DAIKIN

technical data

intelligent touch Controller

air conditioning systems

R-410A

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technical data

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intelligent touch Controller

R-410A

intelligent touch Controller

1 Features

1 - 1 Main Features

① **Languages***

- English
- French
- German
- Italian
- Spanish
- Dutch**
- Portuguese**

② **Management**

- Web application & internet compatibility
  - Monitoring & control according to user
  - Remote monitoring & control of more than one building
  - Remote monitoring & control of more than one building via internet
- Power Proportional Distribution: PPD (option)
- PPD data is available on the network through Web option
- Easy management of electricity consumption
- Enhanced history function
- Http interface option

③ **Control**

- Individual control (set point, start/stop, fan speed, etc) (Max. 2 x 64 groups/indoor units)
- Set back schedule**
- Enhanced scheduling function (8 schedules, 17 patterns)
- Yearly schedule
- Flexible grouping in zones
- Free cooling function
- Automatic cooling/heating changeover
- Temperature limit
- Heating optimization
- Fire emergency stop control
- Interlocking control (option)
- Increased HRV monitoring and control function
- Password security: 3 levels (general, administration & service)
- Quick selection & full control
- Simple navigation

④ **Monitoring**

- Visualisation via Graphical User Interface (GUI)
- Icon colour display change function
- Indoor units operation mode
- Error messages via e-mail (web option)
- Indication filter replacement
- Multi PC

⑤ **Cost Performance**

- Labour saving
- Easy installation
- Compact design: limited installation space
- Overall energy saving

* For DAME only available in English
** Contact your local dealer for more information and availability

1 Features

1 - 1 Main Features

⑥ **Connectable to**

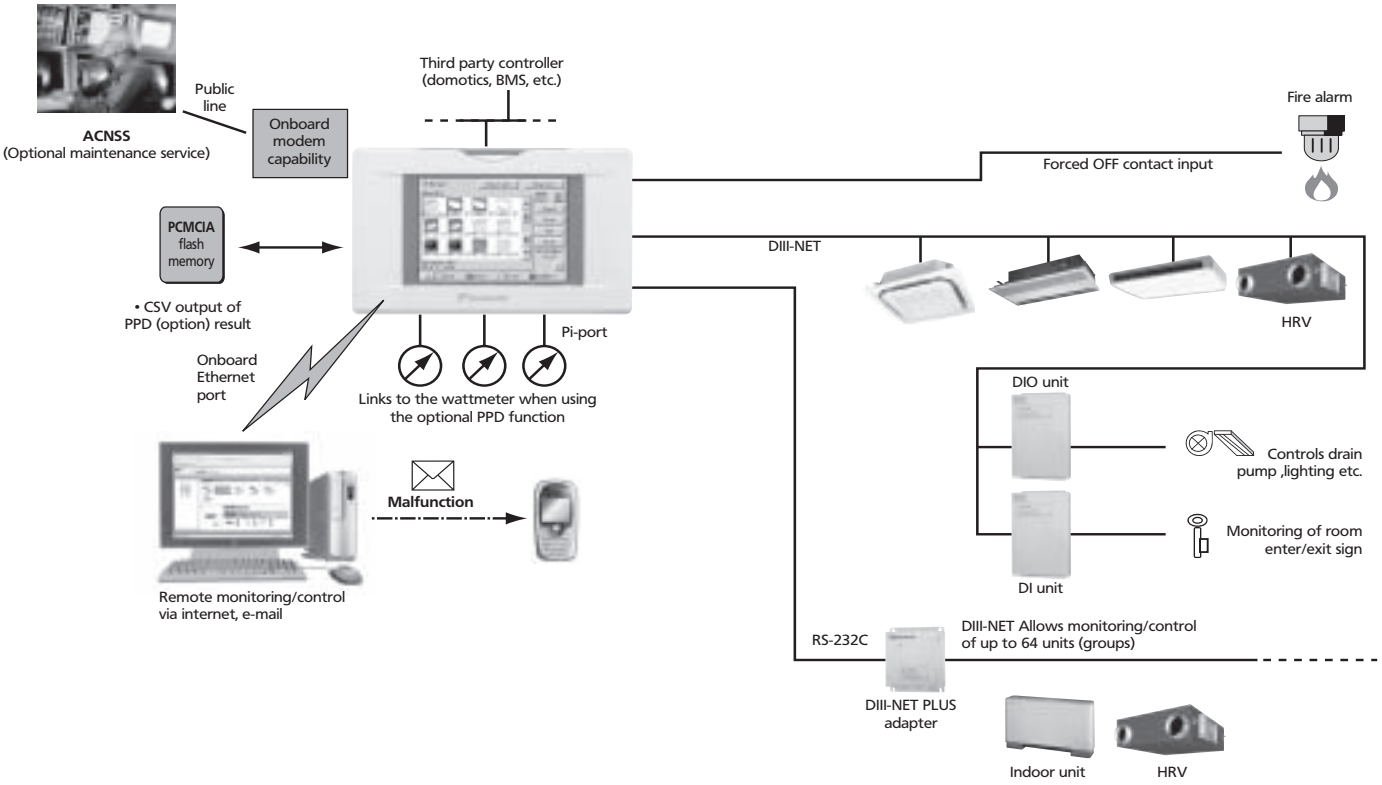
- VRV®
- HRV
- Sky Air (via interface adapter)
- Split (via interface adapter)

