



Air Conditioners

Technical Data

Intelligent Touch Manager



EEDEN13-721208

Revision History

Month	Year	Name	Model name	Document	EM No.	Software version	Revised contents
4	2012	iTM	DCM601A51	Installation Manual	EM11A016	–	First edition
4	2012	iTM plus ADP	DCM601A52	Installation Manual	EM11A029	–	First edition
4	2012	iTM integrator	DCM601A53	Installation Manual	EM11A032	–	First edition
8	2012	iTM	DCM601A51	Commissioning Manual	EM11A021	Ver1.02.00	First edition
8	2012	iTM	DCM601A51	Commissioning Manual Layout Screen Creation Tool	EM11A024	Ver1.02.00	First edition
8	2012	iTM	DCM601A51	Commissioning Manual External Management Points	EM11A026	Ver1.02.00	First edition
8	2012	iTM	DCM601A51	Commissioning Manual PPD Setup	EM11A027	Ver1.02.00	First edition
8	2012	iTM	DCM601A51	Commissioning Manual Energy Navigator Setup	EM11A028	Ver1.02.00	First edition

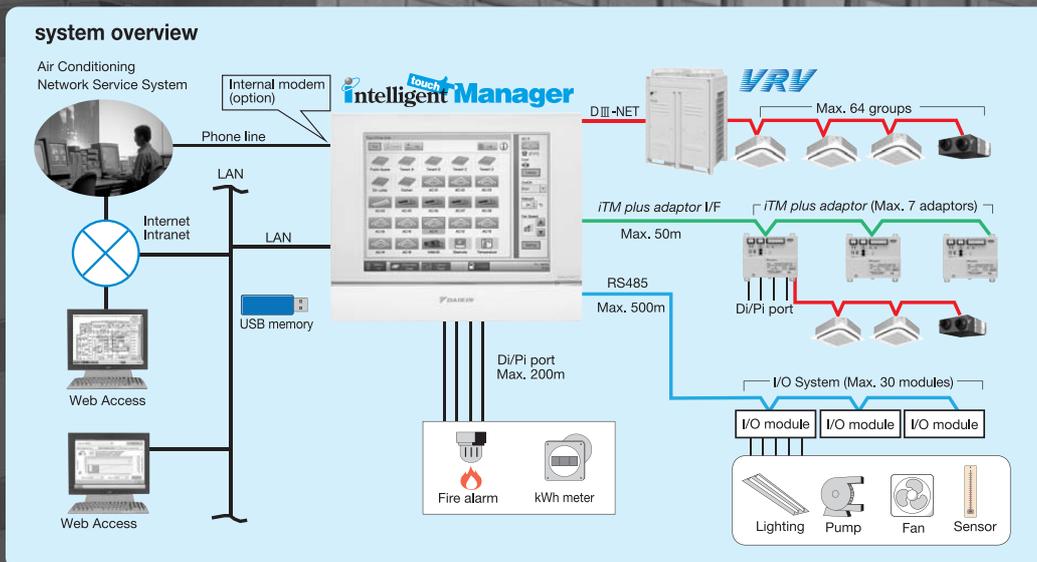
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Part 1 **intelligent Touch Manager**

State-of-the-art management of building air conditioning

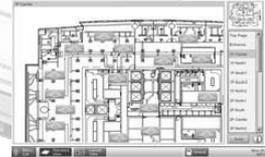


One touch selection to total air comfort

Daikin proudly introduces its new *intelligent Touch Manager*, a VRV system controller featuring an array of simple, useful system management functions for added value.

Central control

- Handy area settings simplify detailed management of VRV.
- Display of floor plans enables a quick search of desired air conditioning units.
- Operation history shows manner of control and origin in past operations of air conditioning units.



Remote access

- Remote access with a PC allows total air conditioning management using the same type of screens as those displayed in the *intelligent Touch Manager*.
- Authorised users can centrally control individual air conditioning units from their own computers.

Automatic control

- VRVs are controlled automatically throughout the year by the schedule function.
- Interlocking VRVs and other equipment enables easy automation of building facilities operation.
- Setback adjusts temperature settings even when rooms are unoccupied.

Energy management

- The Energy Navigator feature simplifies energy management by tracking energy consumption data and identifying inefficient operation.



Troubleshooting

- Contact information of maintenance contractors can be registered and displayed.
- E-mails are sent automatically to alert of malfunctions and potential trouble.
- The *intelligent Touch Manager* can link to the Air Conditioning Network Service System for 24-hour monitoring of operating conditions and status.

Scalability

- A single *intelligent Touch Manager* can manage a small building or be expanded to handle medium- to large-sized buildings.
- Large building properties can also take advantage of the *iTM integrator* to link up and expand system up to 5 *intelligent Touch Managers* for integrated control.

The logo for intelligent Touch Manager features the word 'intelligent' in a standard sans-serif font, 'touch' in a smaller font inside a blue speech bubble pointing towards the right, and 'Manager' in a large, bold, blue sans-serif font.

Central control

Simple operation

Using the easily recognised icons and intuitive menu screens, even novice users can operate and monitor the system like an expert.



List view

Designed for simplicity, this menu provides a quick view of overall status and essential information in a list format. Using the sorting function, air conditioning units operating under the same conditions and status are identified for comparison and assessment.



Layout view

A special feature utilises building floor plans to provide a visual representation of system equipment. Without having to memorise equipment names, users can visually locate any installed equipment by searching its position on the floor plan.

Language can be changed according to user needs.

Comprehensive management history

Rather than simply recording malfunctions, the *intelligent Touch Manager* provides a comprehensive history for equipment events including operation, status change, automatic control, and settings. This assists in system optimisation for additional energy savings and comfort as well as for preventive maintenance.

Easy access to a wide range of menus

Users can readily access their desired menu screens simply by touching the menu icon from the main screen.



Automatic control



System settings



Operation management

Remote access

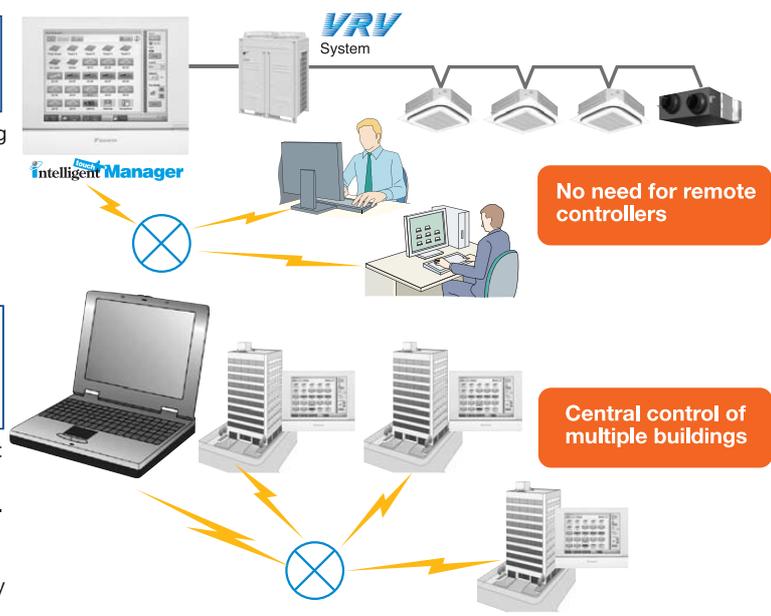
Air conditioning control using a PC

Air conditioning units in buildings can be operated via PC.

Authorised users can operate building air conditioning equipment with a PC and have the same type of screens displayed as those displayed in the *intelligent Touch Manager*.

Air conditioning units in buildings at distant locations can also be remotely monitored and controlled.

Operating air conditioning equipment using a computer is comparable to that of the *intelligent Touch Manager*. Administrator can centrally operate and monitor individual units and systems at distant locations as if they were working in the same building.



Automatic control

Automatic operation for the entire year

Calendar settings can automate daily management of air conditioning equipment for the entire year to optimise energy savings and comfort.



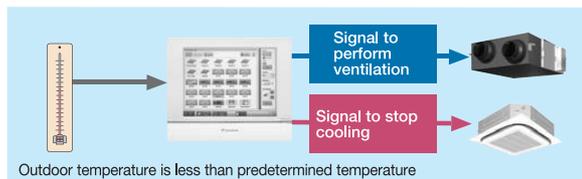
- A weekly schedule can be set for any air conditioning unit and its group.
- Administrator can also set Start/Stop, Setpoint and below conditions:
 - Pre-Cool/Heat •Setback High/Low
 - Remote Controller Restriction •Timer Extension
 - Setpoint Shift •Fan Speed •Setpoint Restriction
- Holidays and special days can be set. Monthly schedule can be easily checked on the calendar.
- An expiration date can be set for each schedule. This enables a schedule pattern to be automatically changed according to the season.

Interlock variety

The *intelligent Touch Manager* offers interlock variety that extends beyond simply starting and stopping interlocks to automatic interlocks of connected units. This enables the system to control air conditioning equipment in performance of such operations as free cooling and time-delayed ventilation.

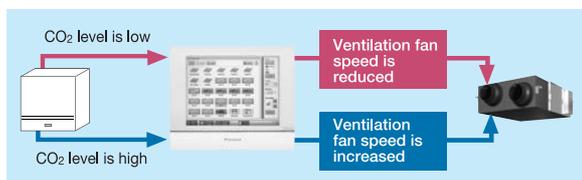
Example 1 Free cooling

When the outdoor temperature is lower than the predetermined temperature, the cooling operation stops, and outdoor air is directly introduced through the ventilation unit to save energy.



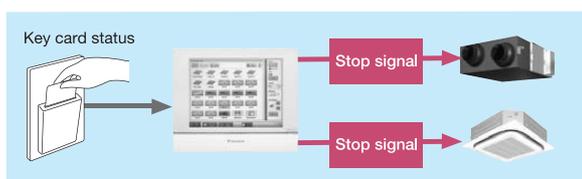
Example 2 Ventilation control

Ventilation equipment is controlled depending on the indoor CO₂ levels. Air conditioning losses attributed to unnecessary ventilation are reduced while maintaining appropriate use of indoor air and enabling energy savings.



Example 3 Air conditioning interlock according to room occupancy status

Key control systems and occupancy sensors are employed to detect room occupancy status and automatically perform setback or stop operations for unoccupied rooms depending on settings.

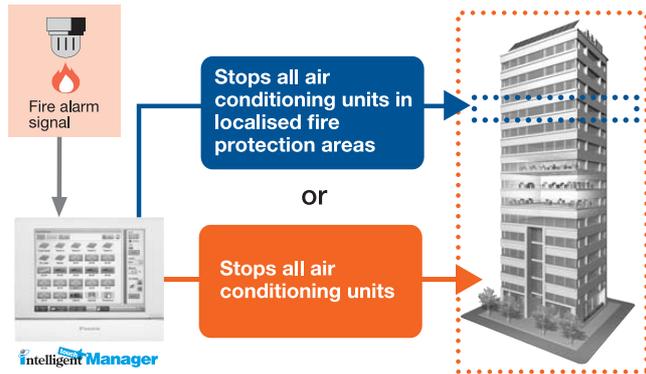


Interlock variety enables greater functionality between air conditioning equipment and peripheral equipment.

Emergency stop for localised fire protection areas

By interlocking fire alarms, the system can perform an emergency stop of air conditioning and ventilation units and execute for either all air conditioning units or only affected fire protection areas.

Having centralised control to perform an emergency stop on localised fire protection areas offers building managers of multi-tenant buildings a choice for maximising safety of affected areas without disrupting activities of those areas that are unaffected.



Comfortable energy-saving control

Automatic changeover

Cooling/heating operations of each room can be automatically changed based on setpoint and room temperature.

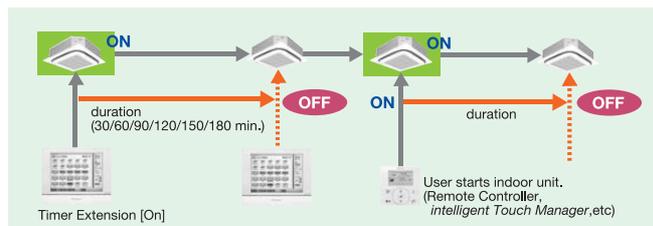
* In the case of heat pump type VRV, cooling/heating operations can be changed at the same time for the entire VRV system.

Setback

Unoccupied rooms such as offices at night have no need for maximum air conditioning operation to maintain a suitable room environment. The setback feature scales back air conditioning in unoccupied rooms to prevent unnecessary energy consumption and provide lower electricity costs.

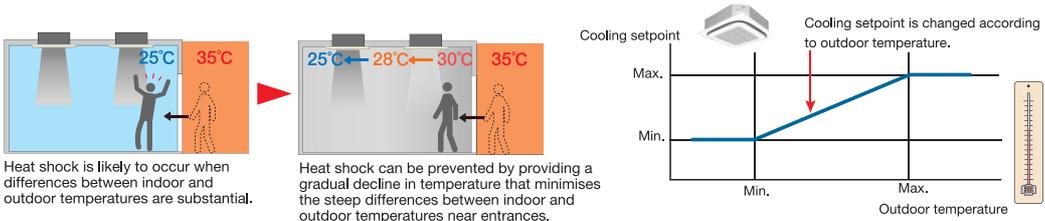
Timer Extension

To conserve energy when rooms are left unoccupied, the system has an automatic stop operation for air conditioning units that turns down the air conditioning after a predetermined time. This can be a true energy saver for a variety of building types including school classrooms.



Sliding Temperature

This function is designed to change setpoint to reduce differences between the outdoor and indoor temperatures. Particularly useful at building entrances and similar locations, this function effectively prevents a "heat shock" from exposure to a sudden drop in temperature and can also enhance energy savings.



Heat shock is likely to occur when differences between indoor and outdoor temperatures are substantial.

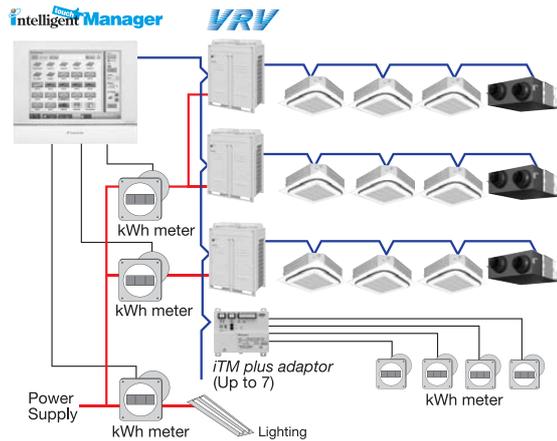
Heat shock can be prevented by providing a gradual decline in temperature that minimises the steep differences between indoor and outdoor temperatures near entrances.

Energy management

Energy saving control assisted by Energy Navigator (Option)

Energy consumption trends of all the equipment (including air conditioning units) can be easily understood by using the Energy Navigator feature. Here users can identify air conditioning units that are suspected of overcooling or kept running in unoccupied rooms. The Energy Navigator feature will also provide support in formulation and verification of energy-saving measures to help ensure advanced energy management.

Hourly energy consumption is measured and the intelligent Touch Manager records data sent from the electrical meter.



Accumulated data appears in an easy-to-understand graph.

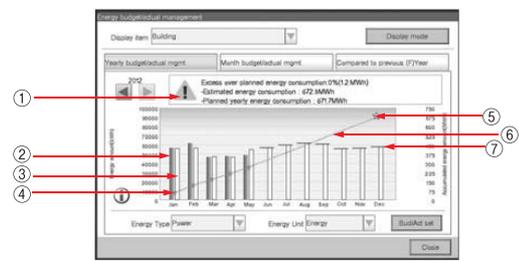
Energy consumption data is presented on a daily and monthly basis. Also, energy targets and projected energy consumption data as well as comparison data with the previous year's actual results are presented in a user-friendly format to help ensure energy-saving control.

Daily energy consumption



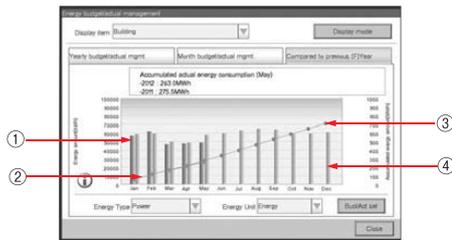
- ① Warning indication
- ② Actual daily energy consumption
- ③ Cumulate line
- ④ Current month's target
- ⑤ Prediction line
- ⑥ Daily average to achieve month's target

Monthly energy consumption



- ① Warning indication
- ② Actual monthly energy consumption
- ③ Monthly target energy consumption
- ④ Cumulate line
- ⑤ Current year's target
- ⑥ Prediction line
- ⑦ Monthly target to achieve year's target

Comparison from the previous year



- ① Current year's energy use
- ② Current year's cumulate line
- ③ Previous year's cumulate line
- ④ Previous year's energy use

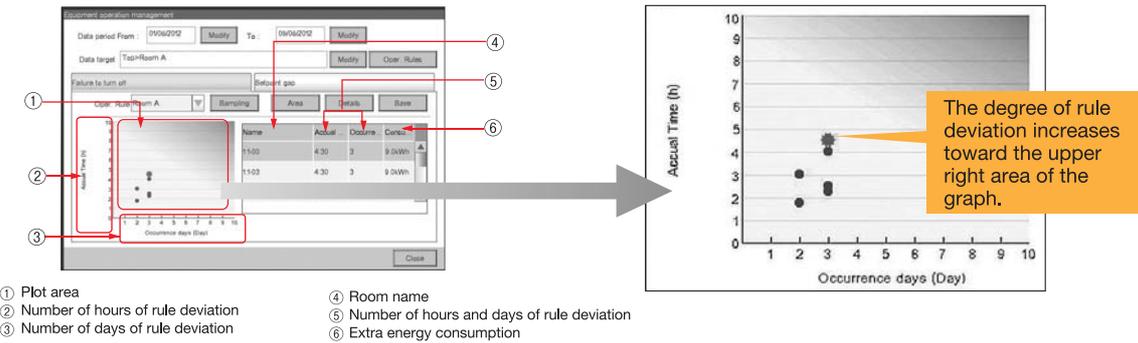
Information concerning energy management of the system can be viewed on the user's own PC via LAN.

The diagram shows a 'User's PC' (laptop) connected to the 'intelligent Manager' via a 'LAN' connection.



Energy consumption is automatically evaluated for each room.

Based on the accumulated data, the *intelligent Touch Manager* automatically identifies rooms and air conditioning units that substantially deviate from operation rules established by the user for operation time and predetermined temperature settings. A benchmark showing ways to further reduce energy consumption can be displayed to alert users to even greater energy and cost savings.

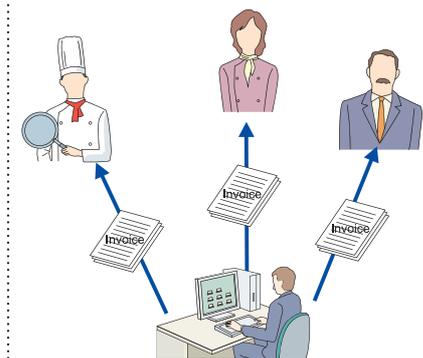
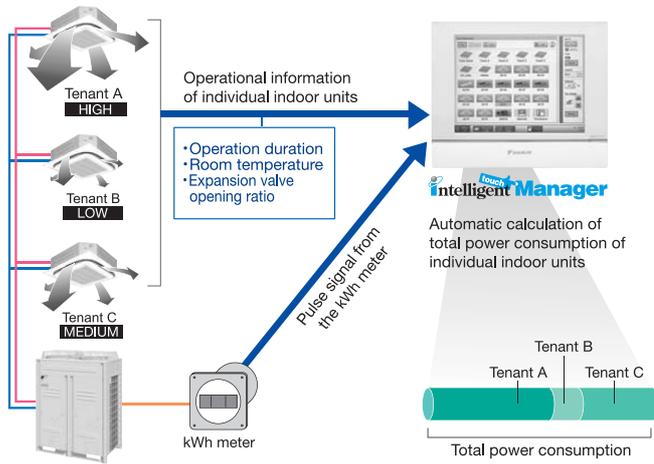


With the PPD function, power consumption can be calculated for each indoor unit. (Option)

The energy consumption is proportionally calculated for each indoor unit. The data can be used for energy management and calculation of air conditioning usage fees for respective tenants.

Operational information of individual indoor units are monitored, allowing for distribution of power consumption at outdoor units.

Daikin's PPD* keeps track of power distribution for each indoor unit. It performs air conditioning billing calculations quickly and automatically.



* PPD (Power Proportional Distribution) is Daikin's proprietary calculation method.

It is easy to output PPD data.

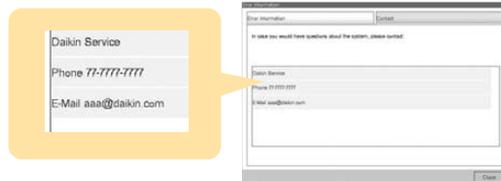
PPD data is output in CSV format to a PC or USB memory device and can be freely processed and managed.

Troubleshooting

Various functions for simplifying troubleshooting

Display of maintenance contact information

Contact information of maintenance contractors (who are responsible for servicing air conditioning equipment) can be registered and displayed.



E-mail alerts for reporting malfunctions

E-mail alerts are sent immediately to inform concerned parties of malfunctions involving equipment connected to the *intelligent Touch Manager*. Conveying equipment models and error codes, these e-mail alerts enable recipients to take prompt action and can be set for specific equipment.

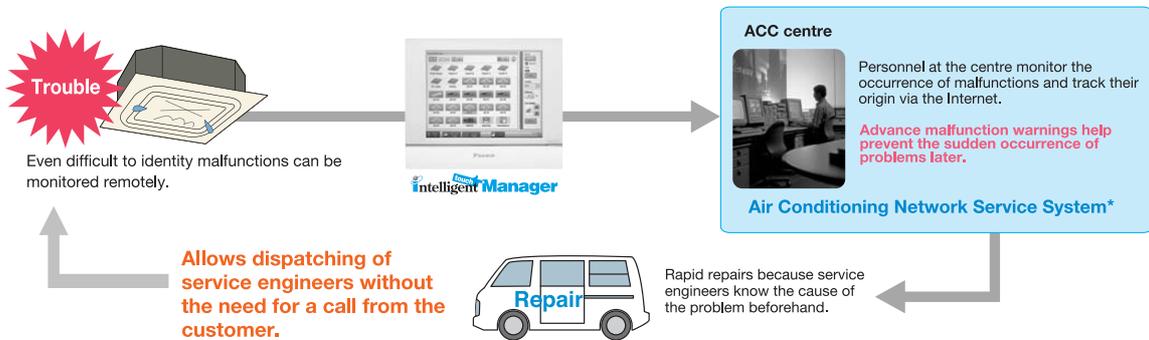


Air Conditioning Network Service System (Optional Maintenance Service)

The *intelligent Touch Manager* can be connected to Daikin's own Air Conditioning Network Service System for remote monitoring and verification of operation status for air conditioning units. By its ability to predict malfunctions, this service provides customers with additional peace of mind.

Enhanced convenience with link to the Air Conditioning Network Service System

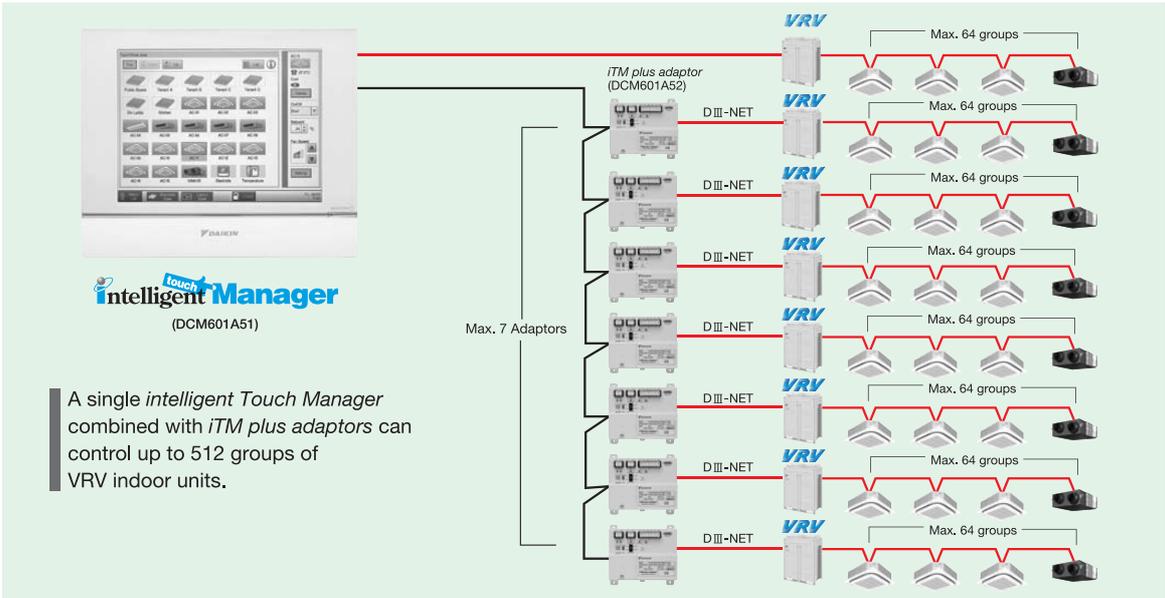
The *intelligent Touch Manager* connects seamlessly to Daikin's 24-hour Air Conditioning Network Service System.



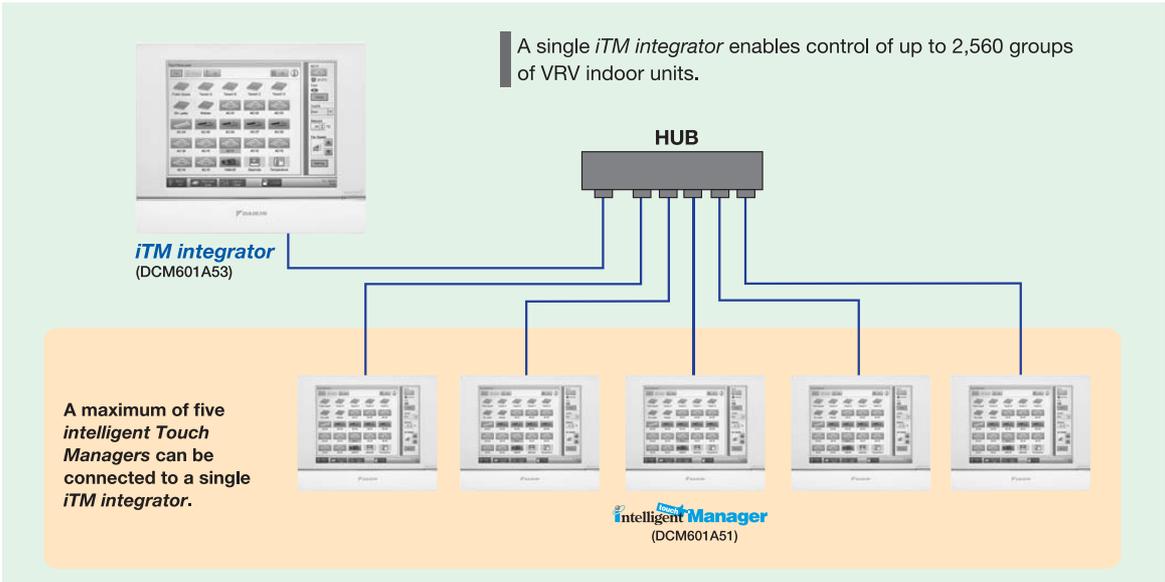
*Because of restrictions in applicable areas and release times, please consult a Daikin representative separately for details.

Scalability

A single *intelligent Touch Manager* enables centralised control of up to 512 groups of VRV indoor units.



Integration of five *intelligent Touch Managers* enables centralised control of up to 2,560 groups of VRV indoor units.



Specifications

■ intelligent Touch Manager function

Category	Function	Remarks	
Basic functions	<i>iTM plus adaptor</i> (DCM601A52)	Maximum number of adaptors: 7	
	Management points	Maximum number of management points: 650 (Number of DIII connection management points: 512)	
	Areas	Maximum number of areas: 650 Maximum area hierarchies: 10	
	Supported languages	English, French, German, Italian, Spanish, Portuguese, Dutch, Chinese, and Japanese	
	Monitoring screens	Icon view	Icons show the operation status of equipment.
		List view	Detailed information of each management point is displayed.
		Layout view	Up to 60 screens can be created.
History	Up to 100,000 events are recorded in history including malfunctions, operations, automatic control, and system information. Operation origin is also recorded.		
Automatic control	Schedule	Number of programmes:100 Up to 20 actions/day can be set.	
		Weekly schedule	7 days of the week + 5 special days can be set.
		Yearly calendar	Special days can be specified by date or month/week/day of the week. Special day settings can be reused every year.
		Seasonal schedule	Programmes for respective seasons can be switched by date.
	Interlock	Number of programmes:500 Interlock is possible for on/off, malfunction, analogue value, and operation mode switching.	
	Emergency stop	Number of programmes:31	
	Automatic changeover	Number of changeover groups:512	
	Temperature limit	Number of temperature limit groups: 8 Upper limit range: 32-50°C Lower limit range: 2-16°C	
	Sliding temperature	Number of sliding temperature groups: 8 Outdoor temperature range: 18-34°C Setpoint range: 16-32°C	
	Heating Mode Optimisation (HMO)	Unneeded heating is prevented.	
Timer extension	Operation stop is selectable from 30, 60, 90, 120, and 180 minutes.		
Setback	Setback setpoint can be set for 2 patterns. Temperature range: 1-7°C , -1--7°C (setpoint shift amount)		
Data control	Power Proportional Distribution	Hourly Power Proportional Distribution results up to 13 months are recorded. The system supports data output in CSV format.	
	Energy Navigator	Actual results of daily/monthly energy consumption are shown in graphs. Comparisons can be made with predetermined values/actual results of the previous year. Inefficient operation of VRV indoor units is automatically identified, and energy waste is calculated.	
Remote access	Web access	Web browsers can display the same type of screen as the <i>intelligent Touch Manager</i> . Up to 4 administrators and 60 general users can be registered. Screens and operation accessible to general users can be restricted.	
	E-mail alerts	Up to 10 e-mail addresses can be set. Addresses for sending malfunction alerts can be set by range of management points. The SMTP server authentication method is selectable from no authentication, POP before SMTP, and SMTP-AUTH.	
System	Automatic registration	Indoor units connected to DIII-NET are automatically detected, and icons for respective models are automatically registered.	
	Security	Screen lock functions are available. Access restrictions can be set for each general user.	
	Screen savers	Screen savers are selectable from 3 patterns.	
	Setting of contact information	Contact information for servicing can be registered.	
Air Conditioning Network Service	Air Conditioning Network Service System	A service agreement needs to be concluded.	
	Energy Saving Air Conditioning Network Service System	A service agreement needs to be concluded.	

■ iTM integrator function

Category	Function	Remarks
Basic functions	<i>intelligent Touch Manager</i> (DCM601A51)	Maximum number of units: 5
	Management points	Maximum number of management points: 3,250 (number of DIII connection management points: 2,560)
	Areas	Maximum number of areas: 3,250 Maximum area hierarchies: 10
	Supported languages	English, French, German, Italian, Spanish, Portuguese, Dutch, Chinese, and Japanese

■ Types of management points and target equipment/interface

Management point	Supported equipment	Number of management points
Indoor	DIII-compatible indoor units	Maximum: 512 *1
	Interface adaptor for SkyAir (DTA102A52)	
	Interface adaptor for residential indoor unit (KRP928BB2S)	
	Central control adaptor kit (DTA107A55)	
Outdoor	VRV outdoor units	Maximum: 80
Ventilator	Heat Reclaim Ventilator	Maximum: 512 *1
DIII Chiller	DIII-compatible air-cooled chillers (UWA/Y)/water-cooled chillers (ZUW)	Maximum: 320 *2
Di	Di port of <i>intelligent Touch Manager</i>	Maximum: 32 *3
	Di port of <i>iTM plus adaptor</i>	
DIII Di	DIII Di Unit (DEC101A51)	Maximum: 512 *1
External Di	Wago Di	Maximum: 512 *4
DIII Dio	DIII Dio Unit (DEC102A51)	Maximum: 512 *1
	General-purpose adaptor (DTA103A51)	Maximum: 512 *4
External Dio	Wago Di, Do	Maximum: 512 *4
Pi	Pi port of <i>intelligent Touch Manager</i>	Maximum: 32 *3
	Pi port of <i>iTM plus adaptor</i>	Maximum: 80
Internal Pi	Energy consumption of VRV outdoor units	Maximum: 80
External Ai	Wago Ai	Maximum: 512 *4
Internal Ai	Room temperature, setpoint D3 Chiller outlet/inlet water temperatures	Maximum: 512 *4

*1: Total of DIII connection equipment (Indoor, Ventilator, DIII Chiller, DIII Di, DIII Dio)

*2: Maximum number of management points for DIII Chiller only

*3: Total of Di/Pi management points

*4: Total of External Di, External Do, External Ai, and Internal Ai

■ DAIKIN supplied equipment

Model	Item
DCM601A51	<i>intelligent Touch Manager</i>
DCM601A52	<i>iTM plus adaptor</i> (Option)
DCM601A53	<i>iTM integrator</i> (Option)
DCM002A51	iTM power proportional distribution software (Option)
DCM008A51	iTM energy navigator software (Option)

■ Locally supplied equipment

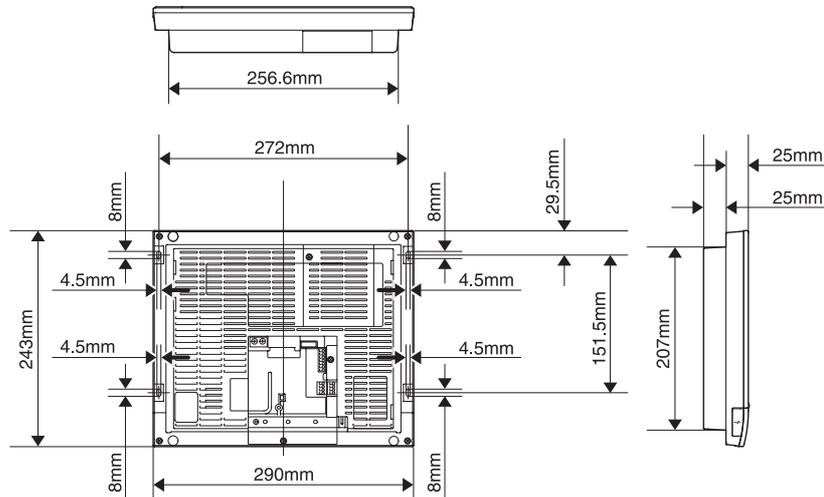
Item	Specification
USB memory	USB 2.0 Up to 32GB memory can use
PC for Web access	Windows XP Professional SP3 (32bit) Windows VISTA Business SP2 (32bit) Windows 7 Professional SP1 (32bit,64bit) Monitor: 1024x768 or more Web browser: Internet Explorer 8, 9 Firefox 10.0 Flash Player Ver11.1
WAGO I/O system	Modbus communication unit: 750-315/000-002 /K190-6442 DC24V power supply unit: 787-712 DC24V power supply module: 750-613 Connector: 750-960 Terminator module: 750-600 Di module: 750-400, 750-432 Do module: 750-513/000-001 Ai module: 750-454, 750-479 Thermistor module: 750-461/020-000

Main specifications

intelligent Touch Manager

Port	Number	Use
D III	1ch	D III-NET (Up to 64 groups)
LAN	1ch	Web Access (100BASE-TX)
RS485	1ch	External I/O module (Di,Dio,Ai)
Di(Pi)	4ch	Emergency stop input (Di1) Pulse input,contact signal input
plus ADP IF	1ch	iTM plus adaptor (Up to 7 adaptors)
internal modem (option)	1ch	Air Conditioning Network Service System

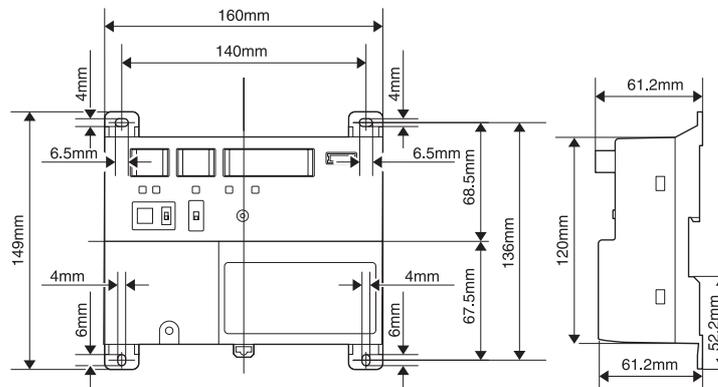
POWER SUPPLY : DCM601A51 AC100-240V(±10%)(50/60Hz)
 INPUT : 23W
 MASS : 2.4kg
 FUSE AMP : 3.15A
 Operating temperature limit : -0°C - +40°C
 Operating humidity limit : MAX.15 - 85%
 Storage temperature range : -15°C - +60°C
 Installation direction : Vertical direction only



iTM plus adaptor (DCM601A52) Input/Output port

Port	Number	Use
plus ADP IF	1ch	iTM plus adaptor (Up to 7 adaptors)
D III	1ch	D III-NET (Up to 64 groups)
Di(Pi)	4ch	Pulse input,contact signal input

POWER SUPPLY : DCM601A52 AC100V-240V(±10%)(50/60Hz)
 INPUT : 6W
 MASS : 0.5kg
 FUSE AMP : 3.15A
 Operating temperature limit : -10°C - +50°C
 Operating humidity limit : MAX.15 - 85%
 Storage temperature range : -15°C - +60°C
 Installation direction : Vertical direction only



Part 2

Fundamental of DIII-NET

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1. Design of DIII-NET

1.1 Features of DIII-NET

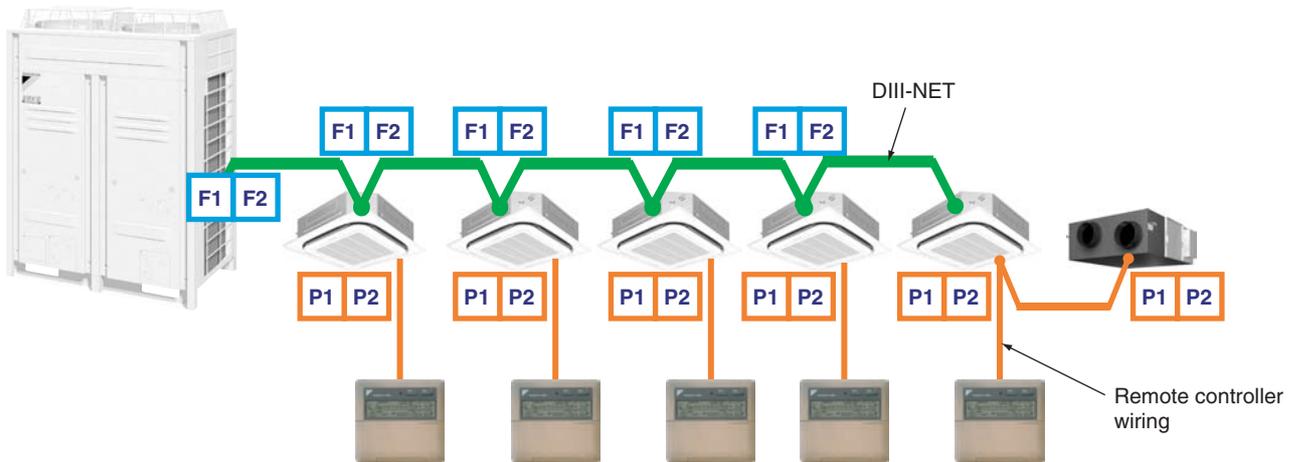
What is DIII-NET?

DIII-NET is a proprietary high-speed communication method developed by Daikin, with which huge amount of information can be transmit at high speed and various facilities of a building, such as air conditioners, can be freely connected via networks in accordance with the usage, scale, and conditions.

- Various types of air-conditioners installed in a whole building are integrated, and detailed monitoring and control are provided.
- The non-polar 2-wire system reduces the number of required cables inside a building. It also reduces mis-connection, facilitating the connection operation.
- Post-installation can be done easily. Wiring up to 2km in total extension is available.
- Various control devices can be freely connected, and hierarchical risk diversification system can be established as well.
- Comprehensive management of our Heat Reclaim Ventilator and heat source devices is also available.

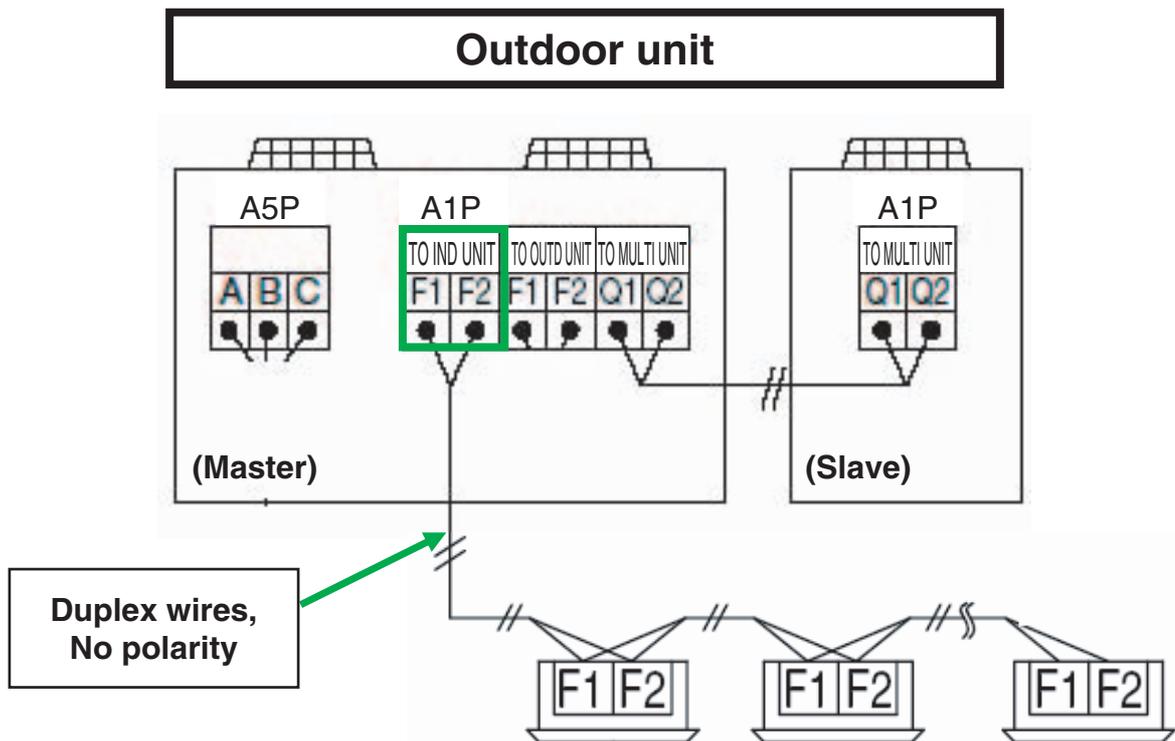
2. DIII-NET Design Standard

2.1 Terminal Number



Just for operation with each remote controller

2.2 Detail of Outdoor Unit Terminal No.

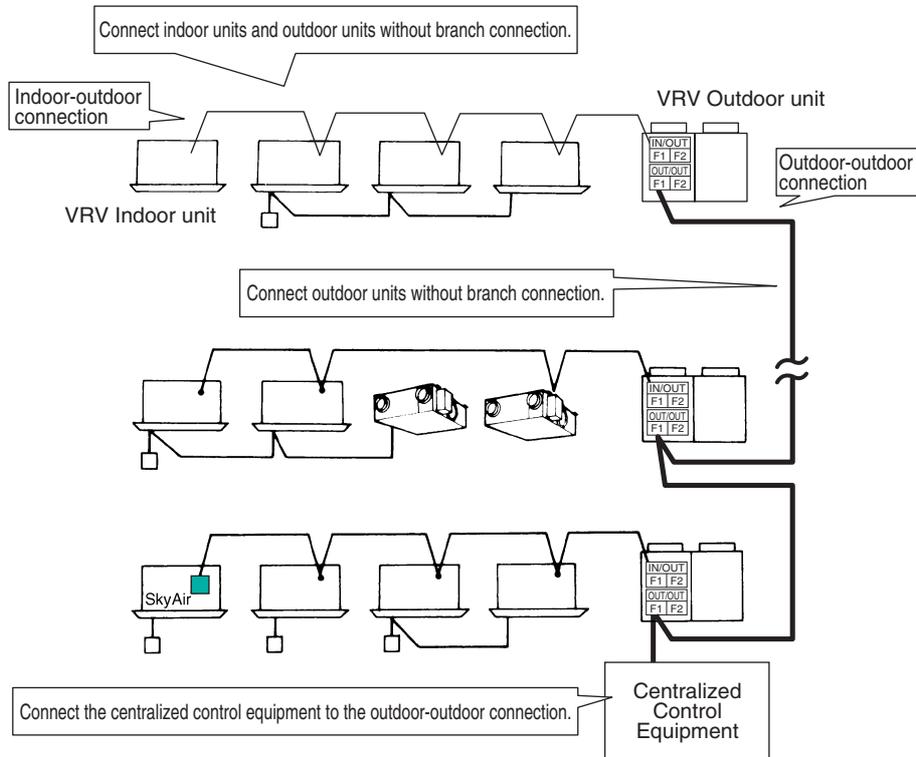


2.3 Connection Method

2.3.1 Correct Wiring

- Series wiring method only should be used.

[Example]



Caution:

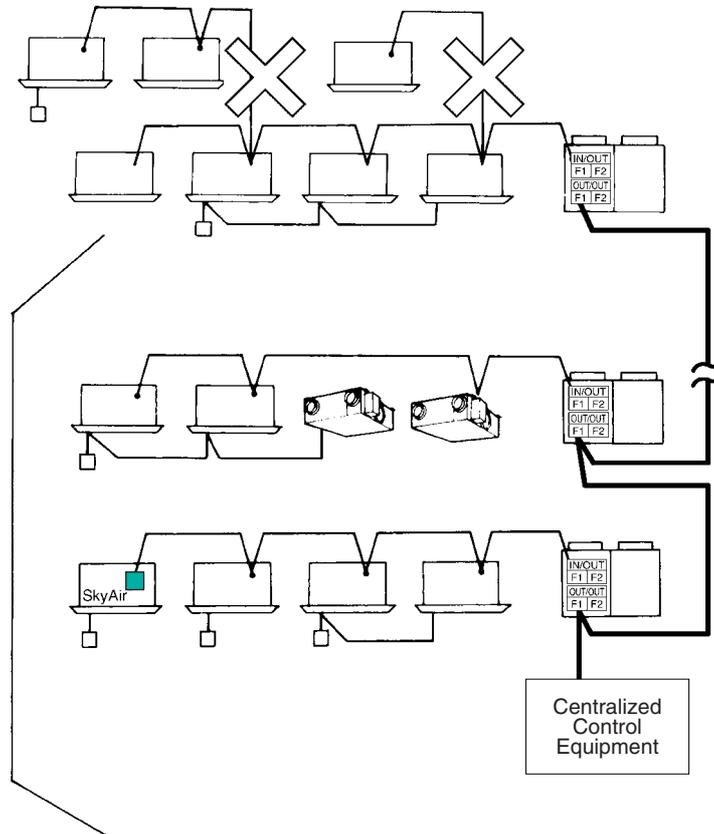
Be sure to have indoor-outdoor control wiring and that of refrigerant system coincide. Crossed wiring will cause malfunctioning.

2.3.2 Incorrect Wiring Example

Caution:
Communication problems could occur.

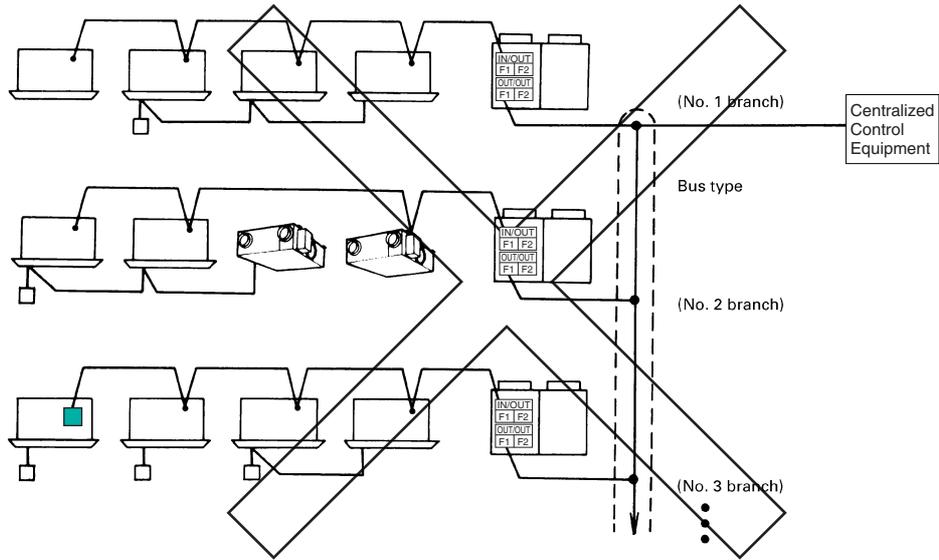
[Incorrect Wiring 1]

- Series wiring method only should be used.



Caution:
As shown above, the centralized control equipment should be connected to the wiring between the outdoor units, wherever possible. (If connected to the control wiring between indoor unit and the outdoor unit, it may not be able to control the units even on the normal circuit if the circuit connected to the centralized control equipment is out of order.)

[Incorrect Wiring 2]

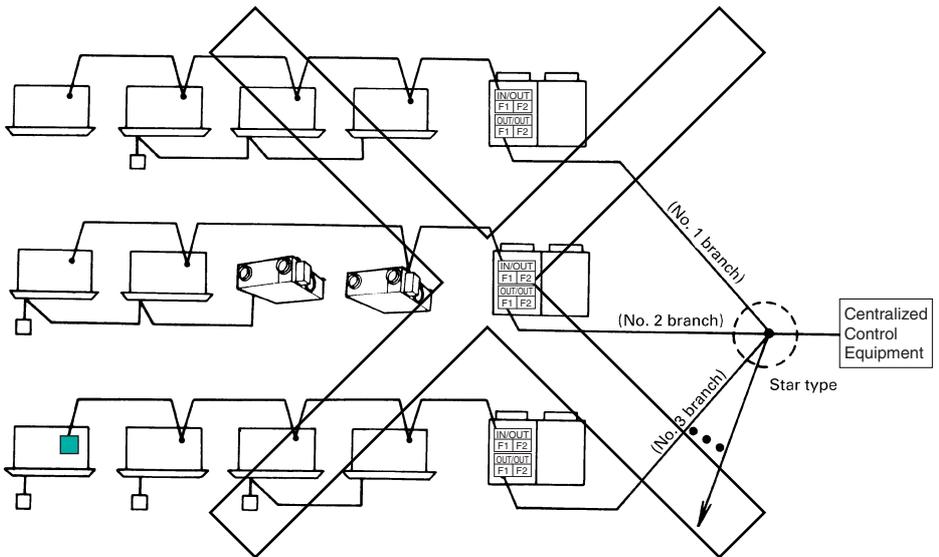


Caution:

[Reason]

Communication problems could occur.

[Incorrect Wiring 3]

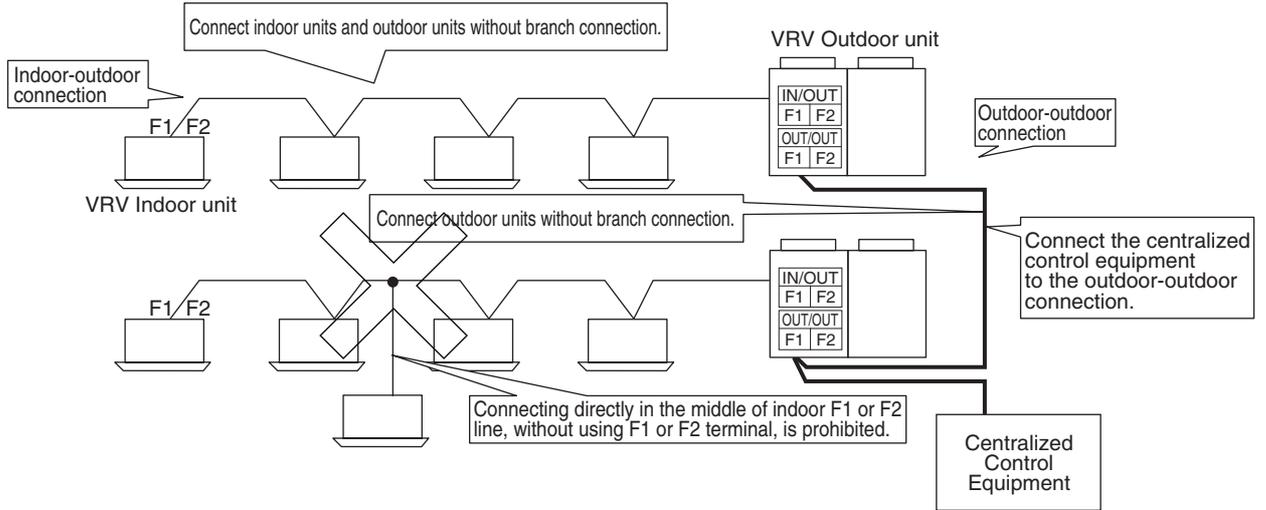


Caution:

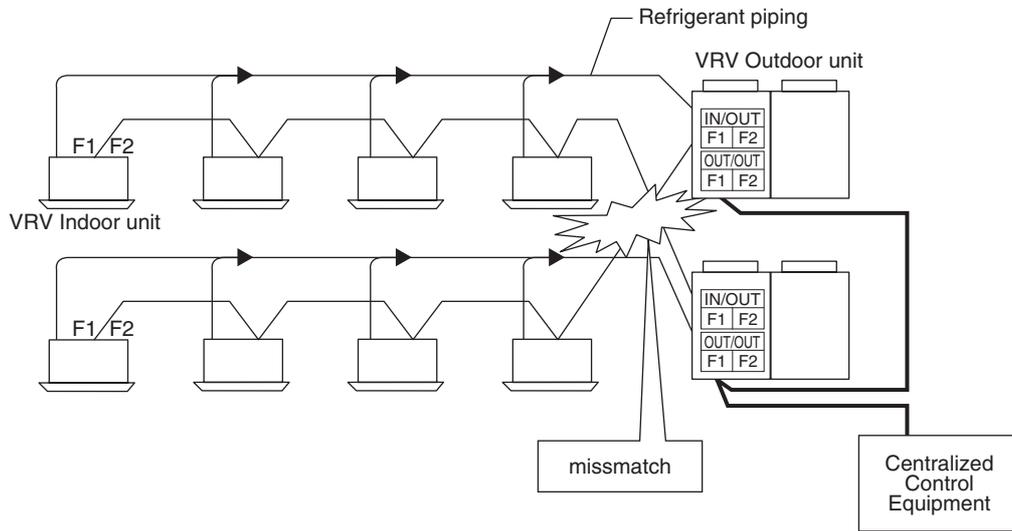
[Reason]

Communication problems could occur.

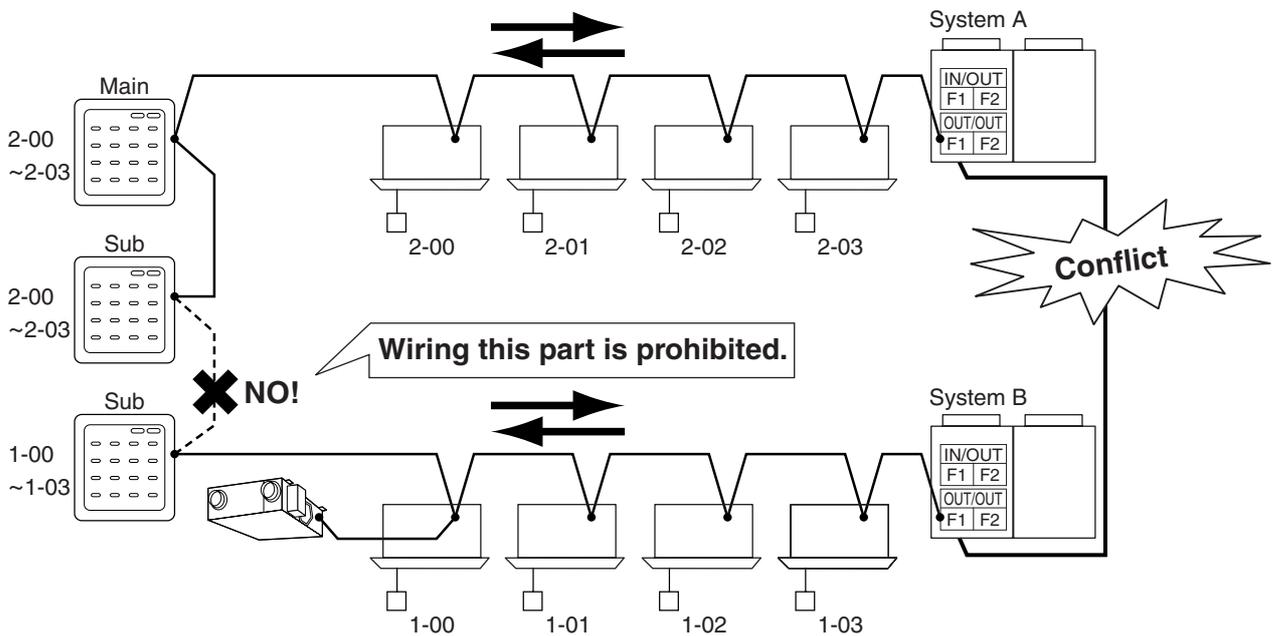
[Incorrect Wiring 4]



[Incorrect Wiring 5]



[Incorrect Wiring 6]

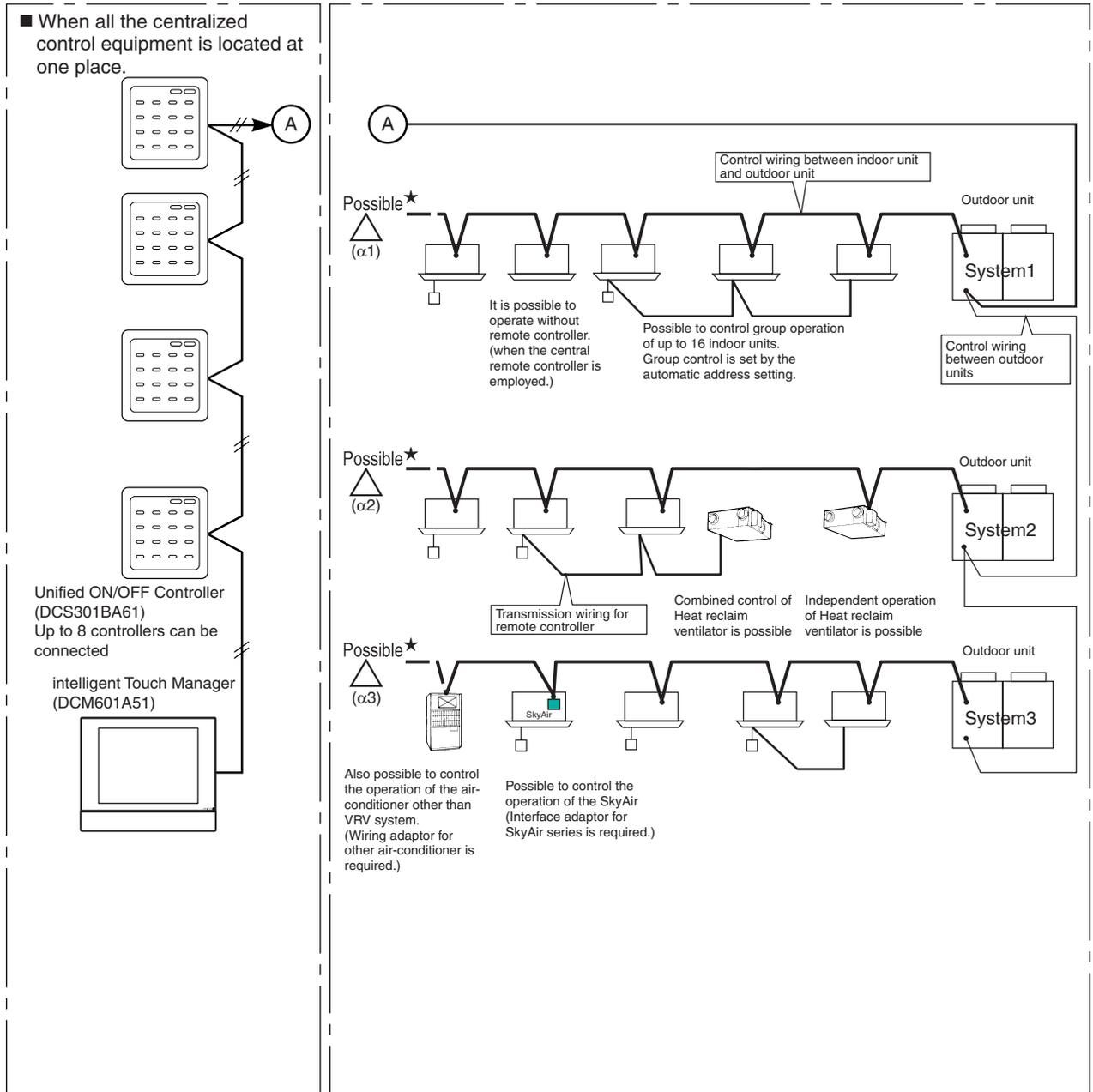


2.4 Wiring Example

Example of Control Wiring

- Be sure to connect the wiring of the centralized control equipment to control wiring between outdoor units. When wiring connections are made between indoor and outdoor units, there may be cases where control over normal systems may become impossible if one of the connected systems should happen to fail.
- Be sure to prevent the connection of three wires on the same terminal.

<Pattern 1>



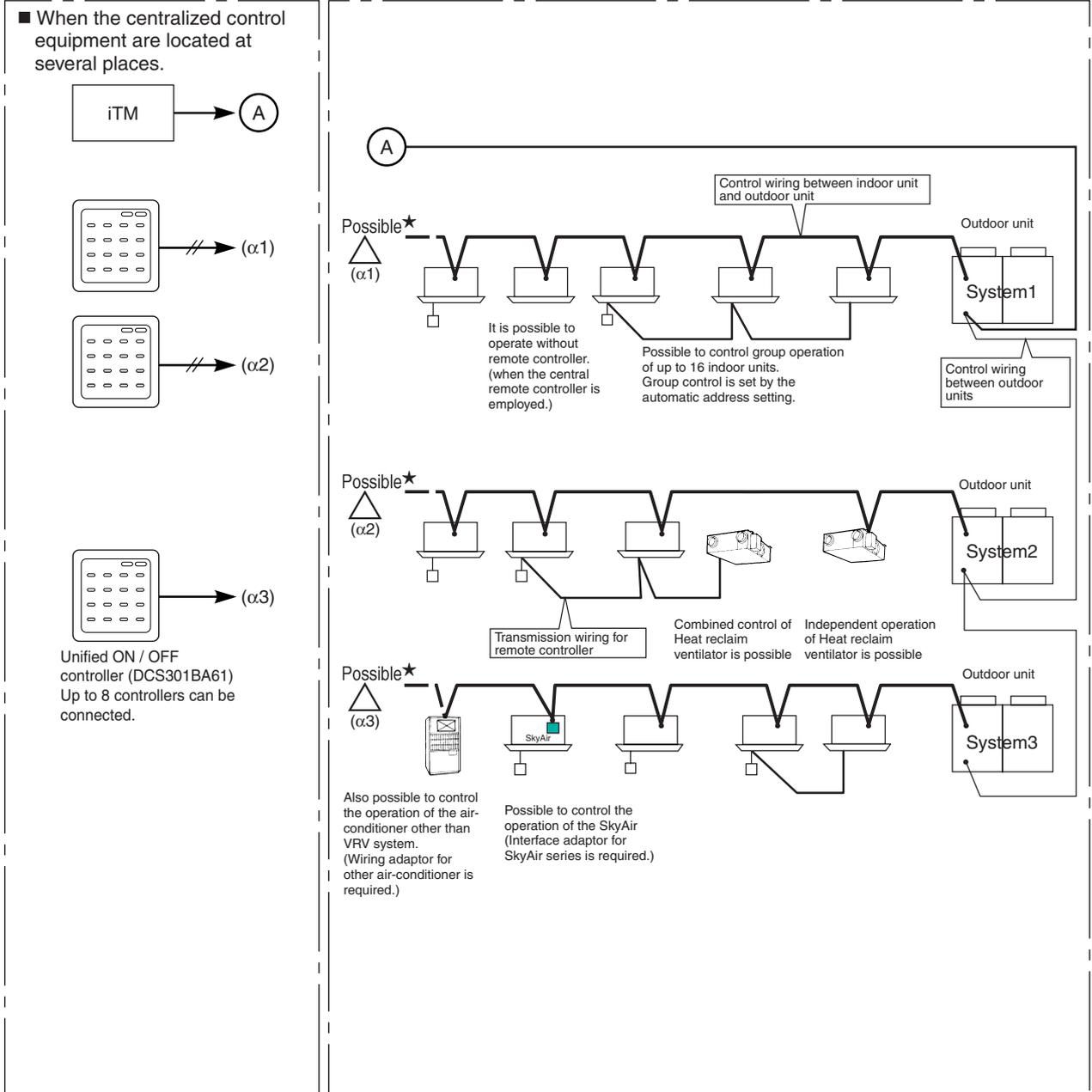
The advantages when the centralized control equipment are connected to A.

- If the centralized control equipment are connected to A, it is still possible to have a centralized control, even if the power supply of other circuit connected to the centralized control equipment is shut off. (even if the power is shut off due to long vacation etc.)

Caution:

- ★1. It is not recommended to connect the centralized control equipment on (α1), (α2), (α3), as there is a risk to loose control over all systems.
Ex.; If intelligent Touch Manager (iTM) is connected on (α1), and System1 shut down, control over System2 and System3 units is lost.

<Pattern 2>



The advantages when the centralized control equipment are connected to A.

- If the centralized control equipment are connected to A, it is still possible to have a centralized control, even if the power supply of other circuit connected to the centralized control equipment is shut off. (even if the power is shut off due to long vacation etc.)

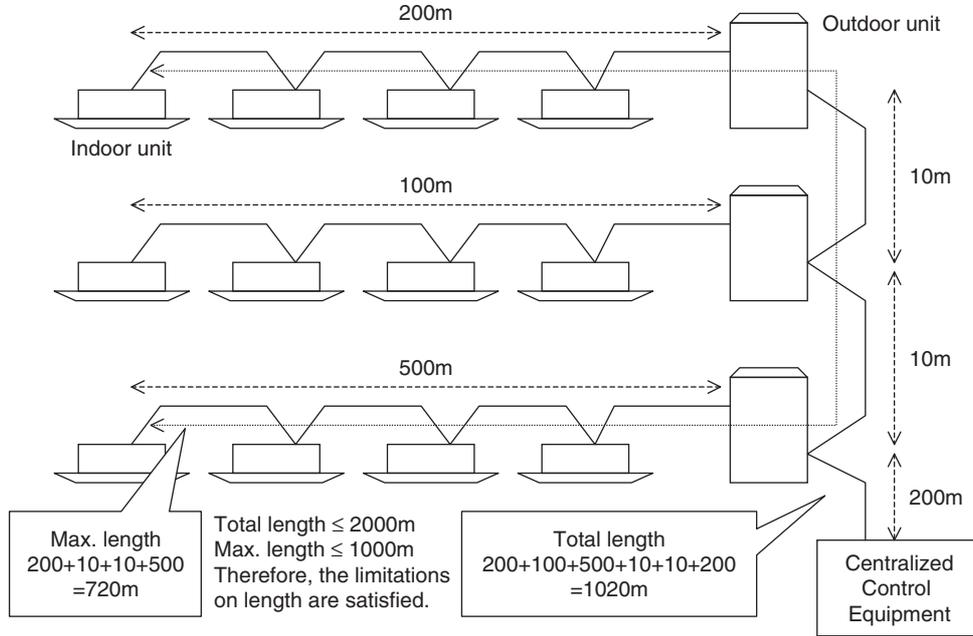
Caution:

- ★1. It is not recommended to connect the centralized control equipment on (α1), (α2), (α3), as there is a risk to loose control over all systems.
Ex.; If intelligent Touch Manager (iTM) is connected on (α1), and System1 shut down, control over System2 and System3 units is lost.

2.5 Wiring Length

- Total length must be 2000m or less. (The total wiring length is 1500m when shielded wire use.)
- Max. length must be 1000m or less.

[Example]



2.6 Recommendation of Installation DIII-NET Expander Adaptor

Intelligent buildings in recent years have increased in the amount of communication equipment and power supply wiring and this may have an effect on DIII-NET communications. In the cases listed below, it is recommended that the "DIII-NET Expander Adaptor" (DTA109A51) be installed.

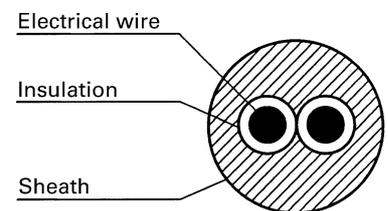
- Where there are 8 or more outdoor unit systems
- Where it is not possible to verify that restrictions on DIII-NET wiring length, branched wiring and wire types are observed

2.7 Wiring Specifications of DIII-NET

Be sure to use either 2-core sheathed vinyl cord or cable as mentioned below.

- | | | |
|-----------------------------------------------------|---------|----------|
| ■ Vinyl cab tire round cord | VCTF | JISC3306 |
| ■ Vinyl insulated, vinyl sheathed cable for control | CVV | JISC3401 |
| ■ Round vinyl sheathed cable for control | CVS | JISC3401 |
| ■ Round vinyl insulated, vinyl sheathed cable | VVR | JISC3342 |
| ■ 600V vinyl cab tire cable | VCT | JISC3312 |
| ■ Polyethylene insulated vinyl sheathed cable | CPEV(★) | |
| ■ Mesh insulated cable | MVVS(★) | |

<Example>Section of cord



- ★ When the shield wire is used, be sure to ground the one side of the shield wire.
- ★ Do not use the shield wire with other type of wire in the same system.
- The total wiring length is 1500m when shielded wire is used.

Cautions:

1. Never use a 3 or more core of cord or cable.
2. The size of wire should be 0.75~1.25mm².
3. Never bundle the cable or cord of transmission line.
4. Be sure to keep the transmission wiring distant from power wiring as shown below to prevent electrical noise.

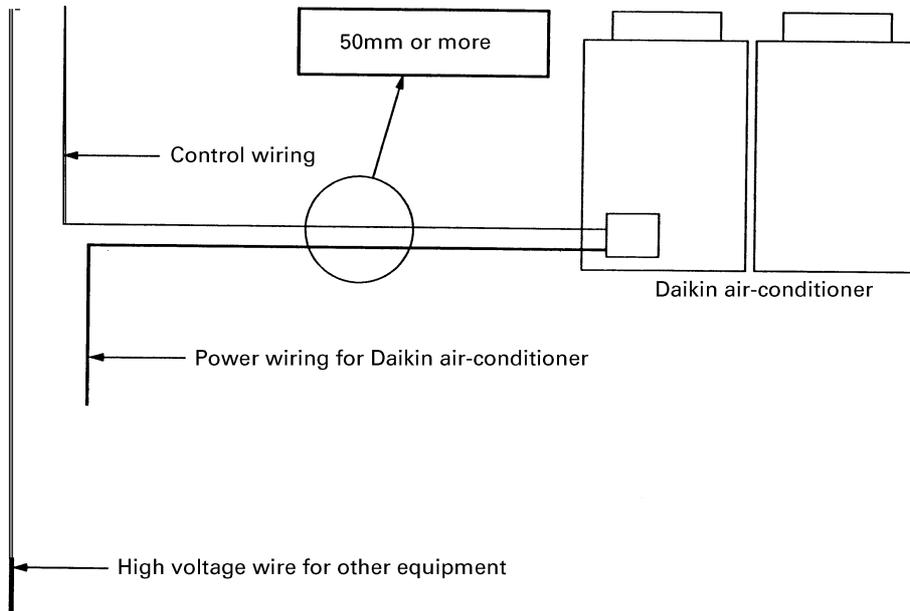
Capacity of power wiring		Distance between Power wiring and control wiring	
		Daikin air-conditioner (★1)	Other air-conditioners
220V or less	10A or less	50mm or more (★2)	300mm or more
	50A or less		500mm or more
	100A or less		1000mm or more
	100A or more		1500mm or more



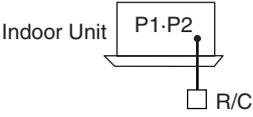
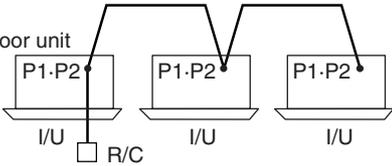
Note:

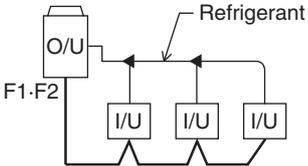
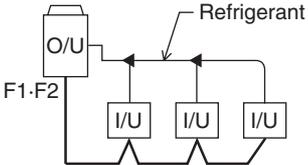
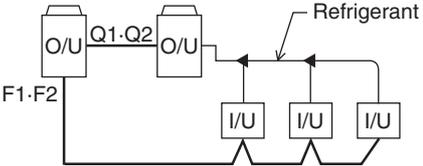
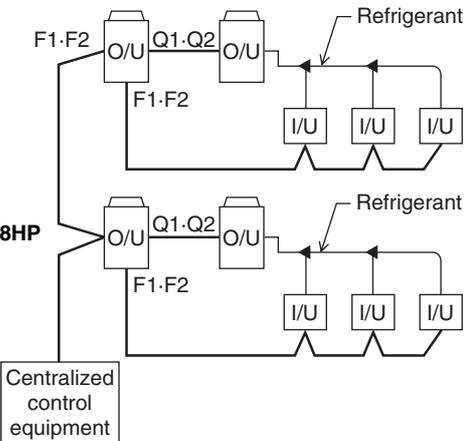
1. ★1VRV system, SkyAir series and other air-conditioner.
2. ★2VRV system or other Daikin air-conditioner produces less electrical noise, so that the distance of 50mm or more is sufficient.
3. For control wiring, never use the shield wire together with other sheathed vinyl cord in the same system, which may cause the malfunction in transmission.

[Example]



3. Unit and Group

Indoor Unit and R/C	No. of Group	No. of Indoor Unit
	1	1
	1	3

Outdoor Unit	No. of Outdoor Unit
<p>10HP</p> 	1
<p>18HP</p> 	1
<p>28HP</p> 	1
<p>28HP</p> 	2

I/U: Indoor unit O/U: Outdoor unit R/C: Remote controller

4. Number of Connectable Units

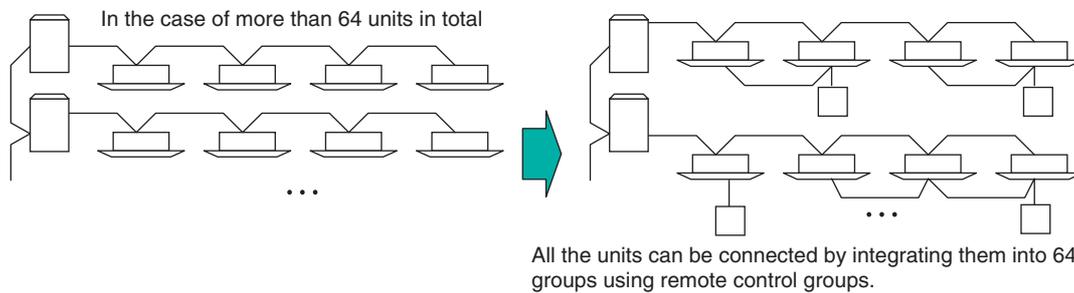
4.1 Number of Units to be Connected [VRV] (Supplementary Explanation)

- **Up to 10 VRV outdoor units** can be connected to DIII-NET.
 - In case of VRVII and VRVIII, an outdoor unit which consists of multiple modules is counted as one unit.



- **Up to 64 VRV indoor unit groups** can be connected to DIII-NET.
 - If you create remote control groups of indoor units, up to 128 units can be connected. (Max. number of groups is 64.)
 - In case of power proportional distribution, the number of indoor units that can be connected is 64 units at the maximum even if you create remote control groups.

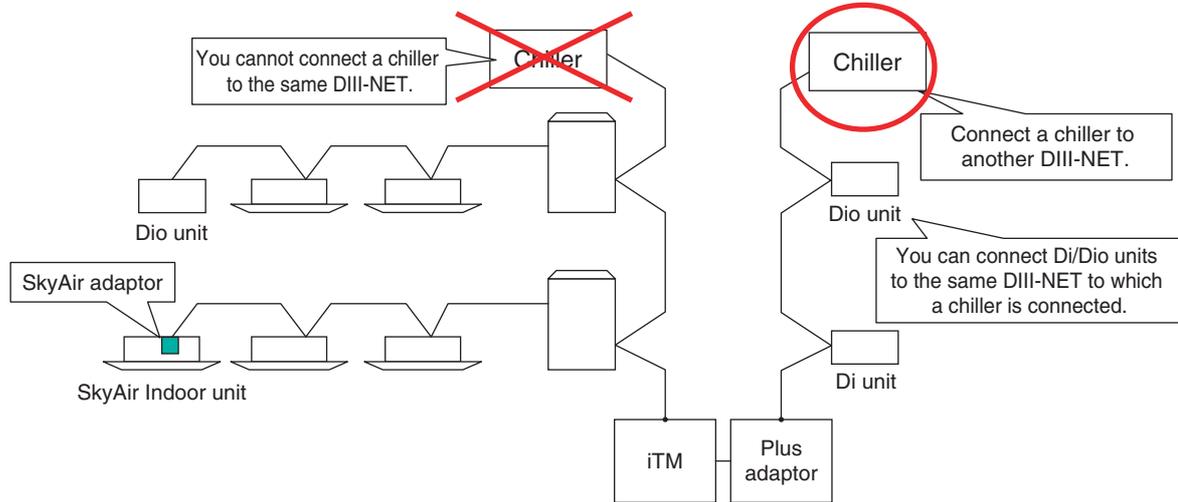
[Example]



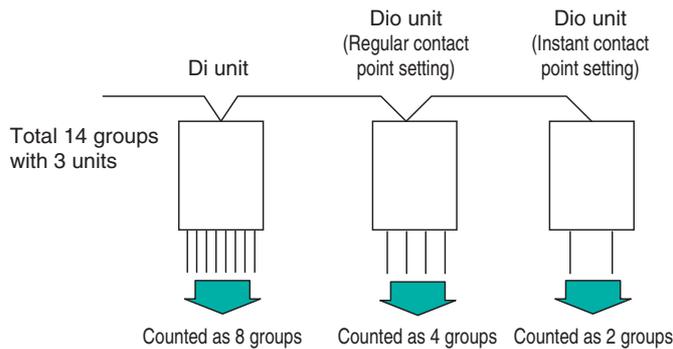
4.2 Connection of Devices other than VRV

- You can connect adaptors and other devices (SkyAir adaptor, RA adaptor, Di/Dio units, etc.), which are not VRV, to either indoor-outdoor connection or outdoor-outdoor connection.
- You cannot connect a chiller (which accommodates DIII-NET) to the same DIII-NET to which VRV, SkyAir, and RA are connected.
 - If you connect a chiller which accommodates DIII-NET to intelligent Manager III, divide the DIII-NET for VRV use and for the chiller.

[Example]



- The maximum number of adaptors, except VRV indoor units, to be connected is 64 groups including VRV indoor units.
 - One air-conditioner connecting adaptor (SkyAir adaptor, etc.) is counted as one group.
 - One Di unit is counted as 8 groups.
 - One Dio unit is counted as 4 groups.
 - When the output of Dio unit is set to an instant contact point, one unit is counted as 2 groups.
- * Regarding Di/Dio units, if you specify the number of groups to be connected to each unit, you can reduce the number of groups connected to one unit.



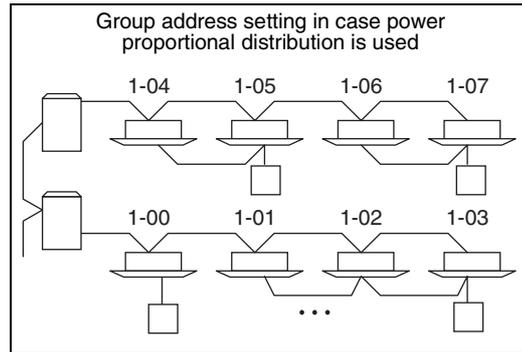
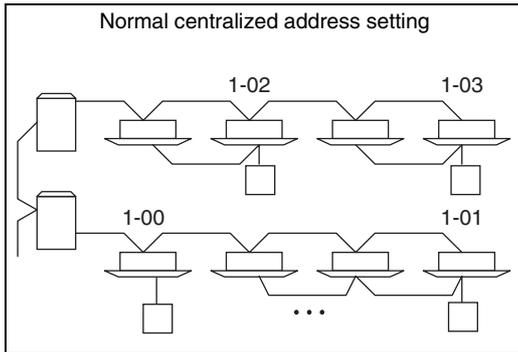
5. Group and Zone

5.1 Group Address

- Set a group address to a device to be connected to DIII-NET.
- The range of addresses to be set is 64 types as shown below.

1-00~1-15 16 types	Total 64 types
2-00~2-15 16 types	
3-00~3-15 16 types	
4-00~4-15 16 types	

- You cannot set a same group address on a same DIII-NET.
- You do not need to set a group address to a child unit in a remote control group.
 - In case power proportional distribution is used, you need to set a group address to a child unit in a remote control group as well.



5.2 Setting Group Address for Centralized Control

Set the group address of each group of the indoor unit from the remote controller. (In case of no remote controller, also connect the remote controller and set the group address. Then, remove the remote controller.)

* Group address can not be set without centralized control equipment.

Cautions:

When the power is supplied, all the display appears once on the remote controller and then the display changes to [88] for about one minute and during that time the remote controller does not function. However, this is not a malfunction of remote controller.

5.2.1 Wired Remote Controller <BRC1C62>

1. Turn ON the power of the indoor unit and unified ON/OFF controller. (Unless the power is ON, no setting can be made.)

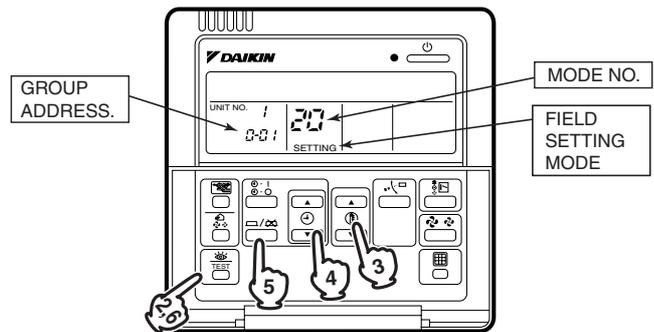
Check that the installation and electrical wiring are correct before turning the power supply ON.

When the power supply is turned ON, all LCD appear once and the unit may not accept the operation for about one minute with the display of "HOST" flashing (an interval of ON, ON, and OFF).

2. While in the normal mode, hold down the "TEST" button for a minimum of 4 seconds.

The remote controller will enter the FIELD SETTING MODE.

3. Select the MODE No. "00" with the "MODE" button.
4. Use the "GROUP" button to select the group address. for each group. (Group address increase in the order of 1-00, 1-01, ...1-15, 2-00, ... 8-15.)
5. Press "SET" to set the selected group address.
6. Press "TEST" to return to the NORMAL MODE.



5.2.2 Navigation Remote Controller <BRC1E61>

BRC1E61 does not have the Main/Sub switch.

1. How to confirm "Main/Sub changeover" setup. Following are displayed after power-on. "Connection under check Please wait for a moment"

You can confirm the current setup by the display "Main remote controller" or "Sub remote controller" on the lower part of the screen.

2. How to change "Main/Sub changeover" setup. While the following are displayed after power-on. "Connection under check Please wait for a moment", press and hold 4 seconds or longer "Operation mode selector" button of the remote controller to be set. When the display is changed from "Main remote controller" to "Sub remote controller", the setting is completed and Basic screen is displayed.

Note:

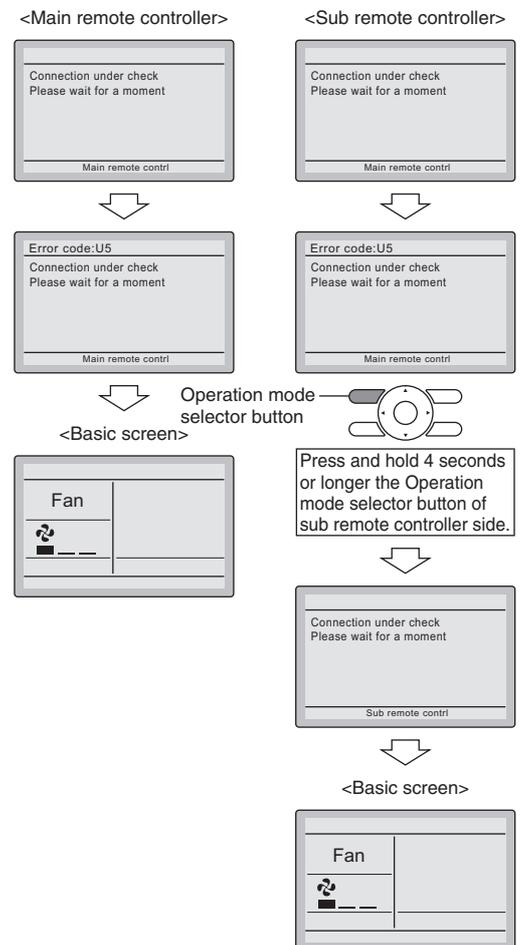
Error display occurred by setting mistake.

- Error code "U8": If there is only "Sub remote controller" (no "Main remote controller" at power-on.)
→ Perform above 2. operation to change from "Sub remote controller" to "Main remote controller".
- Error code "U5": If Sub remote controller is not set at power-on in case of one indoor unit controlled by two remote controllers.
→ Perform above 2. operation to change from "Main remote controller" to "Sub remote controller".

Note:

Display of "Main/Sub changeover" setup is changed at the time of "power-on".

- When selecting "Main/Sub Changeover" in "Field setting" again after setup, the display does not change (Setup changes).
- To confirm setup, be sure confirm the LCD screen after power-on accordance with above 1. How to confirm "Main/Sub changeover" setup.



Note:

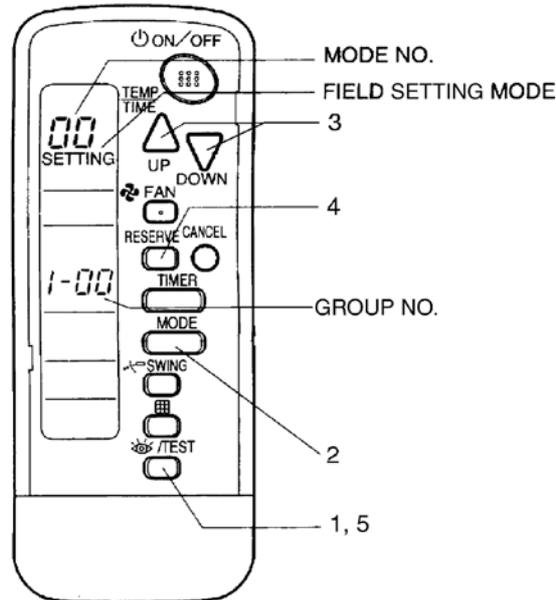
- For simplified remote controller, see the installation manual.
- For setting group No. of Heat reclaim ventilator and wiring adaptor for other air-conditioners, etc., refer to the operation manual attached.

Note:

Enter the group No. and installation place of the indoor unit into the attached installation manual. Be sure to keep the installation manual with the operation manual for maintenance.

5.2.3 Wireless Remote Controller <BRC4C, 7C, 7E>

1. When in the normal mode, press “ ” button for 4 seconds or more, and operation then enters the “field setting mode.”
2. Set mode No. “00” with “ ” button.
3. Set the group No. for each group with “ ” “ ” button (advance/backward).
4. Enter the selected group numbers by pressing “ ” button.
5. Press “ ” button and return to the normal mode.

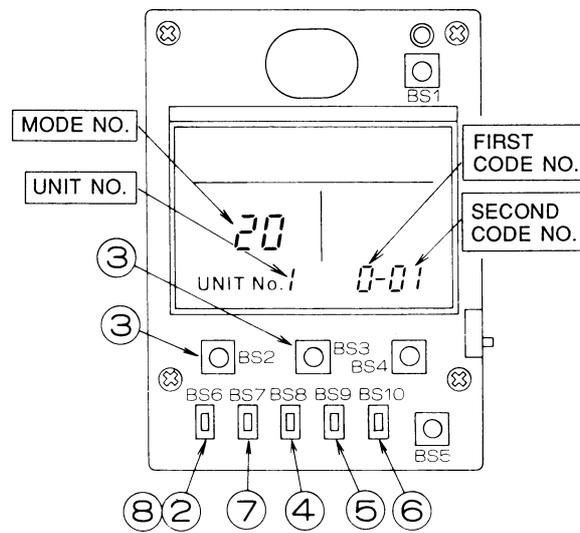


5.2.4 Simplified Remote Controller <BRC2C51>

Procedure

1. Remove the upper part of remote controller.
2. When in the normal mode, press the [BS6] BUTTON (field set), and the FIELD SET MODE is entered.
3. Select the desired MODE No. with the [BS2] BUTTON (temperature setting ▲) and the [BS3] BUTTON (temperature setting ▼).
4. During group control, when setting by each indoor unit (mode No. 20, 22 and 23 have been selected), press the [BS8] BUTTON (unit no.) and select the INDOOR UNIT NO. to be set. (This operation is unnecessary when setting by group.)
5. Press the [BS9] BUTTON (set A) and select FIRST CODE NO.
6. Press the [BS10] BUTTON (set B) and select SECOND CODE NO.
7. Press the [BS7] BUTTON (set/cancel) once and the present settings are SET.
8. Press the [BS6] BUTTON (field set) to return to the NORMAL MODE.

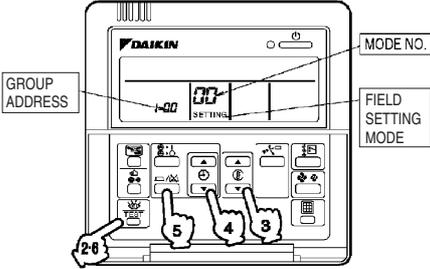
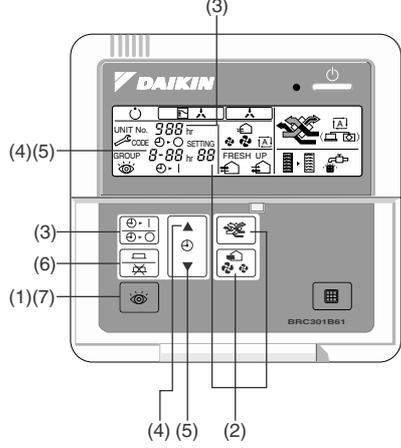
(Example) If during group setting and the time to clean air filter is set to FILTER CONTAMINATION - HEAVY, SET MODE NO. to "10", FIRST CODE NO. to "0", and SECOND CODE NO. to "02".



C: 3PA52946A

5.2.5 Heat Reclaim Ventilator Wired Remote Controller <BRC301B61>

The following shows the procedure how to set the group address for the centralized control equipment by the remote controller for Heat Reclaim Ventilator.

Purpose	Controller	Operating procedure
<p>When you use the centralized control equipment, you have to set the each unit connected to the DIII-NET line.</p>	<p>●BRC1C62</p> 	<p>Set the group address of each group of the Heat Reclaim Ventilator from the remote controller. (In case of no remote controller, also connect the remote controller and set the group address. Then, remove the remote controller.)</p> <ol style="list-style-type: none"> (1) Turn ON the power of the indoor unit and centralized control equipment. (Unless the power is ON, no setting can be made.) Check that the installation and electrical wiring are correct before turning the power supply ON. (When the power supply is turned ON, all LCD appear once and the unit may not accept the operation for about one minute with the display of "00".) (2) While in the normal mode, press the " " button for a minimum of 4 seconds. The remote controller will enter the FIELD SETTING MODE. (3) Select the MODE No. "00" with the " " button. (4) Use the " " button to select the group address for each group. (Group address increase in the order of 1-00, 1-01, ... 1-15, 2-00, ... 8-15.) (5) Press " " to set the selected group address. (6) Press " " to return to the NORMAL MODE.
	<p>●BRC301B61</p> 	<p>(Auto-address setting)</p> <ol style="list-style-type: none"> (1) Press the INSPECTION button for more than four seconds. (2) Use the VENTILATION MODE, AIRFLOW RATE to select the mode No. "00". (3) Use the top or lower section of the TIMER button to set the group address for the centralized control equipment. (4) Press the PROGRAM / CANCEL button to enter the setting group / address shown on the display. (5) Press INSPECTION button to return to normal mode.

Note:
 Do not duplicate the group address.
 Be sure to supply the power to the remote controller side.
 (It cannot be set without the power supply.)

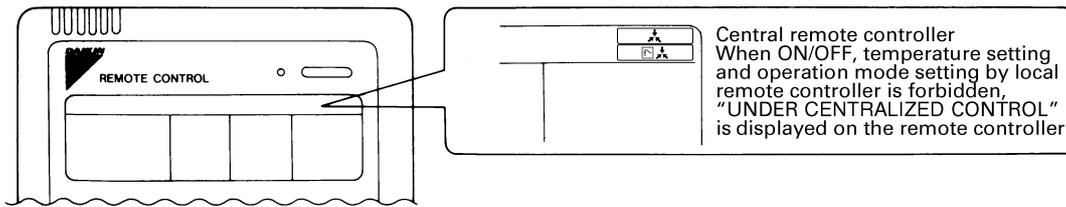
6. Centralized control equipments which can use with intelligent Touch Manager

Following centralized control equipments can connect to the same DIII-NET with an intelligent Touch Manager.

Centralized control equipment	Description
DMS502B51 (Interface for use in BACnet®) or DMS504B51 (Interface for use in LONWORKS®)	One of these interfaces can connect to the same DIII-NET. DIII MASTER switch of intelligent Touch Manager should be set to "SLAVE".
DMS601A51 (intelligent Touch Manager) or DMS601A52 (ITM plus adaptor) or DCS302CA61 (Central remote controller)	One of these controllers can connect to the same DIII-NET. -DIII MASTER switch of DMS601A51 and DMS601A52 should be set to "SLAVE". -DIII MASTER connector of DCS302CA61 should be removed. -These controllers have to be set to "SLAVE".
DCS301BA51 (Unified ON/OFF controller)	Totally 8 DCS301BA51 can connect to the same DIII-NET. Refer to DCS301BA51 installation manual for setting.

7. Appendix

7.1 Under Centralized Control



C : 3P171361-1



7.2 Error Code on Initial Setting and Wiring Troubles

Malfunction code	Contents of malfunction
M1	Failure of PCB of schedule timer. Fixes The following causes are possible. Check each one. 1. PCB problems
M8	Malfunction of transmission between each optional controllers for centralized control equipment. Fixes Check all centralized control equipment which are connected (e.g., power supply, transmission wiring, etc.).
MA	Improper combination of optional controllers for centralized control equipment. Fixes The following causes are possible. Check each one. 1. Are all centralized control equipment combined correctly? 2. Is the master central connector attached to two or more centralized control equipments? 3. Are there 128 or more indoor units connected?
MC	Address failure of schedule timer. Fixes The following causes are possible. Check each one. 1. Do the control range addresses in the central remote controller overlap? 2. Do the control range addresses in the unified ON/OFF controller overlap? 3. Are there 2 or more schedule timers connected?
U4	Transmission error between indoor unit/BEV unit and outdoor/BS unit, Transmission error between outdoor unit and BS unit
U5	Transmission error between remote controller and indoor control unit
U5	Remote controller PCB fault or remote controller setting fault
U6	Transmission error between indoor units
U7	Transmission error between outdoor units Transmission error between outdoor unit and VRV system thermal storage by ice.
U7	Transmission error between outdoor units (operation mode change, low-noise operation)
U8	Transmission error between master remote controller and slave remote controller (slave remote controller error) Incorrect combination of indoor unit and remote controller within a single system (model)
U9	Transmission error between indoor unit/BEV unit and outdoor unit within a single system Transmission error between BS unit and indoor unit/BEV unit and outdoor unit within a single system
UC	Centralized control group No. overlap
UE	Error of transmission between indoor unit and optional controllers for centralized control equipment. Fixes Inspect all indoor units which are displaying an error (e.g., power supply, transmission wiring, etc.).
—	Error in indoor unit (Refer to the error codes of the indoor remote controller, while also read the "CAUTION FOR SERVICING" attached to the indoor unit.)

3P124623-5C

Part 3 Power Proportional Distribution (PPD)

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 - 1-3 Explanations of Power Proportional Distribution 42
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- 2. Reference Material 47**
 - 2-1 Case Examples 47
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1. PPD Design Guide

1.1 System Architecture

1.1.1 Confirmation of Watthour Meter

For distribution of electric energy, the integrating watthour meter with pulse transmitter is required.

It is important to confirm that the specifications coincide with each other, and also to confirm with the division in charge (normally, electrical work division, not air-conditioning div.).

• **Specifications of watthour meter to be connected to intelligent Manager**

- a) To be an integrating watthour meter with pulse transmitter.
- b) The output pulse unit (pulse weight) is to be from 0.1 kWh/pulse to 10 kWh/pulse.
- c) The pulse width is to be within 20~400 msec and pulse interval have to be more than 100 msec.
- d) The semiconductor relay is to be used for pulse output, and it to be no-voltage output.

If the specifications are not coincident, there is a possibility that the following imperfections are caused:

- If the pulse width is not within 20~400 msec.

If it is less than 20 msec, the pulse input cannot be detected, and the result of calculation is smaller than the real value.

In addition, if more than 400 msec, more than 2 pulses is detected for 1-pulse input, and the result of calculation is larger than the real value.

- If use of contact other than electronic type relay.

If it is a mechanical relay, the pulse may not accurately be detected due to relay chattering.

Confirm the following items for the construction process.

- Construction of pulse signal line is kept away from power cables

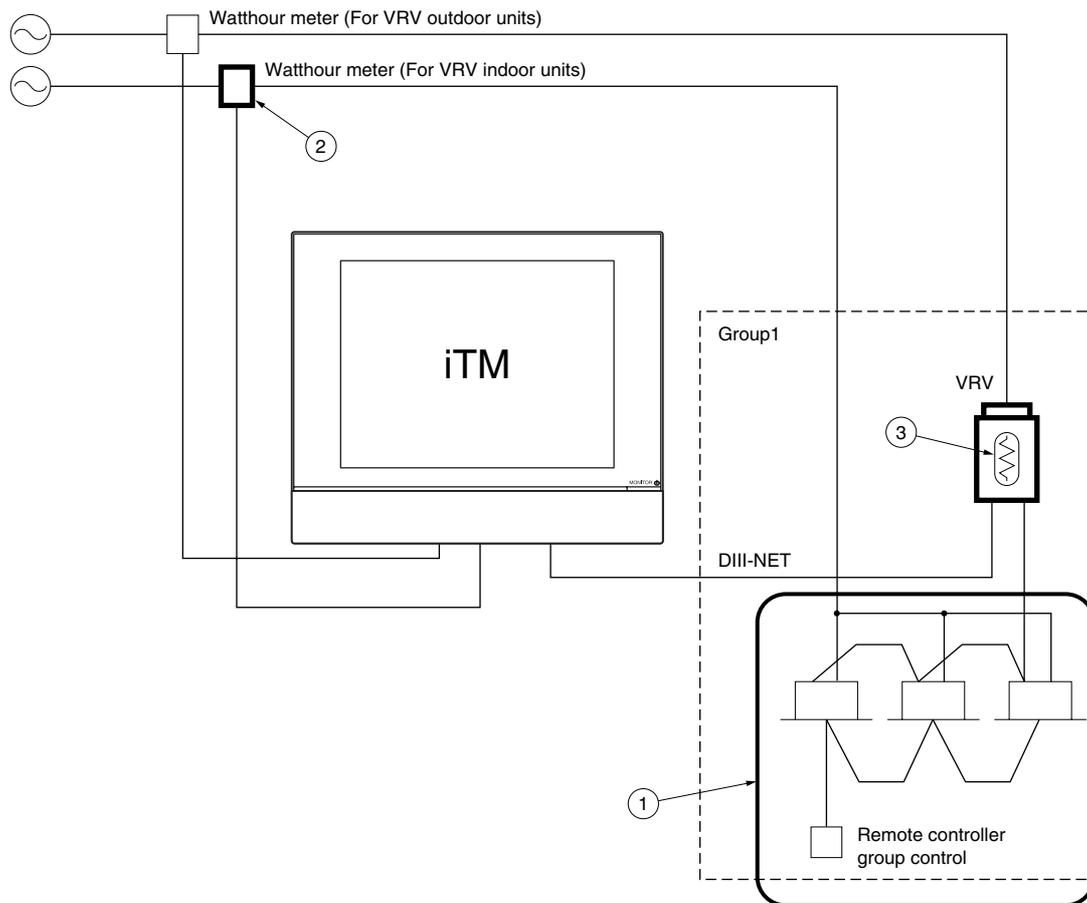
For this pulse signal line, the voltage DC16V should be applied from the intelligent Manager side. It should be constructed separating from the power cables.

- Max. distance to be 200 m

Confirm that the distance with the watthour meter~intelligent Manager is within 200 m.

1.2 Design Precautions

1.2.1 Calculation Condition



(1) Remote controller group ①

Also in the indoor unit (sub-unit) with remote controller group, set the group address for correct electric energy distributing.

(The group address for sub-unit can be set in the site set mode "30" of the remote controller.

However, after setting with "30", if set with "00", the sub-unit address will be deleted.)

→ An imperfection in case collective distribution is done with main-unit running state without setting of group address at sub-unit

Even if the remote controller group control is done, each indoor unit has different thermostat state depending on its installation place.

Therefore, the distribution result will differ depending on the decision which indoor unit is to be as main unit.

(2) In case power consumption of indoor unit to be included ②

It is necessary to connect the watt-hour meter to the power supply line of the indoor unit and input its pulse to iTM.

In this case, "included power of Fan" has to be set to "Yes" in the PPD setup tool.

(3) Calculation of electric power (Crankcase heater / PCB power consumption) at stopping ③

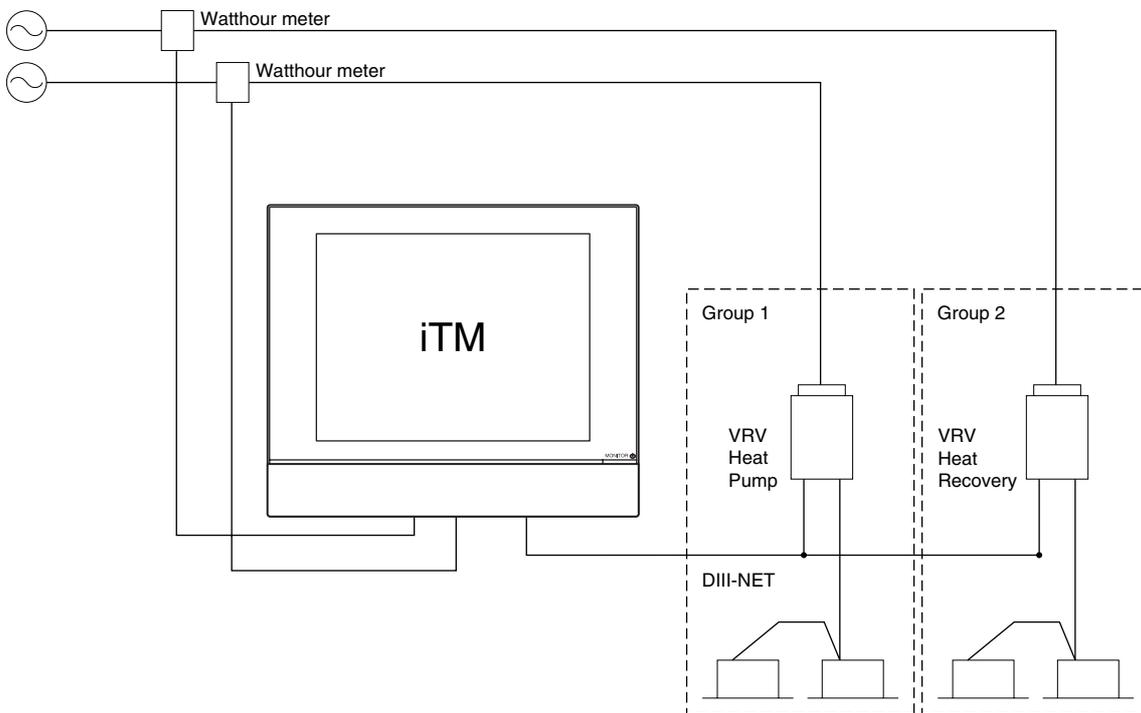
1. In case of calculation for crankcase heater and PCB when not in operation.
 - (1) The electric power consumed by crankcase heater of the outdoor unit is divided by the capacity of each indoor unit.

Note: The calculation also includes the indoor units which are not in operation. (eg.vacant)
In this case, “included power during STOP” has to be set to “Yes” in the PPD setup tool.
2. In case of not calculating for crankcase heater and PCB when not in operation.
 - (1) It is possible to exclude the power consumed by crankcase heater and PCB.

Therefore the power will not be added to each indoor unit.
In this case, “included power during STOP” has to be set to “No” in the PPD setup tool.

1.2.2 Setting of Each Electric Power Group

Wathour meters have to be installed for Heat Pump type VRV and Heat Recovery type VRV respectively as shown below figure and make power groups respectively.



1.2.3 The Reason why VRV Heat Recovery must not be Included

For Heat Recovery outdoor units, the wathour meter must be independently installed.

- (1) For heat recovery, there is a case that the power consumption is less than VRV and VRV Plus.
- (2) However, if different systems are put on the one meter, the electric power distribution would be calculated by constant counting, and the calculation result would then more than the actual value on all indoor units.

Therefore, it is necessary to install the wathour meter independently as shown in Fig. 2.

In addition, the power port No. in Address Table must be different from others. (To be set at test operation)

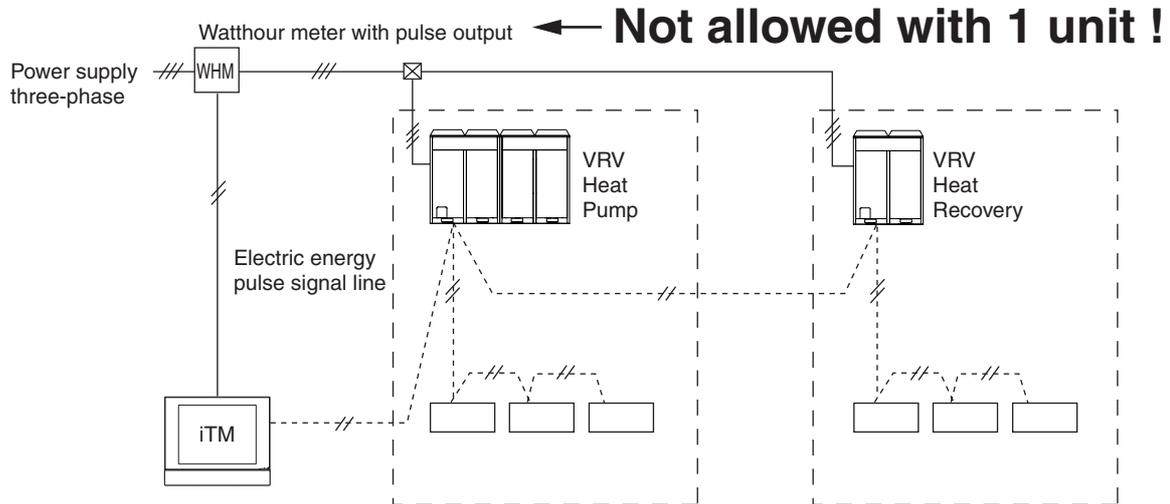


Fig.1 Not Recommended : Wathour meter is shared.

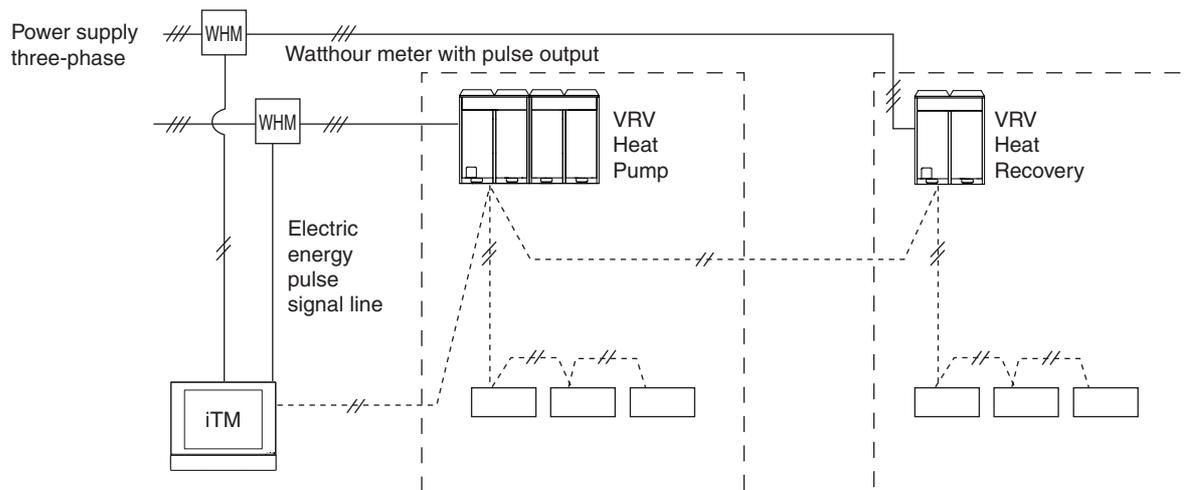


Fig.2 Recommended : Heat Recovery and other system wathour meter are separated.

Caution:

It is possible to register to the same electric power group for the following combination.

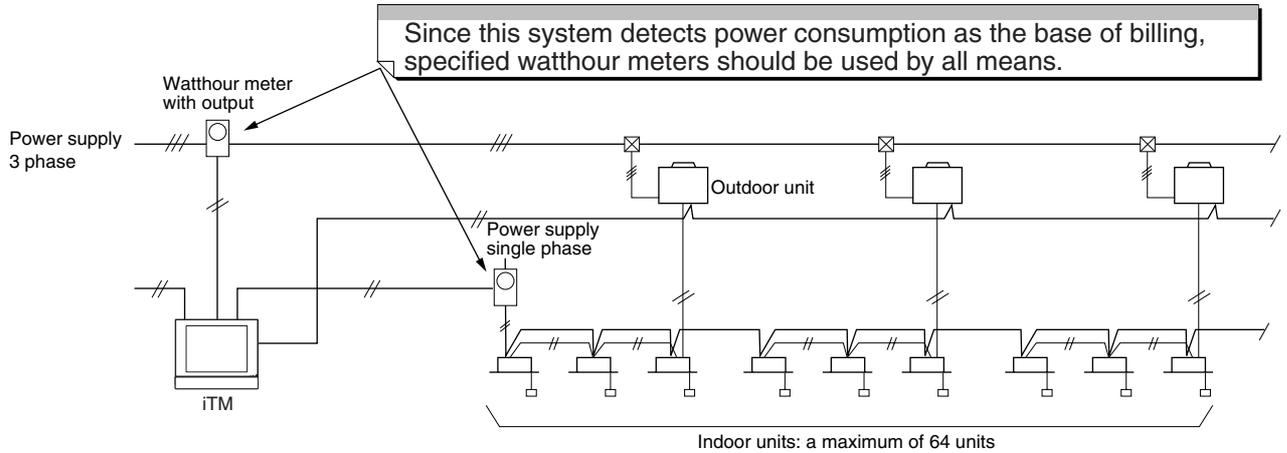
1. VRV, VRVII Heat Pump (R-22, R-407C)
2. VRV Heat Recovery (R-22, R-407C)
3. VRVII, VRVIII Heat Pump (R-410A)
4. VRVII, VRVIII Heat Recovery (R-410A)

When the combination of the above-mentioned is not observed, a correct power proportional distribution calculation cannot be done.

1.3 Explanations of Power Proportional Distribution

1.3.1 What is the Power Proportional Distribution (PPD)

(System Ex. : Normal VRV)



- Previously the general way for requesting the electricity charge at tenant buildings was that a management staff read a watt-hour meter and billed the tenants by manual-account based on the operation time which were counted through time-counters.

However, this method takes a lot of time for the management staff. In addition, as air-conditioning consumes much different electricity for either the operation of air-conditioning (thermostat-ON) or the operation of fan only (thermostat-OFF), it might cause to give unfair sense to the tenants inhabited in the spaces with different heat load, though “operation-time” itself is the same.

For instance, even if a certain higher set temperature is applied in summer for energy saving, fee for air-conditioning may equal to the fee without set temperature so far as it is counted based on the operation time.
- Electric energy distributing function of iTM carries out the proportional division computation in consideration of those thermostat-ON and thermostat-OFF operations and saves time for building management staffs to read watt-hour meters, and also supplies tenants printed data useful for making the bills.

Namely, iTM is the product created by the concept to help the assignment of bill-issuing and offers users the reasonable price of the products.
- Yet, since the iTM is constantly assuming each indoor unit’s power consumption based on the data which is transferred from indoor units, it should be noticed that the iTM is not which complies with the Weight and Measure Act as shown in the catalogue.

