OPERATING MANUAL

SERVICE TOOL for VRF System

UTR-YSTC **Ver. 3.0**

CAUTION

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FUJITSU GENERAL LIMITED

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for
“SERVICE TOOL for VRF SYSTEM” (Version 3.0)

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Contents

1. Safety precautions

1-1 Safty precautions

- Before using Service Tool, read this “Safety precautions” thoroughly to ensure the correct operation.
- This section describes the important safety information to operate Service Tool.
- The meanings of “WARNING” and “CAUTION” are explained as follows.

⚠ **WARNING!**	This mark indicates the procedures, which might result in the death of or serious injury to the user or service personnel if improperly performed.
⚠ **CAUTION!**	This mark indicates the procedures, which might result in personal harm to the user or damage to property if improperly performed.

This manual is for service personnel authorized to use the Service Tool. Always keep this manual in an easily accessible place for use by authorized service personnel.

⚠ WARNING!

The following notices are mainly described for the dealing of transmission adaptor, which is used for transmitting data between Service Tool and the Indoor or Outdoor unit.

1. **The transmission adaptor includes the high voltage circuit. Installation must be performed by an authorized service personnel only.**
2. **This adaptor contains no user-serviceable parts. Always consult the authorized service personnel for repairs.**
3. **When moving this adaptor, consult the authorized service personnel for disconnection and installation.**
4. **If a problem (burning, smell, etc.) occurs, turn off the electrical breaker immediately to stop operation, and then consult the authorized service personnel.**
5. **If the power supply cord is damaged, do not attempt to repair it. Contact your service representative for instructions.**
6. **If any work is to be performed on the transmission adaptor, turn off the power supply and wait at least 10 seconds. Failure to do so might lead to an electric shock.**

⚠ CAUTION!

Service Tool can control the air-conditioner system on a personal computer. Be careful not to turn off the power supply of the personal computer or transmission adaptor, or not to finish the application compulsorily during operation. Otherwise, Service Tool might malfunction. For personal computer used as Service Tool, refer to the instruction manual. The following notices are mainly described for the dealing of transmission adaptor, which is used for transmitting data between Service Tool and the Indoor or Outdoor unit.

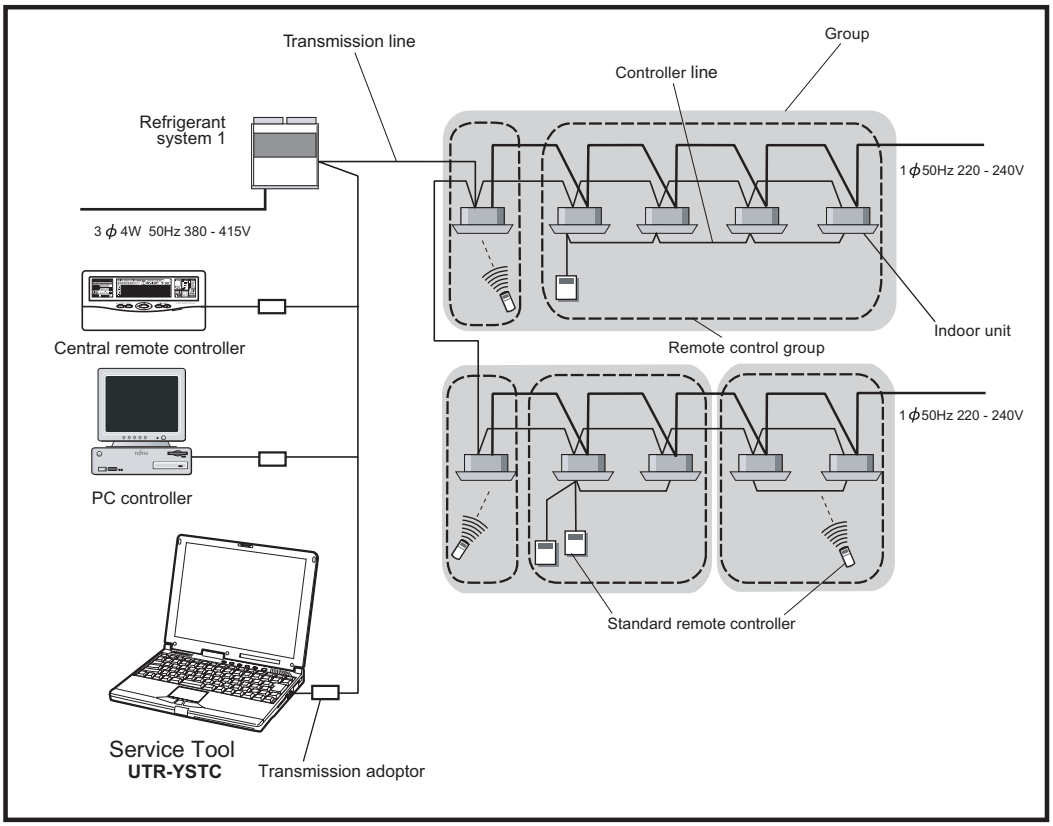
1. **Ensure that all electronic equipment is at least one meter away from the adaptor. Otherwise, unexpected noise might lead to malfunction of the equipment.**
2. **Avoid installing the adaptor near a fireplace or other heating apparatus.**
3. **When installing the adaptor, take precautions to prevent access from infants.**
4. **Do not use inflammable gases near the adaptor. Otherwise, it might lead to a fire.**
5. **The rated voltage of the adaptor is 220-240V A.C. 50-60Hz. Confirm that the power supply is within this range. If the voltage is out of range, contact your electric company.**
6. **Do not change the DIP-SW setting in the adaptor. Otherwise, Service Tool might malfunction.**
7. **Do not install the adaptor in highly dust locations. Otherwise, it might lead to a fire or an electrical shock.**
8. **The operation temperature range of the adaptor is 0-46°C. Do not use it except within this range. Otherwise, the adaptor might malfunction.**
9. **Install the adaptor where the ambient relative humidity is less than 90%RH. Placing in a highly humid or damp location might lead to a fire or an electrical shock.**
10. **If water, metal or foreign material enters the adaptor, stop operation, turn off power immediately, and disconnect the power supply cord and transmission cord. Failure to disconnect might lead to a fire or an electric shock.**
11. **Do not splash water in the adaptor or touch it with wet hands. It isn't water-proof. If splashed water enters, turn off power immediately and wipe it off with a dry cloth. Failure to perform, might lead to a fire or an electric shock.**

1-2 Precautions when using the service tool

1. Please read and fully understand the Operating Manual. Fujitsu General Limited is not responsible for improper use.
2. Fujitsu General Limited is not responsible if the settings in this software or data used for the controlling are deleted. We request that the customer take responsibility for the administration of the settings and control data.
3. If the personal computer operating this software stops, immediately restart the computer and restart this software. Also, if the unit equipment stops due to a power supply interruption, restart this software immediately as there is the potential for malfunctioning.
4. The master CD for this software and the hasp (hardware protection key) will not be reissued. Store the master CD in a safe place after installing.
5. For information about operating your personal computer, refer to the operating manual for the PC and the store that sold it.
6. Never start this software simultaneously with other software as this may cause malfunctioning.

Contents

2. Outline



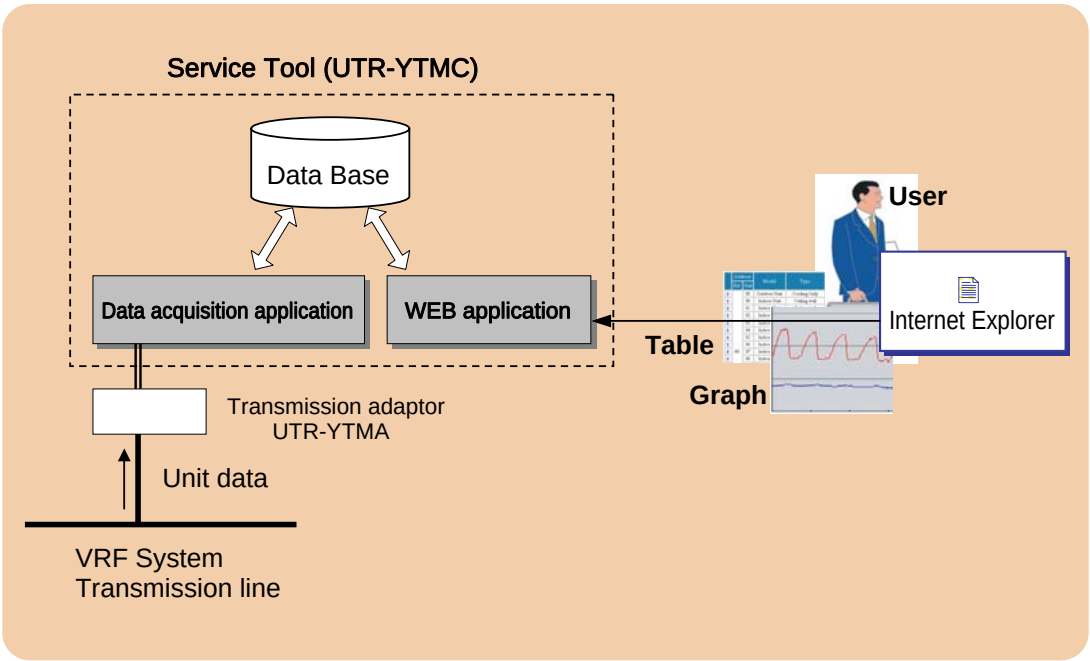
This operating manual explains the operating procedures for the software of Service Tools for the VRF control system.
The use of the system tools allows detailed data about the operating condition of each refrigerant system that has been installed in the building's system to be displayed in an easy-to-understand format.
Moreover, it also allows the latest data about pressure and temperature of indoor and outdoor units to be monitored. If there are fluctuations in the conditions, they can be displayed clearly in graph form on a PC screen.
When an error occurs in the transmission line or in an indoor or outdoor unit in the system, details about the error can be displayed on the error history screen for easy assessment of the conditions for fast troubleshooting and resolution.

■ Software construction

The service tool software consists of the two functions Data acquisition application and WEB application.

The Data acquisition application is a program which is made resident when the service tool starts, and exchanges data with the VRF System transmission line. The received Unit data is saved to a Data base.

The WEB application is a program which converts the acquired Unit data to Table and Graph, and displays them to a browser (Internet Explorer). It also converts operations input from the User and passes them to the Data acquisition application through the Database.



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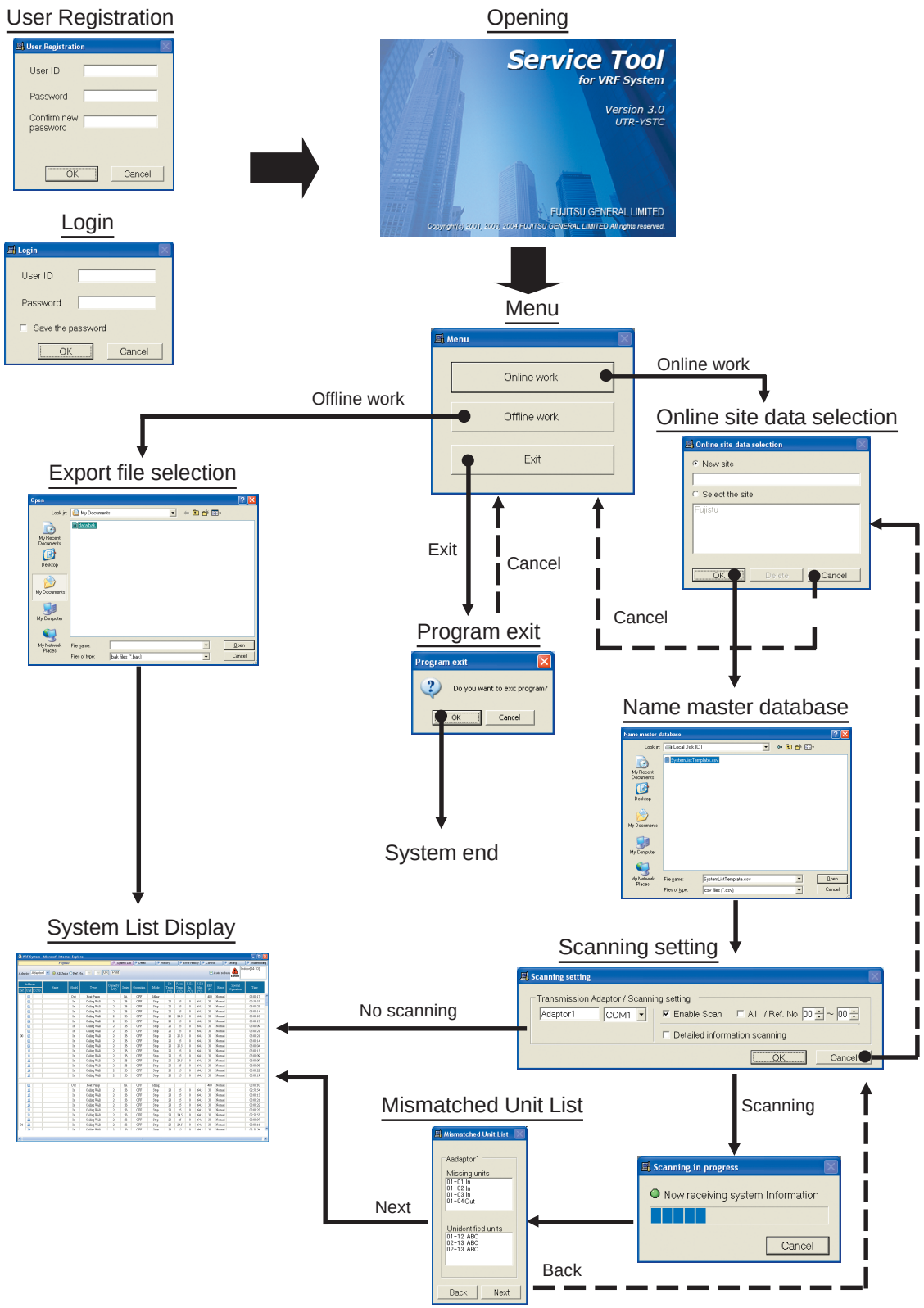
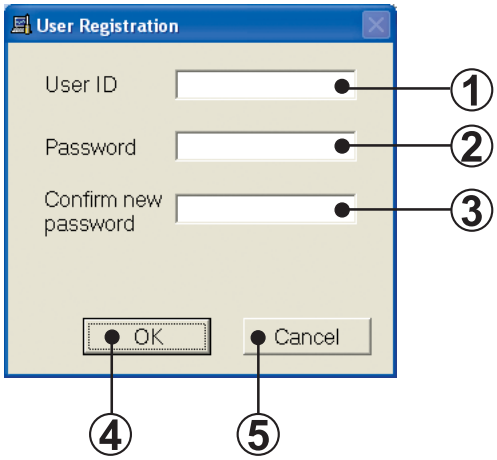
3. Data acquisition application starting flow

3-1 Screen transition



3-2-1 User registration (at initial starting)

To start the Data acquisition application, the user must be verified by user ID and password. If the user is not registered, user registration processing is started. User registration, change, and deletion can also be performed at 5-10 Setting screen.



① User ID input field
Input the user ID. (Up to 20 alphanumeric characters) (*1)

② Password input field
Input the password. (Up to 20 alphanumeric characters) (*1)

③ Password confirmation input field
Input the password again for confirmation. (Up to 20 alphanumeric characters) (*2)

④ OK button

When the OK button is clicked, the inputted data is saved.

The opening screen is displayed, and operation advances to site data selection processing.

⑤ Cancel button

When the Cancel button is clicked, user registration stops and the service tool ends.

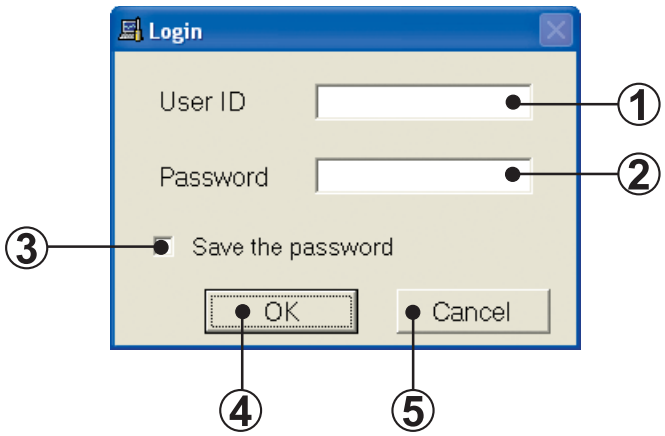
Note

*1 When the user ID and password input fields are not inputted, an error message is displayed.

*2 When the password and password confirmation input contents are different, an error message is displayed.

3-2-2 Login

At other than initial starting (when a user is registered), a login screen is displayed.



① User ID input field

Input the ID of the user to be logged in. (Up to 20 alphanumeric characters) (*1)

② Password input field

Input the password of the user to be logged in. (Up to 20 alphanumeric characters) (*1)

③ Save the password check box

When the Save the password check box was checked, the same user ID and password are automatically displayed the next time the service tool is started.

When the Save the password check box is not checked, the next time the service tool is started, the user ID and password are not displayed and must be manually inputted.

④ OK button

When the OK button is clicked, the opening screen is displayed, and then operation advances to site data selection processing.

⑤ Cancel button

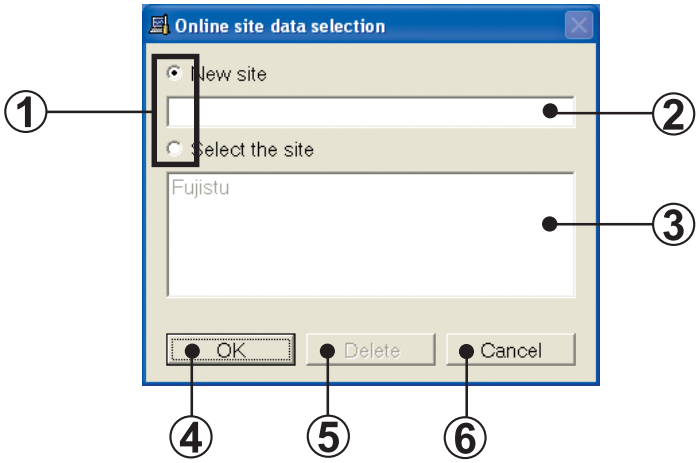
When the Cancel button is clicked, the service tool ends.

Note

*1 When the user ID and password input fields are not inputted, an error message is displayed.

3-2-3 Site data selection

New site can be registered and existing site can be selected / deleted on this screen. One service tool can manage multiple sites by registering the sites. When using the service tool the next time, rapid service without scanning can be performed by reading already registered site data.



① Site data selection item

To register a new site, select “New site”. To select an already registered site data, select “Select the site”.

② New site name input field

When “New site” was selected at step ①, input the site name to be registered. (Up to 20 alphanumerics and symbols) (*1)

③ Site data selection display field

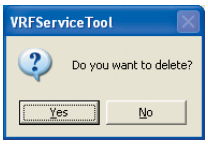
Displays the site names already registered.

