

Introduction

Thank you for purchasing the Mitsubishi general-purpose MELSEC series sequencer.
Read this manual and make sure you understand the functions and performance of MELSEC series sequencer thoroughly in advance to ensure correct use.
Please make this manual available to the end user.

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14.12 Setting MELSECNET/MINI Parameters

A	QnA	FX
×	•	×

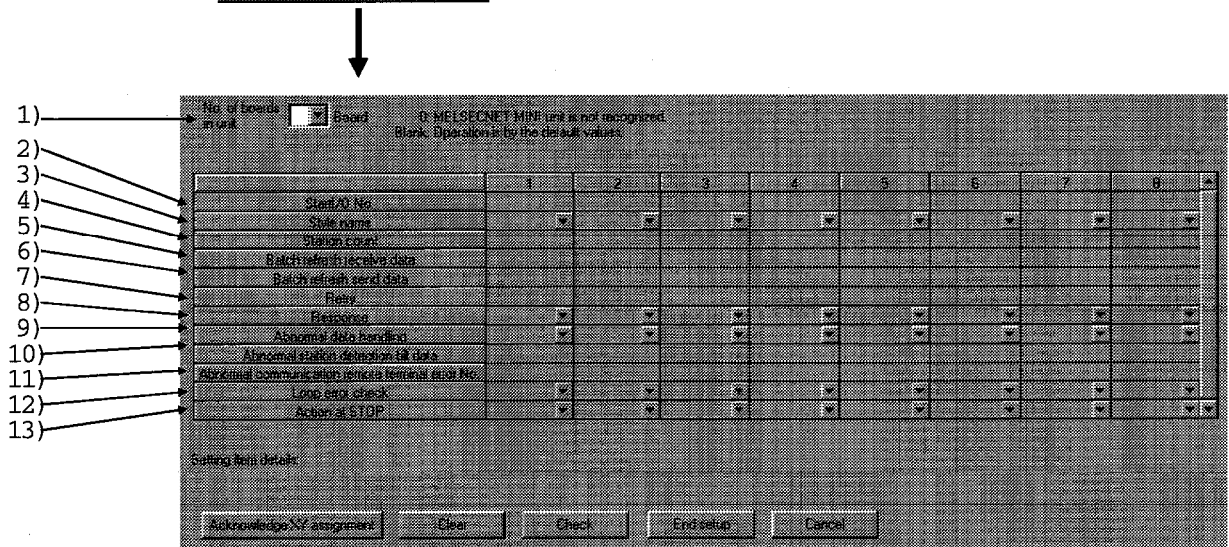
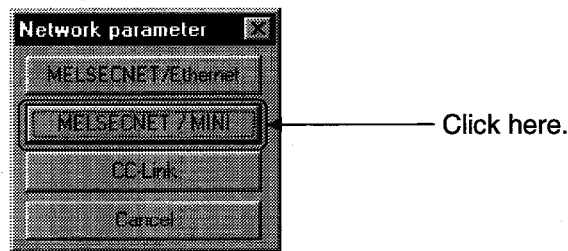
[Purpose]

Makes settings to automatically execute I/O refresh (reading and writing I/O information between the master unit and the remote unit) in the MELSECNET/MINI (S3) data link system.

[Operating procedure]

Select [Network parameter] to display the network parameter selection dialog box, and click the [MELSECNET/MINI] button.

[Dialog box]



[Description]

- 1) No. of boards in unit
Sets the total number of master boards for which parameters will be set.
- 2) Start I/O No.
Sets the start I/O number at which a master unit is loaded.
- 3) Style name
Selects the mode to use.
MELSECNET/MINI I/O dedicated mode
MELSECNET/MINI-S3..... Extension mode
- 4) Station count
Sets the station of count to link.

- 5) Batch refresh receive data
Sets the device in which the received data for batch refresh will be stored. By setting the device and the head number, all areas set in all stations will be refreshed by word. (The station number area in the output unit will also be refreshed.)
Set the head number at a multiple of 0 or 16 (0, 10, 20, ..., for X and B or 0, 16, 32 ... for M, L, and S) when the device to be refreshed is a bit device. Leave this box blank (no setting) when refresh is not required (when the received data is to be read by a FROM instruction, all remote I/O units are output units, etc.)
- 6) Batch refresh send data
Sets the device in which the transmitted data for batch refresh will be stored. By setting the device and the head number, all areas set in all stations will be refreshed by word. (The station number area in the input and output units will also be refreshed.)
Set the head number at a multiple of 0 or 16 (0, 10, 20, ..., for Y and B or 0, 16, 32 ... for M, L, and S) when the device to be refreshed is a bit device. Leave this box blank (no setting) when refresh is not required (when the transmitted data is to be written by a TO instruction, all remote I/O units are input units, etc.)
- 7) Retry
Sets the number of retries to the remote I/O when a communication error occurs.
- 8) Response
Sets whether the "link" or the "CPU" is given priority in access to the buffer memory in the master unit.
- 9) Abnormal data handing
Sets whether to "clear" or "retain" the data stored in the station where a communication error has occurred.
- 10) Abnormal station detection bit data
Sets the device in which abnormal station detection data will be stored. When the set model is MELSECNET/MINI, four words of data will be refreshed. When the set model is MELSECNET/MINI-S3, five words of data will be refreshed.
The number of words remains fixed even though the number of remote stations changes.
Set the head number at a multiple of 0 or 16 when the device to be refreshed is a bit device. Leave this box blank (no setting) when refresh is not required.
- 11) Abnormal communication remote terminal error No.
Sets the device in which the error code will be stored when an error occurs. When the set model is MELSECNET/MINI, a word of data will be refreshed. When the set model is MELSECNET/MINI-S3, a word plus the number of remote terminal stations (the number of stations written to the initial data ROM) of data will be refreshed.
Leave this box blank (no setting) when refresh is not required.

12) Loop error check

Sets the transmission status when a loop error occurs.

Test : Test text will be transmitted.

OFF : The data just before a loop error occurs will be transmitted to the remote I/O station.

Maintain : 00 text will be transmitted to the remote I/O station.

13) Action at STOP

Sets whether to discontinue or continue the ongoing operation when the PLC is at a stop.

14.13 Setting CC-Link Parameters

A	QnA	FX
x	•	x

[Purpose]

Makes settings to automatically execute I/O refresh (reading and writing I/O information between the master unit and the remote unit) in the CC-link data link unit system.

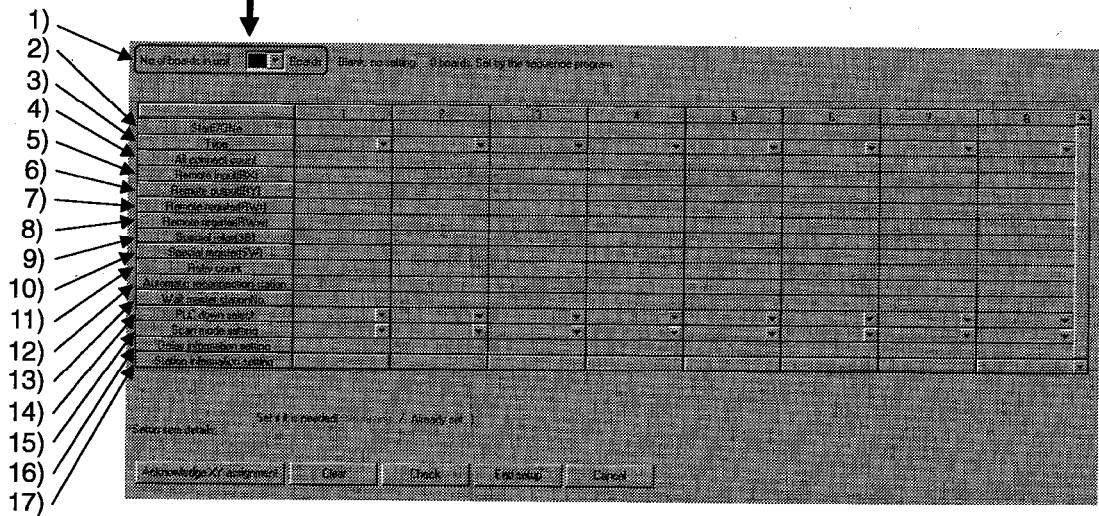
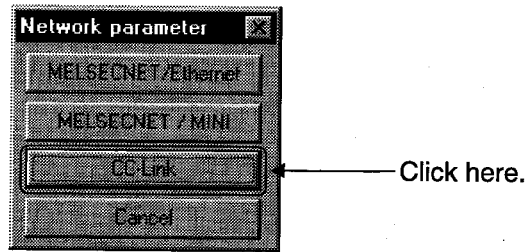
Beware that the CC-link parameter matching PLCs, AJ61QBT11 and A1SJ61QBT11, are version 9707B or later.

For unit versions, see Appendix 7.

[Operating procedure]

Select [Network parameter] to display the network parameter selection dialog box, and click the **CC-Link** button.

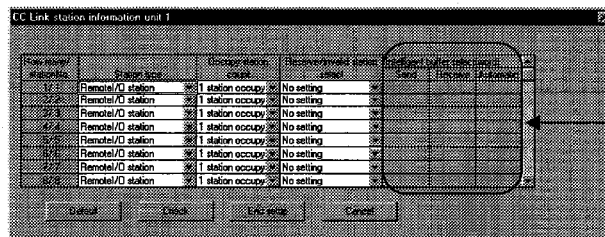
[Dialog box]



[Description]

- 1) No. of boards in unit
Sets the total number of master boards for which parameters will be set.
Set the number of boards at 0 when parameters are created using the sequence program.
- 2) Start I/O No.
Sets the head I/O number at which a master unit is loaded.
- 3) Type
Sets the master station and local stations.
- 4) All connect count
Sets the total number of stations connected, including reserved and invalid stations.
- 5) Remote input (RX)
Sets a bit device to batch-fresh remote inputs (RX).
By setting the device and the head number, all areas in all stations will be refreshed.
- 6) Remote output (RY)
Sets a bit device to batch-fresh remote outputs (RY).
By setting the device and the head number, all areas in all stations will be refreshed.
- 7) Remote register (RW_r)
Sets a word device to batch-fresh remote registers (RW_r).
By setting the device and the head number, all areas in all stations will be refreshed.
- 8) Remote register (RW_w)
Sets a word device to batch-fresh remote registers (RW_w).
By setting the device and the head number, all areas in all stations will be refreshed.
- 9) Special relay (SB)
Sets a bit device to batch-fresh link special relays (SW).
By setting the device and the head number, all areas in all stations will be refreshed.
- 10) Special register (SW)
Sets a bit device to batch-fresh special registers (SW).
By setting the device and the head number, all areas in all stations will be refreshed.
- 11) Retry count
Sets the number of text transmission retries when a transient transmission error occurs.
- 12) Automatic reconnection station
Sets the number of stations that can automatically be reconnected to the system during a scan.

- 13) Wait master station No.
Sets the number of the standby master station.
- 14) PLC down select
Sets whether to continue or discontinue the data link when the PLC is at a stop.
- 15) Scan mode setting
Sets whether to execute sequence scans in the synchronous or asynchronous mode.
- 16) Delay information setting
Sets the delay time between link scan intervals.
- 17) Station information setting
Sets information about each station for each unit.



- 18) Intelligent buffer select(word)
Buffer memory size will be assigned to the intelligent device station during transient transmission.
Default value : 80H Setting range : 80H to 1000H

14. SETTING NETWORK PARAMETERS

MELSEC

POINT																
• The available devices are shown below:																
Item	Bit Device									Word Device						
	X	Y	M	L	B	S	T	ST	C	D	W	T	ST	SW	R	ZR
Remote input (RX)	•		•	•	•	•				•	•				•	•
Remote output (RY)		•	•	•	•	•	•	•	•	•	•				•	•
Remote register (RW _r)			•	•	•	•				•	•				•	•
Remote register (RW _w)			•	•	•	•				•	•	•	•	•	•	•
Link special relay (SB)			•	•	•	•				•	•				•	•
Link special register (SW)			•	•	•	•				•	•				•	•

The bit devices F, V, and SB and the word device C are not available.

To set bit devices, set a multiple of 0 or 16 for the head device.
 When devices are X and Y : X10, Y10
 When devices are M : M0, M16, M32

14.14 Setting Ethernet Parameters

Beware that the Ethernet parameter matching PLC QE71, is available for version 9707B or later. For unit versions, see Appendix 7.

For further information about Ethernet, see the manual listed below:

- For QnA Ethernet Interface Module Use's Manual

14.14.1 Setting the IP address

A	QnA	FX
×	•	×

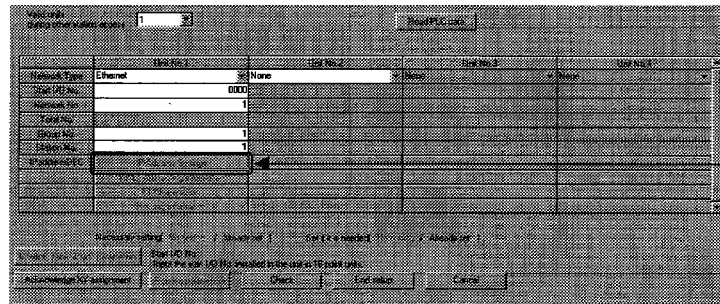
[Purpose]

Sets the IP address

[Operating procedure]

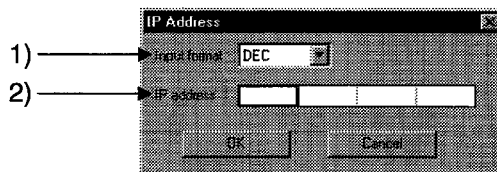
Display the network setting dialog box (set the network type, the start I/O number, the network number, and the station number), and click the **IP Address Settings** button.

[Dialog box]



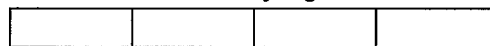
Click here.

[IP address setting dialog box]



[Description]

- 1) Input format
Selects decimal or hexadecimal.
- 2) IP address
Sets the IP address by eight bits.



Numeric value of bits 7 to 0

Numeric value of bits 31 to 24

14.14.2 Setting the NET/10 routing information

A	QnA	FX
×	•	×

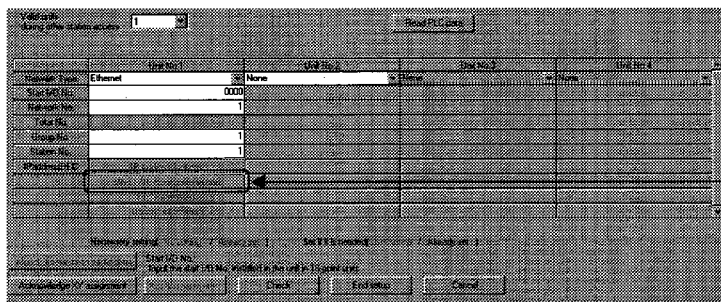
[Purpose]

Sets NET/10 routing information for access to another station via the QE71 using the MELSECNET/10 relay communication function.

[Operating procedure]

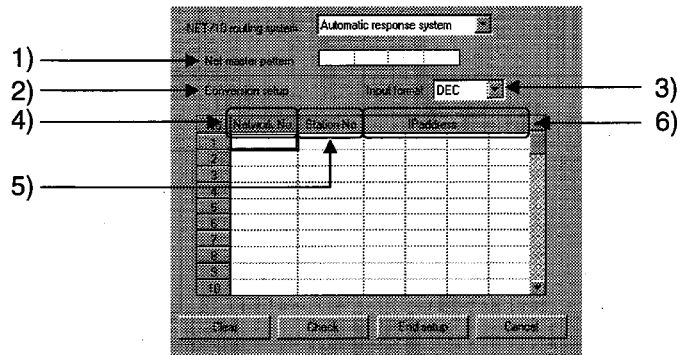
Display the network setting dialog box (set the network type, the start I/O number, the network number, and the station number), and click the **NET/10 routing information** button.

[Dialog box]



Click here.

[NET/10 routing information setting dialog box]



[Description]

- 1) NET/10 routing system
Selects the desired conversion system.
- 2) Net master pattern
Sets a 32-bit mask value by eight bits in decimal or hexadecimal.
- 3) Input format
Selects the notation used for expressing the network mask pattern and the IP addresses value from decimal and hexadecimal.
- 4) Network No.
Sets the network number between 1 and 239.
- 5) Station No.
Sets the destination station number between 1 and 64.
- 6) IP address
Sets the 32-bit IP address by eight bits in decimal or hexadecimal.

14.14.3 Setting the FTP parameter

A	QnA	FX
×	•	×

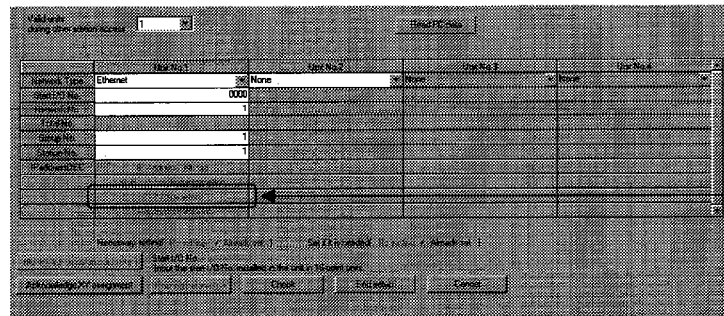
[Purpose]

Sets the FTP parameter to use the file transfer function of the QE71.

[Operating procedure]

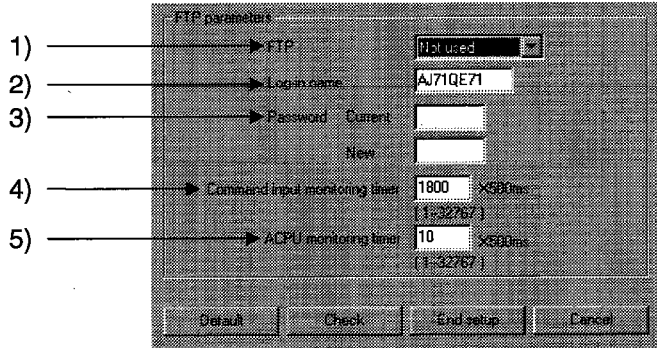
Display the network setting dialog box (set the network type, the start I/O number, the network number, the group number, and the station number), and click the **FTP Parameters** button.

[Dialog box]



Click here.

[FTP parameter setting dialog box]



[Description]

- 1) FTP
Sets whether to use the FTP function parameter.
- 2) Log-in name
Enter the login name to access.
- 3) Password
Enter the password within eight characters.
Current Enter the registered password.
New Enter the password to be newly registered.
- 4) Command input monitoring timer
The default value is 1800 x 500 ms.
- 5) ACPU monitoring timer
The default value is 10 x 500 ms.

14.14.4 Setting the routing information

A	QnA	FX
×	•	×

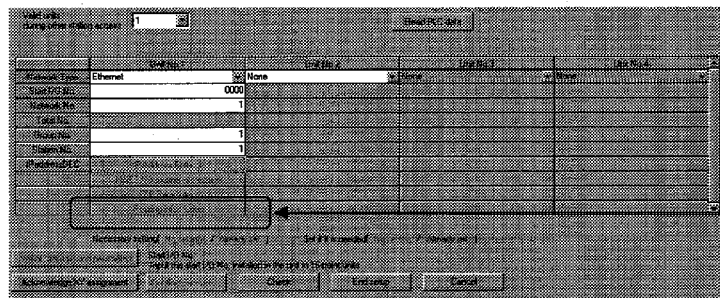
[Purpose]

Sets routing information for data communication via sub net masks and default router IP addresses.