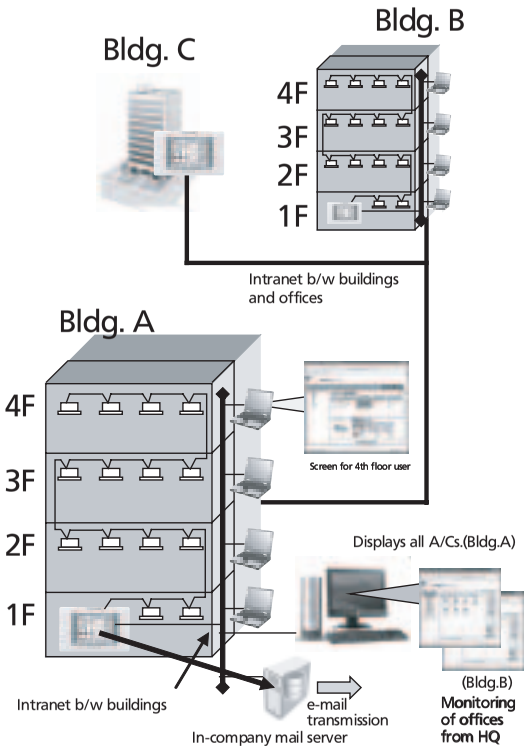
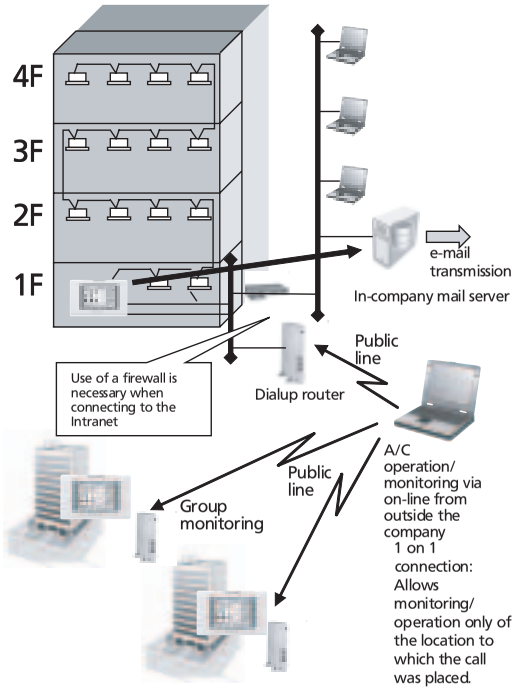
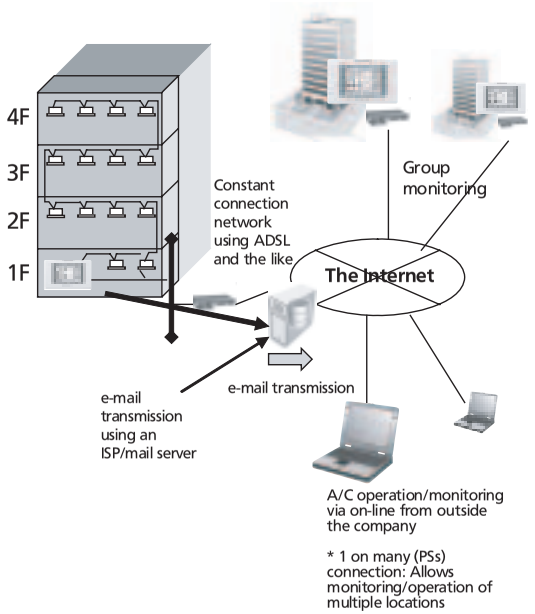
⑦ **System Layout**

- Up to 2 x 64 indoor units can be controlled
- Onboard Ethernet port (web + e-mail)
- Digital i/o contacts (option DEC101A51 / DEC102A51)
- Touch panel (full colour LCD via icon display)

⑧ **Open Interface**

- Communication to any third party controller (domotics, BMS, etc.) is possible via open interface



Type of connection	When using a LAN (Intranet) within the company	When using dialup	When using an constant Internet connection
Use scenarios	• A/C operation via the office PC • A/C operation via PCs on each floor • Monitoring of each office and sales branch from HQ • Error messages via e-mail	• A/C operation and status monitoring from remote locations • Group monitoring by connecting whenever necessary • Error messages via e-mail	• A/C operation and status monitoring from remote locations • Group monitoring via a constant connection (monitoring of the buildings and offices) • PPD data can be accessed remotely via the internet • Error messages via e-mail
System examples The network environment and devices configured by excising environment of the target building and commercially available products.			 * When connecting also to the Intranet, use of a firewall is necessary as in the case of dialup.
Security levels for the system example	• Allows for security within the Intranet • Username/password control via iTC web functions * If information/data such as passwords are leaked, it is possible that individuals (users of the Intranet) could maliciously operate the system from within the company	• Dialup router security function (phone number, username and password in general) as well as username/password control via the iTC web function * If information/data such as phone numbers and passwords are leaked, it is possible that the A/C system could be operated by an intruder. * When connecting to the Intranet, it is possible that someone could enter the Intranet unauthorized via a dialup environment	• Username/password control via the iTC web function • If there is no security within the constant connection environment to the web, available security is only the username/password control via the iTC web function. * If information/data such as the password is leaked, it is possible that an intruder could operation the A/C.
Proposals for better security	• Users can be limited by allowing only limited PCs to be able to access the web via the use of firewalls and the like	• Introduction of security for constant connection environment via network devices allows for a higher level of security (Example) Introduction of network devices, such as dialup routers, that feature strict authentication of accesses from outside the company Unauthorized access from outside the company prevented with a virtual private network (VPN).	• Introduction of security for constant connection environment via network devices allows for a higher level of security (Example) Unauthorized access from outside the company prevented with a virtual private network (VPN).

2 System overview

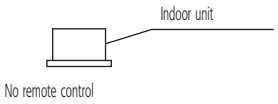
This intelligent Touch Controller is capable of controlling/monitoring up to 64 groups of indoor units (hereafter “groups”).

