

Part II

SR Programming Software

Super CAD

Chapter I Installation & Uninstallation

1.1 Installation of Super CAD

The installation of Super CAD is very simple. A prompt dialogue box will appear automatically and you will complete the installation smoothly on the computer under its guidance. The main steps are as follows:

1. Insert the CD-ROM with Super CAD into the CD Drive and Installation Guidance will appear automatically, as shown in the following figure.
2. Enter the Installation window of Super CAD, as shown in the Fig. 1.1:

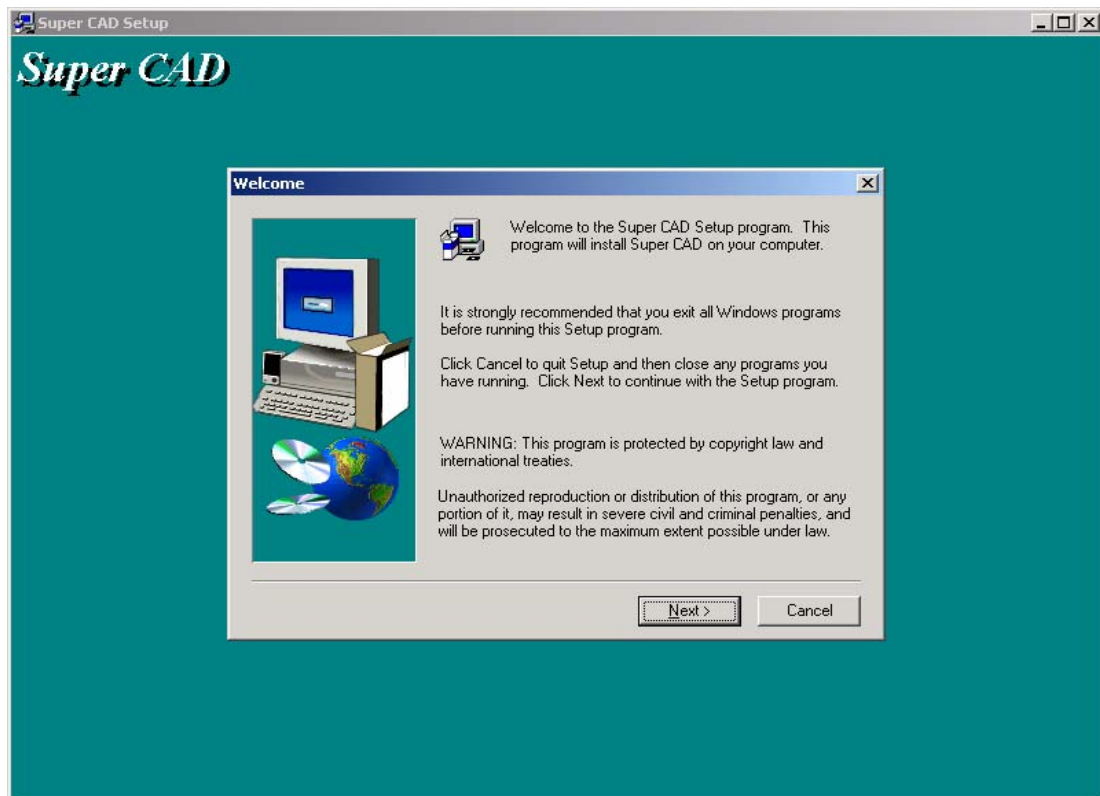


Fig 1.1 Installation Window

- Click NEXT to enter the next step of installation. The License Agreement will be displayed. Press [Page Down] to read the contents of the agreement. The License Window will be shown as in Fig. 1.2.
- Click Cancel to exit the installation.

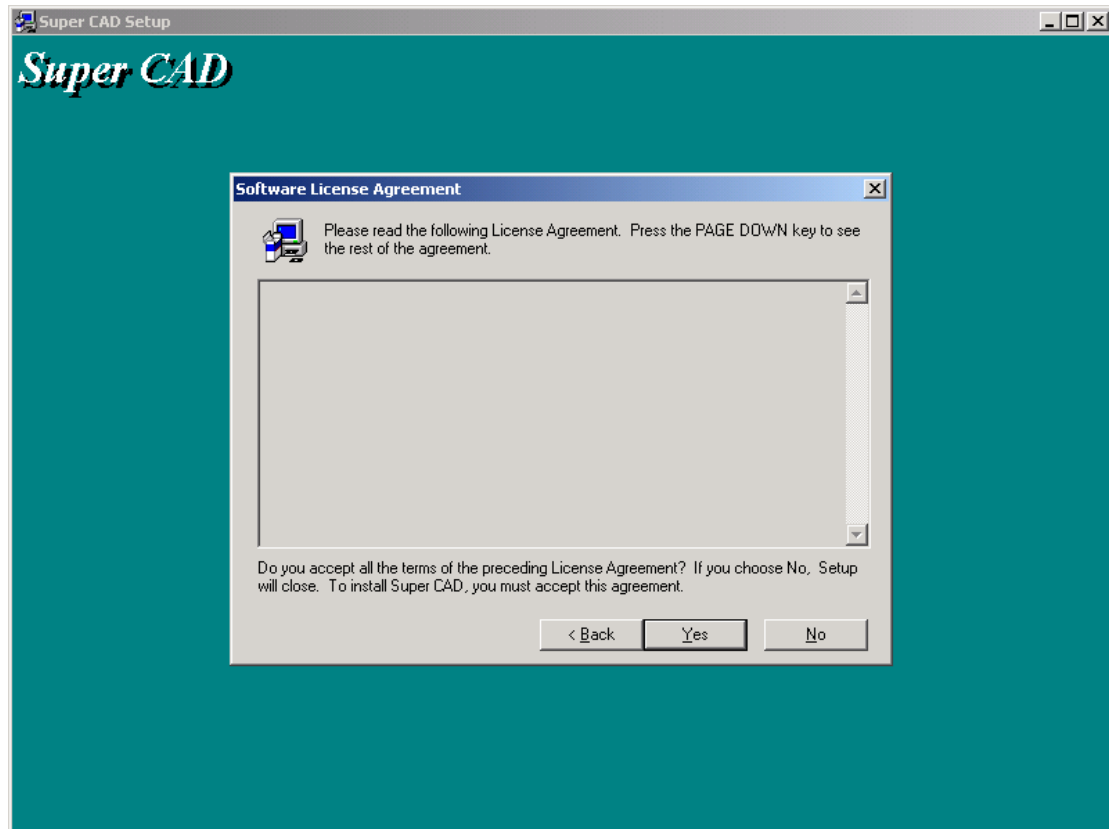


Fig 1.2 License Window

3. If you agree with the above License Agreement, click [Yes] to enter the next step. The User Information Window will be displayed, as shown in Fig. 1.3.

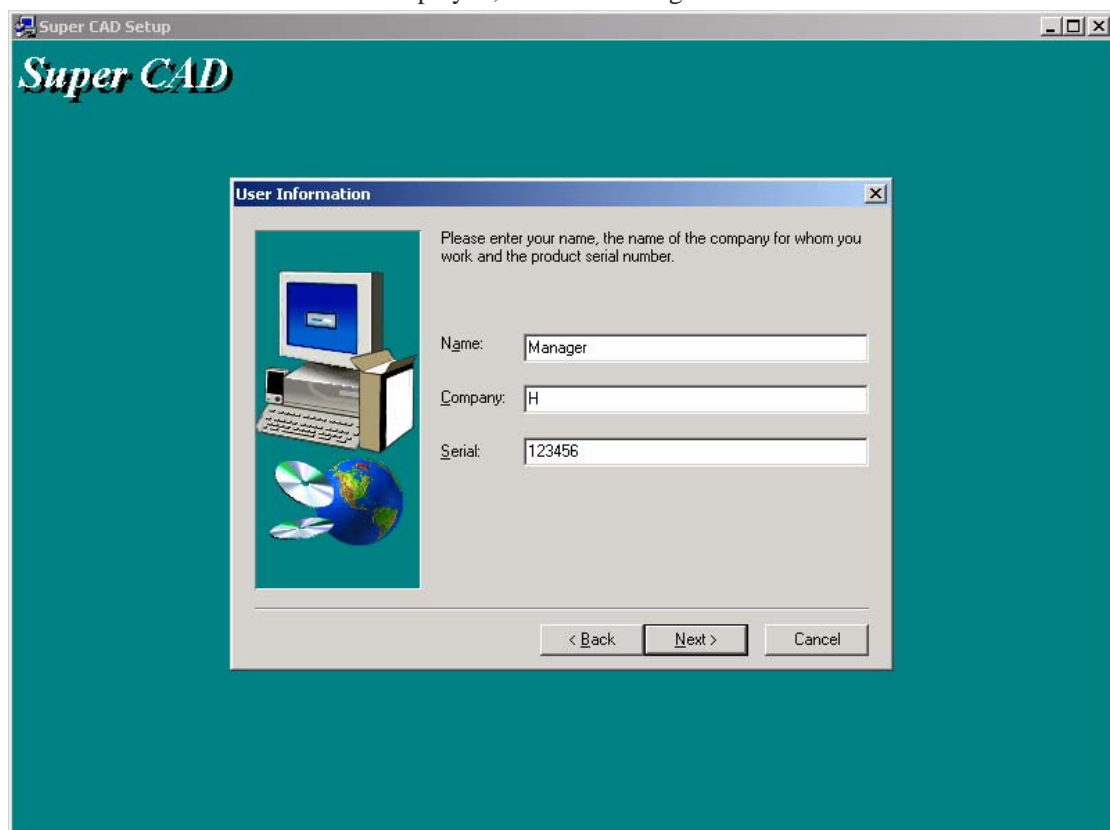


Fig 1.3 User Information Window

4. After setting the user information and entering the correct Serial No., click [Next] to enter the next step. The Destination Folder Window will be displayed, as shown in Fig. 1.4.

