

OPERATING MANUAL

SERVICE TOOL for VRF System

UTR-YSTC

Ver. 3.2



CAUTION

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FUJITSU GENERAL LIMITED

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1. Safety precautions

1-1 Safety 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.**
- 7. The reference to adaptor above applies to Transmission Adaptor (UTR-YTMA).**
- 8. When using U10 USB Network Adaptor, follow the instructions given in the manual that comes with the product.**



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.**

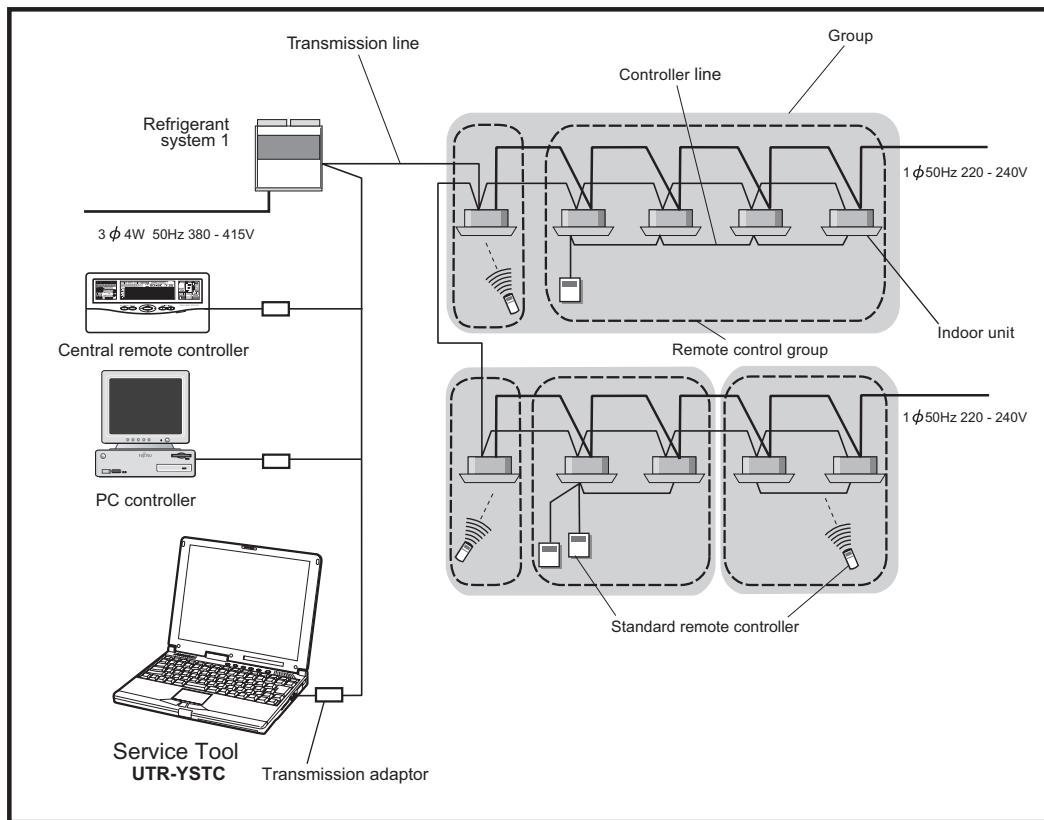
1-2 Precautions when using the service tool

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.
7. When Service Tool program is running, do not set/adjust the time and date of the PC to prevent data becoming inconsistent.
8. Service Tool is tested to install and operate under new Windows environment.
When program executional environment of Windows is corrupted or abnormal, or other softwares that interfere with the operation of Service Tool is installed or running, Service Tool may not install or run properly. It is usually extremely difficult to detect such conditions, if it occurs.
9. Service Tool product is provided with softwares, drivers, components listed below.
If the same kind of softwares, drivers, components with different version is installed on the same PC, Service Tool may not install or run properly.
 - 1) .NET Framework
 - 2) Internet Information Services (IIS)
 - 3) Microsoft Data Access Components (MDAC)
 - 4) Microsoft SQL Server 2000 Desktop Engine (MSDE)

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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.

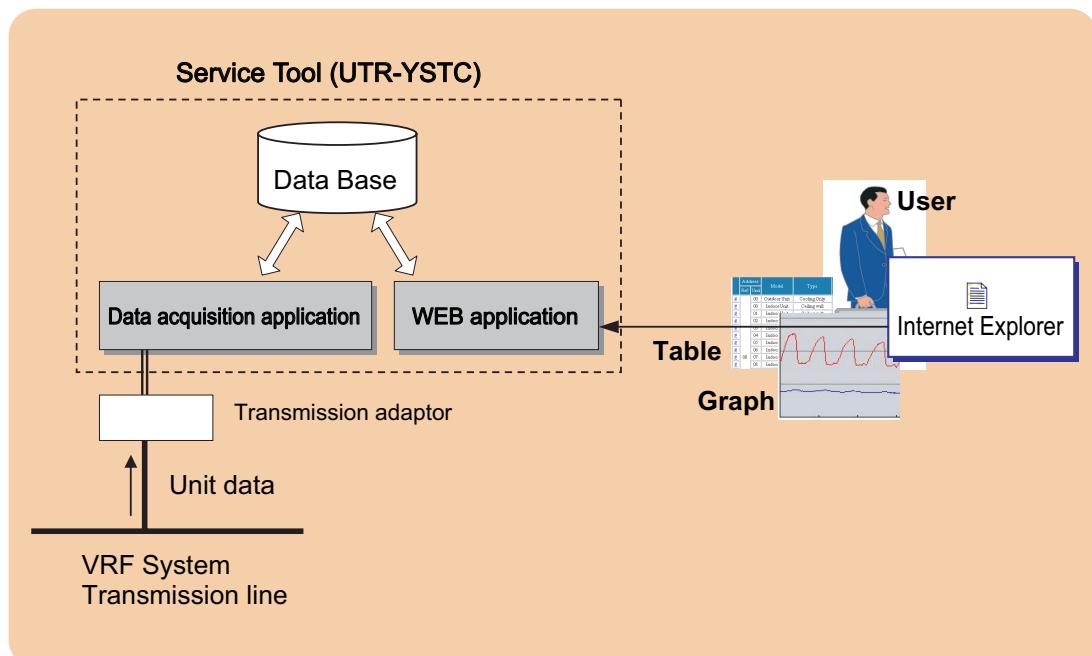
■ Software construction

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

User Registration



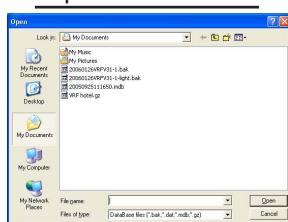
Opening



Login

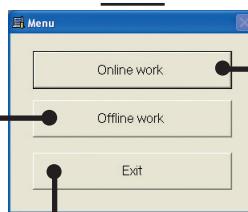


Import file selection



Offline work

Menu



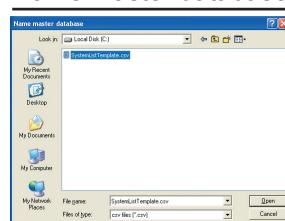
Online work

Online site data selection



Cancel

Name master database



Exit



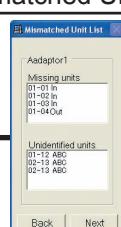
System end

System List Display



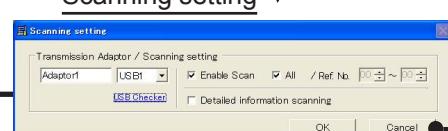
No scanning

Mismatched Unit List

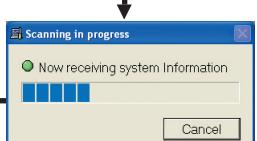


Next

Scanning setting



Scanning

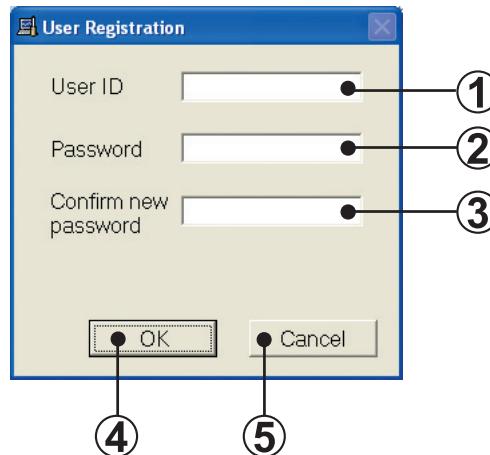


Back

3-2 Data acquisition application starting (online) flow

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 5-12 others screen (Setting).



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.

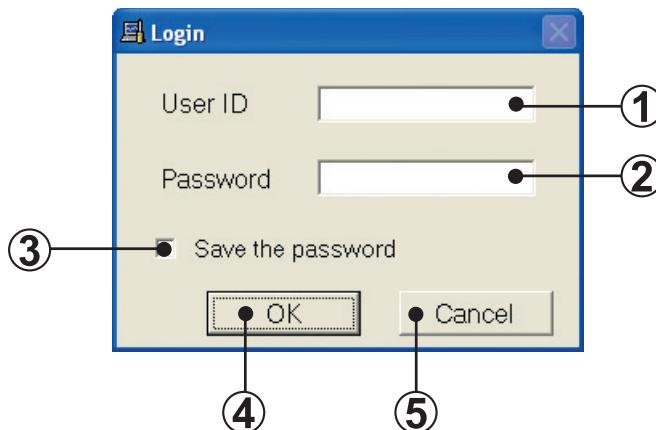


*1 When the user ID and password input fields are not inputted, an error message is displayed.

*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

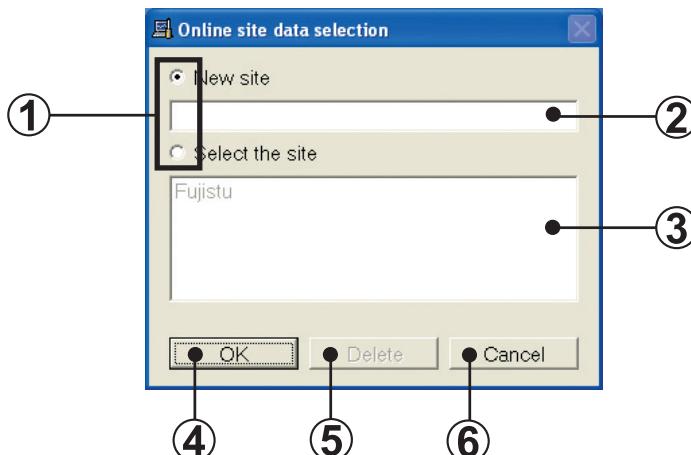
When the **Cancel** button is clicked, the service tool ends.



*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 spaces) (*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

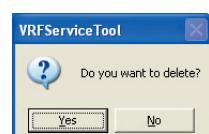
When the **OK** button is clicked, the name master database file selection screen is displayed.

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.

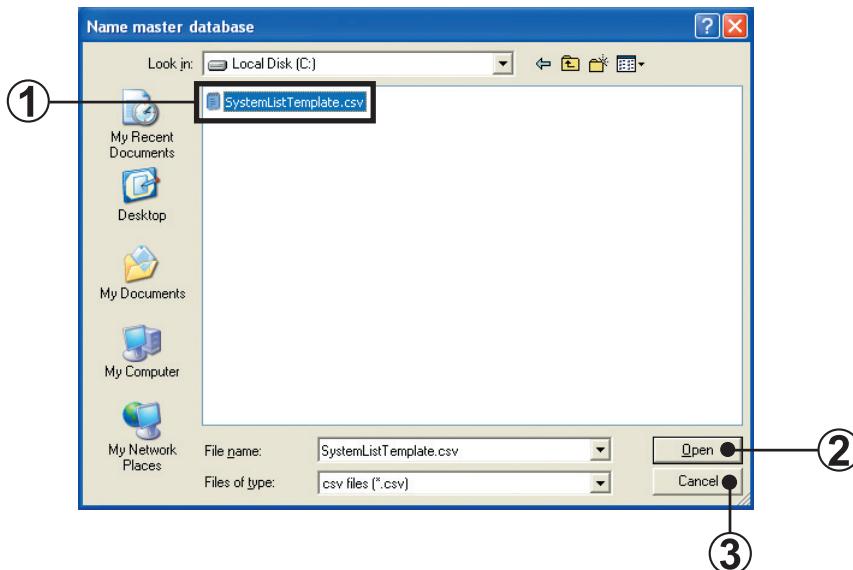
*1 When the new site name input field is not inputted, an error message is displayed. Only alpha-numeric characters and spaces may be used for the site name.

*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)



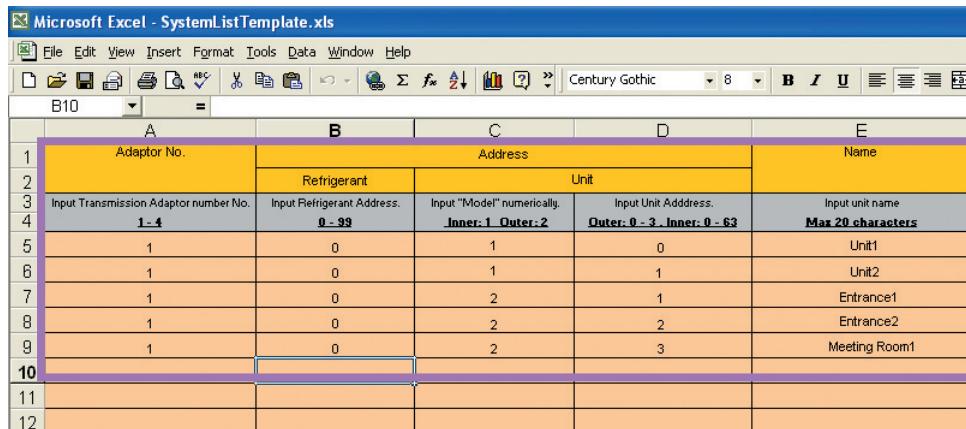
*1 Files other than CSV files cannot be selected and displayed.

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

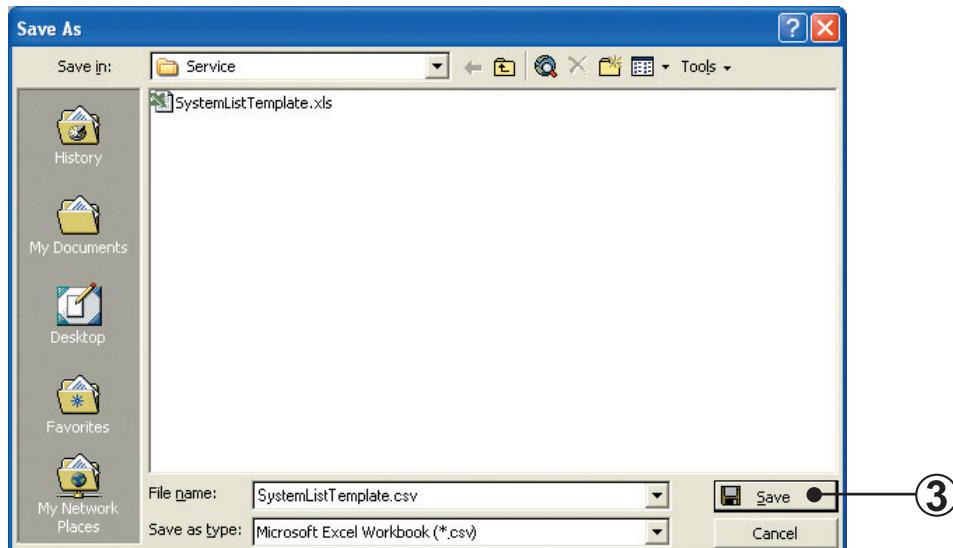
Input contents

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. Only alpha-numeric characters and spaces may be used for the unit name.