When “Select the site” was selected at step ①, select the objective site name. (*2)

④ OK button

When the OK button is clicked, the name master database file selection screen is displayed.

⑤ Delete button



Can be used only when the objective site name was selected at step ③.

When the Delete button is clicked, all the data of the selected site is deleted.

Before deletion processing, a confirmation screen is displayed.

⑥ Cancel button

When the Cancel button is clicked, the program returns to the menu screen.

Note

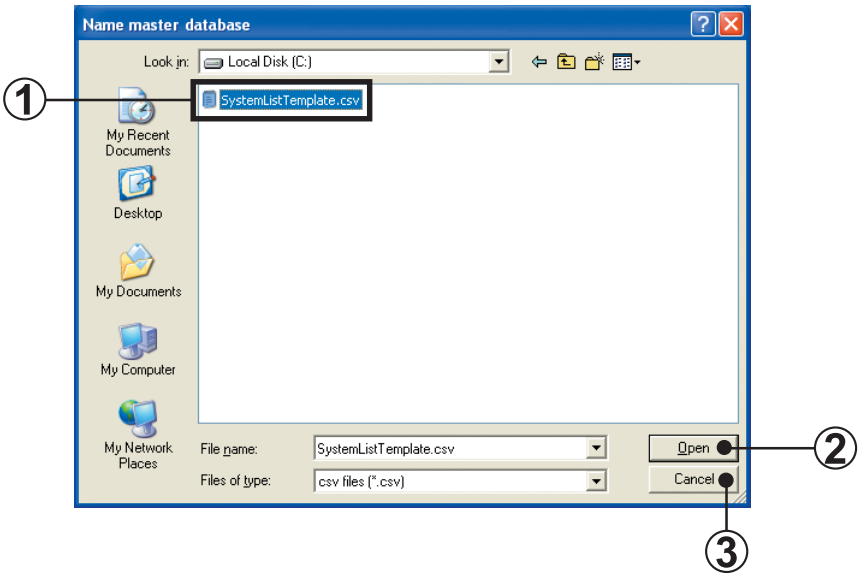
- Up to 50 sites can be registered.
  When the number of sites already registered exceeds 7, a scroll bar is displayed.

*1 When the new site name input field is not inputted, an error message is displayed.

*2 When a site is not selected, an error message is displayed.

3-2-4 Name master database file selection screen

When scanning is performed by specifying a name master database file (.CSV), the specified file and the unit data actually scanned are collated, and the mismatched unit list of par. 3-2-6 can be performed.
Create the name master database file in advance and specify it from this screen.



① CSV file selection

Select a name master database file (.CSV) containing the unit data. (*1)

② Open button

When the Open button is clicked, the scanning setting screen is displayed, and after the end of scanning, the differences between the name master database file and actual scanning result can be confirmed.

③ Cancel button

When scanning is performed without selecting a name master database file (.CSV), click the Cancel button. (The scanning setting screen is displayed.) In this case, the mismatched unit list screen is not displayed after scanning. (*2)

Note

*1 Files other than CSV files cannot be selected and displayed.

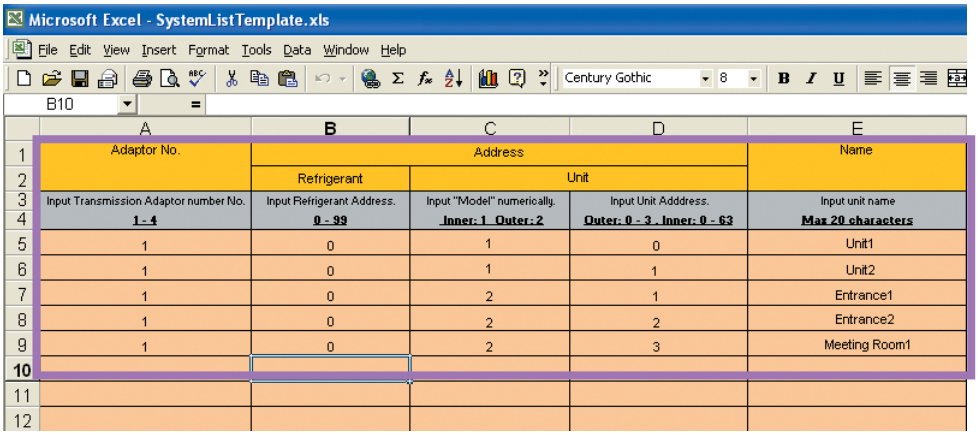
*2 When not selected, an error is not displayed even if there are units which cannot receive the address information normally.

■ Name master database file (.CSV) preparation

The address, name, and other information which becomes the comparison source during scanning are saved beforehand in CSV format.

① Since the template [SystemListTemplate.xls] is C:\Program Files\VRF System\ServiceTool\, open that file with Excel. (*1) (*2)

② Since the following screen is displayed, set a value at each item.



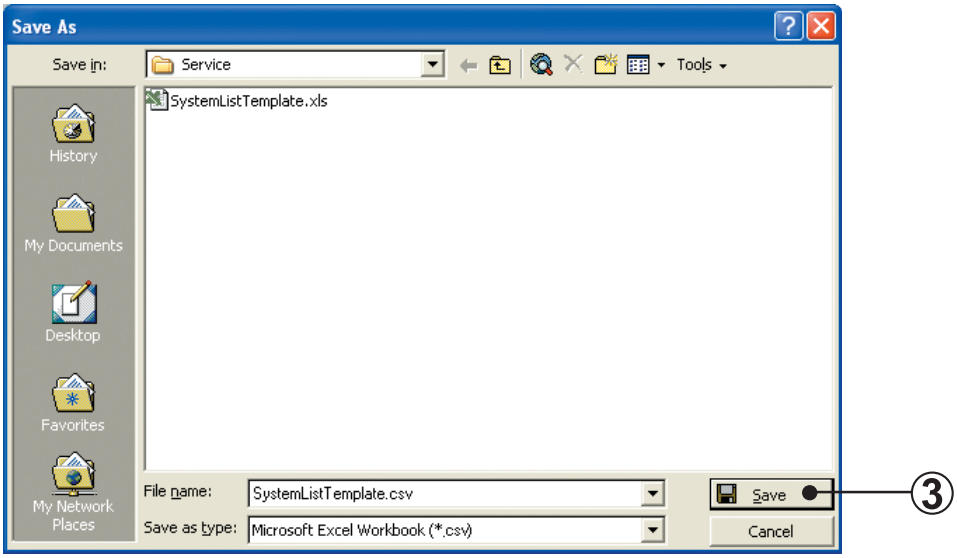
	A	B	C	D	E
1	Adaptor No.	Address			Name
2		Refrigerant	Unit		
3	Input Transmission Adaptor number No.	Input Refrigerant Address.	Input "Model" numerically.	Input Unit Adddress.	Input unit name
4	1 - 4	0 - 99	Inner: 1 Outer: 2	Outer: 0 - 3 , Inner: 0 - 63	Max 20 characters
5	1	0	1	0	Unit1
6	1	0	1	1	Unit2
7	1	0	2	1	Entrance1
8	1	0	2	2	Entrance2
9	1	0	2	3	Meeting Room1
10					
11					
12					

Input contents

Adaptor No.		Enter the Adaptor No. (Range: 1~4)
Refrigerant		Enter the refrigerant system No. (Range: 0~99)
Unit	Input "Model" numerically	Enter the unit model. (Inner: 1, Outer: 2)
	Input Unit Address	Enter the unit No. (When “1” is inputted in “Model” field, input within the 0 ~ 3 range. When “2” is inputted in “Model” field, input within the 0 ~ 63 range.)
Name		Enter a name which allows easy classification of units. When a name is entered in this field, it is displayed on the service tool. Entry is not always necessary. When nothing is entered, the name is displayed as a blank.

③ Select “Microsoft® Excel workbook (*.CSV) at Save as type.

Confirm that the file name extension is [.CSV] and then click the Save button. (*3)



Note

*1 This template is created by spreadsheet program Excel.

Excel must be purchased separately.

*2 [SystemListTemplate.xls] is in the folder specified when installing the service tool. When an address other than the default installation address was specified, check that folder.

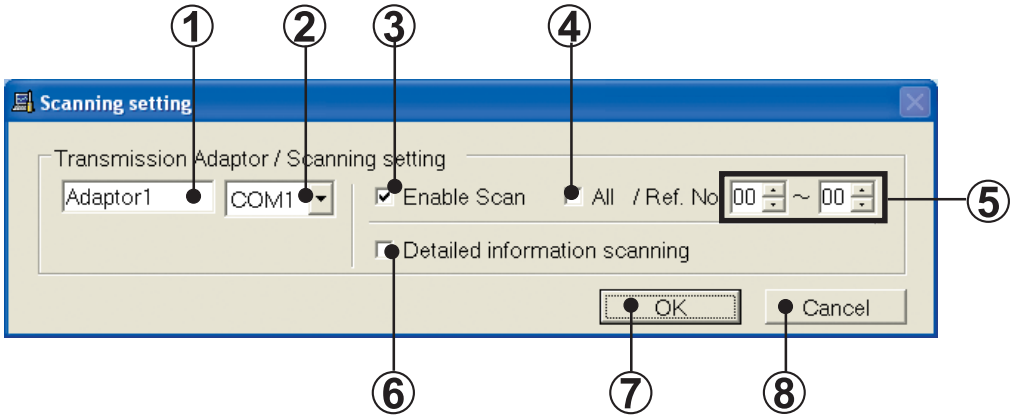
(Refer to par. 5-6-2 Data acquisition application of the **Setting Manual**.)

3 Since a CSV file is not created in formats other than “Microsoft® Excel workbook (.CSV)” at Save as type, it cannot be used at the name master database file selection screen.

3-2-5 Scanning

■ Scanning setting screen

The air conditioner indoor units and outdoor units are connected by a transmission bus line and each have unique address information. Scanning collects this information.



① Transmission adaptor entry field

The name of the transmission adaptor displayed on the screen can be entered. The default is “Adaptor1”. When unnecessary, it can remain as is.

② COM port selection field

Select the COM port which connects the transmission adaptor.

③ Scan execution setting check

Check to execute scanning.

Do not check when using existing site data which is currently being read. (*2)

④ Ref. No. range (ALL) check

Check to scan all the refrigerant systems.

At this time, the range of refrigerant numbers to be scanned is automatically set to 00 ~ 99.

⑤ Ref. No. range input field

When ALL is not checked at step ④, input the refrigerant system numbers to be scanned within the 00 ~ 99 range.

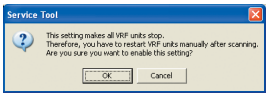
Input the start refrigerant system No. ~ end refrigerant system No. range.

⑥ Detailed information scanning check

Can be used only when ③ is checked.

Check when you want to acquire more detailed information by scanning. (*1)

When checked, a confirmation screen is displayed. When all the units in the VRF System may be temporarily stopped, click the OK button.



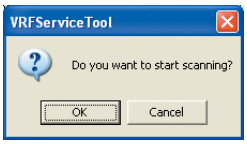
When the Cancel button was clicked, the check mark is removed.

⑦ OK button

• When “Enable Scan” checked

When the [OK] button is clicked, scanning starts and scanning progress is displayed on the scanning progress screen.

Before scanning starts, whether or not scanning is to be performed is displayed on a confirmation screen.



• When “Enable Scan” not checked

When the [OK] button is clicked, the system list screen is displayed without scanning.

⑧ Cancel button

When the [Cancel] button is clicked, the online site selection screen is displayed.

Note

*1 • When Detailed information scanning checked

Normally, perform bus priority mode scanning. Full scanning which can receive detail data is performed. However, since each unit performs scan dedicated special operation, the units of the entire VRF System temporarily stop. To start scanning, check if the VRF System can be completely stopped, then execute scanning. Since the units remain stopped even when scanning is finished, a restart command must be sent from the control unit.

• When Detailed information scanning not checked

Use when scanning at sites at which the VRF System cannot be stopped.

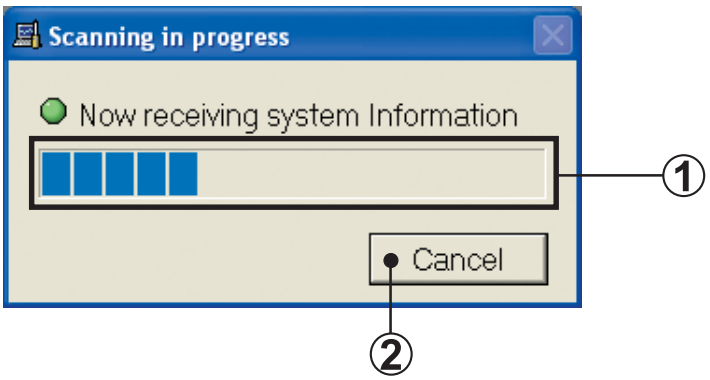
In this mode, scanning can be performed without affecting the operating status of the VRF System. However, since R.C group data cannot be received, it is not full scanning. Operation is not controlled in R.C. group units.

• When Single-Split Adaptor (UTR-YSSA) is connected within the VRF system, be sure to check the “Detail information scanning” when performing scanning in order to recognized the equipment and display correct information.

*2 When not checked, since scanning is not performed, the scanning objective refrigerant system No. cannot be set.

■ Scanning progress screen

Scanning is started and the scanning progress is displayed.



① Scanning progress display field

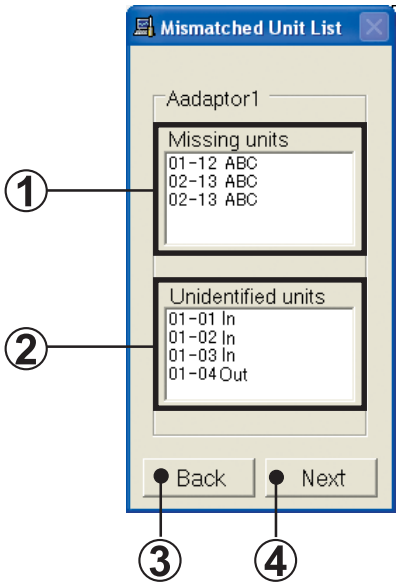
Displays the progress of scanning.

② Cancel button

When the Cancel button is clicked, scanning stops and the program returns to the scanning setting screen.

3-2-6 Mismatched unit list

When a name master database file is specified at par. 3-2-4, the unit data of the database file and the unit data actually scanned are collated. If there is a mismatch, that unit address is displayed. Therefore, correct the address setting on the board of the displayed unit and then re-scan. Repeat this work until a mismatched unit is not displayed.



① Missing units address display field

This field displays the unit addresses and unit names whose unit data is defined by name master database, but the relevant data could not be acquired during scanning.

② Unidentified units address field

This field displays the unit address and unit model (indoor unit, outdoor unit) whose address was received during scanning, but whose unit data is not defined by name master database file.

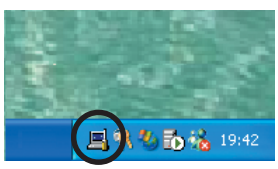
③ Back button

When the Back button is clicked, the program returns to the scan setting screen.

④ Next button

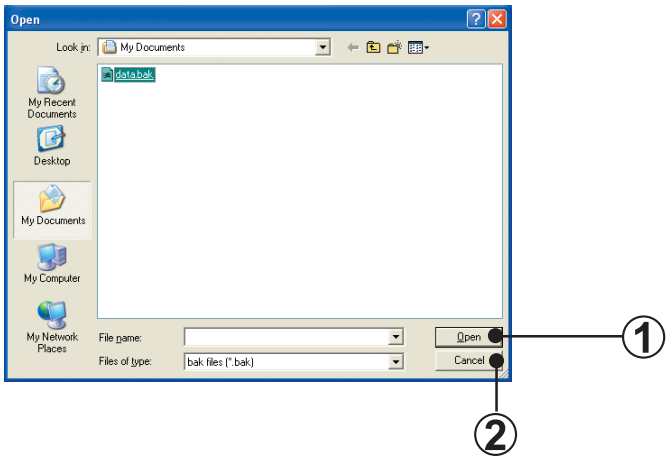
When the Next button is clicked, the scanning acquisition data is stored and the system list screen (see par. 5-4) is displayed. The application icon is also displayed at the task tray.

If there is a unit mismatch, return to the scanning setting screen by clicking the Back button and repeat collation with the scanning acquired data until there are no mismatches. After confirming that there are not mismatches, click the Next button. If the Next button was clicked when there is a mismatch, the unit data acquired by scanning is displayed on the system list screen unchanged.



3-3-1 Export file selection

An Export file created at the Save unit data screen at the end of the data acquisition application can be loaded to the service tool and displayed as offline data.
For a description of the offline data creation method, see par. 4-5 Exiting.



① Open button

When the Open button is clicked, the data of the selected Export file is fetched and the system list screen (see par. 5-4) is displayed.

② Cancel button

When the Cancel button is clicked, the program returns to the menu screen.

