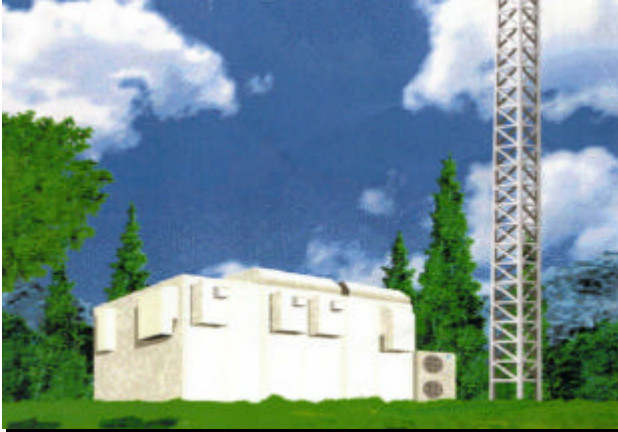




DS-NET

Model DPC001A51



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Glossary

Before Use

Thank you for purchasing DS-NET system software.
This instruction manual contains notes for safe use of the product.

For correct use, be sure to read this manual carefully beforehand.

License Agreement

The user acknowledges that the obligations and liabilities of Daikin Industries in respect of the DS-NET software ["the software"] are exhaustively defined in this agreement.

Daikin Industries will not be liable to the user or any third party for any direct, indirect or consequential loss, damage, cost or expense of any kind whatsoever and however caused whether arising under contract, tort [including negligence] or otherwise, including [without limitation] the entire cost of service or repair, loss of or corruption to data, loss of profits or of contracts loss of operation time and loss of goodwill or anticipated savings, even if Daikin Industries has been advised of their possibility.

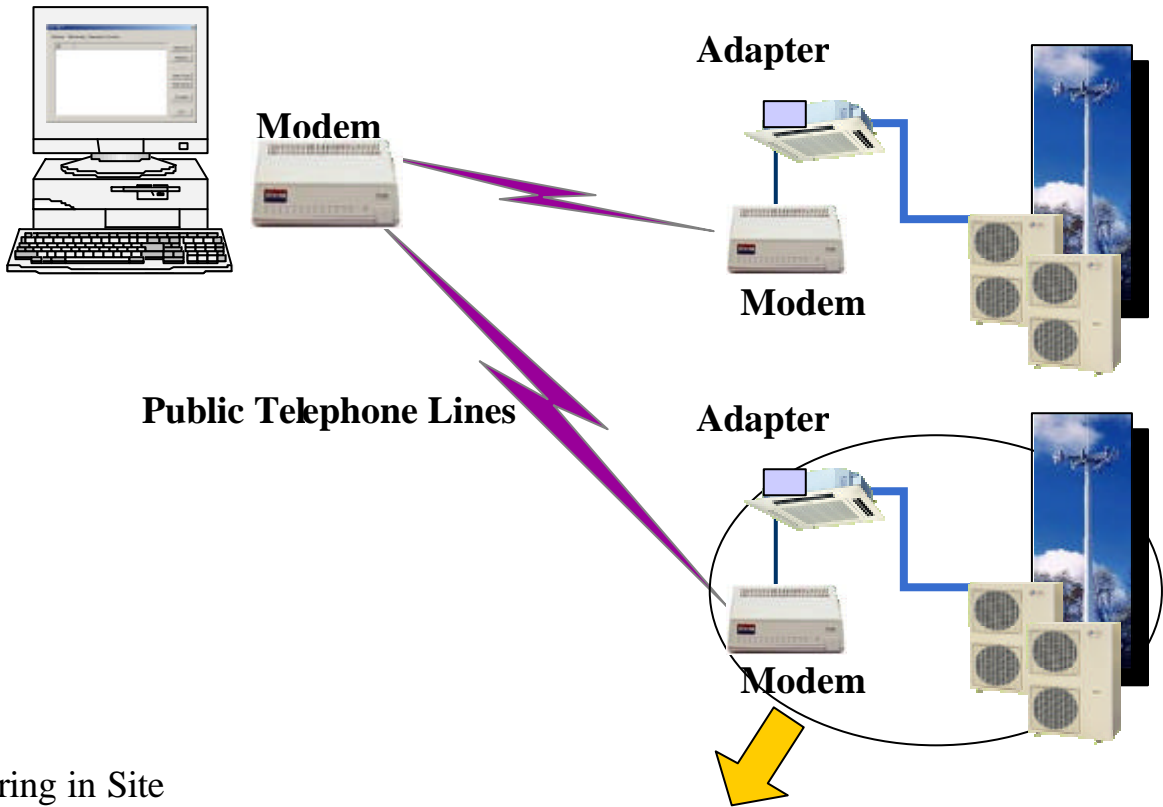
Good data processing procedure dictates that any software program be thoroughly tested with non-critical data before relying to it.

The user must assume the entire risk of using the software

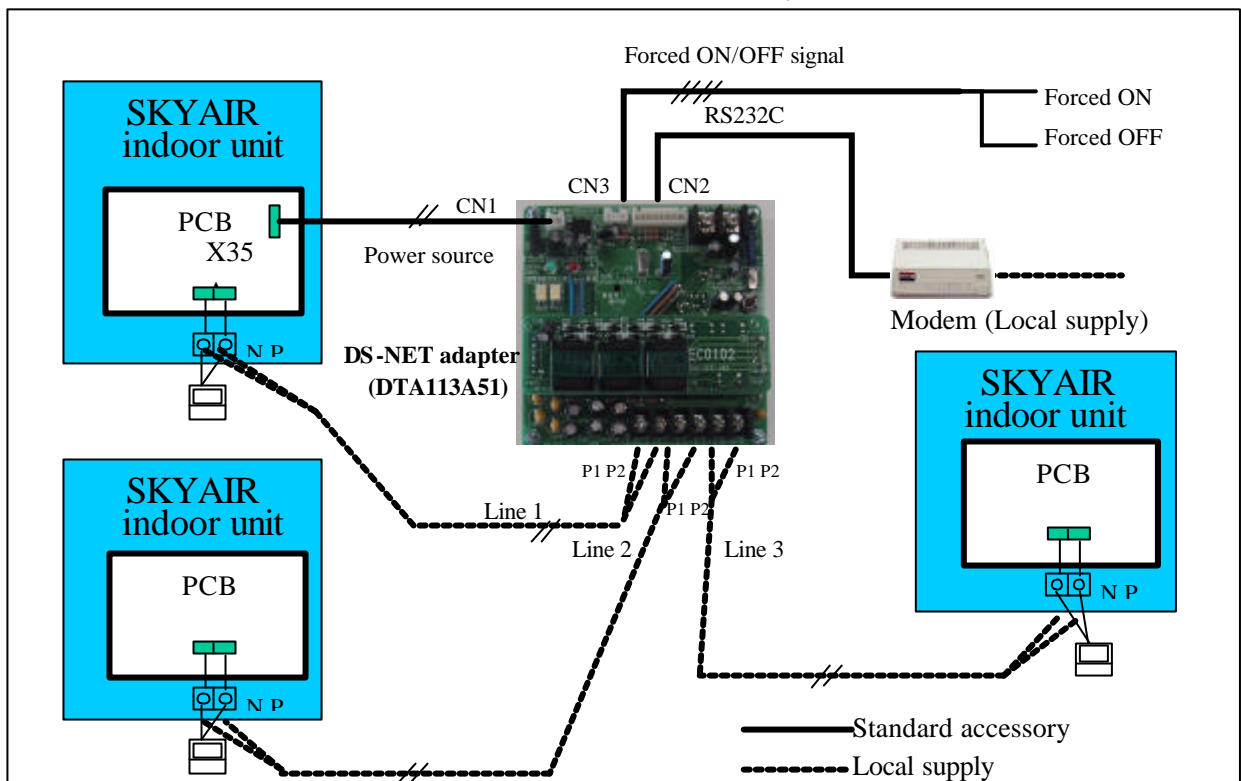
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System Overviews

DS-NET is a light system that allows remote malfunction monitoring and remote operation of A/C units installed in locations such as unmanned remote telecommunications shelters(site) communication sites. Furthermore, in addition to monitoring and reports of malfunctions detected by adapters installed at the site, it also allows local control such as backup operation and intermittent operation.



