



Sanyo Centralized Control System SHA-KT256EG Operation Manual

INTELLIGENT CONTROLLER

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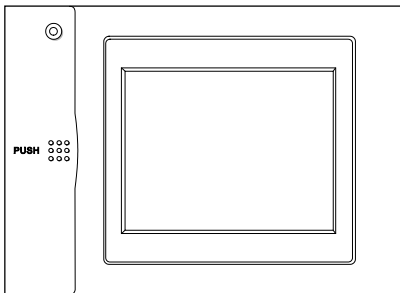
Thank you for choosing the SHA-KT256EG Intelligent Controller.

Before using the system, be sure to read this manual carefully. In particular, be sure to read the "Important Safety Instructions".

After reading this manual, store it in a convenient place.

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Main 5 Sub 1 refers to the explanation of main menu 5, sub menu 1.

1 Important Safety Instructions

Before using the system, be sure to read these “Important Safety Instructions”.


The precautions given in this manual consist of specific “⚠ Warnings” and “⚠ Cautions”. They provide important safety related information and are important for your safety, the safety of others, and trouble-free operation of the system. Be sure to strictly observe all safety procedures.

- The labels and their meanings are as described below.


⚠ Warning This refers to a hazard or unsafe procedure or practice which can result in severe personal injury or death.

⚠ Caution This refers to a hazard or unsafe procedure or practice which can result in personal injury or product or property damage.

- Meaning of symbols




 Indicates “Warning” or “Caution”.

 Indicates “Prohibited”.

 Indicates an action that should always be performed.




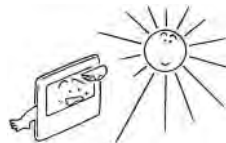

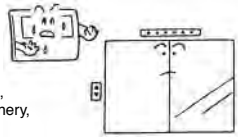




- After reading this manual, save it in a convenient place.
Be sure to provide this manual to any person who may use the product.

Installation Precautions

⚠ Warning	
<p>Do not install yourself</p> <p> Installation should always be performed by your dealer or a professional service provider. Electric shock or fire may result if an inexperienced person performs any installation or wiring procedures incorrectly.</p> <p>Have dealer install</p>	<p>Use only specified air conditioners</p> <p> Always use only air conditions specified by Sanyo.</p> <p>Specified air conditioners</p>
<p>Electrical work must be carried out by qualified personnel</p> <p> Contact your dealer for installation. Do not attempt to install the product yourself.</p> <p>Contact your dealer for installation.</p>	





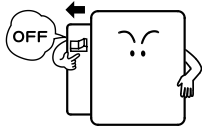
1 Important Safety Instructions






Location

⚠ Caution	
<p>Do not install in damp locations or locations subject to vibrations</p> <p>Damage to the product can result.</p> <p> </p>	<p>Do not install under direct sunlight or in places near heat sources</p> <p>The product may be damaged.</p> <p> </p>
<p>Do not install near sources of noise</p> <p>Malfunctions can result.</p> <p> </p> <p>Elevators, Automatic doors, Industrial machinery, etc</p>	<p>Avoid static electricity during cabling work</p> <p>Before starting cabling work, touch ground to discharge static electricity from the body.</p> <p></p>
<p>Avoid installation in the following locations</p> <p></p> <ul style="list-style-type: none"> ● Locations subject to inflammable gas leakage ● Near beaches or other places with a large amount of salt ● Hot springs or other locations subject to sulfuric gas ● Locations near water and oil (including industrial lubricants), and water and oil sprays ● Locations with large changes in voltage ● Near machines generating electromagnetic waves ● Locations close to organic solvents 	<p>Keep televisions, radios, PCs, etc, at least 1m away from the central controller, indoor units, and remote controls</p> <p> Picture breakup and noise can occur.</p>
<p>Do not use heaters near the Intelligent Controller</p> <p> Plastic parts of the Intelligent Controller may be deformed or discolored.</p>	



1 Important Safety Instructions

Precautions for Use




Warning	
<p>Do not touch switches with wet hands</p> <p>Electric shock and damage to the system can result.</p>  <p>Prohibited</p> 	<p>Protect the Intelligent Controller from water</p> <p>Damage to the system can result.</p>  <p>Prohibited</p>
<p>Stop the system and turn the power off if you sense unusual smells or other irregularities</p> <p>Continuing operation when the system is out of order can result in electric shock, fire, and damage to the system. Contact your dealer</p>  <p>Turn off the power.</p> 	

Caution	
<p>Do not drop the system or subject it to strong shocks</p> <p>Damage to the system can result.</p>  <p>Prohibited</p> 	<p>Use only fuses with the correct capacity</p> <p>Use of pins or copper wire can result in fire and damage to the system.</p>  <p>Prohibited</p>
<p>Use only the specified power source</p> <p>Use of any other power source can result in fire and damage to the system. Use single-phase 100-240V power.</p>  <div style="text-align: center;">  </div>	

1 Important Safety Instructions

Caution	
<p>Use the special supplied touch pen</p> <p>Touching the touch panel with any pen other than the supplied touch pen can damage the system.</p>  <p>Prohibited</p>	

Moving and Repair Precautions

Warning	
<p>Do not disassemble or repair</p> <p>Never disassemble or repair the system yourself. Contact your dealer for repair. Electric shock or fire may result if an inexperienced person attempts to repair the system.</p>  <p>Prohibited</p>	<p>Contact your dealer before moving the system</p> <p>Contact your dealer or a professional service provider about moving and reinstalling the system. Electric shock or fire may result if an inexperienced person performs any installation procedures incorrectly.</p>  <p>Contact your dealer</p>
<p>Do not touch the LCD if it is leaking</p> <p>If the touch panel is damaged, the liquid crystal from inside the display may leak out. Do not ingest the liquid or allow it to contact your skin.</p> <p>If accidental contact with skin occurs, rinse the area of contact thoroughly under running water for at least 15 minutes.</p> <p>If accidental swallowing occurs, rinse the inside of your mouth thoroughly with water. Drink plenty of water and induce vomiting, and then seek immediate medical attention.</p>  <p>Prohibited</p>	

2 Features of the System

The Intelligent Controller (SHA-KT256EG) is a centralized air conditioning management system dedicated to PAC and GHP for small and medium sized buildings.

- Number of connectable units
 - By connecting communication adaptors to one Intelligent Controller, up to 256 indoor units can be connected.
 - Up to 120 outdoor units can be connected.
- Display
 - Touch panel type 6.5-inch TFT color (640x480 pixel VGA) LCD display
- Operation functions
 - Start and stop, temperature settings, operation mode selection, fan speed settings, fan direction settings, ventilation etc.
- Operating monitoring
 - All unit monitoring of operation status (operating/stopped, operation mode, alarms)
 - Display of alarm logs
 - One-operation checking of all filter cleaning signs and engine oil inspection signs
 - External output of all errors, external output of all operations (relay connections)
- Program timers
 - Up to 50 types of weekly timers can be programmed by combining 50 types of daily timers (50 times per day).
- Air conditioning energy distribution
 - Recording and display of accumulated operating time and total number of operations for each indoor unit.
 - Calculation of gas and electricity distribution ratios and energy amounts used (m³, kWh) for each indoor unit and each tenant.
 - Distributions are available in two modes: the "simple distribution" calculated based on the operating time and "loaded distribution" calculated based on the actual air conditioning capacity, respectively. (In order to make operation in the "Loaded distribution" mode, the air conditioner side needs to be adaptable to the "Loaded distribution".
 - Distribution by time zones (regular hours, out of hours, special days).
 - Recording of up to past 24 months of cut-off data.
- Printing display
 - All operating screens can be printed out with a dedicated printer connected (hardcopy).

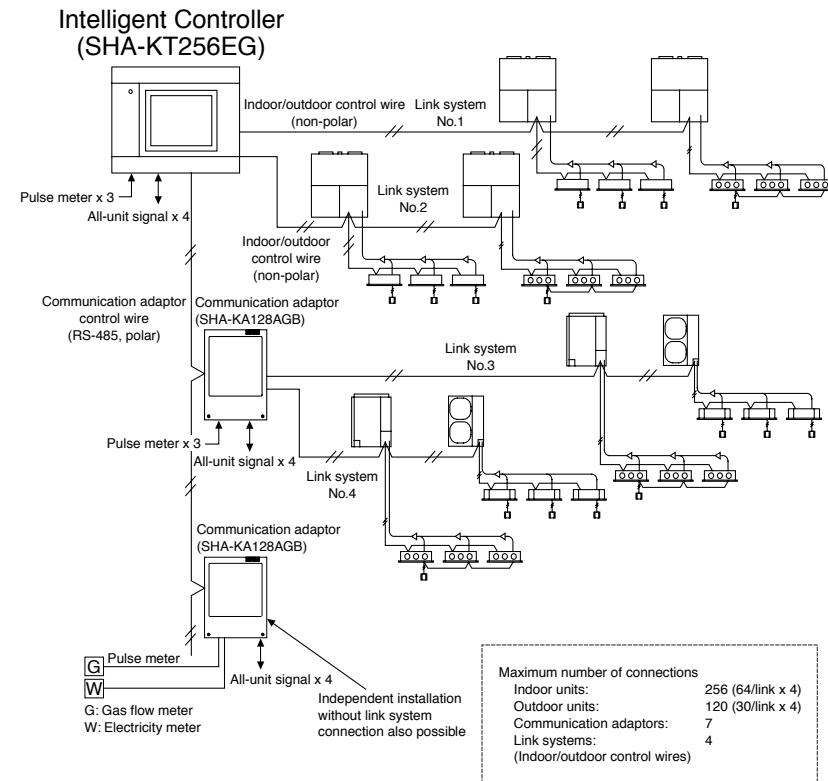
Terms and abbreviations used in this manual and in the system software

Full term	Abbreviation
Adaptor address	Adaptor
Link system address	Link system
Outdoor unit system address	Outdoor unit system, Outdoor unit, Outdoor system, Outdoor, O/D
Indoor unit address	Indoor unit, Indoor, I/D
Distribution group number	Distribution group No., Distribution group
Tenant number	Tenant No., Tenant
Zone number	Zone No., Zone
Unit name	Unit
Air conditioning distribution ratio	Distribution ratio, Distr. ratio
Central control address	Central address, CNTR
Thermostat	T/S

* For more information about terms, see "11 Terms".

3 System Configuration

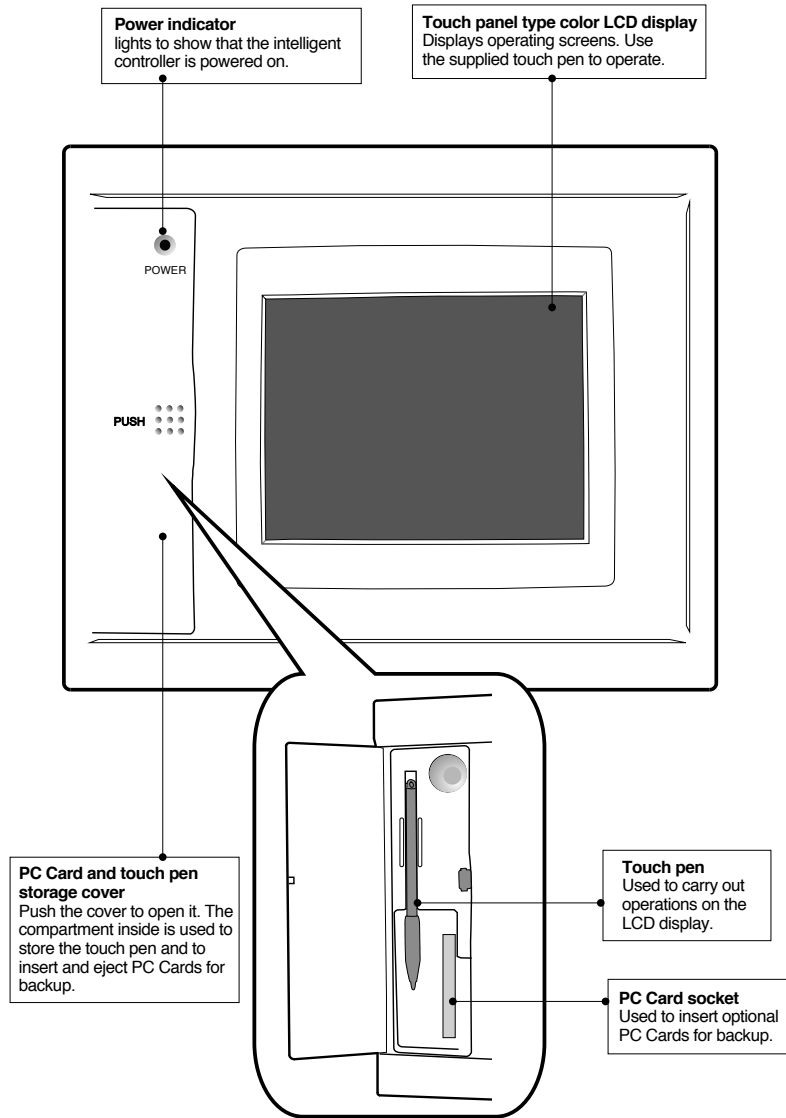
System Configuration Example



* When connecting link systems (indoor and outdoor unit control wires), always connect beginning with LINK1 and LINK2 on the Intelligent Controller. Up to 4 link systems can be connected.

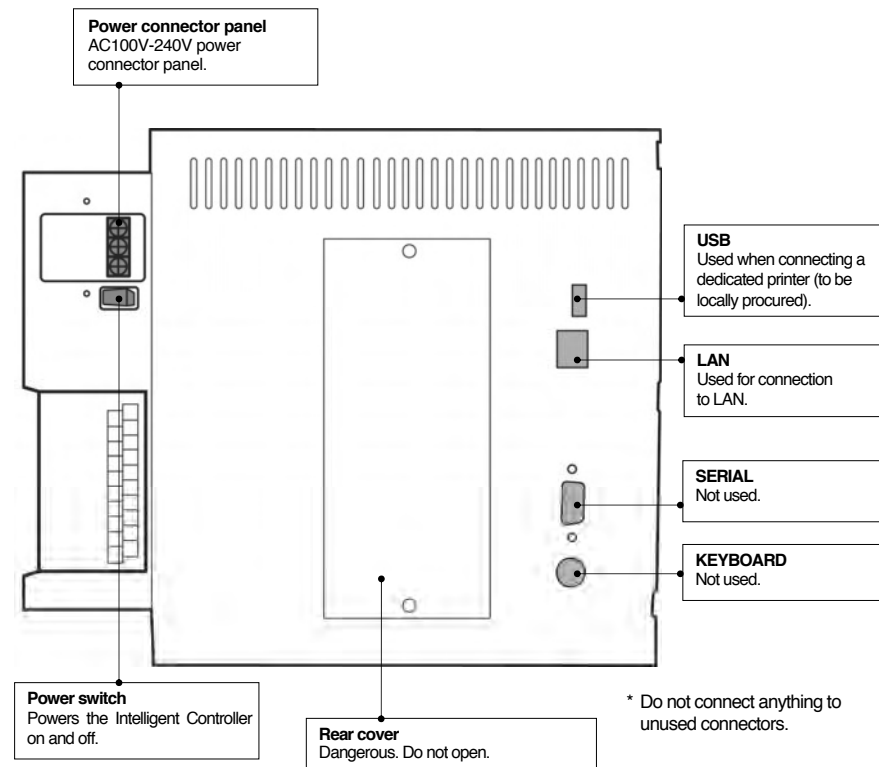
4 Names and Functions of Parts

● Front Panel



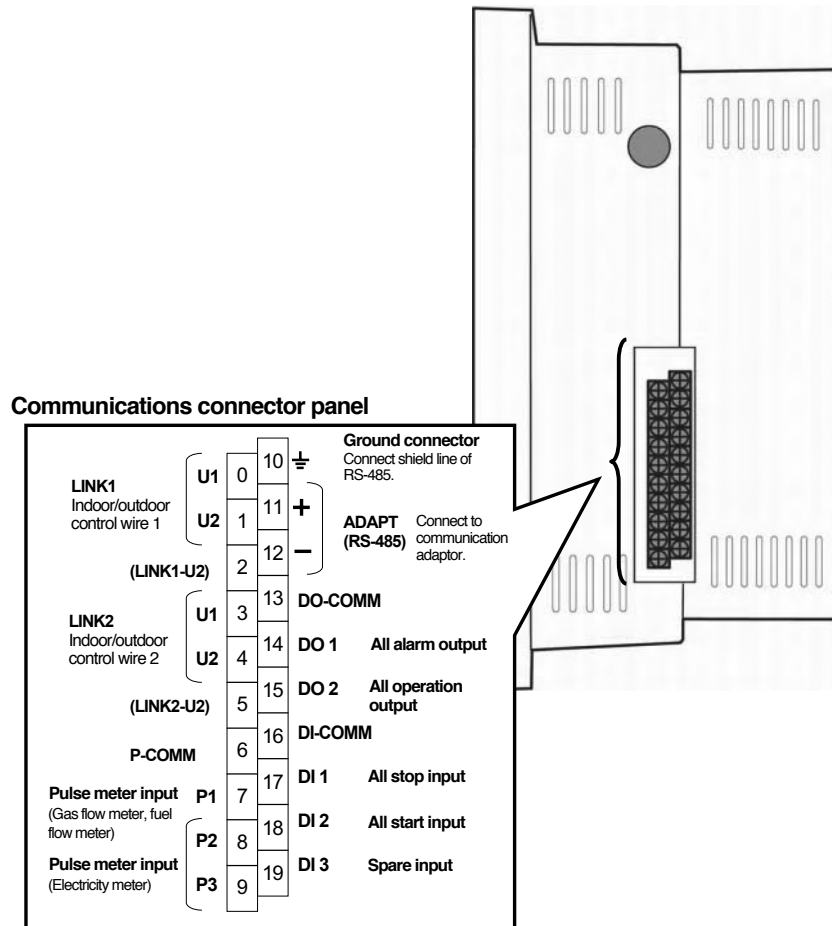
4 Names and Functions of Parts

● Rear Panel



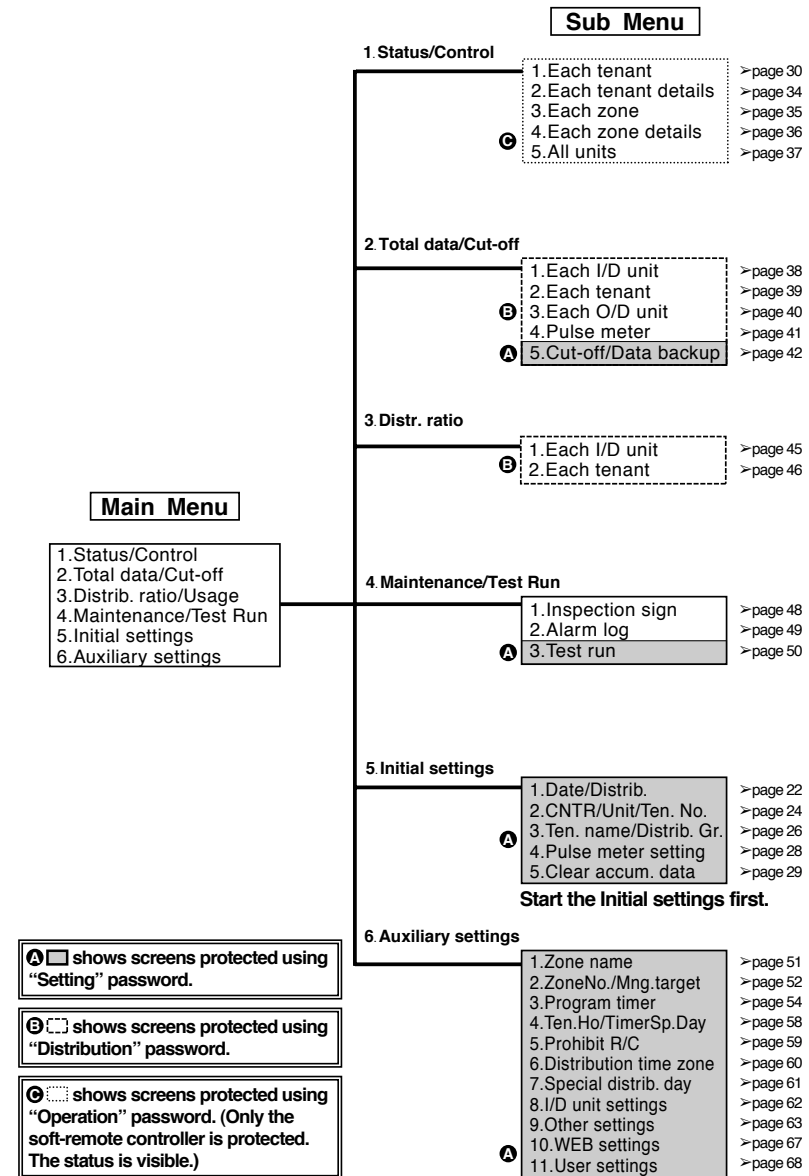
4 Names and Functions of Parts

- Right side panel



5 Quick Reference

Menu List



5 Quick Reference

Menu List

Listed are only typical functions.

How to operate air conditioners

Operating all units collectively desired	→ 6.4.1.3 Operating all connected units	☞ Page 33
Operating units individually desired	→ 6.4.1.1 Operating units individually	☞ Page 31
Operating units by tenant desired	→ 6.4.1 Displaying general information by tenant	☞ Page 30
Operating units by zone desired	→ 6.4.3 Displaying general information by zone	☞ Page 35
Varying operation modes desired	→ 6.4.1.1 Operating units individually	☞ Page 31
Varying setting temperatures desired	→ 6.4.1.1 Operating units individually	☞ Page 31
Resetting filter signs desired	→ 6.4.1.1 Operating units individually	☞ Page 31
Varying fan direction and speed	→ 6.4.1.1 Operating units individually	☞ Page 31
Prohibiting remote controlling desired	→ 6.4.1.1 Operating units individually	☞ Page 31

Monitoring status of air conditioner operation

Monitoring status of inspection signs desired	→ 6.7.1 Checking inspection signs	☞ Page 48
Monitoring operation status collectively desired	→ 6.4.5 Displaying and operating all indoor units	☞ Page 37
Checking the alarm history desired	→ 6.7.2 Checking the alarm logs of indoor units	☞ Page 49
Checking current and past total calculation times desired	→ 6.5.1 Displaying total data by indoor unit	☞ Page 38
Checking current and past distribution ratios and energy consumption desired	→ 6.6.1 Displaying distribution ratios and energy usage by indoor unit	☞ Page 45

Setting the system

Changing the unit names desired	→ 6.3.3 Setting central addresses, unit names and tenant numbers	☞ Page 24
Changing tenant names desired	→ 6.3.4 Setting tenant names and distribution groups	☞ Page 26
Changing zone names desired	→ 6.8.1 Registering zone names	☞ Page 51
Adjusting dates and times desired	→ 6.3.2 Setting the date, cut-off date, and distribution ratio calculation method	☞ Page 22
Setting timer operation desired	→ 6.8.3 Programming timers	☞ Page 54
Setting security displayed on the screen desired	→ 6.8.9.2 Registering passwords	☞ Page 64
Stopping or sounding the buzzer	→ 6.8.9.4 Buzzer sounds	☞ Page 64

Others

Backing up PC cards desired	→ 6.5.5.4 Restoring data	☞ Page 44
Powering off Intelligent Controllers desired	→ 6.8.9.8 Power off button	☞ Page 66
Outputting distribution in progress desired	→ 6.5.5.3 Outputting distribution data in progress	☞ Page 43
Printing desired	→ 9. Printing	☞ Page 78
Calibrating touch panel deviations	→ 6.8.9.7. Calibrating touch panels	☞ Page 65

6 Using the System

6.1 Powering the System On

Check the wiring, (air conditioners, communication adaptors, etc.) and then turn the power switch on (see page 12). The system starts automatically.