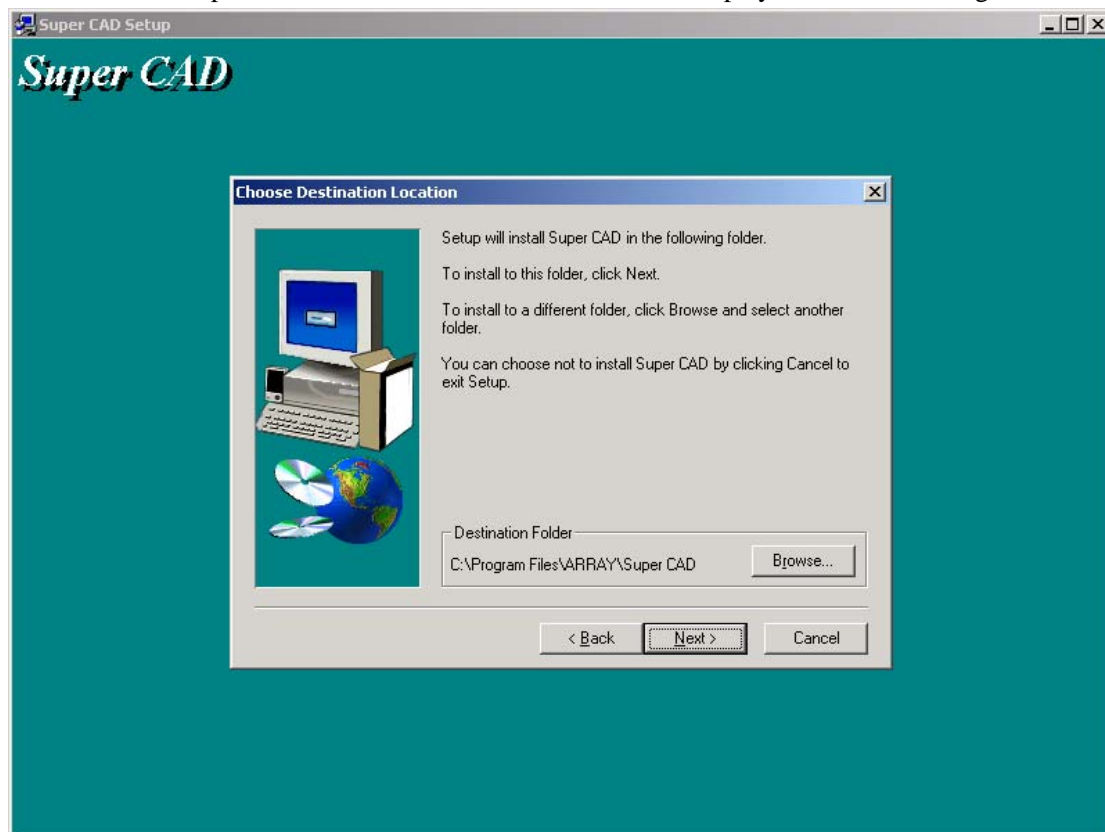


Fig. 1.4 Destination Folder Window

- If you click [Next], it will display the path and install Super CAD software into your computer according to the displayed path.
- If you click [BACK], the previous installation window will appear, as shown in Fig. 1.3
- If you click [CANCEL], the installation program will be terminated.

5. After setting the destination folder, click [Next] to enter the next step. Setup Type Window as shown in Fig. 1.5 will be displayed. Please select your desired installation type.

- If the [**Typical**] option is selected, all application components of Super CAD will be installed.
- If the [**Compact**] option is selected, the simplified components of Super CAD will be installed.
- If the [**Custom**] option is selected, users will be allowed to select the components of Super CAD.

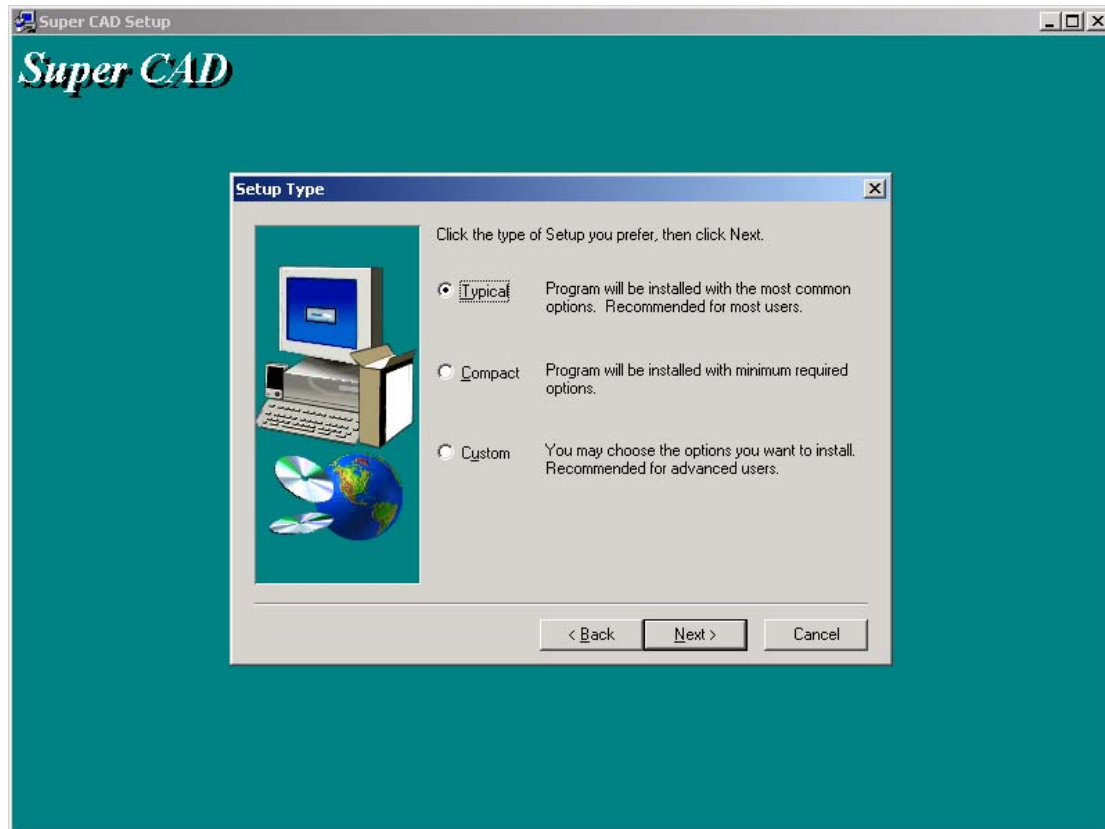


Fig. 1.5 Setup Type Window

!Notes: Selection of Typical option is recommended.

- 6 · If the [**Custom**] option is selected, the Components Window as shown in Fig.1.6 will be displayed. Select and click the **element** you want to install, it will then appear in the corresponding box and the said element is selected and after being clicked again, it is cancelled (default of Super CAD is to install all components when setup is completed).
- Click **NEXT** to enter the next step of installation and the Setup Program Set Name dialogue box will appear, as shown in Fig.2.7.
- Click **BACK**, the previous installation dialogue box will be displayed, as shown in Fig.2.5.
- Click **CANCEL**, the installation program will be terminated.

Fig 1.6 Components Window

7. Click [Next] in Fig. 1.6 to enter the Program Folder Window to select your desired program folder name. (The original connection is Super CAD).
- Click **NEXT** to enter the next step of installation and the contents of the program will be installed, as shown in Fig.1.8.
- Click **BACK**, the previous installation dialogue box will be displayed, as shown in Fig.1.6.
- Click **CANCEL**, the installation program will be terminated.



Fig 1.7 Program Folder window

8. The installation program proceeds to the automatic installation procedure. Click **CANCEL**, if you want to terminate now.

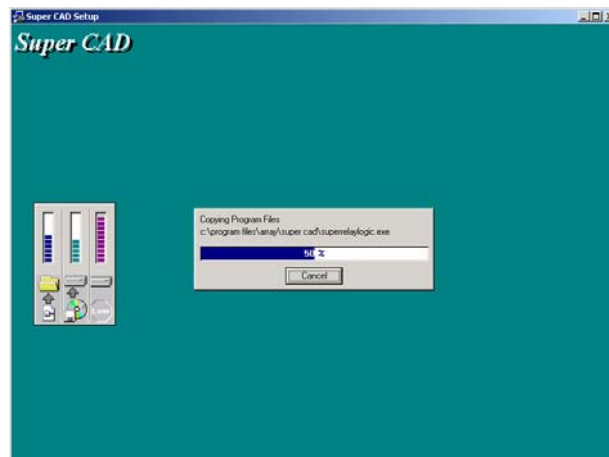


Fig 1.8 Setup window

9. When the automated installation process is completed, the Setup Finished Window appears, as shown in Fig.1.10. Click **FINISH** to complete the installation process.



Fig 1.9 Setup Finished Window

1.2 Uninstallation of Super CAD

There are two ways for the uninstallation of Super CAD:

1. Remove from the program:

- Under the Windows taskbar, click **>Start >Program>Hezhong** and select the **Hezhong** program folder.
- Click **UNINSTALL** under the said program folder with the left mouse button, as shown in Fig. 1.10;
- When a Confirm Uninstall dialogue box, as shown in Fig. 1.11, appears, click **Yes**.



Fig. 1.10 Uninstallation Window

2 · Remove from the console:

- Under the **Windows** interface, double click **My Computer** and the management files of **My Computer** will be open.
- Double click and open the **Control panel**.
- In the **Control Panel**, select **Add/Remove Program** and the Add/Remove Program dialogue box appears.
- After selecting the **Super CAD** program folder in the said dialogue box, click **Add/Remove Program** icon and a dialogue box appears to ask if you want to remove the program. Click **Yes** and the Remove window, as shown in Fig.2.11, appears.
- Click **OK** to complete the removal and then close the Add/Remove Program window.

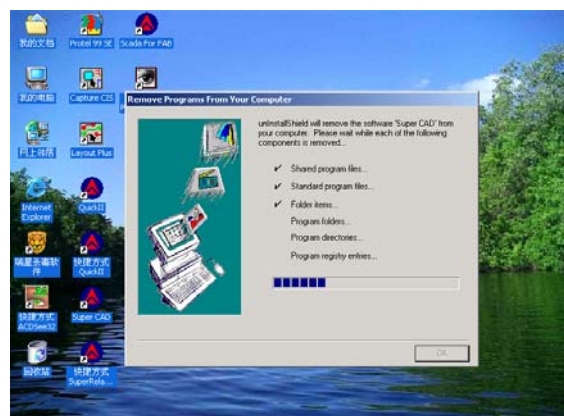


Fig. 1.11 Remove window of Super Relay

Logical Diagram Editing window of the Super CAD is as shown in Fig. 2.3. In this editing window, you can click the desired block in the block library on the left to draw the Logical Function Diagram and set the block property. After the function diagram is completed, simulation can be run in this window and the program can be downloaded to SPR.