The main functions of the intelligent Touch Controller include:

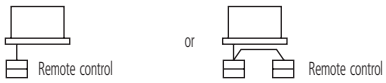
1 Set back function, enabling a building’s temperature to be monitored and managed during both heating and cooling seasons through a single setting.
2 Free cooling function, reducing the air conditioning energy consumption by actively introducing fresh air into rooms.
3 Collective starting/stopping of operation of the indoor units connected to the intelligent Touch Controller.
4 Starting/stopping of operation, temperature setting, switching between temperature control modes and enabling/disabling of operation with the hand-held remote control by zone or group .
5 Scheduling by zone or group .
6 Monitoring of the operation status by zone or group .
7 Display of the air conditioner operation history.
8 Compulsory contact stop input from the central monitoring panel (non-voltage, normally-open contact).
9 Power proportional distribution of the air conditioners. (With the optional software DCS002C51)
10 Control and Monitoring of air conditioner with personal computer by the Controller (with the optional software DCS004A51).

* A group of indoor units include:

① One indoor unit without a remote control.



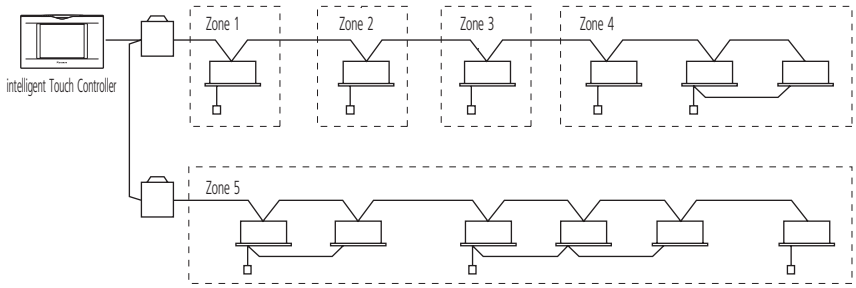
② One indoor unit controlled with one or two remote controls.



③ Up to 16 indoor units controlled with one or two remote controls.

* Zone control with the intelligent Touch Controller

* Zone control, which allows collective settings for more than one group, is available with the intelligent Touch Controller, which facilitates the setting operations.



- One setting makes the same setting for all of the units in one zone.
- Up to 128 zones can be set with one intelligent Touch Controller. (The maximum number of groups in one zone is 64.)
- Groups can be zoned at will with the intelligent Touch Controller.
- Units in one group can be divided into more than one zone.

3 Part Names

3 - 1 Front and Side

PCMCIA Card Slot

Used when using the optional Power Proportional Distribution (DCS002C51) or updating the intelligent Touch Controller software to a newer version.

Color LCD with Touch Panel

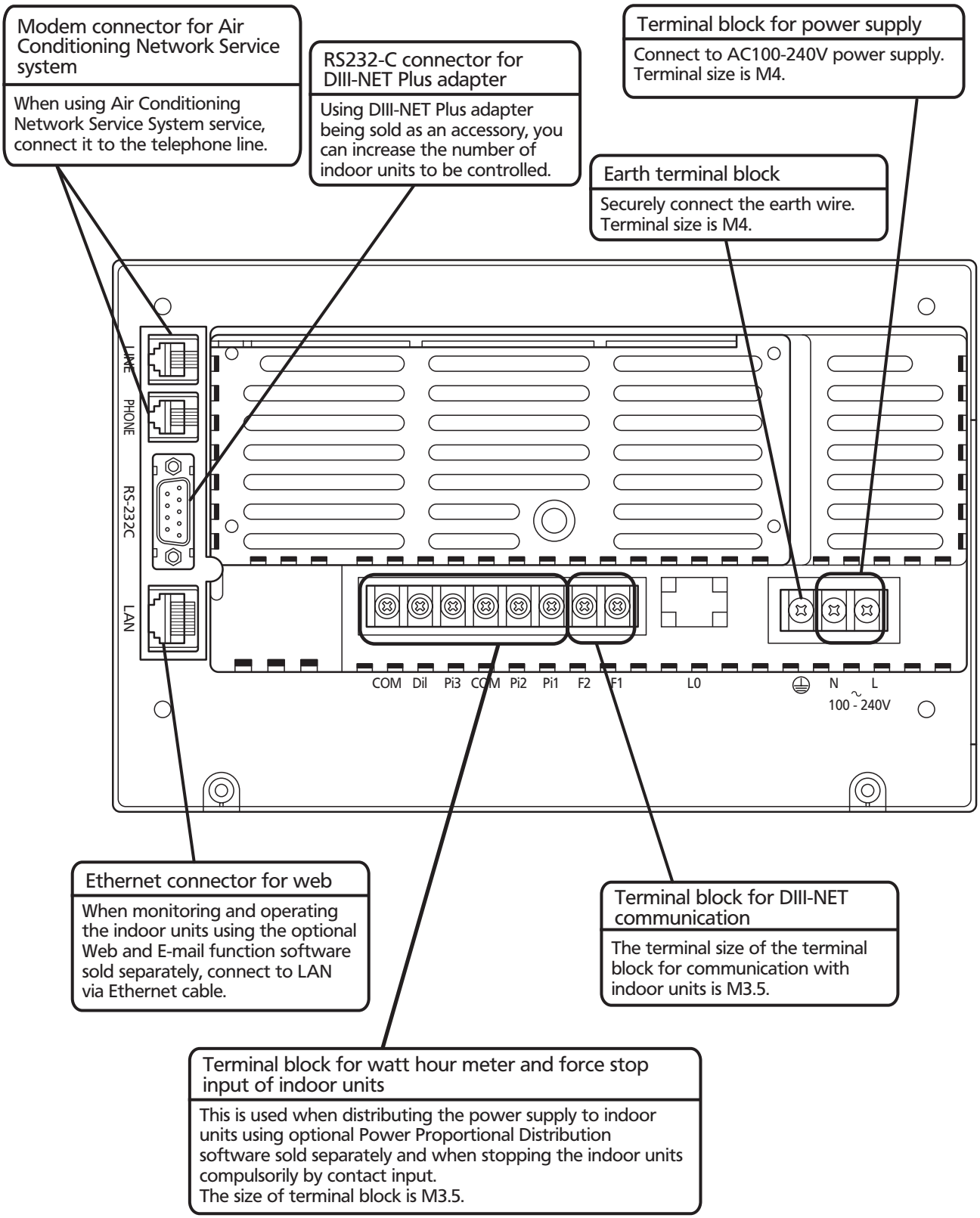
Provides a display for monitoring and operation.