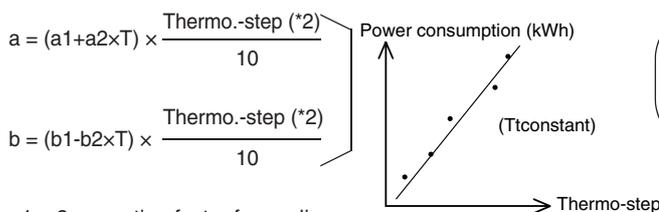
The details of the cause to count error is described at chapter 1.3.2.

(1) Count method (for a conventional VRV system)

1) The following proportional division calculation is carried out every one hour and assigns the power consumption of air-conditioning system to each indoor unit.

$$\begin{aligned} \text{Heat load depending on the operation conditions of air-conditioner} = & \text{power consumption of indoor unit's fan} \\ & + \text{power consumption of optional heater} \\ & + \text{the rated power consumption in cooling (*1) } \times a \\ & + \text{the rated power consumption in heating (*1) } \times b \end{aligned}$$

*1: The value which is registered at the test operation, adapting the indoor unit's capacity



a1, a2: correction factor for cooling
 b1, b2: correction factor for heating
 T: indoor unit's suction air temperature

As shown in the left, heat load is calculated from an equation of the first degree which approximates the correlation, among thermo-step, indoor unit's suction air temperature and power consumption, into the linear line under the standard conditions of the unit.

*2: "Thermo.-step" signifies that an air-conditioning capacity is expressed in a range of the values 0-5 mainly based on the opening grade of an electronic expansion valve in an indoor unit.

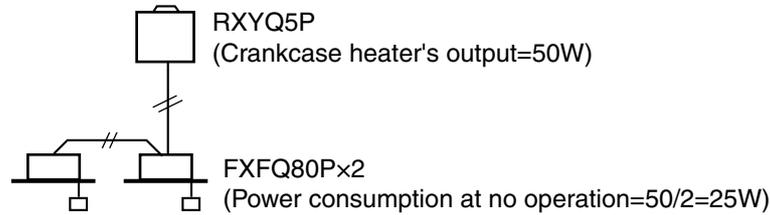
$$\text{Indoor units N's power consumption (kWh)} = \frac{\text{total pulse input from wattmeters} \times \text{Heat load by one hour calculated through the operating of air-conditioner N}}{\text{total heat load by one hour calculated through the operating conditions of all the air-conditioners}}$$

2) Counting the electricity at the stopped condition of the unit

Even if a VRV is stopped or in the condition of thermostat -OFF (the condition that the compressors are stopped as the temperature in the space where all the indoor units are installed falls down to the set temperature), the VRV consumes energy due to the energy consumption mainly by the crankcase heater in the outdoor unit.

When the iTM is used, the rated power consumption of the crankcase heater is divided by the number of indoor units in usual connection (for instance, two indoor units of 2.5 HP are connected to an outdoor unit of 5 HP etc.) and the value is registered at the test operation, adapting each indoor unit's capacity.

(Example)



The iTM counts the indoor unit's operating conditions every 20 seconds.

Since the indoor units send ON/OFF data of the crankcase heater to iTM, it adds one(+1) to the power counter inside iTM at no operation of the air-conditioner when the crankcase heater is ON.

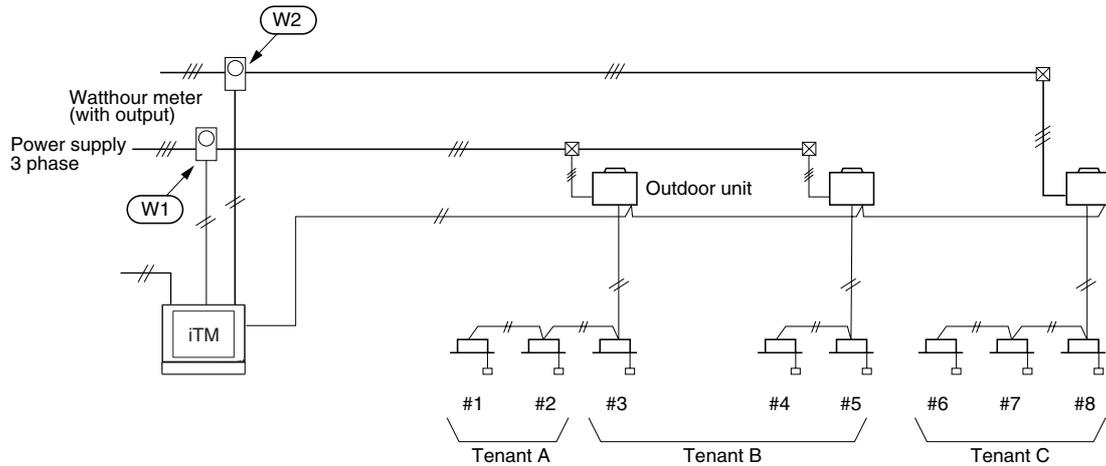
When this counter reaches 180, it judges that the crankcase heater was ON for one hour, and in case of the above mentioned indoor unit, the counter goes back to zero after 25 Wh is added to the counting result.

This calculation process is conducted separately from the proportional division computation mentioned on this section, and this input is got rid of from the pulse input of the watt-hour meter. Because of this procedure, the power consumption in the space where the air-conditioner is not used at all is counted constantly every month.

(However, as this air-conditioning system is a multi-system, in case that one outdoor unit is shared to another tenant, the count output can be seen in lower value rather than the crankcase heater's power consumption registered, because the crankcase heater does not actuate when another tenant operates the VRV.)

1.3.2 Count Accuracy

**(1) Cause of error
(System example)**



Legend (W1, W2): Read on wattmeter
#: Indoor unit's address

<Case of arising error>

- 1 (W1) + (W2) ≙ Count conclusive total for indoor unit #1~#8 ⇒ Refer to the "REASON"
- 2 (W1) ≠ Count conclusive total for indoor unit #1~#5
(W2) ≠ Count conclusive total for indoor unit #6~#8 ⇒ Refer to the next page
- 1 (W1) + (W2) ≙ Count conclusive total for indoor unit #1~#8* : The reason to get and the error size

REASON

iTM counts every one hour's power consumption.

Though fraction in case of computation occurs at this time, it is computed after leaving off a 1-W figure to avoid the risk for the owners. As a result, the error by the leaving-off occurs by 0.5W/ hour in average value as per each indoor unit.

(Calculation example)

- (1) Count for errors in 8-day
 Tenant A + B : 0.5 (Wh) × 24 hr × 8 days × 5 units = + 0.48 kWh
 Tenant C : 0.5 (Wh) × 24 hr × 8 days × 3 units = + 0.288 kWh
 total = + 0.768 kWh
- (2) Assuming that the reads on watt-hour meters are as follows:
 W1: read on watt-hour meter = 490 kWh
 W2: read on watt-hour meter = 200 kWh
 total = 690 kWh
- (3) Finally it is concluded as total error = 0.768 / 690 × 100 = 0.11%

- 2 (W1) ≠ Count conclusive total for indoor unit #1~#5 :
(W2) ≠ Count conclusive total for indoor unit #6~#8 :

iTM counts the power consumption as the following conditions (1)~(6) for the standards. So, the gap to be raised from these conditions may cause the error. Since these errors vary depending on the surrounded situations, the worst error value cannot be drawn out from the computing.

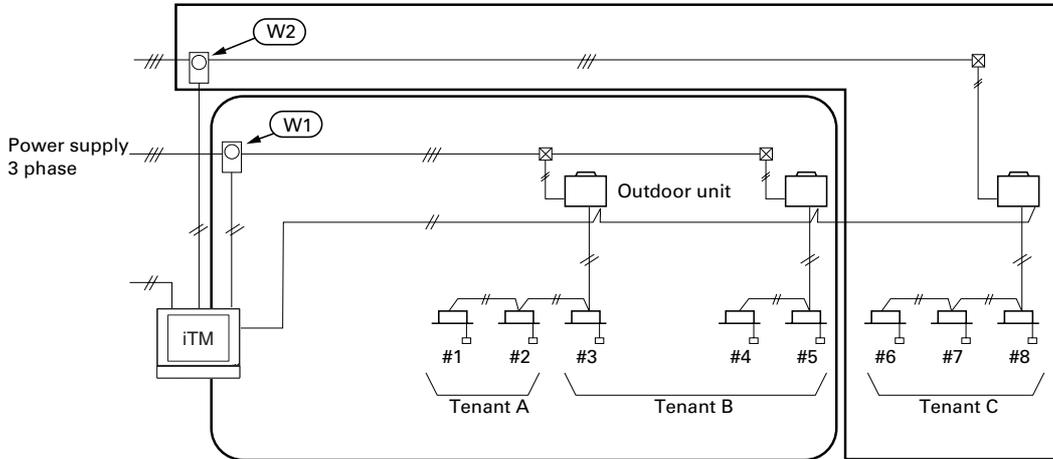
- (1) Combination rate of indoor units connected to an outdoor unit (100%)
- (2) Outdoor air temperature (35°C)
- (3) Indoor unit's suction air temperature (19°C)
- (4) Piping length (5m)
- (5) Level difference (0m)
- (6) Pipe diameter (φ22.2)

(2) The way to reduce errors

The error 1 cannot be reduced, however this error is small and negligible, therefore so it can generally clear troubles if excusing the reason caused to tenants.

The way to reduce the error 2 will be described as follows.

As shown in the drawing below, when the relation between a watt-hour meter and indoor units are clear, "Power group setting" for each watt-hour meter can reduce the error.



On the above example, watts at W1 and watts at W2 are shared by indoor units #1~#5 and indoor units #6~#8, respectively.

The above setting results in the followings:

W1 ≙ Count conclusive total for indoor unit #1~#5

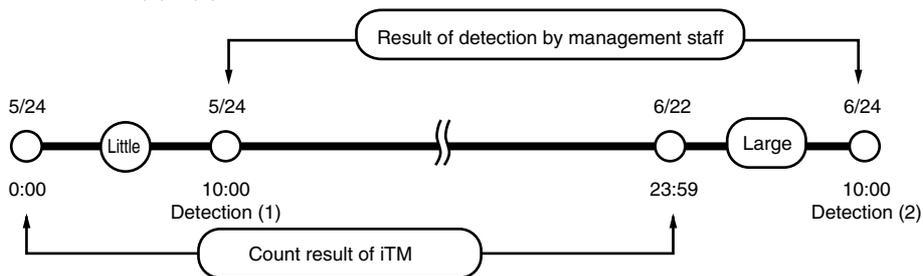
W2 ≙ Count conclusive total for indoor unit #6~#8

Caution:

If management staff checks the watts in the procedure mentioned below, they would find the calculation to be incorrect due to an uncompleted cycle.

Example:

- (1) May/24th, read watt-hour meter and records the watts at 10:00 am
- (2) June/24th, read watt-hour meter and records the watts at 10:00 am
- (3) When the count in a period of May/24th to June/23rd is printed out, the total value does not meet the value detected mentioned above on (2) - (1).



iTM stores the information collected in a period of 0:00 am through 23:59 pm as one day information as shown above. It results in the fact that there are ten hours gaps between on the first day of the counting and on the last day of the count in the above mentioned column of "Result of detection by management staff" and "Count result".

As shown in the figure above, this error increases in the season from the intermediate forwarding to the season in which air-conditioning is highly required.

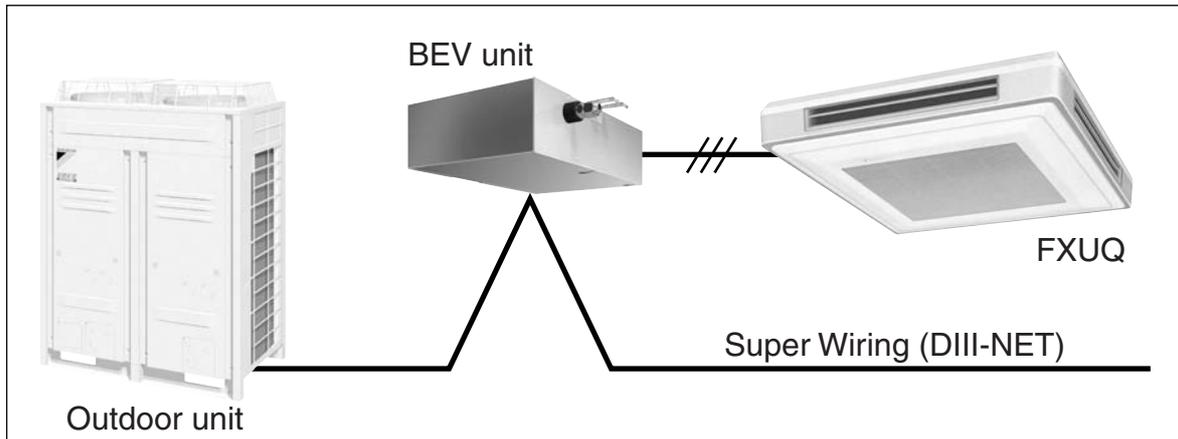
For more accuracy, it is necessary to compare with the value detected at 0:00 am.

1.4 Notes

- It is not possible to apportion power consumption for the VRV series indoor unit FXUQ (ceiling suspended cassette type).

(Reason)

VRV and SkyAir use different methods to calculate thermo step, which is a parameter necessary for power consumption apportionment. For the VRV, the indoor unit calculates thermo step. Whereas for the SkyAir, the outdoor unit calculates thermo step. Although FXUQ is a SkyAir-based indoor unit, it cannot gather thermo step information from the outdoor unit because of an intervening BEV unit. Therefore, power consumption apportionment is not possible.



2. Reference Material

2.1 Case Examples

(1) A value on a wattmeter of each outdoor unit system does not correspond to PPD result.

Electric power of wattmeter A is nearly the same as that of wattmeters B + C + D.

However, the PPD result of outdoor unit system 1 (4 indoor units) does not correspond to the value on wattmeter B.

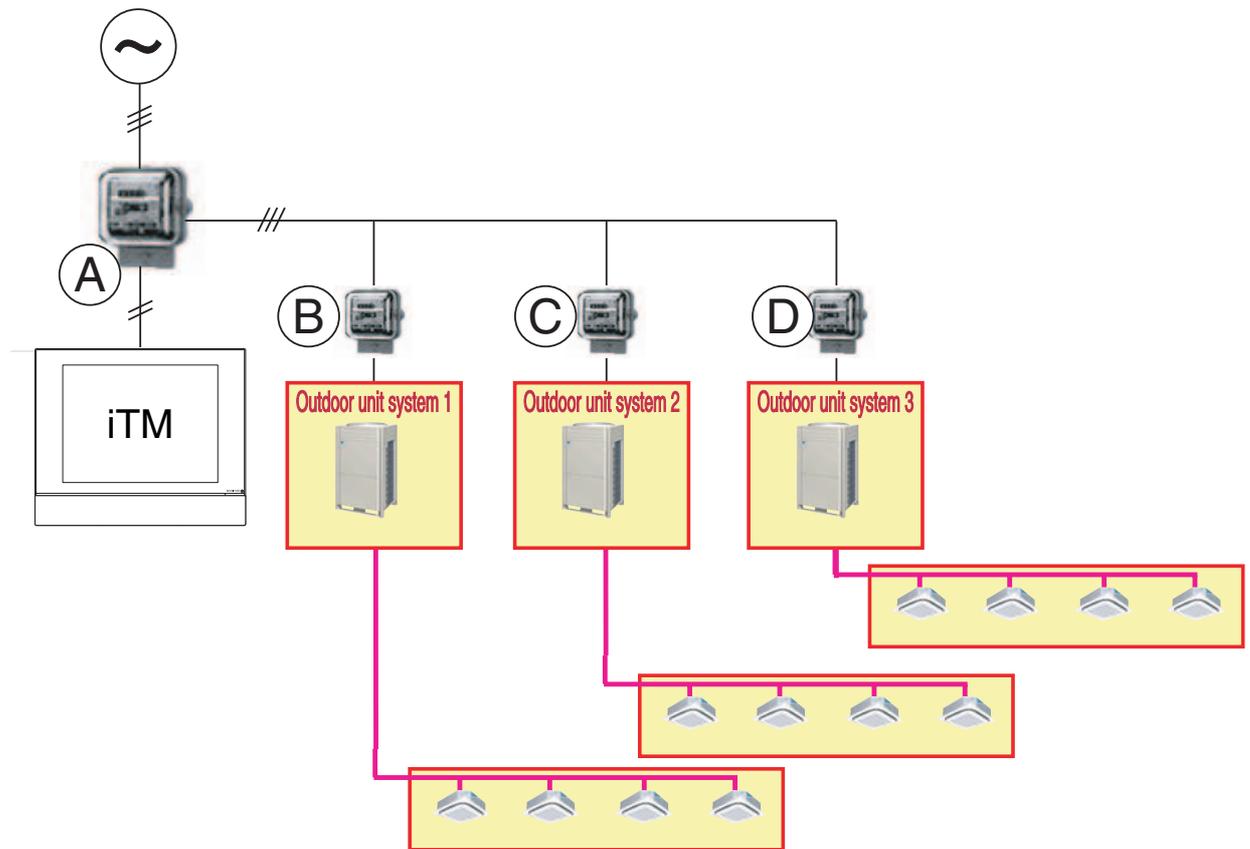
[Reason]

An intersystem difference causes this problem.

The PPD function does not recognize how many outdoor units exist in an electric power group. It regards outdoor units as one big unit to perform PPD calculation.

[Countermeasure]

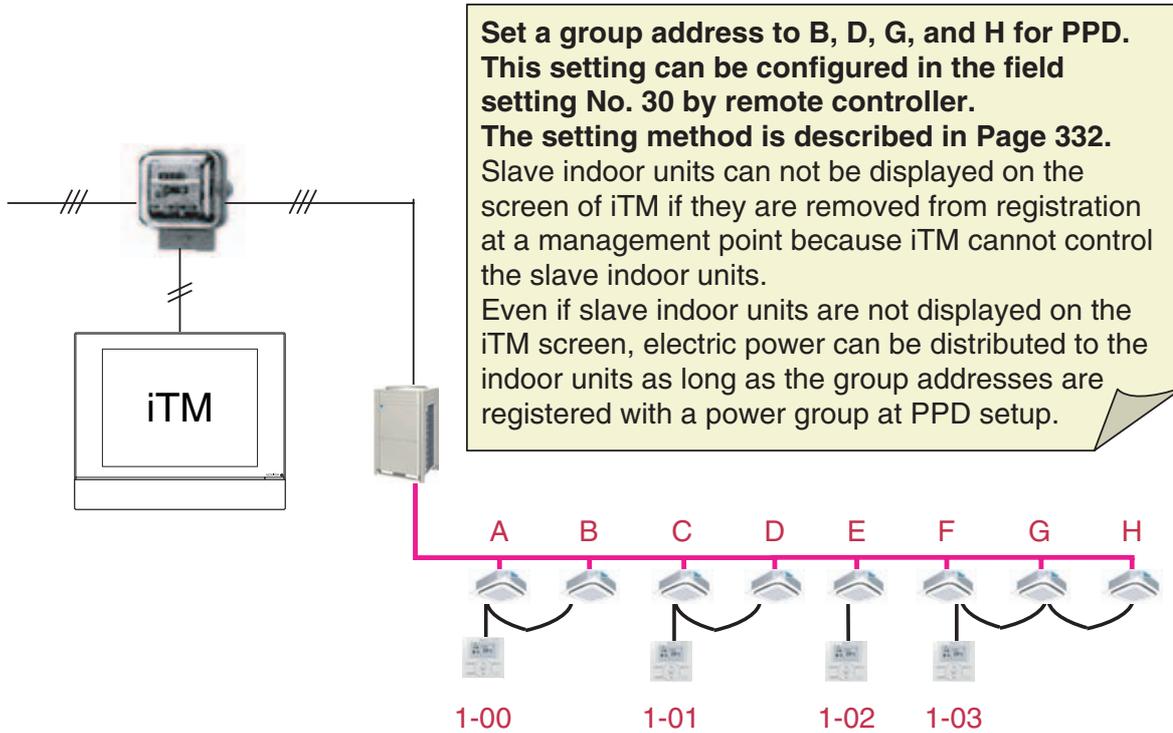
If each outdoor unit system has a wattmeter, make a power group for each outdoor unit system.



(2) A group address is not set to a slave indoor unit with remote controller group.

iTM cannot control slave indoor units (Indoor units B, D, G, and H in the following figure) in remote controller group. In general, the setting of a group address is not required for control with a remote controller group. However, it is necessary to set a group address even to slave indoor units and register it with a power group at PPD setup because a thermo. step and a suction air temperature for each slave indoor units are required for PPD.

If a group address is not set, electric power is not distributed to the indoor unit.
Electric power is distributed among indoor units whose group addresses are registered.



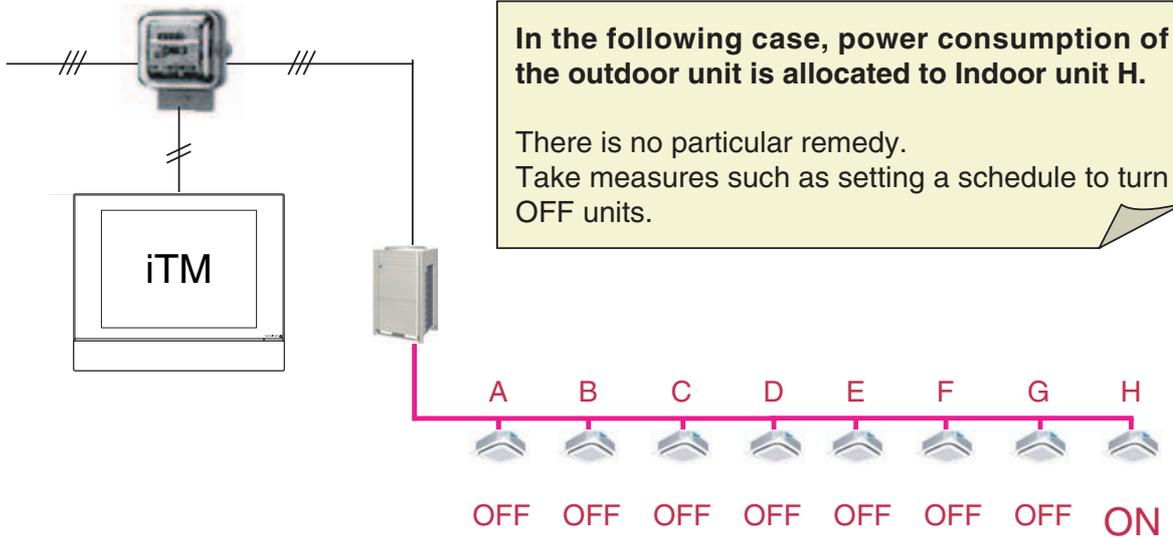
(3) A PPD calculation result for a certain tenant is excessively large.

iTM distributes electric power based on operation data from an indoor unit.

If only one VRV indoor unit is in operation, electric power consumed by an outdoor unit increases because a compressor is turned ON only for one indoor unit in operation.

Stopped indoor units do not consume energy power at stopping (standby electricity) because the compressor is turned ON and the crankcase heater is turned OFF.

If accidentally keeping an air conditioner ON at a certain tenant, the power consumption will increase.



3

(4) When setting the Excluded Time, is there a way to get to know a PPD result of the time?

- A power pulse and a thermo. step are not counted during the excluded time.

There is no way to get to know a PPD result or a power pulse inputted during the excluded time.

2.2 Q & A

Q

What situations and what operations cause loss of PPD result?

A

Refer to the description on Page 349.

The following operations from iTM (DCM601A51) cause loss of PPD result.

- Changing a PPD method
- Initializing all data on PPD
- Adding a PPD group
- Deleting a PPD group
- Editing a PPD group

Q

In what situations does a PPD result lean to a certain indoor unit?

A

It happens when multiple indoor units are connected to VRV and only one of them is in operation.

The PPD system performs distribution calculation of electric power used by an outdoor unit based on load on indoor units.

In the above case, the power consumption by the outdoor unit is allocated to one indoor unit in operation because the outdoor unit is in operation (that is, the compressor is turned ON) only for one indoor unit in operation.

Part 4 Adaptor

1. Adaptor for Air-conditioning System	52
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1-2 Wiring Adaptor for Electrical Appendices (2) <KRP4AA51 / KRP4AA52 / KRP4AA53 / KRP4A54>.....	62
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1. Adaptor for Air-conditioning System

1.1 Wiring Adaptor for Electrical Appendices (1) <KRP2A61 / KRP2A62 / KRP2A53>

1.1.1 Function

The KRP2A61/62/53 enables operation by remote control (ON/OFF control, temperature setting, operation display, error display). With it, the following system can be built. Note however that the adaptor cannot be used with other centralized control equipment.

Type	BRC1C62	KRP2A61/62/53
Group/Zone	One Group	Unified control for all Zone
Item	One Group	Unified control for all Zone
ON/OFF	Possible	Possible
Temp. setting	Possible	Possible
Air flow rate setting	Possible	Impossible
Air flow direction setting	Possible	Impossible
Timer setting twice a day	Possible	Impossible
Mode setting	Possible	Impossible
Filter sign reset	Possible	Impossible
Inspection/Test operation	Possible	Operation & Error display only by lamps

Zone Control

This adaptor is connected to the centralized line, and "all the air conditioners connected to the central control lines (F1, F2) are under unified control".

(Unified control of a max. 64 groups of a max. 16 indoor units each. But, the max. indoor units are 128.)

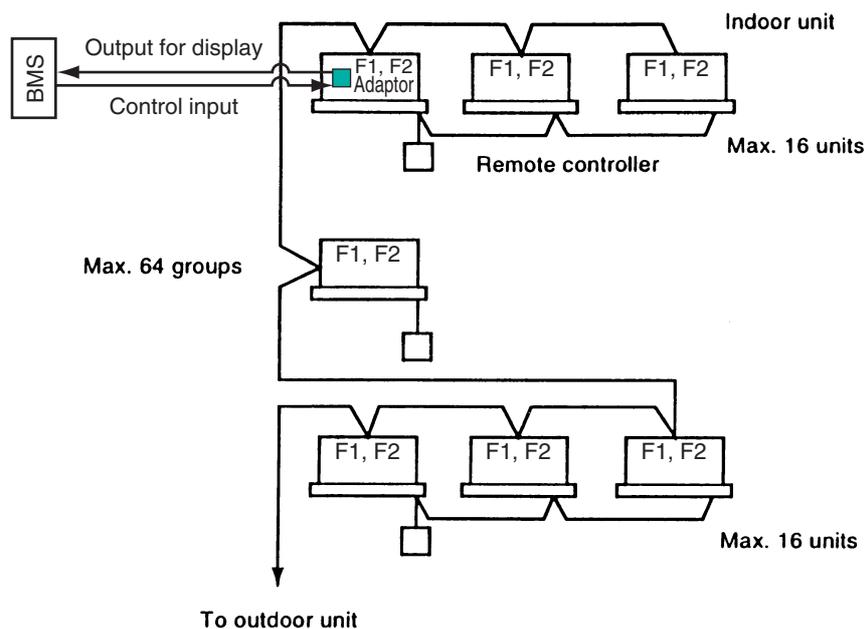
This system requires the following parts.

- Wiring Adaptor for Electrical Appendices (1)
 - ... KRP2A61 or KRP2A62 or KRP2A53
- Remote controller switches (For control)

...BRC1C62
 BRC2C51
 BRC3A61 } Per group

(Ex.) Zone control for 8 units of FXFQ63PVE (control groups of 4, 3 and 1)

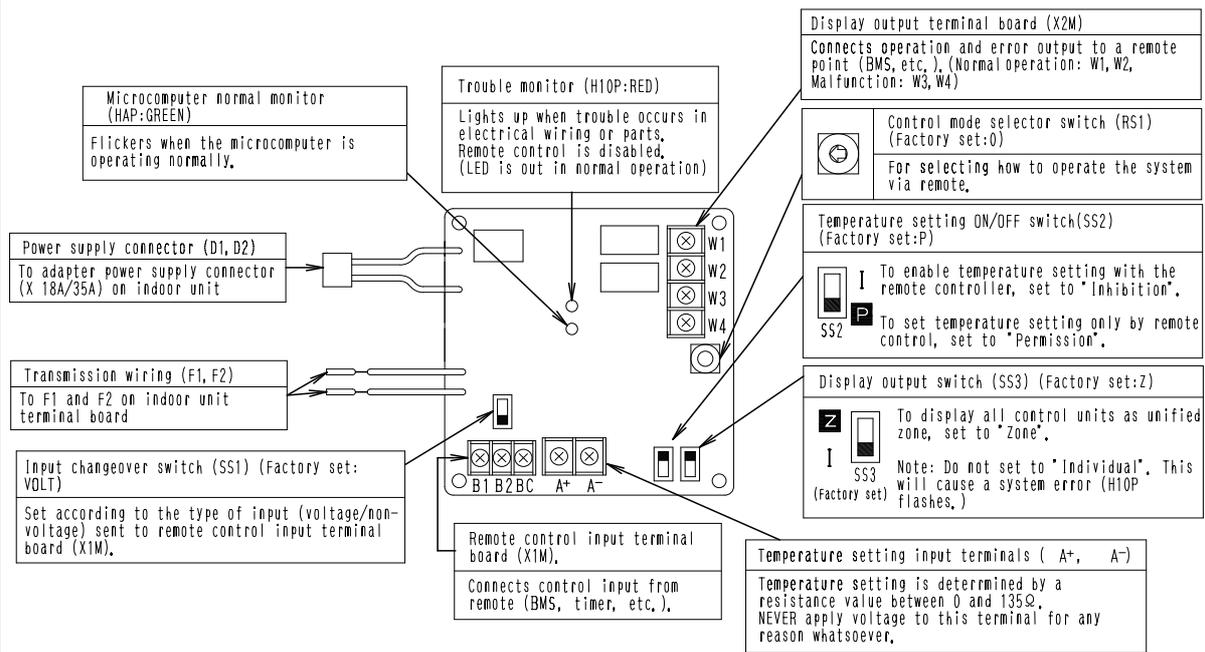
KRP2A62x1 kit
 BRC1C62x3 kits } 1 set required for each group.



Note:

1. Individual indoor units connected to the centralized line cannot be displayed individually on the BMS.

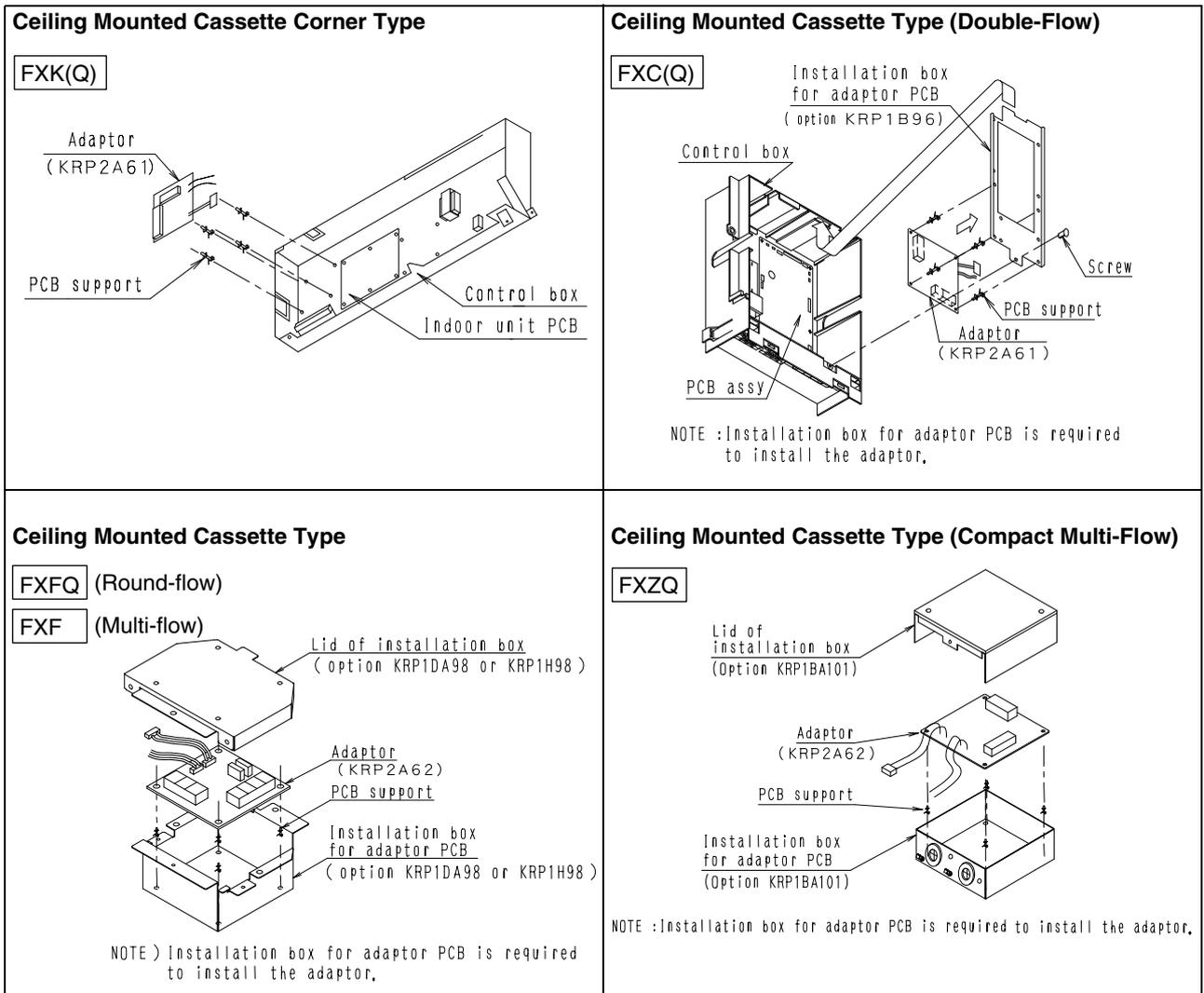
1.1.2 Part Names and Functions



1PA63641J



1.1.3 Installation



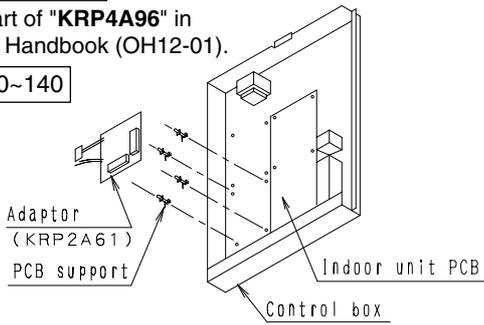
C: 1PA63641J

Ceiling Mounted Duct Type

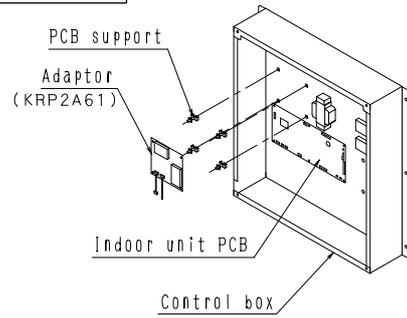
FXMQ20~140P

See part of "KRP4A96" in Option Handbook (OH12-01).

FXM20~140

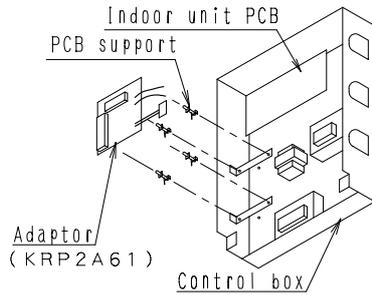


FXM(Q)200 · 250



Ceiling Mounted Built-In Type
Ceiling Mounted Built-In Type (Rear Suction)

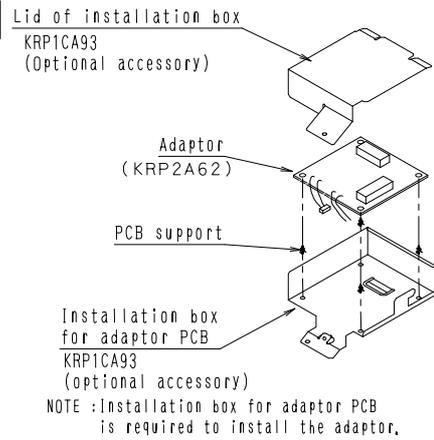
FXS
FXSYQ
FXYB



Note :
Installation box is necessary for second adaptor (FXS (Q)).

Ceiling Suspended Type

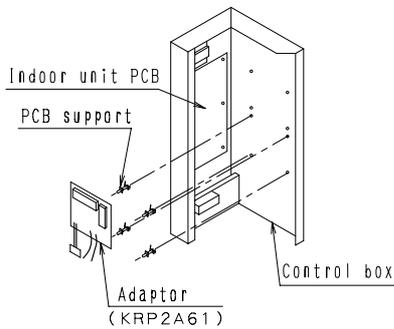
FXH(Q)



Installation box for adaptor PCB
KRP1CA93
(optional accessory)
NOTE : Installation box for adaptor PCB is required to install the adaptor.

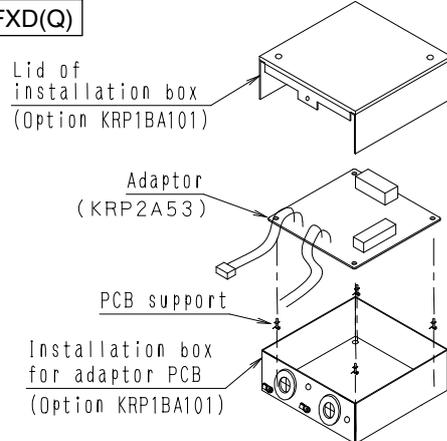
Floor Standing Type

FXL(Q)
FXN(Q)



Slim Ceiling Mounted Duct Type

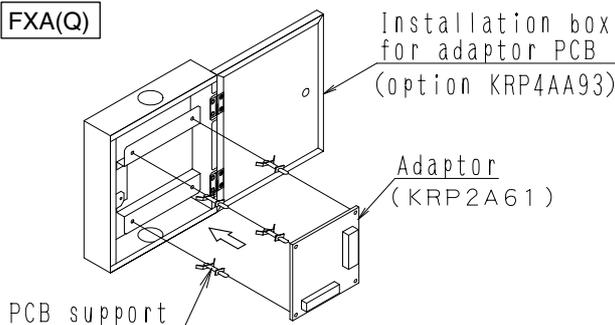
FXD(Q)



NOTE : Installation box for adaptor PCB is required to install the adaptor.

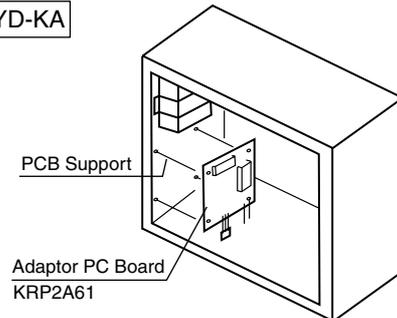
Wall Mounted Type

FXA(Q)



Ceiling Mounted Low Silhouette Duct Type

FXYD-KA



Note:
Installation box is necessary for second adaptor.

1.1.4 Electric Wiring Work and Initial Setting

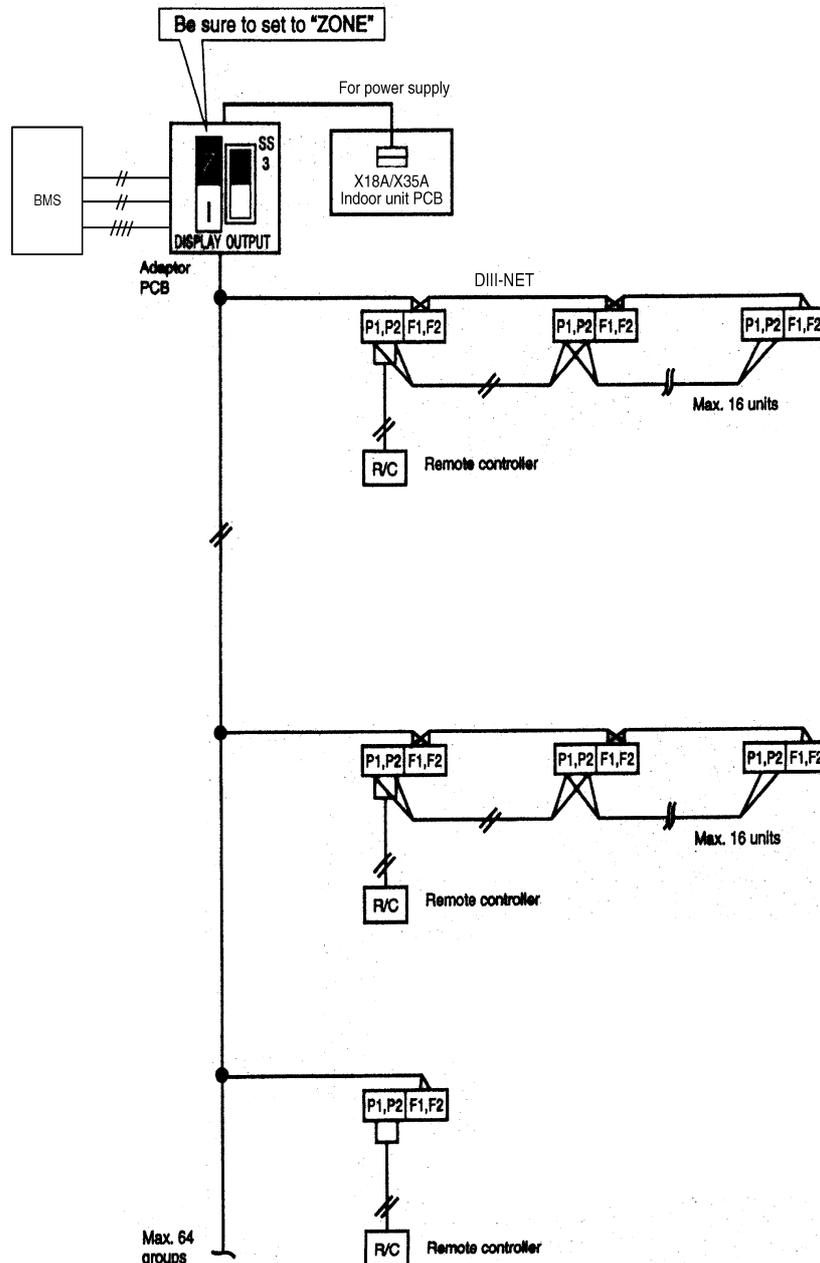
<Electric Wiring Work>

1. First, wire between the indoor and outdoor units, then to the separate power supply, and between the indoor units and the remote controllers. Then, check wiring is correct. (If wanting group control by remote controller, check transmission wiring.) For details, see the installation manual of the indoor and outdoor units.
2. Next, wire between the wiring adaptor for electrical appendices (1) and the indoor units. For details, see **Wiring to indoor units**.
3. Finally, wire between external units such as BMS, and make the necessary settings. For details, see **Wiring to external units (BMS)**.

Note:

It is not necessary to set address No. for centralized control.
(Setting is automatic.)

Wiring to the adaptor

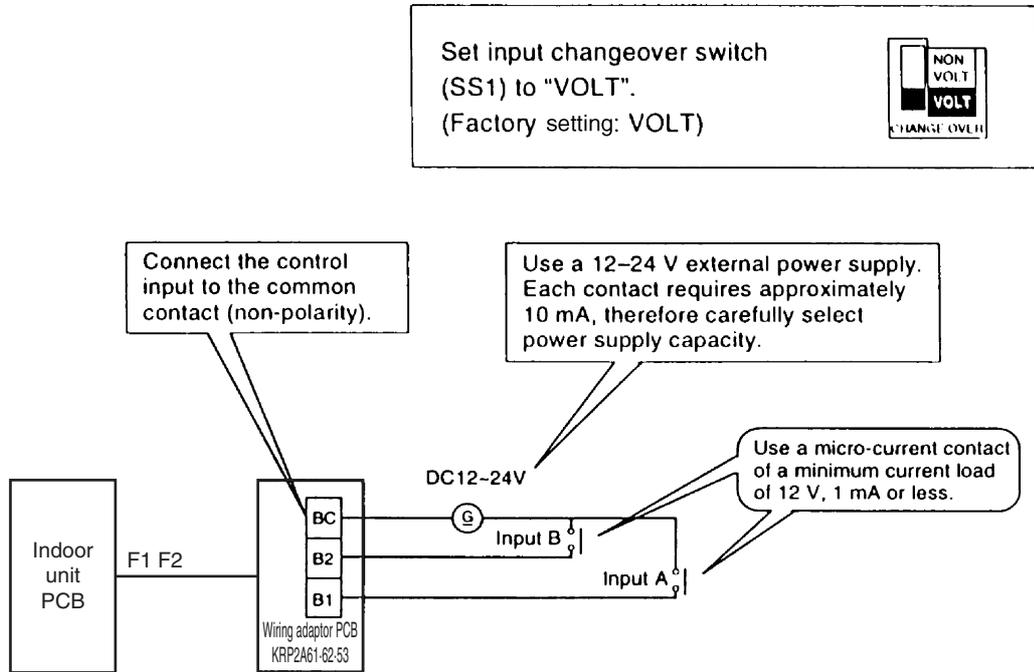


<Initial Setting>

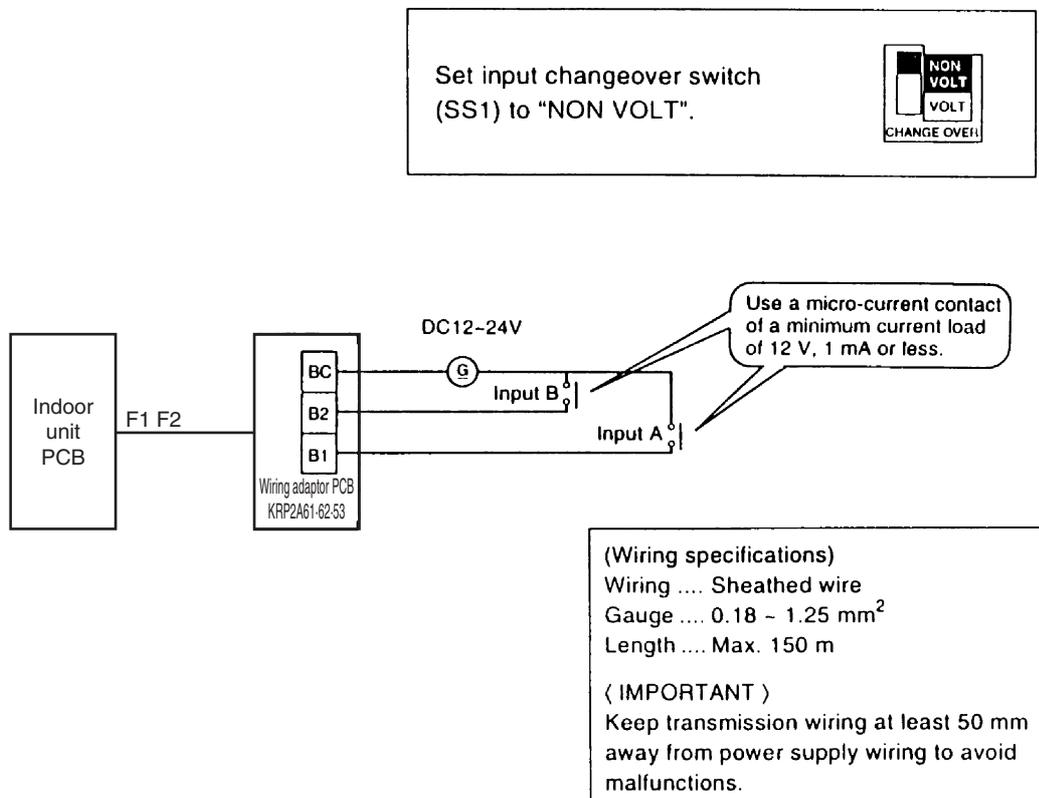
1. Remote control input (Operation control)

Wire as described below. Wiring differs depending on whether using a voltage or non-voltage input.

- For voltage input

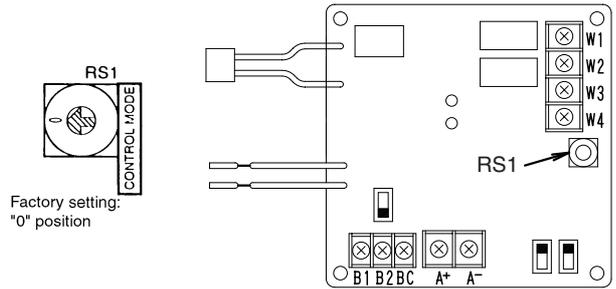


- For non-voltage input



2. Setting control mode selector switch (RS1)

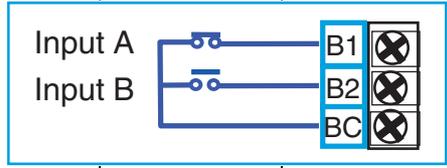
Using control mode selector switch (RS1), select the control mode as described below.



(1) When operating with only individual display function

Position	Function
0	Individual Display (Input Ignored)

(2) When operating with constant input from A

CONTROL MODE Position 	Function	Input A ON		Input A OFF		Input B ON		
		Operation or not of indoor unit	From Remote controller	Operation or not of indoor unit	From Remote controller	Operation or not of indoor unit	From Remote Controller	
1	Remote Control Rejection	ON	Rejection		Rejection	OFF	Rejection	Forced OFF
2	Central Priority	ON	Acceptable					
3	Stop by Remote controller Acceptable	ON	Only Stop acceptable					
4	Remote controller acceptance / rejection	Permit	Acceptable					

Note:

- Input B is for forced-OFF. When ON, stop + remote controller is rejected, and input A is ignored. When OFF, even if A is ON, the contents of when input A is ON, are not achieved. Input A must therefore be re-input.

(3) When operating with momentary input from A (Use a momentary input of ON time 200 msec or longer.)

Position	Function	Input A ON		Constant Input B ON (Input A is ignored)	
		Operation or not of indoor unit	From Remote controller	Operation or not of indoor unit	From Remote controller
5	Remote Control Rejection	ON/OFF	Rejection	Forced OFF	Rejection
6	Last command Priority	ON/OFF	Acceptable		

■ For demand control from input B

Position	Function when input A is ON	Function when input B is ON
C	Remote controller rejected (Same as position "5")	Forced thermostat OFF command
D		Forced temperature shift command
E	Last command priority (Same as position "6")	Forced thermostat OFF command
F		Forced temperature shift command

- Forced thermostat OFF command
Forces indoor unit to operate the fan only.
- Forced temperature shift command
The indoor unit operates at 2°C higher (cooling) or 2°C lower (heating) than the set temperature.

Note:

- In zone control, operation is displayed as long as one indoor unit is running. When in the last command priority mode, some units are not operating while ON.
- In such case, even if input A is ON, the unit and all other units in the same zone will stop.

4

(4) When operating with dual momentary inputs from A and B (Use a momentary input of 200 msec or longer.)

Position	Function	Input A ON		Input B ON	
		Operation or not of indoor unit	From Remote controller	Operation or not of indoor unit	From Remote controller
7	Remote Control Rejection	ON	Rejection	OFF	Rejection
8	Central Priority	ON	Acceptable		
9	Stop by Remote controller Acceptable	ON	Only Stop acceptable		
A	Remote controller acceptance / rejection	Permit	Acceptable		
B	Last command Priority	ON	Acceptable	OFF	Acceptable

Note:

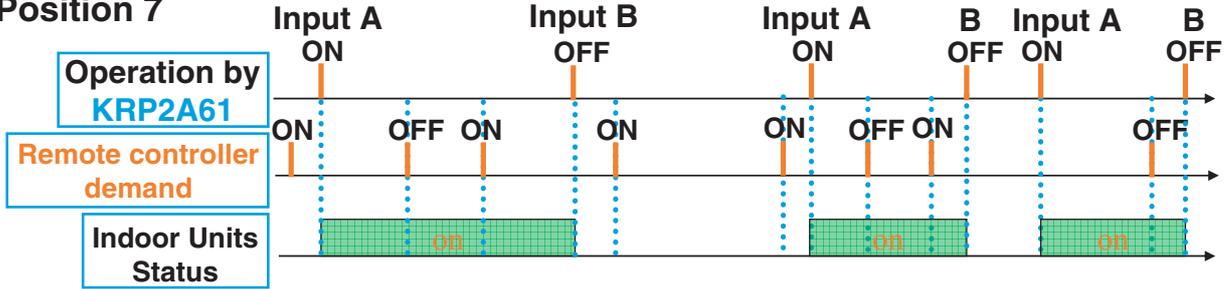
- Doing constant input A with position 7-A, it will be forced OFF function (input A is ignored).
- Constant input cannot use for input B with position B.

C: 1PA63642C

Timing Chart for Each Control Mode by pulse input

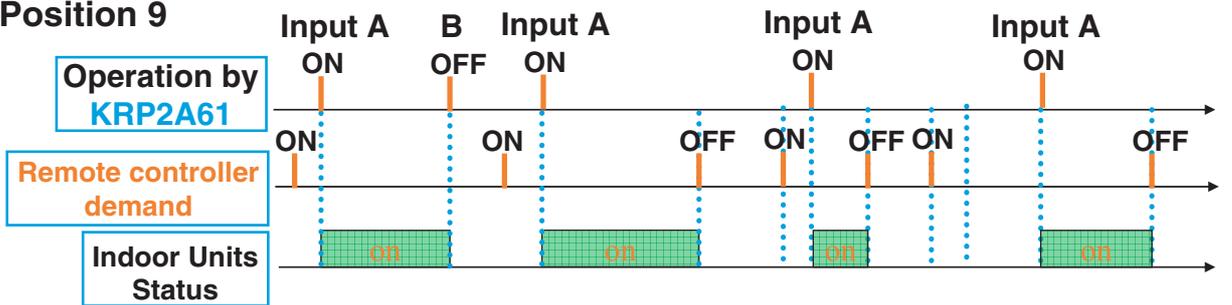
Remote controller rejection

Position 7



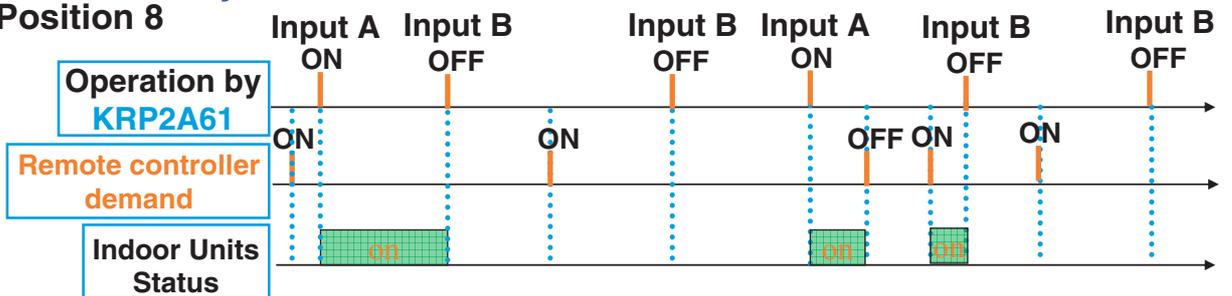
Stop by Remote controller Acceptable

Position 9



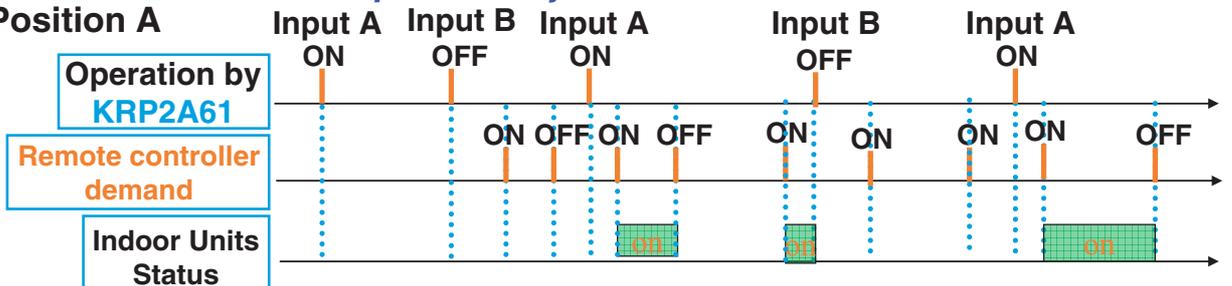
Central Priority

Position 8



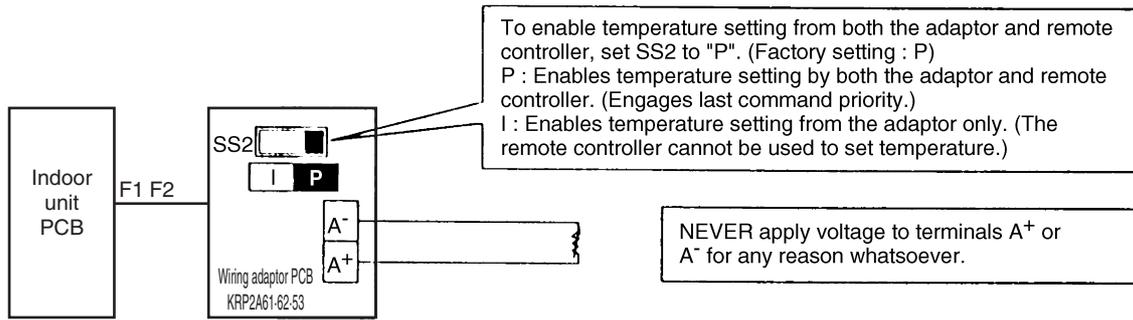
Remote controller acceptance / rejection

Position A



4

3. Temperature setting input



Temperature setting corresponds to resistance values in the range of 0 to 135Ω. Their relationship is as shown below.

Temperature Setting (°C)	16	17	18	19	20	21	22	23	24
Resistance (Ω)	0.0~3.4	5.0~11.6	13.8~20.0	22.4~28.4	31.0~36.4	39.4~44.8	48.2~52.8	56.6~61.2	65.2~69.4

Temperature Setting (°C)	25	26	27	28	29	30	31	32
Resistance (Ω)	73.8~77.8	82.4~85.8	91.0~94.0	99.4~102.2	108.6~110.4	117.2~119.2	125.8~127.4	134.2~140.0

Note:

Wiring resistance included in above figures.

(Wiring specifications)

Wiring ... Sheathed wire

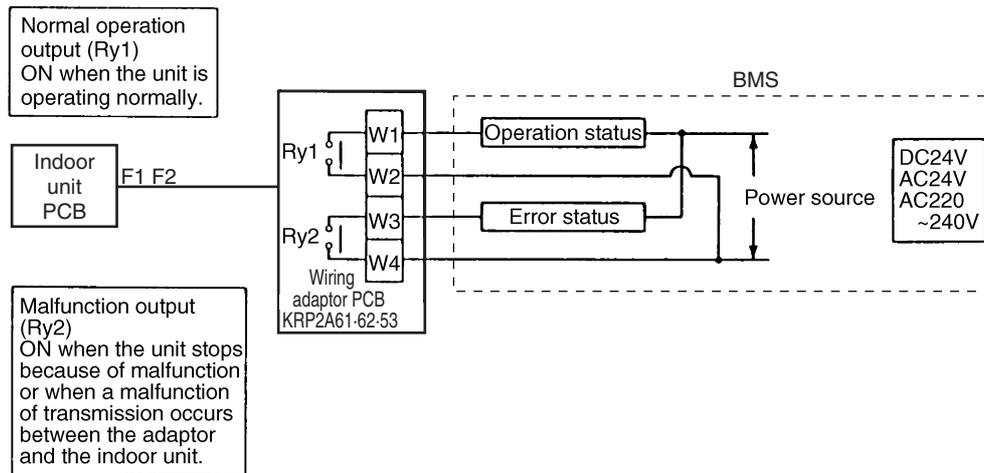
Gauge ... 1.25~2.00 mm²

Length ... Max. 70 m

(IMPORTANT)

Keep transmission wiring at least 50 mm away from power supply wiring to avoid malfunctions.

4. Output display signals



Operation output terminals (W1 and W2) and malfunction output terminals (W3 and W4) are non-voltage constant contact output.

(Allowed electric current per contact is between 10 mA ~ 3 A.)

Note:

If using a 220~240V power supply, keep transmission wiring at least 50 mm away from incoming power supply wiring.

Output System	Both Ry1 and Ry2 OFF	Ry1 only ON	Ry2 only ON
Zone control	All zones OFF	At least one unit running normally, no malfunction	Even 1 unit stopped due to malfunction or malfunction of transmission between adaptor and indoor unit

Display output is described in the above table.

Note:

If rewiring F1 and F2 after running the system, turn ON power for 5 minutes, then turn it OFF and ON again. Changes to wiring can sometimes disable control from the wiring adaptor.

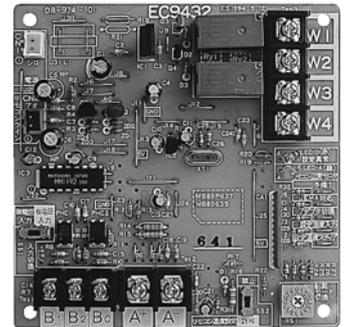
C : 1PA63642C



1.2 Wiring Adaptor for Electrical Appendices (2) <KRP4AA51 / KRP4AA52 / KRP4AA53 / KRP4A54>

1.2.1 Function

This adaptor is an interface required to connect the indoor unit with the BAS. And by installing this adaptor in the indoor unit, it enables you to have various remote controls (ON/OFF, temperature setting, operation status display and malfunction display). One adaptor can control simultaneously the group of units (Max. 16 units) connected to the remote control wiring line (P1, P2).



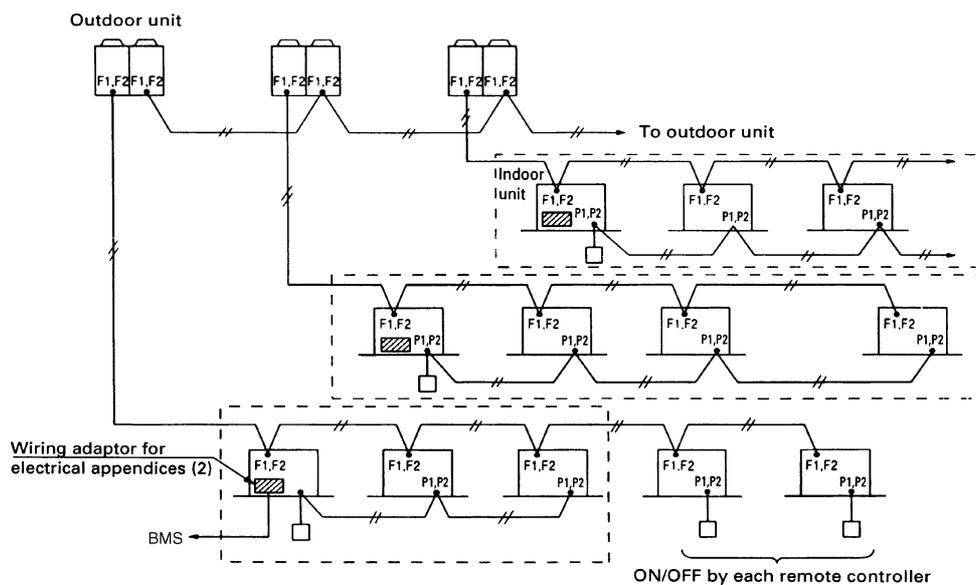
Type	BRC1C62	KRP4AA51/52/53 KRP4A54
Group/Zone	One Group	One Group
ON/OFF	Possible	Possible
Temp. setting	Possible	Possible
Airflow rate setting	Possible	Impossible
Airflow direction setting	Possible	Impossible
Timer setting twice a day	Possible	Impossible
Mode setting	Possible	Impossible
Filter sign reset	Possible	Impossible
Inspection/Test operation	Possible	Operation & Error display only by lamps

Note:

1. This adaptor cannot be used together with centralized control equipment.
2. The model of adaptor differs according to the type of indoor unit to be installed.

Note:

1. Marked  shows wiring adaptor for electrical appendices.
2. Marked  indicates the same control range.
3. The wiring adaptor for electrical appendices (2) can control simultaneously the group of the units (Max. 16 units) connected to the remote control wiring line (P1, P2). In another words, all the units connected between P1 and P2 terminal have the same control.



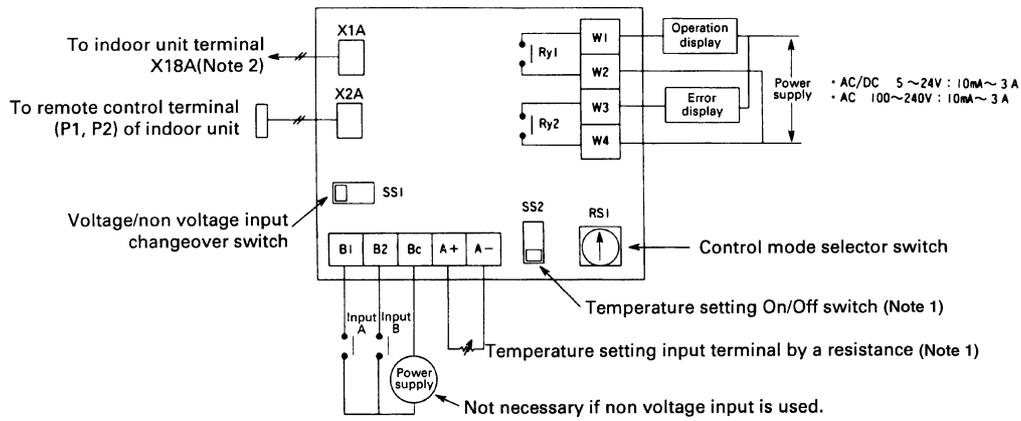
Applied Model

Series	Applicable	
VRV Systems (VRV Inverter "K(A)" "K(U)" Series and later)	Yes	
SkyAir Series *1	Yes	
Room Air-Conditioner	No	
Packaged Air-Conditioners	FDYB-KA, FDYM-FA, FDY-KA *2	Yes
	FDBG, FDMG, FD	No
	Other air-conditioners	No
Heat Reclaim Ventilator (Note: BRC1C61, 62 etc. are required.)	Yes	

Note:

- *1 FH-NU, FDBG-NU, FDBT-NU and FDMG-PU are not connected.
- *2 Installation box for adaptor PCB is necessary.

1.2.2 Part Names and Functions



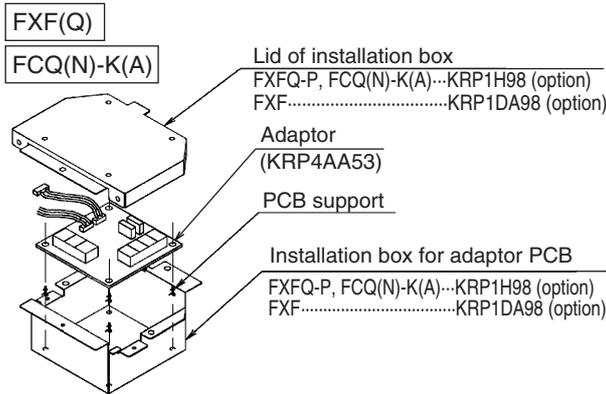
Note:

1. This is valid only for the indoor unit, which has a temperature setting function.
2. Terminal No. X18A is for the indoor unit of VRV system. For SkyAir series and other air-conditioner, connect to the relevant terminal for each units.



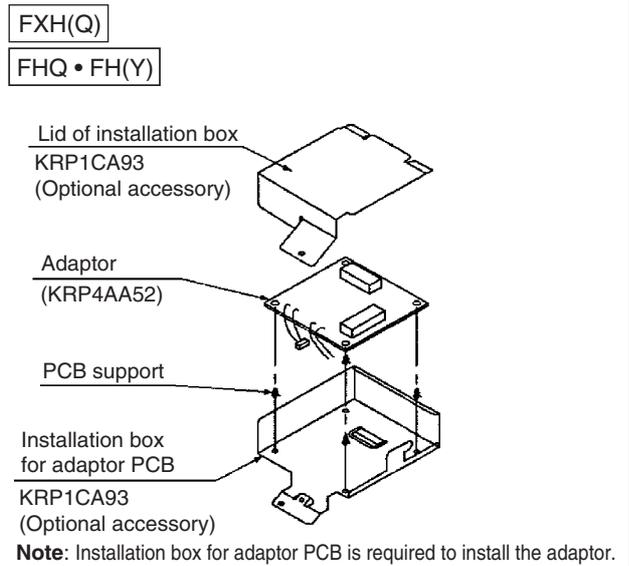
1.2.3 Installation

Ceiling Mounted Cassette Type

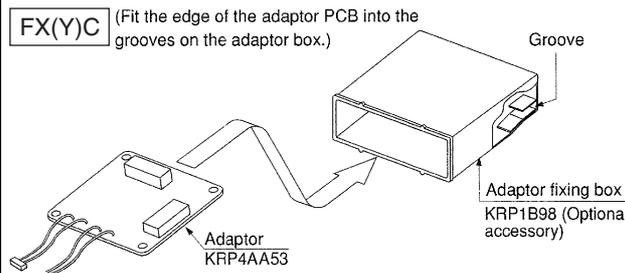


Note: Installation box for adaptor PCB is required to install the adaptor.

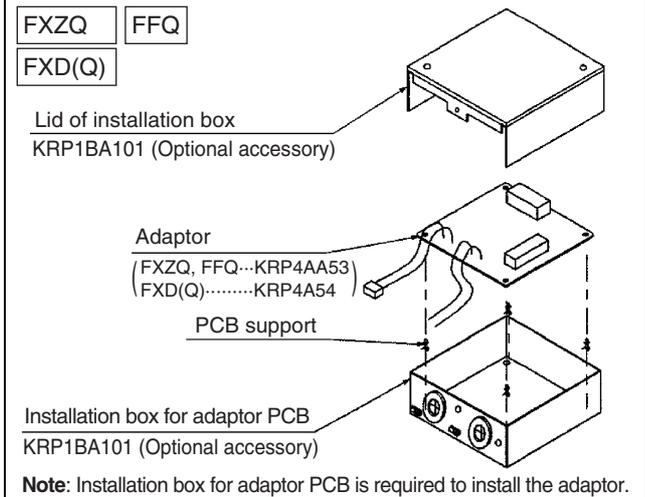
Ceiling Suspended Type



Note: Installation box for adaptor PCB is required to install the adaptor.

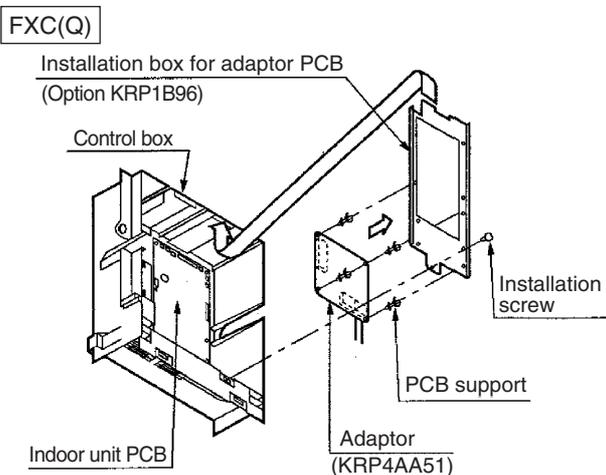


Ceiling Mounted Cassette Type (Compact Multi Flow) Slim Ceiling Mounted Duct Type



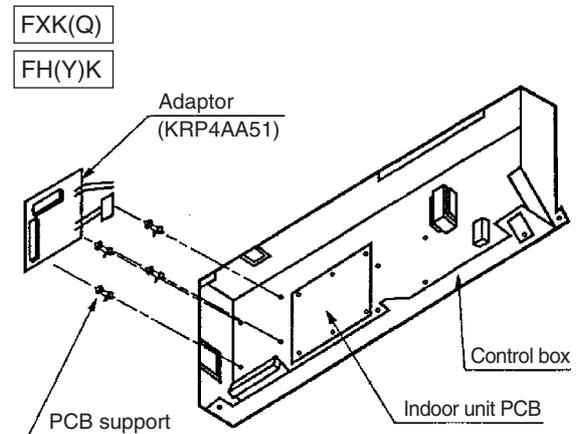
Note: Installation box for adaptor PCB is required to install the adaptor.

Ceiling Mounted Cassette Type (Double Flow)

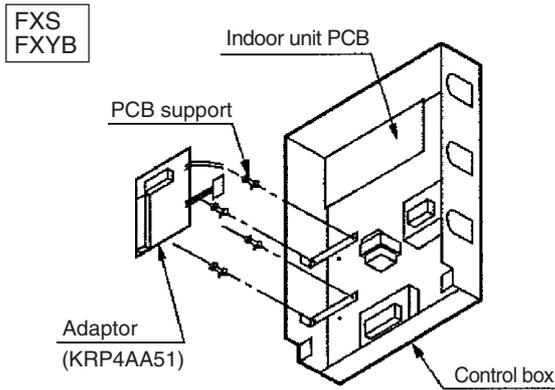


Note: A separate plate is needed to install the adaptor PCB.

Ceiling Mounted Cassette Corner Type

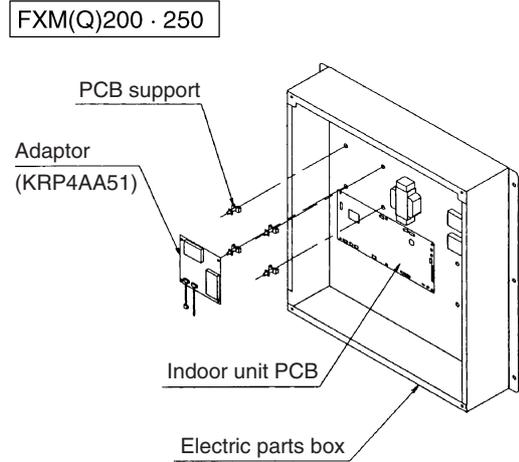


Ceiling Mounted Built-in Type

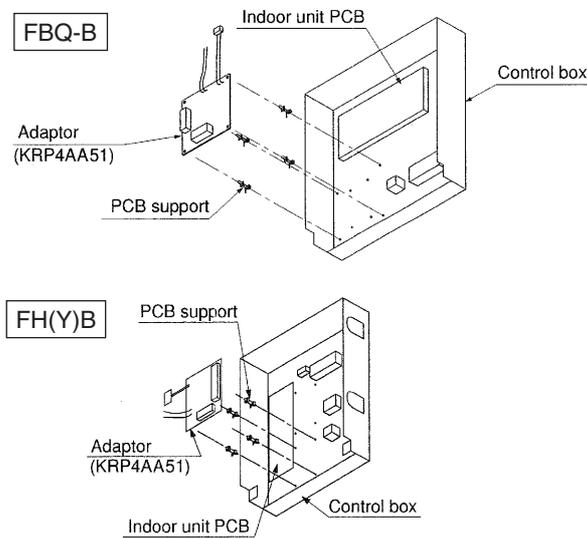


Note: Installation box is necessary for second adaptor (FXS).

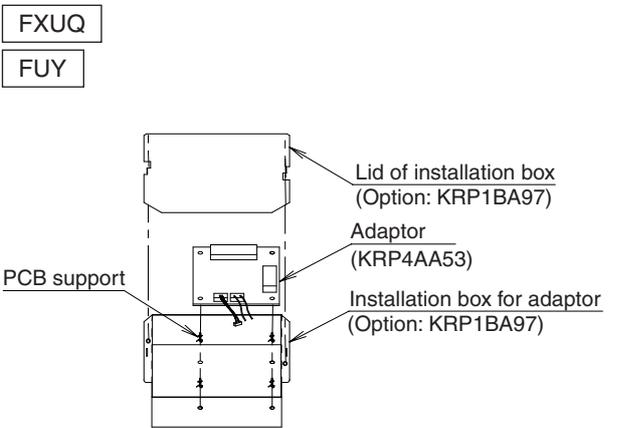
Ceiling Mounted Duct Type



Ceiling Mounted Built-in Type

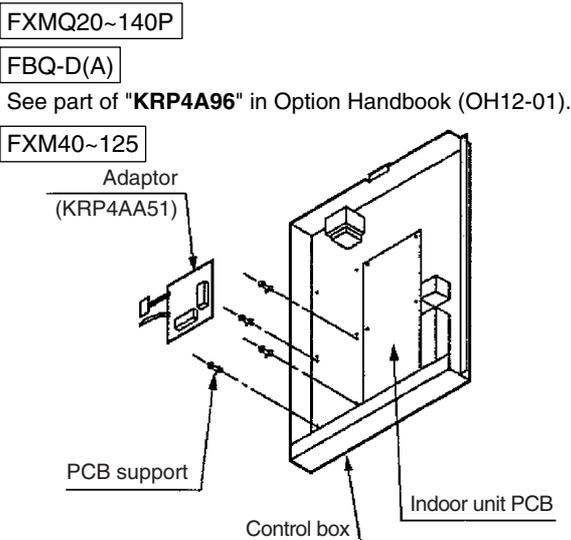


Ceiling Suspended Cassette Type



Note: Installation box for adaptor (option) is required to install.

Ceiling Mounted Duct Type



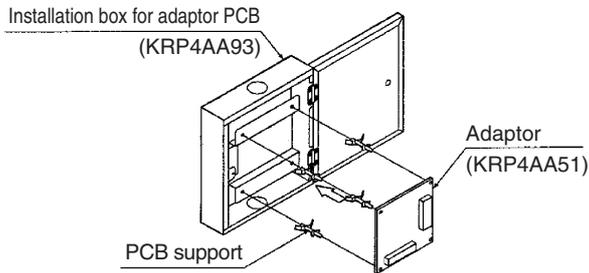
C: 1PA59889L

4

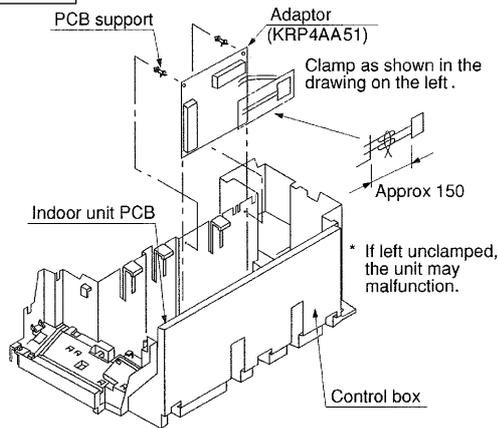
Wall Mounted Type

FXA(Q)

FAQ71BVV1B
FAY-L

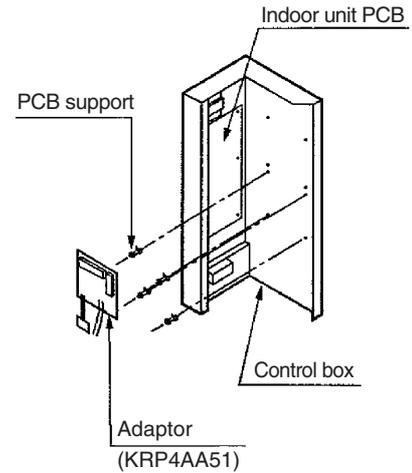


FAQ100BVV1B
FA(Y)-F(A)



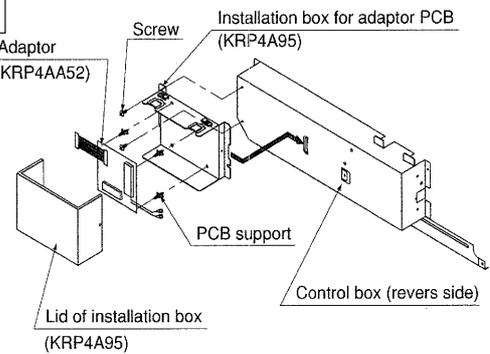
**Floor Standing Type
Concealed Floor Standing Type**

FXL(Q)
FXN(Q)



Floor Standing Type

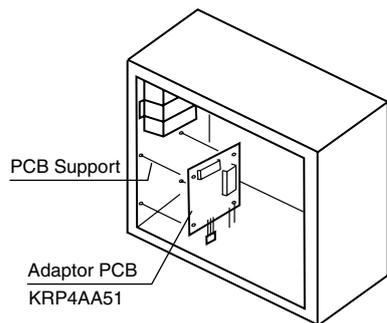
FV(Y)



Note: Installation box for adaptor PCB is required to install the adaptor.

Ceiling Mounted Low Silhouette Duct Type

FXYD-KA

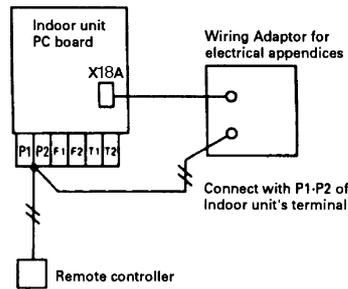


Note: Installation box is necessary for second adaptor.

C: 1PA59889L

1.2.4 Electric Wiring Work and Initial Setting

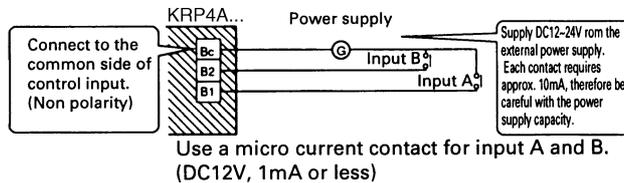
1. Wiring



2. Depending on whether [voltage input] or [non voltage input], connect the wiring as shown below.
Input/Output for External Control

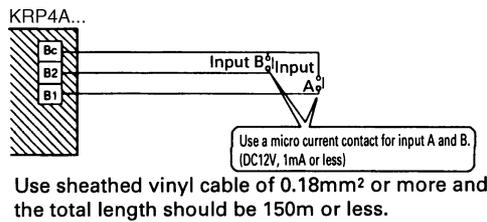
3. Depending on whether [voltage input] or [non voltage input], connect the wiring as shown below.
 ■ **Input with Voltage.**

Set the Voltage/Non voltage changeover switch (SS1) to VOLT.



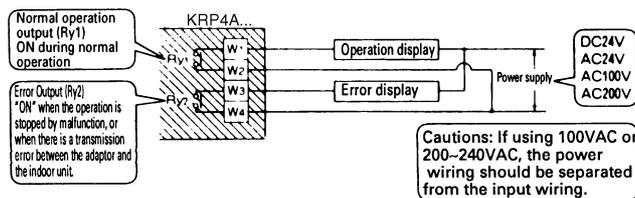
■ **Input with No Voltage.**

Set the Voltage/Non voltage changeover switch (SS1) to NON VOLT.



4. Display Signal Retrieval (Output)

The normal operation output terminals (W1, W2) and error output terminals (W3, W4) are non-voltage output contacts. (Permissive current is 10mA~3A per contact.)

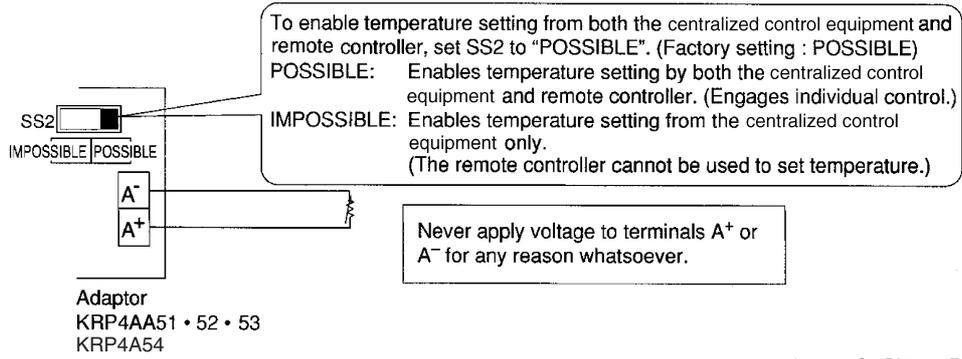


Output is as given below.

Output System	Both Ry1 and Ry2 is OFF.	Only Ry1 is ON.	Only Ry2 is ON.
Group control	OFF	All normal operation	At least one unit is stopped due to error or transmission error between the adaptor and the indoor unit.

C: 1PA59890F

5. Temperature setting input



C: 1PA59890F

Temperature setting corresponds to resistance values in the range of 0 to 135Ω.

Their relationship is as shown below.

Relation between the setting temperature and the resistance are as follows.

Setting temperature (°C)	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Resistance (Ω)	0.0 ~ 3.4	5.0 ~ 11.6	13.8 ~ 20.0	22.4 ~ 28.4	31.0 ~ 36.4	39.4 ~ 44.8	48.2 ~ 52.8	56.6 ~ 61.2	65.2 ~ 69.4	73.8 ~ 77.8	82.4 ~ 85.8	91.0 ~ 94.0	99.4 ~ 102.2	108.6 ~ 110.4	117.2 ~ 119.2	125.8 ~ 127.4	134.2 ~ 140.0

Note:

- The value of resistance includes the resistance of wiring.
- The setting temperature is limited within the setting range of indoor unit. If you set the temperature outside of the range by the adaptor, it controls at the nearest setting range.

6. Setting of control mode selector switch (RS1)

CONTROL MODE Position RS1	Function	Input A close		Input A open		Input B close (Input A is ignored)	
		Operation or not of indoor unit	From Remote controller	Operation or not of indoor unit	From Remote controller	Operation or not of indoor unit	From Remote controller
0	Input Ignored	—		—		—	
1	Remote Control Rejection	ON	Rejection	OFF	Rejection	Forced OFF	Rejection
2	Central Priority	ON	Acceptable				
3	Remote controller Acceptable/ Rejection	ON	Only Stop acceptable				
4	Remote controller acceptance / rejection, OFF	Permit	Acceptable				
Position	Function	Input A close/open (pulse input)		Constant Input B close (Constant input) (Input A is ignored)			
		Operation or not of indoor unit	From Remote controller	Operation or not of indoor unit	From Remote controller		
5	Remote Control Rejection	ON / OFF	Rejection	Forced OFF at close	Rejection		
6	Last command Priority	ON / OFF	Acceptable				

Position	Function	Input A close/open (pulse input)		Input B close/open (pulse input)	
		Operation or not of indoor unit	From Remote controller	Operation or not of indoor unit	From Remote controller
7	Remote Control Rejection	ON	Rejection	OFF at close	Rejection
8	Last command Priority	ON	Acceptable		
9	Remote controller OFF Acceptable	ON	Only Stop acceptable		
A	Remote controller acceptance / rejection, OFF	permit	Acceptable	OFF	Acceptable
B	Last command Priority	ON	Acceptable		
C	Position 5 + Energy Saving Control	The same as position 5		Forced thermostat OFF at ON	
D	Position 5 + Temperature Set-Back			Setting temperature shift command at ON	
E	Position 6 + Energy Saving Control	The same as position 6		Forced thermostat OFF at ON	
F	Position 6 + Temperature Set-Back			Setting temperature shift command at ON	

Note:

1. When constant input is used for input B at position 7~A, the system is shut-down forcibly (Ignored input A). Constant input cannot be used for input B at position B.
2. Refer to the followings for the outline of above functions.

■ **Description of Functions (Outline)**

1. Remote Control Rejection..... For when you want to turn ON/OFF only by central remote controller. (ON/OFF cannot be controlled by remote controller for indoor unit.)
2. Remote controller OFF Only Accepted For when you want to turn ON only by the central remote controller, and turn OFF only by remote controller for indoor unit.
3. Central Priority For when you want to turn ON only by the central remote controller, and during the set time, turn ON/OFF freely by remote controller for indoor unit.
4. Individual Priority (Last command priority) For when you want to turn ON/OFF by both central remote controller and remote controller for indoor unit.
5. Remote Controller Permission Timer For when you want to turn ON/OFF by remote controller for indoor unit during set time, and you want to start the operation by remote controller for indoor unit at the programmed time of system start.

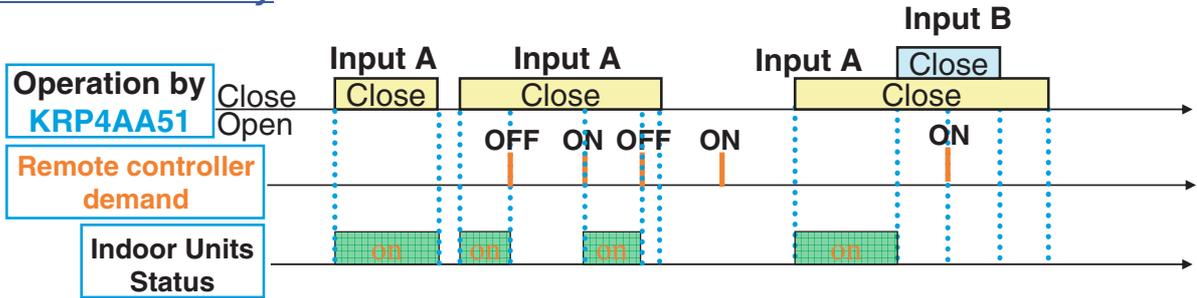


<Example when the control mode selector switch is set at position 6>

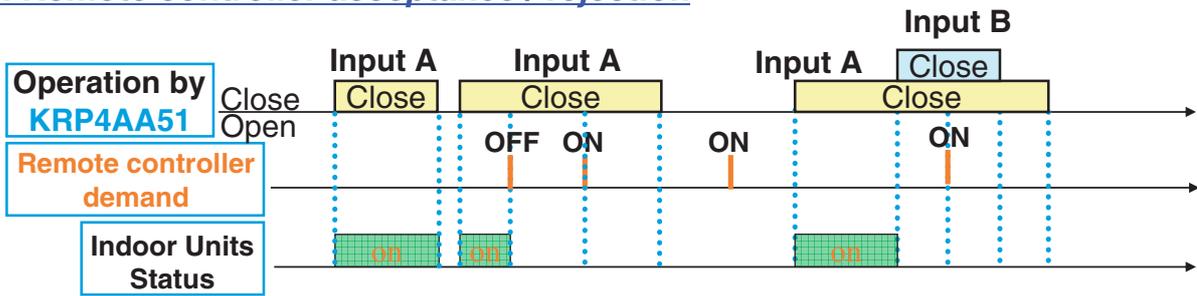
The following is the time chart for the command by remote controller and the indoor unit against input signal.

Timing Chart for Each Control Mode by momentary input

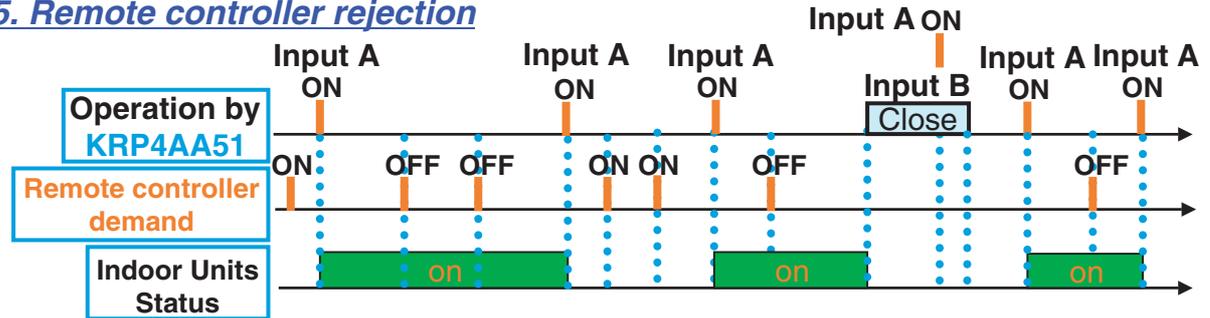
2. Central Priority



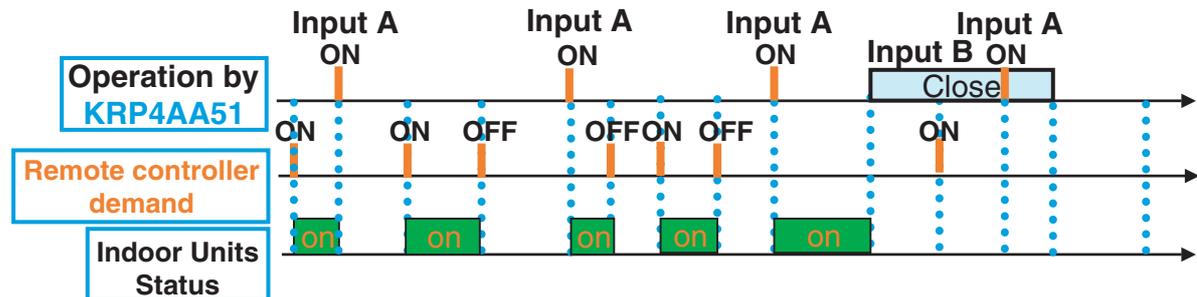
3. Remote controller acceptance / rejection



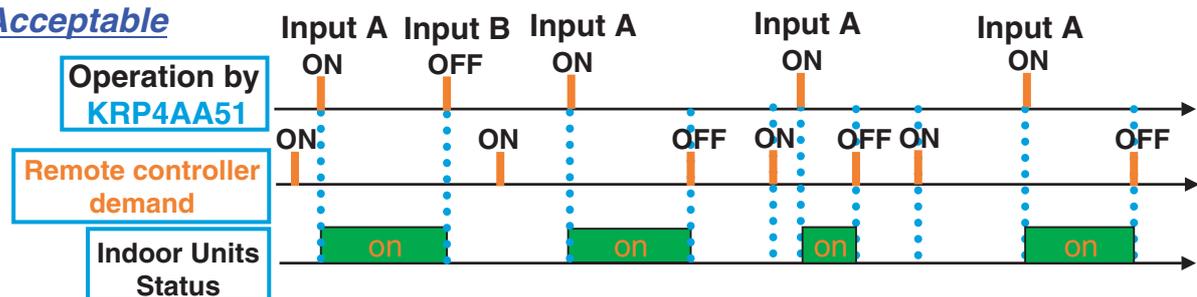
5. Remote controller rejection



6. Last Command Priority



9. Remote controller OFF Acceptable



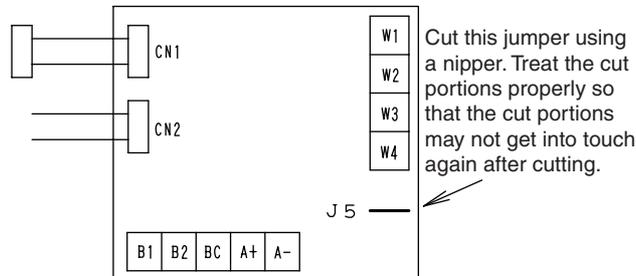
1.2.5 Precautions before Use for the Wiring Adaptor for Electrical Appendices (2)

Combined use of the wiring adaptor for electrical appendices (2) and the centralized control equipment is possible by the following setting method only under the limited use condition.

[Setting method]

Cut the jumper (J5) for the wiring adaptor for electrical appendices (2).

(Note, however, that the adaptor may not operate normally unless the following use condition is met.



[Use condition]

- (1) When the wiring adaptor for electrical appendices (2) is used in the following ways, combined use of the wiring adaptor and the centralized control equipment is possible.
 - ① As for the monitor, operation using the wiring adaptor for electrical appendices (2)
 - ② Forced thermo. off control using the wiring adaptor for electrical appendices (2)
(Mode setting: Only input B is used at the positions C and E)
 - ③ Room temperature set shift control using the wiring adaptor for electrical appendices (2)
(Mode setting: Only input B is used at the positions D and F, however, impossible when the room temperature set unit (DPF201A53) is used at the same time.)
- (2) In the case of teleconference using the wiring adaptor for electrical appendices (2), combined use is possible if the centralized control equipment is used as given in the following table.

Models	Conditions
Central remote controller (DCS302CA61)	Possible if forced outage input is not used and the adaptor is used using any of the operation codes 6, 7, 16, and 17.
Unified ON/OFF controller (DCS301BA61)	Possible if forced outage input is not used, and the adaptor is used using the operation code of priority to the last press
Schedule timer (DST301BA61)	Possible if the operation code is set to priority to the last press
Unification adaptor for computerized control (DCS302A52)	Possible if the input mode is set to the position 3
Parallel interface (DPF201A51, 52, 53)	Possible if forced outage input is not used and the operation mode is set to the position 1

1.3 Interface Adaptor for SkyAir Series <DTA102A52>

1.3.1 Function

- This interface adaptor is necessary when connecting to SkyAir indoor unit to Centralized Control Equipment (Central Remote Controller, Unified ON/OFF Controller, Schedule Timer etc.).
By connecting Centralized Control Equipment, unified operation (ON/OFF), timer operation, remote controller rejection/acceptance setting and operation/error monitor etc. are possible.

This adaptor enables the following operation and monitor function from Centralized Control Equipment.

	Function
1. ON/OFF setting	Setting Operation/Stop of the indoor unit
2. Operation/Error monitor	Monitoring Operation (ON/OFF) status and error status
3. Mode setting	Selecting mode such as cooling, fan only, etc.
4. Temperature setting	Enabling to set the temperature in the all set temperature range of SkyAir (Cooling: 16-32°C, Heating: 16-32°C)
5. Remote controller rejection/acceptance setting	Restricting operation of the remote controller for ON/OFF setting, Mode setting and temperature setting (the last command priority, remote controller rejection, etc.)
6. Test operation	Operating forced thermostat ON
7. Display of error code and reset	
8. Group control	Controlling the maximum 16 of indoor units simultaneously
9. Indoor temperature monitor	Monitoring the indoor temperature when connecting Parallel Interface
10. Forced thermostat Off	Operating forced thermostat OFF when Centralized Control Equipment has the forced thermostat OFF function
11. Filter sign display and reset	
12. Air flow direction and volume setting	Setting the air flow direction and volume by individual mode of Central Remote Controller
13. Other monitor	Monitoring the thermostat status, the compressor operation status and indoor unit fan operation status (*1)

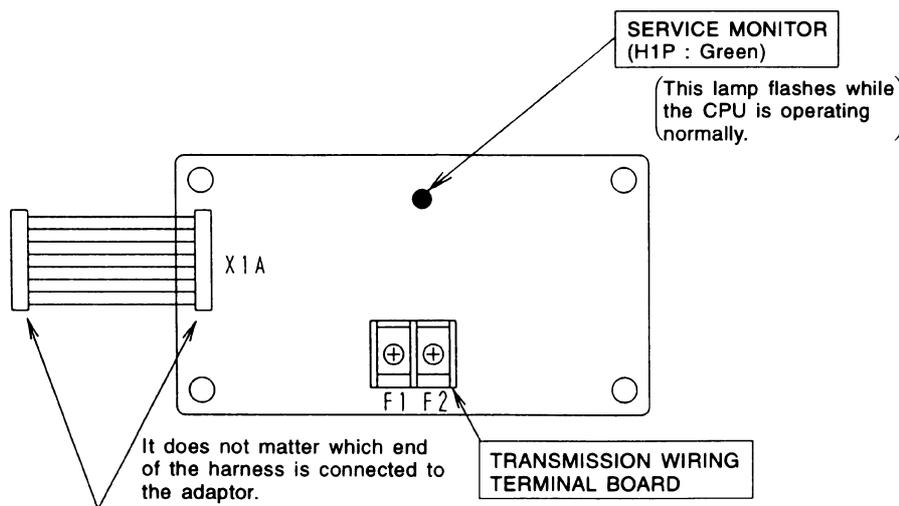
Note: *1. It is limited when connecting Interface for BACnet® and BMS

- Applicable SkyAir indoor unit
FH(Y)K-FJ, FH(Y)C-K, FHC-D, FH(Y)B-F, FVY-LA, FA(Y)-F(A), FXUQ-M(A), FUY-FJ

Note:

1. FCQ(N)-K and FBQ-D are equipped standardly with the interface adaptor and this option is unnecessary.
2. This adaptor is not connected with FH-NU, FDBG-NU, FDBT-NU, FDMG-NU and FDMG-PU.

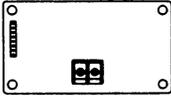
1.3.2 Part Names and Functions



1.3.3 Installation

1. Accessories

Check if the following accessories are included in the kit.

Adaptor	Relay Harness
x 1	x 1
	

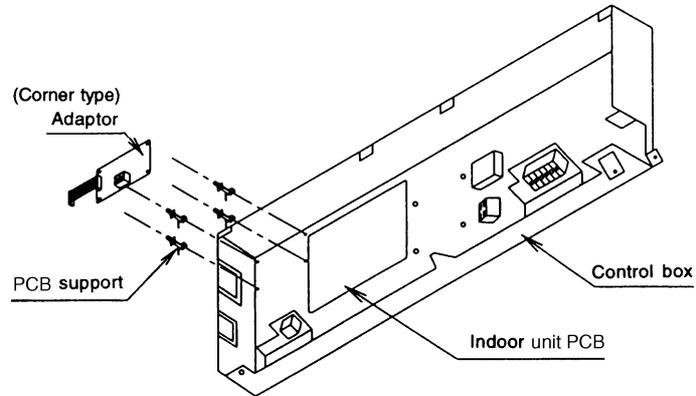
PCB Support	x 4
Clamp	x 2
Installation Manual	x 1

2. Installation

- Installation differs according to models as shown below.
- Do not bundle low and high voltage wires together.
- Bundle any excess wires with the attached clamps so as to keep loose wirings off the indoor unit PC board.

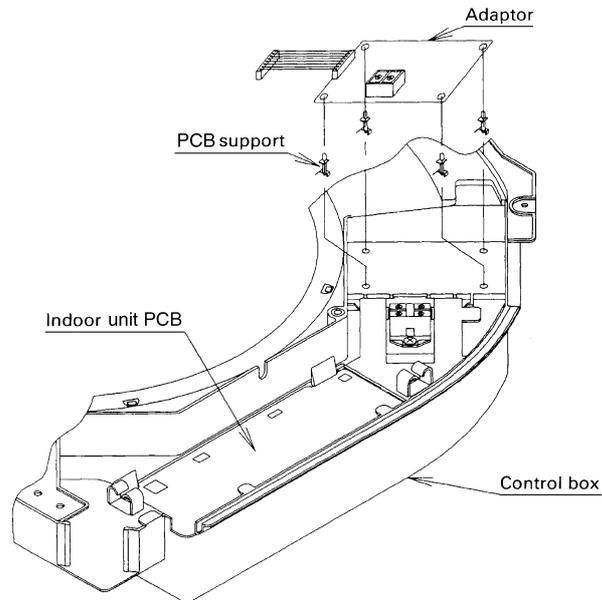
Ceiling Mounted Cassette Corner Type

FH(Y)K



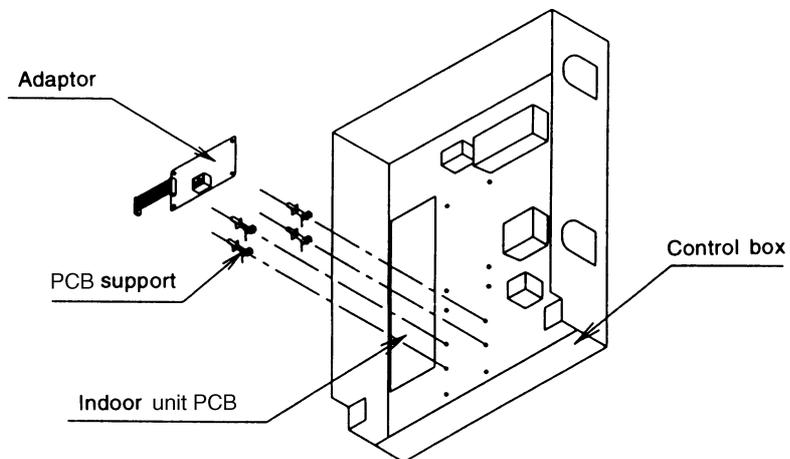
Ceiling Mounted Cassette Type (Multi-Flow)

FH(Y)C~K



Ceiling Mounted Built-in Type

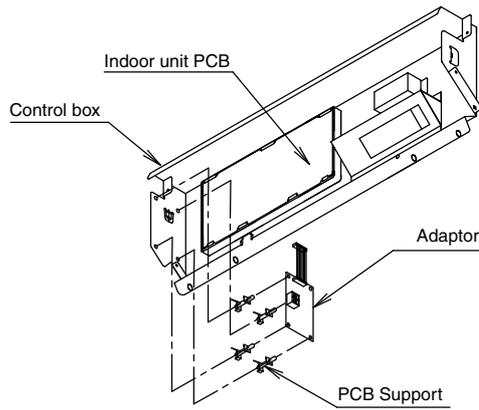
FH(Y)B



C : 1PA59896

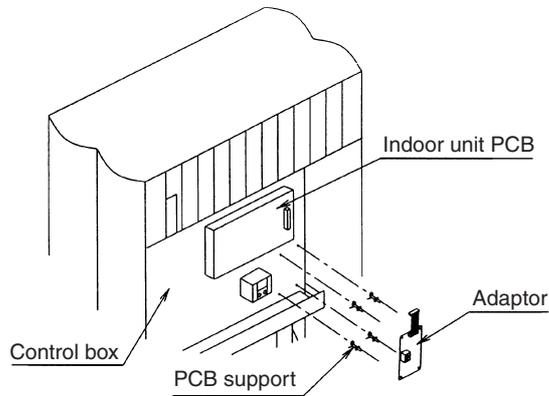
Ceiling Suspended Type

FH(Y)



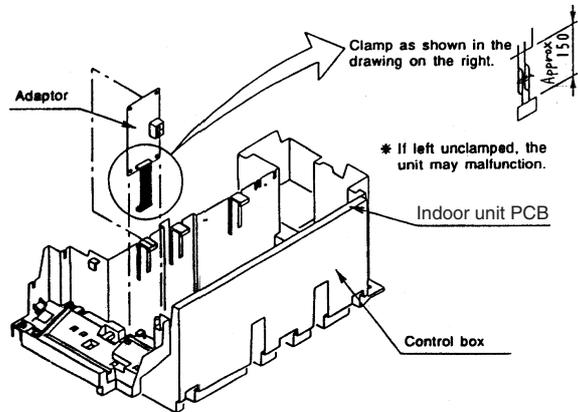
Floor Standing Type

FVY



Wall mounted type

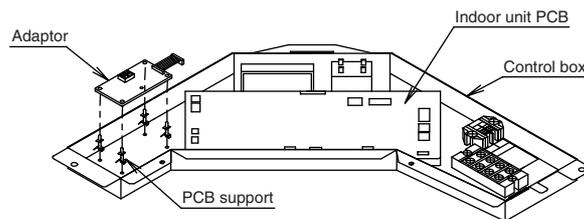
FA(Y)-F(A)



C: 1PA59896

Ceiling Suspended Cassette Type

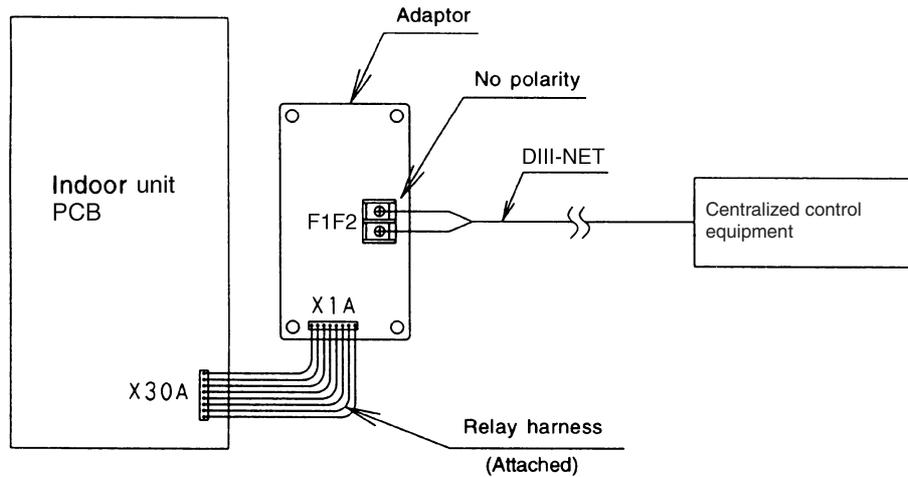
FXUQ FUY



JC: 1PA57137K

1.3.4 Electric Wiring Work

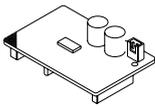
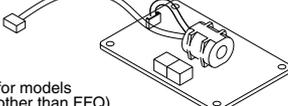
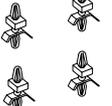
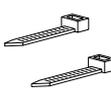
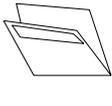
- Wire this kit as described below.
- Make sure wires to units do not pass over the PCB when wiring.



C : 1PA59896

1.4 Interface Adaptor for SkyAir <DTA112BA51>

Accessories Check if the following accessories are included in the kit.

① Adaptor	② Relay PCB	③ Relay harness	④ PCB support	⑤ Clamp material	⑥ Installation manual
 x1	 x1 (for models other than FFQ)	 x1 (for FFQ model)	 x4	 x2	 x1

Note: Before opening control box lid, be sure cut off the all air conditioner power of indoor unit and outdoor unit, or you may get an electric shock..

1.4.1 Function

- This interface adaptor is necessary when connecting to SkyAir indoor unit to Centralized Control Equipment (Central Remote Controller, Unified ON/OFF Controller, Schedule Timer etc.).
By connecting Centralized Control Equipment, unified operation (ON/OFF), timer operation, remote controller rejection/acceptance setting and operation/error monitor etc. are possible.

This adaptor enables the following operation and monitor function from Centralized Control Equipment.

	Function
1. ON/OFF setting	Setting Operation/Stop of the indoor unit
2. Operation/Error monitor	Monitoring Operation (ON/OFF) status and error status
3. Mode setting	Selecting mode such as cooling, fan only, etc.
4. Temperature setting	Enabling to set the temperature in the all set temperature range of SkyAir (Cooling:16-32°C, Heating:16-32°C)
5. Remote controller rejection/ acceptance setting	Restricting operation of the remote controller for ON/OFF setting, Mode setting and temperature setting (the last command priority, remote controller rejection, etc.)
6. Test operation	Operating forced thermostat ON
7. Display of error code and reset	
8. Group control	Controlling the maximum 16 of indoor units simultaneously
9. Indoor temperature monitor	Monitoring the indoor temperature when connecting Parallel Interface
10. Forced thermostat Off	Operating forced thermostat OFF when Centralized Control Equipment has the forced thermostat OFF function
11. Filter sign display and reset	
12. Air flow direction and volume setting	Setting the air flow direction and volume by individual mode of Central Remote Controller
13. Other monitor	Monitoring the thermostat status, the compressor operation status and indoor unit fan operation status (*1)

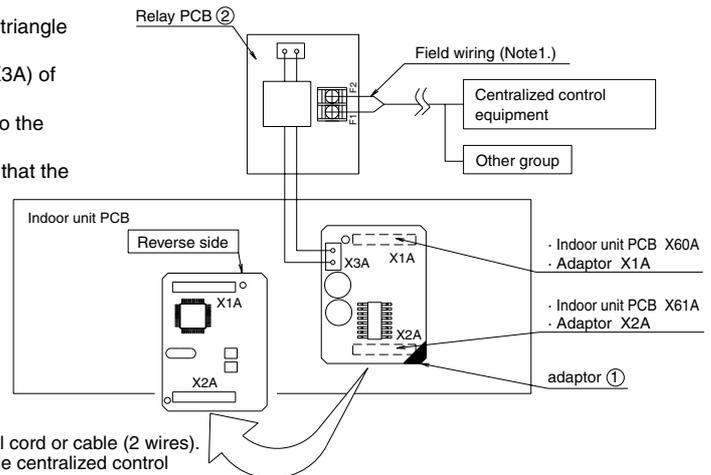
Note: *1. It is limited when connecting Interface for BACnet® and BMS

- Applicable SkyAir indoor unit
FFQ-B, FHQ-BV, FAQ-BV, FBQ-B

Note: FCQ(N)-K and FBQ-D are equipped standardly with the interface adaptor and this option is unnecessary.

1.4.2 Installation and Electric Wiring

- (1) Mount the adaptor ① on the indoor unit PCB by setting the triangle marks together.
- (2) Insert the harness from Relay PCB ② into the connector (X3A) of the Adaptor ①.(Fig.4)
- (3) Mount the Relay PCB ② on the required location referring to the figure of [Install position of Relay PCB.]
- (4) Bind the extra wires with the attached clamp material ⑤ so that the wires do not go over the indoor unit PCB and the parts on the PCB do not get damaged.
- (5) Connect the wires from the terminals F1 and F2 to the centralized control equipment. (Fig.4)



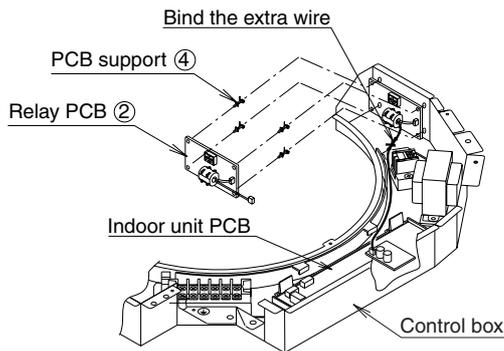
Note: 1. Wiring specifications ... Use a 0.75-1.25mm sheathed vinyl cord or cable (2 wires).
 2. For details on compatible systems and how to connect to the centralized control equipment, see the instruction manual of the centralized control equipment and technical reference materials.