[Operating procedure]

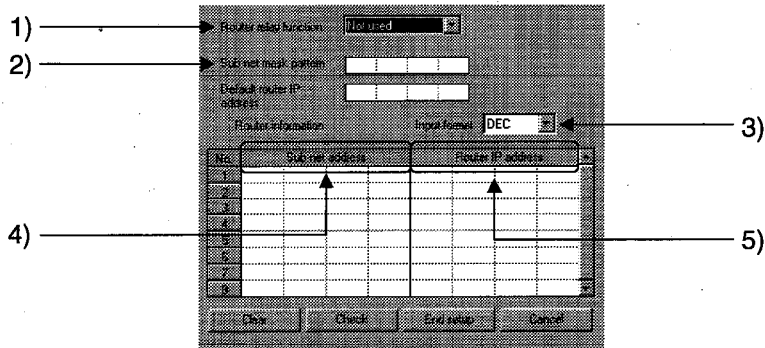
Display the network setting dialog box (set the network type, the start I/O number, the network number, the group number, and the station number), and click the **Routing information** button.

[Dialog box]



Click here.

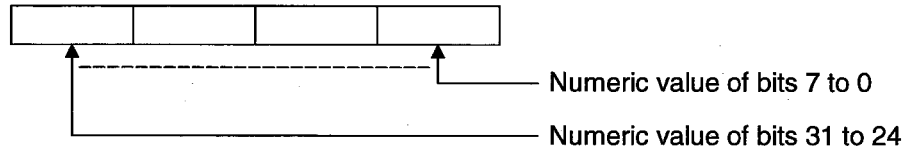
[Routing Information Dialog box]



[Description]

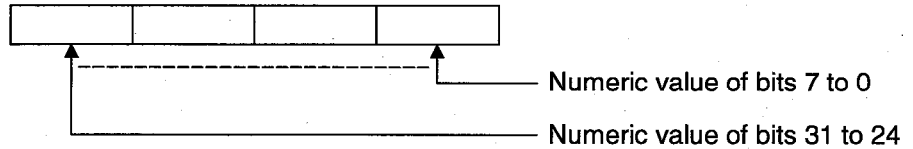
1) Router relay function
Sets whether to use the router relay function.

2) Sub net mask pattern
Sets the sub net mask pattern by eight bits.

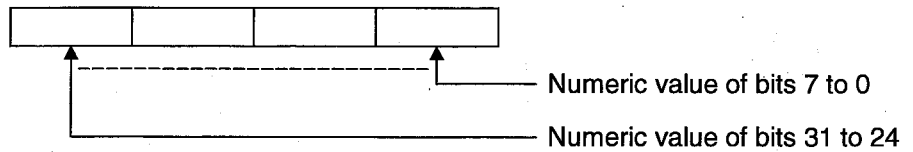


3) Input format
The form of the sub net mask pattern, the default router IP addresses, the sub net addresses, and the router IP addresses will be switched between decimal and hexadecimal.

4) Sub net address
Sets the destination address by eight bits.



5) Router IP address
Sets the router IP address by eight bits.

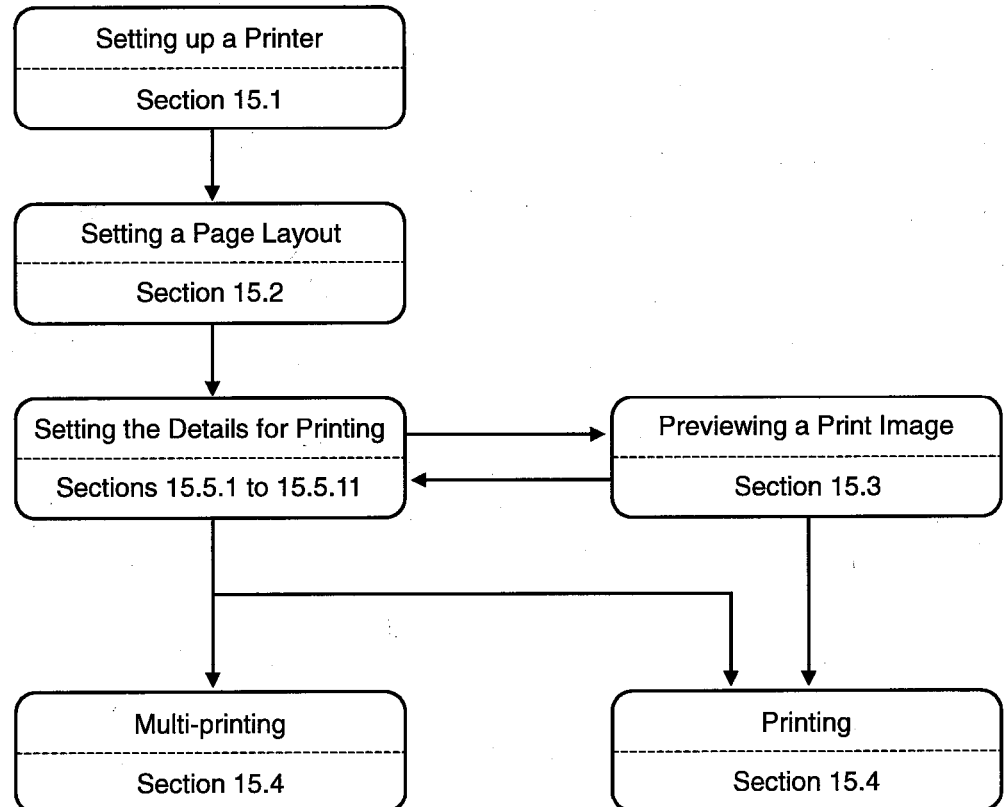


15. PRINT

This chapter describes how to print data, including sequence programs created by a GPPW, device comments, and set parameters, on a printer from a peripheral device.

[Outline of operations to printing]

Shown below is the basic flow of steps to printing.



15.1 Setting Up a Printer

A	QnA	FX
•	•	•

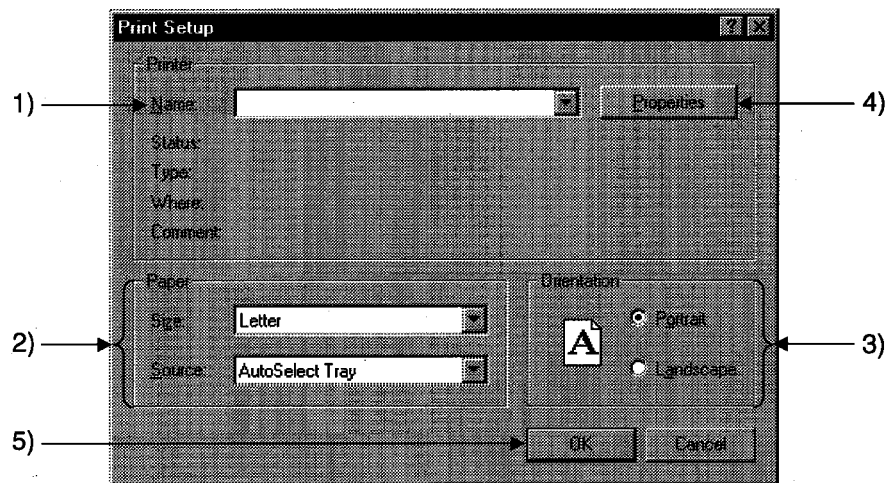
[Purpose]

Selects a printer for printing and sets the paper size, the printing orientation, and other printing format-related items.

[Operating procedure]

Select [Project] → [Printer setup] or click  (**Ctrl** + **P**) and the **Printer setup** button.

[Dialog box]



[Description]

- 1) **Printer**
Selects a printer for printing.
- 2) **Paper**
Sets the size of the paper for printing and the paper feed method of the printer. The setting range depends on the printer.
- 3) **Orientation**
 - Portrait**
Characters will be printed along the paper feed direction.
 - Landscape**
Characters will be printed across the paper feed direction.
- 4) **Properties** button
Clicking this button displays the properties dialog box. The printer property option is used to make the basic settings of the printer.
- 5) **OK** button
Click this button after the printer setting is completed.

POINTS

- A printer model operable, whose performance was verified by Mitsubishi, is available.
HP Laser Jet 4000N
- Consult the operation manual for the selected printer for the printer properties that depend on the printer manufacturer and the printer model.
- To print large quantities of data, open the printer property window from the control panel of Windows 95, and select "Print directly to the printer" for the spool setting.


15.2 Setting a Page Layout

A	QnA	FX
•	•	•

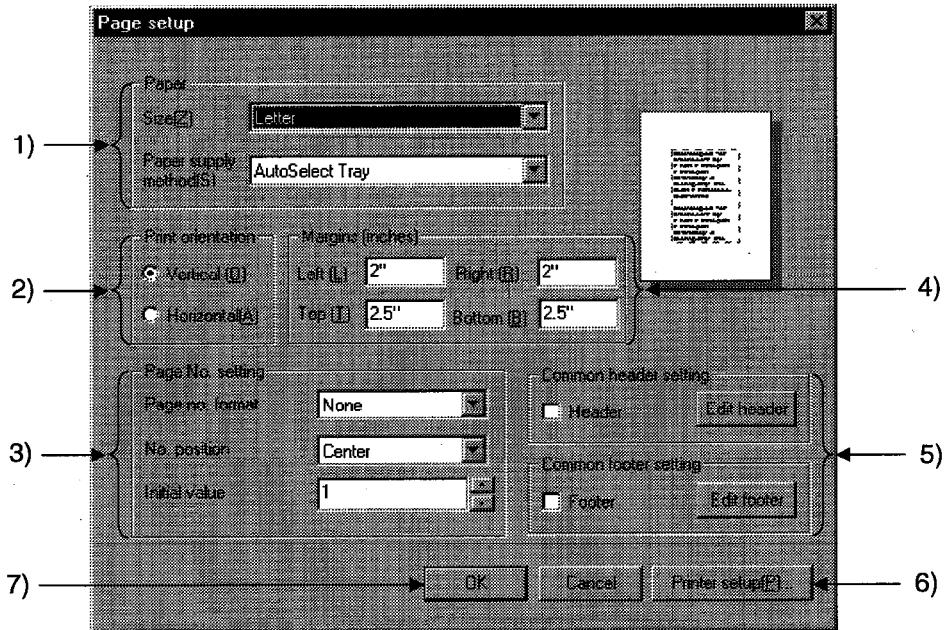
[Purpose]

Makes settings related paper, page number, header, and so on.

[Operating procedure]

Select [Project] → [Printing] and click the [Page setup] button, or click  ([Ctrl] + [P]) then the [Page setup] button.

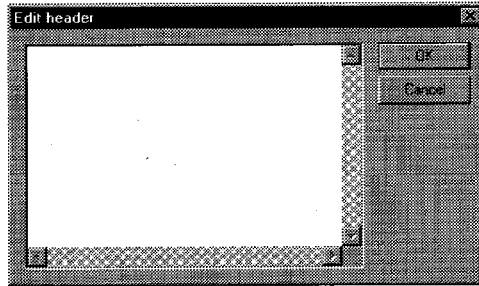
[Dialog box]



[Description]

- 1) Paper
Sets paper size and paper feed method.
- 2) Print orientation
Sets the orientation of printing on paper.
- 3) Page No. setting
Page no. form..... When page numbers are not required, set "None"
The symbol "-**-" indicates that page numbers starting from the initial value will be printed by item. However, serial number will be printed when the data to be printed is more than one page long. The symbol "***-***" indicates that page numbers starting from the initial number will be printed according to the printing order set in the Multi-Printing dialog box.
- No. position..... Sets the position of page numbers.
- Initial value..... Sets the page number to be printed on the first page.

- 4) Margins
Sets the margins of the page.
- 5) Common header setting
By checking off the check box, a header will be printed on each page.
Click the **Edit header** button, and the Header Edit dialog box as shown below will be displayed.



Alternatively, clicking the **Edit footer** button displays the Footer Edit dialog box like the Header Edit dialog box.
The header (or footer) can be edited within the range of 64 characters x seven lines.
Lines and images cannot be edited, and characters cannot be decorated.

- 6) **Printer setup** button
By clicking this button, the printer dialog box will be displayed (see Section 15.1.).
- 7) **OK** button
Click this button after the page setting is completed.

POINTS

- The printing date will be printed automatically in the header (footer) by setting "#YY-MM-DD#" in the Header (Footer) Edit dialog box.
The PC type will also be printed automatically in the header (footer) by setting "#CPU#."
<Example>

#YY-MM-DD#
#CPU#

<Printing example>
98-03-01
A3U

- Entered character patterns and printed characters

Character Pattern	Function	Remarks
#YY-MM-DD#	Date (year-month-day)	/
#YYYY-MM-DD#	Date (year-month-day)	
#YY/MM/DD#	Date (year/month/day)	
#YYYY/MM/DD#	Date (year/month/day)	
#YY#	Year (last two digits)	
#YYYY#	Year (four digits)	
#MM#	Month	
#DD#	Day	
#CPU#	CPU model	When setting characters after the CPU model, the total length of characters including the CPU model must not exceed 64 characters. Otherwise the CPU model may not be printed.
#PROJECT#	Project name	/
#PROJ-COMMENT#	Quick reference title of project	
#DATA#	Data name (MAIN, SUB1, etc.)	
#DATA-COMMENT#	Quick reference title of data name	

To add a fixed character after the character pattern, insert a space after #CPU#.
<Example> Printed characters when A2USHCPU-S1 is selected

When no space is inserted after CPU
#CPU#ABCD → Print → A2USH-S1D

When a space is inserted after CPU
#CPU# ABCD → Print → A2USH-S1 ABCD

↑
Insert a space.

15.3 Previewing a Print Image

A	QnA	FX
•	•	•

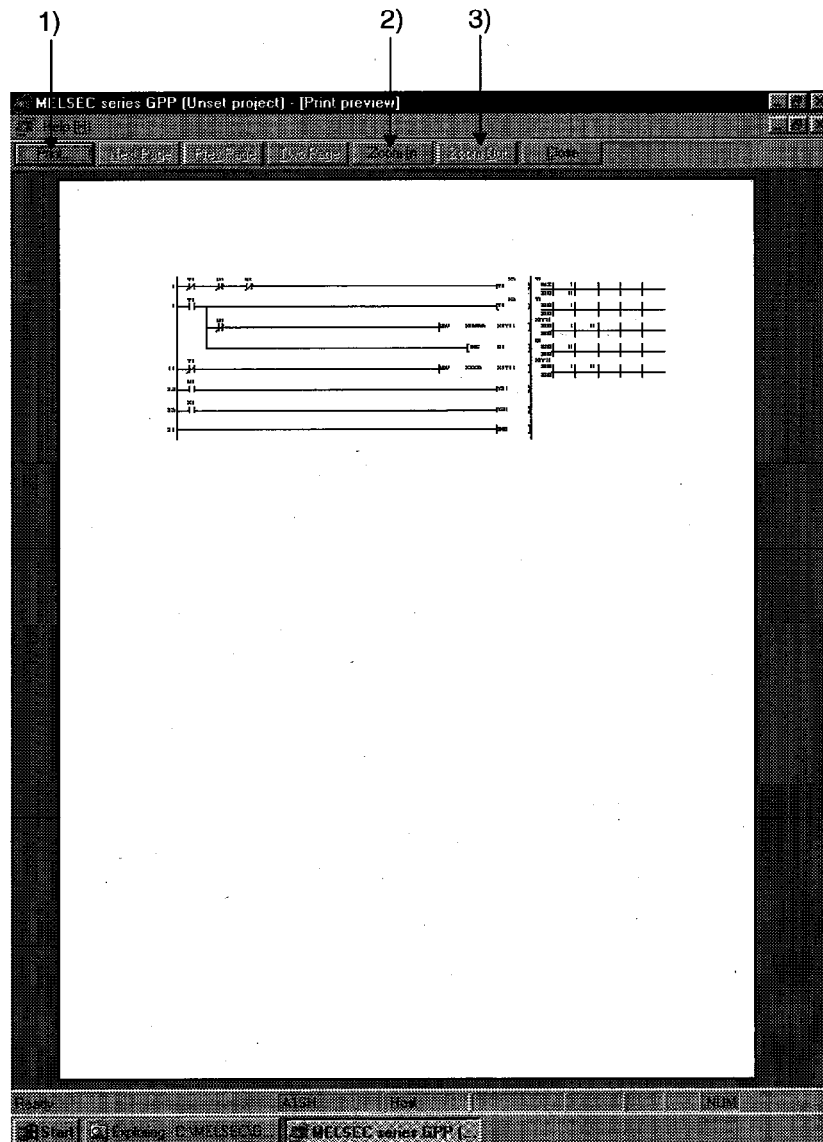
[Purpose]

The image of the entire page when it is printed will be displayed.

[Operating procedure]

Select [Project] → [Print] and click the **Print preview** button, or click  (**Ctrl** + **P**), then the **Print preview** button.



[Preview Window]



[Description]

- 1) **Print** button
The data displayed on the print preview window will be printed.
- 2) **Zoom In** button
The displayed image will be enlarged by clicking this button.
Data will be displayed in three different scales.
- 3) **Zoom Out** button
The displayed image will be reduced by clicking this button.

POINT

- When the mouse button is clicked while the shape of the mouse pointer is , the window zooms in.
When the mouse button is clicked while the shape of the mouse pointer is , the data is displayed in the standard scale.

15.4 Printing


A	QnA	FX
•	•	•

[Purpose]

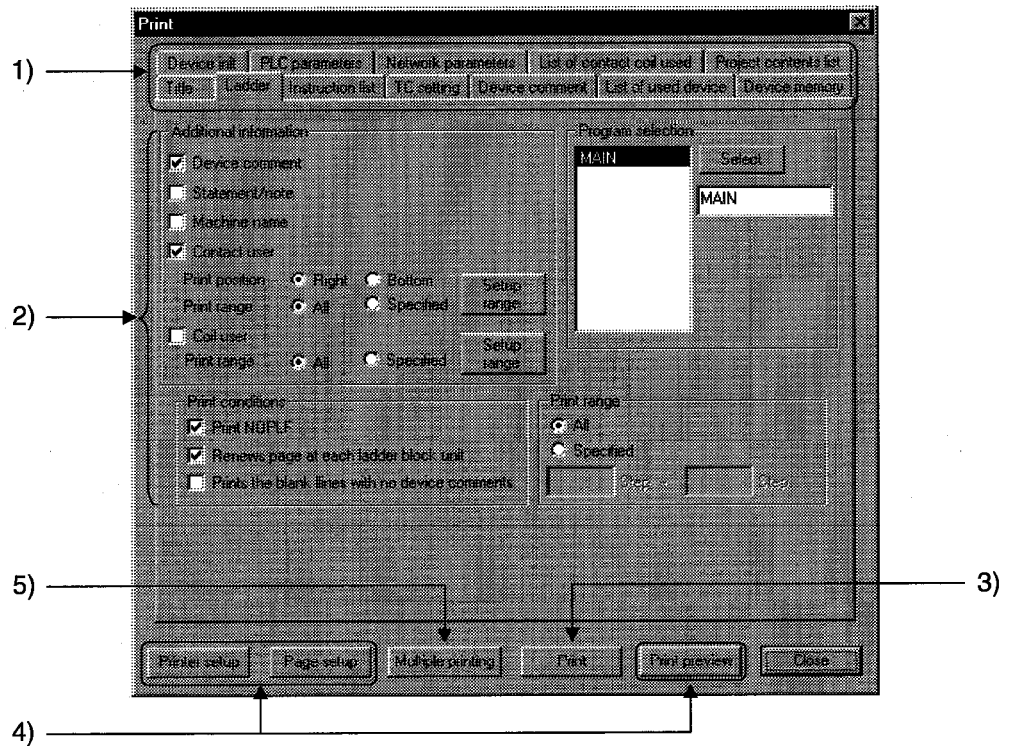
Prints data, such as sequence programs and device comments.

