



**Human Machine Interface**

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**TP SERIES  
TOUCH SCREEN**

**OPERATE  
MANUAL**

**THE FIRST EDITION**

**PREFACE**

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**● ITEMS YOU MUST NOTE TO KEEP SAFE ●**

Please read the relative manual carefully and pay attention when design the system. Moreover, please note the following points in order to operate the device correctly.

**◎ ITEMS YOU MUST NOTE IN PRACTICE ◎****CAUTION**

- When practicing, please follow you instructor or the instructions .
- Please don't refit parts of the machine at your will or change the layout. Or else there will be some trouble、 wrong actions、 losses、 even fire.
- When the practice machine gives off special smell or noise, please cut off the power.

**HAZARDOUS**

- Please don't touch the interface point, or you will get electric shock.
- Please not open the hood.

## PREFACE

PLC is usually called programmable logical controller (hereinafter refer to as “this product”), It is a generally used industry automatic control device which based on microprocessor, and multiply computer technology, auto control technology and communication technology. As the product has the advantages of small volume, large capacity, simple to program, easy to maintain etc, especially, with the ability to adapt bad industry environments and good performance, its usage is more and more wide .so, it has been called one of the three backbones (PLC, robot and CAD/CAM)in today’ s industry.

The human machine interface (HMI) is the bridge of intercommunication for the operator and the machine .The user can combine the characters, buttons, graphics data freely to process or monitor and manage the multi-function display screen on which the information could be different at any moment. With the fast development of mechanic device ,the operate interface before need to be operated by skilled operator ,and it is hard to operate. So, it is impossible to improve the work efficiency. But the HMI can clearly identify and tell the operator the device’ s present state, which make the operation easy and lively and also reduce the mistakes made in the operation. Even the new operator can operate the machine easily. Using the HMI can also make the machine’ s layout standardized, simplified and decrease the I/O points needed by PLC monitor. This will reduce the production cost, At the same time, with the panel control miniaturized and high-powered, it promote the whole equipment’ s additional value relatively.

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# HARDWARE PARTS

## 1 SUMMARY OF THE PRUDUCTS

TP series touch screen is a new break to replace control panel and keyboard, It is a new feature of the machine. With direct image, good compatibility, high performance-price ratio, they have been the first choice of middle size and small size control.

According to product's sizes, operation ways, there are models in the following table:

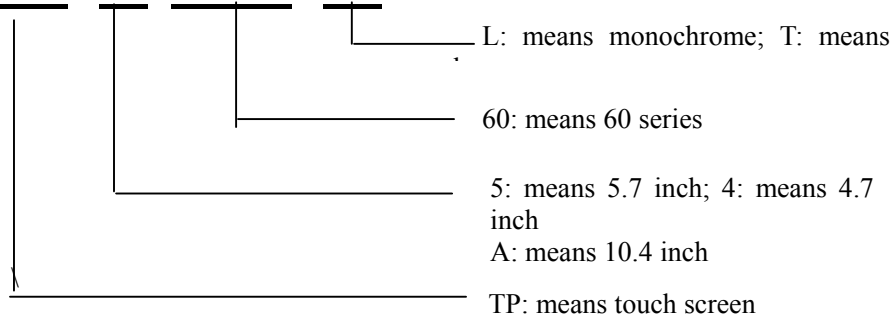
Display sizes	Display materials	TP series
4.7 Inch	Black-white LCD	TP-460-L
5.7 Inch	Black-white LCD	TP-560-L
	256 color	TP-560-T
10.4Inch	Black-white LCD	TP-A60-L
	256 color	TP-A60-T

If there are no special explain, all the models' working voltage in the above table is DC24V.

### The components of the product model

Example of the model name:

**TP-5 6 0-L**



## 1-1 FUNCTIONS

TP series touch screen is a mirror inside the machine. It can tell all the things of the machine's action in time, lively and correctly by displaying with images, lamps etc. Besides, it has special performances on parameter setting, displaying, warning and memory.

### Advantages

Comparing to the console and simulate instruments, it has the advantages as following:

- 1) Small volume, beautiful exterior, impropriate nearly no space
- 2) Easy to connect
- 3) All kinds of display are lively
- 4) It can memory lots of data
- 5) With strong function, it can read and write PLC data at your will
- 6) Large amount of image facture

### Main function

- ✓ Monitor: Tell PLC's inside state, memory data with data, fold-line, image, dynamic image etc. So it can tell the industry control system's flow and trend directly.
- ✓ Control: You can change PLC's inside state bit, memory data via touch screen. In this way you can participate in process control.
- ✓ Data disposal: Real time sampling and information disposal, it can even connected to factory's local area net to realize data share and machine's long-distance control

## 1-2 General Size

### 1、 Electric Size

Model	TP-A60-T	TP-A60-L	TP560-T	TP560-L	TP460-L
Input voltage	DC20-DC28V				
Consume current	380mA	380mA	< 220mA	< 200mA	< 180mA
Instantaneous power cut allow	Less than 20ms				
Endure voltage	AC1000V-10MA one minute (signal and time)				
Insulated resistance	DC500V-about 10M $\Omega$ (signal and time )				
Communication port	Support RS232/RS422/RS485				

### 2、 Environment conditions

Model	TP-A60-T	TP-A60-L	TP560-T	TP560-L	TP460-L
Operate temperature	0-50 $^{\circ}$ C				0-60 $^{\circ}$ C
Store temperature	-20-60 $^{\circ}$ C				
Environment humidity	20-85% (no coagulate dew)				
Endure vibration	10-25HZ (X, Y, Z direction each 30 minutes 2G)				
Resist interfere	Voltage noise: 1000Vp-p、 pulse width 1us、 one minute				
Surrounding atmosphere	No canker gas				
Protect configuration	Accord with IP65				



3、 **Image attribute**

Model	TP-A60-T	TP-A60-L	TP-560-T	TP-560-L	TP-460-L
Type	TFT Color LCD	4 rank gray color	TFT Color LCD	CCFL monochrome	monochrome
Use life	50000 hours upwards, environment temperature 25 degrees, 24 hours run				
Display area	800*600	640*480	320*240		240*128
lightness	Potentiostat can adjust				
Word setting	Brief Chinese; English				
Text size	Random size, random style				
Touch panel	Matrix type touch		Matrix type touch		Matrix type touch
screen	8MB		4MB		2MB
data	4MB		2KB		1KB

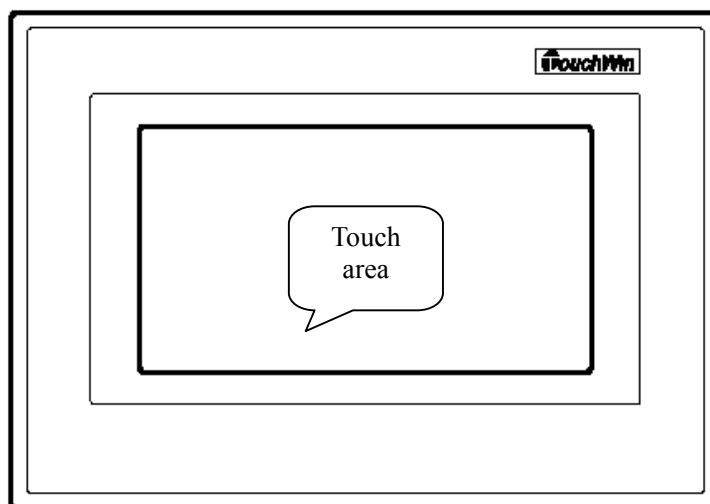
4、 **Configuration size**

Model		TP-A60-T	TP-A60-L	TP-560-T	TP-560-L	TP-460-L
Configuration	Cooling manner	Natural wind cooling				
	Exterior size	311*234*48		189.4*141.4*44.4		173.2*121.4*45
	Panel opening hole size	301*224		181*133		164*112

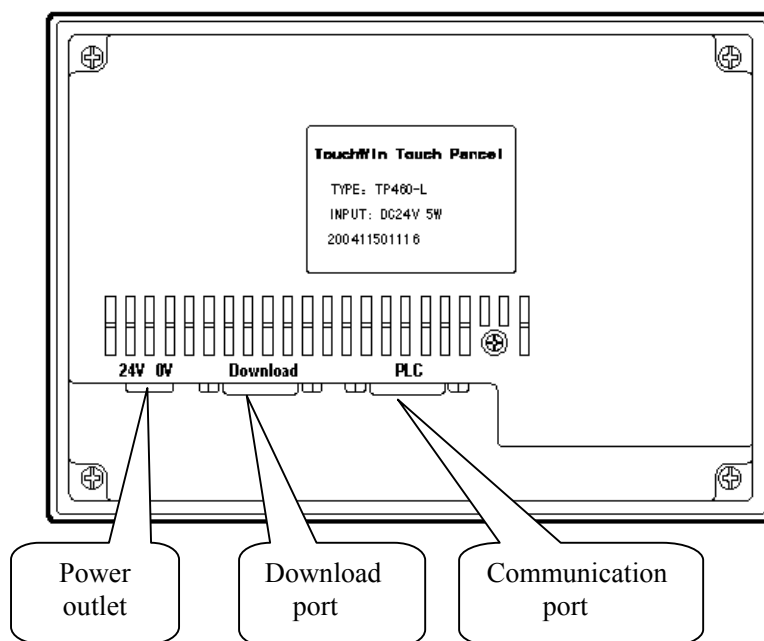
1-3 Each parts name

TP460-L touch screen:

Front image

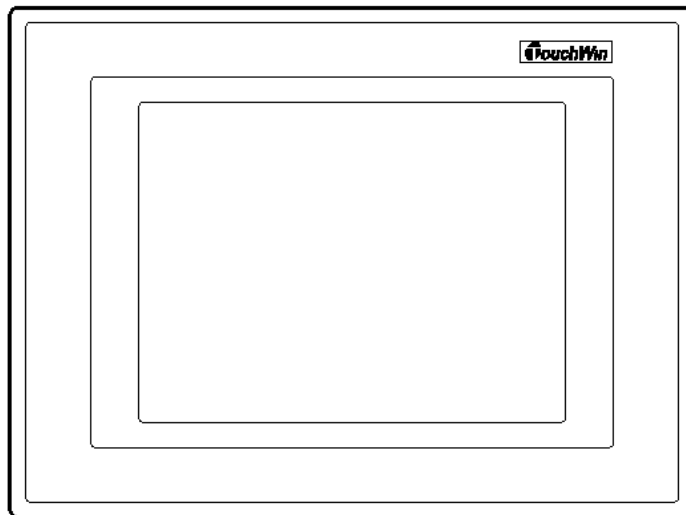


Inverse image

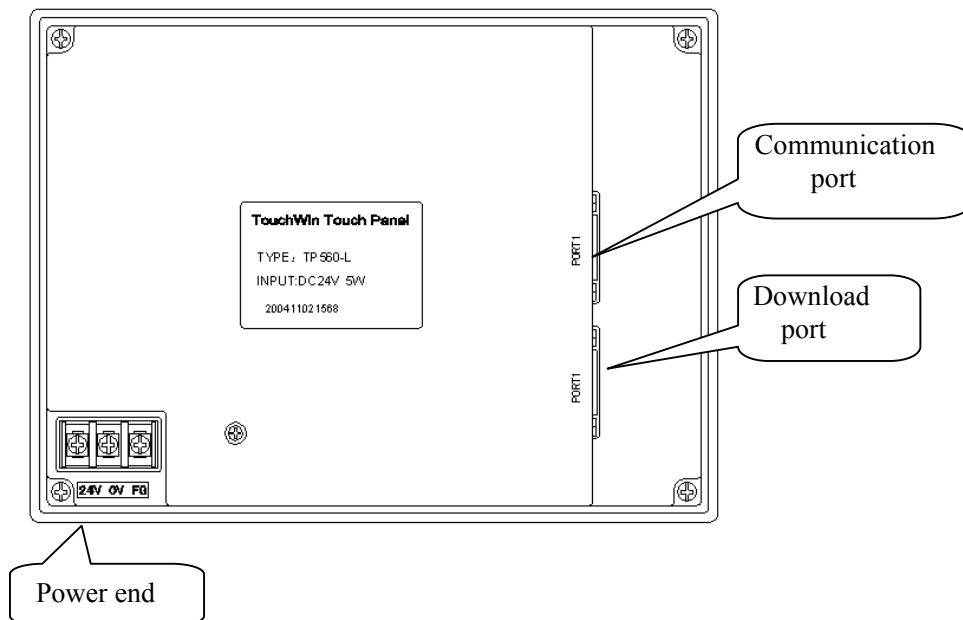


5.7 inch touch screen:

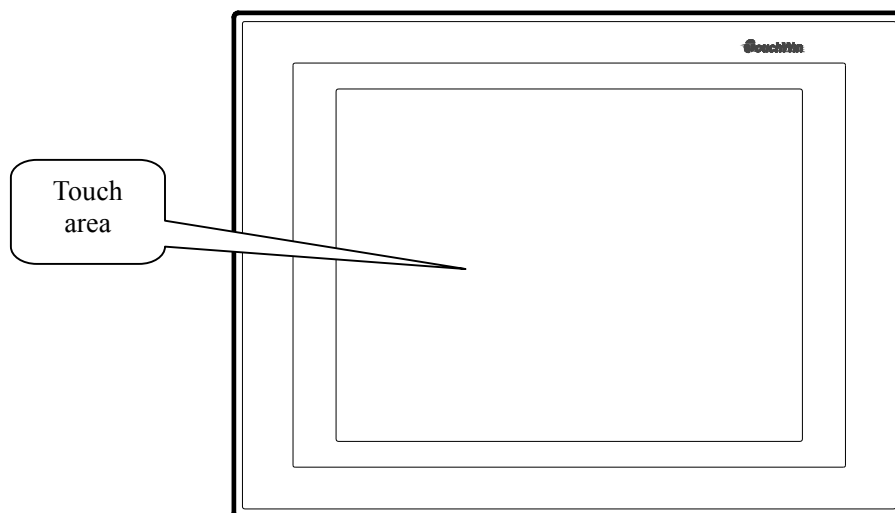
Front image



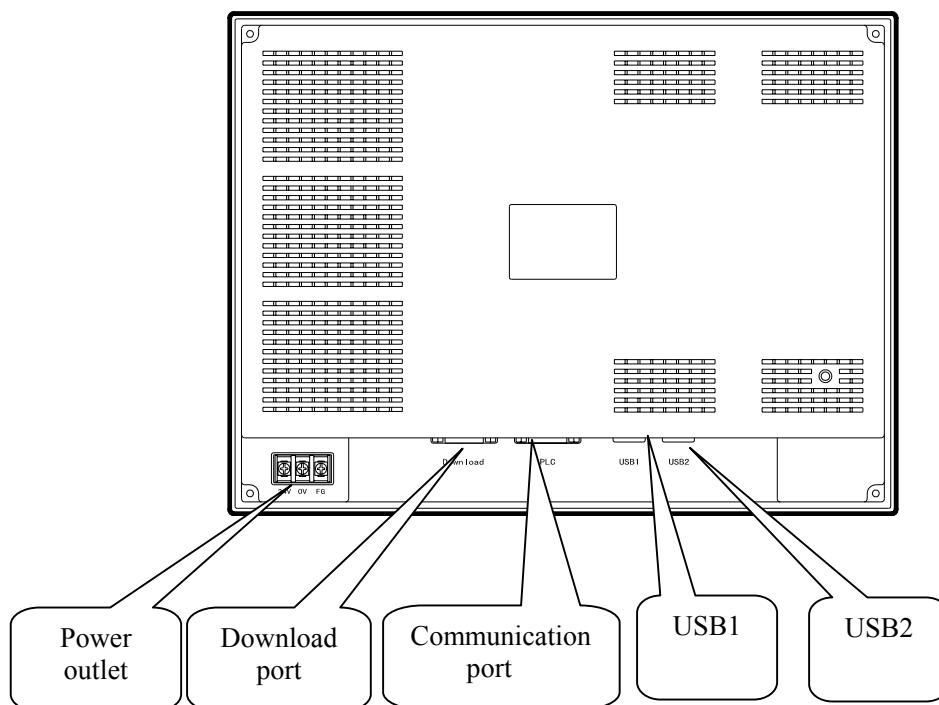
Inverse image



TP-A60-T/TP-A60-Ltouch screen:



**Inverse image**



1-4 Interface definition and download cable

TP touch screen series port communication feet define number:

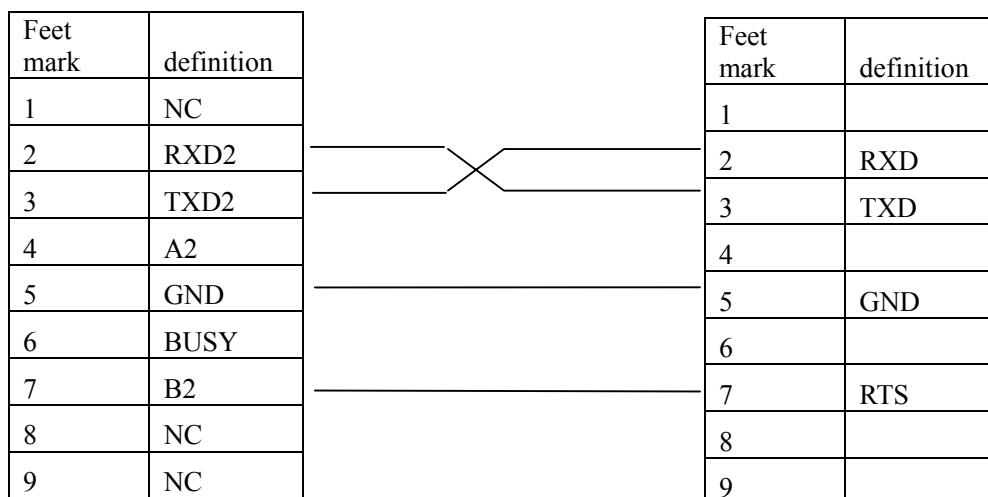
Feet number	definition
1	TD+
2	RXD1
3	TXD1
4	A1
5	GND
6	TD-
7	B1
8	RDD-
9	RDD+

TP communication port

Feet mark	definition
1	NC
2	RXD2
3	TXD2
4	A2
5	GND
6	BUSY
7	B2
8	NC
9	NC

TP download port

TP touch screen download cable connection map:



TP download port

Computer COM port

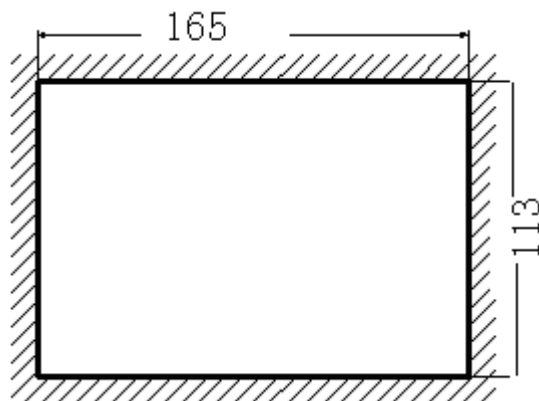
reference: On the base of hereinbefore download cable, meet the eighth foot and fifth foot in short, then you can download TP with force.

2 Exterior size

### 2-1 TP460-Lsize

TP460-L real size (unit mm) :  $163.2 \times 111.4 \times 45$

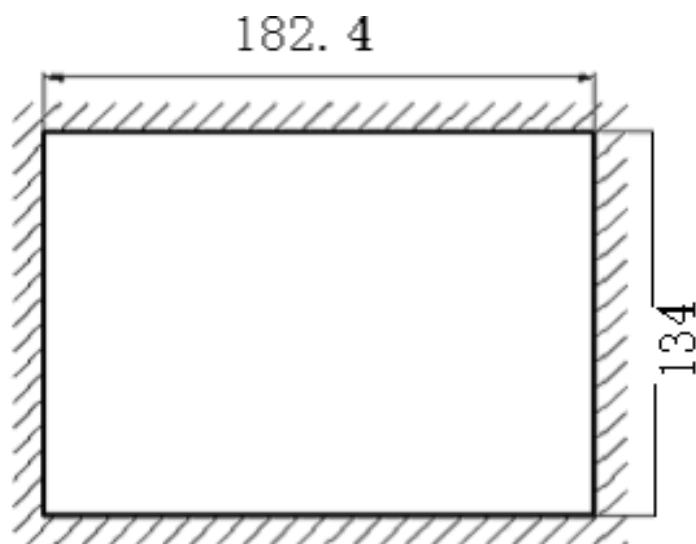
fix hole size (unit mm) :  $165 \times 113$



### 2-2 TP560-L/TP560-T size

TP560-L real size (unit mm):  $180.4 \times 132 \times 44$

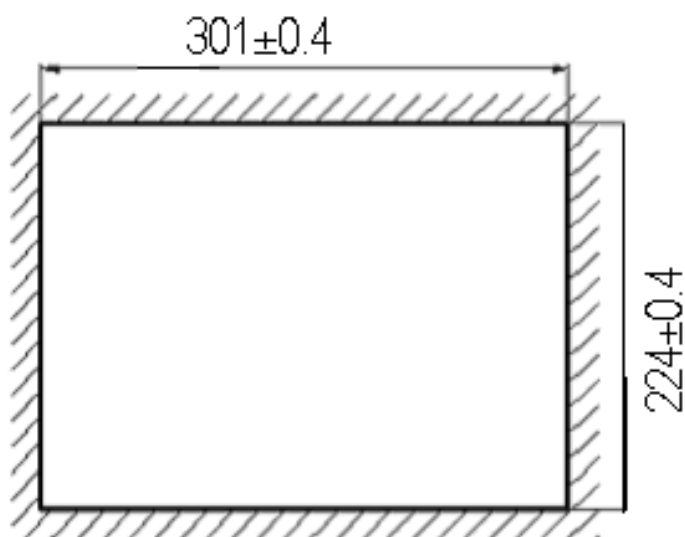
fix hole size (unit mm):  $182.4 \times 134.4$



**2-3 TPA60-L/TPA60-T size**

TPA60-L/TPA60-T real size (unit mm):  $311 \times 234 \times 48$

fix hole size (unit mm):  $301 \times 224$



### 3 fix measures

When you buy a TP, there will be 4 iron install frames with it. There are two square fix holes on the display's upside and downside. Use the frame to fix the display tightly in the control tank's install holes.

Touch screen's temperature will go high if it works too long. So, you'd better hold 10 cm space for the touch screen to avoid this (each side 5 cm). Then the atmosphere will change freely.

#### Install steps

1. Refer to hereinbefore graph's size. Open a square hole on the control tank's panel.
2. Add airproof circles in the airproof trough when installing
3. Plug the display's bottom to the hole of control tank
4. Set the install frame into the display's side fix hole and screw the screw
5. Connect the display and PLC communication port with cables. The communication cable can be offered by the supplier or make by yourself, give +24V direct power to start working



# Software parts

## 1 About graphics software

This chapter describes TP series touch screen software's project screen and its components , and the components of toolbox ,template in addition .

### 1-1 Installation of the software

Find "setup.exe" in the touch screen software and double-click it



Click "next" or "yes" all along to enter user information dialog box



Input user name、 company name and serial number。  
The serial number is: 11111111111111 or Xinje TouchWin (note if the letter is in capital or not and the blank ),  
Then click "next".

**InstallShield Wizard**

**Customer Information**  
Please enter your information.

Please enter your name, the name of the company for whom you work and the product serial number.

User Name:  
user

Company Name:

Serial Number:

InstallShield

< Back   Next >   Cancel



Click “next” all along until finish installation and then click “finish”。

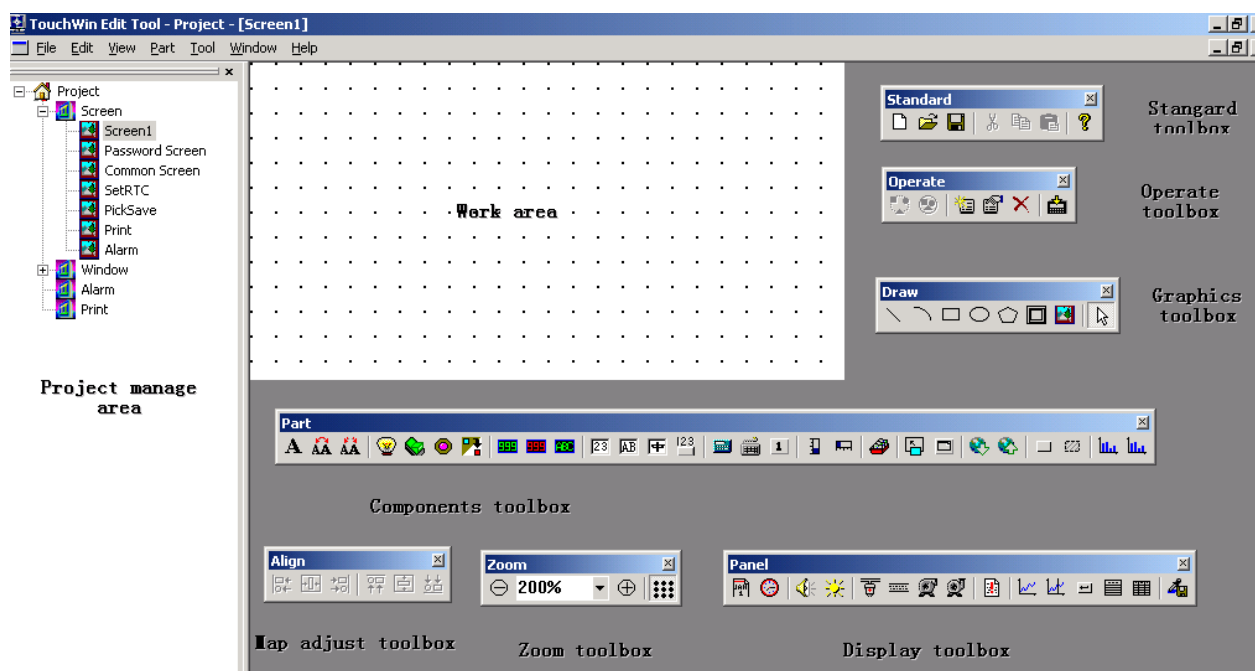


If the installation is finished ,there will be an icon on the table as following。



## 1-2 The components of software screen

TP touch screen’s interface display contents are the following image, each name and function is described as follows:



**Graphic toolbox**



**Name of each tool button**

- (1) Draw a line
- (2) Draw an arc
- (3) Draw a rectangle
- (4) Draw a circuit or an oval
- (5) Draw a polygon or a multi-segment line
- (6) Frame
- (7) Map
- (8) Select unit

**Parts toolbox**



**Name of each tool button**

- (1) text
- (2) dynamic text
- (3) Variational text
- (4) lamp
- (5) bit operate button
- (6) lamp button
- (7) screen jump
- (8) digital display
- (9) alarm display
- (10) text display
- (11) data input
- (12) text input
- (13) Chinese input
- (14) set data
- (15) digital keyboard
- (16) ASC II keyboard
- (17) user input
- (18) vertical bar
- (19) horizon bar
- (20) dynamic image
- (21) call window
- (22) window button
- (23) down scheme
- (24) up scheme
- (25) function button
- (26) real trend map
- (27) scatter column map
- (28) continue column map

**Display toolbox**



**Name of each tool button**

- (1)date
- (2)clock
- (3)buzzer
- (4)LCD light control
- (5)valve
- (6)pipe
- (7)pump
- (8)auto wind
- (9)convertor alarm information
- (10)real time map
- (11)history data map
- (12)event button
- (13) display real time event
- (14)display history event
- (15)sample save

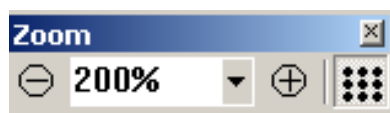
**Operate toolbox**



**Name of each tool button**

- (1)public unit
- (2)private unit
- (3)new
- (4)property
- (5)delete
- (6)download

**Zoom toolbox**



- (1)
- (2)
- (3)
- (4)

**Name of each tool button**

- (1)zoom out
- (2)zoom ratio
- (3)zoom in
- (4)menu gridding

**Standard toolbox**



**Name of each tool button**

- (1)new
- (2)open
- (3)save
- (4)cut
- (5)copy
- (6)paste
- (7)about

**Graph adjust toolbox**



**Name of each tool button**

- (1)align left
- (2)align center
- (3)align right
- (4)align top
- (5)align middle
- (6)align bottom

## 2 Instructions you have to know

Before you use the program software , you should make sure which model the touch screen is and what kind the PLC is, all these are the precondition to decide whether the software could download in gear and communication .

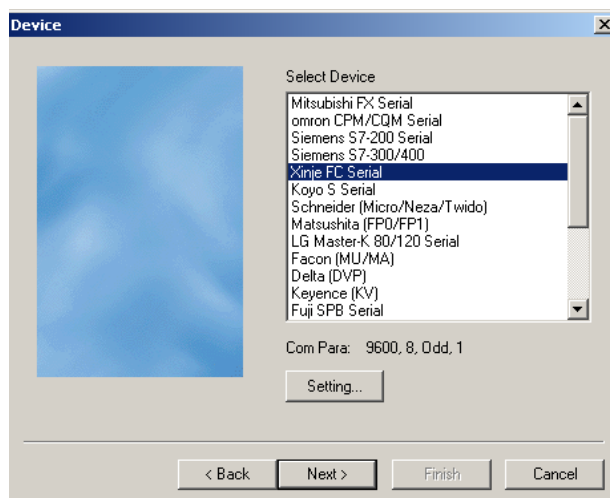
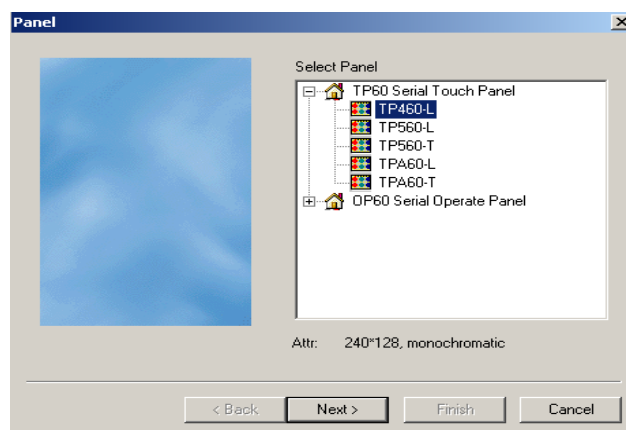
### 2-1 New

1 Click “new” icon in the standard tool column .

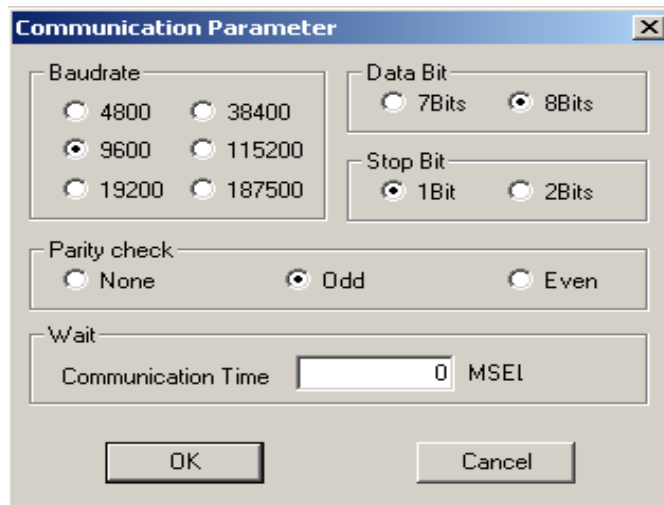


“new” icon

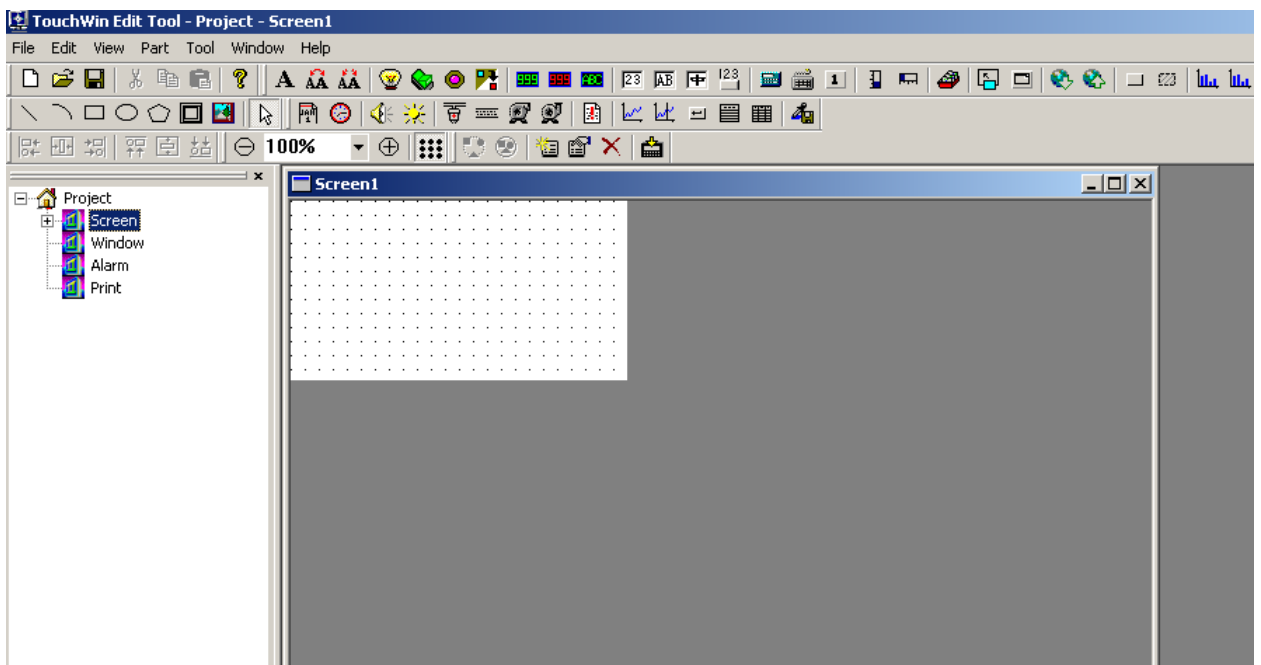
2 When you set up a new project, there will come out a dialog box as the following left map, you could choose the touch screen’s model , and then click “next” .