When the system is powered on for the first time, about 10 minutes are required for the normal system screen to appear. Wait until it appears.

6.2 Names and Functions of Screen Parts



6.2.1 Initial communications screen

The figure below shows the initial communications screen, which appears when the Intelligent Controller starts.



★ System power off procedure ★

Always use the following procedure to power the Intelligent Controller off.

In the "Other settings" menu ((Main  Sub )), select the last item, **Power off**



The message "Exit this program?" appears. Press the **OK** button.



The message "It is now safe to turn off the Intelligent Controller." appears (*). Turn the power off. (* Several minutes may be required before the message appears.)

6 Using the System

6.2.2 Operating screen example

The figure below shows a typical operating screen.

Main menu

1. Status/Control
2. Total data/Cut-off
3. Distrib. ratio/Usage
4. Maintenance/Test Run
5. Initial settings
6. Auxiliary settings

Filter cleaning sign
This lights when a filter cleaning sign has been issued for an indoor unit.

Sub menu

Operate on all units

Outputs hardcopies by the printer.

1. Status/Control | 1. Each tenant | All units | Print

AAA Co., Ltd.	AAA Co., Ltd.	AAA Co., Ltd.	BBB Sports	BBB Sports
ROOM 101	0-1-06-08	0-1-06-15	0-1-06-22	0-1-07-04
ROOM 102	0-1-06-09	0-1-06-16	0-1-06-23	0-1-07-05
ROOM 103	0-1-06-10	0-1-06-17	0-1-06-24	0-1-07-06
0-1-06-04	0-1-06-11	0-1-06-18	0-1-06-25	0-1-07-07
0-1-06-05	0-1-06-12	0-1-06-19	0-1-07-01	0-1-07-08
0-1-06-06	0-1-06-13	0-1-06-20	0-1-07-02	0-1-07-09
0-1-06-07	0-1-06-14	0-1-06-21	0-1-07-03	0-1-07-10

Timer operation mark
This lights when an indoor unit is set up for timer operation.

Tenant selection window
Allows direct selection of tenant names.
* See next page for details.

Notification column
Displays alarms, errors, and other messages.
Intelligent Controller - 1 - 01 - 08
Indoor address (1-64)
Outdoor address (1-30)
Link number (1,2)
Adapter number (Intelligent Controller, 1-7)

Reset button
Stops the buzzer and resets the alarm display. (Depends on the type of alarm.)

Displays tenant name.

Displays unit name.

Scrolls the columns displaying indoor units.

Displays the current date and time.

Converting data | FRD 4/Aug 1456

Filter cleaning signs are issued only as approximate guides. We recommend that filters be cleaned regularly, even if no sign has been issued.

6 Using the System

* Selection windows

When you touch [Tenant] (or whatever is displayed in blue between the scroll buttons) shown on the previous page, the items available for selection appear in a list as follows, enabling direct selection.

[Tenant] list

Tenant selection window showing a list of tenants and their unit numbers.

Ltd	AAA Co., Ltd.	BBB Sports	BBB Sports
08	0-1-06-15	0-1-06-22	0-1-07-04
09	0-1-06-16	0-1-06-23	0-1-07-05
10	0-1-06-17	0-1-06-24	0-1-07-06
11	0-1-06-18	0-1-06-25	0-1-07-07
12	0-1-06-19	0-1-07-01	0-1-07-08
13	0-1-06-20	0-1-07-02	0-1-07-09
	0-1-06-21	0-1-07-03	0-1-07-10

Converting data | FRD 4/Aug 1456

A similar list appears for the other buttons.

[I/D unit] list

I/D unit list showing a scrollable list of indoor and outdoor unit addresses.

[Weekly timer] list

Weekly timer list showing a scrollable list of timer numbers (No.1 to No.25).

Tenant holiday [Date] list

Tenant holiday list showing a scrollable list of dates from Dec/2007 to Nov/2009.

6 Using the System

Main 5 Sub 1

6.3 Initial Settings

The items in the "Initial settings" menu (main menu 5) must be set in order to use the Intelligent Controller. Be sure to set these items.

Before making the settings, read the following and decide what kind of information you want to obtain from the system.

(1) Setting central addresses

Central addresses must be set on the "CNTR/Unit/Ten.No." screen

(Main 5 Sub 2).

Be aware that using them along with the system controller, ON/OFF-controller and so on, may affect zone control classification.

(2) Decide whether or not to use distribution ratios. (See "6.3.2 Setting the date, cut-off date, and distribution ratio calculation method".)

Question: Do you need to display and record **distribution ratios** for each indoor unit and each tenant?

Yes → Select "T/S ON+OFF time" or "T/S ON time" as calculation target of power distribution.

No → Select "No Distrib." as calculation target of power distribution.

If all you need to do is to monitor air conditioning status, operate the system, and view total data for operating time and so on, you should select "No". (Information you do not need will not be displayed.)

When you select "No", the following displays are disabled.

Setting items : Distribution group registration in Main 5 Sub 3.

Display items : Time zones in Main 2 Sub 1 and Main 2 Sub 2.

Menus : Main 3 Sub 1 and Main 3 Sub 2, Main 6 Sub 6, Main 6 Sub 7, and Main 6 Sub 8.

(3) If you will be using distribution ratios, decide which **calculation method** to use. (See "6.3.2 Setting the date, cut-off date, and distribution ratio calculation method".)

Question: Do you need to consider electricity of indoor units?

Yes → Select "T/S ON+OFF time" as calculation target of power distribution.

No → Select "T/S ON time" as calculation target of power distribution.

If pulse (electricity) meters are installed for measuring both indoor and outdoor units, select "T/S ON+OFF time".

If only outdoor units are measured, select "T/S ON time".

(4) Pulse meter settings (See "6.3.5 Making pulse meter settings".)

When you need to display air conditioner distribution ratios for (1) above,

Question: Do you require monthly **energy usage** display?

Yes → Install a pulse meter for each distribution group.

No → Pulse meter installation is unnecessary.

When pulse meters are not set, "0" is displayed for usage.



You can remove connected units from management by this system. For details, see "6.8.2 Setting zone numbers and management targets".

6 Using the System

Main 5 Sub 1

6.3.1 System setting flow

○: Settings are necessary.

▲: Settings are necessary depending on circumstances.

×: Settings are unnecessary.

Basic settings are completed by setting items of "○" one by one in accordance with the system management of the customer.

Items of "▲" need to be set only when making necessary settings and maintenance upon customer request regardless of the said management.

Air conditioner operation only	Displaying distribution ratios (simple distribution)	Displaying distribution ratios (loaded distribution)	Displaying energy usage (simple distribution)	Displaying energy usage (loaded distribution)
START				
↓				
Main 5 Sub 1 Date/Distrib.				
(1) Setting the current date	○	○	○	○
(2) Setting the cut-off date	▲ Note 1	○	○	○
(3) Calculation target of power distribution	×	○	○	○
(4) Setting the energy saving distribution	×	×	▲ Note 2	×
(5) Language	○	○	○	○
↓				
Main 5 Sub 2 CNTR/Unit/Ten.No.				
(1) Central addresses Note 8	○	○	○	○
(2) Unit name	○	○	○	○
(3) Tenant No.	▲ Note 3	○	○	○
↓				
Main 5 Sub 3 Ten.name/Distrib.Gr.				
(1) Tenant name	▲ Note 3	○	○	○
(2) Distribution group	×	○	○	○
Product type	×	▲ Note 4	▲ Note 5	▲ Note 4
Distribution "Loaded" or "Simple" Note 14	×	×	○	×
↓				
Main 5 Sub 4 Pulse meter setting				
(1) Distribution group	×	×	×	○
(2) Pulse unit value	×	×	×	○
(3) Ice heat accumulation night power / system selection	×	×	×	○
↓				
Main 5 Sub 5 Clear accum.data Note 6				
▲ Note 1	○	○	○	○



6 Using the System

Main 5 Sub 1

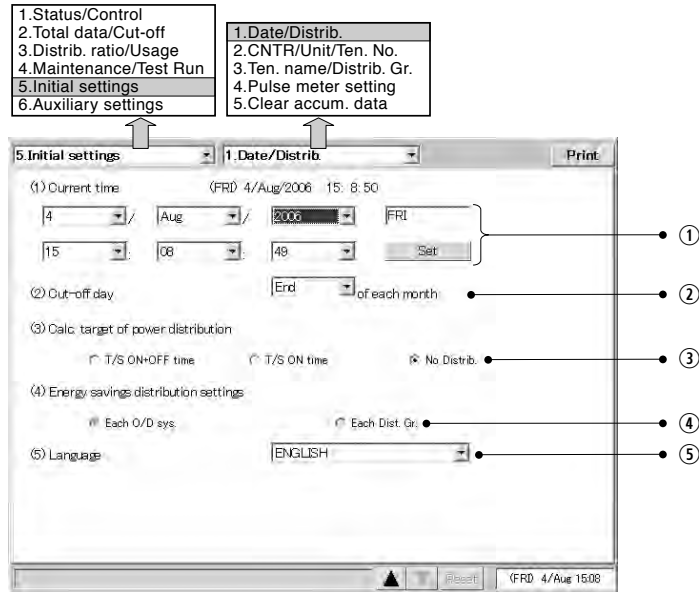
6.3.2 Setting the date, cut-off date, and distribution ratio calculation method

Use this screen to set the current date and time, and make settings related to time. These settings are needed for program timers and distribution ratio calculation, **so be sure to make them before starting operation of the system.**

Procedure

Select [5.Initial settings] in the main menu and [1.Date/Distrib.] in the sub menu, then proceed as follows.

- ① Set the current date and time.
Under "(1) Current time", select the current [year, month, day, hour, minute, and second] from the drop-down lists(▼).
The day of the week is shown automatically.
Press the [Set] button to set the settings.
- ② Set the monthly cut-off day.
Under "(2) Cut-off day", select a number from [1 to 28 or End] (to select the last day of the month) from the drop-down list(▼).



6 Using the System

Main 5 Sub 1

- ③ Select the calculation target of power distribution.
(3) Select [T/S ON+OFF time], [T/S ON time], or [No Distrib.].
- T/S ON + OFF time
To be selected when taking power both for the outdoor and indoor units to make distribution calculation.
- T/S ON time
To be selected when taking power only for the outdoor unit to make distribution calculation.
- No Distrib.
To be selected when distribution calculation for gas and electricity is unnecessary.
- ④ Select the energy savings distribution settings.
(4) Select [Each O/D sys.] or [Each Dist. Gr.].
This item cannot be selected when [No Distrib.] has been set for "(3) Calc. target of power distribution".
Select a range where the energy savings effect in 3 WAY units can be reflected on the distribution calculation.
- Each O/D sys.
The energy savings operation in 3 WAY units is reflected only on the air conditioning distribution for the tenant for the outdoor system.
- Each Dist.Gr.
The energy savings operation in 3 WAY units is reflected on air conditioning distributions for all the tenants in the overall distribution group including them.
(However, this is effective only when plural distribution groups have been set.)
- ⑤ In the Language pull-down menu (5), select the language you would like to use.

6.3.3 Setting central addresses, unit names and tenant numbers

Use this screen to set central addresses, names of units connected to the system and tenant numbers.

Procedure

Select [5.Initial settings] in the main menu and [2.CNTR/Unit/Ten. No.] in the sub menu, then proceed as follows.

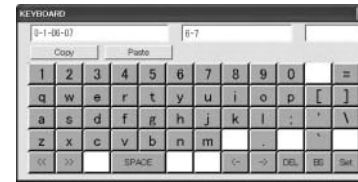
- | | |
|-------------------------|---------------------------|
| 1. Status/Control | 1. Date/Distrib. |
| 2. Total data/Cut-off | 2. CNTR/Unit/Ten. No. |
| 3. Distrib. ratio/Usage | 3. Ten. name/Distrib. Gr. |
| 4. Maintenance/Test Run | 4. Pulse meter setting |
| 5. Initial settings | 5. Clear accum. data |
| 6. Auxiliary settings | |

O/D- I/D	CNTR Address	Unit name	Tenant No.	Zone No.	Management	Product Type	Model (Class)
6-1	-	ROOM 101	1	1	Target	PAC	T(45)
6-2	-	ROOM 102	1	1	Target	PAC	X(71)
6-3	-	ROOM 103	1	1	Target	PAC	X(71)
6-4	-	0-1-06-04	1	1	Target	PAC	K(28)
6-5	-	0-1-06-05	1	1	Target	PAC	A(28)
6-6	-	0-1-06-06	1	1	Target	PAC	S(45)
6-7	-	0-1-06-07	1	1	Target	PAC	T(4)

- When you touch a central address column, a screen will be displayed as shown on the right. Input a number 1 to 64 to set central address. When you touch [Auto], the central address will be automatically set.

Two identical central address settings cannot be used within a link system. If you input an existing address, the input data is cancelled. It may take several minutes before the central address settings are reflected in the display. When other central controllers (system controller, etc.) are connected, it is recommended to set the central addresses on those units.

- Touch an unit name column. A keyboard window like the one shown below appears. Use the keyboard to enter a unit name. Unit names can be up to 12 characters long.



- * See "7 Entering Text and Numbers" for details about entering text in keyboard windows.
- * You can copy and paste text using the [Copy] and [Paste] buttons. See "7.2 Entering Text" for details.

- Touch a tenant number. A keyboard window like the one shown below appears. Use the keyboard to enter the tenant number.



- * The tenant number range is from 1 to 256.

6.3.4 Setting tenant names and distribution groups

Use this screen to set tenant names and distribution groups.
 You can also use this screen to set the product type (PAC, GHP, HOT, etc.) of indoor units.

Procedure

Select **5.Initial settings** in the main menu and **3.Ten. name/Distrib. Gr.** in the sub menu, then proceed as follows.

1. Status/Control
 2. Total data/Cut-off
 3. Distrib. ratio/Usage
 4. Maintenance/Test Run
 5. Initial settings
 6. Auxiliary settings

1. Date/Distrib.
 2. CNTR/Unit/Ten. No.
 3. Ten. name/Distrib. Gr.
 4. Pulse meter setting
 5. Clear accum. data

5.Initial settings | 3.Ten. name/Distrib. Gr. | Print

Set tenant name and distribution Gr.

No.	Tenant name	Distrib. Gr.	No.	Tenant name	Distrib. Gr.
1	AAA	1(PAC)	8	Tenant008	-
2	BBB	2(HOT)	9	Tenant009	-
3	CCC	3(GHP)	10	Tenant010	-
4	Tenant004	-	11	Tenant011	-
5	Tenant005	-	12	Tenant012	-
6	Tenant006	-	13	Tenant013	-
7	Tenant007	-	14	Tenant014	-

1 → Tenant name field

2 → Distrib. Gr. field

3 → Type button

4 → Distrib. button

5 → Keyboard window

- ① Touch a tenant name. A keyboard window appears. Use the keyboard to enter the tenant name.
 Tenant names can be up to 20 characters long.
 * See "7 Entering Text and Numbers" for details about entering text on software keyboards.
 * The tenant number range is from 1 to 256.

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- ② Touch a distribution group. A keyboard window like the one shown above appears. Use the keyboard to enter a distribution group number and to select the product type from among PAC, GHP and HOT. Select "Simple" or "Load" in the distribution methods.
 * Refer to "10. Calculating air conditioner distribution" for details.
 The tenant set at "Load" distribution will have its "No" box display in light blue.
 * The distribution group number range is from 1 to 8.
 * This button is invalid when "No Distrib." has been set. (Refer to [Main 5 Sub 1](#))
 * The distribution group column set at loaded distribution has no product type such as "PAC" and "GHP" displayed.
 * Make manual cut-off in advance to change the distribution method.
- ③ Press the **Type** button to select "PAC" or "GHP" for the following unit that is unable to automatically recognize product type.
 - ON/OFF local adapter
 This is only for "Simple distribution" setting.
- ④ Specify which distribution method, "Simple" or "Load," to apply to the selected distribution group.
- ⑤ Touch **Set** to confirm the setting, or **Cancel** to cancel it.

• PAC, GHP, and HOT cannot be mixed in the same group. Set up a separate distribution group for each type.

• HOT multi units cannot be recognized automatically (they are recognized as PAC). Manually set the product type to HOT.

• HOT Tenants cannot be set at the "Load" distribution.

• "Load" distribution tenants cannot be set at "HOT".

• Air conditioners unadaptable to loaded distribution cannot be set at "Load" Distribution.

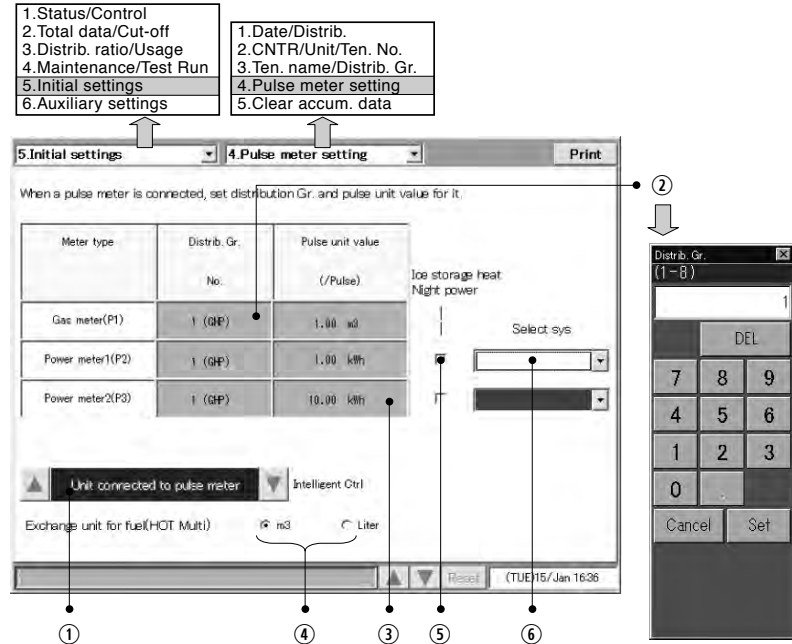
• Local adapters are also unadaptable to loaded distribution.

6.3.5 Making pulse meter settings

If you have connected pulse meters, use this screen to set the target distribution groups and the amount of electricity or gas per pulse.

Procedure

Select [5. Initial settings] in the main menu, and [4. Pulse meter setting] in the sub menu.



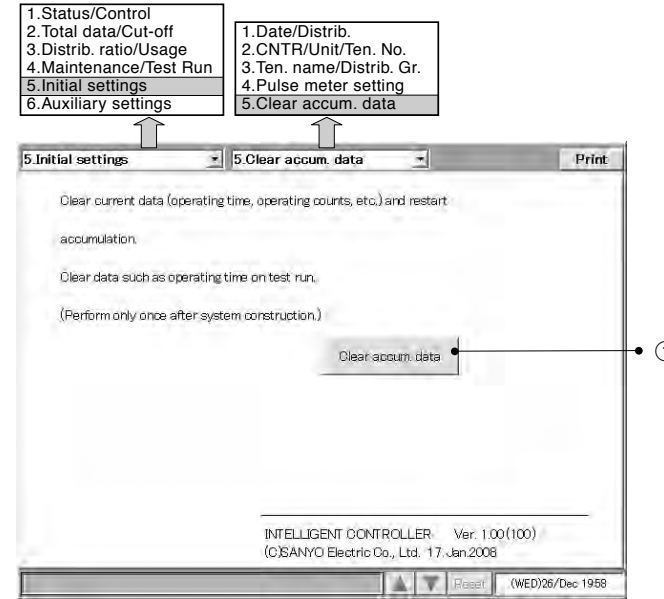
- ① Select the pulse meter connection destination.
- ② Touch a distribution group number. A numeric keypad appears for the distribution group. Use the keyboard to enter the distribution group number.
 - * The distribution group number range is from 1 to 8.
 - * The distribution group buttons are disabled when you have chosen not to perform distribution rate calculations (see [Main 5 Sub 1]).
- ③ Touch the pulse unit amount column and enter the amount of electricity (kWh) or gas (m³) per pulse.
- ④ If the product type is HOT Multi, select the unit for fuel metering.
- ⑤ Select this check box for ice heat accumulation night power meters. (Enabled during loaded distribution setting only.)
 - * This cannot be set for electricity meters configured for use with HOT Multi or simple distribution.
- ⑥ For the night power meter set in ⑤, select which outdoor system to meter ice heat accumulation by selecting the address.

6.3.6 Clear accumulation data

Use this screen to erase total data after test runs, and to restart total calculations for operating time, operating counts, and so on.

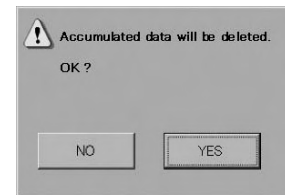
Procedure

Select [5. Initial settings] in the main menu and [5. Clear accum. data] in the sub menu, then proceed as follows.



- ① Touch [Clear accum. data].

A window like the following appears.



Touch [Yes]. Total data up to now is erased, and calculation of total operating time restarts.



6.4 Status Monitoring and Operation Screens

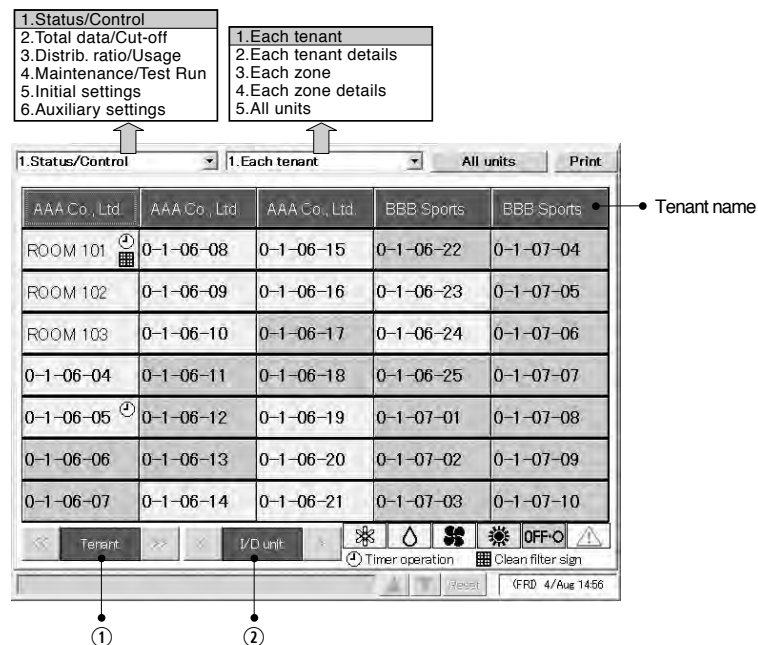
6.4.1 Displaying general information by tenant

Use this screen to display information about all connected indoor units by tenant.

