Section 4 Print Function

Page

The print function consists of the following.

1) Common setting
2) Printout configuration setting
   - Ladder (program) printout
   - I/O device listing
   - Device use condition printout
   - Device cross-reference printout
   - System definition printout
3) Printer setting
4) Print preview

Here, the individual items shown above are explained.

4-1-1 Common setting

In the common setting, the heading, footer, margin, etc. which are common with items to be printed are set.

(1) Display of common setting dialog box and setting of contents

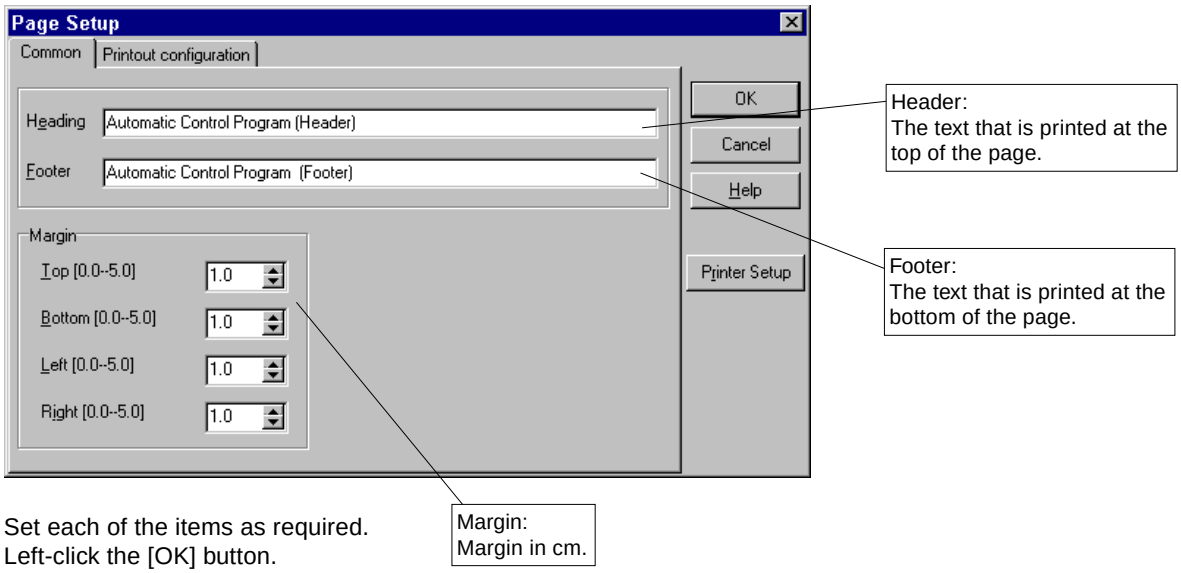
The common setting dialog box can be displayed by either of the following two methods.

1) Use the Page Setup command.

◊ Select the [Page Setup...] command from the [File] menu.
The {Page Setup} dialog box is displayed.
◊ Left-click the [Common] tab.
The dialog box shown below is displayed.

2) Use the Print command.

◊ Select the [Print...] command from the [File] menu.
The {Print} dialog box is displayed.
◊ Left-click the [Page Setup] button.
The {Page Setup} dialog box is displayed.
◊ Left-click the [Common] tab.
The dialog box shown below is displayed.



◊ Set each of the items as required.
◊ Left-click the [OK] button.

4-1 Outline of Print Function

4-1-2 Printout configuration setting

In the printout configuration setting, it is possible to set a scope and content of printout for each item (shown below).

- Ladder (program) printout
- I/O device list printout
- Device use condition printout
- Device cross-reference printout
- System definition printout

(1) Display of printout configuration setting dialog box

The printout configuration setting dialog box can be displayed by either of the following two methods.

1) Use the Page Setup command.

◊ Select the [Page Setup...] command from the [File] menu.
The {Page Setup} dialog box is displayed.

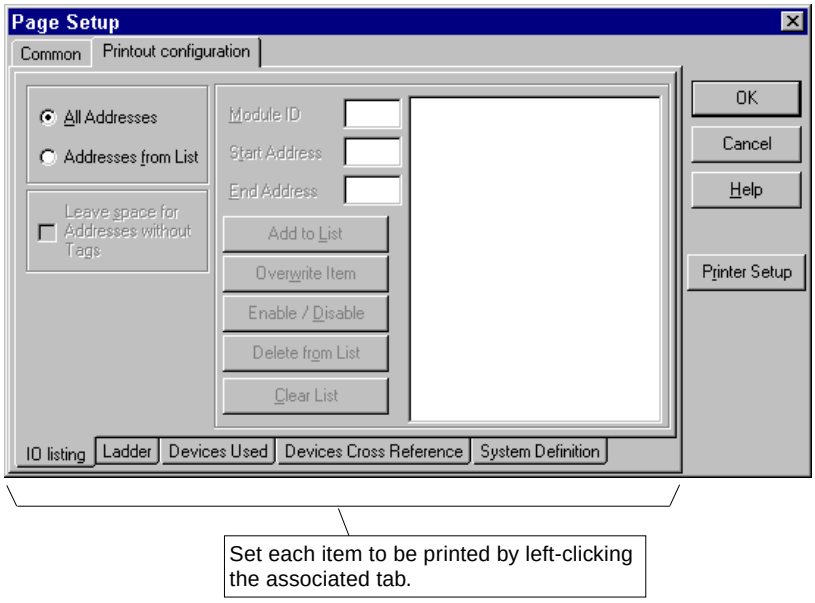
◊ Left-click the [Printout configuration] tab. (Normally, this tab is automatically displayed in the {Page Setup} dialog box.
The diagram shown below is displayed.

2) Use the Print command.

◊ Select the [Print...] command from the [File] menu.
The {Print} dialog box is displayed.

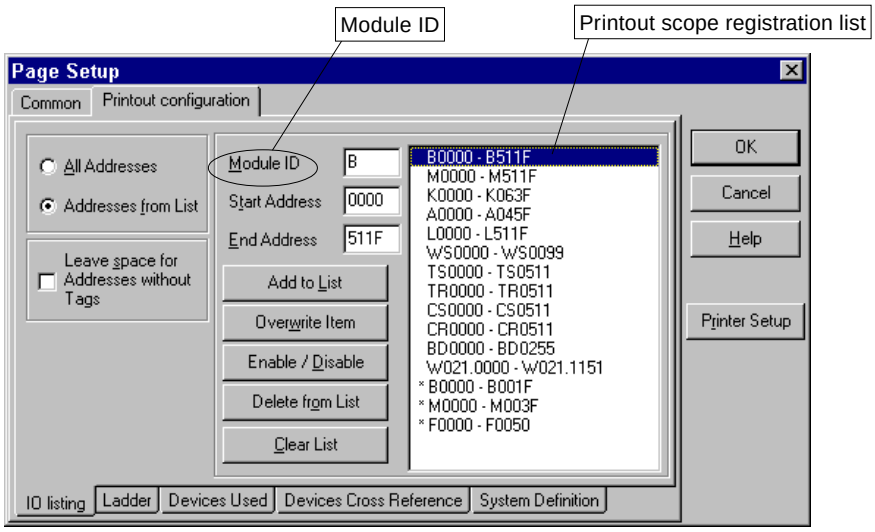
◊ Left-click the [Page Setup] button.
The {Page Setup} dialog box is displayed.

◊ Left-click the [Printout configuration] tab. (Normally, this tab is automatically displayed in the {Page Setup} dialog box.
The dialog box shown below is displayed.



(2) Setting of IO Listing

When this item is set, specified tags, memory addresses, and descriptive statements are printed in the form of a list.



<Explanation of the dialog box>

Optional [All Addresses] button:

Only the tags that have been registered in the Tag Editor are printed.

Optional [Addresses from List] button:

Only the tags of the memory addresses that have been registered in the printout range registration list are printed.

[Leave Space for Addresses without Tags] check box:

When this box is checked, even the memory addresses without tags are printed. To print only the memory addresses with tags, uncheck the box.

• Use of the "Printout Scope Registration List"

[Module ID] text box:

Enter the identifier of the memory module to be printed (B, M, K, WB, WM, WK, W30, etc.).

[Start Address] text box:

Enter the first address of the memory to be printed.

[End Address] text box:

Enter the last address of the memory to be printed.

[Add to List] button:

Left-click this button when registering the entries in the [Module ID], [Start Address], and [End Address] text boxes in the "Printout Scope Registration List."

[Overwrite Item] button:

Left-click this button when overwriting (changing) any item that has been selected in the "Printout Scope Registration List."

[Enable/Disable] button:

This button is used to specify whether or not to print any item that has been specified in the "Printout Scope Registration List." (Items with an asterisk (*) are printed, whereas those without an asterisk are not printed.)

[Delete from List] button:

Left-click this button when selecting and deleting only one of the items that have been registered in the "Printout Scope Registration List."

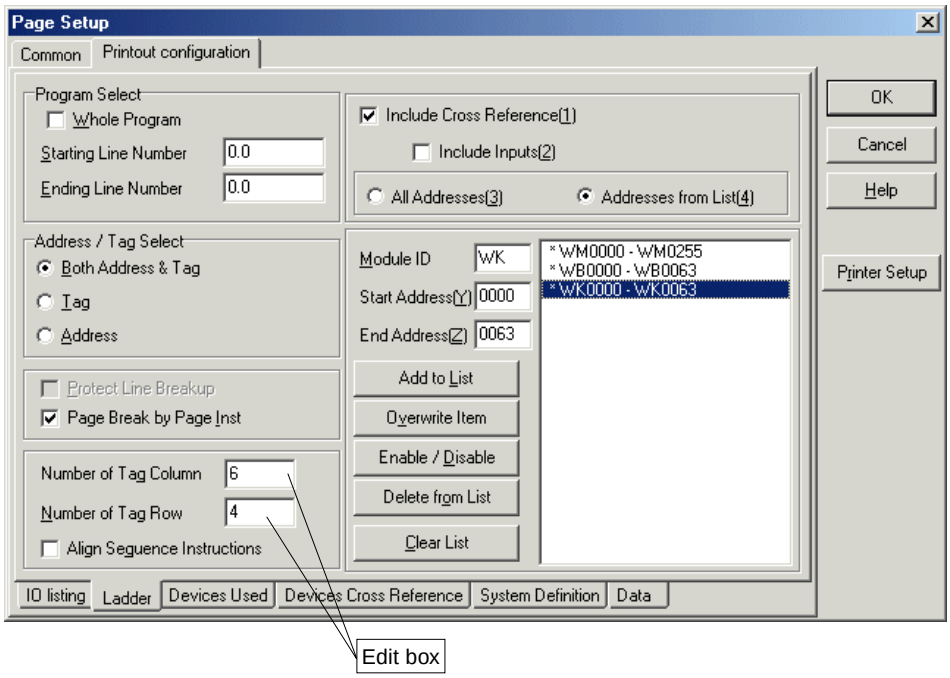
[Clear List] button:

This button is used to delete all the items that have been registered in the "Printout Scope Registration List."

* To delete registered items on a one-by-one basis, select the item to be deleted and push the <Delete> key.

(3) Setting of Ladder

When this item is selected, a program list is printed. It is possible to set either the whole program or any part of it to be printed.



<Explanation of the dialog box>

{Program Select} box

[Whole Program] check box:

Check this box when printing the whole program.

[Starting Line Number] text box:

When printing a part of the program, enter the starting line number (page number.line number) in this text box. Entry in this text box is valid when the [Whole Program] box is unchecked.

[Ending Line Number] text box:

When printing a part of the program, enter the ending line number (page number.line number) in this text box. Entry in this text box is valid when the [Whole Program] box is unchecked.

{Address/Tag Select} box

[Both Address & Tag] option button:

Left-click this button when printing the program with addresses and tags.

[Tag] option button:

Left-click this button when printing the program with tags only.

[Address] option button:

Left-click this button when printing the program with addresses only.

[Protect Line Breakup] check box:

Left-click this box when a line is not printed with one page. If this is checked the line will be printed from the top of the next page. When [Include Cross Reference(1)] is checked, this setting cannot be used.

[Page Break by Page Inst] check box :

To make form feed for each page instruction so that the page instruction be at the top of a page, set this check box to ON.

[Number of Tag Column], [Number of Tag Row] text boxes :

Specify the number of tag characters per row (6 to 24) and the number of rows (1 to 4).

[Align Sequence Instructions] check box:

Check this box when tag display width is fixed to the number of characters set in the [Specify Tag Width] edit box and sequence instructions are printed out at the same intervals.

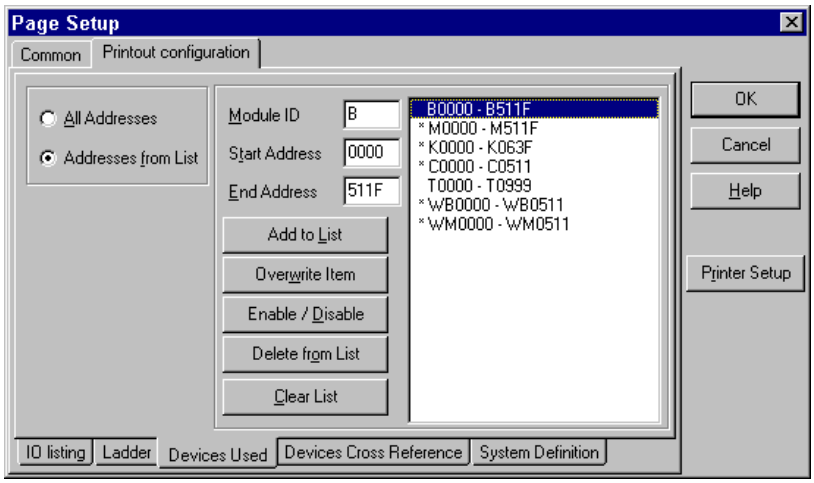
[Include Cross Reference (1)] check box:

Check this box when a ladder circuit with cross reference is to be printed.
When the [Include Inputs (2)] box is also checked, an input side cross-reference is added to the printout.
For a scope of addresses for cross-reference, left-click either [All Addresses (3)] or [Addresses from List (4)] optional button. When [Address from List (4)] is specified, the scope of memory addresses to be printed must be set.