Wiring in Site

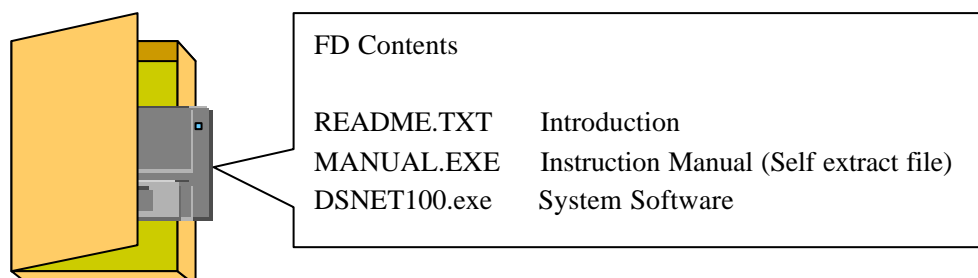


Installation

1. Contents

This manual and DS-NET software are on the floppy disk (FD).

Fig. 1-1. FD and Contents



2. Introduction

Before installing the software, confirm the following:

Disk Space:

Secure 1G Byte of disk space for the daily operations of the DS-NET, such as the log files.

Windows Version:

DS-NET is supported by Windows2000 and WindowsNT4.0. For systems operating on WindowsNT4.0, make sure that the ServicePack4 (SP4) or later version has been installed. DS-NET supported by English version. It is not supported by 2 byte character language such as Chinese, Japanese.

Power Saving Function

DS-NET continually operates to monitor A/C unit operations. Therefore, if the PC has been set to automatically shut off with the Windows Power Saving function or the like, deactivate this setting.

Modem

DS-NET supported by modem compatible with AT and extended AT command set.

It is recommended ZOOM/FAXMODEM 56Kx DUAL MODE(Model2948) made by ZOOM Telephonics, Inc.

3. Installation of PC/Modem

With the PC, modem and the like turned off, connect the recommended modem to the COM1 port on the PC. Turn on the modem and PC and start Windows.

During PC startup, the Plug and Play function will automatically search for the modem and request installation of a driver. Click on the Cancel button because DS-NET does not require a modem driver. Even if a modem driver is installed, no problems will occur.

Note: In order to use this system, adapters must also be installed at each site.

In order to avoid any communication problems, such as compatibility between modems, use the same modems for the PC and sites.

4. Software Installation

4-1. Installation with a FD

If necessary, create an installation folder and start the DSNET100.EXE file on the FD. A dialog box to enter the name of the folder to which the system is to be installed will be displayed. Type in the name and click on the OK button. The folder will be created and files will be copied.

Note:

Rapid installation is possible by installing after copying the file of FD into the hard disk.

Fig. 4-1. Install icon



Fig. 4-2. Dialog (Specification of installation folder)

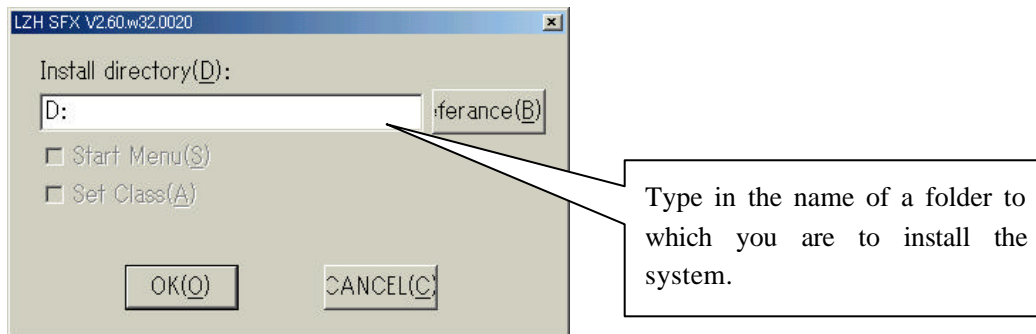
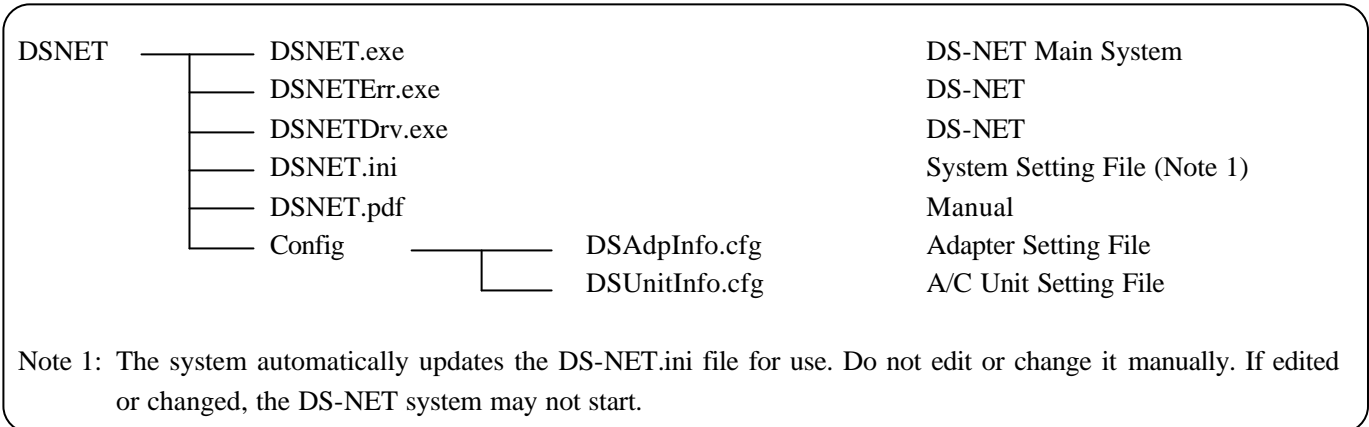


Fig. 4-3. Files to be installed



Among the folder and files that have been installed, DSNET.EXE is the main software within the DS-NET system. If necessary, create a shortcut on the desktop or any other suitable location. When doing so, always specify that the working folder is one in which the DSNET.EXE file has been installed.

4-2. Editing the Setting File

In order to use the DS-NET system, information regarding the site and A/C units must be created. The folder into which the DS-NET has been installed is the config folder that contains samples of setting files. The config folder contains the following sample files. Refer to these, appropriately editing to suit the end user's environment. These files are in text format, so they can be edited with applications such as NotePad and MS-Excel.

Caution: When registering and making changes, always conduct a complete scanning of all sites in order to align with the settings for each site.

Note: Before creating any data, it is recommended that once the necessary information has been entered onto the data sheet attached to Appendix A, the setting files be modified according to the sheet content.

DSAdpInfo.cfg	Setting file concerning adapters
DSUnitInfo.cfg	Setting file concerning A/C units

4-2-1. Setting File of Adapters information (DSAdpInfo.cfg)

This file consists of the following formats separated by commas.
Each line defines one site (adapter).

Note: Do not use commas in the specified character string.