3 In the upward map you could choose the PLC’s type, click “setting” to enter communicate parameter setting dialog box.



4 When the touch screen communicate with different kinds of PLC, the communicate parameter will be different .The default value is auto set when you choose the PLC model. If there is no special change, please don't change it at your will to avoid communication mistakes. If you finish setting, click "OK" and there will pop out a new project.

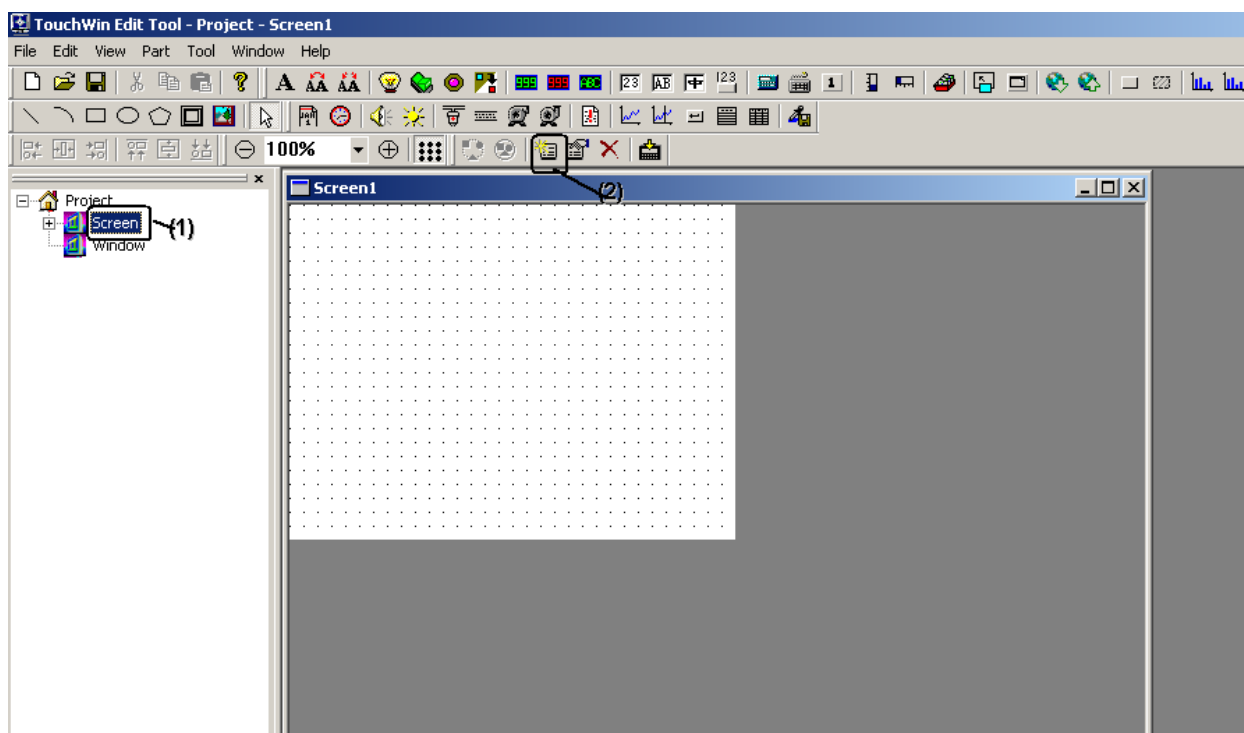


## 2-1-1 Creating new screens or windows

### 2-1-1-1 Creating new screens

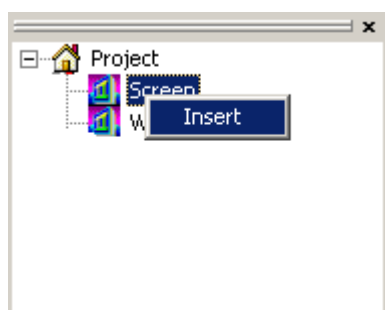
1: There are two ways to create a new screen:

- A: ①Click “screen” in the project manage area with the mouse’s left key to make it the opposite color;  
②Click “new” in the operate toolbox。 (the detail operation is as the following map)



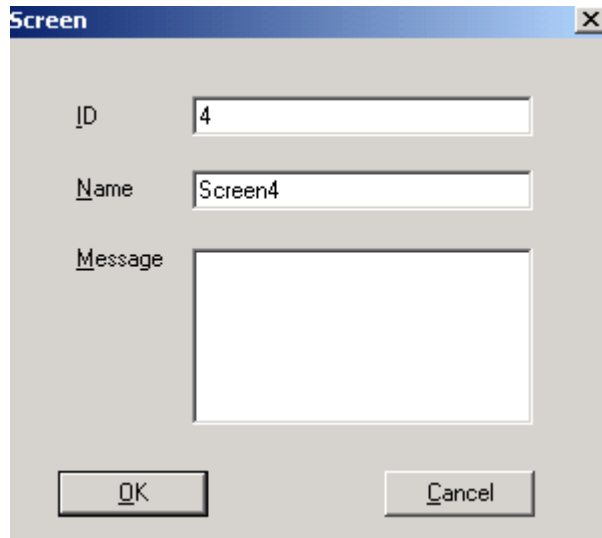
**B: Insert a new screen in the console 。 (the detail operation is as the following map)**

Click “screen” with the mouse’s left key in the project manage area to make it the opposite color, then click the mouse’s right key , click “insert” in the pop menu .





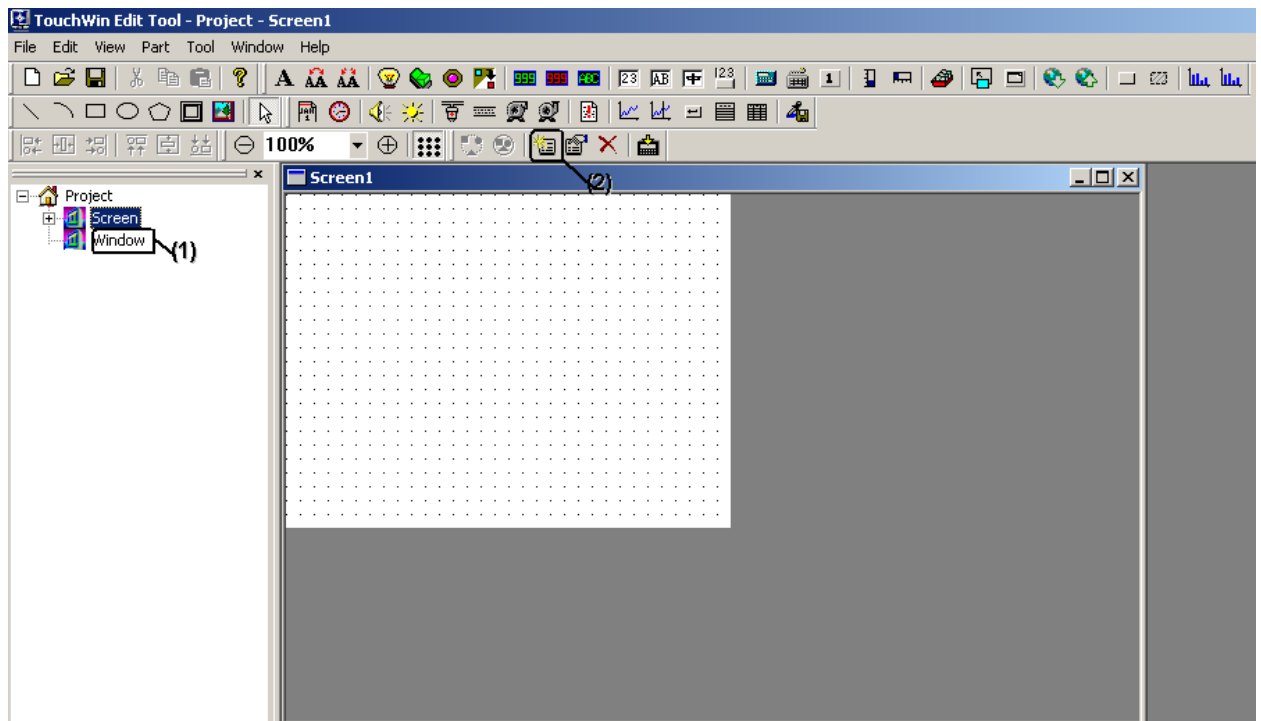
2 There will pop out a new screen dialog box. Input screen's ID and screen name , finally click “OK” and you will finish creating a new screen .



### 2-1-1-2 Creating new windows

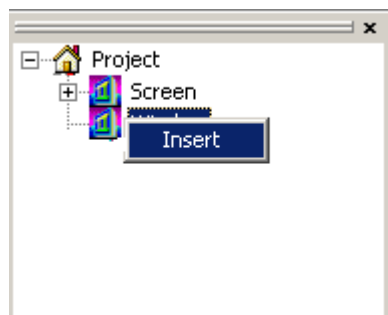
1 There are also two ways in creating windows:

A: ①Click “window” with your left key in the manage toolbox to make it opposite color②Click “new” in the operate toolbox

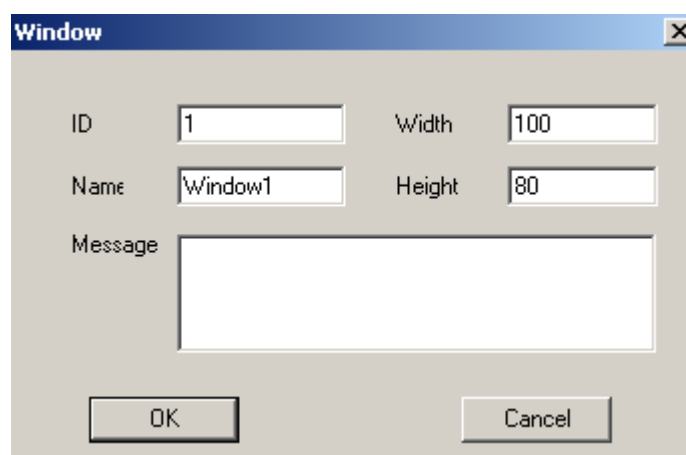


B: Insert a window in the console (the detail operation is as the following map)

Click “window” in the project manage area with the mouse’s left key to make it the opposite color, Click your right key , in the pop out menu just choose “Insert”



2 There will pop out a new window dialog box, set the window ID and its name, size. Finally click “OK” and you will finish creating a new window.

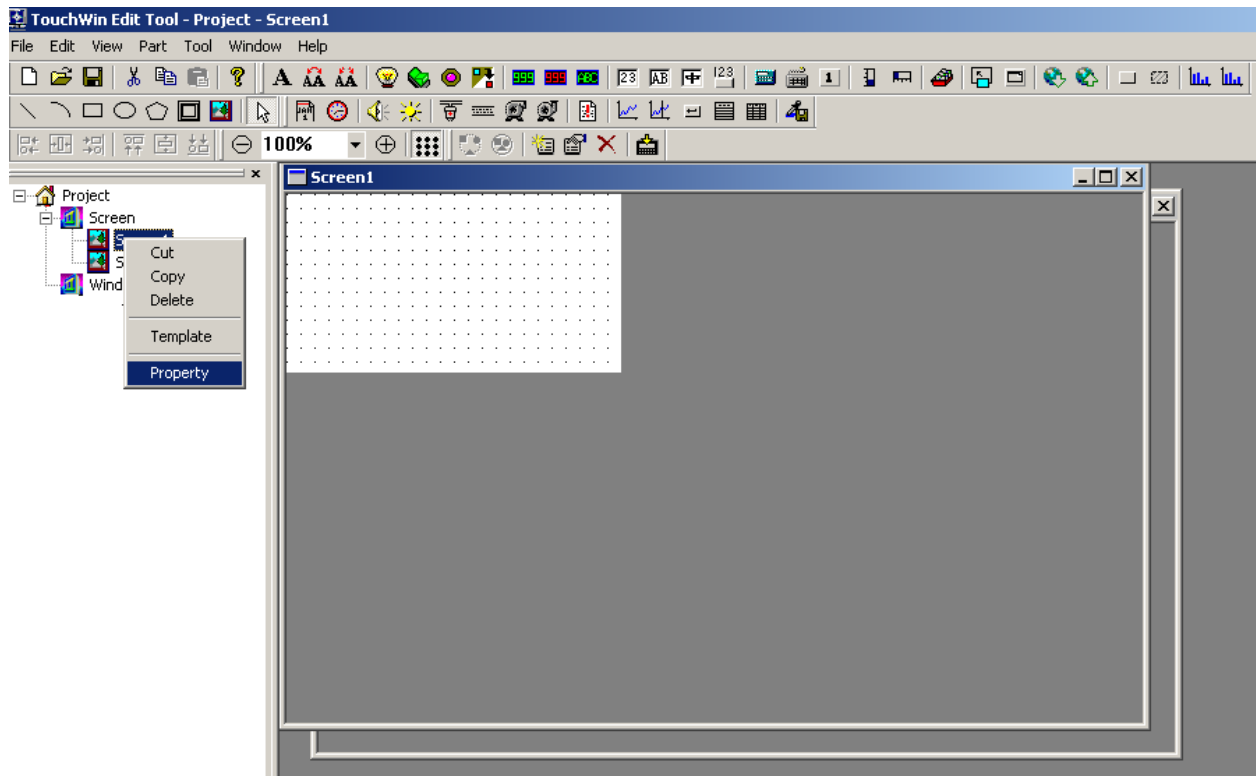


## 2-2 Title setting for a screen or a window


1 When creating a project screen (window), We often give each screen (window) a different name to identify the screen (window).There are two ways to modify their name.

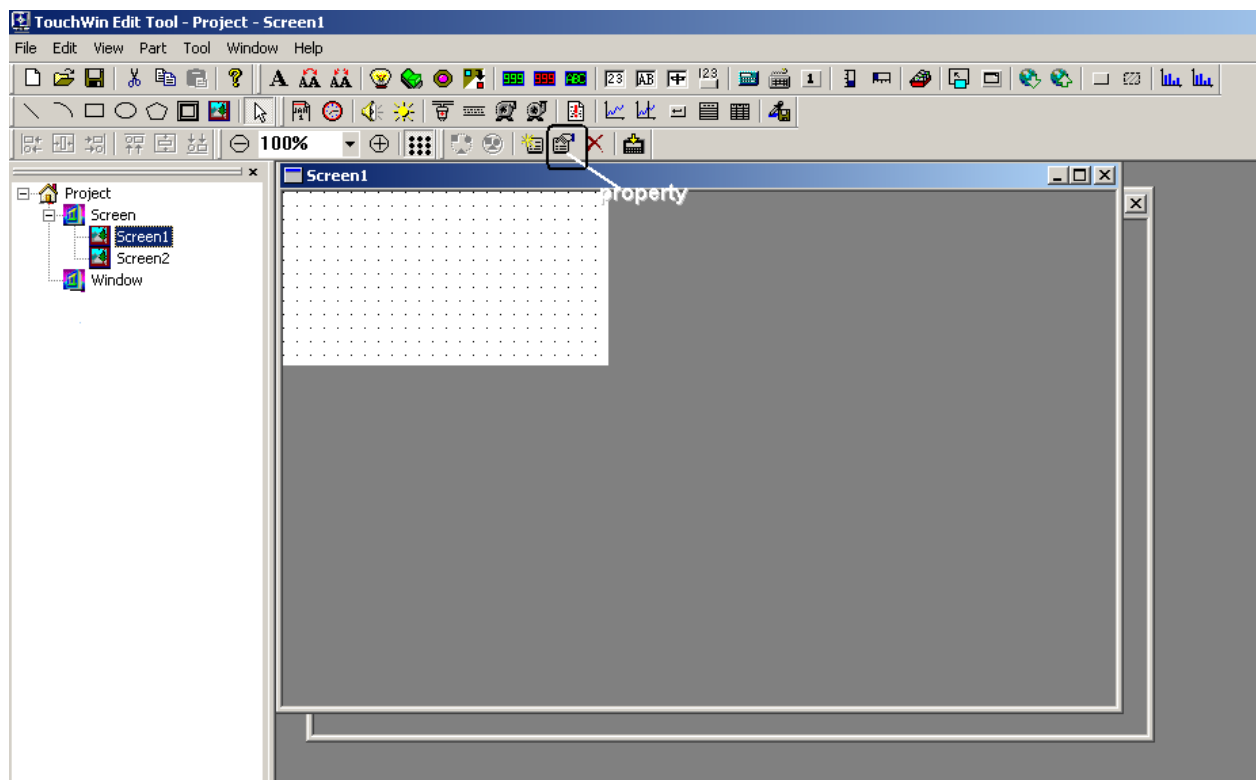
### WAY 1

Click a certain “screen” or “window” in the console with the mouse’s right key, then choose “property” in the pull down menu

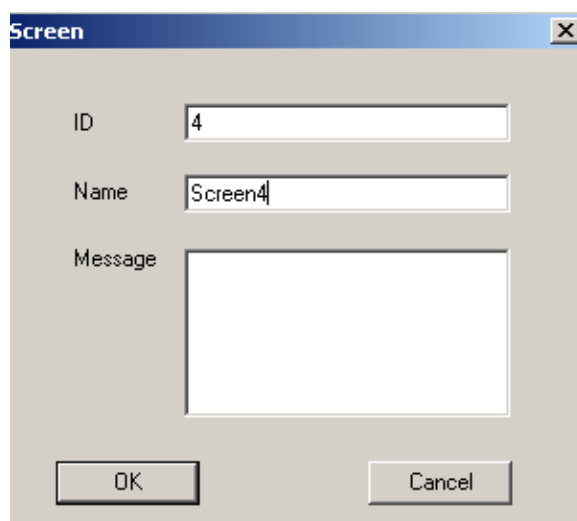


### WAY 2

Click  in the operate toolbox directly

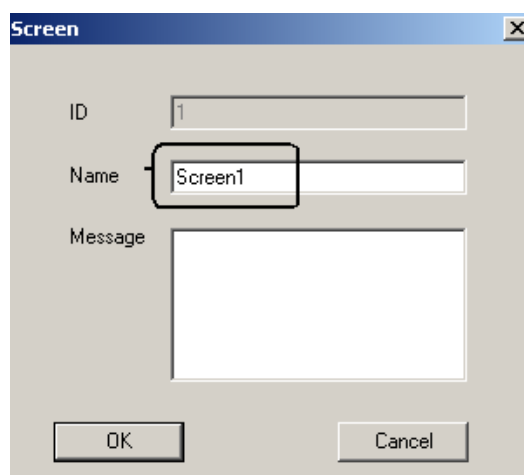


2 A setting map will pop out (as the following map)



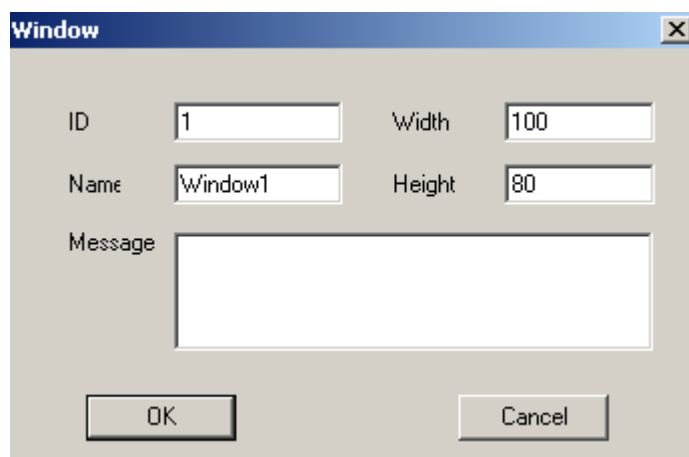
The screenshot shows a dialog box titled "Screen". It has three input fields: "ID" with the value "4", "Name" with the value "Screen4", and "Message" which is an empty text area. At the bottom, there are two buttons: "OK" and "Cancel".

3 Input the user-name in the "name" bar



The screenshot shows a dialog box titled "Screen". The "ID" field contains "1", the "Name" field contains "Screen1", and the "Message" field is empty. The "Name" field is highlighted with a black border. At the bottom, there are two buttons: "OK" and "Cancel".

If you click the window property, you can also set its size in the pop out dialog box



The screenshot shows a dialog box titled "Window". It has four input fields: "ID" with the value "1", "Name" with the value "Window1", "Width" with the value "100", and "Height" with the value "80". There is also a "Message" text area which is empty. At the bottom, there are two buttons: "OK" and "Cancel".

## 2-3 How to make a graph

Graphics toolbox






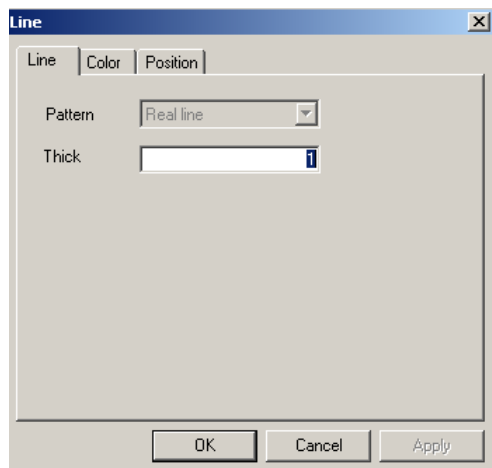
### 2-3-1 Draw a line, a rectangle or a circuit/oval

The following describes how to draw a line, a rectangle or a circuit/oval


Here we take drawing a line as an example



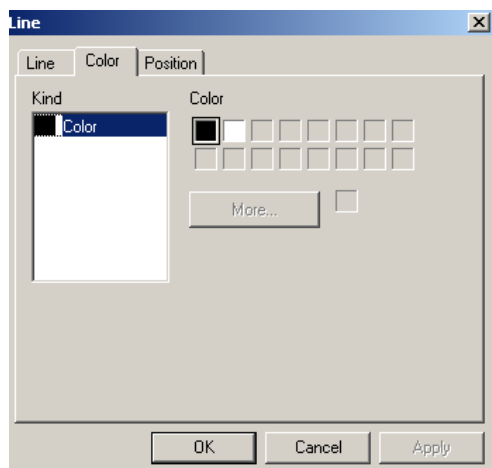
- 1 Click  in the graphics bar.  
 Draw a rectangle : click  ;  
 Draw a circuit/oval: click  .
- 2 Click your left key at the start dot
- 3 Drag the cursor to the end dot
- 4 Let the mouse's left key go to finish drawing a line
- 5 Set the property



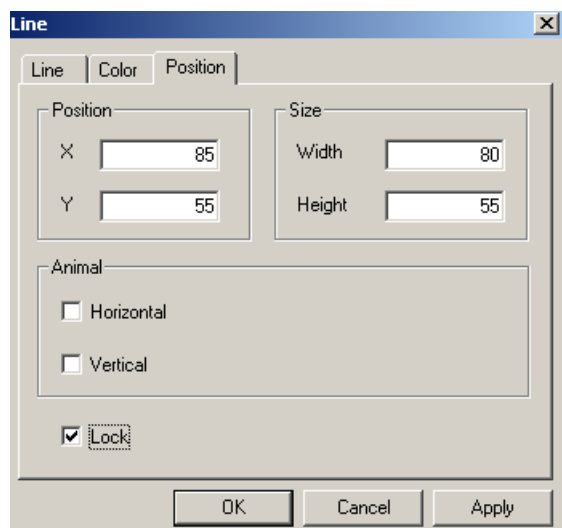
Procedure of setting the property

I If the object is in the state of been selected, double click the mouse's left key or click  in the operate toolbox, then there will pop out a property dialog box

Choose of the line's thickness (input value is an integer between 0~255).



II There are two options for the line's color (At present the touch screen is monochrome, so, "more" button is useless)



III Input the start position in the position area , in the size area , width stands for the horizontal length and height stands for vertical length

IV When you choose lock , the line's position is fixed in the screen and couldn't carry out any operation . (except for property choose and delete)。


V Click "OK" to save your setting when you finish it

### 2-3-2 Draw a polygon, a fold line

The following describes how to draw a polygon, a fold line

Here we will take drawing a polygon as an example




1. Click  in the toolbox
2. At the start dot of the polygon, press down your left key
3. Drag the cursor to the second acme's position
4. Let the left key go to fix the second acme's position
5. If you increase the acme number, please repeat doing this
6. Double click at the end acme and you will finish drawing a polygon
7. The property setting (the same as before)

When setting property ,you may refer to line's property setting

### 2-3-3 Draw an arc

The following describes how to draw an arc

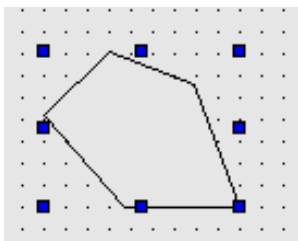


1. Click  in the toolbox
2. At the start dot of the arc, press down your left key
3. Drag the cursor to the end, then let it go
4. Property setting

### 2-3-4 Change the size

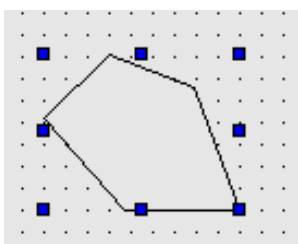
The following describes how to change the graph and the object's size



Graph and object's size show how to extend or shrink



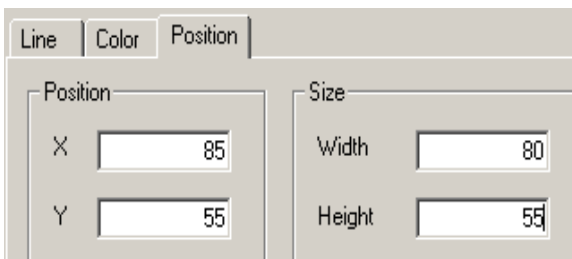
**WAY 1:**

I Choose one that you want to extend or shrink



II On the , press your mouse and drag when it becomes .

III Let the mouse's left key go to finish changing the size.

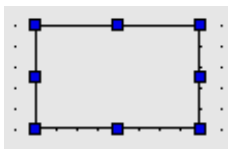


**WAY 2:**

Choose "position" in the property dialog box, input the object's horizontal width and vertical height in the "width" and "height", then click "OK".

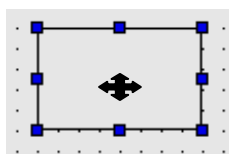
**2-3-5 Move of the selected objected**


The following describes how to move the maps and the objects



**WAY 1:**

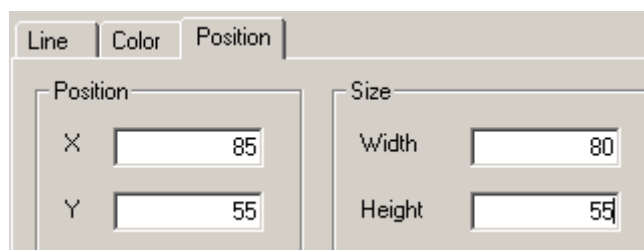
I Choose the map or object you want to move



II Move the cursor to the map, object, the cursor will become 

III Press your left key and drag it the place you want

IV Let the key go to fix the position






### WAY 2:

Choose "position" in the property dialog box, choose the coordinates you want (the coordinates' norm is in the up-left).

## 2-3-6 Cut , copy and paste of the selected object

The following describes how to cut ,copy and paste a graphics or an object

1. Choose one that needs to be cut
2. Click the toolbox: cut  , copy .
3. Click  in the toolbox

- **When choosing one that needs to be cut , copy or paste ,the following key will realize the same operation**

cut: Ctrl+X

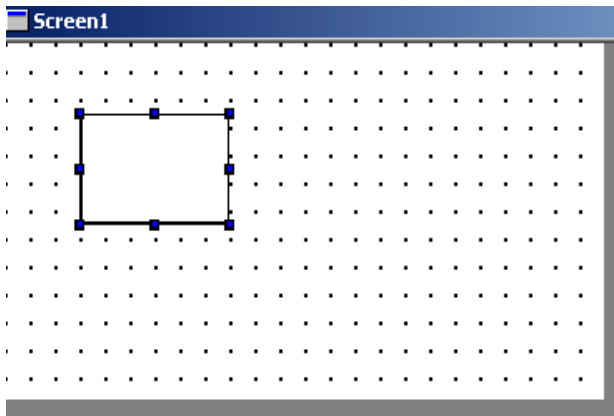
copy: Ctrl+C

paste: Ctrl+V



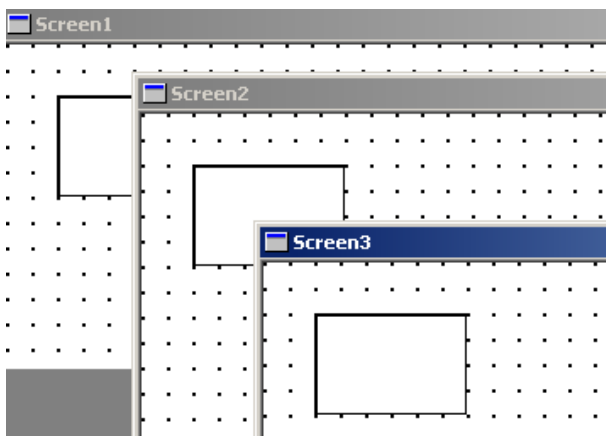
### 2-3-7 Public unit and private unit


In order to improve work efficiency, we offer public unit and private unit operation. Public unit can make the current screen's one or more units be used by all the screens; private unit is the opposite of public unit, it can only be used by the current screen.

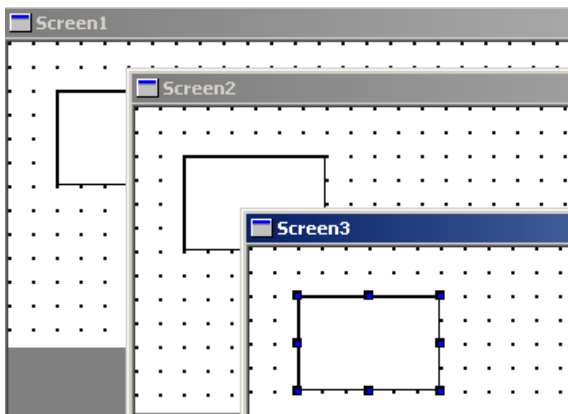


For example:

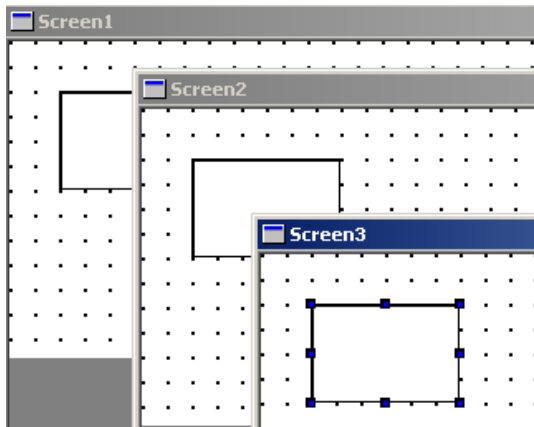
We create 3 screens in all. In the first screen, we add a rectangle (other units and components can be used, too) and choose it, just as the following map.




Then we click the public unit button , we will find in the second and third screen's same place, it auto adds a rectangle.