Fig.4

Installation position of Relay PCB

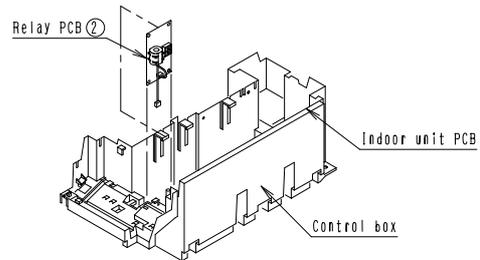
<Ceiling Mounted Cassette Type>

[FCQ] (Multi Flow Type)



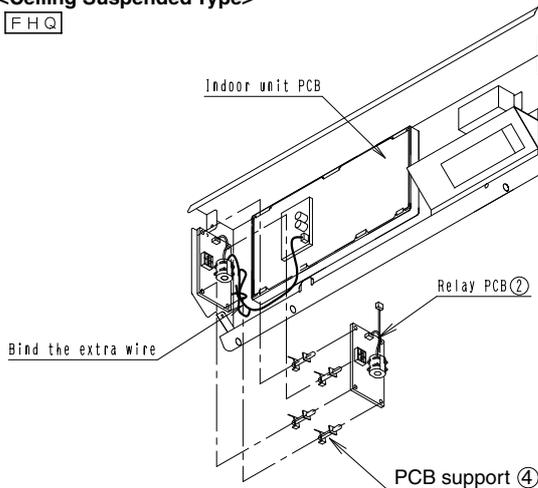
<Wall-Mounted Type>

[FAQ]



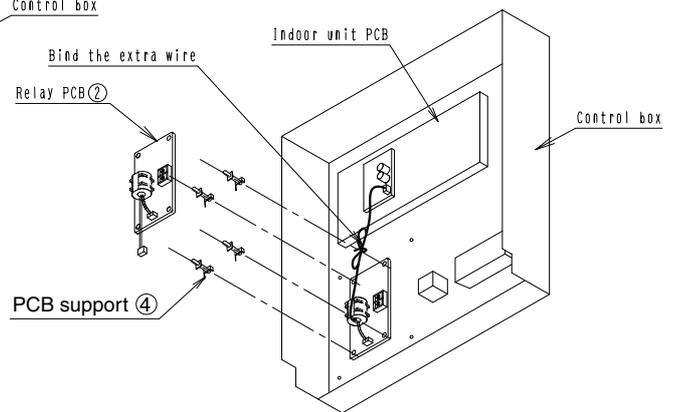
<Ceiling Suspended Type>

[FHQ]



<Ceiling Mounted Built-In Type>

[FBQ-B]



C:1P107904C



1.5 Central Control Adaptor Kit <DTA107A55>

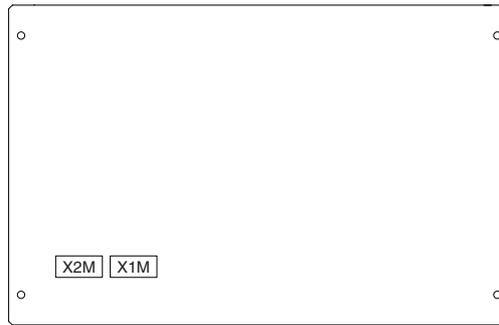
1.5.1 Function

- By connecting this kit to the centralized control equipment, all units of the FD series and UAT series in the system can be controlled as a group from the centralized control equipment.

This adaptor enables the following operation and monitor function from Centralized control equipments.

	Operation	Monitor
ON/OFF	OK	OK
Setpoint	OK	OK
Operation mode (Cool/Heat/Fan)	OK	OK
Malfunction	-	OK
Filter sign	-	OK
Filter sign reset	OK	-

1.5.2 Part Names

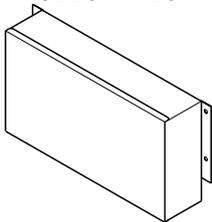


1.5.3 Installation

COMPONENTS

Check the following components are included in this optional accessory before installation.

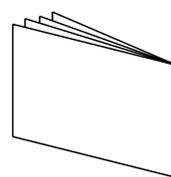
CONTROL BOARD BOX



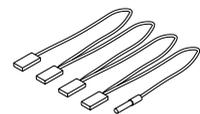
OPERATION MANUAL



INSTALLATION MANUAL



WIRE HARNESS



Give to the customer this OPERATION MANUAL certainly.

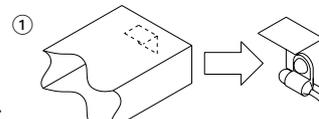
INSTALLATION

Decide the situation of Control Board Box.

It is affected the situations of the thermistor.

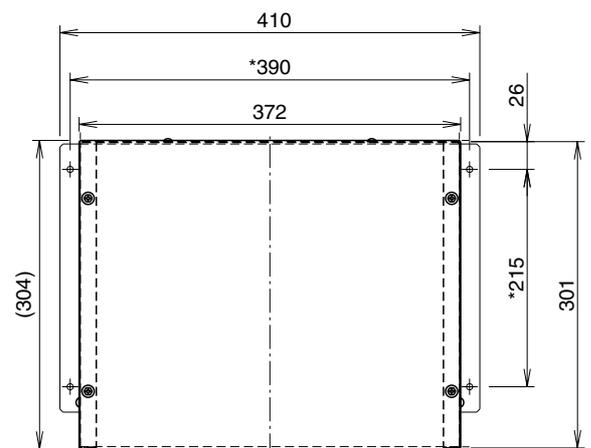
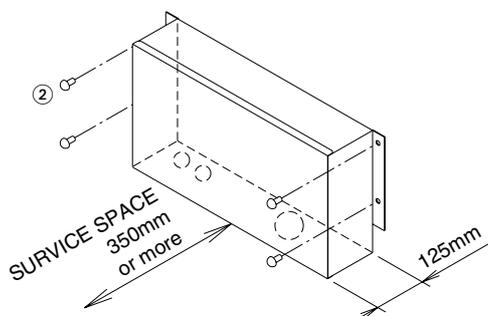
The length of lead wire - Thermistor : 2.5m

- ① Install the thermistor (in the control board box) at the inlet duct or the suction grille.
Use the kit : remote sensor (KRCS01-1B), if you need the longer length than it. (Can use it untill 12m.)
- ② Install the control board box on the wall or the pillar.
Make sure the wire inlet is at the bottom of the box.
Use 4 bolts (M5) for fixing the box.
Install the box in the indoor side.
(Example : Set it in the ceiling or in the room.)
Do not install the box in the air conditioner.
Fixing situation : See below Fig. (Height : 125mm)
(*shows the fixing pich.)



Example : Set the thermistor into the inlet duct and clamped by resin clamp and fix plate.

Unit (mm)



1.5.4 Electric Wiring Work

1. General instructions

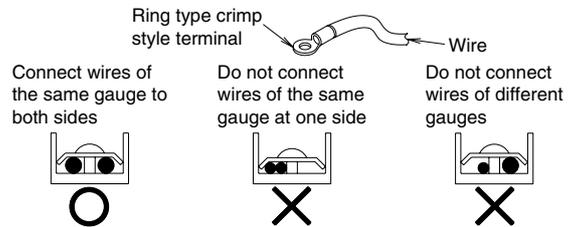
- All wiring, components and materials to be procured on site must comply with the applicable local and national codes.
- Use copper conductors only.
- All field wiring and components must be provided by licensed electrician.
- Unit shall be grounded in compliance with the applicable local and national codes.
- After wiring work, check power to the equipment shuts OFF when switch is shut OFF.

⚠ WARNING

Use ring type crimp style terminal for connection to power supply terminal block.

If is not used, satisfy the following conditions :

- Do not connect wires of different gauge to the same power supply terminal.
(Looseness in the connection may cause overheating.)
- When connecting wires of the same gauge, connect them according to the righthand figure.



2. Wiring specification

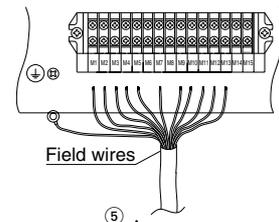
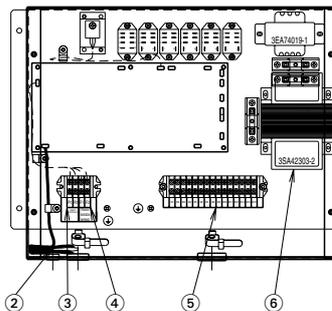
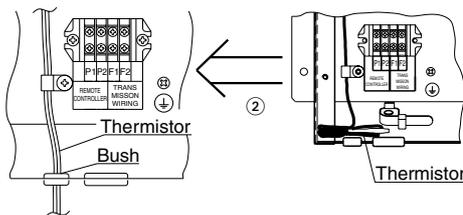
Use the wire shown right for between the unit and the control board box.

Type	Size
UL1015 AWG18 equivalent	0.75mm ² each

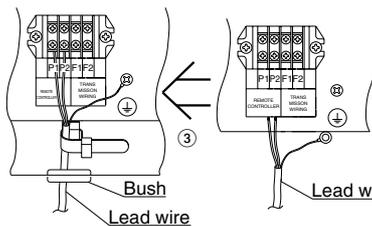
Connect the wiring between indoor and outdoor units, centralized control equipment and remote controller.

For details, refer to the installation manual of them.

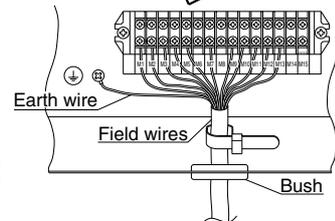
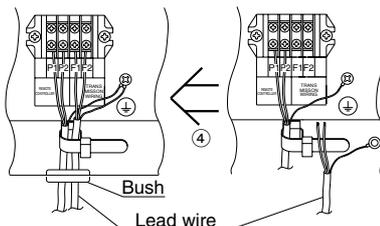
- 1 Remove the cover of the control board box, after setting it. (Parts situation is shown right Fig.)
- 2 Install the thermistor through the bush. (It is in the control board box. See below Fig.)



- 3 Connect the read wires of Remote Controller. (See the below Fig.) Ground the shield of the cords to the control board box.



- 4 Connect the read wires of centralized control equipment. (See the below Fig.) Ground the shield of the cords to the control board box.



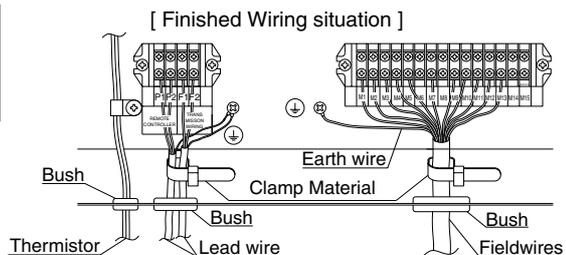
- 5 Connect the field wires to the Air Conditioner. (Details: See the back side.) Ground the control board box.

- 6 Change the connection of transformer according to the right table. (Especially for Y1 Model.)

VOLTAGE		TERMINAL
PRIMARY	SECONDARY	
220V	200V	*U-V1
230V	200V	U-V2
240V	200V	U-V3

* FACTORY CONNECTION

Clamp these wires by clamp materials certainly. (Clamp the earth wire.) (See right Fig.) Do not clamp the high voltage wires (Field wires) and the low voltage wires (Lead wire and Thermistor) both inside and outside of the control board box.



⚠ DO NOT CLAMP THESE WIRES!

NOTE

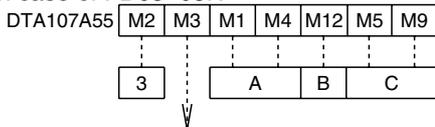
- Prepare the remote controller (BRC1C62).
REASON : The remote controller is needed per each kit for setting the address.

C: 2P042157

3. Connection of the terminal

Connect between the air conditioner and DTA107A55 shown below.

In case of FD03~05K



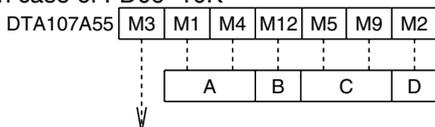
Connect the wiring between the box of this kit and the EL. COMPO. BOX ASSY of the indoor unit. [Refer to the wiring diagram of the indoor unit.]

See below for connecting the terminal "M3". (The Output of alarm signal)

About these models, we can only output the alarm signal of indoor fan motor.

Connect the wiring between the terminal "M3" and the terminal "96" of magnetic contactor of indoor fan motor (K1M).

In case of FD06~10K



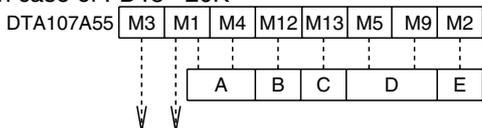
Connect the wiring between the box of this kit and the EL. COMPO. BOX ASSY of the indoor unit. [Refer to the wiring diagram of the indoor unit.]

See below for connecting the terminal "M3". (The Output of alarm signal)

Use the attached wire harness and change from the wire to it. The wire is connected between K1R(5), K1R(7), K2R(7), and K3R(5). [() is shown the terminal.]

Connect the wiring between the terminal "M3" and the solderless splices butt "M3" of the wire assy.

In case of FD15 · 20K



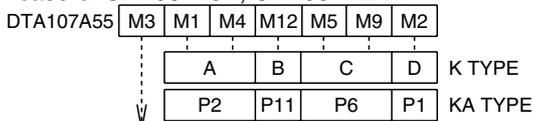
Connect the wiring between the box of this kit and the EL. COMPO. BOX ASSY of the indoor unit. [Refer to the wiring diagram of the indoor unit.]

See below for connecting the terminal "M3". (The Output of alarm signal)

Connect the wiring between the terminal "M1" and the terminal "6" of K4R (magnetic relay).

Connect the wiring between the terminal "M3" and the terminal "4" of K4R (magnetic relay).

In case of UAT06~10K, UAT06~12KA



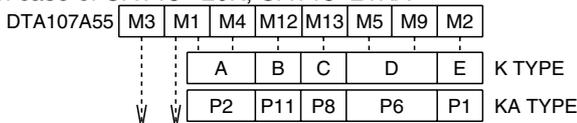
Connect the wiring between the box of this kit and the EL. COMPO. BOX ASSY of the air conditioner. [Refer to the wiring diagram of the air conditioner.]

See below for connecting the terminal "M3". (The Output of alarm signal)

Use the attached wire harness and change from the wire to it. The wire is connected between K1R(5), K1R(7), K2R(7), and K3R(6). [() is shown the terminal.]

Connect the wiring between the terminal "M3" and the solderless splices butt "M3" of the wire assy.

In case of UAT15 · 20K, UAT15~21KA



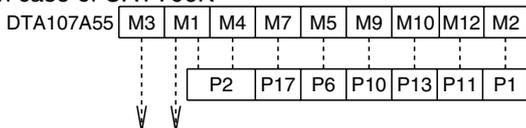
Connect the wiring between the box of this kit and the EL. COMPO. BOX ASSY of the air conditioner. [Refer to the wiring diagram of the air conditioner.]

See below for connecting the terminal "M3". (The Output of alarm signal)

Connect the wiring between the terminal "M1" and the terminal "6" of K3R (magnetic relay).

Connect the wiring between the terminal "M3" and the terminal "4" of K3R (magnetic relay).

In case of UATY06K



Connect the wiring between the box of this kit and the EL. COMPO. BOX ASSY of the air conditioner. [Refer to the wiring diagram of the air conditioner.]

See below for connecting the terminal "M3". (The Output of alarm signal)

In case of Y1, connect the wiring between the terminal "M1" and the terminal "5" of K2R (magnetic relay).

Connect the wiring between the terminal "M3" and the terminal "3" of K2R (magnetic relay).

In case of Y19, connect the wiring between the terminal "M3" and the terminal "8" of K4R (magnetic relay).

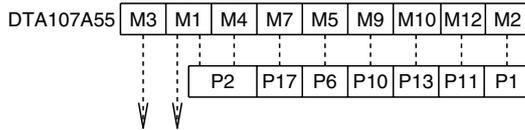
In case of TAL and YAL, use the attached wire harness and change from the wire to it.

The wire is connected between K1R(6), K1R(7), K2R(7), and K3R(6). [() is shown the terminal.]

Connect the wiring between the terminal "M3" and the solderless splices butt "M3" of the wire assy.



In case of UATY08~12K

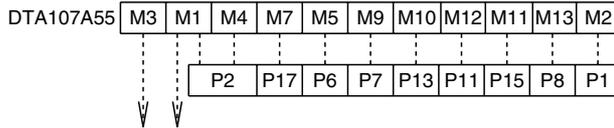


Connect the wiring between the box of this kit and the EL. COMPO. BOX ASSY of the air conditioner.
[Refer to the wiring diagram of the air conditioner.]

See below for connecting the terminal "M3". (The Output of alarm signal)

- In case of Y1, connect the wiring between the terminal "M1" and the terminal "5" of K2R (magnetic relay).
- Connect the wiring between the terminal "M3" and the terminal "3" of K2R (magnetic relay).
- In case of Y19, connect the wiring between the terminal "M3" and the terminal "8" of K4R (magnetic relay).
- In case of TAL and YAL, use the attached wire harness and change from the wire to it.
- The wire is connected between K1R(5), K1R(7), K2R(7), and K3R(5). [() is shown the terminal.]
- Connect the wiring between the terminal "M3" and the solderless splices butt "M3" of the wire Assy.

In case of UATY15~21K



Connect the wiring between the box of this kit and the EL. COMPO. BOX ASSY of the air conditioner.
[Refer to the wiring diagram of the air conditioner.]

See below for connecting the terminal "M3". (The Output of alarm signal)

- In case of Y1, connect the wiring between the terminal "M1" and the terminal "6" of K2R (magnetic relay).
- Connect the wiring between the terminal "M3" and the terminal "4" of K2R (magnetic relay).
- In case of Y19, connect the wiring between the terminal "M3" and the terminal "8" of K4R (magnetic relay).
- In case of TAL and YAL, connect the wiring between the terminal "M1" and the terminal "6" of K14R (magnetic relay).
- Connect the wiring between the terminal "M3" and the terminal "4" of K14R (magnetic relay).

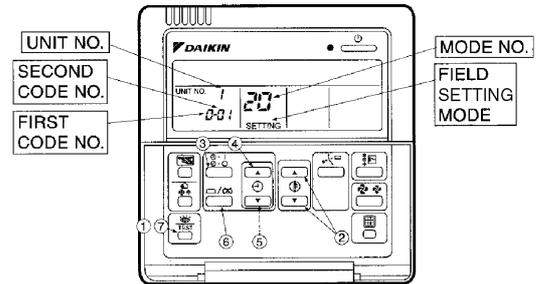
2P042158A

1.5.5 Field Setting

(If optional accessories are mounted on the indoor unit, the indoor unit setting may have to be changed. Refer to the installation manual for each optional accessory.)

Procedure

- When in the normal mode, press the "TEST" button for a minimum of four seconds, and the FIELD SETTING MODE is entered.
- Select the desired MODE NO. with the "MODE" button.
- During group control, when setting by each indoor unit (mode No. 20, 21 and 23 have been selected), push the "UNIT NO." button and select the INDOOR UNIT NO to be set. (This operation is unnecessary when setting by group.)
- Press the "FIRST CODE NO." upper button and select FIRST CODE NO.
- Press the "SECOND CODE NO." lower button and select the SECOND CODE NO.
- Press the "SET" button once and the present settings are SET.
- Press the "TEST" button for about one second to return to the NORMAL MODE.



(Example) If during group setting and the time to clean air filter is set to FILTER CONTAMINATION - HEAVY, SET MODE NO. to "10," FIRST CODE NO. to "0," and SECOND CODE NO. to "02."

Mode No. (Note 1)	FIRST CODE NO.	Description of Setting	SECOND CODE No. (Note 2)					
			01	02	03			
10(20)	0	Filter Contamination - Heavy/Light (Setting for spacing time of display time to clean air filter) (Setting for when filter contamination is heavy, and spacing time to clean air filter is to be halved)	Ultra-long-life type	Approx. 10,000 hours	Approx. 5,000 hours	---		
			Long-life type	Light	Approx. 2,500 hours		Heavy	Approx. 1,250 hours
			Standard type	Approx. 200 hours	Approx. 100hours			
10(20)	1	Long-life filter type (Setting of filter sign indication time) (Change setting when Ultra-long-life filter is installed)	Long-life filter	Ultra-long-life filter (1)	---			
	3	Spacing Time of Display Time to Clean Air Filter Count (Setting for when the filter sign is not to be displayed)	Display	Do Not Display	---			
11(21)	0	Setting Number of Connected SkyAir Simultaneous Operation System Indoor Units (Setting for Simultaneous Operation System)	Pair	Twin	---			

- NOTES)
- Setting is carried out in the group mode, however, set the mode number inside the () for individual setting of the each indoor unit or confirmation after setting.
 - The SECOND CODE number. is set to "01" when shipped from the factory. However for the following cases it is set to "02"
• Air flow direction range setting.
 - Do not make any settings not given in the table on the left.
 - Not displayed if the indoor unit is not equipped with that function.
 - When returning to the normal mode, "00" may be displayed in the LCD in order for the remote controller to initialize itself.

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1.6 Interface Adaptor for DIII-NET Use (RA) <KRP928B2S>

1.6.1 Functions

Item	KRP928B2S
ON/OFF	Possible
Temp. setting	Possible
Airflow rate setting	Impossible
Airflow direction setting	Impossible
Mode setting	Possible
Filter sign reset	Impossible
Inspection/Test operation	Operation display only by lamps

<Overview, Features and Compatible Models>

This kit is the interface required when connecting the centralized control equipment and a Daikin Room Air Conditioner. Use of the centralized control equipment makes it possible to perform the following monitoring and operations. It is compatible with room air conditioners which have an HA connector S21.

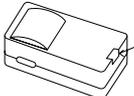
- 1.Run / stop for the centralized control equipment and wired remote controller, operating mode selection, and temperature can be set.
- 2.The operating status, any errors, and the content of those errors can be monitored from the centralized control equipment and wired remote controller.
- 3.Run / stop for the centralized control equipment and wireless remote controller, operating mode selection, and the temperature setting can be limited by the centralized control equipment.
- 4.Zone control can be performed from the centralized control equipment.
- 5.The unit can remember the operating status of the air conditioner before a power outage and then start operating in the same status when the power comes back on.
- 6.Card keys, operating control panels, and other constant / instantaneous connection-compatible equipment can be connected.
- 7.The Operating / error signals can be read.
- 8.HA JEM-A-compatible equipment can be connected.
- 9.The indoor temperature can be monitored from the intelligent Touch Controller.

Precaution

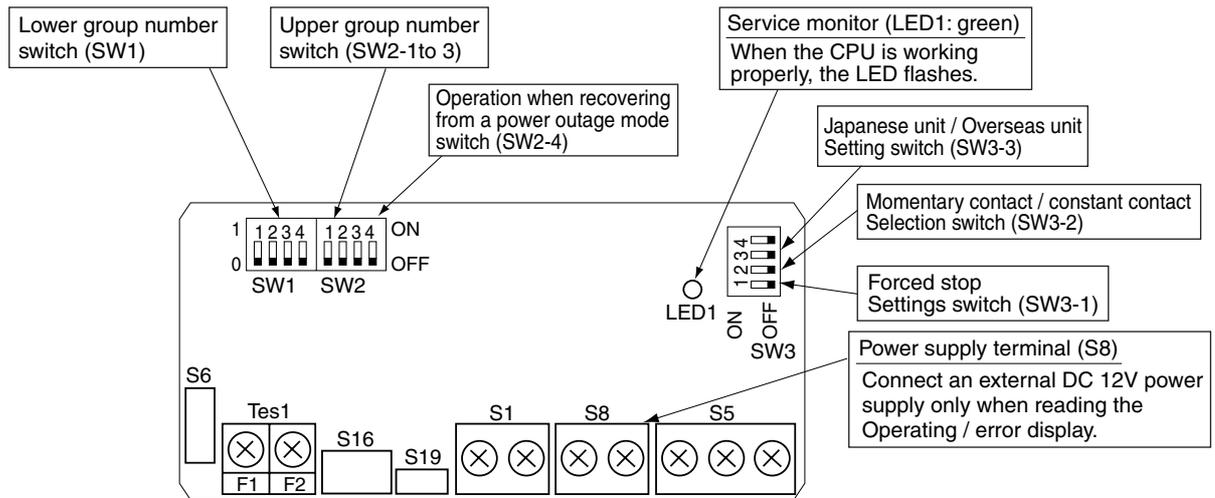
- 1.When reading the Operating / error signals, a separate external power supply (DC 12V) is needed.
- 2.A separate timer power supply (DC 16V) is needed when using the schedule timer independently, and not in conjunction with other centralized control equipment.
- 3.The range of temperatures that can be set from the centralized control equipment is 18°C to 32°C in cooling and 14°C to 28°C in heating.
- 4.Fan operation cannot be selected from the centralized control equipment or wired remote controller.
- 5.Group control (i.e., control of multiple indoor units with a single remote controller) is not available.
- 6.Monitoring is not available of the thermo. status, compressor operating status, indoor fan operating status, electric heater, or humidifier operating status.
- 7.Forced thermo. off, filter sign display and reset, fan direction and speed settings, air conditioning fee management, energy savings instructions, low-noise instructions, and demand instructions cannot be made.

<Component Parts and Separately-Sold Parts which are Required>

This kit includes the following components. Check to ensure that none of these are missing.

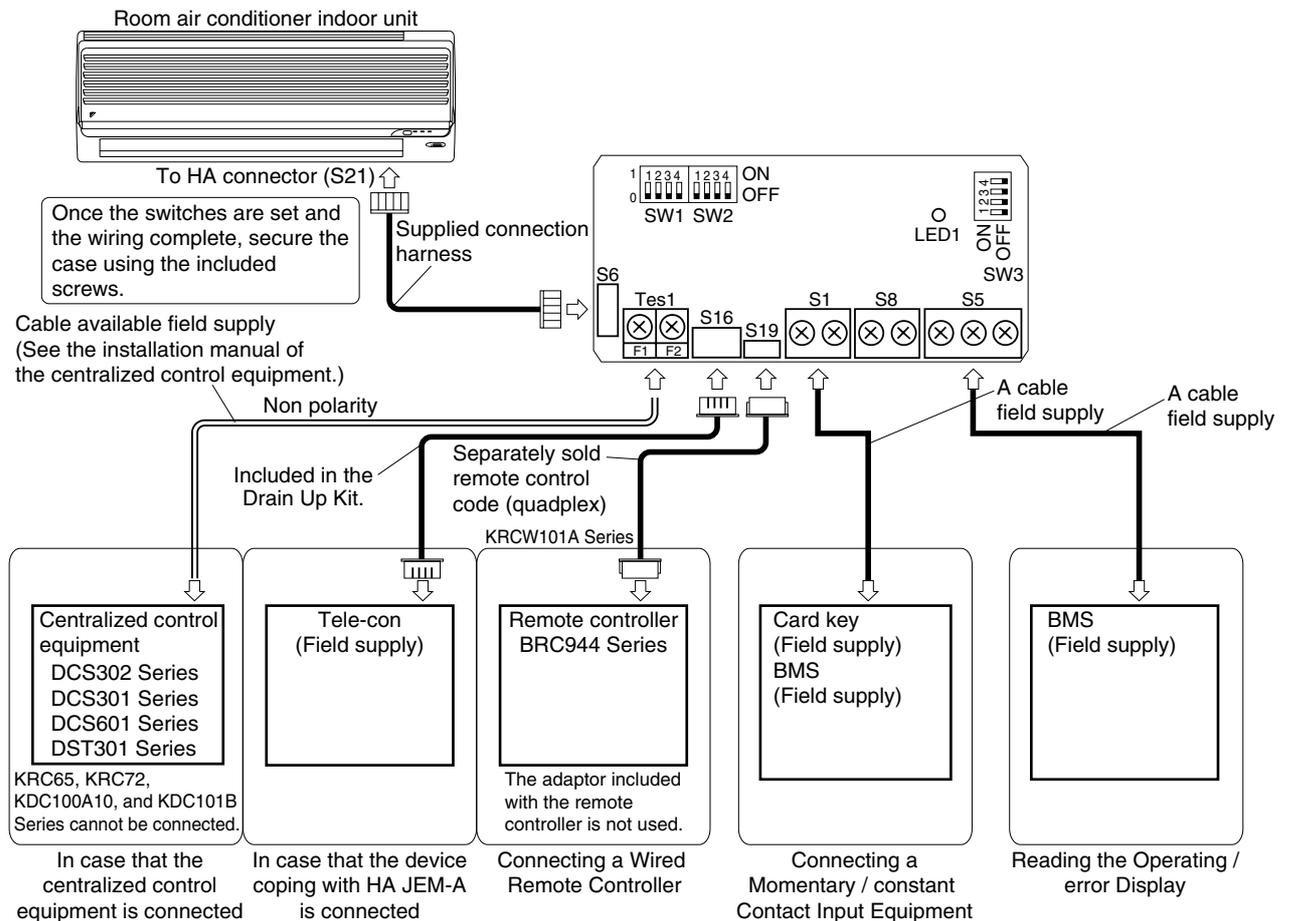
Parts	Q'ty	Parts	Q'ty
Kit assy PCB is in the housing.  Screw cover	1	Connection harness (about 1.6m)	1set
		Mounting screws	3pcs.
		Binding band	1pc.
		Installation manual	1set

1.6.2 Part Names and Functions



1.6.3 Electric Wiring Work and Initial Settings

<Wiring procedure>



<Switch Settings>

NOTE Turn the power on after all the switches have been set. Settings made while the power is on are invalid.

Open the Kit's case and set the switches on the circuit board.

(1) For Overseas / Japanese unit setting (SW3-3)

Room air conditioners, different methods are used for setting the temperature in automatic mode, so this switch needs to be set.

Destination	SW3-3 setting	What Happens
Japan	OFF (Factory setting)	● "Automatic" operation is not available from the centralized control equipment. When using "automatic" operation using the wireless remote controller, the centralized control equipment displays automatic cooling (heating) and 25°C. Even if the temperature is changed, it will return to 25°C after a while.
Other countries	ON	● "Automatic" operation is available from the centralized control equipment.

(2) Group number settings (SW1 and SW2-1 to SW2-3)

Set these when using the centralized control equipment. (Set to the ■ side.) Do not set more than one unit to the same number.

However, these settings do not need to be made when using the schedule timer independently.

(The settings are needed when used in conjunction with another DCS Series centralized control equipment.)

In this case, the schedule timer performs an auto address after the power is turned on, so new group numbers are automatically set. Settings made using the switches will be overwritten.

SW2 setting	Upper group No.	SW1 setting	Lower group No.	SW1 setting	Lower group No.
1	1—	0	0 0	0	0 8
2	2—	1	0 1	1	0 9
3	3—	2	0 2	2	1 0
4	4—	3	0 3	3	1 1
5	5—	4	0 4	4	1 2
6	6—	5	0 5	5	1 3
7	7—	6	0 6	6	1 4
8	8—	7	0 7	7	1 5

NOTE also that a separate timer power supply is needed when using the schedule timer independently.
 Power supply specs: DC 16V, +10%, -15%, 200mA.
 Recommended power supply: Omron S82J-01015A. (Should be used with the output voltage adjusted to the center, DC 16V.)

(3) Settings when recovering from a power outage (SW2-4)

This selects whether to restart operation when the power comes back on after a power outage occurred during operation. This setting is given priority in cases where the indoor unit has an auto start ON / OFF jumper. Note also that regardless of whether switch SW2-4 is on or off, the operating mode, set temperature, fan direction and speed settings, and remote control prohibition status are stored.

SW2-4 setting	What Happens
OFF (Factory setting)	Stops after recovering from a power outage
ON	Stops if the unit was stopped before the power outage and runs if it was running.

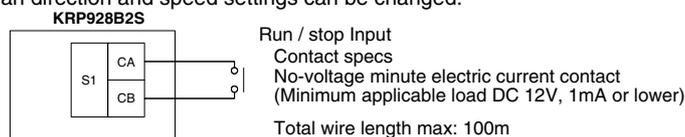
(4) Contact input function settings (SW3-1 to SW3-2)

When using contact input (S1), choose one of the following functions.

S1 operating mode	SW3-1 setting	SW3-2 setting	What Happens	Control mode
Instantaneous contact input (factory setting)	OFF	OFF	The operating status of the air conditioner is reversed by an instantaneous input of 100 msec or more.	Last command priority
Constant contact input		ON	Contact - Open to close: air condition runs. Close to open: air conditioner is stopped (NOTE 1.).	ON / OFF control is rejected (operate / stop / timer prohibition) (NOTE 2.).
Forced stop or remote controller permission input	ON	Invalid	Contact - Open to close: air condition stops (forced stop). Close to open: no change in operating status.	During a forced stop, all remote controller actions are prohibited.

Note:

- Since centralized control equipment and HA JEM-A-compatible equipment both use last command priority, the contact status and operating status of the air conditioner might not match sometimes.
 Example: If the unit is run from the centralized control equipment while the air conditioner is stopped with an open contact, the contact will be open and the unit will be running.
- Operating mode and fan direction and speed settings can be changed.



<Control Codes>

When using the centralized control equipment, the operating codes can be used to limit operation from wireless remote controllers.

○ : permitted; x: prohibited

S1 operating mode	Control mode	Control code	Operations from the remote controller								Operations from the centralized control equipment, contact input and HA JEM-A input
			"Run" control from the centralized control equipment				"Stop" control from the centralized control equipment				
			Run / timer	Stop	Operating mode temperature	Fan direction and fan speed	Run / timer	Stop	Operating mode temperature	Fan direction and fan speed	
Instantaneous contact mode	ON / OFF control is rejected	0,1,3	x	x	○	○	x	x	○	○	
		10,11	x	x	x		x	x	x		
	Only OFF control is accepted	2	x	○	x		x	○	x		
		12-19	x	○	x		x	○	x		
	Central priority	4	○	○	○		x	○	x		
		5	○	○	○		x	x	○		
Last command priority	6,7	○	○	○	○	○	○	○			
Timer operation is accepted by remote controller		8	○	○	○	x	○	x			
		9	○	○	○	x	x	○			
Constant contact mode			x	x	○	x	x	○			
Forced stop			x	x	x	x	x	x	x		

The remote controller permission / prohibition settings using the intelligent Touch Controller are as follows.

○ : permitted; x: prohibited

S1 pin operating mode	intelligent Touch controller settings			Operations from the remote controller				Operations from the centralized control equipment, contact input and HA JEM-A input
	Start / stop	Change operating mode	Change set temperature	Run / timer	Stop	Operating mode temperature	Fan direction and fan speed	
Instantaneous contact mode	ON / OFF control is rejected	permitted	permitted	x	x	○	○	
			prohibited	x	x	○		
		prohibited	permitted	x	x	x		
			prohibited	x	x	x		
Constant contact mode	Only OFF control is accepted	permitted	permitted	x	x	○		
			prohibited	x	○	x		
		prohibited	permitted	x	○	x		
			prohibited	x	○	x		
Instantaneous contact mode	Last command priority	permitted	permitted	○	○	○		
			prohibited	○	○	○		
		prohibited	permitted	x	○	x		
			prohibited	x	○	x		
Constant contact mode	Last command priority	permitted	permitted	x	x	○		
			prohibited	x	x	○		
		prohibited	permitted	x	x	x		
			prohibited	x	x	x		
Forced stop	Does not affect settings			x	x	x	x	

<Read Operating / Error Display Signal>

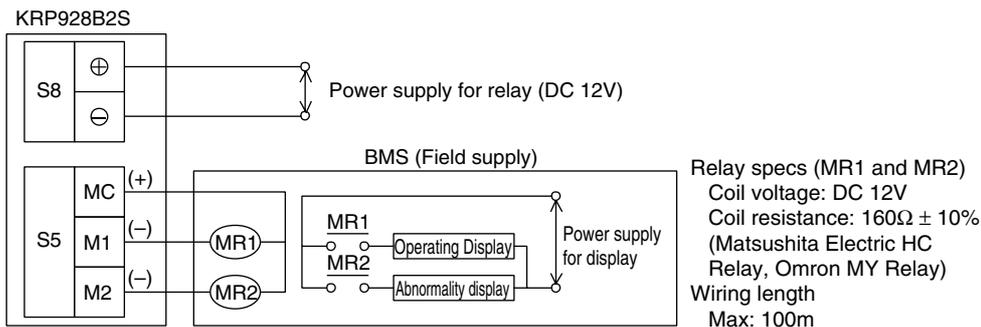
The Operating / error signals can be read from the contact output (S5).

Output specs

M1: Turn MR 1 ON when the air conditioner is running.

M2: Turn MR 2 when a communication error has occurred between the KRP928B2S and the air conditioner, or MR 1 is ON and the unit has stopped after an error.

MR 2 is not turned ON during a warning.



C: 3P157704-2A

1.7 Adaptor for Wiring <KRP1B61 / KRP1BA54, B56, BA57, BA59 / KRP1C63, C64>

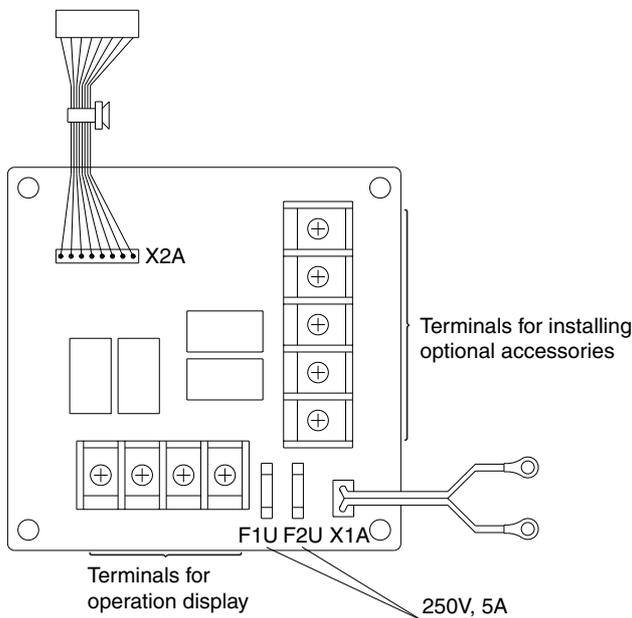
1.7.1 Functions

This adaptor allows taking out compressor operating signal/indoor fan operating signal. When an auxiliary electric heater or a humidifier is installed on FXS(Q) model, each one of this is required for each indoor unit.

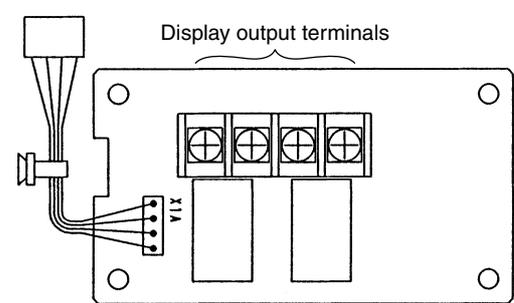
1. Compressor operating signal taking out
Thermostat on/off status is detected on the basis of each indoor unit and operating/halting status of compressor is output. (Turned on for No-voltage, a-contact, or thermostat-ON.)
2. Indoor unit fan operating signal taking out
Rotating/halting status of fan is detected on the basis of each indoor unit. (Turned on for No-voltage, a-contact, or thermostat-on.)
Turned off for defrosting, and hot start, when fan halts.
3. Installing auxiliary electric heater, humidifier, and fresh air intake kit
This is required for installing those optional devices for each indoor unit.

1.7.2 Part Name

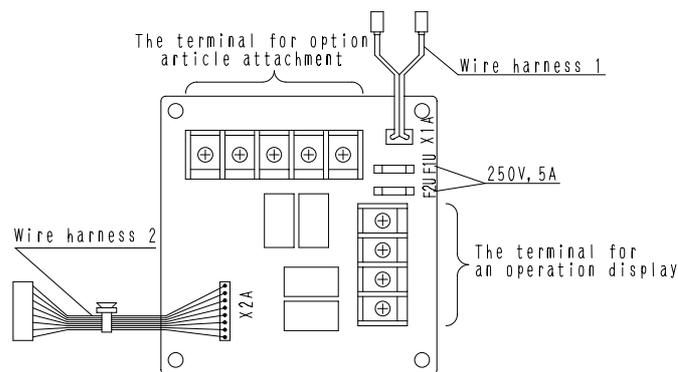
KRP1B61



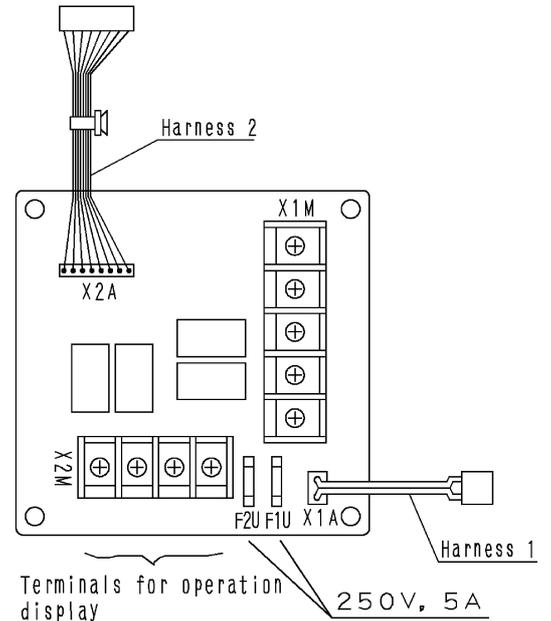
KRP1BA54, B56, BA57, BA59



KRP1C63



KRP1C64

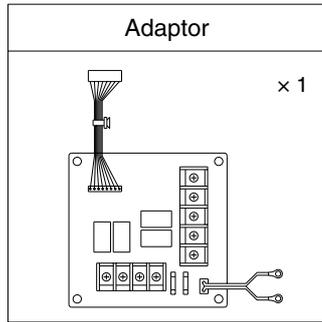


1.7.3 Installation

KRP1B61

Accessories

Check if the following accessories are included in the kit.



PCB support	× 4
Clamp	× 3
Installation manual	× 1

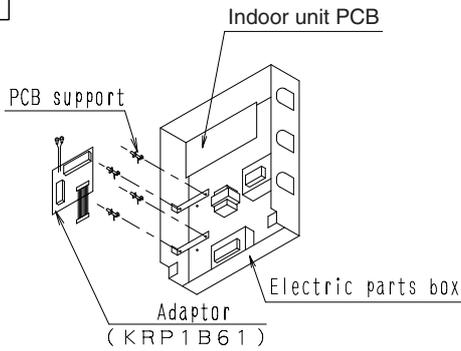
Note:

- Kits vary according to applicable models.
- A special adaptor fixing plate and box are required for the following models.
 FXC(Q)..... KRP1B96

- Installation differs according to models as shown below.
- Do not bundle low and high voltage wires together.
- Bundle any access wires with the attached clamps so as to keep loose wirings off the indoor unit PCB

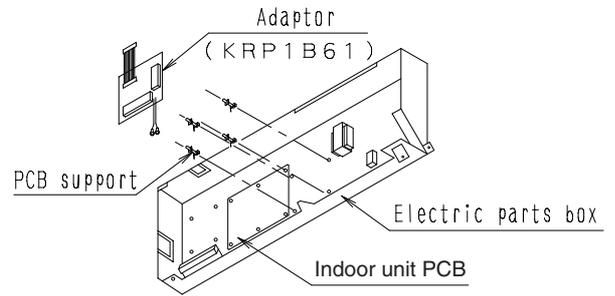
Ceiling mounted built-in type

FXS



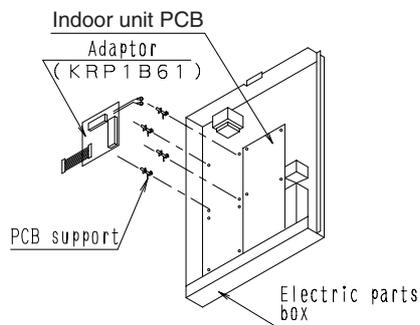
Ceiling mounted cassette type

FXK (Q) (Corner model)

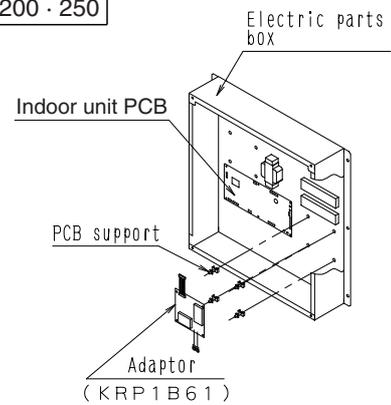


Ceiling mounted duct type

FXM40~125

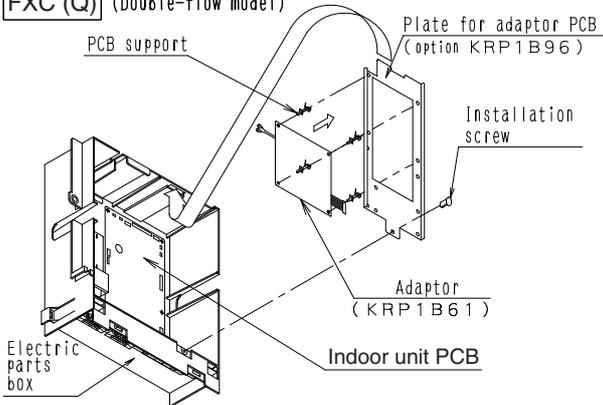


FXM (Q) 200 · 250



Ceiling mounted cassette type

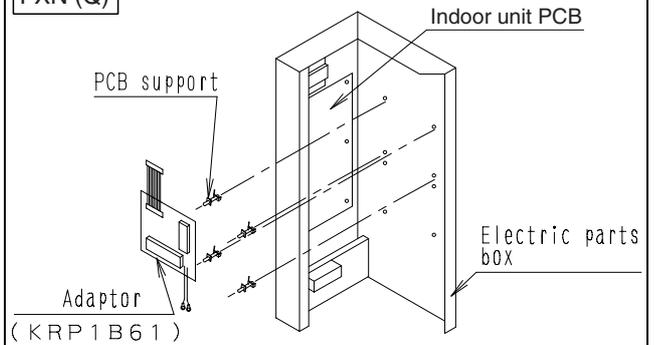
FXC (Q) (Double-flow model)



Note: A separate plate is needed to install the adaptor PCB.

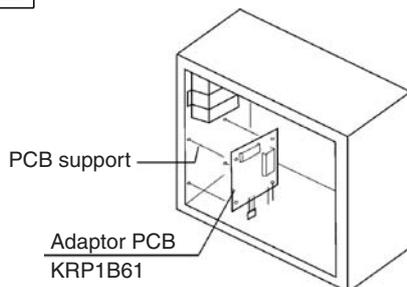
Floor-standing type

**FXL (Q)
FXN (Q)**



Ceiling mounted low silhouette duct type

FXYD-KA



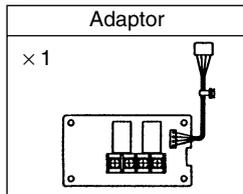
Note: Installation box is necessary for second adaptor

4

KRP1BA54, B56, BA57, BA59

Accessories

Check if the following accessories are included in the kit.



PCB support	× 4
Clamp	× 3
Installation manual	× 1

NOTE

- Kits vary according to applicable models.
- A special adaptor fixing plate and box are required for the following models.
 FXF-LKRP1DA98
 FXZQ, FXD(Q).....KRP1BA101

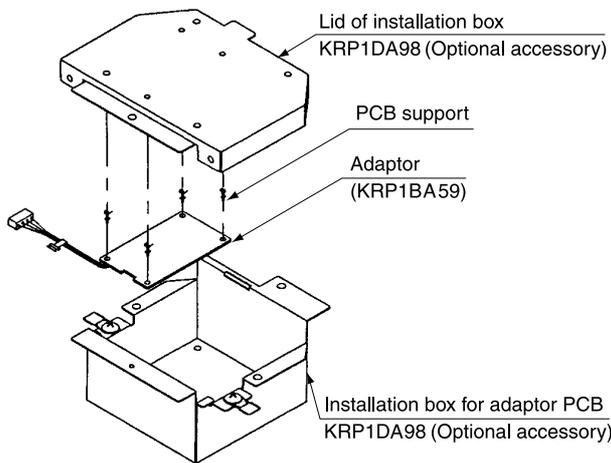
- Installation differs according to models as shown below.
Do not bundle low and high voltage wires together.
- Bundle any excess wires with the attached be wraps so as to keep loose wirings off the indoor unit PCB.

Ceiling-mounted cassette type

FXF

(Multi-flow type)

Note: Installation box for adaptor PCB is required to install the adaptor.



Ceiling-mounted cassette type

Ceiling-mounted Duct type

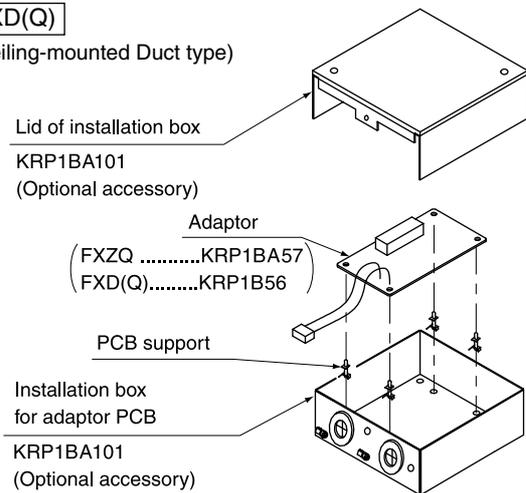
FXZQ

(Compact Multi-flow type)

FXD(Q)

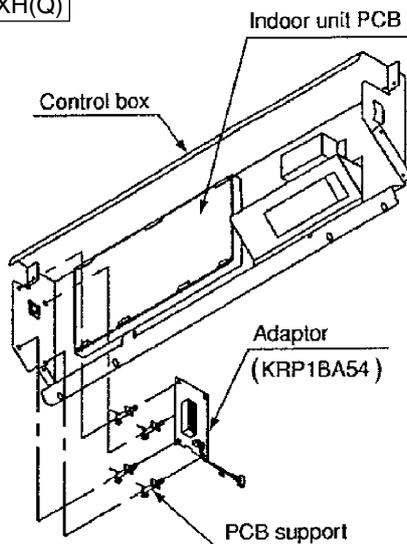
(Ceiling-mounted Duct type)

Note: Installation box for adaptor PCB is required to install the adaptor.



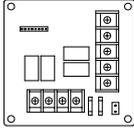
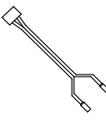
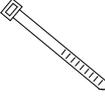
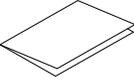
Ceiling-suspended type

FHQ · FXH(Q)



KRP1C63

Accessories Check if the following accessories are included in the kit.

Adapter	Wire harness 1	Wire harness 2	PCB support	Clamp	Installation manual
					
× 1	× 1	× 1	× 4	× 3	× 1

Note

- Keep in mind that a kit changes with application models.
- An adapter attachment box is required for the following model separately.

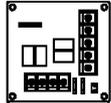
FCQ(N)-KVEA, FXFQ-PVE KRP1H98

KRP1C64

Accessories

- Check if the following accessories are included in the kit.

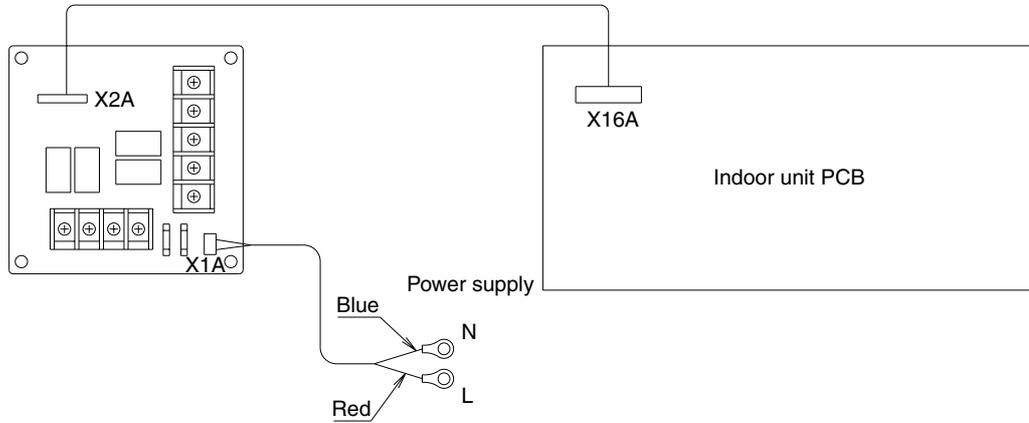
< Remarks >
 Don't throw away all parts until finished installation, because these parts are necessary for installation work.

Name	Adaptor for wiring	Harness 1	Harness 2	PCB support	Clamp	Installation manual
Shape						
Quantity	1	1	1	4	4	1

1.7.4 Electric Wiring Work

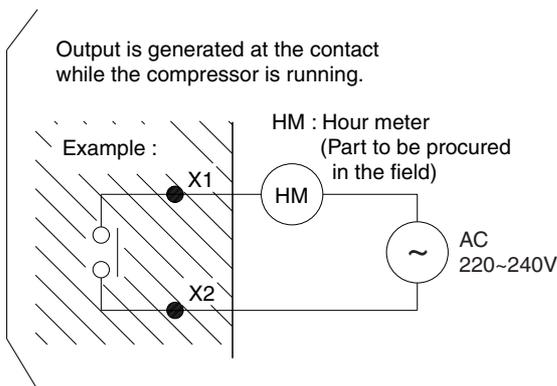
KRP1B61

- Refer to the WIRING DIAGRAM attached to the indoor unit before attempting to wire.
[Make sure wires to units do not pass over the PCB when wiring.]
- Wire the adaptor to the indoor unit as shown below.

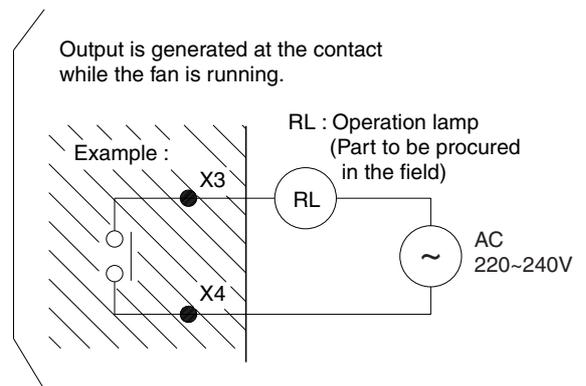


① Fetching the operation display signal

- Attaching an hour meter



- Fan ON display

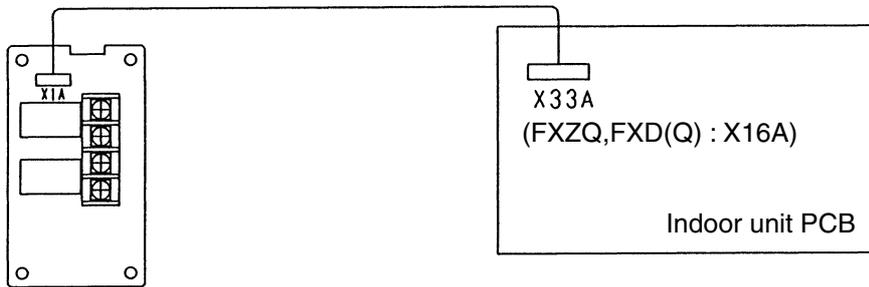


② If optional accessories are installed (auxiliary electric heater, humidifier)

- Wire correctly in accordance with the attached installation manual.
- Refer to the wiring diagram applied to the indoor unit when running electric wiring.

KRP1BA54, B56, BA57, BA59

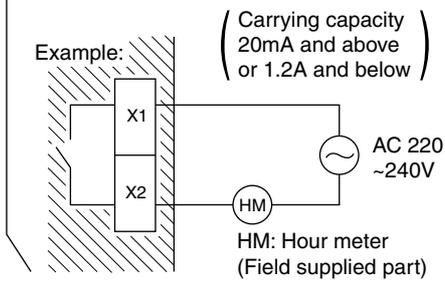
- Refer to the WIRING DIAGRAM attached to the indoor unit before attempting to wire.
[Make sure wires to units do not pass over the PCB when wiring]
- Wire the adaptor to the indoor unit as described below.



Fetching the operation display signal

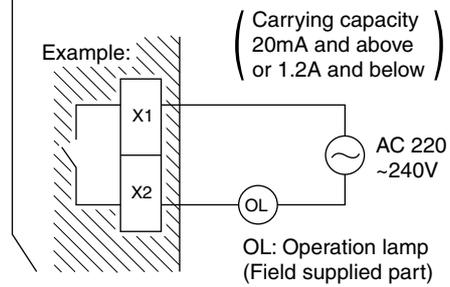
- Attaching an hour meter

Output is generated at the contact while the compressor is running.



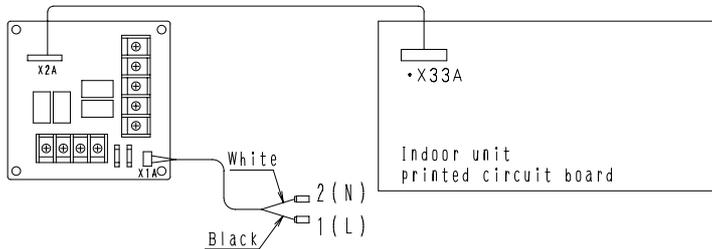
- Fan ON display

Output is generated at the contact while the fan is running.



KRP1C63

- Please be sure for electric wiring to do the upper work of reference of the electric wiring figure of pasting on an indoor unit.
- [Be careful for wiring to apparatus not to pass along a substrate top at the time of wiring.]
- Please wire an indoor unit main part in the following way.



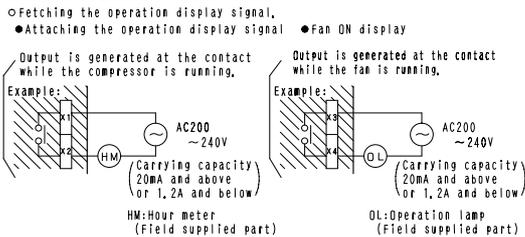
The connection with the terminal base for wiring between units should use a round shape pressure connection terminal. When you cannot use it unavoidably, Please be sure to keep the following matter.

<Attention at the time of power-source wiring>

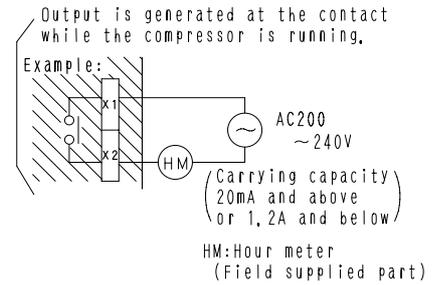
Round shape pressure terminal Electric wire

- Please do not connect two diameter electric wires of different to the terminal base for wiring between units. (There is fear of unusual generation of heat according to looseness of an electric wire etc.)
- It connects certainly using a predetermined electric wire, and external force wiring in a terminal part. Please fix not to be added.
- Please use a proper driver for bolting of a terminal screw thread. The driver of small size damages a screw-head part, and cannot perform proper bolting.
- A screw thread may be damaged if a terminal screw thread is bolted too much.
- Refer to the right table for the torque with a bundle of a terminal screw thread.

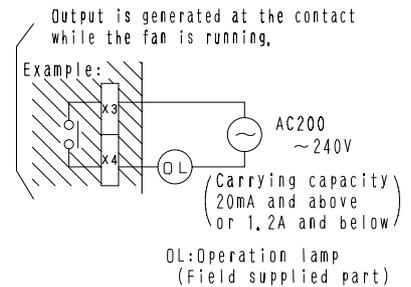
Torque with a bundle (N·m)	
The terminal base for wiring between units	1, 18~1, 44



- Fetching the operation display signal.
- Attaching the operation display signal

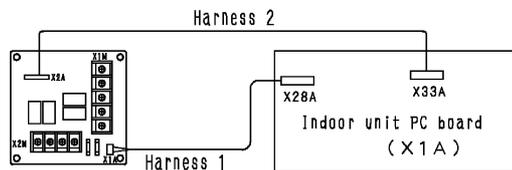


- Fan ON display

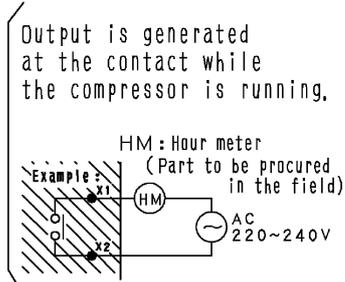


KRP1C64

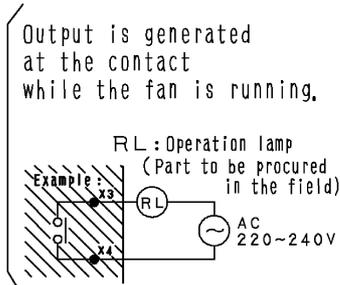
- Refer to the WIRING DIAGRAM attached to the indoor unit before attempting to wire.
- [Make sure wires to units do not pass over the PC board when wiring.]
- Wire the adaptor to the indoor unit as shown below.



- Fetching the operation display signal
- Attaching an hour meter



- Fan ON display

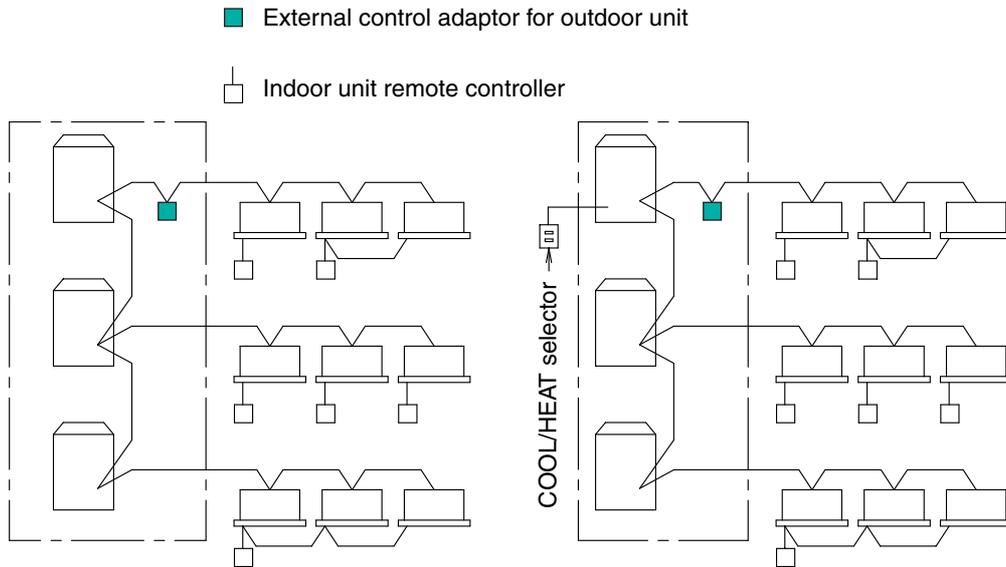


1.8 External Control Adaptor for Outdoor Unit <DTA104A61 / DTA104A62 / DTA104A53>

1.8.1 Function

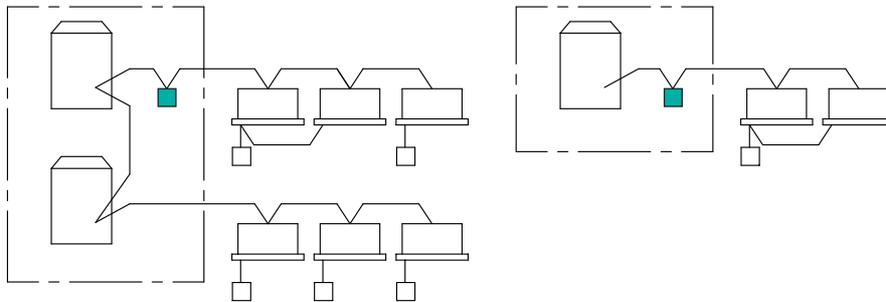
With the external control adaptor, outdoor units are controlled as follows.

1. Operation mode (COOL/HEAT/FAN) is switched simultaneously for more than one outdoor unit.
 - If switching operation mode by indoor unit remote controller or COOL/HEAT selector.



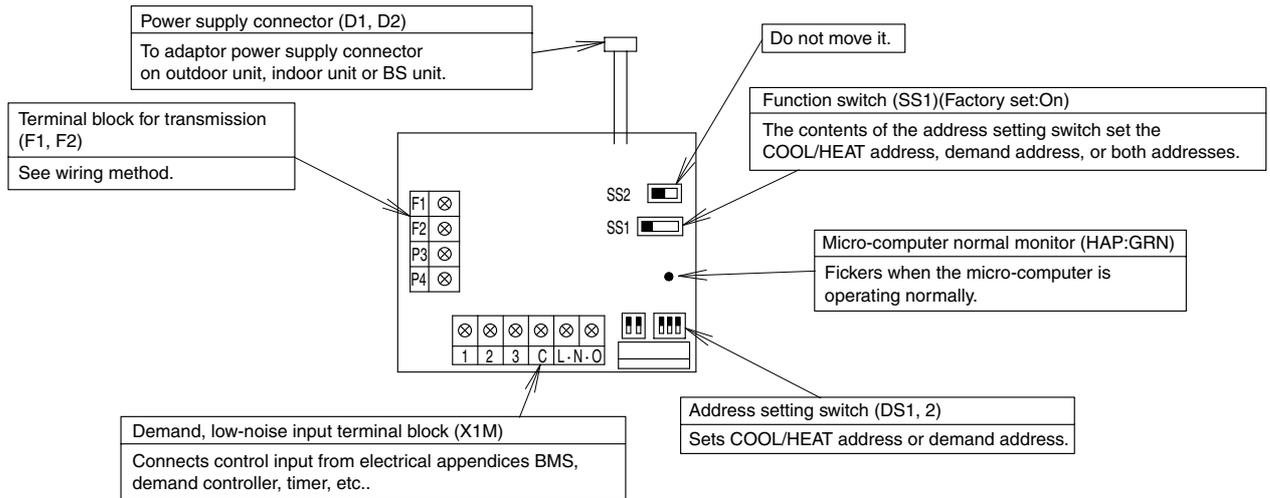
You can simultaneously switch operation mode for outdoor units in [] .

2. Demand control and low-noise control are executed simultaneously for more than one outdoor unit.



Demand control and low-noise control are executed simultaneously for outdoor units in [] .

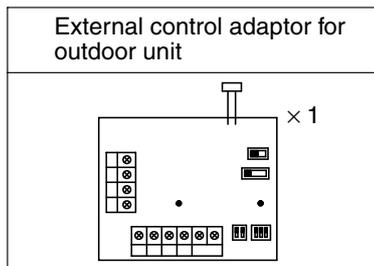
1.8.2 Part Name and Functions



C: 1PA63164E

1.8.3 Installation

Accessories Check the following accessories are included in the kit before the installation.

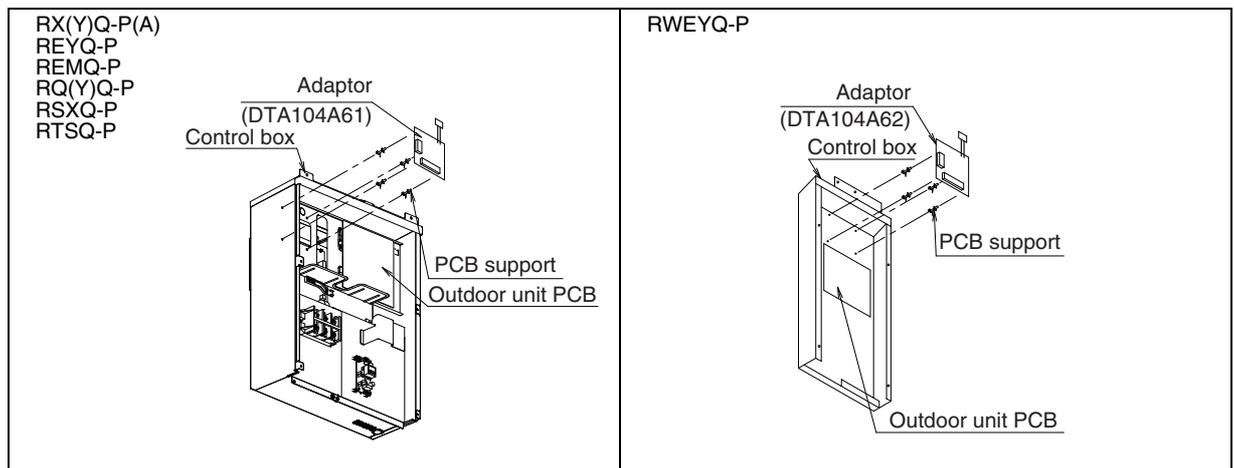


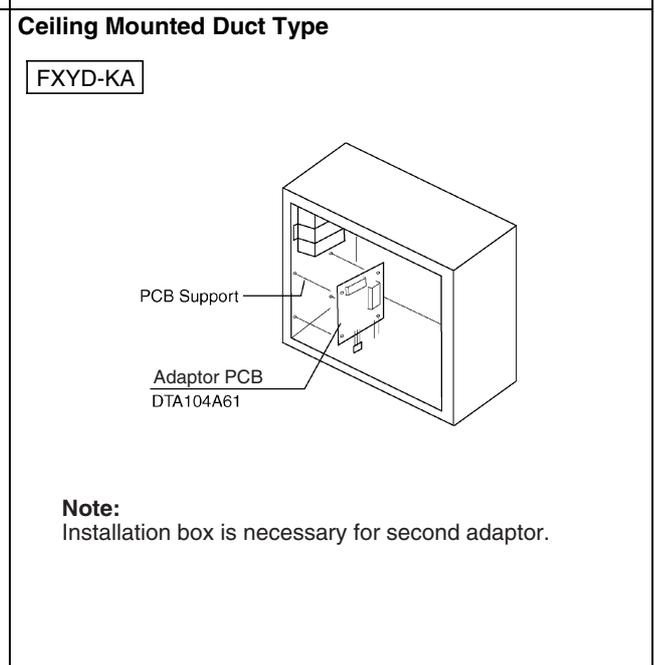
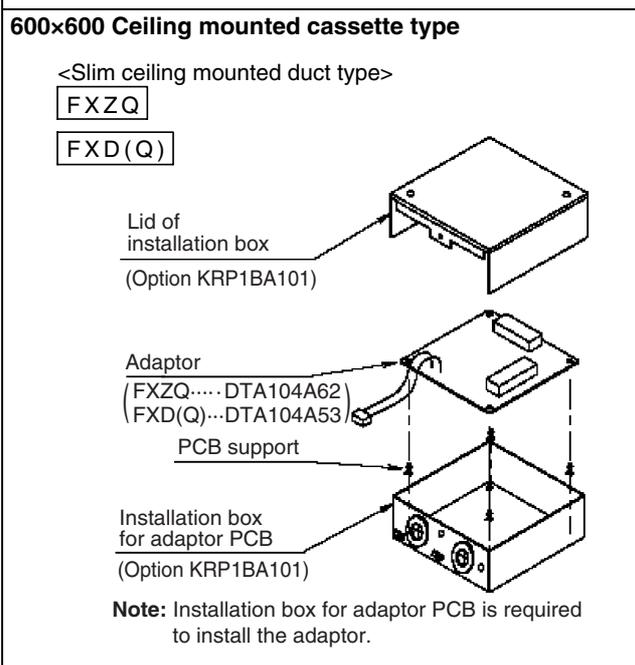
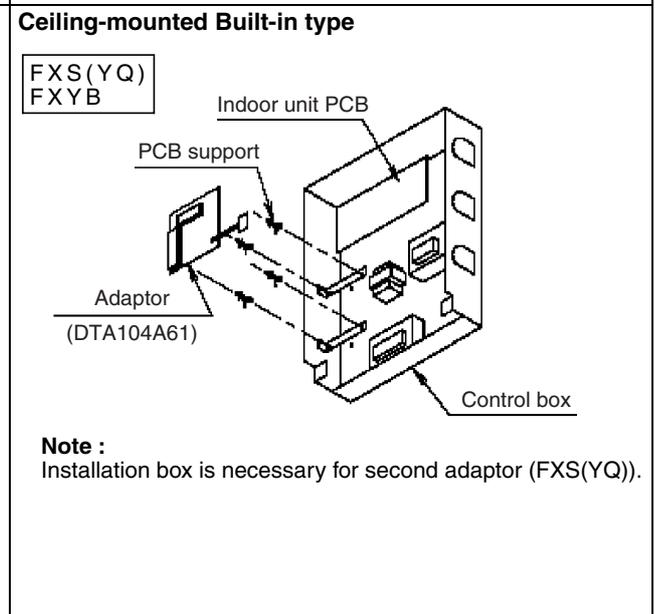
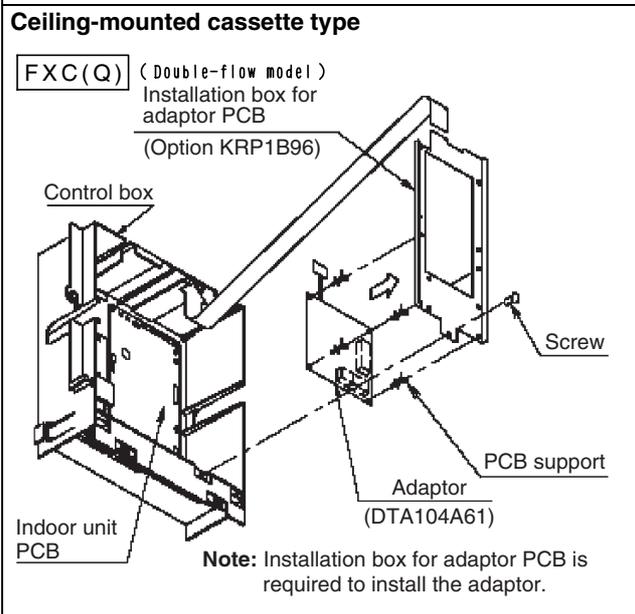
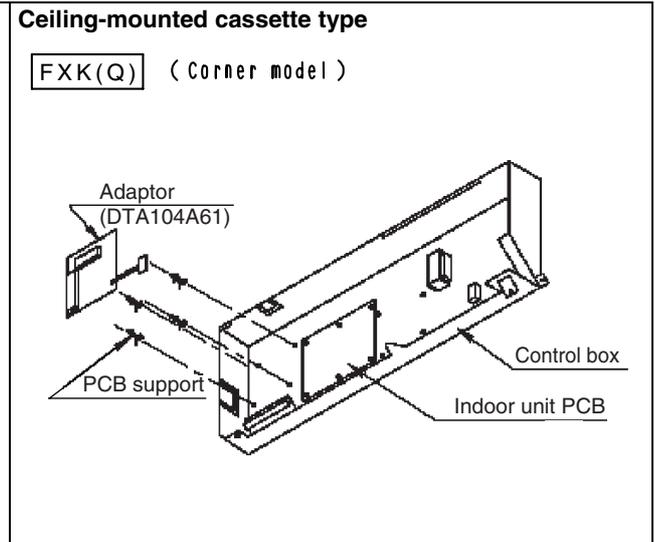
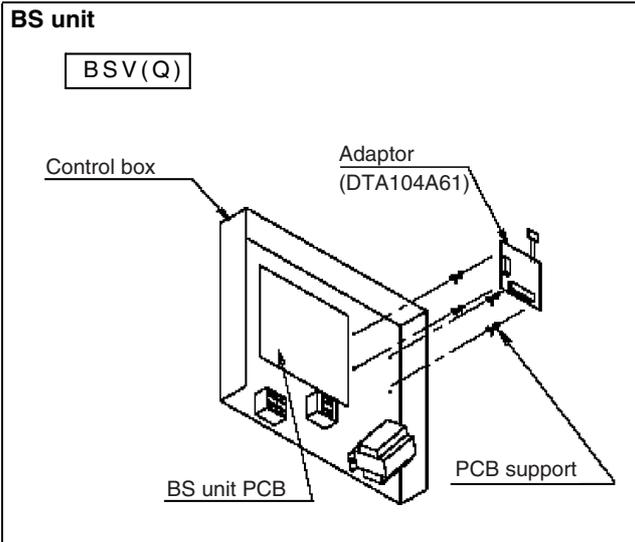
PCB support	× 4
Clamp	× 3
Installation manual	× 8

NOTES

- The kit type (DTA104A61 type, DTA104A62 type, DTA104A53 type) varies according to air conditioner model.
- The installation box for adaptor PCB are required with the following air conditioner models.

FXC(Q)	KRP1B96
FXFQ-P	KRP1H98
FXF	KRP1DA98
FXH(Q)	KRP1CA93
FXA(Q)	KRP4AA93
FXD(Q), FXZQ	KRP1BA101
FXMQ-P	KRP4A96
FXYD	KRP1B100
FXS(YQ)	KRP4A91
- This adaptor is not applicable to the outdoor unit with anti-corrosion treatment (Models: E).





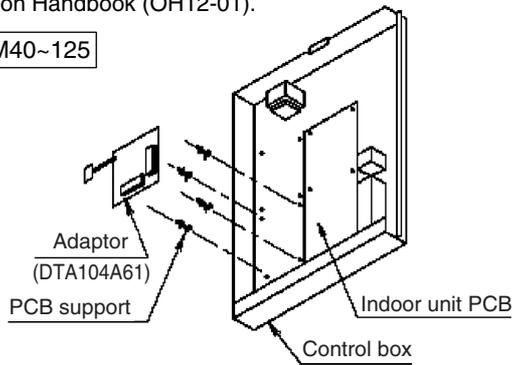
C: 1PA63164E

Ceiling-mounted Duct type

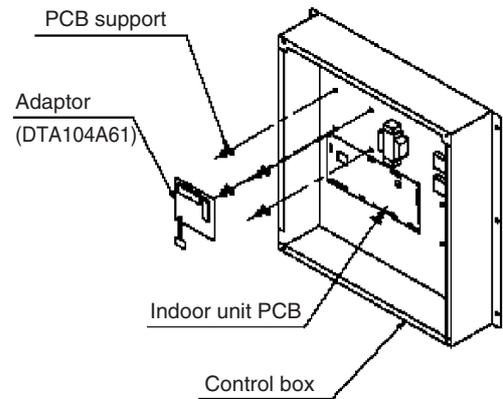
FXMQ20~140P

See part of "KRP4A96" in Option Handbook (OH12-01).

FXM40~125



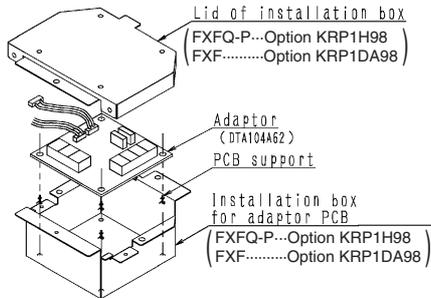
FXM(Q)200 · 250



Ceiling mounted cassette type

FXFQ-P (Round flow model)

FXF (Multi flow model)

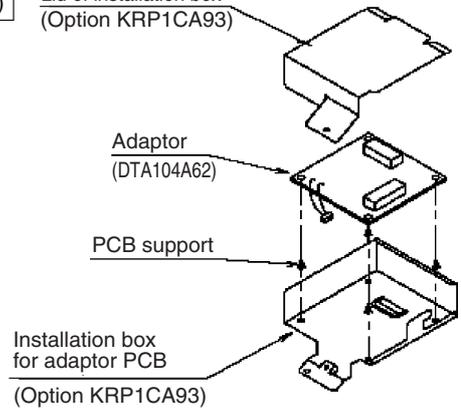


Note:
Installation box for adaptor PCB is required to install the adaptor.

Ceiling Suspended type

FXH(Q)

Lid of installation box (Option KRP1CA93)

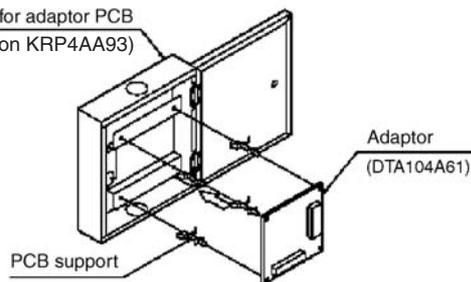


Note: Installation box for adaptor PCB is required to install the adaptor.

Wall mounted type

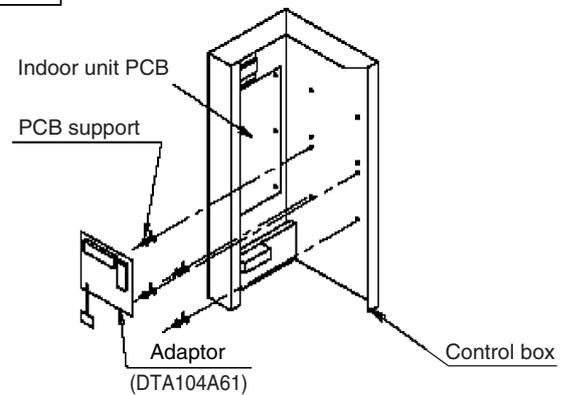
FXA(Q)

Installation box for adaptor PCB (Option KRP4AA93)



**Floor standing type
Concealed floor standing type**

FXL(Q)
FXN(Q)

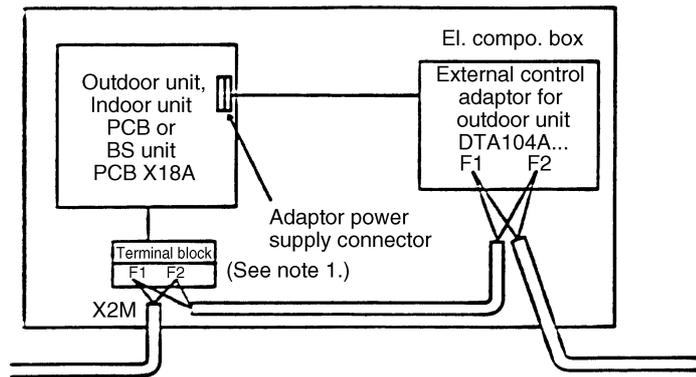


C: 1PA63164E

1.8.4 Electric Wiring Work and Initial Setting

<Electric Wiring Work>

- ① Connect the power supply wiring from the adaptor to the adaptor power supply connector on the PCB of the Outdoor unit, Indoor unit or BS unit.
- ② Connect the transmission wiring to the various terminal blocks, and to the F1 and F2 terminals on the PCB. (Use double-core wiring with no polarity.)
- ③ Using the attached clamps, clamp the transmission wiring to weak field wiring, etc.



Note 1: If mounting on a BS unit, connect the BS unit's terminal block (F1 and F2, indoor unit side) with F1 and F2 of the adaptor.

NOTES

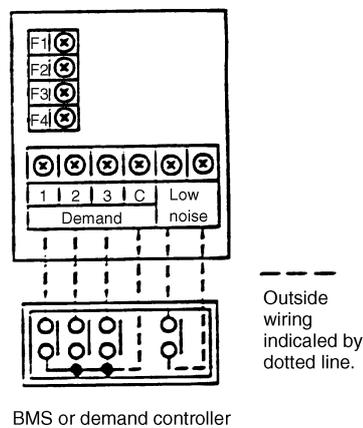
- (Transmission wiring specifications)

Sheathed wire
(2 wire)
0.75~1.25 mm²

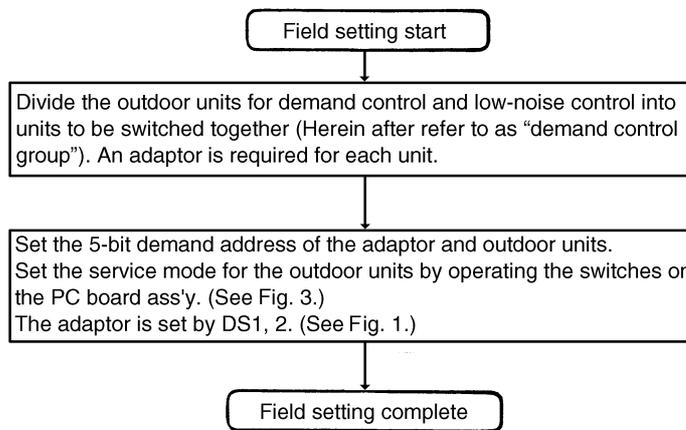
- (Transmission wiring length)

Malfunction of transmission may occur if the following limits are exceeded.
(Total wiring length: Max. 1000 m)
(No. of branches: Max. 16)

- ④ If carrying out demand or low-noise input, connect the adaptor's terminals as shown below.

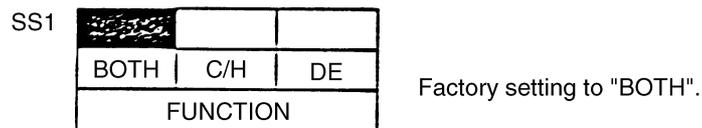


2. The contents of the various settings for unified switching of demand and low noise operation are as follows.

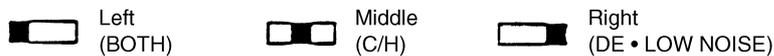


3. To carry out operation mode switching and demand control simultaneously

You can carry out operation mode switching and demand control simultaneously by setting function switch SS1 on the adaptor "BOTH". Only one address, however, can be set on the adaptor, so the "operation mode switch unit" and "demand control unit" are the same.



Set the COOL/HEAT address, demand address and low night noise address, or both as needed.



Note: The outdoor unit can have an independent "COOL/HEAT address" and "demand address". You can therefore set the "operation mode group" and "demand control group" to different ranges.

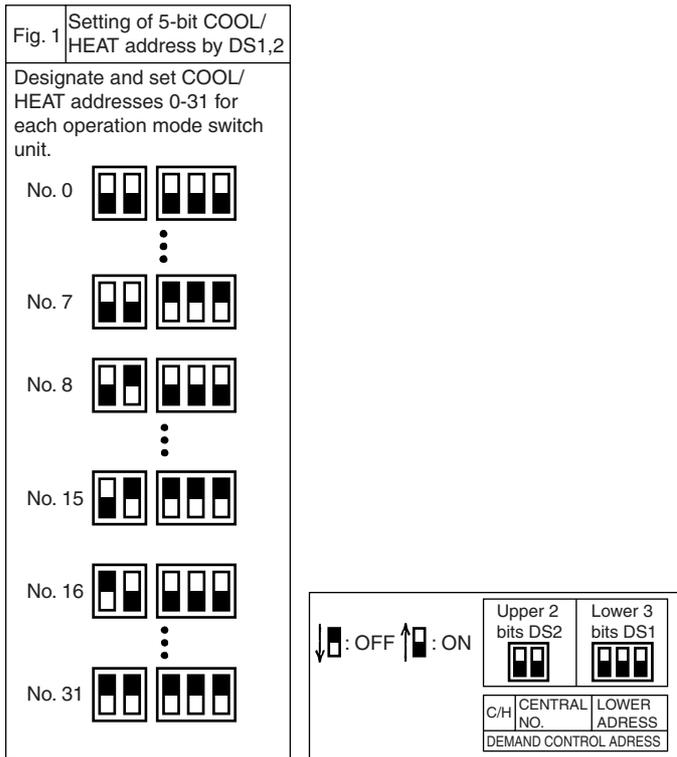


Fig. 2 (Ex.) To set the outdoor unit's COOL/HEAT address to No. 15 :

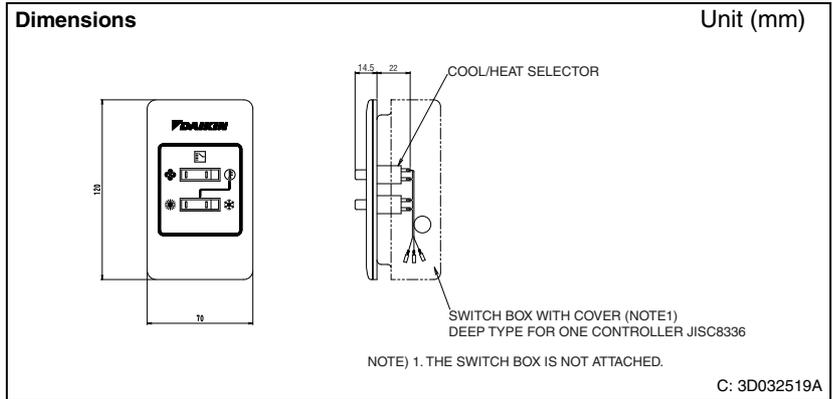
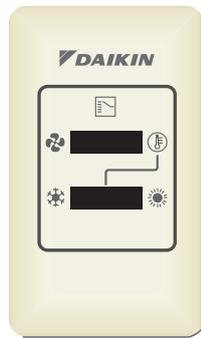
Procedure	Setting contents	MODE	TEST	5-bit				
				C/H SELECT			L.N.O.P.	SEQ. START
				IND	MASTER	SLAVE		
When power turned on	Setting mode (factory setting)	● LED20	● LED21	○ LED22	● LED23	● LED24	● LED25	○ LED25
Hold down next page button for 5 sec.	Enters address setting.	○ LED20	● LED21	● LED22	● LED23	● LED24	● LED25	● LED25
Press operation button one time.	Enters COOL/HEAT address setting.	○ LED20	● LED21	● LED22	● LED23	● LED24	● LED25	○ LED25
Press confirmation button one time.	Make sure COOL/HEAT address has been entered.	○ LED20	● LED21	● LED22	● LED23	● LED24	● LED25	● LED25
Press operation button 15 times. (Address No. = Times pushed)	Sets COOL/HEAT address.	○ LED20	● LED21	● LED22	● LED23	○ LED24	● LED25	● LED25
Press confirmation button two times.	Check COOL/HEAT address.	○ LED20	● LED21	● LED22	● LED23	● LED24	● LED25	● LED25
Press next page button one time.	Returns to set mode.	● LED20	● LED21	○ LED22	● LED23	● LED24	● LED25	○ LED25

Fig. 3 (Ex.) To set the outdoor unit's demand address to No. 7 :

Procedure	Setting contents	MODE	TEST	5-bit				
				C/H SELECT			L.N.O.P.	SEQ. START
				IND	MASTER	SLAVE		
When power turned on	Setting mode (factory setting)	● LED20	● LED21	○ LED22	● LED23	● LED24	● LED25	○ LED25
Hold down next page button for 5 sec.	Enters address setting.	○ LED20	● LED21	● LED22	● LED23	● LED24	● LED25	● LED25
Press operation button two times.	Enters demand address setting.	○ LED20	● LED21	● LED22	● LED23	● LED24	○ LED25	● LED25
Press confirmation button one time.	Make sure demand address has been entered.	○ LED20	● LED21	● LED22	● LED23	● LED24	● LED25	● LED25
Press operation button 7 times. (Address No. = Times pressed)	Sets demand address.	○ LED20	● LED21	● LED22	● LED23	○ LED24	● LED25	● LED25
Press confirmation button two times.	Check demand address.	○ LED20	● LED21	● LED22	● LED23	● LED24	● LED25	● LED25
Press next page button one time.	Returns to set mode.	● LED20	● LED21	○ LED22	● LED23	● LED24	● LED25	○ LED25

1.9 Cool / Heat Selector <KRC19-26A>

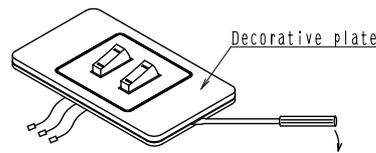
This remote controller has a switch to enable selection of a heating or cooling operation for each outdoor unit or system. The controller can also be used to switch to the fan operation mode, for example, during moderate weather season.



- Basically, this remote controller is not necessary for the Heat Pump VRV System and the Cooling Only VRV System.
- When the BS unit that automatically selects either cooling or heating operation mode is used in the manual mode, this remote controller can be connected to the BS unit.

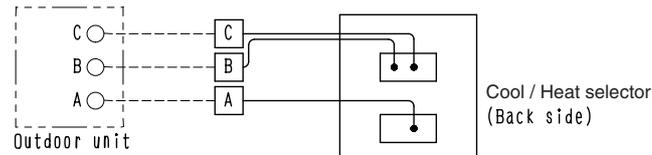
1.9.1 Installation Point

1. Remove the decorative plate.
 - Insert a (-) screwdriver in the gap between the concaved part of the decorative plate and the Cool/Heat selector to open it.

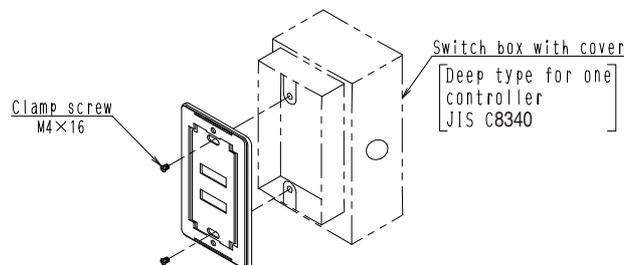


2. Provide the wiring between the Cool/Heat selector and the outdoor unit.
 - Connect terminals (A, B, C) on the back side of the Cool/Heat selector to terminals (A, B, C) on the outdoor unit.
 - --- shows field wiring.
 - Use the wires shown below for the wiring.

Kind of wires	Polyvinyl chloride insulated and sheathed cords or cables,
Size of wires	0,75 ~ 1,25mm ²



3. Attach the Cool/Heat selector to the switch box
(To be obtained locally) as shown below.



4. Attach the decorative plate.

Note; The switch box and connecting wires are not attached.

C: 3P077945A

1.10 DIII-NET Expander Adaptor <DTA109A51>

1.10.1 Function

The adaptor allows easy system expansion as long as restrictions are observed.

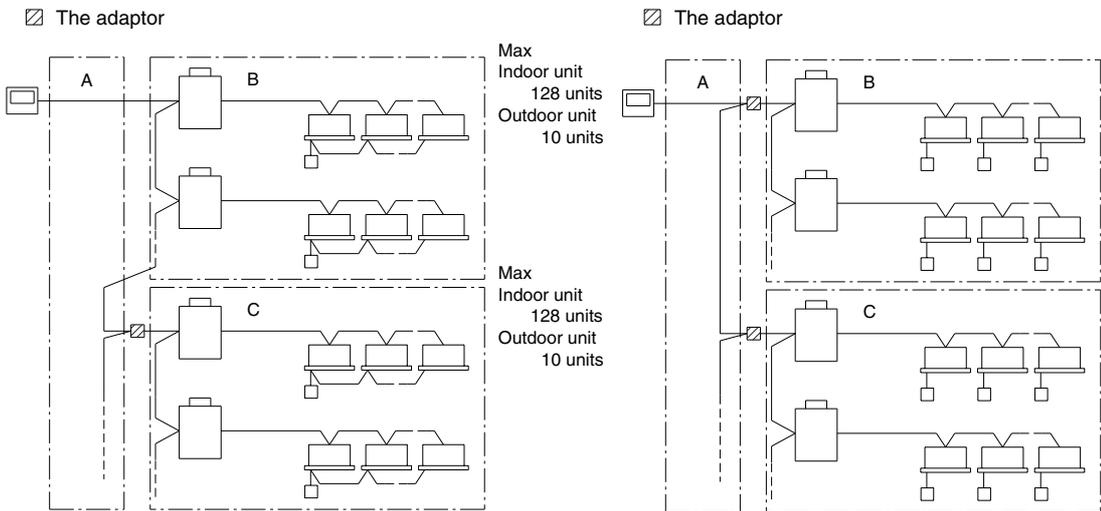
1. The below systems can be controlled on the DIII-NET when using the adaptor.

(1) Up to 1024 units can be centrally controlled in 64 different groups.

(With 2 central remote controllers, up to 1024 units can be controlled in 128 groups.)

Restrictions on the number of units that can be connected to DIII-NET apply to each adaptor.

(2) Wiring restrictions (max.length : 1000m, total wiring length : 2000m, max.number of branches : 16) apply to each adaptor.



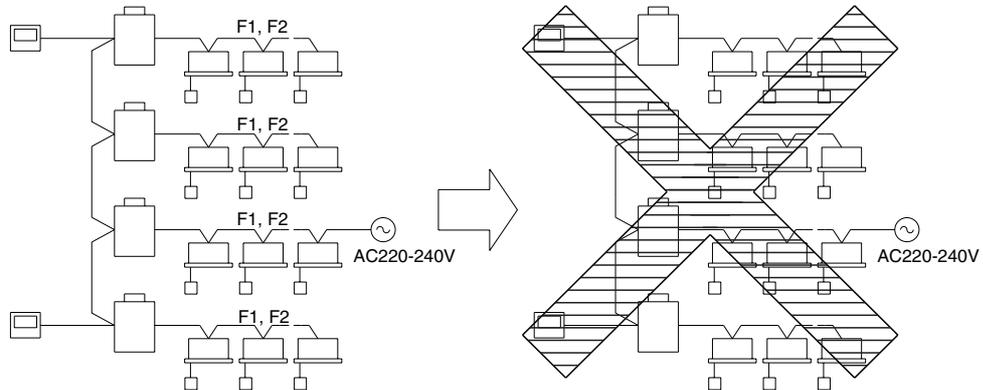
A maximum of 128 indoor units and 10 outdoor units can be connected in each group B and C.

Each group A, B and C can have a maximum wiring length of 1000m, total wiring length of 2000m and a maximum 16 branches.

(3) Setups risky for centralized control systems are possible.

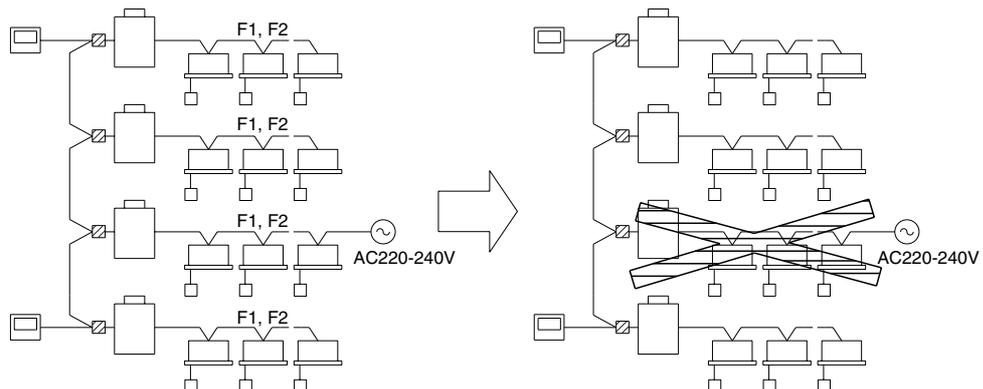
Without the adaptor

Misswiring such as applying 220-240V to circuits of DIII-NET should possibly shut down the entire system.

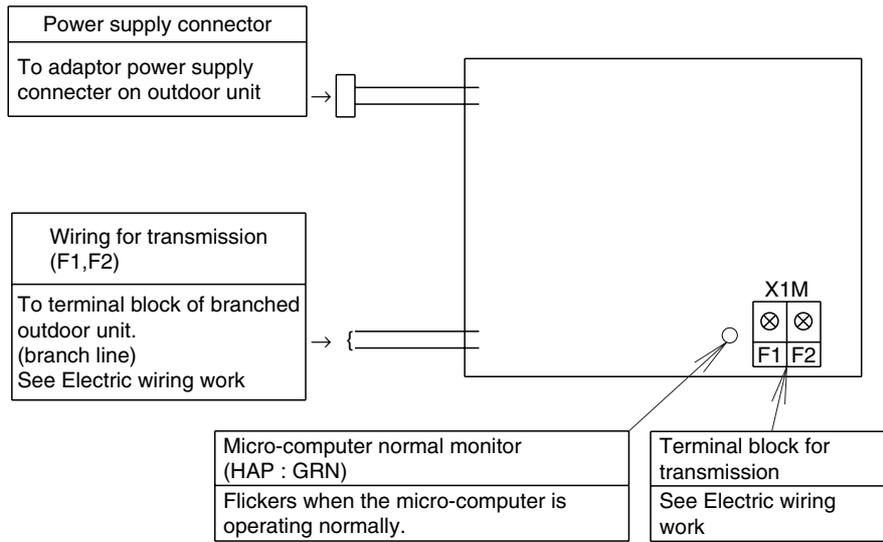


With the adaptor

Should trouble occur, only units below the adaptor are shut down. Thus, it is possible to avoid a total system shutdown.



1.10.2 Part Name and Functions

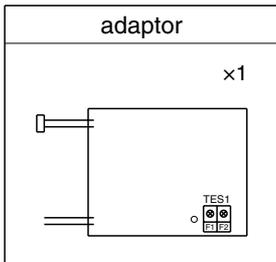


1P013360



1.10.3 Installation

Accessories Check the following accessories are included in the kit before the installation

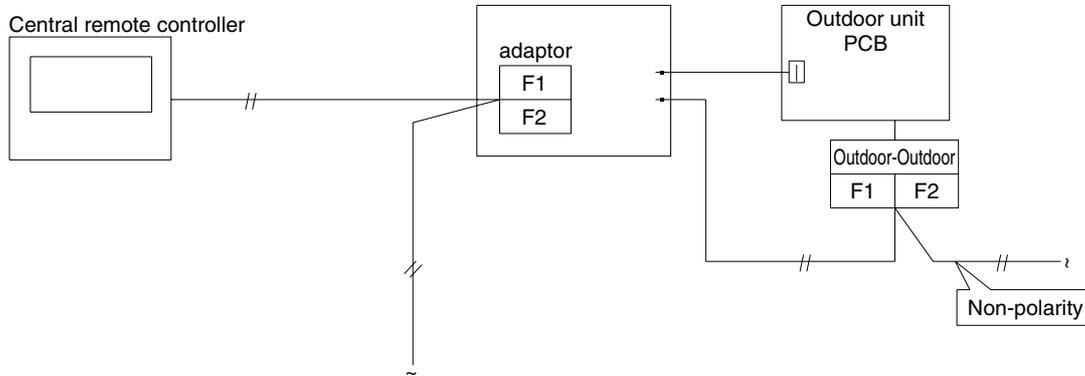


PCB support	× 4
Clamp	× 3
Installation Manual	× 1

Note: This adaptor does not apply to salt damage resistance.

1.10.4 Electric Wiring Work

- (1) Connect the wire from the adaptor to the adaptor power connector on the outdoor unit's PCB.
(For connector Nos., see the electric wiring diagrams for the indoor and function units.)
- (2) Connect transmission wires between outdoor units (Outdoor-Outdoor terminal board).
- (3) Wire transmission wires to terminal boards as shown below.



Note:

(Transmission wiring specifications)

- 0.75 ~ 1.25mm² sheathed wire (2 wire).

(Transmission wiring length)

- Observe the following limits on transmission wires. The limits apply to each adaptor. If you exceed the limits, it may cause malfunction.

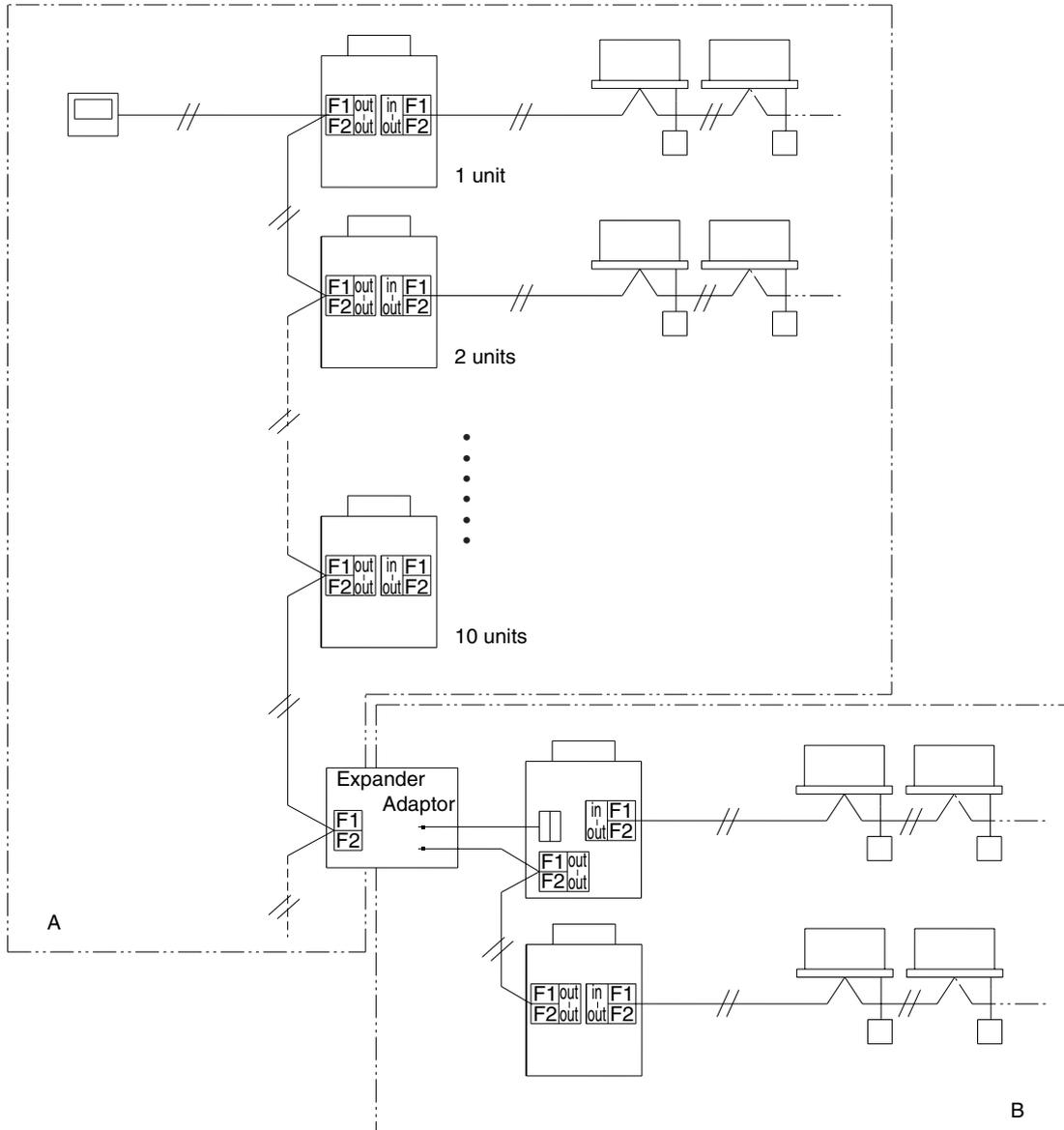
(Total length : 2000m
Max. length : 1000m
Max. number of branches : 16)

- At least one outdoor unit and one centralized control equipment are required.
- Up to 8 adaptors can be connected in one system.
- Do not locate adaptors downstream of other adaptors.
- If not used with a centralized control equipment, the expander adaptor cannot be used with the wiring adaptor for electrical appendices (KRP2A) or the schedule timer (DST301BA61).
- The external control adaptor for outdoor units controls group cooling and demand for each adaptor.
(Anything beyond the expansion control falls outside the control domain.)
- Do not turn the system ON/OFF rapidly from the centralized control equipment. This can cause temporary erroneous displays.
- Sequential starts is controlled by each expander adaptor.

C : 1P013360

<Wiring example>

System with more than 10 outdoor units.



Note: Wiring restrictions (see "Electric wiring work") apply to each group A and B.

C : 1P013360

2. Adaptor for Other Equipment

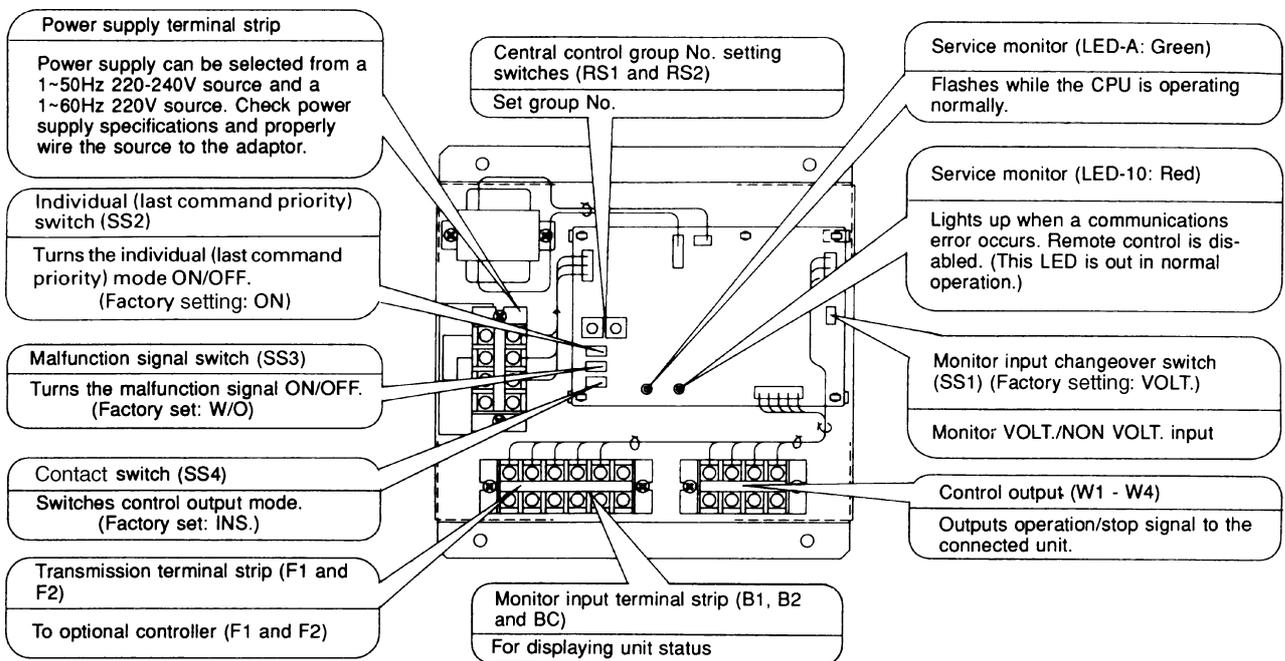
2.1 Wiring Adaptor for Other Air Conditioners <DTA103A51>

2.1.1 Function

This kit contains an I/O interface adaptor for centralized control equipment, used when there is a non-connectable air conditioner and electrical equipment. When connected to the centralized control equipment, this adaptor enables operation/stop and display of operation/error monitors from the centralized control equipment.

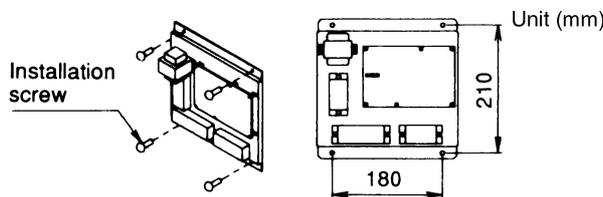
Item	DTA103A51
ON/OFF	Possible
Temp. setting	Impossible
Airflow rate setting	Impossible
Airflow direction setting	Impossible
Mode setting	Impossible
Filter sign reset	Impossible
Inspection/Test operation	Operation & Error display only by lamps

2.1.2 Part Names and Functions



2.1.3 Installation

Securely install the adaptor with the attached installation screw.



Note:

Install the adaptor inside a control box of outer dimensions: 230W × 230D × 60H.

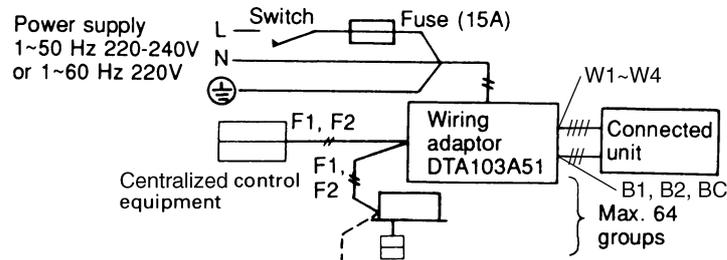
Supply a control box at site with outer dimensions equal to or larger than those shown below. 230W × 230D × 60H.

2PA53853

2.1.4 Electric Wiring Work

<Wiring Requirements>

1. Wire between the adaptor and centralized control equipment (F1, F2)
2. Wire to the connected units and set all switches. ... For details, refer to WIRING TO CONNECTED UNITS.
3. Wire to the power supply. ... For details, refer to POWER SUPPLY WIRING.



C : 2PA53853

<General Instructions>

- All wiring, components and materials to be procured on the site must comply with the applicable local and national codes.
- Use copper conductors only.
- All field wiring and components must be provided by licensed electrician.
- Unit shall be grounded in compliance with the applicable local and national codes.
- Fit the power supply wiring with a fuse and a switch.
- After wiring work, check power to the equipment shuts OFF when the switch is shut OFF.

<Wiring Specification>

	Type	Size
Power Supply Wiring	H05VV-U3G	(Note 1)
Transmission Wiring	(Note 2)	0.75 - 1.25 mm ²

Note:

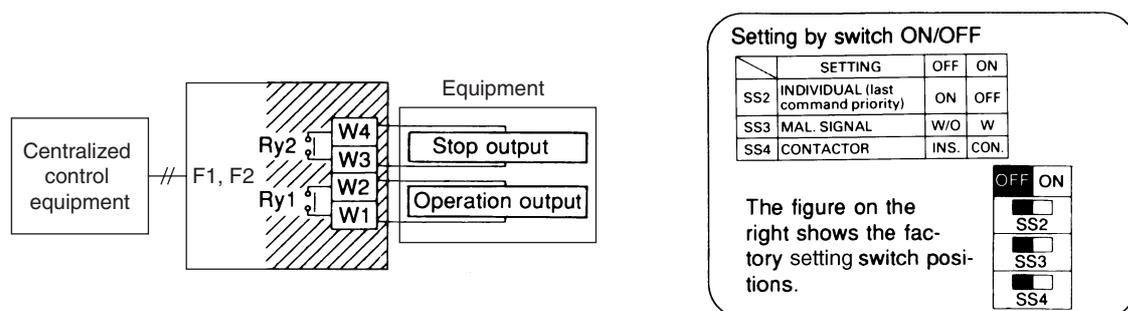
1. Select the size in electric wire in accordance with the local and national standards.
2. You can use the shielded wire, sheathed vinyl cord or cable (2 conductors). See the installation manual of the optional controllers for centralized control equipment to be connected for further details.

<Wiring to Connected Units>

Control Output

Terminals W1 - W4 are non voltage contacts used in normal operation to output operation display (W1 and W2) and error display (W3 and W4) signals.

Ry1 and Ry2 Contact Specifications		
Voltage	Max. current	Min. Current
1-50Hz 220-240V 1-60Hz 220V	2A	1mA
≡ 5-24V	3A	1mA

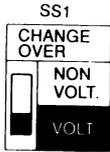


Output modes include instantaneous output (INS.) and constant output (CON.). Mode is changed at the contact switch (SS4). (Factory setting: INS)

C : 2PA53853

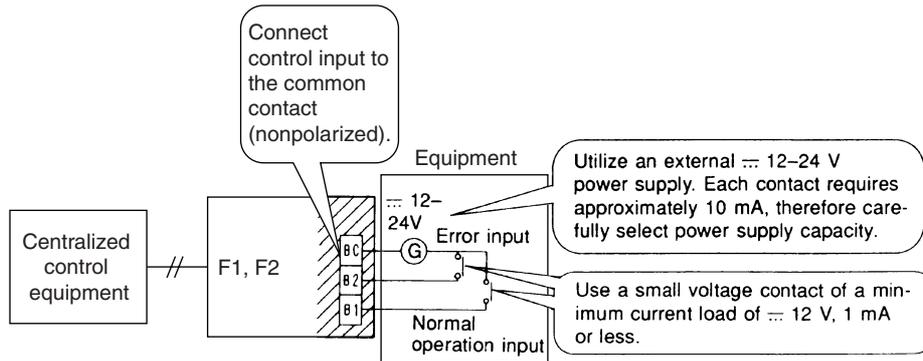
<Monitor Input>

Wire as explained here following, depending on whether input carries a voltage (VOLT.) or not (NON VOLT.). Make the VOLT/NON VOLT. setting at the monitor input changeover switch (SS1).