③

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

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



Note

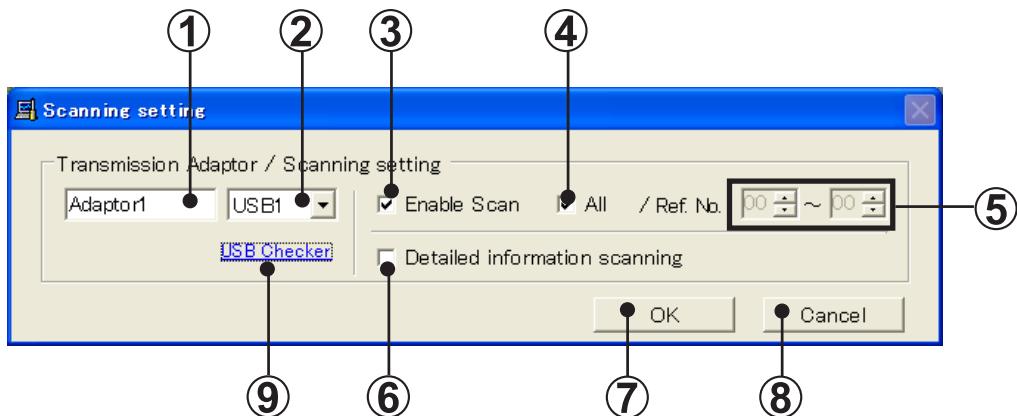


- *1 This template is created by spreadsheet program Excel.
Excel must be purchased separately.
- *2 [SystemListTemplate.xls] is in the folder specified when installing the service tool. When an address other than the default installation address was specified, check that folder.
- *3 Since a CSV file 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. Only alpha-numeric characters and spaces may be used for the transmission adaptor name (up to 10 alphanumerics and spaces).

② COM or USB port selection field

Select the COM or USB 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.

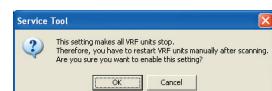
Input the start refrigerant system No. ~ end refrigerant system No. range.

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.



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 re-scanning, dialog box will appear after selecting the start of scan, confirming whether the existing indoor/outdoor units data (operation data, etc.) may be deleted.

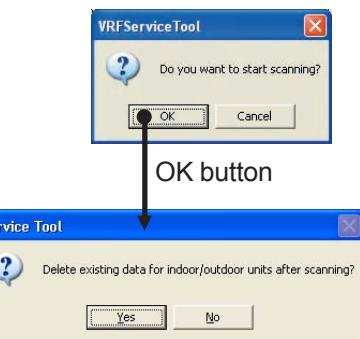
Yes ... delete the data after scanning, No ... Keep the data,

* When performing scanning selecting “No” and number of units before and after scanning mismatches, following symptom may be encountered. Therefore, when selecting “No”, be sure to have the correct number of units before and after scanning in mind.

- Transmission error may occur for the units that ceased to exist after scanning.
- Delay may occur for collecting data for each unit.

- When “Enable Scan” not checked

When the **OK** button is clicked, the system list screen is displayed without scanning. But when CSV formatted Name master file (3-2-4) has been already read, the corresponding Name of the unit will be updated.



8

Cancel button

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

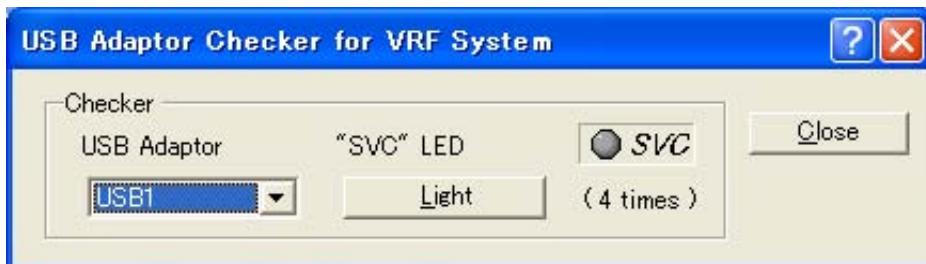
9

USB Checker

This will be used to detect the actual USB port where transmission adaptor is inserted, when using USB type transmission adaptor (U10 USB Network Interface). Note that this will not be displayed if the driver for the U10 USB Network Adaptor is not installed.

<Detection Mechanism>

- Insert the transmission adaptor (U10 Network Interface) into the USB port.
(This requires that software installation is already completed).
- When clicking the [USB Checker] in the scanning setting screen, following screen will be displayed.
- In this screen, click the [USB Adaptor] pull-down list box and select any USB port, then push the [Light] button.
- If the selected USB port is the actual porting connecting the USB adaptor, [SVC] in this screen and LED (SVC) of the transmission adaptor will flicker 4 times. (If the port differs, there will be no flicker).
- When the USB port No. is confirmed, close the screen and set the USB No. port in the above procedure (2) (COM or USB port selection field) the USB port number where USB adaptor was detected.



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.

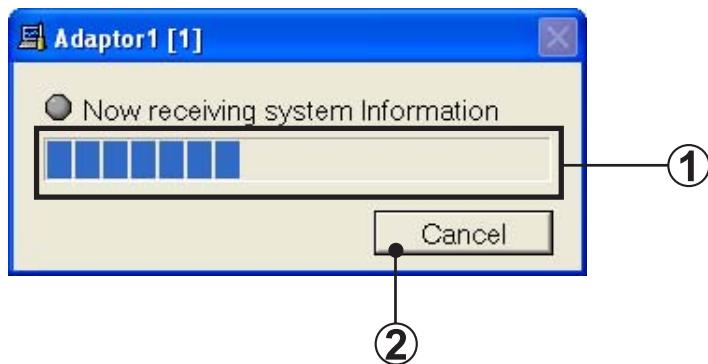
In this mode, scanning can be performed without affecting the operating status of the VRF System. However, since R.C group data cannot be received, it is not full scanning. Operation is not controlled in R.C. group units.

- When Single-Split Adaptor (UTR-YRDA) is connected within the VRF system, be sure to check the "Detail information scanning" when performing scanning in order to recognize 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

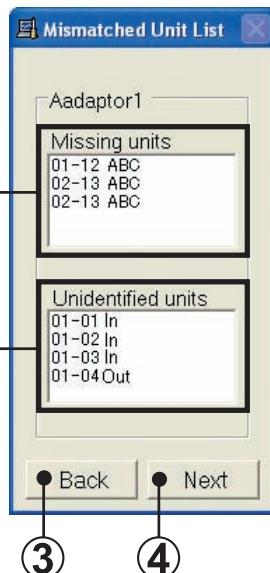
Displays the progress of scanning.

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 Data acquisition application starting (offline) flow

3-3-1 Import file selection

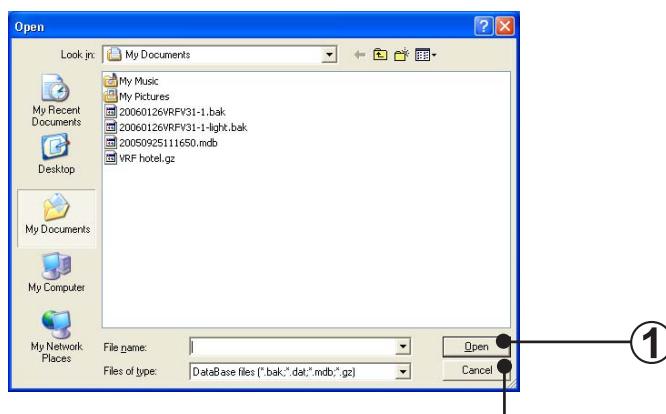
By selecting the data files that has been saved in the past, you may monitor the various unit data on the screen off-line.

The data that may be displayed are those saved using;

- Service Tool Ver. 1.1 (UTR-YSTB) *1
- Service Tool Ver. 3.0 or later *2 (UTR-YSTC)
- Web Monitoring Tool Ver. 3.0 or later *2 (UTR-YMSA)

For how to save the data, refer following chapter. For how to save data for other product type, refer corresponding manual.

- 4-5 Exiting
- 5-13 Others screen (Download)



① Open button

When the **Open** button is clicked, the data of the selected Import 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.



*1 In order to cope with the incompatibility of data between Service Tool Ver. 1.1 (UTR-YSTB), following restriction will apply when displaying that version of data offline.

- VRF Series data from Single-Split Adaptor (UTR-YRDA) will be displayed as outer unit: VRF1, inner unit: VRF1/1A.
- Data from VRF1B Series (operation data and series) will not be displayed correctly.

*2 When the file created by Download screen is imported (compression file-extension:gz), the decompression file of the selection file is created.

Contents

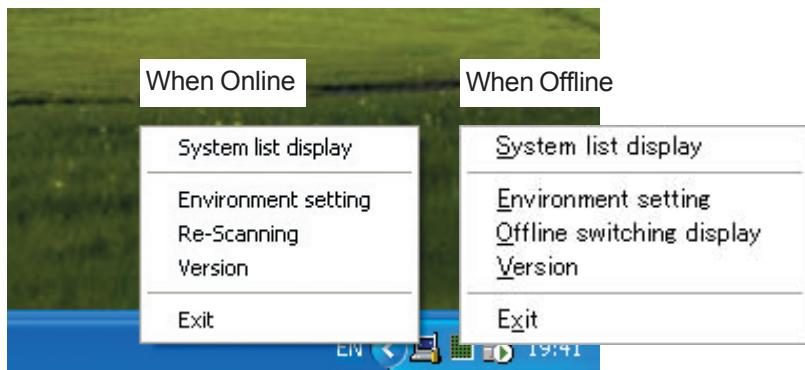
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4. Data acquisition application right click menu

4-1 Outline

4-1-1 Menu

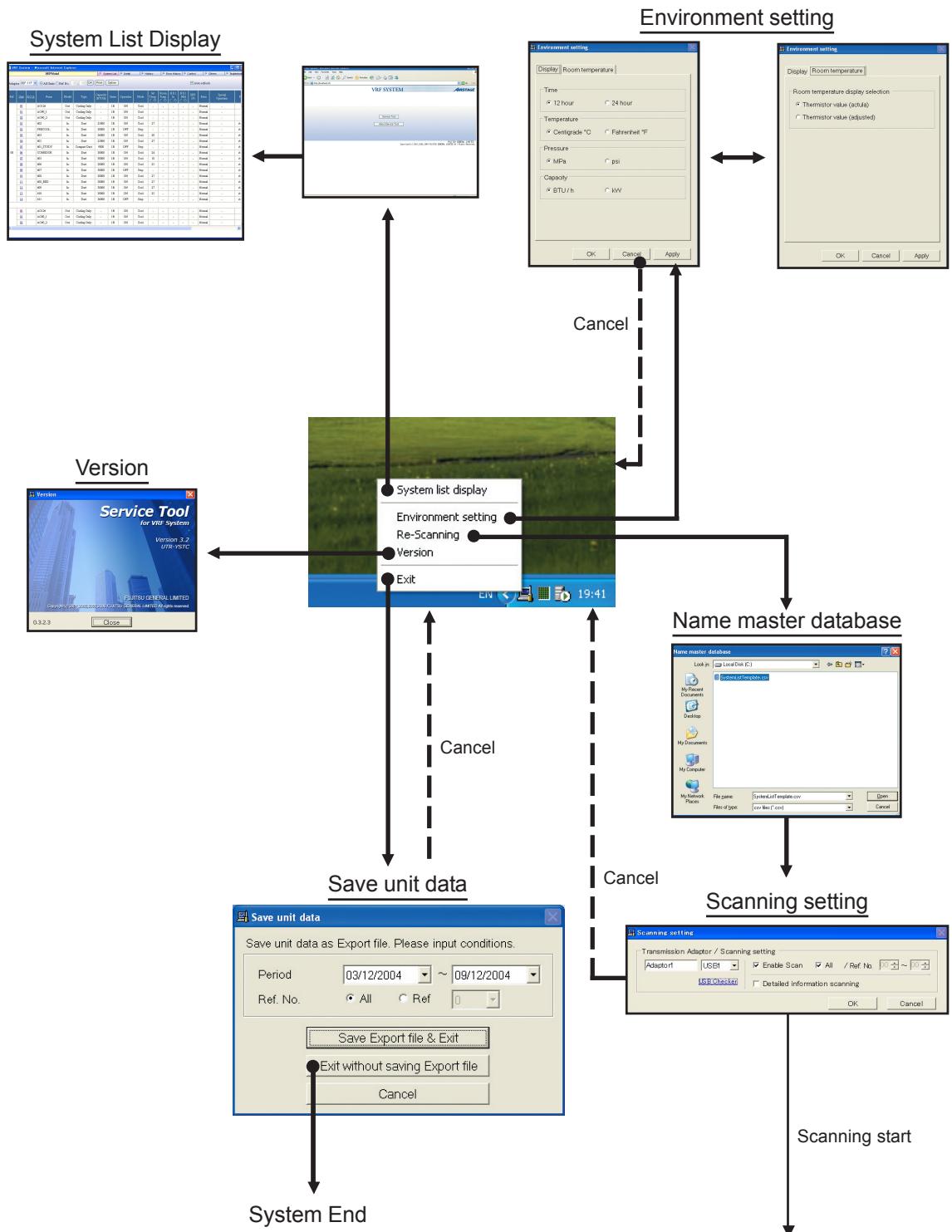
A menu is displayed and various operations can be performed by right-clicking the  application icon on the task tray.



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.
Offline switching display	Offline data may be read again. Not displayed when online.
Version	Version information screen is displayed.
Exit	Exit confirmation screen is displayed.