Procedure

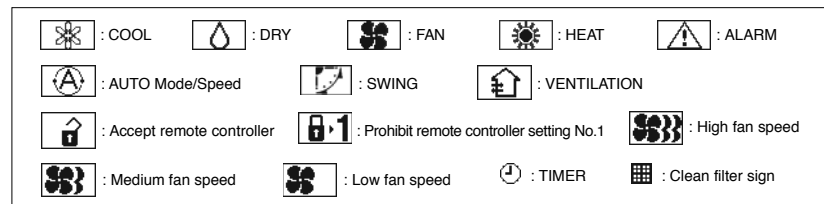
Select [1.Status/Control] in the main menu and [1.Each tenant] in the sub menu.

The indoor units for each tenant are displayed.



- ① Scrolls the display one tenant at a time.
- ② Scrolls the display one row at a time.

Meaning of symbols



"--" is displayed in the tenant name row for indoor units not registered to a tenant. The first 12 characters are displayed for tenant names and unit names.

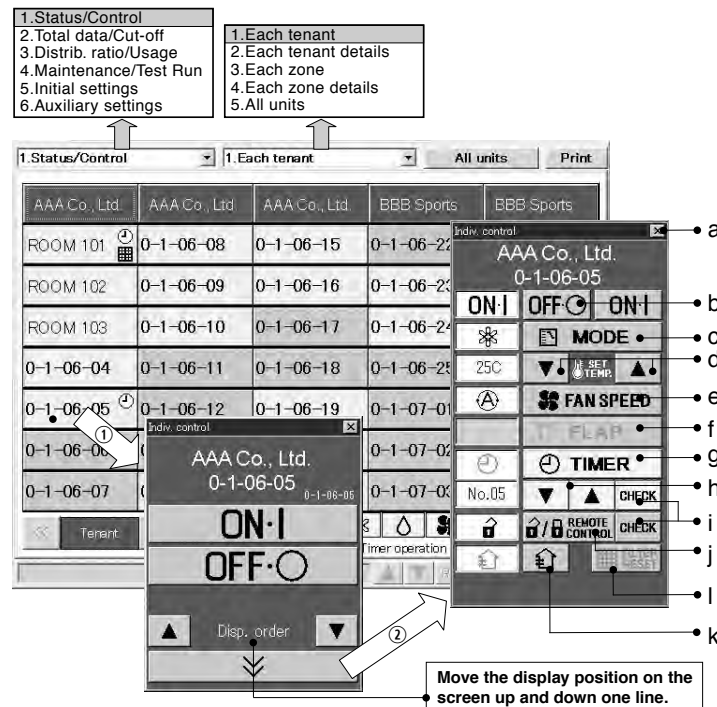
6.4.1.1 Operating units individually

Use this screen to operate individual indoor units.

Procedure

Select [1.Status/Control] in the main menu and [1.Each tenant] in the sub menu.

- ① When you touch the unit that you want to set, a remote control window for individual on/off operations appears.
- ② When you touch [ON/OFF], a remote control window appears. This window allows you to make detailed settings for operations on individual units.



- a. Closes the remote control window.
- b. Sets to either Start or Stop.
- c. Sets the operating mode.
- d. Set the temperature.
- e. Sets the fan speed.
- f. Sets the fan direction. This setting is applied to the entire group. You cannot change the sub unit setting independently.
- g. Sets and cancels timer operation.
- h. Sets timer number from No. 1 to No. 50.
- i. Displays a window that allows you to check timer setting status and remote control prohibition status.
- j. Displays one of "Prhbt1/ Prhbt2/ Prhbt3/ Prhbt4/ Accept".
- k. Turns the ventilation function ON and OFF. (You cannot press the button when air conditioners have no ventilation functions).
- l. Resets filter cleaning signs.


• For multiple units, the operation mode for one unit may not be varied while another indoor unit is under operation. In such a case, once stop the unit, hold it for several minutes, and then vary the operation mode.
 • In the remote control window, the first 16 characters for tenant names and the first 12 characters for unit names are displayed.

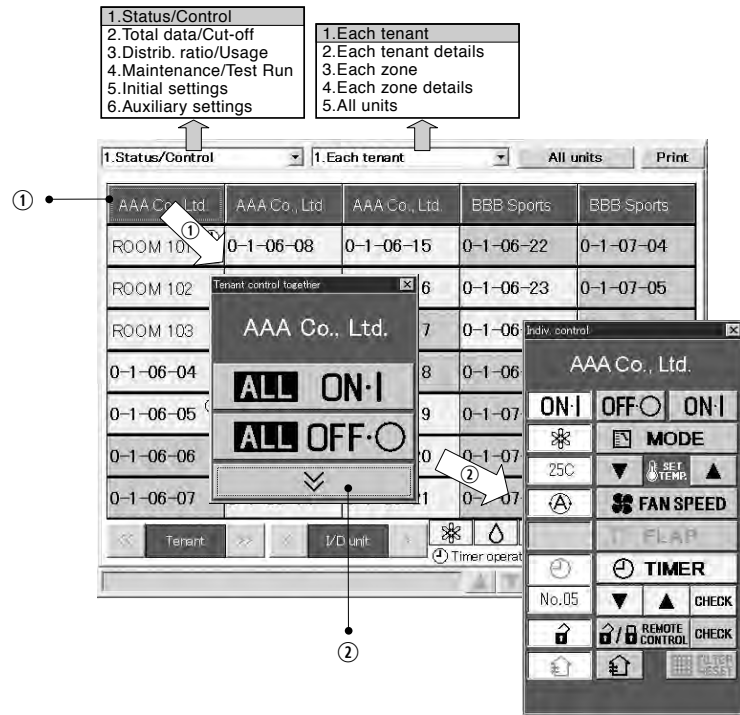
6.4.1.2 Operating all units by tenant

Use this screen to operate all connected indoor units of each tenant.

Procedure

Select **1.Status/Control** in the main menu and **1.Each tenant** in the sub menu.

- ① When you touch a tenant name, a remote control window appears. This window allows you to perform on/off operations for all units of the tenant.
- ② When you touch , a remote control window appears. This window allows you to make detailed settings for operations on all units of the tenant.




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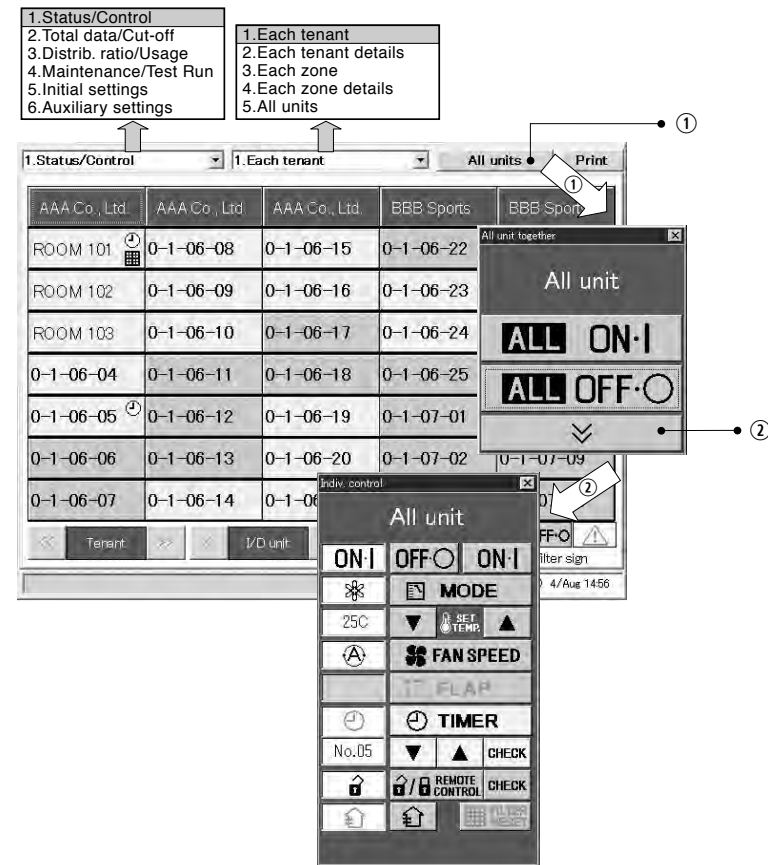
6.4.1.3 Operating all connected units

Use this screen to operate all connected indoor units.

Procedure

Select **1.Status/Control** in the main menu and **1.Each tenant** in the sub menu.

- ① When you touch **All units**, a remote control window appears. This window allows you to perform on/off operations for all connected units.
- ② When you touch , a remote control window appears. This window allows you to make detailed settings for all connected units.



6 Using the System

Main 1 Sub 2

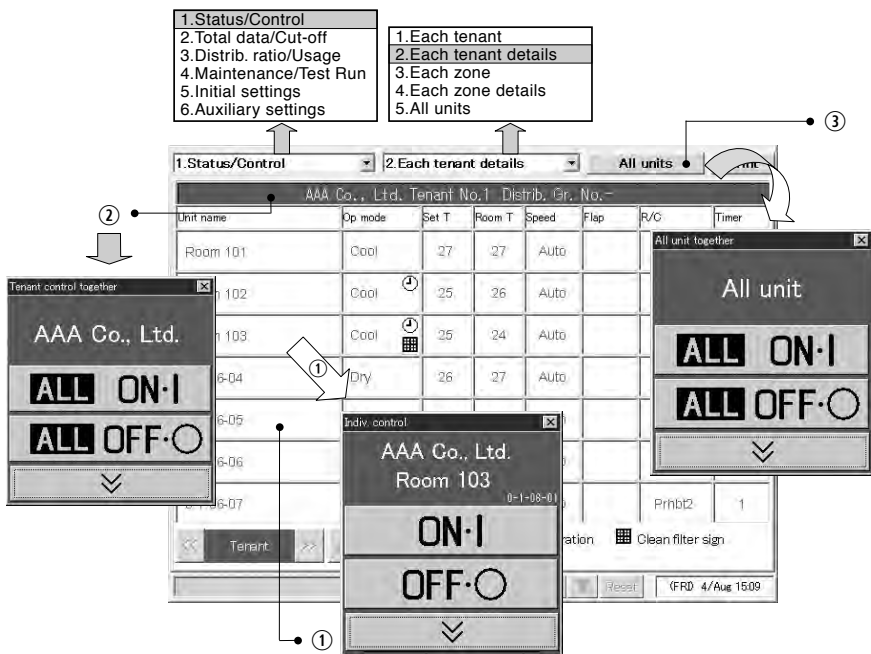
6.4.2 Displaying detailed information by tenant

Use this screen to display detailed settings and operating for each tenant.

Procedure

Select **1.Status/Control** in the main menu and **2.Each tenant details** in the sub menu.

- ① When you touch a unit name, a remote control window for individual operations appears.
- ② When you touch a tenant name, a remote control window for operating all tenant units appears.
- ③ When you touch **All units**, a remote control window for operating all connected units appears.



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6 Using the System

Main 1 Sub 3

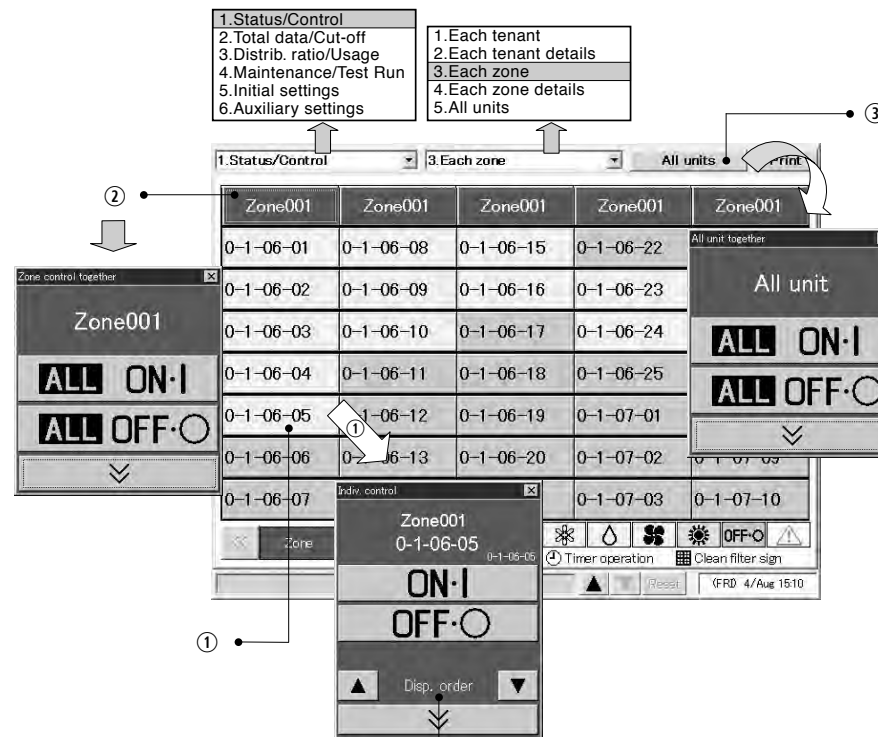
6.4.3 Displaying general information by zone

Use this screen to display the state of all units in a zone and to operate those units.

Procedure

Select **1.Status/Control** in the main menu and **3.Each zone** in the sub menu.

- ① When you touch a unit name, a remote control window for individual operations appears.
- ② When you touch a zone name, a remote control window for operating all units in the zone appears.
- ③ When you touch **All units**, a remote control window for operating all connected units appears.



Move the display position on the screen up and down one line.

The first twelve characters are displayed for zone names and unit names.

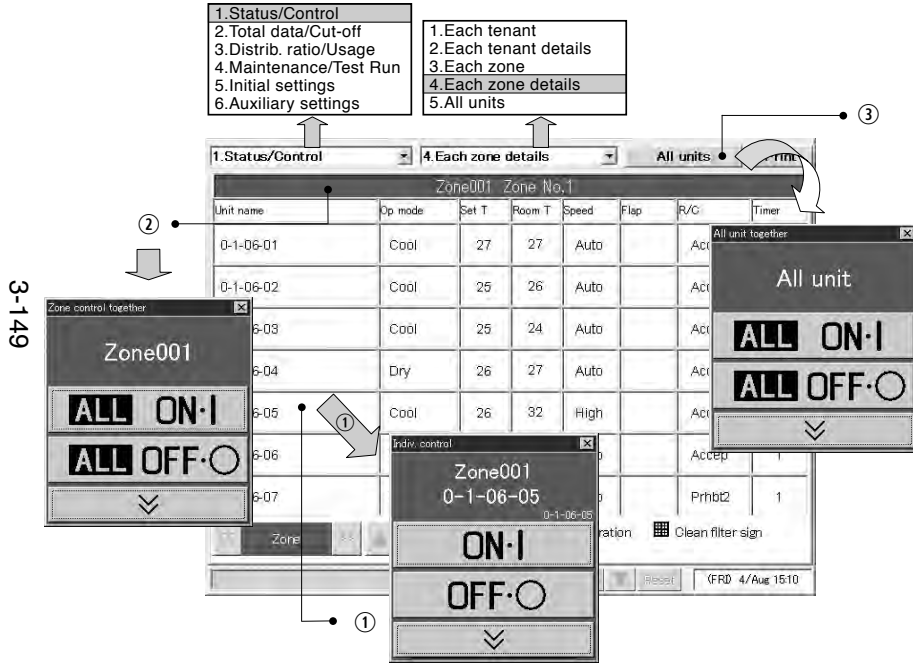
6.4.4 Displaying detailed information by zone

Use this screen to display detailed settings and operating for each zone.

Procedure

Select 1.Status/Control in the main menu and 4.Each zone details in the sub menu.

- ① When you touch a unit name, a remote control window for individual operations appears.
- ② When you touch a zone name, a remote control window for operating all units in the zone appears.
- ③ When you touch All units, a remote control window for operating all connected units appears.



6.4.5 Displaying and operating all indoor units

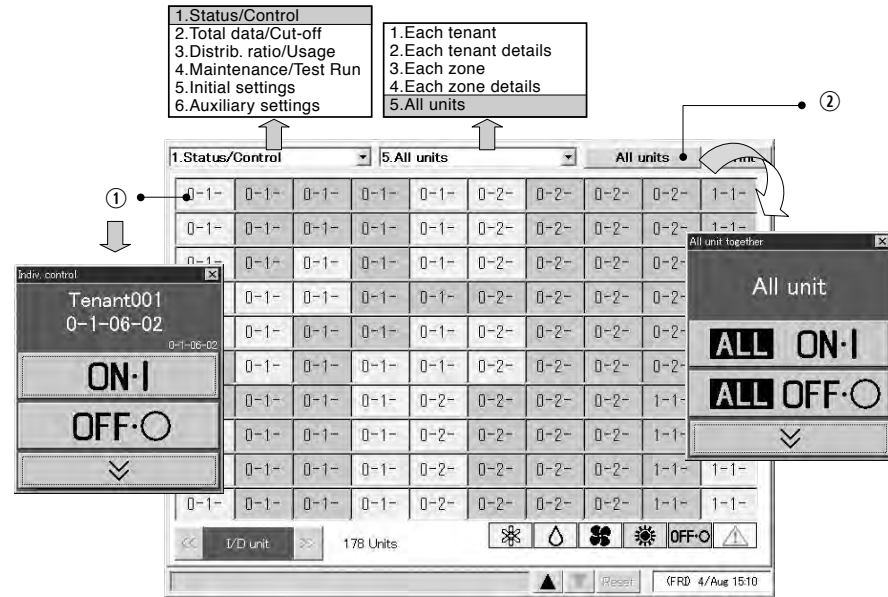
Use this screen to display information about the state of all indoor units and to operate all indoor units at once.

Procedure

Select 1.Status/Control in the main menu and 5.All units in the sub menu.

One screen displays up to 100 indoor units in order of their tenant. The units can be operated individually or all at once.

- ① When you touch a unit name, a remote control window for individual operations appears.
- ② When you touch All units, a remote control window for operating all connected units appears.



The first four characters are displayed for unit names.



6.5 Total Data and Manual Cut-Off Processing

6.5.1 Displaying total data by indoor unit

Use this screen to check total data such as the operating time and the number of operations for each indoor unit.

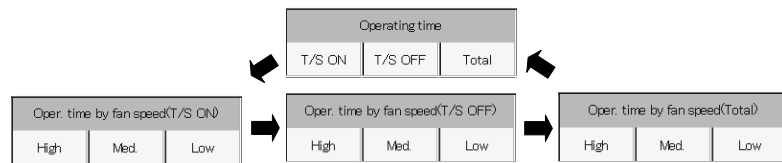
Procedure

Select [2.Total data/Cut-off] in the main menu and [1.Each I/D unit] in the sub menu.

- ① Selects the tenant to display.
- ② Selects either the current or the past (maximum 24 months) cut-off data.
- ③ Selects the time zone to display.

* This button will be invalid when setting the mode at "No Distrib.". (see Main 5 Sub 1)

④ If you want to display operating time by fan speed, touch [Operating time]. The display changes as shown below.



6.5.2 Displaying total data by tenant

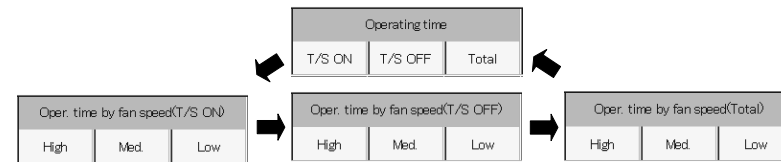
Use this screen to check total data such as the operating time and the number of operations for each tenant.

Procedure

Select [2.Total data/Cut-off] in the main menu and [2.Each tenant] in the sub menu.

- ① Selects the distribution group to display.
 - ② Selects either the current or the past (maximum 24 months) cut-off data.
 - ③ Selects the time zone to display.
- * This button will be invalid when setting the mode at "No Distrib.". (see Main 5 Sub 1)

④ If you want to display operating time by fan speed, touch [Operating time]. The display changes as shown below.



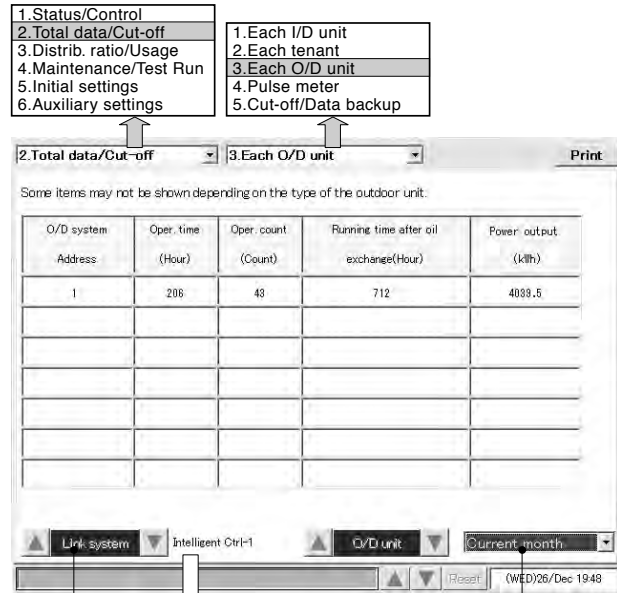
6.5.3 Displaying total data by outdoor unit

Use this screen to check total data such as the operating time and the number of operations for each outdoor unit.

Procedure

Select [2.Total data/Cut-off] in the main menu and [3.Each O/D unit] in the sub menu.

- ① Selects the connection destination link system to display.
- ② Selects either the current or the past (maximum 24 months) cut-off data.



Intelligent Ctrl-1
Intelligent Ctrl-2
Adaptor 1-1
Adaptor 1-2
:
Adaptor 7-2

- You should make frequent checks of the running time after oil exchanges. When the time approaches for an oil exchange, contact your dealer or service provider to request an early oil exchange. The engines of GHP type outdoor unit can be damaged by operation without exchanging the oil.
- For double multiple models comprising two or more outdoor units with the same address, data with a typical unit are displayed.
- Depending on the model of the outdoor unit, some items may not be displayed.
- Monthly values are displayed for "Operating time" and "Operating count". (The values reset to "0" after cut-off processing.)
- Cumulative values from the starting point are displayed for "Running time after oil exchange (Hour)" and "Power output (kWh)". (The values do not reset to "0" even after cut-off processing.)

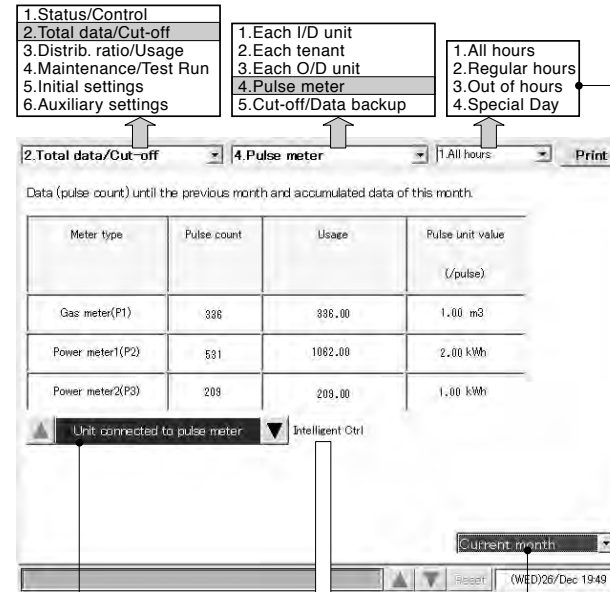
6.5.4 Displaying pulse meter total data

Use this screen to check the pulse count and other such cumulative data for pulse meters.

