

AIRSTAGE™

Variable Refrigerant Flow System

Multi Air Conditioning System for Buildings



Model : AO90T
AO90E
AO72T
AO72E

HEATPUMP & COOLING ONLY TYPE

DESIGN & TECHNICAL DATA

FUJITSU GENERAL LIMITED

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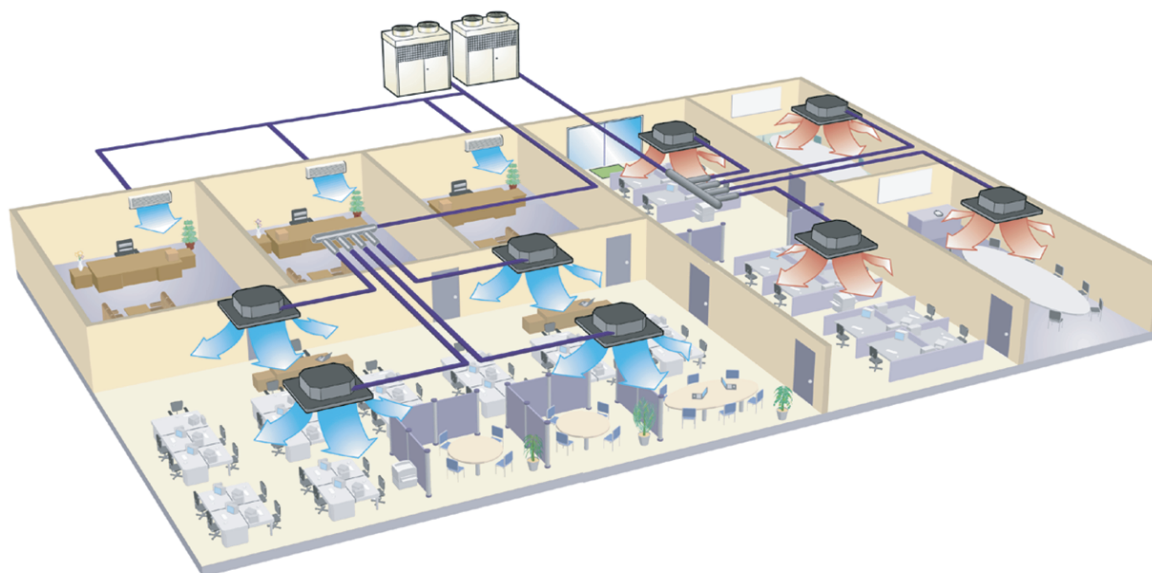
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1 . GENERAL INFORMATION

1-1 FEATURES OF SYSTEM

Combining multiple constant speed compressors, Fujitsu General VRF system creates High COP. This enables to provide the superior energy saving and the top class quiet operation. Fujitsu General VRF system offers the individual air conditioning system, that allows a design to provide a higher installation freedom.



■ FEATURE

(1) Long piping for high rise building

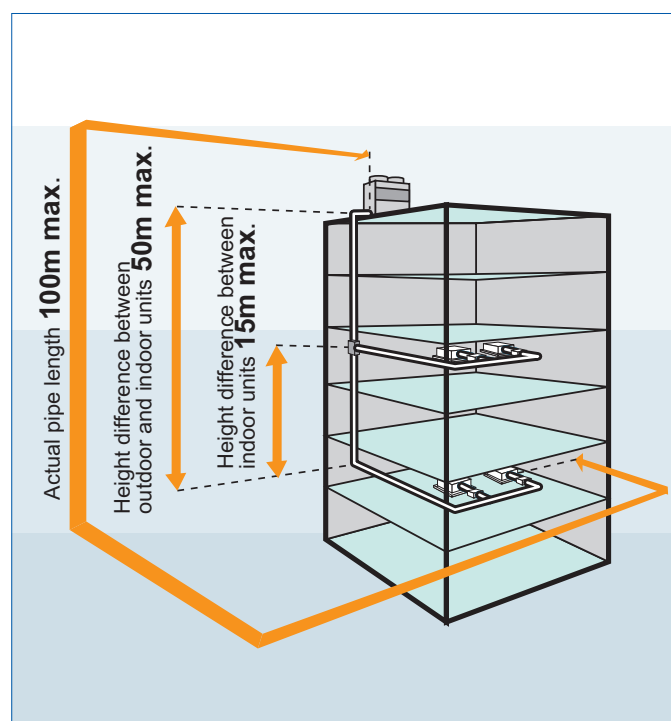
Height difference between outdoor unit and indoor units : 50m max.

(For the outdoor unit : 40m max.
stated below)

Actual pipe length : 100m max.

Equivalent pipe length : 120m max

Total pipe length : 200m max.



(2) High energy efficiency system

• New operating system

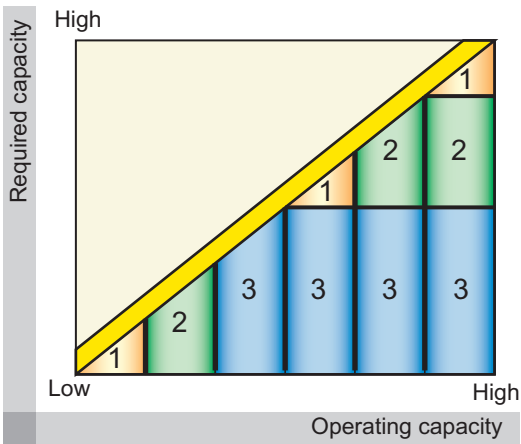
This newly developed operating system controls the refrigerant flow rate inside the refrigerant circuit by adopting two control technology, namely, compressor capacity control technology and power balance control technology. Therefore, it can be operated at an optimum refrigerant flow rate and high efficiency.

Cooling COP	3.1
Heating COP	3.7

20 % higher
compared with
outdoor unit of the
equivalent class

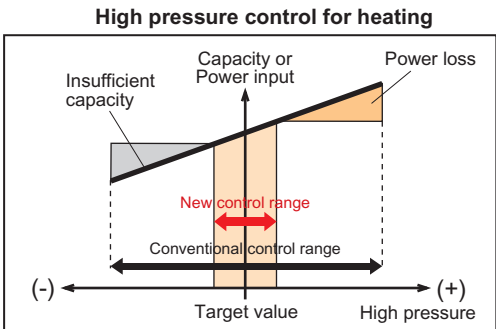
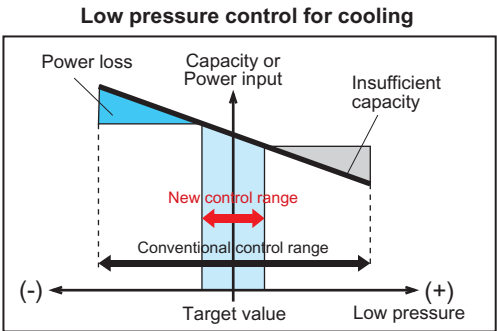
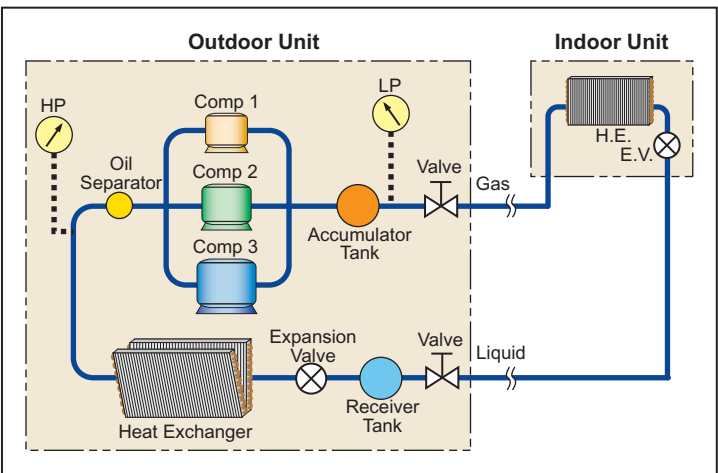
• Compressor capacity control

Compressor capacity control is realized by using various combinations of three compressors with different capacity. This control method can not only provide a wide range of refrigerant flow rate that is suitable for indoor units but also is more efficient than inverter system. Moreover, the refrigerant flow rate of each compressor step can be adjusted because the density of the gas that is sucked into compressor is also controlled.



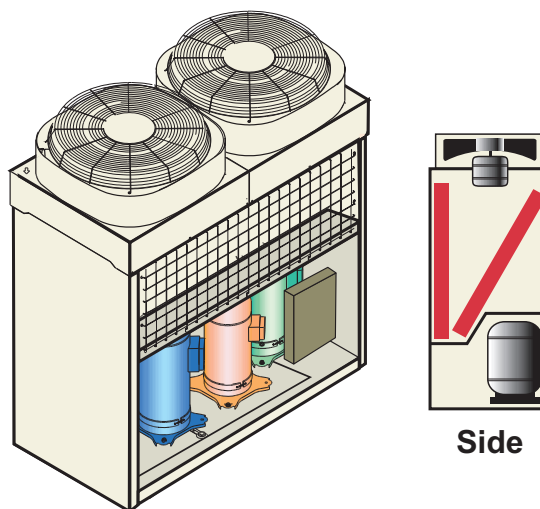
• Power balance control

Power balance control technology realizes highly efficient operation by detecting low pressure (evaporating temperature) during cooling operation and high pressure (condensing temperature) during heating operation and precisely controls the optimum refrigerant condition and refrigerant flow rate (capacity). This eliminates a waste of capacity by excessive refrigerant flow rate and insufficient capacity due to insufficient refrigerant flow rate.



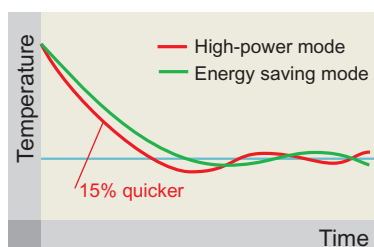
• High COP technology

- * 3 compressor system adopting high efficiency scroll compressors without causing power supply conversion loss (3-10%) like an inverter system.
- * New refrigerant flow control system enabling to supply refrigerant to compressor in an optimum saturated vapor condition (quality=1) for operating the system always with the maximum efficiency.

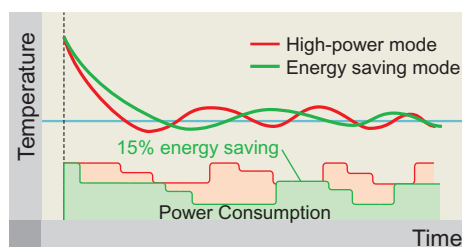


• High Power and Energy Saving

High-power mode, Energy saving mode can be set according to the needs of the customer. This setting makes it possible to vary the outflow air temperature within a range of about 2 degrees. In comparison with high-power mode, 15% energy saving can be realized by using energy saving mode. On the other hand, in comparison with energy saving mode, the capacity increases about 15% if high-power mode



By setting high-power mode, the room temperature reaches set temperature quicker than energy saving mode. (About 15% quicker)



An energy saving of 15% is realized because the temperature can be corrected slowly by energy saving mode.

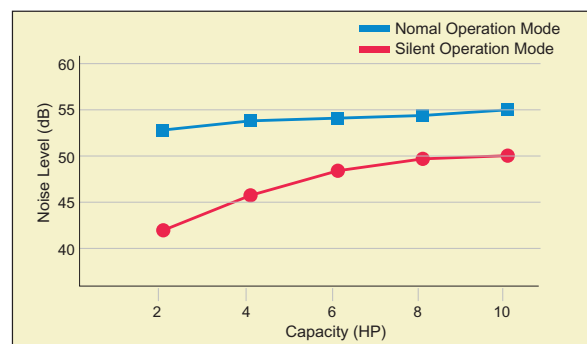
(3) Super quiet

• Low operation sound level

- * A jarring noise was considerably reduced by adopting new Bellmouse and fan.
- * Noise can be reduced by 5dB (A) compared with normal operation by reducing the operating speed of fan as the outdoor temperature lowers. (DIP-SWITCH setting necessary) Furthermore, the noise can be reduced in the low capacity range.

Normal operation mode : 55dB(A) (380V)

Silent operation mode : 50dB(A) (380V)



(4) Flexibility of layout

• Maximum 16 indoor units could be connected (2.15kW)

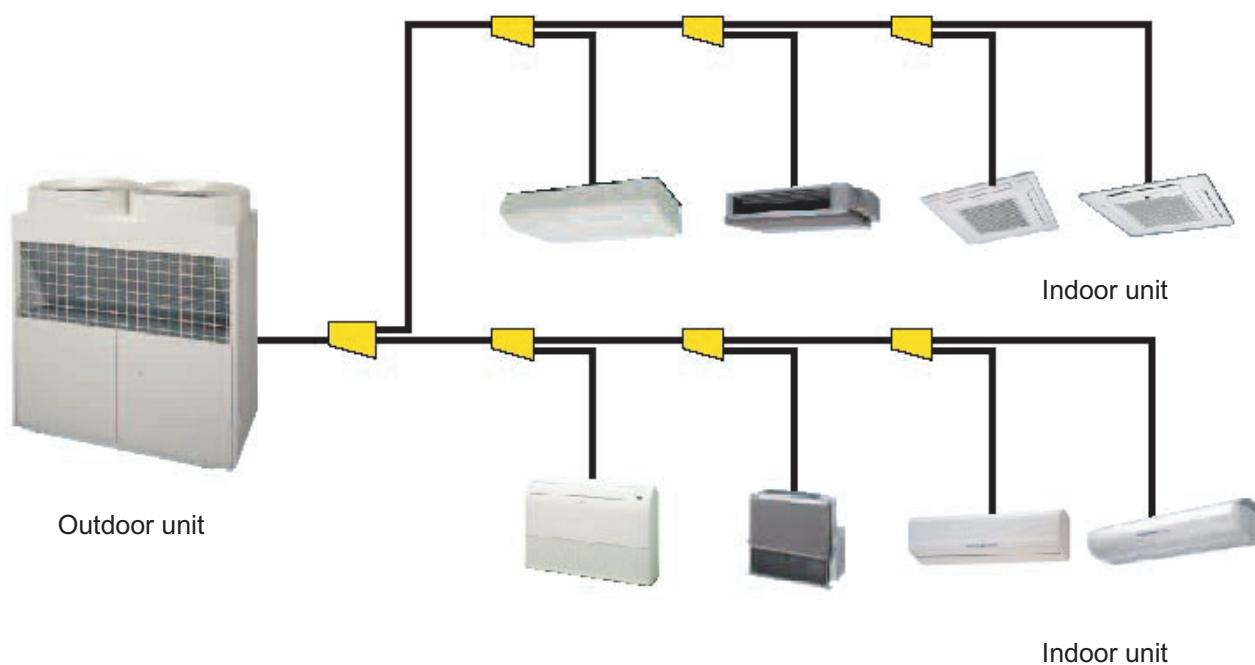
One outdoor unit can control individually up to 16 indoor units of different type and capacity.

outdoor unit	maximum number of connectable indoor unit	capacity ratio of outdoor unit
AO 90	16	50 to 130%
AO 72	13	

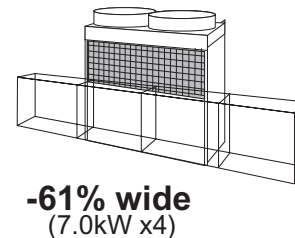
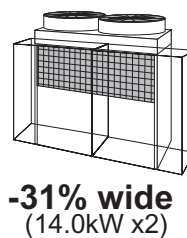
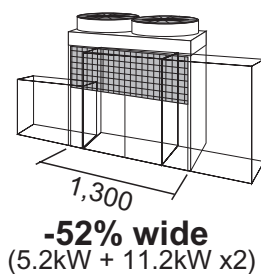
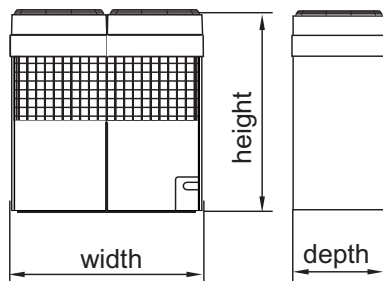
• Various connectable indoor unit

Various combinations of indoor unit type and capacity 12 types 45 models ranging from 2.15kW to 17.0kW.

Type		Cassette (compact)	Cassette	Cassette	Duct (compact)	Duct (compact)	Duct	Duct (High Static Pressure)	Universal Floor/Ceiling	Ceiling	Wall mounted (compact)	Wall mounted	Ceiling wall
Capacity (kW)	Model code												
17.0	60							●					
14.1	54			●						●			
12.7	45			●			●	●		●			
10.5	36			●			●	●		●			
8.8	30		●				●			●		●	●
7.05	25		●				●						
6.8	24								●			●	●
5.7	20		●									●	●
5.3	18	●				●			●			●	●
4.05	14	●				●			●		●		●
3.6	12	●				●			●		●		●
2.8	9	●			●						●		●
2.15	7	●			●						●		●



• Space saving

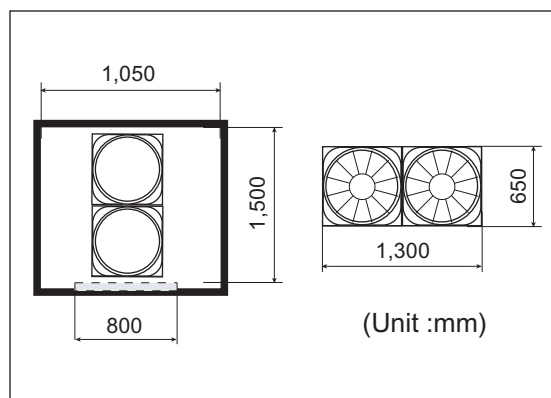


• Dimensions

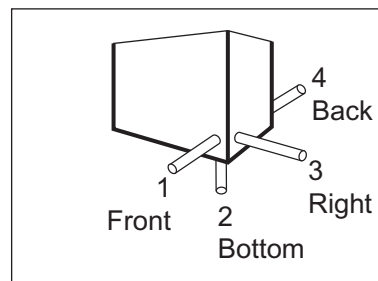
height 1,380mm
width 1,300mm
depth 650mm

• Easy Installation

Outdoor unit goes into elevator.

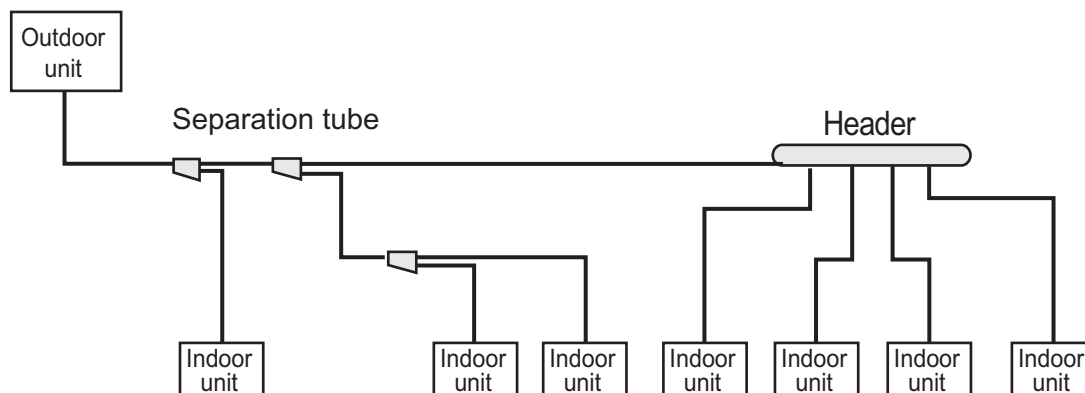


Four-direction pipe allows a variety of installation configurations.
Easy installation and pipe direction setting.



• Flexible piping

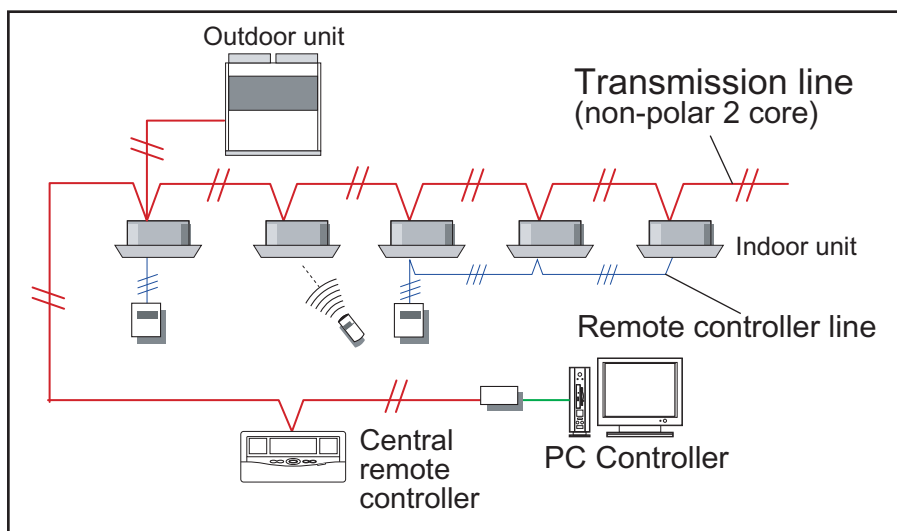
Selectable variation by using separation tube and header.



(5) Flexibility of control system

• Flexible Design System

A flexible system can be designed as outdoor units, indoor units and controllers can be connected anywhere within the transmission line wiring connection.

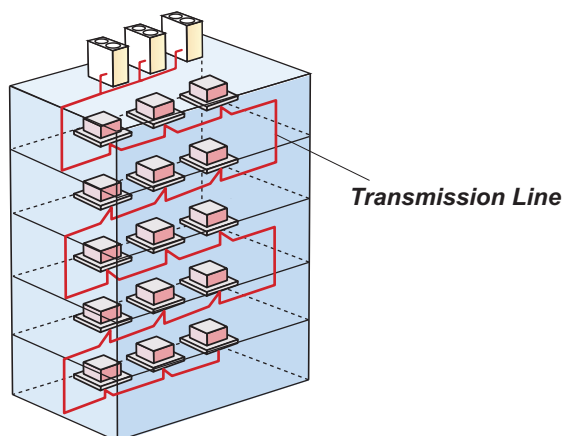


Maximum connectable number per onetransmission line

Refrigerant system	100
Indoor units	400
Outdoor units	100

• Easy wiring

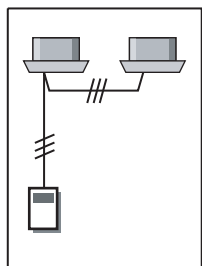
Non-polar 2-core transmission line prevents erroneous wiring.



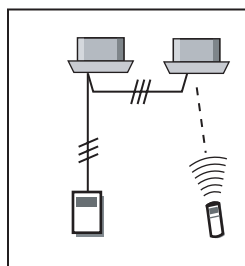
• Various control system

By combining each remote controllers of central control and individual control, it provides wide variety of controls that fit to each customer's used.

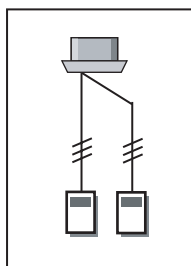
Wired / Simple / Wireless remote controllers can be simultaneously used with the same indoor unit, as the remote controller signal receiver is built into the indoor unit body.



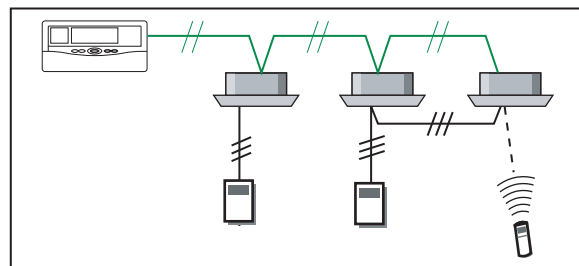
Wired or Simple
Remote Controller



Wired or Wireless
Remote Controller



2 remote controllers
(joint use)



Central control and individual control

(6) High reliability

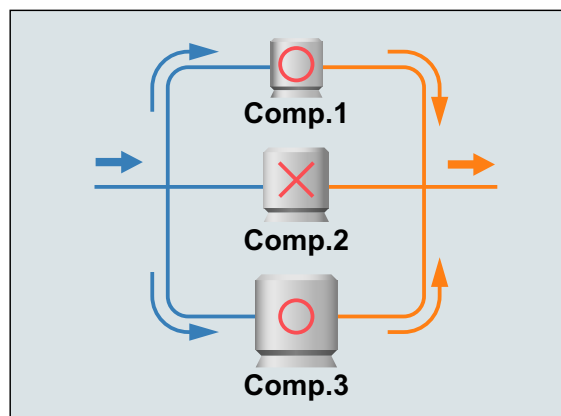
• Recovery operation

* Outdoor unit

Even if one or two compressors should fail, the remaining compressor(s) perform the recovery operation automatically while generating an alarm and, thus, the system continues to operate without any interruption.

* Indoor unit

Each indoor unit on the transmission line acts as an independent transmission processor, therefore, even if one unit fails, the remaining system is not affected.

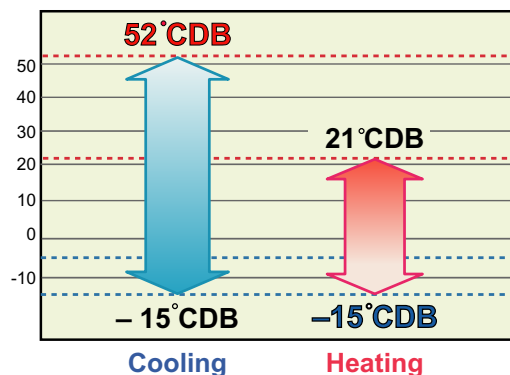


• Oil recovery operation

Oil recovery operation is performed automatically after fixed operation time to return the oil that has accumulated inside the refrigerant circuit and indoor unit.

(7) Wide operating range

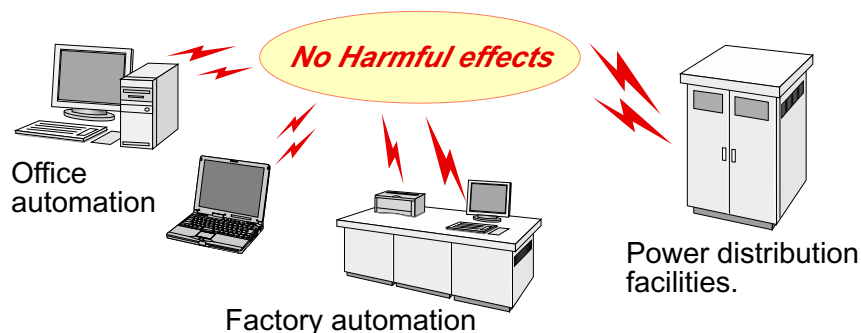
Outdoor unit operates over an outdoor temperature range of 52°C to -15°C for cooling and 21°C to -15°C for heating.



(8) Environmentally Friendly

• Harmonic-less

Our VRF system don't use inverter to control the refrigerant flow rate, thus hardly does harmonic current emit. Because the system has no harmful effects on office automation equipment, factory automation equipment and power distribution facilities, it can be used anywhere, such as in hospital where the harmonic current emissions are restricted.



• Alternative refrigerant

To protect the earth's environment, alternative refrigerant R407C is used.

1-2 MODEL LINE UP

■ OUTDOOR UNIT

TYPE	CAPACITY	MODEL	Maximum Connectable Indoor unit
AIRSTAGE™ Heat pump type	28.0 kW(10HP)	AO*90TPBMF	16
	22.4 kW(8HP)	AO*72TPBMF	13
AIRSTAGE™ Cooling only type	28.0 kW(10HP)	AO*90EPBMF	16
	22.4 kW(8HP)	AO*72EPBMF	13

Refrigerant : R407C

- Heat pump type
AO90T
AO72T



- Cooling only type
AO90E
AO72E



■ CONTROLLER

TYPE	MODEL	Maximum Connectable Indoor unit
Wired Remote Controller	UTB-YLB,UTB-GLB,UTB-TLB	16
Simple Remote Controller	UTB-YPA,UTB-GPA,UTB-TPA	16
Wireless Remote Controller	UTB-YVA,UTB-GVA	16
Central Remote Controller	UTB-YCA,UTB-GCA	400
PC Controller	UTR-YOTA	400

Individual Control

Wired Remote Controller



Simple Remote Controller



Wireless Remote Controller

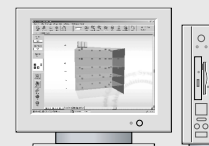


Central Control

Central Remote Controller



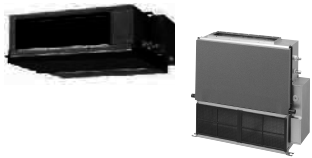
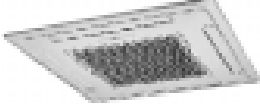
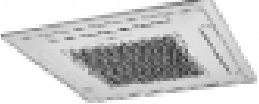
PC Controller



■ INDOOR UNIT

12 types, 45 models ranging from 2.15kW to 17.0kW

Type		Cassette (compact)	Cassette	Cassette	Duct (compact)	Duct (compact)	Duct	Duct (High Static Pressure)	Universal Floor/Ceiling	Ceiling	Wall mounted (compact)	Wall mounted	Ceiling wall
Capacity (kW)	Model code												
17.0	60							●					
14.1	54			●						●			
12.7	45			●			●	●		●			
10.5	36			●			●	●		●			
8.8	30		●				●			●		●	●
7.05	25		●				●						
6.8	24								●			●	●
5.7	20		●										
5.3	18	●				●			●			●	●
4.05	14	●				●			●		●		●
3.6	12	●				●			●		●		●
2.8	9	●			●						●		●
2.15	7	●			●						●		●

• Universal Floor / Ceiling TYPE AB12 AB14 AB18 AB24 	• Large Ceiling TYPE AB30 AB36 AB45 AB54 	• Compact Duct TYPE AR 7 AR 9 
• Compact Duct TYPE AR12 AR14 AR18 	• Duct TYPE (Low Static Pressure) AR25 AR30 AR36 AR45 	• Duct TYPE (High Static Pressure) AR36H AR45H AR60H 
• Compact Cassette TYPE AU 7 AU 9 AU12 AU14 AU18 	• Cassette TYPE AU20 AU25 AU30 	• Cassette TYPE AU36 AU45 AU54 
• Compact wall mounted TYPE AS 7 AS 9 AS12 AS14 	• Wall mounted TYPE AS18 AS24 AS30 	• Ceiling Wall TYPE AW7 AW9 AW12 AW14 AW18 AW24 AW30 

■ SEPARATION TUBE

Type	Model	Total model code of connectable indoor unit
Cooling only Heat pump	UTR-BP54TA	Less than 60
	UTR-BP90TA	More than 61

■ HEADER

Type	Model	Connectable indoor units
Cooling only Heat pump	UTR-HD906A	3 ~ 6
	UTR-HD908A	7 ~ 8

■ ADAPTOR / CONVERTOR

Type	Model	Features
Transmission adaptor	UTR-YTMA	The equipment for enabling control by other equipment with RS-232C cable.
Network convertor	UTR-YSSA	The equipment for controlling operation of split type/big multi type air conditioners from transmission line of VRF system.
Network convertor	UTR-YLLA	The equipment for connecting our original LONWORKS® to the system built by LONWORKS®, to manage mutually between medium and small-sized BMS and VRF system.
Network convertor	UTR-YLEA	The equipment for connecting our original LONWORKS® to the system built by Ethernet, to manage mutually between large-sized BMS and VRF system.
Signal Amplifier	UTR-YRPA	The equipment for extend the transmission line up to Max 2000m.

*LONWORKS® is a resistered mark of Echelon Corporation.



2 . CONTROL SYSTEM

2-1. CONTROL SYSTEM

2-1-1. LINE UP OF CONTROLLERS

Installation Work Saving

Simplified wiring and reduced installation cost by the use of non-polar 2-core transmission line.

Flexible Control System to Meet a Variety of Needs.

Air Conditioning Individual Control

A range of Remote Controllers suitable for diverse individual control situations using various built-in timers.



UTB-YLB
UTB-GLB
UTB-TLB

Wired Remote Controller

- *Up to 16 indoor units can be controlled with one remote controller, for individual operation control to weekly timer setting.



UTB-YVA
UTB-GVA

Wireless Remote Controller

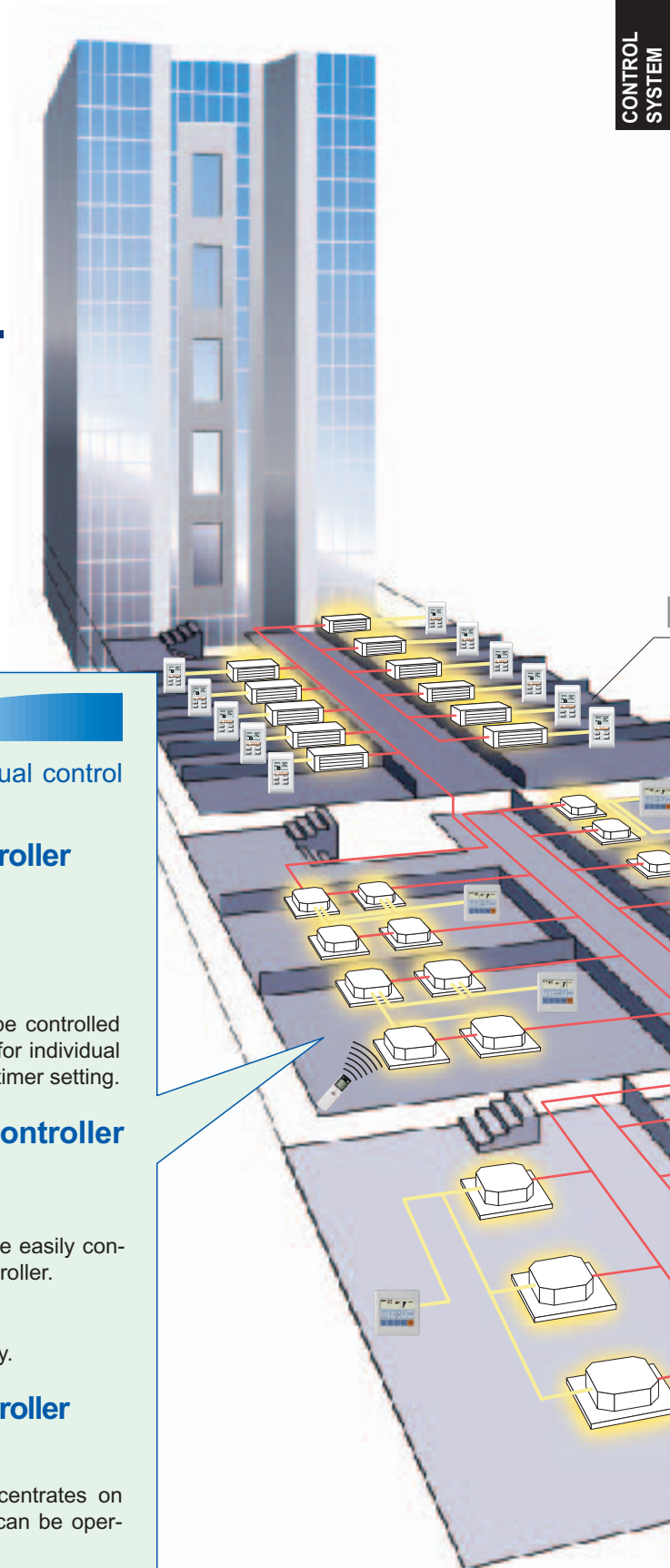
- *Up to 16 indoor units can be easily controlled with one remote controller.
- *Thin design and user-friendly.



UTB-YPA
UTB-GPA
UTB-TPA

Simple Remote Controller

- *This remote controller concentrates on the basic functions, which can be operated easily by anybody.
- *Suitable for hotels or offices which do not require complicated control functions.



— Transmission Line

— Remote Controller Line

Easy Operation

Advanced control functions can be set up with the easy-to-use setting operation.

Control System Configuration Expansion

Optimum system configuration by various controller combinations, allowing for various applications and future expansion.

Free System Configuration

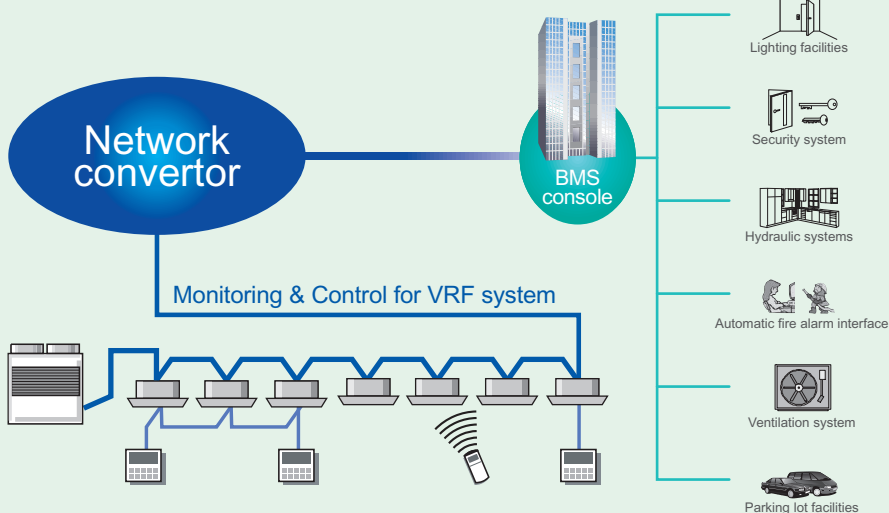
Up to 400 indoor units are connectable in one wiring system. System is adaptable to various applications, from small to large buildings.

CONTROL SYSTEM

CONTROL SYSTEM

Building Management System Connectivity (BMS)

Possible to control not only the air conditioning system but total building management system including lighting and electrical facilities, hydraulic systems, fire alarm interface, security system, etc.



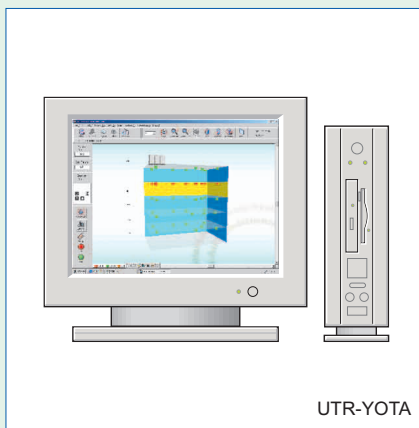
HOTEL

OFFICE

Air Conditioning Central Control

PC Controller suitable for building air conditioning management.

PC Controller



UTR-YOTA

*Up to 400 indoor units / 400 groups can be controlled with one system making large scale system configuration possible.

*Advanced building air conditioning control including electricity charge calculation, annual operation schedule function, etc.

Central Remote Controller specially designed for centralized control.

Central Remote Controller



UTB-YCA
UTB-GCA

*Up to 400 indoor units can be centrally controlled with few button operations.

*Weekly timer and daily timer are equipped as standard functions for detailed time schedule setting.

Control Room

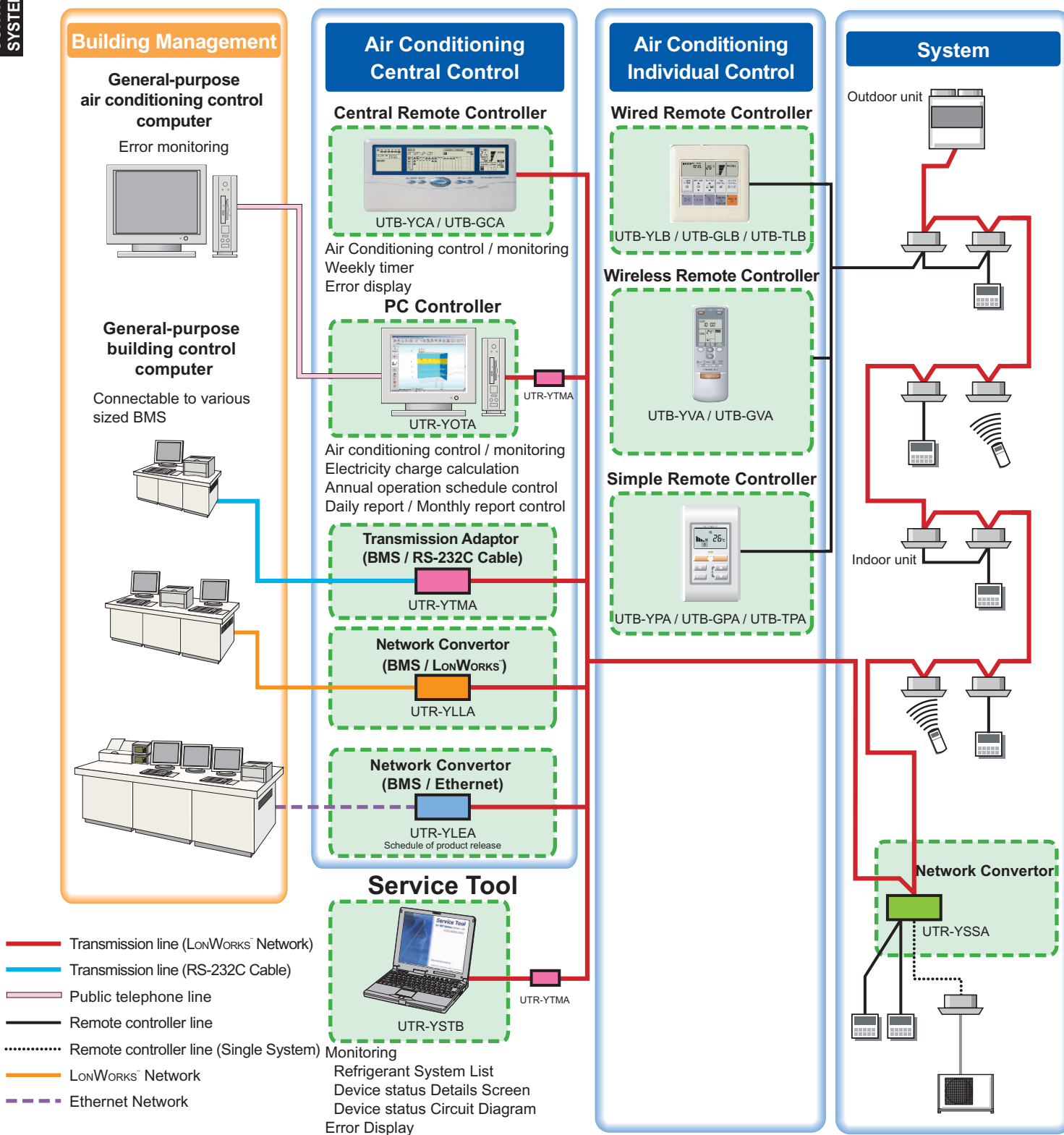
2-1-2. CONTROL SYSTEM DESIGN

Management / Monitoring

Control

CONTROL
SYSTEM

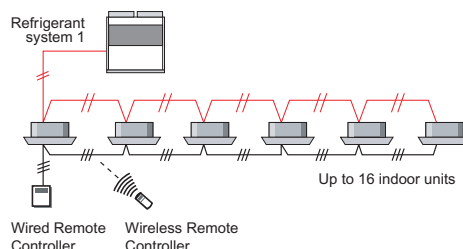
CONTROL
SYSTEM



2-1-3. SYSTEM CONFIGURATION EXAMPLES

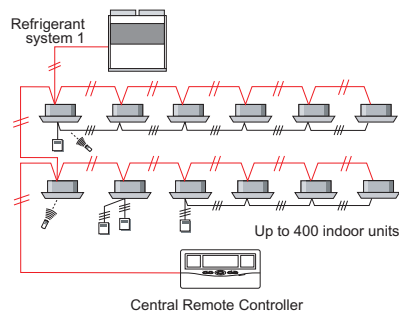
Wired / Wireless / Simple Remote Controller

- * Up to 16 indoor units connectable to one wired / wireless / simple remote controller.
- * Wired, simple and wireless remote controllers can be used simultaneously (Signal receiver for wireless remote controller not needed).



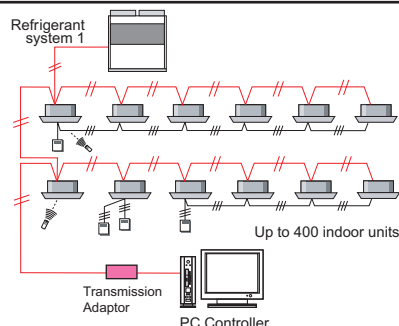
Central Remote Controller

- * Up to 400 indoor units / 64 groups connectable to one central remote controller.
- * Up to 16 central remote controllers connectable to one system.
- * Simple system configuration available using built-in weekly / daily timer.



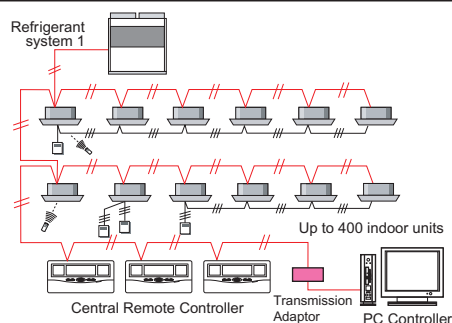
PC Controller

- * Up to 400 indoor units / 400 groups connectable to one PC controller.
- * No interface required with the built-in electricity charge calculation function.



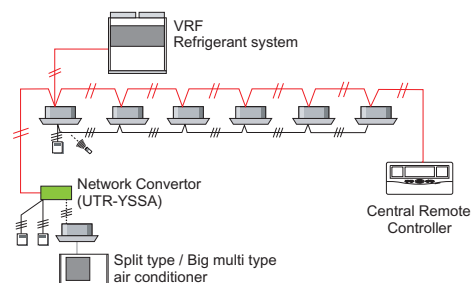
Combination of Central Remote Controller and PC Controller

- * Central remote controller and PC controller can be used simultaneously.



Single System Connectivity

- * Single system can be connected to VRF system and controlled simultaneously.

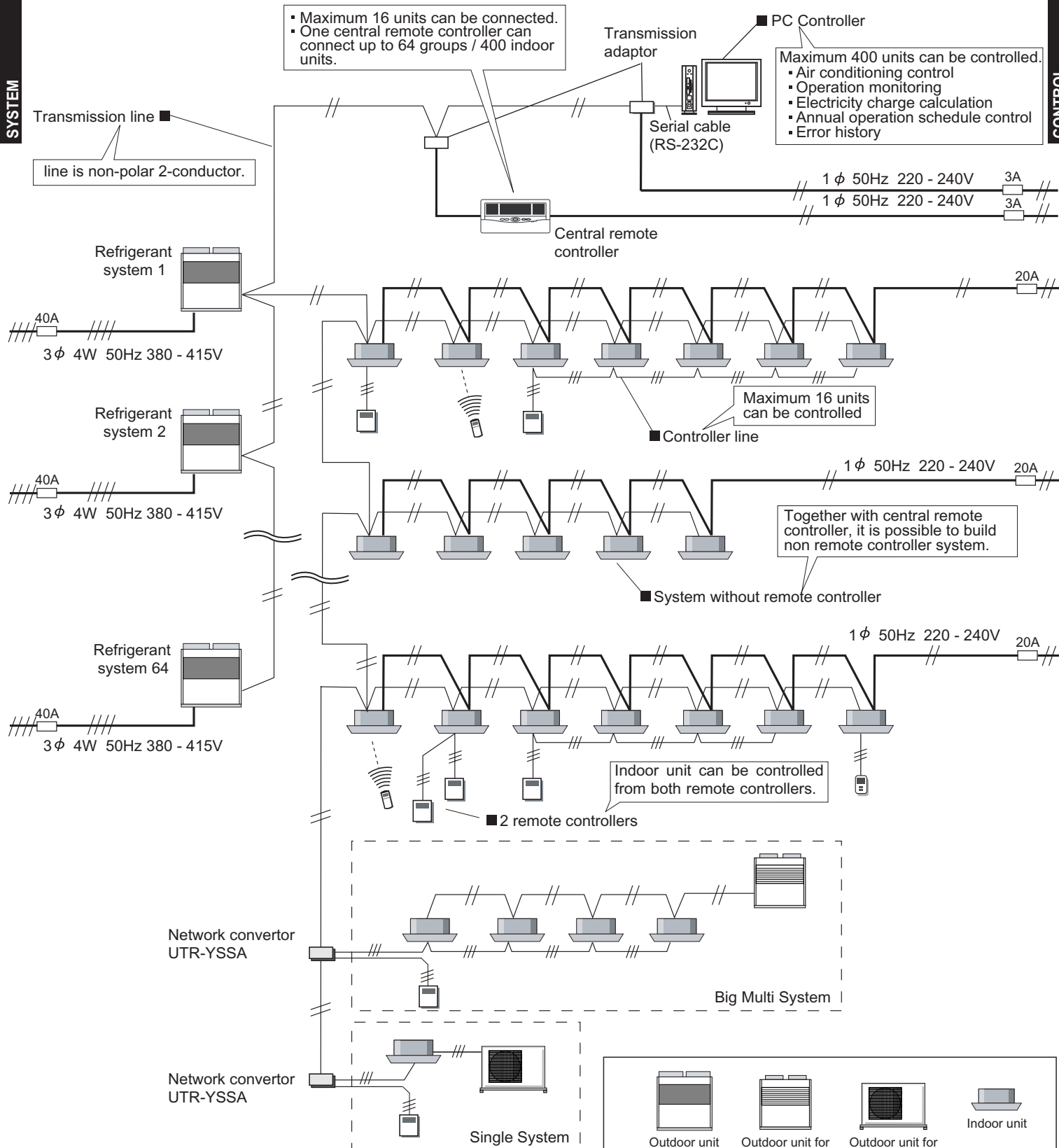


2-1-4. CONSTRUCTION OF WIRING

CONTROL SYSTEM

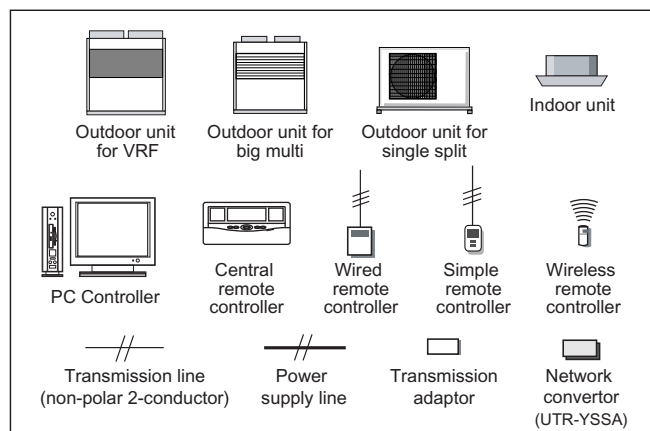
CONTROL SYSTEM

- Maximum 16 units can be connected.
- One central remote controller can connect up to 64 groups / 400 indoor units.



Maximum Connection per Transmission line

Number of refrigeration systems	100
Number of indoor units	400
Number of outdoor units	100



2-1-5 FEATURES OF CONTROL SYSTEM

1. Wiring work can be reduced since all equipment making up the system is wired with only one transmission line (non-polar 2-conductor).
2. Since each equipment on the transmission line is independently processed, a system failure at one indoor unit does not affect other equipment.
3. Total wiring length (total length of transmission line) can be extended up to 2000m (with signal amplifier unit).
4. Maximum 400 indoor units can be connected.
5. Maintenance work efficiency is improved, because PC monitoring system can be connected to anywhere on the transmission line.
6. Indoor units can be controlled by wired, simple, wireless, central remote controller and PC controller.
7. When a failure occurs, the error code is displayed and details can be confirmed at the wired remote controller, simple remote controller, central remote controller, or PC controller.
8. By adopting an interface for FUJITSU GENERAL's single split type models (excluding some models) or multi air conditioner for Building models, the central control will be available from the central remote controller or PC controller.
9. Simple Remote Controller that allows an easy operation is available for the installation such as a hotel guest room.
10. These components can be freely combined to get the maximum control depending on the usage of the building

2-2. CONTROLLER UNIT

The following types of controllers are available with the FUJITSU GENERAL LIMITED VRF System :

- Wired remote controller
- Simple remote controller
- Wireless remote controller
- Central remote controller
- PC controller

Individual Control

Wired Remote Controller



- Control up to 16 units
- Built in Weekly Timer
- Error Display

Simple Remote Controller



- Control up to 16 units
- Error Display
- Simple Operation
- Background Light

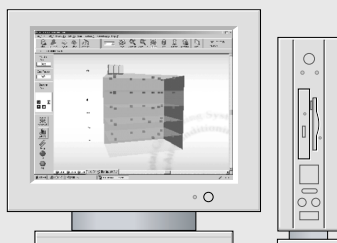
Wireless Remote Controller



- Control up to 16 units
- Built in Daily Timer
- Simple Operation

Central Control

PC Controller



- Centralized control up to 400 units
- Control by group
- Electricity Charge Calculation
- Annual Operation Schedule Control
- Error History (Max. 100 cases)

Central Remote Controller



- Centralized control up to 400 units
- Control by all/group/individual
- Built in Weekly Timer
- Error History

2-2-1. WIRED REMOTE CONTROLLER

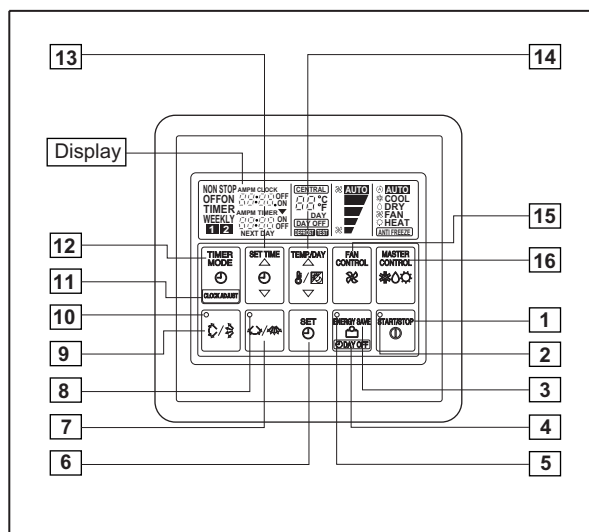
Model : UTB - *LB (Market region Y or G or T)

FEATURES

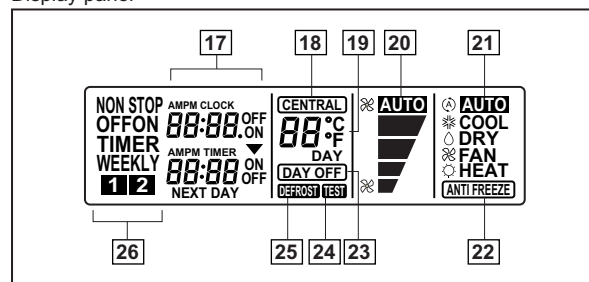


- * Various timer setup (ON / OFF / WEEKLY) are possible.
- * Equipped with weekly timer as standard function.
(2 times Start / Stop per day for a week)
- * When setting up a timer, operation mode and a temperature setup can be changed.
- * When a failure occurs, the error code is displayed. (Maximum of 16)
- * Error indication. (A maximum of 16 error histories are memorizable.)
- * Two remote controllers can be connected.
- * Up to 16 indoor units can be simultaneously controlled.
- * Anti freeze and energy saving operation are possible.
- * Easy installation with a slim shape with no bolded in the back.

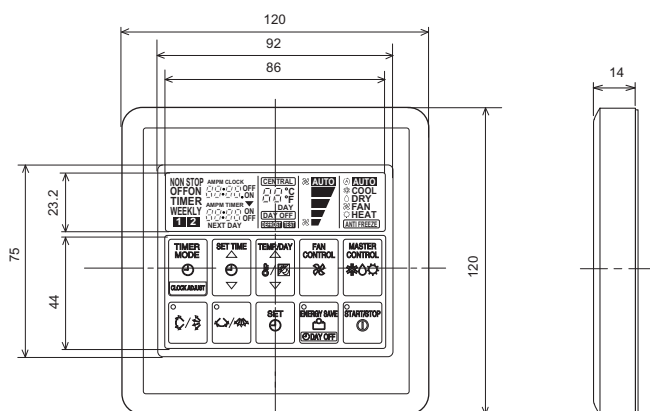
FUNCTIONS



Display panel



DIMENSION



Front View

- 1 START/STOP button
Pressed to start and stop operation
- 2 Operation lamp
Lights during operation and when the timer is on.
- 3 Energy save button
Turns the energy efficient mode on and off.
- 4 Day off button
Temporarily cancels of one day timer.
- 5 Energy save lamp
Lights when the unit is in the energy save mode.
- 6 Set button
Sets the date, hour, minute and on-off time.
- 7 Horizontal air flow direction and swing button
Push for two seconds to change the swing mode.
- 8 Horizontal swing lamp
Lights when the horizontal swing mode.
- 9 Vertical air flow direction and swing button
Push for two seconds to change the swing mode
- 10 Vertical swing lamp
Lights when the vertical swing mode.
- 11 Clock adjust button
- 12 Timer mode button
Changes the timer mode (NON STOP, OFF TIMER, ON TIMER, WEEKLY TIMER).
- 13 Set time button
Sets the current time and on-off time.
- 14 Temp./Day button
Sets the indoor temperature / days.
- 15 Fan control button
Selects the fan speed (AUTO, LOW, MED, HIGH).
- 16 Master control button
Selects the operating mode(AUTO, HEAT, FAN, COOL, DRY).
- 17 Clock display (AM PM / 24-hour change)
(Upper) Indicates the error code. *1) *2) / The refrigerant system.*3)
(Lower) Indicates the remote controller address. *1) *2) *3)
- 18 Central control display
- 19 Set temperature / Day display
Indicates the error history number. *2)
Indicates the indoor unit address. *3)
- 20 Fan speed display
- 21 Master control display
- 22 Anti freeze display
- 23 Day off display
- 24 Test display
- 25 Defrost display
- 26 Timer mode display

*1) During self - diagnosis mode.

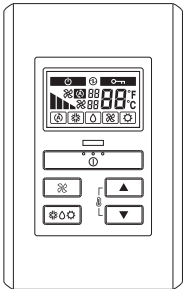
*2) During error code history display mode.

*3) During indoor unit address display mode.

2-2-2. SIMPLE REMOTE CONTROLLER

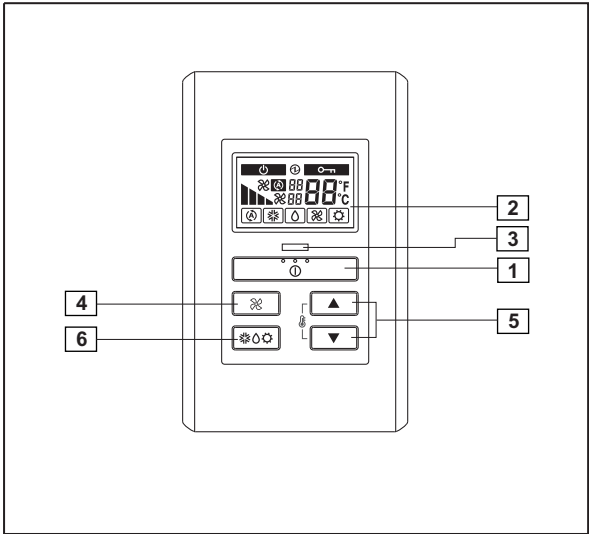
Model : UTB - *PA (Market region Y or G or T)

FEATURES

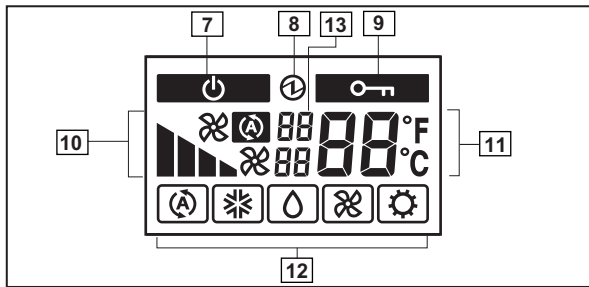


- * Easy operation.
- * Built-in Back Light function.
- * Easy installation with a slim shape with no bulge in the back.
- * Error indication.(A maximum of 16 error histories are memorizable.)
- * Up to 16 indoor units can be simultaneously controlled.
- * Can be installed onto SW-BOX. (applies to European and other country's standard)

FUNCTIONS



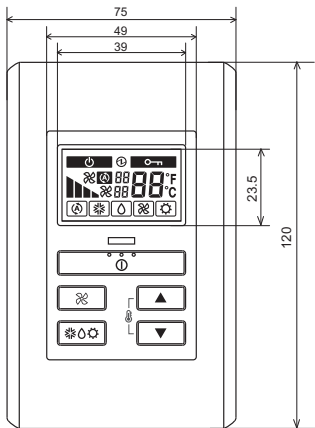
Display panel



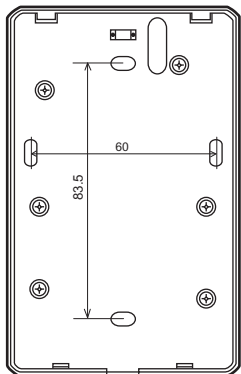
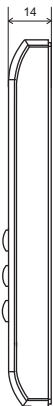
- 1 START/STOP button
Pressed to start and stop operation
- 2 Display background light
Lights during operation.
- 3 Operation lamp
Lights during operation.
- 4 Fan control button
Selects the fan speed (AUTO, LOW, MED, HIGH).
- 5 Temperature button
Selects the setting temperature.
- 6 Mode button(=Master control)
Selects the operating mode (AUTO, HEAT, FAN, COOL, DRY).
- 7 Standby display
Indicates during the oil recovery and defrosting operation.
- 8 Power source display
Indicates the main power ON.
- 9 Central control display
Indicates when function is locked from central remote controller or PC controller.
- 10 Fan speed display
- 11 Set temperature
Indicates Error history number. *2)
Indicates Indoor unit address. *3)
- 12 Master control display
- 13 (Upper) Indicates the error code *1) *2) / the refrigerant system address. *3)
(Lower) Indicates the remote controller address. *1) *2) *3)

*1) during self Diagnosis mode.
*2) during Error code history display mode.
*3) during address display mode.

DIMENSION



Front View



Rear View

2-2-3. WIRELESS REMOTE CONTROLLER

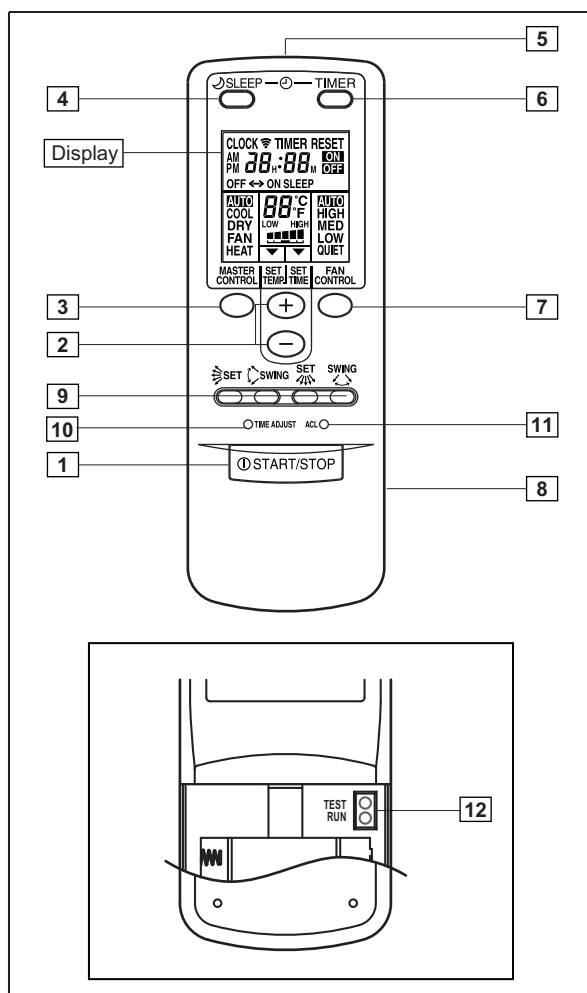
Model : UTB - *VA (Market region Y or G)

■ FEATURES

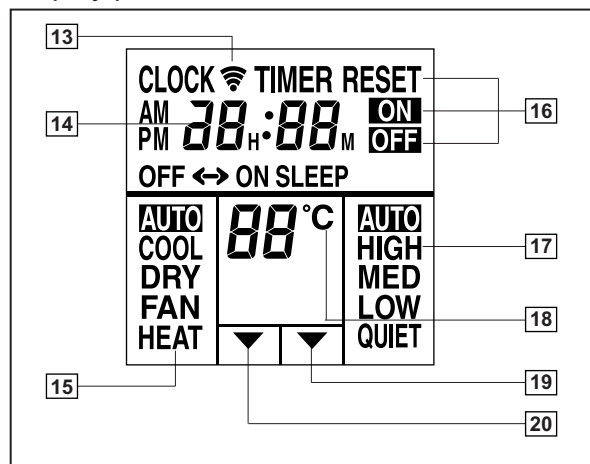


- * Four kinds of timer setup (ON / OFF / PROGRAM / SLEEP) are possible.
- * Up to 16 indoor units connected to the remote controller group can be simultaneously controlled.
- * Can be used jointly with Wired remote controllers .
- * Easy to change transmission code (4 patterns) by button operation.

■ FUNCTIONS



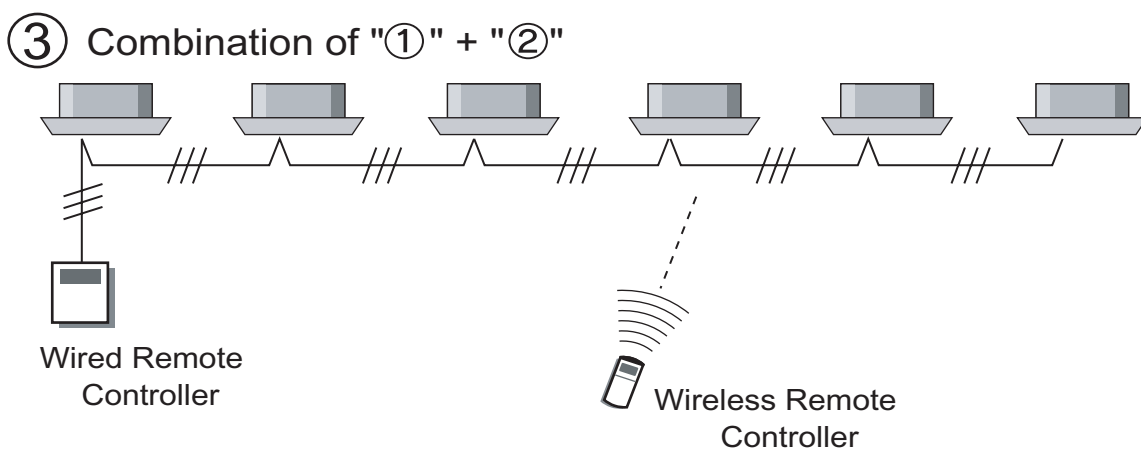
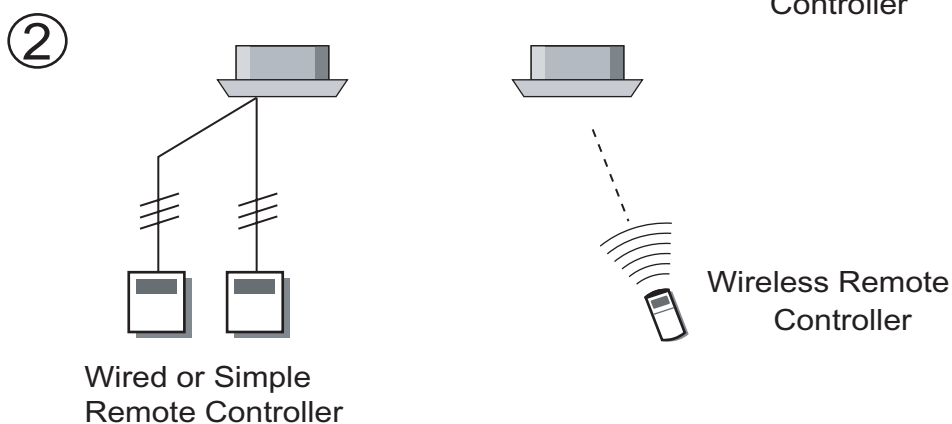
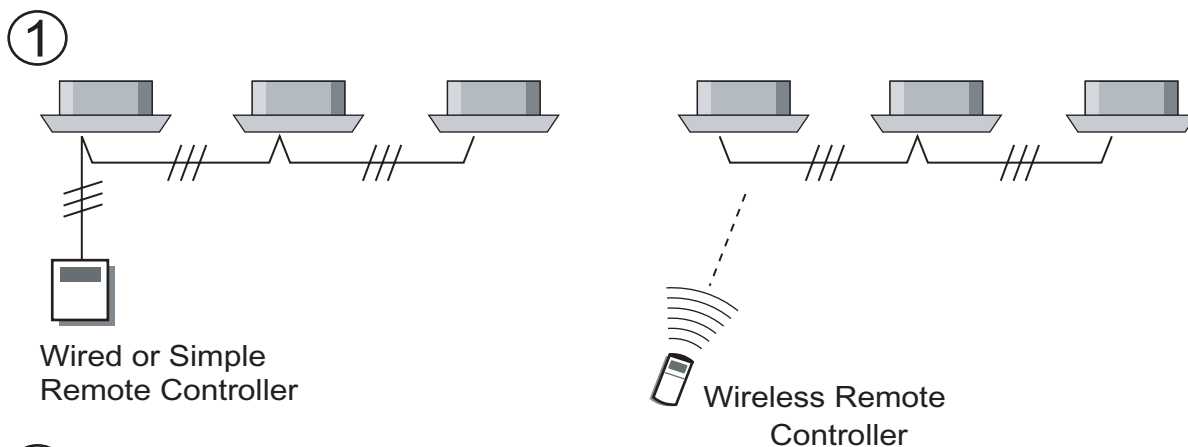
Display panel



- 1** START/STOP button
Pressed to start and stop operation
- 2** Set temp./Set time buttons/Set remote controller custom code buttons
Sets the indoor temp./Sets the current time and on-off time /Set R.C. custom code
- 3** Master control button/Code change
Selects the operating mode (AUTO, HEAT, FAN, COOL, DRY).
Start/end R.C. custom code change. (Max. 4 types)
- 4** Sleep timer button
Pressed to select sleep timer.
- 5** Signal transmitter
- 6** Timer button
Pressed to select the timer mode. (OFF TIMER, ON TIMER, PROGRAM TIMER, TIMER RESET)
- 7** Fan control button
Selects the fan speed (AUTO, LOW, MED, HIGH).
- 8** Battery compartment lid
- 9** Air flow direction button
Used to set the desired air flow direction & swing function.
- 10** Time adjust button
Sets the current time.
- 11** ACL button
Used when replacing batteries or change the code.
- 12** Test run button
Used when testing the air conditioner after installation.
- 13** Transmit indicator
- 14** Clock display
- 15** Master control display
- 16** Timer mode display
- 17** Fan speed display
- 18** Set temperature display
- 19** Timer set indicator
- 20** Temperature set indicator

2-2-4. COMBINATION OF LOCAL REMOTE CONTROLLER

* Wired, wireless and simple remote controllers can be used jointly in the following combinations.



※ Timer function cannot be used by wireless remote controller by setting, combination , ① ③

2-2-5 GROUP CONTROL METHOD

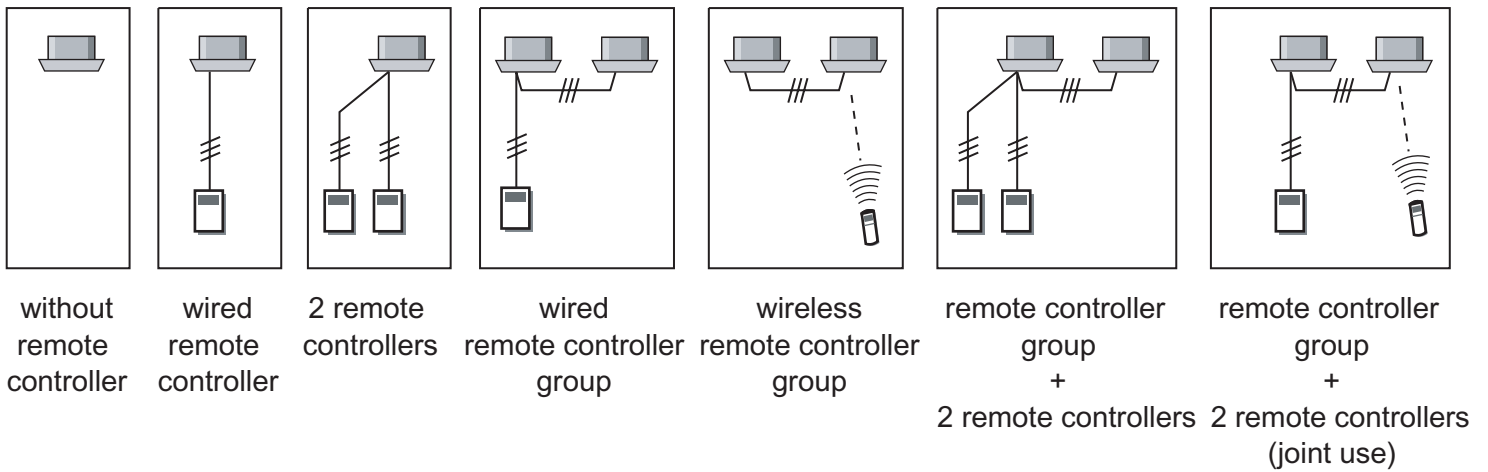
"Group" is defined as one indoor unit or a combination of two or more indoor units.

Group formation consists of two groups.

- * Remote controller group.
- * Group.

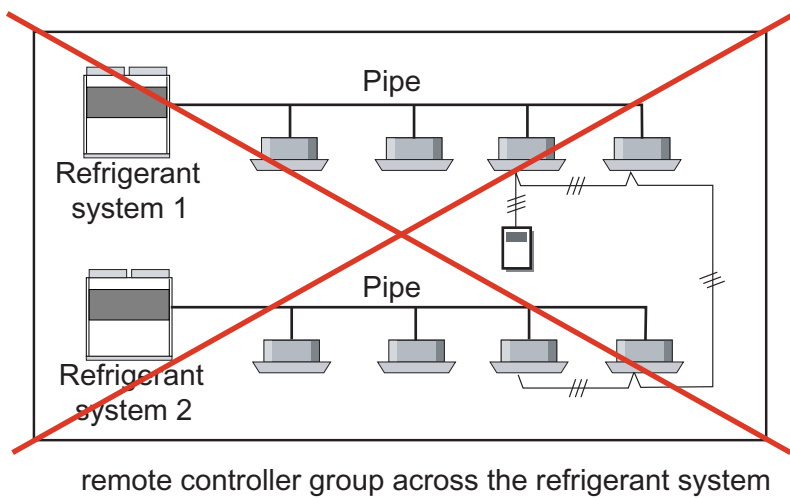
■ REMOTE CONTROLLER GROUP

Example of minimum indoor unit combination for "Remote controller group"



* Setting that extends into the refrigerant system is impossible.

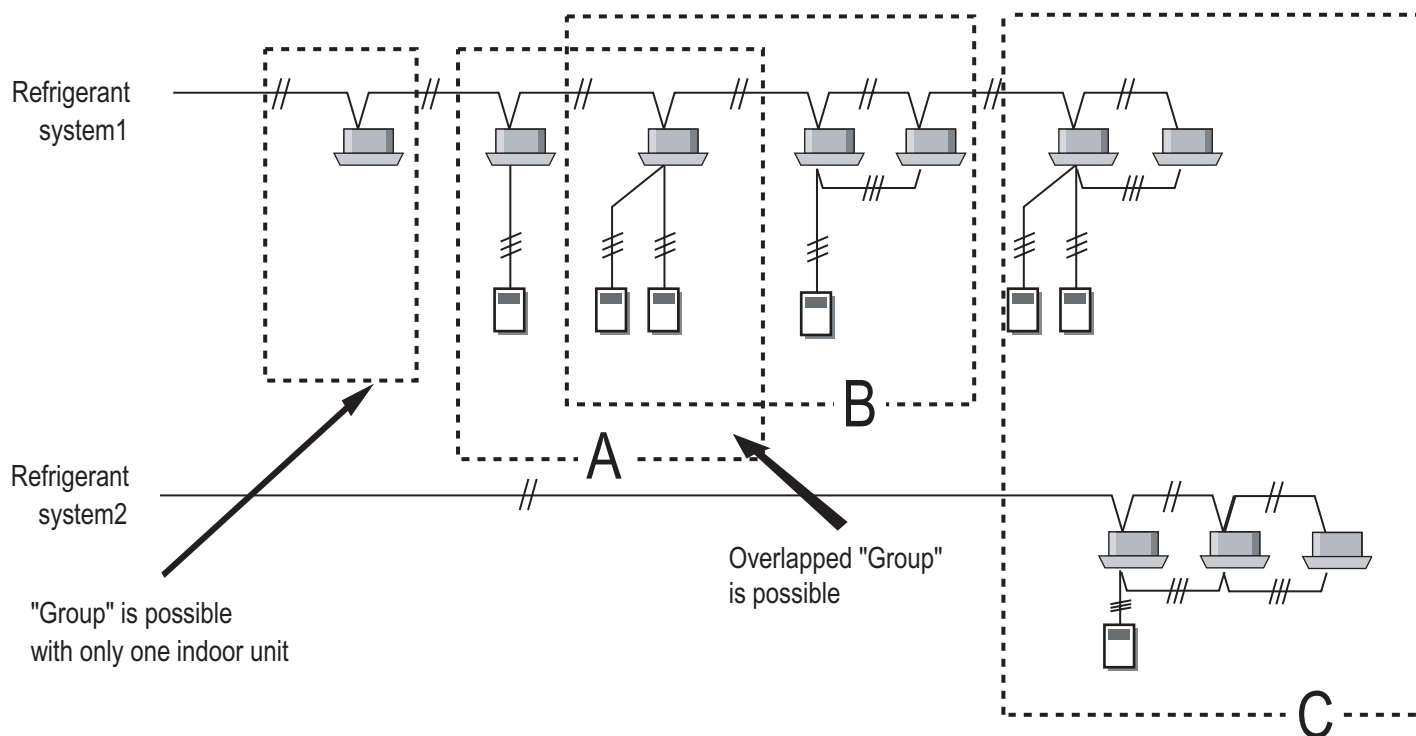
* Up to 16 indoor units can be connected.



■ GROUP

This function is used when operating a multiple number of remote controller group at one time from the central remote controller or PC controller.

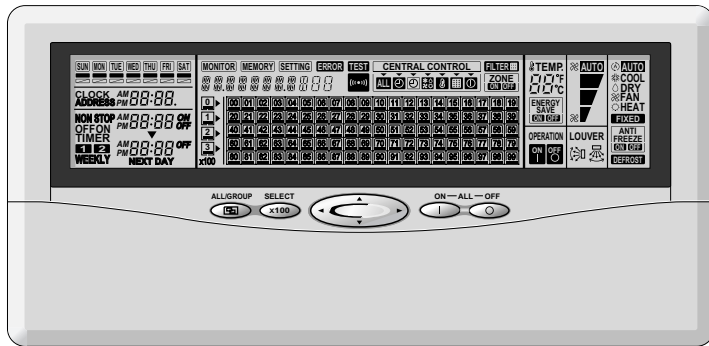
Example of "Group"



- * Operation of either A group or B group is possible.
- * Simultaneous operation of A group and B group is possible. (Last setting has priority)
- * As shown in drawing "C", "Group" spanning the refrigerant system is possible.
- * It is very convenient that PC controller can assign the title on each group.

2-2-6.CENTRAL REMOTE CONTROLLER

Model : UTB - * CA (Market region Y or G)



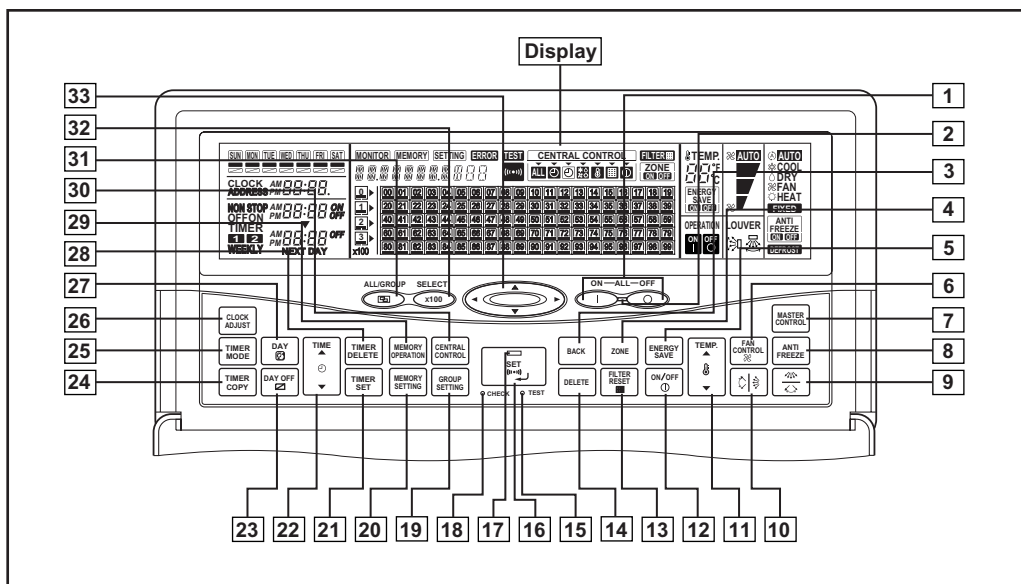
■ FEATURES

- * One remote controller can control up to 400 indoor units/64 groups.
- * Up to 16 central remote controllers can be connected in one system.
- * Central remote controller can control the system by all/group/individual.
- * The selectable functions (all functions, timer mode, operating mode, temperature setting, filter reset, and On / Off) of the standard controller can be locked by central remote controller.
- * Weekly timer is equipped as standard function. (2 times On / Off per day for one week).
- * Setting contents of central remote controller are all memorized, so that each indoor unit can be operated under the memorized conditions even if the operating conditions are changed later on.
- * Error code is displayed when an error occurs.
The history of failures can also be displayed, which is convenient for maintenance.

Examples of errors:

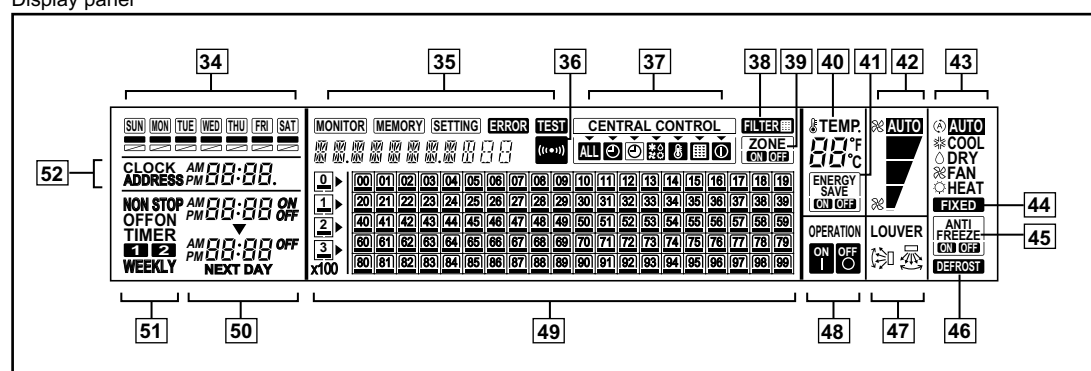
- | | |
|--------------------------------------|------------------------------------|
| 1. Microcomputer communication error | 9. Power supply frequency abnormal |
| 2. Heat exchanger thermistor error | 10. Reverse phase blocker error |
| 3. Outdoor unit thermistor error | 11. Pressure error |
| 4. Discharge temperature error | 12. Pressure sensor error |
| 5. Compressor error | |
| 6. Model information error | |
| 7. Indoor unit fan error | |
| 8. Room temperature thermistor error | |

■ FUNCTIONS



- | | | |
|-----------|--|---|
| 1 | All ON/OFF button | |
| 2 | All ON/OFF LED | |
| 3 | Back button | |
| 4 | Zone button | |
| 5 | Energy save button | Starts energy save operation. |
| 6 | Fan control button | |
| 7 | Master control button | |
| 8 | Anti freeze button | |
| 9 | Horizontal Air flow direction and swing button | |
| 10 | Vertical air flow direction and swing button | |
| 11 | Temp button | Indoor temperature setting. |
| 12 | ON/OFF button | ON/OFF setting. |
| 13 | Filter reset button | |
| 14 | Delete button | Deletion of setting. |
| 15 | Test button | |
| 16 | Set button | Transmits of all changed setting details. |
| 17 | Set LED | Blinks when transmission is necessary. |
| 18 | Check button | Confirmation of address display and error code. |
| 19 | Group setting button | Setting of group of a remote controller group connected to the central remote controller. |
| 20 | Memory setting button | Memorizes the entire setting contents. |
| 21 | Timer set button | Sets date, hour, minute and on-off time. |
| 22 | Time button | On-off time setting. |
| 23 | Day off button | Temporary cancellation of one day timer. |
| 24 | Timer copy button | Copies the timer condition (the day before). |
| 25 | Timer mode button | Changes the timer mode (NON STOP, OFF, ON1, ON2, WEEKLY). |
| 26 | Clock adjust button | |
| 27 | Day button | |
| 28 | Timer delete button | |
| 29 | Memory operation button | Operates the memorized condition. |
| 30 | Central button | Inhibits some operations of the individual remote controller. |
| 31 | All/Group button | Changes the control unit (ALL→GROUP→R.C.GROUP). |
| 32 | Select × 100 button | Remote controller group indication by hundreds. |
| 33 | Select button | Changes remote controller group or group number. |

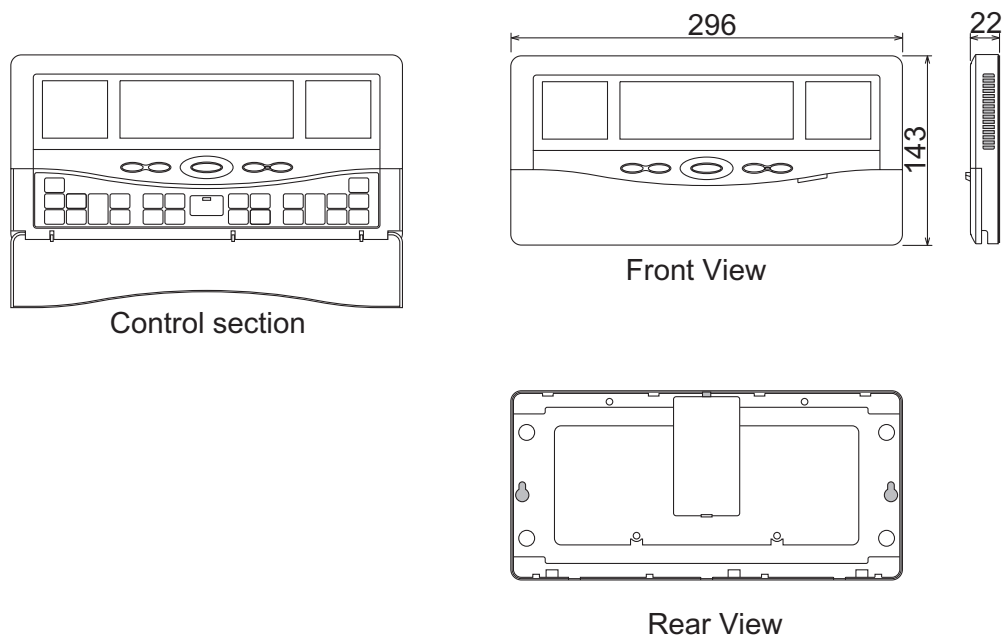
Display panel



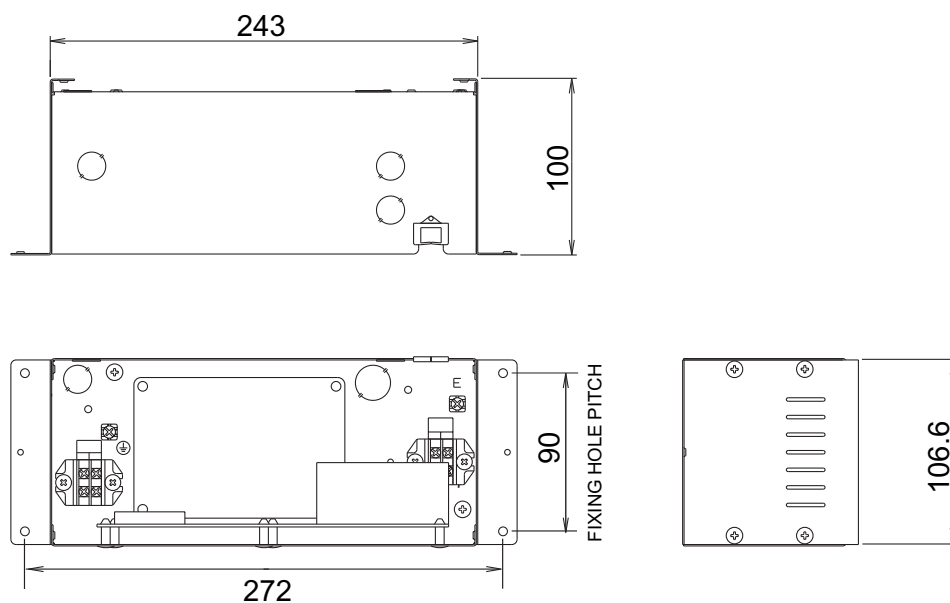
- | | | | | | | | |
|-----------|----------------------------|-----------|--|-----------|----------------------------|-----------|---------------------------|
| 34 | Day of week display | 40 | Temperature display | 45 | Anti freeze display | 51 | Timer mode display |
| 35 | Status display | 41 | Energy save display | 46 | Defrost display | 52 | Clock and address display |
| 36 | Transmit indicator display | 42 | Fan control display | 47 | Air flow direction display | | |
| 37 | Central control display | 43 | Master control display | 48 | ON/OFF display | | |
| 38 | Filter reset display | 44 | Fixed cooling or heating operation display | 49 | Group control display | | |
| 39 | Zone display | 50 | ON/OFF time display | | | | |

■ DIMENSIONS

● Control panel



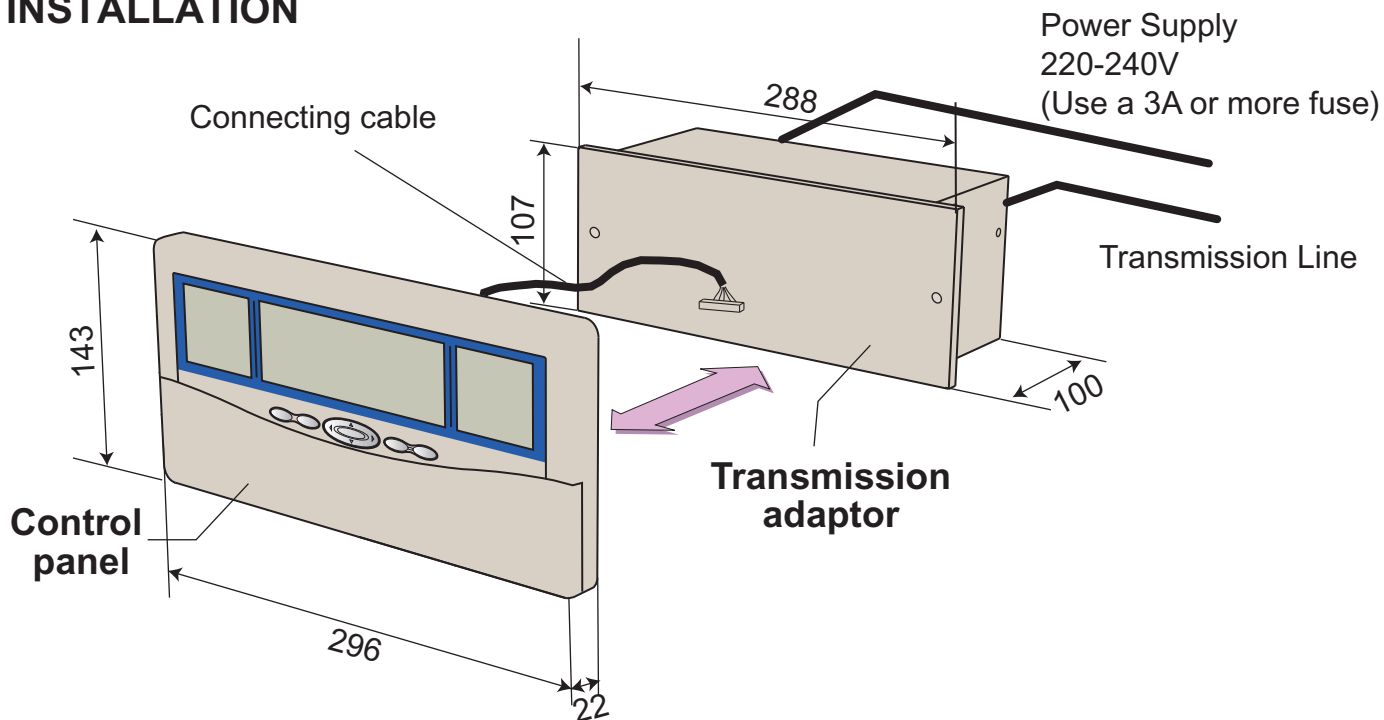
● Transmission adaptor



■ SPECIFICATIONS

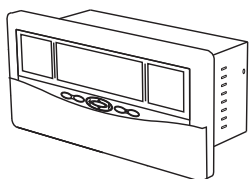
	Control panel	Transmission adaptor
POWER SUPPLY	50-60Hz 220-240V	
POWER CONSUMPTION (W)	4.8 W	
FUSE CAPACITY (A)	3	
SIZE (H x W x D mm)	143 x 296 x 22	107 x 288 x 100
WEIGHT (g)	550	1300

■ INSTALLATION



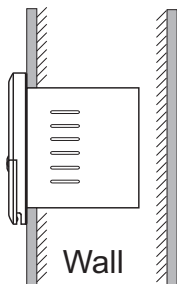
There are 2 ways of set up.

One body set up

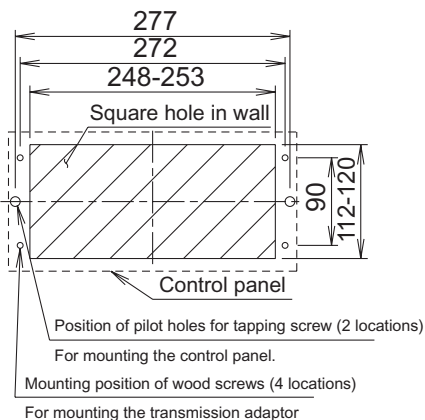


Control panel and transmission adaptor together

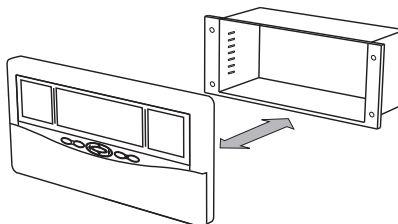
Setting Example



Make a hole in Wall

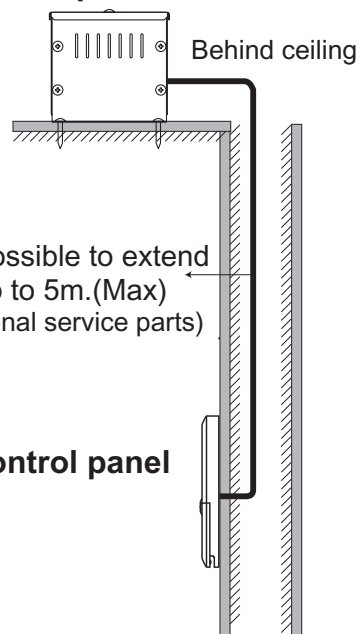


Separated set up



Control panel and transmission adaptor separately

Setting Example Transmission adaptor



OPTIONAL SERVICE PARTS

5-meters extension cord (service parts) is required when installing the control panel transmission adaptor separately. Please use the part number shown below to order the extension cord from your sales representative.

Name and shape	Q'ty	Parts NO
5-meter extension cord	1	9704270016

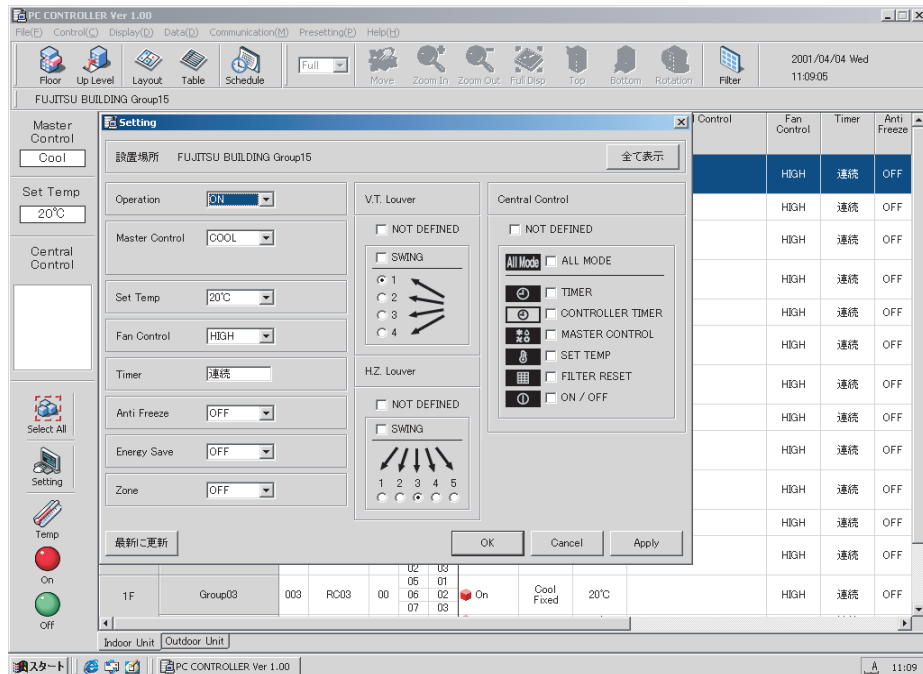
2-2-7. PC (Personal Computer) CONTROLLER

MODEL : UTR-YOTA

■ FEATURE

(1) Air conditioning control

- * One PC controller can control up to 400 groups/400 indoor units.
- * The room or place can be named for each group.

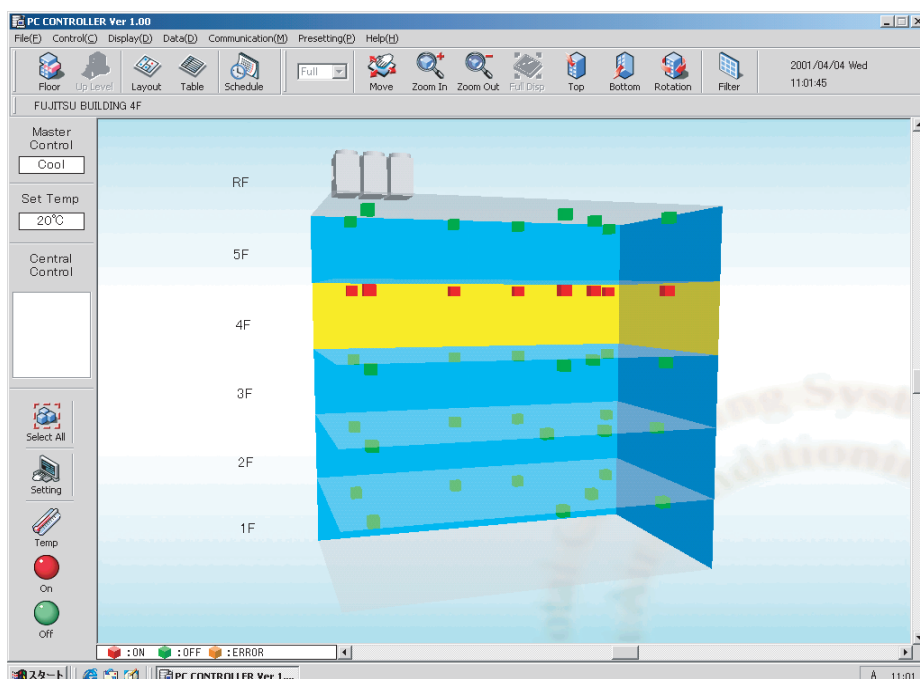


(2) Monitoring of operation state

- * State of outdoor/indoor unit operation can be monitored

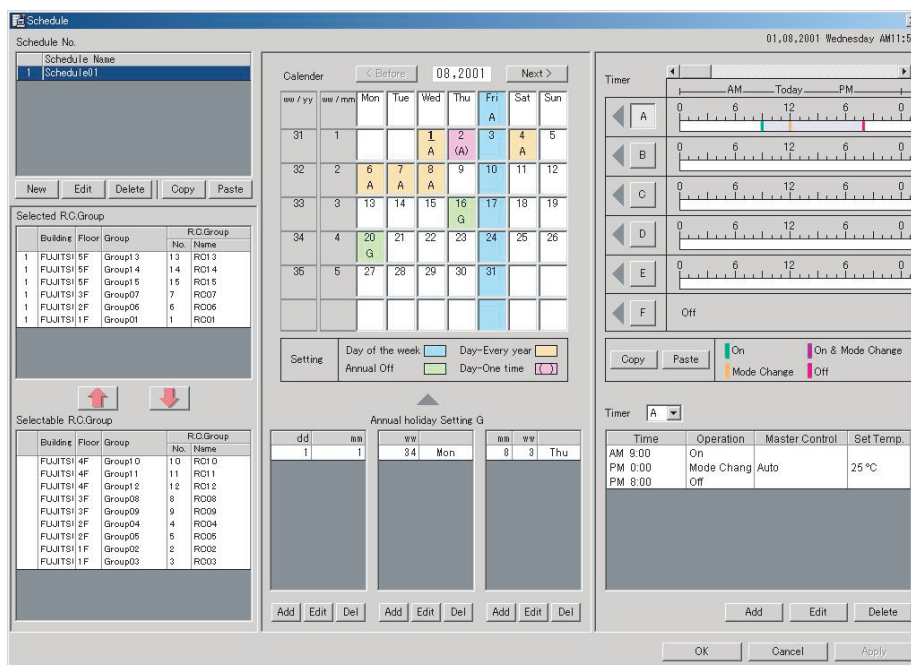
(3) Layout display

- * The layout setting can be displayed for every building / floor / group with a 3D screen and floor plane display, as well as in a list.



(4) Annual schedule control

- * An annual schedule of operation can be controlled for each group.
- In addition, the operating mode can be set for each operating schedule.



(5) Error diagnosis

- * Error display when an error occurs. This is convenient for maintenance.
- * When an error occurs, dialogue display or alarm is given to notify the user.

(6) Error history

- * The error history for up to 100 errors can be recorded for each equipment.

(7) Operation records

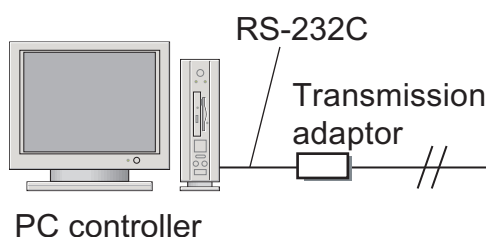
- * The operating conditions of each equipment can be recorded and a daily report or monthly report can be generated.

(8) Operating accumulation time

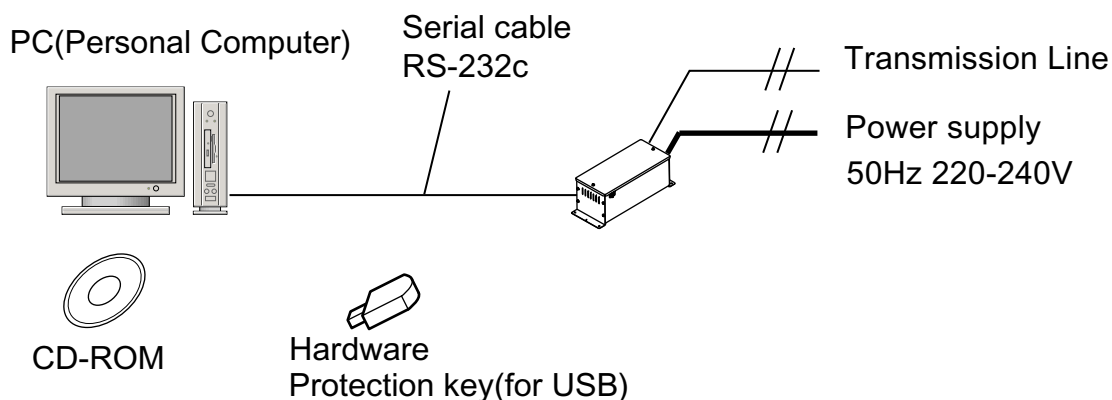
- * Operating time estimation is useful in maintenance.

(9) Electricity charge calculation

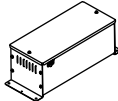
- * Electricity charge calculation system can be incorporated.



■ COMPOSITION



■ STANDARD PARTS

• TRANSMISSION ADAPTOR	
• CD-ROM	
• Hardware Protection key	

※ Personal Computer and Serial cable must be procured at the site.

• Personal computer specification

The following equipment is required for using PC controller

AT compatible machine that runs on Microsoft Windows®

CPU Intel® Pentium® II 300MHz or higher

Hard Drive 30MB or more of free space is required

Memory 128MB or more

Display 1024 X 768 dots.

High color (16bit)

Requires that the internal graphics accelerator be compatible with Microsoft® DirectX® 7.0 or later

Interface Requires RS-232C port and USB port

Operating System Microsoft® Windows 2000 (English language version)

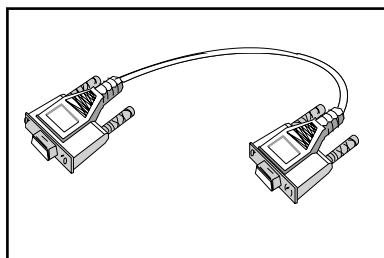
Service Pack 2 or later

Required Software Adobe® Acrobat® reader 4.0 or later

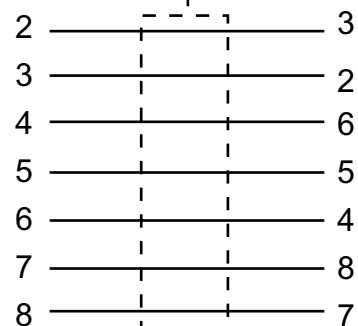
• RS-232C

Inter Link cable

D-sub 9 pin



GND ——— GND



D-sub 9 pin
female

D-sub 9 pin
female

2-2-8.COMPARISON TABLE OF CONTROLLER

Table 1 List of Controller Functions

		Wired remote controller	Simple remote controller	Wireless remote controller	Central remote controller	PC controller
Max. controllable indoor units		16	16	16	400	400
Max. controllable remote controller groups		—	—	—	400	400
Max. controllable groups		—	—	—	64	400
Air conditioning control function	On/Off	○	○	○	○	○
	Operation mode setting	○	○	○	○	○
	Air flow mode setting	○	○	○	○	○
	Room temp. setting	○	○	○	○	○
	Test operation	○	○	○	○	○
	Up/down air direction flap setting	○		○	○	○
	Right/left air direction flap setting	○		○	○	○
	Save operation	○		○※ 1	○	○
	Auto restart ※ 2	○	○	○	○	○
	Address display	○	○	○	○	○
	Group setting				○	○
Display	Failure	○	○		○	○
	Defrosting	○	○		○	○
	Current time	○		○	○	○
	Day of week	○			○	○
	Centrally controlling	○	○		○	○
	Cooling/Heating priority	○	○		○	○
Timer	On/Off timer	○		○	○	○
	Weekly timer	○			○	○
	Sleep timer			○		
	Program timer			○		
	On/Off per day	2		1	2	72
	On/Off per week	14			14	504
	Day off	○			○	○
	Min. unit of timer setting	5		5	10	10
Control	Status monitoring system					○
	Electricity charge calculation					○
	Error history	○	○		○	○

※ 1 Save operation can be set by only UTR - *SA

※ 2 Auto restart can be set by DIP switch on PCB inside of indoor unit.

2-3.ADAPTOR UNIT

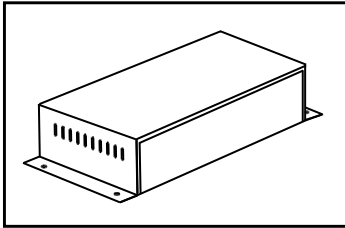
The following types of convertors and adaptors are available with the FUJITSU GENERAL LIMITED VRF system.

- **Network convertor (UTR-YSSA)**
- **Network convertor (UTR-YLLA)**
- **Signal amplifier(UTR-YRPA)**
- **Transmission adaptor(UTR-YTMA)**

2-3-1.NETWORK CONVERTOR

Model : UTR - YSSA

■ FEATURES



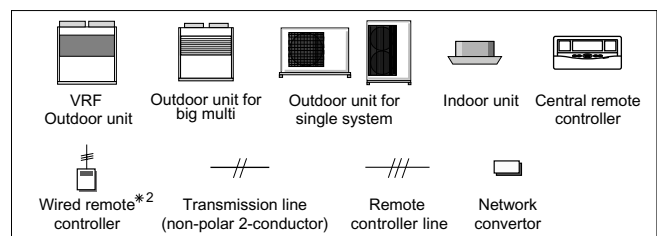
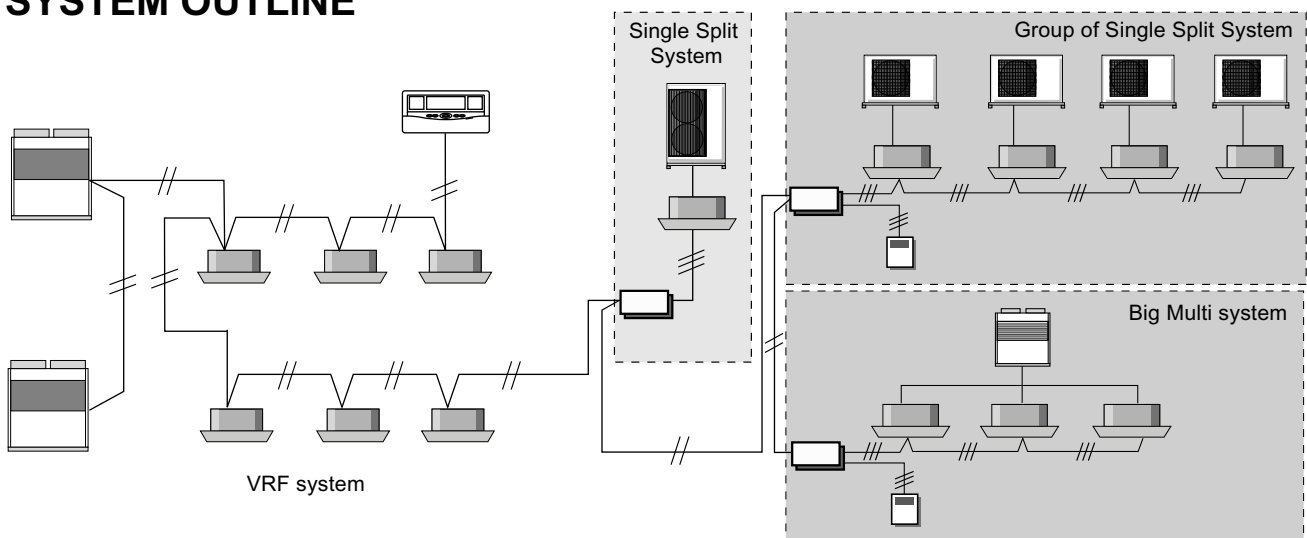
- * With this Network convertor, single split type and big multi type air conditioners can be controlled by Central remote / PC controller in VRF system or by standard remote controller connected to the Network convertor.
- * ON/OFF, operation mode, temperature setting, fan speed, etc. can be done with these controller.
- * Up to 16 single units can be connected to and controlled with one Network convertor.
- * 2 standard remote controllers are possible for one Network convertor.
- * Up to 100 units of Network convertor can be connected in one VRF transmission system. (One Network convertor is regarded as one refrigerant system. The total refrigerant systems in one VRF transmission system must be within 100.)

■ APPLICABLE MODEL

Big Multi type	Simultaneous model	○
	Individual model	○
Single Split type	Wired RC model *1*2	○
	Wireless RC model	×
Window type		×

- *1 There is inadaptable model in old type. Contact the authorized sales company for confirmation of these models.
- *2 Indoor units which can be controlled from a network convertor are denoted by 'L' as the controller method (remote controller). Not applicable to models
AR*7RLB, AR*9RLB, AR*12RLB, AR*14RLB, AR*18RLB, AR*18RLBH, AR*9ALA, AR*9ALB, AR*18ALBH, AR*7ELA, AR*9ELA, AR*12ELA, AR*14ELA, AR*18ELA.

■ SYSTEM OUTLINE

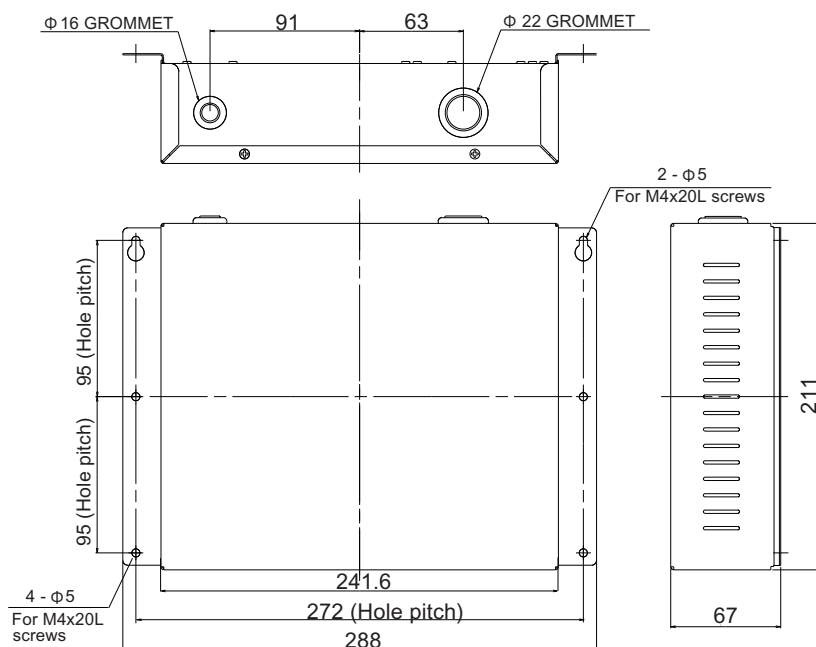


■ FUNCTION

- * ON / OFF
- * MASTER CONTROL
- * FAN CONTROL
- * TEMPERATURE CONTROL
- * TIMER SETTING
- * CENTRAL CONTROL (Lock the remote controller functions)

- *2 When needing to be operated by remote control individually Remote controller should be changed to VRF exclusive controller.
Applicable remote controller : Wired type: UTB-YLA, UTB-GLA, UTB-TLA
Simple type: UTB-YPA, UTB-GPA, UTB-TPA

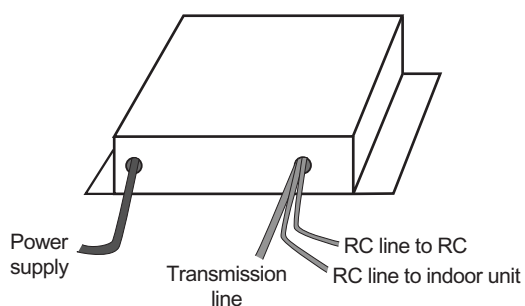
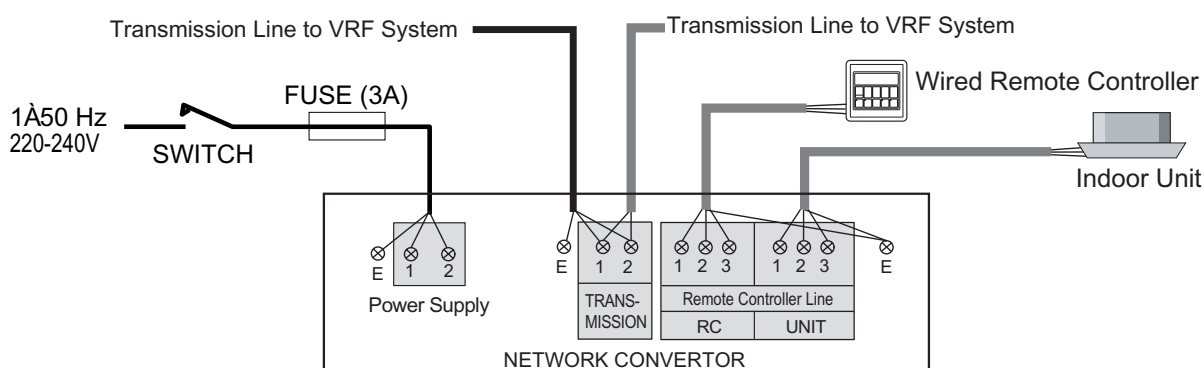
■ DIMENSIONS



■ SPECIFICATION

POWER SUPPLY	50-60Hz 220-240V
POWER CONSUMPTION (W)	8.5
SIZE (H × W × D) (mm)	67 × 288 × 211
WEIGHT (g)	1400

■ ELECTRICAL WIRING



*Do not bind the power cable and remote controller cable to avoid an erroneous operation.

**Use shield cable for transmission line and remote controller line. The shield metal should be grounded. (Only ground one side of transmission cable.)

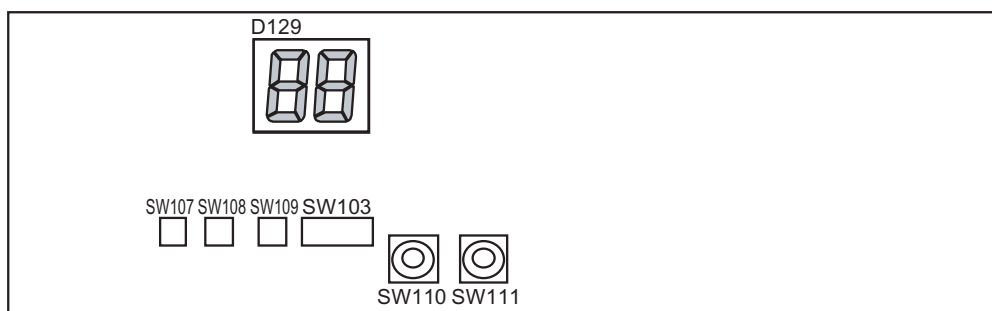
***Use ground wire to ground the Network converter.

■ WIRING SPECIFICATION

Use	Size		Wire type	Remarks
Power supply cable (mm ²)	Maximum	1.25	H07RN-F or equiv	1 ϕ2 wire 50Hz 220-240V *
	Minimum	0.5		
Transmission cable (mm ²)	Maximum	1.25	shield cable (LONWORKS compatible part)	Non-polar 2-core
	Minimum	0.75		
Remote controller cable (mm ²)	Maximum	1.25	shield cable	Polar 3-core
	Minimum	0.75		
Fuse capacity (A)	3			

*The ground wire is not included in this cord. Always ground the unit.

■ CIRCUIT BOARD SETTING



The DIP switch SW103, 107, 108, 109 and rotary switch SW110, 111 of Network converter need to be set. Refer to (INSTALLATION INSTRUCTION SHEET) for detail information.

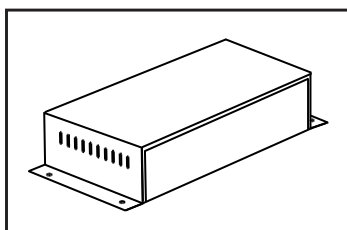
Network converter (UTR - YSSA)			
DIP-SW	SW103	1	Indoor unit and remote controller model
		2	
		3	
		4	
		5	Number of connected indoor units
		6	
		7	
		8	
	SW107	1	Forbidden
		2	Wired remote controller validity / invalidity
	SW108	1	External input validity / invalidity
		2	External input select edge / pulse
	SW109	1	Auto change over validity / invalidity *set to OFF for duct type indoor unit
		2	Auto restart validity / invalidity
ROTARY SW	SW110		Refrigerant circuit address 1
	SW111		Refrigerant circuit address 2

2-3-2.NETWORK CONVERTOR

Model : UTR - YLLA

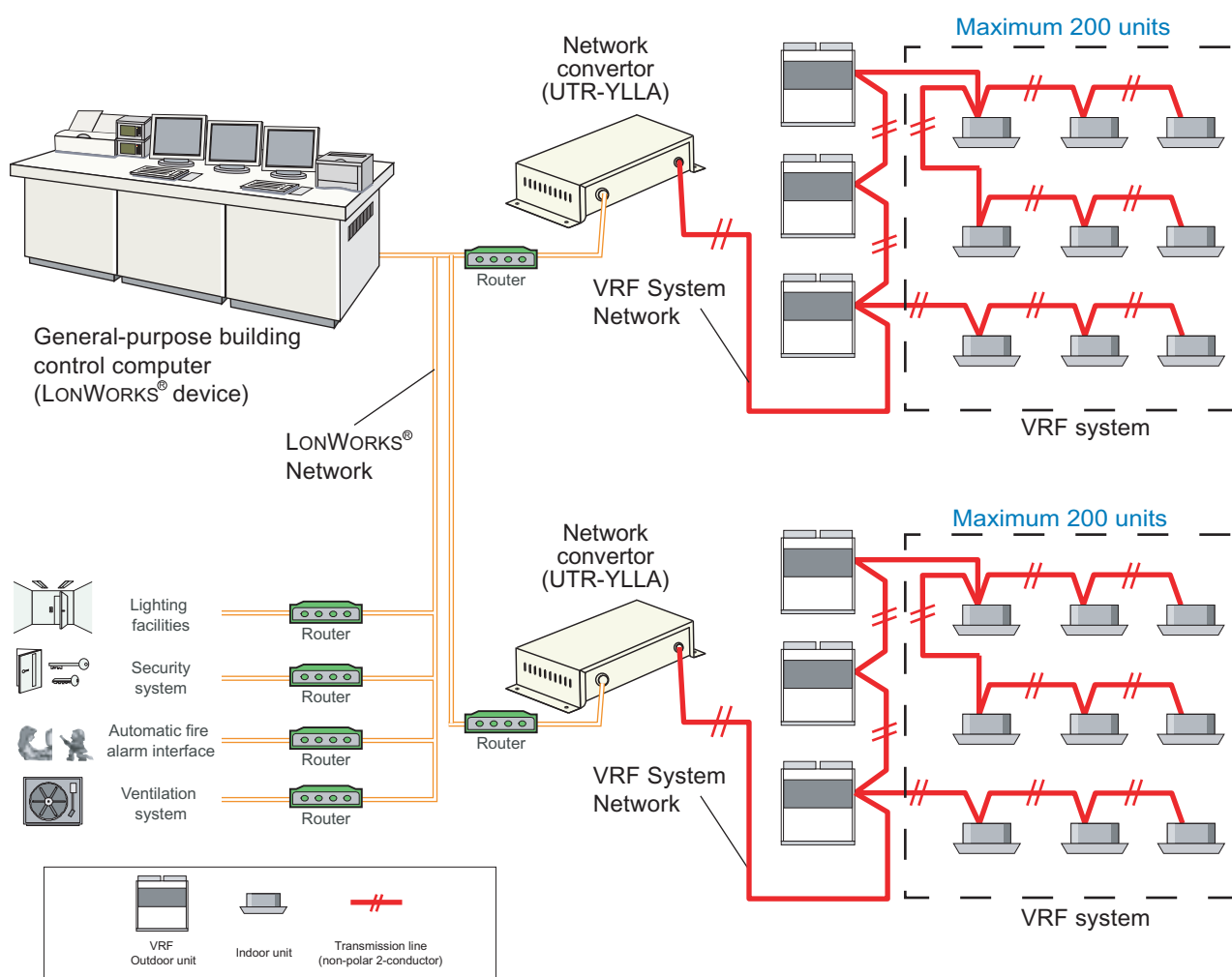
■ FEATURES

The convertor for connecting our original LONWORKS to the system built by LONWORKS, an open network, to manage mutually between medium and small-sized BMS and VRF system.



- * Up to 400 Indoor units / 100 Outdoor units can be connected to 1 unit of Network Converter.
- * By using UTR-YLLA , VRF system can be centrally controlled or monitord from BMS which has Lon Works interfase.

■ SYSTEM OUTLINE



■ FUNCTION (Example)

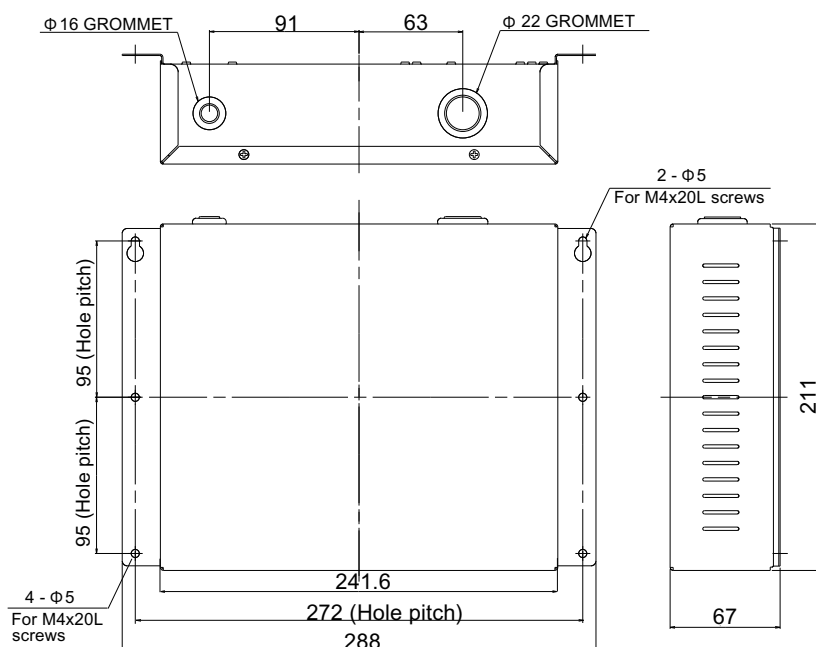
Control (Lon Network → VRF Network)

- * Operation (ON / OFF)
- * Operation Mode Setting
- * Temperature Setting
- * Fan Speed Setting
- * Central Controller Setting
(Lock the remote controller functions)

Monitor information (Lon Network ← VRF Network)

- * Operation Condition (ON / OFF)
- * Operation Mode
- * Set Temperature
- * Fan Speed
- * Error Display
- * Central Control Display
(Lock the remote controller functions)

■ DIMENSIONS



■ SPECIFICATION

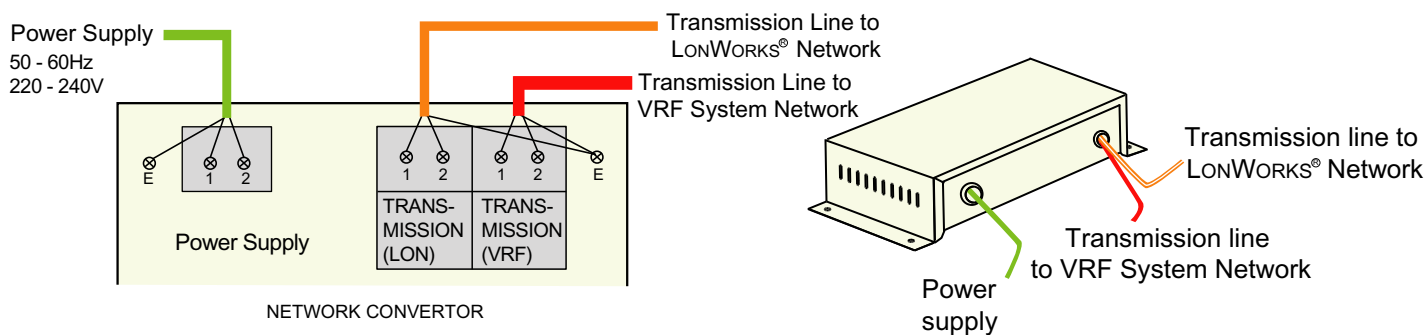
• Main specification

POWER SUPPLY	50-60Hz 220-240V
POWER CONSUMPTION (W)	3.4(50Hz,240V)
SIZE (H × W × D) (mm)	67 × 288 × 211
WEIGHT (g)	1500

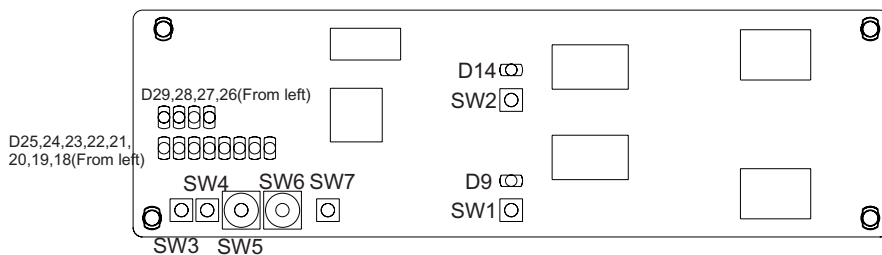
• Transmission specification

BMS SIDE	
Transmission speed	78kbps
Transceiver	FTT-10A
Transmission way form	Free topology
Cable	22AWG equivalent
	Twisted pair cable
Termined resistor	None (It attaches at the terminal of a network.)

■ ELECTRICAL WIRING



■ CIRCUIT BOARD SWITCH SETTING



< SW >

SW No	Type	Description
SW1	Push SW	Service Pin (VRF side)
SW2	Push SW	Service Pin (Lon works side)
SW3	Push SW	Selection in setting mode
SW4	Push SW	Decision of a set up
SW5	Rotary SW (0-15)	Input a set value for various setting modes. (D25-D22)
SW6	Rotary SW (0-15)	Input a set value for various setting modes. (D21-D18)
SW7	Push SW	CPU Reset

< LED >

LED No	Description
D9	The light turns on when SW 1 is pushed.(Neuron ID Transmission)
D14	The light turns on when SW 2 is pushed.(Neuron ID Transmission)
D25-D18	The setting value specified with SW 5 and SW 6 is displayed.
D29-D26	The setting mode pushed with SW 3 is displayed.

■ ABOUT NETWORK VARIABLE

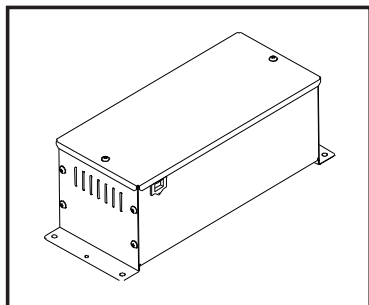
The data length of UNVT which is a kind of network variable is 6 bytes. A notice system and an instruction system use one UNVT(A total of two pieces), respectively.

2-3-3.SIGNAL AMPLIFIER

Model : UTR - YRPA

If the total length of Transmission Line exceeds 500m, or the number of units exceeds 64 units, Signal Amplifier will be necessary to use.

■ FEATURES

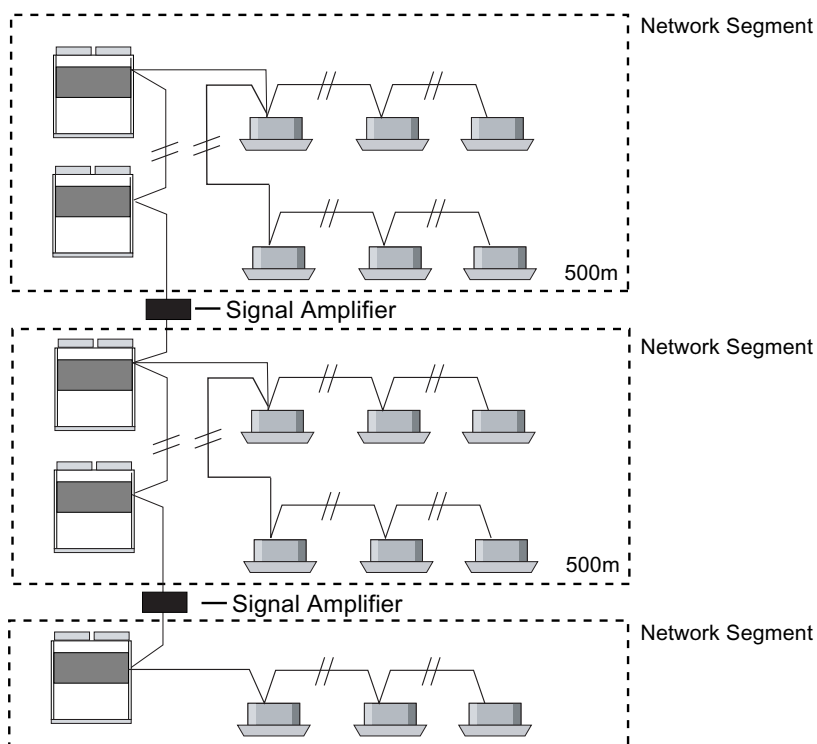


* By using this unit, it can connect the following number of each units,

- (1) Transmission Line : Max. 2000m
- (2) Connectable Units : Max. Indoor Unit : 400 units
Outdoor Unit : 100 units
Central Remote Controller : 16 units

* Standard can connect up to 500m of Transmission Line and 64 units of connecting units.

■ SYSTEM OUTLINE

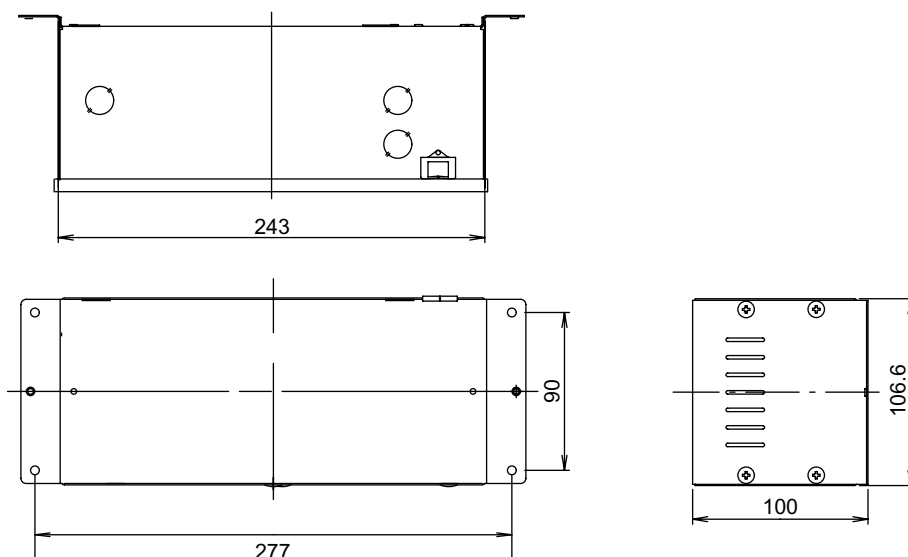


Each network segment must be within

* Total wiring length of transmission line : 500m

* A number of units : 64

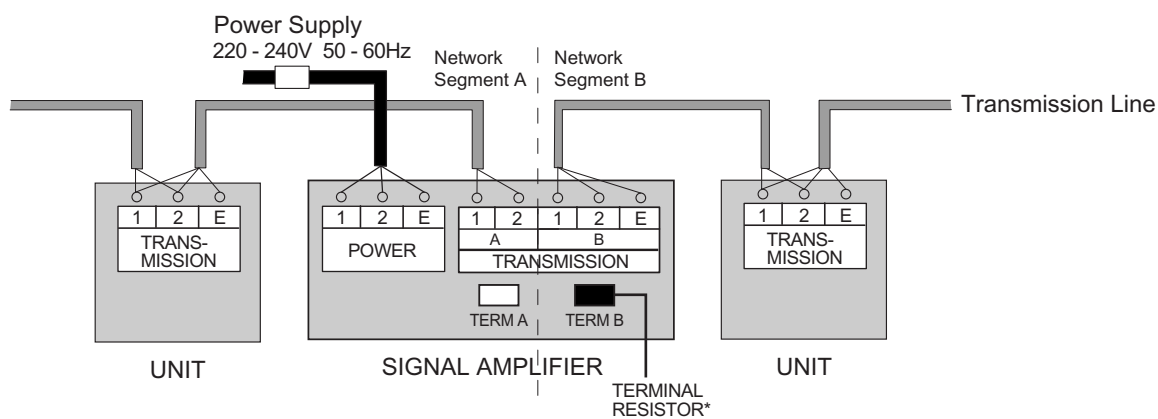
DIMENSIONS



SPECIFICATION

POWER SUPPLY	50-60Hz 220-240V
POWER CONSUMPTION (W)	2.9
FUSE CAPACITY	3
SIZE (H × W × D) (mm)	100 × 288 × 110
WEIGHT (g)	1300

ELECTRICAL WIRING



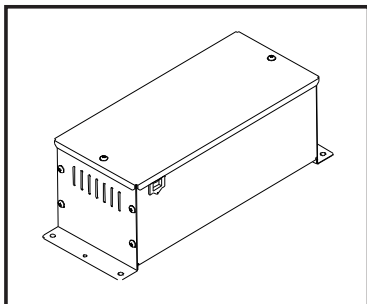
* Make sure to install 1 piece of Terminal Resistor to each 1 Network segment. It is provided to each Outdoor unit, but please remove it if there is a multiple number of Outdoor units in the one Network segment.

2-3-4.TRANSMISSION ADAPTOR

Model : UTR - YTMA

■ FEATURES

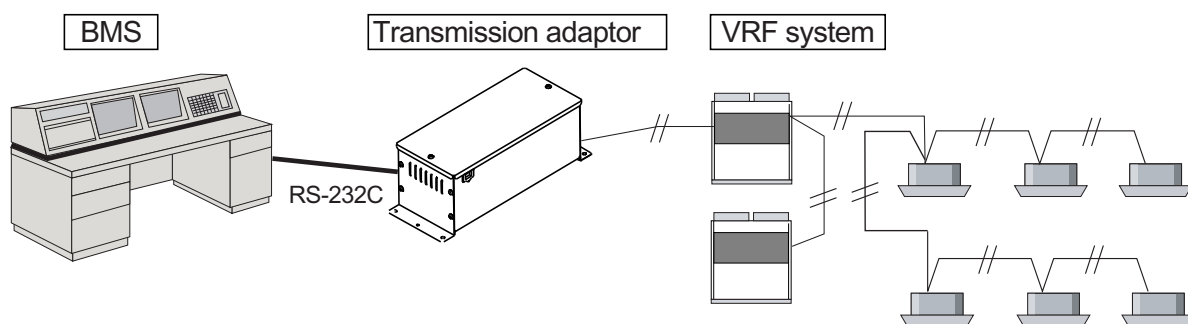
For the air condition of the medium and large size building, the control software can control and monitor the air conditioners together with the ones in the other buildings.



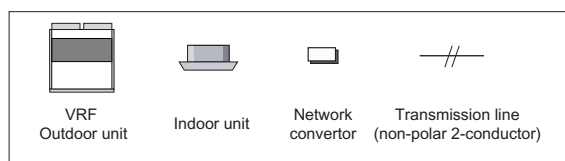
* Up to 400 Indoor units / 100 Outdoor units can be connected to 1 unit of Network Convertor.

* By using UTR-YTMA , VRF system can be centrally controlled or monitored from BMS which has Lon Works interface.

■ SYSTEM OUTLINE



*Contact the authorized sales company for inquiry on the communication protocol.



■ FUNCTION (Example)

- * START / STOP
- * MASTER CONTROL
- * FAN CONTROL
- * TEMPERATURE CONTROL
- * TIMER SETTING
- * ERROR DISPLAY
- * LOUVER DIRECTION*



3 . OUTDOOR UNITS

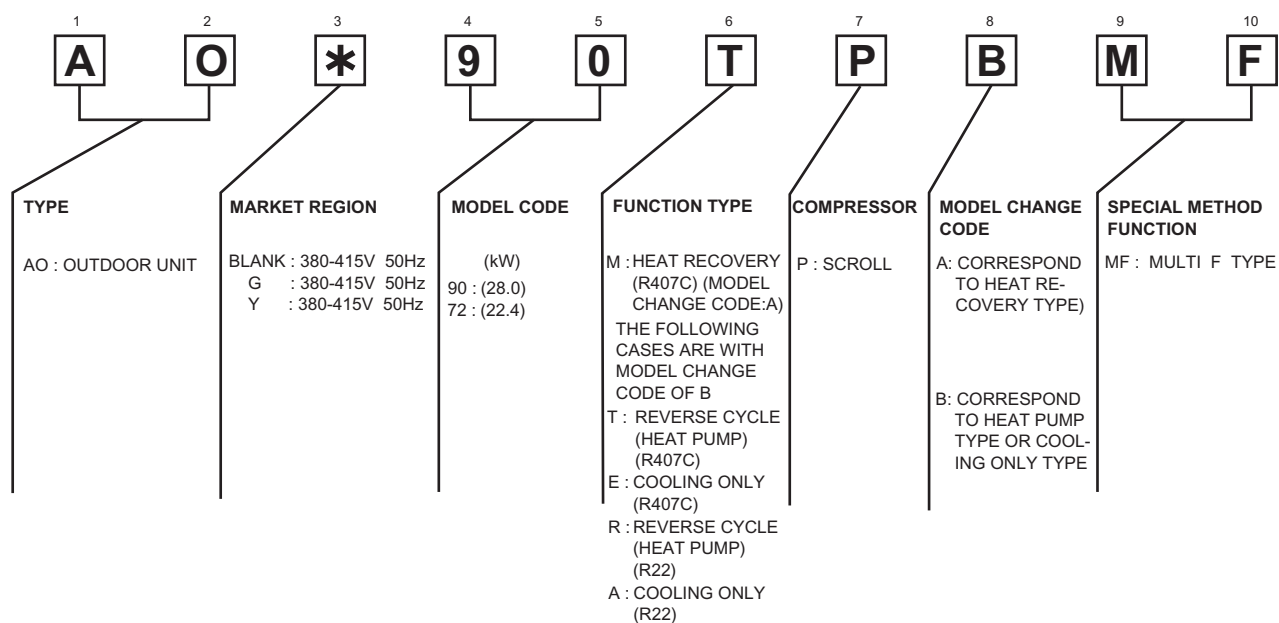
3-1 MODEL LINE UP

■ LINE UP

TYPE	CAPACITY	MODEL NAME	Maximum Connectable Indoor unit
 Heat pump type	28.0 kW(10HP)	AO*90TPBMF	16
	22.4 kW(8HP)	AO*72TPBMF	13
 Cooling only type	28.0 kW(10HP)	AO*90EPBMF	16
	22.4 kW(8HP)	AO*72EPBMF	13

■ REFRIGERANT R407C

■ MODEL DESIGNATION

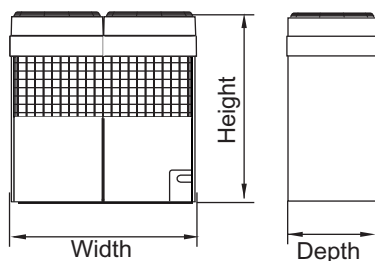


■ CAPACITY RANGE

MODEL	CAPACITY	Total capacity of Indoor unit	Ratio of outdoor unit capacity
AO 90	28.0kW	14.0 ~ 36.4kW	50 ~ 130%
AO 72	22.4kW	11.2 ~ 29.1kW	50 ~ 130%

3-2 FEATURE

■ NEW COMPACT



Dimensions

Height **1,380mm**

Width **1,300mm**

Depth **650mm**

(Unit : mm)

■ SPACE SAVING

Space saving by setting side by side without space in between.