Touch Pen

Be sure to use the touch pen for operation of the touch panel of the intelligent Touch Controller. Operating with an object other than the touch pen provided may cause damage and failure.
(When the pen is lost, contact the dealer you purchased the product from.)

3 Part Names

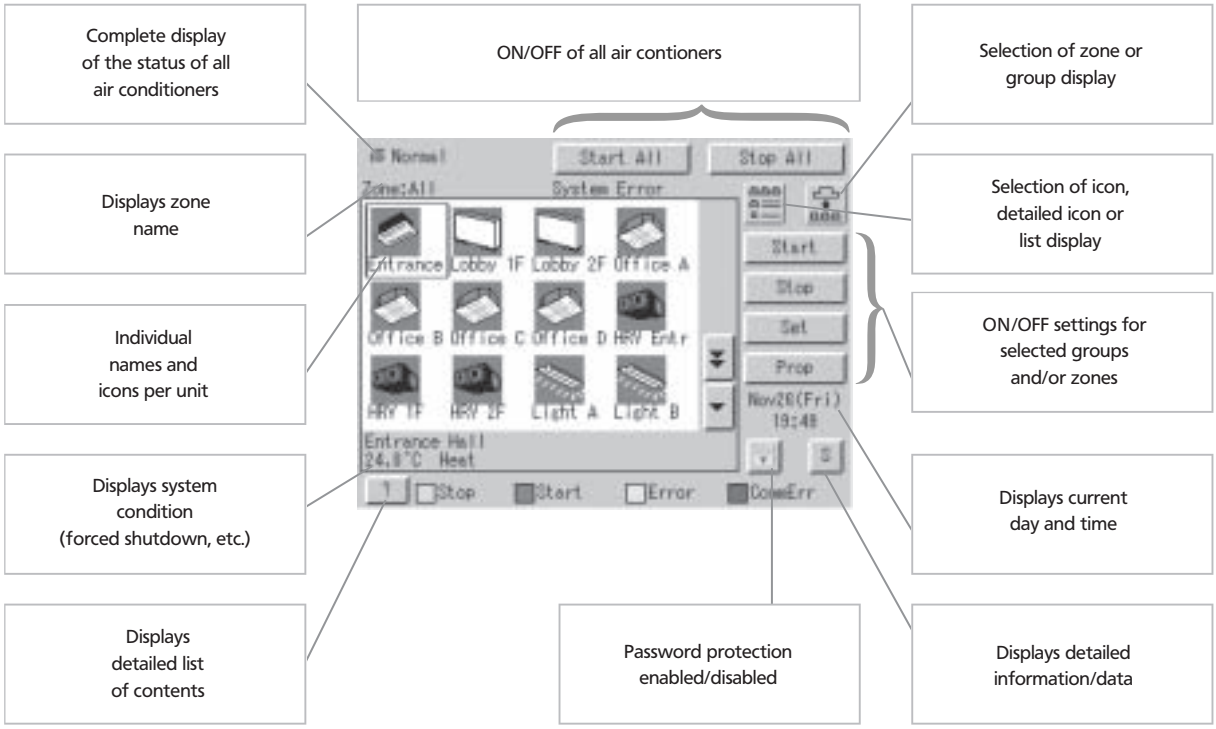
3 - 2 Back



4 Detailed and easy monitoring and operation

Detailed and easy monitoring and operation of systems with up to 2x 64 groups of indoor units (with maximum 128 indoor units).

Just a touch on the screen brings up icons that make it easy to grasp any information regarding system control. The Intelligent Touch Controller enables an operator to carry out a variety of quick and easy operations, establish numerous settings and bring up screens to confirm the details.



5 Specifications


			Intelligent Touch Controller	DIII-NET Plus adapter
REFERENCE			DCS601C51	DCS601A52
POWER SUPPLY			externally supplied AC100V-240V, 50/60Hz	externally supplied AC100V-240V, 50/60Hz
CONDITION OF INSTALLATION METHOD FOR USE			JIS4 switchbox embedded in indoor wall	-
OPERATING CONDITION	Surrounding temperature		0°C to 40°C	-10°C to 40°C
	Humidity		less than 85 % RH (if no condensation)	less than 90 % RH
DIMENSIONS	HxWxD	mm	147x230x107	190x157x42
LCD PANEL	Size / n° of dots / n° of colours		5.7 inches / QVGA 320x240 / 4,096 colours	-
MAXIMUM NUMBER OF INDOOR GROUPS			1 x 64 (2 x 64: combined with DCS601A52)	1 x 64
MAXIMUM NUMBER OF OUTDOOR SYSTEMS			1 x 10 (2 x 10: combined with DCS601A52)	10
PC & DISPLAY			built-in	-
INPUT	Touch panel		10 bit encoded analog input	-
COMMUNICATION FUNCTIONS	DIII-NET x 1		air conditioning equipment communication line	air conditioning equipment communication line
	Ethernet		port for web access and e-mail function	-
	RS-232C		DIII-NET Plus adapter	-
	10BASE-T		web option	-
	Modem	999121A	onboard modem capability	-
	PCMCIA slot		flash memory card	-
INPUT TERMINALS	Digital input Di x 1		forced shutdown	-
	Pulse input Pi x 3		power measuring pulse	power measuring pulse
OVERSEAS CERTIFICATION	Safety of information - Technology Equipment		IEC60730 (including IEC60335)	IEC60730 (including IEC60335)
	Interference (EMC)		EN55022 Class A, EN55024	EN55022 Class A, EN55024
PROJECT DATA & ENGINEERING			Configuration and engineering for each project are necessary. For further details, please consult with Daikin distributors and dealers	