For the method of setting the scope of memory addresses to be printed in the dialog box, refer to "(2) Setting of I/O Listing".

(4) Setting of Devices Used

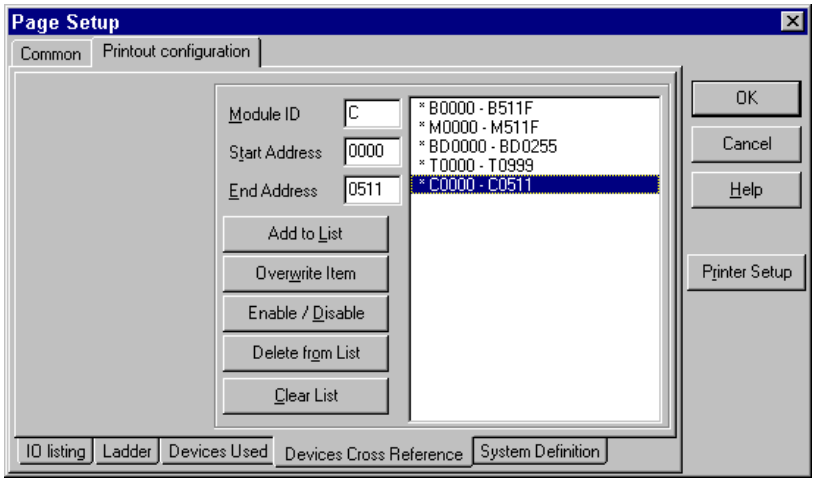
When this item is set, the conditions of use of the memory addresses (bit/word) used by a program are printed in the form of a table. It is possible to freely set a scope of memory to be printed using the following dialog box.



For the method of setting a scope of memory addresses to be printed in the dialog box, refer to “(2) Setting of IO Listing.”

(5) Setting of Devices Cross Reference

The cross reference indicates the line of a program in which each individual memory address is used. When this item is set, the cross-reference information is printed in the form of a table.
The scope of memory to be printed can be freely set in the following dialog box.

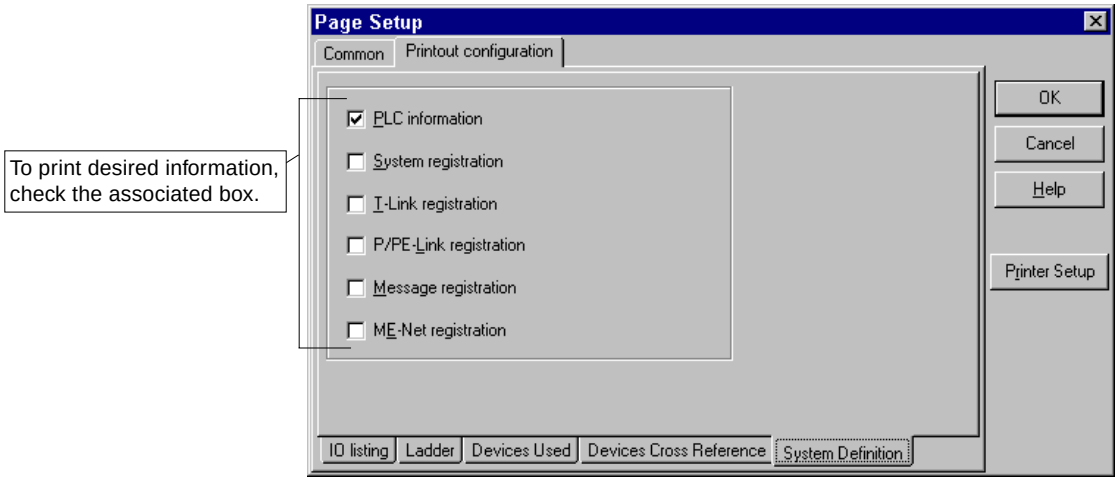


For the method of setting a scope of memory addresses to be printed in the dialog box, refer to “(2) Setting of IO Listing.”

By previously checking the memory addresses used by “Devices Used” and specifying the minimum scope of memory addresses required, it is possible to reduce the time required to print the cross reference and preview the printout.

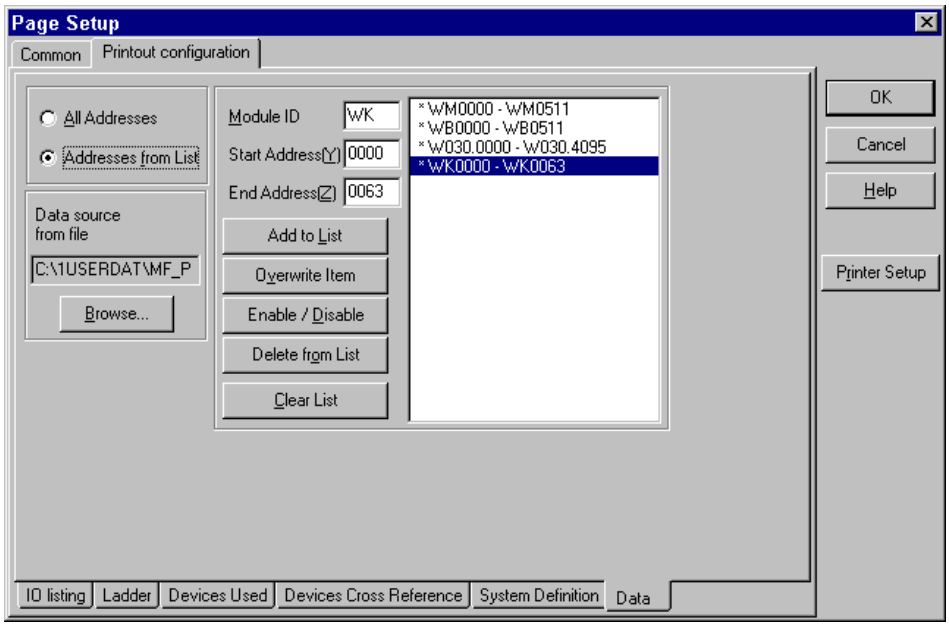
(6) Setting of System Definition

When this item is set, the system definition information that has been registered is printed.



(7) Setting Data Print

When this item is set, the content of the data file that has been saved with the data save command is printed out.



When the [Browse...] button is left-clicked, data files are displayed in the [Data file print] dialog box. From this list, select a data file to be printed.
For the scope of addresses, select either [All Addresses (3)] or [Addresses from List (4)].
In either case, the data in the up bit area of timer (T) and counter (C) cannot be printed.

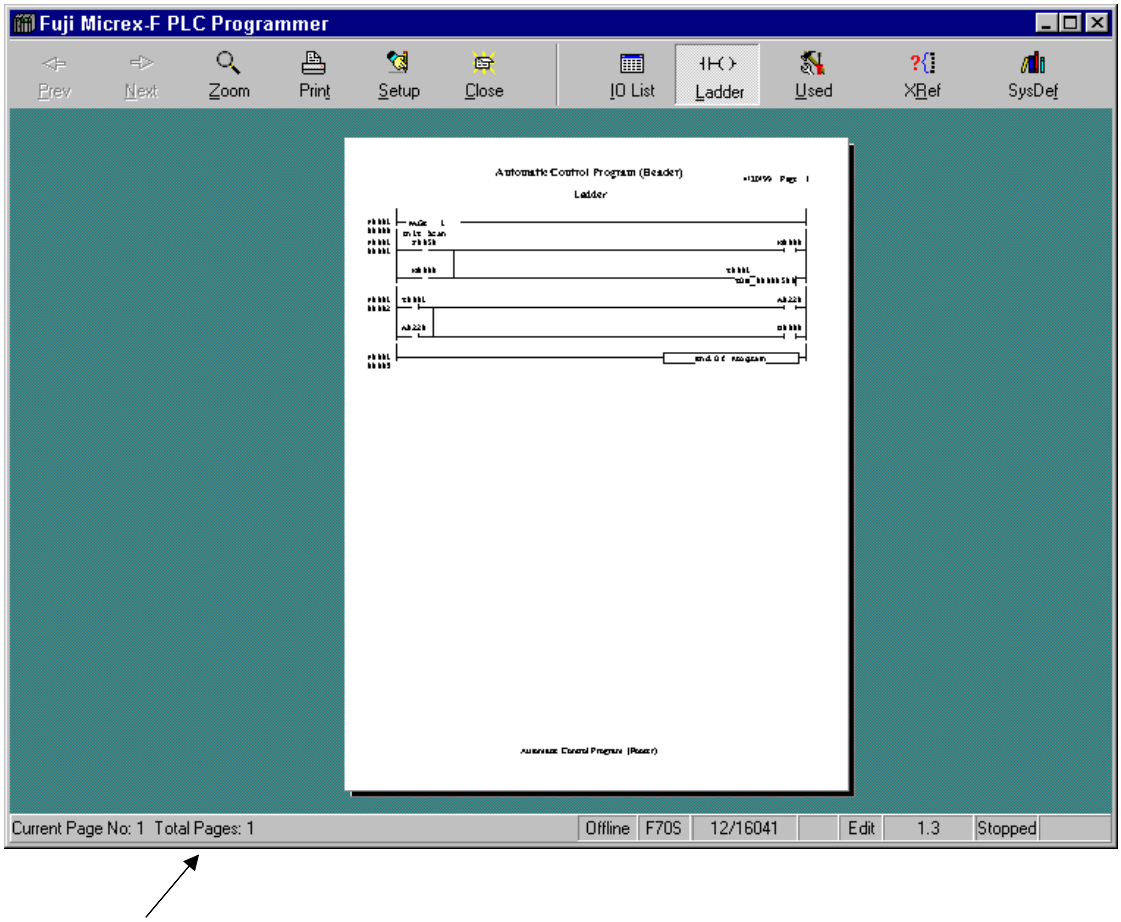
For the method of setting the scope of memory addresses to be printed in the dialog box, refer to "(2) Setting of I/O Listing".

4-1 Outline of Print Function

4-1-3 Print Preview

The Print Preview function permits the result of printout to be checked on the screen prior to the actual print operation. This function can be used with all the printout items, and the contents that have been set by the individual printout items (as explained in “4-1-1 Common” and “4-1-2 Printout configuration”) are reflected in the printout.

* The printer driver used for the print preview is the one that has been specified as “Set As Default” in the Printer Setup dialog box of Windows.



The total number of printed pages is displayed at lower left on the screen.

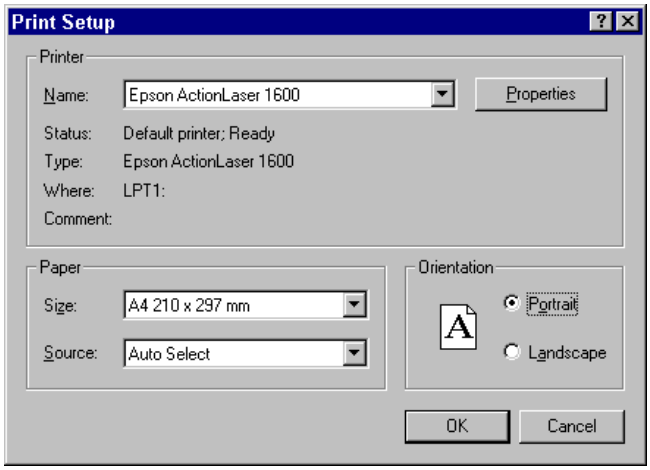
4-1-4 Printer Setup

In the Printer Setup dialog box, the output printer, printing method (paper size and source), etc. are set.

<Display of the Printer Setup dialog box>

To cause the {Printer Setup} dialog box to be displayed, left-click the [Printer Setup] button in the dialog box that is displayed when the [Page Setup] or [Print...] command is selected from the [File] menu (the {Page Setup} or {Print} dialog box).

The following {Printer Setup} dialog box is displayed.



Set the output printer name, paper size and source, etc. and left-click the [OK] button.

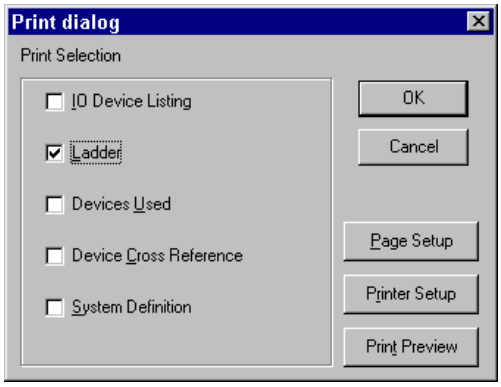
4-2 Print

4-2-1 Execution of print operation

After setting the appropriate items (refer to “4-1 Outline of Print Functions”), execute the print operation.

<Method of executing print operation>

◊ Select the [Print...] command from the [File] menu.
The {Print} dialog box is displayed.



◊ Check the box associated with the item to be printed.
◊ Left-click the [OK] button, and the print operation starts.
An example of printout of each item is given below.

4-2-2 Printout example

As a reference, examples of printout using the software are given below.