Procedure

Select [2.Total data/Cut-off] in the main menu, and [4. Pulse meter] in the sub menu.

- ① Selects the pulse meter connection destination.
- ② Selects either the current or the past (maximum 24 months) cut-off data.
- ③ Selects the time zone to display.
 - * This button will be invalid when setting the mode at "No Distrib.". (see Main 5 Sub 1)



Intelligent Ctrl
Adaptor 1
Adaptor 2
:
Adaptor 7

If the product type is HOT Multi, unit amount will be displayed in m³ or liters. The meter type will be "fuel metering".



6 Using the System

Main 2 Sub 5

6.5.5 Performing manual cut-off processing and saving data

Use this screen to perform manual cut-off processing, and to back up setting and total data to optional PC Cards.

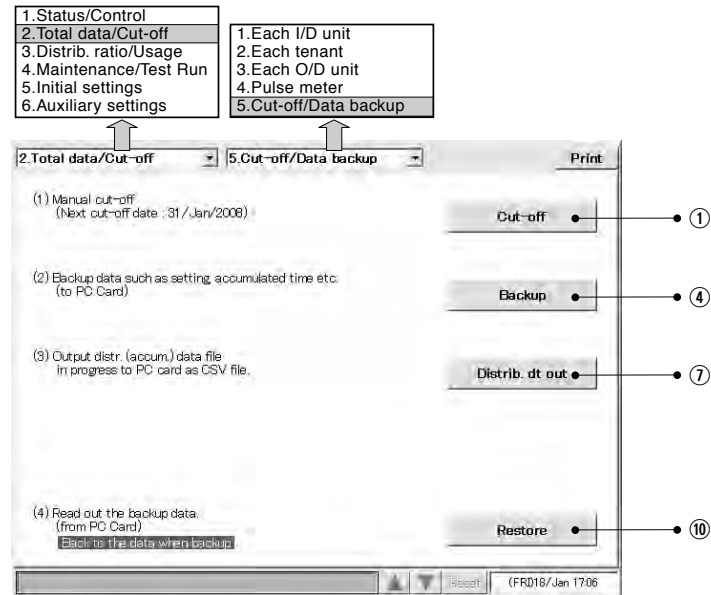
6.5.5.1 Manual cut-off processing

Proceed as follows to manually perform cut-off processing.

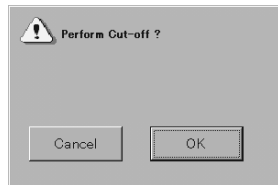
Procedure

Select **2.Total data/Cut-off** in the main menu and **5.Cut-off/Data backup** in the sub menu.

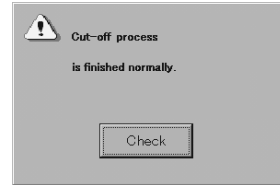
- ① Touch **Cut-off**.



- ② When a window like the one shown below appears, touch the **OK** button.



- ③ When a window like the one shown below appears, touch the **Check** button.



6 Using the System

Main 2 Sub 5

6.5.5.2 Saving data

Proceed as follows to back up setting data and totals data to optional PC Cards.

Procedure

Complete the cut-off processing described in “6.5.5.1 Manual cut-off processing” and then execute the following backup procedure.

- ④ Insert a PC card and touch the **Backup** button.

- ⑤ When a window like the one shown below appears, touch the **OK** button.



- ⑥ When a window like the one shown below appears, touch the **Check** button.



* When keeping the PC card inserted in a unit, data therein are automatically backed up once a day (at every 0 o'clock at midnight).

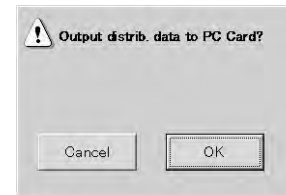
6.5.5.3 Outputting distribution data in progress

Save distribution data (total data) in progress before cut-off processing in PC cards (optionally available) following the procedure stated below.

Procedure

- ⑦ Insert a PC card and touch the **Distrib. dt out** button.

- ⑧ When a screen like the one shown below appears, touch the **OK** button.



As data output by pressing the **Distrib. dt out** button are strictly in progress, it is impossible to apply these data for cut-off processing for the tenant who leaves halfway. (Manual cut-off processing is necessary).

⑨ When a screen like the one shown below appears, touch the **Check** button.



[File form]

A file name is fixed as follows according to the year, month, and date when the distribution data output was carried out.

20060316A.csv (Example of a file output on March 16, 2006)

When outputting repeatedly on the same day, the last "A" varies as B, C, D, and so forth.

(Outputting is possible up to 26 times a day).

Data composition in the file is the same as that in a cut-off processing file.

[Caution]

Distribution data files are stored in the "Data" folder.

Copy output distribution data files to your PC and then delete them from the PC card.

When distribution data files are too many, normal backups of cut-off data may become impossible.

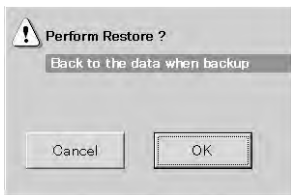
3-153 6.5.5.4 Restoring data

Proceed as follows to restore setting data and total data from optional PC Cards.

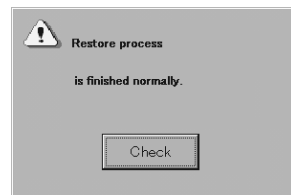
Procedure

⑧ Insert a PC card and touch the **Restore** button.

⑩ When a window like the one shown below appears, touch the **OK** button.



⑨ When a window like the one shown below appears, touch the **Check** button.



- * When trying to restore data backed up using an old-version Intelligent Controller, a message "Unsupported file version. Perform Restore?" will be displayed; confirm the message and touch "Yes". After completing restoring, "Rebooting." will be displayed and then touch "OK". The data restored will be effective after rebooting. (After "Converting data" is displayed for a while, the system will automatically reboot again.)
- * Everyday, at 23:30 to 00:00, cut-off processing take place, when you cannot press the **Restore** button.

Use the special optional PC Cards to back up and restore Intelligent Controller data. For details about using PC Cards, refer to the instructions of the PC Cards. Depending on the amount of data, backup and restore operations may require up to 15 minutes.

6.6 Air Conditioning Distribution Ratios and Energy Usage

6.6.1 Displaying distribution ratios and energy usage by indoor unit

Use this screen to check the distribution ratios and energy usage of indoor units.

Procedure

Select **3.Distrib. ratio/Usage** in the main menu and **1.Each I/D unit** in the sub menu.

*When "No Distrib." is selected, this screen is not accessible. (see Main 3 Sub 1)

- ① Selects the tenant to display.
- ② Selects either the current or the past (maximum 24 months) cut-off date.
- ③ Selects the time zone to display.
- ④ Switches the gas distribution ratio and gas usage display between values for air conditioning and values for power generation.

When "Gas usage" is displayed: Gas distribution ratios and usage for air conditioning are shown.

When "Gas use/PwrGen" is displayed: Gas distribution ratios and usage for power generation are shown.

For air conditioning units without a power generation feature, " - " appears under gas usage for power generation and gas distribution ratio.

Link=	Unit name	I/D op time	Power usage	Distr.	Gas usage	Distr.	
O/D-I/D		T/S ON	(kWh)	ratio(%)	(m3)	ratio(%)	
0-1-01-01	101	174:54	117:27	12.14	1.56	10.77	2.06
0-1-01-02	102	174:05	119:43	12.29	1.58	10.92	2.09
0-1-31-02	103	132:15	88:21	12.37	1.59	11.08	2.12
1-1-01-01	1-1-01-01	278:54	187:19	12.37	1.59	10.98	2.10
1-1-01-02	1-1-01-02	189:29	121:21	12.45	1.60	11.13	2.13

- If the product type is HOT Multi, unit amount will be displayed in m³ or liters.
- If no pulse meter is connected, power usage and gas usage are not displayed.
- Gas usage and distribution ratios are not displayed for PAC units.



6 Using the System

Main 3 Sub 2

6.6.2 Displaying distribution ratios and energy usage by tenant

Use this screen to check the distribution ratios and energy usage by tenant.

Procedure

Select **3.Distrib. ratio/Usage** in the main menu and **2.Each tenant.** in the sub menu.

*When "No Distrib." is selected, this screen is not accessible. (see **Main 5 Sub 1**)

- ① Selects the distribution group to display.
- ② Selects either the current or the past (maximum 24 months) cut-off data.
- ③ Selects the time zone to display.
- ④ Switches the gas distribution ratio and gas usage display between values for air conditioning and values for power generation.

When "Gas usage" is displayed: Gas distribution ratios and usage for air conditioning are shown.

When "Gas use/PwrGen" is displayed: Gas distribution ratios and usage for power generation are shown.

For air conditioning units without a power generation feature, " - " appears under gas usage for power generation and gas distribution ratio.

Tenant No.	Tenant name	Power usage(kWh)		Gas usage(m3)	
			ratio (%)		ratio (%)
1	AAA Co., Ltd.	284.13	36.52	203.79	38.89
2	BBB Sports	82.70	10.83	0.00	0.00
3	CCC	284.44	36.56	204.26	39.06
4	DDD	61.82	7.92	54.88	10.50
5	EEE	64.96	8.37	59.85	11.45
Total		777.84	100.00	522.77	100.00

Callout 1: 3.Distrib. ratio/Usage
Callout 2: 2.Each tenant
Callout 3: 1.All hours, 2.Regular hours, 3.Out of hours, 4.Special Day
Callout 4: 1.Each I/D unit, 2.Each tenant

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- If the product type is HOT Multi, unit amount will be displayed in m³ or liters.
- If no pulse meter is connected, power usage and gas usage are not displayed.
- Gas usage and distribution ratios are not displayed for PAC units.

6 Using the System

Main 3 Sub 2

6.6.3 Time zone totals and distribution

The Intelligent Controller provides functions for recording total operating time and calculating distribution ratios for four time zones: All hours, Regular hours, Out of hours, and Special days. When using these functions, be aware of the following points.

■ Margin of error in time zone operating totals

The intelligent controller acquires operating time data accumulated by individual indoor units via communication adaptors. The Intelligent Controller itself has an internal communication adaptor function.

When the Intelligent Controller requests data from a communication adaptor, the adaptor queries indoor units for their operating time data, and forward it to the Intelligent Controller after all totals have been calculated.

For this reason, there is a margin of error of up to several minutes that may arise in count totals around the transitions from one time zone to another. For example, cases such as the following are possible.

- Case 1) Indoor units are stopped at the exact end of the Regular hours time zone (or immediately before the end of the zone). For this reason, several minutes are counted in the Out of hours total.
- Case 2) Indoor units are operated for the same length of time before and after the transition from Regular hours to Out of hours, but the totals for the two zones are not the same.

■ Note about daily timer settings

For communications reasons, there is a slight delay before units can be stopped by a timer. Therefore you should avoid setting timers that stop units exactly at the transition between two time zones.

For example, if you simultaneously stop a large number of indoor units at the transition from Regular hours to Out of hours, a certain period of time is required for the indoor units to actually stop. This time is counted as Out of hours time.

If you need to set a timer to stop units before a time zone transition, you should avoid setting it within 10 minutes of the transition. (This is only an approximately guideline, since results vary depending on communications conditions.)

■ Communications errors and data totals

Data totals may not be accurate if communications errors occur in the Intelligent Controller, indoor units, or communication adaptors.

For example, if a communications error occurs in the Regular hours time zone, and normal communications are restored in the Out of hours time zone, all data received by the Intelligent Controller will be counted in the Out of hours time zone.

Totals data received by the Intelligent Controller is counted in the time zone in which it is received.

6.7 Maintenance and Test Runs

6.7.1 Checking inspection signs

Use this screen to check for indoor units for which filter cleaning signs have been issued, and outdoor units (GHP) for which engine oil inspection signs have been issued.

Procedure

Select **4.Maintenance/Test Run** in the main menu and **1.Inspection sign** in the sub menu.

If filter cleaning signs or engine oil inspection signs have been issued, contact your dealer or service provider to request cleaning or oil exchange.



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Filter cleaning signs are only an approximate guide. We recommend that you clean indoor unit filters regularly, even if no signs have been issued.

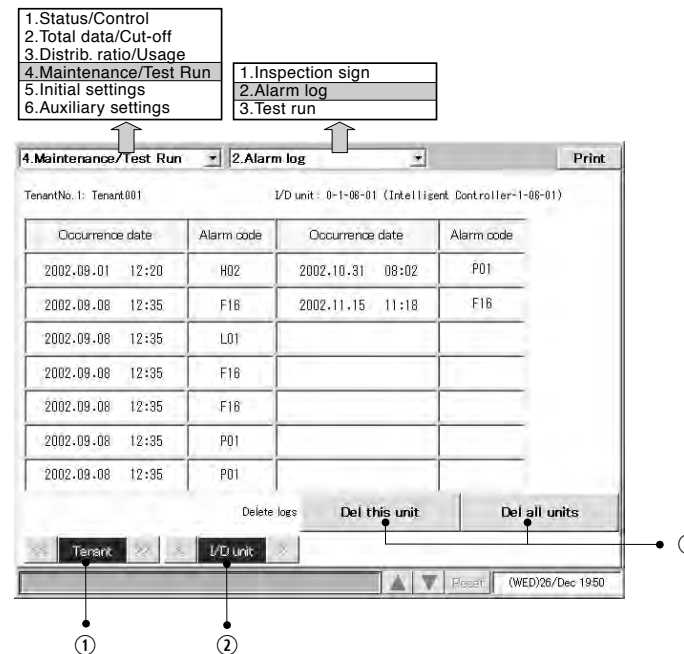
6.7.2 Checking the alarm logs of indoor units

Use this screen to check logs of up to the past 14 alarms and errors for individual indoor units.

Procedure

Select **4.Maintenance/Test Run** in the main menu and **2.Alarm log** in the sub menu.

- ① Select the tenant to display.
- ② Select the indoor unit to display.



- ③ Touch the **Del this unit** button to delete the alarm logs of the selected unit only, or touch the **Del all units** button to delete the alarm logs of all units.
- ④ When a window like the following appears, touch the **Yes** button.



6.7.3 Executing test runs

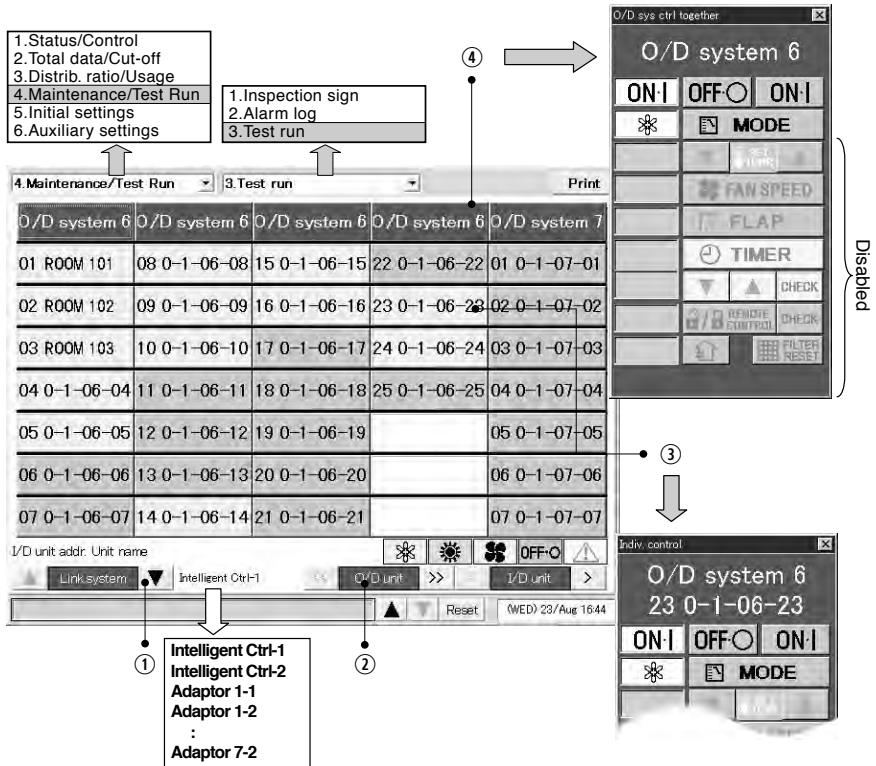
Use this screen to display list of each indoor unit for outdoor unit system addresses. You can execute test runs, either for each outdoor unit system address or individually.

Procedure

Select **4.Maintenance/Test Run** in the main menu and **3.Test run** in the sub menu.

- ① Select a connection destination link system.
- ② Select the outdoor unit to operate.

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- ③ To operate an individual unit, touch a unit name and operate with the individual control remote control window.
- ④ To operate all units in an outdoor unit system, touch the outdoor unit system address column. A remote control window for operating an outdoor unit system appears. Use this window to execute a test run. Select Cool, Heat, or Fan as the operating mode.

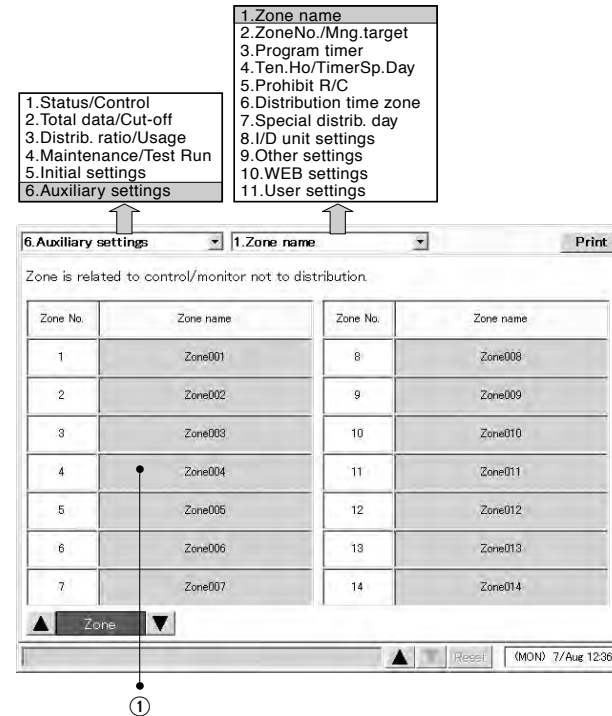
6.8 Auxiliary Settings

6.8.1 Registering zone names

You can assign names to zones. Zones are unrelated to distribution, so you can mix GHP, PAC, and HOT units, and make settings that extend across link systems. Start/stop, monitoring, timer operation and so on can be done all at once for all units in a zone.

Procedure

Select **6.Auxiliary settings** in the main menu and **1.Zone name** in the sub menu.



- ① Select a name to register or modify. A software keyboard appears.
- ② Enter the name with the keyboard. Names can be up to 20 characters long.
 - * See "7 Entering Text and Numbers" for details about entering text in keyboard windows.
 - * Zones name can be registered in the range 1 to 128.

6.8.2 Setting zone numbers and management targets

Use this screen to set the zone number and management category for individual indoor units. Be sure to assign a central address to each unit.

Procedure

Select **6.Auxiliary settings** in the main menu and **2.ZoneNo./Mng.target** in the sub menu.

O/D- I/D	CNTR Address	Unit name	Tenant No.	Zone No.	Management	Product Type	Model (Class)
6-1	1	ROOM101	1	1	Target	PAC	T(45)
6-2	2	ROOM102	1	1	Target	PAC	X(71)
6-3	3	ROOM103	1	-	Indiv Op	PAC	X(71)
6-4	4	0-1-06-04	1	-	Not Target	PAC	K(28)
6-5	5	0-1-06-05	1	-	Target	PAC	A(28)
6-6	6	0-1-06-06	1	-	Target	PAC	S(45)
6-7	-	0-1-06-07	1	-	Target	PAC	T(45)

① A window like the one shown at right appears when you touch the zone number column.

Enter digits from 1 to 9 to specify the zone number.

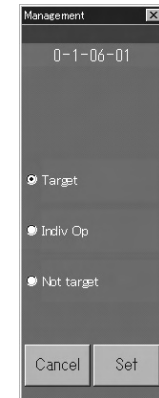
* Zone No. can be registered in the range 1 to 128.



② A window like the one shown at right appears when you touch the management column.

Select one from among Target, Individual operation, or Not Target.

- Individual operation:
Display, total, distribution, and individual operation are possible with Individual units, but all-unit operations (all tenant units, all zone units, all connected units, external all stop input, external all start input, etc.) are not possible.
However, external all-unit alarm output and external all-unit operation output are possible.
- Not Target:
No operations are possible for Not Target units, including information display (except for Main 5 Sub 2 and Main 6 Sub 2), totals calculation, and distribution.



6 Using the System

6.8.3 Programming timers

Up to 50 types of daily timers and 50 types of weekly timers can be programmed. It is also possible to set holidays or timer special days for tenants.

6.8.3.1 Programming daily timers

Up to 50 types of daily timers can be programmed, with up to 50 times per day. Start/stop, operation mode, temperature settings, and remote control prohibition can be programmed.

Procedure

Select **6.Auxiliary settings** in the main menu and **3.Program timer** in the sub menu.

1. Status/Control
2. Total data/Cut-off
3. Distrib. ratio/Usage
4. Maintenance/Test Run
5. Initial settings
6. Auxiliary settings

1. Zone name
2. ZoneNo./Mng.target
3. Program timer
4. Ten.Ho/TimerSp.Day
5. Prohibit R/C
6. Distribution time zone
7. Special distrib. day
8. I/D unit settings
9. Other settings
10. WEB settings
11. User settings

No.	Set time	Start/Stop	Op mode	Set temp.	Prbht
1	7:00	Stop	-	24	Acc
2	8:00	Start	Heat	23	Prt
3	9:00	Stop	-	24	Acc
4	13:00	Start	Heat	23	Prt
5	15:00	Stop	-	24	Acc

No.	SUN	MON	TUE	WED	THU	FRI	SAT
1	D1	D1	D1	D1	D1	D1	D1
2	D2	D1	D1	D1	D1	D1	D1
3	D2	D1	D1	D1	D1	D1	D2

- ① With Daily timer, select a timer number (D1 to D50, Holiday, Sp1 to Sp5).
The Holiday number is reserved for tenant holiday settings.
The timer numbers Sp1 to Sp5 are reserved for setting timer special days.
- ② Touch the Set time column.
- ③ Select the time to set.

6 Using the System

- ④ Touch **Set** to confirm the time.
- ⑤ Touch **Cancel** to cancel the setting.
The display changes to “-”.
- ⑥ Touch the Start/Stop column and set in the following window.

1. Closes the window.

2. Programs the timer to start the unit.

3. Programs the timer to stop the unit.

4. Cancels the setting.

5. Confirms the setting.

- ⑦ Touch the Op mode column and set in the following window.

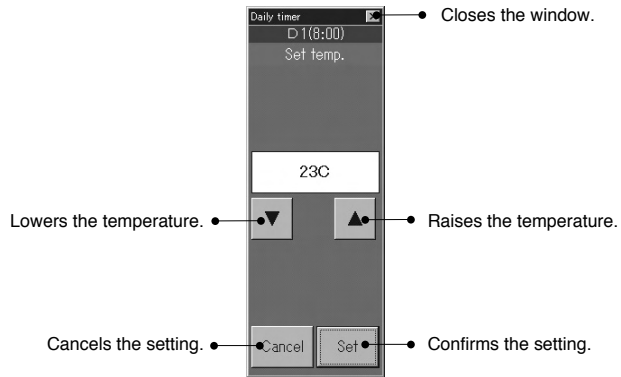
1. Closes the window.