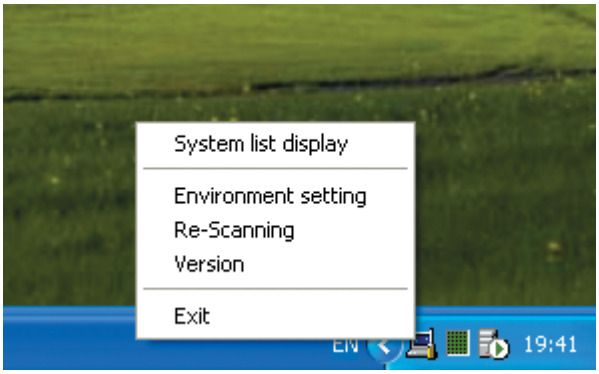
Contents

4. Data acquisition application right click menu

4-1 Outline

4-1-1 Menu

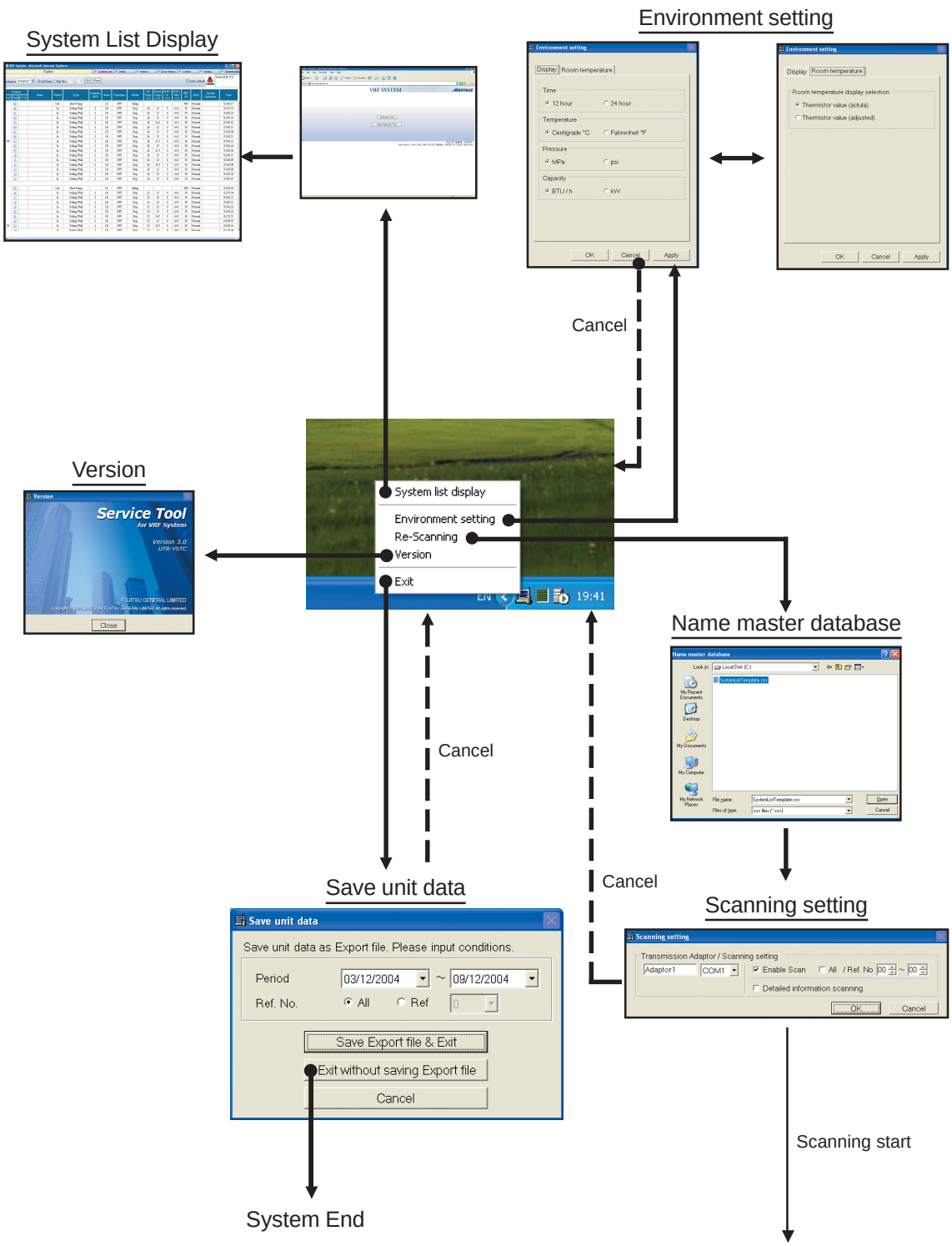
A menu is displayed and various operations can be performed by right-clicking the application icon on the task tray.



System list display	System list screen is displayed.
Environment setting	Environment setting screen is displayed.
Delete site	Delete site screen is displayed.
Re-Scanning	Name master database selection screen is displayed. Not displayed when offline.
Version	Version information screen is displayed.
Exit	Exit confirmation screen is displayed.

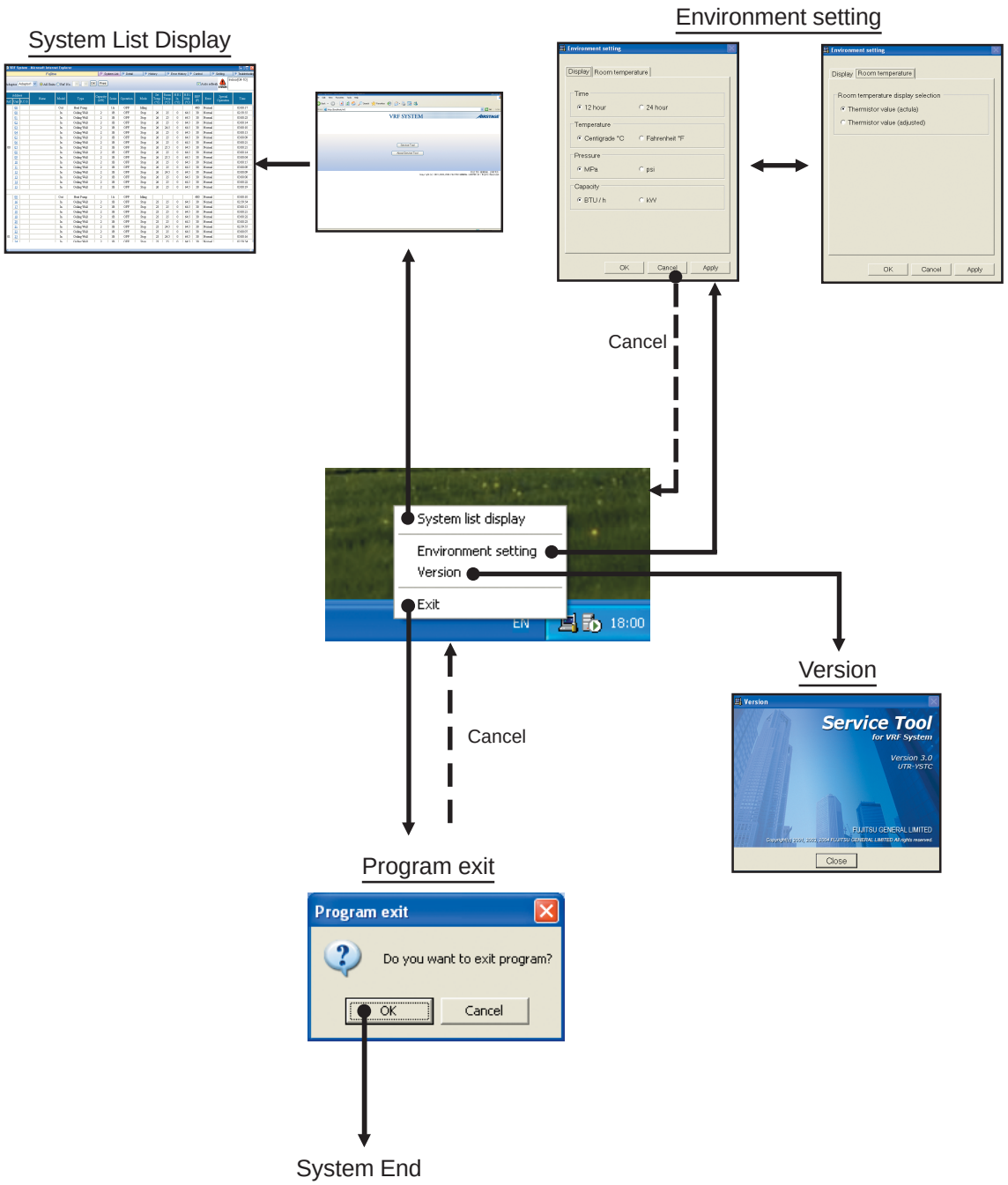
4-1-2 Screen transition (online)

The following shows transition of the screens which are started from the right click online menu.



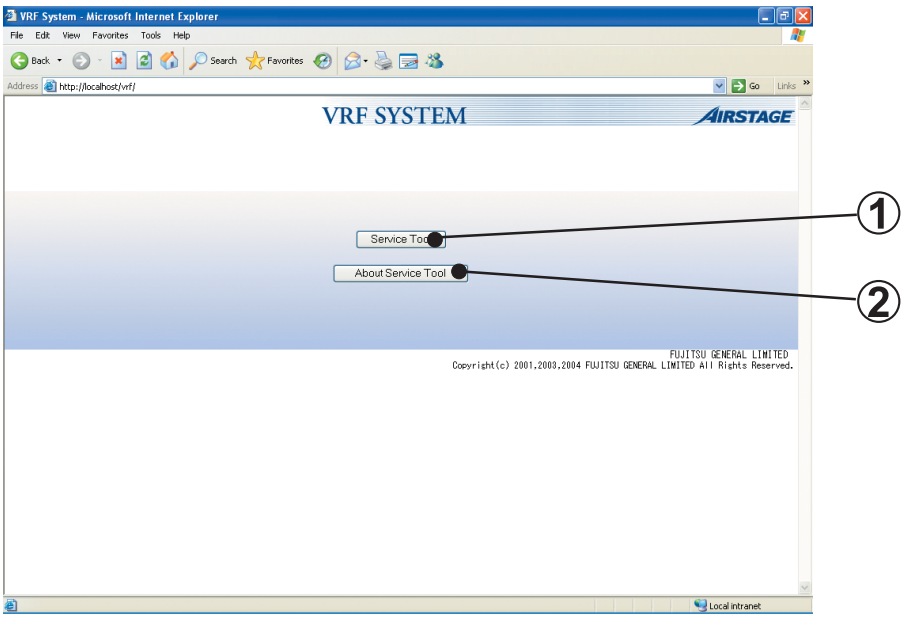
4-1-3 Screen transition (offline)

The following shows transition of the screens which are started from the right click offline menu.



4-2 Web browser starting (menu screen)

This is the initial screen. It displays service tool starting and version information.



① Displays the system list screen.

② Displays the version information.

Note

* For details, refer to par. 5-2 Menu.

4-3 Environment setting

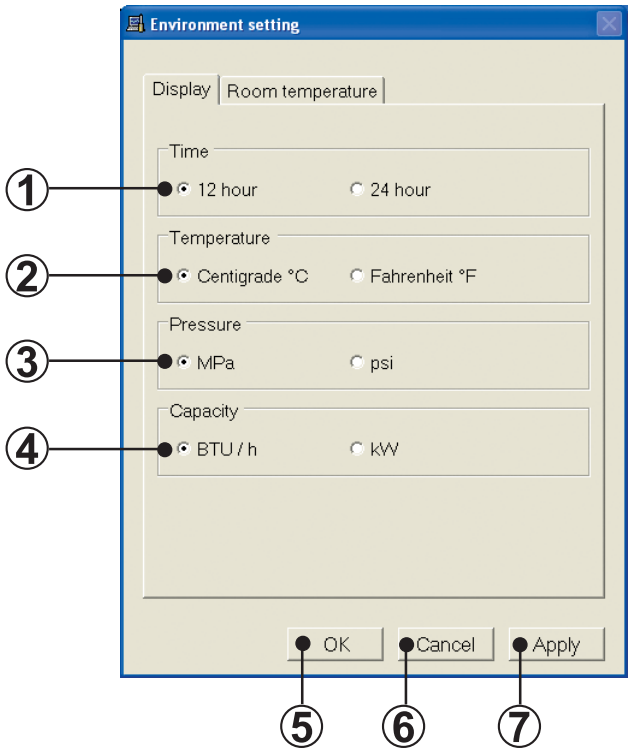
Various settings related to the operating environment are performed.

Display tab: Sets the Time/Temperature/Pressure/Capacity display method.

Room temperature tab: Sets the room temperature display method.

4-3-1 Display setting

Sets the display method of the Time/Temperature/Pressure/Capacity to be displayed by the Web application.



① Time display selection item

Sets the time display format.

For 12-hour display format, select “12 hour”. For 24-hour display format, select “24 hour”.

② Temperature selection item

Sets the temperature display units.

When you want to display the temperature in centigrade, select “Centigrade °C”.

When you want to display the temperature in fahrenheit, select “Fahrenheit °F”.

③ Pressure selection item

Select the pressure display units from “MPa” or “psi”.

④ Capacity selection item

Select the capacity display units from “BTU/h” or “kW”.

⑤ OK button

When the OK button is clicked, the set contents are saved and the screen is closed.

⑥ Cancel button

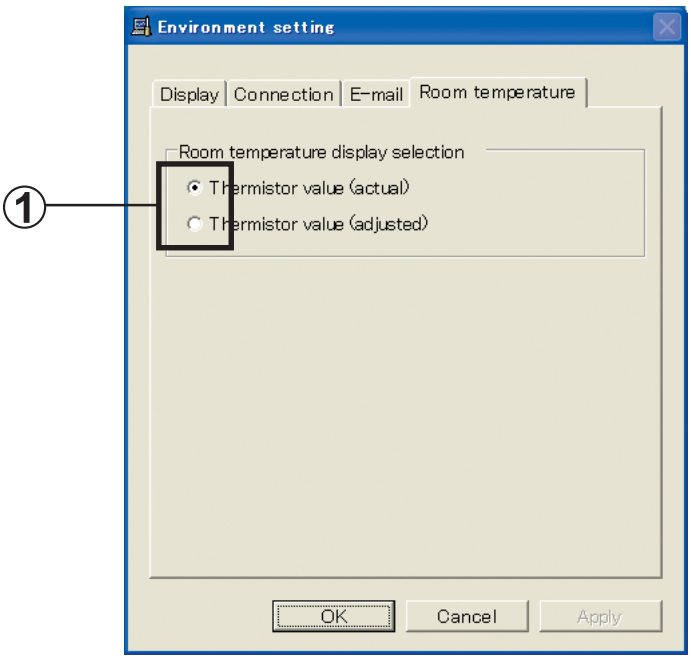
When the Cancel button is clicked, environment setting stops and the screen closes.

⑦ Apply button

When the Apply button is clicked, the set contents are saved.

4-3-2 Room temperature display setting

Sets the display method of the room temperature to be displayed by Web application.



① Room temperature selection item

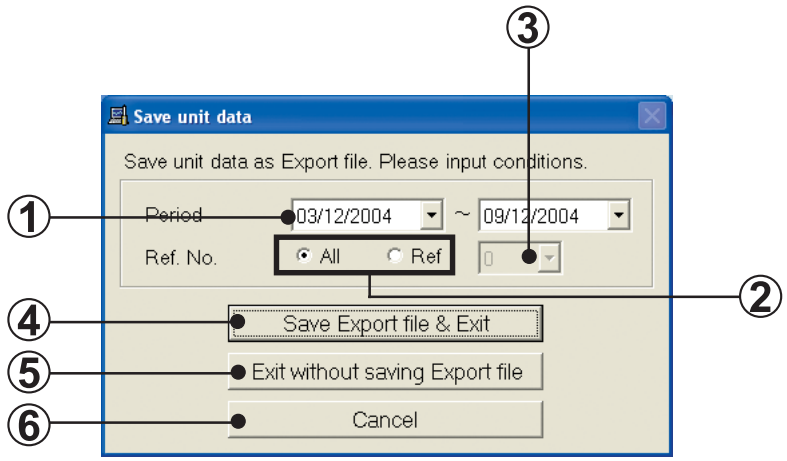
When you want to display the room temperature detected by sensor unchanged, select “actual”. When you want to display the room temperature corrected (used in control) by the unit, select “adjusted”.

4-4 Re-scanning

Perform the operations described in par. 3-2-4 and 3-2-5.

4-5 Exiting

Exits the service tool. When exited, the unit data acquired up to that point can be saved as an Export file, as required. Care is required because all the data which is not saved when exiting is deleted.
The saved Export file can be referenced later in the offline mode. (See par. 3-3-1 Export file selection.)



① Date setting field

Specify the date range of the data you want to save.

② Ref. No. setting field

When you want to save the data of all the refrigerant system No., select “All”.

When you want to save the data of a specific refrigerant system No., select “Ref”.

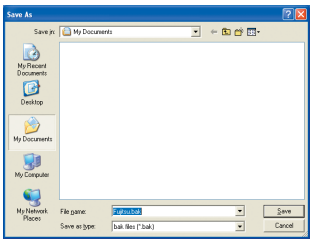
③ Ref. No. setting field

This field can be used only when “Ref” was selected.

Select the refrigerant system No. to be saved.

④ Save Export file & Exit button

Creates an Expert file and exits the service tool.



When the [Save Export file & Exit] button is clicked, the save file dialog screen is displayed. Set the Export file save location and save name.

When the [Save] button of the save file dialog screen is clicked, Export file creation under the conditions set on the screen starts. After the end of creation, the program exits from the service tool.

⑤ Exit without saving Export file button

When the [Exit without saving Export file] button is clicked, the program exits the service tool without creating an Export file. When exiting the service tool, all the unit data other than the system list is deleted. Therefore, when data must be referenced later, save the data by selecting “Save Export file & Exit”.

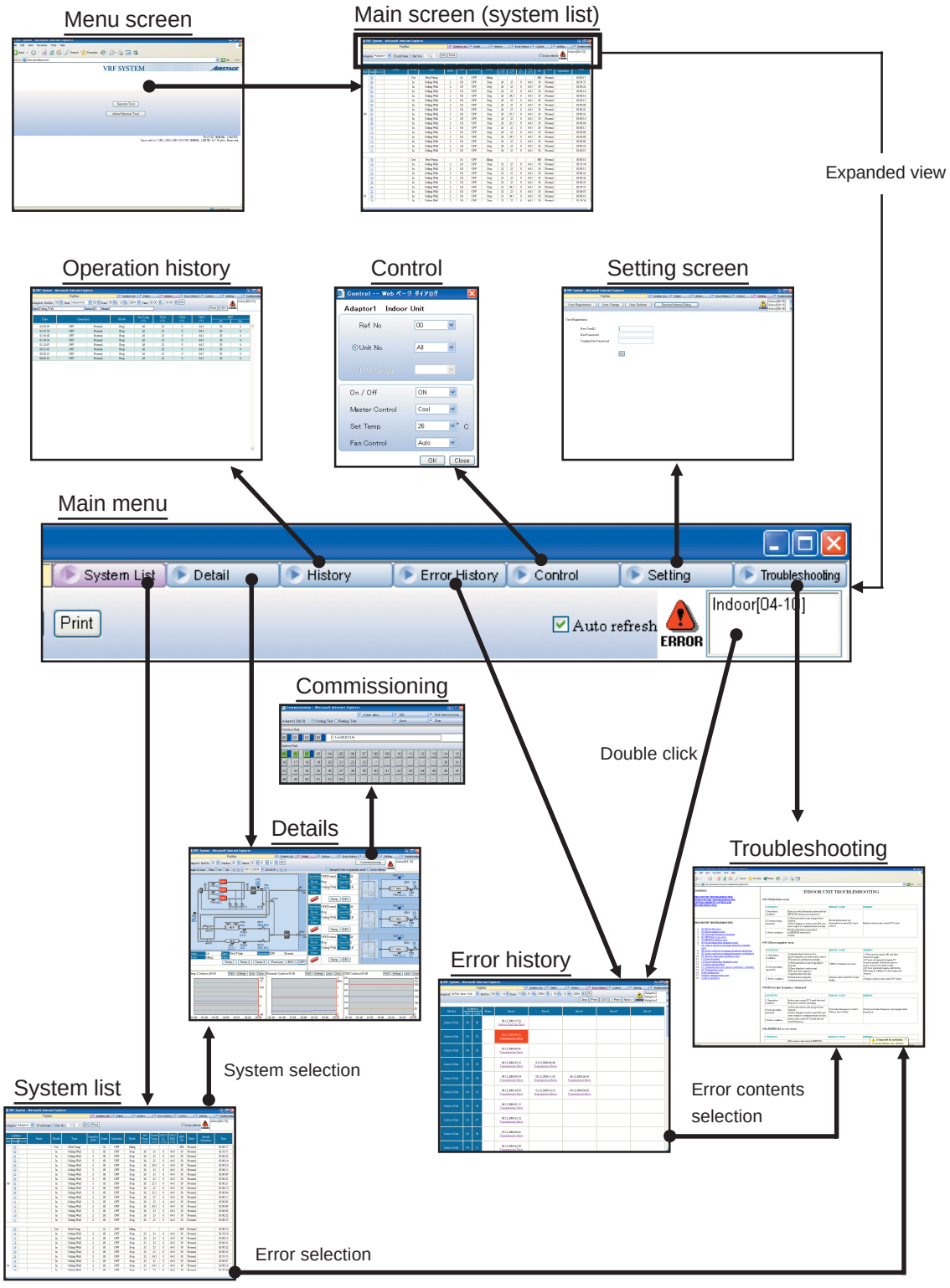
⑥ Cancel button

When the [Cancel] button is clicked, operation returns to the previous screen without exiting the service tool.