Data can be printed in two ways: each volume of data will be printed or two or more volumes of data will be printed at a time.

[Operating procedure]

Select [Project] → [Print], or click  (**Ctrl** + **P**), then the **Print preview** button.

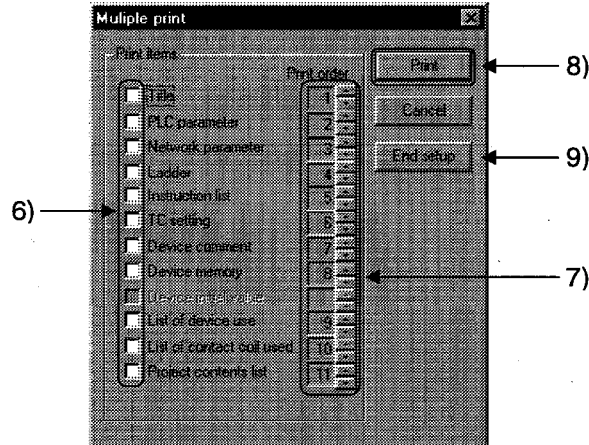
[Dialog box]




[Description]

- 1) Click the tab for the data to be printed, and the sheet for setting details will come in front.
- 2) Sheet
Each sheet provides the items to be set to designate items and range of the data to be printed and other details.
Select each item by checking the check box to the left.
For details on each sheet, see Subsections 15.5.1 to 15.5.12.
- 3) **Print** button
Click this button after details have been set on each sheet.
The data of the displayed sheet will be printed.

- 4) **Related function**
By clicking on each button, the corresponding dialog box related to printing will be displayed. (See Sections 15.1, 15.2, and 15.3.)
- 5) **Multiple printing** button
By clicking this button, the Multiple Data Printing dialog box shown below will be displayed.
Two or more volumes of data will be printed at a time.



- 6) **Print items**
Select the data items to batch-print by checking the check box.
- 7) **Print order**
Sets the order in which each data will be printed.
Set the order number of each item using 
The order number of any data, which is not set to be printed, will be ignored.
- 8) **Print** button
By clicking this button, the data items with a checkmark ✓ will be batch-printed.
Select data items to batch-print by checking their check boxes.
- 9) **End setup** button
The data items to print will be set, and the initial setting dialog box will be displayed.

[Setting procedure]

1. After the printer setting is completed, display the print dialog box.
2. Open the page setting dialog box, and set the page format.
3. Open each sheet, and set details.
4. To confirm the image of the data when it is printed, click [Print preview].
5. Click the [Print] button 3) when printing data one by one.
The data displayed on the current sheet will be printed.
To batch-print two or more volumes of data, click the [Multiple printing] button 5).
The multiple data printing dialog box will be displayed.
6. Set the items to print 6) and the printing orders 7).
7. By clicking the [Print] button 8), the selected volumes of data will be batch-printed.

POINTS

- In data-by-data printing, a ladder will be printed by clicking the [Print] button when the <<Ladder>> sheet is displayed, or a device comment will be printed by clicking on the [Print] button when the <<Device comment>> is displayed.
- When the page number form "-**-" is set in page setting for multiple data printing, the data will be printed in the set printing order, and serial page numbers will be printed.

15.5 Setting the Details for Printing

Set details for printing, such as the range and contents of each data.
For a printing example of each data, see Section 15.6.


15.5.1 Creating a title

A	QnA	FX
•	•	•

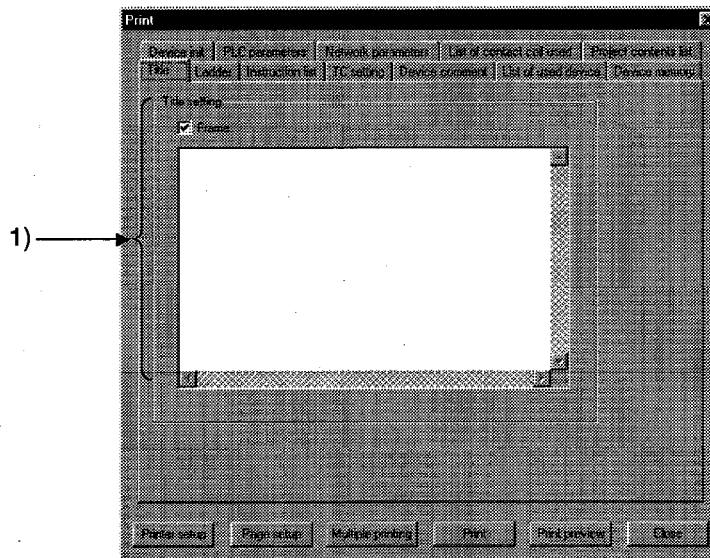
[Purpose]

Creates a title for the project to be printed.

[Operating procedure]

Select [Project] → [Print] and click the <<Title>> tab, or click  ([Ctrl] + [P]), then the <<Title>> tab.

[Dialog box]



[Description of item]

1) Title setting

Edit the title within 64 characters x nine lines.

Lines and images cannot be edited, and characters cannot be decorated.

By checking the check box, the title edited will be framed.

The date will be printed automatically when a character pattern, such as "#YY-MM-DD#", is set.

On this dialog box, the date (#YY-MM-DD#) and the CPU model (#CPU#) can be set.

For input characters patterns, see Section 15.2.


15.5.2 Setting a ladder print range

A	QnA	FX
•	•	•

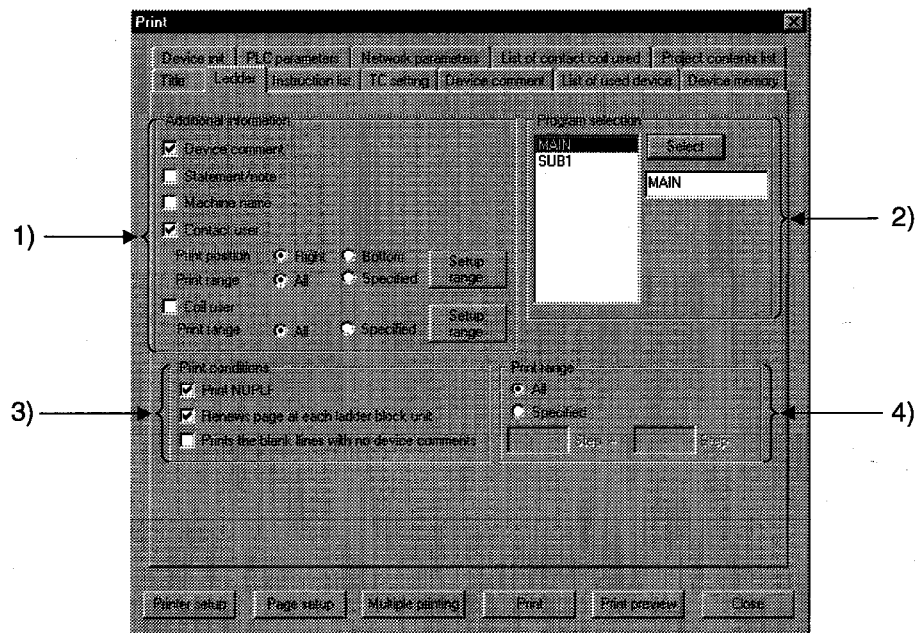
[Purpose]

Sets details about ladder printing, such as the ladder print range and additional information.

[Operating procedure]

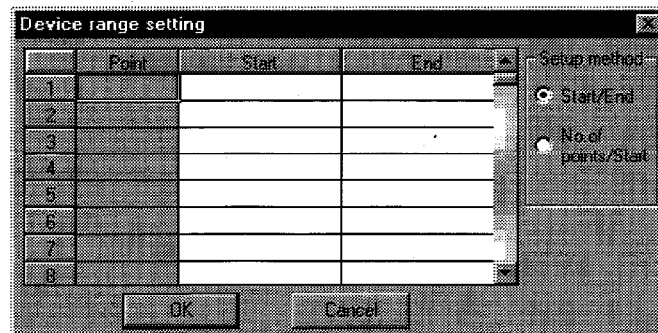
Select [Project] → [Print] and click the <<Ladder>> tab, or click  ([Ctrl] + [P]), then the <<Ladder>> tab.

[Dialog box]



[Description]

- 1) Additional information
Any item with a checkmark ✓ will be added to the ladder to be printed. By clicking the **Setup range** button for contact using data or for coil using data, the following Device Range Setting dialog box appears. Set the head and final devices or the number of points and the head device of each range to be specified.



- 2) Program selection
Using the mouse, select on the list a program to print, and click the **Select** button to set the selection.

- 3) Print conditions
 - Sets the condition for printing the ladder.
 - Print NOPLF (A series and QnA series only)
NOPLF will be printed by checking the check box.
 - Renews page at each ladder block unit
Pages will be renewed by ladder block by checking the check box.
When the check box is not checked, pages will be renewed by ladder line.
 - Prints the blank lines with no device comments
Any line without a device comment will also be printed by checking the check box.

- 4) Print range
 - Sets the print range of the ladder.
 - All
The entire range from step 0 to the END instruction of the program will be printed.
 - Specified
The range between the specified steps will be printed.

POINT

- Precautions
 Printing condition
 Pages will be fed at the position following an NOPLF instruction even if the NOPLF check box is not checked. (A series and QnA series only)

- If the program is read from the GPPA by selecting [Project] → [Import file], the number of contacts to be displayed on a line is different between the GPPW and the GPPA and the number of lines printed by the GPPA may therefore vary.

- When feeding pages

The screenshot shows a software window with several tabs: Device list, PLC parameters, Network parameters, List of contact coil used, Project contents list, Ladder, Instruction list, I/O setting, Device comment, List of used device, and Device memory. The 'Ladder' tab is active. On the left, under 'Additional information', the 'Contact user' checkbox is checked. Below it, 'Print position' has 'Right' selected, and 'Print range' has 'All' selected. At the bottom left, under 'Print conditions', the 'Print NOPLF' checkbox is unchecked. On the right, under 'Program selection', 'MAIN' is selected in a list, and 'SUB1' is also visible. At the bottom right, under 'Print range', 'All' is selected. Labels 'Selected' and 'Not selected' point to the 'Contact user' and 'Print NOPLF' checkboxes respectively.

If there are two or more lines of contact using data under the above settings, pages will be fed in the middle of the lines. Pages will not be fed in the middle of the ladder and the coil using data.

15.5.3 Setting a Instruction list print range

A	QnA	FX
•	•	•

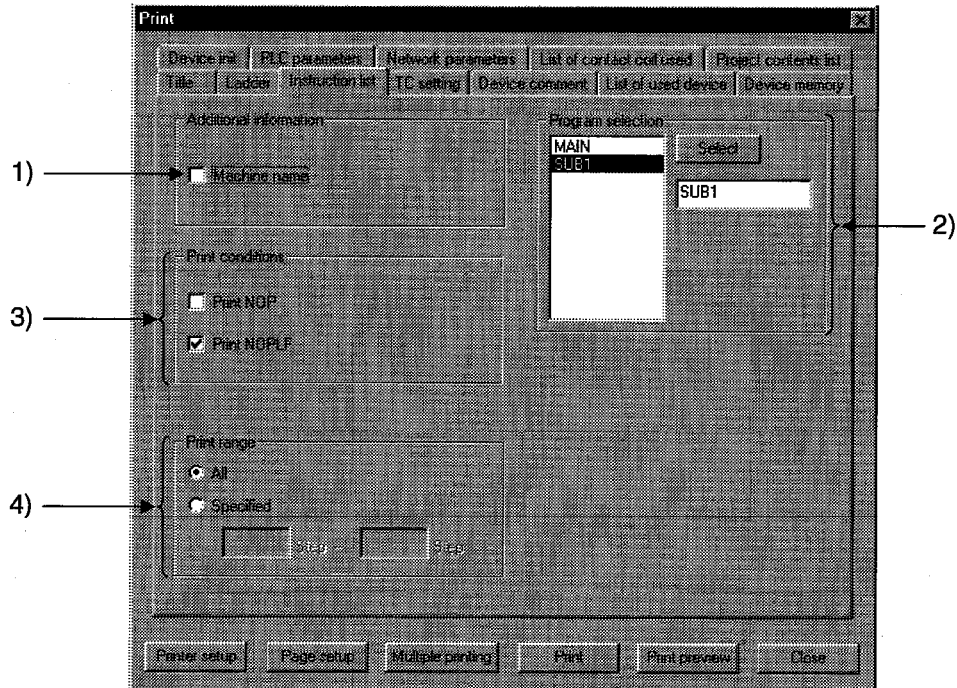
[Purpose]

Sets details about Instruction list printing, such as the list print range and additional information.

[Operating procedure]

Select [Project] → [Print] and click the <<Instruction list>> tab, or click  ([Ctrl] + [P]), then the <<Instruction list>> tab.

[Dialog box]



[Description]

- 1) Additional information
A device name will be added to the Instruction list.
Select this item by checking the check box.
- 2) Program selection
Using the mouse, select on the list a program to print, and click the **Select** button to set the selection.
- 3) Print conditions
Prints NOP
NOP will be printed by checking the check box.
Print NOPLF (A series and QnA series only)
NOPLF will be printed by checking the check box.

4) Print range

Set the print range of the list.

⊙ All

The entire range from step 0 to the END instruction of the program will be printed.

⊙ Specified

The range between the specified steps will be printed.

POINT							
<ul style="list-style-type: none"> Precautions <ul style="list-style-type: none"> Printing condition Pages will be fed at the position following an NOPLF instruction even if the Printing NOPLF check box is not checked. (A series and QnA series only) Print range In setting the print range, enter both the start step and the end step, and the former must be larger than the latter. When two or more steps are specified as the start or end step for an instruction, or when the instruction includes the steps specified, the instruction will also be printed. When printing data on A4 portrait paper If the number of device characters of an instruction exceeds 80 on A4 portrait paper or 130 on A4 landscape paper, the excessive characters may not be printed. Any entire instruction or device within eight characters will be printed. If a device is more than eight characters long, the third device will not be printed completely. (All device characters will be printed on A3 landscape paper even if the number of characters is maximum.) <Example> Printing on A4 portrait paper 							
1	2	3	4	5	6	7	8
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890
123 EFCALL	"File001" P0		ZR1000Z0	ZR1100Z0	ZR1200Z1	ZR1300Z0	ZR1400Z0
123 EFCALL	"File001" P0		J123\W100Z12		J123\W100Z12		J123\W100Z12


15.5.4 Setting a TC setting value print range

A	QnA	FX
•	•	•

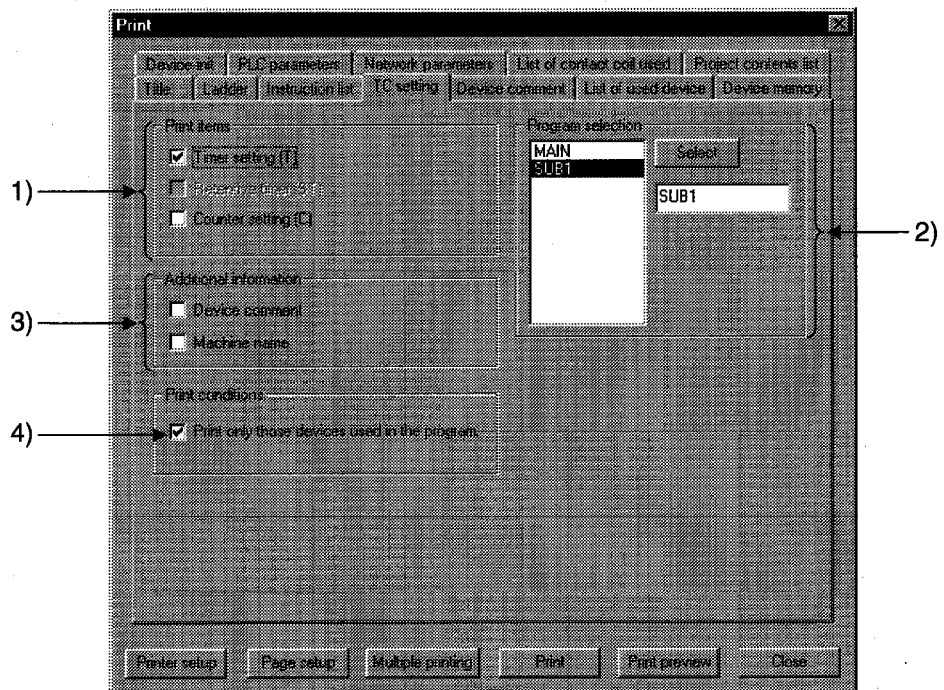
[Purpose]

Sets details about timer or counter settings, such as the items to be printed and additional information.

[Operating procedure]

Select [Project] → [Print] and click the <<TC setting>> tab, or click  ([Ctrl] + [P]), then the <<TC setting>> tab.

[Dialog box]



[Description]

- 1) Print items
The item with a checkmark ✓ will be printed.
- 2) Program selection
Select on the list a program for which timer or counter settings will be made, and click the **Select** button to set the selection.
- 3) Additional information
The item with a checkmark ✓ will be added.
- 4) Print conditions
Only the timer or counter used in the program will be printed by checking this check box.


15.5.5 Setting a device comment print range

A	QnA	FX
•	•	•

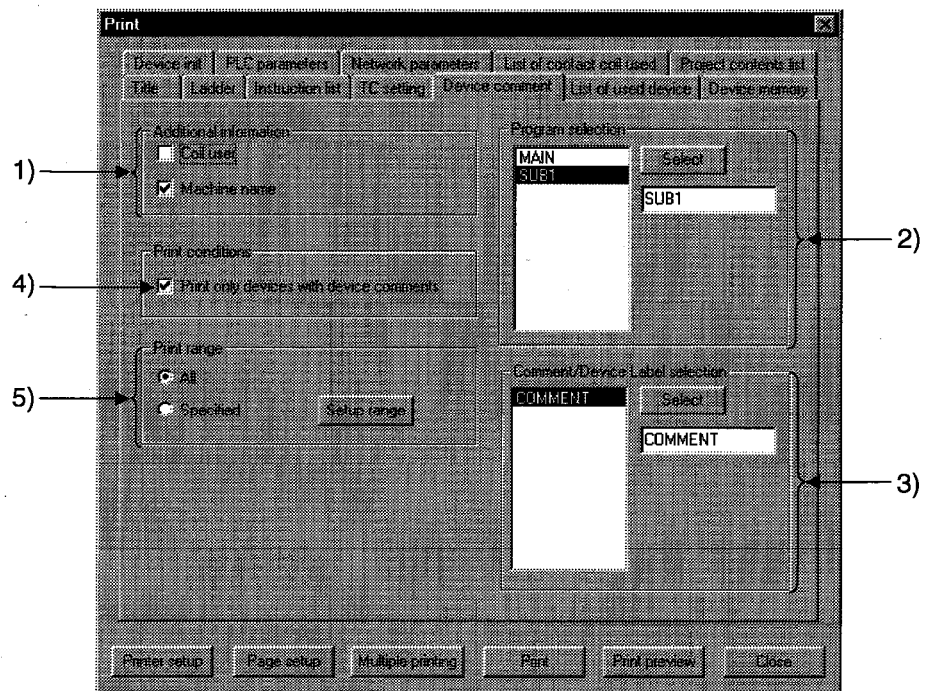
[Purpose]

Sets the print range of device comments and so on.

