CHAPTER 6
SYSWIN program for programming a PLC controller

KJE555 - PLC

Introduction

- SYSWIN is a software designed for OMRON programmable controllers class C and CV

- It is designed for creating and maintaining a program, as well as for testing PLC controller function, in off-line and controller's operational regime

Introduction (2)

- Necessary conditions for starting SYSWIN are Microsoft Windows environment on a standard IBM or 386/486 compatible or Pentium computer, with 8MB RAM at least, and 10MB free disc space

Connecting a PLC controller with a PC computer

- PLC controller is linked with a PC computer through an RS-232 cable
- One end of the cable is connected to a serial PC port (9-pin or 25-pin connector), while the other end is connected to an RS-232C connector on RS232 module of a CPM1A controller

Connecting a PLC controller with a PC computer (2)

- In order to establish a connection with a PC, DIP switch on the connector must be set in "Host" position
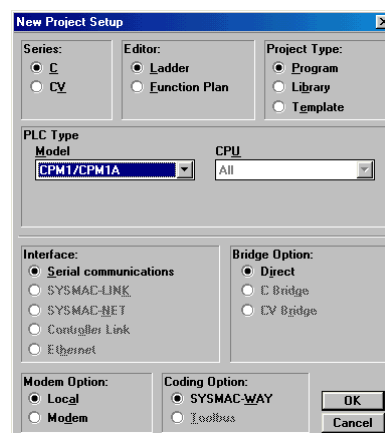
SYSWIN program
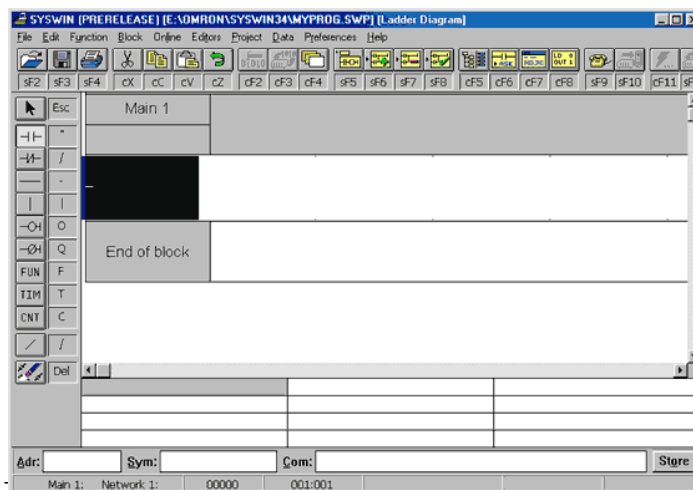
Writing your first program

- Writing a program begins with New Project option from a File menu. In a message window that appears you need to select options as in picture below

Writing your first program (2)

- Project > Project Setup

Writing your first program (3)

- Select a PLC controller by clicking on OK, and a program is ready to be used
- It is recommended when you begin working that you write in a header a title of a program, author's name and inputs/outputs used

Writing your first program (4)

- Program written here is just a basic program made for learning Syswin
- Program can detect when a key has been pressed and can activate a relay at the PLC controller output
- As long as the key is pressed down, a relay is active

Writing your first program (5)

- Operation of a relay and a key can be followed via LED diodes on PLC controller housing
- It is very important to use addresses in a regular way when programming with SYSWIN
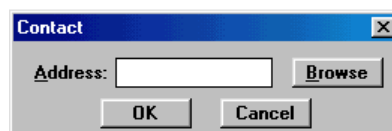
Writing your first program (6)

- Addresses can have two parts, first refers to the word address, and the second to bit address in that word (both numbers must be separated by a period)
- For example, if address 200 is used, SYSWIN will interpret this as 2.00, and a zero bit whose word address is 2 will be called for

Writing your first program (7)

- If you wish to access word 200 or its zero bit, you must use a call 20000, or better even 200.00
- In this example address 000.00 is assigned for input address (key)
- This address represents a zero bit for word 000 from memory region IR

Writing your first program (8)

- By connecting a key to it, and to one of the COMM terminal screws, a needed connection between PLC controller and keys is established
- Address dialogue box for a bit that contact refers to

Writing your first program (9)

- When you have written in 000.00, select OK, and first segment of the program will come up
- Bit address will appear above the symbol with two vertical lines which refers to this bit, and a black rectangle will move one space to the right

Writing your first program (10)

- First element of a program myprog.swp
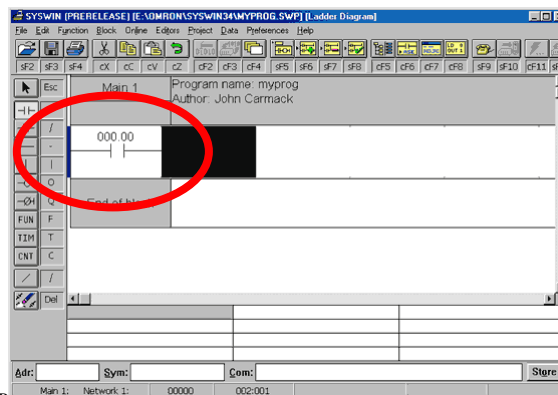
Writing your first program (11)