Adapter Name, Adapter ID, Site TEL No., Center TEL No, Site Name, 1

Adapter Name:	Name of the adapter (Note 1) (Max. of 32 bytes)
Adapter ID:	Identification given to the adapters (Note 2) (16 characters)
Site TEL No:	Telephone number for the site (adapter) (Note 3) (Max. of 30 characters)
Center TEL No:	Telephone number of the monitoring center (Note 4) (Max. of 30 characters)
Site Name:	Name of sites (Note) (Max. of 16 bytes)
1:	Always specify 1.

Note 1: Can be specified with any string of numbers and alphabet letters.

Note 2: Specify an ID consisting of 16 numbers.

Specify all 16.

<Important> These IDs must be unique within the system.

Note 3: Specify the telephone numbers using numbers and hyphens.

<Important> As with the Adapter ID, Site TEL No. must be unique within the system.

Note 4: Specify the telephone numbers using numbers and 'B'. (Don't specify hyphens.)

Place the letter, 'B', at the head of the number.

Within this system, the same numbers are specified on each line.

Setting Example

ADP001,1231231230000001,123-4567-1111,B1112223456,Site-A,1
ADP002,7897890000000001,123-4567-2222,B1112223456,Site-B,1

4-2-2. Setting File of A/C Units information (DSUnitInfo.cfg)

This file consists of the following formats separated by commas.
Each line defines one A/C unit.

Note:

Do not use commas in the specified character string.

Serial No, A/C Name, Adapter ID, Line No

Serial No:	A serial number (Displayed as the number for the Main screen: 1 to 150) (Note 1)
A/C Name:	Name of the A/C unit (Note 2) (Max. of 16 bytes)
Adapter ID:	The identification code for the adapter connected to the specific A/C unit (Note 3) (16 characters)
Line No:	Number of the connected adapter(s) (Either 1, 2 or 3)

Note 1: Must start with a 1 and be sequential number.

Note 2: Can be specified with any string of numbers and alphabet letters.

Note 3: Specify the Adapter ID registered in the DSADpInfo.cfg

Setting Example

1,SiteA-A/C1,1231231230000001,1 2,SiteA-A/C2,1231231230000001,2 3,SiteA-A/C3,1231231230000001,3 4,SiteB-A/C1,7897890000000001,1 5,SiteB-A/C2,7897890000000001,2

Note:

At first, DS-NET system will use the values of adapters as system initial values of adapters. Therefore, when installing adapters on local site, please set the initial values to adapters by R/C on site, or from remote by DS-NET system.

4-3. Check by DS-NET Start

4-3-1. Start and Default Settings

a) When the DS-NET system is started, it automatically checks whether the set files have been done so correctly.

If not, a message will appear and the system will not be started.

Correct the setting files according to the message.

b) When the system has been started, enter a character string in the Login dialog to log in and conduct the following settings with the System Setting function.

Password default settings

Register the password. After doing so, this password will become necessary when logging in.

Do not forget the password.

Setting for the warning sound file

Specify the sound for the buzzer that will be set off in the event a malfunction is detected.

c) Scanning from All Sites

Scan all the sites that have undergone a complete manual scanning in order to gather and send the latest information. In the event a communication error or malfunction occurs while scanning, confirm the source because it could be due to a setting error for the DS-NET system or a problem involving the sites (adapters).

Note: When registering and making changes, always conduct a complete scanning of all sites in order to align with the settings for each site. Until the scanning is conducted, the settings will not be reflected in the sites.

d) Detailed Settings

Allows settings for each site (adapter) and the system settings.

e) Backup Recommendations

After all settings and confirmation have been completed, shutdown the DS-NET system and create a backup of all the installed folders for the system.

Note:

The DS-NET system keeps the latest information and log data from daily monitoring. In order to prevent the loss of this data due to PC malfunction and the like, it is recommended to obtain a backup everyday with the appropriate Windows function. All the files in the DS-NET system can be copied with the system started.

4-3-2. Confirmation when the System does not Start

Some of the possible reasons for the DS-NET system not starting are setting errors on the DS-NET system and devices such as the site adapters and modems not being properly connected.

No communication, at all: Confirm whether the modem is correctly connected to COM1 port and if it is plugged in.

Unable to conduct communication with particular sites: Error in setting the telephone number of the DS-NET site.

Communication error involving particular A/C units: Error in setting the line number.

Operation

1. Start and Stop

The DS-NET system can be started by double clicking on the icon in Fig. 2-1 or the shortcut icon linked to this icon. Once the system has been started, the Main screen as shown in Fig. 3-1 will appear.



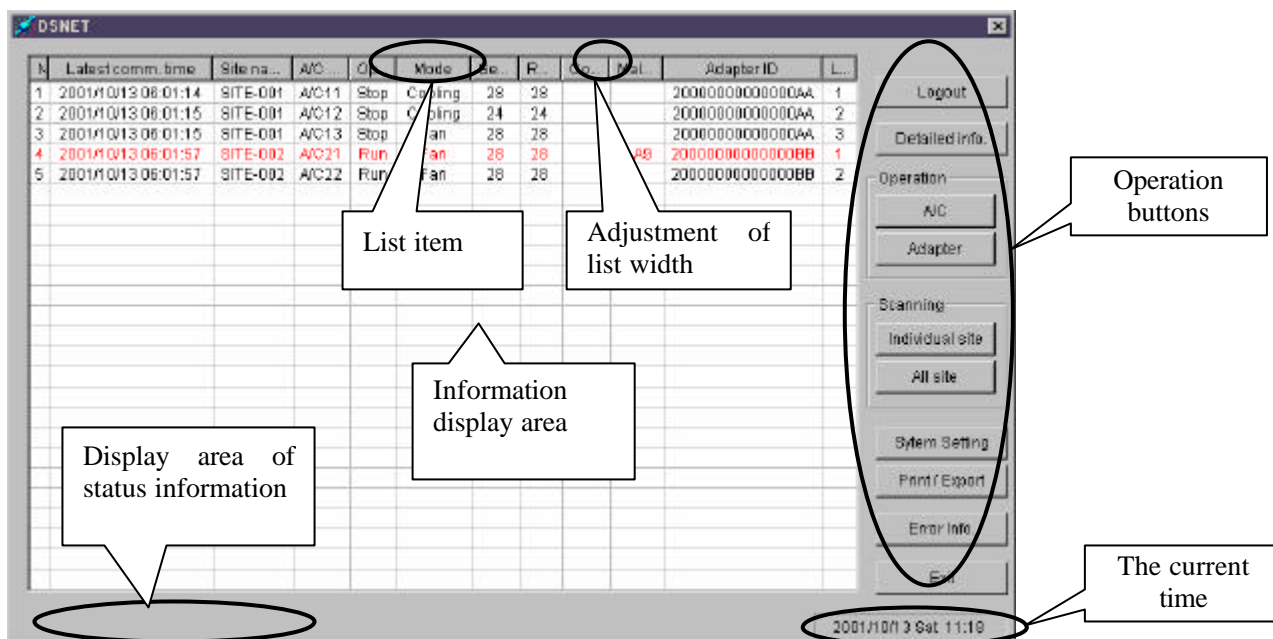
The program can be exited by clicking on the Exit button on the Main screen.

In regular circumstances, keep to continuously execute the DS-NET system.. The DS-NET system cannot detect or monitor any malfunctions, such as those at the site, that may occur while the system is shutdown.

2. Main Screen

Starting the DS-NET system will bring up the Main screen at which time monitoring will commence. Particulars such as the placement and size of the displayed window can be adjusted. These adjustments are recorded and used the next time the system is started.

Fig. 3-1. Main screen



- Adjustment of list width:** By manipulating the edge between each item, the width of the item display can be adjusted.
- List items:** Clicking upon the item labels allows changes to the display order (such as sorting).
- Status area:** Information, such as that concerning functions currently in operation, is displayed.
- Screen size adjustment:** The size of the window can be adjusted by 'stretching' the corner of the window. However, the window cannot be adjusted to a size less than the minimum.