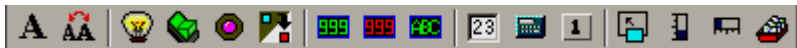
If we only want to keep the rectangle in the third screen, we will use private unit. Choose the rectangle in the third screen.



Then click private unit button , we will find that only screen 3 has a rectangle. The rectangle will disappear in screen 2 and screen 1.

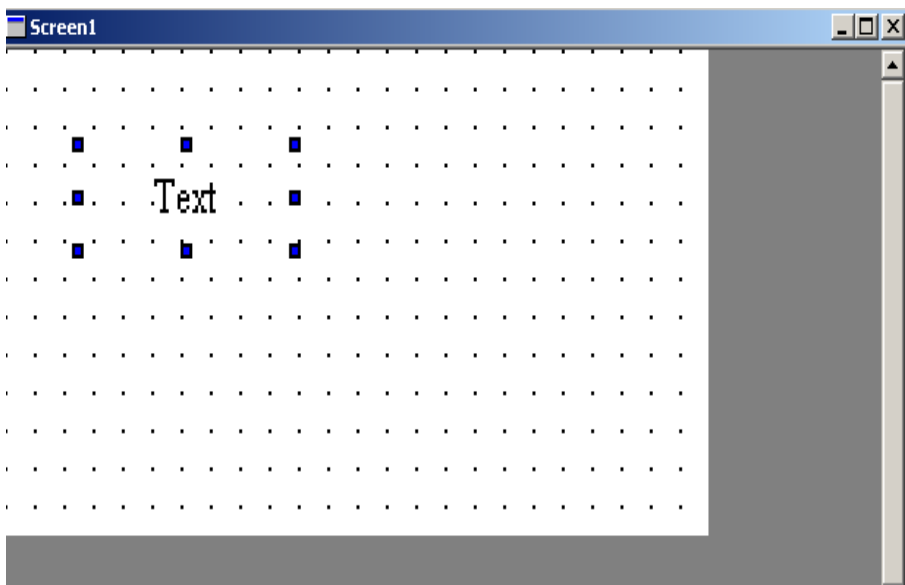
### 3 COMPONENTS

Components toolbox

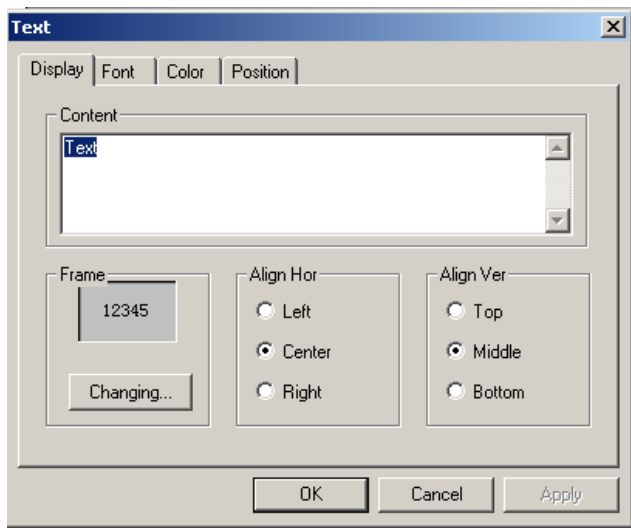


#### 3-1 Text setting

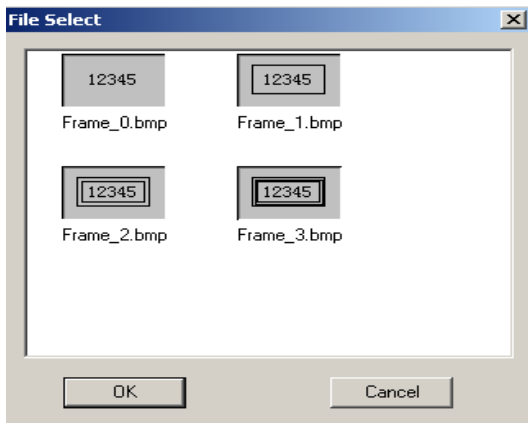
1. Click “**A**” icon in the components toolbox
2. Drag cursor into the screen , click the mouse’s left key to place the text (click the right key or press the ESC key to cancel your place)。



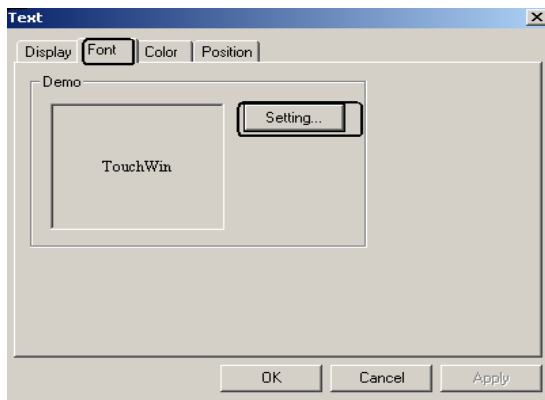
3. Double click the left key or choose  icon , there will pop out a text setting dialog box.



I Display the setting:  
①This contains content , frame and align mode

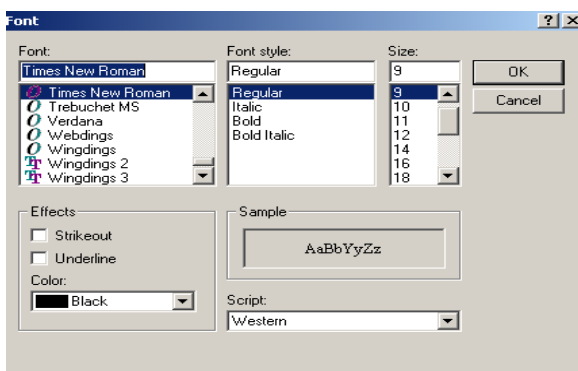


②Click **Changing...**, There will come out a “file select” map , you can choose text frame here



## II Font choose

①We offer different font in TP series touch screen , choose **Setting...** in the font




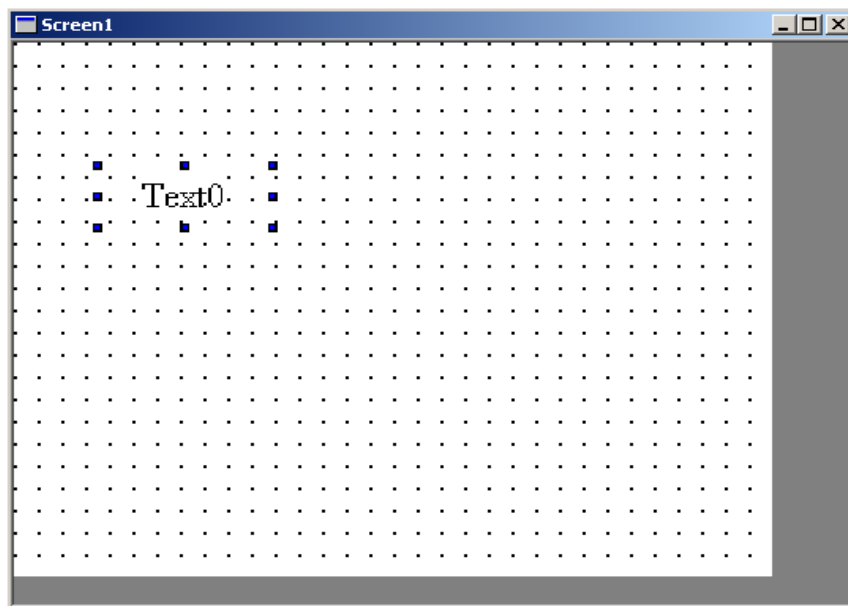
②There will come out a font setting dialog box

4 click **OK**, and you will finish setting the text

### 3-2 Dynamic text

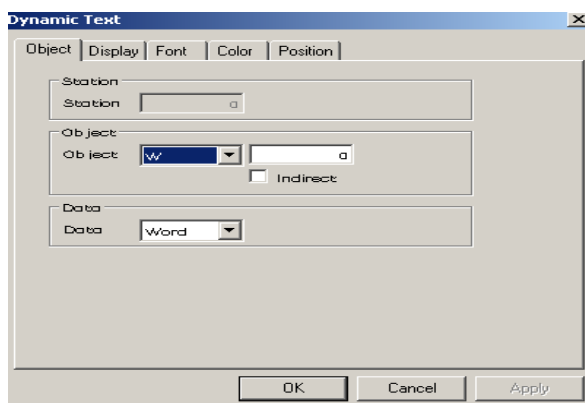
In the industry control process, the machine's state may be more. By these dynamic text the machine can display these different states. This make the operator much convenient and improve the work efficiency. So dynamic text is your ideal choice.

1. Click “” icon in the components toolbox
2. Move cursor into the screen, click your left key to place it in the screen area (click your right key or press ESC key, to cancel place)。



3. When the text is been selected, you could choose property.

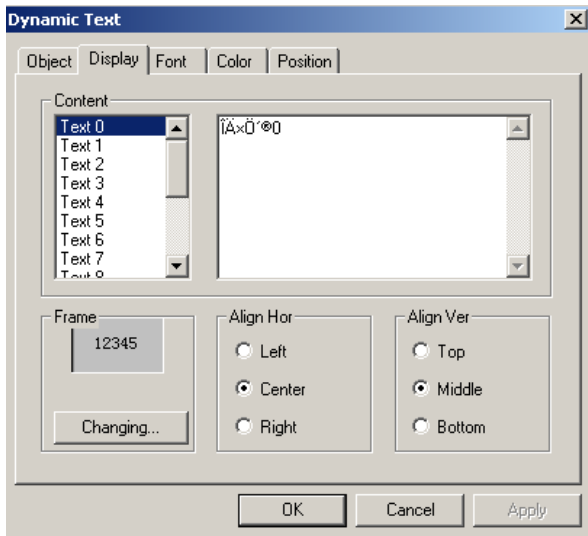
I Choose the dynamic text's object type.



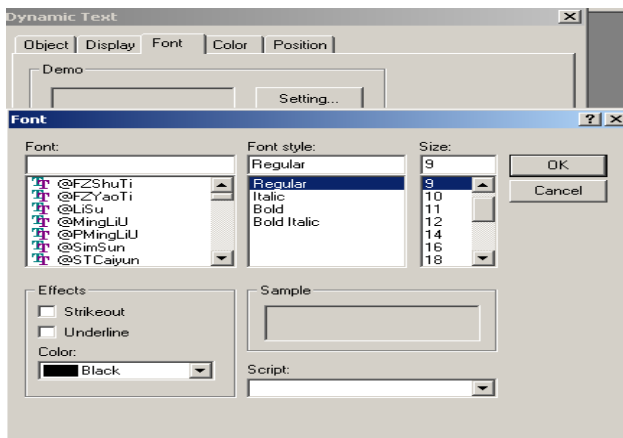
PLC Register's define ID correspond to the display

**Different model of PLC, its object and area are different. You may refer to appendix to know more**

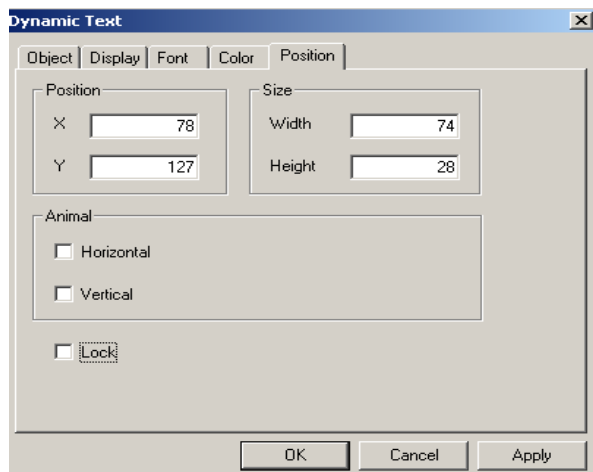




II Each register correspond to 16 states , each part's corresponding value is 0~15, when the register value is 0, the dynamic text will display the content of text 0. Others are the same. You can also choose align type and text frame.




III Choose of font and size

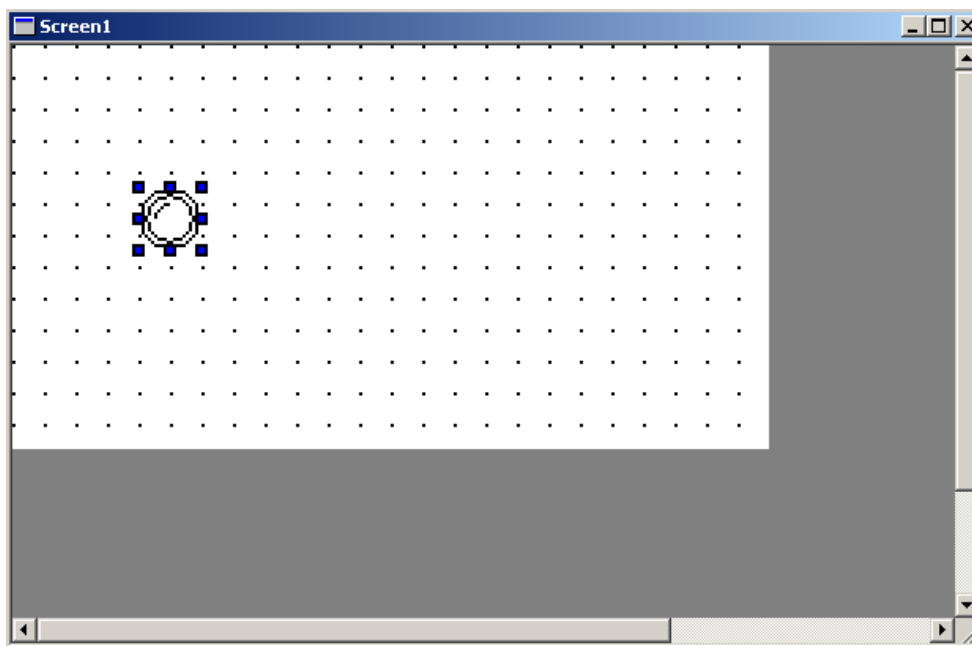


IV Choose of text's position and size  
 V Click "OK" and you will finish property operation

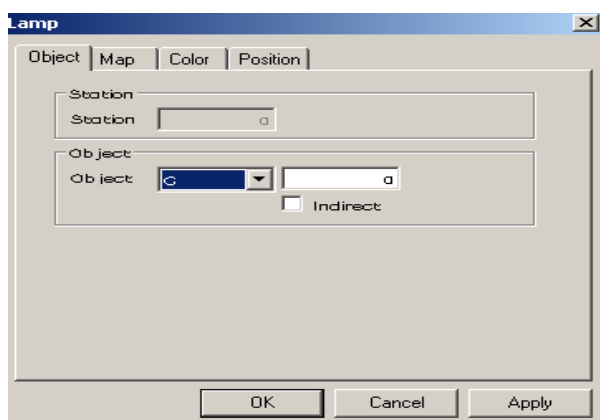
### 3-3 Lamp

In the operation process, in order to display clearly what operation is been take or what state is the machine, we offer fast way for the operation and monitor.

1. Click “” icon in the components toolbox
2. Move cursor into the screen, click your left key to finish placing the lamp (Click your right key or press ESC key to cancel placing)。



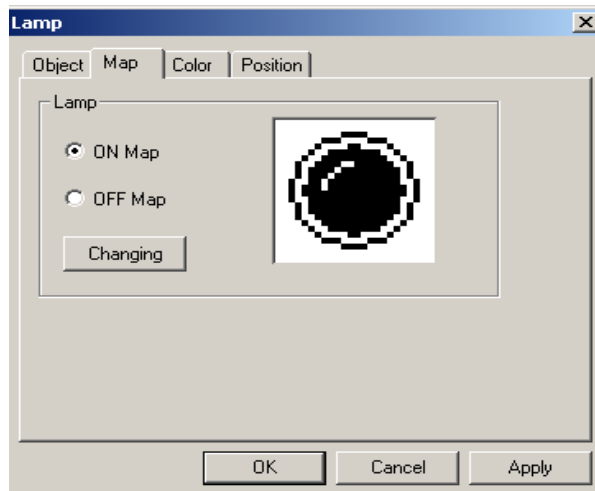
3. Click property and there will come out a lamp dialog box。



I Set station number to “1”。

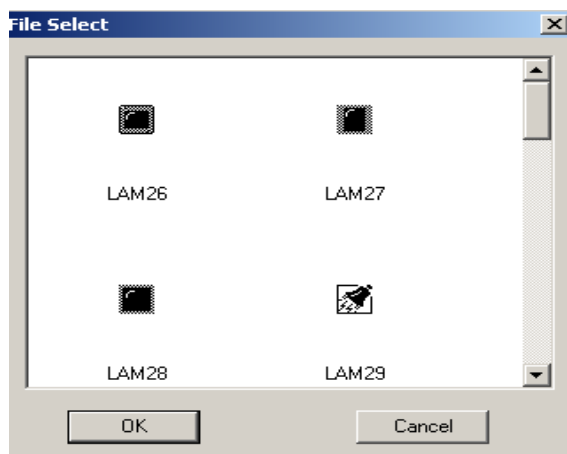
II Object type setting  
 PLC relay bound correspond to the display






### III Lamp map choosing。


You could choose the relay ON or OFF map

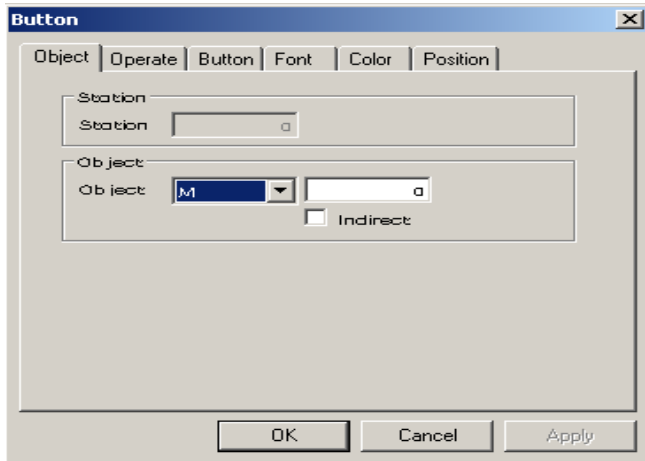


IV Click  to change the lamp map

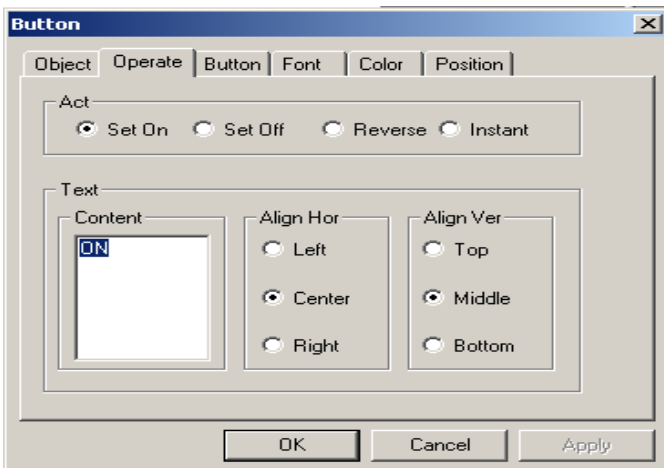


### 3-4 Bit switch

1. Click  icon
2. Move cursor into the screen, click your left key to finish placing bit switch button (click your right key or press ESC to cancel placing)
3. Click property and there will pop out bit switch button dialog box



I Choose bit switch button in the object type



II There are four states for bit switch button, at the same time you could choose key-press content and align mode

III Press “OK” to finish property setting

➤ **SET ON**

When the button is pressed down ,the selected middle relay will be set ON。

➤ **SET OFF**

When the button is pressed down ,the selected middle relay will be set OFF。

➤ **REVERSE**

When the button is pressed down, the selected middle relay will be set the opposite logic

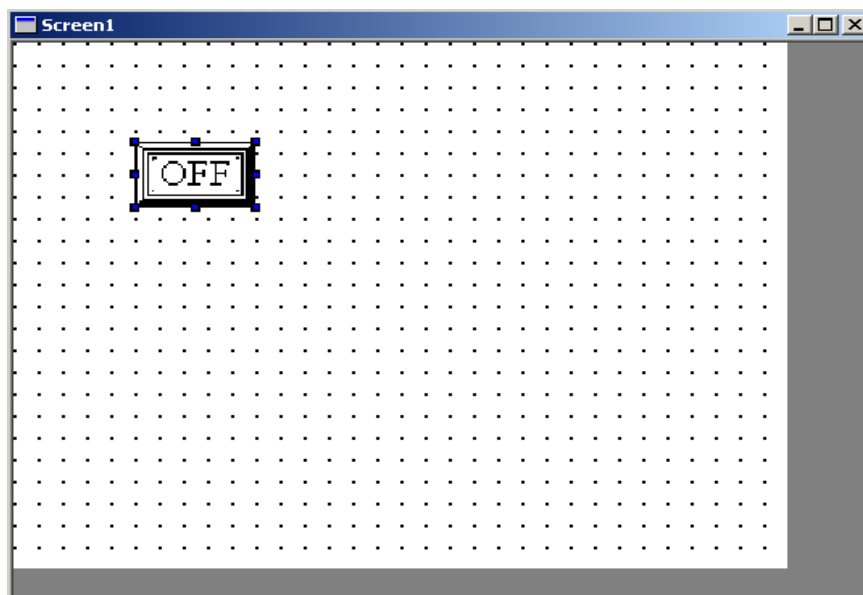
➤ **MOMENTARY**

When the button is pressed down ,the selected middle relay will be set ON ;when the button gets up ,the selected middle relay will be set OFF。

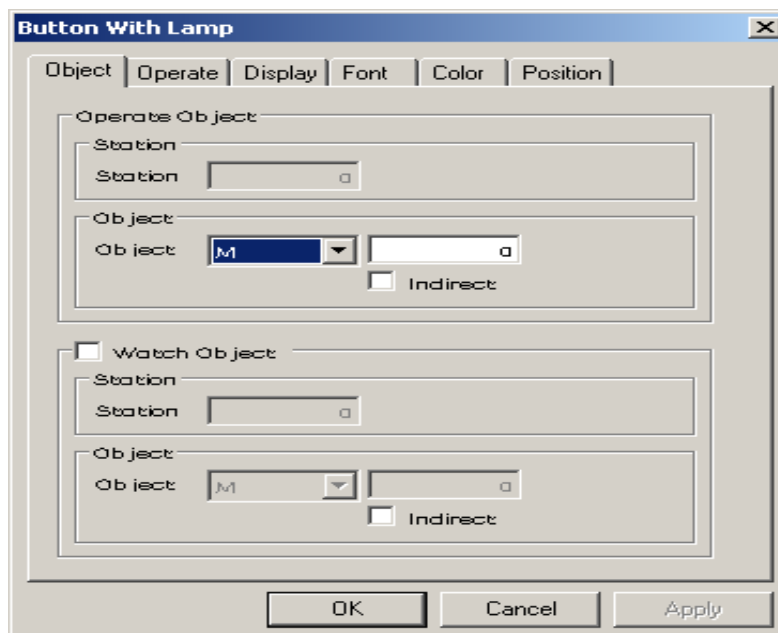
### 3-5 Lamp button

The lamp button has the function of lamp and button, but the lamp and the button could also be used separately for different relays.

1 Place the lamp button in the screen.



2 Lamp button property setting (when not choosing the monitor object, the lamp button will be only used as button).



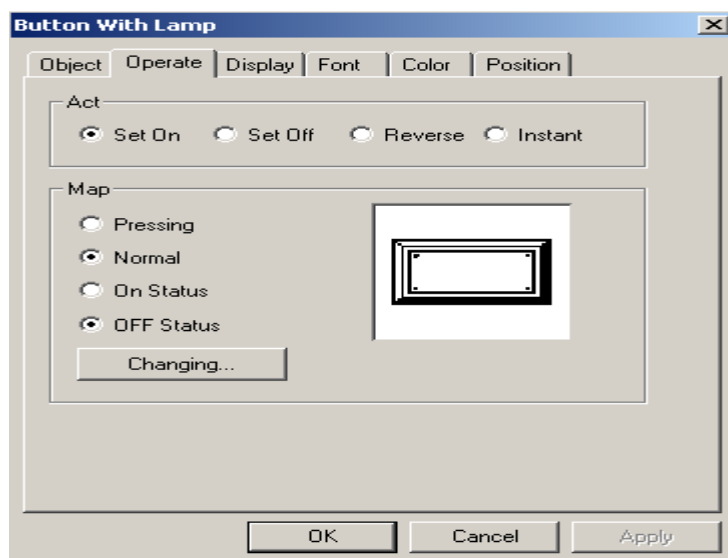
➤ Operate object

It shows that the lamp button has the key-press function to some middle relay

➤ Watch object

It shows that the lamp button display some middle relay's state (ON or OFF)

### 3 Operate setting



➤ Button operation

There are four states for the button operation

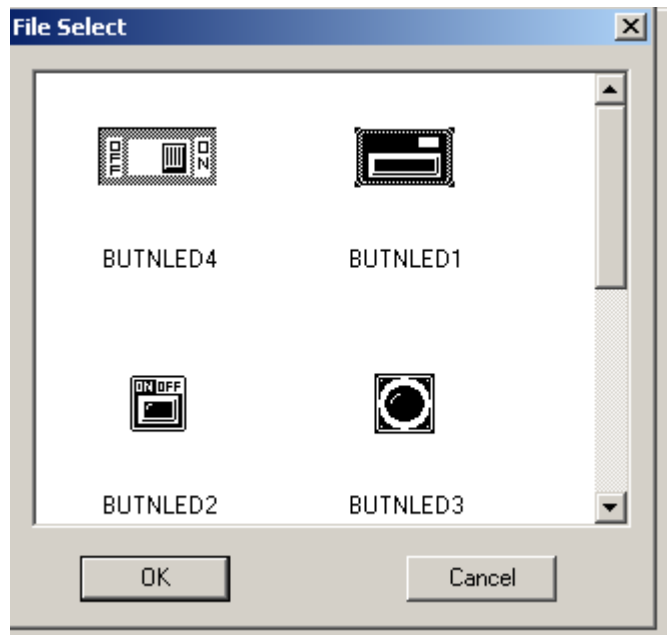
➤ Map

As a button , it has two states: “button on”、 “button off”

As a lamp , it has two states: “state ON”、 “state OFF”

➤ Change the graph of the lamp button

Press “Changing”, in the pop out “file select” dialog box, you could choose your map and click to finish .

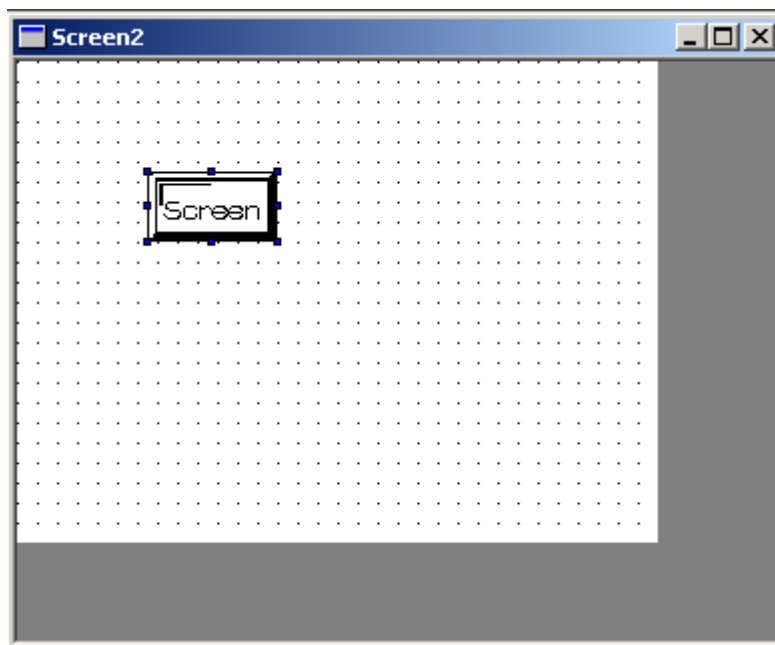


**【NOTE】 Operate object and watch object couldn't set the same.**

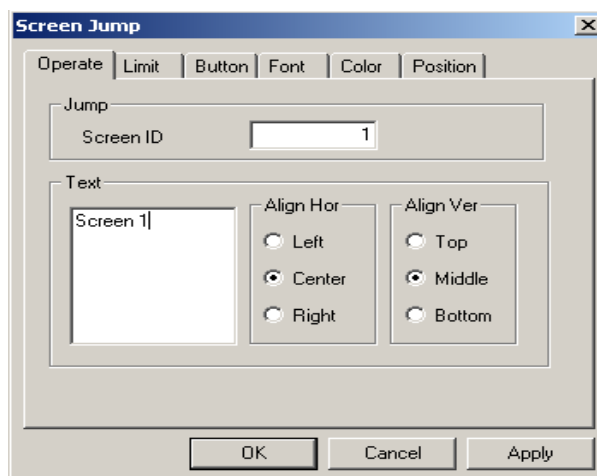
### 3-6 Image conversion

Image conversion is used to convert different images of the touch screen  
Setting of image conversion:

- 1 Click  and place it in the screen (click your right key or press ESC to cancel placing)



## 2 Set the property of image conversion




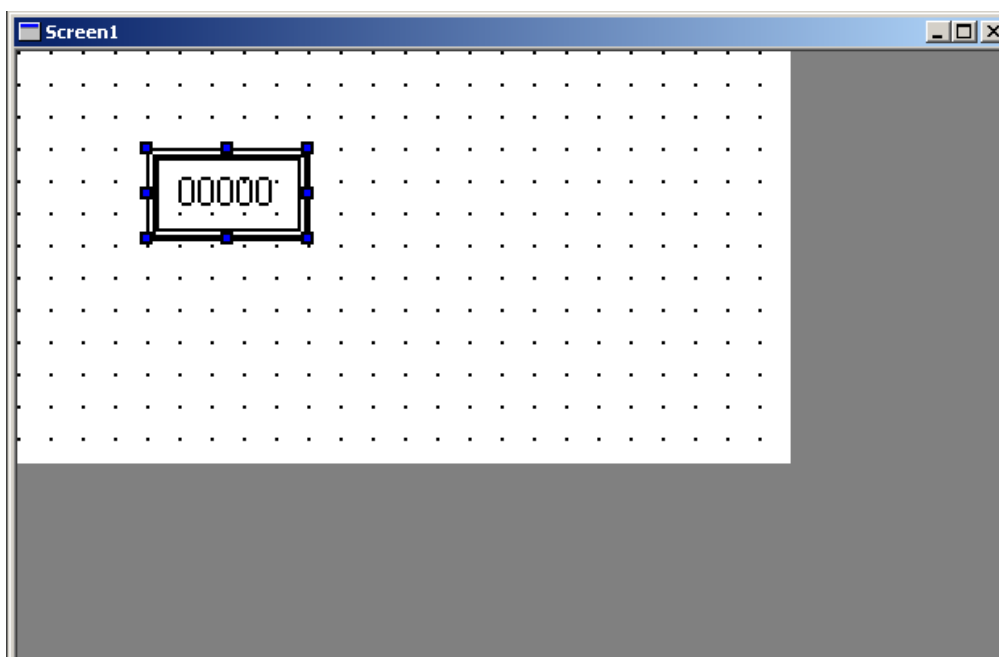
### ➤ Image conversion

When trigger the image conversion button ,the image will convert to the object image.

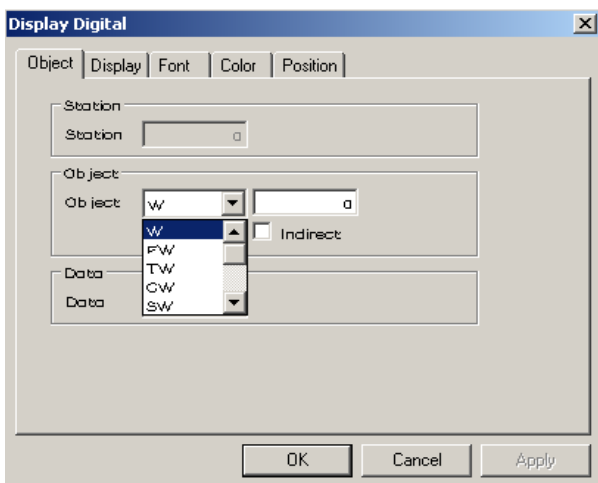
## 3-7 Data display

In the industry control process, the machine run parameter could tell if it is ok or not. So, it is display's another advantage to display the machine's action in figure. This function is the contribution of data display.