2. Sets the operating mode. Select from among Heat, Cool, Fan, Dry, and Auto.

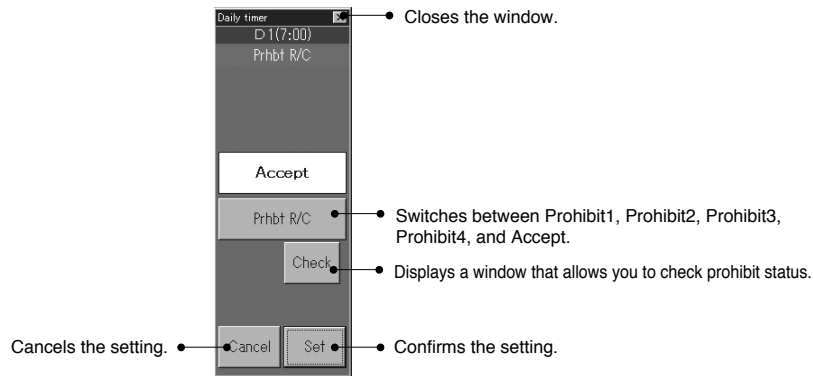
3. Confirms the setting.

4. Cancels the setting.

⑥ Touch the Set temp. column and set in the following window.



⑦ Touch the Prhbt R/C column and set in the following window.



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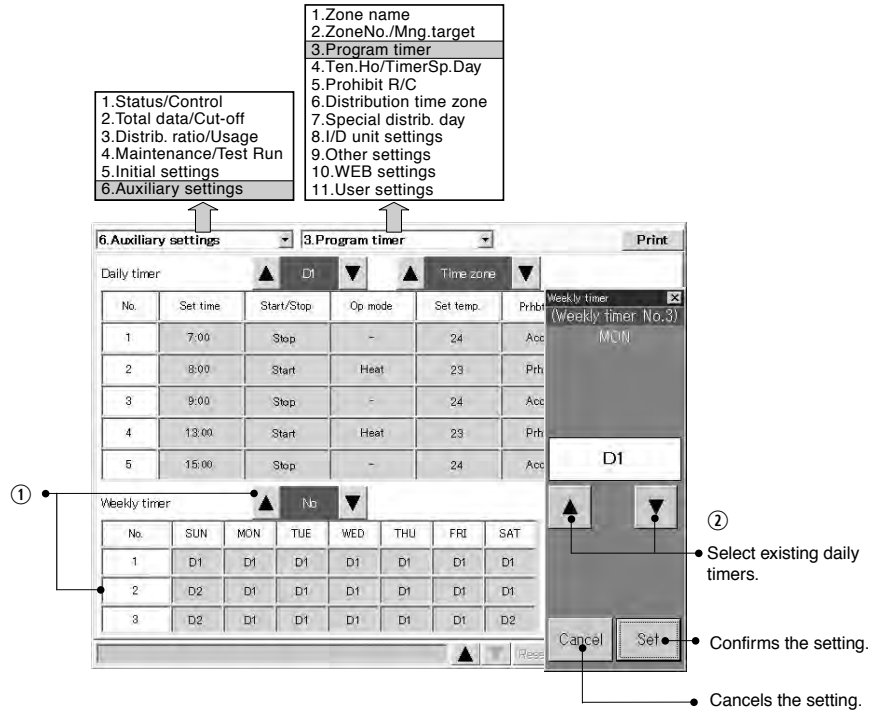
Since different air conditioner models have different upper and lower temperature limits, the temperature is set automatically within the supported range when an air conditioner is actually controlled. Items for which no time is set are ignored.

6.8.3.2 Programming weekly timers

You can program weekly timers by assigning any daily timer to each day of the week. Up to 50 types of weekly timers can be programmed.

Procedure

Select [6.Auxiliary settings] in the main menu and [3.Program timer] in the sub menu.



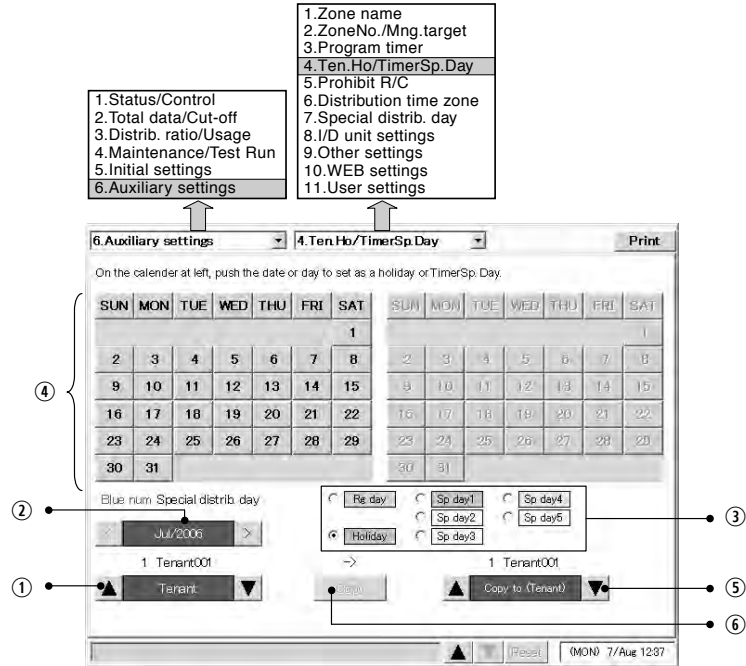
- ① With Weekly timer, select a weekly timer number (1 to 50).
Up to 50 types of weekly timers can be set. Three items each are displayed.
Each press of ▲ changes the display in order like 1,2,3 | 2,3,4 | 3,4,5.
Each press of ▼ changes the display in order like 50,1,2 | 49,50,1 | 48,49,50.
- ② Select the daily timer number (D1 to D50 | Holiday, Sp1 to Sp5) to set and confirm or cancel each button.

6.8.4 Setting Tenant holiday/Timer special day

You can make settings by tenant of days of setting timer for holidays and timer special days. Holidays and timer special days can be registered for up to the next two years.

Procedure

Select **6.Auxiliary settings** in the main menu and **4.Ten.Ho/Timer Sp. Day** in the sub menu.



- ① Select the tenant.
- ② Select the calendar for the month of the year to set.
- ③ Select items (regular days, holidays, and special days 1 to 5) you would like to set.
- ④ Point the item (regular days, holidays, and special days 1 to 5) you would like to set on the left calendar and touch the date or day of the week.
- ⑤ If holidays and timer special days have already been registered for a tenant, you can copy them from the calendar to the calendar on the right. Select the tenant for the copy destination calendar.
- ⑥ A window like the one on the right appears when you touch **Copy**.
- ⑦ Touch the **OK** button to copy two years of holidays from the tenant on the left to the tenant on the right.
* Set the system mode at "Regular day" to cancel settings of holidays and timer special days.

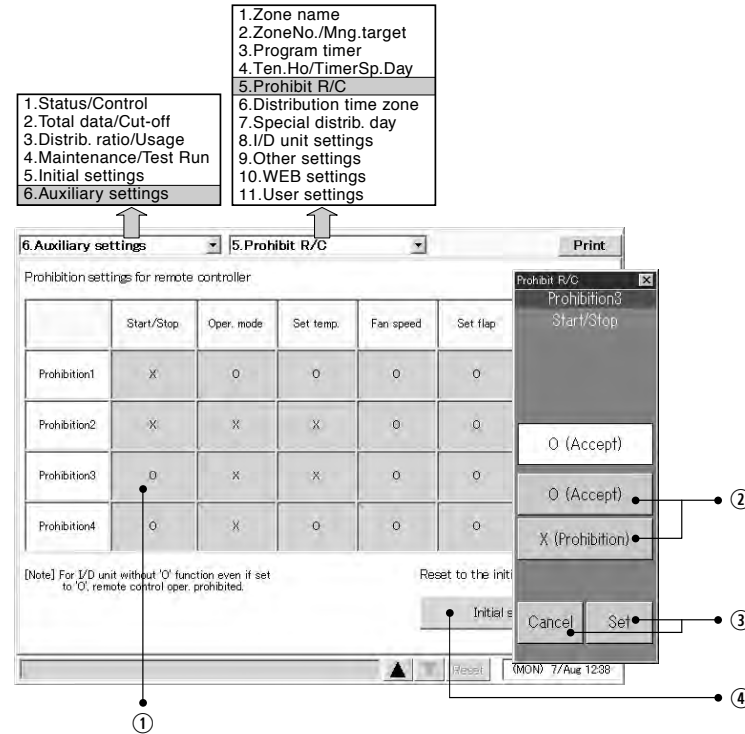


6.8.5 Prohibiting remote control use

You can prohibit the use of the remote controls connected to indoor units.

Procedure

Select **6.Auxiliary settings** in the main menu and **5.Prohibit R/C** in the sub menu.



- ① Touch the item you want to change to display a settings window for that item.
- ② To allow remote control use, touch the **O (Accept)** button. To prohibit remote control use, touch the **X (Prohibition)** button.
- ③ Touch the **Set** button to confirm the setting, or the **Cancel** button to cancel it.
- ④ Touch the **Initial setting** button to restore the initial setting (described above).

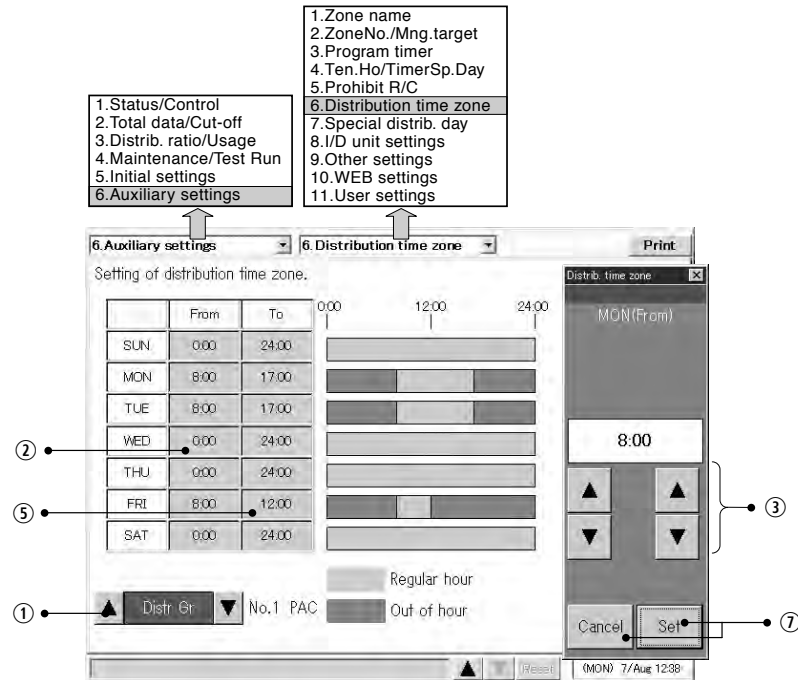
6.8.6 Setting distribution time zones

You can set distribution time zones for the same day of each week.

Procedure

Select [6.Auxiliary settings] in the main menu and [6.Distribution time zone] in the sub menu.

*When "No Distrib." is selected, this screen is not accessible. (see Main 5 Sub 1)



- ① Select the distribution group.
- ② Touch the "From" column.
- ③ Set the start time of regular hours to a time between 00:00 and 24:00 (30-minute intervals).
- ④ Touch the [Set] button to confirm the setting, or the [Cancel] button to cancel it.
 - If you set the start time to 00:00 and the end time to 24:00, the entire day is regular hours.
 - If the start time is the same as the end time, the entire day is out of hours.
 - If the start time and the end time are reversed, the outer side is regular hours.
- ⑤ Touch the "To" column.
- ⑥ Set the end time of regular hours to a time between 00:00 and 24:00 (30-minute intervals).
- ⑦ Touch the [Set] or [Cancel] button.

* Refer also to "6.6.3 Time zone totals and distribution".

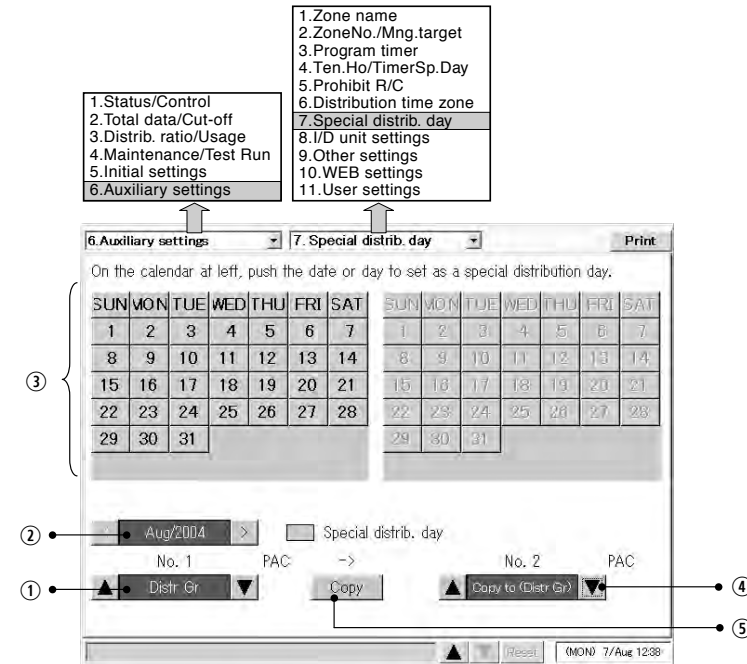
6.8.7 Setting special distribution days

You can set special distribution days to which normal time zone settings do not apply. Use this function for holidays and so on. Special distribution days can be registered for up to the next two years.

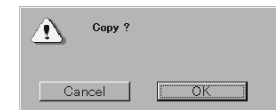
Procedure

Select [6.Auxiliary settings] in the main menu and [7.Special distrib. day] in the sub menu.

*When "No Distrib." is selected, this screen is not accessible. (see Main 5 Sub 1)



- ① Select the distribution group to set.
- ② Select the calendar for the month of the year to set.
- ③ On the left-side calendar, touch the date or day to set as a special distribution day.
- ④ If special distribution days have already been registered for a distribution group, you can copy them from the calendar to the calendar on the right. Select the distribution group for the copy destination calendar.
- ⑤ A window like the one on the right appears when you touch [Copy].
- ⑥ Touch the [OK] button to copy two years of special distribution days from the distribution group on the left to the distribution group on the right.



6 Using the System

Main 6 Sub 8

6.8.8 Indoor unit settings

You can use this screen to check the air conditioning capacity of indoor units, and to set the capacity. Normally you do not need to change settings with this screen.

Exercise care when changing settings, because improper settings can prevent accurate distribution.

Procedure

Select [6.Auxiliary settings] in the main menu and [8.I/D unit settings] in the sub menu.

*When "No Distrib." is selected, this screen is not accessible. (see Main 5 Sub 1)

1. Select the link system to display.

O/D- I/D	Unit name	Ten. No.	I/D unit Cap&W	Eheater Cap&W	Prdt. Type
1-1	aaa	1	2.4	-	PAC
1-2	bbb	1	*45.0	-	PAC
1-3	asahi	2	2.4	0.0	PAC
1-5	BlueWave	3	2.4	-	PAC
1-6	BlueWave	3	2.4	-	PAC(Sub)
1-7	BlueWave	3	2.4	-	PAC(Sub)
1-8	0-1-01-08	128	2.4	0.0	PAC

2. To change a capacity setting, touch an item in the capacity column, and enter a kW capacity from 0 to 999.9 in the numeric keypad window which appears.
3. Touch [Set] to confirm the setting.
Or [Auto] to cancel it. (The capacity value will restore the received level)
If you have changed the capacity, an asterisk (*) appears to the left of the value.
4. Touching the heater capacity column for the indoor unit having an electric heater will have a soft ten-key for the heater capacity setting displayed. Input numbers 0.0 to 100.00 by kW. However, these are effective only for loaded distribution settings.

6 Using the System

Main 6 Sub 9

6.8.9 Other settings

You can use this screen to register passwords, initialize data, and make power saving settings for the LCD display.

Procedure

Select [6.Auxiliary settings] in the main menu and [9.Other settings] in the sub menu.

6.8.9.1 Checking the connection configuration

1. Touch the [Chk config] button to check the connection configuration of the system.
You should do this after adding or deleting units, changing addresses, and so on.
If the system configuration has changed, cut-off processing and confirmation of the system processing messages appear. For details, see "6.9 System Configuration Changes".



Up to 10 minutes may be required to check the system configuration.

6.8.9.2 Registering passwords

- ② Click the **Not registered** button to display a keyboard window for registering passwords. You can register 3 kinds of passwords: “Setting”, “Distrib.”, and “Operation”. Refer to “Menu list” under “5. Quick reference” for details. Enter a 4-digit number from 0000 to 9999, and touch the **Set** button. The caption on the **Not registered** button changes to **Registered**. To delete a password, first enter the four-digit password, then touch the **Set** button. Clear the password by pressing the **Registered** button and entering the password. The button changes back to **Not registered**. When changing a password, delete the old password before setting the new one.

6.8.9.3 Selecting no-communications mode

- ③ Use the options buttons to select whether or not to use no-communications mode. If you select **YES (no-communications mode)** then communications errors will be suppressed, but it will not be possible to communicate with air conditioning units. Data displayed by the system will be meaningless. This setting is provided for occasions when you want to register names or check the display layout even though air conditioners are not installed, not turned on, or otherwise not capable of communications. Normally you should leave the **NO (Normal)** button selected, selecting **YES (no-communications mode)** only when it is necessary.

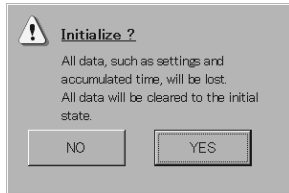
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6.8.9.4 Buzzer sounds

- ④ When pressing an effective button during setting at **Sound**, the buzzer will sound (buzz). When setting at **No sound**, even the alarm buzzer does not sound.

6.8.9.5 Initialization

- ⑤ Initialization erases all system data, including setting data and totals data. A window like the following appears when you touch the **Initialization** button.



!! Do not make imprudent initialization.

Touch the **Yes** button to erase all data and return the system to the factory default state.
 * Everyday, at 23:30 to 00:00, cut-off processing takes place and you cannot press the **Initialization** button then.

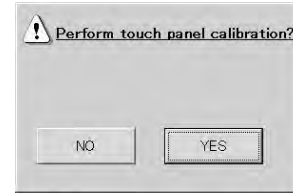
6.8.9.6 LCD auto off settings

- ⑥ The auto display off settings allow you to select a time after which the LCD display should be automatically turned off if there is no activity. The LCD display is turned on again when you touch it.
 Settings: 5 minutes, 10 minutes, 15 minutes, 30 minutes, OFF (default: 30 minutes)
 Turning the LCD display off when it is not in use saves power and can prolong the life of the display and backlight.

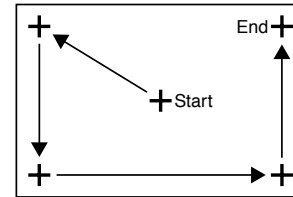
6.8.9.7 Calibrating touch panels

Humidity and temperature around the Intelligent Controller and its secular change may affect the point on the touch panel screen to deviate after use over a long period of time. In such a case, Calibrate the position.

- ⑦ Press **Calibration** and the next screen will be displayed.



Now press **Yes** and a cross mark will appear in the center of the screen. Keep pressing the center with a touch pen for a second or longer and stop pressing. Follow the same procedure of Upper left → Lower left → Lower right → Upper right.



Finally the cross mark disappear and “New calibration settings have been measured.” will be displayed. Then press somewhere on the screen and the result of calibration will become effective to restore the original screen. When 30 seconds passes without operating the screen, the calibration result is cancelled to restore the previous screen.



6.8.9.8 Power off button

⑧ **Always touch this button before powering the Intelligent Controller off.**

A message appears asking if you want to exit the program. Touch [OK] in the message.

The system saves current data, and then displays a message "It is now safe to turn off the Intelligent Controller." Wait until this message appears before powering the system off. (If there is a large amount of data, several minutes may be required for this message to appear.)

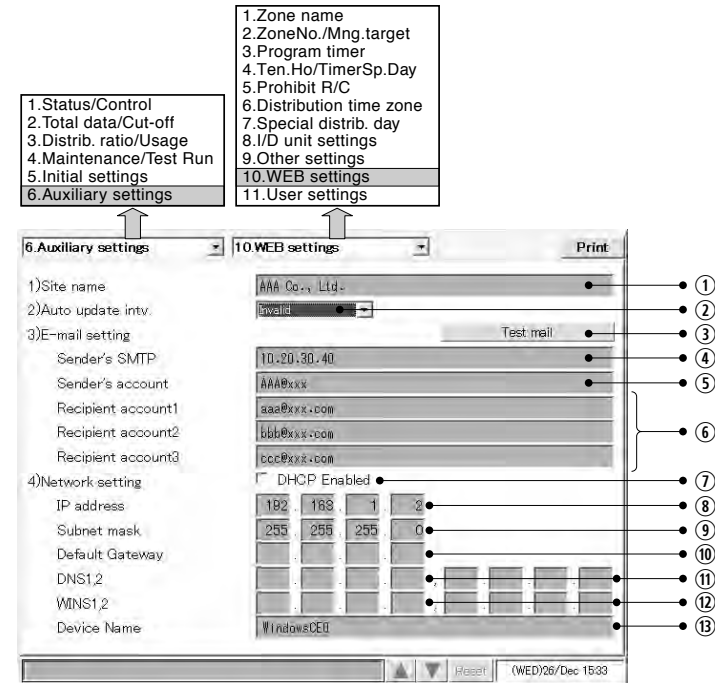
!! Powering off before this message appears may cause malfunction or prevent booting.

6.8.10 WEB settings

Settings related to WEB such as the site name, mail settings, and network settings are possible.

Procedure

Select [6. Auxiliary settings] in the main menu and [10. WEB settings] in the sub menu.



For items ①, ④ to ⑥, and ⑧ to ⑩, touch each input box and a soft keyboard will appear.

- ① Input the name of an optional site (within 40 characters).
- ② Set the automatic updating interval on the screen displayed on Web browser. When selecting "Invalid", data will not be updated until pressing the [New] button on the WEB browser screen.
- ③ Send the test mail.
- ④ Input the IP address (or domain name) of the mail (SMTP) server separately contracted.
- ⑤ Input an optional transmitter account name (mail address) (within 40 characters).
- ⑥ Input the receiver account name (mail address) (within 40 characters).
- ⑦ Select this check box to enable DHCP instead of using a fixed IP address. When DHCP is enabled, input for items ⑧ to ⑩ is disabled.
- ⑧ Input the Intelligent Controller IP address (or domain name). Refer to settings for other equipment (PC, router, etc.).
- ⑨ Input the Intelligent Controller subnet mask. Refer to settings for other equipment (PC, router, etc.).
- ⑩ Input the IP address of the default gateway connected to the Intelligent Controller as necessary.