Setting size

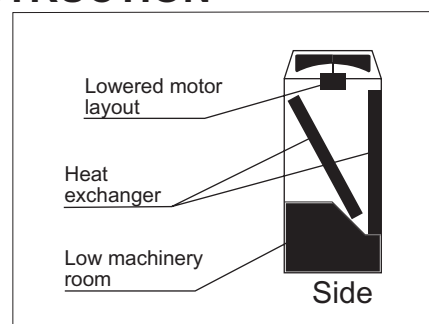
5.72 (Unit : m²)

Only a small area is needed for outdoor unit (total capacity 30HP, height of surrounding wall 1.2m)

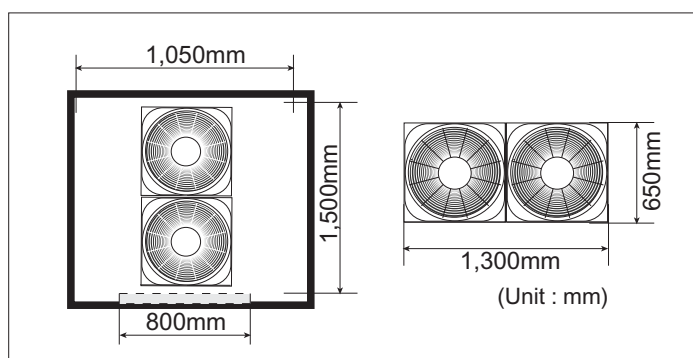


■ COMPACT CONSTRUCTION

Layout of evaporator and fan allows us to reduce the height.



■ OUTDOOR UNIT GOES INTO ELEVATOR



■ HIGH COP

High COP was realized by adopting high efficiency scroll compressor without power supply conversion loss (3 - 10%) like an inverter system.

Cooling COP	3.1
Heating COP	3.7

20% higher
compared with
outdoor unit of the
equivalent class

■ WIDE OPERATION RANG

* Cooling operation -15° C to 52° C

* Heating operation -15° C to 21° C

■ HIGH POWER AND ENERGY SAVING

The setting of Normal mode / High-power mode / Save-energy mode can be made according to the needs of customer.

This setting makes it possible to vary the outflow air temperature within the range of about 2 degrees, by which 10% capacity increase and energy saving operation are realized.

■ LOW NOISE LEVEL

Large 590mm diameter fan provides top class low noise level.

Low outdoor unit (10HP)
noise level
(Silent operation mode 50dB(A))

55dB(A)

(unit : dB(A))

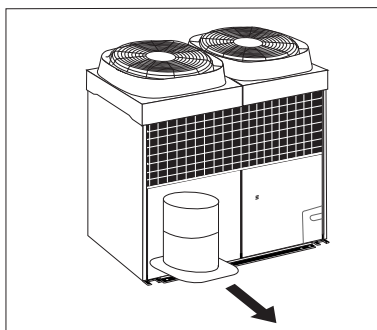
outdoor units	Power requirement	Normal mode	Silent mode
AO 90	380V	55	50
	415V	57	51
AO 72	380V	54	48
	415V	56	49

■ EASY MAINTENANCE

Indication of operating status on PCB.

Indicating the operating status and details of failures on PCB in outdoor unit, allows better service and quick and easy maintenance.

Easy to replace compressors



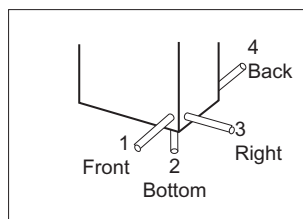
The pump down can be performed from Outdoor unit by the switch on the PCB in outdoor unit.

■ EASY INSTALLATION

Four-direction piping allows a variety of installation, configurations

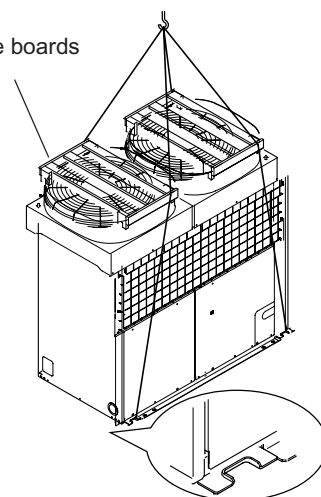
Easy installation and pipe direction setting

Four-direction pipe



Outdoor unit can be lifted by a crane set up on the roof of the building

Protective boards



■ OTHERS

- * Power requirement 3-phase 4-wire
- * Pipe limitation

Maximum Length	100m
Height Difference	50m

3-3. SPECIFICATIONS(HEAT PUMP TYPE)

- AO90TPBMF
- AO72TPBMF

OUTDOOR
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OUTDOOR
UNITS

Model				AO 90TPB	AO 72TPB	
Power Requirement			ϕ ,Hz	3W4,50Hz	3W4,50Hz	
			V	380 - 415	380 - 415	
Total Capacity	Cooling	kW		28.0	22.4	
	Heating			31.5	25.2	
Total Input Watts	Cooling	kW		9.0	7.2	
	Heating			8.5	7.6	
Total Ampacity	Cooling	A		15.2	12.5	
	Heating			14.3	13.0	
Starting Current			A	81	70	
E.E.R.	Cooling	W/W		3.11	3.1	
	Heating			3.71	3.3	
Heat Exchanger	Type			Plate Fin Coil	Plate Fin Coil	
	Rows x Stages			3 x 30 + 2 x 30	2 x 30 + 2 x 30	
	Fin Pitch			1.8	1.8	
Fan Speed	High	r.p.m.		730	730	
	Low			360	360	
Air Circulation	High	m³/h		9800	9800	
Fan Type x Qty				Propeller x 2	Propeller x 2	
Fan Motor Output			W	150 x 2	150 x 2	
Compressor	Model			ZR22K3E-TFD ZR48K3E-TFD ZR72KCE-TFD	ZR22K3E-TFD ZR36K3E-TFD ZR68KCE-TFD	
	Type			Hermetically sealed scroll type	Hermetically sealed scroll type	
	Motor Output		kW	1.5/3.4/4.9	1.5/2.5/4.8	
	Protection			Internal Protector(OCR) High Pressure Relief Valve	Internal Protector(OCR) High Pressure Relief Valve	
Dimensions (H x W x D)	Net		mm	1,380 x 1,300 x 650	1,380 x 1,300 x 650	
	Gross			1,535 x 1,400 x 770	1,535 x 1,400 x 770	
Weights	Net		kg	285	278	
	Gross			321	314	
Noise Level (Sound Pressure)			dB (A)	57	56	
Condition	Indoor Air Temp.	Cooling	DB/WB (°C)	27 / 19	27 / 19	
		Heating		20 / (15)	20 / (15)	
	Outdoor Air Temp.	Cooling	DB/WB (°C)	35 / 24	35 / 24	
		Heating		7 / 6	7 / 6	
Refrigerant	Type			R407C	R407C	
	Charge		kg	12	10	
Refrigerant OIL	Type			EMIKARATE RL 32CF	EMIKARATE RL 32CF	
	Charge		cc	1120/1360/1774 + 2000	1120/1242/1774 + 2000	
Pipe	Size	Liquid	mm	12.7	12.7	
		Suction Gas		28.58	28.58	
	Max Length		m	100	100	
	Max Height			50	50	
	Max Chargeless Length			7.5	7.5	
Operation (Outdoor)		Cooling	°C	-15 to 52	-15 to 52	
		Heating		-15 to 21	-15 to 21	

3-3. SPECIFICATIONS(COOLING ONLY TYPE)

■ AO90EPBMF

■ AO72EPBMF

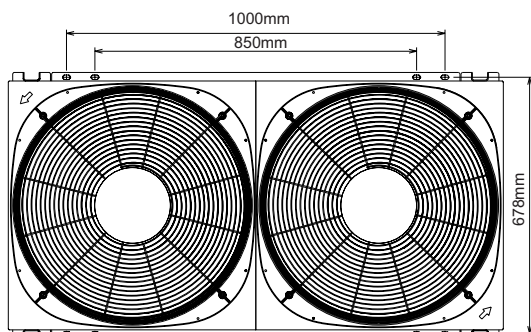
OUTDOOR
UNITS

OUTDOOR
UNITS

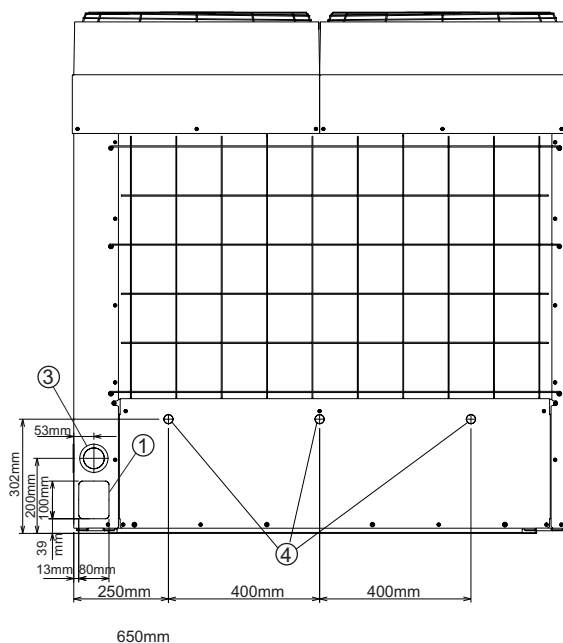
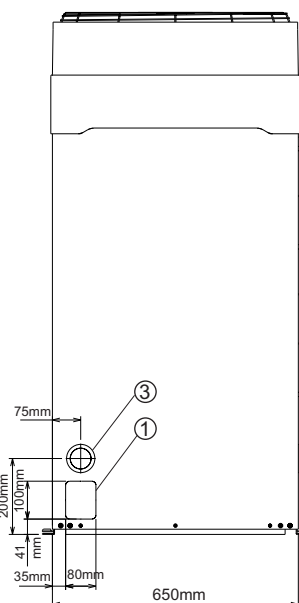
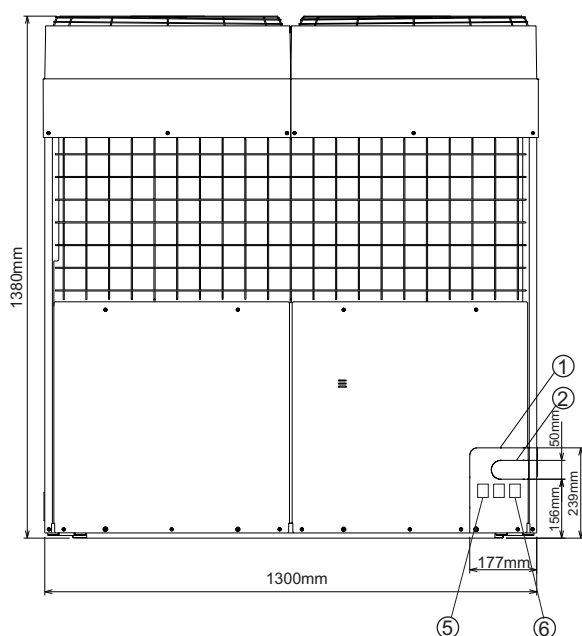
Model				AO 90EPB		AO 72EPB	
Power Requirement			φ ,Hz	3W4,50Hz		3W4,50Hz	
			V	380 - 415		380 - 415	
Total Capacity	Cooling		kW	28.0		22.4	
Total Input Watts	Cooling		kW	9.0		7.2	
Total Ampacity	Cooling		A	15.2		12.5	
Starting Current			A	81		70	
E.E.R.	Cooling		W/W	3.1		3.1	
Heat Exchanger	Type			Plate Fin Coil		Plate Fin Coil	
	Rows x Stages			3 x 30 + 2 x 30		2 x 30 + 2 x 30	
	Fin Pitch			1.8		1.8	
Fan Speed	High		r.p.m.	730		730	
	Low			360		360	
Air Circulation	High		m³/h	9800		9800	
Fan Type x Qty				Propeller x 2		Propeller x 2	
Fan Motor Output			W	150 x 2		150 x 2	
Compressor	Model			ZR22K3E-TFD ZR48K3E-TFD ZR72KCE-TFD		ZR22K3E-TFD ZR36K3E-TFD ZR68KCE-TFD	
	Type			Hermetically sealed scroll type		Hermetically sealed scroll type	
	Motor Output		kW	1.5/3.4/4.9		1.5/2.5/4.8	
	Protection			Internal Protector(OCR) High Pressure Relief Valve		Internal Protector(OCR) High Pressure Relief Valve	
Dimensions (H x W x D)	Net		mm	1,380 x 1,300 x 650		1,380 x 1,300 x 650	
	Gross			1,535 x 1,400 x 770		1,535 x 1,400 x 770	
Weights	Net		kg	284		277	
	Gross			320		313	
Noise Level (Sound Pressure)		Cooling	dB (A)	57		56	
Condition	Indoor Air Temp.	Cooling	DB/WB	27 / 19		27 / 19	
	Outdoor Air Temp.	Cooling	(°C)	35 / 24		35 / 24	
Refrigerant	Type			R407C		R407C	
	Charge		kg	12		10	
Refrigerant OIL	Type			EMIKARATE RL 32CF		EMIKARATE RL 32CF	
	Charge		cc	1120/1360/1774 + 2000		1120/1242/1774 + 2000	
Pipe	Size	Liquid	mm	12.7		12.7	
		Suction Gas		28.58		28.58	
	Max Length		m	100		100	
	Max Height			50		50	
	Max Chargeless Length			7.5		7.5	
Operation (Outdoor)		Cooling	°C	-15 to 52		-15 to 52	

3-4 DIMENSIONS

(Unit : mm)

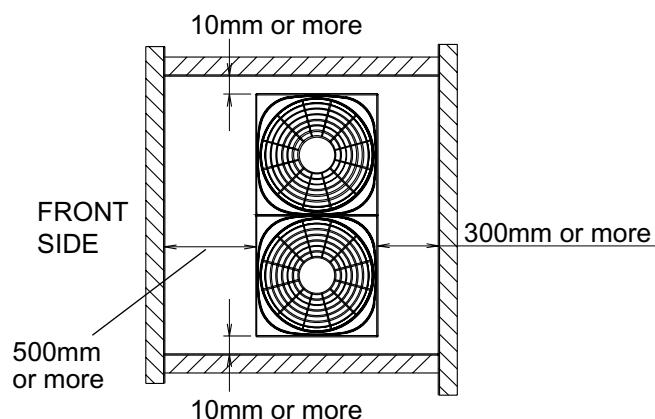


- ① Knock out hole for piping
- ② Knock out hole for wiring
- ③ Bush for wiring
- ④ Knock out hole for drain piping
- ⑤ Liquid pipe valve (flare)
- ⑥ Suction pipe valve (flange)



3-5 INSTALLATION SPACE

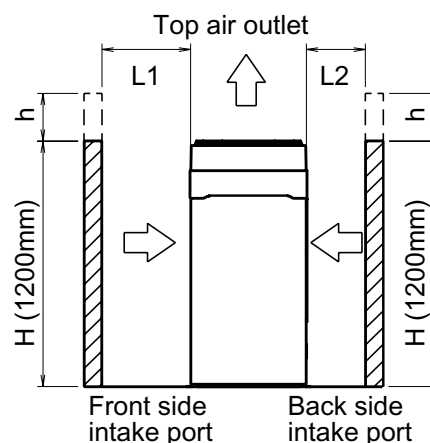
■ FOR INDIVIDUALLY



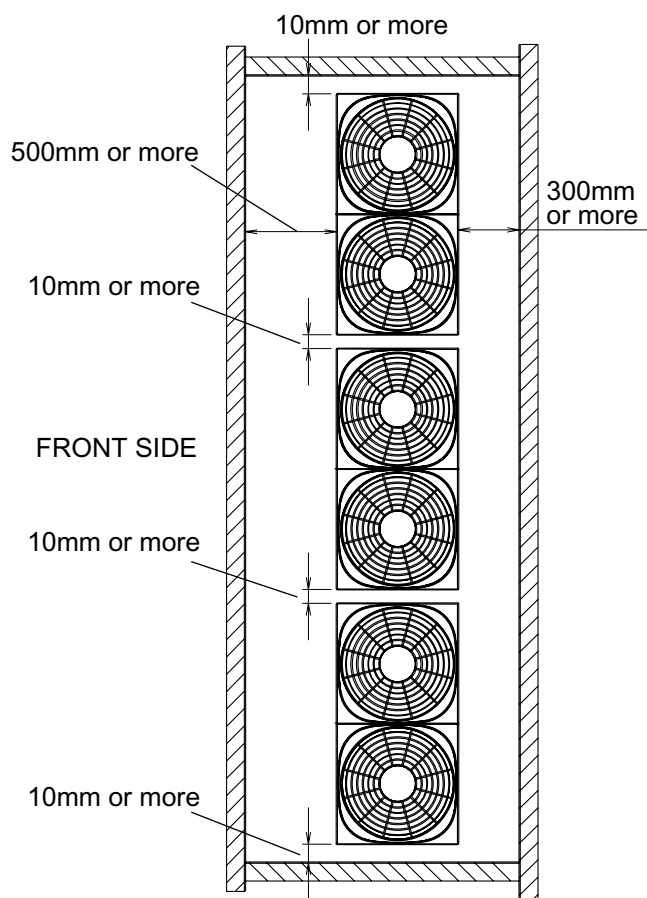
- * There are no height restriction for the side wall.
- * The height (H) of front and rear wall should be less than 1,200mm.
- * If the height of wall exceed 1,200mm by h mm, add h mm to the service space width for L1 and L2.

$$H \leq 1,200 : L1 \geq 500, L2 \geq 300$$

$$H > 1,200 : L1 > 500+h, L2 > 300+h$$



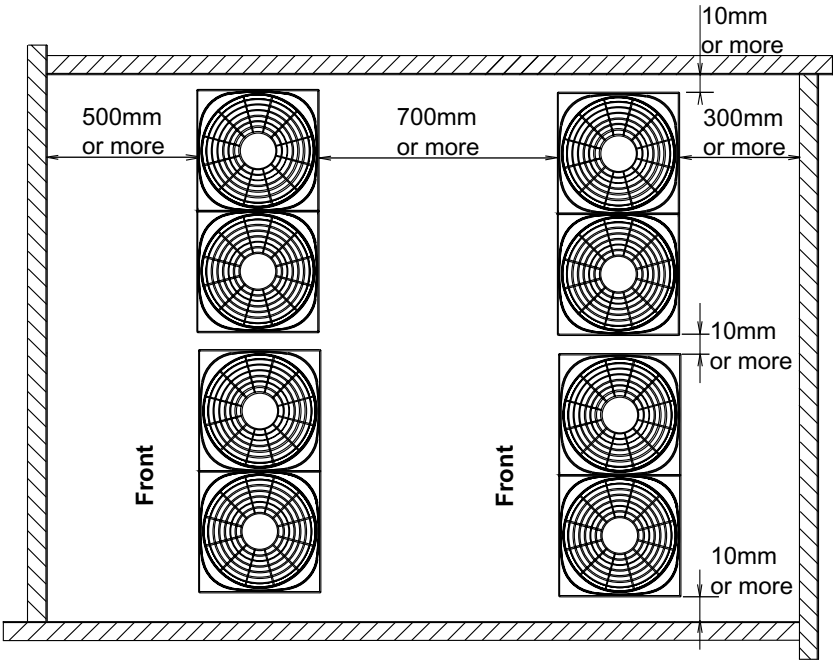
■ FOR CONTINUOUS



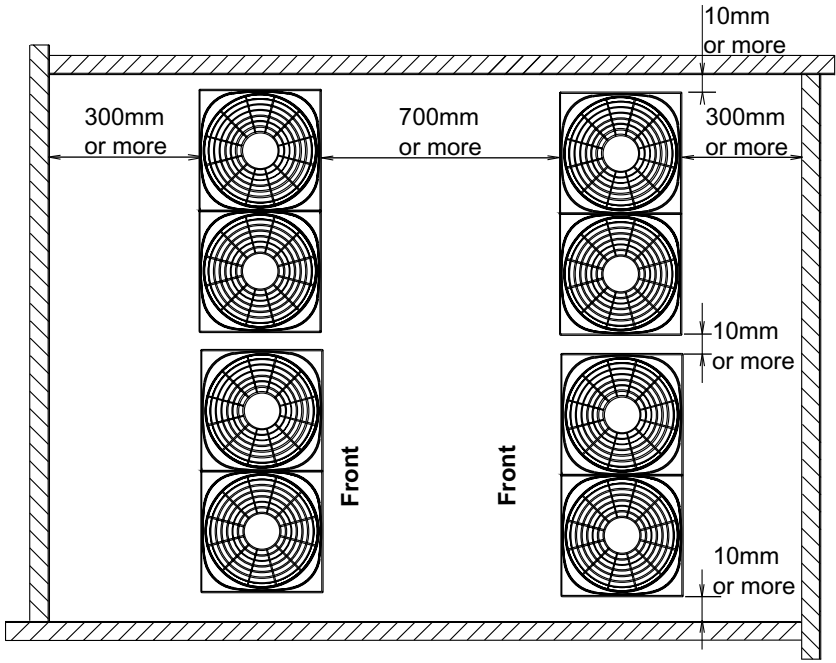
- * If outdoor unit is not installed to specifications, capacity may drop because of a short-circuit. As a result, a high pressure error may occur.
- * Since specified values are minimum permissible measurements, install unit after duly considering the measurements required for installation location, piping work and maintenance.

■ FOR CENTRALIZED

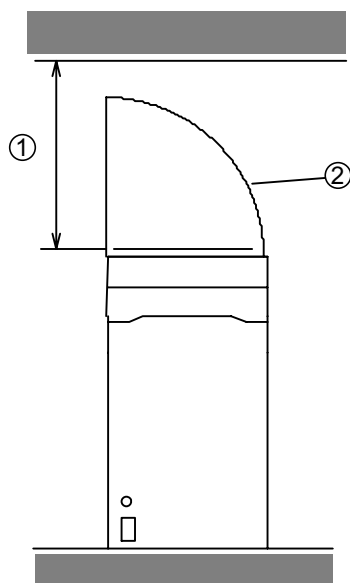
OUTDOOR
UNITS



OUTDOOR
UNITS



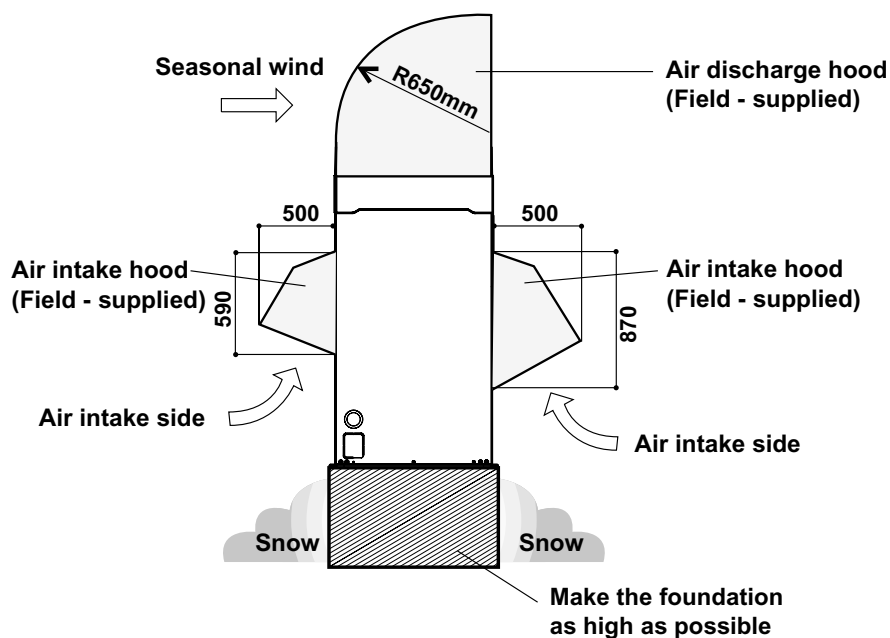
■ REQUIRED SPACE FOR DISCHARGE OUTLET



- ① Minimum space : 700mm
Install a hood when the space is less than 1000mm.
- ② When a hood is installed, the static pressure has to be less than 3mmAq.

■ CONSIDERATION FOR SEASONAL WIND AND SNOW

* Install inlet and outlet ducts in order to maintain stable operation in cold or snowy regions



■RECOMMENDED SHAPES OF EACH DUCT

OUTDOOR
UNITS

OUTDOOR
UNITS

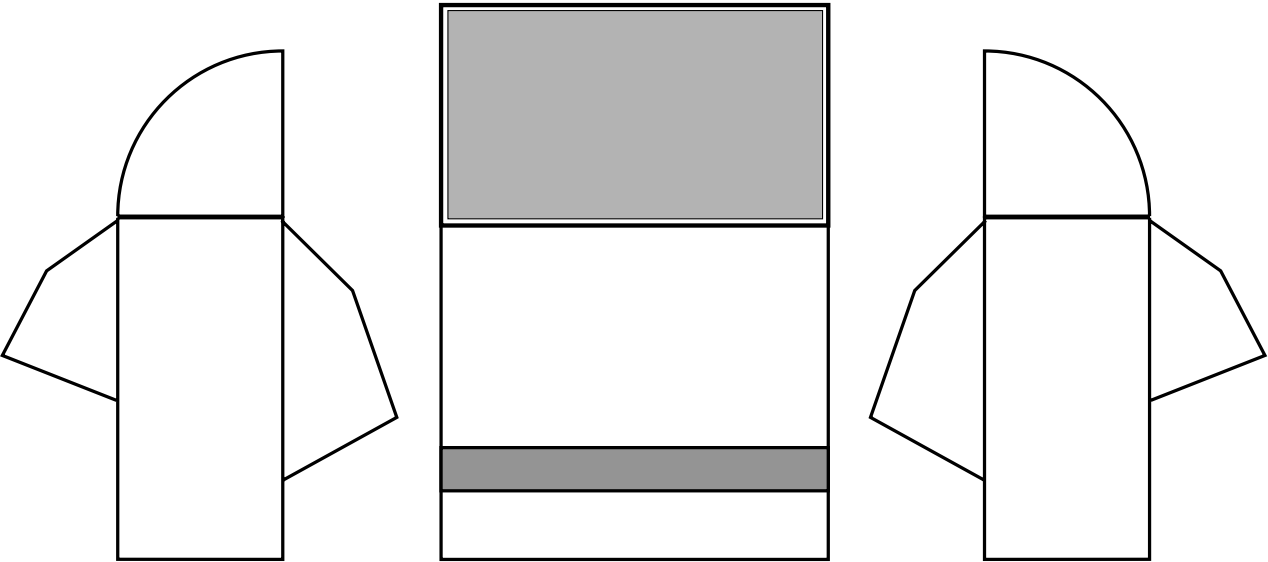


Fig.1 Overall view

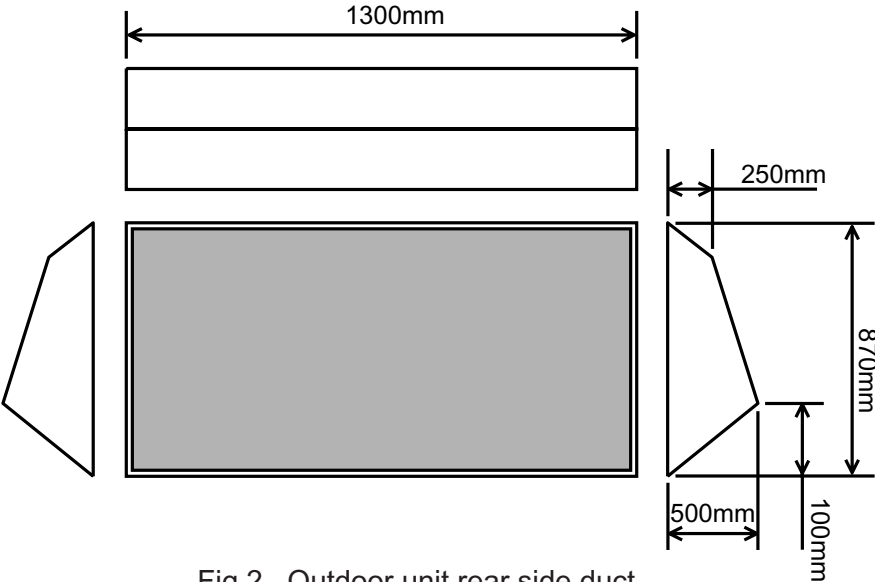


Fig.2 Outdoor unit rear side duct

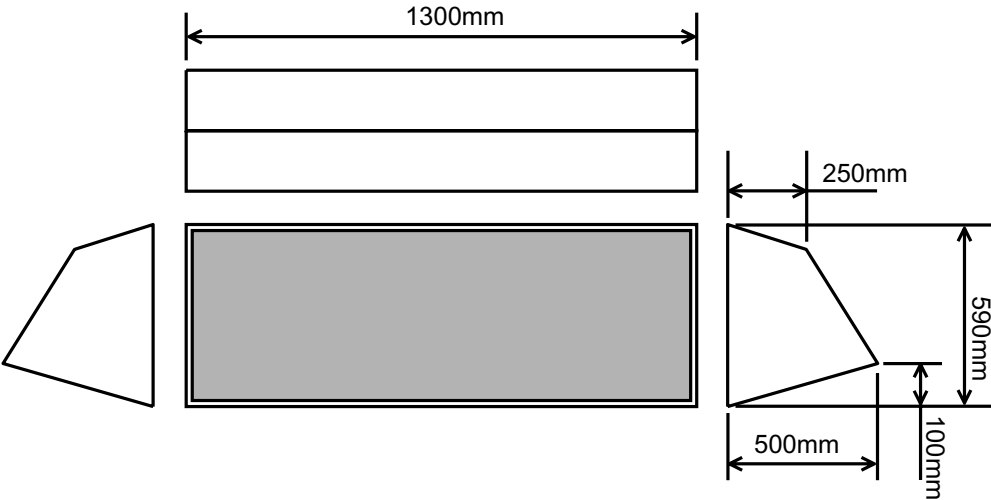


Fig.3 Outdoor unit front side duct

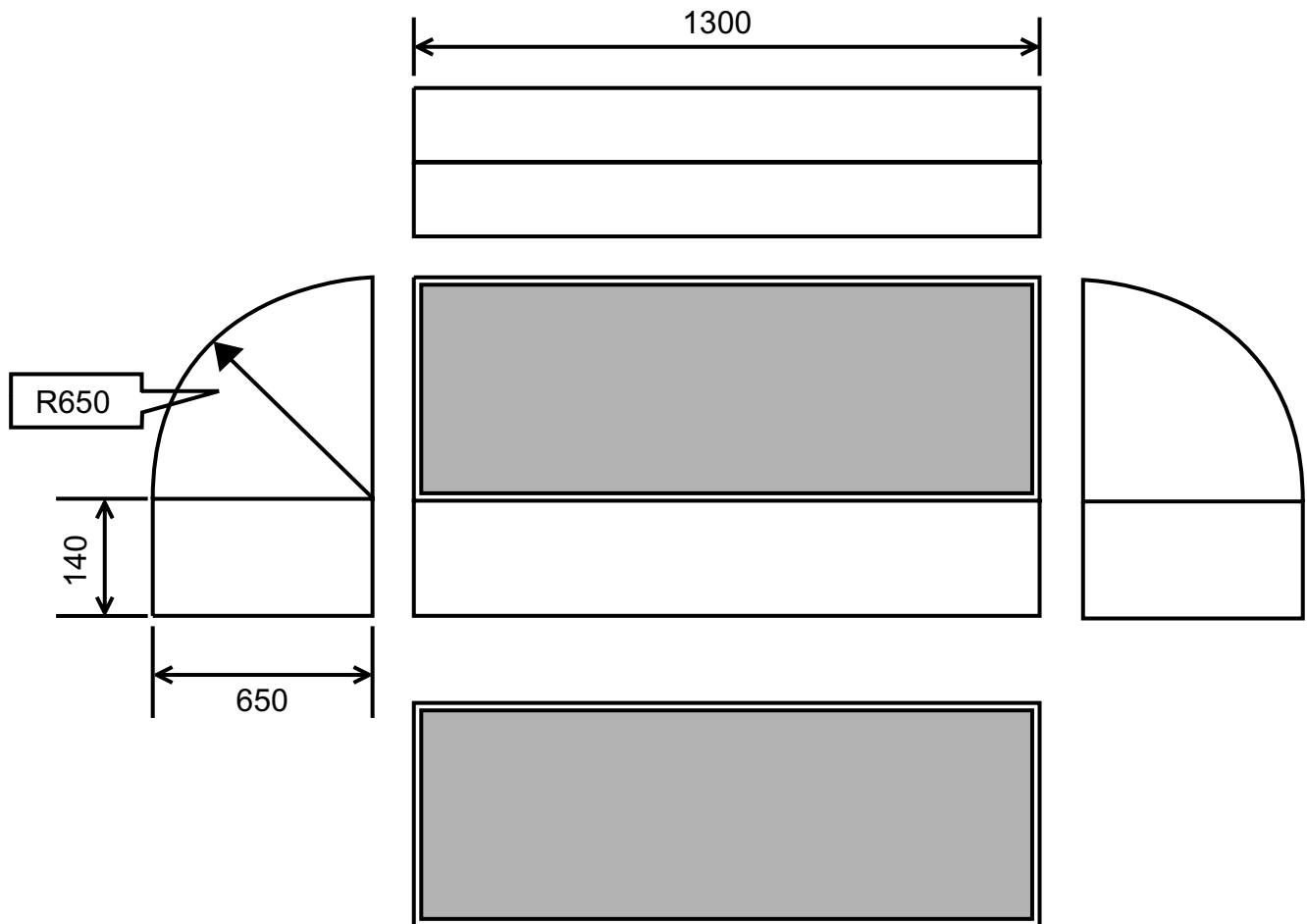


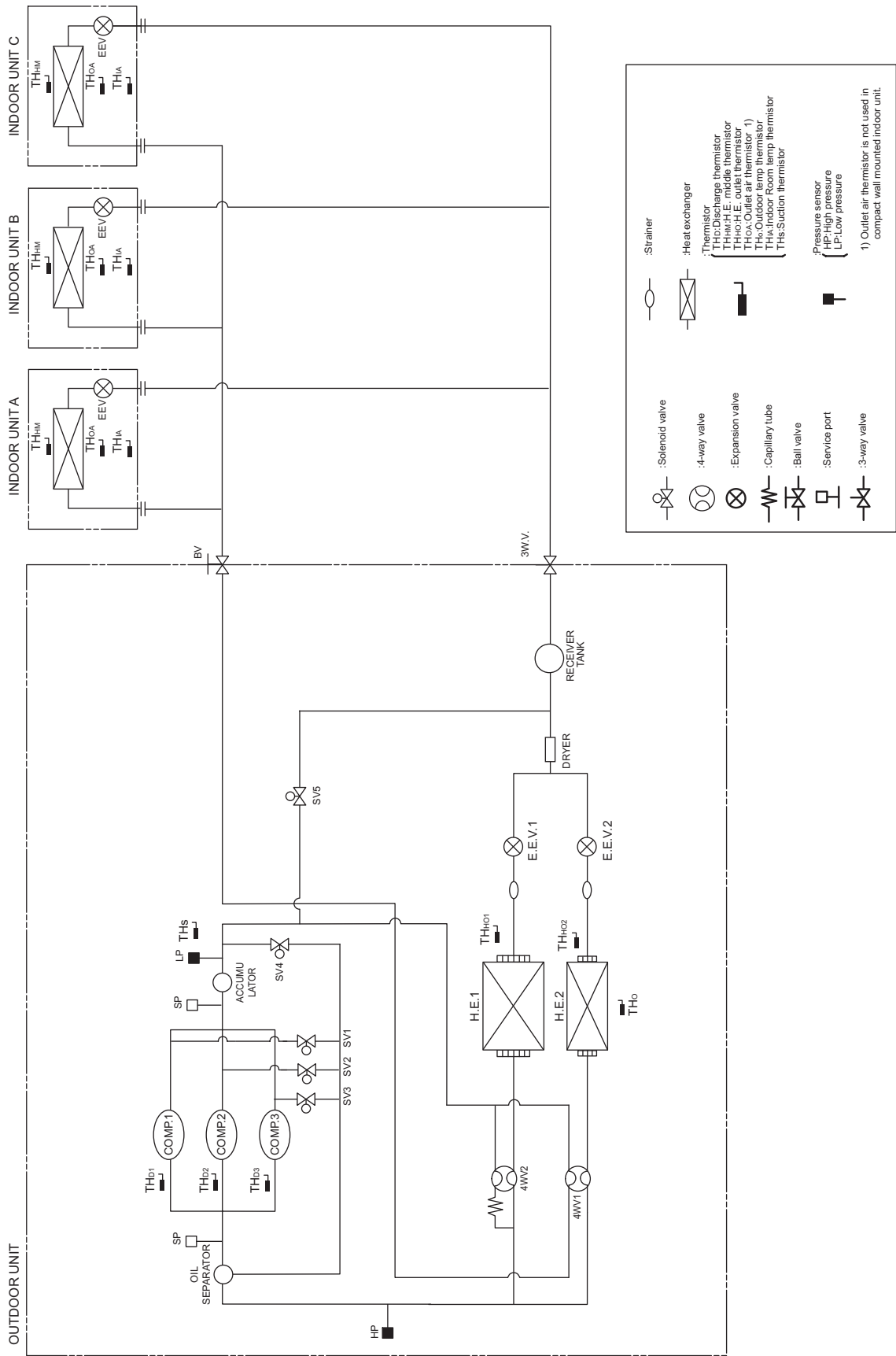
Fig.4 Outdoor unit upper part duct

3-6 REFRIGERANT CIRCUIT

■ HEAT PUMP TYPE

- MODEL : AO90T , AO72T

OUTDOOR
UNITS

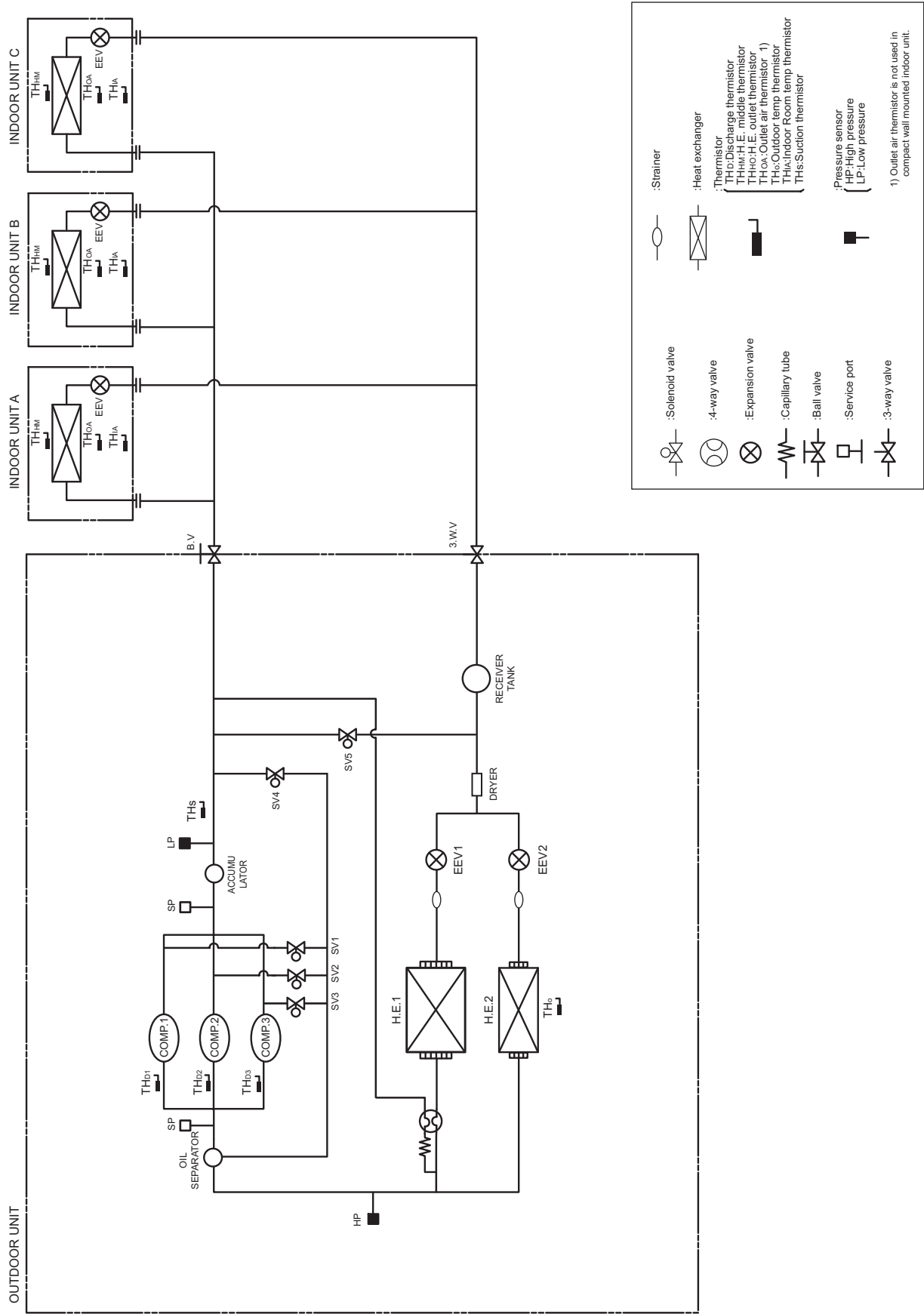


OUTDOOR
UNITS

■ COOLING ONLY TYPE

• MODEL : AO90E , AO72E

OUTDOOR
UNITS

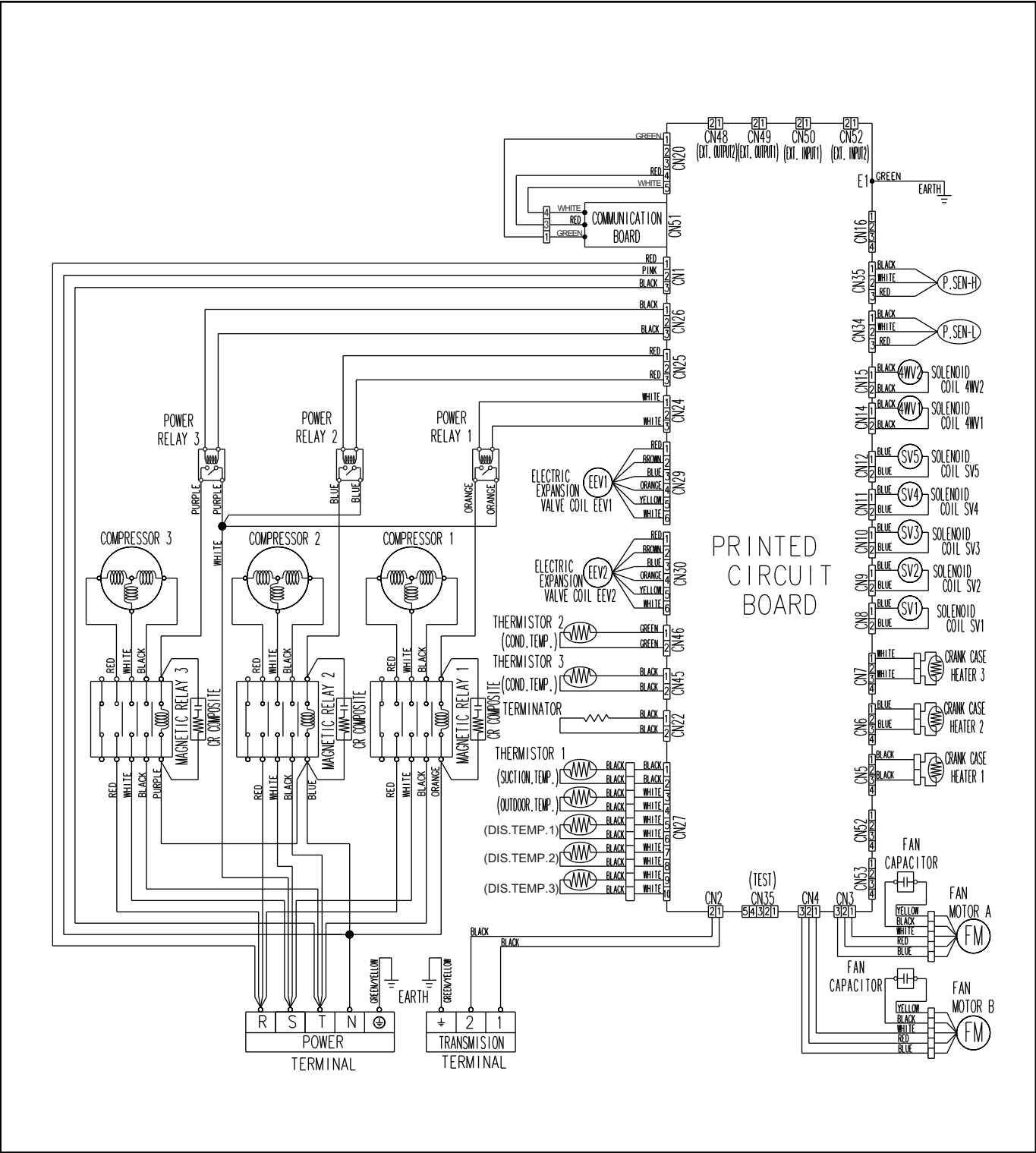


OUTDOOR
UNITS

3-7 WIRING DIAGRAM

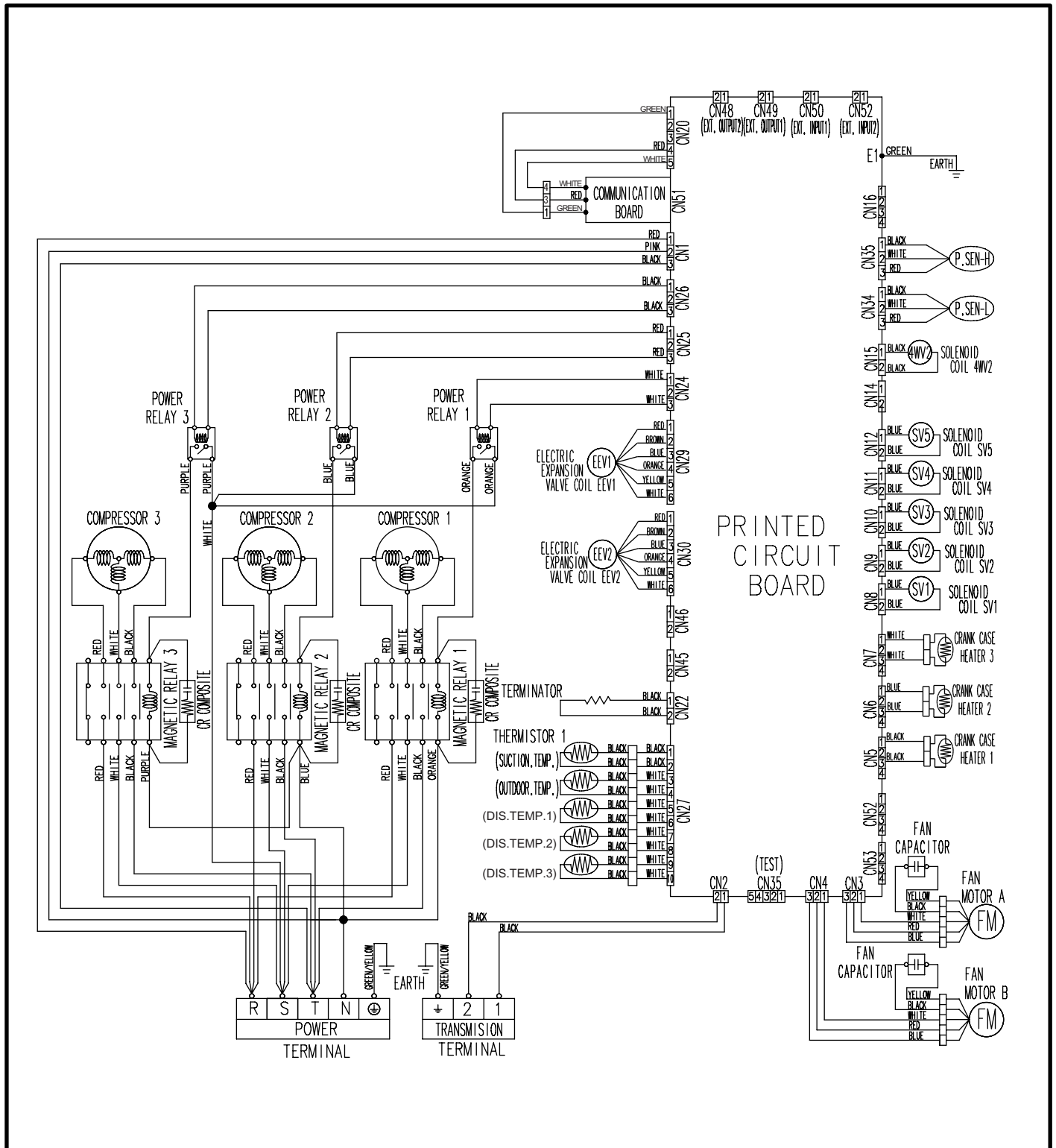
HEAT PUMP TYPE

- MODEL : AO90T , AO72T



■ COOLING ONLY TYPE

• MODEL : AO90E , AO72E



3-8 CAPACITY TABLE

COOLING CAPACITY

COOLING CAPACITY

• MODEL : AO90T,AO90E

Outdoor Units	Total Capacity Of Indoor Unit		Outdoor Temperature		Indoor Temperature													
					20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
	(kW)		(°CDB)	(°FDB)	68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
					TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
36.4 (130%)	10	50	27.8	3.71	30.0	3.96	34.3	5.03	36.4	5.30	38.5	5.55	42.4	6.77	43.2	6.85		
	15	59	27.8	4.47	30.0	4.75	34.3	5.98	36.4	6.27	38.5	7.35	41.2	7.71	42.0	7.79		
	21	70	27.8	5.45	30.0	6.45	34.3	7.19	36.4	8.38	38.2	8.69	39.7	8.84	40.5	8.92		
	23	73	27.8	5.79	30.0	6.85	34.3	7.61	36.4	8.86	37.7	9.06	39.2	9.21	40.0	9.29		
	25	77	27.8	6.13	30.0	7.26	34.3	8.91	36.4	9.36	37.2	9.44	38.7	9.59	39.5	9.66		
	27	81	27.8	7.21	30.0	7.68	34.3	9.41	36.4	9.86	36.7	9.82	38.2	9.96	39.0	10.0		
	30	86	27.8	7.85	30.0	8.33	34.3	10.2	35.2	10.3	36.0	10.4	37.5	10.5	38.2	10.6		
	33	91	27.8	8.51	30.0	9.00	33.7	10.8	34.5	10.9	35.2	10.9	36.7	11.1	37.4	11.1		
	35	95	27.8	8.96	30.0	9.46	33.2	11.2	33.9	11.2	34.7	11.3	36.1	11.4	36.9	11.5		
	37	99	27.8	9.42	30.0	10.9	32.7	11.5	33.4	11.6	34.2	11.7	35.6	11.8	36.3	11.9		
	40	104	27.8	10.1	30.0	11.7	31.9	12.1	32.6	12.2	33.4	12.2	34.8	12.4	35.5	12.4		
	45	113	27.8	12.5	29.3	12.9	30.6	13.0	31.3	13.1	32.0	13.2	33.4	13.3	34.1	13.3		
	52	125	26.8	14.1	27.4	14.2	28.7	14.3	29.4	14.4	30.0	14.4	31.3	14.6	32.0	14.6		
33.6 (120%)	10	50	25.7	3.02	27.7	3.69	31.6	4.13	33.6	4.94	35.6	5.20	39.5	6.39	41.5	6.66		
	15	59	25.7	4.17	27.7	4.45	31.6	5.58	33.6	5.88	35.6	6.16	39.5	7.51	40.7	7.67		
	21	70	25.7	5.11	27.7	5.42	31.6	6.75	33.6	7.08	35.6	8.23	38.6	8.73	39.3	8.80		
	23	73	25.7	5.44	27.7	5.76	31.6	7.16	33.6	7.50	36.6	8.70	38.1	9.10	38.8	9.18		
	25	77	25.7	5.77	27.7	6.10	31.6	7.58	33.6	7.92	35.6	9.19	37.6	9.48	38.4	9.55		
	27	81	25.7	6.12	27.7	6.45	31.6	8.00	33.6	9.26	35.6	9.69	37.1	9.86	37.9	9.93		
	30	86	25.7	6.65	27.7	7.81	31.6	8.66	33.6	10.0	34.9	10.3	36.4	10.4	37.1	10.5		
	33	91	25.7	7.20	27.7	8.47	31.6	10.3	33.5	10.8	34.2	10.8	35.6	11.0	36.4	11.0		
	35	95	25.7	8.40	27.7	8.92	31.6	10.8	33.0	11.2	33.7	11.2	35.1	11.4	35.8	11.4		
	37	99	25.7	8.85	27.7	9.38	31.6	11.4	32.5	11.5	33.2	11.6	34.6	11.7	35.3	11.8		
	40	104	25.7	9.55	27.7	10.1	31.1	12.0	31.8	12.1	32.5	12.2	33.8	12.3	34.5	12.3		
	45	113	25.7	10.8	27.7	12.4	29.8	13.0	30.5	13.0	31.2	13.1	32.5	13.2	33.2	13.3		
	52	125	25.7	13.8	26.8	14.1	28.0	14.3	28.6	14.3	29.3	14.4	30.5	14.5	31.2	14.5		
30.8 (110%)	10	50	23.6	2.84	25.4	2.99	29.0	3.85	30.8	4.04	32.6	4.23	36.2	5.28	38.0	5.49		
	15	59	23.6	3.43	25.4	4.13	29.0	4.62	30.8	4.84	32.6	5.74	36.2	6.24	38.0	7.28		
	21	70	23.6	4.19	25.4	5.06	29.0	5.60	30.8	6.61	32.6	6.92	36.2	8.36	38.0	8.67		
	23	73	23.6	5.05	25.4	5.38	29.0	6.67	30.8	7.01	32.6	7.33	36.2	8.84	37.5	9.05		
	25	77	23.6	5.37	25.4	5.72	29.0	7.07	30.8	7.42	32.6	7.75	36.2	9.33	37.1	9.43		
	27	81	23.6	5.71	25.4	6.06	29.0	7.48	30.8	7.84	32.6	8.18	35.9	9.74	36.6	9.81		
	30	86	23.6	6.22	25.4	6.58	29.0	8.12	30.8	8.49	32.6	9.79	35.2	10.3	35.9	10.4		
	33	91	23.6	6.76	25.4	7.13	29.0	8.78	30.8	9.16	32.6	10.6	34.5	10.9	35.2	10.9		
	35	95	23.6	7.12	25.4	7.50	29.0	9.23	30.8	10.6	32.6	11.1	34.0	11.2	34.7	11.3		
	37	99	23.6	7.50	25.4	8.76	29.0	9.69	30.8	11.2	32.2	11.5	33.5	11.6	34.2	11.7		
	40	104	23.6	8.08	25.4	9.46	29.0	11.4	30.8	12.0	31.5	12.1	32.8	12.2	33.5	12.2		
	45	113	23.6	10.1	25.4	10.7	29.0	12.9	29.6	12.9	30.2	13.0	31.5	13.1	32.2	13.2		
	52	125	23.6	11.9	25.4	13.7	27.2	14.2	27.8	14.2	28.4	14.3	29.7	14.4	30.3	14.5		
28.0 (100%)	10	50	21.4	2.66	23.1	2.80	26.4	3.54	28.0	3.74	29.6	3.92	32.9	4.86	34.6	5.07		
	15	59	21.4	3.19	23.1	3.38	26.4	4.28	28.0	4.50	29.6	4.70	32.9	5.79	34.6	6.02		
	21	70	21.4	3.92	23.1	4.13	26.4	5.22	28.0	5.46	29.6	6.41	32.9	6.97	34.6	7.22		
	23	73	21.4	4.18	23.1	4.39	26.4	5.55	28.0	5.80	29.6	6.81	32.9	7.38	34.6	8.52		
	25	77	21.4	4.44	23.1	5.28	26.4	5.88	28.0	6.14	29.6	7.21	32.9	7.80	34.6	9.00		
	27	81	21.4	4.70	23.1	5.61	26.4	6.23	28.0	7.28	29.6	7.62	32.9	8.22	34.6	9.49		
	30	86	21.4	5.11	23.1	6.12	26.4	6.76	28.0	7.91	29.6	8.26	32.9	9.88	34.6	10.2		
	33	91	21.4	6.26	23.1	6.65	26.4	8.16	28.0	8.55	29.6	8.92	32.9	10.7	33.9	10.8		
	35	95	21.4	6.61	23.1	7.01	26.4	8.59	28.0	9.00	29.6	9.37	32.8	11.1	33.4	11.2		
	37	99	21.4	6.98	23.1	7.38	26.4	9.04	28.0	9.46	29.6	10.8	32.3	11.5	33.0	11.6		
	40	104	21.4	7.54	23.1	7.95	26.4	9.74	28.0	10.2	29.6	11.7	31.6	12.1	32.3	12.1		
	45	113	21.4	8.53	23.1	9.93	26.4	11.0	28.0	12.6	29.2	12.9	30.4	13.0	31.1	13.1		
	52	125	21.4	11.1	23.1	11.7	26.3	14.1	26.9	14.2	27.5	14.2	28.7	14.3	29.3	14.4		
25.2 (90%)	10	50	22.2	2.86	20.8	2.60	23.7	2.85	25.2	2.97	26.7	3.58	29.6	3.92	31.1	4.07		
	15	59	22.2	3.37	20.8	3.11	23.7	3.44	25.2	4.12	26.7	4.33	29.6	4.70	31.1	4.86		
	21	70	22.2	4.13	20.8	3.83	23.7	4.79	25.2	5.04	26.7	5.27	29.6	6.42	31.1	6.68		
	23	73	22.2	4.40	20.8	4.08	23.7	5.10	25.2	5.36	26.7	5.60	29.6	6.81	31.1	7.08		
	25	77	22.2	4.67	20.8	4.34	23.7	5.42	25.2	5.69	26.7	5.93	29.6	7.22	31.1	7.49		
	27	81	22.2	4.94	20.8	4.60	23.7	5.75	25.2	6.03	26.7	6.28	29.6	7.63	31.1	7.90		
	30	86	22.2	5.37	20.8	5.00	23.7	6.26	25.2	6.55	26.7	6.80	29.6	8.26	31.1	8.54		
	33	91	22.2	5.80	20.8	5.42	23.7	6.79	25.2	7.08	26.7	8.25	29.6	8.91	31.1	10.2		
	35	95	22.2	6.10	20.8	6.45	23.7	7.15	25.2	7.45	26.7	8.69	29.6	9.36	31.1	10.7		
	37	99	22.2	6.40	20.8	6.81	23.7	7.52	25.2	8.74	26.7	9.13	29.6	10.9	31.1	11.3		
	40	104	22.2	8.02	20.8	7.37	23.7	8.09	25.2	9.43	26.7	9.82	29.6	11.7	31.0	12.0		
	45	113	22.2	9.03	20.8	8.34	23.7	10.2	25.2	10.6	26.7	11.0	29.2	12.9	29.8	13.0		
	52	125	22.2	10.5	20.8	10.9	23.7	12.0	25.2	13.7	26.5	14.1	27.6	14.2	28.2	14.3		

TC : Total Capacity kW

PI : Power Input kW (Comp. + Outdoor fan motor)

• MODEL : AO90T,AO90E

Total Capacity Of Indoor Unit (kW)	Outdoor Temperature		Indoor Temperature													
			20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
			68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
	(°CDB)	(°FDB)	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
22.4 (80%)	10	50	17.1	2.18	18.4	2.28	21.1	2.64	22.4	2.75	23.7	2.85	26.4	3.55	27.7	3.70
	15	59	17.1	2.33	18.4	2.80	21.1	3.15	22.4	3.30	23.7	3.44	26.4	4.29	27.7	4.46
	21	70	17.1	2.86	18.4	3.48	21.1	3.87	22.4	4.04	23.7	4.80	26.4	5.22	27.7	5.41
	23	73	17.1	3.48	18.4	3.72	21.1	4.12	22.4	4.29	23.7	5.11	26.4	5.55	27.7	5.74
	25	77	17.1	3.71	18.4	3.96	21.1	4.38	22.4	4.56	23.7	5.43	26.4	5.88	27.7	6.08
	27	81	17.1	3.96	18.4	4.21	21.1	4.64	22.4	5.50	23.7	5.76	26.4	6.22	27.7	6.42
	30	86	17.1	4.34	18.4	4.60	21.1	5.05	22.4	6.00	23.7	6.27	26.4	6.74	27.7	7.85
	33	91	17.1	4.73	18.4	5.00	21.1	6.20	22.4	6.51	23.7	6.79	26.4	8.19	27.7	8.49
	35	95	17.1	5.00	18.4	5.28	21.1	6.55	22.4	6.86	23.7	7.15	26.4	8.62	27.7	8.93
	37	99	17.1	5.28	18.4	5.56	21.1	6.91	22.4	7.23	23.7	7.51	26.4	9.06	27.7	9.37
	40	104	17.1	5.71	18.4	6.00	21.1	7.46	22.4	7.79	23.7	8.08	26.4	9.74	27.7	10.1
	45	113	17.1	6.46	18.4	7.63	21.1	8.43	22.4	8.76	23.7	10.2	26.4	10.9	27.7	12.5
	52	125	17.1	8.57	18.4	9.07	21.1	11.0	22.4	11.5	23.7	11.9	26.3	14.1	26.3	13.9
19.6 (70%)	10	50	15.0	2.00	16.1	2.10	18.4	2.27	19.6	2.51	20.8	2.62	23.1	2.80	24.2	2.88
	15	59	15.0	2.12	16.1	2.24	18.4	2.81	19.6	2.97	20.8	3.11	23.1	3.37	24.2	3.48
	21	70	15.0	2.62	16.1	2.75	18.4	3.49	19.6	3.67	20.8	3.83	23.1	4.11	24.2	4.90
	23	73	15.0	2.79	16.1	2.93	18.4	3.73	19.6	3.91	20.8	4.07	23.1	4.36	24.2	5.21
	25	77	15.0	2.97	16.1	3.11	18.4	3.97	19.6	4.16	20.8	4.33	23.1	5.32	24.2	5.53
	27	81	15.0	3.15	16.1	3.30	18.4	4.22	19.6	4.41	20.8	4.59	23.1	5.65	24.2	5.86
	30	86	15.0	3.43	16.1	4.13	18.4	4.60	19.6	4.80	20.8	4.98	23.1	6.14	24.2	6.36
	33	91	15.0	3.72	16.1	4.51	18.4	5.00	19.6	5.21	20.8	5.40	23.1	6.66	24.2	6.88
	35	95	15.0	4.47	16.1	4.78	18.4	5.28	19.6	5.49	20.8	6.49	23.1	7.01	24.2	7.24
	37	99	15.0	4.74	16.1	5.05	18.4	5.56	19.6	5.77	20.8	6.84	23.1	7.37	24.2	7.60
	40	104	15.0	5.15	16.1	5.47	18.4	5.99	19.6	7.07	20.8	7.38	23.1	7.93	24.2	9.18
	45	113	15.0	5.88	16.1	6.20	18.4	7.65	19.6	8.01	20.8	8.33	23.1	9.99	24.2	10.3
	52	125	15.0	6.98	16.1	7.32	18.4	9.07	19.6	9.44	20.8	10.9	23.1	11.7	24.2	12.1
16.8 (60%)	10	50	12.8	1.78	13.8	1.89	15.8	2.07	16.8	2.15	17.8	2.21	19.8	2.54	20.8	2.63
	15	59	12.8	1.86	13.8	1.99	15.8	2.20	16.8	2.29	17.8	2.38	19.8	3.00	20.8	3.12
	21	70	12.8	2.33	13.8	2.47	15.8	2.71	16.8	2.81	17.8	3.40	19.8	3.69	20.8	3.83
	23	73	12.8	2.49	13.8	2.64	15.8	2.88	16.8	2.99	17.8	3.63	19.8	3.94	20.8	4.07
	25	77	12.8	2.66	13.8	2.81	15.8	3.06	16.8	3.69	17.8	3.87	19.8	4.18	20.8	4.32
	27	81	12.8	2.83	13.8	2.98	15.8	3.25	16.8	3.92	17.8	4.11	19.8	4.44	20.8	4.58
	30	86	12.8	3.09	13.8	3.26	15.8	4.08	16.8	4.29	17.8	4.49	19.8	4.82	20.8	4.97
	33	91	12.8	3.37	13.8	3.54	15.8	4.45	16.8	4.68	17.8	4.88	19.8	5.23	20.8	6.38
	35	95	12.8	3.55	13.8	3.73	15.8	4.71	16.8	4.94	17.8	5.15	19.8	5.50	20.8	6.51
	37	99	12.8	3.75	13.8	3.92	15.8	4.98	16.8	5.21	17.8	5.42	19.8	5.78	20.8	6.86
	40	104	12.8	4.05	13.8	4.23	15.8	5.39	16.8	5.63	17.8	5.84	19.8	7.14	20.8	7.39
	45	113	12.8	4.57	13.8	5.53	15.8	6.11	16.8	6.36	17.8	6.58	19.8	8.07	20.8	8.33
	52	125	12.8	6.23	13.8	6.60	15.8	7.21	16.8	8.49	17.8	8.85	19.8	9.47	20.8	10.9
14.0 (50%)	10	50	10.7	1.54	11.5	1.62	13.2	1.83	14.0	1.91	14.8	1.99	16.5	2.12	17.3	2.17
	15	59	10.7	1.54	11.5	1.68	13.2	1.92	14.0	2.01	14.8	2.10	16.5	2.26	17.3	2.33
	21	70	10.7	1.96	11.5	2.12	13.2	2.38	14.0	2.49	14.8	2.59	16.5	2.77	17.3	3.34
	23	73	10.7	2.11	11.5	2.27	13.2	2.55	14.0	2.66	14.8	2.76	16.5	2.94	17.3	3.57
	25	77	10.7	2.26	11.5	2.43	13.2	2.71	14.0	2.83	14.8	2.94	16.5	3.12	17.3	3.80
	27	81	10.7	2.42	11.5	2.60	13.2	2.88	14.0	3.00	14.8	3.11	16.5	3.89	17.3	4.04
	30	86	10.7	2.67	11.5	2.85	13.2	3.15	14.0	3.27	14.8	3.39	16.5	4.25	17.3	4.41
	33	91	10.7	2.92	11.5	3.11	13.2	3.42	14.0	3.55	14.8	3.67	16.5	4.62	17.3	4.79
	35	95	10.7	3.10	11.5	3.29	13.2	3.61	14.0	3.74	14.8	3.86	16.5	4.88	17.3	5.05
	37	99	10.7	3.28	11.5	3.47	13.2	3.80	14.0	3.93	14.8	4.75	16.5	5.15	17.3	5.32
	40	104	10.7	3.56	11.5	3.76	13.2	4.09	14.0	4.92	14.8	5.15	16.5	5.56	17.3	5.73
	45	113	10.7	4.06	11.5	4.26	13.2	5.34	14.0	5.61	14.8	5.85	16.5	6.27	17.3	6.45
	52	125	10.7	4.81	11.5	5.02	13.2	6.38	14.0	6.66	14.8	6.91	16.5	8.41	17.3	8.70

TC : Total Capacity kW

PI : Power Input kW (Comp. + Outdoor fan motor)

• MODEL : AO72T,AO72E

Total Capacity Of Indoor Unit (kW)	Outdoor Temperature		Indoor Temperature													
			20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
	(°CDB)	(°FDB)	68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
29.1 (130%)	10	50	22.3	3.27	24.0	3.50	27.4	4.20	29.1	4.42	30.8	5.28	33.8	5.72	34.4	5.78
	15	59	22.3	3.90	24.0	4.16	27.4	4.95	29.1	5.19	30.8	6.18	33.0	6.50	33.6	6.56
	21	70	22.3	4.71	24.0	5.31	27.4	5.90	29.1	6.98	30.8	7.30	32.0	7.42	32.6	7.48
	23	73	22.3	4.98	24.0	5.62	27.4	6.22	29.1	7.37	30.5	7.61	31.7	7.73	32.3	7.79
	25	77	22.3	5.27	24.0	5.93	27.4	7.38	29.1	7.76	30.1	7.92	31.4	8.03	32.0	8.09
	27	81	22.3	5.55	24.0	6.25	27.4	7.76	29.1	8.15	29.8	8.23	31.0	8.34	31.6	8.39
	30	86	22.3	6.36	24.0	6.75	27.4	8.36	28.7	8.64	29.3	8.69	30.5	8.80	31.2	8.85
	33	91	22.3	6.86	24.0	7.25	27.4	8.97	28.2	9.10	28.8	9.15	30.0	9.25	30.7	9.30
	35	95	22.3	7.20	24.0	7.60	27.3	9.36	27.9	9.41	28.5	9.46	29.7	9.56	30.3	9.60
	37	99	22.3	7.54	24.0	7.95	27.0	9.66	27.6	9.71	28.2	9.76	29.4	9.86	30.0	9.90
	40	104	22.3	8.07	24.0	9.47	26.5	10.1	27.1	10.2	27.7	10.2	28.9	10.3	29.5	10.4
	45	113	22.3	8.98	24.0	10.6	25.7	10.9	26.2	10.9	26.8	11.0	28.0	11.1	28.6	11.1
	52	125	22.3	11.6	23.3	11.9	24.5	11.9	25.1	12.0	25.6	12.0	26.8	12.1	27.4	12.1
26.9 (120%)	10	50	20.6	2.67	22.1	3.25	25.3	3.66	26.9	4.13	28.5	4.34	31.6	5.41	33.2	5.65
	15	59	20.6	3.62	22.1	3.88	25.3	4.63	26.9	4.88	28.5	5.10	31.6	6.32	32.6	6.46
	21	70	20.6	4.39	22.1	4.68	25.3	5.55	26.9	5.81	28.5	6.85	31.1	7.33	31.7	7.39
	23	73	20.6	4.66	22.1	4.96	25.3	5.86	26.9	6.13	28.5	7.23	30.8	7.64	31.4	7.70
	25	77	20.6	4.94	22.1	5.24	25.3	6.18	26.9	6.46	28.5	7.62	30.4	7.95	31.0	8.01
	27	81	20.6	5.22	22.1	5.53	25.3	6.51	26.9	7.65	28.5	8.01	30.1	8.26	30.7	8.31
	30	86	20.6	5.65	22.1	6.34	25.3	7.00	26.9	8.24	28.5	8.61	29.7	8.72	30.2	8.77
	33	91	20.6	6.09	22.1	6.83	25.3	8.42	26.9	8.84	28.0	9.08	29.2	9.18	29.8	9.23
	35	95	20.6	6.39	22.1	7.17	25.3	8.83	26.9	9.26	27.7	9.39	28.9	9.49	29.4	9.53
	37	99	20.6	6.69	22.1	7.51	25.3	9.25	26.8	9.65	27.4	9.70	28.5	9.79	29.1	9.84
	40	104	20.6	7.60	22.1	8.00	25.3	9.88	26.3	10.1	26.9	10.2	28.0	10.2	28.6	10.3
	45	113	20.6	8.50	22.1	8.90	24.9	10.8	25.5	10.9	26.1	10.9	27.2	11.0	27.8	11.0
	52	125	20.6	9.82	22.1	11.5	23.8	11.9	24.4	11.9	24.9	12.0	26.1	12.0	26.7	12.1
24.6 (110%)	10	50	18.8	2.52	20.3	2.64	23.2	3.40	24.6	3.58	26.1	4.02	29.0	4.40	30.4	5.22
	15	59	18.8	2.98	20.3	3.58	23.2	4.04	24.6	4.25	26.1	4.76	29.0	5.17	30.4	6.12
	21	70	18.8	3.59	20.3	4.35	23.2	4.86	24.6	5.43	26.1	5.68	29.0	6.97	30.4	7.24
	23	73	18.8	3.80	20.3	4.62	23.2	5.14	24.6	5.74	26.1	6.00	29.0	7.35	30.3	7.60
	25	77	18.8	4.57	20.3	4.89	23.2	5.78	24.6	6.06	26.1	6.32	29.0	7.73	30.0	7.91
	27	81	18.8	4.84	20.3	5.16	23.2	6.09	24.6	6.38	26.1	6.64	29.0	8.13	29.7	8.22
	30	86	18.8	5.25	20.3	5.59	23.2	6.58	24.6	6.87	26.1	8.05	28.7	8.64	29.3	8.69
	33	91	18.8	5.68	20.3	6.03	23.2	7.07	24.6	7.38	26.1	8.65	28.2	9.10	28.8	9.15
	35	95	18.8	5.97	20.3	6.32	23.2	7.41	24.6	7.72	26.1	9.06	27.9	9.41	28.5	9.46
	37	99	18.8	6.27	20.3	6.63	23.2	7.75	24.6	9.07	26.1	9.47	27.6	9.72	28.2	9.76
	40	104	18.8	6.73	20.3	7.53	23.2	8.28	24.6	9.70	26.1	10.1	27.1	10.2	27.7	10.2
	45	113	18.8	7.52	20.3	8.42	23.2	10.3	24.6	10.8	26.1	11.2	26.4	10.9	26.9	11.0
	52	125	18.8	9.25	20.3	9.73	23.1	11.8	23.6	11.9	26.1	12.8	25.2	12.0	25.8	12.0
22.4 (100%)	10	50	17.1	2.34	18.4	2.48	21.1	3.10	22.4	3.29	23.7	3.47	26.4	4.06	27.7	4.24
	15	59	17.1	2.76	18.4	2.93	21.1	3.72	22.4	3.93	23.7	4.12	26.4	4.80	27.7	4.99
	21	70	17.1	3.35	18.4	3.54	21.1	4.50	22.4	4.73	23.7	4.94	26.4	5.72	27.7	5.92
	23	73	17.1	3.56	18.4	3.75	21.1	4.77	22.4	5.00	23.7	5.58	26.4	6.04	27.7	7.08
	25	77	17.1	3.76	18.4	3.96	21.1	5.05	22.4	5.28	23.7	5.89	26.4	6.36	27.7	7.46
	27	81	17.1	3.98	18.4	4.76	21.1	5.33	22.4	5.57	23.7	6.20	26.4	6.68	27.7	7.85
	30	86	17.1	4.30	18.4	5.17	21.1	5.75	22.4	6.41	23.7	6.69	26.4	8.13	27.7	8.44
	33	91	17.1	4.63	18.4	5.59	21.1	6.19	22.4	6.90	23.7	7.18	26.4	8.72	27.7	9.04
	35	95	17.1	4.85	18.4	5.88	21.1	6.49	22.4	7.23	23.7	7.52	26.4	9.13	27.4	9.37
	37	99	17.1	5.80	18.4	6.17	21.1	7.24	22.4	7.57	23.7	7.86	26.4	9.54	27.1	9.68
	40	104	17.1	6.24	18.4	6.63	21.1	7.76	22.4	8.09	23.7	9.43	26.1	10.1	26.7	10.1
	45	113	17.1	7.02	18.4	7.41	21.1	8.64	22.4	8.98	23.7	10.5	25.4	10.9	25.9	10.9
	52	125	17.1	8.16	18.4	9.12	21.1	11.1	22.4	11.6	23.3	11.9	24.3	11.9	24.9	12.0
20.2 (90%)	10	50	15.4	2.15	16.6	2.29	19.0	2.52	20.2	2.62	21.3	3.15	23.7	3.47	24.9	3.61
	15	59	15.4	2.52	16.6	2.69	19.0	2.99	20.2	3.12	21.3	3.77	23.7	4.12	24.9	4.28
	21	70	15.4	3.08	16.6	3.27	19.0	3.60	20.2	4.34	21.3	4.55	23.7	4.93	24.9	5.48
	23	73	15.4	3.28	16.6	3.47	19.0	3.81	20.2	4.60	21.3	4.82	23.7	5.58	24.9	5.79
	25	77	15.4	3.47	16.6	3.68	19.0	4.62	20.2	4.87	21.3	5.10	23.7	5.89	24.9	6.11
	27	81	15.4	3.68	16.6	3.89	19.0	4.89	20.2	5.15	21.3	5.38	23.7	6.20	24.9	6.42
	30	86	15.4	3.99	16.6	4.20	19.0	5.31	20.2	5.57	21.3	5.80	23.7	6.69	24.9	6.91
	33	91	15.4	4.31	16.6	4.53	19.0	5.73	20.2	6.00	21.3	6.24	23.7	7.18	24.9	7.41
	35	95	15.4	4.53	16.6	4.75	19.0	6.02	20.2	6.29	21.3	6.98	23.7	7.51	24.9	8.76
	37	99	15.4	4.75	16.6	4.98	19.0	6.31	20.2	6.59	21.3	7.31	23.7	7.85	24.9	9.17
	40	104	15.4	5.09	16.6	6.09	19.0	6.77	20.2	7.51	21.3	7.82	23.7	9.45	24.9	9.79
	45	113	15.4	5.67	16.6	6.86	19.0	7.54	20.2	8.38	21.3	8.70	23.7	10.5	24.8	10.8
	52	125	15.4	7.56	16.6	7.99	19.0	9.30	20.2	9.66	21.3	11.3	23.3	11.9	24.0	11.9

TC : Total Capacity kW

PI : Power Input kW (Comp. + Outdoor fan motor)

COOLING CAPACITY

• MODEL : AO72T,AO72E

Total Capacity Of Indoor Unit (kW)	Outdoor Temperature		Indoor Temperature													
			20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
	(°CDB)	(°FDB)	68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
			TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
17.9 (80%)	10	50	13.7	1.94	14.8	2.07	16.9	2.32	17.9	2.43	19.0	2.52	21.1	3.12	22.1	3.27
	15	59	13.7	2.01	14.8	2.42	16.9	2.73	17.9	2.86	19.0	2.98	21.1	3.74	22.1	3.90
	21	70	13.7	2.76	14.8	2.97	16.9	3.31	17.9	3.46	19.0	3.59	21.1	4.51	22.1	4.69
	23	73	13.7	2.95	14.8	3.16	16.9	3.51	17.9	3.66	19.0	3.80	21.1	4.78	22.1	4.96
	25	77	13.7	3.14	14.8	3.35	16.9	3.72	17.9	3.87	19.0	4.64	21.1	5.05	22.1	5.23
	27	81	13.7	3.33	14.8	3.55	16.9	3.92	17.9	4.08	19.0	4.91	21.1	5.33	22.1	5.51
	30	86	13.7	3.63	14.8	3.86	16.9	4.24	17.9	5.07	19.0	5.32	21.1	5.75	22.1	6.36
	33	91	13.7	3.94	14.8	4.17	16.9	4.56	17.9	5.48	19.0	5.74	21.1	6.18	22.1	6.84
	35	95	13.7	4.15	14.8	4.39	16.9	4.78	17.9	5.77	19.0	6.03	21.1	6.48	22.1	7.17
	37	99	13.7	4.36	14.8	4.60	16.9	5.76	17.9	6.05	19.0	6.32	21.1	7.26	22.1	7.50
	40	104	13.7	4.69	14.8	4.94	16.9	6.20	17.9	6.50	19.0	6.76	21.1	7.76	22.1	8.01
	45	113	13.7	5.26	14.8	5.51	16.9	6.95	17.9	7.26	19.0	7.54	21.1	8.63	22.1	8.88
	52	125	13.7	6.10	14.8	7.32	16.9	8.07	17.9	8.95	19.0	9.30	21.1	11.2	22.1	11.6
15.7 (70%)	10	50	12.0	1.79	12.9	1.87	14.8	2.08	15.7	2.20	16.6	2.30	18.4	2.47	19.4	2.55
	15	59	12.0	1.84	12.9	1.93	14.8	2.43	15.7	2.57	16.6	2.70	18.4	2.92	19.4	3.02
	21	70	12.0	2.22	12.9	2.32	14.8	2.98	15.7	3.13	16.6	3.27	18.4	3.52	19.4	4.22
	23	73	12.0	2.35	12.9	2.46	14.8	3.17	15.7	3.33	16.6	3.47	18.4	3.72	19.4	4.47
	25	77	12.0	2.49	12.9	2.97	14.8	3.36	15.7	3.52	16.6	3.67	18.4	3.93	19.4	4.74
	27	81	12.0	2.62	12.9	3.16	14.8	3.56	15.7	3.73	16.6	3.88	18.4	4.81	19.4	5.00
	30	86	12.0	2.83	12.9	3.45	14.8	3.86	15.7	4.03	16.6	4.19	18.4	5.21	19.4	5.41
	33	91	12.0	3.49	12.9	3.75	14.8	4.17	15.7	4.35	16.6	4.51	18.4	5.63	19.4	5.84
	35	95	12.0	3.69	12.9	3.95	14.8	4.38	15.7	4.57	16.6	4.73	18.4	5.91	19.4	6.12
	37	99	12.0	3.90	12.9	4.16	14.8	4.60	15.7	4.78	16.6	4.95	18.4	6.20	19.4	6.41
	40	104	12.0	4.21	12.9	4.48	14.8	4.93	15.7	5.12	16.6	6.14	18.4	6.64	19.4	6.86
	45	113	12.0	4.76	12.9	5.04	14.8	5.50	15.7	6.59	16.6	6.89	18.4	7.40	19.4	8.17
	52	125	12.0	5.58	12.9	5.86	14.8	7.35	15.7	7.69	16.6	7.99	18.4	9.13	19.4	9.41
13.4 (60%)	10	50	10.3	1.60	11.1	1.69	12.6	1.84	13.4	1.90	14.2	2.03	15.8	2.22	16.6	2.30
	15	59	10.3	1.64	11.1	1.74	12.6	1.90	13.4	1.98	14.2	2.36	15.8	2.59	16.6	2.70
	21	70	10.3	2.00	11.1	2.11	12.6	2.29	13.4	2.74	14.2	2.89	15.8	3.16	16.6	3.27
	23	73	10.3	2.12	11.1	2.23	12.6	2.42	13.4	2.93	14.2	3.03	15.8	3.35	16.6	3.47
	25	77	10.3	2.24	11.1	2.36	12.6	2.55	13.4	3.11	14.2	3.27	15.8	3.55	16.6	3.67
	27	81	10.3	2.37	11.1	2.49	12.6	3.12	13.4	3.30	14.2	3.47	15.8	3.75	16.6	3.87
	30	86	10.3	2.57	11.1	2.69	12.6	3.41	13.4	3.59	14.2	3.76	15.8	4.05	16.6	4.18
	33	91	10.3	2.77	11.1	2.89	12.6	3.70	13.4	3.90	14.2	4.07	15.8	4.37	16.6	4.50
	35	95	10.3	2.90	11.1	3.03	12.6	3.90	13.4	4.10	14.2	4.28	15.8	4.58	16.6	4.71
	37	99	10.3	3.04	11.1	3.17	12.6	4.11	13.4	4.31	14.2	4.49	15.8	4.80	16.6	4.93
	40	104	10.3	3.26	11.1	3.39	12.6	4.43	13.4	4.63	14.2	4.81	15.8	5.12	16.6	6.17
	45	113	10.3	3.62	11.1	4.47	12.6	4.97	13.4	5.18	14.2	5.37	15.8	6.67	16.6	6.91
	52	125	10.3	4.95	11.1	5.26	12.6	5.78	13.4	6.00	14.2	6.19	15.8	7.75	16.6	7.99
11.2 (50%)	10	50	8.56	1.43	9.22	1.47	10.5	1.63	11.2	1.70	11.9	1.76	13.2	1.87	13.8	1.91
	15	59	8.56	1.43	9.22	1.49	10.5	1.67	11.2	1.75	11.9	1.82	13.2	1.94	13.8	2.31
	21	70	8.56	1.71	9.22	1.83	10.5	2.03	11.2	2.12	11.9	2.19	13.2	2.72	13.8	2.84
	23	73	8.56	1.82	9.22	1.95	10.5	2.16	11.2	2.24	11.9	2.32	13.2	2.90	13.8	3.03
	25	77	8.56	1.94	9.22	2.07	10.5	2.28	11.2	2.37	11.9	2.45	13.2	3.08	13.8	3.21
	27	81	8.56	2.06	9.22	2.19	10.5	2.41	11.2	2.50	11.9	2.58	13.2	3.27	13.8	3.40
	30	86	8.56	2.24	9.22	2.38	10.5	2.60	11.2	2.70	11.9	2.78	13.2	3.56	13.8	3.70
	33	91	8.56	2.43	9.22	2.57	10.5	2.80	11.2	2.90	11.9	3.53	13.2	3.85	13.8	4.00
	35	95	8.56	2.56	9.22	2.70	10.5	2.94	11.2	3.03	11.9	3.72	13.2	4.05	13.8	4.20
	37	99	8.56	2.69	9.22	2.84	10.5	3.07	11.2	3.17	11.9	3.92	13.2	4.26	13.8	4.41
	40	104	8.56	2.89	9.22	3.04	10.5	3.28	11.2	4.03	11.9	4.23	13.2	4.57	13.8	4.72
	45	113	8.56	3.24	9.22	3.39	10.5	4.32	11.2	4.55	11.9	4.76	13.2	5.12	13.8	5.27
	52	125	8.56	3.76	9.22	3.91	10.5	5.10	11.2	5.34	11.9	5.55	13.2	5.91	13.8	6.07

TC : Total Capacity kW

PI : Power Input kW (Comp. + Outdoor fan motor)

HEATING CAPACITY

HEATING CAPACITY

• MODEL : AO90T

Total Capacity Of Indoor Unit (kW)	Outdoor Temperature			Indoor Temperature											
				15°CDB		18°CDB		20°CDB		23°CDB		25°CDB		27°CDB	
				59°FDB		64°FDB		68°FDB		73°FDB		77°FDB		81°FDB	
	(°CDB)	(°FDB)	RH	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
36.4 (130%)	-15	5	RH85%	22.3	6.42	21.6	6.87	21.1	7.18	20.3	7.63	19.8	7.93	19.3	8.23
	-10	14		25.3	6.89	24.6	7.34	24.1	7.64	23.3	8.09	22.8	8.40	22.2	8.70
	-5	23		28.8	7.41	28.0	7.86	27.5	8.16	26.7	8.61	26.2	8.91	25.6	9.21
	0	32		32.8	8.00	32.0	8.44	31.4	8.74	30.5	9.18	30.0	9.48	29.4	9.77
	5	41		37.3	8.65	36.4	9.08	35.8	9.37	34.8	9.81	34.2	10.1	31.4	8.72
	7	45		39.2	8.92	38.2	9.35	37.6	9.64	36.7	10.1	36.0	10.4	31.4	8.49
	10	50		41.7	9.28	40.7	9.71	40.1	9.99	36.9	8.73	34.2	8.53	31.4	8.14
33.6 (120%)	15	59		46.6	9.96	43.7	9.94	41.0	8.60	36.9	8.24	34.1	7.01	31.4	6.74
	-15	5	RH85%	22.0	6.62	21.2	7.07	20.7	7.37	20.0	7.81	19.5	8.11	19.0	8.41
	-10	14		24.9	7.12	24.2	7.56	23.7	7.86	22.9	8.31	22.4	8.60	21.9	8.90
	-5	23		28.4	7.67	27.6	8.12	27.1	8.41	26.3	8.86	25.8	9.15	25.2	9.45
	0	32		32.2	8.29	31.4	8.73	30.9	9.02	30.0	9.45	29.5	9.74	28.9	10.0
	5	41		36.6	8.97	35.7	9.40	35.1	9.68	34.0	10.1	31.5	8.72	29.0	8.43
	7	45		38.4	9.26	37.5	9.68	36.9	9.96	34.0	9.79	31.5	8.50	29.0	8.15
	10	50		40.9	9.63	39.9	10.0	37.8	9.92	34.0	8.48	31.5	8.18	29.0	6.97
30.8 (110%)	15	59		44.1	10.0	40.3	8.55	37.8	8.36	34.0	6.99	31.5	6.76	29.0	5.58
	-15	5	RH85%	21.6	6.86	20.9	7.29	20.4	7.58	19.6	8.02	19.1	8.31	18.6	8.60
	-10	14		24.5	7.38	23.8	7.82	23.3	8.11	22.5	8.55	22.0	8.84	21.5	9.13
	-5	23		27.9	7.97	27.1	8.41	26.6	8.70	25.8	9.13	25.3	9.42	24.8	9.71
	0	32		31.6	8.62	30.8	9.05	30.2	9.33	29.4	9.76	28.9	10.0	26.6	8.71
	5	41		35.8	9.34	34.9	9.76	34.4	10.0	31.2	8.67	28.9	8.42	26.6	7.15
	7	45		37.6	9.64	36.7	10.1	34.7	9.90	31.2	8.47	28.9	8.16	26.6	6.96
	10	50		40.0	10.0	37.0	8.69	34.7	8.54	31.2	7.14	28.9	6.96	26.6	6.68
28.0 (100%)	15	59		40.4	8.56	37.0	8.30	34.7	7.02	31.2	6.74	28.9	5.55	26.6	5.38
	-15	5	RH85%	21.2	7.12	20.4	7.55	19.9	7.84	19.2	8.26	18.7	8.55	18.2	8.84
	-10	14		24.0	7.68	23.3	8.11	22.8	8.40	22.0	8.83	21.5	9.11	21.0	9.40
	-5	23		27.2	8.31	26.5	8.74	26.0	9.02	25.2	9.45	24.7	9.73	24.2	9.99
	0	32		30.9	9.00	30.1	9.42	29.5	9.70	28.4	9.98	26.3	8.65	24.2	8.37
	5	41		34.9	9.76	33.6	10.0	31.5	8.67	28.4	8.36	26.3	7.10	24.2	6.87
	7	45		36.6	10.1	33.6	8.65	31.5	8.50	28.4	7.11	26.3	6.92	24.2	6.64
	10	50		36.8	8.65	33.6	8.46	31.5	8.24	28.4	6.90	26.3	6.66	24.2	5.51
25.2 (90%)	15	59		36.8	8.32	33.6	6.95	31.5	6.79	28.4	5.50	26.3	5.35	24.2	5.13
	-15	5	RH85%	20.6	7.43	19.9	7.85	19.4	8.13	18.7	8.55	18.3	8.83	17.8	9.10
	-10	14		23.4	8.04	22.7	8.45	22.2	8.73	21.5	9.15	21.0	9.43	20.5	9.71
	-5	23		26.5	8.71	25.8	9.12	25.3	9.40	24.6	9.81	23.6	9.90	21.7	8.60
	0	32		30.0	9.45	29.3	9.85	28.4	9.99	25.5	8.55	23.6	8.29	21.7	7.06
	5	41		33.1	9.99	30.2	8.56	28.4	8.38	25.5	7.02	23.6	6.81	21.7	6.50
	7	45		33.1	8.60	30.2	8.39	28.4	7.08	25.5	6.84	23.6	6.59	21.7	5.47
	10	50		33.1	8.43	30.2	7.04	28.4	6.91	25.5	6.59	23.6	5.45	21.7	5.26
22.4 (80%)	15	59		33.1	6.92	30.2	6.70	28.4	5.47	25.5	5.28	23.6	5.08	21.7	4.00
	-15	5	RH85%	20.0	7.80	19.3	8.21	18.8	8.48	18.2	8.88	17.7	9.15	17.2	9.42
	-10	14		22.7	8.45	22.0	8.86	21.5	9.13	20.8	9.53	20.3	9.80	19.3	9.78
	-5	23		25.7	9.18	25.0	9.58	24.5	9.85	22.7	9.75	21.0	8.47	19.3	8.16
	0	32		29.0	9.96	26.9	9.82	25.2	8.51	22.7	8.16	21.0	6.95	19.3	6.70
	5	41		29.4	8.49	26.9	8.23	25.2	6.97	22.7	6.69	21.0	5.52	19.3	5.35
	7	45		29.4	8.33	26.9	6.97	25.2	6.82	22.7	5.52	21.0	5.38	19.3	5.18
	10	50		29.4	6.97	26.9	6.78	25.2	6.59	22.7	5.36	21.0	5.18	19.3	4.93
19.6 (70%)	15	59		29.4	5.48	26.9	5.38	25.2	5.26	22.7	4.99	21.0	3.94	19.3	3.83
	-15	5	RH85%	19.2	8.24	18.6	8.63	18.1	8.89	17.5	9.28	17.0	9.54	16.6	9.80
	-10	14		21.8	8.95	21.1	9.34	20.7	9.60	19.8	9.90	18.4	8.59	16.9	8.33
	-5	23		24.7	9.74	23.5	9.92	21.1	8.58	19.8	8.29	18.4	7.04	16.9	6.83
	0	32		25.7	8.54	23.5	8.33	22.1	7.04	19.8	6.80	18.4	6.55	16.9	5.44
	5	41		25.7	6.99	23.5	6.82	22.1	6.64	19.8	5.40	18.4	5.23	16.9	5.00
	7	45		25.7	6.88	23.5	6.66	22.1	5.45	19.8	5.26	18.4	5.06	16.9	3.99
	10	50		25.7	6.70	23.5	5.41	22.1	5.30	19.8	5.05	18.4	3.97	16.9	3.87
16.8 (60%)	15	59		25.7	5.31	23.5	5.13	22.1	4.96	19.8	3.85	18.4	3.74	16.9	3.59
	-15	5	RH85%	18.3	8.78	17.7	9.15	17.3	9.40	16.6	9.77	15.8	9.72	14.5	8.44
	-10	14		20.8	9.56	20.1	9.94	18.9	9.75	17.0	8.36	15.8	8.09	14.5	6.90
	-5	23		22.1	8.54	20.2	8.36	18.9	8.16	17.0	6.84	15.8	6.62	14.5	5.48
	0	32		22.1	6.99	20.2	6.85	18.9	6.69	17.0	5.43	15.8	5.28	14.5	5.06
	5	41		22.1	6.69	20.2	5.40	18.9	5.30	17.0	5.06	15.8	3.96	14.5	3.87
	7	45		22.1	5.41	20.2	5.30	18.9	5.17	17.0	3.95	15.8	3.88	14.5	3.76
	10	50		22.1	5.31	20.2	5.13	18.9	4.96	17.0	3.85	15.8	3.75	14.5	3.60
14.0 (50%)	15	59		22.1	5.02	20.2	3.84	18.9	3.77	17.0	3.62	15.8	3.46	14.5	3.25
	-15	5	RH85%	17.2	9.46	16.6	9.81	15.8	9.76	14.2	8.36	13.1	8.13	12.1	6.91
	-10	14		18.4	8.50	16.8	8.33	15.8	8.15	14.2	6.83	13.1	6.62	12.1	5.47
	-5	23		18.4	6.96	16.8	6.82	15.8	6.66	14.2	5.41	13.1	5.26	12.1	5.06
	0	32		18.4	6.67	16.8	5.38	15.8	5.28	14.2	5.04	13.1	3.95	12.1	3.86
	5	41		18.4	5.26	16.8	5.08	15.8	3.91	14.2	3.82	13.1	3.71	12.1	3.55
	7	45		18.4	5.14	16.8	3.89	15.8	3.84	14.2	3.72	13.1	3.59	12.1	3.41
	10	50		18.4	3.87	16.8	3.81	15.8	3.74	14.2	3.58	13.1	3.41	12.1	3.19
14.0 (50%)	15	59		18.4	3.73	16.8	3.61	15.8	3.50	14.2	3.25	13.1	2.37	12.1	2.33

TC : Total Capacity kW

PI : Power Input kW (Comp. + Outdoor fan motor)

HEATING CAPACITY

• MODEL : AO72T

Total Capacity Of Indoor Unit (kW)	Outdoor Temperature			Indoor Temperature											
				15°CDB		18°CDB		20°CDB		23°CDB		25°CDB		27°CDB	
				59°FDB		64°FDB		68°FDB		73°FDB		77°FDB		81°FDB	
	(°CDB)	(°FDB)	RH	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
29.1 (130%)	-15	5	RH85%	18.2	5.44	17.5	5.83	17.1	6.10	16.4	6.50	15.9	6.76	15.5	7.03
	-10	14		20.8	5.93	20.1	6.32	19.7	6.59	19.1	6.98	18.6	7.25	18.2	7.51
	-5	23		23.6	6.43	23.0	6.82	22.6	7.08	21.9	7.48	21.5	7.74	21.1	8.00
	0	32		26.8	6.95	26.1	7.33	25.7	7.59	25.1	7.98	24.6	8.23	24.2	8.49
	5	41		30.3	7.50	29.7	7.87	29.3	8.13	28.6	8.50	27.3	8.48	25.1	7.20
	7	45		31.9	7.72	31.2	8.10	30.8	8.35	29.5	8.53	27.3	7.24	25.1	6.99
	10	50		33.9	8.02	33.3	8.39	32.8	8.61	29.5	7.20	27.3	6.98	25.1	6.26
	15	59		38.0	8.57	34.9	8.32	32.8	7.05	29.5	6.25	27.3	6.03	25.1	5.71
26.9 (120%)	-15	5	RH85%	17.9	5.62	17.2	6.01	16.8	6.27	16.1	6.66	15.7	6.92	15.2	7.18
	-10	14		20.4	6.13	19.8	6.52	19.4	6.78	18.7	7.17	18.3	7.43	17.9	7.69
	-5	23		23.3	6.66	22.6	7.05	22.2	7.30	21.6	7.69	21.2	7.95	20.7	8.20
	0	32		26.3	7.21	25.7	7.59	25.3	7.84	24.7	8.22	24.2	8.47	23.2	8.48
	5	41		29.8	7.78	29.2	8.16	28.8	8.40	27.2	8.48	25.2	7.20	23.2	6.94
	7	45		31.3	8.02	30.7	8.39	30.2	8.62	27.2	7.21	25.2	7.00	23.2	6.27
	10	50		33.4	8.33	32.3	8.57	30.2	8.33	27.2	6.98	25.2	6.26	23.2	6.00
	15	59		35.3	8.38	32.3	7.01	30.2	6.83	27.2	6.03	25.2	5.75	23.2	4.72
24.6 (110%)	-15	5	RH85%	17.5	5.82	16.9	6.21	16.4	6.46	15.8	6.85	15.4	7.10	14.9	7.36
	-10	14		20.1	6.37	19.4	6.75	19.0	7.01	18.4	7.39	18.0	7.64	17.6	7.90
	-5	23		22.8	6.93	22.2	7.31	21.8	7.56	21.2	7.94	20.8	8.19	20.4	8.44
	0	32		25.9	7.50	25.2	7.87	24.8	8.12	24.2	8.49	23.1	8.50	21.3	7.20
	5	41		29.3	8.11	28.7	8.47	27.7	8.55	24.9	7.16	23.1	6.94	21.3	6.22
	7	45		30.8	8.36	29.6	8.56	27.7	8.32	24.9	6.97	23.1	6.26	21.3	6.00
	10	50		32.3	8.58	29.6	7.16	27.7	7.03	24.9	6.23	23.1	6.00	21.3	4.86
	15	59		32.3	7.01	29.6	6.24	27.7	6.09	24.9	5.74	23.1	4.70	21.3	4.52
22.4 (100%)	-15	5	RH85%	17.1	6.06	16.5	6.43	16.1	6.69	15.4	7.06	15.0	7.31	14.6	7.56
	-10	14		19.6	6.64	19.0	7.01	18.6	7.26	18.0	7.64	17.6	7.89	17.2	8.14
	-5	23		22.3	7.23	21.7	7.60	21.3	7.85	20.7	8.22	20.3	8.47	19.3	8.44
	0	32		25.3	7.84	24.7	8.21	24.3	8.45	22.7	8.42	21.0	7.16	19.3	6.90
	5	41		28.6	8.49	26.9	8.47	25.2	7.16	22.7	6.88	21.0	6.18	19.3	5.91
	7	45		29.4	8.55	26.9	7.14	25.2	7.00	22.7	6.21	21.0	5.98	19.3	4.85
	10	50		29.4	7.13	26.9	6.95	25.2	6.25	22.7	5.96	21.0	4.82	19.3	4.67
	15	59		29.4	6.22	26.9	6.02	25.2	5.81	22.7	4.65	21.0	4.49	19.3	4.27
20.2 (90%)	-15	5	RH85%	16.7	6.34	16.0	6.70	15.6	6.94	15.0	7.31	14.6	7.55	14.2	7.80
	-10	14		19.1	6.95	18.5	7.32	18.1	7.56	17.5	7.93	17.1	8.17	16.7	8.41
	-5	23		21.8	7.59	21.2	7.95	20.8	8.19	20.2	8.55	18.9	8.38	17.4	7.12
	0	32		24.6	8.24	24.0	8.59	22.7	8.45	20.4	7.07	18.9	6.84	17.4	6.13
	5	41		26.5	8.44	24.2	7.06	22.7	6.90	20.4	6.11	18.9	5.86	17.4	4.78
	7	45		26.5	7.09	24.2	6.90	22.7	6.20	20.4	5.90	18.9	4.79	17.4	4.64
	10	50		26.5	6.92	24.2	6.15	22.7	5.98	20.4	4.75	18.9	4.62	17.4	4.43
	15	59		26.5	6.00	24.2	4.72	22.7	4.64	20.4	4.43	18.9	4.23	17.4	3.95
17.9 (80%)	-15	5	RH85%	16.1	6.66	15.5	7.01	15.1	7.25	14.5	7.60	14.1	7.84	13.8	8.07
	-10	14		18.5	7.33	17.9	7.68	17.5	7.91	17.0	8.27	16.6	8.50	15.5	8.32
	-5	23		21.1	8.01	20.5	8.35	20.1	8.59	18.1	7.19	16.8	7.01	15.5	6.29
	0	32		23.5	8.58	21.5	7.15	20.2	7.03	18.1	6.25	16.8	6.04	15.5	5.74
	5	41		23.5	7.00	21.5	6.23	20.2	6.09	18.1	4.81	16.8	4.70	15.5	4.53
	7	45		23.5	6.26	21.5	6.08	20.2	5.90	18.1	4.70	16.8	4.56	15.5	4.35
	10	50		23.5	6.10	21.5	5.85	20.2	4.71	18.1	4.54	16.8	4.35	15.5	4.10
	15	59		23.5	4.66	21.5	4.54	20.2	4.42	18.1	4.13	16.8	3.19	15.5	3.11
15.7 (70%)	-15	5	RH85%	15.5	7.05	14.9	7.39	14.5	7.61	14.0	7.95	13.6	8.18	13.2	8.40
	-10	14		17.8	7.77	17.2	8.11	16.8	8.33	15.9	8.44	14.7	7.14	13.5	6.94
	-5	23		20.2	8.51	18.8	8.43	17.6	7.11	15.9	6.86	14.7	6.16	13.5	5.91
	0	32		20.6	7.06	18.8	6.87	17.6	6.18	15.9	5.89	14.7	4.77	13.5	4.62
	5	41		20.6	6.15	18.8	5.92	17.6	4.74	15.9	4.59	14.7	4.42	13.5	4.18
	7	45		20.6	6.00	18.8	4.72	17.6	4.64	15.9	4.44	14.7	4.24	13.5	3.25
	10	50		20.6	4.70	18.8	4.60	17.6	4.48	15.9	4.22	14.7	3.22	13.5	3.15
	15	59		20.6	4.47	18.8	4.28	17.6	4.10	15.9	3.11	14.7	3.03	13.5	2.91
13.4 (60%)	-15	5	RH85%	14.7	7.52	14.1	7.84	13.8	8.05	13.2	8.37	12.6	8.39	11.6	7.09
	-10	14		16.9	8.31	16.1	8.51	15.1	8.33	13.6	6.95	12.6	6.24	11.6	6.04
	-5	23		17.6	7.08	16.1	6.92	15.1	6.22	13.6	5.97	12.6	4.80	11.6	4.67
	0	32		17.6	6.18	16.1	5.98	15.1	4.76	13.6	4.63	12.6	4.48	11.6	4.26
	5	41		17.6	4.70	16.1	4.61	15.1	4.50	13.6	4.24	12.6	3.22	11.6	3.16
	7	45		17.6	4.62	16.1	4.49	15.1	4.35	13.6	4.05	12.6	3.16	11.6	3.07
	10	50		17.6	4.50	16.1	4.31	15.1	4.13	13.6	3.13	12.6	3.05	11.6	2.94
	15	59		17.6	4.16	16.1	3.09	15.1	3.04	13.6	2.92	12.6	3.80	11.6	2.63
11.2 (50%)	-15	5	RH85%	13.7	8.10	13.2	8.40	12.6	8.42	11.3	7.01	10.5	6.85	9.66	6.14
	-10	14		14.7	7.06	13.4	6.93	12.6	6.22	11.3	6.01	10.5	5.78	9.66	4.68
	-5	23		14.7	6.17	13.4	5.98	12.6	4.74	11.3	4.62	10.5	4.48	9.66	4.27
	0	32		14.7	4.69	13.4	4.60	12.6	4.49	11.3	4.25	10.5	3.22	9.66	3.15
	5	41		14.7	4.47	13.4	4.27	12.6	3.17	11.3	3.10	10.5	3.02	9.66	2.91
	7	45		14.7	4.34	13.4	3.14	12.6	3.11	11.3	3.02	10.5	2.93	9.66	2.79
	10	50		14.7	3.11	13.4	3.08	12.6	3.03	11.3	2.90	10.5	2.78	9.66	2.61
	15	59		14.7	2.99	13.4	2.91	12.6	2.82	11.3	2.62	10.5	2.23	9.66	2.15

TC : Total Capacity kW

PI : Power Input kW (Comp. + Outdoor fan motor)

3-9 SELECTION PROCEDURE

■ CHARACTERISTICS OF CAPACITY (COOLING CAPACITY)

Example) In case of AU12 x 6 units and AR14 x 3units.
Design Condition : Indoor 28°C DB, 20°C WB. Outdoor 40°C DB.

● Select the indoor unit

① Select the indoor unit

Refer to 4-8.CAPACITY TABLE(COOLING) of INDOOR UNIT

Enter the given designed indoor and outdoor air temperature.

Please find the indoor unit capacity **TC**.

MODEL	AU12	AR14
Rated CAPACITY	3.60	4.00
TC	3.81	4.24

... ①-a based on table1~4.

... ①-b

Select the unit by using TC ①-b to make nearest to and larger than the load of each room.

Table.1 Capacity of indoor unit (AB)

	AB12	AB14	AB18	AB24	AB30	AB36	AB45	AB54
Cooling capacity(kw)	3.5	4.05	5.3	6.6	8.8	10.5	12.7	14.1
Heating capacity(kw)	4.1	5.0	5.6	7.7	9.1	10.7	13.7	15.8

Table.2 Capacity of indoor unit (AR)

	AR7	AR9	AR12	AR14	AR18	AR25	AR30	AR36
Cooling capacity(kw)	2.15	2.8	3.5	4.0	5.3	7.05	8.8	10.5
Heating capacity(kw)	2.45	3.10	4.10	4.8	5.6	7.85	9.1	10.7

	AR45	AR36H	AR45H	AR60H
Cooling capacity(kw)	12.7	10.5	12.7	17.0
Heating capacity(kw)	13.7	10.7	13.7	17.6

Table.3 Capacity of indoor unit (AU)

	AU7	AU9	AU12	AU14	AU18	AU20	AU25	AU30	AU36	AU45	AU54
Cooling capacity(kw)	2.15	2.8	3.6	4.0	5.0	5.7	7.05	8.8	10.5	12.7	14.1
Heating capacity(kw)	2.45	3.1	4.1	4.5	5.45	5.8	7.85	9.1	10.7	13.7	15.8

Table.4 Capacity of indoor unit (AS)

	AS18	AS24	AS30
Cooling capacity(kw)	5.4	6.9	8.0
Heating capacity(kw)	5.6	7.8	8.8

Table.5 Capacity of indoor unit (AW)

	AW7	AW9	AW12	AW14	AW20	AW24	AW30
Cooling capacity(kw)	2.15	2.80	3.60	4.3	5.4	6.9	8.0
Heating capacity(kw)	2.45	3.10	4.10	4.9	5.6	7.8	8.8

• **Calculate the capacity of the system**

② **Calculate cooling capacity of the system based on table1~5.**

Total capacity of indoor unit (COOLING) = {3.6(kW)x6(units)}+{4.0(kW)x3(units)} = 33.6(kW)... ②

③ **Calculate the cooling capacity of OUTDOOR UNIT**

Refer to CAPACITY TABLE of OUTDOOR UNIT

Enter the total capacity of indoor unit (②) and given designed indoor and outdoor air temperature.

Please find the outdoor unit capacity TC.

Outdoor unit capacity = 32.5 (kW)... ③

• **Calculate the actual capacity for individual indoor unit**

Calculate according to the following formulas.

④ **Calculate the individual indoor unit actual capacity of system.**

Actual capacity = Cooling Capacity ③ x (Indoor unit capacity ① -a / Total capacity ②) x Ratio

Capacity of AU12 = 32.5 x (3.60 / 33.6) = 3.48(kW)

Capacity of AR14 = 32.5 x (4.00 / 33.6) = 3.87(kW)

Ratio : Ratio of capacity based on Piping Length / 100

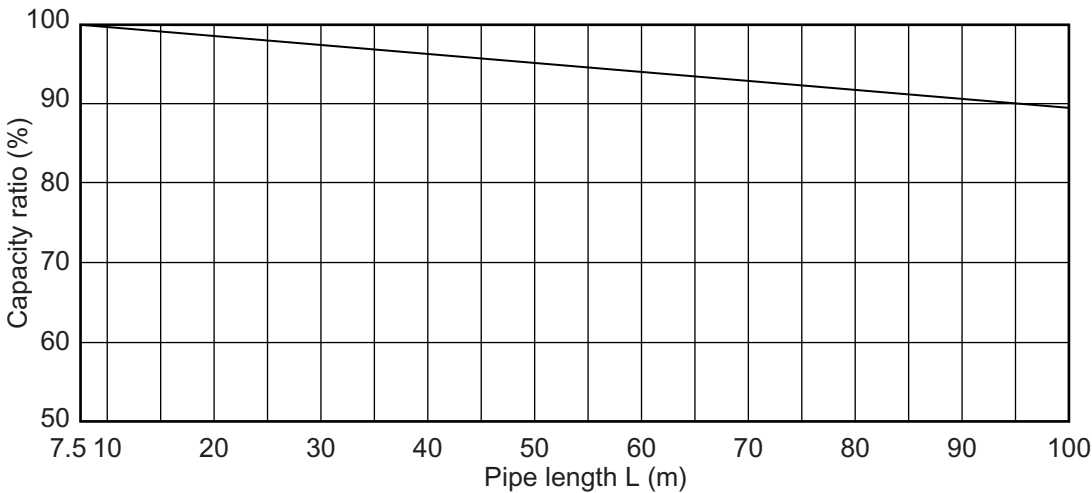
(Reference the capacity ratio of REFRIGERANT PIPING LENGTH COMPENSATION CURVE)

If the actual capacity is less than load of room,select the unit again as exceed to load.

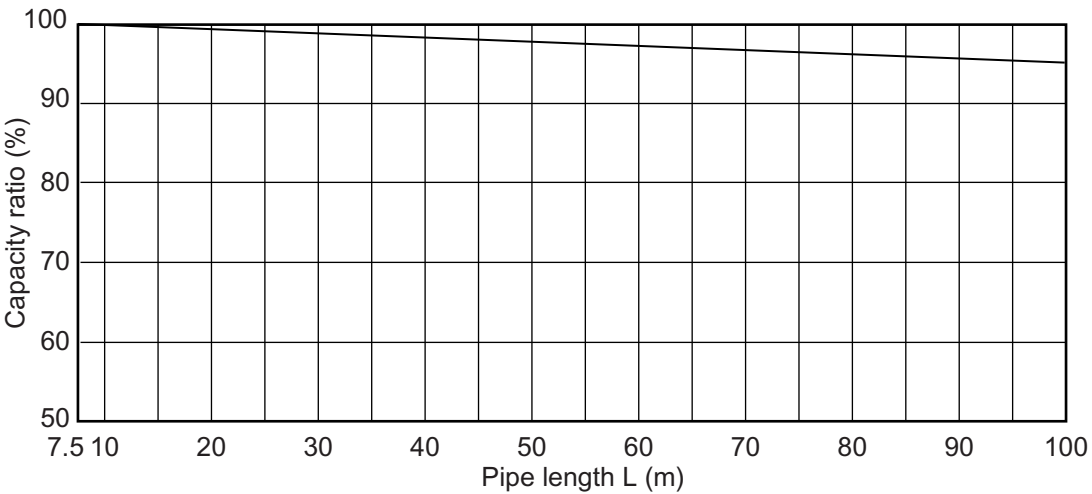
Note : Select the optimum size units and make sure not to select oversized units.

3-10 REFRIGERANT PIPING LENGTH COMPENSATION CURVE

• CAPACITY RATIO OF COOLING OPERATION



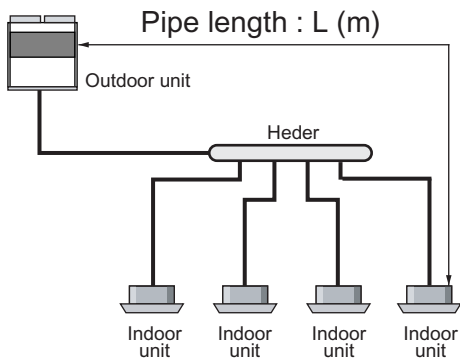
• CAPACITY RATIO OF HEATING OPERATION



These data are under the rated standard condition.

• CAUTION

Depending on the pipe length, the set-up of the pipe length switch (on the outdoor unit PCB) is required. If it was set up incorrectly, it leads to the trouble such as insufficient capacity or abnormal pressure.



Recommended Range of L (m)	SWITCH setting
$L \leq 40$	S
$40 < L \leq 60$	Standard
$60 < L \leq 80$	M
$80 < L \leq 100$	L

◆ Factory setting

For setting up the switch, refer to FUNCTION SETTING in 5-4.

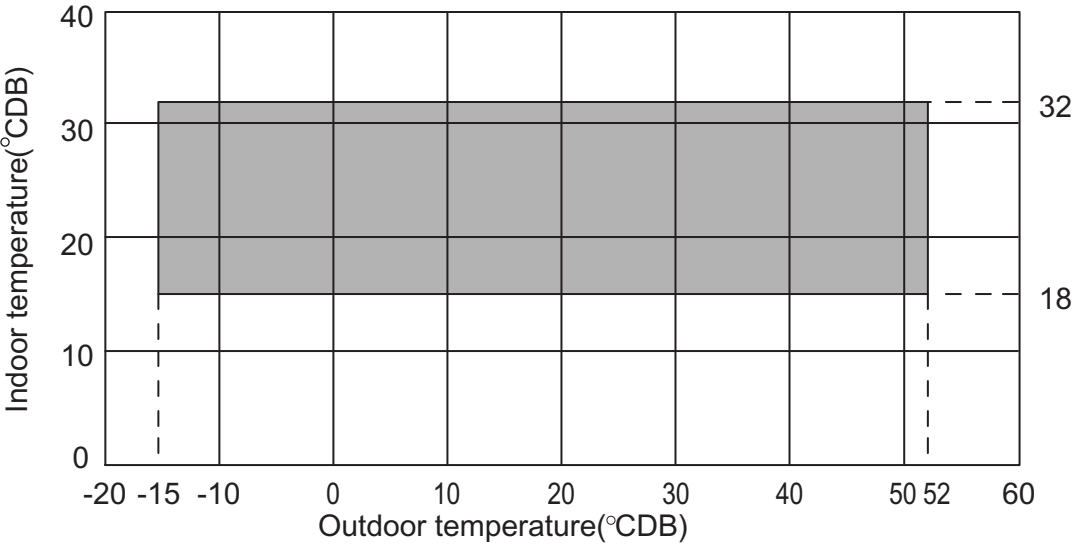
NOTE:

Outdoor unit is controlling pressure to keep constantly , so that outdoor unit compressor step will be carried for some part.

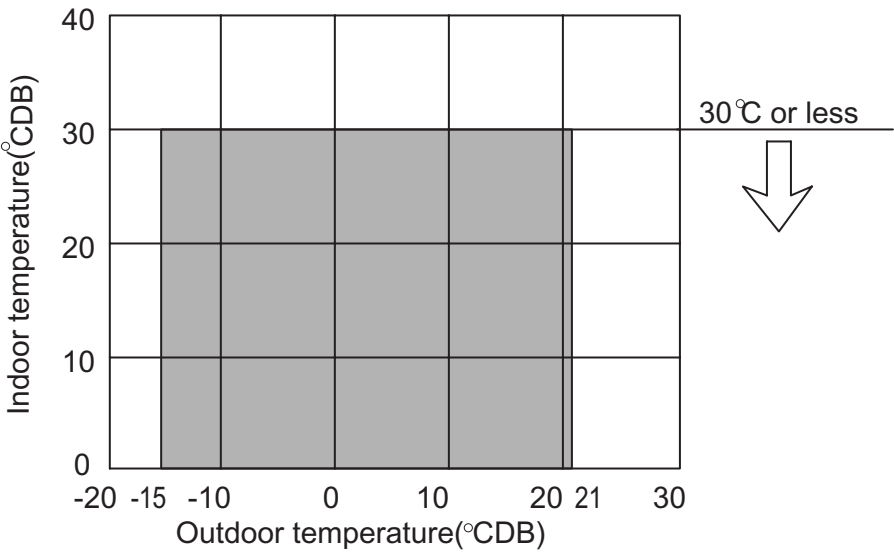
3-11 OPERATION RANGE

■ AO90 , AO72

• Cooling



• Heating



3-12 SOUND LEVEL

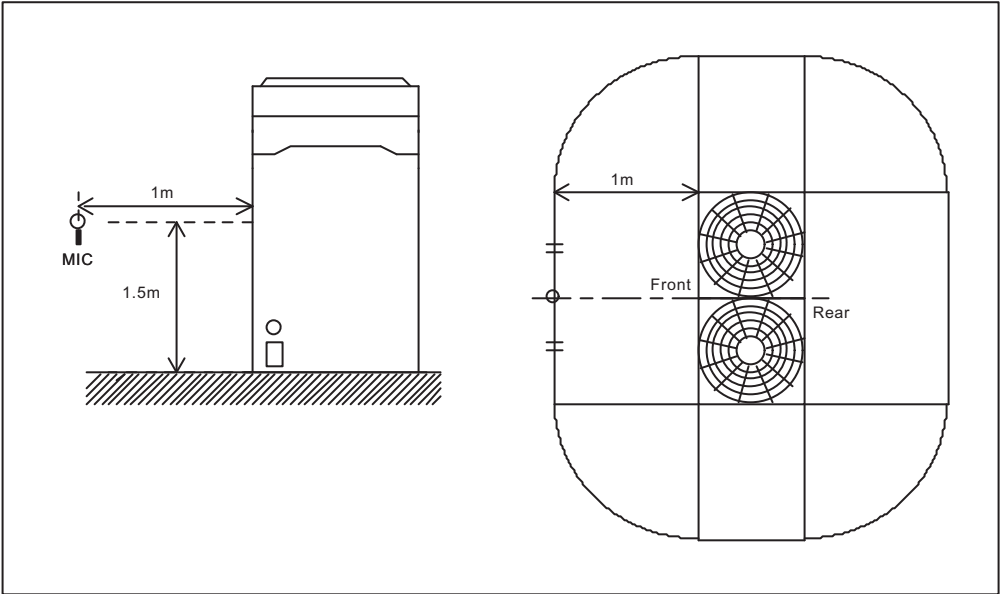
OVERALL

MODEL	VOLTAGE	SOUND LEVEL
AO 90	380V	55 dB (A)
	415V	57 dB (A)
AO 72	380V	54 dB (A)
	415V	56 dB (A)

OUTDOOR
UNITS

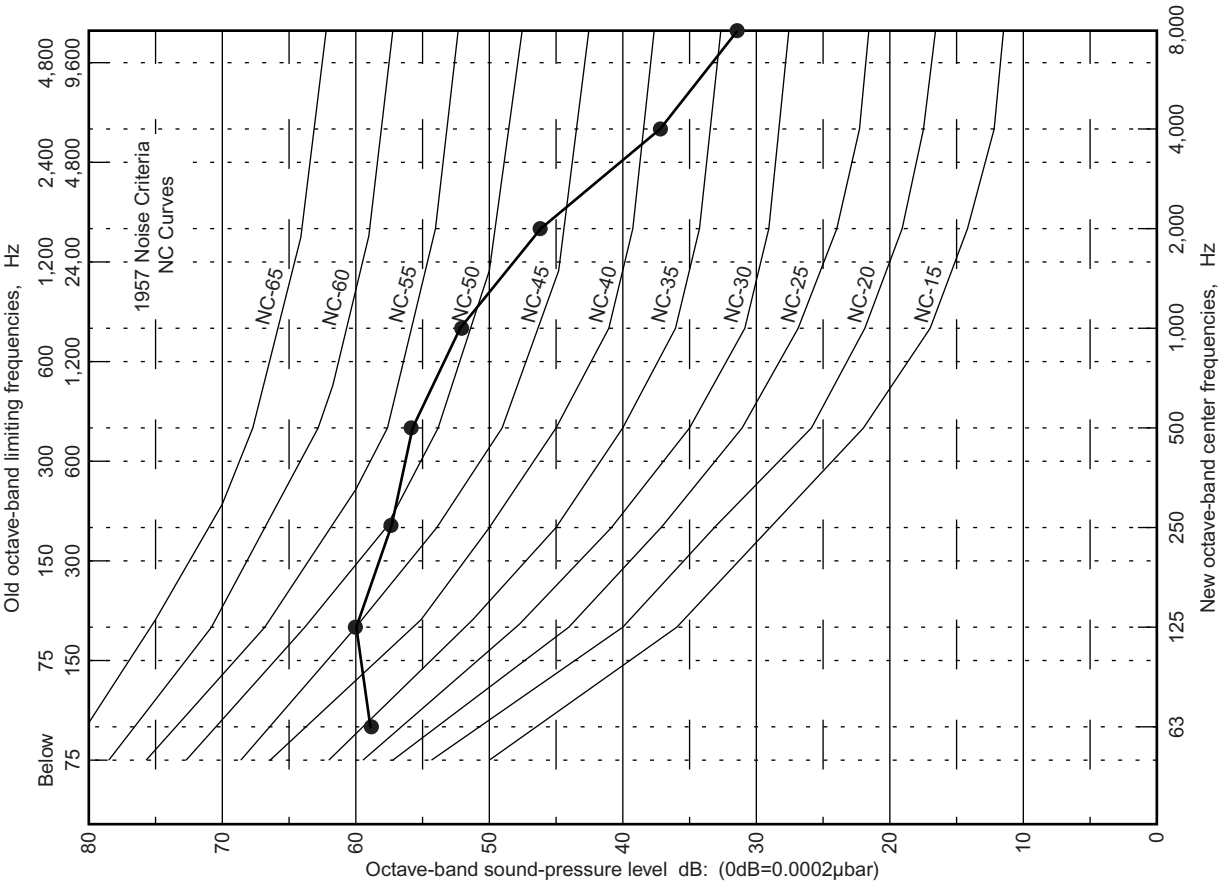
OUTDOOR
UNITS

SOUND LEVEL CHECK POINT

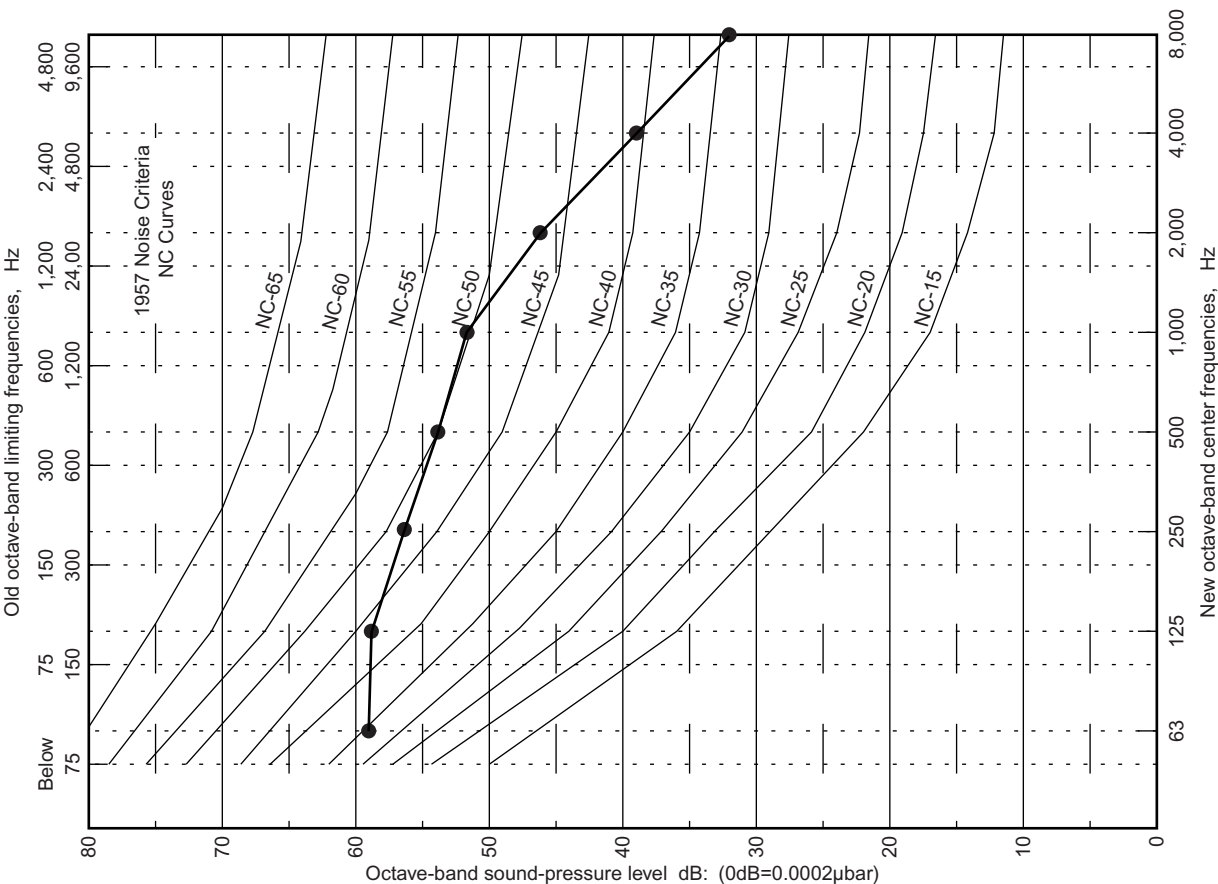


■ OCTAVE-BAND LEVEL

● MODEL : AO90



● MODEL : AO72



3-13 ELECTRIC CHARACTERISTICS

MODEL NAME				AO90TPB / AO90EPB		AO72TPB / AO72EPB	
POWER SUPPLY	ϕ W			3 ϕ 4W			
	FREQUENCY		Hz	50			
	VOLTAGE	RATED	V	380 - 415			
		min / MAX		min.342 / MAX.456			
RATED LOAD CURRENT		RLC	A	15.2		12.5	
MAX. LOAD CURRENT		MLC		30		28	
MAX. LOAD INPUT		MLI	kW	14.8		14.7	
MAX. FUSE AMP.		FS	A	40			
STARTING CURRENT		SC		81		70	
COMPRESSOR	Rated Load Amp.	RLA	A	3.9/7.85/10		3.9/5.7/10	
	MOTOR OUTPUT	MO	kW	1.52/3.39/4.93		1.52/2.51/4.81	

- RLC is based on following standard condition.

Indoor : 27°C DB/19°C WB

Outdoor : 35°C DB

- MLC is based on the value of using maximum operation range.
- To select electrical equipment and wire size, calculate following method.
- To select electrical circuit breaker, refer to the value of FS.

$$FS \geq RLC \times S^{*EX}) \quad *S : \text{Safety Factor} \approx 2.25$$

- * Caution Safety Factor is depend on the wiring regulation of each regions.

3-14 SAFETY DEVICES SETTING

MODEL NAME			AO90TPB / AO90EPB		AO72TPB / AO72EPB	
PCB FUSE			250V 6.3A			
COMPRESSOR	INTERNAL PROTECTOR	COMP.1	130℃ ON 21A 61℃ OFF in 3-10sec		130℃ ON 21A 61℃ OFF in 3-10sec	
		COMP.2	105℃ ON 24A 61℃ OFF in 3-10sec		105℃ ON 24A 61℃ OFF in 3-10sec	
		COMP.3	120℃ ON 60A 61℃ OFF in 3-10sec		145℃ ON 48A 61℃ OFF in 3-10sec	
	RELIEF VALVE		Pd-Ps 2.99MPa			
HIGH PRESSURE PROTECTION			3.3MPa OFF			
FAN MOTOR THERMAL PROTECTOR			130℃± 5℃ OFF 83℃ ON			
REMARKS			REVERSE PHASE BLOCK			



4 . INDOOR UNIT

4-1 MODEL LINE UP

■ LINE UP

12 types, 45models ranging from 2.15kW to 17.0kW.

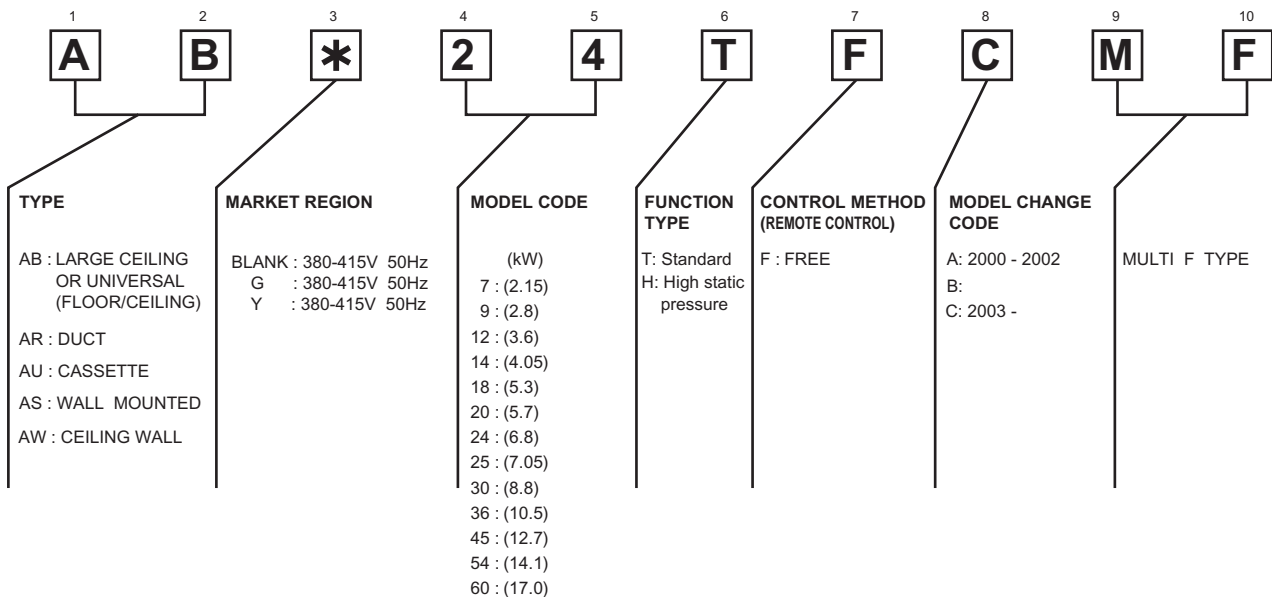
Type Capacity (kW) Model code		Cassette (compact)	Cassette	Cassette	Duct (compact)	Duct (compact)	Duct	Duct (High Static Pressure)	Universal Floor/Ceiling	Ceiling	Wall mounted (compact)	Wall mounted	Ceiling wall
17.0	60			●				●					
14.1	54			●						●			
12.7	45			●			●	●		●			
10.5	36			●			●	●		●			
8.8	30		●				●			●		●	●
7.05	25		●				●						
6.8	24								●			●	●
5.7	20		●										
5.3	18	●				●			●			●	●
4.05	14	●				●			●		●		●
3.6	12	●				●			●		●		●
2.8	9	●			●						●		●
2.15	7	●			●						●		●

■ MODEL CHANGE CODE : C

■ APPLICABLE OUTDOOR UNIT

Refriertant type	Type	Model	MODEL CHANGE CODE
R22	COOLING ONLY	AO90A , AO72A	MODEL CHANGE CODE : B
	HEAT PUMP	AO90R , AO72R	
R407C	COOLING ONLY	AO90E , AO72E	
	HEAT PUMP	AO90T , AO72T	
	HEAT RECOVERY	AO90M	MODEL CHANGE CODE : A

■ MODEL DESIGNATION



4-2 FEATURE

4-2-1 UNIVERSAL FLOOR / CEILING TYPE

■ **MODELS : AB12, AB14, AB18, AB24**

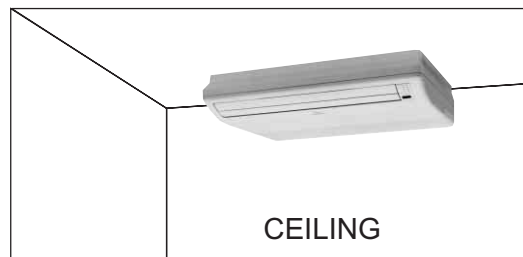
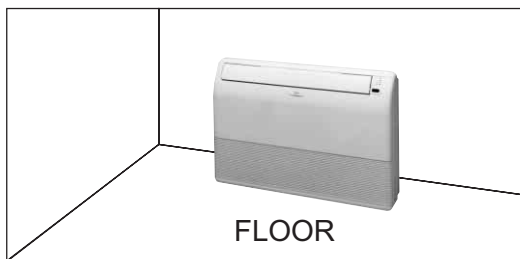
■ **FEATURES**

● **Compact design**

Symmetrical thin and compact design
Flat and round form



● **Flexible installation**



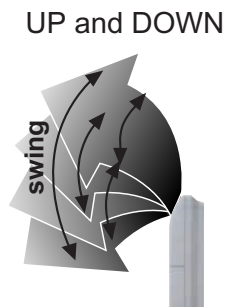
● **Double auto swing**

Combination of up/down and right/left air direction swing allows three-dimensional air direction control.

Since up/down air direction flaps operate automatically, according to the operating mode of the unit, it is possible to set the air direction based on the operating mode.



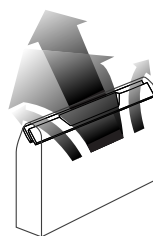
5 steps selectable



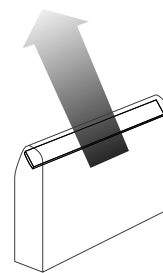
4 steps selectable

● **Super vane**

The double-flap "Super Vane" with newly developed special configuration boosts the air flow, sending cool air quickly to every corner of the room.



New model



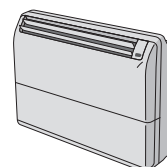
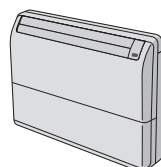
Old model

● **Others**

- *Auto Restart
- *Detachable and Washable Open Panel
- *Auto Shut Flaps

Non-operation mode

Operation mode



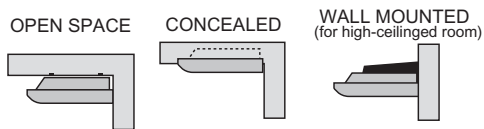
4-2-2 LARGE CEILING TYPE

■ MODELS : AB30, AB36, AB45, AB54

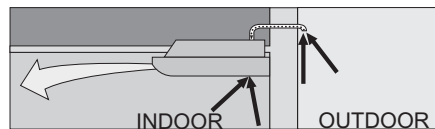


■ FEATURES

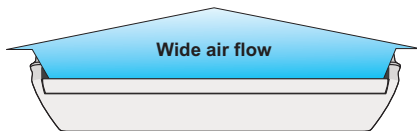
● Installation



● Fresh-air intake

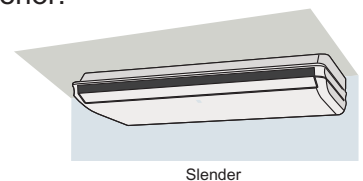


● Wide air flow



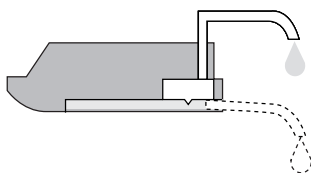
● Slender shape

A slender shape with curves harmonizes perfectly with the room interior.



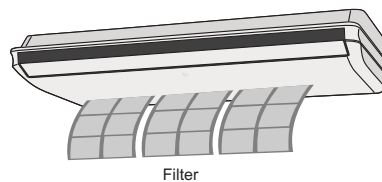
● Drain lift-up mechanism

Optional drain lift-up mechanism allows more flexible installation.

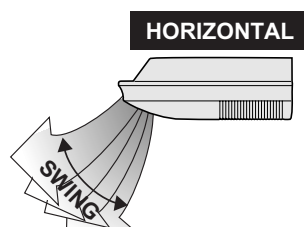
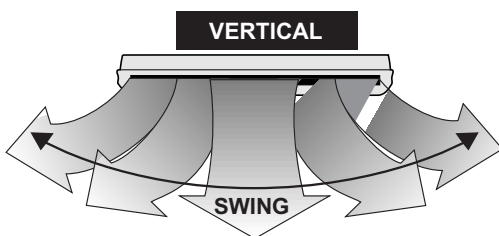


● Long-life filter

High efficiency long-life filter that extends the cleaning cycle up to 2 times that of the current model is standard.



● Double auto swing



● Others

- * Auto Restart
- * Detachable and Washable Open Panel

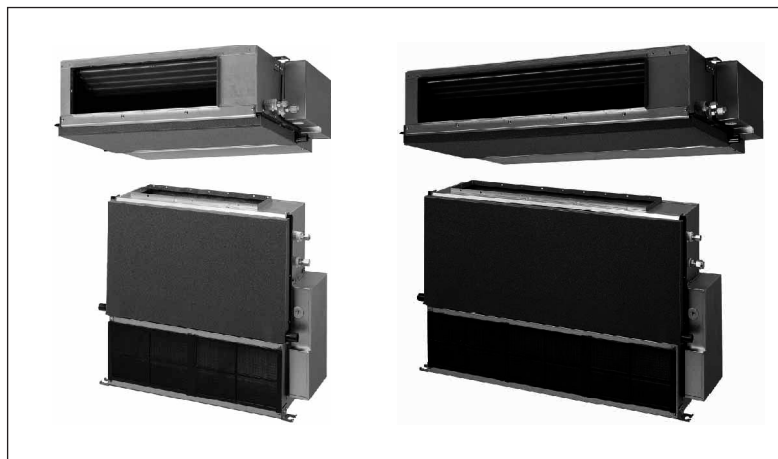
● Option parts

Drain water rizer kit

UTR-DPB241

4-2-3 COMPACT DUCT TYPE

■ MODELS : AR7, AR9, AR12, AR14, AR18



■ FEATURES

● Compact design

Ultra-thin duct air conditioner for easy installation

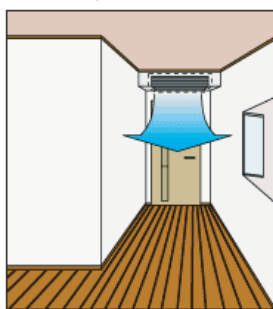
● Low noise level

Low noise level is realized for each capacity.

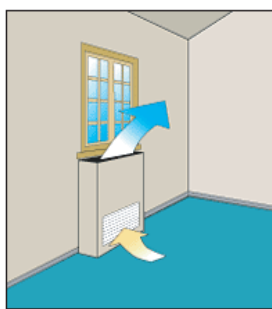
MODEL CODE		7	9	12	14	18
Static pressure (Normal/Max.)	Pa	0 / 39.6				
Volume of air-flow (High/Low)	m ³ / h	340/290	420/360	460/380	640/480	750/640
Noise level (Low speed)	dB(A)	26	31	26	30	33

● Easy to install (universal type)

Ceiling concealed



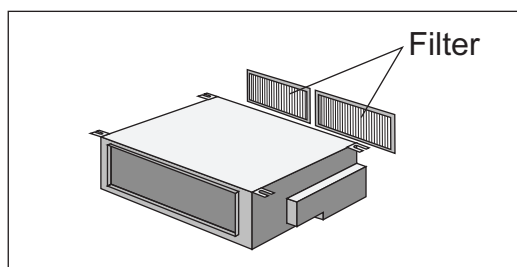
Floor concealed



● Installation example



● Filter (Accessory)



● Others

- * Auto restart
- * Air intake from rear or bottom side

● Option parts

Remote sensor kit UTD-RS100F

4-2-4 LOW STATIC PRESSURE DUCT TYPE

MODELS : AR25, AR30, AR36, AR45

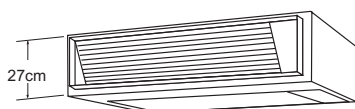
Installed behind the ceiling (or with a double ceiling for existing rooms) this design offers space savings and low noise.

One indoor unit can condition the air of multiple rooms. With a beautiful finish, the outlet grille does not stick out into the room.