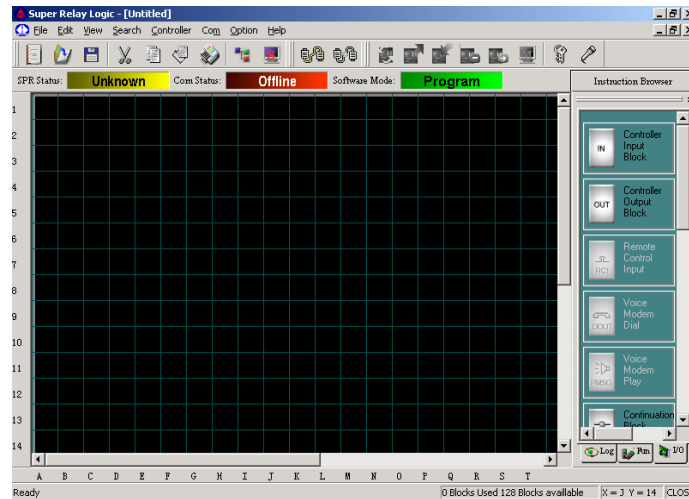


Fig. 2.3 Logical Diagram Editing Window

Notes: For the detailed operation, please refer to Chapter III and Chapter IV of this part.

2.3 Main Functions

1. Editing function

The main function of Super CAD is programming for SPR. By using the Logical Function Editing window of Super CAD, you can create and edit your desired SPR programs using various function blocks of SPR and can also perform file operations such as save, print, etc.

2. Simulation operation function

After the program is edited, you can view the program operation result on the computer and conveniently check if the said program meets your control requirements. Here Super CAD provides you with a completely new off-line test function, through which you can debug the program without installing the SPR on site. With this function, many inconvenience of the site test can be avoided.

3. Real-time monitoring

Super CAD has a Real-Time Monitoring window. You can view the process of the control system and the running conditions of all SR and control remote SR, by connecting the SPR communication port to the computer you can view the process of the control system.

Chapter III Operation Instructions and Function Block Stock

3. 1 Function Instructions

When Super CAD is used to edit SPR programs, some basic operations including files management, opening and closing of the Tool Bar and Status Bar access to Help information are completed by using pull-down menu under File, Controller, Communication, View, Option and Help. The Instruction Function list of Super CAD is characterized by its flexibility and variation according to the main selection. It can be changed according to the current operation for convenience of your specific operations.

3.1.1 File

The instruction is mainly used for file management, including creation, opening, saving and printing of files.

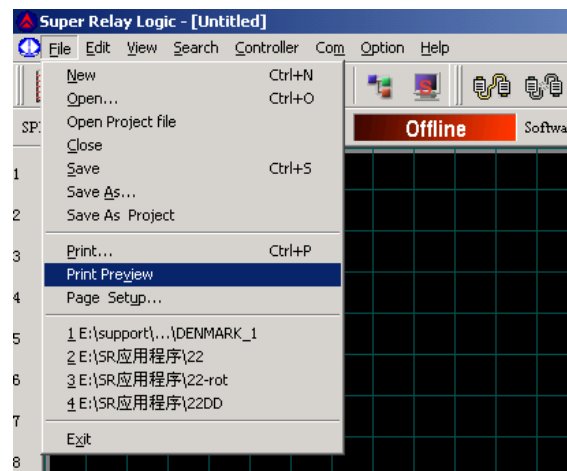


Fig 3.1 File Menu

Instruction Name	Function
New	Open a new file
Open	Open an old file
Close	Close the current active Window
Save	Save a file
Save As	Save current file to a new path and a new file
Print	Print a file
Print Preview	Preview the file printing result
Setup Print	Setup printing format
Exit	Exit Super CAD

3.1.2 Edit

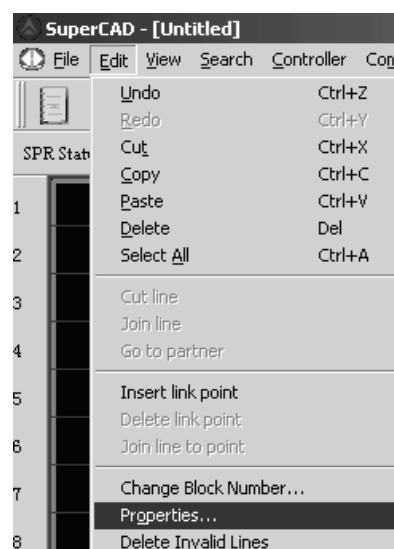


Fig. 3.2 Edit Menu

- ※ Undo: Undo the previous step operation and support consecutive operations.
- ※ Redo: Recover the contents undone by the previous step of operation and support consecutive operations.
- ※ Cut: Cut the contents in the area highlighted with the cursor.
- ※ Copy: Copy the contents highlighted with the cursor.
- ※ Paste: Paste the contents cut or copied.
- ※ Delete: Delete various graphic components.
- ※ Select All: Select all the contents in the current window editing box and setup the label.
- ※ Change Block Number:

3.1.3 Controller

This instruction is mainly used for reading program from SPR, writing program to SPR, diagnosis the communication situation of SPR and simulation and so on. The Pull down Menu of Controller is shown as the following:

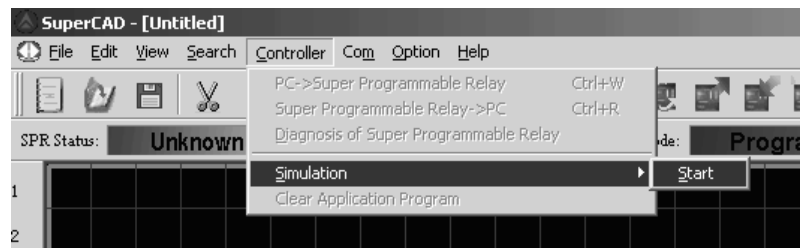


Fig. 3.3 Controller Menu

- ※ PC->Super Programmable Relay PC: writing program to SPR.
- ※ Super Programmable Relay-> PC PC: reading program from SPR.
- ※ Diagnosis of Super Programmable Relay: diagnosis the communication of SPR.
- ※ Simulation: simulate the SPR program.

3.1.4 Communication

The instruction is mainly used for on-line setup of SPR with the PC. The downpull menu is as the following:

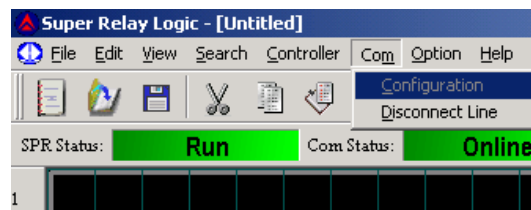


Fig 3.4 Communication Menu

- ※ Configuration: selection of communication mode and setup of communication port.
- ※ Disconnect Line: when it is not necessary for FAB to communicate with the upper computer, click this option to stop communication.

3.1.5 View

This instruction is to display the toolbar, state bar and the window proportions and so on. The downpull menu is shown as the following:

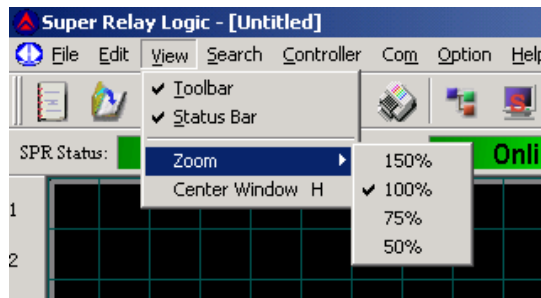


Fig 3.5 View Menu

- ※ Toolbar: Toolbar displaying instruction
- ※ Status bar: state bar displaying instruction
- ※ Zoom: window proportion displaying instruction. There are four different sizes of the windows for the user to select.

3.1.6 Option

In this downpull menu, you can not only set the personal style, but also set the time and address of SPR, read the address of SPR and the record of the voice module and write the system program on-line. And the detailed functions of these options are as the following:

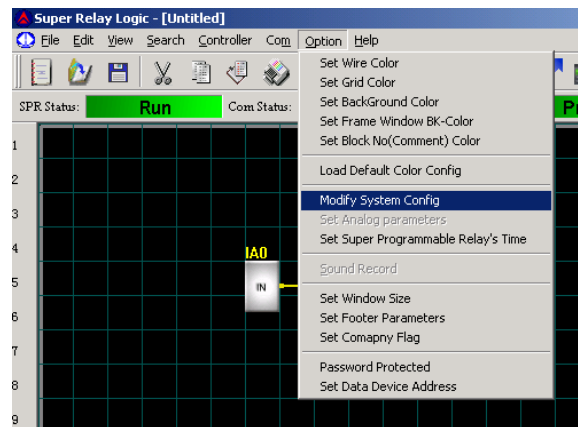


Fig 3.6 Option Menu

Option	Function
Set Wire Color	Setup block on-line color
Set Valid Region Base Color	Setup Function Diagram significant draw zone color
Set Grid Color	Setup Function Diagram grid point color
Set Background Color	Setup Window background color
Set Frame Window BK-Color	Setup background color of the block window
Load Default Color Config	Setup window background color as the defaulted
Modify System Config	Setup default configuration
Set Analog parameters	Setup the analog parameter
Set Super Programmable Relay's Time	Modify the internal time of the SPR
Sound Record	Record the voice module
Set Ring Times	Setup the dialing times when the telephone module alarming
Set Sound play times	Setup the times of the voice broadcasting
Select Speaker or External Sound Box	Select to broadcast by the voice module or the external audio box
Write OS Program To Super	Write system program to SPR

Programmable Relay	
Write OS Program To HMI	Write system program to LCD

3.1.7 Help

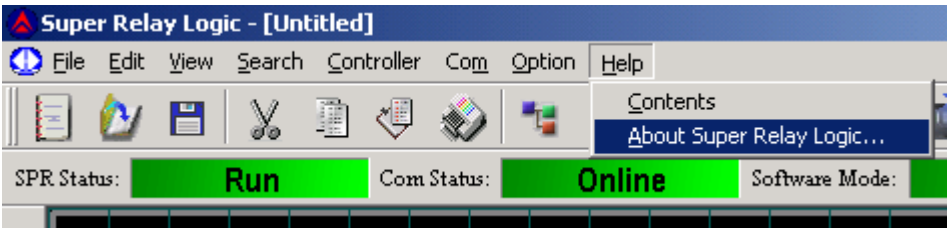


Fig 3.7 Help Menu

- ※ Content Index: Help index and detailed contents
- ※ About Super CAD

3.1.8 Search

This instruction is mainly used for finding blocks in the function diagram that meet certain conditions.