6 Accessories

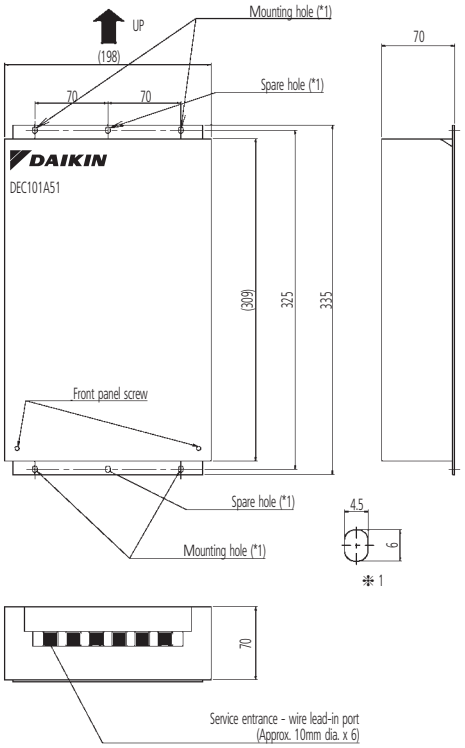
Description	Reference	Comments
SOFTWARE	DCS002C51	Power Proportional Distribution (PPD) Software
	DCS004A51	E-mail / Web software
	DCS007A51	Http interface option
HARDWARE	DCS601A52	DIII NET-Plus adapter
INSTALLATION BOX	KJB411A	For wall mounted installation
TOUCH-PEN	1264009	Spare part n° of Touch-Pen for Intelligent Touch Controller
INTERFACE ADAPTERS	KRP928A2S	For connection to Split units
	DTA102A52	For connection to R-22 / R-407C Sky Air units
	DTA112B51	For connection to R-410A Sky Air units
DIII-AI	DAM101A51	Outdoor temperature sensor, required for free cooling changeover
DIGITAL INPUT	DEC101A51	Input contacts: 8 inputs wth additional error feedback
DIGITAL INPUT/OUTPUT	DEC102A51	Input / output contacts: 4 inputs / outputs with additional error and on/off feedback

6 Accessories

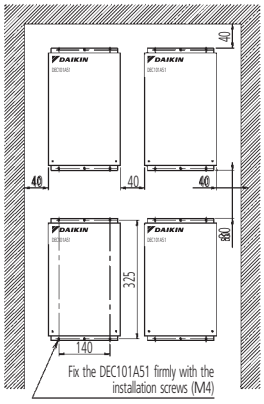
6 - 1 DEC101A51 - Digital input

6 - 1 - 1 Dimensional drawing

DEC101A51



Power supply specifications	1~200-240V 50/60Hz
Rated power consumption	15W
Mass (Weight)	2.5kg
Case material	Plated steel sheet
Case color	Matting chrome



NOTES

1 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 authorized personnel can touch it.

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

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

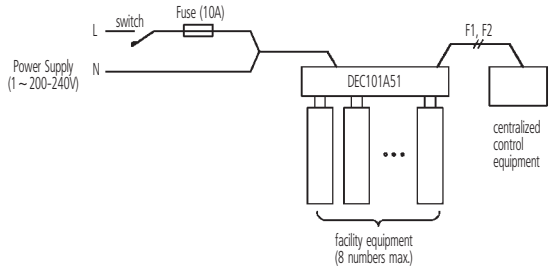
4 Restrictions in continuous installation
In case several devices are set up and installation inside the power board is carried out, each equipment installation space and space between the wall surface and this equipment should be left at least as shown to the left.

3D047630

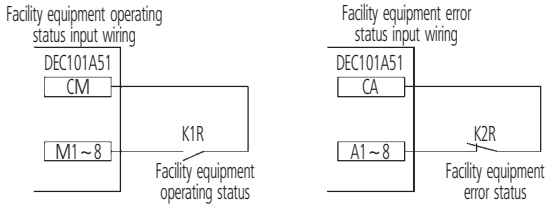
6 - 1 - 2 External connection diagram

DEC101A51

No. ✻	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.
③	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.
Abormal input When the contact is "Open" or "Closed", "Error" is produced. Input specifications: No-voltage "a" contact (The welding current is approx. 10mA when the applied voltage is 20 to 30 V DC and the contact is "Closed".) For input, use the contact to micro current. (12VDC, 1mA max.)



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 2.0mm^2. After checking the power supply specifications, make correct connections.
Connect the earth wiring to the " ⏚ " terminal. Use a 2.0 mm^2 wire.