(1) Ladder printout

Automatic Control Program (Header)

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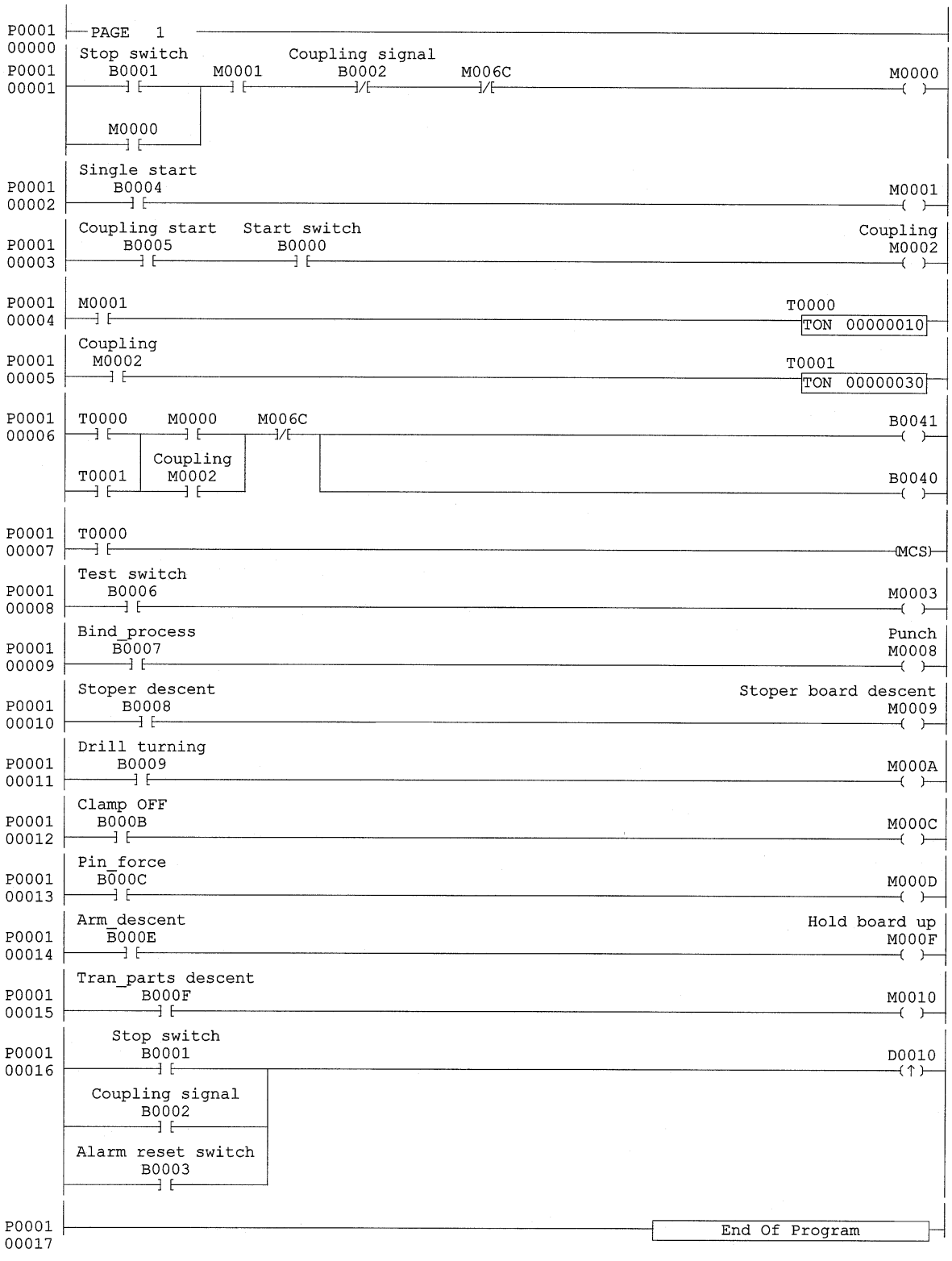
Sample2 - Ladder



Automatic Control Program (Footer)

Ladder printout (Cross Reference)

Automatic Control Program (Header)

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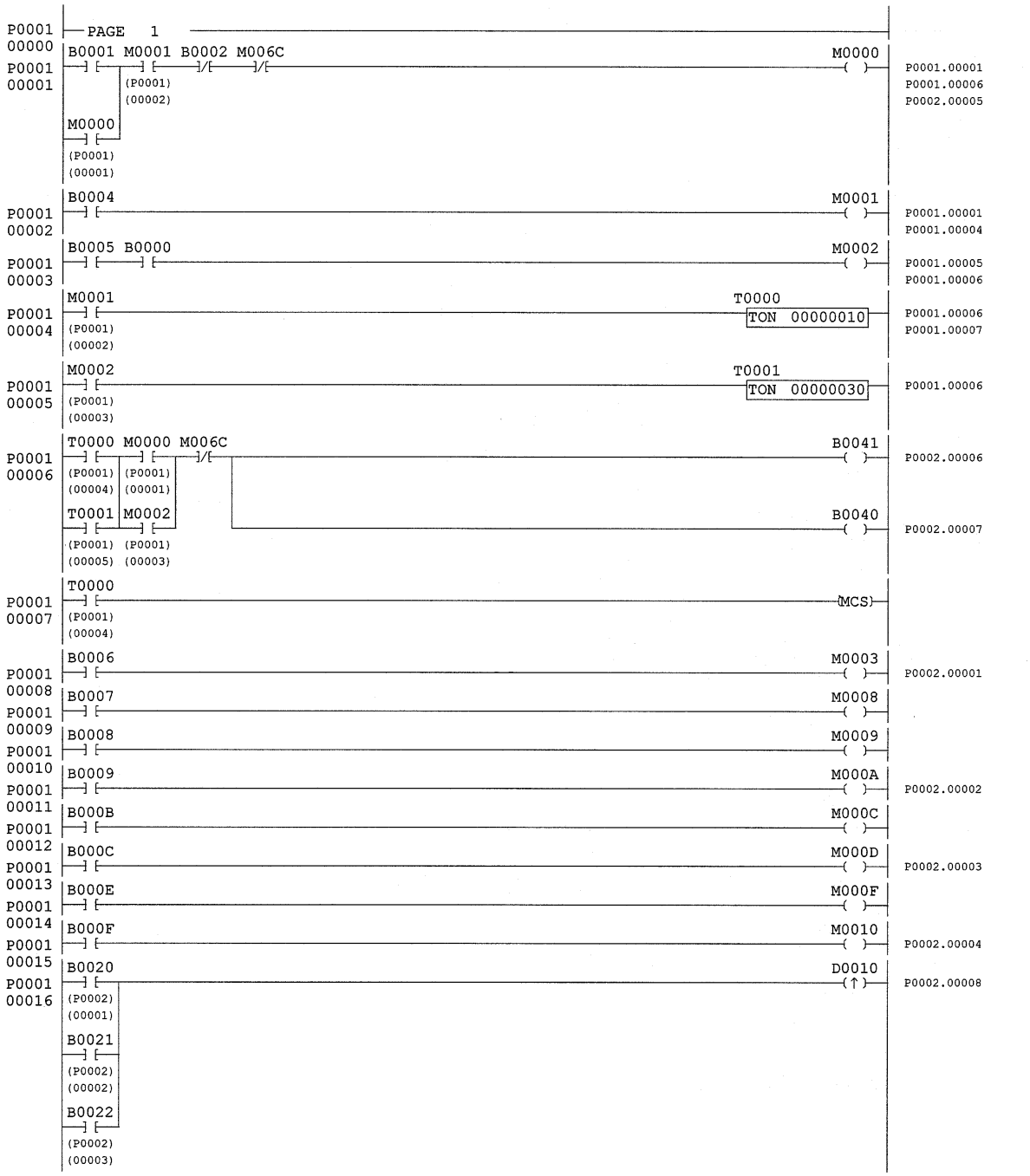
Sample2 - Ladder



Automatic Control Program (Footer)

(2) I/O device listing

Automatic Control Program (Header)

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Sample2 - IO Device Listing

Address	Tag	Description
A0040	Overflow	
A0041	Operation_execution_err	

Address	Tag	Description
B0000	Start switch	
B0001	Stop switch	
B0002	Coupling signal	
B0003	Alarm reset switch	
B0004	Single start	
B0005	Coupling start	
B0006	Test switch	
B0007	Bind_process	
B0008	Stoper descent	
B0009	Drill turning	
B000A	Clamp ON	
B000B	Clamp OFF	
B000C	Pin_force	
B000D	Arm_rise	
B000E	Arm_descent	
B000F	Tran_parts descent	
B0010	Plate detection	
B0011	Hole detection	
B0014	Limit_SW_01_ON	
B0015	Stoper limit_L	
B0016	Stoper limit_U	
B001B	Limit_SW_02 ON	
B001C	Limit_SW_02 OFF	
B001D	Lift_up	
B001E	Lift_down	

Address	Tag	Description
F0000	Run	
F0001	Stop	
F0002	Fatal_fault	
F0003	Nonfatal_fault	
F0010	Memory_error	
F0014	Tlink_fault	
F0018	User_program_err	
F0019	WDT_error	
F001A	BUS_error	
F001C	I/O_double_assign	
F001F	Fatal_plant_fault	
F0026	Tlink_config_fault	
F002F	Nonfatal_plant_fault	
F004E	Sign_flag	
F004F	Zero_flag	
F0050	Init_Scan	Contact on for initial scan only
F0053	1/10s_clock	
F0054	1s_clock	

Address	Tag	Description
M0002	Coupling	
M0008	Punch	
M0009	Stoper board descent	
M000E	Hold board down	
M000F	Hold board up	
M003F	Plate detection support	

Address	Tag	Description
WB0040	Set up Data 1	Reception Data
WB0041	Set up Data 2	Reception Data
WB0042	Set up Data 3	Reception Data
WB0050	Indication Data 1	Reception Data
WB0051	Indication Data 2	Reception Data
WB0052	Indication Data 3	Tranmit Data

Automatic Control Program (Footer)

(3) Device used printout

Automatic Control Program (Header)

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Sample2 - Devices Used

Address	0 1 2 3 4 5 6 7 8 9 A B C D E F
B0000	x x x x x x x x x x . x x . x x
B0010	. . . .
B0020	. . . .
B0030	. . . .
B0040	x x

Address	0 1 2 3 4 5 6 7 8 9 A B C D E F
M0000	x x x x . . . . x x x . x x . x
M0010	x . . . .
M0020	. . . .
M0030	. . . .
M0040	. . . .
M0050	. . . .
M0060	 x

Address	0 1 2 3 4 5 6 7 8 9 A B C D E F
D0010	x

Address	0 1 2 3 4 5 6 7 8 9
T0000	x x

Automatic Control Program (Footer)

(4) Device cross-reference printout

Automatic Control Program (Header)

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Sample2 - Device Cross Reference

Range : B0000 - B0050

Address	Tag	# PageNo.LineNo # (* denotes Output)
B0000	Start switch	1.3
B0001	Stop switch	1.1
B0002	Coupling signal	1.1
B0004	Single start	1.2
B0005	Coupling start	1.3
B0006	Test switch	1.8
B0007	Bind_process	1.9
B0008	Stoper descent	1.10
B0009	Drill turning	1.11
B000B	Clamp OFF	1.12
B000C	Pin_force	1.13
B000E	Arm_descent	1.14
B000F	Tran_parts descent	1.15
B0020		1.16 2.1*
B0021		1.16 2.2*
B0022		1.16 2.3*
B0023		2.4*
B0040		1.6* 2.7
B0041		1.6* 2.6

Range : M0000 - M0050

Address	Tag	# PageNo.LineNo # (* denotes Output)
M0000		1.1 1.1* 1.6 2.5
M0001		1.1 1.2* 1.4
M0002	Coupling	1.3* 1.5 1.6
M0003		1.8* 2.1
M0008	Punch	1.9*
M0009	Stoper board descent	1.10*
M000A		1.11* 2.2
M000C		1.12*
M000D		1.13* 2.3
M000F	Hold board up	1.14*
M0010		1.15* 2.4

Automatic Control Program (Footer)

(5) System definition printout

Automatic Control Program (Header)

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Sample2 - System Definition

PC Information

PC Model	F70S
Program Memory	16041 Step
Program Memory Free	15993 Step

System Registration

Processor Definition

Fail Soft	No
WDT Time	0 *10ms
BD Module D.CNT	0
Constant Scan Time	0 *1ms
Duplex Processor	Not Enabled

PIO Definition

Shelf 0	Scan Reset Mode
Shelf 1	Reset Mode
Shelf 2	Reset Mode
Shelf 3	Reset Mode
Shelf 4	Reset Mode
Shelf 5	Reset Mode
Shelf 6	Reset Mode
Shelf 7	Reset Mode

PIO Configuration

	Slot Number															
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Shelf 0	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Shelf 1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Shelf 2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Shelf 3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Shelf 4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Shelf 5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Shelf 6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Shelf 7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Option Slot

	Slot Number					
	0	1	2	3	4	5
Option Slot	.	.	.	.	.	.

T-Link Registration : I/O Expansion

I/O Expansion Not Enabled

T-Link Registration : Channel 0

F: Fail-Soft R: Registered I: Freeze IO on STop 0..3: Group 0,1,2,3

ST.No.	F	R	I	0	1	2	3	ST.No.	F	R	I	0	1	2	3
00	.	.	.	.	.	.	.	50	.	.	.	.	.	.	.
01	.	.	.	.	.	.	.	51	.	.	.	.	.	.	.
02	.	.	.	.	.	.	.	52	.	.	.	.	.	.	.
03	.	.	.	.	.	.	.	53	.	.	.	.	.	.	.
04	.	.	.	.	.	.	.	54	.	.	.	.	.	.	.
05	.	.	.	.	.	.	.	55	.	.	.	.	.	.	.
06	.	.	.	.	.	.	.	56	.	.	.	.	.	.	.
07	.	.	.	.	.	.	.	57	.	.	.	.	.	.	.
08	.	.	.	.	.	.	.	58	.	.	.	.	.	.	.
09	.	.	.	.	.	.	.	59	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	60	.	.	.	.	.	.	.
11	.	.	.	.	.	.	.	61	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.	62	.	.	.	.	.	.	.
13	.	.	.	.	.	.	.	63	.	.	.	.	.	.	.