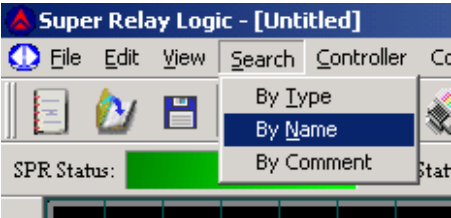


Fig 3.8 Search Menu

- ※ Search By type: click this option, the following diagram will be displayed:

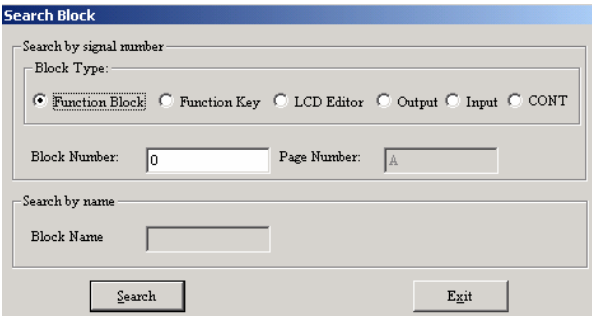


Fig. 3.9 Typical Search Window

- ※ Search By Name: find according to the name of the function block.

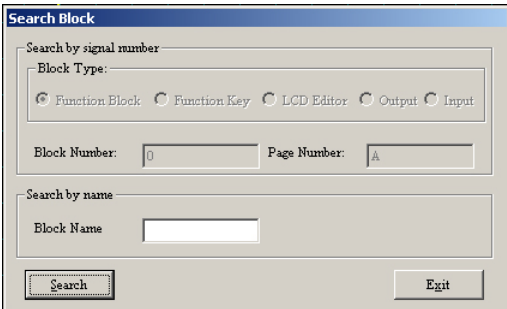


Fig. 3.10 Search according to the Name of the Function Block

3.2 Toolbar

After the Tool Bar is activated, the icon buttons of the Tool Bar will appear in the Edit window. You can use these icons directly without trying to locate them in the Function List. Tool Bar will let you complete your editing and drawing work faster and better.

Standard Tool Bar			
	New		Close communication Window
	Open		Show SPR Information
	Save		Read SPR Program
	Cut		Write Program to SPR
	Copy		Stop Running
	Paste		Run
	Print		Monitor Simulation diagram
	Connect		Setup Program Password
	Simulation		Record to SPR
	Open Communication Port		

3.3 Function Block Stock

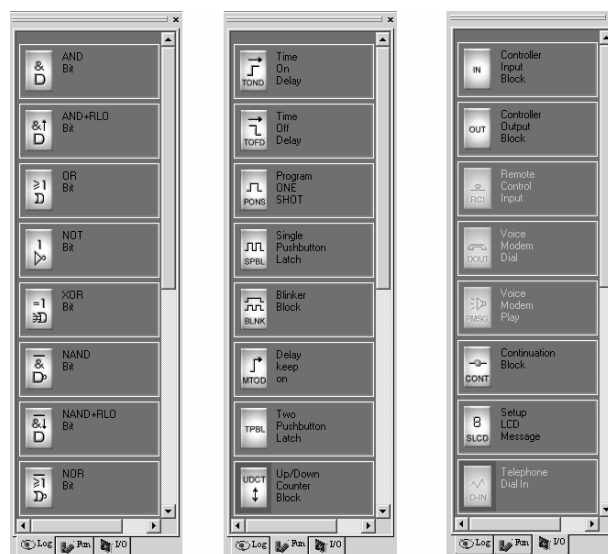


Fig. 3. 11 Block Library

In the block library, there are all the SPR function blocks. You can click the button below the block library such as “LOG”, “FUN”, “I/O” to display different function block library. “LOG” represents the logic blocks. FUN represents the special function blocks. IN represents the input blocks. OUT represents the output blocks. Please refer to Chapter IV for details of different blocks.

Block Library Operation

1. Click **LOG**, **FUN**, **I/O** used for selecting block types under the Block Library, and corresponding blocks will be displayed in the Block Library Frame.
2. Move the cursor to the desired **block** and select it by clicking on it. You may pull the moving bar to show all the function.
3. Select the desired function block, the cursor will change into a big yellow arrow. Click the corresponding block in the Edit window. If an undesired one is chosen, click the right key of the mouse, the chosen will be given up and you can select again.

3.3.1 Function Block Type

The blocks are classified into four types: Logical Block, Function Block, Input Block and Output Block. The Input and Output blocks are only used to graphically represent the input and output ends of SPR, without any actual functions. The key parts are the Logical Block and Function Block, the combination of which realizes several types of SPR control.

3.2.2 Properties Setup and Action Demonstration of Function Block

It is necessary to setup the properties of the blocks in the plotting of logical diagrams. The block properties are divided into General property and Special property. In the state of editing the logic function diagram, double click the function block or click the right key of the mouse and select the “Properties...” option after selecting the function block and then you can set up the parameter of the block..

3.3.2.1 General Properties

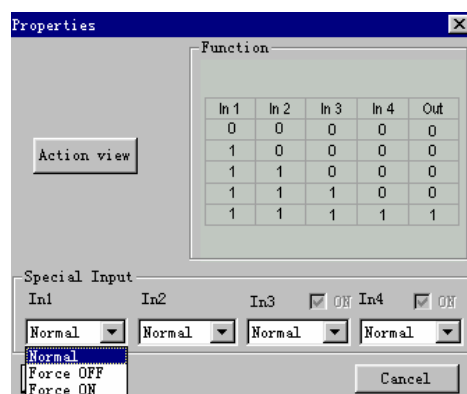


Fig 3. 12 Setup of General property

The settings of General property mainly include:

- ※ **Special Input:** set the state of the input of the current block. “Normal” represents that the input state is determined by the external input. “Force ON” forces this input to be state “1”. “Force OFF” forces this input to be state “0”.

※ Action view: show the logic relationship of the input/output of the block. These options make the user clearly and directly understand the function block.

Notes: When the state of the input pin is set as “Force ON” or “Force OFF”, this pin cannot connect the wires from other blocks and the state of this pin is always be state “1” or state “0”.

Functions of the block: Click the left key of the mouse and the following diagram will be displayed:

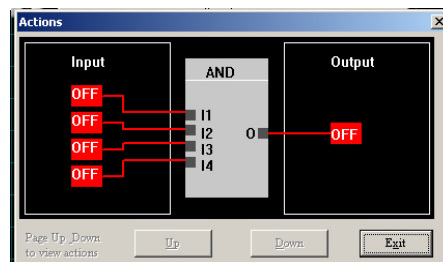


Fig. 3. 13 Action view Showing Window

3.3.2.2 Special Properties

Among the blocks of SPR, there are some special blocks that have special properties, including TOND, TOFD, SPBL, SCHD, DOUT, PMSG and so on. Setup of the properties of different special blocks is described as follows respectively.

1. Module with time schedule

Such as: TOND, TOFD, SPBL, TPBL and so on.

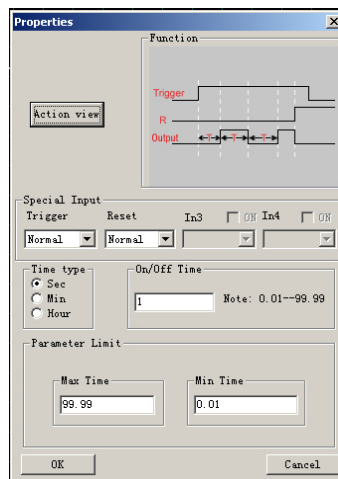


Fig. 3. 14Module with the timer Property Setup

Time type:

There are three time units for option: Sec, Min, Hour.

On/Off Time:

Set the time value of the timer and the time can be accuracy to 0.001S.

Parameter Limit:

The max set time limit is 99.99 hours and the min time is 0.001 second.

Action view:

Simulate the working process of the time schedule module. Click this button, the following will be displayed:

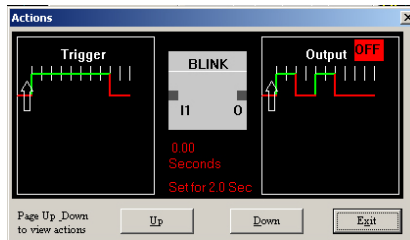


Fig. 3. 15 Showing of the Time Schedule Function Block

In this window, if you click [Up] or [Down] button, it will work as parameter setting showing function block.

2. Function block with counter

UDCT, Blocks with counter that can count up and down, whose Properties Setup dialogue box is as shown in Fig. 3.16:

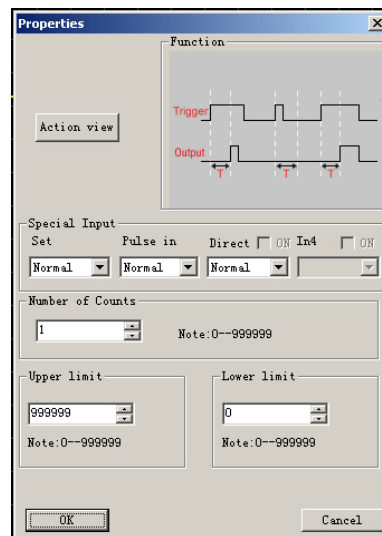


Fig. 3 . 16 Setting Properties for Blocks with Counters

Special Input

- ※Set: Set signal input and reset the counter.
- ※Pulse in: Counting pulse input terminal.
- ※Direct : Counting direction controlling terminal: “Force ON” counting downward, “Force OFF” counting upward.
- ※Number of Conts: Setup counting value of the counter. The range of the counting value is 1—999999。

3. Properties of RS relay

The dialogue box of RS relay properties setting is as shown in fig. 3.17.