Contents

5. WEB application

5-1 Screen transmission

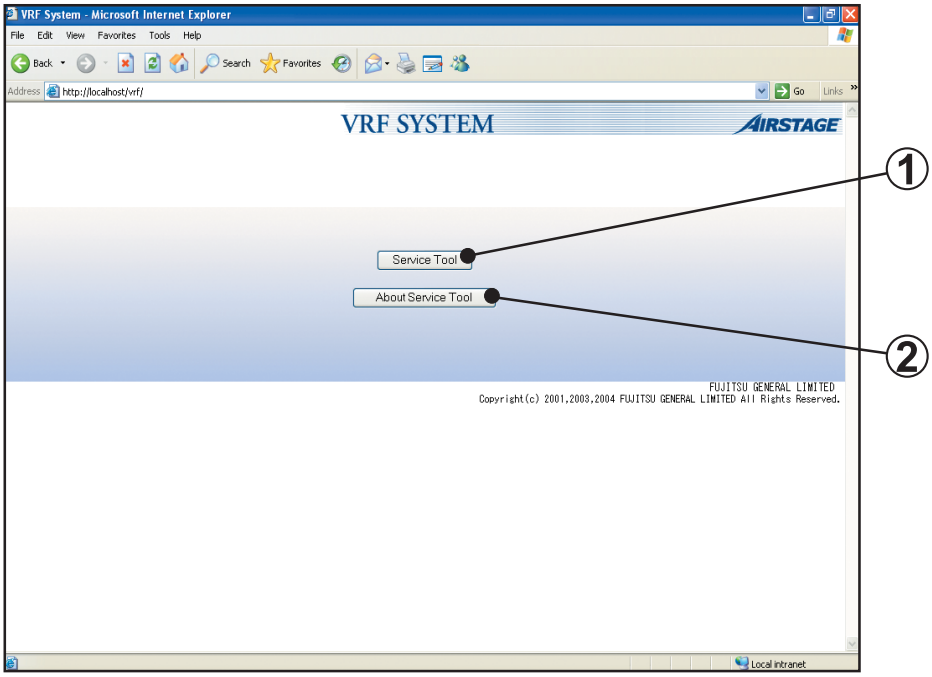


* For details, refer to the description of each screen.

Screen	Function	Page
Menu screen	Initial screen. Starts the service tool and displays the version information.	5
System list screen	Lists the status of each unit and the overall operating status can be grasped. This screen is displayed when shifting from the menu screen.	7
Details screen	Performs normal operation check and cause specification when an error was generated from the detailed status display of the units.	11
Commissioning tool	Test run instructions and commissioning data storage can be performed.	22
Operation history screen	Displays the indoor units or outdoor unit operating history information for each unit.	30
Error history screen	Displays the error information for each unit.	36
Control screen	Operation of each refrigerant system, indoor unit, or R.C. group can be controlled.	39
Setting screen	Performs new user's registration, user password change, registered user deletion, and demand interval setup.	41
Troubleshooting screen	Displays the error contents and corrective action.	46

5-2 Menu

This is the initial screen. It starts the service tool and displays the version information.



① Service Tool button

Starts the service tool, and displays the detail screen.

② About Service Tool button

Displays the version information.

5-3 Main menu

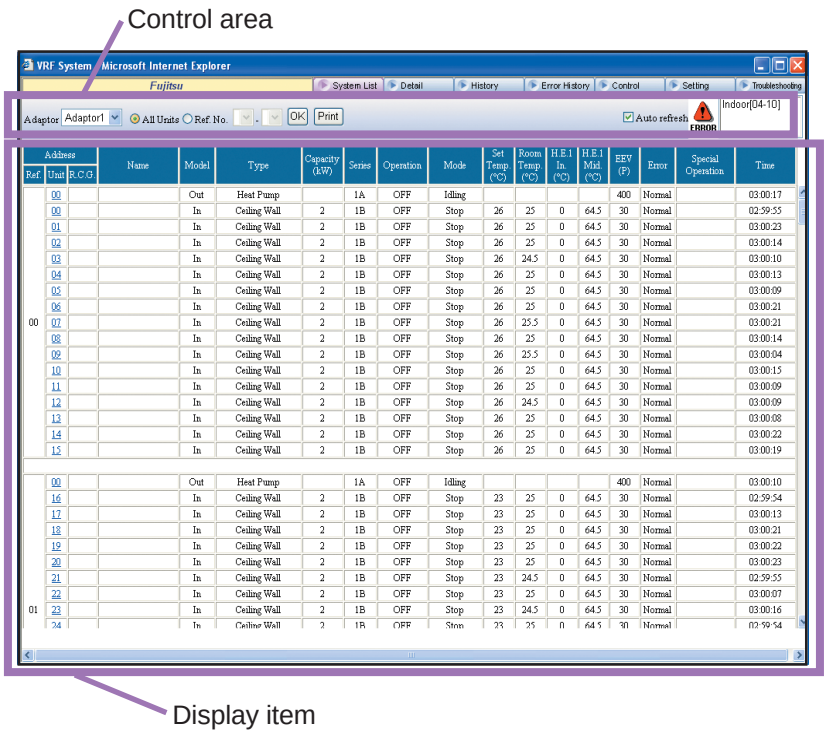
Menu which is displayed at the top of the screen. Each time the button is clicked, the display shifts to the screen of the next function.

System List	Shifts to the system list screen.
Detail	Shifts to the detail screen.
History	Shifts to the operation history screen.
Error History	Shifts to the error history screen.
Control	Displays the control screen.
Setting	Shifts to the setting screen.
Troubleshooting	Displays the troubleshooting screen.
ERROR	Up to 20 addresses of units currently generating an error can be displayed, beginning from the newest unit. Shift to the error history screen by double clicking the unit.

5-4 System list screen

This screen grasps the overall operating status from a list of the status of each unit. When an error unit is detected at this screen, shift to the system detail screen (refer to 5-5) and then check the detailed status. This screen can also be printed.

5-4-1 Name and function of each area



Control area

Adaptor	Displays the name of the transmission adaptor being used.
All Unit	Displays all the units.
Ref No.	Specifies the refrigerant system No. (narrow down display)
OK	Specified condition. Refreshes the display screen.
Print	Prints the currently displayed list.
Auto refresh	Specifies automatic refreshing of the display data. Checked: Automatically refresh the screen at a 30 seconds interval. Unchecked: Do not automatically refresh the screen.

Display items

Ref	Displays the refrigerant system No.
Unit	Displays the unit No. Shifted to unit detail screen of the selected unit No. by click operation.
R.C.G.	Displays the R.C. Group No.
Name	Displays the unit name.
Model	Displays the unit model (Indoor/Outdoor).
Type	Displays the unit type.
Capacity	Displays the indoor unit capacity. Indoor unit capacity is displayed in [BTU/h] or [kW] units. (*1)
Series	Displays the VRF1/1A/1B series.
Operation	Displays the operating status.
Mode	Displays the operating mode.
Set Temp	Displays the setting temperature. (*1)
Room Temp	Displays the room temperature. (*1)
H.E.1. In.	Displays the heat exchanger inlet temperature. (*1)
H.E.1. Mid.	Displays the heat exchanger middle temperature. (*1)
EEV	Displays expansion valve. Units display is [Pulse].
Error	When a unit is currently generating an error, displays [Error]. The troubleshooting screen (refer to 5-11) is displayed by clicking.
Special Operation	Displays special operation. Oil Recovery operation / Defrost operation (Outdoor unit) Anti Freeze operation (Indoor unit)
Time	Displays the newest receiving time of a transmission packet received by the service tool. (12-hour display or 24-hour display)(*2) • For summer time, (S) is displayed. Whether or not network communication is performed normally is made the judgment standard.

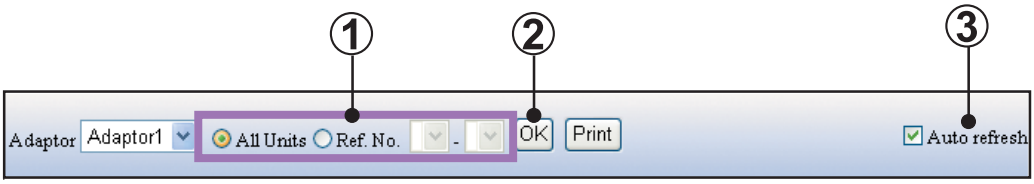
Note

*1 Units display is [°C] or [°F]. The display format depends on the setting at the data acquisition application. (Refer to 4-3 Environment setting.)

*2 The display format depends on the setting at the data acquisition application.

5-4-2 System list display

Only the necessary units can be displayed by specifying the refrigerant system range. This is convenient when you want to display only the objective unit in the state in which a large number of units are connected to the system.



① Select the range of the displayed refrigerant system. (*1)

② When the OK button is clicked, the display data is refreshed.

③ The system list is automatically refreshed every 30 seconds by clicking Auto refresh.

Note

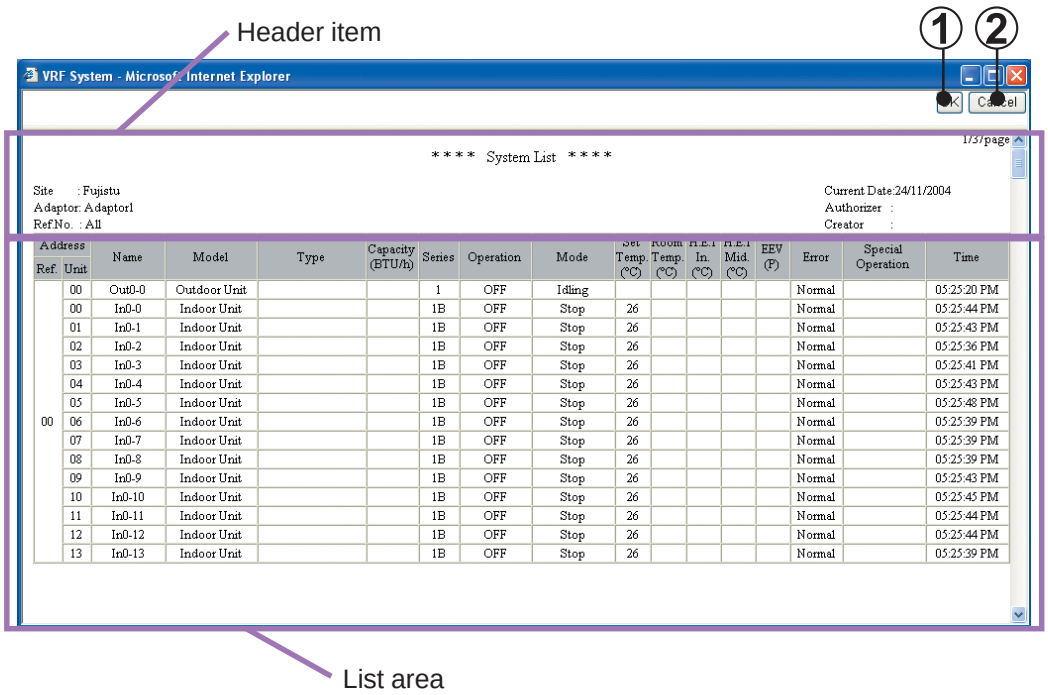
*1 When “All Units” is selected, the entire refrigerant system is displayed.

When “Ref No.” is selected, a list of only the refrigerant systems of the specified range is displayed. Specify the range of the refrigerant systems you want to display.

Select the refrigerant system from . The refrigerant systems currently registered are displayed.

5-4-3 System list printing

A print window of the currently displayed system list is displayed by clicking the Print button of the system list screen.



Address Ref.	Unit	Name	Model	Type	Capacity (BTU/h)	Series	Operation	Mode	Set Temp. (°C)	Room Temp. (°C)	H.E.X In. (°C)	H.E.X Mid. (°C)	EEV (P)	Error	Special Operation	Time
00	00	Out0-0	Outdoor Unit			1	OFF	Idling						Normal		05:25:20 PM
	00	In0-0	Indoor Unit			1B	OFF	Stop	26					Normal		05:25:44 PM
	01	In0-1	Indoor Unit			1B	OFF	Stop	26					Normal		05:25:43 PM
	02	In0-2	Indoor Unit			1B	OFF	Stop	26					Normal		05:25:36 PM
	03	In0-3	Indoor Unit			1B	OFF	Stop	26					Normal		05:25:41 PM
	04	In0-4	Indoor Unit			1B	OFF	Stop	26					Normal		05:25:43 PM
	05	In0-5	Indoor Unit			1B	OFF	Stop	26					Normal		05:25:48 PM
	06	In0-6	Indoor Unit			1B	OFF	Stop	26					Normal		05:25:39 PM
	07	In0-7	Indoor Unit			1B	OFF	Stop	26					Normal		05:25:39 PM
	08	In0-8	Indoor Unit			1B	OFF	Stop	26					Normal		05:25:39 PM
	09	In0-9	Indoor Unit			1B	OFF	Stop	26					Normal		05:25:43 PM
	10	In0-10	Indoor Unit			1B	OFF	Stop	26					Normal		05:25:45 PM
	11	In0-11	Indoor Unit			1B	OFF	Stop	26					Normal		05:25:44 PM
	12	In0-12	Indoor Unit			1B	OFF	Stop	26					Normal		05:25:44 PM
	13	In0-13	Indoor Unit			1B	OFF	Stop	26					Normal		05:25:39 PM

① OK button

When the OK button is clicked, printing starts.
Since a print confirmation screen is displayed, follow the instructions displayed on the screen. Set the printing form in the horizontal direction.

② Cancel button

Each time the Cancel button is pressed, the print window is closed without printing.

Printing contents

Header item

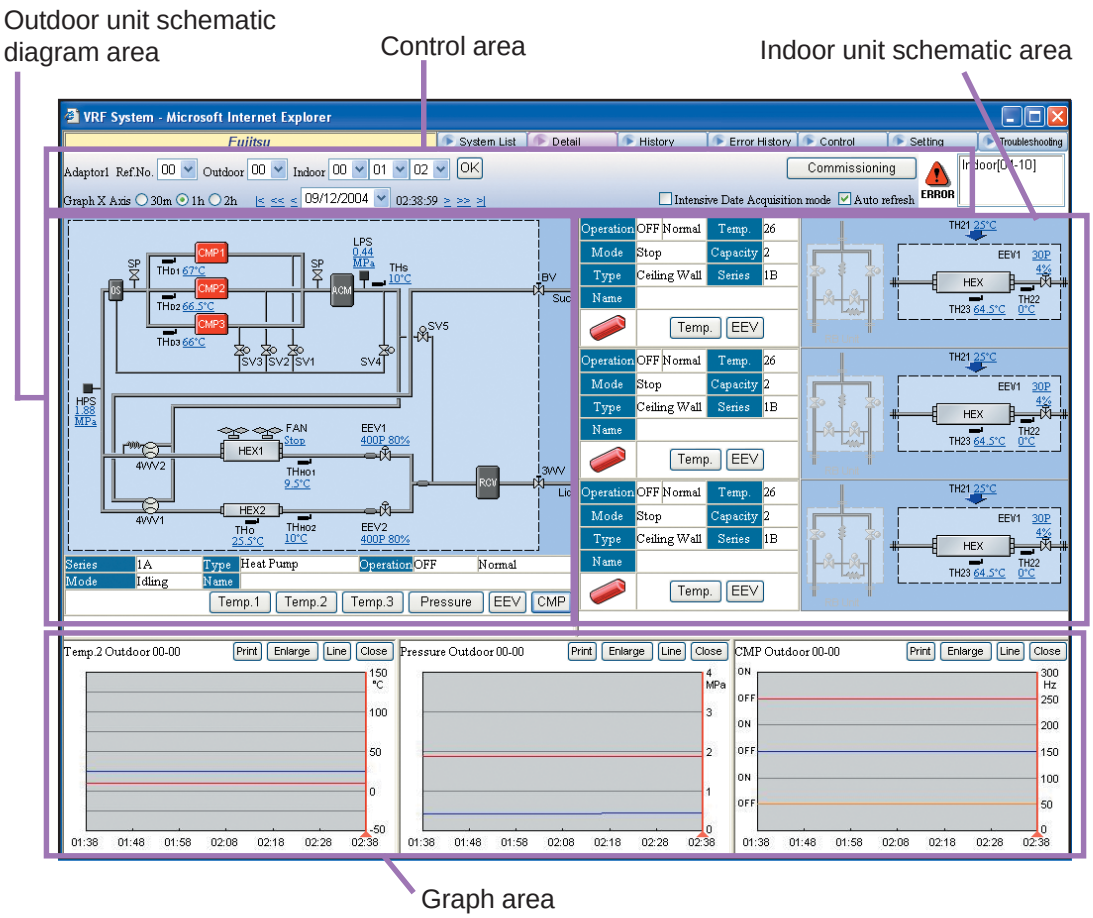
Site	Displays the site name.
Adaptor	Displays the transmission adaptor name.
Ref No.	Displays the specified refrigerant system range.
Current Date	Displays the current date.

List area

List	Displays the system list displayed on the screen.

5-5 Detail screen

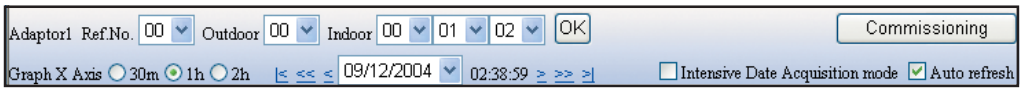
This screen displays the schematic, sensor values, and electrical components operating status of the selected system. At this screen, normal operation checks and cause specification when an error occurs are performed.
The schematic of 1 outdoor unit and 3 indoor units and three items graph can be simultaneously displayed.



5-5-1 Name and function of each area

■ Control area

Sets display contents specification and automatic refresh on/off.



Ref No.	Displays the refrigerant system No.
Outdoor	Specifies the outdoor unit No. displayed on the schematic.
Indoor	Specifies the indoor unit No. displayed on the schematic. (Up to 3 units can be specified.)
OK	The schematic of the specified unit is reflected on the screen by pressing this OK button after the refrigerant system No. and unit No. were specified. (*1)

Commissioning	Starts the commissioning tool. (Refer to 5-6 Commissioning tool.)
Graph X Axis	Specifies the X-axis scale of the graph.
<, << , |<	Moves the display time. (Refer to 5-5-2 Schematic specification method.)
Date	Specifies the date of the display data.
Time	Displays the acquisition time of the display data. (12-hour display or 24-hour display) (*2) For summer time, (S) is displayed.
Intensive Data Acquisition mode	Sets the mode which demands data from the service tool to each unit. (*3) The demand interval is set at 5-10-4 Demand interval setup. Checked: Demand output only for the displayed refrigerant system. Unchecked: Demand output for the entire system.
Auto refresh	Specifies automatic refreshing of the displayed data. Checked: Automatically refresh the screen at a 30 seconds interval. Unchecked: Do not automatically refresh the screen.

