View

1) Move View



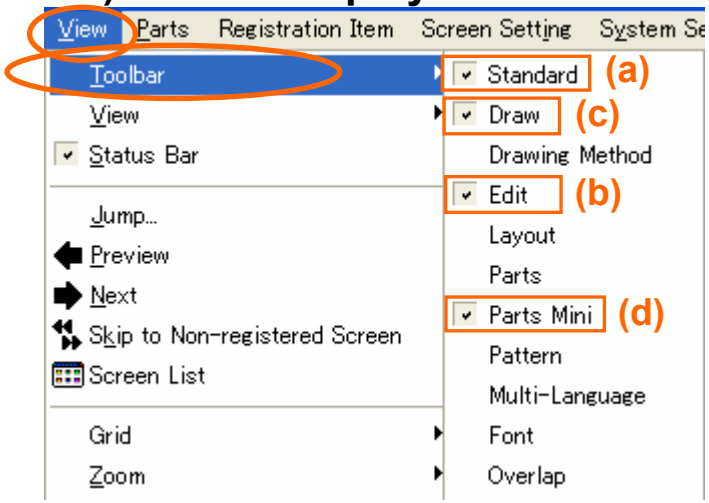
Double-click the top of the view
OR [Ctrl]+ drag

2) Fix View



Double-click the top of the view
OR drag

3) How to display “Toolbar”

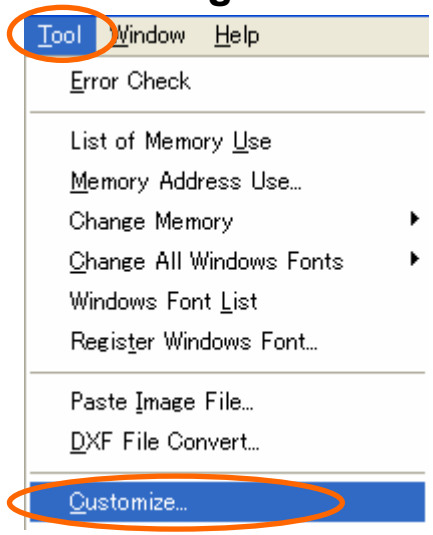


[View] > [Toolbar] > Select items to display

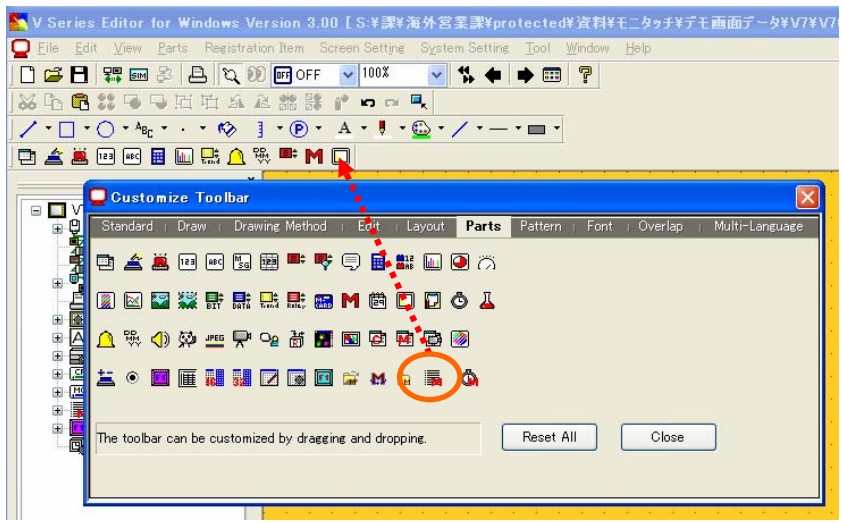
(a) Standard **(c) Draw**

(b) Edit **(d) Parts Mini**

4) Customizing “Toolbar”

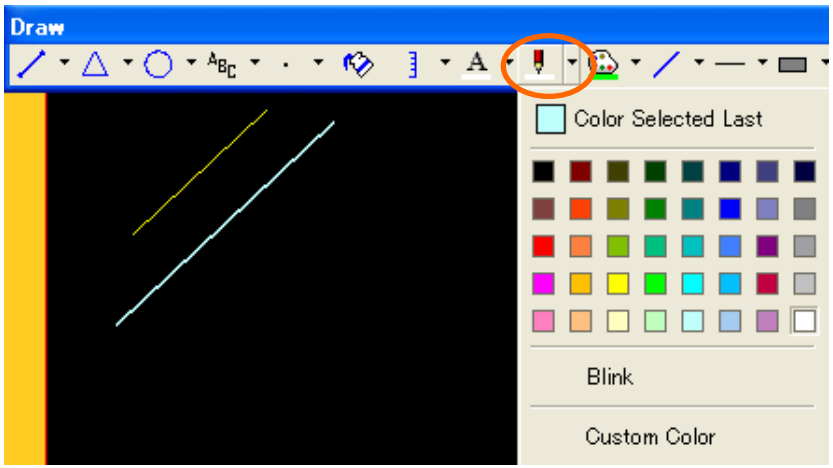


[Tool] > [Customize]



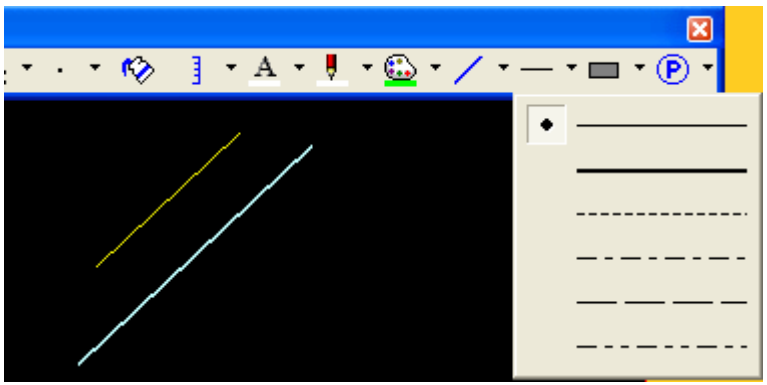
3. Drawing lines and rectangles

1) Select line color



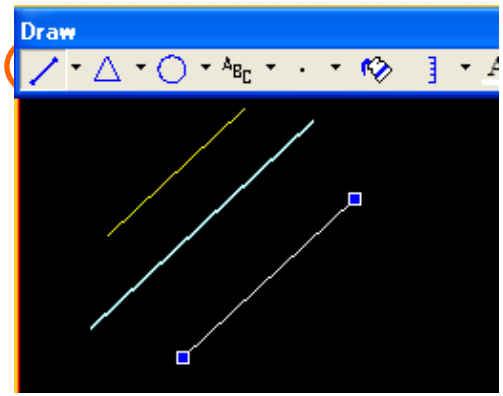
Click the arrow next to “Pen” icon > Select line color

2) Select line type



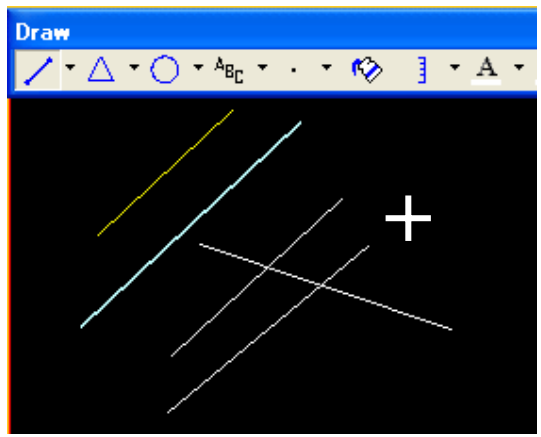
Click the arrow next to “Line” icon > Select line type

3) Drawing a line



Click [Straight Line] icon > Drag the cursor

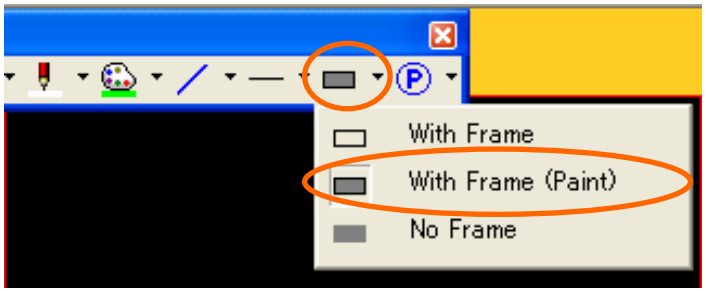
4) Cancel the drawing mode



Right-click OR Click anywhere on the screen

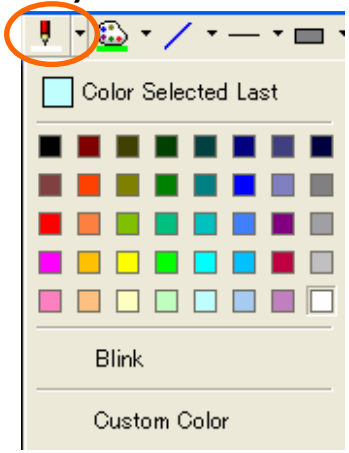
3. Drawing lines and rectangles

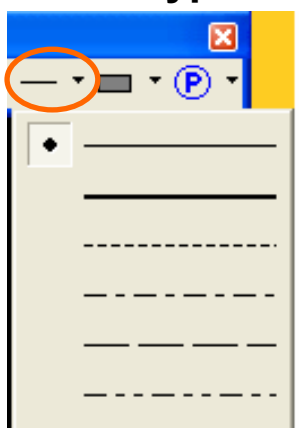
1) Select frame type



Click the arrow next to [Frame Type] icon
> Select frame type

2) Select line color and line type



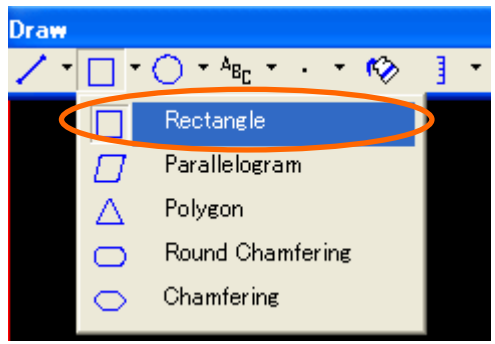


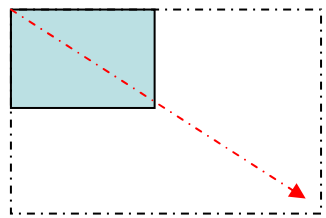
Select line color and line type

3) Select paint color

Click the arrow next to [Paint] icon
> Select paint color

4) Drawing a rectangle





Click [Rectangle] icon > Select “Rectangle”
Drag the cursor from the start-point to the end-point

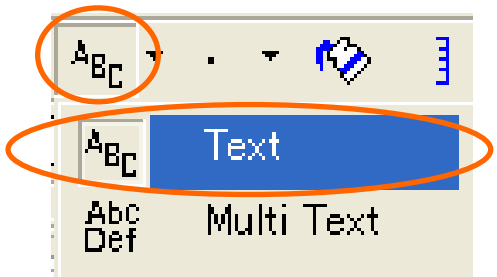
4. Placing "Text"

1) Property Setting

a) Color
b) Paint / Background color

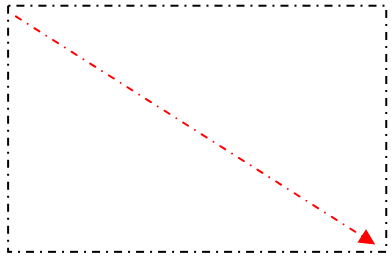
Select the color for text and background

2) Select [Text]

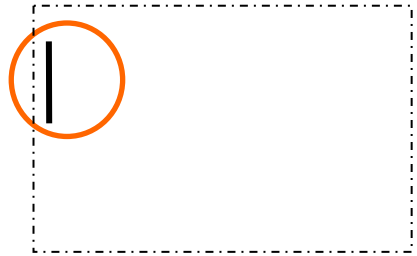


Click [Text] icon > Select [Text]

3) Making text area



Drag from the start-point to the end-point



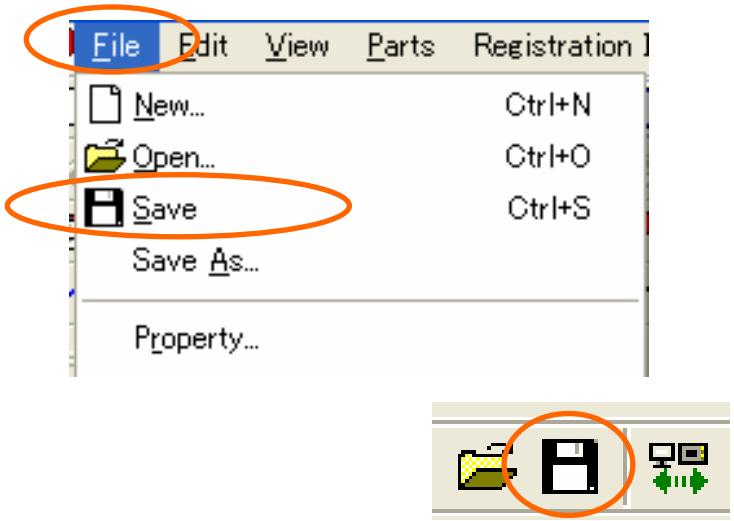
Blinking cursor appears

4) Edit text

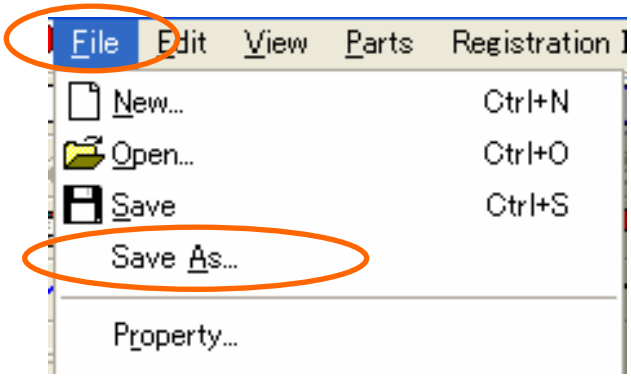
Edit the text in text area

5. Saving screen data

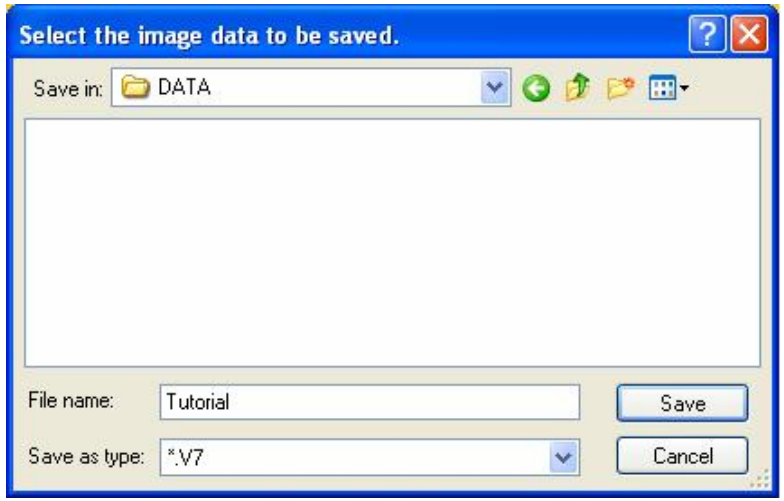
1-1) Save



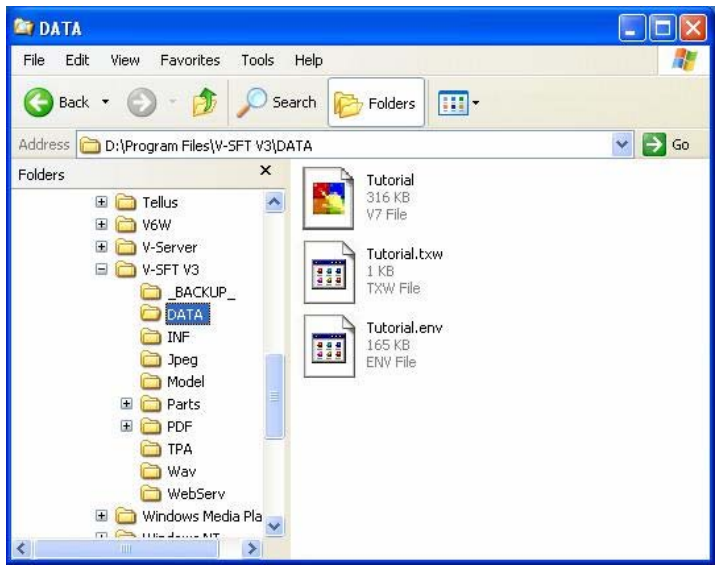
1-2) Save As…



2) Naming file and selecting “Save in”

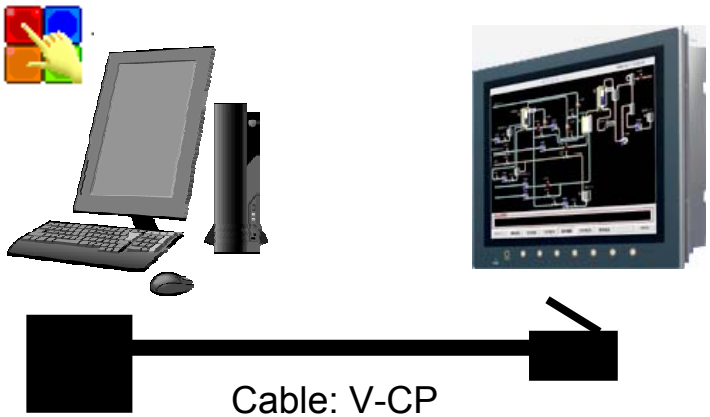


3) Created files and their extension



6. Transferring screen data

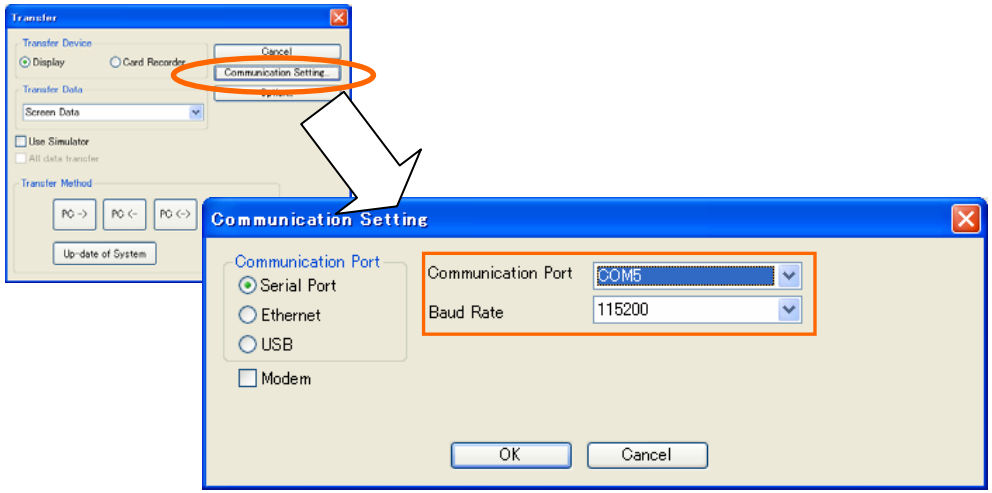
1) Necessary tools



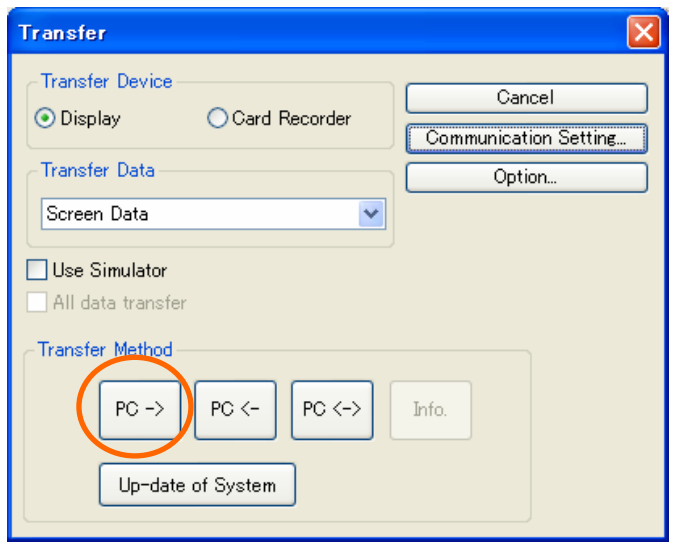
Cable: V-CP
(Dsub9M-RJ45)

2) Connection

3) COM port setting



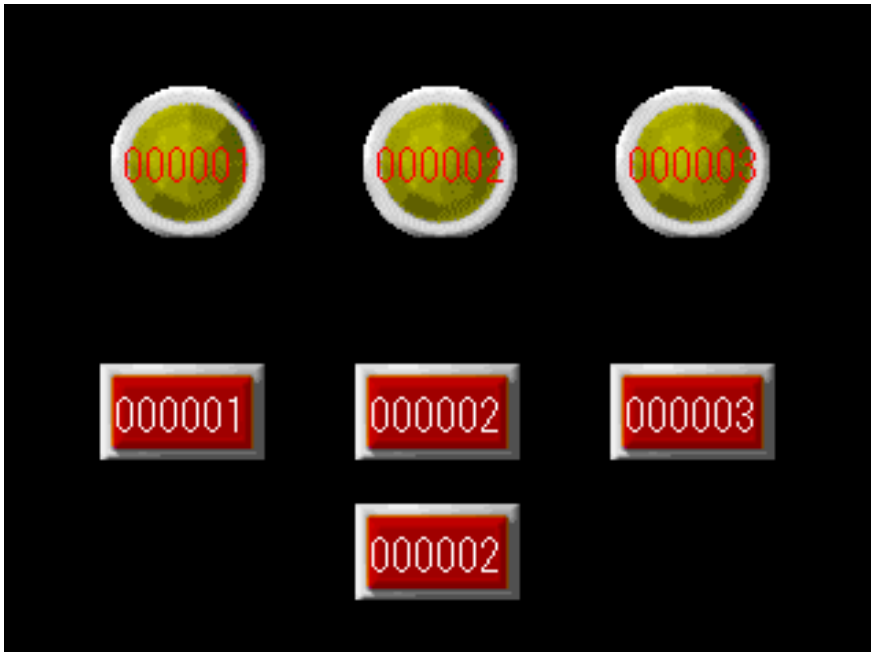
4) Transfer



2. How can I place lamps and switches?

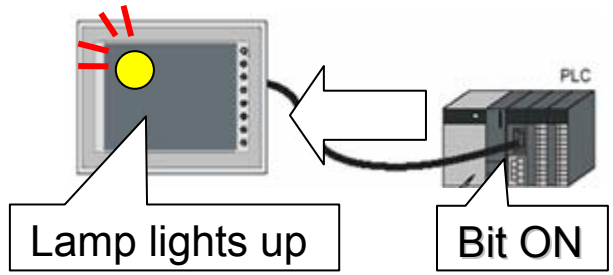
MONITOUCH

Completed screen



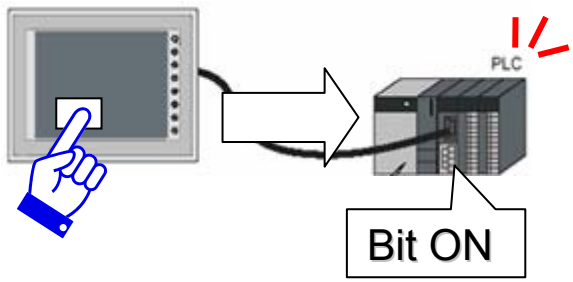
Function used : Lamp (by Wizard)
Switch (by Wizard)

Lamp lights up and off according to bit memory's ON/OFF status.

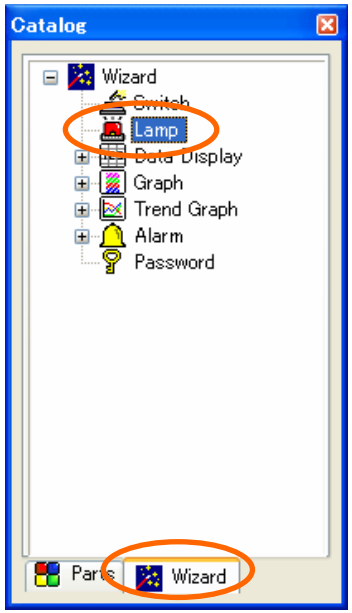


Switch controls PLC bit to ON/OFF.

Also, wide variety of switch functions such as displaying pop-up window, switching the screens are available.

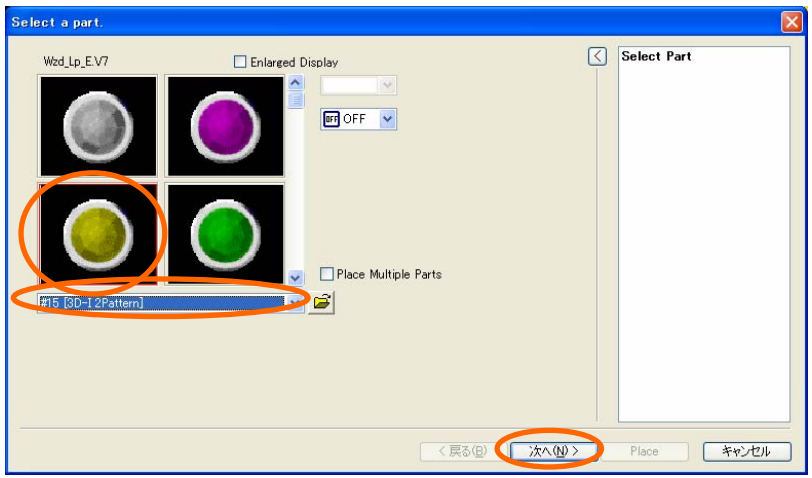


1) Start “Wizard”



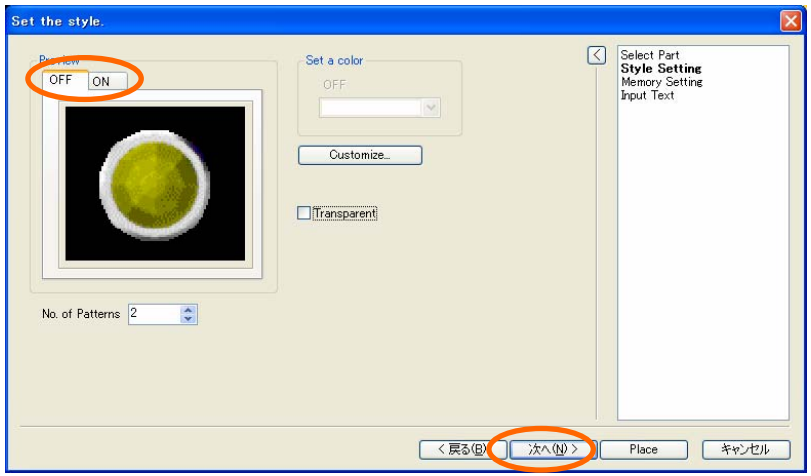
[Catalog View] > [Wizard]tab > [Lamp]

2) [Select Part]



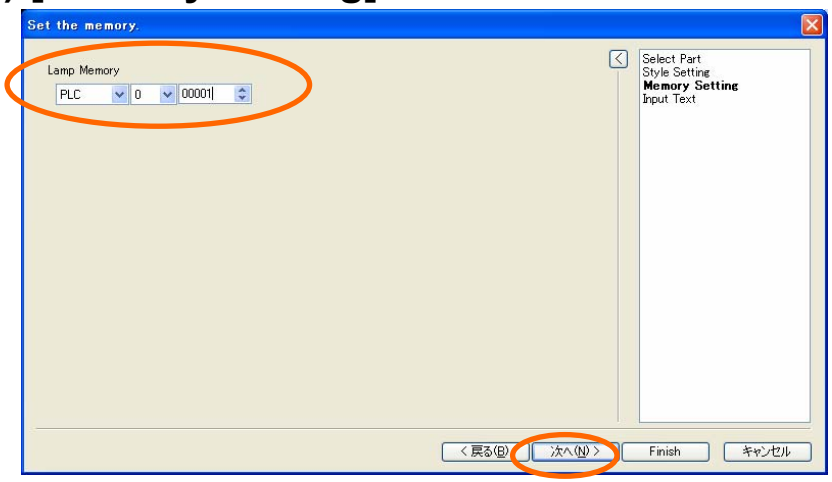
Select parts list > Select part > Click [Next]

3) [Style Setting]



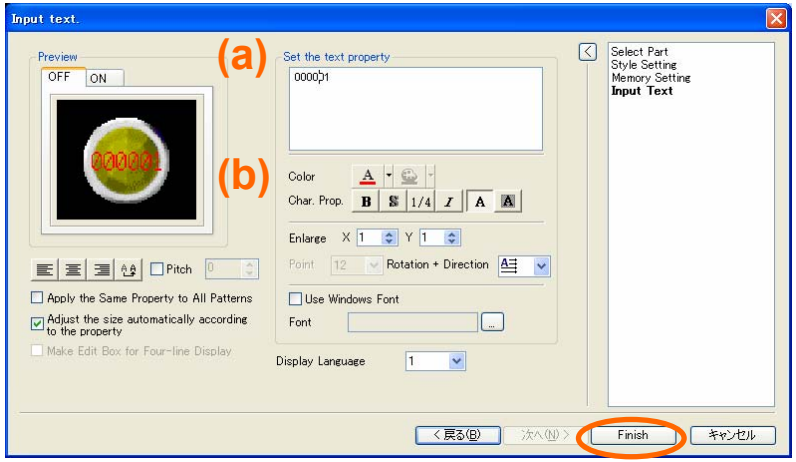
Click [Next]

4) [Memory Setting]



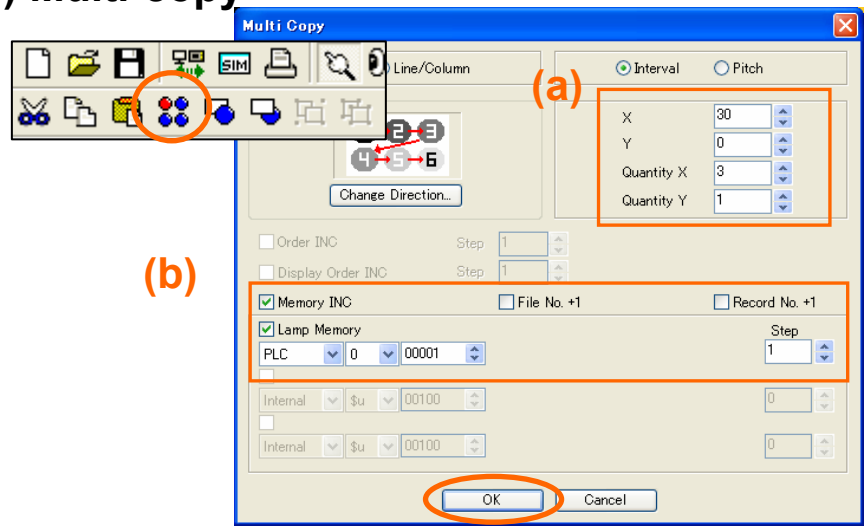
Set lamp memory > Click [Next]

5)[Input Text]

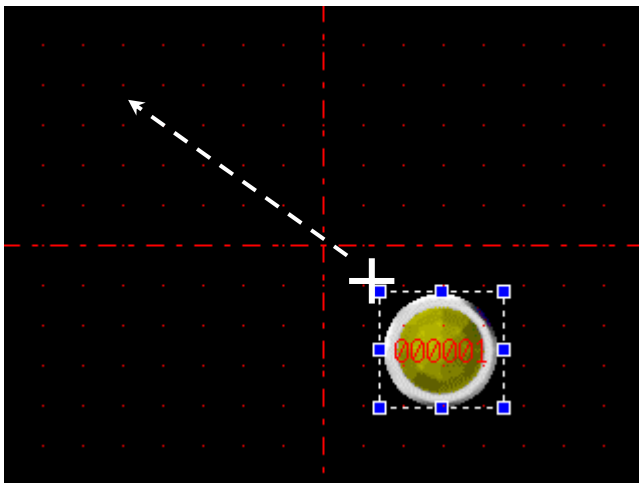


Enter text on lamp > Click [Place]

7) Multi-copy

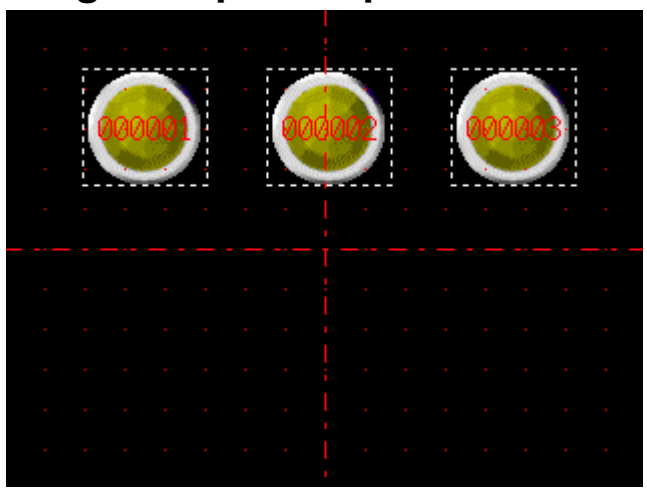


6) Placing a lamp



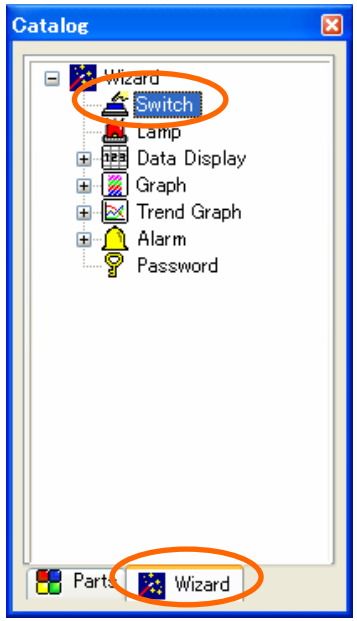
Place a lamp by dragging it

8) Placing multiple lamps



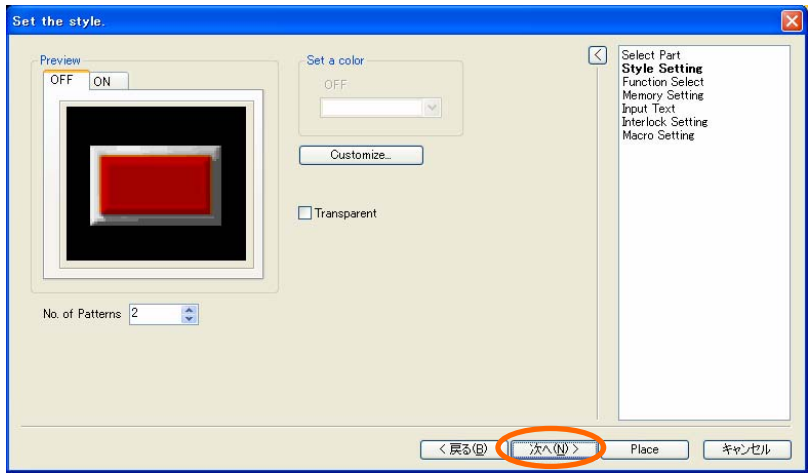
Multi-copy completed

1) Start “Wizard”