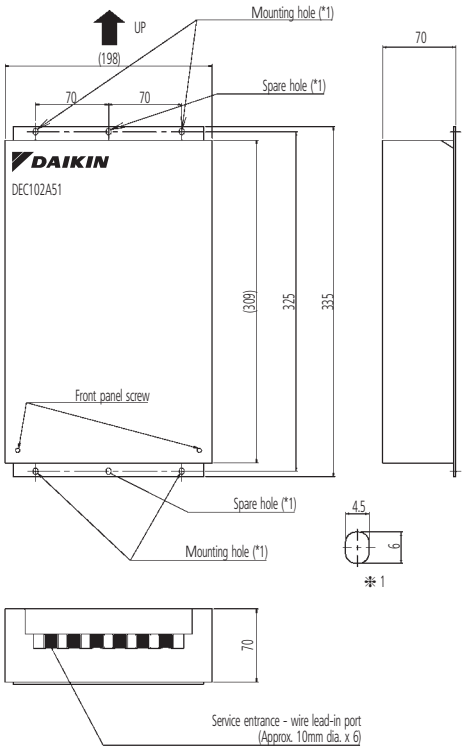
3D047631

6 Accessories

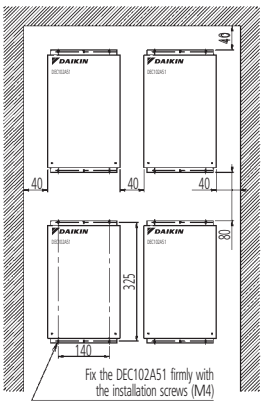
6 - 2 DEC102A51 - Digital input / output

6 - 2 - 1 Dimensional drawing

DEC102A51



Power supply specifications	1~200-240V 50/60Hz
Rated power consumption	15W
Mass (Weight)	2.5kg
Case material	Plated steel sheet
Case color	Matting chrome



NOTES

1 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 authorized personnel can touch it.

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

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

4 Restrictions in continuous installation
In case 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 to the left.

3D047623

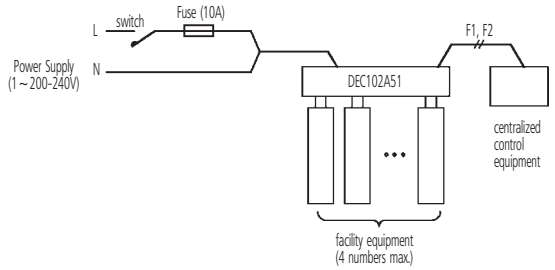
6 Accessories

6 - 2 DEC102A51 - Digital input / output

6 - 2 - 2 External connection diagram

DEC102A51

No. ❊	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.
③	For the wiring connection and clamping method, refer to the "Wiring lead-in" paragraph.



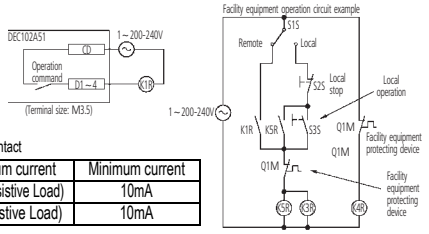
Wiring with Facility Equipment

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

Operation output

It is possible to select continuous 1 output (4 points) or instantaneous 2 output (ON/OFF pair - 2 points).

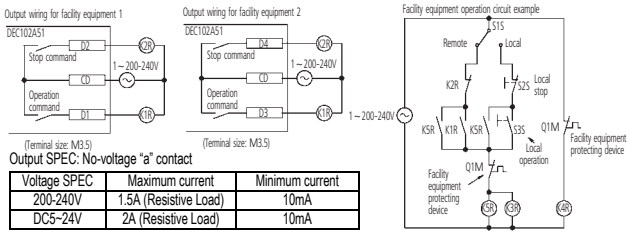
- Wiring at Continuous Output (Up to 4 facility equipments can be connected.)



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

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



Output SPEC: No-voltage "a" contact

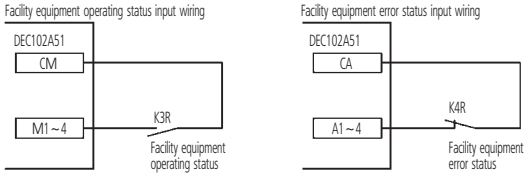
Voltage SPEC	Maximum current	Minimum current
200-240V	1.5A (Resistive Load)	10mA
DC5~24V	2A (Resistive Load)	10mA

Operation input

When the contact is "Closed", "Run" is to be input. 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. 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.)



When the switch was set to "Ins." (Instantaneous Output), the operation input terminals M3, M4 and abnormal input terminals A3, A4 ar 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 or setting to "Instantaneous Output"							
	Operation output terminal		Stop output terminal		Operation input terminal		Stop input terminal	
1st equipment	CD	D1	CD	C2	CM	M1	CA	A1
2nd equipment	CD	D2	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 2.0mm^2. After checking tht power supply specifications, make correct connections.

Connect the earth wiring to the " ⏚ " terminal. Use a 2.0 mm^2 wire.