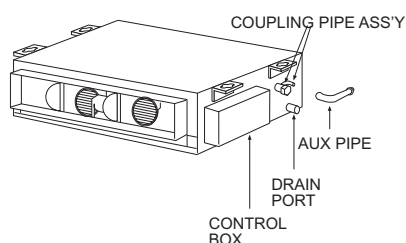


FEATURES

- Ultra thin models for very low ceilings
- Flexible installation

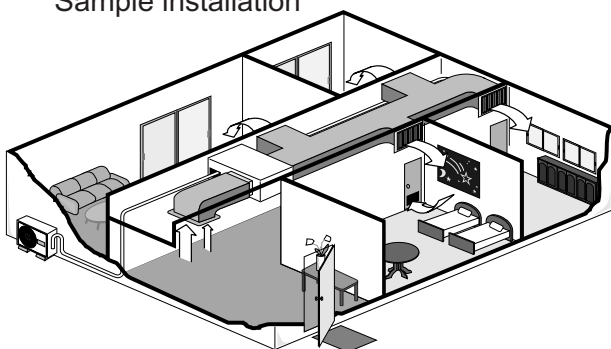


- Piping can be laid in almost any direction.



- Sample installation / Installation style

Sample installation



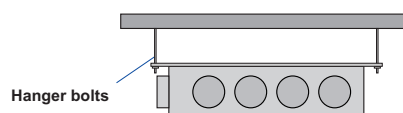
- Others

Auto Restart

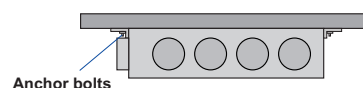
- Option parts

- * Flange (square) UTD-SF045T
- * Flange (round) UTD-RF204
- * Flexible duct UTD-RD202
- * Long life filter UTD-LF270
- * Remote sensor kit UTD-RS100F

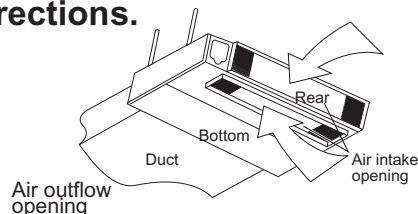
Suspended installation



Direct installation

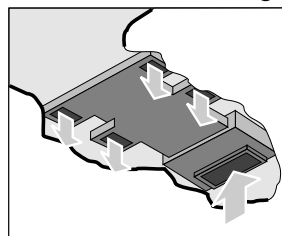


- Fresh air can be taken in from two directions.

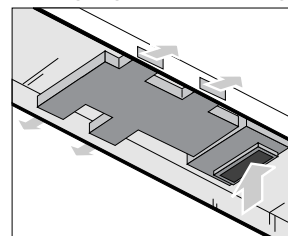


Installation styles

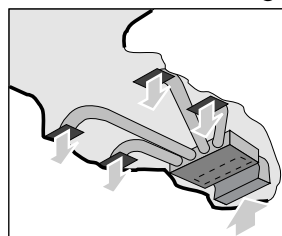
Embedded in Ceiling



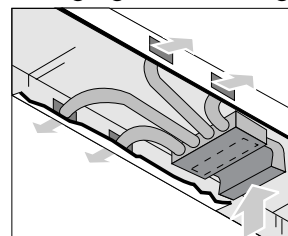
Hanging from Ceiling



Embedded in Ceiling



Hanging from Ceiling



4-2-5 HIGH STATIC PRESSURE DUCT TYPE

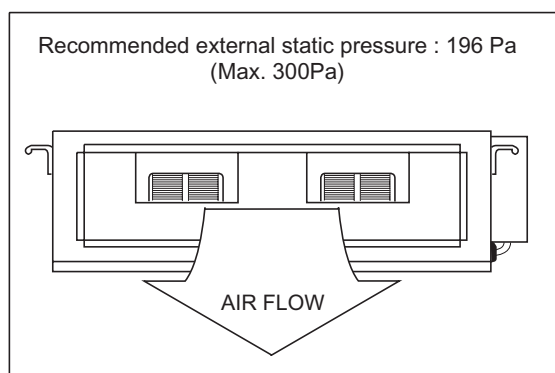
■ MODELS : AR36H, AR45H, AR60H

Installed behind the ceiling this design offers space savings and low noise. One indoor unit can condition the air of multiple rooms. With a beautiful finish, the outlet does not stick out into the room.



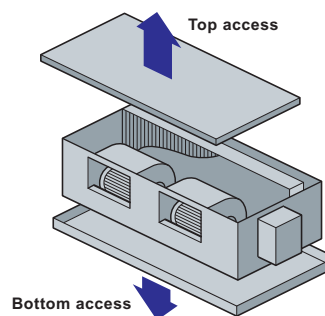
■ FEATURES

● High static pressure

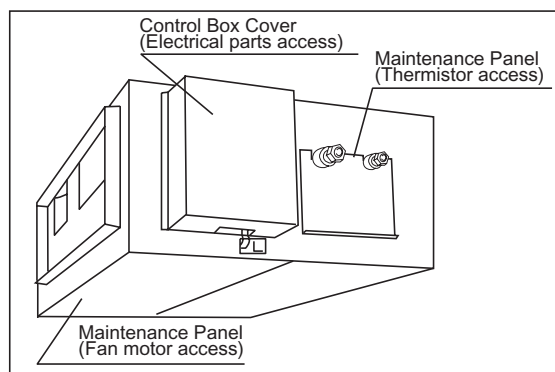


● Easy maintenance

Fan motor maintenance can be performed from the top and the bottom.



● Easy maintenance



● Installation example



● Optional parts

- | | |
|---------------------|------------|
| * Flange (square) | UTD-SF045T |
| * Flange (round) | UTD-RF204 |
| * Outlet chamber | UTD-BC200 |
| * Flexible duct | UTD-RD202 |
| * Long life filter | UTD-LF400 |
| * Remote sensor kit | UTD-RS100F |

● Others

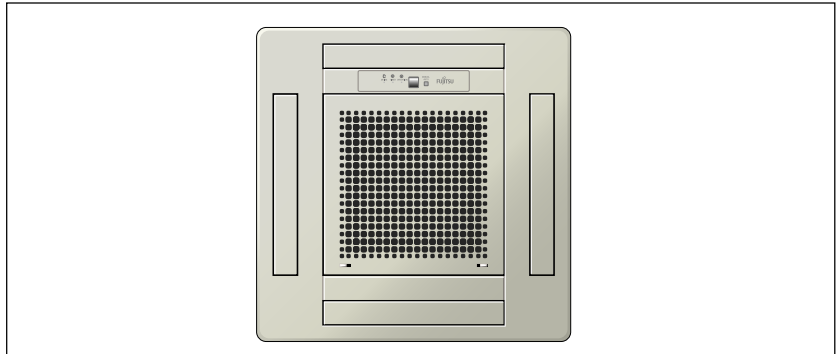
Auto Restart

4-2-6 COMPACT CASSETTE TYPE

■ MODELS : AU7, AU9, AU12, AU14, AU18

- Applicable grille unit:

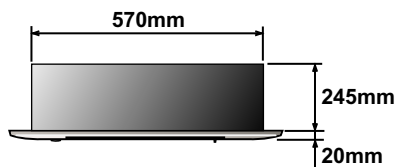
UTG-UD* D-W



■ FEATURES

- Compact Design

This compact air conditioner can be fit to ceiling tiles (600×600mm)

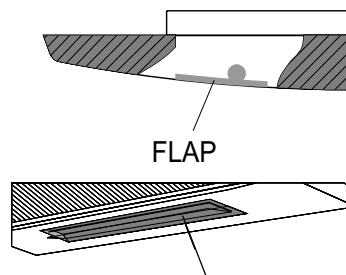


Fit to ceiling tiles (600mm x 600mm)



Plastic Flap with no Velvet Coating

- Flat & simple design



Plastic flap with no velvet coating

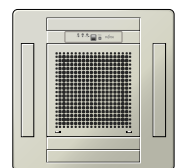
- Adjustable grill

Adjustment to ceiling design

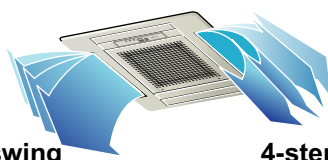
Current model



New model



- Auto Air Flow Direction and Auto Swing



4-step swing

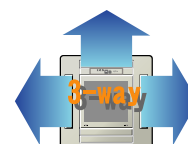
4-step swing

- 4-way air flow system

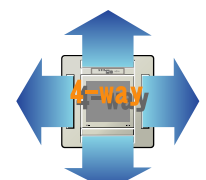
You can select 2-way, 3-way or 4-way air flow to suit your needs.



2-way



3-way



4-way

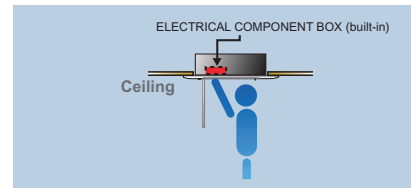
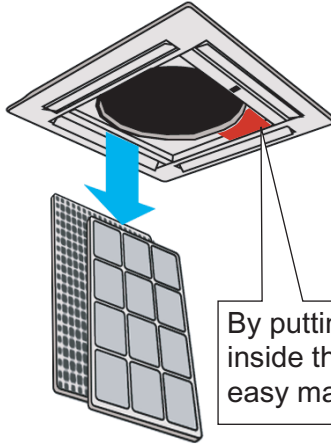
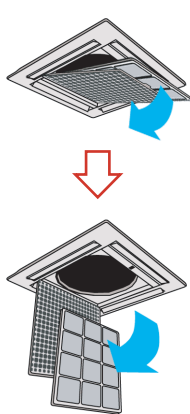
• Easy maintenance

By putting the Electrical Component box inside the unit, we realized easy maintenance.

• Simple maintenance

Wide opening for easy maintenance.

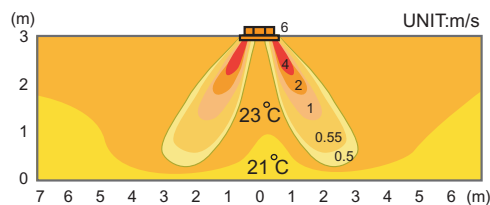
• Detachable, washable air intake grille



By putting the P.C. board inside the unit, we realized easy maintenance.

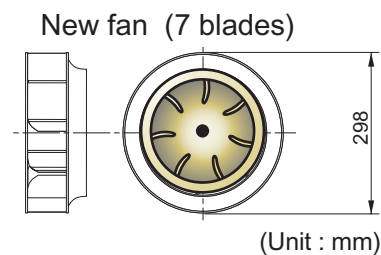
• Airflow range

Airflow at floor level is increased by changing the air velocity.



• Low noise

Large air volume and low noise achieved by large diameter variable pitch Turbo Fan(Φ 298mm) and Φ 7 evaporator.



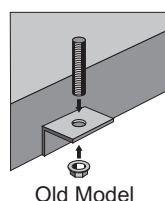
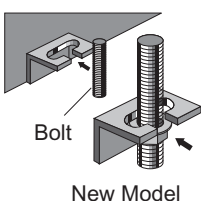
Φ 298mm, 7 blades, variable pitch Fan

By reducing the noise level of around 100Hz, we realized to reduce the harsh grating noise in actual hearing.

• Light weight & easy installation

Body : 18kg

Panel : 2.2kg



• Drain water pipe lifted to 400mm



• Others

* Auto Restart

* Auto Shut Flaps

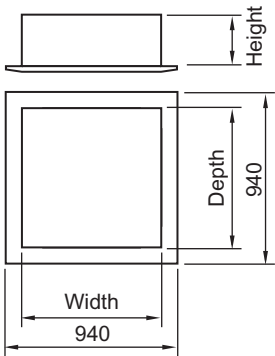
4-2-7 CASSETTE TYPE (Slim body)

MODELS : AU20, AU25, AU30

FEATURES

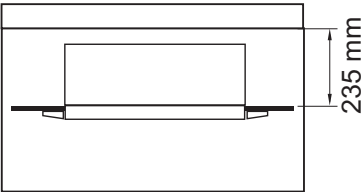
Flexible installation

Small and compact body allows space saving installation. New mechanism allows the cassette body to move 35mm downward and contributes to keeping the ceiling surface clean.

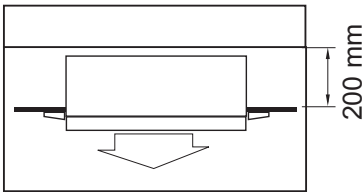


Setting space

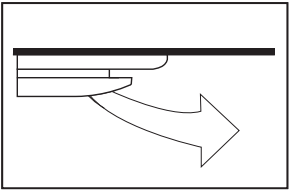
Model	AU20, AU25, AU30
Height	200 or 235
Width	830
Depth	830



Standard setting



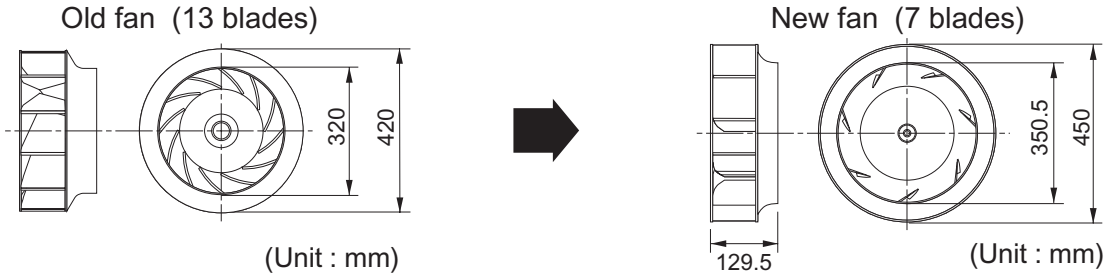
Slender setting



Improved noise level and air distribution

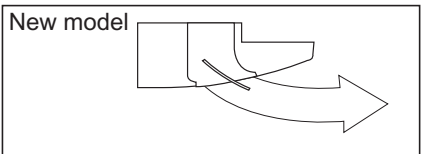
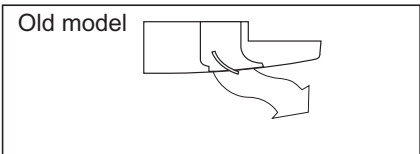
- Noise level is lowered dramatically.
- * Improved turbo fan shape (aerodynamic design)
- * Expanded air distribution
- * Low internal resistance
- * Molded fan motor

Improvement of fan blade



Wide air flow

Larger air flap distributes the outlet air flow a longer distance in the horizontal direction.



4-2-7 CASSETTE TYPE

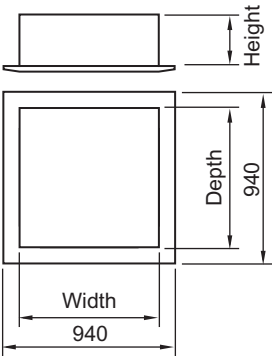
MODELS : AU36, AU45, AU54



FEATURES

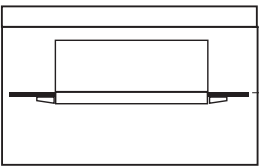
Flexible installation

Small and compact body allows space saving installation. New mechanism allows the cassette body to move 35mm downward and contributes to keeping the ceiling surface clean.

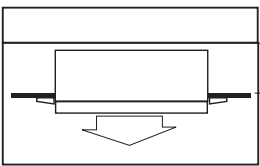


Setting space

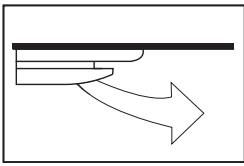
Model	AU36, AU45, AU54
Height	250 or 285
Width	830
Depth	830



Standard setting



Slender setting



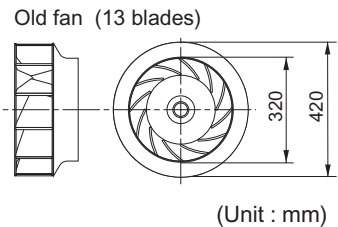
Improved noise level and air distribution

Comparison of noise level (dB)

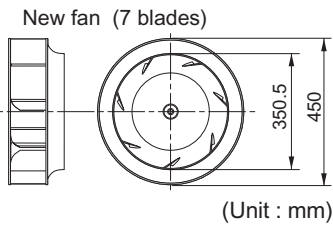
Noise level is lowered dramatically.

- * Improved turbo fan shape (aerodynamic design)
- * Expanded air distribution
- * Low internal resistance
- * Molded fan motor

Improvement of fan blade



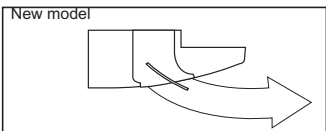
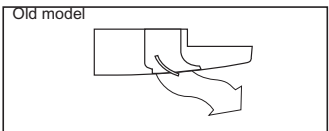
(Unit : mm)



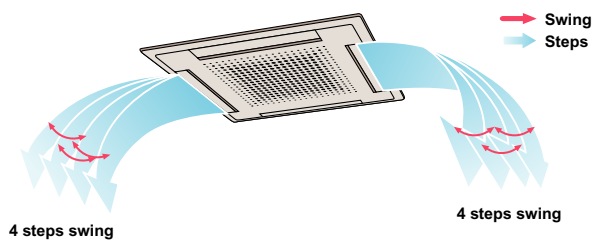
(Unit : mm)

Wide air flow

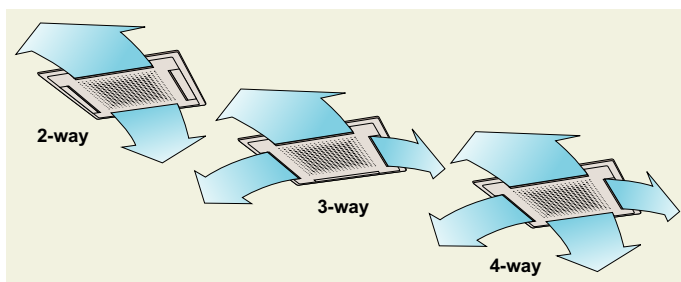
Larger air flap distributes the outlet air flow a longer distance in the horizontal direction.



• Auto air flow direction and auto swing



• 4-way air flow system

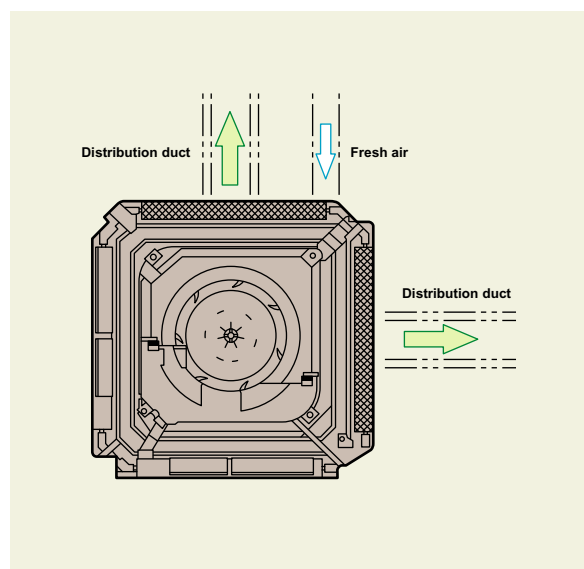


• Air flow volume can be switched

High ceiling mode (air flow up) and low-noise (air flow down) can be switched according to the height of the ceiling and other conditions by means of a PCB DIP switch.

• Duct connection hole opening

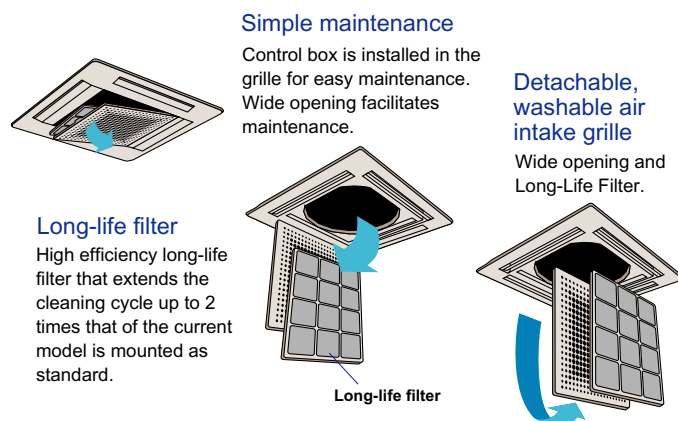
Fresh air can be introduced through this opening.



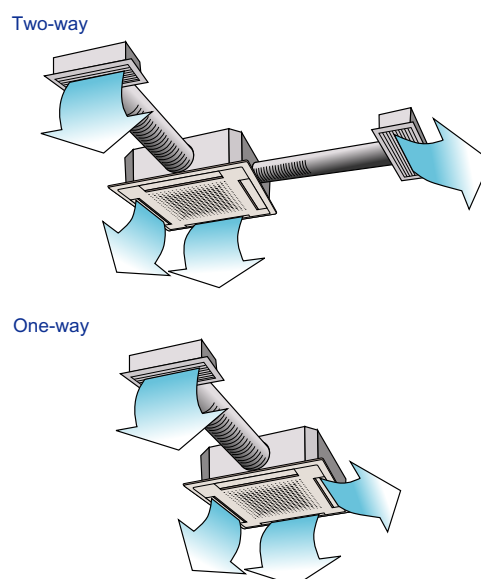
• Drain water pipe lifted to 800mm



• Harmonized design



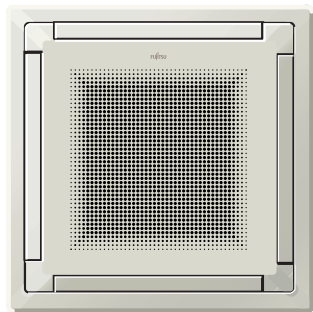
Conditioned air can be distributed by means of a distribution duct.



• Others

- * Auto Restart
- * Auto Shut Flaps

•New grill design

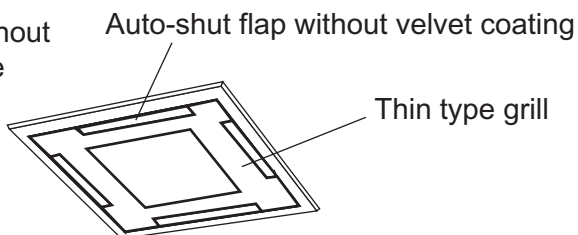


Symmetrical design

New "Punch hole" grill harmonizes with any interior design, even when several units are installed in one room.

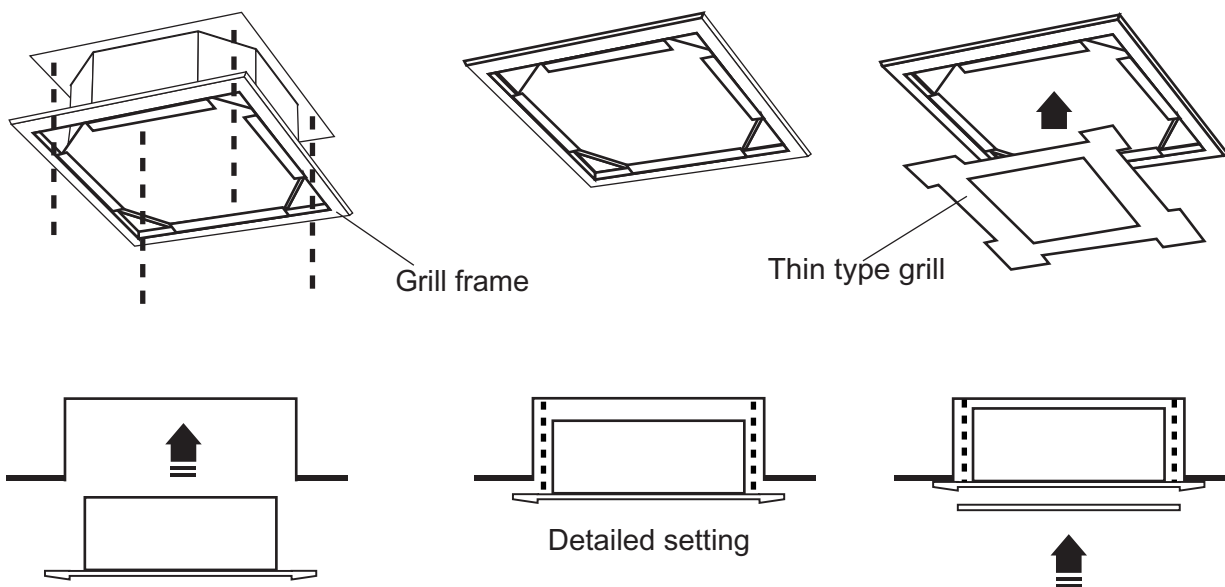
•Easy cleaning

Thin grill, auto-close flaps without velvet coating and flat surface allow easy cleaning.



•Easy installation

Since the cassette body can be installed using a grill frame, it is easy to fit in the ceiling surface.



•Drain water pipe lifted to 800mm



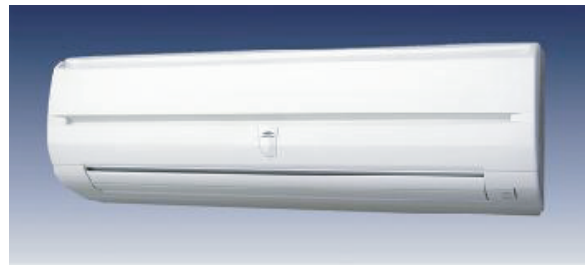
•Others

- * Auto Restart
- * Auto Shut Flaps

4-2-8 COMPACT WALL MOUNTED TYPE

■ MODELS : AS7, AS9, AS12, AS14

- Vertical and horizontal symmetrical design matched to the interior decor
- Compact design



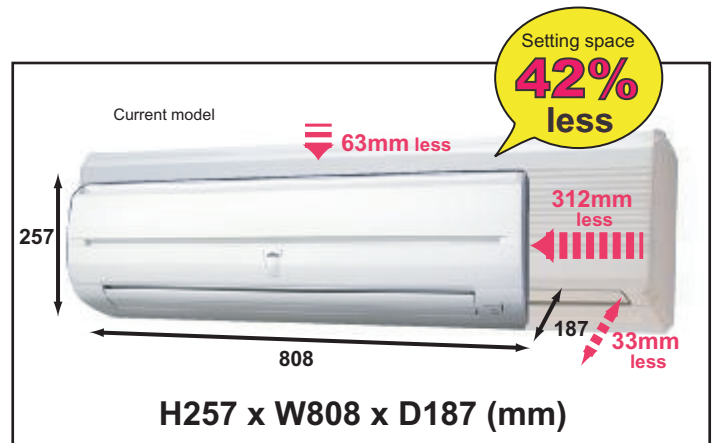
■ FEATURES

● Fine symmetry design

H257 x W808 x D187 (mm)

● Powerful Output in spite of Small Size

Though the indoor unit is compact, it features a large, high pressure cross fan (90mm diameter) in a center mounted configuration and a lambda type heat exchanger to provide plenty of power.



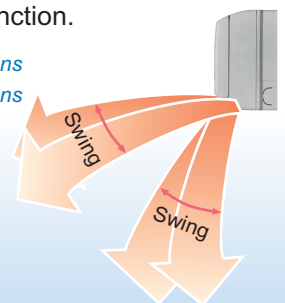
● Auto swing louver

It is possible to obtain the optimum air flow direction corresponds to the each operation mode by using the "Auto Swing Louver" function.

Cooling mode : 2-step air directions

Heating mode : 4-step air directions

Steps
Swing



● Low noise level

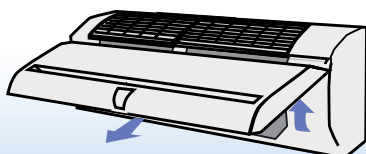
Realizing the low noise operation by optimizing the air channel structure.

(AS7)

HIGH	30
LOW	26

● Washable open panel

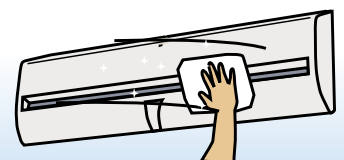
Removable and washable panel totally purges mold and dust.



Since the panel is removed and easily washed, the panel is always clean and filter cleaning is also simple.



Since there are few bars, only a daily wipe cleans the panel.



4-2-9 WALL MOUNTED TYPE

■ MODELS : AS18, AS24, AS30

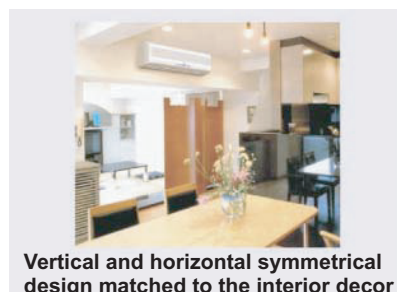
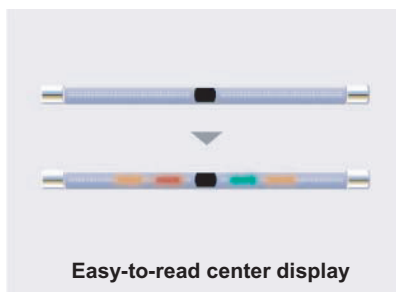
- Vertical and horizontal symmetrical design matched to the interior decor
- Easy-to-read center display
- Big wide flaps with a powerful image



■ FEATURES

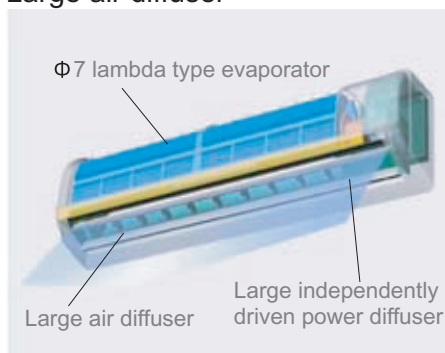
● Fine symmetry design

H320 x W1,120 x D220 (mm)



● Low-noise

- High efficiency fan construction $\Rightarrow$ Φ 7mm Lambda type evaporator improves the airflow path
- Large air diffuser

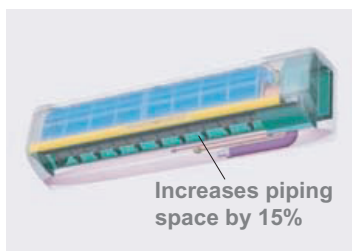


● Other features include continuation of the functions of the existing wall mounted type.

- Double auto swing
- 2-way draining route

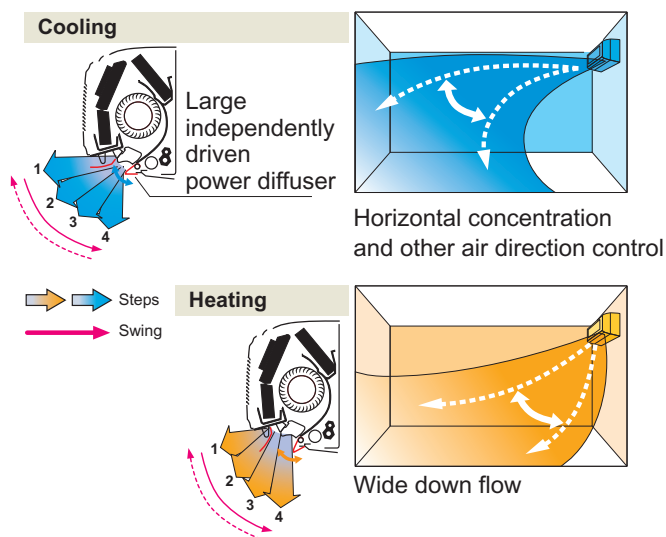
● Easier installation

- Expanded work space at bottom of casing
Increases piping space by 15%



● Multi air flow

- Large independently driven power diffusers used
Heating: Wide down flow
Cooling: Horizontal concentration and other air direction control

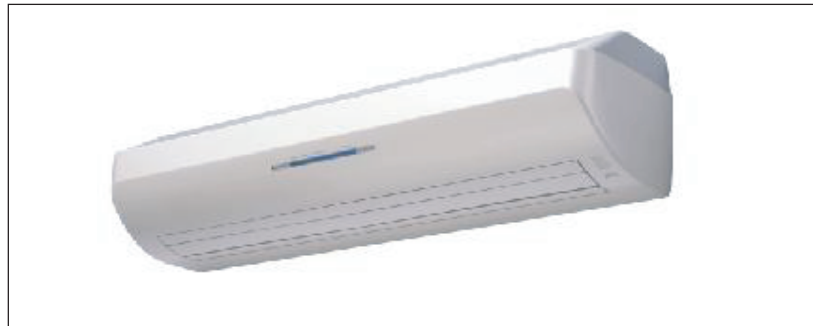


● Others

- * Auto Restart
- * Double auto swing

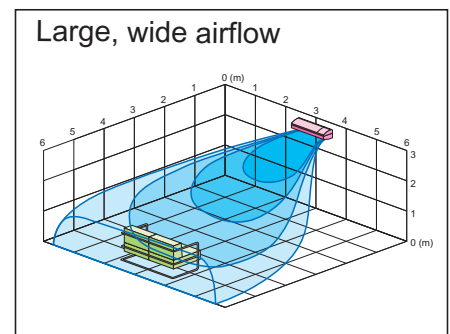
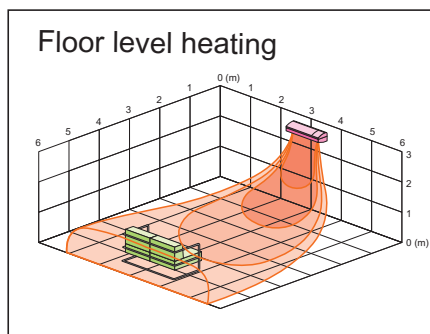
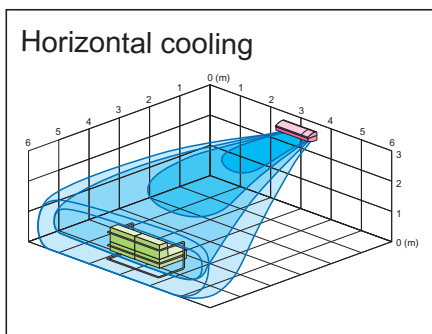
4-2-10 CEILING WALL TYPE

■ MODELS : AW7, AW9, AW12, AW14, AW18, AW24, AW30



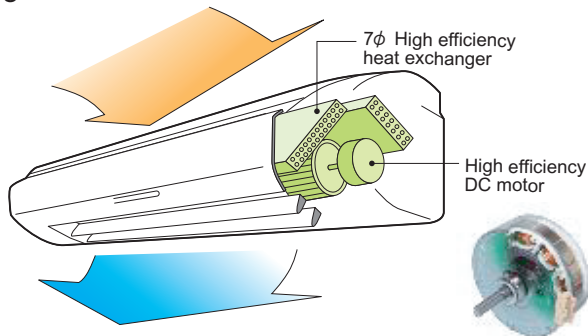
■ FEATURES

● Large & wide airflow



● High efficiency

High output and high efficiency are achieved by using a DC motor.



● Large center display

Color - coding the operation state lets you check the unit's operation status at a glance.

Cool/Dry/Fan

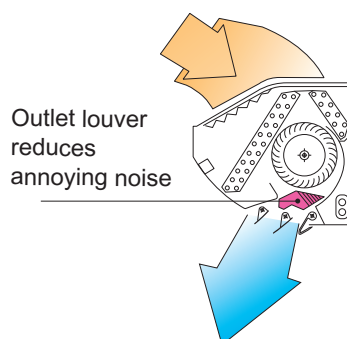
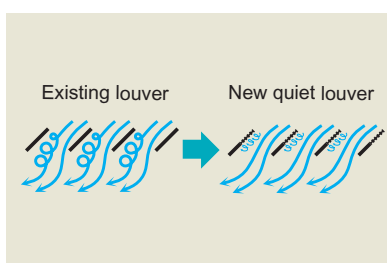


Heat



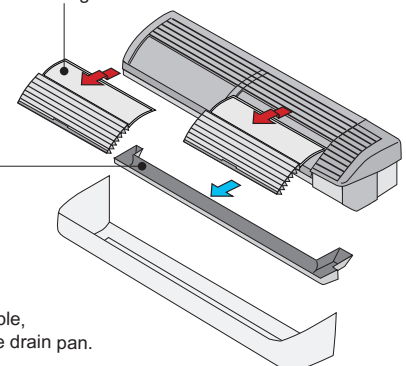
● Low noise

Suppressing the turbulence by providing vertical grooves on the quiet louver and the right/left louver reduces annoying noise. Large airflow and low noise achieved by top air intake.



● Easy maintenance

One-touch long-life filter.



● Others

- * Auto Restart
- * Double auto swing

4-3 SPECIFICATIONS

4-3-1 UNIVERSAL FLOOR / CEILING TYPE

Model			AB12	AB14	AB18	AB24
Power			220-240V~50Hz			
Cooling capacity		[kW]	3.5	4.05	5.3	6.6
		[BTU/h]	11,900	13,800	18,100	22,500
Heating capacity		[kW]	4.1	5.0	5.6	7.7
		[BTU/h]	14,000	17,100	19,100	26,300
Input		[W]	57	57	88	88
Current		[A]	0.25	0.25	0.38	0.38
Max Current		[A]	0.30	0.30	0.45	0.45
Air Circulation	High	[m³/h]	640	640	770	900
	Med		560	560	680	780
	Low		480	480	560	660
Fan Speed	High	[r.p.m.]	850	850	1,030	1,180
	Med		760	760	890	1,040
	Low		670	670	770	900
Fan Motor Output		[W]	16	16	30	40
Noise Level (Sound Pressure)	High	[dB (A)]	41	41	47	50
	Med		38	38	42.5	46
	Low		35	35	38	42
Fan Type x Q'ty			Sirocco x 2			
Heat Exchanger			Plate Fin Coil			
Dimensions (H x W x D)	Net	[mm]	199 x 990 x 655			
	Gross		320 x 1,150 x 790			
Weights	Net	[kg]	28	28	28	30
	Gross		37	37	37	39
Pipe size	Liquid	[mm]	ϕ 6.35		ϕ 6.35	
	Gas		ϕ 12.7		ϕ 15.88	
Pipe Connection Method			Flare			
Operation Range	Cooling	[°C]	18 to 30			
	Heating		16 to 30			

4-3-2 LARGE CEILING TYPE

Model			AB30	AB36	AB45	AB54
Power			220-240V~50Hz			
Cooling capacity		[kW]	8.8	10.5	12.7	14.1
		[BTU/h]	30,000	36,000	43,500	48,200
Heating capacity		[kW]	9.1	10.7	13.7	15.8
		[BTU/h]	31,000	36,500	47,000	54,000
Input		[W]	124	144	160	180
Current		[A]	1.14	1.16	1.17	1.17
Max Current		[A]	1.36	1.39	1.40	1.40
Air Circulation	High	[m³/h]	1,420	1,660	1,850	1,900
	Med		1,350	1,500	1,660	1,700
	Low		1,190	1,270	1,430	1,450
Fan Speed	High	[r.p.m.]	850	1,000	1,100	1,250
	Med		800	900	1,000	1,150
	Low		700	750	850	1,000
Fan Motor Output		[W]	160			
Noise Level (Sound Pressure)	High	[dB (A)]	41.5	47	50	52
	Med		38	44	48	50
	Low		34.5	39	44	46
Fan Type x Q'ty			Sirocco x 4			
Heat Exchanger			Plate Fin Coil			
Dimensions (H x W x D)	Net	[mm]	240 x 1,660 x 700			
	Gross		318 x 1,800 x 790			
Weights	Net	[kg]	48	48	48	49
	Gross		61	61	61	62
Pipe size	Liquid	[mm]	ϕ 9.53			
	Gas		ϕ 15.88	ϕ 19.05		
Pipe Connection Method			Flare			
Operation Range	Cooling	[°C]	18 to 30			
	Heating		16 to 30			

INDOOR
UNIT

INDOOR
UNIT

4-3-3 COMPACT DUCT TYPE

Model			AR7	AR9	AR12	AR14	AR18
Power			220-240V~50Hz				
Cooling capacity		[kW]	2.15	2.80	3.50	4.00	5.30
		[BTU/h]	7,300	9,600	11,900	13,700	18,100
Heating capacity		[kW]	2.45	3.10	4.10	4.80	5.60
		[BTU/h]	8,400	10,600	14,000	16,400	19,100
Input		[W]	40	43	34	50	62
Current		[A]	0.21	0.21	0.20	0.23	0.27
Max Current		[A]	0.25	0.25	0.24	0.27	0.32
Air Circulation	High	[m³/h]	340	420	460	640	750
	Med		320	390	430	560	700
	Low		290	360	390	480	640
Fan Speed	High	[r.p.m.]	780	960	640	840	960
	Med		720	880	610	740	900
	Low		660	810	580	650	840
Fan Motor Output		[W]	12	14	16	18	21
Noise Level (Sound Pressure)	High	[dB (A)]	31	35	28	34	36
	Med		28	33	27	32	35
	Low		26	31	26	30	33
Fan Type x Q'ty			Sirocco x 1		Sirocco x 2		
Heat Exchanger			Plate Fin Coil				
Dimensions (H x W x D)	Net	[mm]	217 x 663 x 595		217 x 953 x 595		
	Gross		324 x 785 x 686		324 x 1,075 x 686		
Weights	Net	[kg]	18		25		
	Gross		22		29		
Pipe size	Liquid	[mm]	ϕ 6.35				ϕ 6.35
	Gas		ϕ 9.53		ϕ 12.7		ϕ 15.88
Pipe Connection Method			Flare				
Operation Range	Cooling	[°C]	18 to 30				
	Heating		16 to 30				

4-3-4 LOW STATIC PRESSURE DUCT TYPE

Model			AR25	AR30	AR36	AR45
Power			220-240V~50Hz			
Cooling capacity		[kW]	7.05	8.80	10.5	12.7
		[BTU/h]	24,100	30,000	36,000	43,500
Heating capacity		[kW]	7.85	9.10	10.7	13.7
		[BTU/h]	26,800	31,000	36,500	47,000
Input		[W]	155	240	265	315
Current		[A]	0.68	1.06	1.16	1.44
Max Current		[A]	0.84	1.58	1.58	1.84
Air Circulation	High	[m³/h]	1,200	1,650	2,000	2,200
	Med		1,100	1,550	1,800	2,000
	Low		1,000	1,350	1,600	1,800
Fan Speed	High	[r.p.m.]	890	1,240	1,280	1,320
	Med		820	1,140	1,200	1,270
	Low		745	1,040	1,130	1,200
Fan Motor Output		[W]	70	275		
Noise Level (Sound Pressure)	High	[dB (A)]	44	47	47	49
	Med		42	45	45	47
	Low		40	43	43	45
Fan Type x Q'ty			Sirocco x 2			
Heat Exchanger			Plate Fin Coil			
Dimensions (H x W x D)	Net	[mm]	270 x 1,210 x 700			
	Gross		330 x 1,300 x 790			
Weights	Net	[kg]	43	43	45	45
	Gross		58	58	60	60
Pipe size	Liquid	[mm]	φ6.35	φ9.53		
	Gas		φ15.88		φ19.05	
Pipe Connection Method			Flare			
Operation Range	Cooling	[°C]	18 to 30			
	Heating		16 to 30			

INDOOR
UNIT

INDOOR
UNIT

4-3-5 HIGH STATIC PRESSURE DUCT TYPE

Model			AR36H	AR45H	AR60H
Power			220-240V~50Hz		
Cooling capacity		[kW]	10.5	12.7	17.0
		[BTU/h]	36,000	43,500	58,000
Heating capacity		[kW]	10.7	13.7	17.6
		[BTU/h]	36,500	47,000	60,100
Input		[W]	445	463	733
Current		[A]	2.35	2.35	3.58
Max Current		[A]	3.02	3.02	4.81
Air Circulation	High	[m³/h]	2,000	2,200	3,000
	Med		1,700	1,900	2,750
	Low		1,400	1,600	2,500
Fan Speed	High	[r.p.m.]	760	890	1,150
	Med		690	820	1,075
	Low		630	760	1,000
Fan Motor Output		[W]	350		
Noise Level (Sound Pressure)	High	[dB (A)]	47	48	53
	Med		45	46	52
	Low		43	44	51
Fan Type x Q'ty			Sirocco x 2		
Heat Exchanger			Plate Fin Coil		
Dimensions (H x W x D)	Net	[mm]	400 x 1,250 x 800		
	Gross		500 x 1,430 x 930		
Weights	Net	[kg]	75		
	Gross		90		
Pipe size	Liquid	[mm]	φ9.53		
	Gas		φ19.05		
Pipe Connection Method			Flare		
Operation Range	Cooling	[°C]	18 to 30		
	Heating		16 to 30		

INDOOR
UNIT

INDOOR
UNIT

4-3-6 COMPACT CASSETTE TYPE

Model			AU7	AU9	AU12	AU14	AU18
Power			220-240~50Hz				
Cooling capacity		[kW]	2.15	2.80	3.60	4.00	5.00
		[BTU/h]	7,400	9,600	12,300	13,700	17,100
Heating capacity		[kW]	2.45	3.10	4.10	4.50	5.45
		[BTU/h]	8,400	10,600	14,000	15,400	18,600
Input		[W]	28	28	52	52	50
Current		[A]	0.13	0.13	0.23	0.23	0.22
Max Current		[A]	0.15	0.15	0.27	0.27	0.26
Air Circulation	High	[m³/h]	530	530	580	580	640
	Med		480	480	520	520	540
	Low		410	410	460	460	470
Fan Speed	High	[r.p.m.]	630	630	690	690	750
	Med		570	570	610	610	640
	Low		480	480	540	540	540
Fan Motor Output		[W]	9		10		18
Noise Level (Sound Pressure)	High	[dB (A)]	38	38	41	41	44
	Med		35	35	37	37	38
	Low		31	31	34	34	35
Fan Type x Q'ty			Turbo x 1				
Heat Exchanger			Plate Fin Coil				
Dimensions (H x W x D)	Net	[mm]	230 x 570 x 570				
	Gross		280 x 710 x 750				
Weights	Net	[kg]	18				
	Gross		23				
Pipe size	Liquid	[mm]	ϕ6.35				
	Gas		ϕ9.53		ϕ12.7		ϕ15.88
Pipe Connection Method			Flare				
Operation Range	Cooling	[°C]	18 to 30				
	Heating		16 to 30				

4-3-7 CASSETTE TYPE

Model			AU20	AU25	AU30
Power			220-240V~50Hz		
Cooling capacity		[kW]	5.70	7.05	8.80
		[BTU/h]	19,500	24,100	30,000
Heating capacity		[kW]	5.80	7.85	9.10
		[BTU/h]	19,800	26,800	31,100
Input		[W]	104	124	140
Current		[A]	0.60	0.64	0.67
Max Current		[A]	0.72	0.77	0.80
Air Circulation	High	[m³/h]	1,000	1,100	1,200
	Med		840	940	1,050
	Low		700	780	840
Fan Speed	High	[r.p.m.]	450	490	540
	Med		390	430	480
	Low		330	360	390
Fan Motor Output		[W]	37		
Noise Level (Sound Pressure)	High	[dB (A)]	41	43	46
	Med		37	40	43
	Low		33	35	37
Fan Type x Q'ty			Turbo x 1		
Heat Exchanger			Plate Fin Coil		
Dimensions (H x W x D)	Net	[mm]	246 x 830 x 830		
	Gross		355 x 1,060 x 1,025		
Weights	Net	[kg]	34		
	Gross		44		
Pipe size	Liquid	[mm]	ϕ6.35		ϕ9.53
	Gas		ϕ15.88		
Pipe Connection Method			Flare		
Operation Range	Cooling	[°C]	18 to 30		
	Heating		16 to 30		

4-3-7 CASSETTE TYPE

Model			AU36	AU45	AU54
Power			220-240V~50Hz		
Cooling capacity		[kW]	10.5	12.7	14.1
		[BTU/h]	35,800	43,400	48,100
Heating capacity		[kW]	10.7	13.7	15.8
		[BTU/h]	36,500	46,800	53,900
Input		[W]	175	190	219
Current		[A]	0.92	0.94	0.95
Max Current		[A]	1.10	1.12	1.14
Air Circulation	High	[m³/h]	1,500	1,650	1,780
	Med		1,300	1,450	1,550
	Low		1,100	1,200	1,300
Fan Speed	High	[r.p.m.]	580	620	680
	Med		500	550	580
	Low		420	470	500
Fan Motor Output		[W]	90		
Noise Level (Sound Pressure)	High	[dB (A)]	48	49	52
	Med		44	47	48.5
	Low		41	43	45
Fan Type x Q'ty			Turbo x 1		
Heat Exchanger			Plate Fin Coil		
Dimensions (H x W x D)	Net	[mm]	296 x 830 x 830		
	Gross		455 x 1,060 x 1,025		
Weights	Net	[kg]	40		
	Gross		47		
Pipe size	Liquid	[mm]	ϕ9.53		
	Gas		ϕ19.05		
Pipe Connection Method			Flare		
Operation Range	Cooling	[°C]	18 to 30		
	Heating		16 to 30		

4-3-8 COMPACT WALL MOUNTED TYPE

Model			AS7	AS9	AS12	AS14
Power			220-240V~50Hz			
Cooling capacity		[kW]	2.15	2.80	3.50	3.80
		[BTU/h]	7,400	9,600	11,900	13,000
Heating capacity		[kW]	2.45	3.10	4.10	4.50
		[BTU/h]	8,400	10,600	14,000	15,400
Input		[W]	26	30	35	39
Current		[A]	0.15	0.16	0.18	0.20
Max Current		[A]	0.18	0.19	0.22	0.24
Air Circulation	High	[m³/h]	410	450	520	540
	Med		380	410	500	510
	Low		350	370	470	490
Fan Speed	High	[r.p.m.]	1,000	1,090	1,250	1,300
	Med		930	1,000	1,200	1,240
	Low		860	900	1,150	1,180
Fan Motor Output		[W]	16.5			
Noise Level (Sound Pressure)	High	[dB (A)]	30	33	37	38
	Med		28	30	36	37
	Low		26	27	34	35
Fan Type x Q'ty			Cross Flow x 1			
Heat Exchanger			Plate Fin Coil			
Dimensions (H x W x D)	Net	[mm]	257 x 808 x 187			
	Gross		270 x 850 x 310			
Weights	Net	[kg]	8			
	Gross		10			
Pipe size	Liquid	[mm]	ϕ6.35			
	Gas		ϕ 9.53		ϕ12.7	
Pipe Connection Method			Flare			
Operation Range	Cooling	[°C]	18 to 30			
	Heating		16 to 30			

INDOOR
UNIT

INDOOR
UNIT

4-3-9 WALL MOUNTED TYPE

Model			AS18	AS24	AS30
Power			220-240V~50Hz		
Cooling capacity		[kW]	5.40	6.90	8.00
		[BTU/h]	18,400	23,600	27,300
Heating capacity		[kW]	5.60	7.80	8.80
		[BTU/h]	19,100	26,600	30,000
Input		[W]	38	50	60
Current		[A]	0.18	0.24	0.28
Max Current		[A]	0.22	0.29	0.34
Air Circulation	High	[m³/h]	840	950	1,050
	Med		700	800	940
	Low		600	670	780
Fan Speed	High	[r.p.m.]	1,080	1,190	1,320
	Med		940	1,030	1,210
	Low		810	900	1,030
Fan Motor Output		[W]	38		
Noise Level (Sound Pressure)	High	[dB (A)]	42	45	48
	Med		39	41	45
	Low		35	37	41
Fan Type x Q'ty			Cross Flow x 1		
Heat Exchanger			Plate Fin Coil		
Dimensions (H x W x D)	Net	[mm]	320 x 1,120 x 220		
	Gross		348 x 1,240 x 427		
Weights	Net	[kg]	16		
	Gross		22		
Pipe size	Liquid	[mm]	ϕ6.35		ϕ9.53
	Gas		ϕ15.88		
Pipe Connection Method			Flare		
Operation Range	Cooling	[°C]	18 to 30		
	Heating		16 to 30		

4-3-10 CEILING WALL TYPE

Model			AW7	AW9	AW12
Power			220-240V~50Hz		
Cooling capacity		[kW]	2.15	2.80	3.60
		[BTU/h]	7,400	9,600	12,300
Heating capacity		[kW]	2.45	3.10	4.10
		[BTU/h]	8,400	10,600	14,000
Input		[W]	16	19	20
Current		[A]	0.08	0.09	0.10
Max Current		[A]	0.10	0.11	0.12
Air Circulation	High	[m³/h]	380	480	600
	Med		330	420	520
	Low		290	390	470
Fan Speed	High	[r.p.m.]	1,090	1,310	950
	Med		980	1,110	860
	Low		900	930	800
Fan Motor Output		[W]	32		
Noise Level (Sound Pressure)	High	[dB (A)]	34	35	35
	Med		32	32	33
	Low		30	31	31
Fan Type x Q'ty			Cross Flow x 1		
Heat Exchanger			Plate Fin Coil		
Dimensions (H x W x D)	Net	[mm]	270 x 1,150 x 285		
	Gross		400 x 1,260 x 380		
Weights	Net	[kg]	16		
	Gross		20		
Pipe size	Liquid	[mm]	ϕ6.35		
	Gas		ϕ9.53		ϕ12.7
Pipe Connection Method			Flare		
Operation Range	Cooling	[°C]	18 to 30		
	Heating		16 to 30		

4-3-10 CEILING WALL TYPE

Model			AW14	AW18	AW24	AW30
Power			220-240V~50Hz			
Cooling capacity		[kW]	4.30	5.40	6.90	8.00
		[BTU/h]	14,700	18,400	23,600	27,300
Heating capacity		[kW]	4.90	5.60	7.80	8.80
		[BTU/h]	16,700	19,100	26,600	30,000
Input		[W]	21	30	40	50
Current		[A]	0.10	0.14	0.19	0.24
Max Current		[A]	0.12	0.17	0.23	0.29
Air Circulation	High	[m³/h]	650	760	900	950
	Med		570	660	780	870
	Low		490	560	650	780
Fan Speed	High	[r.p.m.]	1,000	1,150	1,300	1,380
	Med		910	1,030	1,160	1,280
	Low		820	930	1,020	1,180
Fan Motor Output		[W]	32			
Noise Level (Sound Pressure)	High	[dB (A)]	37	40	44	47
	Med		35	37	41	45
	Low		32	34	37	42
Fan Type x Q'ty			Cross Flow x 1			
Heat Exchanger			Plate Fin Coil			
Dimensions (H x W x D)	Net	[mm]	270 x 1,150 x 285			
	Gross		400 x 1,260 x 380			
Weights	Net	[kg]	16			
	Gross		20			
Pipe size	Liquid	[mm]	ϕ 6.35			ϕ 9.53
	Gas		ϕ 12.7	ϕ 15.88		
Pipe Connection Method			Flare			
Operation Range	Cooling	[°C]	18 to 30			
	Heating		16 to 30			

INDOOR
UNIT

INDOOR
UNIT

4-4 ELECTRIC CHARACTERISTICS

■ UNIVERSAL FLOOR/CEILING TYPE

Model Name		Voltage (V)	Frequency (Hz)	Input (W)	Current (A)	Max Crrnt (A) (MLC)
AB	12	220-240	50	57	0.25	0.30
	14			57	0.25	0.30
	18			88	0.38	0.45
	24			88	0.38	0.45

■ LARGE CEILING TYPE

Model Name		Voltage (V)	Frequency (Hz)	Input (W)	Current (A)	Max Crrnt (A) (MLC)
AB	30	220-240	50	124	1.14	1.36
	36			144	1.16	1.39
	45			160	1.17	1.40
	54			180	1.17	1.40

■ COMPACT DUCT TYPE

Model Name		Voltage (V)	Frequency (Hz)	Input (W)	Current (A)	Max Crrnt (A) (MLC)
AR	7	220-240	50	40	0.21	0.25
	9			43	0.21	0.25
	12			34	0.20	0.24
	14			50	0.23	0.27
	18			62	0.27	0.32

■ LOW STATIC PRESSURE DUCT TYPE

Model Name		Voltage (V)	Frequency (Hz)	Input (W)	Current (A)	Max Crrnt (A) (MLC)
AR	25	220-240	50	155	0.68	0.84
	30			240	1.06	1.58
	36			265	1.16	1.58
	45			315	1.44	1.84

■ HIGH STATIC PRESSURE DUCT TYPE

Model Name		Voltage (V)	Frequency (Hz)	Input (W)	Current (A)	Max Crrnt (A) (MLC)
AR	36H	220-240	50	445	2.35	3.02
	45H			463	2.35	3.02
	60H			733	3.58	4.81

■ COMPACT CASSETTE TYPE

Model Name		Voltage (V)	Frequency (Hz)	Input (W)	Current (A)	Max Crrnt (A) (MLC)
AU	7	220-240	50	28	0.13	0.15
	9			28	0.13	0.15
	12			52	0.23	0.27
	14			52	0.23	0.27
	18			50	0.22	0.26

■ CASSETTE TYPE

Model Name		Voltage (V)	Frequency (Hz)	Input (W)	Current (A)	Max Crrrent (A) ^(MLC)
AU	20	220-240	50	104	0.60	0.72
	25			124	0.64	0.77
	30			140	0.67	0.80
	36			175	0.92	1.10
	45			190	0.94	1.12
	54			219	0.95	1.14

■ COMPACT WALL MOUNTED TYPE

Model Name		Voltage (V)	Frequency (Hz)	Input (W)	Current (A)	Max Crrrent (A) ^(MLC)
AS	7	220-240	50	26	0.15	0.18
	9			30	0.16	0.19
	12			35	0.18	0.22
	14			39	0.20	0.24

■ WALL MOUNTED TYPE

Model Name		Voltage (V)	Frequency (Hz)	Input (W)	Current (A)	Max Crrrent (A) ^(MLC)
AS	18	220-240	50	38	0.18	0.22
	24			50	0.24	0.29
	30			60	0.28	0.34

■ CEILING WALL TYPE

Model Name		Voltage (V)	Frequency (Hz)	Input (W)	Current (A)	Max Crrrent (A) ^(MLC)
AW	7	220-240	50	16	0.08	0.10
	9			19	0.09	0.11
	12			21	0.10	0.12
	14			21	0.10	0.12
	20			30	0.14	0.17
	24			40	0.19	0.23
	30			50	0.24	0.29

FUSE AMP. Is calculated by follwing method.

$$\text{FUSE AMP.} \geq (\text{MLC of Indoor unit A} + \text{MLC of Indoor unit B} + \dots) \times S$$

S : Safety Factor

According to country regulation

EX) In case of 1system: AB18×1, AR30×1, AU14 ×1, AU25 ×1, AW14×2

$$\text{FUSE AMP.} = (0.45 + 1.58 + 0.27 + 0.77 + 0.12 \times 2) \times 2.25 = 7.45$$

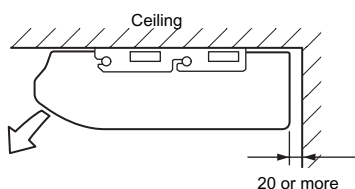
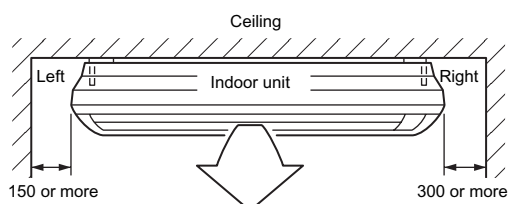
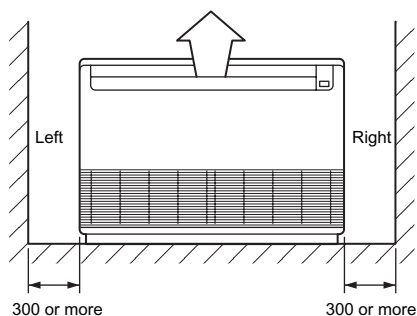
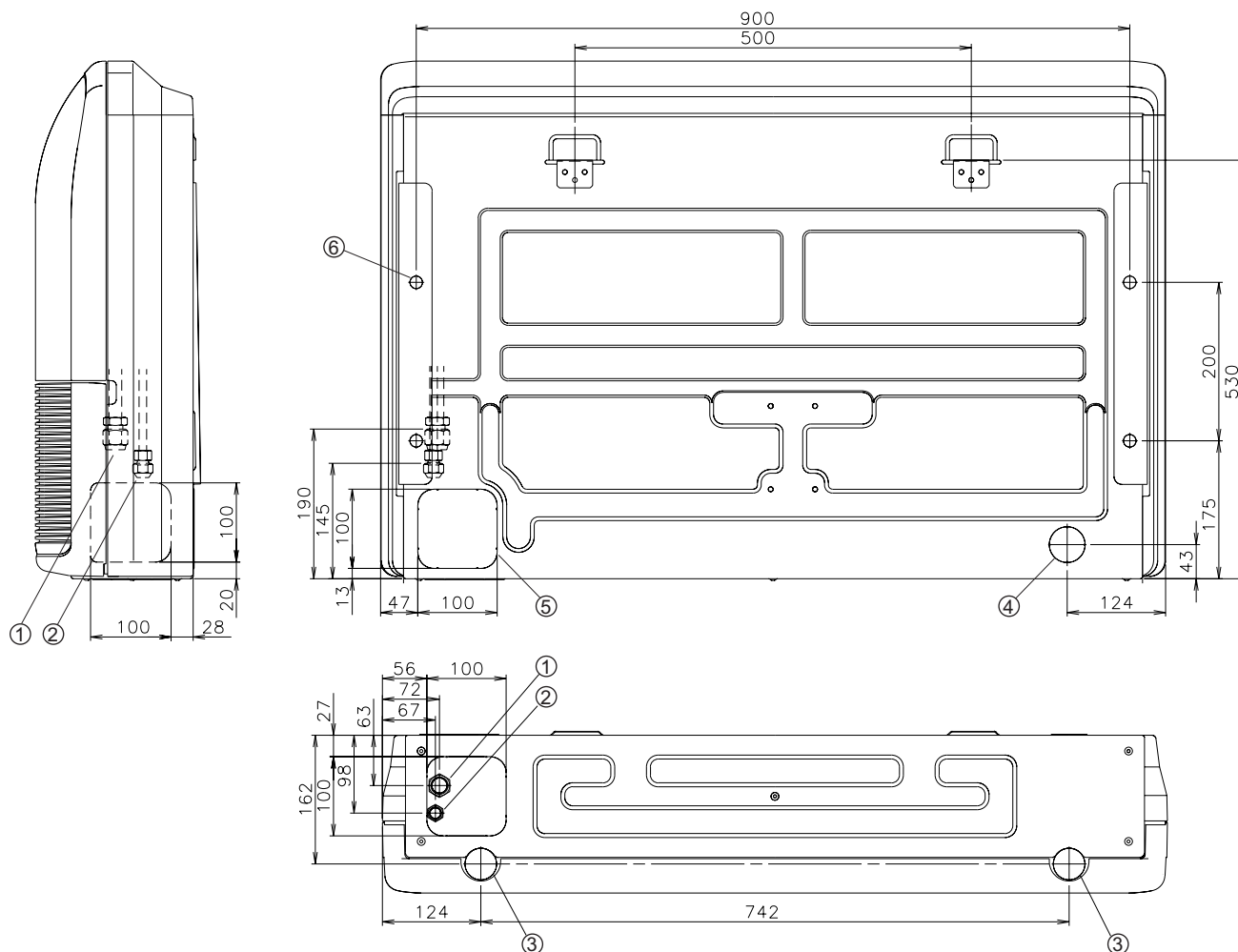
Use 7.45 or more FUSE AMP. capacity

4-5 DIMENSIONS

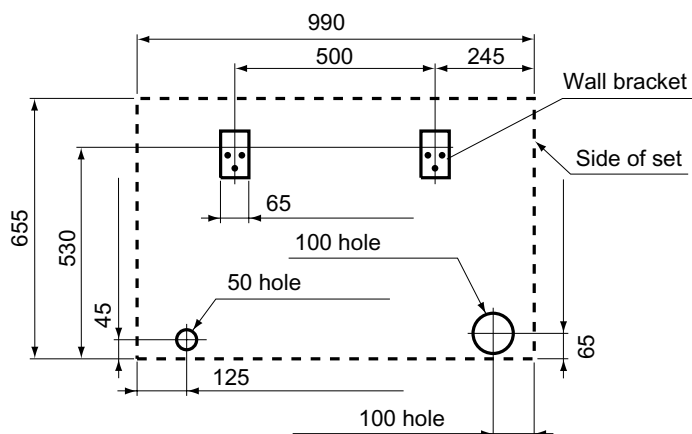
4-5-1 UNIVERSAL FLOOR / CEILING TYPE

■ MODELS : AB12, AB14, AB18, AB24

(Unit : mm)



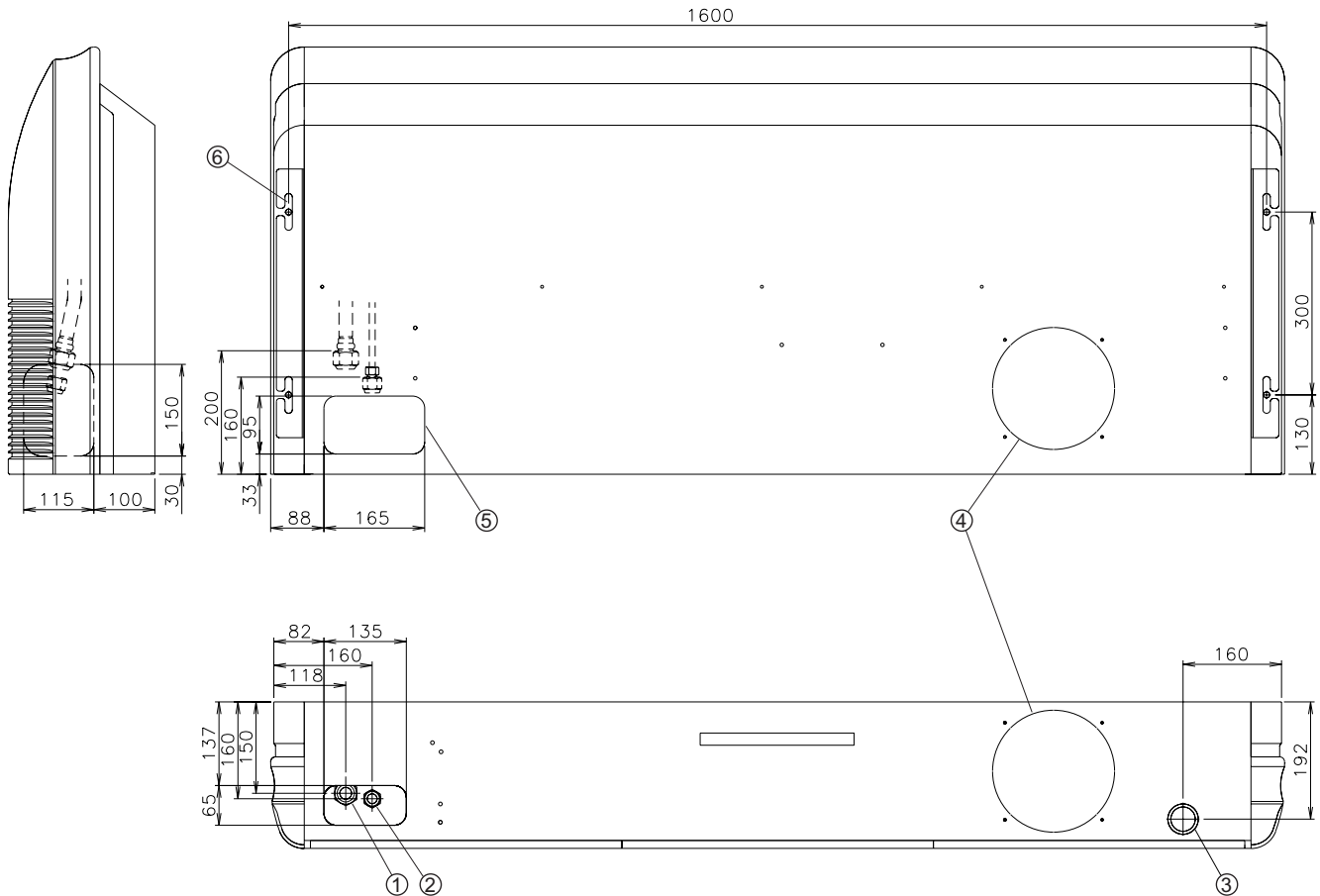
- ① Refrigerant piping flare connection (Gas)
- ② Refrigerant piping flare connection (Liquid)
- ③ Drain piping connection (Drain pipe : I.D. ϕ 25 O.D ϕ 29 L 700)
- ④ Knock out hole for drain piping
- ⑤ Knock out hole for refrigerant piping
- ⑥ Hole for lifting bolt (Use M10 screw bolt)



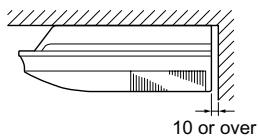
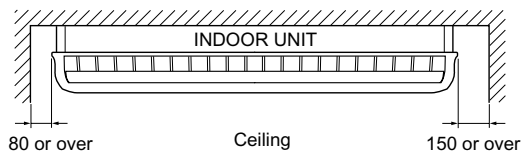
4-5-2 LARGE CEILING TYPE

MODELS : AB30, AB36, AB45, AB54

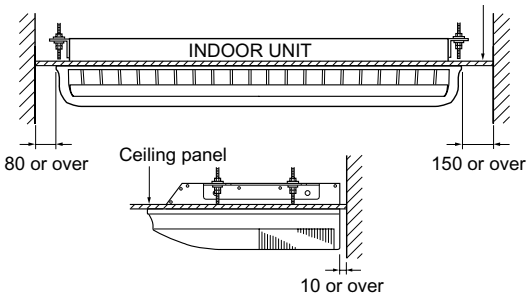
(Unit : mm)



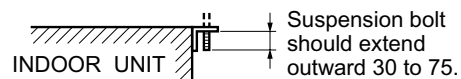
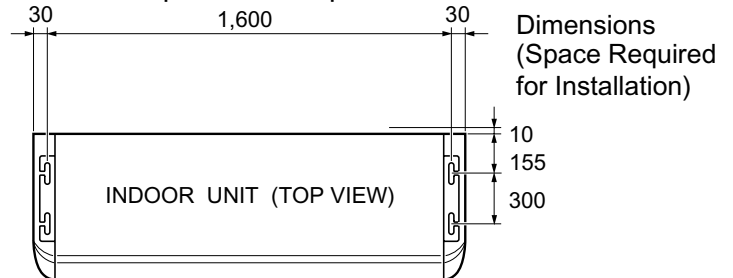
Ceiling



Ceiling panel



Suspension bolt pitch

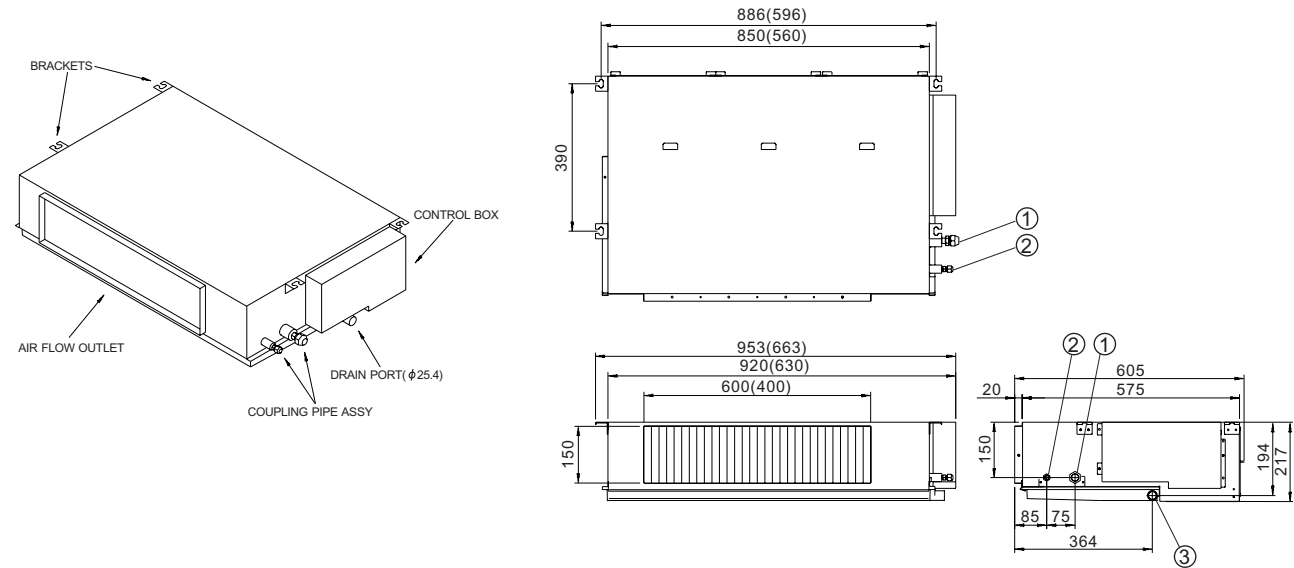


- ① Refrigerant piping flare connection (Gas)
- ② Refrigerant piping flare connection (Liquid)
- ③ Drain piping connection (Drain pipe : I.D. $\phi 22$ O.D. $\phi 25.6$)
- ④ Knock out hole for fresh air
- ⑤ Knock out hole for refrigerant piping
- ⑥ Hole for lifting bolt (Use M10 screw bolt)

4-5-3 COMPACT DUCT TYPE

MODELS : AR7, AR9, AR12,AR14,AR18

() : AR7, AR9 (Unit : mm)

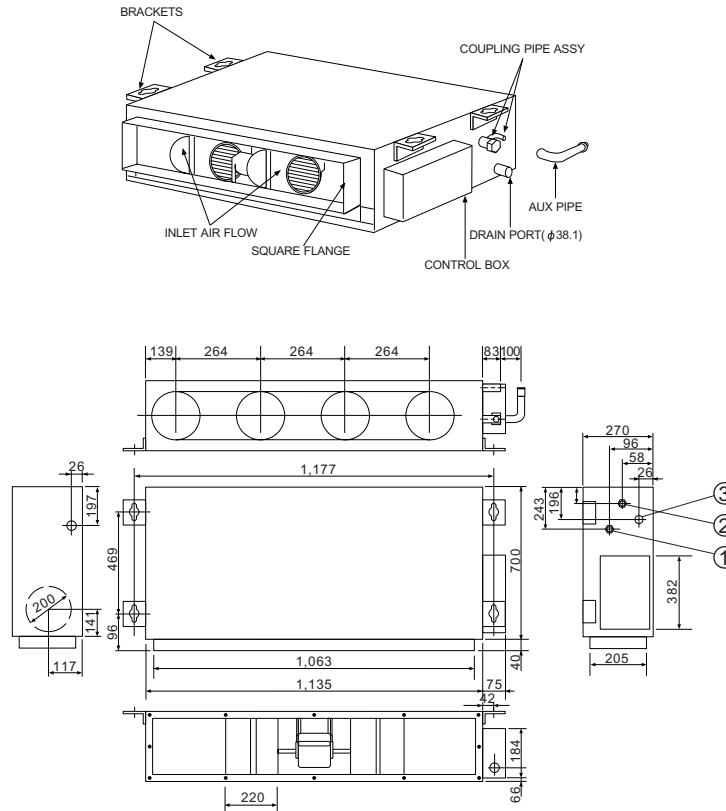


- ① Refrigerant piping flare connection (Gas)
- ② Refrigerant piping flare connection (Liquid)
- ③ Drain piping connection (Drain pipe : I.D. φ21.5 O.D. φ26.0)

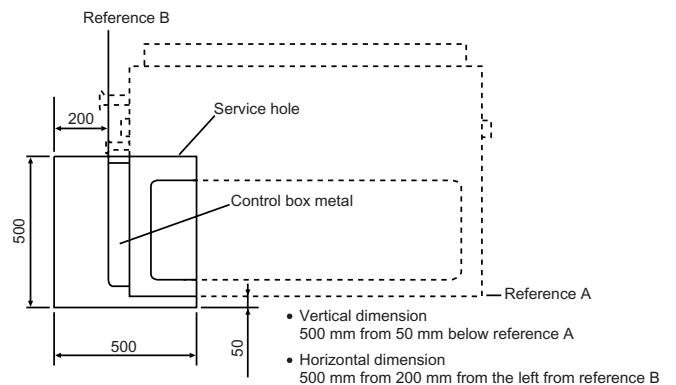
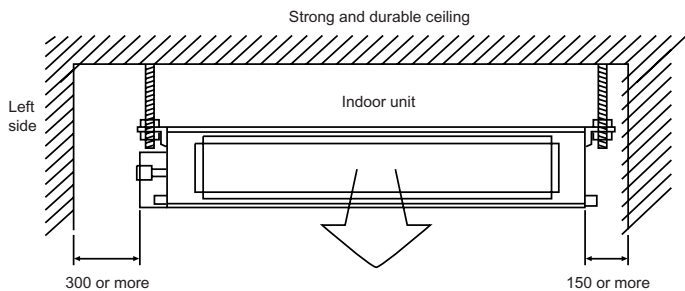
4-5-4 LOW STATIC PRESSURE DUCT TYPE

■ MODELS: AR25, AR30, AR36, AR45

(Unit : mm)



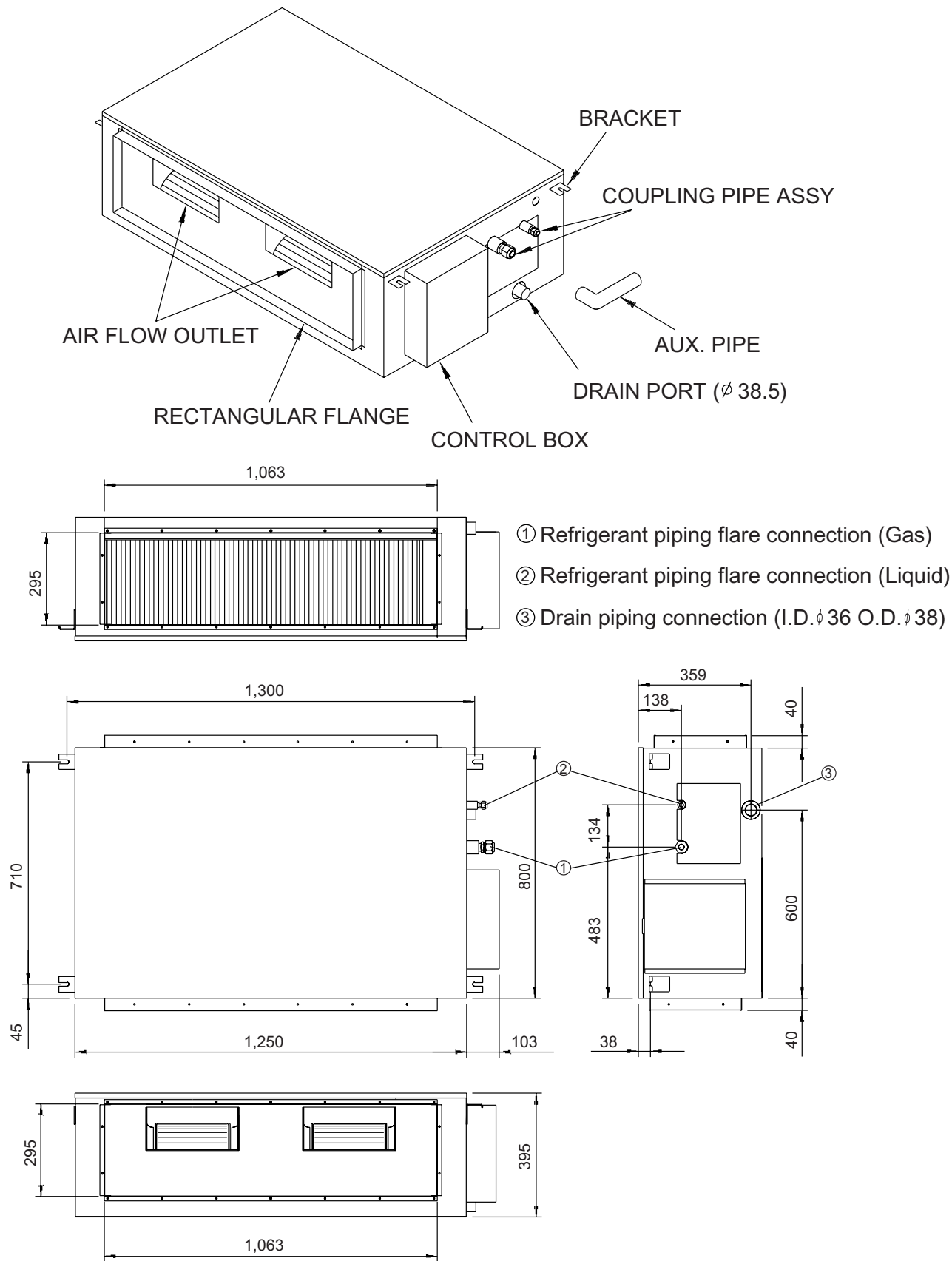
- ① Refrigerant piping flare connection (Gas)
- ② Refrigerant piping flare connection (Liquid)
- ③ Drain piping connection (Drain pipe : I.D.φ36 O.D.φ38)



4-5-5 HIGH STATIC PRESSURE DUCT TYPE

■ MODELS : AR36H, AR45H, AR60H

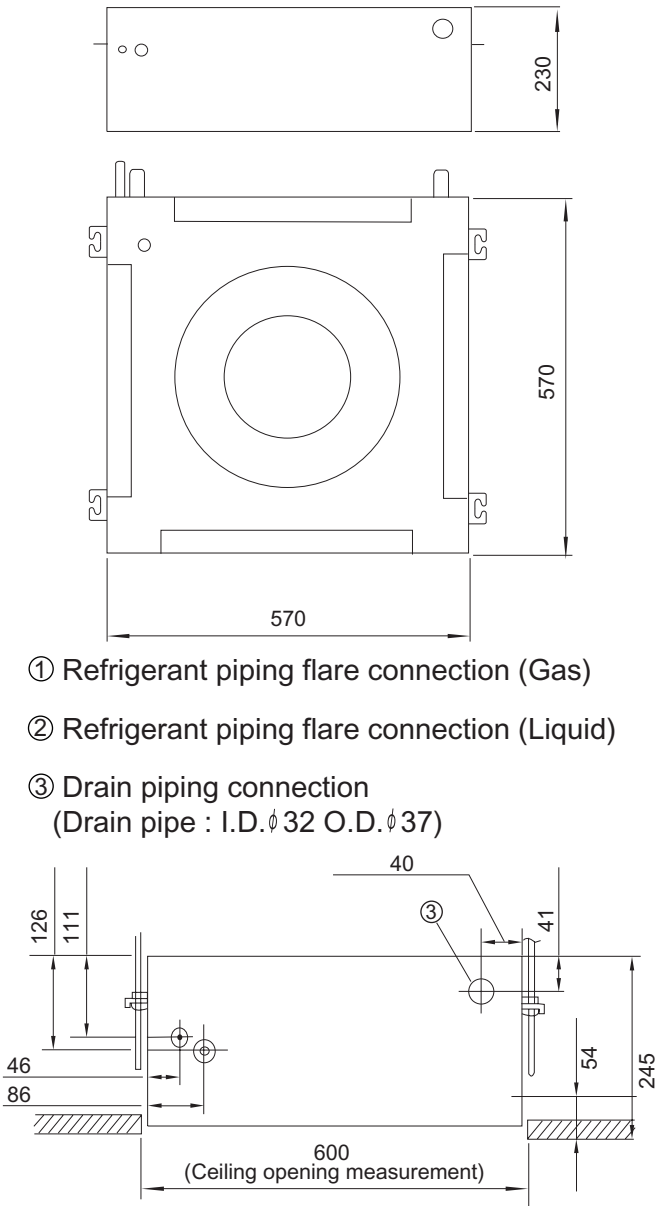
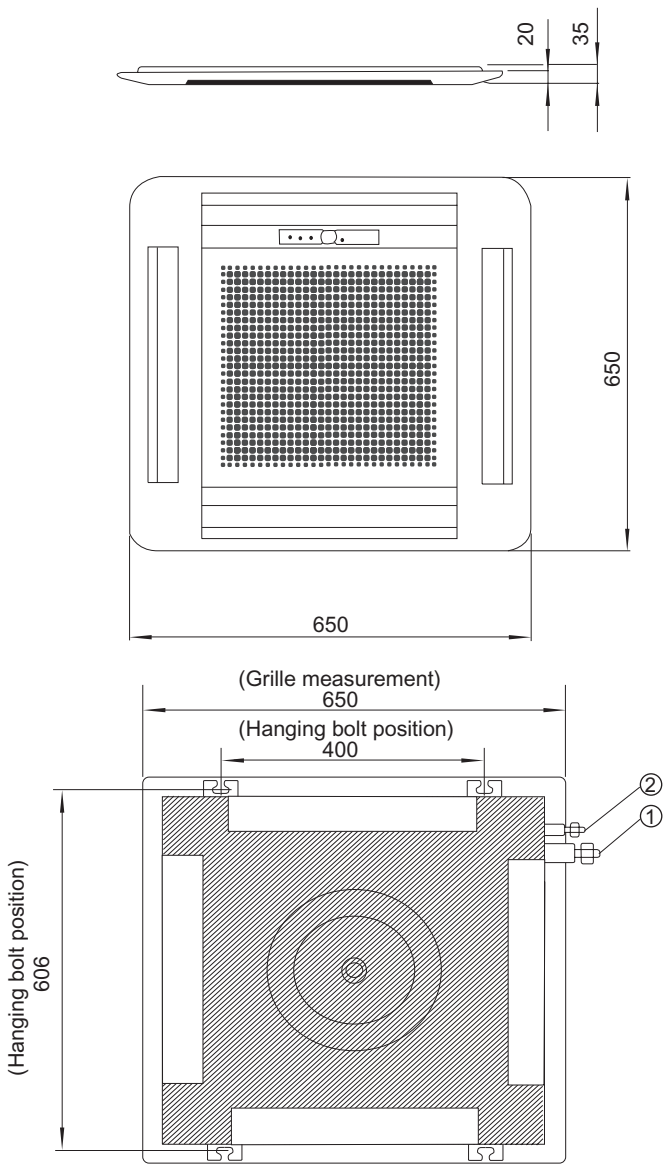
(Unit : mm)



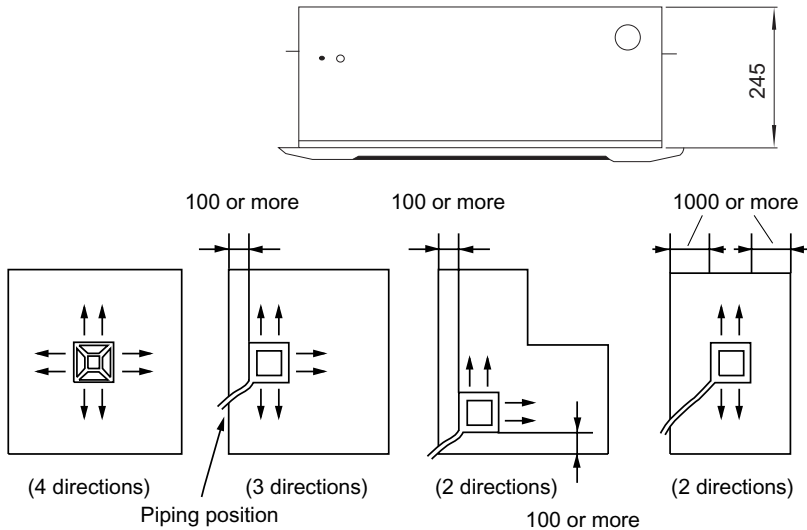
4-5-6 COMPACT CASSETTE TYPE

■ MODELS : AU7, AU9, AU12, AU14, AU18

(Unit : mm)



- ① Refrigerant piping flare connection (Gas)
- ② Refrigerant piping flare connection (Liquid)
- ③ Drain piping connection
(Drain pipe : I.D.φ 32 O.D.φ 37)

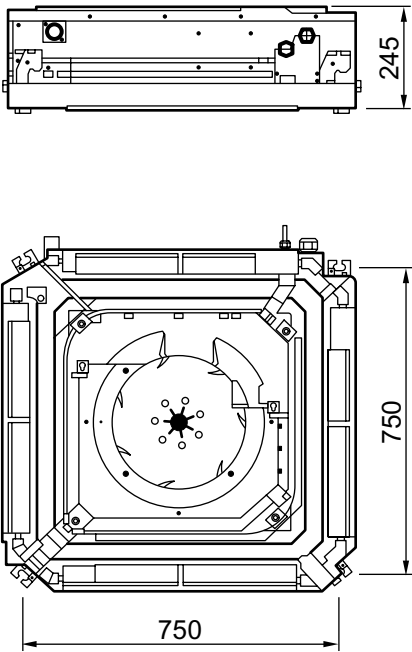
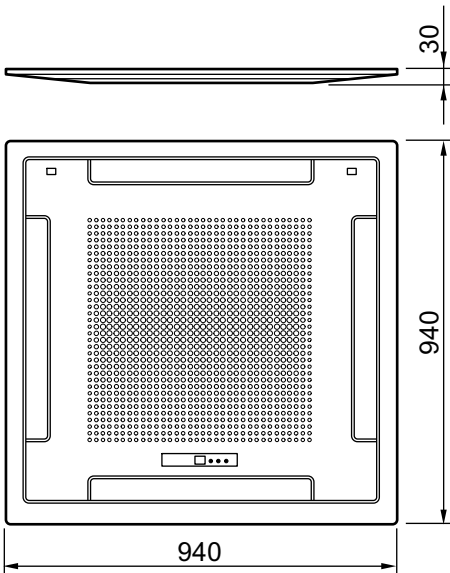


4-5-7 CASSETTE TYPE

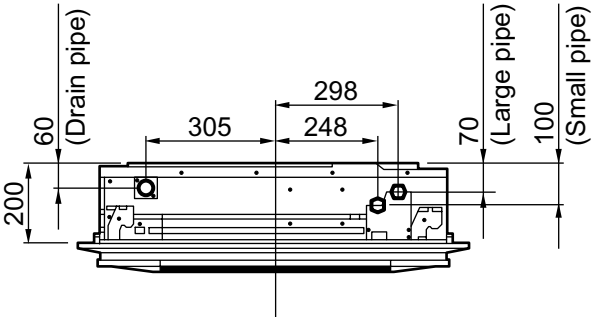
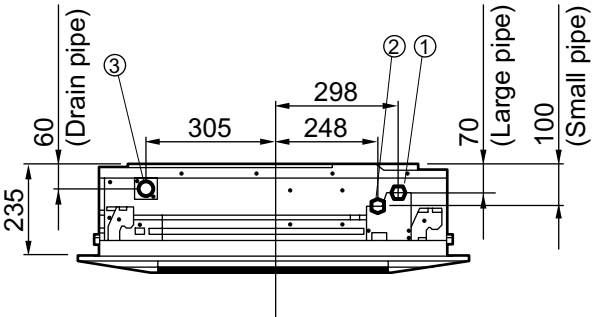
MODELS : AU20, AU25, AU30

(Unit : mm)

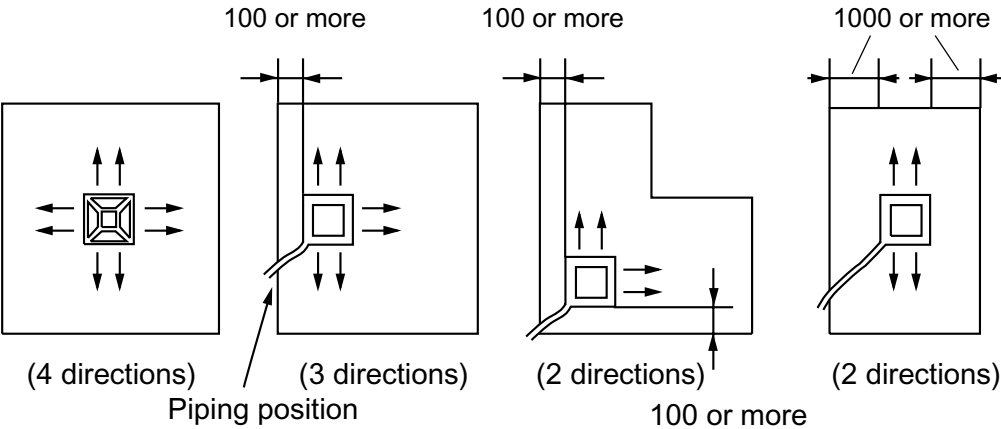
INDOOR UNIT



INDOOR UNIT

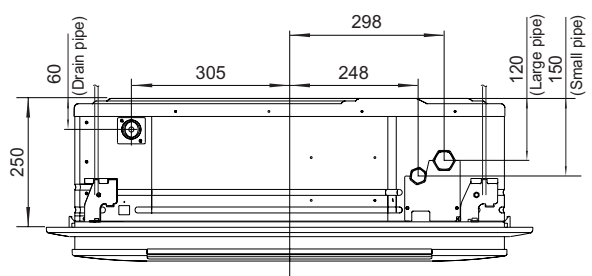
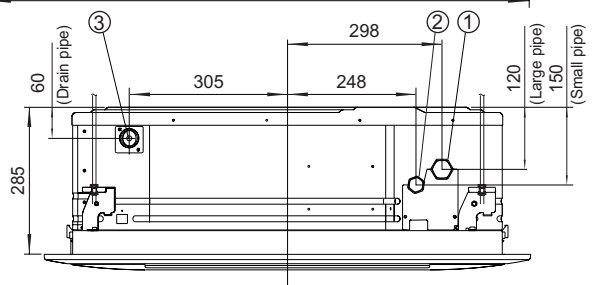
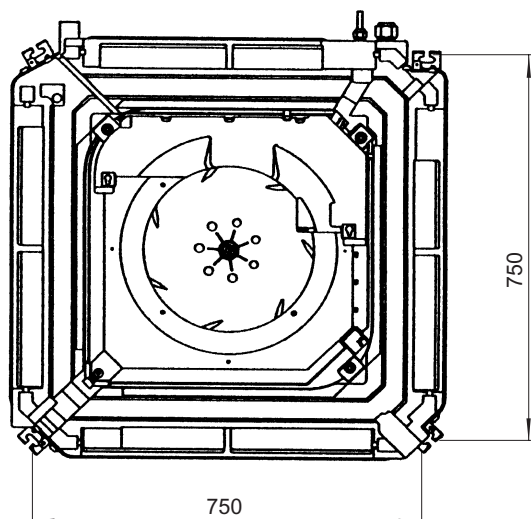
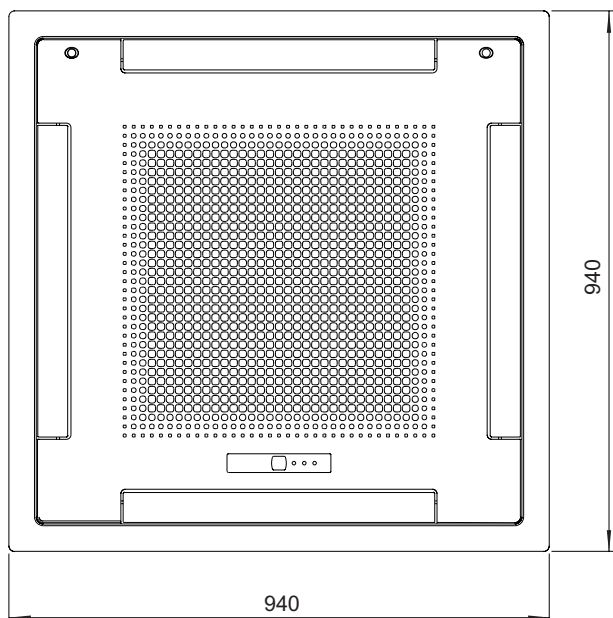
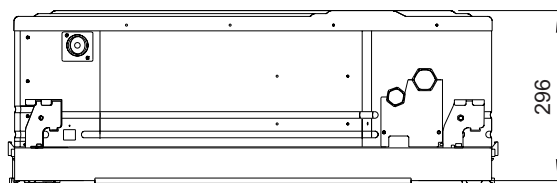


- ① Refrigerant piping flare connection (Gas)
- ② Refrigerant piping flare connection (Liquid)
- ③ Drain piping connection (Drain pipe : I.D. ϕ 32 O.D. ϕ 37)

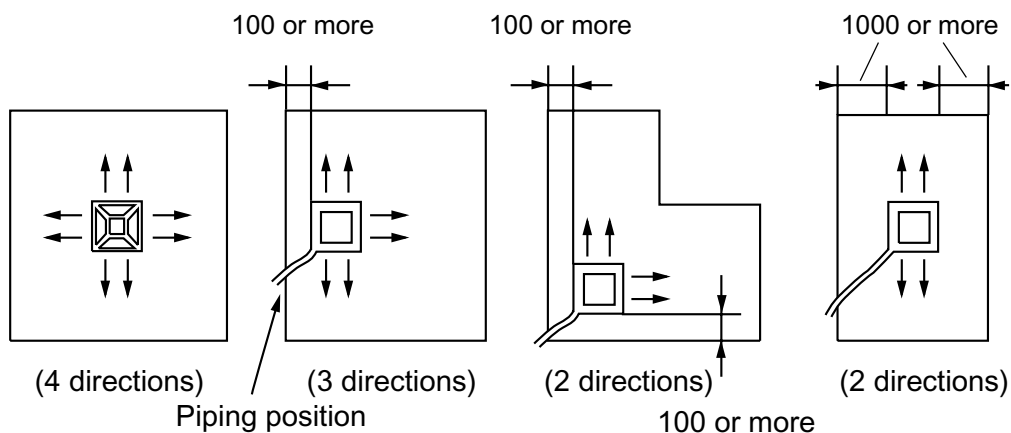


■ MODELS : AU36, AU45, AU54

(Unit : mm)



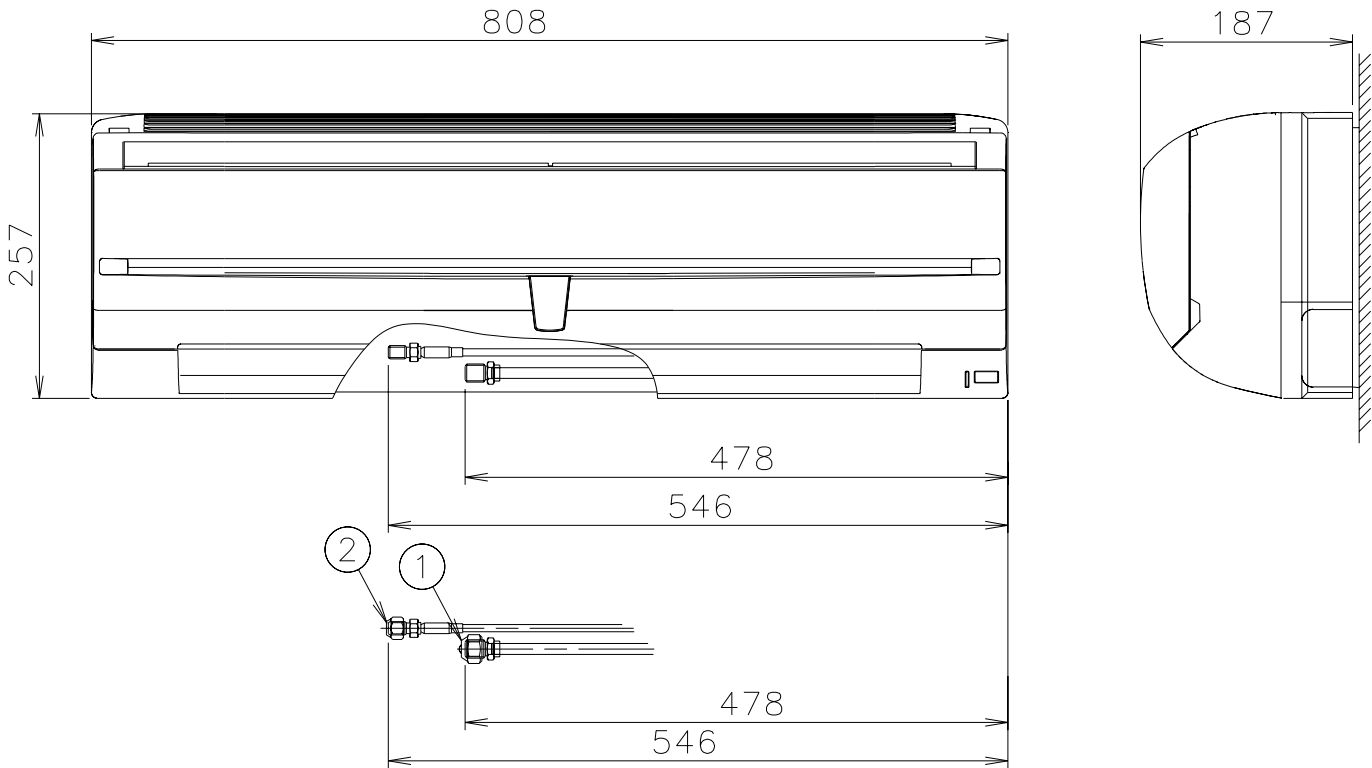
- ① Refrigerant piping flare connection (Gas)
- ② Refrigerant piping flare connection (Liquid)
- ③ Drain piping connection (Drain pipe : I.D. $\phi 32$ O.D. $\phi 37$)



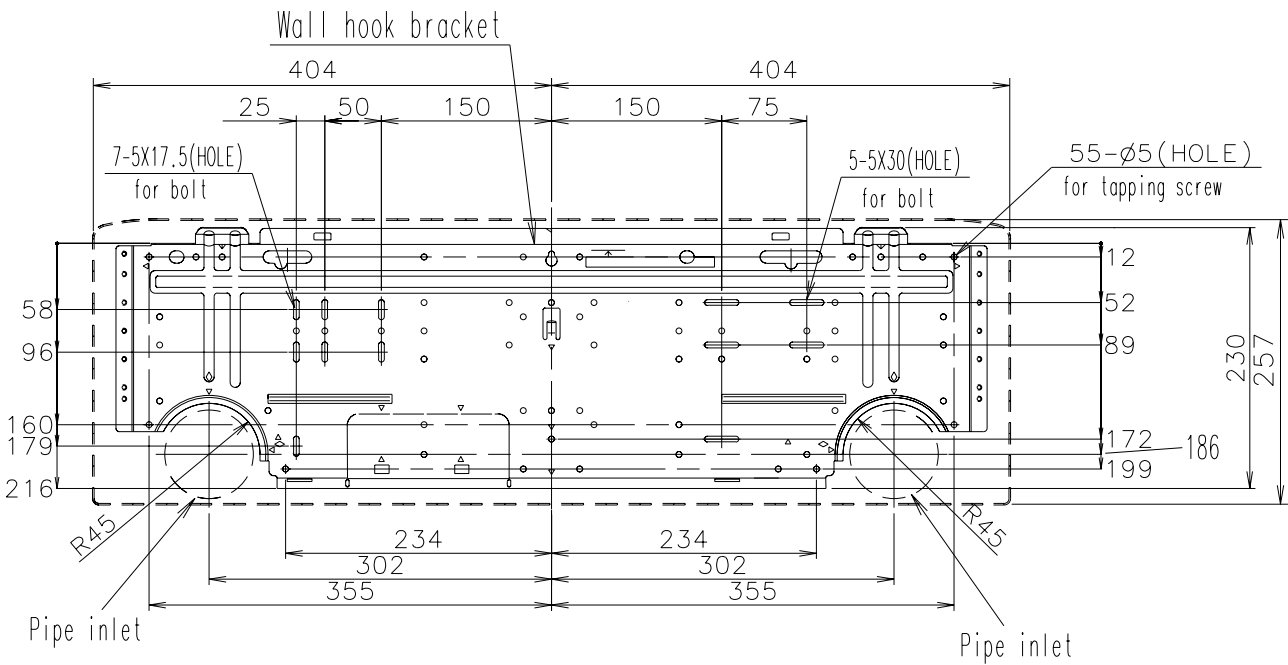
4-5-8 COMPACT WALL MOUNTED TYPE

MODELS : AS7,AS9,AS12,AS14

(Unit : mm)



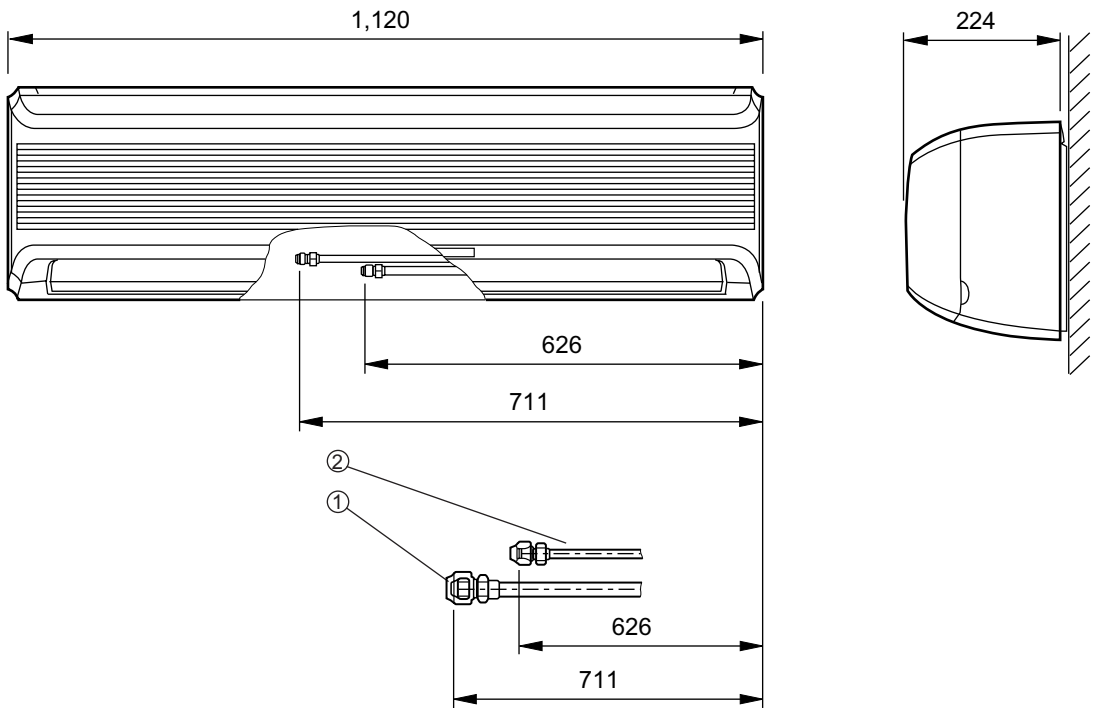
- ① Refrigerant piping flare connection (Gas)
- ② Refrigerant piping flare connection (Liquid)
- ③ Drain piping connection (Drain pipe : I.D. $\phi 14$ O.D. $\phi 25.5$ L620)



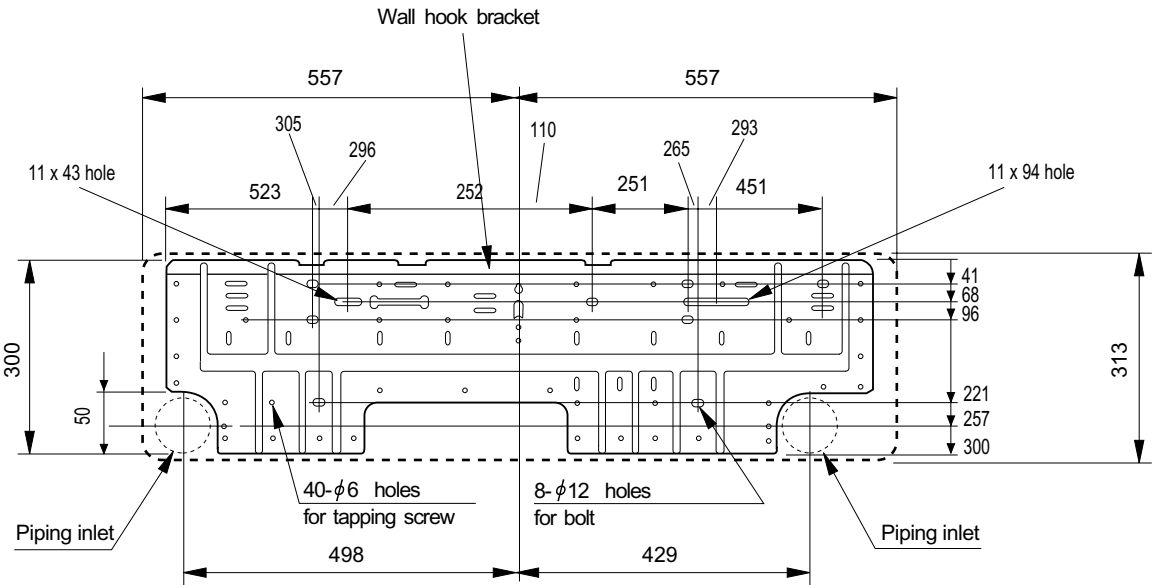
4-5-9 WALL MOUNTED TYPE

MODELS : AS18, AS24, AS30

(Unit : mm)

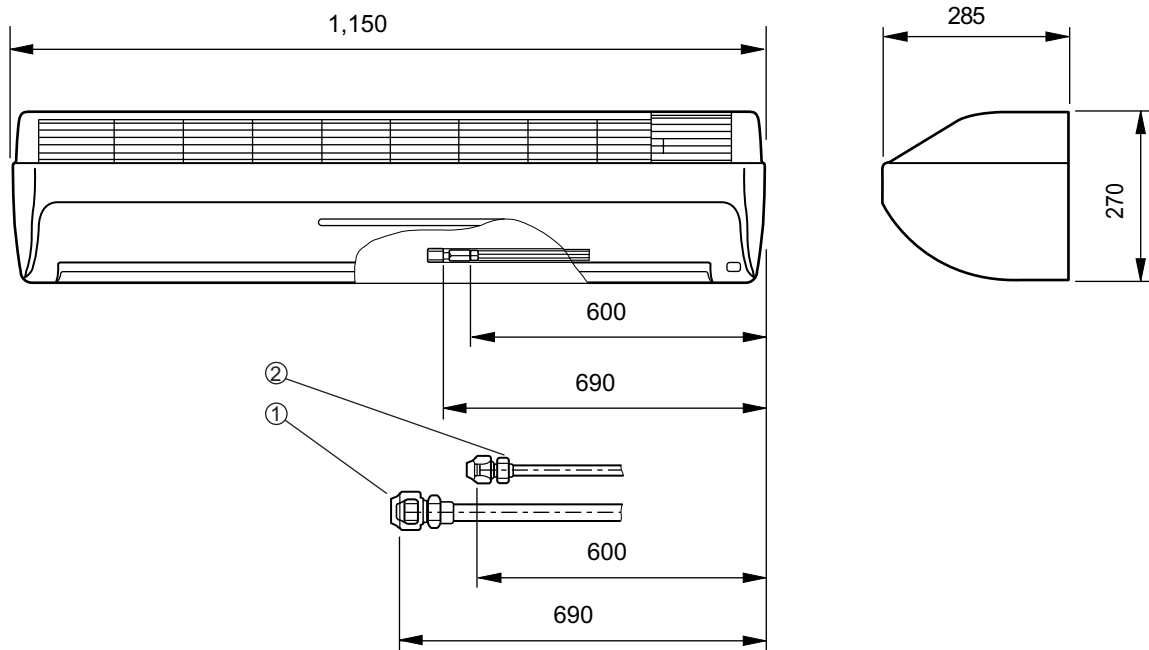


- ① Refrigerant piping flare connection (Gas)
- ② Refrigerant piping flare connection (Liquid)
- ③ Drain piping connection (Drain pipe : I.D. ϕ 14 O.D. ϕ 28 L670)

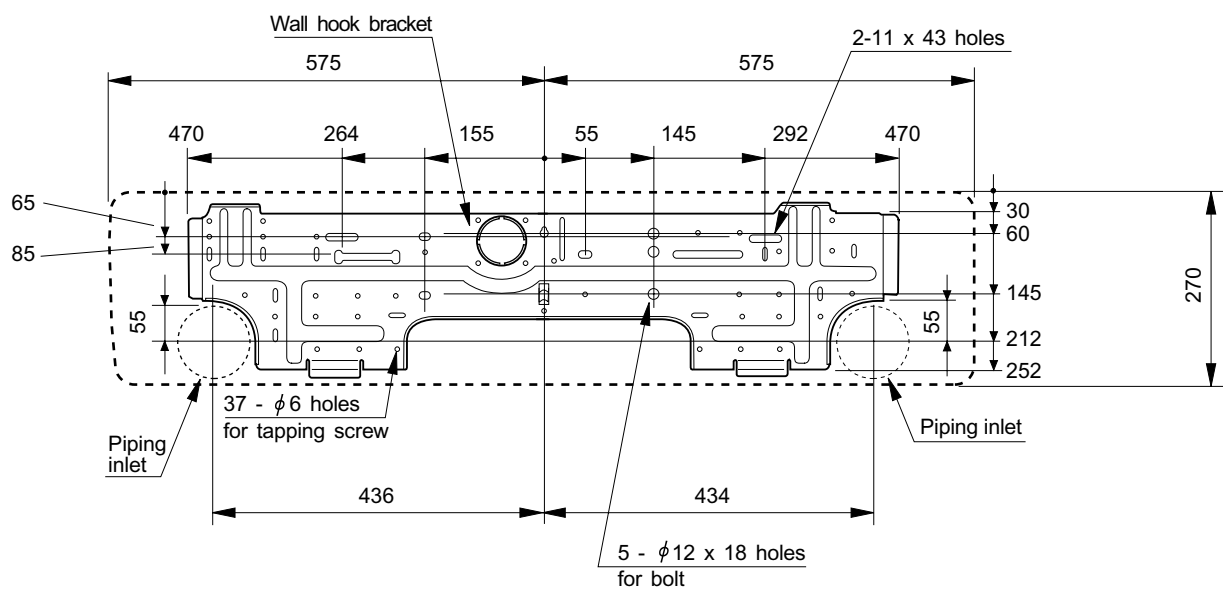


4-5-10 CEILING WALL TYPE

■ **MODELS : AW7, AW9, AW12, AW14, AW18, AW24, AW30** (Unit : mm)



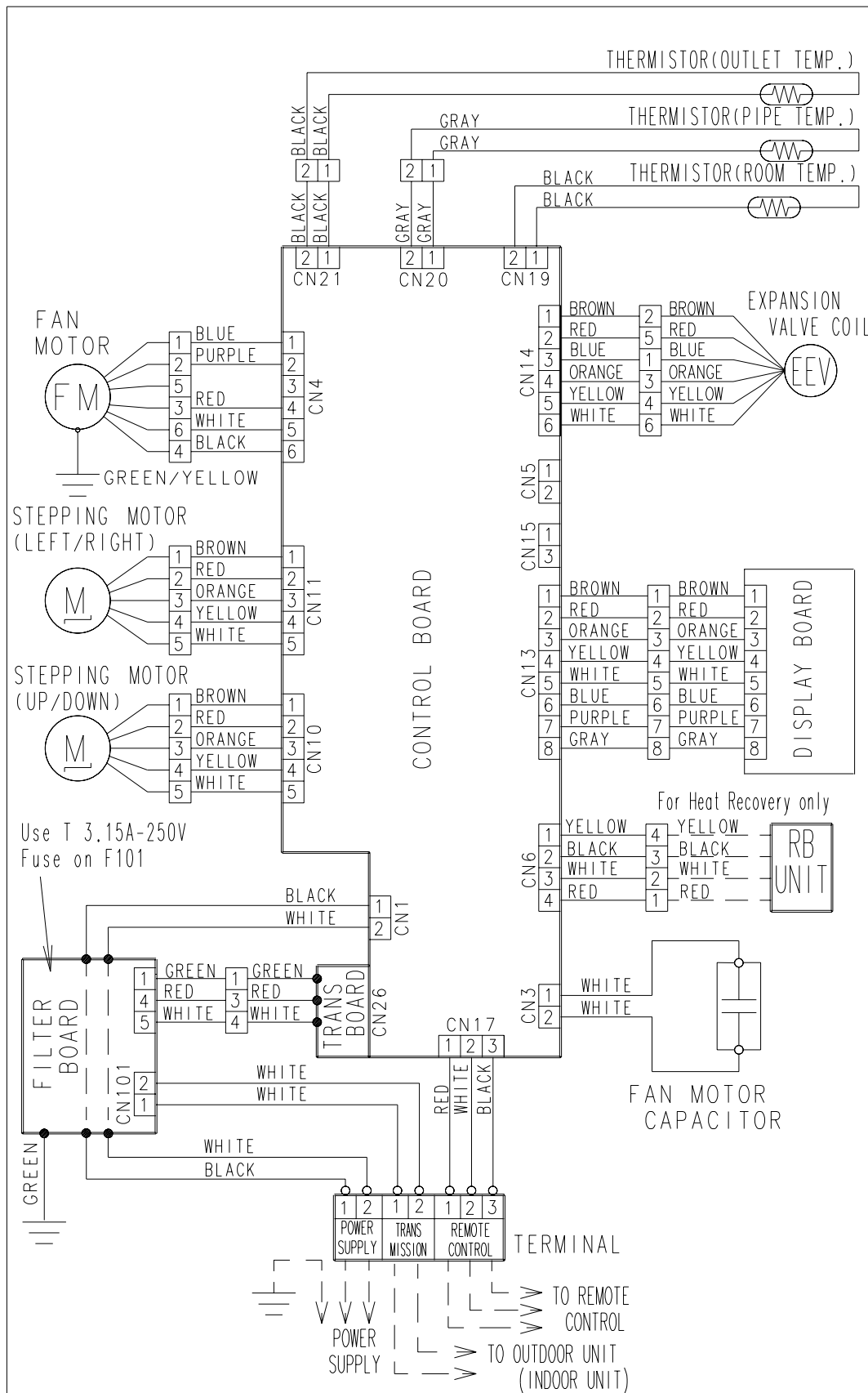
- ① Refrigerant piping flare connection (Gas)
- ② Refrigerant piping flare connection (Liquid)
- ③ Drain piping connection (Drain pipe : I.D. $\phi 14$ O.D. $\phi 28$ L670)



4-6 WIRING DIAGRAMS

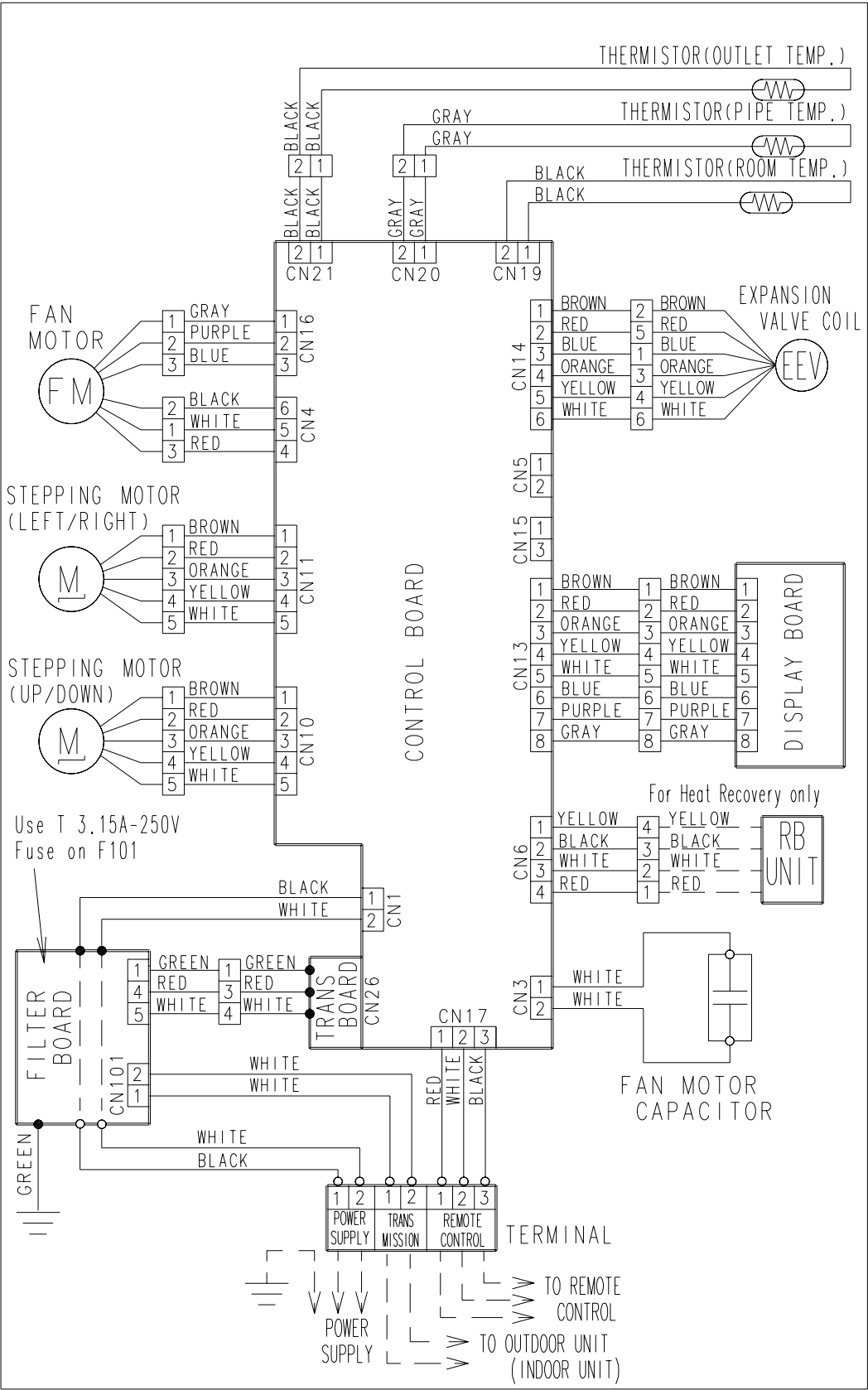
4-6-1 UNIVERSAL FLOOR / CEILING TYPE

■ MODELS : AB12, AB14, AB18, AB24



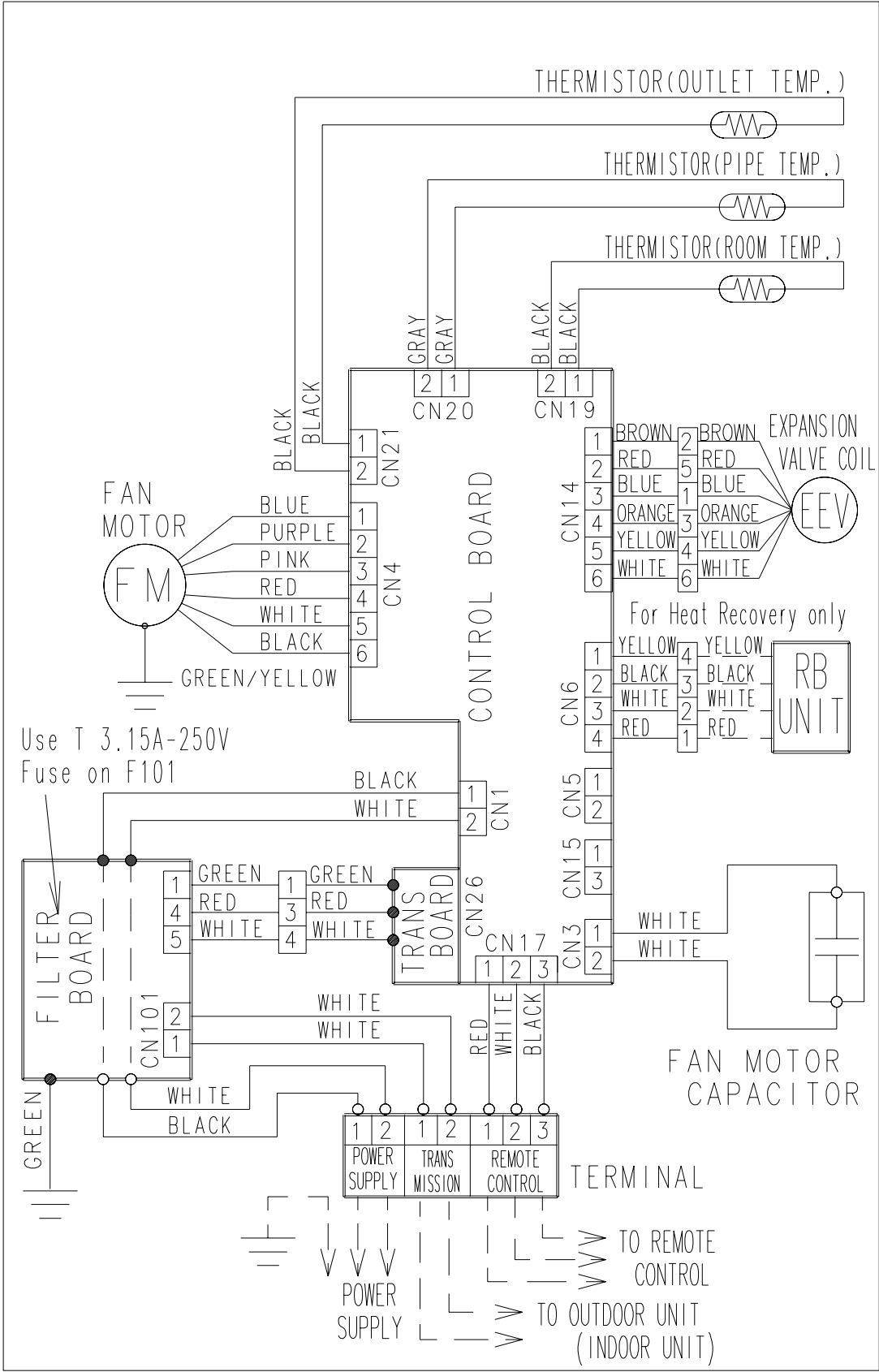
4-6-2 LARGE CEILING TYPE

MODELS : AB30, AB36, AB45, AB54



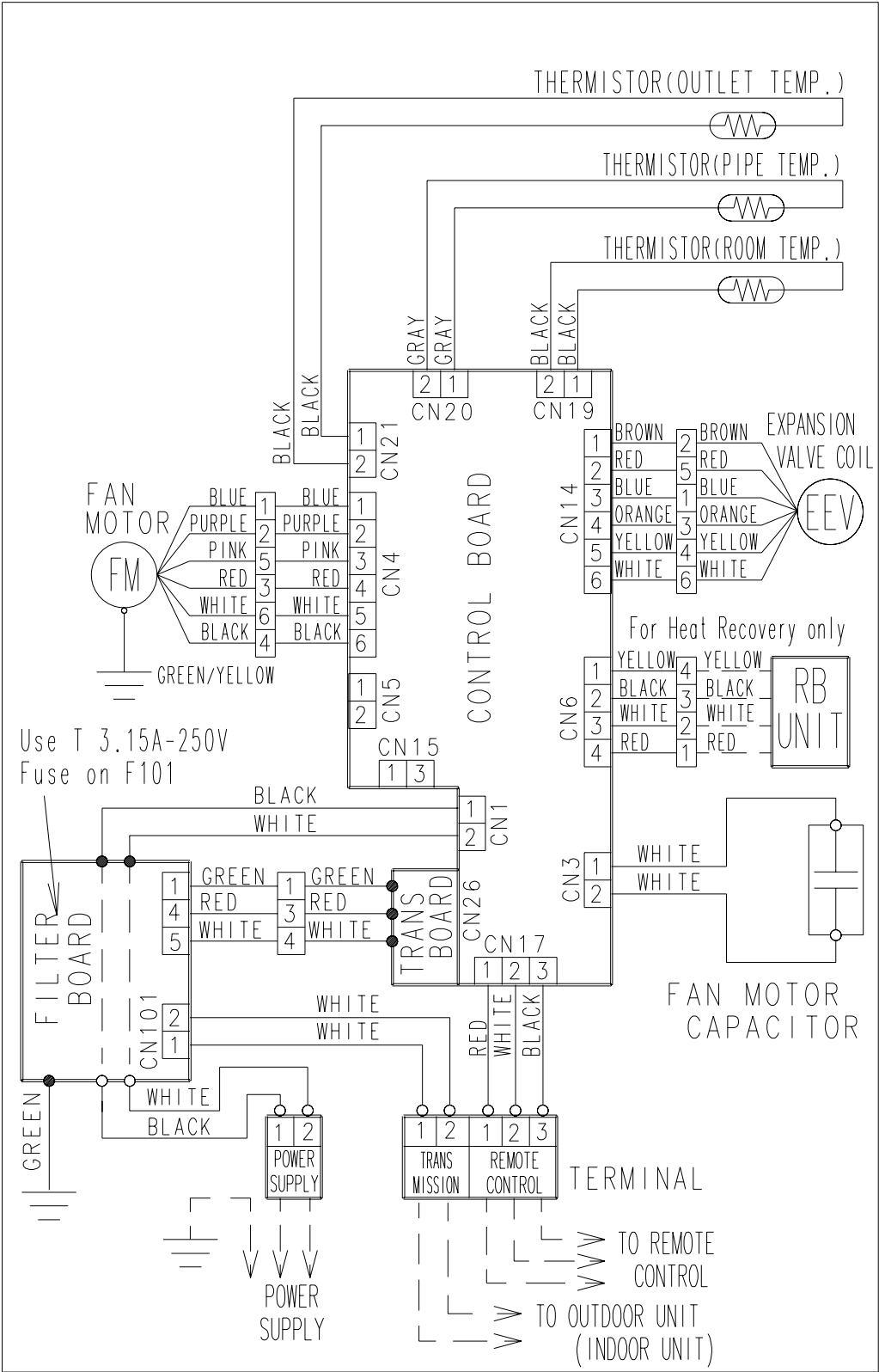
4-6-3 COMPACT DUCT TYPE

■ MODELS : AR7, AR9, AR12, AR14, AR18

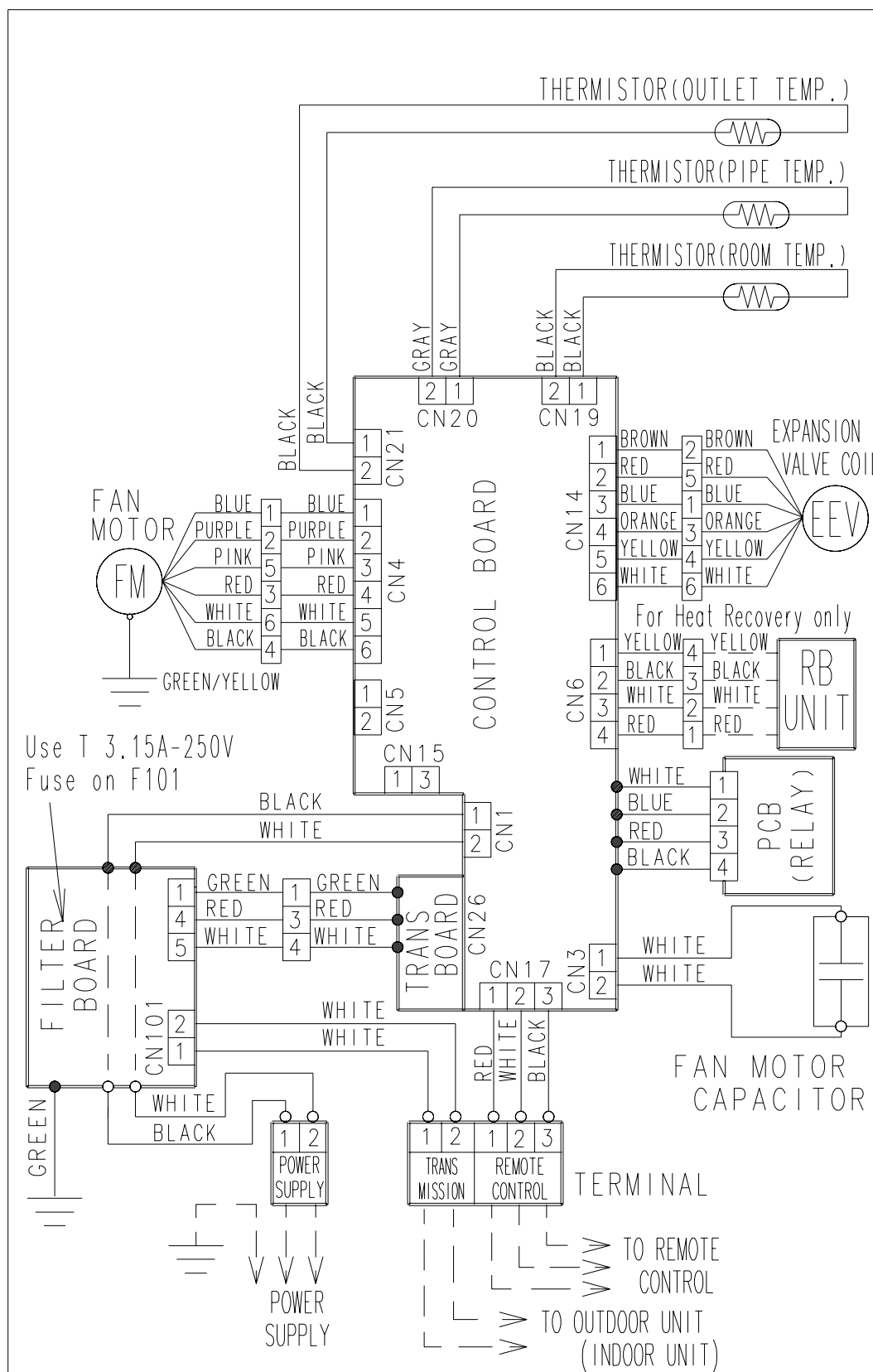


4-6-4 LOW STATIC PRESSURE DUCT TYPE

MODELS : AR25

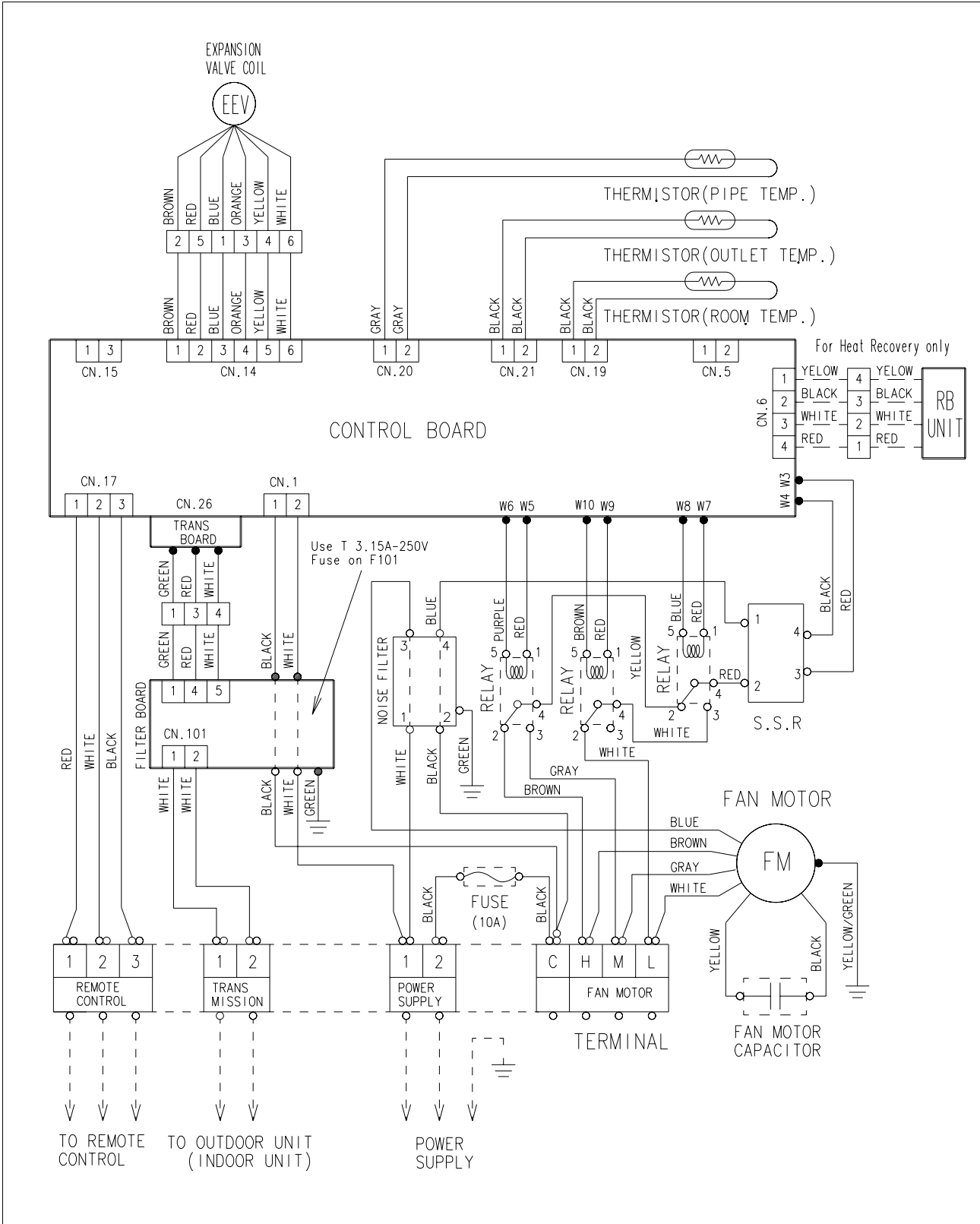


■ MODELS : AR30, AR36, AR45



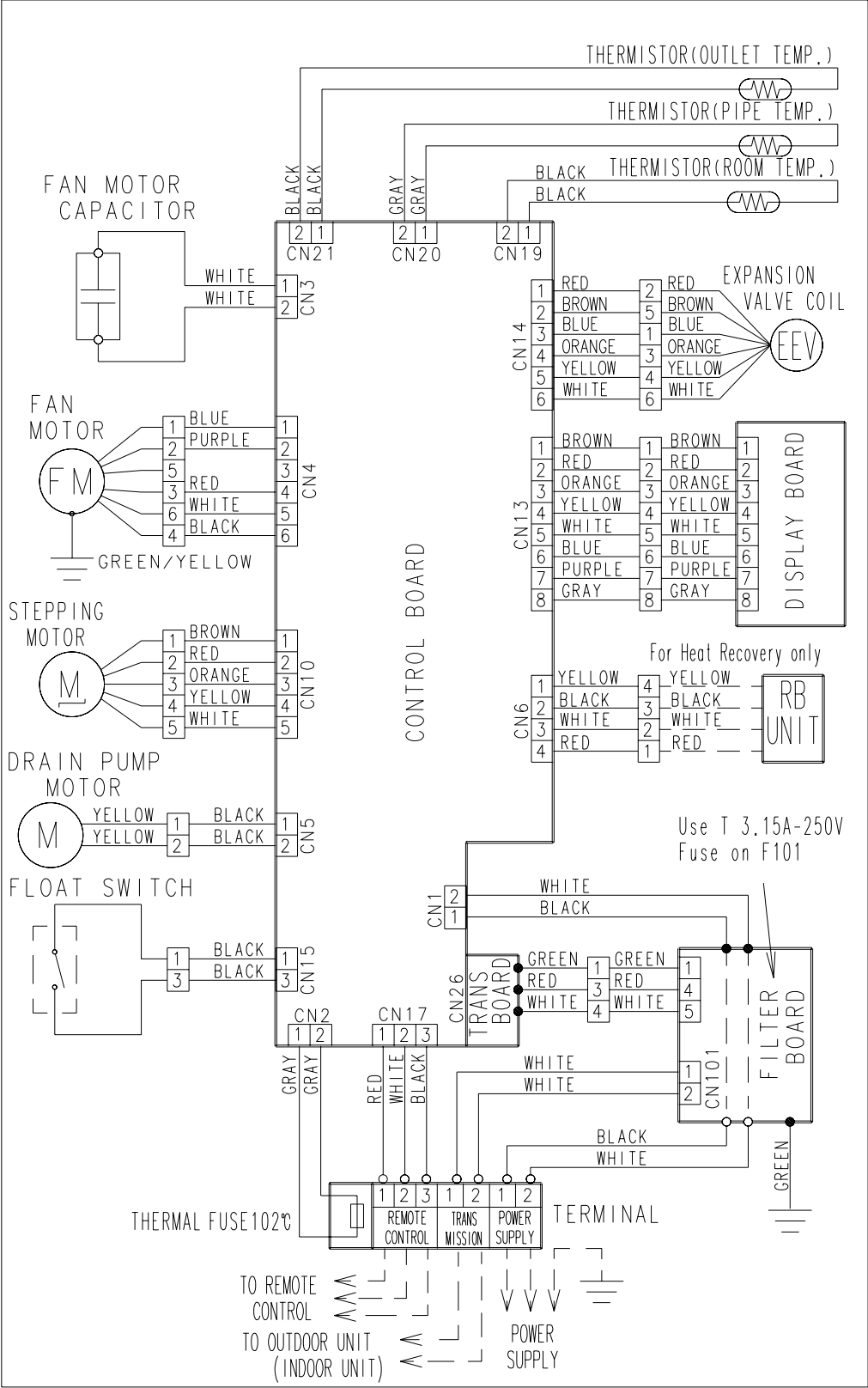
4-6-5 HIGH STATIC PRESSURE DUCT TYPE

MODELS : AR36H, AR45H, AR60H



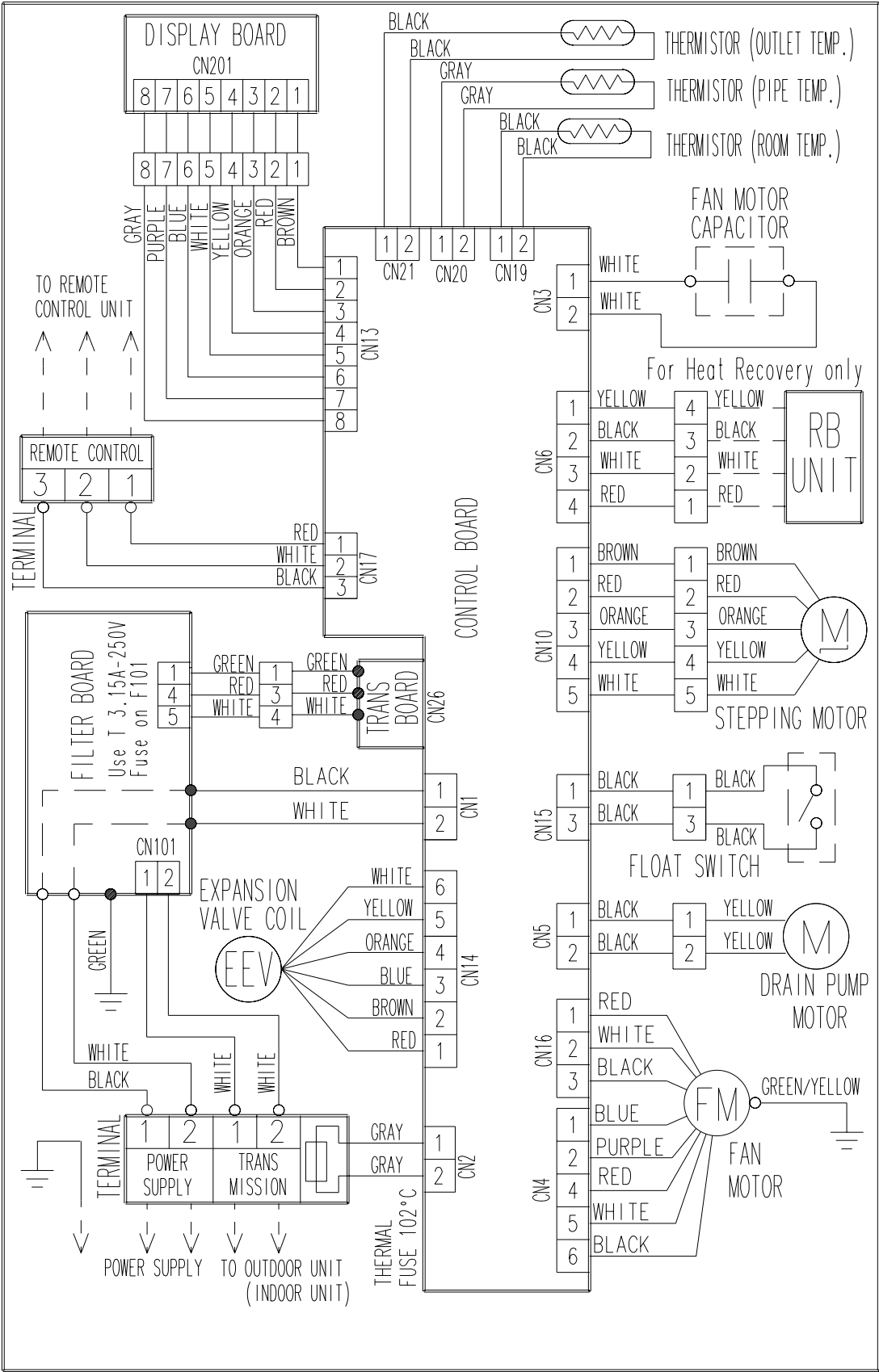
4-6-6 COMPACT CASSETTE TYPE

■ MODELS : AU7, AU9, AU12, AU14, AU18

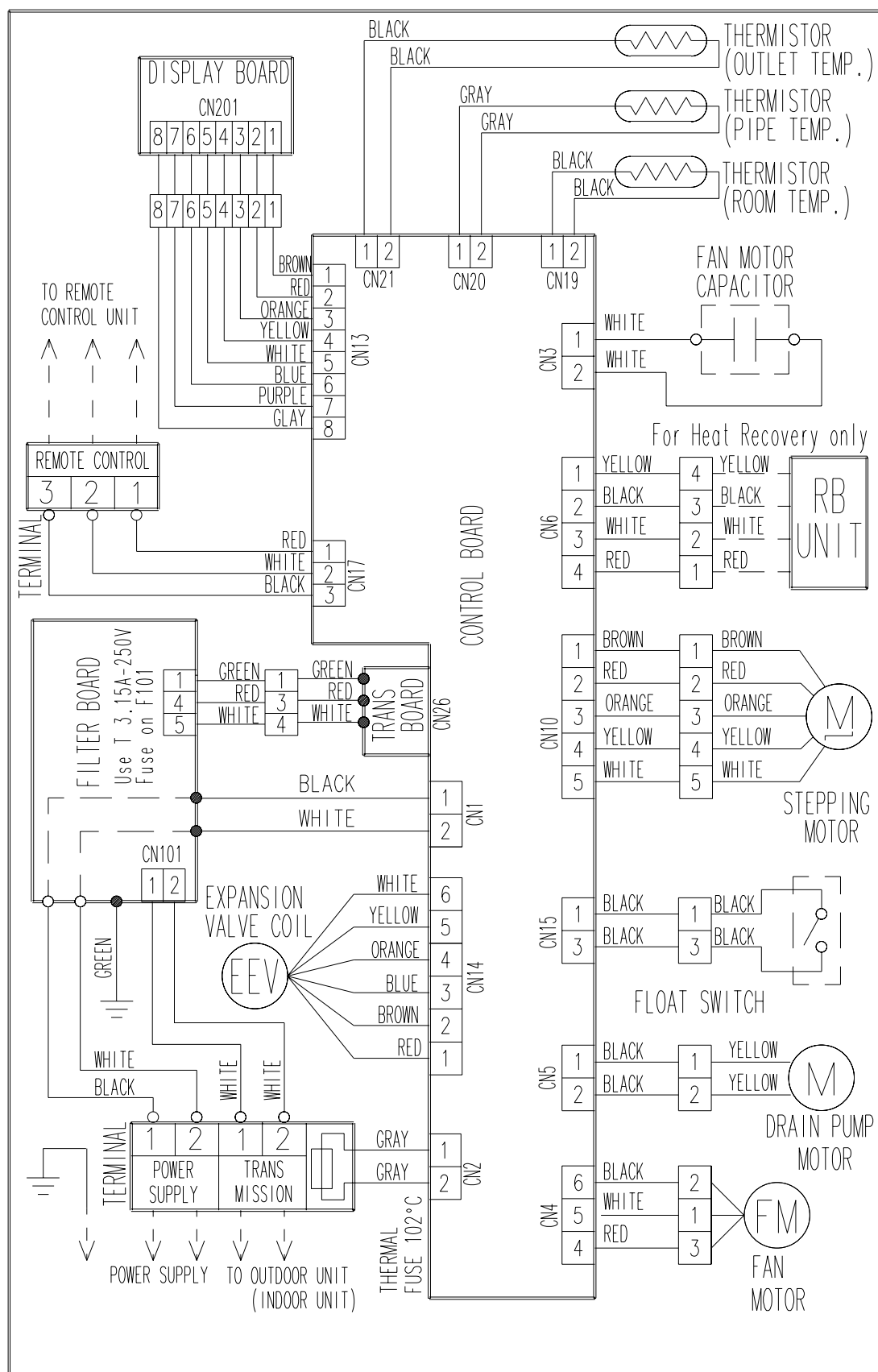


4-6-7 CASSETTE TYPE

MODELS : AU20, AU25, AU30



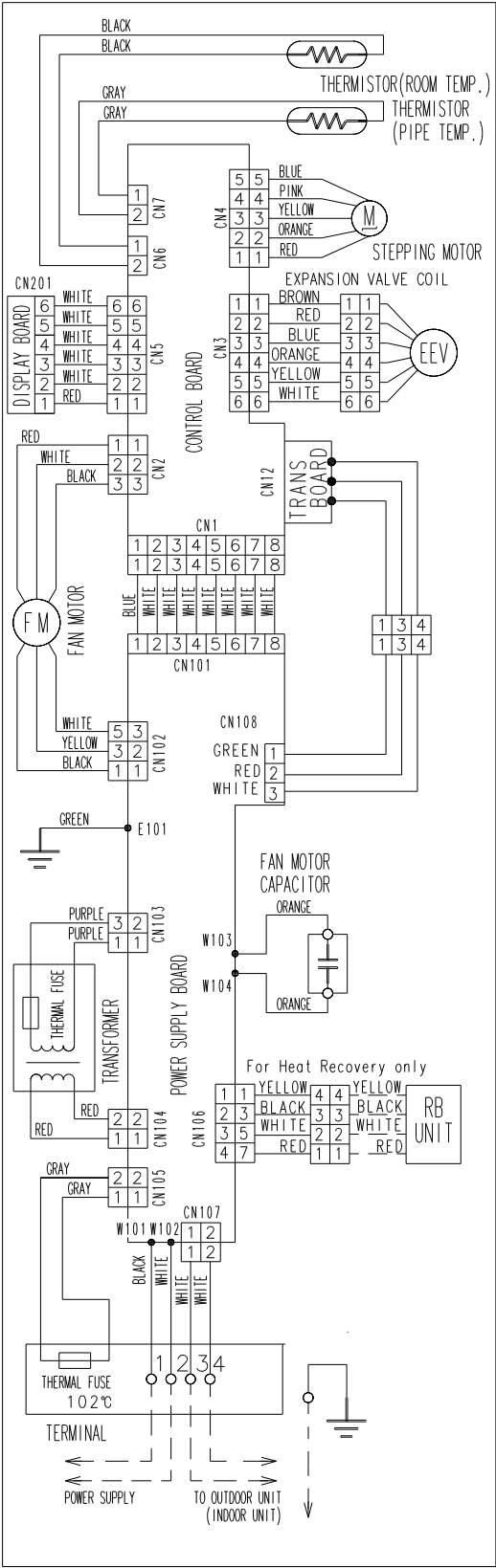
■ MODELS : AU36, AU45, AU54



4-6-8 COMPACT WALL MOUNTED TYPE

■ MODELS : AS7, AS9, AS12, AS14

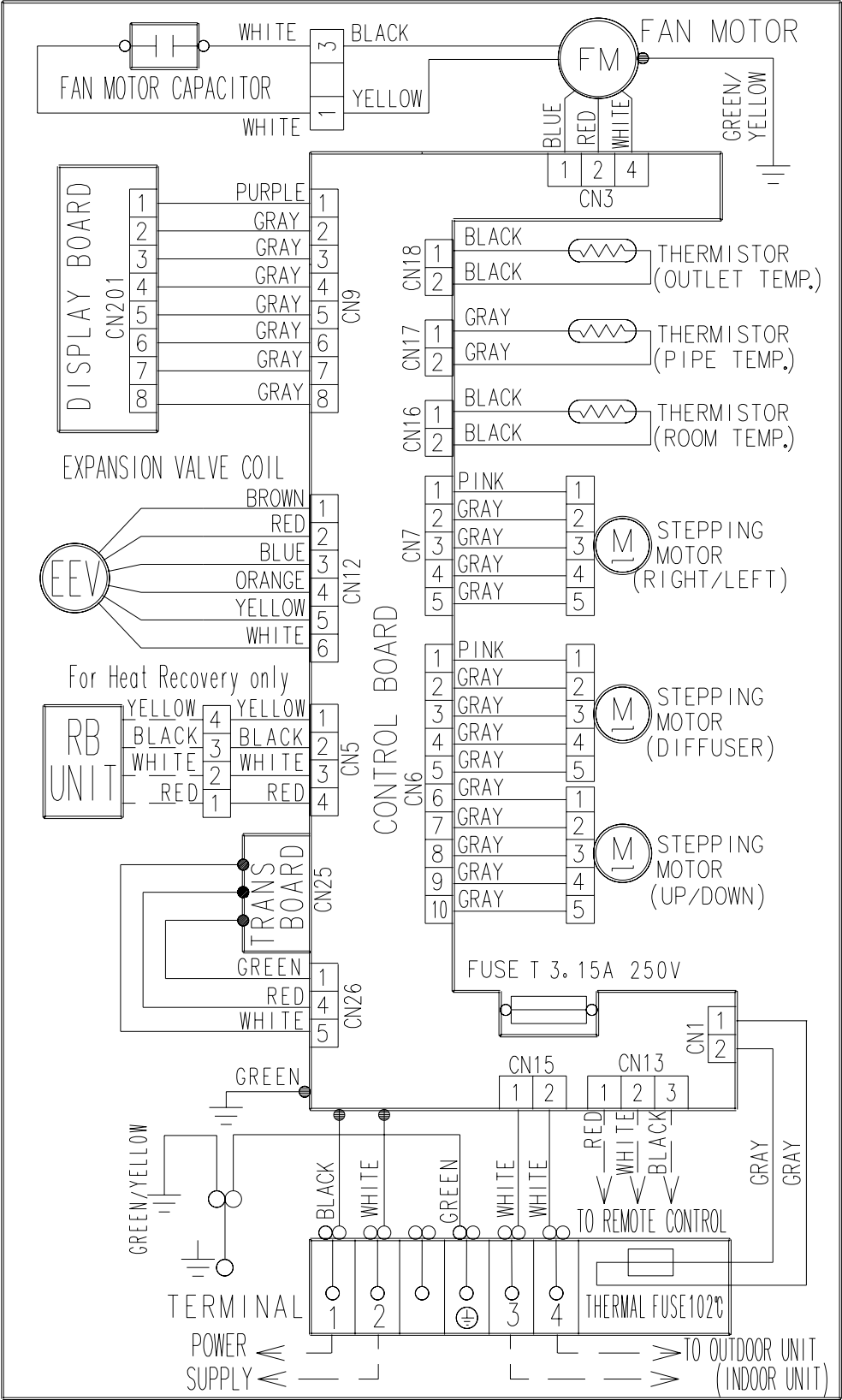
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UNIT