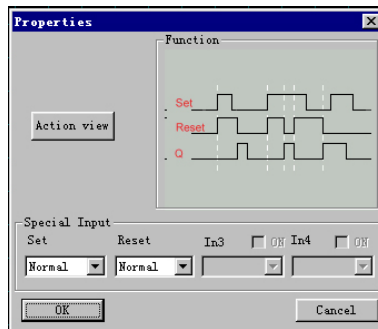


Fig. 3.17 Setting Properties for RS Relay

Special Input:

※Set:

※Reset:

4. Properties of CW Clock Switch Block

The Setup dialogue box is as shown in Fig.3.18

Clock setup: In this setting, the status of output can be regularly changed. Six options, year style, quarter style, month style, week style and date style, are provided to meet the particular requirements of users.

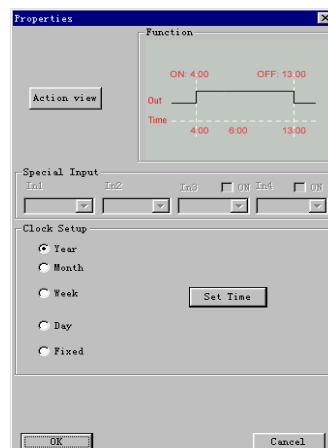


Fig. 3. 18 Setting CW Clock Switch Block Properties

※If Year Style is selected , and **Set Time** is clicked, the frame of setting time will be on and you can set up to 128 intervals for the time switch. Please note that you should set the time according to a time sequence.

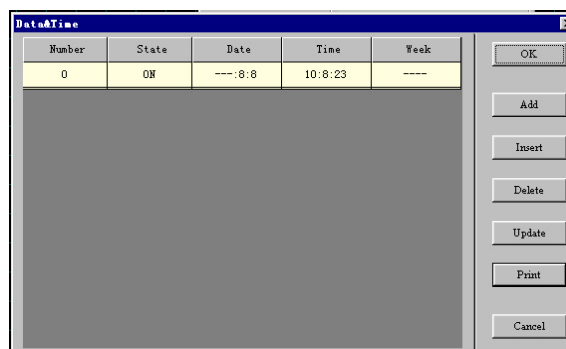


Fig. 3.19 Setting Clock Mode

Time Setting:

- ※ Add: When you need to add a time, click “add” button, the dialogue frame as in Fig. 3.20 will be displayed:

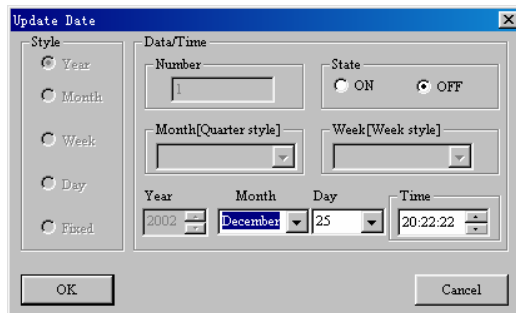


Fig. 3.20 Setting Time

- ※ In this window, you may set the needed time according to the prompting contents in the dialogue window. After setting, click “OK” and a time record will be added.

Notes: *They must be set in a time sequence.*

- ※ Insert: When you need to insert a time in the existing time setting combination, please click **INSERT** and a dialogue box will appear, as shown in Fig.3.21.



Fig. 3.21 Inserting Time

Notes: In Year Style, only ON/OFF month and detailed time can be set, for it is set year as the period. As for the detailed introduction of the time module, please refer to Chapter IV of Part I.

- ※ Delete: When you want to delete a time, put the cursor on the said time record and click **CANCEL**. When the Confirm Cancel frame appears, click **OK** to cancel the said time record.
- ※ Update: When you want to update a time, put the cursor on the said time record and click **UPDATE**. As a time setting frame, similar to that shown in Fig.3.20 appears, reset the time, click **OK** and the said time record is modified.
- ※ Print: When you want to print your set time on paper then click “Print” .

Notes: Year Style set year as the cycling period, month style set month as the cycling period, week style set week as the cycling period, date style set date as the cycling period, and fixed date style set to open or close in the fixed time. Their setting is about the same. As for these five modules, please refer to the introduction to the time module.

5. Setup for Analog block.

The diagram of property of analog block AN is as fig 3.22.

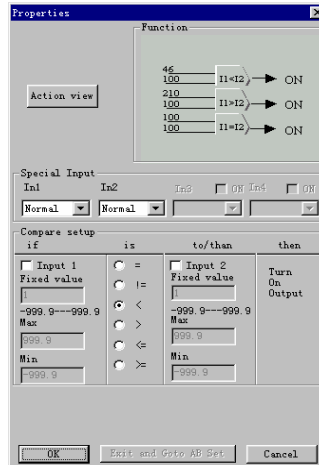


Fig 3.22 Setup of Property of Analog Block

- ※ Action view: show the function of the analog comparison module. The displaying diagram is as in Fig. 3.23. It can clearly and directly describe the running process of the analog comparison.
- ※ In1 and In2 is analog input terminal. The range of the input analog is 0.0-10.0v.
- ※ Compare Setup: Set up the voltage value of Input 1, relation and voltage value of Input 2. And the range of the input value is 0.0-10.0.
- ※ Relation: It provides “<,>,<=,>=,!=,” 6 options. And this comparison block is for comparison between Input 1 and Input 3.

For example: When < has been selected,

if input 1<input 2, then Q=1. if input 1>input3, then Q=0.

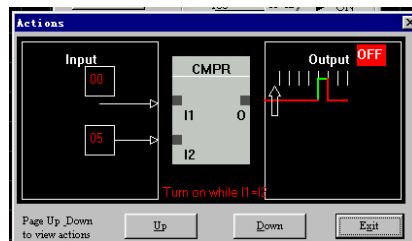


Fig. 3.23 Show of Analog Comparison Functions

6. TSEQ

TSEQ realizes the output in the set time of the outputs. The dialogue box of property of TSEQ is as the following diagram:

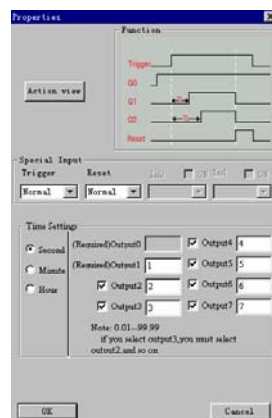


Fig. 3.24 Dialogue Box of the Property of TSEQ

- ※ Action view: view the switching action process of TSEQ in simulation.
- ※ Trigger: When the trigger is effective, the TSEQ starts to act.
- ※ Reset: When the reset terminal is effective, the TSEQ stops acting.
- ※ Time Settings: Set the unit and length of the time.

Function Description:

When Trigger terminal in high potential is triggered, the TSEQ starts timing and the corresponding outputs will be connected at the set time in turn. The range of the time is 0.01-99.99 hours. When setting, if you select the Output3, the Output2 must be selected at the same time.

7. SSEQ

The dialogue box of property of SSEQ is as the following diagram:

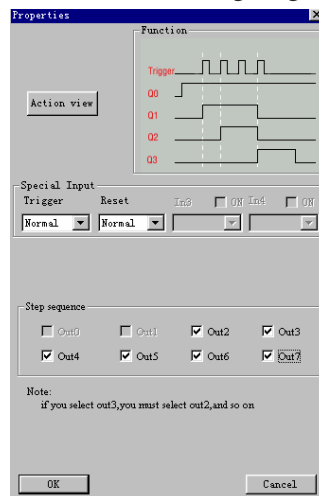


Fig. 3.25 Dialogue Box of the Property of SSEQ

- ※ Action view: view the switching action process of SSEQ in simulation.
- ※ Trigger: When the trigger has pulse input, the SSEQ starts to act. Every time a pulse output will connect one by turn.
- ※ Reset: When the reset terminal is effective, the SSEQ stops acting.
- ※ Time Settings: Set the unit and length of the time.

Function Description:

The SSEQ is working as the following step. When Trigger terminal has pulse inputs, as the first positive pulse is inputting, Out2 outputs. The next pulse connects Out3 and thus in turn. When Out7 is connected, the next pulse will make the Out2-Out7 terminal open. And then it will repeat the above procedure until the Reset Input is in 1.

Notes: When Out3 is selected, the Out2 must be selected and thus in turn. When Out7 is selected, all the output points before it must be selected.

8. Hour Increase and Descend Module

The dialogue box of property of Hour Increase and Descend Module is as the following diagram:

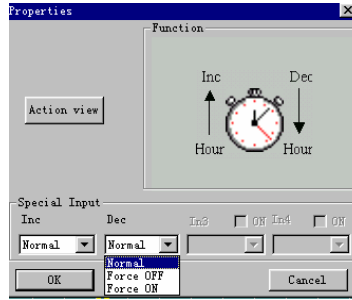


Fig. 3.26 Dialogue Box of the Property of Hour Increase and Descend Module

- ※ Inc: When this pin is coming a positive pulse, the system time will add an hour automatically.
- ※ Dec: When this pin is coming a positive pulse, the system time will minus an hour automatically.