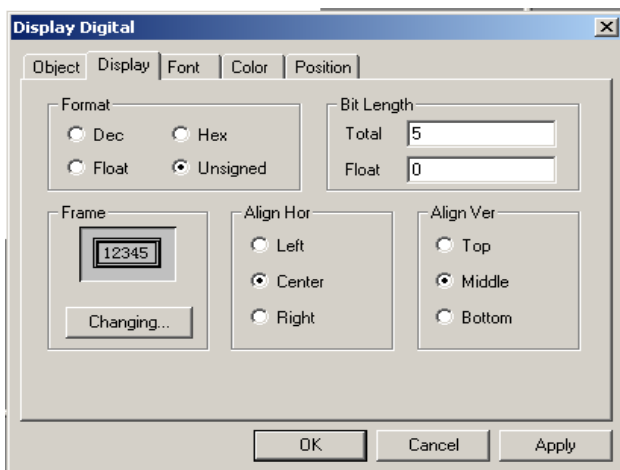
1. Click  icon
2. Move cursor into the screen to place it in the screen (click your right key or press ESC to cancel placing)



3. Click property and there will pop out a data display dialog box



I Choose object type (register type, ID and if the data is single word or double).



II In the “display” you could set data type, length ,align type and character’s frame, color and position.

➤ **Bit length**

Display or set the max number

➤ **Decimal fraction**

Keep the efficient bits after the decimal.

➤ **Decimalization**

Display the register’s data in the form of algorism (We suggest that mitsubishi and OMRON’s PLC use this form)

**Float number**

Display the register’s data in the form of float

➤ **Unsigned number**


The highest bit of register is 1, it is not a sign bit. For example: FFFF means 65535。

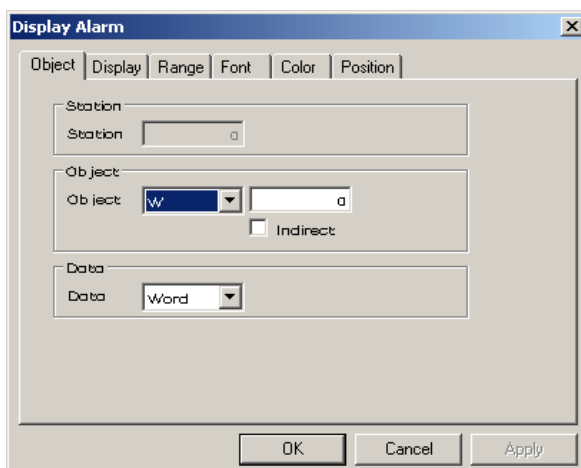
➤ **Hex/BCD**

Display the data in the form of hex/BCD。

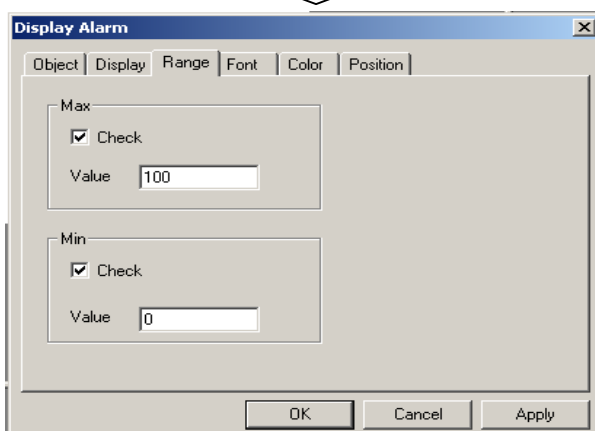
### 3-8 Alarm data display

In order to protect the operation, some data must have certain restrict. Data alarm display will glitter when the data exceed the restriction .This will awake the operator to take action.

1. Click  icon in the components toolbox
2. Move cursor into the screen , place it in the screen (click your right key or press ESC to cancel placing)
3. Click property, there will pop out alarm display dialog box。



I You could refer to data display on setting of object and display type



II According to practice demand, you could set the max value and min value .If the data goes beyond the bound, the data and the frame will glitter at the same time.

III You could refer to dynamic text in displaying font, color and position.

IV Click “OK” to finish。

4. When the data goes beyond the bound of alarm display, the alarm data will continue to glitter, this awake the operator.



### 3-9 Text display

Text display is used to display the register data in the form of text in the touch screen.

You could refer to data display for detail.

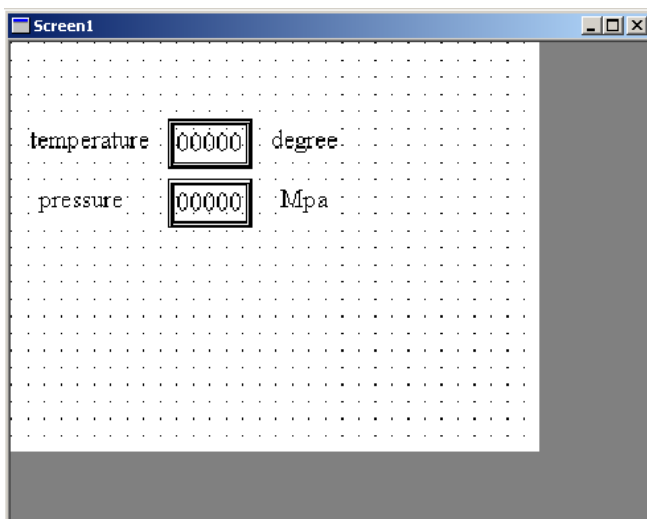
### 3-10 Data input

Data input is used to modify every parameter which is run by the machine freely by touch screen .It is another way for human machine connection.

But when inputting data there must be a digital keyboard .So data input must be used with keyboard.

**The following is the data input steps:**

1 First, place “data input” component in the screen, if the modify data is more, you could put more data input components as the following:

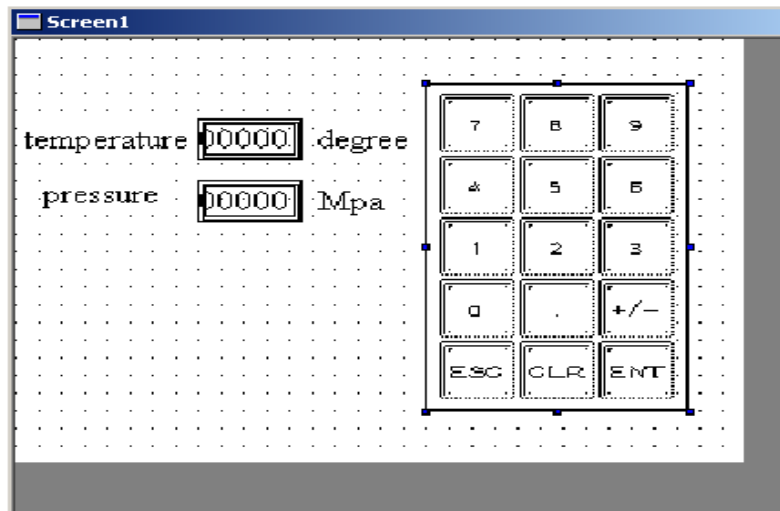


You could refer to “data display” setting in setting data input.



2 Click “data input” component to make it the opposite color . (If the data has a protect password, you should input the password before modifying the data )。

3 When the data input frame turns to the opposite color, there will come out a small digital keyboard as the following:



3 After input the number press “ENT” on the keyboard to finish data input .The small keyboard will disappear at the same time.

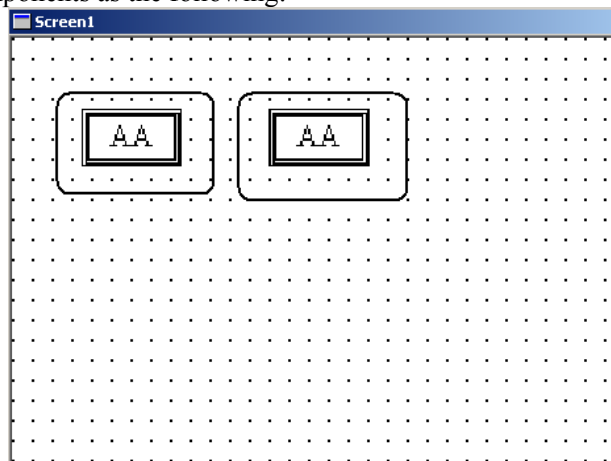
4 When data input is more, just repeat step 1~3。

### 3-11 Text input

Just like data input, when input text there must be a small text keyboard, too.

The following tells the text input steps:

1 First, place text input component in the screen , if the modify text is more ,you could put more text input components as the following:

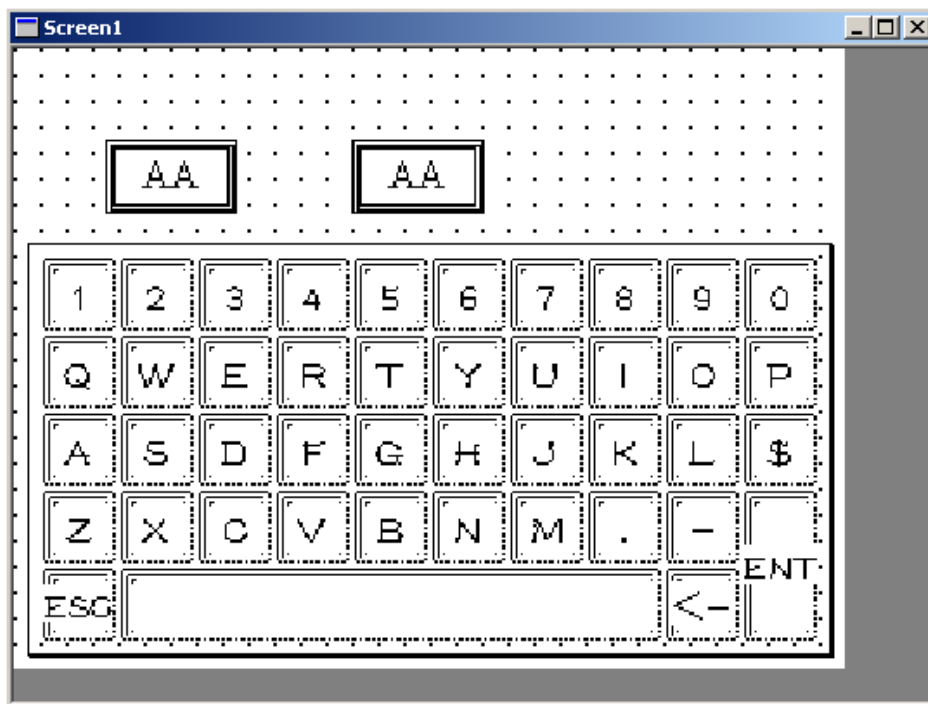


You could refer to text display setting in setting of text input.



2 Click text input component to make it in the opposite color . (If the text has a protect password, you should input the password before modifying the text)。

3 When the text input frame turns to the opposite color, there will pop out a small text keyboard as the following:



4 After input the text, press “ENT” on the keyboard to finish text input .The small keyboard will disappear at the same time.

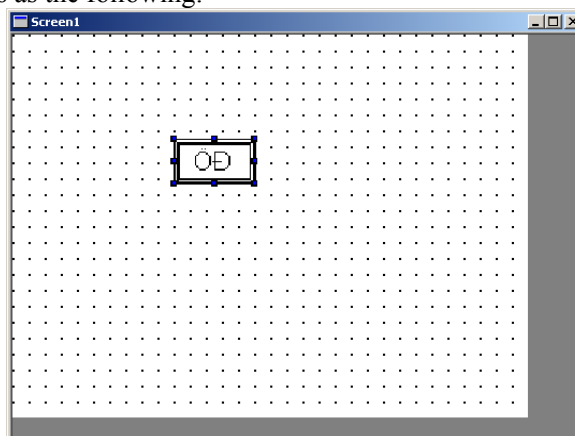
5 When data input is more, just repeat step 1~4.

### 3-12 Chinese input

“Chinese input” is used to input Chinese into register unit by touch screen. When inputting Chinese a small keyboard and a character spell window is needed.

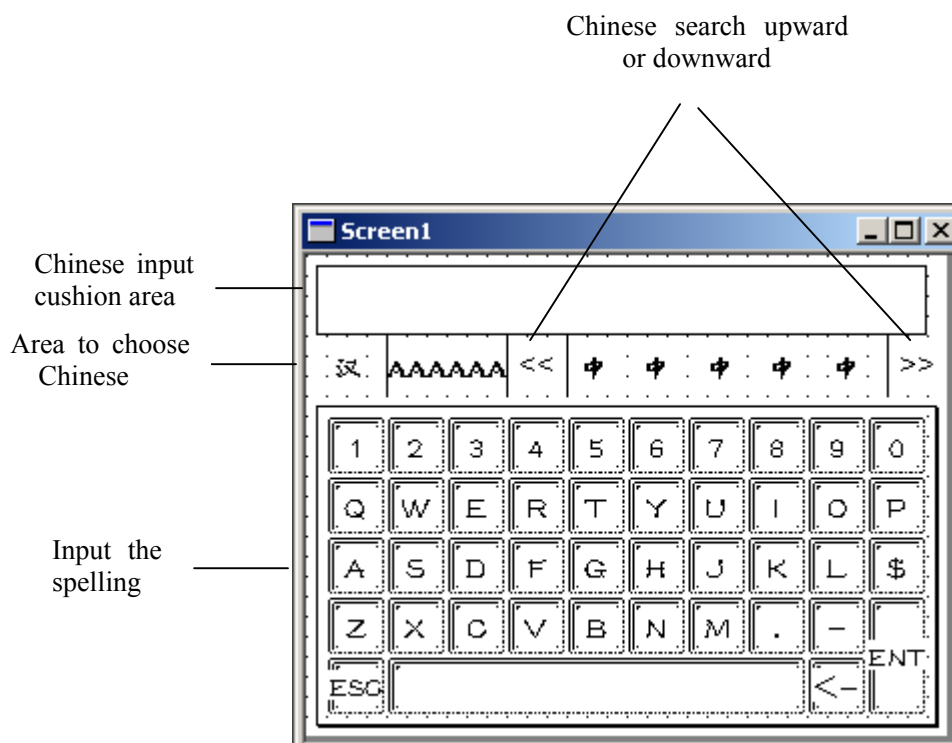
The following tells the character input steps:

1 First, place “Chinese input” component in the screen, if the modify Chinese is more, you could put more Chinese input components as the following:



2 . Click text input component to make it the opposite color . (If the text has a protect password, you should input the password before modifying the text)。

3 When the Chinese input frame turns to the opposite color, there will come out a small text keyboard as the following:

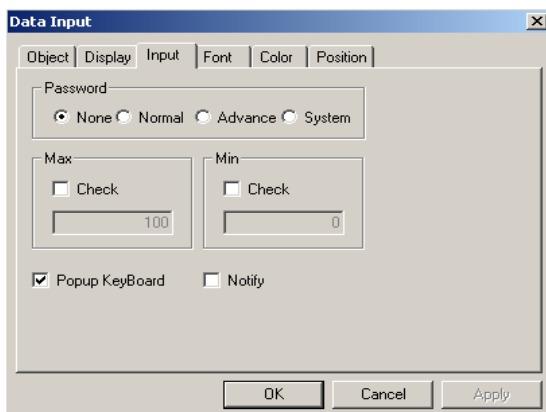


- 4 First, spell the character you want and input them on the keyboard. In the Chinese chosen area it will display five homophone. You can press “up” or “down” button to find the character. After choosing it, press “ENT” to finish. The keyboard will disappear at the same time. When you want to modify, just press “<-”.
- 5 When Chinese input is more ,just repeat step 1~4.

### 3-13 Digital keyboard

1. In the process of input and modify the data, keyboard plays an important role to link people and machine. As it is simple and convenient, the current operator is more likely to use it.
2. You can refer to others to place the small digital keyboard.
3. Small digital keyboard must be used with data input.

In the “data input” we have introduced before, we adopt the keyboard’s use mode as the default state, this is pop out mode. But we can modify data input and character input property at the same time. Such as the following map:




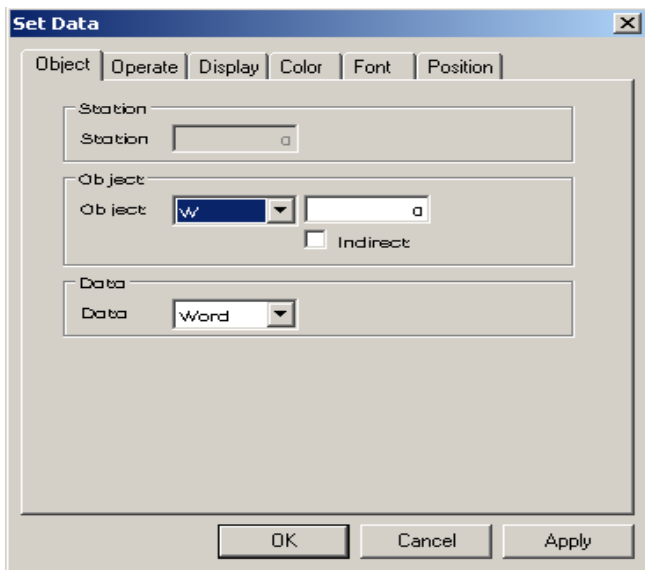
In the input choice of data input property setting, throw off the tick in the “pop keyboard”, then the keyboard will not pop out any more. So we need to add a digital keyboard or a text keyboard in the screen when we add data input components or text input components.

### 3-14 ASC II keyboard

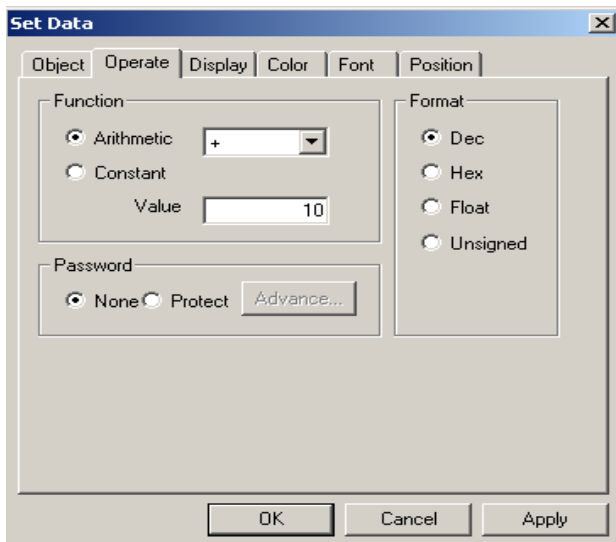
Just similar to digital keyboard , ASC II keyboard must be used with text input .You could refer to digital keyboard.

### 3-15 Data setting

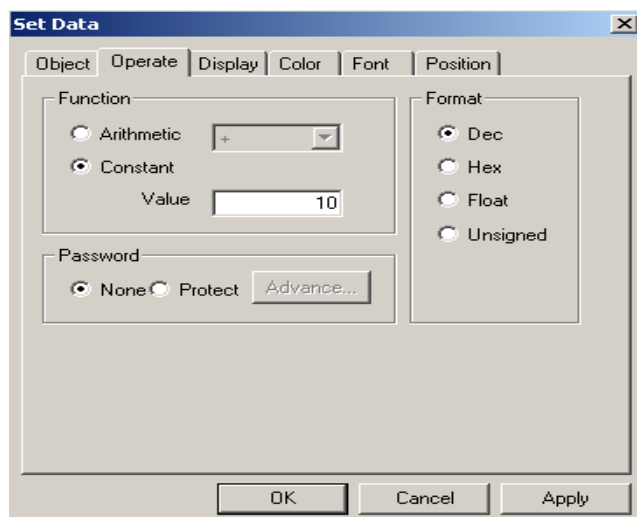
1. Click  icon
2. Move cursor into the screen. Click the left key to finish placing data setting button (click your right key or press ESC button to cancel placing)
3. Click property and there will come out data setting dialog box.



I Choose register's type and ID in the object. Choose data type at the same time.



II In the operate option, if you choose arithmetic, that means do arithmetic with the data in the set register. The example in the map is that after the operation add 10 to the register's data.

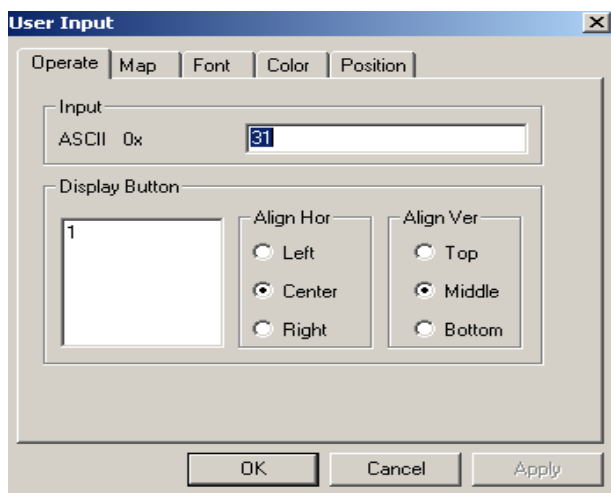


III If you choose set constant, it means give a value to a correspond register. In the following example, it shows that after the operation, the correspond register will be evaluated 10. The former value in the register will be covered.

Press “OK” to finish.

### 3-16 User input

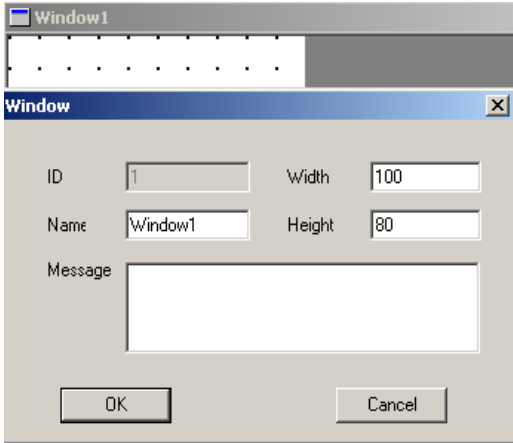
User input key is the base to compose each figure input key in the small keyboard. You can input letters at the same time. But the letters are inputted in the format of ASC.



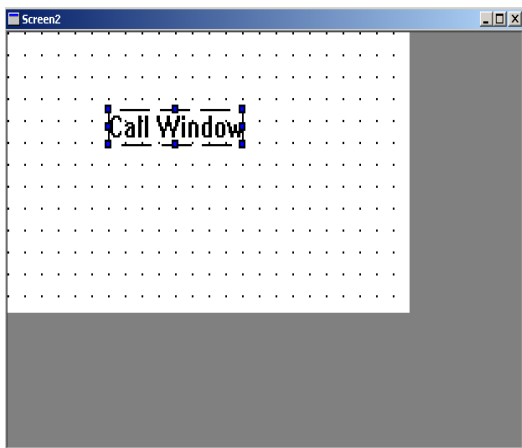
You can refer to upwards setting for the other settings.


### 3-17 Transfer the window

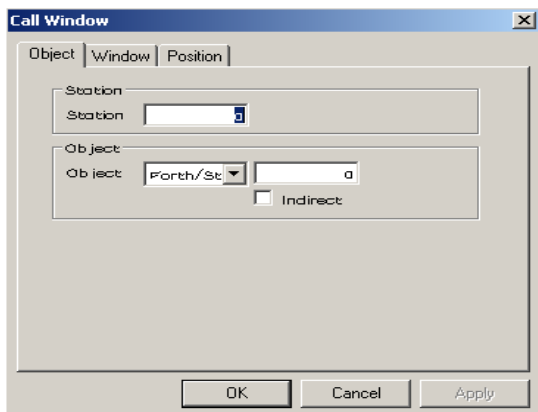
The following describes the way to transfer the window.



I Create a new window to be transferred .Set the window's size, name and other information .

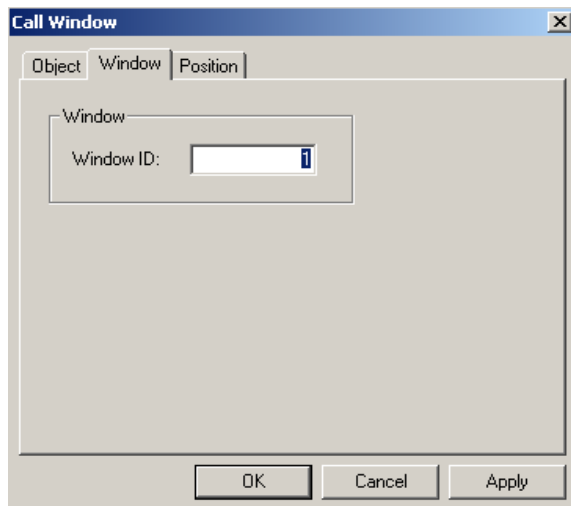


II Click  in the components toolbox, then place it in the screen.



III Click property button. Set the relay's type and address in the object. When the middle relay is in the state of ON, the window to be transferred will pop out. When it is OFF, the window will be close.





IV Set the window's ID.


V Set the window's position.

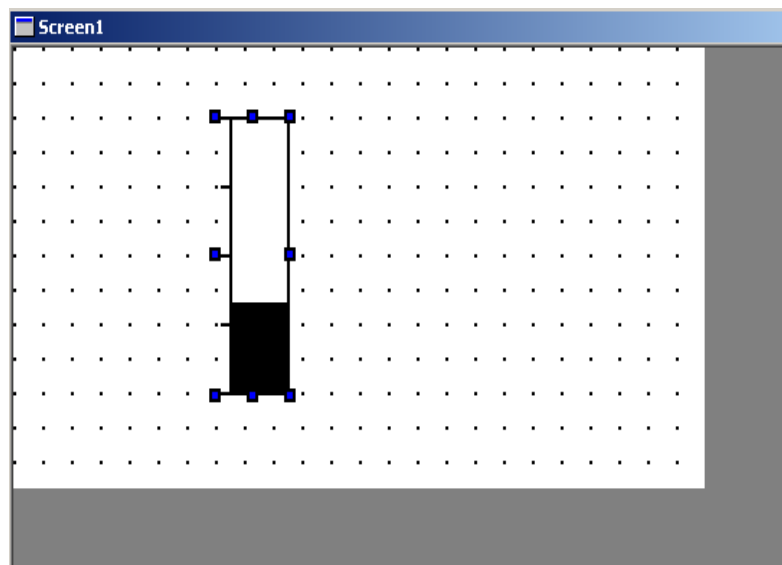
**【NOTE】:** Transfer the small key is the same to transfer the window. Just put the small keyboard in the transferred window.

### 3-18 Vertical bar

Bar graphics is another format to display data.

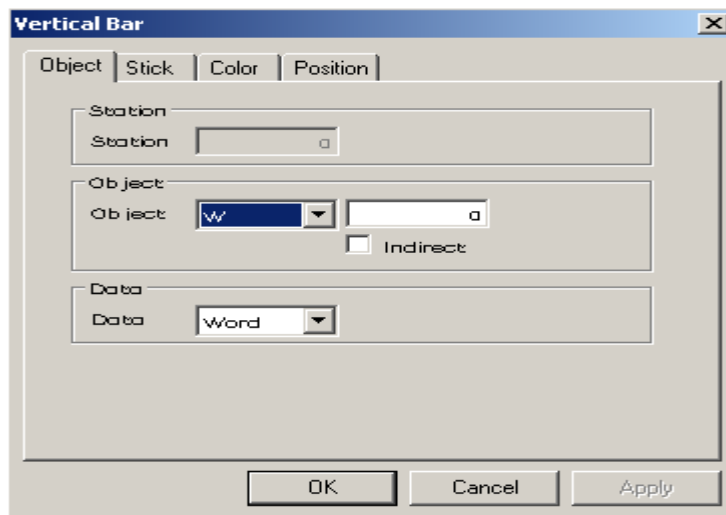
Vertical bar graph is used to vertical display analog parameters such as temperature, pressure, flux and so on . It displays data in the form of percent based on the max value and min value set in the property .The height and width could be set at your will.

1 Click  , drag cursor into the screen , then click your left key just as the following .

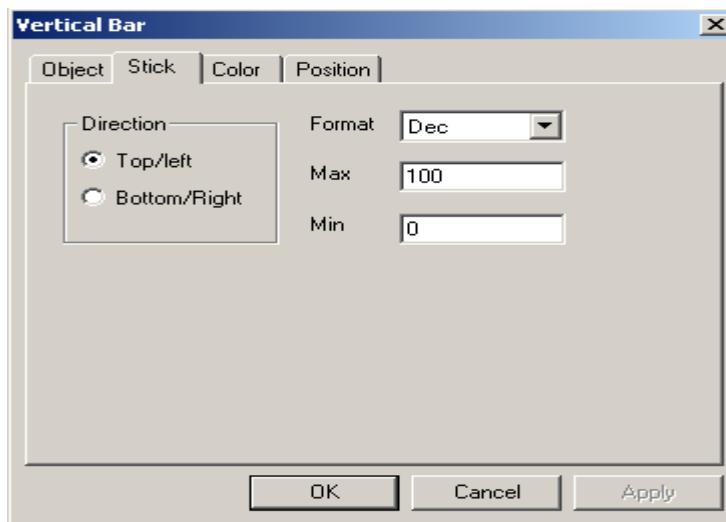


2 Double click the bar graphics or click property, there will come out a property dialog box.





- **Object type**  
Register's ID in the PLC.




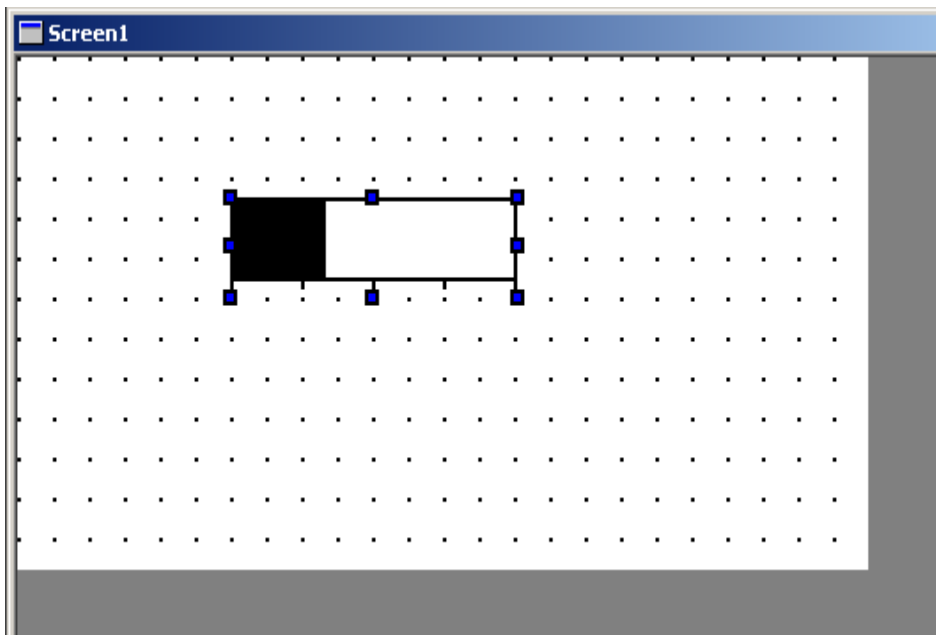
- **Direction**  
Direction when the bar increase.
- **Format**  
The type when the bar changing.
- **Max and min**  
The max value and min value that the bar map shows
- **Color**  
You can set the bar map's bar color and frame color .

➤ **Position**

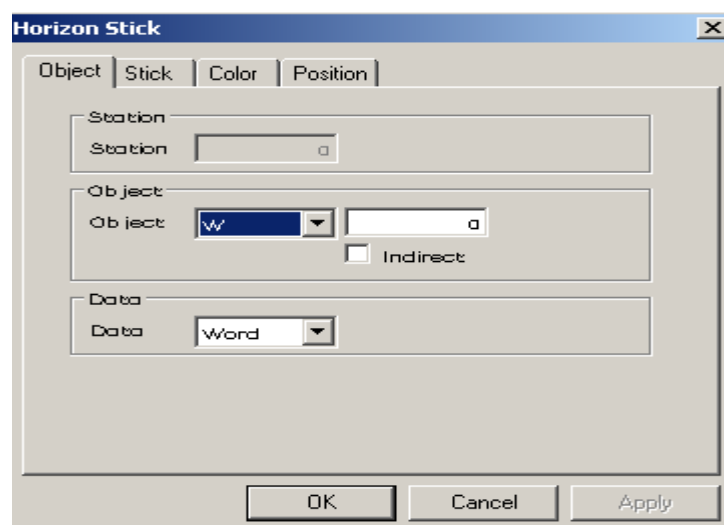
You can set the position in the screen.