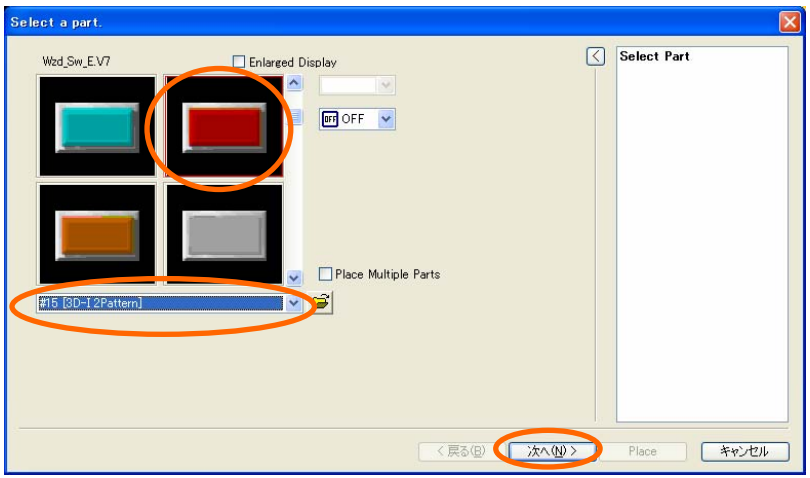
[Catalog View] > [Wizard]tab > [Switch]

3) [Style Setting]



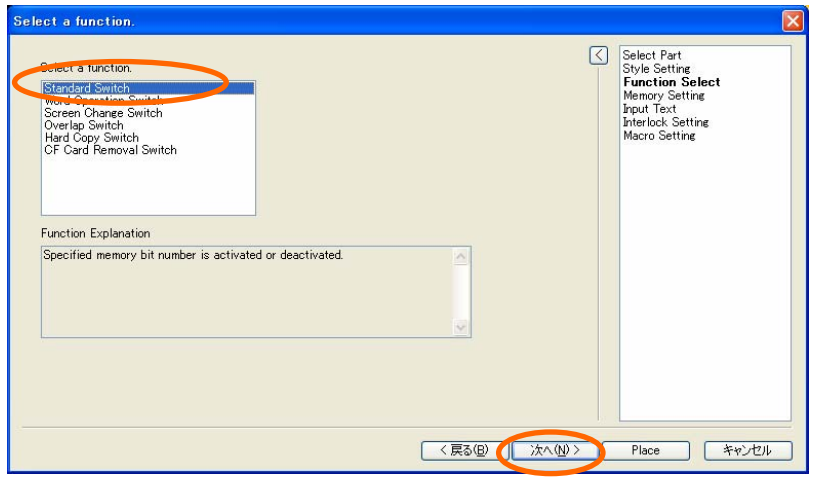
Click [Next]

2) [Select Part]



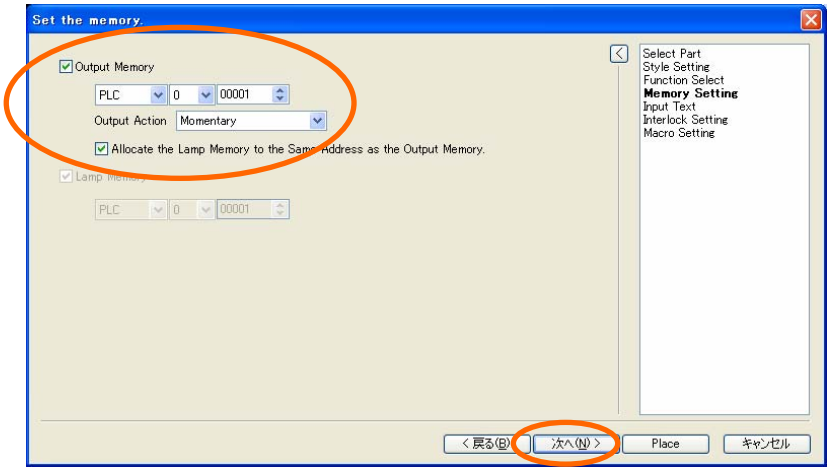
Select parts list > Select part > Click [Next]

4) [Function Select]



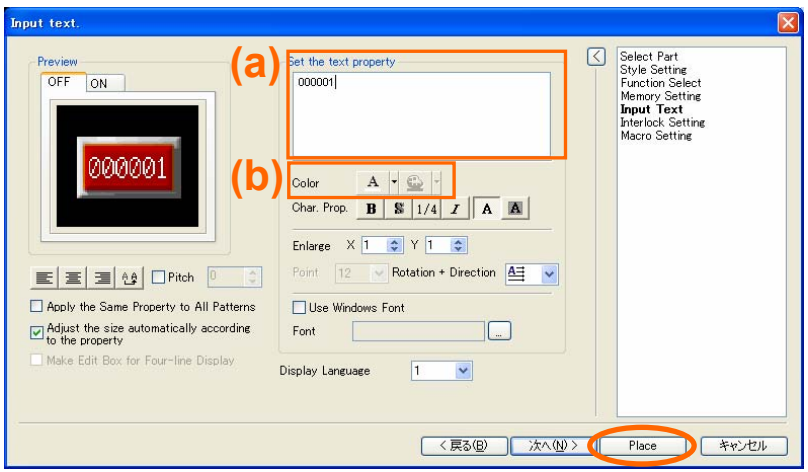
Select [Standard Switch] > Click [Next]

5) [Memory Setting]



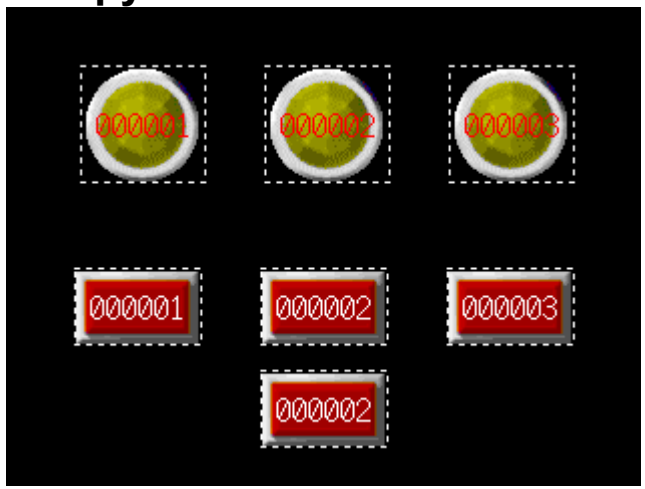
Set switch memory > Click [Next]

6) [Input Text]



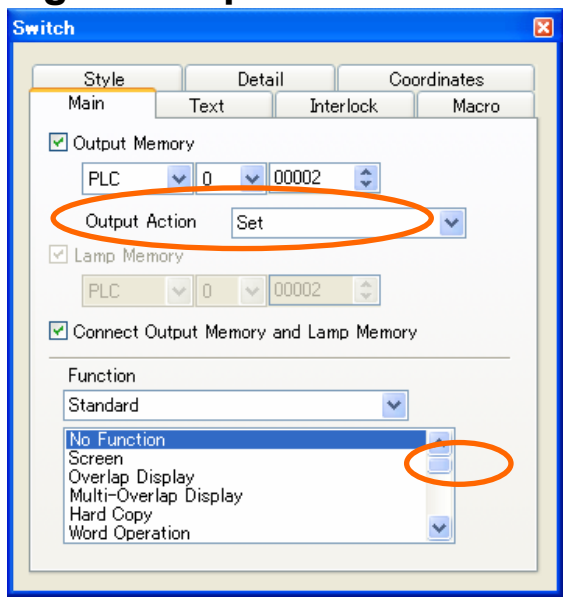
Enter text on switch > Click [Place]

7) Multi-copy

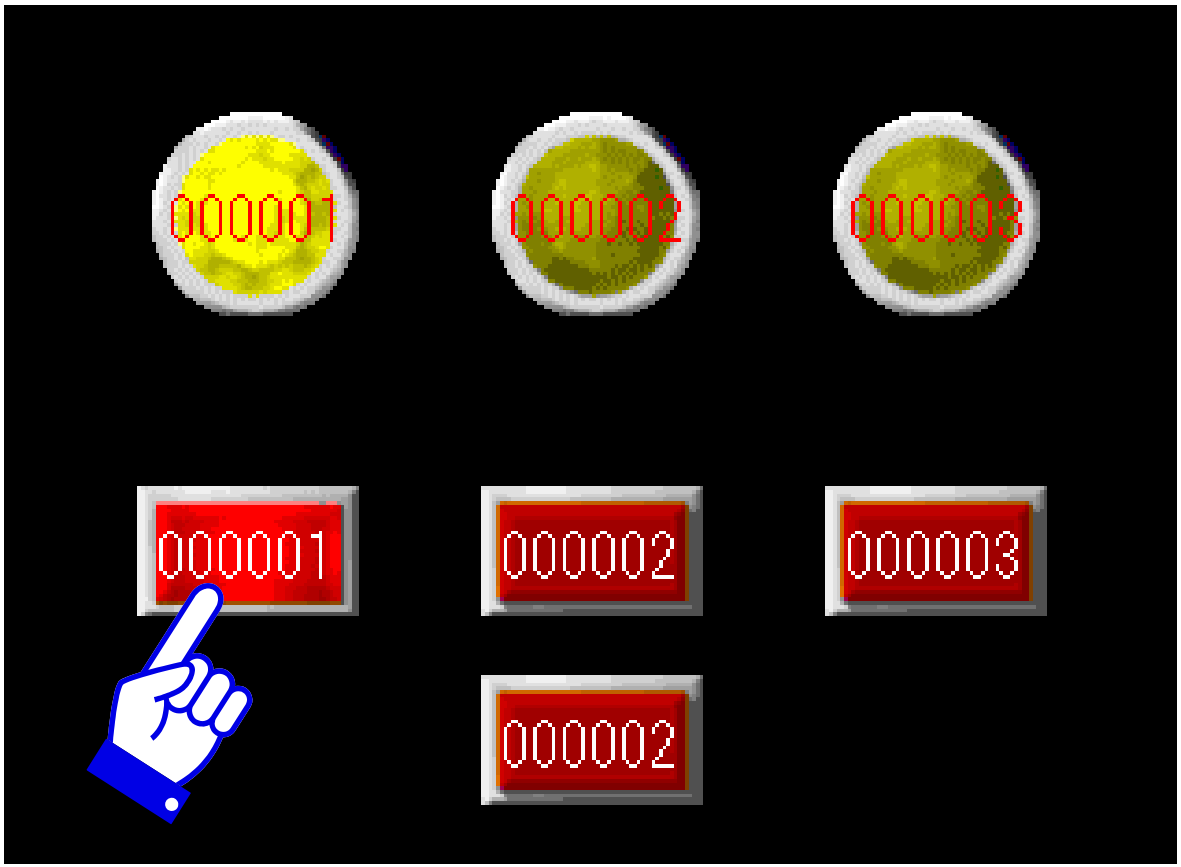


Placing 4 switches by multi-copy and copy

8) Setting for Output Action



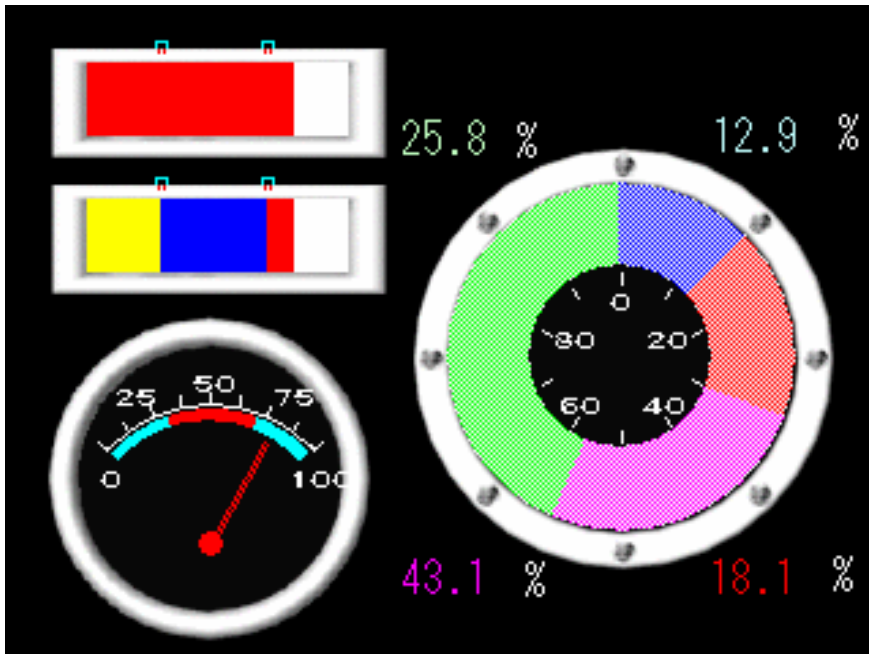
Check the function of each switch with different output action.



3. How can I display the value in PLC register in graph?

MONITOUCH

Completed Screen



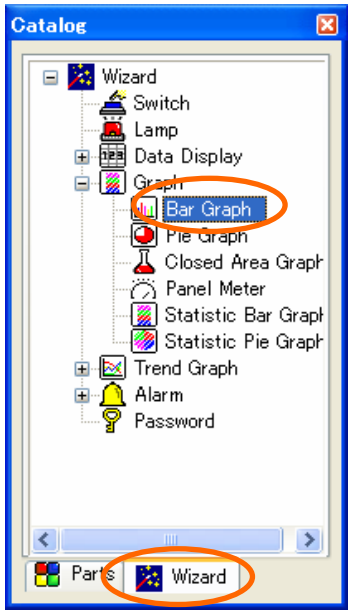
Visualizing numeric data in PLC register in graph format.

Graph can improve the visibility even more by using “Alarm” function to change the color of graph.

In this chapter, we will place a bar graph, a panel meter and a statistic pie graph.

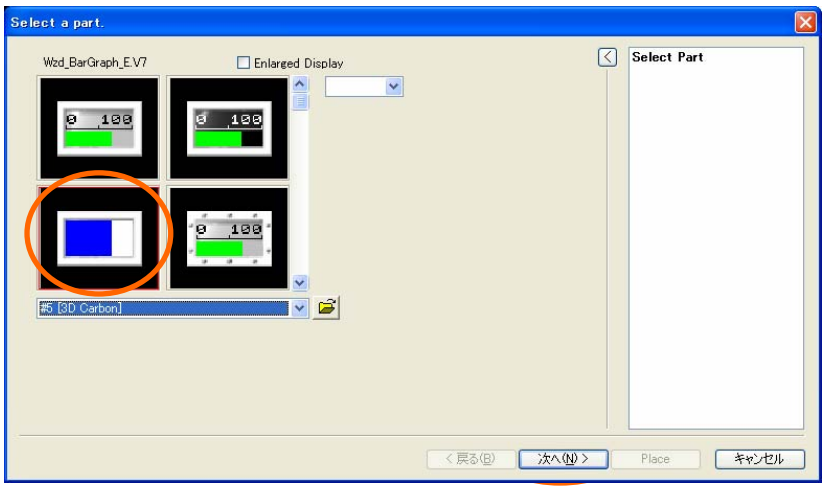
Function used: Bar Graph (by Wizard)
Panel Meter (by Wizard)
Statistic Pie Graph (by Wizard)

1) Start “Wizard”



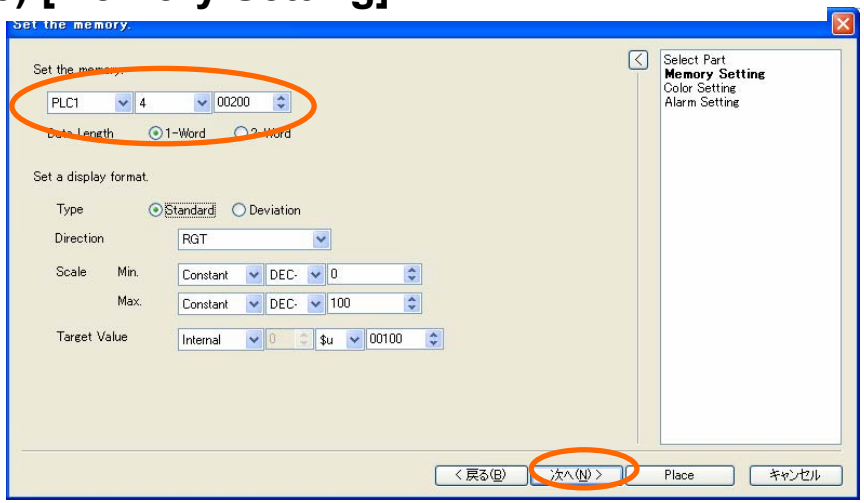
[Catalog View] > [Wizard] tab> [Graph] > [Bar Graph]

2) [Select Part]



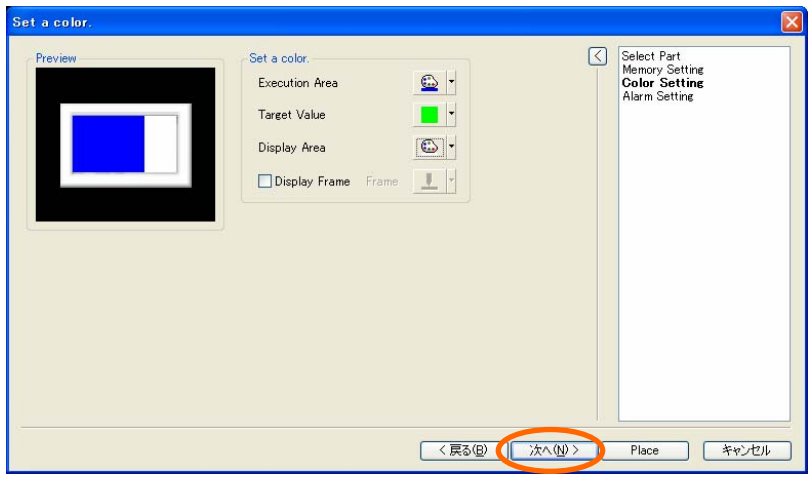
Select parts list > Select part > Click [Next]

3) [Memory Setting]



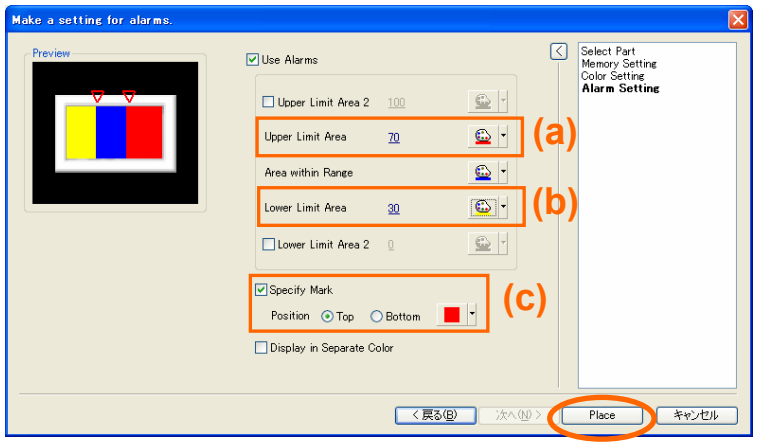
Set graph memory > Click [Next]

4) [Color Setting]



Click [Next]

5) [Alarm Setting]



Set alarm > Click [Place]

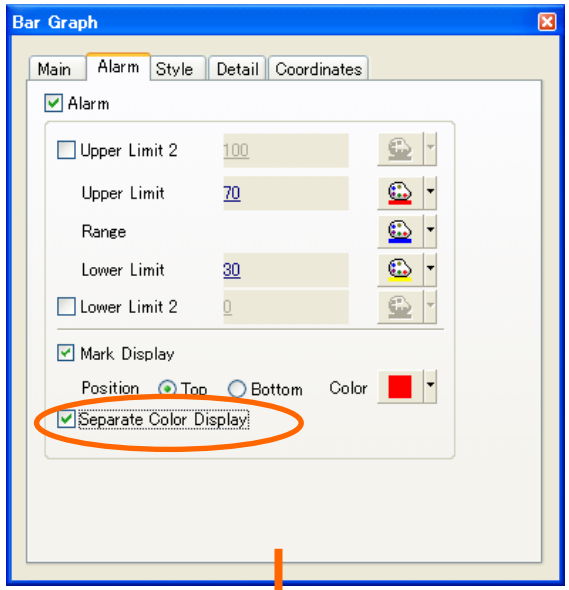
(a) Upper Limit: 70 (Red)

(b) Lower Limit: 30 (Yellow)

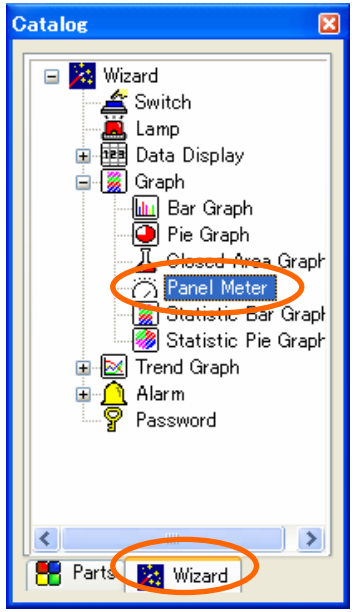
6) Copy bar graph

Copying the graph by copy & paste

7) Separate Color Display

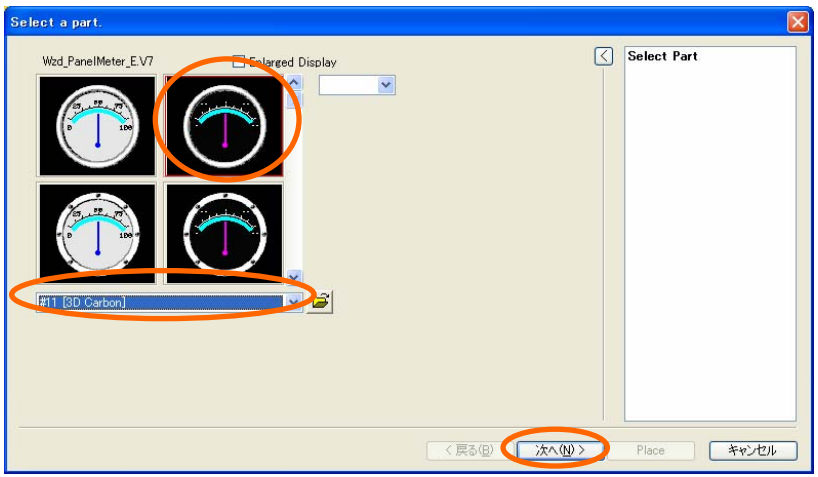


1) Start “Wizard”



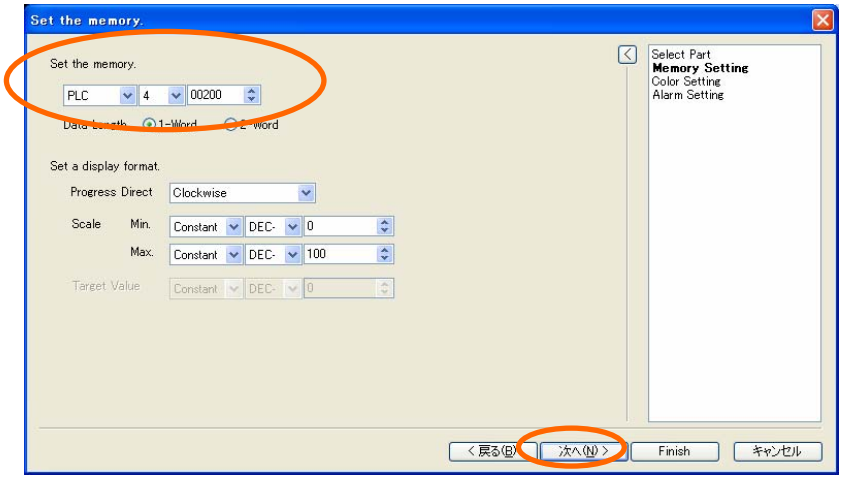
[Catalog View] > [Wizard] tab > [Graph] > [Panel Meter]

2) [Select Part]



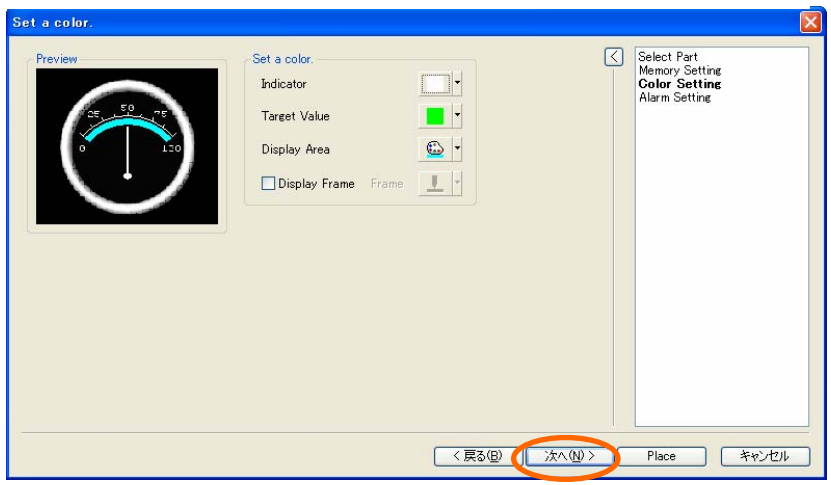
Select parts list > select part > Click [Next]

3) [Memory Setting]



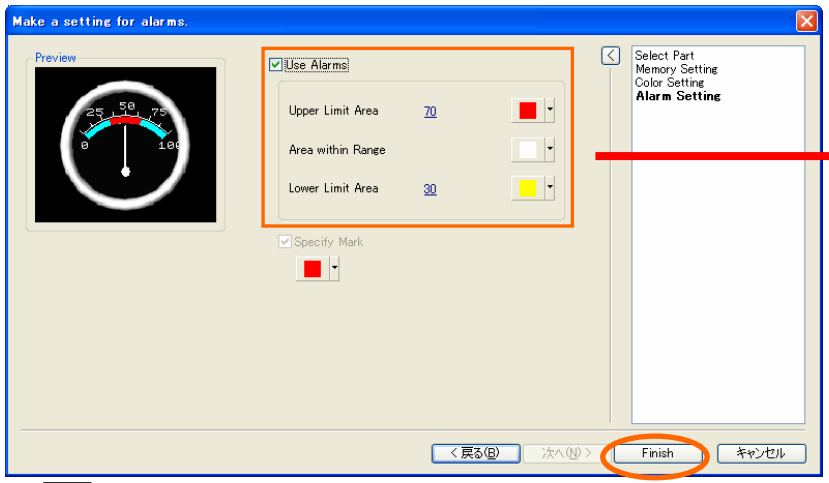
Set panel meter memory > Click [Next]

4) [Color Setting]



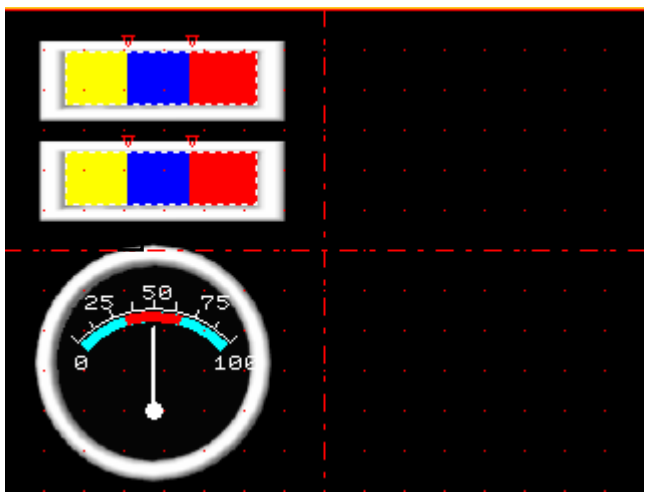
Change color for “Indicator” > Click [Next]

5) [Alarm Setting]

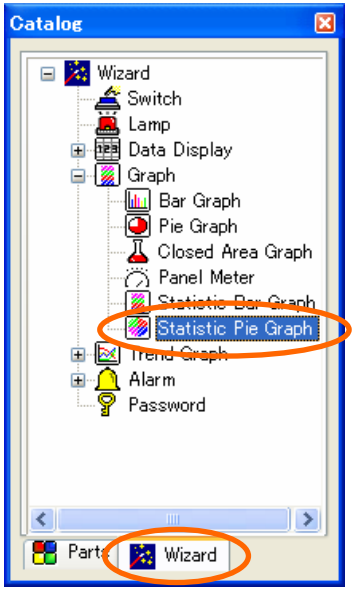


☑ Use Alarm > Click [Place]

6) Placing a panel meter

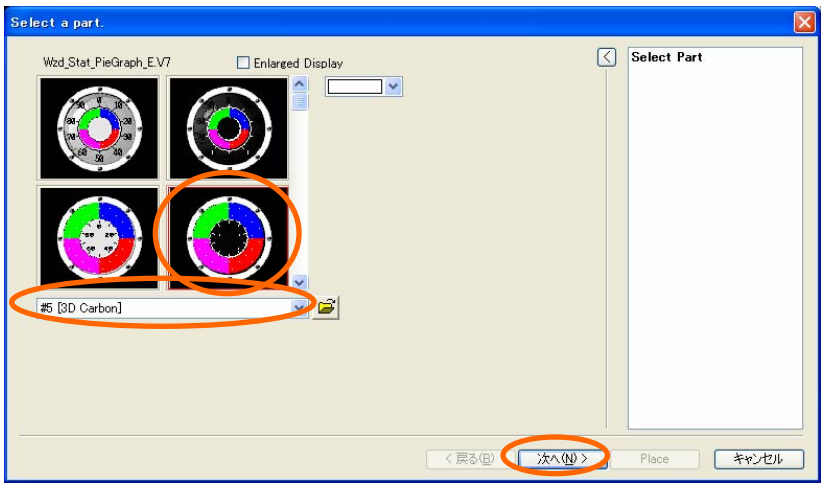


1) Start “Wizard”



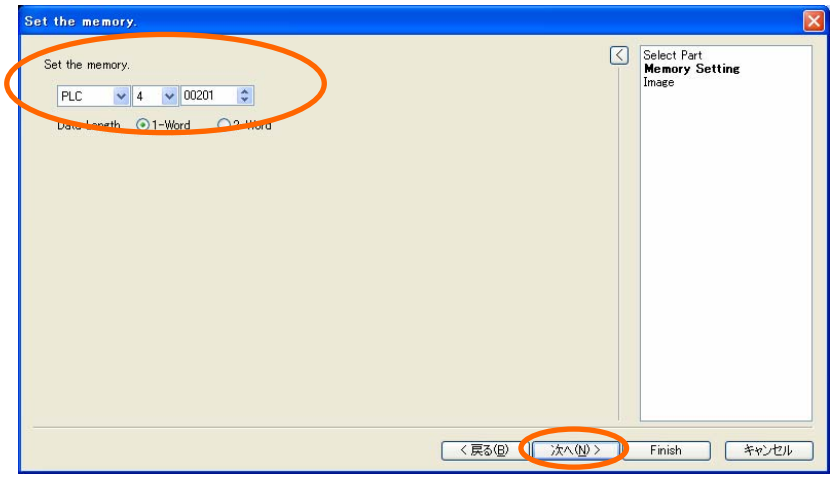
[Catalog View] > [Wizard] tab > [Graph] >[Statistic Pie Graph]

2) [Select Part]



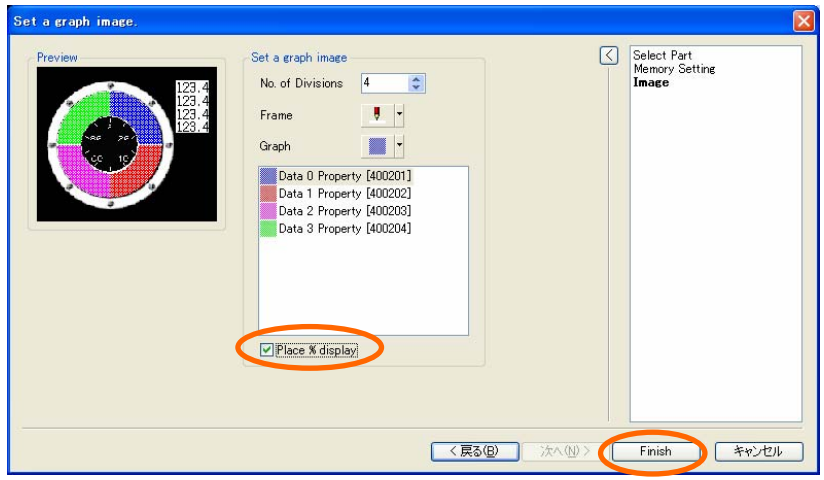
Select parts list > Select part > Click [Next]

3) [Memory Setting]



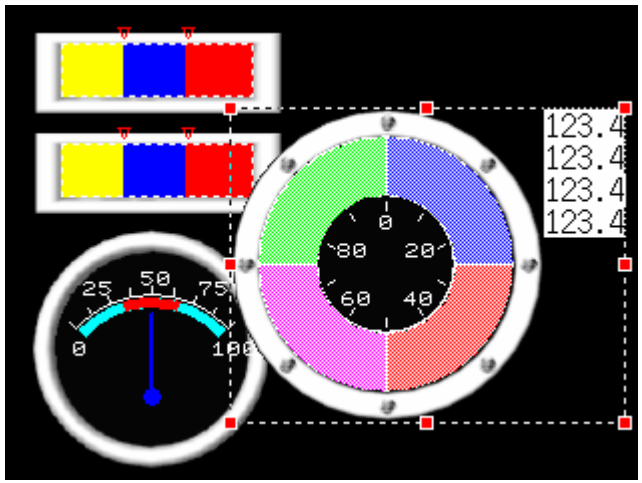
Set the top address of statistic pie graph memory > Click [Next]

4) [Image]

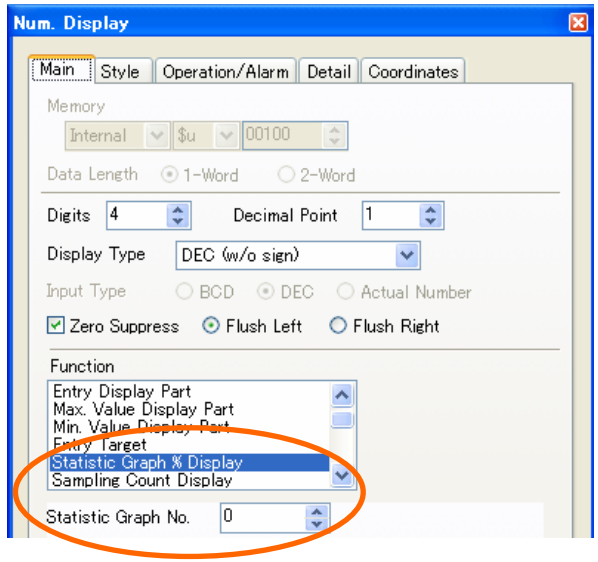


☑ Place % display > Click [Place]