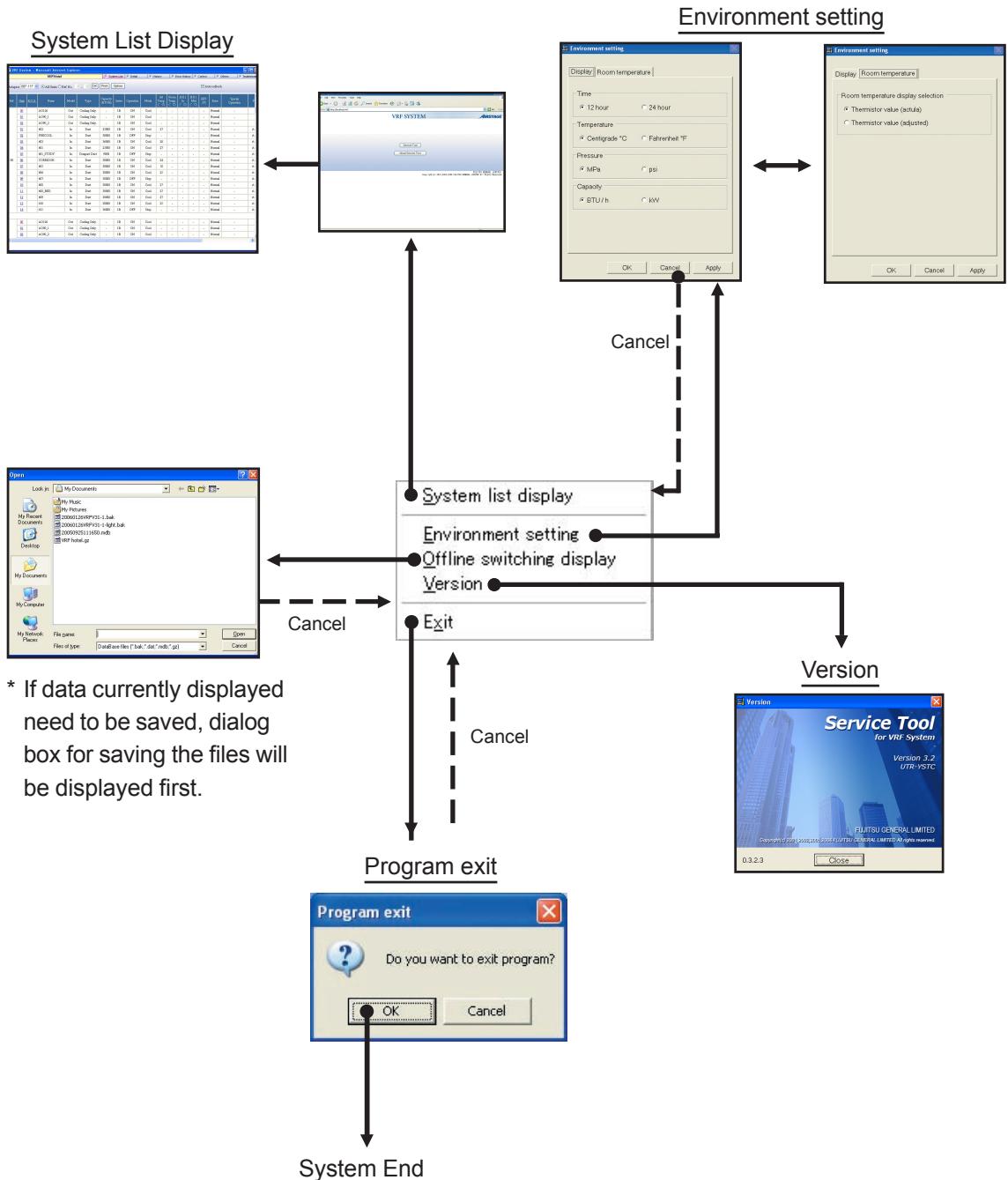
4-1-2 Screen transition (online)

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



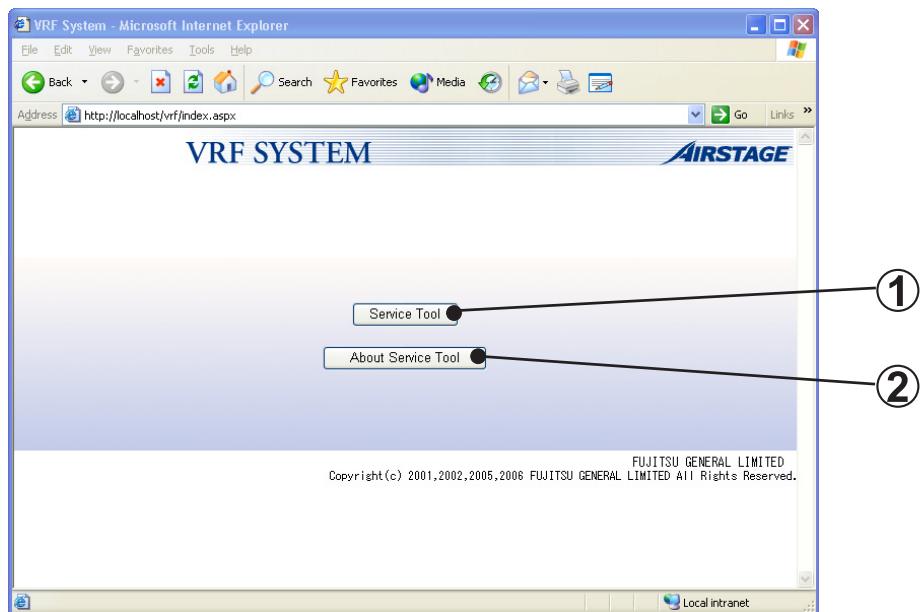
4-1-3 Screen transition (offline)

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

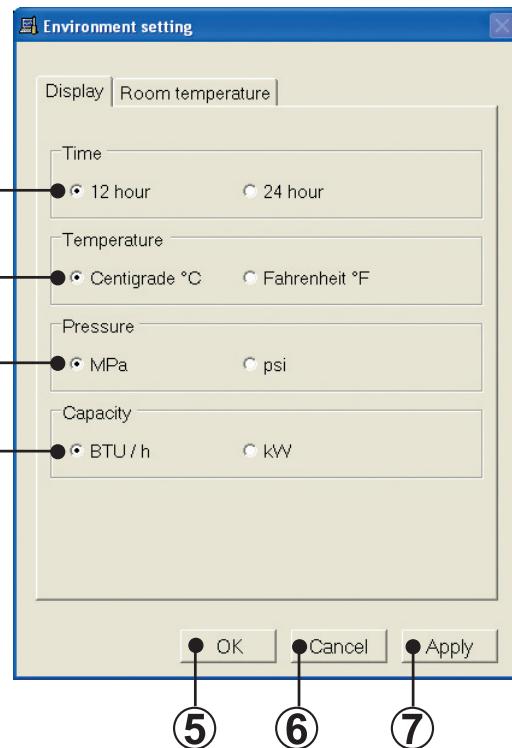
Various settings related to the operating environment are performed.

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”.

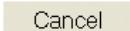
④ Capacity selection item

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

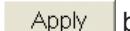
⑤ OK button

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

⑥ Cancel button

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

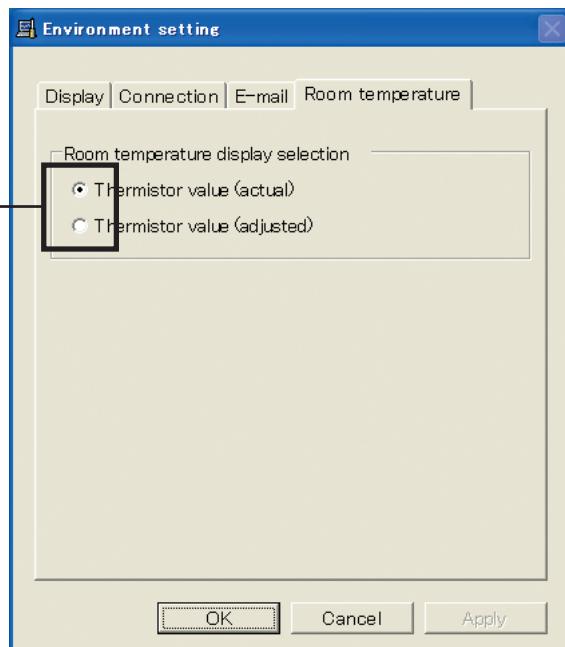
⑦ Apply button

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

Note  After changing the display settings, the changes will take effect only from the Web application newly started from the Menu screen.
In order for the changes to take effect, re-display the Web application from the Menu Screen (Refer to section 5-2).

4-3-2 Room temperature display setting

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

Note  After changing the display settings, the changes will take effect only from the Web application newly started from the Menu screen.
In order for the changes to take effect, re-display the Web application from the Menu Screen (Refer to section 5-2).

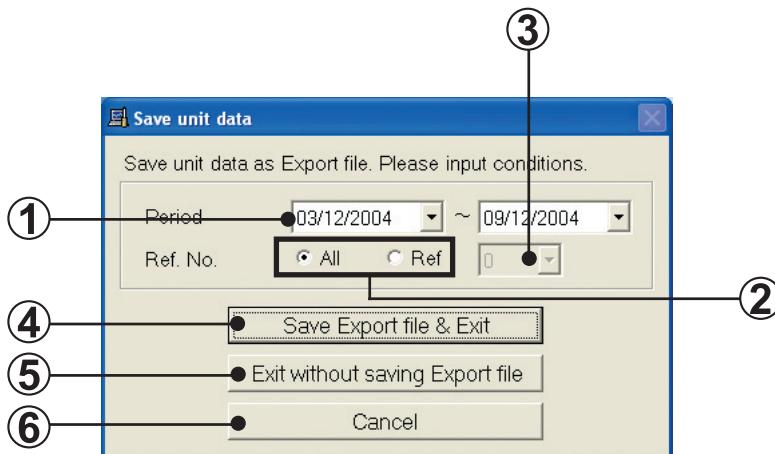
4-4 Re-scanning

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 Import 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.

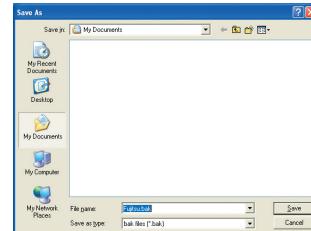
Select the refrigerant system No. to be saved.

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.

4-6 Offline switching display

Other offline data can be displayed without restarting the Service Tool.

When currently displayed data is of the version listed below, file save dialog box for the currently displayed data will be displayed prior to "Import file selection" dialog box where offline data may be selected.

Here, give an arbitrary file name and save. By saving the files, the data may be read and displayed faster the next time you read in (the speed may depend on the file volume). If you select "Cancel", the screen closes without saving the data.

<Version whose data will be save>

- Service Tool Ver. 1.1 (UTR-YSTB)
- Service Tool Ver. 3.0 or 3.1 (UTR-YSTC)
- Web Monitoring Tool Ver. 3.0 or 3.1 (UTR-YMSA)

When file save dialog box closes (the dialog may not be displayed depending on the version), "Import file selection" dialog screen is displayed. Here, by selecting any file, the unit data will be displayed offline.

* Time required to display the data may depend on the data volume.

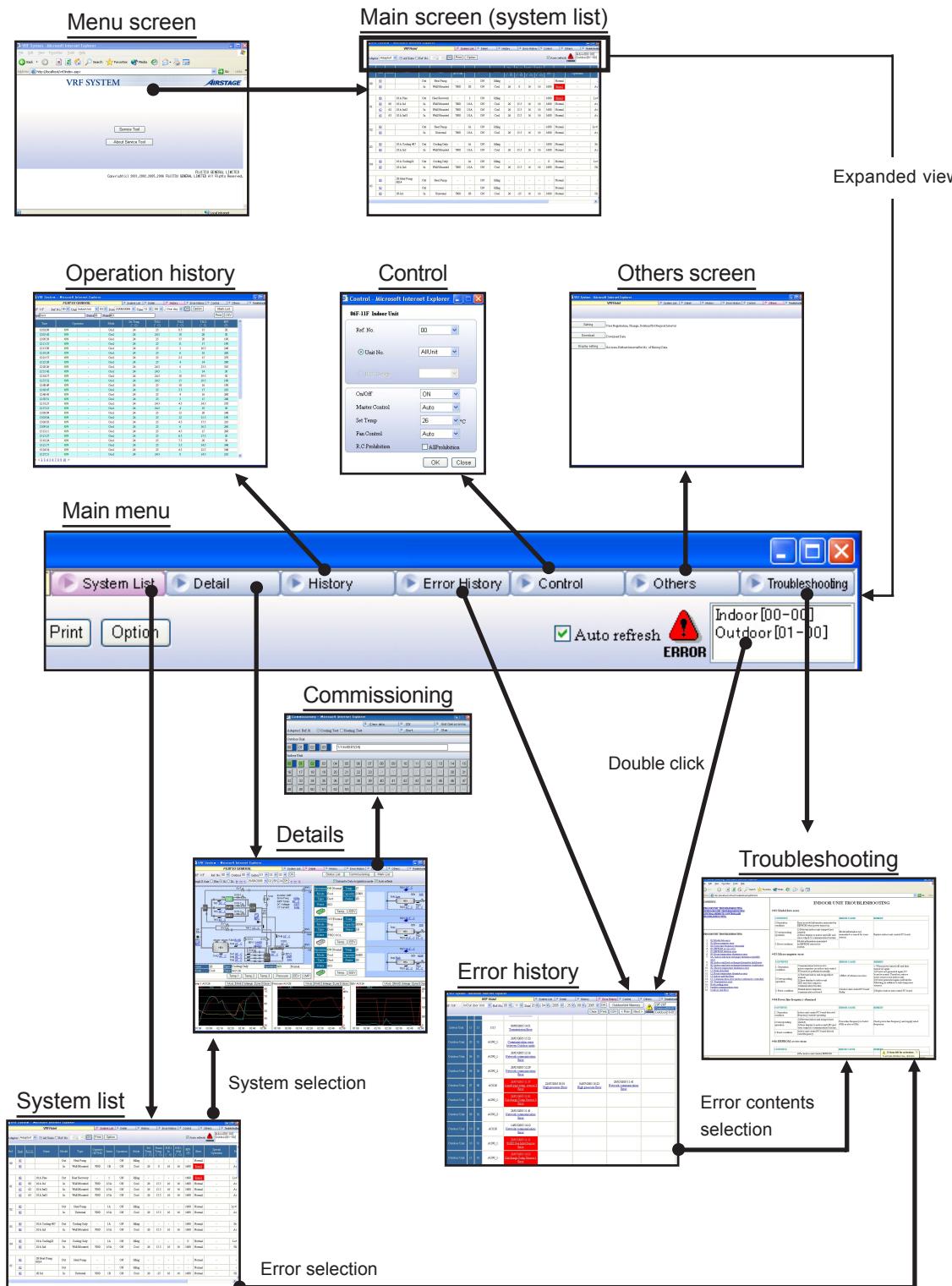
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5. WEB application

5-1 Screen transmission

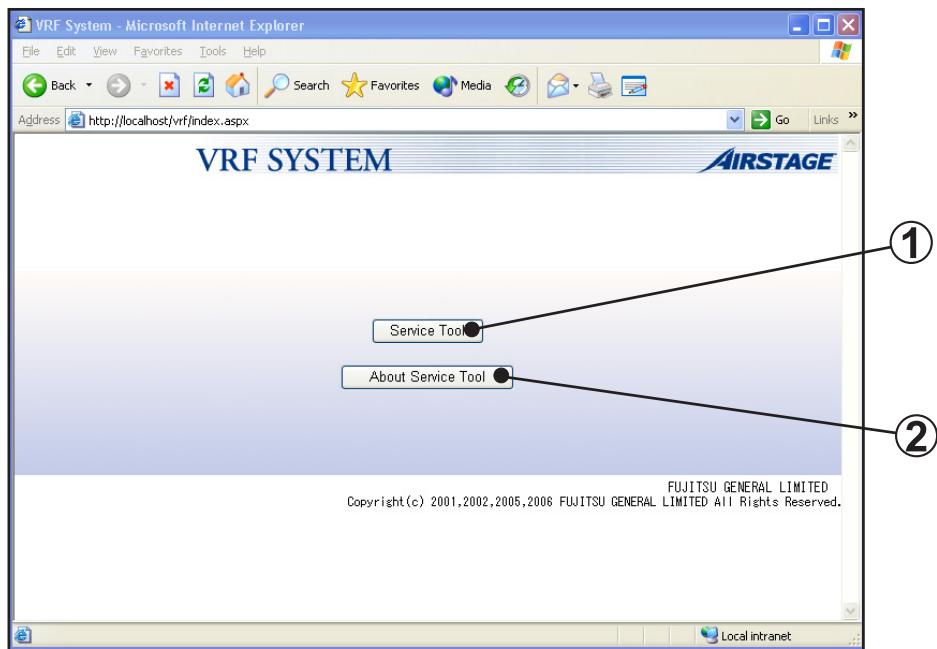


* For details, refer to the description of each screen.