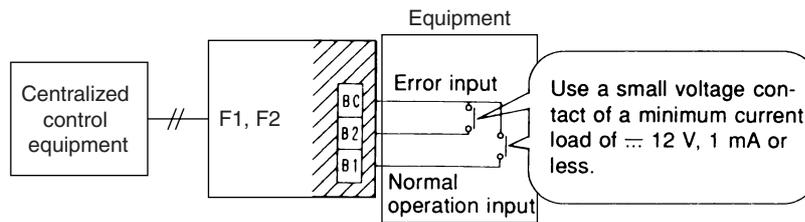
(For Voltage Charged Input)

Set the monitor input changeover switch to VOLT. (Factory setting: VOLT.)



(For Non Voltage Input)

Set the monitor input changeover switch to NON VOLT. (Factory setting: VOLT.)



Switch the malfunction signal switch (SS3) according to needs (Factory setting: W/O [OFF]). Set the switch to W (ON) to display errors even if no operation feedback from the indoor unit is available, for example, when power to the indoor unit is OFF. Together, set the individual switch (SS2) to OFF (ON).

Note:

- This switch is ineffective when SS2 is set to ON (OFF).
- The centralized control equipment display will change, as shown on the right, depending on the monitor input state and the malfunction signal switch (SS3) setting.
- After switching the centralized control equipment from stop to operation, it will take from 10 to 30 seconds before the centralized control equipment display will indicate an error.

(SS3) Malfunction Signal	Centralized Control Equipment Display at Command Output		
	Monitor Input State		
	Operation Input ON	Operation Input OFF	Error Input ON
W	Operation Display	Error (A1 Display)	Error (A1 Display)
W/O		Operation Display	

C: 2PA53853

<Setting Group No. for Centralized Control>

Set the group No. at the centralized control group No. setting switches (RS1 and RS2). Refer to the below table to set group No. Group No. increases in the order of 1-00, 1-01 ... 1-15, 2-00, ... 4-15. Refer to the installation manual of the centralized control equipment.

RS1 Switch Setting and Upper Group No. Position

Position	0	1	2	3	4	5	6	7	8	9
Group No.	—	1	2	3	4	—	—	—	—	—

RS2 Switch Setting and Lower Group No. Position

Position	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Group No.	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15

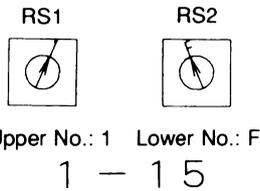
Make Settings before Turning ON the Power.

Note:

Group number need not be set on this adaptor during individual use with either a wiring adaptor for electrical appendices or a schedule timer. Setting is automatic.

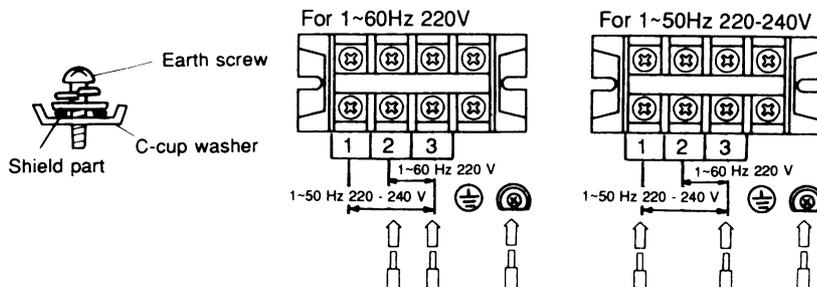
Ex. Setting group No. 1-15

First and second group No.s are indicated as below.



<Power Supply Wiring>

Power supply can be selected from a 1-50 Hz 220-240V source and a 1-60 Hz 220V source. Check power supply specifications and properly wire the source to the adaptor.



Note:

- Ground wires as shown in the figure on the above.
- The adaptor may malfunction or be damaged if improperly wired.
- The fuse is designed for short circuit protection (Overcurrent protection). Therefore, it may not offer sufficient protection against improper voltage.

2PA53853

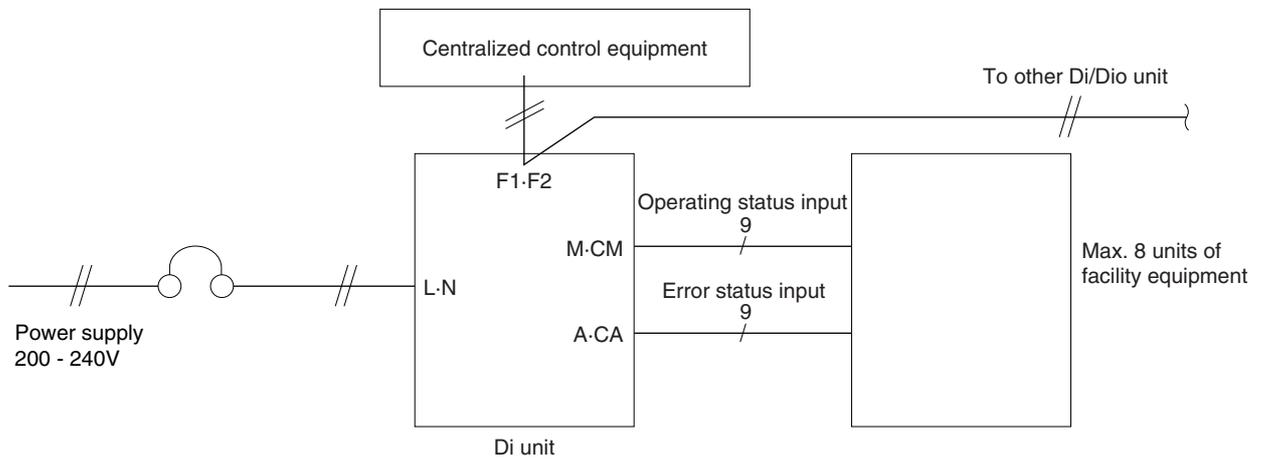
2.2 Di Unit <DEC101A51>

Using this unit, connection of other facilities other than air conditioner is made possible, such as power supply facility, sanitary facility, anti-disaster facility, and crime prevention facility.

2.2.1 Function

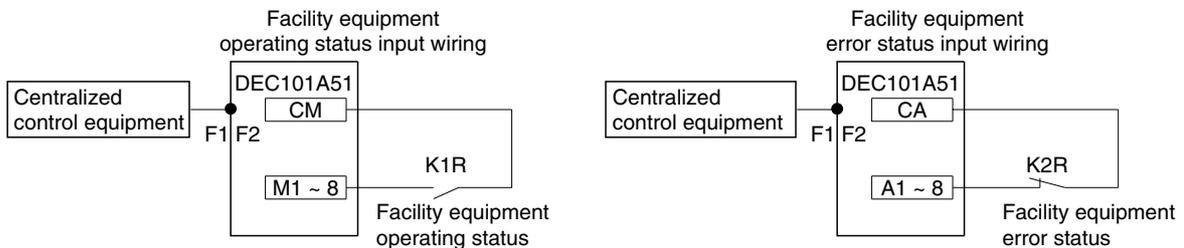
Type	BRC1C62	DEC101A51
Item	One Group	Up to 4 groups
ON/OFF	Possible	Impossible
Temp. setting	Possible	Impossible
Airflow rate setting	Possible	Impossible
Airflow direction setting	Possible	Impossible
Timer setting twice a day	Possible	Impossible
Mode setting	Possible	Impossible
Filter sign reset	Possible	Impossible
Inspection/Test operation	Possible	Operation & Error display only by lamps

■ Unit (DEC101A51)



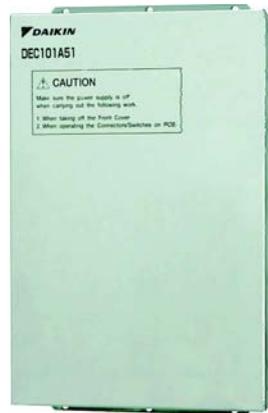
Operating and error input

When the contact is "Open" or "Closed", "Error" is produced. For changeover, refer to "2. Initial Setting ②"
 Input specifications : No-voltage "a" contact
 (The welding current is approx. 10mA when the applied voltage is 20 to 30VDC and the contact is "Closed".)
 For input, use the contact for micro current. (12VDC, 1mA max.)

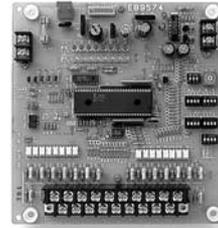


2.2.2 Part Names and Functions

1. Appearance

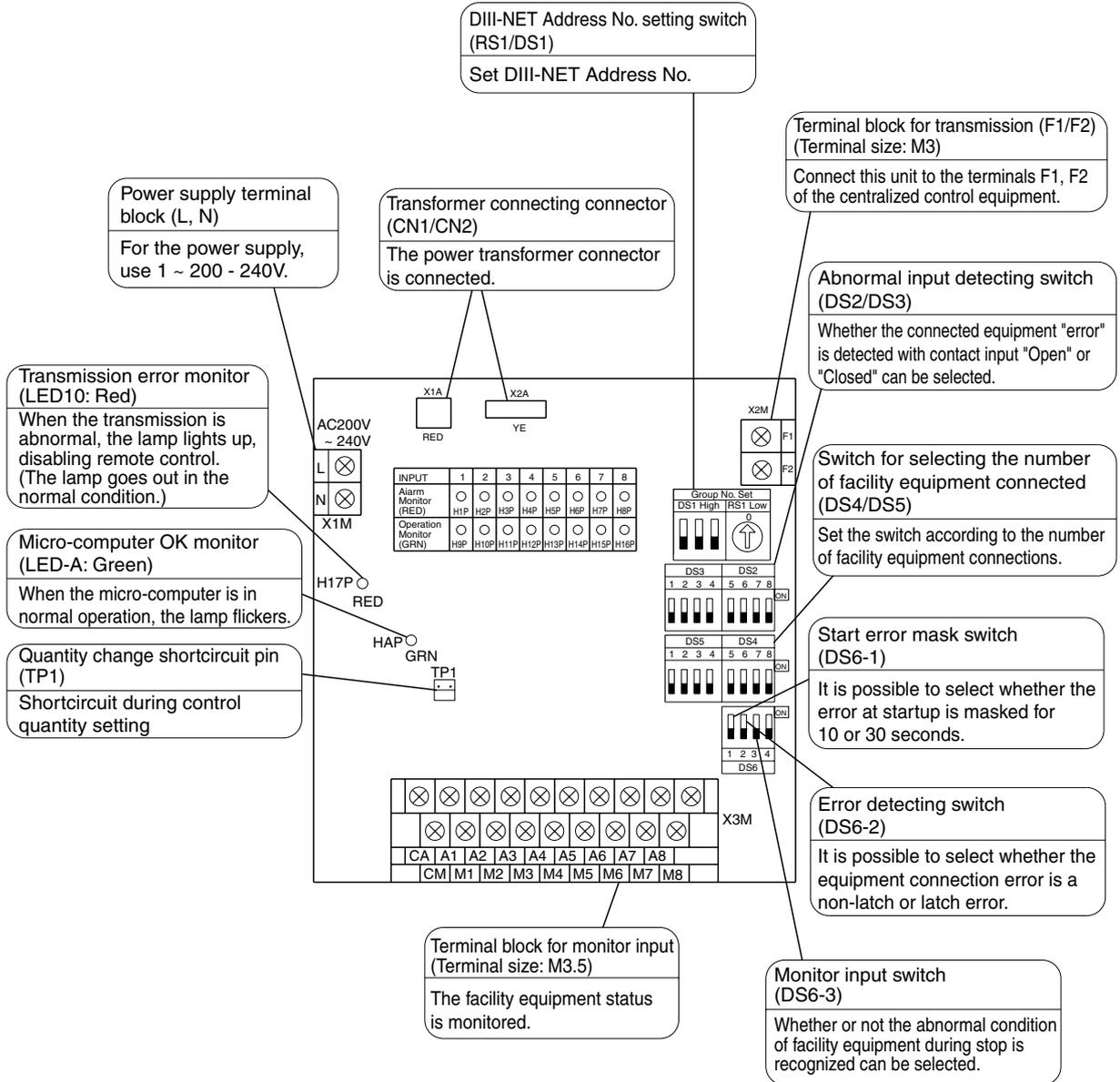


Di Unit
DEC101A51



PCB in DEC101A51

The figure below shows the printed circuit board built in this equipment.



2. Specifications

		Di board
Input contacts	16 points. 8 pairs based on a pair of On/Off input and abnormality input	
	* Contact information(On/Off, Abnormality) is transmitted to intelligent Touch Controller / intelligent Manager III through DIII-Net communication.	
Installation method		Indoor installation
Power supply		To be supplied from outside
Rating		AC200-240V, 50/60Hz
Applied Standard		Safety standard: IEC730, EMC standard: CISPR22-A (EMI), CISPR24 (EMS)
Environment for use	Outdoor air temperature	-15 to 60 °C
	Ambient humidity	95%RH or less (no condensation)
Environment for storage	Outdoor air temperature	-20 to 60 °C
	Ambient humidity	95%RH or less (no condensation)

2.2.3 Installation

(Installation Place)

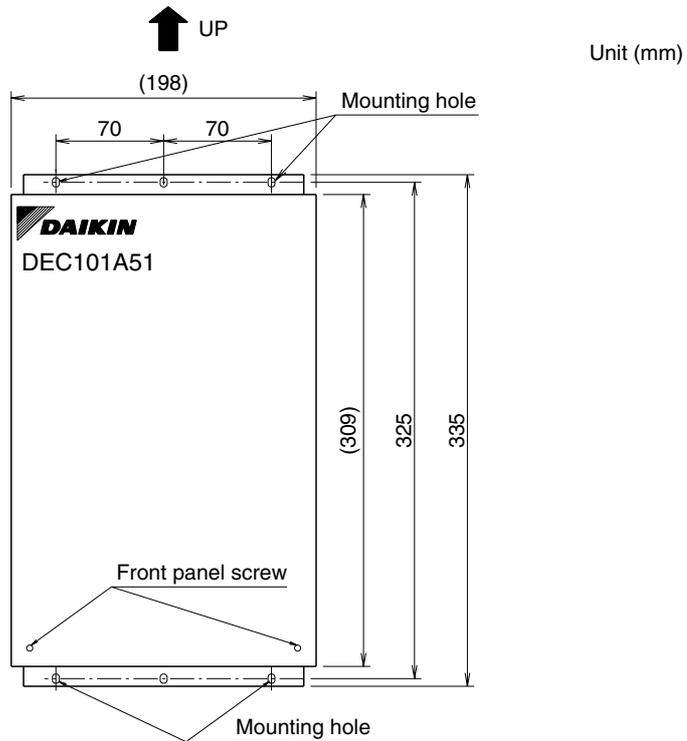
- Install the unit indoors where it is not exposed to water and dust or dirt.
- Install the unit where both temperature and humidity do not become high.
(Operating (available) temperature: -10 ~ +40°C)
(Operating (available) humidity: 10 ~ 85%)
- Connect the wiring to be connected in the field from the lower surface side.
It is, therefore, necessary to make arrangements so as not to attach other equipment within 80mm from the lower surface of this equipment.
- Install this equipment in a place in which only the authorized personnel can touch it.

(Installation Direction)

- Install this equipment vertically to the floor surface. It should be noted that if it is installed in the horizontal direction, a malfunction or failure may result.

(Installation Method)

- Ensure that this equipment is installed with 4 screws (screw size M4 min.).



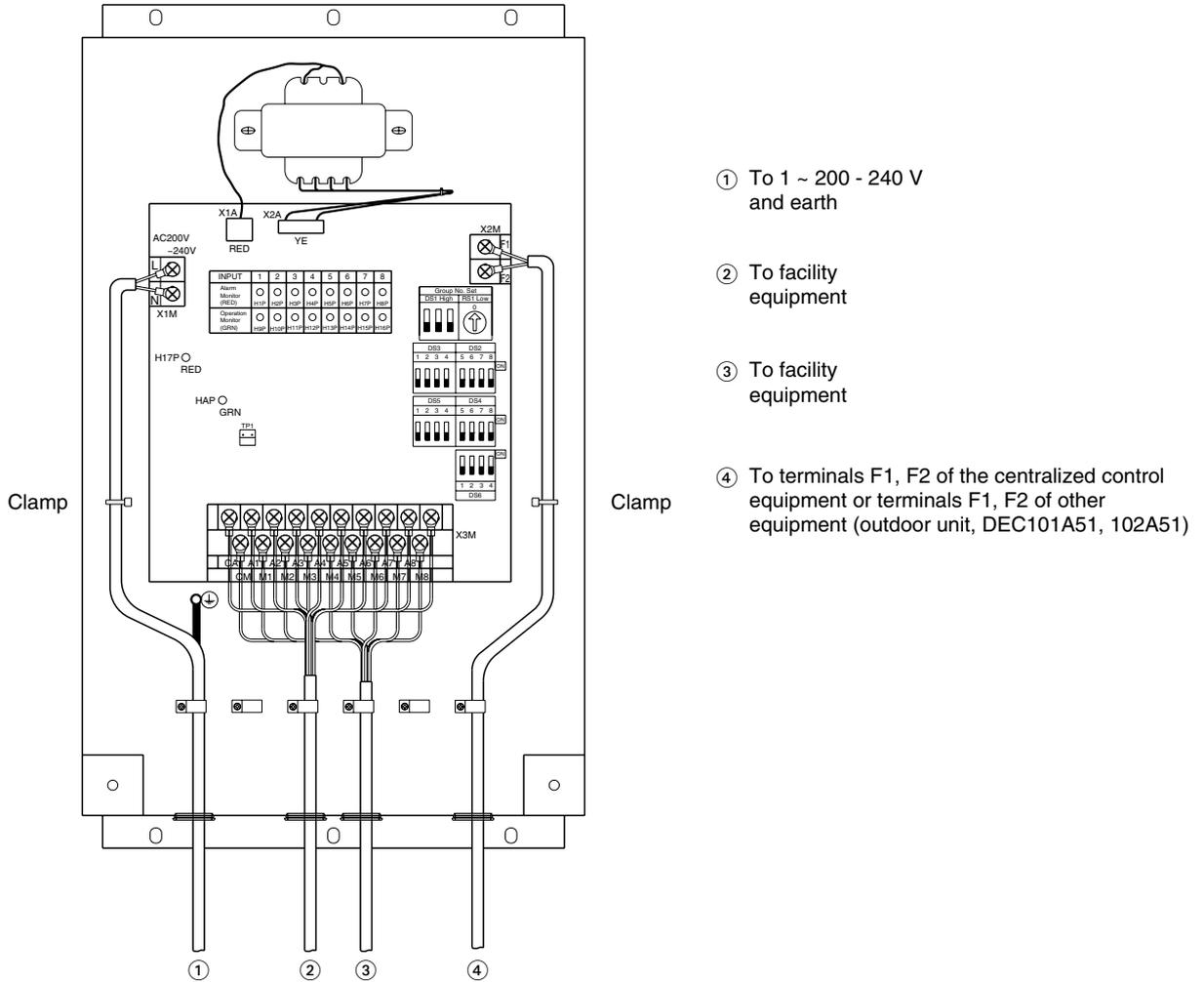
2.2.4 Electric Wiring Work and Initial Setting

1. Electric wiring work

Wiring Lead-In

For wiring connection, remove the front panel (secured with 2 screws) of this equipment.

Upon completion of operation given in this paragraph and "2. Initial Setting" below, close the front panel with the screws described above.



(1) Wire connections and wire clamping should be as shown in the figure above.

(2) No simultaneous clamping is allowed for high-voltage wiring

(power supply wiring (L/N) & earth wiring), low-voltage wiring <Communication wiring (F1/F2), operation input wiring (CM, M1 to 8) and abnormal input wiring (CA, A1 to 8)> since malfunctioning may result. Also, in case where the wirings described above are routed in parallel, be sure to connect the wirings at least 50 mm apart from the other.

2. Initial setting

● DEC101A51 Switch Settings

	Name	Operation	OFF	ON
DS2	Abnormal input detection Open/Close (Concentrated address +4 to 7)	Abnormal input detection method Open: Close (Normal) → Open (Abnormal) Close: Open (Normal) → Close (Abnormal)	Open	Close
DS3	Abnormal input detection Open/Close (Concentrated address +0 to 3)		Open	Close
DS4	Buzzer output ON/OFF (Concentrated address +4 to 7)	ON/OFF switching of buzzer output of buzzer unit upon detection of failure.	ON	OFF
DS5	Buzzer output ON/OFF (Concentrated address +0 to 3)		ON	OFF
DS6-1	Startup failure	Masking time after detecting operation input.	10 seconds	30 seconds
DS6-2	Failure detection	Recovery method upon detection of failure.	Automatic reset	Retained
DS6-3	Monitor input	Detection of failure under halting status.	Yes	No

Note:

All are set to "OFF" upon shipment from factory.

- ① Set the top address of this equipment with the DIII-NET setting switch (DS1/RS1).
Using the DIII-NET setting switch (DS1), set the range of Address No. that is set in this equipment.
Address Nos. 1-00 to 1-15 are factory controlled before shipment.

Control range DS1	1-00 ~ 1-15	2-00 ~ 2-15	3-00 ~ 3-15	4-00 ~ 4-15
Control range DS1 (high order setting) (Address range)				

↑ When a product is discharged from the factory
 ← This indicates the switch knob.

Set Address No. (low order) with the centralized address setting switch (RS1).
Referring to the table below, set the address number low order.
(Address Nos. are 1-00, 1-01, --- 1-15, 2-00, --- 4-15.)

RS1 Switch Setting Table

Position	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
Address No.	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	(low order)

↑ <when a product is discharged from the factory>

<Example>
When Address No. is set to 1-08

DS1

High order : 1

RS2

Low order : 8

Address No. indicates the following portion in this case.

1-08
High order Low order

In this case, it follows that this equipment uses Address Nos. 1-08 to 1-15. (8 numbers max.)

* Number of centralized addresses used

The number of centralized addresses used is determined by the top address set in this item and the number of facility equipment connected that is set in "③ TP1 Setting (Facility equipment quantity change)".

Example 1:

When the top address was set to "1-00" and the number of facility equipment was set to "2", it follows that "1-00" and "1-01" are being used.

Example 2:

When the top address was set to "3-15" and the number of facility equipment was set to "8", it follows that "3-15", "4-00", "4-01", "4-02", "4-03", "4-04", "4-05" and "4-06" are being used.

<CAUTION>

This equipment can use the addresses between "1-00" and "4-15".

(It is impossible to use Address 5-00 and subsequent addresses, and use any address in duplication.)

Example:

When the top address was set to "4-14", the number of facility equipment cannot be set to "8". In this case, set it to "1" or "2".)

② DS2 & DS3 Setting

This switch selects whether the input is abnormal with the abnormal input contact (A1 to A8) open or closed.

OFF (factory preset before shipment) ----- Abnormal in the open condition

ON ----- Abnormal in the closed condition

The relationship between each switch and abnormal input is as described below.

- Input A1 : DS2, 3-1
- Input A2 : DS2, 3-2
- Input A3 : DS2, 3-3
- Input A4 : DS2, 3-4
- Input A5 : DS2, 3-5
- Input A6 : DS2, 3-6
- Input A7 : DS2, 3-7
- Input A8 : DS2, 3-8

③ TP1 Setting (Facility equipment quantity change)

This function is used to set the number of facility equipment controllable with this equipment.

(The number of controllable facility equipment factory shipment is 8.)

(Setting Method)

1. Turn the power "ON" with TP1 short-circuited and change the quantity of facility equipment according to the DS4, 5 setting.
The relation between DS4, 5 setting and facility equipment quantity is as per the table below.
2. Turn the power OFF.
3. Open the TP1 and turn all DS4, 5 switches "OFF".
4. Turn the power ON again.
5. Short-circuit the TP1, and check to see if the setting coincides with the number of facility equipment connected to this equipment.
6. Finally, open the TP1.

TP1	Shortcircuit (with power "ON")			
DS4 DS5				
Setting Contents	1 unit	2 units	3 units	4 units
TP1	Shortcircuit (with power "ON")			
DS4 DS5				
Setting Contents	5 units	6 units	7 units	8 units

← This indicates the switch knob.

By short-circuiting the quantity change TP1 in the normal operating condition, the setting status can be confirmed.

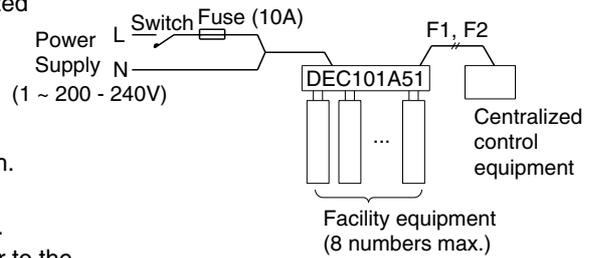


☉ This indicates LED lighting.

3. Electric wiring connection

Wiring Procedure

- ① <F1/F2> wiring between this equipment and centralized control equipment is required.
- ② The connection to the facility equipment and setting of various switches are required
See the "Wiring with Facility Equipment" paragraph.
- ③ Connect the power supply and earth.
See the "Power Supply & Earth Wiring" paragraph.
- ④ For the wiring connection and clamping method, refer to the "Wiring Lead-in" paragraph.



Wiring with Facility Equipment

<CAUTION> The length of wiring between this equipment and facility equipment is 100m max.

Power Supply & Earth Wiring

- For power supply, 1 ~ 200 - 240 V is used. The wiring to the power terminal block (L/N) is required. The electric wire used should be 1.25 to 2.0mm². After checking the power supply specifications, make correct connections.
- Connect the earth wiring to the "⊕" terminal. Use a 2.0mm² wire.

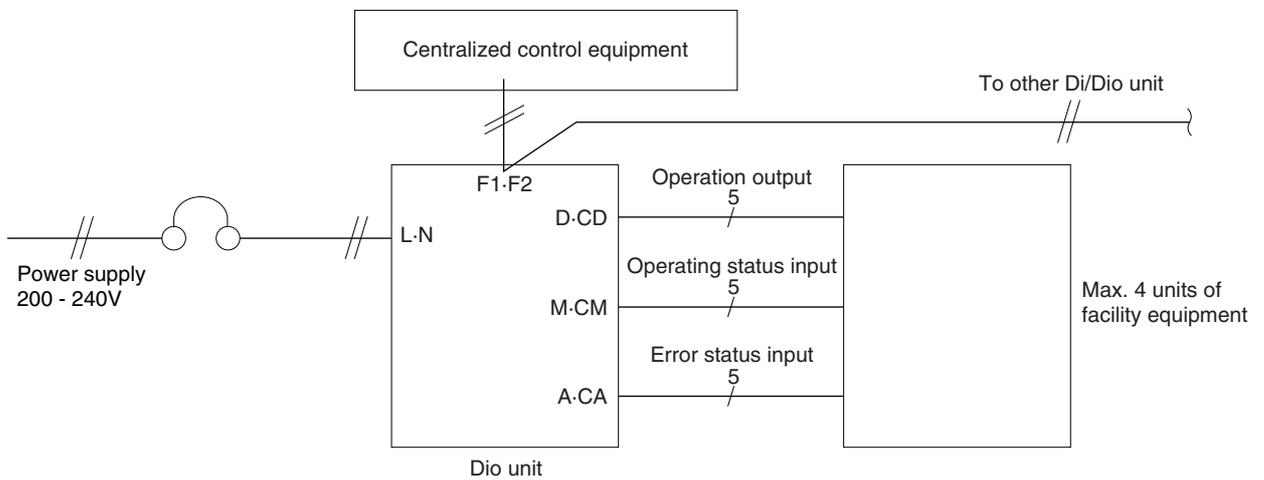
2.3 Dio Unit <DEC102A51>

Using this unit, connection of other facilities other than air conditioner is made possible, such as power supply facility, sanitary facility, anti-disaster facility, and crime prevention facility.

2.3.1 Function

Type	BRC1C62	DEC102A51
Item	One Group	Up to 4 groups
ON/OFF	Possible	Possible
Temp. setting	Possible	Impossible
Airflow rate setting	Possible	Impossible
Airflow direction setting	Possible	Impossible
Timer setting twice a day	Possible	Impossible
Mode setting	Possible	Impossible
Filter sign reset	Possible	Impossible
Inspection/Test operation	Possible	Operation & Error display only by lamps

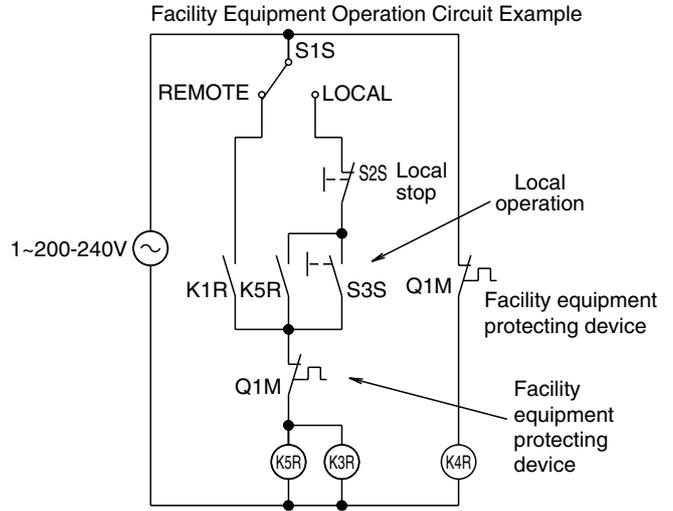
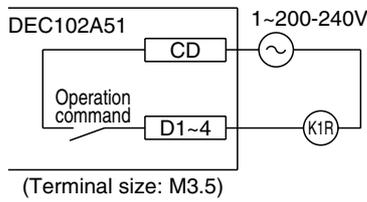
■ Dio Unit (DEC102A51)



Operation output

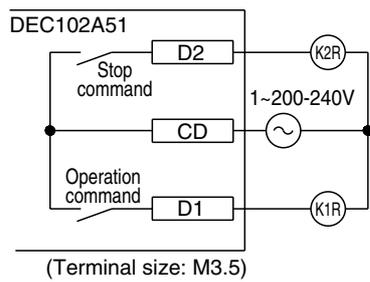
It is possible to select continuous 1 output (4 points) or instantaneous 2 output (ON/OFF pair-2 points).
For switching, refer to 2. Initial Setting ④

- Wiring at Continuous Output (Up to 4 facility equipments can be connected.)

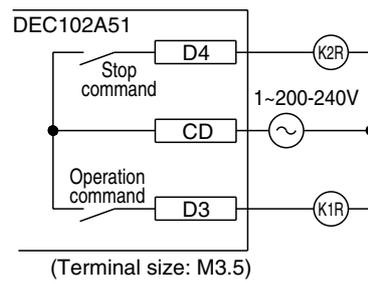


- Wiring at Instantaneous Output (Up to 2 facility equipments can be connected.)

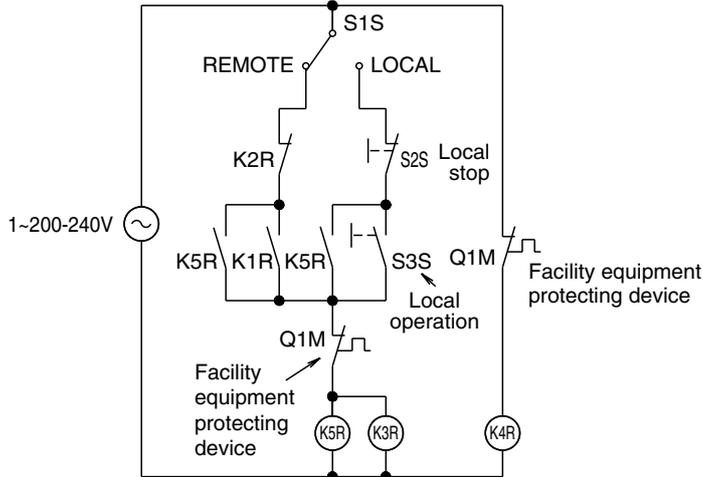
Output wiring for facility equipment 1



Output wiring for facility equipment 2



Facility Equipment Operation Circuit Example



Output SPEC: No-voltage "a" contact

Voltage SPEC	Maximum Current	Minimum Current
200-240V	1.5A (Resistive Load)	10mA
DC5-24V	2A (Resistive Load)	10mA

Operation input

When the contact is "Closed", "Run" is to be inputted.

Input SPEC: No-voltage "a" contact (When the applied voltage is 20 to 30V DC and the contact is "Closed", the welding current is approx. 10mA.)

For input, use a contact for micro current. (12V DC, 1mA max.)

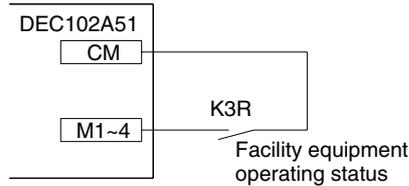
Abnormal input

When the contact is "Open" or "Closed", "Error" is produced. For changeover, refer to **"1.5.4 Electric Wiring Work and Initial Setting"**

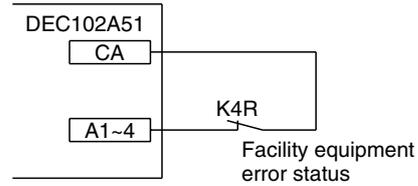
Input specifications: No-voltage "a" contact (The welding current is approx. 10mA when the applied voltage is 20 to 30V DC and the contact is "Closed".)

For input, use the contact for micro current. (12V DC, 1mA max.)

Facility equipment operating status input wiring



Facility equipment error status input wiring



When the switch was set to "Ins." (Instantaneous Output), the operation input terminals M3, M4 and abnormal input terminals A3, A4 are not used.

Terminal used in case where the switch was set to "Continuous Output" (Con.) or "Instantaneous Output" (Ins.)

Facility equipment (Up to 4 units can be connected to single DEC102A51.)	Terminal used in the case of setting to "Continuous Output"					
	Run/Stop output terminal		Operation input terminal		Abnormal input terminal	
1st equipment	CD	D1	CM	M1	CA	A1
2nd equipment	CD	D2	CM	M2	CA	A2
3rd equipment	CD	D3	CM	M3	CA	A3
4th equipment	CD	D4	CM	M4	CA	A4

Facility equipment (Up to 2 units can be connected to single DEC102A51.)	Terminal used in the case of setting to "Instantaneous Output"							
	Operation output terminal	Stop output terminal	Operation input terminal		Abnormal input terminal			
1st equipment	CD	D1	CD	C2	CM	M1	CA	A1
2nd equipment	CD	D3	CD	C4	CM	M2	CA	A2

When the switch was set to "Ins." (Instantaneous Output), the operation input terminals M3, M4 and abnormal input terminals A3, A4 are not used.

Power Supply & Earth Wiring

- For power supply, 1~200-240V is used. The wiring to the power terminal block (L/N) is required. The electric wire used should be 1.25 to 2.0mm². After checking the power supply specifications, make correct connections.
- Connect the earth wiring to the "⊕" terminal. Use a 2.0mm² wire.

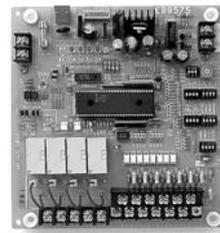


2.3.2 Part Names and Functions

1. Appearance

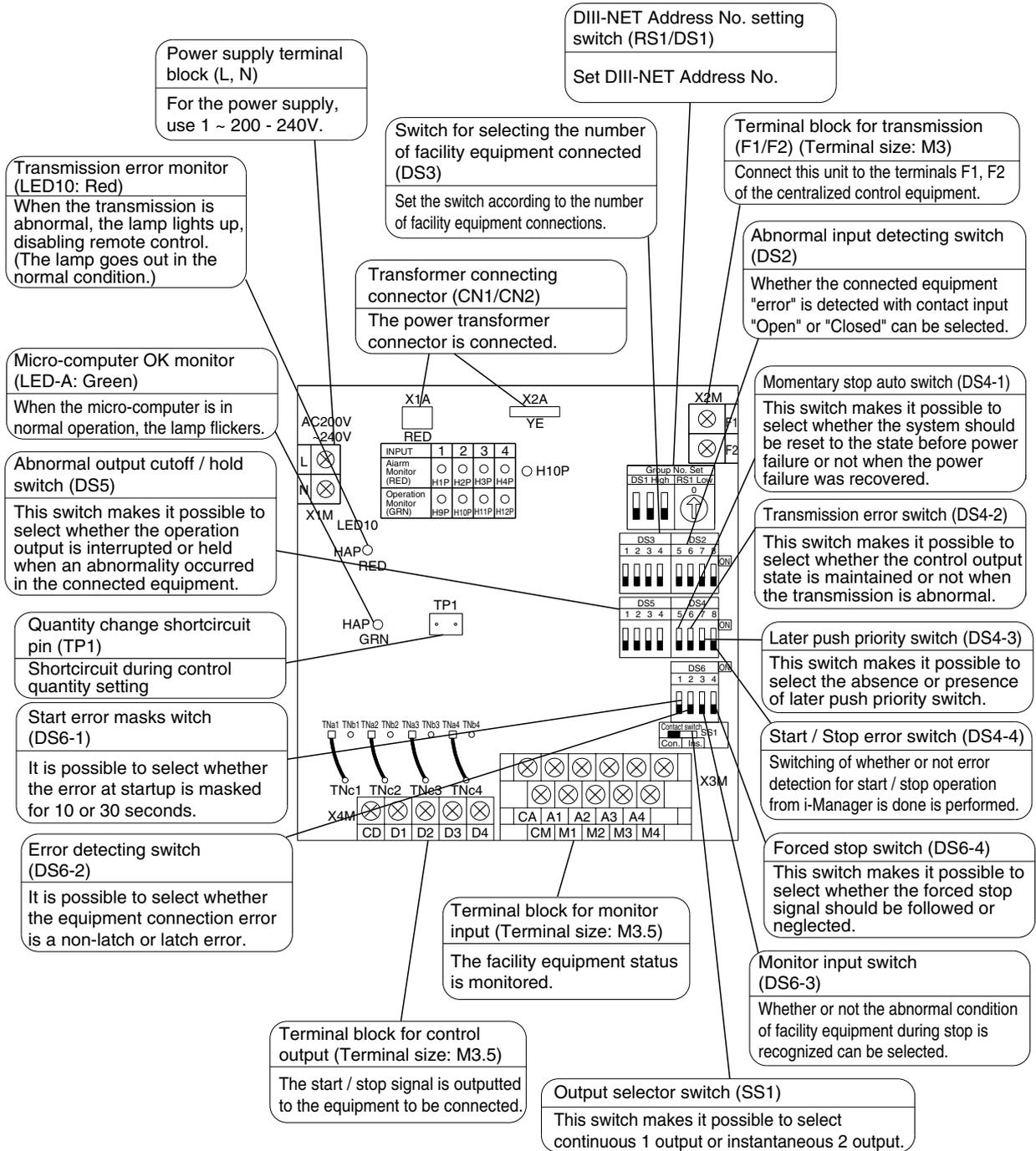


Dio Unit
DEC102A51



PCB in DEC102A51

The figure below shows the PC board built in this equipment.



4

2. Specifications

		Dio board
Input contacts		8 points. 4 pairs based on a pair of On/Off input and abnormality input
		* Contact information(On/Off, Abnormality) is transmitted to intelligent Manager III through DIII-Net communication.
Output contacts		4 points. In case of normally output, 4 units are controllable. In case of instantaneous output, 2 units are controllable.
		* From intelligent Touch Controller / intelligent Manager III, On/Off and control of the equipment with the external contacts are possible through DIII-NET communication.
Installation method		Indoor installation
Power supply		To be supplied from outside
Rating		AC200-240V, 50/60Hz
Applied Standard		Safety standard: IEC730, EMC standard: CISPR22-A (EMI), CISPR24 (EMS)
Environment for use	Outdoor air temperature	-15 to 60 °C
	Ambient humidity	95%RH or less (no condensation)
Environment for storage	Outdoor air temperature	-20 to 60 °C
	Ambient humidity	95%RH or less (no condensation)

Output specs: Voltage free "a" contact

Voltage specs	Maximum current	Minimum current
AC200-240V	1.5 A (resistance load)	10mA
DC5-24V	2.0 A (resistance load)	10mA

Input specs: Voltage free "a" contact

Micro current load contact input (DC12V, 1 mA or less)

Wiring length: 150 m

2.3.3 Installation

(Installation Place)

- Install the unit indoors where it is not exposed to water and dust or dirt.
- Install the unit where both temperature and humidity do not become high.
(Operating (available) temperature: -10 ~ +40°C)
(Operating (available) humidity: 10 ~ 85%)
- Connect the wiring to be connected in the field from the lower surface side.
It is, therefore, necessary to make arrangements so as not to attach other equipment within 80mm from the lower surface of this equipment.
- Install this equipment in a place in which only the authorized personnel can touch it.

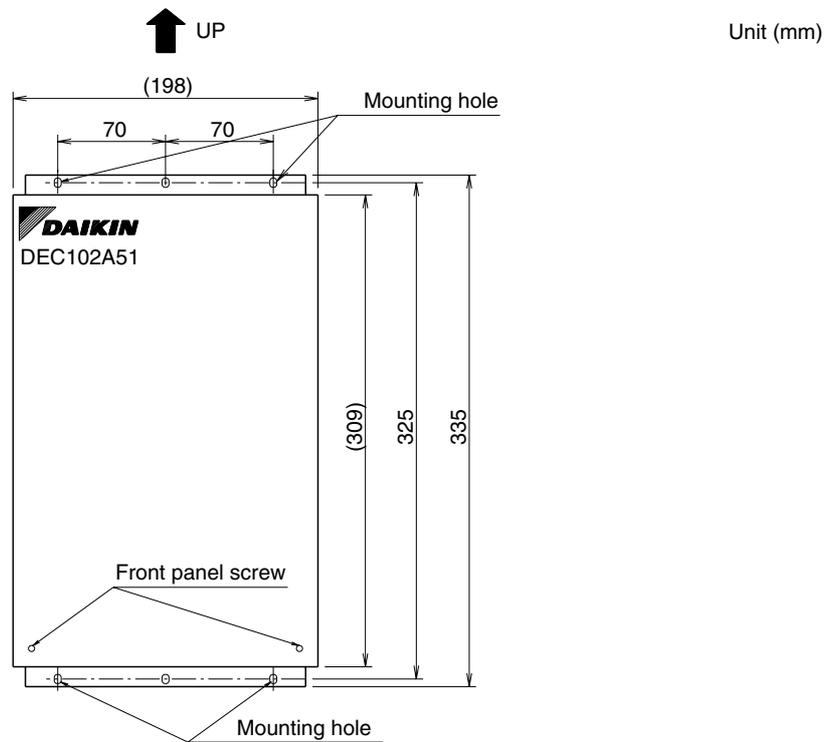
(Installation Direction)

- Install this equipment vertically to the floor surface. It should be noted that if it is installed in the horizontal direction, a malfunction or failure may result.

(Installation Method)

Install in container box or in panel.

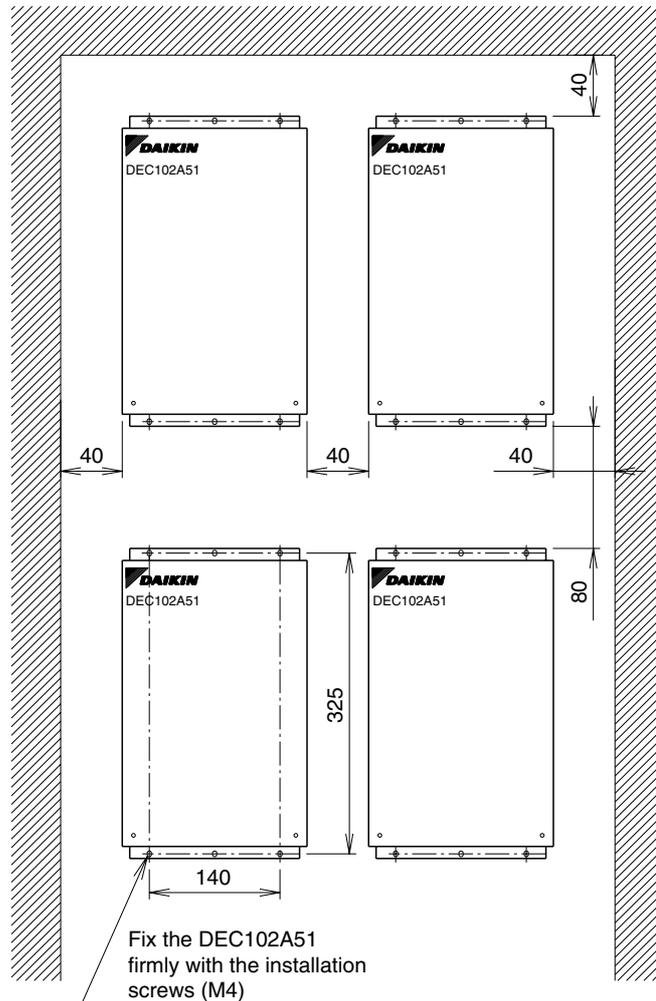
- Ensure that this equipment is installed with 4 screws (screw size M4 min.).



Restrictions in Continuous Installation

In case where several devices are set up and installation inside the power board is carried out, each equipment installation space and space between the wall surface and this equipment should be left at least as shown below.

Unit (mm)



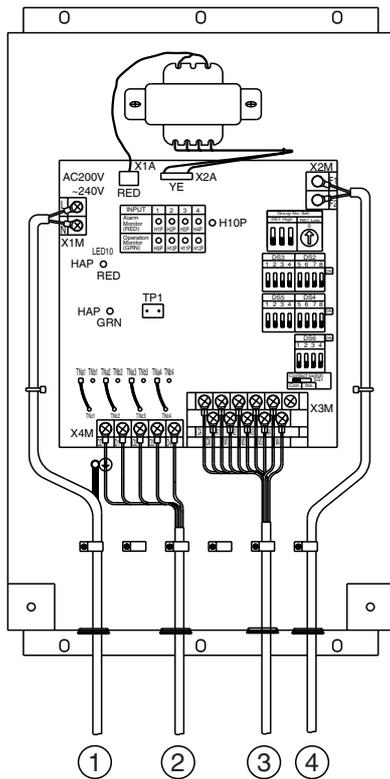
(To Remove Front Panel:)

"1.4.4 Electric Wiring Work and Initial Setting" should be performed with the front panel removed.

The front panel can be removed by detaching 2 front panel screws shown in the figure above and sliding it lightly to the upper side. Upon completion of all wiring connections and setting operations, close the front panel as it was and screw it firmly.

2.3.4 Electric Wiring Work and Initial Setting

1. Electric Wiring Work



No simultaneous clamping is allowed for high-voltage wiring <power supply wiring (L/N), earth wiring, relay output wiring (CD, D1 to 4)>, low-voltage wiring <communication wiring (F1/F2), operation input wiring (CM, M1 to 4) and abnormal input wiring (CA, A1 to 4)> since malfunctioning may result. Also, in case where the wirings described above are routed in parallel, be sure to connect the wirings at least 50mm apart from the other.

- ① To 1~200-240V and earth
- ② To facility equipment
- ③ To facility equipment
- ④ To terminals F1, F2 of the centralized control equipment or terminals F1, F2 of other equipment (outdoor unit, DEC101A51, 102A51)

2. Initial setting

● DEC102A51 Switch Settings

	Name	Operation	OFF	ON
SS1	Output switching	Switching control output	Always output "1"	Always output "2"
DS2	Abnormal input detection Open/Close	Failure detection Open: Close (Normal) → Open (Abnormal) Close: Open (Normal) → Close (Abnormal)	Open	Close
DS3	Buzzer output ON/OFF	ON/OFF switching of buzzer output of buzzer unit upon detection of failure.	ON	OFF
DS4-1	Instantaneous automatic recovery	Recover control output after power failure to status before the power failure.	No	Yes
DS4-2	Transmission failure	Shut off control output upon detecting transfer failure.	Yes	No
DS4-3	Last command priority	Allowing start/stop control from facility.	Yes	No
DS4-4	Start/stop failure	Detecting start/stop failure. (*1)	No	Yes
DS5	Abnormal output shutoff/retain	Shut off control output upon detecting failure.	Yes	No
DS6-1	Startup failure	Masking time after detecting operation input.	10 seconds	30 seconds
DS6-2	Failure detection	Operation upon recovery from failure.	Automatic reset	Retained
DS6-3	Monitor input	Detecting failure under halting status.	Yes	No
DS6-4	Forced termination	Ignoring forced stop signal.	No	Yes

Note:

- 1. All are set to "OFF" upon shipment from factory.
- 2. *1 If operating feedback input is not detected within 10 seconds after 1 operation input is received, it results in start/ stop failure.

Factory preset before shipment

C/C : Centralized control equipment
 C/D : Connectable Devices or Facility equipment

Switch	Condition	Factory preset before shipment
DS1	Range of address No.	1-00, 01, 02, 03
DS2	A1 - AM	Abnormal in the open condition
DS4-1	Power failure, then after power recovery	Stop
DS4-2	Communication abnormal	Stop
DS4-3	Last command priority or C/C only	Last command priority
DS4-4	Operation commands from C/C reach to C/D , but no operation.	No abnormality signal to C/C
DS5	Of abnormal in C/D,	CD- D1~4 is "turned off".
DS6-1	Mask time for abnormal input after operation command from C/C	10 seconds
DS6-2	After error of C/D is recovered	Automatic reset
DS6-3	Abnormal input + stop state of C/D	Error display on C/C
DS6-4	Forced stop command from C/C	C/D stop
SS1	Continuous output "Con" / Instantaneous output "Ins"	Continuous output
TNa	"a" contact or "b" contact for CD- D1~4	"a" contact
DS3	Number of C/D	4

"a" contact: make-contact, "b" contact: break-contact

- ① Set the top address of this equipment with the DIII-NET setting switch (DS1/RS1).
 Using the DIII-NET setting switch (DS1), set the range of Address No. that is set in this equipment.
 Address Nos. 1-00 to 1-15 are factory controlled before shipment.

Control range DS1	1-00 ~ 1-15	2-00 ~2-15	3-00 ~ 3-15	4-00 ~ 4-15
Control range DS1 (high order) setting (Address range)	 *			

* when a product is discharged from the factory
 ← This indicates the switch knob.

Set Address No. (low order) with the centralized address setting switch (RS1).
 Referring to the table below, set the address number low order.
 (Address Nos. are 1-00, 1-01, --- 1-15, 2-00, --- 4-15.)

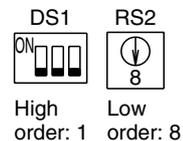
RS1 Switch Setting Table * when a product is discharged from the factory

Position	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Address No.	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15

* (low order)

<Example>
 When Address No. is set to 1-08

Address No. indicates the following portion in this case.



1-8
 High order Low order

In this case, it follows that this equipment uses Address Nos. 1-08 to 1-11. (4 numbers max.)

* Number of centralized addresses used

The number of centralized addresses used is determined by the top address set in this paragraph and the number of facility equipment connected that is set in "⑤ TP1 Setting (Facility equipment quantity change)" paragraph.

Example 1: When the top address was set to "1-00" and the number of facility equipment was set to "2", it follows that "1-00" and "1-01" are being used.

Example 2: When the top address was set to "3-15" and the number of facility equipment was set to "4", it follows that "3-15", "4-00", "4-01" and "4-02" are being used.

<CAUTION>

This equipment can use the addresses between "1-00" and "4-15".

(It is impossible to use Address 5-00 and subsequent addresses, and use any address in duplication.)

Example: When the top address was set to "4-14", the number of facility equipment cannot be set to "4".
 In this case, set it to "1" or "2".)

② DS2 Setting

This switch selects whether the input is abnormal with the abnormal input contact (A1 to A4) open or closed.

OFF (factory preset before shipment) --- Abnormal in the open condition

ON --- Abnormal in the closed condition

The relationship between each switch and abnormal input is as described below.

Input A1: DS2-1 Input A2: DS2-2

Input A3: DS2-3 Input A4: DS2-4

③ DS4-1 Setting

This switch selects the control output status after power failure occurred in this equipment and the power was recovered.

OFF (factory preset before shipment) --- The control power after power recovery is handled as stop output.

ON --- The control output after power recovery is handled as output before power failure.

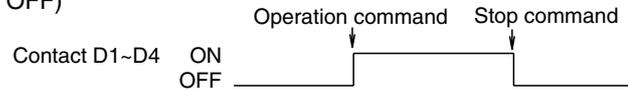


④ SS1 Setting

This switch selects continuous output or instantaneous output for control outputs (D1 to D4) commanded to the facility equipment.

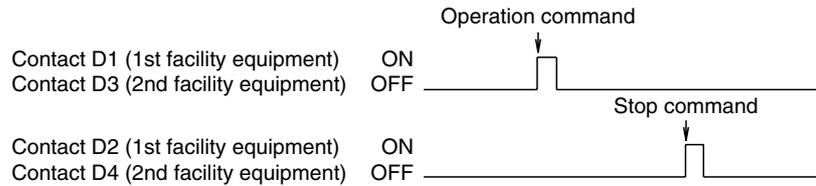
Set to "Con." side (factory preset before shipment) --- Continuous output

(Contacts D1 to D4 at the time of operation command from the centralized control equipment:
ON-Contacts D1 to D4 at stop command: OFF)



Set to "Ins." side --- Instantaneous output

(Contact D1 or D3 at the time of operation command from the centralized control equipment:
ON for one second only-Contact D2 or D4 at stop command: ON for one second only)



⑤ TP1 Setting (Facility equipment quantity change)

This function is used to set the number of facility equipment controllable with this equipment.

(The number of controllable facility equipment factory preset before shipment is 4.)

(Setting Method)

1. Turn the power "ON" with TP1 short-circuited and change the quantity of facility equipment according to the DS3 setting.
The relation between DS3 setting and facility equipment quantity is as per the table below.
2. Turn the power "OFF".
3. Open the TP1 and turn all DS3 switches "OFF".
4. Turn the power ON gain.
5. Short-circuit the TP1, and check to see if the setting coincides with the number of facility equipment connected to this equipment.
6. Finally, open the TP1.

* The number of connectable facility equipment is 4 max. at continuous output, and 2 max. at instantaneous output.

TP1	Short circuit (with power "ON")			
DS3				
Setting Contents	1 Unit	2 Units	3 Units	4 Units

← This indicates the switch knob.

By short-circuiting the quantity change TP1 in the normal operating condition, the setting status can be confirmed.

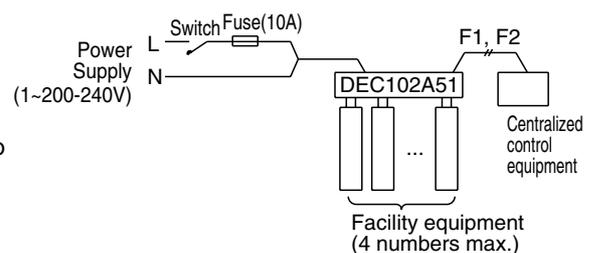
Operation Monitor	1 Unit	2 Units	3 Units	4 Units
	☉○○○	☉☉○○	☉☉☉○	☉☉☉☉

☉ This indicates LED lighting.

3. Electric Wiring Connection

Wiring Procedure

- ① <F1/F2> wiring between this equipment and centralized control equipment is required.
- ② The connection to the facility equipment and setting of various switches are required.
See the "Wiring with Facility Equipment" paragraph
- ③ Connect the power supply and earth.
See the "Power Supply & Earth Wiring" paragraph.
- ④ For the wiring connection and clamping method, refer to the "Wiring Lead-in" paragraph.



Wiring with Facility Equipment

<CAUTION> The length of wiring between this equipment and facility equipment is 100m max.

Part 5 Installation Manual

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1. Safety Precautions

Also see installation manual attached to equipment you connect.

Please read these "SAFETY PRECAUTIONS" carefully before installing air conditioning unit and be sure to install it correctly.

- They both contain important information regarding safety. Be sure to observe all precautions without fail.

 WARNING	Failure to follow these instructions properly may result in personal injury or loss of life.
 CAUTION	Failure to observe these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstances.

- After completing installation, conduct a trial operation to check for faults and explain to the customer how to operate the air conditioner and take care of it with the aid of the operation manual. Ask the customer to store the installation manual along with the operation manual for future reference.

 WARNING	
• Ask your dealer or other qualified personnel to carry out installation work.	Do not attempt to install the unit yourself. Improper installation may result in an electric shock or fire.
• Do not relocate or reinstall the unit yourself.	Improper installation work may result in an electric shock or fire. Ask your local dealer to carry out relocation and reinstallation of the unit.
• Install the unit in accordance with the instructions in this installation manual.	Improper installation may result in an electric shock or fire.
• Be sure to use only the specified accessories and parts for installation work.	Failure to use the specified parts may result in the unit falling, an electric shock, or fire.
• Install the unit on a foundation strong enough to withstand the weight of the unit.	A foundation of insufficient strength may result in the equipment falling and causing injury.
• Always perform installation work with the power supply shut off.	Touching energized electric parts causes an electric shock.
• Do not disassemble, modify or repair the unit.	An electric shock or fire may be caused.
• Make sure that all wiring is secured, that the specified wires are used, and that there is no strain on the terminal connections or wires.	Improper connection or securing of wires may result in abnormal heat build-up or fire.
• The choice of materials and installations must comply with the applicable national and international standards.	
• Carry out installation work taking earthquakes into account.	Failure to do so during installation work may result in the unit falling and causing accidents.
• Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual.	An insufficient power supply capacity or improper electrical construction may lead to an electric shock or fire.
• When wiring the power supply and connecting the remote controller wiring and transmission wiring, position the wires so that the electric parts box lid can be securely fastened.	Improper positioning of the electric parts box lid may result in an abnormal heat build-up, an electric shock, or fire.

WARNING

- **Be sure to earth the unit.**
Do not earth the unit to a utility pipe, lightning conductor or telephone earth lead. Imperfect earthing may result in an electric shock or fire.
- **Do not change the protective equipment settings.**
Otherwise, a short-circuit may occur in a pressure switch, temperature switch, or other protective equipment, forcing the unit to operate unexpectedly. In addition, use of parts other than those specified by DAIKIN may result in firing.
- **Install an earth leakage breaker, as required.**
Failure to install an earth leakage breaker may result in an electric shock or fire.
- **This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.**
- **Children should be supervised to ensure that they do not play with the appliance.**

CAUTION

- **Be very careful about product transportation.**
- **Safely dispose of the packing materials.**
Tear apart and throw away plastic packaging bags so that children will not play with them. If children play with a plastic bag which was not torn apart, they face the risk of suffocation.
- **This unit is a class B product.**
- **In a domestic environment, this product may cause radio interference.**
In such case, the user may be required to take adequate measures.
- **Disposal requirements Dismantling of the unit, treatment of the refrigerant, of oil and of other parts must be done in accordance with relevant local and national legislation.**
- **To ensure your safety, be sure to lock the control enclosure door except during maintenance.**
- **Fill the wiring through hole with putty.**
Entry of water or insects may result in electric leakage or malfunction.
- **Do not operate with wet hands.**
An electric shock and malfunction may be caused.
- **Do not wash this unit with water.**
An electric shock or fire may be caused.
- **Install the indoor and outdoor units, power cord, and connecting wires at least 1 meter away from televisions or radios.**
This is to prevent picture interference and noise. (Depending on the incoming signal strength, a distance of 1 meter may not be sufficient to eliminate noise.)
- **Do not install the unit in the following places.**
 1. **Where there is a high concentration of mineral oil spray or vapor (e.g. a kitchen).**
Plastic parts will deteriorate, parts may fall off and water leakage could result.
 2. **Near machinery emitting electromagnetic radiation.**
Electromagnetic radiation may disturb the operation of the control system and result in a malfunction of the unit.
 3. **Where flammable gas may leak, where there is carbon fibre or ignitable dust suspensions in the air, or where volatile flammables such as paint thinner or gasoline are handled.**
Operating the unit in such conditions may result in fire.
 4. **High temperature area or directly flamed point.**
Abnormal heat build-up or firing may be caused.
 5. **Moist area, or place that may be exposed to water.**
If water enters inside the unit, an electric shock and malfunction may be caused.

2. intelligent Touch Manager

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1 Before Installation

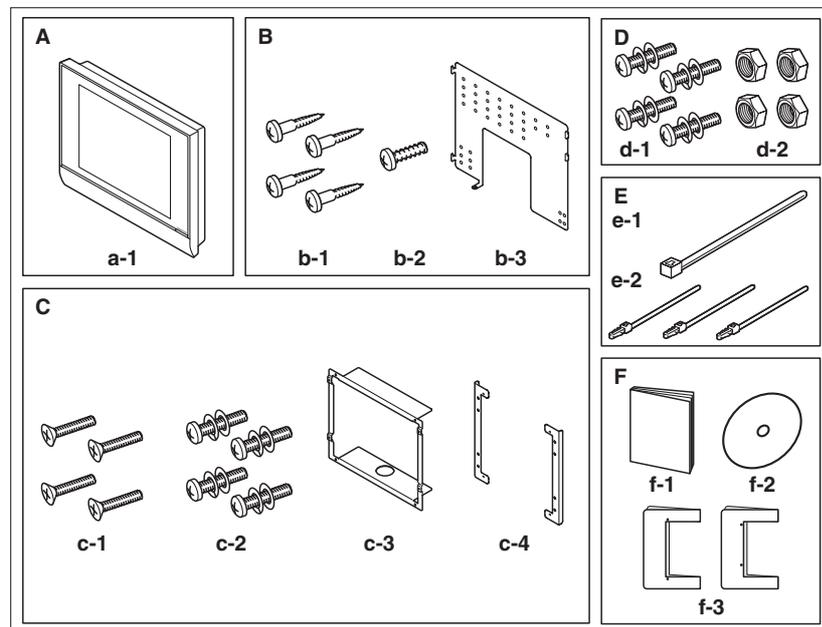
Before you start installing the intelligent Touch Manager, complete the following preparations.

- Check that the intelligent Touch Manager comes with all accessories.
- Confirm where the terminals and switches of the intelligent Touch Manager are located.
- Check that an appropriate space for installing the intelligent Touch Manager is available.

1.1 Checking that all accessories are included

Based on the following accessory list, check that all accessories for the intelligent Touch Manager are included. Should there be any missing or defective parts, contact your dealer.

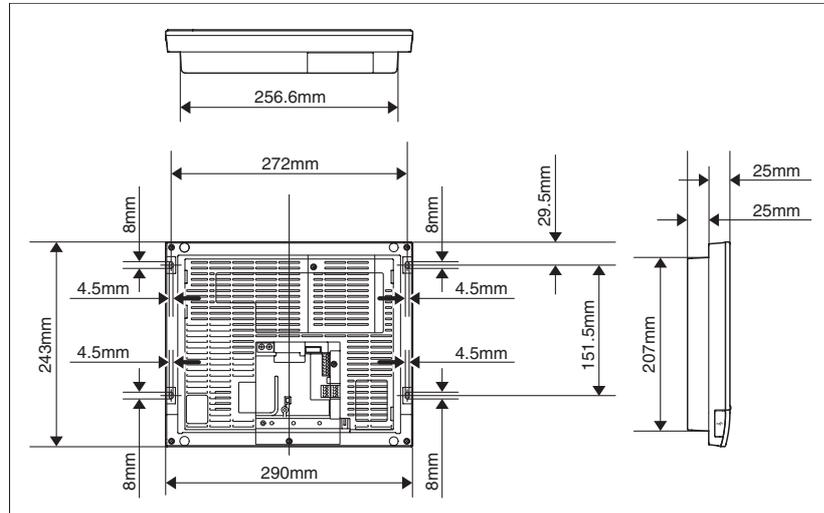
<Accessories included with intelligent Touch Manager>



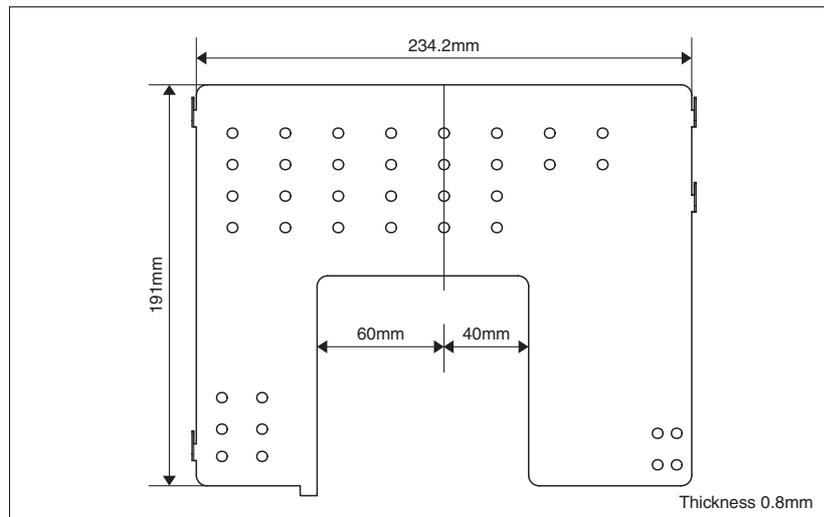
- A** (a-1) intelligent Touch Manager body (1 pc.)
- B** Wall mounting parts
 (b-1) Round-head wood screw ($\phi 4.1 \times 25$), 4 pcs. (b-2) P-tight screw ($\phi 3 \times 8$), 1 pc.
 (b-3) Wall mounting metal plate, 1 pc.
- C** Flush wall mounting parts
 (c-1) Flat-head screw (M4 \times 40), 4 pcs. (c-2) Pan-head screw (M4 \times 14, with spring washer and plain washer), 4 pcs.
 (c-3) Frame bracket, 1 pc. (c-4) Angle bracket, 2 pcs.
- D** Control enclosure parts
 (d-1) Pan-head screw (M4 \times 40, with spring washer and plain washer), 4 pcs.
 (d-2) Nut ($\phi 4$), 4 pcs.
- E** (e-1) Cable tie, 1 pc. (e-2) Push mount tie, 3 pcs.
- F** (f-1) Installation manual (This manual), 1 pc. (f-2) Manual CD, 1 pc.
 (f-3) Paper template, 2 pcs.

1.2 Understanding external dimensions

- intelligent Touch Manager body

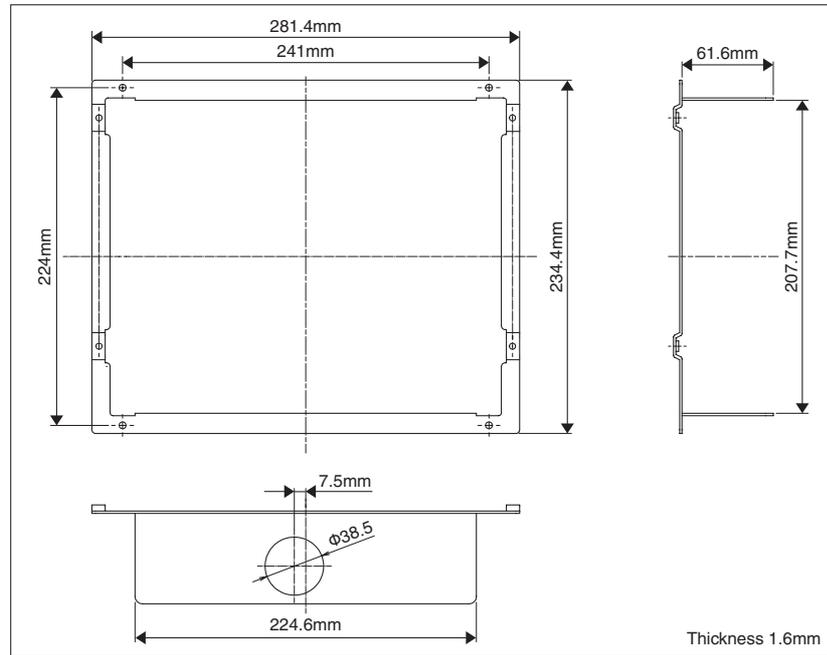


- Wall mounting metal plate

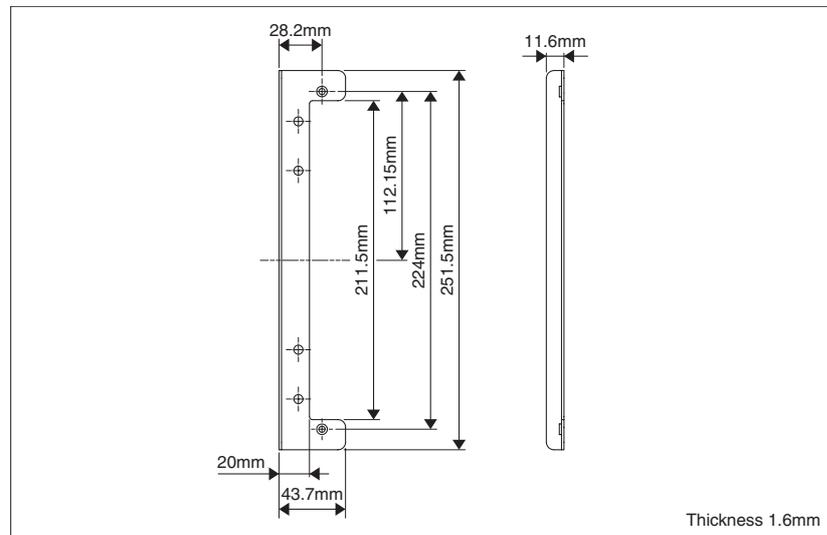


5

• Frame bracket



• Angle bracket



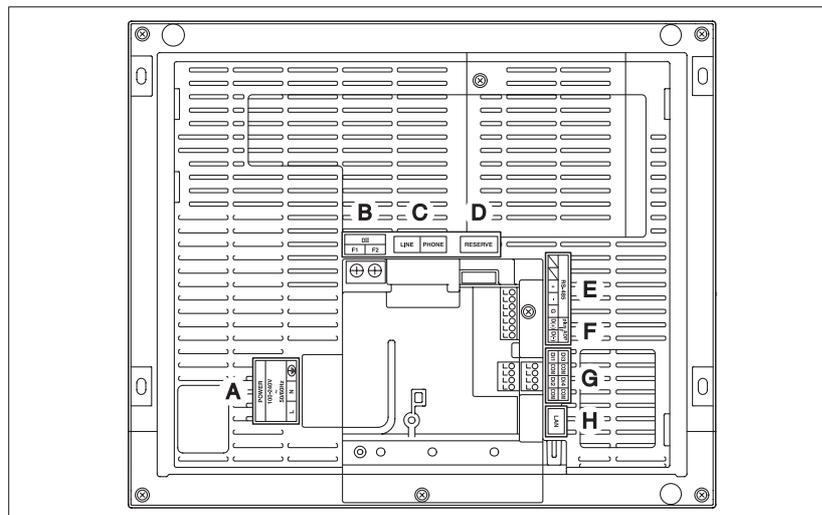
1.3 Understanding where terminals and switches are located

Understand the arrangement of terminals and the location of openings on the unit and plan how to route the cable and in which order to connect its wires to facilitate the installation procedure. For connection details including the cable type and terminal size, refer to “2. Connection”.

1.3.1 Rear face

Most terminals are located on the rear face of the intelligent Touch Manager. However, they are covered with a terminal cover for safety reasons. Removing 2 screws to detach this cover reveals various types of terminals as shown below.

<Rear face of intelligent Touch Manager>

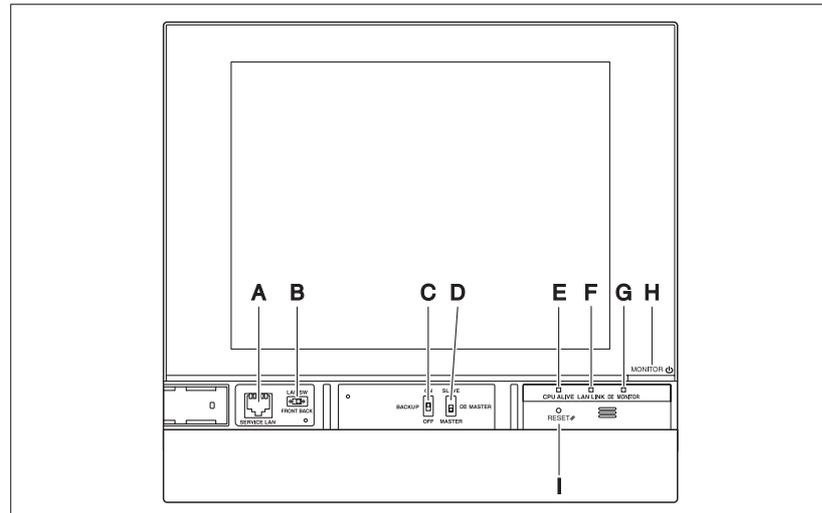


- A [POWER]** The power line connection terminals. A power supply voltage of 100 to 240 VAC (at 50/60 Hz) is required. Near this terminal block, there is a blue resin cable mount used for securing the power supply cables with cable ties.
- B [DIII]** The communication line connection terminals for “DIII-NET”, which enables communications with DAIKIN’s air conditioning equipment.
- C [LINE, PHONE]** The sockets used when subscribing to the DAIKIN “Air Conditioning Network Service System” online monitoring service for air-conditioning systems. To use the “Air Conditioning Network Service System” service, you need to sign a separate maintenance contract.
- D [RESERVE]** No Use.
- E [RS-485]** The terminals for connecting serial equipment.
- F [plus ADP IF]** The terminals for connecting one or more iTM plus adaptors when the intelligent Touch Manager is used to control more air conditioning devices.
- G [Di (1-4), COM]** The terminals for connecting an external signal input device for stopping air conditioners in an emergency, or for connecting electric energy meters for calculating the electricity usage of individual air conditioners.
- H [LAN]** The socket for connecting the intelligent Touch Manager to an Ethernet network.

1.3.2

Front panel

Located below the monitor display on the front panel are four LEDs that indicate the operating status of the intelligent Touch Manager. Sliding the front slide cover down and then removing a screwed cover reveals terminals used during the setup after installation or during maintenance work.

<Front face of intelligent Touch Manager>

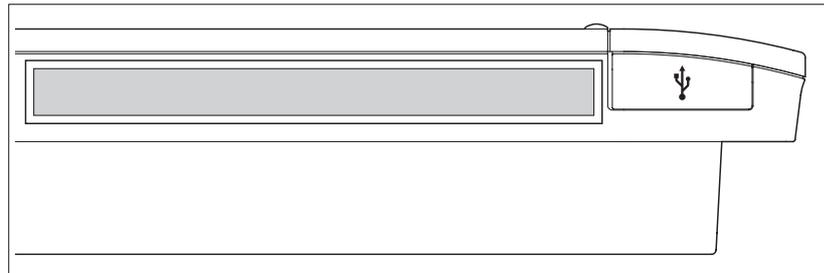
- A [SERVICE LAN]** The socket for temporarily connecting the intelligent Touch Manager to a LAN from its front face, instead of its rear face, during installation or maintenance.
- B [LAN SW]** The switch for selecting which Service LAN socket, one on the front face or one on the rear face, is to be activated.
You cannot close the cover when the switch set to "FRONT". To close the cover, select "BACK".
- C [BACKUP]** The switch for turning on/off the backup power supply for retaining the current settings.
- D [DIIII MASTER]** The switch used when there are two or more DIIII-NET centralized controllers to select the "MASTER" or "SLAVE" controllers.
- E [CPU ALIVE] LED (Green)** The LED that indicates that the CPU is operating normally. The CPU is operating normally when this LED is blinking and malfunctioning when it is on or off.
(It takes about 10 seconds for detection of the abnormality.)
On: Installation failure
Off: A hardware failure occurred.
- F [LAN LINK] LED (Green)** The LED that indicates whether or not the hardware connection is established normally between the intelligent Touch Manager and the equipment connected to the LAN port. It lights green when the LAN port is linked normally.
- G [DIIII MONITOR] LED (Yellow)** This LED blinks when data is being sent or received on DIIII-NET.
- H [MONITOR] key and LED (Orange/Green)** Each time you press this key, the monitor display turns on/off. The color of the LED also changes accordingly to the condition of the monitor display.
Off: The monitor is powered off.
On (Orange): The monitor display is off.
On (Green): The monitor display is on.
- I [RESET//]** The switch for restarting the intelligent Touch Manager.

1.3.3

Side face

On the left side face of the intelligent Touch Manager, a USB port cover is provided. You use this cover during setup after installation or during maintenance. You also see an attached label, bearing the model, weight, power ratings and the serial number of the intelligent Touch Manager.

<Side face of intelligent Touch Manager>



[USB] Pulling up the rubber cover reveals a USB socket. This socket can be raised 90 degrees, so you can plug in a USB device to it from the front direction when there is no clearance from the side edge of the unit.

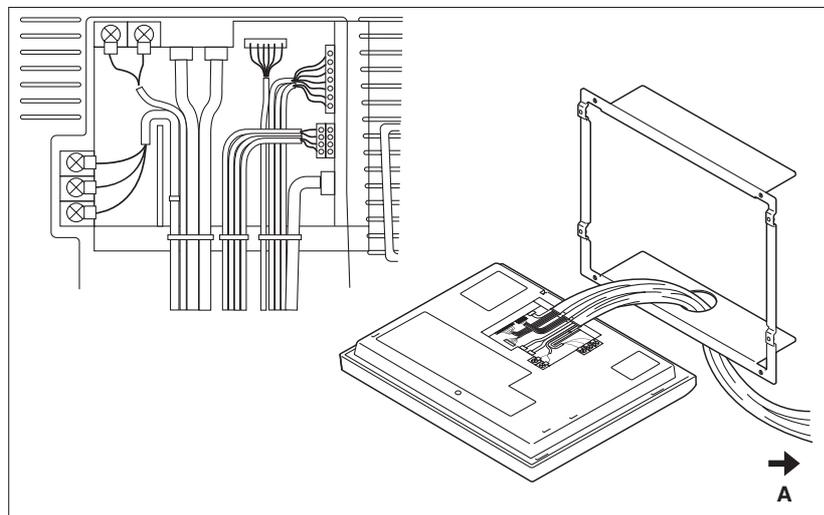
1.3.4

Routing of cables

To flush-mount the intelligent Touch Manager to the wall, you need to route in advance the cables through the cable hole of the frame bracket.

An example of cables routed to the rear face of the intelligent Touch Manager is shown below.

<Routing of cables>



A To conduit tube

Make sure that each wiring is secured with supplied cable ties.

Secure the power supply cables to the blue resin cable mount with white cable ties and secure them to the other wiring with black cable ties as shown on the wiring diagram (example).

To secure the wiring with black cable ties, insert the cable tie head into the provided hole.

1.4 Determining installation place

Be sure to install the intelligent Touch Manager in a place that meets the conditions described in 1.4.1 through 1.4.3 below.

1.4.1 Installation place and mounting direction

Below are the description of the installation place and mounting direction. Be sure to confirm.

- Installation place: Indoor, free from dust and water splashes
- Mounting direction: Vertical

1.4.2 Environmental conditions

Make sure that the installation environment meets the following conditions.

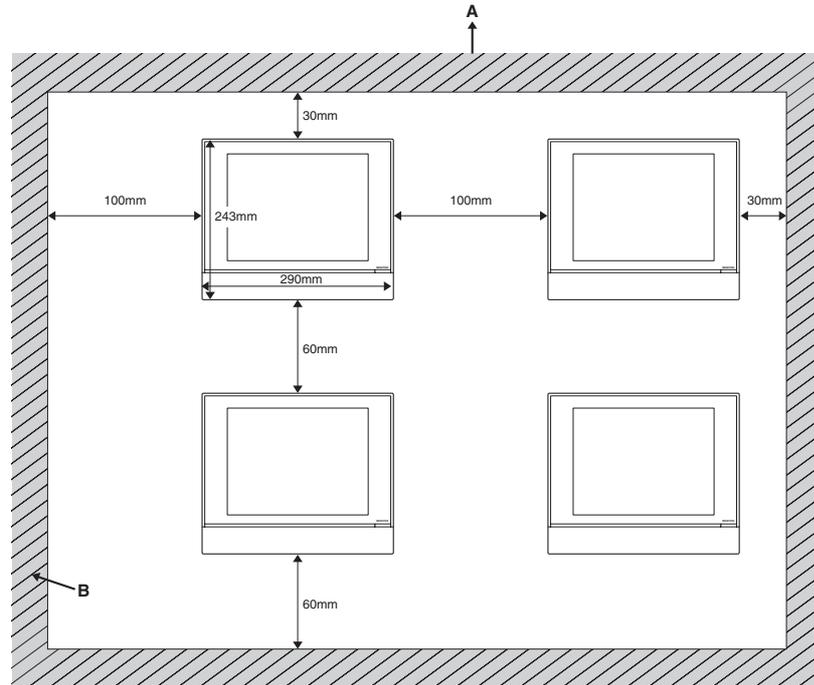
- The ambient temperature must be 0 to 40 °C.
- The ambient humidity must be 85% RH or less (without condensation).
- There must be no electromagnetic disturbance.

1.4.3 Required space

To install the intelligent Touch Manager, the following space is required. Make sure that there is a minimum clearance of 30 mm from the top edge, 100 mm from the left side edge, 30 mm from the right side edge, and 60 mm from the bottom edge of the unit.

<Installation space required for intelligent Touch Manager>

Required installation space



- A Top
- B Wall

2 Connection

This chapter describes the procedure for connecting the intelligent Touch Manager with DAIKIN air conditioning devices and other equipment.

In addition to air conditioners, the intelligent Touch Manager can monitor and control a wide range of equipment. However, the required connection procedures vary depending on the equipment to be connected.

Required procedures

- 2.2 Connecting DIII-NET-compatible air conditioning equipment
- 2.7 Connecting power supply

Equipment-specific procedures

- 2.3 Connecting a LAN cable
- 2.4 Connecting I/O module
- 2.5 Connecting an emergency stop input device or electric energy meters
- 2.6 Connecting iTM plus adaptors

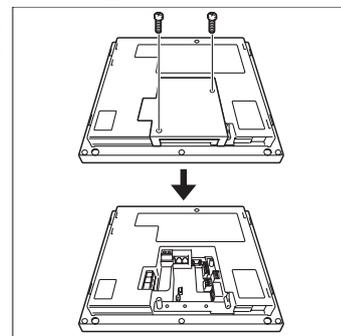
WARNING

- Do not turn the power supply on until all connections are made. Also, make sure that the local circuit breaker, if available, is turned off. Not doing so may cause an electric shock.
- After completing connections, check again that all wires are connected correctly before turning on the power supply.
- All field supplied parts and materials, electric works must conform to local codes.
- All wiring must be performed by an authorized electrician.

2.1 Removing terminal cover from rear face

Before you start any of these connection procedures, remove the terminal cover from the rear face. To do so, remove two screws using a Phillips screwdriver.

<Removing terminal cover>



2.2 Connecting DIII-NET-compatible air conditioning equipment

DIII-NET is a unique air conditioning equipment communication capability developed by DAIKIN. Using DIII-NET, you can centrally control multiple DAIKIN DIII-NET-compatible air conditioning devices by connecting them to your intelligent Touch Manager.

WARNING

- Be sure to perform this procedure with the power supply turned off. Not doing so may cause an electric shock.
- The maximum length of adhered wiring of high current electrical line of power wires and weak current line of communication wires must be kept to 20 meters or less.

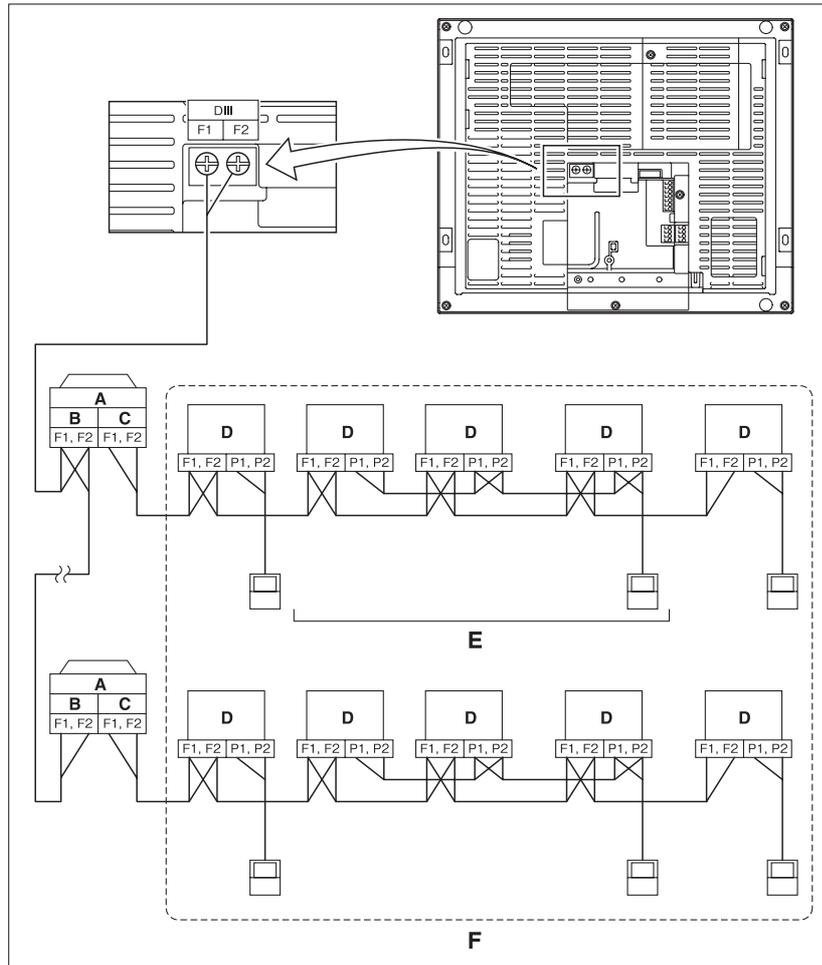
2.2.1 Terminals location and conceptual connection diagram

To connect the DIII-NET communication line, use the 2 terminals F1 and F2 under the label "DIII" on the rear face. These 2 terminals have no polarity. An example of connecting more than two air conditioning devices is shown in the following conceptual connection diagram.

⚠ CAUTION

Make sure that the wires you are connecting to the F1 and F2 terminals are not power wires. Inadvertently connecting power wires to these terminals results in a failure of the air conditioner or intelligent Touch Manager.

<Conceptual connection diagram with air conditioning equipment>



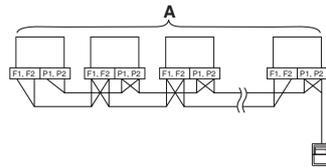
- A** Outdoor unit
- B** OUT - OUT
- C** IN - OUT
- D** Indoor unit
- E** A maximum of 16 indoor units can be connected per remote controller group.
- F** A maximum of 64 remote controller groups (128 indoor units) can be connected.
A maximum of 64 indoor units can be connected when power distribution is enabled.

NOTE

• What's a remote controller group?

A single remote controller can simultaneously control a maximum of 16 indoor units. This capability is referred to as group control. A remote controller group is a group of indoor units controlled under the same remote controller.

[Conceptual drawing of a remote controller group]



A Max. 16 units

2.2.2**Requirements that must be met**

Cable specifications

- Cable type: 2-core vinyl-insulated vinyl-sheathed cable/vinyl cable or 2-core shielded cable
- Core thickness: 0.75mm² - 1.25mm²
- Terminal treatment: Use a round crimp-type terminal (M3.5) with insulating sleeve

Precautions

- Do not use multicore cables with three or more cores.
- When using a shielded cable, connect only one end of each shield wire to the ground.
- The maximum wire distance must be kept to 1000 meters or less. The total wire length must be limited to 2000 meters, except when using a shielded cable whose total wire length must be kept to 1500 meters or less.

2.2.3**Precautions for using multiple centralized controllers**

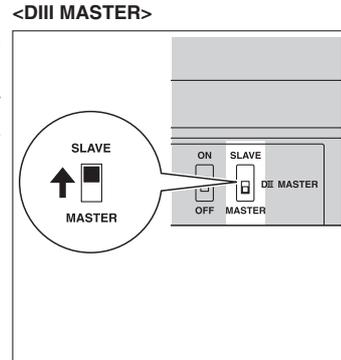
Equipment that controls multiple air conditioners is referred to as "centralized controller". DAIKIN's product portfolio includes a wide range of centralized controllers suited to different applications or target sizes, which can be used in combination to construct an optimal air conditioning control system.

If two or more centralized controllers are used in combination in DIII-NET, you must establish a MASTER to SLAVE relationship among those controllers to prevent confusion. The MASTER authority may be assigned to one controller only. The remaining controllers must be set to SLAVE.

The intelligent Touch Manager is set to MASTER by default. Change the setting to SLAVE in any of the following cases:

- Where Interface for use in BACnet is installed in parallel.
- Where Interface for use in LONWORKS is installed in parallel.
- Where there is another MASTER intelligent Touch Manager or MASTER iTM plus adaptor, and it is connected in relations of main/sub.

To set the intelligent Touch Manager to SLAVE, use the DIII MASTER switch located under the front slide cover. Placing the DIII MASTER switch in the upper position (labeled as “SLAVE”) changes it to a SLAVE.



To install multiple centralized controllers, set only the highest priority controller to MASTER and all other controllers to SLAVE according to the following order of priority:

- | | | |
|----------|---|-----------------------------------------------------------------------|
| High | ↑ | (1) Interface for use in BACnet |
| | | (2) Interface for use in LONWORKS |
| | | (3) intelligent Touch Manager (Main) , iTM plus adaptor (Main) |
| Priority | | (4) Central Remote Controller (Main) |
| | | (5) intelligent Touch Manager (Sub) , iTM plus adaptor (Sub) |
| | | (6) Central Remote Controller (Sub) |
| Low | ↓ | (7) ON/OFF Controller (Main) |
| | | (8) ON/OFF Controller (Sub) |

Centralized controllers that cannot be installed in parallel with intelligent Touch Manager

- CALCULATE UNIT
- intelligent Processing Unit
- Parallel Interface
- Intelligent Touch Controller
- DIII-NET Plus Adapter
- Residential Central Remote Controller
- Schedule Timer
- Wiring Adaptor for Electrical Appendices (1) (KRP2)

2.3 Connecting a LAN cable

Connecting your intelligent Touch Manager with a PC network enables you to set up the operation of air conditioning system or perform maintenance work on it from a remote location.

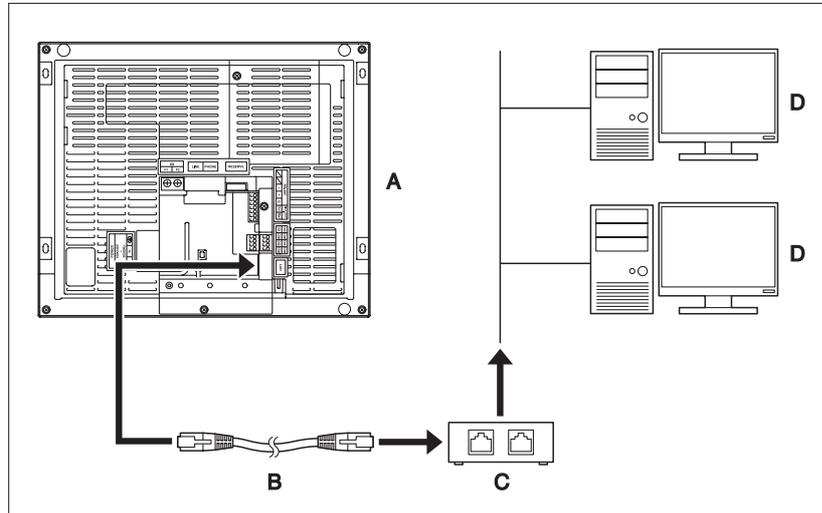
WARNING
Do not clamp the cables with high-current lines such as a power cable.

NOTE
For how to connect the intelligent Touch Manager to a PC network, contact your network administrator.

2.3.1 Terminals location and conceptual connection diagram

Using a LAN cable, connect the LAN socket to the network hub.

<Conceptual drawing of LAN connection>



- A Rear face of intelligent Touch Manager
- B LAN cable
- C Hub
- D PC

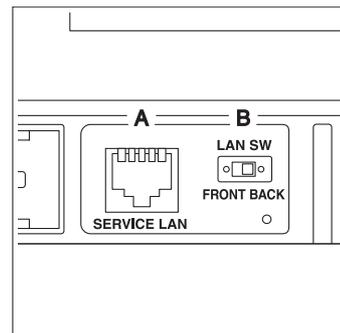
2.3.2 Requirements that must be met

- Applicable cable standard: 100Base-TX or 10Base-T
- Connector standard: RJ-45

NOTE

- If you are connecting to a LAN temporarily during installation or maintenance, use the SERVICE LAN terminal located on the front face. Changing the position of the LAN SW switch to "FRONT" causes the SERVICE LAN socket to activate (enabled for use).
- You cannot close the cover when the switch set to "FRONT". To close the cover, select "BACK".

<SERVICE LAN socket and LAN SW switch>



- A SERVICE LAN
- B LAN SW

2.4 Connecting I/O module

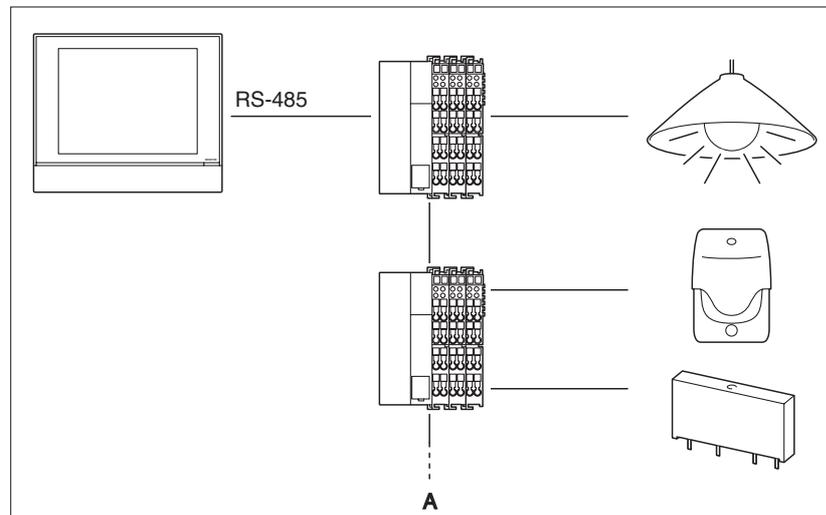
The intelligent Touch Manager can be used in conjunction with the I/O module. The I/O module provides a maximum of 960 I/O points for controlling non-DAIKIN peripheral equipment such as lighting equipment and security lock systems.

WARNING

- Be sure to perform this procedure with the power supply turned off. Not doing so may cause an electric shock.
- Do not clamp the cables with high-current lines such as a power cable.

2.4.1 Terminals location and conceptual connection diagram

<Conceptual drawing of I/O module connection>



A Max. 30 nodes

Connect the I/O module to the RS-485 terminals located on the rear face. Be sure to connect the positive (+) core to the + (positive) terminal and the negative (–) core to the – (negative) terminal, respectively. If you are using shielded stranded wire cables, twist and connect the strands of wire to the G (Ground) terminal.

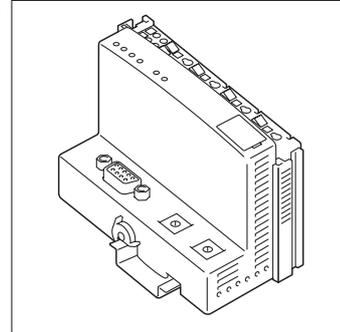
2.4.2 Requirements that must be met

- Cable type: CPEV or FCPEV cable (shielded type also acceptable)
- Cable length: 500 meters or less
- Core thickness: $\phi 0.65 - 0.9\text{mm}$
- Limitation in contacts per node is 120 or less. Maximum number of nodes is 30.
- The intelligent Touch Manager must be connected as a terminal to the RS-485 wiring.

2.4.3 Address setup

The bus coupler located at the beginning of each node has a rotary switch for address setup. You must set a unique address for each node by using the rotary switch. For details, refer to the operation manual for the I/O module.

<Bus coupler>



2.5 Connecting an emergency stop input device or electric energy meters

The intelligent Touch Manager can be connected with an external signal input device for stopping air conditioners in an emergency, or with electric energy meters for calculating the electricity usage of individual air conditioners (when power distribution is enabled).

WARNING

- Be sure to perform this procedure with the power supply turned off. Not doing so may cause an electric shock.
- Do not clamp the cables with high-current lines such as a power cable.

NOTE

- Power distribution is available for a maximum of 64 air conditioners (indoor units) per DIII-NET port.
- With 7 iTM plus adaptors, however, you can connect up to 512 indoor units.

2.5.1 Terminals location and conceptual connection diagram

Connect the contact input lines or pulse signal lines to the Di1, Di2, Di3, Di4, and COM terminals of the orange connector located on the rear face. Each terminal has a different function.

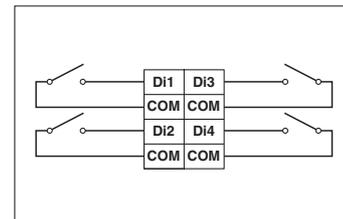
[Di1] Emergency stop input

[Di2] [Di3] [Di4] Pulse input, contact signal input

[COM] Common

This function assignment, however, may be changed at a later time. For how to change the function assignment, refer to the commissioning manual.

<Conceptual drawing of Di connection>



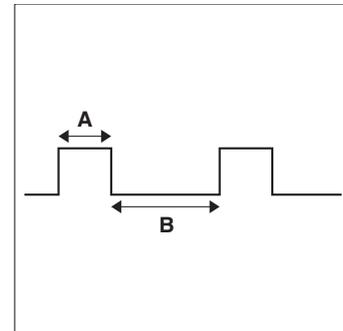
NOTE

The COM terminals are all connected internally. So, you can use either of them. However, you can connect up to two wires simultaneously to each COM terminal.

2.5.2 Requirements that must be met

- Cable type: CPEV cable
- Core thickness: $\phi 0.65 - 0.9$ mm
- Cable length: 200 meters or less
- Pulse width: 20 to 400 ms
Pulse interval: 100 ms or more

<Pulse width>



- A Pulse width: 20 to 400 ms
- B Pulse interval: 100 ms or more

CAUTION

- The contact connected to the contact input terminal must be capable of handling 10 mA at 16 VDC.
- If an instantaneous contact is used for triggering an emergency stop, use one that has an energization time of 200 ms or more.
- Do not clamp the cables with high-current lines such as a power cable.

NOTE

When emergency stop input signal is enabled, you cannot restart all the air conditioners unless you disable it.

2.6 Connecting iTM plus adaptors

If you have many air conditioners, use iTM plus adaptors to connect them. It is a fact that the number of indoor groups you can control using a single intelligent Touch Manager is limited to 64. By using iTM plus adaptors, however, you can connect additional 64 groups of indoor units per iTM plus adaptor. Moreover, considering that the intelligent Touch Manager can be connected with a maximum of seven iTM plus adaptors, you can control a total of 512 groups of indoor units at a maximum using a single intelligent Touch Manager.

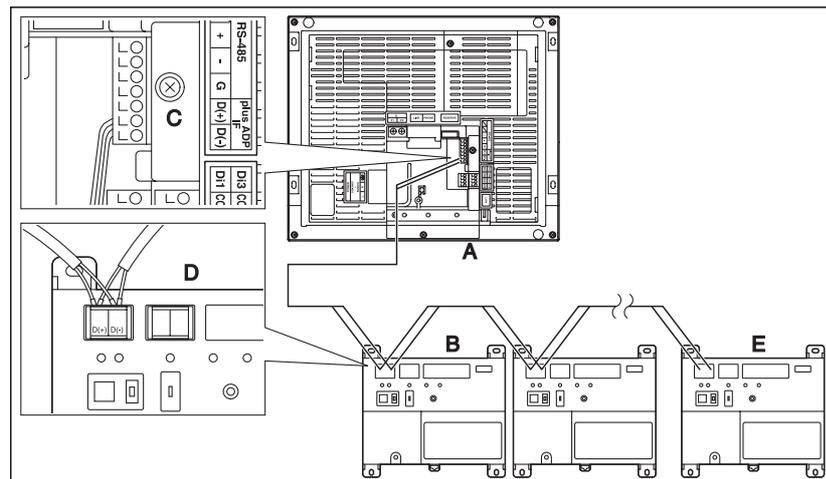
WARNING

- Be sure to perform this procedure with the power supply turned off. Not doing so may cause an electric shock.
- Do not clamp the cables with high-current lines such as a power cable.

2.6.1 Terminals location and conceptual connection diagram

Connect an iTM plus adaptor to the plus ADP IF terminals located on the rear face. Be sure to connect the positive wire the “+” terminal and the negative wire to the “-” terminal, respectively, as these terminals have polarity.

<Terminals location and conceptual connection diagram>



- A intelligent Touch Manager (Rear face)
- B iTM plus adaptor
- C plus ADP IF (intelligent Touch Manager)
- D plus ADP IF (iTM plus adaptor)
- E iTM plus adaptor on which termination resistor must be enabled

2.6.2 Requirements that must be met

- Cable type: CPEV or FCPEV cable
- Core thickness: $\phi 0.65 - 0.9$ mm
- Cable length: 50 meters or less

NOTE

Each air conditioner controlled via an iTM plus adaptor is also assigned a DIII address between "1-00" to "4-15". From the intelligent Touch Manager, it is recognized as "2:1-00", "3:1-02", or the like, with the DIII-NET port number prefixed.

2.7 Connecting power supply

Connect the intelligent Touch Manager to an AC power supply.

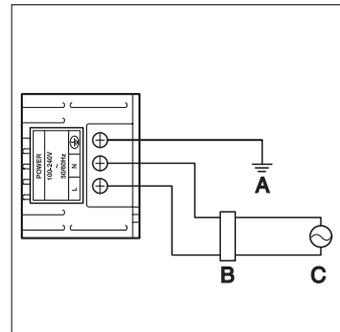
⚠ WARNING

The following procedures must be carried out with the power supply shut off. Do not turn the power supply on until all connections are made. Not doing so may cause an electric shock.

2.7.1 Terminals location and conceptual connection diagram

Connect the power supply to the three terminals, L (Live), N (Neutral), and ground in the POWER section.

<Conceptual drawing of power supply connection>



- A** Earth
- B** Earth leakage breaker
- C** Power supply 100-240VAC
50/60 Hz

2.7.2**Requirements that must be met**

- Cable type: Ordinary tough rubber sheathed cord (60245 IEC 53) equivalent or higher
Ordinary polyvinyl chloride sheathed cord (60227 IEC 53) equivalent or higher
- Core thickness: Power wire: 1.0 - 2.0 mm²
Earth lead: Size must comply with local codes.
- Terminal treatment: Use a round crimp-type terminal (M4) with insulating sleeve.
- Power supply voltage: Single phase 100 to 240 VAC (at 50/60 Hz)
- Voltage fluctuation: ±10% or less
- Electric power consumption: 23 W

**CAUTION**

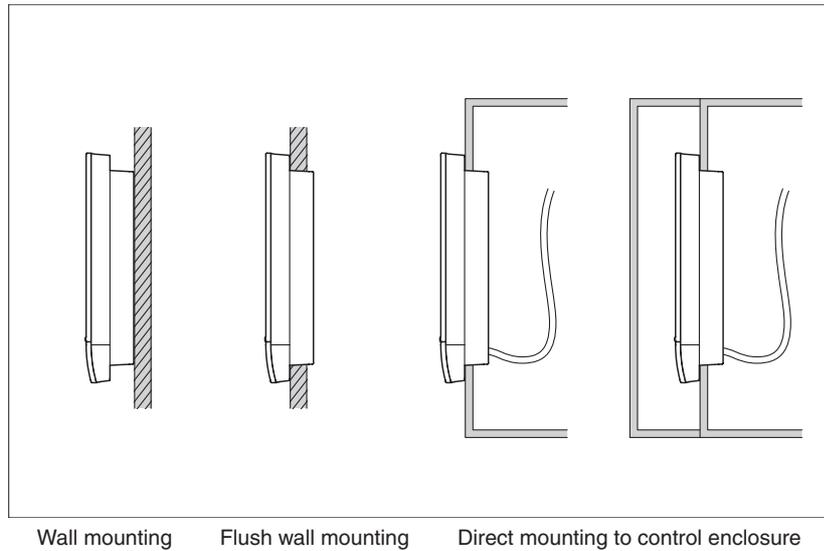
- **An earth leakage breaker capable of shutting down power supply to the entire system must be installed.**
- **When using an earth leakage breaker, make sure to select one useful for to protection against overcurrent and short-circuit. When using an earth leakage breaker only for earth device, make sure to use a wiring interrupter together.**
- **The power supply requires earth leakage breaker installation and earth wire connection. After installing an earth leakage breaker, be sure to connect only the intelligent Touch Manager to it.**
- **To prevent accidents due to wire breakage or disconnection, secure the power supply cables to the blue resin cable mount with cable ties.**
- **Be sure to connect the earth wire.**
- **Do not connect the earth wire to gas or water pipes, lighting rod, or telephone earth wire.**
- **Replace the unit when the unit cannot be turned on due to the blowing of the electrical fuse.**

3 Installation

The intelligent Touch Manager can be installed in the following three ways:

- Wall mounting: The intelligent Touch Manager is hooked onto the wall mounting metal plate secured to the wall.
- Flush wall mounting: The rear portion of the intelligent Touch Manager is embedded in the wall.
- Direct mounting to control enclosure: The intelligent Touch Manager is directly installed to the control enclosure using fixing screws.

<Ways of installation>



3.1 Wall mounting

3.1.1 Parts to be used

To wall-mount the intelligent Touch Manager, use the following accessory mounting parts:

- Wall mounting metal plate, 1 pc.
- Round-head wood screw ($\phi 4.1 \times 25$), 4 pcs.
- P-tight screw ($\phi 3 \times 8$), 1 pc.

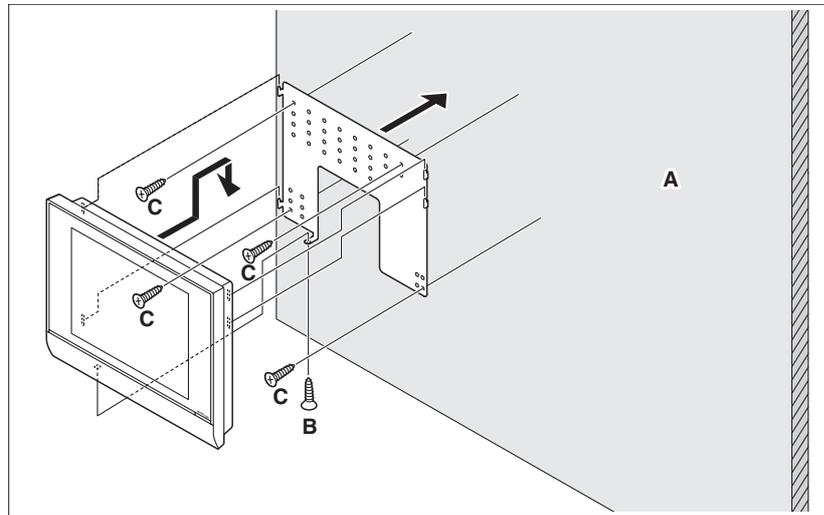
3.1.2 Installation procedure

Install the intelligent Touch Manager as shown in the figure below.

CAUTION

- The wall mounting metal plate has many holes for round-head wood screws. Although you may use any of these screw holes, use ones closer to the edge as much as possible to prevent wobbling.
- Secure the wall mounting metal plate at four points using the round-head wood screws.

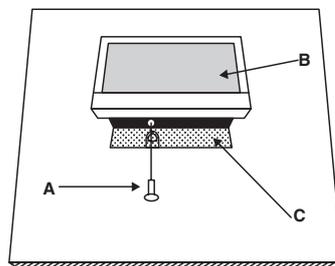
<Wall mounting installation>



- A Wall
- B P-tight screw
- C Round-head wood screw

NOTE

- How to use the P-tight screw
Screw in from the bottom of the intelligent Touch Manager.



- A P-tight screw
- B intelligent Touch Manager
- C Wall mounting metal plate

3.2 Flush wall mounting

3.2.1 Parts to be used

To flush-mount the intelligent Touch Manager to the wall, use the following accessory mounting parts:

- Frame bracket, 1 pc.
- Angle bracket, 2 pcs.
- Flat-head screw (M4×40), 4 pcs.
- Pan-head screw (M4×14, with spring washer and plain washer), 4 pcs.

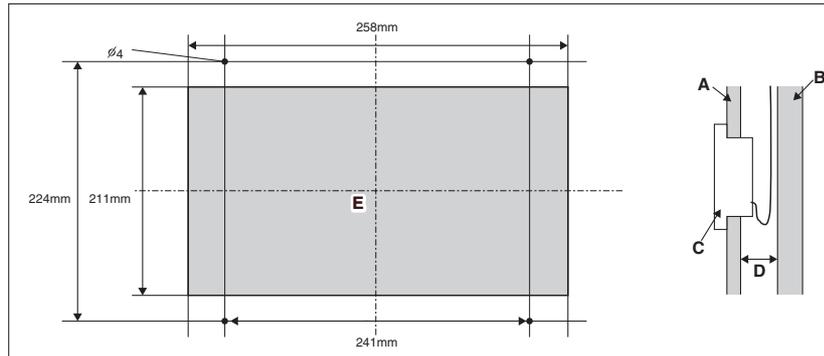
3.2.2 Wall opening dimensions

Use the following dimensional drawing to provide a sufficient opening.

NOTE

The supplied paper template helps you mark the dimensions of the required wall opening.

<Wall opening dimensions for flush wall mounting>



- A Inner wall
- B Building structure
- C intelligent Touch Manager
- D 60 mm min.
- E Opening

3.2.3 Installation procedure

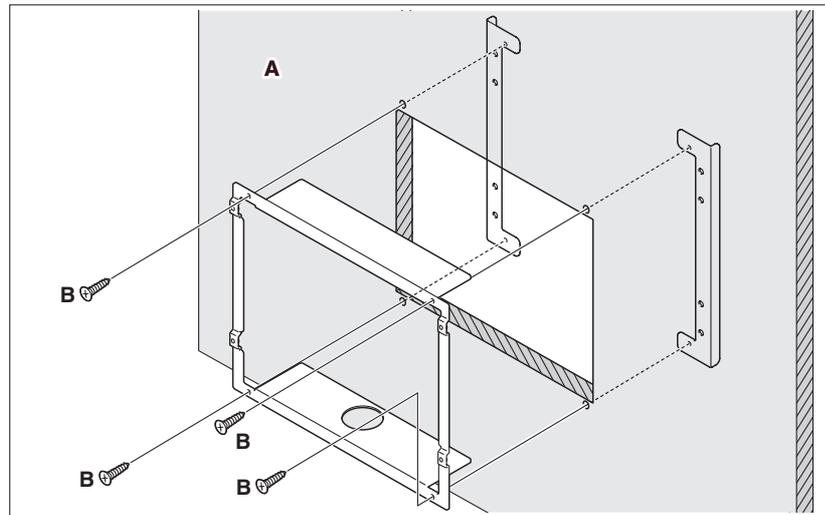
Install the intelligent Touch Manager as follows.

1. First of all, insert the frame bracket and angle brackets into the wall opening and secure them to the wall in such a manner that the wall is sandwiched between them.

NOTE

- You need to route in advance the cables connected to the rear face of the intelligent Touch Manager through the cable hole provided at the bottom of the frame bracket.
- Before installing the intelligent Touch Manager body, remove the terminal cover from the rear face.

<Securing frame bracket and angle brackets>



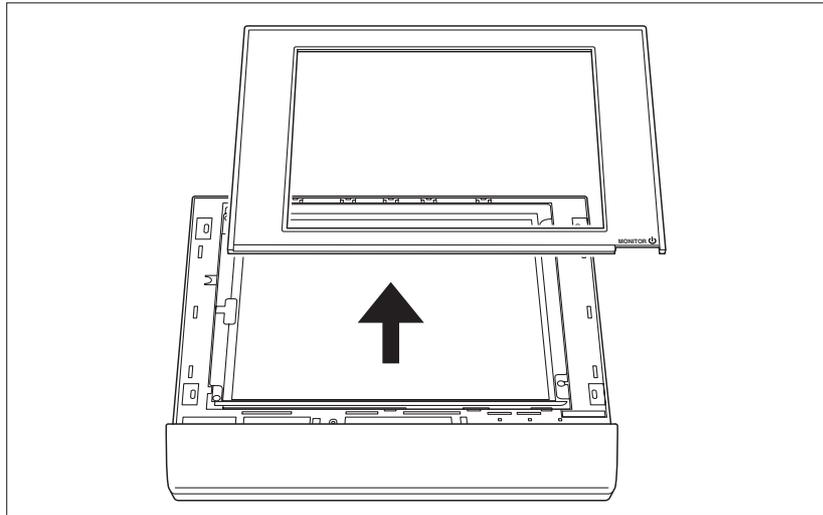
- A** Wall
B Flat-head screw

NOTE

When securing the frame bracket, be careful not to drop the angle brackets inside the wall.