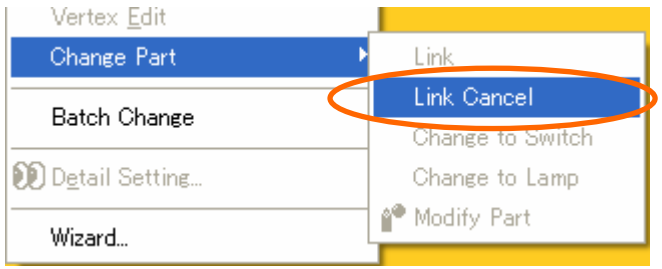
5) Placing a statistic pie graph



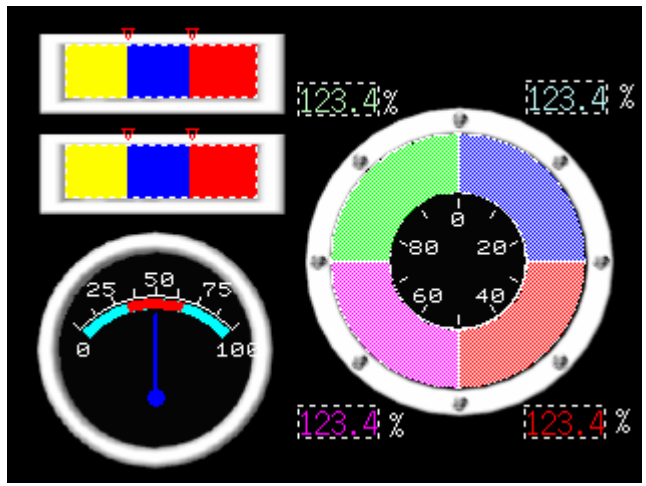
7) % display



6) Link Cancel

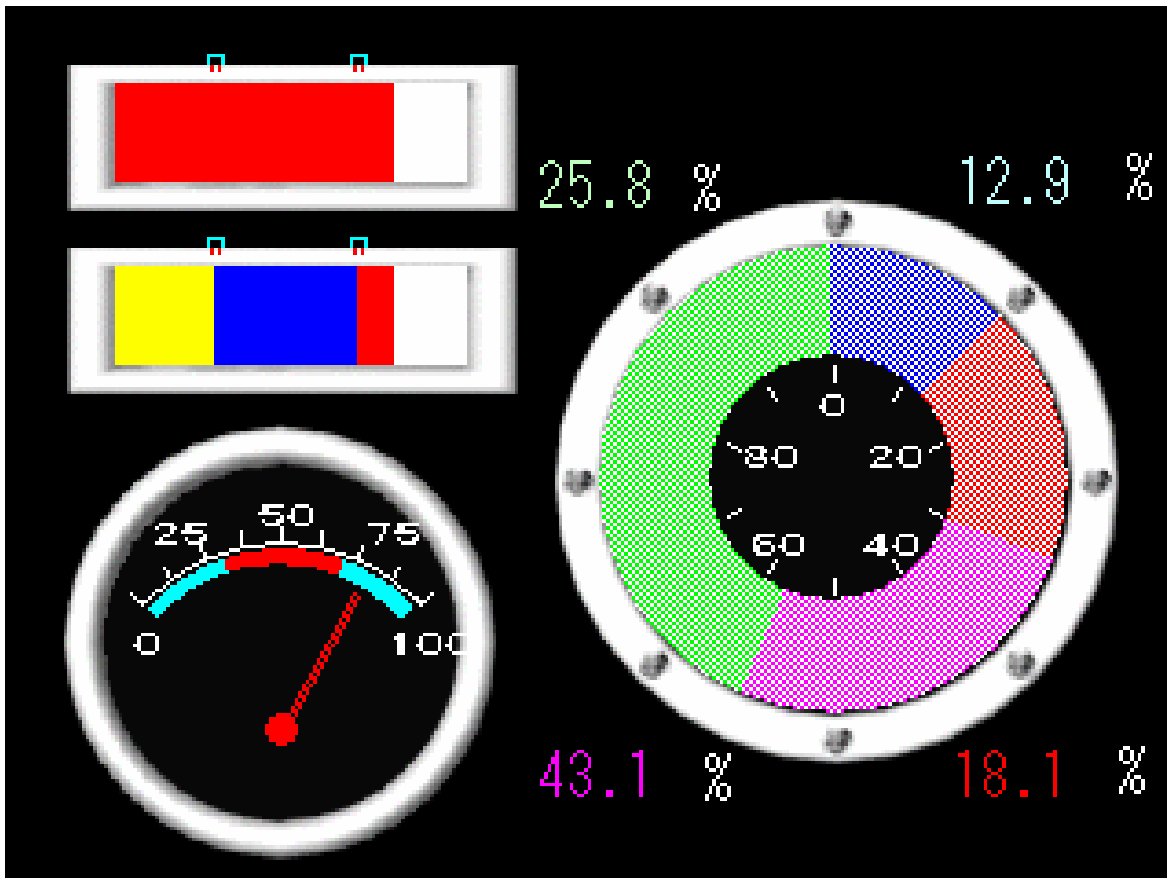


8) Placing % displays



Right-click on graph > Select [Link Cancel]

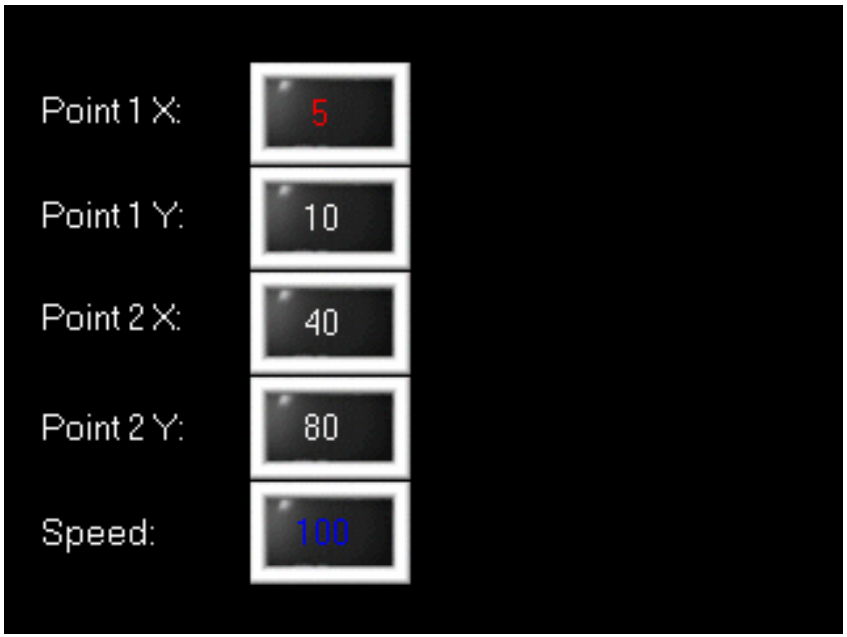
Check how each graph displays by entering the value in PLC memory.



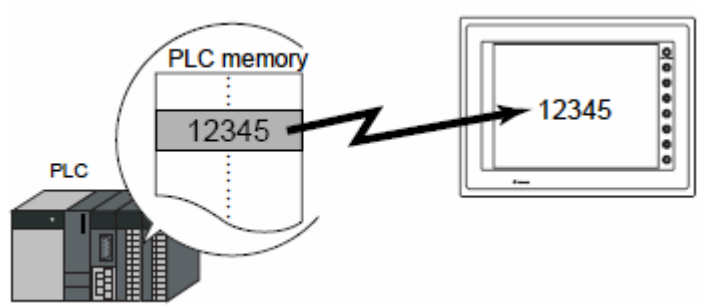
4. How can I display the value in PLC memory numerically?

MONITOUCH

Completed screen



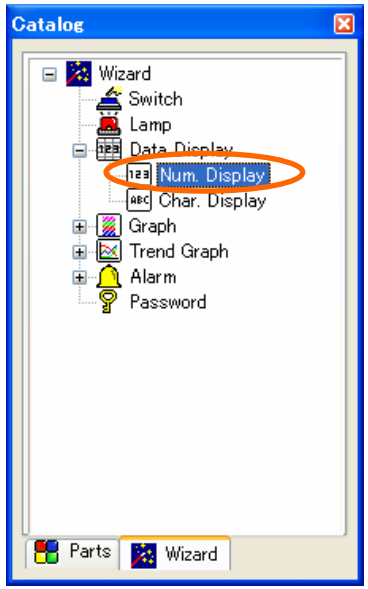
Displaying the value in PLC memory as numerical display on MONITOUCH.



Alarm setting enables the display in different color, e.g. when exceeding a normal range.

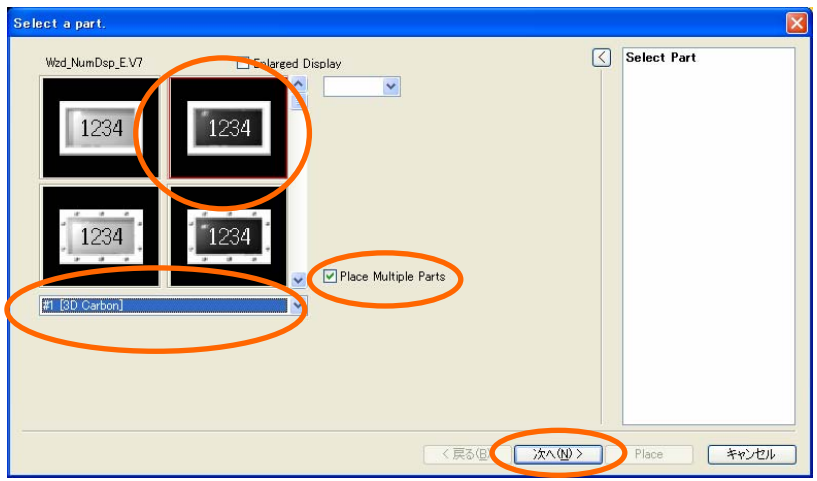
Function used: Numerical Display (by Wizard)

1) Start “Wizard”



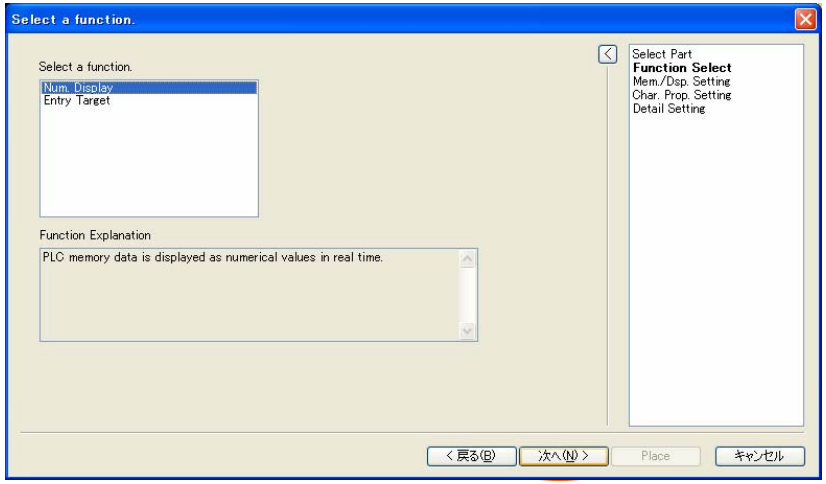
[Catalog View] > [Wizard] tab > [Data Display] > [Num. Display]

2) [Select part]



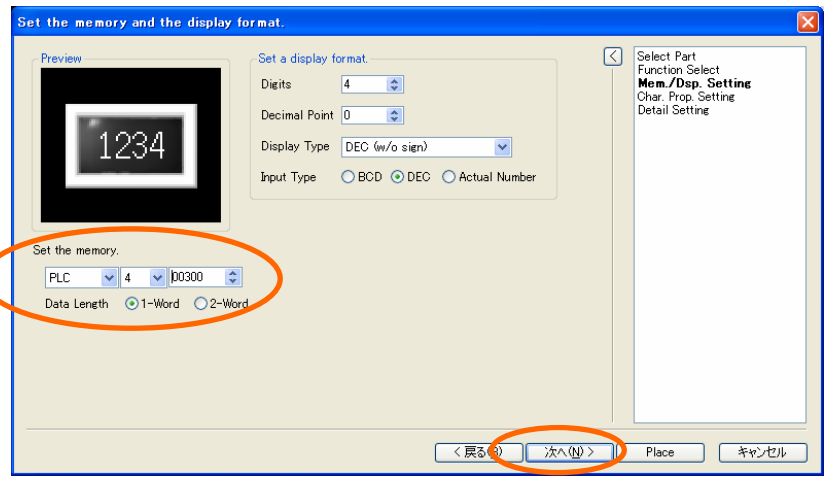
Select part > [☑ Place Multiple Parts] > Click [Next]

3) [Function Select]



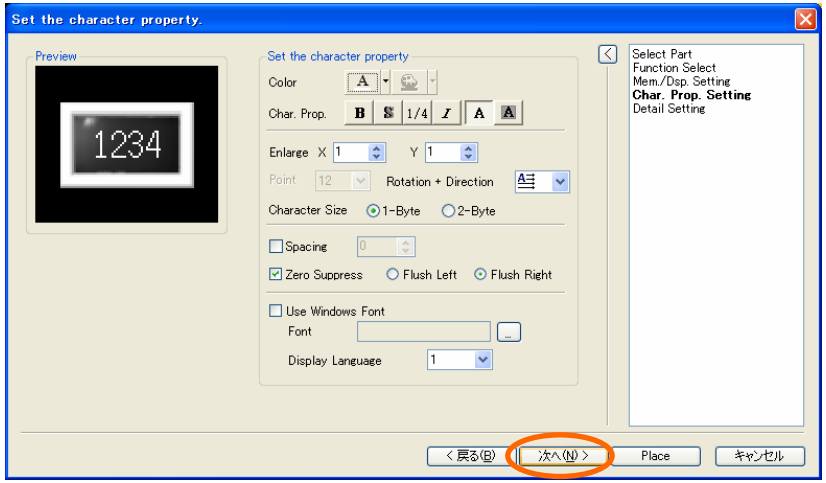
Select “Num. Display” > Click [Next]

4) [Mem./Dis. Setting]



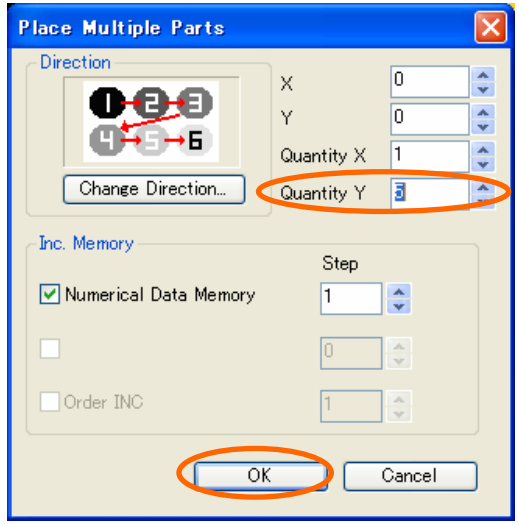
[Set the Memory] > Click [Next]

5) [Char. Prof. Setting]



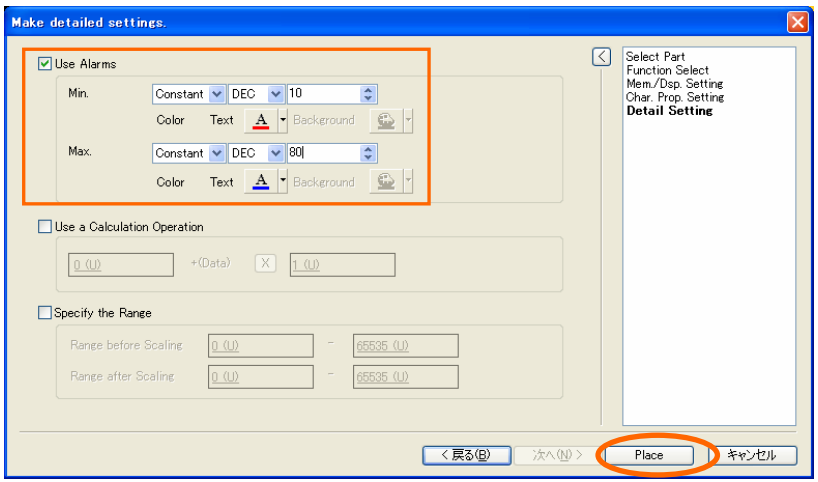
Click [Next]

7) [Place Multiple Parts]



Set [Quantity] and [Inc. Memory] > Click [OK]

6) [Detail Setting]



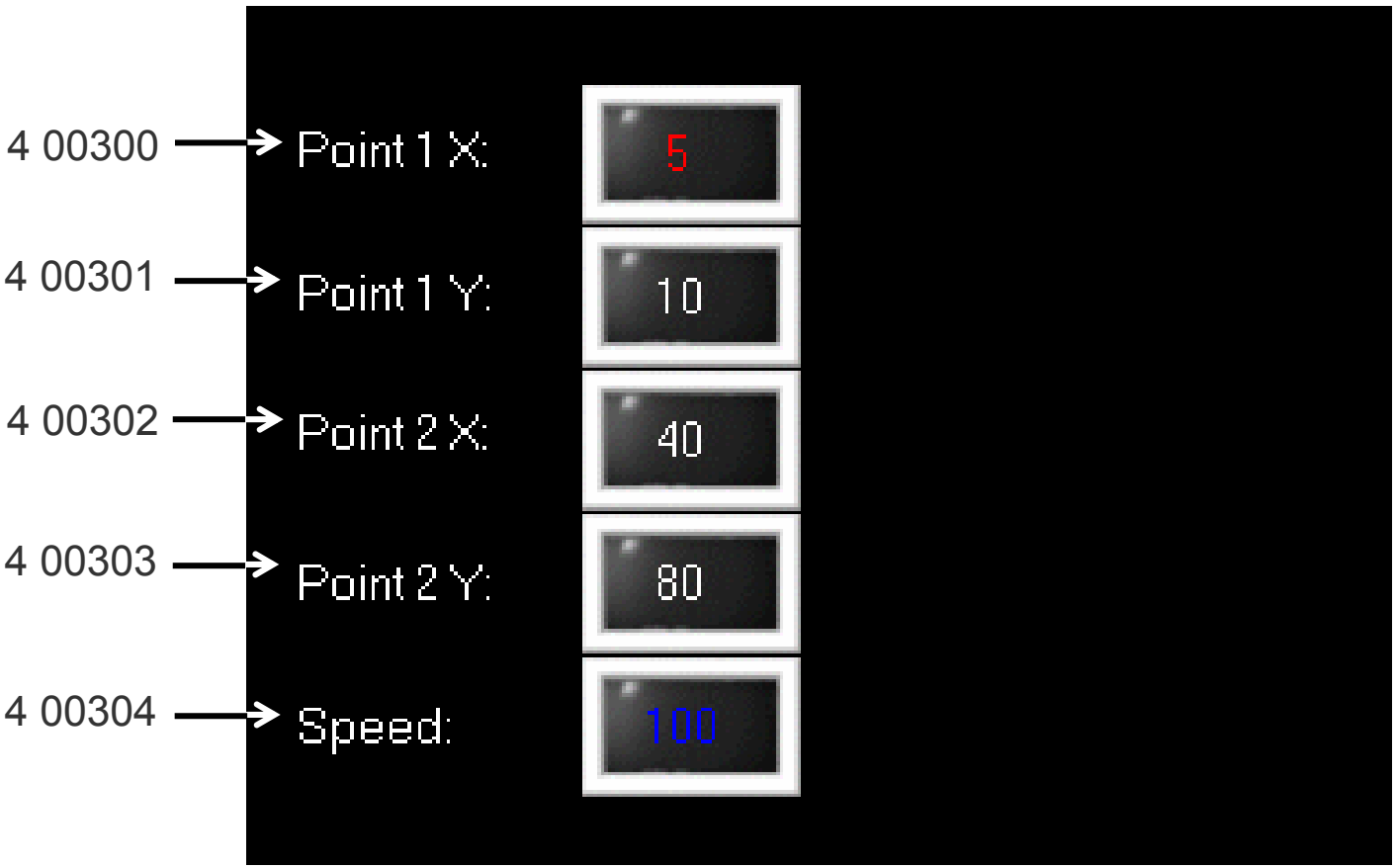
[☑ Use Alarm] > [Max]/[Min] setting > Click [Place]

8) Num. Display and text placing

Place part > Place text

Operation Check

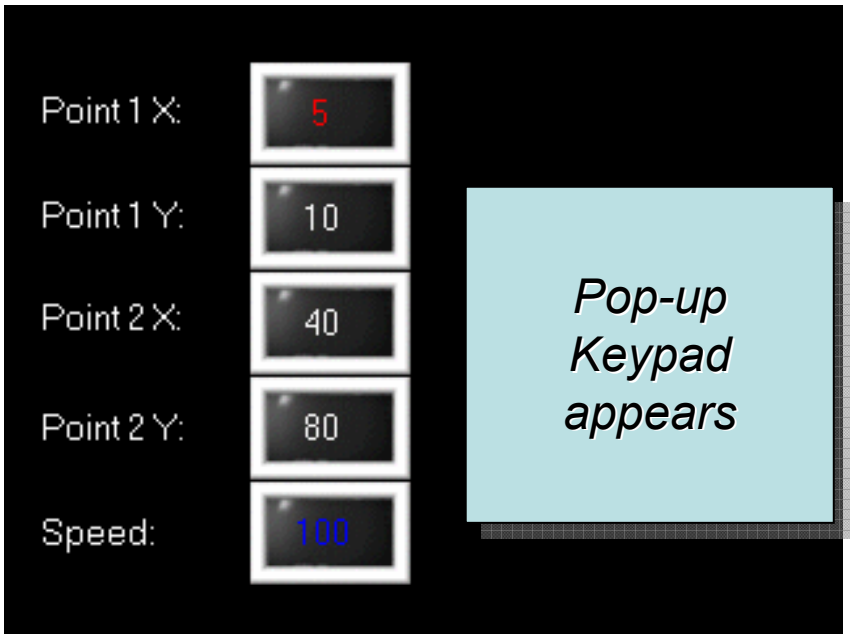
Check the dipaly on MONITOUCH by changing the value in PLC memory 4 00300 to 4 00304.



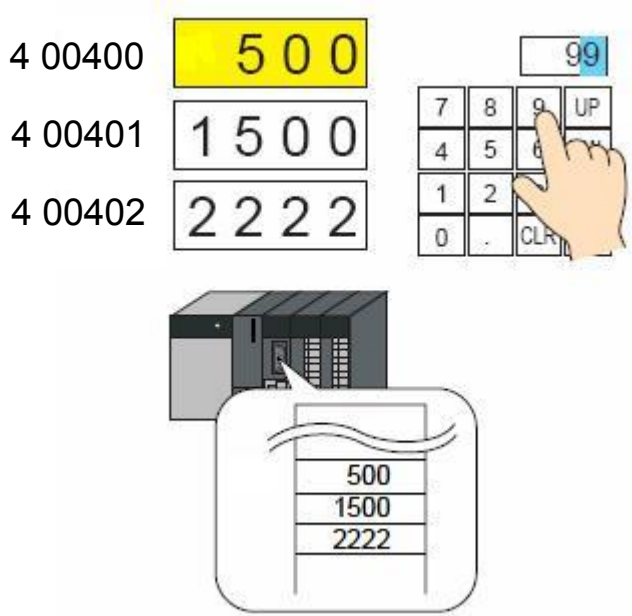
5. How can I change the value in PLC memory from MONITOUCH?

MONITOUCH

Completed screen

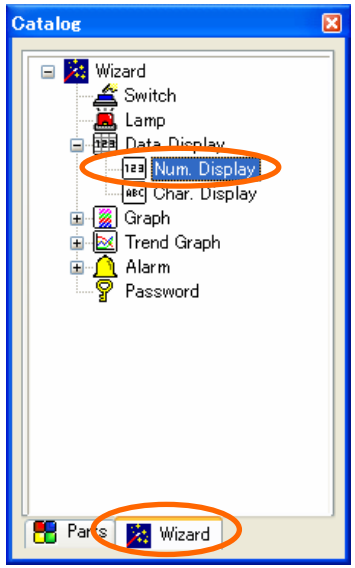


Entering the value directly to the PLC memory by using keypad on MONITOUCH.



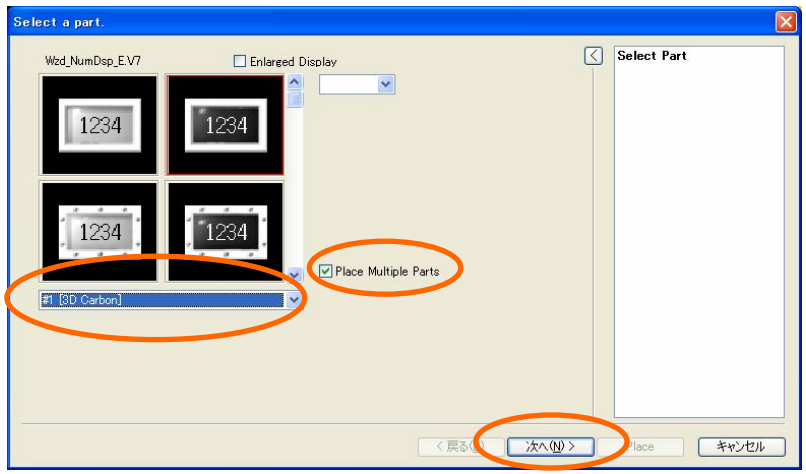
Function used: Entry Mode (by Wizard)

1) Start “Wizard”



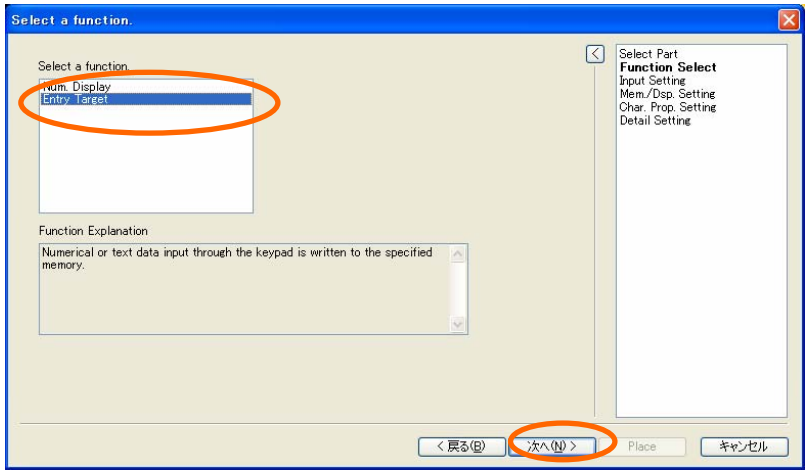
[Catalog View] > [Wizard] tab > [Data Display] > [Num. Display]

2) [Select part]



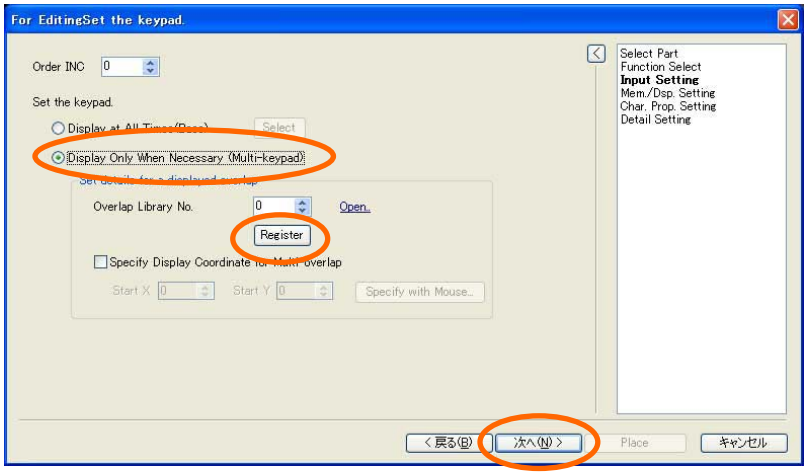
Select part > [☑Place Multiple Parts] > Click [Next]

3) [Function Select]



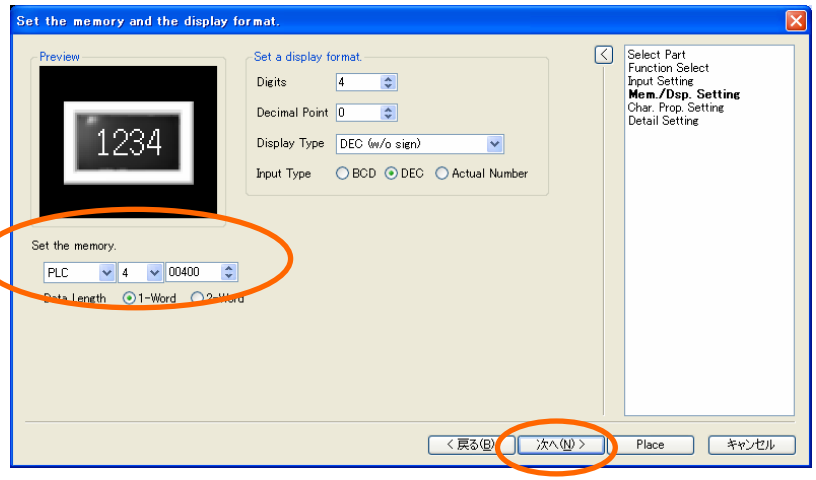
Select “Entry Target” > Click [Next]

4-1) [Input Setting]



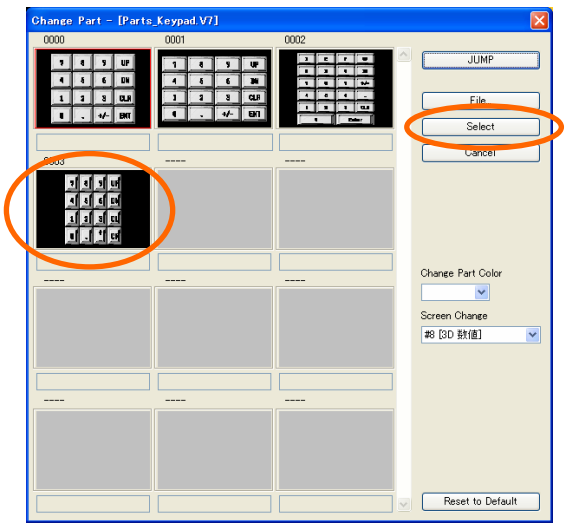
"Display only when Necessary" > "Register"

5) [Mem./Dis. Setting]



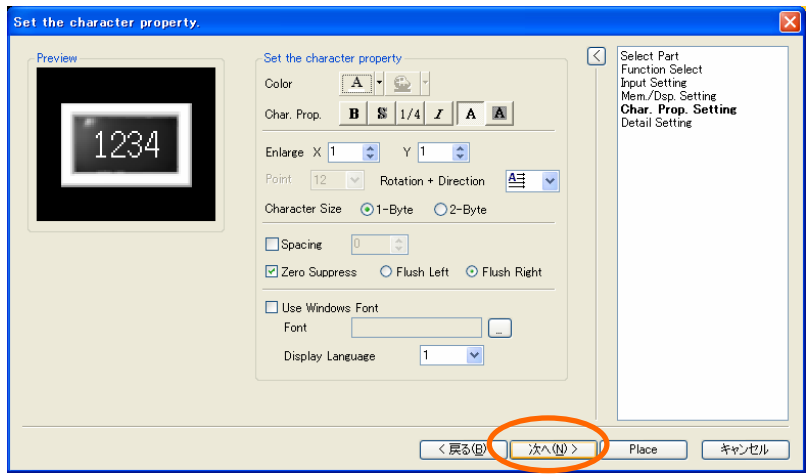
Set the Memory > Click [Next]

4-2) [Input Setting] ("Select" button)



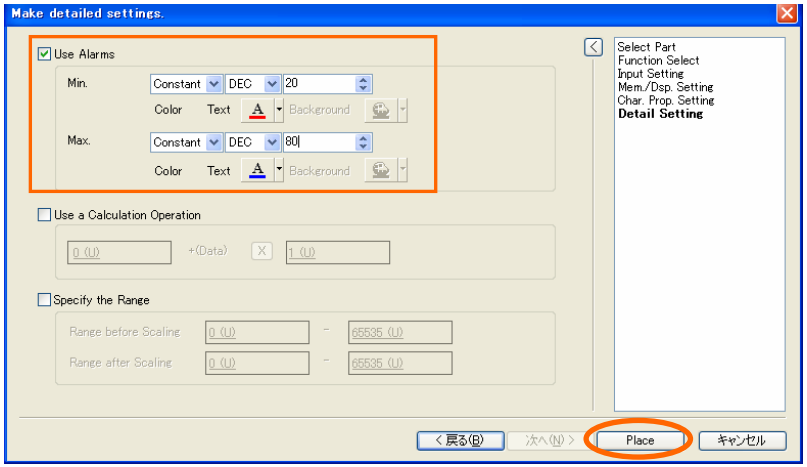
Click "Select" button > Select keypad part > Click [Next]

6) [Char. Prop. Setting]



Click [Next]

7) [Detail Setting]

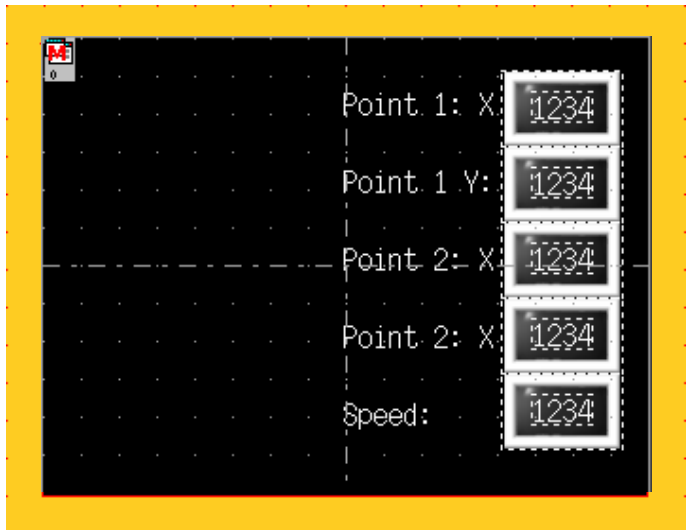


[☑Use Alarm] > [Max]/[Min] setting > Click [Place]

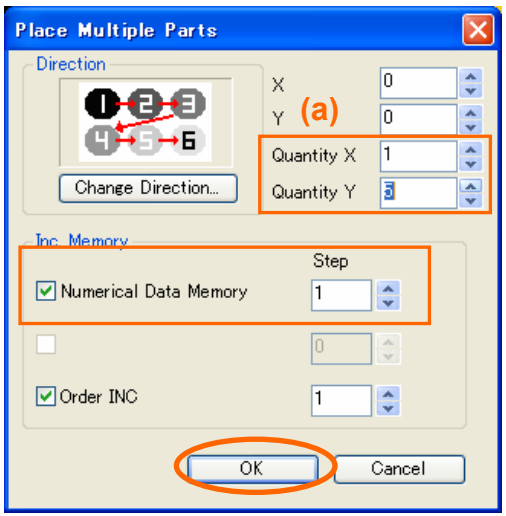
9) Place parts

Place parts on the screen

10) Position adjustment and text placement



Adjust the parts position > Place texts



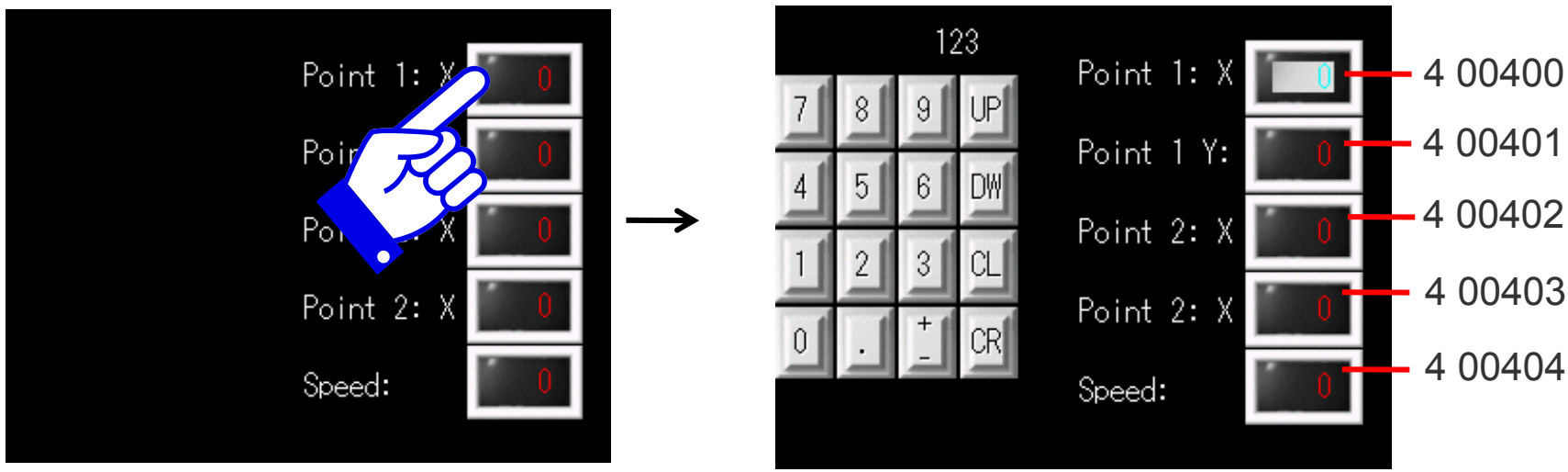
(a) Quantity X: 1
Quantity Y: 5

(b)☑Numerical Data Memory : 1

Set [Quantity] > [OK]

Operation Check

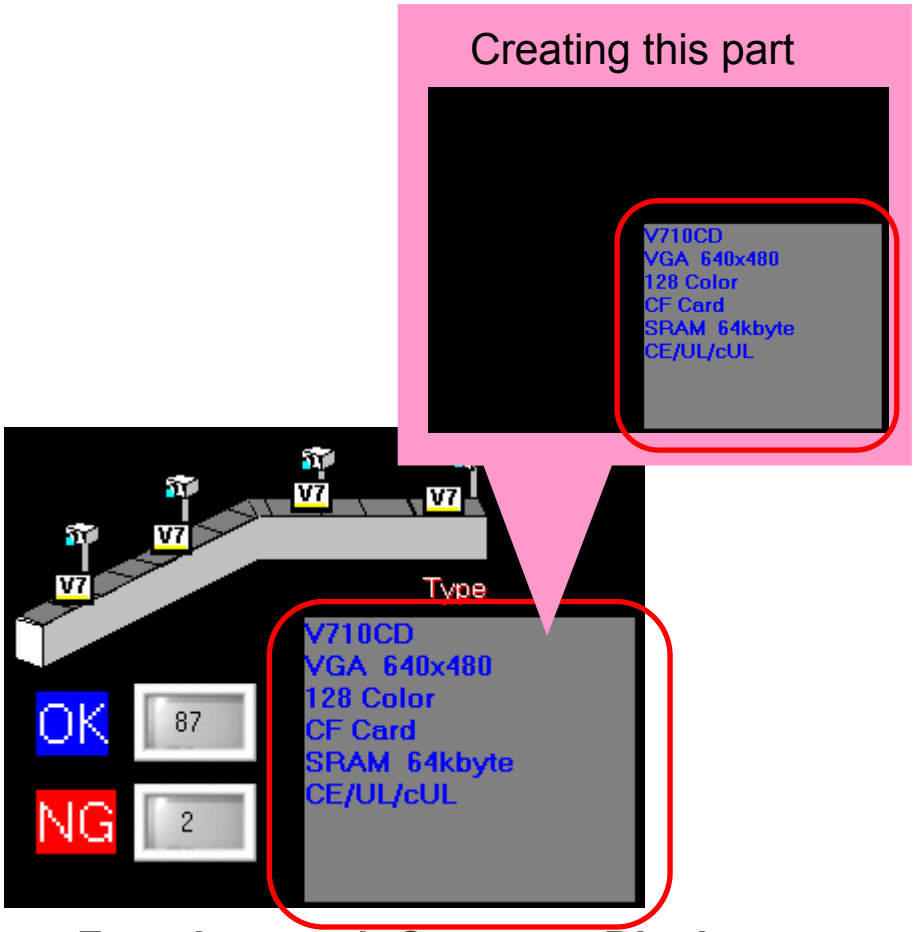
Let’s try to enter the value using a keypad.