### 3-19 Horizon bar

1 Click  , drag cursor into the screen , then click your left key just as the following .

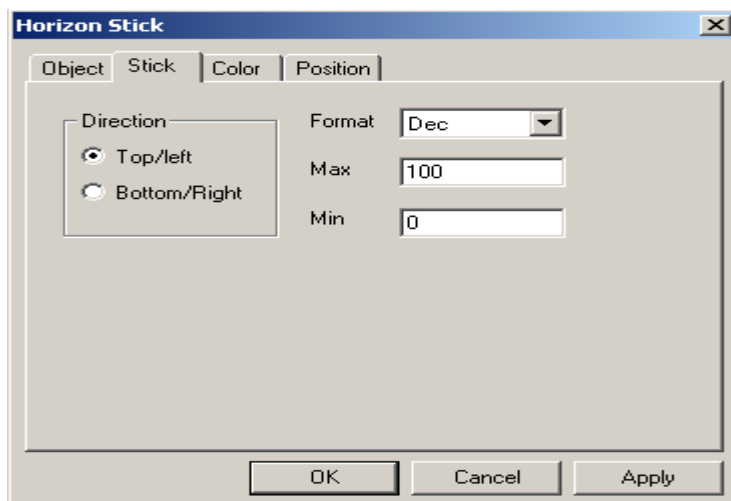


2 Double click the bar graphics or click property, there will come out a property dialog box .



➤ **Object type**

Register's ID in the PLC.



➤ **Direction**

Direction when the bar increase .

➤ **Format**

The type when the bar changing .

➤ **Max and min**

The max value and min value that the bar graphics show

➤ **Color**


You can set the bar graphics 's bar color and frame color .

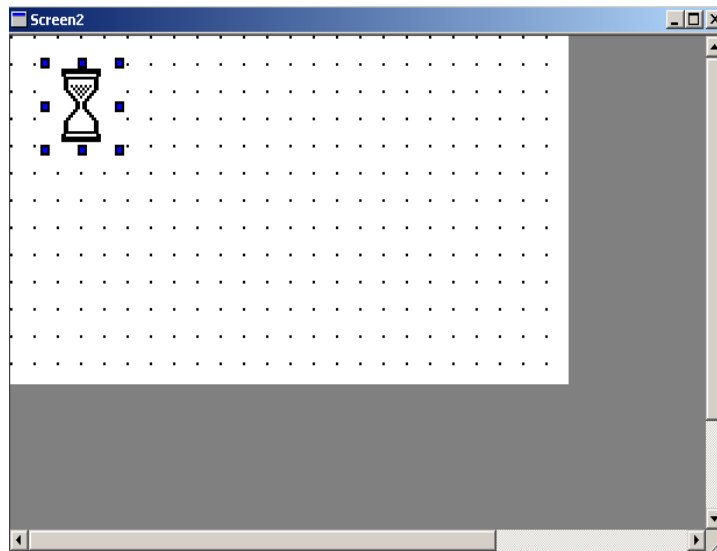
➤ **Position**

You can set the position in the screen .

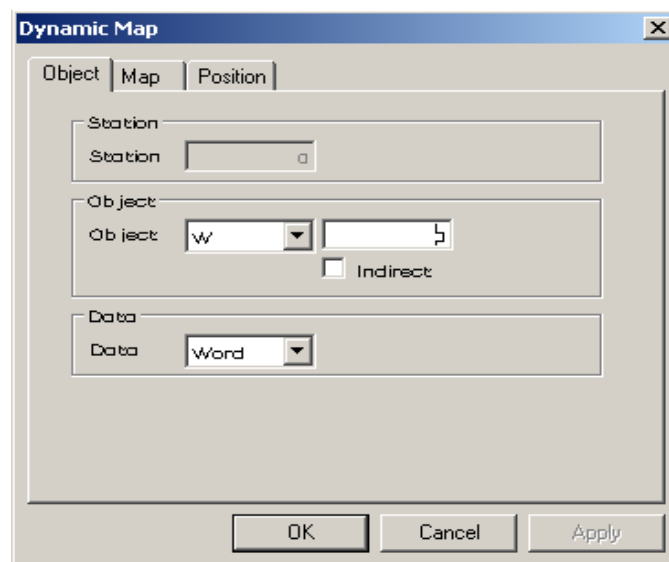
### 3-20 Dynamic image

Setting dynamic image is the same as dynamic text. If the register's value is different, they will all display different text (or image). The register value range from 0 to 15 (16 states). As the register value (0-15) different, it will display different image.

1 Click  , place it in the screen 。



2 Set dynamic image's property 。



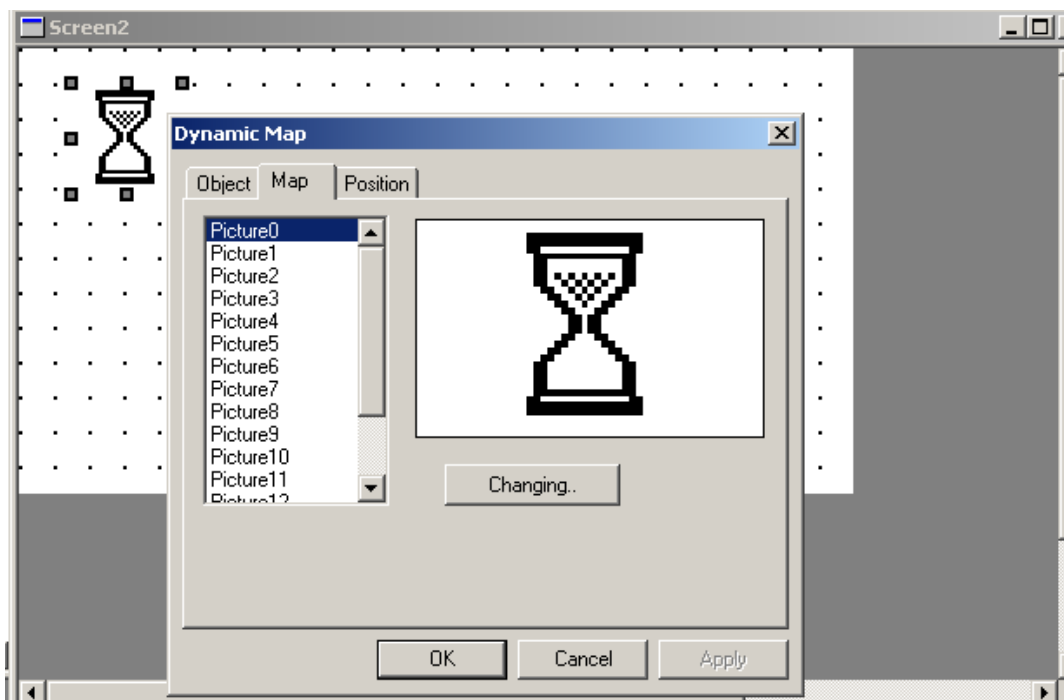
➤ Station number

We default Station number 1。

➤ Object type

Register's ID of PLC 。

### 3 Set dynamic map




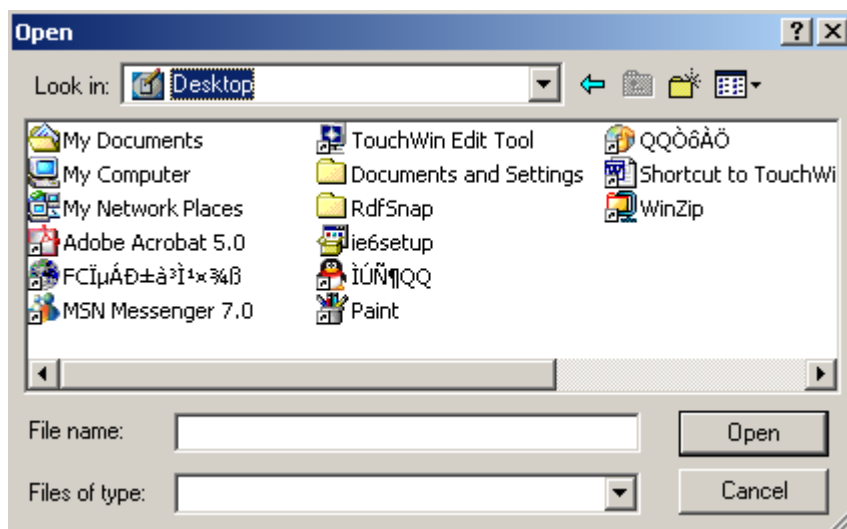
- Map 0~map15

In the “object”, register’s value 0-15 correspond map 0—map 15 .

- Changing

User’s self-defined map

4 Click , there will come out a dialog box ,you could choose your map .



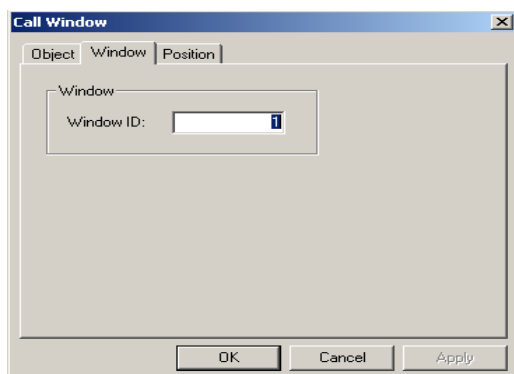
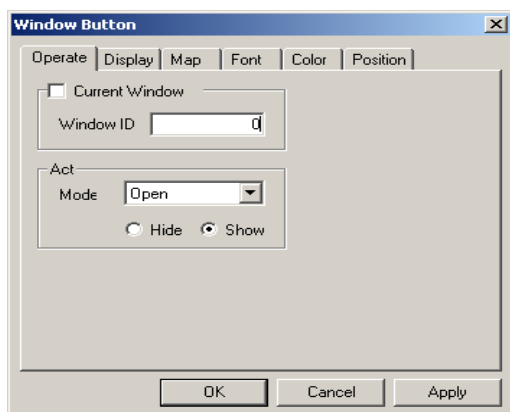
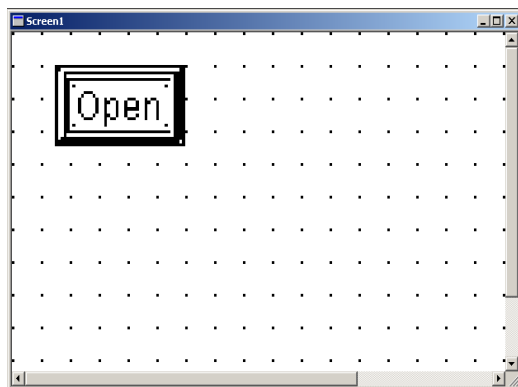
**NOTE:** map format must be \*bmp format .


### 3-21 Window button

We have introduced transferring the window before. But in the process of transferring the window, we may discover that we need a relay. This is so trivial, and when we open the window, we couldn't close it in the current window. Window button will solve all these problems.

The following, we will tell you how to use the window button.

I Create a new window.



II Click  button in the components toolbox and place it in the screen.

III open the property setting dialog box, click "Operate" and fill the window's ID which you want to operate. If you want to operate the current window, just choose "current window". Then, the window ID color will turn to gray. In the "Act" column, you could set act mode: open, close, hold. You could also set the window hide or show.

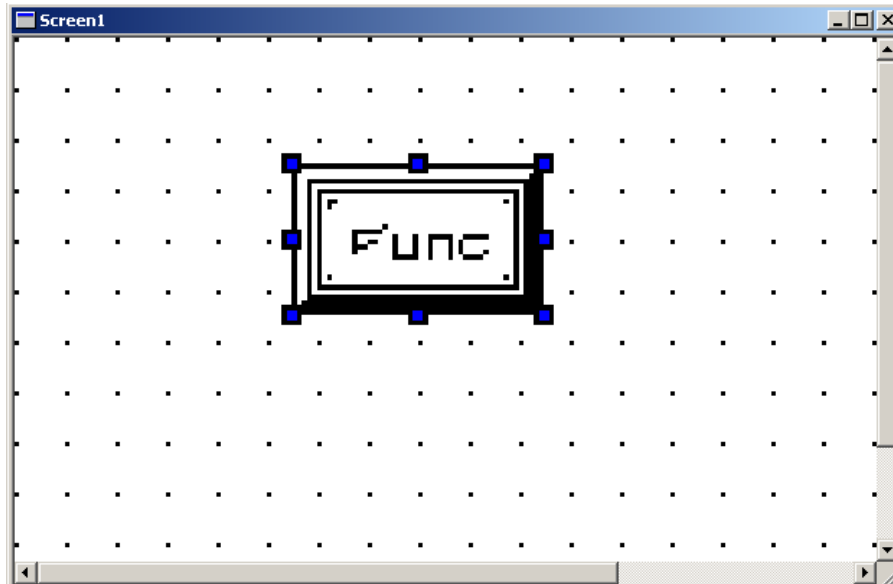
IV In the "display" column, we could modify the text content which will display on the button. If you want to close a window by this button, you can change it to "close".

Click "OK" to finish setting the button.

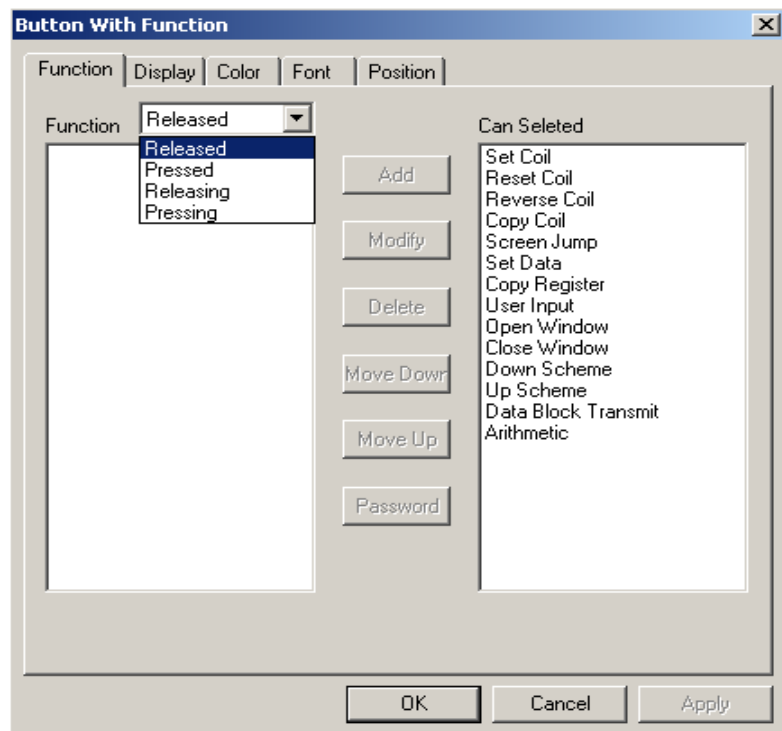
### 3-22 Function button

Function button gathers the function of all buttons .It can choose function for the button, this can make the button carry out different function.

1. Place  in the screen .



2. Double click the function button or click property, there will pop out a dialog box.



➤ Function

The function button has four types. they each stands for four states : released ,pressed ,releasing ,pressing .  
We could add different function for the four states at one time.

➤ Option

It shows that the button's certain state can add the following function operation: set coil, reset coil, reverse coil, copy coil , screen jump , set data , copy register ,user input ,open window , close window ,down scheme ,p scheme ,data block transmit ,arithmetic .

After finish adding the function, you can carry out modify operation to obtain your user's require.

● Set coil

Set "1" to certain relay or bit

● Reset coil

Set "0" to certain relay or bit

● Reverse coil

Reverse certain relay or bit

● Copy coil

Copy the source coil's data to the aim coil

● Screen jump

Make the screen jump to the appoint screen

● Set data

Set the appoint value to the appoint object

● Copy register

Copy the register's value to the aim register

● User input

Input button codes, the codes are in the form of ASC

● Open window

Open the appoint window by the window ID

● Close window

Close the appoint window by the window ID

● Down scheme

Download the scheme data (touch screen) to the device data (PLC)

● Up scheme

Upload the device data (PLC) to the scheme data.

● Data block transmit

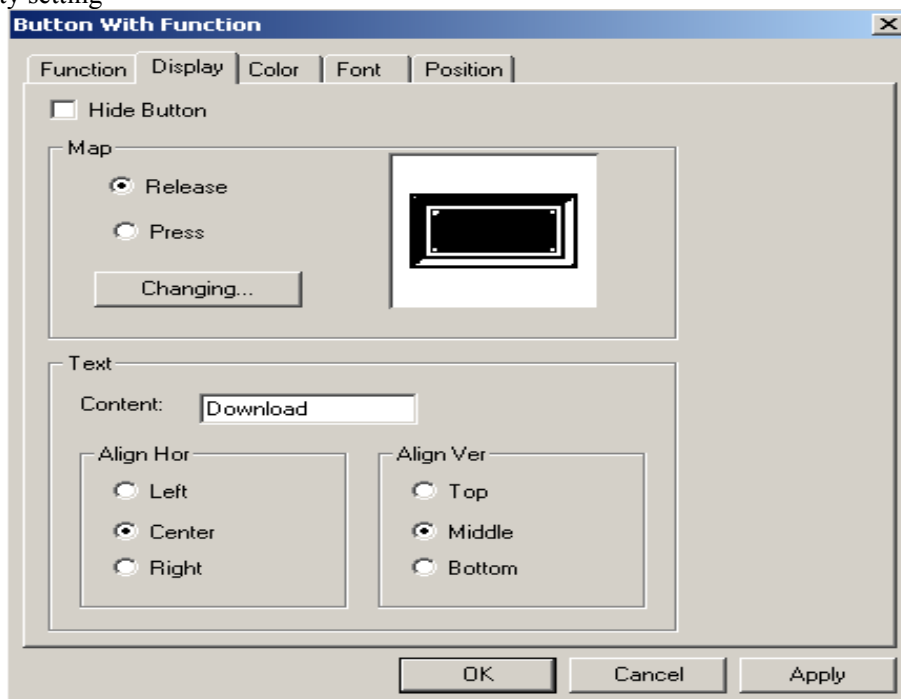
Transfer the appoint source ID register's data to the correspond aim ID register

● Arithmetic

Do an arithmetic with the set register's data, then save the final value in the appoint register



3. Property setting



➤ Maps

There are two states as a button: “Pressed”、 “Released”。

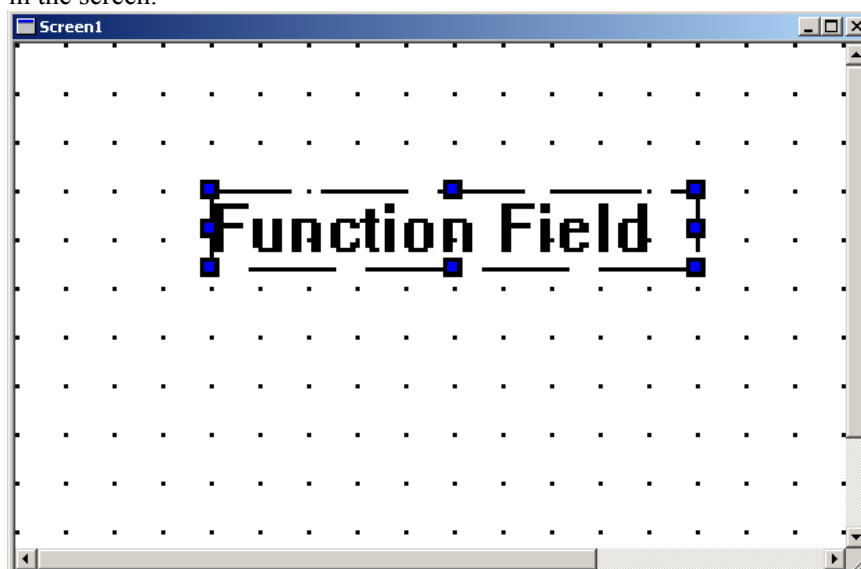
Changing

Press “Changing”, there will pop out a “File select” dialog box of the map .You could choose any map you need.

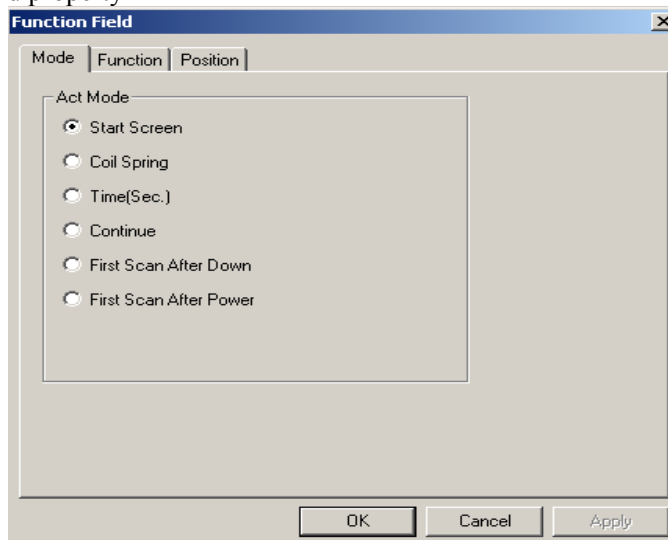
**3-23 Function field**

Function field’s usage is similar to function button, but they are not the same. The difference is on the function’s trigger action. Function button can set different operation to the four trigger action. But the function field has only one trigger action, and must be touched off outside.

1. Place  in the screen.



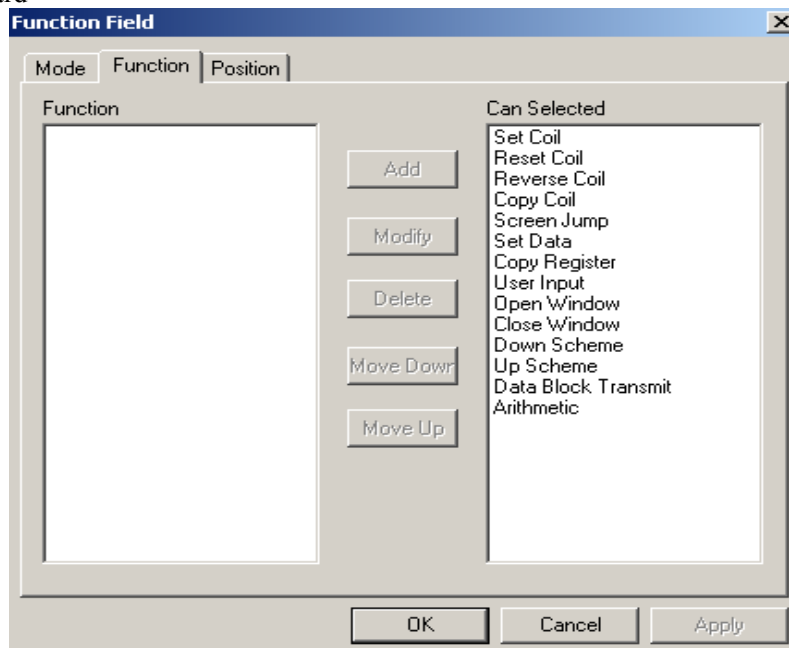
## 2. Setting of function field property



Act mode (User can only choose one trigger action)

- Start screen  
When the screen in which is the function field is transferred, the function field's ever has function will be carried out.
- Coil spring  
When the appoint coil jump from 0 to1, the function field's ever has function will be carried out.
- Time (sec.)  
When the screen in which is the function field is transferred, the function field's ever has function will be carried out. These function will be carried again in a certain time (can be set)
- Continue  
When the screen in which is the function field is transferred, carry out the ever has function in the function field continually.

## 3. Option card

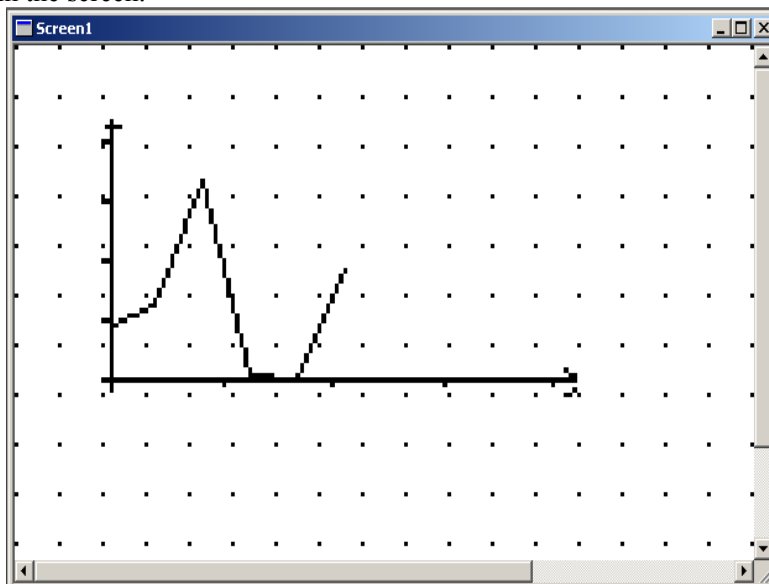


The option card's function is the same to function button's. Just add them in the function

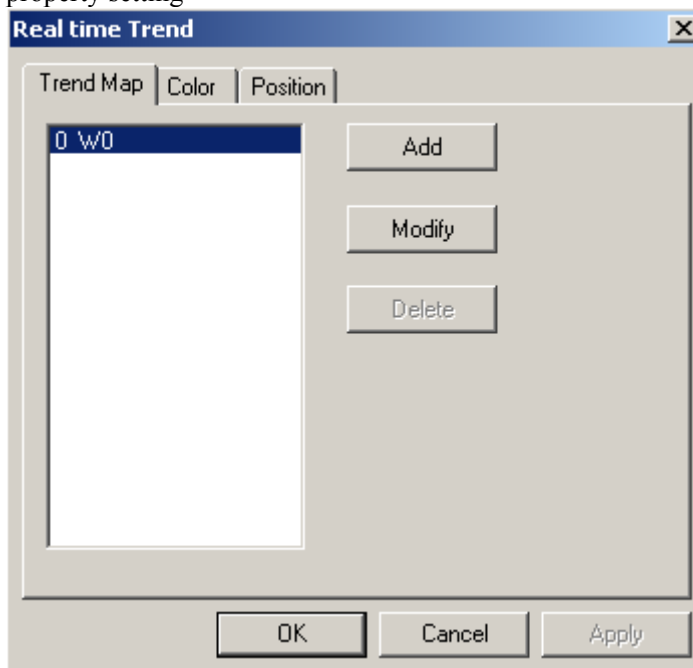
### 3-24 Real time graph

Real time graph can show the appoint register's value change to the user directly in the form of graph. The trend graph will sample the PLC register and display its state timely. When each sample cycle is over, new data will be read and displayed in the right of the trend graph. The display has the property of real time.

1. Place  in the screen.

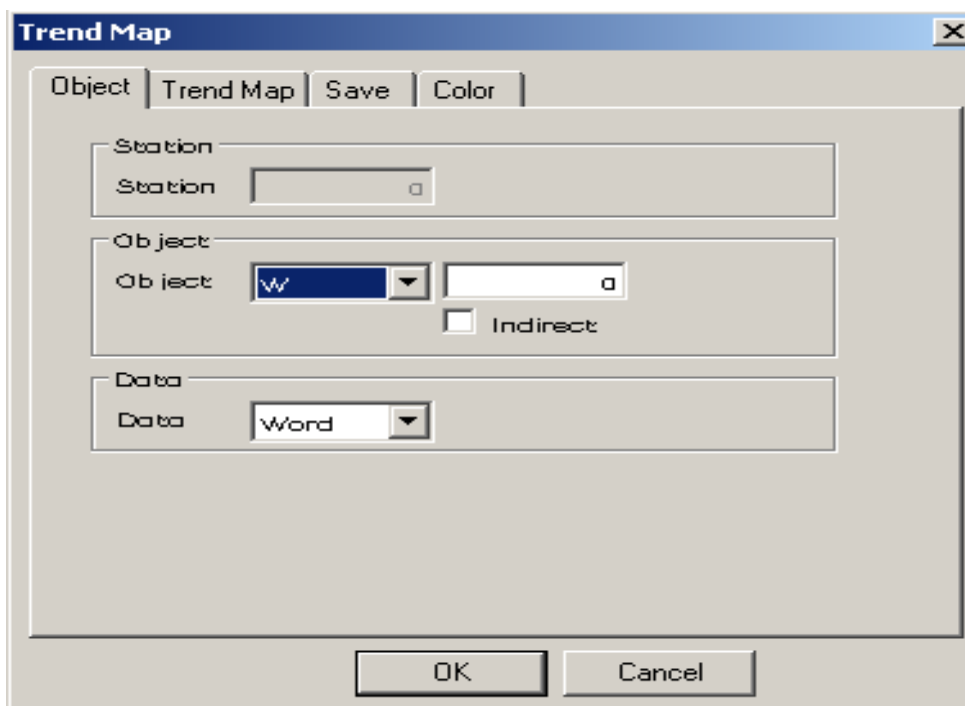


2. Real time graph property setting



- Add  
You can add many appoint register, appoint many object.
- Modify  
Modify the trend graph property of the appoint object.

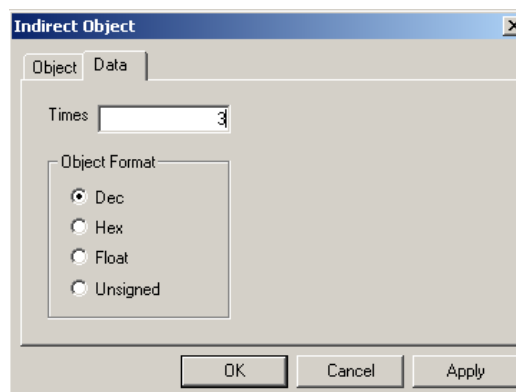
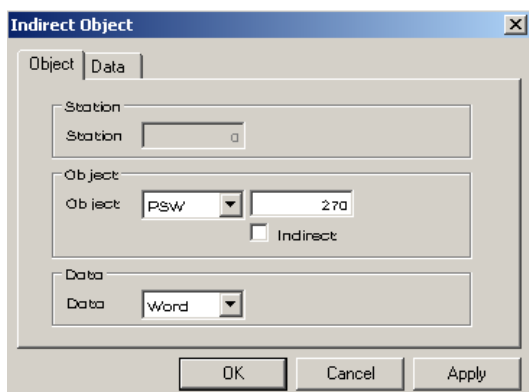
- 3 press the “modify” button to enter the appoint trend map property.



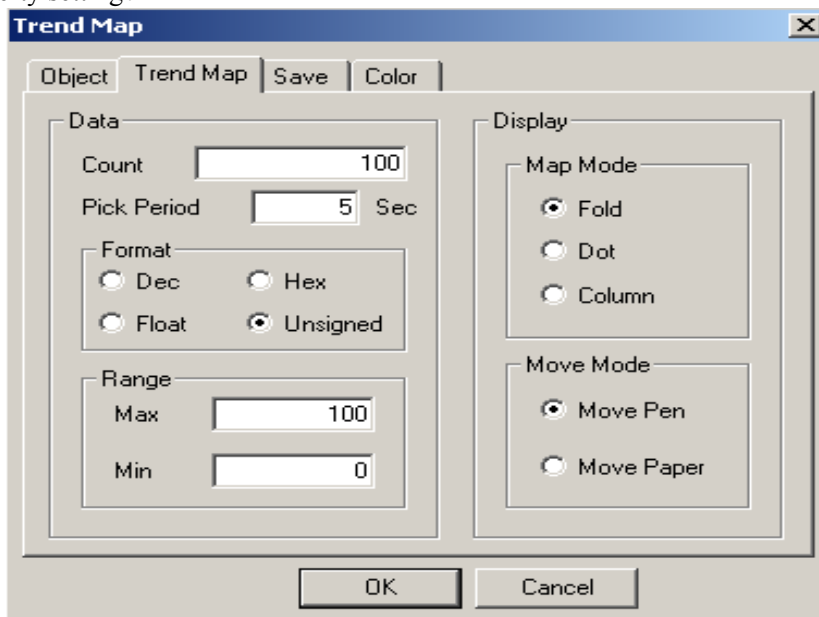
In the object type we can find that there is an indirect appoint choice frame. This is a new function. In fact, the indirect appoint is to add indirect appoint value's ID to current ID (W0).

Choose indirect appoint choice frame, there are two choice card in the indirect appoint object. They are object and data.