- ① Input the IP address of the primary and secondary DNS servers as necessary.
- ② Input the IP address of the primary and secondary WINS servers as necessary.
- ③ Input the Intelligent Controller's device name (device ID) (within 15 characters).
(This is used to identify the Intelligent Controller when using DNS, for example.)
- * Refer to the network administrator for confirmation of detailed mail and network settings.
- * If you change the settings for items ① and ②, the system restarts so that the new settings are reflected when you switch to other screens.
- * You cannot set the IP address to "0.0.0.0" or "255.255.255.255". You cannot set the subnet mask, default gateway, DNS, or WINS to "0.0.0.0".

6.8.11 User settings

The user ID, password, authority, and operable tenant can be set.

Procedure

Select [6.Auxiliary settings] in the main menu and [11.User settings] in the sub menu.

1. Status/Control
2. Total data/Cut-off
3. Distrib. ratio/Usage
4. Maintenance/Test Run
5. Initial settings
6. Auxiliary settings

1. Zone name
2. ZoneNo./Mng.target
3. Program timer
4. Ten.Ho/TimerSp.Day
5. Prohibit R/C
6. Distribution time zone
7. Special distrib. day
8. I/D unit settings
9. Other settings
10. WEB settings
11. User settings

No.	User ID	Password	Authority	Operable
000	administrator	admin	o	1,2,3,...
001	abcd	12345	o	1,2,3
002	efgh	06789	o	4,5
003	ijkl	33333	x	6
004				
005				
006				

For items ① and ②, touch each input box and a soft keyboard will appear.

- ① Input an optional user ID (within 20 characters).
- ② Input an optional password (within 10 characters).
- ③ Users include three categories: "Administrator", "Special user", and "General user".
No. 000 denotes "Administrator" (A special user solely admitted; its initial user ID: administrator).
No.001 or higher denotes "Special user" if authority is set to o, and "General user" if authority is set to X. Depending on the user, the functions available from the Web differ as follows.

	Tenants affected	Prohibit remote control settings	Screen 3-3 Download	Screen 4-2 Alarm log	Screen 4-4 Sent mail log	Screen 6-3 Program timer	Screen 6-4 Ten.Ho/TimerSp.Day	Screen 6-5 Prohibit R/C
Administrator	All tenants	o	o	o	o	o	o	o
Special user	Specified tenants	o	x	o	x	Confirmation only	Confirmation only	Confirmation only
General user	Specified tenants	x	x	x	x	Confirmation only	x	x

- ④ When touching the input box, the following small screen is displayed, where you set operable tenants by User ID.

- ⑤ Register the tenant selected on the left side into the right side as the operable tenant.
- ⑥ Delete the tenant selected on the right side from among the operable tenants.
- ⑦ Select all the tenants on the left side.
- ⑧ Cancel this tenant setting change.
- ⑨ Make register setting for this user as the operable tenant.
- ⑩ Select all the tenants on the right side.



6 Using the System

6.9 System Configuration Changes

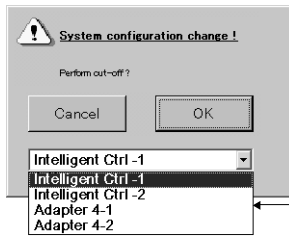
An alarm message like the following appears when a system configuration change (or the possibility of a configuration change) is detected.

If the system continues to operate after its configuration has changed, distribution ratios and other data will be totally inaccurate. For this reason, cut-off processing must be done with the system in the state before the change. The following message is displayed to ask you to confirm the processing.

Operation procedure for each case is as follows.

6.9.1 When a system configuration change detected

This alarm message is displayed in cases such as the following.



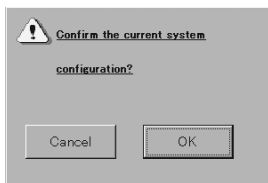
- ① "Check system Configuration" was made after removing the outdoor and indoor units.
- ② "Check system Configuration" was made after starting the unit and found that it was different from the previous one in configuration.

* "Configuration" includes not only the number of units and address but also indoor unit capacity, main/sub unit setting, and presence/absence of an electric heater.

While this message is visible, no other operations can be performed except **OK** and **Cancel**.

Touch **OK** to perform cut-off processing with the system in the state before the change.

Touch **Cancel** if you do not need to perform cut-off processing.



Touch **OK** to check the new configuration.

If you select **OK** here, the current system configuration is re-checked and the results are confirmed.

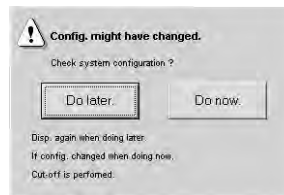
If you do not need to do this, select **Cancel**.

If the system has changed because of a mistake, return the system to its former state and then touch **Cancel**. You should also touch **Cancel** here if you mistakenly selected **Cancel** in the previous message, even though the system cut-off processing should have been done. This returns you to the first alarm message, where you can perform cut-off processing.

While this message is visible, no other operations can be performed except **OK** and **Cancel**.

6 Using the System

6.9.2 When system configuration may change



This alarm message is displayed in cases such as the following.

- ① The following "Detailed settings" were made from a local remote controller.
(for address, extension settings, indoor unit capacity, or presence/absence of an electric heater)
 - ② Only confirmation of "Detailed setting" was made from a local remote controller.
 - ③ Automatic address setting was carried out for an indoor or outdoor unit.
 - ④ An additional indoor or outdoor unit was installed.
- * "Configuration" includes not only the number of units and address but also indoor unit capacity, main/sub unit setting, and presence/absence of an electric heater.

While this message is visible, no other operations can be performed except **Do later.** or **Do now.**

When touching **Do later.**, this window closes and other screen operations are made possible.

However, after a while the message will be displayed again.

Touch **Do now.** to confirm whether the configuration has been actually changed.

When a configuration change was detected as a result of configuration confirmation, cut-off processing is automatically performed and the post-variation configuration is established. When there is no change in configuration, the screen exits configuration confirmation processing.

For example, imprudently pressing **Do now.** while a communication error message is displayed will result in an automatic cut-off processing to establish the current configuration. Therefore, take full care to avoid such a mistake.

When establishing a configuration without making cut-off processing, press **Do later.** to once close the screen and perform "Check system Configuration" using the 6-9 screen.

After this, proceed "Perform cut-off?" → "Cancel" → "Confirm the current system configuration?" → "OK" in accordance with "6.9.1. When a system configuration change detected".

When no operation has been made on this screen for twelve hours or more, cut-off and post-variation configuration fixing processing are automatically carried out.

Caution

Imprudent cut-off processing and configuration fixing or neglecting them when necessary may cause a significant inconvenience in control.

When this alarm message is displayed, do not operate the system and contact the store where you purchased it or its service agency.

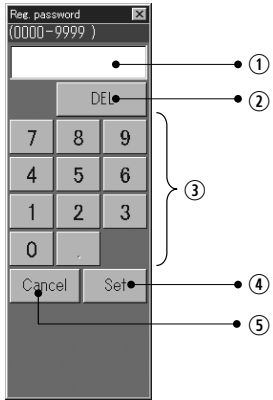
This message may be displayed also in inspecting the air conditioner. In such a case inform the person in charge of service of the fact.

7 Entering Text and Numbers

This system displays keyboard and numeric keypad windows when you need to enter names and numbers. The numeric keypad window appears when you need to enter numbers, and the keyboard window appears when you need to enter text.

7.1 Entering Numbers

A numeric keypad window like the one shown below appears when you need to enter a number, for example to register a password.



- ① Input field
Displays the number being entered.
- ② DEL button
Deletes digits in the number, from the right.
- ③ Numeric keys
Add the digit shown on the key face to the number in the input field.
- ④ Set button
Confirms the number in the input field.
- ⑤ Cancel button
Clears the numbers entered.

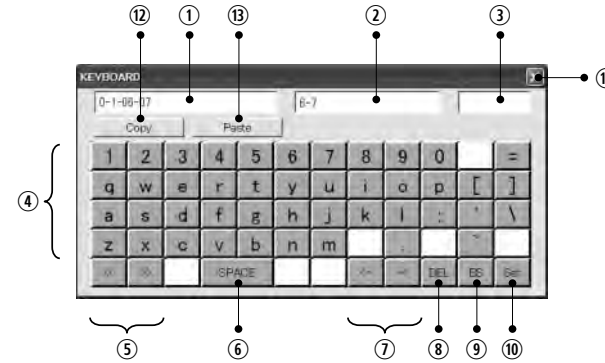
7 Entering Text and Numbers

7.2 Entering Text

A keyboard window like the one shown below appears when you need to enter text, for example a tenant name.

To edit an existing text string, touch the character that you want to edit in the input field.

Alphanumeric, lowercase



- ① Input field
Displays the text being entered.
- ② Information field
Displays information about the target of the operation (for example, the tenant number when a tenant name is being entered).
- ③ Input mode
Displays the current input mode (type of characters).
- ④ Character input buttons
Input characters.
- ⑤ Input mode selection buttons
Select the type of characters to input.
- ⑥ Space button
Inputs a space.
- ⑦ <- and -> buttons
Move the input cursor to the left and right in the input field.

7 Entering Text and Numbers

- ⑧ DEL button
Deletes the character to the right of the input cursor.
- ⑨ BS button
Deletes the character to the left of the input cursor.
- ⑩ Set button
Confirms the input and closes the keyboard window.
- ⑪ Close button
Closes the keyboard window.
- ⑫ Copy button
Copies text displayed in the input field. You can also copy portions of the text by dragging the touch pen over the desired portion.
- ⑬ Paste button
Pastes the text copied with the Copy button to the input field in which the cursor is currently located.

Alphanumeric, upper case



8 Connection of External Signals

When connecting external signals, refer to the Installation Instructions (end of this manual) for detailed information about the electrical specifications.

8.1 Pulse Meter Input

You can measure energy usage by connecting pulse meters (gas, fuel, and electricity meters). If you do not need to view information about energy usage, there is no need to install pulse meters.

1) Input locations

The communications connector panel on the side of the intelligent controller or on an optical communication adaptor connected to the intelligent controller:

- P1 (No.7), P-COMM (No.6) Gas meter, fuel meter
- P2 (No.8), P-COMM (No.6) Electricity meter 1
- P3 (No.9), P-COMM (No.6) Electricity meter 2

2) Operation

Each pulse is counted.

The amount of energy consumed per pulse (m³, kWh, liters) must be defined by "Main⁵Sub⁴ Pulse meter setting".

See "6.3.5 Making pulse meter settings".

8 Connection of External Signals

8.2 All Stop Input

You can stop all connected units automatically by connecting external signals (for example, from fire-alarm detectors.)

All stop input is available only for managed ("target") units. It does not affect units which have been designated as not managed ("Not target") or individually operated ("Indiv Op").

1) Input location

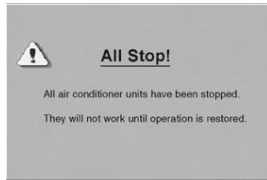
The communications connector panel on the side of the Intelligent Controller or on an optional communication adaptor connected to the Intelligent Controller:

DI1 (No. 17), DI-COMM (No.16)

2) Operation

While the input is asserted ON, a stop signal is sent periodically (once per minute) to all indoor units.

3) Display



This message disappears when normal status is restored.

8.3 All Start Input

You can start all connected units automatically by connecting external signals.

All start input is available only for managed ("target") units. It does not affect units which have been designated as not managed ("Not target") or individually operated ("Indiv Op").

1) Input location

The communications connector panel on the side of the Intelligent Controller or on an optional communication adaptor connected to the Intelligent Controller:

DI2 (No.18), DI-COMM (No.16)

2) Operation

When inputting ON from OFF, the operation signal will be transmitted to all the indoor units.



When both "All stop input" and "All start input" are set ON simultaneously, only "All stop input" is enabled.

8 Connection of External Signals

8.4 All-Unit Alarm Output

An external signal is output when an alarm or error occurs in any connected unit. This signal can be used by alarm monitors and other equipment.

1) Output location

The communications connector panel on the side of the Intelligent Controller or on an optional communication adaptor connected to the Intelligent Controller:

DO1 (No.14), DO-COMM (No.13)

2) Operation

The signal goes ON when an alarm or error occurs, and goes OFF when normal status is restored.

8.5 All-Unit Operation Output

An external signal is output when any connected unit is operating.

1) Output location

The communications connector panel on the side of the Intelligent Controller or on an optional communication adaptor connected to the Intelligent Controller:

DO2 (No.15), DO-COMM (No.13)

2) Operation

The signal goes ON when any connected unit (including local adaptors) is operating, and goes OFF when all units are stopped.

Operation during alarms and errors is included.

9 Printing

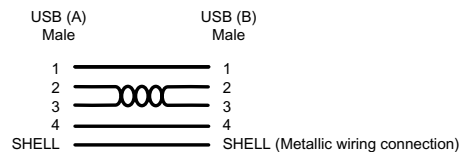
Printing using the Intelligent Controller is as stated below.

9.1 Preparation

Printing is ready only by connecting a USB cable to the unit's USB port. Purchase the cable shown below (an example) separately.

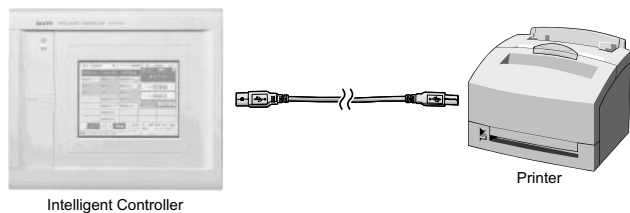
Example) ELECOM USB2-20 (2 m) or equivalent.

Internal wiring connection (reference)

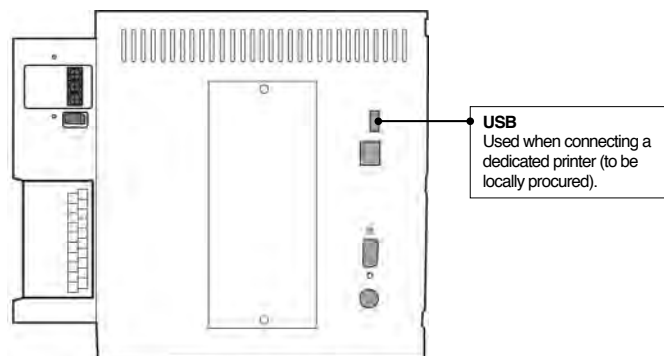


9.2 Connection

Connect the printer with the Intelligent Controller using a USB cable.



Connect the cable to the "USB" connector located on the controller's back.



9 Printing

9.3 Restrictions

(1) The Intelligent Controller is adaptable to printers of the "PCL" standards, among which we have made sure that the following two are fully adaptable:

Laser printer	1710 from Dell Inc.
Ink jet printer	Officejet Pro K550 from Hewlett-Packard Co.

(2) Some printers need to have the Intelligent Controller powered on prior to connecting the printer cable or re-power the printer.

(3) Printers can be connected only to the USB port.

(4) Only A4-size paper in vertical position can be printed.

(5) Printing is available only in monochrome. Color printing is unavailable.

(6) Printing provides hardcopies (just as displayed in the screen).

(7) Refer to the operation manual for the printer for the printer-side settings, displays, and measures to counter failures.

(8) The following alarm dialogue will be shown when pressing **Print** in the events of:

- The printer is not connected to the system.
- The printer is not powered on.
- The printer is off-line.



10 Calculating air conditioner distribution

The Intelligent Controller calculates energy (electricity and gas) distribution ratios utilizing the accumulated working time (T/S ON/OFF) or the capacity value of the indoor unit.
 * T/S: Thermostat

10.1 Calculating simple distribution

Parameters as listed below are used to calculate simple distribution:

- ① **RHHi**: accumulated operation time for indoor unit i (High fan speed)
 - ② **RHi**: accumulated operation time for indoor unit i (Medium fan speed)
 - ③ **RLi**: accumulated operation time for indoor unit i (Low fan speed)
 - ④ **SHHi**: T/S ON accumulated time for indoor unit i (High fan speed)
 - ⑤ **SHi**: T/S ON accumulated time for indoor unit i (Medium fan speed)
 - ⑥ **SLi**: T/S ON accumulated time for indoor unit i (Low fan speed)
 - ⑦ **Pi**: Capacity of indoor unit i (in kW)
 - ⑧ **k**: Weighing factor for power consumptions as T/S ON and OFF
 - ⑨ **aHH**: Weighing factor for High fan speed
 - ⑩ **aH**: Weighing factor for Medium fan speed
 - ⑪ **aL**: Weighing factor for Low fan speed
- * Accumulated operation time = T/S ON accumulated time + T/S OFF accumulated time

Index of indoor unit i power/gas consumptions is calculated.

Here, "TEi" and "TGi" denotes the power and gas consumption indexes of the indoor unit i, respectively.

When "Object of power distribution calculation" is "T/S ON + OFF time":

The power consumption index is calculated using "Accumulated operation time" and "T/S ON accumulated time"; the gas consumption index using "T/S ON accumulated time"

- For GHP:
 - $TEi = (RHHi \times aHH + RHi \times aH + RLi \times aL) \times Pi$ Formula 1
 - $TGi = (SHHi \times aHH + SHi \times aH + SLi \times aL) \times Pi$ Formula 2
- For PAC:
 - $TEi = \{ (RHHi \times aHH + RHi \times aH + RLi \times aL) / k + (SHHi \times aHH + SHi \times aH + SLi \times aL) \} \times Pi$ Formula 3
 - $TGi = 0$

When "Object of power distribution calculation" is "T/S ON time":

Both the power and gas consumption indexes are calculated using "T/S ON accumulated time".

- For GHP:
 - $TEi = (SHHi \times aHH + SHi \times aH + SLi \times aL) \times Pi$
 - $TGi = (SHHi \times aHH + SHi \times aH + SLi \times aL) \times Pi$
- For PAC:
 - $TEi = (SHHi \times aHH + SHi \times aH + SLi \times aL) \times Pi$
 - $TGi = 0$

10 Calculating air conditioner distribution

Calculate **electricity/gas usage index of entire distribution group**

Let "TOTALe" be the electricity usage index of entire distribution group, and let "TOTALg" be the gas usage index of entire distribution group.
 Let "m" be the number of indoor units in the distribution group.

$$TOTALe = TE1 + TE2 + \dots + TE_m$$

$$TOTALg = TG1 + TG2 + \dots + TG_m$$

Calculate **electricity/gas usage distribution ratio of indoor units**

Let "REi" be the electricity usage distribution ratio, and let "RGi" be the gas usage distribution ratio.

$$REi (\%) = TEi / TOTALe \times 100$$

$$RGi (\%) = TGi / TOTALg \times 100$$

Calculate **electricity/gas usage distribution ratio of tenant j**

Let "NEj" be the electricity usage distribution ratio of tenant j, and let "NGj" be the gas usage distribution ratio of tenant j.
 Let "n" be the number of indoor units of tenant j.

$$NEj (\%) = RE1 + RE2 + \dots + RE_n$$

$$NGj (\%) = RG1 + RG2 + \dots + RG_n$$

Distribution ratios are rounded at the third decimal place and shown to the second decimal place.

* The following table shows which of the formulas ① to ③ on the previous page are used by the two distribution modes.

		T/S ON+OFF time distribution mode	T/S ON time distribution mode
GHP	Electricity	①	②
	Gas	②	②
PAC	Electricity	③	②
	Gas	—	—
HOT	Electricity	③	②
	Gas	②	②



- Weighing by wind speed is not carried out for models with their speed set only as High or only as High and low.
- Distribution ratios are not calculated when you have chosen not to perform distribution ratio calculations. (See "6.3.2 Setting the date, cut-off date, and distribution ratio calculation method")



See "About distribution ratios in 12 Supplementary Information".



10 Calculating air conditioner distribution

10.2 Calculating air conditioner energy usage

Calculate **electricity/gas usage of entire distribution group**

Electricity usage for distribution group = Pulse meter (electricity) count value × Pulse unit amount (kWh)

Gas usage for distribution group = Pulse meter (gas) count value × Pulse unit amount (m³)

Calculate **electricity/gas usage of indoor units**

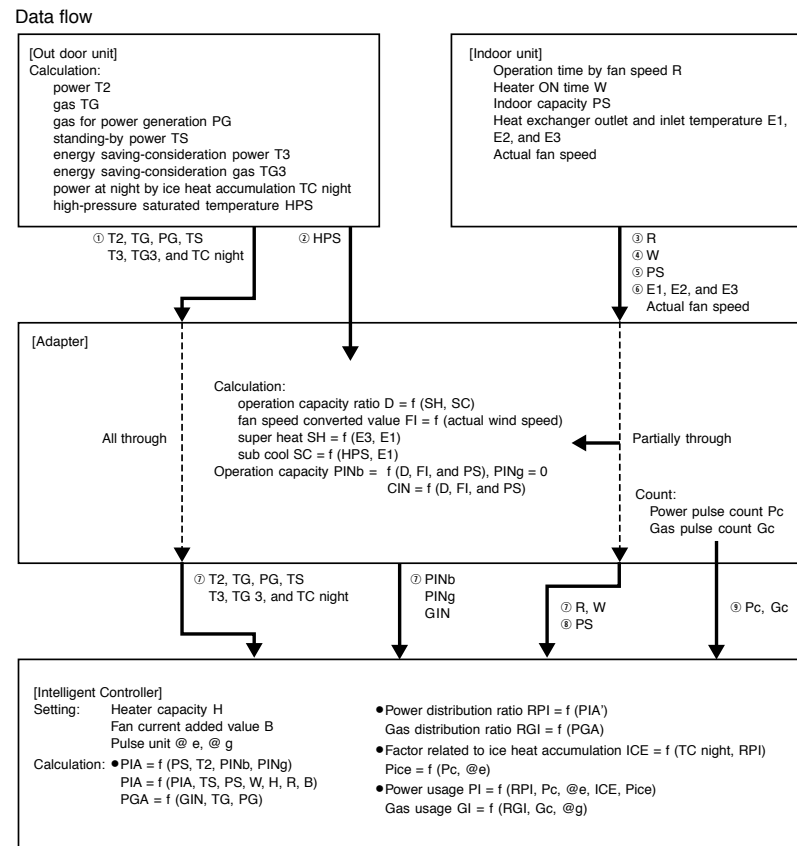
Electricity usage for indoor unit = Electricity usage for distribution group × Electricity consumption distribution ratio for indoor unit

Gas usage for indoor unit = Gas usage for distribution group × Gas consumption distribution ratio for indoor unit

The usage is **rounded** to two decimal places and displayed.

10 Calculating air conditioner distribution

10.3 Calculating loaded distribution



* “f” means function. For example:
Operation capacity ratio $D = f(\text{SH}, \text{SC})$
means that the operation capacity ratio is calculated using super heat SH and sub cool SC.

Calculation parameter	Simple distribution	Loaded distribution
Indoor unit capacity (kW)	○	○
Indoor unit operation time	○	○
Indoor fan speed ratio (high, medium, low)	○	○
Outdoor unit operation ratio (Power: detected using CT, Gas: neuro-calculation)	×	○
Standing-by power and various heater powers	×	○
Indoor unit loaded ratio (Calculated using the values detected by multiple internal thermo sensor of indoor unit)	×	○ (Overheat degree)

○:parameters considered in distribution calculation

×:parameters not considered in distribution calculation



See "About distribution ratios and energy usage" in "12 Supplementary Information".