Screen	Function	Page
Menu screen	Initial screen. Starts the service tool and displays the version information.	39
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.	41
Details screen	Performs normal operation check and cause specification when an error was generated from the detailed status display of the units.	45
Commissioning tool	Test run instructions and commissioning data storage can be performed.	59
Operation history screen	Displays the indoor units or outdoor unit operating history information for each unit.	67
Error history screen	Displays the error information for each unit.	74
Control screen	Operation of each refrigerant system, indoor unit, or R.C. group can be controlled.	78
Others screen	<ul style="list-style-type: none"> • Performs new user registration, user password change, registered user deletion, and demand interval setup. • Save/Download data • Setting Auto-refresh interval and maximum No. of lines per page. 	80
Troubleshooting screen	Displays the error contents and corrective action.	90

5-2 Menu

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



① Service Tool button

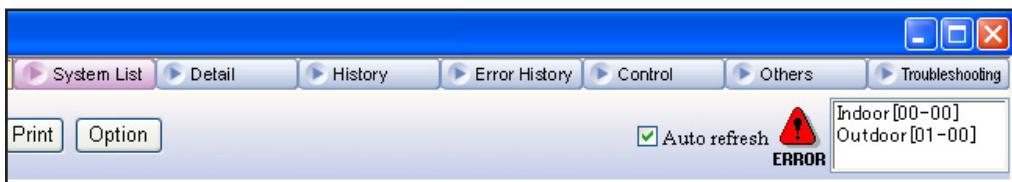
Starts the service tool, and displays the detail screen.

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.



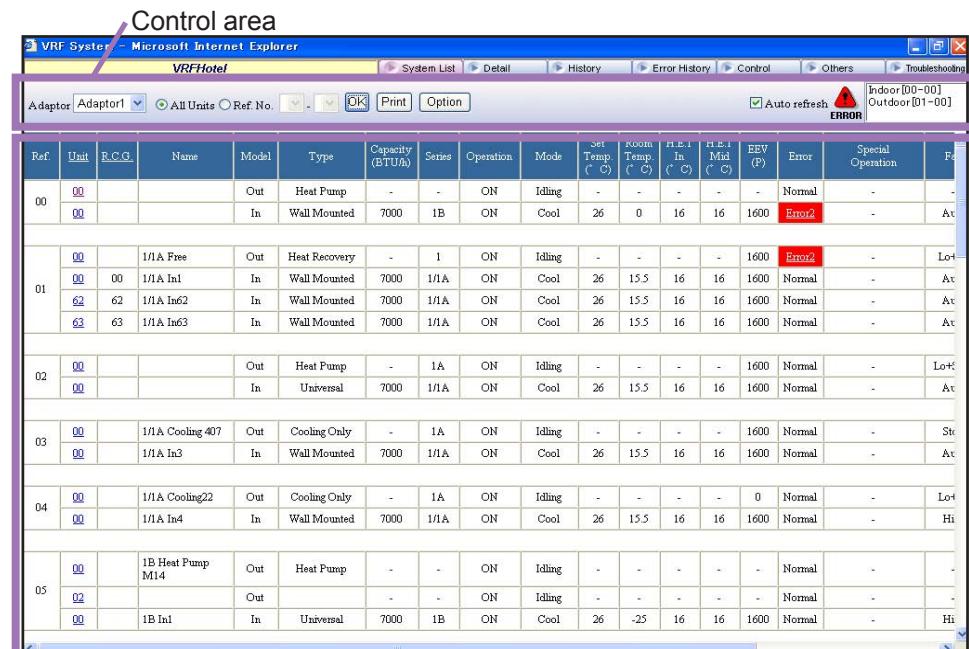
System List	Shifts to the system list screen.
Detail	Shifts to the detail screen.
History	Shifts to the operation history screen.
Error History	Shifts to the error history screen.
Control	Displays the control screen.
Others	Shifts to the others screen.
Troubleshooting	Displays the troubleshooting screen.
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



Display item

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.														
Option	Set whether the column should be displayed or hidden.														
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 5-15) is displayed by clicking.
Special Operation	Displays special operation. Oil Recovery operation / Defrost operation (Outdoor unit) Anti Freeze operation (Indoor unit)
Fan	Displays the fan status. (*3)
R.C. Prohibition	Displays the R.C. Prohibition setting. * Display whether the "All prohibition" is enabled or disabled.
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.

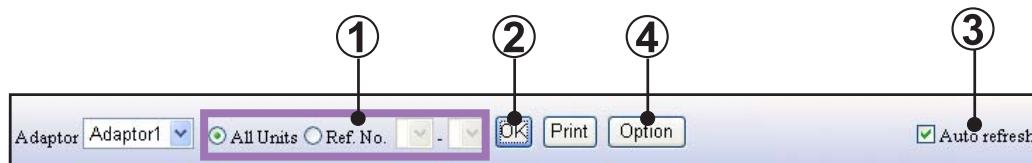
Note



- *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.
- *3 Sometimes, it may take time for the FAN status display to be updated in the System List screen. The delay time is proportional to the number of existing indoor units and may take approximately 2 minutes for 100 indoor units (the time does not have anything to do with the number of indoor units being controlled). In any case, the actual control operation to the indoor units are performed immediately after control operation from the Control screen, only the display delays.

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**.
- ④ Set whether Display item (column) should be displayed or hidden.
Items to be set in the option screen is as follows. When display items are set, they will be displayed right-wise.
Checked ...display, Unchecked ...hidden

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 **Adaptor**. 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.

List area **Header item**

Address	Name	Model	Type	Capacity (BTU/h)	Series	Operation	Mode	Set Temp	Room Temp	H.E.1	H.E.2	EEV	Error	Special Operation	Fan	R.C. Prohibition	Time
Ref. Unit R.C.G.								(C)	(C)	(C)	(C)	(F)					
00	00	Out	Heat Pump	-	-	ON	Idling	-	-	-	-	-	Normal	-	-	-	31/01/2006 14:03:53
00	00	In	Wall Mounted	7000	1B	ON	Cool	26	0	16	16	1600	Error2	-	High	OFF	31/01/2006 14:03:54

Address	Name	Model	Type	Capacity (BTU/h)	Series	Operation	Mode	Set Temp	Room Temp	H.E.1	H.E.2	EEV	Error	Special Operation	Fan	R.C. Prohibition	Time	
Ref. Unit R.C.G.								(C)	(C)	(C)	(C)	(F)						
01	00	1/1A Free	Out	Heat Recovery	-	1	ON	Idling	-	-	-	1600	Error2	-	Lo+Lo	-	31/01/2006 14:03:53	
01	00	1/1A In1	In	Wall Mounted	7000	1/1A	ON	Cool	26	15.5	16	16	1600	Normal	-	High	OFF	31/01/2006 14:03:54
01	62	1/1A In62	In	Wall Mounted	7000	1/1A	ON	Cool	26	15.5	16	16	1600	Normal	-	High	OFF	31/01/2006 14:03:54
01	63	1/1A In63	In	Wall Mounted	7000	1/1A	ON	Cool	26	15.5	16	16	1600	Normal	-	High	OFF	31/01/2006 14:03:54

Address	Name	Model	Type	Capacity (BTU/h)	Series	Operation	Mode	Set Temp	Room Temp	H.E.1	H.E.2	EEV	Error	Special Operation	Fan	R.C. Prohibition	Time
Ref. Unit R.C.G.								(C)	(C)	(C)	(C)	(F)					

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 (Diagram)

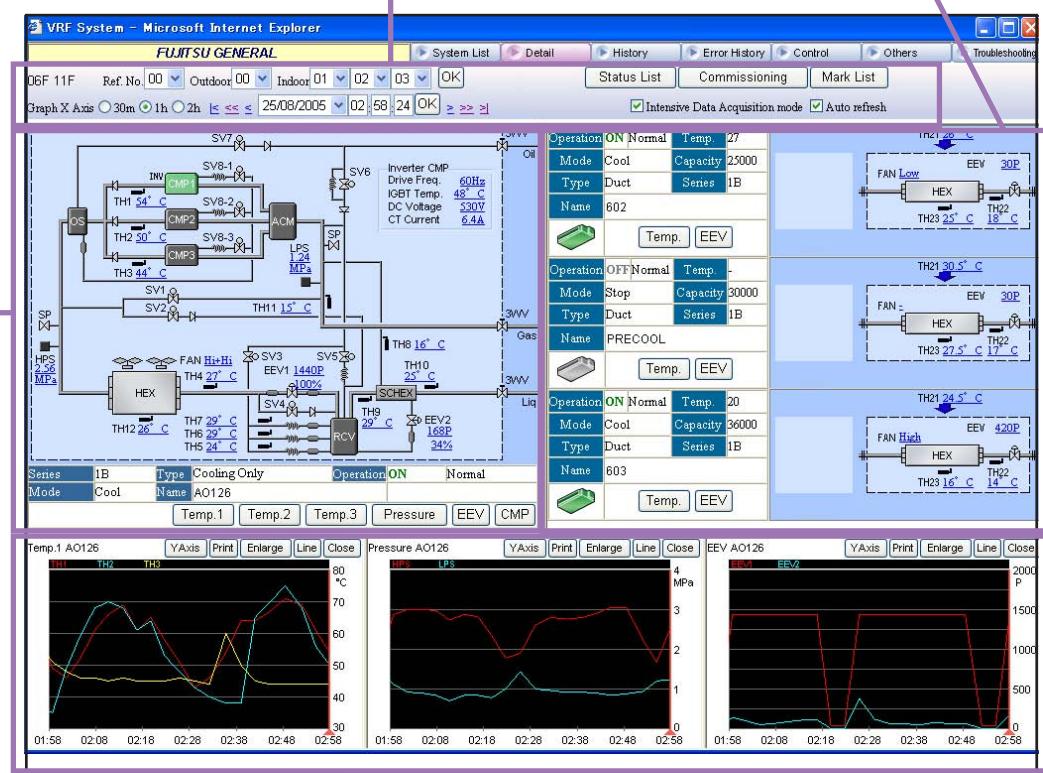
This screen displays the schematic, sensor values, and electrical components operating status of the selected system. At this screen, normal operation checks and cause specification when an error occurs are performed.

The schematic of 1 outdoor unit and 3 indoor units and three items graph can be simultaneously displayed.

Outdoor unit schematic diagram area

Control area

Indoor unit schematic area



Graph area

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 5-7 Commissioning tool.)
Status List	Switch to the “Status List screen”. (Refer to 5-6 Detail screen (Status List))
Mark List	Displays the list of abbreviations.
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. By inputting time, data for the nearest time will be 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 5-12-4 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.

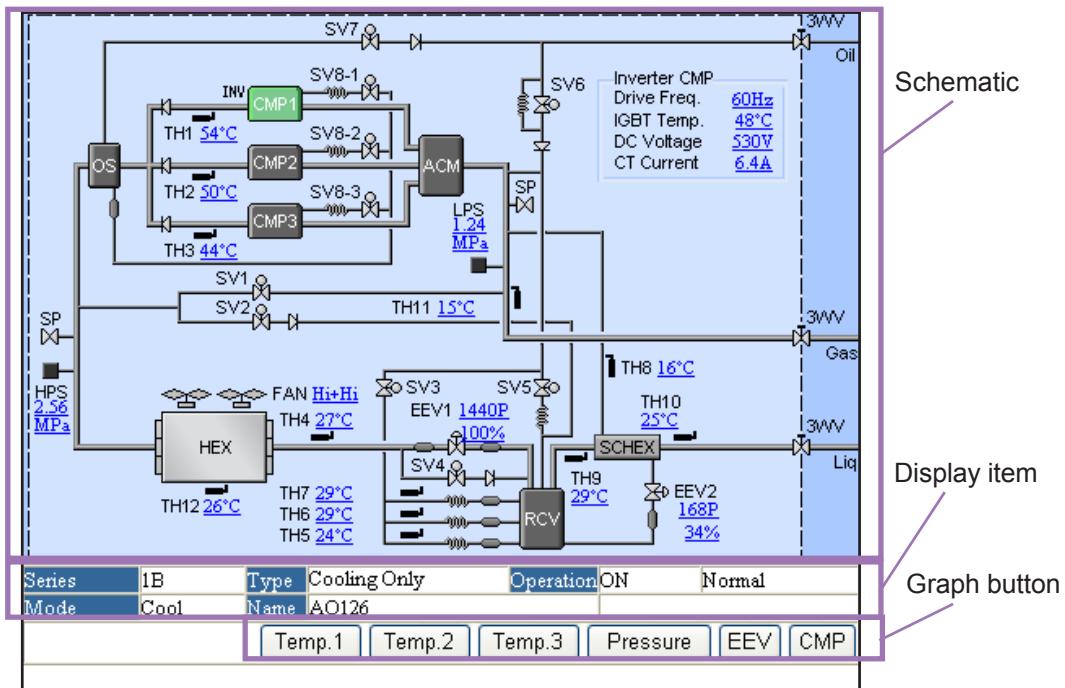
Note



- *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: Gray
4-way valve/solenoid valve 	Displays the 4-way valve/solenoid valve status. On: Green Off: Gray *The outdoor unit of S series (VRF1/1A) does not change of status. (gray display)

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)



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

Graph button

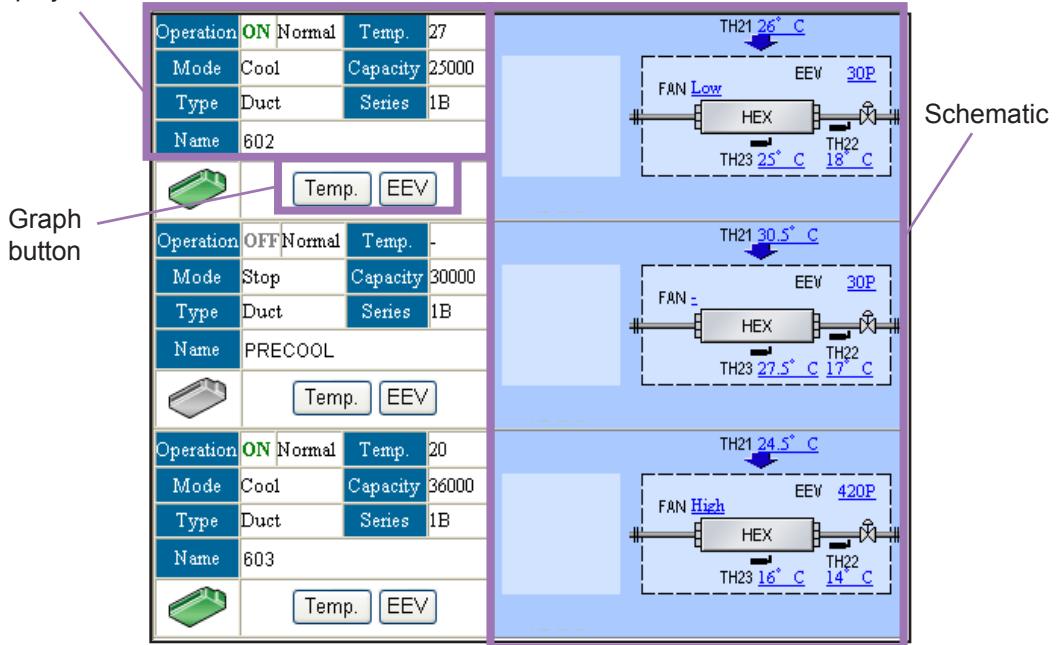
The graph corresponding to the clicked button is displayed. Up to 3 graphs can be displayed at the graph area. When you want to display a new graph, but 3 graphs are already displayed, close one of the graphs beforehand.