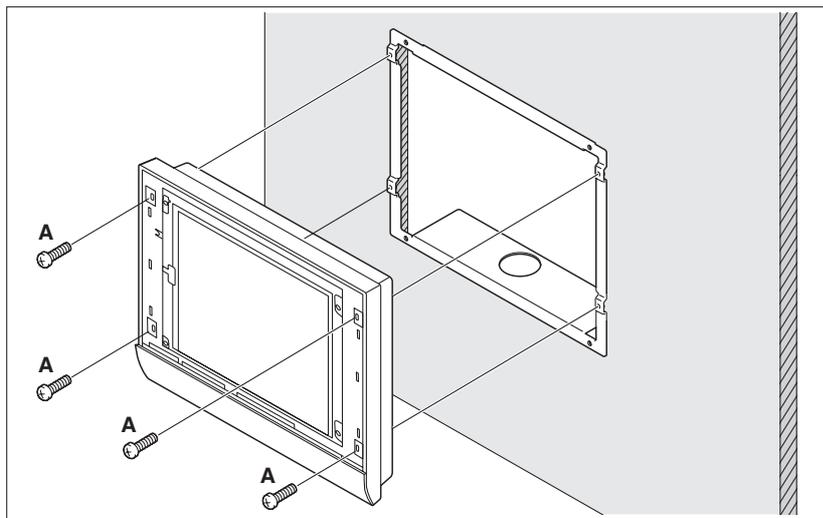
- Remove the resin frame from the front face of the intelligent Touch Manager. This frame is snapped into the edge of the monitor display. You can remove it by hand as this is not screwed.
 Removing the frame reveals four screw holes, two holes each to the left and right of the monitor display.

<Removing frame>



3. Insert the intelligent Touch Manager into the frame bracket secured to the wall and install it to the frame bracket using the pan-head screws.

<Installing intelligent Touch Manager body>



A Pan-head screw

4. Snap the resin frame back into the front face of the intelligent Touch Manager as it was before.

3.3 Direct mounting to control enclosure

3.3.1 Parts to be used

To mount the intelligent Touch Manager directly to the control enclosure, use the following accessory mounting parts:

- Pan-head screw (M4×40, with spring washer and plain washer), 4 pcs.
- Nut (φ4), 4 pcs.

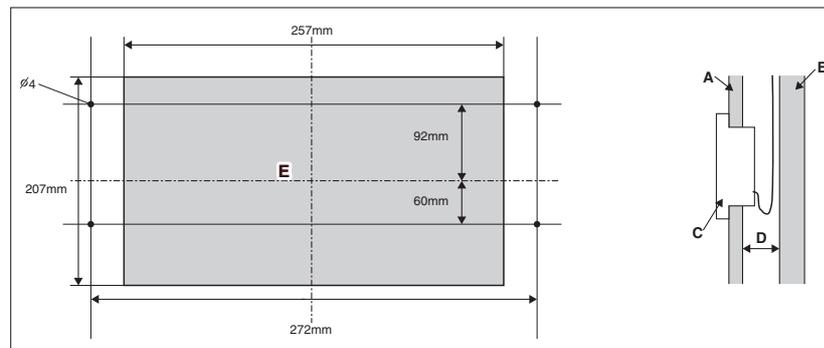
3.3.2 Wall opening dimensions

Use the following dimensional drawing to provide a sufficient opening.

NOTE

The supplied paper template helps you mark the dimensions of the required wall opening.

<Wall opening dimensions for direct mounting to control enclosure>

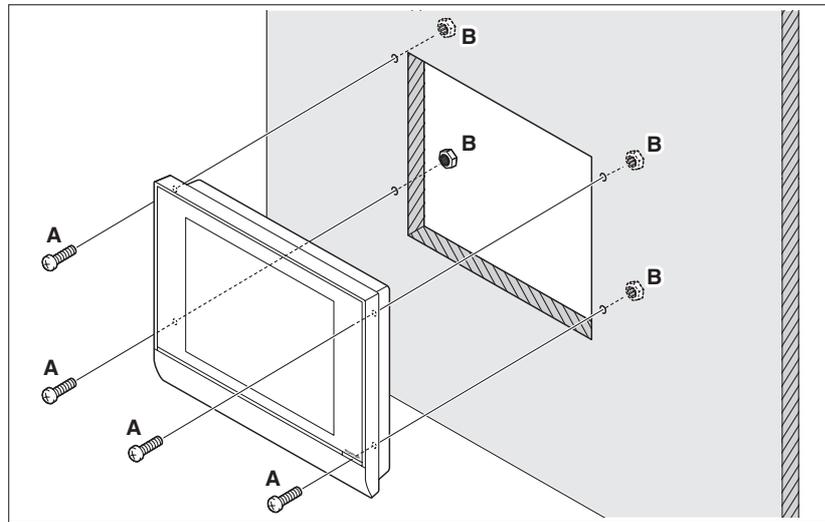


- A Control enclosure face plate
- B Control enclosure inner wall
- C intelligent Touch Manager
- D 25mm min.
- E Opening

3.3.3 Installation procedure

1. Remove the resin frame from the front face of the intelligent Touch Manager. This frame is snapped into the edge of the monitor display. You can remove it by hand as this is not screwed.
Removing the frame reveals four screw holes, two holes each to the left and right of the monitor display.
2. Insert the intelligent Touch Manager into the opening of the control enclosure and install it to the control enclosure using the pan-head screws.
3. Snap the resin frame back into the front face of the intelligent Touch Manager as it was before.

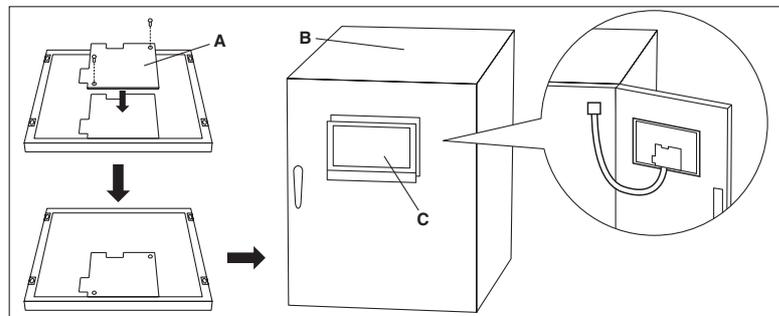
<Installing intelligent Touch Manager body to control enclosure>



- A Pan-head screw
- B Nut

CAUTION

If the intelligent Touch Manager is directly mounted to the control enclosure, you will be exposed to the power line connection terminals when opening the control enclosure door. To prevent the risk of an electric shock by accidentally touching these power terminals, for safety, be sure to attach the terminal cover before starting the installation procedure.



- A Terminal cover
- B Control enclosure
- C intelligent Touch Manager

4 Basic Setup

If you are sure that all connections have been made, proceed to the basic setup of the intelligent Touch Manager. Here, "basic setup" means setting up the intelligent Touch Manager in preparation for controlling the operation of your air conditioning system.

Turning on the power of the intelligent Touch Manager starts a setup program that lets you complete the basic setup procedure. You can complete the basic setup procedure by following the instructions displayed on the monitor display in steps.

The setting assignment made through this procedure may be changed at a later time.

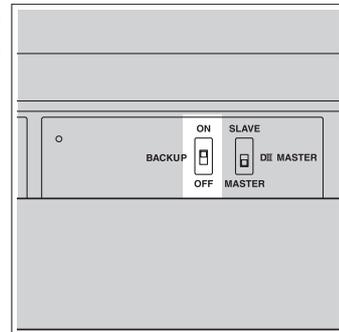
The following sections appear in the order of the setup steps.

4.1 Powering on data backup battery

To retain the settings even in the event of a power outage, the intelligent Touch Manager has a built-in battery. Because this battery is disabled by default, the first thing you should do is to enable it.

Open the front slide cover and turn the screws to remove the front slide cover. Set the BACKUP switch to "ON".

< BACKUP switch >



4.2 Powering on intelligent Touch Manager and air conditioners

Turn on the intelligent Touch Manager and the air conditioners connected to it.

1. First power on the air conditioners and then power on the intelligent Touch Manager. The Title screen appears and, after a while, the message "Ready to set up A/C centralized address" appears.
"A/C centralized address" (hereinafter referred to as "DIII-NET address") refers to a management number for identifying each air conditioner in a DIII-NET system. **A DIII-NET address needs to be assigned manually using the remote controller for each air conditioner. Refer to "4.8 Assigning a DIII-NET address for each air conditioner" for how to assign a DIII-NET address.**
When finished assigning air conditioner addresses, proceed to the next step.
2. Touch OK.
The Language Settings screen appears.

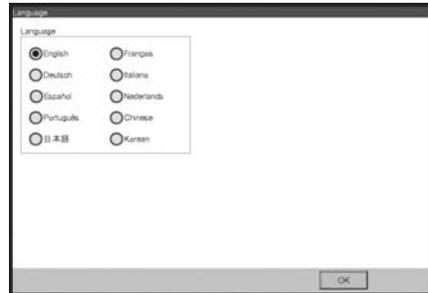
CAUTION

Before power-on, make sure that all installation and connection procedures are done without problems.

4.3 Setting up display language

Set up the display language used throughout the intelligent Touch Manager setup screens.

<Language Settings screen>



1. Touch the desired language from those listed on the screen.
The radio button next to the language you touched is now selected.
2. Touch OK.
The Locale Settings screen appears.

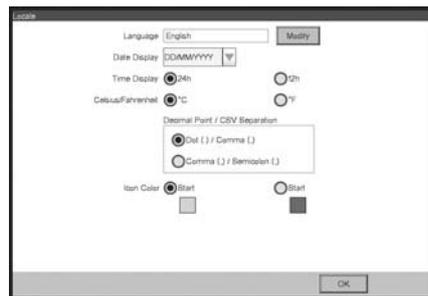
NOTE

If the message “Turn ON Battery Backup switch” appears instead of the Locale Settings screen, it means that you did not turn on the data backup battery in 4.1. If so, refer to “4.1 Powering on data backup battery” to turn on the data backup battery. When done, touch the OK button shown with the message on the screen. Then, the Locale setup screen appears.

4.4 Setting up locale

“Locale setup” allows to set up how you want to see items that are expressed in different ways depending on the region, such as the date/time, temperature, and decimal point, on the display.

<Locale Settings screen>



1. [LOCALE] Select the desired options on the Locale Settings screen.
 [Language] Select the display language.
 [Date] Select the date display format.
 [Time] Select the time display format (24-hour or 12-hour clock).
 [Celsius / Fahrenheit] Select the temperature display unit (Celsius or Fahrenheit).
 [Decimal point / CSV separate] Select the decimal point symbol and the delimiter for CSV files. For details, refer to the user's manual.
 [Icon Color] Select the icon color.
2. When setup is done, touch OK.
 The Time Zone Settings screen appears.

4.5 Setting time zone

Set up the local standard time zone you want to use for the system clock.

<Time Zone Settings screen>

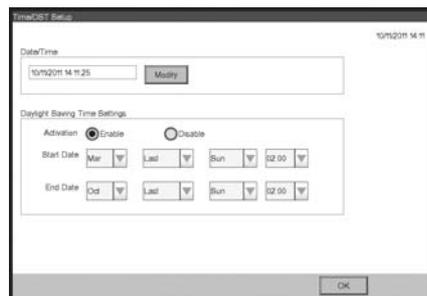


1. On the Time Zone Settings screen, select the time zone of desired region from the list box.
2. Touch OK.
 The Time/DST Setup screen appears.

4.6 Setting current time and daylight saving time

Adjust the clock and set up the daylight saving time schedule.

<Time/DST Setup screen>



1. On the Time/DST Setup screen, set up the date/time and the daylight saving time schedule. (Enable or disable the daylight saving time function. If enabled, select the start time and the end time.)
2. Touch OK.
 The A/C Auto Register screen appears.

4.7 Confirming air conditioner auto registration results

On the A/C Auto Register screen, the message “The following A/C has been connected. Do you want to register for Mng.Point? The system will restart after the registration”. appears.

1. Make sure that all air conditioners for which you assigned a DIII-NET address in “4.8 Assigning a DIII-NET address for each air conditioner” are displayed.
If you see any problem, touch Show Updates to reload the up-to-date information, or review the DIII address settings.
2. When the confirmation dialog appears, touch Yes.
The intelligent Touch Manager restarts and Main screen appears. The intelligent Touch Manager setup has now been completed.

NOTE

When iTM plus adaptor is connected, power on the iTM plus adaptor in advance.

4.8 Assigning a DIII-NET address for each air conditioner

In a DIII-NET system, there is a management number for identifying each air conditioner. This can be referred to as DIII-NET address. A DIII-NET address needs to be assigned manually using the remote controller for each air conditioner.

There are remote controllers of several types, each requiring a different way of assigning a DIII-NET address. This section describes commonly used two types of remote controllers, wired and navigation remote controllers, as examples.

NOTE

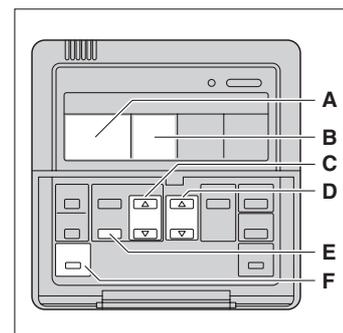
For how to assign addresses for Ventilator (Heat Reclaim Ventilator) equipment and various adaptors (such as a universal adaptor), refer to the manual for each product.

4.8.1 Remote controller buttons and areas

The names of buttons and areas of a wired remote controller used in this section are shown below.

- A Address display area
- B Parameter number display area
- C Programming time buttons
- D Temperature setting buttons
- E Timer ON/OFF button
- F Inspection / Test operation button

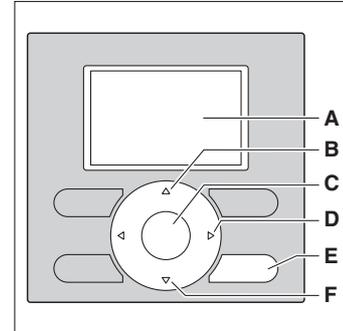
<Wired Remote Controller>



The names of buttons and areas of a navigation remote controller used in this section are shown below.

- A Display
- B Up button
- C Menu / Enter button
- D Right button
- E Cancel button
- F Down button

<Navigation Remote controller>



4.8.2 Procedure for a wired remote controller

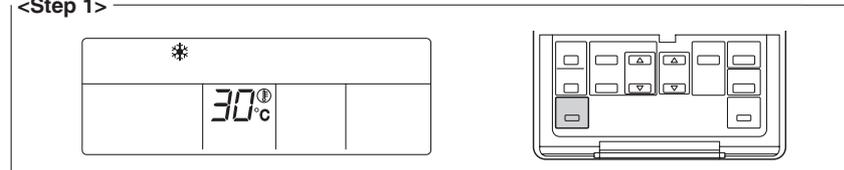
The following describes how to assign a DIII-NET address when a wired remote controller is installed.

NOTE

After power-on, the controller shows the symbol "⊗" for about 1 minute after displaying all information on its display. During this period, it may not accept your operation. If so, try operating the remote controller again after "⊗" disappears.

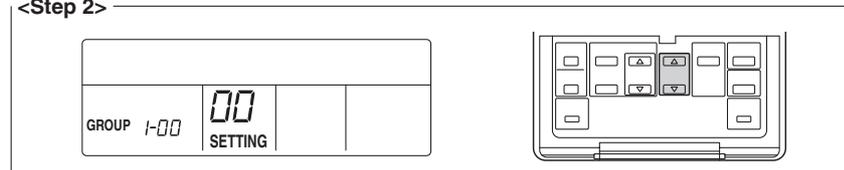
1. Press and hold the Inspection/Test Operation button for 4 seconds or more. "SETTING" appears in the center of remote controller display.

<Step 1>



2. Using the Temperature Setting buttons, change the value shown in the parameter number display area to "00". In the address display area, the current address setting is displayed. (This area will show "-" if no address is set.)

<Step 2>

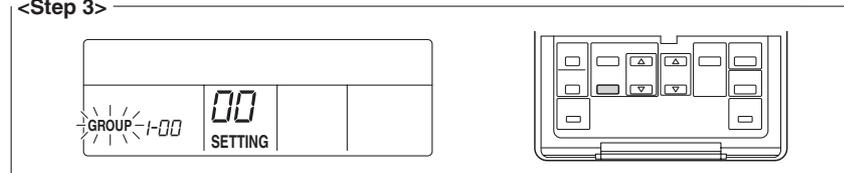


NOTE

The parameter number cannot be changed to "00" when the intelligent Touch Manager is not powered on.
 Power on the intelligent Touch Manager and wait for a while before trying to operate the remote controller. You cannot change the parameter number to "00" also when the intelligent Touch Manager is not communicating with the indoor units normally. Make sure that the cables are connected correctly.

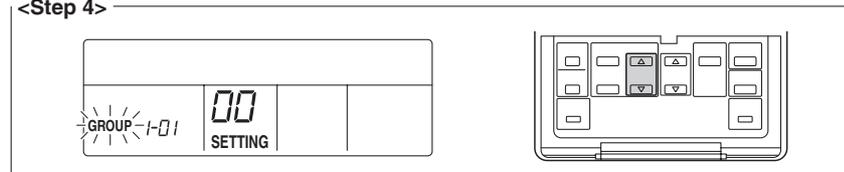
3. Press the Timer ON/OFF button to make the "GROUP" indicator blink.
 You are now ready to change the DIII-NET address.

<Step 3>



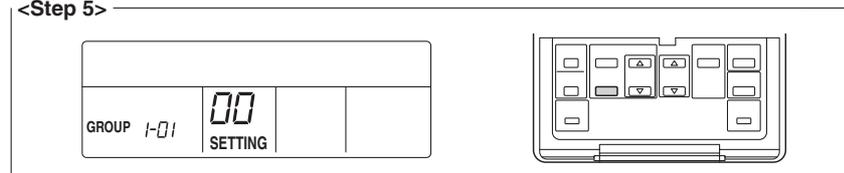
4. Using the Programming time buttons, select the address you want to set.

<Step 4>

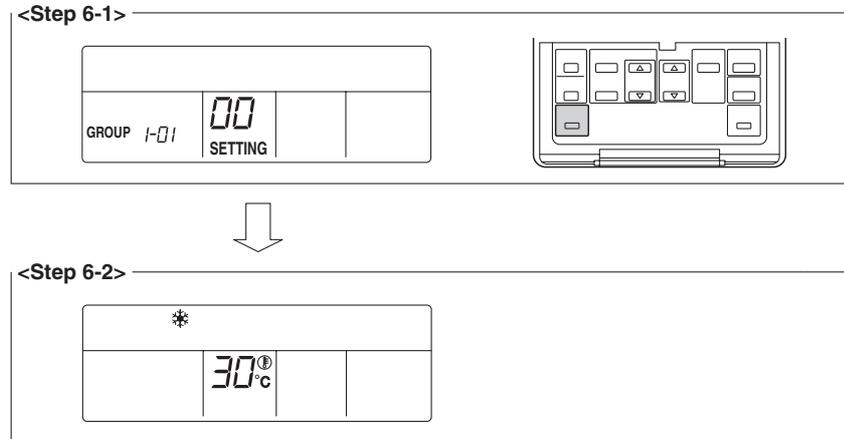


5. Press the Timer ON/OFF button to make the "GROUP" indicator stay lit.
 The DIII-NET address has been set.

<Step 5>



- Press the Inspection/Test Operation button.
You are now brought back to the screen shown in Step 6-2.



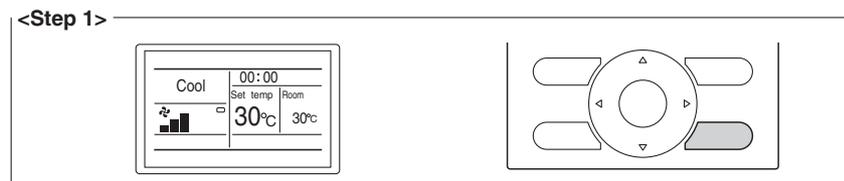
4.8.3 Procedure for a navigation remote controller

The following describes how to assign a DIII-NET address when a navigation remote controller is installed.

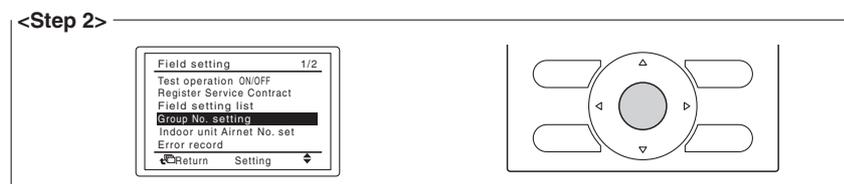
NOTE

You cannot perform the following procedure when the display backlight is off. In this case, press any key to turn on the backlight before starting the procedure.

- Press and hold the Cancel button for 4 seconds or more.
The "Field setting" menu is displayed.



- Using the Up/Down buttons, select "Group No. setting" and press the Menu/Enter button.
The "Group No. setting" menu is displayed.

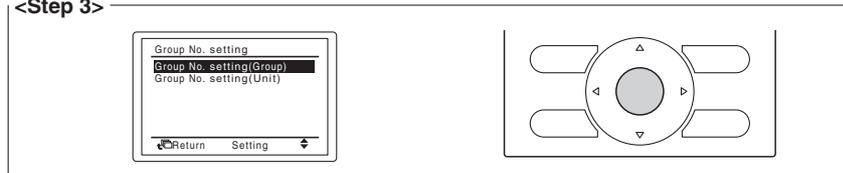


NOTE

The “Group No. setting” menu is not displayed when the intelligent Touch Manager is not powered on. Power on the intelligent Touch Manager and wait for a while before trying to operate the remote controller. The “Group No. setting” menu is not displayed also when the intelligent Touch Manager is not communicating with the indoor units normally. Make sure that the cables are connected correctly.

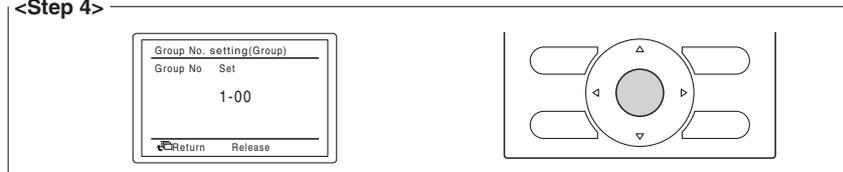
- Using the Up/Down buttons, select “Group No. setting (Group)” and press the Menu/Enter button.
The current address setting is displayed.

<Step 3>



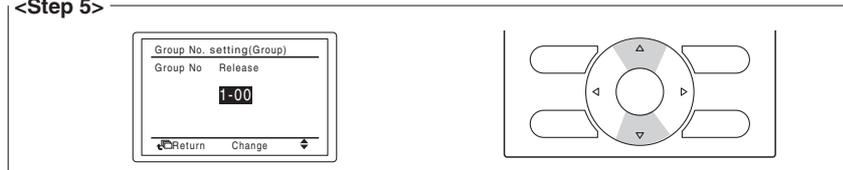
- Press the Menu/Enter button to release the current address setting.
The mode indication changes from “Setting” to “Release”. You are now ready to change the DIII-NET address.

<Step 4>



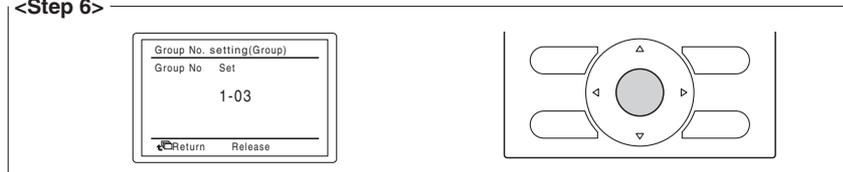
- Using the Up/Down buttons, select the address you want to set.

<Step 5>

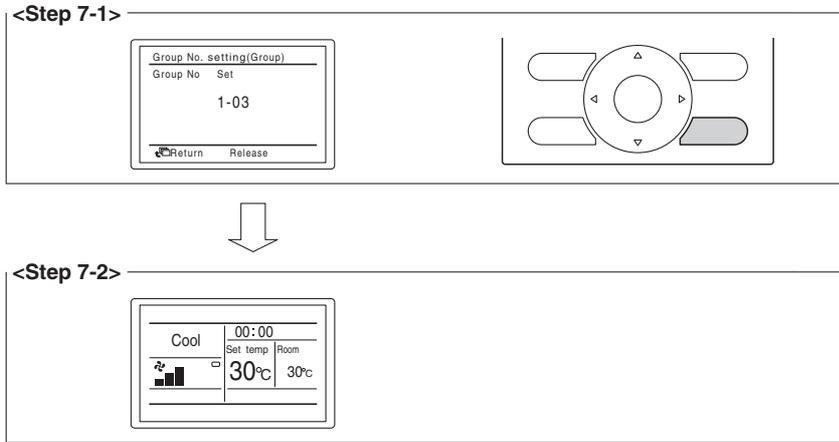


- Press the Menu/Enter button.
The DIII-NET address has been set.

<Step 6>



7. Press the Cancel button three times. You are now brought back to the screen shown in Step 7-2.



4.8.4

Setting a unique address to each unit (when power distribution is enabled)

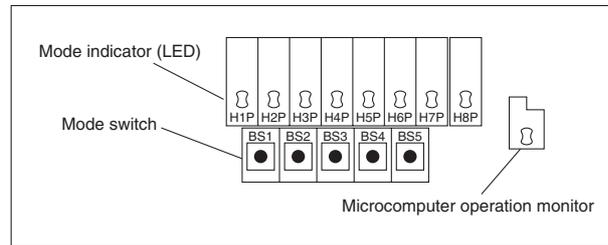
When power distribution is enabled, you need to set a unique address for each unit. For how to set an address, refer to the commissioning manual.

5 Outdoor Unit Address Setup

For the intelligent Touch Manager to identify each outdoor unit, you need to set a unique address for it. Follow the setup procedure described in this chapter.

5.1 Procedure

To set the address of an outdoor unit, use push buttons provided on the unit's printed circuit board. The current setting or operating status of an outdoor unit is indicated by the on, blink, or off of its LEDs.



1. Press the BS1 button for 5 seconds or more. The H1P LED lights up.
2. Press the BS2 button 13 times. This causes each LED on the printed circuit board to be in the following state, which indicates that you are in the address setup mode.

H1P	H2P	H3P	H4P	H5P	H6P	H7P
○	●	●	○	○	●	○

○ :On ● :Off

3. Press the BS3 button. You can now find out the current address setting by the blinking LED.
4. Press the BS2 to change to the desired address. (Set the address number within the range of 1 to 127. The default setting is "0".)
5. Press the BS3 twice to fix the address setting.
6. Press the BS1 button once to return to the normal mode.

3. iTM plus adaptor

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1 Before Installation

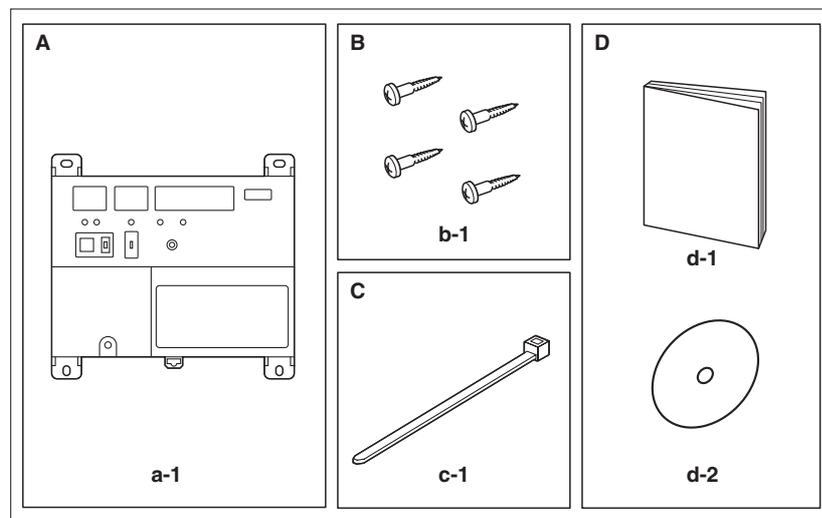
Before you start installing the iTM plus adaptor, complete the following checks:

- Check that the iTM plus adaptor comes with all accessories.
- Understand where the terminals and switches of the iTM plus adaptor are located.
- Make sure that an appropriate space for installing the iTM plus adaptor is available.

1.1 Checking that all accessories are included

Based on the following accessory list, check that all accessories for the iTM plus adaptor are included. Should there be any missing or defective parts, contact your dealer.

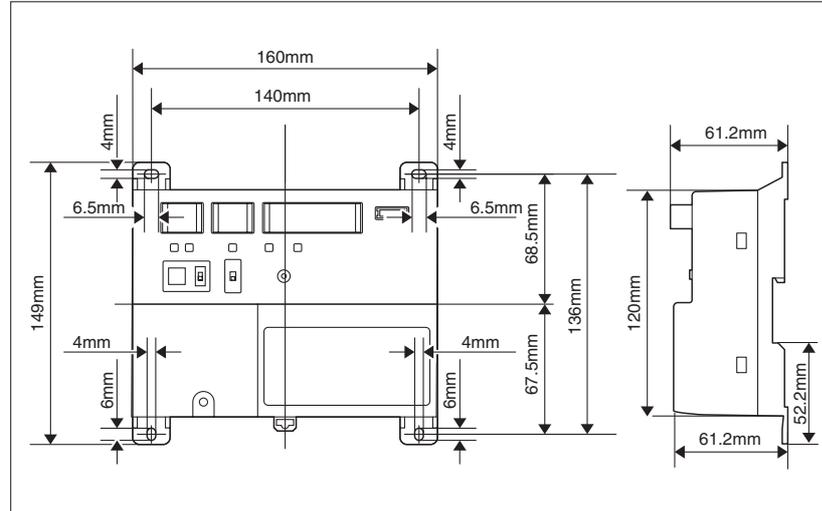
<Accessories included with iTM plus adaptor>



- A** (a-1) iTM plus adaptor body (1 pc.)
B (b-1) Round-head wood screw ($\phi 3.5 \times 16$), 4 pcs.
C (c-1) Cable tie, 1 pc.
D (d-1) Installation manual (This manual), 1 pc. (d-2) Manual CD, 1 pc.

1.2 Understanding external dimensions

- iTM plus adaptor body



1.3 Understanding where terminals are located

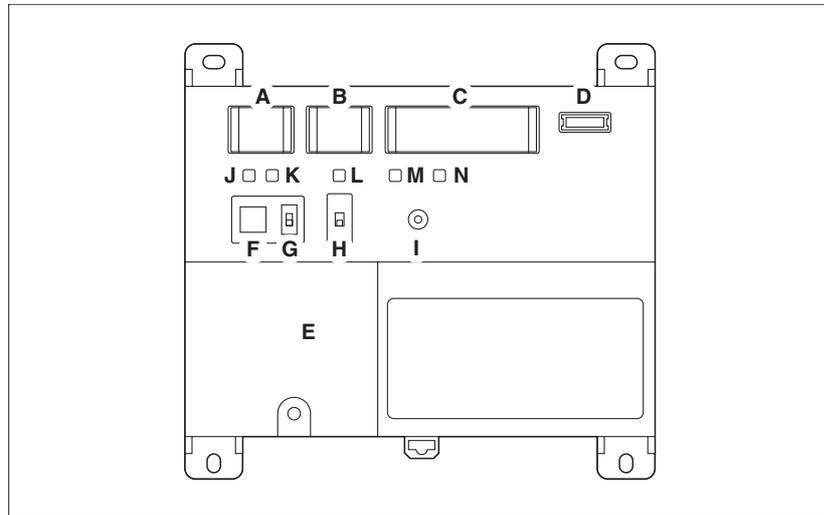
Understand the arrangement of terminals and switches on the unit and draw up an efficient work plan. For connection details including the cable type, terminal size, and wiring precautions, refer to "2. Connection".

1.3.1 Front face of iTM plus adaptor

All the terminals used during installation are located on the front face of the iTM plus adaptor. Note that only the power terminals are covered with a terminal cover for safety. You can remove this cover by loosening a single screw.

In addition to these terminals, several switches and LEDs are also located on the front face of the iTM plus adaptor.

<Front face of iTM plus adaptor>



- A [plus ADP IF]** The terminals for connecting an intelligent Touch Manager or iTM plus adaptor installed in parallel.
- B [DIII]** The communication line connection terminals for “DIII-NET”, which enables communications with DAIKIN’s air conditioning equipment.
- C [Di]** The terminals for connecting an external signal input device for stopping air conditioners in an emergency, or for connecting electric energy meters for calculating the electricity usage of individual indoor air conditioning units.
- D [RESERVE]** No Use.
- E [POWER]** The power line connection terminals. These terminals are covered with a protective cover. A power supply voltage of 100 to 240 VAC (at 50/60 Hz) is required. Near this terminal block, there is a blue resin cable mount used for securing the power supply cables with cable ties.
- F [plus ADP ADDRESS]** The switch for selecting the address of the iTM plus adaptor. For each iTM plus adaptor, set a unique number between 2 to 8.
- G [TERM]** The switch used when multiple iTM plus adaptors are connected in parallel for enabling the termination resistor on the furthest iTM plus adaptor from the intelligent Touch Manager.
- H [DIII MASTER]** The switch used when there are two or more DIII-NET centralized controllers, such as intelligent Touch Managers, are connected for distinguishing between the “MASTER” or the “SLAVE” controllers.
- I [RESET//]** The switch for restarting the iTM plus adaptor.
- J [Tx]** (Green) The indicator that indicates when on that data is being sent to the intelligent Touch Manager.
- K [Rx]** (Orange) The indicator that indicates when on that data is being received from the intelligent Touch Manager.
- L [DIII MONITOR]** (Yellow) The indicator that indicates when on that data is being communicated with DIII-NET.
- M [CPU ALIVE]** (Green) The LED that indicates that the CPU is operating normally. For the relationship between the LED status and the unit’s operating condition, refer to the “LED status and operation” table below.
- N [ALARM]** (Red) The LED that turns on or blinks in the event of an error. For the relationship between the LED status and the unit’s operating condition, refer to the “LED status and operation” table below.

The table below shows the status of the CPU ALIVE/ALARM LED when the iTM plus adaptor is operating normally or failed.

NOTE
[LED status and operation table]

Operating condition	CPU ALIVE	ALARM
Normal	Blink	Off
Hardware failure	Off	On
Address failure	On	On
plus ADP IF communication failure	On	Blink

1.4 Determining installation place

Be sure to install the iTM plus adaptor in a place that meets the conditions described in 1.4.1 through 1.4.3.

1.4.1 Installation place and mounting direction

Note that the iTM plus adaptor must be installed in a place and in a mounting direction as described below:

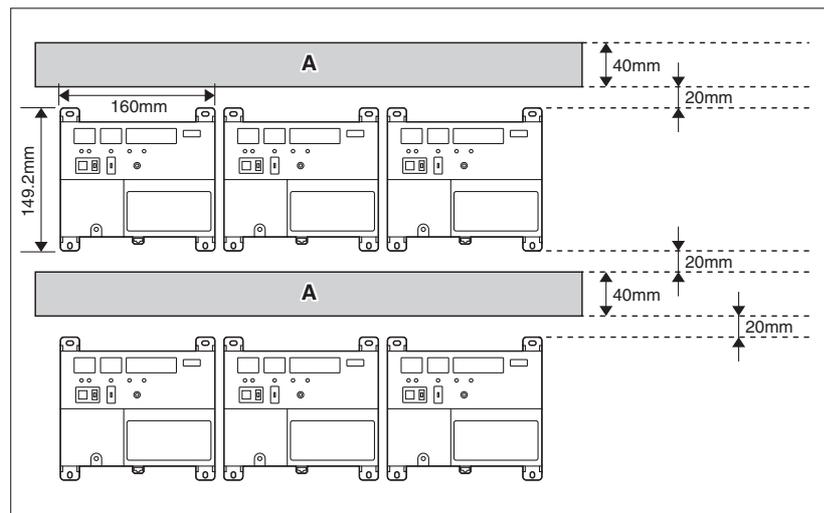
- Installation place: Indoor, inside control enclosure (which must be lockable or designed to be opened only with a special tool)
- Mounting direction: Vertical only

1.4.2 Required space

To install the iTM plus adaptor, the following space is required. Also note the following:

- Make sure that there is a minimum clearance of 20 mm between each unit and wiring ducts.
- When installing two or more units side by side, they can be arranged without clearance in the horizontal direction.

Required installation space



A Wiring duct

1.4.3 Environmental conditions

The installation environment must meet the following conditions:

- Ambient temperature: –10 to 50 °C
- Ambient humidity: 85% RH or less (without condensation)

2 Connection

This chapter describes the procedure for connecting the iTM plus adaptor with intelligent Touch Manager, DIII-NET-compatible air conditioning devices and other equipment.

In addition to air conditioners, the iTM plus adaptor can be connected and work with a wide range of equipment. However, the required connection procedures vary depending on the equipment to be connected.

Required procedures

- 2.1 Connecting intelligent Touch Manager
- 2.2 Connecting DIII-NET-compatible air conditioning equipment
- 2.4 Connecting power supply

Equipment-specific procedures

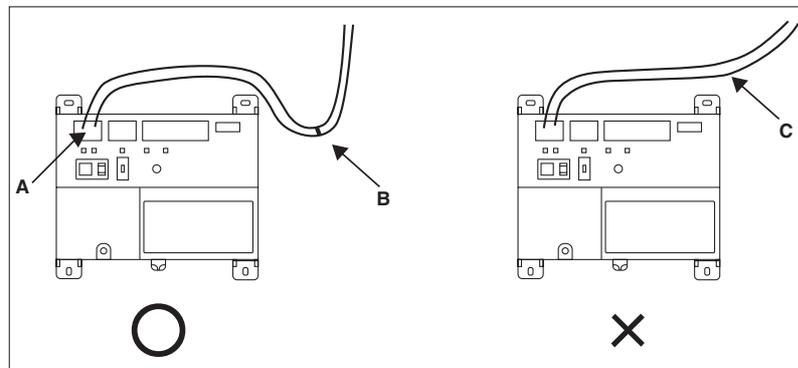
- 2.3 Connecting contact or pulse input equipment such as electric energy meters

WARNING

- Do not turn the power supply on until all connections are made. Not doing so may cause an electric shock.
- After completing connections, check again that all wires are connected correctly before turning on the power supply.
- All field supplied parts and materials, electric works must conform to local codes.
- All wiring must be performed by an authorized electrician.

CAUTION

Provide a cable trap before the terminal block and perform wiring to prevent water entry. Water splashing onto the terminal block may result in an electric shock or fire.



- A Terminal block
- B With trap
- C Without trap

2.1 Connecting intelligent Touch Manager

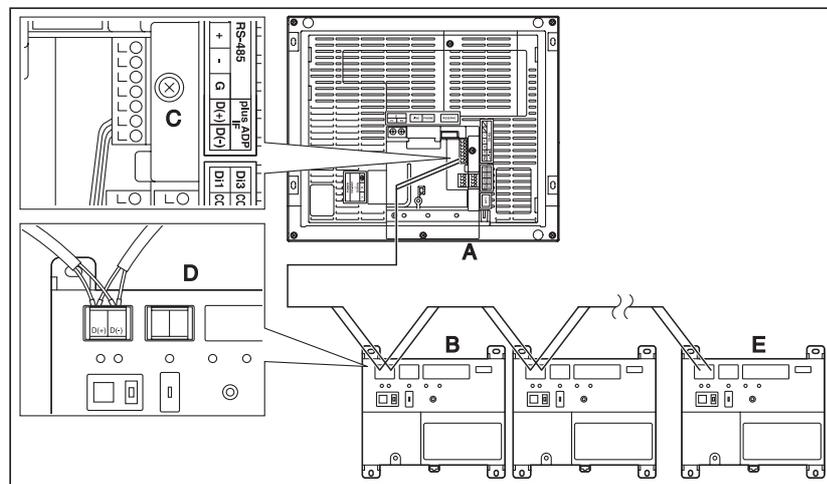
The iTM plus adaptor is a device that enables you to control more air conditioners with the intelligent Touch Manager. It needs to be connected to an intelligent Touch Manager to provide this capability.

2.1.1 Terminals location and conceptual connection diagram

Connect the terminals located in the “plus ADP IF” section of the iTM plus adaptor to the corresponding terminals located in the “plus ADP IF” section on the rear face of your intelligent Touch Manager. Note that these terminals have polarity. Be sure to connect the positive wire to the “+” terminal and the negative wire to the “-” terminal, respectively.

In addition, the intelligent Touch Manager must be connected as a terminal to the wiring.

<Terminals location and conceptual connection diagram>



- A intelligent Touch Manager (Rear face)
- B iTM plus adaptor
- C plus ADP IF (intelligent Touch Manager)
- D plus ADP IF (iTm plus adaptor)
- E iTM plus adaptor on which termination resistor must be enabled

2.1.2 Requirements that must be met

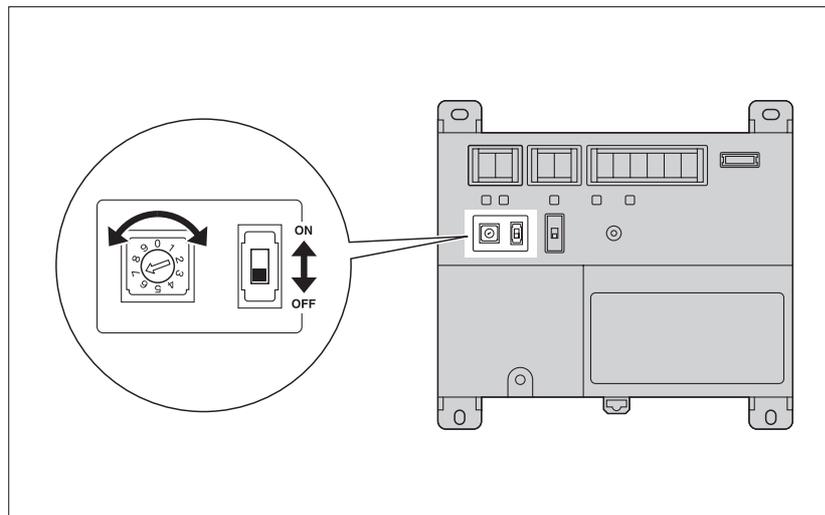
- Cable type: CPEV or FCPEV cable
- Core thickness: $\phi 0.65 - 0.9$ mm
- Cable length: 50 meters or less in total for overall plus ADP IF wiring

2.1.3 Address setup and termination resistor

You need to assign a unique address to each of your intelligent Touch Manager and the iTM plus adaptors connected to it. Because the address of the intelligent Touch Manager is fixed to "1", each iTM plus adaptor must be given an address between "2" and "8". Turn the plus ADP ADDRESS switch located on the front face of each iTM plus adaptor to set a unique address.

You also need to enable the termination resistor on the furthest iTM plus adaptor from the intelligent Touch Manager. This termination resistor setting is done using the TERM switch located on the front face of the iTM plus adaptor.

<plus ADP ADDRESS switch and TERM switch>



NOTE

If the two LEDs, CPU ALIVE and ALARM, both light up during power-on after installation, there is a possibility of a problem with the address assignment:

- An invalid address is set. ("0", "1", and "9" are not allowed.)
- A duplicate address is used.

You must assign a unique address between 2 and 8 for each iTM plus adaptor. Power off the unit once, check and correct the address, and then turn it on again. Check the status of the two LEDs, CPU ALIVE and ALARM.

2.2

Connecting DIII-NET-compatible air conditioning equipment

DIII-NET is a unique air conditioning equipment communication capability developed by DAIKIN. Using DIII-NET, you can centrally control multiple DIII-NET-compatible air conditioning devices by connecting them to your intelligent Touch Manager.

The iTM plus adaptor allows you to connect additional 64 groups of air conditioners per unit. Considering that the intelligent Touch Manager can be connected with a maximum of seven iTM plus adaptors, you can control a total of 512 groups of air conditioners at a maximum using a single intelligent Touch Manager.

 **WARNING**

- **Be sure to perform this procedure with the power supply turned off. Not doing so may cause an electric shock.**
- **The maximum length of adhered wiring of high current electrical line of power wires and weak current line of communication wires must be kept to 20 meters or less.**

NOTE

Each air conditioner controlled via an iTM plus adaptor is also assigned a DIII address between "1-00" to "4-15". From the intelligent Touch Manager, it is recognized as "2:1-00", "3:1-02", or the like, with the DIII-NET port number prefixed.

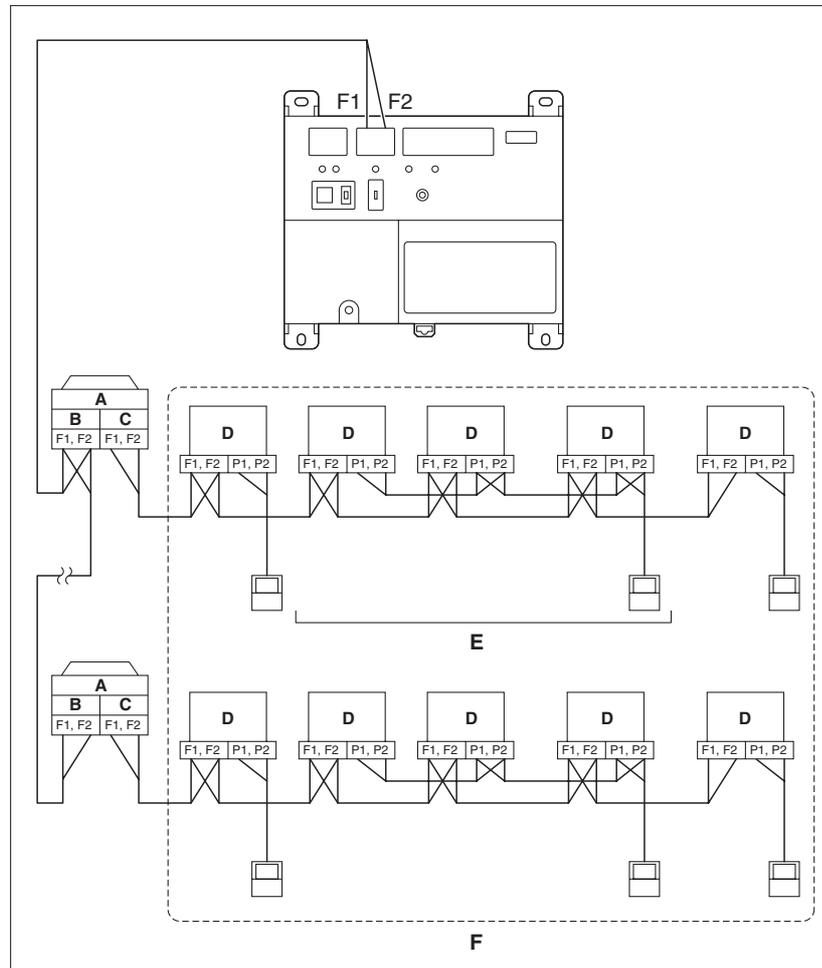
2.2.1 Terminals location and conceptual connection diagram

To connect the DIII-NET communication line, use the two terminals F1 and F2 under the label "DIII". These 2 terminals have no polarity. An example of connecting more than 2 air conditioning devices is shown in the following conceptual connection diagram.

⚠ CAUTION

Make sure that the wires you are connecting to the F1 and F2 terminals are not power wires. Inadvertently connecting power wires to these terminals results in a failure of the air conditioner or iTM plus adaptor.

<Conceptual connection diagram with air conditioning equipment>



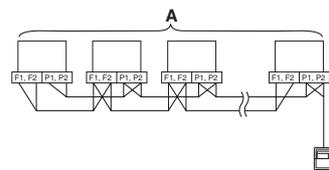
- A** Outdoor unit
- B** OUT - OUT
- C** IN - OUT
- D** Indoor unit
- E** A maximum of 16 indoor units can be connected per remote controller group.
- F** A maximum of 64 remote controller groups (128 indoor units) can be connected.
A maximum of 64 indoor units can be connected when power distribution is enabled.

NOTE

• What's a remote controller group?

A single remote controller can simultaneously control a maximum of 16 indoor units. This capability is referred to as group control. A remote controller group is a group of indoor units controlled under the same remote controller.

[Conceptual drawing of a remote controller group]



A Max. 16 units

2.2.2 Requirements that must be met

Cable specifications

- Cable type: 2-core vinyl-insulated vinyl-sheathed cable/vinyl cabtyre cable or 2-core shielded cable
- Core thickness: 0.75mm² - 1.25mm²
- Terminal treatment: Use a round crimp-type terminal (M3) with insulating sleeve.

Precautions

- Do not use multicore cables with three or more cores.
- When using a shielded cable, connect only one end of each steel wire to the ground.
- Keep the DIII-NET communication wiring at least 50 mm away from power supply wiring.
- The maximum wire distance must be kept to 1000 meters or less. The total wire length must be limited to 2000 meters, except when using a shielded cable whose total wire length must be kept to 1500 meters or less.

2.2.3 Precautions for using multiple centralized controllers

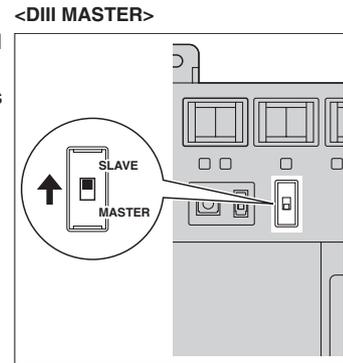
Equipment that controls multiple air conditioners is referred to as “centralized controller”. DAIKIN’s product portfolio includes a wide range of centralized controllers suited to different applications or target sizes, which can be used in combination to construct an optimal air conditioning system.

If two or more centralized controllers are used in combination in DIII-NET, you must establish a MASTER to SLAVE relationship among those controllers to prevent confusion. The MASTER authority may be assigned to one controller only. The remaining controllers must be set to SLAVE.

The iTM plus adaptor is set to MASTER by default. Change the setting to SLAVE in any of the following cases:

- Where Interface for use in BACnet is installed in parallel.
- Where Interface for use in LONWORKS is installed in parallel.
- Where there is another MASTER intelligent Touch Manager, or it is connected in relations of main/sub.
- Where there is another MASTER iTM plus adaptor, and it is connected in relations of main/sub.

To set the iTM plus adaptor to SLAVE, use the DIII MASTER switch. Placing the switch in the upper position (labeled as "SLAVE") changes it to a SLAVE.



To install multiple centralized controllers, set only the highest priority controller to MASTER and all other controllers to SLAVE according to the following order of priority:

High	↑	(1) Interface for use in BACnet
		(2) Interface for use in LONWORKS
		(3) intelligent Touch Manager (Main), iTM plus adaptor (Main)
Priority		(4) Central Remote Controller (Main)
		(5) intelligent Touch Manager (Sub), iTM plus adaptor (Sub)
		(6) Central Remote Controller (Sub)
Low	↓	(7) ON/OFF Controller (Main)
		(8) ON/OFF Controller (Sub)

Centralized controllers that cannot be installed in parallel with iTM plus adaptor

- CALCULATE UNIT
- intelligent Processing Unit
- Parallel Interface
- Intelligent Touch Controller
- DIII-NET Plus Adapter
- Residential Central Remote Controller
- Schedule Timer
- Wiring Adaptor for Electrical Appendices (1) (KRP2)

2.3 Connecting contact or pulse input equipment such as electric energy meters

The iTM plus adaptor can be connected with an external signal input device for stopping air conditioners in an emergency, or with electric energy meters for calculating the electricity usage of individual air conditioners (when power distribution is enabled).

WARNING

- **Be sure to perform this procedure with the power supply turned off. Not doing so may cause an electric shock.**
- **Do not clamp the cables with high-current lines such as a power cable.**

NOTE

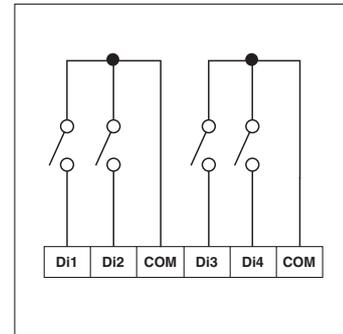
Power distribution is available for a maximum of 64 air conditioners (indoor units) per DIII-NET port.

2.3.1 Terminals location and conceptual connection diagram

Use the terminals located under the label “Di” to connect the pulse signal line. The iTM plus adaptor accepts four types of signals through its four channel terminals, Di1, Di2, Di3, and Di4, and two COM terminals (ground).

NOTE
 The COM terminals are all connected internally. So, you can use either of them. However, you can connect up to two wires simultaneously to each COM terminal.

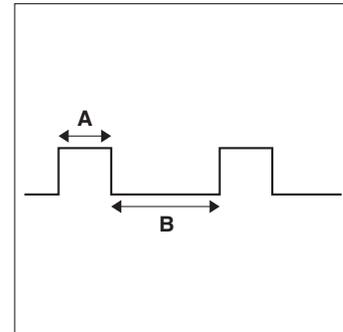
<Conceptual drawing of Di connection>



2.3.2 Requirements that must be met

- Cable type: CPEV cable
- Core thickness: $\phi 0.65 - 0.9$ mm
- Cable length: 200 meters or less
- Pulse width: 20 to 400 ms
 Pulse interval: 100 ms or more

<Pulse width>



- A Pulse width: 20 to 400 ms
- B Pulse interval: 100 ms or more

CAUTION

- The contact connected to the contact input terminal must be capable of handling 10 mA at 16 VDC.
- If an instantaneous contact is used for triggering an emergency stop, use one that has an energization time of 200 ms or more.
- Do not clamp the cables with high-current lines such as a power cable.

2.4 Connecting power supply

Connect the iTM plus adaptor to an AC power supply.

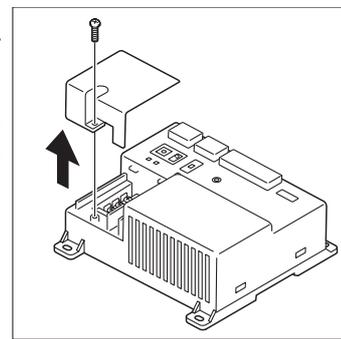
WARNING

The following procedures must be carried out with the power supply shut off. Do not turn the power supply on until all connections are made. Not doing so may cause an electric shock.

2.4.1 Terminals location and conceptual connection diagram

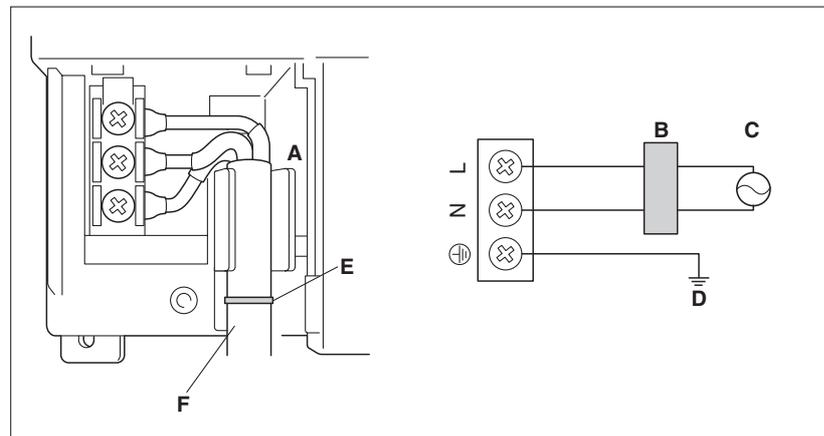
For safety reasons, power connection terminals are covered with a protective cover. Remove this cover before you start connecting the power supply. You can do so by loosening a single screw using a Philips screwdriver. The terminal cover must be replaced where it was before when you finish connecting the power supply.

<Removing terminal cover>



Next, connect the power supply to the three terminals, L (Live), N (Neutral), and ground in the POWER section. Be sure to ground the ground terminal. Remember to secure the power cables to the blue resin cable mount with cable ties when power connections are made.

<Connecting power supply>



- A Cable mount
- B Earth leakage breaker
- C Power supply (100-240VAC, 50/60Hz)
- D Earth
- E Secure cables with cable ties.
- F Location of cable mount

2.4.2**Requirements that must be met**

- Cable type: Ordinary tough rubber sheathed cord (60245 IEC 53) equivalent or higher
Ordinary polyvinyl tough chloride sheathed cord (60227 IEC 53) equivalent or higher
- Core thickness: Power wire: 1.0 - 2.0 mm²
Earth lead: Size must comply with local codes.
- Terminal treatment: Use a round crimp-type terminal (M4) with insulating sleeve.
- Power supply voltage: Single phase 100 to 240 VAC (at 50/60 Hz)
- Voltage fluctuation: ±10% or less
- Electric power consumption: 6 W

**CAUTION**

- **An earth leakage breaker capable of shutting down power supply to the entire system must be installed.**
- **When using an earth leakage breaker, make sure to select one useful for to protection against overcurrent and short-circuit. When using an earth leakage breaker only for earth device, make sure to use a wiring interrupter together.**
- **The power supply requires earth leakage breaker installation and earth wire connection.**
- **After installing an earth leakage breaker, be sure to connect only the iTM plus adaptor to it.**
- **To prevent accidents due to wire breakage or disconnection, secure the power supply cables to the blue resin cable mount with cable ties.**
- **Be sure to connect the earth wire.**
- **Do not connect the earth wire to gas or water pipes, lighting rod, or telephone earth wire.**
- **Replace the unit when the unit cannot be turned on due to the blowing of the electrical fuse.**

3 Installation

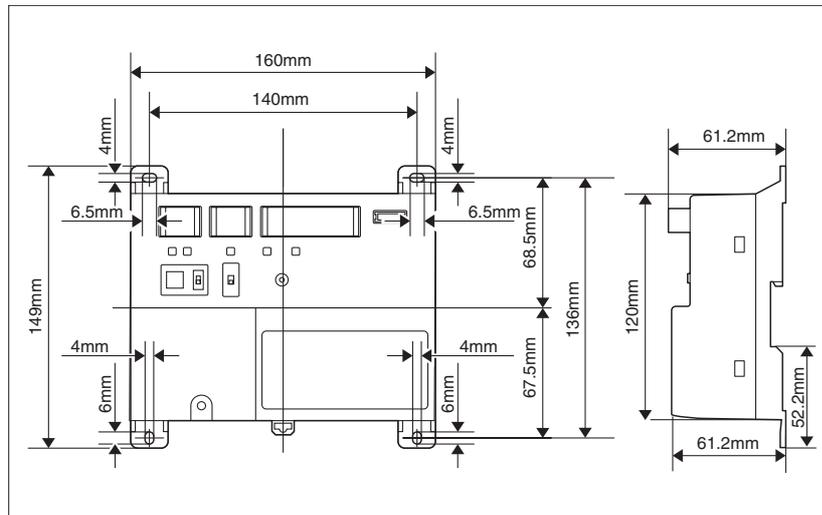
The iTM plus adaptor can be installed in the following two ways:

- Screw mounting to control enclosure
- DIN rail mounting

3.1 Screw mounting to control enclosure

3.1.1 Dimensions of iTM plus adaptor

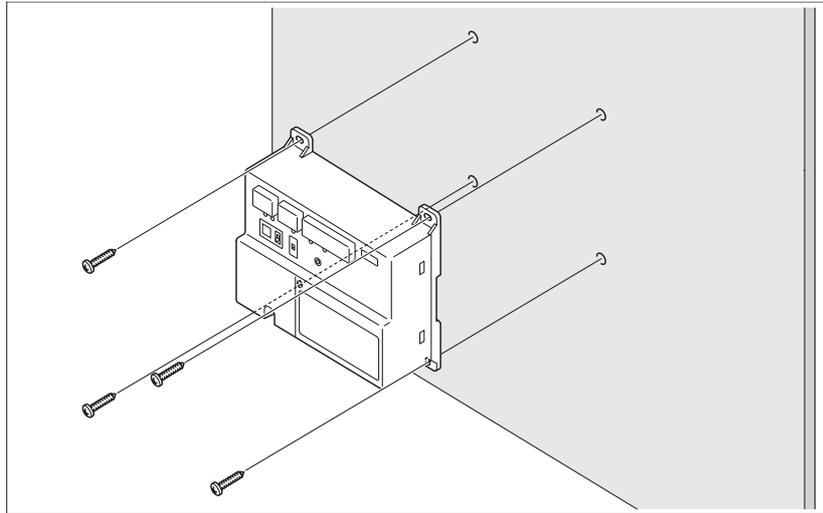
The figure below shows the dimensions of the iTM plus adaptor.



3.1.2 Installation procedure

Secure the iTM plus adaptor to the control enclosure using the supplied round-head wood screws. When done, remove the blue protective film from the upper portion of the unit body.

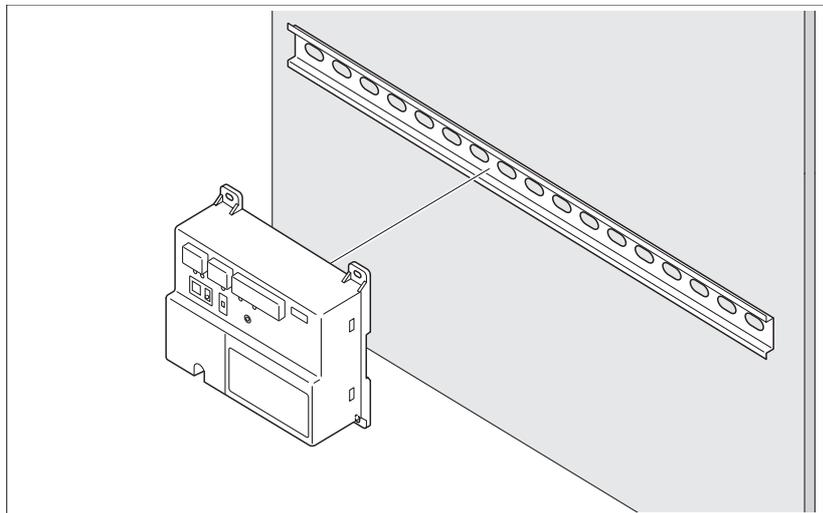
<Mounting to control enclosure>



3.2 DIN rail mounting

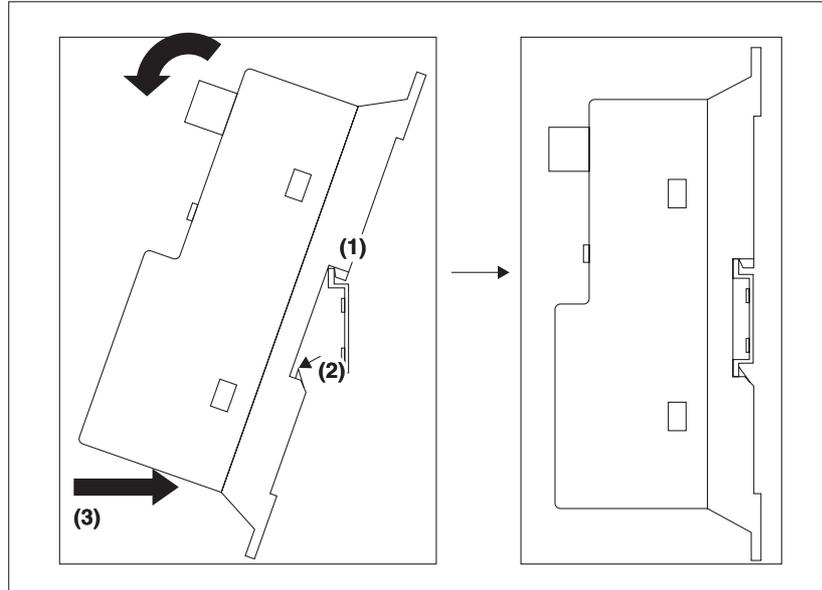
The iTM plus adaptor can be mounted to a 35 mm DIN rail.

<Mounting to DIN rail>



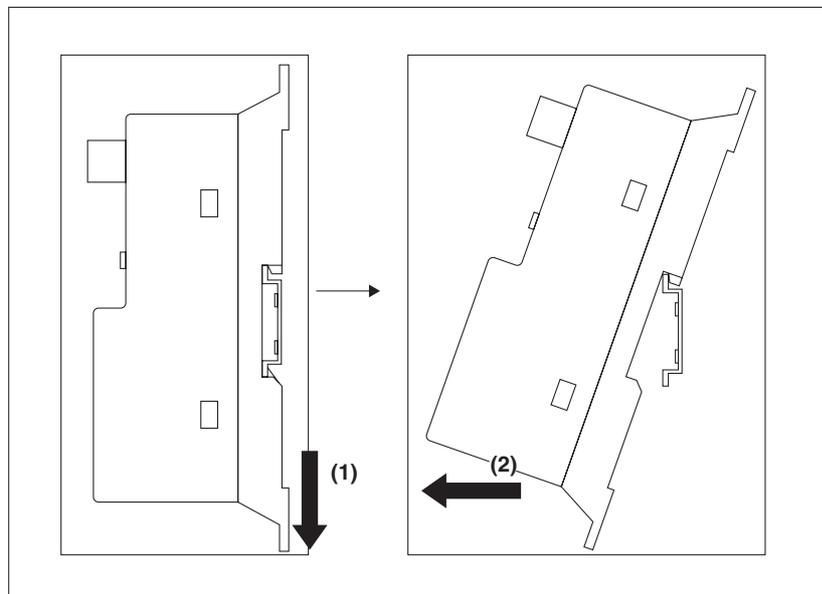
Do not use screws to secure the iTM plus adaptor onto the DIN rail.

Place the iTM plus adaptor over the top of the DIN rail so that the upper hook (1) on the rear face is hooked and push it in direction (3) until the lower hook (2) snaps into the DIN rail. When done, remove the blue protective film from the upper portion of the unit body.



3.2.1 Removal from DIN rail

Pull down the lever at the lower portion of the iTM plus adaptor (1) and pull the unit body (2) out toward you.



4. iTM integrator

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1 Before Installation

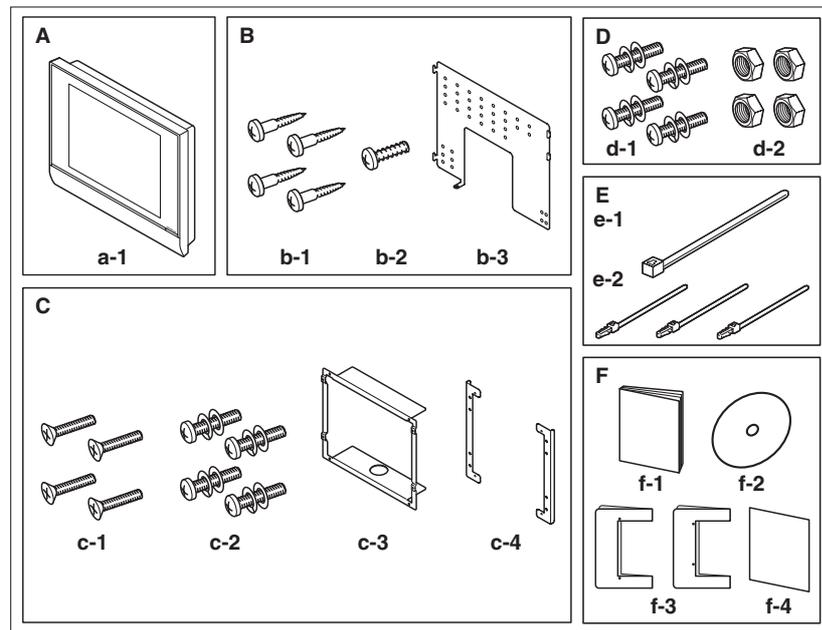
Before you start installing the iTM integrator, complete the following preparations.

- Check that the iTM integrator comes with all accessories.
- Confirm where the terminals and switches of the iTM integrator are located.
- Check that an appropriate space for installing the iTM integrator is available.

1.1 Checking that all accessories are included

Based on the following accessory list, check that all accessories for the iTM integrator are included. Should there be any missing or defective parts, contact your dealer.

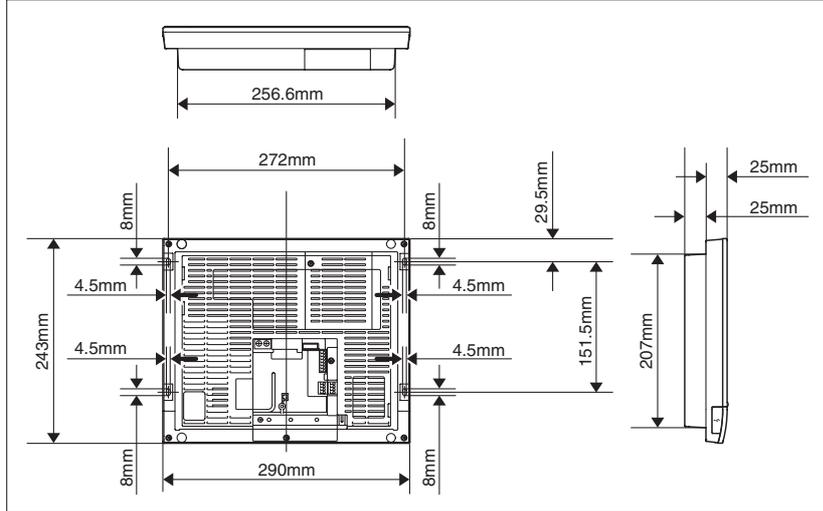
<Accessories included with iTM integrator>



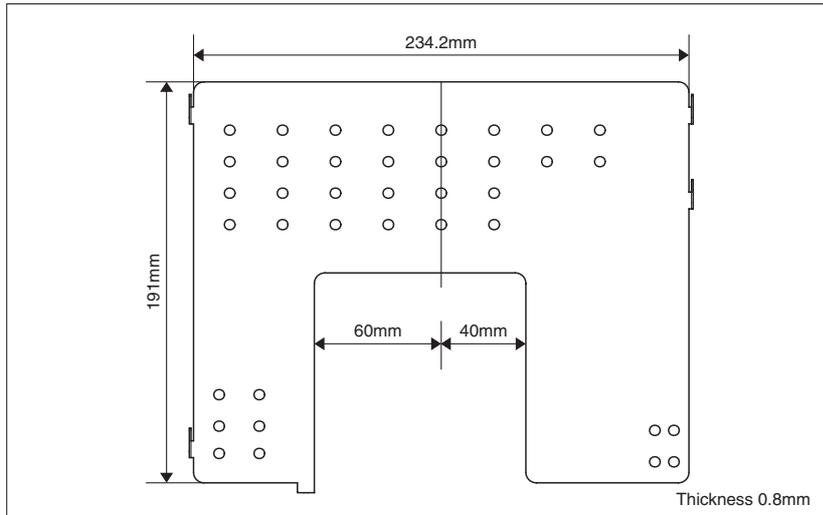
- A** (a-1) iTM integrator body (1 pc.)
- B** Wall mounting parts
(b-1) Round-head wood screw ($\phi 4.1 \times 25$), 4 pcs. (b-2) P-tight screw ($\phi 3 \times 8$), 1 pc.
(b-3) Wall mounting metal plate, 1 pc.
- C** Flush wall mounting parts
(c-1) Flat-head screw (M4 \times 40), 4 pcs. (c-2) Pan-head screw (M4 \times 14, with spring washer and plain washer), 4 pcs.
(c-3) Frame bracket, 1 pc. (c-4) Angle bracket, 2 pcs.
- D** Control enclosure parts
(d-1) Pan-head screw (M4 \times 40, with spring washer and plain washer), 4 pcs.
(d-2) Nut ($\phi 4$), 4 pcs.
- E** (e-1) Cable tie, 1 pc. (e-2) Push mount tie, 3 pcs.
- F** (f-1) Installation manual (This manual), 1 pc. (f-2) Manual CD, 1 pc.
(f-3) Paper template, 2 pcs. (f-4) Warranty card, 1 pc.

1.2 Understanding external dimensions

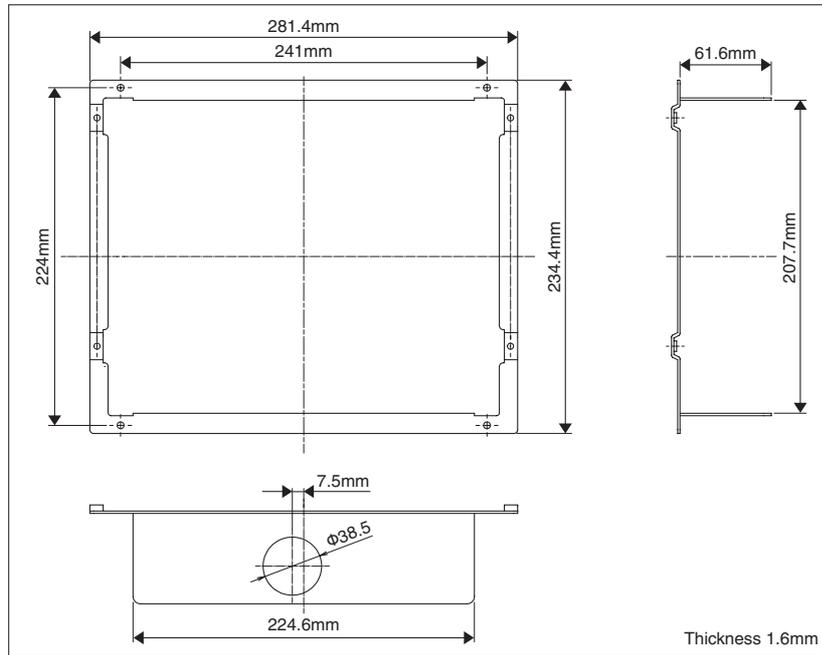
- iTM integrator body



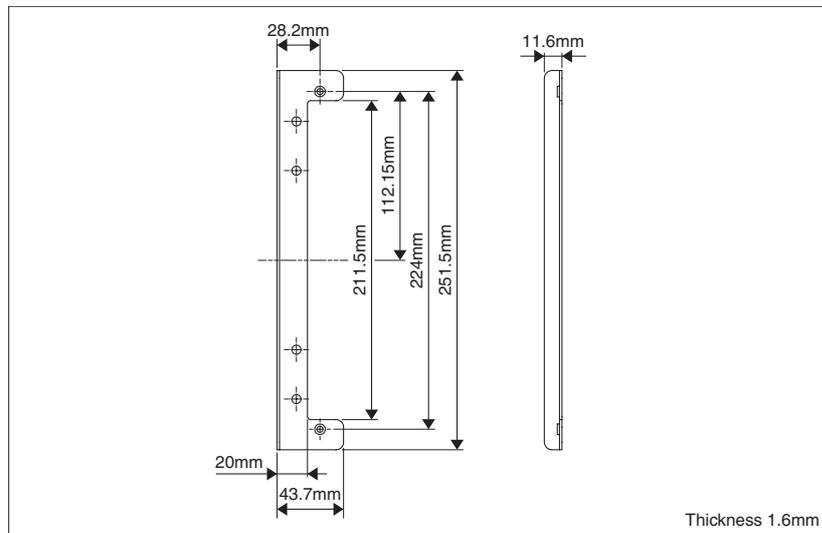
- Wall mounting metal plate



• Frame bracket



• Angle bracket



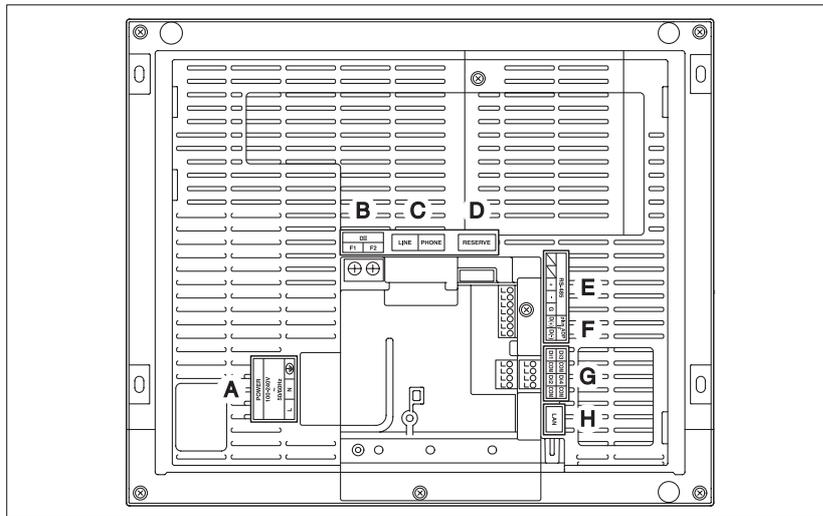
1.3 Understanding where terminals and switches are located

Understand the arrangement of terminals and the location of openings on the unit and plan how to route the cable and in which order to connect its wires to facilitate the installation procedure. For connection details including the cable type and terminal size, refer to “2. Connection”.

1.3.1 Rear face

Most terminals are located on the rear face of the iTM integrator. However, they are covered with a terminal cover for safety reasons. Removing 2 screws to detach this cover reveals various types of terminals as shown below.

<Rear face of iTM integrator>



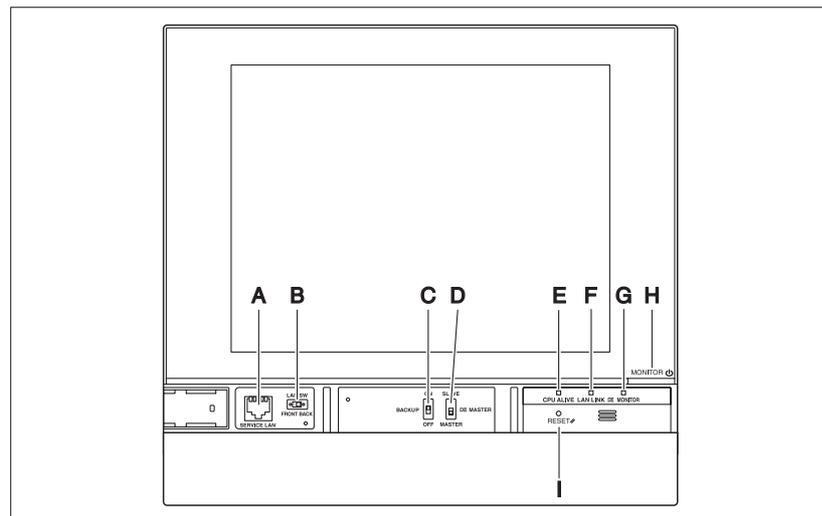
- A [POWER]** The power line connection terminals. A power supply voltage of 100 to 240 VAC (at 50/60 Hz) is required. Near this terminal block, there is a blue resin cable mount used for securing the power supply cables with cable ties.
- B [DIII]** No Use.
- C [LINE, PHONE]** No Use.
- D [RESERVE]** No Use.
- E [RS-485]** No Use.
- F [plus ADP IF]** No Use.
- G [Di (1-4), COM]** No Use.
- H [LAN]** The socket for connecting the iTM integrator to an Ethernet network.

1.3.2

Front panel

Located below the monitor display on the front panel are four LEDs that indicate the operating status of the iTM integrator. Sliding the front slide cover down and then removing a screwed cover reveals terminals used during the setup after installation or during maintenance work.

<Front face of iTM integrator>

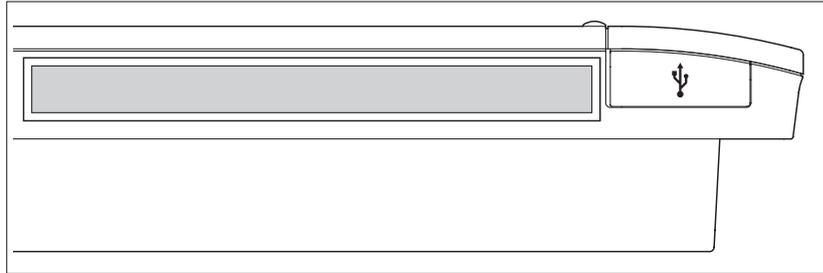


- A [SERVICE LAN]** The socket for temporarily connecting the iTM integrator to a LAN from its front face, instead of its rear face, during installation or maintenance.
- B [LAN SW]** The switch for selecting which Service LAN socket, one on the front face or one on the rear face, is to be activated.
You cannot close the cover when the switch set to "FRONT". To close the cover, select "BACK".
- C [BACKUP]** The switch for turning on/off the backup power supply for retaining the current settings.
- D [DIII MASTER]** No Use.
- E [CPU ALIVE] LED (Green)** The LED that indicates that the CPU is operating normally. The CPU is operating normally when this LED is blinking and malfunctioning when it is on or off.
(It takes about 10 seconds for detection of the abnormality.)
On: Installation failure
Off: A hardware failure occurred.
- F [LAN LINK] LED (Green)** The LED that indicates whether or not the hardware connection is established normally between the iTM integrator and the equipment connected to the LAN port. It lights green when the LAN port is linked normally.
- G [DIII MONITOR] LED (Yellow)** This LED blinks when data is being sent or received on DIII-NET.
- H [MONITOR] key and LED (Orange/Green)** Each time you press this key, the monitor display turns on/off. The color of the LED also changes accordingly to the condition of the monitor display.
Off: The monitor is powered off.
On (Orange): The monitor display is off.
On (Green): The monitor display is on.
- I [RESET//]** The switch for restarting the iTM integrator.

1.3.3 Side face

On the left side face of the iTM integrator, a USB port cover is provided. You use this cover during setup after installation or during maintenance. You also see an attached label, bearing the model, weight, power ratings and the serial number of the iTM integrator.

<Side face of iTM integrator>



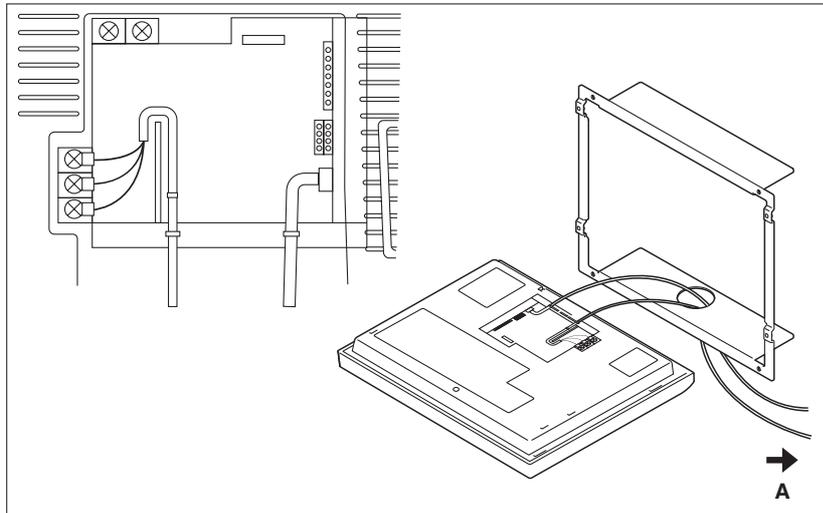
[USB] Pulling up the rubber cover reveals a USB socket. This socket can be raised 90 degrees, so you can plug in a USB device to it from the front direction when there is no clearance from the side edge of the unit.

1.3.4 Routing of cables

To flush-mount the iTM integrator to the wall, you need to route in advance the cables through the cable hole of the frame bracket.

An example of cables routed to the rear face of the iTM integrator is shown below.

<Routing of cables>



A To conduit tube

Make sure that each wiring is secured with supplied cable ties. Secure the power supply cables to the blue resin cable mount with white cable ties and secure them to the other wiring with black cable ties as shown on the wiring diagram (example). To secure the wiring with black cable ties, insert the cable tie head into the provided hole.

1.4 Determining installation place

Be sure to install the iTM integrator in a place that meets the conditions described in 1.4.1 through 1.4.3 below.

1.4.1 Installation place and mounting direction

Below are the description of the installation place and mounting direction. Be sure to confirm.

- Installation place: Indoor, free from dust and water splashes
- Mounting direction: Vertical

1.4.2 Environmental conditions

Make sure that the installation environment meets the following conditions.

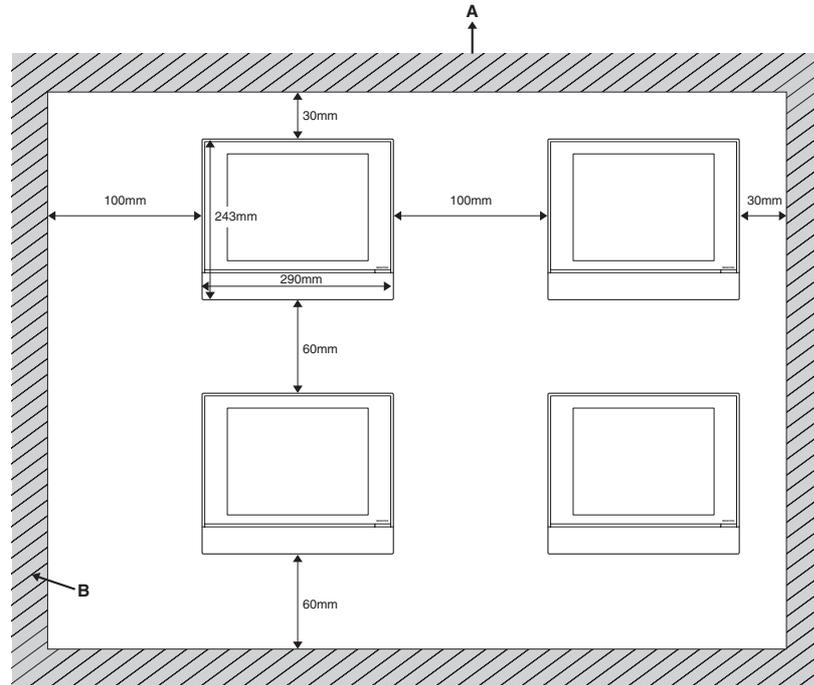
- The ambient temperature must be 0 to 40 °C.
- The ambient humidity must be 85% RH or less (without condensation).
- There must be no electromagnetic disturbance.

1.4.3 Required space

To install the iTM integrator, the following space is required. Make sure that there is a minimum clearance of 30 mm from the top edge, 100 mm from the left side edge, 30 mm from the right side edge, and 60 mm from the bottom edge of the unit.

<Installation space required for iTM integrator>

Required installation space



- A Top
- B Wall

2 Connection

This chapter describes the procedure for connecting the iTM integrator with the intelligent Touch Manager.

Required procedures

- 2.3 Connecting power supply
- 2.2 Connecting a LAN cable



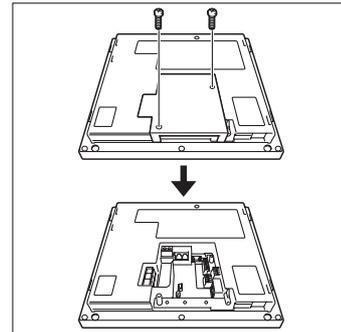
WARNING

- Do not turn the power supply on until all connections are made. Also, make sure that the local circuit breaker, if available, is turned off. Not doing so may cause an electric shock.
- After completing connections, check again that all wires are connected correctly before turning on the power supply.
- All field supplied parts and materials, electric works must conform to local codes.
- All wiring must be performed by an authorized electrician.

2.1 Removing terminal cover from rear face

Before you start any of these connection procedures, remove the terminal cover from the rear face. To do so, remove two screws using a Phillips screwdriver.

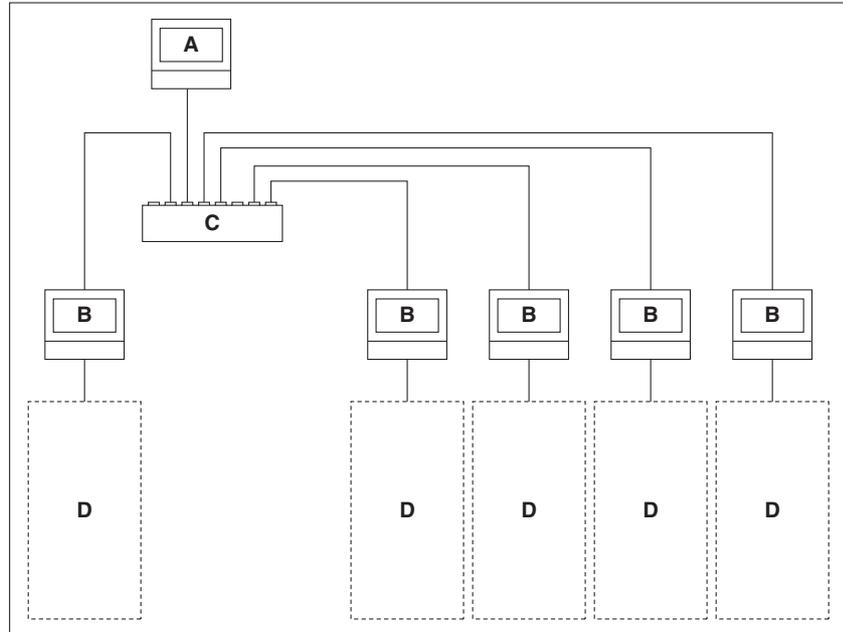
<Removing terminal cover>



2.2 Connecting a LAN cable

Connecting your iTM integrator with network enables you to operate the intelligent Touch Manager from iTM integrator.

One iTM integrator can operate a maximum of 5 intelligent Touch Manager.



- A iTM integrator
- B intelligent Touch Manager
- C Hub
- D Air conditioners or other devices that the intelligent Touch Manager is monitoring.

⚠ WARNING

Do not clamp the cables with high-current lines such as a power cable.

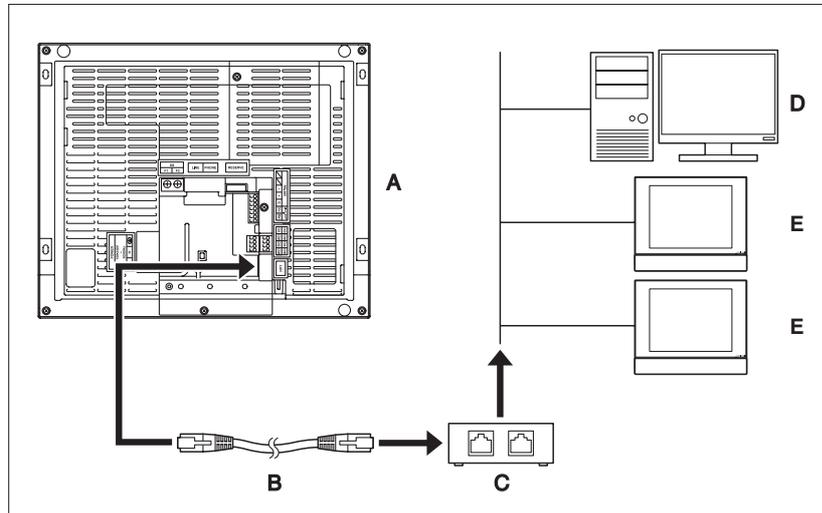
NOTE

For how to connect the iTM integrator to a PC network, contact your network administrator.

2.2.1 Terminals location and conceptual connection diagram

Using a LAN cable, connect the LAN socket to the network hub.

<Conceptual drawing of LAN connection>



- A Rear face of iTM integrator
- B LAN cable
- C Hub
- D PC
- E intelligent Touch Manager

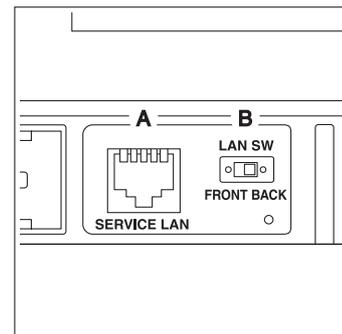
2.2.2 Requirements that must be met

- Applicable cable standard: 100Base-TX or 10Base-T
- Connector standard: RJ-45

NOTE

- If you are connecting to a LAN temporarily during installation or maintenance, use the SERVICE LAN terminal located on the front face. Changing the position of the LAN SW switch to “FRONT” causes the SERVICE LAN socket to activate (enabled for use).
- You cannot close the cover when the switch set to “FRONT”. To close the cover, select “BACK”.

<SERVICE LAN socket and LAN SW switch>



- A SERVICE LAN
- B LAN SW

2.3 Connecting power supply

Connect the iTM integrator to an AC power supply.

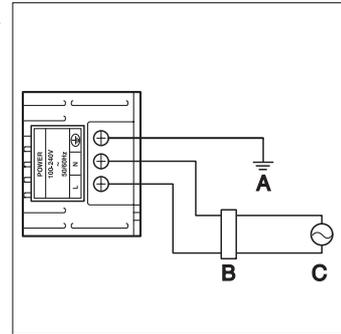
WARNING

The following procedures must be carried out with the power supply shut off. Do not turn the power supply on until all connections are made. Not doing so may cause an electric shock.

2.3.1 Terminals location and conceptual connection diagram

Connect the power supply to the three terminals, L (Live), N (Neutral), and ground in the POWER section.

<Conceptual drawing of power supply connection>



- A Earth
- B Earth leakage breaker
- C Power supply 100-240VAC
50/60 Hz

2.3.2**Requirements that must be met**

- Cable type: Ordinary tough rubber sheathed cord (60245 IEC 53) equivalent or higher
Ordinary polyvinyl chloride sheathed cord (60227 IEC 53) equivalent or higher
- Core thickness: Power wire: 1.0 - 2.0 mm²
Earth lead: Size must comply with local codes.
- Terminal treatment: Use a round crimp-type terminal (M4) with insulating sleeve.
- Power supply voltage: Single phase 100 to 240 VAC (at 50/60 Hz)
- Voltage fluctuation: ±10% or less
- Electric power consumption: 23 W

**CAUTION**

- **An earth leakage breaker capable of shutting down power supply to the entire system must be installed.**
- **When using an earth leakage breaker, make sure to select one useful for to protection against overcurrent and short-circuit. When using an earth leakage breaker only for earth device, make sure to use a wiring interrupter together.**
- **The power supply requires earth leakage breaker installation and earth wire connection. After installing an earth leakage breaker, be sure to connect only the iTM integrator to it.**
- **To prevent accidents due to wire breakage or disconnection, secure the power supply cables to the blue resin cable mount with cable ties.**
- **Be sure to connect the earth wire.**
- **Do not connect the earth wire to gas or water pipes, lighting rod, or telephone earth wire.**
- **Replace the unit when the unit cannot be turned on due to the blowing of the electrical fuse.**

Part 6

Commissioning Manual

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1. intelligent Touch Manager

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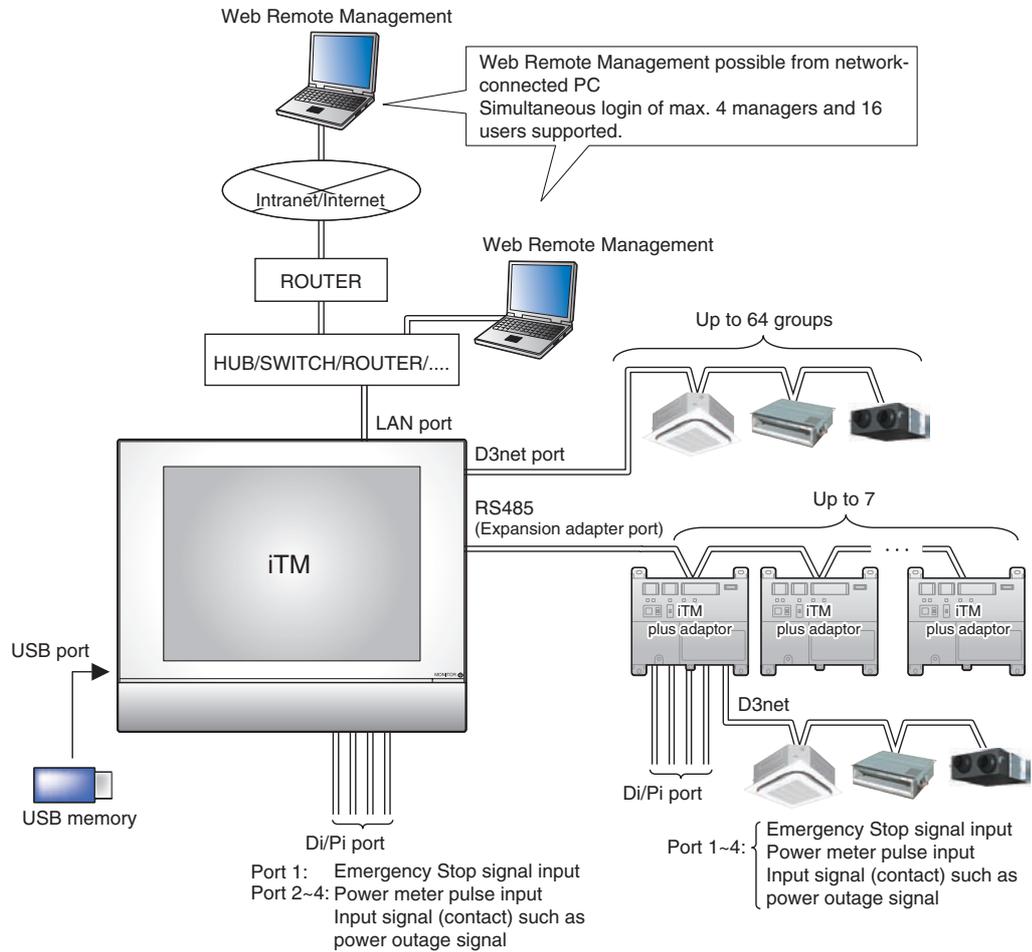
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System Overview

1. About the iTM (intelligent Touch Manager)

1-1 System Configuration



6

2. Engineering

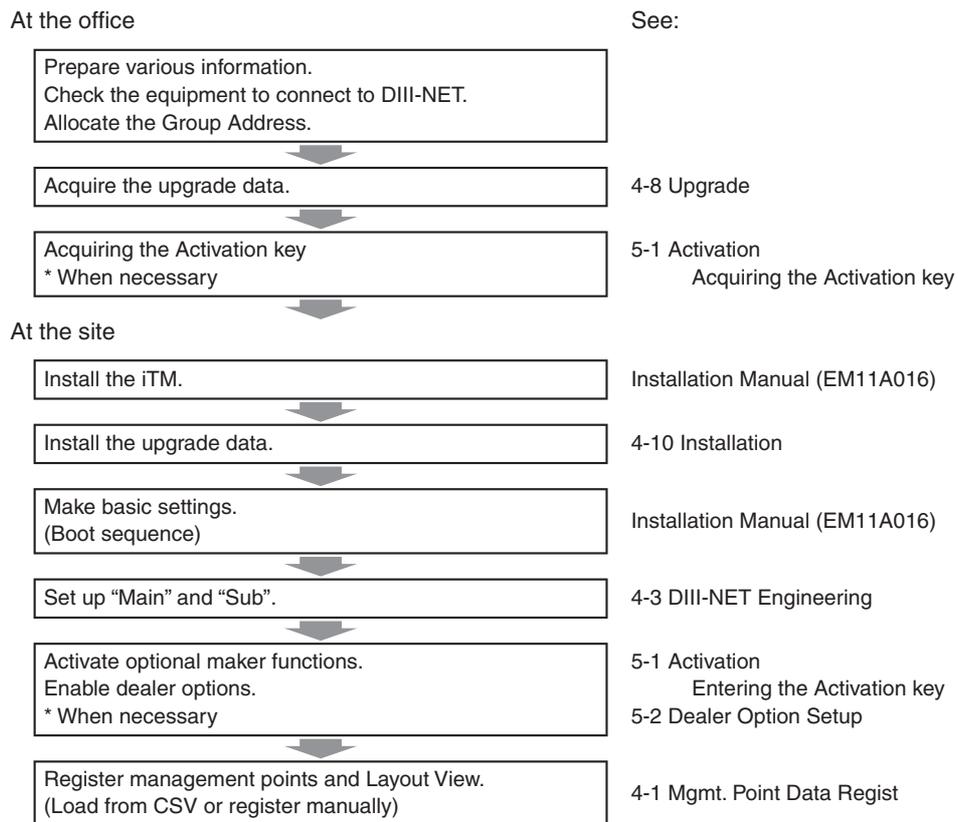
2-1 Engineering Workflow

Various engineering works are necessary for using the iTM.

Engineering works can be roughly divided into those carried out at the office in advance and those carried out on site after installation.

The following diagram shows the engineering workflow.

New installation (Without using the pre-engineering tool)



New installation (By using the pre-engineering tool)

At the office

See:

Prepare various information.
Check the equipment to connect to DIII-NET.
Allocate the Group Address.

Acquire the upgrade data.

4-8 Upgrade

Back up the iTM data.
*In the case of maintenance (When pre-engineering by using the current settings)

4-9 Backup

Set up management points.
(Pre-engineering tool, spreadsheet such as Microsoft Excel)

4-7 Pre-engineering

Create the Layout View.
(Layout View creation tool)
* When necessary

Commissioning Manual Supplementary Volume
Layout View Creation Tool (EM11A024)

Acquiring the Activation key
* When necessary

5-1 Activation
Acquiring the Activation key

At the site

Install the iTM.

Installation Manual (EM11A016)

Install the upgrade data.

4-10 Installation

Make basic settings.
(Boot sequence)

Installation Manual (EM11A016)

Set up "Main" and "Sub".

4-3 DIII-NET Engineering

Install pre-engineering data and Layout View data.

4-10 Installation

Activate optional maker functions.
Enable dealer options.
* When necessary

5-1 Activation
Entering the Activation key
5-2 Dealer Option Setup

2-2 Logging into Service Mode

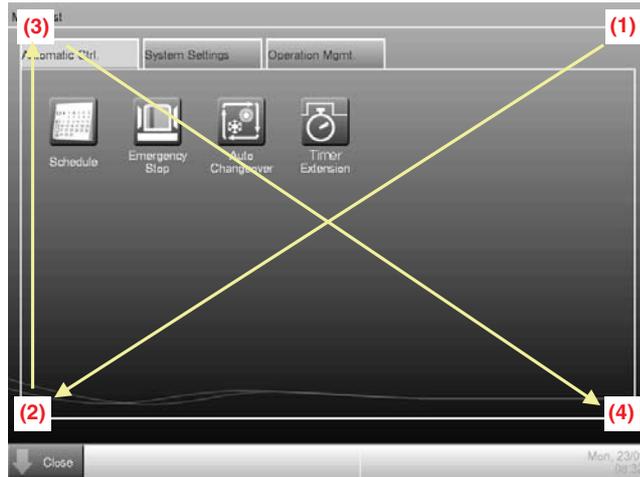
To run engineering, you must log into the Service (SE) Mode from the Menu List screen.

In the SE Mode, the Service Settings tab, which is normally hidden, is displayed on the Menu List.

Also, special buttons available only in SE Mode are displayed on the tabs.

The following describes how to log into the SE Mode.

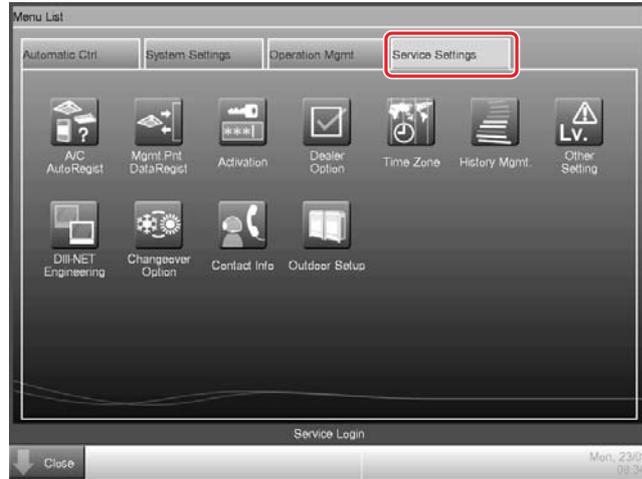
1. Display the Menu List screen.



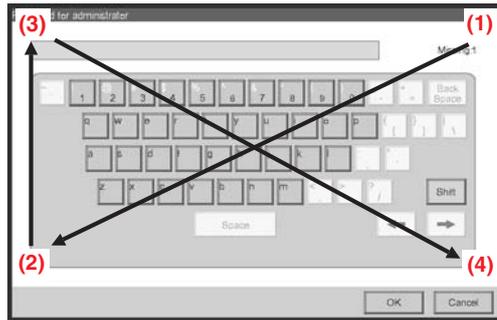
2. Touch the four corners of the screen in the indicated order. The Password Input dialog appears.



3. Enter the service password (daikin) and touch the OK button to log into the SE Mode.



Furthermore, if the screen is locked, entering the service password instead of the administrator password after carrying out the special operation indicated below, allows you to unlock the screen and log into the SE Mode.



Names and Functions

3. Detailed Screen Description

3-1 Setup Screen Structure

Basic Functions

Service Settings Tab	Displays a list of functions configurable by service engineers	(See page 10.)
A/C Auto Regist	This function automatically registers air conditioners that are not yet registered as management points	(See page 10.)
Mgmt. Point Data Regist	This function allows you to manually register, edit, or delete management points	(See page 13.)
Other Setting	Allows you to configure the error detection level and enable or disable the Dry mode	(See page 38.)
DIII-NET Engineering	Allows you to switch the master and slave settings and, when used in conjunction with an upper level central controller, configure the setpoint limitation function	(See page 39.)
Time Zone	Allows you to configure the time difference between the UTC (Universal Time Coordinated) and the local time	(See page 41.)
Changeover Option	This function allows you to configure or cancel the cooling / heating selection right	(See page 41.)
History Mgmt. (Delete)	This function allows you to delete the history data	(See page 43.)
Pre-engineering	This tool allows you to preconfigure necessary settings on the PC	(See page 44.)
Upgrade	Allows you to write a new system file for upgrade	(See page 55.)
Backup	This function allows you to read the current system file and configuration data	(See page 56.)
Installation	This function allows you to install the data for upgrade or restoration	(See page 58.)
Contact Info	Configure the contact information for inquires about system errors or other problems	(See page 60.)
Setting outdoor unit	Configure the model type of the outdoor unit	(See page 62.)
Leakage Check	This function automatically detects refrigerant leak	(See page 69.)
Activation	This function allows you to enter the Activation key required to activate a manufacturer option	(See page 84.)
Dealer Option Setup	Allows you to enable or disable a dealer option	(See page 86.)
System Settings Tab	Displays a list of functions related with system settings	(See page 12.)
Network	Allows you to configure the network IP address and other related settings	(See page 87.)
Web Remote Management	Allows you to configure the Web Remote Management user	(See page 90.)

3-2 Service Settings Tab



NOTE

The button of an optional function is hidden unless the option is enabled.

(1) A/C Auto Regist

Automatically registers as management points those air conditioners that are connected to the iTM but not registered as management point. The air conditioner icons to be displayed on the Standard View screen are also set up automatically.

NOTE

Automatic registration is supported only for indoor units and Ventilator.

(2) Mgmt. Point Data Regist

Registers, modifies, and deletes management points to be operated/controlled using the iTM. The management point data can also be input from/output to a file in CSV format.

(3) Activation

Enables optional maker functions based on entered Activation keys.

NOTE

Optional maker functions refer to the Power Proportional Distribution and Energy Navigator functions.

(4) Dealer Option

Enables/Disables dealer options.

(5) Time Zone

Sets up the difference between the Universal Time Coordinated (UTC) and local time.

(6) History Mgmt. (Delete)

Deletes history records of a specified period from the history.

(7) Other Setting

Enables/Disables the “Detect Level” and “Dry Operation Mode”.

Detect Level: When enabled, indicates management point error alarms via icons and history.

Dry Operation Mode: When enabled, allows you to set Dry mode from the touch panel, the Schedule or Interlocking function.

(8) DIII-NET Engineering

Sets up the iTM as Main or Sub. When an upper central controller is also installed, sets Setpoint Restriction to “Enable” or “Auto”.

NOTE

The “Auto” option automatically Enables/Disables Setpoint Restriction depending on whether an upper central unit is installed or not.

(9) Changeover Option

Enables/Disables the Changeover Option for an air conditioner.

(10) Layout Setup (Optional function)

Displayed only when Layout View data exists.

Allows you to Enter/Output Layout View data.

(11) Contact Info

Sets up contact information (three lines) for inquiries regarding errors in the system and the like.

(12) Outdoor Setup

Allows you to manually register the indoor units that belong to the refrigeration system of each outdoor unit based on the indoor and outdoor unit’s installation information.

Also, allows you to automatically check leakage for each refrigeration system in a multi-refrigeration system. You can also make it run at a set time by using the Schedule function.

(13) Energy Navigator (Optional function)

Sets up the reference room temperature, month to start collecting data, and energy conversion type to be used by the Energy Navigator.

3-3 System Settings Tab



(1) Network

Sets up the network IP addresses as well as the Web Servers.

(2) Web Access Users

Sets up Web users for Web Remote Management.

(3) Backup

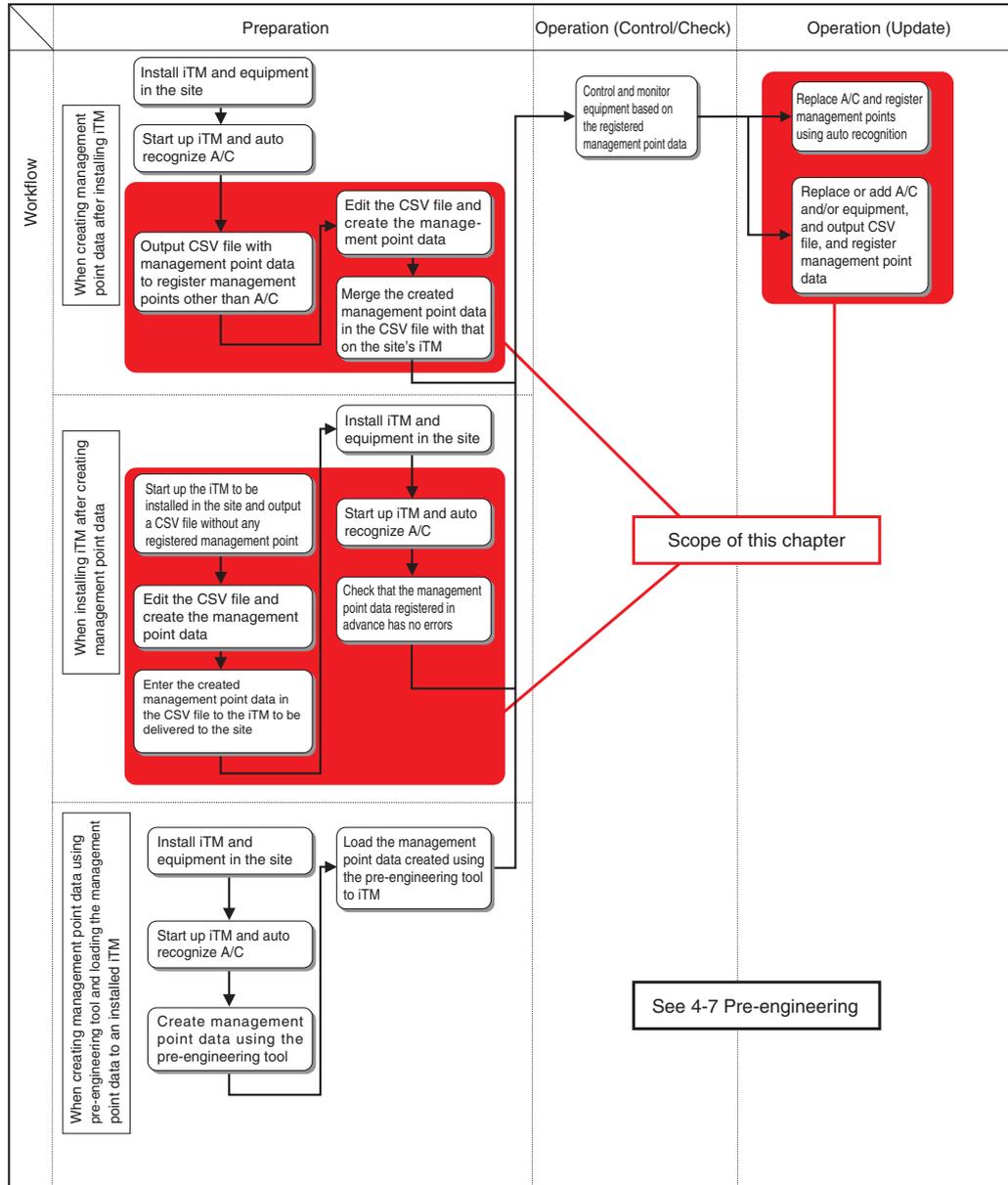
Allows you to export the system file and setup data.

Basic Functions

4. Service Settings

4-1 Mgmt. Point Data Regist

Register, modify, and delete management points to be controlled using the iTM. Management points can be registered in two ways: directly with the iTM unit, or by editing a CSV file on a PC and loading it to the iTM unit. The figure below shows the flowchart of a management point registration.



The following describes the operating procedure.

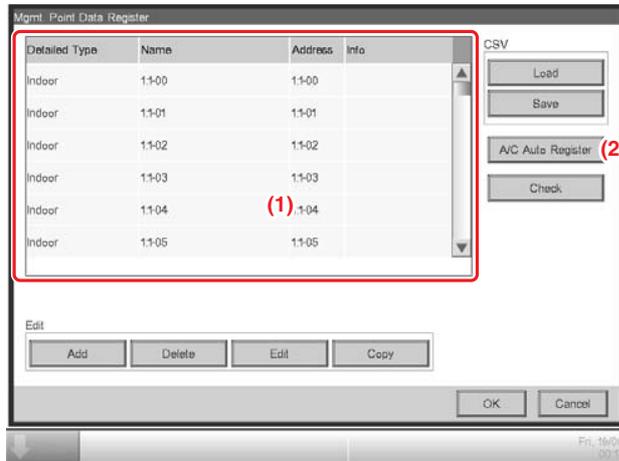
Registering a management point with the iTM unit

1. Automatically recognizing air conditioners

Automatically recognize air conditioners. The iTM unit will search for any D3 units that can be registered, but have not yet been registered with it.

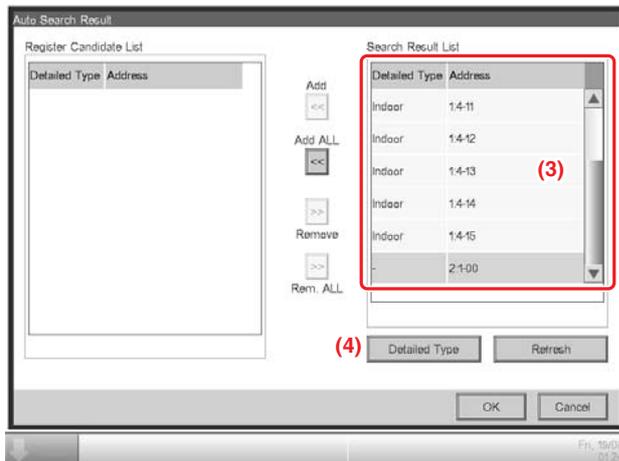
Log into SE Mode from the Menu List screen and display the Service Settings tab (see page 7).