9. Timer/Counter Comparison Module

The dialogue box of property of Timer/Counter Comparison Module is as the following diagram:

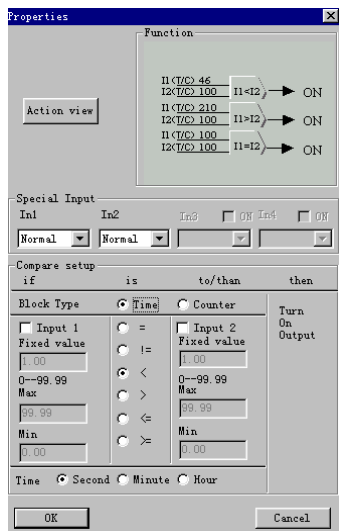


Fig. 3.27 Dialogue Box of the Property of Timer Comparison

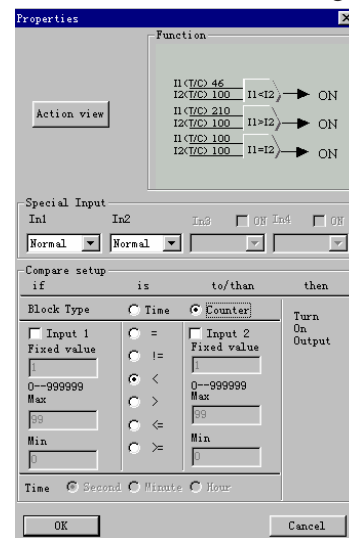


Fig. 3.28 Dialogue Box of the Property of Counter Comparison

- ※ Action view: Simulate the action.
- ※ Option of Time and Counter: the range of the time is 0.01-99.99 hours, and the range of the counting is 0-999999.
- ※ It provides “<,>,<=,>=,!=,” six options. And this comparison block is for the comparison between Input 1 and Input 3.

Function Description:

Timer/Counter Comparison is the same as the Analog Comparison. It is just that here the time and the counting value is companioned. The input of this comparison is connected with TSEQ and counter, such as TOND, TOFD, BLNK and so on module and counter with time schedule.

10. Set of the Connection Point Module

Connection Point Module is the two points of a connection wire, using the connection point to reduce the length of the wire. There are two kinds of connection points: output connection point and input connection point. The input connection point and the output connection point of the

same marked number is regarded as the same point. The dialogue box of property of connection point is as the following diagram:

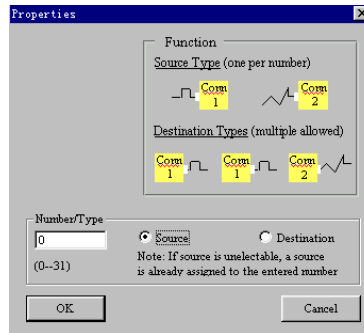


Fig. 3.29 Set of the Connection Point Module Box of the Property of Counter

- ※ The range of the marked No. of the connection point is 0-31
- ※ Source: As the output of the module, it is the source of the wire.
- ※ Destination: the input connection point of the module.

Application of the connection point:

The program diagram is as in the following diagram:

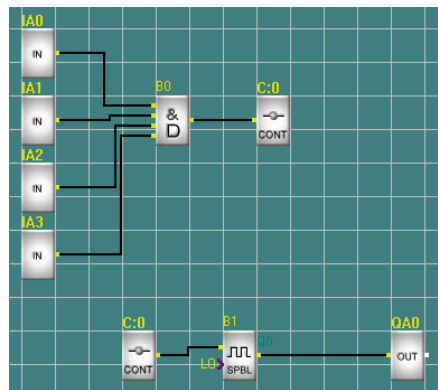


Fig. 3.30 Application of the connection point

Notes: In this program, C0 is the two connection points of the wire, that is to say that, the output of B0 is connected to input of B1.

Chapter IV Basic Operation

This chapter will tell you how to write logic function graph Program with Super CAD. How to simulate the Program you write with Super CAD; How to communicate between PC and SPR with Super CAD; How to copy system document of SPR with Super CAD, then complete the update of application and system Program code.

If you want to write a function graph Program, first of all, it's necessary to start an empty document, then put the function block into editing box and setting the property of every function block, then link every function block according to logic controlling relation, thereby complete the protracting of a logic function graph. In addition, in order to help the users confirm if the function graph accord with the prospective controlling result, Super CAD also provides most intuitionist function of simulation. You can get the moving result of the program through simulation of the function graph.

Now an actual example will show you how to write function block Program with Super CAD,

Eg: To use SPR constitutes more -function switch, which will be used in airiness system.

Requirements: Airiness system can not only give fresh air indoor, but also can vent exhaust air outdoor.

1. Exhaust air venting equipment and fresh air giving equipment must be installed indoor.
2. Airiness system is dominated by controlling monitor.
3. Air pressure willn't be allowed indoor anytime.
4. Only flux monitor show that exhaust air venting equipment works well, fresh air giving equipment will be used.
5. If a fault appeared in airiness system, alarm light will be bright.

4.1 Open File

4.1.1 Open New File

Operating method:

To open a new file, click 'New' option of menu 'File' once with left button of mouse ,or click



once in toolbar. As shown in the following fig.

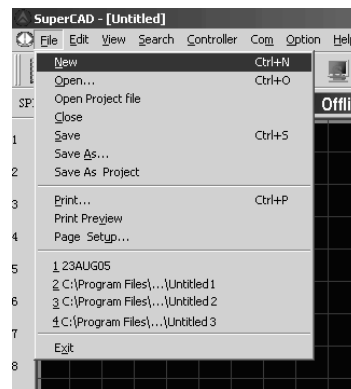


Fig 4.1 Open New Document

Notes: An option Window of outside-meet extended module will appear before a new document be opened.

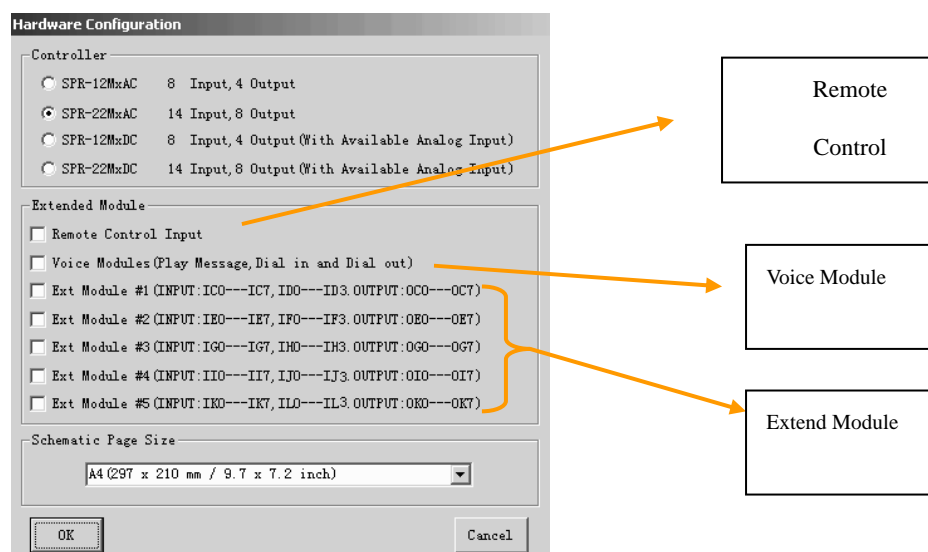


Fig 4.2 The add of remote

Main Type:

Choose type of the SPR mainframe.

Extend:

Remote Control Input: The add of remote input module;

Voice Modules (Play Message, Dial in and Dial out);

The rest is the quantity of extend module to add.

If you haven't choose while open a new document, choose 'Modify System Config' in menu 'Option' to config again.

4.1.2 Open Existed Document

Operation Method:

1. To open a document, click 'Open' option of menu 'File' once with left button of mouse ,or click



once in toolbar, shortcut key 'Ctrl+O' also can be used. As shown in Fig 4.2:

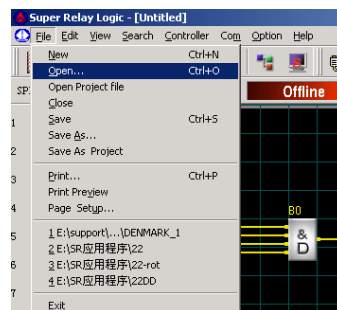


Fig 4.3 Open Existed Document

2. Click 'Open' once, find the path of saving file, dialogue box as follows:

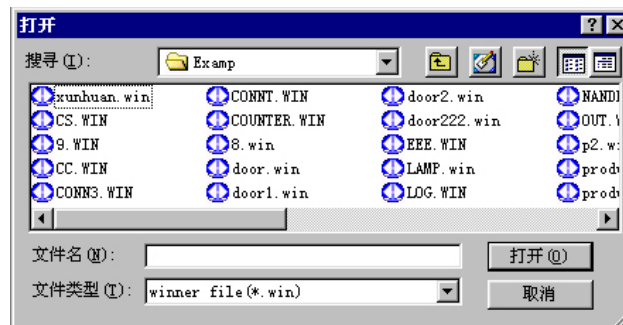


Fig4.4 Dialogue Box of Existed Document

3. Click the file you want to open with left button of mouse, then click button "Open", opened the document, you can modify or print the document.

4.2 Write Function Chart Program

4.2.1 Place Function Module

While you set up a new document, then you can write your control Program in the new edit box, the method and process of placement is as follows:

The method of placing function module is as follows: choose function block needed from the module storeroom right of the edit box.

Operation Process:

1. Choose corresponding module group, if you choose basic module, click button “Log” with right button of the mouse, if you choose special function module, click button “Fun” with left button of mouse; click “I/O” to choose input/output module.
2. Click the module you needed with left button of the mouse.
3. Move the mouse to the proper place in the function graph edit box, click with left button of the mouse, then complete the placement of a module.
4. According to above operation, put all modules in edit box.

E.g.: To complete all the function module of the airiness system control, as Fig 4.4 shown, put all the function module into the edit box.