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 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: Gray Test: Orange On (Error): Green blinking Off (Error): Gray 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.

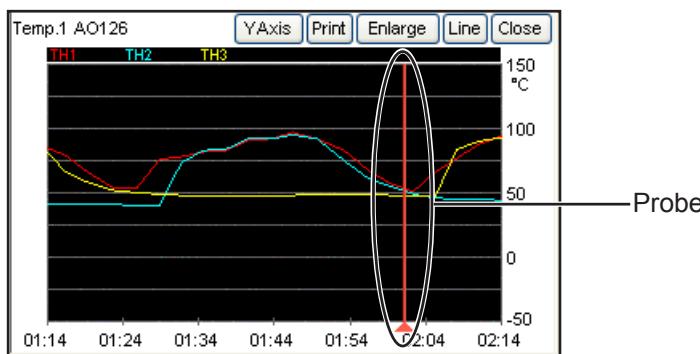
Temp	Displays a temperature graph at the graph area.
EEV	Displays an electrical expansion valve pulse value at the graph area.

Schematic

Schematic	Displays the schematic of the specified units. Up to 3 units can be displayed. The R.B. unit status will only be displayed beside the refrigerant circuit when the system type is heat recovery.
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■ 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.
YAxis	Upper and lower limit of Y axis of the graph may arbitrary be set (*3). Allowable range for each graph types is as follows. <ul style="list-style-type: none">• Temp: -50~150 °C/-58~302 °F• Pressure: 0~4 Mpa/0~600 psi• EEV: 0~2000 Pulse• CMP: 0~300 Hz
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. (*2)

Note



- *1 For details, refer to the next clause (Graph area details).
- *2 When displaying the files created by previous version of this product (Ver. 1.1:mdb files) in offline mode, indoor and outdoor unit data corresponding to the time position of the probe may not synchronize. This is because in previous version, the data collecting method of the service tool was different from the present version.
- *3 After upper and lower limit is set, scale for the Y axis will evenly be apportioned. Therefore, the scale may slightly be different from the actual value.

■ Graph area details

- Graphs can be printed by clicking the **Print** button.

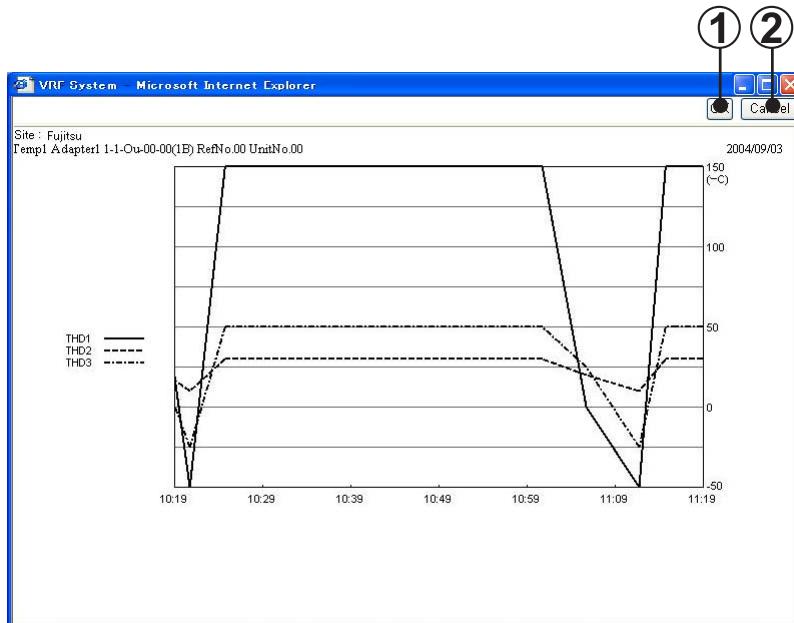
① OK button

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.

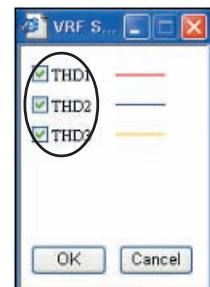


- The graph is vertically enlarged 2 times and displayed by pressing the **Enlarge** button.

- 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	—	Pressure	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
—	SV5	—	Solenoid valve 5
—	SV6	—	Solenoid valve 6
—	SV7	—	Solenoid valve 7
—	SV8	—	Solenoid valve 8
THD1	TH1	Temp.1	Discharge temperature 1
THD2	TH2	Temp.1	Discharge temperature 2
THD3	TH3	Temp.1	Discharge temperature 3

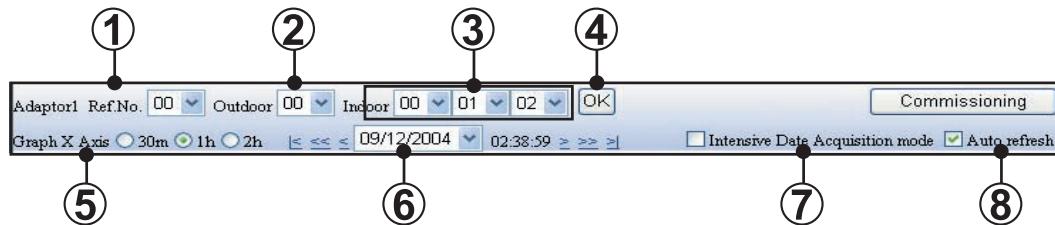
THHI1	—	Temp.3	Heat exchanger inlet temperature 1
THHI2	—	Temp.3	Heat exchanger inlet temperature 2
THHI3	—	Temp.3	Heat exchanger inlet temperature 3
THHO1	TH4	Temp.3/2	Heat exchanger outlet temperature 1
THHO2	—	Temp.3	Heat exchanger outlet temperature 2
THHO3	—	Temp.3	Heat exchanger outlet temperature 3
—	TH5	Temp.3	Receiver low level temperature
—	TH6	Temp.3	Receiver middle level temperature
—	TH7	Temp.3	Receiver high level temperature
—	TH8	Temp.3	Sub cool heat exchanger gas outlet temperature
—	TH9	Temp.2	Liquid temperature 1
—	TH10	Temp.2	Liquid temperature 2
THS	TH11	Temp.2/3	Suction temperature
THO	TH12	Temp.2	Outdoor temperature
—	TH13	Temp.3	SCHEX inlet temperature
3WV		—	3-way valve
BV	—	—	Ball valve
SP		—	Service port
HP	—	—	High-pressure switch
LP	—	—	Low-pressure switch
—	Inverter CMP(Hz)	CMP	Displays drive frequency
—	Inverter CMP(°C)	—	Displays IGBT temperature.
—	Inverter CMP(V)	—	Displays DC voltage
—	Inverter CMP(A)	—	Displays CT current

- Indoor unit

1/1A	IB	Graphbutton	Description
EEV1	EEV	EEV	Electrical Expansion valve
MAX	—	—	Displays maximum EEV value.
THOA	—	Temp	Outlet temperature
THIA	TH21	Temp	Room temperature
THHI	TH22	Temp	Heat exchanger inlet temperature
THHM	TH23	Temp	Heat exchanger middle temperature
THHO	—	Temp	Heat exchanger outlet temperature
SVD	—	—	Discharge solenoid valve
SVS	—	—	Suction solenoid valve
SVB	—	—	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.
02 56 24	By inputting time, data for the nearest time will be displayed.

- 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.

i *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 Detail screen (Status List)

The Status List is started with the **Status List** button of the detail screen control area.

Status list screen will be switched from the diagram screen by pressing the “Status list” button in the detail screen area.

In this screen, detail data for all the units in the specified refrigerant system will be displayed at a certain point of time.

Control area

Outdoor unit status area

Indoor unit status area

Outdoor																		
Unit	Name	Type	Operation	Special Operation	Mode	TH1 (°C)	TH2 (°C)	TH3 (°C)	TH4 (°C)	TH5 (°C)	TH6 (°C)	TH7 (°C)	TH8 (°C)	TH9 (°C)	TH10 (°C)	TH11 (°C)	TH12 (°C)	
00	AO126	Cooling Only	ON	-	-	Cool	54	50	44	27	24	29	29	16	29	25	15	26
01	AO90_1	Cooling Only	ON	-	-	Cool	37	38	10	26	28	29	29	24	27	24	23	26
02	AO90_2	Cooling Only	ON	-	-	Cool	35	41	10	27	27	27	29	24	27	24	24	26

Indoor																	
Unit	Name	Type	Capacity (BTU/H)	Operation	Mode	Set Temp (°C)	TH21 (°C)	TH22 (°C)	TH23 (°C)	EEV (P)	THH1 (°C)	THHM (°C)	THH2 (°C)	THIA (°C)	THOA (°C)	EEV (P)	MAX EEV
01	602	Duct	25000	ON	-	Cool	27	26	18	25	30	-	-	-	-	-	-
02	PRECOOL	Duct	30000	OFF	-	Stop	-	30.5	17	27.5	30	-	-	-	-	-	-
03	603	Duct	36000	ON	-	Cool	20	24.5	14	16	420	-	-	-	-	-	-
04	601	Duct	25000	ON	-	Cool	27	25.5	24	25	30	-	-	-	-	-	-
05	601_STUDY	Compact Duct	9000	OFF	-	Stop	-	26	22.5	23	30	-	-	-	-	-	-
06	CORRIDOR	Duct	30000	ON	-	Cool	24	26.5	14	17.5	530	-	-	-	-	-	-
07	605	Duct	30000	ON	-	Cool	18	21.5	13	16.5	430	-	-	-	-	-	-
08	606	Duct	30000	ON	-	Cool	25	24.5	17	22.5	30	-	-	-	-	-	-
09	607	Duct	30000	OFF	-	Stop	-	23	12	17	30	-	-	-	-	-	-
10	608	Duct	30000	ON	-	Cool	27	26	22	26	30	-	-	-	-	-	-
11	608_BED	Duct	30000	ON	-	Cool	27	26	17	26	30	-	-	-	-	-	-
12	609	Duct	30000	ON	-	Cool	27	25.5	16	25	30	-	-	-	-	-	-
13	610	Duct	30000	ON	-	Cool	25	25	17.5	23.5	30	-	-	-	-	-	-
14	611	Duct	36000	OFF	-	Stop	-	23.5	16	19	30	-	-	-	-	-	-

5-6-1 Name and function of each area

■ Control area

Sets display contents specification.



Ref.No.	Displays the refrigerant system No. Also, any refrigerant system No. may be specified and be switched to.
OK	Fix the Ref. No. and the date / time of the data to be displayed.
↖ & ↳	Shift up to the first or last data acquisition time of the specified date.
↖ & ↳	Shift the time 1 graduation.
Date/Time	Date/time for the data currently displayed will be shown. By specifying specific date and time, any data may be displayed.
Option	Set whether Display item (column) should be displayed or hidden. Items to be set in the option screen is as follows. When display items are set, they will be displayed right-wise. Checked ... display, Unchecked ... hidden
Intensive Data Acquisition mode	Sets the mode which demands data from the service tool to each unit. The demand interval is set at 5-12-4 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.
Diagram	This will switch to the Diagram screen. (Refer to 5-5 Detail screen (Diagram))
Commissioning	Starts the commissioning tool. (Refer to 5-7 Commissioning tool.)
Mark List	Displays the list of abbreviations.

■ Outdoor unit status area

Display the following operation status of each outdoor unit according to the condition given in the Control area.

Unit	Displays the unit No.
Name	Displays the unit name.
Type	Displays the unit type.
Series	Displays the VRF1/1A/1B series.
Operation	Displays the operating status (ON/OFF) and unit status (Normal/Error).
Special operation	Displays special operation. Oil Recovery operation / Defrost operation
Mode	Displays the operating mode.

* For other information, refer to the 5-5-1 Name and function of each area, Schematic/graph display item (Outdoor unit).

■ Indoor unit status area

Display the following operation status of each indoor unit according to the condition given in the Control area.

Unit	Displays the unit No.
Name	Displays the unit name.
Type	Displays the unit type.
Capacity	Displays the capacity. Units display is [BTU/h] or [kW].
Series	Displays the VRF1/1A/1B series.
Operation	Displays the operating status (ON/OFF) and unit status (Normal/Error).
Mode	Displays the operating mode.
Set Temp.	Displays the setting temperature. Units display is [°C] or [°F].

* For other information, refer to the 5-5-1 Name and function of each area, Schematic/graph display item (Indoor unit).

5-7 Commissioning tool

The commissioning tool is started with the **Commissioning** button of the detail screen control area.

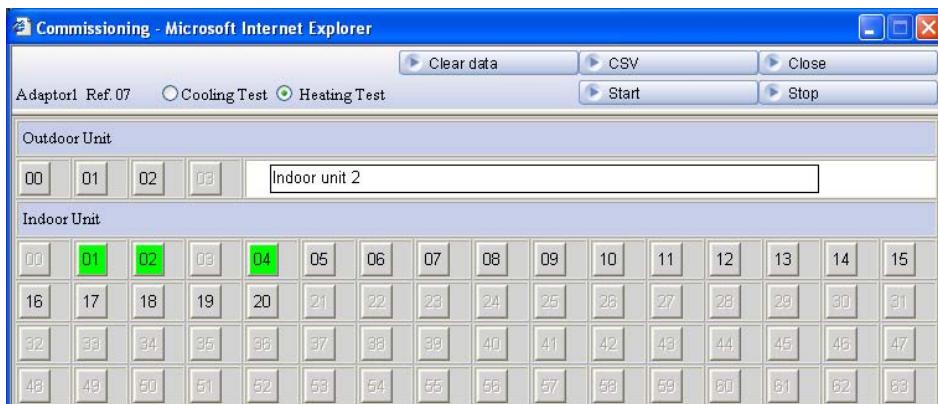
Test run commands can be executed with the commissioning tool. During test running, the outdoor unit/indoor unit sensor data can be saved (commissioning log data). After the end of test running, this data can be exported in CSV file format.

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.