[Operating procedure]

Select [Project] → [Print] and click the <<Device comment>> tab, or click  ([Ctrl] + [P]), then the <<Device comment>> tab.

[Dialog box]



[Description]

- 1) Additional information
Device comments will be printed with additional information.
Check the desired check box.
- 2) Program selection
Select on the list a program as the coil using data specified for Additional information, and click the **Select** button to set the selection.
- 3) Comment/Device Label selection
Select on the list the device comment data to be printed, and click the **Select** button to set the selection.
- 4) Print conditions
Only devices with a comment will be printed.
Select this item by checking the check box.

5) Print range

Set the range of the device comments to be printed.

 All

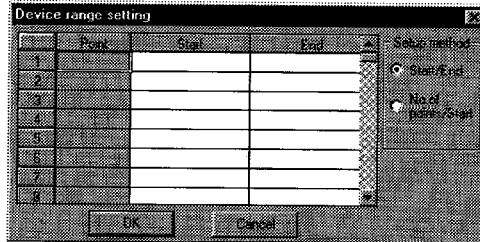
All device comments of the data selected will be printed.

 Specified

The device comments within the specified range will be printed.

By clicking the **setup range** button, the Device Range Setting dialog box shown below will be displayed.

Set the head and final devices or the number of points and the head device of the range to be designated.

**POINT**

- Whenever device comments are read from the GPPA, GPPQ, FXGP(DOS) or FXGP(WIN) from the [Import file] menu, confirm before printing whether the data is read properly.
If the data is not read properly, check whether the comment range is set according to Chapter 9 "Setting Device Comments."


15.5.6 Setting a device use list print range

A	QnA	FX
•	•	•

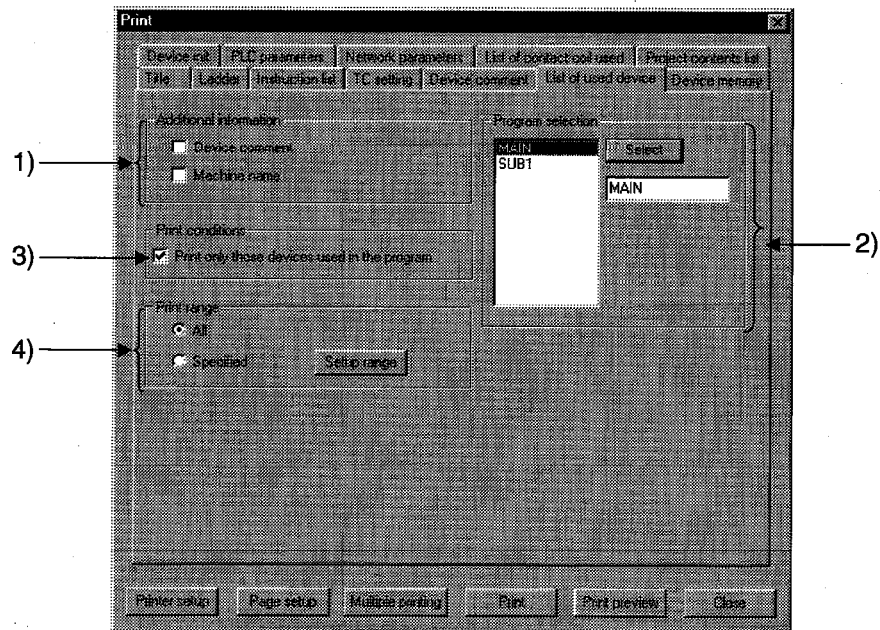
[Purpose]

Sets the print range of device using data and so on.

[Operating procedure]

Select [Project] → [Print] and click the <<List of used device>> tab, or click  (**[Ctrl] + [P]**), then the <<List of used device>> tab.

[Dialog box]



[Description]

- 1) Additional information
A device use list will be printed with additional information.
Check the desired check box.
- 2) Program selection
Select on the list a program as the device using data specified for Additional information, and click the **[Select]** button to set the selection.
- 3) Print conditions
Prints only devices being used during the program.
Select this item by checking the check box.
- 4) Print range
Sets the range of the device use list to be printed.
 - Ⓐ All
All device use lists of the data selected will be printed.
 - Ⓑ Specified
The device use lists within the specified range will be printed.
At the Device Range Setting dialog box displayed by clicking the **[setup range]** button, set the head and final devices or the number of points and the head device of the range to be designated.


15.5.7 Setting a device memory print range

A	QnA	FX
•	•	•

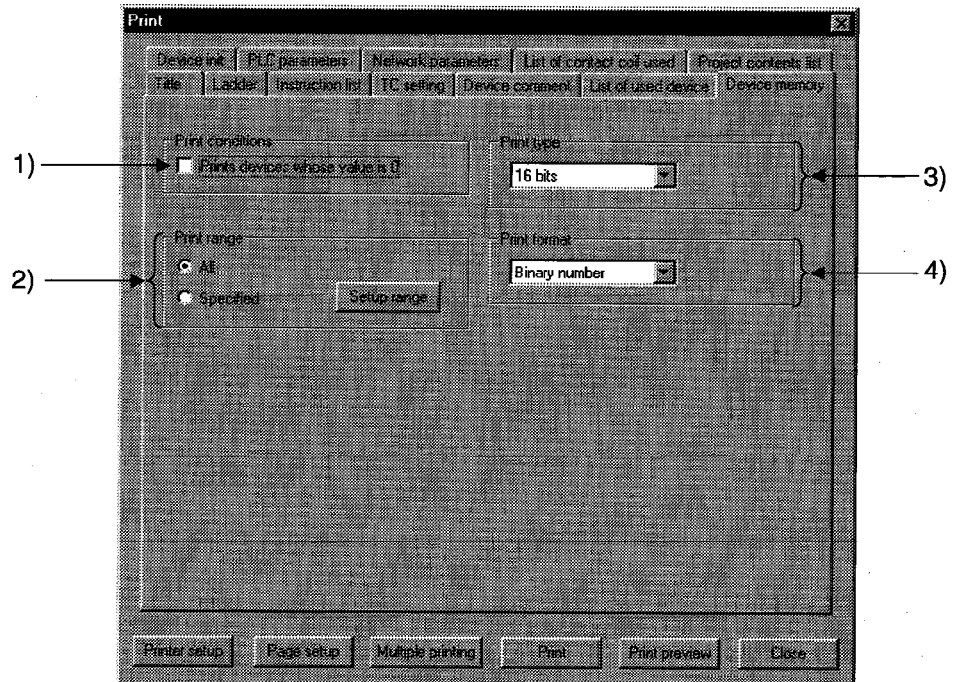
[Purpose]

Sets the print range of the device memory using data and so on.

[Operating procedure]

Select [Project] → [Print] and click the <<Device memory>> tab, or click  ([Ctrl] + [P]), then the <<Device memory>> tab.

[Dialog box]



[Description]

- 1) **Print conditions**
Any device whose value is "0" will also be printed.
Select this item by checking the check box.
- 2) **Print range**
Sets the print range of the device memory.
 - Ⓐ All
The entire device memory will be printed.
 - Ⓑ Specified
The specified range of the device memory will be printed.
By clicking the [Specified range] button, the Device Range Setting dialog box will be displayed. Set the head and final devices or the number of points and the head device of the range to be designated.
- 3) **Print type**
Set device memory values in 16-bit integers, 32-bit integers or real numbers.
- 4) **Printing format**
Sets device memory values in binary, decimal or hexadecimal.


15.5.8 Setting a device initial value print range

A	QnA	FX
×	•	×

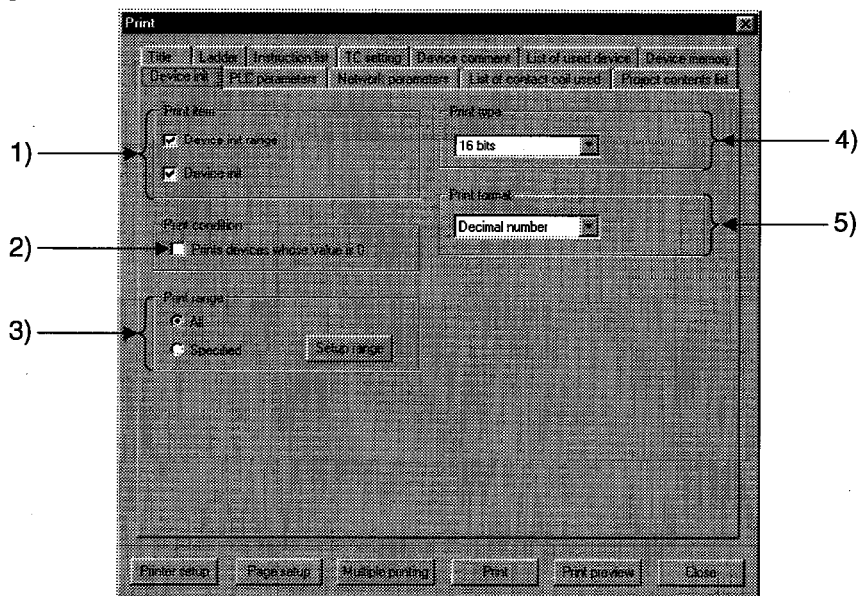
[Purpose]

Sets the print range of the QnA series device initial values and so on.

[Operating procedure]

Select [Project] → [Print] and click the <<Device init>> tab, or click  (**Ctrl** + **P**), then the <<Device init>> tab.

[Dialog box]



[Description]

- 1) Print item
The items selected will be printed.
Select the desired item by checking the check box.
- 2) Print condition
Any device whose value is "0" will also be printed.
Select this item by checking the check box.
- 3) Print range
Sets the print range of the device initial values.
 - Ⓐ All
All device initial values will be printed.
 - Ⓑ Specified
The device initial values within the specified range will be printed.
By clicking the **Setup range** button, the Device Range Setting dialog box will be displayed. Set the head and final devices or the number of points and the head device of the range to be designated.
- 4) Print type
Sets device initial values in 16-bit integers, 32-bit integers or real numbers.
- 5) Print format
Sets device initial values in binary, decimal or hexadecimal.


15.5.9 Setting a PLC parameter print item

A	QnA	FX
•	•	•

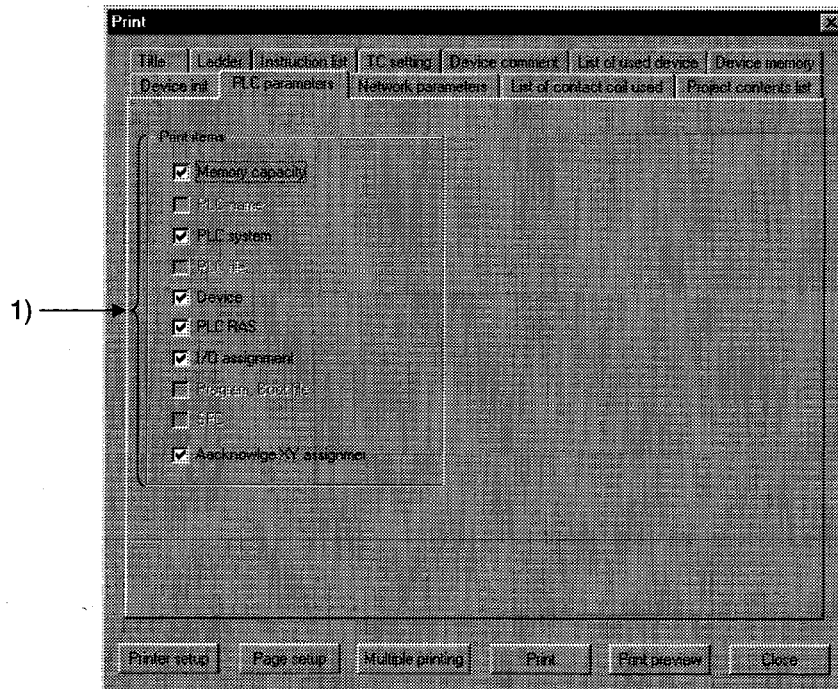
[Purpose]

Sets the PLC parameter items to be printed.

[Operating procedure]

Select [Project] → [Print] and click the <<PLC parameters>> tab, or click  ([Ctrl] + [P]), then the <<PLC parameters>> tab.

[Dialog box]



[Description]

1) Print items

The items selected will be printed.

Select each desired item by checking the check box.

PLC name setting, PLC file setting, Program setting/Boot file setting, and SFC setting are not required and cannot therefore be selected for the A series.

Memory capacity setting is not required and cannot therefore be selected for the QnA series.

PLC file setting, PLC RAS setting, Program setting, Boot file setting, and SFC setting are not required and cannot therefore be selected for the FX series.

XY assignment check can be selected only for the AnA, AnU, and QnA series.


15.5.10 Setting a network parameter print item

A	QnA	FX
•	•	×

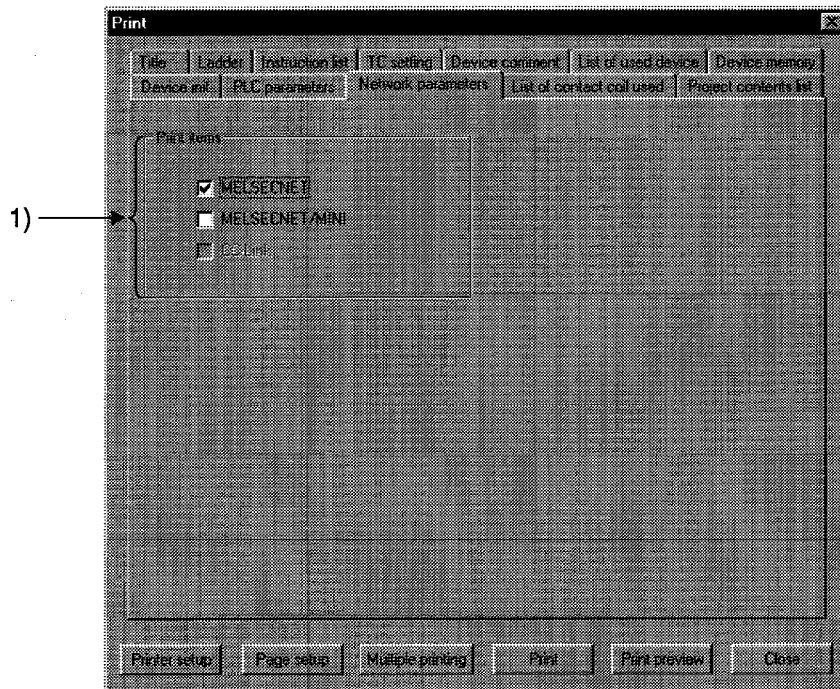
[Purpose]

Sets the network parameter items to be printed.

[Operating procedure]

Select [Project] → [Print] and click the <<Network parameters>> tab, or click  (**[Ctrl] + [P]**), then the <<Network parameters>> tab.

[Dialog box]



[Description]

1) Print items

The items selected will be printed.

Select each desired item by checking the check box.

CC-link setting is not available and cannot therefore be selected for the A series.


15.5.11 Setting a list of contact coil used

A	QnA	FX
•	•	•

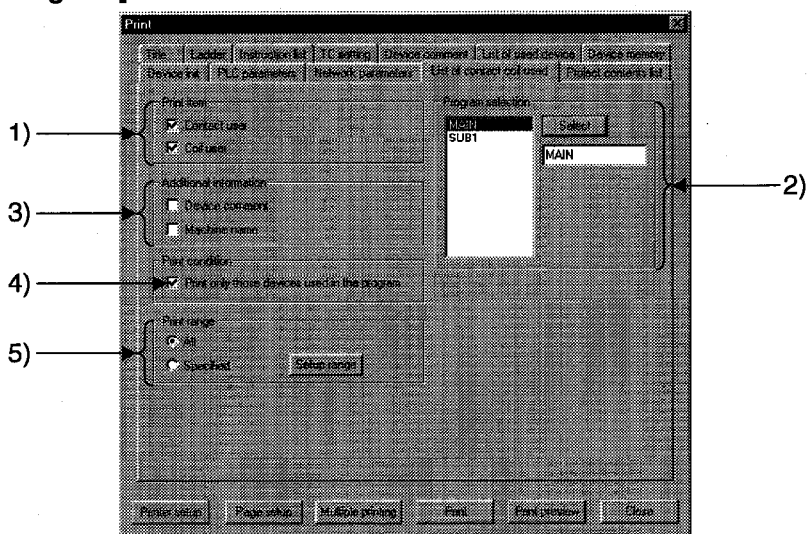
[Purpose]

Sets the print range of the devices used for contacts or coils and so on.

[Operating procedure]

Select [Project] → [Print] and click the <<List of contact coil used>> tab, or click  (**Ctrl** + **P**), then the <<List of contact coil used>> tab.

[Dialog box]



[Description]

- 1) Print item
A list will be printed with the selected items added.
Check the desired check box.
- 2) Program selection
Select on the list a program as the contact or coil using data, and click the **Select** button to set the selection.
- 3) Additional information
The list will be printed with additional information.
Select this item by checking the check box.
- 4) Print condition
Only devices used in the program selected will be printed.
- 5) Print range
Set the range of the contact/coil use list to be printed.
 - All
The entire range from step 0 to the END instruction of the program will be printed.
 - Specified
The range specified by the step numbers will be printed.
To specify the range, set the head and final devices or the number of points and the head device in the Device Range Setting dialog box.


15.5.12 Displaying a project contents list

A	QnA	FX
•	•	•

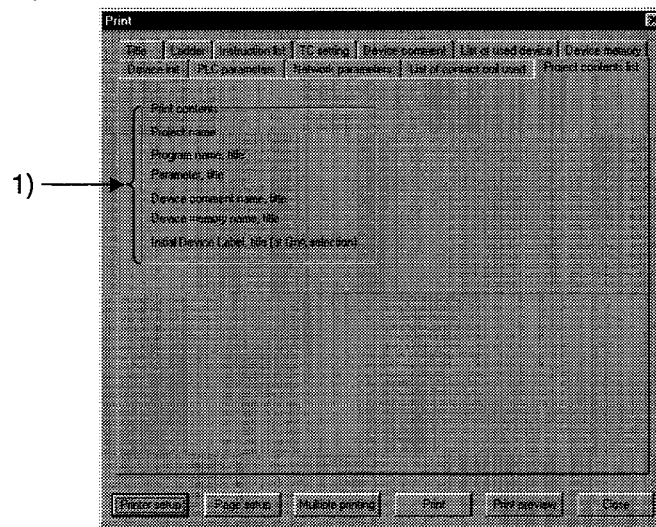
[Purpose]

Displays a list of project data.

[Operating procedure]

Select [Project] → [Print] and click the <<Project contents list>> tab, or click  ([Ctrl] + [P]), then the <<Project contents list>> tab.