Touch the Mgmt. Pnt Data Regist button on the Service Settings tab to display the main Mgmt. Point Data Register screen (see page 10).



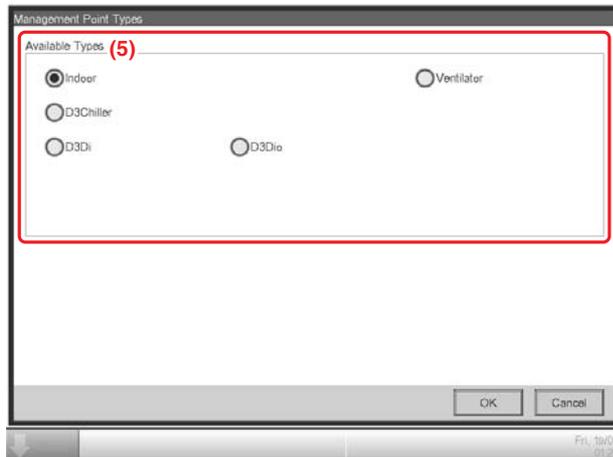
(1) is the list of registered management points.

Touch the **A/C Auto Register** button (2) to display the Auto Search Result screen.

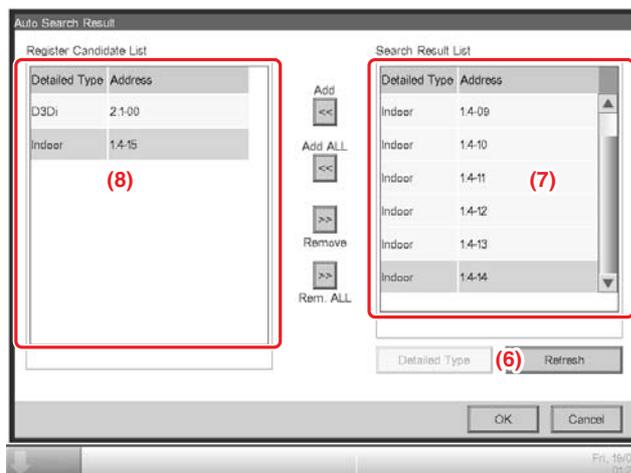


(3) is the search results list. The Detailed Type and Port/Address are displayed.

For management points whose Detailed Type is unknown, you can select the management point and display the Management Point Types screen by touching the **Detailed Type** button (4).



Using the radio buttons (5), select the management point type. Touch the OK button to save and return to the Auto Search Result screen for air conditioners.



Touching the **Refresh** button (6) updates the Search Result List (7) to its most recent status. Selecting a management point to register and touching the Add button adds it to the Register Candidate List (8). To register all management points listed in (7), touch the Add ALL button. To delete a management point from the Register Candidate List (8), select it and touch the Remove button. The management point moves to (7) and is deleted from the list of candidates that can be registered. Touching the Rem. ALL button deletes all of the candidates that can be registered.

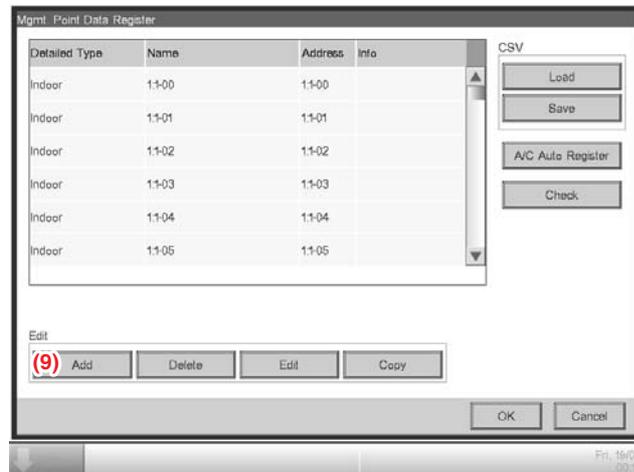
Touch the OK button to register the management point (8) and return to the main Mgmt. Point Data Register screen.

NOTE

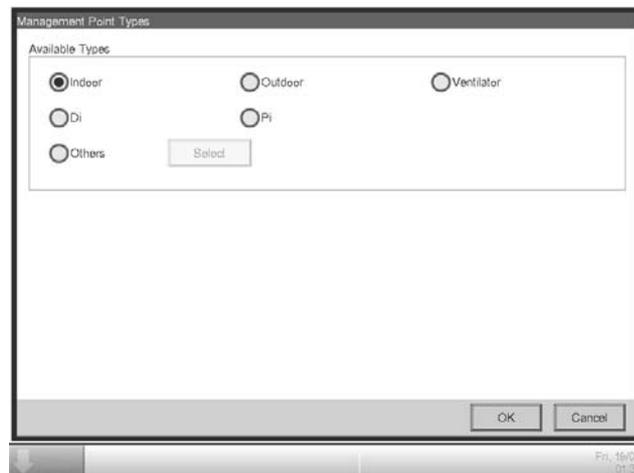
The Add and Add ALL buttons are grayed out when the upper limit of registration has been reached and thus no more management points can be registered.

2. Manually registering management points

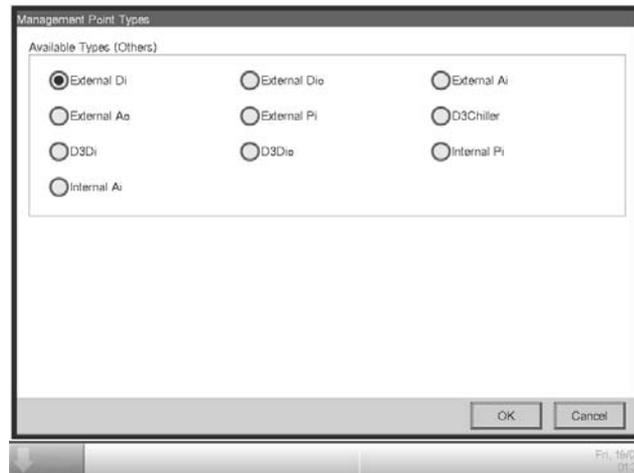
Register one by one the management points that are not registered by automatic recognition.



Touch the **Add** button (9) to display the Management Point Types screen.



Select the management point type to register from Indoor, Outdoor, Ventilator, Di, and Pi.
 To select another type, select the Others radio button and touch the Select button. The Management Point Types screen for other types appears.



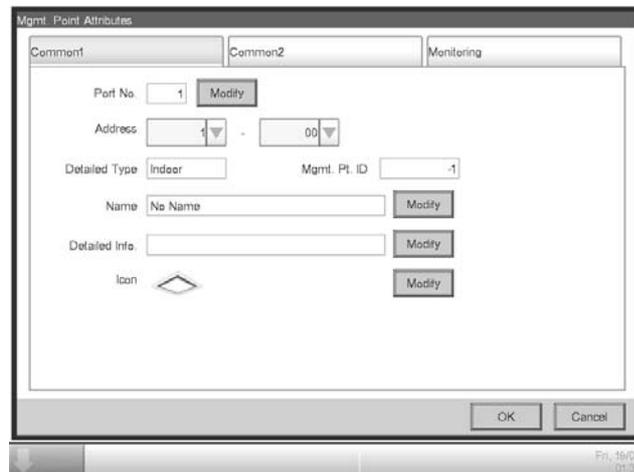
Select the management point type and touch the OK button to save and return to Management Point Types screen.

Remark: External Ao or External Pi are not supported by this model.

When finished, touch the OK button to display the Mng. Point Attributes screen.

3. Setting up details for a management point

Set up details for a management point.

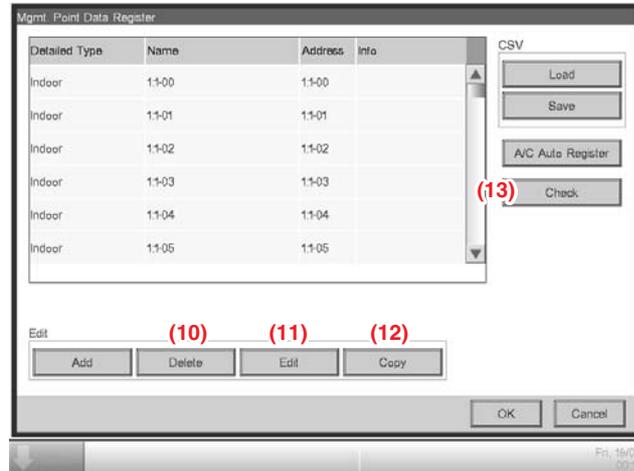


Tabs and items displayed on the Mng. Point Attributes screen vary depending on the selected management point type. Set up by switching the displayed tabs as necessary.

For details of each tab, see page 21 onwards.

When finished with all the tabs, touch the OK button to save the settings and return to the main Mgmt. Point Data Register screen.

4. Deleting/Editing/Copying a management point



Touching the **Delete** button (10) deletes the management point selected in the list.

Touching the **Edit** button (11) displays the Mng. Point Attributes screen for editing the management point selected in the list. (See procedures 1 to 3)

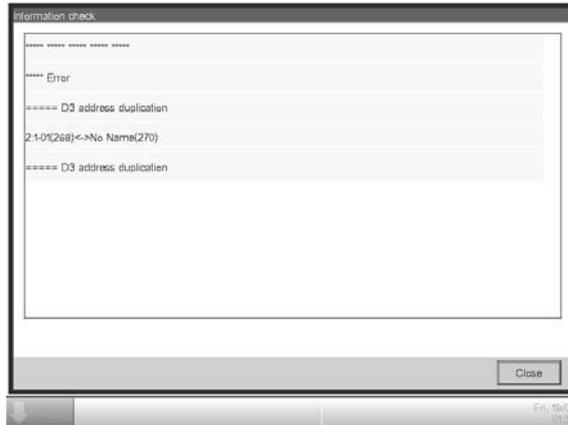
Touching the **Copy** button (12) makes a copy of the management point selected in the list.

NOTE

Modify as necessary since the copy has exactly the same data. Registering as is will cause duplicated address error and the like.

5. Checking the setting results

Touching the **Check** button (13) checks the content of the current settings data and displays the check results on the Information check screen.



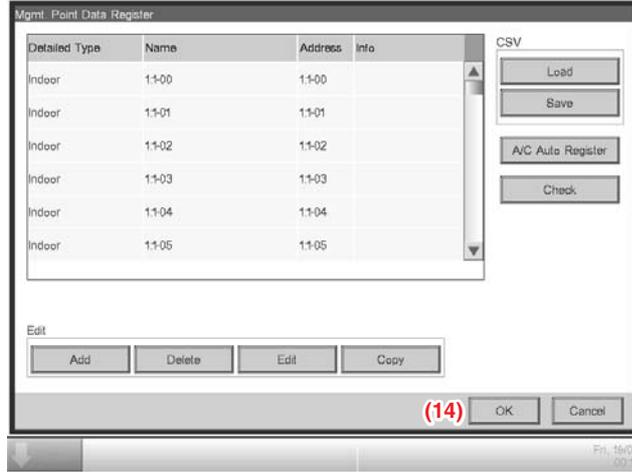
If an error is found, discards the edited content retained until then and restores the saved original data. "No error" is displayed if no error is found. Touch the Close button to close the screen.

Check items list

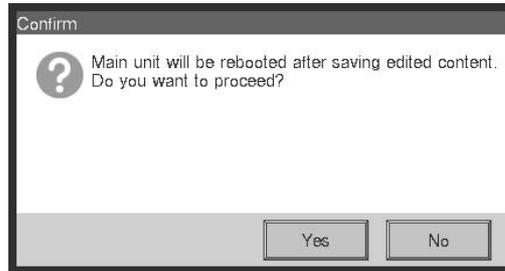
Classification	Check item	Message
Common	Duplicated management point names	==== Mng. point name duplication [Management point name] ([Management point ID]) <-> [Management point name] ([Management point ID]) ==== Mng. point name duplication
	Excess of total number of other management points	Mgmt. points exceeded (Other)
	Excess of number of chiller management points	Chiller Mgmt. Pnt
	Excess of number of outdoor management points	Outdoor Unit Mgmt. points exceeded
	Excess of total number of Internal Pi management points	Internal Pi Mgmt. point exceeded
DIII	Duplicated D3 addresses	==== D3 address duplication [Management point name] ([Management point ID]) <-> [Management point name] ([Management point ID]) ==== D3 address duplication
Di, Pi	Duplicated port numbers	==== Di/Pi address duplication [Management point name] ([Management point ID]) <-> [Management point name] ([Management point ID]) ==== Di/Pi address duplication
Internal Ai	Ai reference management point error	Ai:[Management point name]([Management point ID]): The reference Mng. point is inaccurate
		Ai:[Management point name]([Management point ID]): Analog type error [Invalid]
Internal Pi	Duplicated port numbers	==== Internal Pi address duplication [Management point name] ([Management point ID]) <-> [Management point name] ([Management point ID]) ==== Internal Pi address duplication
BACnet	Duplicated object IDs	==== Duplicate object IDs [Management point name] ([Management point ID]) <-> [Management point name] ([Management point ID]) ==== Duplicate object IDs

6. Restarting iTM

Restart iTM to reflect the settings.



When finished, touch the **OK** button (14). A settings data check is carried out and the Information check screen displayed if errors are found. If no problems are found, the dialog below appears.



Touching the Yes button after confirming restarts the iTM unit.

Detailed Mgmt. Point Attributes screen and button descriptions

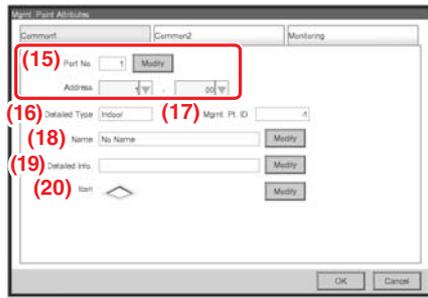
The following describes the Mng. Point Attributes screen in detail.

Tabs and items displayed on the Mng. Point Attributes screen vary depending on the selected management point type. Set up by switching the displayed tabs as necessary.

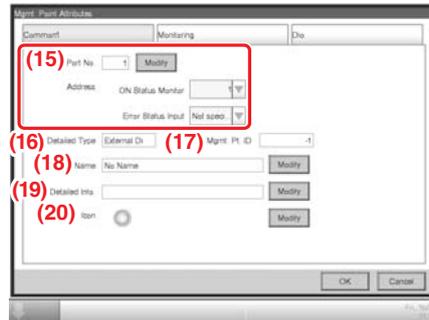
• **Common 1 Tab**

Sets common items for a management point.

Displayed items vary depending on the management point type.



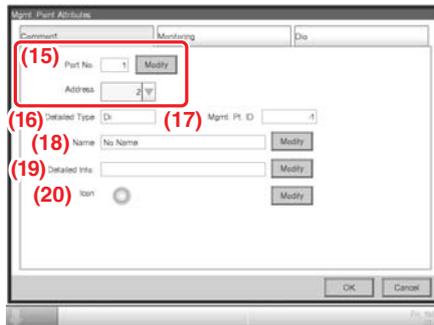
<Indoor, Ventilator, D3Chiller, D3Di, and D3Dio>



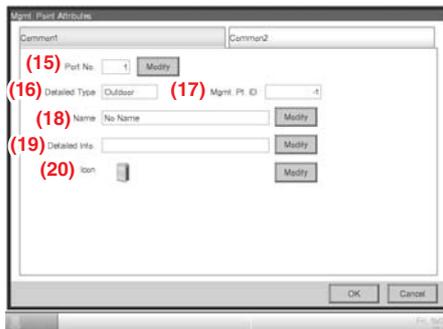
<External Di>



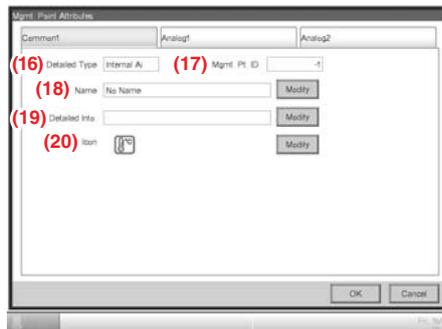
<External Dio>



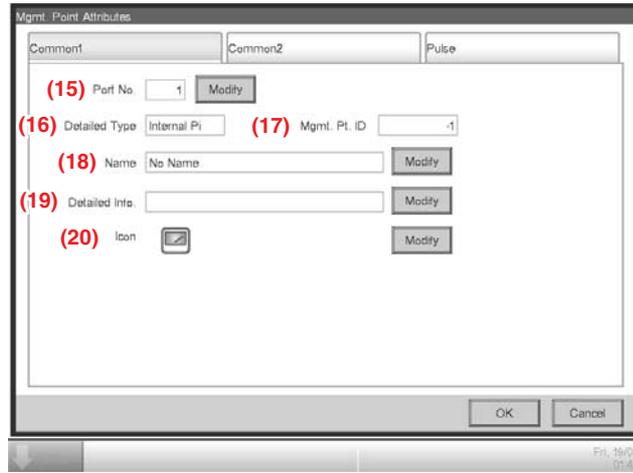
<Di, Pi, External Ai>



<Outdoor>



<Internal Ai>



<Internal Pi>

(15) Port No. text field, **Address** combo box

Sets up the port number and address to which the management point belongs.

For the port number, touch the Modify button and enter it in the Numerical Input dialog that appears.

For the address, select it using the combo box.

Duplicated addresses cannot be registered. All addresses must be different.

The range of values you can enter/set is as indicated in the table below.

Detailed Type	Port number		Address	
	View	Minimum/Maximum value (Default value)	View	Minimum/Maximum value (Default value)
			Non-differentiated	
Di/Pi	<input type="radio"/>	1 to 8 (1)*	<input type="radio"/>	1 to 4 (2)*
D3Di	<input type="radio"/>	1 to 8 (1)	<input type="radio"/>	1-00 to 4-15 (1-00)
D3Dio	<input type="radio"/>	1 to 8 (1)	<input type="radio"/>	1-00 to 4-15 (1-00)
Indoor unit	<input type="radio"/>	1 to 8 (1)	<input type="radio"/>	1-00 to 4-15 (1-00)
Ventilator	<input type="radio"/>	1 to 8 (1)	<input type="radio"/>	1-00 to 4-15 (1-00)
D3Chiller	<input type="radio"/>	1 to 8 (1)	<input type="radio"/>	1-00 to 4-15 (1-00)
Outdoor unit	<input type="radio"/>	1 to 8 (1)	<input checked="" type="radio"/>	-
Internal Ai	<input checked="" type="radio"/>	-	<input checked="" type="radio"/>	-
Internal Pi	<input type="radio"/>	1 to 8 (1)	<input checked="" type="radio"/>	-

* The combination: Port number 1 and Address 1 is assigned exclusively for the input of the iTM unit emergency stop signal and cannot be used.

(16) Detailed Type field

Displays the detailed management point type. However, you cannot modify it here.

(17) Mgmt. Pt. ID field

Displays the management point ID automatically allocated by the system. However, you cannot modify it here.

(18) Name text field

Sets up the management point name.

Touch the Modify button and enter the name in the Name Input dialog that appears.

Specify a name for the management point using 1 to 12 characters, irrespective of single or double byte.

(19) Detailed Info. text field

Set up information about the management point as necessary.

Touch the Modify button and enter the value in the Text Input dialog that appears.

The number of characters you can enter is 0 to 50, irrespective of single or double byte.

(20) Icon field

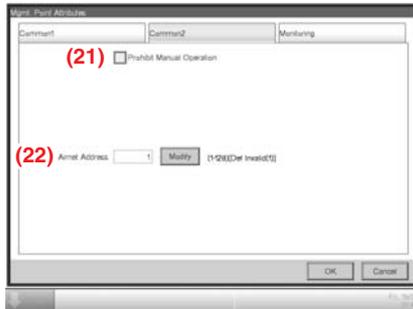
Sets up the icon for the management point.

Touch the Modify button and set the icon in the Icon Setup screen that appears.

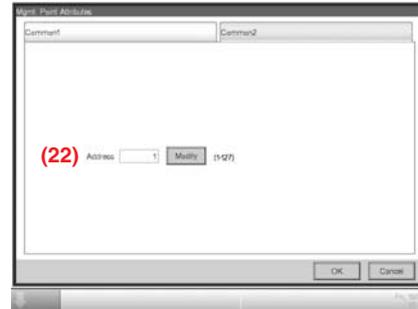
• Common 2 Tab

Sets up common items 2 for a management point.

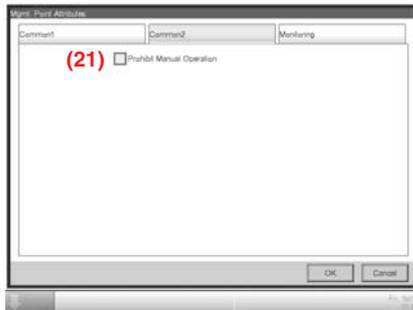
Displayed items vary depending on the management point type.



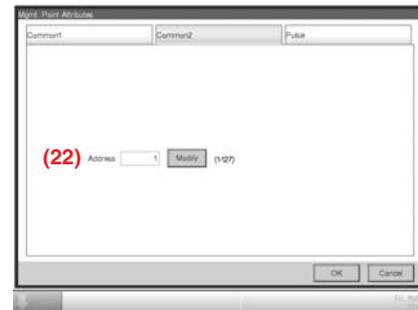
<Indoor>



<Outdoor>



<D3Chiller, D3Dio, External Dio>



<Internal Pi>

(21) Prohibit Manual Operation check box

Select the check box when prohibiting manual operation from the iTM.

(22) Address/ACN address text field

Sets up the ACN address.

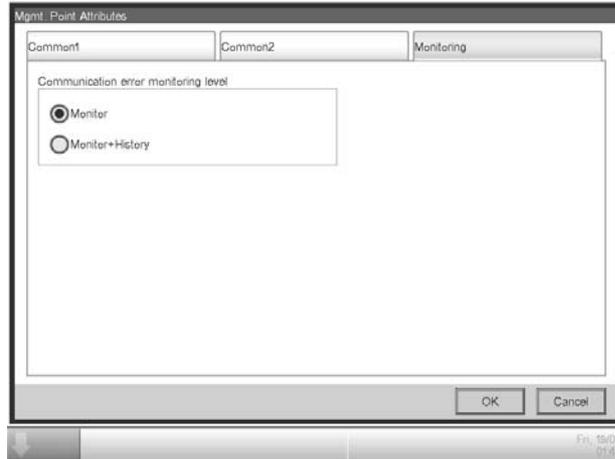
Touch the Modify button and enter the value in the Numerical Input dialog that appears.

Addresses can be specified in steps of 1 and within the following ranges of values.

Indoor unit: 1 to 128, Outdoor unit: 1 to 127, Internal Pi: 1 to 127

• **Monitoring Tab**

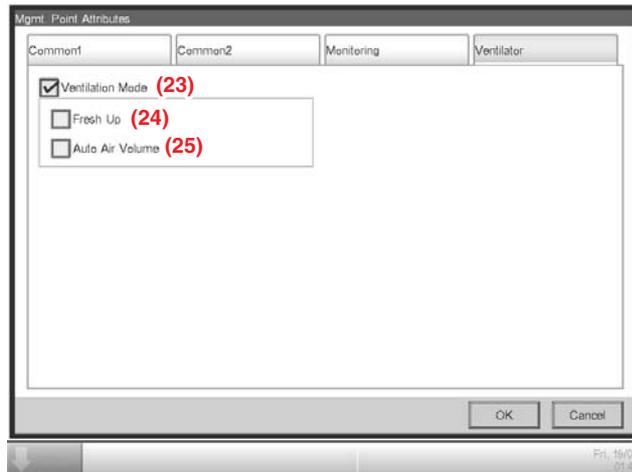
Sets up the monitoring item.



Select either of the communication error monitoring levels: Monitor or Monitor + History by using the radio button.

• **Ventilator Tab**

Sets up the Ventilator.



(23) Ventilation Mode check box

Select the check box when setting up Fresh Up and/or Auto Air Volume.

(24) Fresh Up check box

Select the check box to enable Fresh Up.

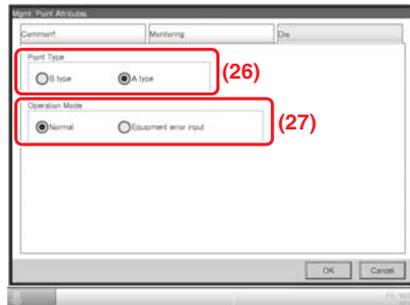
(25) Auto Air Volume check box

Select the check box to enable Auto Air Volume.

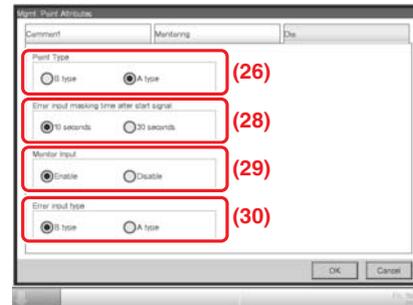
• Dio Tab

Sets up the Dio.

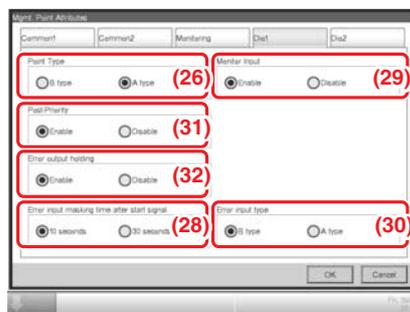
Displayed items vary depending on the management point type.



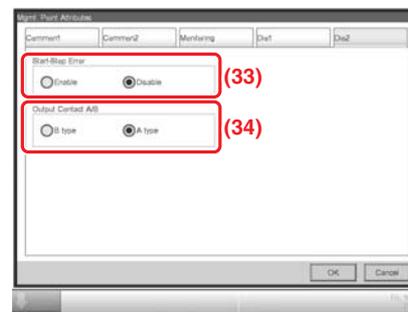
<Di>



<External Di>



<External Dio>



(26) Point Type radio button

Select the Di Point Type from A type and B type.

(27) Operation Mode radio button

Select the Di operation mode from Normal and Equipment error input.

(28) Error input masking time after start signal radio button

Select an Error Mask Time after operation input from 10 and 30 seconds.

Start up error occurs if the external Di or external Dio cannot start even after the time set up here elapses from the moment the Start signal has been received.

(29) Monitor Input radio button

Select whether to carry out error detection when the external Di or external Dio is off from Enable and Disable.

(30) Error input type radio button

Select the error input detection from A type and B type.

(31) Post-Priority radio button

Select whether to allow Start/Stop from the equipment from Enable and Disable.

(32) Error output holding radio button

Select whether to block the control signal when an error is detected from Enable and Disable.

(33) Start-Stop Error radio button

Select whether to carry out start/stop error detection from Enable and Disable.

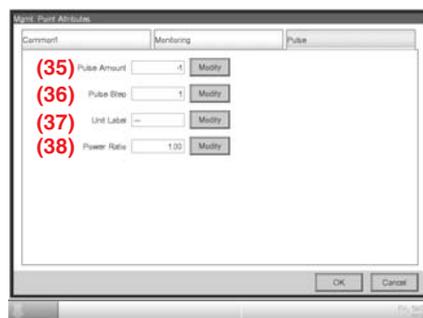
(34) Output Contact A/B radio button

Select the type of output contact from A type and B type.

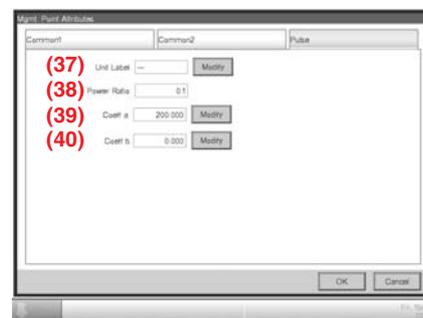
- **Pulse Tab**

Sets up the pulse value.

Displayed items vary depending on the management point type.



<Pi>



<Internal Pi>

(35) Pulse Amount text field

Sets up the pulse value.

Touch the Modify button and enter the value in the Numerical Input dialog that appears.

You can enter a value in the -1 to 999999999 range, in increments of 1.

(36) Pulse Step text field

Sets up the pulse constant.

Touch the Modify button and enter the value in the Numerical Input dialog that appears.

You can enter a value in the 1 to 999999 range, in increments of 1.

(37) Unit Label text field

Sets up the unit.

Touch the Modify button and enter the value in the Text Input dialog that appears.

The number of characters you can enter is 0 to 8, irrespective of single or double byte.

(38) Power Ratio text field

Sets up the power ratio.

Touch the Modify button and enter the value in the Numerical Input dialog that appears.

You can enter a value in the 0.01 to 99999.99 range, in increments of 0.01.

For the Internal Pi, the power ratio is fixed to 0.1.

(39) Coeff a text field

Sets up the coefficient a.

Touch the Modify button and enter the value in the Numerical Input dialog that appears. You can

enter a value in the 0.000 to 1000.000 range, in increments of 0.001.

(40) Coeff b text field

Sets up the coefficient b.

Touch the Modify button and enter the value in the Numerical Input dialog that appears. You can

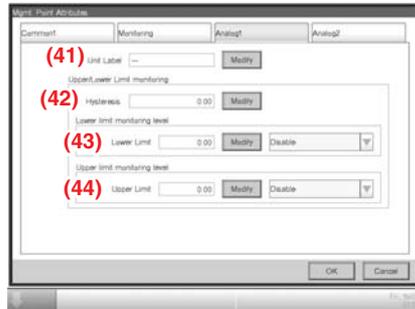
enter a value in the -10.000 to 10.000 range, in increments of 0.001.

• **Analog Tab**

Sets up the analog value.

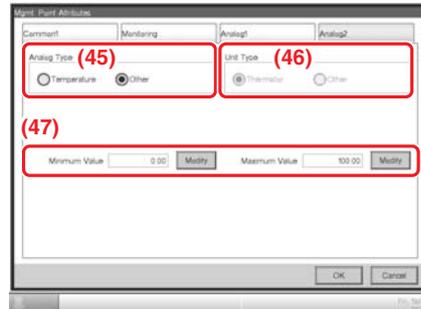
Displayed items vary depending on the management point type.

Analog 1



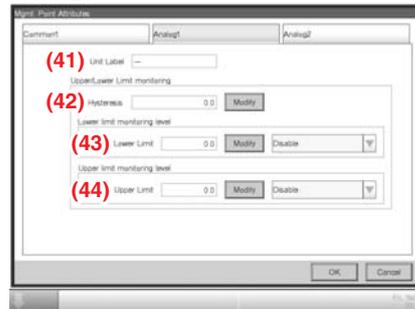
<External Ai>

Analog 2



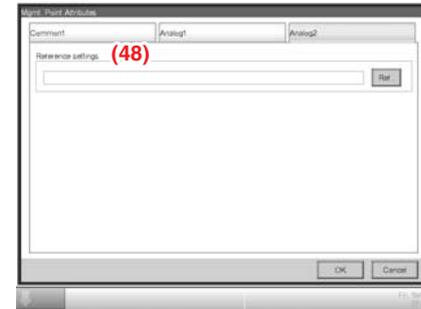
<External Ai>

Analog 1



<Internal Ai>

Analog 2



<Internal Ai>

For the range of values that can be input for each type in the Numerical Input dialog see the table on page 31.

(41) Unit Label text field

Sets up the unit.

Touch the Modify button and enter the value in the Text Input dialog that appears.

The number of characters you can enter is 0 to 8, irrespective of single or double byte.

(42) Hysteresis text field

Sets up the hysteresis.

Touch the Modify button and enter the value in the Numerical Input dialog that appears.

(43) Lower Limit field

Sets up the lower limit and monitoring status for lower limit error monitoring.

For the lower limit, touch the Modify button and enter it in the Numerical Input dialog that appears.

For the monitoring status, select from Disable, Monitoring, and Monitor + History from the combo box.

(44) Upper Limit field

Sets up the upper limit and monitoring status for upper limit error monitoring.

For the upper limit, touch the Modify button and enter it in the Numerical Input dialog that appears.

For the monitoring status, select from Disable, Monitoring, and Monitor + History from the combo box.

(45) Analog Type radio button

Select the analog value type from Temperature and Other.

(46) Unit Type radio button

Select the unit type of External Ai either "Thermistor" or "Other". The unit type cannot be configured when Other is selected in Analog Type **(45)**.

Selecting Thermistor sets the Minimum value and Maximum value text fields **(47)** to -512.0 and 512.0 (or -890 and 954 in Fahrenheit), respectively, which cannot be changed.

(47) Minimum Value / Maximum Value text field

Sets up the physical quantities corresponding to the minimum and maximum analog value input signals.

Touch the Modify button and enter the value in the Numerical Input dialog that appears.

(48) Reference settings field

Sets up the Target Point and Target analog value for the Internal Ai.

Touch the Ref.. button and select the Target Point and Target analog value to set from the Analog Point Selection screen that appears (see page 32).

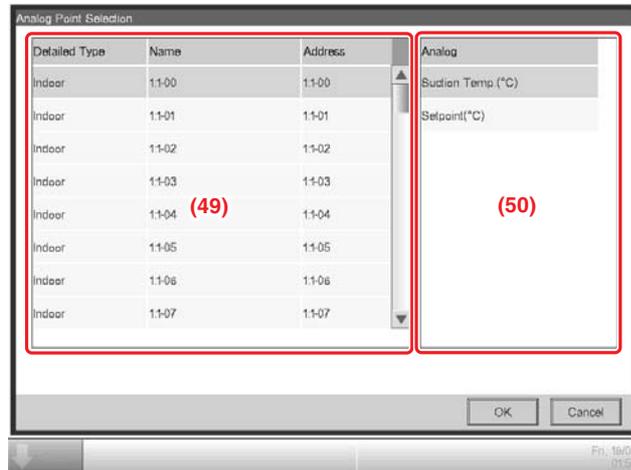
Acceptable range for each numeric value

Detailed Type	Classification	Item	For Celsius		For Fahrenheit		For analog value	
			Minimum/Maximum value (Default value)	Increment	Minimum/Maximum value (Default value)	Increment	Minimum/Maximum value (Default value)	Increment
External Ai BACnet Ai	Upper/ Lower Limit monitoring	Hysteresis	0.0 to 512.0 (0.0)	0.1	0 to 922 (0)	1	0.00 to 9999.99 (0.00)	0.01
		Lower limit	-512.0 to 512.0 (0.0)	0.1	-890 to 954 (32)	1	-9999.99 to 9999.99 (0.00)	0.01
		Upper limit	-512.0 to 512.0 (0.0)	0.1	-890 to 954 (32)	1	-9999.99 to 9999.99 (0.00)	0.01
	Analog value	Minimum value	-512.0 to 512.0 (0.0/-512.0)* ³	0.1	-890 to 954 (32/-890)* ³	1	-9999.99 to 9999.99 (0.00)	0.01
		Maximum value	-512.0 to 512.0 (100.0/512.0)* ³	0.1	-890 to 954 (212/954)* ³	1	-9999.99 to 9999.99 (100.00)	0.01
Internal Ai	Upper/ Lower Limit monitoring	Hysteresis	0.0 to 512.0 (0.0)* ²	0.1	0 to 922 (0)* ²	1		
		Lower limit	-512.0 to 512.0 (0.0)* ²	0.1	-890 to 954 (32)* ²	1		
		Upper limit	-512.0 to 512.0 (0.0)* ²	0.1	-890 to 954 (32)* ²	1		
BACnet Ao	Analog value	Min. of op	-512.0 to 512.0 (0.0)	0.1	-890 to 954 (32)	1	-9999.99 to 9999.99 (0.00)* ¹	0.01* ¹
		Max. of op	-512.0 to 512.0 (0.0)	0.1	-890 to 954 (32)	1	-9999.99 to 9999.99 (0.00)* ¹	0.01* ¹
		Displayed accuracy	-1 (-1)	1	0 (0)	1	-2 to 3 (-1)	1

- *1 Min of op. and Max of op. can be set up with the accuracy specified in Displayed accuracy.
If Displayed accuracy is modified when Min of op. and Max of op. are already set, their value are rounded to fit the accuracy specified by the Displayed accuracy.
(When loading a CSV file, an input data error will occur if it contains any value finer than the specified accuracy.)
- *2 The default values displayed on GUI will change depending on whether Celsius or Fahrenheit is selected in System Settings.
- *3 The former or latter value will be used depending on whether Unit Type is Other or Thermistor, respectively.
(When loading a CSV file with Thermistor selected, the default value will be used regardless of the input data.)

• Analog Point Selection Screen

Sets up the reference for the Internal Ai. Touch the Ref.. button on the Analog2 tab to display the Analog Point Selection screen.



(49) is the list of management points with analog value.

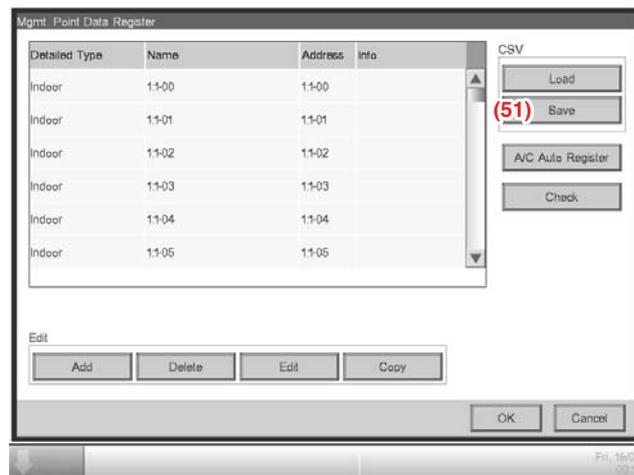
(50) is the list of analog values that applicable to the Internal Ai of the selected management point.

Registering management points using a CSV file

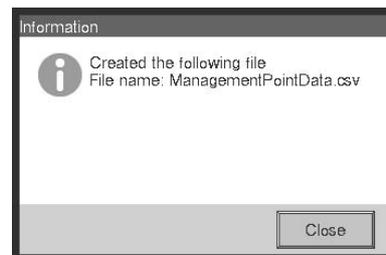
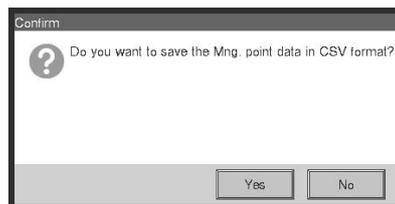
1. Outputting a CSV file

The current settings data can be output to a CSV file for editing the management point data using a computer software or the Pre-engineering tool. The CSV file can be edited using “Microsoft Excel” and the like.

Log into SE Mode from the Menu List screen and display the Service Settings tab (see page 7). Touch the Mgmt. Point Data Register button on the Service Settings tab to display the main Mgmt. Point Data Register screen.



Connect a USB memory to the iTM unit and touch the **Save** button (51). Touch the Yes button on the Confirm dialog that appears. Saving to the USB memory starts.

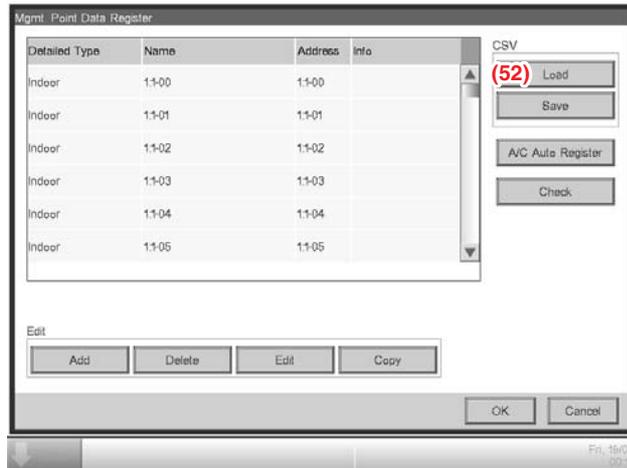


Saving is complete when a save completion dialog appears. Touch the Close button to return to the main Mgmt. Point Data Register screen.

2. Loading a CSV file

Load the edited CSV file. The edited data does not overwrite everything, it only merges the difference to the current settings data.

Log into SE Mode from the Menu List screen and display the Service Settings tab (see page 7). Touch the Mgmt. Point Data Register button on the Service Settings tab to display the main Mgmt. Point Data Register screen.



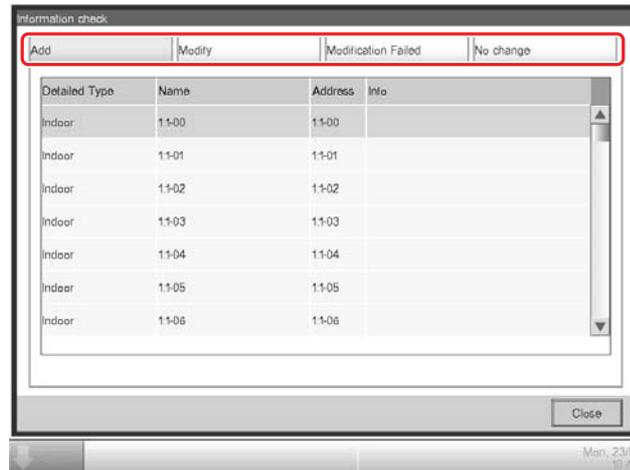
Connect the USB memory to the iTM unit and touch the **Load** button (52).

File names that can be loaded are limited to “**ManagementPointData.csv**”. If a file is named differently, rename it in advance.

Touch the Yes button on the Confirm dialog that appears to start loading.



If the setting data has been loaded without any problem, the merge results appear.



The Display Merge Results screen consists of the tabs: Add, Modify, Modification Failed, and No change.

After checking the list on each tab, touch the Close button to return to the main Mgmt. Point Data Register screen.

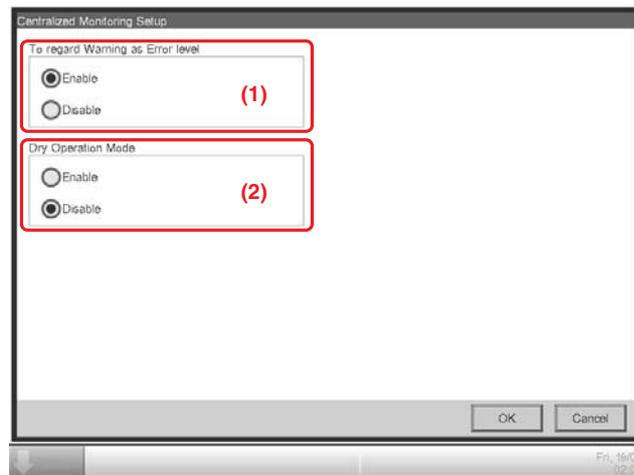
NOTE

- Symbols (decimal point, digit group separator, etc) used in Windows may vary depending on the locale. Be sure to check before editing a file.
- Pi pulse value at the time of saving the CSV file is output with an invalid, out of the merge scope value (-1). To enable pulse value merge, rewrite it to a valid range value.
- Daikin recommends you to leave the management point ID in the CSV file in blank so that they are automatically set up at loading.

4-2 Other Setting

Sets up whether to recognize the “Warning” from a management point as an error and indicate it via icon and history. Also Enables/Disables the Dry operation mode.

1. Log into SE Mode from the Menu List screen and display the Service Settings tab (see page 7).
Touch the Other Setting button on the Service Settings tab to display the Centralized Monitoring Setup screen (see page 10).



2. Enable/Disable using the **To regard Warning as Error level** radio button (1). The following table shows the displayed content for each error type depending on the setting.

	Err Type	Error detection level	
		Not regard Warning as Error level	Regard Warning as Error level
Icon	Equipment error	○	○
	Warning	x	○
History	Equipment error	○	○
	Warning	x	○

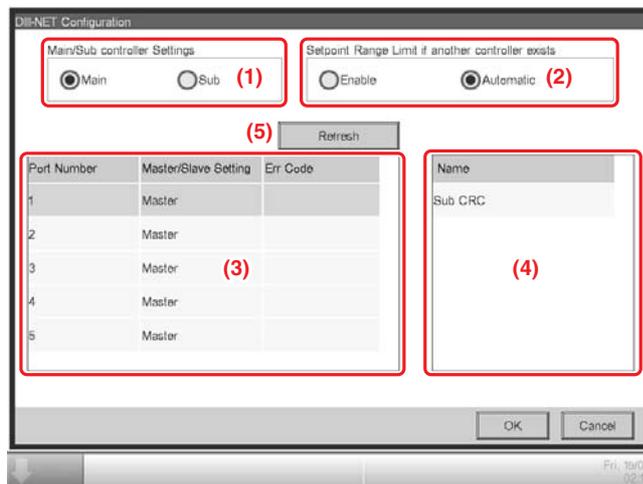
[Legend]
○: Error indication
x: No error indication

3. Enable/Disable dry operation mode in **Dry Operation Mode (2)**. When enabled, allows you to set Dry mode from the touch panel, or the Schedule or Interlocking function. Touch the OK button to commit and close the screen.

4-3 DIII-NET Engineering

Sets up the iTM as “Main” or “Sub” when also installing an upper central controller. Sets Setpoint Restriction to “Enable” or “Auto” when also installing an upper central controller (such as: Interface for use in BACnet, Interface for use in LONWORKS).

1. Log into SE Mode from the Menu List screen and display the Service Settings tab (see page 7). Touch the DIII-NET Engineering button on the Service Settings tab to display the DIII-NET Engineering screen (see page 10).



2. Set “Main” or “Sub” using the **Main/Sub controller Settings** radio button (1). A restart is necessary after switching the Main/Sub controller Settings.

NOTE

When “Sub” is selected, **Setpoint Range Limit if another controller exists (2)** is greyed out and cannot be selected. The setting is “always disabled”.

3. If you have set “Main” in step 2, select “Enable” or “Auto” in **Setpoint Range Limit if another controller exists (2)**.

Enable: The Setpoint Restriction is enabled.

Auto: The Setpoint Restriction is disabled when an upper central unit is present. The Setpoint Restriction is enabled when an upper central unit is not present.

4. (3) is a list of Connector Plugs for each iTM port. (4) is a list of central units recognized on the port selected in (3), where its name is displayed along with its Main/Sub setting. Central units that can be installed together are as follows.

NOTE

This iTM is not displayed in (4).

Displayed information	Applicable product
DDS	Interface for use in BACnet
	Interface for use in LONWORKS
Main CRC-1	Central Remote Controller iTM iTM plus adaptor
Sub CRC-1	
Main On/Off-1	ON/OFF Controller
Sub On/Off-1	
Main On/Off-2	ON/OFF Controller
Sub On/Off-2	
Main On/Off-3	ON/OFF Controller
Sub On/Off-3	
Main On/Off-4	ON/OFF Controller
Sub On/Off-4	
(Hidden)	Service checker, LC
Unknown	Central units other than the above

5. Pressing the **Refresh** button (5) updates (3) and (4). Touching the OK button displays a confirmation dialog. Touch the Yes button to commit. The screen closes and the system restarts.

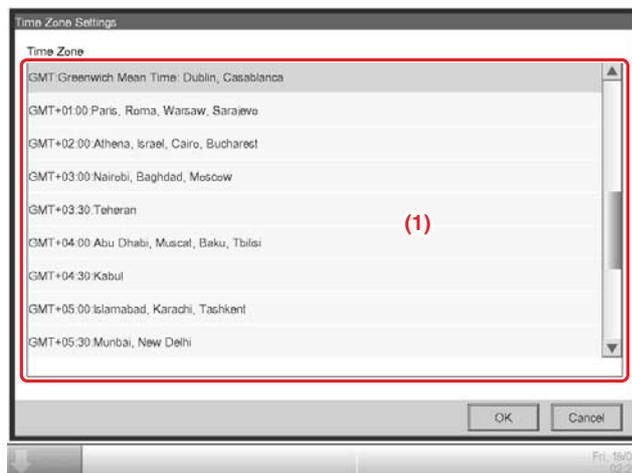
NOTE

If you install or uninstall another controller, please review the configuration of the Setpoint Range Limit.

4-4 Time Zone

Sets up the difference between the Universal Time Coordinated (UTC) and local time.

1. Log into SE Mode from the Menu List screen and display the Service Settings tab (see page 7).
Touch the Time Zone button on the Service Settings tab to display the Time Zone Setting screen (see page 10).

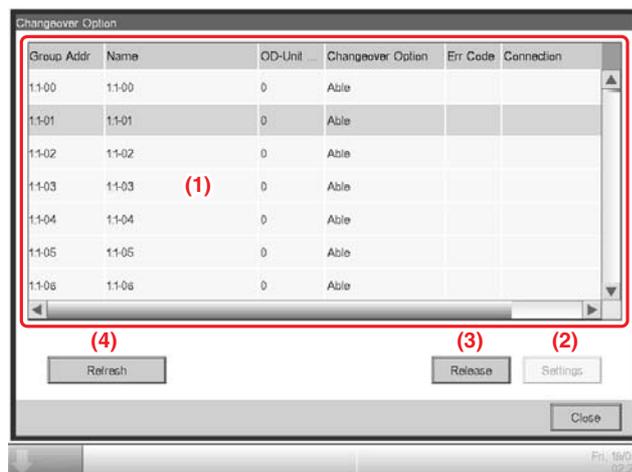


2. Select the time zone in the Time Zone area (1). Touching the OK button displays a confirmation dialog. Touch the Yes button to commit and close the screen.

4-5 Changeover Option

Enables/Disables the Changeover Option for an indoor unit.

1. Log into SE Mode from the Menu List screen and display the Service Settings tab (see page 7).
Touch the Changeover Option button on the Service Settings tab to display the Changeover Option screen (see page 10).



2. (1) is an air conditioner list displaying all Group Addresses. When no management points are registered, columns other than Group Addr. are displayed blank.

The displayed contents are as indicated in the table below.

Column	Displayed information	Value range
Group Addr.	Group address number	1:1-00 to 8:4-15
Name	Displays the name of the connected unit.	Characters permitted by Mgmt. Point Data Register.
OD-Unit Addr.	Refrigeration system number of the connected unit. “----” is displayed for units for which the refrigeration system number could not be acquired.	0 to 127/----
Changeover Option	Whether Changeover Option is available or not for the connected unit.	Able / N/A / Selectable / ---- *1
Err Code	Error code detected in the connected unit. Blank when there are no errors.	Possible Error Code values
Connection	Unit connection status Blank when normal.	Comm Err / N/A / Maintenance *2
Type	Type of the connected unit. Blank when type is not registered.	Indoor / Ventilator / Chiller / Dio

*1 See the table below for the correspondence between the content displayed in the Changeover Option column and its meaning.

*2 Comm Err : Group address of the connected unit with communication error.

N/A : A group address not registered as a management point.

Maintenance : A group address of a connected unit under maintenance.

Changeover Option	Meaning	Availability for selection	
		Release button	Setup button
Able	Unit with Changeover Option.	○	×
N/A	There is an indoor unit with Changeover Option within the same refrigeration system.	×	×
Selectable	There are no indoor units with Changeover Option within the same refrigeration system.	×	○
---	Connection is “N/A” or Type is other than “Indoor”.	×	×

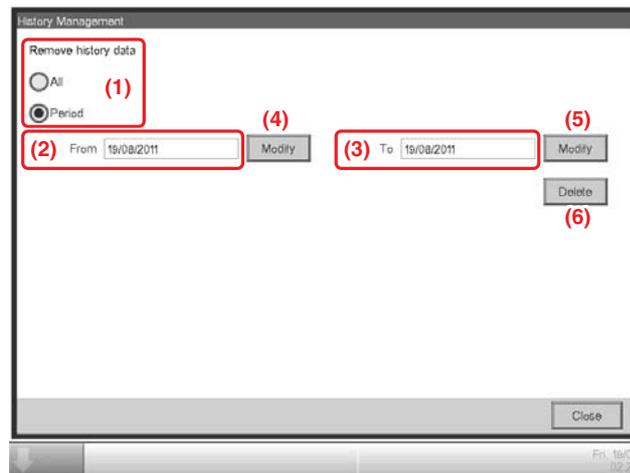
[Legend] ○: Not greyed out ×: Greyed out

- Select the indoor unit for which you want to set the Changeover Option from (1) and touch the **Settings** button (2). The Changeover Option becomes “Able”. At that moment, the Changeover Option for the other indoor units in the same refrigeration system becomes “N/A”.
- Select the indoor unit for which you want to release the Changeover Option from (1) and touch the **Release** button (3). The Changeover Option becomes “Selectable”. At that moment, the Changeover Option for the other indoor units in the same refrigeration system also becomes “Selectable”. Touching the **Refresh** button (4) updates the contents displayed in (1). Close the screen using the Close button.

4-6 History Mgmt. (Delete)

Deletes history records.

1. Log into SE Mode from the Menu List screen and display the Service Settings tab (see page 7). Touch the History Mgmt. button on the Service Settings tab to display the History Management screen (see page 10).



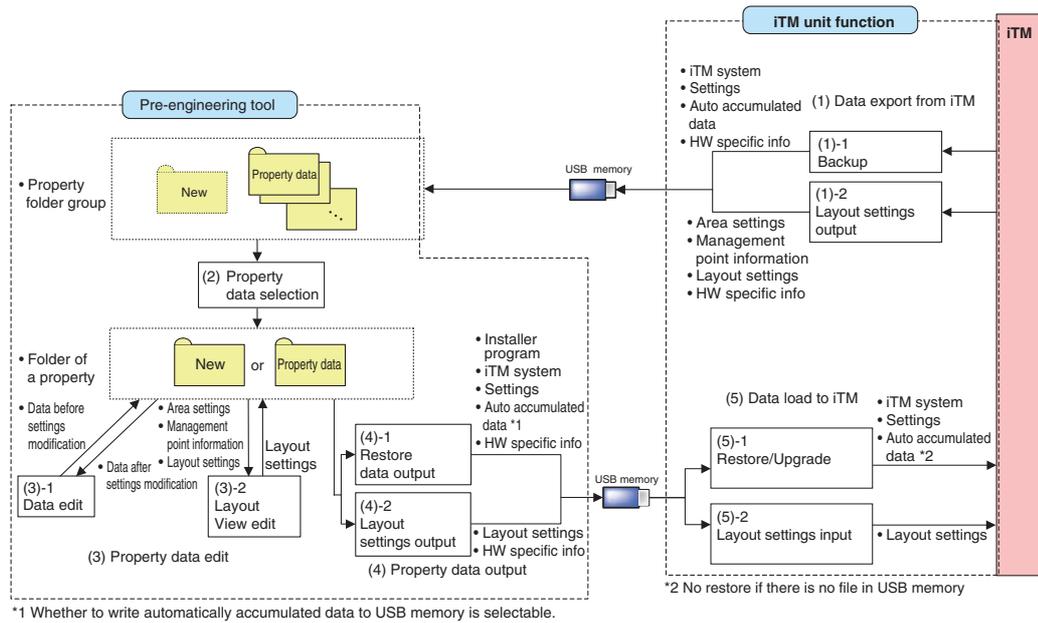
2. Using the **Remove history data** radio button (1), select whether to delete All or a Period.
3. If you selected Period, set up the start date of the period to delete in (2) and the end date in (3). To set up the start date, touch the **Modify** button (4) and enter the start date in the Time Input dialog box that appears. Touch the OK button to commit the start date and close the dialog. The start date is displayed in the From field (2). To set the end date, touch the **Modify** button (5) and enter the end date in the Time Input dialog box that appears. Touch the OK button to commit the end date and close the dialog. The end date is displayed in the To field (3).
4. Touching the **Delete** button (6) displays a confirmation dialog. Touch the Yes button to delete the history for the specified period. Touch the Close button and close the screen.

NOTE

If you specified a period to delete, you can cancel deletion halfway but the history data before cancelling will be deleted. Make sure before executing because the deleted data cannot be recovered.

4-7 Pre-engineering

Pre-engineering is carried out to lessen the work to be carried out on site, such as when installing iTM in a large new property, modifying settings due to a large-scale equipment renovation, or making extensive modifications to the settings due to the implementation of new functions, etc. By using the Pre-engineering tool (demo version for PC) described here together with the CSV file input/output function described in 4-1 and the backup function described in 4-9, you will be able to set up most of the items at the office including detailed settings and automatic control settings for the management points, as well as system settings.



Pre-engineering Tool and iTM Unit Data Flow Diagram

NOTE

iTM integrator uses the backup data for restoring because it is not compatible with the Pre-engineering tool.

Relationship between the assumed scenario and functions

Function		Pre-engineering tool				
		(2) Property data selection	(3) Property data edit		(4) Property data output	
			(3)-1 Data edit	(3)-2 Layout View edit	Restore data output	Layout settings output
Scenario 1: Installation to new property		○	○	○	○	×
Scenario 2: Maintenance of existing property	Data edit	○	○	○	○	×
	Layout View edit	○	×	○	×	○
Scenario 3: Restore with existing property's backup data		○	×	×	○	×
Scenario 4: Implementation of new functions due to existing property's upgrade		○	○	×	○	×

Function		iTM unit			
		(1) Export from iTM		(5) Load to iTM	
		(1)-1 Backup	(1)-2 Layout settings output	(5)-1 Restore/ Upgrade	(5)-2 Layout settings input
Scenario 1: Installation to new property		×	×	○	×
Scenario 2: Maintenance of existing property	Data edit	○	×	○	×
	Layout View edit	×	○	×	○
Scenario 3: Restore with existing property's backup data		×	×	○	×
Scenario 4: Implementation of new functions due to existing property's upgrade		○	×	○	×

Download the pre-engineering tool from the Distributor's Page.

To use the pre-engineering tool, a separate PC is necessary. The requirements for the PC are as indicated in the table below.

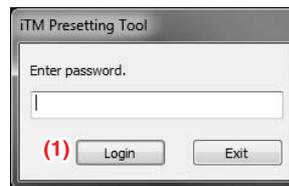
PC requirement for running the pre-engineering tool

Function	Requirement
PC to run the pre-engineering tool	OS: Windows XP Professional SP3 (32 bit) Windows VISTA Business SP2 (32 bit) Windows 7 Professional SP1 (32 bit, 64bit) CPU: Equivalent to Intel Core 2 Duo 1.2 GHz or higher Memory: 2 GB or more Free HDD space: 10 GB or more Network: 100Base-TX or higher Display resolution: 1024 x 768 or higher
Network	100Base-TX Real transfer rate: 115 kbps or higher
Supported security software	McAfee 2011 Norton 2011 Virus Buster 2011
Flash Player	Version 11.1
Web browser	Internet Explorer 8, 9 Firefox 10.0

Displaying the main screen

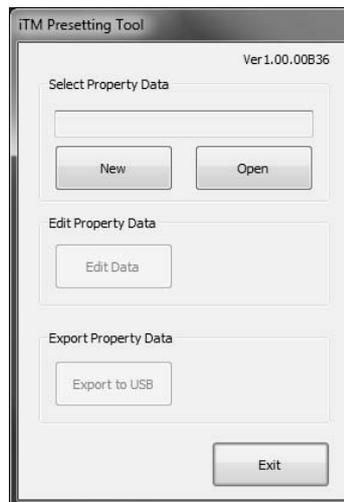
1. Start up the pre-engineering tool on the PC.





2. On the login screen that appears, enter the password and click the **Login** button (1).
The iTM Pre-engineering tool main screen appears if the correct password has been provided.

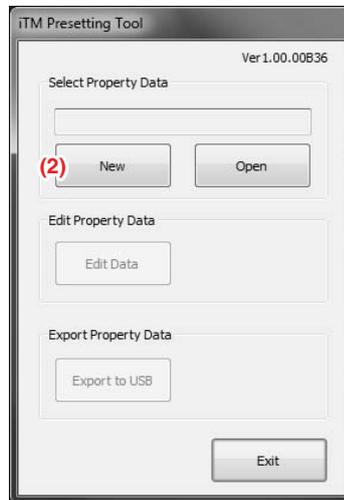
Main screen



Scenario 1: Installation to new property

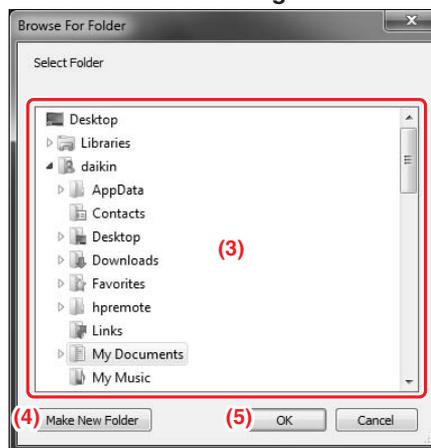
Set up data for the new property in advance.

Main screen



1. Click the **New** button (2) to display the Create New Folder dialog.

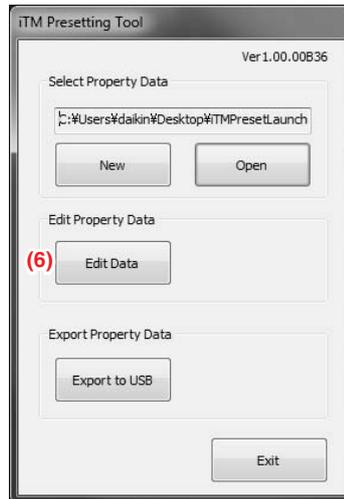
Create New Folder dialog



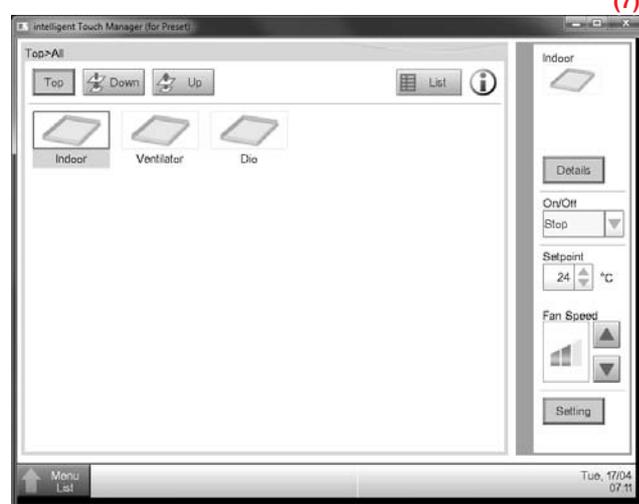
2. Select the location to create the new property's folder in (3).
Clicking the **Make New Folder** button (4) creates a new folder directly under the folder selected in (3).
Clicking the **OK** button (5) sets up the folder selected in (3) as new folder. A dialog confirming whether to delete the data in the folder appears. Click the Yes button to commit and return to the iTM Pre-engineering tool main screen.

NOTE

Clicking the OK button on the confirmation dialog box deletes all folders and files within the folder.

Main screen

3. Click the **Edit Data** button (6) to start up the iTM demo version for PC.

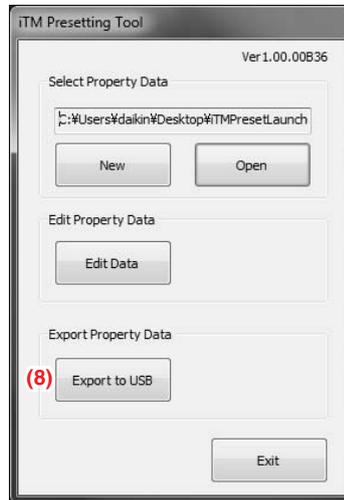
Screen of demo version for PC

The demo version for PC allows you to make similar settings as with the iTM unit. Make settings as required.

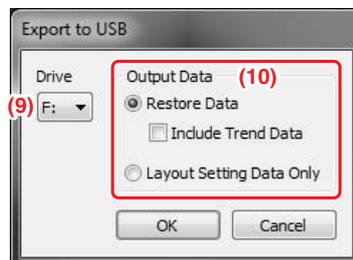
When finished, click the  button (7) and return to the Pre-engineering tool main screen.

NOTE

Input of Activation key (optional functions enable) is not accepted.

Main screen

4. Output the edited restore data in the property folder to a USB memory.
Click the **Export to USB** button (8). The Output to USB dialog appears.



Select the drive in the **Drive** combo box (9).

Select the content to output using the **Output Data** radio button (10).

Click the OK button. A conformation dialog appears, indicating that you are about to delete the data in the folder. If you click the Yes button to confirm the deletion, the output of data starts and the screen closes.

NOTE

Check that the USB memory is ready for writing data. The output will fail if it is damaged, has insufficient storage capacity, or is write-protected.

-
5. The set up restore data is saved to the USB. Insert the USB memory to iTM to restore. (For details, see 4-10 Installation)

NOTE

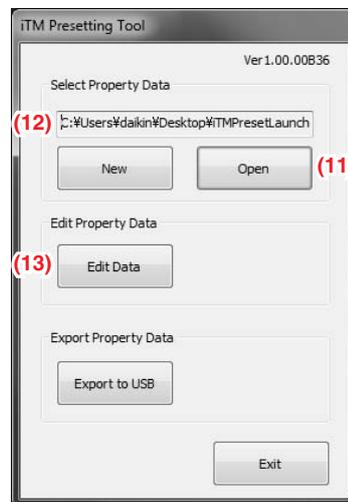
“Layout Setup data only” is available when the Layout option is enabled and saves only the Layout Setup data to the USB memory. For the method of entering the Layout Setup data to the iTM unit, see the supplementary volume Layout View Creation Tool (EM11A024).

Scenario 2: Maintenance of existing property (When carrying out pre-engineering using the current setting)

When extensively modifying an existing property due to equipment renovation and the like, the current settings for the existing property must be modified.

1. Back up the system file data as well as settings data, MAC addresses, etc. on the iTM unit to a USB memory. (For details, see 4-9 Backup)
2. Copy data backed up in the USB memory (folder name: Backup_MAC address_year month day_hour minute second) to a PC. Start up the Pre-engineering tool and display its main screen. (For details, see page 46)

Main screen



3. Click the **Open** button (11) to display the Select Folder to Open dialog.

Select the folder of the property to edit and click the OK button.

NOTE

If the property data is created using an older version, a dialog that prompts upgrade appears. Click the OK button.

The absolute path is displayed in (12) when a property data is selected.

-
- Click the **Edit Data** button **(13)** to start up the iTM demo version for PC.

The steps from editing using the demo version for PC to restore data output to USB and iTM restore are the same as steps 3 to 5 of the procedure for Scenario 1: Installation to new property.

NOTE

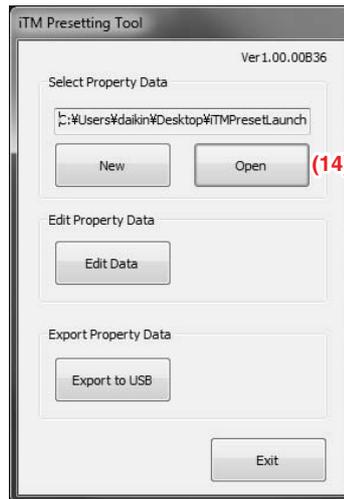
The Layout Setup data backup and restore procedures are the same as when modifying the Layout View of an existing property. For the method of editing the Layout Setup data, see the supplementary volume Layout View Creation Tool (optional).

Scenario 3: Restore with existing property's backup data

When iTM in an existing property is replaced due to malfunction and the like, the system is recovered by restoring the backup data (folder name: Backup_MAC address_year month day_hour minute second) to the new iTM.

- iTM

Main screen



1. Click the **Open** button (14) to display the Select Folder to Open dialog. Select the folder of the property for which you are creating the restore data and click the OK button to close the screen.
2. The restore data in the selected folder is output to a USB memory.
The steps up to the output to USB and iTM restore are the same as steps 4 and 5 of the procedure for Scenario 1: Installation to new property.

- iTM integrator

1. Copy the data backed up with iTM integrator (folder name: iTM_integrator_Backup_MAC address_year month day_hour minute second) to the USB memory connected to a PC.
2. Move all the data in the folder copied to the USB memory to directly below the USB memory.
3. Insert the USB memory prepared with PC to the iTM integrator to restore. (For details, see 4-10 Installation)

Scenario 4: Implementation of new functions due to existing property's upgrade

When implementing new functions to an existing property, the upgraded Pre-engineering tool is used to create the functions' settings data.

1. Back up the system file data as well as settings data, MAC addresses, etc. on the iTM unit to a USB memory. (For details, see 4-9 Backup)
2. Copy data backed up in the USB memory (folder name: Backup_MAC address_year month day_hour minute second) to a PC. Start up the newly acquired upgraded Pre-engineering tool and display its main screen. (For details, see page 46)
3. Edit the settings data using the upgraded Pre-engineering tool.
The steps up to the output of the edited data to USB and iTM restore are the same as steps 4 and 5 of the procedure for Scenario 1: Installation to new property.

4-8 Upgrade

Upgrade includes system file installation for a new property or new function implementation to an existing property. (When using the Pre-engineering tool, see 4-7 Pre-engineering)

NOTE

When installing a new iTM, be sure to install the updater program during the preparation.

Download procedure

1. From your PC, access the Network Solution page of the Distributor's Page. Then, download and save the updater program onto the USB memory.



2. Insert the USB memory with the updater program into iTM and install. For the installation procedure, see 4-10 Installation.

4-9 Backup

When modifying settings data due to equipment renovation in an existing property or upgrade, the iTM unit data must be backed up to a USB memory as history and settings data reference for troubleshooting and the like.

Data to be backed up is as follows.

- iTM system file
- Settings data of each function
- Automatically accumulated data such as Energy Navigator's time tone, trend data, and history data
- MAC addresses

NOTE

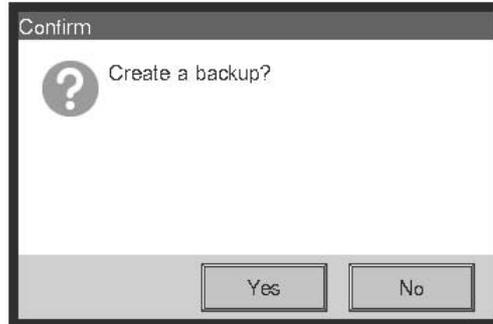
All iTM functions run normally even during backup. However, operation from the iTM unit's screen is restricted during backup.

The following describes how to create a backup.

1. Display the System Settings tab of the Menu List screen (see page 12).



2. Insert a USB memory into iTM. Touching the **Backup** button (1) displays a backup start confirmation dialog.



3. Touch the Yes button. A USB memory content deletion confirmation dialog appears.



4. Touching the Yes button displays a wait dialog and starts the backup. When backup is complete, an information dialog appears. Touch the Close button to close the screen and remove the USB memory.

NOTE

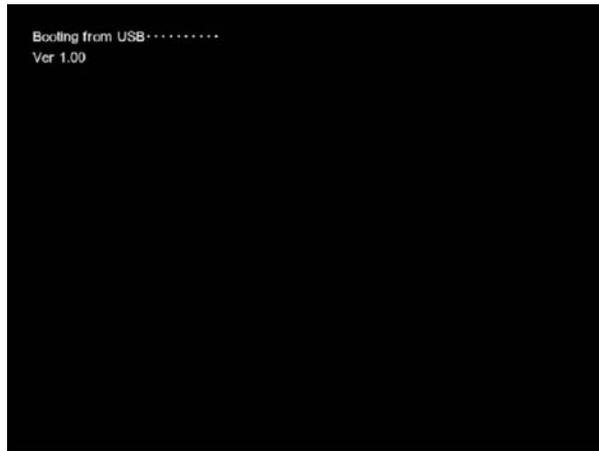
- All the folders and files in the USB memory will be deleted when the backup begin.
- One folder with the following name will be created in the USB memory when the backup complete.
 "Backup_XXXXXXXXXX_YYYYMMDD_HHMMSS"
 (XXXXXXXXXXXX: MAC address of the iTM, YYYYMMDD_HHMMSS: Year, Month, Day, Hour, Minute and Second of the backup execution time)
- When backup fails because the USB memory is not inserted or due to an error, an error dialog appears.

4-10 Installation

Data installation to the iTM unit includes installation of upgrade data and pre-engineered data (See 4-7 Pre-engineering). The installation procedure is the same in all cases.

The following describes the operating procedure.

1. Insert the USB memory with the target data into the iTM unit and turn on, or restart, the iTM unit while pressing the MONITOR button provided on it. Keep the MONITOR button depressed until the following screen appears and then release it. To restart, press the RESET// switch on the front panel. (See the intelligent Touch Manager Installation Manual).



2. The calibration screen appears. Correct the touch panel calibration. To calibrate more accurately, use a touch pen.

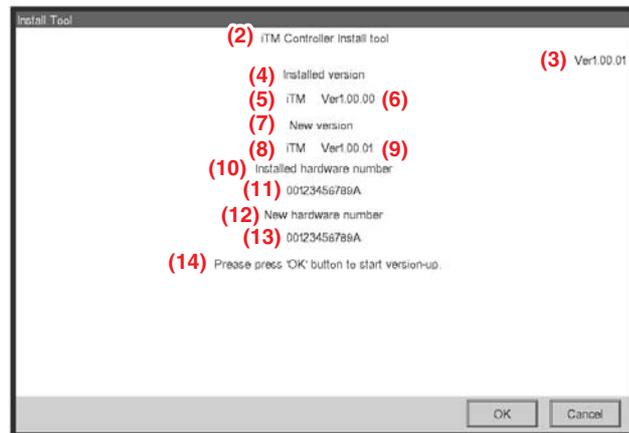


3. A cross (1) will appear 5 times on the screen. Touch the centre of each cross in order. You can start the calibration again by touching a point far from the cross. The calibration is complete when you touched the cross 5 times.

4. The installation tool screen appears once calibration is finished.

NOTE

If an error is found in the installer program on the USB memory, an error confirmation dialog appears. Be sure to prepare the correct installer program.



5. The version of the data and MAC addresses in the USB memory are compared with the version and MAC addresses on the iTM.

The information displayed on the installation tool screen is as follows.

- (2) Name
- (3) Version of the installer
- (4) Name of the current version
- (5) Name of the current controller
- (6) Current version
- (7) Name of the installer
- (8) Name of the installer controller
- (9) Version of the installer
- (10) Current hardware name
- (11) Current MAC address
- (12) Name of the installer hardware
- (13) Installer's MAC address
- (14) Message displayed in accordance with the installation tool's status.

If there is no flaw in the information, touching the OK button on the installation tool screen starts the installation. When installation is complete, an information dialog appears. Remove the USB memory and touch the Close button to close the screen. The iTM automatically restarts and checks the history and version information, and then installation will be completed.

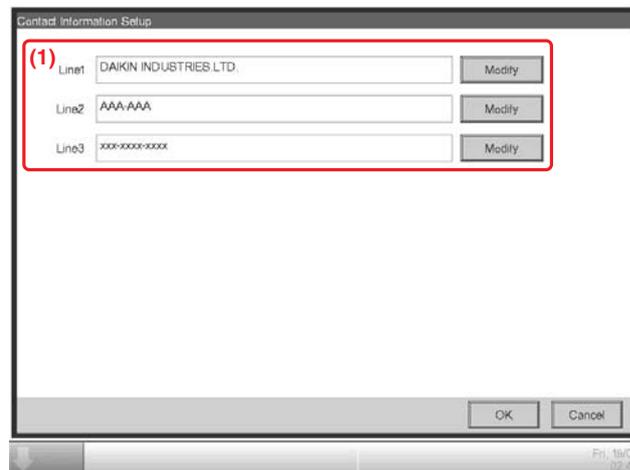
NOTE

If the data version on the installer side is earlier than that on iTM, the OK button on the installation tool screen is greyed out and cannot be clicked.

4-11 Contact Info

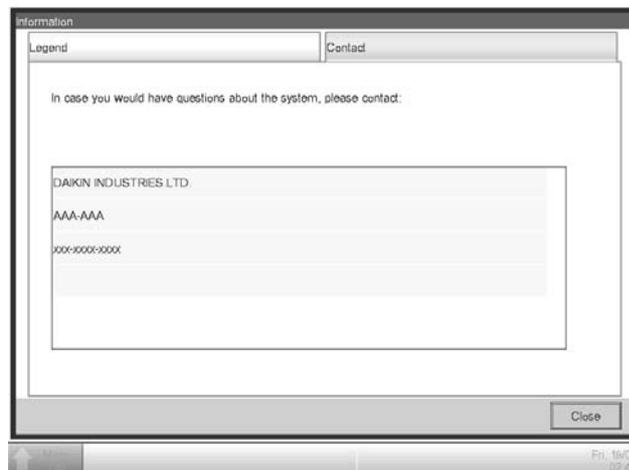
Sets up contact information for inquiries regarding the system.

1. Log into SE Mode from the Menu List screen and display the Service Settings tab (see page 7). Touch the Contact Info button on the Service Settings tab to display the Contact Information Setup screen (see page 10).



2. You can set up to 3 lines of contact information: Lines 1 to 3 **(1)**. Touch the Modify button to display the Text Input dialog. Enter necessary information such as dealer's name, telephone number, e-mail address, etc. You can enter up to 50 characters in each line, regardless of single or double byte.
When finished setting up the contact information, touch the OK button to close the screen.

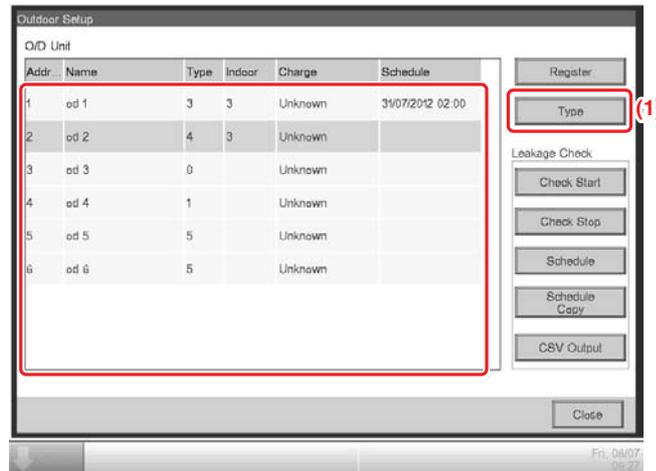
- The registered contact information can be checked on the Contact tab of the Information screen accessible from the Standard View screen. (See User's Manual (EM11A015))



4-12 Setting outdoor unit

Set the type of the outdoor unit registered as a Mgmt. point.

1. Log into SE Mode from the Menu List screen and display the Service Settings tab (see page 7).
Touch the Outdoor Setup button on the Service Settings tab to display the Outdoor Setup screen (see page 10).



2. Select the desired outdoor unit from the list and touch the **(1) Type** button.
When the input dialogue is displayed, input the type. The type depends on the model of the outdoor unit. Check the type in the table on page 63 before setting.



CAUTION

If the specified type of outdoor unit is wrong, leakage check operation cannot be executed correctly. Be careful when setting the type.

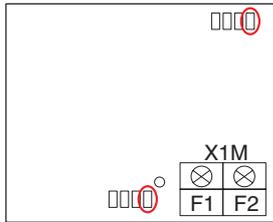
NOTE

When you use the outdoor unit as Internal Pi, check that the pulse amount is correct in the detailed information screen.

Precautions when using DIII-NET EXPANDER ADAPTER

In the application using the DIII-NET EXPANDER ADAPTER, if you monitor the outdoor units or use Internal Pi or such other functions processed based on information from the outdoor units, you need to cut the jumper pin of the DIII-NET EXPANDER ADAPTER.

Intended functions: Monitoring of outdoor units, Energy Navigator and leakage detection.



The jumper pin to be cut is J1 only.

There are two jumper pins to be cut, so be sure to cut both of them.

NOTE

The total number of outdoor units connected to the DIII-NET EXPANDER ADAPTER (whose J1 jumper pins were cut) and those directly connected to iTM should be 10 or less.

Table of types

No.	Model name	Type	No.	Model name	Type	No.	Model name	Type	No.	Model name	Type
1	RXYQ5MY1B	1	36	RXYQ32M7W1B	1	71	RX18MY1	1	106	RX30MTLE	1
2	RXYQ8MY1B	1	37	RXYQ34M7W1B	1	72	RX18MY1E	1	107	RX30MY1	1
3	RXYQ10MY1B	1	38	RXYQ36M7W1B	1	73	RX18MYL	1	108	RX30MY1E	1
4	RXYQ12MY1B	1	39	RXYQ38M7W1B	1	74	RX18MYLE	1	109	RX30MYL	1
5	RXYQ14MY1B	1	40	RXYQ40M7W1B	1	75	RX20MTL	1	110	RX30MYLE	1
6	RXYQ16MY1B	1	41	RXYQ42M7W1B	1	76	RX20MTLE	1	111	RX32MTL	1
7	RXYQ18MY1B	1	42	RXYQ44M7W1B	1	77	RX20MY1	1	112	RX32MTLE	1
8	RXYQ20MY1B	1	43	RXYQ46M7W1B	1	78	RX20MY1E	1	113	RX32MY1	1
9	RXYQ22MY1B	1	44	RXYQ48M7W1B	1	79	RX20MYL	1	114	RX32MY1E	1
10	RXYQ24MY1B	1	45	RX10MTL	1	80	RX20MYLE	1	115	RX32MYL	1
11	RXYQ26MY1B	1	46	RX10MTLE	1	81	RX22MTL	1	116	RX32MYLE	1
12	RXYQ28MY1B	1	47	RX10MY1	1	82	RX22MTLE	1	117	RX34MTL	1
13	RXYQ30MY1B	1	48	RX10MY1E	1	83	RX22MY1	1	118	RX34MTLE	1
14	RXYQ32MY1B	1	49	RX10MYL	1	84	RX22MY1E	1	119	RX34MY1	1
15	RXYQ34MY1B	1	50	RX10MYLE	1	85	RX22MYL	1	120	RX34MY1E	1
16	RXYQ36MY1B	1	51	RX12MTL	1	86	RX22MYLE	1	121	RX34MYL	1
17	RXYQ38MY1B	1	52	RX12MTLE	1	87	RX24MTL	1	122	RX34MYLE	1
18	RXYQ40MY1B	1	53	RX12MY1	1	88	RX24MTLE	1	123	RX36MTL	1
19	RXYQ42MY1B	1	54	RX12MY1E	1	89	RX24MY1	1	124	RX36MTLE	1
20	RXYQ44MY1B	1	55	RX12MYL	1	90	RX24MY1E	1	125	RX36MY1	1
21	RXYQ46MY1B	1	56	RX12MYLE	1	91	RX24MYL	1	126	RX36MY1E	1
22	RXYQ48MY1B	1	57	RX14MTL	1	92	RX24MYLE	1	127	RX36MYL	1
23	RXYQ5M7W1B	1	58	RX14MTLE	1	93	RX26MTL	1	128	RX36MYLE	1
24	RXYQ8M7W1B	1	59	RX14MY1	1	94	RX26MTLE	1	129	RX38MTL	1
25	RXYQ10M7W1B	1	60	RX14MY1E	1	95	RX26MY1	1	130	RX38MTLE	1
26	RXYQ12M7W1B	1	61	RX14MYL	1	96	RX26MY1E	1	131	RX38MY1	1
27	RXYQ14M7W1B	1	62	RX14MYLE	1	97	RX26MYL	1	132	RX38MY1E	1
28	RXYQ16M7W1B	1	63	RX16MTL	1	98	RX26MYLE	1	133	RX38MYL	1
29	RXYQ18M7W1B	1	64	RX16MTLE	1	99	RX28MTL	1	134	RX38MYLE	1
30	RXYQ20M7W1B	1	65	RX16MY1	1	100	RX28MTLE	1	135	RX40MTL	1
31	RXYQ22M7W1B	1	66	RX16MY1E	1	101	RX28MY1	1	136	RX40MTLE	1
32	RXYQ24M7W1B	1	67	RX16MYL	1	102	RX28MY1E	1	137	RX40MY1	1
33	RXYQ26M7W1B	1	68	RX16MYLE	1	103	RX28MYL	1	138	RX40MY1E	1
34	RXYQ28M7W1B	1	69	RX18MTL	1	104	RX28MYLE	1	139	RX40MYL	1
35	RXYQ30M7W1B	1	70	RX18MTLE	1	105	RX30MTL	1	140	RX40MYLE	1

No.	Model name	Type	No.	Model name	Type	No.	Model name	Type	No.	Model name	Type
141	RX42MTL	1	208	RXY20MTLE	1	275	RXY42MY1	1	342	RHXY32MY1	1
142	RX42MTLE	1	209	RXY20MY1	1	276	RXY42MY1E	1	343	RHXY34MY1	1
143	RX42MY1	1	210	RXY20MY1E	1	277	RXY42MYL	1	344	RHXY36MY1	1
144	RX42MY1E	1	211	RXY20MYL	1	278	RXY42MYLE	1	345	RHXY38MY1	1
145	RX42MYL	1	212	RXY20MYLE	1	279	RXY44MTL	1	346	RHXY40MY1	1
146	RX42MYLE	1	213	RXY22MTL	1	280	RXY44MTLE	1	347	RHXY42MY1	1
147	RX44MTL	1	214	RXY22MTLE	1	281	RXY44MY1	1	348	RHXY44MY1	1
148	RX44MTLE	1	215	RXY22MY1	1	282	RXY44MY1E	1	349	RHXY46MY1	1
149	RX44MY1	1	216	RXY22MY1E	1	283	RXY44MYL	1	350	RHXY48MY1	1
150	RX44MY1E	1	217	RXY22MYL	1	284	RXY44MYLE	1	351	RXYMQ4MV4A	1
151	RX44MYL	1	218	RXY22MYLE	1	285	RXY46MTL	1	352	RXYMQ5MV4A	1
152	RX44MYLE	1	219	RXY24MTL	1	286	RXY46MTLE	1	353	RXYMQ6MV4A	1
153	RX46MTL	1	220	RXY24MTLE	1	287	RXY46MY1	1	354	RXYMQ4M7V3B	1
154	RX46MTLE	1	221	RXY24MY1	1	288	RXY46MY1E	1	355	RXYMQ5M7V3B	1
155	RX46MY1	1	222	RXY24MY1E	1	289	RXY46MYL	1	356	RXYMQ6M7V3B	1
156	RX46MY1E	1	223	RXY24MYL	1	290	RXY46MYLE	1	357	RXYQ96MTJU	1
157	RX46MYL	1	224	RXY24MYLE	1	291	RXY48MTL	1	358	RHX8MAY1	1
158	RX46MYLE	1	225	RXY26MTL	1	292	RXY48MTLE	1	359	RHX12MAY1	1
159	RX48MTL	1	226	RXY26MTLE	1	293	RXY48MY1	1	360	RHX18MAY1	1
160	RX48MTLE	1	227	RXY26MY1	1	294	RXY48MY1E	1	361	REYQ96MTJU	1
161	RX48MY1	1	228	RXY26MY1E	1	295	RXY48MYL	1	362	RMX112CMV2C	1
162	RX48MY1E	1	229	RXY26MYL	1	296	RXY48MYLE	1	363	RMX140CMV2C	1
163	RX48MYL	1	230	RXY26MYLE	1	297	RXY5MTL	1	364	RMX160CMV2C	1
164	RX48MYLE	1	231	RXY28MTL	1	298	RXY5MTLE	1	365	RXM4MVM	1
165	RX5MTL	1	232	RXY28MTLE	1	299	RXY5MY1	1	366	RXM5MVM	1
166	RX5MTLE	1	233	RXY28MY1	1	300	RXY5MY1E	1	367	RXM6MVM	1
167	RX5MY1	1	234	RXY28MY1E	1	301	RXY5MYL	1	368	RXM4MVM	1
168	RX5MY1E	1	235	RXY28MYL	1	302	RXY5MYLE	1	369	RXYM5MVM	1
169	RX5MYL	1	236	RXY28MYLE	1	303	RXY8MTL	1	370	RXYM6MVM	1
170	RX5MYLE	1	237	RXY30MTL	1	304	RXY8MTLE	1	371	RXYM4MVM	1
171	RX8MTL	1	238	RXY30MTLE	1	305	RXY8MY1	1	372	RXYM5MVM	1
172	RX8MTLE	1	239	RXY30MY1	1	306	RXY8MY1E	1	373	RXYM6MVM	1
173	RX8MY1	1	240	RXY30MY1E	1	307	RXY8MYL	1	374	RXYSQ4M7V3B	1
174	RX8MY1E	1	241	RXY30MYL	1	308	RXY8MYLE	1	375	RXYSQ5M7V3B	1
175	RX8MYL	1	242	RXY30MYLE	1	309	REYQ8MY1B	1	376	RXYSQ6M7V3B	1
176	RX8MYLE	1	243	RXY32MTL	1	310	REYQ10MY1B	1	377	RWEYQ10MY1	1
177	RXY10MTL	1	244	RXY32MTLE	1	311	REYQ12MY1B	1	378	RWEYQ20MY1	1
178	RXY10MTLE	1	245	RXY32MY1	1	312	REYQ14MY1B	1	379	RWEYQ30MY1	1
179	RXY10MY1	1	246	RXY32MY1E	1	313	REYQ16MY1B	1	380	RXYQ5PY1	3
180	RXY10MY1E	1	247	RXY32MYL	1	314	REYQ18MY1B	1	381	RXYQ8PY1	3
181	RXY10MYL	1	248	RXY32MYLE	1	315	REYQ20MY1B	1	382	RXYQ10PY1	3
182	RXY10MYLE	1	249	RXY34MTL	1	316	REYQ22MY1B	1	383	RXYQ12PY1	3
183	RXY12MTL	1	250	RXY34MTLE	1	317	REYQ24MY1B	1	384	RXYQ14PY1	3
184	RXY12MTLE	1	251	RXY34MY1	1	318	REYQ26MY1B	1	385	RXYQ16PY1	3
185	RXY12MY1	1	252	RXY34MY1E	1	319	REYQ28MY1B	1	386	RXYQ18PY1	3
186	RXY12MY1E	1	253	RXY34MYL	1	320	REYQ30MY1B	1	387	RXYQ20PY1	3
187	RXY12MYL	1	254	RXY34MYLE	1	321	REYQ32MY1B	1	388	RXYQ22PY1	3
188	RXY12MYLE	1	255	RXY36MTL	1	322	REYQ34MY1B	1	389	RXYQ24PY1	3
189	RXY14MTL	1	256	RXY36MTLE	1	323	REYQ36MY1B	1	390	RXYQ26PY1	3
190	RXY14MTLE	1	257	RXY36MY1	1	324	REYQ38MY1B	1	391	RXYQ28PY1	3
191	RXY14MY1	1	258	RXY36MY1E	1	325	REYQ40MY1B	1	392	RXYQ30PY1	3
192	RXY14MY1E	1	259	RXY36MYL	1	326	REYQ42MY1B	1	393	RXYQ32PY1	3
193	RXY14MYL	1	260	RXY36MYLE	1	327	REYQ44MY1B	1	394	RXYQ34PY1	3
194	RXY14MYLE	1	261	RXY38MTL	1	328	REYQ46MY1B	1	395	RXYQ36PY1	3
195	RXY16MTL	1	262	RXY38MTLE	1	329	REYQ48MY1B	1	396	RXYQ38PY1	3
196	RXY16MTLE	1	263	RXY38MY1	1	330	RHXY8MY1	1	397	RXYQ40PY1	3
197	RXY16MY1	1	264	RXY38MY1E	1	331	RHXY10MY1	1	398	RXYQ42PY1	3
198	RXY16MY1E	1	265	RXY38MYL	1	332	RHXY12MY1	1	399	RXYQ44PY1	3
199	RXY16MYL	1	266	RXY38MYLE	1	333	RHXY14MY1	1	400	RXYQ46PY1	3
200	RXY16MYLE	1	267	RXY40MTL	1	334	RHXY16MY1	1	401	RXYQ48PY1	3
201	RXY18MTL	1	268	RXY40MTLE	1	335	RHXY18MY1	1	402	RXYQ50PY1	3
202	RXY18MTLE	1	269	RXY40MY1	1	336	RHXY20MY1	1	403	RXYQ52PY1	3
203	RXY18MY1	1	270	RXY40MY1E	1	337	RHXY22MY1	1	404	RXYQ54PY1	3
204	RXY18MY1E	1	271	RXY40MYL	1	338	RHXY24MY1	1	405	RXYQ8PY1C	3
205	RXY18MYL	1	272	RXY40MYLE	1	339	RHXY26MY1	1	406	RXYQ10PY1C	3
206	RXY18MYLE	1	273	RXY42MTL	1	340	RHXY28MY1	1	407	RXYQ12PY1C	3
207	RXY20MTL	1	274	RXY42MTLE	1	341	RHXY30MY1	1	408	RXYQ14PY1C	3

No.	Model name	Type									
409	RXYQ16PY1C	3	476	RXYQ40M8W1B	1	543	RXYQ22M9W1B	1	610	RHXYQ24MAY1	1
410	RXYQ18PY1C	3	477	RXYQ42M8W1B	1	544	RXYQ24M9W1B	1	611	RHXYQ26MAY1	1
411	RXYQ20PY1C	3	478	RXYQ44M8W1B	1	545	RXYQ26M9W1B	1	612	RHXYQ28MAY1	1
412	RXYQ22PY1C	3	479	RXYQ46M8W1B	1	546	RXYQ28M9W1B	1	613	RHXYQ30MAY1	1
413	RXYQ24PY1C	3	480	RXYQ48M8W1B	1	547	RXYQ30M9W1B	1	614	RHXYQ32MAY1	1
414	RXYQ26PY1C	3	481	REYQ8M7W1B	1	548	RXYQ32M9W1B	1	615	RHXYQ34MAY1	1
415	RXYQ28PY1C	3	482	REYQ12M7W1B	1	549	RXYQ34M9W1B	1	616	RHXYQ36MAY1	1
416	RXYQ30PY1C	3	483	REYQ14M7W1B	1	550	RXYQ36M9W1B	1	617	RHXYQ38MAY1	1
417	RXYQ32PY1C	3	484	REYQ16M7W1B	1	551	RXYQ38M9W1B	1	618	RHXYQ40MAY1	1
418	RXYQ34PY1C	3	485	REYQ18M7W1B	1	552	RXYQ40M9W1B	1	619	RHXYQ42MAY1	1
419	RXYQ36PY1C	3	486	REYQ20M7W1B	1	553	RXYQ42M9W1B	1	620	RHXYQ44MAY1	1
420	RXYQ38PY1C	3	487	REYQ22M7W1B	1	554	RXYQ44M9W1B	1	621	RHXYQ46MAY1	1
421	RXYQ40PY1C	3	488	REYQ24M7W1B	1	555	RXYQ46M9W1B	1	622	RHXYQ48MAY1	1
422	RXYQ42PY1C	3	489	REYQ26M7W1B	1	556	RXYQ48M9W1B	1	623	RXYQ10P7W1B	3
423	RXYQ44PY1C	3	490	REYQ28M7W1B	1	557	RXYQ5PY16	3	624	RXYQ12P7W1B	3
424	RXYQ46PY1C	3	491	REYQ30M7W1B	1	558	RXYQ8PY16	3	625	RXYQ14P7W1B	3
425	RXYQ48PY1C	3	492	REYQ32M7W1B	1	559	RXYQ10PY16	3	626	RXYQ16P7W1B	3
426	RXYQ50PY1C	3	493	REYQ34M7W1B	1	560	RXYQ12PY16	3	627	RXYQ18P7W1B	3
427	RXYQ52PY1C	3	494	REYQ36M7W1B	1	561	RXYQ14PY16	3	628	RXYQ20P7W1B	3
428	RXYQ54PY1C	3	495	REYQ38M7W1B	1	562	RXYQ16PY16	3	629	RXYQ22P7W1B	3
429	RXYMQ4PVE	3	496	REYQ40M7W1B	1	563	RXYQ18PY16	3	630	RXYQ24P7W1B	3
430	RXYMQ6PVE	3	497	REYQ42M7W1B	1	564	RXYQ20PY16	3	631	RXYQ26P7W1B	3
431	RXYMQ6PVE	3	498	REYQ44M7W1B	1	565	RXYQ22PY16	3	632	RXYQ28P7W1B	3
432	RMXS112DV2C	3	499	REYQ46M7W1B	1	566	RXYQ24PY16	3	633	RXYQ30P7W1B	3
433	RMXS112DY1C	3	500	REYQ48M7W1B	1	567	RXYQ26PY16	3	634	RXYQ32P7W1B	3
434	RMXS140DV2C	3	501	RCXYQ16MAY1	1	568	RXYQ28PY16	3	635	RXYQ34P7W1B	3
435	RMXS140DY1C	3	502	RCXYQ18MAY1	1	569	RXYQ30PY16	3	636	RXYQ36P7W1B	3
436	RMXS160DV2C	3	503	RCXYQ20MAY1	1	570	RXYQ32PY16	3	637	RXYQ38P7W1B	3
437	RMXS160DY1C	3	504	RCXYQ22MAY1	1	571	RXYQ34PY16	3	638	RXYQ40P7W1B	3
438	LMXS4DMV2C	3	505	RCXYQ24MAY1	1	572	RXYQ36PY16	3	639	RXYQ42P7W1B	3
439	LMXS5DMV2C	3	506	RCXYQ26MAY1	1	573	RXYQ38PY16	3	640	RXYQ44P7W1B	3
440	LMXS6DMV2C	3	507	RCXYQ28MAY1	1	574	RXYQ40PY16	3	641	RXYQ46P7W1B	3
441	REYQ10M7W1B	1	508	RCXYQ30MAY1	1	575	RXYQ42PY16	3	642	RXYQ48P7W1B	3
442	RXYSQ4M	1	509	RCXYQ32MAY1	1	576	RXYQ44PY16	3	643	RXYQ50P7W1B	3
443	RXYSQ5M	1	510	RCXYQ34MAY1	1	577	RXYQ46PY16	3	644	RXYQ52P7W1B	3
444	RXYSQ6M	1	511	RCXYQ36MAY1	1	578	RXYQ48PY16	3	645	RXYQ54P7W1B	3
445	RXYQ5MAY1	1	512	RCXYQ38MAY1	1	579	RXYQ50PY16	3	646	RXYQ5M8W1B	1
446	RXYQ8MAY1	1	513	RCXYQ40MAY1	1	580	RXYQ52PY16	3	647	RXYQ5P7W1B	3
447	RXYQ10MAY1	1	514	RCXYQ42MAY1	1	581	RXYQ54PY16	3	648	RXYQ8P7W1B	3
448	RXYQ12MAY1	1	515	RCXYQ44MAY1	1	582	REM08PY1	3	649	RXYSQ4P7V3B	3
449	RXYQ14MAY1	1	516	RCXYQ46MAY1	1	583	REYQ8PY1B	3	650	RXYSQ5P7V3B	3
450	RXYQ16MAY1	1	517	RCXYQ48MAY1	1	584	REM010PY1	3	651	RXYSQ6P7V3B	3
451	RHXYQ8MAY1	1	518	RXQ8MAY19	1	585	REYQ10PY1B	3	652	REYQ8M8W1B	1
452	RHXYQ10MAY1	1	519	RXQ8MAY15	1	586	REM012PY1	3	653	REYQ12M8W1B	1
453	RHXYQ12MAY1	1	520	RXQ10MAY19	1	587	REYQ12PY1B	3	654	REYQ14M8W1B	1
454	RHXYQ14MAY1	1	521	RXQ10MAY15	1	588	REM014PY1	3	655	REYQ16M8W1B	1
455	RHXYQ16MAY1	1	522	RXQ12MAY19	1	589	REYQ14PY1B	3	656	REYQ18M8W1B	1
456	RCXYQ8MAY1	1	523	RXQ12MAY15	1	590	REM016PY1	3	657	REYQ20M8W1B	1
457	RCXYQ10MAY1	1	524	RXQ14MAY19	1	591	REYQ16PY1B	3	658	REYQ22M8W1B	1
458	RCXYQ12MAY1	1	525	RXQ14MAY15	1	592	RWEYQ8PY1	1	659	REYQ24M8W1B	1
459	RCXYQ14MAY1	1	526	RXQ16MAY19	1	593	RWEYQ10PY1	1	660	REYQ26M8W1B	1
460	RXYQ8M8W1B	1	527	RXQ16MAY15	1	594	RWEYQ16PY1	1	661	REYQ28M8W1B	1
461	RXYQ10M8W1B	1	528	RXQ18MAY19	1	595	RWEYQ18PY1	1	662	REYQ30M8W1B	1
462	RXYQ12M8W1B	1	529	RXQ18MAY15	1	596	RWEYQ20PY1	1	663	REYQ32M8W1B	1
463	RXYQ14M8W1B	1	530	RXYQ8MAY19	1	597	RWEYQ24PY1	1	664	REYQ34M8W1B	1
464	RXYQ16M8W1B	1	531	RXYQ10MAY19	1	598	RWEYQ26PY1	1	665	REYQ36M8W1B	1
465	RXYQ18M8W1B	1	532	RXYQ12MAY19	1	599	RWEYQ28PY1	1	666	REYQ38M8W1B	1
466	RXYQ20M8W1B	1	533	RXYQ14MAY19	1	600	RWEYQ30PY1	1	667	REYQ40M8W1B	1
467	RXYQ22M8W1B	1	534	RXYQ16MAY19	1	601	RXYN10AY1	3	668	REYQ42M8W1B	1
468	RXYQ24M8W1B	1	535	RXYQ5M9W1B	1	602	RHXYQ8PY1	3	669	REYQ44M8W1B	1
469	RXYQ26M8W1B	1	536	RXYQ8M9W1B	1	603	RHXYQ10PY1	3	670	REYQ46M8W1B	1
470	RXYQ28M8W1B	1	537	RXYQ10M9W1B	1	604	RHXYQ12PY1	3	671	REYQ48M8W1B	1
471	RXYQ30M8W1B	1	538	RXYQ12M9W1B	1	605	RHXYQ14PY1	3	672	RXYQ18MAY1	1
472	RXYQ32M8W1B	1	539	RXYQ14M9W1B	1	606	RHXYQ16PY1	3	673	RXYQ20MAY1	1
473	RXYQ34M8W1B	1	540	RXYQ16M9W1B	1	607	RHXYQ18MAY1	1	674	RXYQ22MAY1	1
474	RXYQ36M8W1B	1	541	RXYQ18M9W1B	1	608	RHXYQ20MAY1	1	675	RXYQ24MAY1	1
475	RXYQ38M8W1B	1	542	RXYQ20M9W1B	1	609	RHXYQ22MAY1	1	676	RXYQ26MAY1	1

No.	Model name	Type	No.	Model name	Type	No.	Model name	Type	No.	Model name	Type
677	RXYQ28MAY1	1	744	RHXY46PY1	3	811	RXQ42PY16	3	878	RXYQ26PAY19	3
678	RXYQ30MAY1	1	745	RHXY48PY1	3	812	RXQ44PY16	3	879	RXYQ28PAY19	3
679	RXYQ32MAY1	1	746	RHXY50PY1	3	813	RXQ46PY16	3	880	RXYQ30PAY19	3
680	RXYQ34MAY1	1	747	RHXY52PY1	3	814	RXQ48PY16	3	881	RXYQ32PAY19	3
681	RXYQ36MAY1	1	748	RHXY54PY1	3	815	RXQ50PY16	3	882	RXYQ34PAY19	3
682	RXYQ38MAY1	1	749	RXQ5M7W1B	1	816	RXQ52PY16	3	883	RXYQ36PAY19	3
683	RXYQ40MAY1	1	750	RXQ8M7W1B	1	817	RXQ54PY16	3	884	RXYQ38PAY19	3
684	RXYQ42MAY1	1	751	RXQ10M7W1B	1	818	RXQ5PAY1	3	885	RXYQ40PAY19	3
685	RXYQ44MAY1	1	752	RXQ8M8W1B	1	819	RXQ8PAY1	3	886	RXYQ42PAY19	3
686	RXYQ46MAY1	1	753	RXQ10M8W1B	1	820	RXQ10PAY1	3	887	RXYQ44PAY19	3
687	RXYQ48MAY1	1	754	RXYQ72MTJU	1	821	RXQ12PAY1	3	888	RXYQ46PAY19	3
688	RXYQ8MY1K	1	755	RXYQ144MTJU	1	822	RXQ14PAY1	3	889	RXYQ48PAY19	3
689	RXYQ10MY1K	1	756	RXYQ168MTJU	1	823	RXQ16PAY1	3	890	RXYQ50PAY19	3
690	RXQ5MAY1	1	757	RXYQ192MTJU	1	824	RXQ18PAY1	3	891	RXYQ52PAY19	3
691	RXQ8MAY1	1	758	REYQ72MTJU	1	825	RXQ20PAY1	3	892	RXYQ54PAY19	3
692	RXQ10MAY1	1	759	REYQ144MTJU	1	826	RXQ22PAY1	3	893	RXYQ5PAYL	3
693	RXQ12MAY1	1	760	REYQ168MTJU	1	827	RXQ24PAY1	3	894	RXYQ8PAYL	3
694	RXQ14MAY1	1	761	REYQ192MTJU	1	828	RXQ26PAY1	3	895	RXYQ10PAYL	3
695	RXQ16MAY1	1	762	RXQ5M9W1B	1	829	RXQ28PAY1	3	896	RXYQ12PAYL	3
696	RXQ18MAY1	1	763	RXQ8M9W1B	1	830	RXQ30PAY1	3	897	RXYQ14PAYL	3
697	RXQ20MAY1	1	764	RXQ10M9W1B	1	831	RXQ32PAY1	3	898	RXYQ16PAYL	3
698	RXQ22MAY1	1	765	RZP350MAY1	1	832	RXQ34PAY1	3	899	RXYQ18PAYL	3
699	RXQ24MAY1	1	766	RXMQ4PVE	3	833	RXQ36PAY1	3	900	RXYQ20PAYL	3
700	RXQ26MAY1	1	767	RXMQ5PVE	3	834	RXQ38PAY1	3	901	RXYQ22PAYL	3
701	RXQ28MAY1	1	768	RXMQ6PVE	3	835	RXQ40PAY1	3	902	RXYQ24PAYL	3
702	RXQ30MAY1	1	769	RXQ5PY1	3	836	RXQ42PAY1	3	903	RXYQ26PAYL	3
703	RXQ32MAY1	1	770	RXQ8PY1	3	837	RXQ44PAY1	3	904	RXYQ28PAYL	3
704	RXQ34MAY1	1	771	RXQ10PY1	3	838	RXQ46PAY1	3	905	RXYQ30PAYL	3
705	RXQ36MAY1	1	772	RXQ12PY1	3	839	RXQ48PAY1	3	906	RXYQ32PAYL	3
706	RXQ38MAY1	1	773	RXQ14PY1	3	840	RXQ50PAY1	3	907	RXYQ34PAYL	3
707	RXQ40MAY1	1	774	RXQ16PY1	3	841	RXQ52PAY1	3	908	RXYQ36PAYL	3
708	RXQ42MAY1	1	775	RXQ18PY1	3	842	RXQ54PAY1	3	909	RXYQ38PAYL	3
709	RXQ44MAY1	1	776	RXQ20PY1	3	843	RXYQ5PAY6	3	910	RXYQ40PAYL	3
710	RXQ46MAY1	1	777	RXQ22PY1	3	844	RXYQ8PAY6	3	911	RXYQ42PAYL	3
711	RXQ48MAY1	1	778	RXQ24PY1	3	845	RXYQ10PAY6	3	912	RXYQ44PAYL	3
712	RHXYQ18PY1	3	779	RXQ26PY1	3	846	RXYQ12PAY6	3	913	RXYQ46PAYL	3
713	RHXYQ20PY1	3	780	RXQ28PY1	3	847	RXYQ14PAY6	3	914	RXYQ48PAYL	3
714	RHXYQ22PY1	3	781	RXQ30PY1	3	848	RXYQ16PAY6	3	915	RXYQ50PAYL	3
715	RHXYQ24PY1	3	782	RXQ32PY1	3	849	RXYQ18PAY6	3	916	RXYQ52PAYL	3
716	RHXYQ26PY1	3	783	RXQ34PY1	3	850	RXYQ20PAY6	3	917	RXYQ54PAYL	3
717	RHXYQ28PY1	3	784	RXQ36PY1	3	851	RXYQ22PAY6	3	918	RXYQ5PRY6	3
718	RHXYQ30PY1	3	785	RXQ38PY1	3	852	RXYQ24PAY6	3	919	RXYQ8PRY6	3
719	RHXYQ32PY1	3	786	RXQ40PY1	3	853	RXYQ26PAY6	3	920	RXYQ10PRY6	3
720	RHXYQ34PY1	3	787	RXQ42PY1	3	854	RXYQ28PAY6	3	921	RXYQ12PRY6	3
721	RHXYQ36PY1	3	788	RXQ44PY1	3	855	RXYQ30PAY6	3	922	RXYQ14PRY6	3
722	RHXYQ38PY1	3	789	RXQ46PY1	3	856	RXYQ32PAY6	3	923	RXYQ16PRY6	3
723	RHXYQ40PY1	3	790	RXQ48PY1	3	857	RXYQ34PAY6	3	924	RXYQ18PRY6	3
724	RHXYQ42PY1	3	791	RXQ50PY1	3	858	RXYQ36PAY6	3	925	RXYQ20PRY6	3
725	RHXYQ44PY1	3	792	RXQ52PY1	3	859	RXYQ38PAY6	3	926	RXYQ22PRY6	3
726	RHXYQ46PY1	3	793	RXQ54PY1	3	860	RXYQ40PAY6	3	927	RXYQ24PRY6	3
727	RHXYQ48PY1	3	794	RXQ8PY16	3	861	RXYQ42PAY6	3	928	RXYQ26PRY6	3
728	RHXYQ50PY1	3	795	RXQ10PY16	3	862	RXYQ44PAY6	3	929	RXYQ28PRY6	3
729	RHXYQ52PY1	3	796	RXQ12PY16	3	863	RXYQ46PAY6	3	930	RXYQ30PRY6	3
730	RHXYQ54PY1	3	797	RXQ14PY16	3	864	RXYQ48PAY6	3	931	RXYQ32PRY6	3
731	RHXY20PY1	3	798	RXQ16PY16	3	865	RXYQ50PAY6	3	932	RXYQ34PRY6	3
732	RHXY22PY1	3	799	RXQ18PY16	3	866	RXYQ52PAY6	3	933	RXYQ36PRY6	3
733	RHXY24PY1	3	800	RXQ20PY16	3	867	RXYQ54PAY6	3	934	RXYQ38PRY6	3
734	RHXY26PY1	3	801	RXQ22PY16	3	868	RXYQ5PAY19	3	935	RXYQ40PRY6	3
735	RHXY28PY1	3	802	RXQ24PY16	3	869	RXYQ8PAY19	3	936	RXYQ42PRY6	3
736	RHXY30PY1	3	803	RXQ26PY16	3	870	RXYQ10PAY19	3	937	RXYQ44PRY6	3
737	RHXY32PY1	3	804	RXQ28PY16	3	871	RXYQ12PAY19	3	938	RXYQ46PRY6	3
738	RHXY34PY1	3	805	RXQ30PY16	3	872	RXYQ14PAY19	3	939	RXYQ48PRY6	3
739	RHXY36PY1	3	806	RXQ32PY16	3	873	RXYQ16PAY19	3	940	RXYQ50PRY6	3
740	RHXY38PY1	3	807	RXQ34PY16	3	874	RXYQ18PAY19	3	941	RXYQ52PRY6	3
741	RHXY40PY1	3	808	RXQ36PY16	3	875	RXYQ20PAY19	3	942	RXYQ54PRY6	3
742	RHXY42PY1	3	809	RXQ38PY16	3	876	RXYQ22PAY19	3	943	RXYQ18PHY1	3
743	RHXY44PY1	3	810	RXQ40PY16	3	877	RXYQ24PAY19	3	944	RXYQ18PHY1	3

No.	Model name	Type	No.	Model name	Type	No.	Model name	Type	No.	Model name	Type
945	RXYQ24PHY1	3	1012	RHXYQ20PAY1	3	1079	RXYHQ26P9W1B	3	1146	RXYQ120PYDN	3
946	RXYQ26PHY1	3	1013	RHXYQ22PAY1	3	1080	RXYHQ28P9W1B	3	1147	RXYQ72PATJ	3
947	RXYQ28PHY1	3	1014	RHXYQ24PAY1	3	1081	RXYHQ30P9W1B	3	1148	RXYQ96PATJ	3
948	RXYQ30PHY1	3	1015	RHXYQ26PAY1	3	1082	RXYHQ32P9W1B	3	1149	RXYQ108PATJ	3
949	RXYQ32PHY1	3	1016	RHXYQ28PAY1	3	1083	RXYHQ34P9W1B	3	1150	RXYQ72PAYD	3
950	RXYQ34PHY1	3	1017	RHXYQ30PAY1	3	1084	RXYHQ36P9W1B	3	1151	RXYQ96PAYD	3
951	RXYQ36PHY1	3	1018	RHXYQ32PAY1	3	1085	RXQ5P7W1B	3	1152	RXYQ108PAYD	3
952	RXYQ38PHY1	3	1019	RHXYQ34PAY1	3	1086	RXQ8P7W1B	3	1153	RXYQ120PTJUR	3
953	RXYQ40PHY1	3	1020	RHXYQ36PAY1	3	1087	RXQ10P7W1B	3	1154	RXYQ120PYDNR	3
954	RXYQ42PHY1	3	1021	RHXYQ38PAY1	3	1088	RXQ12P7W1B	3	1155	RXYQ144PTJU	3
955	RXYQ44PHY1	3	1022	RHXYQ40PAY1	3	1089	RXQ14P7W1B	3	1156	RXYQ168PTJU	3
956	RXYQ46PHY1	3	1023	RHXYQ42PAY1	3	1090	RXQ16P7W1B	3	1157	RXYQ192PTJU	3
957	RXYQ48PHY1	3	1024	RHXYQ44PAY1	3	1091	RXQ18P7W1B	3	1158	RXYQ216PTJU	3
958	RXYQ50PHY1	3	1025	RHXYQ46PAY1	3	1092	REYQ8PY1	3	1159	RXYQ240PTJU	3
959	RXY24PHY1	3	1026	RHXYQ48PAY1	3	1093	REYQ10PY1	3	1160	RXYQ144PYDN	3
960	RXY26PHY1	3	1027	RHXYQ50PAY1	3	1094	REYQ12PY1	3	1161	RXYQ168PYDN	3
961	RXY28PHY1	3	1028	RHXYQ52PAY1	3	1095	REYQ14PY1	3	1162	RXYQ192PYDN	3
962	RXY30PHY1	3	1029	RHXYQ54PAY1	3	1096	REYQ16PY1	3	1163	RXYQ216PYDN	3
963	RXY32PHY1	3	1030	RXYQ8P7Y1K	3	1097	REYQ18PY1	3	1164	RXYQ240PYDN	3
964	RXY34PHY1	3	1031	RXYQ10P7Y1K	3	1098	REYQ20PY1	3	1165	REYQ72PTJU	3
965	RXY36PHY1	3	1032	RXYQ12P7Y1K	3	1099	REYQ22PY1	3	1166	REYQ96PTJU	3
966	RXY38PHY1	3	1033	RXYQ16P7Y1K	3	1100	REYQ24PY1	3	1167	REYQ120PTJU	3
967	RXY40PHY1	3	1034	RXYQ18P7Y1K	3	1101	REYQ26PY1	3	1168	REYQ144PTJU	3
968	RXY42PHY1	3	1035	RXYQ20P7Y1K	3	1102	REYQ28PY1	3	1169	REYQ168PTJU	3
969	RXY44PHY1	3	1036	RXYQ22P7Y1K	3	1103	REYQ30PY1	3	1170	REYQ192PTJU	3
970	RXY46PHY1	3	1037	RXYQ24P7Y1K	3	1104	REYQ32PY1	3	1171	REYQ216PTJU	3
971	RXY48PHY1	3	1038	RXYQ26P7Y1K	3	1105	REYQ34PY1	3	1172	REYQ240PTJU	3
972	RXY50PHY1	3	1039	RXYQ28P7Y1K	3	1106	REYQ36PY1	3	1173	REYQ72PYDN	3
973	RXQ16PHY1	3	1040	RXYQ30P7Y1K	3	1107	REYQ38PY1	3	1174	REYQ96PYDN	3
974	RXQ18PHY1	3	1041	RXYQ32P7Y1K	3	1108	REYQ40PY1	3	1175	REYQ120PYDN	3
975	RXQ24PHY1	3	1042	RXYQ34P7Y1K	3	1109	REYQ42PY1	3	1176	REYQ144PYDN	3
976	RXQ26PHY1	3	1043	RXYQ36P7Y1K	3	1110	REYQ44PY1	3	1177	REYQ168PYDN	3
977	RXQ28PHY1	3	1044	RXYQ8P7Y1K	3	1111	REYQ46PY1	3	1178	REYQ192PYDN	3
978	RXQ30PHY1	3	1045	RXYQ10P7Y1K	3	1112	REYQ48PY1	3	1179	REYQ216PYDN	3
979	RXQ32PHY1	3	1046	RXYQ12P7Y1K	3	1113	REYQ8P8Y1B	3	1180	REYQ240PYDN	3
980	RXQ34PHY1	3	1047	RXYQ16P7Y1K	3	1114	REYQ10P8Y1B	3	1181	REYQ72PATJ	3
981	RXQ36PHY1	3	1048	RXYQ18P7Y1K	3	1115	REYQ12P8Y1B	3	1182	REYQ96PATJ	3
982	RXQ38PHY1	3	1049	RXYQ20P7Y1K	3	1116	REYQ14P8Y1B	3	1183	REYQ120PATJ	3
983	RXQ40PHY1	3	1050	RXYQ22P7Y1K	3	1117	REYQ16P8Y1B	3	1184	REYQ144PATJ	3
984	RXQ42PHY1	3	1051	RXYQ24P7Y1K	3	1118	REYQ18P8Y1B	3	1185	REYQ168PATJ	3
985	RXQ44PHY1	3	1052	RXYQ26P7Y1K	3	1119	REYQ20P8Y1B	3	1186	REYQ192PATJ	3
986	RXQ46PHY1	3	1053	RXYQ28P7Y1K	3	1120	REYQ22P8Y1B	3	1187	REYQ72PAYD	3
987	RXQ48PHY1	3	1054	RXYQ30P7Y1K	3	1121	REYQ24P8Y1B	3	1188	REYQ96PAYD	3
988	RXQ50PHY1	3	1055	RXYQ32P7Y1K	3	1122	REYQ26P8Y1B	3	1189	REYQ120PAYD	3
989	RXQ16PAHY1	3	1056	RXYQ34P7Y1K	3	1123	REYQ28P8Y1B	3	1190	REYQ144PAYD	3
990	RXQ18PAHY1	3	1057	RXYQ36P7Y1K	3	1124	REYQ30P8Y1B	3	1191	REYQ168PAYD	3
991	RXQ24PAHY1	3	1058	RXYMQ36PVJU	3	1125	REYQ32P8Y1B	3	1192	REYQ192PAYD	3
992	RXQ26PAHY1	3	1059	RXYMQ48PVJU	3	1126	REYQ34P8Y1B	3	1193	RXYQ144PAYD	3
993	RXQ28PAHY1	3	1060	RXYHQ12P8W1B	3	1127	REYQ36P8Y1B	3	1194	RXYQ144PATJ	3
994	RXQ30PAHY1	3	1061	RXYQ16P8W1B	3	1128	REYQ38P8Y1B	3	1195	RXYQ168PATJ	3
995	RXQ32PAHY1	3	1062	RXYHQ16P8W1B	3	1129	REYQ40P8Y1B	3	1196	RXYQ216PTJUR	3
996	RXQ34PAHY1	3	1063	RXYHQ18P8W1B	3	1130	REYQ42P8Y1B	3	1197	RXYQ240PTJUR	3
997	RXQ36PAHY1	3	1064	RXYHQ20P8W1B	3	1131	REYQ44P8Y1B	3	1198	RXYQ168PAYD	3
998	RXQ38PAHY1	3	1065	RXYHQ22P8W1B	3	1132	REYQ46P8Y1B	3	1199	RXYQ192PAYD	3
999	RXQ40PAHY1	3	1066	RXYHQ24P8W1B	3	1133	REYQ48P8Y1B	3	1200	RXYQ216PYDNR	3
1000	RXQ42PAHY1	3	1067	RXYHQ36P8W1B	3	1134	REYHQ20P8W1B	3	1201	RXYQ240PYDNR	3
1001	RXQ44PAHY1	3	1068	RXYHQ26P8W1B	3	1135	REYHQ22P8W1B	3	1202	REYQ216PYDNR	3
1002	RXQ46PAHY1	3	1069	RXYHQ28P8W1B	3	1136	REYHQ24P8W1B	3	1203	REYQ240PYDNR	3
1003	RXQ48PAHY1	3	1070	RXYHQ30P8W1B	3	1137	REYHQ16P9W1B	3	1204	REYQ216PTJUR	3
1004	RXQ50PAHY1	3	1071	RXYHQ32P8W1B	3	1138	REYHQ20P9W1B	3	1205	REYQ240PTJUR	3
1005	RHXYQ5PAY1	3	1072	RXYHQ34P8W1B	3	1139	REYHQ22P9W1B	3	1206	RXYQ192PATJ	3
1006	RHXYQ8PAY1	3	1073	RXYHQ12P9W1B	3	1140	REYHQ24P9W1B	3	1207	REYHQ16P8W1B	3
1007	RHXYQ10PAY1	3	1074	RXYHQ16P9W1B	3	1141	RXYQ72PTJU	3	1208	CMSQ200A7W1B	3
1008	RHXYQ12PAY1	3	1075	RXYHQ18P9W1B	3	1142	RXYQ72PYDN	3	1209	CMSQ250A7W1B	3
1009	RHXYQ14PAY1	3	1076	RXYHQ20P9W1B	3	1143	RXYQ96PTJU	3	1210	RWEYQ80MTJU	1
1010	RHXYQ16PAY1	3	1077	RXYHQ22P9W1B	3	1144	RXYQ96PYDN	3	1211	RWEYQ72MTJU	1
1011	RHXYQ18PAY1	3	1078	RXYHQ24P9W1B	3	1145	RXYQ120PTJU	3	1212	RWEYQ84MTJU	1

No.	Model name	Type	No.	Model name	Type	No.	Model name	Type	No.	Model name	Type
1213	RWEYQ144MTJU	1	1224	RXYMQ48MVJU	1	1235	RQYQ8PY1	1	1246	RQCEQ360P	3
1214	RWEYQ168MTJU	1	1225	RZQ18PVJU	3	1236	RQYQ10PY1	1	1247	RQCEQ460P	3
1215	RWEYQ216MTJU	1	1226	RZQ24PVJU	3	1237	RQYQ12PY1	1	1248	RQCEQ500P	3
1216	RWEYQ252MTJU	1	1227	RZQ30PVJU	3	1238	RQYQ14PY1	1	1249	RQCEQ540P	3
1217	RWEYQ84PTJU	1	1228	RQYQ140P	3	1239	RQYQ16PY1	1	1250	RQCEQ636P	3
1218	RWEYQ72PTJU	1	1229	RQYQ180P	3	1240	RQYP615A	1	1251	RQCEQ712P	3
1219	RWEYQ168PTJU	1	1230	RQCYQ280P	3	1241	RQYP680A	1	1252	RQCEQ744P	3
1220	RWEYQ144PTJU	1	1231	RQCYQ360P	3	1242	RQYP730A	1	1253	RQCEQ816P	3
1221	RWEYQ252PTJU	1	1232	RQCYQ460P	3	1243	RQYP785A	1	1254	RQCEQ848P	3
1222	RWEYQ216PTJU	1	1233	RQCYQ500P	3	1244	RQYP850A	1			
1223	RXYMQ36MVJU	1	1234	RQCYQ540P	3	1245	RQCEQ280P	3			

Optional Functions

5. Service Settings

5-1 Activation

In addition to standard functions, iTM provides various optional functions suited to users' needs.