Automatic Control Program (Footer)

Automatic Control Program (Header)

Sample2 - System Definition

14	.	.	.	.	.	.	.		64	.	.	.	.	.	.	.
15	.	.	.	.	.	.	.		65	.	.	.	.	.	.	.
16	.	.	.	.	.	.	.		66	.	.	.	.	.	.	.
17	.	.	.	.	.	.	.		67	.	.	.	.	.	.	.
18	.	.	.	.	.	.	.		68	.	.	.	.	.	.	.
19	.	.	.	.	.	.	.		69	.	.	.	.	.	.	.
20	.	.	.	.	.	.	.		70	.	.	.	.	.	.	.
21	.	.	.	.	.	.	.		71	.	.	.	.	.	.	.
22	.	.	.	.	.	.	.		72	.	.	.	.	.	.	.
23	.	.	.	.	.	.	.		73	.	.	.	.	.	.	.
24	.	.	.	.	.	.	.		74	.	.	.	.	.	.	.
25	.	.	.	.	.	.	.		75	.	.	.	.	.	.	.
26	.	.	.	.	.	.	.		76	.	.	.	.	.	.	.
27	.	.	.	.	.	.	.		77	.	.	.	.	.	.	.
28	.	.	.	.	.	.	.		78	.	.	.	.	.	.	.
29	.	.	.	.	.	.	.		79	.	.	.	.	.	.	.
30	.	.	.	.	.	.	.		80	.	.	.	.	.	.	.
31	.	.	.	.	.	.	.		81	.	.	.	.	.	.	.
32	.	.	.	.	.	.	.		82	.	.	.	.	.	.	.
33	.	.	.	.	.	.	.		83	.	.	.	.	.	.	.
34	.	.	.	.	.	.	.		84	.	.	.	.	.	.	.
35	.	.	.	.	.	.	.		85	.	.	.	.	.	.	.
36	.	.	.	.	.	.	.		86	.	.	.	.	.	.	.
37	.	.	.	.	.	.	.		87	.	.	.	.	.	.	.
38	.	.	.	.	.	.	.		88	.	.	.	.	.	.	.
39	.	.	.	.	.	.	.		89	.	.	.	.	.	.	.
40	.	.	.	.	.	.	.		90	.	.	.	.	.	.	.
41	.	.	.	.	.	.	.		91	.	.	.	.	.	.	.
42	.	.	.	.	.	.	.		92	.	.	.	.	.	.	.
43	.	.	.	.	.	.	.		93	.	.	.	.	.	.	.
44	.	.	.	.	.	.	.		94	.	.	.	.	.	.	.
45	.	.	.	.	.	.	.		95	.	.	.	.	.	.	.
46	.	.	.	.	.	.	.		96	.	.	.	.	.	.	.
47	.	.	.	.	.	.	.		97	.	.	.	.	.	.	.
48	.	.	.	.	.	.	.		98	.	.	.	.	.	.	.
49	.	.	.	.	.	.	.		99	.	.	.	.	.	.	.

T-Link Registration : Channel 1

F: Fail-Soft R: Registered I: Freeze IO on STop 0..3: Group 0,1,2,3

ST.No.	F	R	I	0	1	2	3	ST.No.	F	R	I	0	1	2	3
00	.	.	.	.	.	.	.	50	.	.	.	.	.	.	.
01	.	.	.	.	.	.	.	51	.	.	.	.	.	.	.
02	.	.	.	.	.	.	.	52	.	.	.	.	.	.	.
03	.	.	.	.	.	.	.	53	.	.	.	.	.	.	.
04	.	.	.	.	.	.	.	54	.	.	.	.	.	.	.
05	.	.	.	.	.	.	.	55	.	.	.	.	.	.	.
06	.	.	.	.	.	.	.	56	.	.	.	.	.	.	.
07	.	.	.	.	.	.	.	57	.	.	.	.	.	.	.
08	.	.	.	.	.	.	.	58	.	.	.	.	.	.	.
09	.	.	.	.	.	.	.	59	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	60	.	.	.	.	.	.	.
11	.	.	.	.	.	.	.	61	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.	62	.	.	.	.	.	.	.
13	.	.	.	.	.	.	.	63	.	.	.	.	.	.	.
14	.	.	.	.	.	.	.	64	.	.	.	.	.	.	.
15	.	.	.	.	.	.	.	65	.	.	.	.	.	.	.
16	.	.	.	.	.	.	.	66	.	.	.	.	.	.	.
17	.	.	.	.	.	.	.	67	.	.	.	.	.	.	.
18	.	.	.	.	.	.	.	68	.	.	.	.	.	.	.
19	.	.	.	.	.	.	.	69	.	.	.	.	.	.	.
20	.	.	.	.	.	.	.	70	.	.	.	.	.	.	.
21	.	.	.	.	.	.	.	71	.	.	.	.	.	.	.
22	.	.	.	.	.	.	.	72	.	.	.	.	.	.	.

Automatic Control Program (Header)

Sample2 - System Definition

23	.	.	.	.	.	.	.		73	.	.	.	.	.	.	.
24	.	.	.	.	.	.	.		74	.	.	.	.	.	.	.
25	.	.	.	.	.	.	.		75	.	.	.	.	.	.	.
26	.	.	.	.	.	.	.		76	.	.	.	.	.	.	.
27	.	.	.	.	.	.	.		77	.	.	.	.	.	.	.
28	.	.	.	.	.	.	.		78	.	.	.	.	.	.	.
29	.	.	.	.	.	.	.		79	.	.	.	.	.	.	.
30	.	.	.	.	.	.	.		80	.	.	.	.	.	.	.
31	.	.	.	.	.	.	.		81	.	.	.	.	.	.	.
32	.	.	.	.	.	.	.		82	.	.	.	.	.	.	.
33	.	.	.	.	.	.	.		83	.	.	.	.	.	.	.
34	.	.	.	.	.	.	.		84	.	.	.	.	.	.	.
35	.	.	.	.	.	.	.		85	.	.	.	.	.	.	.
36	.	.	.	.	.	.	.		86	.	.	.	.	.	.	.
37	.	.	.	.	.	.	.		87	.	.	.	.	.	.	.
38	.	.	.	.	.	.	.		88	.	.	.	.	.	.	.
39	.	.	.	.	.	.	.		89	.	.	.	.	.	.	.
40	.	.	.	.	.	.	.		90	.	.	.	.	.	.	.
41	.	.	.	.	.	.	.		91	.	.	.	.	.	.	.
42	.	.	.	.	.	.	.		92	.	.	.	.	.	.	.
43	.	.	.	.	.	.	.		93	.	.	.	.	.	.	.
44	.	.	.	.	.	.	.		94	.	.	.	.	.	.	.
45	.	.	.	.	.	.	.		95	.	.	.	.	.	.	.
46	.	.	.	.	.	.	.		96	.	.	.	.	.	.	.
47	.	.	.	.	.	.	.		97	.	.	.	.	.	.	.
48	.	.	.	.	.	.	.		98	.	.	.	.	.	.	.
49	.	.	.	.	.	.	.		99	.	.	.	.	.	.	.

T-Link Registration : Channel 2

F: Fail-Soft R: Registered I: Freeze IO on STop 0..3: Group 0,1,2,3

ST.No.	F	R	I	0	1	2	3		ST.No.	F	R	I	0	1	2	3
00	.	.	.	.	.	.	.		50	.	.	.	.	.	.	.
01	.	.	.	.	.	.	.		51	.	.	.	.	.	.	.
02	.	.	.	.	.	.	.		52	.	.	.	.	.	.	.
03	.	.	.	.	.	.	.		53	.	.	.	.	.	.	.
04	.	.	.	.	.	.	.		54	.	.	.	.	.	.	.
05	.	.	.	.	.	.	.		55	.	.	.	.	.	.	.
06	.	.	.	.	.	.	.		56	.	.	.	.	.	.	.
07	.	.	.	.	.	.	.		57	.	.	.	.	.	.	.
08	.	.	.	.	.	.	.		58	.	.	.	.	.	.	.
09	.	.	.	.	.	.	.		59	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.		60	.	.	.	.	.	.	.
11	.	.	.	.	.	.	.		61	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.		62	.	.	.	.	.	.	.
13	.	.	.	.	.	.	.		63	.	.	.	.	.	.	.
14	.	.	.	.	.	.	.		64	.	.	.	.	.	.	.
15	.	.	.	.	.	.	.		65	.	.	.	.	.	.	.
16	.	.	.	.	.	.	.		66	.	.	.	.	.	.	.
17	.	.	.	.	.	.	.		67	.	.	.	.	.	.	.
18	.	.	.	.	.	.	.		68	.	.	.	.	.	.	.
19	.	.	.	.	.	.	.		69	.	.	.	.	.	.	.
20	.	.	.	.	.	.	.		70	.	.	.	.	.	.	.
21	.	.	.	.	.	.	.		71	.	.	.	.	.	.	.
22	.	.	.	.	.	.	.		72	.	.	.	.	.	.	.
23	.	.	.	.	.	.	.		73	.	.	.	.	.	.	.
24	.	.	.	.	.	.	.		74	.	.	.	.	.	.	.
25	.	.	.	.	.	.	.		75	.	.	.	.	.	.	.
26	.	.	.	.	.	.	.		76	.	.	.	.	.	.	.
27	.	.	.	.	.	.	.		77	.	.	.	.	.	.	.
28	.	.	.	.	.	.	.		78	.	.	.	.	.	.	.
29	.	.	.	.	.	.	.		79	.	.	.	.	.	.	.
30	.	.	.	.	.	.	.		80	.	.	.	.	.	.	.
31	.	.	.	.	.	.	.		81	.	.	.	.	.	.	.

Automatic Control Program (Footer)

Automatic Control Program (Header)

Sample2 - System Definition

32	.	.	.	.	.	.	.	82	.	.	.	.	.	.	.
33	.	.	.	.	.	.	.	83	.	.	.	.	.	.	.
34	.	.	.	.	.	.	.	84	.	.	.	.	.	.	.
35	.	.	.	.	.	.	.	85	.	.	.	.	.	.	.
36	.	.	.	.	.	.	.	86	.	.	.	.	.	.	.
37	.	.	.	.	.	.	.	87	.	.	.	.	.	.	.
38	.	.	.	.	.	.	.	88	.	.	.	.	.	.	.
39	.	.	.	.	.	.	.	89	.	.	.	.	.	.	.
40	.	.	.	.	.	.	.	90	.	.	.	.	.	.	.
41	.	.	.	.	.	.	.	91	.	.	.	.	.	.	.
42	.	.	.	.	.	.	.	92	.	.	.	.	.	.	.
43	.	.	.	.	.	.	.	93	.	.	.	.	.	.	.
44	.	.	.	.	.	.	.	94	.	.	.	.	.	.	.
45	.	.	.	.	.	.	.	95	.	.	.	.	.	.	.
46	.	.	.	.	.	.	.	96	.	.	.	.	.	.	.
47	.	.	.	.	.	.	.	97	.	.	.	.	.	.	.
48	.	.	.	.	.	.	.	98	.	.	.	.	.	.	.
49	.	.	.	.	.	.	.	99	.	.	.	.	.	.	.

T-Link Registration : Channel 3

F: Fail-Soft R: Registered I: Freeze IO on STop 0..3: Group 0,1,2,3

ST.No.	F	R	I	0	1	2	3	ST.No.	F	R	I	0	1	2	3
00	.	.	.	.	.	.	.	50	.	.	.	.	.	.	.
01	.	.	.	.	.	.	.	51	.	.	.	.	.	.	.
02	.	.	.	.	.	.	.	52	.	.	.	.	.	.	.
03	.	.	.	.	.	.	.	53	.	.	.	.	.	.	.
04	.	.	.	.	.	.	.	54	.	.	.	.	.	.	.
05	.	.	.	.	.	.	.	55	.	.	.	.	.	.	.
06	.	.	.	.	.	.	.	56	.	.	.	.	.	.	.
07	.	.	.	.	.	.	.	57	.	.	.	.	.	.	.
08	.	.	.	.	.	.	.	58	.	.	.	.	.	.	.
09	.	.	.	.	.	.	.	59	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	60	.	.	.	.	.	.	.
11	.	.	.	.	.	.	.	61	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.	62	.	.	.	.	.	.	.
13	.	.	.	.	.	.	.	63	.	.	.	.	.	.	.
14	.	.	.	.	.	.	.	64	.	.	.	.	.	.	.
15	.	.	.	.	.	.	.	65	.	.	.	.	.	.	.
16	.	.	.	.	.	.	.	66	.	.	.	.	.	.	.
17	.	.	.	.	.	.	.	67	.	.	.	.	.	.	.
18	.	.	.	.	.	.	.	68	.	.	.	.	.	.	.
19	.	.	.	.	.	.	.	69	.	.	.	.	.	.	.
20	.	.	.	.	.	.	.	70	.	.	.	.	.	.	.
21	.	.	.	.	.	.	.	71	.	.	.	.	.	.	.
22	.	.	.	.	.	.	.	72	.	.	.	.	.	.	.
23	.	.	.	.	.	.	.	73	.	.	.	.	.	.	.
24	.	.	.	.	.	.	.	74	.	.	.	.	.	.	.
25	.	.	.	.	.	.	.	75	.	.	.	.	.	.	.
26	.	.	.	.	.	.	.	76	.	.	.	.	.	.	.
27	.	.	.	.	.	.	.	77	.	.	.	.	.	.	.
28	.	.	.	.	.	.	.	78	.	.	.	.	.	.	.
29	.	.	.	.	.	.	.	79	.	.	.	.	.	.	.
30	.	.	.	.	.	.	.	80	.	.	.	.	.	.	.
31	.	.	.	.	.	.	.	81	.	.	.	.	.	.	.
32	.	.	.	.	.	.	.	82	.	.	.	.	.	.	.
33	.	.	.	.	.	.	.	83	.	.	.	.	.	.	.
34	.	.	.	.	.	.	.	84	.	.	.	.	.	.	.
35	.	.	.	.	.	.	.	85	.	.	.	.	.	.	.
36	.	.	.	.	.	.	.	86	.	.	.	.	.	.	.
37	.	.	.	.	.	.	.	87	.	.	.	.	.	.	.
38	.	.	.	.	.	.	.	88	.	.	.	.	.	.	.
39	.	.	.	.	.	.	.	89	.	.	.	.	.	.	.
40	.	.	.	.	.	.	.	90	.	.	.	.	.	.	.