Note

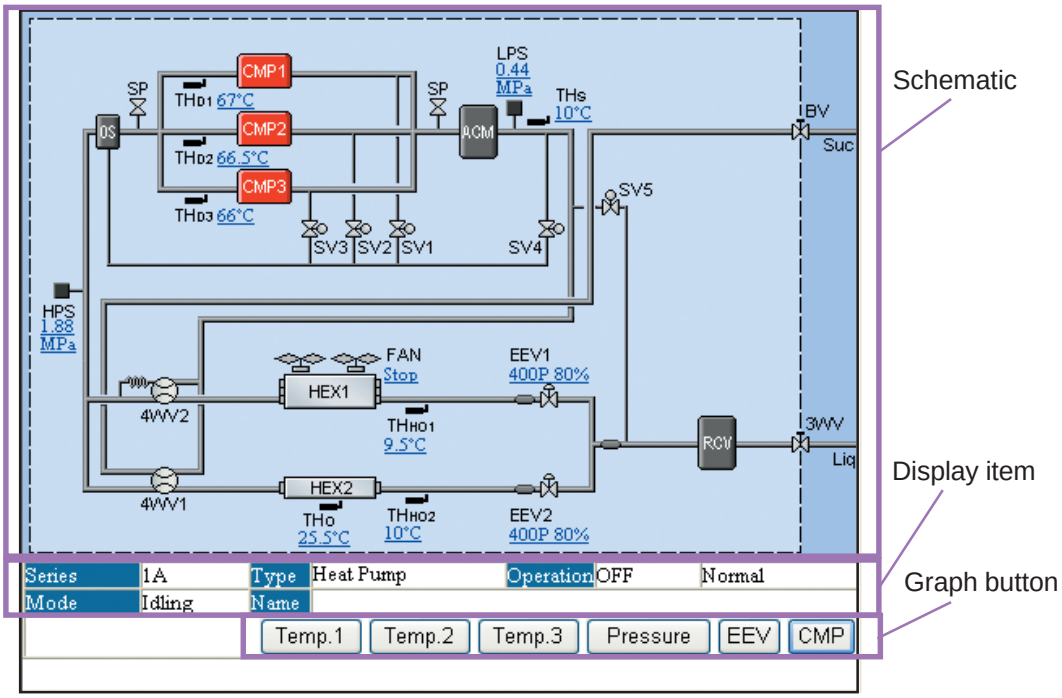
*1 When unchecked (no automatic refresh) at “Auto refresh”, each time the OK button is pressed, the screen can be manually refreshed to the newest status.

*2 The display format depends on the setting at the data acquisition application. (Refer to 4-3 Environment setting.)

*3 A data demand is sent from the service tool at a fixed interval and the data returned by each unit in response to this demand is displayed on the screen.
When checked, since demands are limited to the displayed refrigerant systems, detailed data collection is possible.
Conversely, a demand is not sent for refrigerant systems other than the displayed systems. Select this when you want to monitor a specific refrigerant system.
When unchecked, demands are sent to the entire system. However, instead of the demand range becoming wide, the data density becomes thin. Set when the system is operating normally and you want to monitor the entire system.

■ Outdoor unit schematic area

This area displays the outdoor unit schematic. For the meaning of each symbol, refer to the “Design & Technical Manual”. For the meaning of each item in the schematic, refer to the later schematic /graph display item.



Schematic

Schematic	Displays a schematic of the specified unit. • The schematic depends on the unit.
Compressor 	Displays the compressor status. On: Green Off: Red
4-way valve/solenoid valve 	Displays the 4-way valve/solenoid valve status. On: Green Off: Gray

Display items

Series	Displays the VRF1/1A/1B series.
Type	Displays the unit type.
Operation	Displays the operating status (ON/OFF) and unit status (Normal/Error).
Mode	Displays the operating mode.
Name	Displays the unit name. (*1)

Note *1 Only when preset (Refer to 3-2-4 Name master database file selection screen.)

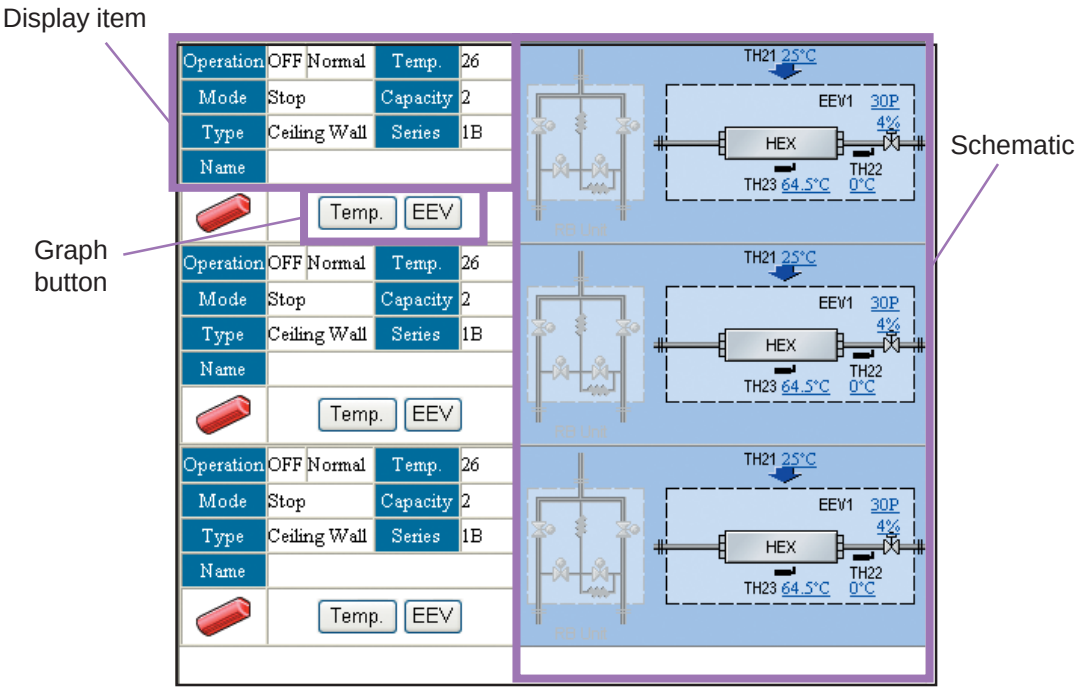
Graph button

The graph corresponding to the clicked button is displayed. Up to 3 graphs can be displayed at the graph area. When you want to display a new graph, but 3 graphs are already displayed, close one of the graphs beforehand.

Temp.1	Displays discharge temperature graphs 1 ~ 3 at the graph area.
Temp.2	Displays the suction temperature and outdoor temperature graphs at the graph area.
Temp.3	Displays heat exchanger inlet/outlet temperature graphs 1 ~ 3 at the graph area.
Pressure	Displays a pressure graph at the graph area.
EEV	Displays an electrical expansion valve opening rate graph at the graph area.
CMP	Displays the operating status of the compressor at the graph area. For an inverter compressor, the operation frequency is also displayed.

■ Indoor unit schematic area

Displays the schematic of up to 3 indoor units selected by control area. For the meaning of each item in the schematic, refer to the later schematic/graph display item.



Display items

Operation	Displays the operating status (ON/OFF) and unit status (Normal/Error).
Mode	Displays the operating mode.
Type	Displays the unit type.
Name	Displays the unit name. (*1)
Temp	Displays the setting temperature. Units display is [°C] or [°F]. (*2)
Capacity	Displays the capacity. Units display is [BTU/h] or [kW]. (*2)
Series	Displays VRF1/1A/1B series.
Indoor Unit Icon 	Displays the status of the indoor units. The display color depends on the status. On: Green Off: Red Test: Orange On (Error): Green blinking Off (Error): Red blinking Test (Error): Orange blinking.

Note

*1 Only when preset. (Refer to 3-2-4 Name master database file selection screen.)

*2 The display format depends on the setting at the data acquisition application. (Refer to 4-3 Environment setting.)

Graph button

The graph corresponding to the clicked button is displayed. Up to 3 graphs can be displayed at the graph area. When you want to display a new graph, but 3 graphs are already displayed, close one of the graphs beforehand.

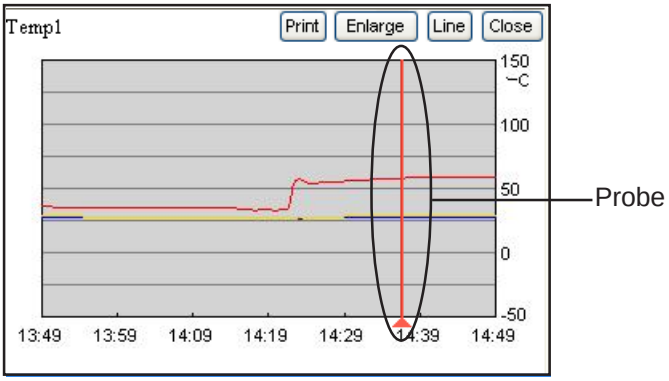
Temp	Displays a temperature graph at the graph area.
EEV	Displays an electrical expansion valve opening rate graph at the graph area.

Schematic

Schematic	Displays the schematic of the specified units. Up to 3 units can be displayed.

■ Graph area

Graphs are displayed by clicking each button of the control item from the indoor unit/ outdoor unit schematic area.



Name	The graph item/unit name (if set) are displayed at the top left-hand corner of the graph area.
Print	Displays the print confirmation window. (*1)
Enlarge	Enlarges and displays a graph. (*1)
Line	Displays the graph line selection screen. (*1)
Close	Closes the graph.
Probe	The probe is moved to the left and right by dragging it with the mouse. The unit status received at the past time at the probe position is reflected on the schematic. When a past unit status is referenced, the “Auto refresh” check mark is automatically removed.

Note

*1 For details, refer to the next clause (Graph area details).

■ Graph area details

• Graphs can be printed by clicking the Print button.

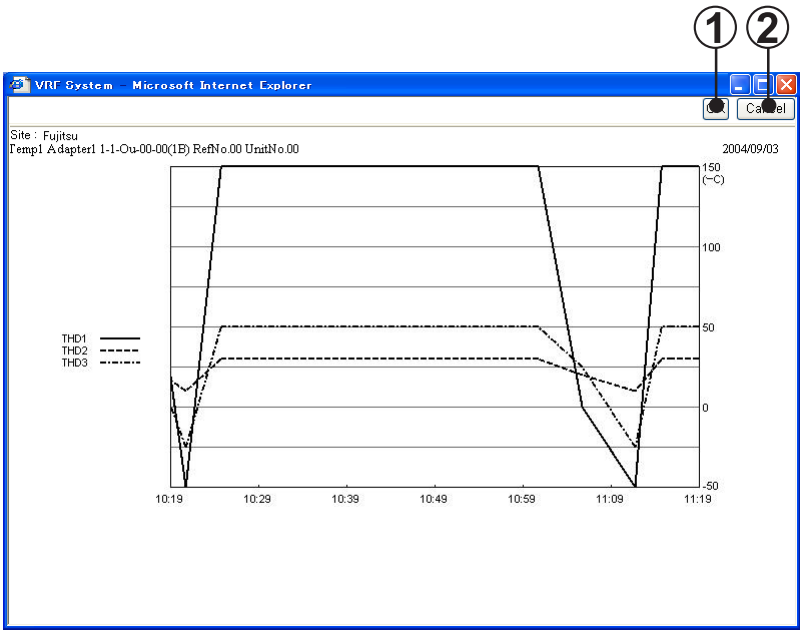
① OK button

Start printing by clicking the OK button.

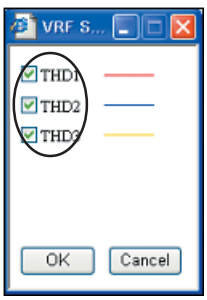
Since a print confirmation screen is displayed, follow the instructions displayed on the screen. Set the printing form in the horizontal direction.

② Cancel button

Close the print window without printing by clicking the Cancel button.



- The graph is vertically enlarged 2 times and displayed by pressing the Enlarge button.
- The graph line selection screen is displayed by pressing the Line button.
  Graph display/hide can be set by checking/unchecking.
  For the meaning of each item displayed on the graph line selection screen, refer to the later schematic/graph display item.



■ Schematic/graph display item

Shows the item names and contents displayed on the schematic and graph screens.
The items in the graph button field can be graphically displayed with the graph button of the relevant name. However, there are also items which may not be displayed, depending on the unit series (1/1A/1B) and unit type (free/cooling only/heat pump).

• Outdoor unit

1/1A	IB	Graph button	Description
CMP1		CMP	Compressor 1
CMP2		CMP	Compressor 2
CMP3		CMP	Compressor 3
HEX		—	Heat exchanger
Fan		—	Outdoor fan
ACM		—	Accumulator
RCV		—	Receiver tank
OS		—	Oil separator
—	SCHEX	—	Sub cool heat exchanger
HPS		Pressure	High pressure sensor
MPS	—	—	Middle pressure sensor
LPS		Pressure	Low pressure sensor
4WV1	4WV	—	4-way valve 1
4WV2	—	—	4-way valve 2
4WV3	—	—	4-way valve 3
4WV4	—	—	4-way valve 4
EEV1		EEV	Electrical expansion valve 1
EEV2		EEV	Electrical expansion valve 2
EEV3	—	EEV	Electrical expansion valve 3
—	SV1	—	Solenoid valve 1
—	SV2	—	Solenoid valve 2
—	SV3	—	Solenoid valve 3
—	SV4	—	Solenoid valve 4
—	SV6	—	Solenoid valve 6
—	SV7	—	Solenoid valve 7
—	SV8	—	Solenoid valve 8
—	SV9	—	Solenoid valve 9
—	SV10	—	Solenoid valve 10
THD1	TH1	Temp.1	Discharge temperature 1
THD2	TH2	Temp.1	Discharge temperature 2
THD3	TH3	Temp.1	Discharge temperature 3

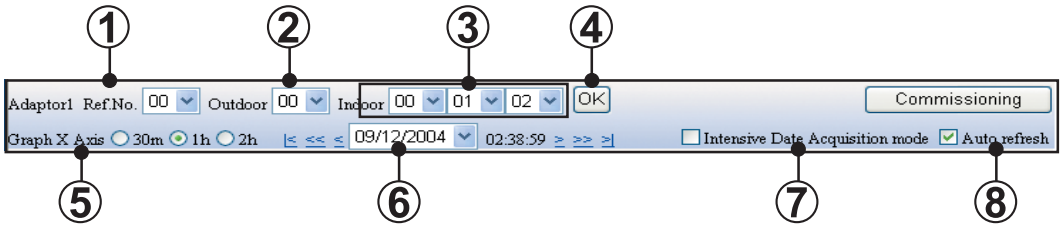
THHI1	—	Temp.3	Heat exchanger inlet temperature 1
THHI2	—	Temp.3	Heat exchanger inlet temperature 2
THHI3	—	Temp.3	Heat exchanger inlet temperature 3
THHO1	TH4	Temp.3	Heat exchanger outlet temperature 1
THHO2	—	Temp.3	Heat exchanger outlet temperature 2
THHO3	—	Temp.3	Heat exchanger outlet temperature 3
—	TH5	—	Receiver low level temperature
—	TH6	—	Receiver middle level temperature
—	TH7	—	Receiver high level temperature
—	TH8	—	Sub cool heat exchanger gas outlet temperature
—	TH9	—	Liquid temperature 1
—	TH10	—	Liquid temperature 2
THS	TH11	Temp.2	Suction temperature
THO	TH12	Temp.2	Outdoor temperature
3WV	3WB	—	3-way valve
VB	—	—	Ball valve
SP		—	Service port
HP	—	—	High-pressure switch
LP	—	—	Low-pressure switch

• Indoor unit

1/1A	IB	Graph button	Description
EEV1		EEV	Electrical Expansion valve
THOA	—	—	Room temperature
THIA	TH21	—	Outlet temperature
THHI	TH22	Temp	Heat exchanger inlet temperature
THHM	TH23	Temp	Heat exchanger middle temperature
THHO	—	Temp	Heat exchanger outlet temperature
SVD	SV1	—	Discharge solenoid valve
SVS	SV2	—	Suction solenoid valve
SVB	SV3	—	Bypass solenoid valve

5-5-2 Schematic specification method

The refrigerant system, outdoor unit, and indoor unit are specified at the control area and the schematic is displayed. The graph X-axis/display date are also changed and the screen is refreshed.



① Specifies the refrigerant system.

② Selects the outdoor unit.

③ Selects the indoor units. (Up to 3 indoor units can be selected.)

④ When the OK button is clicked, the schematic display is refreshed. (*1)

⑤ Changes the X-axis time. Select from Graph X Axis 30m 1h 2h. (*2)

⑥ Displays the data of the specified date/time. (*3)
Select the date from 14/10/2004.
Change the time by the following method.

≤ & ≥	Shift the time 1 graduation.
≪ & ≫	Shift the time 1 axis.
|≤ & ≥|	Shift up to the first or last data acquisition time of the specified date.

⑦ Demands are sent to the currently displayed refrigerant system in a concentrated manner by checking ☐ Intensive Date Acquisition mode. When you want to monitor units at a shorter interval, check mark the box.

⑧ Automatically refresh the screen at a 30 seconds interval by checking ☐ Auto refresh.

Note

*1 The latest date/time are displayed.

*2 The X-scale of the graph is changed by selection. (Default 1h)

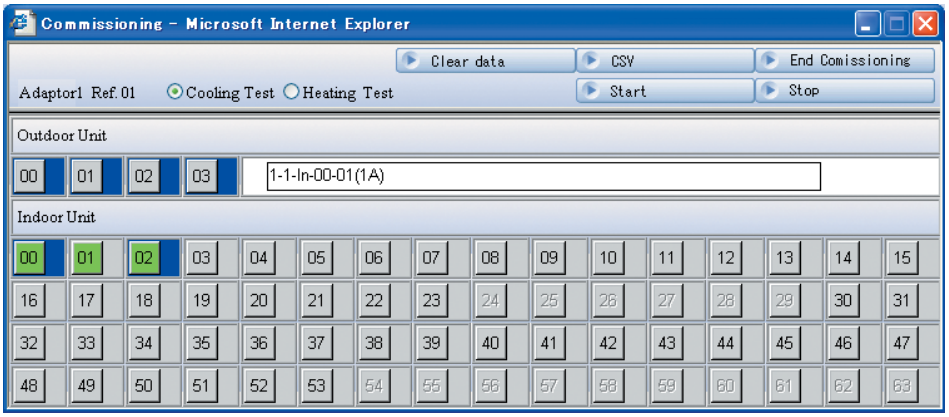
*3 The dates at which there is data are displayed in a list and can be selected.
When the date/time was changed and the schematic was displayed, the check mark is removed from “Auto refresh”.