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UNIT

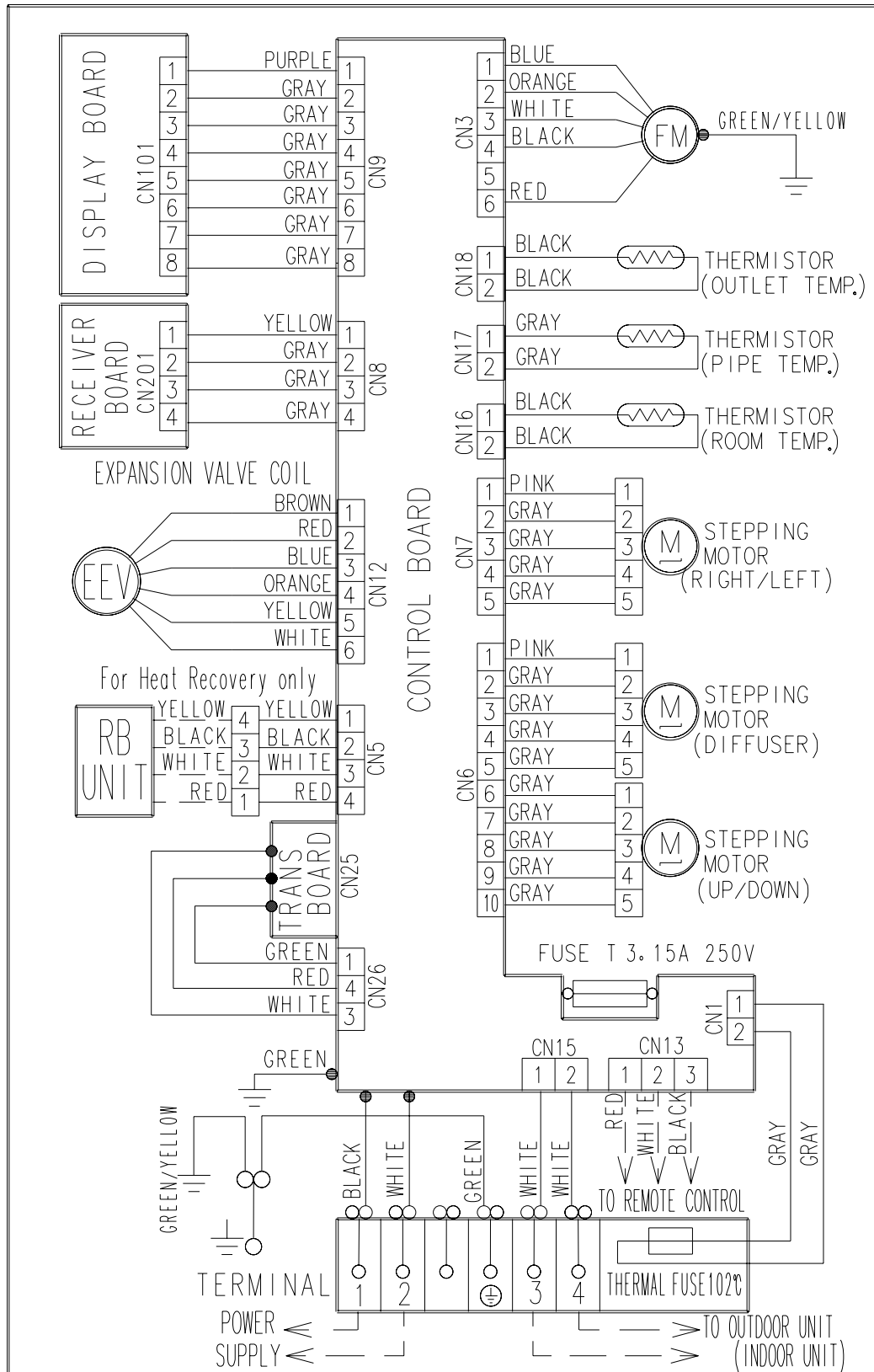
4-6-9 WALL MOUNTED TYPE

MODELS : AS18, AS24, AS30



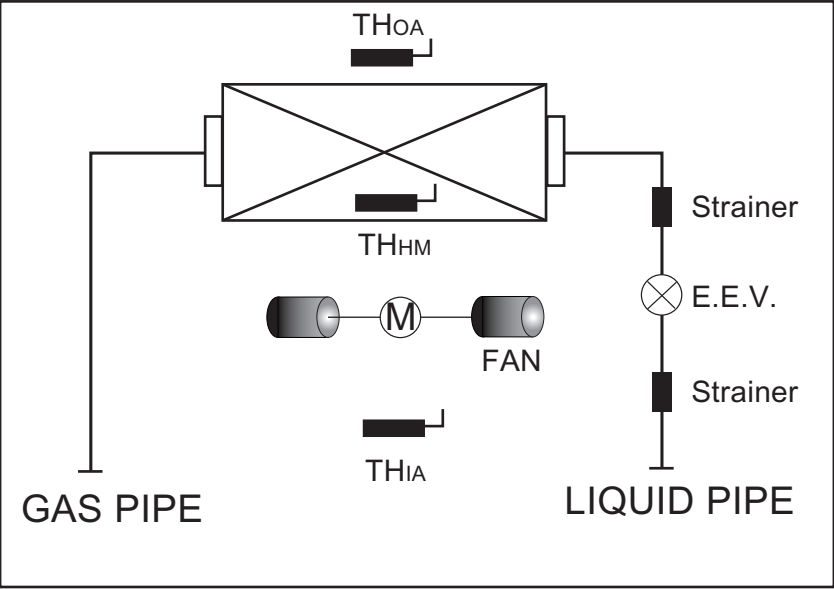
4-6-10 CEILING WALL TYPE

■ MODELS : AW7, AW9, AW12, AW14, AW18, AW24, AW30



4-7 PIPING DIAGRAM

■ INDOOR UNIT



- THIA :Indoor room temp. thermistor
- THoA :Outlet air thermistor
- THHM :Heat exchanger middle thermistor
- E.E.V.:Electronic expansion valve

■ REFRIGERATION PIPE DIAMETER

MODEL CODE	GAS PIPE Size (Thickness)	LIQUID PIPE Size (Thickness)
7, 9	Ø 9.53 (0.8)	Ø 6.35 (0.8)
12, 14	Ø 12.7 (0.8)	Ø 6.35 (0.8)
18, 20, 24, 25	Ø 15.88 (1.0)	Ø 6.35 (0.8)
30	Ø 15.88 (1.0)	Ø 9.53 (0.8)
36, 45, 54, 60	Ø 19.05 (1.0)	Ø 9.53 (0.8)

4-8 CAPACITY TABLE COOLING

4-8-1 UNIVERSAL FLOOR / CEILING TYPE

■ MODEL : AB12

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	2.68	1.90	2.88	2.28	3.29	2.41	3.50	2.42	3.71	2.45	4.12	2.48	4.32	2.52
15	59	2.68	1.90	2.88	2.28	3.29	2.41	3.50	2.42	3.71	2.45	4.12	2.48	4.32	2.52
20	68	2.68	1.90	2.88	2.28	3.29	2.41	3.50	2.42	3.71	2.45	4.12	2.48	4.32	2.52
23	73	2.68	1.90	2.88	2.28	3.29	2.41	3.50	2.42	3.71	2.45	4.12	2.48	4.32	2.52
25	77	2.68	1.90	2.88	2.28	3.29	2.41	3.50	2.42	3.71	2.45	4.12	2.48	4.32	2.52
27	81	2.68	1.90	2.88	2.28	3.29	2.41	3.50	2.42	3.71	2.45	4.12	2.48	4.32	2.52
30	86	2.68	1.90	2.88	2.28	3.29	2.41	3.50	2.42	3.71	2.45	4.12	2.48	4.32	2.52
33	91	2.68	1.90	2.88	2.28	3.29	2.41	3.50	2.42	3.71	2.45	4.12	2.48	4.24	2.51
35	95	2.68	1.90	2.88	2.28	3.29	2.41	3.50	2.42	3.71	2.45	4.10	2.47	4.18	2.48
37	99	2.68	1.90	2.88	2.28	3.29	2.41	3.50	2.42	3.71	2.45	4.04	2.44	4.12	2.48
40	104	2.68	1.90	2.88	2.28	3.29	2.41	3.50	2.42	3.71	2.45	3.96	2.42	4.04	2.43
45	113	2.68	1.90	2.88	2.28	3.29	2.41	3.50	2.42	3.65	2.42	3.81	2.37	3.88	2.38
52	125	2.68	1.90	2.88	2.28	3.29	2.41	3.36	2.32	3.44	2.41	3.59	2.30	3.66	2.31

■ MODEL : AB14

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	3.10	2.29	3.34	2.74	3.81	2.90	4.05	2.92	4.29	2.96	4.76	2.99	5.00	3.04
15	59	3.10	2.29	3.34	2.74	3.81	2.90	4.05	2.92	4.29	2.96	4.76	2.99	5.00	3.04
20	68	3.10	2.29	3.34	2.74	3.81	2.90	4.05	2.92	4.29	2.96	4.76	2.99	5.00	3.04
23	73	3.10	2.29	3.34	2.74	3.81	2.90	4.05	2.92	4.29	2.96	4.76	2.99	5.00	3.04
25	77	3.10	2.29	3.34	2.74	3.81	2.90	4.05	2.92	4.29	2.96	4.76	2.99	5.00	3.04
27	81	3.10	2.29	3.34	2.74	3.81	2.90	4.05	2.92	4.29	2.96	4.76	2.99	5.00	3.04
30	86	3.10	2.29	3.34	2.74	3.81	2.90	4.05	2.92	4.29	2.96	4.76	2.99	5.00	3.04
33	91	3.10	2.29	3.34	2.74	3.81	2.90	4.05	2.92	4.29	2.96	4.76	2.99	4.90	3.03
35	95	3.10	2.29	3.34	2.74	3.81	2.90	4.05	2.92	4.29	2.96	4.74	2.98	4.84	2.99
37	99	3.10	2.29	3.34	2.74	3.81	2.90	4.05	2.92	4.29	2.96	4.68	2.93	4.77	2.99
40	104	3.10	2.29	3.34	2.74	3.81	2.90	4.05	2.92	4.29	2.96	4.58	2.92	4.67	2.93
45	113	3.10	2.29	3.34	2.74	3.81	2.90	4.05	2.92	4.23	2.91	4.40	2.85	4.49	2.87
52	125	3.10	2.29	3.34	2.74	3.81	2.90	3.89	2.84	3.98	2.91	4.15	2.78	4.24	2.79

■ MODEL : AB18

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	4.05	2.92	4.36	3.49	4.99	3.69	5.30	3.71	5.61	3.76	6.24	3.80	6.55	3.86
15	59	4.05	2.92	4.36	3.49	4.99	3.69	5.30	3.71	5.61	3.76	6.24	3.80	6.55	3.86
20	68	4.05	2.92	4.36	3.49	4.99	3.69	5.30	3.71	5.61	3.76	6.24	3.80	6.55	3.86
23	73	4.05	2.92	4.36	3.49	4.99	3.69	5.30	3.71	5.61	3.76	6.24	3.80	6.55	3.86
25	77	4.05	2.92	4.36	3.49	4.99	3.69	5.30	3.71	5.61	3.76	6.24	3.80	6.55	3.86
27	81	4.05	2.92	4.36	3.49	4.99	3.69	5.30	3.71	5.61	3.76	6.24	3.80	6.55	3.86
30	86	4.05	2.92	4.36	3.49	4.99	3.69	5.30	3.71	5.61	3.76	6.24	3.80	6.55	3.86
33	91	4.05	2.92	4.36	3.49	4.99	3.69	5.30	3.71	5.61	3.76	6.24	3.80	6.42	3.85
35	95	4.05	2.92	4.36	3.49	4.99	3.69	5.30	3.71	5.61	3.76	6.21	3.79	6.33	3.80
37	99	4.05	2.92	4.36	3.49	4.99	3.69	5.30	3.71	5.61	3.76	6.12	3.73	6.24	3.81
40	104	4.05	2.92	4.36	3.49	4.99	3.69	5.30	3.71	5.61	3.76	5.99	3.71	6.11	3.73
45	113	4.05	2.92	4.36	3.49	4.99	3.69	5.30	3.71	5.53	3.70	5.76	3.63	5.88	3.65
52	125	4.05	2.92	4.36	3.49	4.99	3.69	5.09	3.56	5.21	3.70	5.43	3.53	5.54	3.55

■ MODEL : AB24

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	5.05	3.48	5.44	4.16	6.21	4.40	6.60	4.42	6.99	4.48	7.76	4.53	8.15	4.60
15	59	5.05	3.48	5.44	4.16	6.21	4.40	6.60	4.42	6.99	4.48	7.76	4.53	8.15	4.60
20	68	5.05	3.48	5.44	4.16	6.21	4.40	6.60	4.42	6.99	4.48	7.76	4.53	8.15	4.60
23	73	5.05	3.48	5.44	4.16	6.21	4.40	6.60	4.42	6.99	4.48	7.76	4.53	8.15	4.60
25	77	5.05	3.48	5.44	4.16	6.21	4.40	6.60	4.42	6.99	4.48	7.76	4.53	8.15	4.60
27	81	5.05	3.48	5.44	4.16	6.21	4.40	6.60	4.42	6.99	4.48	7.76	4.53	8.15	4.60
30	86	5.05	3.48	5.44	4.16	6.21	4.40	6.60	4.42	6.99	4.48	7.76	4.53	8.15	4.60
33	91	5.05	3.48	5.44	4.16	6.21	4.40	6.60	4.42	6.99	4.48	7.76	4.53	7.99	4.59
35	95	5.05	3.48	5.44	4.16	6.21	4.40	6.60	4.42	6.99	4.48	7.73	4.51	7.88	4.53
37	99	5.05	3.48	5.44	4.16	6.21	4.40	6.60	4.42	6.99	4.48	7.62	4.45	7.78	4.54
40	104	5.05	3.48	5.44	4.16	6.21	4.40	6.60	4.42	6.99	4.48	7.46	4.43	7.61	4.44
45	113	5.05	3.48	5.44	4.16	6.21	4.40	6.60	4.42	6.89	4.42	7.18	4.33	7.32	4.35
52	125	5.05	3.48	5.44	4.16	6.21	4.40	6.34	4.25	6.49	4.41	6.76	4.21	6.90	4.23

TC : Total Capacity kW

SHC : Sensible Heat Capacity kW

4-8-2 LARGE CEILING TYPE

■ MODEL : AB30

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.33	10.4	6.41	10.9	6.51
15	59	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.33	10.4	6.41	10.9	6.51
20	68	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.33	10.4	6.41	10.9	6.51
23	73	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.33	10.4	6.41	10.9	6.51
25	77	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.33	10.4	6.41	10.9	6.51
27	81	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.33	10.4	6.41	10.9	6.51
30	86	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.33	10.4	6.41	10.9	6.50
33	91	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.33	10.4	6.41	10.7	6.49
35	95	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.33	10.3	6.38	10.5	6.40
37	99	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.33	10.2	6.29	10.4	6.41
40	104	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.33	9.94	6.25	10.1	6.28
45	113	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.18	6.24	9.57	6.11	9.76	6.14
52	125	6.73	4.91	7.25	5.88	8.28	6.21	8.45	6.00	8.65	6.23	9.02	5.95	9.21	5.98

■ MODEL : AB36

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	8.03	6.03	8.65	7.21	9.88	7.63	10.5	7.67	11.1	7.77	12.4	7.86	13.0	7.98
15	59	8.03	6.03	8.65	7.21	9.88	7.63	10.5	7.67	11.1	7.77	12.4	7.86	13.0	7.98
20	68	8.03	6.03	8.65	7.21	9.88	7.63	10.5	7.67	11.1	7.77	12.4	7.86	13.0	7.98
23	73	8.03	6.03	8.65	7.21	9.88	7.63	10.5	7.67	11.1	7.77	12.4	7.86	13.0	7.98
25	77	8.03	6.03	8.65	7.21	9.88	7.63	10.5	7.67	11.1	7.77	12.4	7.86	13.0	7.98
27	81	8.03	6.03	8.65	7.21	9.88	7.63	10.5	7.67	11.1	7.77	12.4	7.86	13.0	7.98
30	86	8.03	6.03	8.65	7.21	9.88	7.63	10.5	7.67	11.1	7.77	12.4	7.86	13.0	7.98
33	91	8.03	6.03	8.65	7.21	9.88	7.63	10.5	7.67	11.1	7.77	12.4	7.86	12.7	7.96
35	95	8.03	6.03	8.65	7.21	9.88	7.63	10.5	7.67	11.1	7.77	12.3	7.82	12.5	7.85
37	99	8.03	6.03	8.65	7.21	9.88	7.63	10.5	7.67	11.1	7.77	12.1	7.71	12.4	7.87
40	104	8.03	6.03	8.65	7.21	9.88	7.63	10.5	7.67	11.1	7.77	11.9	7.67	12.1	7.70
45	113	8.03	6.03	8.65	7.21	9.88	7.63	10.5	7.67	11.0	7.65	11.4	7.50	11.7	7.53
52	125	8.03	6.03	8.65	7.21	8.88	7.62	10.1	7.36	10.3	7.64	10.8	7.29	11.0	7.33

■ MODEL : AB45

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.9	8.96	15.7	9.26
15	59	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.9	8.96	15.7	9.26
20	68	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.9	8.96	15.7	9.26
23	73	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.9	8.96	15.7	9.26
25	77	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.9	8.96	15.7	9.26
27	81	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.9	8.96	15.7	9.26
30	86	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.9	8.96	15.7	9.25
33	91	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.9	8.96	15.4	9.23
35	95	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.9	8.93	15.2	9.10
37	99	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.7	8.80	15.0	9.13
40	104	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.4	8.75	14.6	8.93
45	113	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.3	8.75	13.8	8.56	14.1	8.74
52	125	9.71	6.99	10.5	8.37	11.9	8.84	12.2	8.54	12.5	8.74	13.0	8.20	13.3	8.37

■ MODEL : AB54

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	10.8	7.87	11.6	9.42	13.3	9.96	14.1	10.0	14.9	9.99	16.6	10.1	17.1	10.4
15	59	10.8	7.87	11.6	9.42	13.3	9.96	14.1	10.0	14.9	9.99	16.6	10.1	17.1	10.4
20	68	10.8	7.87	11.6	9.42	13.3	9.96	14.1	10.0	14.9	9.99	16.6	10.1	17.1	10.4
23	73	10.8	7.87	11.6	9.42	13.3	9.96	14.1	10.0	14.9	9.99	16.6	10.1	17.1	10.4
25	77	10.8	7.87	11.6	9.42	13.3	9.96	14.1	10.0	14.9	9.99	16.6	10.1	17.1	10.4
27	81	10.8	7.87	11.6	9.42	13.3	9.96	14.1	10.0	14.9	9.99	16.6	10.1	17.1	10.4
30	86	10.8	7.87	11.6	9.42	13.3	9.96	14.1	10.0	14.9	9.99	16.6	10.1	17.1	10.4
33	91	10.8	7.87	11.6	9.42	13.3	9.96	14.1	10.0	14.9	9.99	16.6	10.1	17.1	10.4
35	95	10.8	7.87	11.6	9.42	13.3	9.96	14.1	10.0	14.9	9.99	16.5	10.1	16.8	10.3
37	99	10.8	7.87	11.6	9.42	13.3	9.96	14.1	10.0	14.9	9.99	16.3	9.91	16.6	10.3
40	104	10.8	7.87	11.6	9.42	13.3	9.96	14.1	10.0	14.9	9.99	15.9	9.86	16.3	10.1
45	113	10.8	7.87	11.6	9.42	13.3	9.96	14.1	10.0	14.7	9.85	15.3	9.64	15.6	9.84
52	125	10.8	7.87	11.6	9.42	13.3	9.96	13.5	9.62	13.9	9.84	14.5	9.23	14.8	9.43

TC : Total Capacity kW
SHC : Sensible Heat Capacity kW

4-8-3 COMPACT DUCT TYPE (1/2)

MODEL : AR7

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.53	1.70	2.66	1.72
15	59	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.53	1.70	2.66	1.72
20	68	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.53	1.70	2.66	1.72
23	73	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.53	1.70	2.66	1.72
25	77	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.53	1.70	2.66	1.72
27	81	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.53	1.70	2.66	1.72
30	86	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.53	1.70	2.66	1.72
33	91	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.53	1.70	2.60	1.72
35	95	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.52	1.69	2.57	1.70
37	99	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.48	1.67	2.53	1.70
40	104	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.43	1.66	2.48	1.66
45	113	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.24	1.65	2.34	1.62	2.39	1.63
52	125	1.64	1.30	1.77	1.56	2.02	1.65	2.07	1.59	2.11	1.65	2.20	1.58	2.25	1.58

MODEL : AR9

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.29	2.12	3.46	2.16
15	59	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.29	2.12	3.46	2.16
20	68	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.29	2.12	3.46	2.16
23	73	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.29	2.12	3.46	2.16
25	77	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.29	2.12	3.46	2.16
27	81	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.29	2.12	3.46	1.16
30	86	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.29	2.12	3.46	2.16
33	91	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.29	2.12	3.39	2.15
35	95	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.28	2.11	3.34	2.12
37	99	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.23	2.09	3.30	2.13
40	104	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.16	2.07	3.23	2.08
45	113	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.92	2.07	3.04	2.03	3.11	2.04
52	125	2.14	1.63	2.31	1.95	2.63	2.06	2.69	1.99	2.75	2.07	2.87	1.97	2.93	1.98

MODEL : AR12

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.12	2.51	4.32	2.59
15	59	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.12	2.51	4.32	2.59
20	68	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.12	2.51	4.32	2.59
23	73	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.12	2.51	4.32	2.59
25	77	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.12	2.51	4.32	2.59
27	81	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.12	2.51	4.32	2.59
30	86	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.12	2.51	4.32	2.59
33	91	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.12	2.51	4.24	2.58
35	95	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.10	2.49	4.18	2.54
37	99	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.04	2.46	4.12	2.55
40	104	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	3.96	2.45	4.04	2.50
45	113	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.65	2.44	3.81	2.39	3.88	2.44
52	125	2.68	1.95	2.88	2.34	3.29	2.47	3.36	2.39	3.44	2.44	3.59	2.29	3.66	2.34

TC : Total Capacity kW
 SHC : Sensible Heat Capacity kW

4-8-3 COMPACT DUCT TYPE (2/2)

■ MODEL : AR14

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	3.06	2.42	3.29	2.90	3.76	3.06	4.00	3.08	4.24	3.07	4.71	3.11	4.94	3.21
15	59	3.06	2.42	3.29	2.90	3.76	3.06	4.00	3.08	4.24	3.07	4.71	3.11	4.94	3.21
20	68	3.06	2.42	3.29	2.90	3.76	3.06	4.00	3.08	4.24	3.07	4.71	3.11	4.94	3.21
23	73	3.06	2.42	3.29	2.90	3.76	3.06	4.00	3.08	4.24	3.07	4.71	3.11	4.94	3.21
25	77	3.06	2.42	3.29	2.90	3.76	3.06	4.00	3.08	4.24	3.07	4.71	3.11	4.94	3.21
27	81	3.06	2.42	3.29	2.90	3.76	3.06	4.00	3.08	4.24	3.07	4.71	3.11	4.94	3.21
30	86	3.06	2.42	3.29	2.90	3.76	3.06	4.00	3.08	4.24	3.07	4.71	3.11	4.94	3.21
33	91	3.06	2.42	3.29	2.90	3.76	3.06	4.00	3.08	4.24	3.07	4.71	3.11	4.84	3.20
35	95	3.06	2.42	3.29	2.90	3.76	3.06	4.00	3.08	4.24	3.07	4.69	3.09	4.78	3.15
37	99	3.06	2.42	3.29	2.90	3.76	3.06	4.00	3.08	4.24	3.07	4.62	3.05	4.71	3.16
40	104	3.06	2.42	3.29	2.90	3.76	3.06	4.00	3.08	4.24	3.07	4.52	3.03	4.61	3.09
45	113	3.06	2.42	3.29	2.90	3.76	3.06	4.00	3.08	4.17	3.03	4.35	2.97	4.44	3.03
52	125	3.06	2.42	3.29	2.90	3.76	3.06	3.84	2.96	3.93	3.03	4.10	2.84	4.18	2.90

■ MODEL : AR18

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	4.05	3.04	4.36	3.64	4.99	3.85	5.30	3.87	5.61	3.86	6.24	3.90	6.55	4.03
15	59	4.05	3.04	4.36	3.64	4.99	3.85	5.30	3.87	5.61	3.86	6.24	3.90	6.55	4.03
20	68	4.05	3.04	4.36	3.64	4.99	3.85	5.30	3.87	5.61	3.86	6.24	3.90	6.55	4.03
23	73	4.05	3.04	4.36	3.64	4.99	3.85	5.30	3.87	5.61	3.86	6.24	3.90	6.55	4.03
25	77	4.05	3.04	4.36	3.64	4.99	3.85	5.30	3.87	5.61	3.86	6.24	3.90	6.55	4.03
27	81	4.05	3.04	4.36	3.64	4.99	3.85	5.30	3.87	5.61	3.86	6.24	3.90	6.55	4.03
30	86	4.05	3.04	4.36	3.64	4.99	3.85	5.30	3.87	5.61	3.86	6.24	3.90	6.55	4.03
33	91	4.05	3.04	4.36	3.64	4.99	3.85	5.30	3.87	5.61	3.86	6.24	3.90	6.42	4.02
35	95	4.05	3.04	4.36	3.64	4.99	3.85	5.30	3.87	5.61	3.86	6.21	3.88	6.33	3.96
37	99	4.05	3.04	4.36	3.64	4.99	3.85	5.30	3.87	5.61	3.86	6.12	3.83	6.24	3.97
40	104	4.05	3.04	4.36	3.64	4.99	3.85	5.30	3.87	5.61	3.86	5.99	3.81	6.11	3.89
45	113	4.05	3.04	4.36	3.64	4.99	3.85	5.30	3.87	5.53	3.81	5.76	3.73	5.88	3.80
52	125	4.05	3.04	4.36	3.64	4.99	3.85	5.09	3.72	5.21	3.80	5.43	3.57	5.54	3.64

TC : Total Capacity kW
SHC : Sensible Heat Capacity kW

4-8-4 LOW STATIC PRESSURE DUCT TYPE

■ MODEL : AR25

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	5.39	4.10	5.81	4.91	6.64	5.19	7.05	5.22	7.46	5.21	8.29	5.26	8.71	5.43
15	59	5.39	4.10	5.81	4.91	6.64	5.19	7.05	5.22	7.46	5.21	8.29	5.26	8.71	5.43
20	68	5.39	4.10	5.81	4.91	6.64	5.19	7.05	5.22	7.46	5.21	8.29	5.26	8.71	5.43
23	73	5.39	4.10	5.81	4.91	6.64	5.19	7.05	5.22	7.46	5.21	8.29	5.26	8.71	5.43
25	77	5.39	4.10	5.81	4.91	6.64	5.19	7.05	5.22	7.46	5.21	8.29	5.26	8.71	5.43
27	81	5.39	4.10	5.81	4.91	6.64	5.19	7.05	5.22	7.46	5.21	8.29	5.26	8.71	5.43
30	86	5.39	4.10	5.81	4.91	6.64	5.19	7.05	5.22	7.46	5.21	8.29	5.26	8.71	5.43
33	91	5.39	4.10	5.81	4.91	6.64	5.19	7.05	5.22	7.46	5.21	8.29	5.26	8.54	5.41
35	95	5.39	4.10	5.81	4.91	6.64	5.19	7.05	5.22	7.46	5.21	8.26	5.24	8.42	5.34
37	99	5.39	4.10	5.81	4.91	6.64	5.19	7.05	5.22	7.46	5.21	8.14	5.16	8.31	5.36
40	104	5.39	4.10	5.81	4.91	6.64	5.19	7.05	5.22	7.46	5.21	7.97	5.14	8.13	5.24
45	113	5.39	4.10	5.81	4.91	6.64	5.19	7.05	5.22	7.36	5.13	7.67	5.02	7.82	5.13
52	125	5.39	4.10	5.81	4.91	6.63	5.19	6.77	5.01	6.93	5.13	7.23	4.81	7.38	4.91

■ MODEL : AR30

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.24	10.4	6.30	10.9	6.51
15	59	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.24	10.4	6.30	10.9	6.51
20	68	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.24	10.4	6.30	10.9	6.51
23	73	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.24	10.4	6.30	10.9	6.51
25	77	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.24	10.4	6.30	10.9	6.51
27	81	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.24	10.4	6.30	10.9	6.51
30	86	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.24	10.4	6.30	10.9	6.50
33	91	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.24	10.4	6.30	10.7	6.49
35	95	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.24	10.3	6.27	10.5	6.40
37	99	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.24	10.2	6.19	10.4	6.41
40	104	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.32	6.24	9.94	6.15	10.1	6.28
45	113	6.73	4.91	7.25	5.88	8.28	6.22	8.80	6.25	9.18	6.15	9.57	6.02	9.76	6.14
52	125	6.73	4.91	7.25	5.88	8.28	6.21	8.45	6.00	8.65	6.14	9.02	5.76	9.21	5.88

■ MODEL : AR36

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.4	7.41	13.0	7.65
15	59	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.4	7.41	13.0	7.65
20	68	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.4	7.41	13.0	7.65
23	73	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.4	7.41	13.0	7.65
25	77	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.4	7.41	13.0	7.65
27	81	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.4	7.41	13.0	7.65
30	86	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.4	7.41	13.0	7.65
33	91	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.4	7.41	12.7	7.63
35	95	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.3	7.38	12.5	7.53
37	99	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.1	7.28	12.4	7.55
40	104	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	11.9	7.24	12.1	7.38
45	113	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.0	7.23	11.4	7.08	11.7	7.22
52	125	8.03	5.78	8.65	6.92	9.88	7.31	10.1	7.06	10.3	7.22	10.8	6.78	11.0	6.92

■ MODEL : AR45

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.9	8.09	15.7	9.39
15	59	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.9	8.09	15.7	9.39
20	68	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.9	8.09	15.7	8.39
23	73	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.9	8.09	15.7	8.39
25	77	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.9	8.09	15.7	8.39
27	81	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.9	8.09	15.7	9.39
30	86	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.9	8.09	15.7	9.39
33	91	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.9	9.09	15.4	9.36
35	95	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.9	9.05	15.2	9.23
37	99	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.7	8.93	15.0	9.26
40	104	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.4	8.88	14.6	9.06
45	113	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.3	8.87	13.8	8.68	14.1	8.86
52	125	9.71	7.09	10.5	8.49	11.9	8.97	12.2	8.66	12.5	8.86	13.0	8.32	13.3	8.49

TC : Total Capacity kW
SHC : Sensible Heat Capacity kW

4-8-5 HIGH STATIC PRESSURE DUCT TYPE

■ MODEL : AR36H

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.4	7.41	13.0	7.65
15	59	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.4	7.41	13.0	7.65
20	68	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.4	7.41	13.0	7.65
23	73	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.4	7.41	13.0	7.65
25	77	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.4	7.41	13.0	7.65
27	81	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.4	7.41	13.0	7.65
30	86	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.4	7.41	13.0	7.65
33	91	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.4	7.41	12.7	7.63
35	95	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.3	7.38	12.5	7.53
37	99	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	12.1	7.28	12.4	7.55
40	104	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.1	7.34	11.9	7.24	12.1	7.38
45	113	8.03	5.78	8.65	6.92	9.88	7.31	10.5	7.35	11.0	7.23	11.4	7.08	11.7	7.22
52	125	8.03	5.78	8.65	6.92	9.88	7.31	10.1	7.06	10.3	7.22	10.8	6.78	11.0	6.92

■ MODEL : AR45H

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.9	9.09	15.7	9.39
15	59	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.9	9.09	15.7	9.39
20	68	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.9	9.09	15.7	9.39
23	73	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.9	9.09	15.7	9.39
25	77	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.9	9.09	15.7	9.39
27	81	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.9	9.09	15.7	9.39
30	86	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.9	9.09	15.7	9.39
33	91	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.9	9.09	15.4	9.36
35	95	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.9	9.05	15.2	9.23
37	99	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.7	8.93	15.0	9.26
40	104	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.4	9.00	14.4	8.88	14.6	9.06
45	113	9.71	7.09	10.5	8.49	12.0	8.97	12.7	9.02	13.3	8.87	13.8	8.68	14.1	8.86
52	125	9.71	7.09	10.5	8.49	11.9	8.97	12.2	8.66	12.5	8.74	13.0	8.32	13.3	8.49

■ MODEL : AR60H

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	13.0	9.63	14.0	11.5	16.0	12.2	17.0	12.2	18.0	12.2	20.0	12.3	21.0	12.7
15	59	13.0	9.63	14.0	11.5	16.0	12.2	17.0	12.2	18.0	12.2	20.0	12.3	21.0	12.7
20	68	13.0	9.63	14.0	11.5	16.0	12.2	17.0	12.2	18.0	12.2	20.0	12.3	21.0	12.7
23	73	13.0	9.63	14.0	11.5	16.0	12.2	17.0	12.2	18.0	12.2	20.0	12.3	21.0	12.7
25	77	13.0	9.63	14.0	11.5	16.0	12.2	17.0	12.2	18.0	12.2	20.0	12.3	21.0	12.7
27	81	13.0	9.63	14.0	11.5	16.0	12.2	17.0	12.2	18.0	12.2	20.0	12.3	21.0	12.7
30	86	13.0	9.63	14.0	11.5	16.0	12.2	17.0	12.2	18.0	12.2	20.0	12.3	21.0	12.7
33	91	13.0	9.63	14.0	11.5	16.0	12.2	17.0	12.2	18.0	12.2	20.0	12.3	20.6	12.7
35	95	13.0	9.63	14.0	11.5	16.0	12.2	17.0	12.2	18.0	12.2	19.9	12.3	20.3	12.5
37	99	13.0	9.63	14.0	11.5	16.0	12.2	17.0	12.2	18.0	12.2	19.6	12.1	20.0	12.6
40	104	13.0	9.63	14.0	11.5	16.0	12.2	17.0	12.2	18.0	12.2	19.2	12.1	19.6	12.3
45	113	13.0	9.63	14.0	11.5	16.0	12.2	17.0	12.2	17.7	12.0	18.5	11.8	18.9	12.0
52	125	13.0	9.63	14.0	11.5	16.0	12.2	16.3	11.9	16.7	12.0	17.4	11.3	17.8	11.5

TC : Total Capacity kW
SHC : Sensible Heat Capacity kW

4-8-6 COMPACT CASSETTE TYPE (1/2)

■ MODEL : AU7

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	1.64	1.20	1.77	1.44	2.02	1.52	2.15	1.53	2.28	1.52	2.53	1.54	2.66	1.59
15	59	1.64	1.20	1.77	1.44	2.02	1.52	2.15	1.53	2.28	1.52	2.53	1.54	2.66	1.59
20	68	1.64	1.20	1.77	1.44	2.02	1.52	2.15	1.53	2.28	1.52	2.53	1.54	2.66	1.59
23	73	1.64	1.45	1.77	1.44	2.02	1.52	2.15	1.53	2.28	1.52	2.53	1.54	2.66	1.59
25	77	1.64	1.20	1.77	1.44	2.02	1.52	2.15	1.53	2.28	1.52	2.53	1.54	2.66	1.59
27	81	1.64	1.20	1.77	1.44	2.02	1.52	2.15	1.53	2.28	1.52	2.53	1.54	2.66	1.59
30	86	1.64	1.20	1.77	1.44	2.02	1.52	2.15	1.53	2.28	1.52	2.53	1.54	2.66	1.59
33	91	1.64	1.20	1.77	1.44	2.02	1.52	2.15	1.53	2.28	1.52	2.53	1.54	2.60	1.58
35	95	1.64	1.20	1.77	1.44	2.02	1.52	2.15	1.53	2.28	1.52	2.52	1.53	2.57	1.56
37	99	1.64	1.20	1.77	1.44	2.02	1.52	2.15	1.53	2.28	1.52	2.48	1.51	2.53	1.57
40	104	1.64	1.20	1.77	1.44	2.02	1.52	2.15	1.53	2.28	1.52	2.43	1.50	2.48	1.53
45	113	1.64	1.20	1.77	1.44	2.02	1.52	2.15	1.53	2.24	1.50	2.34	1.47	2.39	1.50
52	125	1.64	1.20	1.77	1.44	2.02	1.52	2.07	1.47	2.11	1.50	2.20	1.41	2.25	1.44

■ MODEL : AU9

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	2.14	1.54	2.31	1.84	2.64	1.95	2.80	1.96	2.96	1.96	3.29	1.98	3.46	2.04
15	59	2.14	1.54	2.31	1.84	2.64	1.95	2.80	1.96	2.96	1.96	3.29	1.98	3.46	2.04
20	68	2.14	1.54	2.31	1.84	2.64	1.95	2.80	1.96	2.96	1.96	3.29	1.98	3.46	2.04
23	73	2.14	1.54	2.31	1.84	2.64	1.95	2.80	1.96	2.96	1.96	3.29	1.98	3.46	2.04
25	77	2.14	1.54	2.31	1.84	2.64	1.95	2.80	1.96	2.96	1.96	3.29	1.98	3.46	2.04
27	81	2.14	1.54	2.31	1.84	2.64	1.95	2.80	1.96	2.96	1.96	3.29	1.98	3.46	2.04
30	86	2.14	1.54	2.31	1.84	2.64	1.95	2.80	1.96	2.96	1.96	3.29	1.98	3.46	2.04
33	91	2.14	1.54	2.31	1.84	2.64	1.95	2.80	1.96	2.96	1.96	3.29	1.98	3.39	2.03
35	95	2.14	1.54	2.31	1.84	2.64	1.95	2.80	1.96	2.96	1.96	3.28	1.97	3.34	2.01
37	99	2.14	1.54	2.31	1.84	2.64	1.95	2.80	1.96	2.96	1.96	3.23	1.94	3.30	2.01
40	104	2.14	1.54	2.31	1.84	2.64	1.95	2.80	1.96	2.96	1.96	3.16	1.93	3.23	1.97
45	113	2.14	1.54	2.31	1.84	2.64	1.95	2.80	1.96	2.92	1.93	3.04	1.89	3.11	1.93
52	125	2.14	1.54	2.31	1.84	2.63	1.95	2.69	1.88	2.75	1.93	2.87	1.81	2.93	1.85

■ MODEL : AU12

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	2.75	2.01	2.96	2.41	3.39	2.54	3.60	2.56	3.81	2.55	4.24	2.58	4.45	2.66
15	59	2.75	2.01	2.96	2.41	3.39	2.54	3.60	2.56	3.81	2.55	4.24	2.58	4.45	2.66
20	68	2.75	2.01	2.96	2.41	3.39	2.54	3.60	2.56	3.81	2.55	4.24	2.58	4.45	2.66
23	73	2.75	2.01	2.96	2.41	3.39	2.54	3.60	2.56	3.81	2.55	4.24	2.58	4.45	2.66
25	77	2.75	2.01	2.96	2.41	3.39	2.54	3.60	2.56	3.81	2.55	4.24	2.58	4.45	2.66
27	81	2.75	2.01	2.96	2.41	3.39	2.54	3.60	2.56	3.81	2.55	4.24	2.58	4.45	2.66
30	86	2.75	2.01	2.96	2.41	3.39	2.54	3.60	2.56	3.81	2.55	4.24	2.58	4.45	2.66
33	91	2.75	2.01	2.96	2.41	3.39	2.54	3.60	2.56	3.81	2.55	4.24	2.58	4.36	2.65
35	95	2.75	2.01	2.96	2.41	3.39	2.54	3.60	2.56	3.81	2.55	4.22	2.57	4.30	2.62
37	99	2.75	2.01	2.96	2.41	3.39	2.54	3.60	2.56	3.81	2.55	4.16	2.53	4.24	2.62
40	104	2.75	2.01	2.96	2.41	3.39	2.54	3.60	2.56	3.81	2.55	4.07	2.52	4.15	2.57
45	113	2.75	2.01	2.96	2.41	3.39	2.54	3.60	2.56	3.76	2.51	3.91	2.46	3.99	2.51
52	125	2.75	2.01	2.96	2.41	3.39	2.54	3.46	2.46	3.54	2.51	3.69	2.36	3.77	2.41

TC : Total Capacity kW
SHC : Sensible Heat Capacity kW

4-8-6 COMPACT CASSETTE TYPE (2/2)

■ MODEL : AU14

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	3.06	2.23	3.29	2.67	3.76	2.83	4.00	2.84	4.24	2.84	4.71	2.86	4.94	2.96
15	59	3.06	2.23	3.29	2.67	3.76	2.83	4.00	2.84	4.24	2.84	4.71	2.86	4.94	2.96
20	68	3.06	2.23	3.29	2.67	3.76	2.83	4.00	2.84	4.24	2.84	4.71	2.86	4.94	2.96
23	73	3.06	2.23	3.29	2.67	3.76	2.83	4.00	2.84	4.24	2.84	4.71	2.86	4.94	2.96
25	77	3.06	2.23	3.29	2.67	3.76	2.83	4.00	2.84	4.24	2.84	4.71	2.86	4.94	2.96
27	81	3.06	2.23	3.29	2.67	3.76	2.83	4.00	2.84	4.24	2.84	4.71	2.86	4.94	2.96
30	86	3.06	2.23	3.29	2.67	3.76	2.83	4.00	2.84	4.24	2.84	4.71	2.86	4.94	2.96
33	91	3.06	2.23	3.29	2.67	3.76	2.83	4.00	2.84	4.24	2.84	4.71	2.86	4.84	2.95
35	95	3.06	2.23	3.29	2.67	3.76	2.83	4.00	2.84	4.24	2.84	4.69	2.85	4.78	2.91
37	99	3.06	2.23	3.29	2.67	3.76	2.83	4.00	2.84	4.24	2.84	4.62	2.81	4.71	2.92
40	104	3.06	2.23	3.29	2.67	3.76	2.83	4.00	2.84	4.24	2.84	4.52	2.80	4.61	2.85
45	113	3.06	2.23	3.29	2.67	3.76	2.83	4.00	2.84	4.17	2.79	4.35	2.74	4.44	2.79
52	125	3.06	2.23	3.29	2.67	3.76	2.82	3.84	2.73	3.93	2.79	4.10	2.62	4.18	2.67

■ MODEL : AU18

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	3.82	2.79	4.12	3.34	4.71	3.53	5.00	3.55	5.29	3.54	5.88	3.58	6.18	3.70
15	59	3.82	2.79	4.12	3.34	4.71	3.53	5.00	3.55	5.29	3.54	5.88	3.58	6.18	3.70
20	68	3.82	2.79	4.12	3.34	4.71	3.53	5.00	3.55	5.29	3.54	5.88	3.58	6.18	3.70
23	73	3.82	2.79	4.12	3.34	4.71	3.53	5.00	3.55	5.29	3.54	5.88	3.58	6.18	3.70
25	77	3.82	2.79	4.12	3.34	4.71	3.53	5.00	3.55	5.29	3.54	5.88	3.58	6.18	3.70
27	81	3.82	2.79	4.12	3.34	4.71	3.53	5.00	3.55	5.29	3.54	5.88	3.58	6.18	3.70
30	86	3.82	2.79	4.12	3.34	4.71	3.53	5.00	3.55	5.29	3.54	5.88	3.58	6.17	3.70
33	91	3.82	2.79	4.12	3.34	4.71	3.53	5.00	3.55	5.29	3.54	5.88	3.58	6.05	3.68
35	95	3.82	2.79	4.12	3.34	4.71	3.53	5.00	3.55	5.29	3.54	5.86	3.56	5.97	3.64
37	99	3.82	2.79	4.12	3.34	4.71	3.53	5.00	3.55	5.29	3.54	5.77	3.51	5.89	3.64
40	104	3.82	2.79	4.12	3.34	4.71	3.53	5.00	3.55	5.29	3.54	5.65	3.50	5.76	3.57
45	113	3.82	2.79	4.12	3.34	4.71	3.53	5.00	3.55	5.22	3.49	5.44	3.42	5.55	3.49
52	125	3.82	2.79	4.12	3.34	4.70	3.53	4.80	3.41	4.91	3.49	5.12	3.27	5.23	3.34

TC : Total Capacity kW
SHC : Sensible Heat Capacity kW

4-8-7 CASSETTE TYPE (1/2)

MODEL : AU20

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	4.36	3.14	4.69	3.76	5.36	3.97	5.70	3.99	6.04	3.98	6.71	4.00	7.04	4.15
15	59	4.36	3.14	4.69	3.76	5.36	3.97	5.70	3.99	6.04	3.98	6.71	4.02	7.04	4.15
20	68	4.36	3.14	4.69	3.76	5.36	3.97	5.70	3.99	6.04	3.98	6.71	4.02	7.04	4.15
23	73	4.36	3.14	4.69	3.76	5.36	3.97	5.70	3.99	6.04	3.98	6.71	4.02	7.04	4.15
25	77	4.36	3.14	4.69	3.76	5.36	3.97	5.70	3.99	6.04	3.98	6.71	4.02	7.04	4.15
27	81	4.36	3.14	4.69	3.76	5.36	3.97	5.70	3.99	6.04	3.98	6.71	4.02	7.04	4.15
30	86	4.36	3.14	4.69	3.76	5.36	3.97	5.70	3.99	6.04	3.98	6.71	4.02	7.04	4.15
33	91	4.36	3.14	4.69	3.76	5.36	3.97	5.70	3.99	6.04	3.98	6.71	4.02	6.90	4.14
35	95	4.36	3.14	4.69	3.76	5.36	3.97	5.70	3.99	6.04	3.98	6.68	4.01	6.81	4.09
37	99	4.36	3.14	4.69	3.76	5.36	3.97	5.70	3.99	6.04	3.98	6.58	3.95	6.72	4.10
40	104	4.36	3.14	4.69	3.76	5.36	3.97	5.70	3.99	6.04	3.98	6.44	3.93	6.57	4.01
45	113	4.36	3.14	4.69	3.76	5.36	3.97	5.70	3.99	5.95	3.93	6.20	3.84	6.32	3.92
52	125	4.36	3.14	4.69	3.76	5.36	3.97	5.48	3.83	5.60	3.92	5.84	3.68	5.96	3.76

MODEL : AU25

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	5.39	4.05	5.81	4.84	6.64	5.12	7.05	5.15	7.46	5.14	8.29	5.19	8.71	5.36
15	59	5.39	4.05	5.81	4.84	6.64	5.12	7.05	5.15	7.46	5.14	8.29	5.19	8.71	5.36
20	68	5.39	4.05	5.81	4.84	6.64	5.12	7.05	5.15	7.46	5.14	8.29	5.19	8.71	5.36
23	73	5.39	4.05	5.81	4.84	6.64	5.12	7.05	5.15	7.46	5.14	8.29	5.19	8.71	5.36
25	77	5.39	4.05	5.81	4.84	6.64	5.12	7.05	5.15	7.46	5.14	8.29	5.19	8.71	5.36
27	81	5.39	4.05	5.81	4.84	6.64	5.12	7.05	5.15	7.46	5.14	8.29	5.19	8.71	5.36
30	86	5.39	4.05	5.81	4.84	6.64	5.12	7.05	5.15	7.46	5.14	8.29	5.19	8.71	5.36
33	91	5.39	4.05	5.81	4.84	6.64	5.12	7.05	5.15	7.46	5.14	8.29	5.19	8.54	5.34
35	95	5.39	4.05	5.81	4.84	6.64	5.12	7.05	5.15	7.46	5.14	8.26	5.17	8.42	5.27
37	99	5.39	4.05	5.81	4.84	6.64	5.12	7.05	5.15	7.46	5.14	8.14	5.09	8.31	5.28
40	104	5.39	4.05	5.81	4.84	6.64	5.12	7.05	5.15	7.46	5.14	7.97	5.07	8.13	5.17
45	113	5.39	4.05	5.81	4.84	6.64	5.12	7.05	5.15	7.36	5.06	7.67	4.96	7.82	5.06
52	125	5.39	4.05	5.81	4.84	6.63	5.12	6.77	4.94	6.93	5.06	7.23	4.75	7.38	4.85

MODEL : AU30

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	6.73	4.79	7.25	5.73	8.28	6.05	8.80	6.08	9.32	6.07	10.4	6.14	10.9	6.34
15	59	6.73	4.79	7.25	5.73	8.28	6.05	8.80	6.08	9.32	6.07	10.4	6.14	10.9	6.34
20	68	6.73	4.79	7.25	5.73	8.28	6.05	8.80	6.08	9.32	6.07	10.4	6.14	10.9	6.34
23	73	6.73	4.79	7.25	5.73	8.28	6.05	8.80	6.08	9.32	6.07	10.4	6.14	10.9	6.34
25	77	6.73	4.79	7.25	5.73	8.28	6.05	8.80	6.08	9.32	6.07	10.4	6.14	10.9	6.34
27	81	6.73	4.79	7.25	5.73	8.28	6.05	8.80	6.08	9.32	6.07	10.4	6.14	10.9	6.34
30	86	6.73	4.79	7.25	5.73	8.28	6.05	8.80	6.08	9.32	6.07	10.4	6.14	10.9	6.33
33	91	6.73	4.79	7.25	5.73	8.28	6.05	8.80	6.08	9.32	6.07	10.4	6.14	10.7	6.32
35	95	6.73	4.79	7.25	5.73	8.28	6.05	8.80	6.08	9.32	6.07	10.3	6.11	10.5	6.23
37	99	6.73	4.79	7.25	5.73	8.28	6.05	8.80	6.08	9.32	6.07	10.2	6.02	10.4	6.25
40	104	6.73	4.79	7.25	5.73	8.28	6.05	8.80	6.08	9.32	6.07	9.94	5.99	10.1	6.11
45	113	6.73	4.79	7.25	5.73	8.28	6.05	8.80	6.08	9.18	5.99	9.57	5.86	9.76	5.98
52	125	6.73	4.79	7.25	5.73	8.28	6.05	8.45	5.85	8.65	5.97	9.02	5.61	9.21	5.73

TC : Total Capacity kW
SHC : Sensible Heat Capacity kW

4-8-7 CASSETTE TYPE (2/2)

■ MODEL : AU36

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	8.03	5.62	8.65	6.72	9.88	7.10	10.5	7.14	11.1	7.24	12.4	7.32	13.0	7.43
15	59	8.03	5.62	8.65	6.72	9.88	7.10	10.5	7.14	11.1	7.24	12.4	7.32	13.0	7.43
20	68	8.03	5.62	8.65	6.72	9.88	7.10	10.5	7.14	11.1	7.24	12.4	7.32	13.0	7.43
23	73	8.03	5.62	8.65	6.72	9.88	7.10	10.5	7.14	11.1	7.24	12.4	7.32	13.0	7.43
25	77	8.03	5.62	8.65	6.72	9.88	7.10	10.5	7.14	11.1	7.24	12.4	7.32	13.0	7.43
27	81	8.03	5.62	8.65	6.72	9.88	7.10	10.5	7.14	11.1	7.24	12.4	7.32	13.0	7.43
30	86	8.03	5.62	8.65	6.72	9.88	7.10	10.5	7.14	11.1	7.24	12.4	7.32	13.0	7.43
33	91	8.03	5.62	8.65	6.72	9.88	7.10	10.5	7.14	11.1	7.24	12.4	7.32	12.7	7.41
35	95	8.03	5.62	8.65	6.72	9.88	7.10	10.5	7.14	11.1	7.24	12.3	7.29	12.5	7.31
37	99	8.03	5.62	8.65	6.72	9.88	7.10	10.5	7.14	11.1	7.24	12.1	7.19	12.4	7.33
40	104	8.03	5.62	8.65	6.72	9.88	7.10	10.5	7.14	11.1	7.24	11.9	7.15	12.1	7.17
45	113	8.03	5.62	8.65	6.72	9.88	7.10	10.5	7.14	11.0	7.13	11.4	6.99	11.7	7.02
52	125	8.03	5.62	8.65	6.72	9.88	7.10	10.1	6.86	10.3	7.12	10.8	6.80	11.0	6.83

■ MODEL : AU45

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.9	8.96	15.7	9.26
15	59	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.9	8.96	15.7	9.26
20	68	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.9	8.96	15.7	9.26
23	73	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.9	8.96	15.7	9.26
25	77	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.9	8.96	15.7	9.26
27	81	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.9	8.96	15.7	9.26
30	86	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.9	8.96	15.7	9.25
33	91	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.9	8.96	15.4	9.23
35	95	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.9	8.93	15.2	9.10
37	99	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.7	8.80	15.0	9.13
40	104	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.4	8.87	14.4	8.75	14.6	8.93
45	113	9.71	6.99	10.5	8.37	12.0	8.85	12.7	8.89	13.3	8.75	13.8	8.56	14.1	8.74
52	125	9.71	6.99	10.5	8.37	11.9	8.84	12.2	8.54	12.5	8.74	13.0	8.20	13.3	8.37

■ MODEL : AU54

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	10.8	7.67	11.6	9.18	13.3	9.70	14.1	9.75	14.9	9.73	16.6	9.83	17.4	10.2
15	59	10.8	7.67	11.6	9.18	13.3	9.70	14.1	9.75	14.9	9.73	16.6	9.83	17.4	10.2
20	68	10.8	7.67	11.6	9.18	13.3	9.70	14.1	9.75	14.9	9.73	16.6	9.83	17.4	10.2
23	73	10.8	7.67	11.6	9.18	13.3	9.70	14.1	9.75	14.9	9.73	16.6	9.83	17.4	10.2
25	77	10.8	7.67	11.6	9.18	13.3	9.70	14.1	9.75	14.9	9.73	16.6	9.83	17.4	10.2
27	81	10.8	7.67	11.6	9.18	13.3	9.70	14.1	9.75	14.9	9.73	16.6	9.83	17.4	10.2
30	86	10.8	7.67	11.6	9.18	13.3	9.70	14.1	9.75	14.9	9.73	16.6	9.83	17.4	10.1
33	91	10.8	7.67	11.6	9.18	13.3	9.70	14.1	9.75	14.9	9.73	16.6	9.83	17.1	10.1
35	95	10.8	7.67	11.6	9.18	13.3	9.70	14.1	9.75	14.9	9.73	16.5	9.79	16.8	9.98
37	99	10.8	7.67	11.6	9.18	13.3	9.70	14.1	9.75	14.9	9.73	16.3	9.65	16.6	10.0
40	104	10.8	7.67	11.6	9.18	13.3	9.70	14.1	9.75	14.9	9.73	15.9	9.60	16.3	9.79
45	113	10.8	7.67	11.6	9.18	13.3	9.70	14.1	9.75	14.7	9.59	15.3	9.39	15.6	9.58
52	125	10.8	7.67	11.6	9.18	13.3	9.70	13.5	9.37	13.9	9.56	14.5	8.99	14.8	9.18

TC : Total Capacity kW
SHC : Sensible Heat Capacity kW

4-8-8 COMPACT WALL MOUNTED TYPE

MODEL : AS7

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.53	1.70	2.66	1.72
15	59	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.53	1.70	2.66	1.72
20	68	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.53	1.70	2.66	1.72
23	73	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.53	1.70	2.66	1.72
25	77	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.53	1.70	2.66	1.72
27	81	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.53	1.70	2.66	1.72
30	86	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.53	1.70	2.66	1.72
33	91	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.53	1.70	2.60	1.72
35	95	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.52	1.69	2.57	1.70
37	99	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.48	1.67	2.53	1.70
40	104	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.28	1.68	2.43	1.66	2.48	1.66
45	113	1.64	1.30	1.77	1.56	2.02	1.65	2.15	1.66	2.24	1.65	2.34	1.62	2.39	1.63
52	125	1.64	1.30	1.77	1.56	2.02	1.65	2.07	1.59	2.11	1.65	2.20	1.58	2.25	1.58

MODEL : AS9

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.29	2.12	3.46	2.16
15	59	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.29	2.12	3.46	2.16
20	68	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.29	2.12	3.46	2.16
23	73	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.29	2.12	3.46	2.16
25	77	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.29	2.12	3.46	2.16
27	81	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.29	2.12	3.46	1.16
30	86	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.29	2.12	3.46	2.16
33	91	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.29	2.12	3.39	2.15
35	95	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.28	2.11	3.34	2.12
37	99	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.23	2.09	3.30	2.13
40	104	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.96	2.10	3.16	2.07	3.23	2.08
45	113	2.14	1.63	2.31	1.95	2.64	2.06	2.80	2.07	2.92	2.07	3.04	2.03	3.11	2.04
52	125	2.14	1.63	2.31	1.95	2.63	2.06	2.69	1.99	2.75	2.07	2.87	1.97	2.93	1.98

MODEL : AS12

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.12	2.51	4.32	2.59
15	59	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.12	2.51	4.32	2.59
20	68	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.12	2.51	4.32	2.59
23	73	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.12	2.51	4.32	2.59
25	77	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.12	2.51	4.32	2.59
27	81	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.12	2.51	4.32	2.59
30	86	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.12	2.51	4.32	2.59
33	91	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.12	2.51	4.24	2.58
35	95	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.10	2.49	4.18	2.54
37	99	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	4.04	2.46	4.12	2.55
40	104	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.71	2.48	3.96	2.45	4.04	2.50
45	113	2.68	1.95	2.88	2.34	3.29	2.47	3.50	2.49	3.65	2.44	3.81	2.39	3.88	2.44
52	125	2.68	1.95	2.88	2.34	3.29	2.47	3.36	2.39	3.44	2.44	3.59	2.29	3.66	2.34

MODEL : AS14

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	2.91	2.30	3.13	2.76	3.57	2.91	3.80	2.93	4.03	2.92	4.47	2.95	4.69	3.05
15	59	2.91	2.30	3.13	2.76	3.57	2.91	3.80	2.93	4.03	2.92	4.47	2.95	4.69	3.05
20	68	2.91	2.30	3.13	2.76	3.57	2.91	3.80	2.93	4.03	2.92	4.47	2.95	4.69	3.05
23	73	2.91	2.30	3.13	2.76	3.57	2.91	3.80	2.93	4.03	2.92	4.47	2.95	4.69	3.05
25	77	2.91	2.30	3.13	2.76	3.57	2.91	3.80	2.93	4.03	2.92	4.47	2.95	4.69	3.05
27	81	2.91	2.30	3.13	2.76	3.57	2.91	3.80	2.93	4.03	2.92	4.47	2.95	4.69	3.05
30	86	2.91	2.30	3.13	2.76	3.57	2.91	3.80	2.93	4.03	2.92	4.47	2.95	4.69	3.05
33	91	2.91	2.30	3.13	2.76	3.57	2.91	3.80	2.93	4.03	2.92	4.47	2.95	4.60	3.04
35	95	2.91	2.30	3.13	2.76	3.57	2.91	3.80	2.93	4.03	2.92	4.46	2.94	4.54	2.99
37	99	2.91	2.30	3.13	2.76	3.57	2.91	3.80	2.93	4.03	2.92	4.39	2.90	4.47	3.00
40	104	2.91	2.30	3.13	2.76	3.57	2.91	3.80	2.93	4.03	2.92	4.29	2.88	4.38	2.94
45	113	2.91	2.30	3.13	2.76	3.57	2.91	3.80	2.93	3.96	2.88	4.13	2.82	4.22	2.88
52	125	2.91	2.30	3.13	2.76	3.57	2.91	3.65	2.81	3.73	2.92	3.90	2.70	3.97	2.76

TC : Total Capacity kW
SHC : Sensible Heat Capacity kW

4-8-9 WALL MOUNTED TYPE

■ MODEL : AS18

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.94	6.35	3.99	6.67	4.05
15	59	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.94	6.35	3.99	6.67	4.05
20	68	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.94	6.35	3.99	6.67	4.05
23	73	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.94	6.35	3.99	6.67	4.05
25	77	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.94	6.35	3.99	6.67	4.05
27	81	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.94	6.35	3.99	6.67	4.05
30	86	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.94	6.35	3.99	6.67	4.05
33	91	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.94	6.35	3.99	6.54	4.04
35	95	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.94	6.32	3.97	6.45	3.98
37	99	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.94	6.24	3.91	6.36	3.99
40	104	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.94	6.10	3.89	6.23	3.91
45	113	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.63	3.88	6.87	3.81	5.99	3.82
52	125	4.13	3.06	4.45	3.66	5.08	3.87	5.19	3.74	5.31	3.88	5.53	3.70	5.65	3.72

■ MODEL : AS24

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	8.12	4.94	8.52	5.10
15	59	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	8.12	4.94	8.52	5.10
20	68	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	8.12	4.94	8.52	5.10
23	73	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	8.12	4.94	8.52	5.10
25	77	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	8.12	4.94	8.52	5.10
27	81	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	8.12	4.94	8.52	5.10
30	86	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	8.12	4.94	8.52	5.10
33	91	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	8.12	4.94	8.36	5.08
35	95	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	8.08	5.92	8.24	5.02
37	99	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	7.97	5.85	8.13	5.03
40	104	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	7.80	5.82	7.95	4.92
45	113	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.20	4.82	7.50	4.72	7.66	4.81
52	125	5.28	3.85	5.68	4.61	6.49	4.87	6.63	4.71	6.78	4.81	7.07	4.52	7.22	4.61

■ MODEL : AS30

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.41	5.73	9.88	5.91
15	59	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.41	5.73	9.88	5.91
20	68	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.41	5.73	9.88	5.91
23	73	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.41	5.73	9.88	5.91
25	77	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.41	5.73	9.88	5.91
27	81	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.41	5.73	9.88	5.91
30	86	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.41	5.73	9.88	5.91
33	91	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.41	5.73	9.69	5.90
35	95	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.37	5.70	9.56	5.82
37	99	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.24	5.62	9.42	5.83
40	104	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.04	5.59	9.22	5.71
45	113	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.35	5.59	8.70	5.47	8.88	5.58
52	125	6.12	4.47	6.59	5.35	7.53	5.65	7.69	5.46	7.86	5.58	8.20	5.24	8.37	5.35

TC : Total Capacity kW
SHC : Sensible Heat Capacity kW

4-8-10 CEILING WALL TYPE (1/2)

■ MODEL : AW7

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	1.64	1.23	1.77	1.48	2.02	1.56	2.15	1.57	2.28	1.57	2.53	1.58	2.66	1.63
15	59	1.64	1.23	1.77	1.48	2.02	1.56	2.15	1.57	2.28	1.57	2.53	1.58	2.66	1.63
20	68	1.64	1.23	1.77	1.48	2.02	1.56	2.15	1.57	2.28	1.57	2.53	1.58	2.66	1.63
23	73	1.64	1.23	1.77	1.48	2.02	1.56	2.15	1.57	2.28	1.57	2.53	1.58	2.66	1.63
25	77	1.64	1.23	1.77	1.48	2.02	1.56	2.15	1.57	2.28	1.57	2.53	1.58	2.66	1.63
27	81	1.64	1.23	1.77	1.48	2.02	1.56	2.15	1.57	2.28	1.57	2.53	1.58	2.66	1.63
30	86	1.64	1.23	1.77	1.48	2.02	1.56	2.15	1.57	2.28	1.57	2.53	1.58	2.66	1.63
33	91	1.64	1.23	1.77	1.48	2.02	1.56	2.15	1.57	2.28	1.57	2.53	1.58	2.60	1.63
35	95	1.64	1.23	1.77	1.48	2.02	1.56	2.15	1.57	2.28	1.57	2.52	1.53	2.57	1.61
37	99	1.64	1.23	1.77	1.48	2.02	1.56	2.15	1.57	2.28	1.57	2.48	1.55	2.53	1.61
40	104	1.64	1.23	1.77	1.48	2.02	1.56	2.15	1.57	2.28	1.57	2.43	1.55	2.48	1.58
45	113	1.64	1.23	1.77	1.48	2.02	1.56	2.15	1.57	2.24	1.54	2.34	1.51	2.39	1.54
52	125	1.64	1.23	1.77	1.48	2.02	1.56	2.07	1.51	2.11	1.54	2.20	1.45	2.25	1.48

■ MODEL : AW9

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	2.14	1.61	2.31	1.92	2.64	2.03	2.80	2.04	2.96	2.04	3.29	2.06	3.46	2.13
15	59	2.14	1.61	2.31	1.92	2.64	2.03	2.80	2.04	2.96	2.04	3.29	2.06	3.46	2.13
20	68	2.14	1.61	2.31	1.92	2.64	2.03	2.80	2.04	2.96	2.04	3.29	2.06	3.46	2.13
23	73	2.14	1.61	2.31	1.92	2.64	2.03	2.80	2.04	2.96	2.04	3.29	2.06	3.46	2.13
25	77	2.14	1.61	2.31	1.92	2.64	2.03	2.80	2.04	2.96	2.04	3.29	2.06	3.46	2.13
27	81	2.14	1.61	2.31	1.92	2.64	2.03	2.80	2.04	2.96	2.04	3.29	2.06	3.46	2.13
30	86	2.14	1.61	2.31	1.92	2.64	2.03	2.80	2.04	2.96	2.04	3.29	2.06	3.46	2.13
33	91	2.14	1.61	2.31	1.92	2.64	2.03	2.80	2.04	2.96	2.04	3.29	2.06	3.39	2.12
35	95	2.14	1.61	2.31	1.92	2.64	2.03	2.80	2.04	2.96	2.04	3.28	2.05	3.34	2.09
37	99	2.14	1.61	2.31	1.92	2.64	2.03	2.80	2.04	2.96	2.04	3.23	2.02	3.30	2.10
40	104	2.14	1.61	2.31	1.92	2.64	2.03	2.80	2.04	2.96	2.04	3.16	2.01	3.23	2.05
45	113	2.14	1.61	2.31	1.92	2.64	2.03	2.80	2.04	2.92	2.01	3.04	1.97	3.11	2.01
52	125	2.14	1.61	2.31	1.92	2.63	2.03	2.69	1.96	2.75	2.01	2.87	1.89	2.93	1.92

■ MODEL : AW12

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	2.75	2.07	2.96	2.47	3.39	2.61	3.60	2.63	3.81	2.62	4.24	2.65	4.45	2.74
15	59	2.75	2.07	2.96	2.47	3.39	2.61	3.60	2.63	3.81	2.62	4.24	2.65	4.45	2.74
20	68	2.75	2.07	2.96	2.47	3.39	2.61	3.60	2.63	3.81	2.62	4.24	2.65	4.45	2.74
23	73	2.75	2.07	2.96	2.47	3.39	2.61	3.60	2.63	3.81	2.62	4.24	2.65	4.45	2.74
25	77	2.75	2.07	2.96	2.47	3.39	2.61	3.60	2.63	3.81	2.62	4.24	2.65	4.45	2.74
27	81	2.75	2.07	2.96	2.47	3.39	2.61	3.60	2.63	3.81	2.62	4.24	2.65	4.45	2.74
30	86	2.75	2.07	2.96	2.47	3.39	2.61	3.60	2.63	3.81	2.62	4.24	2.65	4.45	2.74
33	91	2.75	2.07	2.96	2.47	3.39	2.61	3.60	2.63	3.81	2.62	4.24	2.65	4.36	2.73
35	95	2.75	2.07	2.96	2.47	3.39	2.61	3.60	2.63	3.81	2.62	4.22	2.64	4.30	2.69
37	99	2.75	2.07	2.96	2.47	3.39	2.61	3.60	2.63	3.81	2.62	4.16	2.60	4.24	2.70
40	104	2.75	2.07	2.96	2.47	3.39	2.61	3.60	2.63	3.81	2.62	4.07	2.59	4.15	2.64
45	113	2.75	2.07	2.96	2.47	3.39	2.61	3.60	2.63	3.76	2.59	3.91	2.53	3.99	2.58
52	125	2.75	2.07	2.96	2.47	3.39	2.61	3.46	2.52	3.54	2.58	3.69	2.42	3.77	2.47

TC : Total Capacity kW
SHC : Sensible Heat Capacity kW

4-8-10 CEILING WALL TYPE (2/2)

■ MODEL : AW14

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	3.29	2.47	3.54	2.95	4.05	3.12	4.30	3.14	4.55	3.13	5.06	3.17	5.31	3.27
15	59	3.29	2.47	3.54	2.95	4.05	3.12	4.30	3.14	4.55	3.13	5.06	3.17	5.31	3.27
20	68	3.29	2.47	3.54	2.95	4.05	3.12	4.30	3.14	4.55	3.13	5.06	3.17	5.31	3.27
23	73	3.29	2.47	3.54	2.95	4.05	3.12	4.30	3.14	4.55	3.13	5.06	3.17	5.31	3.27
25	77	3.29	2.47	3.54	2.95	4.05	3.12	4.30	3.14	4.55	3.13	5.06	3.17	5.31	3.27
27	81	3.29	2.47	3.54	2.95	4.05	3.12	4.30	3.14	4.55	3.13	5.06	3.17	5.31	3.27
30	86	3.29	2.47	3.54	2.95	4.05	3.12	4.30	3.14	4.55	3.13	5.06	3.17	5.31	3.27
33	91	3.29	2.47	3.54	2.95	4.05	3.12	4.30	3.14	4.55	3.13	5.06	3.17	5.21	3.26
35	95	3.29	2.47	3.54	2.95	4.05	3.12	4.30	3.14	4.55	3.13	5.04	3.15	5.14	3.21
37	99	3.29	2.47	3.54	2.95	4.05	3.12	4.30	3.14	4.55	3.13	4.97	3.11	5.07	3.22
40	104	3.29	2.47	3.54	2.95	4.05	3.12	4.30	3.14	4.55	3.13	4.86	3.09	4.96	3.15
45	113	3.29	2.47	3.54	2.95	4.05	3.12	4.30	3.14	4.49	3.09	4.68	3.02	4.77	3.08
52	125	3.29	2.47	3.54	2.95	4.05	3.12	4.30	3.02	4.23	3.13	4.41	2.90	4.50	2.96

■ MODEL : AW18

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.88	6.35	3.92	6.67	4.05
15	59	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.88	6.35	3.92	6.67	4.05
20	68	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.88	6.35	3.92	6.67	4.05
23	73	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.88	6.35	3.92	6.67	4.05
25	77	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.88	6.35	3.92	6.67	4.05
27	81	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.88	6.35	3.92	6.67	4.05
30	86	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.88	6.35	3.92	6.67	4.05
33	91	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.88	6.35	3.92	6.54	4.04
35	95	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.88	6.32	3.90	6.45	3.98
37	99	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.88	6.24	3.85	6.36	3.99
40	104	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.72	3.88	6.10	3.83	6.23	3.91
45	113	4.13	3.06	4.45	3.66	5.08	3.87	5.40	3.89	5.63	3.82	6.87	3.74	5.99	3.82
52	125	4.13	3.06	4.45	3.66	5.08	3.87	5.19	3.79	5.31	3.82	5.53	3.59	5.65	3.66

■ MODEL : AW24

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	8.12	4.94	8.52	5.10
15	59	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	8.12	4.94	8.52	5.10
20	68	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	8.12	4.94	8.52	5.10
23	73	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	8.12	4.94	8.52	5.10
25	77	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	8.12	4.94	8.52	5.10
27	81	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	8.12	4.94	8.52	5.10
30	86	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	8.12	4.94	8.52	5.10
33	91	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	8.12	4.94	8.36	5.08
35	95	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	8.08	4.92	8.24	5.02
37	99	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	7.97	4.85	8.13	5.03
40	104	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.31	4.89	7.80	4.82	7.95	4.92
45	113	5.28	3.85	5.68	4.61	6.49	4.87	6.90	4.90	7.20	4.82	7.50	4.72	7.66	4.81
52	125	5.28	3.85	5.68	4.61	6.49	4.87	6.63	4.71	6.78	4.81	7.07	4.52	7.22	4.61

■ MODEL : AW30

Outdoor Temperature		Indoor Temperature													
		20°CDB/15°CWB		23°CDB/16°CWB		26°CDB/18°CWB		27°CDB/19°CWB		28°CDB/20°CWB		30°CDB/22°CWB		32°CDB/23°CWB	
		68°FDB/59°FWB		73°FDB/61°FWB		79°FDB/64°FWB		81°FDB/66°FWB		82°FDB/68°FWB		86°FDB/72°FWB		90°FDB/73°FWB	
(°CDB)	(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
10	50	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.41	5.73	9.88	5.91
15	59	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.41	5.73	9.88	5.91
20	68	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.41	5.73	9.88	5.91
23	73	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.41	5.73	9.88	5.91
25	77	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.41	5.73	9.88	5.91
27	81	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.41	5.73	9.88	5.91
30	86	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.41	5.73	9.88	5.91
33	91	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.41	5.73	9.69	5.90
35	95	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.37	5.70	9.56	5.82
37	99	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.24	5.62	9.42	5.83
40	104	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.47	5.67	9.04	5.59	9.22	5.71
45	113	6.12	4.47	6.59	5.35	7.53	5.65	8.00	5.68	8.35	5.59	8.70	5.47	8.88	5.58
52	125	6.12	4.47	6.59	5.35	7.53	5.65	7.69	5.46	7.86	5.58	8.20	5.24	8.37	5.35

TC : Total Capacity kW

SHC : Sensible Heat Capacity kW

4-9 CAPACITY TABLE HEATING

4-9-1 UNIVERSAL FLOOR / CEILING TYPE

■ MODEL : AB12

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	2.75	2.66	2.60	2.50	2.44	2.37
-10	14		3.12	3.03	2.96	2.87	2.80	2.74
-5	23		3.55	3.45	3.38	3.28	3.22	3.14
0	32		4.02	3.92	3.85	3.69	3.42	3.14
5	41		4.55	4.37	4.10	3.69	3.42	3.14
7	45		4.77	4.37	4.10	3.69	3.42	3.14
10	50		4.78	4.37	4.10	3.69	3.42	3.14
15	59		4.78	4.37	4.10	3.69	3.42	3.14

■ MODEL : AB14

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	3.36	3.24	3.16	3.05	2.97	2.89
-10	14		3.81	3.69	3.61	3.50	3.42	3.34
-5	23		4.33	4.20	4.12	4.00	3.92	3.83
0	32		4.90	4.77	4.69	4.50	4.17	3.83
5	41		5.55	5.33	5.00	4.50	4.17	3.83
7	45		5.82	5.33	5.00	4.50	4.17	3.83
10	50		5.83	5.33	5.00	4.50	4.17	3.83
15	59		5.83	5.33	5.00	4.50	4.17	3.83

■ MODEL : AB18

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	3.76	3.63	3.54	3.42	3.33	3.24
-10	14		4.26	4.13	4.05	3.92	3.83	3.74
-5	23		4.84	4.71	4.62	4.48	4.39	4.29
0	32		5.49	5.35	5.25	5.04	4.67	4.29
5	41		6.21	5.97	5.60	5.04	4.67	4.29
7	45		6.51	5.97	5.60	5.04	4.67	4.29
10	50		6.53	5.97	5.60	5.04	4.67	4.29
15	59		6.53	5.97	5.60	5.04	4.67	4.29

■ MODEL : AB24

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	5.17	4.99	4.87	4.70	4.58	4.46
-10	14		5.86	5.68	5.56	5.38	5.26	5.14
-5	23		6.66	6.48	6.35	6.17	6.04	5.90
0	32		7.55	7.35	7.22	6.93	6.42	5.90
5	41		8.54	8.21	7.70	6.93	6.42	5.90
7	45		8.96	8.21	7.70	6.93	6.42	5.90
10	50		8.98	8.21	7.70	6.93	6.42	5.90
15	59		8.98	8.21	7.70	6.93	6.42	5.90

TC : Total Capacity kW

4-9-2 LARGE CEILING TYPE

■ MODEL : AB30

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	6.11	5.90	5.76	5.55	5.41	5.27
-10	14		6.93	6.72	6.58	6.36	6.22	6.08
-5	23		7.87	7.65	7.51	7.29	7.14	6.98
0	32		8.92	8.69	8.54	8.19	7.58	6.98
5	41		10.1	9.71	9.10	8.19	7.58	6.98
7	45		10.6	9.71	9.10	8.19	7.58	6.98
10	50		10.6	9.71	9.10	8.19	7.58	6.98
15	59		10.6	9.71	9.10	8.19	7.58	6.98

■ MODEL : AB36

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	7.19	6.94	6.77	6.53	6.36	6.20
-10	14		8.15	7.90	7.73	7.48	7.32	7.15
-5	23		9.26	9.00	8.83	8.57	8.40	8.20
0	32		10.5	10.2	10.0	9.63	8.92	8.20
5	41		11.9	11.4	10.7	9.63	8.92	8.20
7	45		12.4	11.4	10.7	9.63	8.92	8.20
10	50		12.5	11.4	10.7	9.63	8.92	8.20
15	59		12.5	11.4	10.7	9.63	8.92	8.20

■ MODEL : AB45

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	9.20	8.88	8.67	8.35	8.14	7.93
-10	14		10.4	10.1	9.90	9.58	9.37	9.15
-5	23		11.9	11.5	11.3	11.0	10.7	10.5
0	32		13.4	13.1	12.8	12.3	11.4	10.5
5	41		15.2	14.6	13.7	12.3	11.4	10.5
7	45		15.9	14.6	13.7	12.3	11.4	10.5
10	50		16.0	14.6	13.7	12.3	11.4	10.5
15	59		16.0	14.6	13.7	12.3	11.4	10.5

■ MODEL : AB54

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	10.6	10.2	10.0	9.64	9.39	9.15
-10	14		12.0	11.7	11.4	11.0	10.8	10.6
-5	23		13.7	13.3	13.0	12.7	12.4	12.1
0	32		15.5	15.1	14.8	14.2	13.2	12.1
5	41		17.5	16.9	15.8	14.2	13.2	12.1
7	45		18.4	16.9	15.8	14.2	13.2	12.1
10	50		18.4	16.9	15.8	14.2	13.2	12.1
15	59		18.4	16.9	15.8	14.2	13.2	12.1

TC : Total Capacity kW

4-9-3 COMPACT DUCT TYPE

■ MODEL : AR7

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	1.65	1.59	1.55	1.49	1.46	1.42
-10	14		1.87	1.81	1.77	1.71	1.68	1.64
-5	23		2.12	2.06	2.02	1.96	1.92	1.88
0	32		2.40	2.34	2.30	2.21	2.04	1.88
5	41		2.72	2.61	2.45	2.21	2.04	1.88
7	45		2.85	2.61	2.45	2.21	2.04	1.88
10	50		2.86	2.61	2.45	2.21	2.04	1.88
15	59		2.86	2.61	2.45	2.21	2.04	1.88

■ MODEL : AR9

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	2.08	2.01	1.96	1.89	1.84	1.79
-10	14		2.36	2.29	2.24	2.17	2.12	2.07
-5	23		2.68	2.61	2.56	2.48	2.43	2.38
0	32		3.04	2.96	2.91	2.79	2.58	2.38
5	41		3.44	3.31	3.10	2.79	2.58	2.38
7	45		3.61	3.31	3.10	2.79	2.58	2.38
10	50		3.62	3.31	3.10	2.79	2.58	2.38
15	59		3.62	3.31	3.10	2.79	2.58	2.38

■ MODEL : AR12

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	2.75	2.66	2.60	2.50	2.44	2.37
-10	14		3.12	3.03	2.96	2.87	2.80	2.74
-5	23		3.55	3.45	3.38	3.28	3.22	3.14
0	32		4.02	3.92	3.85	3.69	3.42	3.14
5	41		4.55	4.37	4.10	3.69	3.42	3.14
7	45		4.77	4.37	4.10	3.69	3.42	3.14
10	50		4.78	4.37	4.10	3.69	3.42	3.14
15	59		4.78	4.37	4.10	3.69	3.42	3.14

■ MODEL : AR14

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	3.22	3.11	3.04	2.93	2.85	2.78
-10	14		3.65	3.54	3.47	3.36	3.28	3.21
-5	23		4.15	4.04	3.96	3.84	3.77	3.68
0	32		4.71	4.58	4.50	4.32	4.00	3.68
5	41		5.32	5.12	4.80	4.32	4.00	3.68
7	45		5.58	5.12	4.80	4.32	4.00	3.68
10	50		5.60	5.12	4.80	4.32	4.00	3.68
15	59		5.60	5.12	4.80	4.32	4.00	3.68

■ MODEL : AR18

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	3.76	3.63	3.54	3.42	3.33	3.24
-10	14		4.26	4.13	4.05	3.92	3.83	3.74
-5	23		4.84	4.71	4.62	4.48	4.39	4.29
0	32		5.49	5.35	5.25	5.04	4.67	4.29
5	41		6.21	5.97	5.60	5.04	4.67	4.29
7	45		6.51	5.97	5.60	5.04	4.67	4.29
10	50		6.53	5.97	5.60	5.04	4.67	4.29
15	59		6.53	5.97	5.60	5.04	4.67	4.29

TC : Total Capacity kW

4-9-4 LOW STATIC PRESSURE DUCT TYPE

■ MODEL : AR25

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	5.27	5.09	4.97	4.79	4.67	4.55
-10	14		5.98	5.79	5.67	5.49	5.37	5.25
-5	23		6.79	6.60	6.48	6.29	6.16	6.02
0	32		7.70	7.50	7.36	7.07	6.54	6.02
5	41		8.71	8.37	7.85	7.07	6.54	6.02
7	45		9.13	8.37	7.85	7.07	6.54	6.02
10	50		9.16	8.37	7.85	7.07	6.54	6.02
15	59		9.16	8.37	7.85	7.07	6.54	6.02

■ MODEL : AR30

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	6.11	5.90	5.76	5.55	5.41	5.27
-10	14		6.93	6.72	6.58	6.36	6.22	6.08
-5	23		7.87	7.65	7.51	7.29	7.14	6.98
0	32		8.92	8.69	8.54	8.19	7.58	6.98
5	41		10.1	9.71	9.10	8.19	7.58	6.98
7	45		10.6	9.71	9.10	8.19	7.58	6.98
10	50		10.6	9.71	9.10	8.19	7.58	6.98
15	59		10.6	9.71	9.10	8.19	7.58	6.98

■ MODEL : AR36

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	7.19	6.94	6.77	6.53	6.36	6.20
-10	14		8.15	7.90	7.73	7.48	7.32	7.15
-5	23		9.26	9.00	8.83	8.57	8.40	8.20
0	32		10.5	10.2	10.0	9.63	8.92	8.20
5	41		11.9	11.4	10.7	9.63	8.92	8.20
7	45		12.4	11.4	10.7	9.63	8.92	8.20
10	50		12.5	11.4	10.7	9.63	8.92	8.20
15	59		12.5	11.4	10.7	9.63	8.92	8.20

■ MODEL : AR45

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	9.20	8.88	8.67	8.35	8.14	7.93
-10	14		10.4	10.1	9.90	9.58	9.37	9.15
-5	23		11.9	11.5	11.3	11.0	10.7	10.5
0	32		13.4	13.1	12.8	12.3	11.4	10.5
5	41		15.2	14.6	13.7	12.3	11.4	10.5
7	45		15.9	14.6	13.7	12.3	11.4	10.5
10	50		16.0	14.6	13.7	12.3	11.4	10.5
15	59		16.0	14.6	13.7	12.3	11.4	10.5

TC : Total Capacity kW

4-9-5 HIGH STATIC PRESSURE DUCT TYPE

■ MODEL : AR36H

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
(°CDB)	(°FDB)	RH	59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
			TC	TC	TC	TC	TC	TC
-15	5	RH85%	7.19	6.94	6.77	6.53	6.36	6.20
-10	14		8.15	7.90	7.73	7.48	7.32	7.15
-5	23		9.26	9.00	8.83	8.57	8.40	8.20
0	32		10.5	10.2	10.0	9.63	8.92	8.20
5	41		11.9	11.4	10.7	9.63	8.92	8.20
7	45		12.4	11.4	10.7	9.63	8.92	8.20
10	50		12.5	11.4	10.7	9.63	8.92	8.20
15	59		12.5	11.4	10.7	9.63	8.92	8.20

■ MODEL : AR45H

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
(°CDB)	(°FDB)	RH	59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
			TC	TC	TC	TC	TC	TC
-15	5	RH85%	9.20	8.88	8.67	8.35	8.14	7.93
-10	14		10.4	10.1	9.90	9.58	9.37	9.15
-5	23		11.9	11.5	11.3	11.0	10.7	10.5
0	32		13.4	13.1	12.8	12.3	11.4	10.5
5	41		15.2	14.6	13.7	12.3	11.4	10.5
7	45		15.9	14.6	13.7	12.3	11.4	10.5
10	50		16.0	14.6	13.7	12.3	11.4	10.5
15	59		16.0	14.6	13.7	12.3	11.4	10.5

■ MODEL : AR60H

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
(°CDB)	(°FDB)	RH	59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
			TC	TC	TC	TC	TC	TC
-15	5	RH85%	11.8	11.4	11.1	10.7	10.5	10.2
-10	14		13.4	13.0	12.7	12.3	12.0	11.8
-5	23		15.2	14.8	14.5	14.1	13.8	13.5
0	32		17.3	16.8	16.5	15.8	14.7	13.5
5	41		19.5	18.8	17.6	15.8	14.7	13.5
7	45		20.5	18.8	17.6	15.8	14.7	13.5
10	50		20.5	18.8	17.6	15.8	14.7	13.5
15	59		20.5	18.8	17.6	15.8	14.7	13.5

TC : Total Capacity kW

4-9-6 COMPACT CASSETTE TYPE

■ MODEL : AU7

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	1.65	1.59	1.55	1.49	1.46	1.42
-10	14		1.87	1.81	1.77	1.71	1.68	1.64
-5	23		2.12	2.06	2.02	1.96	1.92	1.88
0	32		2.40	2.34	2.30	2.21	2.04	1.88
5	41		2.72	2.61	2.45	2.21	2.04	1.88
7	45		2.85	2.61	2.45	2.21	2.04	1.88
10	50		2.86	2.61	2.45	2.21	2.04	1.88
15	59		2.86	2.61	2.45	2.21	2.04	1.88

■ MODEL : AU9

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	2.08	2.01	1.96	1.89	1.84	1.79
-10	14		2.36	2.29	2.24	2.17	2.12	2.07
-5	23		2.68	2.61	2.56	2.48	2.43	2.38
0	32		3.04	2.96	2.91	2.79	2.58	2.38
5	41		3.44	3.31	3.10	2.79	2.58	2.38
7	45		3.61	3.31	3.10	2.79	2.58	2.38
10	50		3.62	3.31	3.10	2.79	3.58	2.38
15	59		3.62	3.31	3.10	2.79	3.58	2.38

■ MODEL : AU12

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	2.75	2.66	2.60	2.50	2.44	2.37
-10	14		3.12	3.03	2.96	2.87	2.80	2.74
-5	23		3.55	3.45	3.38	3.28	3.22	3.14
0	32		4.02	3.92	3.85	3.69	3.42	3.14
5	41		4.55	4.37	4.10	3.69	3.42	3.14
7	45		4.77	4.37	4.10	3.69	3.42	3.14
10	50		4.78	4.37	4.10	3.69	3.42	3.14
15	59		4.78	4.37	4.10	3.69	3.42	3.14

■ MODEL : AU14

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	3.03	2.92	2.85	2.74	2.67	2.61
-10	14		3.43	3.32	3.25	3.15	3.08	3.01
-5	23		3.89	3.78	3.71	3.60	3.53	3.45
0	32		4.41	4.30	4.22	4.05	3.75	3.45
5	41		4.99	4.80	4.50	4.05	3.75	3.45
7	45		5.23	4.80	4.50	4.05	3.75	3.45
10	50		5.25	4.80	4.50	4.05	3.75	3.45
15	59		5.25	4.80	4.50	4.05	3.75	3.45

■ MODEL : AU18

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	3.66	3.53	3.45	3.32	3.24	3.16
-10	14		4.15	4.02	3.94	3.81	3.73	3.64
-5	23		4.71	4.58	4.50	4.36	4.28	4.18
0	32		5.34	5.20	5.11	4.91	4.54	4.18
5	41		6.04	5.81	5.45	4.91	4.54	4.18
7	45		6.34	5.81	5.45	4.91	4.54	4.18
10	50		6.36	5.81	5.45	4.91	4.54	4.18
15	59		6.36	5.81	5.45	4.91	4.54	4.18

TC : Total Capacity kW

4-9-7 CASSETTE TYPE (1/2)

■ MODEL : AU20

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	3.89	3.76	3.67	3.54	3.45	3.36
-10	14		4.42	4.28	4.19	4.06	3.97	3.88
-5	23		5.02	4.88	4.78	4.64	4.55	4.45
0	32		5.69	5.54	5.44	5.22	4.83	4.45
5	41		6.43	6.19	5.80	5.22	4.83	4.45
7	45		6.75	6.19	5.80	5.22	4.83	4.45
10	50		6.77	6.19	5.80	5.22	4.83	4.45
15	59		6.77	6.19	5.80	5.22	4.83	4.45

■ MODEL : AU25

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	5.27	5.09	4.97	4.79	4.67	4.55
-10	14		5.98	5.79	5.67	5.49	5.37	5.25
-5	23		6.79	6.60	6.48	6.29	6.16	6.02
0	32		7.70	7.50	7.36	7.07	6.54	6.02
5	41		8.71	8.37	7.85	7.07	6.54	6.02
7	45		9.13	8.37	7.85	7.07	6.54	6.02
10	50		9.16	8.37	7.85	7.07	6.54	6.02
15	59		9.16	8.37	7.85	7.07	6.54	6.02

■ MODEL : AU30

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	6.11	5.90	5.76	5.55	5.41	5.27
-10	14		6.93	6.72	6.58	6.36	6.22	6.08
-5	23		7.87	7.65	7.51	7.29	7.14	6.98
0	32		8.92	8.69	8.54	8.19	7.58	6.98
5	41		10.1	9.71	9.10	8.19	7.58	6.98
7	45		10.6	9.71	9.10	8.19	7.58	6.98
10	50		10.6	9.71	9.10	8.19	7.58	6.98
15	59		10.6	9.71	9.10	8.19	7.58	6.98

TC : Total Capacity kW

4-9-7 CASSETTE TYPE (2/2)

■ MODEL : AU36

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	7.19	6.94	6.77	6.53	6.36	6.20
-10	14		8.15	7.90	7.73	7.48	7.32	7.15
-5	23		9.26	9.00	8.83	8.57	8.40	8.20
0	32		10.5	10.2	10.0	9.63	8.92	8.20
5	41		11.9	11.4	10.7	9.63	8.92	8.20
7	45		12.4	11.4	10.7	9.63	8.92	8.20
10	50		12.5	11.4	10.7	9.63	8.92	8.20
15	59		12.5	11.4	10.7	9.63	8.92	8.20

■ MODEL : AU45

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	9.20	8.88	8.67	8.35	8.14	7.93
-10	14		10.4	10.1	9.90	9.58	9.37	9.15
-5	23		11.9	11.5	11.3	11.0	10.7	10.5
0	32		13.4	13.1	12.8	12.3	11.4	10.5
5	41		15.2	14.6	13.7	12.3	11.4	10.5
7	45		15.9	14.6	13.7	12.3	11.4	10.5
10	50		16.0	14.6	13.7	12.3	11.4	10.5
15	59		16.0	14.6	13.7	12.3	11.4	10.5

■ MODEL : AU54

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	10.6	10.2	10.0	9.64	9.39	9.15
-10	14		12.0	11.7	11.4	11.0	10.8	10.6
-5	23		13.7	13.3	13.0	12.7	12.4	12.1
0	32		15.5	15.1	14.8	14.2	13.2	12.1
5	41		17.5	16.9	15.8	14.2	13.2	12.1
7	45		18.4	16.9	15.8	14.2	13.2	12.1
10	50		18.4	16.9	15.8	14.2	13.2	12.1
15	59		18.4	16.9	15.8	14.2	13.2	12.1

TC : Total Capacity kW

4-9-8 COMPACT WALL MOUNTED TYPE

■ MODEL : AS7

Outdoor Temperature			Indoor Temperature					
			15°CDB 59°FDB	18°CDB 64°FDB	20°CDB 68°FDB	23°CDB 73°FDB	25°CDB 77°FDB	27°CDB 81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	1.65	1.59	1.55	1.49	1.46	1.42
-10	14		1.87	1.81	1.77	1.71	1.68	1.64
-5	23		2.12	2.06	2.02	1.96	1.92	1.88
0	32		2.40	2.34	2.30	2.21	2.04	1.88
5	41		2.72	2.61	2.45	2.21	2.04	1.88
7	45		2.85	2.61	2.45	2.21	2.04	1.88
10	50		2.86	2.61	2.45	2.21	2.04	1.88
15	59		2.86	2.61	2.45	2.21	2.04	1.88

■ MODEL : AS9

Outdoor Temperature			Indoor Temperature					
			15°CDB 59°FDB	18°CDB 64°FDB	20°CDB 68°FDB	23°CDB 73°FDB	25°CDB 77°FDB	27°CDB 81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	2.08	2.01	1.96	1.89	1.84	1.79
-10	14		2.36	2.29	2.24	2.17	2.12	2.07
-5	23		2.68	2.61	2.56	2.48	2.43	2.38
0	32		3.04	2.96	2.91	2.79	2.58	2.38
5	41		3.44	3.31	3.10	2.79	2.58	2.38
7	45		3.61	3.31	3.10	2.79	2.58	2.38
10	50		3.62	3.31	3.10	2.79	2.58	2.38
15	59		3.62	3.31	3.10	2.79	2.58	2.38

■ MODEL : AS12

Outdoor Temperature			Indoor Temperature					
			15°CDB 59°FDB	18°CDB 64°FDB	20°CDB 68°FDB	23°CDB 73°FDB	25°CDB 77°FDB	27°CDB 81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	2.75	2.66	2.60	2.50	2.44	2.37
-10	14		3.12	3.03	2.96	2.87	2.80	2.74
-5	23		3.55	3.45	3.38	3.28	3.22	3.14
0	32		4.02	3.92	3.85	3.69	3.42	3.14
5	41		4.55	4.37	4.10	3.69	3.42	3.14
7	45		4.77	4.37	4.10	3.69	3.42	3.14
10	50		4.78	4.37	4.10	3.69	3.42	3.14
15	59		4.78	4.37	4.10	3.69	3.42	3.14

■ MODEL : AS14

Outdoor Temperature			Indoor Temperature					
			15°CDB 59°FDB	18°CDB 64°FDB	20°CDB 68°FDB	23°CDB 73°FDB	25°CDB 77°FDB	27°CDB 81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	3.02	2.92	2.85	2.75	2.67	2.61
-10	14		3.42	3.32	3.25	3.15	3.08	3.01
-5	23		3.89	3.79	3.71	3.60	3.53	3.45
0	32		4.42	4.29	4.22	4.05	3.75	3.45
5	41		4.99	4.80	4.50	4.05	3.75	3.45
7	45		5.23	4.80	4.50	4.05	3.75	3.45
10	50		5.25	4.80	4.50	4.05	3.75	3.45
15	59		5.25	4.80	4.50	4.05	3.75	3.45

TC : Total Capacity kW

4-9-9 WALL MOUNTED TYPE

■ MODEL : AS18

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	3.76	3.63	3.54	3.42	3.33	3.24
-10	14		4.26	4.13	4.05	3.92	3.83	3.74
-5	23		4.84	4.71	4.62	4.48	4.39	4.29
0	32		5.49	5.35	5.25	5.04	4.67	4.29
5	41		6.21	5.97	5.60	5.04	4.67	4.29
7	45		6.51	5.97	5.60	5.04	4.67	4.29
10	50		6.53	5.97	5.60	5.04	4.67	4.29
15	59		6.53	5.97	5.60	5.04	4.67	4.29

■ MODEL : AS24

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	5.24	5.06	4.94	4.76	4.64	4.52
-10	14		5.94	5.76	5.64	5.45	5.33	5.21
-5	23		6.75	6.56	6.43	6.25	6.12	5.98
0	32		7.65	7.45	7.32	7.02	6.50	5.98
5	41		8.65	8.32	7.80	7.02	6.50	5.98
7	45		9.07	8.32	7.80	7.02	6.50	5.98
10	50		9.10	8.32	7.80	7.02	6.50	5.98
15	59		9.10	8.32	7.80	7.02	6.50	5.98

■ MODEL : AS30

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	6.11	5.90	5.76	5.55	5.41	5.27
-10	14		6.93	6.72	6.58	6.36	6.22	6.08
-5	23		7.87	7.65	7.51	7.29	7.14	6.98
0	32		8.92	8.69	8.54	8.19	7.58	6.98
5	41		10.1	9.71	9.10	8.19	7.58	6.98
7	45		10.6	9.71	9.10	8.19	7.58	6.98
10	50		10.6	9.71	9.10	8.19	7.58	6.98
15	59		10.6	9.71	9.10	8.19	7.58	6.98

TC : Total Capacity kW

4-9-10 CEILING WALL TYPE (1/2)

■ MODEL : AW7

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	1.65	1.59	1.55	1.49	1.46	1.42
-10	14		1.87	1.81	1.77	1.71	1.68	1.64
-5	23		2.12	2.06	2.02	1.96	1.92	1.88
0	32		2.40	2.34	2.30	2.21	2.04	1.88
5	41		2.72	2.61	2.45	2.21	2.04	1.88
7	45		2.85	2.61	2.45	2.21	2.04	1.88
10	50		2.86	2.61	2.45	2.21	2.04	1.88
15	59		2.86	2.61	2.45	2.21	2.04	1.88

■ MODEL : AW9

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	2.08	2.01	1.96	1.89	1.84	1.79
-10	14		2.36	2.29	2.24	2.17	2.12	2.07
-5	23		2.68	2.61	2.56	2.48	2.43	2.38
0	32		3.04	2.96	2.91	2.79	2.58	2.38
5	41		3.44	3.31	3.10	2.79	2.58	2.38
7	45		3.61	3.31	3.10	2.79	2.58	2.38
10	50		3.62	3.31	3.10	2.79	3.58	2.38
15	59		3.62	3.31	3.10	2.79	3.58	2.38

■ MODEL : AW12

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	2.75	2.66	2.60	2.50	2.44	2.37
-10	14		3.12	3.03	2.96	2.87	2.80	2.74
-5	23		3.55	3.45	3.38	3.28	3.22	3.14
0	32		4.02	3.92	3.85	3.69	3.42	3.14
5	41		4.55	4.37	4.10	3.69	3.42	3.14
7	45		4.77	4.37	4.10	3.69	3.42	3.14
10	50		4.78	4.37	4.10	3.69	3.42	3.14
15	59		4.78	4.37	4.10	3.69	3.42	3.14

TC : Total Capacity kW

4-9-10 CEILING WALL TYPE (2/2)

■ MODEL : AW14

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	3.22	3.11	3.04	2.93	2.85	2.78
-10	14		3.65	3.54	3.47	3.36	3.28	3.21
-5	23		4.15	4.04	3.96	3.84	3.77	3.68
0	32		4.71	4.58	4.50	4.32	4.00	3.68
5	41		5.32	5.12	4.80	4.32	4.00	3.68
7	45		5.58	5.12	4.80	4.32	4.00	3.68
10	50		5.60	5.12	4.80	4.32	4.00	3.68
15	59		5.60	5.12	4.80	4.32	4.00	3.68

■ MODEL : AW18

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	3.89	3.76	3.67	3.54	3.45	3.36
-10	14		4.42	4.28	4.19	4.06	3.97	3.88
-5	23		5.02	4.88	4.78	4.64	4.55	4.45
0	32		5.69	5.54	5.44	5.22	4.83	4.45
5	41		6.43	6.19	5.80	5.22	4.83	4.45
7	45		6.75	6.19	5.80	5.22	4.83	4.45
10	50		6.77	6.19	5.80	5.22	4.83	4.45
15	59		6.77	6.19	5.80	5.22	4.83	4.45

■ MODEL : AW24

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	5.17	4.99	4.87	4.70	4.58	4.46
-10	14		5.86	5.68	5.56	5.38	5.26	5.14
-5	23		6.66	6.48	6.35	6.17	6.04	5.90
0	32		7.55	7.35	7.22	6.93	6.42	5.90
5	41		8.54	8.21	7.70	6.93	6.42	5.90
7	45		8.96	8.21	7.70	6.93	6.42	5.90
10	50		8.98	8.21	7.70	6.93	6.42	5.90
15	59		8.98	8.21	7.70	6.93	6.42	5.90

■ MODEL : AW30

Outdoor Temperature			Indoor Temperature					
			15°CDB	18°CDB	20°CDB	23°CDB	25°CDB	27°CDB
			59°FDB	64°FDB	68°FDB	73°FDB	77°FDB	81°FDB
(°CDB)	(°FDB)	RH	TC	TC	TC	TC	TC	TC
-15	5	RH85%	5.91	5.71	5.57	5.37	5.23	5.10
-10	14		6.70	6.50	6.36	6.15	6.02	5.88
-5	23		7.61	7.40	7.26	7.05	6.90	6.75
0	32		8.63	8.40	8.25	7.92	7.33	6.75
5	41		9.76	9.39	8.80	7.92	7.33	6.75
7	45		10.2	9.39	8.80	7.92	7.33	6.75
10	50		10.3	9.39	8.80	7.92	7.33	6.75
15	59		10.3	9.39	8.80	7.92	7.33	6.75

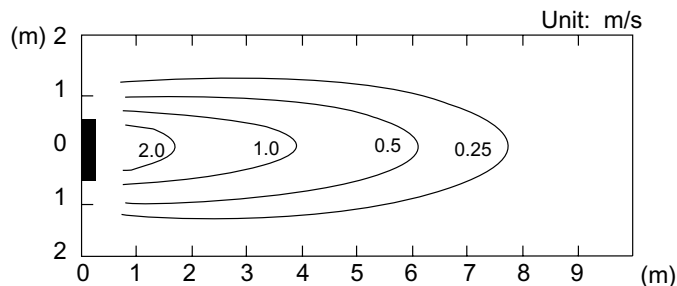
TC : Total Capacity kW

4-10 AIR VELOCITY DISTRIBUTION

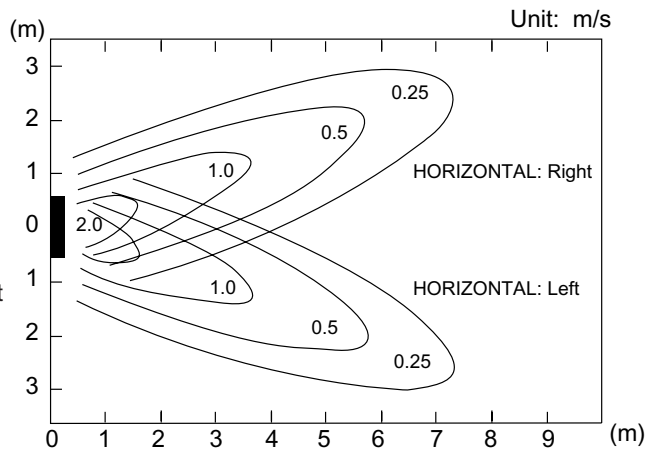
4-10-1 UNIVERSAL FLOOR / CEILING TYPE

■ MODELS : AB12, AB14 (FLOOR CONSOLE)

TOP VIEW
VERTICAL : Forward
HORIZONTAL : Center

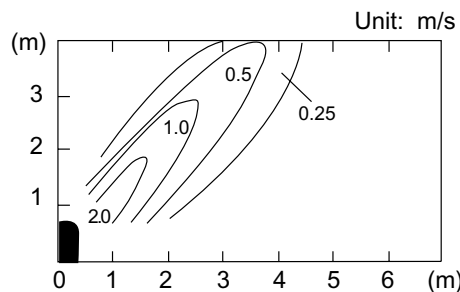
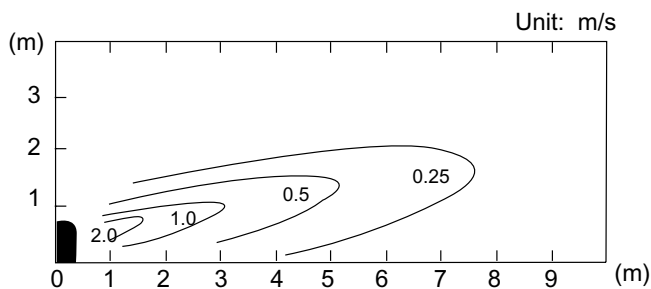


TOP VIEW
VERTICAL : Forward
HORIZONTAL : Right & Left

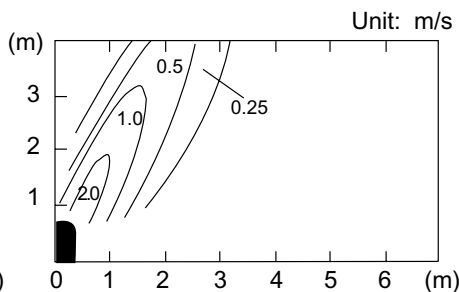


Condition
Fan speed : High
Operation mode : Fan
Voltage : 240V

SIDE VIEW
VERTICAL : Forward
HORIZONTAL : Center



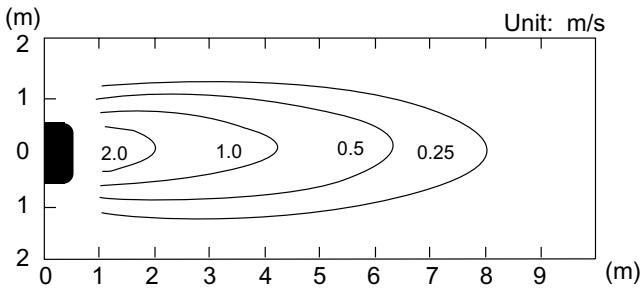
SIDE VIEW
VERTICAL : Center
HORIZONTAL : Center



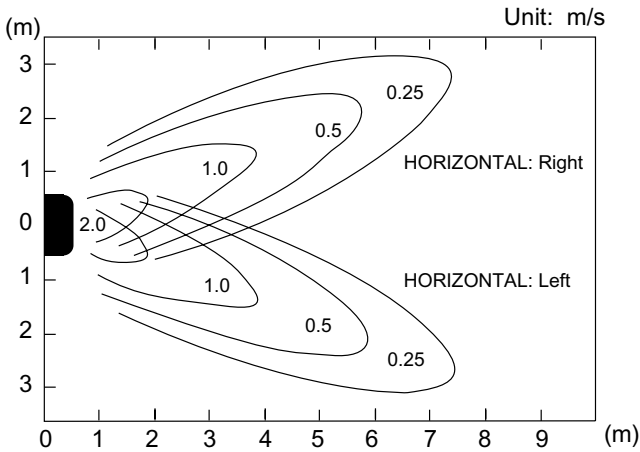
SIDE VIEW
VERTICAL : Upward
HORIZONTAL : Center

MODELS : AB12, AB14 (UNDER CEILING)

TOP VIEW
VERTICAL : Upward
HORIZONTAL : Center

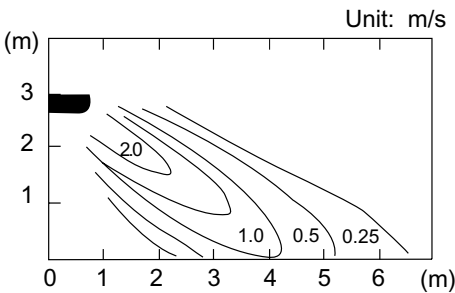
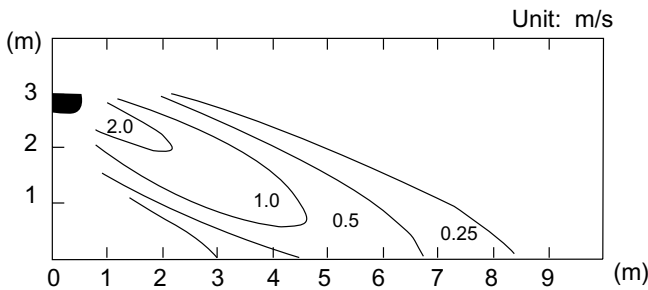


TOP VIEW
VERTICAL : Upward
HORIZONTAL : Right & Left

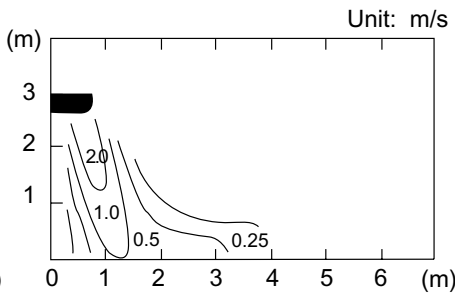


Condition
Fan speed : High
Operation mode : Fan
Voltage : 240V

SIDE VIEW
VERTICAL : Upward
HORIZONTAL : Center



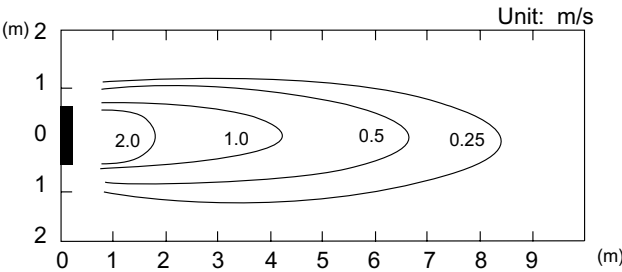
SIDE VIEW
VERTICAL : Center
HORIZONTAL : Center



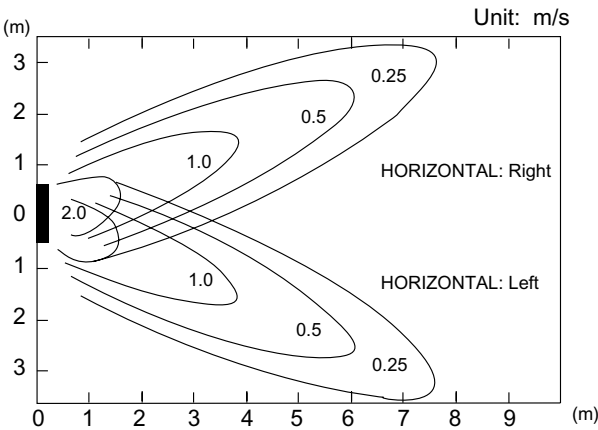
SIDE VIEW
VERTICAL : Downward
HORIZONTAL : Center

■MODEL : AB18 (FLOOR CONSOLE)

TOP VIEW
VERTICAL : Forward
HORIZONTAL : Center

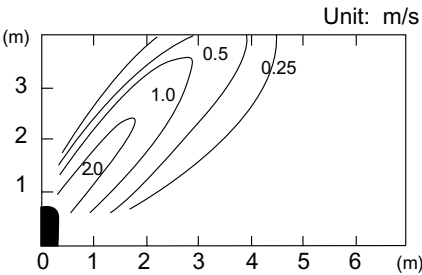
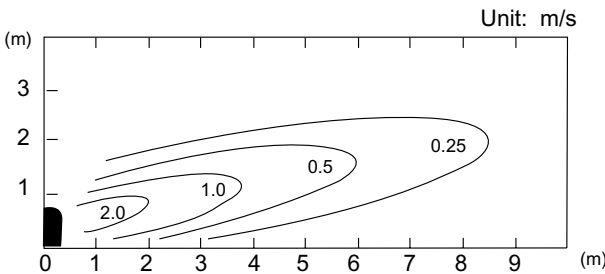


TOP VIEW
VERTICAL : Forward
HORIZONTAL : Right & Left

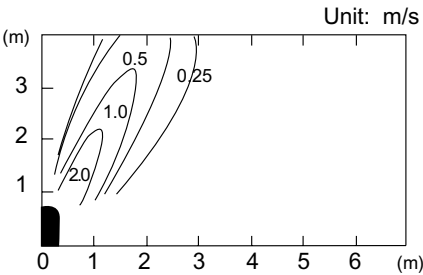


Condition
Fan speed : High
Operation mode : Fan
Voltage : 240V

SIDE VIEW
VERTICAL : Forward
HORIZONTAL : Center



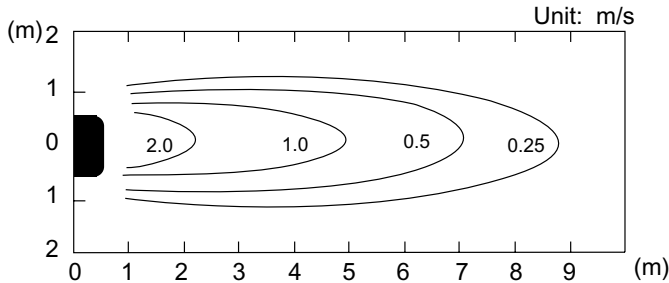
SIDE VIEW
VERTICAL : Center
HORIZONTAL : Center



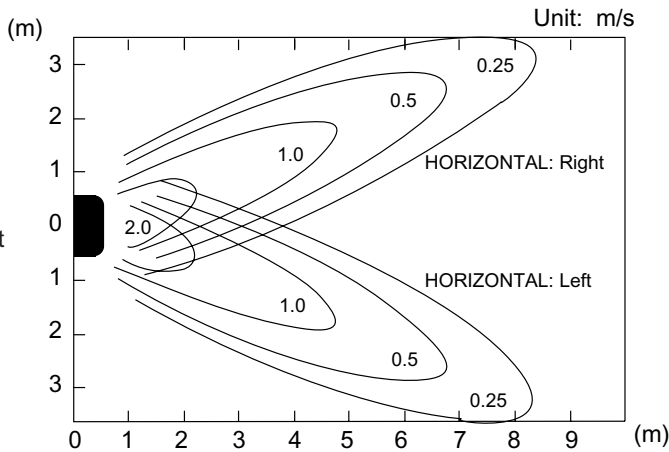
SIDE VIEW
VERTICAL : Up
HORIZONTAL : Center

■ MODEL : AB18 (UNDER CEILING)

TOP VIEW
VERTICAL : Up
HORIZONTAL : Center

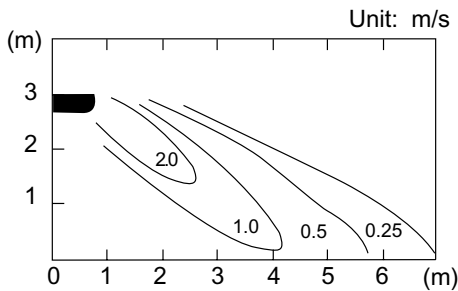
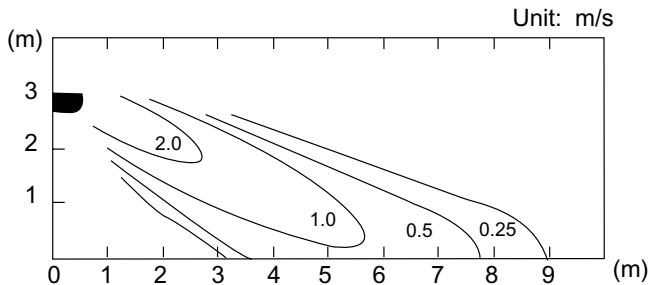


TOP VIEW
VERTICAL : Up
HORIZONTAL : Right & Left

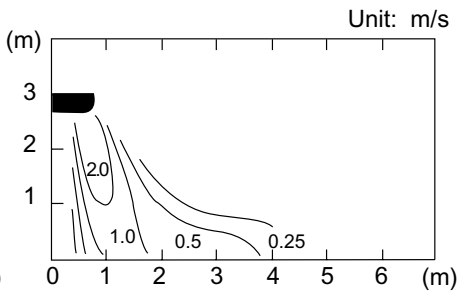


Condition
Fan speed : High
Operation mode : Fan
Voltage : 240V

SIDE VIEW
VERTICAL : Forward
HORIZONTAL : Center



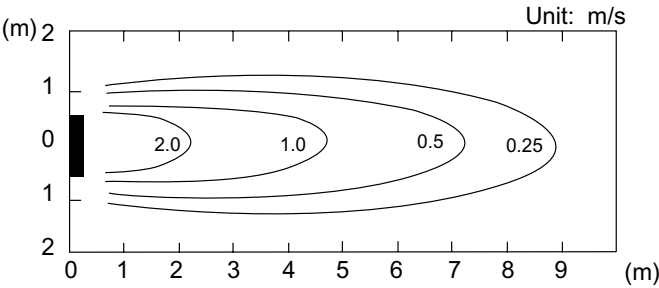
SIDE VIEW
VERTICAL : Center
HORIZONTAL : Center



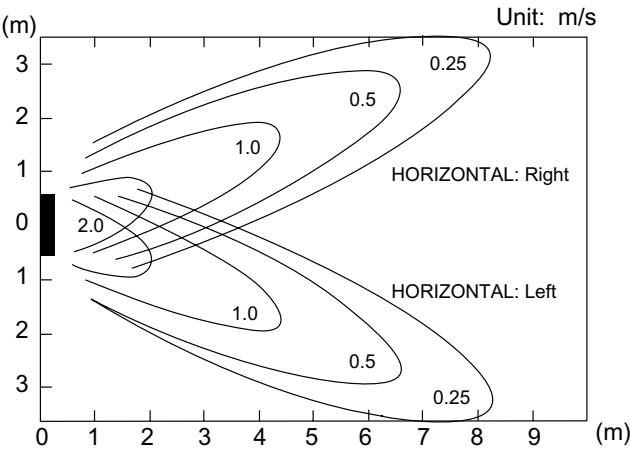
SIDE VIEW
VERTICAL : Down
HORIZONTAL : Center

■MODEL : AB24 (FLOOR CONSOLE)

TOP VIEW
VERTICAL : Forward
HORIZONTAL : Center

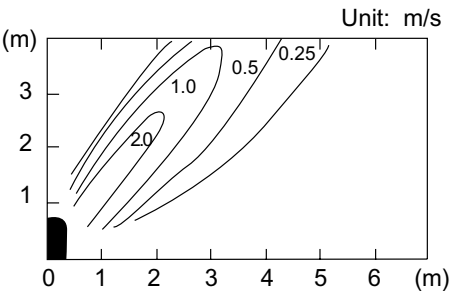
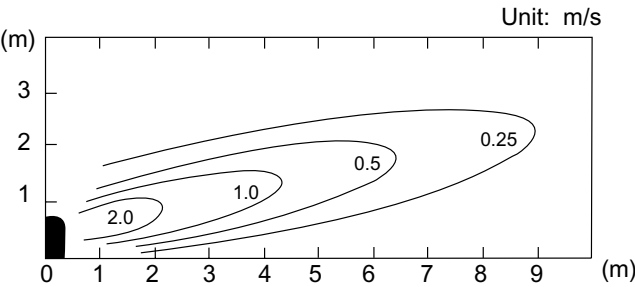


TOP VIEW
VERTICAL : Forward
HORIZONTAL : Right & Left

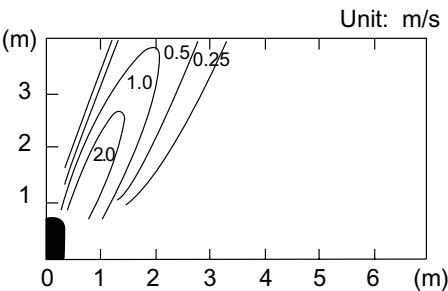


Condition
Fan speed : High
Operation mode : Fan
Voltage : 240V (50Hz)
220V (60Hz)

SIDE VIEW
VERTICAL : Forward
HORIZONTAL : Center



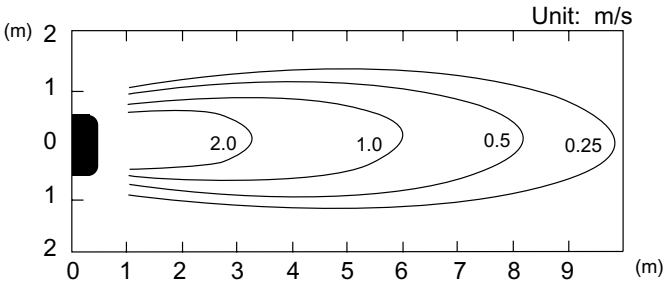
SIDE VIEW
VERTICAL : Center
HORIZONTAL : Center



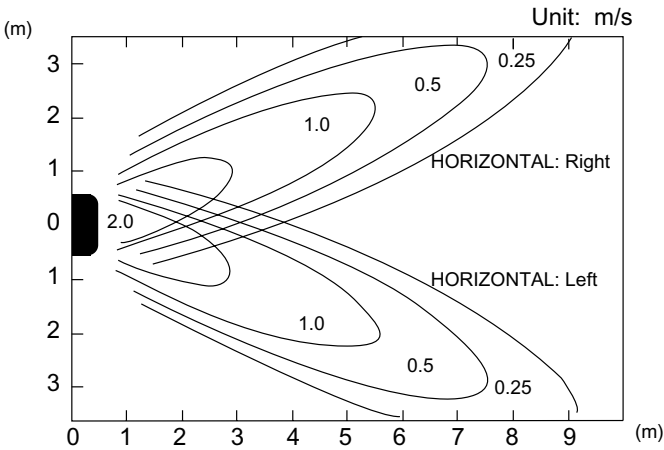
SIDE VIEW
VERTICAL : Up
HORIZONTAL : Center

■ **MODEL : AB24 (UNDER CEILING)**

TOP VIEW
VERTICAL : Up
HORIZONTAL : Center

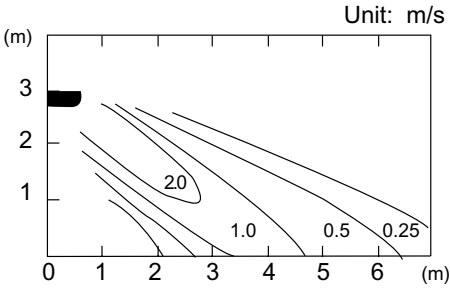
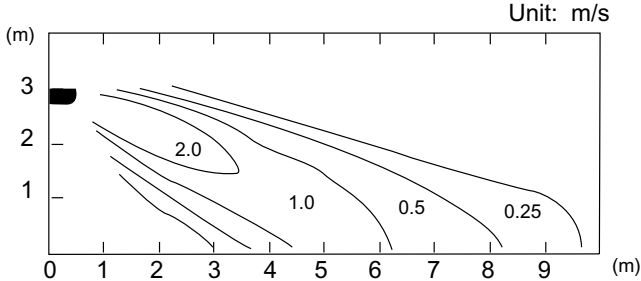


TOP VIEW
VERTICAL : Up
HORIZONTAL : Right & Left

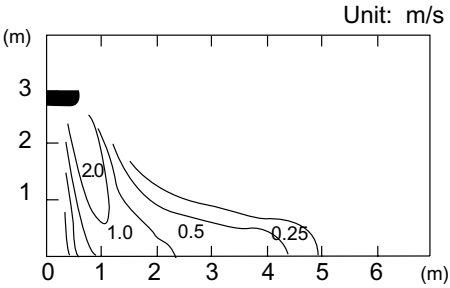


Condition
Fan speed : High
Operation mode : Fan
Voltage : 240V (50Hz)
220V (60Hz)

SIDE VIEW
VERTICAL : Up
HORIZONTAL : Center



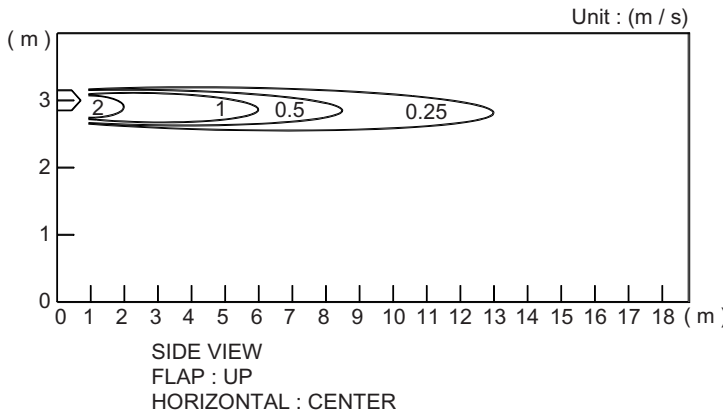
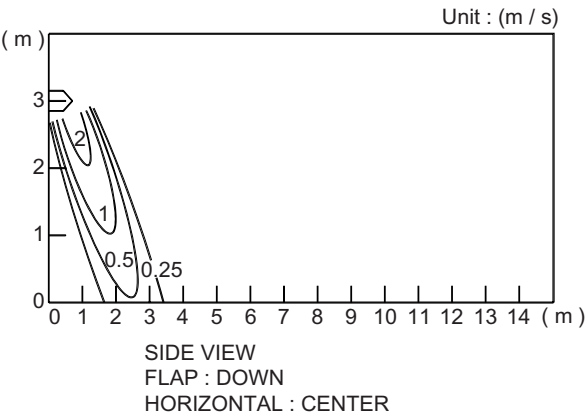
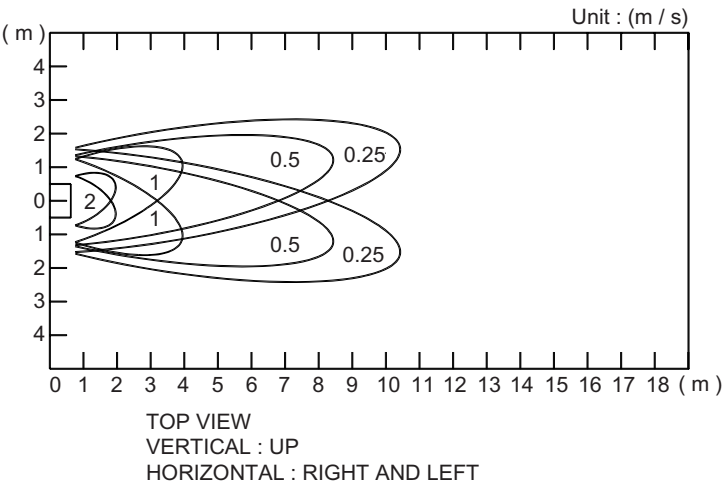
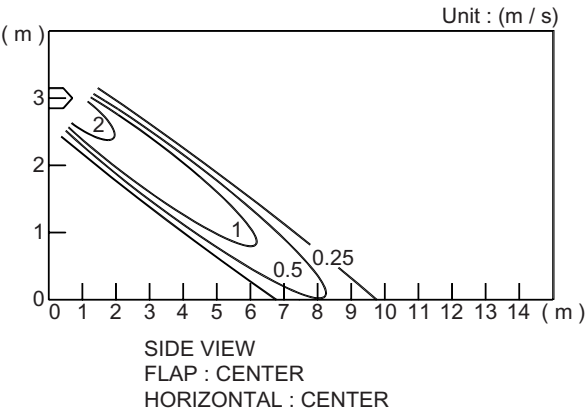
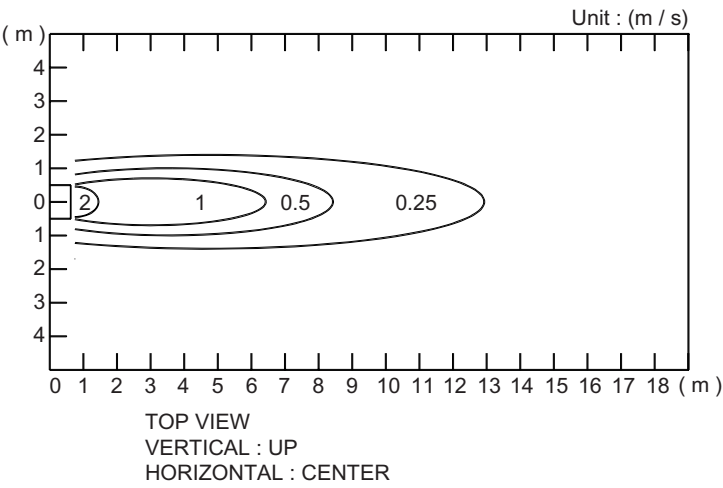
SIDE VIEW
VERTICAL : Center
HORIZONTAL : Center



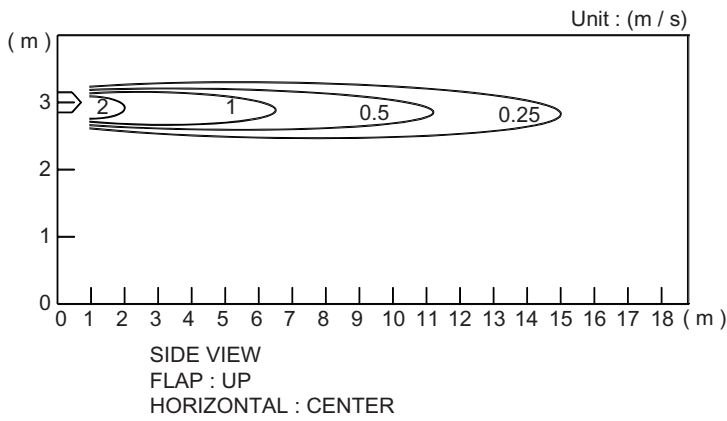
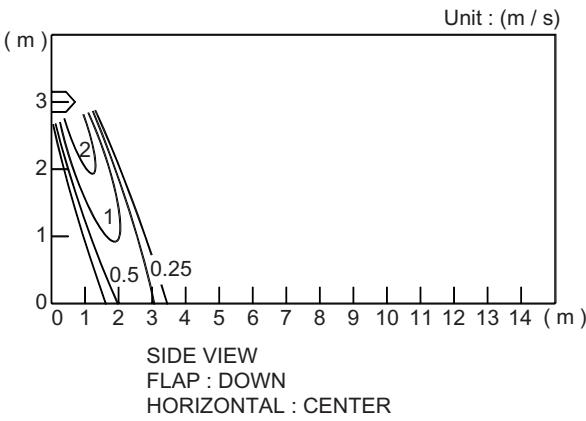
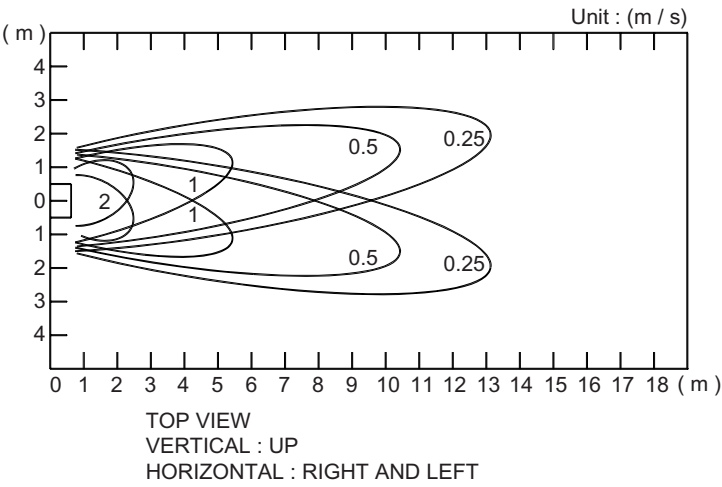
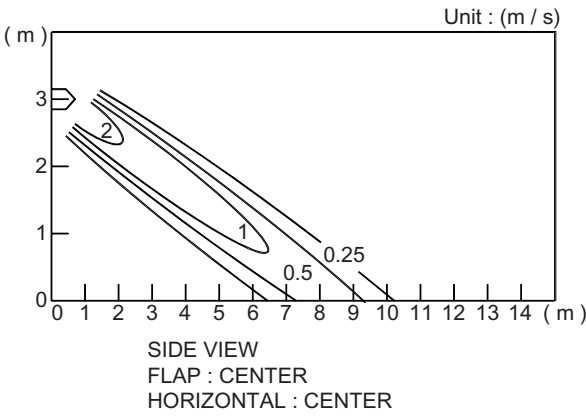
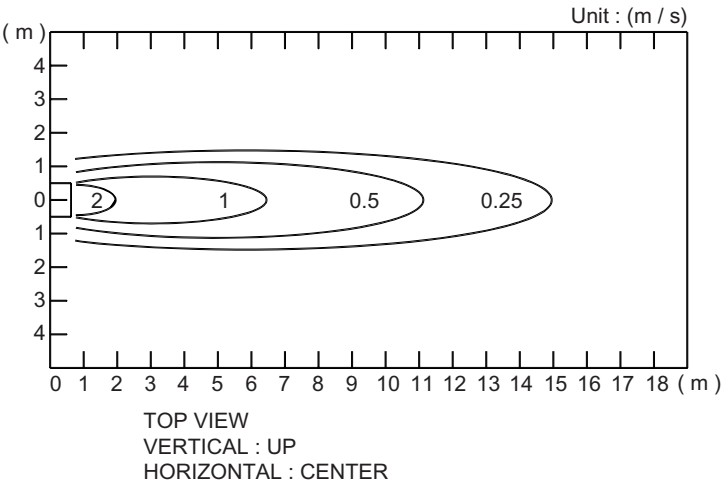
SIDE VIEW
VERTICAL : Down
HORIZONTAL : Center