List Displays: The following information is displayed.

Number:	Serial number
Latest comm. time:	The time of the most recent communication (Note 1)
Site Name:	The name given to the particular site
A/C Name:	The name given to the A/C
Operation	Operation status(Run/Stop)
Mode	Operation mode(Cooling/Heating/Fan)
Set point	Set point of temperature
Room temperature:	Room temperature (Suction temperature is used as the room temperature.)
Comm. Status:	Information regarding communication (Note 1 and 2)
Malfunction code:	The code when malfunctions are detected in the A/C units. (Note 2)
Adapter ID:	The individual ID given to each site
Line No:	The port number for the adapter at each site connected to a maximum of 3 A/C units

Note 1: All the information pertains to that obtained at this time.

Therefore, the information/data on the screen may not correspond with the current status of the A/C units.

Note 2: See Appendix D for the Malfunction code and Comm. Status codes.

The line will be highlighted in red when a malfunction is detected.

Note 3: An error message informing the user of a busy phone line is displayed.

When communication errors have been detected, the line will be highlighted in blue.

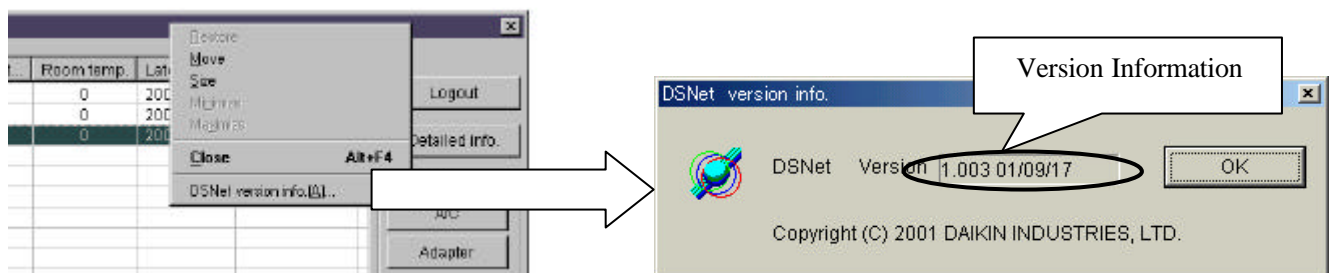
Operation Buttons: These buttons allow all the available operations. See the explanation that follows for details.

Login / Logout:	Allows verification in order to enable operation.
Detailed Info.:	Displays the detailed information/data regarding the A/C units and adapters.
Operation:	Allows operation and setting of the A/C units and adapters.
Scanning:	Allows manual gathering of information/data regarding specific A/C units as well as all A/C units in the system.
System Setting:	Allows system setting.
Print/Export:	Allows printing or export of list contents
Err. Info.	Displays a list of currently detected error information.
Exit:	Allows end user to exit the DS-NET system.

Version Information

Version information is displayed by right-clicking on the Title bar on the Main screen.

If any questions or inquiries, forward them along with the version information displayed here.

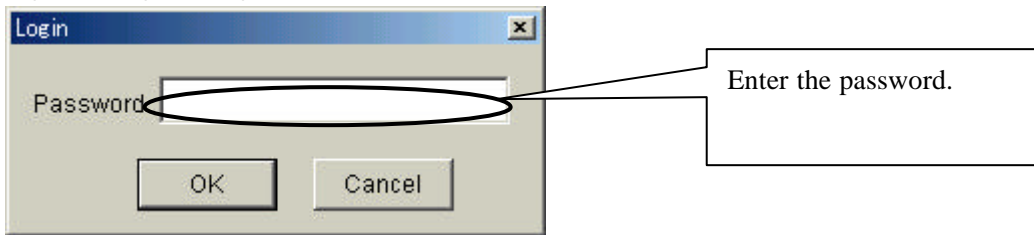


3. Function and Operation

3-1. Login

Login allows verification of the end user in order to obtain the authority to operate the system. Logging in allows the end user to conduct all operations. When logged out, the end user can only view a list of the error information. The password is set along with the system settings.

Fig. 3-1. Login dialog

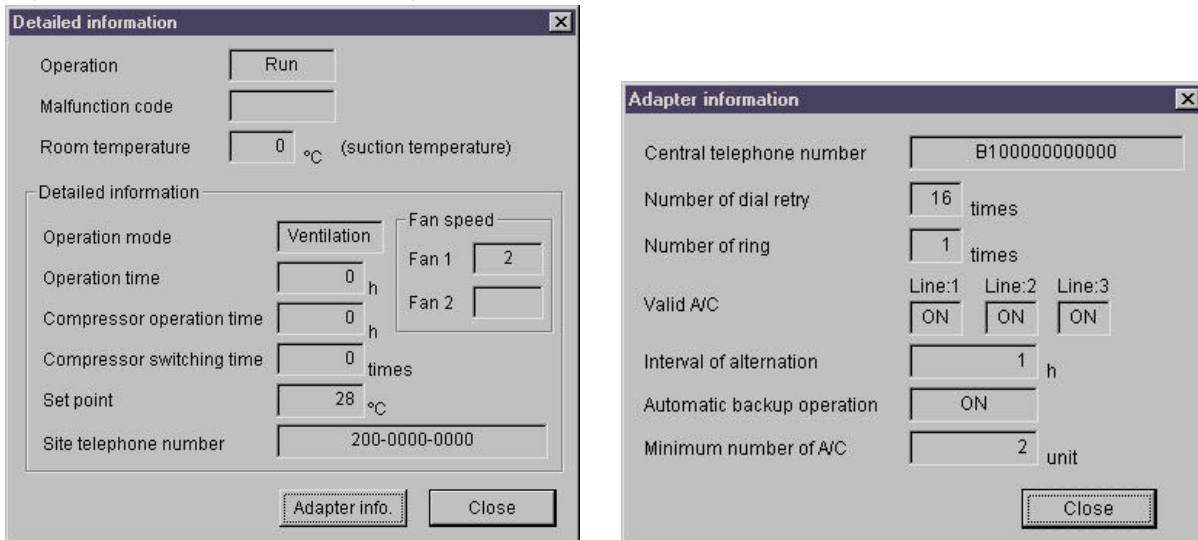


Note: The end user can log in immediately after installing the system by inputting a character string of choice. Therefore, the password must be set with the system settings.

3-2. Detailed Information (A/C unit and adapter information)

The Detailed Information dialog displays the most recently gathered information, so it may differ with the current status of the A/C units. In order to obtain the most recent information, engage in individual or all-site scanning to gather the necessary information.

Fig. 3-2. Detailed Information dialog



A/C Unit Detailed Information

Operation:	Run/Stop status
Malfunction code:	The code used when a malfunction has been detected (blank when none have been detected)
Room temperature:	Room temperature (Suction temperature is used as the room temperature.)
Operation mode:	The mode of operation (Dry is displayed as Cooling.)
Operation time:	Displays the total accumulated amount of operation time. (Note 1)
Compressor operation time:	Displays the total accumulated amount of operation time for the compressor. (Note 1)
Compressor switching time:	Displays the number of compressor switches. (Note 1)
Set point:	Displays the set temperature(s).
Site telephone number:	Displays the site (adapter) telephone number.
[Adapter info.] button:	Displays the detailed information concerning the adapters.