[Dialog box]



[Description]

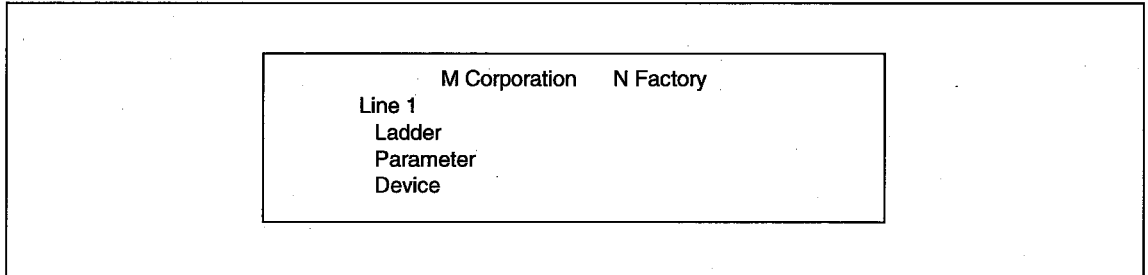
- 1) Print contents
The items to be printed on a list of project data are displayed.

15.6 Print Examples

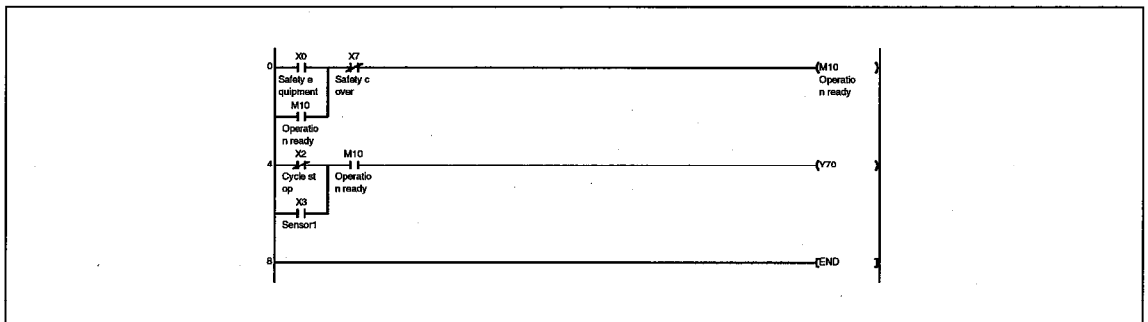
A	QnA	FX
•	•	•

Print examples are shown below.

<<Title>>



<<Ladder>>



<<TC setting>>

Time set val list					
Device	Setting	Device	Setting	Device	Setting
T0	K1000				
T1	K120				
T2	K6000				
T3	K50				
T4	K850				

<<Device comment>>

Device comment list		
Device	Device comment	Dev Lbl
M10	Operation ready	
X0	Safety equipment	SAFETY
X1	Safety cover	COVER
X2	Operation ready	READY
X3	Oil pressure	OIL-M

<<List of used device>>

Device use list					
Device	Use/Not use	No.	Error	Device comment	Dev Lbl
X0	┆┆	0		Safety equipment	SAFETY
X2	┆┆	0		Cycle stop	READY
X3	┆┆	0		Sensor1	OIL-M
X7	┆┆	0		Safety cover	
Y70		1	ERROR		
M10	┆┆ < >	1		Operation ready	

<<Device memory>>

Device memory list										
	16 bits		Type	decimal						
Device	+0	+1		+2	+3	+4	+5	+6	+7	Character string
D0	7086	37		3786	898	3	8798	4641	1697	
D6	9678	8860		7697	35	4400	736	16	4	
D16	67	3		7376	767	2000	373	43	774	
D24	100	738		737	6767	7463	234	55	7799	
D32	1156	878		763	4343	800	7438	4	777	
D40	343	7895		64	867	364	343	360	3	
D48	8381	137		434	789	43	1587	7888	796	
D56	100	0		0	0	0	0	0	0	

<<Device init >>
QnA series only

Dev init set range

No.	Items	Start device	End device	Comment
1	50	D0	D49	
2	100	D100	D199	

Device initial value

Device	16 bit								Character string
	Type	decimal							
	+0	+1	+2	+3	+4	+5	+6	+7	
D0	374	4687	6	746	76	37	3	387	
D6	354	37	3	76	64	35	76	37	
D16	697	879	6	78	3	3789	379	3794	
D24	3998	3687	489	1579	3794	874	679	7897	
D32	57	4	486	7	867	687	68	76	
D40	87	8676	87	7767	6	76	7	687	
D48	687	78							

<<PC parameters>>

Mem capcty set

1	Sequence program capacity	
	Main	[6] K step
	Sub 1	[0] K step
	Sub 1	[] K step
2	Microcomputer program capacity	
	Main	[0] K bytes
	Sub	[] K bytes
3	Comment capacity	
	Comment	[0] K bytes [0] points
	Extension comment	[0] K bytes [0] points
4	File register capacity [0] K bytes [0] points	
5	Capacity for debug	
	Sampling trace	[0] K bytes
	Stat latch (data mem)	[] K bytes
	Stat latch (file reg)	[] K bytes
6	Total capacity [16] K bytes	

<<Network parameters>>
A series and QnA series only

Set unit count				
1	MELSECNET (11, /10) No. of units	[2] Unit(s)		
	Unit 1	<MELSECNET/10 (Ctrl sta)	>	
	Unit 2	<MELSECNET/10 (Ctrl sta)	>	
	Unit 3	<	>	
	Unit 4	<	>	
2	Valid unit accessing other st	[1] (Older of unit)		

Network setting				
	Unit 1 NET/10 Ctrl Sta	Unit 2 NET/10 Ctrl Sta	Unit 3	Unit 4
Start I/O No.	[0]	[30]	[]	[]
Network No.	[1]	[2]	[]	[]

<<List contact coil used>>

List of Contact-Coil				
Device	Step	Ld sym	Ins	Pos
X0	0	┆┆	LD	*
X2	4	┆┆	LDI	*
X3	5	┆┆	OR	*
X7	2	┆┆	ANI	*
Y70	7	< >	OUT	*
M10	1	┆┆	OR	*
M10	3	< >	OUT	*
M10	6	┆┆	AND	*

<<Project contents list>>

Drive/path	A:\		
Project name	TESTA		
Title			

Data name	Size	Creation data	Title
• Program			
┆ MAIN	13KB	1998/ 9/19 16:22:50	
• Device comment			
┆ COMMENT	1KB	1998/ 9/19 16:22:54	
┆ MAIN	1KB	1998/ 9/19 16:40:56	
• Device memory			
┆ MAIN	1KB	1998/ 9/19 16:45:00	
• Parameter			
┆ PC parameter		1998/ 9/19 16:44:56	
┆ Network parameter		1998/ 9/19 16:44:56	

16. OTHER FUNCTIONS


16.1 Checking Programs

A	QnA	FX
•	•	•

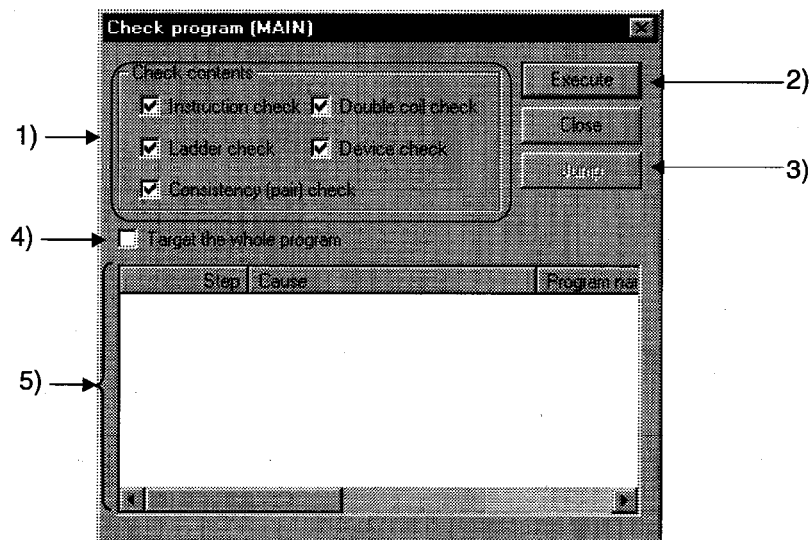
[Purpose]

Checks for logical errors and input errors in programs.

[Operating Procedure]

Select [Tools] → [Check program], or click .

[Dialog Box]



[Description]

1) Check contents

Selects the item to be checked.

The range for the check is from step 0 to the END instruction (or the end of the program if there is no END instruction).

- Instruction check
Check the checkbox to check if instructions can be used, depending on the PC type.
- Ladder check
Check the checkbox to check whether the program is a valid ladder.
- Consistency (pair) check
Check the checkbox to check for consistency in the program, for example whether there are pointers at jump destinations and if there are RET instructions for subroutines.
- Double coil check
Check the checkbox to check for duplicate coils.

- Device check
Check the checkbox to check if device numbers are within the parameter range.
- 2) **Execute** button
Click this button after making the necessary settings.
- 3) **Jump** button
If there is a step with an error, designating the error in the check result and clicking this button moves the cursor to the relevant step of the ladder.
- 4) Apply to whole program
Checks all sequence programs listed in the project list.
- 5) Check result
Displays the result of the project check.

16.2 Merging Programs

A	QnA	FX
•	•	•

[Purpose]

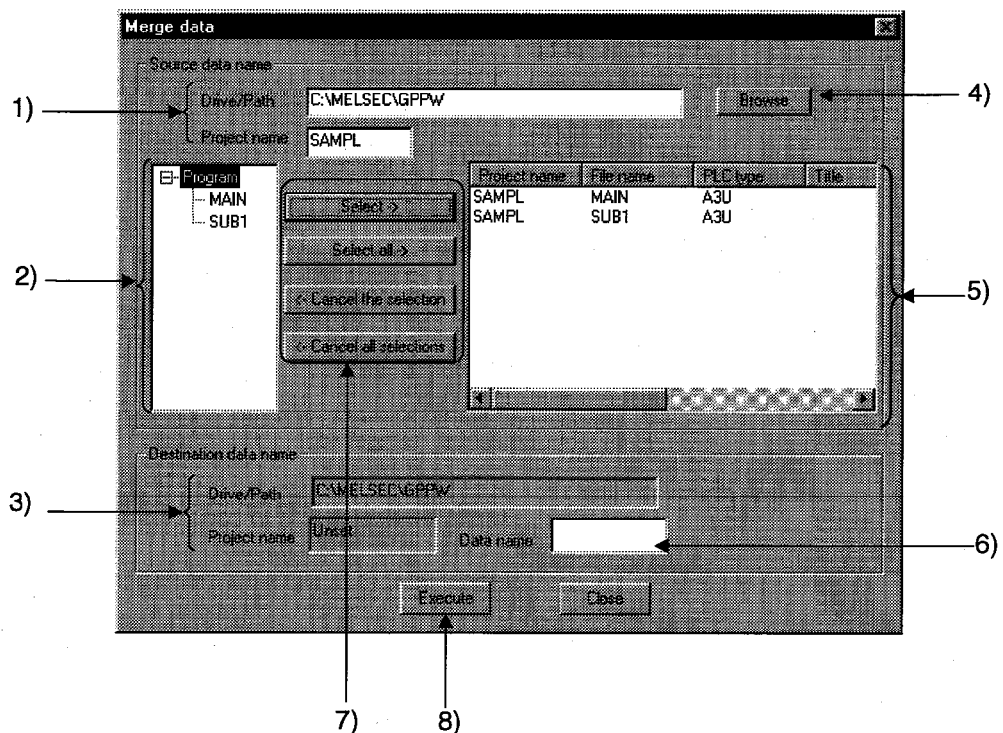
Connects several programs to make a single program.

It is not possible to couple data other than program data, for example device comments.

[Operating Procedure]

Select [Tools] → [Merge data].

[Dialog Box]



[Description]

- 1) Merging source drive/path, project name
Sets a drive/path and project name for the data to be merged.
- 2) Merging source program list
Displays a program list for the merging source project.
- 3) Merging destination path, project name
Designates the project name and drive/path of the currently opened project.
- 4) **Browse** button
Displays a dialog box on which the drive/path and project name are set.
See Section 3.2 for details on how to make these settings.
- 5) Merge data setting
Displays a data name to be selected.
They are merged in downward order from the topmost item in the display.

- 6) Merging destination data name
Sets the data name after merging.
If a data name that already exists is set, you are asked to confirm that you wish to overwrite the existing data.
- 7) Program selection buttons
The **Select->** button selects the specified data in the merging source data list.
The **Select all->** button selects all the data in the merging source data list.
The **<-Cancel the Selection** button cancels the selection of the selected data.
The **<-Cancel all selections** button cancels selection of all the selected data.
- 8) **Execute** button
Click this button after setting the necessary settings.
END instructions occurring part way through programs after merging are deleted, and an END instruction is set at the end of the merged program.

[Operating Procedure]

1. Set the drive path and project name of the merging source data in the dialog displayed by pressing **Browse** button.
2. Select, from the data displayed at 2), the data to be merged, at 5).
3. Repeat steps 1 and 2 until all the data to be merged has been selected, then set 6).
4. Click 8) after setting all the necessary settings.

POINTS			
<ul style="list-style-type: none"> • Programs that are not stored in the peripheral device cannot be merged. • After program merging, perform a program check. • Program merging between different PLC series - for example between the A series and QnA series or FX series - is not possible. • When merging A series or FX series programs, the program capacity complies with the parameter settings of the merging destination project. • When merging QnA series programs, the maximum number of steps complies with the CPU type of the merging destination project. 			
CPU Type	Maximum Number of Steps	CPU Type	Maximum Number of Steps
Q2A,Q2AS(H)	28K	Q3A	92K
Q2AS1,Q2AS(H)S1	60K	Q4A,Q4AR	124K
<ul style="list-style-type: none"> • If the capacity is exceeded after merging, merge in program units up to the available capacity. (Do not merge data if only part of it can be accommodated.) 			

16.3 Checking Parameters

A	QnA	FX
•	•	•

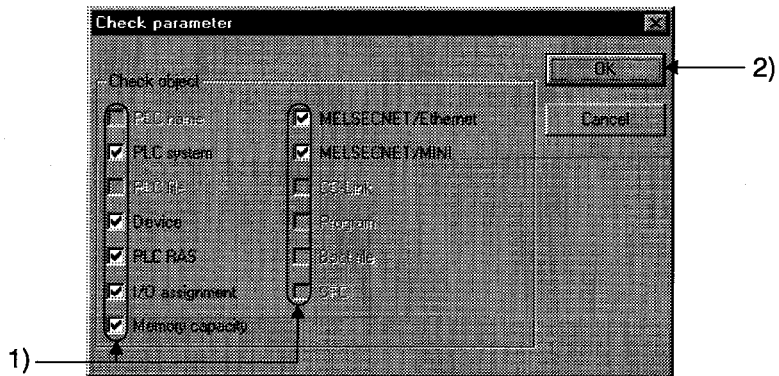
[Purpose]

Checks for errors in the parameter settings.

[Operating Procedure]

Select [Tools] → [Check parameter], or click .

[Dialog Box]



[Description]

1) Check object

Check the checkboxes of the items to be checked to select them.

The applicable parameters for the A series, QnA series and FX series are indicated below.

A series

Parameter	Check	Parameter	Check
PLC name	–	MELSECNET/Ethernet	•
PLC system	•	MELSECNET/MINI	•
PLC file	–	CC-Link	–
Device	•	Program	–
PLC RAS	•	Boot file	–
I/O assignment	•	SFC	–
Memory capacity	•	•: Applicable –: Not applicable	

QnA series

Parameter	Check	Parameter	Check
PLC name	•	MELSECNET/Ethernet	•
PLC system	•	MELSECNET/MINI	•
PLC file	•	CC-Link	•
Device	•	Program	•
PLC RAS	•	Boot file	•
I/O assignment	•	SFC	•
Memory capacity	–	•: Applicable –: Not applicable	

FX series

Parameter	Check	Parameter	Check
PLC name	•	MELSECNET/Ethernet	–
PLC system	*	MELSECNET/MINI	–
PLC file	–	CC-Link	–
Device	•	Program	–
PLC RAS	–	Boot file	–
I/O assignment	•	SFC	–
Memory capacity	•		

•: Applicable –: Not applicable
*: Only applicable when FX2N(C) is selected

2) button

Click this button after making the necessary settings.
On completion of the check the results are displayed.

16.4 All-clearing the Parameters

A	QnA	FX
•	•	•

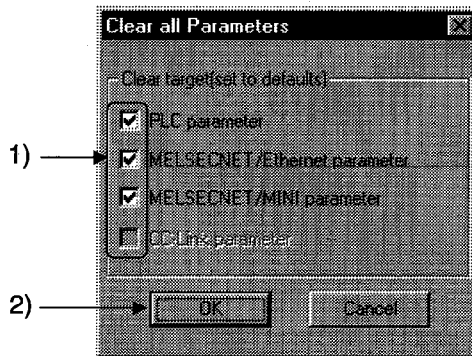
[Purpose]

Clears all parameter settings and sets their default values.

[Operating Procedure]

Select [Tools] → [Clear all Parameters].

[Dialog Box]



[Description]

1) Clear target

Check the checkbox of the item to be cleared to select it.

The applicable parameters for the A series, QnA series and FX series are listed below.

Parameters	A Series	QnA Series	FX Series
PLC parameter	•	•	•
MELSECNET/Ethernet parameter	•	•	—
MELSECNET/MINI parameter	•	•	—
CC-Link parameter	—	•	—

•: Applicable —: Not applicable

2) button

Click this button after setting the necessary settings.

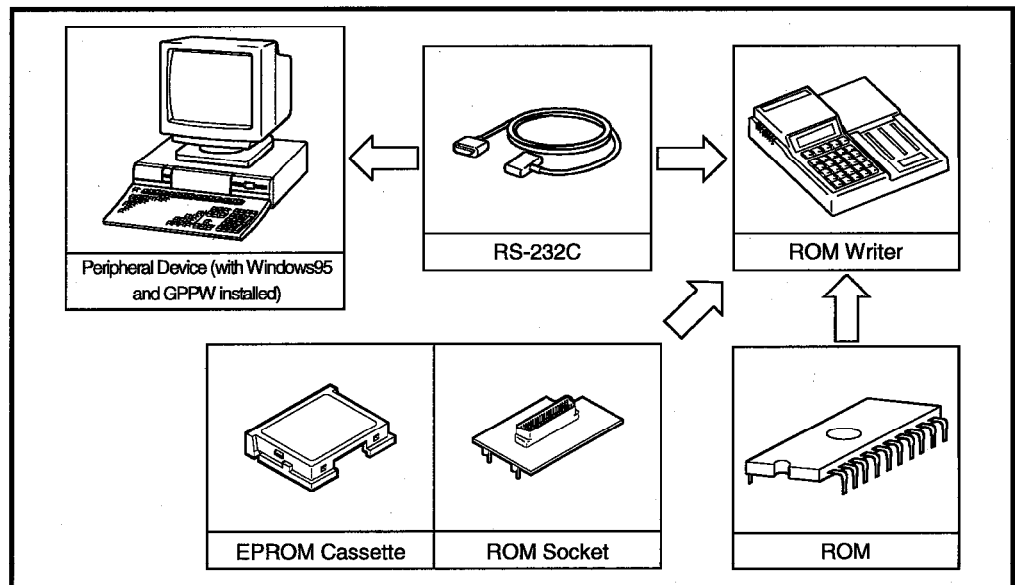
16.5 Transferring ROM Data

A	QnA	FX
•	×	•

Reads, writes, and verifies data from the GPPW, either with respect to the EP-ROM or E²P-ROM installed in an A series memory cassette, or an FX series memory cassette.