6. How can I display the message?

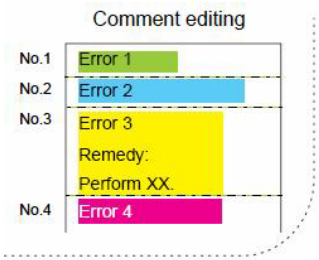
MONITOUCH

Completed screen

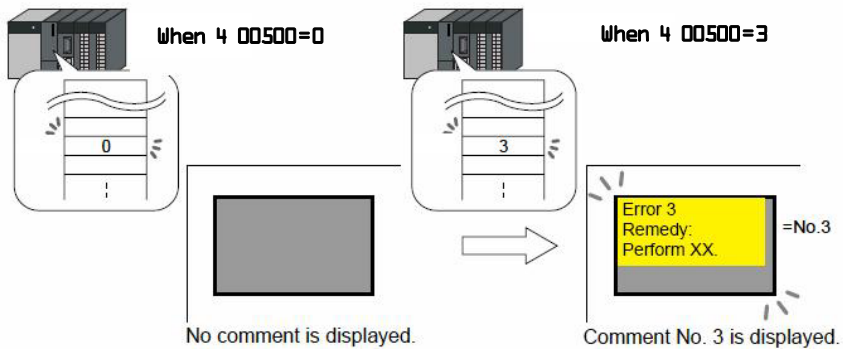


Function used: Comment Display

Registering the messages beforehand and display them according to the value in PLC memory.

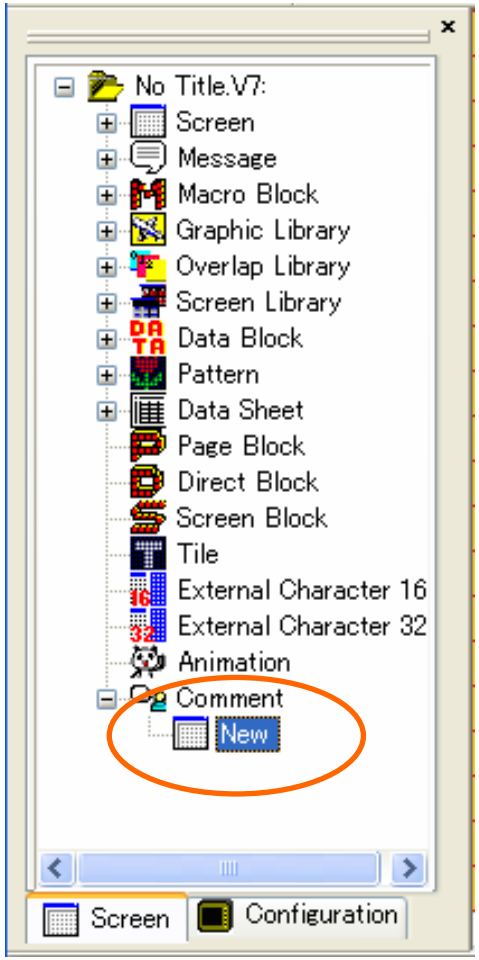


1) Linking the message and PLC memory beforehand…



2) Enter the value to PLC memory and the corresponding message is prompted.

1) Project View

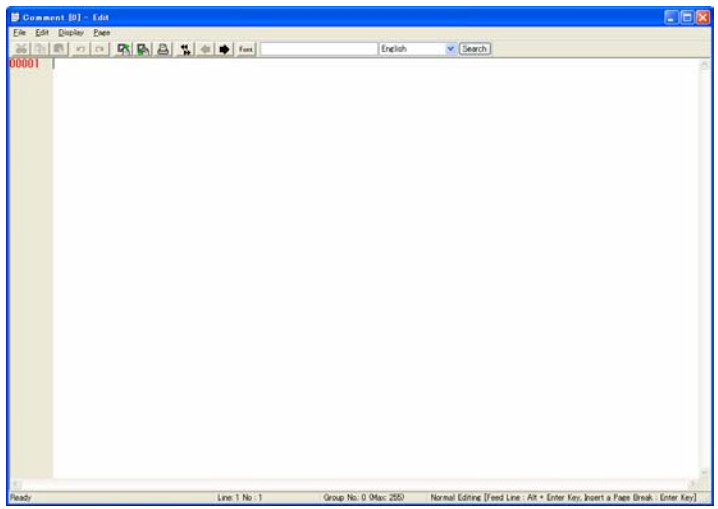


[Project View] > [Screen] tab > [Comment] > [New]

2) Selecting “Group No.”

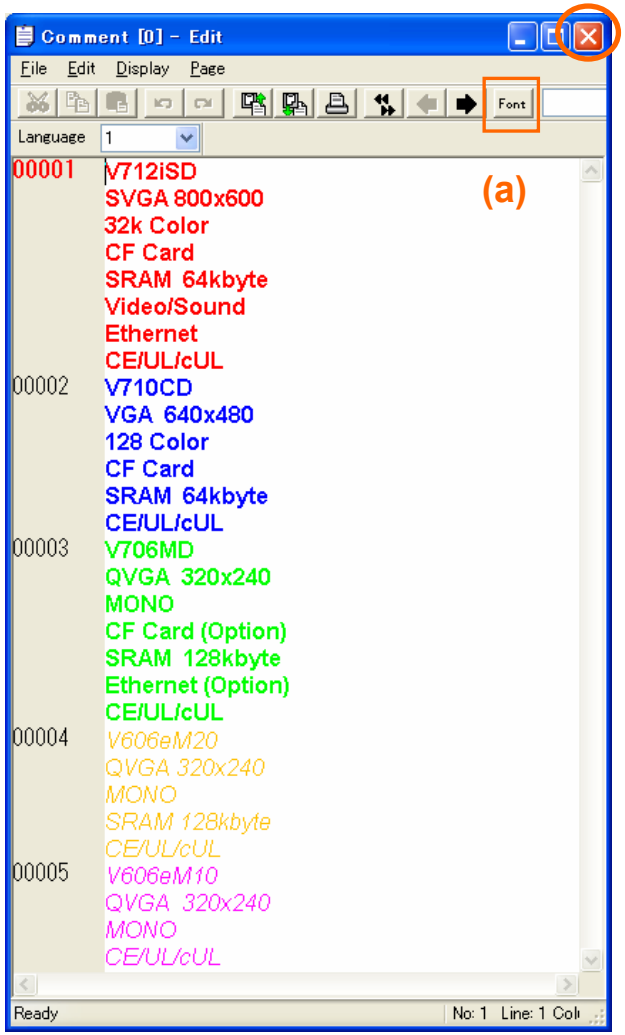
Group “0” > Click [OK]

3) Open [Comment Edit] dialog



[Comment Edit] dialog is prompted.

4) Edit Comment



Edit “Comment”

> Click [X] button to close the dialog

4-1) Editing “Comment” as follows:

Comment 1: V712iSD
SVGA 800x600
32k Color
CF Card
SRAM 64kbyte
Video/Sound
Ethernet
CE/UL/cUL

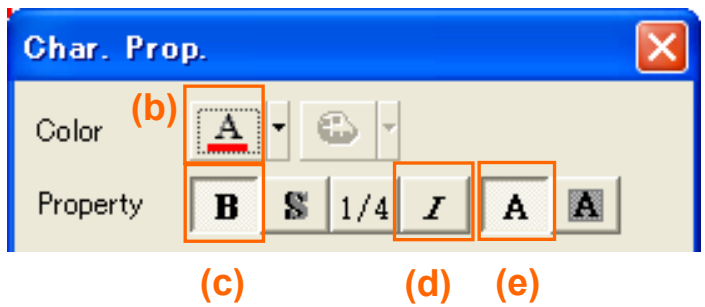
Comment 2: V710CD
VGA 640x480
128 Color
CF Card
SRAM 64kbyte
CE/UL/cUL

Comment 3: V706MD
QVGA 320x240
MONO
CF Card (Option)
SRAM 128kbyte
Ethernet (Option)
CE/UL/cUL

Comment 4: V606eM20
QVGA 320x240
MONO
SRAM 128kbyte
CE/UL/cUL

Comment 5: V606eM10
QVGA 320x240
MONO
CE/UL/cUL

4-2) [Font] setting (Click (a))



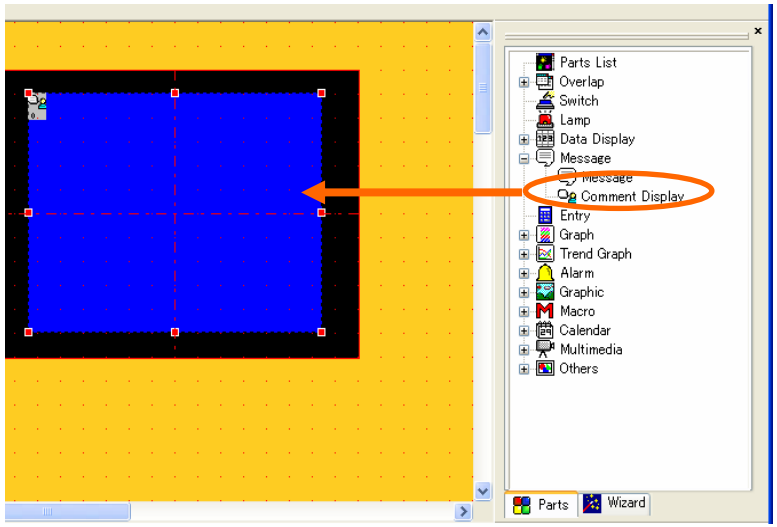
(b) Color

(c) Bold

(d) Italic

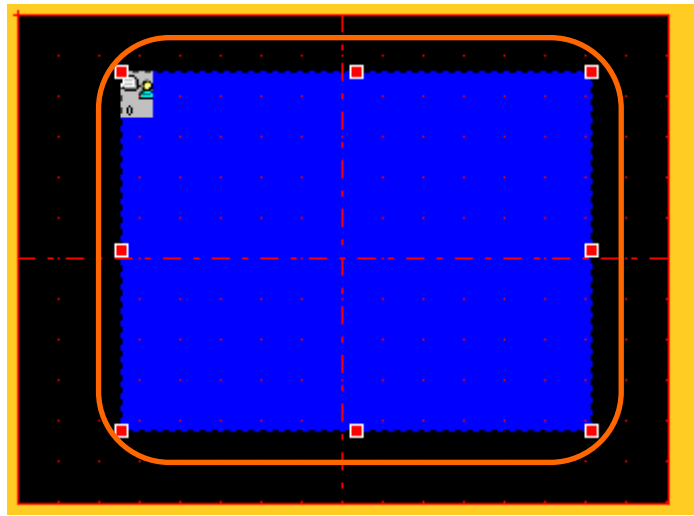
(e) Transparent

5) Place “Comment Display”

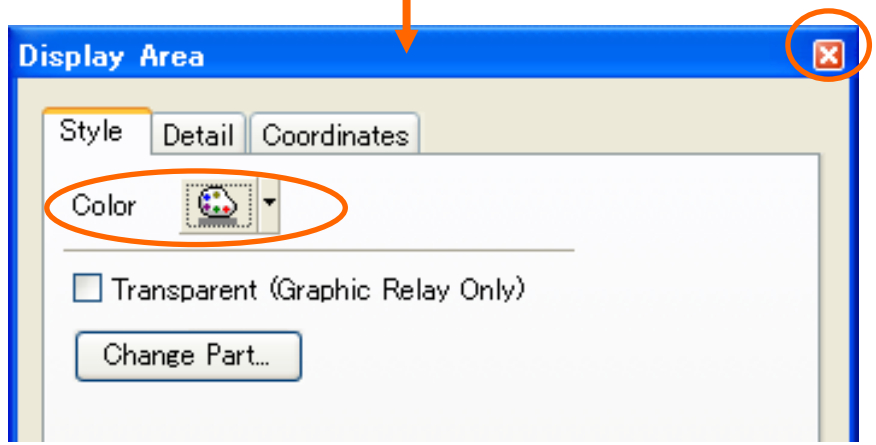


[Catalog View] > [Message] > [Comment Display] > Drag

7) “Display Area” dialog

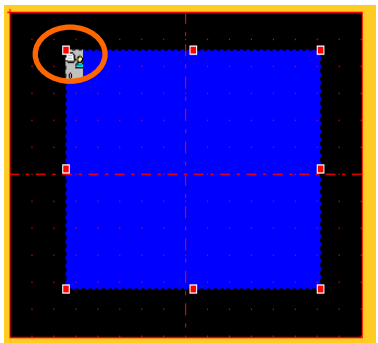


Double-click “Display Area” > [Display Area] dialog prompted.

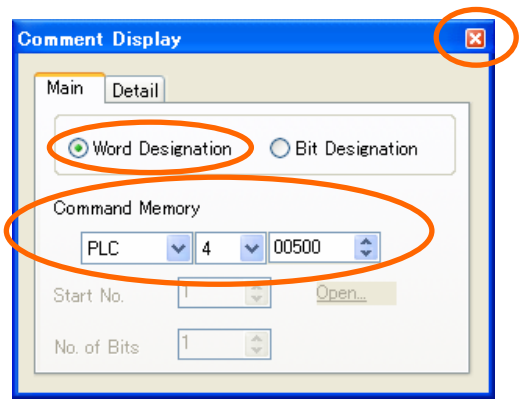


Change [Color]

6) “Comment Display” setting



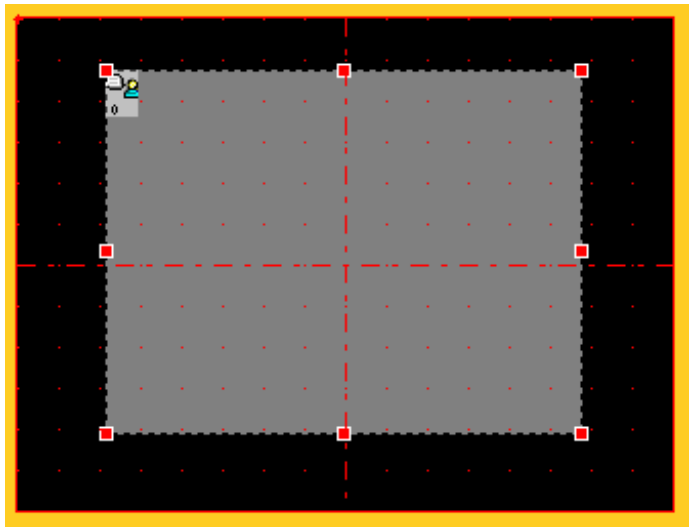
Double-click the icon > [Comment Display] dialog prompted



Select [Word Designation] > Set [Command Memory]

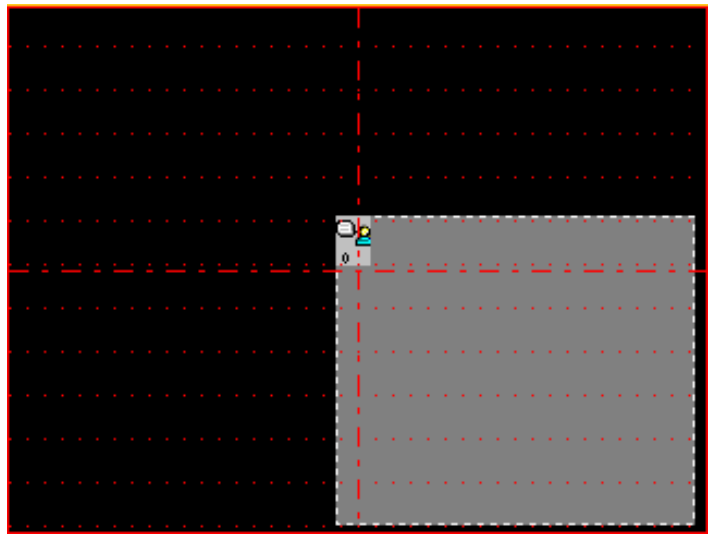
Command Memory : 4 00500

8) Change “Grid”

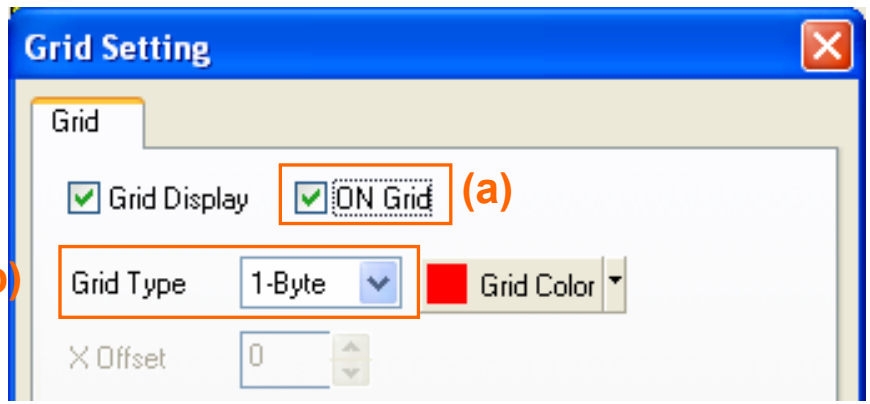


Right-click > [Grid]> [Grid Setting]> [OK]

9) Adjust “Display Area” size



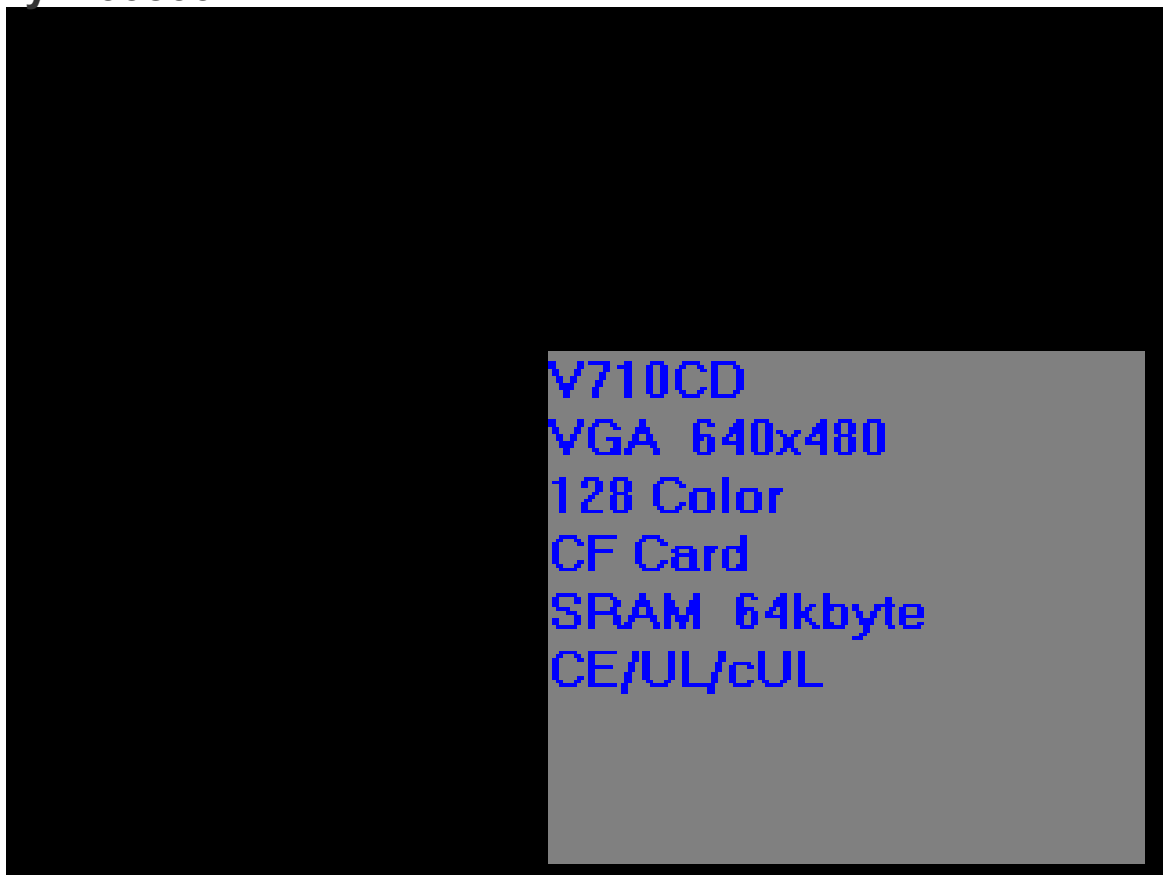
Adjust the area to include 8 lines



(a) ☑ ON Grid

(b) Grid Type: 1-Byte

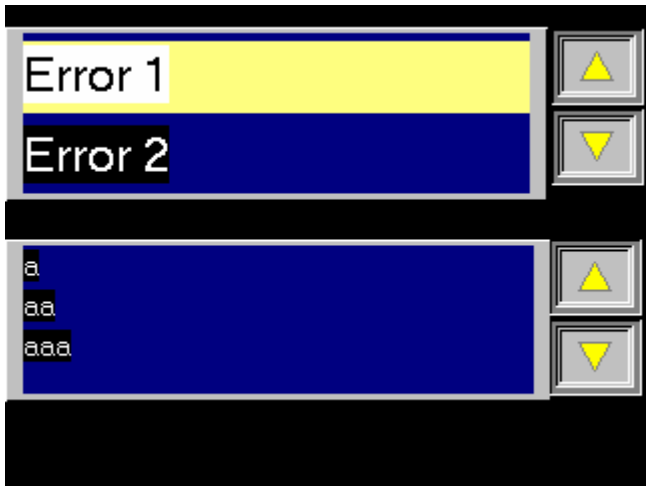
Check if the corresponding message is displayed by changing the value in PLC memory 4 00500.



7. How can I display errors in their priority order?

MONITOUCH

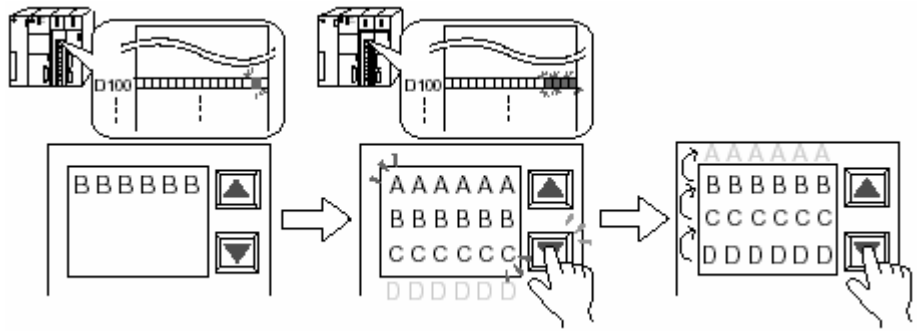
Completed screen



Function used : Bit Order Alarming
Alarm Sub Display

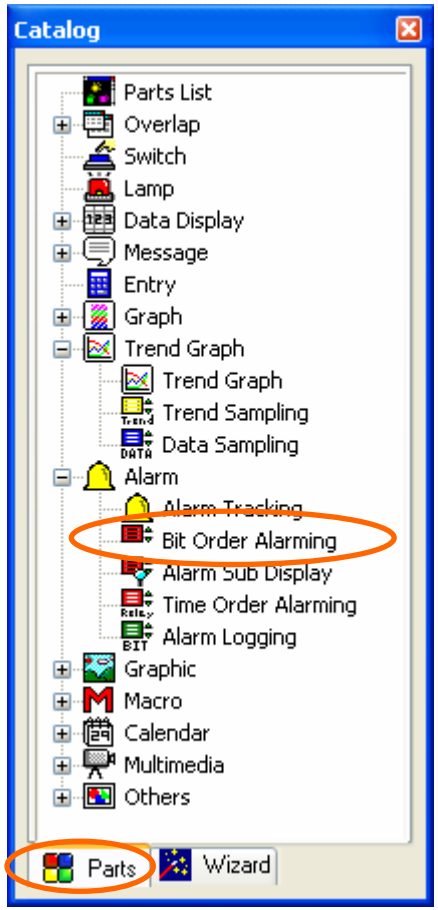
Displaying the error message in their priority order, not in chronological order.

When an alarm bit is set ON, corresponding error message is displayed from the top of the display area. Error message which has more priority comes to the top of the display area. When an error is corrected(alarm bit OFF), the corresponding error message disappears.



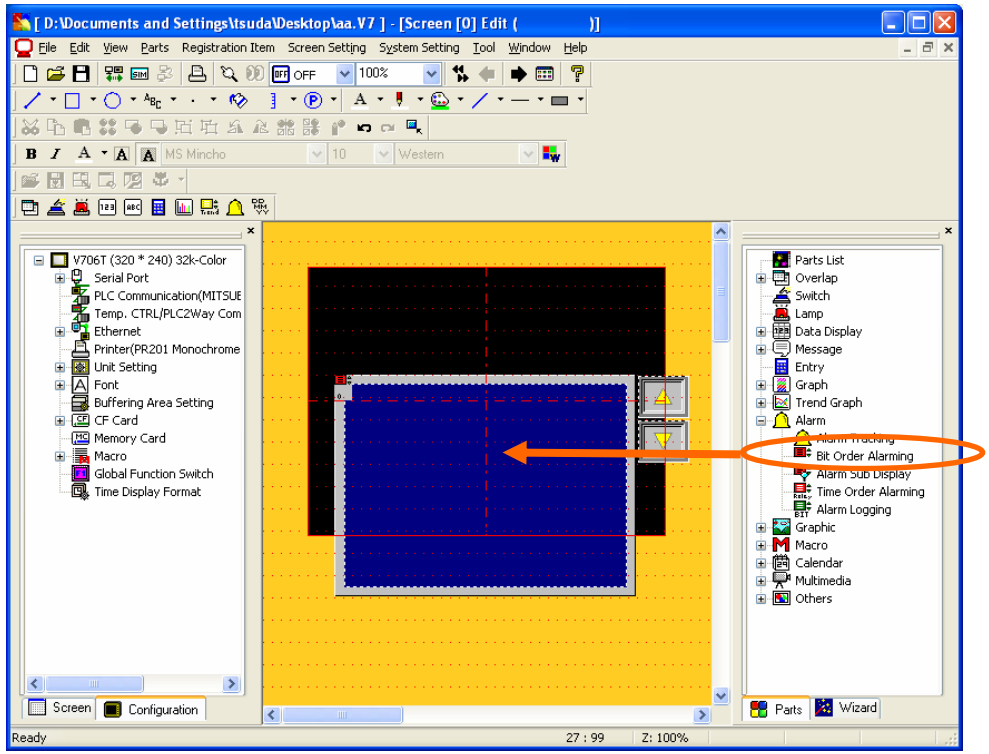
This chapter explains how to create the screen to display error messages in the upper half and sub display for error messages in the lower half of the screen.