Automatic Control Program (Header)

Sample2 - System Definition

41	.	.	.	.	.	.	.		91	.	.	.	.	.	.	.
42	.	.	.	.	.	.	.		92	.	.	.	.	.	.	.
43	.	.	.	.	.	.	.		93	.	.	.	.	.	.	.
44	.	.	.	.	.	.	.		94	.	.	.	.	.	.	.
45	.	.	.	.	.	.	.		95	.	.	.	.	.	.	.
46	.	.	.	.	.	.	.		96	.	.	.	.	.	.	.
47	.	.	.	.	.	.	.		97	.	.	.	.	.	.	.
48	.	.	.	.	.	.	.		98	.	.	.	.	.	.	.
49	.	.	.	.	.	.	.		99	.	.	.	.	.	.	.

P-Link 1

Station No.	Configuration 0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Self Number	00	
Shelf Area	Top	Size
H SP Bit	0000	00 x32
H SP Word	0000	00 x32
L SP Word	0000	00 x32
L SP Word	0000	00 x32

P-Link 2

Station No.	Configuration 0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Self Number	00	
Shelf Area	Top	Size
H SP Bit	0000	00 x32
H SP Word	0000	00 x32
L SP Word	0000	00 x32
L SP Word	0000	00 x32

Message Registration

ST.No.	Data Module	Used	Link	Capsule No.	ETC	Channel
00	000	0	0	000	000	0
01	000	0	0	000	000	0
02	000	0	0	000	000	0
03	000	0	0	000	000	0
04	000	0	0	000	000	0
05	000	0	0	000	000	0
06	000	0	0	000	000	0
07	000	0	0	000	000	0
08	000	0	0	000	000	0
09	000	0	0	000	000	0
10	000	0	0	000	000	0
11	000	0	0	000	000	0
12	000	0	0	000	000	0
13	000	0	0	000	000	0
14	000	0	0	000	000	0
15	000	0	0	000	000	0
16	000	0	0	000	000	0
17	000	0	0	000	000	0
18	000	0	0	000	000	0
19	000	0	0	000	000	0
20	000	0	0	000	000	0
21	000	0	0	000	000	0
22	000	0	0	000	000	0
23	000	0	0	000	000	0
24	000	0	0	000	000	0
25	000	0	0	000	000	0
26	000	0	0	000	000	0
27	000	0	0	000	000	0
28	000	0	0	000	000	0

Automatic Control Program (Footer)

Automatic Control Program (Header)

Sample2 - System Definition

29	000	0	0	000	000	0
30	000	0	0	000	000	0
31	000	0	0	000	000	0
32	000	0	0	000	000	0
33	000	0	0	000	000	0
34	000	0	0	000	000	0
35	000	0	0	000	000	0
36	000	0	0	000	000	0
37	000	0	0	000	000	0
38	000	0	0	000	000	0
39	000	0	0	000	000	0
40	000	0	0	000	000	0
41	000	0	0	000	000	0
42	000	0	0	000	000	0
43	000	0	0	000	000	0
44	000	0	0	000	000	0
45	000	0	0	000	000	0
46	000	0	0	000	000	0
47	000	0	0	000	000	0
48	000	0	0	000	000	0
49	000	0	0	000	000	0

ME-Net Registration

Register Link	Module No.
ME-Net 1	000
ME-Net 2	000

Appendix 1 Differences Between Windows Loader and MS-DOS/ LITE Loaders

Page

Appendix 1 Differences Between Windows Loader and MS-DOS/ LITE Loaders

Appendix 1-1 File Saved Using MS-DOS/LITE Loaders

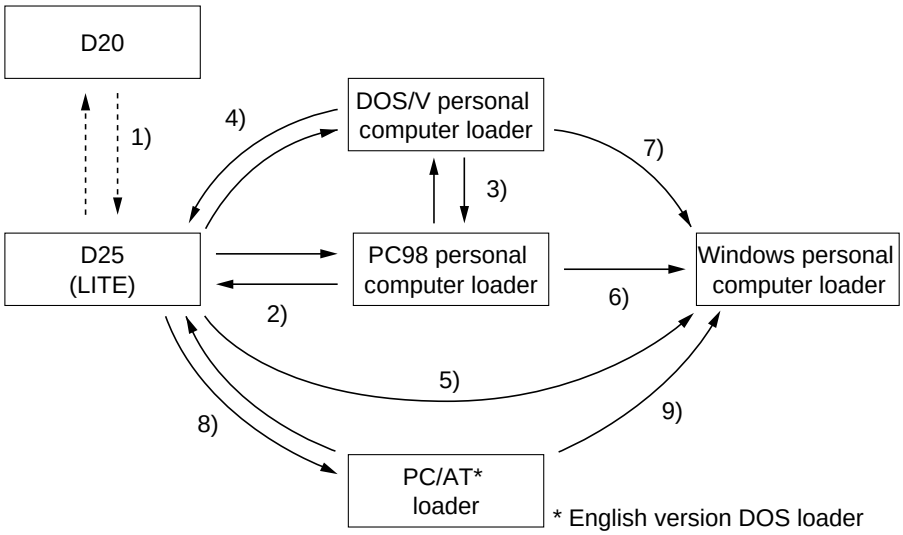
The correspondence between files(program and comment) saved using the MS-DOS or LITE loader and files using Windows loader is as shown in the following table.
Note that in the Windows loader, the term “tag” is used in place of the term “comment.”

MS-DOS/LITE loaders		**Windows loader**	
Name	File extension	Name	File extension
Program	*.PGS	Ladder	*.LDX
Comment	*.CMM, etc.	Tag	*.TAG

The compatibility between the above files is explained below.

Appendix 1-1-1 Compatibility of Program Files

This section describes how to read a file saved using the D20, D25(LITE), and MS-DOS loader(PC98,DOS/V,PC/AT) on this Windows loader.
Basically, any program prepared by any loader can be exchanged between different loaders through the PC.
The use of files saved using the above loaders in shown as follows.



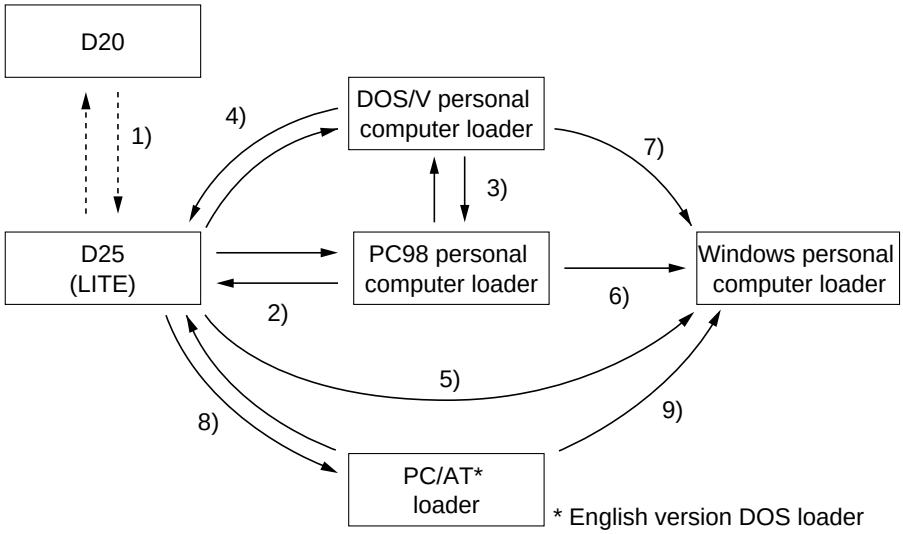
* English version DOS loader

1) Floppy disk data can be shared between them when it is converted by the “D25 - D20 file conversion” function of LITE.
2) As long as the floppy disk is of 1 MB format (sometimes expressed as 1.2 MB or 1.25 MB format), floppy disk data can be shared between them. Though the LITE is capable of handling floppy disks of 1 MB format, it is incompatible with floppy disks of 1.44 MB format.
3) Floppy disk data can be shared between them as long as they both can handle the format of the floppy disk. For the floppy disk formats (1 MB. 1.44 MB) that can be handled, ask the maker of the personal computer.
4) Same as explained in 2), above.
5) Format of a floppy disk in D25(LITE) defaults to 1MB. This diskette formatting is not generally readable on PC/AT compatibles. Please save the program file in 720KB format(2DD) using the D25 and open the file using the PC/AT loader.
   Files(file extension: *.PRG, *.PGS) saved using the D25 in 2DD can be directly opened on the Windows loader. When this program is saved, a new file(file extention: *.LDX) for Windows is created. This *.LDX file cannot be read by the LITE. When files are saved by specifying extension " *.PGS", the LITE loader can read them.
6) Same as explained in 5), above. It is necessary to check the compatibility of floppy disk format between them.
7) Same as explained in 5), above. It is necessary to check the compatibility of flopply disk format between them.
8) Files saved using the D25 and PC/AT loader have compatibility if the floppy disk format is 720KB(2DD).
   For information on the format please refer to the above 5)
9) Same as explained in 5) except 720KB and 1.44MB format are available.

Appendix 1-1 Data Prepared by MS-DOS/LITE Loaders

Appendix 1-1-2 Compatibility of Comment Files

Here, the method of handling comment files prepared by the D20, D25 (LITE), PC98 personal computer loader, or DOS/V personal computer loader using the Windows loader is explained.
The use of files prepared and saved to floppy disks by the individual loaders is as shown in the following diagram.



1) Files can be shared between them by converting them using the “comment definition floppy disk conversion” function of the LITE.
2) Files can be shared between them as long as the floppy disk is of 1 MB format (sometimes expressed as 1.2 MB or 1.25 MB format). (Note, however, that comment files prepared by some versions of loader cannot be read by the counterpart loader. For further details, refer to the manual of LITE or MS-DOS personal computer loader.) Though the LITE is capable of handling floppy disks of 1 MB format, it is incompatible with floppy disks of 1.44 MB format.
3) Files can be shared between them as long as both loaders can handle the format of the floppy disks that contain those files. For the format of floppy disks that can be handled (1 MB, 1.44 MB), ask the maker of the personal computer. Note that comment files prepared by some versions of loader cannot be read by the counterpart loader.
4) Same as explained in 2), above.
5) As long as the personal computer can handle floppy disks of 1 MB format, any new comment file prepared by the LITE (file extension: *.CMM, etc.) can be directly read by the Windows loader. When the new comment file is saved, a new file for the Windows (file extension: *.TAG) is created. This *.TAG file cannot be directly read by the LITE.
To convert the *.TAG file into the format that can be handled by the LITE, it is necessary first to convert it into a text file by executing [Auxiliaries] - [Tag to Text Conversion] - [Text File Output] selected from the main menu on the Windows side, then to convert the text file into the comment file format for LITE by executing the comment definition floppy disk conversion function (personal computer —> D25) on the LITE loader side.
6) Same as explained in 5), above. It is necessary to check the compatibility of the floppy disk formats. To convert any comment file (*.TAG file) saved by the Windows loader into the format that can be handled by the MS-DOS loader, first convert it into a text file on the Windows loader side using the procedure described in <5> , then convert the text file into the comment file format for MS-DOS on the MS-DOS loader side using its optional comment file conversion function.
7) Same as explained in 6), above.

Appendix 1-1 Data Prepared by MS-DOS/LITE Loaders

<When reading comment files prepared by the MS-DOS/LITE loader>
The Windows version program loader can read comment files that are prepared by the LITE or MS-DOS version program loader (hereinafter called "the MS-DOS loader"), in the following manner. (However, only those files with the new extension can be read.)

1) Using the explorer, copy the program file (with extension ".PRG" or ".PGS") and comment files (with extension ".CMM", etc.) that have been prepared by MS-DOS loader in the same folder.
Be careful, because there are several types of comment file. In other words, in addition to the file with extension ".CMM", there are other types of comment files that have different extensions corresponding to memory types (for example, ".CB1" for B area). Copy all the files that are different in extension but have the same name.

2) Using the explorer, make sure the program file and comment files that have been copied in 1) have the same name. Extensions may not be changed.

3) In the ordinary procedure, open the program file of above 2) with the Windows loader.
Comment files are automatically read.
Then, when the program is saved, new files for the Windows loader (program file "*.LDX" and tag file "*.TAG") are created.

The following extensions are available for the comment files for the MS-DOS loader.

File classification	Conventional extension code	New extension code		File classification	Conventional extension code	New extension code
Management file	.CMT	.CMM		Comment (WK)	.CWK	.CKW
Comment (B)	.CB0	.CB1		Comment (WF)	.CWF	.CFW
Comment (M)	.CM0	.CM1		Comment (WA)	.CWA	.CAW
Comment (K)	.CK0	.CK1		Comment (WL)	.CWL	.CLW
Comment (T)	.CT0	.CT1		Comment (WS)	.CWS	.CSW
Comment (C)	.CC0	.CC1		Comment (TS)	.CTS	.CST
Comment (D)	.CD0	.CD1		Comment (TR)	.CTR	.CRT
Comment (F)	.CF0	.CF1		Comment (CS)	.CCS	.CSC
Comment (A)	.CA0	.CA1		Comment (CR)	.CCR	.CRC
Comment (L)	.CL0	.CL1		Comment (BD)	.CBD	.CDB
Comment (S)	.CSB	.CS1		Comment (SI)	.CSI	.CIS
Comment (WB)	.CWB	.CBW		Comment (DI)	.CWM	.CID
Comment (WM)	.CWM	.CMW		Comment (PG)	.CWM	.CGP

If extension ".PGS" is specified when saving the program, comment files (with extension ".CMM", etc.) for the MS-DOS loader are automatically created.