4-10-2 LARGE CEILING TYPE

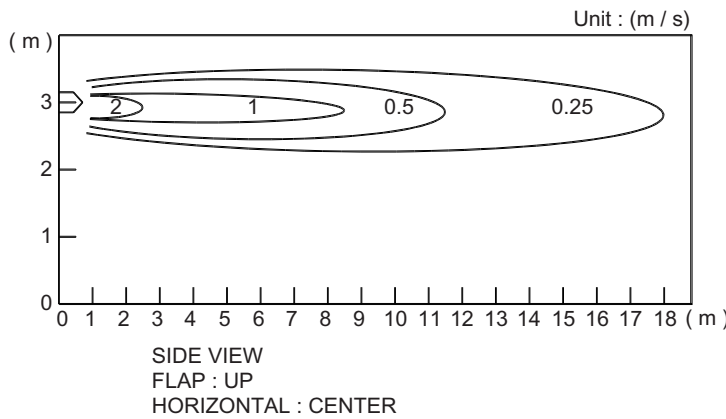
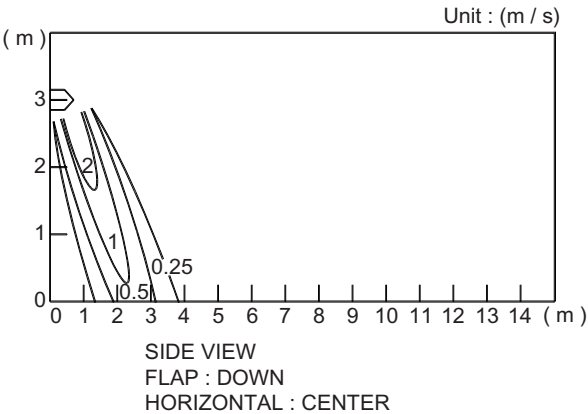
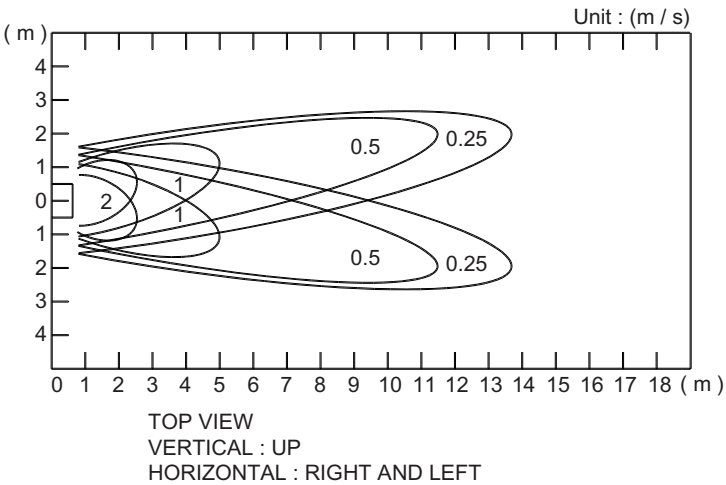
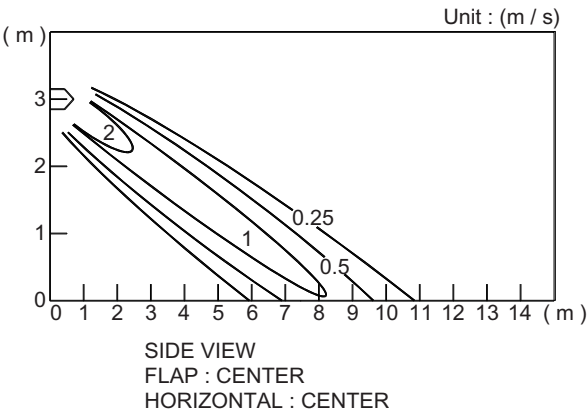
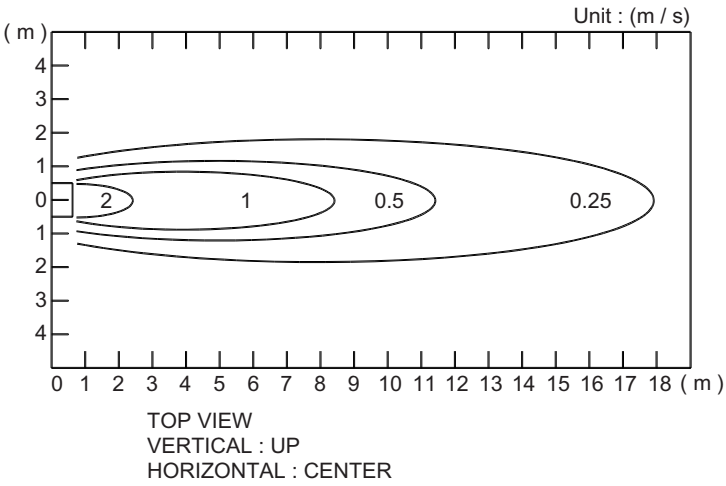
■MODEL : AB30



■MODEL : AB36

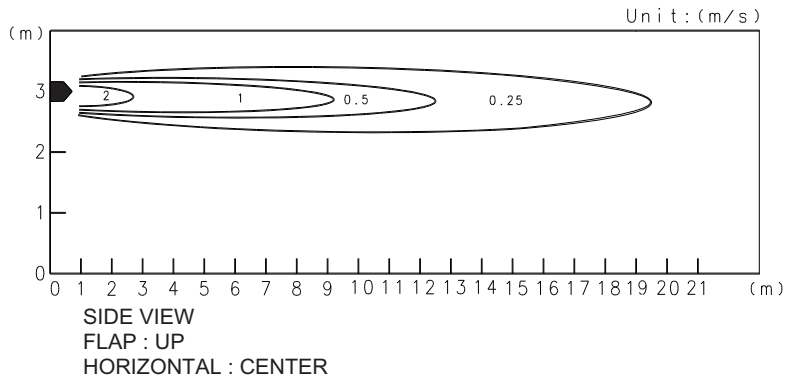
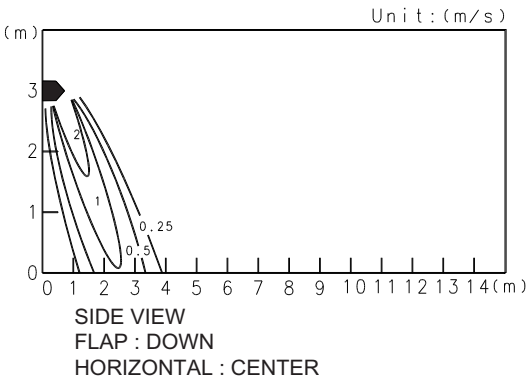
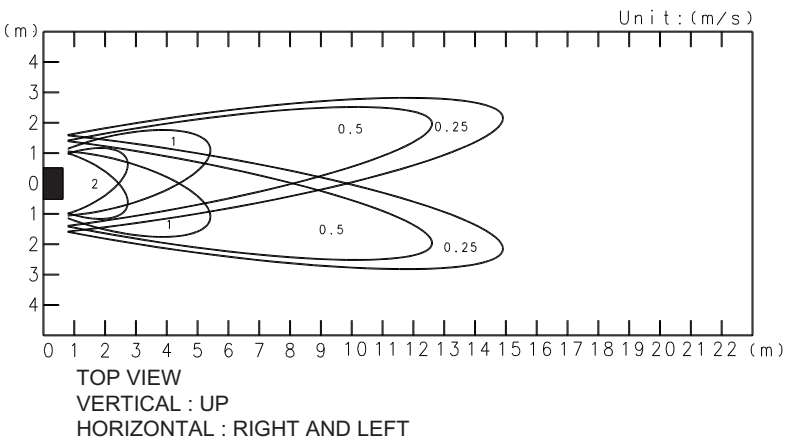
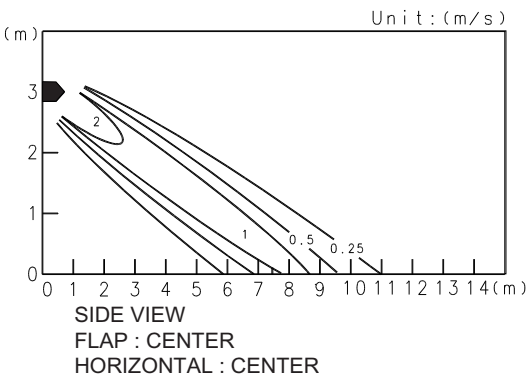
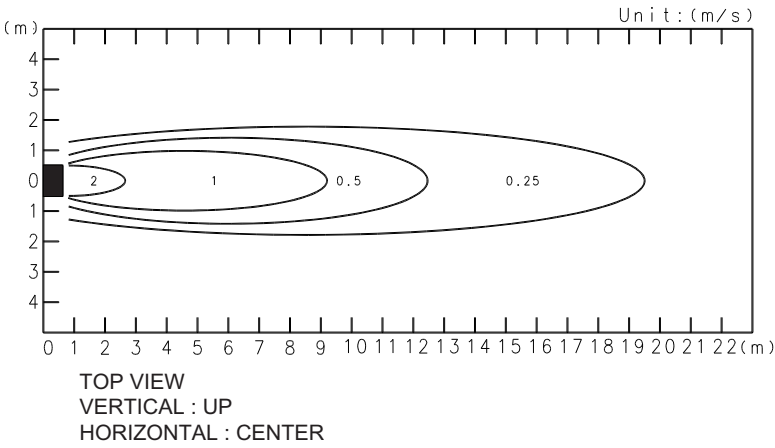


■MODEL : AB45



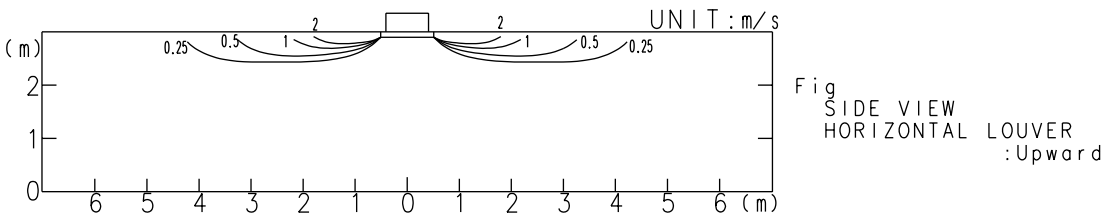
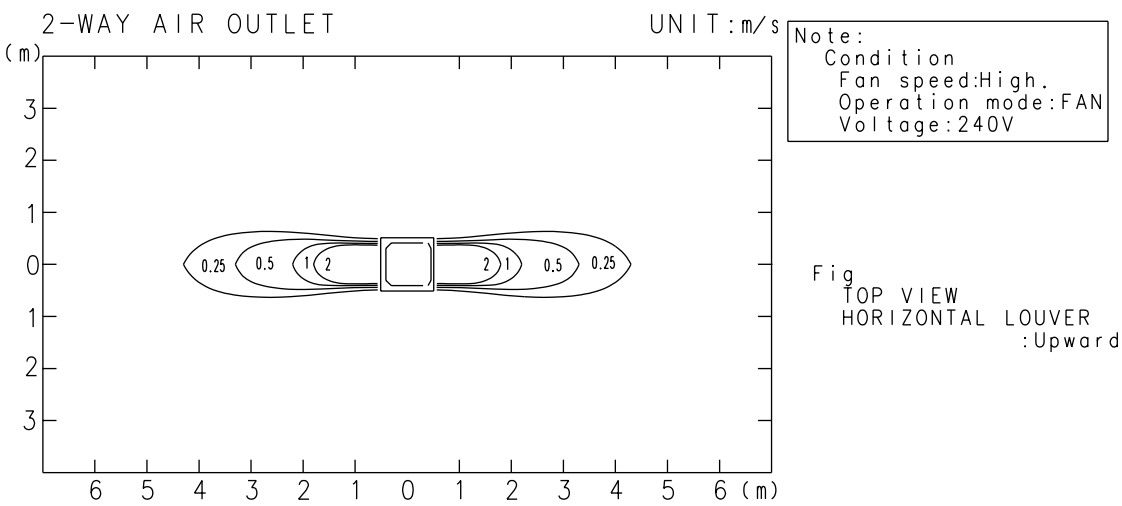
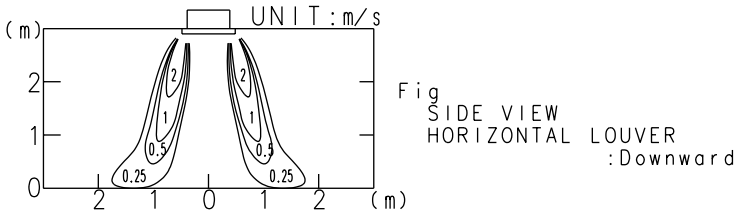
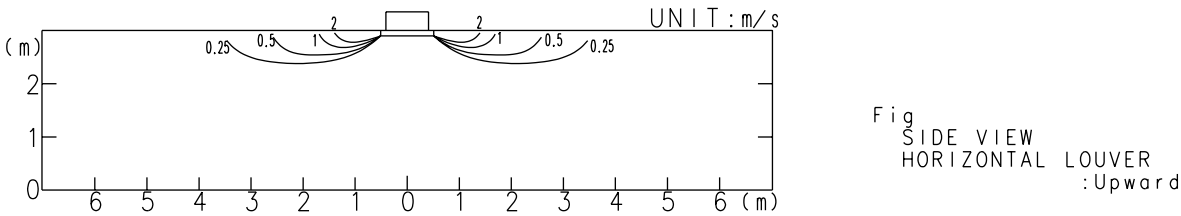
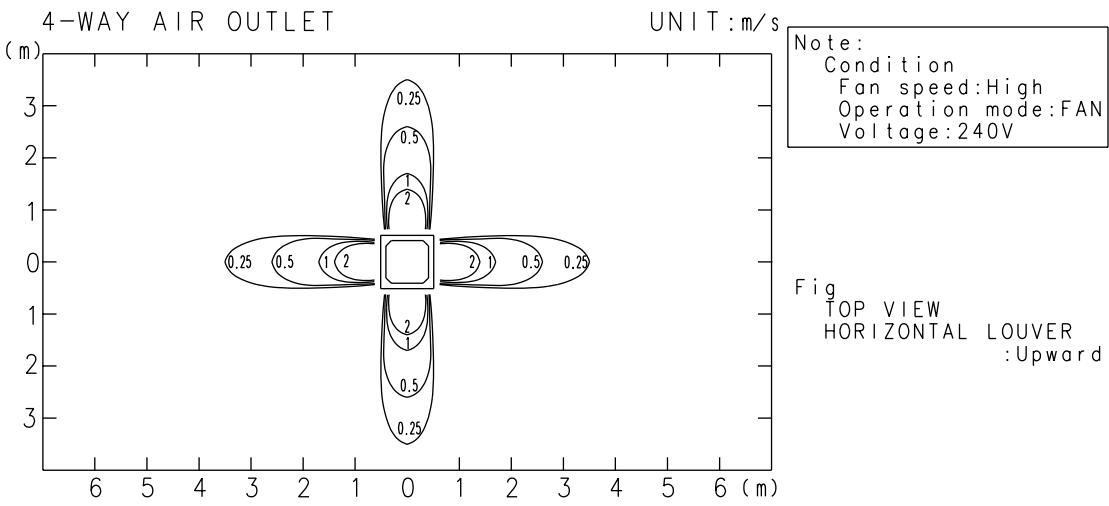
MODELS : AB54

Condition
Fan speed : High
Operation mode : Fan
Voltage : 240V

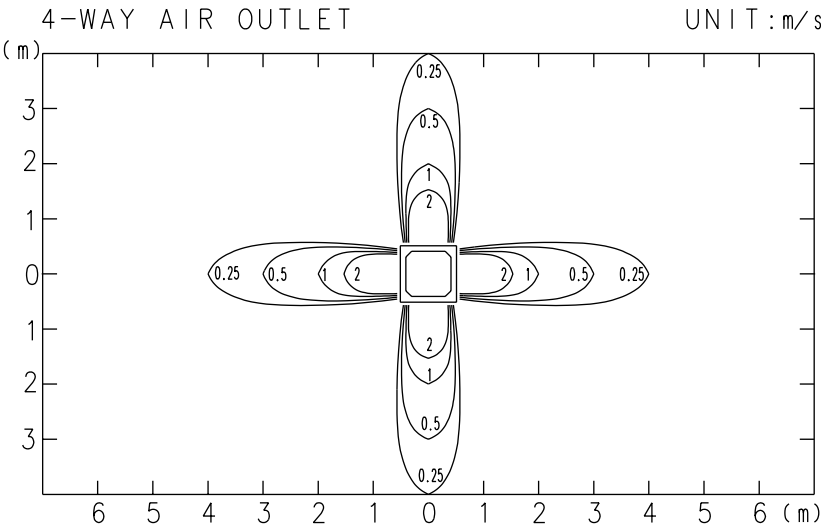


4-10-3 COMPACT CASSETTE TYPE

MODELS : AU7,AU9



■ MODELS : AU12, AU14



Note:
Condition
Fan speed:High
Operation mode:FAN
Voltage:240V

Fig
TOP VIEW
HORIZONTAL LOUVER
:Upward

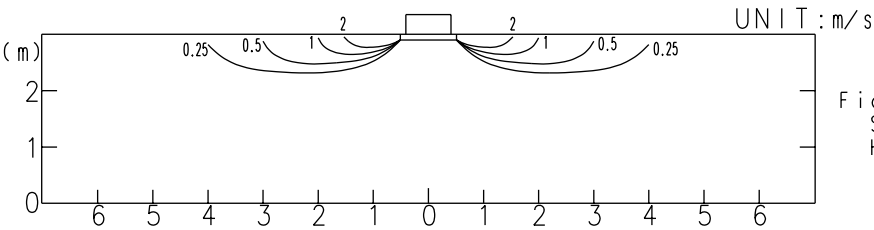


Fig
SIDE VIEW
HORIZONTAL LOUVER
:Upward

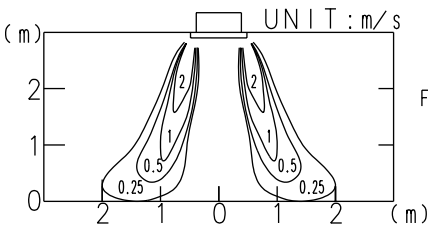
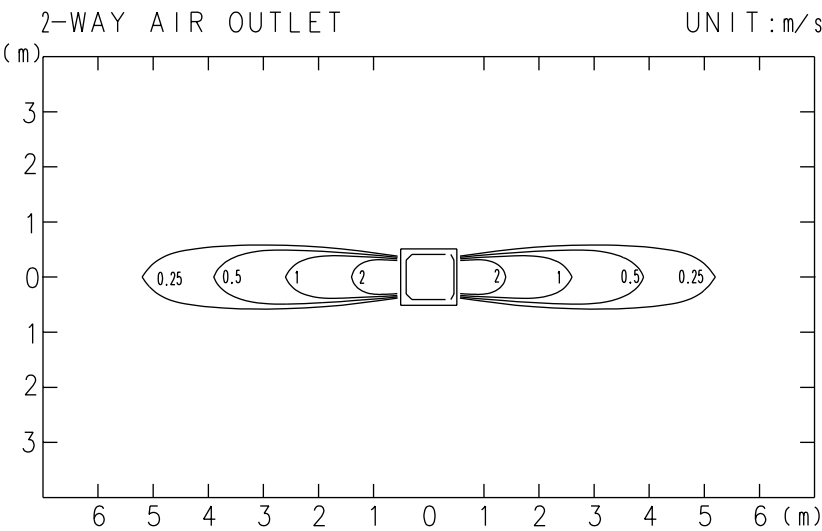
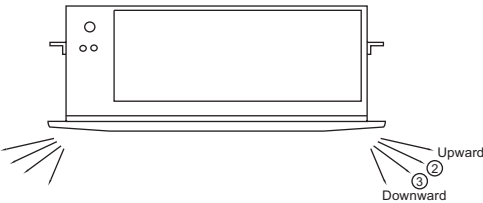


Fig
SIDE VIEW
HORIZONTAL LOUVER
:Downward

AIR DISCHARGE ANGLE



Note:
Condition
Fan speed:Low
Operation mode:FAN
Voltage:240V

Fig
TOP VIEW
HORIZONTAL LOUVER
:Upward

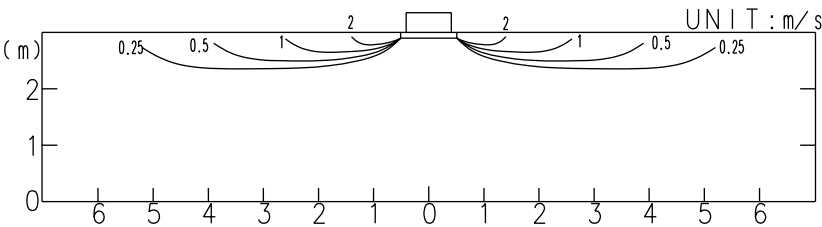
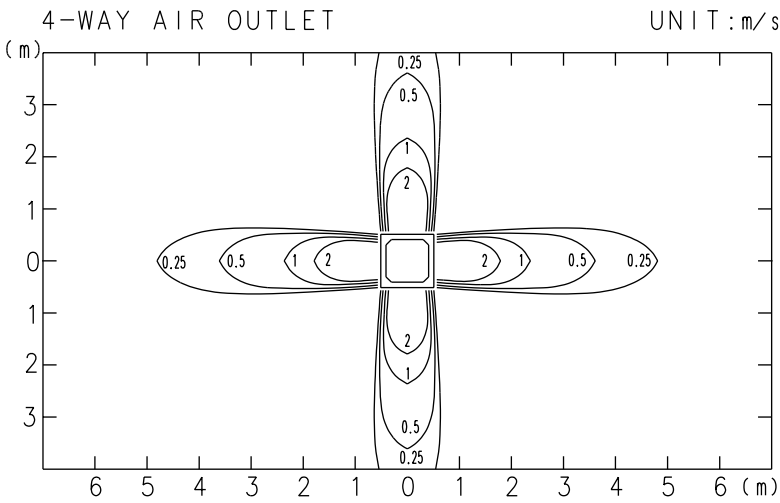


Fig
SIDE VIEW
HORIZONTAL LOUVER
:Upward

■ MODEL : AU18



Note:
Condition
Fan speed: High
Operation mode: FAN
Voltage: 240V

Fig
TOP VIEW
HORIZONTAL LOUVER
: Upward

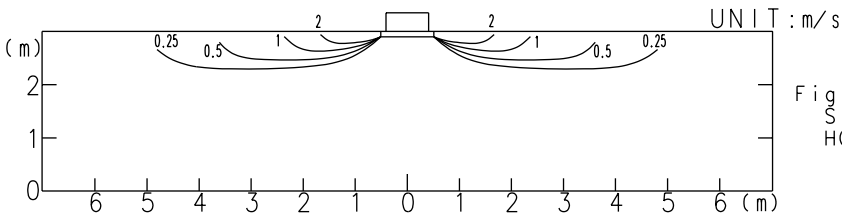


Fig
SIDE VIEW
HORIZONTAL LOUVER
: Upward

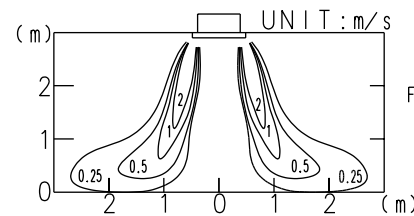
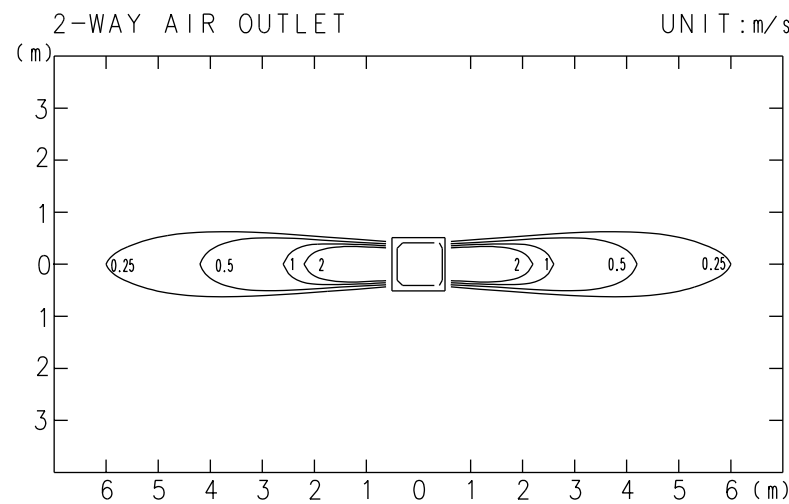
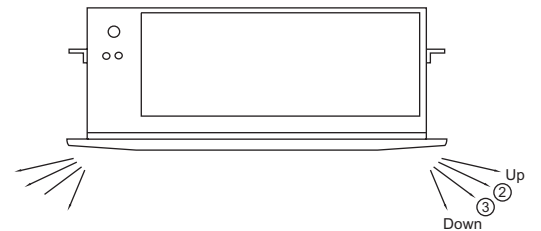


Fig
SIDE VIEW
HORIZONTAL LOUVER
: Downward

AIR DISCHARGE ANGLE



Note:
Condition
Fan speed: Low
Operation mode: FAN
Voltage: 240V

Fig
TOP VIEW
HORIZONTAL LOUVER
: Upward

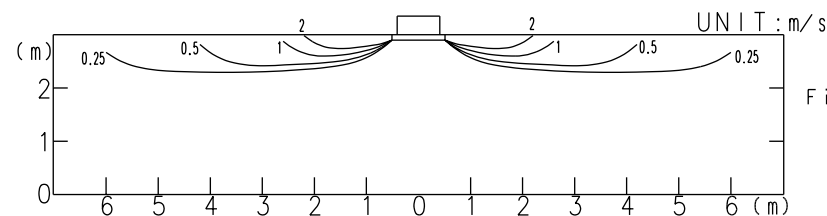
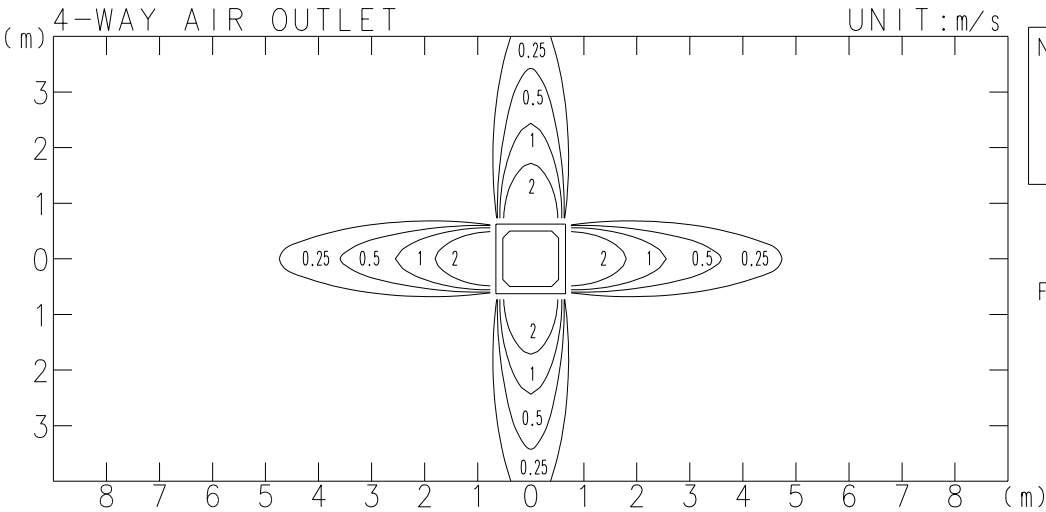


Fig
SIDE VIEW
HORIZONTAL LOUVER
: Upward

4-10-4 CASSETTE TYPE

MODEL : AU20



Note:
Condition
Fan speed:High
Operation mode:FAN
Voltage:240V

Fig
TOP VIEW
HORIZONTAL LOUVER
:Upward

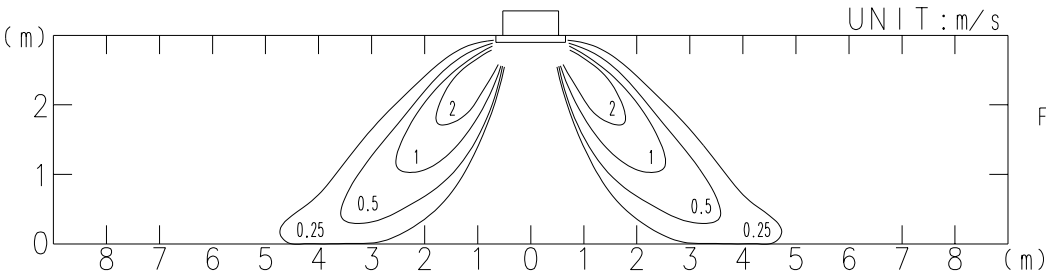


Fig
SIDE VIEW
HORIZONTAL LOUVER
:Upward

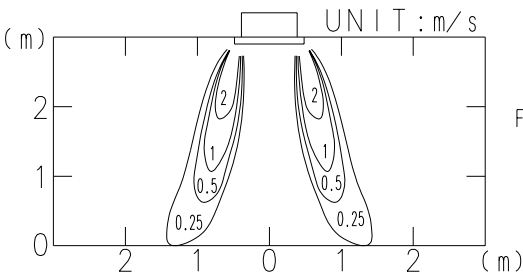


Fig
SIDE VIEW
HORIZONTAL LOUVER
:Downward

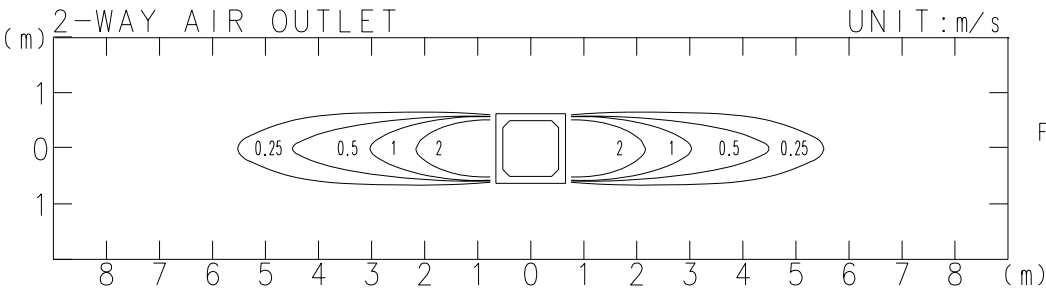


Fig
SIDE VIEW
HORIZONTAL LOUVER
:Upward

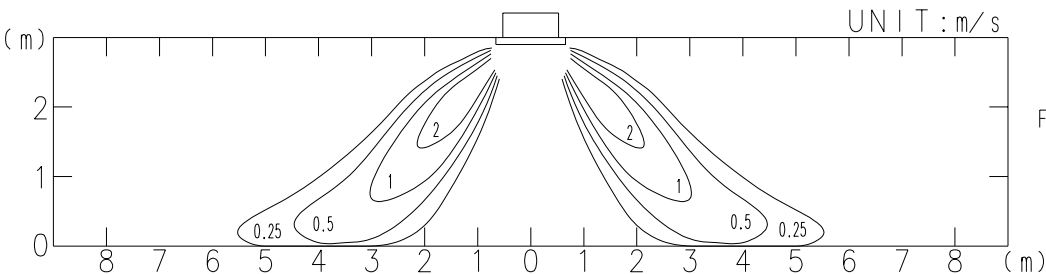
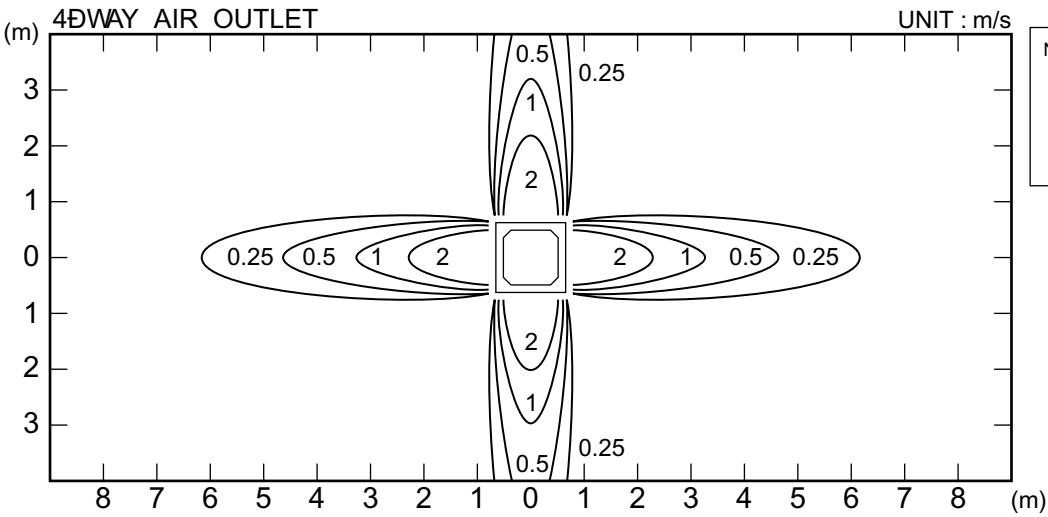


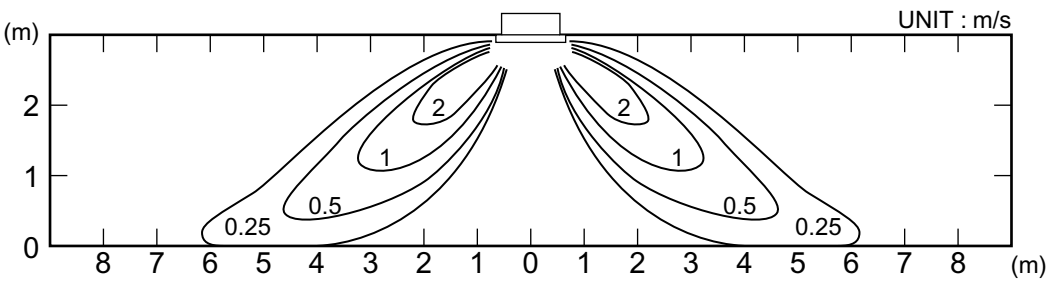
Fig
SIDE VIEW
HORIZONTAL LOUVER
:Upward

■ MODEL : AU25

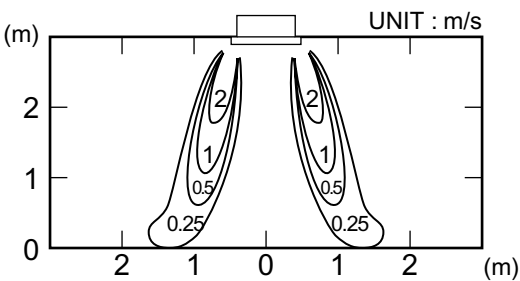


Note :
Condition
Fan speed : High
Operation mode : FAN
Voltage : 240V

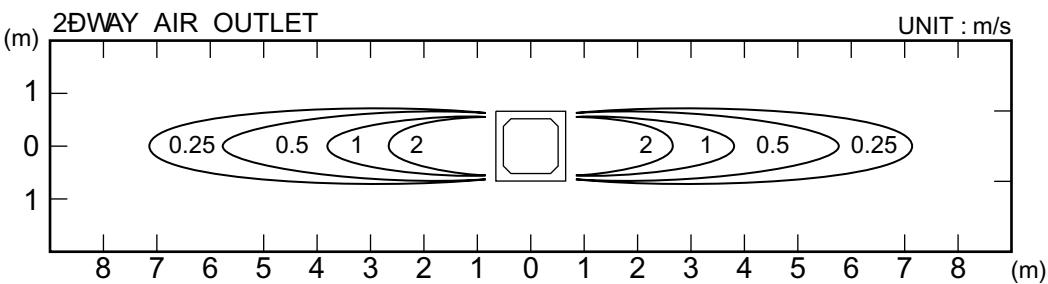
TOP VIEW
AIR FLOW DIRECTION
: Upward



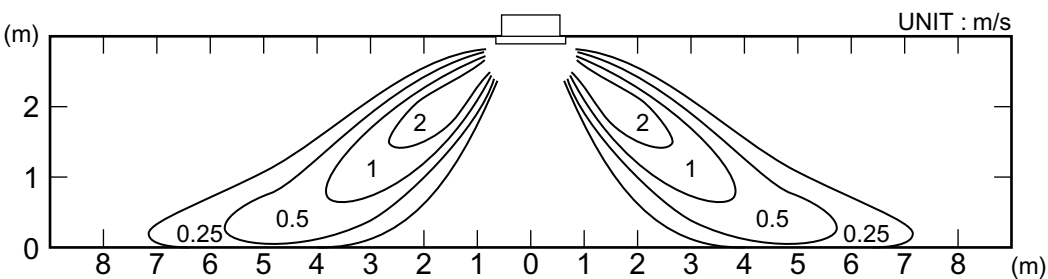
SIDE VIEW
AIR FLOW DIRECTION
: Upward



SIDE VIEW
HORIZONTAL LOUVER
: Downward

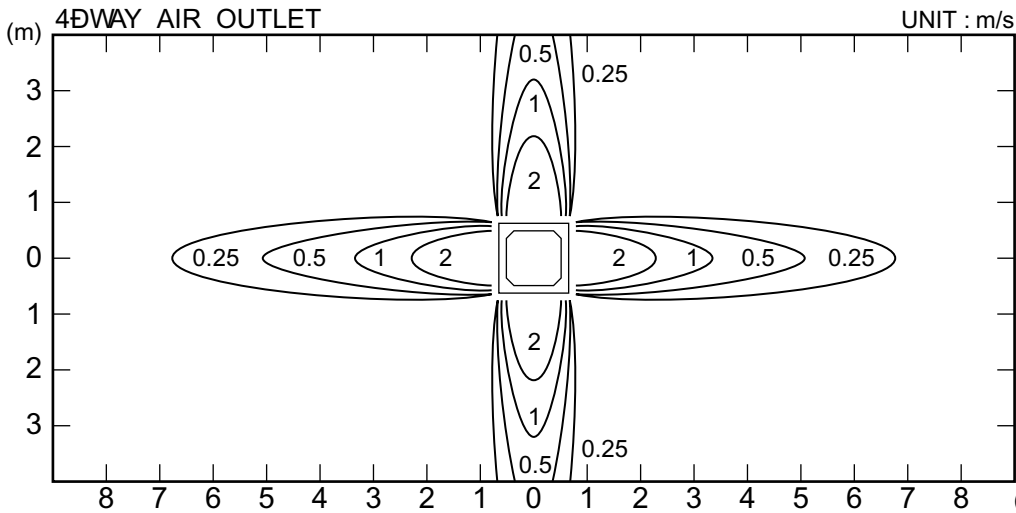


TOP VIEW
AIR FLOW DIRECTION
: Upward



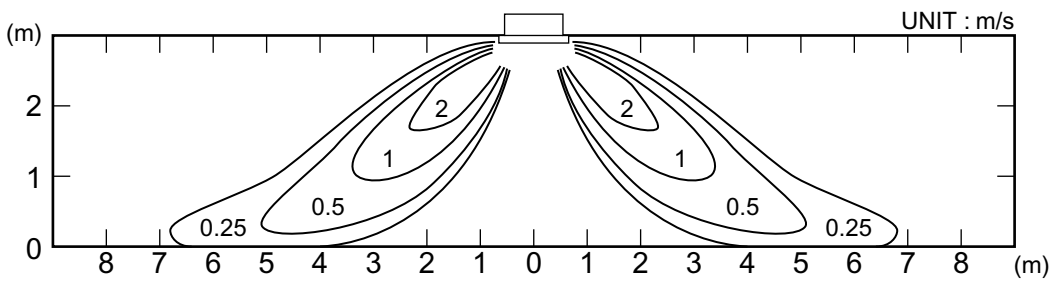
SIDE VIEW
AIR FLOW DIRECTION
: Upward

■ MODEL : AU30

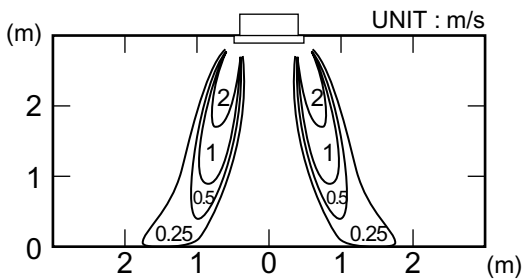


Note :
Condition
Fan speed : High
Operation mode : FAN
Voltage : 240V

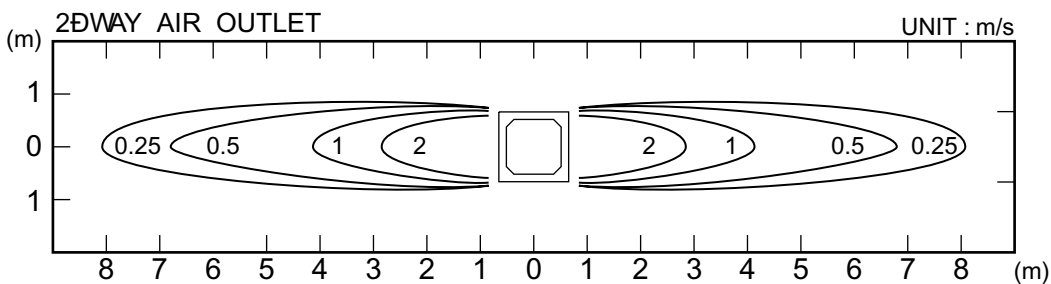
TOP VIEW
AIR FLOW DIRECTION
: Upward



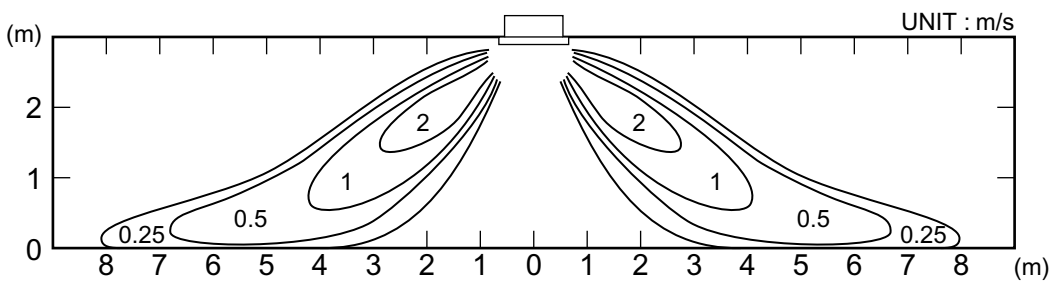
SIDE VIEW
AIR FLOW DIRECTION
: Upward



SIDE VIEW
HORIZONTAL LOUVER
: Downward

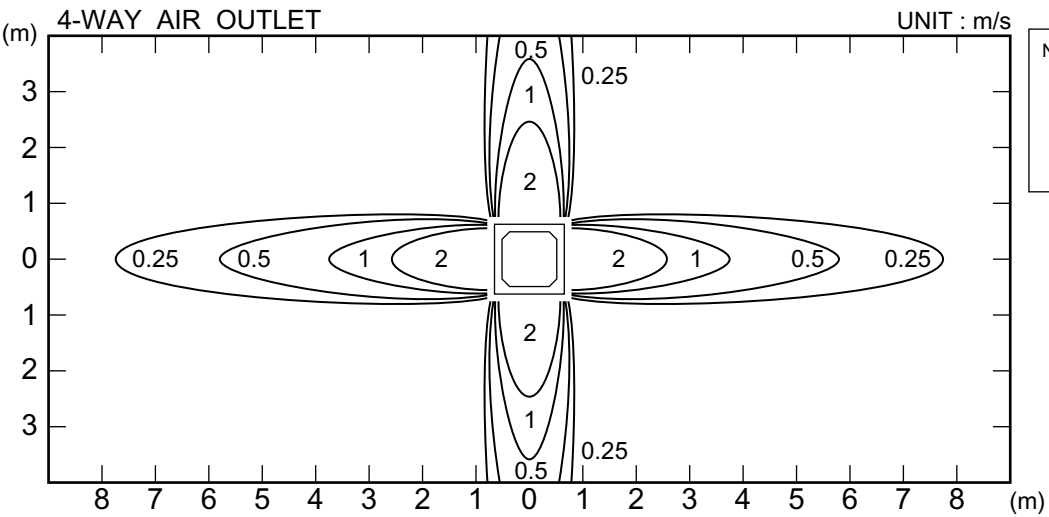


TOP VIEW
AIR FLOW DIRECTION
: Upward



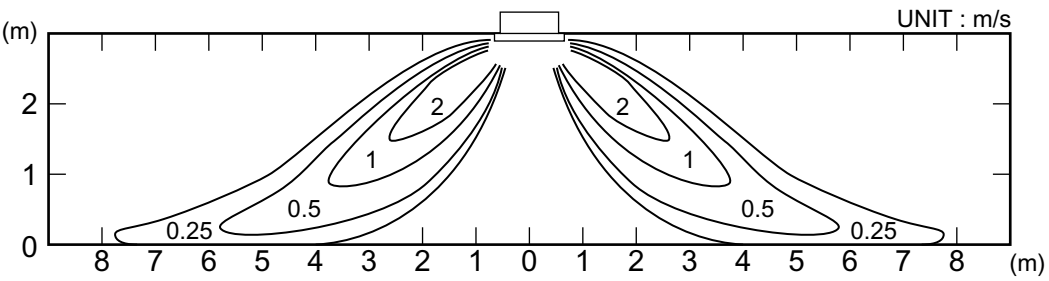
SIDE VIEW
AIR FLOW DIRECTION
: Upward

■ MODEL : AU36

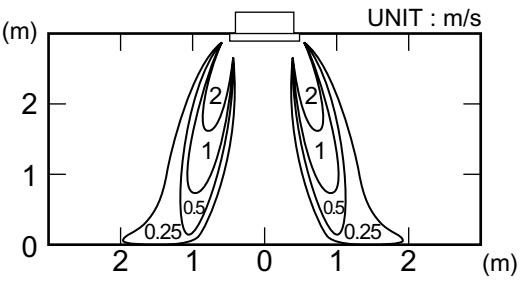


Note :
Condition
Fan speed : High
Operation mode : FAN
Voltage : 240V

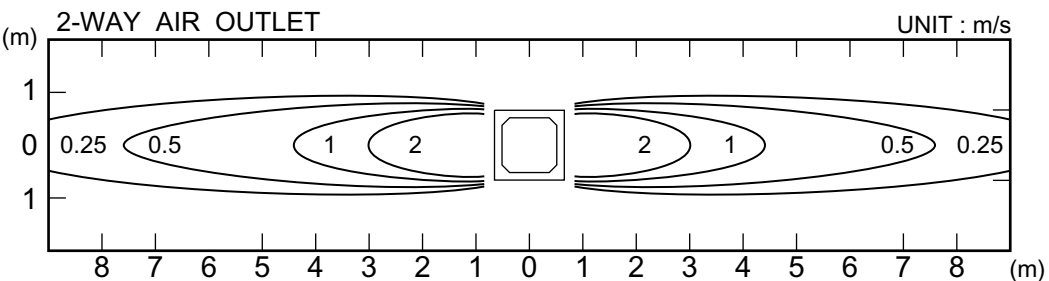
TOP VIEW
AIR FLOW DIRECTION
: Upward



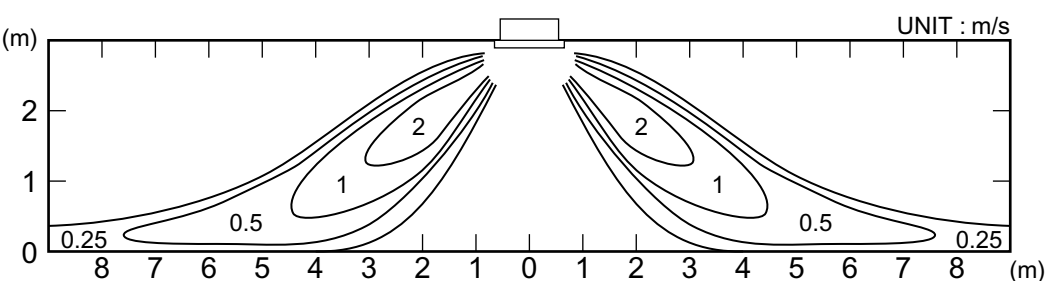
SIDE VIEW
AIR FLOW DIRECTION
: Upward



SIDE VIEW
AIR FLOW DIRECTION
: Downward

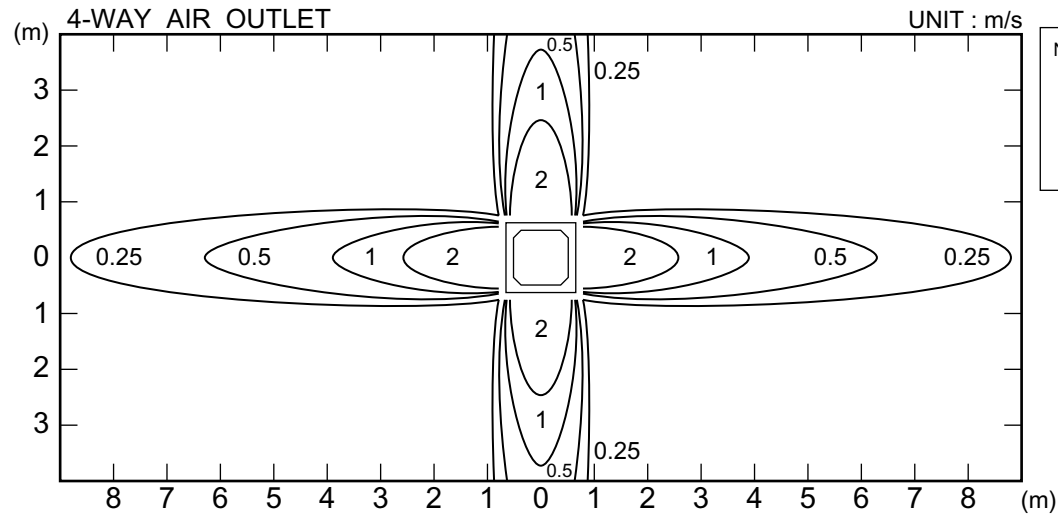


TOP VIEW
AIR FLOW DIRECTION
: Upward

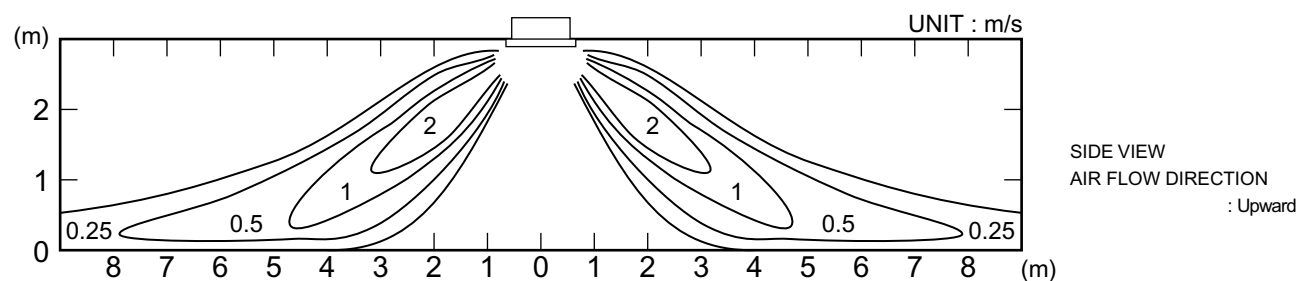
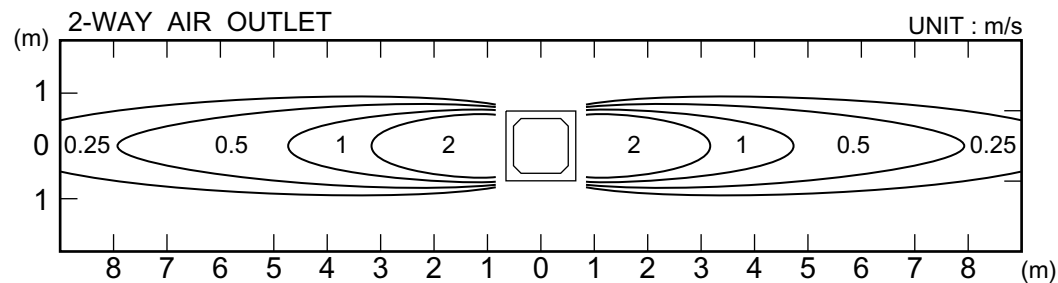
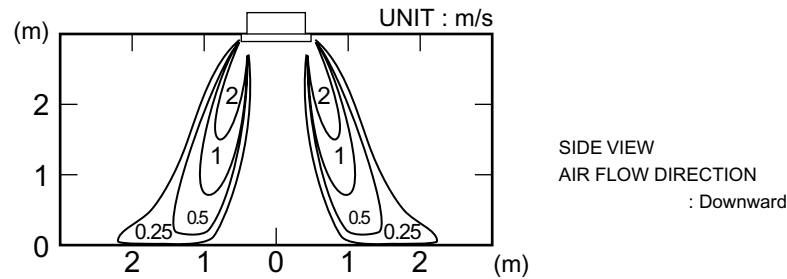
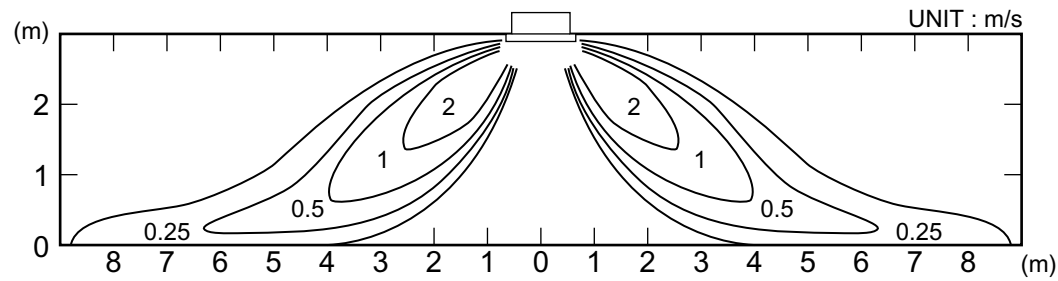


SIDE VIEW
AIR FLOW DIRECTION
: Upward

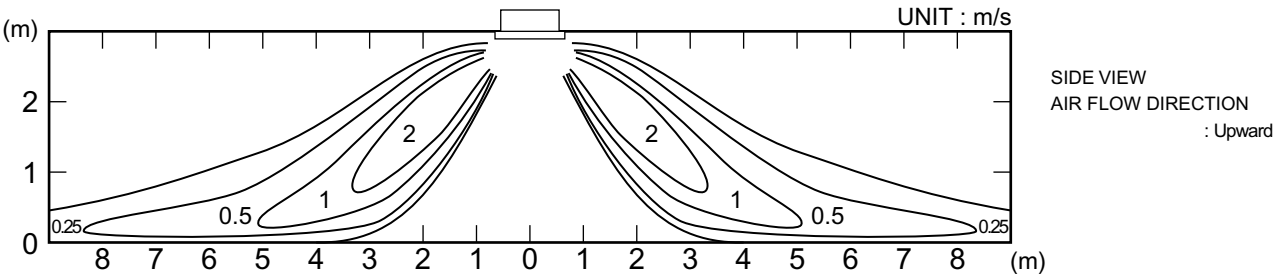
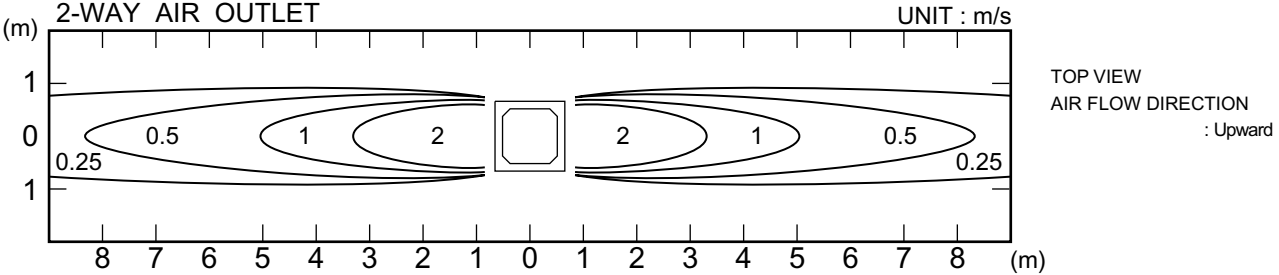
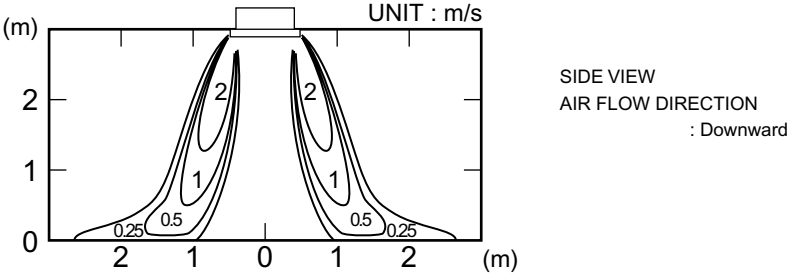
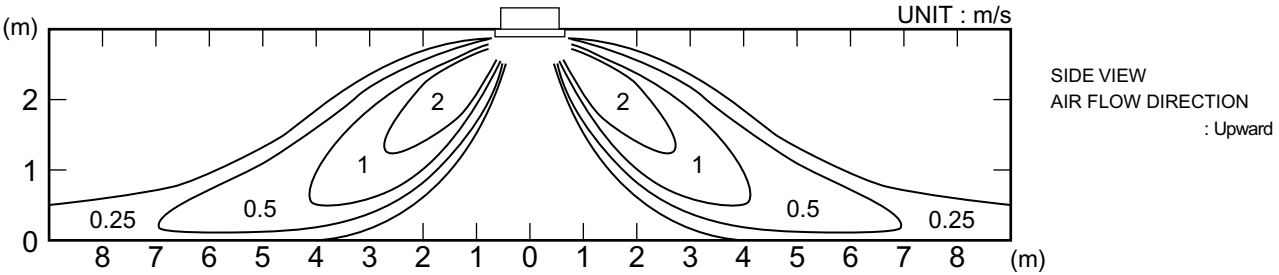
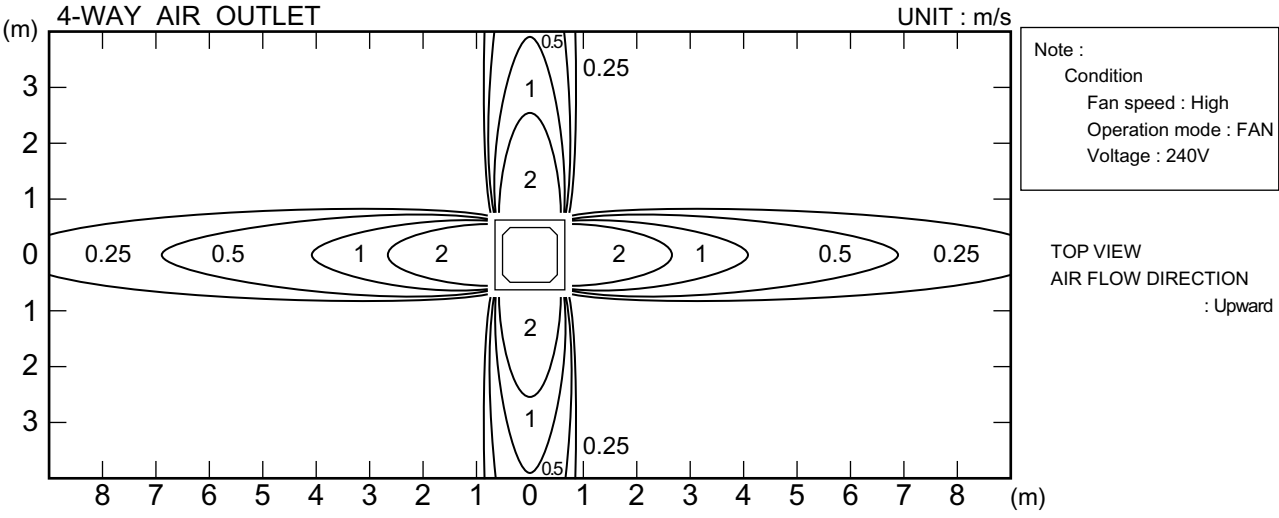
■ **MODEL : AU45**



Note :
Condition
Fan speed : High
Operation mode : FAN
Voltage : 240V



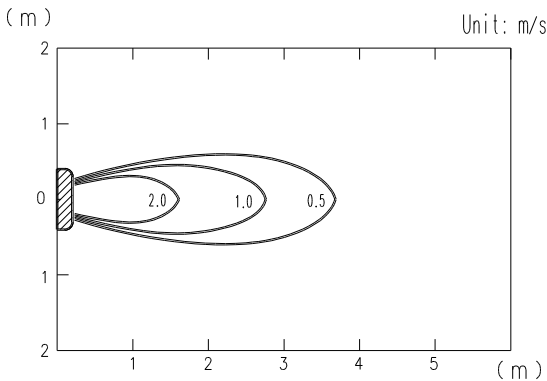
■MODEL : AU54



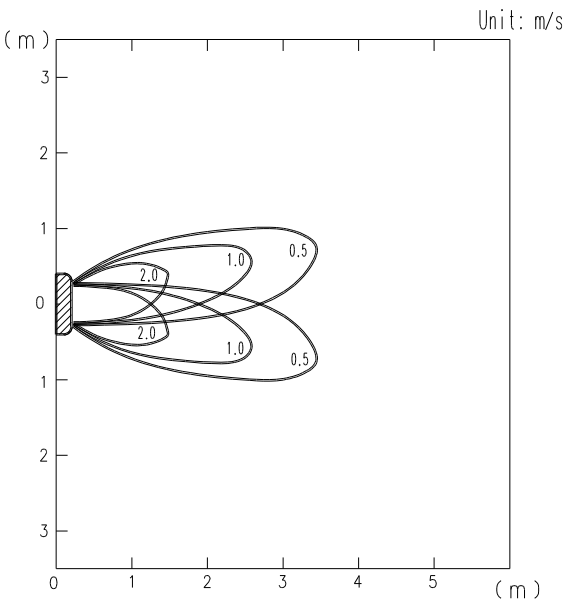
4-10-5 COMPACT WALL MOUNTED TYPE

MODELS : AS7

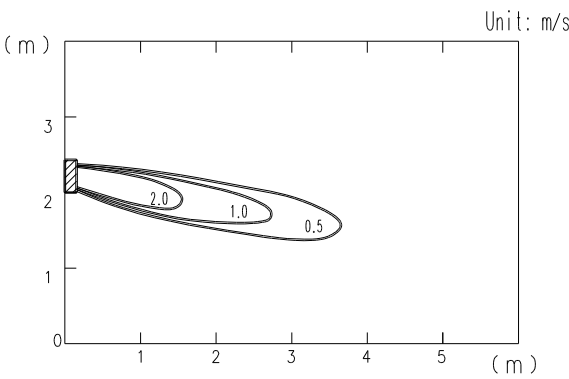
TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center



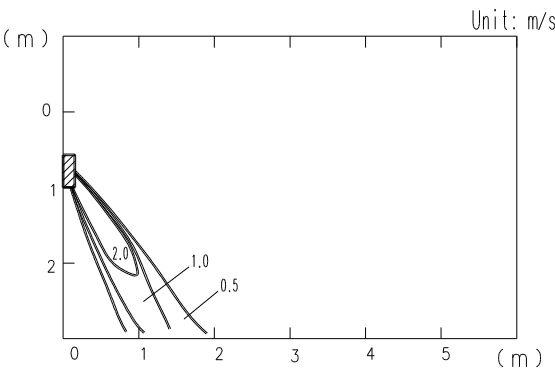
TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Right & Left



SIDE VIEW
FRONT CONTROL PANEL : Horiz.
LOUVER : Center



SIDE VIEW
FLOW CONTROL PANEL : Vert.
LOUVER : Center

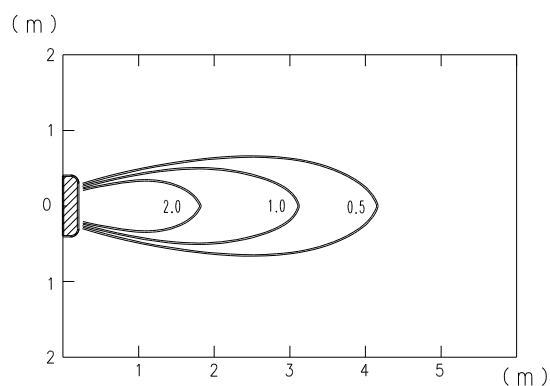


■ MODELS : AS9

TOP VIEW

FLOW CONTROL PANEL : Horiz.

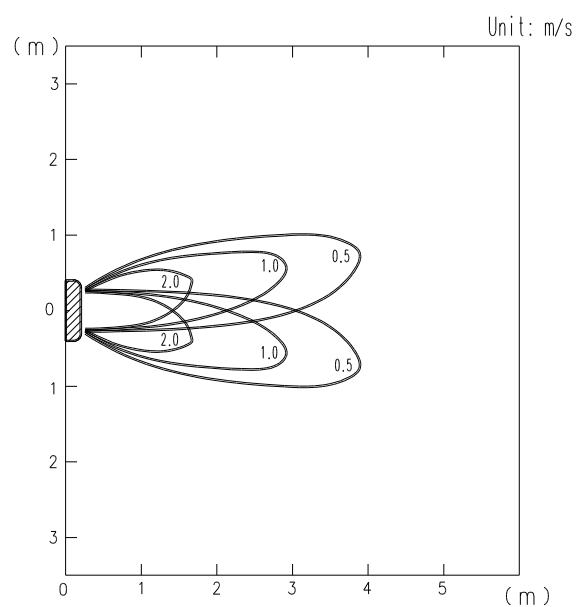
LOUVER : Center



TOP VIEW

FLOW CONTROL PANEL : Horiz.

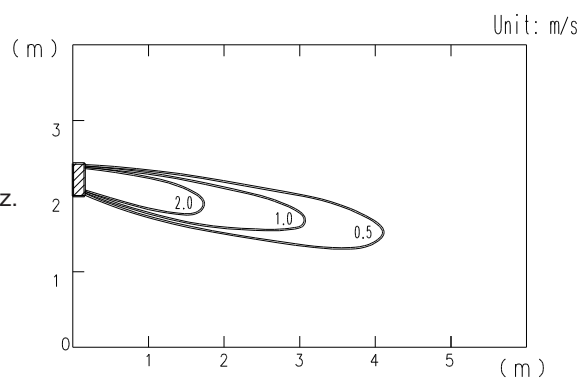
LOUVER : Right & Left



SIDE VIEW

FRONT CONTROL PANEL : Horiz.

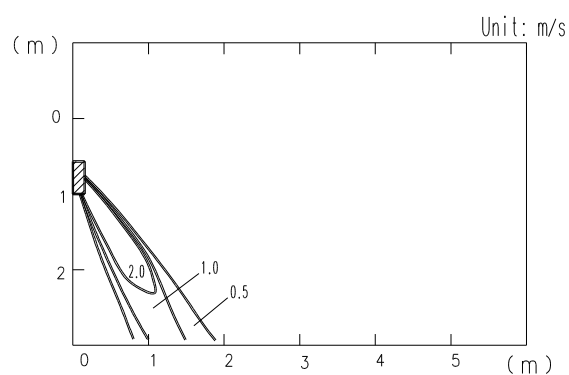
LOUVER : Center



SIDE VIEW

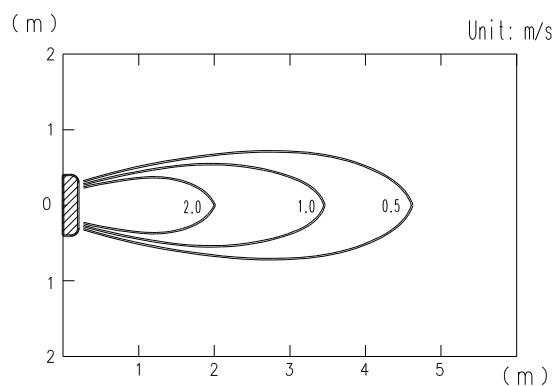
FLOW CONTROL PANEL : Vert.

LOUVER : Center

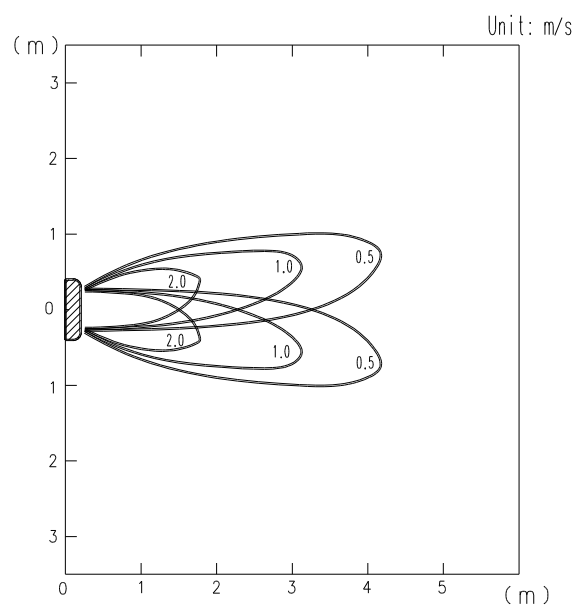


■ MODELS : AS12

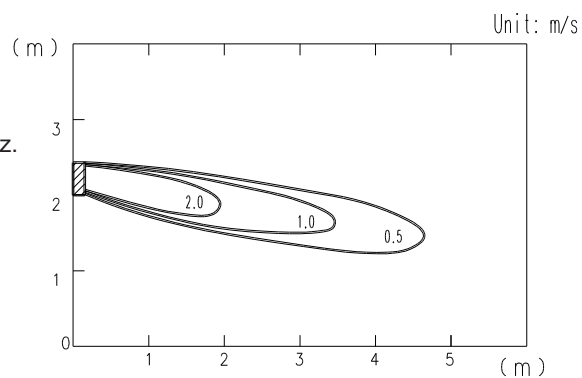
TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center



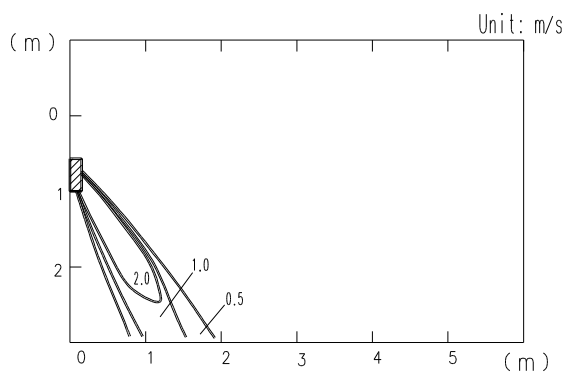
TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Right & Left



SIDE VIEW
FRONT CONTROL PANEL : Horiz.
LOUVER : Center

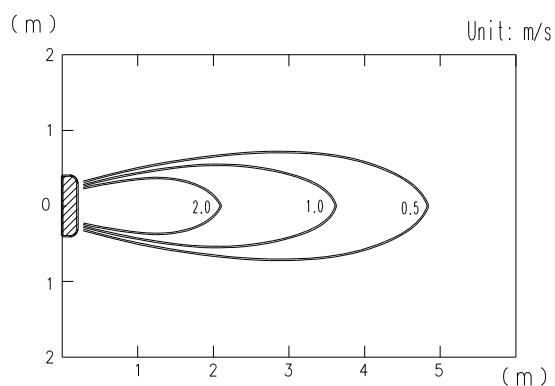


SIDE VIEW
FLOW CONTROL PANEL : Vert.
LOUVER : Center

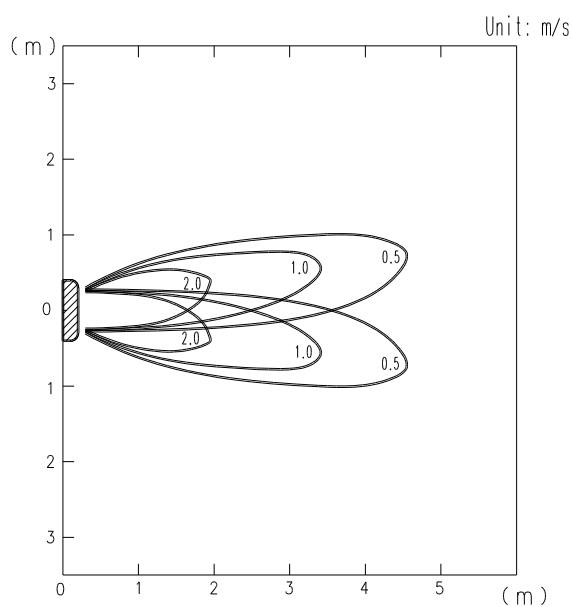


■ MODELS : AS14

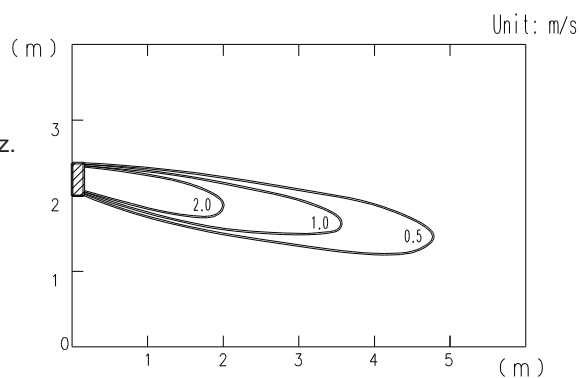
TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center



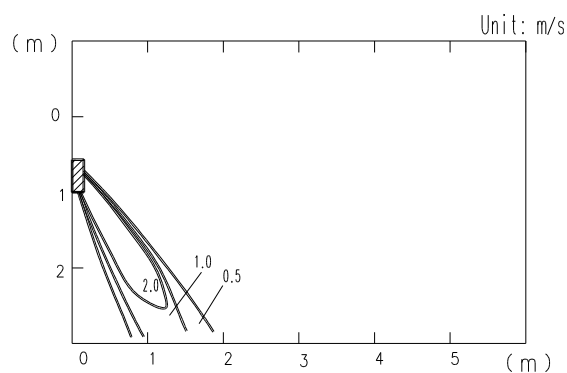
TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Right & Left



SIDE VIEW
FRONT CONTROL PANEL : Horiz.
LOUVER : Center



SIDE VIEW
FLOW CONTROL PANEL : Vert.
LOUVER : Center



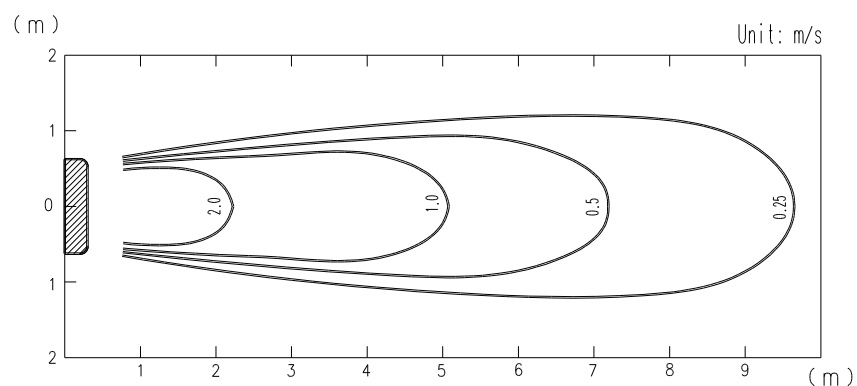
INDOOR
UNIT

INDOOR
UNIT

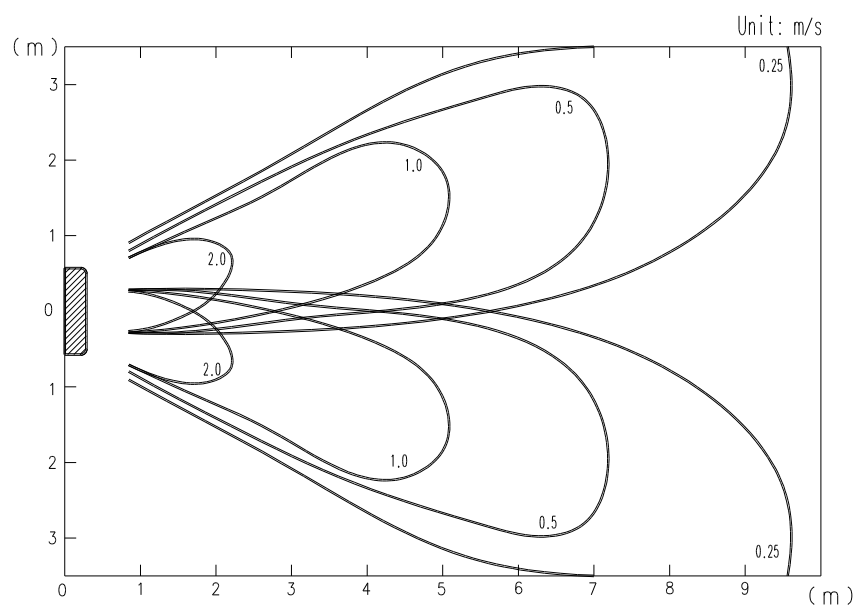
4-10-6 WALL MOUNTED TYPE

■ MODELS : AS18

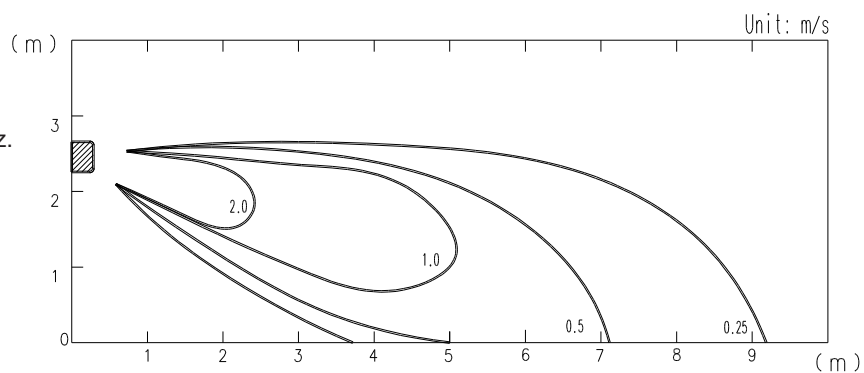
TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center



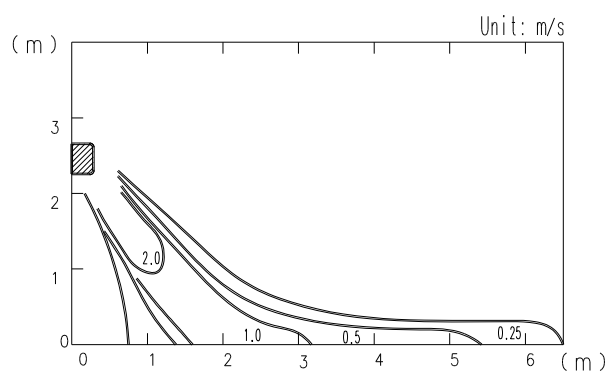
TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Right & Left



SIDE VIEW
FRONT CONTROL PANEL : Horiz.
LOUVER : Center

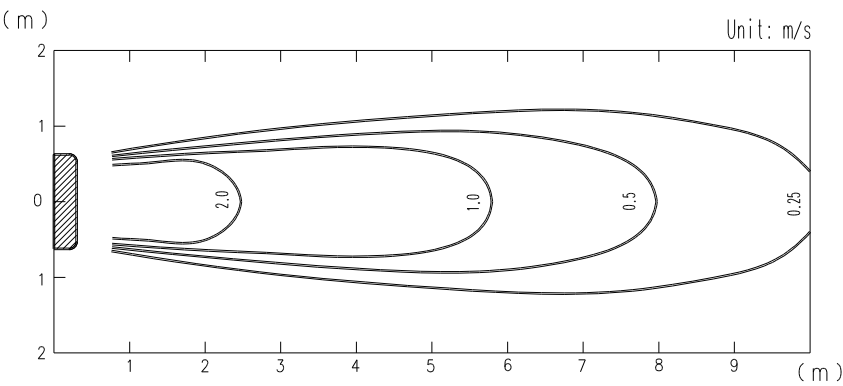


SIDE VIEW
FLOW CONTROL PANEL : Vert.
LOUVER : Center

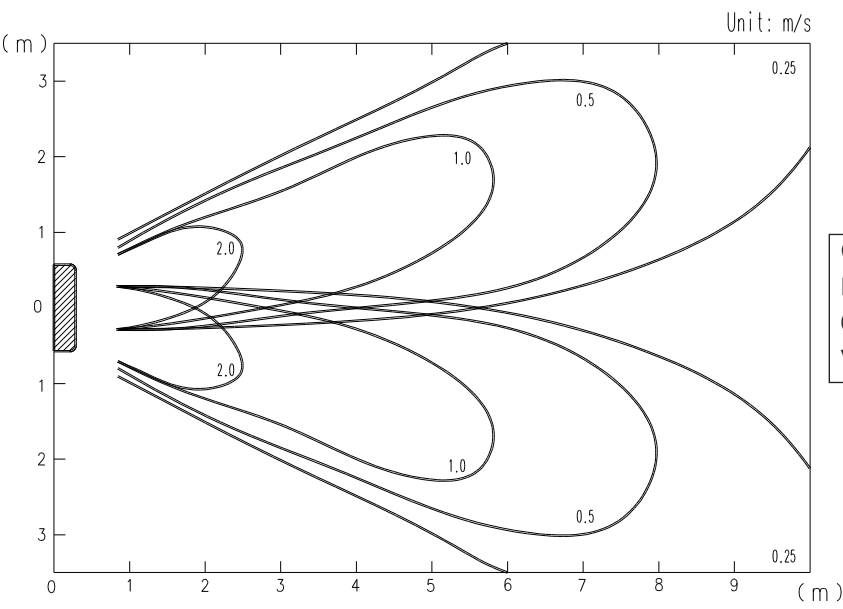


■ **MODELS : AS24**

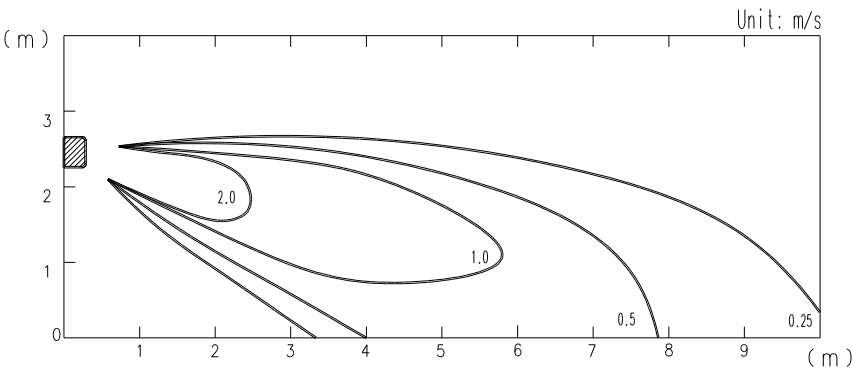
TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center



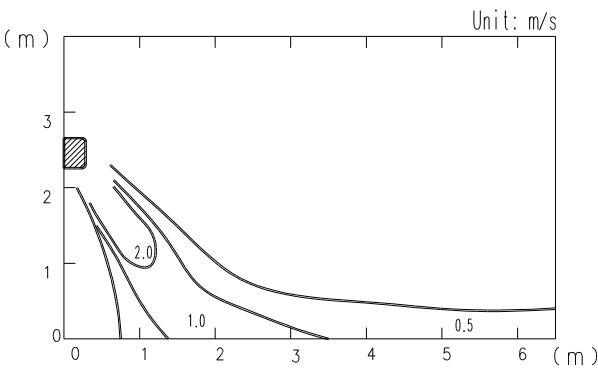
TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Right & Left



SIDE VIEW
FRONT CONTROL PANEL : Horiz.
LOUVER : Center

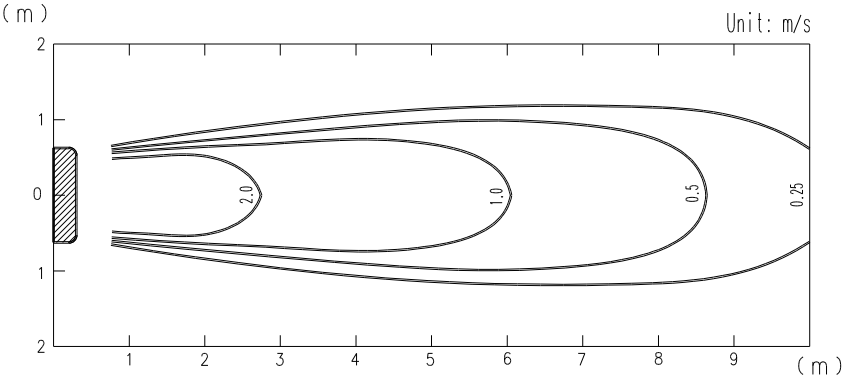


SIDE VIEW
FLOW CONTROL PANEL : Vert.
LOUVER : Center

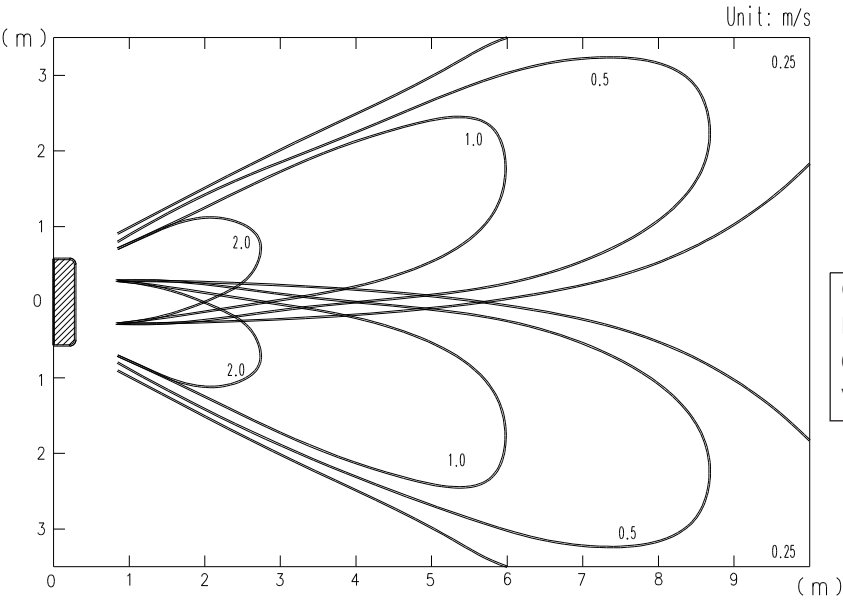


■ **MODEL : AS30**

TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center

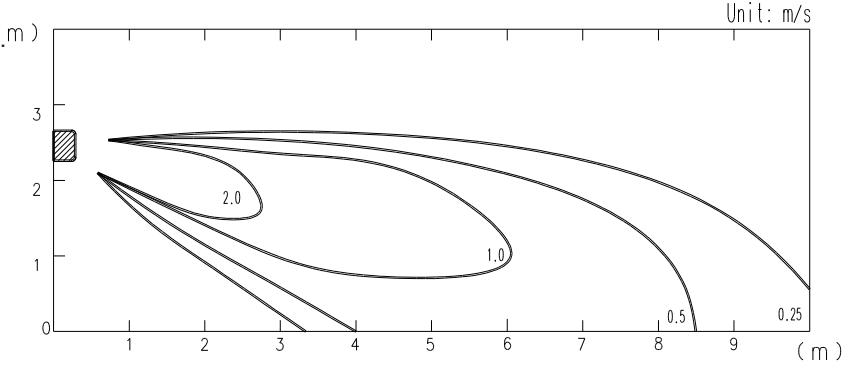


TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Right & Left

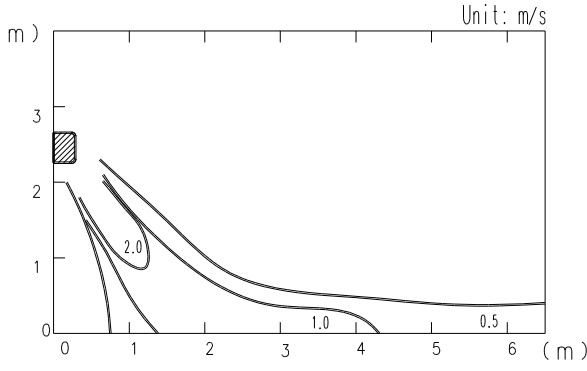


Condition
Fan speed : High
Operation mode : Fan
Voltage : 240V

SIDE VIEW
FRONT CONTROL PANEL : Horiz.
LOUVER : Center



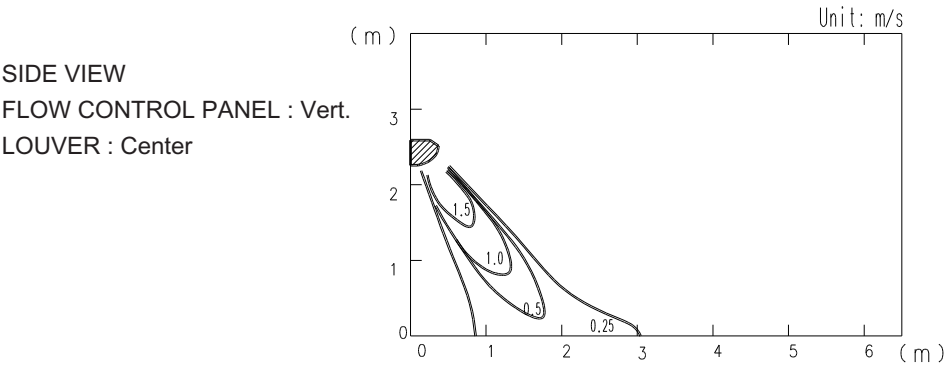
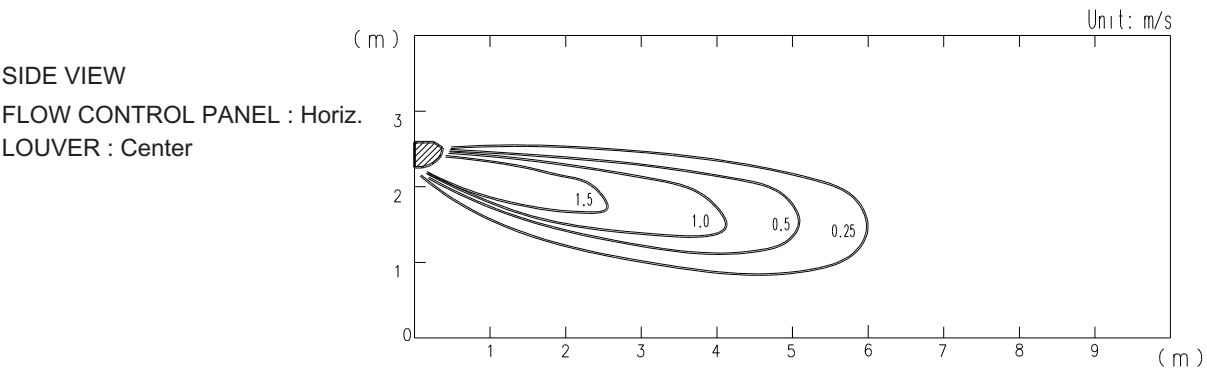
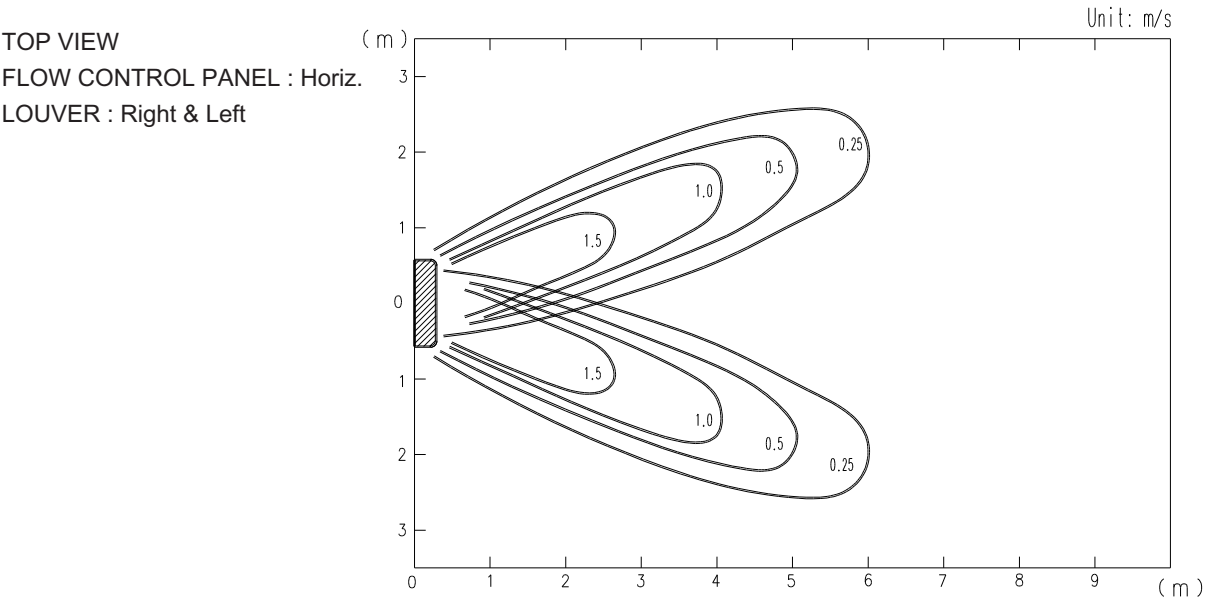
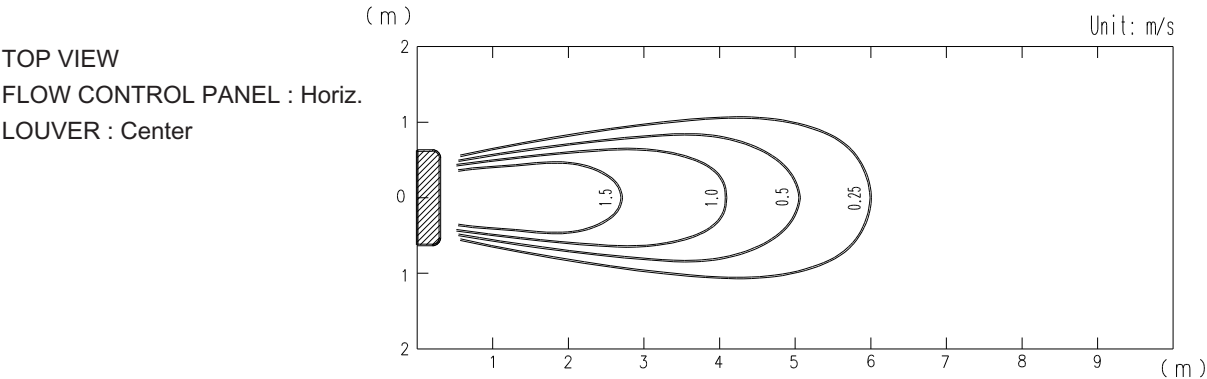
SIDE VIEW
FLOW CONTROL PANEL : Vert.
LOUVER : Center



4-10-7 CEILING WALL TYPE

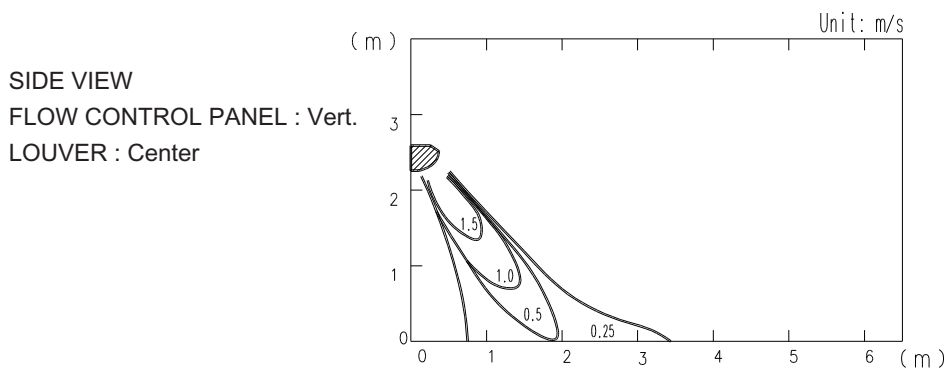
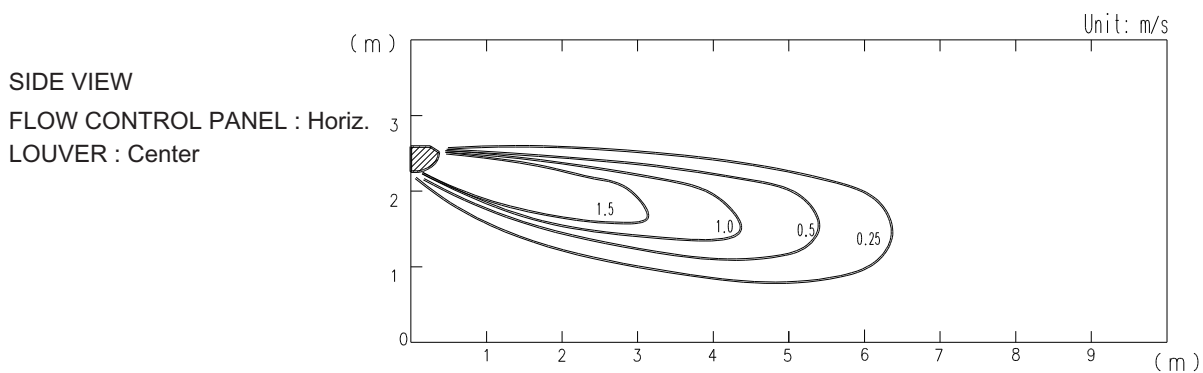
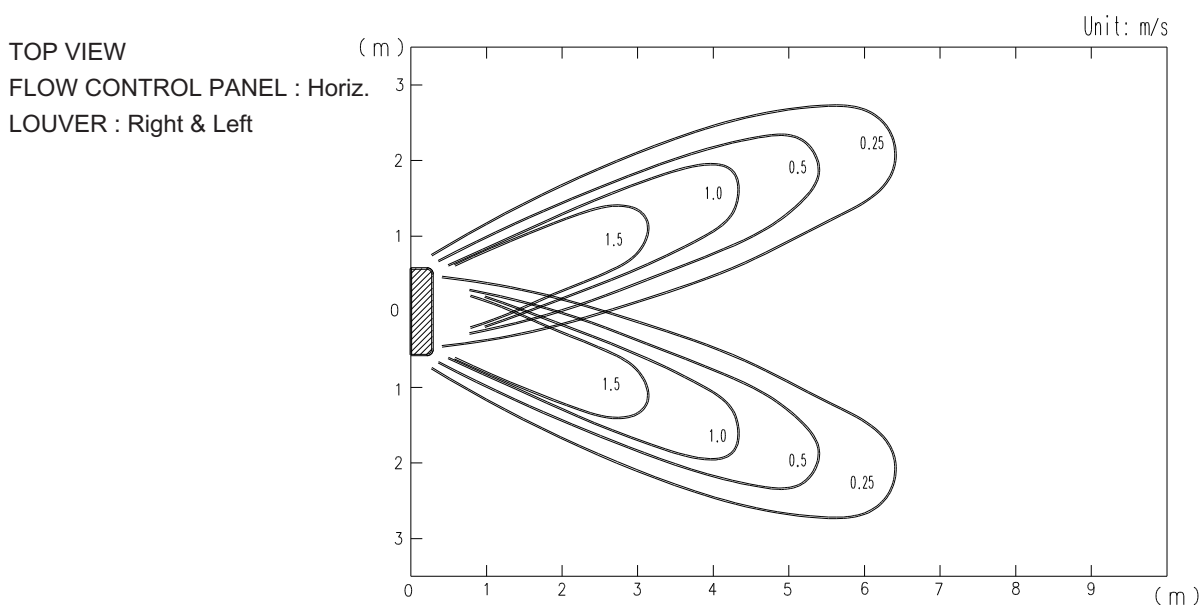
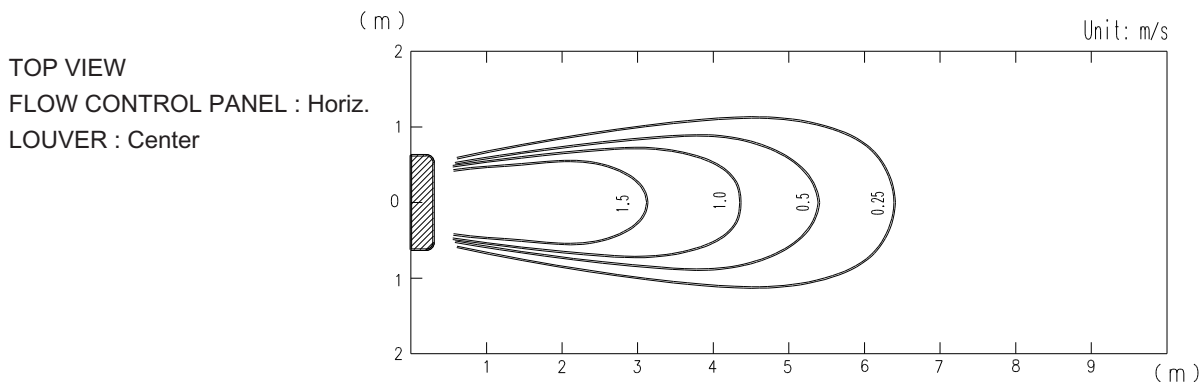
MODELS : AW7

Condition
Fan speed : High
Operation mode : Fan
Voltage : 240V (50Hz)



MODELS : AW9

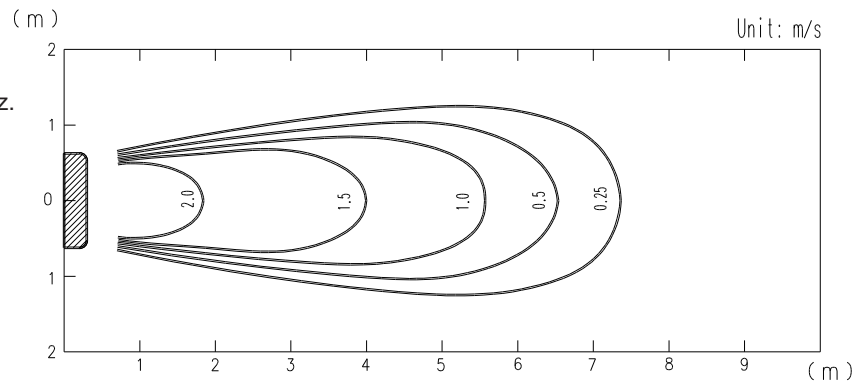
Condition
Fan speed : High
Operation mode : Fan
Voltage : 240V (50Hz)



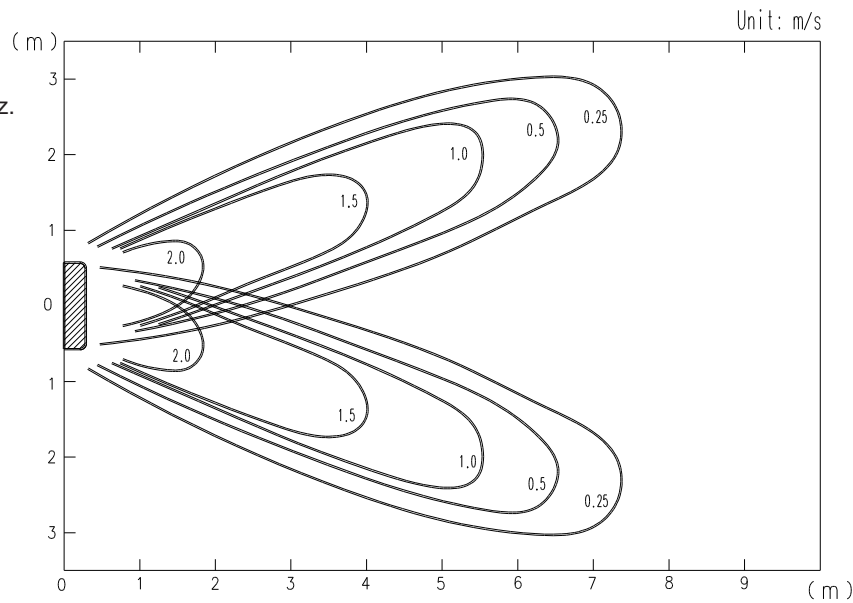
■ MODELS : AW12

Condition	
Fan speed :	High
Operation mode :	Fan
Voltage :	240V (50Hz)

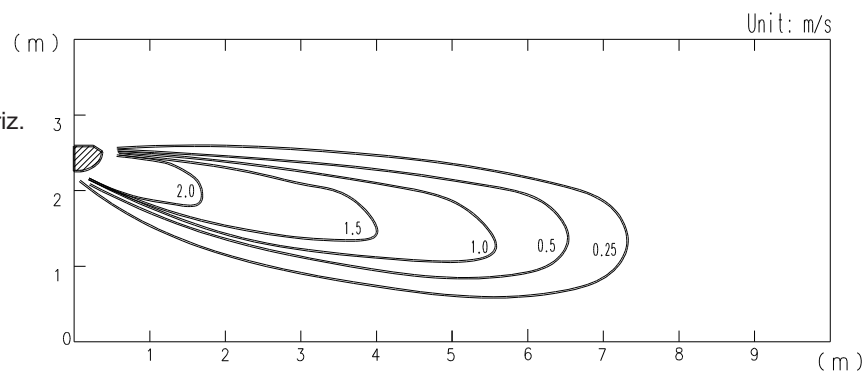
TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center



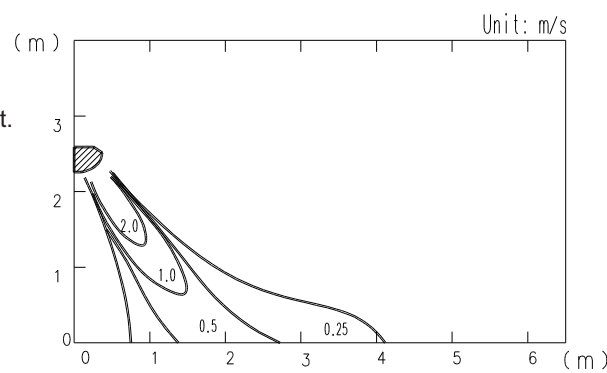
TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Right & Left



SIDE VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center



SIDE VIEW
FLOW CONTROL PANEL : Vert.
LOUVER : Center



■ MODELS : AW14

Condition

Fan speed : High

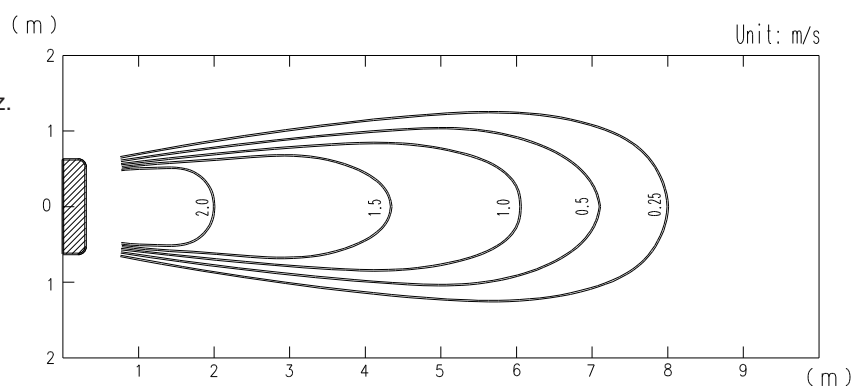
Operation mode : Fan

Voltage : 240V (50Hz)

TOP VIEW

FLOW CONTROL PANEL : Horiz.

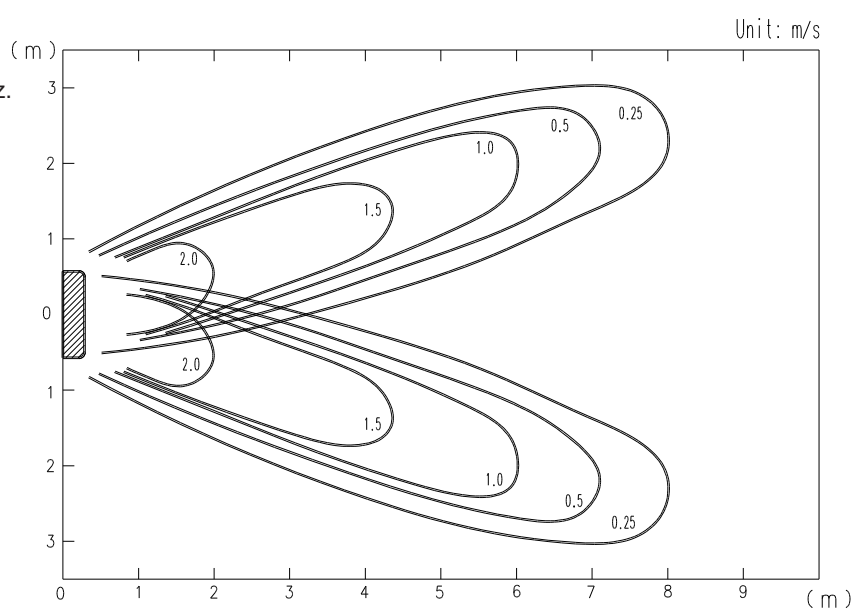
LOUVER : Center



TOP VIEW

FLOW CONTROL PANEL : Horiz.

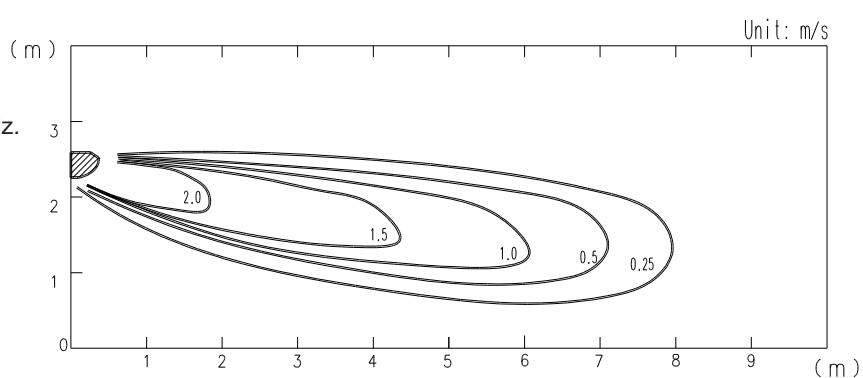
LOUVER : Right & Left



SIDE VIEW

FLOW CONTROL PANEL : Horiz.

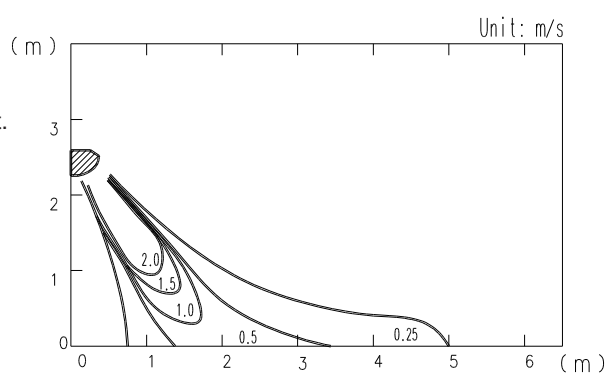
LOUVER : Center



SIDE VIEW

FLOW CONTROL PANEL : Vert.

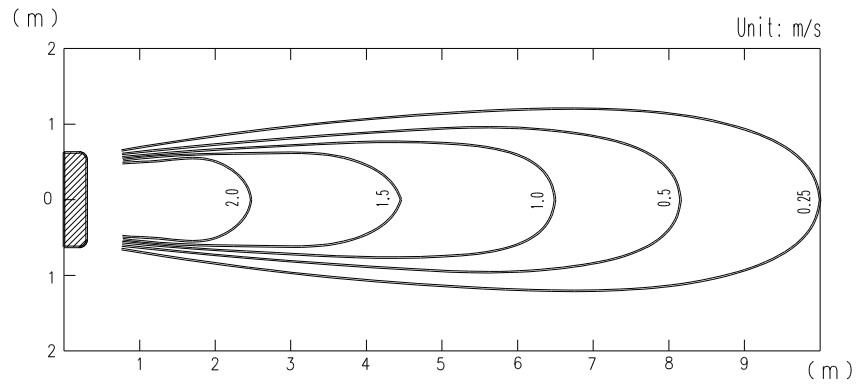
LOUVER : Center



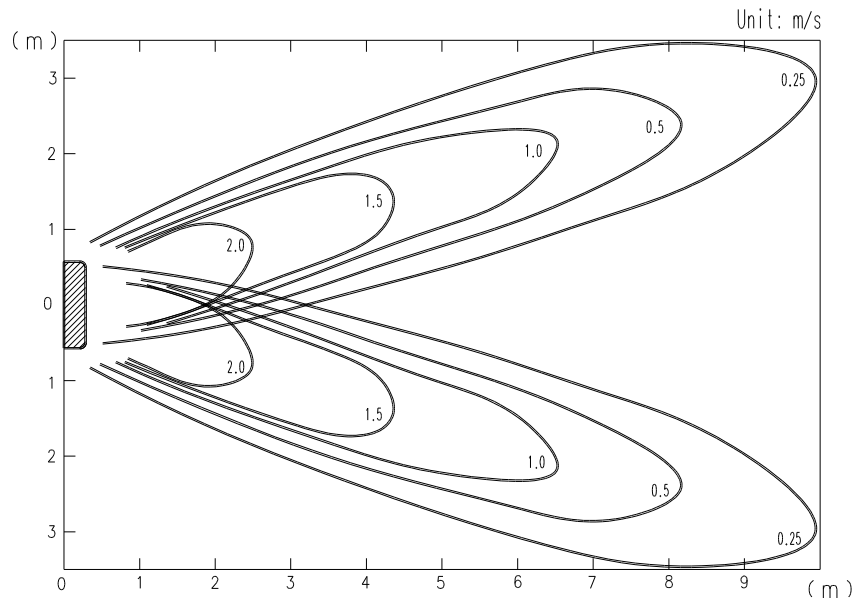
■ MODEL : AW18

Condition
 Fan speed : High
 Operation mode : Fan
 Voltage : 240V

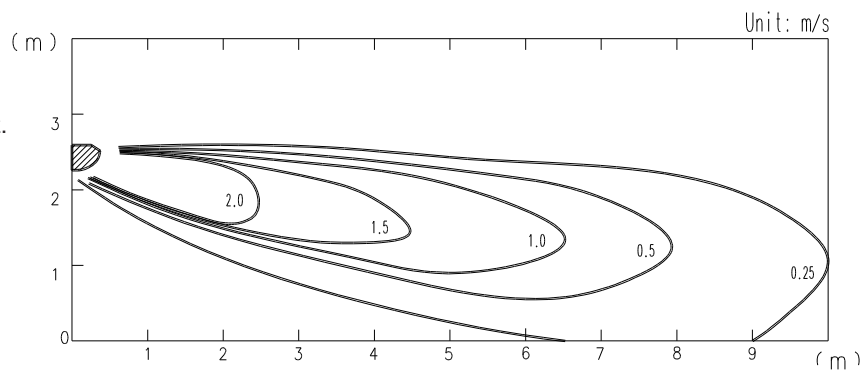
TOP VIEW
 FLOW CONTROL PANEL : Horiz.
 LOUVER : Center



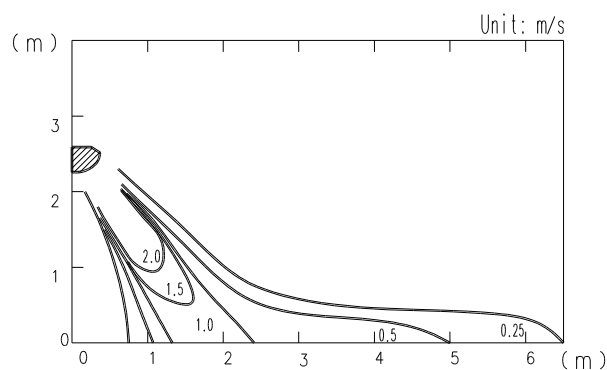
TOP VIEW
 FLOW CONTROL PANEL : Horiz.
 LOUVER : Right & Left



SIDE VIEW
 FLOW CONTROL PANEL : Horiz.
 LOUVER : Center



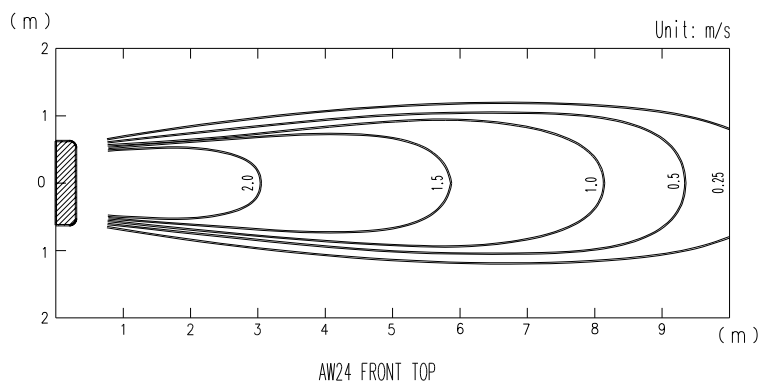
SIDE VIEW
 FLOW CONTROL PANEL : Vert.
 LOUVER : Center



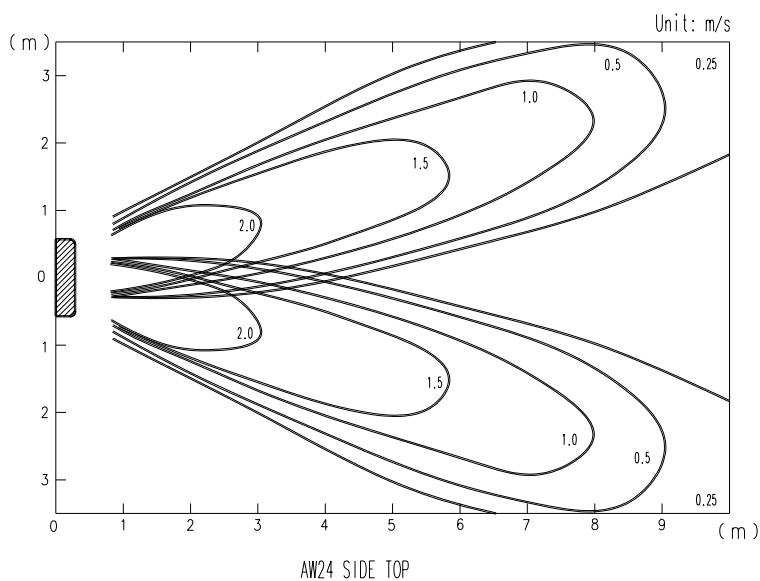
■ MODELS : AW24

Condition
Fan speed : High
Operation mode:Fan
Voltage : 240V

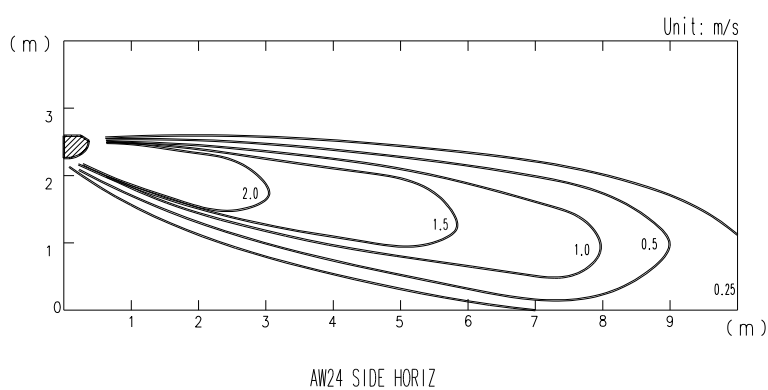
TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center



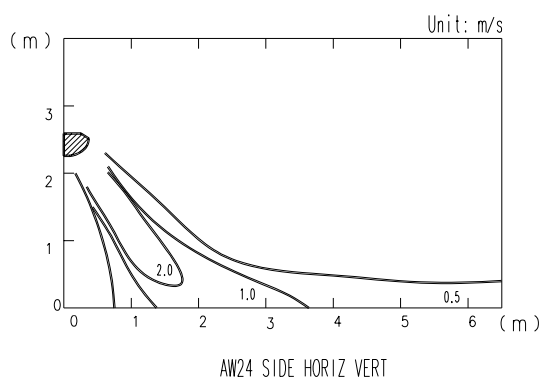
TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Right & Left



SIDE VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center



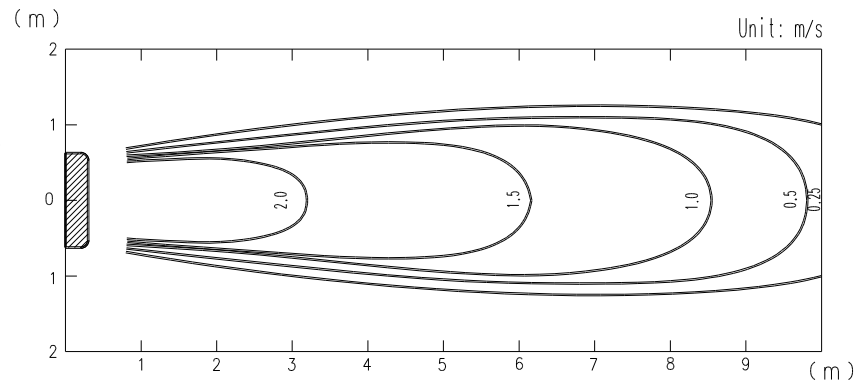
SIDE VIEW
FLOW CONTROL PANEL : Vert.
LOUVER : Center



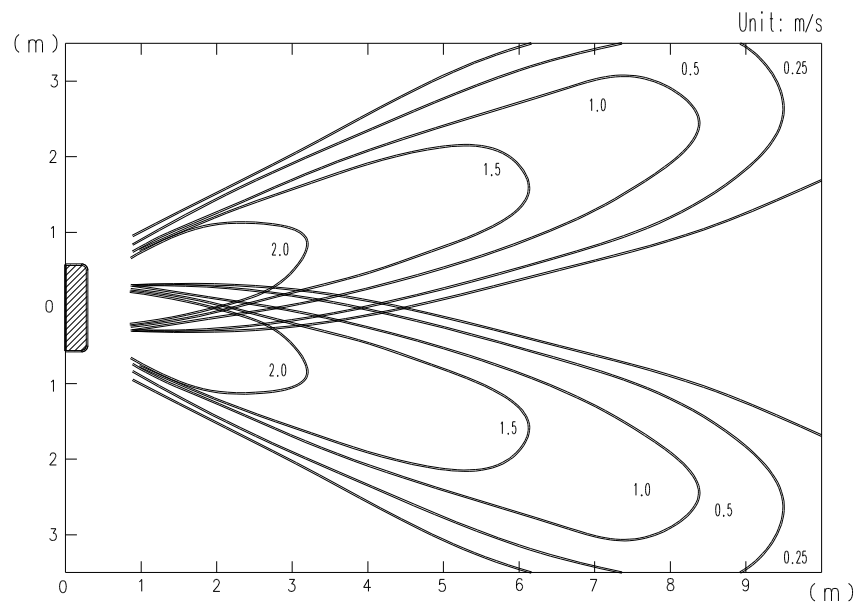
■ MODELS : AW30

Condition
Fan speed : High
Operation mode:Fan
Voltage : 240V

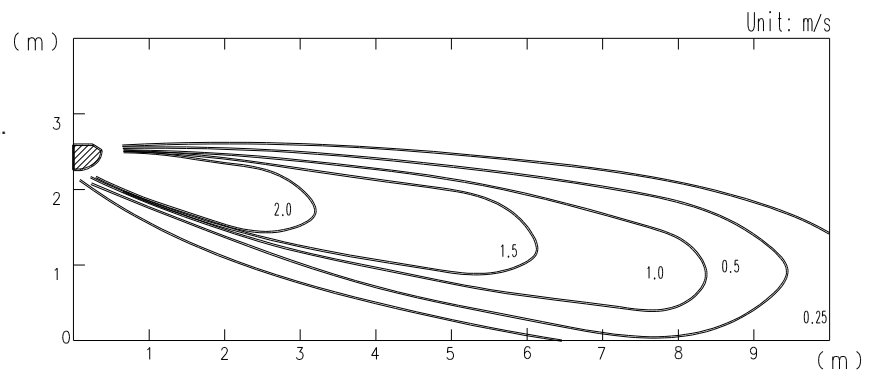
TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center



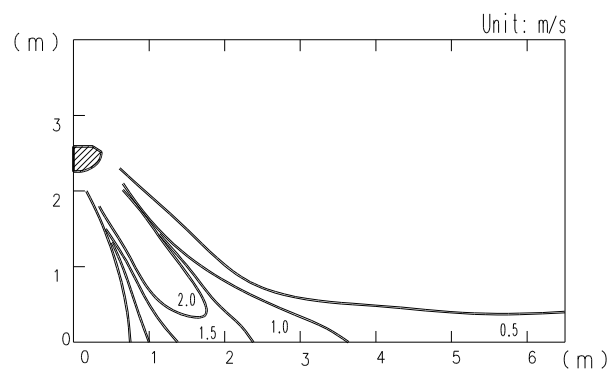
TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Right & Left



SIDE VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center



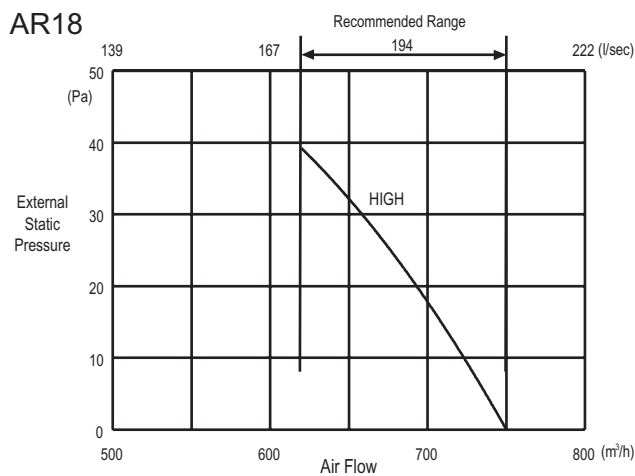
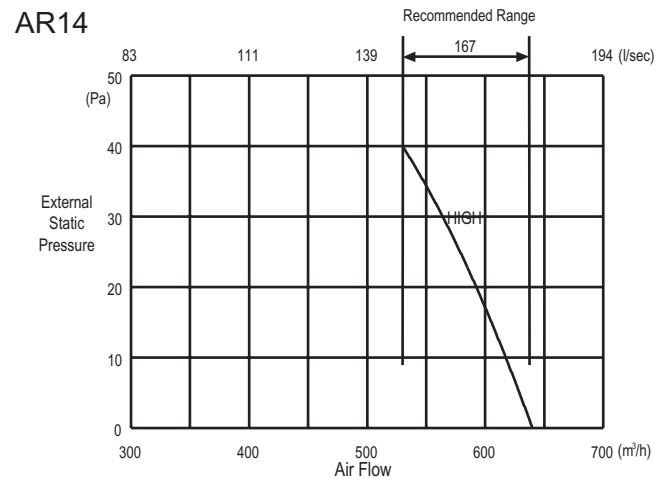
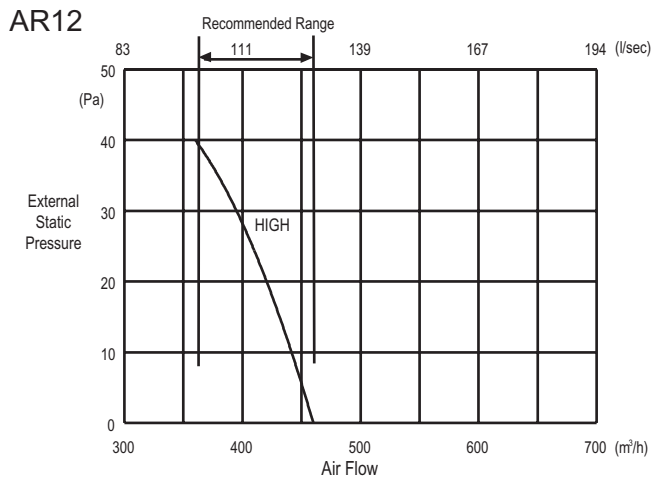
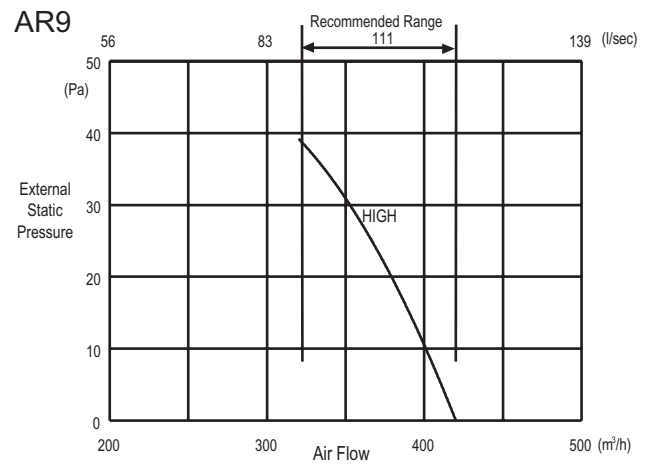
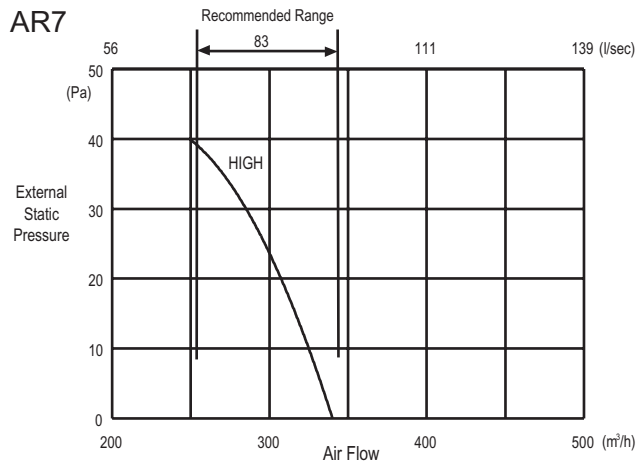
SIDE VIEW
FLOW CONTROL PANEL : Vert.
LOUVER : Center



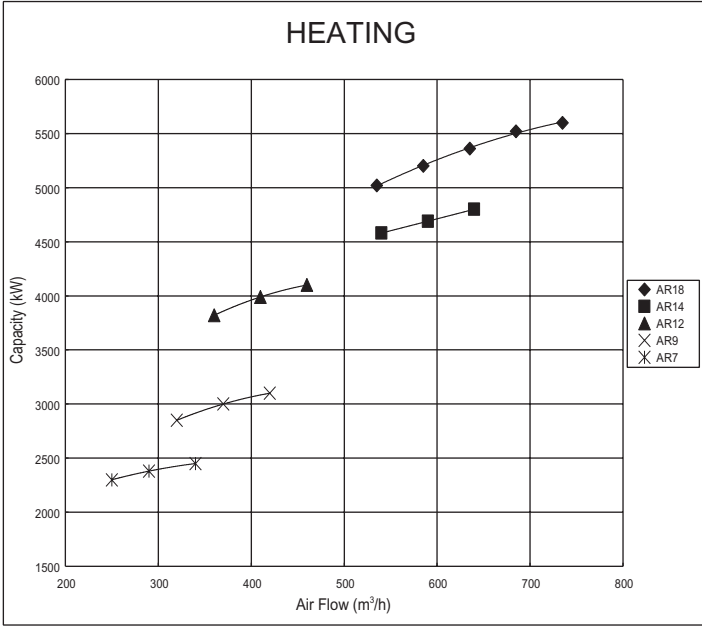
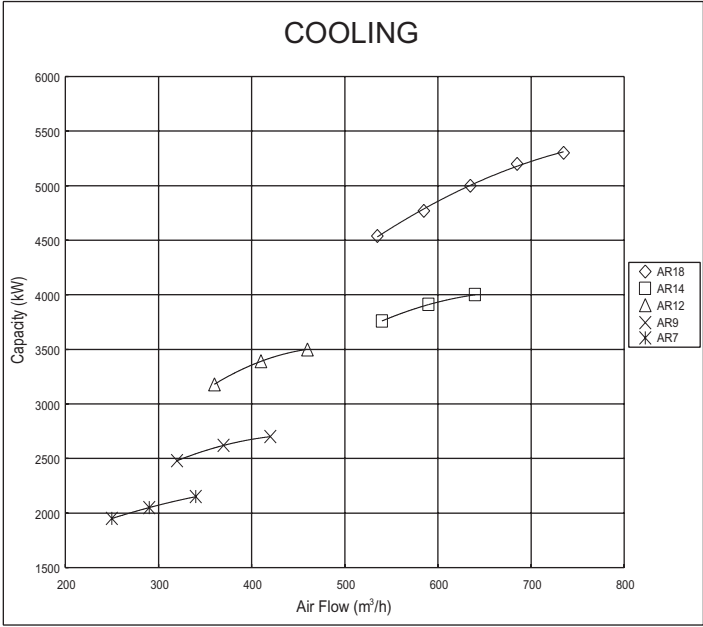
4-11 FAN PERFORMANCE AND AIR FLOW

4-11-1 FAN CURVE (COMPACT DUCT TYPE)

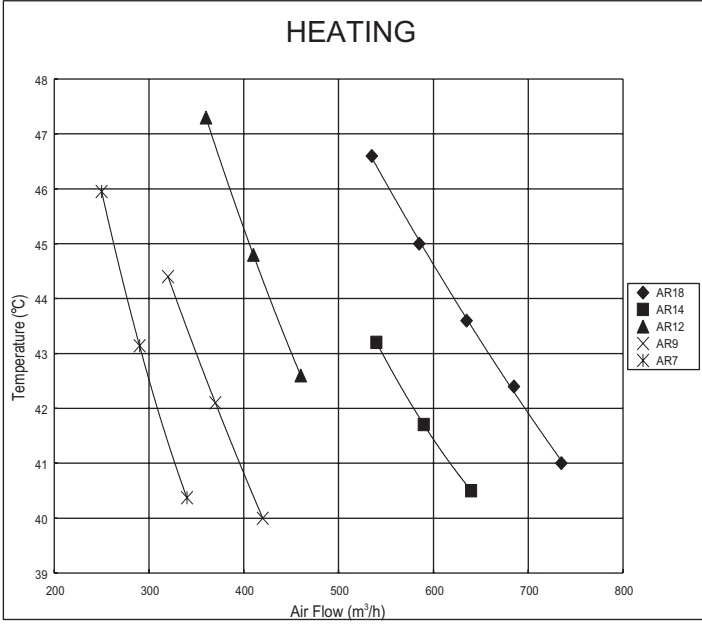
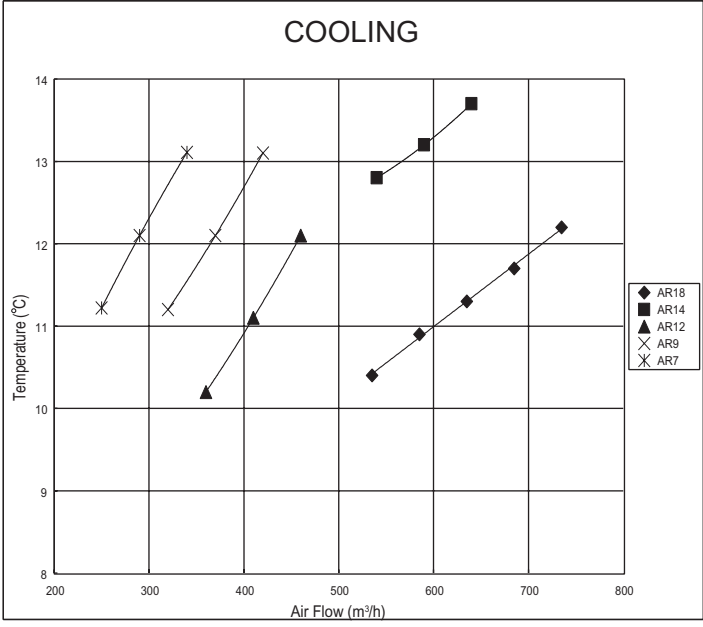
■ MODELS : AR7, AR9, AR12, AR14, AR18



CAPACITY BY AIR FLOW

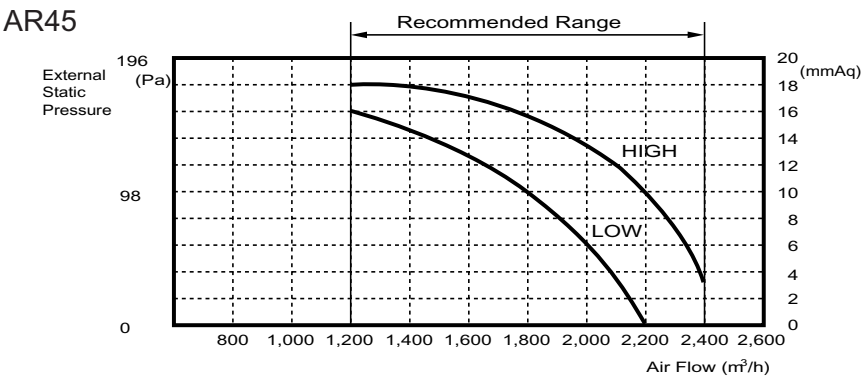
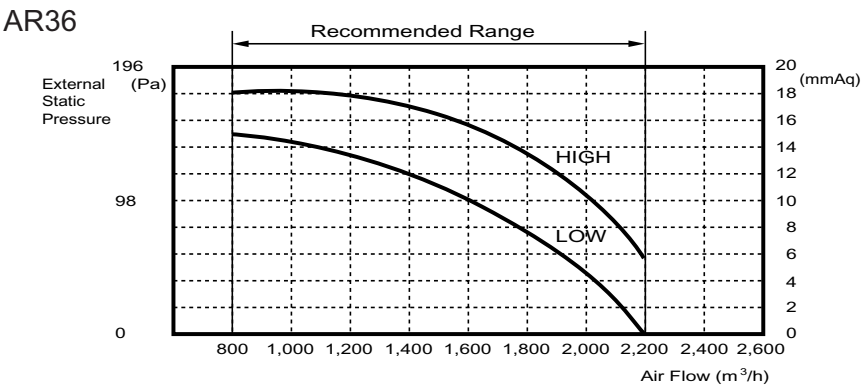
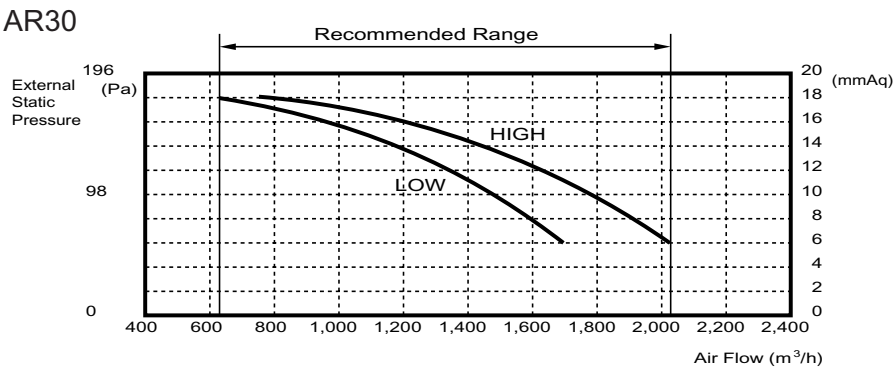
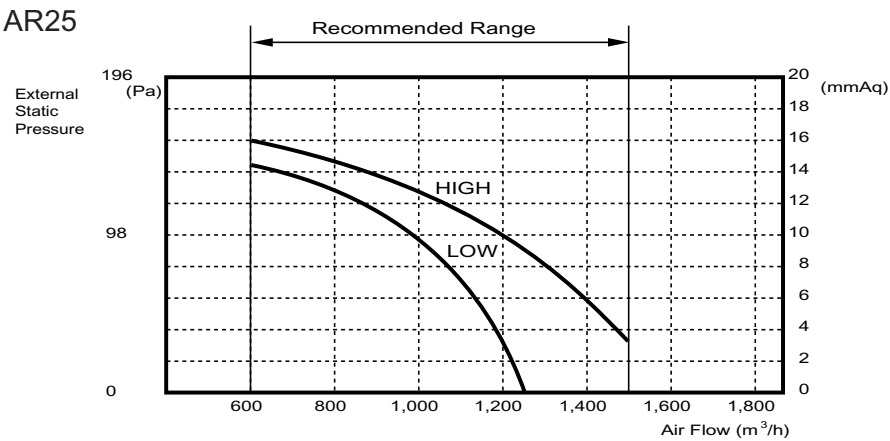


OUTLET AIR TEMPERATURE



4-11-2 FAN CURVE (LOW STATIC PRESSURE DUCT TYPE)

MODELS : AR25, AR30, AR36, AR45

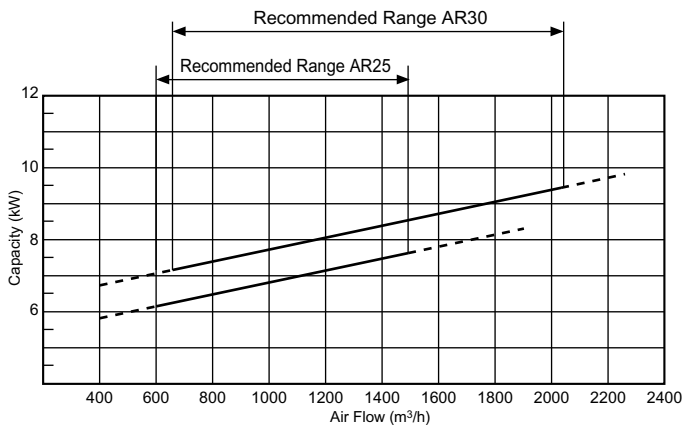


4-11-3 CAPACITY BY AIR FLOW (LOW STATIC PRESSURE DUCT TYPE)

MODELS : AR25, AR30

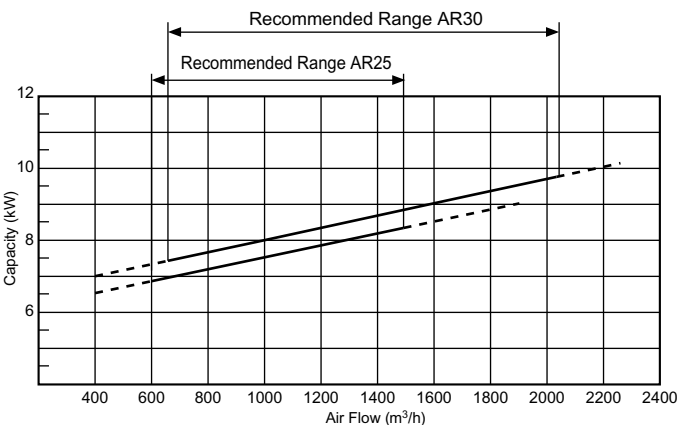
Cooling

(Condition : Inlet Air Temp. 27°C, Outdoor Temp. 35°C.)