5-6 Commissioning tool

The commissioning tool is started with the [Commissioning] button of the detail screen control area.
Test run commands can be executed with the commissioning tool. During test running, the outdoor unit/indoor unit sensor data can be saved (commissioning log data). After the end of test running, this data can be exported in CSV file format.
The exported CSV file can be used in commissioning report generation by reading the CSV file by Excel or other spreadsheet application.
The commissioning screen is automatically refreshed and the latest status is displayed every 30 seconds.

5-6-1 Name and function of each area

■ Control area (initial display)



Ref No.	Displays the refrigerant system No.
Test Pattern Select	Selects “Cooling Test” / “Heating Test” . When selection is switched, unit button selections are all reset.
Clear data	Clears all the commissioning log data of the displayed refrigerant system.
CSV	Creates the commissioning log data to an arbitrary file as a CSV file.
END Commissioning	Closes the commissioning tool screen. Test running is not stopped at exiting.
Stop	Executes a stop command for all the indoor units of the relevant refrigerant system.
Start	Executes the test run command for the selected unit. After the Start button was pressed, unit button selection cannot be changed. If there is even one indoor unit currently being operated by control, etc. from another unit, test run commands cannot be executed. Use the Stop button and stop all the units in advance.

Unit Name Display Area	When a unit name is registered, and the mouse cursor is aligned with the unit button, that unit name is displayed. (Only when set)
Unit Button (outdoor unit)	Represents the current status by character color and back ground color. (*1) When one outdoor unit button is selected, other outdoor unit buttons can be simultaneously selected.
Unit Button (indoor unit)	Represents the current status by character color and back ground color. (*1) Multiple indoor unit buttons can be simultaneously selected.
Commissioning Log Data Yes/No Display Area	Displays whether or not there is commissioning log data for each unit. (*2)

Note

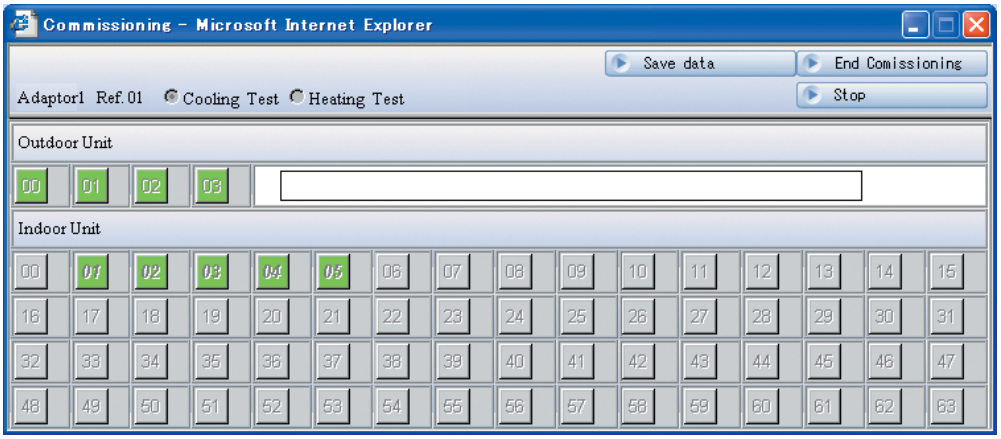
*1 Unit button display status (indoor unit/outdoor unit)

Display		Status
	Character color (black)	Unselected state
	Character color (Red: Bold & italic)	Selected state
	Button color (green)	(Indoor unit) Running (Outdoor unit) Unit running or thermostat on
	Button color (gray)	(Indoor unit) Stopped (Outdoor unit) Unit stopped or thermostat off

*2 Commissioning log data yes/no display status

Display		Status
	Background color (blue)	Commissioning log data of the unit of the currently selected test pattern.
	Background color (gray)	No commissioning log data of unit of the currently selected test pattern

■ Control area (after run command)



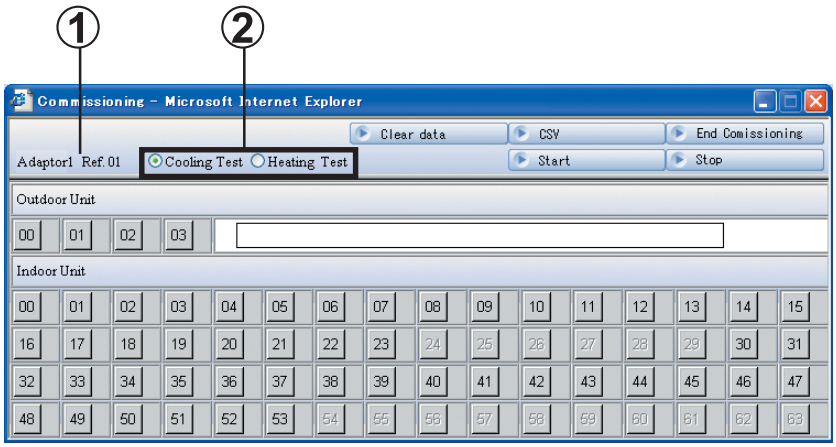
Save data	Saves the sensor data of the test running unit to the commissioning log data. The commissioning log data is saved for each Test Pattern.
End Commissioning	Closes the commissioning tool screen. Test run units are not stopped.
Stop	Stops test running of the relevant refrigerant system and returns to the initial display.
Unit Button	After run command, enters the unselectable state. For units which performed a test run, the button color is displayed in green.

5-6-2 Operating procedure

Selects the test items and the units to be tested from all the units stopped status.

① Check the refrigerant system No. to which the units which are to be test run at “Ref.” on the screen.
Since the refrigerant system No. specified at the detail screen is displayed here, when making changes, after re-specifying by 5-5 Detail screen and pressing the OK button, start the commissioning tool.

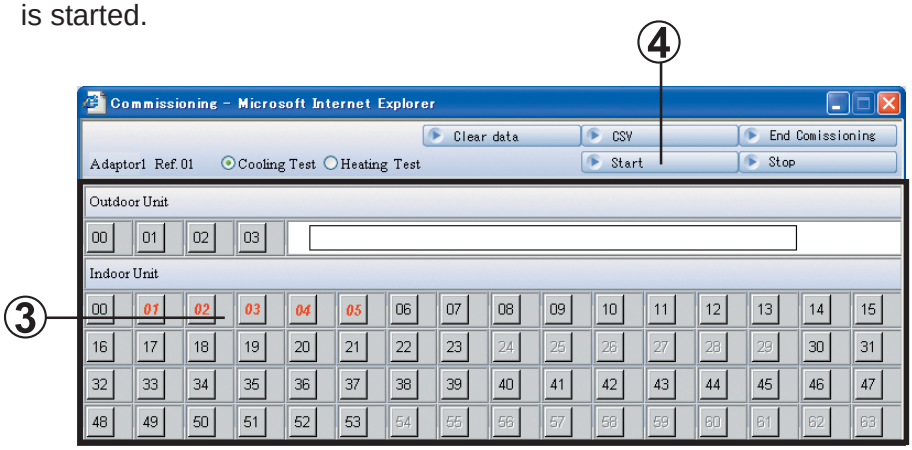
② Select the test pattern according to the item to be test run.
For test run by cooling, select “Cooling Test” and for test run by heating, select “Heating Test”.



③ Select the unit which is to start test run. Select the unit by clicking the button of the relevant unit No.
The selected unit is displayed by a red italic numeric.

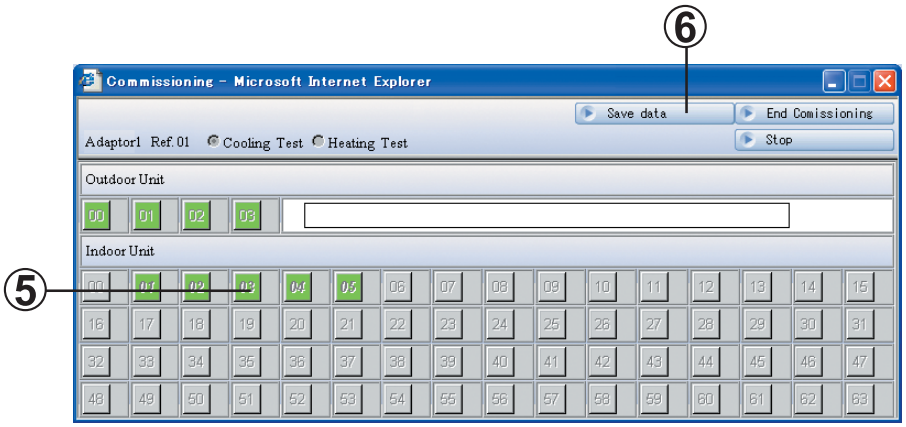
For outdoor units, when any button is selected, all the indoor units also enter the selected state. For indoor units, when any button is selected, all the units belonging to the same R.C. group as the selected unit No. also enter the selected state.

④ When the Start button is clicked in the units selected state, test run is started.

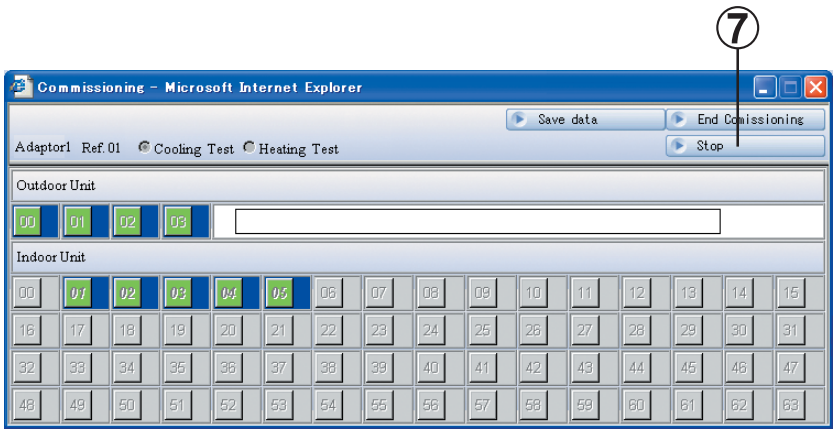


⑤ The button of units that have entered the test run state is displayed in green. When an indoor unit was selected and started, the selected indoor units enter the test run state. When an outdoor unit was selected and started, all the indoor units enter the test run state.

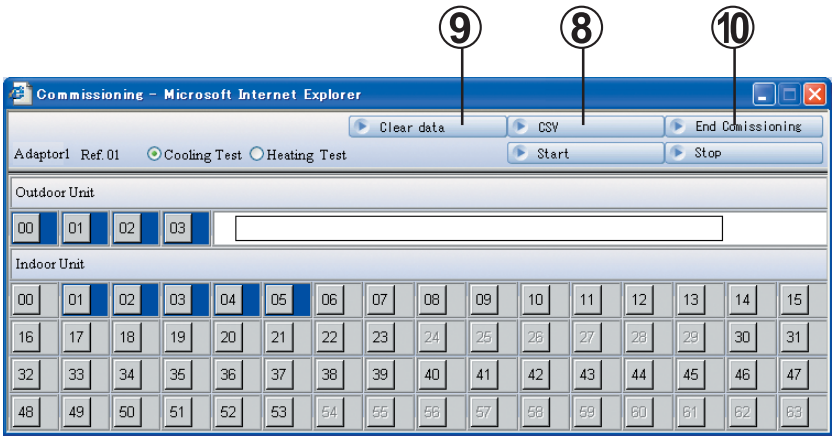
After test run starts, new test run objective units cannot be added. Perform test run stop of ⑦ , clear the commissioning log data of ⑨ , as required, and repeat operation from the initial state.



⑥ The commissioning log data of the selected units (italic bold characters) is saved by clicking the Save data button. On the screen, the background color of the unit No. that generated the commissioning log data changes to blue.



⑦ Test run can be stopped by clicking the Stop button.
The display returns to the initial screen, but the commissioning log data cannot be cleared. (The background color of the unit Nos. at which there is commissioning log data remains blue.)



⑧ A CSV file for generating a commissioning report can be saved to an arbitrary folder by clicking the CSV button in the state of the unit which generated the commissioning log data. (For the commissioning report generation method, refer to 5-6-3 Commissioning report generation.)

⑨ The commissioning log data can be cleared by clicking the Clear data button. When the commissioning log data is cleared, the background color returns to gray.

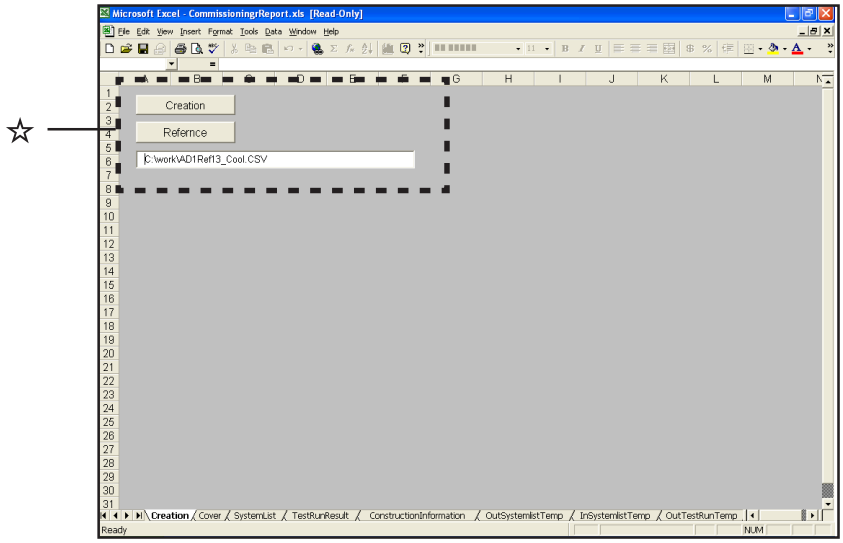
⑩ End the commissioning tool by clicking the End Comissioning button.
However, units which are test running are not stopped.

5-6-3 Commissioning report generation

There is a template to easily generate a commissioning report. (*1)
A commissioning report can be easily generated by reading the CSV file generated by the commissioning tool to this template.

① Since there is a template named “CommissioningReport.xls” at C:\Program Files\VRF System\Service Tool, open that file with Excel. (*1)

② Display the started Excel “Creation” sheet.
A screen like that shown below is displayed. (*2)



Overview of each sheet

Creation	This screen is used to specify the read CSV file and execute commissioning report generation.
Cover	Commissioning report cover (*3)
SystemList	System list
TestRunResult	Test run result
ConstructionInformation	Construction information (*3)
OutSystemListTemp	System list template (outdoor unit)
InSystemListTemp	System list template (indoor unit)
OutTestRunTemp	Test run result template (outdoor unit)
InTestRunTemp	Test run result template (indoor unit)
DataSheet	Temporarily saves the CSV data. This sheet is used in report generation processing.

☆ Enlarge

③ Specify the read CSV file by full path.

A file reference dialog box is displayed by clicking the Refernce button.

When a file other than a CSV file created by commissioning tool was specified when the path is incorrect, a commissioning report is not generated.

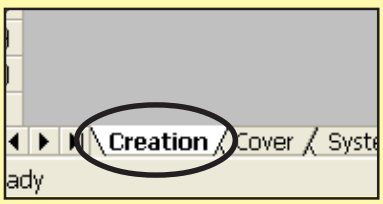
Specify the correct file.

④ Create “SystemList” and “TestRunResult” which read the CSV file specified at ③ by clicking the Creation button.

Note

*1 This template is created by Excel spreadsheet program.
Excel must be purchased separately.
When opening the file, you may be asked if you want to enable macro, depending on the security level set within Excel. In such cases, select “Enable Macros”.

*2 When you want to change the displayed sheet, click the sheet heading at the bottom of the screen. (See the following figure.)



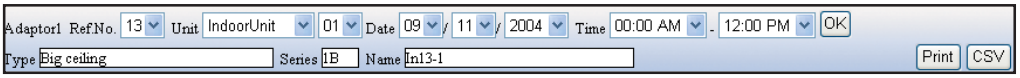
*3 Since generation is not automatic, the necessary items are inputted manually.

5-7 Operation history screen

The indoor units or outdoor unit operation history is displayed for each unit.
The displayed operation history can be printed and saved to a CSV file.
History display can display up to 500 items for the specified period.

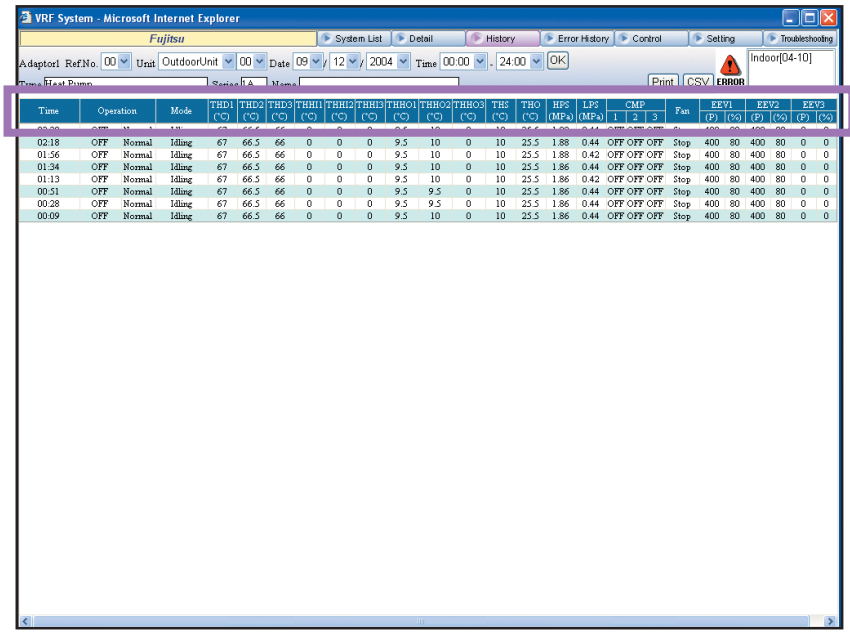
5-7-1 Name and function of each area

■ Control area (common)



Ref No.	Specifies the refrigerant system No.
Unit	Switches outdoor unit/indoor unit and selects the unit No.
Date	Specifies the date of the history data to be displayed.
Time	Specifies the display start time/end time.
OK	Displays the data of the unit of the specified conditions.
Print	Displays a print window.
CSV	Displays the CSV save window.
Type	Displays the unit type.
Series	Displays the VRF1/1A/1B series.
Name	Displays the unit name.