1) Select from [Catalog View]



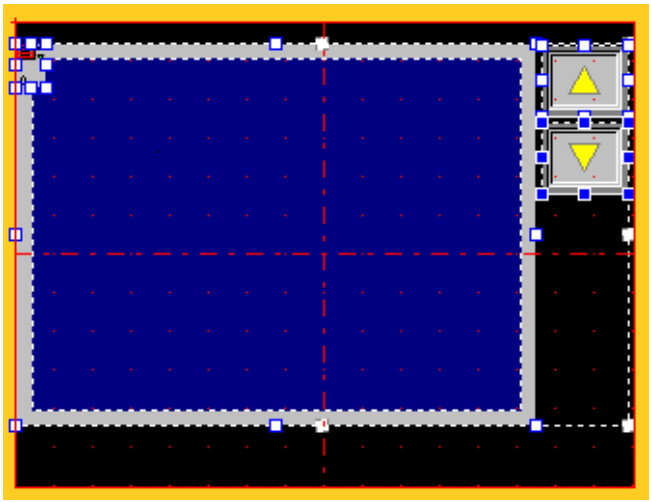
[Catalog View] > [Parts]tab > [Alarm] > [Bit Order Alarming]

2) Placing “Bit Order Alarming” parts



[Bit Order Alarming] > Click and drag it to the screen

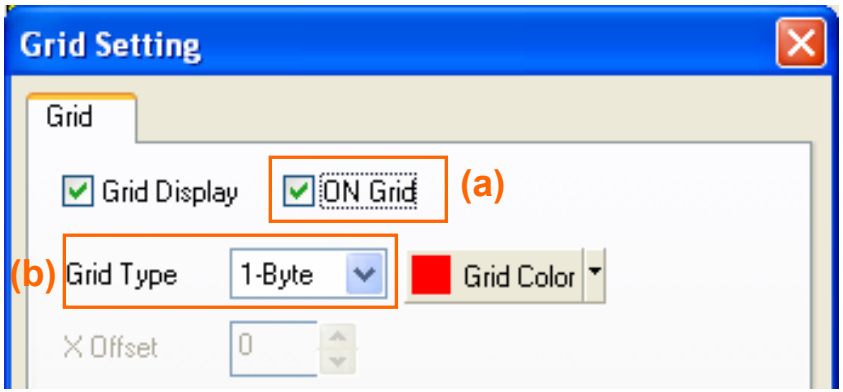
3) Link Cancel



Right-click > [Change Part]> [Link Cancel]

Handle display > Cancel handle display by a click

4) Changing “Grid”

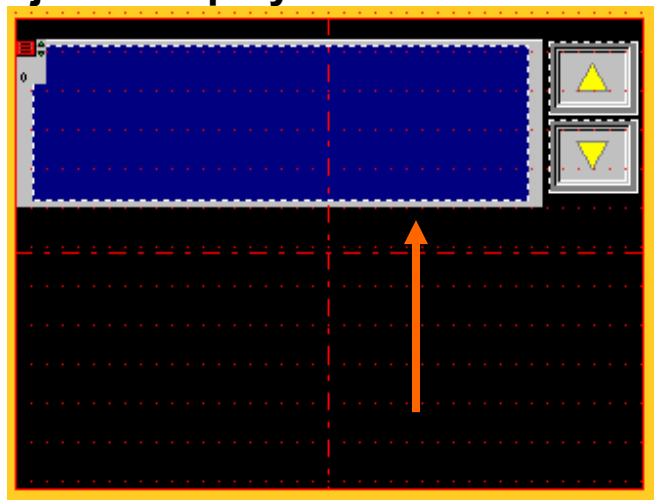


Right-click > [Grid]> [Grid Setting]> [OK]

(a) ☑ ON Grid

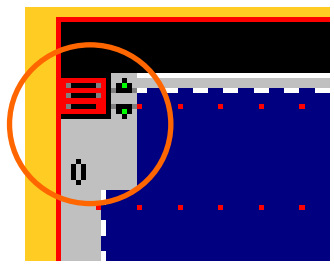
(b) Grid Type: 1-Byte

5) Adjust “Display Area” size



Adjust the area to include four lines

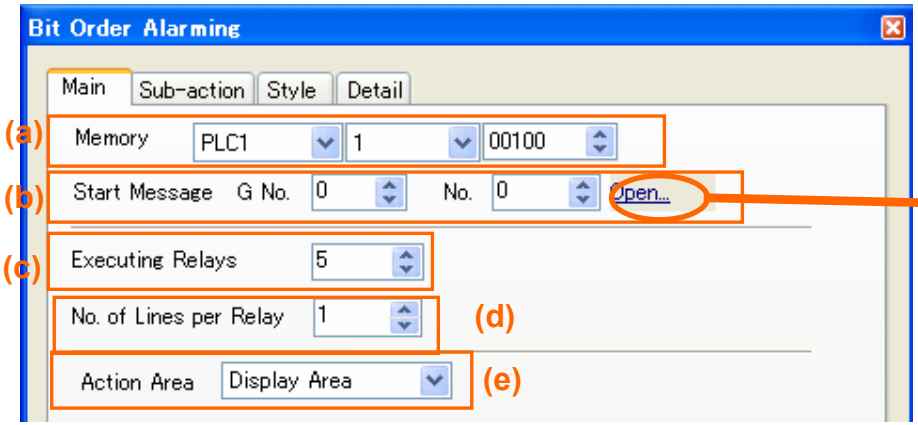
6) Detail setting



Double-click the icon on the top left of the area

> [Bit Order Alarming] dialog opens

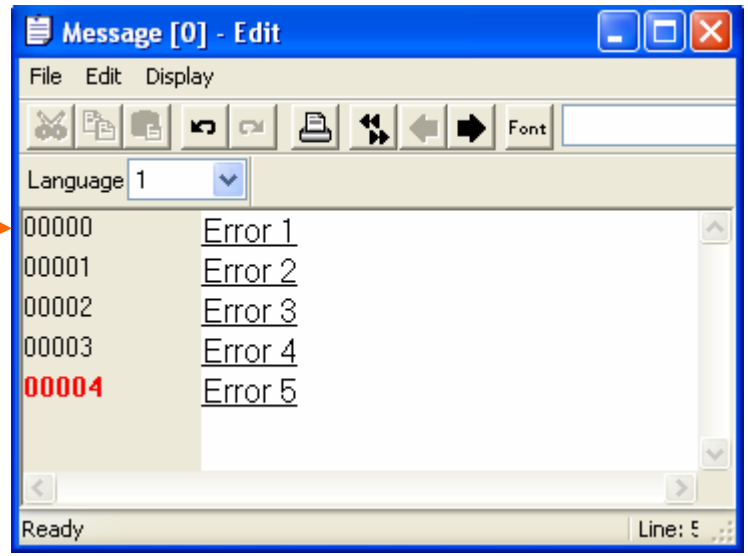
7) [Main] tab setting



(a) Memory: PLC 1 00100
(b) Start Message: G. No. 0, No.0
(c) Executing Relays: 5
(d) No. of Lines per Relay: 1
(e) Action Area: Display Area

After completing, click [Open…]
> [Message] dialog appears

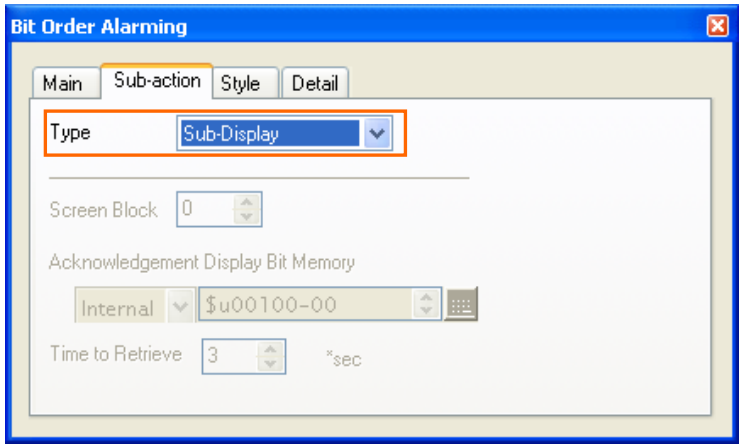
8) Message Edit



Edit 5 messages starting from 00000
> Click ✕ after completion

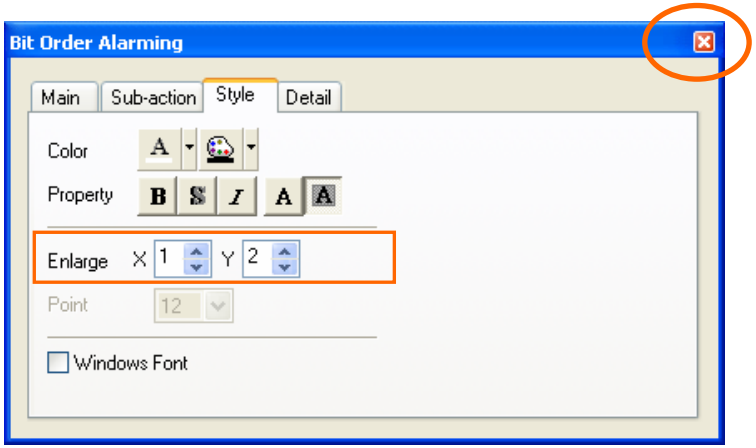
--- Message to edit ---
00000 : Error 1
00001 : Error 2
00002 : Error 3
00003 : Error 4
00004 : Error 5

9) [Sub-action] tab setting



(a) Type: Sub-Display

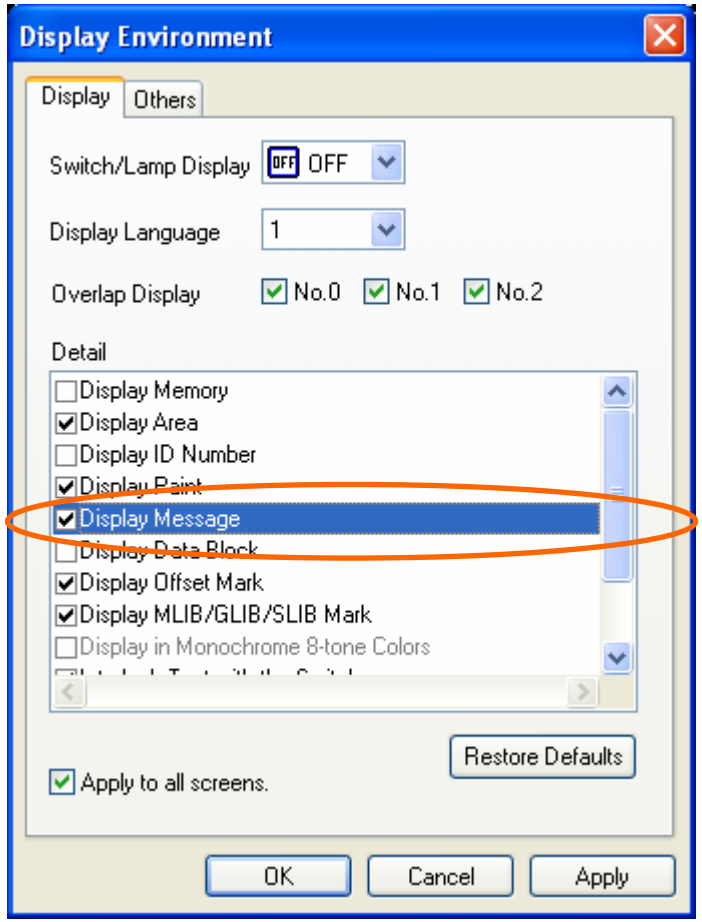
10) [Style] tab setting



(a) Enlarge: X – 1, Y – 2

After completing setting, click ✕

11) Display "Preview"

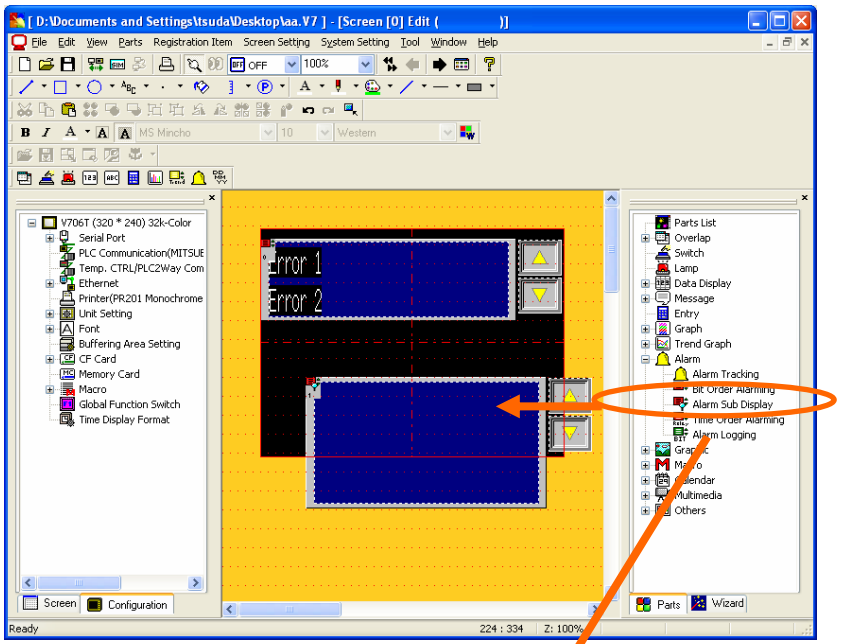


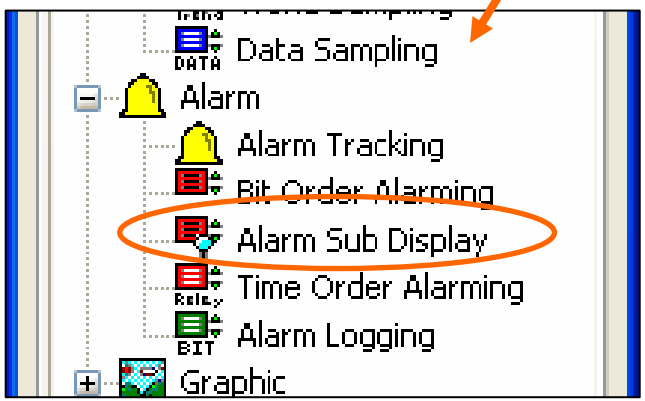
[View]> [Display Environment]

> ☑[Display Message]

> [OK]

12) Place “Alarm Sub Display” parts

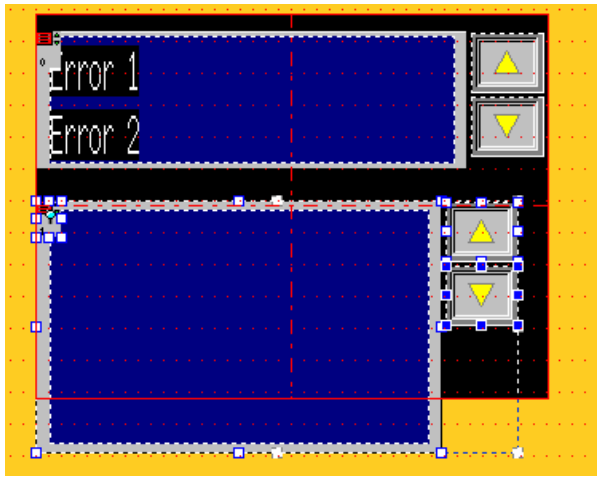




[Alarm] > [Alarm Sub Display]

> Click and drag it to the screen

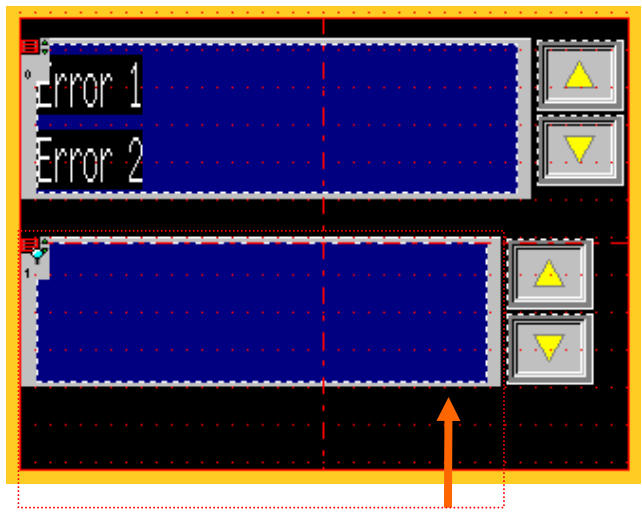
13) Link Cancel



Right-click > [Change Part]> [Link Cancel]

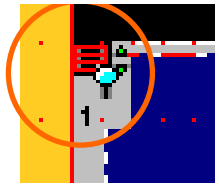
Handle display > Cancel handle display by a click

14) Adjust “Display Area” size



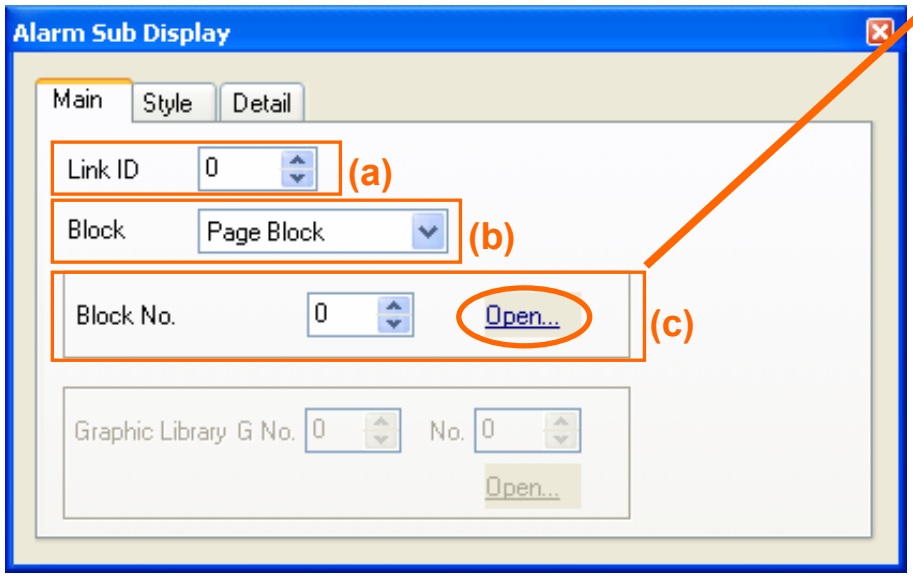
Adjust the area size to include four lines

15) Detail setting



Double-click the icon on the top left of “Display Area”

16) [Main]tab setting



(a) Link ID: 0

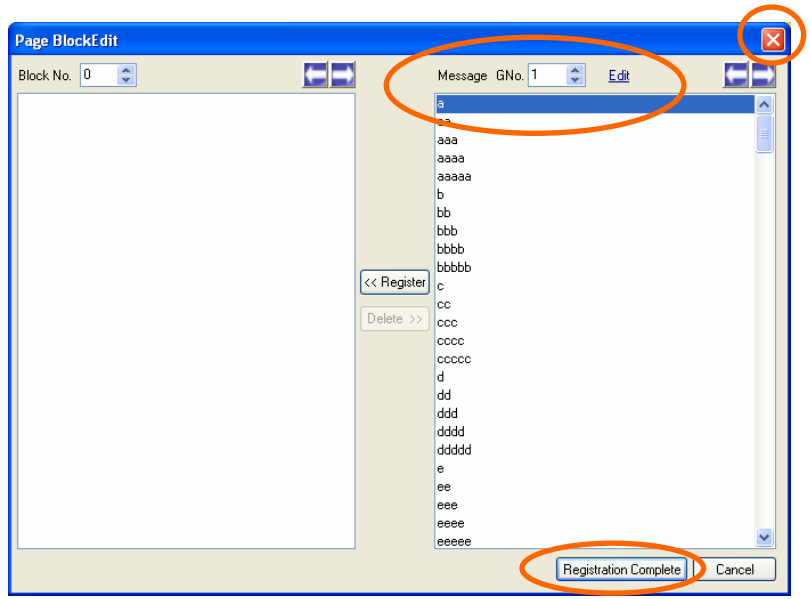
(b) Block: Page Block

(c) Block No.: 0

After completing setting, click [Open…]

> “Page Block Edit” dialog appears

17-1) Page Block Edit 1. Register messages



Set “1” to [Message Group] in the right dialog

> Click “Edit”

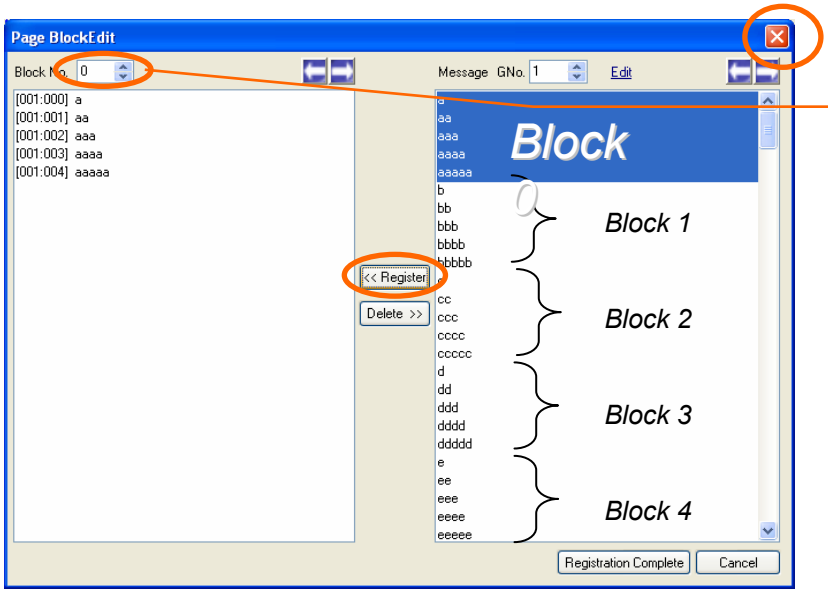
> Register 5 multi-line messages in Group 1

00256: a	00276: e
00257: aa	00277: ee
00258: aaa ~	00278: eee
00259: aaaa	00279: eeee
00269: aaaaa	00280: eeeee

> Click [Registration Complete] and ✕ after editing messages

> Back to “Page Block Edit”

17-2) Page Block Edit□2 Creating “Page Block’□



Page Block setting are;

Block 0: Message G1: Line 0 - 4
Block 1: Message G1: Line 5 - 9
Block 2: Message G1: Line 10 - 14
Block 3: Message G1: Line 15 - 19
Block 4: Message G1: Line 20 - 24

Make sure “0” is selected for [Block No.] on the left hand side

> Select the start message and end message to include in Block 0 (Click the start message and the end message with “Shift” key held down□

> Click [Register] button in the middle

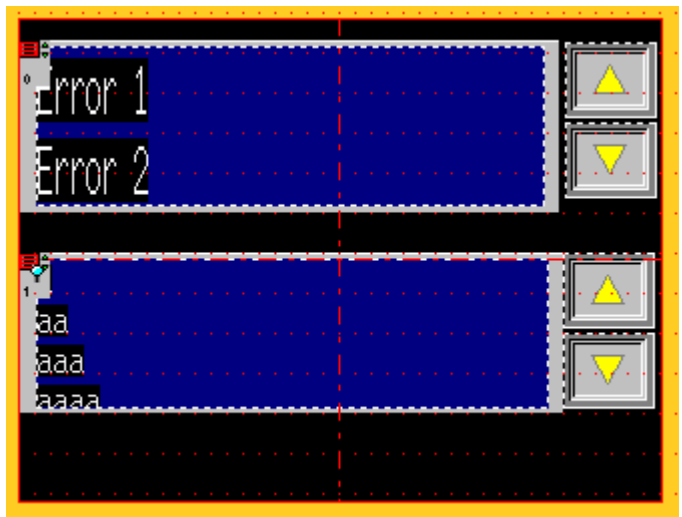
> Change [Block No.] from “0” to “1”

> Select the start message and end message to include in Block 1

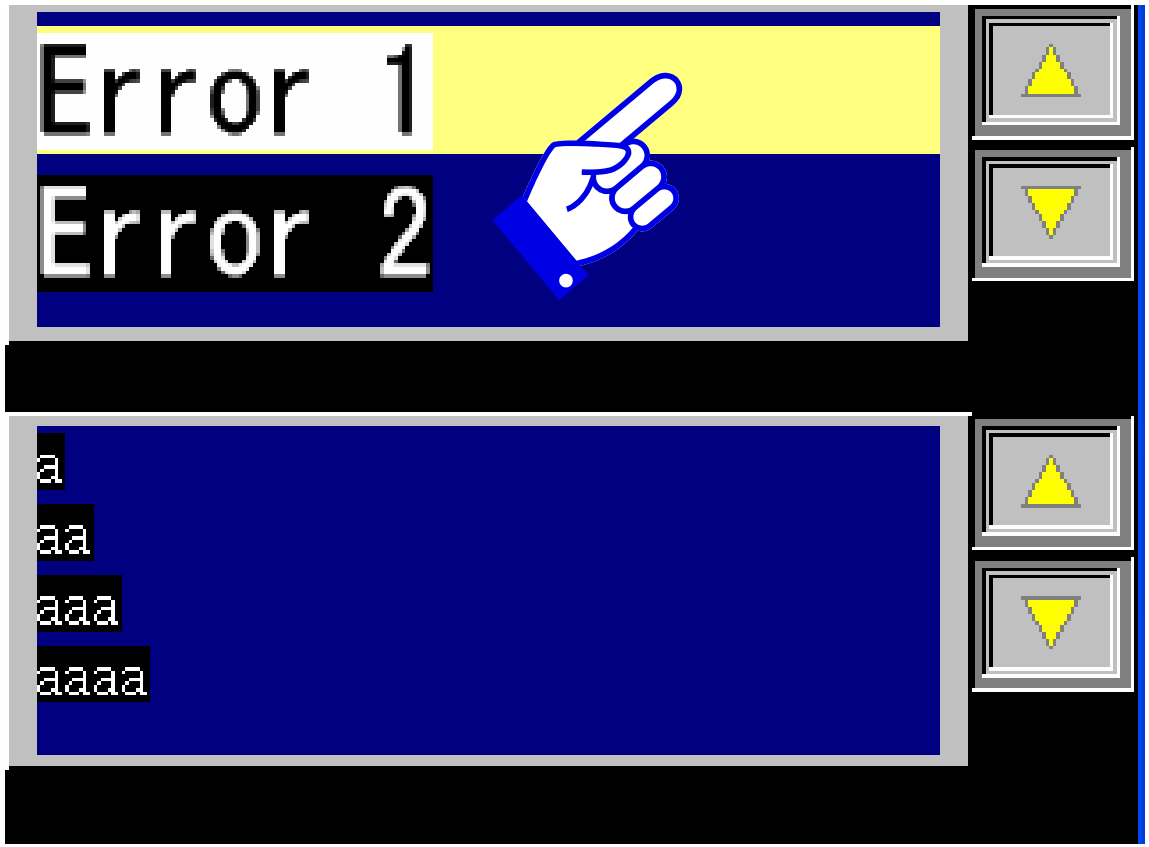
> Create 5 Blocks (to No. 4) in the same way as above

After completing, click t the top right corner

18) Completed screen



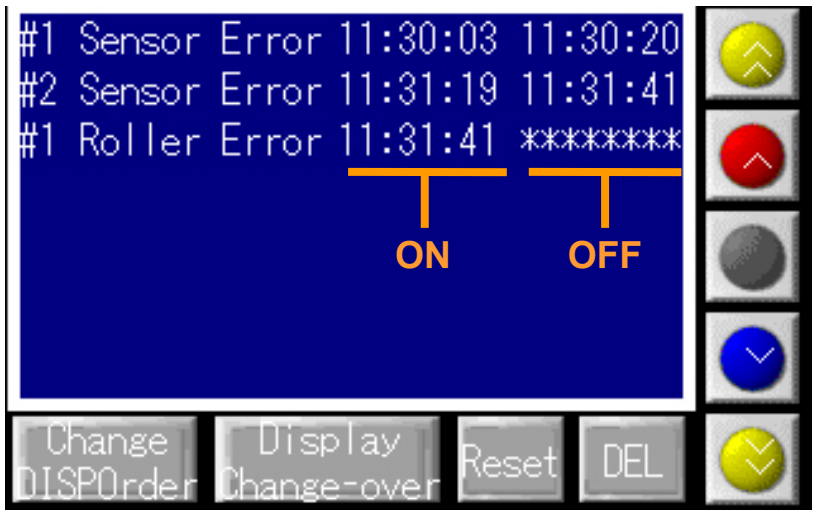
Check if the corresponding message is displayed by setting error bits (starting from 1 00100□



8. How can I display the error history?

MONITOUCH

Completed screen

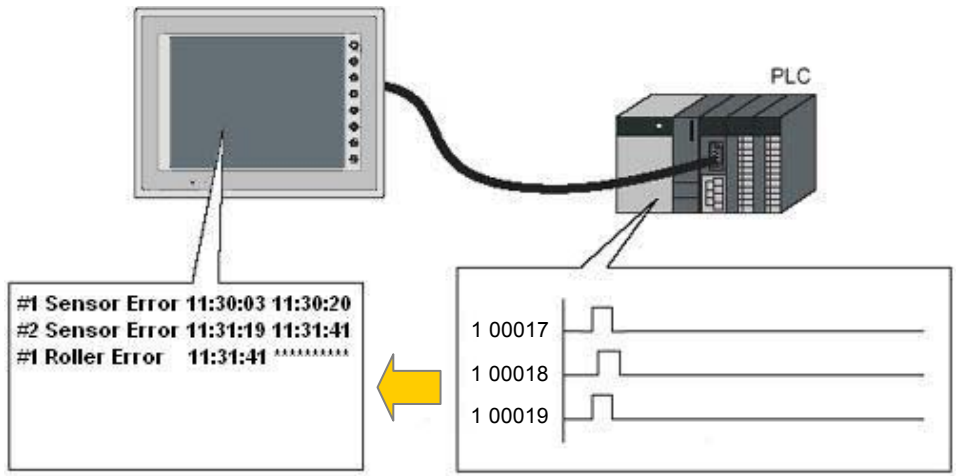


Sampling error messages and time stamps according to bit action and display on the screen as error history.

In this chapter, four error bits are monitored.

Function used：Alarm Tracking

：by Wizard：



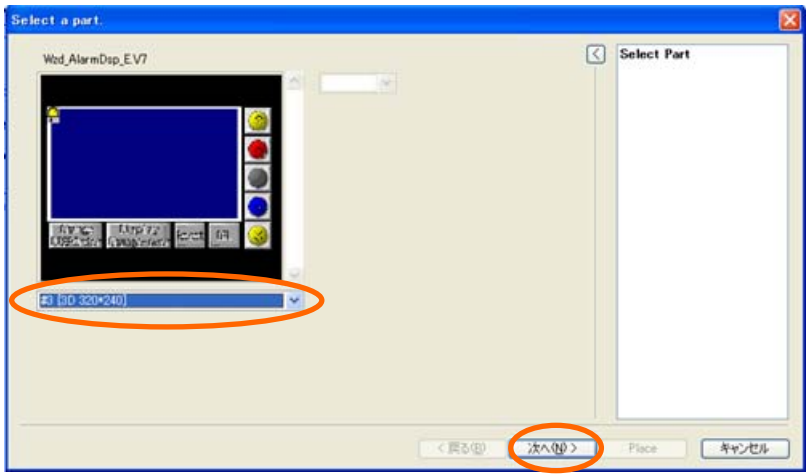
Log and display error history

Monitor alarm bit status

1) Start “Wizard”

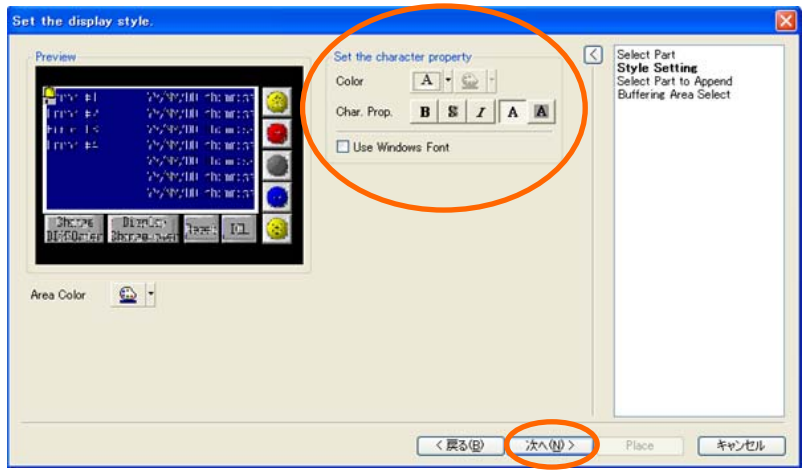
[Catalog View] > [Wizard] tab > [Alarm] > [Alarm Tracking]

2) [Select Part]



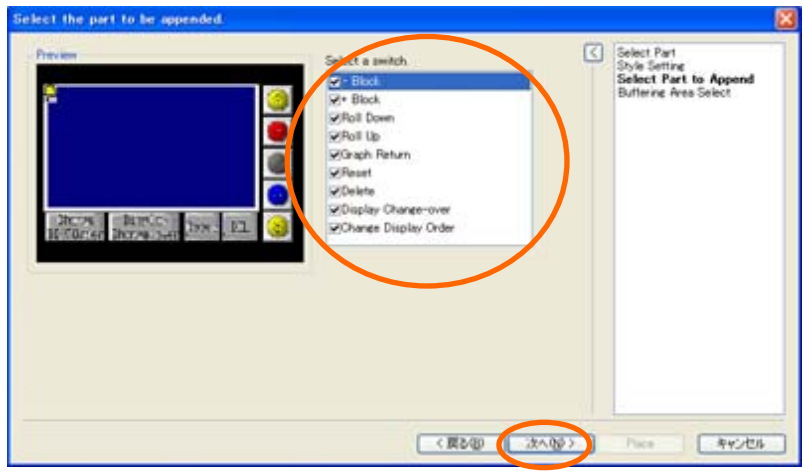
[#6[3D 320*240]] > [Next]

3) [Style Setting]



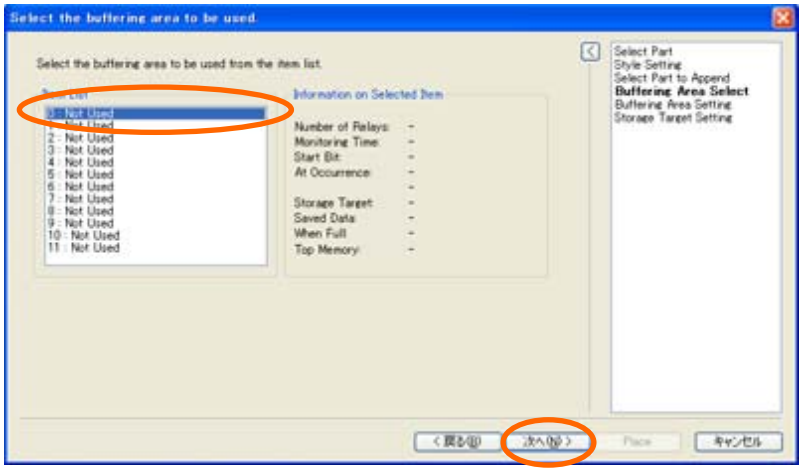
[Set the character property] > [Next]

4) [Select Part to Append]



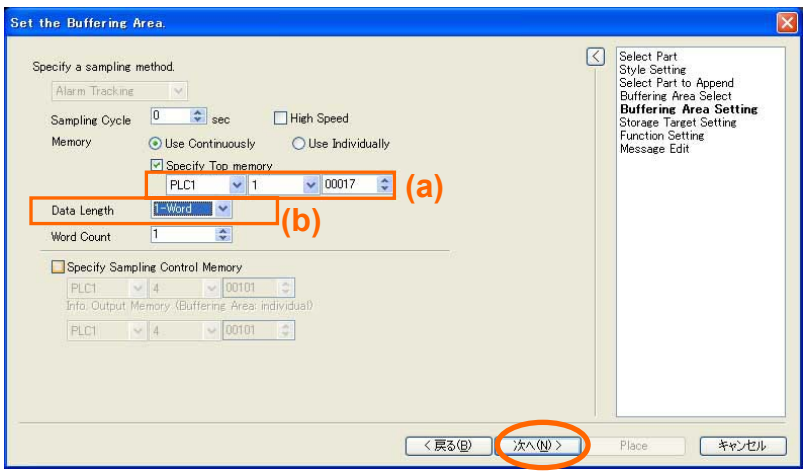
[Select a switch] > [Next]

5) [Buffering Area Select]



[Item List] > Select [0] > [Next]

6) [Buffering Area Setting]

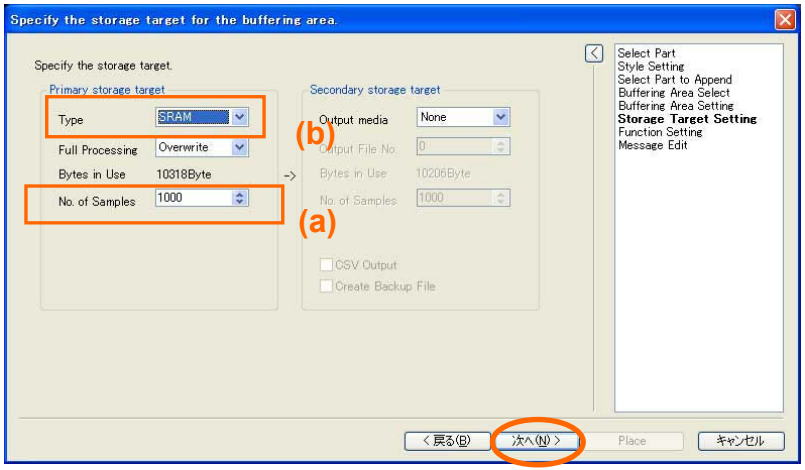


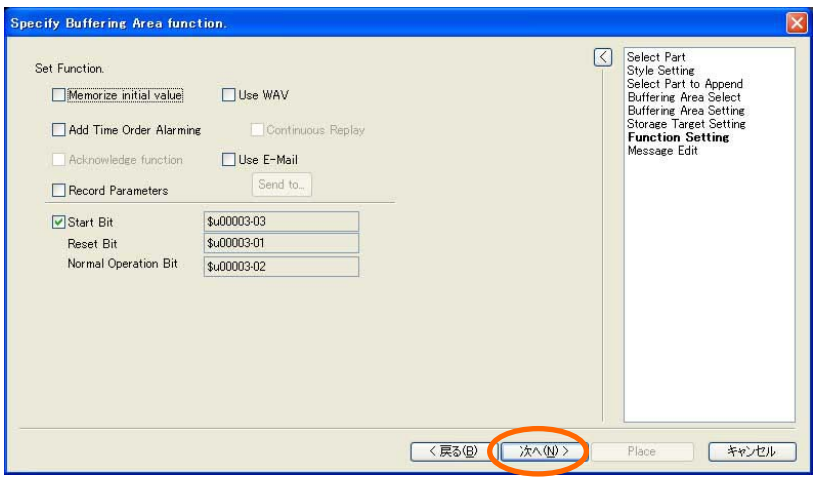
[Specify Top Memory] > [Word Count] > [Next]

(a) [Specify Top Memory] 1 00017

(b) [Word Count] : 1 word

7) [Storing Target Setting]

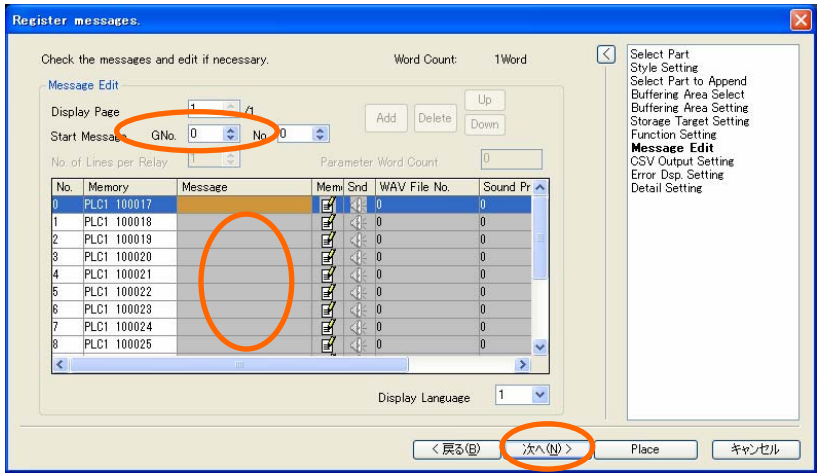




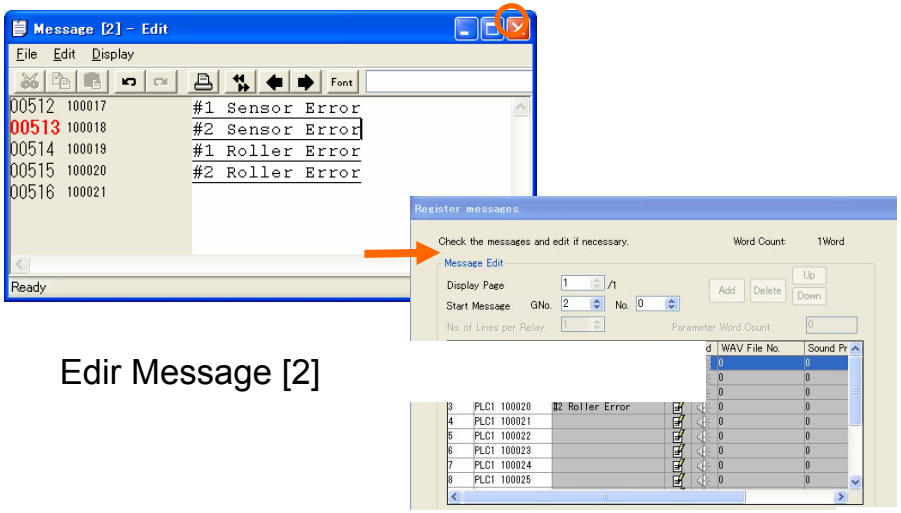
(a) [No. of Saved Data] : 1000

(b) [Specify the storing target] : SRAM

8) [Resister Messages]

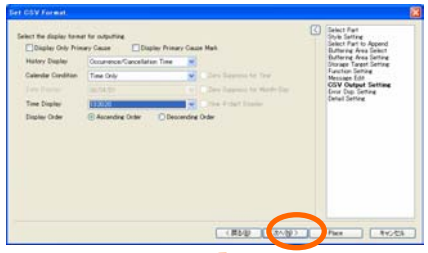


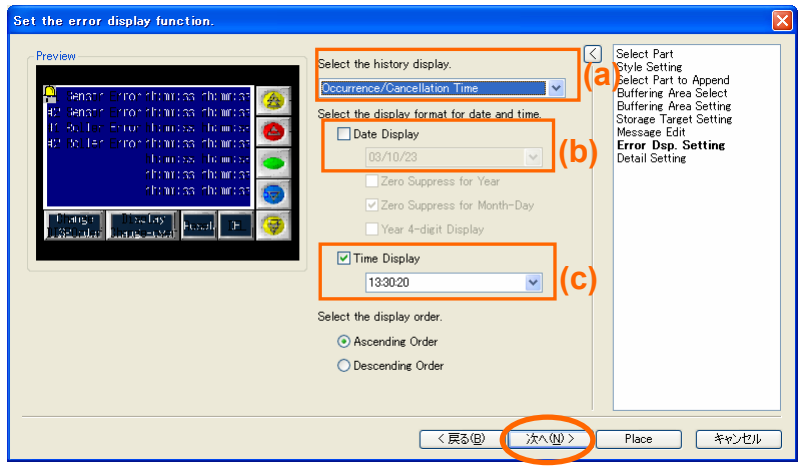
[G No.]> Double click “Message” column.