Set object as PSW270。 Set data's multiply ratio as 3。 So, here our object is  $W(0+PSW270's\ value * 3)$ 。



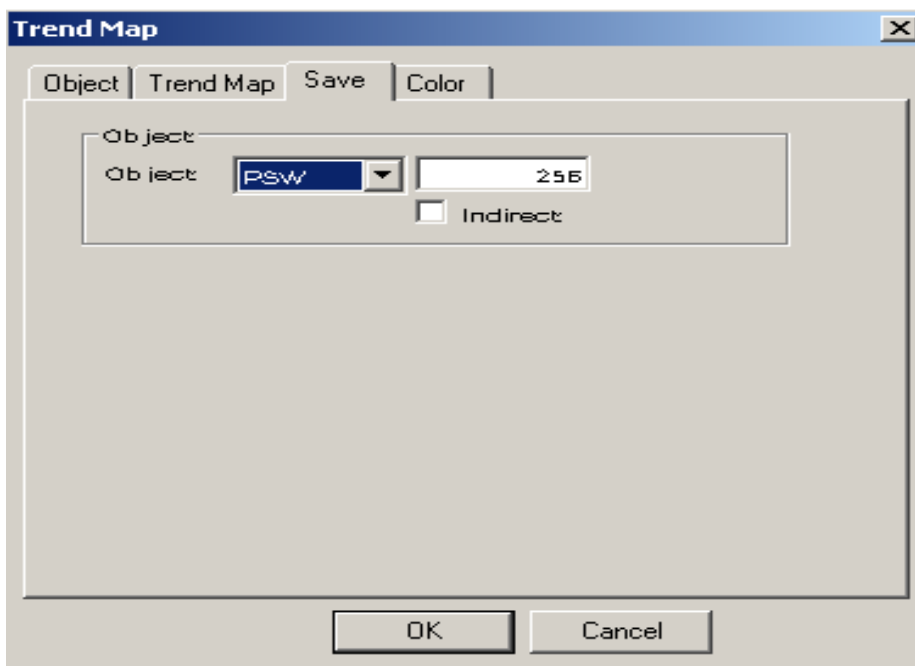
4 Trend property setting。



➤ Data

- Count  
Show the number real time graph can display。
- Pick period  
Show time space when real time graph pick data each time. It must be an integer.
- Range  
Show the range of real time graph's vertical change. The user can pre-set.
- Map mode  
The graph's display mode is fold, dot or column
- Display mode

5 Save




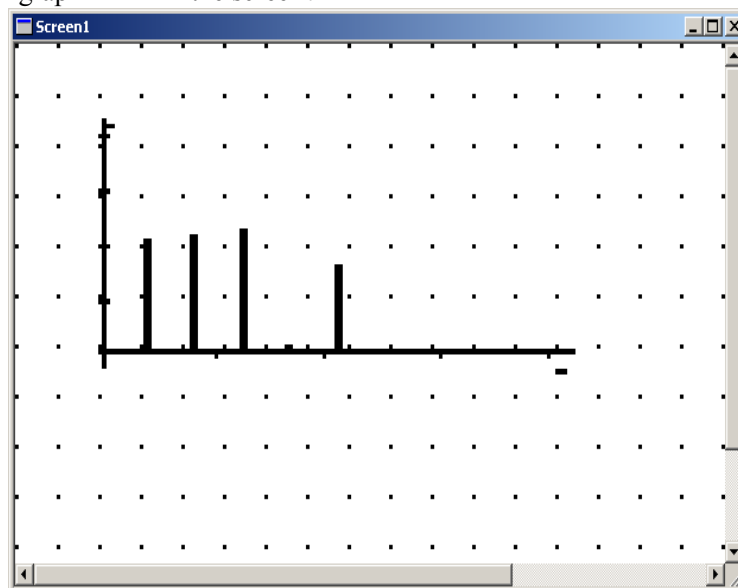
Object type: appoint the original ID after data sample is over and need to save.

As the data should save in the in the table, the first four bytes are used to save the table's head address and tail address. So, the data's real address is the appoint object's address plus 4. We default it as PSW (256+4)

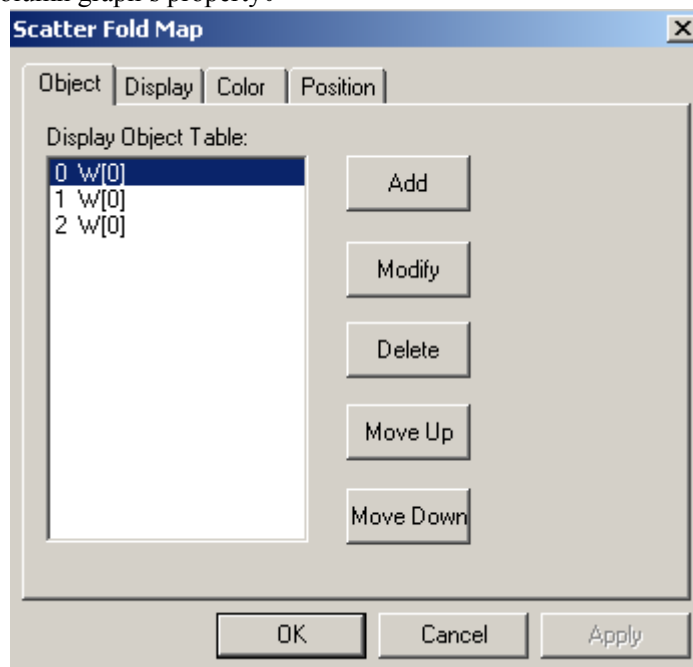
### 3-25 Scatter column graph

Scatter column graph's horizon axis take scatter register as foldline object, and present each register's value with graph.

Place scatter column graph  in the screen.



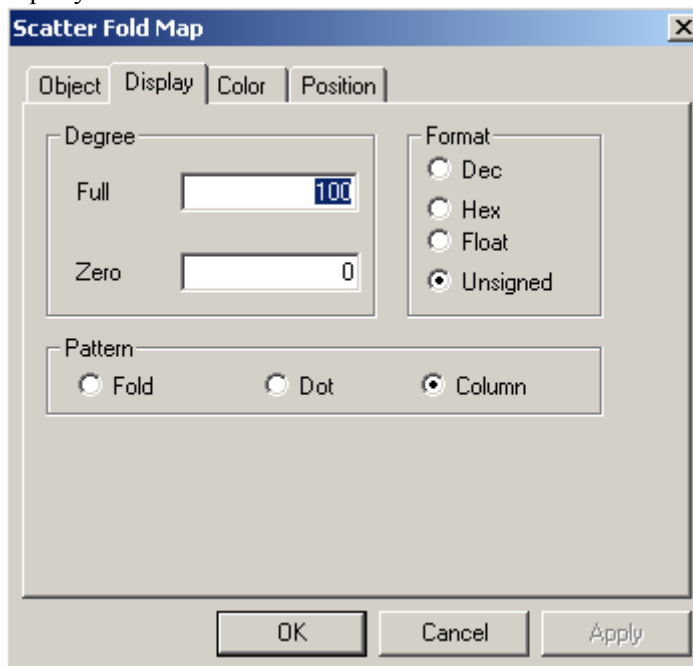
1. Set the scatter column graph's property.



- Display object table

Display each appoint register object, you can add, modify or delete the display object. The system default three display objects.

2. Set the display property.



- Degree

Show the real time graph's vertical change area, the user can pre-set

- Format


In which form. does Scatter column graph change

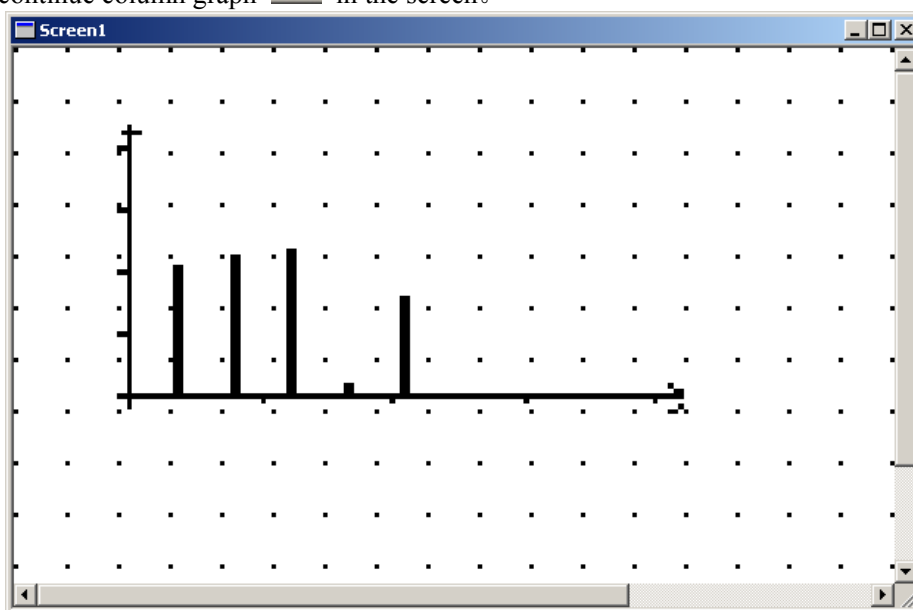
- Pattern

Scatter column graph's display pattern, there are three choices: fold, dot, column

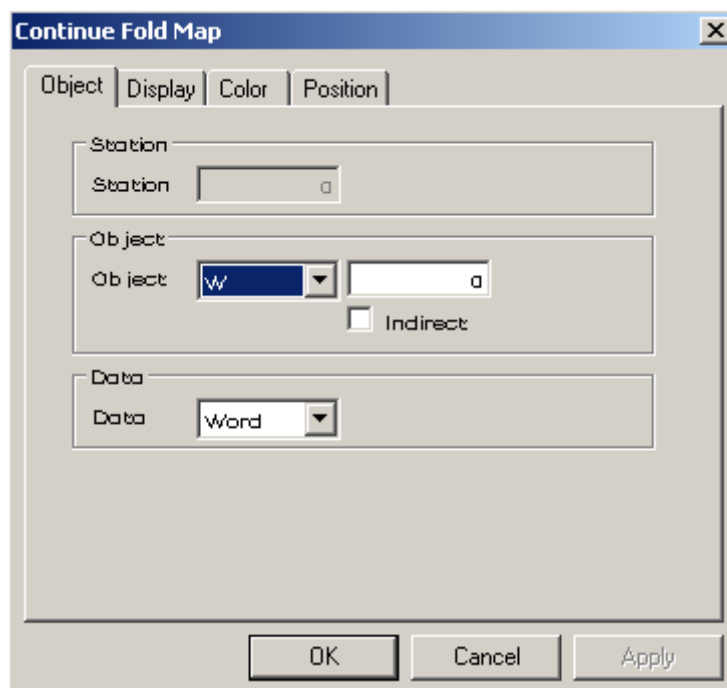
### 3-26 Continue column graph

Continue column graph's horizontal axis take continue register as its object. Display each register's value in the form of graph.

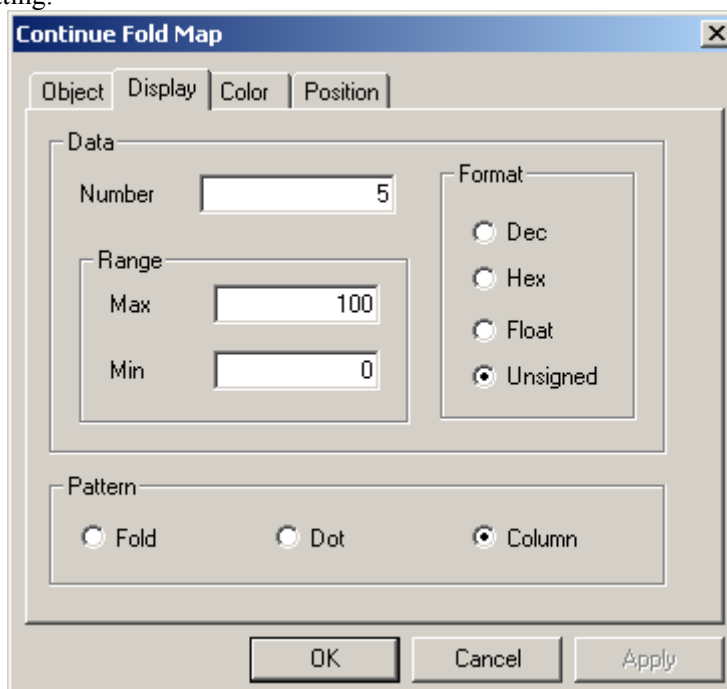
1. Place continue column graph  in the screen.



2. Set the continue column graph's property.



- Choose object type (Register's type, address and single word or double)  
Display property setting.



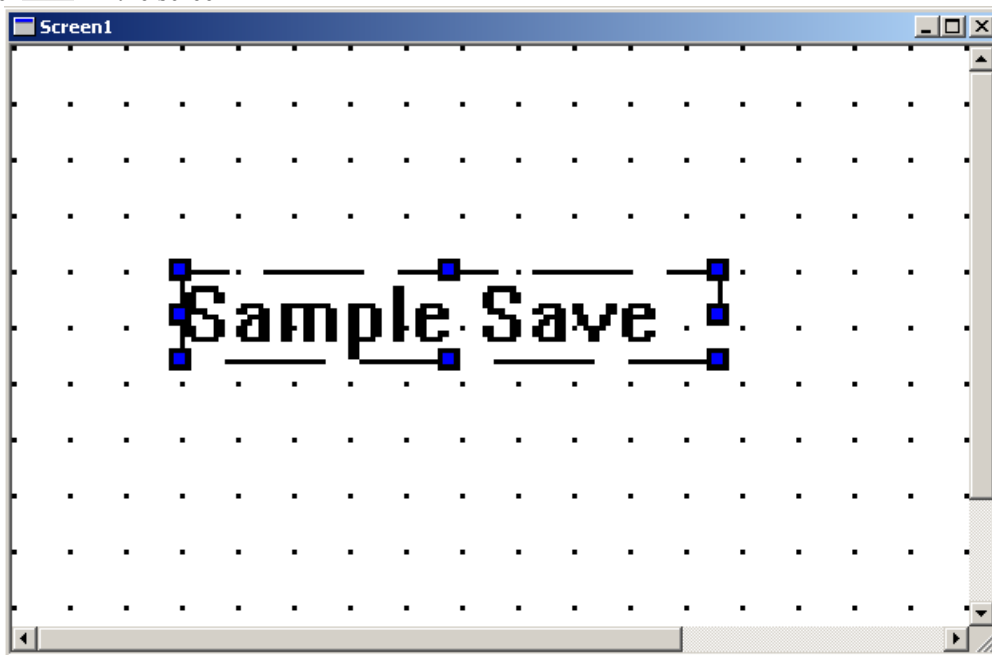
- Number  
Show the number to display. The data address is from the appoint one. Here we default it 5.
- Format  
In which format is the continue column graph change.
- Pattern  
Continue column graph's display pattern: fold, dot or column.



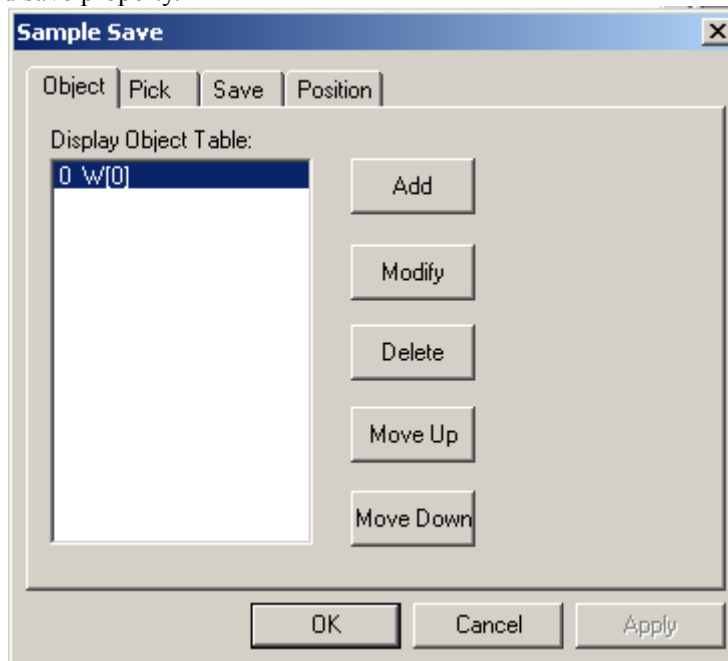
### 3-27 Data collect and save

“Data collect and save” can collect data in a certain cycle and save it in the register unit whose start ID has appointed.

- 1 Place  in the screen



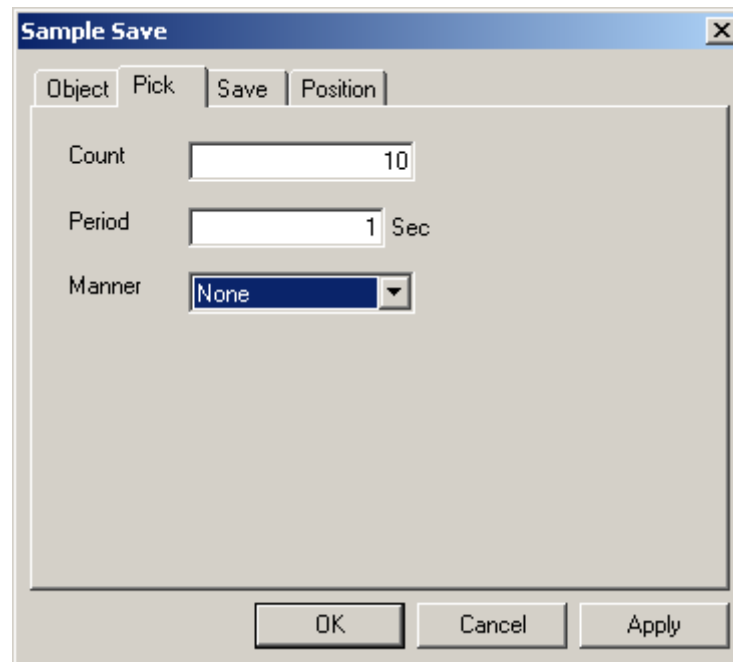
- 2 Set data collect and save property.



➤ Display object table

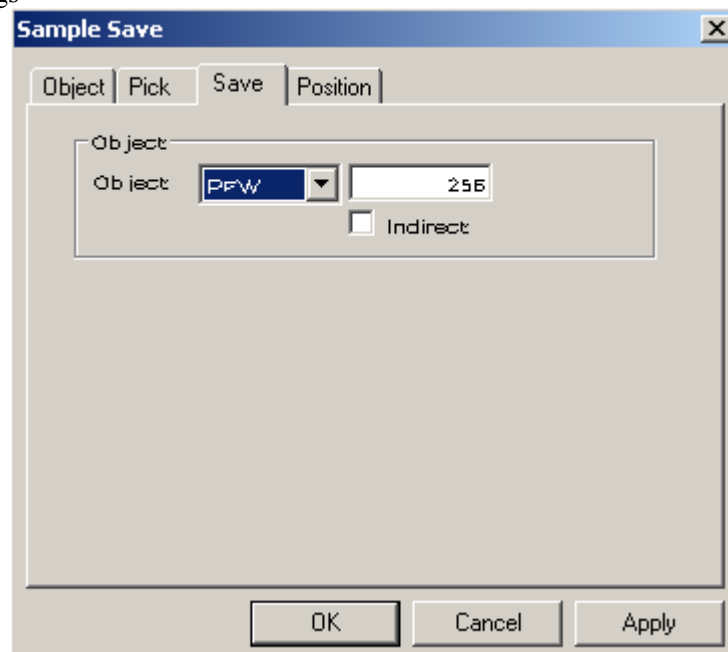
Display each register's object, you can add, modify, delete, move up or move down the display object.

- 6 Collect setting



- a) Count  
Total number of data to collect.
- b) Period  
Collect data in a certain time.
- c) Manner  
If collecting data and time is at the same time.




7 Save the settings




- a) Object  
The start address for the data when they are collected over.

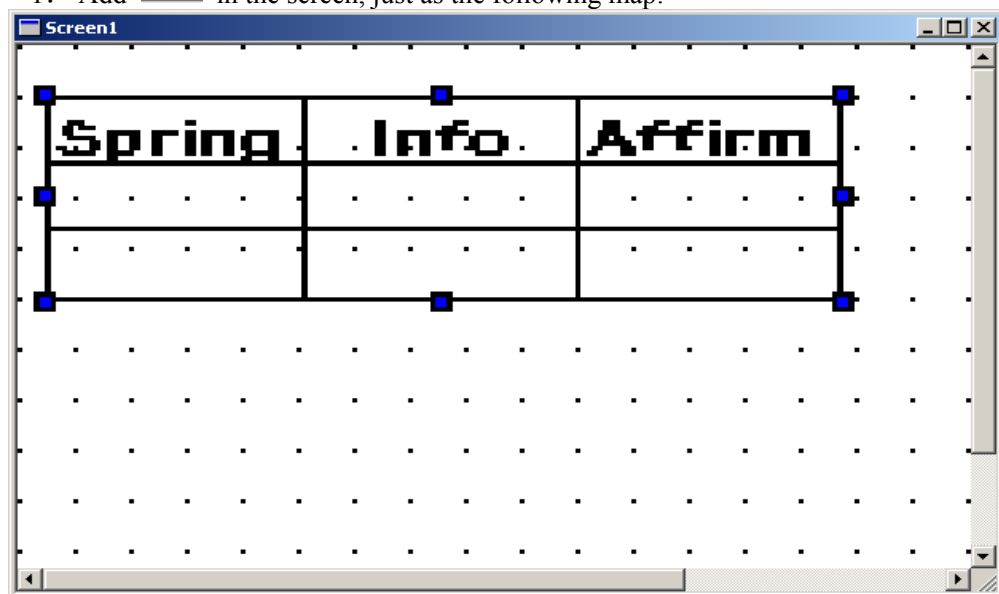
### 3-28 Profile table

The profile table is used to display real time alarm notes and history alarm notes. It controls event's information and trigger time's display with a bit. Meantime, history notes are saved in TP series touch screen's continue register inside. The start address and number can be set by the user freely.

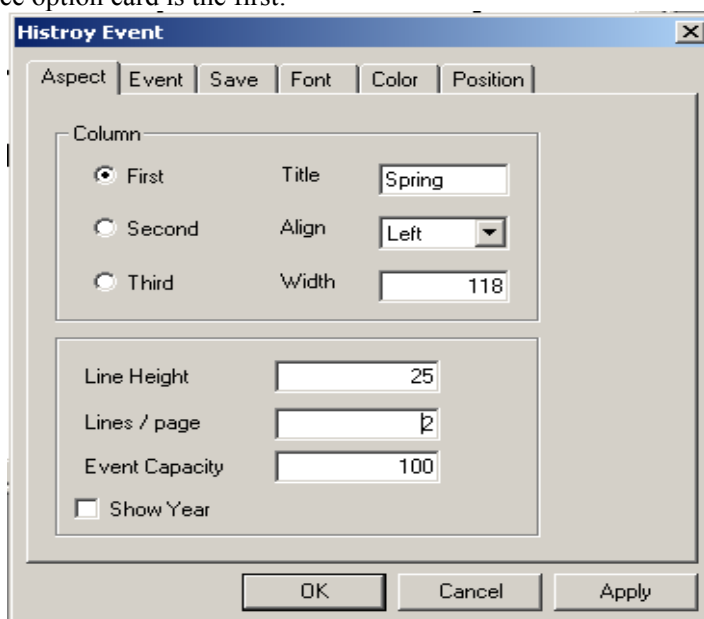
Profile table divides into  history event display and  real time event display.  is event control button. The user can choose it to use freely. The difference is : history event display save the trigger event in order in the user-appoint register, user can look them over and affirm or delete; real time event display can only display the spring event real time, when the event triggers no more, the information will keep no more, when there are many events trigger at the same time, display all of them.

The following, we will take history event as the example to describe:

1. Add  in the screen, just as the following map:



2. Set the property  
The appearance option card is the first:

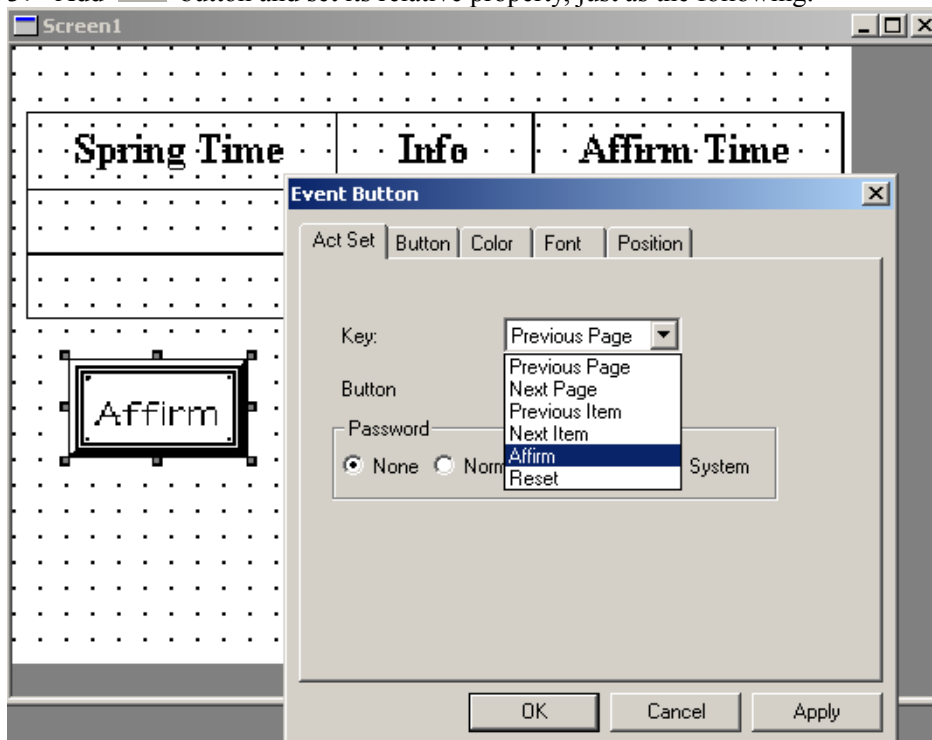




- In the object type column choose the register's type. Fix the address yourself.
- NOTE: The first four word's save information is the first address and end address of history event. The real notes start from the set address plus 4.

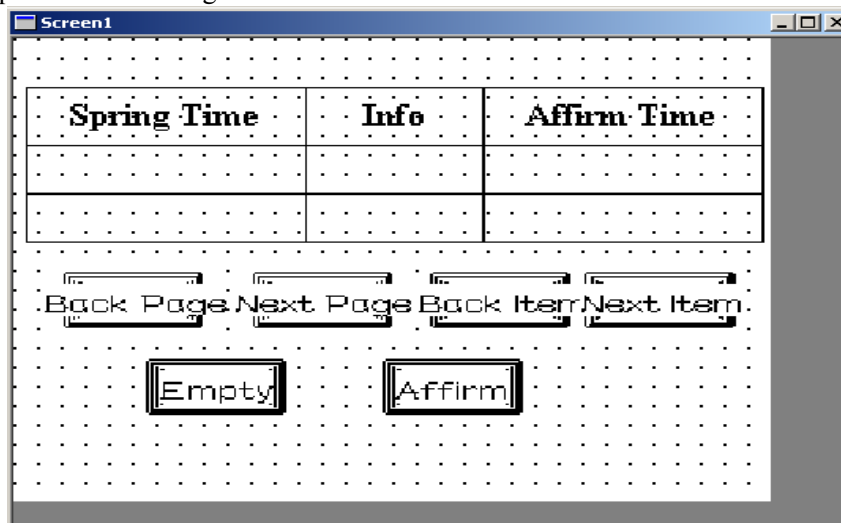
The other option cards are: font, color and position etc. The user can refer to other control's description.

3. Add  button and set its relative property, just as the following:



- Choose the correspond action in the key option. The following are the details:
- Previous page The profile table display previous page's history notes.
- Next page The profile table display the next page's notes.
- Previous item Move to the up line from the current position.
- Next item Move to the down line from the current position.
- Clear Clear all the history notes in the profile table.
- Affirm Affirm of the current position's event.

4. The example is the following :

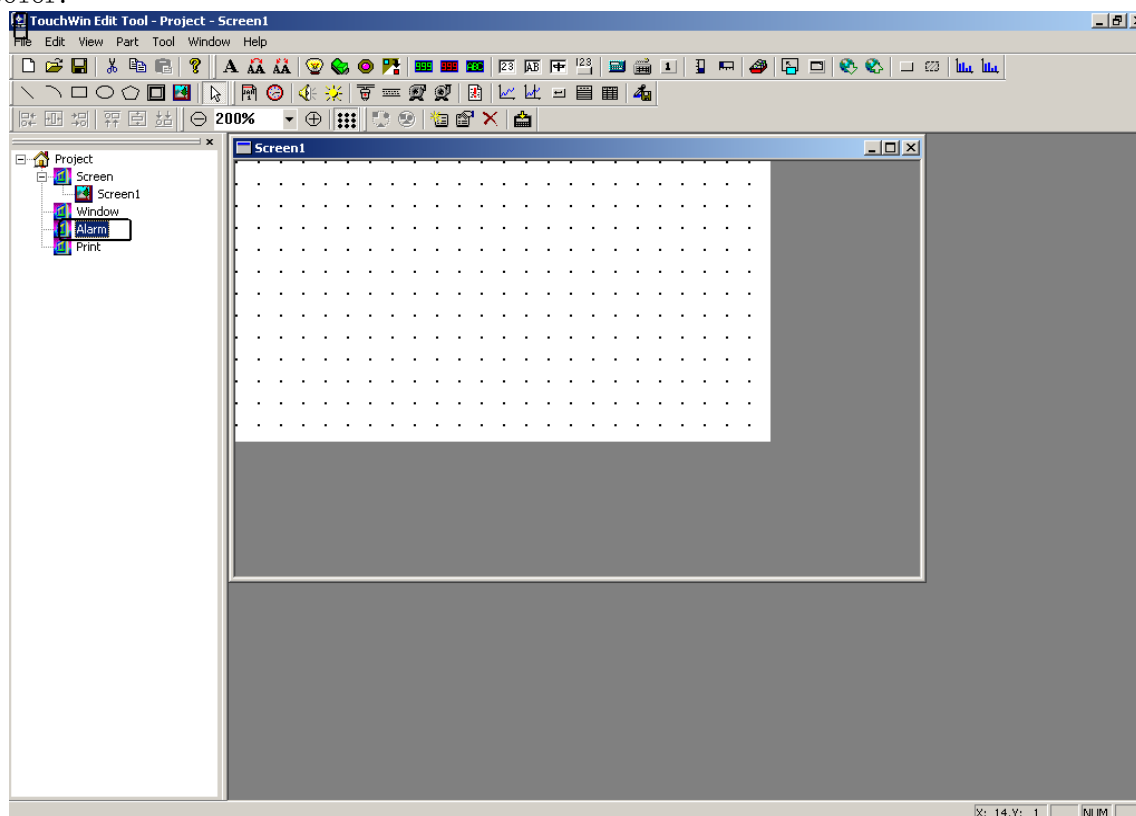


## 4 Alarm window

Alarm window is used to display alarm message when triggering. It controls message display by a bit address of PLC.

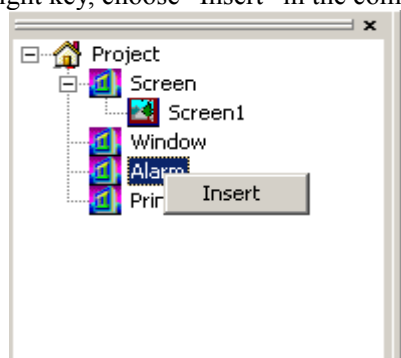
1 Create a new alarm window. It is similar to create a new window. So, it has two ways.

A: ①Click “Alarm” in the manage column with your left key to make it in the opposite color.



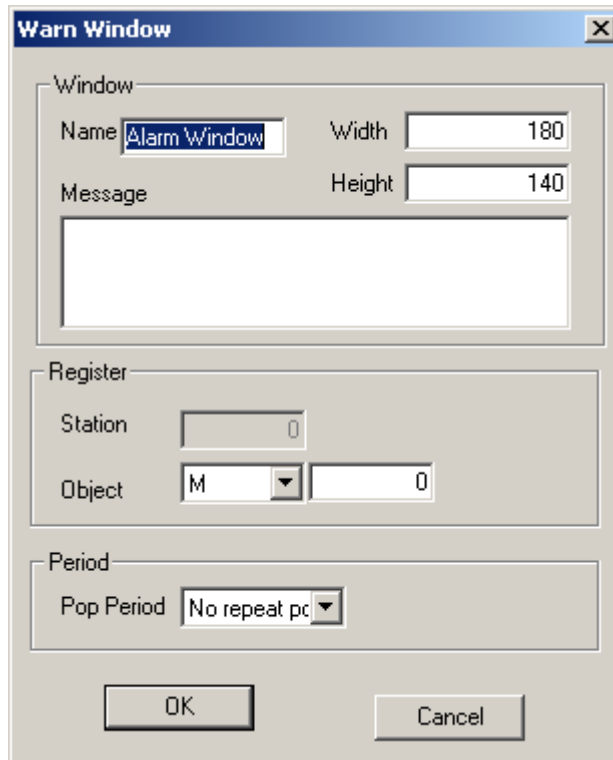
B: Insert a window in the console. (The detail operation as the following)

Click the window of the project manage area with your left key to make it the opposite color. Click your right key, choose “Insert” in the come out menu.