(1) System configuration for ROM writer transfer

The system configuration for reading/writing/verification with a ROM writer is indicated below.



*1 : See Appendix 6 for an example of connecting cable wiring.

The correctness of the operation was confirmed for the ROM writers shown below.

- PECKER-10(PKW-1000)
- PECKER-11(PKW-1100)
- PECKER-30(PKW-3100)

- (2) Making settings at the ROM writer
Before reading/writing/verification with the ROM writer, make the following settings at it.

Item		Details
Data format	Data length	8-bit
	Stop bit	1 bit
	Parity	Odd
	Baud rate	9600 bps
X ON/OFF		Provided

"A" series program memory configuration

- (3) Memory capacity setting
 The data written to the ROM is classified into two types: main program and main + subprogram.
 A memory capacity setting must be made for each data type.

- (a) Setting main program capacity
 When a main program is set, the main program capacity set in the PLC parameters and automatically added parameters (fixed at 4K bytes) are written to the ROM.
 Set the main program capacity in the PLC parameters so as to satisfy the following condition:

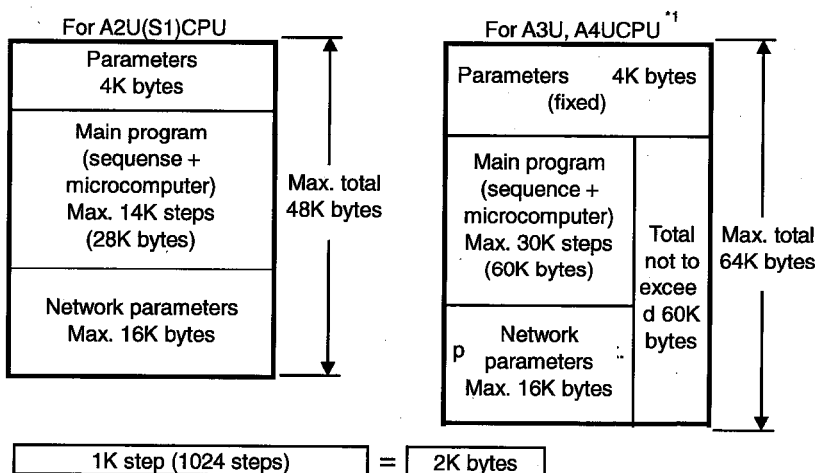
$$\boxed{\text{Main program capacity}} \leq \boxed{\text{Total memory capacity of ROM - parameters (4K bytes)}}$$

In the case of an AnUCPU for which network parameters are set, up to 16K bytes (a maximum of 4K bytes for each network unit) is added. Check the memory capacity in the network parameters on the PLC parameter memory capacity setting dialog box, then set the main program capacity.

$$\boxed{\text{Main program capacity}} \leq \boxed{\text{Total memory capacity of ROM - parameters (4K bytes) - network parameters}}$$

If the writing capacity exceeds the capacity of the ROM, either make the setting for the main program memory capacity in the PLC parameters smaller, or replace the existing ROM with one with a larger capacity.

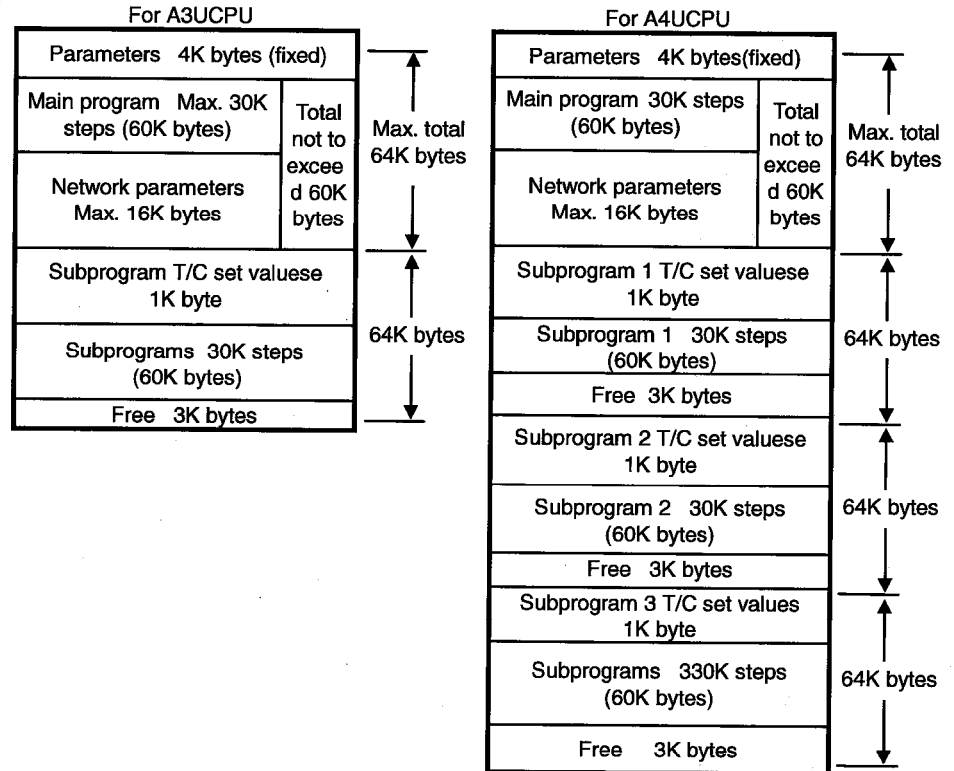
<Example> : Memory capacity setting for AnUCPU (with network parameters set)



*1 : For A3U and A4UCPU, make sure that the capacity for the main program and network parameters does not exceed 60K bytes.

- (b) Setting main program + subprogram capacity
 Write A3U/A4UCPU subprograms together with the main program. It is not possible to write a subprogram by itself.
 When writing a main program + subprogram, the main program capacity set in the PLC parameters, the automatically added parameters (fixed at 4K bytes), and the subprogram capacity, are written to the ROM.
 The subprogram capacity is automatically set at 64K bytes per subprogram.

Example: Memory capacity setting for A3U/A4UCPU



POINT

- The ROMs to which A3U/A4UCPU subprograms can be written are the 32KROM and the 64KROM. The 32KROM and 64KROM are capable of ROM operation with a subprogram written to them. The 32KROM and 64KROM can only be used with the A4UMCA-128 memory cassette.

The total memory capacity, including main program and subprograms, for each ROM, is indicated below.

Model Name	ROM Type	Program Memory Capacity						
		A0J2H,A2C, A2CJ	A1N ^{*1}	A2N(S1), A2A(S1), A2U(S1) ^{*1}	A3A,A3N ^{*1}	A3U,A4U ^{*1}	A1S,A1SJ, A1SH, A1SJH	A2S,A2US, A2USH-S1
4KROM	2764	2K steps (0 to 2046)	6K steps (0 to 6142)	6K steps (0 to 6142)	6K steps (0 to 6142)	6K steps (0 to 6142)	-	-
4KEROM	X2864A	-	6K steps (0 to 6142)	-	-	-	-	-
8KROM	27128	6K steps (0 to 6142)	-	14K steps (0 to 14334)	14K steps (0 to 14334)	14K steps (0 to 14334)	-	-
16KROM	27256	14K steps (0 to 14334)	-	14K steps (0 to 14334)	30K steps (0 to 30178)	30K steps (0 to 30718)	-	-
32KROM ^{*2}	27512	-	-	-	-	30K steps (0 to 30718) + 30K bytes	-	-
64KROM ^{*3}	27010	-	-	-	-	30K steps (0 to 30718) 30K + bytes x 3	-	-
A1SNMCA- 8KP ^{*4}		-	-	-	-	-	8K steps (0 to 8190)	-
A2SMCA- 14KP ^{*5}		-	-	-	-	-	-	14K steps (0 to 14334)

*1 : Two ROMs of the same model are used (for odd addresses and even addresses).

*2 : Only the A4UMCA-128 memory cassette can be installed.

A main program and subprogram 1 can be written, and ROM operation with a subprogram is possible.

*3 : Only the A4UMCA-128 memory cassette can be installed.

With A4UCPU, a main program and subprograms 1, 2, 3 can be written, and ROM operation with a subprogram is possible.

With A3UCPU, a main program and subprogram 1 can be written, and ROM operation with a subprogram is possible.

*4 : An A6WA-28P memory rewrite adapter is required.

Only modls PECKER-11 and 30 can perform write function.

Other ROM writers(including PECKER-10)cannot perform write function.

For occasions such as reading and writing, set the ROM type as "27256."

*5 : An A2SWA-28P memory rewrite adapter is required.

Only modls PECKER-11 and 30 can perform write function.

Other ROM writers(including PECKER-10)cannot perform write function.

For occasions such as reading and writing, set the ROM type as "27256."

Switch between odd and even addresses with the ODD/EVEN setting pins of the A2SWA-28P rewrite adapter.

POINTS

- The A1SMCA-8KP conventional mode EP-ROM is not compatible with A1SHCPU.
Note also that there is no EP-ROM cassette compatible with A2SHCPU.
- Since data writing with a ROM writer is not possible when using A1SNMCA-2KE/8KE or A2SNMCA-30KE E²P-ROM cassettes, write data using the PLC write function.

(4) Address type

Depending on the CPU type, the ROM may have either of two address types (writing methods). The correspondence between CPU types and address types is indicated below.

Address Type	Writing Method	CPU Type
Odd *1 Even *1	Addresses are divided into odd and even, and the data written to two ROMs.*2	A1N,A2N(S1),A3N,A2A(S1),A3A, A2U(S1),A3U,A4U,A2S,A2SH, A2US(S1),A2USH-S1
Contiguous	Data is written to one ROM without division into odd and even addresses.	A0J2H,A1S,A1SJ,A1SH,A1SJH, A2C,A2CJ

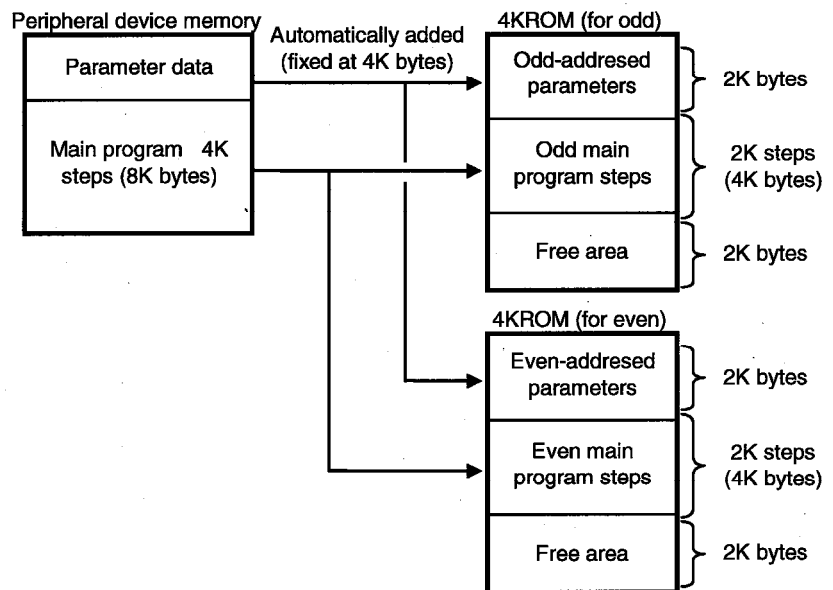
*1 : Two EP-ROMs of the same model are used (one for odd, one for even)

However, note that the EP-ROM cassettes that can be used with A2S, A2SH, A2US(S1), and A2USH-S1 have two ROMs built in.

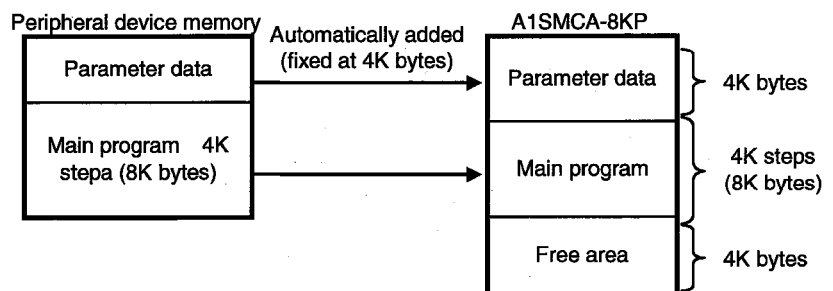
*2 : When there is one ROM writer socket, divide the data into odd and even addresses before writing to the ROM.

Note also that because the memory write adapter has to be switched over with A2S, A2SH, A2US(S1), and A2USH-S1, odd and even address data cannot be written at the same time.

<Example 1> : Writing the main program of an A1NCPU (4K steps) to a 4KROM



<Example 2> : Writing the main program of an A1SCPU to an A1S8MCA-8KP



— Program memory configuration of the FX series —

- (5) Memory capacity setting
 FX-EEPROM-8 memory cassettes allow writing of sequence programs (including parameters), file registers, and comment 1.
 The capacity setting ranges for each type of data are indicated below.

Type	Setting Details	Capacity Setting Range
FX ₀ FX _{0S}	Sequence programs	Memory cassette cannot be used
	File registers	
	Comments	
	Total	
FX _{0N}	Sequence programs	0 to 2000
	File registers	0 to 1500
	Comments	0 to 1500
	Total	2000
FX ₁	Sequence programs	0 to 2000
	File registers	-
	Comments	0 to 4000 ^{*1}
	Total	2000
FX FX ₂ FX _{2C}	Sequence programs	0 to 8000
	File registers	0 to 2000
	Comments	0 to 4000
	Total	Max. 8000, 200/4000 modes also possible
FX _{2N} FX _{2NC}	Sequence programs	0 to 16000
	File registers	0 to 7000
	Comments	0 to 16000
	Total	Max. 16000 2000, 4000, 8000 modes also possible

(Units: steps)

*1 : The maximum program capacity is 2000 steps. However, when using a memory cassette it is possible to write comments up to 2000 steps outside the program area too.

16.5.1 ROM reading, writing, and verification

A	QnA	FX
•	×	•

[Purpose]

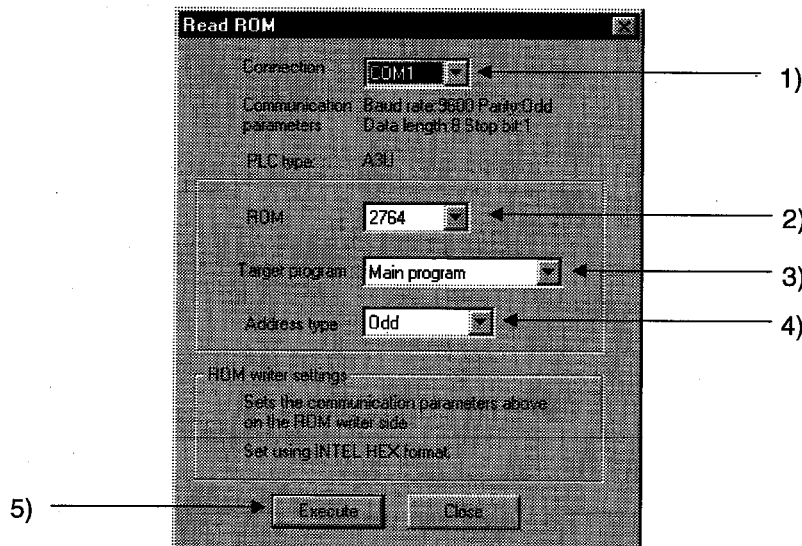
Using a ROM writer connected to the peripheral device, reads from the ROM, writes to the ROM, or verifies the data in the peripheral device against the data in the ROM.

[Operating Procedure]

Select [Tools] → [Transfer ROM] → [Read] ([Write] / [Compare].)

[Dialog Box]

The dialog box for ROM reading is shown here; similar dialog boxes are displayed for writing and verification.



[Description]

- 1) **Connection**
Selects the interface at the peripheral device connected to the ROM writer.
- 2) **ROM**
Selects the type of ROM used.
"Automatic" cannot be selected for writing.
This setting is not possible with the FX series.
- 3) **Target program**
Selects the type of data to be read, written, or verified.
This setting is not possible with the FX series.
- 4) **Address type**
Sets the address type of the ROM.
The address type is sequential for the following CPU types: A0J2H, A1S, A1S(S1) A1SJ, A1SH, A2C, A2CJ, and either odd or even for other CPU types.
Note that when there are two ROM writer sockets it is possible to write simultaneously to odd and even addresses.
However, when writing to an A2SMCA-14KP, ODD and EVEN settings are made at the memory write adapter, making simultaneous writing impossible.
This setting is not possible with the FX series.

- 5) **Execute** button
Click this button after setting the necessary settings.

[Operating Procedure]

- For ROM reading/verification
 1. Install the ROM at the ROM writer, connect to the peripheral device and make the necessary settings.
 2. Set the memory capacity in the PLC parameters at the reading (verification) destination.
 3. Operate the ROM writer to read the ROM data into the buffer memory. *1
 4. Set (1) through (4) in the ROM reading (verification) dialog box.
 5. Click (5) after setting the necessary settings.
- For ROM writing
 1. Install the ROM at the ROM writer, connect to the peripheral device and make the necessary settings.
 2. Set the memory capacity in the PLC parameters.
 3. Set (1) through (4) in the ROM writing dialog box.
 4. Click (5) after setting the necessary settings.
 5. Operate the ROM writer to write the buffer memory data to the ROM. *1

*1 : For details on how to operate the ROM writer, refer to the instruction manual for the model used.

POINTS

- When data is written to the ROM, the ROM writer checks in advance whether the data in the ROM has been deleted.
- If the address type setting is incorrect, reading, writing and verification with the ROM writer will not be possible.
Affix labels to ROMs or use some other method to distinguish among them.
- When the ROM type is set to automatic for reading or verification, an error will occur if there is a discrepancy between the memory capacity settings at the ROM side and peripheral device side.
Alter the setting at the peripheral device side.

16.5.2 Writing to files in ROM format

A	QnA	FX
•	×	•

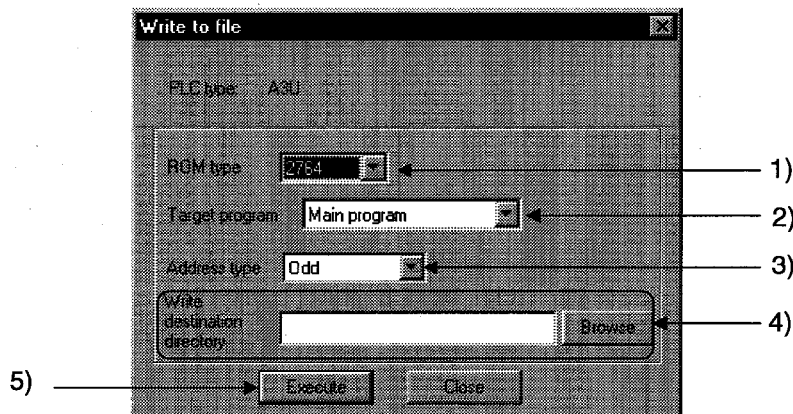
[Purpose]

Writes data to the HD, FD, etc., of a peripheral device in a file format like the address type for writing to a ROM.