There are two types of optional functions: optional maker functions sold by Daikin Industries, Ltd. and dealer options sold by dealers.

This chapter describes the procedure to activate optional maker functions.

Acquiring the Activation key

To activate an optional maker function, you must acquire the Activation key before making settings on site.

Since Activation keys are available at the Daikin Distributor's Page, you need a PC connected to the Internet.

To obtain the key, the MAC address indicated on the iTM main unit and the software ID shown in the license form supplied with the main unit will be requested. Check them in advance. Be sure to have them handy.

1. Access to Daikin Distributor's Page using the Web browser on your PC.
<http://global.daikin.com/distributor/index.html>
Enter your user name and password to login and go to page that issues Activation keys.
2. Enter the MAC Address and Option Software ID. Make a note of the Activation key that is displayed.

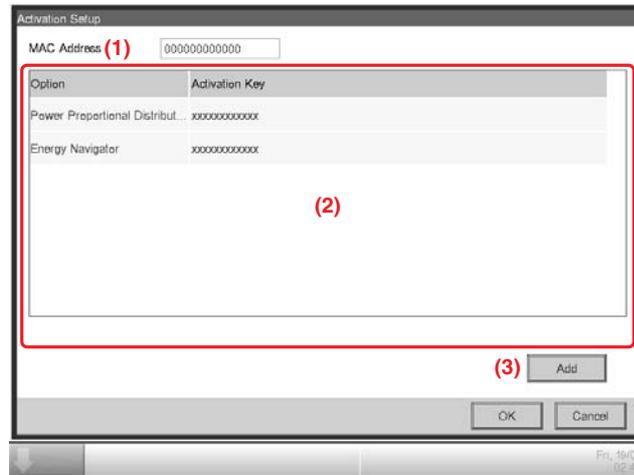
NOTE

iTM does not require the entry of the basic software ID.

Entering the Activation key

The following describes the procedure to enable the optional maker function on site based on the Activation key acquired in advance.

1. Log into SE Mode from the Menu List screen and display the Service Settings tab (see page 7).
Touch the Activation button on the Service Settings tab to display the Activation Setup screen (see page 10).

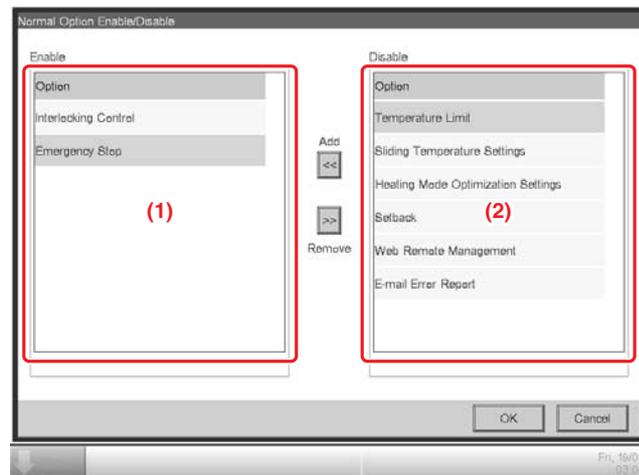


2. The MAC address of the iTM unit appears in MAC Address (1).
(2) is a list of currently enabled optional maker functions.
3. To enable a new optional maker function, touch the **Add** button (3). Enter the Activation key for the optional maker function using the text input keyboard that appears and touch the OK button. If the key is correct, the function is added to the list (2).
4. Touch the OK button on the Activation Setup screen.
A confirmation dialog with the message “Settings have been changed. Reboot now to enable new settings?” appears. Touch the Yes button and restart the iTM unit.

5-2 Dealer Option Setup

The following describes the procedure to enable dealer options.

1. Log into SE Mode from the Menu List screen and display the Service Settings tab (see page 7).
Touch the Dealer Option Switch button on the Service Settings tab to display the Dealer Option screen (see page 10).



Enable **(1)** is a list of enabled dealer options.

Disable **(2)** is a list of disabled dealer options.

2. To enable a new optional function, select it from **(2)** and touch the Add button. It is added to **(1)** and enabled.
To disable, select the optional function from **(1)** and touch the Remove button. Touch the Yes button on the confirmation dialog that appears. It is moved to **(2)** and disabled.
3. When finished, touch the OK button. A confirmation dialog with the message “Settings have been changed. Reboot now to enable new settings?” appears. Touch the OK button and restart the iTM unit.

Operating Optional Functions

6. System Settings

6-1 Network

iTM allows you to operate it remotely via the Internet, or receive notification via E-mail in the case of an error. To use these functions, you must set up the network on the iTM unit.

The following describes how to set this up.

1. Touch the Network button on the System Settings tab of the Menu List screen to display the Network screen (see page 12).

<Name Input dialog>

<IP Address Input dialog>

2. The current settings are displayed. Touch the Modify button to modify the settings in the Input dialog that appears. For information necessary for the settings, consult your network administrator.

- (1) Controller name
- (2) Host name
- (3) IP address
- (4) Subnet mask
- (5) Default gateway address
- (6) Preferred DNS address
- (7) Alternate DNS address

3. Set up the Web server port number.

Network

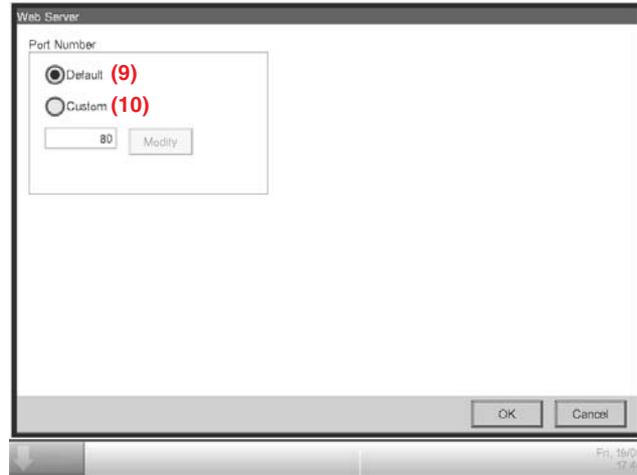
Controller Name	intelligent Touch Manager	Modify
Host Name	localhost	Modify
IP Address	192.168.0.1	Modify
Subnet Mask	255.255.255.0	Modify
Default Gateway	0.0.0.0	Modify
Preferred DNS	0.0.0.0	Modify
Alternate DNS	0.0.0.0	Modify

(8) Web Server

OK Cancel

Fri, 19/08 17:37

Touch the **Web Server** button (8) to display the Web Server screen and set up the port number.

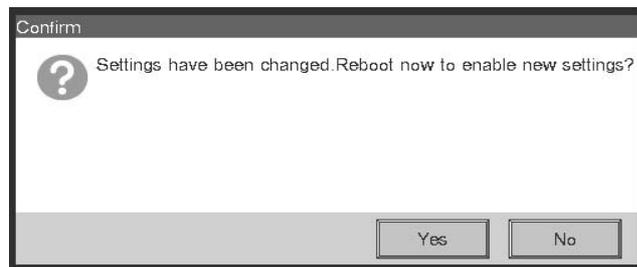


Select **(9)** to use the default port 80.

Selecting **(10)** displays the port number 8080. Touching the Modify button allows you to modify the settings in the Numerical Input dialog that appears.

Touch the OK button to save and close the screen.

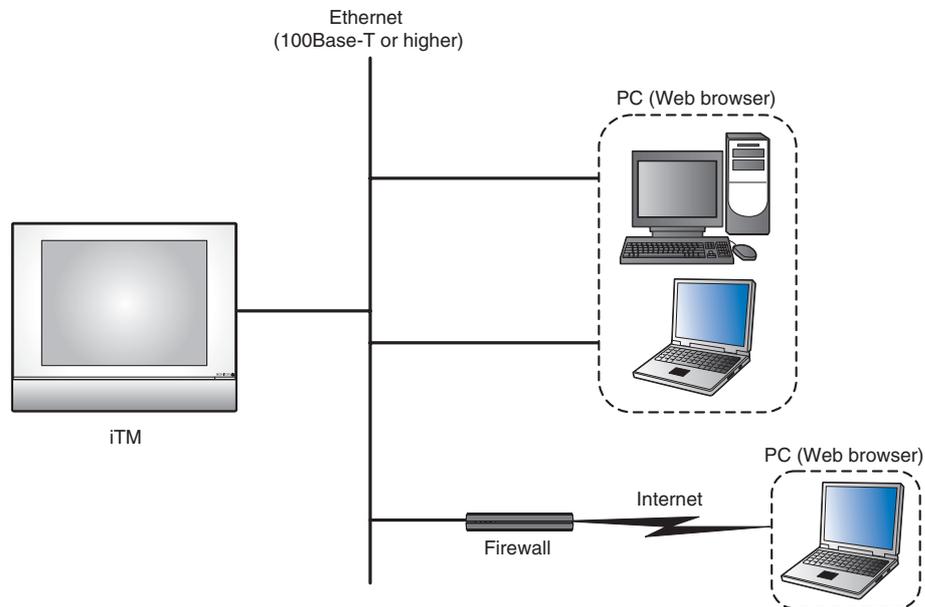
- When finished, touch the OK button. A confirmation dialog appears.



- A restart confirmation message is displayed. Touch the Yes button to reflect the setting and restart the iTM.

6-2 Web Remote Management

The iTM can be remotely operated via the Internet or local network.



For settings necessary on the iTM unit, see “6-1 Network”. This chapter describes the PC setup procedure.

To use the Web Remote Management functions, you need to separately prepare a PC and software such as a Web browser. The requirements for the PC are as indicated in the table below.

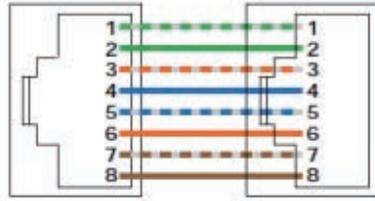
Function	Requirement
PC for Web Remote Management	OS: Windows XP Professional SP3 (32 bit) Windows VISTA Business SP2 (32 bit) Windows 7 Professional SP1 (32bit, 64bit) CPU: Equivalent to Intel Core 2 Duo 1.2 GHz or higher Memory: 2 GB or more Free HDD space: 10 GB or more Network: 100Base-TX or higher Display resolution: 1024 x 768 or higher
Network	100Base-TX Real transfer rate: 115 kbps or higher
Supported security software	McAfee 2011 Norton 2011 Virus Buster 2011
Flash Player	Version 11.1
Web browser	Internet Explorer 8, 9 Firefox 10.0

Connecting the PC and iTM

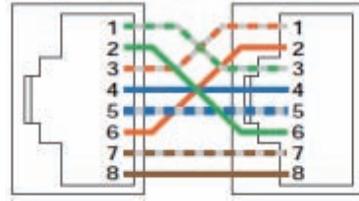
Connect the PC and iTM unit into a network using an Ethernet cable.

Ethernet cables use for connecting networks come in two types: straight and cross. Connect the PC and iTM unit by referring to the connection diagrams below.

Straight cable connection diagram

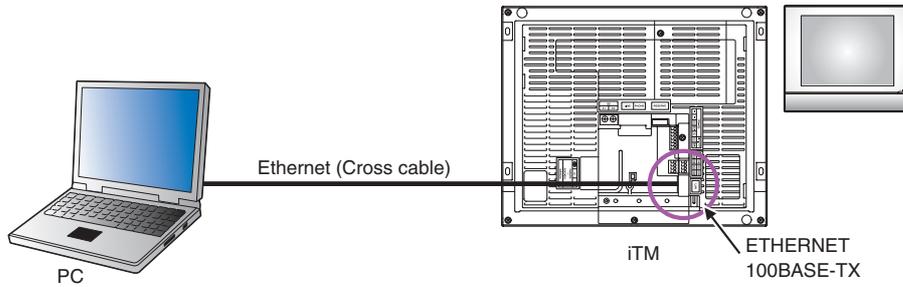


Cross cable connection diagram



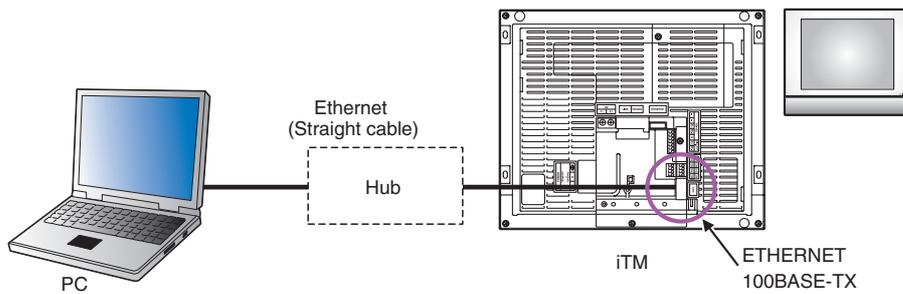
When connecting the PC and iTM directly:

Use a 100Base-TX or higher Ethernet cross cable.



When connecting the PC and iTM via a hub:

Use a 100Base-TX or higher Ethernet straight cable.



Checking the Web browser and Flash Player versions

1. Start up the Web browser (Internet Explorer) and select [About] from the [Help] menu.

NOTE

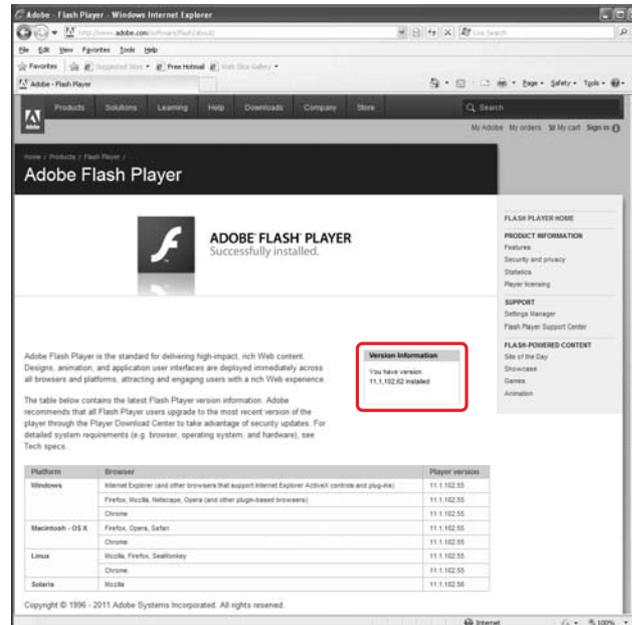
In the case of Firefox, you can check by selecting [Help] → [About Mozilla Firefox].



Check that the version is 8.0.xxxx.xxxxxx or 9.0. xxx.xxxxxx. (The xxx portion may be any)



2. Enter the address of the site for checking the Flash Player version: <http://www.adobe.com/software/flash/about/>



Check that the version is 11.1.xxx.xx. (The xxx portion can be any)

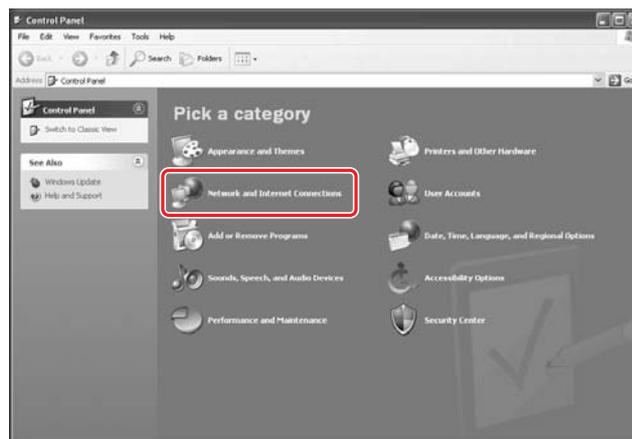
Operation cannot be guaranteed if both the Web browser and Flash Player are not of the specified version. Be sure to use the version described in the table.

NOTE

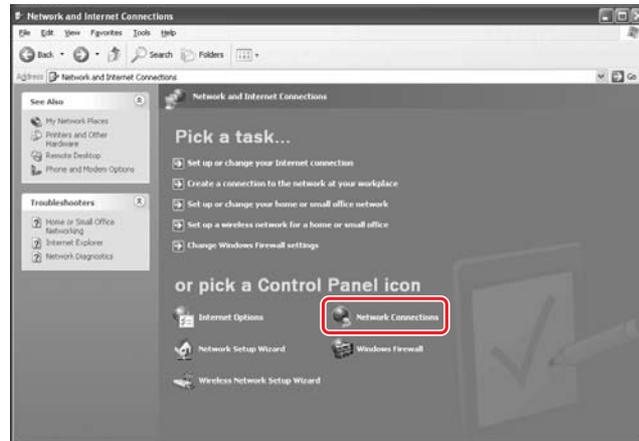
Necessary software can be downloaded from Microsoft, Adobe, and other sites for free.

Setting up the IP address (Windows XP Professional)

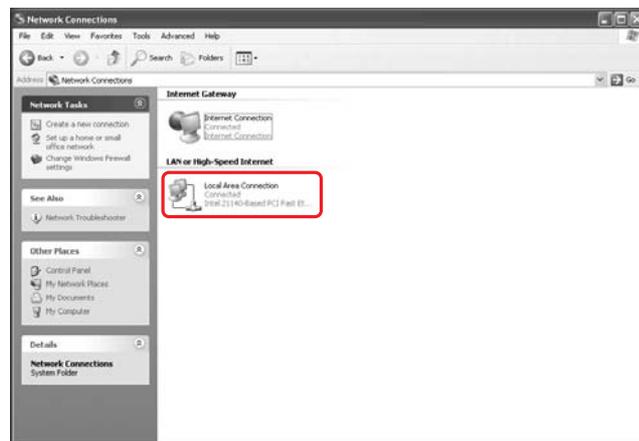
1. Select [Start] → [Control Panel].



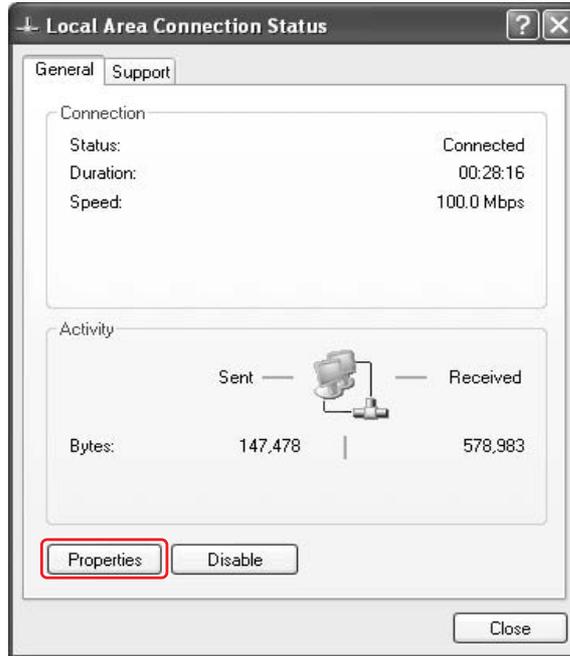
2. Click [Network and Internet Connections].



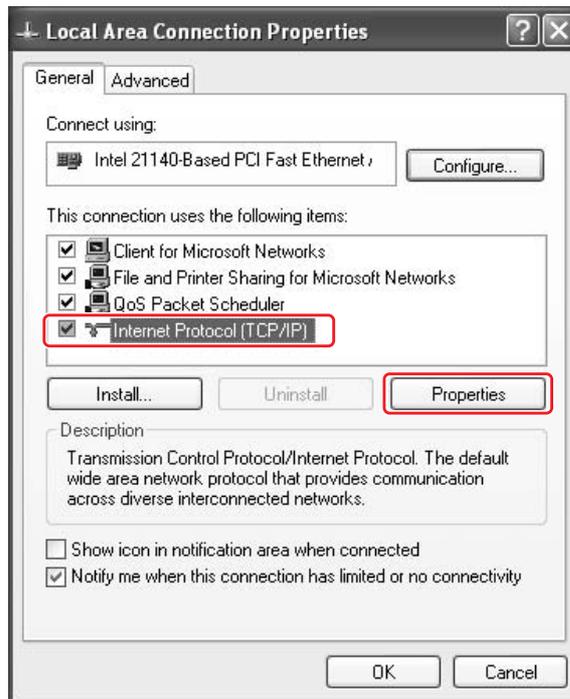
3. Click [Network Connections].



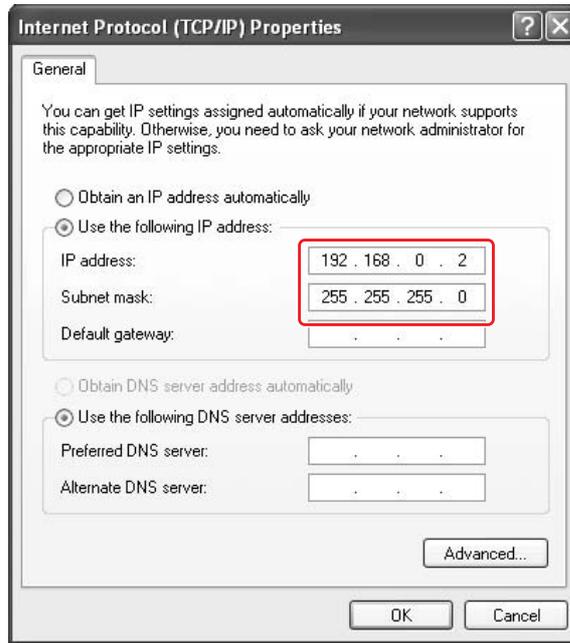
4. Double click [Local Area Connection].



5. Select [Properties].



6. Select [Internet Protocol (TCP/IP)] and click [Properties].



- To connect to the iTM via the Internet, ask its IP address and subnet mask to your network administrator and set them up.

Set them up as follows when connecting to the iTM via local network.

IP address: 192.168.0.2 Subnet mask: 255.255.255.0

NOTE

iTM settings at shipment are as follows.

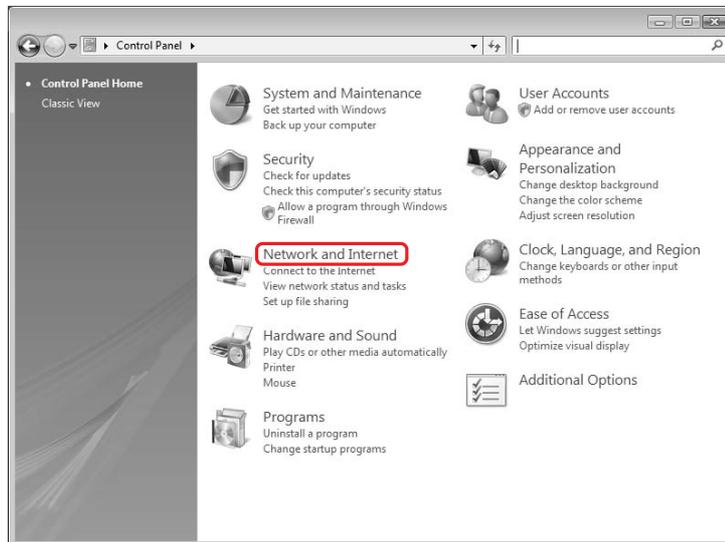
Item	Settings at shipment
Host name	localhost
IP address	192.168.0.1
Subnet mask	255.255.255.0
Default gateway	0.0.0.0
Preferred DNS	0.0.0.0
Alternate DNS	0.0.0.0
Web server port number	80
Controller name	intelligent Touch Manager

- Check that the settings are correct and click [OK] to close the [Internet Protocol (TCP/IP) Properties] and [Local Area Connection Properties] screens.

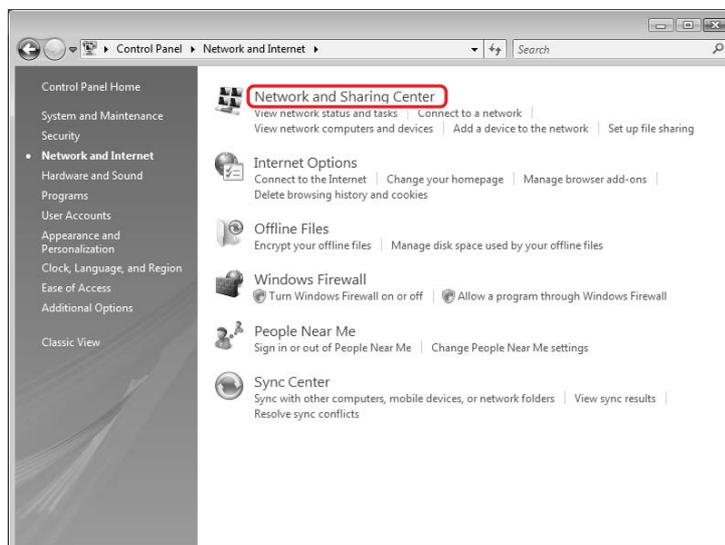
Click [Close] to close the [Local Area Connection Status] screen and finish setup.

Setting up the IP address (Windows Vista Business)

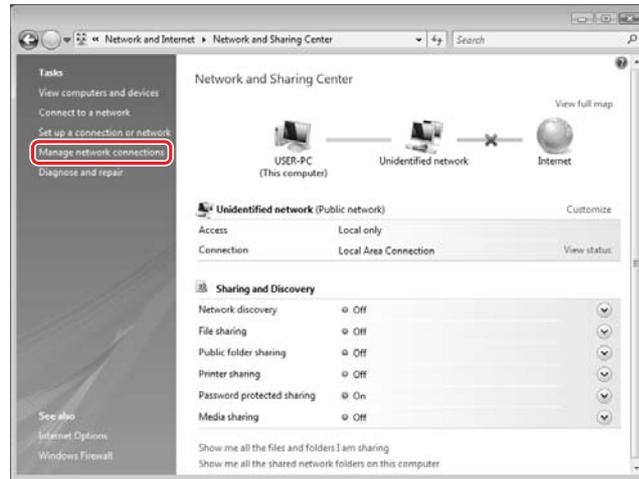
1. Select [Start] → [Control Panel].



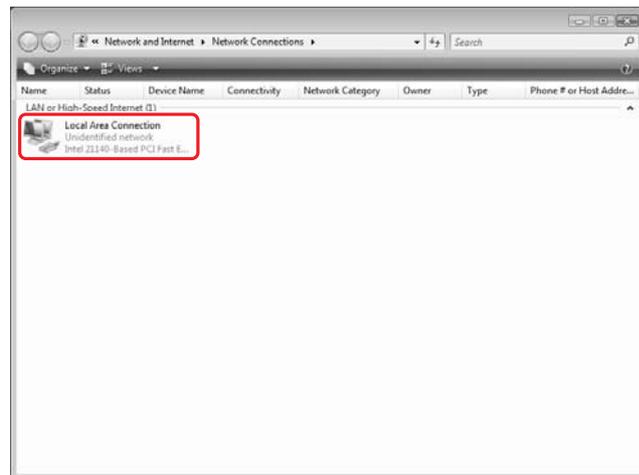
2. Click [Network and Internet].



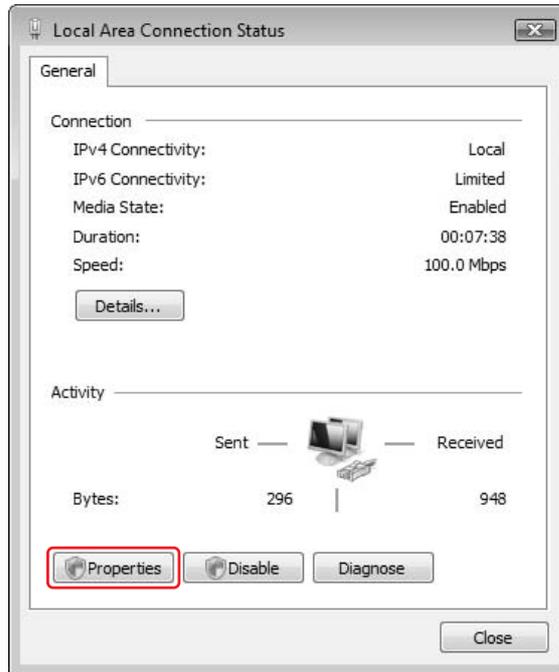
3. Click [Network and Sharing Center].



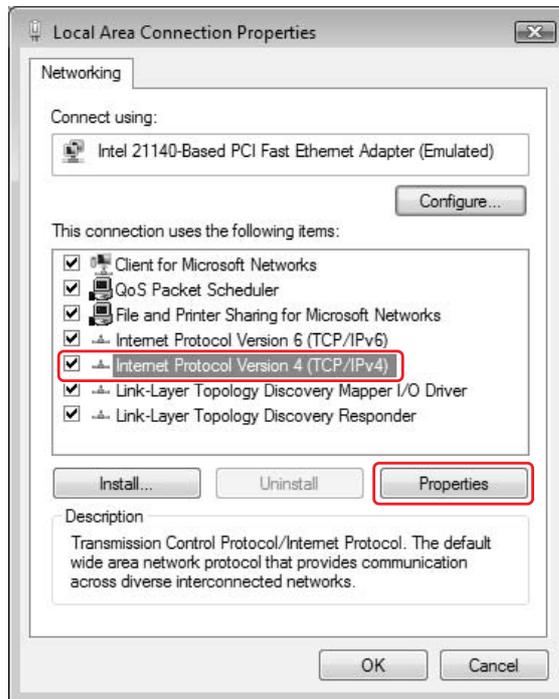
4. Click [Manage network connections].



5. Double click [Local Area Connection].

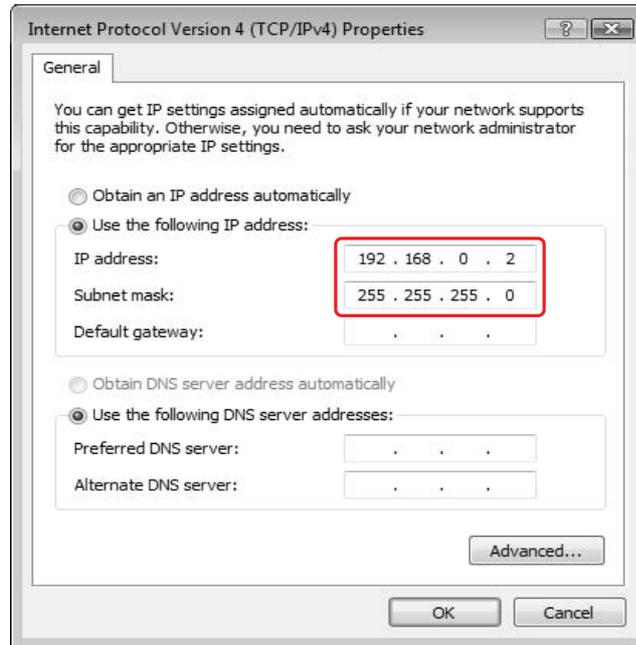


6. Click [Properties].



7. Select [Internet Protocol Version 4 (TCP/IPv4)] and click [Properties].

6



8. To connect to the iTM via the Internet, ask its IP address and subnet mask to your network administrator and set them up.

Set them up as follows when connecting to the iTM via local network.

IP address: 192.168.0.2 Subnet mask: 255.255.255.0

NOTE

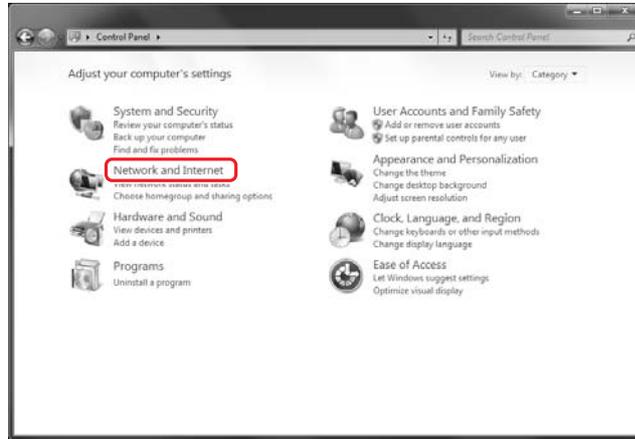
For iTM settings at the time of shipment, see page 96.

9. Check that the settings are correct and click [OK] to close the [Internet Protocol Version 4 (TCP/IPv4) Properties] and [Local Area Connection Properties] screens.

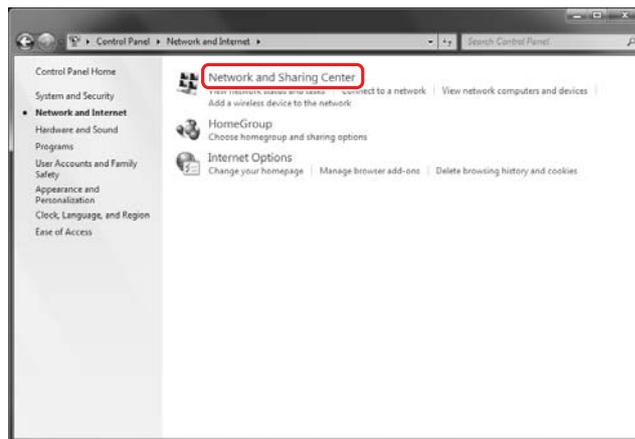
Click [Close] to close the [Local Area Connection Status] screen and finish setup.

Setting up the IP address (Windows 7 Professional)

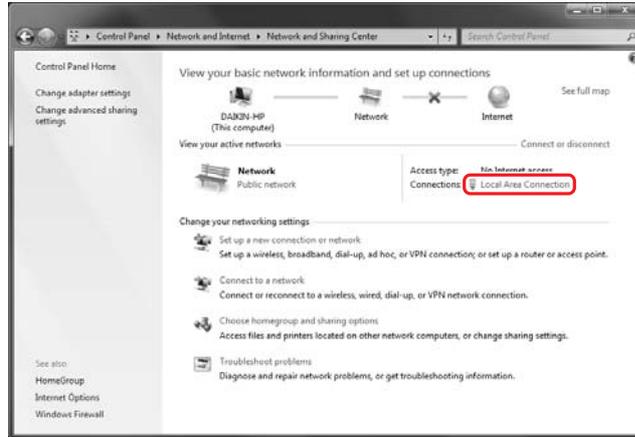
1. Select [Start] → [Control Panel].



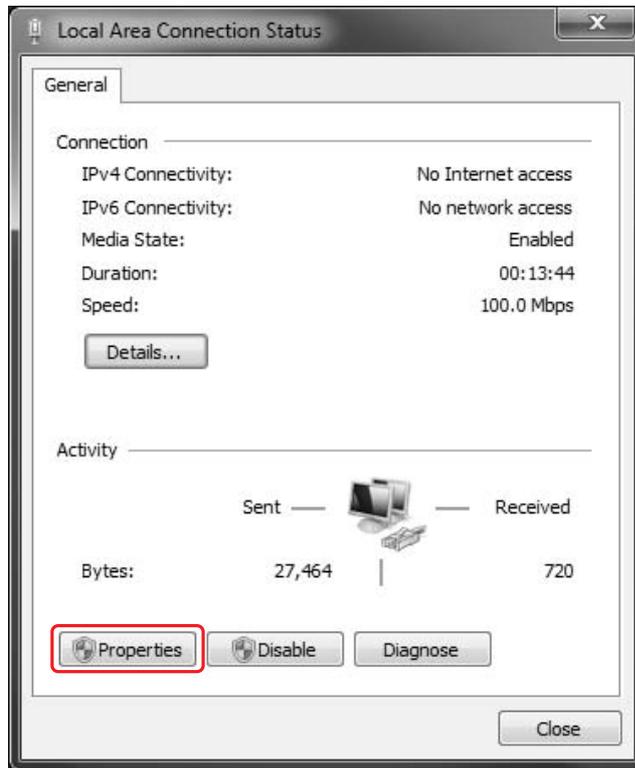
2. Click [Network and Internet].



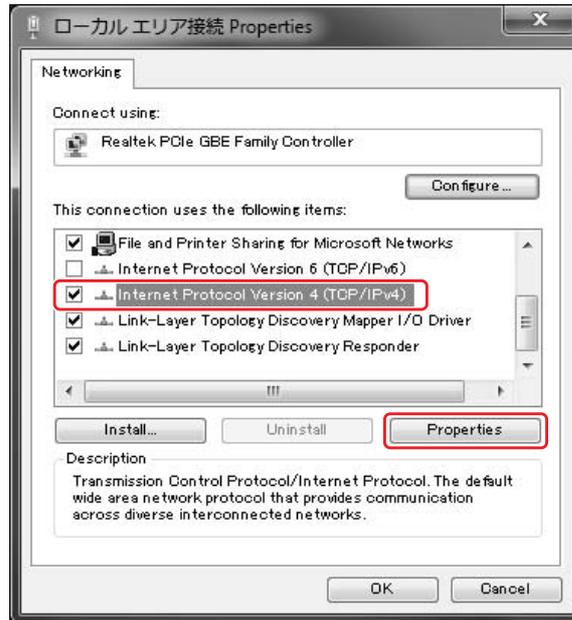
3. Click [Network and Sharing Center].



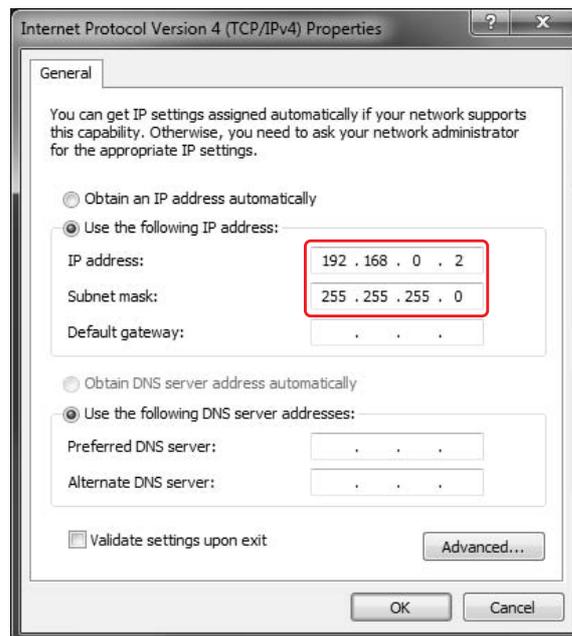
4. Double click [Local Area Connection].



5. Select [Properties].



6. Select [Internet Protocol Version 4 (TCP/IPv4)] and click [Properties].



7. To connect to the iTM via the Internet, ask its IP address and subnet mask to your network administrator and set them up.

Set them up as follows when connecting to the iTM via local network.

IP address: 192.168.0.2 Subnet mask: 255.255.255.0

NOTE

For iTM settings at the time of shipment, see page 96.

8. Check that the settings are correct and click [OK] to close the [Internet Protocol Version 4 (TCP/IPv4) Properties] and [Local Area Connection Properties] screens.

Click [Close] to close the [Local Area Connection Status] screen and finish setup.

Precautions when using Internet Explorer on Windows Vista and Windows 7

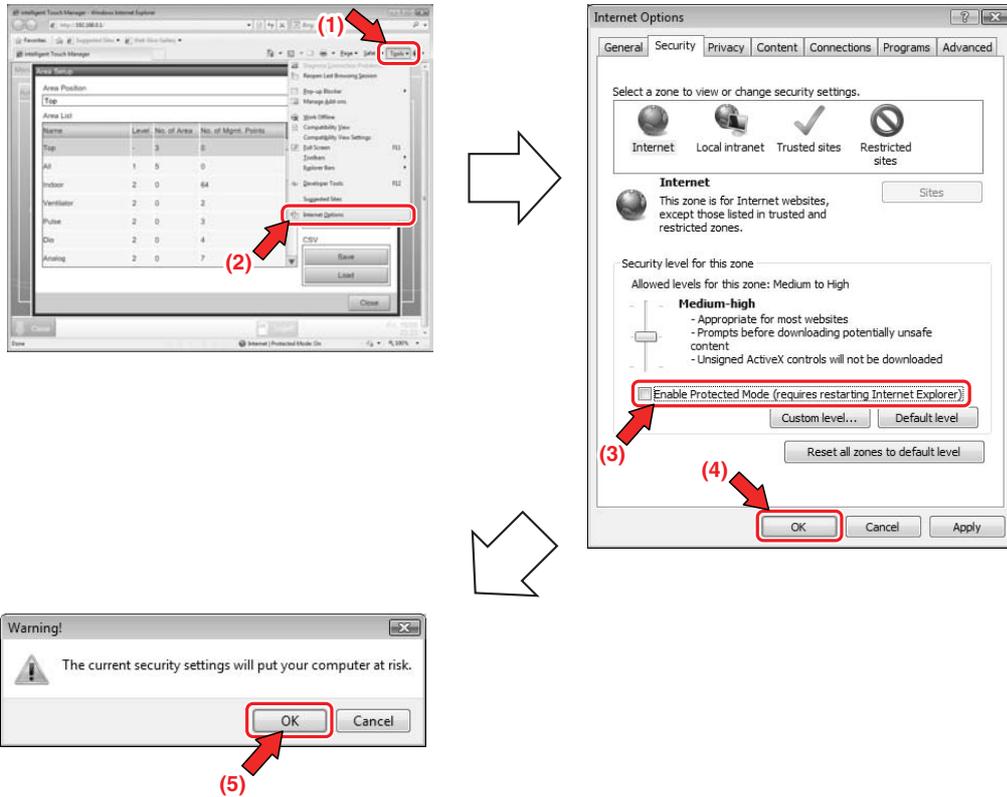
In Windows Vista and Windows 7, some operations are restricted by the User Account Control (UAC) regardless of the user type (administrator/regular user). For that reason, to use Internet Explorer on Windows Vista or Windows 7, you must “turn off” the “Protected Mode” of the Internet Explorer.

To “turn off” the “Protected Mode” of your Internet Explorer, follow the steps below.

NOTE

However, be warned that this method may expose the system to security vulnerabilities. Be sure you have understood its risks before using.

- (1) Select the tool.
- (2) Open Internet Options.
- (3) Deselect [Turn on Protected Mode].
- (4) Click the OK button on the [Internet Options] window.
- (5) Click the OK button on the [Warning] window.



Network Connection Check

Check whether the Ethernet connection between a PC and ITM is normal.
 Carry out the following procedure from the PC.

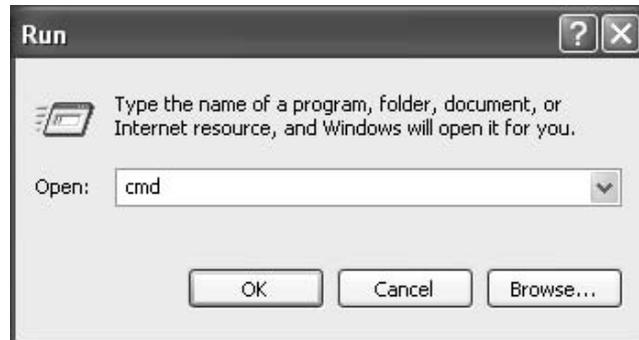
<Windows XP>

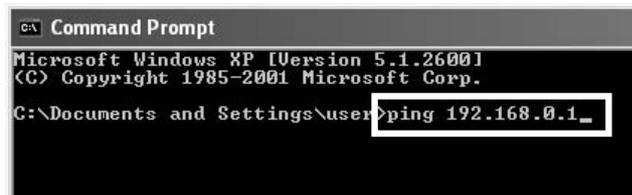
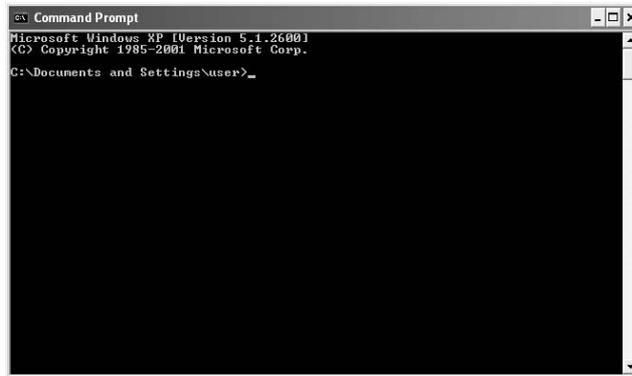


<Windows VISTA, Windows 7>

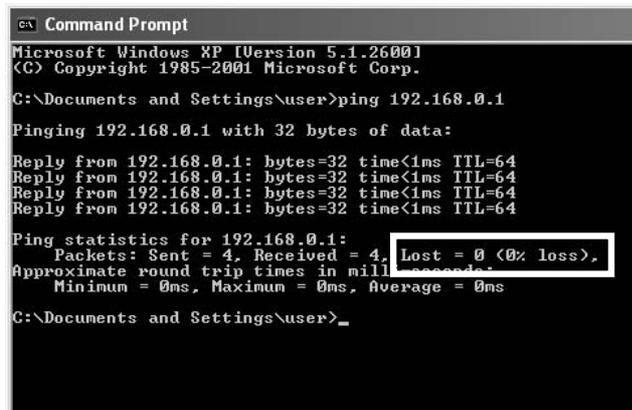


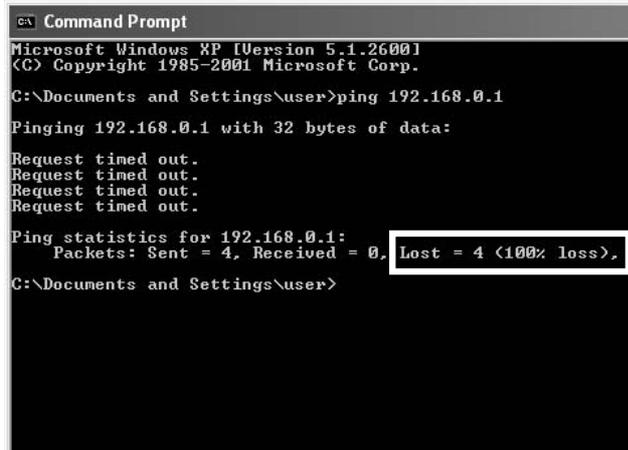
1. From the Start menu of the PC, select “All Programs” → “Accessories” → “Command Prompt”.
Alternatively, select “Run” from the Start menu of the PC, enter “cmd” in Open and click the OK button. (Windows XP)





- 2. The command prompt starts up. Type "ping" followed by one single byte space and then the iTM IP address, and press the Enter key. (In this example, the IP address is 192.168.0.1)





- 3. If Lost=0(0% loss) is displayed, the Ethernet connection between the PC and the iTM unit is normal.
If Lost=4(100% loss) is displayed, then the PC could not recognize the iTM unit. Check the settings.

NOTE

When a port number is set up in the network settings of the iTM unit, enter “:” followed by the port number after the IP address.
(Example: If port number is 8080, enter 192.168.0.1:**8080**)

Logging into Service Mode via Web Remote Management

The Service Mode is also available when managing the iTM remotely using this function, in the same way as from the unit, if you have accessed the Web Remote Management function as manager.

The procedure to log into Service Mode is similar as that from the unit, by clicking the four corners of the browser’s window and entering the password. For details, see “2-2 Logging into Service Mode”.

iTM integrator Explanation

7. iTM integrator

7-1 Basic Setup

If you are sure that all connections have been made, proceed to the basic setup of the iTM integrator. Here, “basic setup” means setting up the iTM integrator in preparation for controlling the operation of your air conditioning system.

Turning on the power of the iTM integrator starts a setup program that lets you complete the basic setup procedure. You can complete the basic setup procedure by following the instructions displayed on the monitor display in steps.

The setting assignment made through this procedure may be changed at a later time.

The following sections appear in the order of the setup steps.

1. From your PC, access the Network Solution page of the Distributor’s Page. Then, download and save the basic software onto the USB memory.



2. Publish the activation key of the basic software.

In the same way as in step 1, access the Network Solution page and then go to the Activation key issue page.



Select Basic software and enter the MAC address, Software ID, and User information of the iTM integrator you want to install.

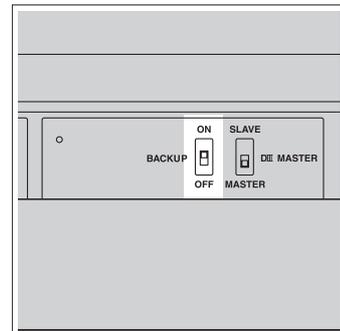
Write down the activation key that appears on the screen.

3. Powering on data backup battery

To retain the settings even in the event of a power outage, the iTM integrator has a built-in battery. Because this battery is disabled by default, the first thing you should do is to enable it.

Open the front slide cover and turn the screws to remove the front slide cover. Set the BACKUP switch to "ON".

< BACKUP switch >

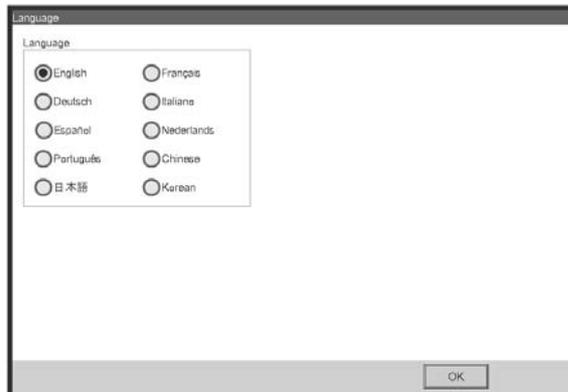


4. Install the software. For the procedure, see 4-10 Installation.

5. Setting up display language

Set up the display language used throughout the iTM integrator setup screens.

<Language Settings screen>



1. Touch the desired language from those listed on the screen.
The radio button next to the language you touched is now selected.
2. Touch OK.
The Locale Settings screen appears.

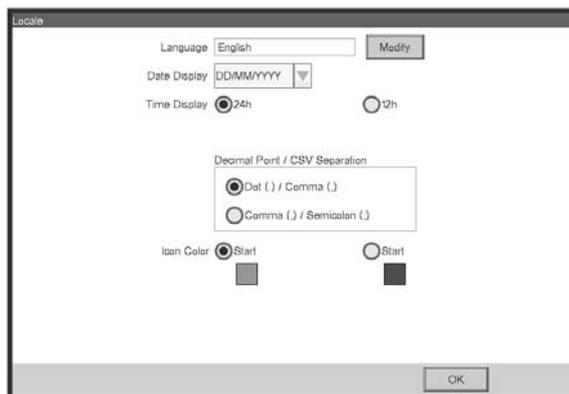
NOTE

If the message “Turn ON Battery Backup switch” appears instead of the Locale Settings screen, it means that you did not turn on the data backup battery. If so, refer to the step 3 on the previous page to turn on the data backup battery. When done, touch the OK button shown with the message on the screen. Then, the Locale setup screen appears.

6. Setting up locale

“Locale setup” allows to set up how you want to see items that are expressed in different ways depending on the region, such as the data/time, temperature, and decimal point, on the display.

<Locale Settings screen>

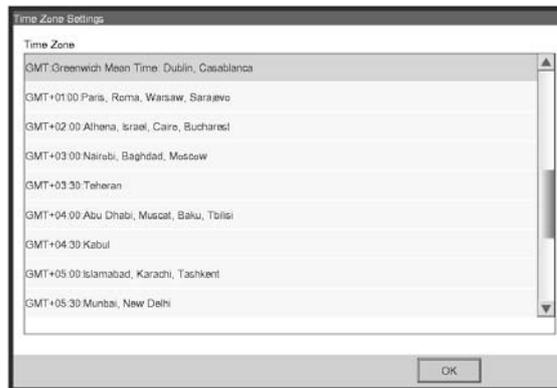


1. [LOCALE] Select the desired options on the Locale Settings screen.
 - [Language] Select the display language.
 - [Date] Select the date display format.
 - [Time] Select the time display format (24-hour or 12-hour clock).
 - [Decimal point / CSV separate] Select the decimal point symbol and the delimiter for CSV files.
 - [Icon Color] Select the icon color.
2. When setup is done, touch OK.
 - The Time Zone Settings screen appears.

7. Setting time zone

Set up the local standard time zone you want to use for the system clock.

<Time Zone Settings screen>



1. On the Time Zone Settings screen, select the time zone of your region from the Time Zone combo box.

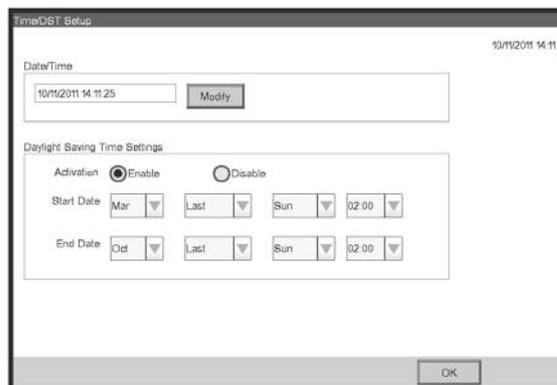
2. Touch OK.

The Time/DST Setup screen appears.

8. Setting current time and daylight saving time

Adjust the clock and set up the daylight saving time schedule.

<Time/DST Setup screen>



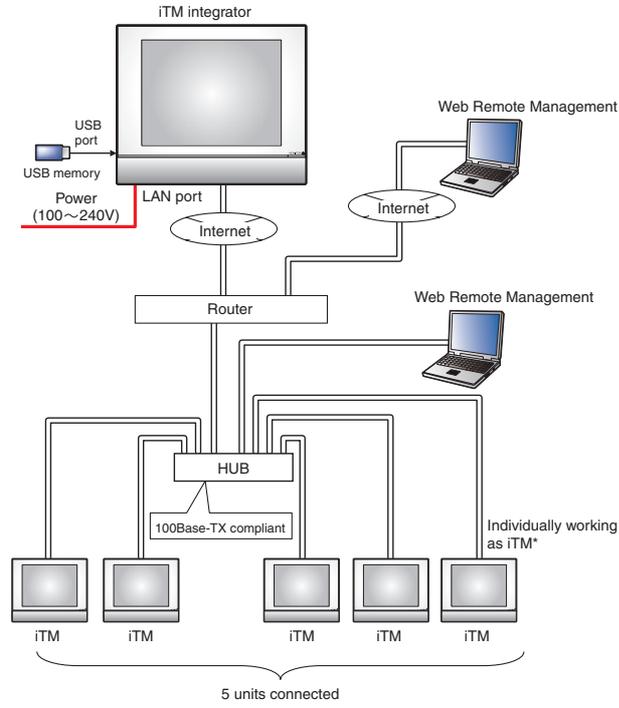
1. On the Time/DST Setup screen, set up the date/time and the daylight saving time schedule. (Enable or disable the daylight saving time function. If enabled, select the start time and the end time.)

2. Touch OK.

The A/C Auto Register screen appears.

7-2 iTM integrator Service Settings

Set up the iTM integrator unit.



Service settings described in this chapter are for the iTM integrator unit. Settings for iTM units are to be made in the respective iTM, or from the iTM integrator Standard View screen by accessing the respective iTM.

Service Settings Tab (Menu List Screen)

Displayed when you log into Service Mode from the iTM integrator Menu List screen.

The procedure to log into Service Mode is the same as that for the iTM. See “2-2 Logging into Service Mode”.



(1) Time Zone

Sets the difference between the Universal Time Coordinated (UTC) on the iTM integrator and the local time.

The setup method is the same as that for the iTM. See “4-4 Time Zone”.

(2) History Mgmt. (Delete)

Deletes history records of a specified period from the iTM integrator’s history.

The setup method is the same as that for the iTM. See “4-6 History Mgmt. (Delete)”.

(3) Controller Access

Sets up the connection between the iTM integrator and iTM.

See the next page for a description of the setup method.

(4) Contact Info

Sets up contact information (three lines) for inquiries regarding errors in the iTM integrator system and the like.

The setup method is the same as that for the iTM. See “4-11 Contact Info”.

NOTE

All settings in this Service Settings tab are for the iTM integrator unit. Please note that they are not for the iTM unit to be controlled using the iTM integrator.

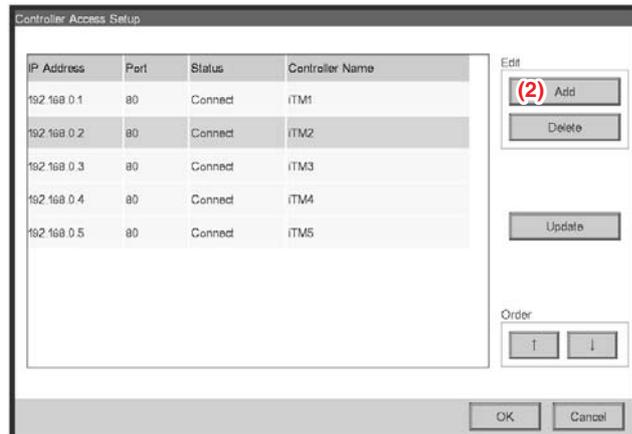
Controller Access Setup

Set up the connection between the iTM to be controlled and the iTM integrator.

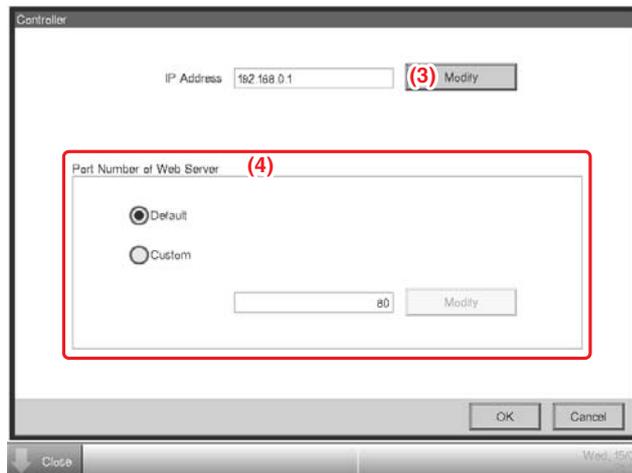
1. Display the Service Settings tab on the iTM integrator Menu List screen.



2. Touch the **Controller Access** button (1) to display the Controller Access Setting screen.



3. Touch the **Add** button (2) to display the Controller screen.



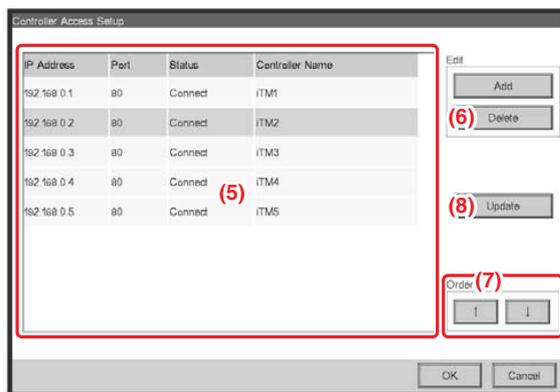
4. Touch the **Modify** button (3) and enter the iTM IP address in the IP Address Input dialog that appears.

Set up the iTM Web port number in (4). Select Default or User Setup using the radio button. If you selected User Setup, then touch the Modify button to enter it in the Numerical Input dialog that appears.

The possible value range, value at shipment, and initial value at new registration for the IP address and Web server port number are as follows.

Item	Possible value range	Value at shipment	Initial value at new registration
IP address set up in controller	“1 to 223(*)”.“0 to 255”.“0 to 255”.“0 to 255” * Addresses starting with “127” cannot be set up since they are for loopback.	—	192.168.0.1
Web server port number set up in controller	Default: 80 User Setting: 1024 to 65535, in increments of 1	—	Default: 80

5. When finished, touch the OK button to return to the Controller Access Setting screen.



The registered iTM’s IP address, Web server port number, connection status, and controller name are listed in (5). You can register up to five iTM.

The **Delete** button (6) allows you to delete the iTM selected in the list.

The **Order** button (7) allows you to sort the list.

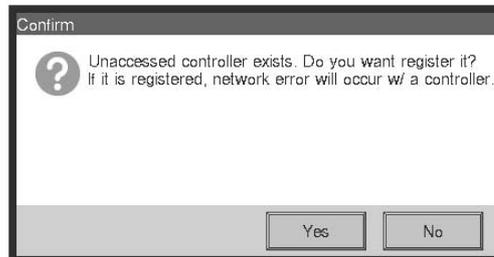
The **Update** button (8) allows you to acquire connection statuses and controller names and refresh the list (5).

NOTE

- You must enable the “Web Remote Management” option of each iTM you want to register. See “5-2 Dealer Option Setup” in this manual.
- The controller name is the name set up in the network settings on the iTM unit. See “6-1 Network” in this manual.
- The controller name is automatically acquired if the communication between iTM integrator and iTM is working normally.

6. When finished, touch the OK button to close the screen.

If there is an iTM whose connection status is “Disconnected”, the following Confirm dialog appears.



To exit setup leaving the iTM disconnected, touch the Yes button. To return to the Controller screen, touch the No button.

7. Open and close all the Layout Views of iTM.

Appendix

8. Useful Information

8-1 Troubleshooting

Troubleshooting table

	Problem	Checking method	Cause	Measure	
Remote operation	Cannot remotely operate iTM from the PC.	When iTM and PC are connected via hub, check whether they are correctly connected.	PC is not connected with iTM.	Connect the iTM and PC via hub using LAN cables.	
			Cross cables are used as the LAN cable for connecting the iTM and PC via hub.	Use straight cables as LAN cable for connecting the iTM and PC via hub.	
			The hub is turned off.	Turn on the hub.	
		Check that iTM is turned on.	The iTM is turned off.	Turn on the iTM.	
		Check whether the network settings on the PC are in conformity with the settings described in this manual.	The network settings on the PC are incorrect.	Modify the network settings on the PC so that they are in conformity with the settings described in this manual.	
		When iTM and PC are connected directly, check whether they are connected using the correct cable.	The LAN cable connecting the iTM and PC is a straight cable.	Connect the iTM and PC using a cross cable.	
The procedure described in this manual has not been followed.	Install again by following the procedure in this manual.				
DIII-NET	All management points on the same DIII-NET are experiencing communication error.	Check whether the DIII-NET cable is correctly connected to the iTM DIII-NET port.	The DIII-NET cable is not correctly connected to the iTM DIII-NET port.	Connect the DIII-NET cable to the correct iTM DIII-NET port.	
		Check whether the DIII-NET cable between the iTM and outdoor unit is correctly connected.	The DIII-NET cable between the iTM and outdoor unit is not correctly connected.	Correctly connect the DIII-NET cable to the iTM and outdoor unit.	
	Some of the management points are experiencing communication error.	Check whether the group address is set up for the management points.	The group address is not set up for the management points.	Set up the correct group address for the management points.	
		Check whether the number of connected indoor units is exceeding the maximum number of indoor units that can be connected.	The total number of connected indoor units exceeds 64 groups, 128 units.	The total number of connected indoor units must not exceed 64 groups, 128 units.	
		Check whether the total wire length is exceeding the guidelines.	The total wire length exceeds 2000m. (For shielded cords, the total wire length exceeds 1500m)	The total wire length must not exceed 2000m (1500m for shielded cords).	
		Check the status of the management points against the wiring diagram.	Connection is done to the wrong DIII-NET port.	Connect to the correct DIII-NET port.	
	A management point experiences communication error intermittently.	Check the wire used.	The wire used in DIII-NET has 3 or more cores.	Change to a wire with the designated specification.	
		Check the actual wire status against the wiring diagram.	The wiring on the DIII-NET is that of a branch wire after branching.	Connect DIII-NET again so that wiring does not become that of a branch wire after branching.	
		Check whether the number of connected indoor units is exceeding the maximum number of indoor units that can be connected.	The total number of connected indoor units exceeds 64 groups, 128 units.	The total number of connected indoor units must not exceed 64 groups, 128 units.	
		Check whether the total wire length is exceeding the guidelines.	The total wire length exceeds 2000m. (For shielded cords, the total wire length exceeds 1500m)	The total wire length must not exceed 2000m (1500m for shielded cords).	
		Check the connection status of DIII-NET pin terminals.	DIII-NET pin terminals are not firmly connected.	Connect DIII-NET pin terminals firmly.	
		Check the status of the terminal board.	There are three or more wires connected to one terminal.	Limit the number of wires to connect to one terminal to two.	
		Check the installation status of other units.	There is a source of noise around the DIII-NET.	Separate DIII-NET from the source of noise.	
	A "Duplicated parent centralized control on DIII port" is output.	Check whether there is any other central unit set up as parent.	There are multiple central units set up as "parent".		Disconnect all connectors for parent centralized control from central units other than the iTM. When an upper central unit is connected, disconnect the connector for parent centralized control from the iTM. (Change the DIII MASTER switch to SLAVE)
			A "DIII port transmission buffer overflow" message is output.	Check the wire used.	The wire used in DIII-NET has 3 or more cores.
	Check the actual wire status against the wiring diagram.	The wiring on the DIII-NET is that of a branch.		Connect DIII-NET again so that wiring does not become that of a branch.	
	Check the connection status of DIII-NET pin terminals.	DIII-NET pin terminals are not firmly connected.		Connect DIII-NET pin terminals firmly.	
	Check the installation status of other units.	There is a source of noise around the DIII-NET.		Separate DIII-NET from the source of noise.	

	Problem	Checking method	Cause	Measure
Air conditioner control	Air conditioners continue to work in cool mode though the room temperature is lower than the lower limit set up by the Temperature Limit function.	Check whether the subject indoor units have Changeover Option.	The subject indoor units are controlled by an upper unit with Changeover Option.	Check the Temperature Limit settings.
	Air conditioners continue to work in heat mode though the room temperature is higher than the upper limit set up by the Temperature Limit function.	Check whether the indoor units have Changeover Option.	The subject indoor units are controlled by an upper unit with Changeover Option.	Check the Temperature Limit settings.
	Indoor units working in automatic mode switches to heat (cool) mode spontaneously.	Check in the history whether the Temperature Limit function is running.	The subject indoor units are controlled by the Temperature Limit function.	Check the Temperature Limit settings.
		Check in the history whether the Auto Changeover function is running.	The subject indoor units are controlled by the Auto Changeover function.	Check the Auto Changeover settings.
		Check in the history whether switching between cool and heat modes is according to the Schedule function.	Switching between cool and heat modes is controlled by a schedule program.	Check the schedule program.
		Check the history whether switching between cool and heat modes is according to the Interlocking Control function.	Switching between cool and heat modes is controlled by an interlocking program.	Check the interlocking program.
		Check the history whether switching between cool and heat modes is carried out manually.	Switching between cool and heat modes is carried out manually.	
PPD	Cannot connect iTM to PPD engineering tool.	When iTM and PC are connected via hub, check whether they are correctly connected.	PC is not connected with iTM.	Connect the iTM and PC via hub using LAN cables.
			Cross cables are used as the LAN cables connecting the iTM and hub, and PC and hub.	Use straight cables as LAN cable for connecting the iTM and PC via hub.
			The hub is turned off.	Turn on the hub.
		Check that iTM is turned on.	The iTM is turned off.	Turn on the iTM.
		Check whether the network settings on the PC are in conformity with the settings described in this manual.	The network settings on the PC are incorrect.	Modify the network settings on the PC so that they are in conformity with the settings described in this manual.
		When iTM and PC are connected directly, check whether they are connected using the correct cable.	The LAN cable connecting the iTM and PC is a straight cable.	Connect the iTM and PC using a cross cable.
	A Firewall is installed on the PC.		Disable or delete the Firewall on the PC. (Be warned that disabling or deleting the firewall may expose the system to security vulnerabilities)	
	The pulse port is not displayed on the PPD setup tool.	Check whether the Pi management point is registered in iTM.	Pi management point is not registered.	Register the Pi management point.
	When trying to run a trial for the set up model on the PPD engineering tool, some of the indoor units are not automatically recognized.	Check whether the management points registered in iTM are experiencing communication error.	Indoor units are experiencing communication error.	Find and solve the cause of the communication error in the indoor units.
		Check whether the subject indoor units are included in the model database.	The subject indoor units are not included in the model database.	Check whether the engineering tool is the latest. Check with System Support if they are supported models. If they are supported models, ask their capacity and actual state. If they are models that must be set up manually, set them up manually.
	The calculated power measurement at the iTM is 1/10 of the detected kWh.	Check whether the pulse rate is "10" for the management point.	1 kWh/pulse is set up for pulse rate for the management point instead of the intended 10 kWh/pulse.	Re-set the pulse rate to 10 kWh/pulse.
	The calculated power measurement at the iTM is 10 times the detected kWh.	Check whether the pulse rate is "1" for the management point.	10 kWh/pulse is set up for pulse rate for the management point instead of the intended 1 kWh/pulse.	Re-set the pulse rate to 1 kWh/pulse.
	The pulse value does not increase for the displayed management point.	Check the port number to which the pulse signal wire is connected.	The pulse signal wire is not connected to the correct Pi port.	Connect the pulse signal wire to the correct Pi port.
		Check whether the detected kWh is increasing.	The detected kWh is not increasing.	Check whether the kWh meter is correctly connected.
	The total pulse value at the iTM does not match the detected PPD value.	Check the history whether a power failure signal has been input while iTM was being reset.	The pulse value has been partially lost while iTM was being reset.	Give explanation to users.
		Check the PPD engineering tool settings.	PPD was set to not distribute the consumed power while the air conditioners are stopped.	Check the PPD specification. If there is any problem, after consulting with the users, modify settings to distribute the consumed power while the air conditions are stopped.
	Consumed power has been distributed though operation time for the subject indoor unit is "0".	Check the PPD engineering tool settings.	PPD was set to distribute the consumed power also while the air conditioners are stopped.	Check the PPD settings. If there is any problem, after consulting with the users, modify settings to not distribute the consumed power while the air conditions are stopped.
Consumed power is "0" though the subject indoor unit is operating.	Check the operation mode of the indoor unit.	The operation mode was fan mode.	Check the PPD settings.	
		The thermostat was always OFF though the air conditioner was operating in cool or heat mode.	Check the PPD settings.	

2. iTM-Layout Screen Creation Tool

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Layout Screen Creation Tool

The Layout Screen Creation Tool, which is provided as part of the Preconfiguration Tool Set and available with the Layout Screen Functionality dealer option, allows you to create layout screens in advance. For information on how to log into the Preconfiguration Tool Set as well as the detailed description of the tool set, see the appropriate pages of the Commissioning Manual.

You need a separate PC to run the Layout Screen Creation Tool.

See the following table for the hardware and software requirements to run the Layout Screen Creation Tool:

Function	Requirement
PC to run the pre-engineering tool	OS: Windows XP Professional SP3 (32 bit) Windows VISTA Business SP2 (32 bit) Windows 7 Professional SP1 (32 bit, 64 bit) CPU: Intel Core 2 Duo 1.2 GHz or equivalent RAM: Minimum 2 GB or higher Free HDD Space: 10 GB or larger Network: 100BASE-TX or higher network connection Display Resolution: 1024 × 768 or higher *
Network	100Base-TX Real transfer rate: 115 kbps or higher
Supported security software	McAfee 2011 Norton 2011 Virus Buster 2011
Flash Player	Version 11.1
Web browser	Internet Explorer 8, 9 Firefox 10.0

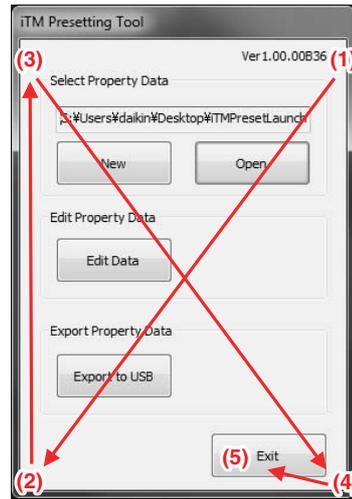
* When the height of the display resolution is 768 pixels, you should enable the "Auto-Hide the Task Bar" setting.

Use the following procedures to work with the Layout Screen Creation Tool:

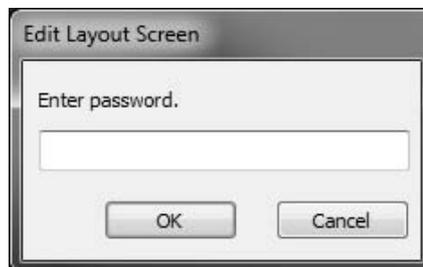
Launching the Layout Screen Creation Tool

1. Log into the Preconfiguration Tool Set and go to the Main Window.

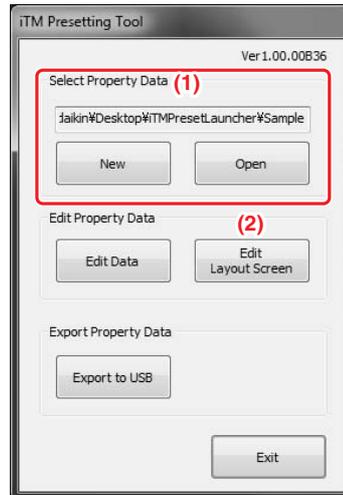
Main screen



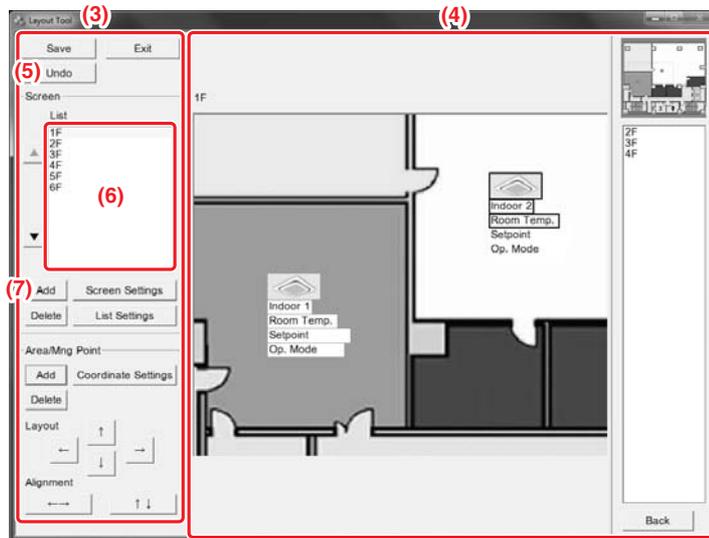
2. Click the four corners of the window in the ascending order of the numbers indicated on the figure above and finally click the Exit button to access the password prompt dialog box.



3. Enter "daikin" as the password and then click the OK button to bring up the following dialog box, which contains the Edit Layout Screen button.



4. Under the section numbered (1) in the figure above, create a folder for a new property or select the folder for an existing property. (For more information, see “4-7. Pre-engineering” in the Commissioning Manual (EM11A021 / EM11A022).
Click the **Edit Layout Screen** button (2) to bring up the Edit Screen window.



The Edit Screen window is divided into the operation pane (3) and the display pane (4). While you are editing the screen in the operation pane (3), the display pane (4) provides a preview of how the screen will be displayed on iTM. You can interact with the display pane (4) in the same way as when you are working within iTM; for more information, see the User's Manual (EM11A015 / EM11A017).

To edit the layout screen, you can perform actions such as adding, deleting, or moving areas or management points by left clicking the appropriate buttons in the operation pane (3). Alternatively, you can point to a certain part on the display pane (4) and then click the right mouse button or press the appropriate key to perform your desired action.

The following table provides a list of available mouse and keyboard actions:

Action		Target	
		Background image	Icon / auxiliary information
Mouse action	Left click	-	Select
	Left click & drag	Rubber band select	Move
	Right click	[Bring up a popup menu] Add an area or management point Set up the screen Set up the list	[Bring up a popup menu] Delete Set up the coordinates
Keyboard action	Delete key	-	Delete the selected displayed information
	Cursor keys	-	Move the selected displayed information
Keyboard action + mouse action	Ctrl key + left click	-	Select multiple items

Mouse and Keyboard Actions

During an edit session, you can undo the previous action by clicking the **Undo** button (5). You can undo up to 10 most recent actions since the last save, screen change, or delete operation.

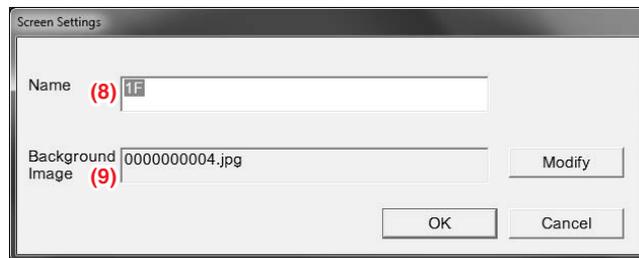
NOTE

Certain actions cannot be undone.

Setting Up the Screen

The screen list (6) in the operation pane (3) provides a list of registered screens. As you select a screen from this list, a preview of the selected screen appears in the display pane (4). You can assign up to 60 screens to a single property.

1. Click the **Add** button (7) to bring up the Screen Settings dialog box.



The text box (8) allows you to enter the screen name by accepting up to 20 characters.

The text box (9) allows you to specify the background image. To change the image to use as the background, click the Modify button. As the background image, you can use any JPEG image file up to 500 KB in size and containing a 600 pixel × 500 pixel to 1500 pixel × 1000 pixel image.

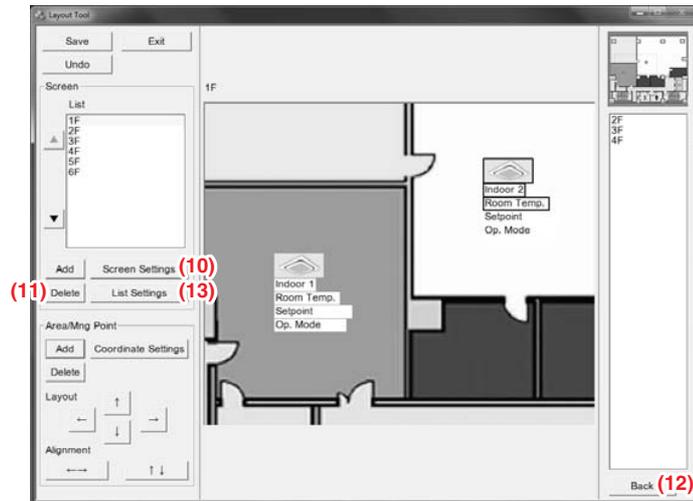
Click the OK button to save the changes and return to the Edit Screen window.

The background image you have just added appears at the bottom of the list.

You can reorder the screen list using the ▲ and ▼ buttons.

NOTE

The file name of the imported background image may be different from the original name because it is automatically converted for management in the tool when the layout data is saved.



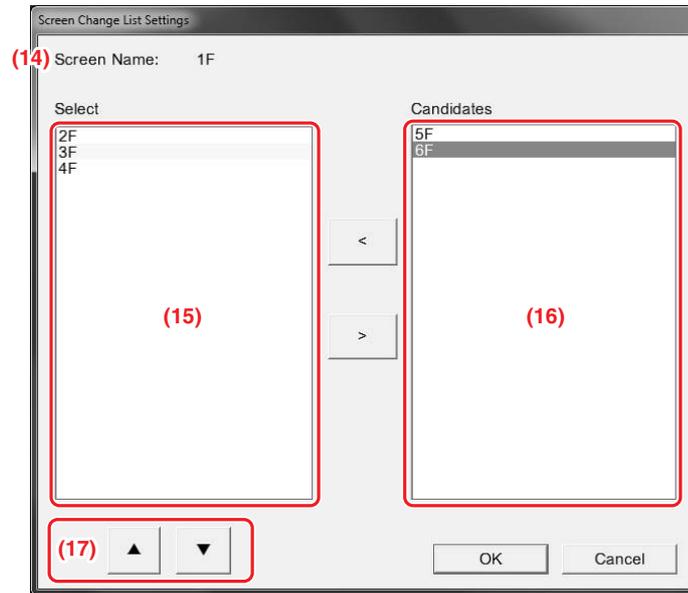
2. You can select a screen from the screen list and click the **Screen Settings** button (10) to bring up the Screen Settings dialog box, where you can change the name and background image of the screen (to do so, follow the instructions given in step 1).

If you want to delete a screen, select it from the screen list and click the **Delete** button (11). You can then delete the screen by clicking the OK button on the confirmation dialog box that appears. Click the **Back** button (12) to go back to the previous screen. You can go back up to 10 screens.

NOTE

Once you have deleted a screen, you cannot recover the deleted screen since the Undo button cannot be used to undo the deletion. Take extreme care.

3. Click the **List Settings** button (13) to bring up the Screen Change List Settings dialog box.



The name of the currently selected screen is displayed in the field numbered (14) in the figure above. This window allows you to set up the contents of the Screen Change List associated with the currently selected screen.

The list (15) displays the screens currently included in the Change List.

The list (16) shows screens available for inclusion in the Change List.

To include an available screen in the Change List, select the screen from the list (16) and then click the < button to move it to the list (15).

To exclude a screen from the Change List, select the screen from the list (15) and then click the > button to move it to the list (16).

To reorder the contents of the list (15), use the ▲ or ▼ button (17).

Click the OK button to save the changes and return to the Edit Screen window.

NOTE

You need to make the screen change list setting for each screen.

During operation by iTM, the list specified for each screen is displayed and you can switch to only the screens shown in the list.

Example)

Screen A

Screen change list setting
Screen B
Screen C
Screen D

Screen B

Screen change list setting
Screen A
Screen C

Screen C

Screen change list setting
Screen A
Screen B

Screen D

Screen change list setting
Screen A

Changable screens

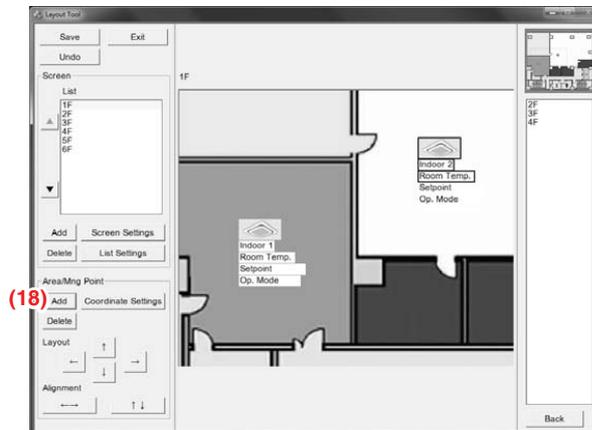
	A	B	C	D
A		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B	<input type="radio"/>		<input type="radio"/>	x
C	<input type="radio"/>	<input type="radio"/>		x
D	<input type="radio"/>	x	x	

By using the screen change list setting, you can limit the screen change; for example changing to a specific screen can be limited to only from specified screens.

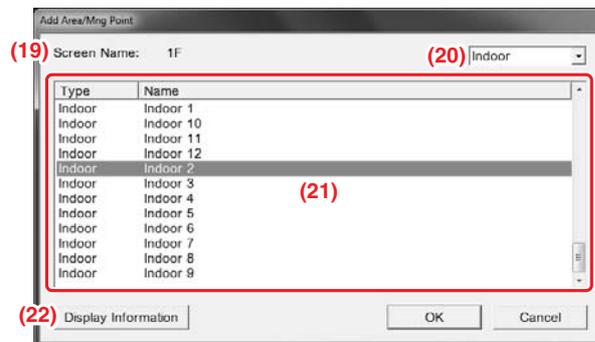
In the example above, changing to the screen D is possible only from the screen A.

Make the setting of changable screens according to the customer demand.

Adding and Editing Areas or Management Points



1. Click the **Add** button (18) to bring up the Add Area / Mng Point dialog box.



The name of the screen to add areas or management points is displayed in (19).

This dialog box does not display any of the automatically generated default areas.

From the Type combo box (20), choose one of the following types: All, Indoor, Ventilator, Analog, Pulse, Outdoor, Area. Select areas and/or management points you want to add from the list (21), which is now populated with a list of areas and management points available with your selected type. You can add up to 20 items at the same time.

2. Click the **Display Information** button (22) to bring up the Displayed Information Settings dialog box, where you can set up the displayed information for your selected areas or management points. The Displayed Information Setup dialog box has 8 tabs that correspond to the types of your selected areas or management points. Each tab provides a number of check boxes that control the display of various items. All of the items checked on the tabs will be displayed on the layout screen. By factory default, all the items are checked. So be sure to uncheck any items that you do not want to have displayed.



Displayed Information Settings dialog box (Indoor tab)



Displayed Information Settings dialog box (Ventilator tab)



Displayed Information Settings dialog box (Dio tab)



Displayed Information Settings dialog box (Analog tab)



Displayed Information Settings dialog box (Pulse tab)



Displayed Information Settings dialog box (Outdoor tab)



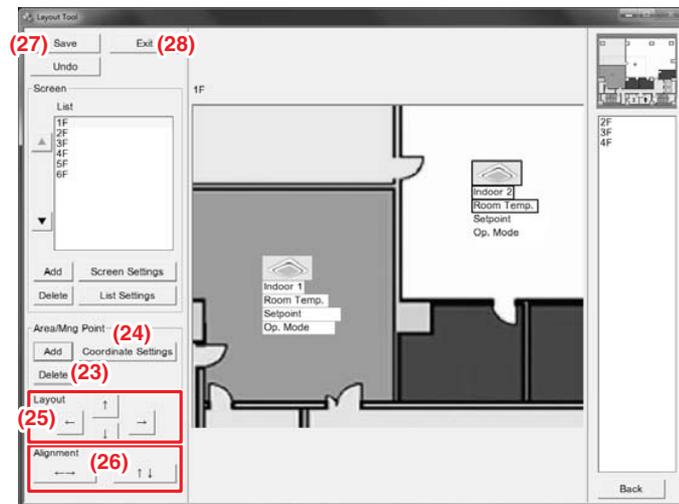
Displayed Information Settings dialog box (Chiller tab)



Displayed Information Settings dialog box (Area tab)

When you are done, click the OK button to save changes and return to the Add Area / Mng Point dialog box.

3. When you finish selecting the areas and management points, click the OK button to close the Add Area / Mng Point dialog box and return to the Edit Screen window.



4. The areas and management points you have just added are displayed on the screen. To delete an area or management point, select the area or management point and then click the **Delete** button (23).

To move an area or management point, select the area or management point using the mouse and drag it to a new location. Alternatively, click the **Coordinate Settings** button (24) and then enter the desired coordinates (in pixels) to move the area or management point to your specified location. The origin of coordinates is located at the upper left corner of the background image with the X axis extending positively from left to right and with the Y axis extending positively from up to down.

You can use the **Layout** buttons (25) to align vertically or horizontally multiple areas or management points.

← button: Aligns the left edges of the selected areas or management points to the left edge of the leftmost of them.

→ button: Aligns the right edges of the selected areas or management points to the right edge of the rightmost of them.

↑ button: Aligns the upper edges of the selected areas or management points to the upper edge of the uppermost of them.

↓ button: Aligns the lower edges of the selected areas or management points to the lower edge of the lowermost of them.

You can use the **Alignment** buttons (26) to evenly arrange (justify) vertically or horizontally multiple areas or management points.

←→ button: Anchors in place the selected areas or management points with the leftmost left edge and with the rightmost right edge and justifies horizontally all the other in between.

↑↓ button: Anchors in place the selected areas or management points with the uppermost upper edge and with the lowermost lower edge and justifies vertically all the other in between.

NOTE

- The Alignment buttons are for aligning “display areas”. The areas may not be evenly displayed on iTM depending on the number of displayed characters.
- The icon size is fixed to 76 px (W) x 38 px (H) and cannot be changed.
- Up to 100 icons can be displayed on a screen.

5. When you are done configuring all necessary settings, click the **Save** button (27) to save the changes to the layout screen data, and then click the **Exit** button (28) to return to the Preconfiguration Tool Set.

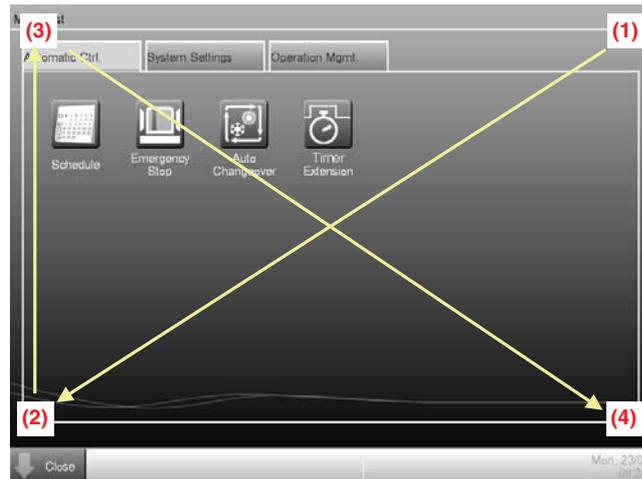
NOTE

Once you have saved a screen using the Save button, you cannot revert the screen to the previous state since the Undo button cannot be used to undo the save. Take extreme care.

Exporting the Screen Data Output

When you want to use the Layout Screen Creation Tool to work on the data of an existing property created in the iTM unit, you can export the data from iTM to a USB memory storage device. To do so, use the following procedures:

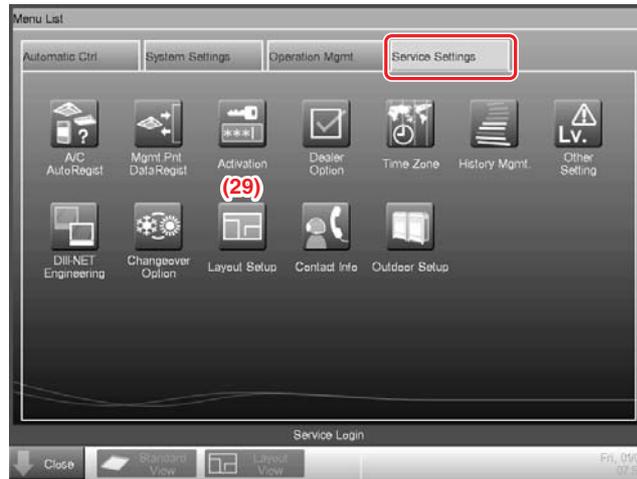
1. On iTM Standard View window, touch the Menu List button to bring up the Menu List window.



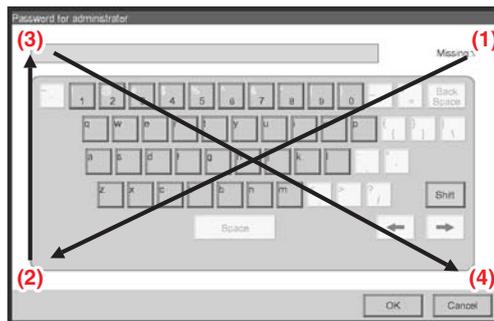
2. Touch the four corners of the screen in the indicated order. The Password Input dialog appears.



3. Enter the service password "daikin" and touch the OK button to log into the SE Mode.



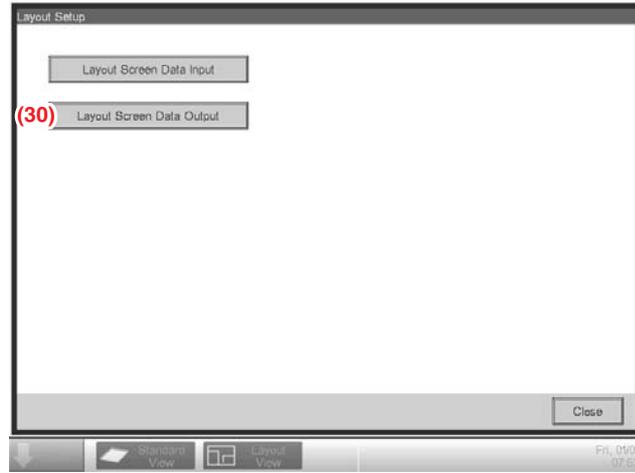
Furthermore, if the screen is locked, entering the service password instead of the administrator password after carrying out the special operation indicated below, allows you to unlock the screen and log into the SE Mode.



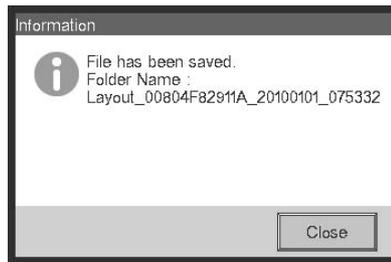
4. Touch the **Layout Setup** button (29) to bring up the Layout Setup window.

NOTE

The Layout Setup button is not displayed when the iTM unit does not contain any layout screen data.



5. Insert the USB memory storage device into iTM unit and then touch the **Layout Screen Data Output** button (30). Export the data by touching the Yes button on the confirmation dialog box that appears.



When the data has been exported, the folder where the data is stored is displayed on the dialog box. Take note of the folder and then touch the Close button to exit.

Importing the Layout Screen Data

After you have edited layout screen data in the Preconfiguration Tool Set, you can save the data on a USB memory storage device and import it into iTM unit. To do so, use the following procedures:
For more information on how to save data on a USB memory storage device, see “4-7. Pre-engineering” in the Commissioning Manual (EM11A021 / EM11A022).

1. Open the Service Settings tab and touch the Layout Setup button to bring up the Layout Setup window.



2. Insert the USB memory storage device into the iTM unit and then touch the **Layout Screen Data Input** button (31). Import the data by touching the Yes button on the confirmation dialog box that appears.
When the data has been imported, iTM restarts automatically.

3. iTM-External Management Points

Contents

- External Management Points 2**
 - System Configuration 2
 - Communications Link Specifications 3
 - Management Point Mapping..... 4
 - Supported I/O Modules 5
 - Connection with iTM..... 6
 - Precautions for Connecting Modules to iTM..... 7
 - Registering External Management Points 8
 - CSV file format 17

External Management Points

iTM allows you to register external I/O systems (WAGO I/O SYSTEM) as management points so that they can be monitored and managed.

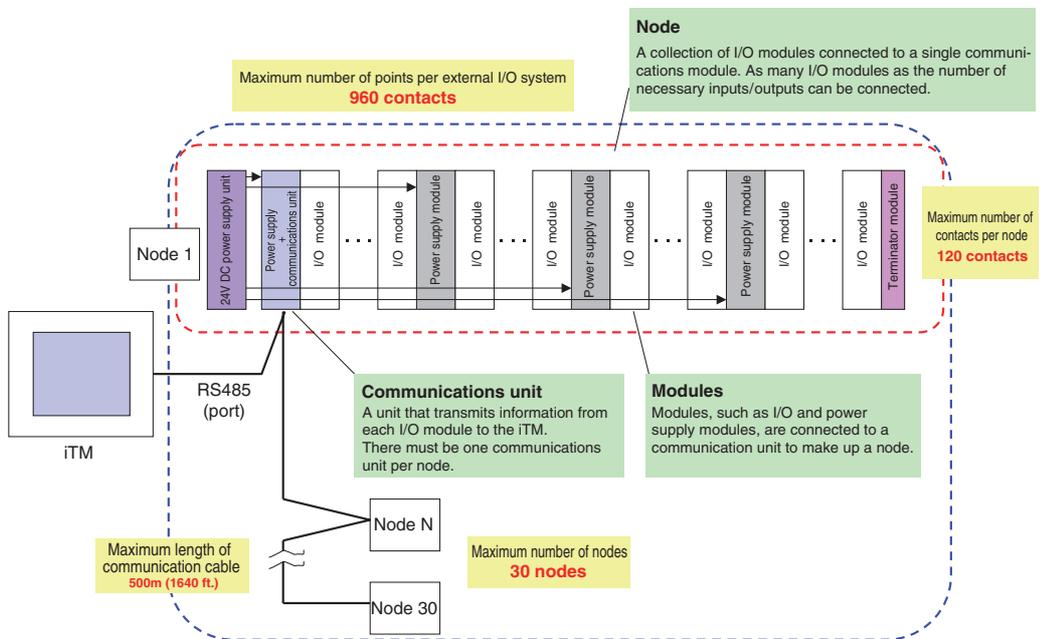
External Di, Do, and Ai management points are collectively referred to as “External management points”.

For more information on how to use and configure various modules, see the manuals that come with the respective products.

This manual describes how iTM handles External management points and provides procedures for registering as External management points.

System Configuration

The following diagram illustrates how the system can be configured using External management points:



Maximum Value Supported by the System

Item	Maximum
The number of the contacts of external I/O systems that can be monitored by a single iTM unit	960 contacts*
The maximum number of External management points that can be registered with iTM unit	512 management points
The number of contacts that can be monitored per external node	120 contacts
The number of external nodes that can be monitored by a single iTM unit	30 nodes

*Although there can theoretically be up to 960 contacts, iTM only accepts up to 512 External management points for registration. This means that, for example, the system can only manage up to 512 contacts when the ratio of contacts to management points is 1:1.

Communications Link Specifications

The communications link between the iTM unit and each external module must meet the following specifications:

Communications Link Specifications

Item	Specification	
Transfer/Medium	Shielded copper cable / 2 (4) x 0.25 mm ² (2 (4) x AWG 24)	
Electrical specification	RS-485	
Communications link type	Dual wire	
Synchronization method	Asynchronous communication	
Connection form	1:N	
Maximum number of connected nodes	30 nodes	
Communication distance	500 m (1640 ft.) at a maximum (total length)	
Communication rate	115,200 bps	
Data format	Data length	8 bit
	Stop bit	1 bit
	Parity	No parity
Error detection	CRC-16	

Management Point Mapping

The following table describes the mapping between External management points and I/O modules:

Mapping between management points and I/O modules

Management point	I/O	I/O modules		
		Di	Do	Ai
External Di	Operational state	○		
	Normal/error status	○*		
External Dio (constant contact)	Operational state	○		
	Normal/error status	○*		
	Stopped state		○	
External Dio (instantaneous contact)	Operational state	○*		
	Normal/error status	○*		
	Instantaneously ON		○	
	Instantaneously OFF		○	
External Ai	Analogue input			○

*These contacts can be optionally specified when External management points are registered. If a management point is registered without specifying a particular contact, then the system does not monitor that contact assuming that there is no input from the contact.

Supported I/O Modules

The following table provides a list of supported I/O modules along with the specifications of External management points that correspond to them:

Supported I/O Modules

I/O module type	Number of input /output contacts per module	Specification	Model number
Di	2 contacts / 4 contacts	No-voltage contact input Contact rating: 24 V DC / 4.5 mA	750-400 (2 contacts) 750-432 (4 contacts)
Do	2 contacts	No-voltage contact output Contact rating: 230 V AC / 30 V DC, 2 A	750-513/000-001 (2 contacts)
Ai	2 contacts	Rated at 4 to 20 mA: 12 bit accuracy Rated at -10 to 10 V: 13 bit accuracy	750-454 (2 contacts / current) 750-479 (2 contacts / voltage)
Thermistor	2 contacts	NTC20K thermistor*	750-461/020-000 (2 contacts)

*The input from a thermistor will be scaled automatically. Therefore, the maximum and minimum analog values are not set.

Also note that, besides the above I/O modules, there are required external modules as shown in the following table.

The optional power supply module listed in the table will be required when you connect 33 or more input / output contacts to a single node.

Required / Optional Modules Besides Supported I/O Modules

	Module type	Specification	Model number
Required Modules	24 V DC power supply unit	100/240 V AC→24 V DC, 2.5 A	787-712
	Communications unit (Bus coupler)	RS-485, Max:115.2kbps, not programmable	750-315/000-002/K190-6442 (Daikin custom) *1
	Connector (*2)	–	750-960
	Terminator module	–	750-600
Optional Modules	Power supply module	IN: 24 V DC, OUT: 5 V DC	750-613

*1. Connecting a node with a communications unit that does not match any of the model numbers specified above would cause a communication error in that node.

*2. This connector must be attached to a communications unit that is connected to the RS485 port (2-pin) of the iTM unit.

Connection with iTM

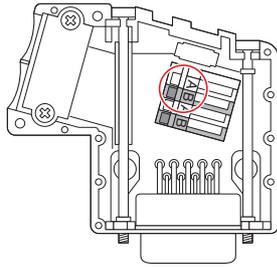
To connect iTM and the I/O module, use the connector (750-960).

Connect the A terminal of connector to the RS-485 “-” terminal on the back of iTM.

Connect the B terminal of connector to the RS-485 “+” terminal on the back of iTM.

See the conceptual connection diagram below before starting connection.

<Connector (750-960)>



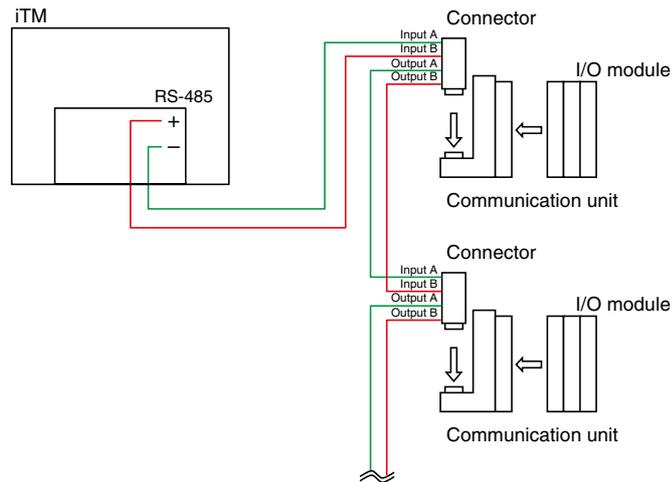
The connector has two sets of two A and two B terminals.

In the left figure, the one set circled is for input side.

Connect iTM to the input side.

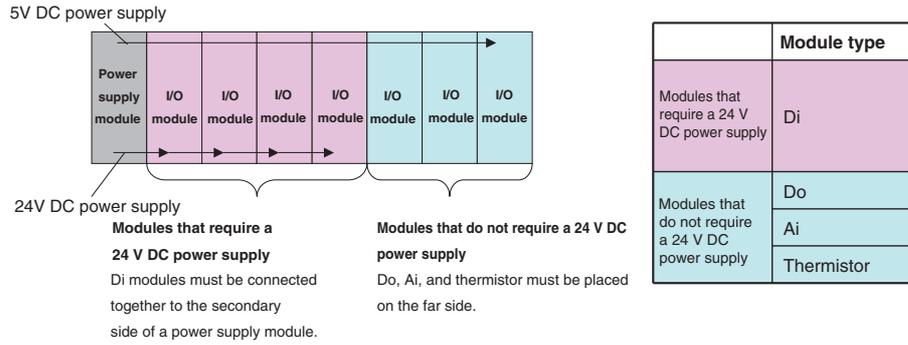
The other set is for output side, to which any other node is connected.

<Conceptual connection diagram>



Precautions for Connecting Modules to iTM

1. All nodes connected to a Pi module must be consisted of Pi modules only.
2. All modules that require a 24 V DC power supply must be connected together to the secondary side of a power supply module.



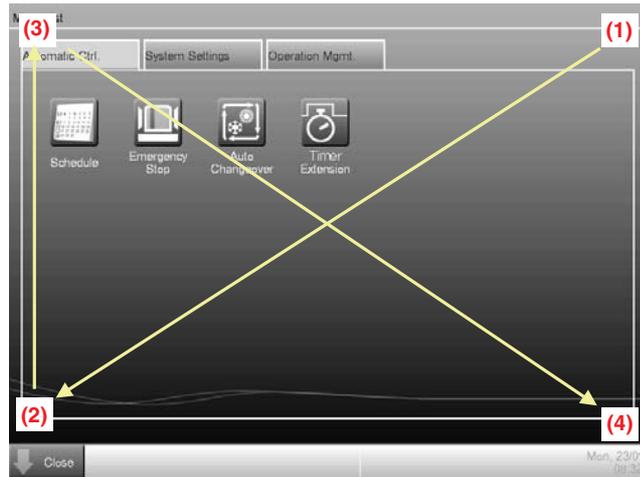
3. Every 32 input / output contacts that do not require a 24 V DC power supply must connected to a power supply module.
There can be up to 120 contacts per node.

Registering External Management Points

iTM provides a feature to automatically register air conditioners but this function cannot be used to register External management points. Instead, you can register External management points either manually or loading a CSV file.

To register External management points with the iTM unit, use the following procedures:

1. Display the Menu List screen.



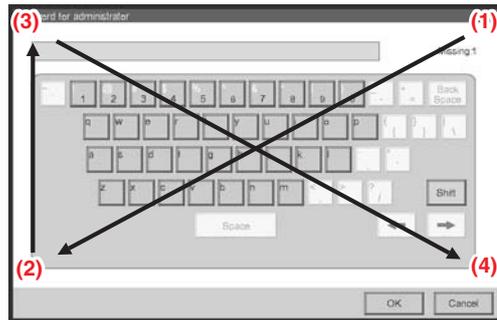
2. Touch the four corners of the screen in the indicated order. The Password Input dialog appears.