Appendix 1-2 Functions of Windows Loader

The current version (V1.00.XXX) does not support the following functions, which are supported by the MS-DOS loader.

- PCs other than F55, 70, 70S, 120S, 140S, and 150S
- Display/edit of block diagram instructions
- Specification of duplexed processor
- Sampling trace, status latch
- One-step write during program run
- Page re-numbering
- Duplicate page check
- Used page check
- Loader network
- Save/restore of diagnostic information
- MCS marking
- Zero suppress
- Save data

V1.10.XXX supports the following functions:

- Adaptation to F30, F50, F50H, F60, F80H and F120H series
- Duplex-processor control
- Sampling trace and status latch
- Loader network (only P-link and PE-link)
- Diagnostic data save (current generation only) (saved as text file)
- Data save/transfer/print
- Ladder print with cross reference

For additional functions for later versions, refer to Help of the Loader Software.

Appendix 2 Environment Setting

Page

Appendix 2 Environment Setting

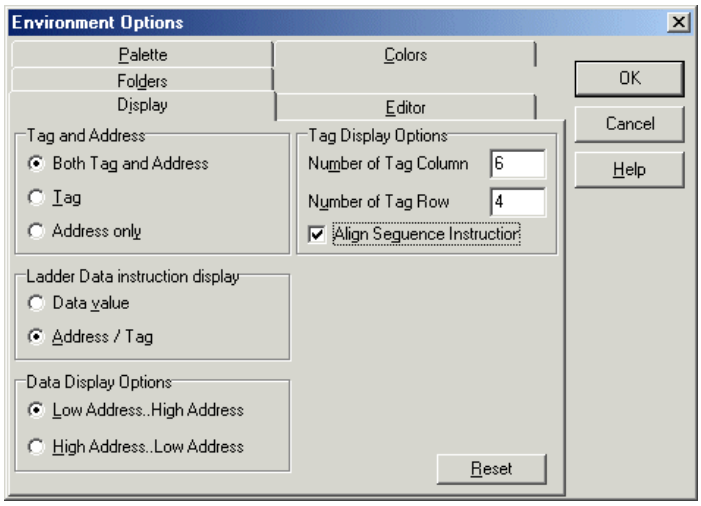
Appendix 2-1 Environment Options

The Environment Options consists of tabs, for setting program edit/display, setting program file folders, setting program display colors, and setting instructions which can be used by [Common] on the ladder edit tool bar. The method of using each of the tabs is explained below.

◊ Select the [Environment...] command from the [Option] menu.
The {Environment Options} dialog box is displayed.

(1) Display Tab

◊ Left-click the [Display] tab.
The items to set to display the program are displayed.

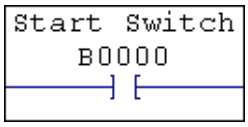


1) "Address/Tag" setting

Set display of address and tag to ON or OFF.

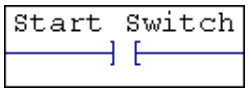
[Both Tag and Address]

Address and Tag are displayed above the instruction symbol.



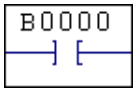
[Tag]

Displays only a tag above the instruction symbol. (Note, however, that when no tag has been set for the instruction address, the instruction address is displayed.)



[Address only]

Displays only an address above the instruction symbol.

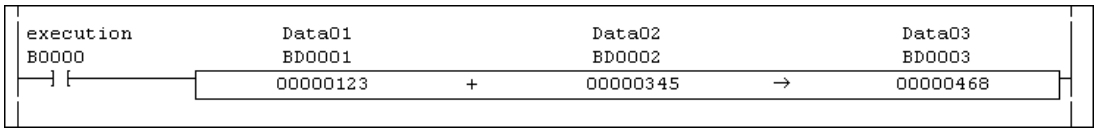


Appendix 2-1 Environment Options

2) Setting of Ladder Data instruction display

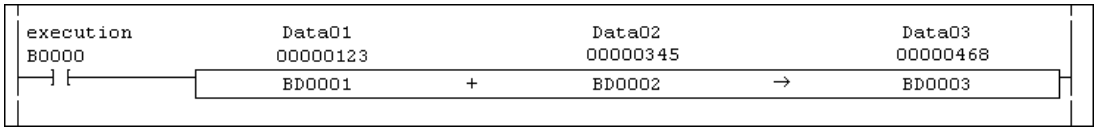
[Data value]

"Data" is displayed within the ladder data instruction frame, and "addresses" and "tags" are displayed above the frame.



[Address/Tag]

"Addresses" are displayed within the ladder data instruction frame, and "tags" and "data" are displayed above the frame



3) Setting of Data Display Options

In the display of data when a double size format (eg. Hex Double) is selected, this option configures the word order - low address, high address, or vice versa.

[Low Address..High Address] option button is check

WM0100	Data01	12345678	BCD (2word)
WM0100	Data02	5678	BCD

[High Address..Low Address] option button is unchecked

WM0100	Data01	56781234	BCD (2word)
WM0100	Data02	5678	BCD

4) "Tag Display Option" setting

Makes tag display for [Number of Tag Column] x [Number of Tag Row]. Characters exceeding this setting are not displayed.

Number of characters : 6 to 24

Number of tag rows : 1 to 4

If [Arrange sequence instructions] is checked, the tag display width is fixed by the specified number of characters and the gap between sequence instructions is equalized.

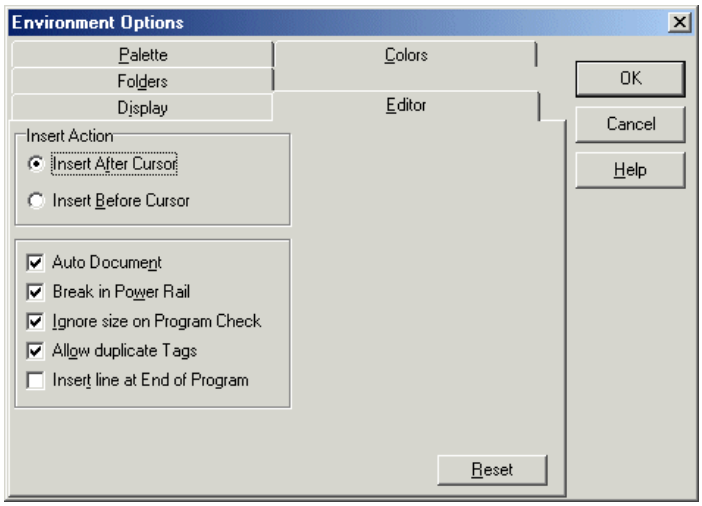
5) [Reset] button

When this button is left-clicked, the setting of editor tag is restored to the initial values at shipment (the setting just after installation).

(2) Editor(E) tab

◊ Left-click the [Editor] tab.

The settings for program editing are displayed.



1) Setting of Insert Action

[Insert After Cursor] option button

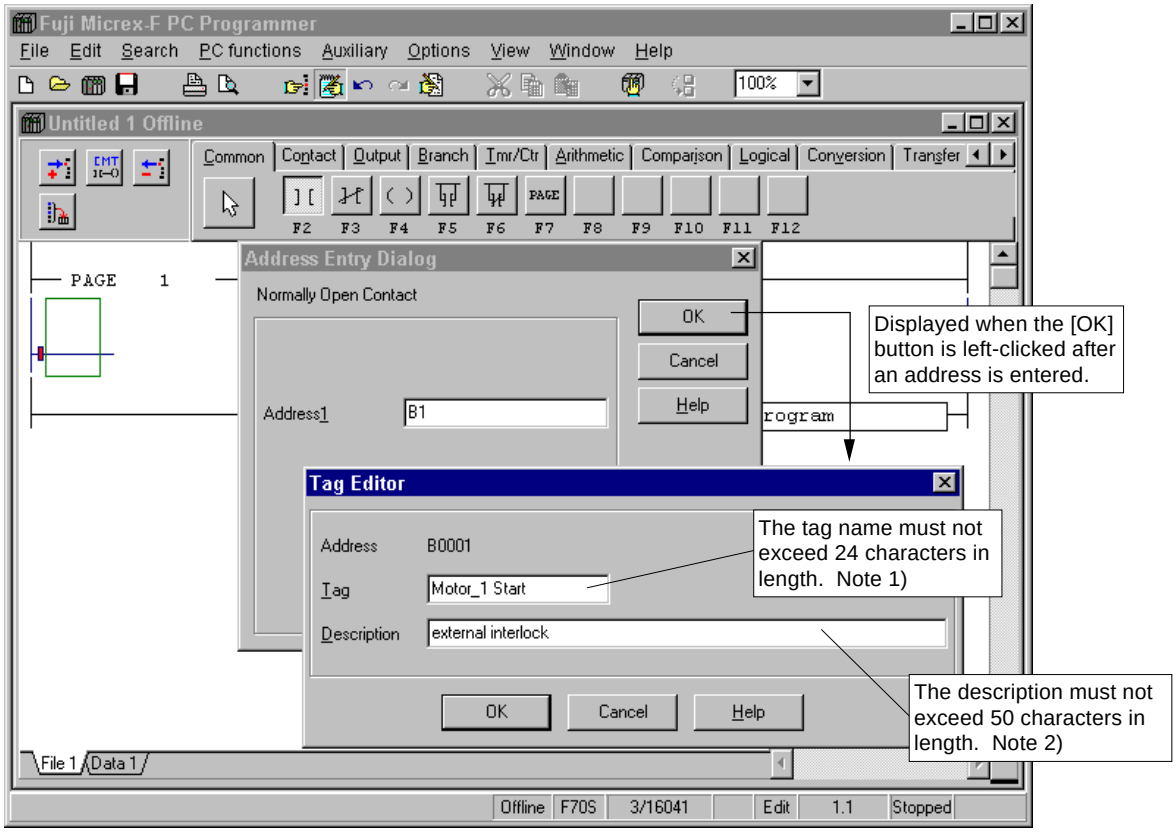
When the [Insert Line] button on the ladder edit tool bar is left-clicked or [Edit] - [Insert Line] is executed, a new line block is inserted after the selected line.

[Insert Before Cursor] option button

When the [Insert Line] button on the ladder edit tool bar is left-clicked or [Edit] - [Insert Line] is executed, a new line block is inserted before the selected line.

2) Setting automatic tag entry

When the [Auto Document] box is checked, the {Untitled 1 Offline} dialog box shown below is displayed during program editing.

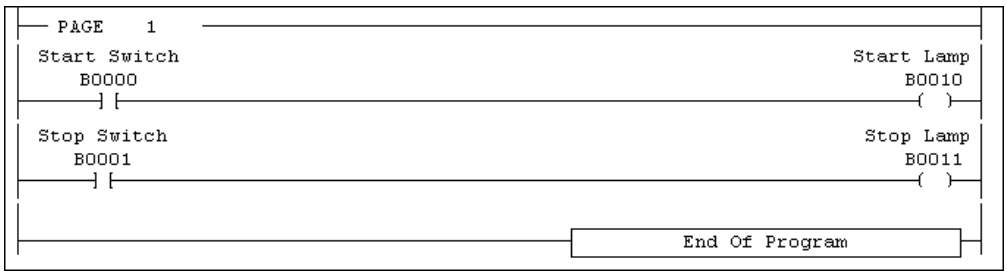


Note: 1)In a tag name, the quotation marks (“ and ‘), comma (,), and period (.) cannot be used. The same tag name cannot be set for two or more different addresses either.

2)In a description, the comma (,) cannot be used. If a comma is included in the description, it is automatically deleted when the description is added to the data base. Note that the description is not displayed on a ladder program.

3) Setting of Break in Power Rail

When the [Break in Power Rail] box is checked, the power rail at the left and right of loader has a small break between each line to indicate the line demarcation as shown below.



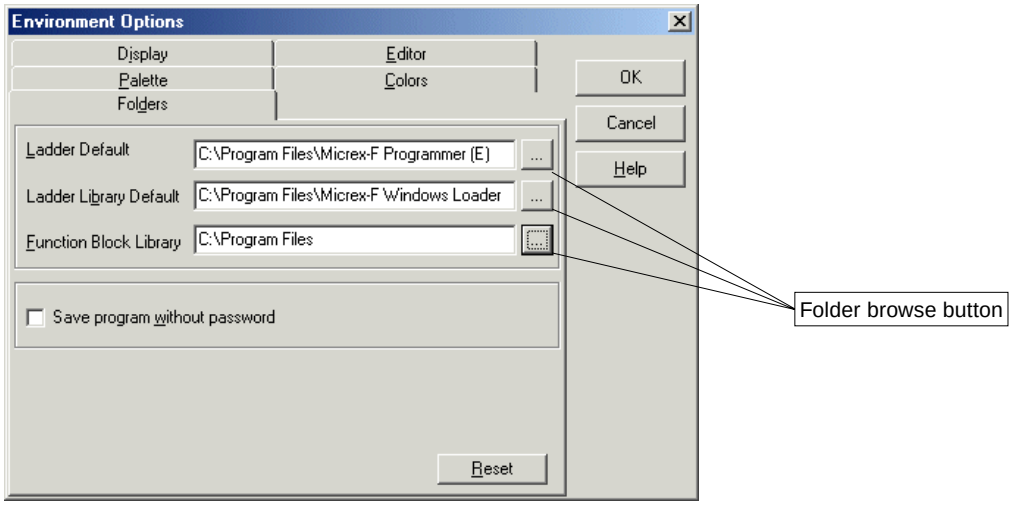
4) Setting of Ignore size on Program Check
When the [Ignore size on Program Check] box is checked, the system does not check the size of the ladder before down loading to a PC. In this case, the users are required to pay attention to the size of the program transferred.

5) Setting [Allow duplicate Tags]
When the [Allow duplicate Tags] box is checked, it is permissible to input a tag of the same name for different addresses.