5-7-1 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.
Close	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 background 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 background 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



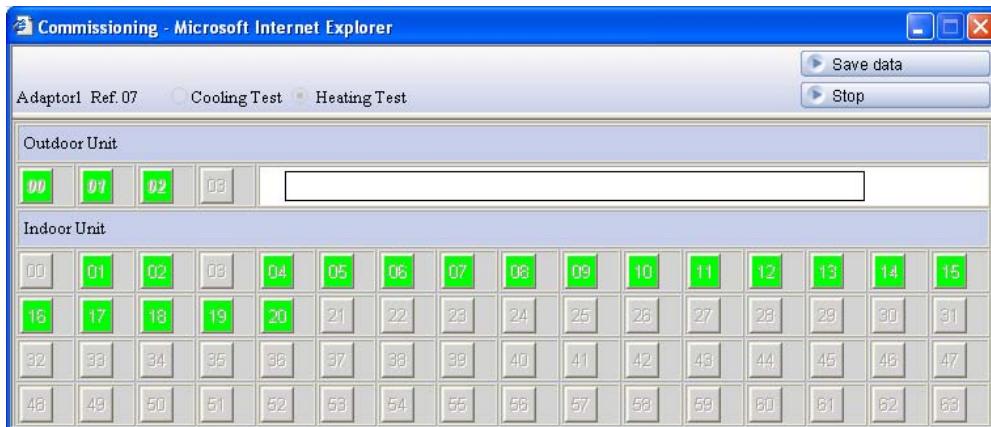
*1 Unit button display status (indoor unit/outdoor unit)

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.
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.

5-7-2 Operating procedure

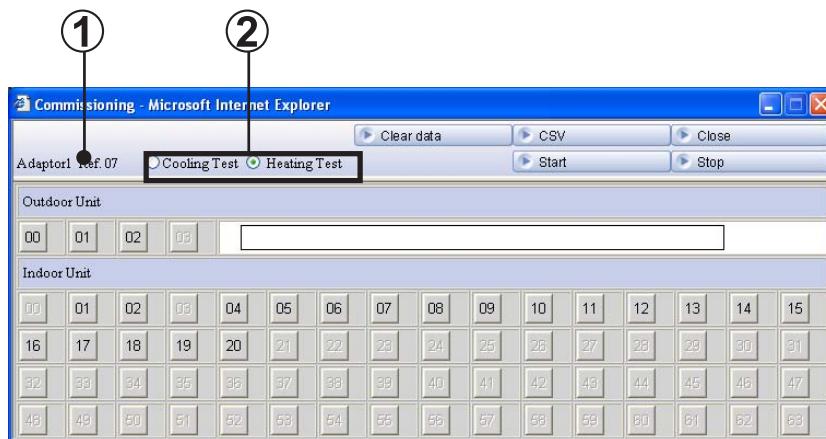
Selects the test items and the units to be tested from all the units stopped status.

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".

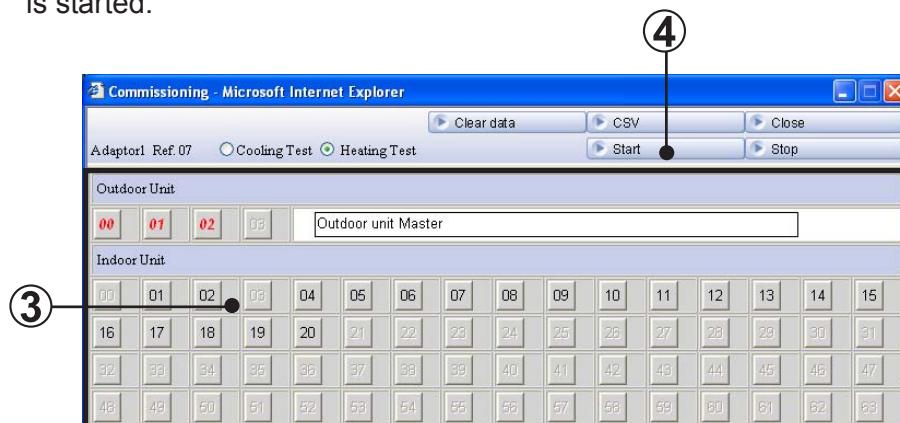


③ Select the unit which is to start test run. Select the unit by clicking the button of the relevant unit No.

The selected unit is displayed by a red italic numeric.

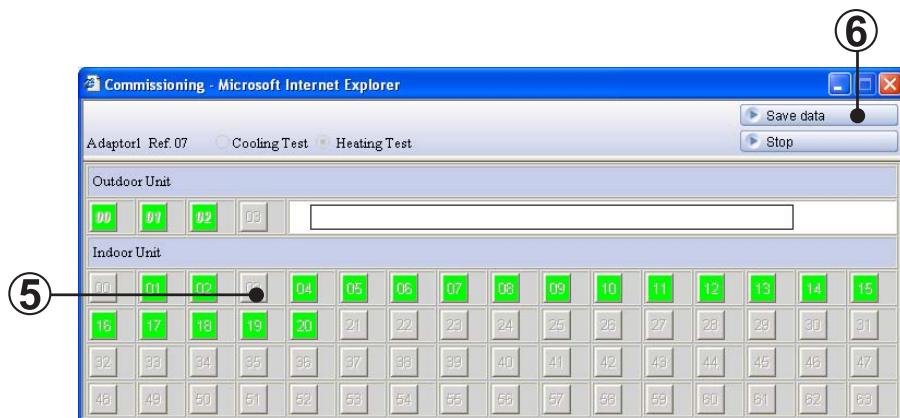
For outdoor units, when any button is selected, all the indoor units also enter the selected state. For indoor units, when any button is selected, all the units belonging to the same R.C. group as the selected unit No. also enter the selected state.

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

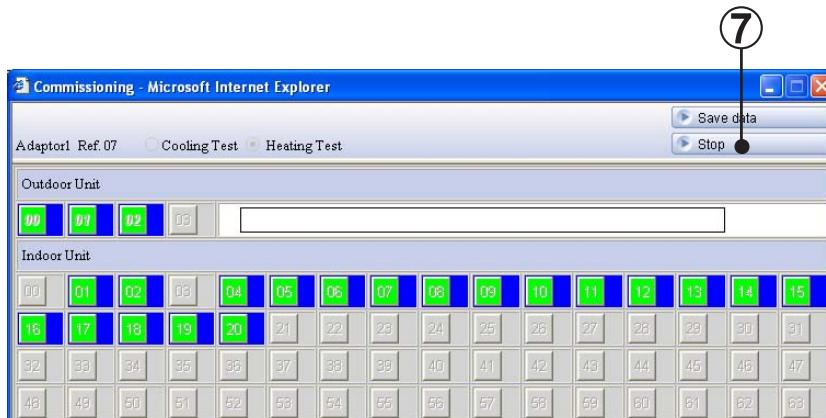


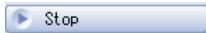
⑤ The button of units that have entered the test run state is displayed in green. When an indoor unit was selected and started, the selected indoor units enter the test run state. When an outdoor unit was selected and started, all the indoor units enter the test run state.

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.

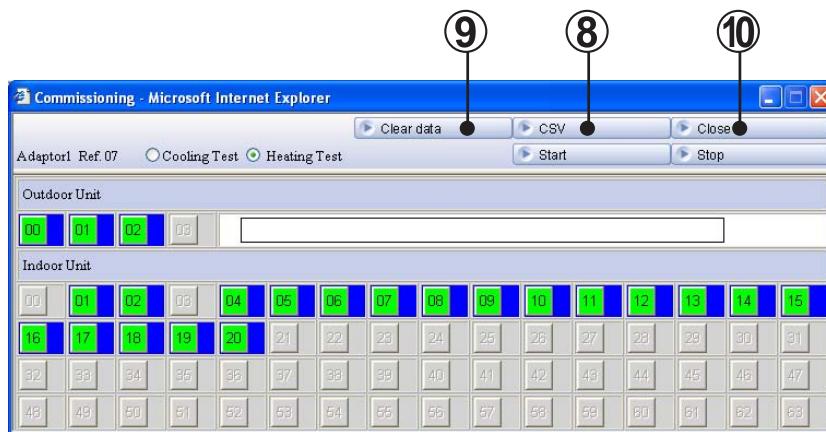


⑥ The commissioning log data of the selected units (italic bold characters) is saved by clicking the **Save data** button. On the screen, the background color of the unit No. that generated the commissioning log data changes to blue.



7 Test run can be stopped by clicking the  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  button in the state of the unit which generated the commissioning log data. (For the commissioning report generation method, refer to 5-7-3 Commissioning report generation.)

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

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

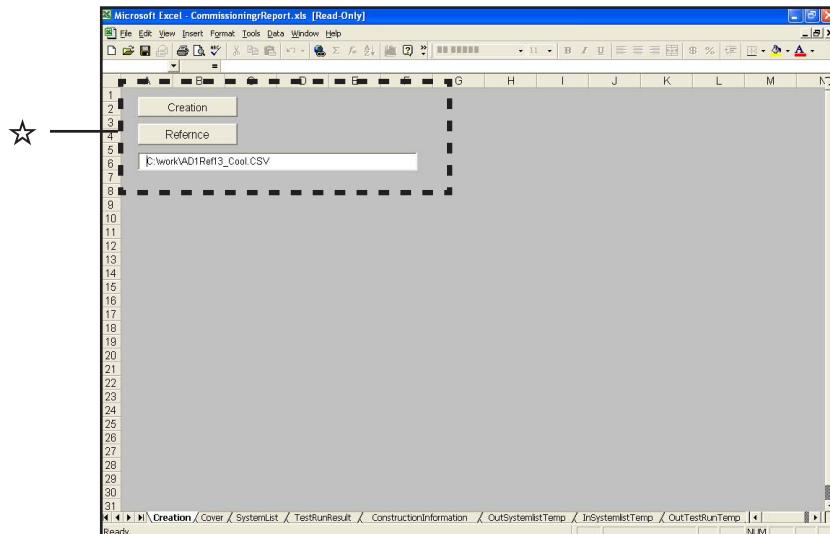
5-7-3 Commissioning report generation

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.



③ Specify the read CSV file by full path.

A file reference dialog box is displayed by clicking the  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.

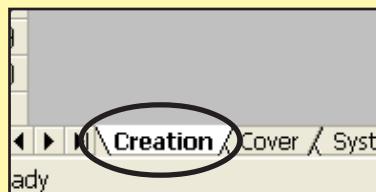
Specify the correct file.

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



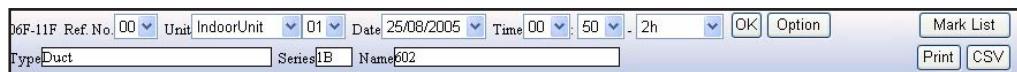
- *3 Since generation is not automatic, the necessary items are inputted manually.

5-8 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.

5-8-1 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	Specify the time range of the history data to be displayed.
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.
Option	Set whether Display item (column) should be displayed or hidden.
Mark List	Displays the list of abbreviations.

■ Outdoor unit

The screenshot shows a data table with the following columns:

Time	Operation	Special Operation	Mode	TH1 (°C)	TH2 (°C)	TH3 (°C)	TH4 (°C)	TH5 (°C)	TH6 (°C)	TH7 (°C)	TH8 (°C)	TH9 (°C)	TH10 (°C)	TH11 (°C)	TH12 (°C)	TH13 (°C)	HPS (MPa)	LPS (MPa)	4WV
00:00:12	ON	-	Cool	82	46	84	41	32	32	37	15	41	32	7	29	-	3.12	0.92	-
00:00:30	ON	-	Cool	79	46	82	36	38	41	41	7	36	25	6	28	-	2.66	0.48	-
00:00:09	ON	-	Cool	71	46	67	27	38	39	41	8	25	22	8	29	-	1.76	1.02	-
00:12:21	OFF	-	Cool	-	-	-	-	36	35	-	22	31	27	-	-	-	-	-	-
00:15:52	ON	-	Cool	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
00:19:21	ON	-	Cool	56	55	54	39	19	30	34	6	39	28	8	29	-	2.94	0.88	-
00:22:54	ON	-	Cool	62	68	51	35	29	30	31	10	36	26	13	28	-	2.78	0.84	-
00:25:51	ON	-	Cool	70	75	50	36	23	23	37	14	36	28	12	28	-	2.86	0.88	-
00:29:06	ON	-	Cool	73	77	49	39	16	32	38	15	39	30	6	28	-	3	0.88	-
00:32:04	ON	-	Cool	76	78	49	40	17	35	38	14	40	31	6	28	-	3.04	0.9	-
00:35:16	OFF	-	Cool	74	76	49	34	21	19	27	1	33	18	8	28	-	2.54	0.48	-
00:38:13	OFF	-	Cool	67	62	49	30	29	30	32	5	34	18	24	27	-	1.93	1.08	-
00:41:27	ON	-	Cool	61	61	56	25	30	32	31	21	29	28	25	27	-	1.58	1.56	-
00:44:24	ON	-	Cool	67	53	72	36	21	36	35	6	36	26	8	28	-	2.36	0.92	-
00:47:57	ON	-	Cool	70	49	76	36	10	32	36	10	36	26	12	28	-	2.88	0.88	-
00:50:56	ON	-	Cool	76	46	81	38	32	36	36	13	38	29	11	28	-	2.94	0.84	-
00:53:52	ON	-	Cool	80	46	84	39	14	15	38	14	39	30	11	28	-	3	0.9	-
00:56:53	ON	-	Cool	79	46	82	40	17	35	40	13	40	30	7	28	-	2.9	0.88	-
01:00:09	OFF	-	Cool	74	46	72	29	31	38	40	1	35	14	3	28	-	1.96	0.88	-
01:03:07	OFF	-	Cool	64	46	61	23	32	38	40	14	31	17	15	28	-	1.54	1.34	-
01:06:56	ON	-	Cool	55	51	56	41	30	34	37	12	41	36	12	28	-	2.32	1.1	-
01:10:12	ON	-	Cool	59	62	51	34	11	12	29	5	34	24	12	28	-	2.74	0.88	-
01:13:09	ON	-	Cool	66	72	49	35	30	31	32	15	36	28	12	27	-	2.82	0.84	-
01:16:08	ON	-	Cool	71	76	49	38	15	30	38	17	38	31	9	28	-	2.88	0.9	-
01:19:05	ON	-	Cool	74	78	49	39	16	34	38	14	39	30	6	28	-	3.02	0.88	-
01:22:20	ON	-	Cool	76	78	49	40	17	35	38	14	40	31	6	28	-	3.04	0.9	-
01:25:33	ON	-	Cool	74	77	49	34	28	28	31	12	34	26	9	28	-	2.7	0.88	-

Display item

• 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.
THD1	TH1	Displays discharge temperature 1. (*2)
THD2	TH2	Displays discharge temperature 2. (*2)
THD3	TH3	Displays discharge temperature 3. (*2)
THH1	—	Displays heat exchanger inlet temperature 1. (*2)
THH2	—	Displays heat exchanger inlet temperature 2. (*2)
THH3	—	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)
—	TH13	Displays the SCHEX inlet temperature. (*2)
HPS		Displays high pressure. (*3)
LPS		Displays low pressure. (*3)

MPS	—	Displays middle pressure. (*3)
—	4WV	Displays 4-way valve status.
—	SV1	Displays solenoid valve 1 status.
—	SV2	Displays solenoid valve 2 status.
—	SV3	Displays solenoid valve 3 status.
—	SV4	Displays solenoid valve 4 status.
—	SV5	Displays solenoid valve 5 status.
—	SV6	Displays solenoid valve 6 status.
—	SV7	Displays solenoid valve 7 status.
—	SV8	Displays solenoid valve 8 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.
—	Inverter CMP (Hz)	Displays drive frequency
—	Inverter CMP (°C)	Displays IGBT temperature.
—	Inverter CMP (V)	Displays DC voltage
—	Inverter CMP (A)	Displays CT current

• Page area

Page will be displayed, if number of items to be displayed exceeds 1 page.
(Refer to 5-14 Others screen (Display setting))

 & 	Page may be shifted back and forth every 10 page.
 & 	Signifies that there are no more page.
Page No.	Displays data corresponding to the page.