Heating

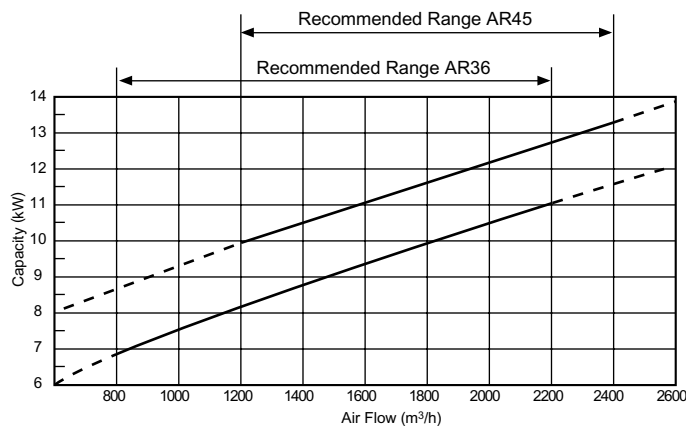
(Condition : Inlet Air Temp. 20°C, Outdoor Temp. 7°C.)



MODELS : AR36, AR45

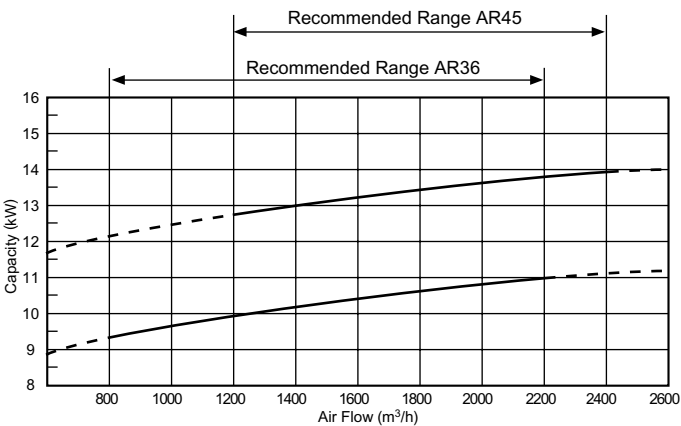
Cooling

(Condition : Inlet Air Temp. 27°C, Outdoor Temp. 35°C.)



Heating

(Condition : Inlet Air Temp. 20°C, Outdoor Temp. 7°C.)

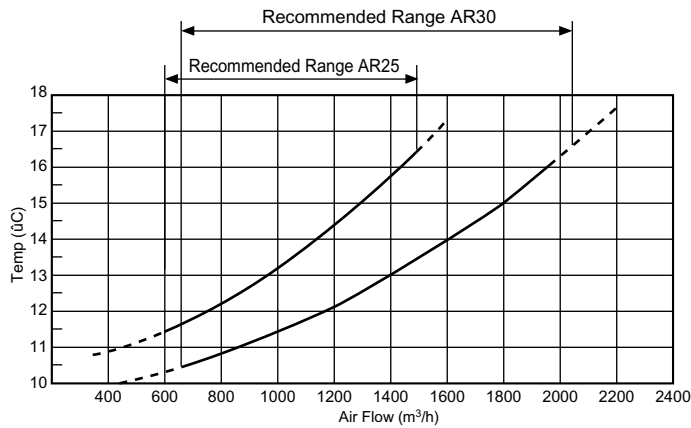


4-11-4 OUTLET AIR TEMPERATURE (LOW STATIC PRESSURE DUCT TYPE)

MODELS : AR25, AR30

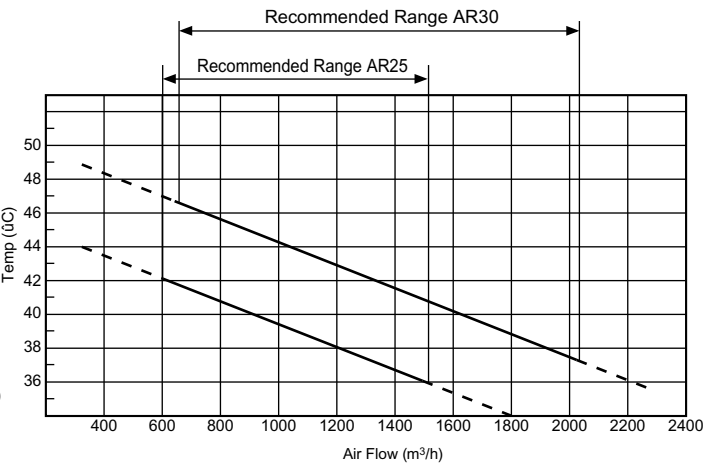
Cooling

(Condition : Inlet Air Temp. 27°C, Outdoor Temp. 35°C.)



Heating

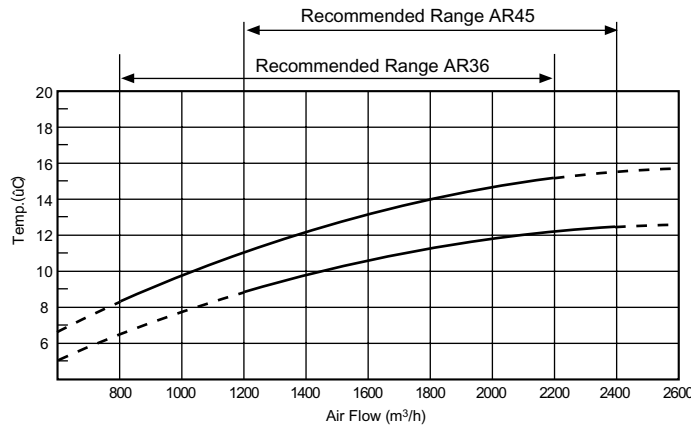
(Condition : Inlet Air Temp. 20°C, Outdoor Temp. 7°C.)



MODELS : AR36, AR45

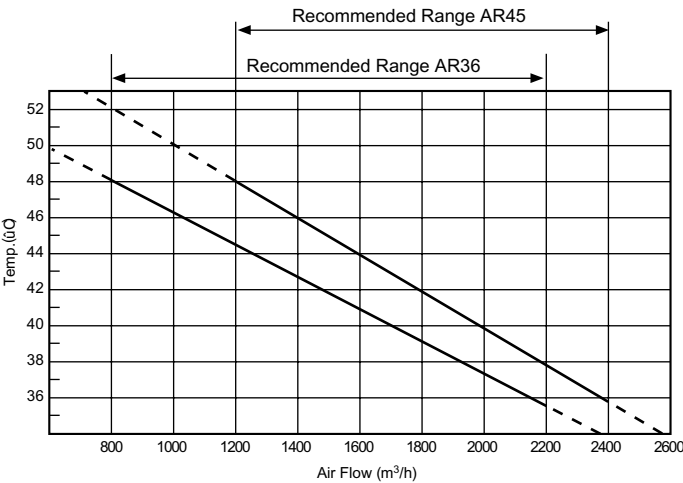
Cooling

(Condition : Inlet Air Temp. 27°C, Outdoor Temp. 35°C.)



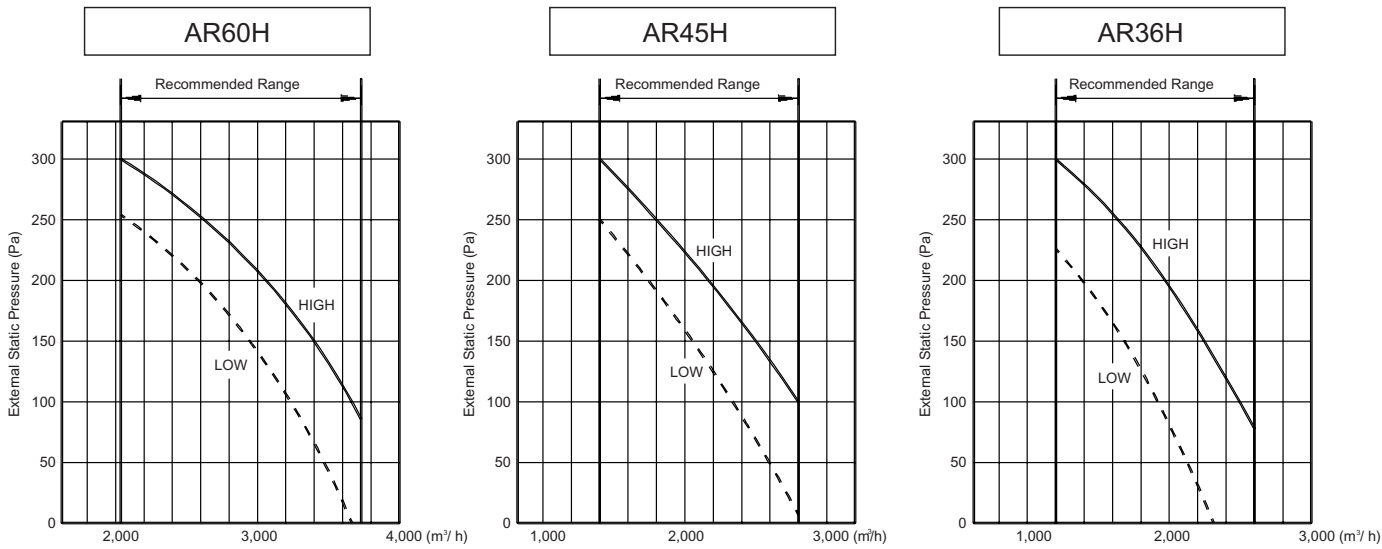
Heating

(Condition : Inlet Air Temp. 20°C, Outdoor Temp. 7°C.)

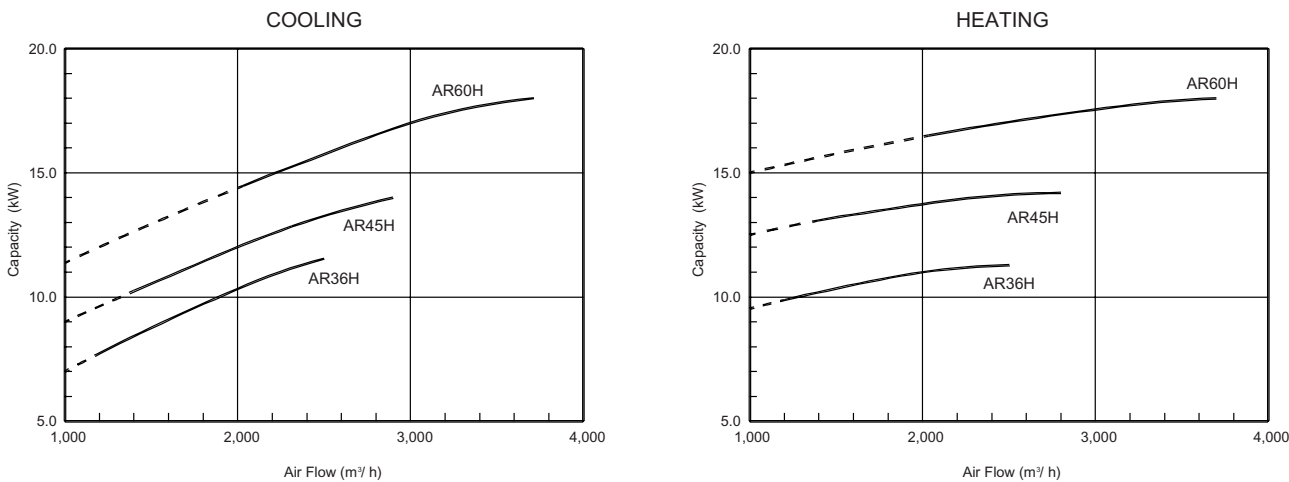


4-11-5 FAN CURVE (HIGH STATIC PRESSURE DUCT TYPE)

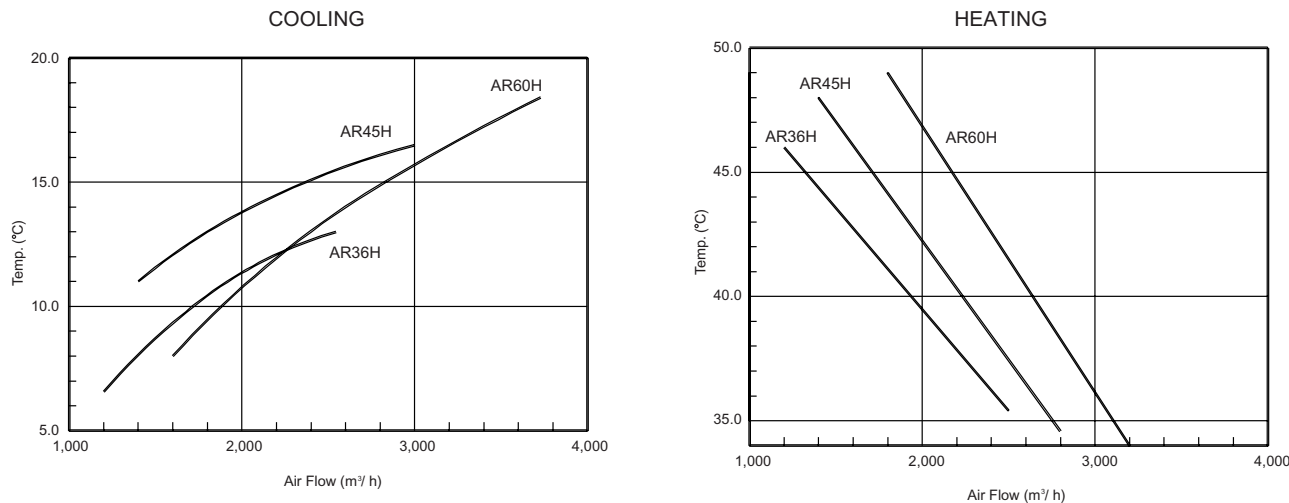
MODELS : AR60H,AR45H,AR36H



CAPACITY BY AIR FLOW

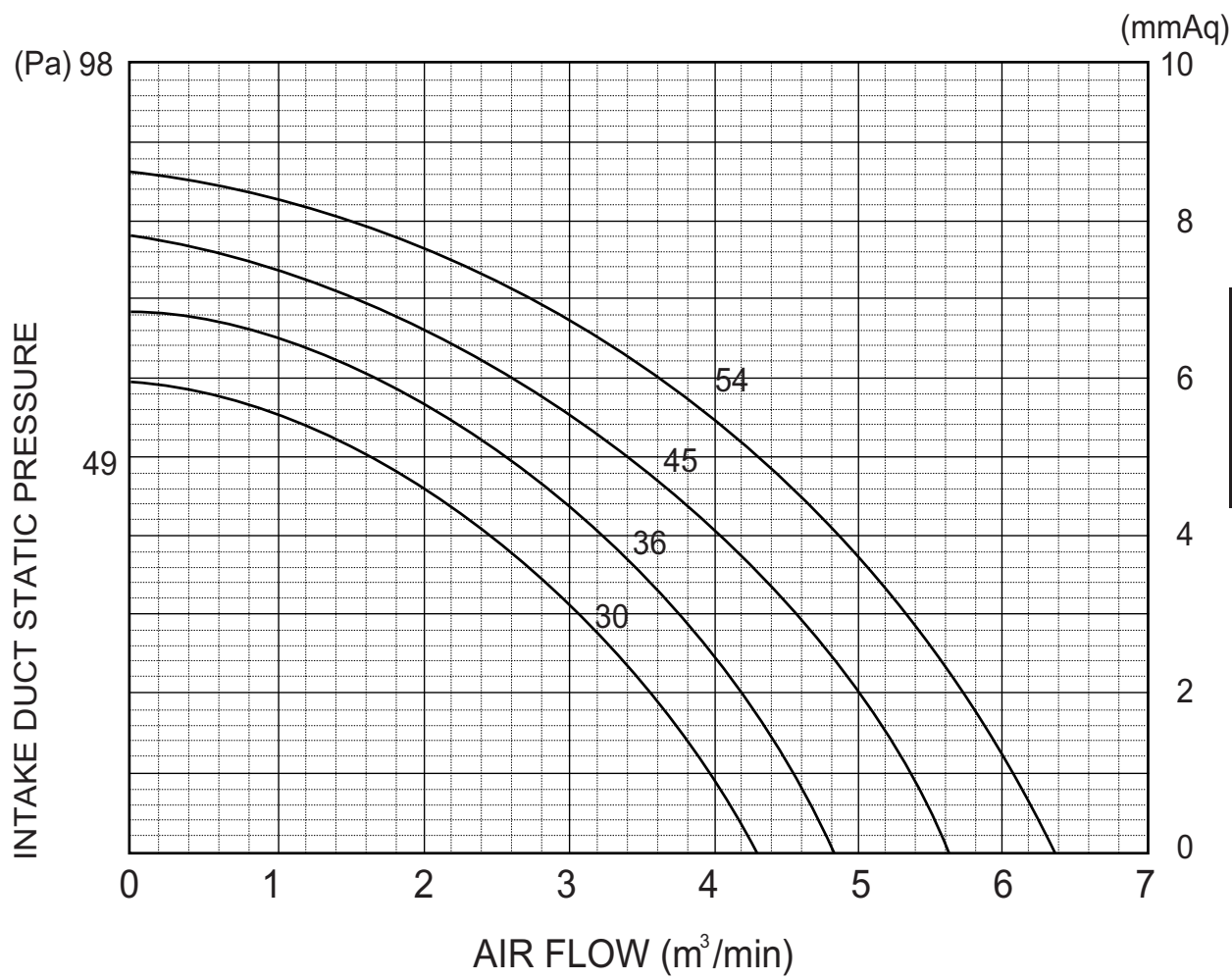


OUTLET AIR TEMPERATURE



4-12 FRESH AIR

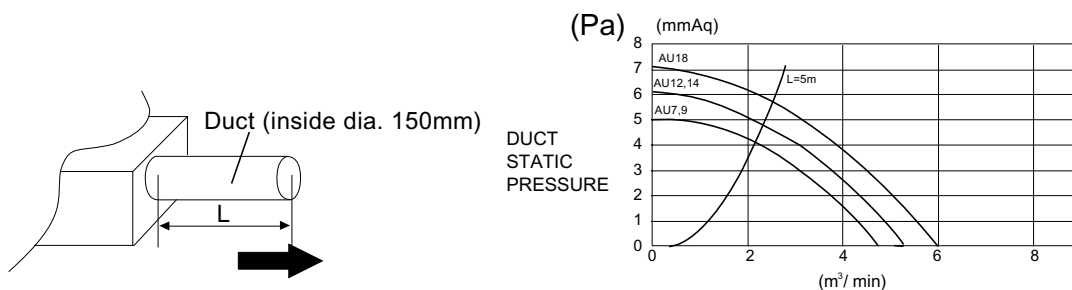
AB30-54 FRESH AIR CHARACTERISTIC



DUCT CONNECTION

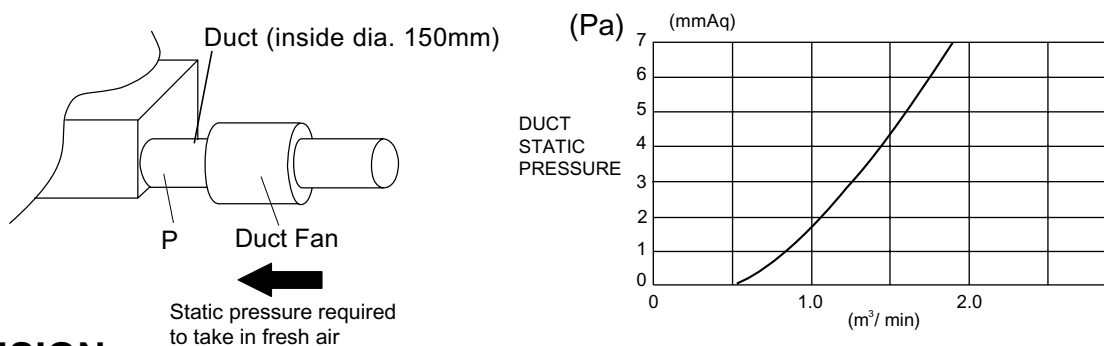
OUTLET AIR

■ MODEL : AU7 , AU 9 , AU12 , AU14 , AU18



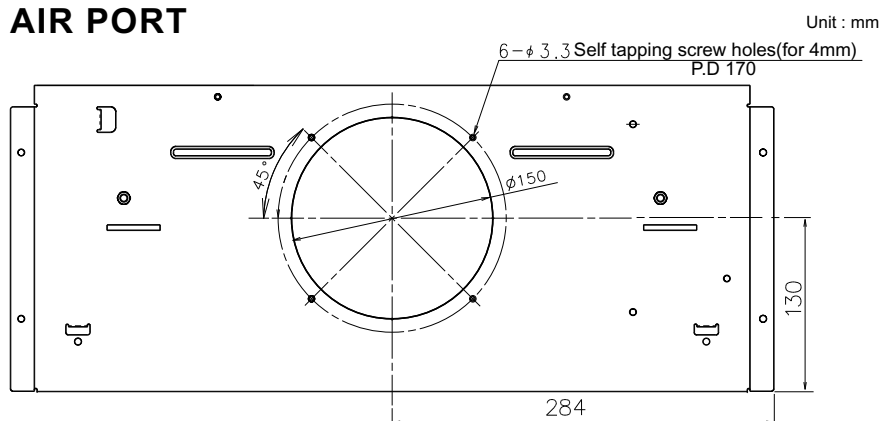
FRESH AIR

■ MODEL : AU7 , AU 9 , AU12 , AU14 , AU18

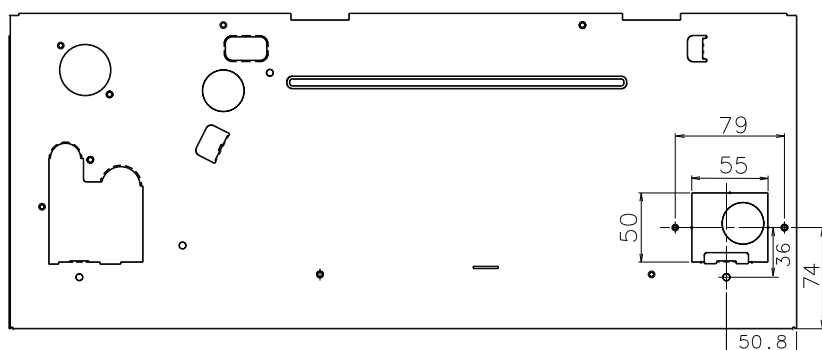


DIMENSION

OUTLET AIR PORT

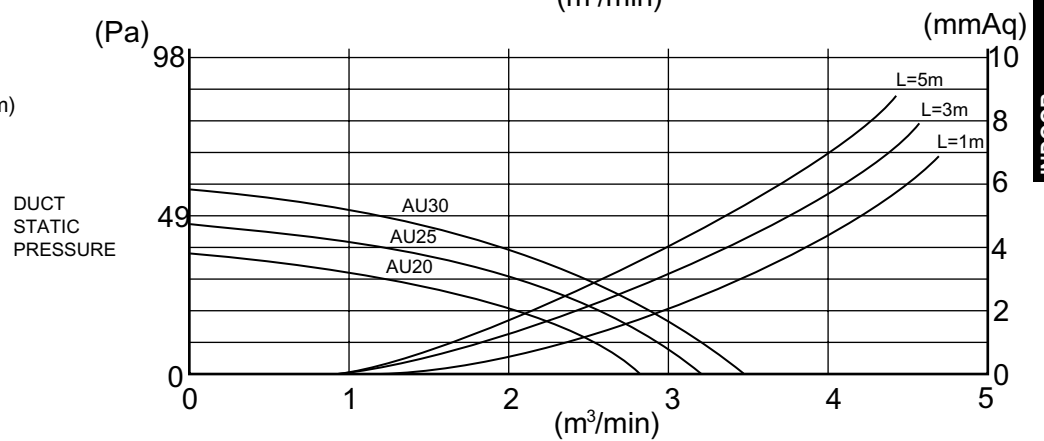
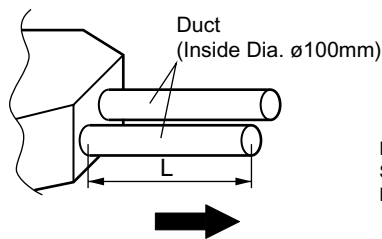
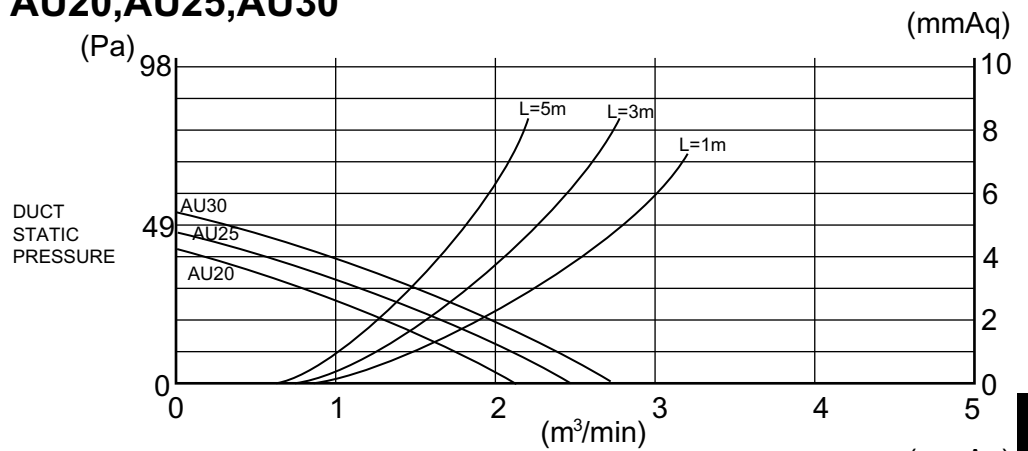
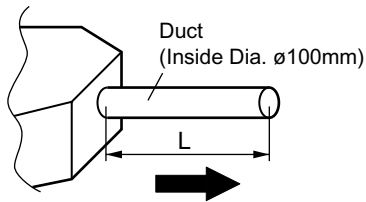


FRESH AIR PORT



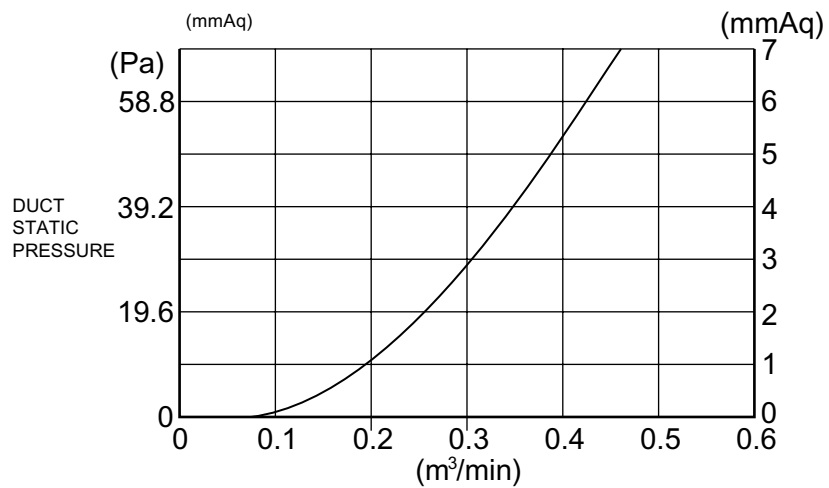
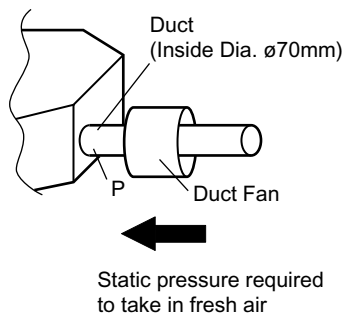
OUTLET AIR

■ MODELS : AU20,AU25,AU30

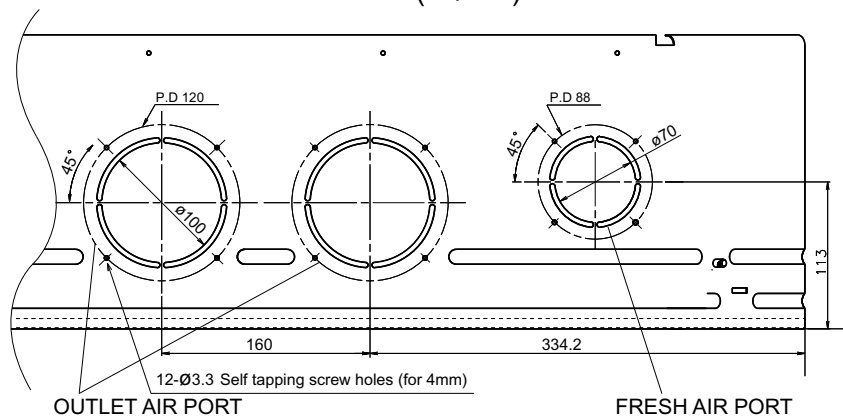


FRESH AIR

■ MODELS : AU20,AU25,AU30

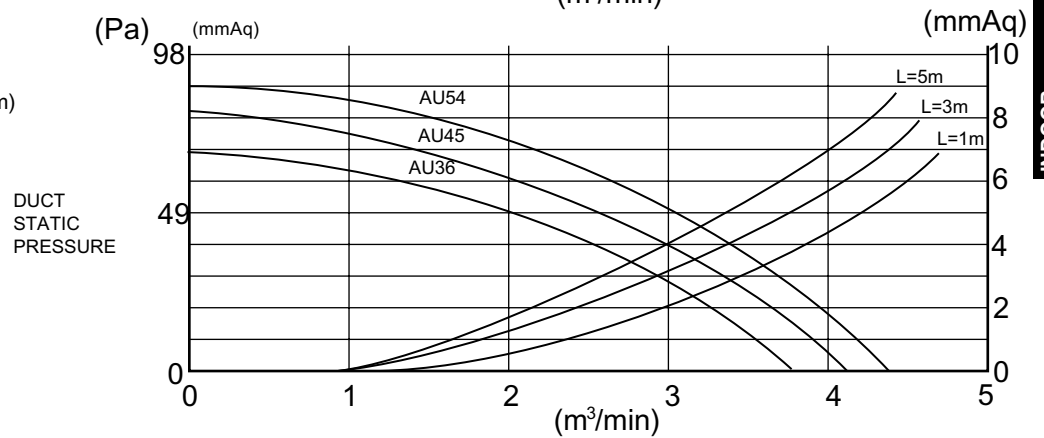
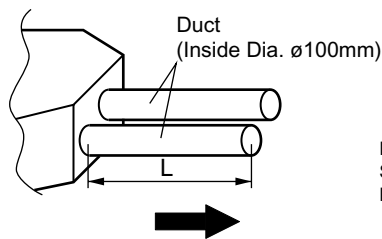
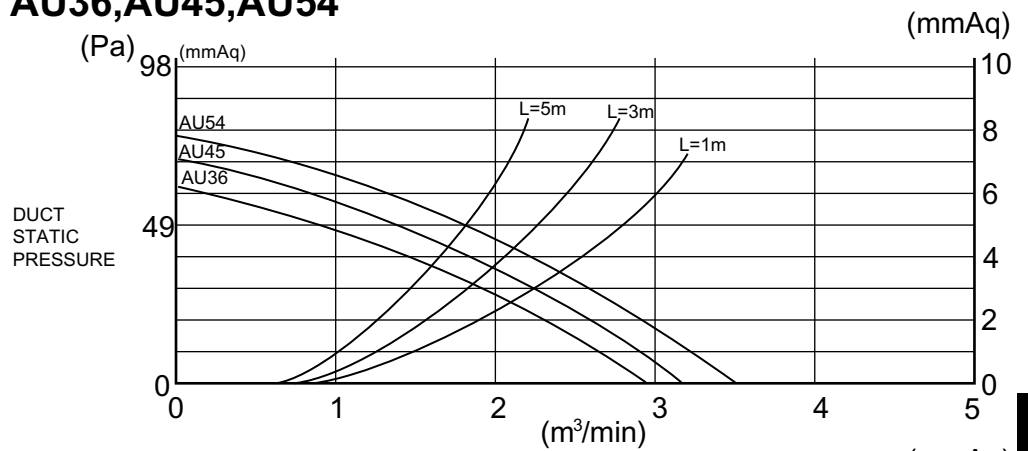
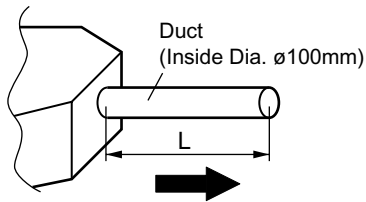


DIMENSION



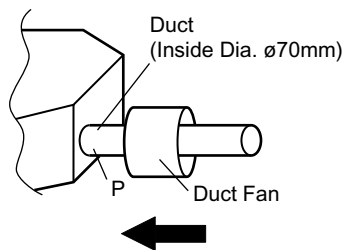
OUTLET AIR

MODELS : AU36,AU45,AU54

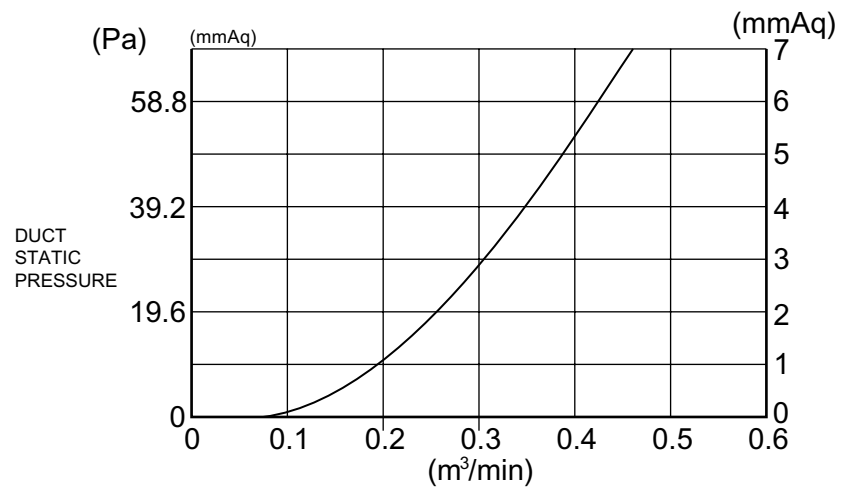


FRESH AIR

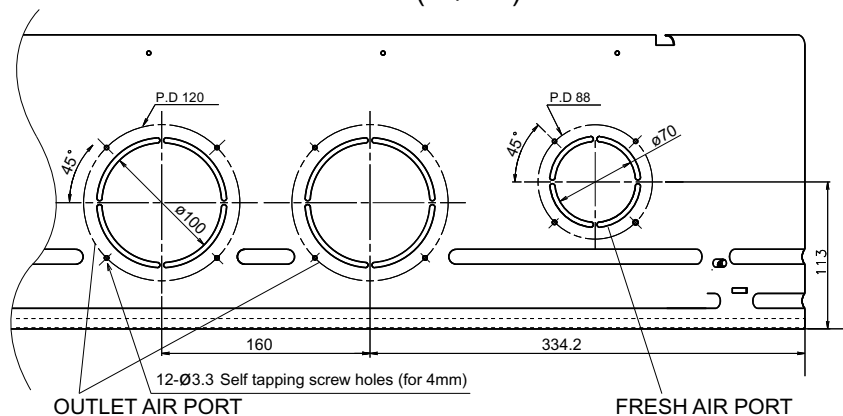
MODELS : AU36,AU45,AU54



Static pressure required to take in fresh air



DIMENSION

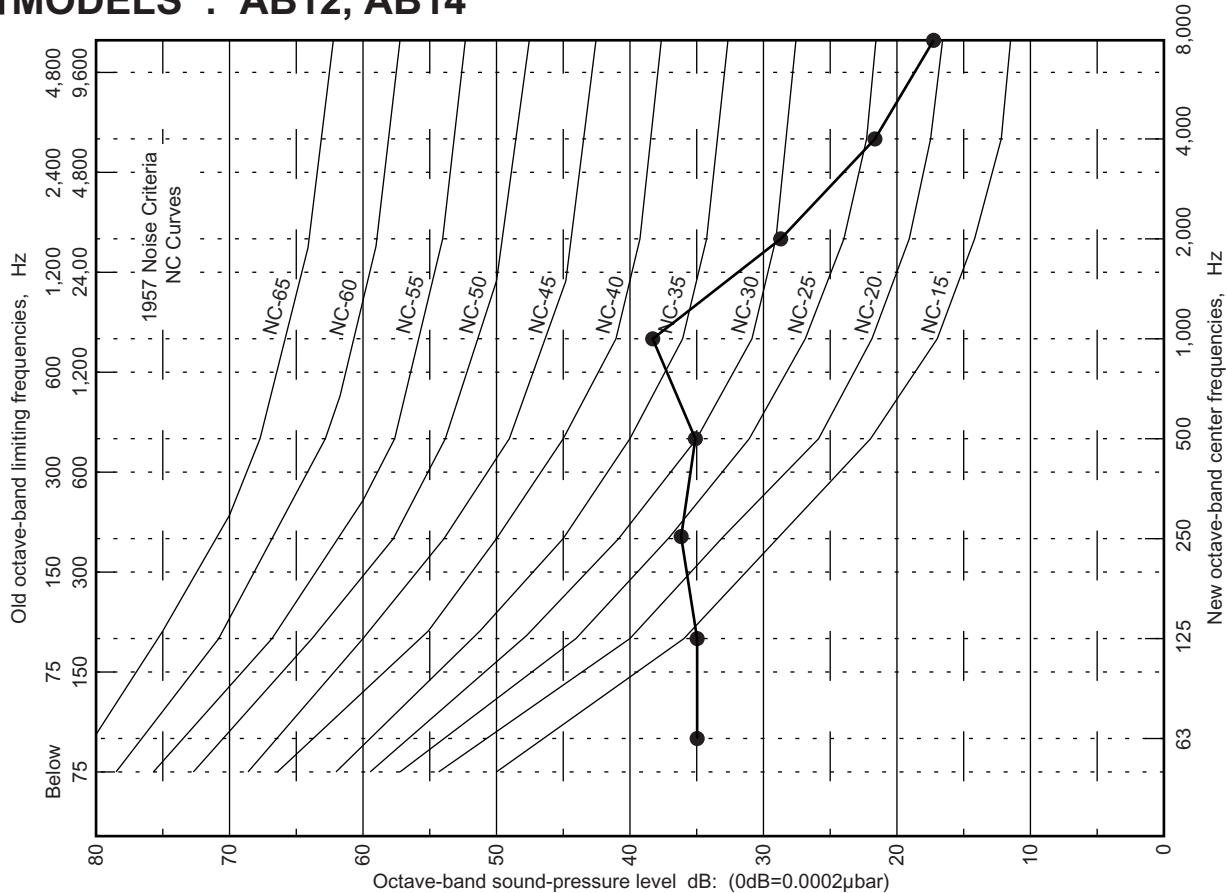


4-13 NOISE LEVEL CURVE

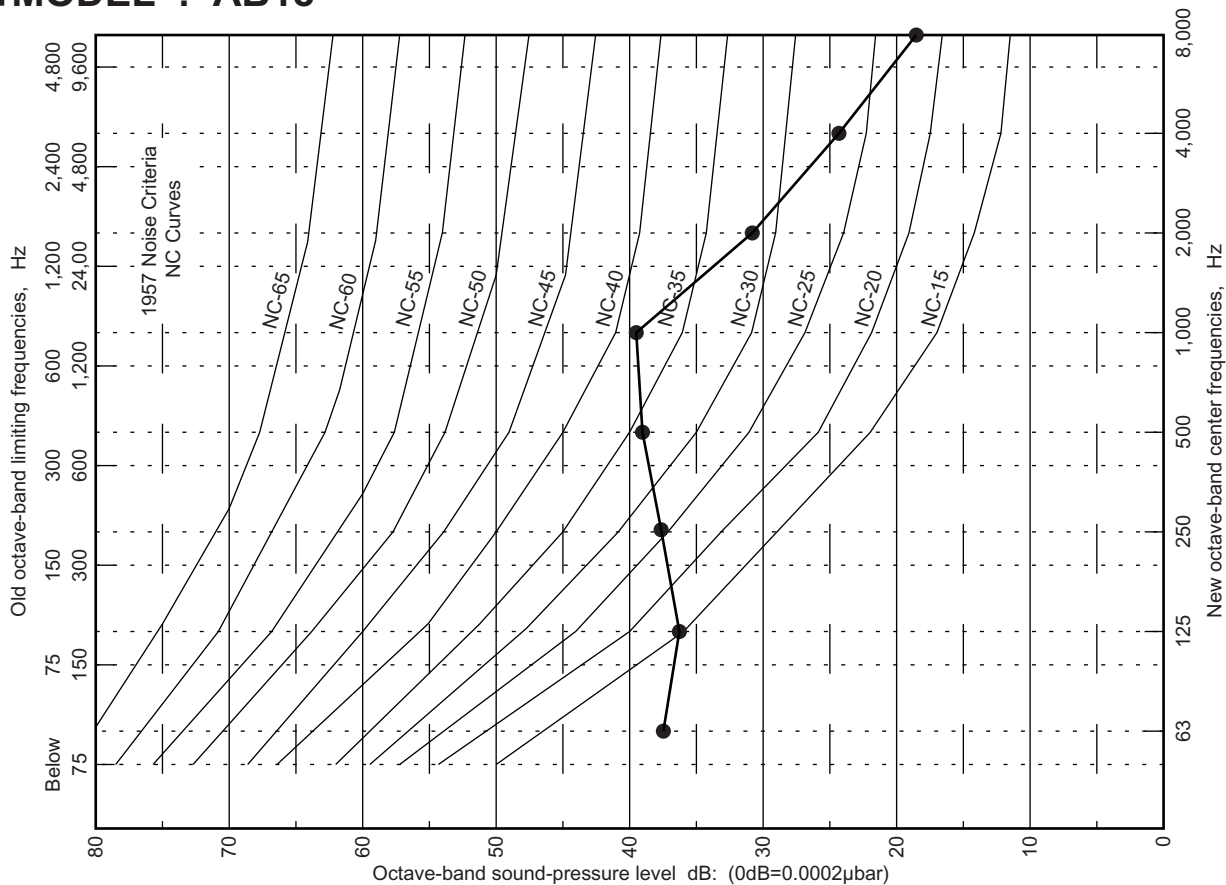
4-13-1 UNIVERSAL FLOOR / CEILING TYPE

Condition	
Fan speed	: High
Operation mode	: FAN
Voltage	: 240V
Static pressure	: 0 Pa

MODELS : AB12, AB14



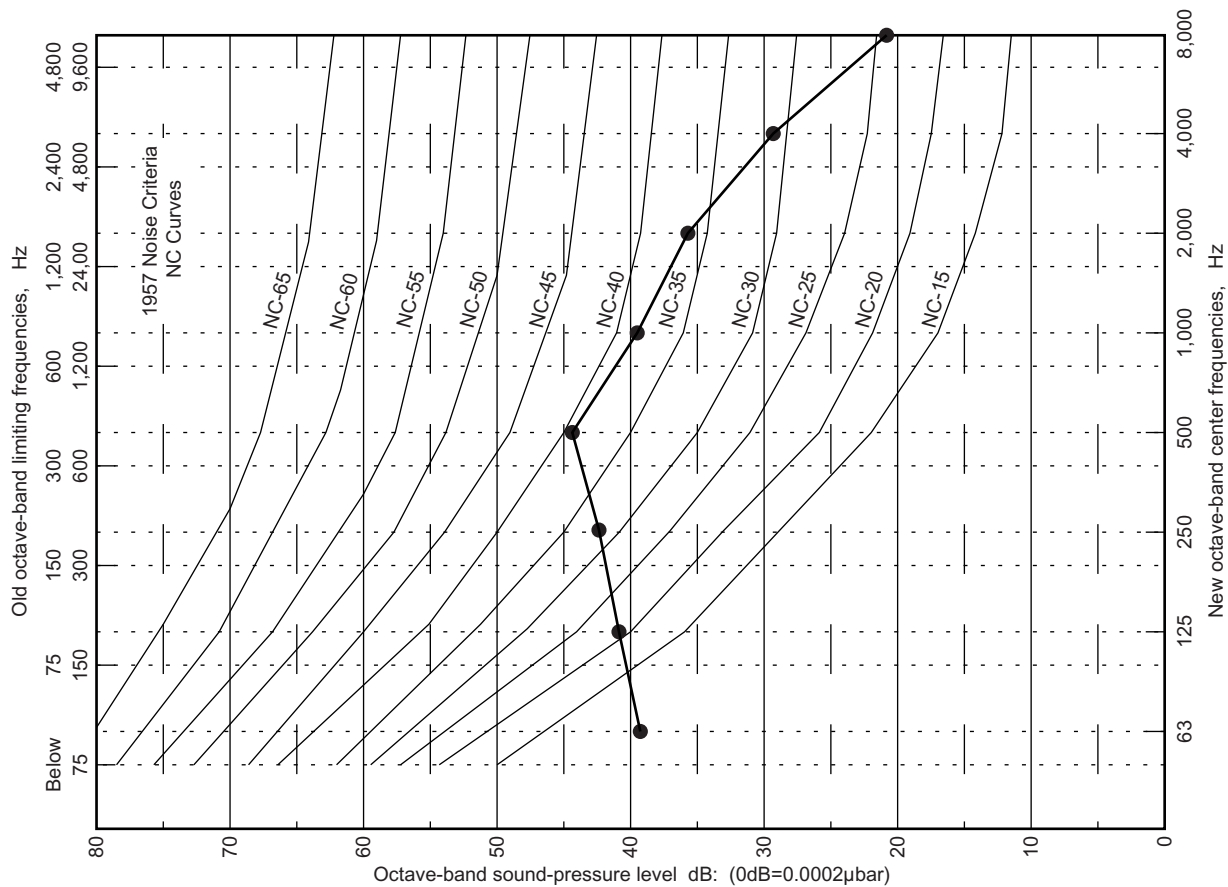
MODEL : AB18



INDOOR
UNIT

MODEL : AB24

Condition	
Fan speed	: High
Operation mode	: FAN
Voltage	: 240V
Static pressure	: 0 Pa

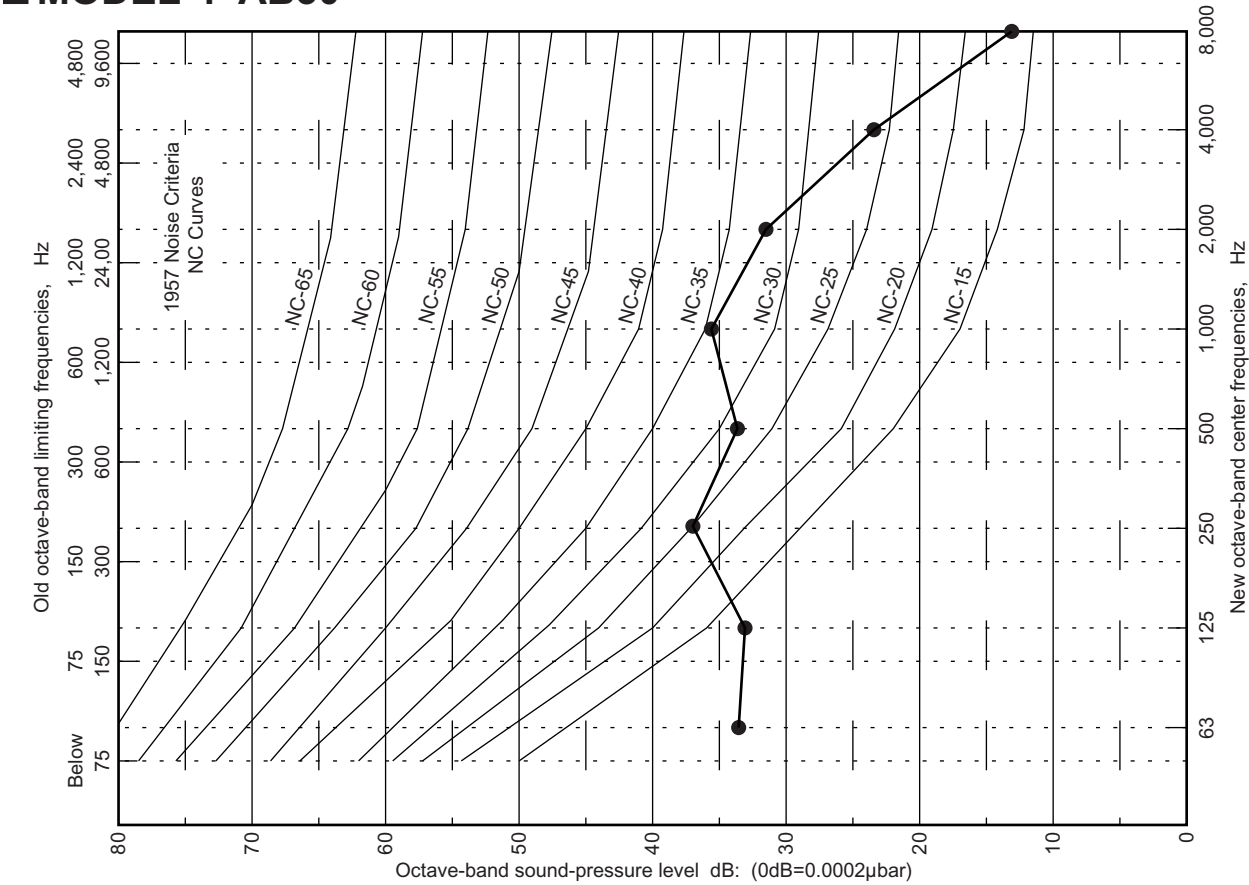


INDOOR
UNIT

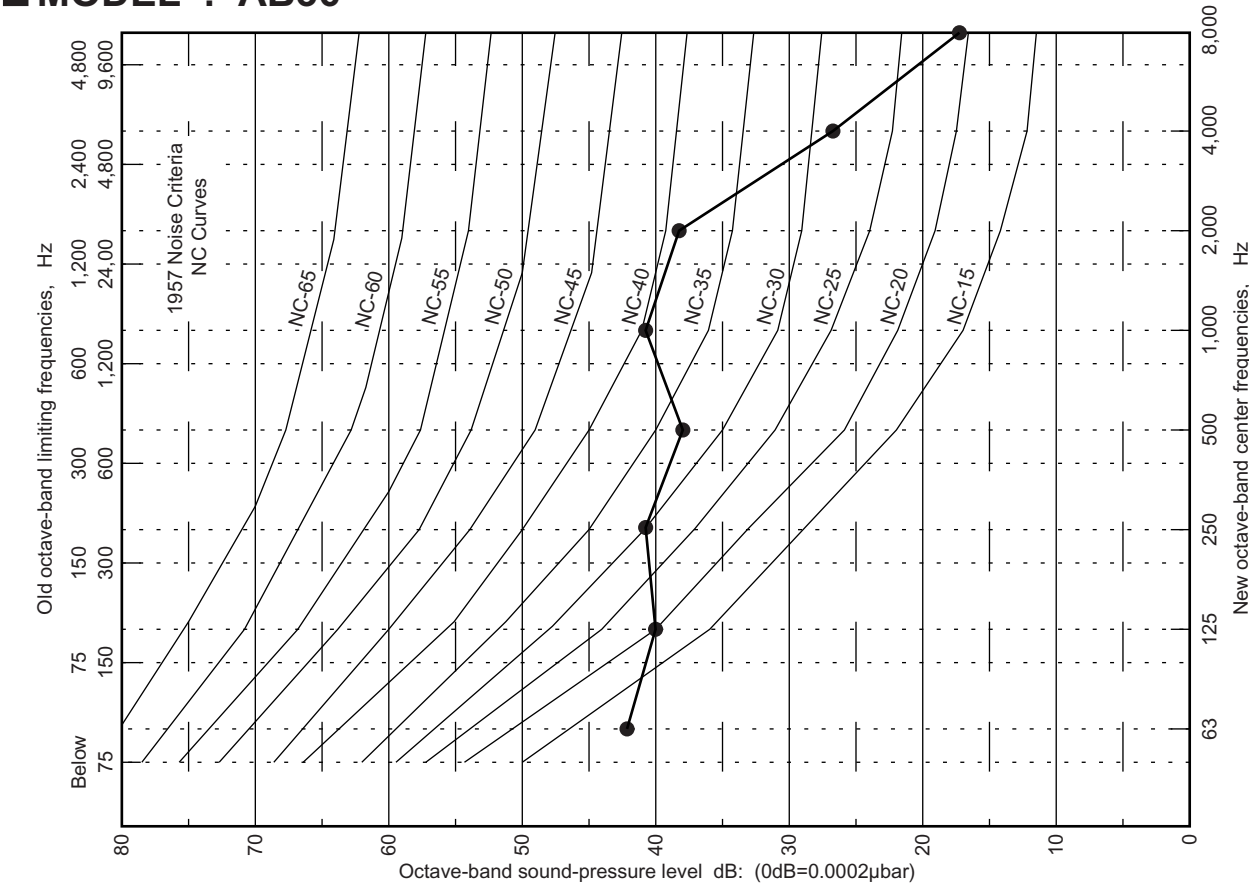
4-13-2 LARGE CEILING TYPE

Condition	
Fan speed	: High
Operation mode	: FAN
Voltage	: 240V
Static pressure	: 0 Pa

MODEL : AB30

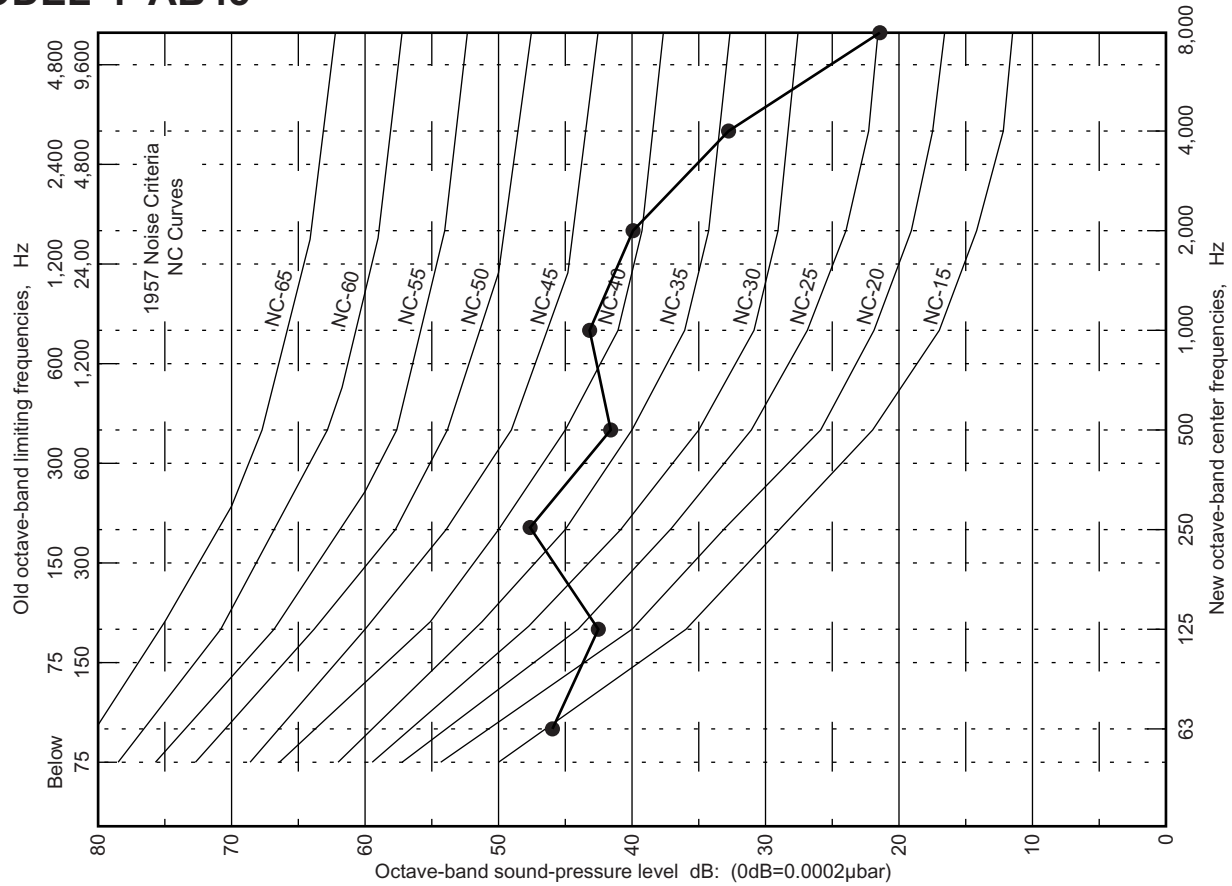


MODEL : AB36

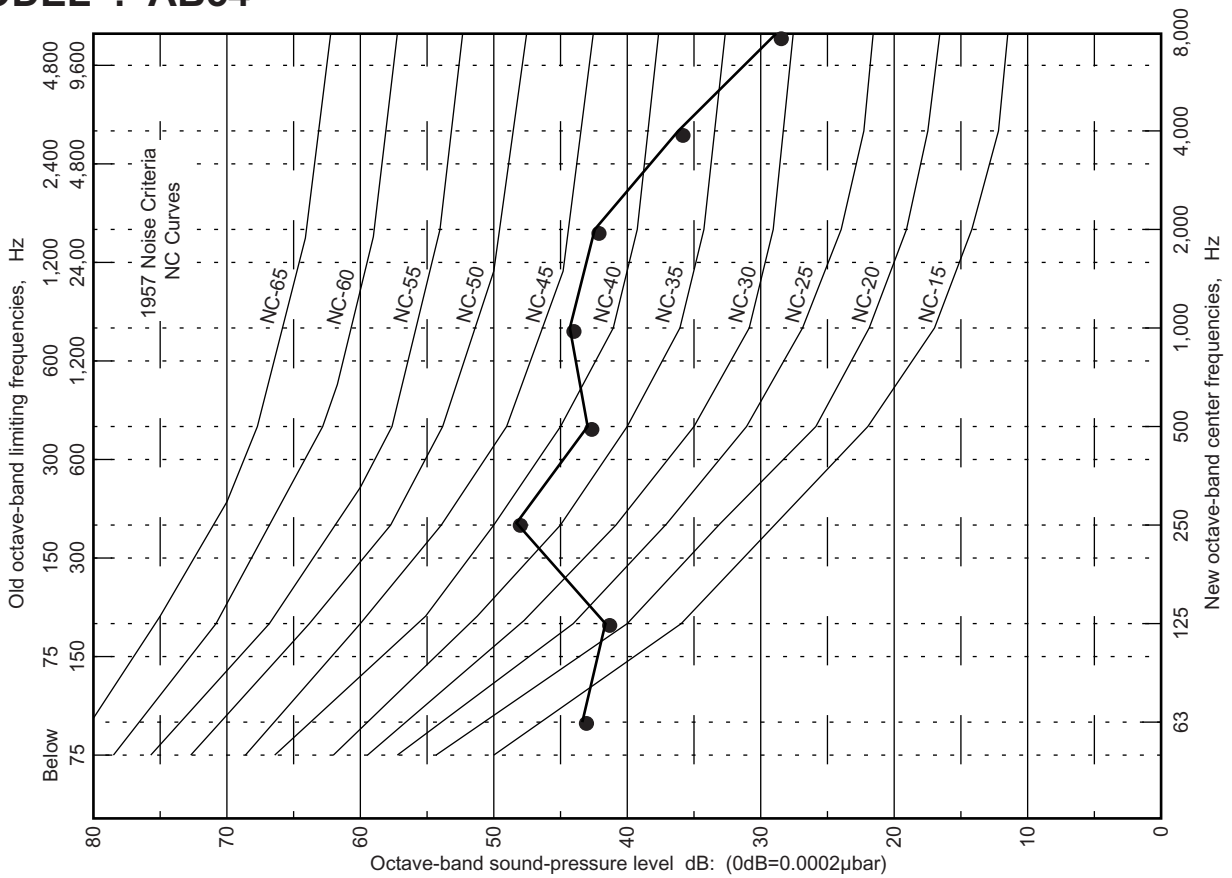


MODEL : AB45

Condition	
Fan speed	: High
Operation mode	: FAN
Voltage	: 240V
Static pressure	: 0 Pa



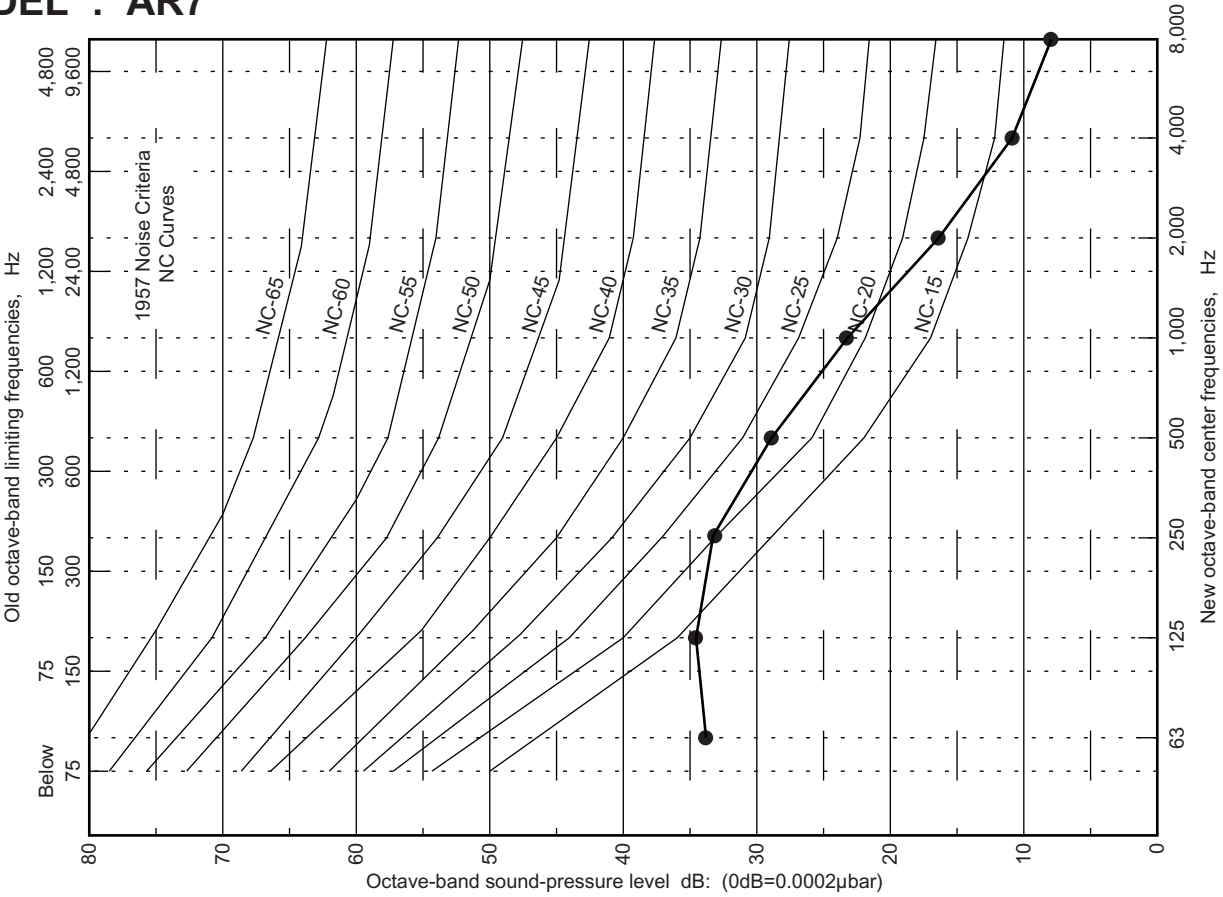
MODEL : AB54



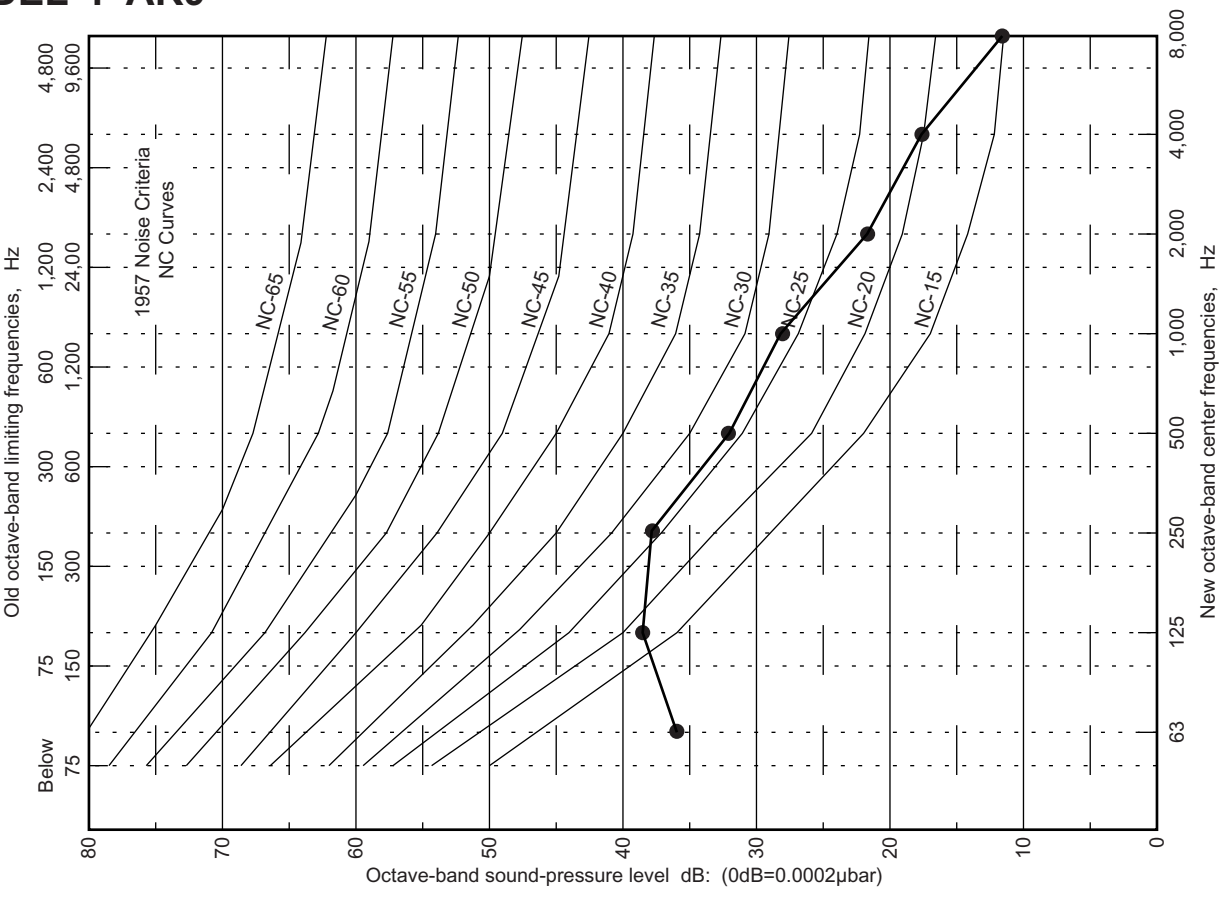
4-13-3 COMPACT DUCT TYPE

Condition	
Fan speed	: High
Operation mode	: FAN
Voltage	: 240V
Static pressure	: 0 Pa

MODEL : AR7

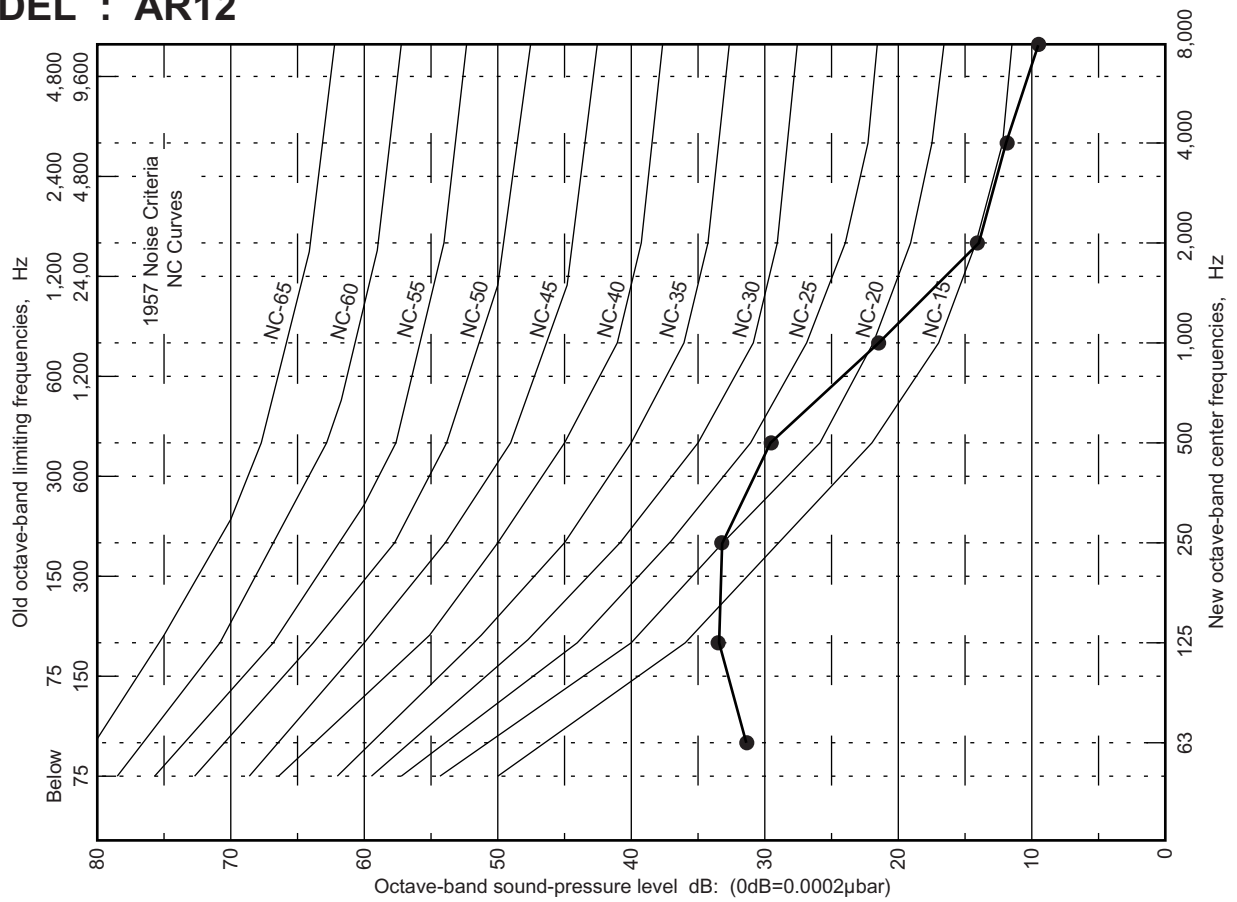


MODEL : AR9

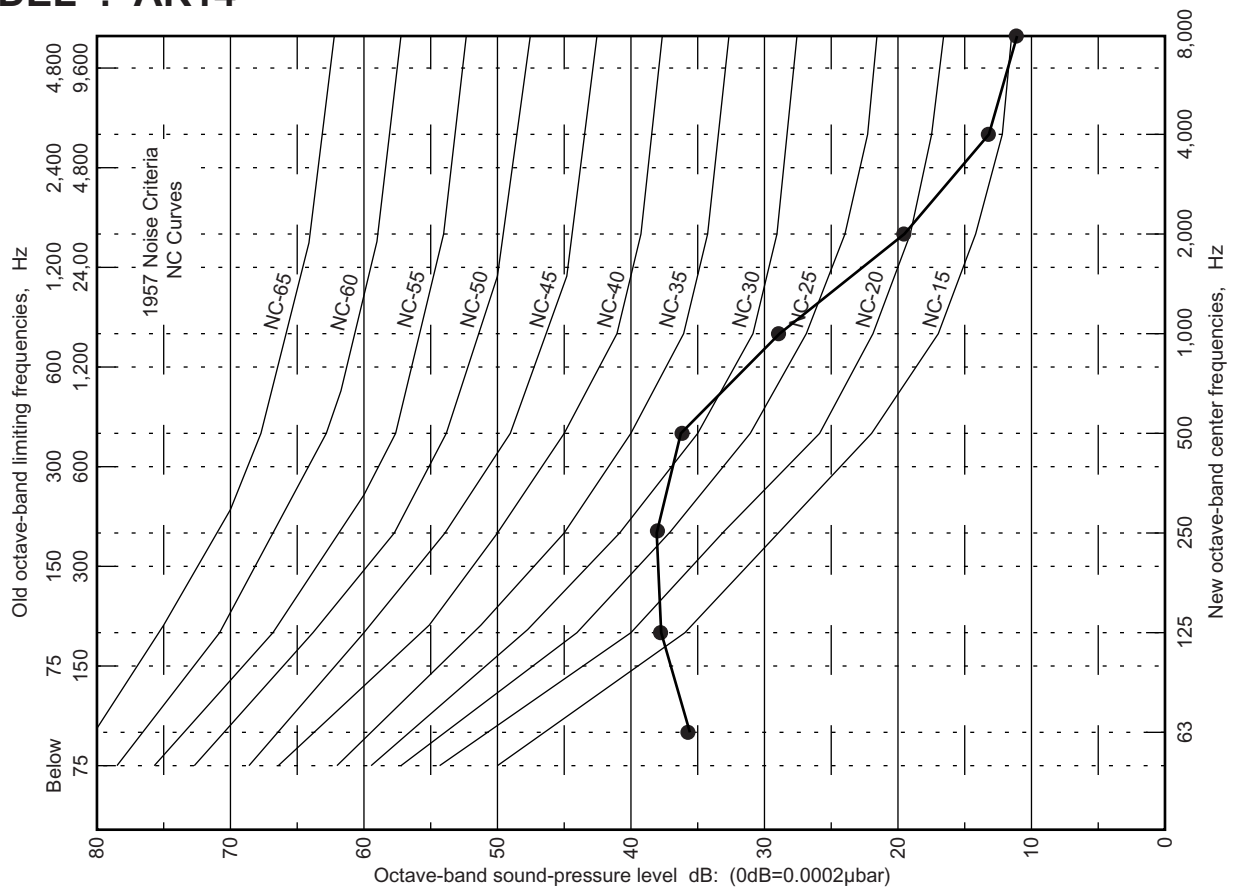


Condition
 Fan speed : High
 Operation mode: FAN
 Voltage : 240V
 Static pressure : 0 Pa

MODEL : AR12

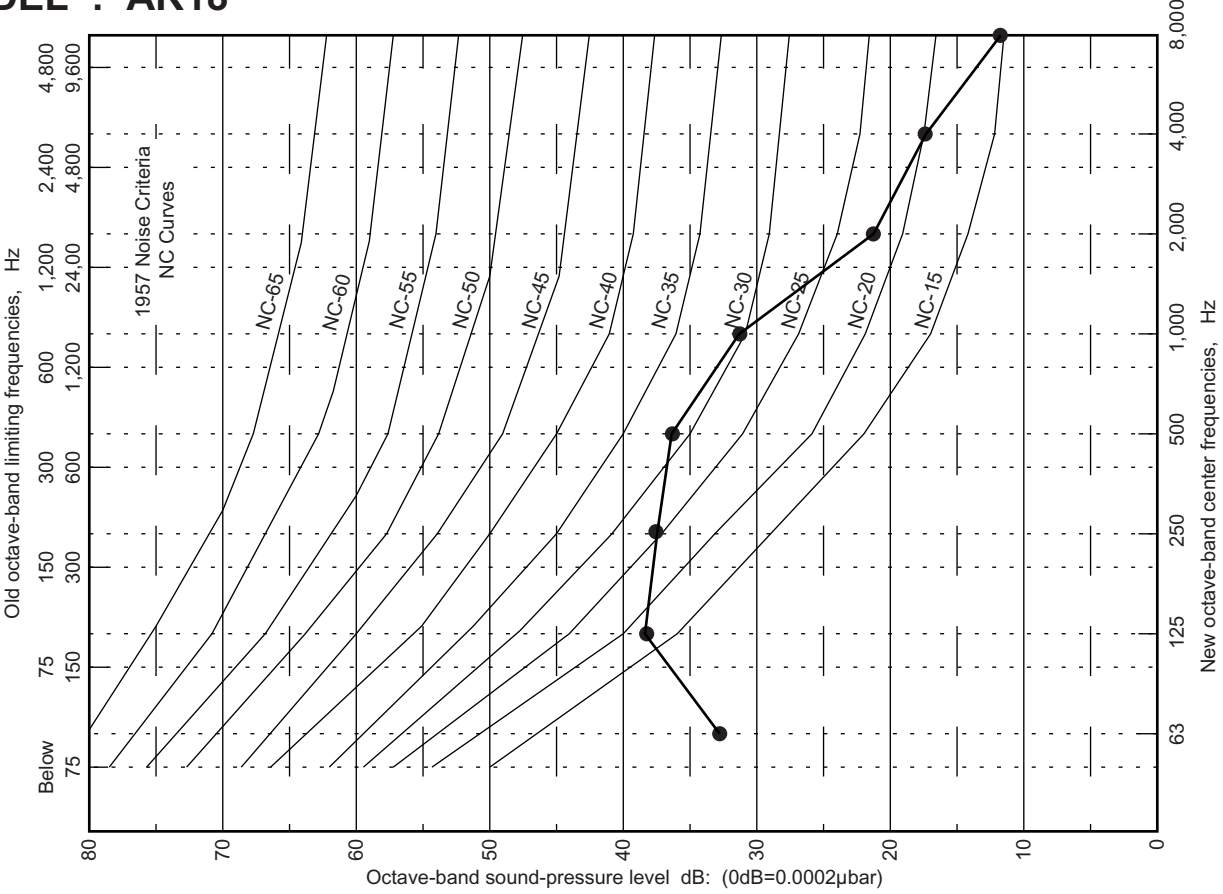


MODEL : AR14



Condition
 Fan speed : High
 Operation mode: FAN
 Voltage : 240V
 Static pressure : 0 Pa

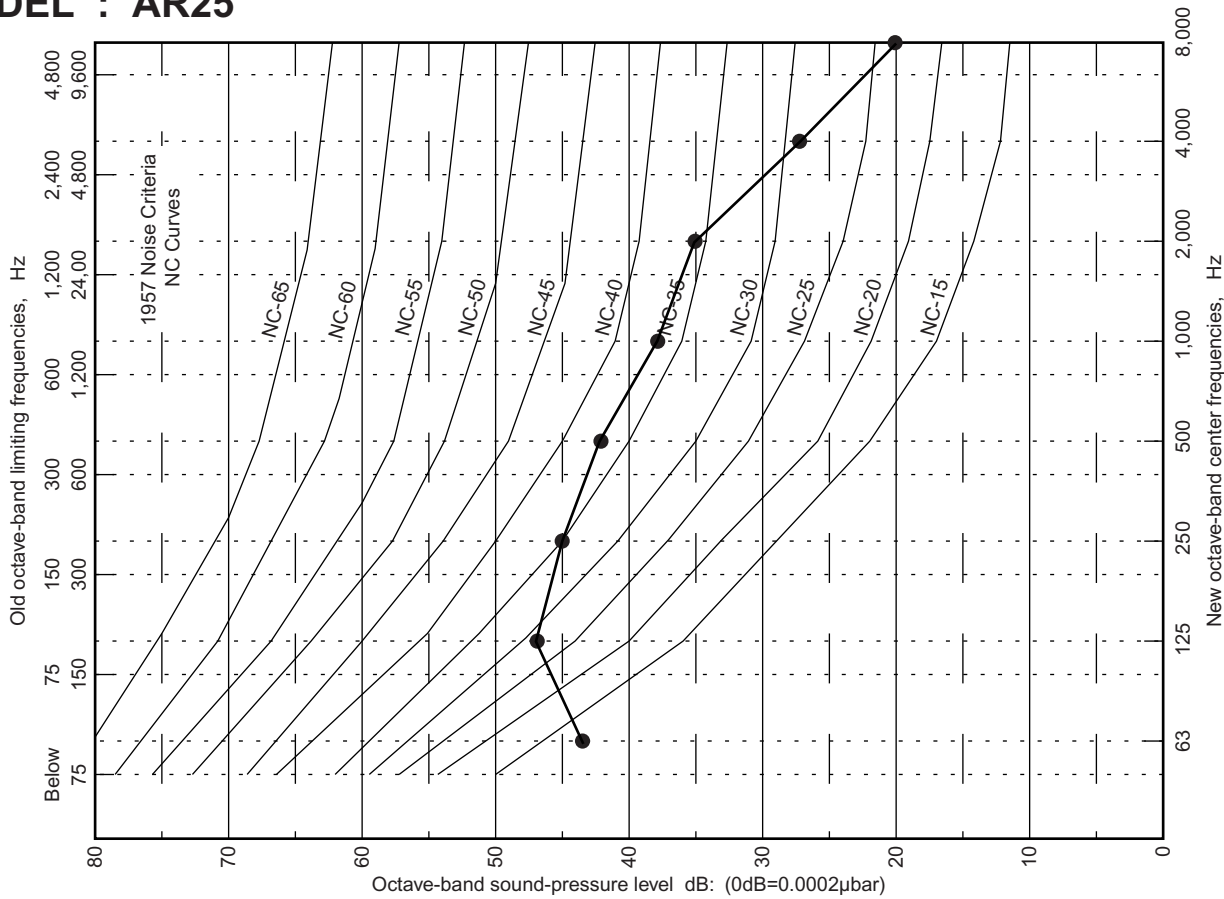
MODEL : AR18



4-13-4 LOW STATIC PRESSURE DUCT TYPE

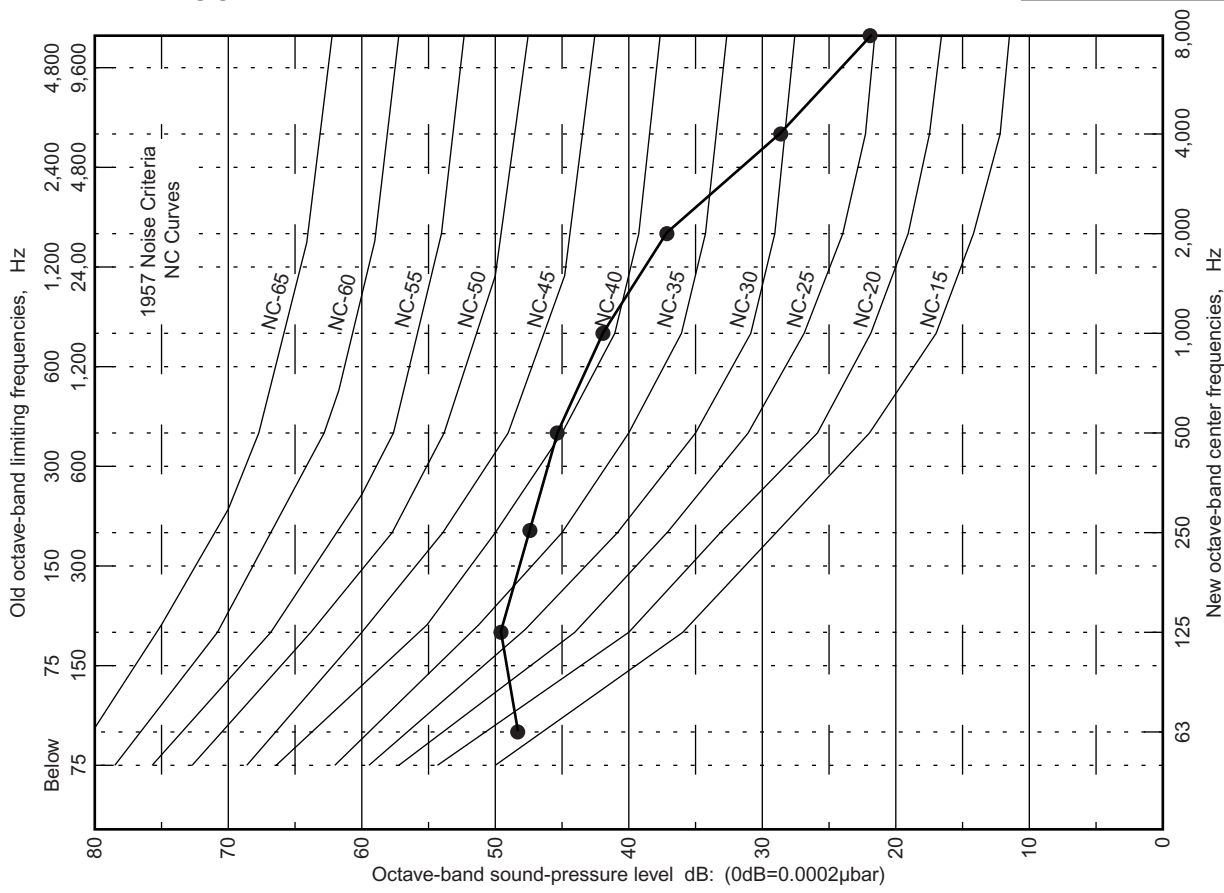
Condition	
Fan speed	: High
Operation mode	: FAN
Voltage	: 240V
Static pressure	: 100Pa

MODEL : AR25



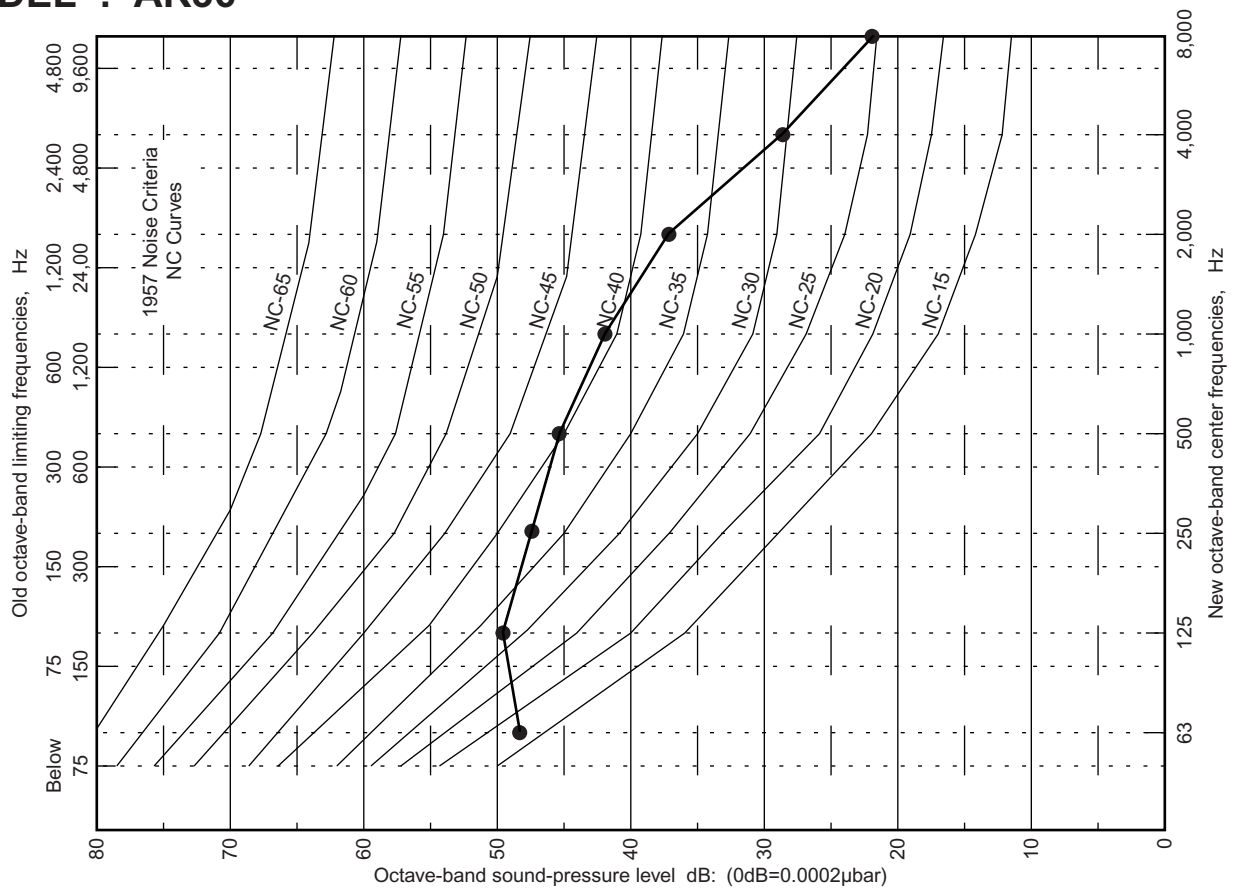
Condition	
Fan speed	: High
Operation mode	: FAN
Voltage	: 240V
Static pressure	: 120Pa

MODEL : AR30

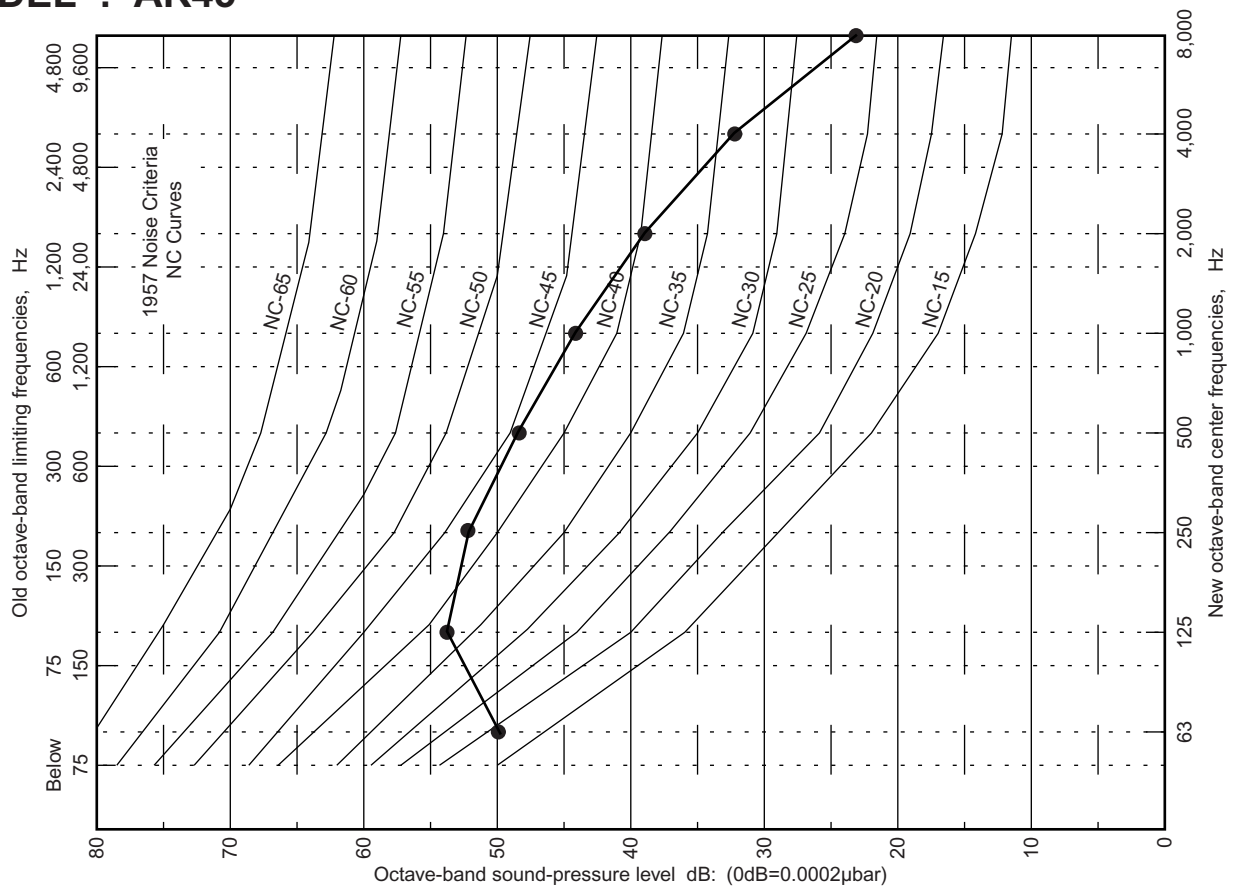


Condition
Fan speed : High
Operation mode: FAN
Voltage : 240V
Static pressure : 100Pa

MODEL : AR36



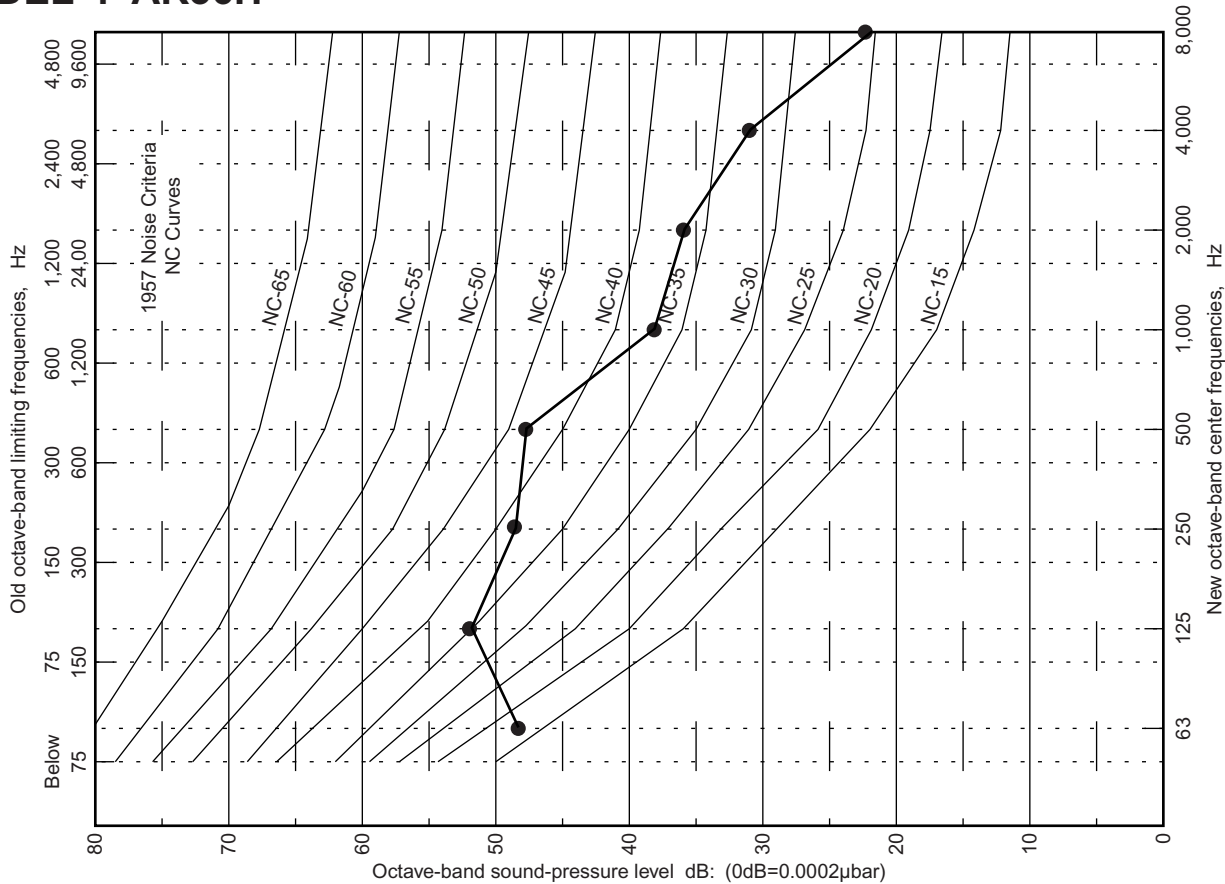
MODEL : AR45



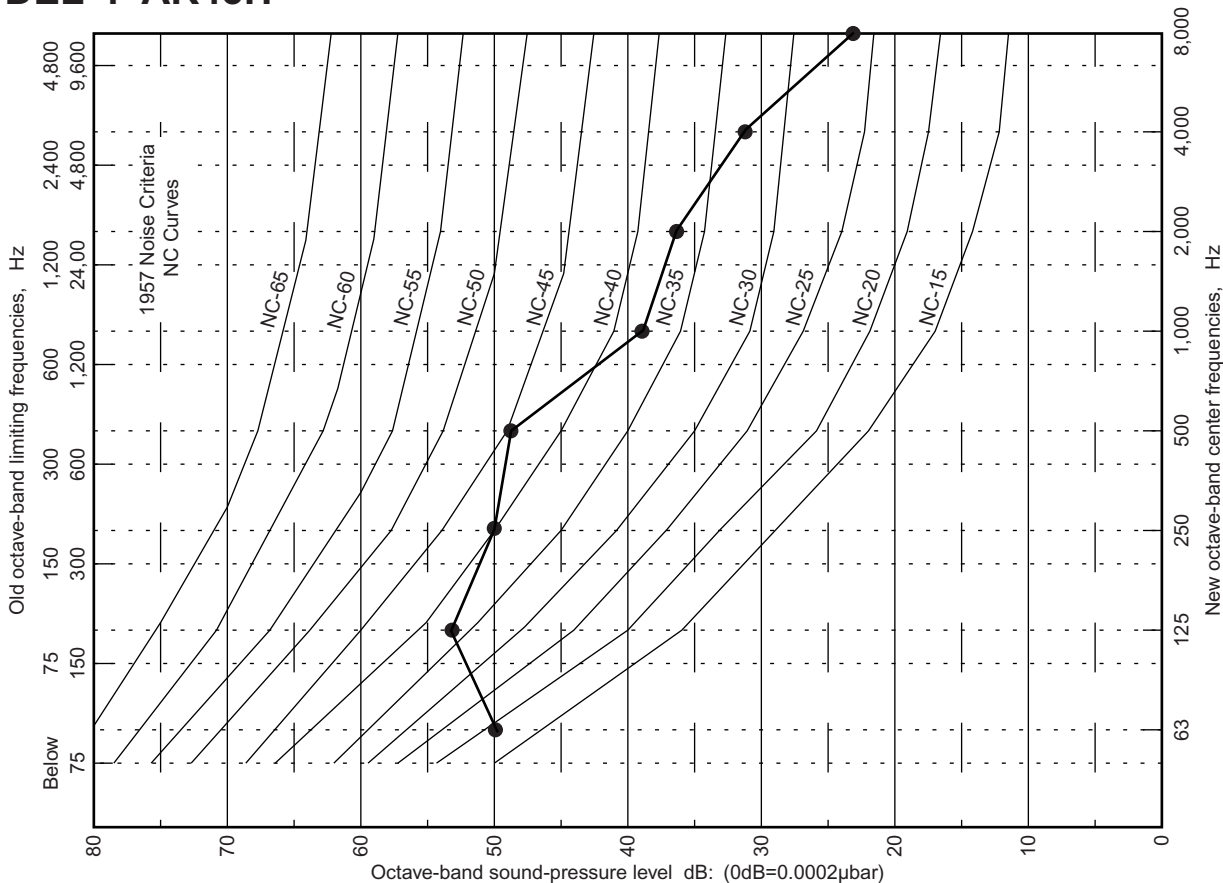
4-13-5 HIGH STATIC PRESSURE DUCT TYPE

Condition	
Fan speed	: High
Operation mode	: FAN
Voltage	: 240V
Static pressure	: 200Pa

MODEL : AR36H

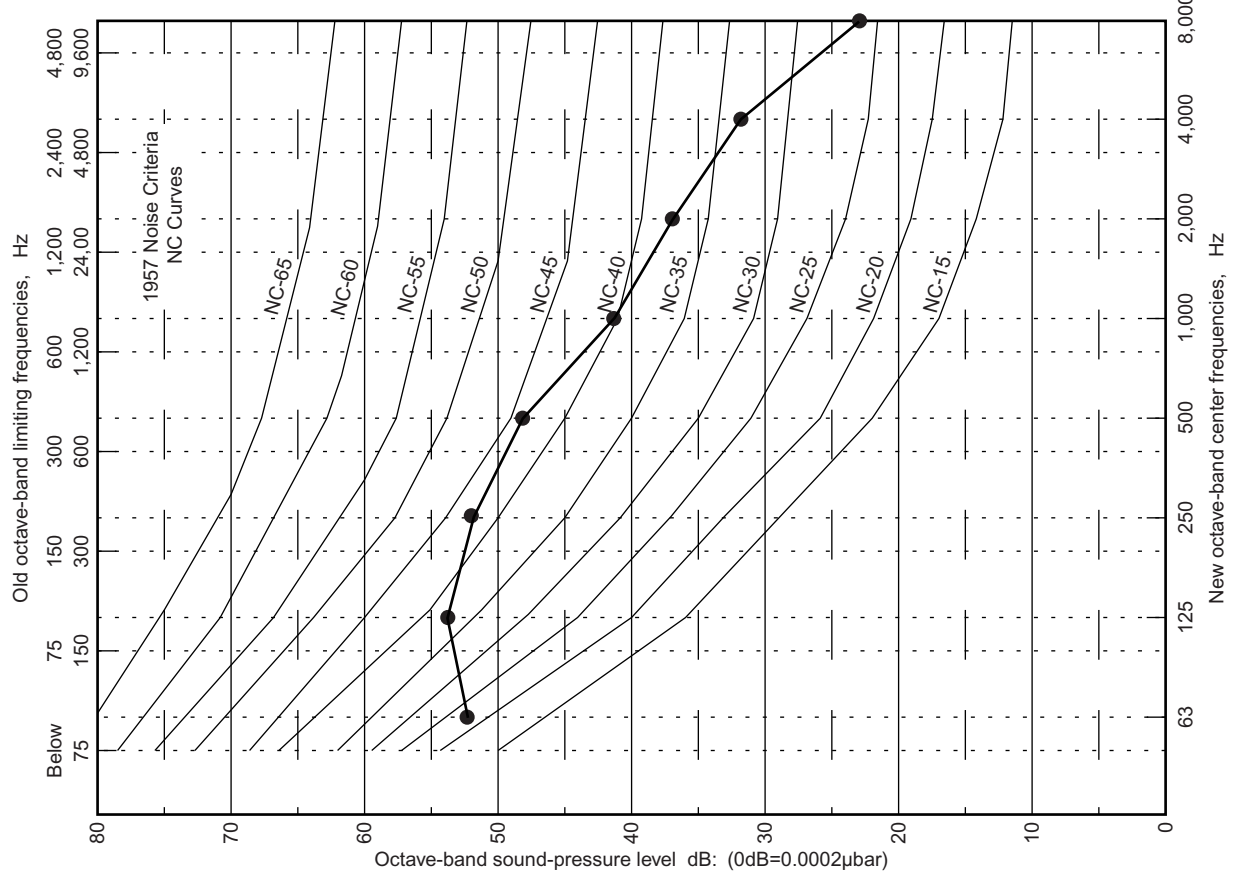


MODEL : AR45H



MODEL : AR60H

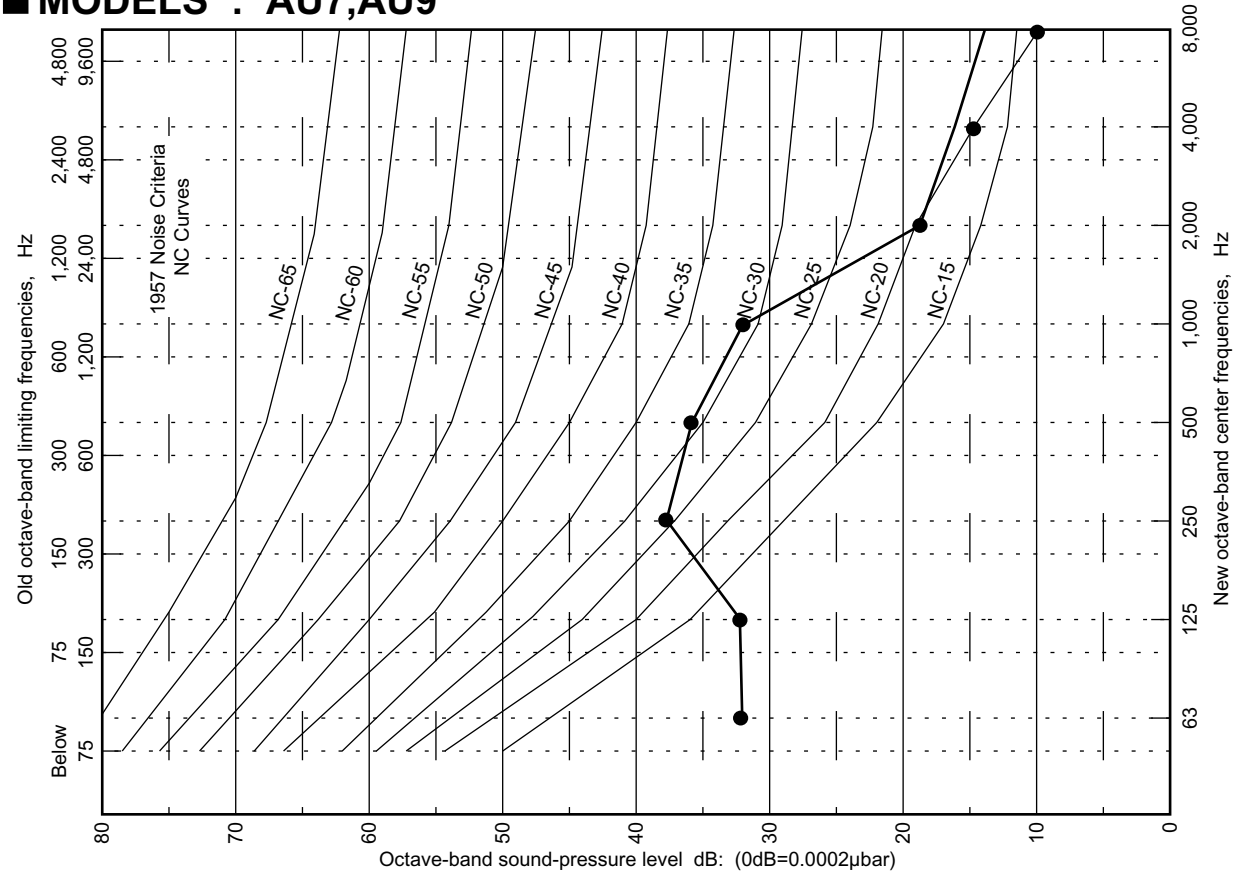
Condition	
Fan speed	: High
Operation mode	: FAN
Voltage	: 240V
Static pressure	: 200Pa



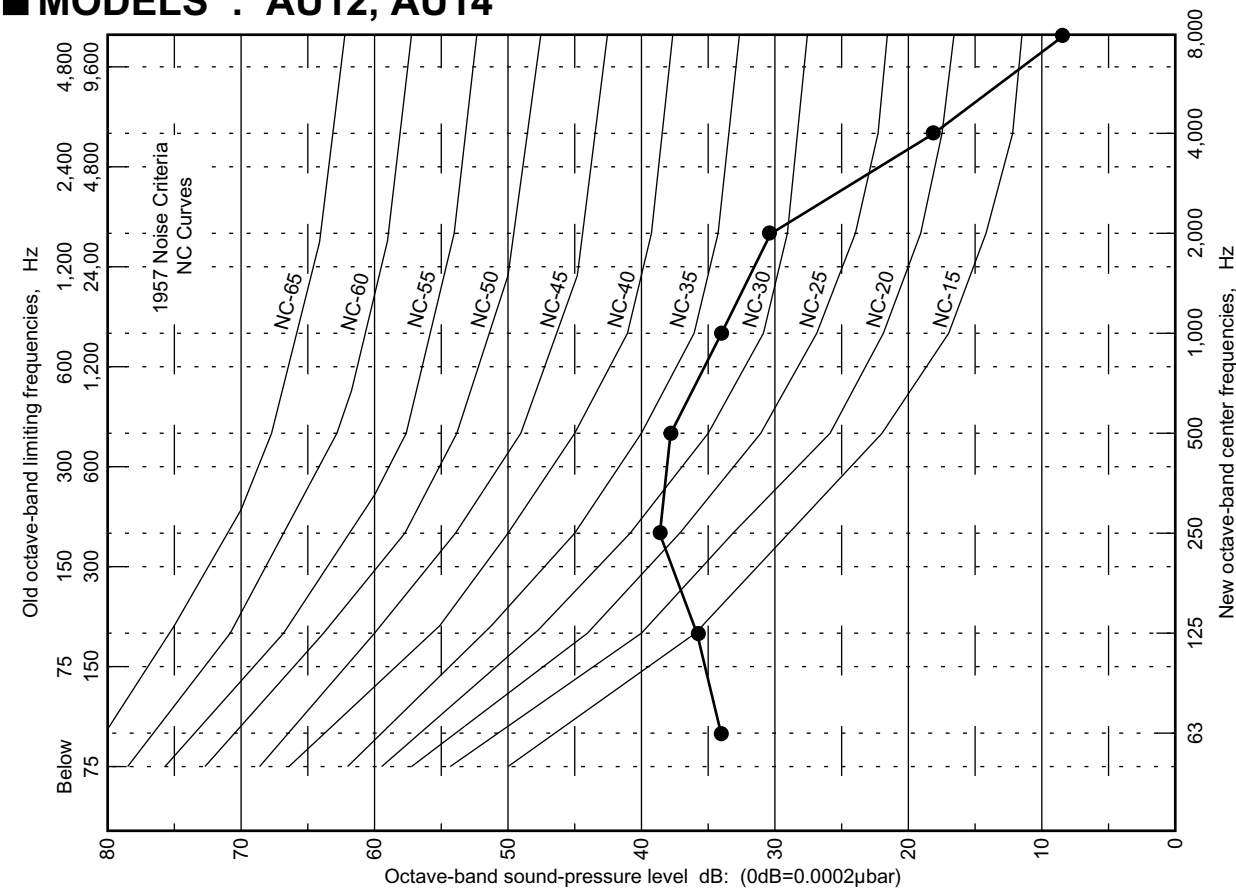
4-13-6 COMPACT CASSETTE TYPE

Condition	
Fan speed	: High
Operation mode	: FAN
Voltage	: 240V
Static pressure	: 0 Pa

MODELS : AU7,AU9

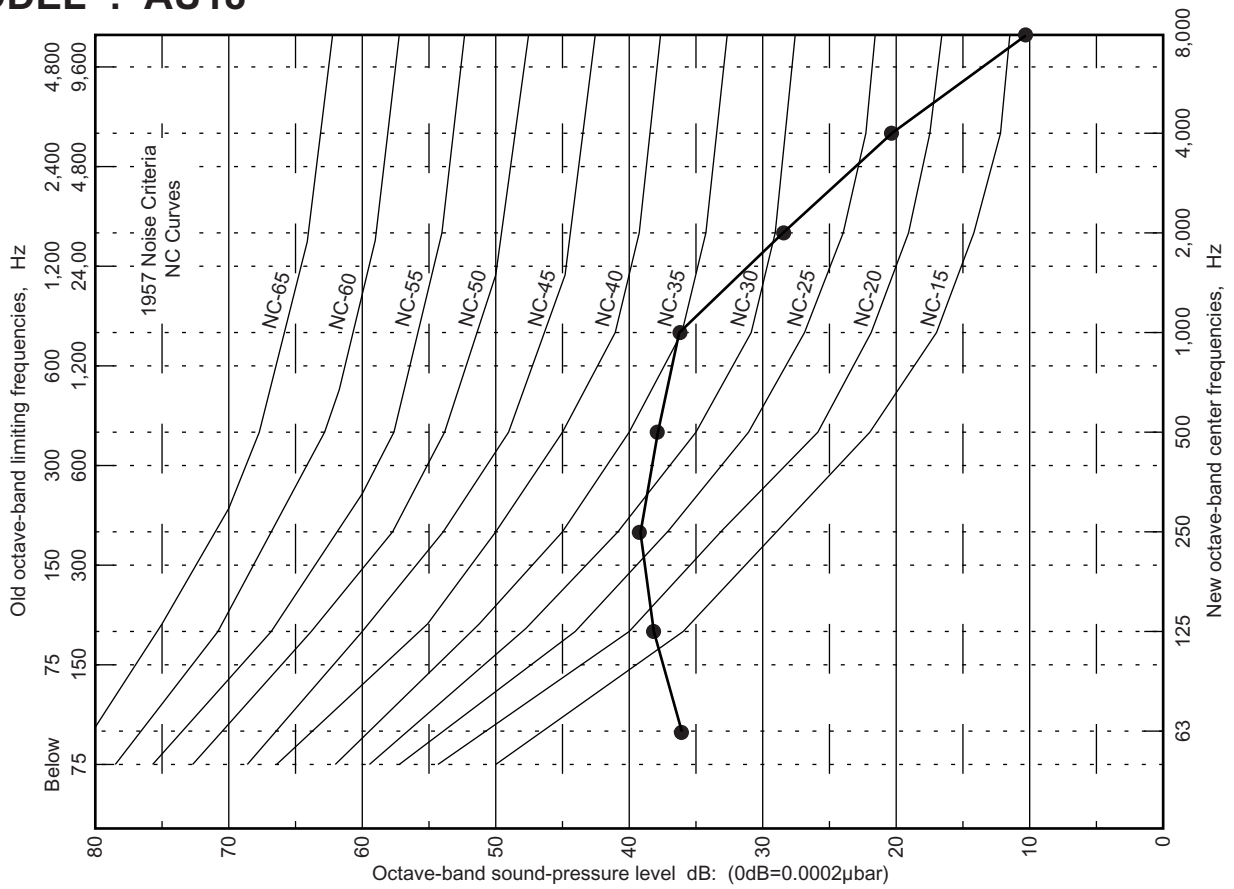


MODELS : AU12, AU14



MODEL : AU18

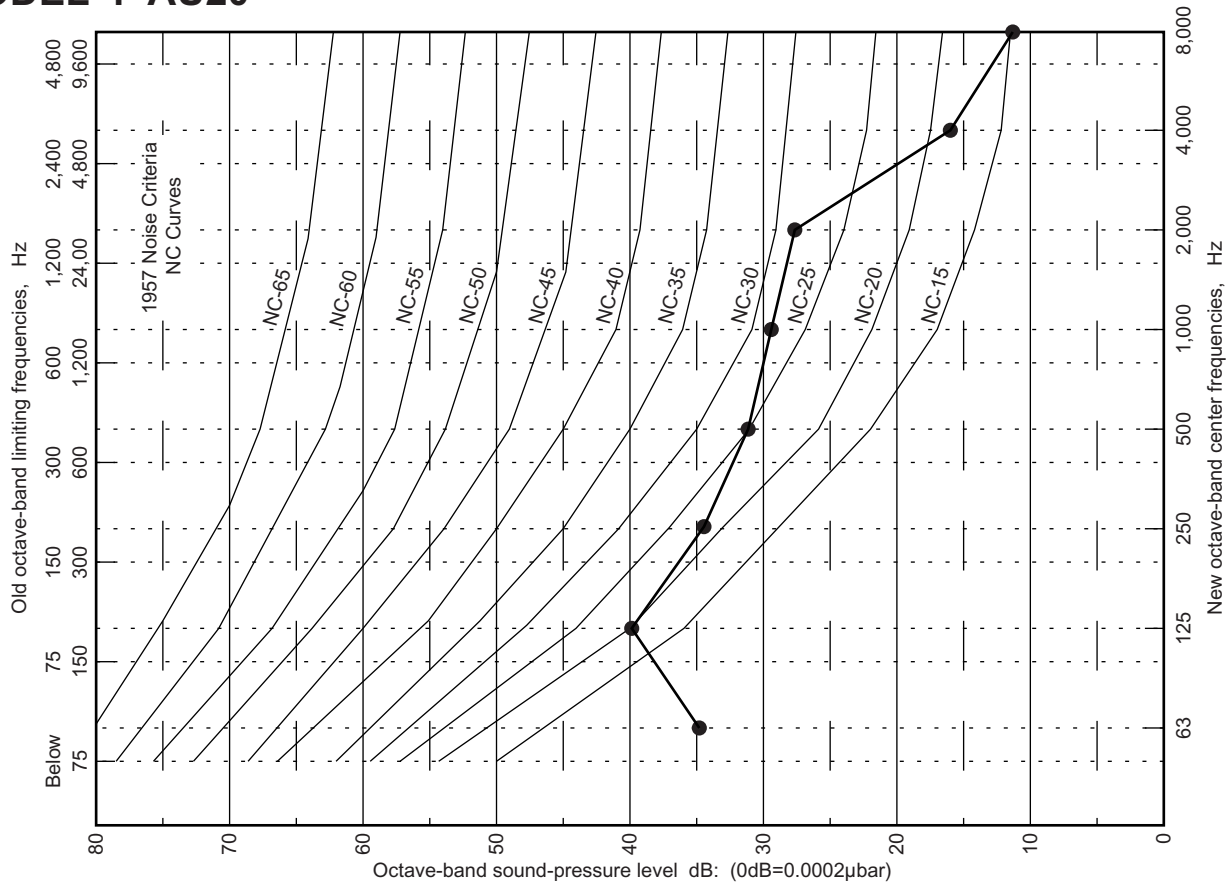
Condition	
Fan speed	: High
Operation mode	: FAN
Voltage	: 240V
Static pressure	: 0 Pa



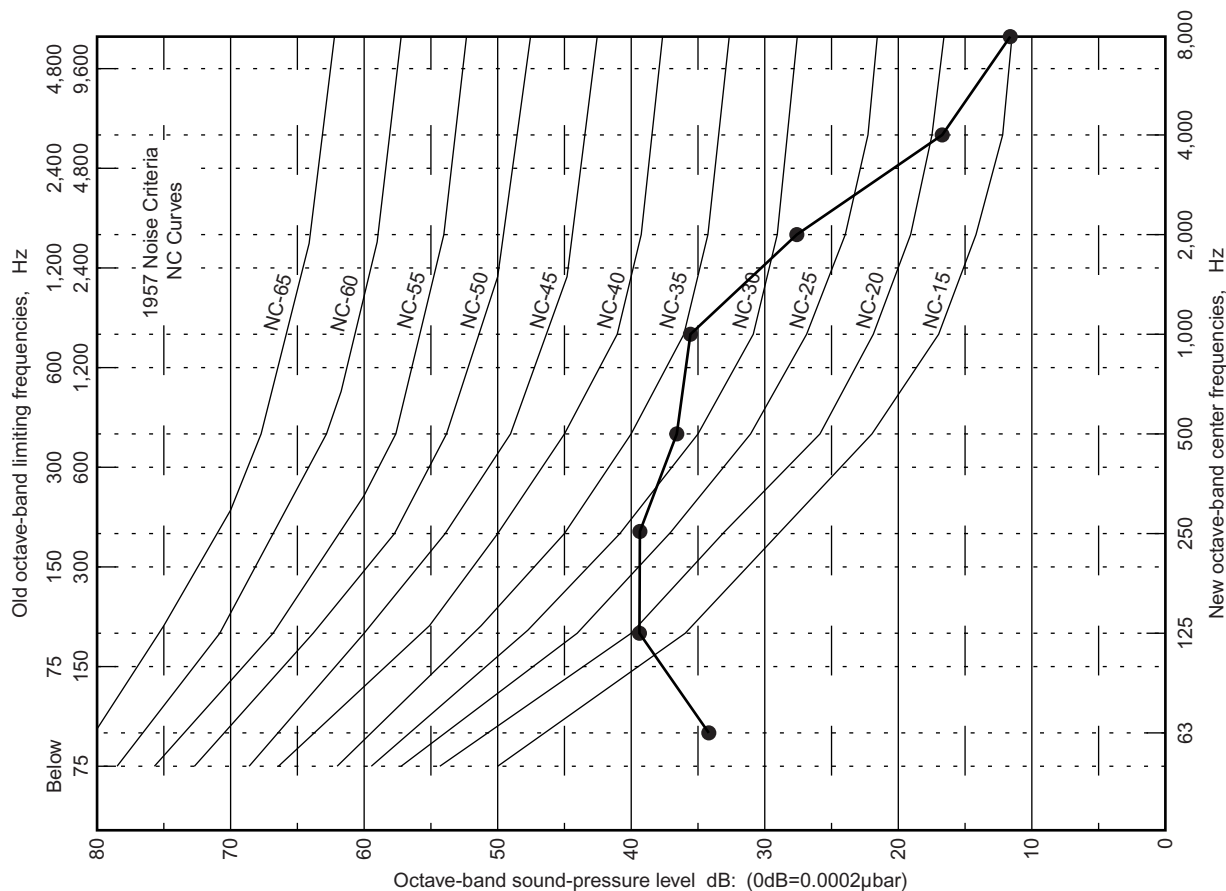
4-13-7 CASSETTE TYPE

MODEL : AU20

Condition	
Fan speed	: High
Operation mode	: FAN
Voltage	: 240V
Static pressure	: 0 Pa



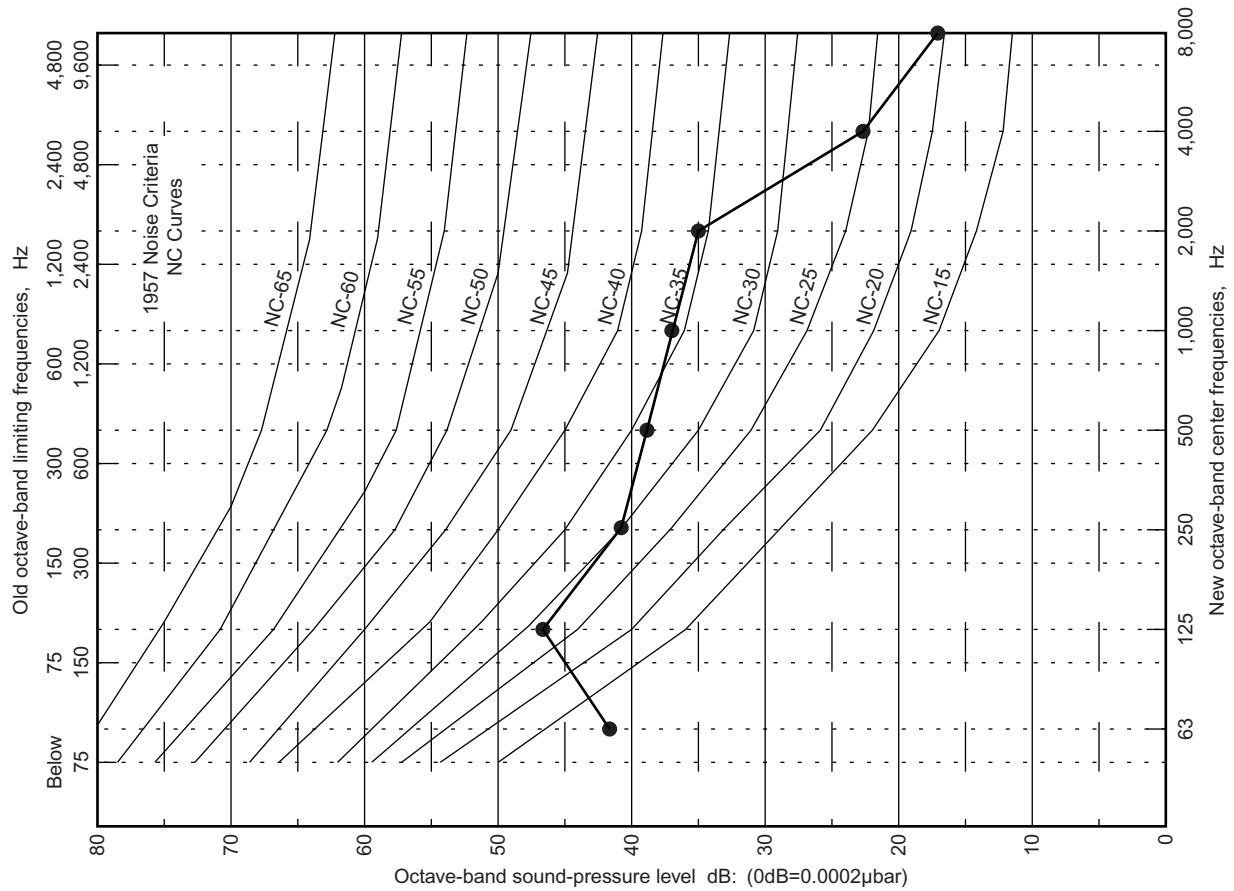
MODEL : AU25



MODEL : AU30

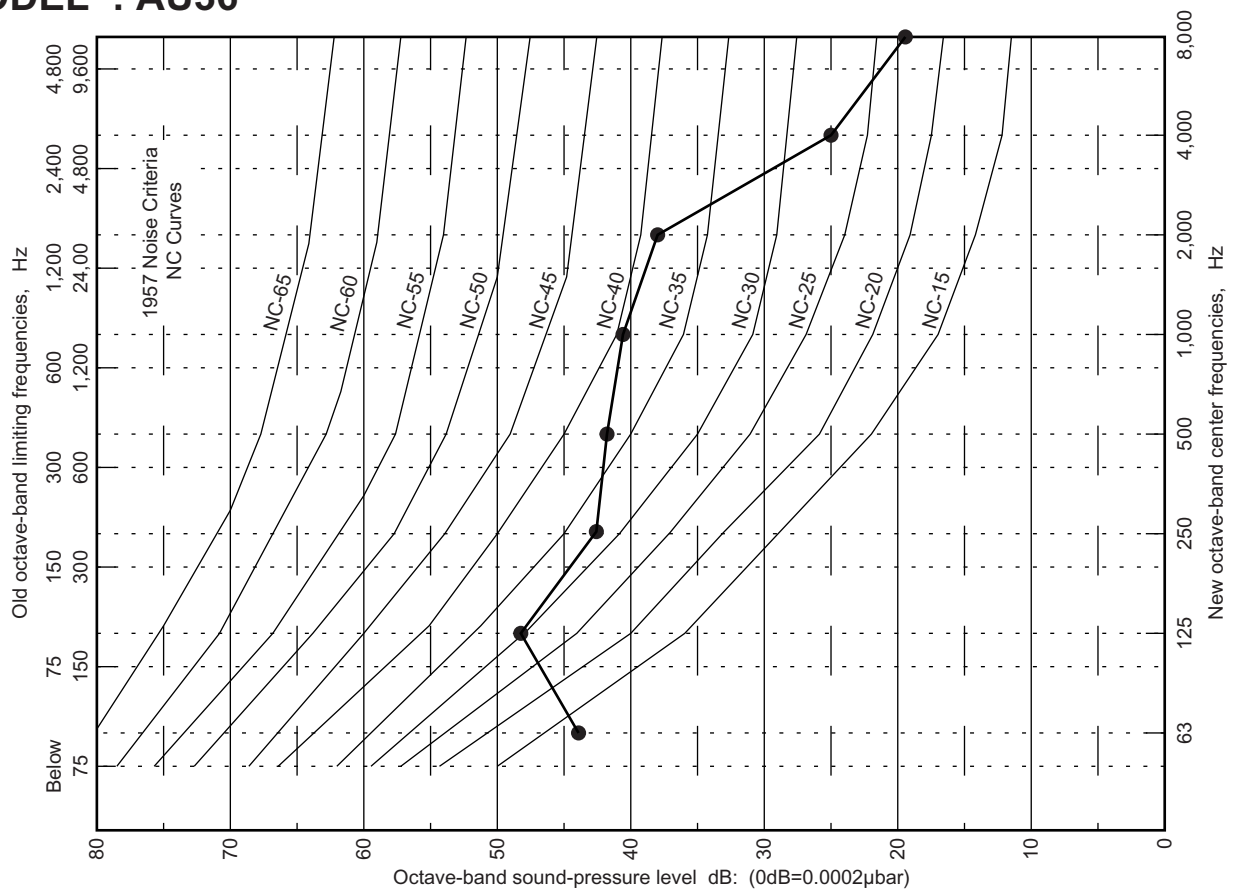
Condition	
Fan speed	: High
Operation mode	: FAN
Voltage	: 240V
Static pressure	: 0 Pa

INDOOR
UNIT



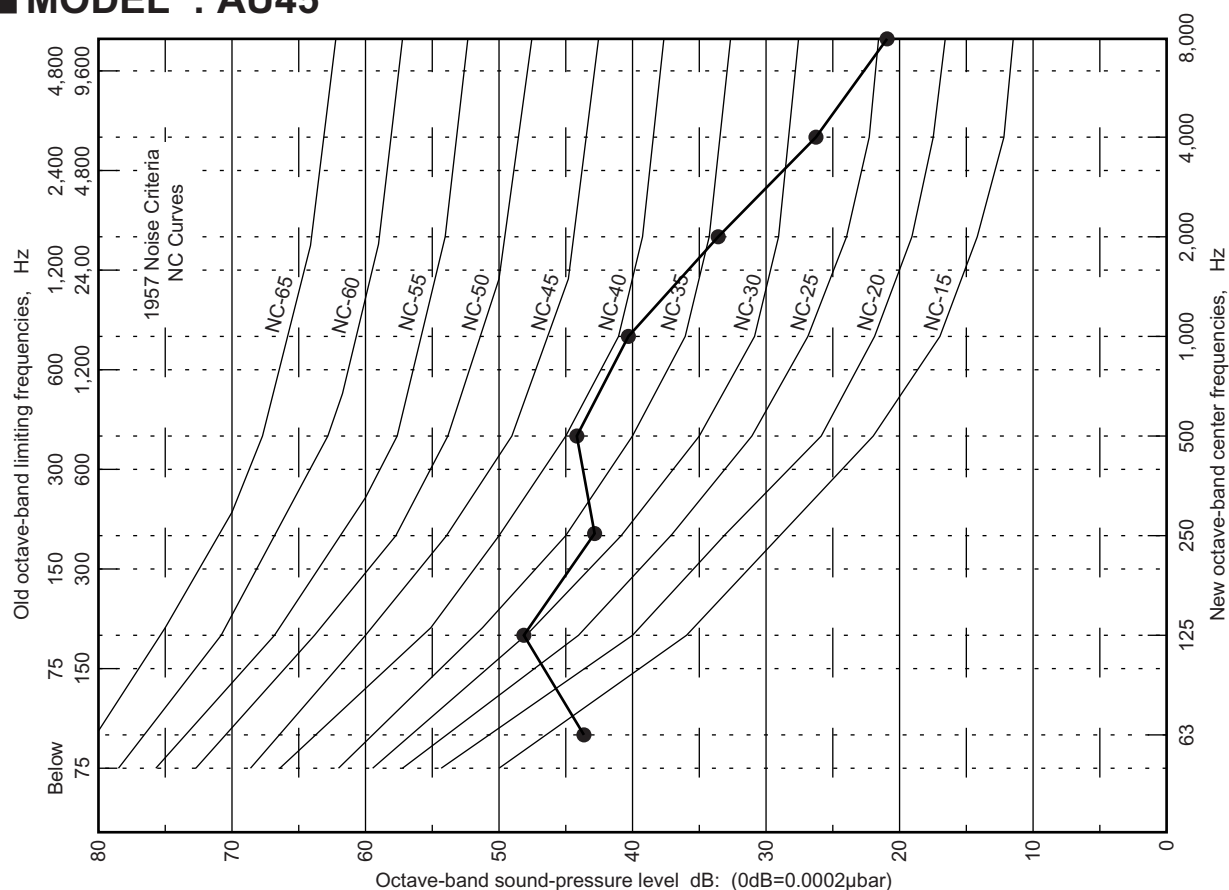
INDOOR
UNIT

MODEL : AU36



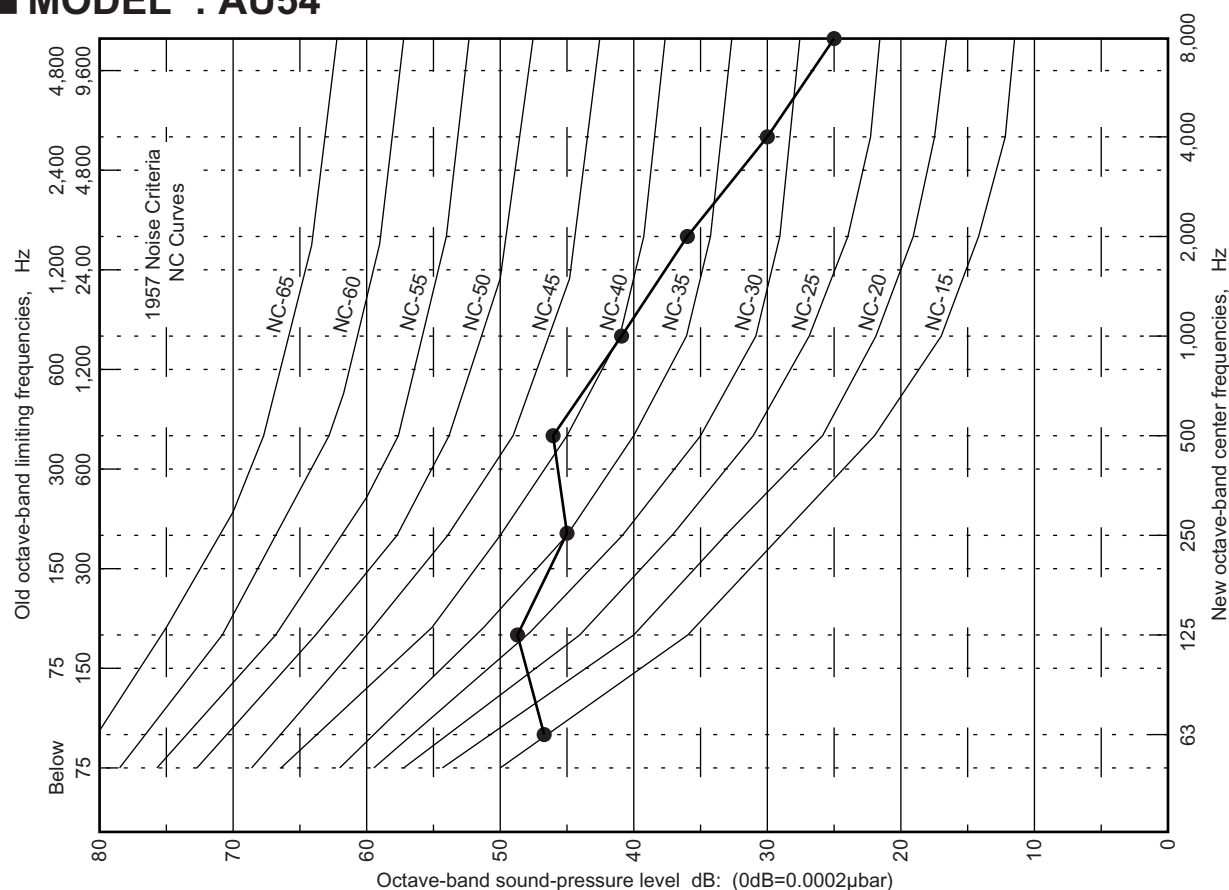
INDOOR
UNIT

MODEL : AU45



INDOOR
UNIT

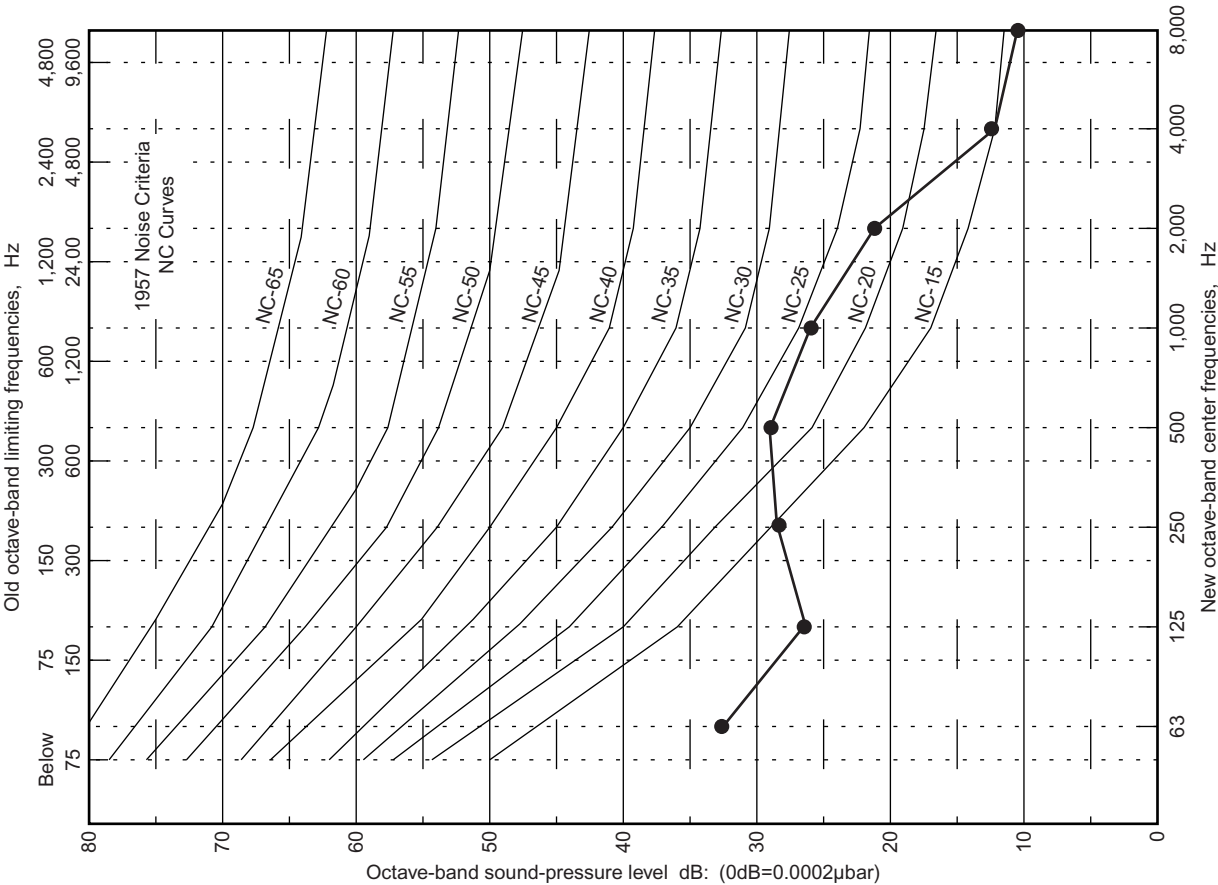
MODEL : AU54



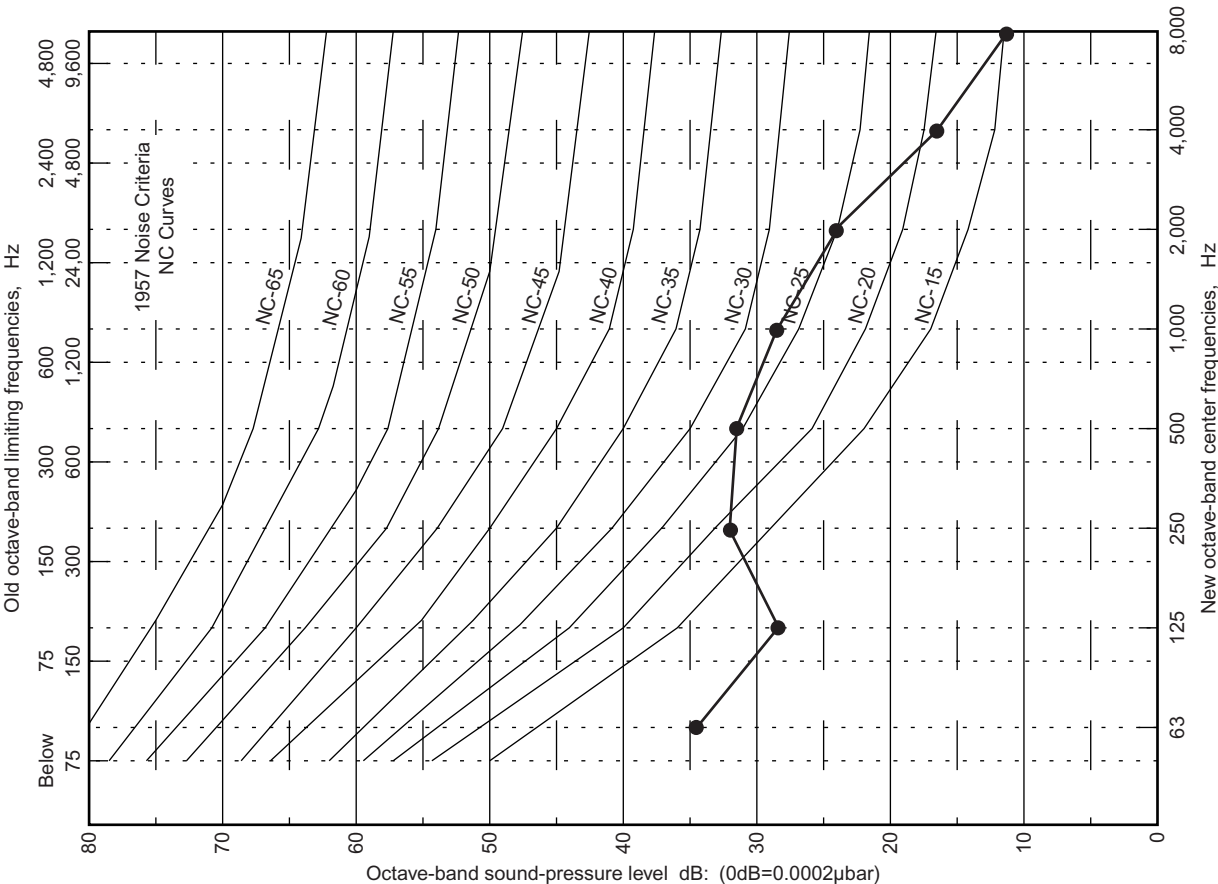
4-13-8 COMPACT WALL MOUNTED TYPE

MODEL : AS7

Condition	
Fan speed	: High
Operation mode	: FAN
Voltage	: 240V
Static pressure	: 0 Pa