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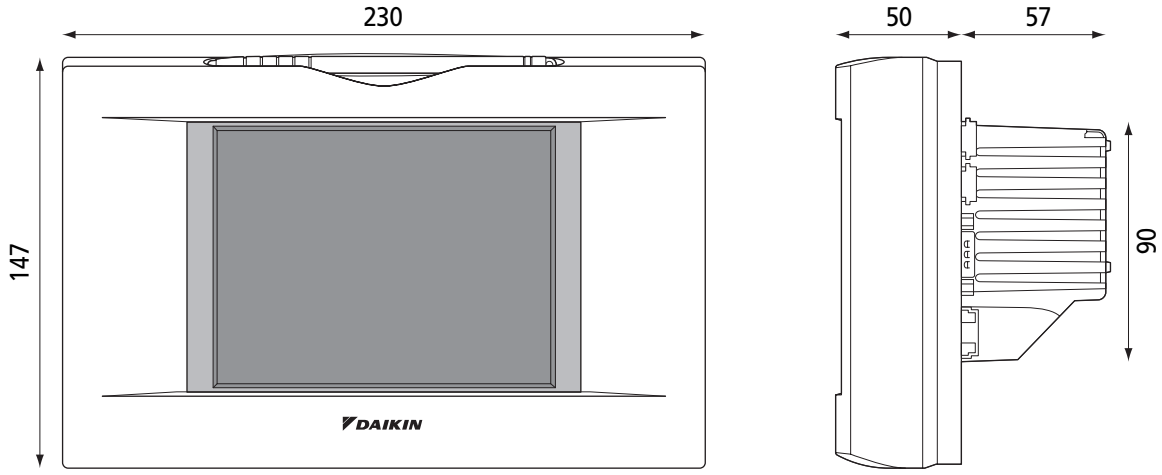
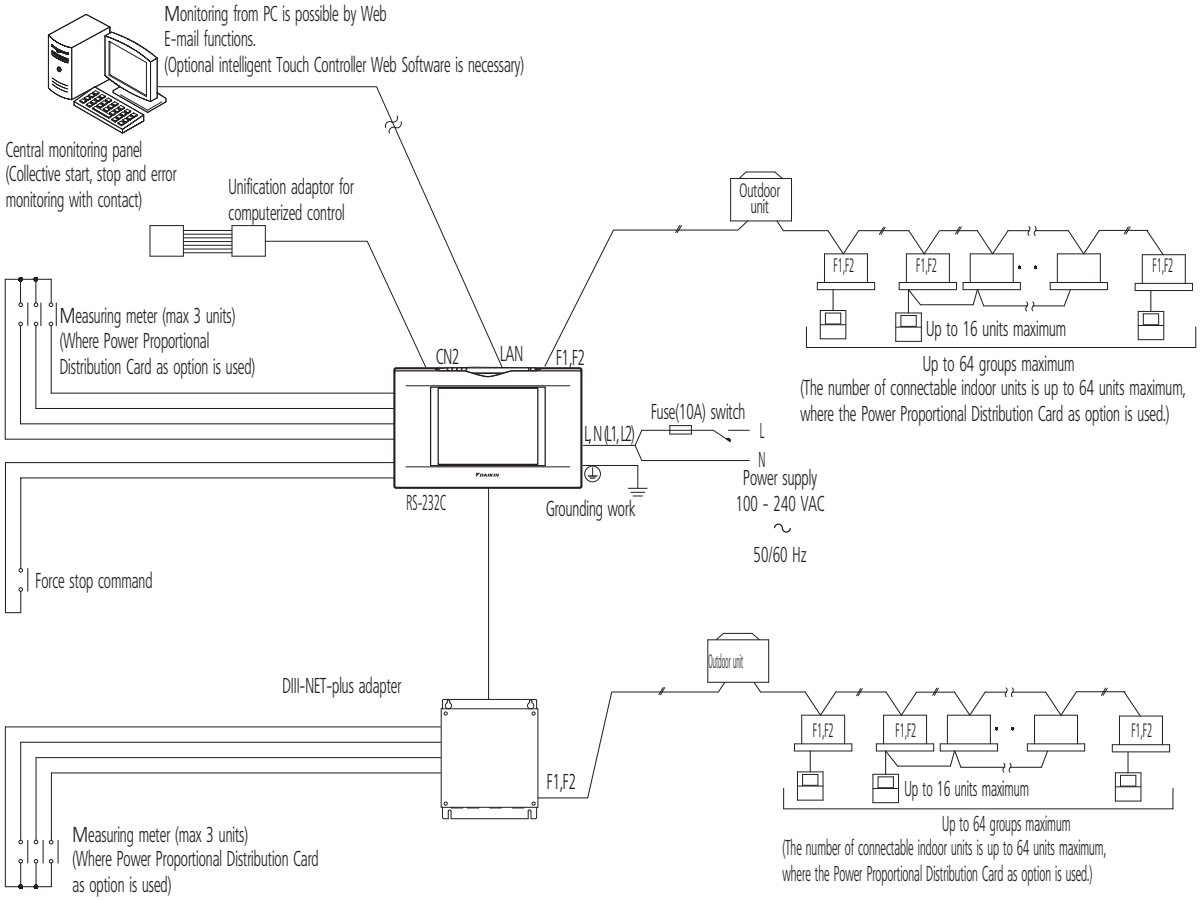
7 Dimensions



8 System wiring

Connecting Unification adaptor allows using the contact for normal and abnormal operation signal and collective start/stop with a contact. For details, contact the vendor you purchased the product from.

Also, by connecting DIII-NET-plus adapter, it is possible to operate and monitor the indoor units of 64 groups (intelligent Touch Controller plus DIII-NET – plus adapter–128 groups in total) additionally.