■ Outdoor unit



1/1A	IB	Description
Time		Displays the data acquisition time. (*1) For summer time, (S) is displayed.
Operation		Displays the operating status/unit status.
Mode		Displays the operating mode.
THD1	TH1	Displays discharge temperature 1. (*2)
THD2	TH2	Displays discharge temperature 2. (*2)
THD3	TH3	Displays discharge temperature 3. (*2)
THHI1	—	Displays heat exchanger inlet temperature 1. (*2)
THHI2	—	Displays heat exchanger inlet temperature 2. (*2)
THHI3	—	Displays heat exchanger inlet temperature 3. (*2)
THHO1	TH4	Displays heat exchanger outlet temperature 1. (*2)
THHO2	—	Displays heat exchanger outlet temperature 2. (*2)
THHO3	—	Displays heat exchanger outlet temperature 3. (*2)
—	TH5	Displays receiver low level temperature. (*2)
—	TH6	Displays receiver middle level temperature. (*2)
—	TH7	Displays receiver high level temperature. (*2)
—	TH8	Displays the SC heat exchanger gas outlet temperature. (*2)
—	TH9	Displays liquid temperature 1. (*2)
—	TH10	Displays liquid temperature 2. (*2)
THS	TH11	Displays the suction temperature. (*2)
THO	TH12	Displays the outdoor temperature. (*2)
HPS		Displays the discharge pressure. (*3)
LPS		Displays the suction pressure. (*3)

—	4WV	Displays 4-way valve status.
—	SV2	Displays receiver bypass. Solenoid valve status.
—	SV5	Displays receiver gas. Solenoid valve status.
CMP1		Displays compressor 1 status.
CMP2		Displays compressor 2 status.
CMP3		Displays compressor 3 status.
Fan		Displays the fan status.
EEV1		Displays electrical expansion valve 1 status.
EEV2		Displays electrical expansion valve 2 status.
EEV3	—	Displays electrical expansion valve 3 status.

Note

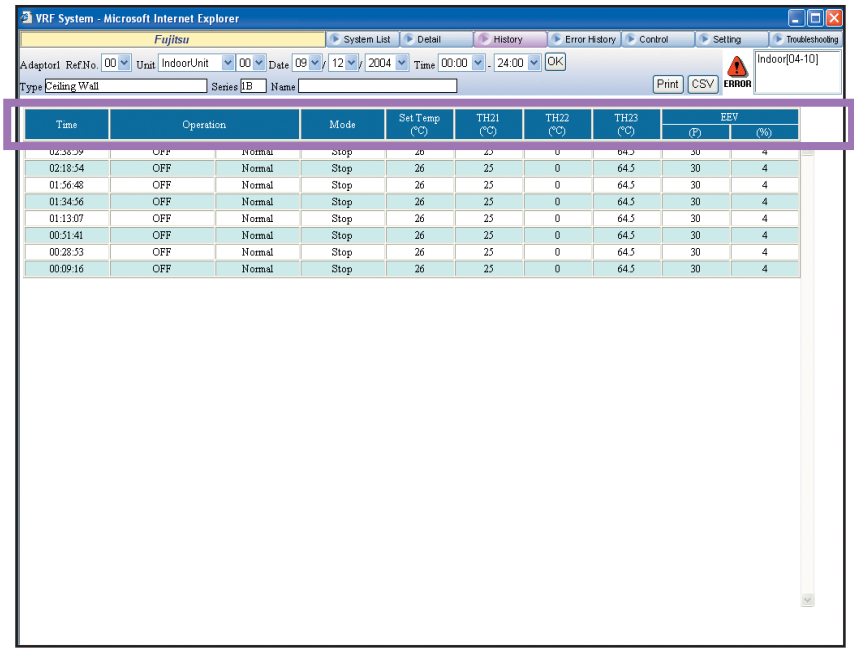
*1 12-hour or 24-hour display. The display format depends on the setting at the data acquisition application.

*2 Units display is [°C] or [°F]. The display format depends on the setting at the data acquisition application.

*3 Units display is [Mpa] or [psi]. The display format depends on the setting at the data acquisition application.

* For setting at the data acquisition application, refer to 5-3 Environment setting.

■ Indoor unit



Display item

1/1A	IB	Description
Time		Displays the data acquisition time. (*1) For summer time, (S) is displayed.
Operation		Displays the operating status/unit status.
Mode		Displays the operating mode.
Set Temp		Displays the setting temperature. (*2)
THIA	TH21	Displays the room temperature. (*2)
THHI	TH22	Displays heat exchanger inlet temperature. (*2)
THHM	TH23	Displays the heat exchanger middle temperature. (*2)
THHO	—	Displays the heat exchanger outlet temperature. (*2)
THOA	—	Displays the outlet temperature. (*2)
EEV		Displays electrical expansion valve status.
SVD	—	Displays discharge solenoid valve status.
SVS	—	Displays suction solenoid valve status.
SVB	—	Displays bypass solenoid valve status.

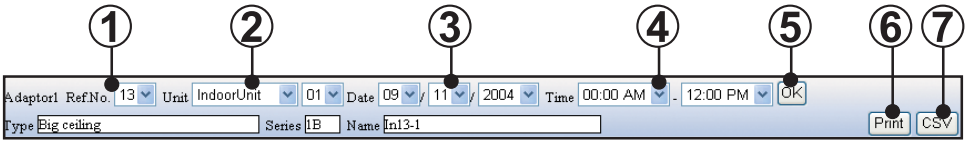
Note

*1 12-hour or 24-hour display. The display format depends on the setting at the data acquisition application.

*2 Units display is [°C] or [°F]. The display format depends on the setting at the data acquisition application.

* For setting at the data acquisition application, refer to 5-3 Environment setting.

5-7-2 Operation history specification



① Refrigerant system selection field
Specifies the refrigerant system.

② Unit selection field
Switches the unit to be displayed. (Select from “Indoor Unit” / “Outdoor Unit”.)

③ Date specification field
Specifies the date of the history data to be displayed.

④ Display time range specification field
Specifies the range of the history time to be displayed.

⑤ OK button
Displays the history by specified condition.

⑥ Print button
Prints the displayed data.

⑦ CSV button
Displays the CSV save widow.

Note

For Windows®XP SP2 and later versions,
in order to save CSV files, set Internet Explorer as follows;
from [Tool] menu, select [Pop-up Blocker], [Turn Off Pop-up Blocker].

5-7-3 Operation history printing

The operation history currently being displayed can be printed by clicking the Print button.

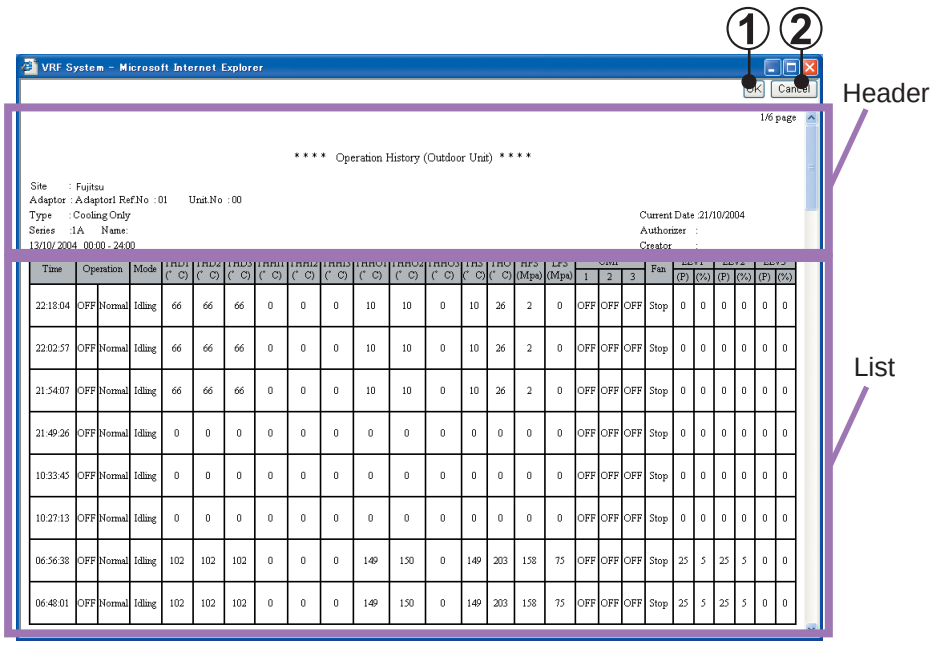
① OK button

Start printing by clicking the OK button.

Since a printing confirmation screen is displayed, follow the instructions displayed on the screen. Set the printing form in the horizontal direction.

② Cancel button

Close the print window without printing by clicking the Cancel button.



Printing contents

Header

Site	Displays the site name.
Adaptor	Displays the transmission adaptor name, refrigerant system No., and indoor unit No.
Type	Displays the unit type.
Date	Displays the date and time of the display list.
Max EEV	Displays the maximum opening pulse rate of the electrical expansion valve of the relevant unit. (*1)
Current Date	Displays the current date.

List

List	Displays the operation history currently being displayed.

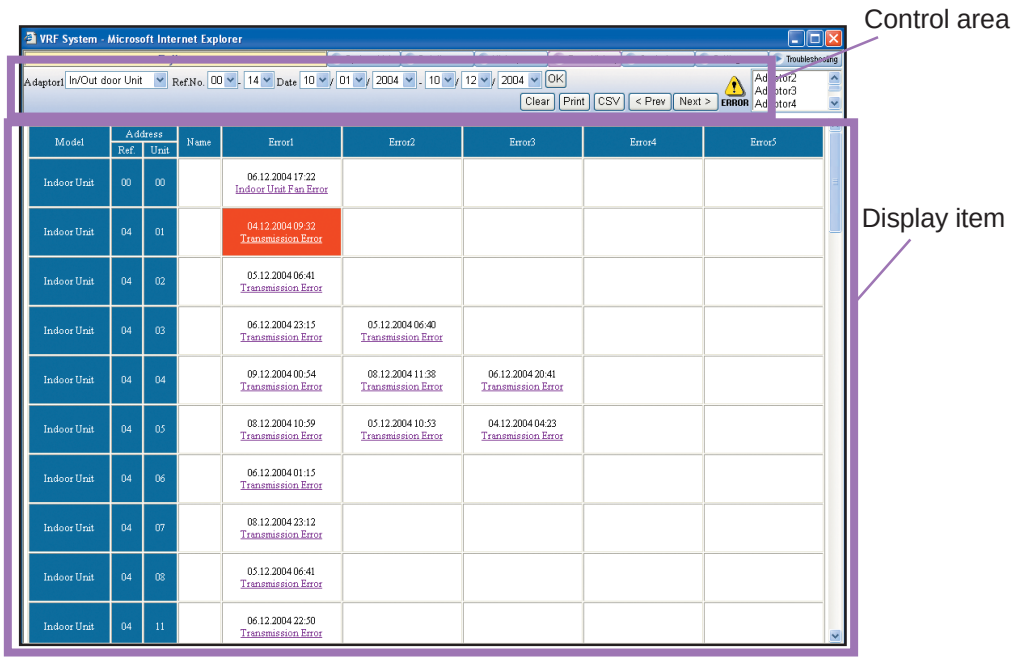
Note

*1 Only indoor unit 1/1A display.

5-8 Error history screen

Displays the error information for each unit. The error information can sequentially display up to 50 items beginning from the newest error for each unit. This screen can also be printed and the error information can be saved in CSV format.

5-8-1 Name and function of each area



Control area

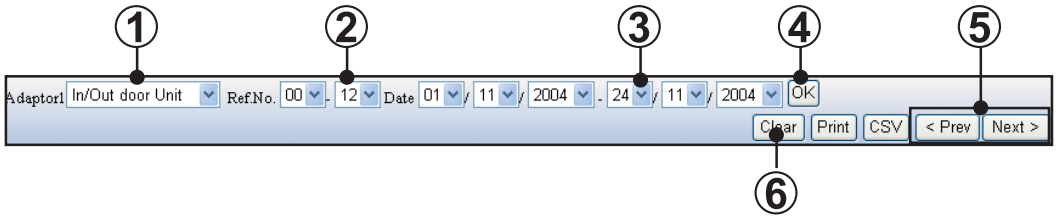
Device Section	Specifies the unit model. Select from “In/Outdoor Unit”, “Peripheral Device”.
Ref.No.	Specifies the refrigerant system No. (narrow down display)
Date	Specifies the date range to be displayed.
OK	Refreshes the display screen according to the specified conditions.
CSV	Saves the currently specified data to a CSV file.
PREV	Displays errors generated before the time displayed on the screen.
NEXT	Displays errors generated after the time displayed on the screen.
Print	Prints the list currently displayed.
Clear	Clears all the error history data of the selected refrigerant system.

Display item

Model	Displays the unit model.
Address	Displays the address information (refrigerant system No./unit No.) of each unit.
Name	Displays the unit name. (*1)
Error1 ~ 50	Displays the error generation time and error contents. Displays currently generated errors in red.

Note *1 Only when preset
(Refer to 3-2-4 Name master database file selection screen.)

5-8-2 Error history display method



① Display unit model selection field

Selects the unit model.

For indoor unit/outdoor unit, select "In/Outdoor Unit" and for centralizedremote controller/transmission adaptor, select "Peripheral Device".

② Refrigerant system selection field

Specifies the range of the refrigerant system No. to be displayed. (*1)

③ Date selection field

Selects the range of dates to be displayed. (*2)

④ OK button

Refreshes the display data according to the selected conditions by clicking the OK button. (*3)

⑤ Display item change button

The Next> button displays the next error. (Errors are displayed in groups of 5, such as when Error1~Error5 were displayed, Error6~Error10 are displayed.)

The <Prev button returns to the previous error.

⑥ Clear button

Clear the error history data of the selected refrigerant system by pressing the Clear button.

Note

*1 If the end refrigerant system No. is smaller than the start refrigerant system No., an error message is displayed.

*2 If the end date is earlier date than the start date, an error message is displayed.

*3 Displays only the units with an error history remaining. Troubleshooting screen (refer to 5-11) can be displayed by clicking the error contents of the display. However, excluding "TransmissionAdaptor" errors.

5-8-3 Error history printing

The currently displayed error history can be printed by clicking the Print button on the error history screen.

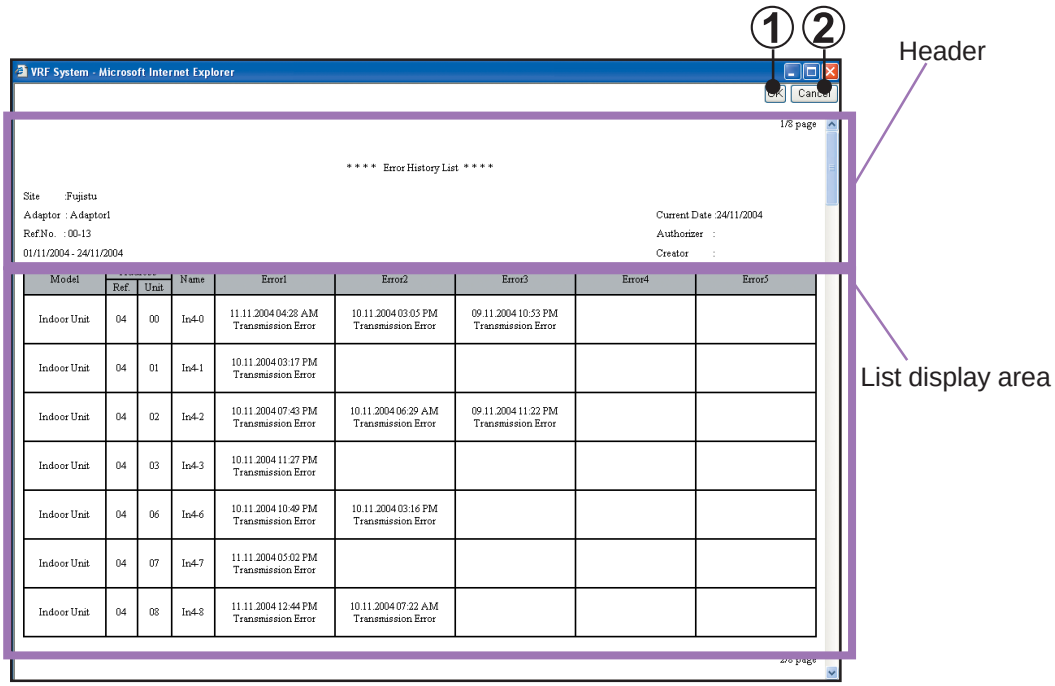
① OK button

Start printing by clicking the OK button.

Since a print confirmation screen is displayed, follow the instructions displayed on the screen. Set the printing form in the horizontal direction.

② Cancel button

Close the print window without printing by clicking the Cancel button.



Printing contents

Header

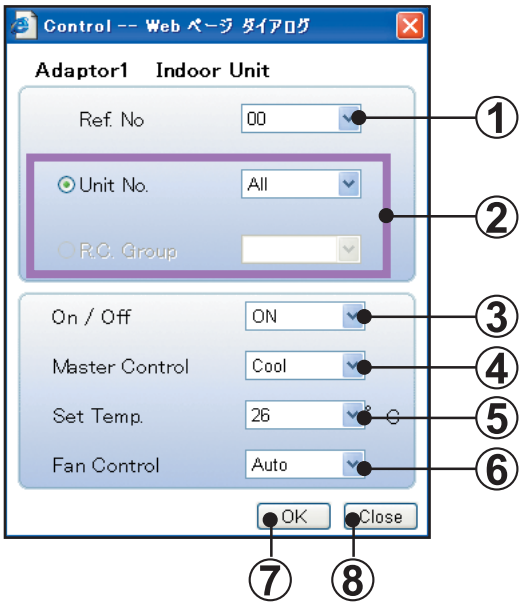
Site	Displays the site name.
Adaptor	Displays the transmission adaptor name.
Ref No.	Displays the specified refrigerant system range.
Date	Displays the date range of the specified data.
Current Date	Displays the current date.

List display area

List	Displays the error history list displayed on the screen.

5-9 Control screen

Operation of each refrigerant system No., indoor unit No. or each R.C. Group can be controlled.



① Ref No. selection field

Selects the refrigerant system No. (The refrigerant system No. to be registered can be selected.)

② Control objective selection field

When specifying in unit units, select "Unit" and when specifying in R.C. Group units, select "R.C. Group". (Unit No and R.C. Group cannot be selected simultaneously.)

③ On/Off selection field

Selects the operating status. (Select from On/OFF/On (Test).)

④ Master Control selection field

Selects the operating mode. (Select from Cool/Heat.)

⑤ Set Temp selection field

Selects the temperature. (*1)

⑥ Fan Control selection field

Selects the air flow. (Select from Auto/S-Low/Med/High.)

⑦ OK button

Controls operation according to the specified contents.

⑧ Cancel button

Closes the screen without taking any action.

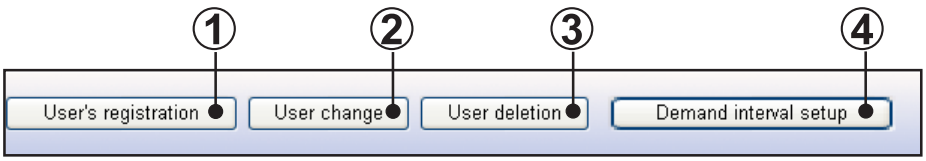
Note

*1 Displayed in Celsius or Fahrenheit depending on the data acquisition application setting.
The settable range depends on the series.