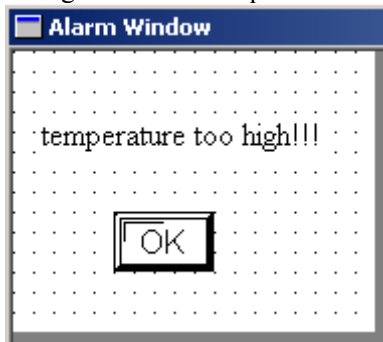


2 There will come out a new alarm window dialog box. Set the window’s name, width, height. Set the object type and pop period. “no repeat pop” means when the alarm window pop one time ,it will not alarm again. “5 sec” means pop in the alarm window. Press “OK” to cancel. The alarm window will appear every five seconds. “10sec”, “30sec”, “1min”, “5min”, “10min”, “30min” is the same as “5 sec”.

Press “OK” to finish setting.



1. Place a “text” in the correspond position of the alarm window. The content is the relative alarm message. Such as “temperature too high”.



The operator can take effective measures at once to solve the problem. Press “OK” to close the alarm window.

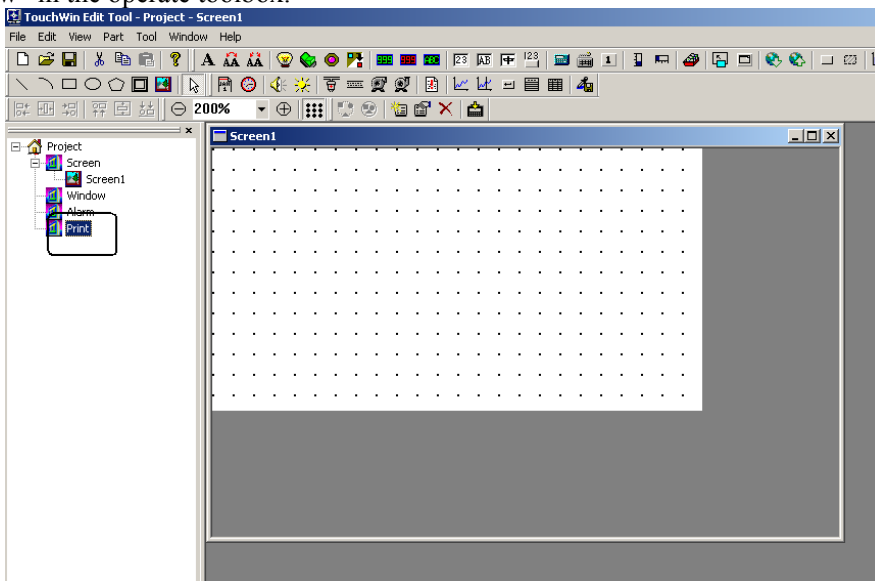
## 5 Print window

### 5-1 Create a new print window

It is a bit address message of PLC to control the pop of print window and trigger print action. The window's content is the print content.

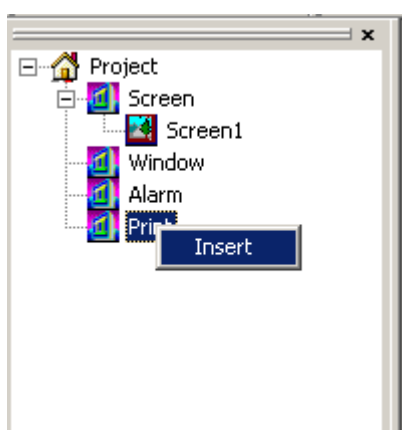
1. Create a new window. It is similar to create a new window. So, it has two ways.

A: ①Click "Print" in the manage textbox with your left key to make it in opposite color. ②Click "new" in the operate toolbox.



B: Insert a window in the console. (The following are the details)

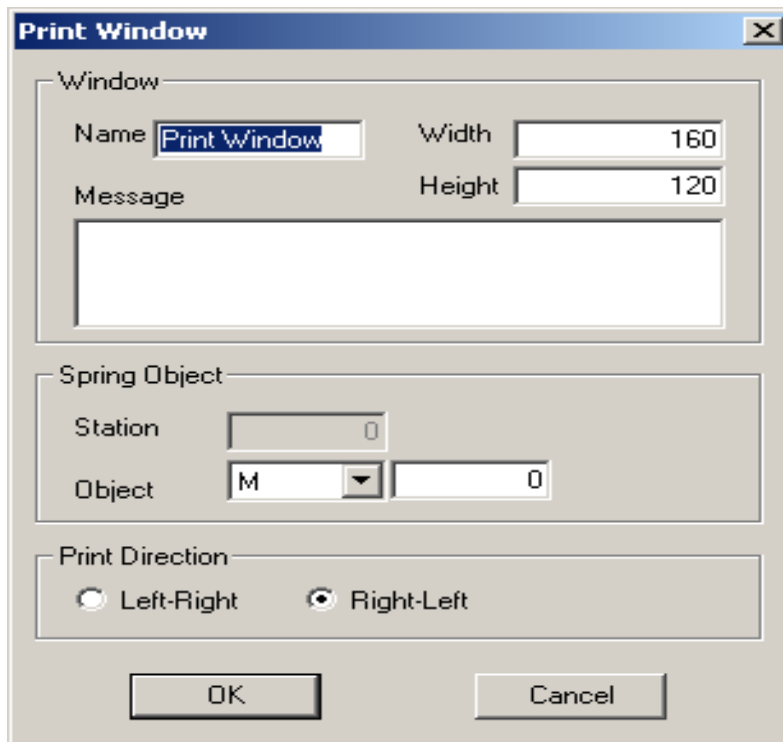
Click the window in the project manage area with your left key to make it opposite color. Click the right key, choose "Insert" in the pop menu.



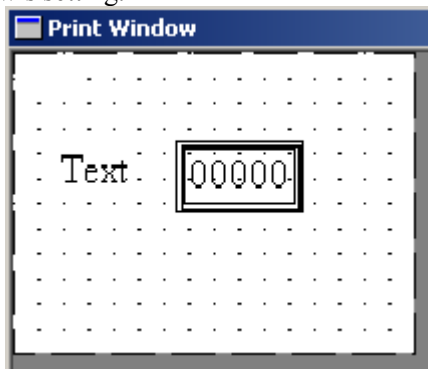
2 There will pop out a new print window dialog box. Set its name, width, height. Set its trigger object (a register bit of PLC. Take M0 for example, when M0=1, the print window pops, at the same time print the window's content. When you don't want to print them, trigger object's value will be set 0.) You can also set the print direction from left to right or from right to left.

Press "OK" to finish setting.

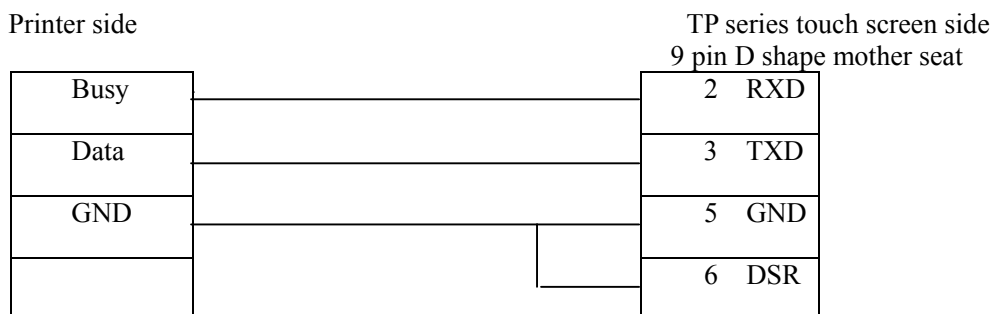




1. Add the print content you want in the print window's correspond position and you will finish print window's setting.



## 5-2 Connection of the printer

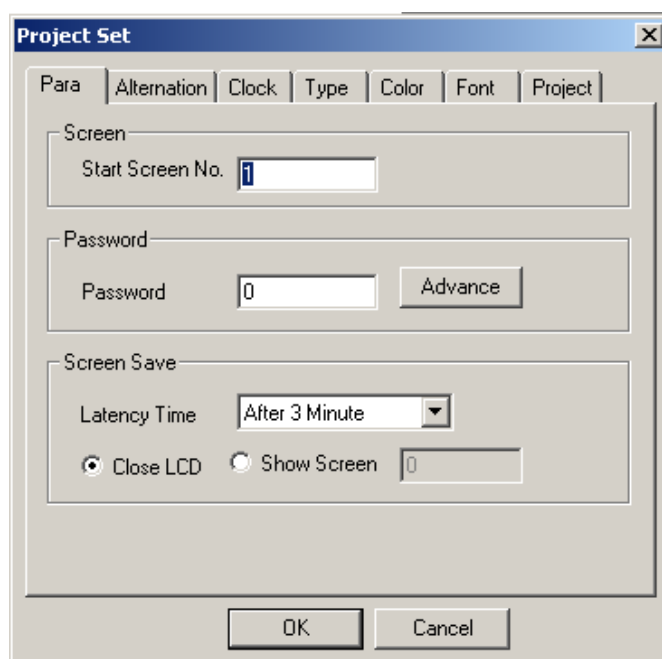


**NOTE:** The printer model Our company use to test is BRIGHTTEK WH164Q0108A5, you can refer to its user manual for its printer.

## 6 System parameter

### 6-1 System setting

Choose system parameter in the file menu. There will pop out a system setting dialog box.



#### 6-1-1 Start up the screen and set up the background

The first screen TP560 displays when give it power. Usually we set the screen with main menu screen or the screen that will be used most often.

Press set button and you can set the screen's background color (It can be set white or black.).

#### 6-1-2 Order setting

In a project, all the screen use a common order. If the “password” property of “data setting”, “function button” etc is effective, only when the system order is undo can the units work. With this function, we can realize screen hidden and set data password.

#### 6-1-3 Screen protecting

When there is no manpower for the screen, you can choose display certain screen and close background light. Background light keep time default as 3 minutes, or you can set it freely. When it is set to “no screen protection”, it means the background light lights all along.

## 6-2 Control in turn

Usually, screen switch is fulfilled by button. Except for this, PLC can switch the screen by modifying the register's value. If the property is effective, write value **n** to register D300 (example), TP560 will auto switch the display to the screen **n**. Then value in D300 will be clear.

TP560 write the current screen number's data to D301, so the PLC will know the display's state.

**NOTE: The designer can define the multi-control register's number freely.**


## 6-3 PLC type choosing

According to the display's communication object, choose PLC model. When TP560 is downing the screen, transfer the screen's data along with PLC's communication protocol which is appointed. So when the display works, it will pass the protocol to communicate with PLC.

## 7 Save and download

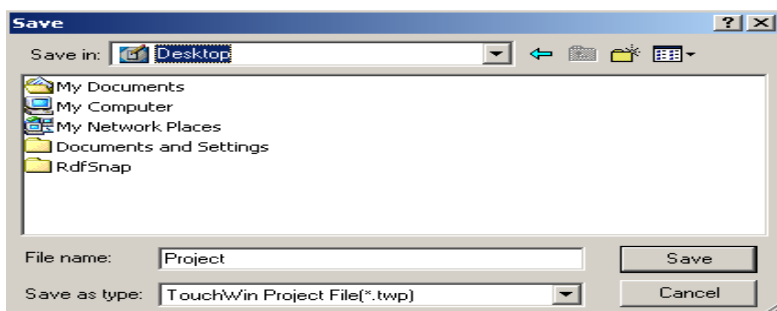
### 7-1 Save the project

After finishing the screen edit, you could save the project file and down the screen project to TP series touch screen. It will be ready to debug online.

Click  button, the screen will pop out a save screen dialog box.


Choose a right route and name to save it .

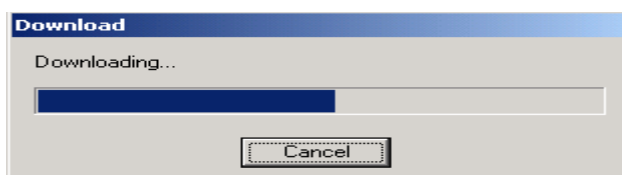
The file' s extend name will auto defined as \*.twp



Input file name, choose a right route, then click “save” to save the screen.

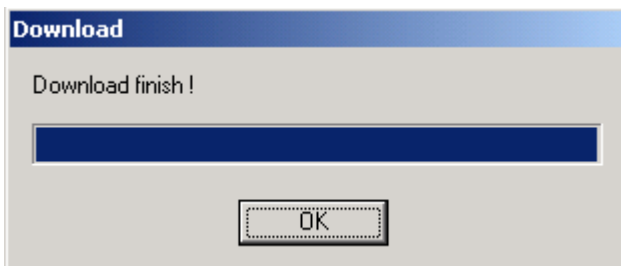
### 7-2 Download

Connect the computer's 9 pin RS232 series port and TP series's download 9 pin series port with download cables. Make sure that TP series has connected to DC24V. Click  button to download data. There will pop out a download screen data prompt window to prompt data plan.



**NOTE:** In the process of download screen data, make sure the TP series touch screen' s power not cut!

After the screen transfer is over, there will pop out a dialog box. It tells that all project screen has transferred.



Cut the display's power off. Pull the screen transfer cable TP-SYS-CAB0 out, connect the PLC's port of TP and PLC with PLC communicate cable.

Give power to PLC and display. If communication is normal, they will carry out data monitor and other operation. If communication failed because of wrong parameter or wrong cable connection, there will be a "communicating" text in the middle of the display. That means TP and PLC is setting up communication. If display and PLC can't communicate normally all along, please check the following:

- 1、 If the PLC model that project choose match with that connected in fact.
- 2、 If they have connected with communication cable
- 3、 If the communication cable is connected right.
- 4、 If PLC's communication parameter setting is right
- 5、 If you have give PLC and display the power
- 6、 If you have not found the problem, please contact with your supplier.

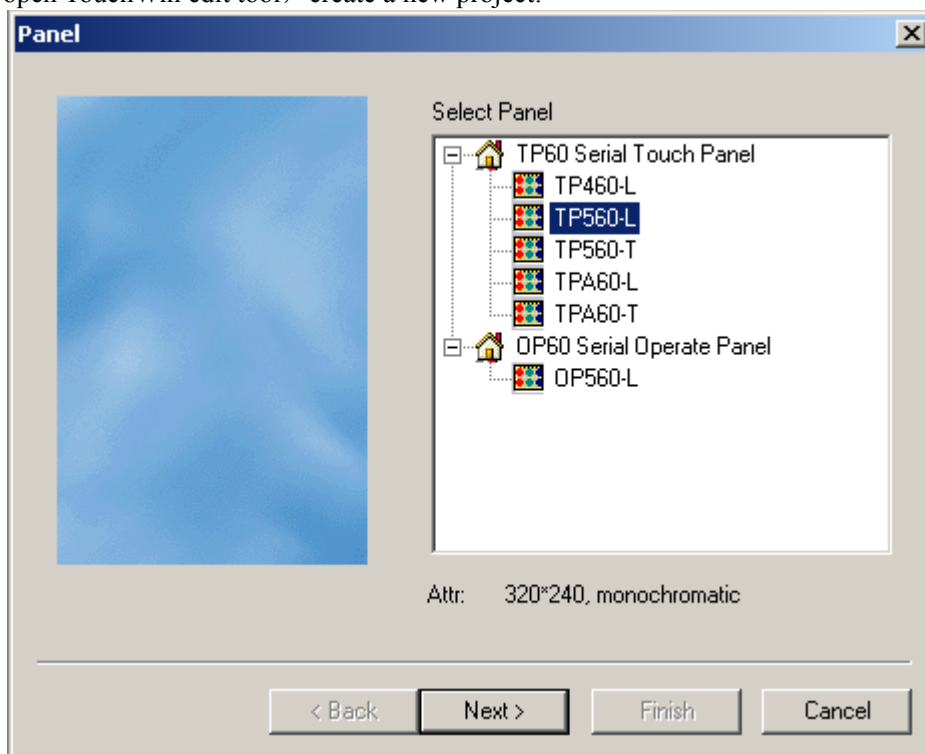
## 8 Special functions

TP series touch screen not only has a terminal display function, it has its own memory area. In the different area it has different definition and function.

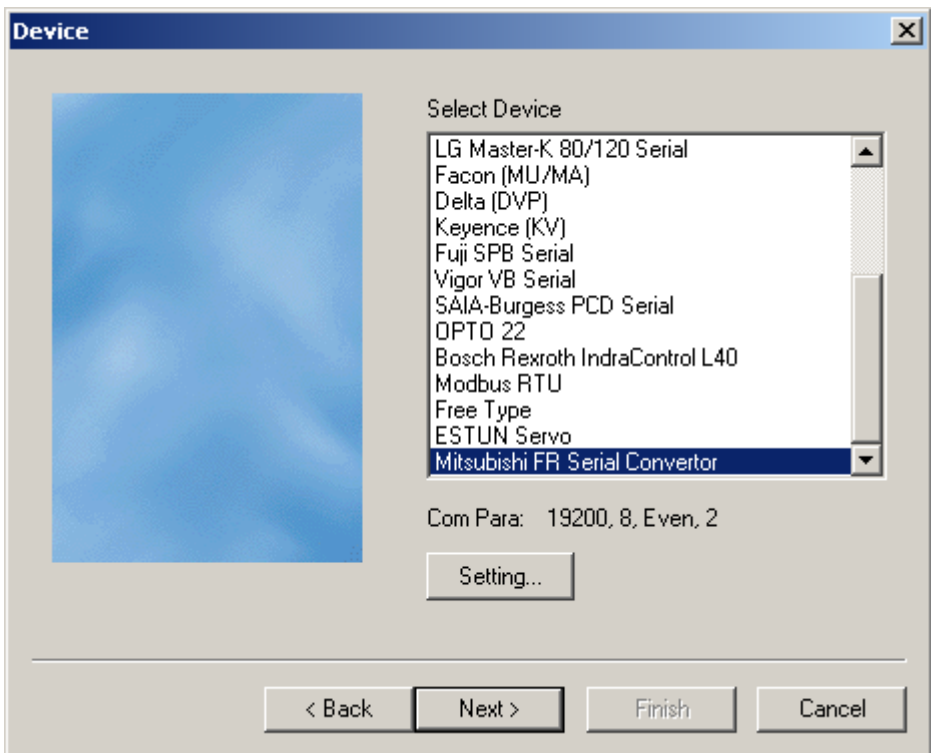
Identifier	Definition	Definition number	Function
PSB	bit	0	always ON
		1	always OFF
		2	the first scan time is ON
		3	0.1 sec plus
		4	1sec plus
		5	1 min plus
PSW	byte	1	Start screen's ID
		2	Current screen's ID

TP series touch screen add a new function to communicate with inverter on the base of original function. The following we will take mitsubishi FR series transducer for example to describe.

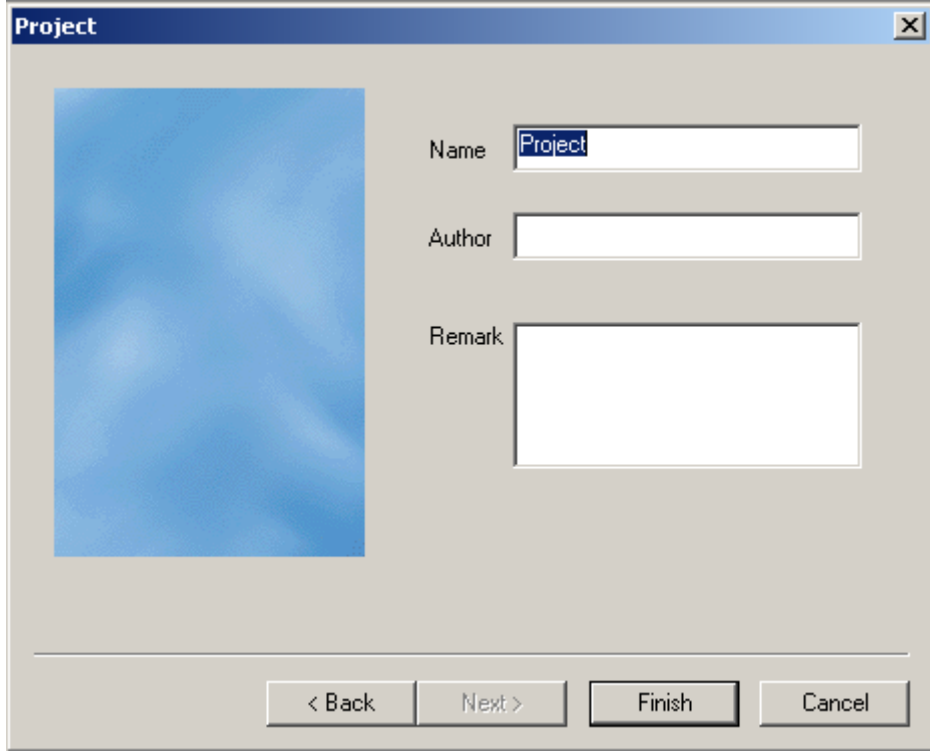
First, open TouchWin edit tool, create a new project:



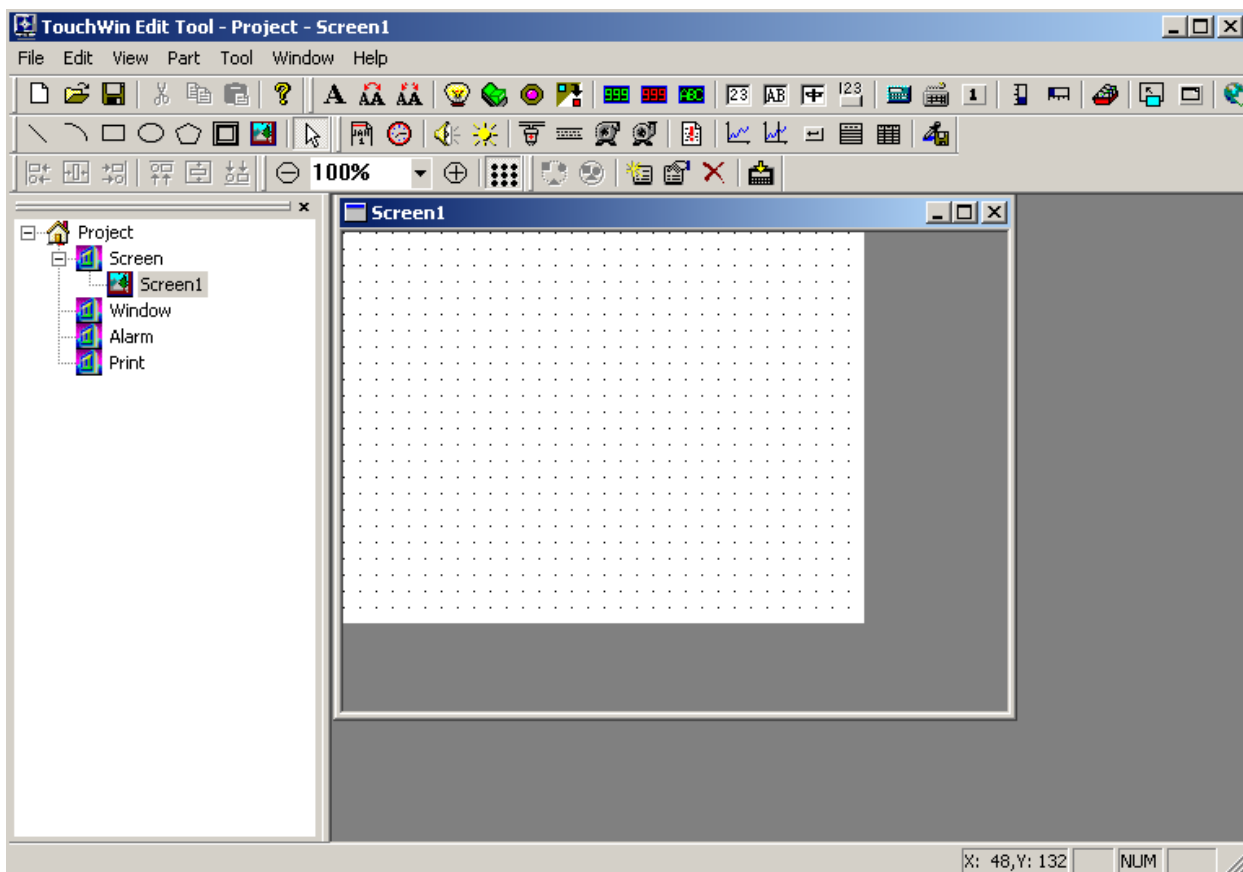
1. Choose a correspond display, click "next":




2. Choose mitsubishi FR series inverter in the table, take “setting” as system default. Click “next”:

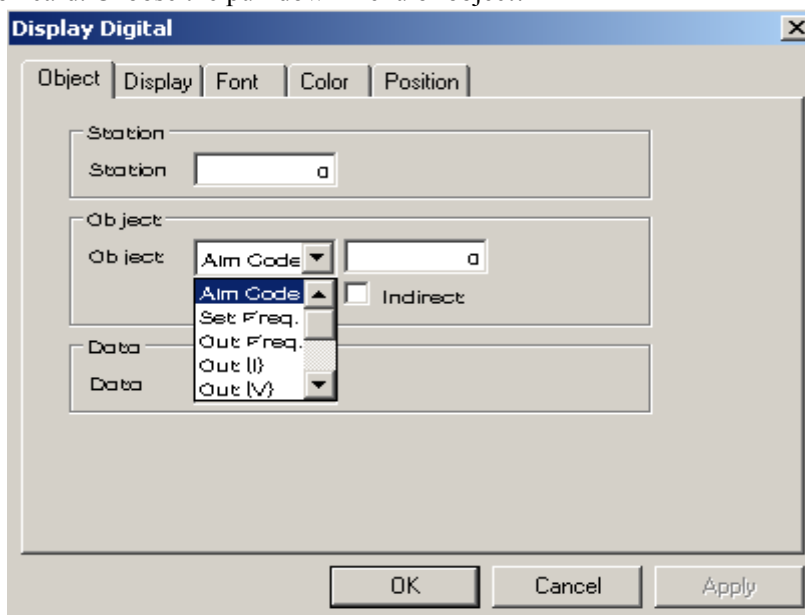


3. Input name, author, remark etc, press “OK” to enter edit screen.



Here we will change the inverter's inside parameter and input frequency mainly by the touch screen to control the electric machine roll forth, roll back, stop. At the same time display the transducer's states of alarm code, output frequency output voltage and output circuit etc by the touch screen. The following will give a detail presentation for the unit.

①. Place digital display unit  in the screen, open the property dialog box, default it as object option card. Choose the pull down menu of object:

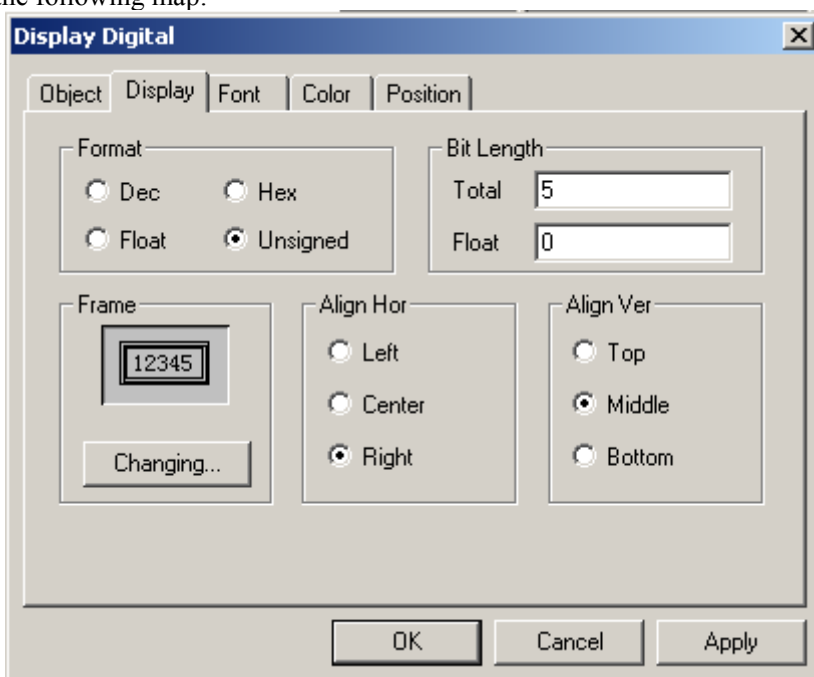


- Alarm codes Correspond to the alarm codes inside the inverter. You can use Chinese to display the alarm message.
- Set frequency Correspond to the set of inverter's frequency.

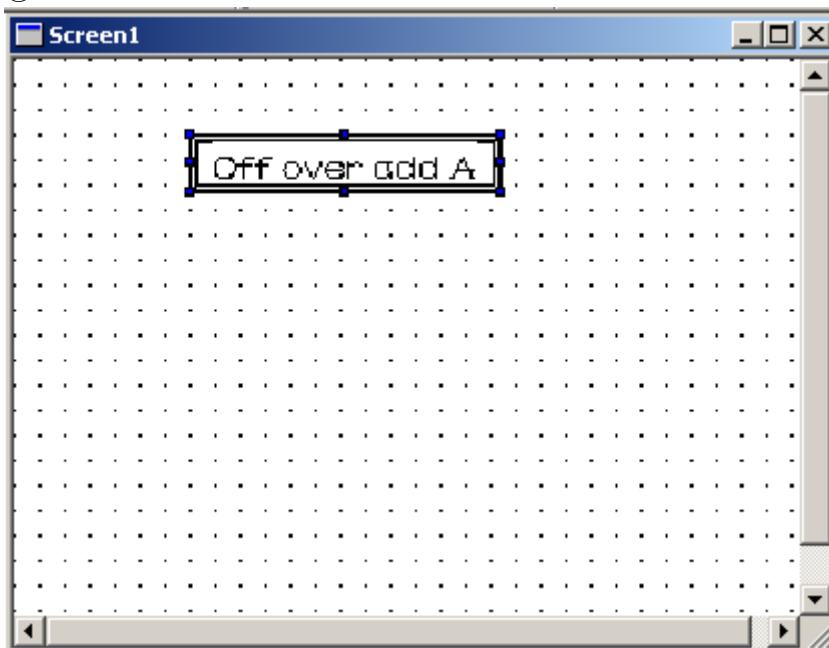


- Output frequency Correspond to the output frequency of the inverter.
- Output current Correspond to the output current of the inverter
- Output voltage Correspond to the output voltage of the inverter
- Parameter Correspond to the different parameter inside the inverter, the user can appoint a certain parameter in the inverter and display it on the touch screen.
  - Order codes Correspond to the different order codes inside the inverter, the user can appoint a certain order code to control the frequency and make it do the correspond action.

Click display option card, set it yourself according to the screen's clue and product demand, just as the following map:

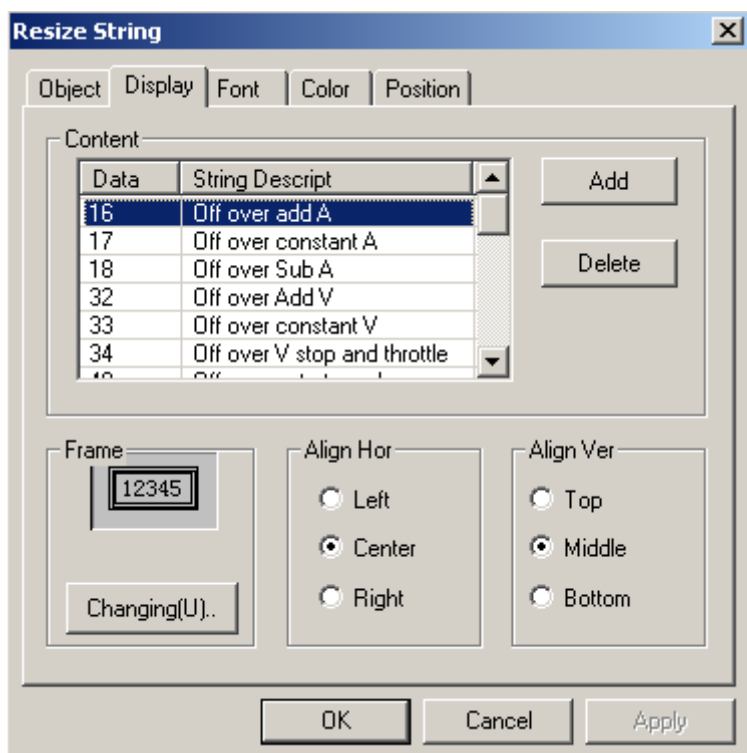


②. Place Transducer Alarm Information  in the screen. Just as the following:




Inverter Alarm information unit's object option card is the same to Digital display. Here we mainly introduce display option card's relative parameter.