9 Power Proportional Distribution Card

9 - 1 Function and Outline

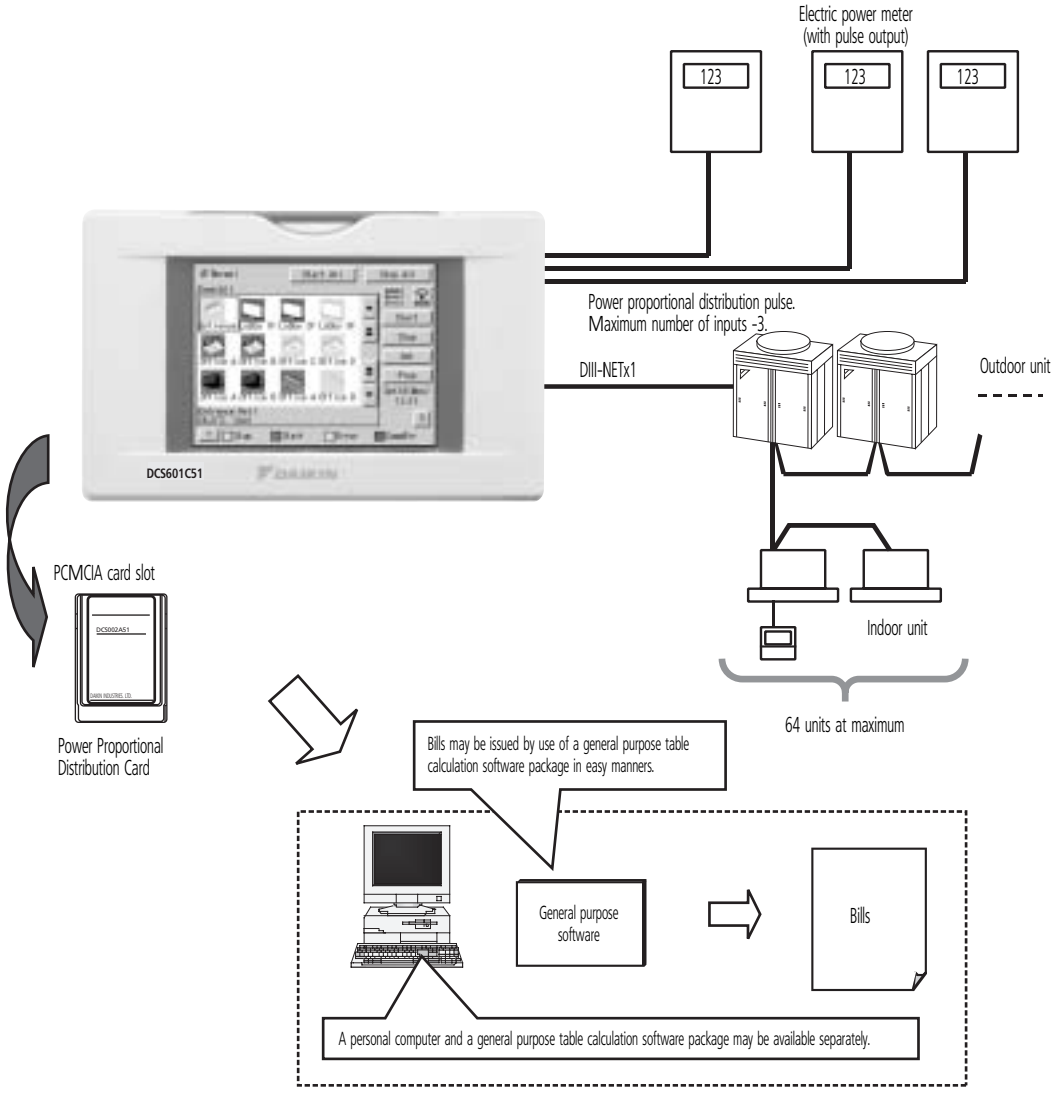
Power Proportional Distribution Card, in combination with an existing intelligent Touch Controller, enables to proportionally calculate and display electricity amount used by air conditioner per indoor unit.

9 - 1 - 1 Main Functions

- 13 months data storage possible
- Data available per hour per indoor unit
- Power proportional distribution may be calculated for 2 x 64 indoor units at maximum.
- Power proportion distribution results data may be saved into a PCMCIA card.
  Data is saved CSV format generally applied to personal computers, so bills may be issued by use of a general purpose table calculation software package in easy manners.
  (A personal computer and a general purpose table calculation software package may be available separately.)

9 - 1 - 2 Precautions

This system calculates electricity consumptions by size of indoor units, run time, expansion vales open gap, suction rate and the number of pulses from the power meters installed at the Outdoor Units.
This method is not calculated by direct measurement alone.



9 Power Proportional Distribution Card

9 - 2 File Format

When Power Proportional Distribution Report is saved, a zone information file, an electric power information file and detailed information file are created.

9 - 2 - 1 Zone information file

This contains zone name and information of air conditioners in the zone.

(1) File name : ZONE.CSV

(2) File format:

(Example)

zone ID, Name ← Index

0, " 'all" ← Zone ID, zone name

1, " 'Z-000"

2, " 'Z-001"

3, " 'Z-002"

← One line space

zone ID, AC No. ← Zone ID, air conditioner number

0, 0

0, 1

1, 2

1, 3

9 - 2 - 2 Electric power information file

This file contains Power Proportional Distribution Report and information of air conditioners.

(1) File name : YYYYMMDD - YYYYMMDD

Month and date of calculation completion

Year, month and date of calculation start

(2) File format :

(Example)

Index

Start day, number of days, air conditioner type (0 : normal type), Undistributed Power Amount, period designation type (0 : period designation, 1 : month designation)

20050101, 31, 0, 0, 200501

← One line space

Air conditioner number, indoor unit number, horse power code, Daytime used Pwr, Nighttime used Pwr, Daytime Idle Pwr, Nighttime Idle Pwr, GasAmount.

0, "1:1-00",38,2459,0,0,0,0

1, "1:1-01", 38,2718,0,0,0,0

60, "1:4-12", 70,489,0,0,0,0

In all of us, a green heart

Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues. For several years Daikin has had the intension to become a leader in the provision of products that have limited impact on the environment. This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.

Daikin Europe N.V. is approved by LRQA for its Quality Management System in accordance with the ISO9001 standard. ISO9001 pertains to quality assurance regarding design, development, manufacturing as well as to services related to the product.

ISO14001 assures an effective environmental management system in order to help protect human health and the environment from the potential impact of our activities, products and services and to assist in maintaining and improving the quality of the environment.

CE Daikin units comply with the European regulations that guarantee the safety of the product.

VRV® products are not within the scope of the Eurovent certification programme.

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