6) "Insert line at End of Program" setting
When the cursor is moved to the end of the program, a blank row is inserted automatically.

(3) Setting of Folders

◊ Left-click the [Folders] tab.
Items to set for the saving of an user program, the registration of a ladder library and a function block library, the addition of a password, etc. are displayed.



1) Ladder Default
When a file is opened, the folder set here is opened.
If the Environment Options have not been set, the folder in which the software has been installed is opened.

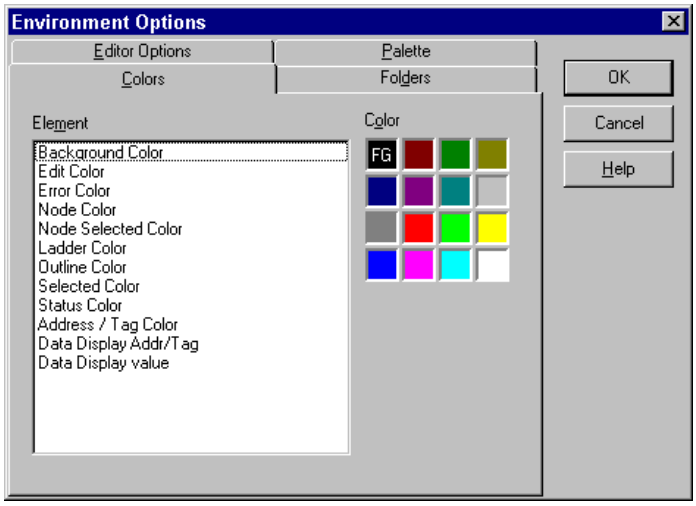
2) Ladder Library Default
When [Edit] - [Copy to Library...] or [Edit] - [Paste from Library] is executed, the folder set here is opened.
If the Environment Options have not been set, the folder in which the software has been installed is opened.

3) Function Block Library
When [PC functions] - [Function Block...] is executed, the folder set here is opened.
If the Environment Options have not been set, the folder in which the software has been installed is opened.

4) Save Program without Password
When this item is unchecked, any program with password is provided with the password when it is saved to a file.
In the initial state, this item is unchecked.

(4) Colors

◊ Left-click the [Colors] tab.
Set colors in which to display a ladder program.

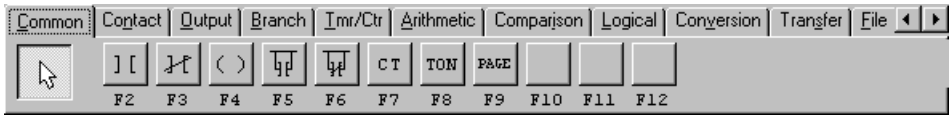


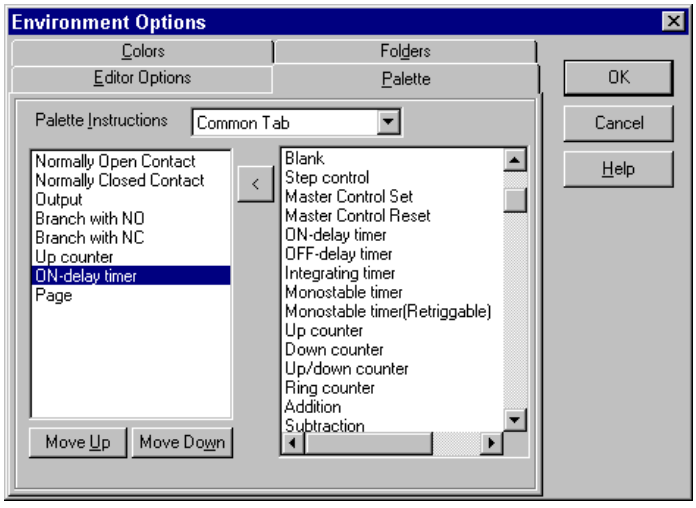
Select the element to be changed from the element list at the left by left-clicking it.
Left-click a desired color, and the FG mark moves to the selected color to set it.

(5) Palette

◊ Left-click the [Palette] tab.
Set instruction buttons which can be used with the [Common] tab of the [Instruction group] tab on the ladder edit tool bar.

[Common] tab





Specify up to 11 instruction buttons (F2 to F11) for each of [Usual], [Shift key], and [Ctrl key].
Left-click one of the instructions listed at the right and left-click the < button, and the selected instruction is assigned to the selected item at the left.

In the instruction assignment table, instructions are assigned to F2 to F12 from top downward.
The positions of instructions in the instruction assignment table can be changed by left-clicking the [Move Up] or [Move Down] button.
Any instruction in the instruction assignment table can be deleted by left-clicking it and pushing the <Delete> key.

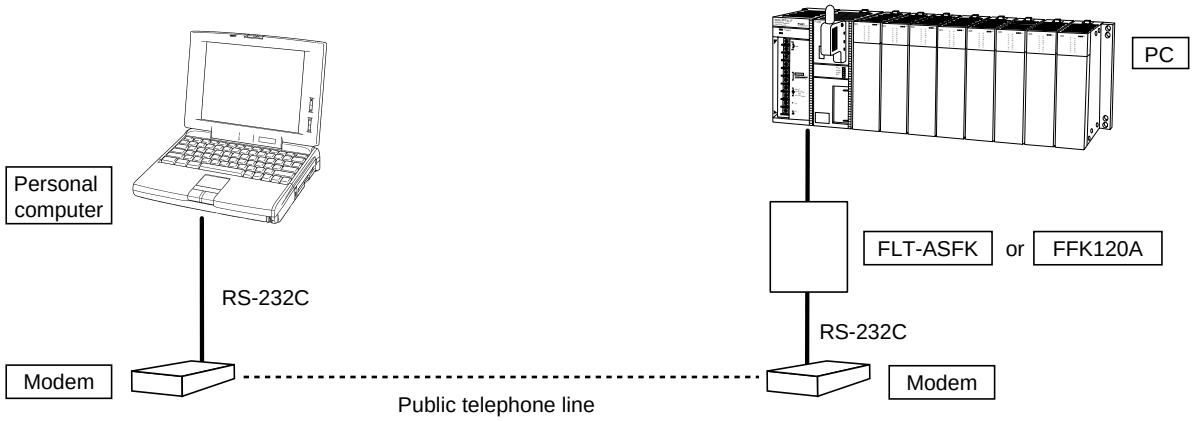
Appendix 3 Modem Connection

Page

Appendix 3 Modem Connection

Here, the method of using a modem to connect the personal computer online to the PC via a public telephone line.

<System configuration>



Note: When an FFK120A is used, it must be case version 1 or newer. The case version is indicated at bottom, right of the front part.

<Modem>

Use a modem which is available on the market. Note that modems more or less differ in the AT commands (the commands for setting modem operations) according to the maker or model. (For details, refer to the instruction manual of the modem purchased.)

Appendix 3-1 Preparation of Modem on PC Side

Here, the preparations (initialization, etc.) required of the modem on the PC side are explained.

Appendix 3-1-1 Modem Already in Use

(1) When using a modem which has been used for remote operation by the MS-DOS loader (or LITE loader), no preparations, such as the initialization, are required of the modem. In this case, the FLT-ASFK (or FFK120A) needs to be set as follows. The FLT-ASFK (or FFK120A) initializes the modem automatically.

• For FLT-ASFK
Set the mode to “REMOTE” (SW1: ON, SW2: OFF).

• For FFK120A
Set the mode to “REMOTE OPERATION” (MODE SW: “8”).

(2) The modems that are supported are as shown below.

Maker	Type
AIWA	PV-A24MNP5, PV-A24VM5, PV-A24B5, PV-A24V5, PV-AF24V5, PV-BF144M2, PV-EF2880, PV-PF3360
OMRON	MD24FS4, MD24FS5, MD24FB5V, MD24FB10V, MD24XT10V, MD96XT10V, MD144XT10V, ME1414BIII

(3) The AT commands used in FLT-ASFK and FFK120A are as shown below.

• For FLT-ASFK
ATE0V0Q0(CR)
AT\J0S0=3(CR)
ATQ1(CR)

• For FFK120A
AT&FE0V0Q0(CR)
AT\N3\J0&D2S0=3(CR)
ATQ1(CR)

- Meanings of commands (Note that the meanings may more or less differ according to the model.)

Command	Function	Meaning
AT&F	Initializes the memory.	
ATE0	Sets command echo function.	Echo not returned
ATV0	Sets result code display mode.	Result code displayed in number
ATQ0	Sets result code output to DTE	Result code output to DTE
ATQ1		Result code not output to DTE
AT\N3	Sets MNP mode.	MNP automatic selection mode set preferentially
AT\J0	Adjusts DTE data speed automatically.	DTE data speed fixed at speed before start of communication even if communication speed between modems varies
AT&D2	Detects RS-232C DTR signal	When DTR signal turns from On to Off, modem in data mode cuts off line and turns AT command mode. When DTR is Off, automatic receive function is invalid.
ATS0=3	Sets automatic receive and number of times of receive calls.	Automatic receive is effected after third ring signal is detected.

(4) Sequence of switching on power supply
As soon as the FLT-ASFK (or FFK120A) is switched on, it starts initializing the modem. Therefore, switch on the modem power supply first. The FLK-ASFK is switched on automatically when the loader cable is plugged to the PC.

Appendix 3-1-2 Other Modems

Even modems other than those shown above need not be initialized as long as the AT commands described above are supported.
Otherwise, the modem needs to be initialized.

(1) Requirements of medem used

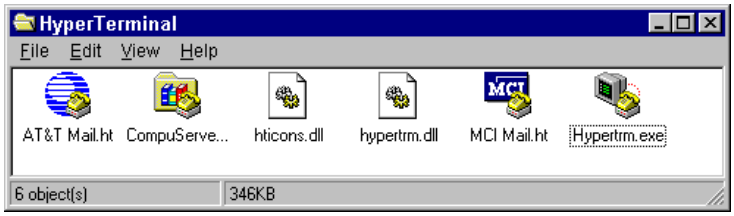
Select a modem which meets the following requirements.

- The AT commands are supported.
- The automatic receive function is provided.
- The interface with external devices is an RS-232C.
- Data compression function (MNP Class 4 or higher) is provided.
- Error control function (MNP Class 4) is provided.
- Terminal speed fixing function is provided.
- Function that retains contents of setting (unvolatile memory) is provided.

(2) Initialization of modem

Use the personal computer to initialize the modem.
Here, the method of initializing Aiwa's modem PV-BW5605 using the "Hyperterminal" (standard accessory of Windows 95) is explained.

◊ Select [Start] - [Program] - [Accessories] - [Hyperterminal] from the desktop of Windows 95.
◊ The "Hyperterminal" window opens. Left-click [Hypertrm.exe].

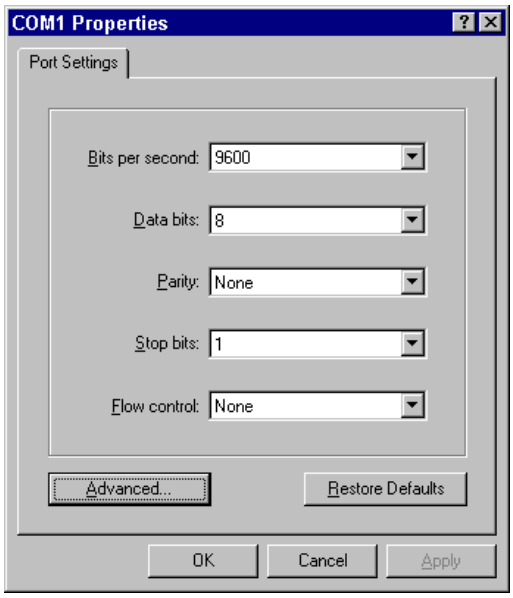


◊ The {Connection Description} dialog box is displayed. Enter any name (e.g., TEST) in the [Name] text box and left-click the [OK] button.

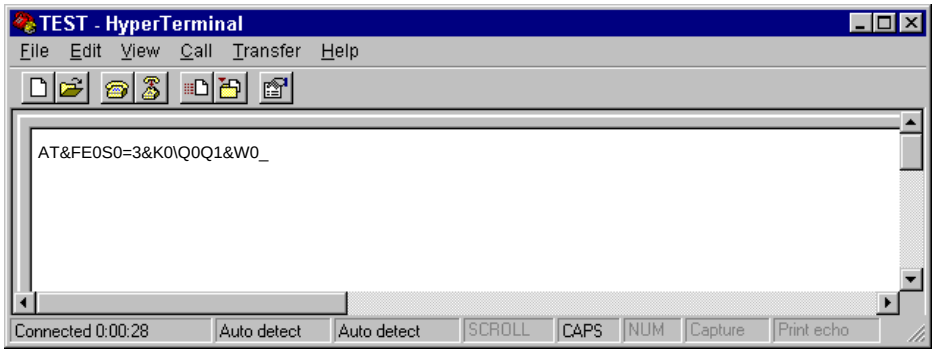
Appendix 3-1 Preparation of Modem on PC Side

◊ The {Phone Number} dialog box is displayed. Left-click the [Down] button of the [Connect using] text box, select the personal computer RS-232C port number (in this example, “Direct to Com 1”) from the list that is displayed, then left-click the [OK] button.

◊ The {Com1 Properties} dialog box is displayed. Set “9600” for Bits persecond, “8” for Data bits, “None” for Parity, “1” for Stop bits, and “None” for Flow control, then left-click the [OK] button. The set values must be the same as those of the FLT-ASFK.



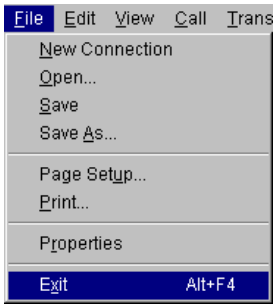
◊ The text entry screen appears. Enter the following text correctly.