Adapter Detailed Information

Center telephone number:	Displays the telephone number for the PC (Center) registered in the adapter.
Number of dial retry:	Displays the number of redials when the adapter is attempting to report information. (Note 2)
Number of ring:	The number of rings until the adapter will receive a call
Valid A/C:	Displays the connection status of the ports for each adapter to the A/C units. ON: A/C units are installed. OFF: A/C units are not installed.
Interval of alternation:	Displays the alternation interval for the intermittent operation.
Automatic backup operation:	Displays the activated or deactivated status of the backup operation function.
Minimum number of A/C:	Displays the minimum number of A/C units that can be operating.

Note 1: This cumulative data is reset to 0 in the A/C unit settings.

The data is not a strict representation of the measured time, but only an approximation.

Note 2: When the Center is busy, the adapter redials as many times as specified in order to send necessary information/data. If it is unable to send this information/data within the specified number of redials, they will not be sent. In such a case, the malfunctions will be detected only when the automatic or manual scanning is conducted at the Center.

3-3. Monitoring of Malfunctions

Malfunctions and errors are monitored in two manners; one involves automatic scanning of all sites at a predetermined time, and the other, all-site or individual scanning of A/C unit status on a manual bases. Furthermore, when the adapter at the site has detected a malfunction in an A/C unit, the respective information is gathered with a report from the adapter.

3-3-1. Regular Automatic Scanning

Scanning is automatically initiated at a predetermined time up to four times per day. While the automatic scanning is being conducted, a message displayed in the status area indicates this.

Note:

When trying to engage in manual scanning or individual operation/setting of A/C units and/or adapters during automatic scanning, the system will stop the automatic scanning after the end user has confirmed the related message in order to engage in manual operation.

3-3-2. Manual All-Site Scanning

Initiates the scanning of all sites.

If it is initiated during automatic scanning, the system will stop the automatic scanning.

3-3-3. Individual Scanning

Initiates scanning of A/C units selected from the given list.

If it is initiated during automatic scanning, the system will stop the automatic scanning.

Note: Even with individual scanning, information/data regarding all the A/C units connected to the same adapter that operates with the specified A/C unit(s) will be gathered.

Note:

- DS-NET system can not monitor the power failure.
 - When malfunctions and some errors were released on local site, detected information will be cleared automatically at scanning time.
 - It takes 30-60 seconds for scanning of one site.
-

3-4. Operation

3-4-1. Remote A/C Operation

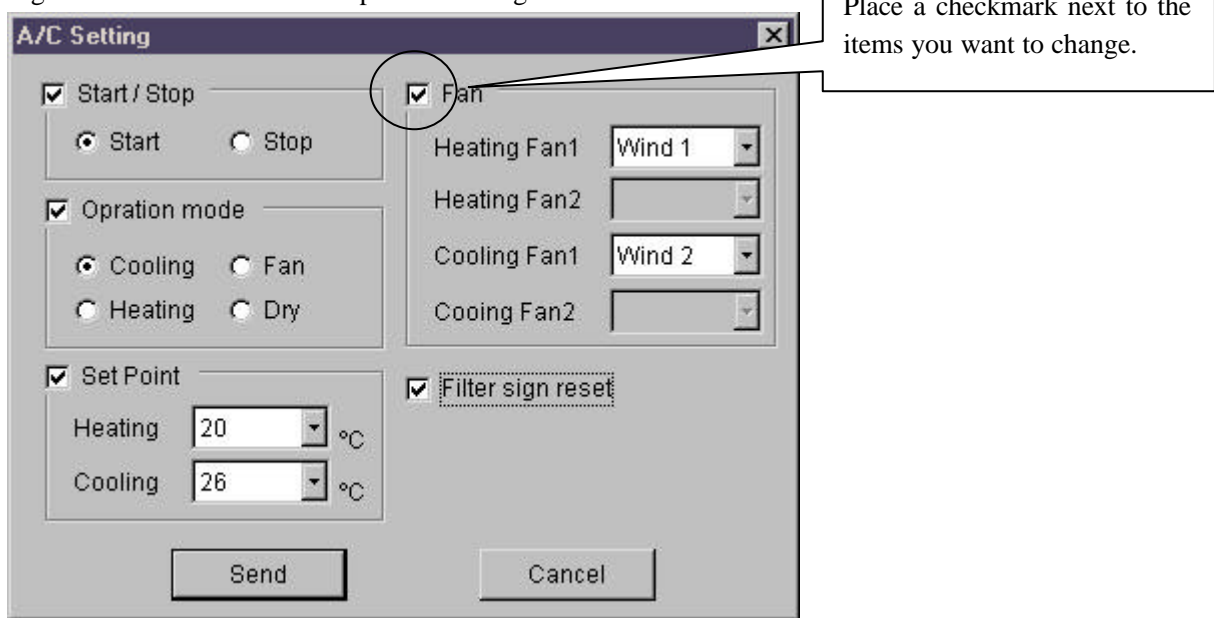
The A/C units selected on the list are operated.

Placing checkmarks in the check boxes of the items to be operated, specifying the settings and clicking on the Send button starts communication, which sets the A/C units. This communication also enables gathering of information/data on the A/C units.

Caution:

The A/C units are set by clicking on the Send button, but may not be immediately set as specified and, in some cases, the commands may not be reflected on the Main screen or in the detailed information. Moreover, local control, including intermittent operation, by the adapter can allow control immediately after the A/C unit is remotely operated. For the important operations, wait several minutes to gather information for confirmation by manually scanning each A/C unit.

Fig. 3-4-1. A/C Unit Remote Operation dialog



- Start/Stop: Starts and stops operation.
- Operation mode: Specifies operation mode. (Note 1)
- Set point: Sets temperature during cooling and heating. (Note 1)
- Fan: Sets the air flow rate. (Note 1)
- Filter sign reset: Resets the filter sign.

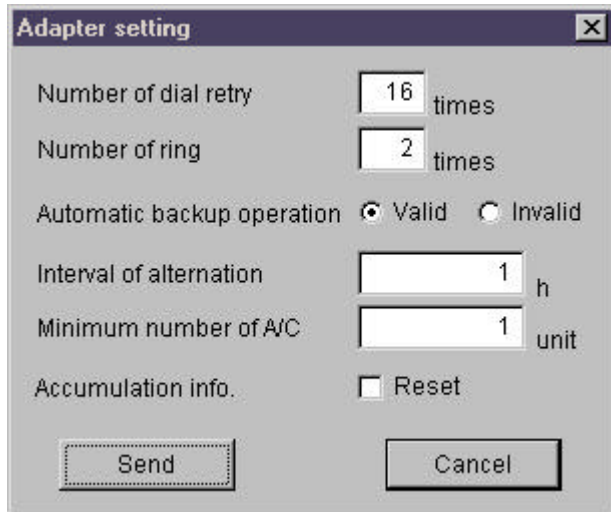
Note 1: With regard to this information, the range (items) of information depends on the A/C unit. When the item cannot be operated, it will be displayed in relatively lighter lettering, not allowing selection.

3-4-2. Adapter Operation

Set the adapters connected to the A/C units that have been selected on the list.

Specifying the settings and clicking on the Send button starts communication, which sets the A/C units. Meanwhile, this communication also enables gathering of information/data on the A/C units that are connected to the adapters.