3. Enter the service password (daikin) and touch the OK button to log into the SE Mode.

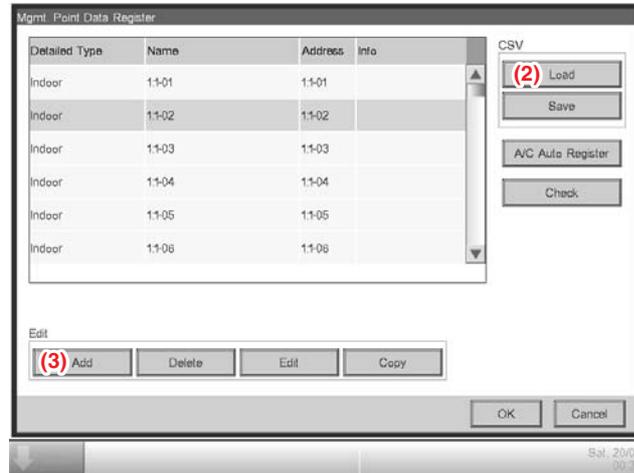


Furthermore, if the screen is locked, entering the service password instead of the administrator password after carrying out the special operation indicated below, allows you to unlock the screen and log into the SE Mode.



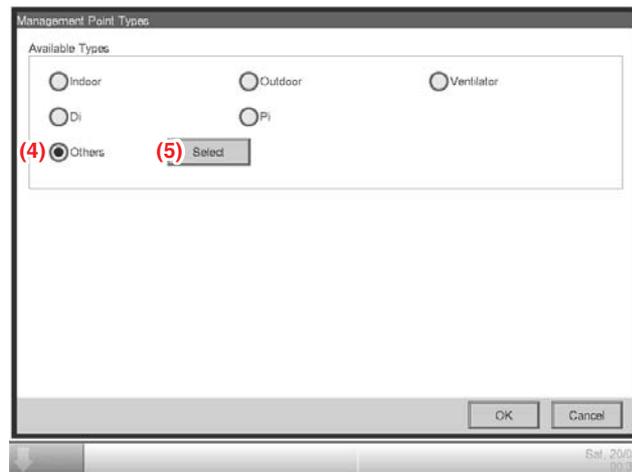
6

4. On the Service Settings tab, touch the **Mgmt. Pnt Data Regist** button (1) to bring up the Mgmt. Point Data Register window.

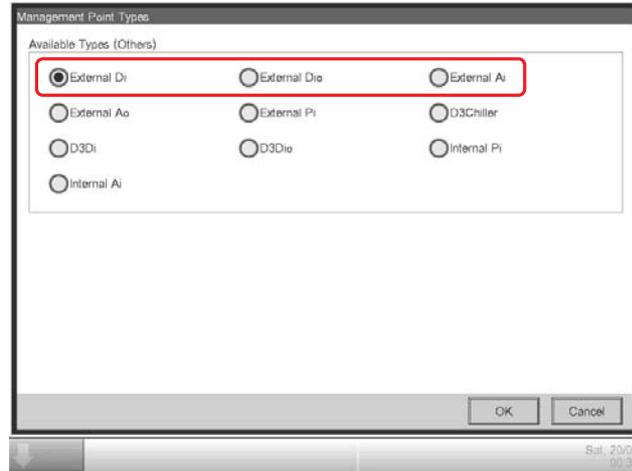


When you want to use a saved CSV file, touch the **Load** button (2).

If you choose to manually enter management point data, touch the **Add** button (3) to bring up the Management Point Types window.



Select **Others** (4) and touch the **Select** button (5) to bring up the window where you can select other management point types.



Select your desired External management point type. Then touch the OK button to save changes and return to the previous window.

Remark: External Ao or External Pi are not supported by this model.

Touch the OK button on the Management Point Types window to bring up the Management Point Attributes window.

NOTE

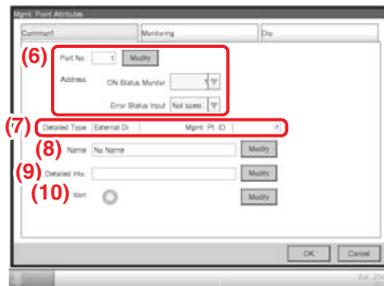
Register a thermistor on “External Ai”.

5. Configure the detailed External management point settings as instructed below:

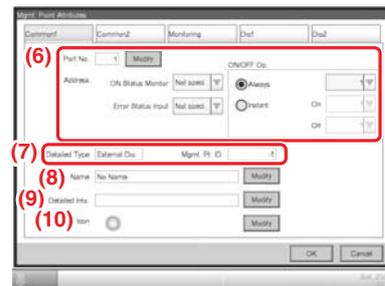
The Management Point Attributes window displays different tabs with different fields depending on your selected External management point type.

The following is the description of each tab and the fields displayed on the tab. To configure the detailed settings, you navigate from tab to tab and fill in all fields on each tab either by entering the appropriate information in an input dialog box that pops up when you touch the Modify button next to the field or by selecting one of the available choices if the field is a combo box or spin box.

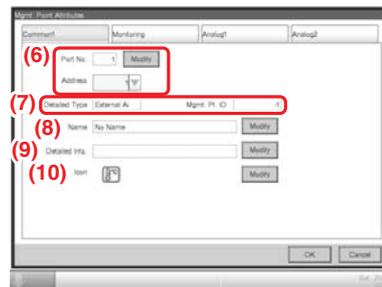
• Common 1 Tab



<External Di>



<External Dio>



<External Ai>

(6) Port No. text field, **Address** combo box

These fields should be filled in with the port number and address, respectively. Duplicated addresses cannot be registered. All addresses must be different. For the External Di and External Dio types, however, you can also specify “no address”. Also note that, between the Di and Do type modules, duplicated addresses may be registered.

The port number of an External management point must match the node address assigned to the communications unit and fall within the range of 1 to 30.

Ai modules and thermistor modules should be assigned consecutive addresses.

(7) Detailed Type / Mgmt. Pt. ID field

These fields are repopulated with the type of the External management point and the management point ID automatically assigned by the system, respectively. However, you cannot modify it here.

(8) Name text field

Fill in with the name of the External management point.

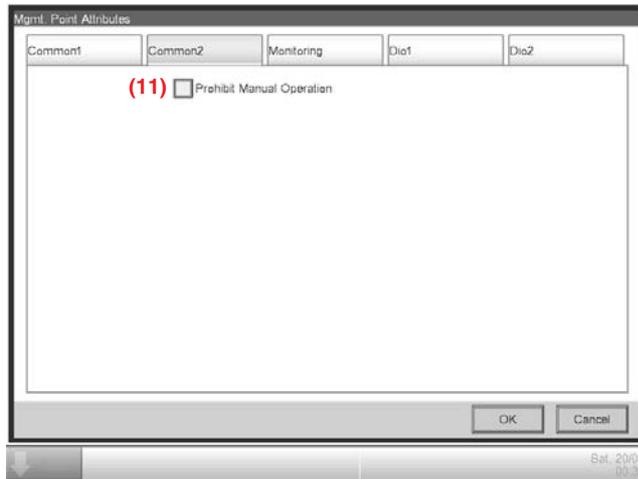
(9) Detailed Info. text field

Fill in with detailed information, up to 50 characters long, on the management point as needed.

(10) Icon field

Use this field to specify the icon for the External management point.

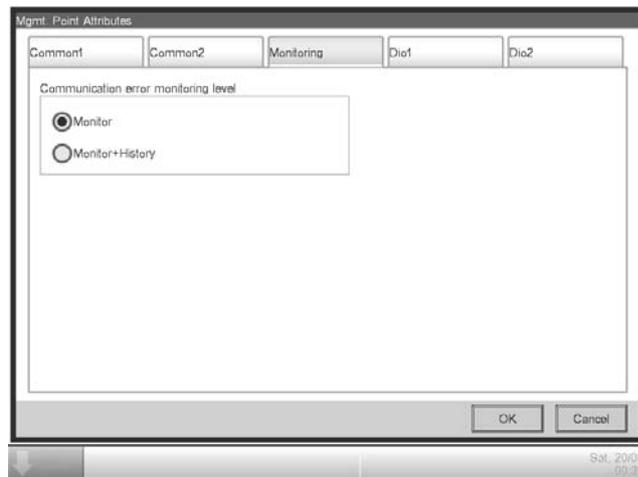
• **Common 2 Tab**



(11) Prohibit Manual Operation check box

Select the check box when prohibiting manual operation from the iTM.

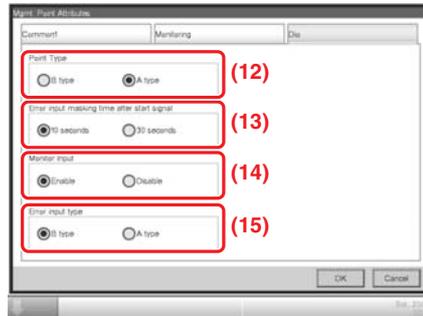
• **Monitoring Tab**



On this tab, you can specify at what level to monitor the External management point for any communication errors.

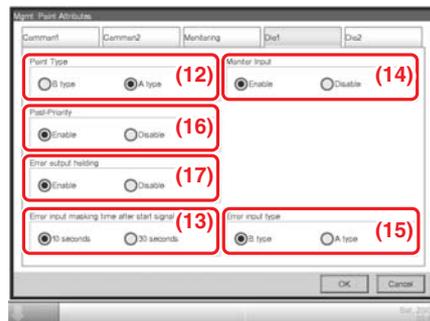
Select either the “Monitor” or “Monitor + History” radio button.

• Dio Tab

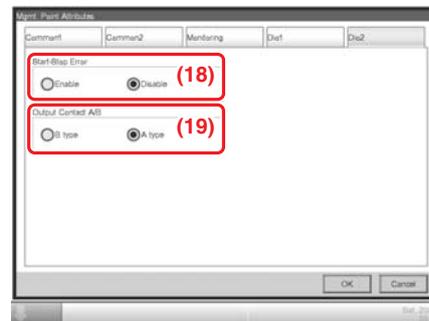


<External Di>

Dio 1



Dio 2



<External Dio>

(12) Point Type radio button

Specify the contact type for the External management point by selecting either the “B type” or “A type” radio button.

(13) Error input masking time after start signal radio button

Set the error input masking time after start signal to either 10 seconds or 30 seconds. Start up error occurs if the External Dio cannot start even after the time set up here elapses from the moment the start signal has been received.

(14) Monitor Input radio button

Specify whether to Enable or Disable the error detection when the External management point is in stopped state.

(15) Error input type radio button

Specify the error input type by choosing either “B type” or “A type”.

(16) Post-Priority radio button

Specify whether to Enable or Disable post-priority.

(17) Error output holding radio button

Specify whether to shut down (stop) the output upon error detection by choosing either “Enable” or “Disable”.

(18) Start-Stop Error radio button

Specify whether to detect start-stop errors by choosing either “Enable” or “Disable”.

(19) Output Contact A/B radio button

Specify the output contact type by choosing either “B type” or “A type”.

- **Analog Tab**

Analog 1
Analog 2

<External Ai>

(20) Unit Label text field

Enter the unit string, up to 8 characters long.

(21) Hysteresis text field

Sets up the hysteresis.

(22) Lower Limit field

Sets up the lower limit and monitoring status for lower limit error monitoring.

For the lower limit, touch the Modify button and enter it in the Numerical Input dialog that appears.

For the monitoring status, select from Disable, Monitoring, and Monitor + History from the combo box.

(23) Upper Limit field

Sets up the upper limit and monitoring status for upper limit error monitoring.

For the upper limit, touch the Modify button and enter it in the Numerical Input dialog that appears.

For the monitoring status, select from Disable, Monitoring, and Monitor + History from the combo box.

(24) Analog Type radio button

Specify the analogue value type by choosing either “Temperature” or “Other”.

(25) Unit Type radio button

Select the unit type of External Ai either “Thermistor” or “Other”. The unit type cannot be configured when Other is selected in Analog Type **(24)**.

Selecting Thermistor sets the Minimum value and Maximum value text fields **(26)** to –512.0 and 512.0 (or –890 and 954 in Fahrenheit), respectively, which cannot be changed.

(26) Minimum Value / Maximum Value text fields

Sets up the physical quantities corresponding to the minimum and maximum analog value input signals.

NOTE

See the table below for the range settable by touching the Modify button.

Management point type	Classification	Item	For Celsius		For Fahrenheit		For analog value	
			Minimum / Maximum value (Default value)	Increments	Minimum / Maximum value (Default value)	Increments	Minimum / Maximum value (Default value)	Increments
External Ai	Upper / lower limit monitoring	Hysteresis	0.0 to 512.0 (0.0)	0.1	0 to 922 (0)	1	0.00 to 9999.99 (0.00)	0.01
		Lower limit	–512.0 to 512.0 (0.0)	0.1	–890 to 954 (32)	1	–9999.99 to 9999.99 (0.00)	0.01
		Upper limit	–512.0 to 512.0 (0.0)	0.1	–890 to 954 (32)	1	–9999.99 to 9999.99 (0.00)	0.01
	Analog value	Minimum value	–512.0 to 512.0 (0.0 / –512.0) *	0.1	–890 to 954 (32 / –890) *	1	–9999.99 to 9999.99 (0.00)	0.01
		Maximum value	–512.0 to 512.0 (100.0 / 512.0) *	0.1	–890 to 954 (212 / 954) *	1	–9999.99 to 9999.99 (100.00)	0.01

* The former or latter value will be used depending on whether Unit Type is Other or Thermistor, respectively.
 (When loading a CSV file with Thermistor selected, the default value will be used regardless of the input data.)

When finished with all the tabs, touch the OK button to save the settings and return to the main Mgmt. Point Data Register screen.

You have now completed the registration of External management points by following the procedures above. For information on how to register and configure other management points, see the Commissioning Manual (EM11A021/EM11A022).

CSV file format

The format of the CSV file output from the iTM is as shown below. A CSV file output when no management point data is registered can be used as a template for new implementations since only the area used by the system and the header portion are output.

The following table shows the CSV format for management point data registration.

- Numeric values indicated in each item correspond to the column number in the CSV file (the first column is fixed and used for data type identification). Blank items indicate there is no applicable data.

Classification	Keyword	Description	Value	Management point type		
				External Ai	External Di	External Dio
Common	—	Header type identification	—	EXTERNAL AI-H	EXTERNAL DI-H	EXTERNAL DIO-H
	—	Data type identification	—	EXTERNAL AI-D	EXTERNAL DI-D	EXTERNAL DIO-D
	POINTID	Management point ID	101 to 1000000	2		
	NAME	Name	String (1 to 12 characters regardless of single or double byte)	3		
	DETAILEDINFO	Detailed information	String (0 to 50 characters regardless of single or double byte)	4		
	PROHIBITOP	Prohibit manual operation	0: Allowed, 1: Prohibited			5
	PORTNO	Port number	D3, Internal Pi, Main unit: 1 to 8 External: 1 to 30	5	5	6
	ADDRESS1	Upper level address (group)	D3: 1 to 4 External: 1 to 120 Internal Pi: 1 to 127 Outdoor unit: 1 to 127 Main unit: 1 to 4 (2 to 4 for Port 1)	6		
	ADDRESS2	Lower level address (unit)	D3Dio, D3Di, Indoor unit, Ventilator, Chiller: 0 to 15			
	STARTSTOPMON	ON Status Monitor	External Di: 1 to 120 External Dio: ON Status Monitor address 1 to 120 Not specified: 0		6	7
	NORMALABNORMALMON	Normal/Abnormal Monitor	Normal/Abnormal Monitor Input address 1 to 120 Not specified: 0		7	8
	STARTSTOP	ON/OFF operation	0: Always 1: Instant			9
	STARTSTOPADDR1	Start/Stop address 1	Always: 1 to 120 Instant: ON address 1 to 120			10
	STARTSTOPADDR2	Start/Stop address 2	Always: Handled as invalid Instant: OFF address 1 to 120			11
ICON	Icon ID	100 to 999	7	8	12	
ANADDR	ACNSS Address	Indoor unit (2 to 128, 1: Invalid)				
Monitoring	COMMONLV	Communication error monitoring level	1: Monitoring, 2: Monitor + History	8	9	13

Classification	Keyword	Description	Value	Management point type		
				External Ai	External Di	External Dio
Di/Dio	DIMODE	Di Operation mode	0: Normal, 1: Equipment error input			
	CPTYPE	Point type	0: B type, 1: A type		10	14
	LATEROPE	Post-Priority	0: Disable, 1: Enable			15
	ABNORMALOP	Error output holding	0: Disable, 1: Enable			16
	STARTFAIL	Error Mask Time after operation input	0: 10 seconds, 1: 30 seconds		11	17
	MONITORIN	Monitor input	0: Disable, 1: Enable		12	18
	ABNORMAL INPUT	Error input detection	0: B type, 1: A type		13	19
	STARTSTOP FAILURE	Start/Stop error	0: Disable, 1: Enable			20
	OUTPUTSPECCONTACT	Output contact	0: B type, 1: A type			21
Ai	UNITSTR	Unit string	String (0 to 8 characters regardless of single or double byte) For Internal Ai: <ul style="list-style-type: none"> Set to "°C" or "°F" depending on the System Settings if any reference management point exists. Set to "..." if no reference management point exists. For other management points: Set to "°C" or "°F" depending on the System Settings, except when the Analog type is Temperature.	9		
	TARGETID	Target management point	Management point ID (indoor unit, chiller), -1: Not specified			
	TARGETTYPE	Measured analog value	1: Suction temperature, 2: Setpoint (Indoor unit) 1: Water inlet temperature, 2: Water outlet temperature (Chiller)			
	ANALOGTYPE	Analog type	0: Normal, 1: Temperature	10		
	UNITTYPE	Unit type	0: Thermistor, 1: Other	11		
	MARGIN	Hysteresis	See page 16.	12		
	UPPERVAL	Upper limit	See page 16.	13		
	LOWERVAL	Lower limit	See page 16.	14		
	ULMMONLV	Upper limit monitoring level	0: Disable, 1: Monitoring, 2: Monitor + History	15		
	LLMMONLV	Lower limit monitoring level	0: Disable, 1: Monitoring, 2: Monitor + History	16		
	MINVAL	Minimum value	See page 16.	17		
	MAXVAL	Maximum value	See page 16.	18		

4. iTM-Power Proportional Distribution Setup

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- Precautions to Take Before Commissioning 2
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- How the Proportional Distribution Calculations are affected by the
Start and End of Daylight Saving Time..... 38



Commissioning for Power Proportional Distribution

Power Proportional Distribution is a function that proportionally distributes the total power used by the air conditioners in a rental building and the like, measured using an electricity meter among the tenants. Proportional distribution calculation can also be exported to a CSV file.

Commissioning is required before Power Proportional Distribution can be used.

The commissioning process can be divided into the following three major steps:

1. Activate the Power Proportional Distribution function on the iTM unit. For more information, see “5-1. Activation” in the Commissioning Manual (EM11A021/EM11A022).
2. Perform commissioning tasks from the iTM unit. For more information, see “10-1. Power Proportional Distribution Function” in the User’s Manual (EM11A015/EM11A017).
3. Perform the commissioning tasks from the service PC using the procedures described herein.

Preparation for Commissioning

Prepare a PC for use in the commissioning for Power Proportional Distribution. The service PC must meet the following requirements:

OS: Windows XP SP3

CPU: Pentium III 800MHz or equivalent at a minimum

RAM: 256 MB or higher

HDD: 2 MB or larger free space

Network: Ethernet 10BASE-T or higher network connection

Other: 800 × 600 or higher resolution and a video card capable of displaying 256 colours

OS: Windows Vista SP2/Windows7 SP1

CPU: Intel Core2 CPU 1.86GHz or equivalent

RAM: 1GB or higher

HDD: 2 MB or larger free space

Network: Ethernet 100BASE-T or higher network connection

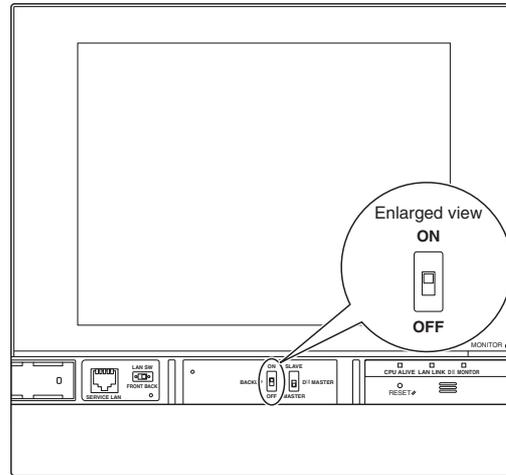
Other: 800 × 600 or higher resolution and a video card capable of displaying 256 colours

Precautions to Take Before Commissioning

• Check the Backup Battery Enable Switch

Before commencing the commissioning process for Power Proportional Distribution, make sure that the backup battery enable switch of the iTM unit is turned on.

If the backup battery enable switch is not turned on, proportional distribution calculations will be lost when the power is lost.



Flip up the switch to turn it ON.

• **Actions That Result in the Loss of Proportional Distribution Calculations**

Caution: If your system is configured as follows, performing any of the following actions will result in the loss of all proportional distribution calculations that have been made so far:

[System configuration]

intelligent Touch Manager

Power Proportional Distribution Software

Any system configured with the combination of the above two.

[Actions that result in the loss of proportional distribution calculations]

- Initialization of all proportional distribution data
- Addition of a proportional distribution group
- Deletion of a proportional distribution group
- Modification of a proportional distribution group

Caution: When there are multiple proportional distribution groups and the proportional distribution calculation is in progress for one or more of them, modifying, adding, or deleting another group will cause the loss of the groups whose calculation is in progress.

[Workaround]

Before performing any of the above mentioned actions that result in the loss of proportional distribution calculations, sum up all of the proportional distribution calculations that have been made so far, and save the aggregated results on a USB memory storage device.

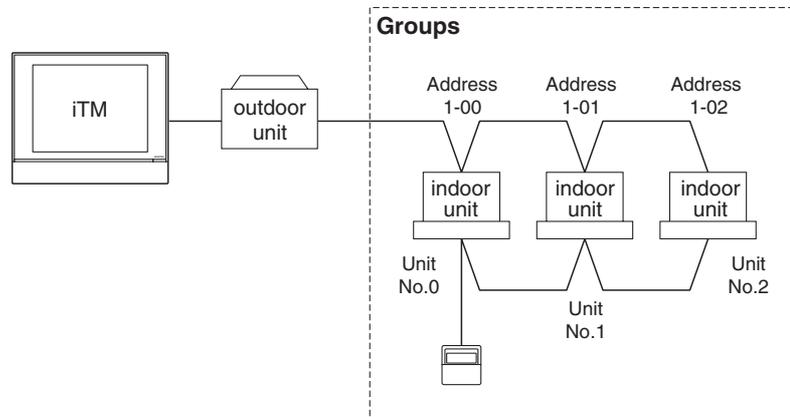
NOTE

For information on how to save proportional distribution calculations, see the User's Manual (EM11A015/EM11A017).

• **Configure the Addresses for Remote Controller Group Control**

If Remote Controller Group Control is applied within the system where proportional distribution will be performed, you must assign central control addresses to all the slave remote controllers that belong to the groups. Otherwise, none of the indoor units controlled by the slave remote controllers can take advantage of proportional distribution.

To configure the addresses, use the following procedures:

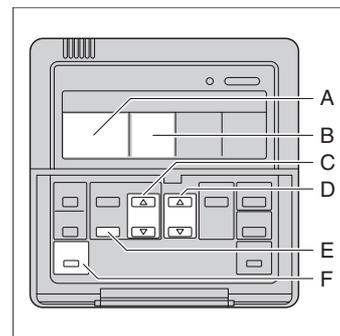


When using a Wired remote controller:

The Wired remote controller's buttons and areas identified below will be used during this procedure:

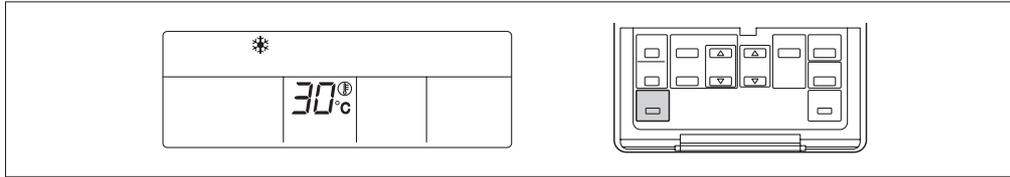
- A Address display area
- B Parameter number display area
- C Programming time buttons
- D Temperature setting buttons
- E Timer ON/OFF button
- F Inspection / Test operation button

<Wired Remote Controller>

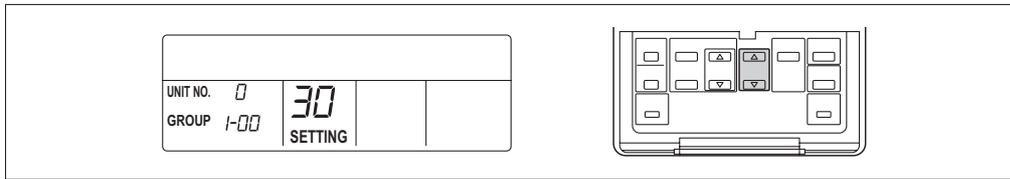


1. Press and hold the Inspection / Test Operation button for at least 4 seconds.

A “Setting” message appears in the middle of the LCD of the remote controller.

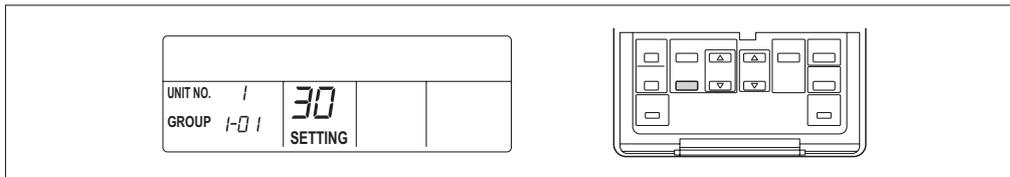


2. Change the parameter number displayed in the parameter number display area to “30” using the Temperature Setting buttons.

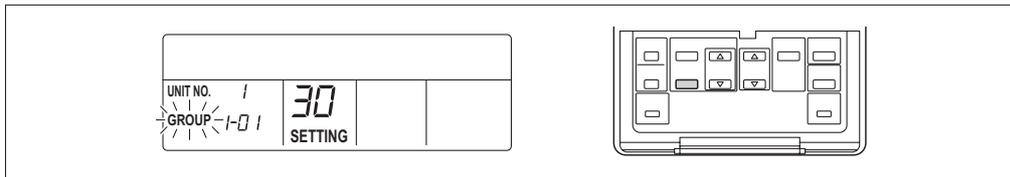


3. Using the Timer ON/OFF button, select the unit whose address you want to configure.

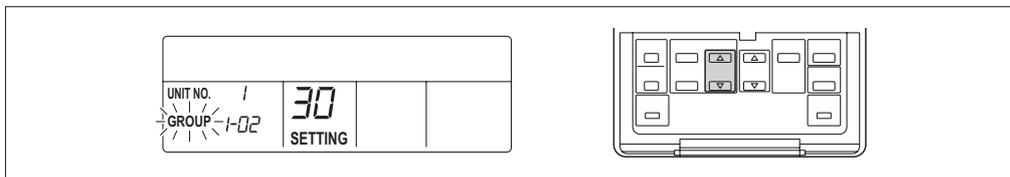
The currently assigned address appears in the address display area.



4. Press the Timer ON/OFF button to blink the currently assigned address.

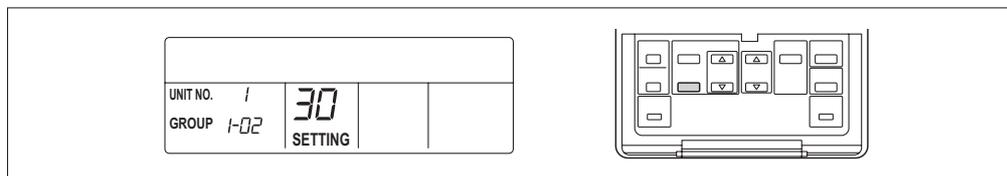


5. Using the Programming time buttons, change the address to your desired number.



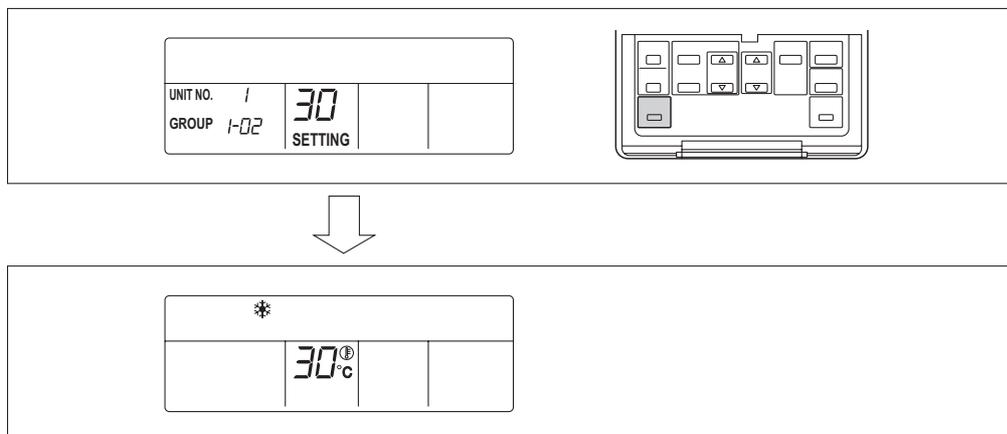
6. Press the Timer ON/OFF button.

Now your specified DIII-NET address is in effect.



7. Press the Inspection / Test Operation button.

You are returned to the normal screen.

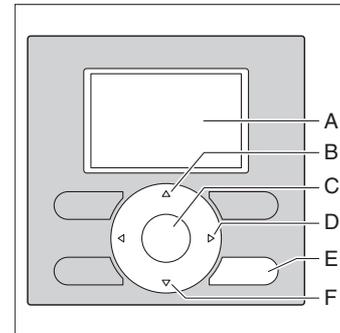


When using a Navigation remote controller:

The Navigation remote controller's buttons and areas identified below will be used during this procedure:

- A Display
- B Up button
- C Menu / Enter button
- D Right button
- E Cancel button
- F Down button

<Navigation Remote controller>



1. Press and hold the Cancel button for at least 4 seconds.

The [Field Setting] menu appears.



2. Select [Group No. Setting] using the Up and Down buttons, and then press the Menu / Enter button.

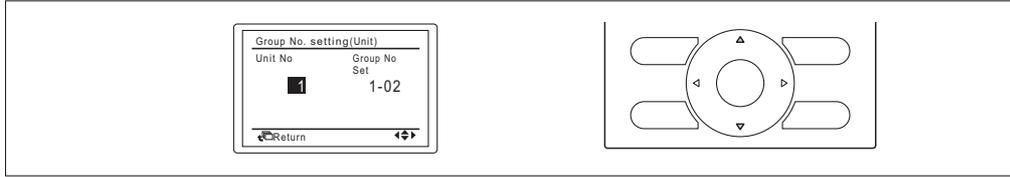
The [Group No. Setting] menu appears.



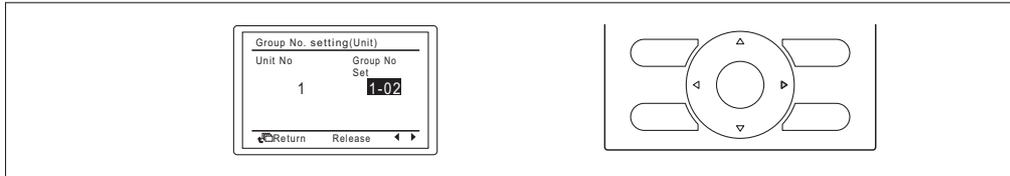
3. Select [Group No. setting (Unit)] using the Up and Down buttons, and then press the Menu / Enter button.



4. Using the Up and Down buttons, select the unit whose address you want to configure.



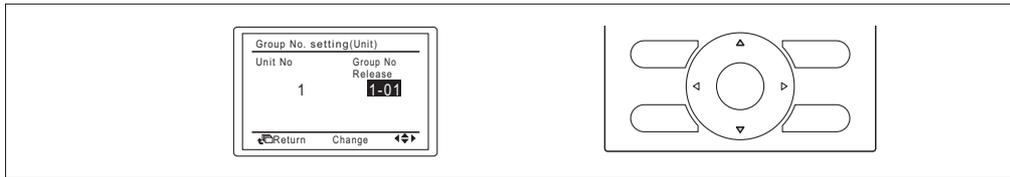
5. Select the Group number by pressing the Right button.



6. Put the currently assigned address into the released (unassigned) state by pressing the Menu / Enter button.
The "Set" text changes to "Release". This means that you can change the address.



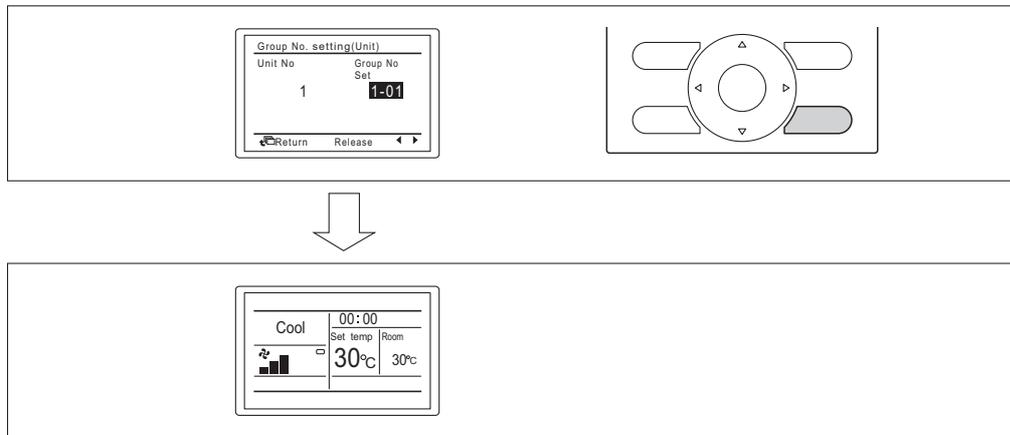
7. Change the address using the Up and Down buttons.



8. Press the Menu / Enter button.
Now your specified DIII-NET address is in effect.



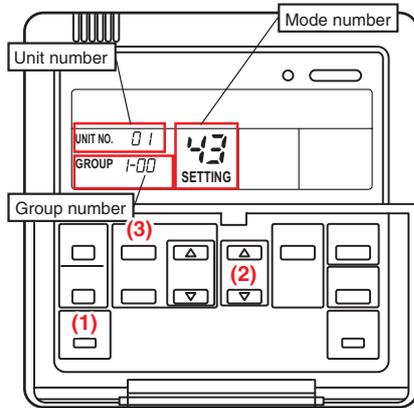
9. Press the Cancel button three times to return to the normal screen.



NOTE

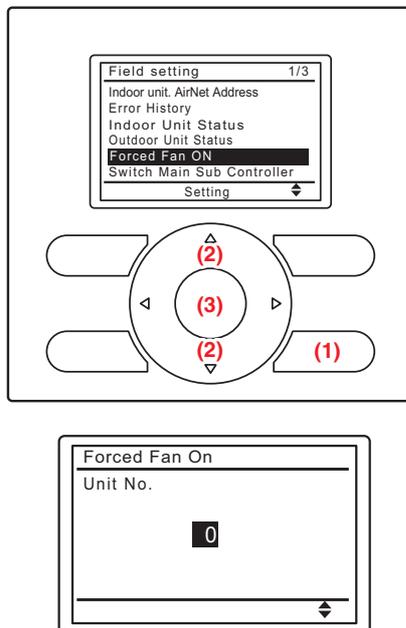
You can identify the air conditioner number associated with each indoor unit by using the Forced Fan ON function of the remote controller.

When using a Wired remote controller:



1. Press and hold the **Inspection / Test operation** button **(1)** for at least 4 seconds to enter the field setup mode.
2. Press and hold the **Inspection / Test operation** button **(1)** for at least 4 seconds to enter the service mode.
3. Press the **Temperature setting** button **(2)** to select mode number "43".
4. Press the **Timer ON/OFF** button **(3)** to select your desired unit number.
(Unit numbers range from 0 to 15.)
5. Then the fan of the air conditioner associated with the indoor unit begins rotating.
6. Press the **Inspection / Test operation** button **(1)** to return to the normal mode.

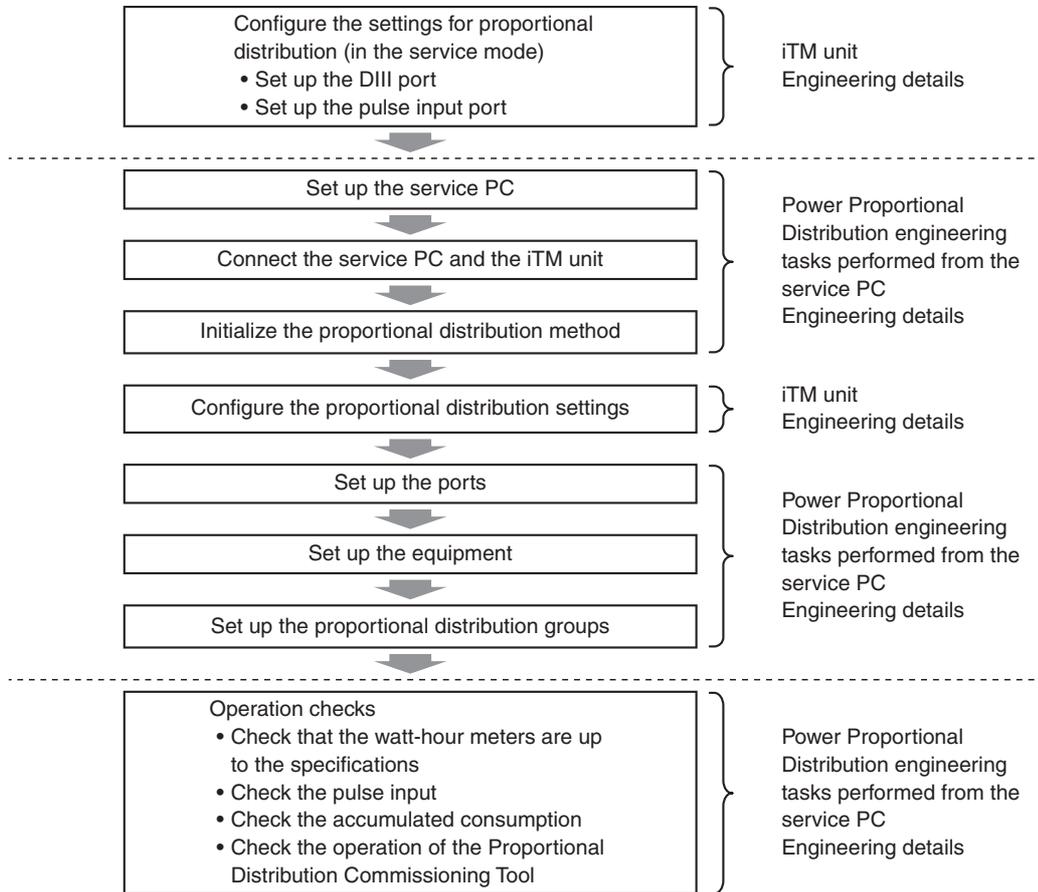
When using a Navigation remote controller:



1. Press and hold the **Cancel** button **(1)** for at least 4 seconds to enter the field setting mode.
2. Using the **Up** and **Down** buttons **(2)**, select [Forced Fan ON] from the menu. Then press the **Menu / Enter** button **(3)** to confirm the selection.
3. On the Forced Fan ON screen that appears, select your desired unit number using the **Up** and **Down** buttons **(2)**.
(Unit numbers range from 0 to 15.)
4. Then the fan of the air conditioner associated with the indoor unit begins rotating.
5. Press the **Cancel** button **(1)** to return to the normal mode.

Workflow of the Commissioning Process for Power Proportional Distribution

The following is the workflow of the commissioning process for Power Proportional Distribution with iTM:



• **Configure the service settings on the iTM unit**

Log into the service mode of the iTM unit and configure the settings necessary for Power Proportional Distribution, such as enabling the Power Proportional Distribution function, registering management points, and specifying the pulse rate.

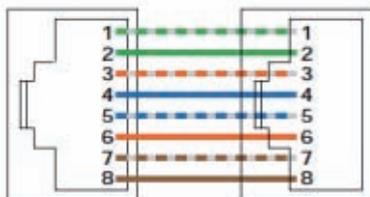
See the appropriate pages of the Commissioning Manual.

• **Set up the service PC**

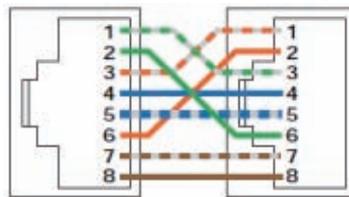
Connect the PC and iTM unit into a network using an Ethernet cable.

Ethernet cables used for connecting networks come in two types: straight and cross. Connect the PC and iTM unit by referring to the connection diagrams below.

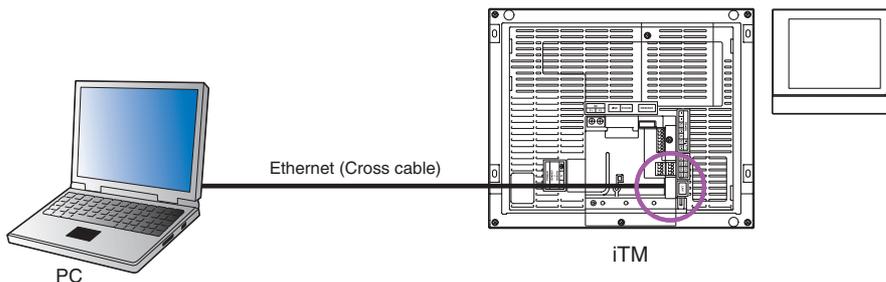
Straight cable connection diagram



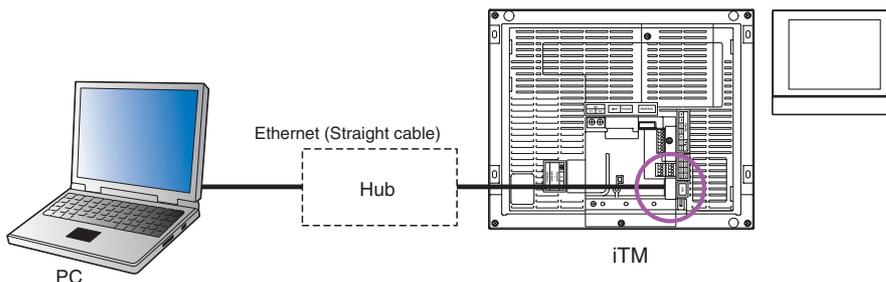
Cross cable connection diagram



When you connect the PC and iTM in a one-to-one configuration, use a cross cable.



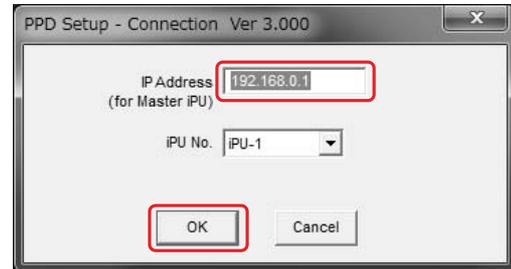
When you connect the PC and iTM with a hub in between, use a straight cable.



Once the cable connection is completed, configure the network connection by entering the IP addresses and subnet masks.

For more information on network configuration, see “6-2. Web Remote Management” in the Commissioning Manual (EM11A021/EM11A022).

Start up the Proportional Distribution Commissioning Tool.



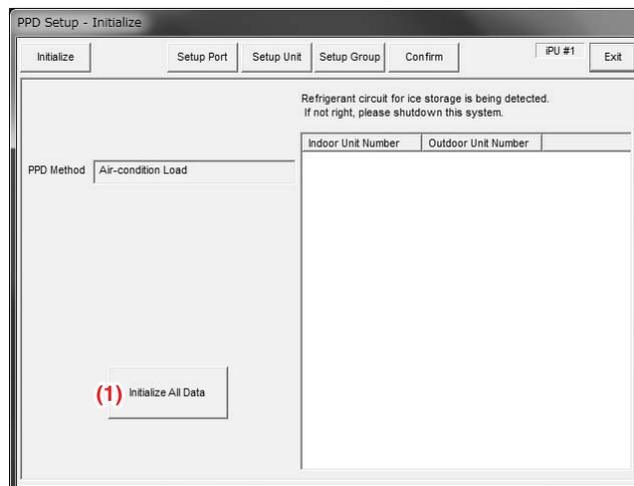
Enter the IP address of the iTM unit and click the OK button. Then the PC is connected with the Proportional Distribution Commissioning Tool and iTM unit and the main window appears.

- **Initialize the proportional distribution data**

The main window (Initialize window) allows you to initialize the proportional distribution data. Since this action will erase all of the existing proportional distribution data and commissioning configuration data, be sure to save the data on a flash memory device or the like before proceeding.

NOTE

You can bring up the Initialize window at any time by clicking the Initialize button.

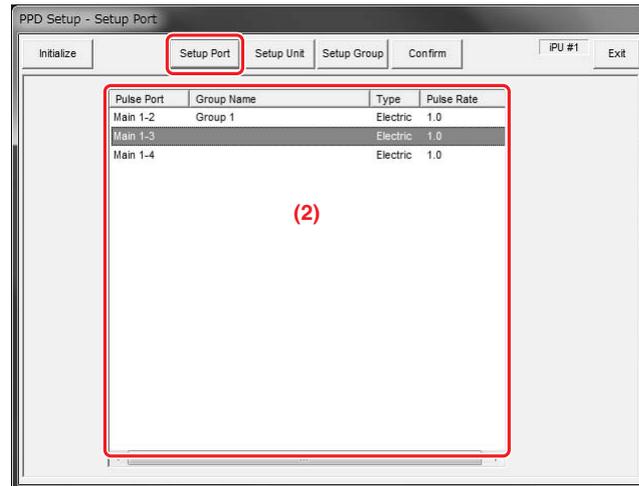


1. When you click the **Initialize All Data** button (1), a confirmation dialog box appears.
2. Click the OK button to proceed with initialization.

- The initialization process begins. Wait until a completion message appears, and then click the OK button to return to the Initialize window. Check if all data has been deleted. If so, the data initialization step is complete.

- **Check the port settings**

- On the main window, click the Setup Port button.



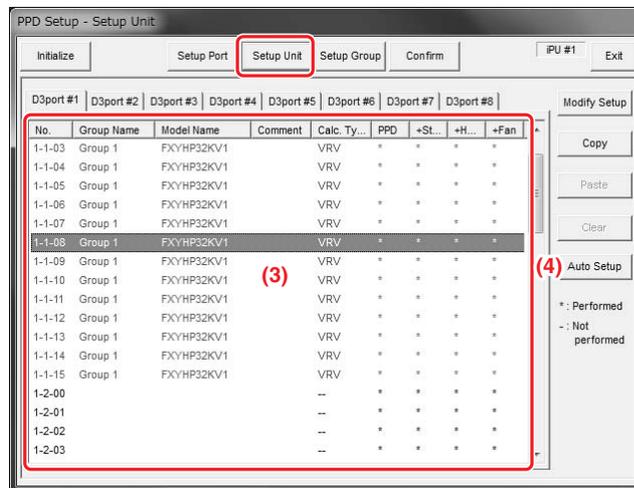
- All of the Pi ports configured on the iTM unit appear in the list (2). Make sure that each port, which is listed with its port name, group name, type, and pulse rate, is correctly configured. If anything is incorrect, exit from the commissioning tool and then fix the problem on the iTM unit.

NOTE

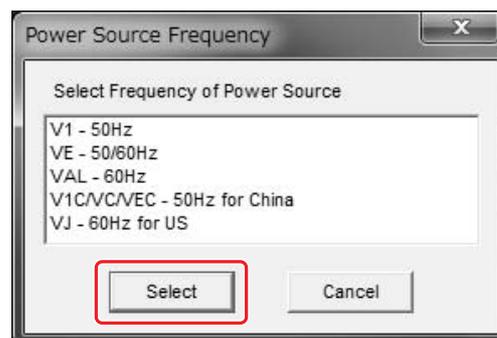
- Port names “Extension 1 to 28” correspond to the port configuration with iTM Plus Adaptor.
- For the Internal Pi, consumption power cannot be used for PPD charge billing.

• Automatically set up the equipment

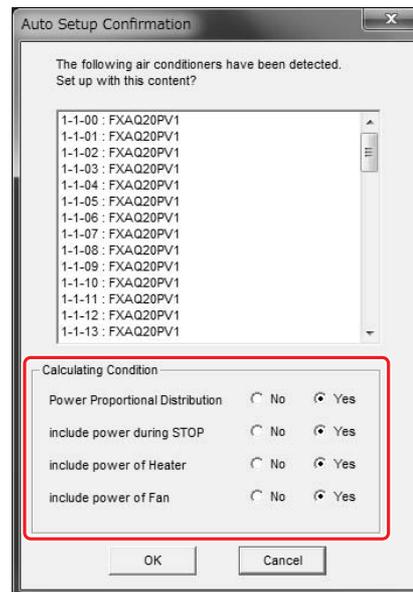
1. On the main window, click the Setup Unit button.



2. A list of equipment (air conditioners) connected to iTM is shown in the list box (3). Air conditioners belonging to a proportional distribution group whose calculation is in progress are highlighted in red. You cannot reconfigure a group still under calculation without first stopping the calculation process. Stopping the calculation process will cause the assumed consumption and pulse number settings to be initialized.
3. Click the **Auto Setup** button (4). From the list on the Power Source Frequency dialog box that appears, select the appropriate power source frequency. Then click the Select button to begin the search for matching air conditioners.



If there are any air conditioners eligible for auto setup, you are presented with the Auto Setup Confirmation dialog box.



4. The dialog box provides a list of air conditioner numbers and model names. Configure the proportional distribution settings conditions by selecting the appropriate radio buttons under “Calculating Condition”.

The following is the description of the radio buttons on this dialog box.

- The Power Proportional Distribution radio buttons: Specify whether or not to perform proportional distribution calculation on the listed air conditioners.
If you choose “No”, they are excluded from proportional distribution.
- The include power during STOP radio buttons: Specify whether or not to add the power consumed when the air conditioner is stopped (i.e., the power consumption by the crank case heater) to the actual power consumption.
If you choose “Yes”, the system will apply proportional distribution to the power consumption by the crank case heater and add the resulting amount to the actual power consumption.
If you choose “No”, the system will separately display the power consumption in the stopped state.
- The include power of Heater radio buttons: Specify whether or not to add the power consumption by the indoor unit heater to the assumed power consumption.
Choose “Yes” when the indoor unit is equipped with an optional heater.
- The include power of Fan radio buttons: Specify whether or not to add the power consumption by the indoor unit fan to the assumed power consumption.
When the electrical system of the indoor unit is connected to the watt-hour meter and the pulse input is enabled, you can choose “Yes” to include the power consumption by the indoor unit in the proportional distribution calculation.
Choose “No” if there is no pulse input from the indoor unit electrical system.

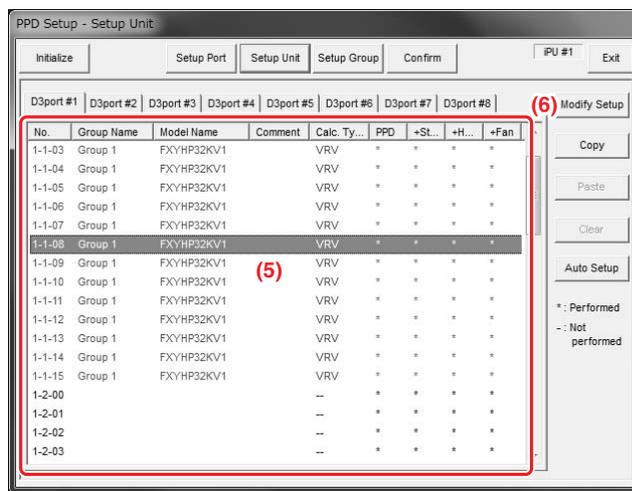
Click the OK button to apply the settings to all of the listed air conditioners and exit from the dialog box. Air conditioners that have been automatically set up are identified by “Auto Setup Done” text that appears in the Comment column on the main window.

Click the Cancel button if you want to exit from the dialog box without saving changes.

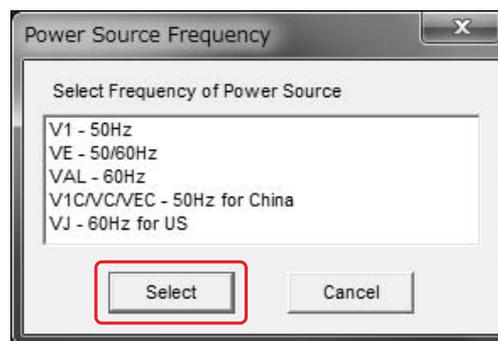
• **Manually configure the equipment**

5. Use the following procedure to manually set up air conditioners and ventilators that cannot be automatically set up.

(You can also edit the information for already set up equipment using the same procedure.)



Choose your desired air conditioner from the list (5) and then click the **Modify Setup** button (6). From the list on the Power Source Frequency dialog box that appears, select the appropriate power source frequency. Then click the Select button to bring up the Model Information Editing dialog box.



6. This dialog box displays, and allows you to change as appropriate, the current settings of your selected air conditioner.

NOTE

The air conditioner number and model name are read-only.

The field (7) allows you to select the calculation type. Open the drop down list, and choose from calculation types available for your selected air conditioner. Typically the list of available calculation types include “Normal”, “Ventilator”, and “General Purpose Adapter”. If you choose “Normal”, the system will calculate the power consumption based on proportional distribution; if you choose one of the remaining choices, the system will calculate the power consumption based on the operating hours.

The field (8) allows you to enter a comment, up to 32 characters long. If you have modified the existing model data, enter the original model name as a comment. Note that this field is repopulated with “Auto Setup Done” text if the air conditioner has been automatically set up.

The radio buttons (9) allow you to configure the proportional distribution settings. These radio buttons work the same way as those on the Auto Setup Confirmation dialog box.

The fields (10) show the current settings for various coefficients.

If your selected air conditioner has one or more unconfigured coefficients, enter the settings for those coefficients.

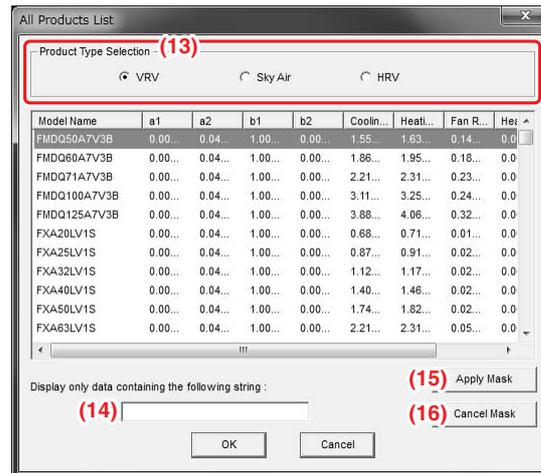
If your selected air conditioner has all of the coefficients already configured, the fields are repopulated with the values automatically obtained from the database and they are read-only by default. If you want to overwrite these read-only entries, you can make them editable by clicking the **Modify Coefficient** button (11).

Whether you can input or change certain entries depends on your selected air conditioner.

NOTE

If you choose “Ventilator” from the list of available calculation types in the drop down list box (7), you can edit the “Fan Rated Power Consumption” field only. Similarly, if you choose “General Purpose Adapter”, you can edit the “Power Consumption During Stop” field only.

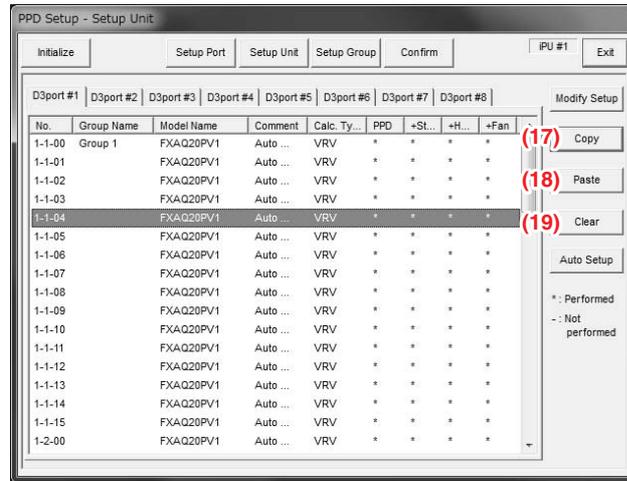
Click the **Consult Database** button (12) to bring up the All Products List dialog box.



When you choose one type from (13), the list box provides a list of data associated with that type. You can filter the list to display only those model names that contain a particular string by entering that string into the field (14) and then clicking the **Apply Mask** button (15). Click the **Cancel Mask** button (16) to cancel the filtering.

When you select your desired model data and click the OK button to return to the Model Information Editing dialog box, your specified model name, calculation type, and coefficient settings will be applied to your selected air conditioner.

When you are done, click the OK button to close the Model Information Editing dialog box and return to the Setup Unit dialog box.



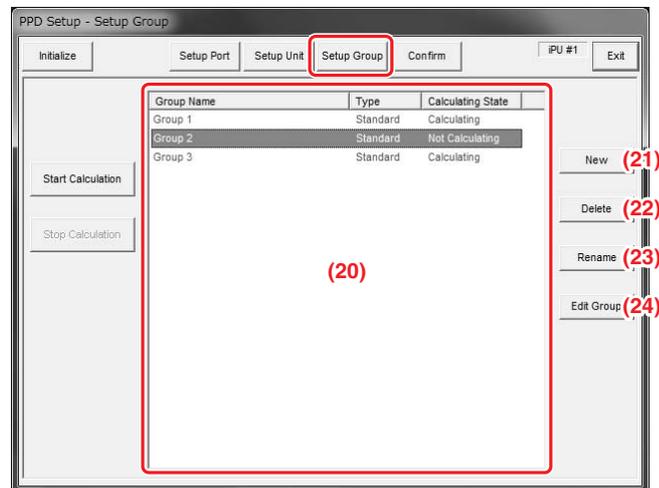
7. You can copy the settings of an already configured air conditioner by selecting the air conditioner and then clicking the **Copy** button (17).

Then you can paste the copied settings to another air conditioner by selecting the air conditioner you want to paste to and then clicking the **Paste** button (18). This action overwrites all the existing settings with the copied settings.

You can clear the settings of an already configured air conditioner so that it is reset to the unconfigured state by selecting the air conditioner and then clicking the **Clear** button (19).

• Set up the proportional distribution groups

1. On the main window, click the Setup Group button.



2. The list box (20) provides a list of existing proportional distribution groups. Groups whose calculation is stopped are displayed in black; groups whose calculation is in progress are displayed in red; and groups whose calculation is suspended are displayed in blue.

Click the **New** button (21) to bring up the Create Proportional Distribution Group dialog box. Enter the name of the new group and click the OK button to add the new group to the list box (20).

A group name can be a maximum of 32 characters in length.

If you want to delete a group, select the group in the list box (20) and click the **Delete** button (22).

NOTE

- You cannot delete a group whose calculation is currently in progress or suspended.
- When you delete a group, the iTM unit will clear the group's assumed consumption, actual power consumption, historical, and hourly report data from its internal storage.

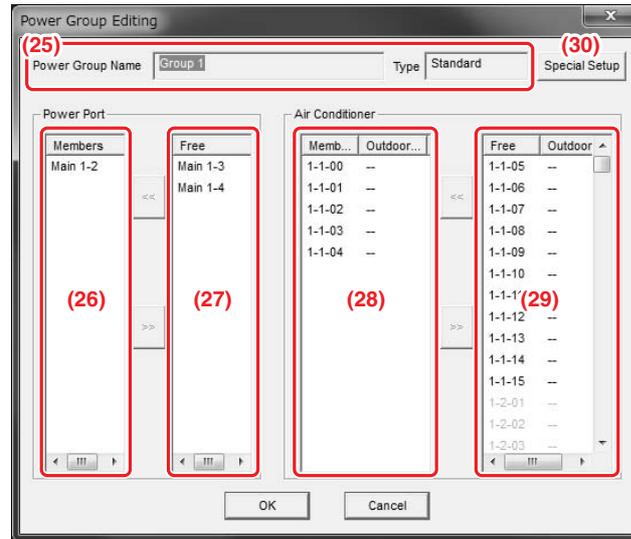
If you want to rename a group, select the group in the list box (20) and click the **Rename** button (23). Then enter the new name in the Rename Group dialog box that appears.

A group name can be a maximum of 32 characters in length.

If you want to edit a group, select the group in the list box (20) and click the **Edit Group** button (24) to bring up the Power Group Editing dialog box.

NOTE

- You cannot edit a group whose calculation is currently in progress or suspended without first stopping the calculation. If you opt to stop the calculation in order to edit such a group, the proportional distribution data will be initialized. Therefore, be sure to save the proportional distribution data before you attempt to edit the group.
- When you edit a group, the iTM unit will clear the group's assumed consumption, actual power consumption, historical, and hourly report data from its internal storage.

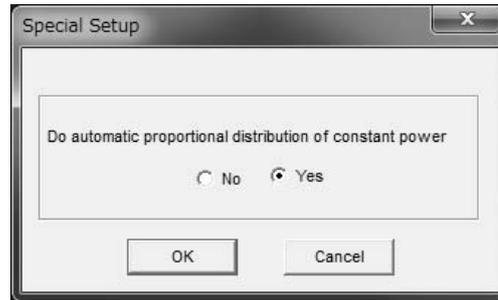


3. The fields (25) in the upper part of the dialog box are populated with your selected proportional distribution group's name and type, respectively.

The list box (26) provides a list of input ports associated with your selected proportional distribution group. To associate an available input port with the group, select the input port from the list box (27), which provides a list of input ports available for association with the group, and then click the << button to move it to the list box (26). To disassociate an input port, select the input port from the list box (26) and the click the >> button to move it to the list box (27).

The list box (28) provides a list of air conditioners that belong to your selected proportional distribution group. To associate an available input port with the group, select the input port from the list box (29), which provides a list of input ports available for association with the group, and then click the << button to move it to the list box (28). To disassociate an input port, select the input port from the list box (28) and the click the >> button to move it to the list box (29).

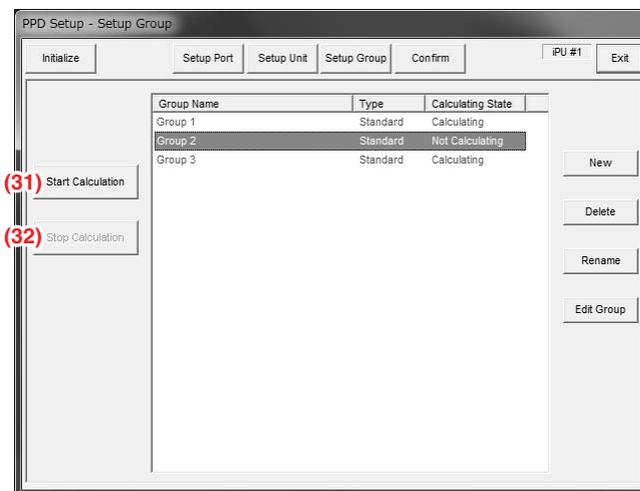
Click the **Special Setup** button (30) to bring up the Special Setup dialog box.



- This dialog box lets you specify whether or not to perform auto proportional distribution on equipment with a constant power consumption. If you opt to perform auto proportional distribution on equipment with a constant power consumption and all of the indoor units that belong to the group have a constant power consumption (“Ventilator” or “General Purpose Adapter”), the actual power consumption will be calculated through proportional distribution based on the pulse number at the rated value rather than by multiplying the operating hours by the rated value.

Select either of the two radio buttons as appropriate and then click the OK button to return to the Power Group Editing dialog box.

When you are done, click the OK button to save changes and return to the Setup Group dialog box.



5. If you want to start the calculation for a proportional distribution group whose calculation is stopped, select the group in the list box and then click the **Start Calculation** button (31).

If you want to suspend the calculation for a proportional distribution group whose calculation is currently in progress, select the group in the list box and then click the button (31), whose label changes to “Suspend” in this case.

If you want to resume the calculation for a proportional distribution group whose calculation is currently suspended, select the group in the list box and then click the button (31), whose label changes to “Resume Calculation” in this case. This action causes the adjustment of each indoor unit’s pulse meter value and therefore can be used when you want to make meter adjustments.

If you want to stop the calculation for a proportional distribution group currently in progress, select the group and then click the **Stop Calculation** button (32). On the confirmation dialog box that appears, click the OK button to stop the calculation.

- **Check that the watt-hour meters are up to the specifications**

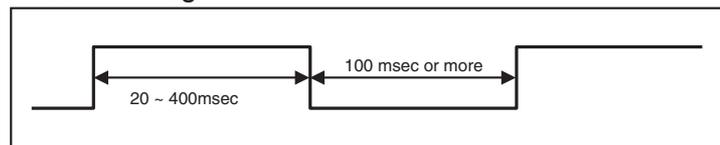
Performing proportional distribution with iTM requires one or more watt-hour meters.

The total power consumption recognized by iTM is derived as pulse input from watt-hour meters. Watt-hour meters play a critical role to iTM. Make sure that the watt-hour meters you plan to use meet the specification requirements of iTM.

A watt-hour meter can be connected to iTM only if it complies with the following requirements:

- It must be a watt-hour meter complete with a pulse oscillator.
- It must support output pulse units from 0.1 kWh/pulse to 10.0 kWh/pulse and allow pulse settings in increments of 0.1.
- Its output pulse width must be 20 to 400 msec.

Pulse width diagram



- Its pulse oscillator must be semiconductor relay based.

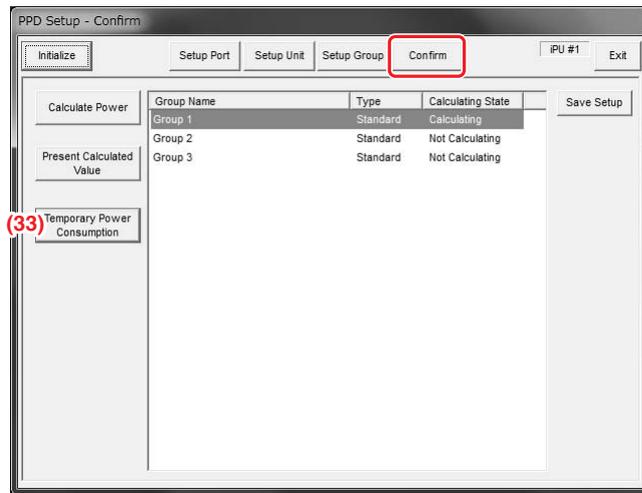
Use of a watt-hour meter that does not comply with the above requirements would result in such problems as follows:

- If the output pulse unit supported by the watt-hour meter does not match the input pulse unit specified as part of the pulse input port configuration, the results of power consumption calculation may be much larger or smaller than the actual power consumption.
- If the pulse oscillator is not semiconductor relay based, a single pulse may be falsely recognized as more than one pulse due to contact chattering.

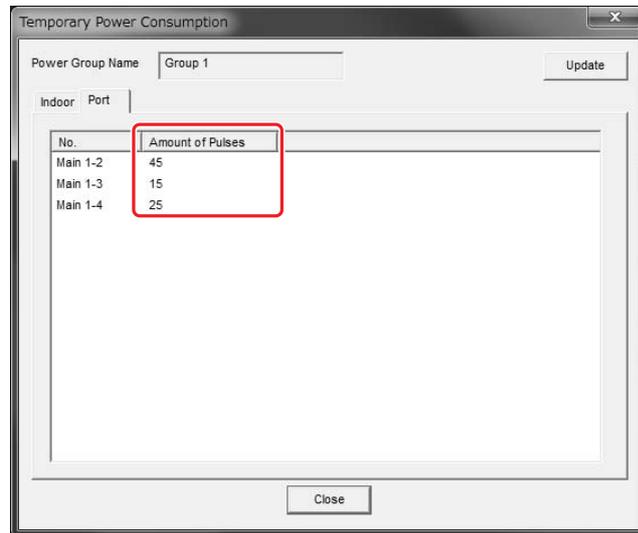
• **Check the pulse input**

Make sure that, when air conditioners are running, the watt-hour meter rotates to output pulses so that they are correctly input to iTM. Also, if there are more than one watt-hour meter installed, make sure that the settings established by editing the proportional distribution groups are consistent with how the watt-hour meters are actually connected.

1. Record the current watt-hour meter reading (W1).
2. Start up the Proportional Distribution Commissioning Tool. Click the Confirm button to bring up the Confirm dialog box.



3. Select one of the listed groups and then click **Temporary Power Consumption** button (33) to bring up Temporary Power Consumption dialog box.



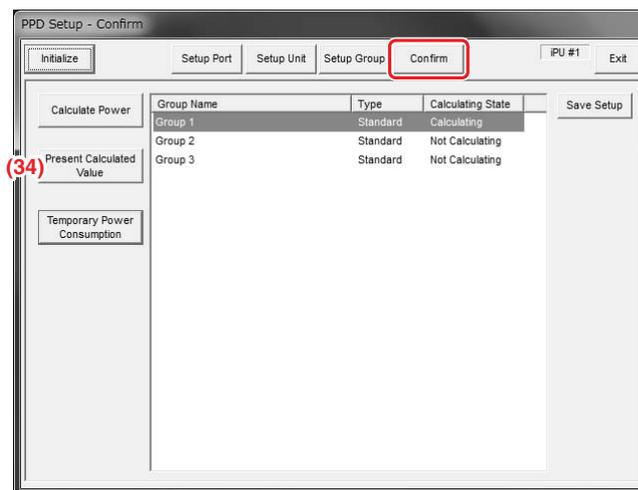
4. Select and open the Port tab. Check the Amount of pulse (P1).

5. After the watt-hour meter reading changes, repeat steps 1 to 4 and record the post-change watt-hour meter reading (W2) and post-change current pulse number (P2).
6. If $(W2-W1) = (P2-P1)$ is true when assigned the values you recorded in the previous steps, then it means that the pulse input is correct.
7. Repeat the same procedure to check the pulse input for all of the connected watt-hour meters.

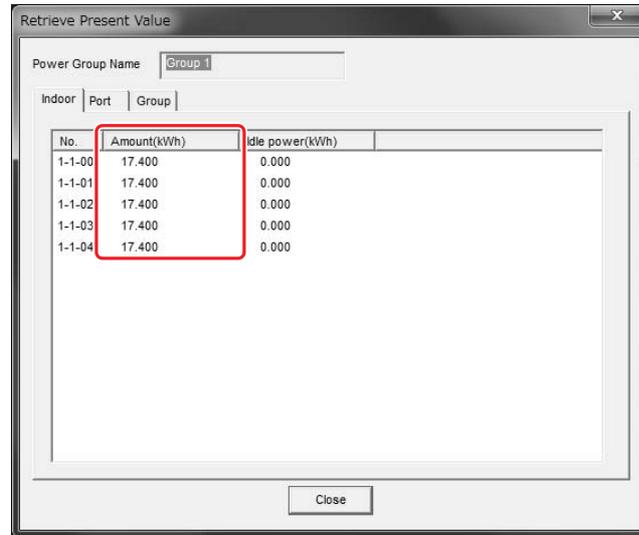
• **Check the accumulated consumption**

Make sure that the total power consumption proportionally distributed on an indoor unit by indoor unit basis is equal to the watt-hour meter reading. This check should be performed for each individual proportional distribution group.

1. Record the watt-hour meter reading (W1) when it is just on the hour such as 9:00 or 14:00.
2. Start up the Proportional Distribution Commissioning Tool. Click the Confirm button to bring up the Confirm dialog box.



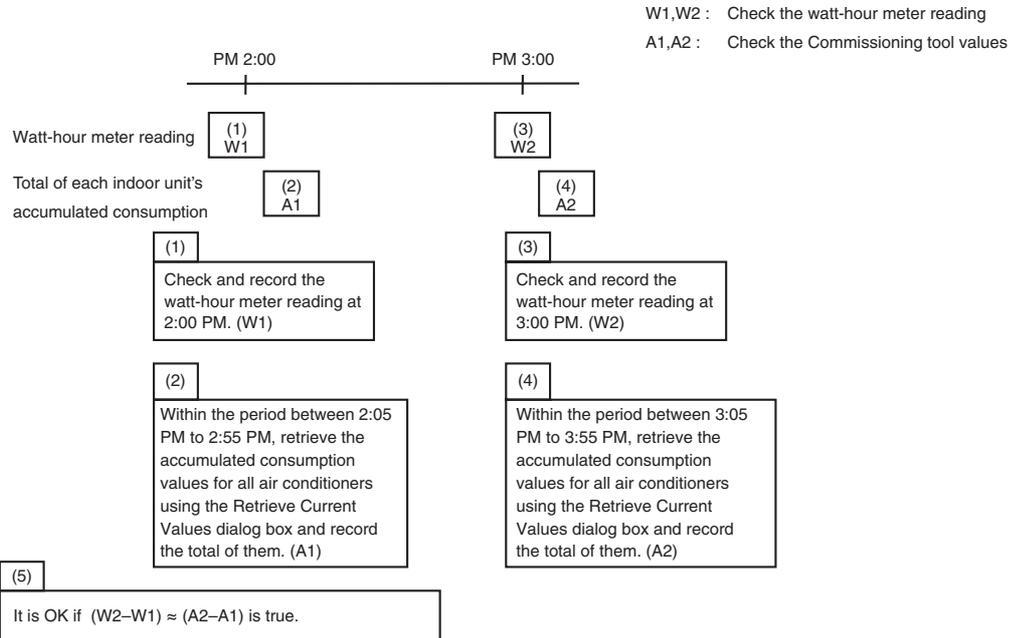
3. Select one of the listed groups and then click the **Present Calculated Value** button (34) to bring up the Retrieve Present Value dialog box.



No.	Amount(kWh)	Idle power(kWh)
1-1-00	17.400	0.000
1-1-01	17.400	0.000
1-1-02	17.400	0.000
1-1-03	17.400	0.000
1-1-04	17.400	0.000

4. Select and open the Indoor tab. Retrieve the accumulated consumption values for all of the indoor units that belong to your selected proportional distribution group and record their combined total (A1).
5. Record the watt-hour meter reading (W2) on the next hour.
6. Repeat steps 2 and 3 to record the combined total of the accumulated consumption values (A2).
7. If $(W2-W1) \approx (A2-A1)$ is true when assigned the values you recorded in the previous steps, then it means that the accumulated consumption is correct.
8. Repeat the same procedure to check the accumulated consumption for all of the existing proportional distribution groups.

Example: Do (1) to (5) in the ascending order referring to the figure below.

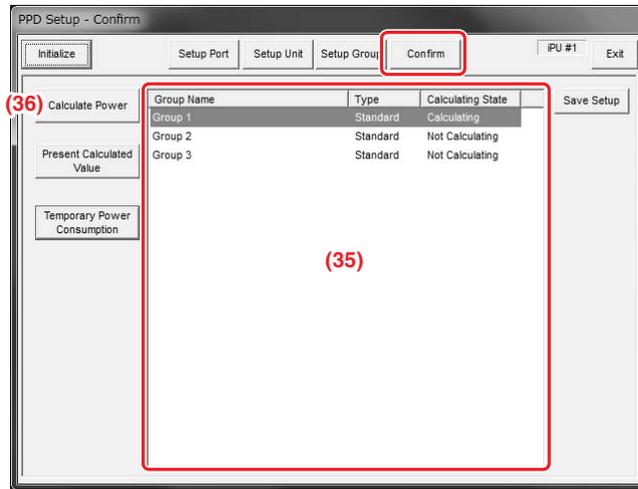


NOTE

When the proportional distribution value for the power consumed by each indoor unit is calculated, any fractions of the power consumption are rounded up to protect the building owner from overpayment. Therefore, the total accumulated consumption is calculated slightly higher than the watt-hour meter reading.

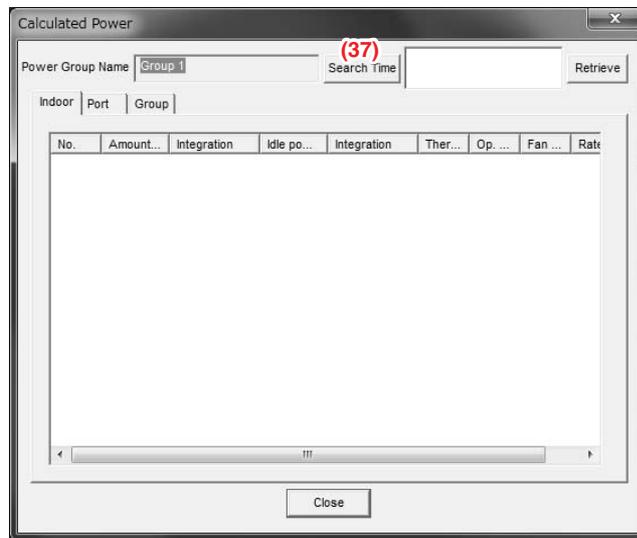
• Check the operation of the Proportional Distribution Commissioning Tool

1. On the main window, click the Confirm button.

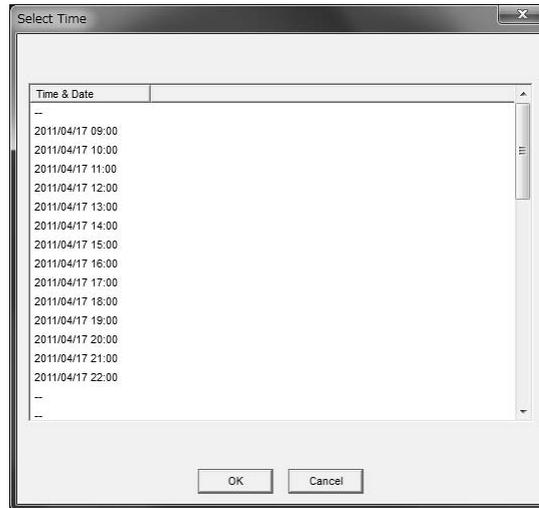


2. Check the accumulated consumption:

Select one of the proportional distribution groups listed in the list box (35) and then click the **Calculate Power** button (36) to bring up the Calculated Power dialog box.



3. Click the **Search Time** button (37) to bring up the Select Time dialog box.



4. This dialog box provides a list of the timestamps of hourly records of accumulated consumption in increments of one hour for up to the last 49 hours.

These timestamps indicate the end of a measuring period. For example, a timestamp of 2011/01/01 00:00 means that the record contains the data for accumulated consumption measured during the period from 2010/12/31 23:00 to 2011/01/01 00:00. Rows that correspond to periods with no data available contain a "--" marker.

Select the timestamp that corresponds to the period for which you want to check the accumulated consumption and click the OK button to return to the Calculated Power dialog box.

NOTE

When there is a row with a "--" or "--" marker, you can select the immediately following row but cannot click the OK button because there is no accumulated consumption data available from the immediately preceding row.

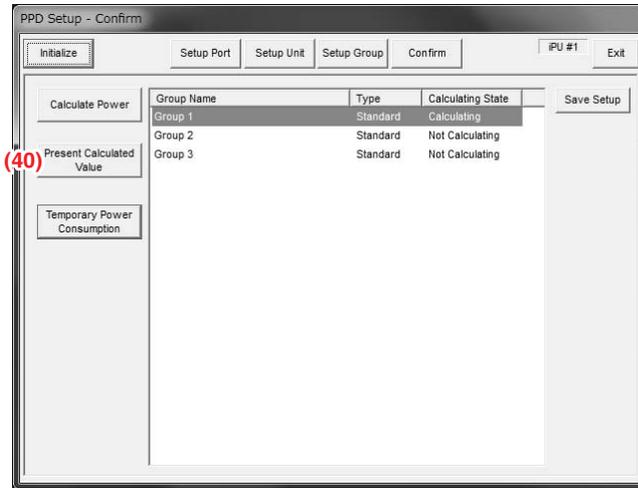
No.	Amount.	Integration	kile po.	Integration	Ther...	Op...	Fan...	Rate
1-1-00	17.400	17.400	0.000	0.000	0	0	0	2C
1-1-01	17.400	17.400	0.000	0.000	0	0	0	2C
1-1-02	17.400	17.400	0.000	0.000	0	0	0	2C
1-1-03	17.400	17.400	0.000	0.000	0	0	0	2C
1-1-04	17.400	17.400	0.000	0.000	0	0	0	2C
Total	87.000		0.000					10

- Click the **Retrieve** button (38) to have the list box (39) display the accumulated consumption data for the period you selected in step 4. You can check the data in detail in terms of indoor units, ports, and groups, respectively, by navigating among the Indoor Port, and Group tabs located along the top of the list box.

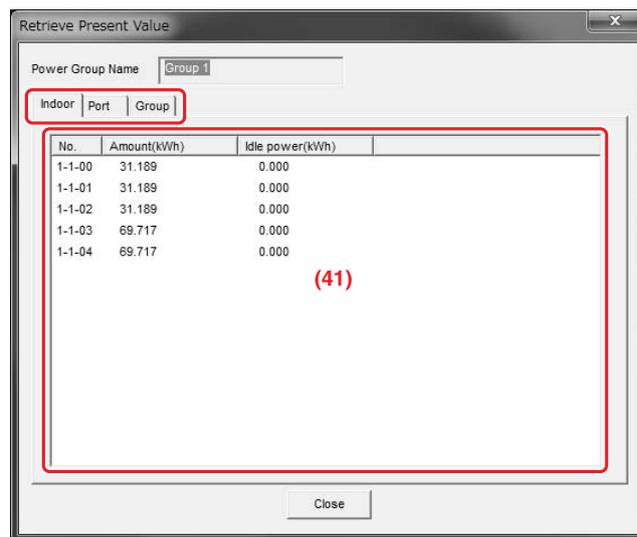
The following table describes the items displayed on each of the three tabs:

Tab	Displayed item	Description
Indoor	No.	Air conditioner number associated with the indoor unit.
	Amount (kWh)	Actual power consumption.
	Integration	Accumulated actual power consumption. This is the accumulated power consumption as of the end of the measuring period, rather than the power consumed during the period. It is the accumulation over time of the value shown in the immediately preceding field.
	Idle power (kWh)	Power consumed in stopped state.
	Integration	Accumulated power consumption in stopped state. This is the accumulated power consumption as of the end of the measuring period, rather than the power consumed during the period. It is the accumulation over time of the value shown in the immediately preceding field.
	ThermoON Time (min.)	Shows how long the thermostat was on (in minutes) during the period.
	Op. Time (min.)	Shows how long the unit was operating during the period.
	Fan Op. Time (min.)	Shows how long the fan was operating during the period.
	Rate (%)	Shows the proportional distribution percentage of the indoor unit during the period.
Port	No.	Input port name.
	Total Pulse	Shows the total pulse number (in pulses)
	Integration	Accumulated total pulses. This is the accumulated number as of the end of the measuring period, rather than the pulse number counted during the period. It is the accumulation over time of the value shown in the immediately preceding field.
	Pulse at Exclusion Period	Shows the number of the pulses that are included in the total pulse number but were input during the excluded time period. (in pulses)
	Integration	Accumulated excluded time pulses. This is the accumulated number as of the end of the measuring period, rather than the pulse number counted during the period. It is the accumulation over time of the value shown in the immediately preceding field.
Group	Power Consumption at Exclusion Period (kWh)	Actual power consumption during the excluded time period (group-wide total).
	Integration (kWh)	Accumulated actual power consumption during the excluded time period (group-wide total).

6. Check the current accumulated consumption:



Click the **Present Calculated Value** button (40) to bring up the Retrieve Present Value dialog box.

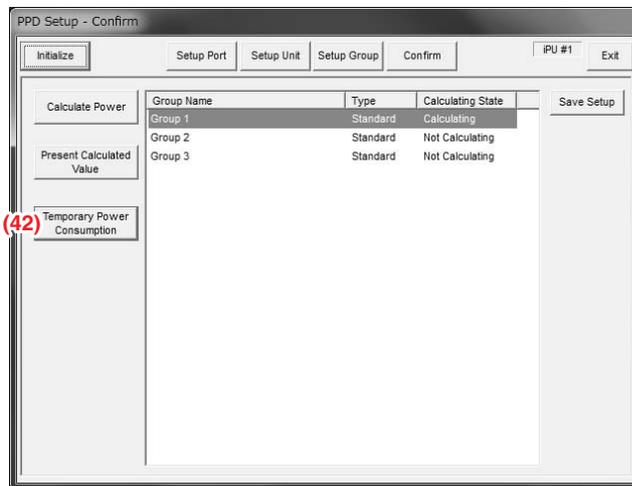


The list box (41) provides a list of data related to actual power consumption. You can check the data in detail in terms of indoor units, ports, and groups, respectively, by navigating among the Indoor, Port, and Group tabs located along the top of the list box.

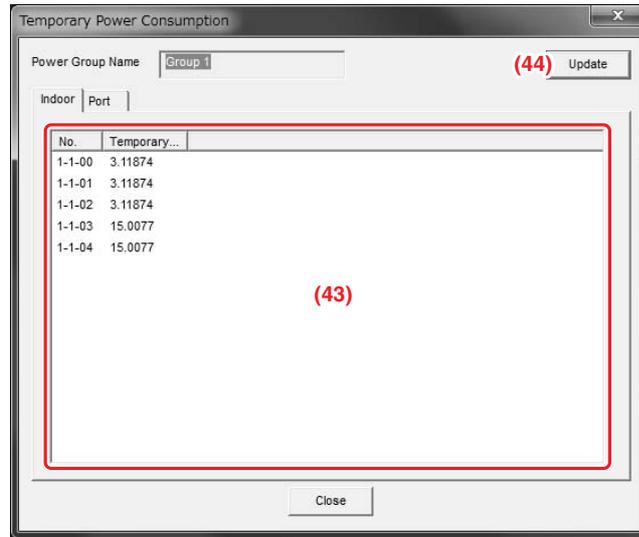
The following table describes the items displayed on each of the three tabs:

Tab	Displayed item	Description
Indoor	No.	Air conditioner number associated with the indoor unit.
	Amount (kWh)	Actual power consumption.
	Idle power (kWh)	Power consumed in stopped state.
Port	No.	Input port name.
	Total Pulse	Shows the total pulse number (in pulses).
	Pulse at Exclusion Period	Shows the number of the pluses that are included in the total pulse number but were input during the excluded time period (in pulses).
Group	Power Consumption at Exclusion Period (kWh)	Actual power consumption during the excluded time period (group-wide total).

7. Check the assumed consumption:



Click the **Temporary Power Consumption** button (42) to bring up the Temporary Power Consumption dialog box.



The list box (43) provides a list of hourly records of assumed consumption taken every hour on the hour. You can check the data in detail in terms of indoor units and ports, respectively, by navigating between the Indoor Unit and Port tabs located along the top of the list box.

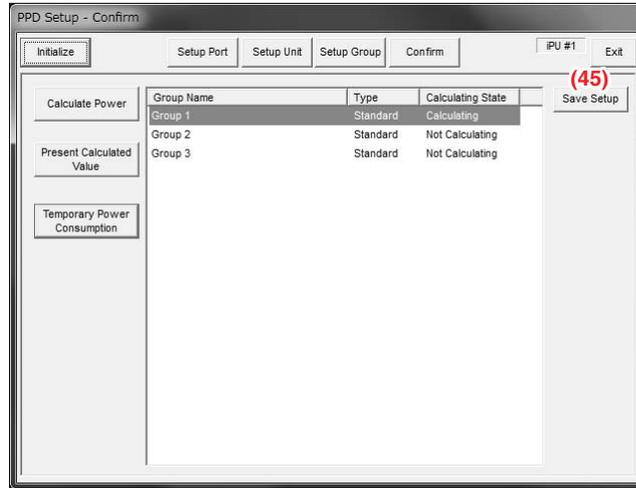
The following table describes the items displayed on each of the two tabs:

Tab	Displayed item	Description
Indoor	No.	Air conditioner number associated with the indoor unit.
	Temporary Power Consumption	Shows the assumed power consumption.
Port	No.	Input port name.
	Amount of Pulses	Shows the pulse number counted on the hour.

You can refresh the list box (43) by clicking the **Update** button (44).

Saving the Proportional Distribution Configuration Data

1. On the main window, click the Confirm button.



Click the **Save Setup** button (45) to bring up the Save As dialog box.

Specify the location where to save the configuration and enter the file name. Then click the Save button to save the configuration data for all of the proportional distribution groups in a text file.

This text file is formatted as follows:

Name	<< Group Name["Name"] >>														
Type	Type :	"Standard"													
Progress of calculation	Calculating State :	"Not Calculating"/"Calculating"/"Suspending"													
Auto proportional distribution	Automatic Distribution :	"Yes"/"No"													
Port	Pulse Port :														
	"Name of port 1"														
Set up the equipment	"Name of port 2"														
	Indoor Unit Number (Outdoor Unit Number)	Calc. Type	PPD	+Stop	+Heater	+Fan	a1	a2	b1	b2	Cooling Rated Power	Heating Rated Power	Fan Rated Power	Heater Rated Power	Power During STOP

↑ { "O"/"X" }
 "Standard"/"Ventilator"/"ADP"

```
<< Group Name [NewGroup] >>
Type : Standard
Calculating State : Calculating
Automatic Distribution : Yes
Pulse Port :
    Main 3
    Extension 6
Indoor Unit Number [Outdoor Unit Number] : (Calc. Type, PPD, +Stop, +Heater, +Fan, a1, a2, b1, b2, Cooling Rated Power,
Heating Rated Power, Fan Rated Power, Heater Rated Power, Power During STOP)
1-1-00[1] (Standard,○,×,○,○,○,1.14,0.073,1.52,0.026,0.94,0.76,0.085,0.7,0.008)
1-1-01 (ADP,○,○,○,○,○,0.04,1,0,0.87,0.91,0.39,0,0.019)
.....
```

NOTE

- When you save the data in a text file as instructed above, the text file will not contain the type and pulse rate for each port. Separately record such information if necessary.
- A text file that contains saved equipment configuration data will not provide distinction between automatically and manually configured settings. Separately record such information if necessary.

How the Proportional Distribution Calculations are affected by the Start and End of Daylight Saving Time

• Start of Daylight Saving Time

For example, if you set the start of Daylight Saving Time to 2:00, the clock of the iTM unit will be changed to 3:00 as soon as it reaches 2:00. Then the proportional distribution calculations made during the time period from 1:00 to 2:00 (that is, the start of Daylight Saving Time) will be added to the proportional distribution calculations for 4:00.

- **End of Daylight Saving Time**

For example, if you set the end of Daylight Saving Time to 2:00, the clock of the iTM unit will be changed to 1:00 as soon as it reaches 2:00. Then the proportional distribution calculations for 1:00 will be recorded again. This second set of the proportional distribution calculations for 1:00 actually contains the proportional distribution calculations for the period from 1:00 to 2:00 (that is, the end of Summer Time).

If you export the calculation results to a CSV file, the proportional distribution calculations for 1:00 on that day will have two instances.

The screenshot shows a spreadsheet with columns for time slots from 0:00 to 23:00. The rows represent different units or zones, with some rows labeled 'PPD' (Proportional Distribution). The data shows values for each time slot, with a notable change in values around 2:00, illustrating the effect of Daylight Saving Time.

5. iTM-Energy Navigator Setup

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Energy Navigator Setup

Energy Navigator assists equipment administrators in implementing systematic operations management by analyzing the operational status of the equipment, formulating energy saving plans, establishing equipment operations standards necessary to achieve energy saving goals.

Energy Navigator consists of the following four main functional areas:

	Function	Summary
Energy Navigator	(1) Budget/Actual Energy Management	Budget/Actual Energy Management visualizes the yearly and monthly progress of the actual energy consumption goals with respect to the planned energy consumption and also provides functionality to compare the actual energy consumption of the current year with that of the previous year.
	(2) Equipment Operations Management (Identification of deviation from operations plans)	Equipment Operations Management identifies and visualizes any equipment systems that are or were running during the hours when they are supposed to stop and any air conditioners that are running beyond the set temperature range set forth as part of the air conditioner operations plans.
	(3) Data Export	Data Export allows you to export measurement data to a CSV format so that you can perform advanced analysis on the data using external software.
	(4) Commissioning	Commissioning allows you to configure settings necessary to take the advantage of Energy Navigator. This function is available in the service mode only.

Energy Navigator can address various needs but depending on how your equipment is engineered, such as whether or not watt-hour meters are installed and whether or not the commissioning process for Power Proportional Distribution has been completed.

Target user	What is needed	Engineering details		Overview of available functionality	
		Availability of Meters installed	Triad Power Proportional Distribution	Budget/Actual Energy Management	Equipment Operations Management
Equipment administrator	(1) Ability to easily gain visibility into the operational status of the equipment.	×	×	△ - Manage actual energy consumption based on billing statements	△ - Identify deviation from equipment operations plans - Visualize, based on CT values, how the energy consumption is affected by deviations of in-house air conditioners from operations plans
	(2) Ability to perform budget/actual management of the whole energy consumed by the building and to ensure that equipment operations comply with operations plans.	○	×	○ - Budget/actual energy management with watt-hour meters	△ - Identify deviation from equipment operations plans - Visualize, based on CT values, how the energy consumption is affected by deviations of in-house air conditioners from operations plans
	(3) Ability to perform extensive energy management of equipment systems that are among the largest energy consumers in the building as well as air conditioners that have great opportunities for operational improvement.	×	○	△ - Manage actual energy consumption based on billing statements	○ - Identify deviation from equipment operations plans - Visualize the waste of energy due to deviations of in-house air conditioners from operations plans
	(4) Ability to perform budget/actual management of the whole energy consumed by the building and to efficiently achieve energy saving goals.	○	○	○ - Budget/actual energy management with watt-hour meters	○ - Identify deviation from equipment operations plans - Visualize the waste of energy due to deviations of in-house air conditioners from operations plans

Legend ○ : Yes × : No

Legend ○: Available
△: Available in part
× : Unavailable

The following table describes how the availability of each of Budget/Actual Management and Equipment Operations Management depends on the engineering details:

Engineering details		Energy budget/actual management function			
Availability of meters	Availability of energy consumption plan	(Monthly) Energy consumption estimation function	Energy budget/actual visualization function		
			Annual energy budget/actual visualization function	Monthly energy budget/actual visualization function	Year-to-year energy comparison function
Yes	Yes	○	○	○	○
Yes	No	x	△	△	○
No	Yes	x	○ (Budget/actual can be visualized by manually entering the actual energy consumption)	x	○ (Available by manually entering the actual energy consumption)
No	No	x	△	x	○ (Available by manually entering the actual energy consumption)

Engineering details		Energy budget/actual management function				
Availability of meters	Availability of energy consumption plan	Energy consumption plan registration function	Actual energy consumption registration function	Energy Group registration function	Energy type/Energy conversion factor registration function	
					Energy type registration function	Energy conversion factor registration function
Yes	Yes	○	○	○	○	○
Yes	No	○	○	○	○	○
No	Yes	○	○	○ (Creation of group to which to manually enter the actual energy consumption)	○	○
No	No	○	○	○ (Creation of group to which to manually enter the actual energy consumption)	○	○

○: Available
 △: Some functions available
 x: Unavailable

Engineering details		Equipment operation management		
Trial Power Proportional Distribution	Operation rules	Operation rule creation function	Sampling period/target setup function	
			Sampling period setup function	Sampling target setup function
Yes	Yes	○	○	○
Yes	No	○	○	○
No	Yes	○	○	○
No	No	○	○	○

Engineering details		Equipment operation management	
Trial Power Proportional Distribution	Operation rules	Failure to turn off sampling function	
		Failure to turn off sampling result display function	Detailed display function
Yes	Yes	○	○
Yes	No	△ (Sampling possible by default rule)	○
No	Yes	△ (Displays power consumed during failure to turn off, based on CT value.)	○
No	No	△ (Displays power consumed during failure to turn off, based on CT value.) (Sampling possible by default rule)	○

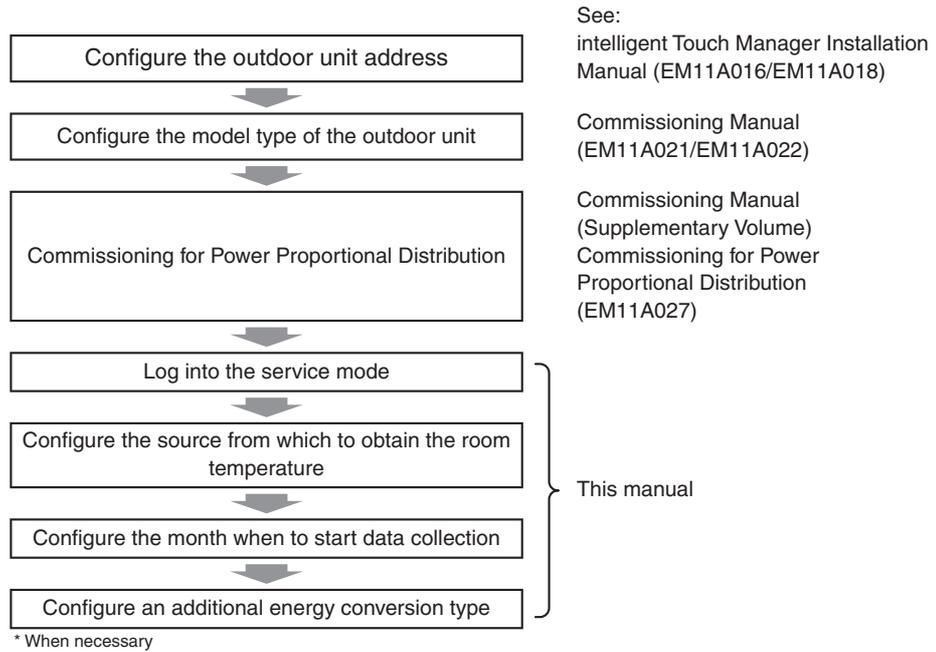
Engineering details		Equipment operation management	
Trial Power Proportional Distribution	Operation rules	Setpoint gap sampling function	
		Setpoint gap sampling function	Detailed display function
Yes	Yes	○	○
Yes	No	△ (Sampling possible by default rule)	○
No	Yes	△ (Displays power consumption when there is setpoint gap, based on CT value.)	○
No	No	△ (Displays power consumption when there is setpoint gap, based on CT value.) (Sampling possible by default rule)	○

○ : Available
 △ : Some functions available
 × : Unavailable

You need the outdoor unit address to use Energy Navigator. Configure the outdoor unit address in advance (see the intelligent Touch Manager Installation Manual (EM11A016/EM11A018)).

For information on how the administrator can configure and use the function, refer to the appropriate sections of the User Manual.

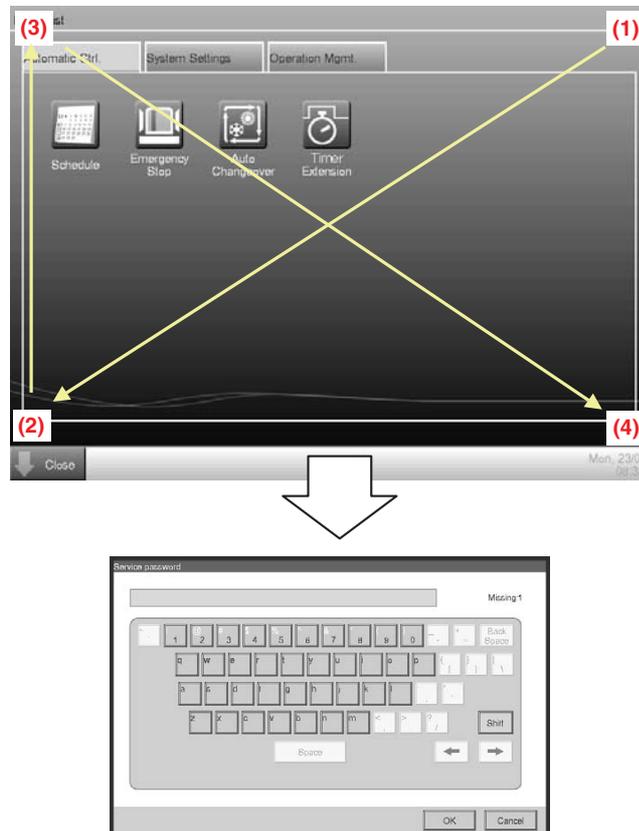
The remaining part of this manual provides the procedures for commissioning.



Log into the service mode

Display the Menu List screen.

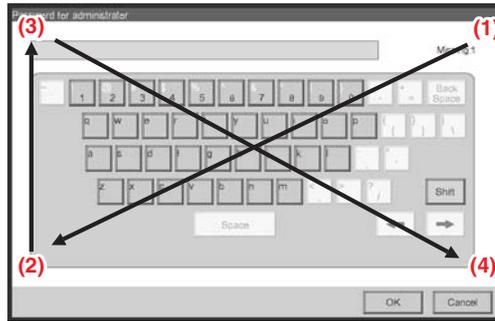
Touch the four corners of the screen in the indicated order. The Password Input dialog appears.



Enter the service password (daikin) and touch the OK button to log into the SE Mode.



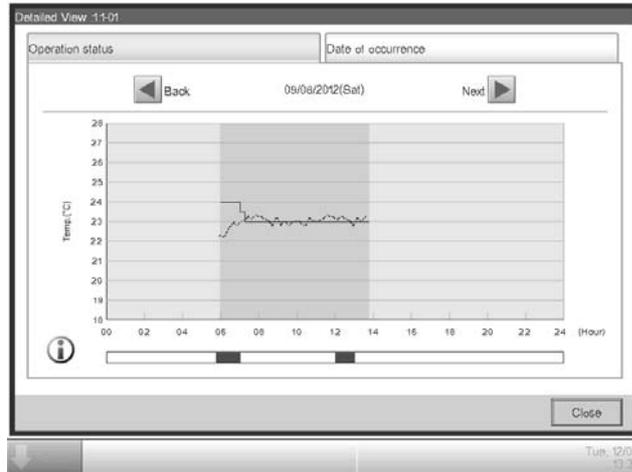
Furthermore, if the screen is locked, entering the service password instead of the administrator password after carrying out the special operation indicated below, allows you to unlock the screen and log into the SE Mode.



Configure the source from which to obtain the room temperature

Configure the source from which to obtain the room temperature that will be displayed on the Operational Status graph on the Detailed View screen accessible from Energy Navigator's Failure to Turn Off sampling screen and Setpoint Gap sampling screen.

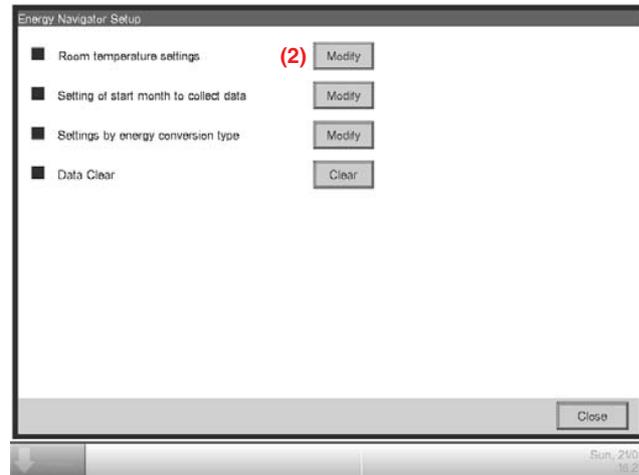
*Detailed View screen (operational state)



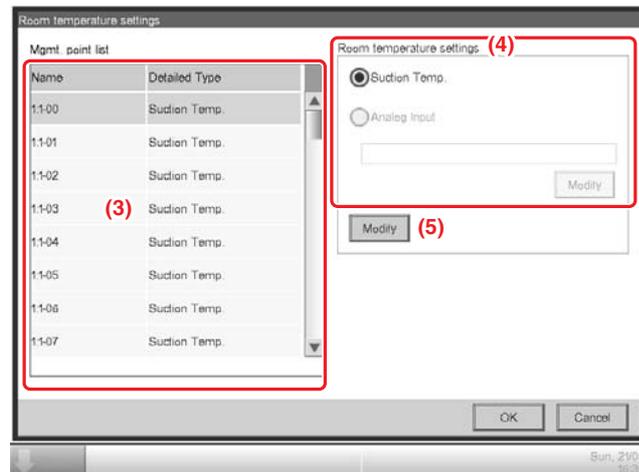
On the service mode Menu List window, select and open the Service Settings tab.



Touch the **Energy Navigator** button (1) to bring up the Energy Navigator Setup window.



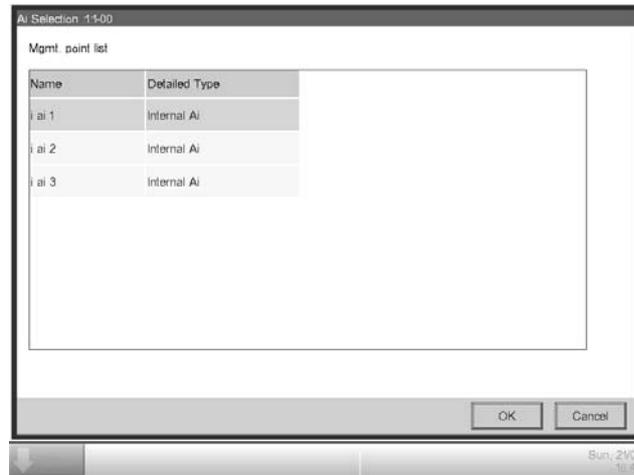
Touch the **Modify** button (2) to bring up the Room temperature settings window.



The Mgmt. point list box (3) provides a list of registered indoor unit management points.

Select your desired management point from this list, which shows management point names along with their current settings. Specify whether to use the suction temperature or analogue input (Ai) as the source of the room temperature by selecting either of the two radio buttons under **Room temperature settings** (4).

If you have chosen Ai, touch the Modify button to bring up the Ai Selection window.



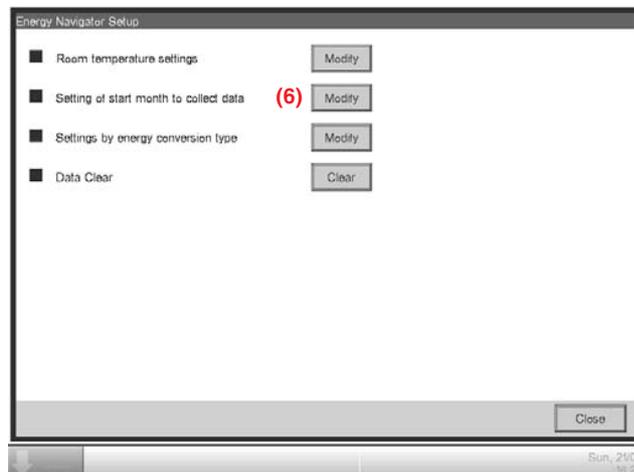
Select your desired Ai management point from the list and then touch the OK button to return to the Room temperature settings window.

The selection you made using the radio button group (4) is saved when you touch the **Modify** button (5). The list (3) is updated to reflect the change.

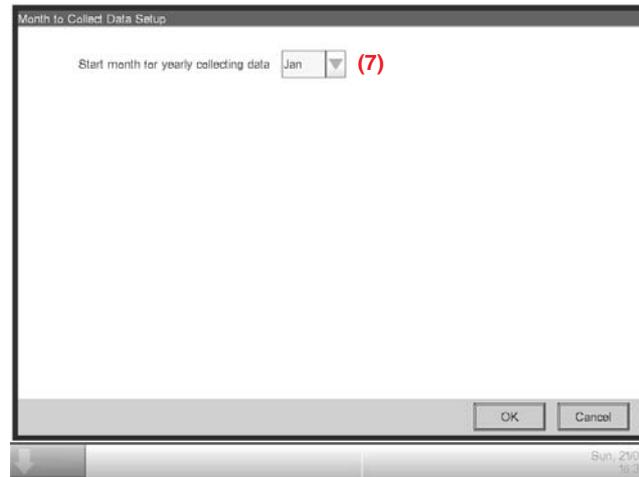
Repeat the steps above to configure all of the indoor unit management points. When you are done, touch the OK button to save the settings and return to the Energy Navigator Setup window.

Configure the month when to start data collection

To configure the month when to start data collection, use the following procedure:



Touch the **Modify** button (6) to bring up the Month to Collect Data Setup window.

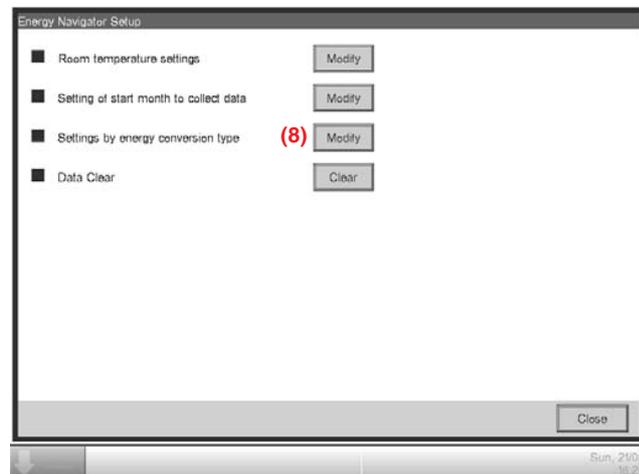


From the **Start month for yearly collecting data** combo box (7), select the month (January through December) when to begin collecting the data for use on the annual budget/actual management graph.

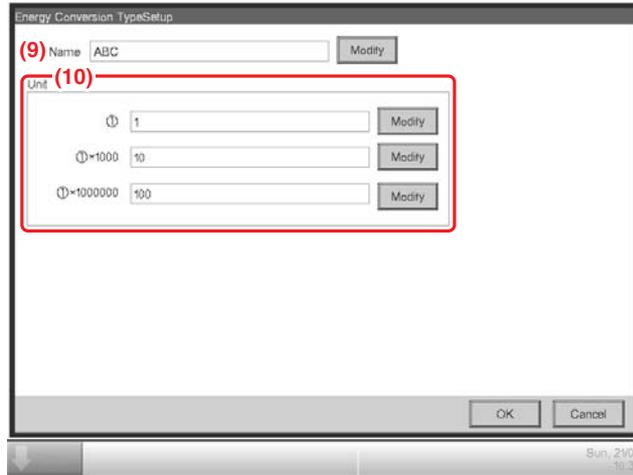
Touch the OK button. On the confirmation dialog box that appears, touch the Yes button to save the settings and restart iTM.

Configure an additional energy conversion type

You can configure an additional energy conversion type for use in Budget/Actual Energy Management as needed.



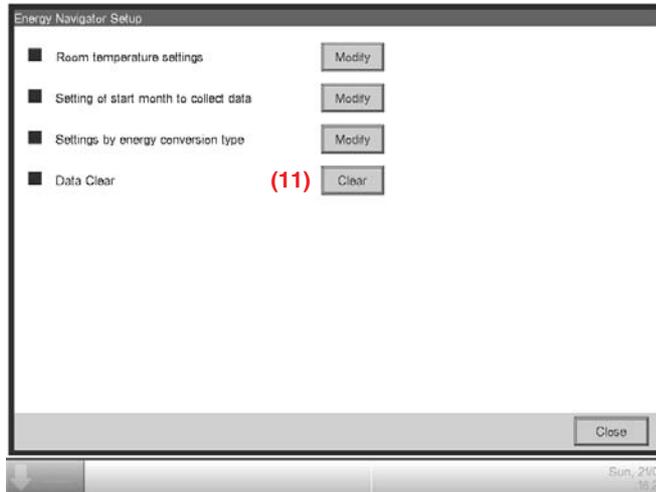
Touch the **Modify** button (8) to bring up the Energy Conversion TypeSetup window.



Fill in the **Name (9)** and **Unit (10)** fields, and specify the x1,000 and x1,000,000 units. To fill in each field, use a text input dialog box that appears when you touch the Modify next to the field.

When you are done, touch the OK button. On the confirmation dialog box that appears, touch the Yes button to save the settings and restart iTM.

Data Clear



You can clear the trend data as needed.

Touch the **Clear** button (11). On the confirmation dialog box that appears, touch the Yes button to clear the data and restart iTM.

Warning



- Daikin products are manufactured for export to numerous countries throughout the world. Prior to purchase, please confirm with your local authorised importer, distributor and/or retailer whether this product conforms to the applicable standards, and is suitable for use, in the region where the product will be used. This statement does not purport to exclude, restrict or modify the application of any local legislation.
- Ask a qualified installer or contractor to install this product. Do not try to install the product yourself. Improper installation can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Use only those parts and accessories supplied or specified by Daikin. Ask a qualified installer or contractor to install those parts and accessories. Use of unauthorised parts and accessories or improper installation of parts and accessories can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Read the User's Manual carefully before using this product. The User's Manual provides important safety instructions and warnings. Be sure to follow these instructions and warnings.

If you have any enquiries, please contact your local importer, distributor and/or retailer.

Cautions on product corrosion

1. Air conditioners should not be installed in areas where corrosive gases, such as acid gas or alkaline gas, are produced.
2. If the outdoor unit is to be installed close to the sea shore, direct exposure to the sea breeze should be avoided. If you need to install the outdoor unit close to the sea shore, contact your local distributor.



JMI-0107

Organization:
DAIKIN INDUSTRIES, LTD.
AIR CONDITIONING MANUFACTURING DIVISION

Scope of Registration:
THE DESIGN/DEVELOPMENT AND MANUFACTURE OF
COMMERCIAL AIR CONDITIONING, HEATING, COOLING,
REFRIGERATING EQUIPMENT, HEATING EQUIPMENT,
RESIDENTIAL AIR CONDITIONING EQUIPMENT, HEAT
RECLAIM VENTILATION, AIR CLEANING EQUIPMENT,
COMPRESSORS AND VALVES.



JQA-1452

Organization:
DAIKIN INDUSTRIES
(THAILAND) LTD.

Scope of Registration:
THE DESIGN/DEVELOPMENT
AND MANUFACTURE OF AIR
CONDITIONERS AND THE
COMPONENTS INCLUDING
COMPRESSORS USED FOR THEM



All of the Daikin Group's business facilities and subsidiaries in Japan are certified under the ISO 14001 international standard for environment management.

Dealer

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In all of us,
a green heart



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