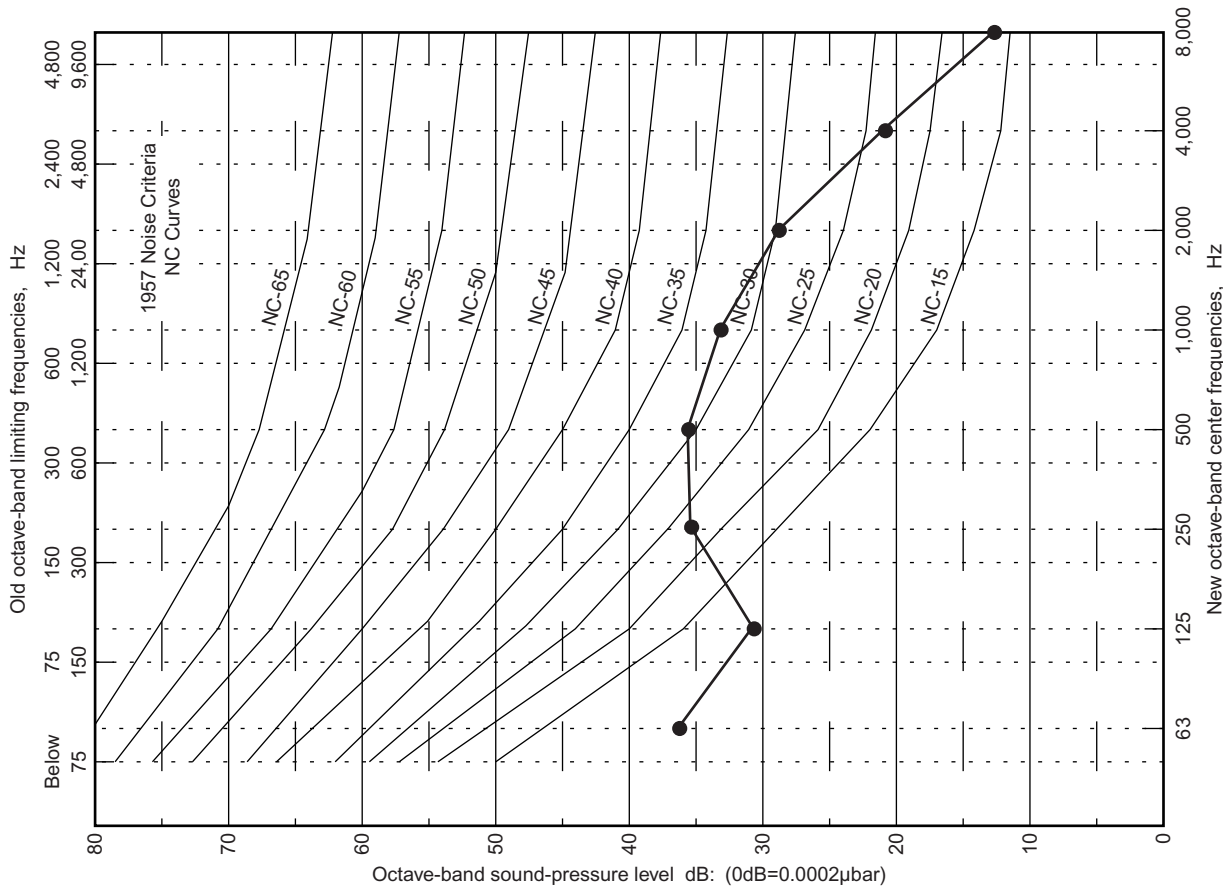


MODEL : AS9

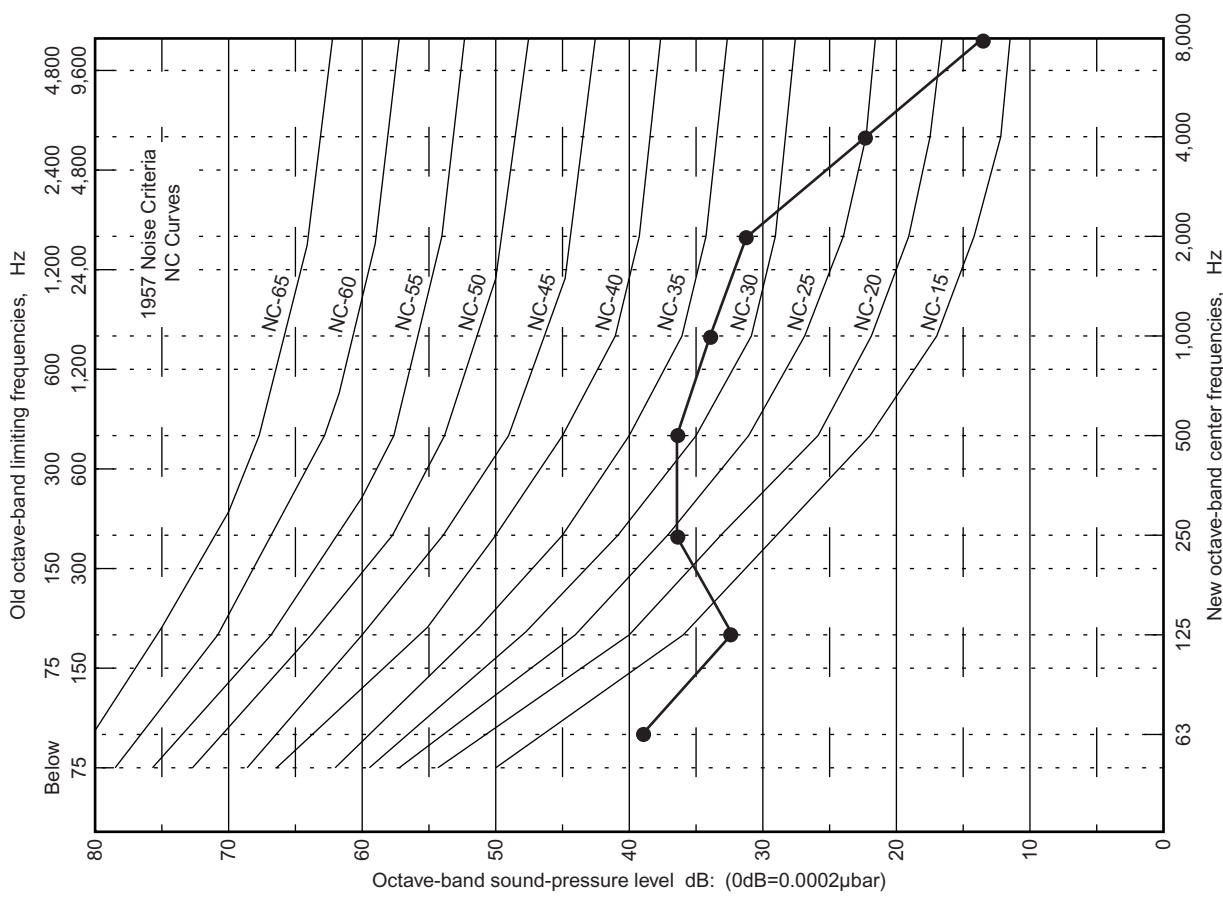


MODEL : AS12

Condition
Fan speed : High
Operation mode: FAN
Voltage : 240V
Static pressure : 0 Pa



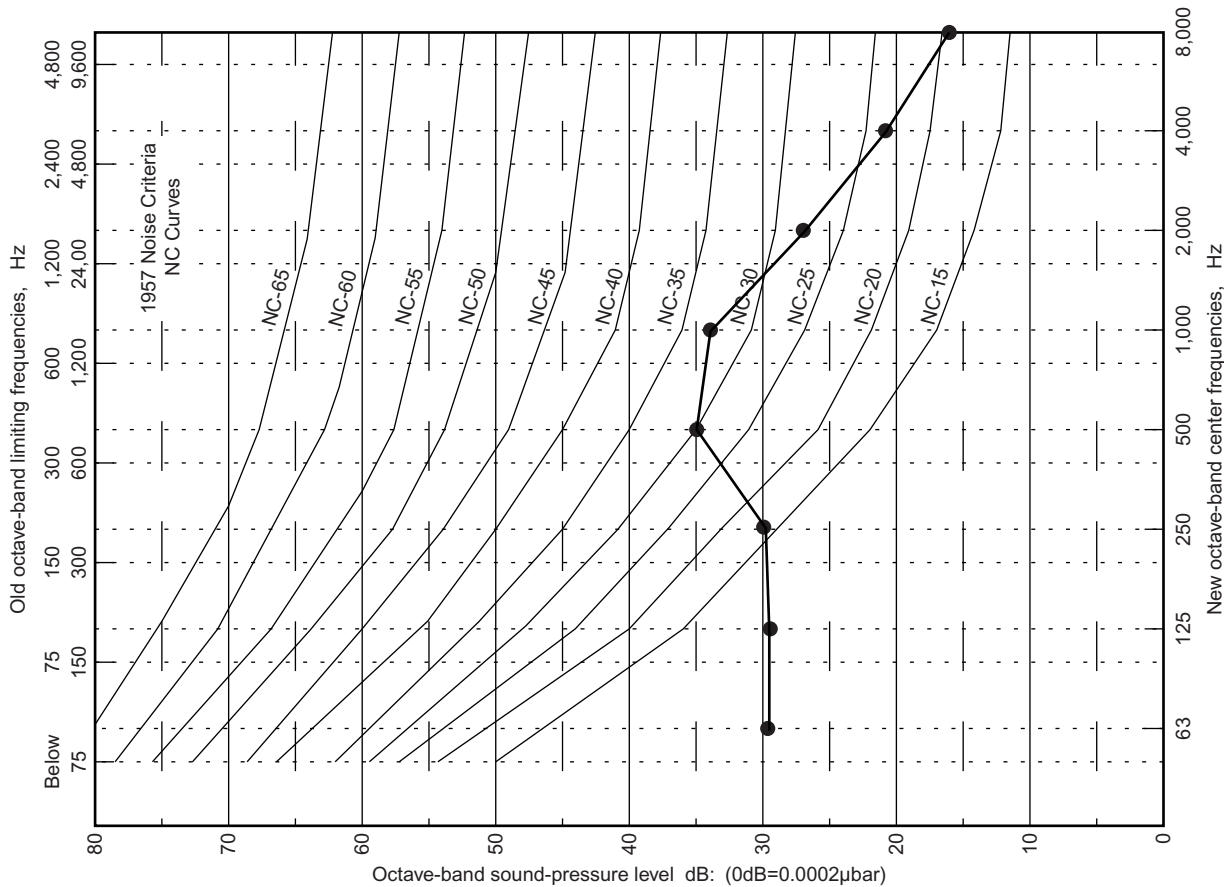
MODEL : AS14



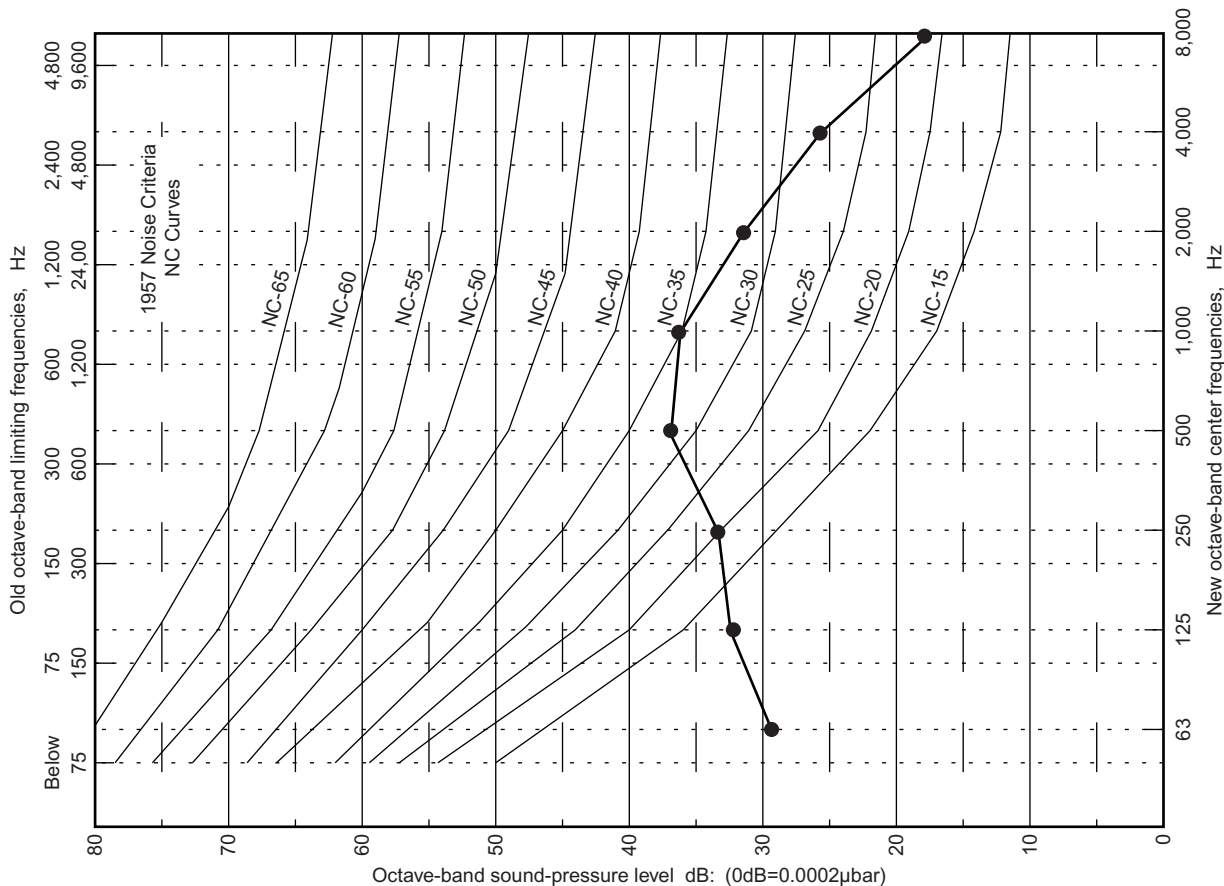
4-13-9 WALL MOUNTED TYPE

MODEL : AS18

Condition	
Fan speed	: High
Operation mode	: FAN
Voltage	: 240V
Static pressure	: 0 Pa

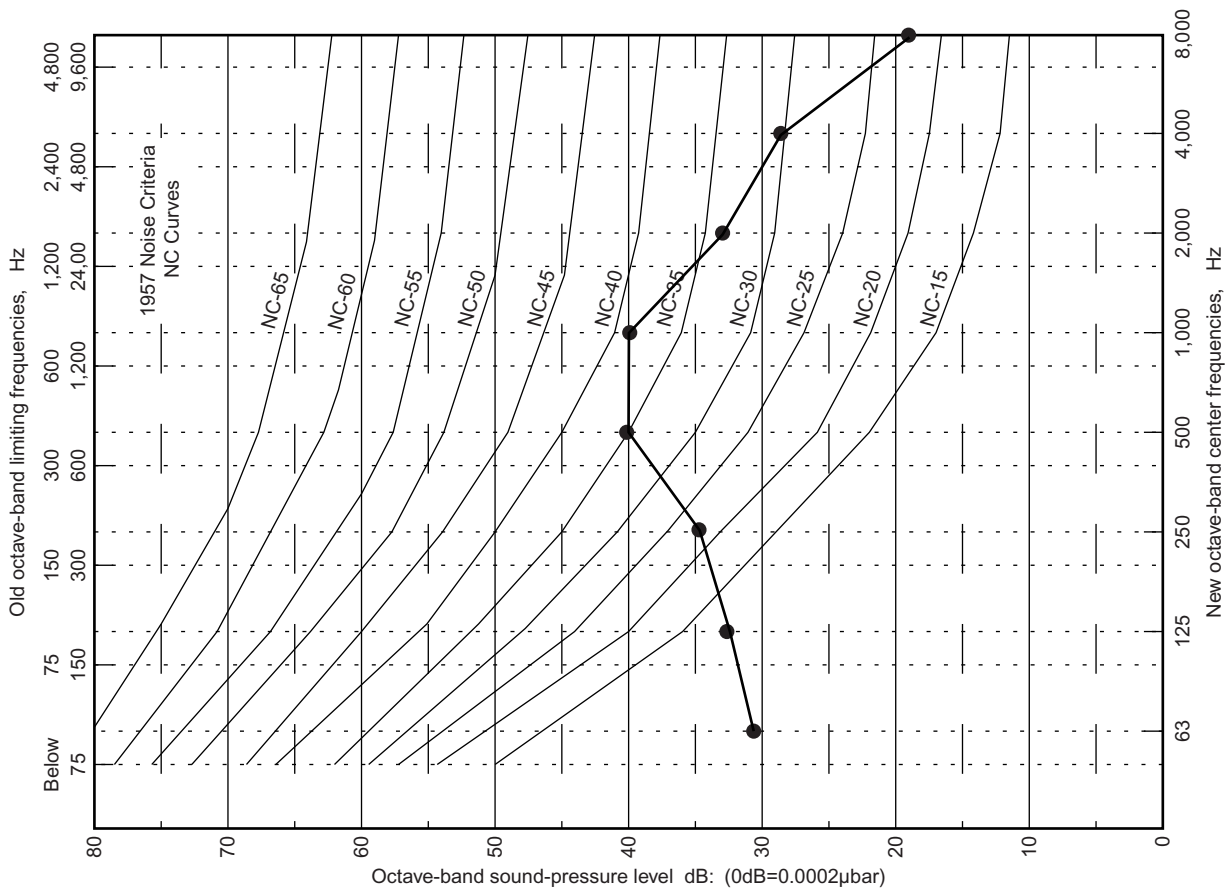


MODEL : AS24



■ **MODEL : AS30**

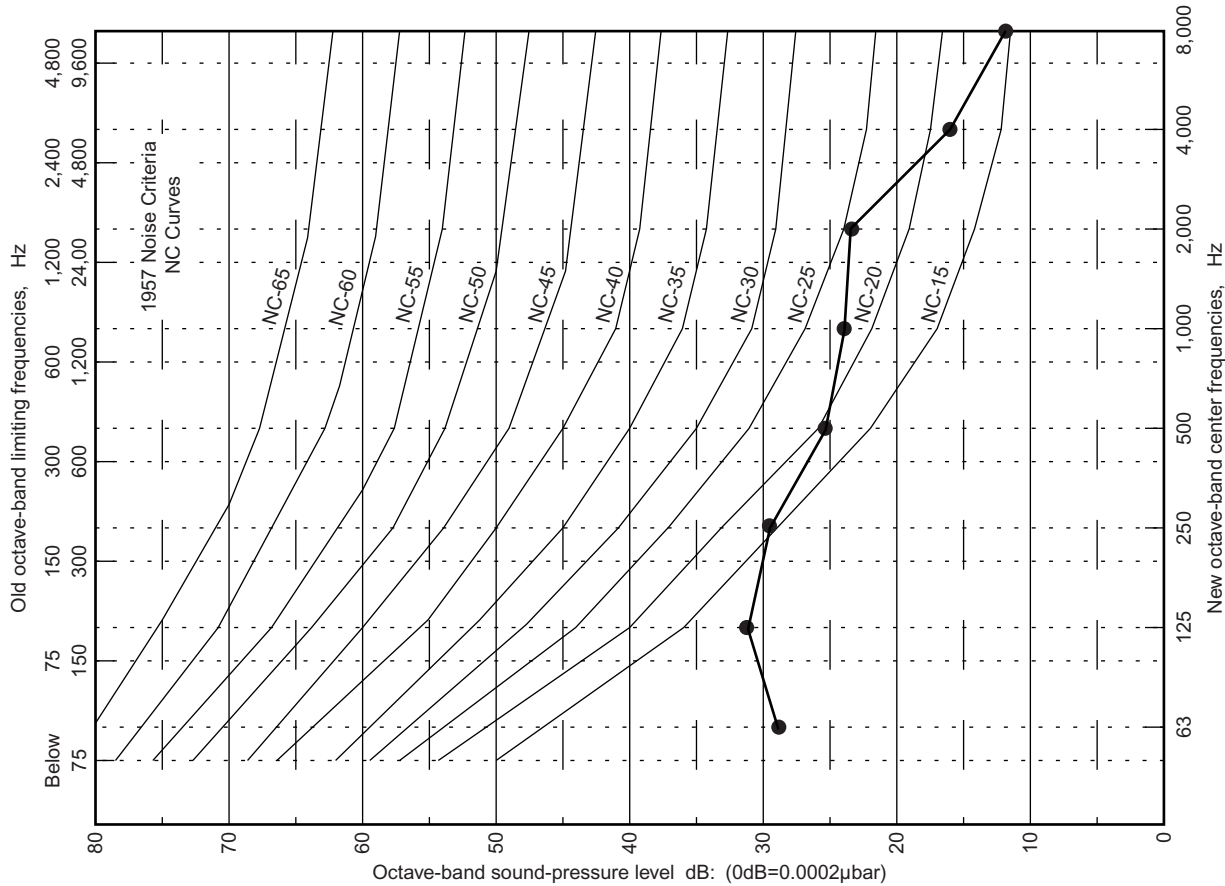
Condition
Fan speed : High
Operation mode: FAN
Voltage : 240V
Static pressure : 0 Pa



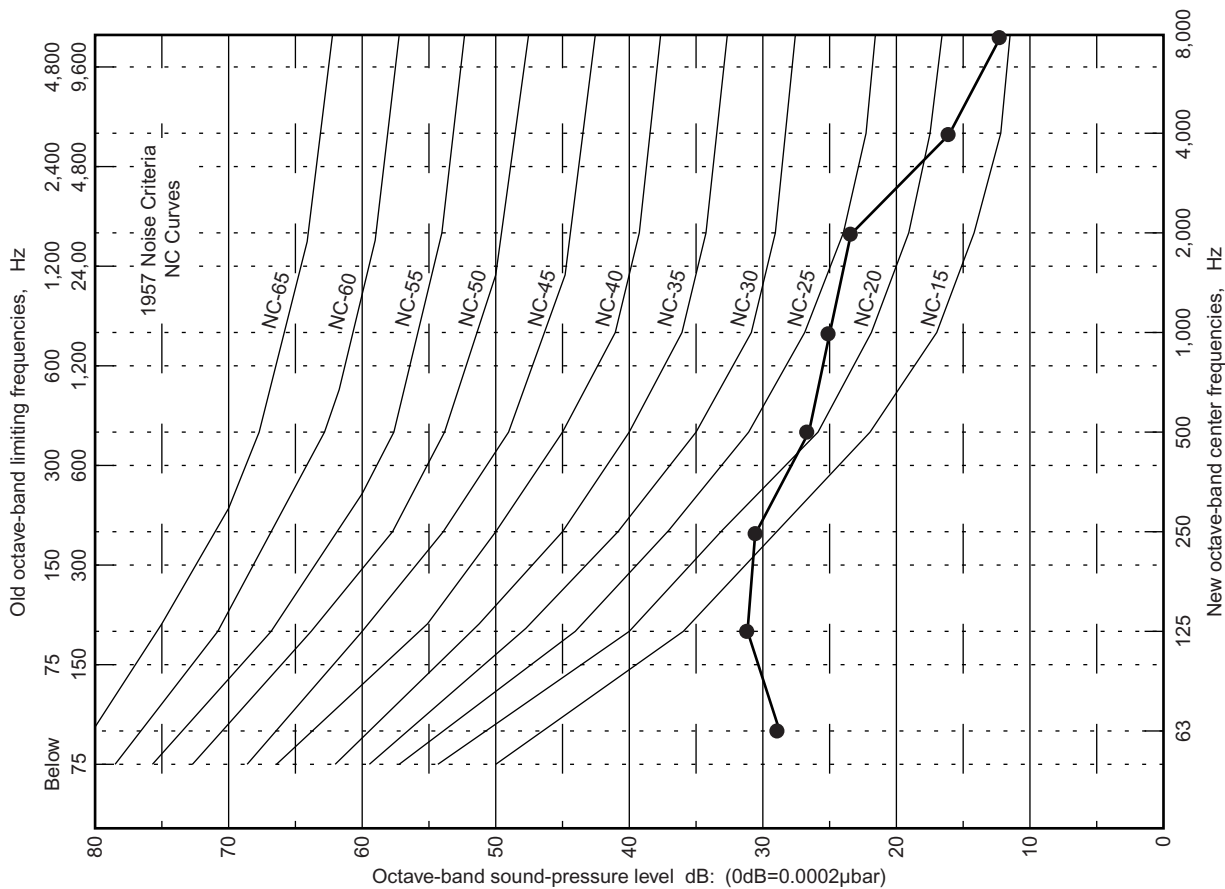
4-13-10 CEILING WALL TYPE

MODEL : AW7

Condition	
Fan speed	: High
Operation mode	: FAN
Voltage	: 240V
Static pressure	: 0 Pa

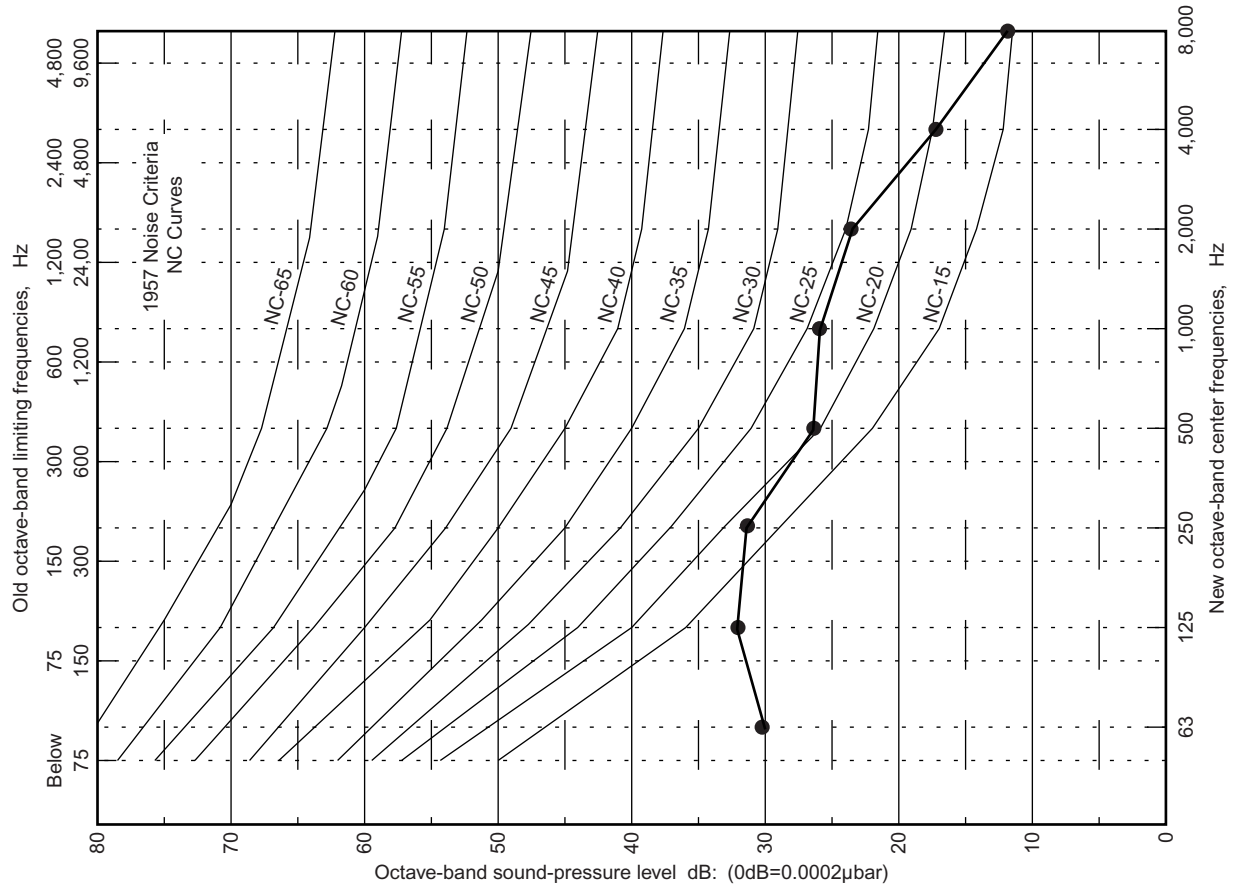


MODEL : AW9



■ MODEL : AW12

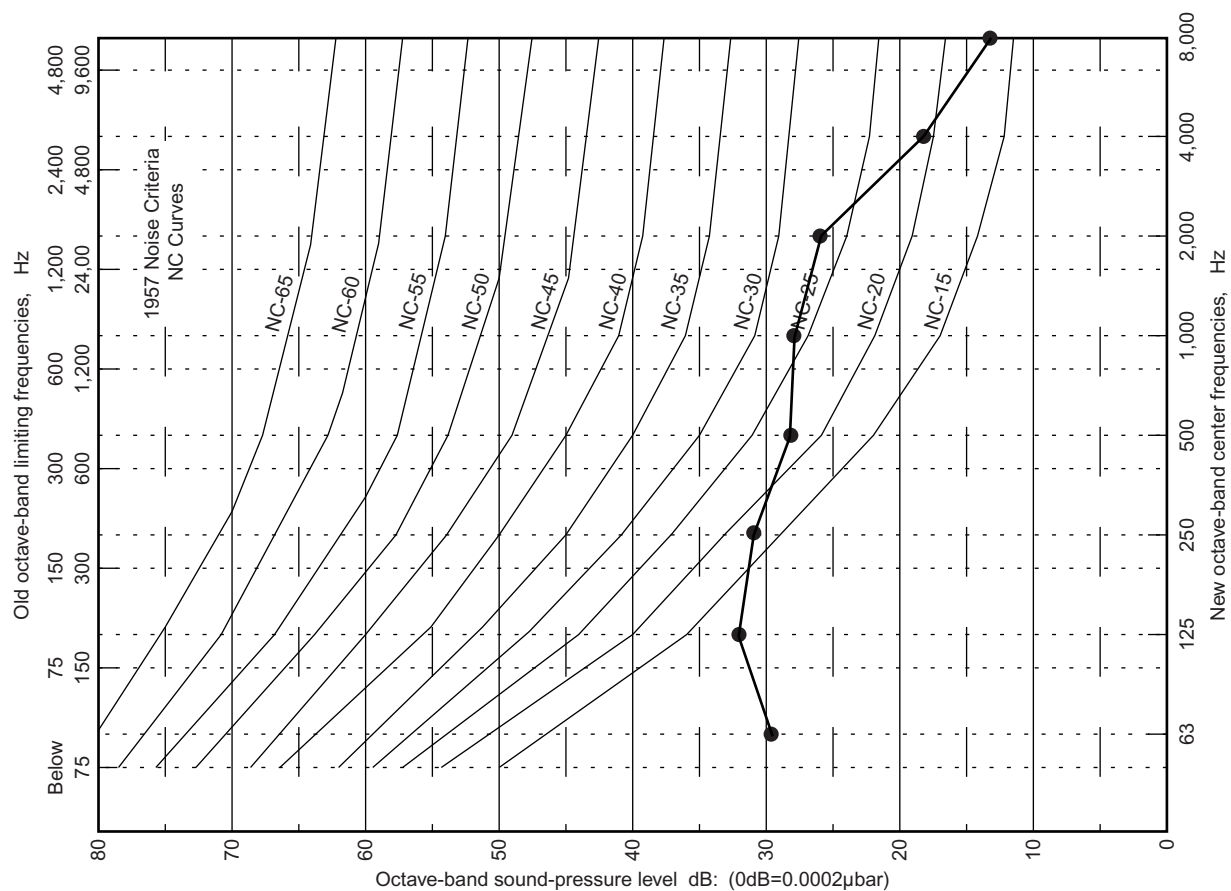
Condition	
Fan speed	: High
Operation mode	: FAN
Voltage	: 240V
Static pressure	: 0 Pa



INDOOR
UNIT

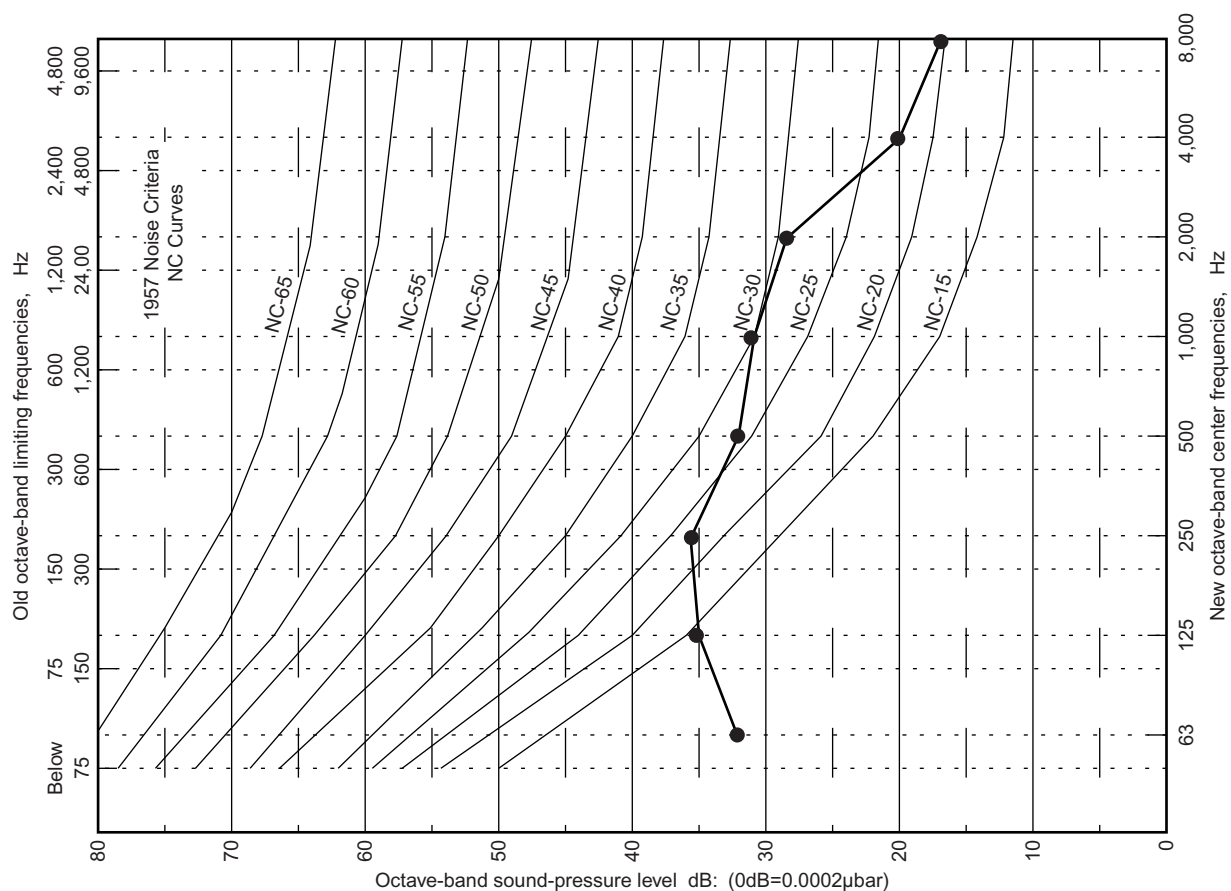
MODEL : AW14

Condition
Fan speed : High
Operation mode: FAN
Voltage : 240V
Static pressure : 0 Pa

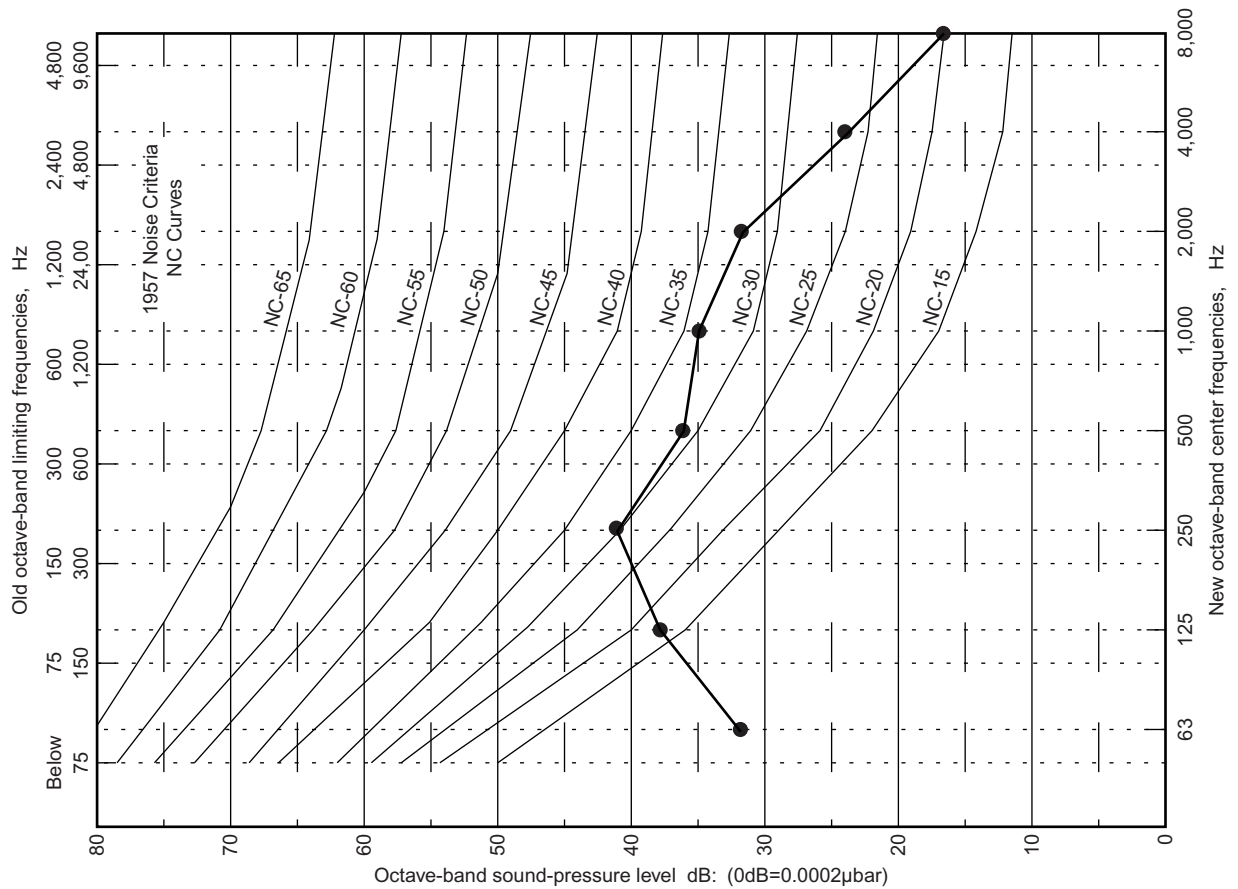


INDOOR
UNIT

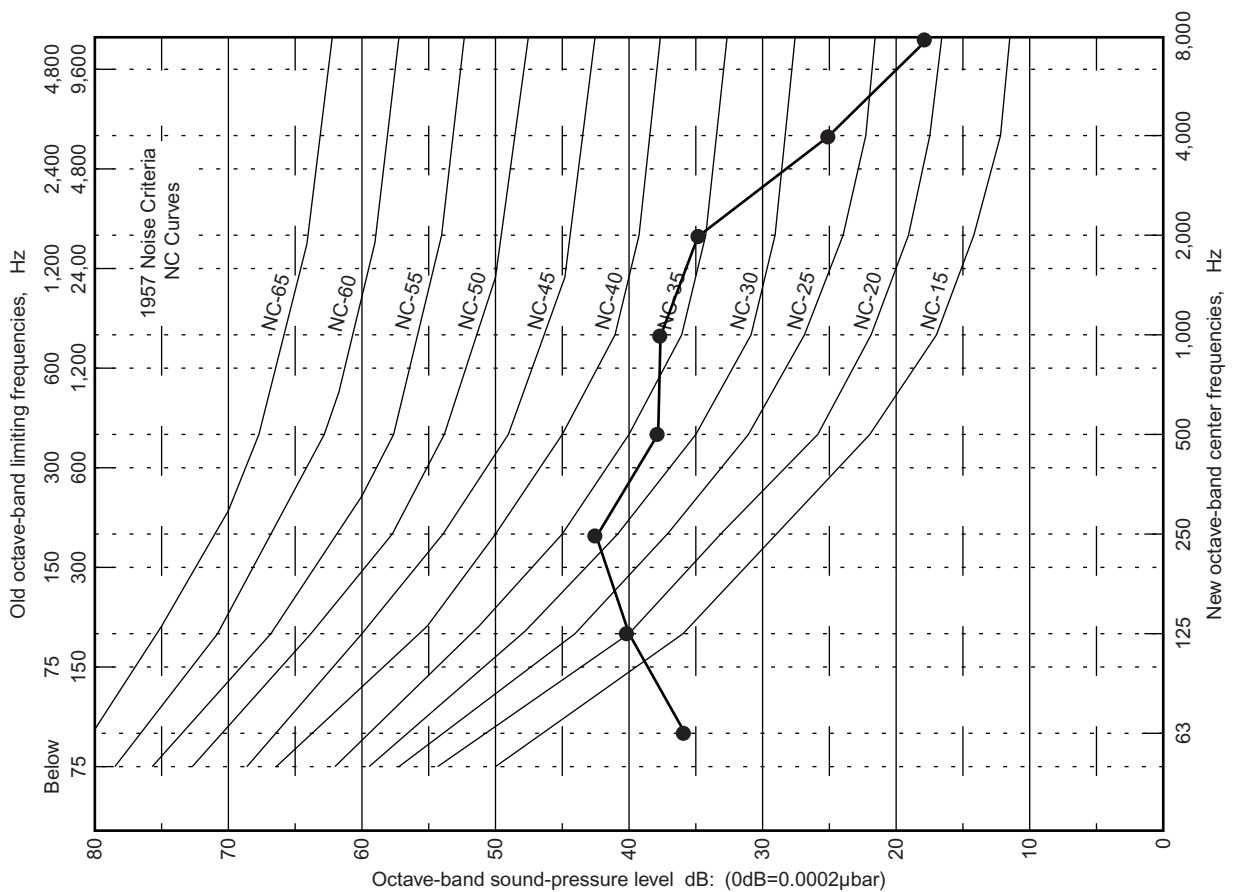
MODEL : AW18



■ MODEL : AW24

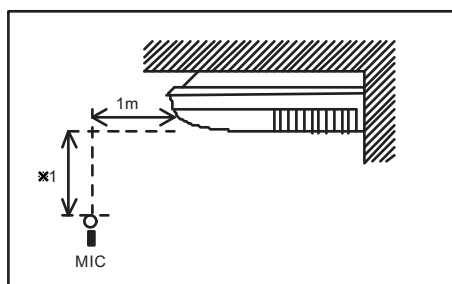


■ MODEL : AW30



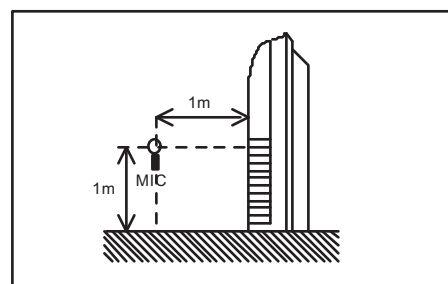
■ SOUND LEVEL CHECK POINT

- UNIVERSAL FLOOR / CEILING TYPE
- LARGE CEILING TYPE

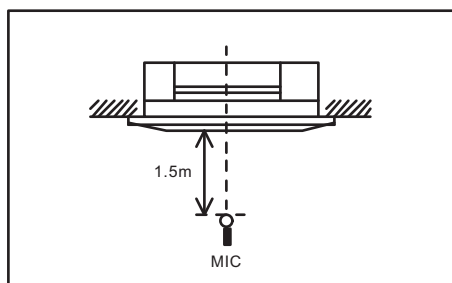


※1 0.8m (For AB12 ~ AB24)
1m (For AB30 ~ AB54)

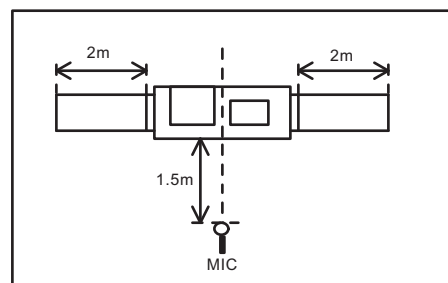
- UNIVERSAL FLOOR / CEILING TYPE



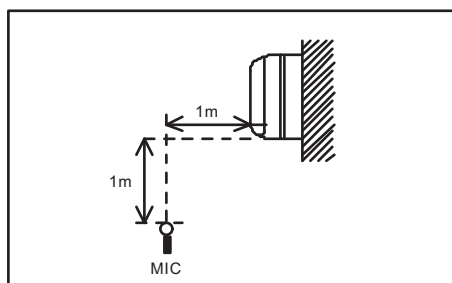
- COMPACT CASSETTE TYPE
- CASSETTE TYPE



- COMPACT DUCT TYPE
- DUCT TYPE



- COMPACT WALL MOUNTED TYPE
- WALL MOUNTED TYPE
- CEILING WALL TYPE



4-14 SAFETY DEVICE

MODEL NAME		P.C.B FUSE	FAN MOTOR THERMAL PROTECTOR	TERMINAL THERMAL FUSE	FLOAT SWITCH
UNIVERSAL FLOOR / CEILING TYPE	AB12	250V 3.15A	135°C±5°C OFF	-	-
	AB14				
	AB18				
	AB24				
LARGE CEILING TYPE	AB30	250V 3.15A	120°C±5°C OFF	-	△
	AB36				
	AB45				
	AB54				
COMPACT DUCT TYPE	AR7	250V 3.15A	135°C±5°C OFF	-	-
	AR9				
	AR12				
	AR14				
	AR18				
LOW STATIC PRESSURE DUCT TYPE	AR25	250V 3.15A	135°C±5°C OFF	-	-
	AR30				
	AR36				
	AR45				
HIGH STATIC PRESSURE DUCT TYPE	AR36	250V 3.15A	135°C±5°C OFF	-	-
	AR45				
	AR60				
COMPACT CASSETTE TYPE	AU7	250V 3.15A	135°C±5°C OFF	102°C OFF	○
	AU9				
	AU12				
	AU14				
	AU18				
CASSETTE TYPE	AU20	250V 3.15A	130°C±5°C OFF	102°C OFF	○
	AU25				
	AU30				
	AU36				
	AU45				
	AU54				
COMPACT WALL MOUNTED TYPE	AS7	250V 3.15A	130°C±2°C OFF	102°C OFF	-
	AS9				
	AS12				
	AS14				
WALL MOUNTED TYPE	AS18	250V 3.15A	120°C±5°C OFF	102°C OFF	-
	AS24				
	AS30				
CEILING WALL TYPE	AW7	250V 3.15A	120°C±5°C OFF	102°C OFF	-
	AW9				
	AW12				
	AW14				
	AW18				
	AW24				
	AW30				

○ *1

*1 Including the drain pump kit (option parts)



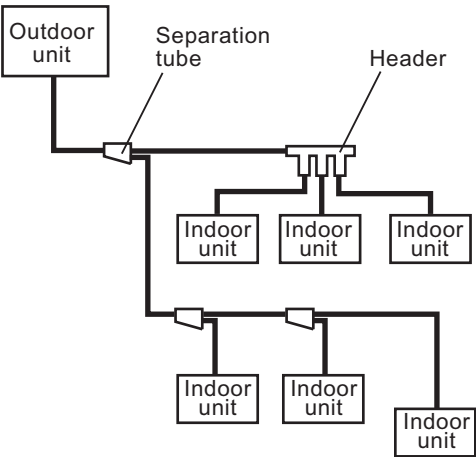
5 . INSTALLATION

5-1 PIPING DESIGN

5-1-1 PIPING METHOD

■ SUMMARY OF PIPING SYSTEM

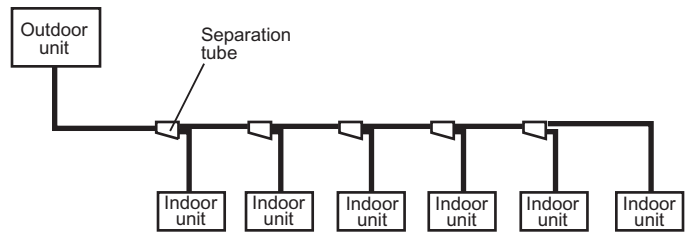
● Cooling only/Heat pump Selection Type



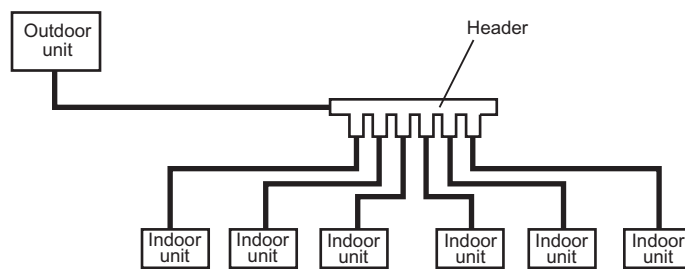
- * Separation of piping:
Separation tube system and header system
- * Number of piping:
2 each of outdoor unit - indoor unit

■ TYPE OF PIPING SYSTEM

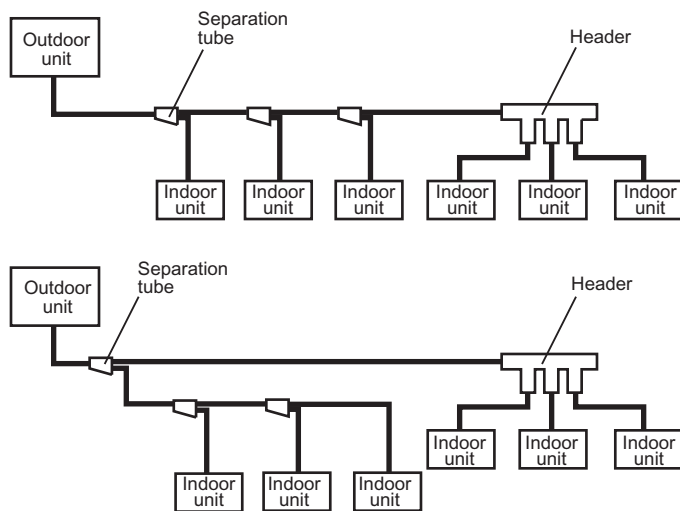
● Line Piping System



● Header Piping System



● Combined (Separation tube/Header) Piping System

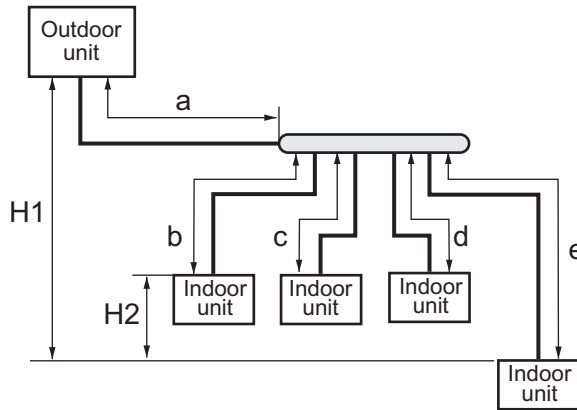


Separation after header separation is not possible

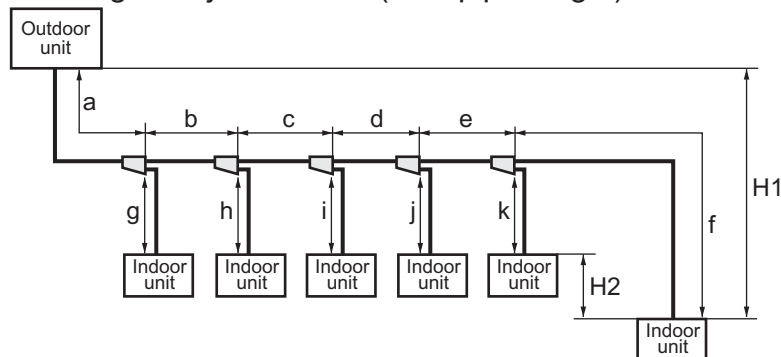
5-1-2 LIMITATIONS

■ COOLING ONLY / HEAT PUMP MODEL

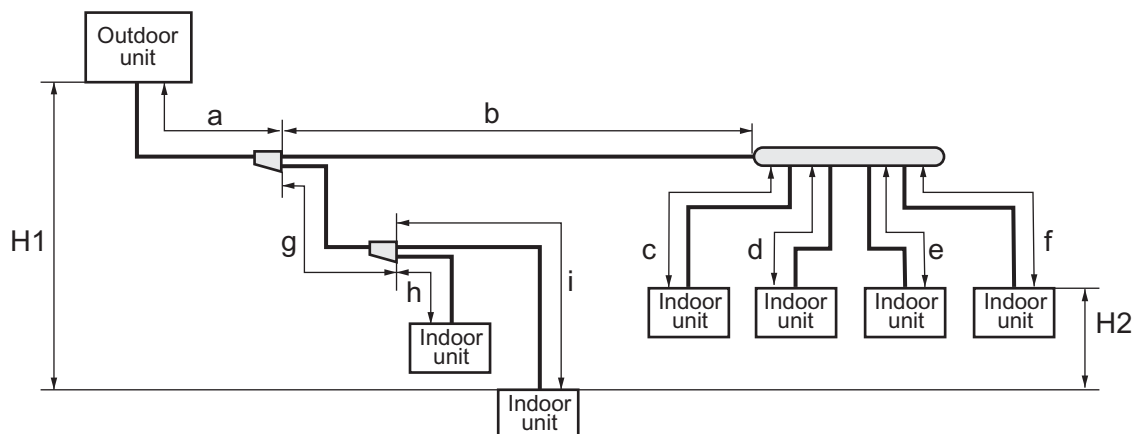
- * $a+e \leq 100\text{m}$ (actual pipe length)
- * Difference in height between outdoor unit and indoor units (H1) maximum 50m.
(For the outdoor unit installed below : maximum 40m)
- * Difference in height between the highest and the lowest indoor units (H2) maximum 15m.
- * From outdoor unit to the first header tube $a \leq 70\text{m}$ (actual pipe length)
- * From the first header tube to the farthest indoor unit $e \leq 40\text{m}$ (actual pipe length)
- * $a+b+c+d+e \leq 200\text{m}$ (total pipe length)



- * $a+b+c+d+e+f \leq 100\text{m}$ (actual pipe length)
- * Difference in height between outdoor unit and indoor units (H1) maximum 50m.
- * Difference in height between the highest and the lowest indoor units (H2) maximum 15m.
- * From outdoor unit to the first separation tube $a \leq 70\text{m}$ (actual pipe length)
- * From the first separation tube to the farthest indoor unit $b+c+d+e+f \leq 40\text{m}$ (actual pipe length)
- * $a+b+c+d+e+f+g+h+i+j+k \leq 200\text{m}$ (total pipe length)



- * $a+g+i \leq 100\text{m}$ $a+b+f \leq 100\text{m}$ (actual pipe length)
- * Difference in height between outdoor unit and indoor units (H1) maximum 50m.
- * Difference in height between the highest and the lowest indoor units (H2) maximum 15m.
- * From outdoor unit to the first separation tube $a \leq 70\text{m}$ (actual pipe length)
- * From the first separation tube to the farthest indoor unit
 $g+i \leq 40\text{m}$ $b+f \leq 40\text{m}$ (actual pipe length)
- * $a+b+c+d+e+f+g+h+i \leq 200\text{m}$ (total pipe length)



5-1-3 PIPE SIZE

■ COOLING ONLY / HEAT PUMP MODEL

- Pipe size connected to outdoor unit.

(unit : mm)

Model	Gas Pipe size (thickness)	Liquid Pipe size (thickness)
AO90	φ 28.58 (1.2)	φ 12.7 (0.8)
AO72	φ 28.58 (1.2)	φ 12.7 (0.8)

- Between two adjacent refrigerant branch kits.

(unit : mm)

Total model code of indoor unit	Gas Pipe size (thickness)	Liquid Pipe size (thickness)	Separation Kit
Less than 30	φ 15.88 (1.0)	φ 9.53 (0.8)	UTR-BP54TA
31 or more to 60	φ 19.05 (1.0)	φ 9.53 (0.8)	
61 or more	φ 28.58 (1.2)	φ 12.7 (0.8)	UTR-BP90TA

- Connection pipe size of indoor unit.

(unit : mm)

Model code of indoor unit	Gas Pipe size (thickness)	Liquid Pipe size (thickness)
7, 9	φ 9.53 (0.8)	φ 6.35 (0.8)
12, 14	φ 12.7 (0.8)	φ 6.35 (0.8)
18, 20, 24, 25	φ 15.88 (1.0)	φ 6.35 (0.8)
30	φ 15.88 (1.0)	φ 9.53 (0.8)
36, 45, 54, 60	φ 19.05 (1.0)	φ 9.53 (0.8)

5-1-4 ADDITIONAL CHARGE CALCULATION

(1) Indoor unit model type

Refrigerant must be added to all connected Indoor units.

Add refrigerant as shown in the Table for every indoor unit connected to the refrigerant system.

Example : When AR_30TFCMF x 2 and AU_18TFCMF x 2 are connected to the refrigerant system.

" Additional charge of Indoor unit model type" is $0.6(\text{kg}) \times 2 + 0.25(\text{kg}) \times 2 = 1.7(\text{kg}) \dots (1)$

Model / Model code	7	9	12	14	18	20	24/25	30	36	45	54	60
AS(_ _ _TFAMF)	0.5	0.5	0.9	0.9	—	0.9	0.9	0.9	—	—	—	—
AU(_ _ _TFAMF)	0.65	0.65	0.65	0.65	0.65	0.8	0.8	0.8	1.5	1.5	1.5	—
AB(_ _ _TFAMF)	—	—	0.65	0.65	0.65	—	1.0	1.0	1.0	1.0	1.0	—
AR(_ _ _TFAMF)	0.4	0.4	0.45	0.45	0.7	—	1.0	1.0	2.0	2.0	—	—
AU(_ _ _TFBMF)	0.45	0.45	0.45	0.45	0.45	—	—	—	—	—	—	—
AR(_ _ _TFBMF)	—	—	—	—	—	—	—	—	2.0	2.0	—	2.0
AS(_ _ _TFCMF)	0.2	0.2	0.2	0.2	0.35	—	0.35	0.4	—	—	—	—
AW(_ _ _TFCMF)	0.25	0.25	0.35	0.35	0.35	—	0.35	0.4	—	—	—	—
AU(_ _ _TFCMF)	0.25	0.25	0.25	0.25	0.25	0.75	0.75	0.75	0.9	0.9	0.9	—
AB(_ _ _TFCMF)	—	—	0.3	0.3	0.4	—	0.55	0.65	0.65	0.65	0.65	—
AR(_ _ _ _TFCMF)	0.25	0.25	0.25	0.25	0.4	—	0.6	0.6	1.2	1.2	—	1.2

Amount of refrigerant (kg)

(2) Pipe length

- * Up to a liquid pipe length of 7.5 m, charging with additional refrigerant is not necessary.
- * If the liquid pipe length exceeds 7.5m, please calculate the additional charge amount.
After calculating the total amount of charging required, subtract the original refrigerant amount of 0.75kg.

Liquid pipe (mm)	φ 12.7	φ 9.53	φ 6.35
Additional refrigerant (kg/m)	0.1	0.05	0.02

The amount of additional charge C(kg)

$$\begin{array}{c}
 \text{C} = \left[\begin{array}{|c|c|} \hline \text{Total length} & \text{x 0.1} \\ \hline \text{of } \phi 12.7\text{mm} & \text{kg/m} \\ \hline \text{liquid pipe} & \\ \hline \text{m} & \\ \hline \text{kg} & \\ \hline \end{array} \right] + \left[\begin{array}{|c|c|} \hline \text{Total length} & \text{x 0.05} \\ \hline \text{of } \phi 9.53\text{mm} & \text{kg/m} \\ \hline \text{liquid pipe} & \\ \hline \text{m} & \\ \hline \text{kg} & \\ \hline \end{array} \right] + \left[\begin{array}{|c|c|} \hline \text{Total length} & \text{x 0.02} \\ \hline \text{of } \phi 6.35\text{mm} & \text{kg/m} \\ \hline \text{liquid pipe} & \\ \hline \text{m} & \\ \hline \text{kg} & \\ \hline \end{array} \right] - 0.75 = \boxed{(2)}
 \end{array}$$

Round up C to 2 decimal place.

If C is zero or less, Charging with additional refrigerant is not required.

Example : When the liquid pipe length $\phi 12.7\text{mm} = 10\text{m}$, $\phi 9.53\text{mm} = 15\text{m}$, $\phi 6.35\text{mm} = 20\text{m}$

" Additional charge of pipe length " is

$$\begin{aligned}
 & 10(\text{m}) \times 0.1(\text{kg/m}) + 15(\text{m}) \times 0.05(\text{kg/m}) + 20(\text{m}) \times 0.02(\text{kg/m}) - 0.75(\text{kg})^* \\
 & = 1.4(\text{kg}) \dots (2)
 \end{aligned}$$

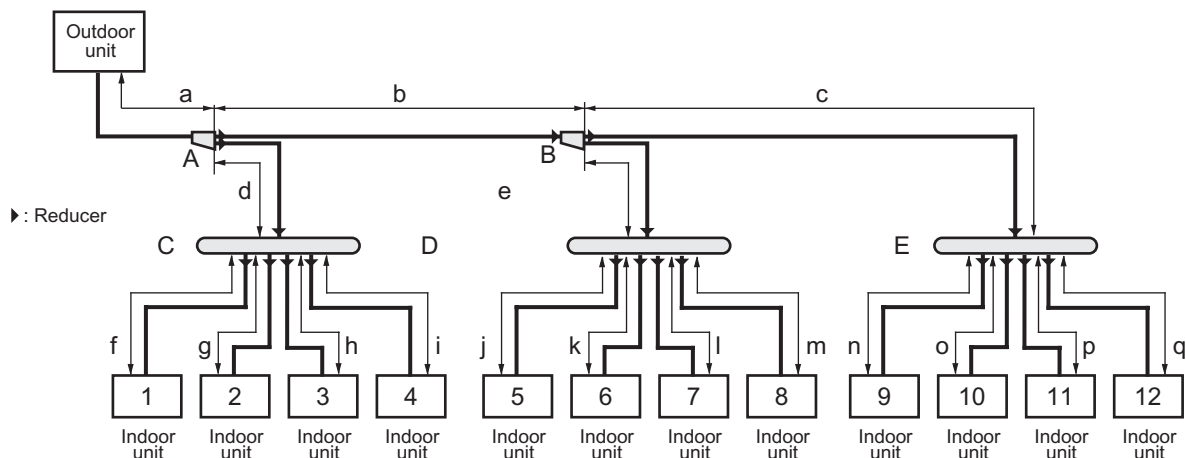
*As 0.75kg of refrigerant is originally provided inside the outdoor unit for liquid pipe length of 7.5m, it is necessary to subtract this 0.75kg from the calculation.

$$\text{ADDITIONAL CHARGE} = (1) + (2)$$

5-1-5 EXAMPLE OF PIPING DESIGN

■ COOLING ONLY / HEAT PUMP MODEL

(1) Refrigerant system ①



● System configuration

	1	2	3	4	5	6	7	8	9	10
Example 1	AR9	AR9	AR9	AR9	AR7	AR7	AR7	AR7	AR7	AR7
Capacity(kW)	2.8	2.8	2.8	2.8	2.15	2.15	2.15	2.15	2.15	2.15
Example 2	AR9	AR9	AR9	AR9	AR7	AR7	AR7	AR7	AR7	AR7
Capacity(kW)	2.8	2.8	2.8	2.8	2.15	2.15	2.15	2.15	2.15	2.15

11	12	Total capacity
AR9	AR9	
2.8	2.8	29.7
AR25	AR25	
7.05	7.05	38.2

Total indoor unit capacity (1 refrigerant system)

Example1 : Total capacity = 29.7 ≤ 36.4

Example2 : Total capacity = 38.2 > 36.4 ※Example 2 cannot be selected

● Selection of pipe size (Example 1)

(unit : mm)

	a	b	c	d	e	f	g
Gas Pipe	φ28.58	φ19.05	φ19.05	φ19.05	φ15.88	φ 9.53	φ 9.53
Liquid Pipe	φ12.7	φ 9.53	φ 9.53	φ 9.53	φ 9.53	φ 6.35	φ 6.35
Length [m] (Example)	10	10	15	5	5	10	5

h	i	j	k	l	m	n	o	p	q
φ 9.53	φ 9.53	φ 9.53	φ 9.53	φ 9.53	φ 9.53	φ 9.53	φ 9.53	φ 9.53	φ 9.53
φ 6.35	φ 6.35	φ 6.35	φ 6.35	φ 6.35	φ 6.35	φ 6.35	φ 6.35	φ 6.35	φ 6.35
5	10	10	5	5	10	10	5	5	10

• Pipe length

$a+b+c+q=45\text{m} \leq 100\text{m}$ (actual pipe length)

Difference in height between outdoor unit and indoor units maximum 50m.

Difference in height between the highest and the lowest indoor unit maximum 15m.

Form outdoor unit to the first separation tube $a=10\text{m} \leq 70\text{m}$ (actual pipe length)

Form the first separation tube to the farthest indoor unit $b+c+q=35\text{m} \leq 40\text{m}$ (actual pipe length)

$a+b+c+d+e+f+g+h+i+j+k+l+m+n+o+p+q=135\text{m} \leq 200\text{m}$ (total pipe length)

• Selection of separation tube and header

	A	B	C	D	E
Model name	UTR-BP90TA	UTR-BP54TA	UTR-HD906A	UTR-HD906A	UTR-HD906A

• Additional charge

Liquid pipe (mm)	$\phi 12.7$	$\phi 9.53$	$\phi 6.35$
Additional refrigerant (kg/m)	0.1	0.05	0.02
Liquid pipe length (m)	10	35	90

• Additional refrigerant

(1) Indoor unit model type (AR(___TFCMF) for example)

AR 9 : (0.25 kg) x 6

AR 7 : (0.25 kg) x 6

$(0.25 \times 6) + (0.25 \times 6) = 3.0 \text{ (kg)}$ --- (1)

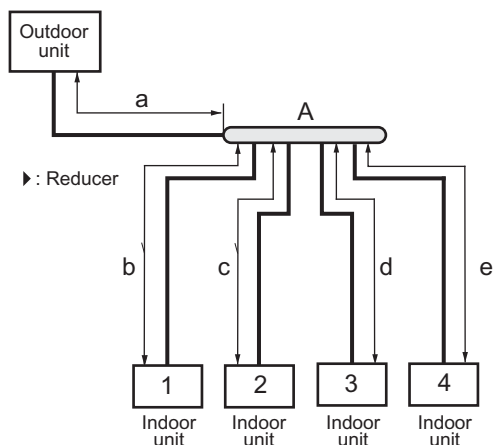
(2) Pipe length

$(0.1 \times 10) + (0.05 \times 35) + (0.02 \times 90) - 0.75 = 3.8 \text{ (kg)}$ --- (2)

(3) Total

$(1) + (2) = 3.0 + 3.8 = 6.8 \text{ (kg)}$

(2) Refrigerant system ②



• System configuration

	1	2	3	4	Total capacity
Example 1	AR18	AR18	AR30	AR36	
Capacity(kW)	5.3	5.3	8.8	10.5	29.9
Example 2	AR30	AR30	AR30	AR45	
Capacity(kW)	8.8	8.8	8.8	12.7	39.1

Total capacity of indoor unit (1 refrigerant system)

Example1 : Total capacity = 29.9 $\leq$ 36.4

Example2 : Total capacity = 39.1 > 36.4 ✕ Example 2 cannot be selected.

• Selection of pipe size (Example 1)

(unit : mm)

	a	b	c	d	e
Gas Pipe	ϕ 28.58	ϕ 15.88	ϕ 15.88	ϕ 15.88	ϕ 19.05
Liquid Pipe	ϕ 12.7	ϕ 6.35	ϕ 6.35	ϕ 9.53	ϕ 9.53
Length [m] (Example)	20	12	7	7	12

• Pipe length

$a+b=32\text{m} \leq 100\text{m}$ (actual pipe length)

Difference in height between outdoor unit and indoor unit maximum 50m.

Difference in height between the highest and the lowest indoor unit maximum 15m.

From outdoor unit to the first header tube $a=20\text{m} \leq 70\text{m}$ (actual pipe length)

From the first header tube to the farthest indoor unit $e=12\text{m} \leq 40\text{m}$ (actual pipe length)

$a+b+c+d+e=58 \leq 200\text{m}$ (total pipe length)

• **Selection of header**

	A
Model name	UTR-HD906A

• **Additional charge**

Liquid pipe (mm)	ϕ 12.7	ϕ 9.53	ϕ 6.35
Additional refrigerant (kg/m)	0.1	0.05	0.02
Liquid pipe length (m)	20	19	19

• **Additional refrigerant**

(1) Indoor unit model type (AR(___TFCMF) for example)

AR 18 : (0.4 kg) x 2

AR 30 : (0.6 kg) x 1

AR 36 : (1.2 kg) x 1

$(0.4 \times 2) + (0.6 \times 1) + (1.2 \times 1) = 2.6 \text{ (kg)}$ - - - (1)

(2) Pipe length

$(0.1 \times 20) + (0.05 \times 19) + (0.02 \times 19) - 0.75 = 2.58 \text{ (kg)}$ - - - (2)

(3) Total

$(1) + (2) = 2.6 + 2.58 = 5.18 \text{ (kg)}$

● **Selection of separation tube and header**

	A	B	C
Model name	UTR-BP90TA	UTR-BP54TA	UTR-HD906A

● **Additional charge**

Liquid pipe (mm)	ϕ 12.7	ϕ 9.53	ϕ 6.35
Additional refrigerant (kg/m)	0.1	0.05	0.02
Liquid pipe length (m)	10	37	37

● **Additional refrigerant**

(1) Indoor unit model type (AW_24TFCMF, AB_36TFCMF, AR__9TFCMF for example)

AW 24 : (0.35 kg) x 1

AB 36 : (0.65 kg) x 1

AR 9 : (0.25 kg) x 4

$(0.35 \times 1) + (0.65 \times 1) + (0.25 \times 4) = 2.0$ (kg) - - - (1)

(2) Pipe length

$(0.1 \times 10) + (0.05 \times 37) + (0.02 \times 37) - 0.75 = 2.84$ (kg) - - - (2)

(3) Total

$(1) + (2) = 2.0 + 2.84 = 4.84$ (kg)

5-2 WIRING DESIGN

5-2-1 WIRING SPECIFICATION

Use		Size		Wire type	Remarks	
Power supply cable (mm ²)	Outdoor unit	Maximum	8.0	H07RN-F or equivalent	3φ4 wire 50Hz 380-415V	※ 1
		Minimum	6.0			
	Indoor unit	Maximum	2.5	H07RN-F or equivalent	1φ 2 wire 50Hz 220-240V	※ 2
		Minimum	1.5			
Transmission cable (mm ²)		Maximum	1.25	Shield (LONWORKS compatible part)	Non-polar 2-core	※ 3
		Minimum	0.75			
Remote controller cable (Wired, Simple) (mm ²)		Maximum	1.25	Sheathed vinyl cord cable	Polar 3-core	※ 4
		Minimum	0.75			

NOTE: Install in accordance with local rules and regulations.

※1,2 The ground wire is not included in this cable.
Always ground the unit.

※3 Total wiring length 2000m.
However, when wiring length exceeds 500m, a signal amplifier (option) is required.
Use the shielded wire specified and always ground it.
Do not bundle the transmission cable with other wires.
Otherwise, transmit-receive with a transmission line is not only impossible, but a malfunction may occur.

※4 10m cable attached.(excluded some models)
Use the shielded cable in accordance with the standards of the country.
Wiring length of a remote controller group should be within 500m.

Fuse capacity	Model	Field fuse	Circuit breaker
	Outdoor unit	40A ※ 5	40A 100mA 0.1sec or less
	Indoor unit	20A ※ 6	20A 40mA 0.1sec or less

※5 per outdoor unit

※6 per refrigerant system.

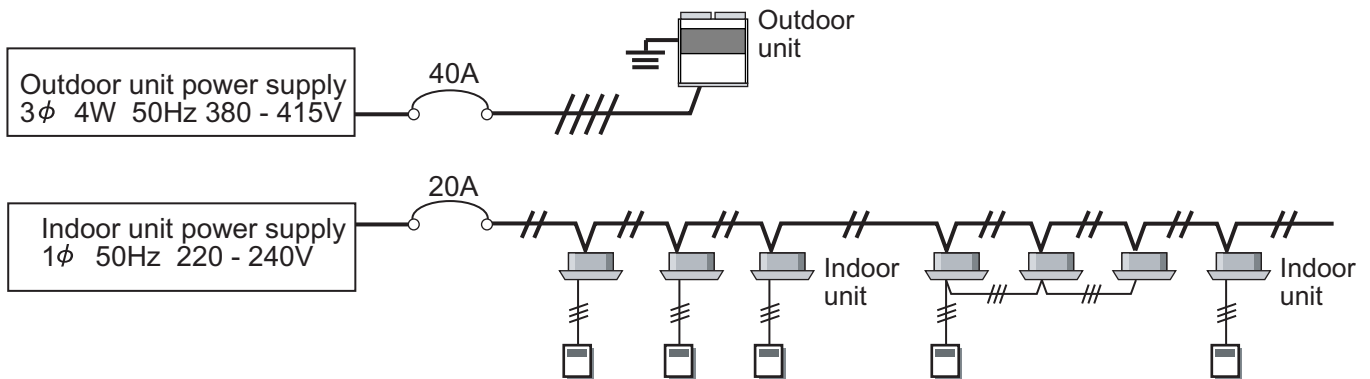
Install the knife switch (contact gap 3mm or more) near the indoor unit for ease of maintenance.(A breaker can be used instead of the knife switch for the outdoor unit.

5-2-2 POWER SUPPLY CABLE WIRING

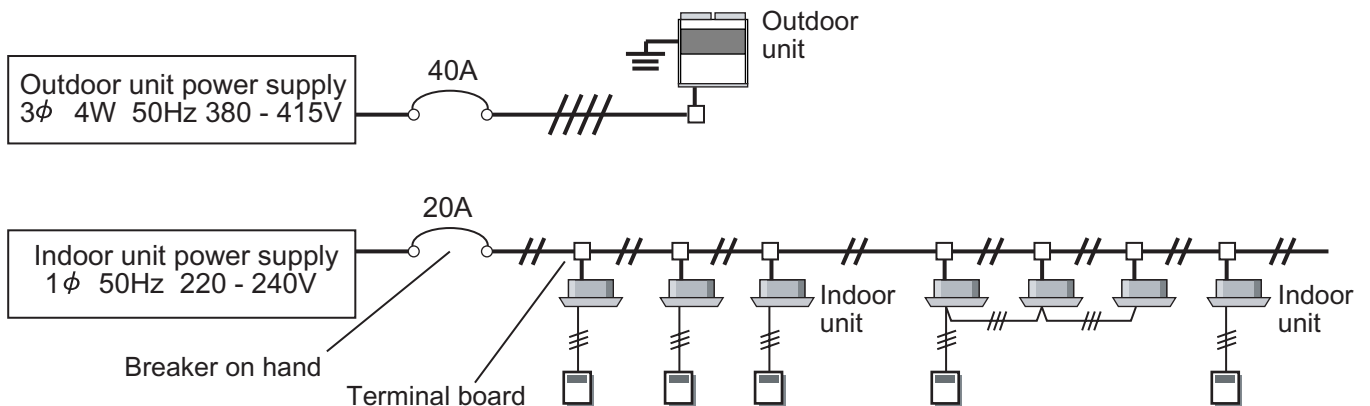
■ POWER SUPPLY CABLE SPECIFICATION

- * A separated power supply cable must be provided for the outdoor unit and indoor unit.
Outdoor unit : 3 ϕ 4W 50Hz 380 - 415V
Indoor unit : 1 ϕ 50Hz 220 - 240V
- * Use terminal board available on the market, when the number of indoor units connected to outdoor unit increases. (Ex.2)
- * Use a circuit breaker of 40A or more for every outdoor unit.
- * The indoor unit shall be connected up to one refrigerant system, and a circuit breaker of 20A or more should be used.

Example 1: Power supply cable wiring.



Example 2: Power supply cable wiring. (using terminal board)



5-2-3 TRANSMISSION LINE

■ TRANSMISSION WIRING SPECIFICATIONS

- * Non-polar 2-core
- * Lonworks compatible wire

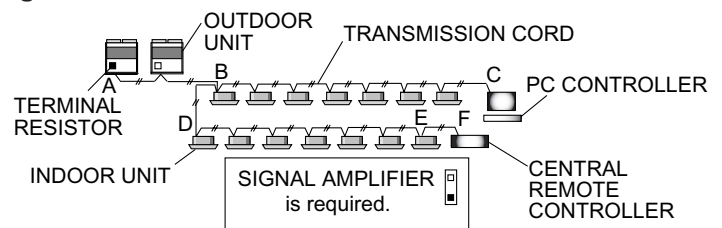
NOTE

- * Do not bundle and wire transmission line with other wiring.

■ WIRING RULES

- * In the following case, SIGNAL AMPLIFIER is required.
 - (1) When the total length of the transmission cord exceeded 500 m.
 $AB+BC+BD+DE+EF > 500 \text{ m}$ (Fig. 1)

Fig. 1



- (2) When the number of total unit* is over 64.

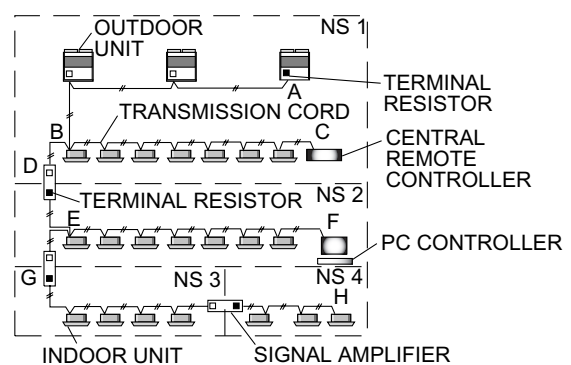
- * Transmission cord length between each unit*: MAX 200 m
- * Total transmission cord length: MAX 2000 m
 $AB+BC+BD+DE+EF+EG+GH < 2000 \text{ m}$ (Fig. 2)

- * When a SIGNAL AMPLIFIER is installed, network is divided into two network segments.
In a network segment (NS), divided by a SIGNAL AMPLIFIER, have to keep the following facts.

- (1) Total transmission cord length: MAX 500 m
 $AB+BC+BD < 500 \text{ m}$ (Fig. 2)

- (2) The number of total unit*: MAX 64
- (3) The number of terminal resistor: 1

Fig. 2



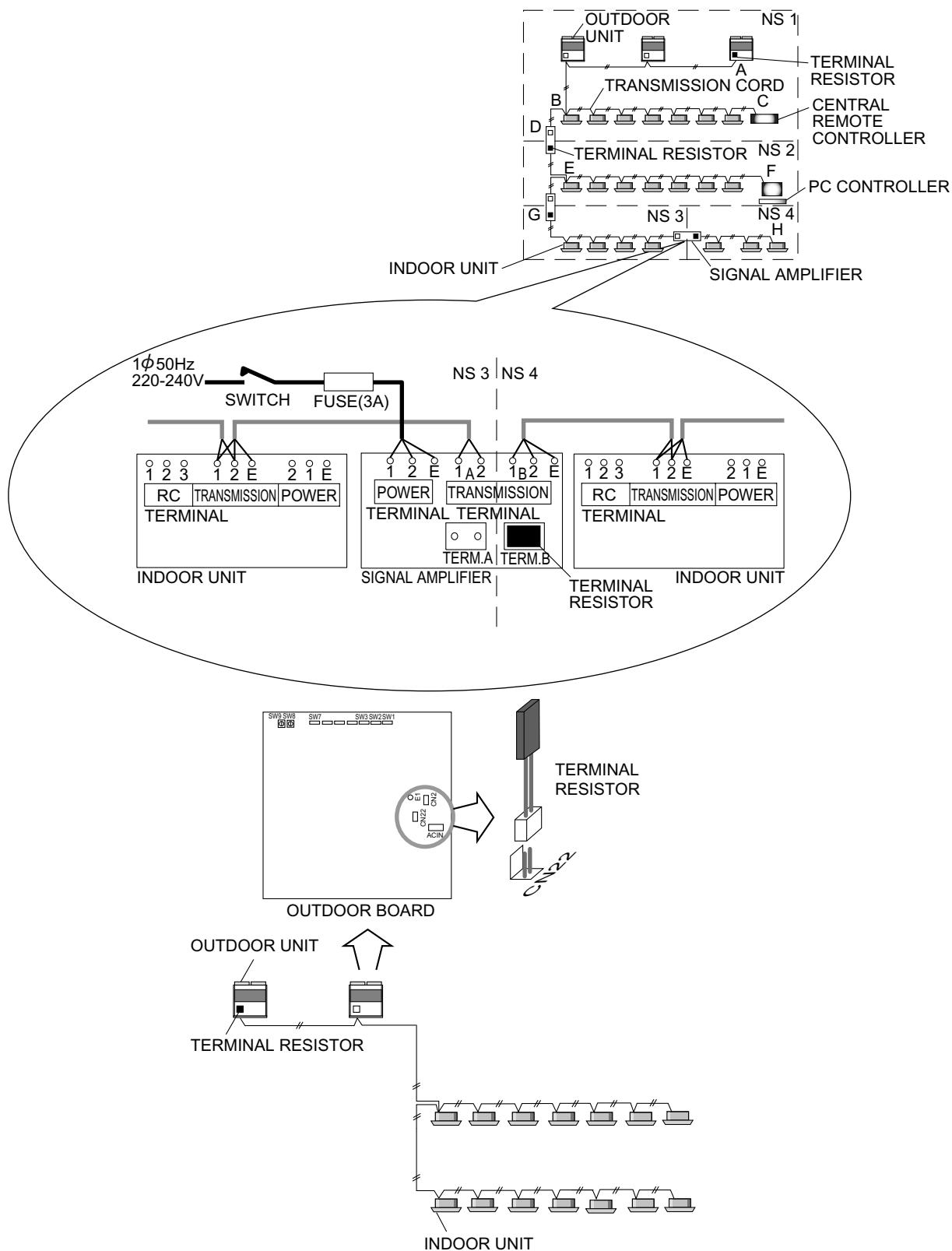
- * Arrange so that there is one terminal resistor for each network segment.
- * If necessary, remove the terminal resistor which connected temporarily to the outdoor unit.
- * Only ground one side of the ground for transmission cord.

Note : Unit* means indoor unit, outdoor unit, central remote controller (CRC) and PC controller.

■ CHECK POINT

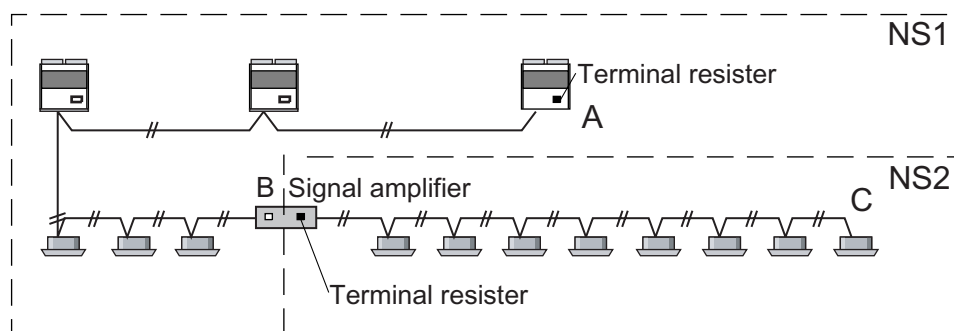
- * Arrange so that there is no transmission cord between each network segment except the transmission cord which passed through the signal amplifier.
- * Arrange so that there is one terminal resistor for each network segment.
If necessary, remove the terminal resistor which connected temporarily to the CN22 terminator of the circuit board for the outdoor unit.

Fig. 3



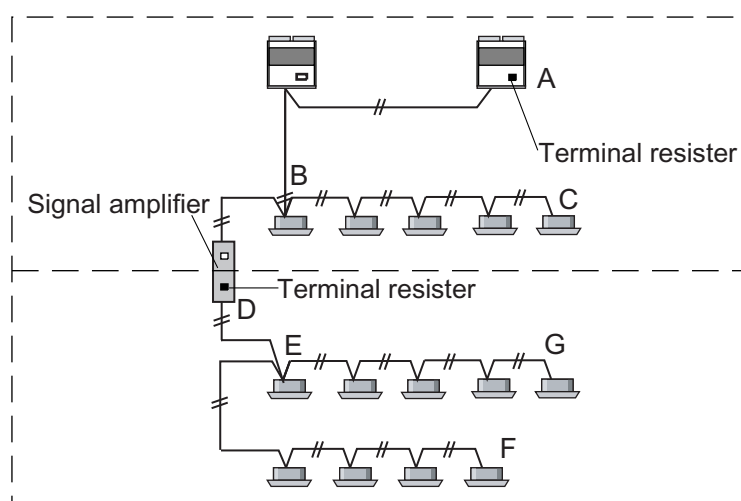
■ EXAMPLE OF INSTALL SIGNAL AMPLIFIER (UTR-YRPA)

Example 1 : In case of series connection



between A and C 800m
 NS1 : between A and B $400\text{m} \leq 500\text{m}$
 NS2 : between B and C $400\text{m} \leq 500\text{m}$

Example 2 : In case of branch connection

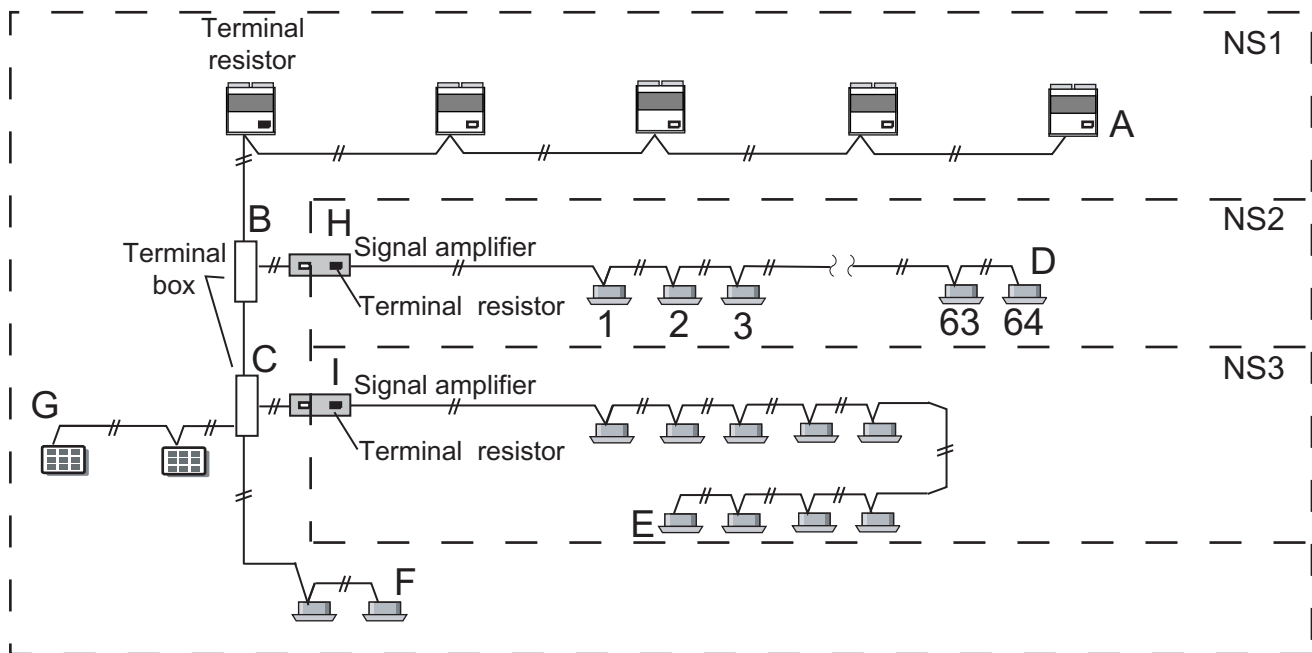


between A and B 100m
 between B and C 200m
 between B and D 200m
 between D and E 200m
 between E and F 100m
 between E and G 100m
 Total wiring length 900m
 NS1 : $AB+BC+BD \leq 500\text{m}$
 NS2 : $DE+EF+EG \leq 500\text{m}$

Note

Install the unit in a place where the total length of the wiring below the signal amplifier is within 500m.

Example 3 : Branch connection and in case of over 64 units



between A and B 100m
 between B and C 100m
 between B and D 200m
 between C and E 500m
 between C and F 100m
 between C and G 100m
 between B and H 10m
 between C and I 10m

Total wiring length 1100m

Number of indoor unit 64

NS1 : $AB+BC+CG+CF+BH+CI \leq 500m$

NS2 : Total equipments between H and D ≤ 64

NS3 : $IE \leq 500m$

5-2-4 WIRING SEPARATION

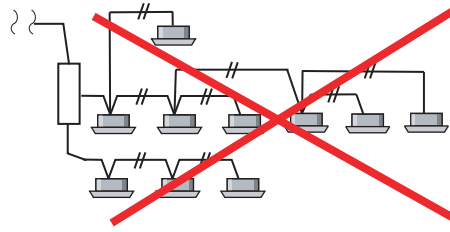
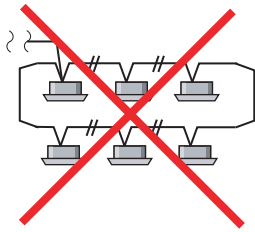
■ TRANSMISSION LINE SEPARATION RULES

- * Up to 16 separations is possible.
- * The transmission wiring between indoor unit, outdoor unit and controllers can be connected by one wire.
- * Terminal board available on the market or the terminal inside the indoor unit or outdoors should be used for transmission line separation.

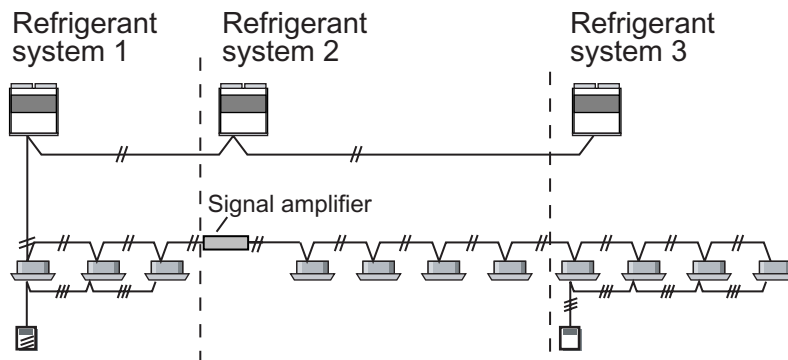
NOTE

· Do not loop.

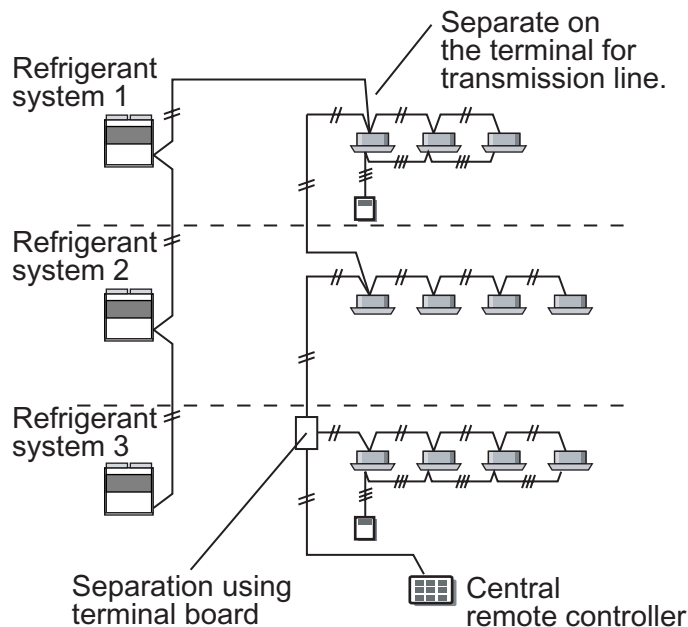
· If number of separation is extreme it may cause an erroneous operation.



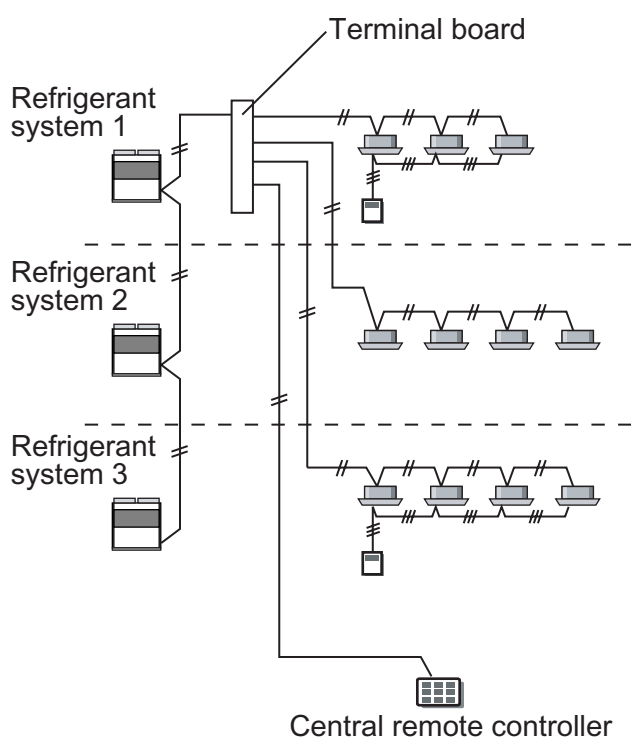
Example 1 : Connecting each outdoor and indoor unit with one connection wiring.



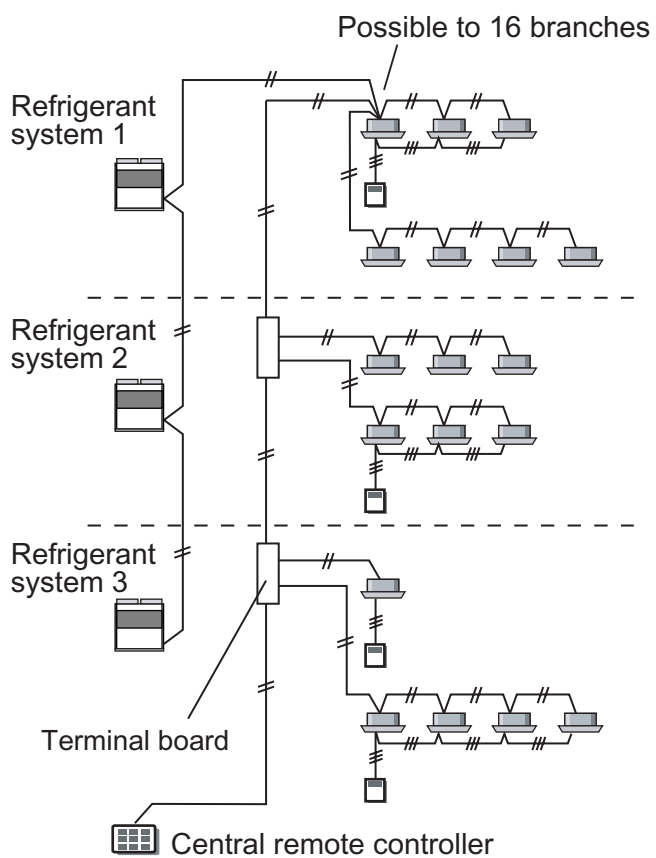
Example 2 : Separating transmission line.



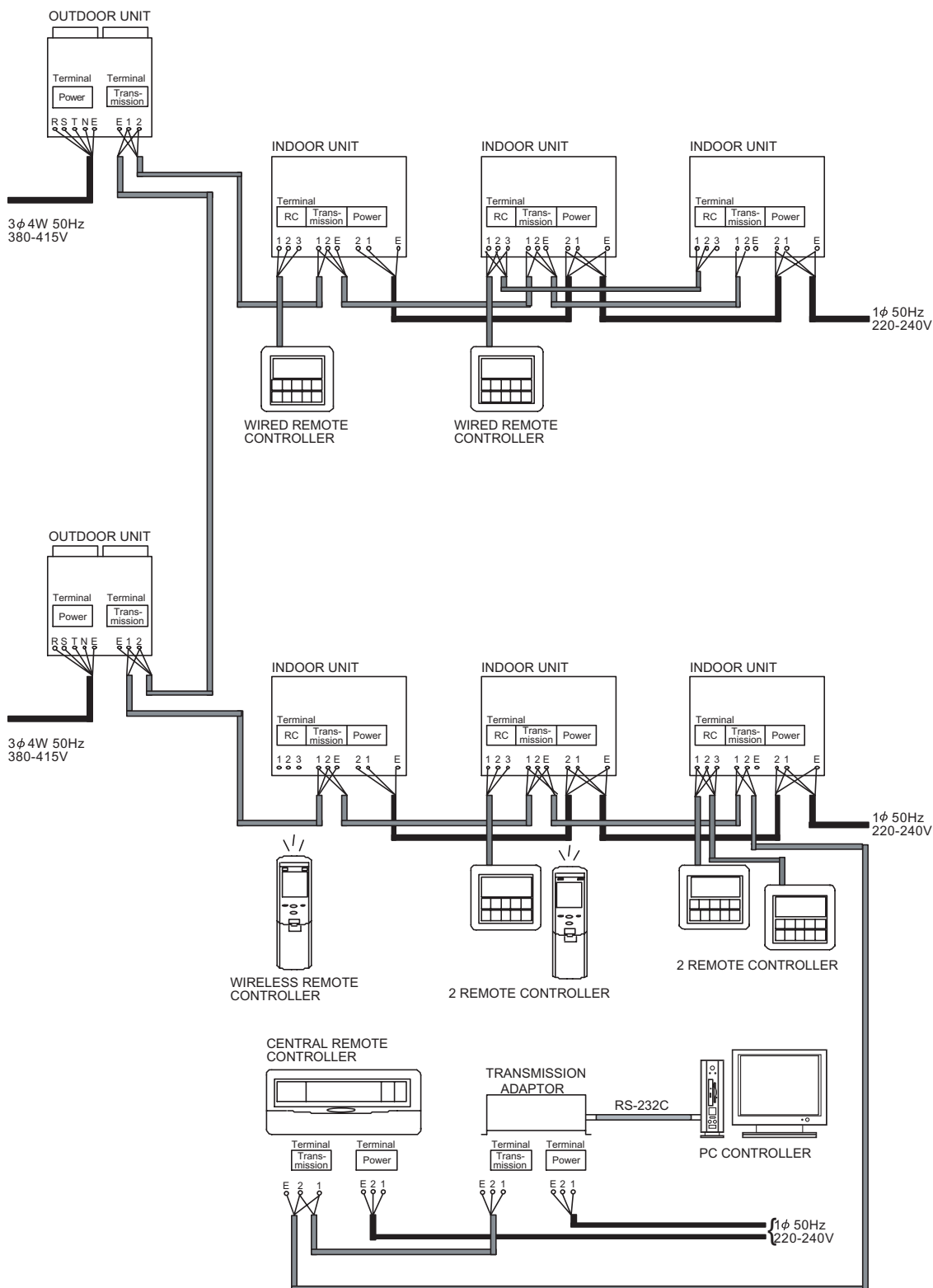
Example 3 : Separation wiring from one terminal board radially.



Example 4 : Combination of example 2 and 3



5-2-5 WIRING EXAMPLE



5-3 SYSTEM SETTING

5-3-1 SYSTEM TYPE SETTING

Set the DIP switch to the corresponding system type as shown in the Table.
Do not use a nonexistent switch combination.

■ WIRED, SIMPLE REMOTE CONTROLLER

◆

	SW 2-1
Heat pump	OFF
Cooling only	ON

◆ Factory setting

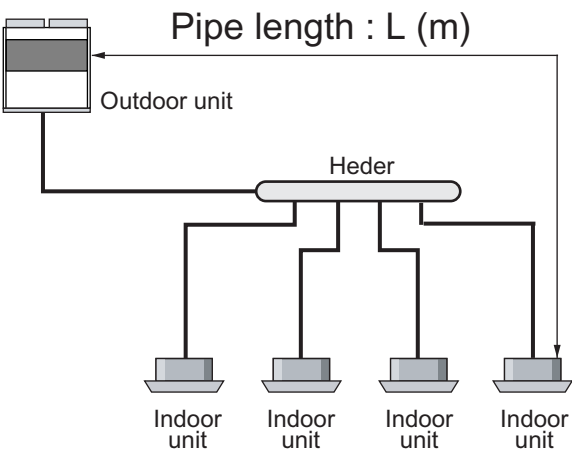
■ PIPE LENGTH SETTING (OUTDOOR UNIT)

Depending on the pipe length, the set-up of the pipe length switch is required.
SW setting can provide the operation to supplement the loss created by the pipe length.

◆

Pipe length	Recommended Range of L (m)	SW 6-1	SW 6-2
S	$L \leq 40$	OFF	ON
Standard	$40 < L \leq 60$	OFF	OFF
M	$60 < L \leq 80$	ON	OFF
L	$80 < L \leq 100$	ON	ON

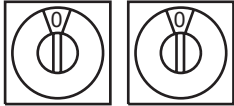
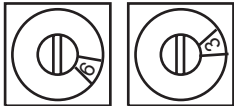
◆ Factory setting



5-3-2 ADDRESS SETTING

* With this system, an address must be set for the indoor unit, outdoor unit and remote controller and central remote controller.

(1) KINDS OF ADDRESS AND SETTING RANGE

UNIT	SETTING	SETTING RANGE	TYPE OF SWITCH	REMARKS
Outdoor unit	Refrigerant circuit address	0~99	Setting example 0  SW 9 SW 8	Shown in the next page
Indoor unit ¹⁾	Refrigerant circuit address	0~99	Setting example 63  SW 9 SW 8	
	Indoor unit address	0~15	Setting example 2  SW 7 SW 6	
	Remote controller address	0~15	Setting example 0  SW 10	Always SW 7 set "0"
Remote controller (wired,simple)	Remote controller switch 1	ON/OFF	DIP SW1-1	OFF : Not terminated ON : Terminated
	Number of indoor unit connection	ON/OFF	DIP SW1-2	Number of indoor unit OFF : 1 unit ON : multiple unit
	Remote controller switch 2	ON/OFF	DIP SW1-4	OFF : Master ON : Slave
Central remote controller	Central remote controller address	0 ~ 15	Initial setting	

1) For compact wall mounted type indoor unit, refer to 5-5-3.

●Refrigerant circuit address conversion table

Outdoor unit

Rotary switch (SW 8)- - Factory setting "0"

Rotary switch (SW 9)- - Factory setting "0"

Indoor Unit

Rotary switch (SW 8)- - Factory setting "0"

Rotary switch (SW 9)- - Factory setting "0"

In the case of a multiple refrigerant system, each refrigerant system (outdoor unit and indoor unit) must be set an exclusive refrigerant circuit address.

Please use the rotary switches(SW8,SW9) to set the address.A conversion table of refrigerant circuit address and rotary switch setting is shown in the table below.

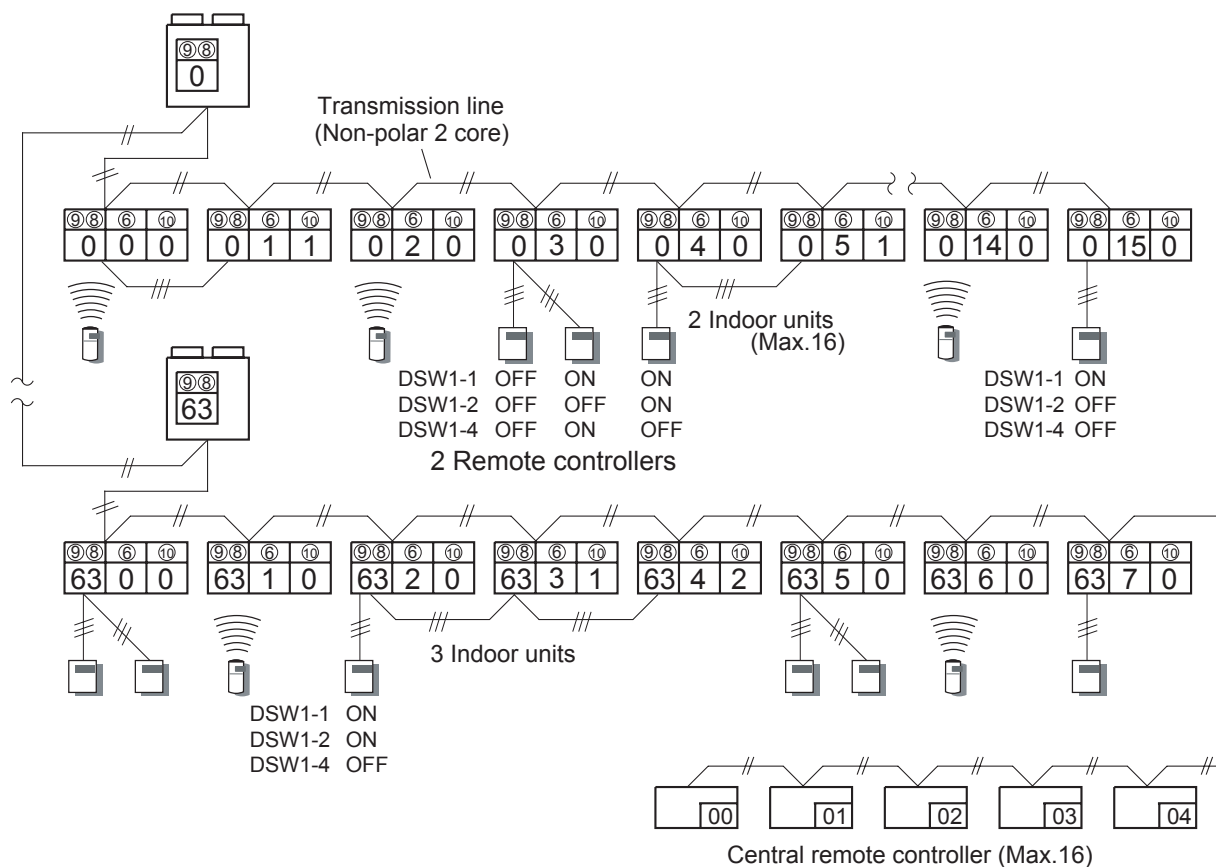
Do not use a nonexistent switch setting combination.

Example : When SW 9 is set to "1" and SW 8 is set to "14" the refrigerant circuit address will be "30".

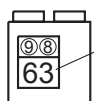
Refrigerant circuit address	Rotary Switch setting		Refrigerant circuit address	Rotary Switch setting		Refrigerant circuit address	Rotary Switch setting		Refrigerant circuit address	Rotary Switch setting		Refrigerant circuit address	Rotary Switch setting	
	SW9	SW8		SW9	SW8		SW9	SW8		SW9	SW8		SW9	SW8
0	0	0	20	1	4	40	2	8	60	3	12	80	5	0
1	0	1	21	1	5	41	2	9	61	3	13	81	5	1
2	0	2	22	1	6	42	2	10(A)	62	3	14	82	5	2
3	0	3	23	1	7	43	2	11(B)	63	3	15	83	5	3
4	0	4	24	1	8	44	2	12(C)	64	4	0	84	5	4
5	0	5	25	1	9	45	2	13(D)	65	4	1	85	5	5
6	0	6	26	1	10(A)	46	2	14(E)	66	4	2	86	5	6
7	0	7	27	1	11(B)	47	2	15(F)	67	4	3	87	5	7
8	0	8	28	1	12(C)	48	3	0	68	4	4	88	5	8
9	0	9	29	1	13(D)	49	3	1	69	4	5	89	5	9
10	0	10(A)	30	1	14(E)	50	3	2	70	4	6	90	5	10(A)
11	0	11(B)	31	1	15(F)	51	3	3	71	4	7	91	5	11(B)
12	0	12(C)	32	2	0	52	3	4	72	4	8	92	5	12(C)
13	0	13(D)	33	2	1	53	3	5	73	4	9	93	5	13(D)
14	0	14(E)	34	2	2	54	3	6	74	4	10(A)	94	5	14(E)
15	0	15(F)	35	2	3	55	3	7	75	4	11(B)	95	5	15(F)
16	1	0	36	2	4	56	3	8	76	4	12(C)	96	6	0
17	1	1	37	2	5	57	3	9	77	4	13(D)	97	6	1
18	1	2	38	2	6	58	3	10	78	4	14(E)	98	6	2
19	1	3	39	2	7	59	3	11	79	4	15(F)	99	6	3

(2) SETTING EXAMPLE

The following examples apply to all indoor units except for compact wall mounted type indoor unit.



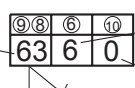
• Outdoor unit



Refrigerant circuit address Rotary-SW9,8

• Indoor unit ¹⁾

Refrigerant circuit address Rotary-SW9,8



Indoor unit address Rotary-SW6
Remote controller address Rotary-SW10

• Remote controller

DSW1-1 OFF ON
DSW1-2 OFF OFF
DSW1-4 OFF ON

Remote controller switch1
Number of indoor unit connection
Remote controller switch2

• Central remote controller



Central remote controller address

1) For compact wall mounted type indoor unit, refer to 5-3-3.

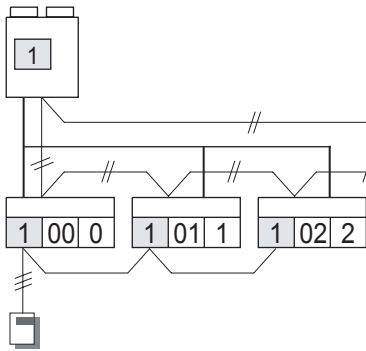
※ Instructions for setting up the address

- 1 The Refrigerant circuit address of the indoor and outdoor units can be set to optional numbers in the range of 0 to 99.
- 2 The Indoor unit address can be set to optional numbers in the range of 0 to 15.
- 3 Set the Remote controller address in the order of 0,1,2,...15.(Blank is impossible)
- 4 The Central remote controller address can be set to optional numbers in the range of 0 to 15.

① Refrigerant circuit address (Outdoor unit)

② Refrigerant circuit address (Indoor unit)

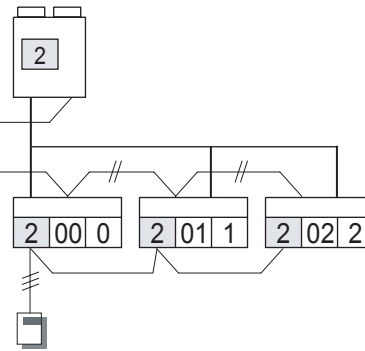
Refrigerant circuit 1



Outdoor unit PCB (Address setting No.0~99)

Setting by rotary SW8,9

Refrigerant circuit 2

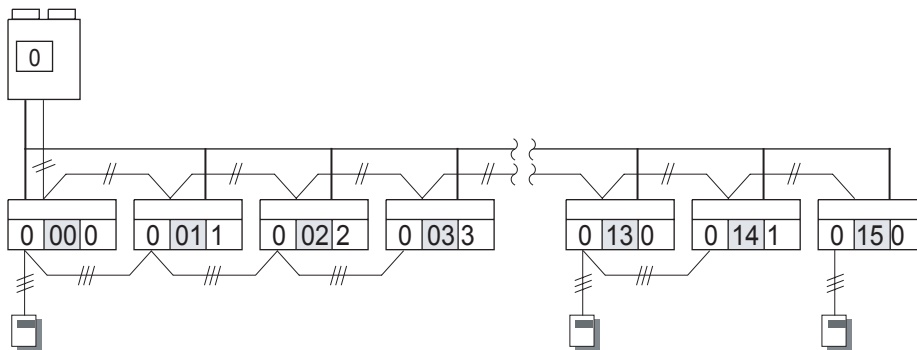


Indoor unit PCB (Address setting No.0~99)

Setting by rotary SW8,9

For compact wall mounted type indoor unit, refer to 5-3-3.

③ Indoor unit address



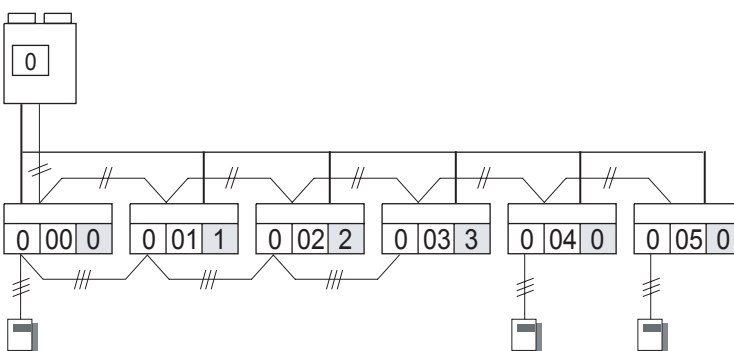
Indoor unit PCB (Address setting No. 0~15)

Setting by rotary SW6, SW7

(Always set Rotary SW7 at 0)

For compact wall mounted type indoor unit, refer to 5-3-3.

④ Remote controller address (Indoor unit)

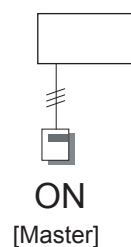
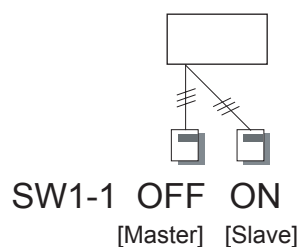


Indoor unit PCB (Address setting No.0~15)

Setting by rotary SW10

⑤ Remote controller switch 1

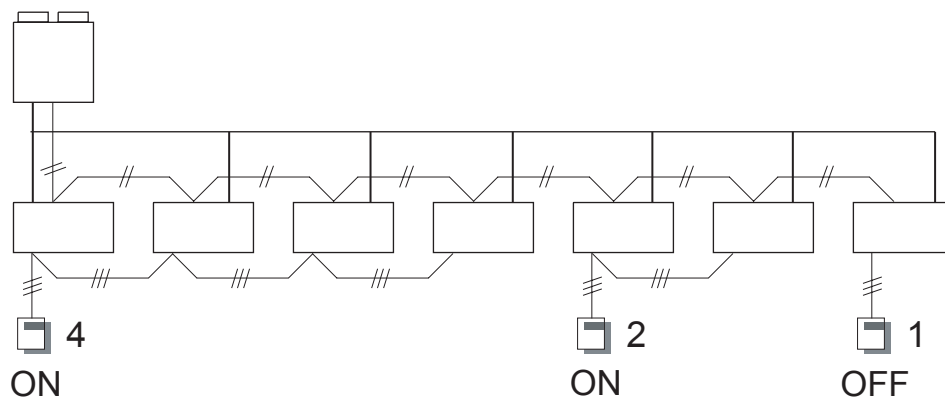
If 2 sets of wired remote controllers are connected to the remote control group, turn the DIP SW 1-1 of Master Remote Controller off.



Remote controller unit PCB
Setting by DIP SW 1-1

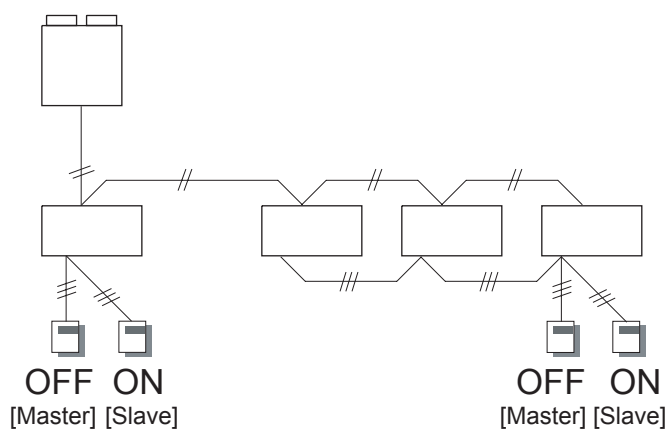
When only 1 remote controller will connect,
this switch must be set ON.

⑥ Number of indoor unit connection



Remote controller PCB
Setting by DIP SW 1-2

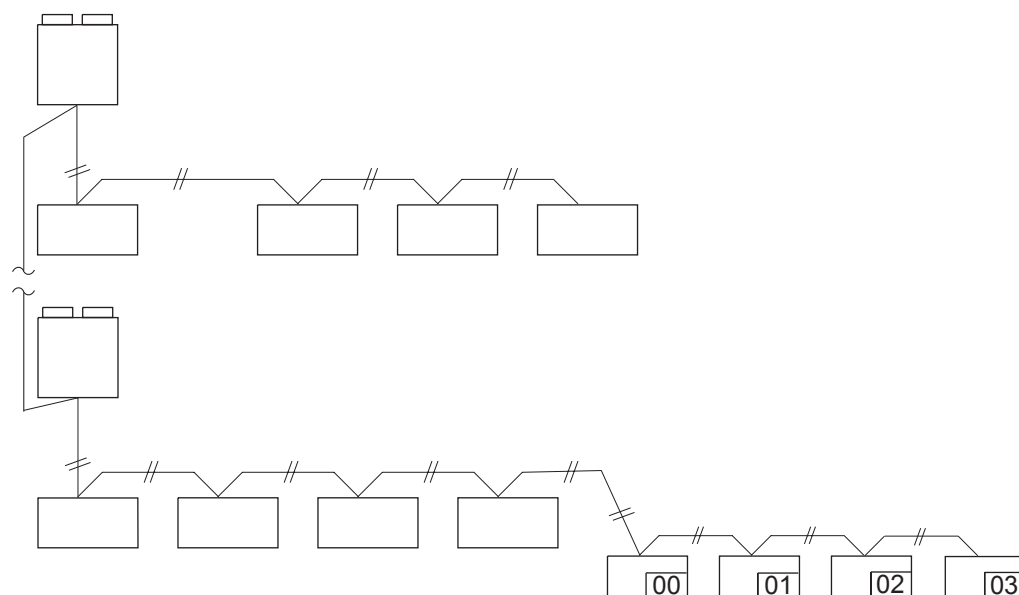
⑦ Remote controller switch 2 (Remote controller)



Remote controller unit PCB

Setting by DIP SW 1 - 4

⑧ Central remote controller address

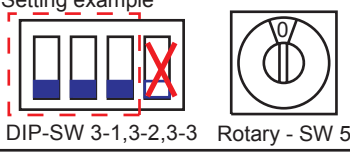
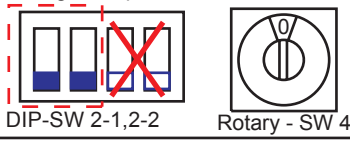


Central remote controller (Max. 16)

* Set central remote controller address first, to conduct the initial setting of it.

5-3-3 ADDRESS SETTING (COMPACT WALL MOUNTED TYPE)

KINDS OF ADDRESS AND SETTING RANGE

SETTING	SETTING RANGE	TYPE OF SWITCH	REMARKS
Refrigerant circuit address	0~99	 Setting example DIP-SW 3-1,3-2,3-3 Rotary - SW 5	See refrigerant address conversion table below
Indoor unit address	0~15(F)	 Setting example DIP-SW 2-1,2-2 Rotary - SW 4	Always set DIP SW 2-1 and 2-2 to "OFF"
Remote controller address	—	No such a switch	A setup is impossible.

• Refrigerant address conversion table

Refrigerant circuit address	DIP-SW			Rotary -sw sw5	Refrigerant circuit address	DIP-SW			Rotary -sw sw5	Refrigerant circuit address	DIP-SW			Rotary -sw sw5	Refrigerant circuit address	DIP-SW			Rotary -sw sw5
	3-1	3-2	3-3			3-1	3-2	3-3			3-1	3-2	3-3			3-1	3-2	3-3	
0	OFF	OFF	OFF	0	25	ON	OFF	OFF	9	50	ON	ON	OFF	2	75	OFF	OFF	ON	11(B)
1	OFF	OFF	OFF	1	26	ON	OFF	OFF	10(A)	51	ON	ON	OFF	3	76	OFF	OFF	ON	12(C)
2	OFF	OFF	OFF	2	27	ON	OFF	OFF	11(B)	52	ON	ON	OFF	4	77	OFF	OFF	ON	13(D)
3	OFF	OFF	OFF	3	28	ON	OFF	OFF	12(C)	53	ON	ON	OFF	5	78	OFF	OFF	ON	14(E)
4	OFF	OFF	OFF	4	29	ON	OFF	OFF	13(D)	54	ON	ON	OFF	6	79	OFF	OFF	ON	15(F)
5	OFF	OFF	OFF	5	30	ON	OFF	OFF	14(E)	55	ON	ON	OFF	7	80	ON	OFF	ON	0
6	OFF	OFF	OFF	6	31	ON	OFF	OFF	15(F)	56	ON	ON	OFF	8	81	ON	OFF	ON	1
7	OFF	OFF	OFF	7	32	OFF	ON	OFF	0	57	ON	ON	OFF	9	82	ON	OFF	ON	2
8	OFF	OFF	OFF	8	33	OFF	ON	OFF	1	58	ON	ON	OFF	10(A)	83	ON	OFF	ON	3
9	OFF	OFF	OFF	9	34	OFF	ON	OFF	2	59	ON	ON	OFF	11(B)	84	ON	OFF	ON	4
10	OFF	OFF	OFF	10(A)	35	OFF	ON	OFF	3	60	ON	ON	OFF	12(C)	85	ON	OFF	ON	5
11	OFF	OFF	OFF	11(B)	36	OFF	ON	OFF	4	61	ON	ON	OFF	13(D)	86	ON	OFF	ON	6
12	OFF	OFF	OFF	12(C)	37	OFF	ON	OFF	5	62	ON	ON	OFF	14(E)	87	ON	OFF	ON	7
13	OFF	OFF	OFF	13(D)	38	OFF	ON	OFF	6	63	ON	ON	OFF	15(F)	88	ON	OFF	ON	8
14	OFF	OFF	OFF	14(E)	39	OFF	ON	OFF	7	64	OFF	OFF	ON	0	89	ON	OFF	ON	9
15	OFF	OFF	OFF	15(F)	40	OFF	ON	OFF	8	65	OFF	OFF	ON	1	90	ON	OFF	ON	10(A)
16	ON	OFF	OFF	0	41	OFF	ON	OFF	9	66	OFF	OFF	ON	2	91	ON	OFF	ON	11(B)
17	ON	OFF	OFF	1	42	OFF	ON	OFF	10(A)	67	OFF	OFF	ON	3	92	ON	OFF	ON	12(C)
18	ON	OFF	OFF	2	43	OFF	ON	OFF	11(B)	68	OFF	OFF	ON	4	93	ON	OFF	ON	13(D)
19	ON	OFF	OFF	3	44	OFF	ON	OFF	12(C)	69	OFF	OFF	ON	5	94	ON	OFF	ON	14(E)
20	ON	OFF	OFF	4	45	OFF	ON	OFF	13(D)	70	OFF	OFF	ON	6	95	ON	OFF	ON	15(F)
21	ON	OFF	OFF	5	46	OFF	ON	OFF	14(E)	71	OFF	OFF	ON	7	96	OFF	ON	ON	0
22	ON	OFF	OFF	6	47	OFF	ON	OFF	15(F)	72	OFF	OFF	ON	8	97	OFF	ON	ON	1
23	ON	OFF	OFF	7	48	ON	ON	OFF	0	73	OFF	OFF	ON	9	98	OFF	ON	ON	2
24	ON	OFF	OFF	8	49	ON	ON	OFF	1	74	OFF	OFF	ON	10(A)	99	OFF	ON	ON	3

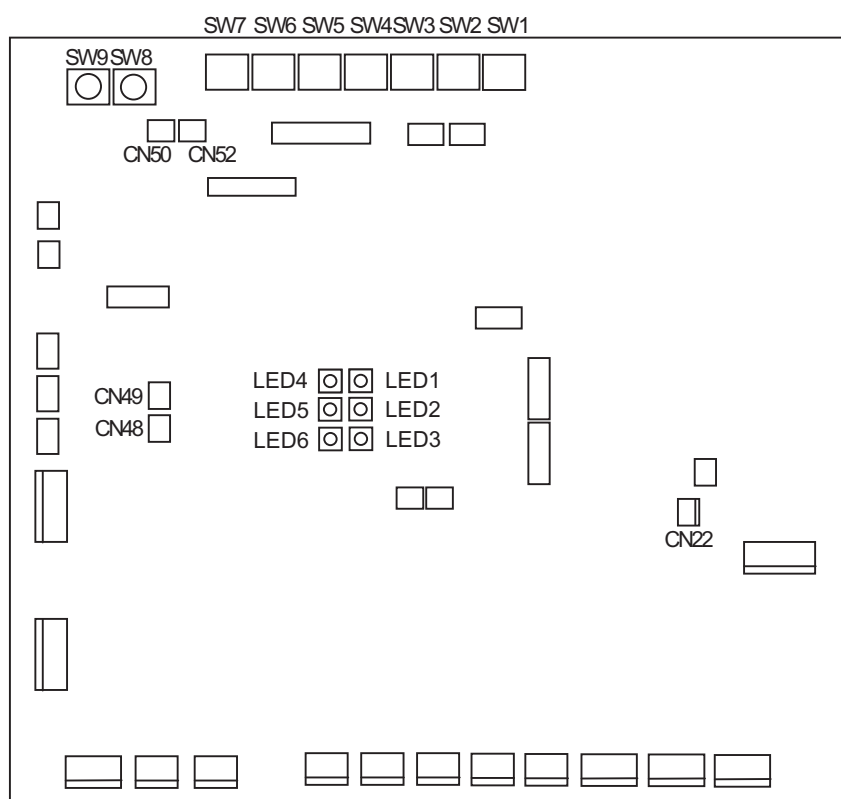
5-4 FUNCTION SETTING

5-4-1 OUTDOOR UNIT

Outdoor unit			
DIP SW	SW 1	1	Test run (Cooling)
		2	Test run (Heating)
		3	Pump down operation
		4	Forced oil recovery operation
	SW 2	1	Silent operation mode
		2	Snow falling protection fan mode
		3	Sequential start shift switch 1
		4	Sequential start shift switch 2
	SW 3	1	Forbidden
		2	Forbidden
		3	Forbidden
		4	Forbidden
	SW 4	1	Forbidden
		2	Forbidden
		3	Forbidden
		4	Forbidden
	SW 5	1	Cooling capacity shift switch 1
		2	Cooling capacity shift switch 2
		3	Heating capacity shift switch 1
		4	Heating capacity shift switch 2
	SW 6	1	Pipe length switch 1
		2	Pipe length switch 2
		3	Forbidden
		4	Forbidden
	SW 7	1	Forbidden(System type switch 1)
		2	Forbidden(System type switch 2)
		3	Forbidden(Refrigerant type switch)
		4	Forbidden(MODEL CODE switch)
ROTARY SW	SW 8		Refrigerant circuit address 1
	SW 9		Refrigerant circuit address 2

■ SWITCH POSITION

● Outdoor unit control circuit board



5-4-2 SWITCH FUNCTION (OUTDOOR UNIT)

■ DIP SWITCH SETTING

(1) SW1 setting

1-1 Test run (cooling & Heating)

All the indoor units connected to the outdoor unit can be test-operated by DIP switch setting.

SELECTOR SWITCH FOR TEST RUN AND NORMAL OPERATION (◆ . . . Factory setting)

	SW1-1	SW1-2	Test Run	Remarks
◆	OFF	OFF	Normal operation	
	ON	OFF	Cooling test run	(OFF-ON) and (operated continuously more than 1 min. with ON state)
	OFF	ON	Heating test run	Same as above
	ON	ON	Normal operation	

(when release ON → OFF)

1-2 Pump down operation

Pump down operation is set with SW1- 3

PUMP DOWN OPERATION (◆ . . . Factory setting)

	SW1-3	Pump down operation	Remarks
◆	OFF	Release	
	ON	Operate	(OFF-ON) and (operated continuously more than 40 sec. with ON state)

1-3 Forced oil recovery operation

Forced oil recovery operation is set with SW1- 4

FORCED OIL RECOVERY OPERATION (◆ . . . Factory setting)

	SW1-4	Forced oil recovery operation	Remarks
◆	OFF	Release	
	ON	Operate	(OFF-ON) and (operated continuously more than 10 sec. with ON state)

(2) SW2 setting

2-1 Silent operation mode

For a reduction of noise level at night, the operating mode of the outdoor unit can be switched.
(In the cooling mode only.)

SILENT OPERATION MODE (◆ . . . Factory setting)

	SW 2-1	Silent operation mode
◆	OFF	Release
	ON	Operate

2-2 Snow falling protection fan mode

When snowing , to prevent the unit from being covered with snow, the outdoor fan is periodically operated by this switch even when the compressor is stopped.

SNOW FALLING PROTECTION FAN MODE (◆ . . . Factory setting)

	SW2-2	Snow falling protection fan mode
◆	OFF	Release
	ON	Operate

2-3 Sequential start shift

The start-up timing of outdoor unit can be set up so that it can delay several seconds.

(◆ ■ ■ ■ Factory setting)

SW2-3	SW2-4	Sequential start shift timing
◆ OFF	OFF	Normal
OFF	ON	2 sec. delay
ON	OFF	4 sec. delay
ON	ON	6 sec. delay

*This feature is useful when multiple number of outdoor units are installed and turned on at the same time to limit the start up current.

(3) SW3 setting

Dip SW3-1,3-2,3-3,3-4 setting forbidden.

SW3-1	OFF
SW3-2	OFF
SW3-3	OFF
SW3-4	OFF

(4) SW4 setting

Dip SW4-1,4-2,4-3,4-4 setting forbidden.

SW4-1	OFF
SW4-2	OFF
SW4-3	OFF
SW4-4	OFF

(5) SW5 setting

5-1 Cooling capacity shift switch

This setting makes it possible to vary the outflow air temperature within the range of about 2 degrees, by which 15% capacity increase and energy saving operation are realized.

(◆ ■ ■ ■ Factory setting)

SW5-1	SW5-2	CAPACITY SHIFT
◆ OFF	OFF	Normal mode
OFF	ON	Save energy mode
ON	OFF	High power mode 1
ON	ON	High power mode 2

5-2 Heating capacity shift switch

(◆ ■ ■ ■ Factory setting)

SW5-3	SW5-4	CAPACITY SHIFT
◆ OFF	OFF	Normal mode
OFF	ON	Save energy mode
ON	OFF	High power mode 1
ON	ON	High power mode 2

(6) SW6 setting

6-1 Pipe length switch

SW setting can provide the operation to supplement the loss created by the pipe length.

(◆ . . . Factory setting)

SW 6-1	SW 6-2	PIPE LENGTH	Recommended Range of L (m)
◆ OFF	OFF	Standard	$40 < L \leq 60$
OFF	ON	Pipe length S	$0 < L \leq 40$
ON	OFF	Pipe length M	$60 < L \leq 80$
ON	ON	Pipe length L	$80 < L \leq 100$

6-2 Dip SW 6-3 & 6-4 setting forbidden.

(7) SW7 setting (Never change at the site)

7-1 System type switch

The outdoor unit model can be selected by setting DIP switches 7-2 and 7-1 on the PCB.
(Heat pump / Cooling only / Heat recovery)

OUTDOOR UNIT TYPE SELECTION (◆ . . . Factory setting)

SW7-1	SW7-2	Type selection
OFF	OFF	Heat pump
ON	OFF	Cooling only
OFF	ON	Forbidden
ON	ON	Forbidden

◆ Heat pump type

◆ Cooling only type

7-2 Refrigerant type switch

REFRIGERANT TYPE SWITCH

SW7-3	REFRIGERANT TYPE
OFF	R22
ON	R407C

◆ R22 model

◆ R407C model

* AO90TPAMF must be OFF

7-3 Model code switch

MODEL CODE SWITCH

SW7-4	MODEL CODE
OFF	90
ON	72

◆ 90 model

◆ 72 model

※ SW7 has been set up at the factory. There is no need to set it up at the installation.

■ ROTARY SWITCH SETTING

SW8,9 setting

Rotary SW	Description	Remarks
8	Refrigerant circuit address SW 1	Refrigerant circuit address (the first digit)
9	Refrigerant circuit address SW 2	Refrigerant circuit address (the second digit)

■ EXTERNAL INPUT AND OUTPUT

Connector	Input	Output
CN48	_____	Operation Display (DC12V)
CN49	_____	Error Display (DC12V)
CN50	OFF: Remote controller priority ON: External Input priority	_____
CN52	Cool or Heat Select switch	_____

5-4-3 INDOOR UNIT

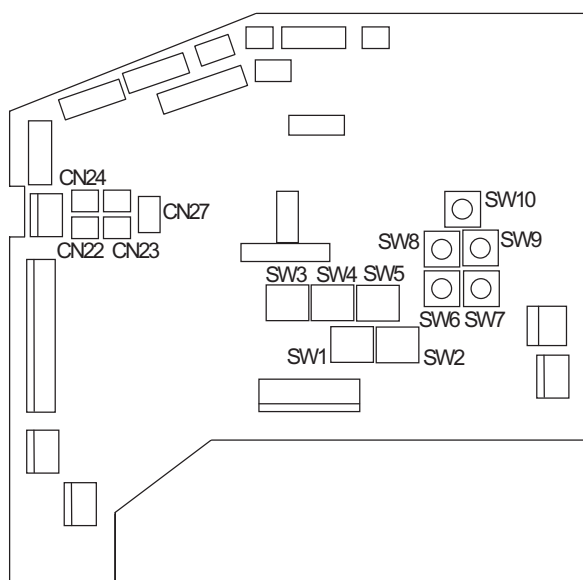
Indoor unit			
DIP SW	SW 1	1	Ceiling height setting 1
		2	Ceiling height setting 2
		3	Room temp correct coefficient of heating 1
		4	Room temp correct coefficient of heating 2
	SW 2	1	Room temp correct coefficient of cooling
		2	Forbidden
		3	Filter check validity / invalidity
		4	Auto restart validity / invalidity
	SW 3	1	Forbidden(Indoor unit fan speed switch 1)
		2	Forbidden(Indoor unit fan speed switch 2)
		3	Forbidden(Indoor unit fan speed switch 3)
		4	External input select edge / pulse
	SW 4	1	Forbidden(Indoor unit model code)
		2	Forbidden(Indoor unit model code)
		3	Forbidden(Indoor unit model code)
		4	Forbidden(Indoor unit model code)
	SW 5	1	Wireless remote controller custom code switch 1
		2	Wireless remote controller custom code switch 2
		3	Forbidden
		4	Draft prevention setting switch
Rotary SW	SW 6		Indoor unit address switch
	SW 7		Forbidden
	SW 8		Refrigerant circuit address 1
	SW 9		Refrigerant circuit address 2
	SW 10		Remote controller address

Refrigerant

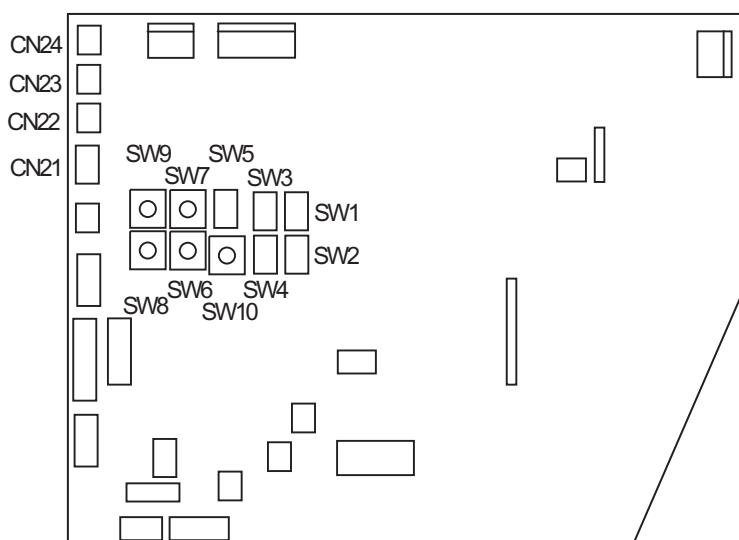
■ SWITCH POSITION

• Indoor unit control circuit board

For AB / AU / AR type indoor unit



For AS / AW types indoor unit



5-4-4 SWITCH FUNCTION (INDOOR UNIT)

■ DIP SWITCH SETTING

(1) SW1 setting

1-1 Ceiling height setting

CEILING HEIGHT SETTING (CASSETTE TYPE)

	SW1-1	SW1-2	suitable ceiling height (m)
◆ Standard	OFF	OFF	2.5~3
High ceiling 1	ON	OFF	3~3.5
High ceiling 2	OFF	ON	more than 3.5
Low ceiling	ON	ON	less than 2.5

This function is validity only cassette type

1-2 Room temperature correct coefficient of heating.

Decide the heating temperature correct coefficient value of heating.

HEATING TEMPERATURE CORRECTION (◆ ■ ■ Factory setting)

SW1-3	SW1-4	Coefficient value
◆ OFF	OFF	+ 4 deg
ON	OFF	+ 8 deg
OFF	ON	0 deg
ON	ON	+ 12 deg

(2) SW2 setting

2-1 Room temperature correct coefficient of cooling.

Decide the cooling temperature correct coefficient value of cooling.

COOLING TEMPERATURE CORRECTION (◆ ■ ■ Factory setting)

SW2-1	Coefficient value
◆ OFF	0 deg
ON	+ 2 deg

2-2 Dip SW 2-2 setting forbidden

(◆ ■ ■ Factory setting)

◆ SW2-2	OFF
---------	-----

2-3 Filter check validity / invalidity.

Filter check is set with Dip SW 2-3

FILTER CLEANING FUNCTION (◆ ■ ■ Factory setting)

SW2-3	Filter check
◆ OFF	Invalidity
ON	Validity

2-4 Auto restart validity / invalidity.

Control the auto restart function by turning this switch ON/OFF.

AUTO RESTART SETTING (◆ ■ ■ ■ Factory setting)

SW2-4	Auto restart
OFF	Invalidity
ON	Validity

SW3 setting (Never change at the site)

3-1 Indoor unit fan speed switch

This switch can select fan speed corresponding to each model.

* Large ceiling type

	AB30	AB36	AB45	AB54
SW3-1	OFF	OFF	OFF	OFF
SW3-2	OFF	ON	OFF	ON
SW3-3	OFF	OFF	ON	ON

* Cassette type

	AU54	AU45	AU36	AU30	AU25	AU20
SW3-1	OFF	ON	OFF	OFF	OFF	ON
SW3-2	OFF	OFF	ON	OFF	ON	ON
SW3-3	OFF	OFF	OFF	ON	ON	ON

* Wall mounted type

	AS18	AS24	AS30
SW3-1	OFF	OFF	ON
SW3-2	OFF	ON	ON
SW3-3	ON	ON	ON

* Ceiling wall type

	AW7	AW9	AW12	AW14	AW18	AW24	AW30
SW3-1	OFF	ON	OFF	ON	OFF	OFF	ON
SW3-2	OFF	OFF	ON	ON	OFF	ON	ON
SW3-3	OFF	OFF	OFF	OFF	ON	ON	ON

* Other model (Default)

SW3-1	OFF
SW3-2	OFF
SW3-3	OFF

3-2 DIP SW 3-4 setting

This switch is used to select the format of external input command as shown in the table below.

(◆ ■ ■ ■ Factory setting)

SW3-4	External input select
OFF	Edge
ON	Pulse

(3) SW4 setting (Never change at the site)

Indoor unit model code.

This switch for changing the model code information of indoor unit PCB.