11 TERMS

This section explains some of the terms used in this manual.

■ Adaptor address (No. 0 set on Intelligent Controller, No. 1 to 7 set on communication adaptors)

An adaptor address is the address assigned to an optional communication adaptor.

■ Link system address (No. 1 to 2, fixed)

A link system is a collection of indoor units and outdoor units connected to a single indoor/outdoor control wire. Up to two link systems each can be connected to the Intelligent Controller and to an optional communication adaptor.

■ Outdoor unit system address (No. 1 to 30 for each link system, set on outdoor unit side)

An outdoor unit system is collection consisting of one outdoor unit and the indoor units connected to that outdoor unit. A single link system can contain up to 30 outdoor systems.

■ Indoor unit address

Up to 64 indoor units can be connected in one link system.

The Intelligent Controller system supports up to two link systems connected to the Intelligent Controller only (128 indoor units), or four link systems (256 indoor units) when an optional communication adaptor is connected.

Indoor unit addresses, central control addresses, and unit names are applied to indoor units.

Indoor unit address (No.1~for each outdoor unit system, set on indoor unit side)

An indoor unit address is a unique number within an outdoor unit system.

These numbers are assigned to each indoor unit, including units subject to group control.

These numbers are the smallest unit of totals calculation and distribution calculation.

Central control address (No.1 to 64 for each link system, set on Intelligent Controller and other central control equipment)

A central control address is a unique number within a link system. It is shared with other central control equipment (system controllers, multi controllers, etc.)

This is the same address used in group control.

Unit name (set on Intelligent Controller)

This is the same name used in group control.

It is the smallest unit of operation, monitoring, and timer operations.

■ Distribution group number (No. 1 to 8, set on Intelligent Controller)

A distribution group is made up of one or more tenants. The total of the distribution ratios in the group is 100%. The Intelligent Controller system supports up to 8 distribution groups. GHP, PAC, and HOT units cannot be mixed in a single distribution group.

■ Tenant number (No. 1 to 256 set on Intelligent Controller)

A tenant is a collection that is the object of distribution calculations (or operation and monitoring).

It is made up of one or more indoor units. The system as a whole supports up to 256 tenants.



■ Zone number (No. 1 to 128, set on Intelligent Controller)

A zone is unrelated to distribution. It is a range for performing all-unit operation, monitoring, and timer operation. GHP, PAC, and HOT units can be mixed in a zone. The system as a whole supports up to 128 zones.

12 Supplementary Information

■ Powering the system off

Always use the following procedure to power the Intelligent Controller off.

Touch the **Power off** button in the "Other settings" screen (Main  Sub .

Touch the **OK** button in the message box which appears to ask if you want to exit the program.

Wait until a message appears to inform you that "It is now safe to turn off the Intelligent Controller." (*) and then power the system off.
(*Several minutes may pass before this message appears.)

■ Air conditioner limitations

Some types of air conditioners are limited in the settings which they support.

For example, cooling-only air conditions cannot be set to heating.

Floor-type models typically support only high fan speeds.

Ceiling mounted models do not have flaps, and therefore cannot change the fan direction.

You should be aware of the limitations of the air conditioner models in your system.

For more information, contact your dealer or service provider.

■ Standby power (for simple distribution)

The Intelligent Controller performs distribution calculations on the basis of indoor unit operating time. Therefore it does not count power consumed while under are stopped (on standby).

For example, if no units are operated over the course of a month, no standby power consumption is distributed to any tenant. However if a unit is operated for even one minute, then all of the standby power consumption is distributed to the corresponding tenant.

For loaded distribution, distribution is made with standing-by power added.

■ W Multi GHP outdoor unit data is displayed as "Reference unit".

Because the reference unit changes depending on operating conditions, the data displayed by the Intelligent Controller also changes.

Outdoor unit data is data such as "number of operations" and "operating time".

■ Only an alarm code is displayed in the notification bar and alarm log display.

The content of an alarm can vary for different models, even if the alarm code is the same. Consult the documentation of the various models to determine the content of the alarm.

■ Because of data transmission delay, the totals and distribution data displayed by the Intelligent Controller for different time zone (regular hours, out of hours, special days) may not be counted in a completely accurate fashion.

For details, see "6.6.3 Time zone totals and distribution".

■ Filter cleaning signs and oil exchange signs are updated every 1 minutes.

Operating time totals and distribution data are updated every 18 minutes. Electric heater ON time is updated once an hour.

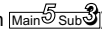
■ Cut off processing for the previous day is performed every day for a few minutes after 00:00 a.m. The system will not respond to user input during this processing.

■ After the settings of an indoor unit are changed from the Intelligent Controller, the display may revert temporarily to the former settings. This is more likely to occur with all-unit operations. The cause is communications delay, not any malfunction in the system. If you wait a few minutes, the display will show the correct information.

12 Supplementary Information

- Errors occurred while operating during a thunder storm or because of electromagnetic interference.
Power the Intelligent Controller off and then on again. (Refer to “Powering the system off” stated on the previous page)
As a rule, the Intelligent Controller should be powered off only in cases such as the above.
Correct management of air conditioning is not possible when the Intelligent Controller is powered off.
- About distribution ratios and energy usage
The formulas used by the Intelligent Controller to calculate air conditioning distribution ratios and energy usage are only approximations. They normally do not yield the same amounts that appear on bills from electric and gas utilities.
Depending on operating conditions, there may be a margin of error between distribution ratios and actual air conditioning amounts.
There may also be a small margin of error between the following, due to the rounding algorithms used in distribution ratio calculations.
 - “Distribution ratios of tenants in a group” and “100.00%”
 - “Total of distribution ratios” and “Overall tenant distribution ratio”
 - “Total of usage by each tenant” and “Total usage indicated by pulse meters”
 - “Total of usage during regular hour, out of hours, and special days time zones” and “Total of all hours time zones”
 The Intelligent Controller does not measure energy use directly. It calculates energy distribution ratio based on the inferred load ratio of each indoor unit. The results of the calculations should be regarded as approximations.
- About operating time totals
Air conditioning distributions and air conditioner operating times are calculated only for periods in which the Intelligent Controller is powered on and in which there are no communications errors between the Intelligent Controller and the air conditioners.
Therefore, no totals are accumulated for times when the Intelligent Controller is powered off or in which communications errors occur.
You should be aware that errors in distribution ratios will become larger if conditions like the above continue for a longer period of time.
- Setting the current date and time
The current date and time should be set on a regular basis, since the system clock can gain or lose up to about two minutes per month.
- Touch panel operations are not possible at the following times.
 - While the system is booting
 - During connection checks
 - Under cut-off processing
 - During PC Card access (backup, restore)
- About passwords
Passwords should be recorded and saved in a safe place. They should never be disclosed to third parties.
If you forget your password, contact your dealer or service provider.
- Flickering on the screen
This may occur occasionally. It is due to data refreshing and is not a malfunction.

12 Supplementary Information

- About On/off Local adaptors (SHA-KL4UGB)
You can use on/off local adaptors to connect equipment that can be turned on and off (fans, room air conditioners and so on) to the Intelligent Controller.
However, note that the following limitations apply.
For details, refer to the documentation of the equipment or contact your dealer or service provider.
- ▶ Central control is supported for the following operations only.
 - Start/stop
 - Remote control prohibition (start/stop only)
Timer settings are supported, but settings other than “start/stop” and “remote control prohibition” are ignored. Remote control prohibition is possible only when prohibition signal output from the local adaptor has been connected to the equipment. Even in this case, the only operations that can be prohibited are start and stop.
- ▶ Alarm display
Alarm details are not shown.
The “C12” code is displayed (meaning local adaptor all-unit alarm).
However, this is possible only when a local adaptor alarm input signal has been connected.
- ▶ About air conditioning distribution
 - ① Indoor unit fan speed data
Total operating times by fan speed are fixed at high speed. (Units are treated as if they always operated at high speed, even if the thermostat ON signal is connected to the unit.)
 - ② Electric heater ON time
Total electric heater ON time is not displayed.
 - ③ Indoor unit capacity values
These cannot be read automatically. Set them as **kW values** in the “I/D unit settings” screen (Distribution is not performed if they are not set.)
 - ④ Product types
When connected via local adapters, the system cannot distinguish PAC and GHP units.
You need to set the type as well when you set the indoor unit capacity.
(Refer to “Tenant name/Distribution group” screen )
 - ⑤ This applicable only to simple distribution. No loaded distribution can be made.
- ▶ As long as it conforms to the contact specifications of the on/off local adaptors, any type of equipment can be connected to the Intelligent Controller. However, you should avoid connecting equipment whose operation can have grave consequences for life or property.
- When only one centralized control unit is installed in a system without remote controller, if the centralized control unit is damaged, the air conditioner(s) may become inoperable, or other troubles may occur. To avoid this problem, we recommend that you install multiple centralized control units.



12 Supplementary Information

★ IMPORTANT ★

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Other products names are trademarks or registered trademarks of their respective holders, or copyrights of their respective holders.
- Duplication of all or part of the software and documentation of this product without the express consent of the holder of the rights to the above, and transfer of the software to another party, are prohibited by law.
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Even in the case of errors in calculations of distribution ratios, and so on, Sanyo will not be responsible for any remedies.
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- This product and the supplied software are subject to change without notice.
The contents of this manual are subject to change without notice.
- Sanyo will not be liable for any violation of the rights of any third party stemming from use of information in this manual, or for violation of other rights.

13 Troubleshooting

Before requesting service, check the following items.
Do not attempt to service the Intelligent Controller yourself. Doing so can be dangerous.

Symptom	Cause
Nothing appears on the screen when the computer is turned on.	<ul style="list-style-type: none"> • Is the power cord connected? • Is the power switch set to on?
Timer operation does not work.	<ul style="list-style-type: none"> • Is timer operation set to the target unit? Operation of a selected timer does not start if the setting is not set the target unit. • Does the setting match the current date and time? If the date and time do not match, operation can start at an unexpected time. (See "6.3.2 Setting the date, cut-off date, and distribution ratio calculation method")
The distribution ratio is always 100%.	<ul style="list-style-type: none"> • Check the group settings and tenant settings. Distribution rate calculations always result in 100% if there is only one tenant registered in a distribution group, or if there is only one indoor unit in a tenant.
The power goes off at odd times.	<ul style="list-style-type: none"> • The screen may be blank because of the power-saving auto off function. The Intelligent Controller is still powered on. Touch the screen to restore the display. • Regardless of the selected auto off time, the screen may be turned off when the Intelligent Controller boots.
There is an alarm message in the notification bar at the bottom of the screen that will not go away.	<ul style="list-style-type: none"> • The message displays the unit where the alarm occurred, and the alarm number. Inform your dealer or service provider about the content of the message.
Backing up to a PC Card does not work.	<ul style="list-style-type: none"> • Data can be backed up only to the special PC Cards (option) for the Intelligent Controller. Backup to other PC Card types is not possible.
It takes a long time after an operation for the screen to be updated.	<ul style="list-style-type: none"> • A certain amount of time may be required depending on the state of communications with the connected air conditioners. Please wait until all of the information is received.
LCD display	<ul style="list-style-type: none"> • In rare cases there may be a dot on the screen which is always on or always off. This is not a malfunction. Due to the nature of LCD displays, there may be some color bleeding in certain areas because of variations in temperature and so on. This is normal and not a malfunction.
Nothing happens when an operation button is pressed.	<ul style="list-style-type: none"> • Over extended use, the touch positions and display positions on the touch panel may get out of alignment. (→ "6.8.9.7. Calibrating touch panels")
When local remote control operation is prohibited on the Intelligent Controller, the Intelligent Controller is not able to start/stop operation of a malfunctioning air conditioner.	<ul style="list-style-type: none"> • Emergency operations until our service person arrives: Power off the Intelligent Controller and externally installed communication adapter; re-power on the indoor unit. Operation with the local remote control will be possible. However, this cannot be done in a remote control free system.
A power outage occurred. When it ended, the equipment did not come on automatically according to program timer settings.	<ul style="list-style-type: none"> • The Intelligent Controller does not power on equipment automatically by program timer after a power outage. The setting for the next programmed time will be executed when the time arrives.
The Intelligent Controller cannot detect a single indoor unit. Or it cannot find all of them.	<ul style="list-style-type: none"> • Try using the "Check configuration" button in the "Other settings" screen (Main  Sub ).

13 Troubleshooting

Symptom	Cause
One of the following messages is displayed and the unit does not start. <ul style="list-style-type: none"> • Application error !! • DiskErr • CF error !! 	<ul style="list-style-type: none"> • Contact the store where you purchased the system or our service agency.
A message, "Diskxx access error", is displayed. (xx is a number from 1 to 4)	Press the [Check] button to close, and press [Reset] to the left of the clock display. If the same message appears again, consult your local dealer or service representative.

14 Maintenance

■ Unplug the power cord before cleaning the Intelligent Controller.

The system has high-voltage connectors and other dangerous components. Always power the system off and unplug the power cord before cleaning it.

■ Use a neutral solvent

To clean the control panel and touch panel, use a soft cloth slightly moistened with a neutral solvent. Do not use volatile liquids such as benzene or thinner, and do not use polishing power or pesticides. Doing so can damage painted surfaces and the surface of the touch panel.

■ Avoid direct contact with water

Do not allow water to contact the product directly. Insulation will be impaired, which may result in damage or electrical shorts.

■ Do not disassemble

Do not disassemble the Intelligent Controller. Doing so is extremely dangerous. It may damage the unit or cause electrical shock.

■ Check the mounting of components

Several times a year, check to make certain that the mounting of components such as the control panel has not been weakened by rust or corrosion.

15 Specifications

Product number	SHA-KT256EG	
External dimensions	(H) 240 (W) 280 (D) 138 mm	
Method of installation	Front door of control panel	
Maximum number of connectable units	Maximum 128 air conditioners (indoor units) Maximum 256 air conditioners (indoor units) with communication adaptor connected	
Timer precision	± Approx. 2 minutes/month (normal temperature)	
Timers	Setting unit	1 minute
	Operation	50 times/day 50 types of daily timer / 50 types of weekly timer
	Program cycle	1 week
Temperature / humidity ranges for use	5°C to 40°C / 20% to 80%	
Display	6.5-inch TFT color LCD display (640 x 480 pixels), with backlight	
Power requirements	Single-phase 100~240 V 50/60 Hz	
Power consumption	Max. 30 W	
Weight	3.4 kg	

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DECLARATION OF CONFORMITY

This product is marked “CE” as it satisfies EEC Directive No. 89/336/EEC, 73/23/EEC and 93/68/EEC. This declaration will become void in case of misuse and/or from non observance though partial of Manufacturer’s installation and/or operating instructions.

15 Specifications



16 Installation (Electric) and Service Instructions

Safety Precautions

- Before conducting installation or electrical work, be sure to carefully read these "Safety Precautions" and follow them carefully.
- The precautions given in this manual consist of specific "Warnings" and "Cautions". Be sure to follow these precautions, as they provide important safety related information. The labels and their meanings are as described below.

	Warning	This refers to a hazard or unsafe procedure or practice which can result in severe personal injury or death.
	Caution	This refers to a hazard or unsafe procedure or practice which can result in personal injury or product or property damage.

Warning

- Be sure to arrange installation at the dealer where the system was purchased or use a professional installer. Electric shock or fire may result if an inexperienced person performs any installation or wiring procedures incorrectly.
- Carefully follow these Installation (Electric) and Service Instructions when installing the unit. Electric shock or fire may result if the unit is not installed correctly.
- Electrical installation should be performed by qualified electrician, in accordance with the provisions of the Technical Standards for Electrical Installations, local regulations for indoor wiring, and these Installation (Electric) and Service Instructions. Be sure to use a dedicated electrical circuit. Insufficient electrical circuit capacity may result in electric shock or fire.
- Use the specified cables for the electrical connections, and connect the cables securely. Fasten the cables securely so that the cables will not exert force on the connection terminals. Insecure connections or fastening may result in overheating or fire.
- The installation location may require the use of a circuit breaker. Failure to use a circuit breaker may result in electric shock or fire.

Caution

- When performing electrical installation, discharge any accumulated static electricity to ground before touching the unit.

Supplied parts

Part number	Part name	Quantity	Part number	Part name	Quantity
①	Small pan head bolt (M4 x 10)	4	②	Nut (M4)	4
③	Flat washer	4	④	Cable tie	6
⑤	Operation Manual	1			

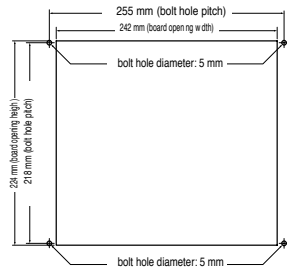
Specifications

Rated voltage 100 - 240 V, single phase
 Rated frequency 50/60 Hz
 Power consumption 30 W max.
 Operating temperature 5° to 40° C
 Operating humidity 20 to 80%
 (non-condensing)

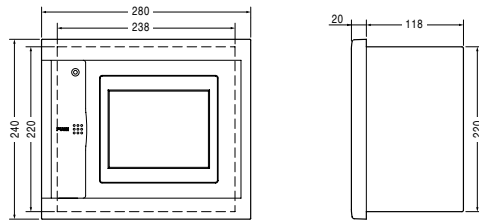
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1 Cautions regarding the design of the control box

Control box machining diagram



External dimensions



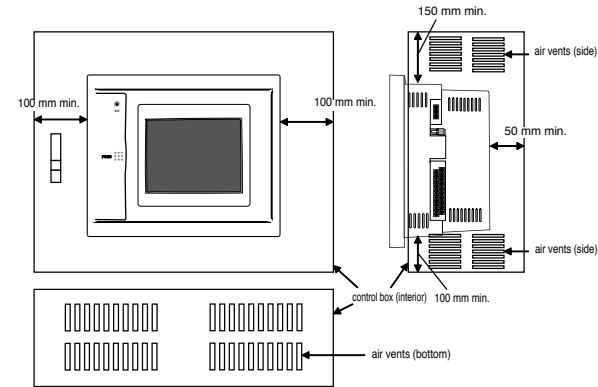
16 Installation (Electric) and Service Instructions

Take the following into consideration when designing the control box:

- To ensure sufficient airflow for cooling, provide air vents (holes, slots, etc.) on the upper, lower, left and right sides of the box, as shown in the figure below. (Be sure not to clog the ventilation hole when setting.)

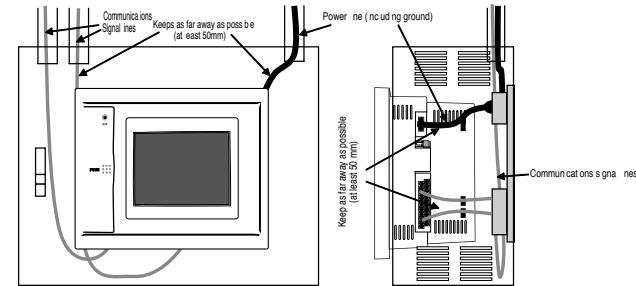
Ensure that the temperature inside the control box does not exceed 40 °C.

Control box example



- Keep the power and communications signal lines as far apart as possible (at least 50 mm, if cabled inside the control box) to reduce the effects of electrical noise.

Wiring example

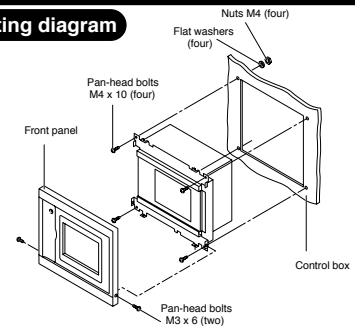


2 Mounting

Caution

- Do not route communications signal lines or input / output signal lines close to power supply lines, or routing them through the same conduit. Doing so may result in malfunction.
 - Mount the unit far away from potential noise sources.
 - Do not mount the unit where it could get wet, or in areas of high humidity.
 - Do not mount the unit where it could be subject to excessive vibration or shocks.
 - Mount the unit inside a control box.
- Remove the two pan-head bolts from the lower sides and bottom of the front panel.
 - Mount the controller unit to the control box using the four supplied bolts, washers, and nuts.
 - Replace the front panel.

Mounting diagram

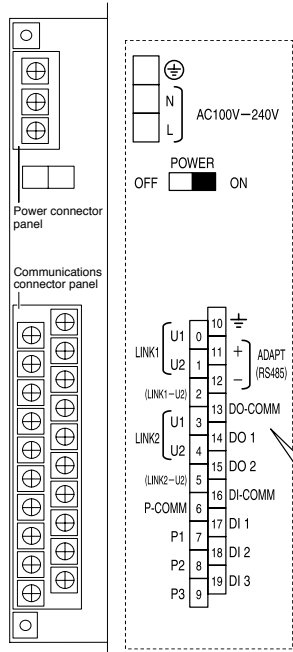


16 Installation (Electric) and Service Instructions

3 Wiring

Always shut off the power supply (breaker) before installing or uninstalling.

Connection terminals

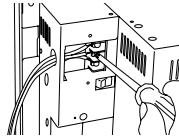


(1) Power supply connection

Connect the power supply to the commercial power mains (100 to 240 V AC), using a dedicated circuit. Connect the power supply lines to the L and N power supply terminals (the power supply neutral to the N terminal).

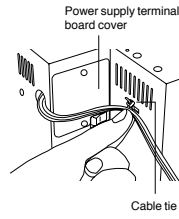
Connect an earth ground line to the FG power supply terminal.

Attach the power supply terminal board cover. Firmly secure the power lines using the supplied cable tie.



(2) Signal connection

- Connect indoor and outdoor signals using 0.5 - 2.0 mm² two-conductor cable.
- Overall length of each signal line should be 1 km or less.
- Do not run signal lines through the same conduit as power supply lines, use the same cable as the power supply, or run close to the power supply lines (maintain at least 30 cm separation, if cabled outside the control box).
- Do not run the LINK1 and LINK2 signal lines through the same conduit, use the same cable for wiring, or run the signal lines close together.

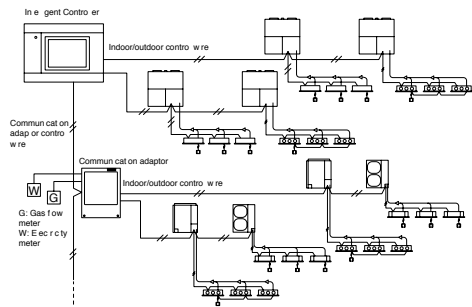


Terminal names and uses

ADAPT +/-	: Communication adaptor control wire (RS-485)
LINK 1/2	: Indoor/outdoor control wire (HBS)
P1	: Pulse meter input (Gas flow meter, fuel meter)
P2 - 3	: Pulse meter input (Electricity meter)
DI 1	: All stop input
DI 2	: All start input
DI 3	: reserved
DO 1	: All alarm output
DO 2	: All operation output

Basic wiring diagram

Wire up the communication adaptor control wire and Indoor/outdoor control wire as shown in the figure below.

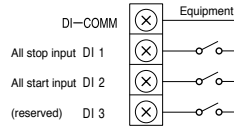


* When connecting link systems (indoor and outdoor unit control wires), always connect beginning with LINK1 and LINK2 on the Intelligent Controller. Up to 4 link systems can be connected.