- *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 4-3 Environment setting.

■ Indoor unit

Display item

Page area

- 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)
THII	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.
MAX EEV	—	Displays maximum EEV value.
SVD	—	Displays discharge solenoid valve status.
SVS	—	Displays suction solenoid valve status.
SVB	—	Displays bypass solenoid valve status.

- Page area

Page will be displayed, if number of items to be displayed exceeds 1 page.
(Refer to 5-14 Others screen (Display setting))

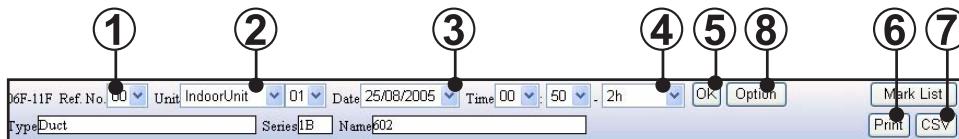
	Page may be shifted back and forth every 10 page.
	Signifies that there are no more page.
Page No.	Displays data corresponding to the page.

Note

i

- *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 4-3 Environment setting.

5-8-2 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.

* By specifying “One day”, the range will be 24 hours from the starting time.

⑤ OK button

Displays the history by specified condition.

⑥ Print button

Prints the displayed data.

⑦ CSV button

Displays the CSV save widow.

⑧ Set whether Display item (column) should be displayed or hidden.

Items to be set in the option screen is as follows. When display items are set, they will be displayed right-wise.

Checked ... display, Unchecked ... hidden

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].

5-8-3 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.

1. OK button (top right of window)

2. Cancel button (top right of window)

Header: The top section of the page containing site information, unit type, and date.

List: The main table of operation history data.

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 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

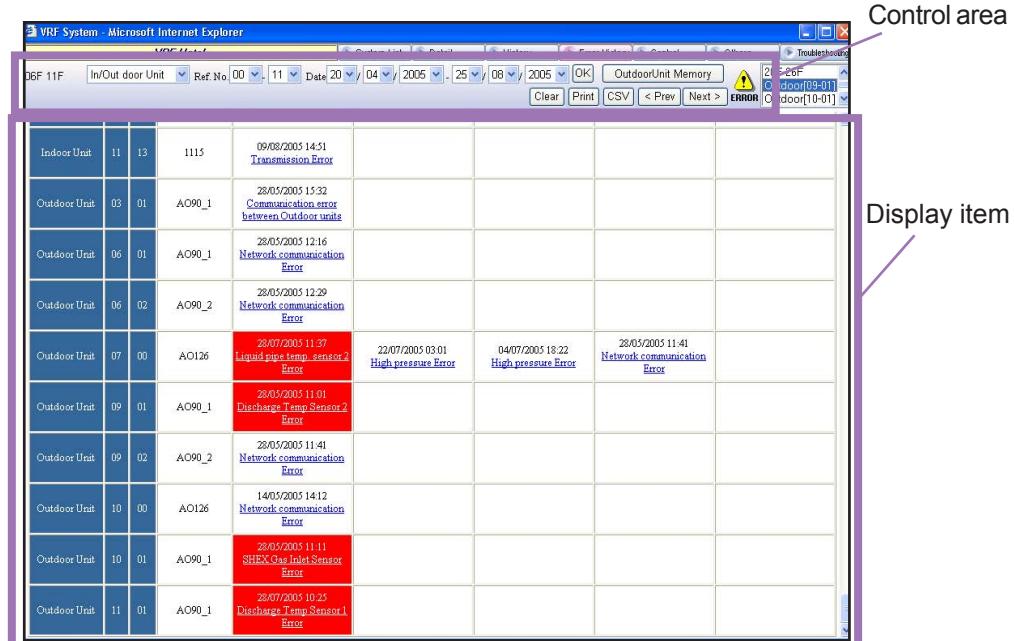


*1 Only indoor unit 1/1A display.

5-9 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.

5-9-1 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.
OutdoorUnit Memory	Displays error names recorded in the outdoor units.

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.

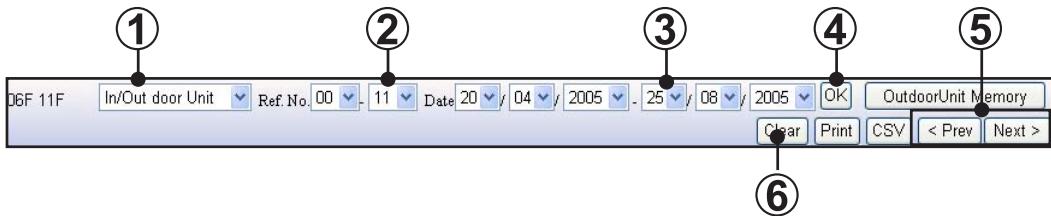
Note

*1 Only when preset



(Refer to 3-2-4 Name master database file selection screen.)

5-9-2 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 centralized remote 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 **i** *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 5-15) can be displayed by clicking the error contents of the display. However, excluding “TransmissionAdaptor” errors.

5-9-3 Error history printing

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

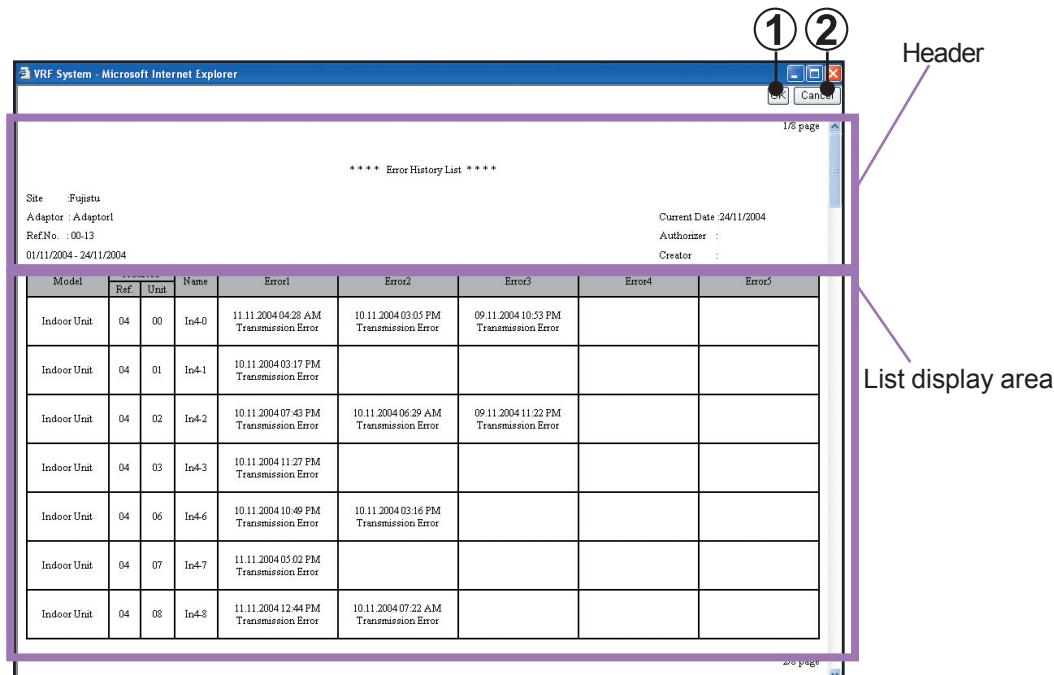
① OK button

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

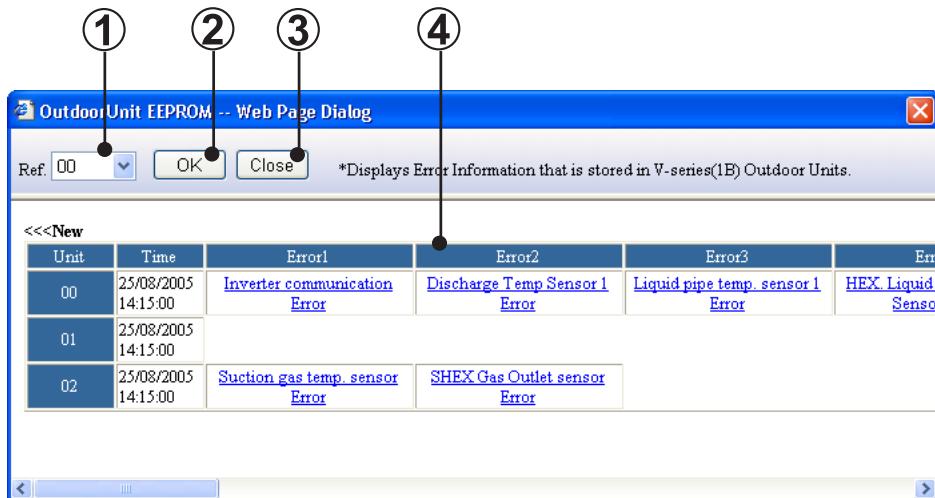
Site	Displays the site name.
Adaptor	Displays the transmission adaptor name.
Ref No.	Displays the specified refrigerant system range.
Date	Displays the date range of the specified data.
Current Date	Displays the current date.

List display area

List	Displays the error history list displayed on the screen.
------	--

5-9-4 Outdoor Unit Memory

By pressing the **OutdoorUnit Memory** button, the most recent error information recorded in the outdoor unit will be displayed. Using this screen, you can display the maximum of 20 error information of any specified outdoor unit.



- ① Specify refrigerant system address whose error records are to be displayed.
You may only specify refrigerant systems with V series (VRF-1B) outdoor units.
- ② Error information for the refrigerant system address specified in ① are displayed here.
- ③ Close this screen.
- ④ Display error information as described below.

Unit	Displays outdoor unit address.
Time	Displays the date & time when the error information was acquired from the outdoor unit.
Error1~20	[Error1] to 20- Displays error names acquired from the outdoor unit. When blank, no error exists. Errors will be sorted by time, [Error1] being the most recent error.

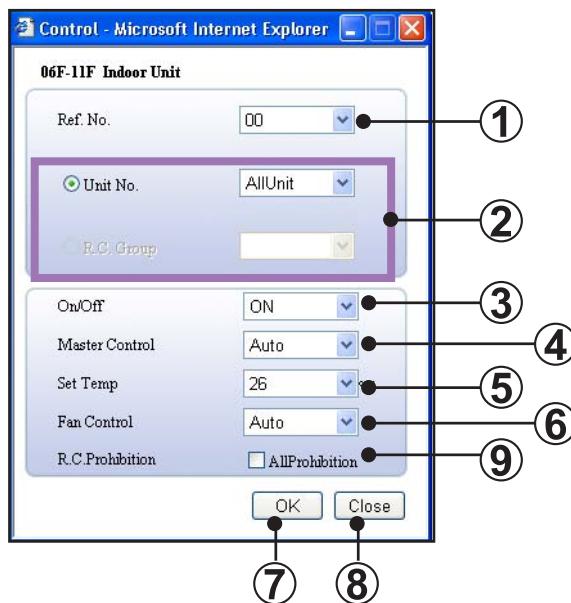
Note

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- This is a supplementary screen to the Error History Screen. Use This screen to check errors not confirmed in the Error History Screen.
- There are cases where the information in this screen and that of Error History Screen do not match. This is because of the differences in the information between the 2 screens.
 - a)Error History Screen displays errors real-time and the data may be deleted at will.
 - b)This screen displays errors recorded in the outdoor unit at one time.
- Errors in this screen do not have information on dates.

5-10 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.

⑨ R.C. Prohibition

Specify that all operation using remote controller will be prohibited. *2

Checked ... Not prohibited, Unchecked ... Operation prohibited.



*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

*2 When setting the R.C. Prohibition, be sure to release the prohibition afterward.

5-11 Others screen

Various setting may be performed and any existing data may be downloaded.

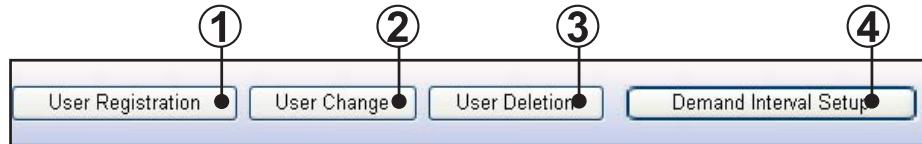
When the Others button is clicked from the main menu, the following Others menu is displayed at the bottom of the main menu.

Setting	User Registration, Change, Deletion/Set Request Interval
Download	Save/Download Data
Display setting	Set Auto-Refresh Interval/Set Number of History Data

Setting	Performs new user registration, user password change, registered user deletion, and demand interval setup. (Refer to 5-12 Others screen (Setting))
Download	Any unit data currently displayed can be saved. (Refer to 5-13 Others screen (Download))
Display setting	Setting Auto-refresh interval and maximum No. of lines per page. (Refer to 5-14 Others screen (Display setting))

5-12 Others screen (Setting)

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



- ① User registration button
Shifts to the user 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.

5-12-1 User registration

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

The screenshot shows the 'User Registration' page of the VRF System. At the top, there are tabs for 'User Registration', 'User Change', 'User Deletion', and 'Demand Interval Setup'. The 'User Registration' tab is active. Below the tabs, the page title is 'User Registration'. There are three input fields: 'New UserID', 'New Password', and 'Confirm New Password'. Below these fields is an 'OK' button. Four numbered callouts (1, 2, 3, 4) point to these elements: 1 points to the 'New UserID' field, 2 points to the 'New Password' field, 3 points to the 'Confirm New Password' field, and 4 points to the 'OK' button.

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

For confirmation, 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 confirmation input contents, an error message is displayed.

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

5-12-2 User change

The password of a registered user can be changed.

The screenshot shows the 'User Change' section of the VRF System interface. It includes fields for UserID (containing 'vrf'), Password, New Password, and Confirm New Password, along with an OK button. Numbered circles 1 through 5 point to these fields and the button.

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 confirmation input field

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

⑤ OK button

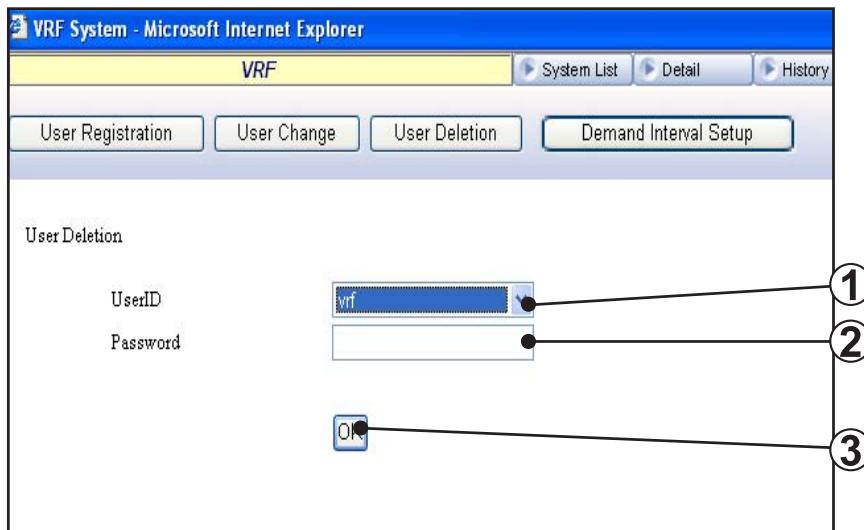
Performs change processing according to the inputted contents. (*3)



- *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 confirmation 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.