Fig. 3-4-2. Adapter Operation dialog



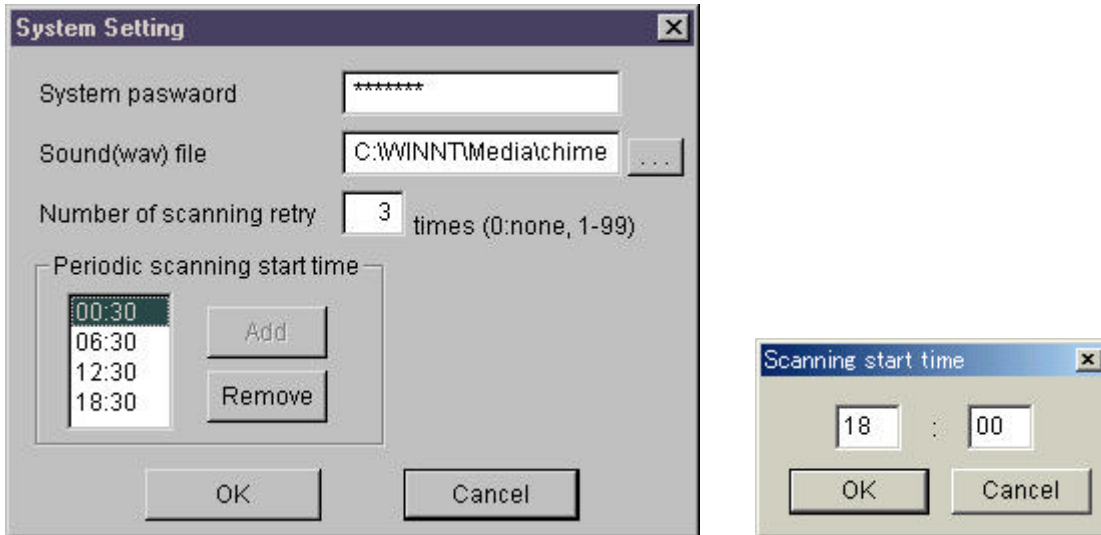
- Number of dial retry: Specifies the number of redials when the adapter is attempting to report information. (Note 1)
- Number of ring: Allows specification of 1 to 99 redials, but the recommended number is 10. Specifies the number of rings until the adapter will receive a call. Allows specification of 1 to 99 redials, but the recommended number is 2.
- Automatic backup operation: Specifies the activated or deactivated status of the backup operation function.
- Interval of alternation: Specifies the alternation interval used for the intermittent operation. Allows specification of 1 to 99 hours.
- Minimum number of A/C: Specifies the minimum number of A/C units that can be operating. Allows specification of 1 or 2 units.
- Reset of accumulation info: Resets accumulation info (i.e., operation time, compressor operation time, compressor operation frequency).

Note 1: Allows the end user to specify the number of redials when the adapter is dialing to send a report but has been unable to connect because the line is busy or cannot be used for some reason. The time interval between redials is approximately 70 seconds. The report is cancelled if not sent within the specified number of redials.

3-5. System Setting

Allows setting for the entire system.

Fig. 3-5. System Setting dialog



- System password: Sets the password entered upon login. (Note 1)
- Sound (wav) file: Specifies the sound file for the buzzer that will sound when a malfunction has been detected. (Note 2)
It can be selected from files with the [...] button.
- Number of scanning retry: Specifies the number of redials when communications are not enabled during automatic or manual scanning because the line is a busy line or cannot be used for some reason.
- Periodic scanning start time: Allows the end user to set the time at which the automatic scanning will be initiated. (Note 3)
Can be specified up to 4 times per day.
- Add: Allows the end user to add the time of initiation.
- Remove: Allows the end user to delete the selected time of initiation.

Note 1: Do not forget your password.

Note 2: Separately install sound files in the wav format. Sound files standardly attached in the Windows system folder can be used. It is recommended that the specified sound file with sound of 1 to 2 seconds in length be used. The buzzer when a malfunction is detected will sound for approximately 2 seconds.

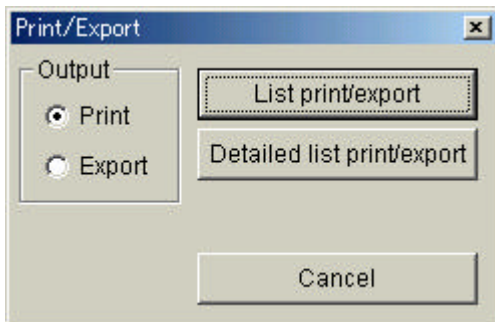
Note 3: The specified time will differ with respect to the number of A/C units being monitored. It is, however, recommended that a sufficient interval be taken, such as every 6 hours, when specifying 4 scans per day. Subsequent automatic scanning will override any incomplete scanning that has been conducted at a predetermined time.

3-6. Print/Export

This function allows the printing and export of the Main screen and detailed information. See Appendix B for the Print form and Export format.

Caution: The information to be printed and exported is that displayed on the screen at the time this function is used, so may differ with the actual A/C unit status. When the most recent information/data is necessary, print and export after manually scanning all-sites.

Fig. 3-6. Print/Export dialog



Output: Specifies the output method.

List print/export: Allows printing and export of information/data on the Main screen.

Detailed list print/export: Allows printing and export of detailed information.

Note: In order to print, a LBP(Page Printer) compatible with Windows that can print A4 (letter) size is necessary.

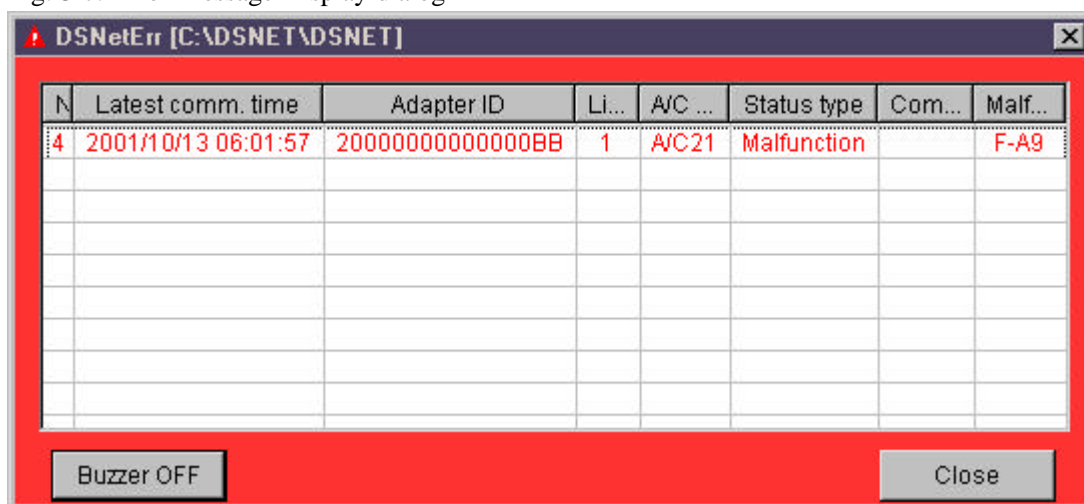
3-7. Error Message

When A/C malfunctions are detected or communications errors occur while information/data is being retrieved via processes such as automatic scanning, manual scanning or A/C operation, the Error Message Display dialog is automatically displayed. A buzzer will sound when this is displayed.

Furthermore, clicking on the [Err inf.] button on the Main screen allows the end user to display a list of the errors/malfunctions currently detected.

Note: When an error/malfunction has been detected while the Error Message Display dialog is being displayed, the content will automatically be updated (add). When the error/malfunction has been resolved, the display will once again automatically update (delete).

Fig. 3-7. Error Message Display dialog



Status type

- Malfunction: DS-NET system detected malfunctions of A/C. Error code will be displayed in the Malfunction code area.
- Comm. Error: DS-NET system detected communication error or communication error occurs. Error code will be displayed in the Comm. status area.

Note: The display content (items and color) and screen operation (resizing, width adjustment of displayed items, etc.) are the same as that on the Main screen. See 3. Main Screen.

3-8. Exit

Clicking on the [Exit] button allows shutdown the DS-NET system.