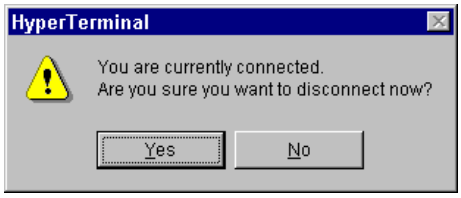
<Meanings of AT commands used>

Command	Function	Meaning
AT&F	Initializes the memory.	
ATE0	Sets command echo function.	Echo not returned
ATS0=3	Sets automatic reception/number of reception calls.	Automatic reception when 3rd call signal is detected
AT&K0	Sets DTE flow control.	Flow control not effected
AT\Q0	Sets DTE-DCE flow control.	Flow control not effected.
ATQ1	Sets output of result code to DTE.	Result code not output to DTE
AT&W0	Saves AT command settings.	Save to retain memory 0.

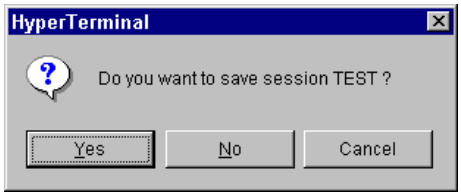
◊ Select [File] - [Disconnect Hyperterminal] from the main menu.



◊ The dialog box for confirming disconnection is displayed. Left-click the [Yes] button.



◊ The dialog box for confirming saving of the session is displayed. Left-click the [Yes] button to terminate the Hyperterminal.



The modem needs to be initialized when the current settings are to be changed or when they have disappeared or right after the modem is purchased. Normally, once the modem is initialized, there is no need to re-initialize it.

(3) Setting of FLT-ASFK/FFK120A

Set the FLT-ASFK (or FFK120A) in the “Personal Computer Loader” mode. It does not operate in the “Remote Operation” mode.

•For FLT-ASFK

Set it in the “LOADER” mode (SW1: OFF, SW2: OFF).

•For FFK120A

Set it in the the “Personal Computer” mode (MODE SW: “B”).

Appendix 3-1 Preparation of Modem on PC Side

Appendix 3-1-3 Preparations for Modem Connection on PC Side

After initializing the modem, prepare for connection of the modem.

◊ Switch on the PC power supply. Keep the FLT-ASFK (FFK120A) power supply off. When an FFK120A is used, connect the T-link cable to the PC.

◊ Set the appropriate baud rate, data bit, and parity bit by the Dip switch of the FLT-ASFK (FFK120A).
For the FFK120A, set the stop bit to "1."
Use the following combination of data bit and parity bit.

Data bit	Parity bit
8	None
7	Even or odd

<Recommended settings>
Baud rate: 9600 or 19200
Data bit: 8
Parity bit: None

◊ Connect the modem and FLT-ASFK (FFK120A) using the RS-232C cable attached to the modem (if not attached, a straight cable of any maker).

◊ Switch on the modem power supply.

◊ Switch on the FLT-ASFK (FFK120A).
For the FLT-ASFK, connect the loader connector to the PC connector. This is all for the preparations for modem connection. Proceed to the manipulation on the personal computer loader side.

Appendix 3-2 Manipulation on Personal Computer Loader Side

Here, the manipulation required on the personal computer loader side is explained.

Appendix 3-2-1 Modem connection

◊ Select [Options] - [Modem Connect...] from the main menu.
The {Modem setup and dailling} dialog box is displayed. Set the following items.

• Phone Number

Enter the phone number of the communication counterpart. It is possible to enter a comment after the phone number with a space of one character inserted between them. The comment after the space is not transmitted to the modem.
To register the phone number, left-click the [Entry] button.
It is possible to register a maximum of 10 phone numbers. Any of the phone numbers that have been registered can be called by left-clicking the [ ] button.
To delete any of the registered phone numbers, select it from the list of phone numbers and push the <Delete> key.

• Modem initialization string

This command is used to initialize the modem on the personal computer side. During modem connection, the command set here is transmitted to the modem. The default is [AT&FS0=0S7=60].
It is also possible to set any command and transmit it to the modem. In this case, however, do not include a phone number in the command.
To register the command that has been entered, left-click the [Entry] button.
It is possible to register a maximum of five commands. Any of the registered commands can be called by left-clicking the [ ] button.
To delete any of the registered commands, select it from the list of commands and push the <Delete> key.

<Meanings of AT commands used>

The meaning of the above default AT command is as follows. The AT commands may differ from one modem type to another. In this case, select a command having the same function.
For details, refer to the manual of the modem used.

Command	Function	Meaning
AT&F	Initializes the modem.	
ATS0=0	Sets automatic reception/number of reception calls.	Without automatic reception
ATS7=60	Sets wait time for detection of carrier from counterpart modem.	60 seconds

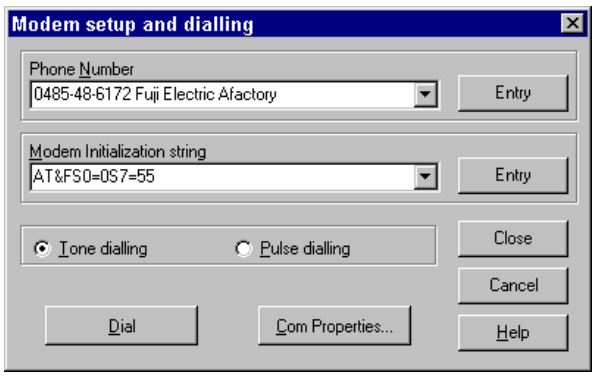
With Aiwa's PV-BW5605 modem mentioned in Appendix 3-1-2, the maximum value of AT command "S7" is 55. When this modem is used, enter the following command in [Modem initialization string].
AT&FS0=0S7=55

• Tone dialling/Pulse dialling

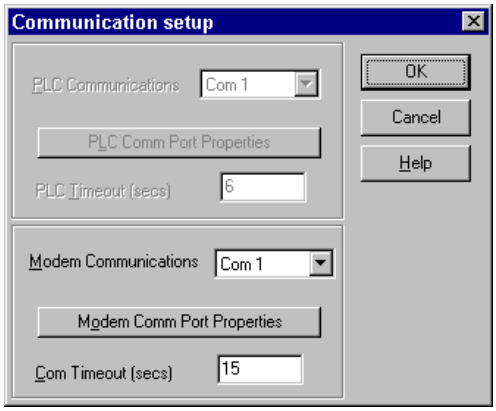
Select either of the following according to the line used.
- Tone dialing
- Pulse dialing

Appendix 3-2 Manipulation on Personal Computer Loader Side

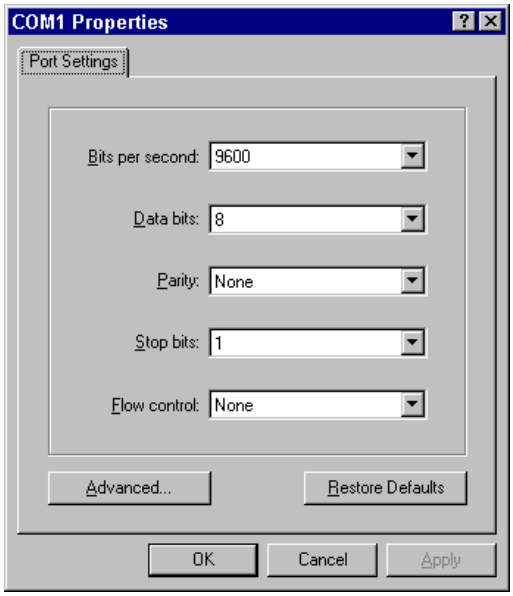
Next, set the RS-232C. Left-click the [Com Properties...] button.



◊ The {Communication setup} dialog box is displayed.
Select the RS-232C port used from [Modem Communications].
Next, left-click the [Modem Comm Port Properties] button.

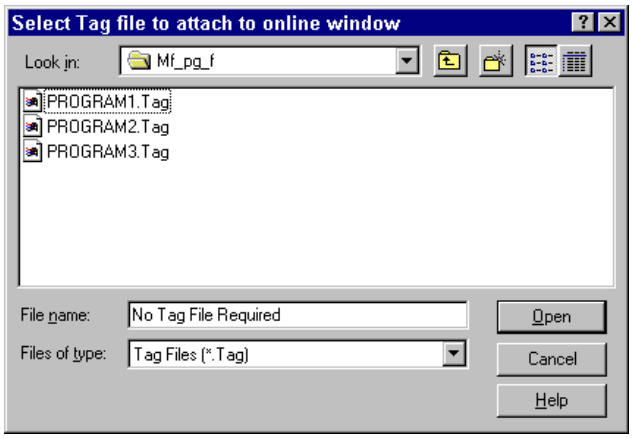


◊ The {COM1 Properties} dialog box is displayed. Set {Bits per second}, {Data bits}, and {Parity} to those values which have been set for the RS-232C (FLT-ASFK or FFK120A) on the PC side.
Set {Stop bits} to {1} and {Flow control} to {None}.
After all items are set, left-click the [OK] button.

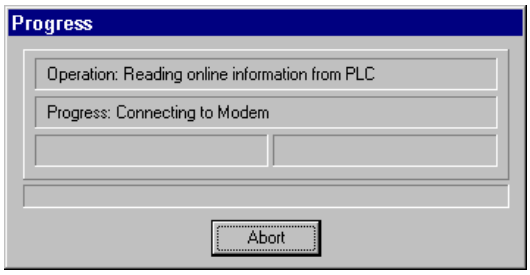


◊ The {Communication setup} dialog box is displayed again. Left-click the [OK] button.
◊ The {Model setup and dialling} dialog box is displayed again. Left-click the [Dial] button.

◊ The {Select tag file to attach to online window} dialog box is displayed. Select a tag file or {No Tag File Required}, and left-click the [Open] button.



◊ When connection to the modem starts, the {Connecting to Modem} message is displayed.



When connection to the modem is completed, reading online information from the PC starts.
When this is completed, the online window is displayed.
The subsequent operations are exactly the same as the ordinary online operations.

Appendix 3-2-2 Modem Disconnection

To disconnect the modem, select [Options] - [Modem Hangup] from the main menu.

Appendix 4 Password

Appendix 4 Password

The password is the function that prevents an unauthorized person from looking at the program that has been prepared. It is a four-digit number in the range 0000 to 3FFF. When an attempt is made to read, transfer, or check a program which is provided with a password, the dialog box that prompts you to enter the password is displayed.

If the right password is not entered, an error message is displayed. In this case, the attempted operation cannot be performed.

A password is saved as a part of a program and can be attached to any of the following.

- Online program (in the PC)
- Offline program (*.LDX file)
- PROM

Note that if you forget the password, you cannot read the program. The password that has been attached to the PC can be erased by clearing the memory. In this case, however, the program is erased at the same time. To erase the password for each of the PC programs, select [File] - [Open and Clear Online...] from the menu bar.

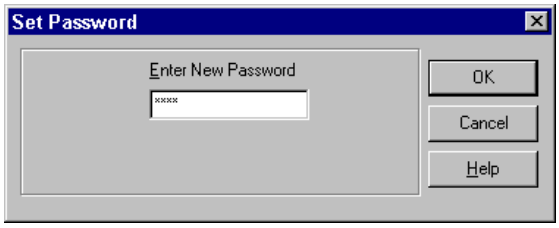
With a PC whose operation mode can be changed by a key switch (e.g., F70S or F120S), set the key switch in the {TERM} position. When the key switch is in the {RUN} or {STOP} position, it is impossible to set or change a password.

The methods of setting, changing, and deleting a password for online program are explained.

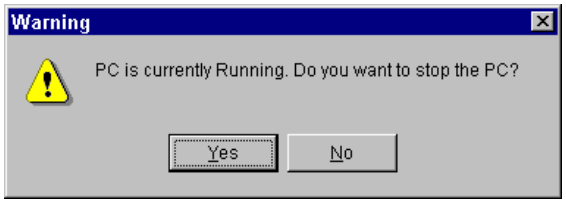
Appendix 4-1 Setting a New Password

Here, the method of setting a password for a program without password is explained. First, open the program window of the program for which a password is to be set.

◊ Select [PC Functions] - [Password...] from the menu bar.
◊ The {Set Password} dialog box is displayed. Enter any 4-digit number (0000-3FFF) in the text box. Note that on the screen the entered number is displayed as ****.
Left-click the [OK] button.



◊ If the PC is running, the {Warning} dialog box is displayed. (It is impossible to set/change a password while the PC is running.) Left-click the [OK] button.



◊ Now, the password has been set (written in the program).

Appendix 4-2 Opening a Program with Password

Here, the procedure for opening (reading) a program with a password is explained.

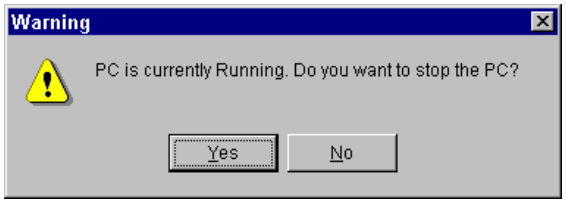
◊ Open the online or offline window. The dialog box that prompts you to enter the password is displayed. Enter the password in the text box and left-click the [OK] button. When the right password is entered, the program window opens.

Appendix 4-3 Changing/Deleting a Password

Here, the procedure for changing/deleting an existing password is explained. In the following explanation, it is assumed that the program with the password has already been opened.

◊ Select [PC Functions] - [Password] from the menu bar.
◊ The {Change/Delete Password} dialog box is displayed. Select [Delete Password] (or [Change Password]).
To change the password, enter a new password in the text box.
Left-click the [OK] button.

◊ If the PC is running, the {Warning} dialog box is displayed. (It is impossible to change/delete a password while the PC is running.) Left-click the [OK] button.



When a password is deleted, the {Warning} dialog box is not displayed. A password can be deleted even while the PC is running.

◊ This is all for the change/deletion of the password.

When the password has been deleted, it is no longer necessary to enter the password in order to open the program next time and after.

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