5-12-3 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

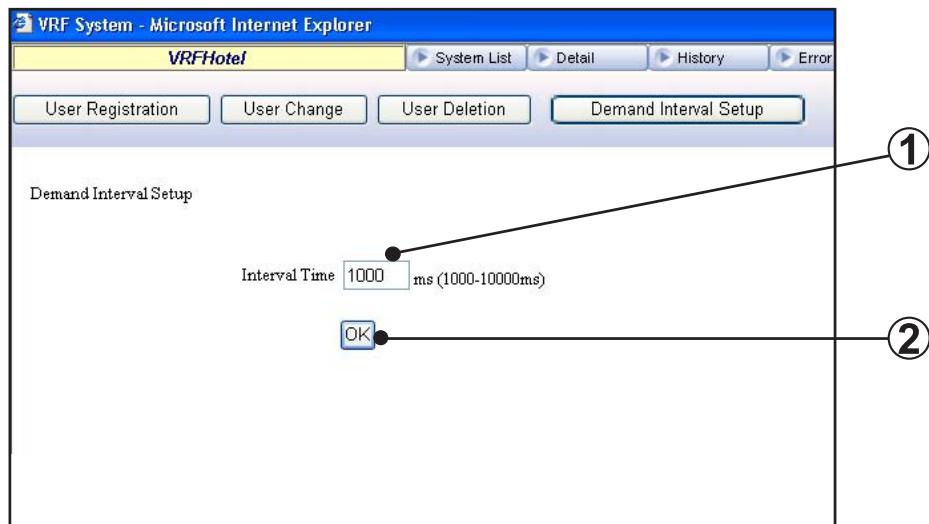


*1 When the password input field is not inputted, an error message is displayed.

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

5-12-4 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.

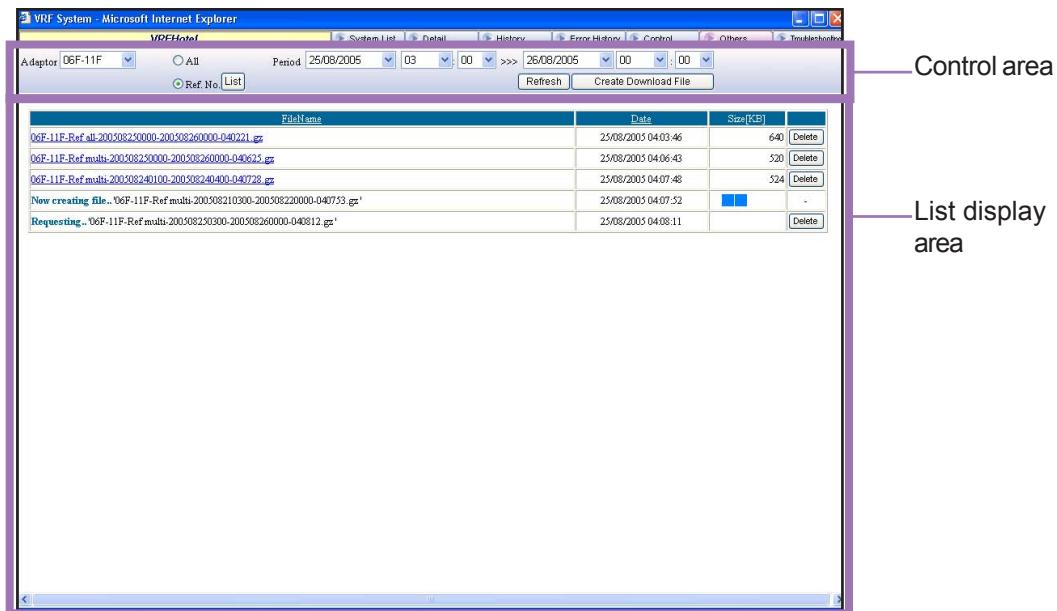


Note *1 The currently set time is displayed by default. Only the numerics 1000 to 10000 (ms) can be inputted. When input is incorrect or there is no inputted, an error message is displayed.

5-13 Others screen (Download)

Any unit data currently displayed can be saved. The saved data may be displayed as offline data for Service Tool Ver. 3.2.

When the Download button is clicked from the Others screen, the following setting menu is displayed at the bottom of the main menu.



5-13-1 Name and function of each area

■ Control area

Specify the conditions and creation of data file to be downloaded.

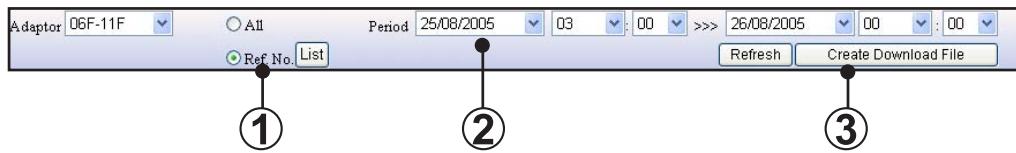
Adaptor	Displays the transmission adaptor name.
All & Ref.No.	Specify the refrigerant address of the data file.
Period	Specify the period of the data file.
Refresh	Update the contents of "List display area".
Create Download File	Create data files.

■ List display area

Display the list of created data files. Also, any data files may be specified for download and/or deletion.

FileName	Display the file names created in the Control area. Also any data file may be downloaded.
Date	Display date of creation of the data files.
Size	Display the size (in KB) of the data files created. When creation is in progress, display the status of progress.
Delete	Delete any data file.

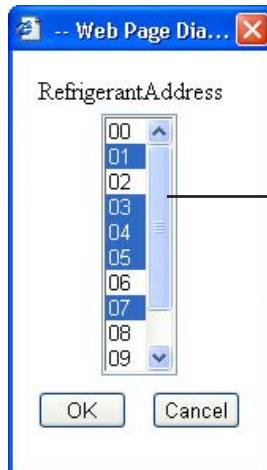
5-13-2 Procedures for Creating Download Files



① All & Ref. No.

Specify the range of refrigerant system of the data files to be created by one of the following methods. If Ref. No. is specified, refrigerant address selection screen will be show up by pressing the List button. Specify the desired refrigerant address here.

- All All refrigerant addresses are specified.
- Ref. No Refrigerant address selected in the refrigerant address selection screen will be specified.



Refrigerant Address selection screen

② Period

Specify the period (Start >> End) of the data file to be created by date and time.

③ Create Download File

Start creating data files using the condition specified by ①, ②. Creation progress may be checked with the FileName in the "List display area".

- FileName format is as follows;
[Transmission adaptor name - Ref all or Ref multi *- Period - time]
* Ref all ... All / Ref multi ... Ref.No.
- There 3 progress status.
 - Completed ... Only File name (File name will be underlined)
 - Creating ... Now creating file ... File name
 - Waiting ... Requesting ... File name

5-13-3 Data file download/deletion

FileName	Date	Size[KB]	
06F-11F-Ref all-200508250000-200508260000-040221.gz	25/08/2005 04:03:46	640	<input type="button" value="Delete"/>
06F-11F-Ref multi-200508250000-200508260000-040625.gz	25/08/2005 04:06:43	520	<input type="button" value="Delete"/>
06F-11F-Ref multi-200508240100-200508240400-040728.gz	25/08/2005 04:07:48	524	<input type="button" value="Delete"/>
Now creating file.. '06F-11F-Ref multi-200508210300-200508220000-040753.gz'	25/08/2005 04:07:52	-	
Requesting.. '06F-11F-Ref multi-200508250300-200508260000-040812.gz'	25/08/2005 04:08:11		<input type="button" value="Delete"/>

①

1 Download

Click on the (underlined) file name that you want to download.

②

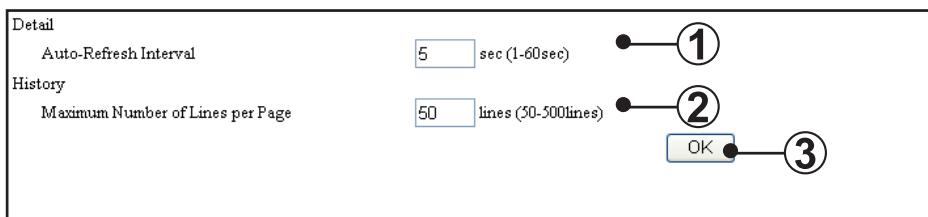
2 Delete

Click on the “Delete” button on the same line as the file name that you want to delete.

5-14 Others screen (Display setting)

Make display setting for the “Detail” screen and “Operation history” screen.

When the Display setting button is clicked from the Others screen, the following setting menu is displayed at the bottom of the main menu.



① Auto-Refresh Interval (*1)

Set “Detail” screen update interval. This defines not the screen update interval but interval for checking the existence of updated data. The check will be performed in this interval and if the data is updated, the screen display will be updated.

② Maximum number of Lines per Page (*1)

Defines the maximum number of data that can be displayed in a page of Operation history screen.

③ OK

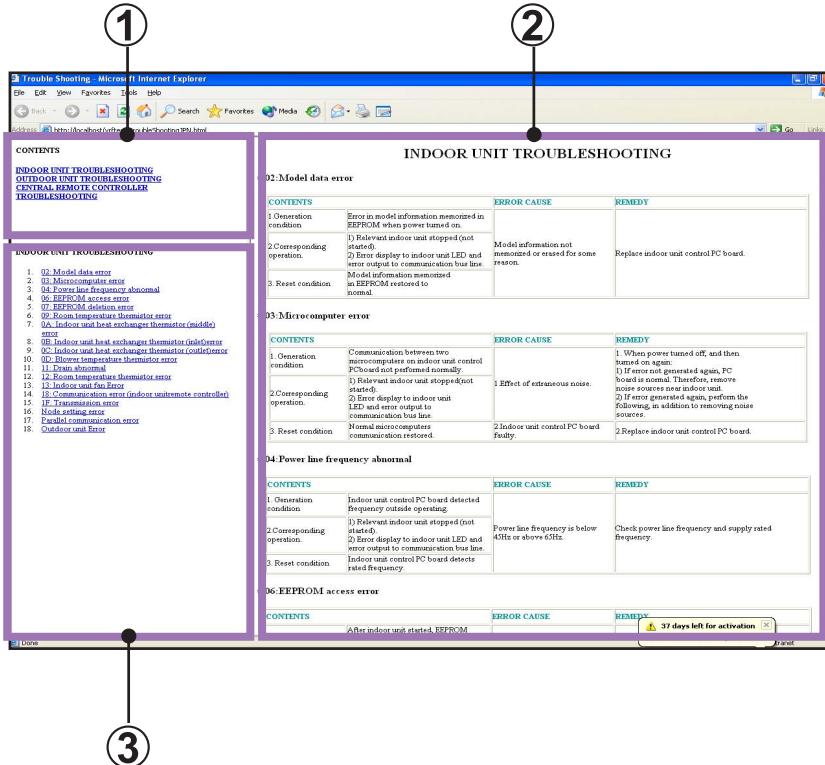
Register the data set in ①, ②.

Note *1 Depending on the performance spec. of personal computer used, operation of this software may become slow. In such case, re-adjust the value set and check the operation.

5-15 Troubleshooting screen

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

5-15-1 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.

5-16 When error generated

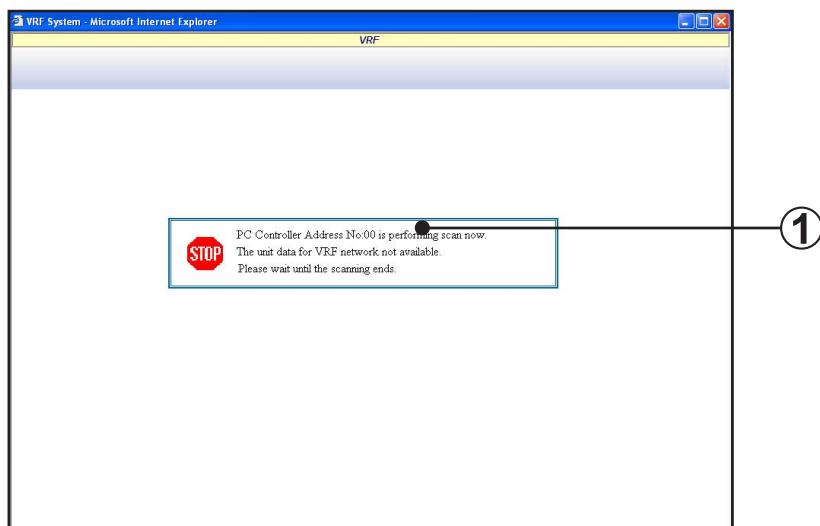
When the service tool (WEB application) cannot be used, the following screen is displayed.

5-16-1 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.

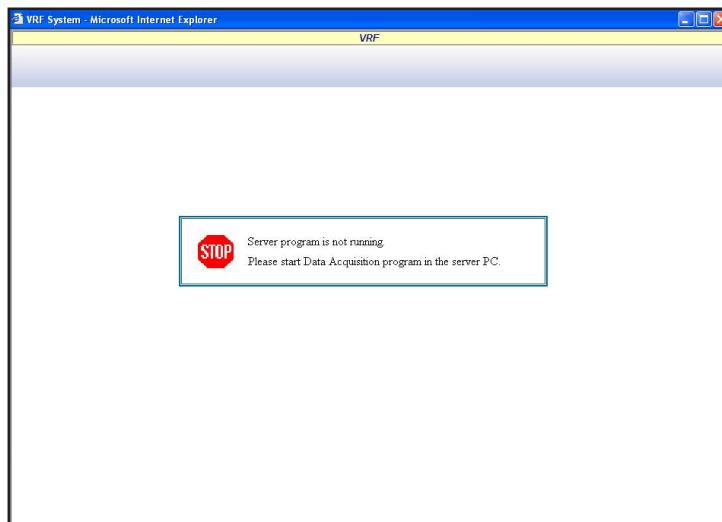
① Message

The unit name being scanned is displayed.



5-16-2 Data acquisition application shutdown

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



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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

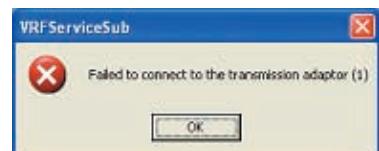
- When using UTR-YTMA

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.



- When using U10 USB Network Interface

① Driver is not installed.

② Power is not supplied to the transmission adaptor.

Countermeasure

- When using UTR-YTMA

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.

- When using U10 USB Network Interface

① To use this product, install necessary drivers/software for this product following the ***QUICK START*** enclosed with this product.

② Make sure that USB equipment (USB hub, etc.) that this product is connected to, is not overloaded (power supplied thru the interface does not exceed the maximum limit).

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”.

T-11 Pop-up window does not show up in the Service Tool screens. (Control screen, Commissioning tool, etc.)

Cause

Pop-up Blocker is enabled in the Internet Explorer.

Countermeasure

- ① Open Internet Explorer → [Tools] → [Pop-up Blocker] and check [Turn Off Pop-up Blocker]
- ② If any of the search tool bar from various search engines (Yahoo, Google etc.) is installed, disable the Pop-up Blocker.
(For detail, refer the help of each toolbar.)

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.