[Operating Procedure]

Select [Tools] → [Transfer ROM] → [Write to file].

[Dialog Box]



[Description]

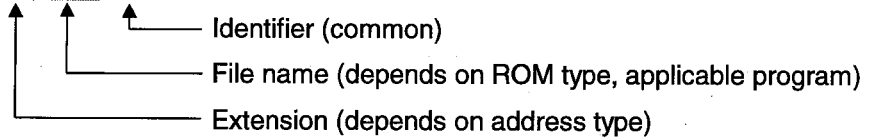
- 1) ROM type
Set the same type as the ROM used.
This setting is not possible with the FX series.
- 2) Target program
Selects the type of data for file writing.
This setting is not possible with the FX series.
- 3) Address type
Set the same address type as the ROM used
If the CPU type is A0J2H, A1S, A1S(S1), A1SJ, A1SH, A2C, or A2CJ, the address type is "sequential."
In other cases it is odd, even, or odd/even.
This setting is not possible with the FX series.
- 4) Write destination directory
Sets the folder of file writing destinations.
- 5) **Execute** button
Click this button after setting the necessary settings.

POINT

- Some examples of how files are saved, and the address type-dependent extensions used, when file writing operations are executed are given below.

Saving example

W|s512|.hex



Extension

- W..... Odd/even addresses
- O..... Odd addresses
- E..... Even addresses
- S..... Sequential addresses

16.6 Customizing Keys

A	QnA	FX
•	•	•

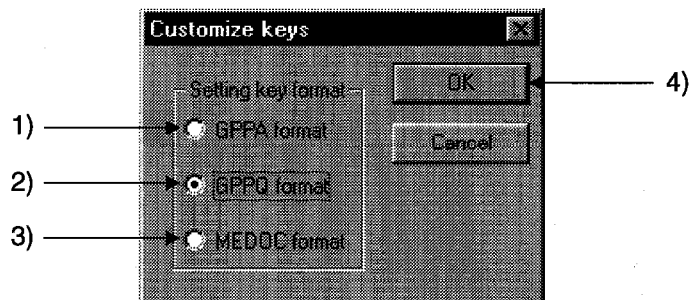
[Purpose]

Sets the key allocations for ladder creation as GPPA format, GPPQ format, or MEDOC format.

[Operating Procedure]

Select [Tools] → [Customize keys].

[Dialog Box]



[Description]

- 1) GPPA format
Sets the key allocations corresponding to GPPA.
- 2) GPPQ format
Sets the key allocations corresponding to GPPQ.
- 3) MEDOC format
Sets the key allocations corresponding to MELSEC MEDOC.*1
- 4) **OK** button
Click this button after setting the necessary settings.

*1: "MELSEC MEDOC" is a programming and document creation system retailed by Mitsubishi Electric Europe GMBH.

16.7 Setting Options

A	QnA	FX
•	•	•

[Purpose]

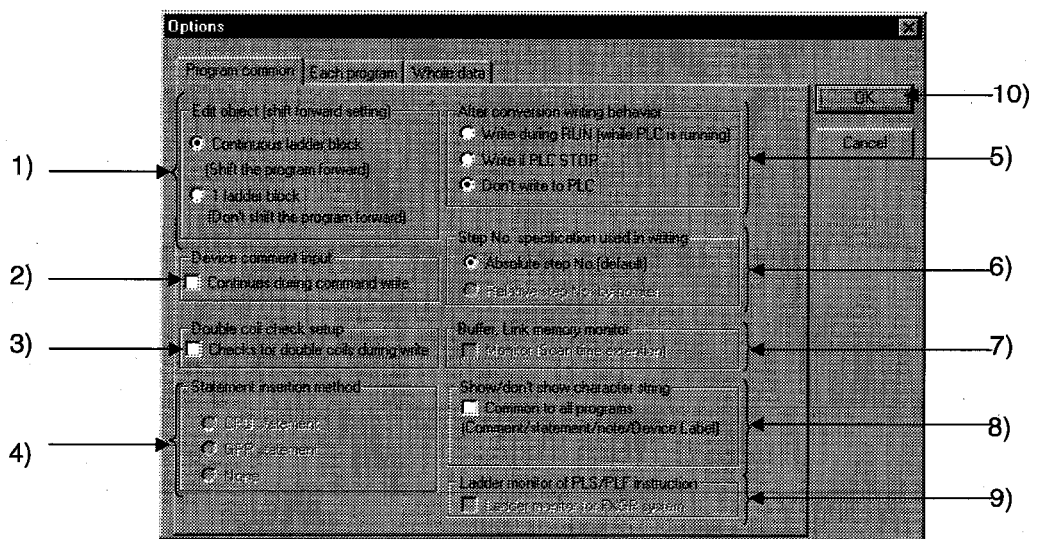
Sets the options for data creation.

[Operating Procedure]

Select [Tools] → [Options].

[Dialog Box]

<<Program common>> sheet



[Description]

1) Edit object (shift forward setting)

⊙ Continuous ladder block (Shift the program forward)

If the edited ladder is shorter than it was before conversion, it is shifted forward on conversion.

⊙ 1 ladder block (Don't shift the program forward)

If the edited ladder is shorter than it was before conversion, NOP instructions are written at the missing steps on conversion.

2) Device comment input

Check the checkbox to select.

After ladder input the comment input window opens, allowing device comments to be set.

- 3) Double coil check setup
 Sets whether a duplicate coil check is to be performed at program creation.
 The devices and instructions to which the duplicate coil check applies are indicated below.

A series

	OUT	SET	SFT	PLS	PLF	MC
Y,M,L,B,F	•	•	•	•	•	•
T,C	•	—	—	—	—	—

• : Applicable —: Not applicable

QnA series

	OUT	SET	SFT	PLS	PLF	EGP, EGF	MC	FF	DELTA
Y,M,L,B.F.SM,DY, SB	•	•	•	•	•	—	•	•	•
D,SD,W,SW,R,ZR	•	—	•	•	•	—	•	•	•
T,C	•	—	—	—	—	—	—	—	—
Z	—	—	—	—	—	•	—	—	—

• : Applicable —: Not applicable

FX series

	OUT	SET	PLS	PLF	MC
Y,M	•	•	•	•	•
S	•	•	•	•	—
T,C	•	—	—	—	—

• : Applicable —: Not applicable

It is possible to use the same coil, but attention must be paid to program operation.

In program editing by copying and pasting, no duplicate coil check is performed; for this reason you should perform a program check after editing.

See Section 16.1 for details of program checks.

- 4) Statement insertion method (QnA series only)
 At macro registration, regardless of the option, the statements registered together with ladder are expanded. If no statements have been registered, before expanding the macro select "CPU statement", "GPP statement", or "None".

⊙ CPU statement

When writing to the PLC, the statements are written as part of the program. However, the number of steps taken up increases.

⊙ GPP statement

The statements of the macro are displayed only at the peripheral device. The number of steps taken up does not increase, but the statements cannot be written to the PLC.

⊙ None

Statements of the macro are not displayed.

- 5) After conversion writing behavior
Sets writing of the program to the PLC after conversion.
- Ⓒ Write during RUN(while PLC is running)
The program is unconditionally written to the PLC during the RUN status.
"LD[R Edit mode]" is displayed to the Title bar.

 - Ⓒ Write if PLC is STOP
The program is written to the PLC if its status is STOP (PAUSE).
"LD[R Edit mode]" is displayed to the Title bar.

 - Ⓒ Don't write to PLC
The program is not written to the PLC.

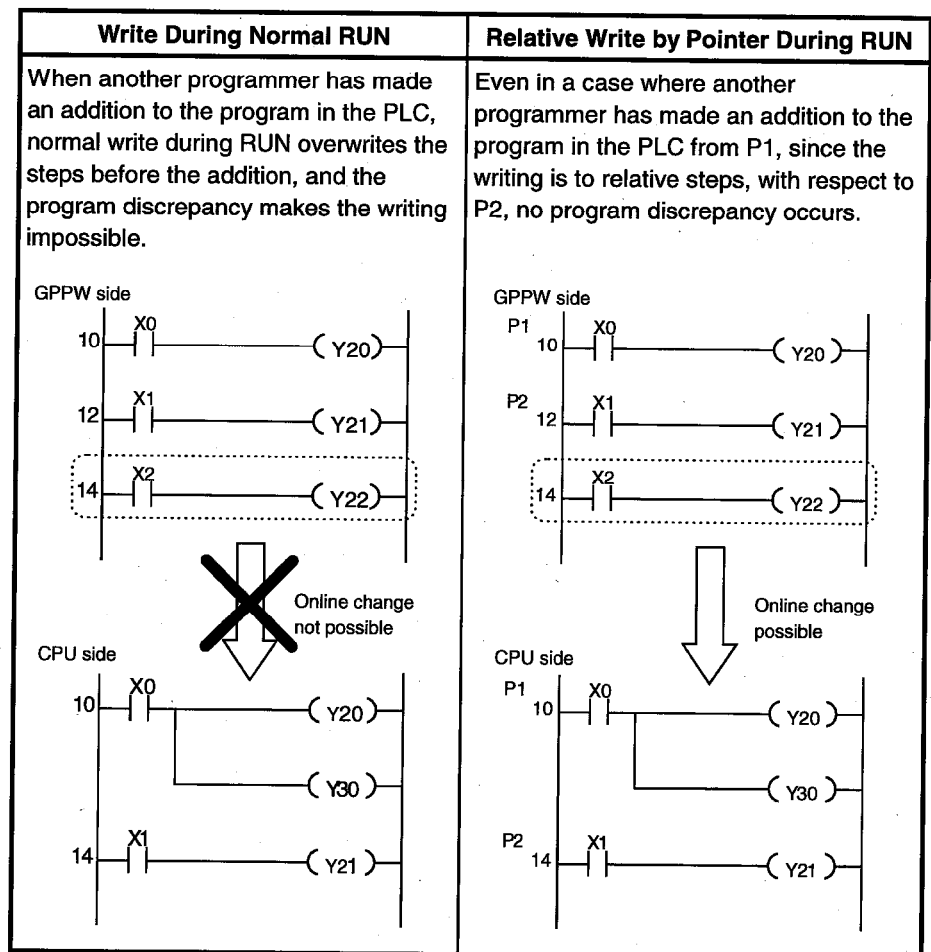
- 6) Step No. specification used in writing
 Sets the method for online program change (write during RUN).
 This setting is not possible with the A series and FX series.
- ⊙ Absolute step No.(default)
 Online program change (write during RUN) is executed based on absolute step numbers.
 - ⊙ Relative step No. by pointer
 Online program change (write during RUN) is executed based on relative step numbers, using pointers.

With relative online program change (write during RUN) using pointers, several operators can create a program divided by pointers, and write only the parts of the program identified with these pointers in online program change (write during RUN) operations.

This method is useful when a program is to be debugged by several people.

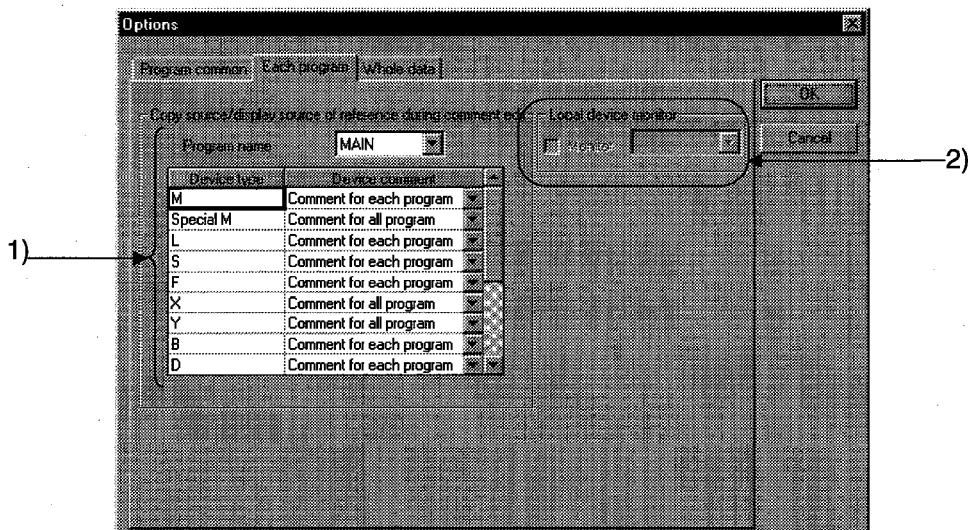
Example:

Online program change (write during RUN) of the program at the peripheral device and the program in the PLC in different states, for example when a single program is being written and debugged by several people.



- 7) Buffer, Link memory monitor
Checking the checkbox causes monitoring of the buffer memory and link memory during ladder monitoring.
When the buffer memory and link memory are monitored, the scan time of the PLC is further increased.
This setting is not possible with the FX series.
- 8) Show/don't show character string
Checking the checkbox causes display of comments/statements/notes/device names for all programs.
This setting is not possible with the FX series.
- 9) Ladder monitor of PLS/PLF instruction (FX series only)
Checking the checkbox causes the monitor display of PLS/PLF instructions to be actuated in FXGP(DOS) and FXGP(WIN) formats. When the checkbox is cleared, monitor display is actuated in the GPPW format. The default is the GPPW format.
(See Appendix 11.)
- 10) button
Click this button after setting all the necessary settings in each dialog box.

[Dialog Box]
 <<Each program>> sheet



[Description]

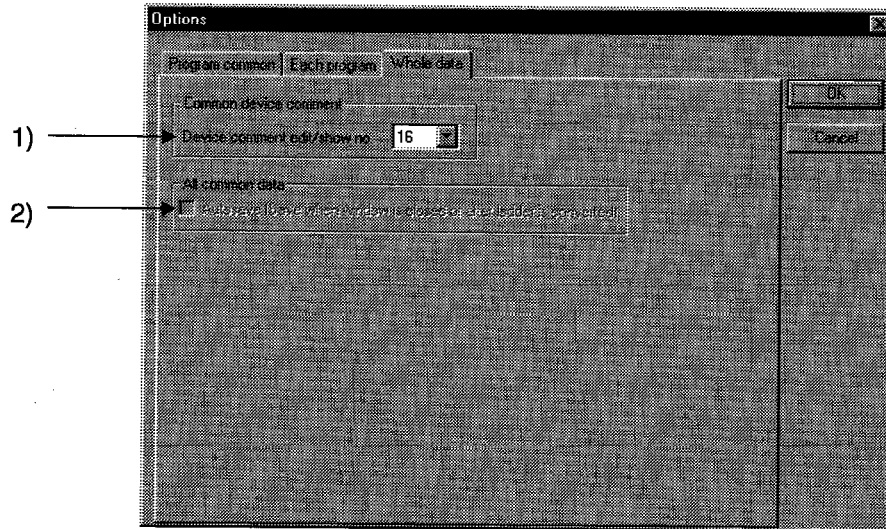
- 1) Copy source/display source of reference during comment edit
 When both a comment common to all programs and a comment specific to the individual program have been assigned to the same device, specifies which of these is to be displayed in the ladder window.
 Set the program name for which the display comment is set and, for each device type, whether comments common to all programs or program-specific comments are to be displayed.
 Comments common to all programs are set as the default for X, Y, special M, and special D devices of the A series.
 The default for all devices of the QnA series and FX series is comments common to all programs.
 However, where only a comment common to all programs or only a program-specific comment is set for a device, the set comment is automatically displayed and therefore this setting is invalidated.

- 2) Local device monitor (QnA series only)
 Checking this checkbox when using the QnA series causes monitoring of the local devices of the selected program.
 This setting is not possible with the A series.

However, note that only QnA series CPUs with version numbers of 9707B and higher support local device monitoring.
 See Appendix 7 for details on interpreting module versions.

[Dialog Box]

<<Whole data>> sheet

**[Description]**

- 1) **Common device comment**
Sets the largest number of characters that can be set for a device comment as 16 characters or 32 characters.
- 2) **All common data**
Checking this checkbox causes the data to be saved automatically when the window is closed.
The data is also automatically saved when ladder changes are made.
However, if no project name has been set when creating a new project this setting is not possible because there is no saving destination.

16.8 Displaying Multiple Windows

A	QnA	FX
•	•	•

[Purpose]

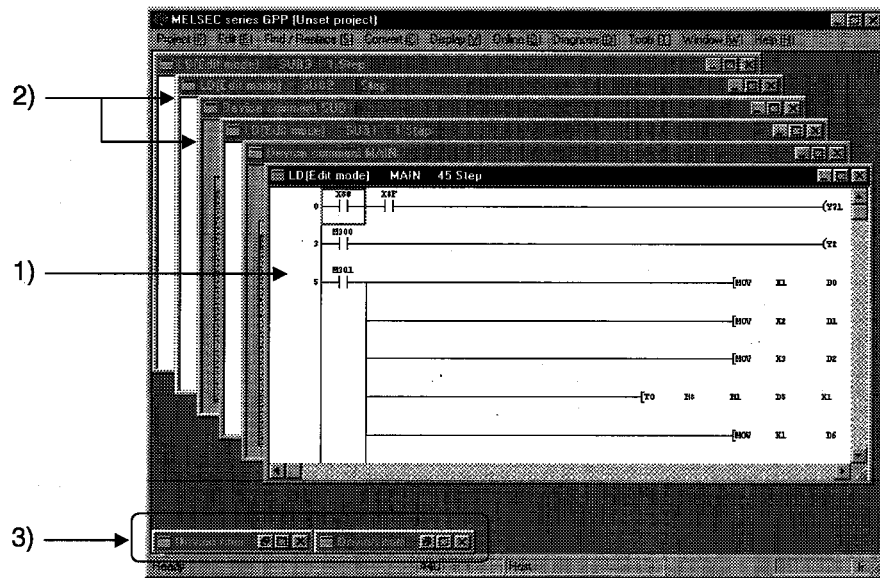
Adjusts the size and position of windows when multiple windows are opened. However, when four or more windows are arranged horizontally or vertically, the number of lines and columns changes.

[Operating Procedure]

Select [Window] → [Cascade] ([Tile vertically], [Tile horizontally], [Arrange icons])

[Dialog Box]

This is an example where windows are displayed cascaded.



[Description]

- 1) Active window
If [Cascade] is selected, the sheet currently being edited is brought to the top.
When [Arrange horizontally] or [Arrange vertically] is selected, the window being edited is brought to the top left of the screen.
- 2) Non-active window
When [Cascade] is selected, windows that are not being edited are moved to the back.
- 3) Icon
When [Arrange icons] is executed, icons (minimized windows) are arranged on the bottom line of the screen.