Mode	Series	Celsius	Fahrenheit
Cool	1/1A/1B	18~30°C	64~88°F
Heat	1/1A	16~30°C	60~88°F
	1B	10~30°C	48~88°F

5-10 Setting screen

Performs user's registration, user password change, registered user deletion, and demand interval setup. When the Setting button is clicked from the main menu, the following setting menu is displayed at the bottom of the main menu.



① Use's registration button
Shifts to the user's registration screen.

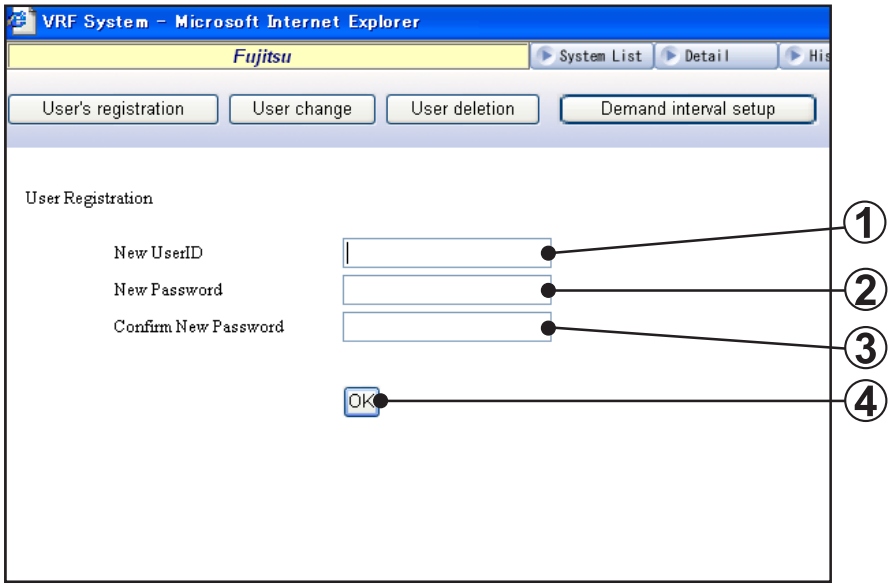
② User change button
Shifts to the user change screen.

③ User deletion button
Shifts to the user deletion screen.

④ Demand interval setup button
Shifts to the demand interval setup screen.

5-10-1 User's registration

Registers new user ID and password. A data acquisition application start user can be added.



① User ID input field

Input the user ID. (Up to 20 alphanumeric characters) (*1)

② Password input field

Input the password. (Up to 20 alphanumeric characters) (*1)

③ Password comfirmation input field

For comfirmation, input the password again. (Up to 20 alphanumeric characters) (*2)

④ OK button

Registers the inputted contents. (*3)

Note

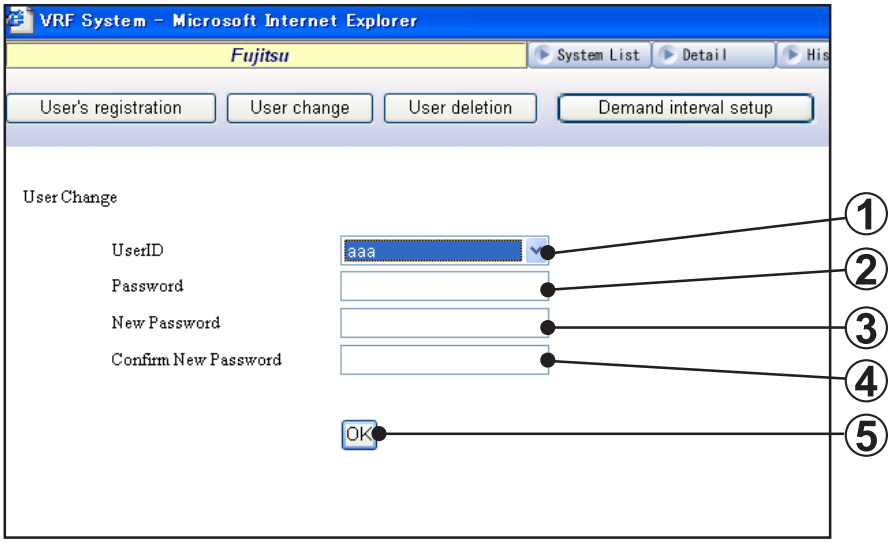
*1 If the user ID and password input fields are not inputted, an error message is displayed.

*2 If there is a difference in the password and password comfirmation input contents, an error message is displayed.

*3 If the same user ID is already registered, an error message is displayed.

5-10-2 User change

The password of a registered user can be changed.



① User ID selection field

Select the user to be changed.

The currently registered users can be displayed and selected with .

② Password input field

Input the password of the user to be changed. (Up to 20 alphanumeric characters) (*1)

③ New password input field

Input the password to be newly registered. (Up to 20 alphanumeric characters) (*1)

④ New password comfirmation input field

For comfirmation, input the password again. Input the same password as the new password. (*2)

⑤ OK button

Performs change processing according to the inputted contents. (*3)

Note

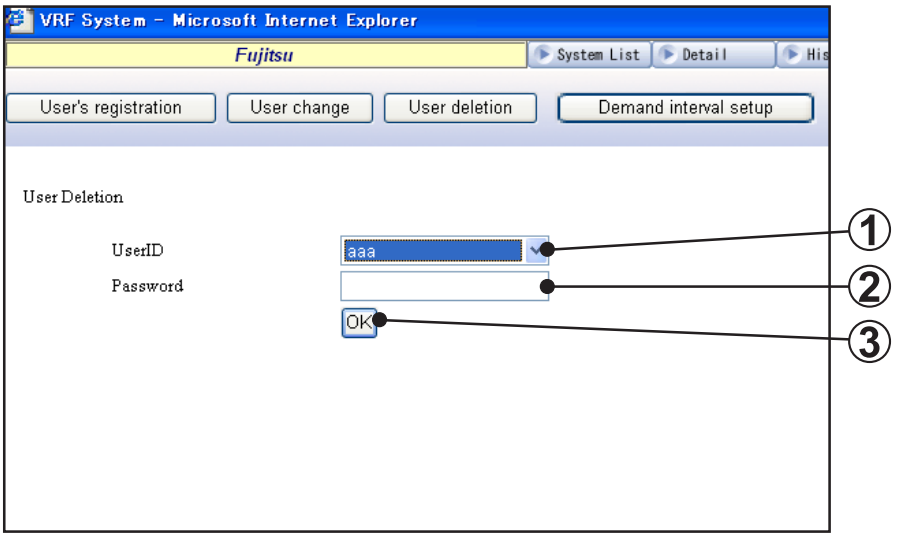
*1 When the password and new password input fields are not inputted, an error message is displayed.

*2 When the contents input at the new password and new password comfirmation input fields do not match, an error message is displayed.

*3 When the password of the selected user ID is incorrect, an error message is displayed.

5-10-3 User deletion

Deletes registered users.



① User ID selection field

Select the user to be deleted.

The currently registered users can be displayed and selected with .

② Password input field

Input the password of the user to be deleted. (Up to 20 alphanumeric characters) (*1)

③ OK button

Deletes the selected user. (*2)

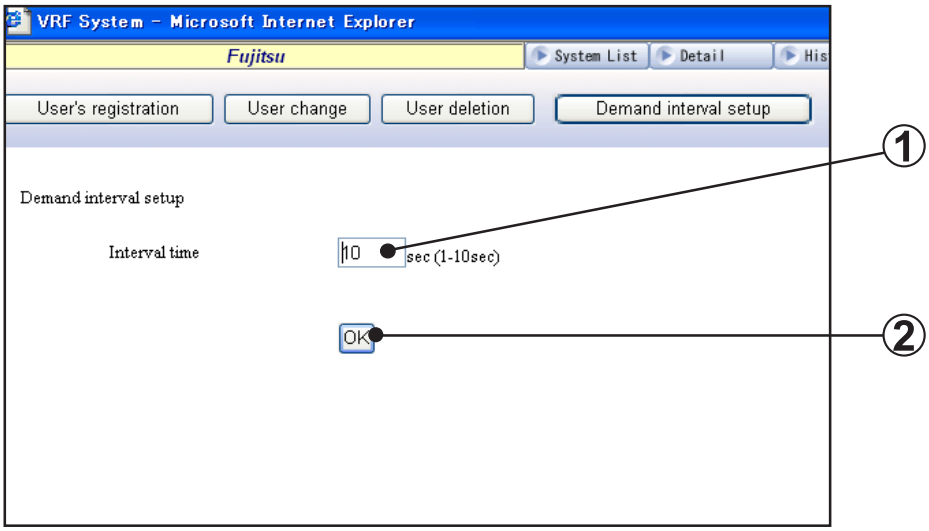
Note

*1 When the password input field is not inputted, an error message is displayed.

*2 When the selected user ID and password do not match, an error message is displayed.

5-10-4 Demand interval setup

Specifies the interval at which the temperature, pressure information, and electrical components operating status is specified for each unit in the VRF System. The refresh interval of the data displayed at the system list, operation history, and unit detail screens is changed by changing this setting. When the demand interval is set to a small value, the data refresh interval becomes shorter, but the data may be received correctly by an error. At this time, set this interval to a large value.



① Interval time input field
Set the demand interval time. (*1)

② OK button
Refreshes the demand interval time according to the inputted time.

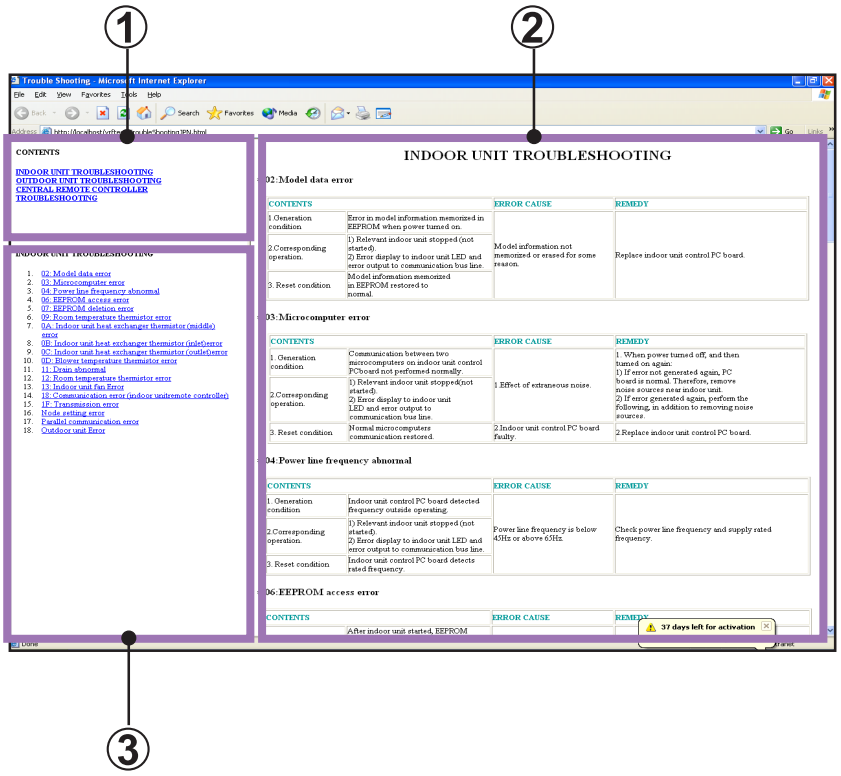
Note

*1 The currently set time is displayed by default. Only the numerics 1 to 10 can be inputted. When input is incorrect or there is no inputted, an error message is displayed.

5-11 Troubleshooting screen

Displays the error contents and corrective action. Display is performed from the main menu and error history screen.

5-11-1 Name and functions of each area



① Contents area by type
When contents are clicked, the contents of the error contents are displayed.

② Troubleshooting contents display area
Displays the error details.

③ Contents area for each error contents
When contents are clicked, those contents are displayed.

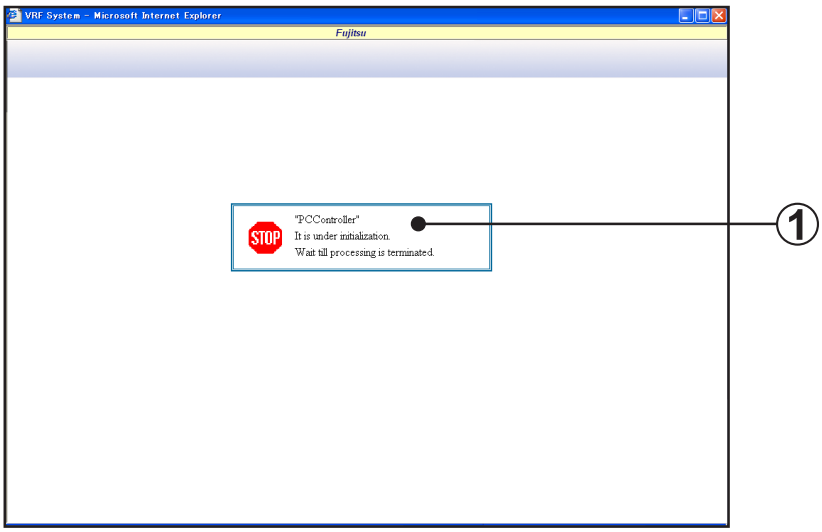
5-12 When error generated

When the service tool (WEB application) cannot be used, the following screen is displayed.

5-12-1 Scanning other units

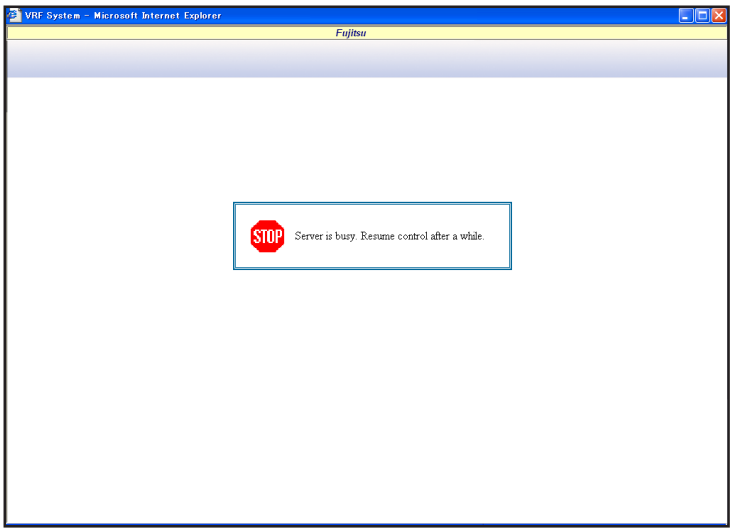
Displays when bus priority processing was generated at another unit (centralized controller, other PC controller). In this case, all operations which perform communication become impossible. When scanning ends, the display automatically returns to the processing screen and operation becomes possible.

① Message
The unit name being scanned is displayed.



5-12-2 Data acquisition application shutdown

Displays when the data acquisition application is shut down. All operations are impossible. Start the data acquisition application.



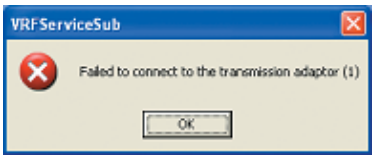
Contents

6. Troubleshooting

When a problem occurred during operation, refer to this section. This section describes assumed problems and how to solve them.

T-1 A transmission adaptor connection error was generated.

Cause



① Power is not supplied to the transmission adaptor.

② The RS-232C cable between the PC and transmission adaptor is not properly connected.

③ Wrong COM port is specified.

④ Type of RS-232C cable is incorrect.

Countermeasure

① Check if power is supplied to the transmission adaptor.

② Check if the RS-232C cable is connected.

③ For the COM port specification method, refer to par. 3-2-5 Scanning.

④ For the cable specifications, refer to the **Setting Manual** 3. Installation.

T-2 Forms cannot be printed.

Cause

① Printer power is not ON.

② Printer cable between PC and printer is not properly connected.

③ Printer driver is not correctly installed.

Countermeasure

① Check if the printer power is ON.

② Check if the printer cable is connected.

③ Print forms by performing printing processing by Windows® setting. Refer to Windows® printing troubleshooting, and check whether or not the Windows® printer setting is correct.

T-3 “Master Abnormality.” message was displayed by the browser.

Cause

There is an abnormality in the master data.

Countermeasure

The database backed up last time is automatically restored. This software cannot be used until completion of restore processing. Since restore processing takes several minutes, wait a while before performing operation. The data backed up the previous time and subsequently is lost. After recovery, check the data.

T-4 “Can not control this transmission adaptor.” message was displayed by the browser.

Cause

The system entered a state in which it cannot control operation because the name master data was not received.

Countermeasure

Wait until the service tool automatically acquires each name master data, and then scan by detailed information scanning setting. For details, refer to par. 3-2-5 Scanning.

T-5 “No data existing.” message was displayed by the browser.

Cause

Data cannot be displayed because the unit data which is the display objective was not received.

Countermeasure

Wait until the service tool automatically acquires each unit data, and then set Intensive Data Acquisition Mode at the system detail screen. For details, refer to par. 5-6-1 Name and function of each area.

T-6 “Server access error occurred.” message was displayed by the browser.

Cause

① Error was generated when accessing the database.

② The database may have been stopped by some cause.

③ The database may have been destroyed.

Countermeasure

① Close the browser and redo from log in.

② Restart the PC and then restart the service tool.

③ The database backed up last time is automatically restored. This software cannot be used until completion of restore processing. Since restore processing takes several minutes, wait a while before performing operation. The data backed up the previous time and subsequently is lost. After recovery, check the data.

T-7 During scanning, PC power was dropped by a power failure or erroneous operation and operation became unstable.

Countermeasure

At a power failure, incomplete data remains and operation may be performed with this incomplete data at the next starting. Repeat scanning. When the power was interrupted during another operation, the operation may return to normal by the same operation after resetting.

T-8 Air conditioner is not controlled in R.C. group units.

Cause

R.C group data cannot be acquired.

Countermeasure

Repeat scanning by detailed information scanning setting.

T-9 Displayed text is garbled.

Cause

PC regional setting is incorrect.

Countermeasure

Set ** Setting Manual ** par. 6-1-1 Regional option to “English (United Kingdom)”.

T-10 Template file for the Commissioning Report (CommissioningReport.xls) can't be opened.

Cause

Security level in Excel is set to “High”.

Countermeasure

Start Excel, from the “Tool” menu;

Select [Tool], [Macro], [Security] then,

in the “Security Level” tab, set the level to “Medium” or “Low”.

Q-1 Can the service tool be restarted by installing it on the same PC as the PC controller and using the same transmission adaptor?

Answer

The service tool can be installed on the same PC, but simultaneous operation is outside the warranty. Also, each application cannot simultaneously share one transmission adaptor.

Q-2 Can a browser other than Internet Explorer be used?

Answer

Other browsers cannot be used because they are incompatible.