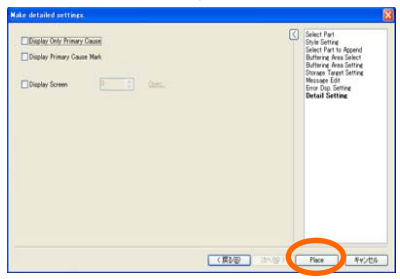
Edir Message [2]

9) [Error Display Setting]



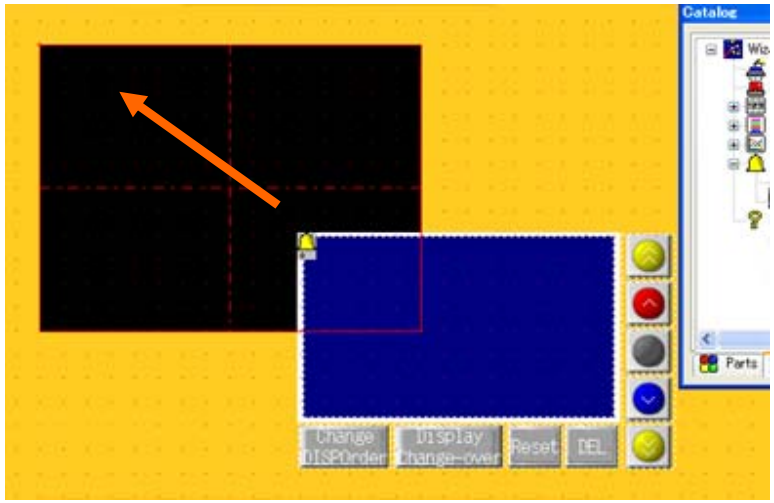


[Select the history display] > [Select the display format for date and time] > [Next]



[Place]

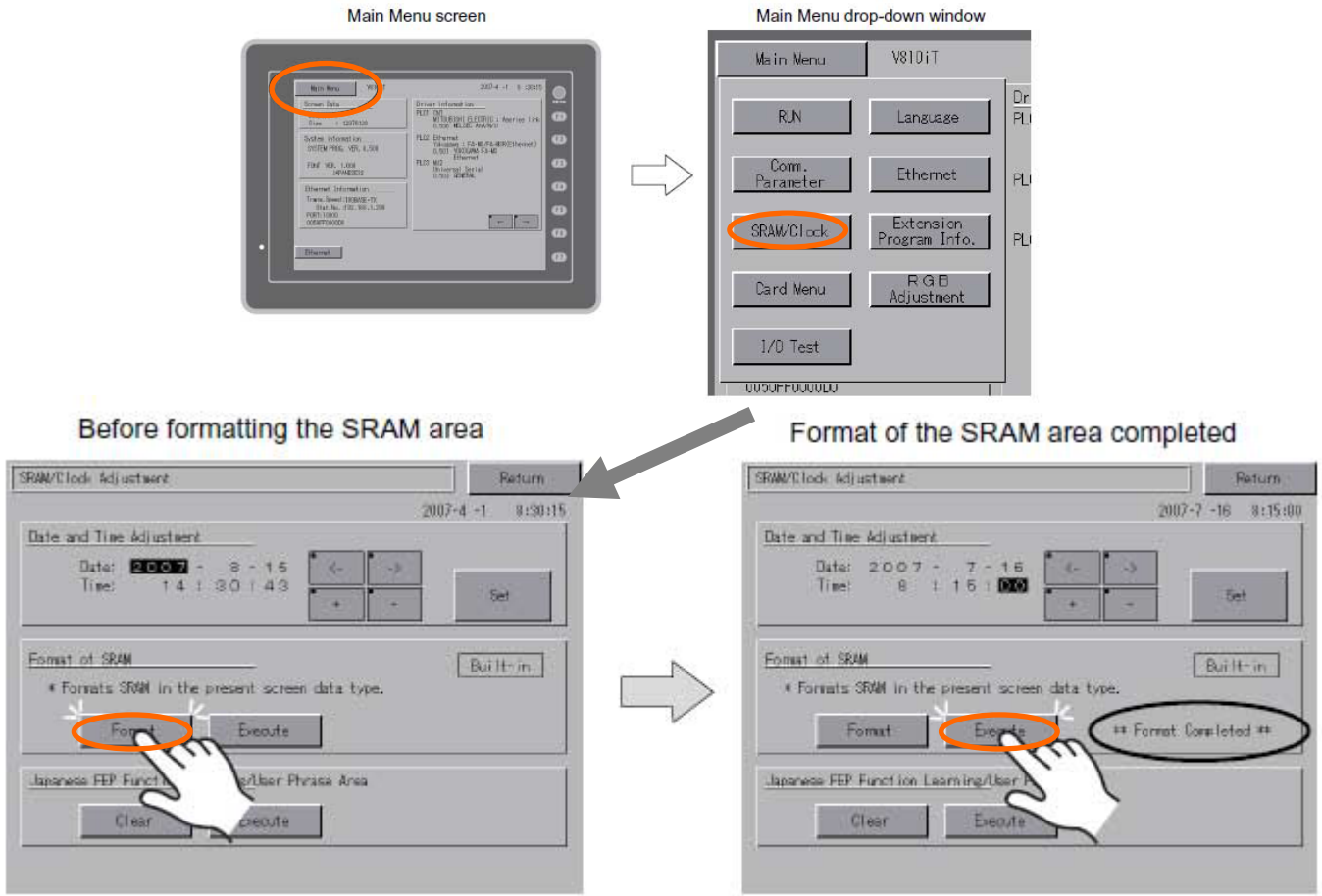
11) Place “Alarm Tracking” parts



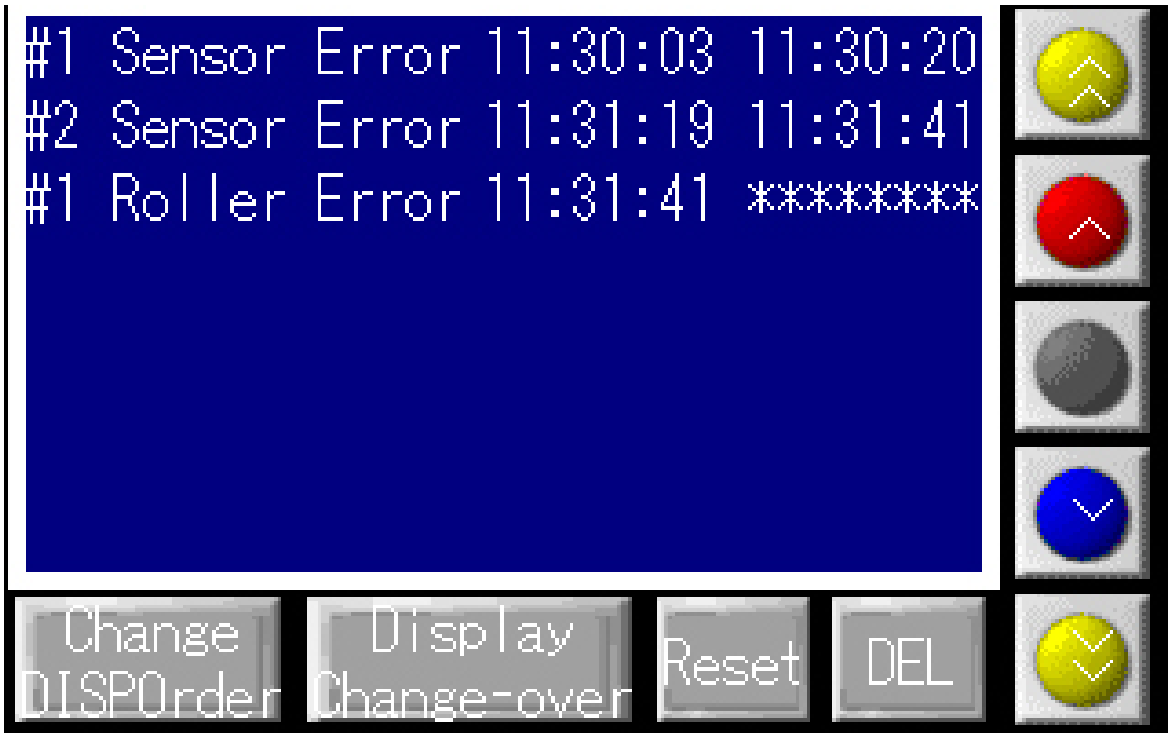
12) Place a format switch

Preparation for Operation Check

Initial format of SRAM area



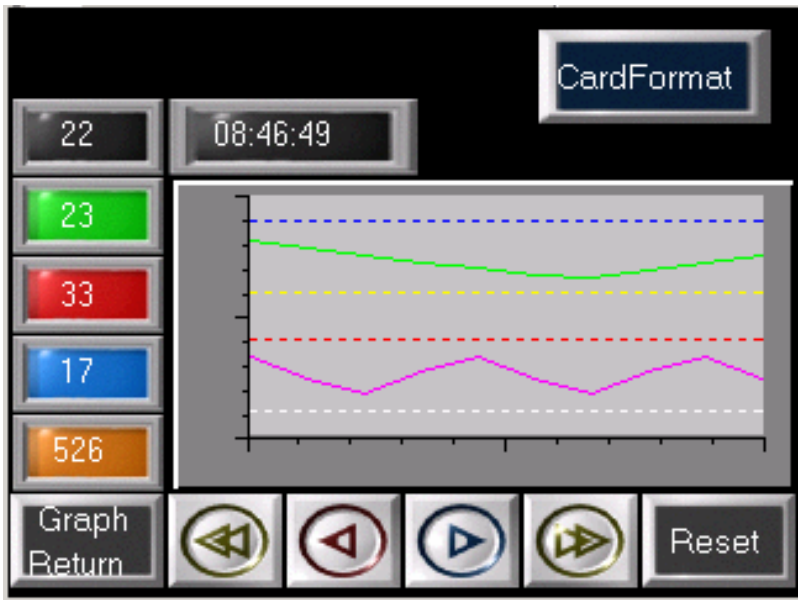
Set error bits and see how the error history is displayed.



9. How can I display the sampled data in line graph?

MONITOUCH

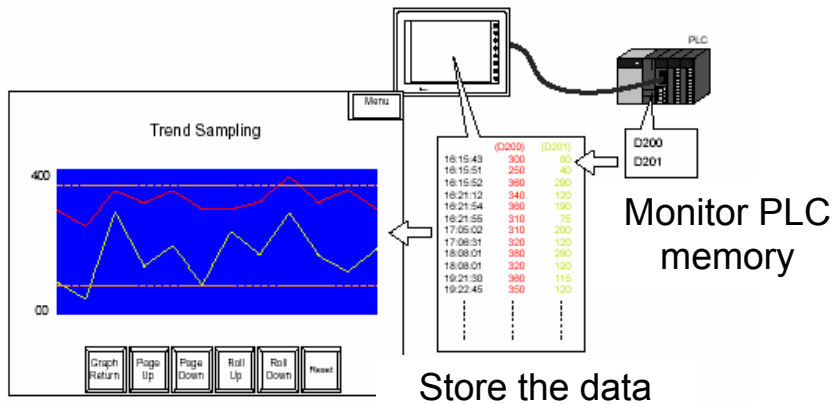
Completed screen



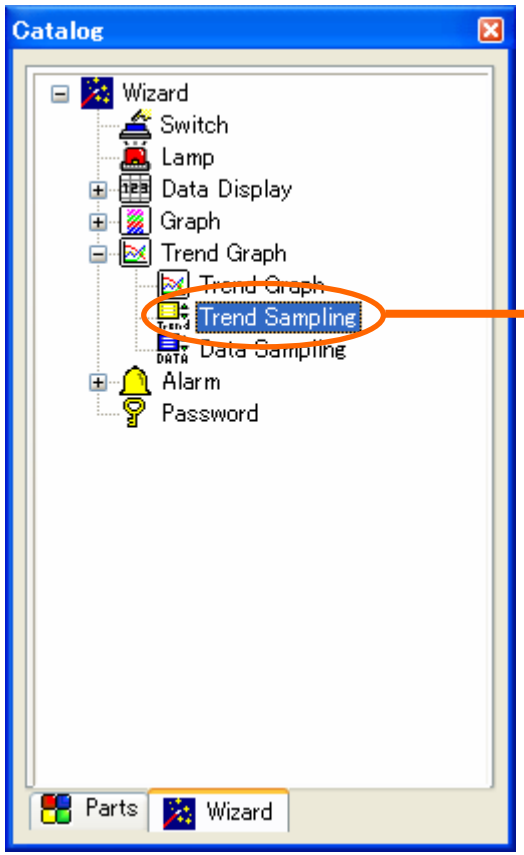
Function used : Trend Sampling (by Wizard)

Display the periodically sampled numeric data in line graph format. The sampled data is stored in the area called “Buffering Area” in MONITOUCH, so you can see the data history as well.

In this chapter, we will monitor 2 words of PLC memory addresses(4 00600 and 4 00601) then display the history in line graph.

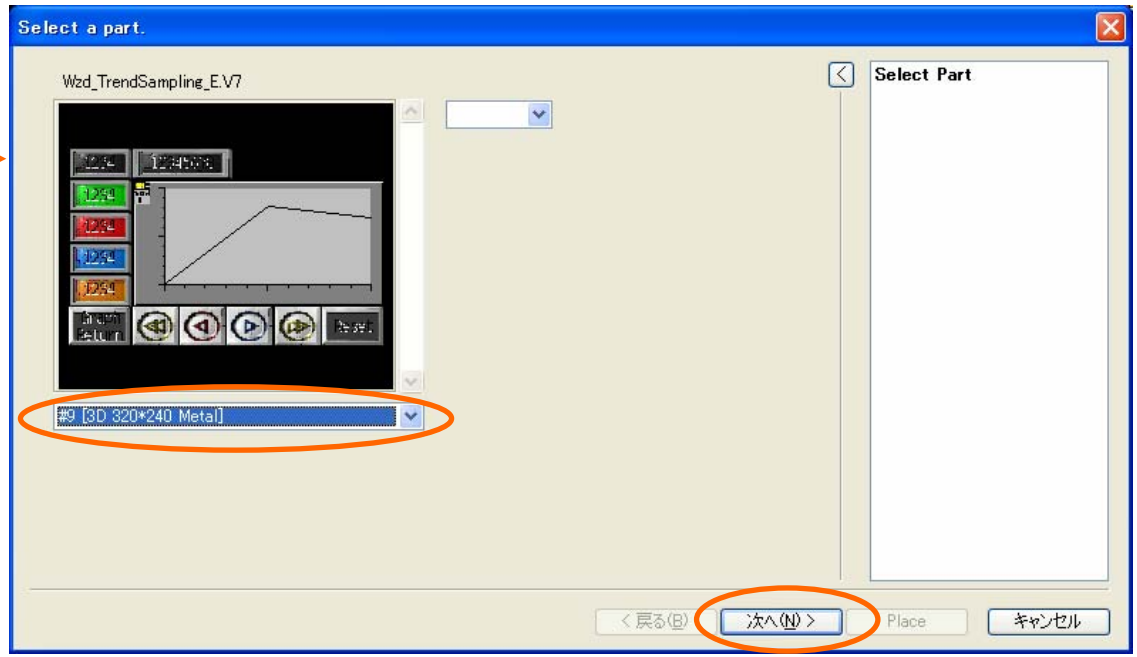


1) Start “Wizard”



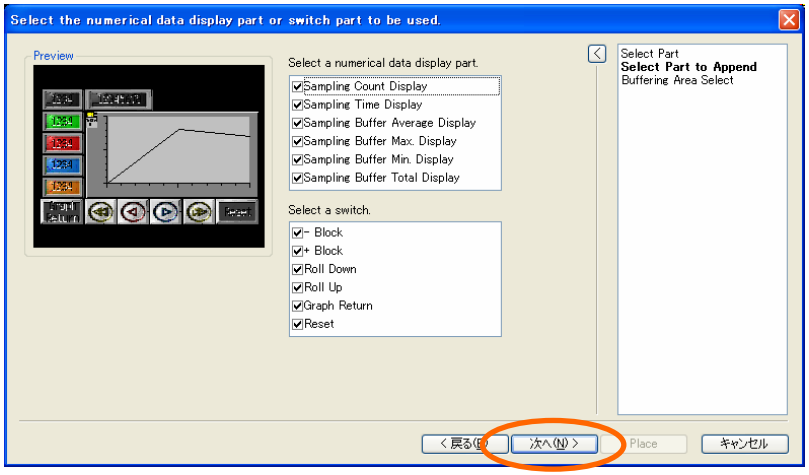
[Catalog View] > [Wizard]tab
> [Trend Graph] > [Trend Sampling]

2) [Select Part]



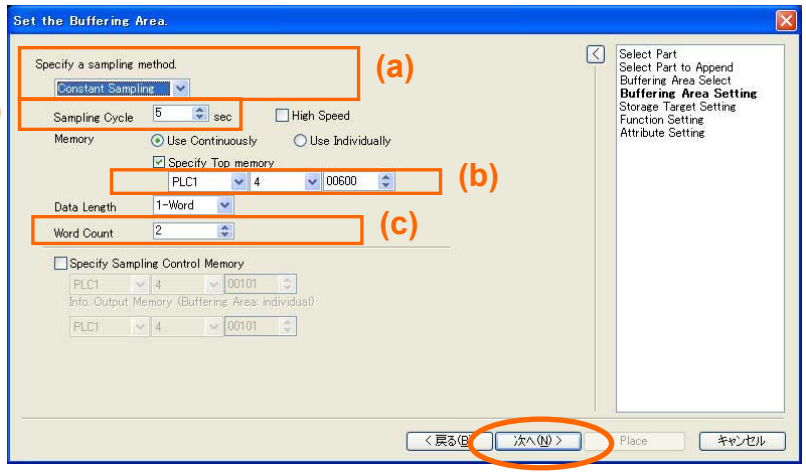
Select “#3 [3D 320*240 Metal]” > [Next]

3) [Select Part to Append]

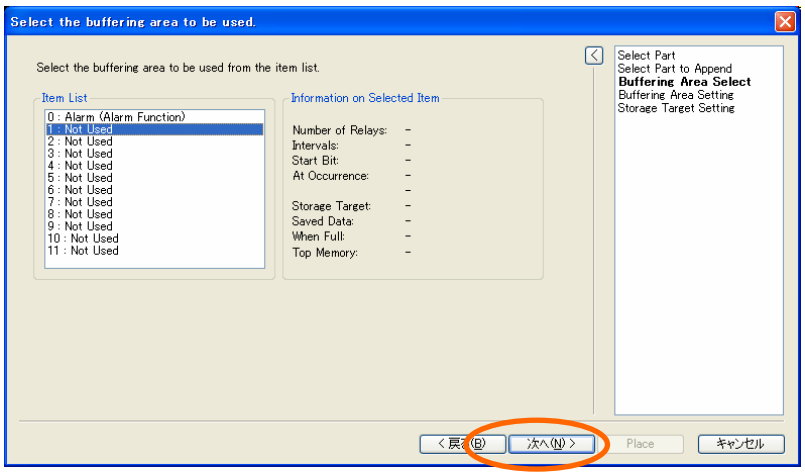


Click [Next]

5) [Buffering Area Setting]



4) [Buffering Area Select]

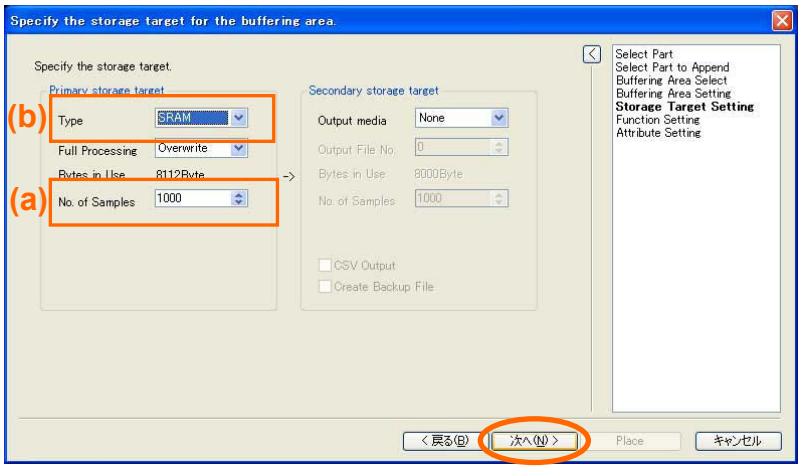


Select “1” for “Item List” > Click [Next]

[Buffering Area Setting] details

a) [Specify a sampling method]: Constant Sampling
b) [☑Specify Top Memory]: PLC memory 4 00600
c) [Word Count]: 2 (Word)
d) [Monitoring Time]: 5 (sec)
e) ☑ Start Bit
> [Next]

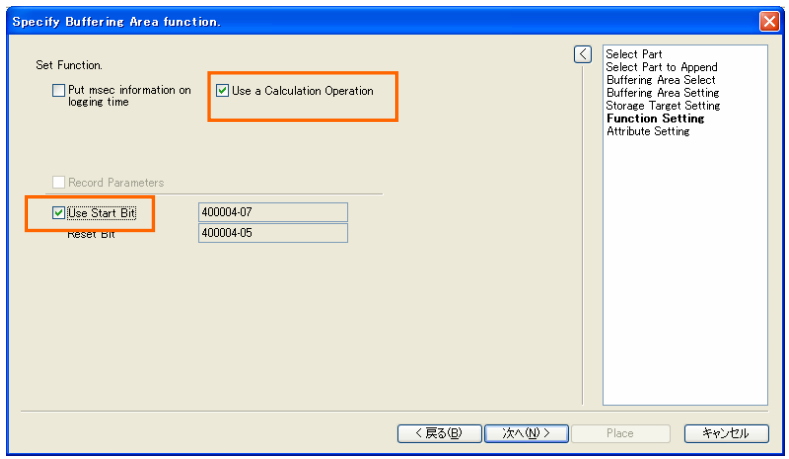
6) [Storage Target Setting]



(a) [No. of Saved Data] : 1000

(b) [Specifying the storing target] : SRAM > [Next]

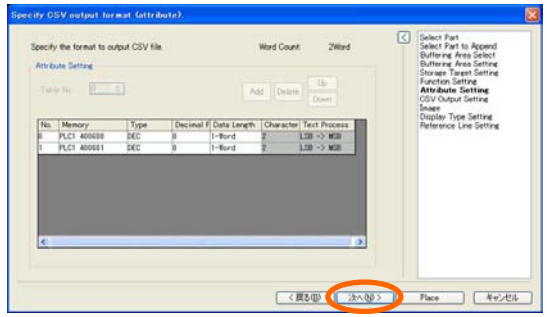
7) [Buffering Area Function]



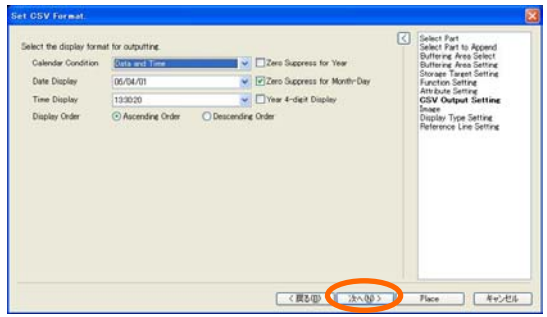
☑ Use a Calculation Operation

☑ Use Start Bit

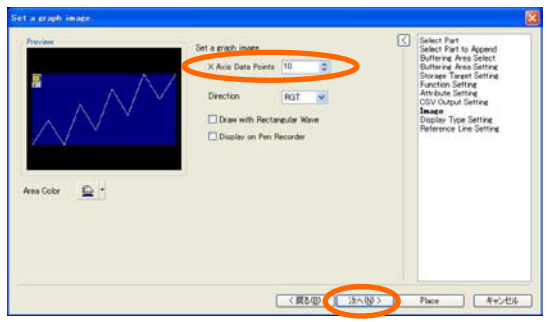
8) [CSV Output Format (Attribute setting)]



9) [CSV Format]

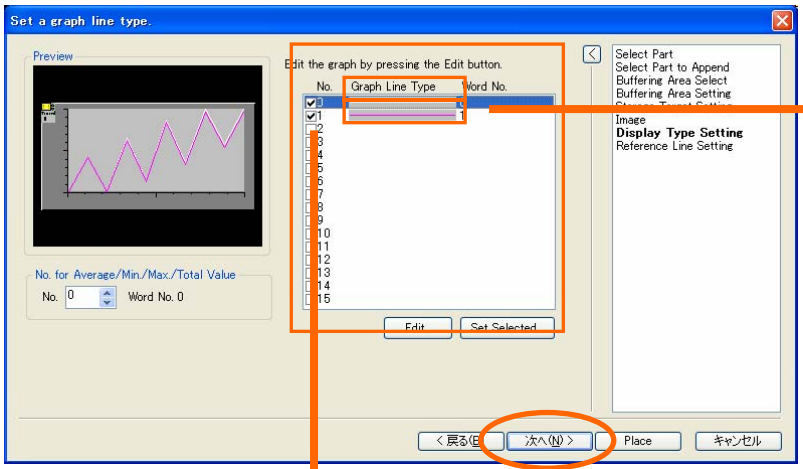


10) [a graph image]



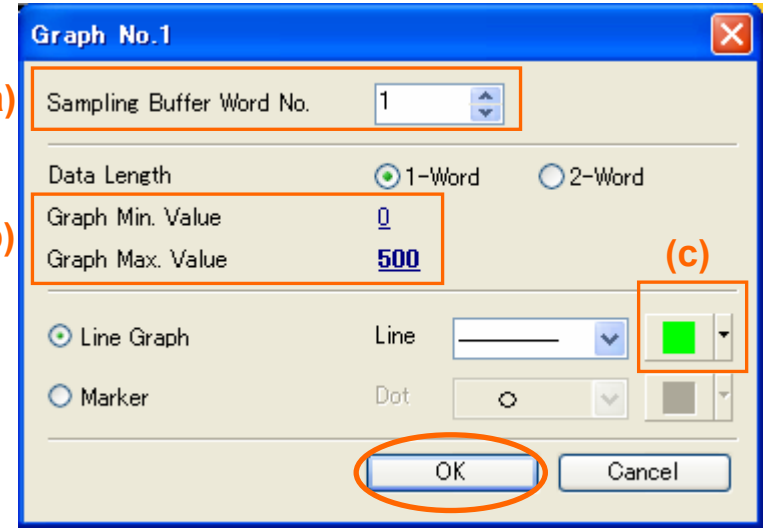
[X Axis Data Points]: 10 > [Next]

11) [Display Type Setting]

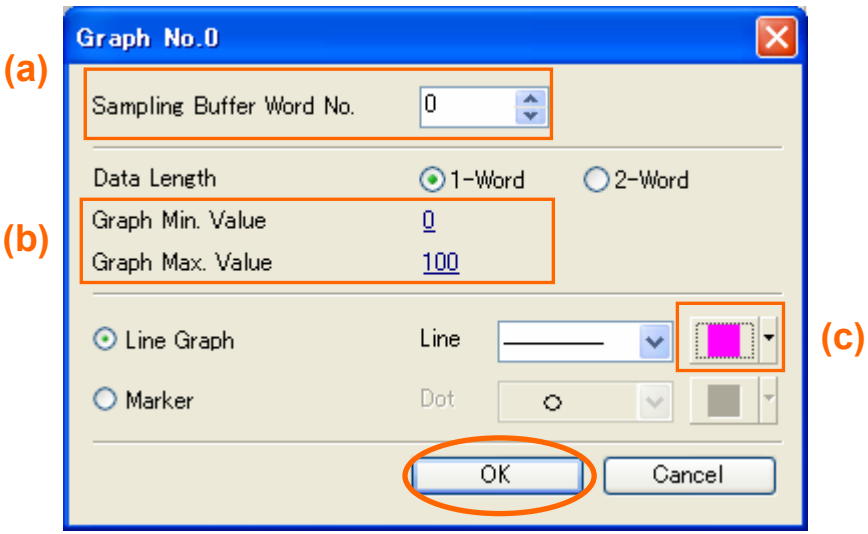


[Graph No.0] and [Graph No.1] setting
> [Next]

[Graph No.1]



[Graph No.0]



[Graph No.0] and [Graph No.1] details

(a) [Sampling Buffer Word No.] :

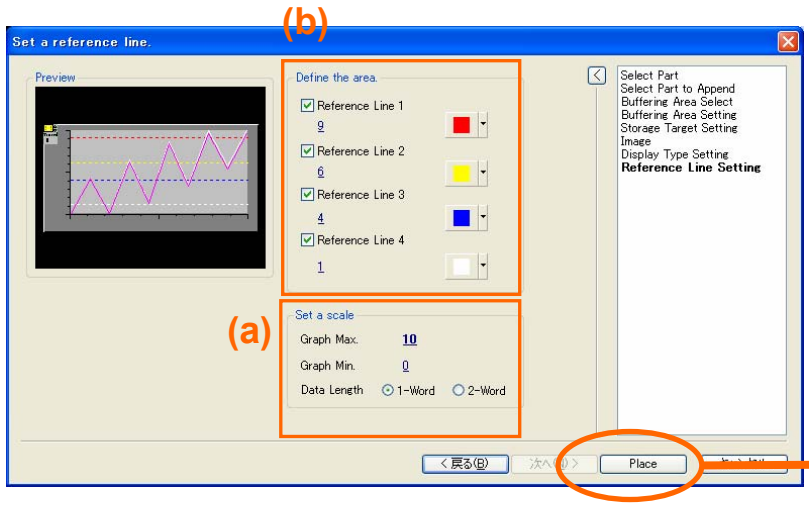
graph No.0	0	
graph No.1	1	

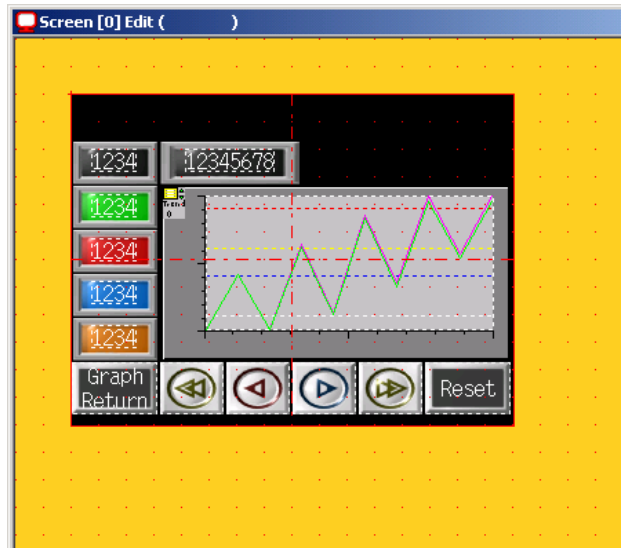
(b) [Graph Min. (Max.) Value] :

graph No.0	Min.	0
	Max.	100
graph No.1	Min.	0
	Max.	500

(c) [Line Graph] color : any
> [OK]