16.9 Opening a Specific Project Using a Shortcut

A	QnA	FX
•	•	•

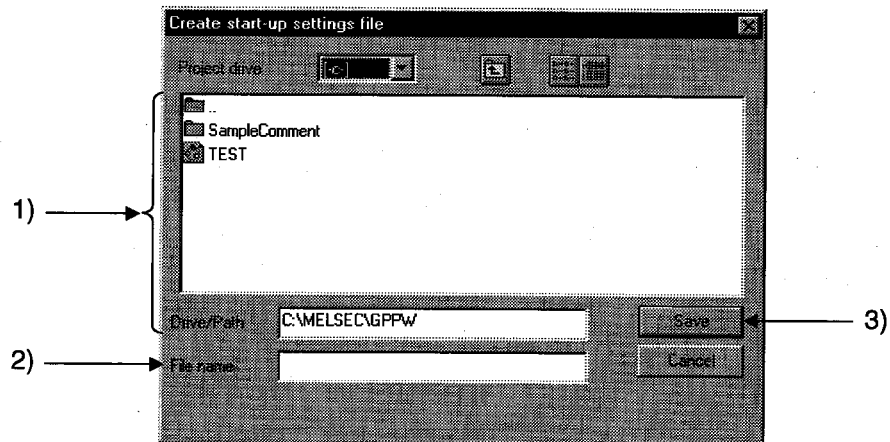
[Purpose]

Creates the start setting file that is to act as the shortcut to a particular project. Just by opening the start setting file, or double-clicking an icon, GPPW can be started up and a project opened.

[Operating Procedure]

Select [Tools] → [Create Start-up setting file].

[Dialog Box]



[Description]

- 1) Project drive, Drive/path
Sets where the start setting file is saved.
- 2) File name
Sets the start setting file name.
- 3) **Save** button
Click this button after setting all the necessary settings.

POINTS

- It is convenient to set the start setting files of frequently opened projects in the desktop.
- Initialization files have the extension ".GPS."
The icon at initial setting is as follows.



Test.gps


16.10 Starting the Ladder Block Test Tool

A	QnA	FX
•	•	•

[Purpose]

Starts the logic test function (LLT) from GPPW and carries out debugging offline.

[Operating Procedure]

Select [Tools] → [Start ladder logic test], or click .

See the Ladder Logic Test function software for windows SW2D5C-LLT, SW2D5F-LLT Operating Manual.

POINT	<ul style="list-style-type: none"> The logic test function (LLT) is available as an option. It must be purchased separately to debug programs offline.
--------------	---

16.11 Outline of Help Function

A	QnA	FX
•	•	•

The help function reproduces some of the information in this manual and the PLC manual.

Information can be checked on the screen of the peripheral device during GPPW operations.

The help menu is explained below.

Help menu	Details
CPU error	Displays details of the error codes listed in the User's Manuals for each CPU and elsewhere. Error codes read during PLC diagnosis can be checked at the peripheral device.
Special relays/registers	Displays explanations of special relays and special registers, classified by function and device number. Allows you to check special relays and special registers during program creation and monitoring.
Shortcut key list	Displays shortcut keys for shortcuts to the menu in GPPW, and lists the key allocations for key customization for ladder creation.
Product information	Displays information about the product, such as the SW0D5C/F-GPPW version.

17. CONNECTING A PLC

The PLC is accessed from the peripheral device to read data, write data, verify data, and to change data attributes.

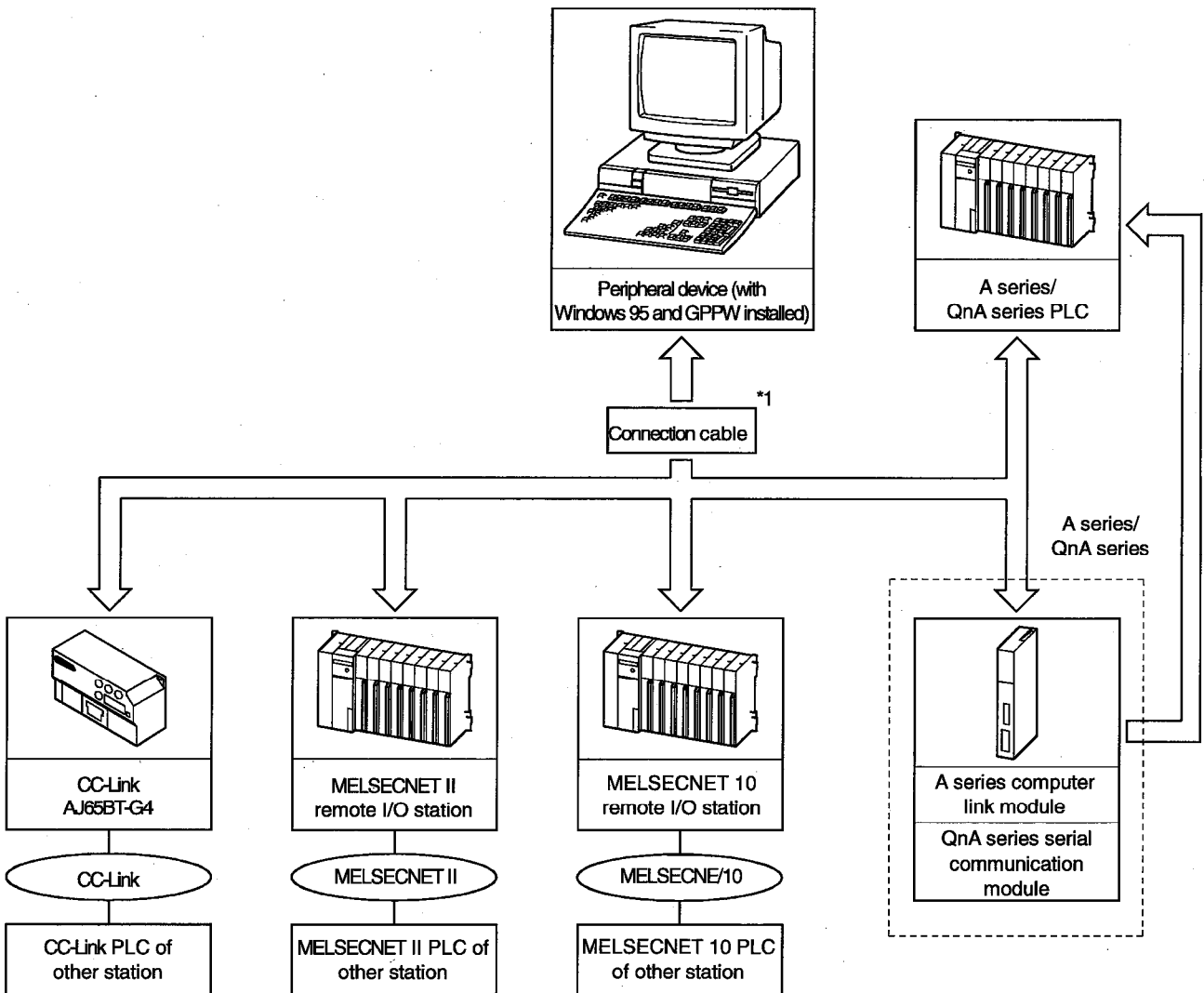
17.1 System Configuration when a PLC is Connected

An example of the system configuration when connecting from a peripheral device is shown here.

17.1.1(1) Connection from the serial port

A	QnA	FX
•	•	×

An example of the system configuration when connecting from the serial (COM) port is shown here.



[List of System Equipment]

A list of the devices connected from the serial (COM) port of the peripheral device is given below.

A Series	
PLC	A0J2H,A1S(S1),A1FXA1SJ,A1SH,A1SJH,A1N,A2C,A2CJ,A2N(S1),A2S(S1),A2SH(S1),A3N,A2A(S1),A3A,A2U(S1),A2US(S1),A2AS(S1),A2AS-S30,A2AS-60,A2USH-S1,A3U,A4U

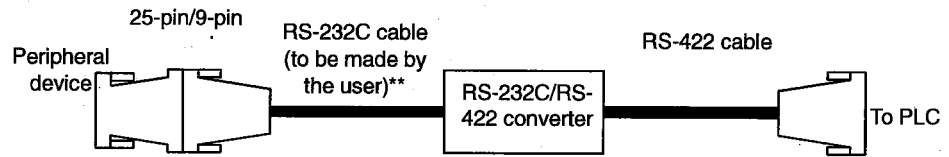
QnA Series	
PLC	Q2A,Q2AS(H),Q2AS1,Q2AS(H)S1,Q3A,Q4A,Q4AR
Serial communication modules	AJ71QC24,AJ71QC24-R2,AJ71QC24-R4,AJ71QC24N,A1SJ71QC24,A1SJ71QC24-R2,AJ71QC24N-R2,AJ71QC24N-R4,A1SJ71QC24N,A1SJ71QC24N-R2

Remote I/O Stations	
MELSECNET II	AJ72P25,AJ72R25
MELSECNET /B	AJ72T25B,A1SJ72T25B
MELSECNET/10	AJ72QLP25,AJ72QLP25G,AJ72QBR15,AJ72LP25

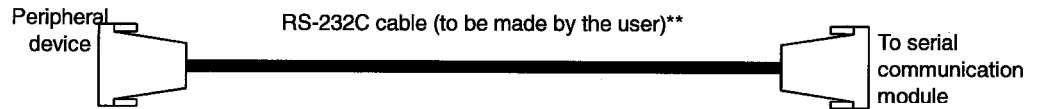
Intelligent Device Stations	
CC-Link	AJ65BT-G4 (See Appendix 2.4 for applicable versions)

*1 : For connection between the peripheral device and PLC, either use a cable with a built-in interface, or an RS-232C cable and RS-422 cable connected with an RS-232C/RS-422 converter.
When connecting to the RS-232C interface of a serial communication module, use a user-made RS-232C cable.

- Connecting with an RS-232C cable, RS-422 cable, and RS-232C/RS-422 converter



- Connecting to Computer Link Module and the RS-232C interface of a serial communication module



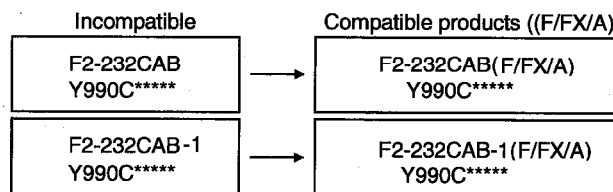
C24, UC24, QC24, Side		Cable Connection and Signal Direction	Peripheral device
Signal Name	Pin No.		Signal Name
FG	1		FG
TXD	2		TXD
RXD	3		RXD
RS	4		RS
CTS	5		CTS
DSR	6		DSR
SG	7		SG
DTR	20	DTR	
		Shield	

RS-232C/RS-422 Converter	Maker
FX-232AW(C)	Mitsubishi Electric Corp.

The following RS-232C and RS-422 cables are recommended.

Cable	Maker
F2-232CAB-1 ^{*1}	Mitsubishi Electric Corp.
FX-422CAB	

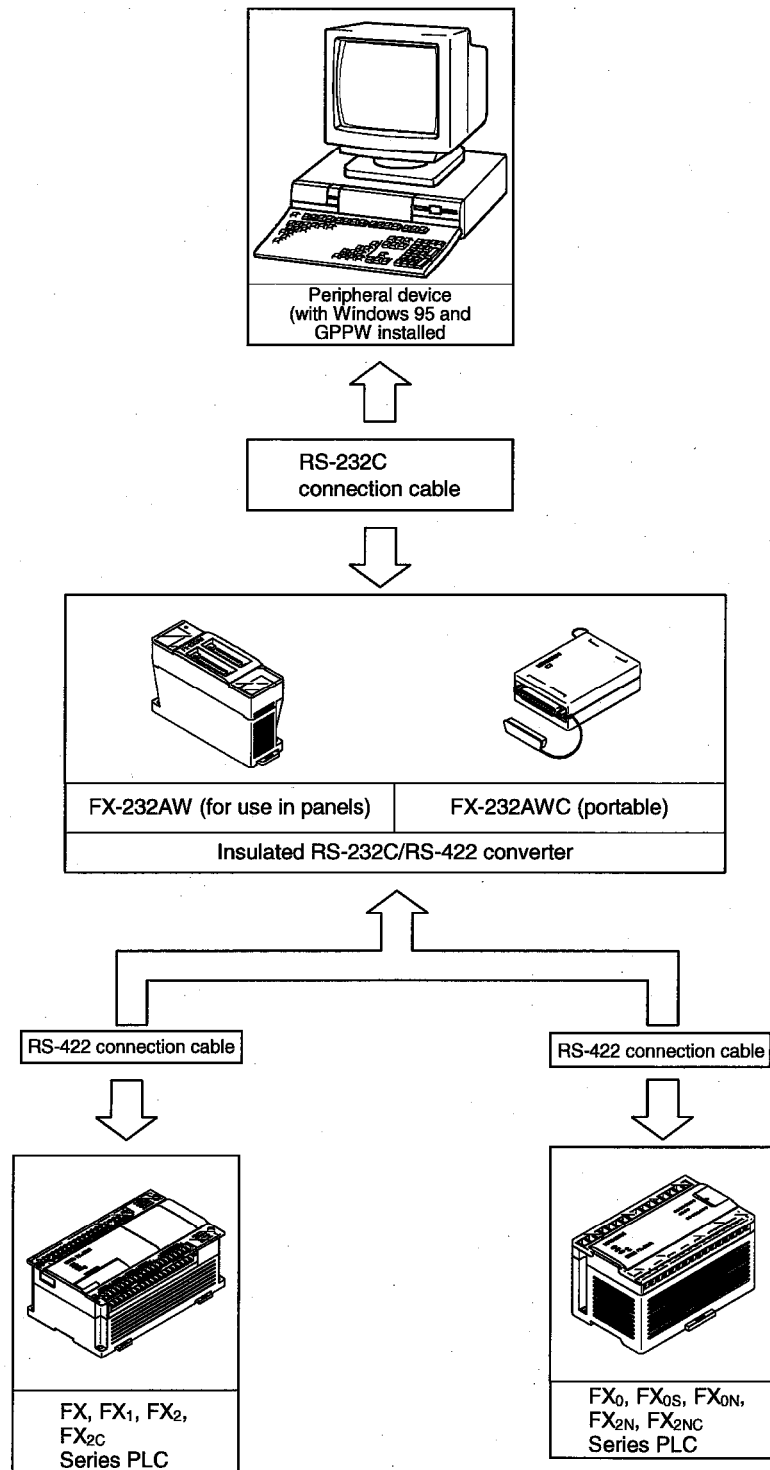
*1 : To determine the compatible equipment, check the model name label affixed to the cable.



17.1.1(2) Connection from the serial port

A	QnA	FX
×	×	•

An example of the system configuration when connecting an FX series model from the serial (COM) port of a peripheral device is shown here.



[List of System Equipment]

RS-232C Cable (all 3 m)	Maker
F2-232CAB-1 (9 pin - 25-pin) For PLC/AT	Mitsubishi Electric Corp.

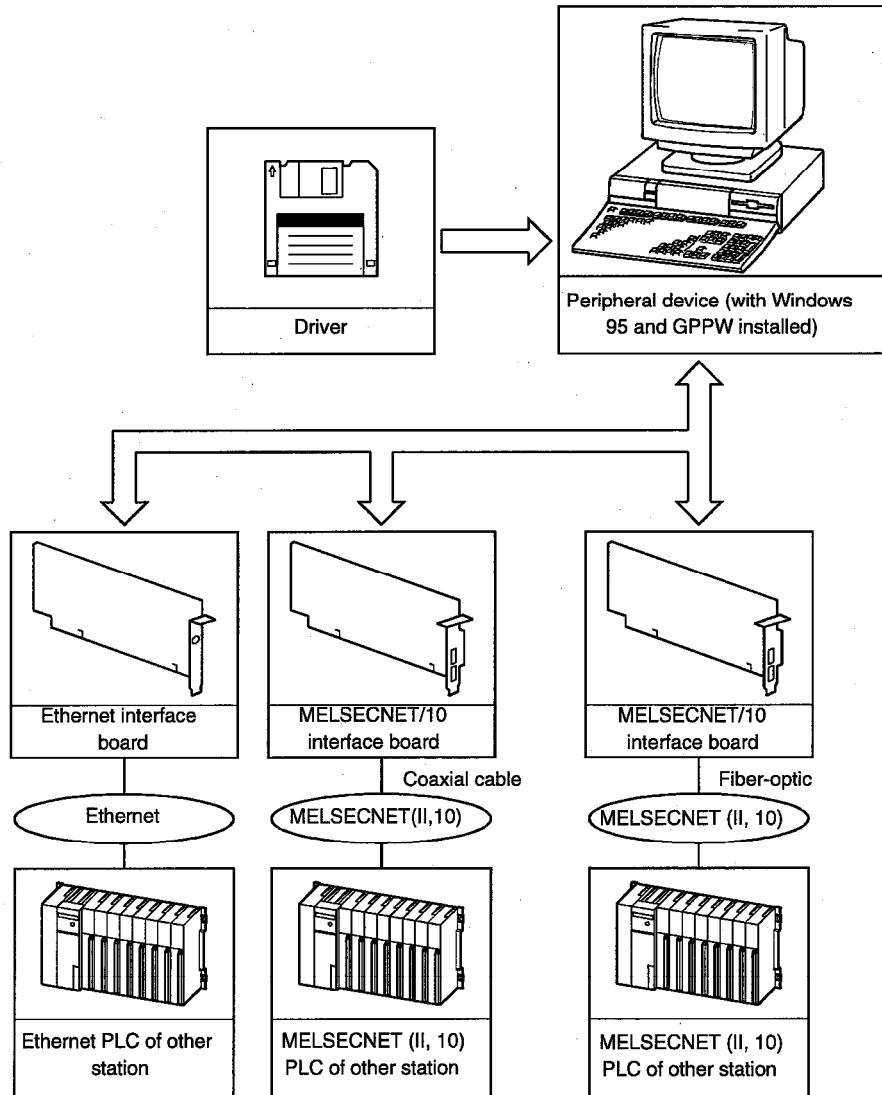
RS-422 Cable	Maker
FX-422CAB(0.3 m) For FX, FX ₁ , FX ₂ , FX _{2C}	Mitsubishi Electric Corp.
FX-422CAB-150(1.5 m) For FX, FX ₁ , FX ₂ , FX _{2C} .	
FX-422CAB0(1.5 m) For FX ₀ , FX _{0S} , FX _{0N} , FX _{2N} , FX _{2NC} series	

Insulated RS-232C/RS-422 Converter	Maker
FX-232AWC (portable)	Mitsubishi Electric Corp.
FX-232AW (for use in panels)	

17.1.2 Connecting from an Interface Board for a Personal Computer

A	QnA	FX
•	•	×

An example of the system configuration when connecting from an interface board installed at the peripheral device is shown here.



[List of System Equipment]

A list of the interface boards at peripheral devices and the drivers installed with them is given below.

	Board	Driver
MELSECNET II	AJ70BD-J71AP23 (fiber-optic cable)	SW11VDWT-MNETP
MELSECNET/10	A70BD-J71QLP23 (fiber-optic cable) A70BD-J71QBR13 (coaxial cable connection) A70BDE-J71LP23GE	SW11VDWT-10P

For applicable Ethernet versions, see Appendix 23.

Ethernet PLC card

Maker Name	Model Name
3Com	EtherLink III LAN PLC Card
Allied Telesis	CenterCOM LA-PCM Ethernet PLC Card LAN Adapter
TDK	10BASE-T LAN card Mode LAK-CD021BX

Ethernet board

Maker Name	Model Name
Allied Telesis	RE2000(ISA)

POINTS

- For details on connection to E71, see Appendix 2.3.
- Connection via MELSECNET/10 board
If a "GPPW system error" occurs when accessing via a MELSECNET/10 board (example: ES:22221234), the lowest four digits - 1234 - are the error code: refer to the error code lists in the manual packed with the product.