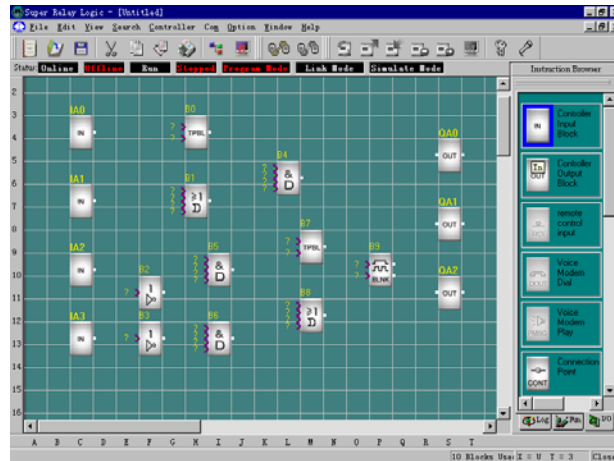


Fig4.5 Place Module

4.2.2 Introduction of Function Module Storeroom

All the module needed in writing function graph is stored in module storeroom, such as basic function module, special function module and input/output module. When mouse is moved on the function module, function cue of the function module will appear automatically, and the right side of the module will appear the statement of the function module. Click button “Log” under the module storeroom with mouse, to display basic function module; Click “Fun” to display special function module; Click “I/O” to display input/output function module. As shown in 4.6(a),4.6(b),4.6(c):

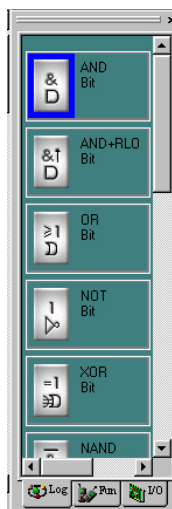


Fig4.6 (a) Basic Module

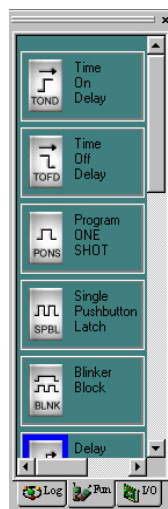


Fig4.6 (b) Special Module

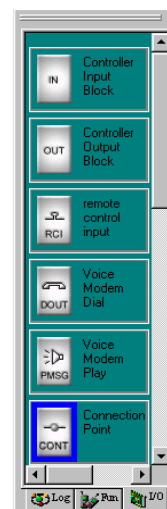










Fig4.6 (c) Input/output Module















Attn: Scroll bar right of the sleek function module storeroom could display all function modules.

4.2.3 Function module Graph









1. Basic function module

Module Graph	Function	Module Graph	Function
	AND		XOR
	AND +RLO		NAND
	OR		NAND+RLO
	NOT		NOR

2.Special Function Module

Module graph	Function	Module graph	Function
	Put through postponed		Omnipotence counter
	Cut postponed		Clock Switch
	Single impulse relay		Simulated Compare Machine
	Impulse relay		Time Order
	Clock Impulse relay		Step Order
	Keep through and postponed Relay		Add/Minus Clock
	RS Relay		Time Data compare

3.Output Module Chart

Function Chart	Function	Function Chart	Function
	Control in and out		Telephone Module
	Control output		Voice play Module
	Double audio frequency pulse		Node
	Remote control input dot		LCD Edit Module

Notes: About the specialty of each function block, please read chapter III of part I in this state book.

About the application of LCD edit module, please read chapter V of part I for reference.

4.2.4 Property of Edit Function Module

After put all function module in edit box, it's necessary to setup property of every function module. This is the most important step to write function module Program.

Operating Method:

1. In the function module Program edit box, click some module twice with left button of the mouse, or pitch on a module and press right button of the mouse, then an edit menu appears, and then click “Properties...” of this menu.

As shown in fig4.7:

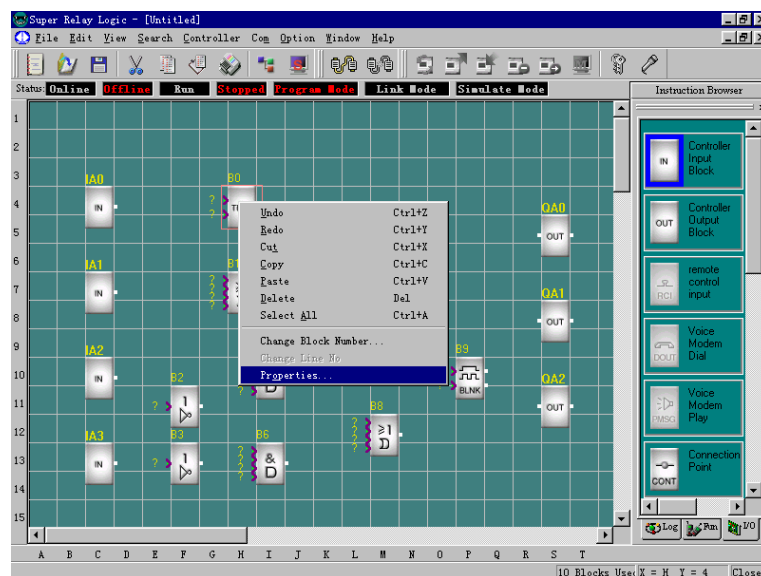


Fig 4.7 Module Operation Menu

2. Property dialogue box, as shown in fig4.6, to setup each item of content according to what you need, you also could click “Action view” to observe the action process of this module.

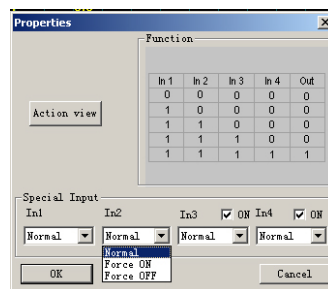


Fig 4.8 Dialog Box of Property setup

Attn:Different module has different property setup, especially the property of special function module, please read chapter III, part II of the explanation to refer the detailed setup.

4.2.5 Setup link

After put all the modules needed in protracting function graph, and set up properties as needed, it's necessary to set up link according to logic control relation and make it an integrated function diagram.

Operating Method:



1. Pitch on shortcut key , when the mouse becomes the shape of a pen, it can be used to link.
2. When the mouse be moved to input & output port, the shape of the mouse is “+”, this means you can press the left button of the mouse to confirm one dot of the link, at that time press left button of the mouse once and move it to the output port (input port) of the next module., system could set up link automatically, as shown in fig4.8:

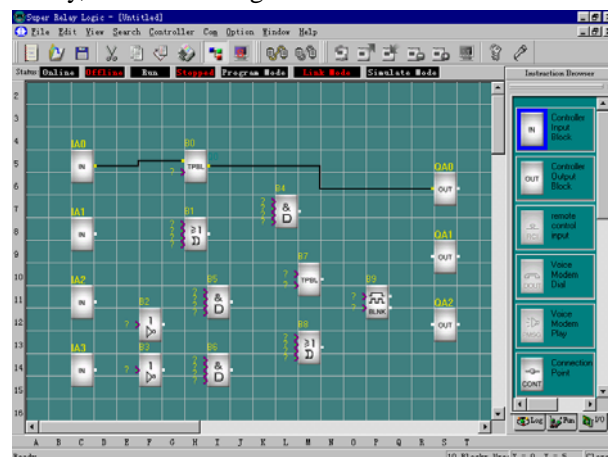


Fig 4.9 Set up Module Link

3. Repeat above operation; link all the function module according to definite logic relation.
4. Modify the tab of the module: press left button of the mouse above the module, dialog box as fig 4.9 appearances, select “Change Block Number”, dialog box as fig 4.10 will flip out, it's time to modify the tab of the module.

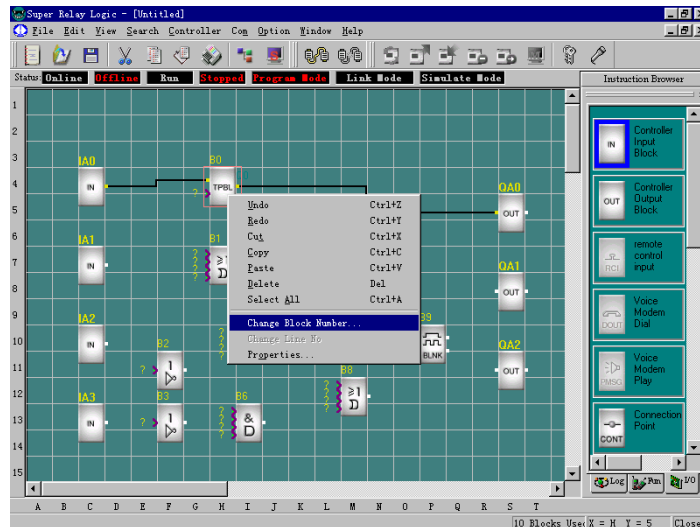


Fig 4.10 Modify Module Tab

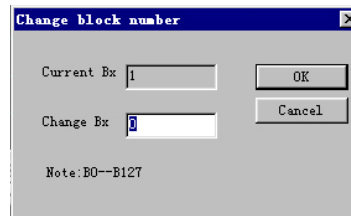


Fig 4.11 Dialog Box of Modify Tab

5. In the state of link, if you want to cancel link, please press right button of the mouse.

4.2.6 Delete Module or Delete Link

When you put some needless module in edit interface box or link some default ones, need to delete, operate as follows:


1. Pitch on module or link needed to delete with mouse.
2. Press “Delete” in the keyboard, or click right button of the mouse, select option “Delete” in the menu. then you can delete the module or link.

4.2.7 Simulation Operation

Super CAD not only could edit function diagram, but also have the function of simulation operation. After you finish the edit, you can start the function of simulation operation, to examine Program accord with your control logic or not.

Operating Method:

1. Click “Start” in “Simulation” under the menu “Controller” with left button of the mouse. As

shown in fig4.11: It’s time to start program of simulation, or click “”in the toolbar with mouse, it also can open simulation operation interface. It shows as fig4.12.

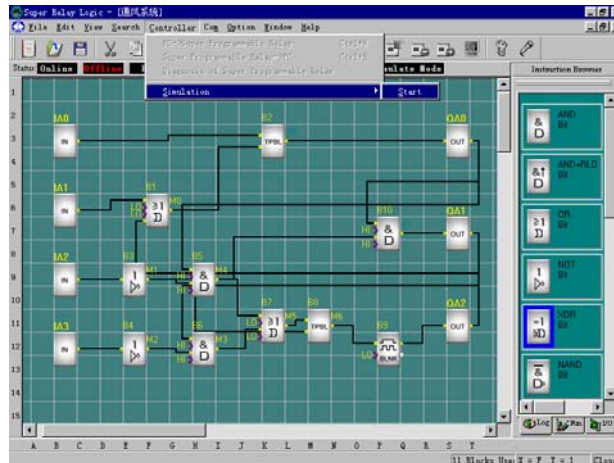


Fig 4.12 Start Simulation

- Click input module with mouse, it can change the state of input, state displays “ON” and “OFF” in the output point of the module, so you can observe the state of input or output.



- Click button again, to terminate the operation function of the module.