Caution:

In regular circumstances, keep to continuously execute the DS-NET system. When a malfunction has occurred at the site while the DS-NET system is shutdown, the adapter will redial to send necessary information/data as setting. However, unless the DS-NET is started in the meantime, the malfunctions will not be read by the system. However, this malfunction information can be read via manual scanning immediately once the system is started.

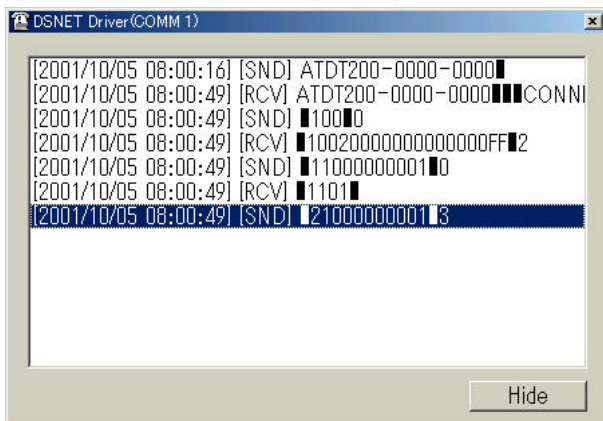
4. Communication Log

4-1. Communications Icon on the task bar

Once the DS-NET system is started, the Communication icon will be displayed on the Task bar. Clicking on this icon allows to display a dialog that monitors communication status.



Fig. 4-1. Communication Log dialog



Hide: Hides the dialog.

4-2. Communication Log

The information/data obtained via communication with the DS-NET system are saved as a communication log. The log is saved as a monthly file (Note 1) in the installed Log Folder. Reserving 1 gigabyte of disk space necessary for DS-NET will enable the creation of log files for several years without any maintenance. Nevertheless, it is recommended that in order to address matters such as PC system errors, a regular backup be taken and unnecessary files (past logs), regularly deleted.

Note 1: The September, 2001 file will be saved as DSNET200109.log.

Note: See Appendix C for the log file format.

Caution:

The information/data in the log file are intended to display the communication results; they are not to be used for purposes such as management of A/C unit condition.

Appendix

Appendix A Data Sheet Sample

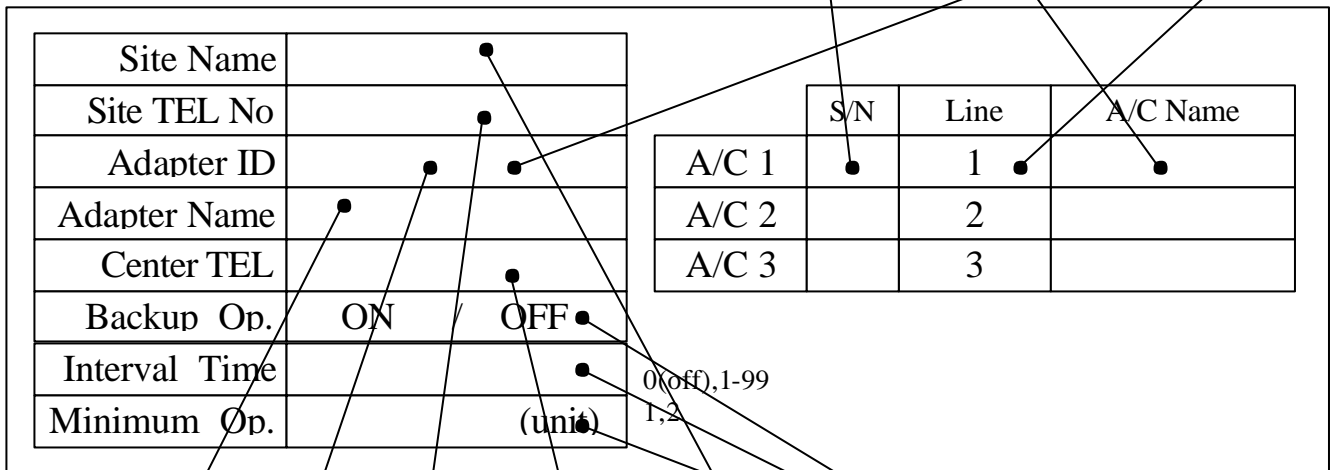
Site Name	
Site TEL No	
Adapter ID	
Adapter Name	
Center TEL	
Backup Op.	ON / OFF
Interval Time	
Minimum Op.	(unit)

	S/N	Line	A/C Name
A/C 1		1	
A/C 2		2	
A/C 3		3	

0(off),1-99
1,2

DSUnitInfo.cfg

Serial No.	A/C Name	Adapter ID,	Line No
------------	----------	-------------	---------



DSAdpInfo.cfg

Adapter Name,	Adapter ID,	Site TEL No.,	Center TEL No.,	Site Name, 1
---------------	-------------	---------------	-----------------	--------------

Always 1

For Adapter setting on the local site

Appendix B Print / Export Format

B-1. List Printing

The items (same information as that on the Main screen) below are printed on A4 (letter) size paper in a portrait direction.. Exporting involves the exporting of files, with the same content as that being printed, in a CSV format separated with a comma. The print date and page number are printed on the bottom left of the page.

NO	Item	Type	Remarks
1	No.	Numeric	
2	Latest time	String	
3	Site name	String	
4	A/C name	String	
5	Status	String	Operation status(Run/Stop)
7	Mode	String	Operation mode (Cooling, Heating, Fan)
8	Set point	Numeric	Set point of temperature
9	R-Temp	Numeric	Room temperature
10	Comm. status	String	Fan, Heating, Cooling
11	Code	String	Malfunction code
12	Adapter ID	String	
13	Line No.	Numeric	1, 2, 3

B-2. Detailed Printing

The items below are printed on A4 (letter) size paper in a landscape direction.. In addition to the Main screen information, the detailed information is also printed. Export involves the exporting of files, with the same content as that being printed, in a CSV format separated with a comma.. The print date and page number are printed on the bottom left of the page.

NO	Item	Type	Remarks
1	No.	Numeric	
9	Latest time	String	
2	Site name	String	
5	A/C name	String	
7	Status	String	Operation status (Run, Stop)
11	Mode	String	Operation Mode (Fan, Heating, Cooling)
14	Set point	Numeric	
8	R-Temp	Numeric	Room temperature
10	Comm. status	String	
6	Code	String	Malfunction code
3	Adapter ID	String	
4	Line No.	Numeric	1, 2, 3
	Op. time	Numeric	
12	Comp time	Numeric	Compressor operation time
13	Comp sw	Numeric	Compressor switching time
15	Fan1,2	String	
16	Retry	Numeric	Number of dial retry
17	Ring	Numeric	Number of ring
18	Valid A/C	String	
19	Backup	String	Automatic backup operation
20	Alt	Numeric	Interval of alternation
21	Mini A/C	Numeric	Minimum number of A/C

Appendix C Log File Format

The communication log records all the information gathered during communication. Therefore, it serves as a communication history and is not to be used in data collection for the purposes of measurement.

A communication log is added into the respective monthly file (DsNetYYYYMM.log) with the items below in one line. A new file is automatically created upon the start of each new month.

NO	Item	Type	Remarks
1	Timestamp (Recording time)	“[yyyy/mm/dd hh:mm:ss]”	
2	Adapter ID	String	
3	Line No.	Numeric	1, 2, 3
4	Site name	String	
5	Adapter name	String	
6	A/C name	String	
7	Malfunction Code	String	
8	Operation	String	ON, OFF
9	Room Temperature	Numeric	
10	Comm. status	Numeric	
11	Operation Mode	Numeric	Fan, Heating, Cooling
12	Operation time	Numeric	0 – FFFF
13	Compressor operation time	Numeric	0 – FFFF
14	Compressor switching time	Numeric	0 – FFFF
15	Set point	Numeric	1 – 127
16	Fan 1	Numeric	0 – 5
17	Fan 2	Numeric	0 – 5
18	Number of dial retry	Numeric	0 – 99
19	Number of ring	Numeric	1 – 15
20	Valid A/C	Numeric	-, * ex. [*--] Line0 only case
21	Interval of alternation	Numeric	0,1 - 99
22	Automatic backup operation	Numeric	ON, OFF
23	Minimum number of A/C	Numeric	1, 2

Each item is separated by a comma.