- When a condition is entered, you also need to enter a corresponding instruction that is set off by an execution of the condition
- In this example it is a relay controlled by a 00 bit in a word 010 of memory region IR
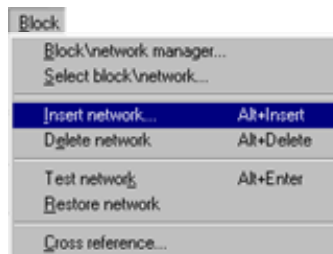- Set the address for the output bit 010.00

Writing your first program (12)

- Program done so far looks as in picture below
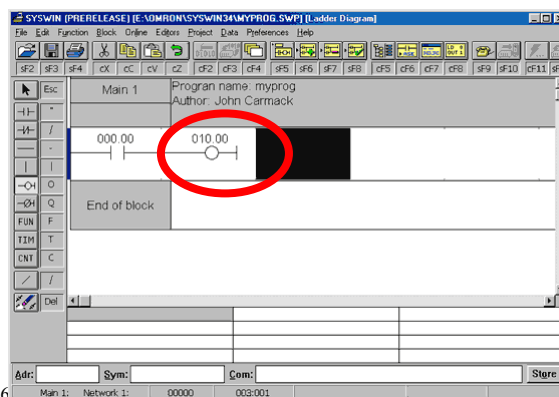
Writing your first program (13)

- Two basic options, *Insert network* and *Delete network*
- Adding a Network is done with Insert network command from a Block menu

Block

|	
Block\network manager...	
Select block\network...	
Insert network...	Alt+Insert
Delete network	Alt+Delete
Test network	Alt+Enter
Restore network	
Cross reference...	

Writing your first program (14)

- When selecting this option, a small window appears where you need to select whether a new network will appear above or below the existing one

Insert Network

○ ABOVE Current Network
● BELOW Current Network

[OK]   [Cancel]
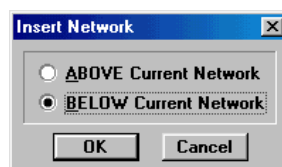
Writing your first program (15)
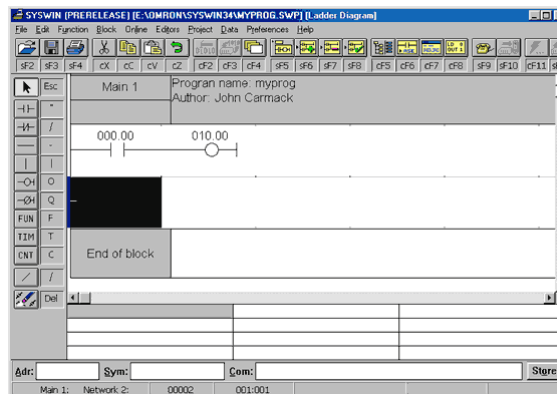
Writing your first program (16)

- Last network in every program must contain END instruction
- End instruction is found among the functions
- In order to come to it, you need to click on FUN icon following which a window as in picture below will come up
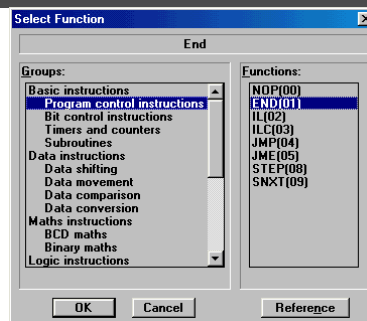
Writing your first program (17)

- END instruction can be obtained either by writing in "END" in newly obtained window or by clicking on Select which gives all PLC controller instructions sorted by the regions as in the following picture.
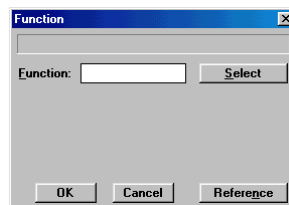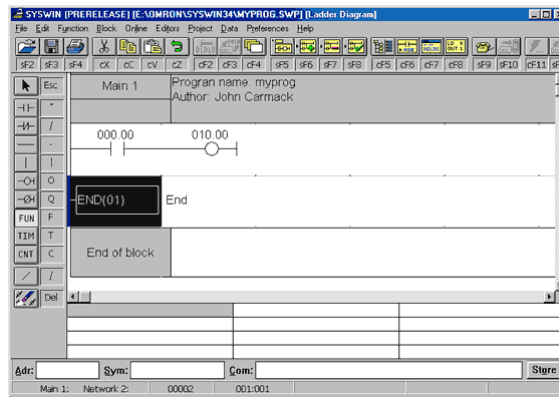
Writing your first program (18)

- By entering the END instruction your writing of a program is finished. Finished program looks as in the following picture

Writing your first program (19)

Saving a project

- Select Save Project option from a File menu, and write in the file name in a message window (myprog.swp in this case)
- After you click on OK, project will be saved
- You can access SYSWIN file contents only from SYSWIN; file type is identified by extension

Saving a project (2)

- Project.swp - SYSWIN program
- Project.swl - SYSWIN library
- Project.swt - SYSWIN pattern
- Project.swb - SYSWIN back-up file
- Project.prg - PMD program