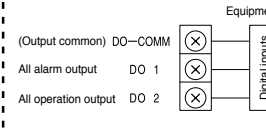
16 Installation (Electric) and Service Instructions

4 Connecting to external equipment

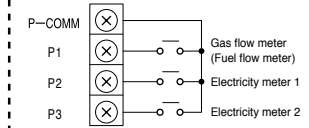
(1) External system inputs (no-voltage contact point static)



(2) External system outputs (no-voltage contact point static)



(3) Pulse meter inputs (no-voltage contact point pulse)

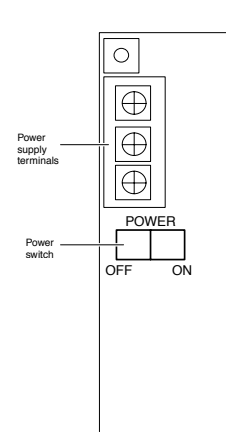


- Keep the input and output signal line lengths to under 20 meters. For distances greater than this, install a standalone communication adaptor, or use a relay.
- For use in areas that may be susceptible to electrical noise, use two-conductor shielded cable (with one line grounded), with a cross-section of 0.5 mm² or greater.
- Do not apply external voltages to the input terminals.
- The input terminals use a sensing current of about 10 mA at 5 V DC.
- The output terminal allowable contact voltage and current are 30 V DC, 0.5 A.

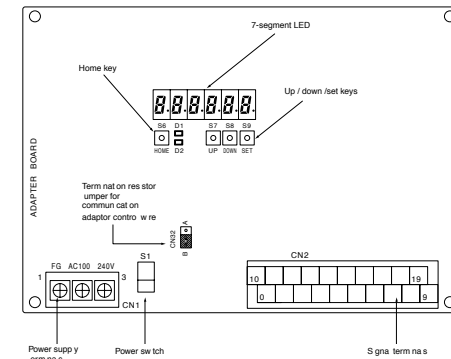
- Minimum pulse width 100 msec
- Minimum pulse interval 1 sec

5 Power switch

The Intelligent Controller has a power switch. If the LCD is blank after connecting power, check the position of the power switch.



6 Circuit board diagram



* Ordinarily, there is no need to change any settings on the Intelligent Controller board.

7 Verify the system configuration, make necessary settings

- ① Turn on power to all air conditioner units.
 - ② Turn on power to the Intelligent Controller.
 - ③ Set the date and time on the Intelligent Controller and verify the system configuration.
 - ④ Following the display on the Intelligent Controller, verify the number of units connected.
 - ⑤ Perform the necessary settings. **Be sure to set the central control address.**
- * See the Operation Manual for details.

8 Educating the customer

- Give the Operation Manual to the customer.
- Explain the operation to the customer, following the explanations given in the Operation Manual.

Sanyo Centralized Control System SHA-KT256EG Operation Manual

INTELLIGENT CONTROLLER

Access and Operation by Web Browser

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Thank you for choosing the SHA-KT256EG intelligent Controller
Before using the system be sure to read this manual carefully

Access and Operation by Web Browser

Accessing the intelligent Controller from your computer allows you to monitor/operate air-conditioning equipment using a Web browser

1. Computer Environment Requirements

In order to use the web browser of your computer to connect to the intelligent Controller and monitor/operate air-conditioning equipment the following environment requirements must be met

Supported browser	Internet Explorer 6.0 or later
Java applet	Sun Microsystems Java Plugin Ver 1.4.2 or later
Screen resolution	1024 × 768 recommended

2. Log-in

To log in to the intelligent Controller enter the following into the address bar of the web browser

http://[Intelligent Controller address]/SACWWW/index_[language code].asp

For example if the intelligent Controller address is 192.168.0.2 and you want to connect to the English page enter

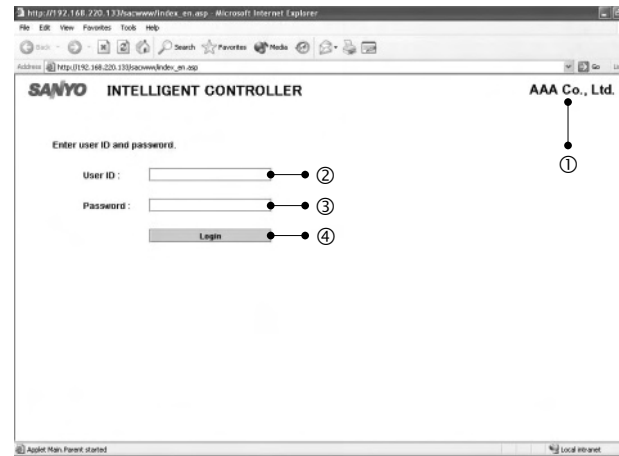
http://192.168.0.2/SACWWW/index_en.asp

The language codes are as follows

English	en	French	fr	German	de	Italian	it
Portuguese	pt	Spanish	es				
Chinese	zh	Japanese	ja	Korean	ko		

This will cause the web browser to connect to the intelligent Controller and a screen such as shown below appears

Enter the user ID and password set for the intelligent Controller to log in

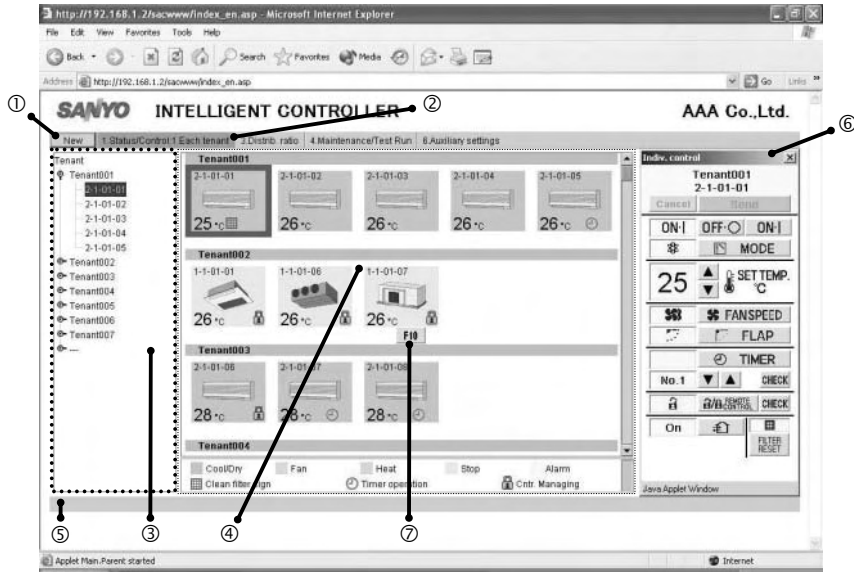


- ① Shows the site name that was set for intelligent Controller
- ② Enter the user ID that was set for intelligent Controller
- ③ Enter the password that was set for intelligent Controller
- ④ Click the **Login** button

3. Screen Display and Operation

3-1. [Each Tenant] Screen

After you log in to the intelligent Controller or when you use the menu to select [1 Status/Control 1 Each tenant] a screen such as shown below appears (Screen details may differ depending on the user logged in)



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① **New** button

Updates the screen to the latest information

② **Menu**

(The menu may differ depending on the user logged in The following menu appears when logged in as an administrator)

Lets you select one of the following screens



③ **Tenant st**

Shows the indoor unit and tenant structure currently accessed by the intelligent Controller in a list
Select indoor units by clicking different parts of the list
Clicking on the part highlighted in the screen example above will select the individual indoor unit while clicking on the tenant name (Tenant001 Tenant002 etc in the example) will select all indoor units for that tenant Clicking on the top of the list (Tenant in the example) will select all indoor units of the site

④ **Icon display area**

Shows icons for indoor units connected to the intelligent Controller

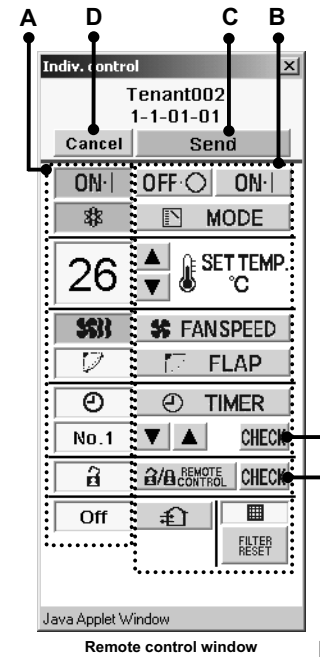
Clicking on an icon whose frame is shown in reverse will select that unit Clicking on a tenant name will select that tenant

⑤ **Notification column**

Shows information about the connection status of web browser and intelligent Controller etc

⑥ **Remote control window**

Shows the Remote control window When this window has been closed clicking on the indoor unit or making another selection will bring it up again



A Status/Control screen section

Shows the status of the indoor unit and the operation condition
When a control operation is performed, the background color of the respective field changes and the [Send] button becomes available
Clicking the [Send] button will send all operation steps performed up to this point to the intelligent Controller if you instead click the [Cancel] button or perform a step such as selecting another indoor unit, operation steps performed up to this point will be canceled

B Control section

Shows controls for possible operation steps such as start/stop switching, operation mode selection, temperature selection, fan speed setting, fan direction setting etc

If the logged in user has only general user privileges, buttons for restricted operation steps will be grayed out (inactive)
The [REMOTE CONTROL] and [CHECK] buttons will not be displayed

C [Send] button

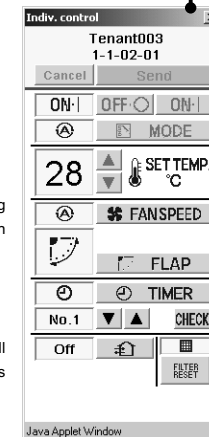
Sends the changes made to the intelligent Controller

D [Cancel] button

Cancels the changes made

E [CHECK] buttons

Used to check the timer setting and remote control prohibition setting status
(See "3-7 Program Timer Screen" and "3-9 Prohibit Remote Control Screen")
Clicking the [Return] button will return the display to the previous screen



Remote control window for general user

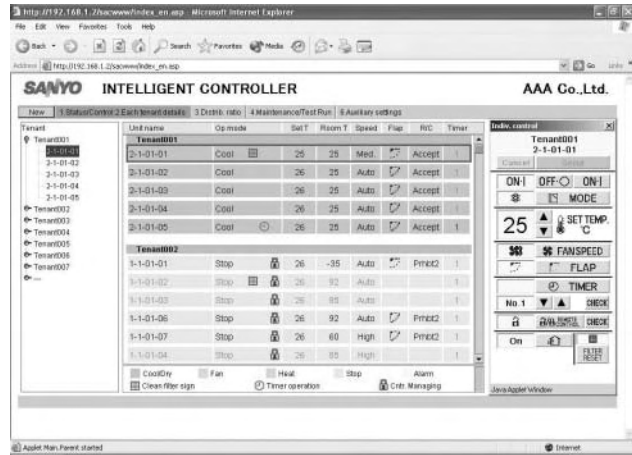
⑦ **Alarm code display**

Shows the alarm code as a tooltip when the cursor is moved over the icon of the indoor unit for which the alarm is occurring



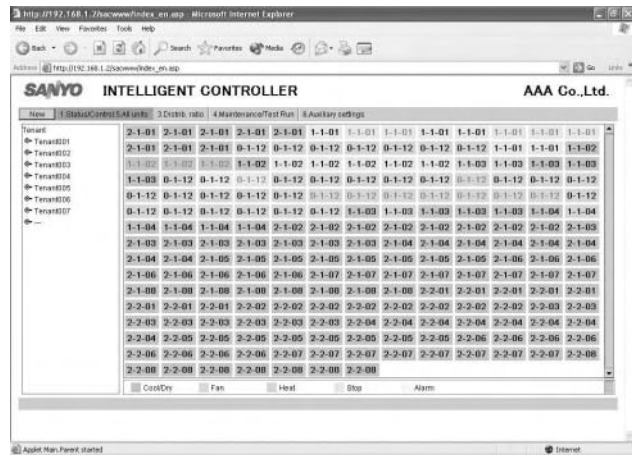
3-2. [Each Tenant Details] Screen

When you use the menu to select [1 Status/Control 2 Each tenant details] a screen such as shown below appears (Screen details may differ depending on the user logged in) Operation principles for this screen are similar to those of the [Each tenant] screen



3-3. [All Units] Screen

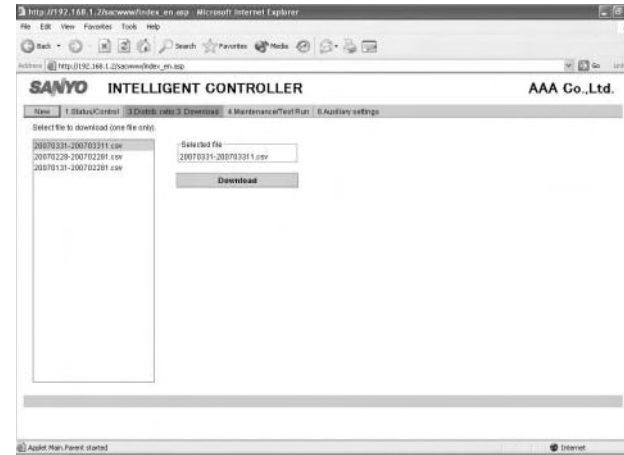
When you use the menu to select [1 Status/Control 5 All units] a screen such as shown below appears (Screen details may differ depending on the user logged in) Operation principles for this screen are similar to those of the [Each tenant] screen



3-4. Distribution Ratio: Data Download Screen

When you use the menu to select [3 Distrib ratio 3 Download] while logged in as an administrator a screen such as shown below appears

You can download files by selecting them and clicking the "Download" button

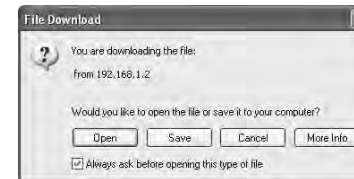


A cut-off data file appears for each piece of cut-off data that appears on the Intelligent Controller unit. Be aware, however, that the dates that appear on the Intelligent Controller unit appear as file names on this screen.

For example, cut-off data that appears as "01/Apr-30/Apr" on the Intelligent Controller will appear as "20070401-20070430.csv" on this screen.

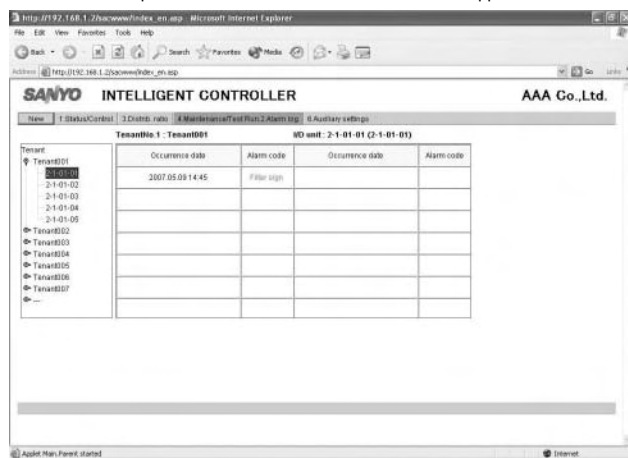
When the following message appears after clicking the "Download" button, select "Open" or "Save".

- "Open" Open the selected CSV file using spreadsheet software
- "Save" Select a folder and save the CSV file



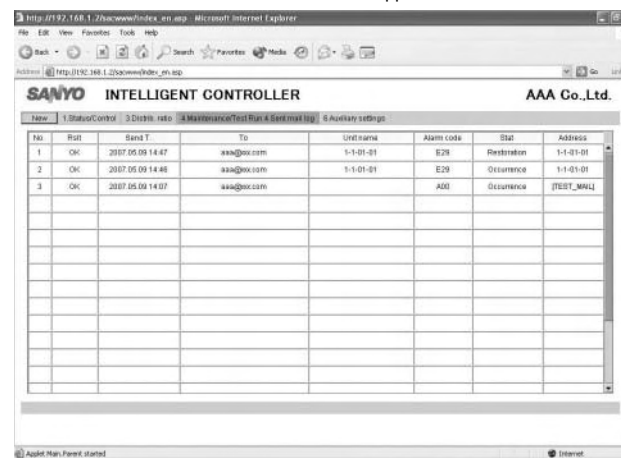
3-5. Alarm Log Screen

When you use the menu to select [4 Maintenance/Test Run 2 Alarm log] while logged in as an administrator or special user a screen such as shown below appears



3-6. Mail Send Log Screen

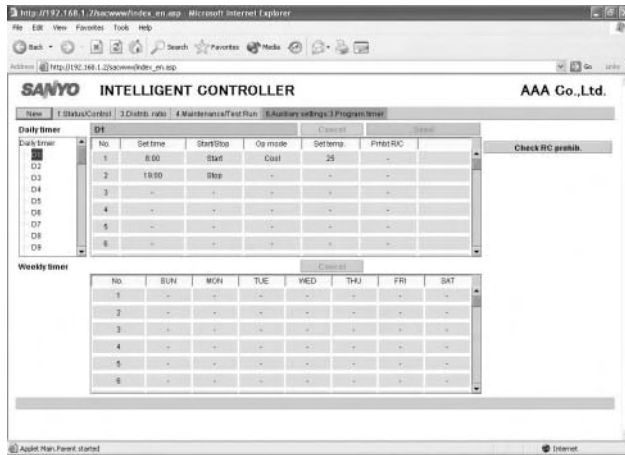
When you use the menu to select [4 Maintenance/Test Run 4 Sent mail log] while logged in as an administrator a screen such as shown below appears



- ① No
The entry numbers for the sent mail log. With a maximum of 20 (No. 1 to 20) possible entries, the newest entries appear at the top of the list. When the number of entries exceeds 20, entries are deleted starting with the oldest.
As up to three mail recipients can be specified, up to three log entries can be recorded for one alarm occurrence.
- ② Rst
"OK" appears when an alarm mail is sent properly, and "NG" appears when sending fails.
- ③ Send T
The date and time the alarm mail was sent (or sending was attempted).
- ④ To
The recipient address the alarm mail was sent to. If the address is too long, only part of the address may appear.
- ⑤ Unit name
The name of the indoor unit for which the alarm occurred.
- ⑥ Alarm code
The code for the alarm that occurred.
- ⑦ Stat
"Occurrence" appears when a notification of an alarm occurrence is sent, and "Restoration" appears when a notification of an alarm restoration is sent.
- ⑧ Address
The address of the indoor unit for which the alarm occurred.
The address follows the format "adaptor number - link number - system (outdoor) number - indoor number".
When a test mail is sent, "TEST_MAIL" appears.

3-7. Program Timer Screen

When you use the menu to select [6 Auxiliary settings 3 Program timer] while logged in as an administrator or use the "CHECK" button for timer operation in the remote control window a screen such as shown below appears (As non-administrator users can only confirm settings and not configure them the "Cancel" and "Send" buttons only appear when logged in as an administrator)



You can only configure daily timer settings one number (D1 D2 etc.) at a time. If you attempt to switch to D2 settings in the middle of configuring D1 settings, for example, the message "Send for each daily timer" appears.

In such a case, apply or cancel the current settings by clicking the "Send" or "Cancel" button, respectively, before configuring the next daily timer number.

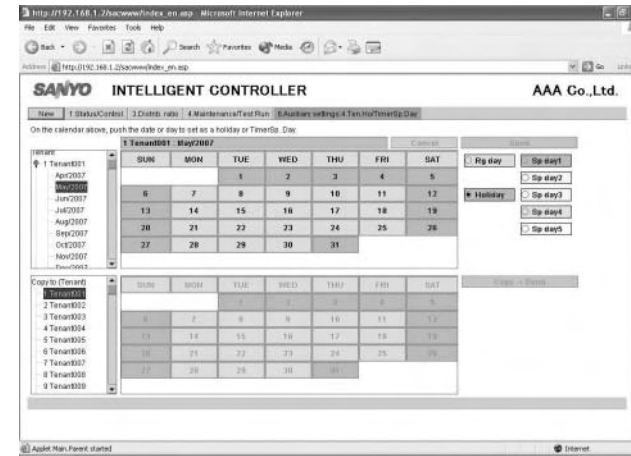
For details on the settings, refer to the operation manual for the Intelligent Controller.

The "Check RC prohib" button appears in the above screen when logged in as an administrator or special user. When you click on this button, a screen such as shown below appears.

	Start/Stop	Oper. mode	Set temp.	Fan speed	Set flap
Prohibition1	X	O	O	O	O
Prohibition2	X	X	X	O	O
Prohibition3	O	X	X	O	O
Prohibition4	O	X	O	O	O

3-8. Tenant Holiday/Timer Special Day Screen

When you use the menu to select [6 Auxiliary settings 4 Ten Ho/TimerSp Day] while logged in as an administrator, a screen such as shown below appears.



You can only configure tenant holiday/timer special day settings one tenant at a time. If you attempt to switch to Tenant002 settings in the middle of configuring Tenant001 settings, for example, the message "Send for each tenant" appears.

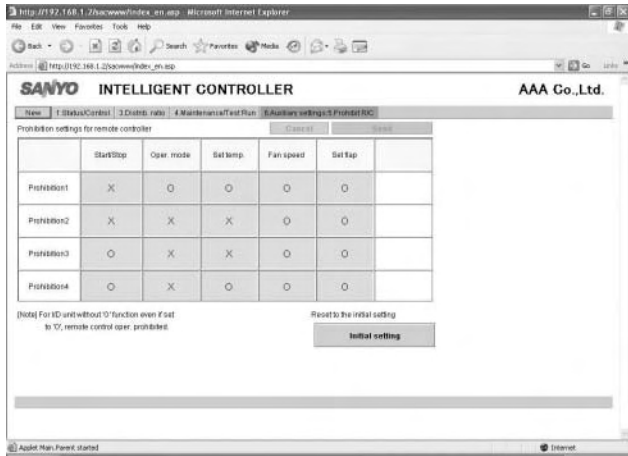
In such a case, apply or cancel the current settings by clicking the "Send" or "Cancel" button, respectively, before configuring the next tenant.

To copy changed settings, click the "Send" button and apply the settings before copying.

For details on the settings, refer to the operation manual for the Intelligent Controller.

3-9. Prohibit Remote Control Screen

When you use the menu to select [6 Auxiliary settings 5 Prohibit R/C] while logged in as an administrator or click the "CHECK" button for prohibit remote control in the remote control window a screen such as shown below appears (As non-administrator users can only confirm settings and not configure them the "Cancel" and "Send" buttons only appear when logged in as an administrator)



For details on the settings refer to the operation manual for the intelligent Controller

4. Supplementary Information

- When connecting the intelligent Controller via internet consider implementing network security measures such as a firewall
- Error Messages

Error	Cause	Remedy
System configuration change (when logged in with Administrator privileges)	The system configuration of the intelligent Controller has changed	This is a warning message Wait a moment and resume operation
intelligent Controller is now processing please wait Please try later	The intelligent Controller is applying settings Access from the Web is heavy	f configuring settings with the intelligent Controller switch to a non-settings screen (such as screen 1-n) Wait a moment and resume operation
Communication error	The intelligent Controller was turned off while connected or a cable was unplugged	Try the operation again Verify that the intelligent Controller is turned on and that the network wiring connections are correct
Invalid user ID	The entered user ID is different from the user ID registered on the intelligent Controller	Verify the user ID that was registered to the intelligent Controller
Wrong password	The entered password is different from the password registered on the intelligent Controller	Verify the password that was registered to the intelligent Controller