12) [Reference Line Setting]





[Reference Line Setting] details

(a) [Set a scale] :

Graph Max.: 10

Graph Min.: 0

(b) [Define the area] : Tick all

Reference Line1 : 9

Reference Line2 : 6

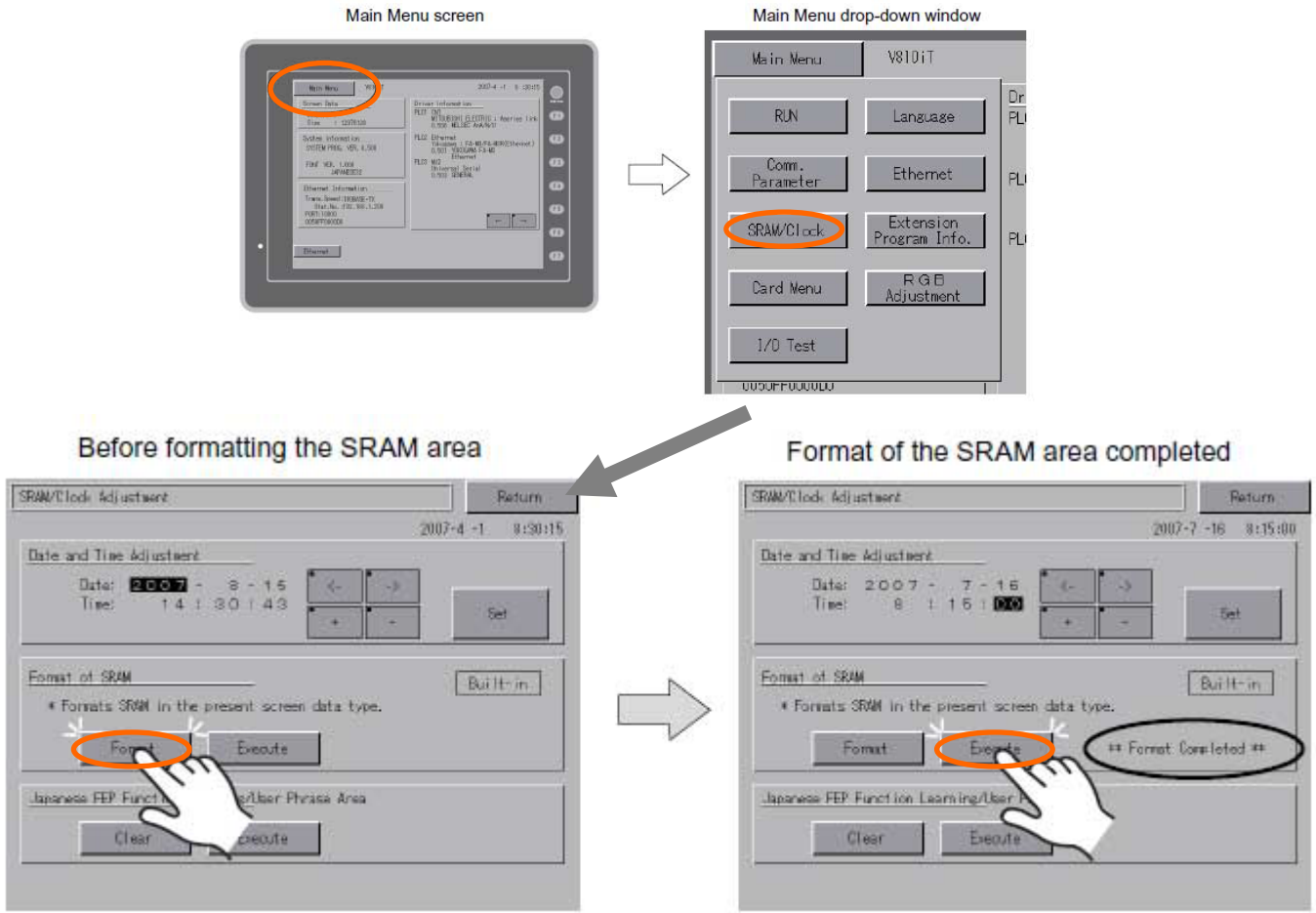
Reference Line3 : 4

Reference Line4 : 1

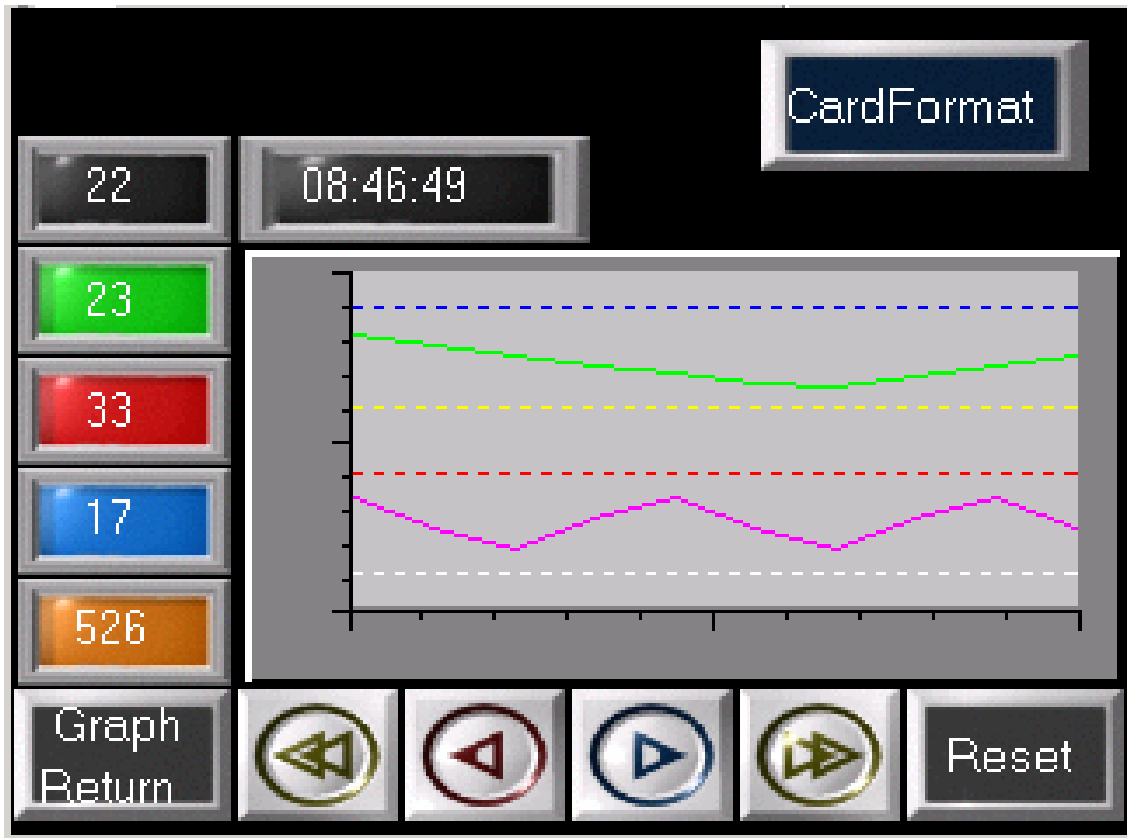
> [Place]

Preparation for Operation Check

Initial format of SRAM area



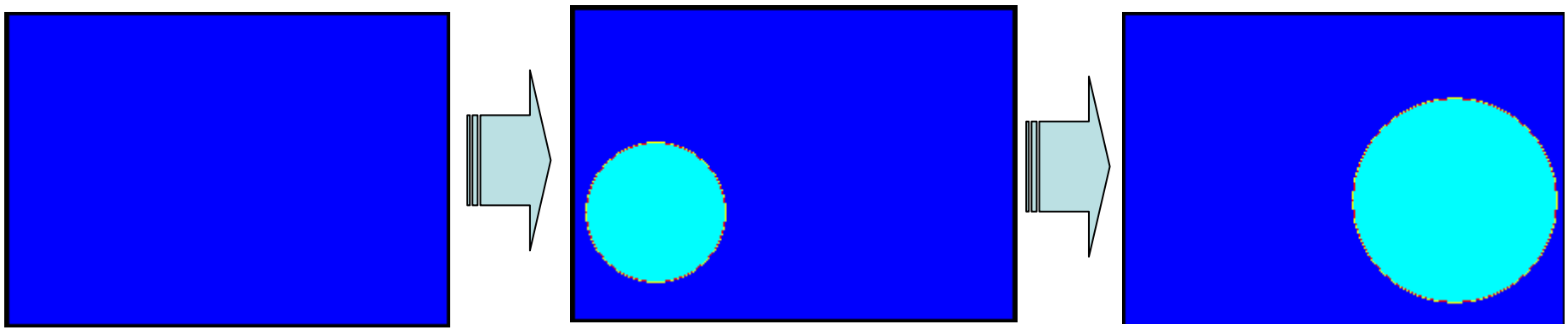
Check how the changing values of PLC memory addresses are displayed with each line graph.



10. How can I display, move and transform the graphic?

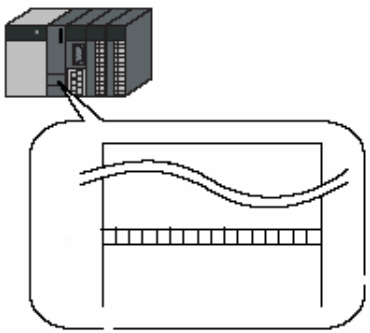
MONITOUCH

Completed screen

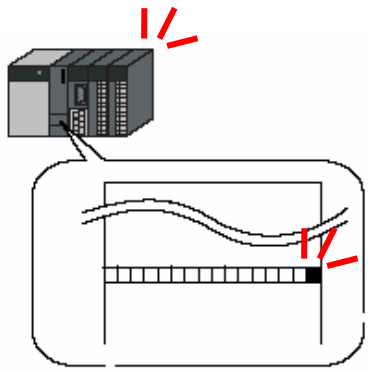


Display

Bit OFF



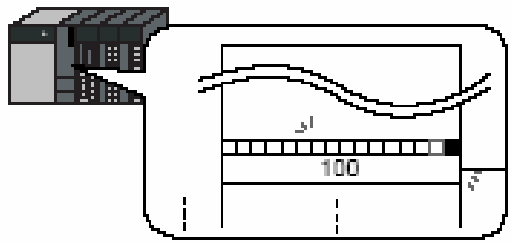
Set a bit ON



Move and Transform

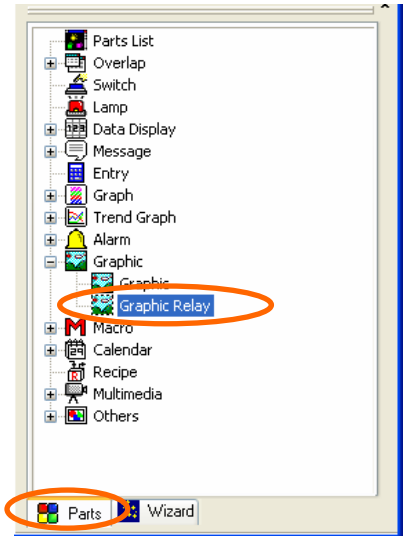
Give value to Parameter

Move and transform the graphic by giving value to Parameter



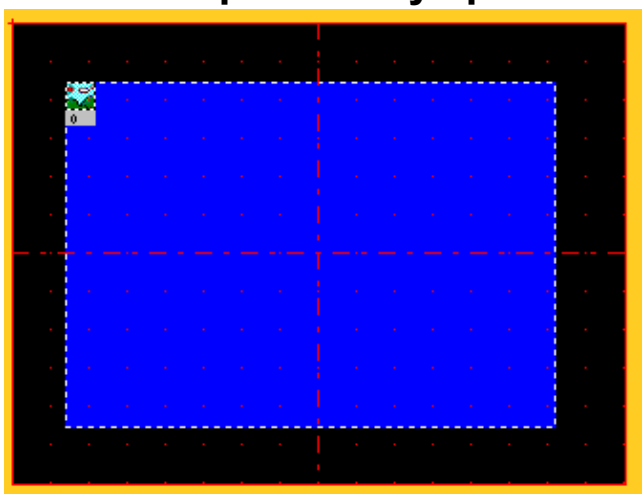
Function used : Graphic Relay Mode

1) Select from [Catalog View]



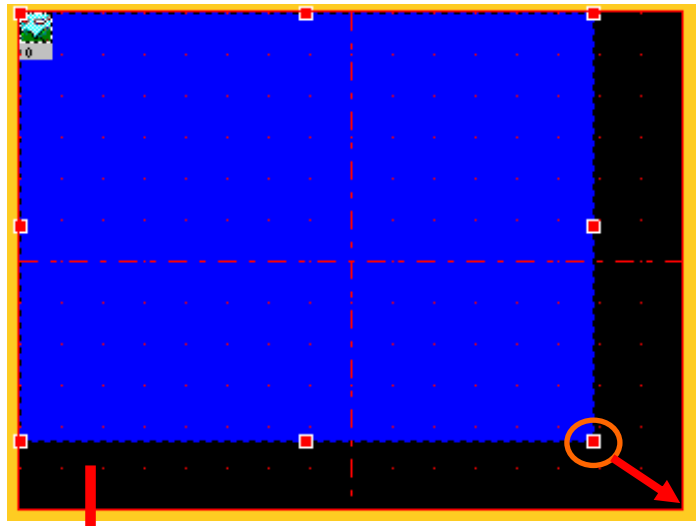
[Catalog view] > [Parts] tab > [Graphic] > [Graphic Relay]

2) Place “Graphic Relay” part

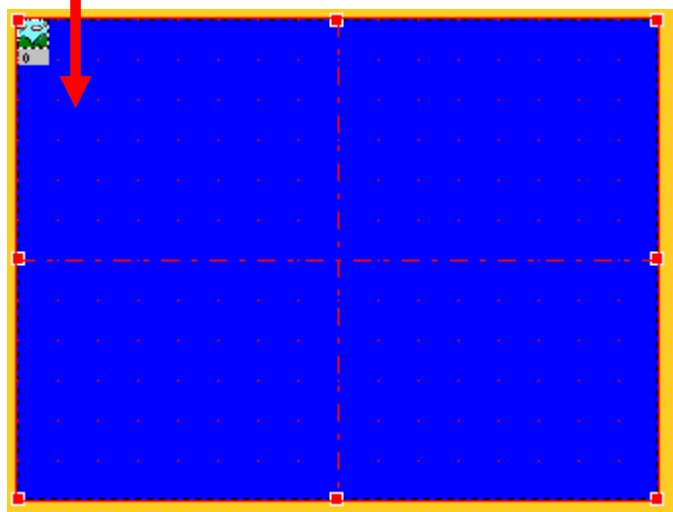


[Graphic Relay] > Click and drag it to the screen

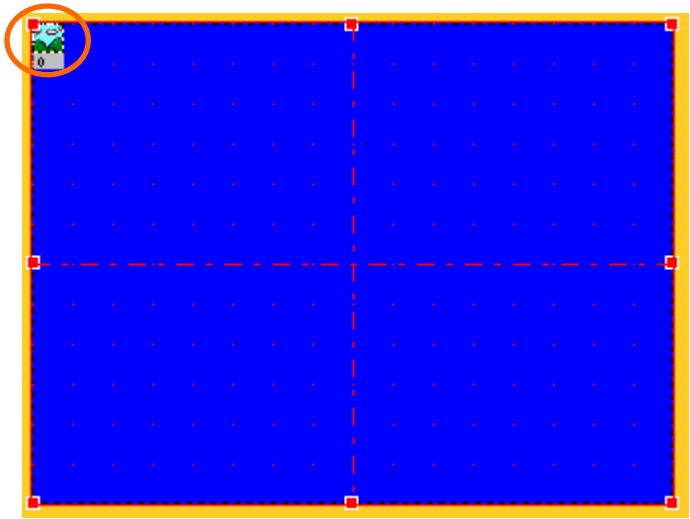
3) Enlarge the part



Select the part and enlarge by dragging outward

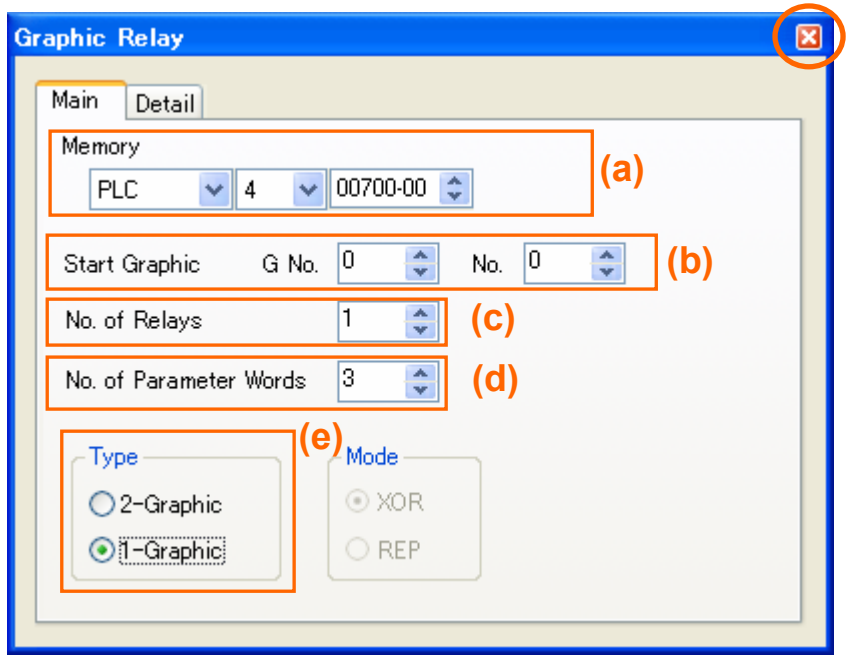


4) “Graphic Relay” setting



Double-click the icon on the top left corner

5) [Main] tab setting

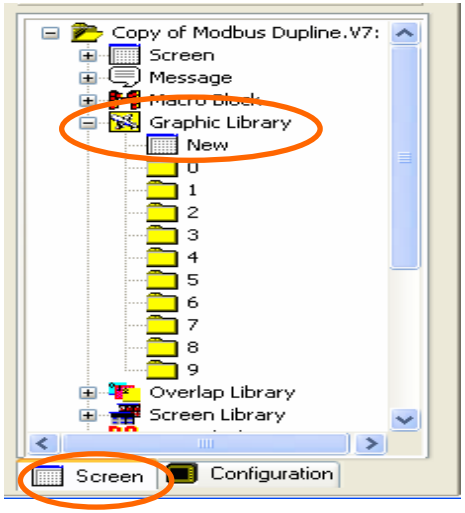


[Main] tab setting

(a) [Memory]:4 00700-00
(b) [Start Graphic]: G No 0 No 0
(c) [No. of Relays]:1
(d) [No. of Parameter Words]:3
(e) [Type]:1-Graphic

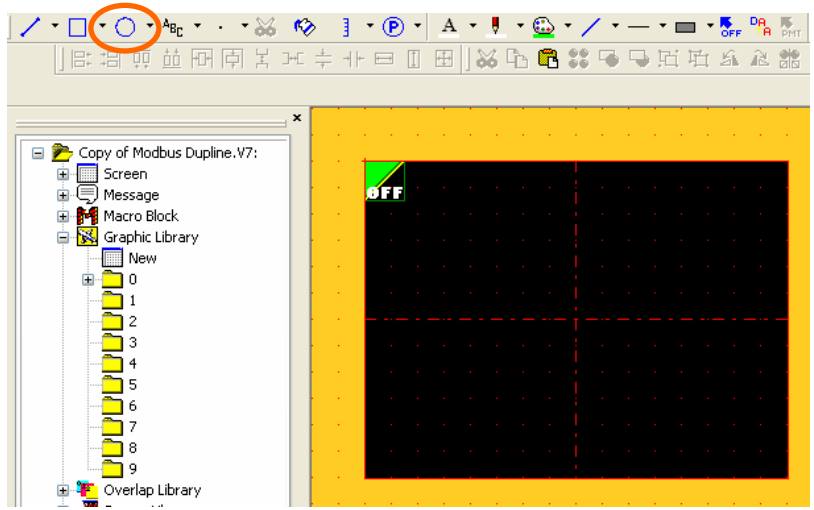
Click ✕ after completion

6) Open [Graphic Library]



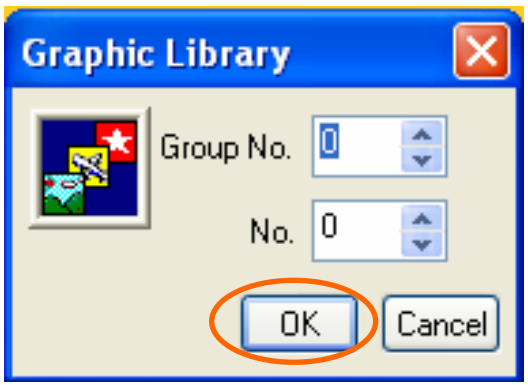
[Project view] > [Screen]tab > [Graphic Library] > [New]

8) Draw a circle in [Graphic Library□0]



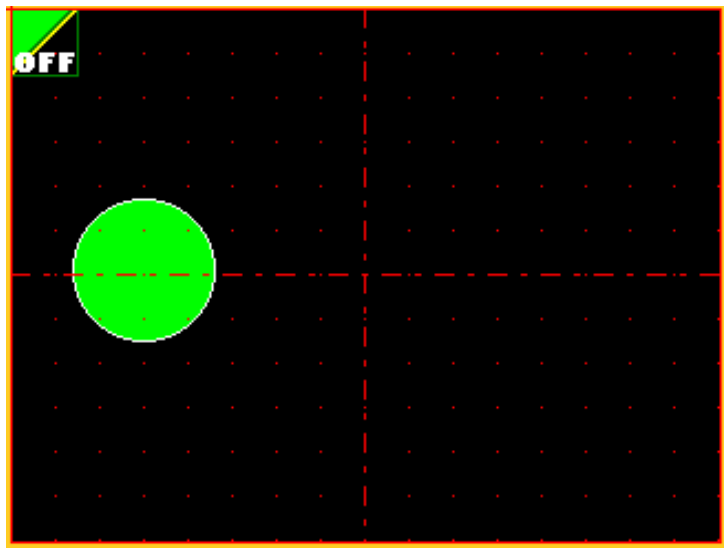
Click “Circle” icon on “Draw” toolbar and draw

7) Select [Graphic Library□0]

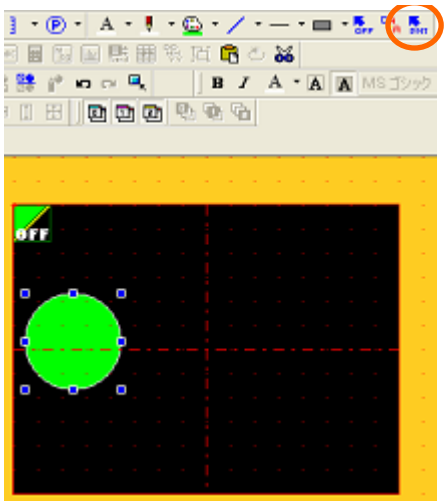


Select “0” to each [Group No.] and [No] > Click [OK]

9) Place a circle

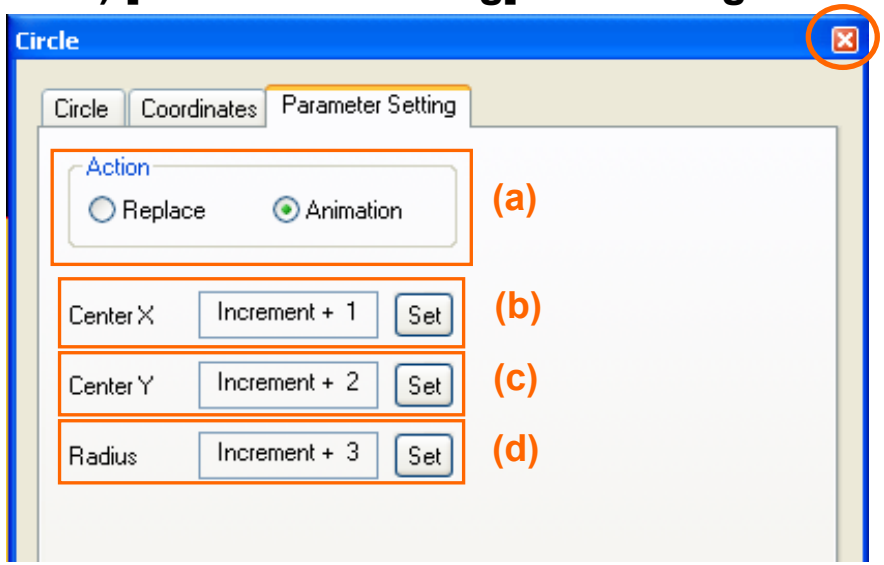


10) Open [Parameter] dialog



Select the circle > click “Parameter” icon

11) [Parameter Setting] tab setting

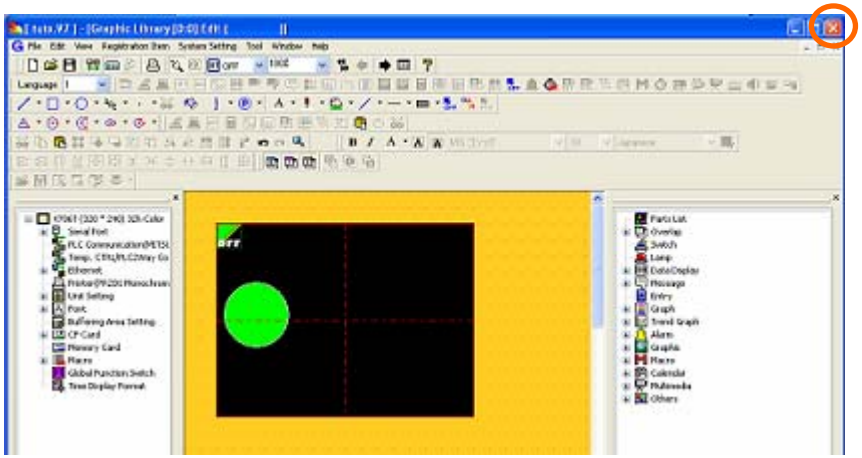


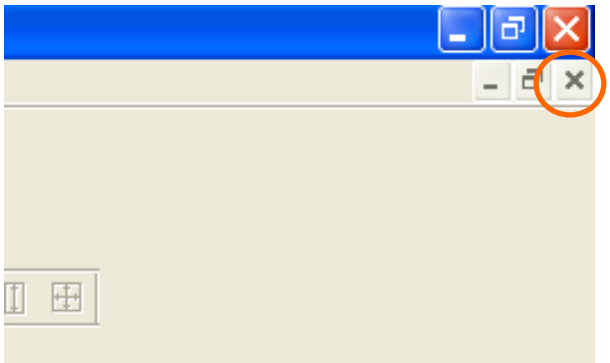
[Parameter Setting] tab setting

(a) [Action]: Animation
(b) [Center X]: Increment + 1
(c) [Center Y]: Increment + 2
(d) [Radius]: Increment + 3

Click ✕ after completion

12) Close [Graphic Library] screen





Close [Graphic Library0□0]

Operation Check

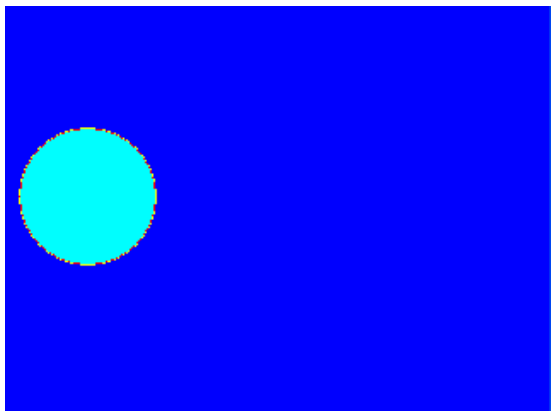
MONITOUCH

Display, move and transform the graphic.

(1)

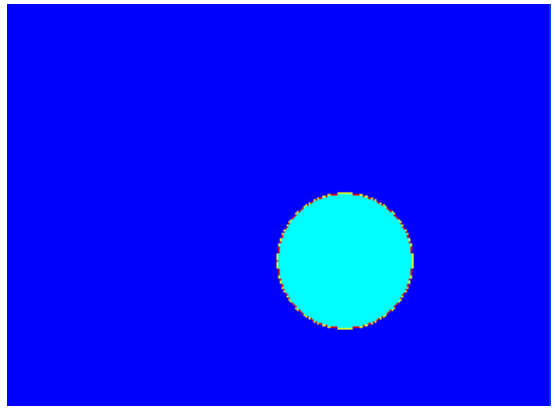
Bit 0 of 4 00700: OFF

(2)



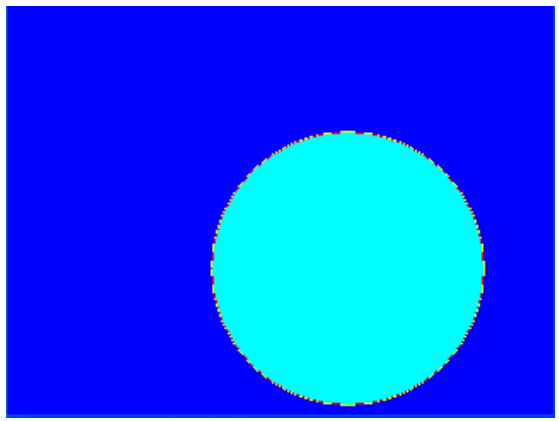
Bit 0 of 4 00700 : ON

(3)



Bit 0 of 4 00700 : ON, 4 00701(X axis) : 150, 4 00702 (Y axis) : 40

(4)



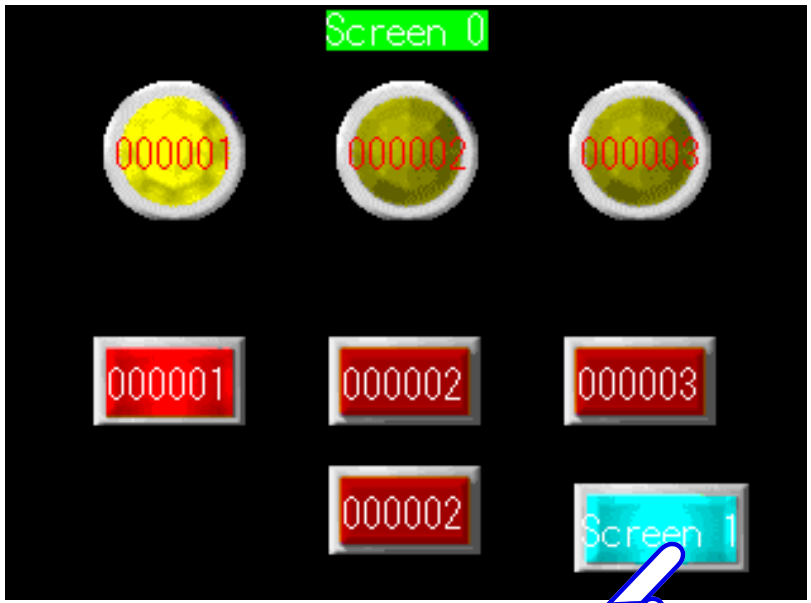
Bit 0 of 4 00700 : ON, 4 00701(X axis) : 150, 4 00702 (Y axis) : 40, 4 00703 (Radius) : 40

Appendix-1. How can I change the screen to be displayed by using a switch?

MONITOUCH

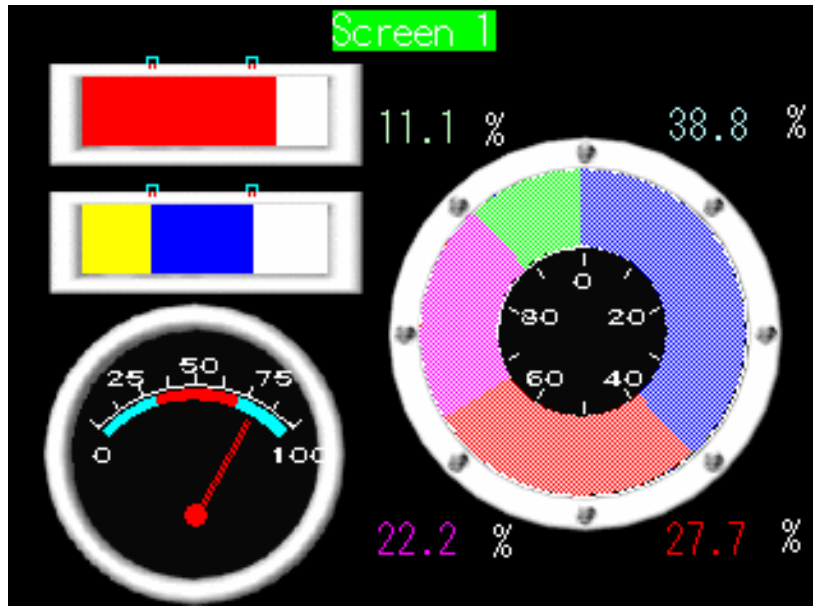
Completed screen

Screen 0



Click the switch.

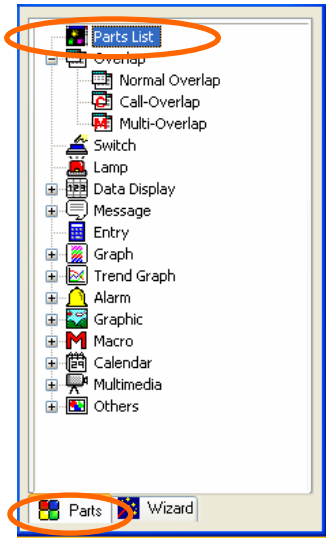
Screen 1



Screen 1 displayed.