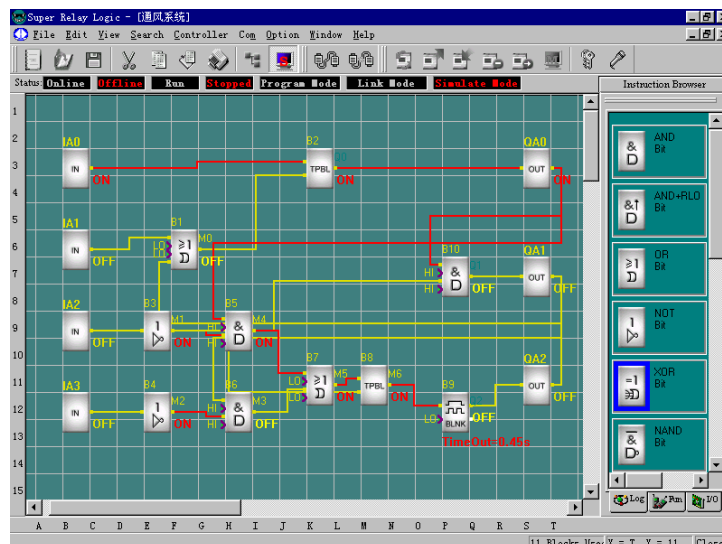


Fig 4.13 Simulation Operation

Attn: In above graph, you can not only see “ON” or “OFF” state of input and output, but also the output state and the current state of timing and counting of all modules. Through this simulation operation graph, you can exam the program accord with the prospective control requestment or not.

4.2.8 Save and Print

Operating method of file saving

- To save a Program, click option “save” or “Save As” under menu “File” with left button of the



mouse, as shown in Fig 4.13, or click button “”under toolbar.

- A dialog box shown as fig 4.14 appears, you can set up saving path and file name in this box.
- After the setup of the file saving path and file name, click “save” to save file in the appointed path, then complete to save file.

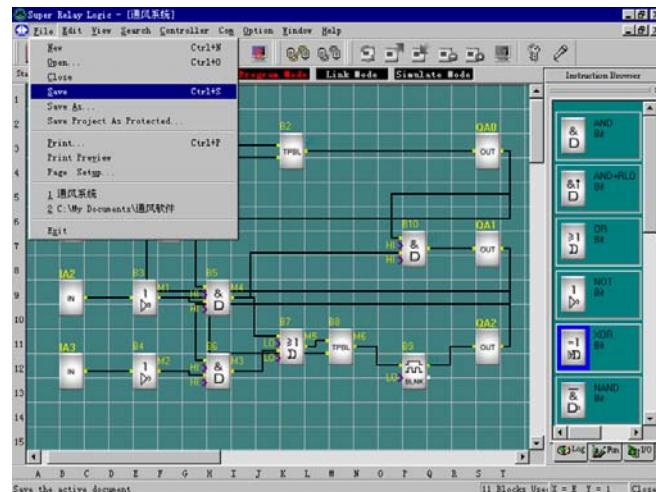


Fig 4.14 Save File Menu

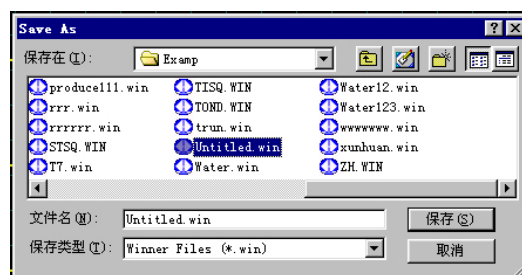


Fig 4.15 Save File Dialog Box

Operating Method of Printing File

1. Click option "Print" under menu "File" with left button of mouse.
2. Dialog box as shown in fig 4.16 appears, set up your printing requirement according to the cue of dialog box.
3. Click "confirm" with left button of mouse, then your file will be printed in your printer.

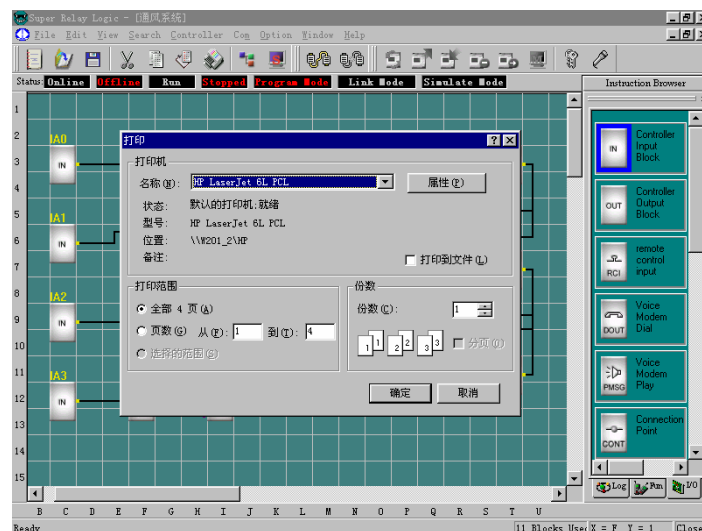


Fig 4.16 File Print

4.2.9 Modify Password and Read the Program


Operating Method:

- a. First of all, link SPR with your PC through special communication thread SPR-PC, as

shown in fig 4.17:



Fig 4.17 SR Communication Link Graph

b. Open application software Super CAD, set up a new document, then open computer com, click option “Configuration” under menu “Com” with left button of the mouse, or click “” in toolbar, dialog box shown as fig 4.18 appears, then select your communication port and speed.

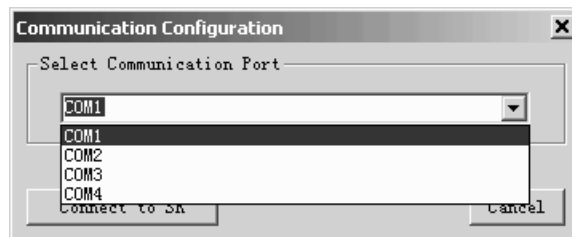



Fig 4.18 Set Up Port and Baud Rate

1. Setup Password and Time

I. SPR permit you to set up password for your Program, only input right password, you can write, read and modify your Program.

Operating method of setup password

a. Click button “” with left button of mouse, dialog box shown as fig 4.19 appears:

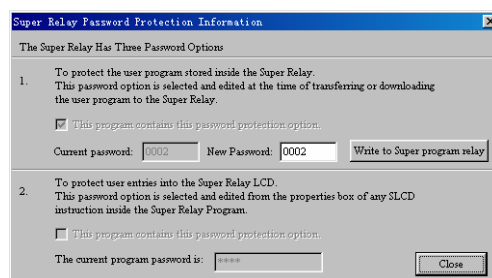


Fig 4.19 Modify Password

You can modify communication password of your SPR mainframe in this dialog box.

- b. Input new password in edit box after “New Password”, “write to Super program Relay”, and dialog box of modifying password success appears.

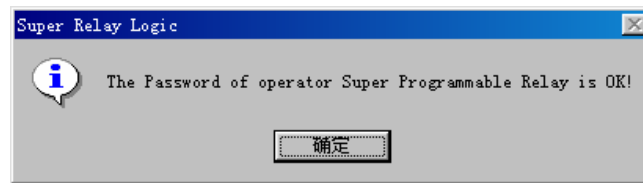


Fig 4.20 Modify Password Succeed

II. You can set up time for SR

Operating Method:

- c. Click option “Set Super Program Relay’s Time” under menu “Option” with left button of the mouse, or click “” under toolbar, dialog box appears shown as fig 4.21.



Fig 4.21 Modify Time Interface

- d. Display system time in this dialog box, click “”, cue shown as fig 4.22 appears, to renew time of SPR succeed.




Fig 4.22 Setup Time Succeed


Operating Method of Setup Time

2. Write/Read Function Block Program

After you debug the function graph successfully, need to read-in SPR, operate as following process.

Operating Method of read-in Program

- a. First of all, link the connection like fig 4.17.
- b. Open the port of computer, click option “Configuration” under menu “Com”, or click “” in toolbar, dialog box shown as fig4.18 appears, select your communication port and speed.
- c. click option “PC->Super Programmable Relay” under menu “Controller”; or click button

“”in toolbar, dialog box shown as fig 4.23 appears, input your password (attn: the original password is 2002).

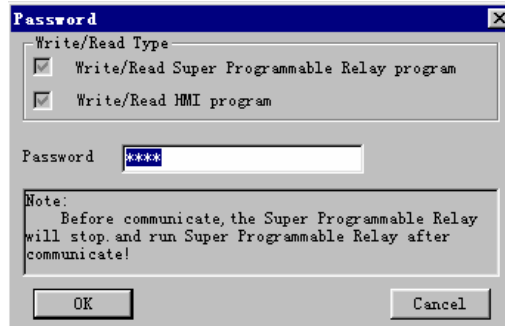


Fig 4.23 Confirm Password

d. Click button “OK” with left button of mouse, start update Program, dialog box shown as fig 4.24 display update Program course.

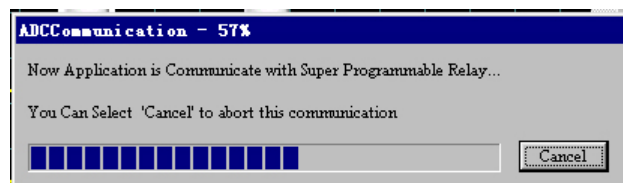



Fig 4.24 Update Program Process

Attn: After the Program update, SPR will run the Program automatically, need not restart.

Operating Method of Read Program:

- a. Click option “Super Programmable Relay->PC” under menu “Controller” with left button of mouse, or click “”under toolbar, dialog box like fig 4.23 appears, input your password (Attn: the original password is 2002)
- b. Input the right password, press “OK”, start read Program, shown as following fig:

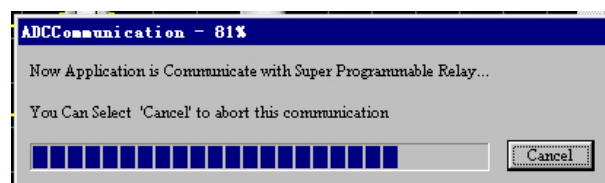


Fig 4.25 Read Process