Just as the following map:



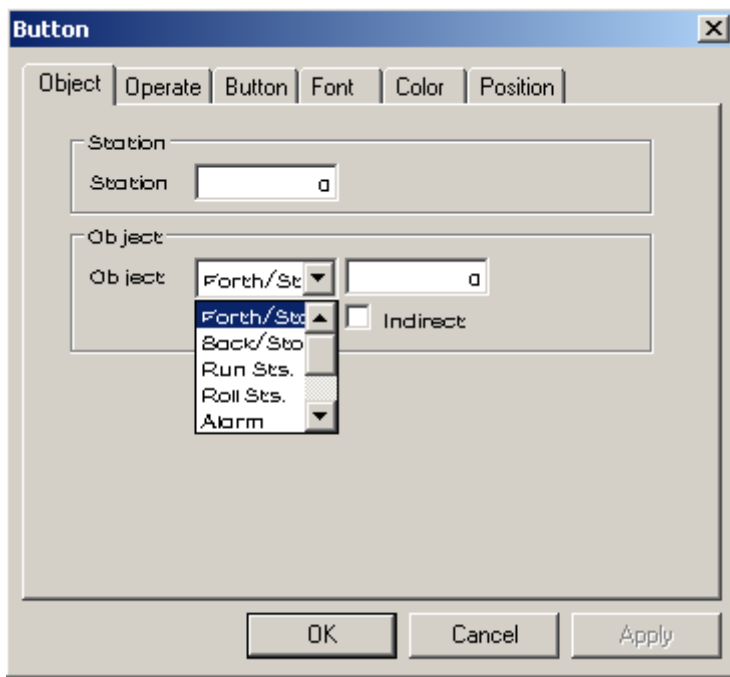
Description presentation:

- 16 Over-circuit is cut off when speeding up
- 17 Over-circuit is cut off when speed be determined
- 18 Over-circuit is cut off when speeding down
- 32 Rebirth over-voltage is cut off when speeding up
- 33 Rebirth over-voltage is cut off when speed be determined
- 34 Rebirth over-voltage is cut off when speeding down or stop
- 48 Inverter over-load open circuit
- 49 Electric machine over-load open circuit
- 64 Radiator is over the temperature
- 96 Loss speed precaution
- 112 Control-action transistor alarm
- 128 Output side connect to the ground over-circuit protection
- 129 Output wrap the phase protect
- 144 Outside hot relay act
- 160 Choose unit abnormal
- 176 Parameter memory abnormal
- 177 Parameter unit 脱落
- 178 Retry times exceed
- 243 Choose unit abnormal
- 246 CPU error
- 247 CPU error
- 0 No alarm information

③. Place  button unit in the screen, open the property dialog box as the following map:

Here we will mainly present object option card's object type, you can refer to other unit's presentation for its option card:

- Roll forth/Stop Correspond to the transducer's roll forth or stop state. ON is rolling forth, OFF is stop.
- Roll back/Stop Correspond to the transducer's output roll back or stop state. ON is rolling back, OFF is stop.
- Rolling state Correspond to the transducer's output roll state. ON is rolling, OFF is not.
- Roll forth and back state Correspond to the transducer's output roll forth and back state.



- ON means roll forth, OFF means roll back
  - Alarm Correspond to the transducer's current inside alarm code
- ④. You can refer to introduction before for other units' relative property, here we will not say any more.

# APPLICATION

## 1 TP series operate methods

### 1-1 TP series online communication

After the screen's data download is over, cut the power off, pull the screen transfer cable OP-SYS-CAB0 out. Connect TP series DOWNLOAD port and PLC communication port with PLC communication cable. Check if the PLC's communication parameter is right. Meanwhile, give PLC and TP the power (TP series use DC 24V power), the display will enter the state of run at once.

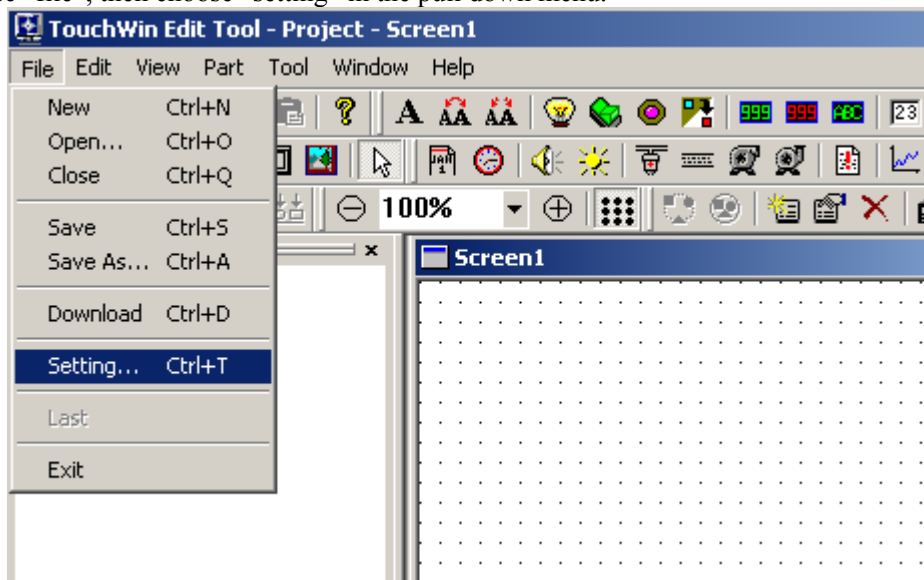
**NOTE: No matter that PLC is in the state of running or programming, TP series touch screen can work regularly.**

### 1-2 TP series touch screen orders

In order to improve the machine's safety, the data in the touch screen must be modified by the professional people. So, this demands that the touch screen must have the function of data protection. The following we will introduce the touch screen's order setting.

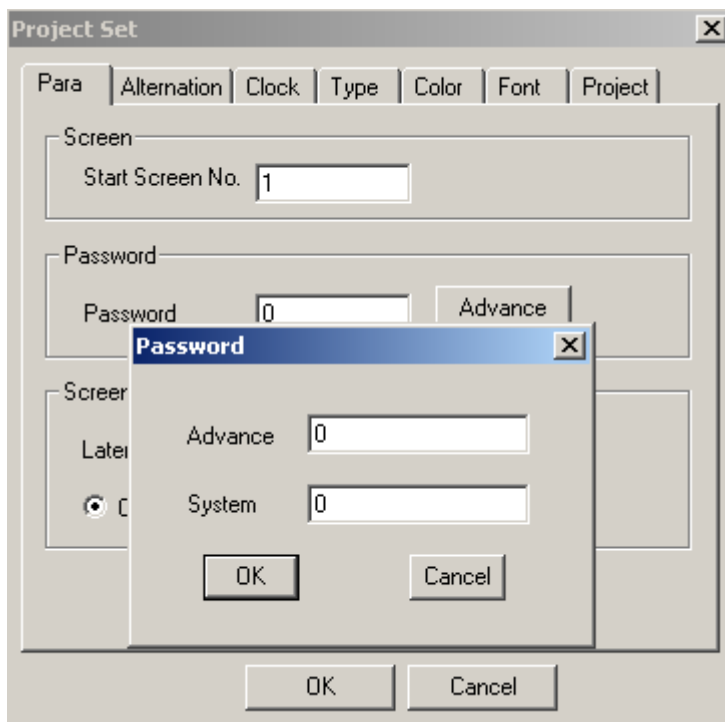
1 First, set the system's parameter.

Choose "file", then choose "setting" in the pull down menu.

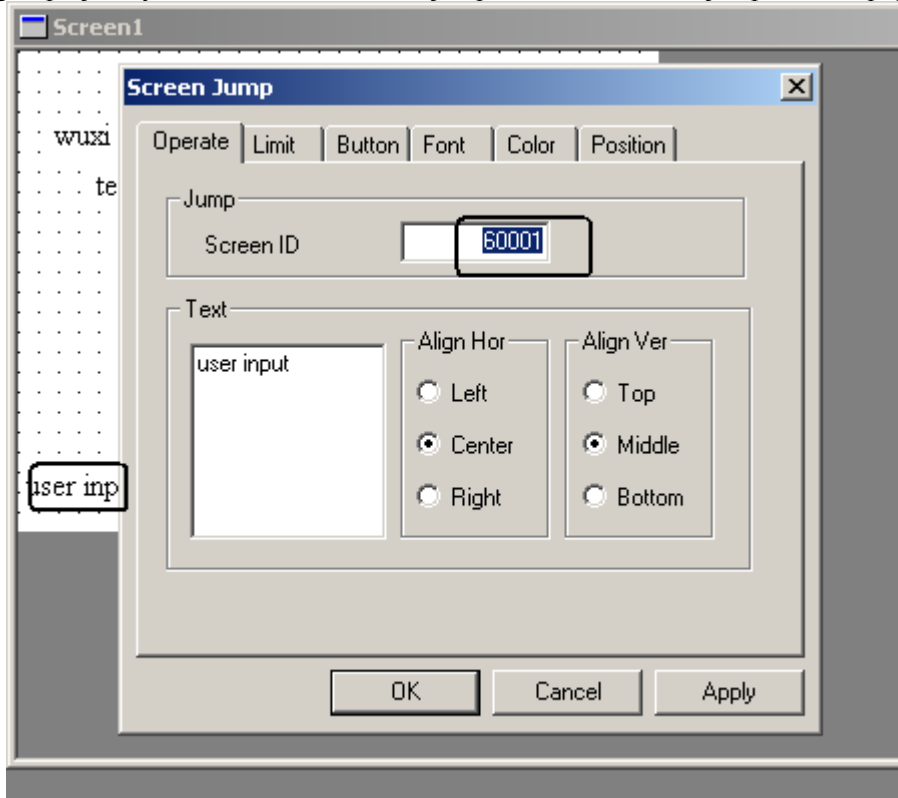


2 There will pop out a system setting dialog box, input the password in order, press "OK" after you finish.  
The order has three grades: regular  
advance  
system

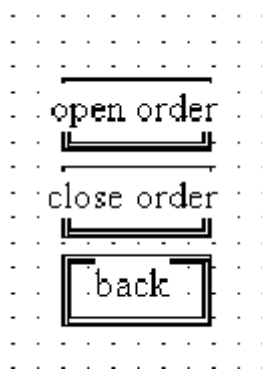
Regular order can only carry out order protection function of normal grade. Advance grade order can carry out order protection function of high grade and regular grade. When input system order, you can carry out all the order operation.



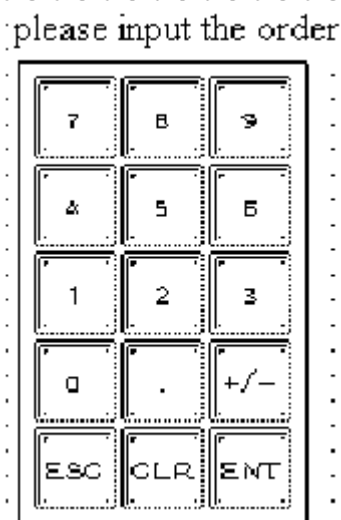
3 Creating of project system. first, set "screen jump" button to make it jump to order page.




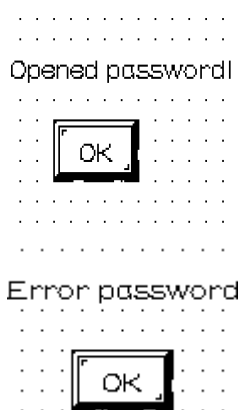
4 Press "user input" button to switch to order screen.



5 Press “open order button” to enter order input screen.



6 Press  after inputting the order. If the order is right, there will pop out 1, or else there will pop out 2.



7 Press “Close order”, jump out close order dialog box, but the operation that has order protection cannot be carried out.



8 Press “back” button to return to the original screen.

# APPENDIX

## 1 PLC CONNECTION METHODS

### 1-1 Xinje FC series

#### TP software setting

Parameter items	Recommend setting
PLC model	Xinje FC series
Communication port type	RS232
Data bit	8
Stop bit	1
Checkout bit	Odd check
Baud rate	9600
Bureau ID	1

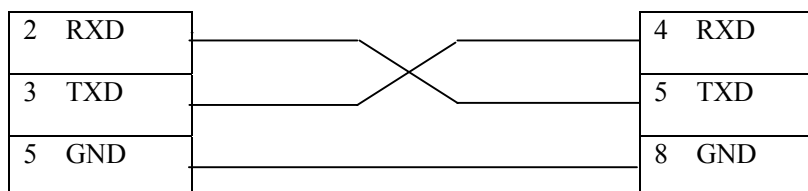
Address for operation

PLC ID type	Operation bound	Format	Presentation
M	0~383	DDD	Assistant point inside
W	0~2047	DDDD	Data memory
D means algorithm data			

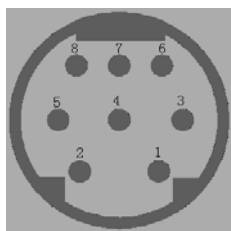
**TP-FC- CAB0 connection map**

TP series touch screen side  
9 pin D shape mother seat

FC series PLC side  
8 pin round father seat



**8 pin DIN round father seat**  
pin column





## 1-2 mitsubishi FX series

### TP software setting

Parameter items	Recommend setting
PLC model	mitsubishi FX series
Data bit	7
Stop bit	1
Checkout	Even check
Baud rate	9600
Bureau ID	0

### Address for operation

PLC address bound	Operation bound	Format	Presentation
X <sup>①</sup>	0~267	O	Outside input point
Y <sup>①</sup>	0~177	O	Outside output point
M <sup>①</sup>	0~1023	D	Inside assistant point
S <sup>①</sup>	0~999	D	Special assistant point
T (as states)	0~255	D	Timer state
C	0~255	D	Counter point
C16	0~199	D	16 bits count
(C32)	200~255		32 bits count
D	0~8255	D	Data memory
T (as registers)	0~255		Current value
①X、Y、M、S all can extend as register.			

**TP-FX-CAB0 connection map****1 CPU Unit**

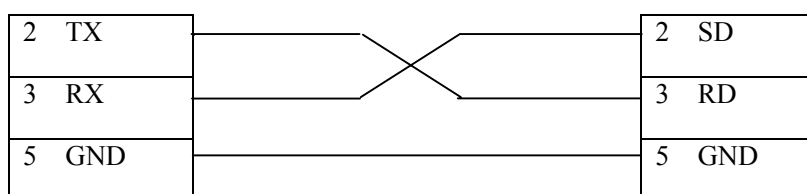
TP series touch screen side  
9 pin D shape mother seat

FC series CPU RS422 port  
8 pin round shape mother seat

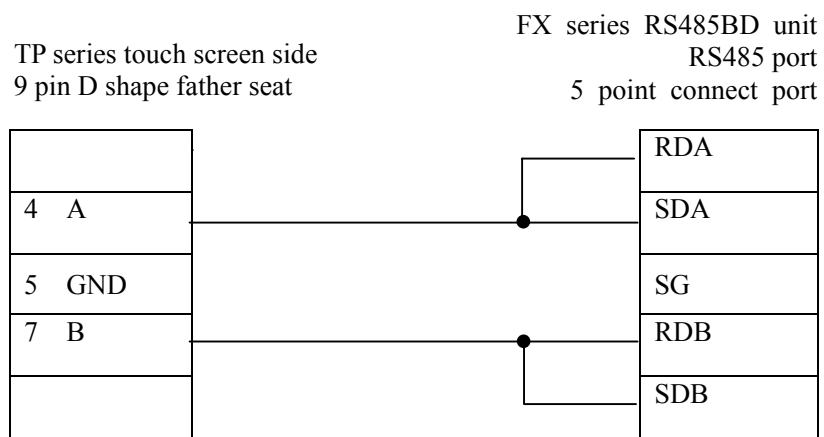
**2 Communication unit RS232BD**

TP series touch screen side  
9 pin D shape mother seat

FX series PLC side  
8 pin D shape mother seat



### 3 Communication unit RS485BD



### 1-3 SIEMENS S7-200 series

#### Software setting

Parameter items	Recommend setting
PLC model	S7-200
Communication port type	RS485
Data bit	8
Stop bit	1
Checkout	Even check
Baud rate	9600
Bureau ID	2

#### Address for operation

PLC address type	Operation bound	Format	Presentation
VB	0~4095	DDDD	Byte data register
VW	0~4095	DDDD	Word data register
M	0~255.7	DDD.O	Inside assistant point
VD	0~4095	DDDD	Double word data register
NOTE: D means algorism data			

#### TP-S7-CAB0 connection map CPU unit

TP series touch screen side  
9 pin D shape mother seat

S7-200 series PLC side  
9 pin round shape mother seat



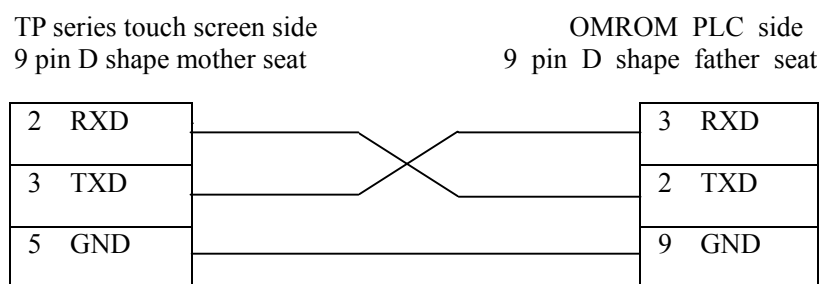
## 1-4 OMRON C series

### Software setting

Parameter items	Recommend setting
PLC model	OMRON
Communication port type	RS232
Data bit	7
Stop bit	2
Checkout	Even check
Baud rate	9600
Bureau ID	0

### Operation address

PLC address type	Operation type	Format	Presentation
IR	00000~24315	DDD(BB)	As points and register
SR	24400~25515	DDD(BB)	As points and register
HR	0000~9915	DD (BB)	As points and register
AR	0000~2715	DD (BB)	As points and register
LR	0000~6315	DD (BB)	As points and register
TC	0~512	DDD	Timer /counter register's value
DM	0~6655	DDDD	Data register
PV	0~512	DDD	Time or counter's current value

**TP-CQM-CAB0 connection map**

Presentation: If OMROM PLC can only monitor but modify data, change data in DM6600 as H0201, give it power again will do.

## 1-5 Koyo S series

### Software setting

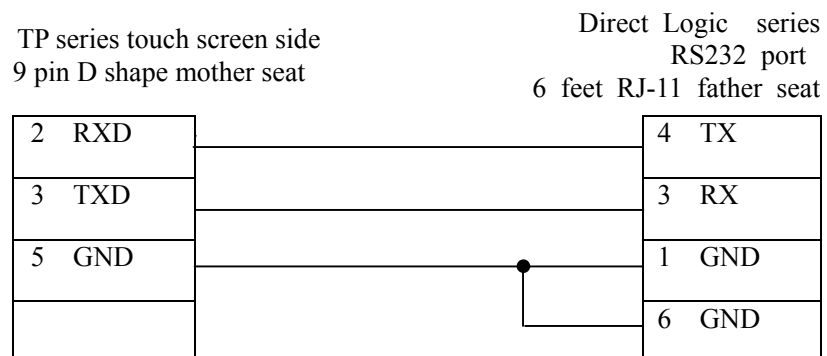
Parameter items	Recommend setting
PLC model	KOYO
Communication port type	RS232
Data bit	8
Stop bit	1
Checkout	Odd check
Baud rate	9600
Bureau ID	1

### Operation address bound

PLC address bound	Operation bound	Format	Presentation
I	0~477	OOO	Outside input point
Q	0~477	OOO	Outside output point 0
M	0~377	OOO	Inside assistant point
T	0~177	OOO	Timer point
C	0~177	OOO	Counter point
S	0~777	OOO	Step point
R	0~41037	OOOOO	Data register
NOTE: O means octal			

## TP-SZ-CAB0 connection map

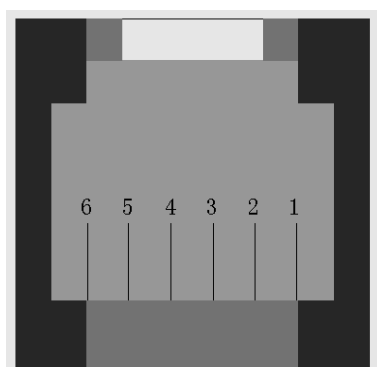
### 1. CPU unit (DL05/DL105/DL230/DL250/DL350/DL450 RS232 Port)



## Presentation

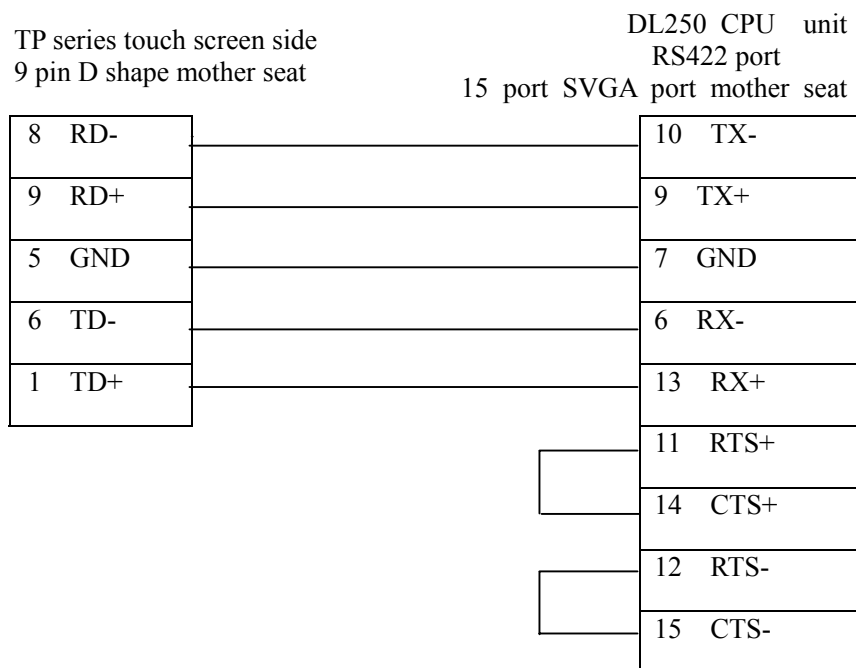
DL05 series port1 & 2、DL240's port1 & 2、DL250' port1、DL350's port1 and DL450's port2 are all hardware port of RJ-11, the connection line is the up map .

### RJ-11 6 foot mother seat pin feet arrange





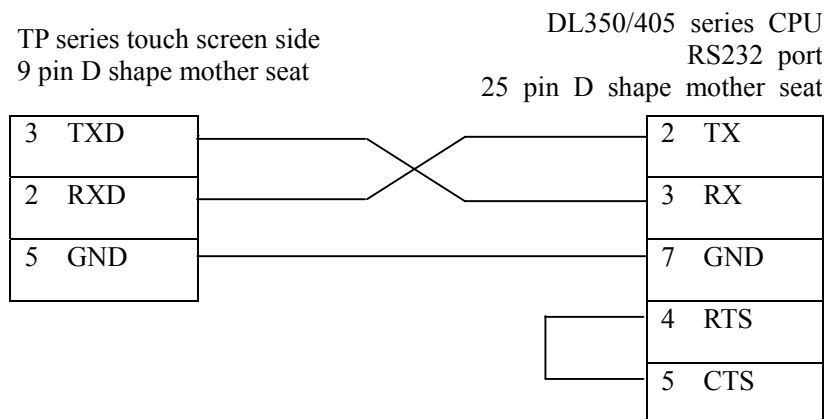
## 2. CPU unit (DL250 CPU unit Port2 RS422)



### Presentation

DL250 unit's Port2 combines RS232 and RS422 these two electric port, when using, please pay attention to their type setting.

## 3. CPU unit (DL430/DL440/DL450 CPU unit Port1&DL350 CPU unit Port2 RS232)



## 1-6 Delta DVP series

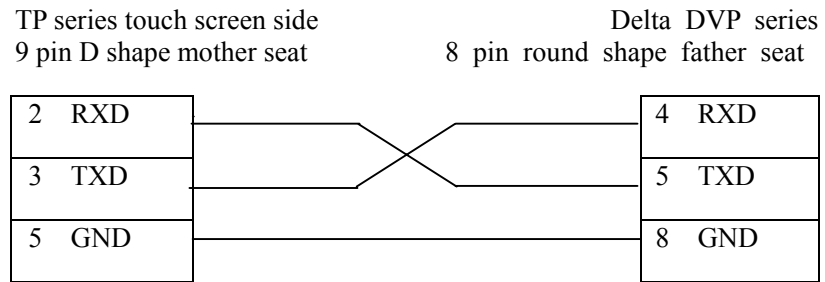
### Software setting

Parameter items	Recommend setting
PLC model	Delta DVP
Communication port type	RS232
Data bit	7
Stop bit	1
Checkout	Even check
Baud rate	9600
Bureau ID	1

### Operation address bound

PLC address type	Operation bound	Format	Presentation
X①	0~377	OOO	Outside input point
Y①	0~377	OOO	Outside output point
M①	0~1279	DDDD	Inside assistant relay
S①	0~1023	DDDD	Step point
T	0~255	DDD	Timer point
C	0~255	DDD	Counter point
D	0~1279	DDDD	Data register
TD	0~255	DDD	Current value of timer
CD	0~255	DDD	Current value of counter
Presentation: D means algorithm number, O means octal number			
①X、Y、M、S all could be extended as a register.			

**TP-DVP-CAB0 connection map**



**Presentation:**

Delta DVP series PLC contain DVP-14/24/32/60ES00 and DVP-XXESO1 etc model, all can connected with TP touch screen by program communication port on CPU unit.

## 1-7 LG Master-k series PLC

### Software setting

Parameter items	Recommend setting	
PLC model	LG Master-k	
PLC communication port	PORT2	PORT1
Protocol	Modbus Slave	PRG
Data bit	8	8
Stop bit	1	1
Checkout	Even check	No check
Baud rate	9600	34800
Bureau ID	1	1

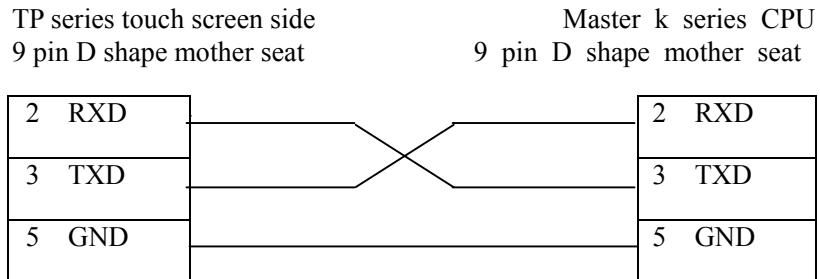
### Operation speed bound

PLC address type	Operation bound	Format	Presentation
P①	0~127F	DDD <sup>H</sup>	Input/output point
K①	0~31F	DD <sup>H</sup>	Keep relay point
M①	0~191F	DDD <sup>H</sup>	Inside assistant point
L①	0~63F	DD <sup>H</sup>	Connect relay point
F①	0~63F	DD <sup>H</sup>	Read only
T	0~255	DDD	Timer point
C	0~255	DDD	Counter point
TD②	0~255	DDD	Current value of timer
CD②	0~255	DDD	Current value of counter
D②	0~5119	DDDD	Data register
SD②	0~100	DDD	Step point

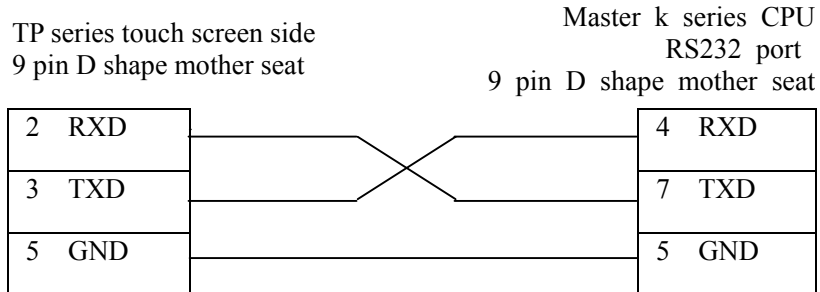
① Can be used as a register.  
② Extend to use as a register.

**TP-LG-CAB0 connection map**

**1. PORT1**



**2. PORT2**



**1-8 Panasonic FP series PLC****Software setting**

Parameter items	Recommend setting
PLC model	Panasonic FP
Communication port type	RS232
Data bit	8
Stop bit	1
Checkout	No
Baud rate	9600
Bureau ID	1

\*\*Usually we default FP series PLC's station number as 1, but FP3 has special control, the station number must be 0. Please pay attention to communication setting of PLC when connecting.

**Operation address bound**

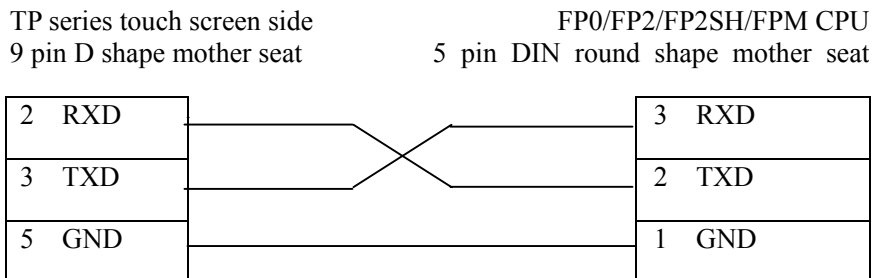
PLC address type	Operation bound	Format	Presentation
X	0~12F	DDH	Outside input point
WX	0~12	DD	As a register
Y	0~12F	DDH	Outside output point
WY	0~12	DD	As a register
R	0~62F 90~903F	DDDH	Inside assistant point
WR	0~62 900~903		As a register
T	0~99	DD	Timer point
C	100~143	DD	Counter point
SV	0~143	DDD	Set value of timer or counter
EV	0~143	DDD	Current value of timer or counter
DT	0~9999	DDDD	Data register

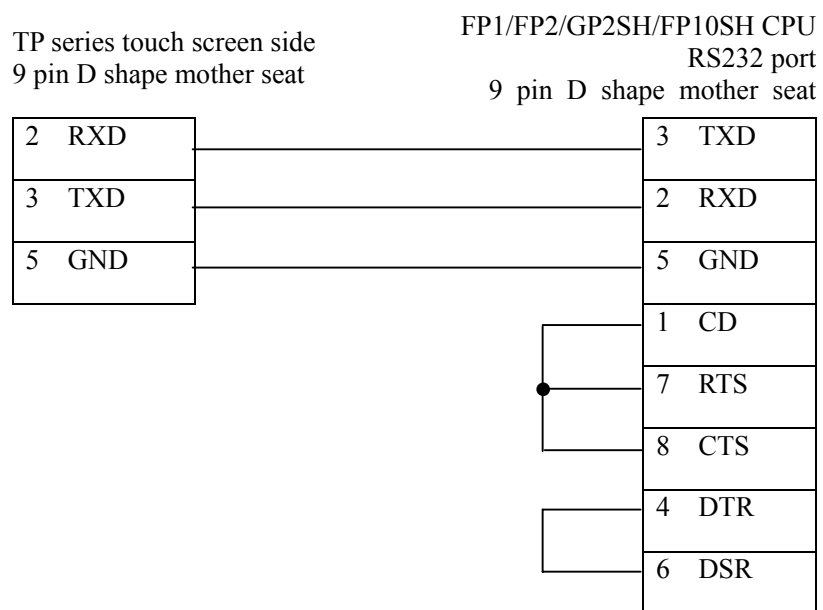
**TP-FP-CAB0 connection map**

**Presentation**

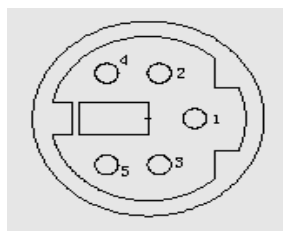
NAIS FP series PLC contains FP0/1/2/3/2SF/10SH etc series, all of them can connect to TP touch screen by program port on CPU or communication port.

**1. CPU unit RS232**





5 pin mother seat pipe feet range



**Presentation**

In FP0 series only FP0-CXXCXX model has RS232 communication port.





## 1-9 Schneider Electric PLC

### TP software setting

Parameter items	Recommend setting
PLC model	Schneider Electric
Communication port type	RS485
Protocol	MODBUS
Transfer frame's MODE	RTU
Data bit	8
Stop bit	1
Checkout	Even check
Baud rate	9600
Bureau ID	1

### Operation address bound

PLC address type	Operation type	Format	Presentation
M	0~2047	DDDD	Inside point
MW	0~2047	DDDD	Register point

### TP-NEZA-CAB0 connection map

TP series touch screen side  
9 pin D shape mother seat

Schneider Electric PLC side  
8 pin D shape father seat