Appendix D Malfunction Code

Malfunction code

The 2-character malfunction code pertains to the A/C units. The code depends on the particular A/C units being installed, so it is recommended that the operation manual for the A/C units be referenced.

The 4-character malfunction code is a code unique to DS-NET as displayed below.

Code	Contents	Remarks
F-**	Failure code (Malfunction)	Refer A/C manuals
W-**	Warning code (Malfunction)	Refer A/C manuals
A-**	Attention code (Malfunction)	Refer A/C manuals
Combination of 0010,0020,0040	Communication error between A/C and adapter 0010:Line-1, 0020:Line-2, 0040:Line-3	Check A/C on the local site
Combination of 0001,0002,004	Communication error between A/C and adapter 0001:Line-1, 0002:Line-3, 0004:Line-3	Check A/C on the local site
0400	Filter sign	Check filter on the local site
DISC	Adapter could not recognize A/C (A/C power was off or etc.)	Check the configuration of DS-NET or check A/C on the local site
FILT	Detection of filter sign	Check filter on the local site

Comm. Status

This is a malfunction code that is detected during communication.

E*** Code

Code	Contents
E001	Misconnection (Misconnection when dialing or redialing)
E002	Command Send/Receive Error (No response)
E003	Command Send/Receive Error (Command Error)
E004	Command Send/Receive Error (Severed line)
E005	Command Send Confirmation Error (Adapter)
E006	Command Send Confirmation Error (A/C Unit)
E007	Password Matching Error
E009	Other

C*** Code

Code	Contents
C110-C2E0	Adapter setting error
C400,C410	A/C unit information retrieval error
C600	Start/Stop operation error
C610	Filter sign reset error
C620	Operation mode setting error
C630	Temperature setting error
C&40	Air flow rate setting error
C720-C7E0	Adapter information retrieval error

Appendix E Adapter Setting

Set the adapters in the DS-NET system as instructed below.

See the adapter operating manual for how to set.

Note: Usually, the default settings used at time of factory shipment can be installed.

Service Mode No	Unit No.	Item No	Values	Remarks
20	15	0	2	
		1	1	
		2	1	
		3	1	
		4	2	
		5	2	
		6	2	
21		0	1:Off, 2:On	Backup operation (Note 1)
		1	1	
		2	2	
50		3	1	Minimum number of A/C (Note 1)
		0	0	Interval of alternation- High digit (Note 1)
		1	0	Interval of alternation- Lo digit (Note 1)
		2	0	
		3	0	
	4	0		
	5	0		
	6	0		
	7	0		
	8	0		
	9	0		

Note 1: The value is changed once the DS-NET goes into operation.

Set at the appropriate value prior to operation.

Appropriate value depend on your operation plan.

Appendix F Local Control

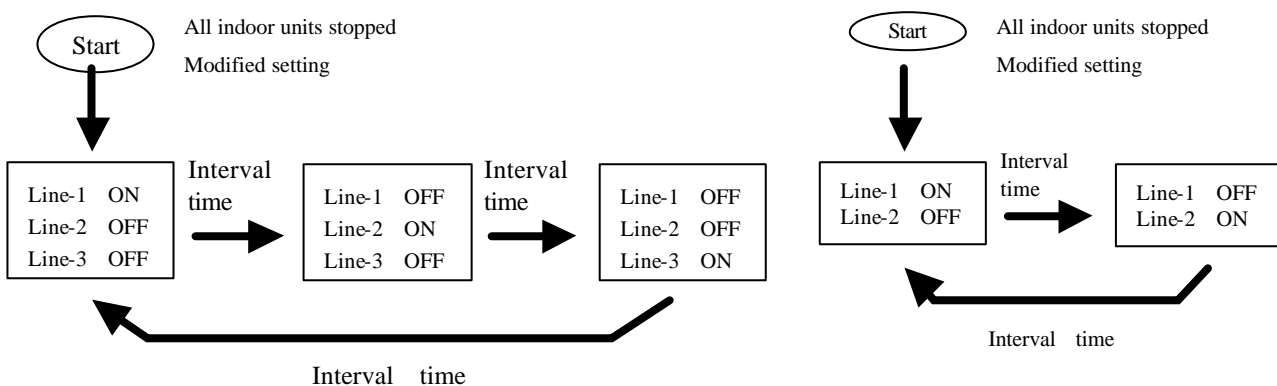
Automatic Intermittent Operation

This is a function that controls A/C unit On/Off at predetermined time intervals to balance out the amount of time each of the units are operating. The operation pattern is determined according to the number of A/C units connected and guaranteed minimum operating units.

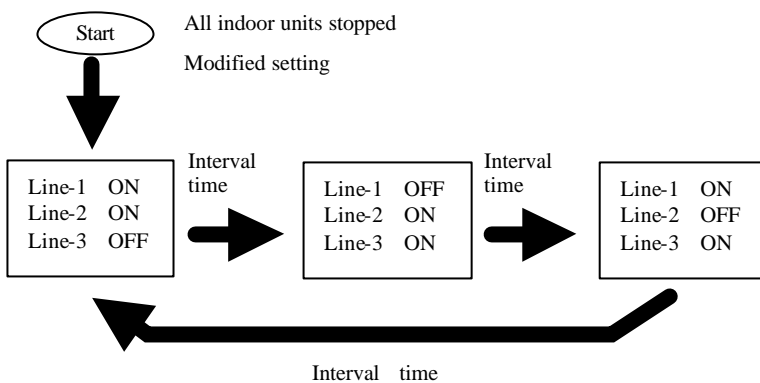
When a malfunction involving the A/C units has been detected, automatic intermittent operation is disabled.

In some cases of automatic intermittent operation, operation by a remote controller and remote operation may not function.

Operation pattern when the number of A/C units connected is 2 or 3 and the guaranteed minimum operating units, 1.



Operation pattern when the number of A/C units connected is 3 and the guaranteed minimum operating units, 2.



Note:

When the Forced On signal is input, all the A/C units begin operating, overriding any automatic intermittent operation, operation by a remote controller or remote operation. The same can be said for the Forced Off signal. The Forced Off signal overrides the Forced On signal.

Glossary

Adapter	A device used in the DS-NET system and installed at unmanned communication sites.
Windows	DS-NET has been confirmed to operate on WindowsNT4.0 and Windows2000.
Malfunction Report	Refers to a function whereby reports are sent via public phone line when a malfunction has been detected by an adapter.
COM1 Port	Refers to the RS232C port that connects the modem.
Site	Refers to a general term used for locations such as unmanned communication sites.
Service Pack (SP4)	Update software (CD) for WindowsNT4.0
Automatic Intermittent Operation	Refers to control that balances out the operating times of A/C units when a multiple number of units are being operated on an intermittent or alternating basis.
Automatic Backup Operation	Refers to automatic control of the operation of other A/C units when a malfunction has been detected in a particular unit.
DS-NET System	This is the name given to a remote malfunction monitoring/remote operating system for Cooling A/Cs for facility use at unmanned communication sites.
Local Control	Refers to automatic control at sites with adapters.
Scanning	Refers to an operation whereby inquiries are made to sites via a Center (PC) into the condition/status of respective A/C units.
Modem	Refers to a device that enables communication via a public phone line (Use the modem recommended for the DS-NET system.).

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