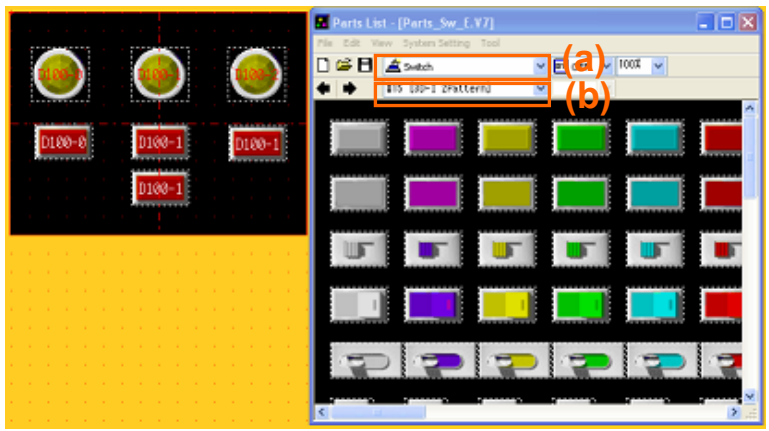
Function used ☐ Switch

1) Select from [Catalog View]



[Catalog view] > [Parts] tab > [Parts List]

2) Select from [Parts List]

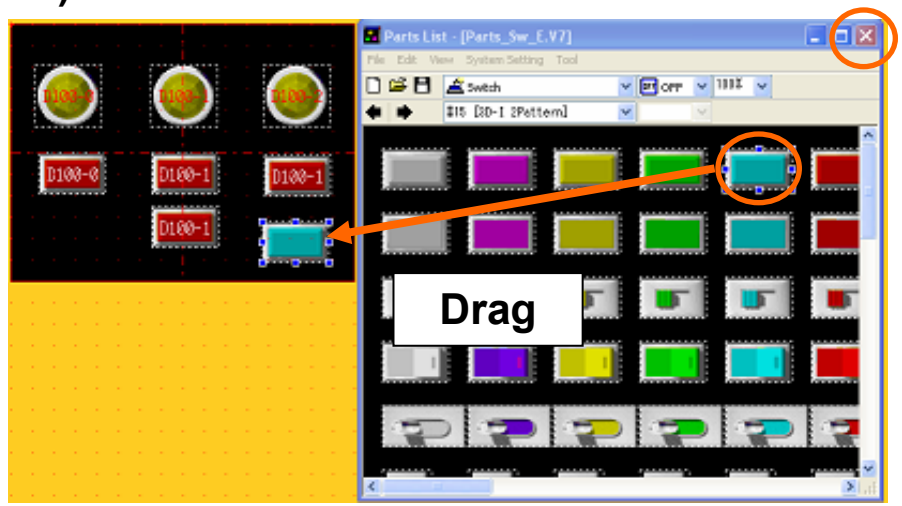


Select Switch from [Parts List]

(a) Switch

(b) #15 [3D-I 2Pattern]

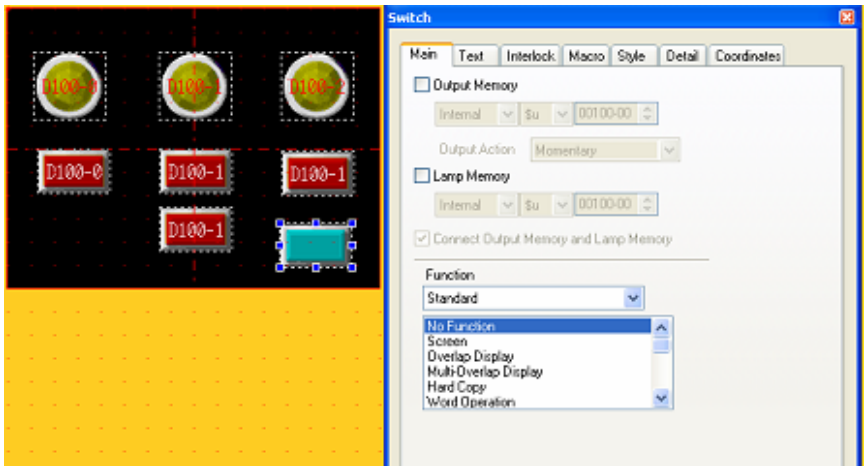
3) Placement of Switch



Select Switch > Place by dragging

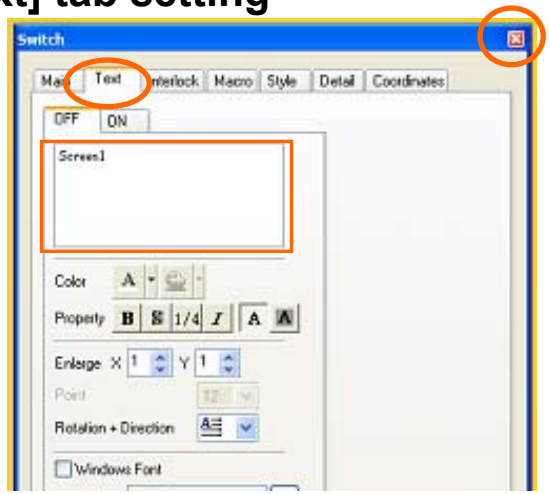
Click ✕ close [Parts List]

4) Open [Item view]



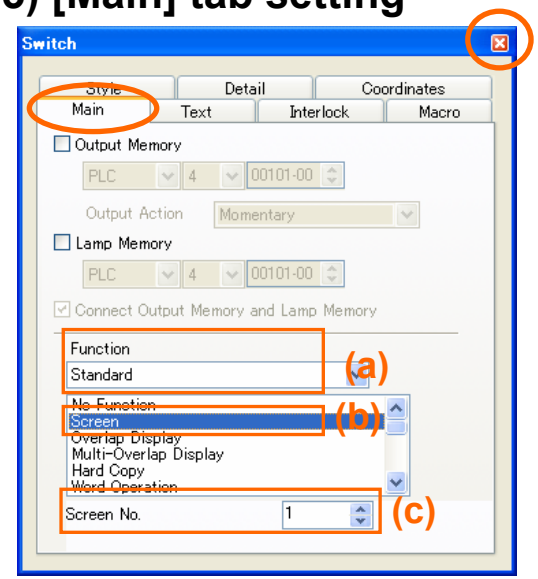
Click the switch that was placed

6) [Text] tab setting



Input the text to display on Switch
> Click ✕ of Item view to close

5) [Main] tab setting



Set the function of Switch under [Main] tab

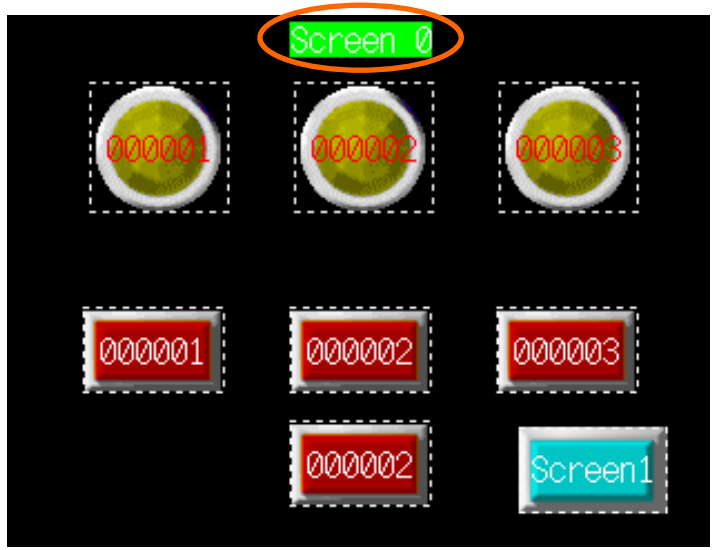
Set up under Main tab

(a) Standard

(b) Screen

(c) Screen No.: 1

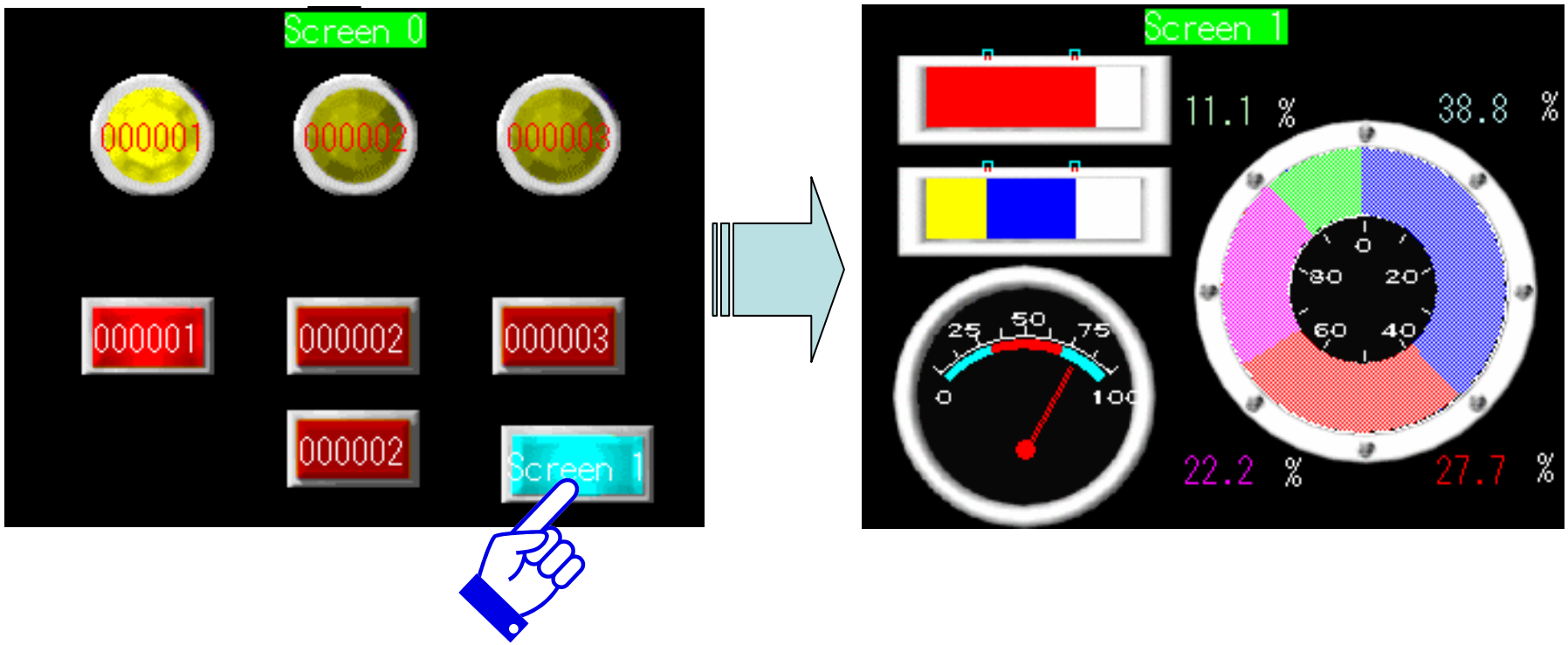
7) [Text] Placement



Place [Text] on the screen

Operation Check

Let's shift the display from Screen 0 to Screen 1 by pressing the switch.



Appendix-2. How can I debug on PC?

MONITOUCH

Screen 0

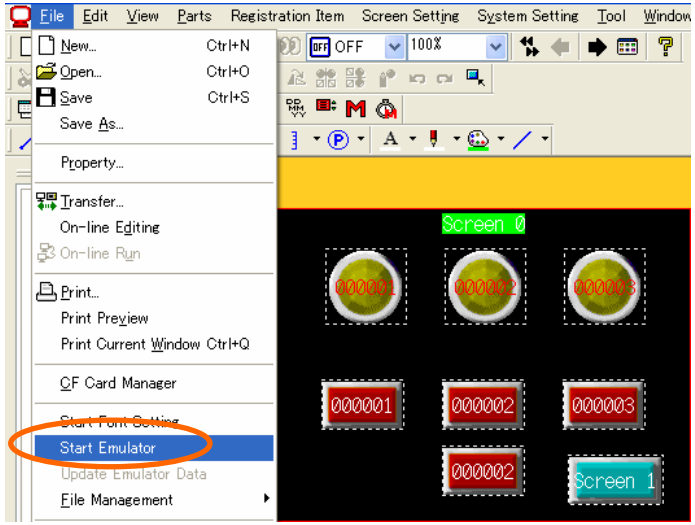
Check the operation by clicking the switch on PC

Screen 1

Check the operation by entering some value in PLC memory

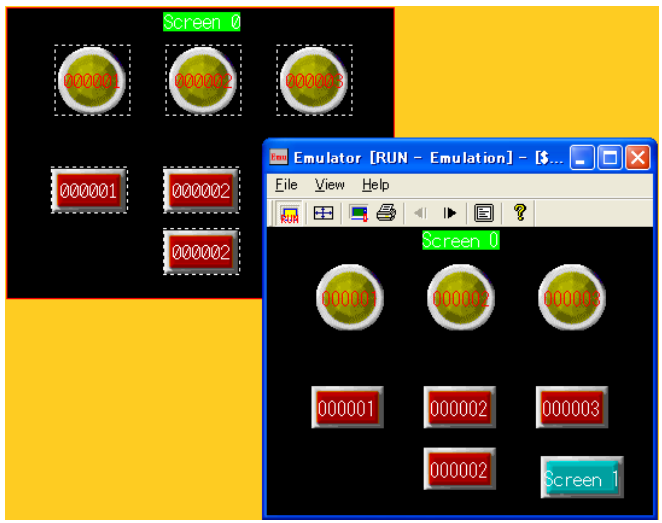
Functions used：Emulator and Simulator

1) Start [Emulator]



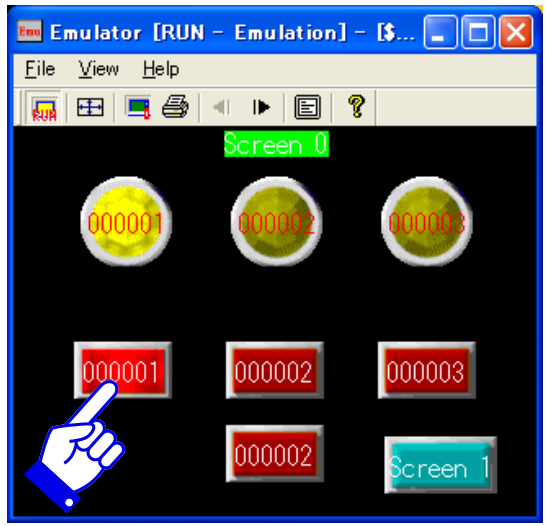
[File] > [Start Emulator]

2) Operation check of Switch and Lamp



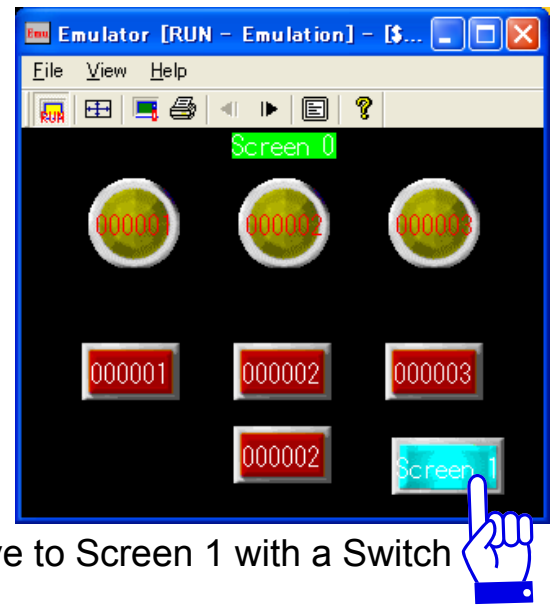
Set a mouse by a Switch on [Emulator]

3) Press switch



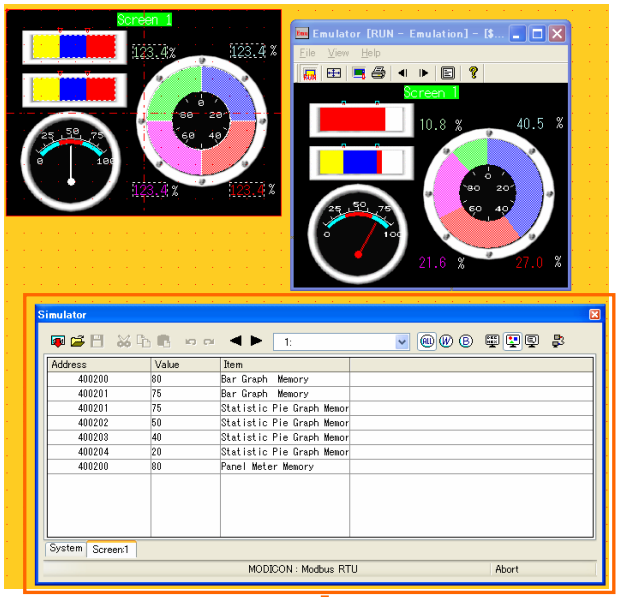
Click the switch to light the lamp up

4) Move to Screen 1

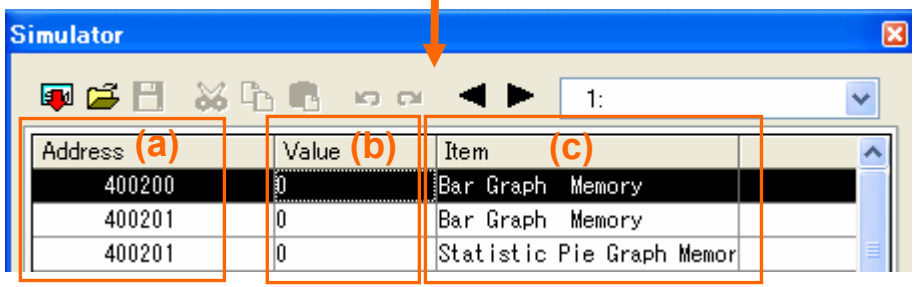


Move to Screen 1 with a Switch

5) Start [Simulator]



[Simulator] automatically starts up when [Emulator] runs



Confiuration of [Simulator]

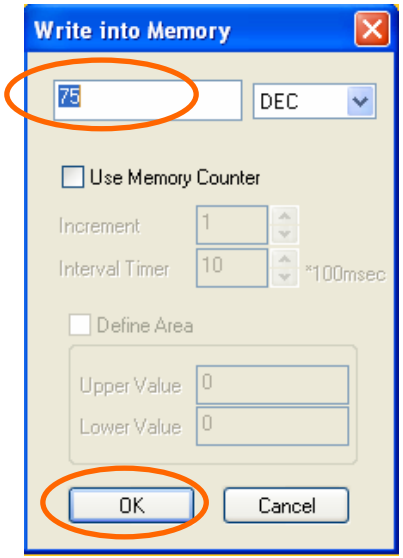
(a) Address: Memory list currently used on the Screen No1

(b) Value: Present value of the memory

(c) Item: Name of the item, which the memory is used

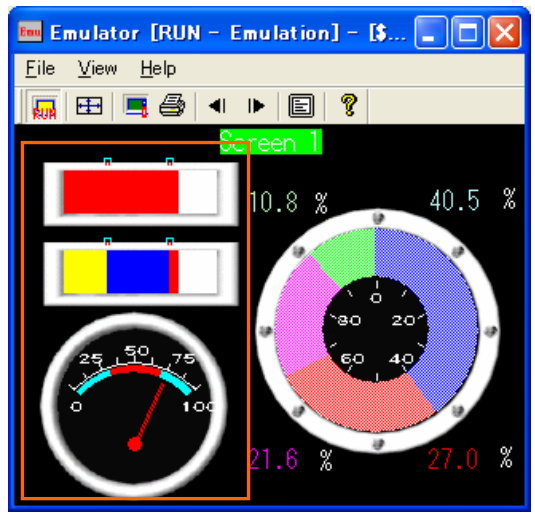
Double-click (b)

6) Enter the value to 4 00200

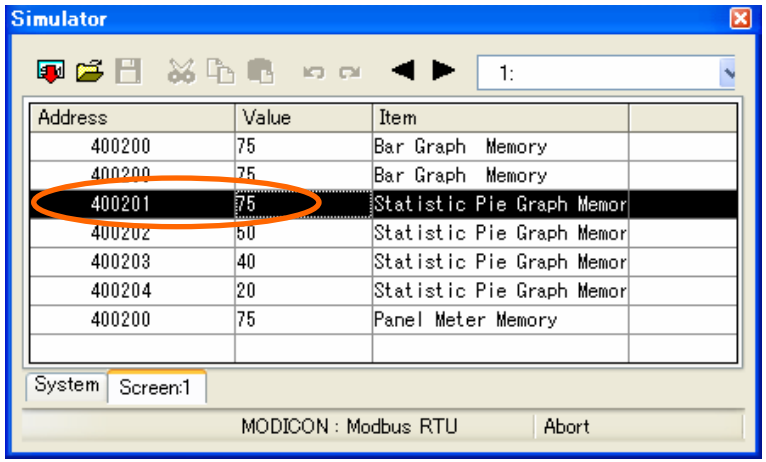


Enter "75" > Click [OK]

7) Operation Check

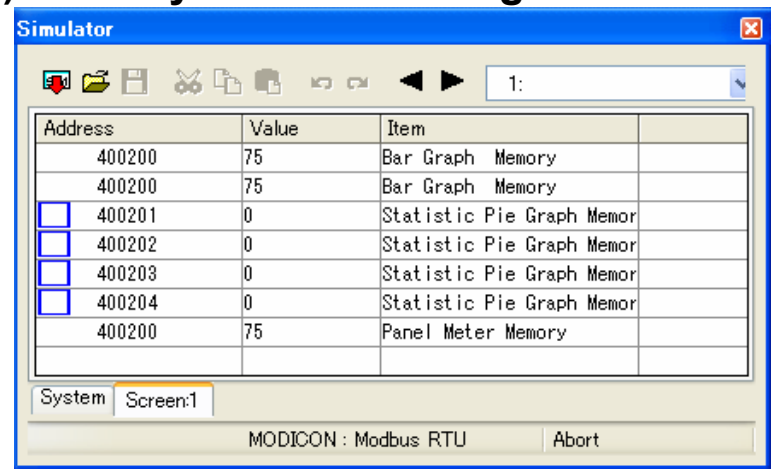


8-1) Memory Counter Setting



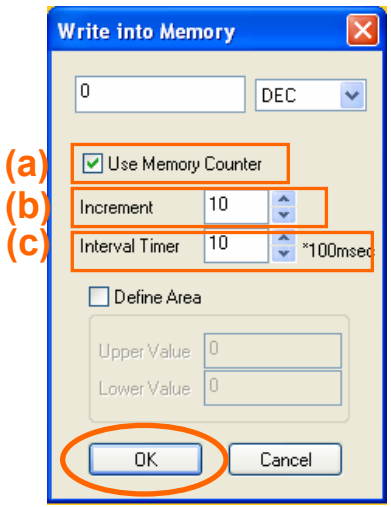
Double-click “Value” of 4 00201

8-3) Memory Counter Setting



Set Memory Counter in 4 00202, 4 00203 and 4 00204

8-2) Memory Counter Setting



Click OK after setting

4 00201 Write into Memory Setting

(a) ☑Use Memory Counter

(b) Increment : 10

(c) Interval Timer : 10

4 00202 Write into Memory Setting

(a) ☑Use Memory Counter

(b) Increment : 15

(c) Interval Timer : 10

4 00203 Write into Memory Setting

(a) ☑Use Memory Counter

(b) Increment : 20

(c) Interval Timer : 10

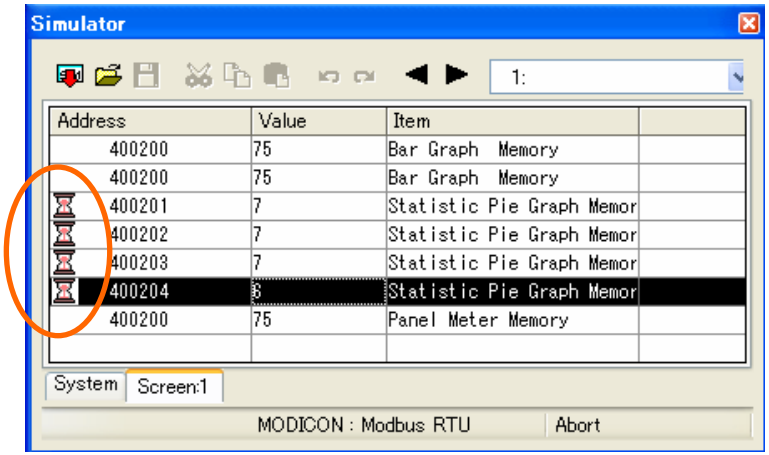
4 00204 Write into Memory Setting

(a) ☑Use Memory Counter

(b) Increment : 25

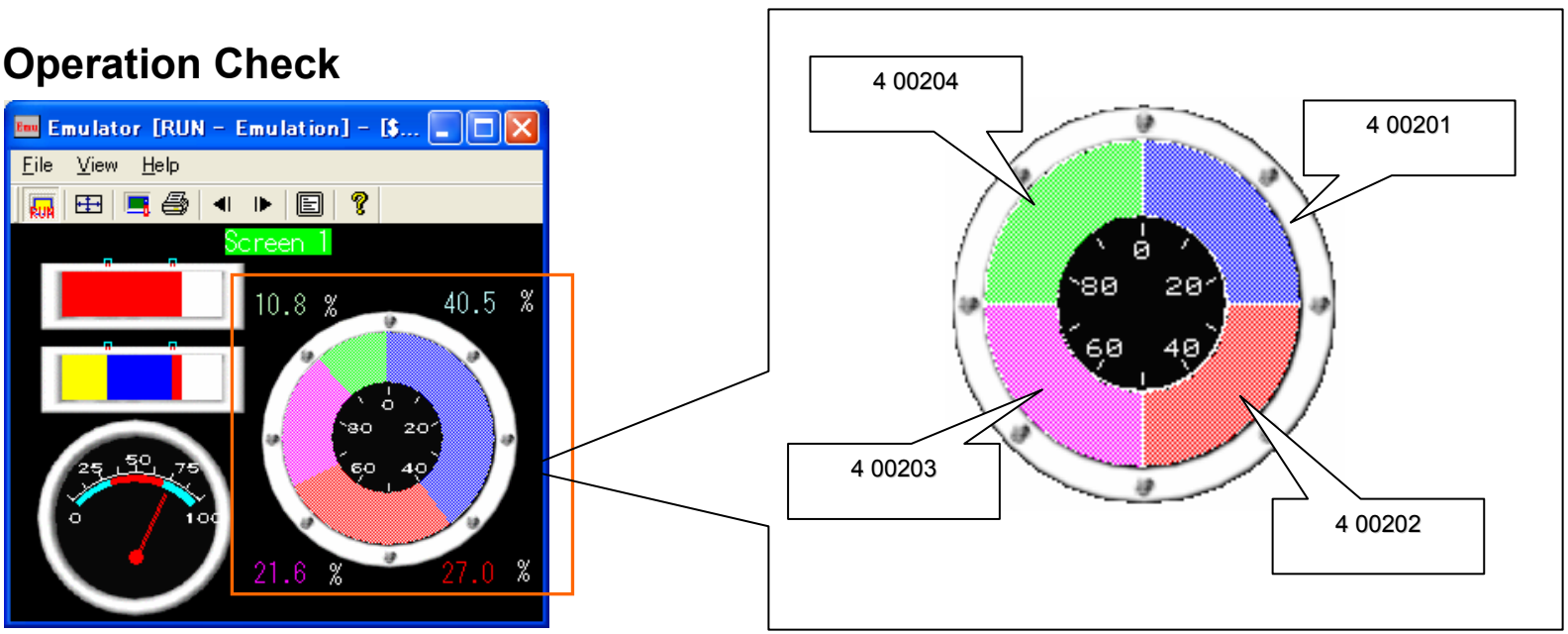
(c) Interval Timer : 10

9) Start Memory Counter



Click on ☐ mark > Hourglass will be shown

10) Operation Check

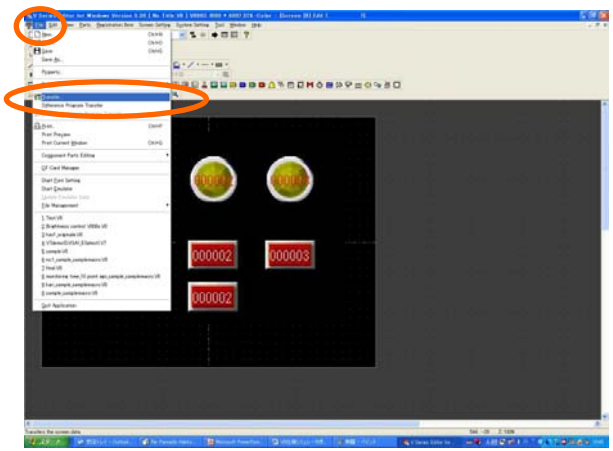


Reference: How to use “Simulator”

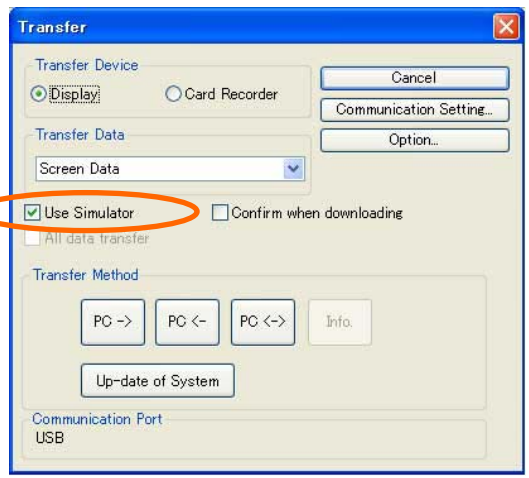
Simulator enables you to debug your program on V8 without connecting PLC.

On V-SFT-5

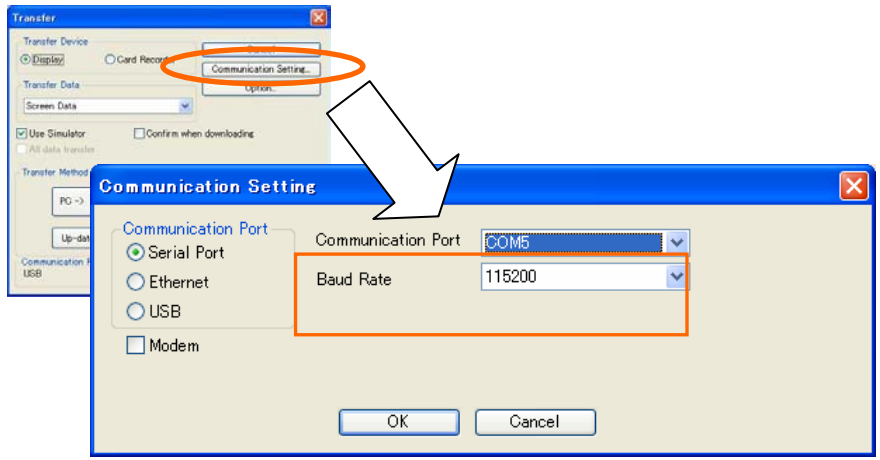
1) [File] >[Transfer]



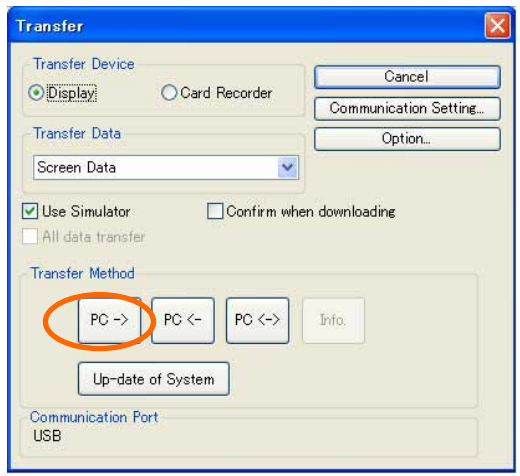
2) Check [Use Simulator]



3) Set COM port

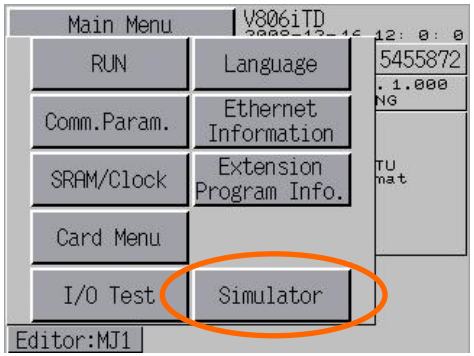


4) Transfer screen program and special driver



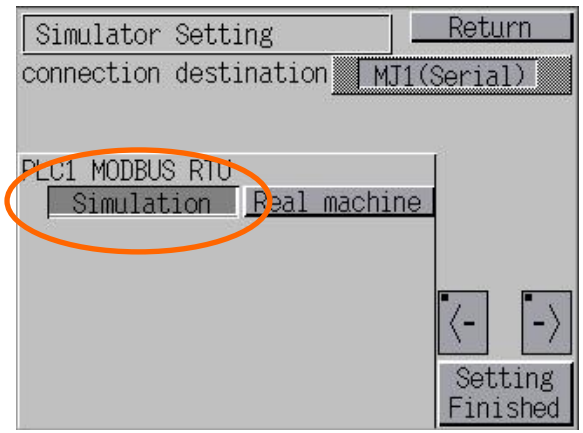
On V8 unit

1) [Main Menu] > [Simulator]

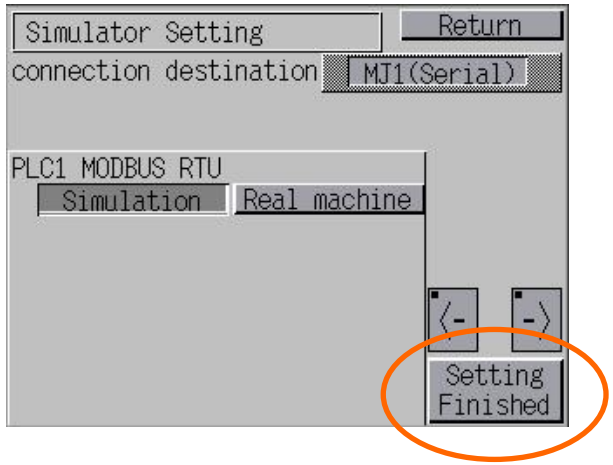


You will see [Simulator] button only when you check [Use Simulator] and download special driver to V8.

2) Press [Simulator] to talk to Simulator



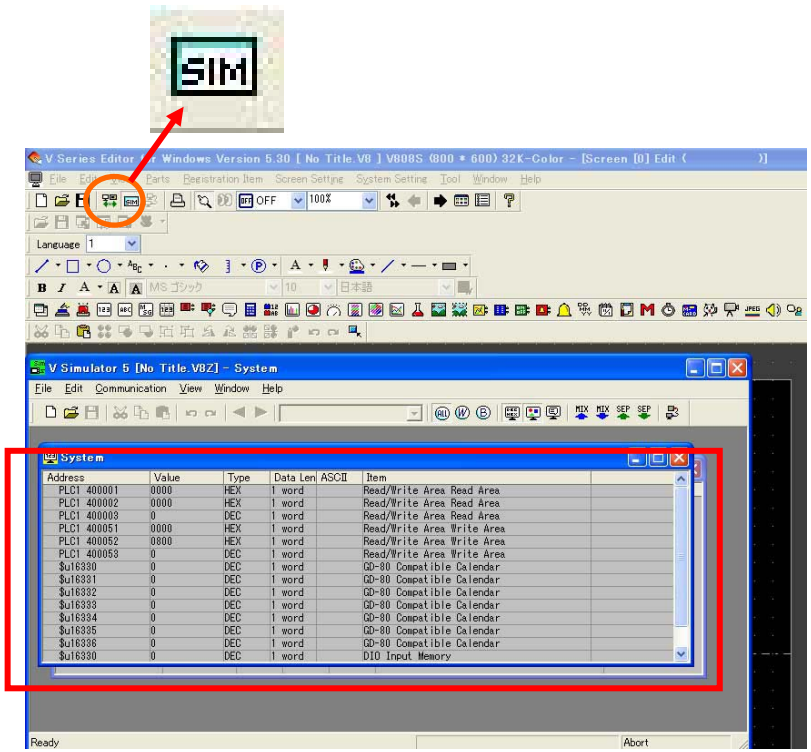
3) Press [Setting Finished]



Debugging using Simulator

MONITOUCH

Click [SIM] icon.



Run Simulator and test your program.