INDOOR UNIT MODEL CODE

Capacity Type	60	54	45	36	30	25(24)	20	18	14	12	9	7
SW4-1	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
SW4-2	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
SW4-3	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
SW4-4	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

(4) SW5 setting

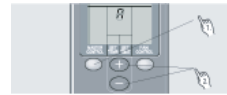
5-1 Wireless remote controller custom code switch

Decid the custom code and restrict the type of infrared control signal, in order to prevent mixing of multiple indoor unit signals.

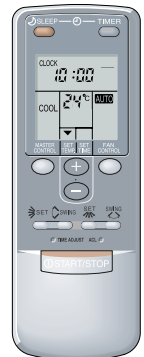
Remote controller custom code switch

(◆ . . . Factory setting)

SW5-1	SW5-2	Custom code
◆ OFF	OFF	Type A
ON	OFF	Type B
OFF	ON	Type C
ON	ON	Type D



1. Press the MASTER CONTROL button for more than five seconds to start the code change.
2. Press the (+) or (-) button to select the desired code. → A → B → C → D
3. Press the MASTER CONTROL button again to end the code change.



5-2 DIP SW 5-3 setting forbidden

(◆ . . . Factory setting)

◆ SW5-3	OFF
---------	-----

5-3 Draft prevention setting switch (only for cassette type)

Set the flap angle of cassette type unit.

Draft prevention switch

(◆ . . . Factory setting)

SW5-4	flap angle
◆ OFF	Normal position
ON	Draft prevention position

Normal position	Draft prevention position
Flap angle 35° - 65°	Flap angle 25° - 65°

An air flow direction, by moving the flap angle horizontally, It can prevent that a cold wind directly hits.

*If air conditioning cooling operation is performed in long time and a humid place, there is a possibility that waterdrop may hang down from a blow-off mouth.

■ ROTARY SWITCH SETTING

1.SW6 setting

Indoor unit address switch

Sets the indoor unit addresses.

INDOOR UNIT ADDRESS SWITCH (Factory setting : 0)

Rotary SW	Description	Remarks
6	Indoor unit address SW	Indoor unit address (0~15)

2.SW7 setting forbidden

Rotary SW7	0
------------	---

3.SW8,9 setting

Refrigerant circuit address switch

Sets the refrigerant circuit.

REFRIGERANT CIRCUIT ADDRESS SWITCH (Factory setting SW 8: 0 SW 9: 0)

Rotary SW	Description	Remarks
8	Refrigerant circuit address SW 1	Refrigerant circuit address (the first digit)
9	Refrigerant circuit address SW 2	Refrigerant circuit address (the second digit)

4.SW10 setting

Remote controller address switch

When the indoor unit is wired by remote controller group, to identify the indoor unit in the remote controller group, the number (remote controller address) in the remote controller group is set. Set the remote controller address in the 0.1.2,~,15 order (Blank is not allowed)

REMOTE CONTROLLER ADDRESS SWITCH (Factory setting : 0)

Rotary SW	Description	Remarks
10	Remote controller address SW	Remote controller address

■ EXTERNAL INPUT AND OUTPUT

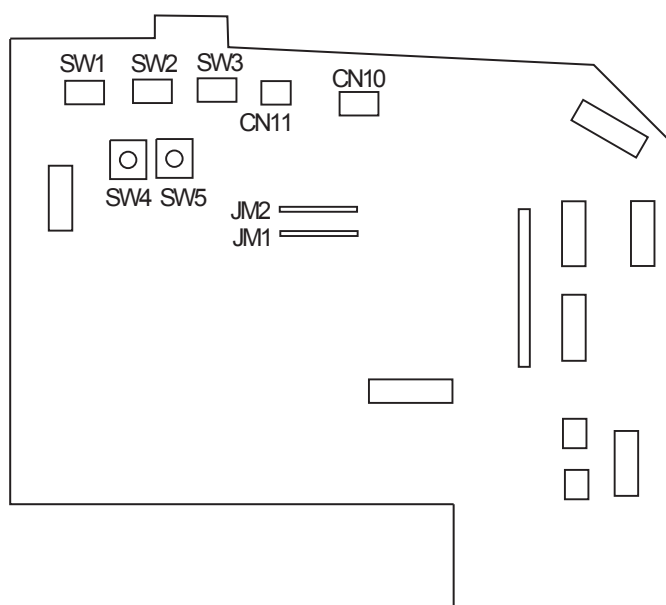
Connector	Indoor unit type	Input	Output	Remarks
CN21	Wall mounted / Ceiling wall types	CONTROL INPUT (OPERATION / STOP)	—	See 5-5-1 for details
CN27	Other types			
CN22	All types	—	OPERATION DISPLAY (DC12V)	
CN23			ERROR DISPLAY (DC12V)	
CN24			INDOOR UNIT FAN STATUS DISPLY(DC12V)	

5-4-5 INDOOR UNIT (COMPACT WALL MOUNTED TYPE)

Indoor unit			
DIP SW	SW 1	1	Forbidden(Indoor unit fan speed switch 1)
		2	Forbidden(Indoor unit fan speed switch 2)
		3	Forbidden(Indoor unit model code)
		4	Forbidden(Indoor unit model code)
	SW 2	1	Indoor unit address switch
		2	Indoor unit address switch
		3	Auto restart validity / invalidity
		4	Forbidden
	SW 3	1	Refrigerant circuit address switch
		2	Refrigerant circuit address switch
		3	Refrigerant circuit address switch
		4	Forbidden
Rotary SW	SW 4		Indoor unit address switch
	SW 5		Refrigerant circuit address switch
Jumper wire	JM 1		Wireless remote controller custom code
	JM 2		Wireless remote controller custom code

■ SWITCH POSITION

- Compact wall mounted type indoor unit control circuit board



5-4-6 SWITCH FUNCTION (COMPACT WALL MOUNTED TYPE)

■ DIP SWITCH SETTING

(1) SW1 setting (Never change at the site)

1-1 Fan speed setting switch

The fan speed corresponding to each model is set with the switch.

	AS7	AS9	AS12	AS14
SW1-1	OFF	ON	OFF	ON
SW1-2	OFF	OFF	ON	ON

1-2 Model code setting switch

The model code information corresponding to each model is provided with the switch.

	AS7	AS9	AS12	AS14
SW1-3	OFF	ON	OFF	ON
SW1-4	OFF	OFF	ON	ON

(2) SW2 setting

2-1 Dip SW 2-1,2-2 setting forbidden

(◆ ■ ■ ■ Factory setting)

◆	SW2-1	OFF
◆	SW2-2	OFF

2-2 Auto restart validity / invalidity.

The auto restart function becomes validity by changing the switch position from OFF to ON.

AUTO RESTART SETTING (◆ ■ ■ ■ Factory setting)

◆	SW2-3	Auto restart
	OFF	Invalidity
	ON	Validity

2-3 DIP SW 2-4 setting forbidden.

(◆ ■ ■ ■ Factory setting)

◆	SW2-4	OFF
---	-------	-----

(3) SW3 setting

3-1 Refrigerant circuit address switch

By combined with Rotary SW5 , the refrigerant circuit address (0-99) can be set.
Please see "5-3-3 ADDRESS SETTING" for refrigerant address conversion table.

(◆ ■ ■ ■ Factory setting)

Refrigerant circuit address	SW3-1	SW3-2	SW3-3	Remarks
◆ 0 - 15	OFF	OFF	OFF	About Rotary SW5, see next page
16 - 31	ON	OFF	OFF	
32 - 47	OFF	ON	OFF	
48 - 63	ON	ON	OFF	
64 - 79	OFF	OFF	ON	
80 - 95	ON	OFF	ON	
96 - 99	OFF	ON	ON	

3-2 DIP SW 3-4 setting forbidden.

(◆ ■ ■ ■ Factory setting)

◆ SW3-4	OFF
---------	-----

■ ROTARY SWITCH SETTING

1.SW4 setting

Indoor unit address switch

Set the indoor unit addresses.

INDOOR UNIT ADDRESS SWITCH (Factory setting : 0)

Rotary SW	Description	Remarks
4	Indoor unit address SW	Indoor unit address (0~15)

2.SW5 setting

Refrigerant circuit address switch

By combined with DIP switch 3-1,3-2 and 3-3,the refrigerant circuit address(0 - 99)can be set. Please see "5-3-3 ADDRESS SETTING" for the refrigerant address conversion table.

REFRIGERANT CIRCUIT ADDRESS SWITCH (Factory setting SW 5: 0)

Rotary SW	Description	Remarks
5	Refrigerant circuit address SW	About DIP switch 3-1,3-2 and 3-3 see previous page

■ EXTERNAL INPUT AND OUTPUT

Connector	Input	Output	Remarks
CN10	CONTROL INPUT (OPERATION / STOP)	—	See 5-5-2 for details
CN11	—	OPERATION DISPLAY (DC12V)	

■ JUMPER WIRE

Wireless remote controller custom code switch

Limit the type of infrared control signal which the indoor unit is controlled,in order to prevent misoperation of the unit due to the signal from other wireless remote controller.

Remote controller custom code switch

(◆ ■ ■ ■ Factory setting)

	JM 1	JM 2	Custom code
◆	Connect	Connect	Type A
	Disconnect	Connect	Type B
	Connect	Disconnect	Type C
	Disconnect	Disconnect	Type D

Handy Type



1. Press the MASTER CONTROL button for more than five seconds to start the code change.
2. Press the (+) or (-) button to select the desired code.
→ A → B → C → D
3. Press the MASTER CONTROL button again to end the code change.

Remote controller



5-4-7 WIRED, SIMPLE REMOTE CONTROLLER

Wired remote controller			
DIP SW	SW 1	1	Remote controller switch 1
		2	Indoor unit connection (One / multiple)
		3	Forbidden
		4	Remote controller switch 2
		5	Forbidden
		6	Forbidden
	SW 2	1	Cooling / Heat pump
		2	Auto change over validity / invalidity
		3	Back ground light validity / invalidity
		4	Maintenance switch
		5	Forbidden
		6	Battery backup switch

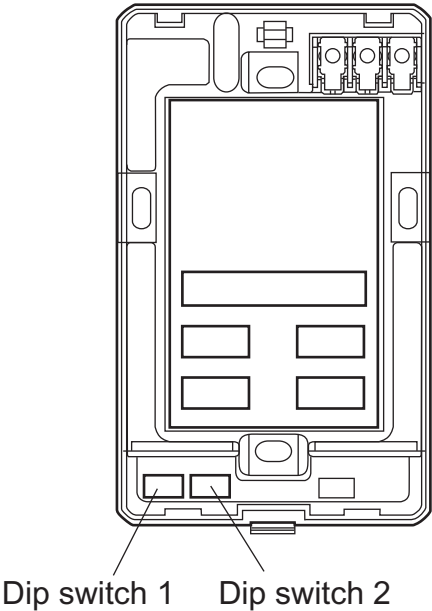
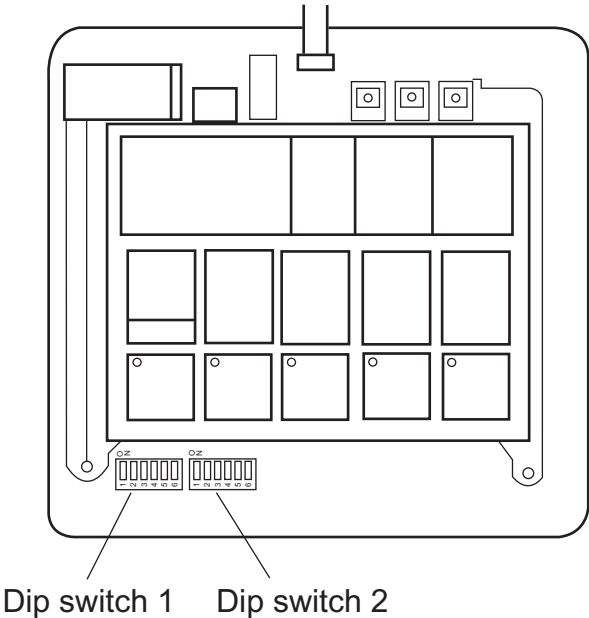
* Simple remote controller only

* Wired remote controller only

SWITCH POSITION

Wired remote controller

Simple remote controller



5-4-8 DIP-SW FUNCTION (WIRED,SIMPLE REMOTE CONTROLLER)

■ DIP SWITCH SETTING

(1) SW1 setting

1-1 Remote controller switch 1

This is used to set up the terminated resistance of the wired remote controller.

When 1 remote controller is connected to remote controller group, set this ON all the time.

When 2 remote controllers are connected to remote controller group, set the Master one OFF, and set the Slave one ON.

REMOTE CONTROLLER SWITCH 1 (◆ ▪ ▪ ▪ Factory setting)

SW1-1	Terminator setting
OFF	Not terminated
ON	Terminated

1-2 Number of indoor unit connection (One/Multiple)

This is switched according to the number of connected indoor units.

NUMBER OF INDOOR UNIT CONNECTION (◆ ▪ ▪ ▪ Factory setting)

SW1-2	Number of indoor unit
OFF	One unit connection
ON	Multiple unit connection

1-3 DIP SW1-3 setting forbidden

DIP SW 1-3	OFF
------------	-----

1-4 Remote controller switch 2

It is used to set up Master/Slave setting of wired remote control.

When 1 remote controller is connected to remote controller group, always set the Master OFF.

When 2 remote controllers are connected to remote controller group, set one side to Master, and the other side to Slave.

REMOTE CONTROLLER SWITCH 2 (◆ ▪ ▪ ▪ Factory setting)

SW1-4	Setting for Master/Slave
OFF	Master
ON	Slave

1-5 DIP SW 1-5,1-6 setting forbidden.

DIP SW 1-5	OFF
DIP SW 1-6	OFF

(2) SW2 setting

2-1 Cooling only / heat pump

Switching cooling only / heat pump.

COOLING ONLY / HEAT PUMP SWITCH

SW2-1	Operation system
◆ OFF	Heat pump/Heat recovery
ON	Cooling only

2-2 Auto change over validity/invalidity

Selecting auto change over validity/invalidity.

Never turn it ON in case of heat pump.

AUTO CHANGE OVER

SW2-2	Auto change over
◆ OFF	Invalidity
ON	Validity

2-3 Back ground light validity (simple remote controller only)

Selecting to use internal background light validity / invalidity.

The background light can turn on during indoor unit operation.

DIP SW 2-3	Background light
◆ OFF	Invalidity
ON	Validity

Never turn it ON in case of wired remote controller.

2-4 Maintenance switch

Used to indicate of the refrigerant system, indoor unit address.

MAINTENANCE SWITCH

SW2-4	Mode
◆ OFF	Normal mode
ON	Maintenance mode

2-5 DIP SW 2-5 setting forbidden.

DIP SW 2-5	OFF
------------	-----

2-6 Battery backup switch (wired remote controller only)

When installing, turn the SW2-6 ON.

BATTERY BACKUP SWITCH

DIP SW2-6	Battery backup
◆ OFF	Invalidity
ON	Validity

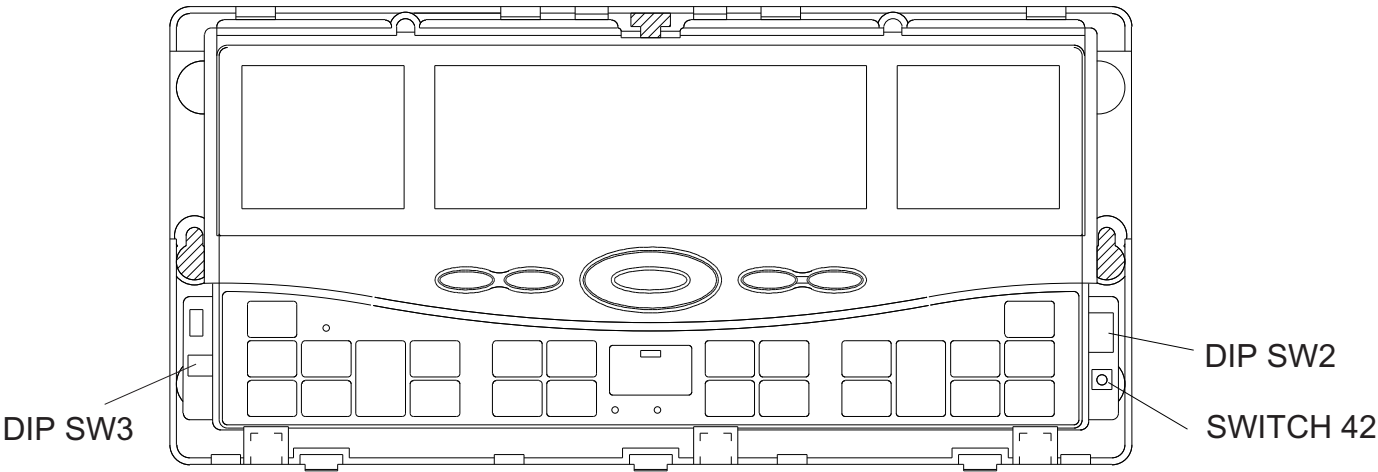
Never turn it ON in case of simple remote controller.

5-4-9 CENTRAL REMOTE CONTROLLER

Central remote controller			
DIP-SW	SW 2	1	External Input validity / invalidity
		2	External Input select Edge / pulse
		3	Filter sign indication ON / OFF
		4	°C / °F switch
		5	RC operation prohibit function validity / invalidity
		6	Forbidden
		7	Forbidden
		8	SRAM battery ON / OFF
	SW 3	1	Forbidden
		2	Forbidden
		3	Forbidden
		4	Forbidden
	SW 42		Initial setting

SWITCH POSITION

- Central remote controller



5-4-10 DIP-SW FUNCTION (CENTRAL REMOTE CONTROLLER)

■ DIP SWITCH SETTING

(1) DIP-SW2 SETTING

1-1 DIP SW2-1 setting.

For validity / invalidity the external input function.

(◆ . . . Factory setting)

◆	SW2-1	External input function
	OFF	Invalidity
	ON	Validity

1-2 DIP SW2-2 setting.

Select the external input command function.

(◆ . . . Factory setting)

◆	SW2-2	External input select
	OFF	Edge
	ON	Pulse

(Refer to 5-4-4 and 5-4-6 external input & output)

1-3 DIP SW2-3 setting.

Filter check sign indication or not when filter check signal come from indoor unit.

(◆ . . . Factory setting)

◆	SW2-3	Filter check sign indication
	OFF	Non-Display
	ON	Display

1-4 DIP SW2-4 setting.

°C /°F switch

Temperature display is centigrade(°C) / Fahrenheit(°F)

(◆ . . . Factory setting)

◆	SW2-4	°C /°F
	OFF	°C
	ON	°F

1-5 DIP SW2-5 setting

For validity / invalidity the wired ,simple and wireless remote controller operation prohibit function.

(◆ . . . Factory setting)

◆	SW2-5	RC operation prohibit function
	OFF	Validity
	ON	Invalidity

1-6 DIP SW2-6 2-7 setting forbidden.

DIP SW 2-6	OFF
DIP SW 2-7	OFF

1-7 DIP SW2-8 setting.

SRAM Battery ON / OFF

When installing the central remote controller, this switch must be set to ON.
(factory setting : OFF)

(◆ ■ ■ ■ Factory setting)

SW2-8	SRAM Battery
OFF	OFF
ON	ON

At the time of shipment, the battery is turned off to avoid electricity consumption.
Be sure to set this switch to ON.

1-8 SW42 Initial setting button

This switch is used when initializing the central remote controller.

5-5.EXTERNAL INPUT & OUTPUT

5-5-1 INDOOR UNIT

(1) Control input (Operation/Stop)

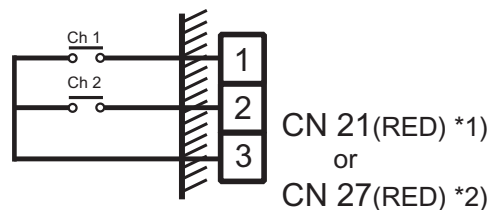
Indoor unit can be operated or stopped by using indoor unit PCB
CN 21 (Wall mounted type / ceiling wall type) or CN27 (other types)

① Input select

Dip SW3-4	Input select
OFF	Edge
ON	Pulse

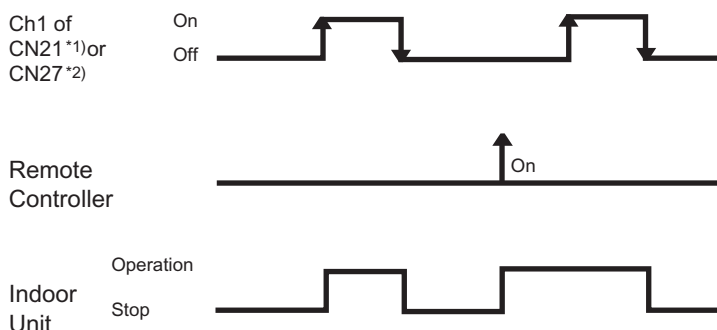
② In the case of "Edge" input

CONNECTOR	INPUT SIGNAL	COMMAND
Ch1 of CN21 ^{*1)} (RED) or CN27 ^{*2)} (RED)	OFF → ON	Operation
	ON → OFF	Stop



*1) For Wall mounted type / Ceiling wall type.

*2) For other types

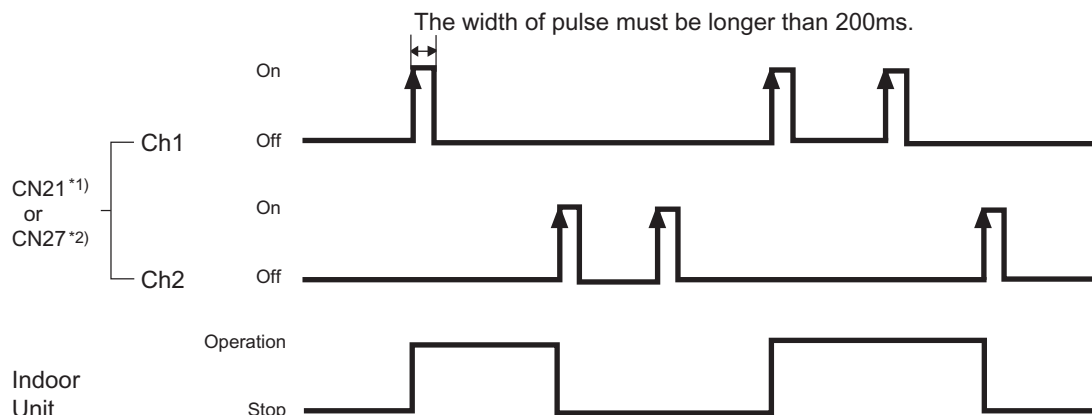


NOTE

1. The last command has priority.
2. The indoor units within the same remote controller group operates in the same mode.
3. The wire connection shall be separate from the power cable line.

③ In the case of "pulse" input

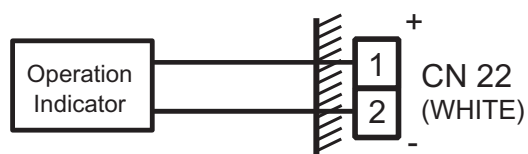
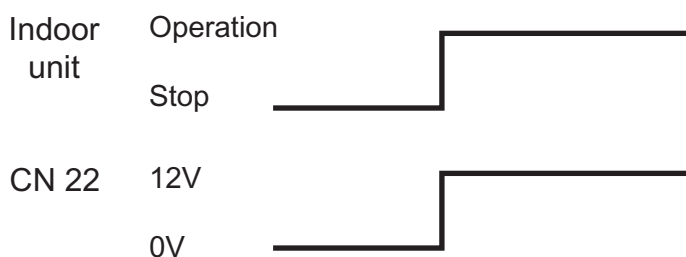
CONNECTOR	INPUT SIGNAL	COMMAND
CN21 ^{*1)} (RED) or CN27 ^{*2)} (RED)	Ch1	OFF → ON
	Ch2	OFF → ON



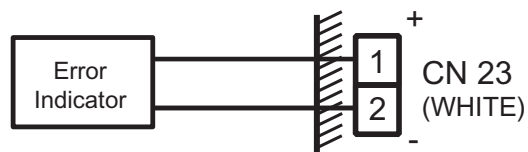
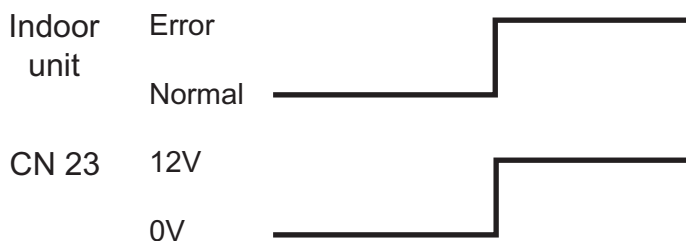
(2) Output

CONNECTOR	OUT VOLTAGE	STATUS
CN22	12V	Operation
	0V	Stop
CN23	12V	Error
	0V	Normal
CN24	12V	Fan run
	0V	Fan stop

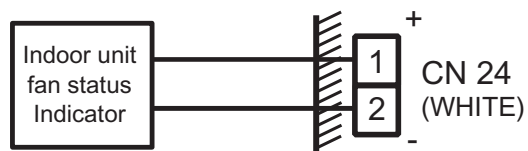
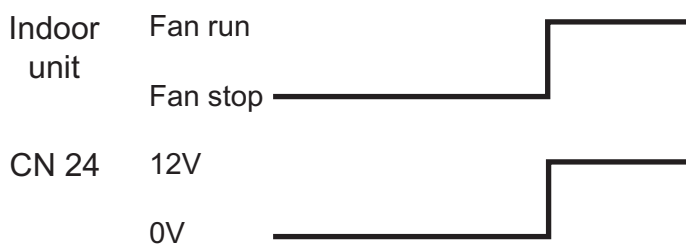
① Operation display



② Error display



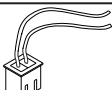
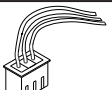
③ Inter locking output with indoor unit fan



EX) Used for inter lock energize for exhaust fan.

(3) Parts

Following cord (service parts) is required. Please use the parts number shown below to order the cord from your sales representative.

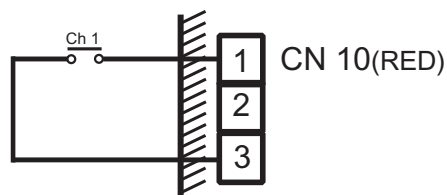
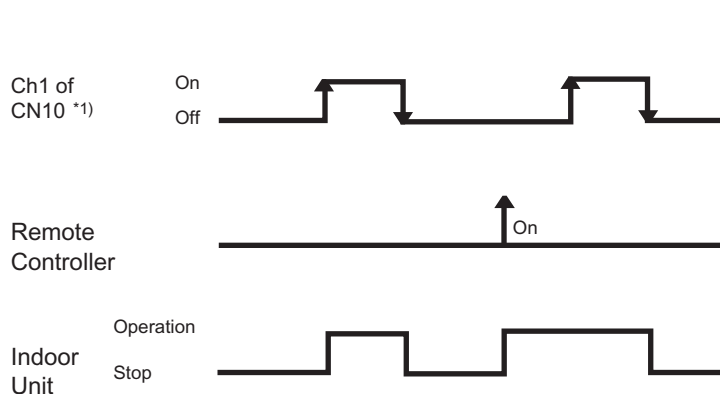
Usage	Name and shapes	Q'ty	Parts No.
For output port	EXTERNAL INPUT WIRE 	1	9368778002
For control input port	EXTERNAL INPUT WIRE 	1	9368779009

5-5-2 INDOOR UNIT(COMPACT WALL MOUNTED)

(1) Control input (Operation/Stop)

Indoor unit can be operated or stopped by using the connector CN10(RED) on indoor unit PCB.

CONNECTOR	INPUT SIGNAL	COMMAND
CN10 (RED)	OFF → ON	Operation
	ON → OFF	Stop



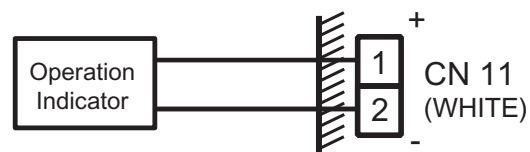
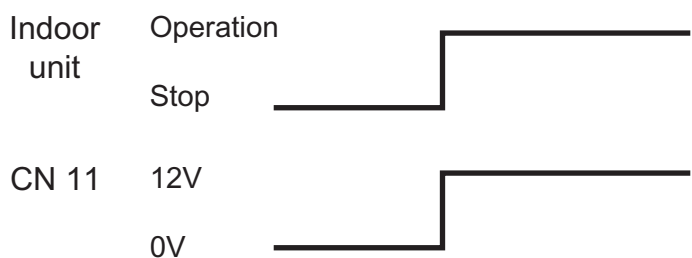
NOTE

1. The last command has priority.
2. The wire connection shall be separate from the power cable line.

(2) Output

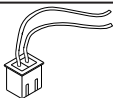
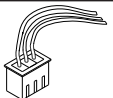
CONNECTOR	OUT VOLTAGE	STATUS
CN11 (WHITE)	12V	Operation
	0V	Stop

① Operation display



(3) Parts

Following cord (service parts) is required. Please use the parts number shown below to order the cord from your sales representative.

Usage	Name and shapes	Q'ty	Parts No.
For output port	EXTERNAL INPUT WIRE 	1	9368778002
For control input port	EXTERNAL INPUT WIRE 	1	9368779009

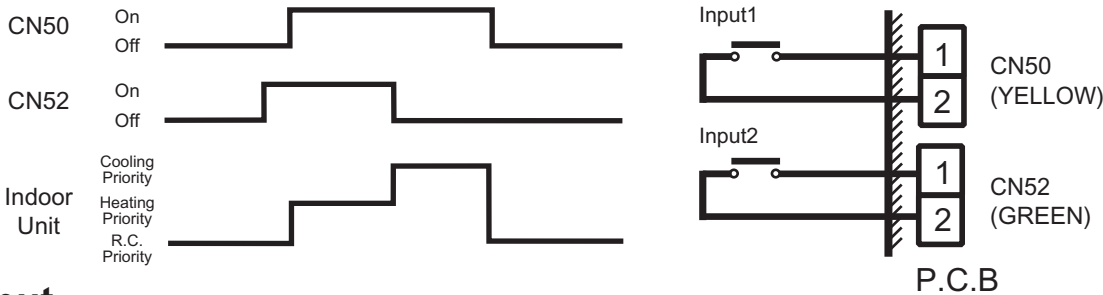
5-5-3 OUTDOOR UNIT

(1) Input

Heat and Cool switch (Heat pump type only)

"Cooling priority" or "Heating priority" can be selected by this input.

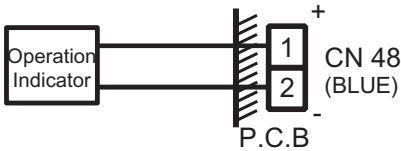
CONNECTOR	INPUT SIGNAL	STATUS	REMARKS
CN50 (YELLOW)	OFF	Remote Controller priority	
	ON	External input priority	
CN52 (GREEN)	OFF	Cooling priority	CN50 need to be "ON".
	ON	Heating priority	



(2) Output

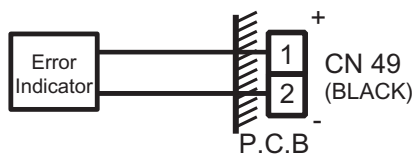
① Operation display

This output indicates the outdoor unit's "Operation" status.

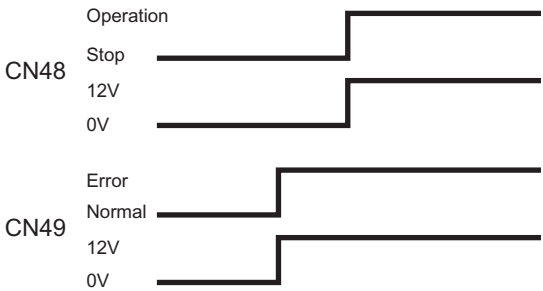


② Error display

This output indicates the outdoor unit and connected indoor unit's "Normal" or "Error" status.

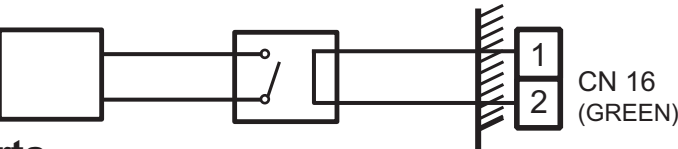


CONNECTOR	OUTPUT VOLTAGE	STATUS
CN48 (BLUE)	0V	Stop
	12V	Operation
CN49 (BLACK)	0V	Normal
	12V	Error



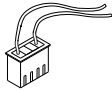
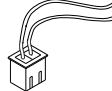
③ Base heater output

Turn ON when the ambient temperature is low in heating mode.(2 °C or less)



(3) Parts

Following cord (service parts) is required. Please use the parts number shown below to order the cord from your sales representative.

Name and shapes	Q'ty	Parts No.
BASE HEATER WIRE 	1	9368776008
EXTERNAL INPUT WIRE 	1	9368777005

5-5-4 CENTRAL REMOTE CONTROLLER / PC CONTROLLER

(1) Input

① Control input (All on / All off)

Indoor units which stored into Central R.C. or PC controller can be operated or stopped by this input.

a) Input select

• Central remote controller

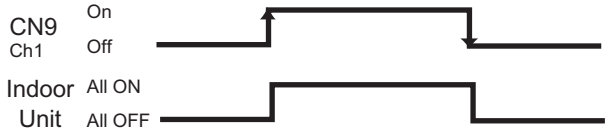
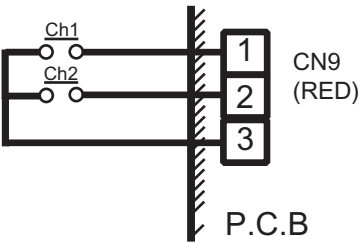
DipSW2-1	DipSW2-2	Input select
ON	OFF	"Edge"
ON	ON	"Pulse"

• PC controller

Input select can be set in environmental set up.
(Please refer to PC Controller's setting manual.)

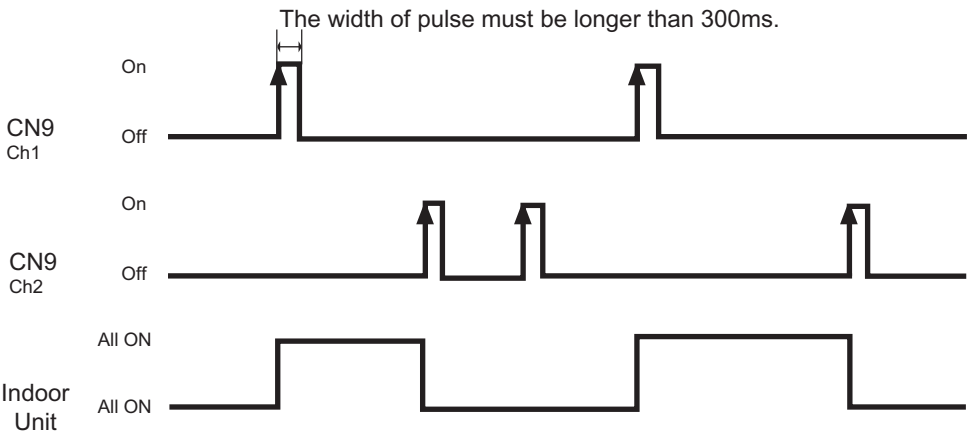
b) In the case of "Edge" input

CONNECTOR		INPUT SIGNAL	COMMAND
CN9 (RED)	Ch1	OFF → ON	All ON
	Ch1	ON → OFF	All OFF



c) In the case of "Pulse" input

CONNECTOR		INPUT SIGNAL	COMMAND
CN9 (RED)	Ch1	OFF → ON	All ON
	Ch2	OFF → ON	All OFF

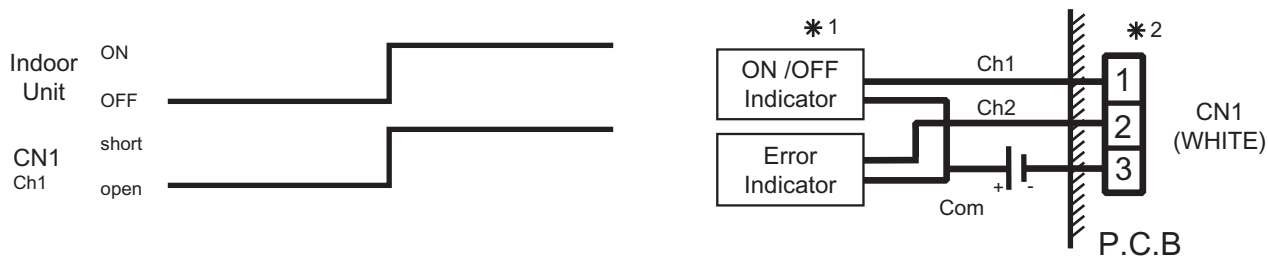


(2) Output

① Operation display

This output indicates the indoor unit's "Operate" or "Stop" status.

CONNECTOR		OUTPUT SIGNAL	STATUS
CN1 (WHITE)	Ch1	open	All of indoor units "OFF"
		short	At least one more indoor units "ON"



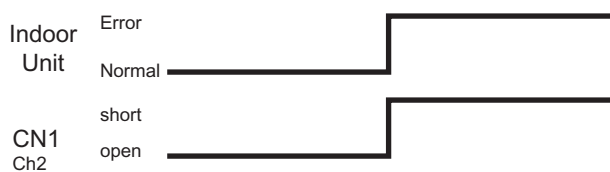
* 1
Necessary to insert a diode
on both ends of relay coil.

* 2
Pin1 - Pin3 } max 15V,70mA
Pin2 - Pin3 }

② Error display

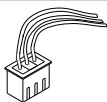
This output indicates the indoor unit's "Normal" or "Error" status.

CONNECTOR		OUTPUT SIGNAL	STATUS
CN1 (WHITE)	Ch2	open	All of indoor units "Normal"
		short	At least one more indoor units "Error"



(3) Parts

Following cord (service parts) is required. Please use the parts number shown below to order the cord from your sales representative.

Name and shapes	Q'ty	Parts No.
EXTERNAL INPUT WIRE 	1	9368779009

5-6 INSTALLATION WORK

5-6-1 INSTALLATION THE OUTDOOR UNIT

■ SELECTING THE MOUNTING POSITION

⚠ WARNING

Install the unit where it will not be tilted by more than 3°.

When installing the outdoor unit it may be exposed to strong wind, fasten it securely.

* If possible, do not install the unit where it will be exposed to direct sunlight.
(If necessary, install a blind that does not interfere with the air flow.)

* Install the outdoor unit in a location where it will avoid getting dirty and getting wet from rain.

* Install the unit where connection to the indoor unit is easy.

* During heating operation, drain water flows from the outdoor unit. Therefore, install the outdoor unit in a place where drain water flow will not be obstructed. (Reverse cycle model only)

* Do not place animals and plants in the path of the warm air.

* Take the air conditioner weight into account and select a place where noise and vibration will be low.

* Select a location so that the warm exhaust air and noise from the outdoor unit do not disturb neighbors.

* Install inlet and outlet ducts in order to maintain stable operation in cold or snowy regions.

* Provide the required space shown in Figure so that the air flow is not blocked.

* The height of the wall (H) on the front side and rear side should be 1,200 mm or less.

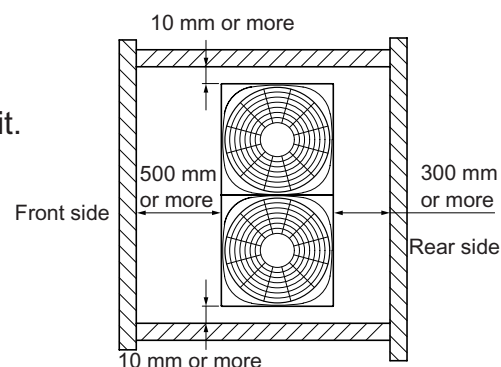
* If the wall height exceeds 1,200 mm, add dimension (h) to the respective space dimensions L1 and L2.

$$H \leq 1,200 : L1 \geq 500, L2 \geq 300$$

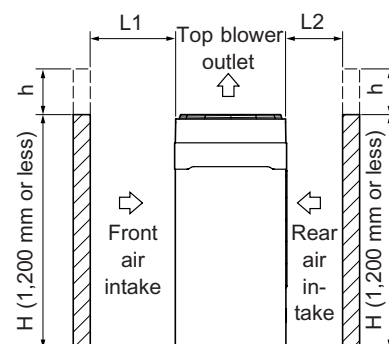
$$H > 1,200 : L1 > 500+h, L2 > 300+h$$

* The dimensions shown above are minimum required limit to prevent a decline in performance. The space provided should be increased in consideration of passageways and room for maintenance.

● Installing the unit individually



* While the gap in the rear side requires at least 300mm for inlet ventilation, but keep an enough spacing by considering the future servicing and constructions from the rear.

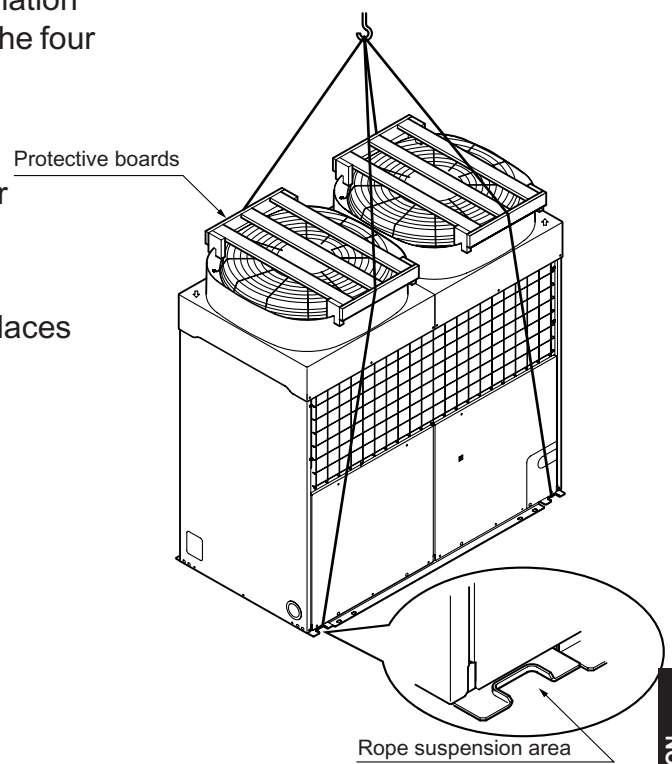


Note: For the installation of multiple units and the duct connections, please refer to the section 3-5 INSTALLATION SPACE.

■ HOISTING METHOD

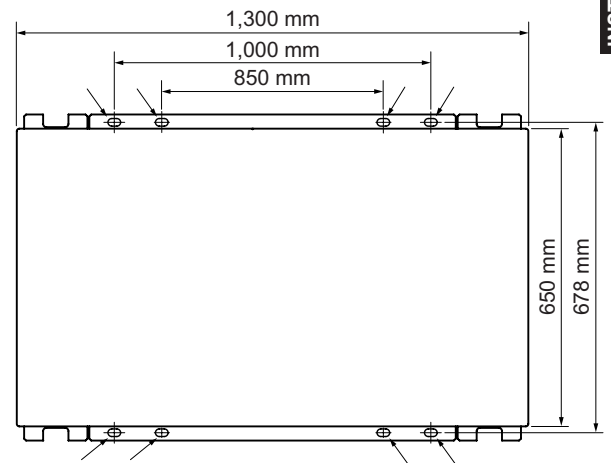
	Weight
Outdoor unit	approx.300kg

- * If suspending the unit and conveying it to its installation location, place the ropes under the bottom, using the four cutouts places on the front and rear provided for suspending it.
- * Use rope made of strong material enough to bear the unit's weight.
- * Be sure to suspend the unit with ropes from 4 places and be careful not to subject it to impacts.
- * Place protective boards on the unit so the rope doesn't make contact with the bell mouth.
- * Use 2 ropes which are 7 m in length or longer



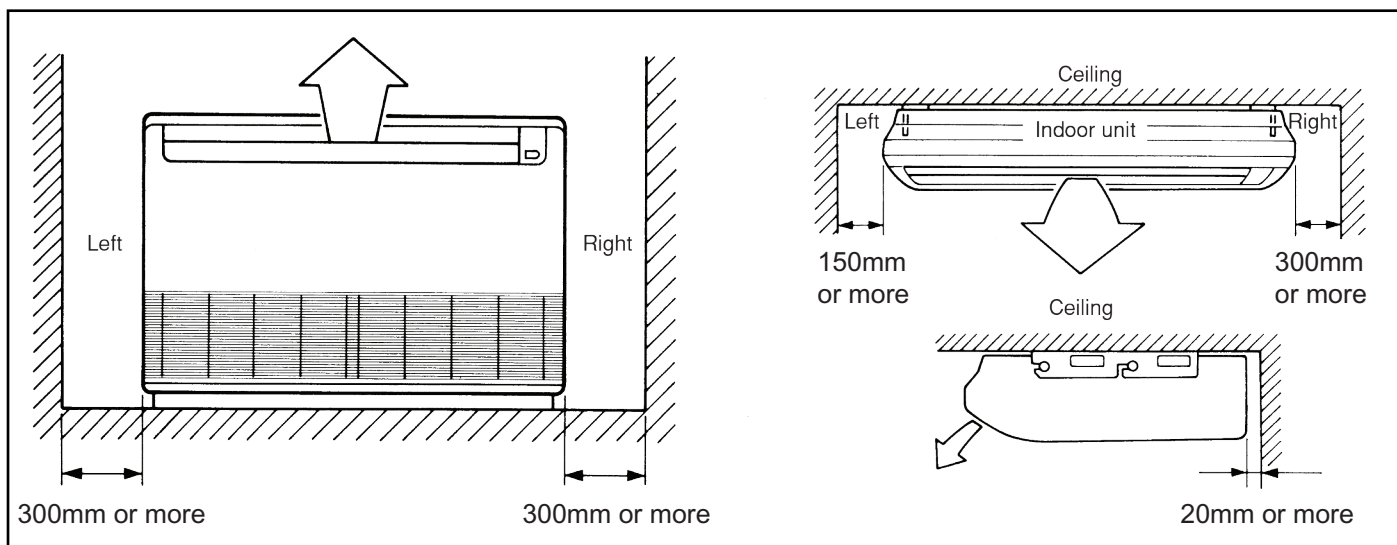
■ ANCHOR BOLT POSITIONS

- * The distance between the left and right anchor bolts should be at least 850 mm.
- * Set the unit on a strong stand, such as concrete blocks to minimize shock and vibration.
- * Do not set the unit directly on the ground because it will cause problems.
- * When the outdoor unit will be exposed to strong wind, fasten it strongly with anchor bolts.

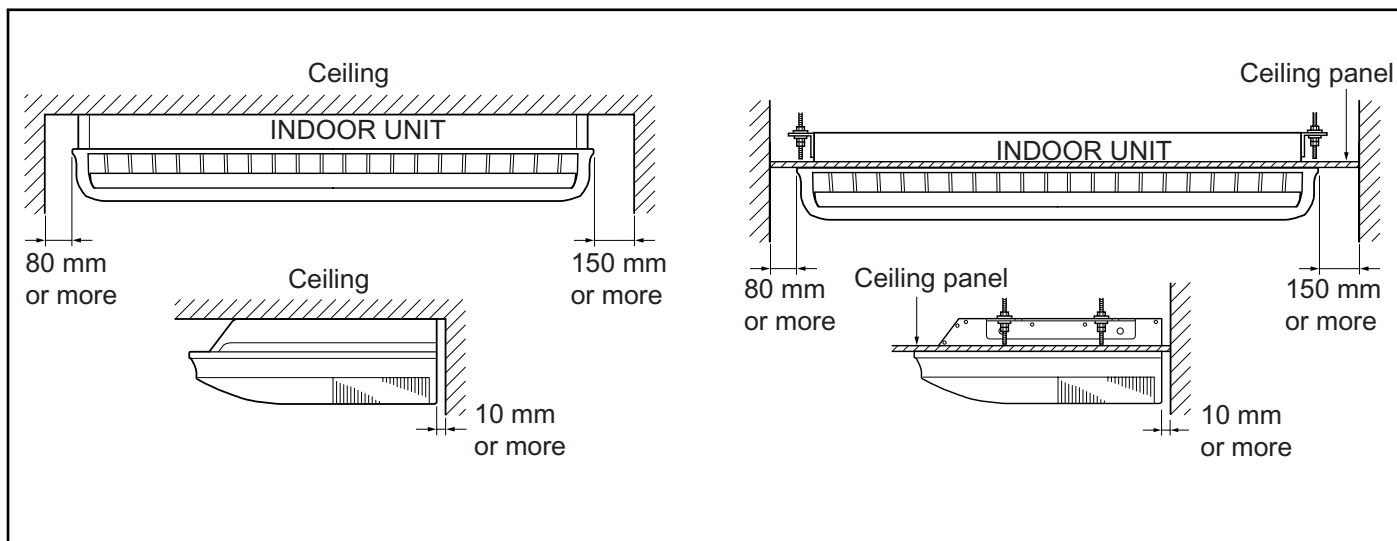


5-6-2 INSTALLATION SPACE

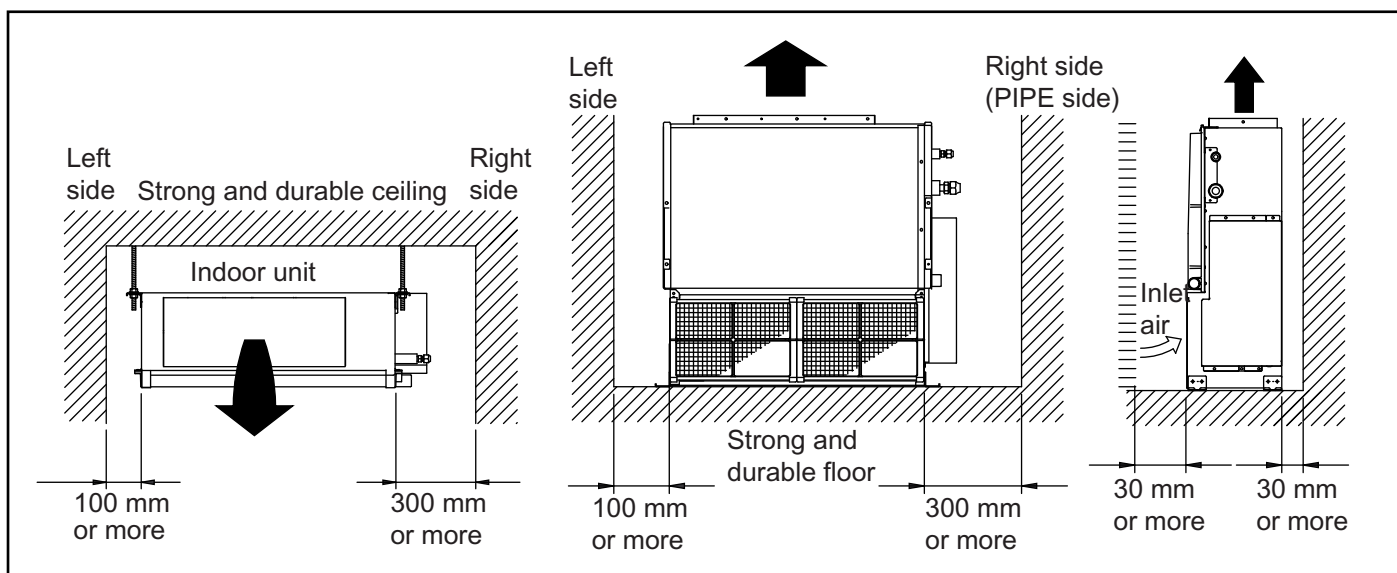
■ UNIVERSAL / FLOOR CEILING TYPE



■ LARGE CEILING TYPE

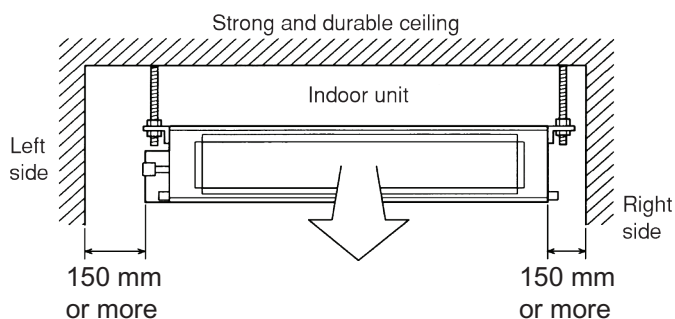


■ COMPACT DUCT TYPE

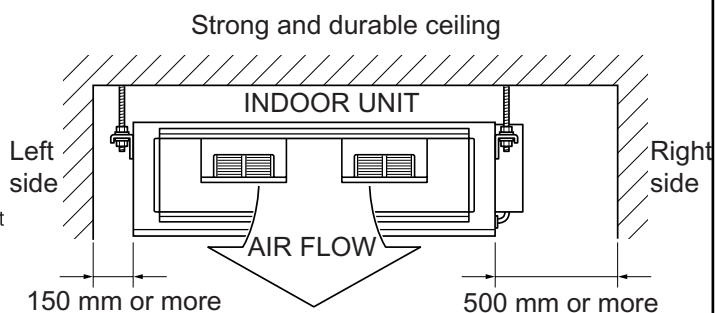


■ DUCT TYPE

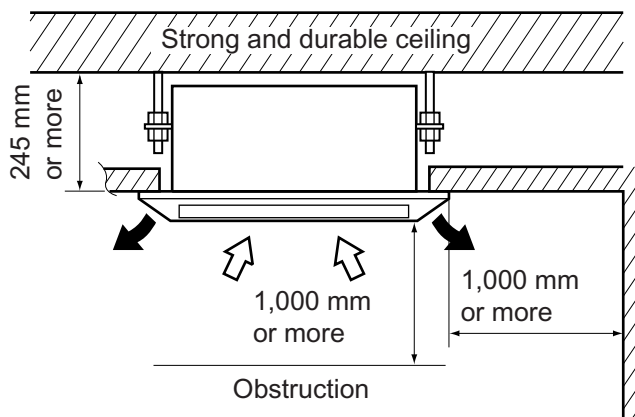
■ LOW PRESSURE TYPE



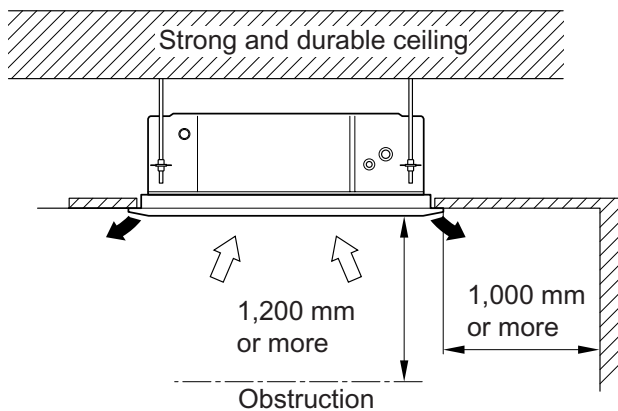
■ HIGH PRESSURE TYPE



■ COMPACT CASSETTE TYPE



■ CASSETTE TYPE



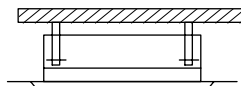
You can select 2-way setting

(A) Standard setting

(B) Slender setting

AU20 - 30

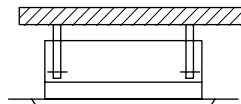
235 mm



200 mm or more

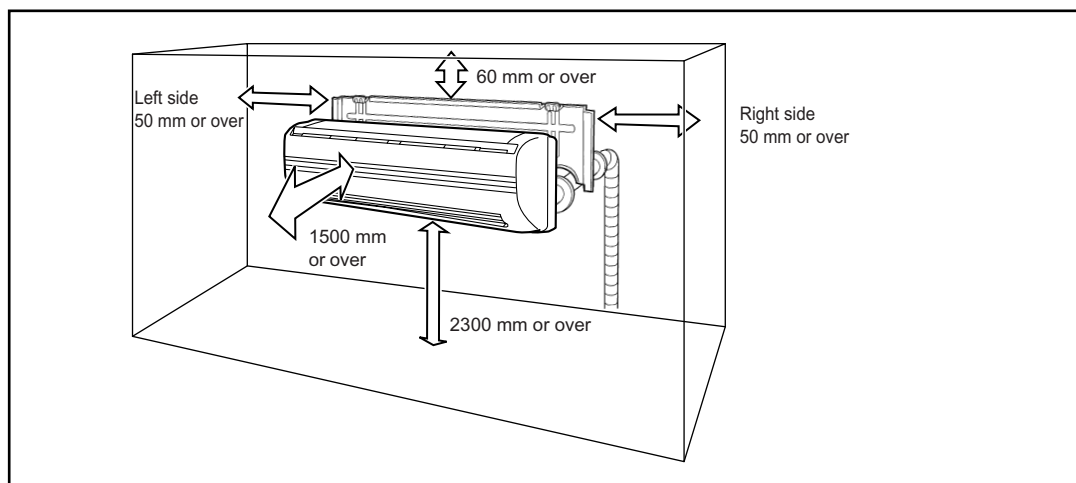
AU36 - 54

285 mm

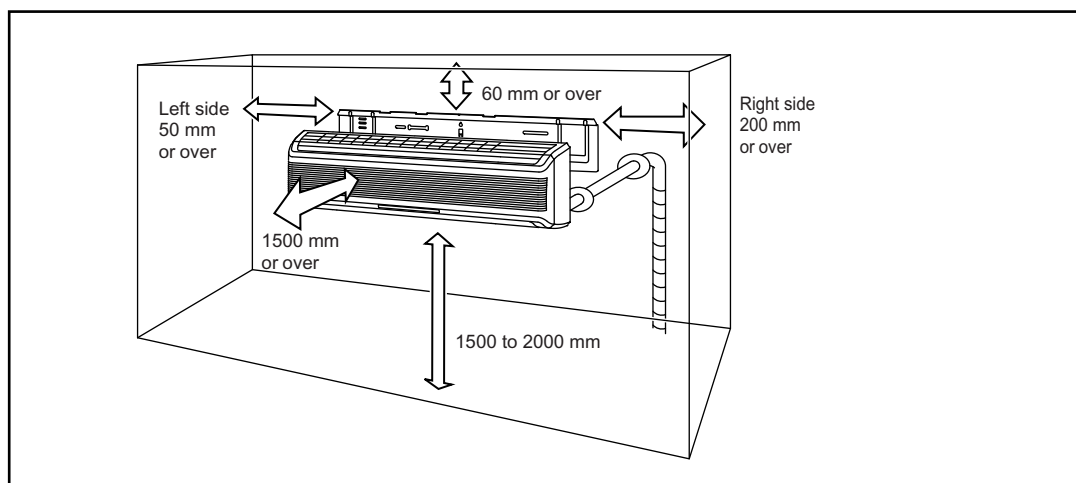


250 mm or more

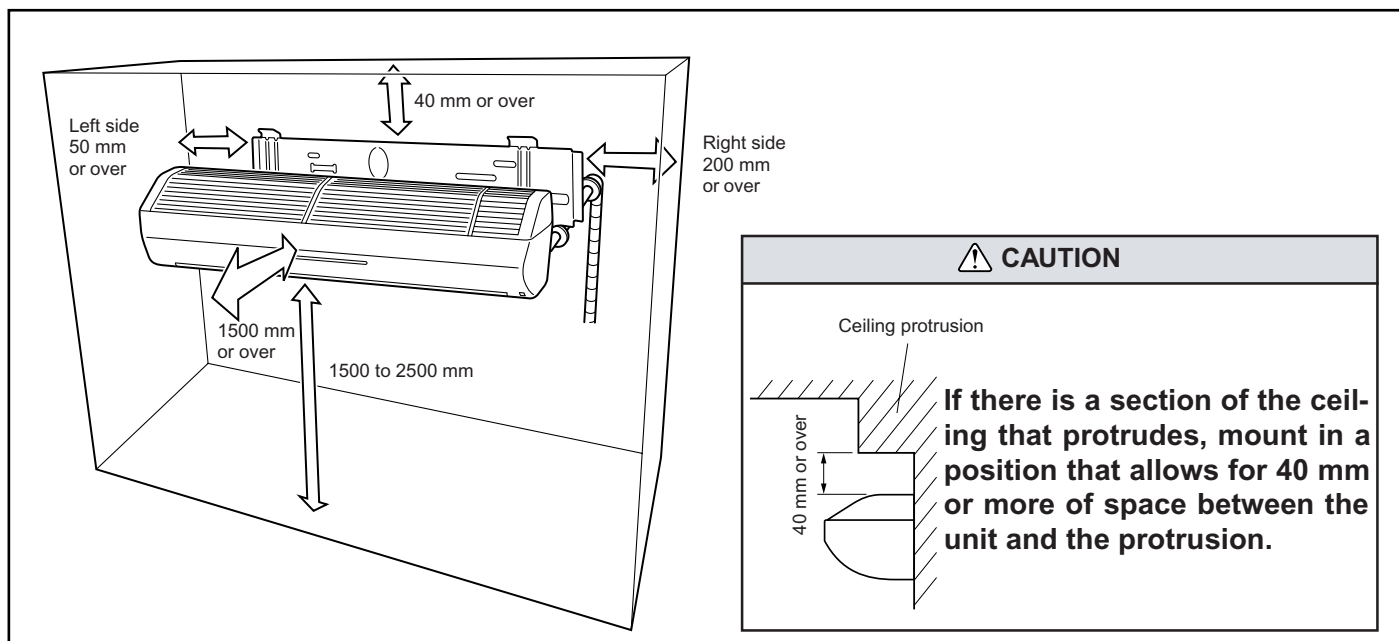
■ COMPACT WALL MOUNTED TYPE



■ WALL MOUNTED TYPE



■ CEILING WALL TYPE



■ CAUTION

WARNING

Install at a place that can withstand the weight of the indoor and outdoor units and install positively so that the units will not topple or fall.

CAUTION

Do not install where there is the danger of combustible gas leakage.

Do not install the unit near a source of heat, steam, or flammable gas.

If children under 10 years old may approach the unit, take preventive measures so that they cannot reach the unit.

Decide the mounting position with the customer as follows:

Install the indoor unit on a strong wall which is not subject to vibration.

The inlet and outlet ports should not be obstructed :the air should be able to blow all over the room.

Do not install the unit where it will be exposed to direct sunlight.

Install the unit where the connection pipe can be easily installed.

Install the unit where the drain pipe can be easily installed.

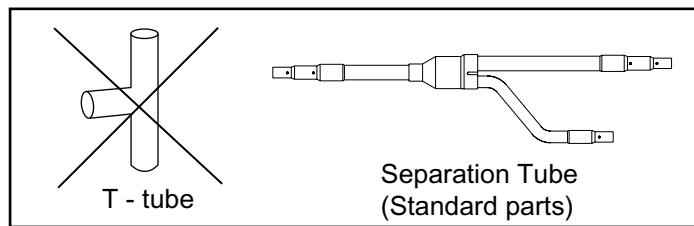
Take servicing, etc. into consideration and leave the spaces.

Also install the unit where the filter can be removed.

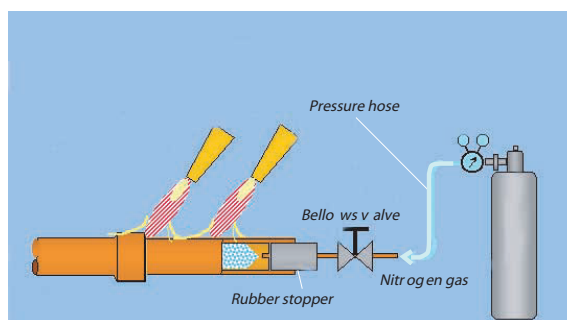
5-6-3 PIPING CONNECTION

■ CAUTION

- * Use the designated size (Diameter & thickness) of refrigerant pipes
- * Those pipes purchased locally may contain dust inside.
Please blow out the dust by dried inert gas when using
- * Be careful to avoid the dust or water falling into the pipe when performing piping process and piping installation.
- * When processing the pipe, make the number of bending portion as few as possible, and the bending radius as large as possible.
- * To process the branch, do not use T-shaped pipe, which causes a uneven refrigerant flow. Use the optionally available standard branch kit.



- * If the diameter of the required pipe is different from the branch unit, either cut it out or use the reducer.
- * Keep the permissible length of every piping limitation to prevent a defect or cooling/heating failure.
- * When replacing the unit, never use piping which has been used for previous installations. Only use the new piping.
- * While welding the pipes, be sure to blow dry nitrogen gas through them.



■ CAUTION

* Welding

While welding the pipe, be sure to blow dry nitrogen gas through the pipes.
If not used, it will be caused to damage for compressor and clog the strainer and Electronic Expansion Valve.

Example) Inside state of welding pipe section

Nitrogen Gas used



Nitrogen Gas used but not sufficient
(Oxygen gas still inside the pipe)



Nitrogen Gas does not used

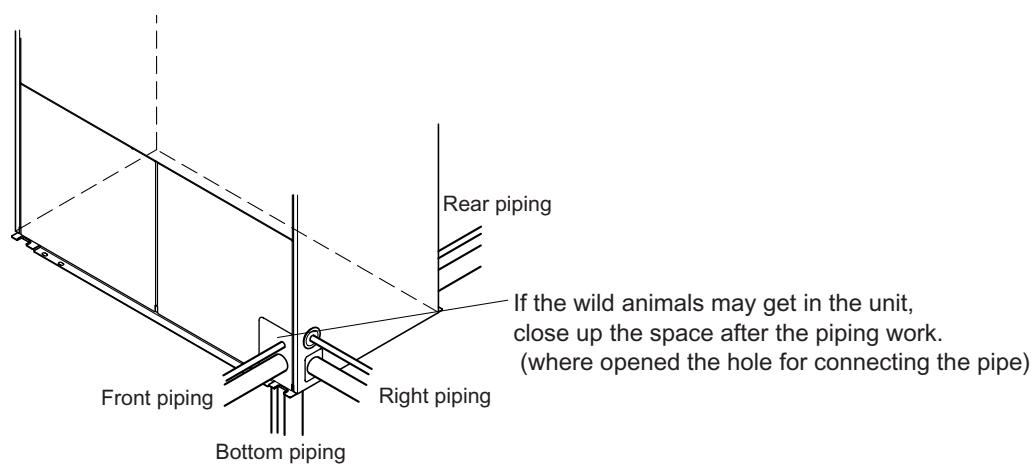


* Make sure to insulate the refrigeration pipes separately with ample thickness of heat-resistant polyethylene form etc. For the connecting portion, apply the enough insulation to avoid any gap.

■ OUTDOOR UNIT PIPE CONNECTION

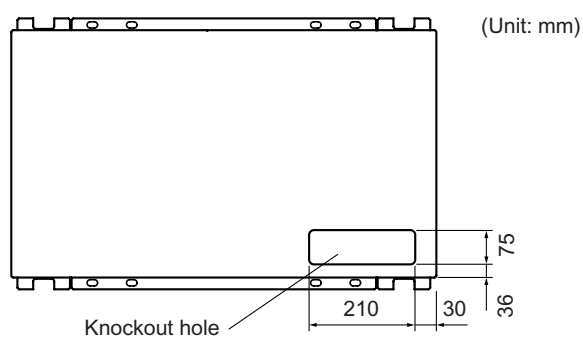
● Piping mounting direction (4-way mounting possible)

There are four possible ways to connect the piping to the outdoor unit.
Knockouts are provided all the place where the pipes need to be connected.

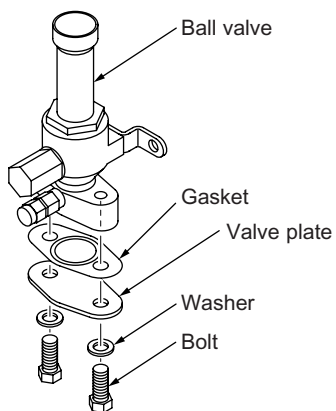


If the piping is connected from the rear or bottom, be sure that there is enough space around the unit to make connections.

When connecting the piping to the bottom of the unit, open a knockout hole at the bottom of the unit.

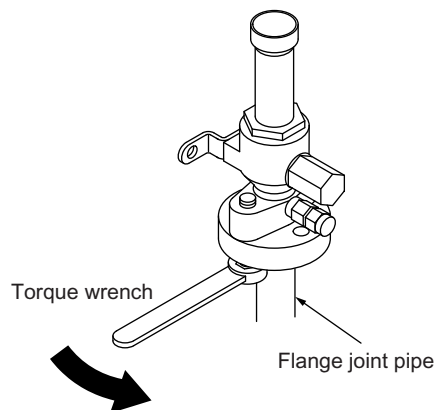


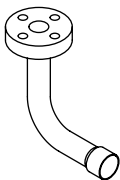
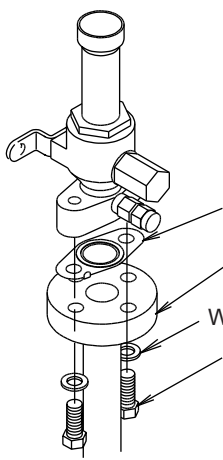
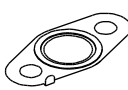
- Before connecting flange joint assembly to ball valve.
Remove bolts, valve plate and gasket.



- Connecting the flange joint pipe.

ACCESSORY PARTS



Description	Q'ty	
Flange joint assembly 	1	 *Use the provided accessory parts. Never use the other or used parts.
Gasket 	1	
Bolt 	2	

Leave the valve of Outdoor Unit fully close and do not operate until all the piping connections are done and the pressure test and air vacuum have been successfully completed.

• Flare nut tightening torque

Pipe	Tightening torque
Liquid pipe	500 to 550 kgf·cm (49 to 53.9 N·m)
Gas pipe (Bolt)	350 to 400 kgf·cm (34.3 to 39.2 N·m)

• Pipe diameter

Unit:mm

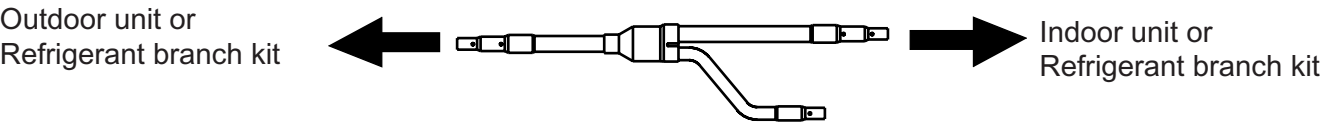
GAS	LIQUID
28.58(1.2)	12.7 (0.8)

():thickness

■INSTALLATION

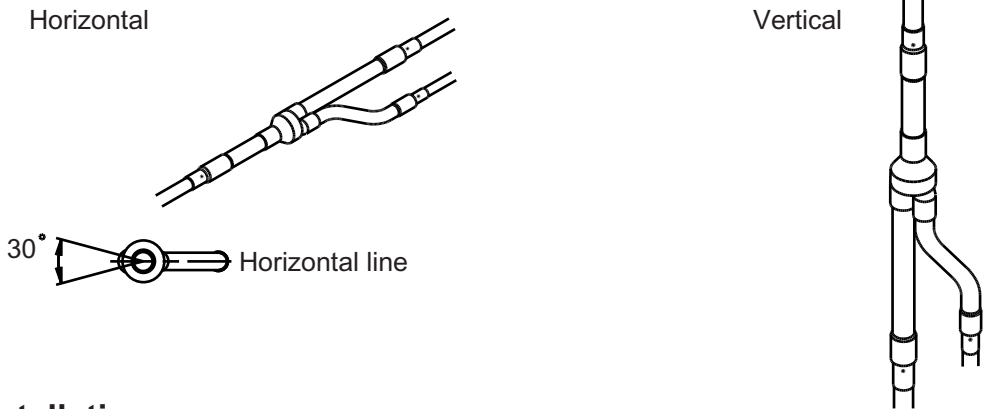
● Separation tube selection

Total capacity of indoor units	Model name of separation tube to be used
	Cooling only model Heat pump model
Less than 60	UTR-BP54TA
61 or more	UTR-BP90TA



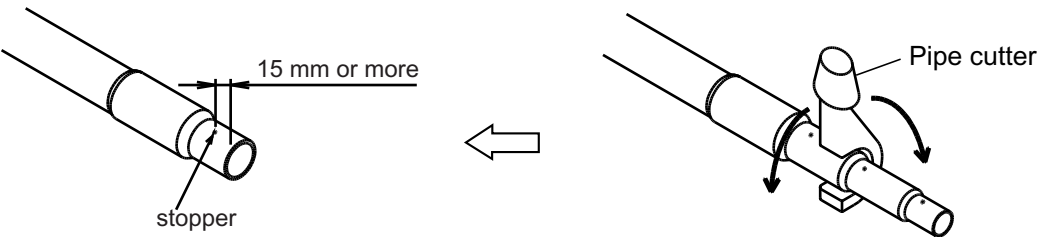
● Installation angle

Install the separation tube so that it branches either horizontally or vertically.

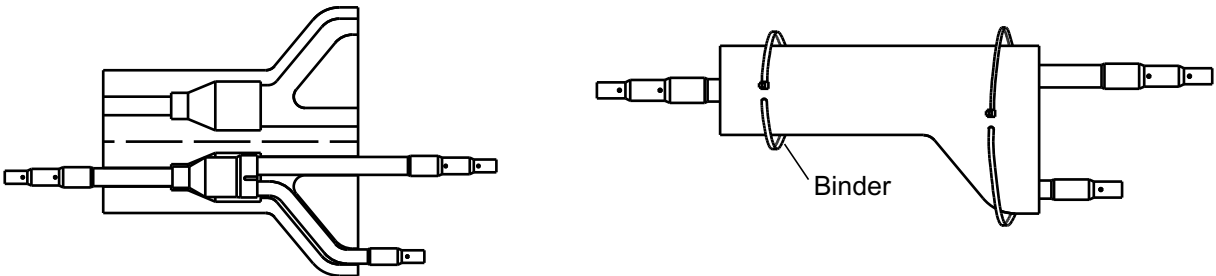


● Installation

Use the pipe cutter to cut at the location which matches the piping size when the piping size is different.



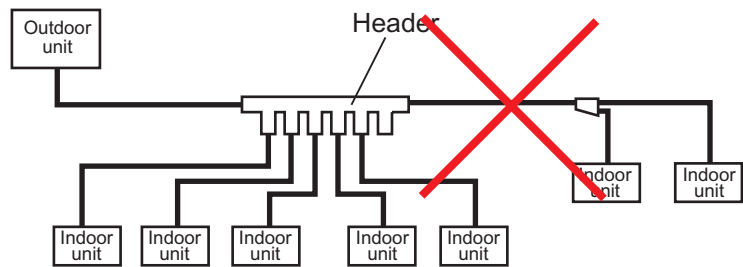
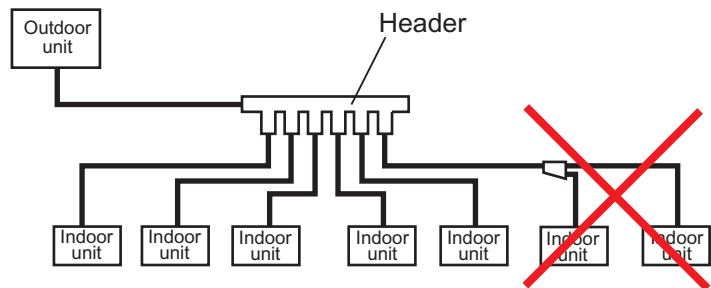
After brazing the piping, attach heat insulation to the separation tube.
Remove the protective paper for the tape attached to the heat insulation for the separation tube.
Tighten by using binders in two locations.



■ **HEADER**

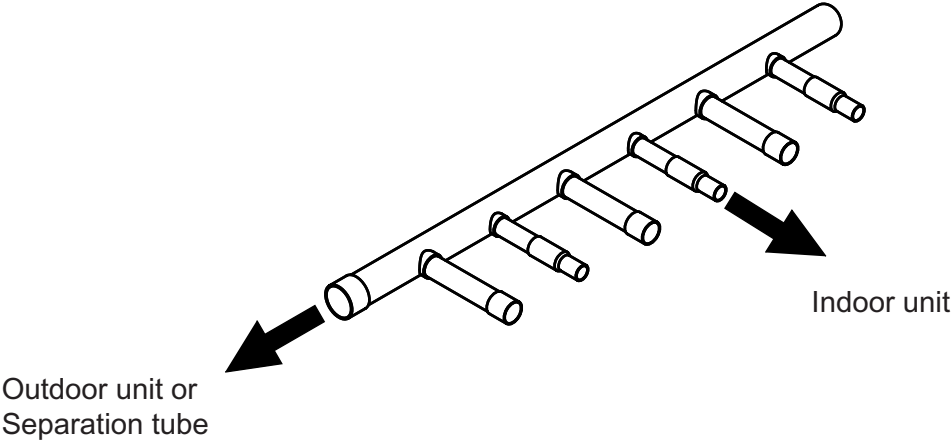
● **Caution**

Separation after header is not possible.



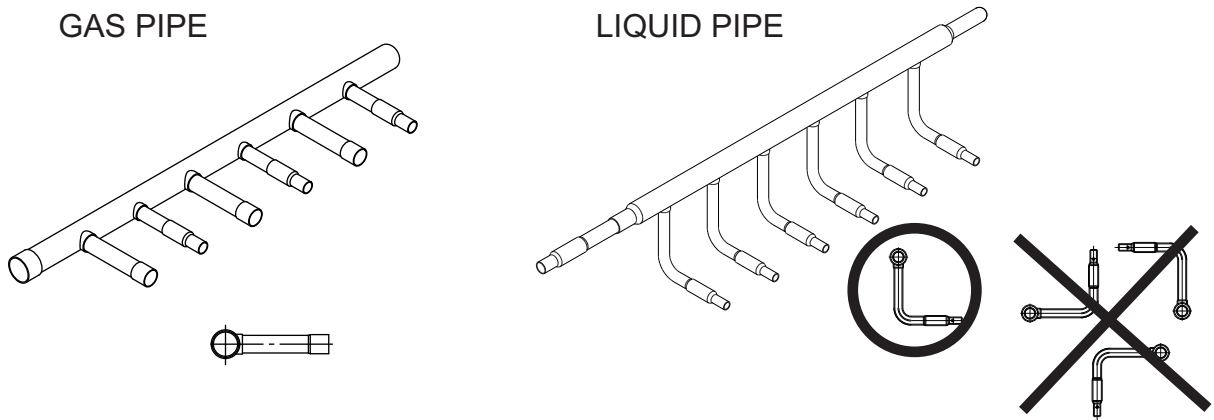
● **Header selection**

Number of branches (Number of indoor units connected)	Model name of header to be used
	Cooling only model Heat pump model
6 units or less	UTR-HD906A
7 to 8 units	UTR-HD908A



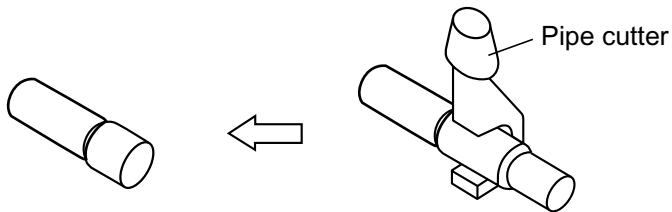
● Installation angle

Install the header so that it branches horizontally.

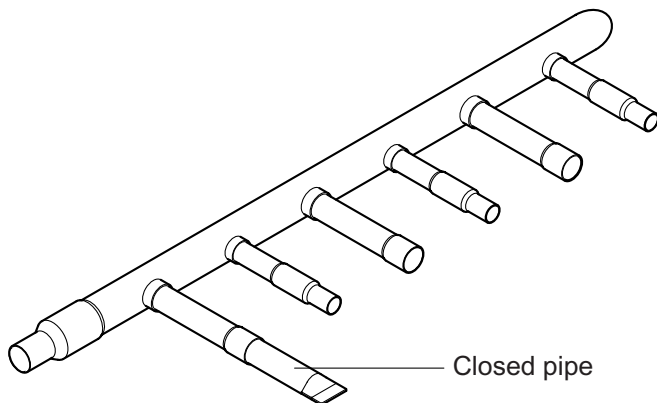


● Installation

- (1) Use a pipe cutter to cut at the location that matches the piping size.
Even if a reducer is to be used, cut at the location that matches the size.

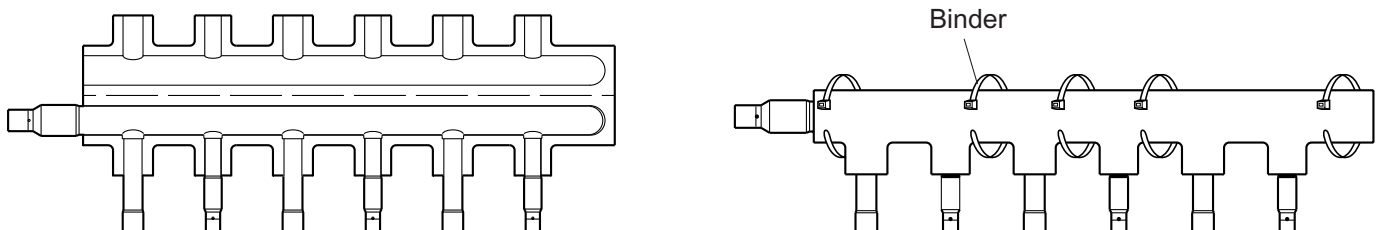


- (2) Attach a closed pipe provided if there is no piping connected at the headers.



- (3) After brazing the piping, attach heat insulation to the header.

- * Remove the protective paper for the tape on the heat insulation for the header and attach it.
- * Tighten by using binders in five locations.



AIR TIGHT TEST

After the piping has been installed, perform a sealing test.
 Charge the piping with nitrogen to within the sealing test pressure (2.94 MPa).
 After 24 hours, check that the pressure has not fallen.
 Make sure to add the pressure to both Gas pipe and Liquid pipe.
 Perform the leak test on all flared and brazed parts.
 Note: When the ambient temperature changes 5 deg. ,the test pressure changes 0.05MPa.

VACUUM PROCESS

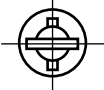
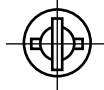
⚠ CAUTION

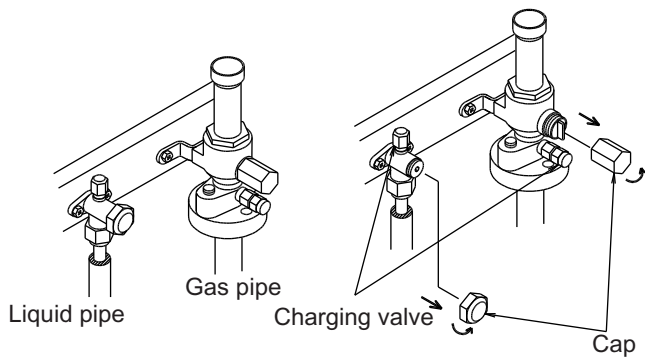
Do not purge the air with refrigerant but use a vacuum pump to remove air from the indoor unit and connection pipes!

- * Remove the cap, and connect the gauge manifold and the vacuum pump to the charging valve by the service hoses.
- * Vacuum the indoor unit and the connecting pipes until the pressure gauge indicates -76 cmHg.
- * When -76 cmHg is reached, operate the vacuum pump for at least 1 hour.
- * After vacuuming inside the indoor unit and connecting pipes,remove the cap of the two valves.
- * Open the handle (spindle) of the Large valves (Ball valve).
 Open the spindle of the Small valve (3 way valve) with a hexagon wrench.
- * Tighten the cap of the two valves to the specified torque.

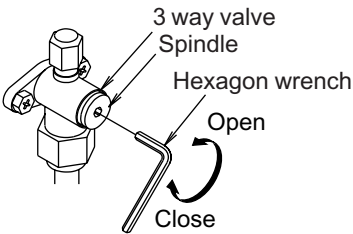
	Tightening torque	
	Ball valve	3 way valve
Spindle (handle)	15 kgf•cm (1.47 N•m) or less	100 to 120 kgf•cm (9.8 to 11.7 N•m)
Cap	150 to 200 kgf•cm (14.7 to 19.6 N•m)	200 to 250 kgf•cm (19.6 to 24.5 N•m)

Ball valve

Open valve state	Closed valve state
	



3 way valve



If the spindle (handle) is not fully open, performance will degrade and an abnormal sound will be generated.

■ ADDITIONAL CHARGE

- * Always add the refrigerant for the appropriate amount.
Refer the additional refrigerant charge amount to item 5-1-4 "ADDITIONAL CHARGE CALCULATION".
- * Either larger or smaller refrigerant charge amount leads to the cause of trouble.
- * For after service purpose , the added refrigerant charge amount and the calculation shall be indicated firmly on the service label over the control box cover.

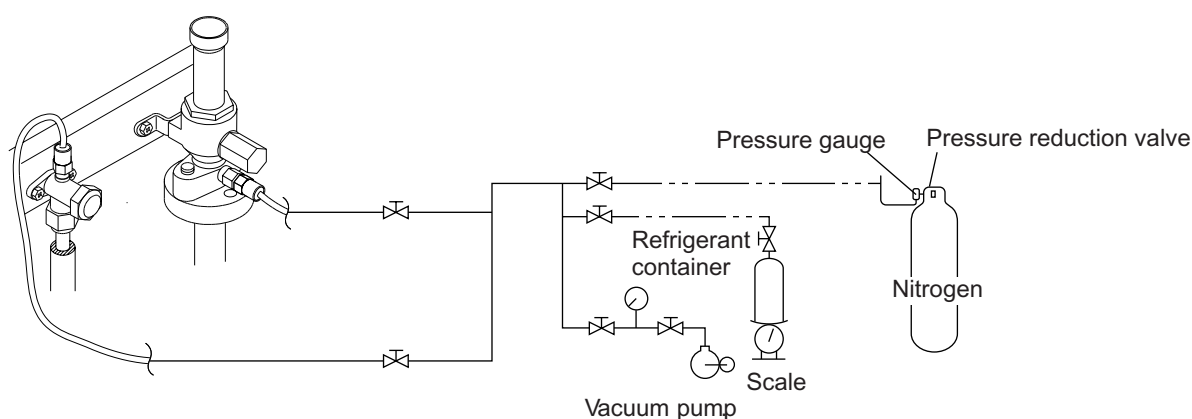
⚠ CAUTION

When moving and installing the air conditioner, do not mix gas other than the specified refrigerant inside the refrigerant circuit.

When charging the refrigerant, always use an electronic balance for refrigerant charging (to measure the refrigerant by weight).

Add refrigerant from the charging valve after the completion of the work.

The maximum length of the piping is 100 m (actual pipe length). If the units are further apart than this, correct operation can not be guaranteed.



5-6-4 ELECTRICAL WIRING

Always perform the installation referring to the installation instruction sheet, based on your local regions related laws and regurations,and electric company

⚠ WARNING

Before starting work, check that power is not being supplied to the outdoor unit.

Connect the connection cord firmly to the terminal board. Imperfect installation may cause a fire.

Always fasten the outside covering of the connection cord with the cord clamp. (If the insulator is chafed,electric leakage may occur.)

Always connect the ground wire.

• **Connect wiring to the terminals**

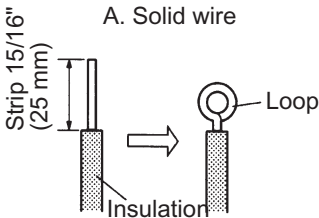
A. For solid core wiring (or F-cable)

Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation to about 15/16"(25 mm) to expose the solid wire.

Using a screwdriver, remove the terminal screw(s) on the terminal board.

Using pliers, bend the solid wire to form a loop suitable for the terminal screw.

Shape the loop wire properly, place it on the terminal board and tighten securely with the terminal screw using a screwdriver.



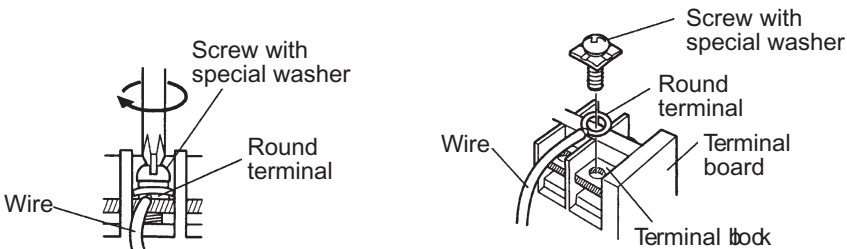
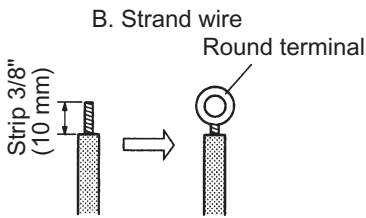
B. For strand wiring

Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation to about 3/8" (10 mm) to expose the strand wiring.

Using a scre wdriver, remove the terminal screw(s) on the terminal board.

Using a round terminal fastener or pliers, securely clamp a round terminal to each stripped wire end.

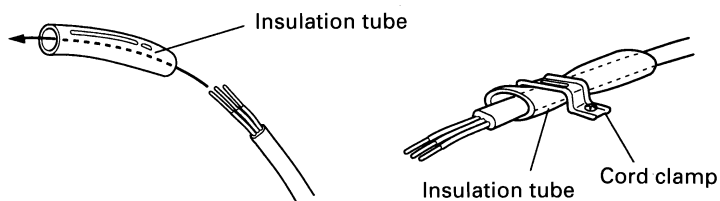
Position the round terminal wire, and replace and tighten the terminal screw using a screwdriver.



• Fix the connection cord and power supply cord at the cord clamp

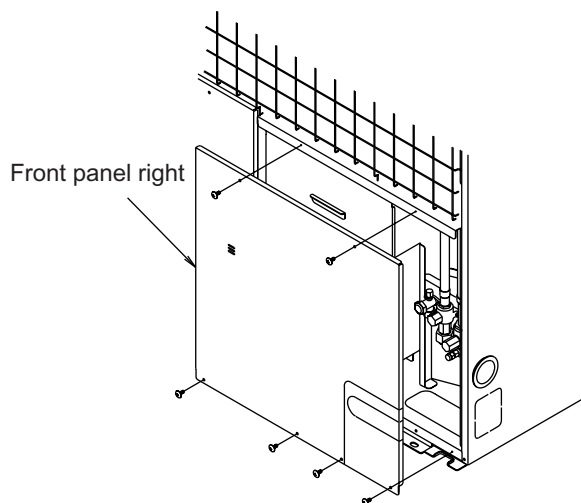
After passing the transmission cord and power supply cord through the insulation tube, fasten it with the cord clamp.

Use VW-1,0.5 to 1.0mm thick, PVC tube as the insulation tube.

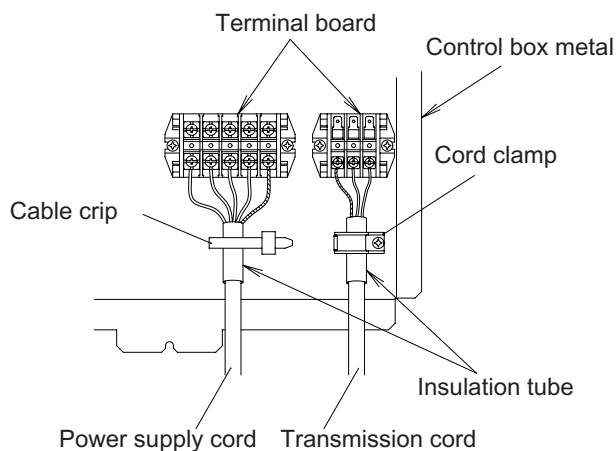
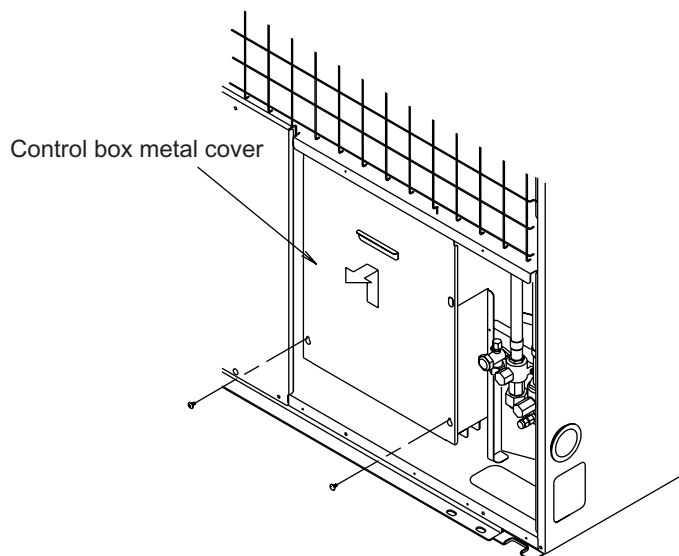


■ OUTDOOR UNIT

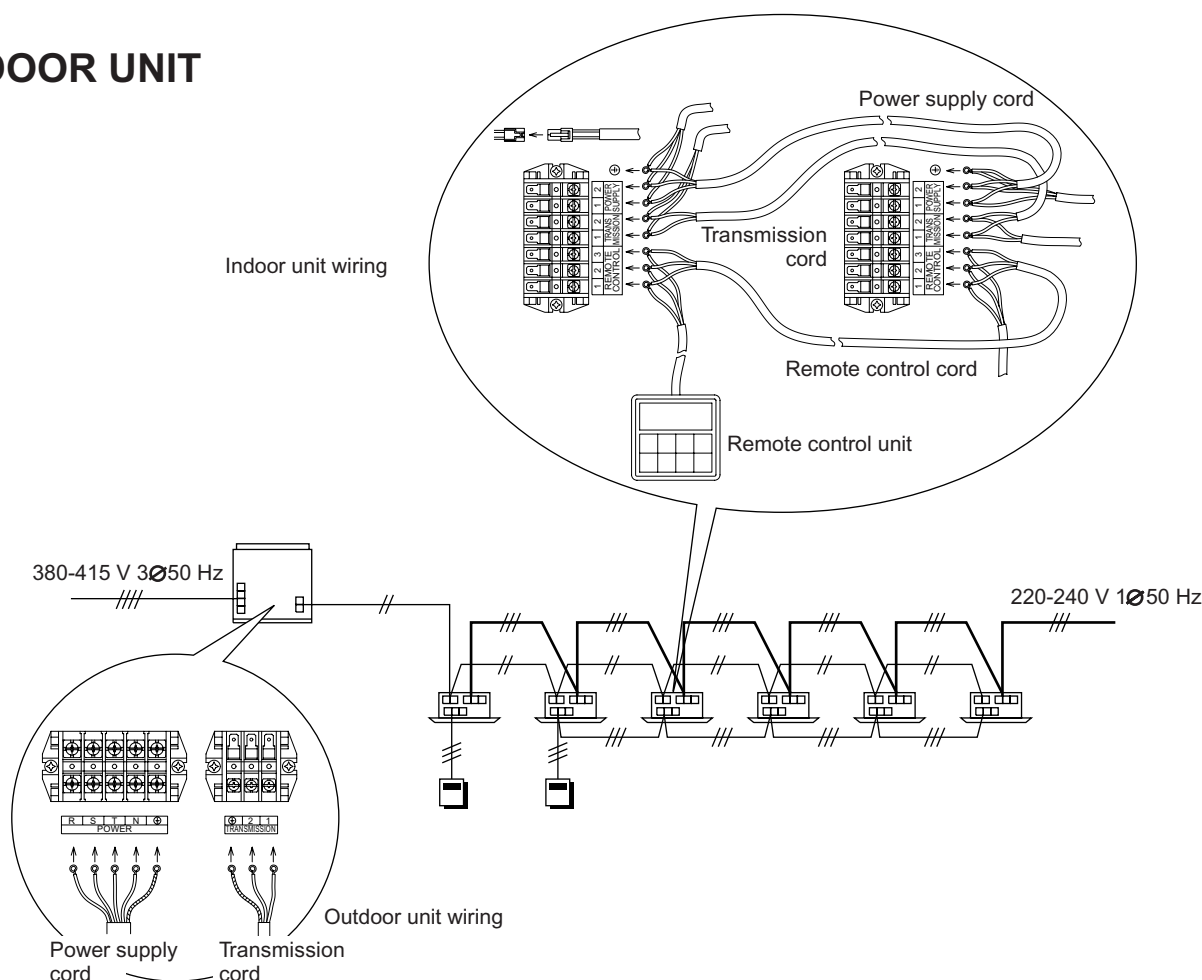
(1) Remove the front panel right.



(2) Remove control box metal cover and connect the power supply cord and transmission cord.



INDOOR UNIT



⚠ CAUTION

Use care to wire properly. (Miss-wiring will result in damage.)

Never bundle the power supply cord, transmission cord and remote controller cord together. Bundling these cords together will cause misoperation.

The total length of the transmission cord should not exceed 500 meters. Note that the total length of the transmission cord can be extended to 2,000 meters if the optional signal amplifier is used.

The power source capacity must be the sum of the air conditioner current and the current of other electrical appliances. When the current contracted capacity is insufficient, change the contracted capacity.

When the voltage is low and the air conditioner is difficult to start, contact the power company to raise electrical voltage.

⚠ WARNING

[1 phase TYPE]

The rated voltage of this product is 220-240V A.C. 50 Hz.

Before turning on verify that the voltage is within the 198 V to 264 V range.

[3 phase TYPE]

The rated voltage of this product is 380-415 V 3Ø 50 Hz.

Before turning on verify that the voltage is within the 342 V to 457 V range.

Always use a special branch circuit and install a special receptacle to supply power to the air conditioner.

Use a circuit breaker and receptacle matched to the capacity of the air conditioner.

Perform wiring work in accordance with standards so that the air conditioner can be operated safely and positively.

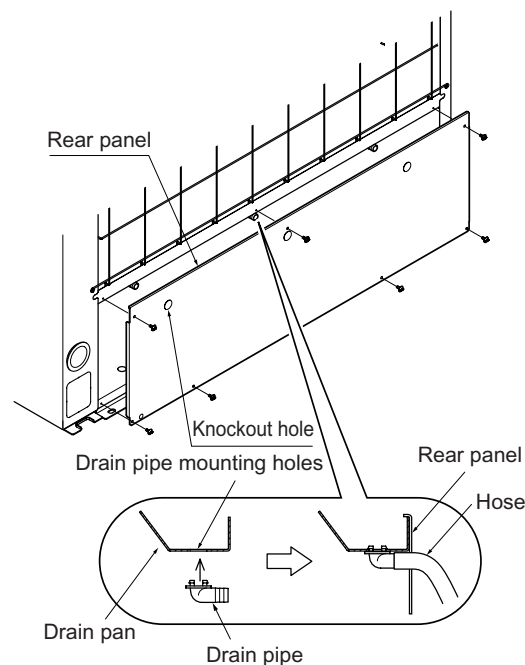
Install a leakage circuit breaker in accordance with the related laws and regulations and electric company standards.

5-6-5 DRAIN PROCESSING

■ OUTDOOR UNIT

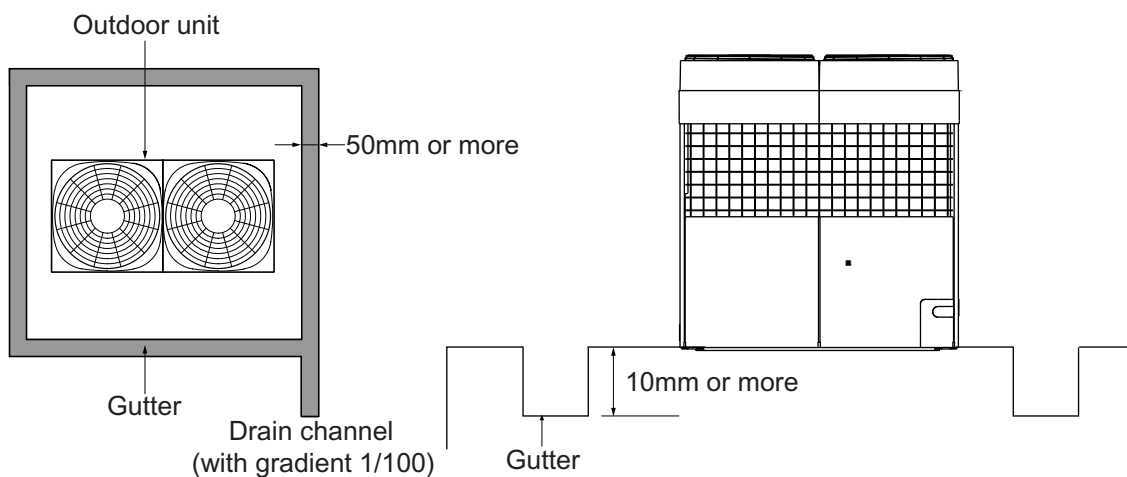
Please connect the hose when the processing of the drain water of the installation in the room etc. is necessary by the following method.

- * Remove the rear panel.
- * Since the drain water flows out of the outdoor unit during heating operation, install the drain pipe and connect it to an commercial 16 mm hose.
(When heating the outdoor temperature is 0°C or less, construct so that drain water from the outdoor unit will not freeze in the drain pipe.)
- * Always use a drain pipe at three places.



⚠ CAUTION

Drain water will leak from the bottom of outdoor unit during cooling / heating operation, even if the drain pipe is connected. To prevent the area surrounding the outdoor unit from getting wet, install a gutter surrounding the outdoor unit as shown in the figure below for drain water.



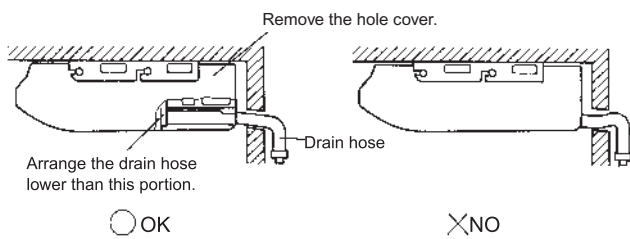
■ INDOOR UNIT

NOTE : Install the drain pipe.

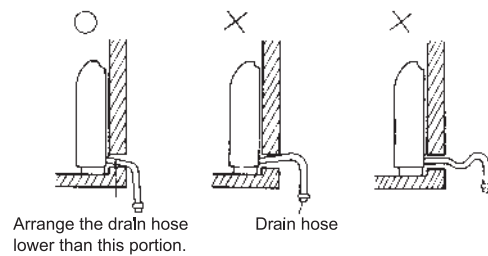
- * Install the drain pipe with downward gradient(1/50 to 1/100) and so there are no rises or traps in the pipe.
- * Use general hard polyvinyl chloride pipe (VP25) and connect it with adhesive (polyvinyl chloride) so that there is no leakage.
- * When the pipe is long, install supporters.
- * Do not perform air bleeding.
- * Always heat insulate the indoor side of the drain pipe.

UNIVERSAL FLOOR / CEILING TYPE

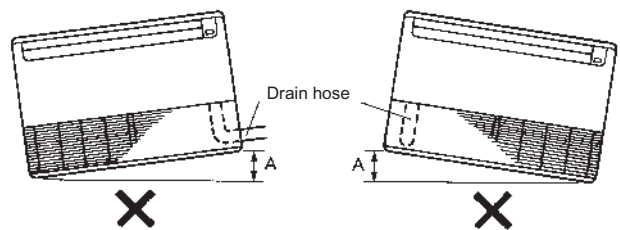
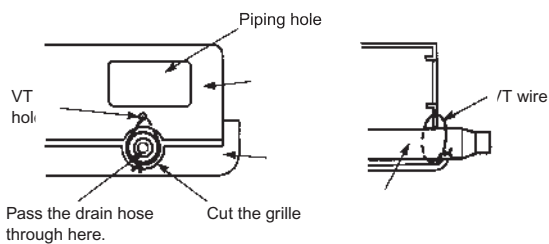
A.UNDER CEILING SETTING



B.FLOOR CONSOLE SETTING



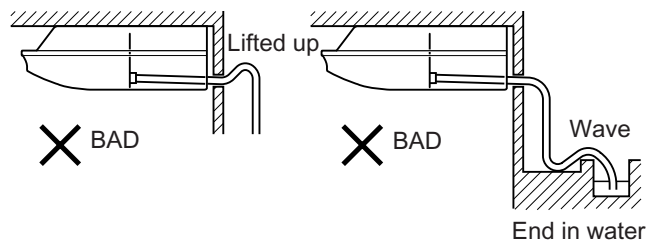
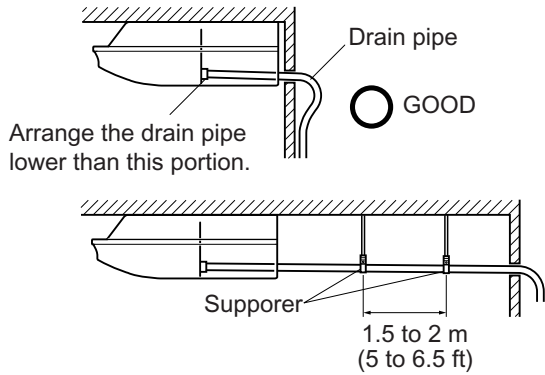
When drain hose is arranged backward.
Secure the drain hose with the VT wire (Fig. 20).



***Do not install the unit so that the drain hose side is too high.
Height A should be less than 5mm.**

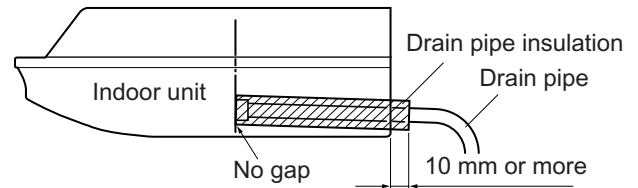
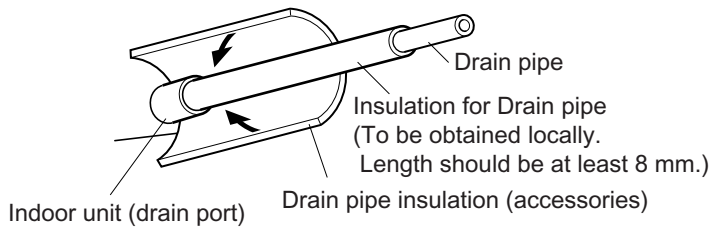
CEILING TYPE

Drain port : O.D Ø38mm

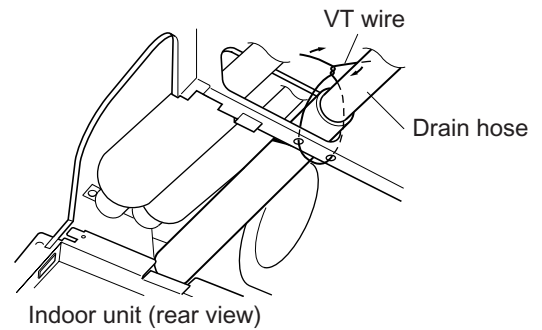


(1) Install insulation for the drain pipe.

Cut the included insulation material to an appropriate size and adhere it to the pipe.



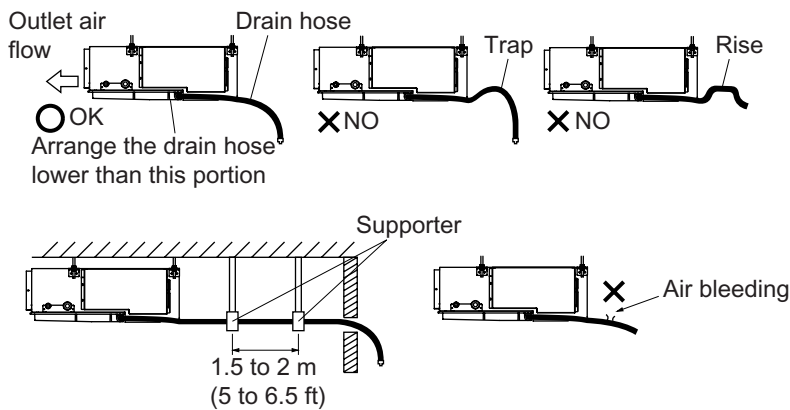
(2) If "1 Right rear piping" :fasten the drain pipe with VT wire so that the pipe slopes correctly within the indoor unit .



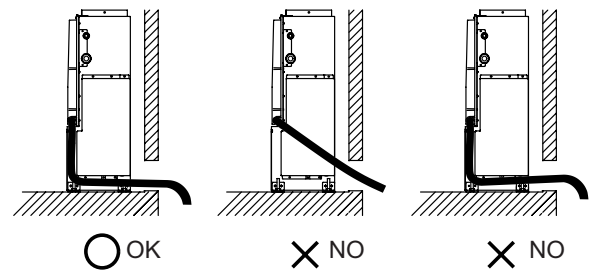
COMPACT DUCT TYPE

Drain port : O.D Ø26mm

A. CEILING CONCEALED SETTING



B. FLOOR STANDING CONCEALED SETTING



CAUTION

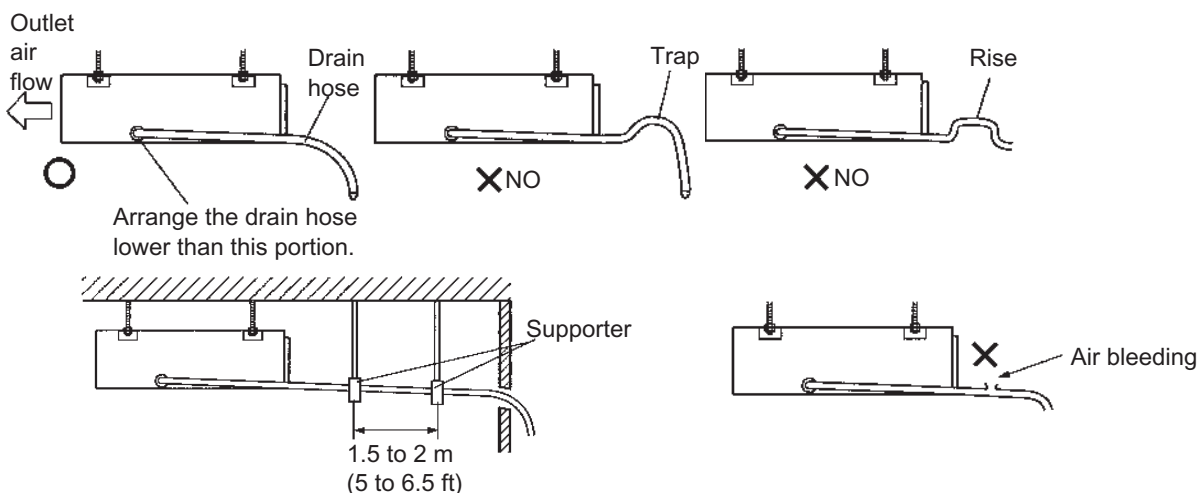
Connect the drain hose so that the control box cover can easily be removed for servicing when necessary.

In order to prevent water from leaking into the control box, make sure that the piping is well insulated.

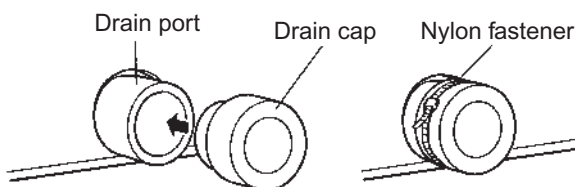
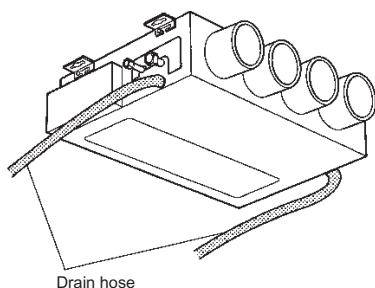
After finishing the piping, the drain hose installation and the wiring, seal the holes in the wall.

LOW PRESSURE DUCT TYPE

Drain port : O.D Ø38mm



- * The outside diameter of the drain port is 38 mm. Use a suitable drain hose.
- * There is a drain port on both the left and right sides. Select the drain port to match the local conditions

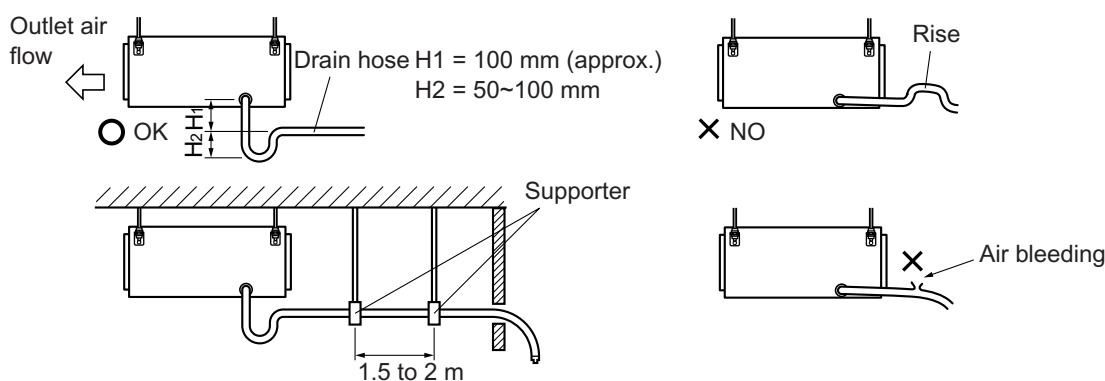


CAUTION

Always check that the drain cap is installed to the unused drain port and is fastened with the nylon fastener. If the drain cap is not installed, or is not sufficiently fastened by the nylon fastener, water may drip during the cooling operation.

HIGH PRESSURE DUCT TYPE

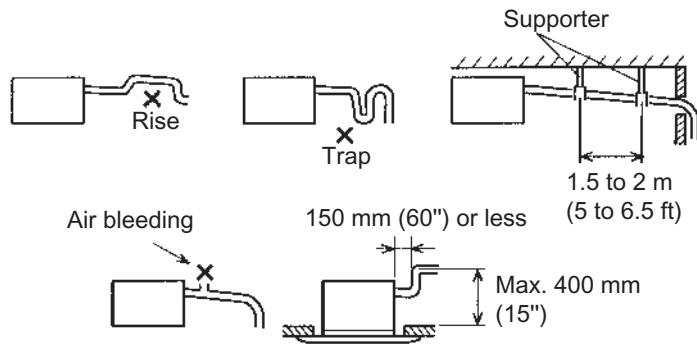
Drain port : O.D Ø38mm



- * Install the drain hose so that there is a trap.
- * The position of the installed drain hose should have a downward gradient of $(1/50 \text{ to } 1/100)$.
- * Make sure that the drain hose is installed without rises.
- * Make the trap near to the indoor unit.

COMPACT CASSETTE TYPE

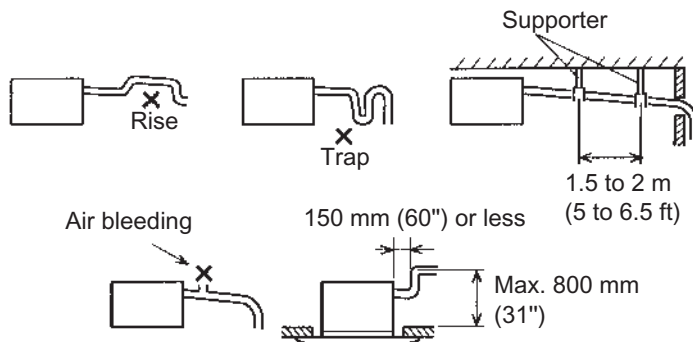
Drain port : O.D Ø32mm



- * When desiring a high drain pipe height, raise it up to 400 mm (15") or less from the ceiling within a range of 150 mm (6") from the body.
- * A rise dimension over this range will cause leakage.

CASSETTE TYPE

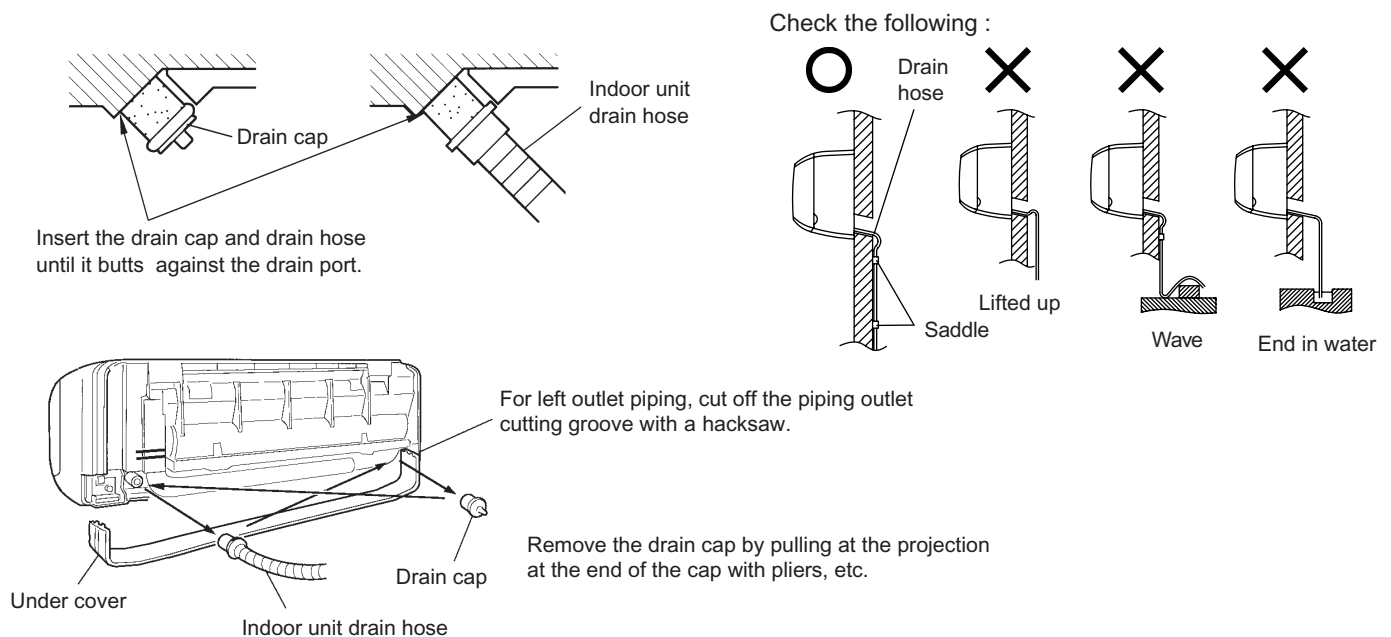
Drain port : O.D Ø32mm



- * When desiring a high drain pipe height, raise it up to 800 mm (31") or less from the ceiling within a range of 150 mm (6") from the body.
- * A rise dimension over this range will cause leakage.

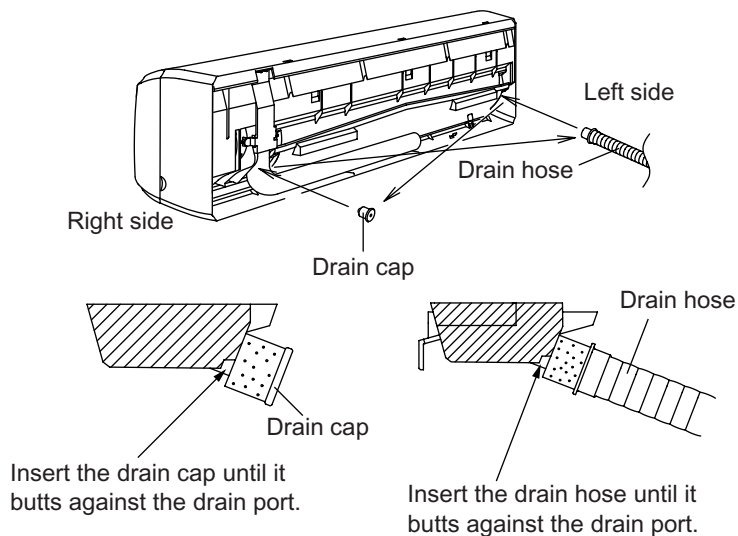
COMPACT WALL MOUNTED TYPE

Drain hose is attached.

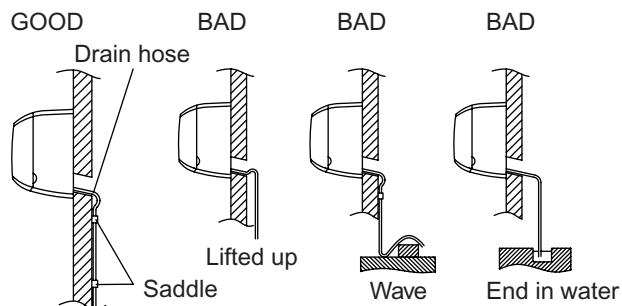


WALL MOUNTED TYPE

Drain hose is attached.



Check the following:

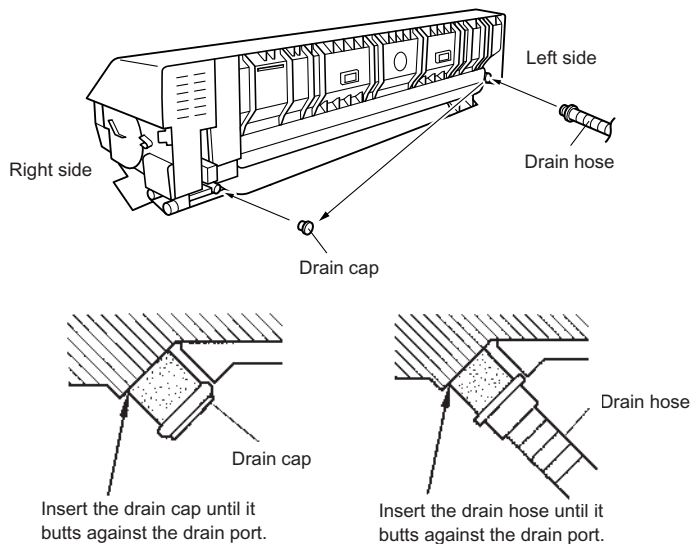
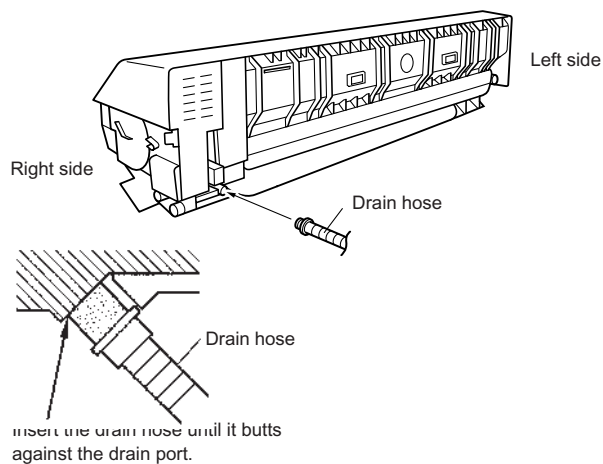


CEILING WALL TYPE

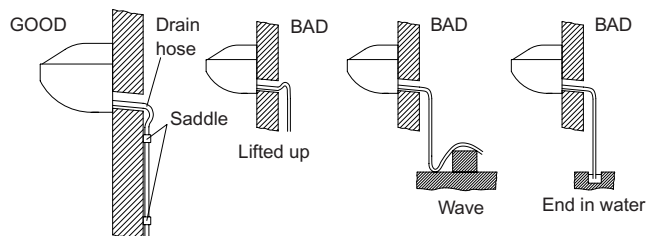
Drain hose is attached.

Mount the drain hose to the drain port on the right side.

Remove the drain cap and mount to the drain port on the right side.
Mount the drain hose to the drain port on the left side.

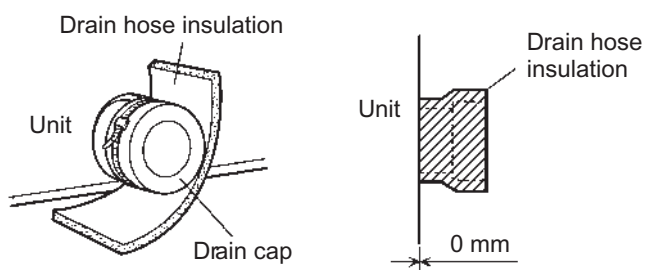
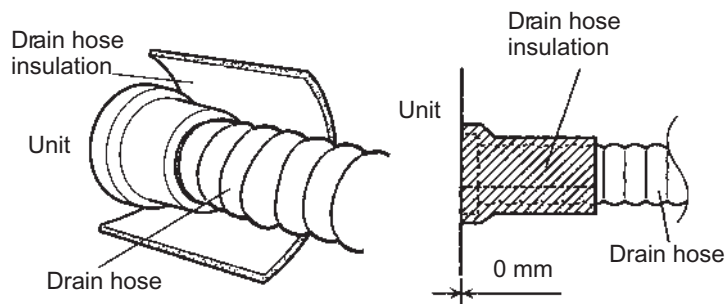


Check the following:

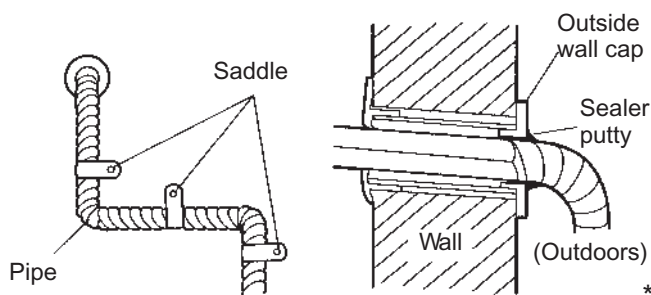


■ DRAIN PIPE INSULATION

- * Please confirm water is injected into Drain pan of the indoor unit, and drain is done normally when the connection of Drain hose is completed.
- * Please check whether there is water leak part in the Drain piping.
- * Please insulate it from heat by the heat insulator of enough thickness so that there is no be dewy when the confirmation ends. It causes the water leak like being imperfect.



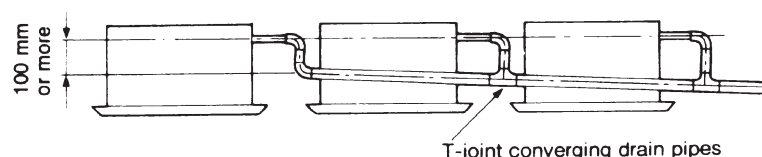
* Please roll the heat insulator also on the Drain cap side.(some models)



* Please cover the space with the putty etc. when you put out Drain hose from the wall.

■ CENTRAL DRAIN PROCESSING

When converging multiple drain pipes , install according to the procedure shown below.



Select converging drain pipes whose gauge is suitable for the operating capacity of the unit.

5-6-6 SYSTEM & FUNCTION SETTING

All of the models require to perform ADDRESS SETTING.

Proceed the set-up referring to 5-3, 5-4 without fail.

If necessary, set up the function setting consulting with the user.

Be sure to record the set-up address etc. for after service purpose.

- System setting
- Address setting
- Function setting

5-6-7 TEST RUN

■ TEST RUN METHOD

The procedures for performing the test run are described below.

(Supply power for at least 12 hours before starting operation in the winter.)

(1) Perform a test run (cooling) separately for each indoor unit that is connected to the refrigerant system, and check the operation in order to confirm there is no problem on the wiring connection and the address.

(2) Perform a test run (cooling) simultaneously for all indoor units are connected to the refrigerant system, and check the operation in order to confirm all installation is completed.

• Test operation using circuit board (Outdoor unit)

If the test operation is to be done for cooling operation, set DIP switch (SW1-1) to on. If the test operation is to be done for heating, set DIP switch (SW1-2) to on.

• Test operation using remote controller

Refer to the installation instruction sheet for the indoor unit.

■ CHECK LIST

	Check item	Checking Method	Standard
1	After operating the indoor unit, the compressor operates?	Check operation sound and the LED of outdoor unit PCB.	Outdoor unit LED 3 :flushing
2	High pressure and low pressure are normal?	Confirm with a pressure gauge	Cooling : Low pressure 0.4 MPa (approx.) Heating : High pressure 2.0 MPa (approx.)
3	Intake and outlet air Temperature of indoor unit are normal?	Check that there is a difference between the intake and outlet air temperatures.	Cooling : Below -10°C (approx.) Heating : Above 15°C (approx.)
4	Water is drained from drain hose or by the drain pump smoothly? (Only for cooling mode)	Check operation sound of the drain pump.	—
		Confirm water is draining.	—
5	Expansion valve of the stopped indoor unit are normal?	Check the refrigerant flows to the heat exchanger.(Wait at least 5 minutes after the indoor unit has stopped before checking the refrigerant.)	Cooling : No refrigerant flow Heating : A little refrigerant flow

5-7 COMPATIBILITY

■ COMPATIBILITY OF EQUIPMENT

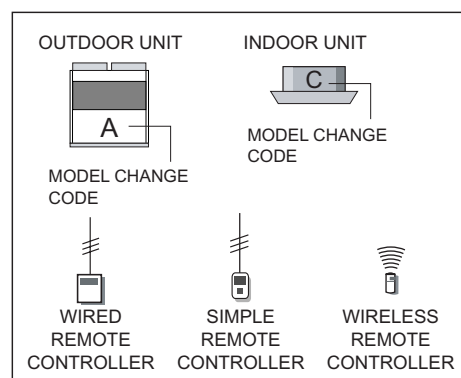
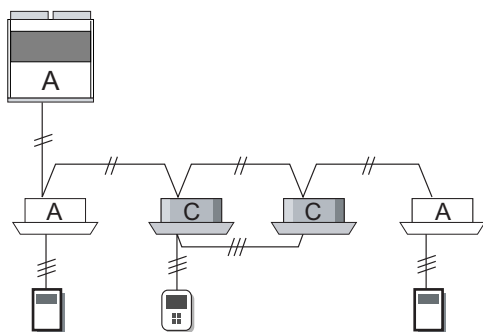
1. OUTDOOR UNIT AND INDOOR UNIT

Compatibility table between Indoor unit and Outdoor unit

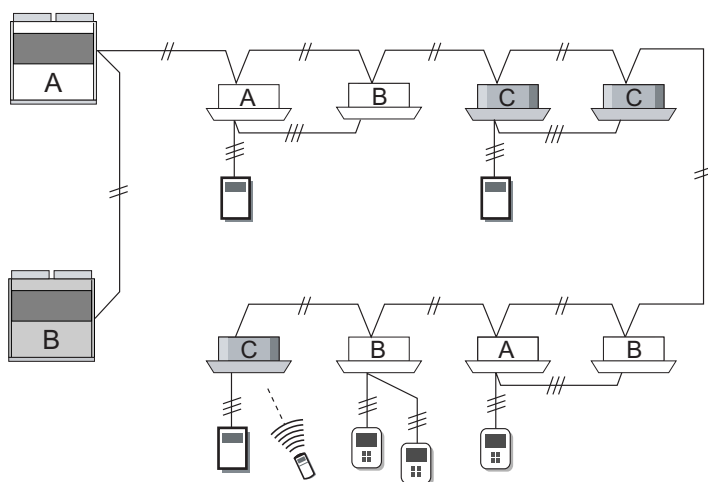
Code		INDOOR UNIT	
		"A" (2000~2002)	"C" (2002~)
OUTDOOR UNIT	"A" (2000~)	○	○
	"B" (2002~)	○	○

("A", "B", "C" : MODEL CHANGE CODE)

Ex.1)



Ex.2)



Any mixed combination is allowable.

In case of making remote controller group, refer to next page.

2. Remote controller and remote controller group

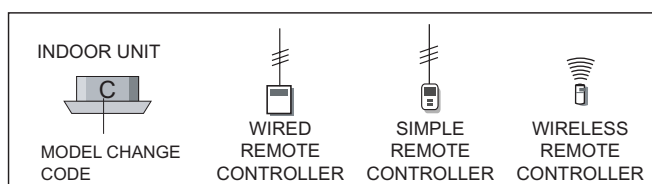
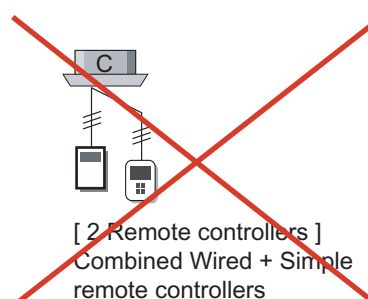
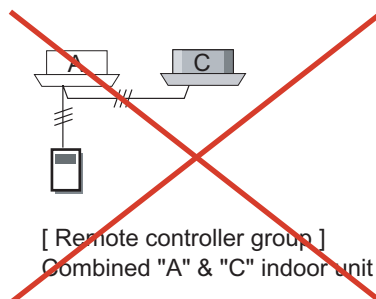
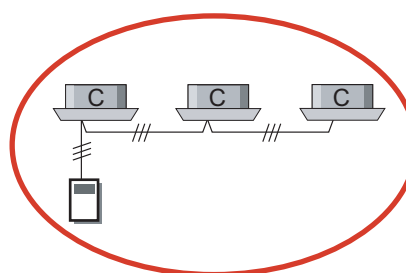
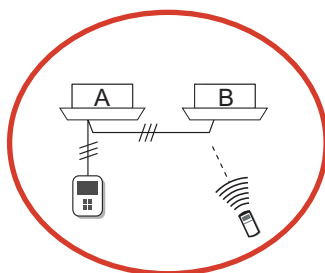
Compatibility table

Combination of Indoor unit \ Combination of remote controller		1 WIRED remote controller	1 SIMPLE remote controller	1 WIRELESS remote controller	COMBINATION OF 2 REMOTE CONTROLLERS
INDOOR UNIT	"A" "B"	○	○	○	See table below (Remote controller compatibility table)
	"C"	○	○	○	
REMOTE CONTROLLER GROUP (Combination of indoor unit)	"A" & "A" "B" & "B" "A" & "B"	○	○	○	
	"C" & "C"	○	○	○	×
	"A" or "B" & "C"	×	×	×	

Remote controller compatibility table

		Wired		Wireless		Simple
		UTB - *LA	UTB - *LB	UTB - *SA	UTB - *VA	UTB - *PA
Wired	UTB - *LA	○	×	○		×
	UTB - *LB	×	○	○		○
Wireless	UTB - *SA	○	○	○		○
	UTB - *VA					
Simple	UTB - *PA	×	○	○		○

Ex.)

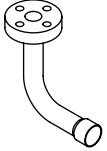
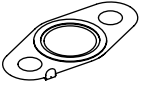


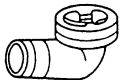
5-8 STANDARD ACCESSORIES

5-8-1 OUTDOOR UNIT

■ AO90TPB , AO72TPB(Heat pump type)

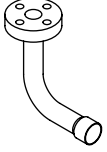
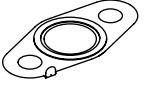
The following installation parts are supplied. Use them as required.

Description	Q'ty	Application
Flange joint assembly 	1	For connecting the piping
Coupler heat insulation 	1	For outdoor side pipe joint
Gasket 	1	Installation between flange joint assembly and valve B
Bolt 	2	For fixing the flange joint assembly

Description	Q'ty	Application
Drain pipe 	3	For outdoor unit drain piping work (Reverse cycle model only)
Hexagon wrench 	1	For opening the refrigerant valve on the outdoor unit

■ AO90EPB , AO72EPB (Cooling only type)

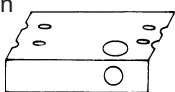
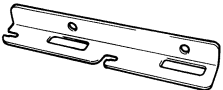
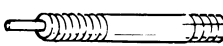
The following installation parts are supplied. Use them as required.

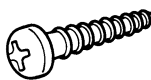
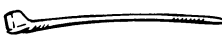
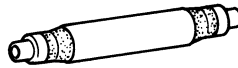
Description	Q'ty	Application
Flange joint assembly 	1	For connecting the piping
Coupler heat insulation 	1	For outdoor side pipe joint
Gasket 	1	Installation between flange joint assembly and valve B
Bolt 	2	For fixing the flange joint assembly

Description	Q'ty	Application
Hexagon wrench 	1	For opening the refrigerant valve on the outdoor unit

5-8-2 INDOOR UNIT

■ UNIVERSAL FLOOR CEILING TYPE

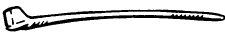
Description	Q'ty	Application
Cover plate (left) 	1	
Cover plate (right) 	1	
Tapping screw (Ø4 x 10) 	2	
Installation template 	1	For positioning the indoor unit For under ceiling type
Bracket (left) 	1	For suspending the indoor unit from ceiling
Bracket (right) 	1	
Anchor bolt (M12) 	4	
Spring washer 	4	
Special nut 	4	
Wall bracket 	2	For suspending the indoor unit on the wall

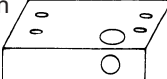
Description	Q'ty	Application
Tapping screw (Ø4 x 20) 	6	For fixing the wall bracket
Coupler heat insulation (large) 	1	For indoor side pipe joint (large pipe)
Coupler heat insulation (small) 	1	For indoor side pipe joint (small pipe)
Nylon fastener 	Large 2	For fixing the coupler heat insulation (This part is enclosed with the 12,000 and 14,000 BTU/h)
	Medium 1	For fixing the drain hose
	Small 2	For power supply, transmission and remote control cord binding
Drain hose 	1	
Insulation (drain hose) 	1	Adhesive type 70 x 230
VT wire 	1	For fixing the drain hose L 280 mm

OPTIONAL PARTS FOR INDOOR UNIT

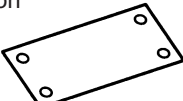
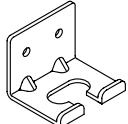
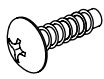
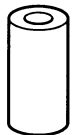
Description	Part No.	Application
Joint pipe-A 	9302812021	For indoor side pipe joint (18,000 and 24,000 BTU/h model)

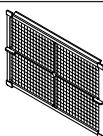
■ LARGE CEILING TYPE

Description	Q'ty	Application
Drain hose insulation 	1	Adhesive type 70 x 230
VT wire 	1	For fixing the drain hose L 280 mm
Coupler heat insulation (large) 	2	For indoor side pipe joint (large pipe)
Coupler heat insulation (small) 	1	For indoor side pipe joint (small pipe)
Nylon fastener 	Large 4	For fixing the coupler heat insulation
	Medium 4	
	Small 2	For power supply, transmission and remote control cord binding

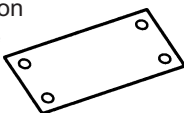
Description	Q'ty	Application
Special nut A (large flange) 	4	For installing indoor unit
Special nut B (small flange) 	4	For installing indoor unit
Installation template 	1	For positioning the indoor unit
Auxiliary pipe 	1	For connecting the piping

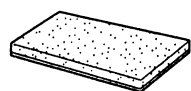
■ COMPACT DUCT TYPE

Name and Shape	Q'ty	Application
Installation template 	1	For positioning the indoor unit
Hanger 	4	For suspending the indoor unit from ceiling
Tapping screw (Ø4 x 10) 	8	For installing the hanger
Special nut A (large flange) 	4	For suspending the indoor unit from ceiling
Special nut B (small flange) 	4	
Coupler heat insulation (large) 	1	For indoor side pipe joint (large pipe)

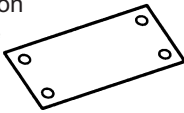
Name and Shape	Q'ty	Application
Coupler heat insulation (small) 	1	For indoor side pipe joint (small pipe)
Binder 	Small 2	For power supply, transmission and remote control cord binding.
	Large 4	For fixing the coupler heat insulation
Filter 	2	AR7, AR9
	3	AR12, AR14, AR18
Drain hose insulation 	1	Insulates the drain hose and vinyl hose connec- tion

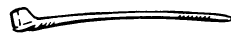
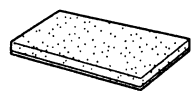
■ DUCT TYPE (LOW PRESSURE)

Name and Shape	Q'ty	Application
Installation template 	1	For positioning the indoor unit
Hanger 	4	For suspending the indoor unit from ceiling
Special nut A (large flange) 	4	For suspending the indoor unit from ceiling
Special nut B (small flange) 	4	
Coupler heat insulation (large) 	2	For indoor side pipe joint (large pipe)

Name and Shape	Q'ty	Application
Coupler heat insulation (small) 	1	For indoor side pipe joint (small pipe)
Nylon fastener 	Large 1	For fixing the drain hose
	Small 2	For power supply, transmission and remote control cord binding
Auxiliary pipe 	1	For pipe connection (gas side)
Drain hose insulation 	1	Insulates the drain hose and vinyl hose connection

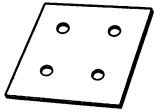
■ DUCT TYPE (HIGH PRESSURE)

Name and Shape	Q'ty	Application
Installation template 	1	For positioning the indoor unit
Special nut A (large flange) 	4	For suspending the indoor unit from ceiling
Special nut B (small flange) 	4	
Coupler heat insulation (large) 	2	For indoor side pipe joint (large pipe)
Coupler heat insulation (small) 	1	For indoor side pipe joint (small pipe)

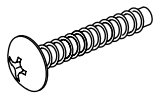
Name and Shape	Q'ty	Application
Nylon fastener 	Large 1	For fixing the drain hose
	Small 2	For power supply, transmission and remote control cord binding
Auxiliary pipe 	1	For pipe connection (gas side)
Drain hose insulation 	1	Insulates the drain hose and drain hose connection
Drain pipe insulation 	1	For insulating the drain pipe

■ COMPACT CASSETTE TYPE

● Indoor unit accessories

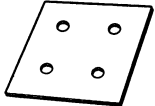
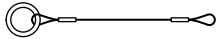
Name and Shape	Q'ty	Application
Coupler heat insulation 	2	For indoor side pipe joint
Special nut A (large flange) 	4	For installing indoor unit
Special nut B (small flange) 	4	For installing indoor unit
Template 	1	For ceiling hole cutting
Binder 	2	For power supply, transmission and remote control cord binding

● Grille accessories

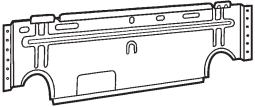
Name and Shape	Q'ty	Application
Bolt 	4	For mounting grille
Washer 	4	For mounting grille
Blower cover insulation 	2	For discharged air

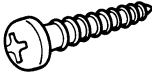
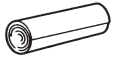
■ CASSETTE TYPE

Name and Shape	Q'ty	Application
Coupler heat insulation 	2	For indoor side pipe joint
Special nut A (large flange) 	4	For installing indoor unit
Special nut B (small flange) 	4	For installing indoor unit

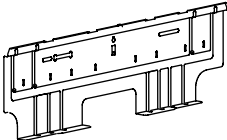
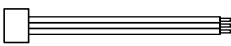
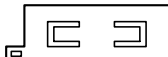
Name and Shape	Q'ty	Application
Template 	1	For ceiling hole cutting
Blower cover insulation 	2	For discharged air
Hook wire 	2	For installing intake grille
Binder 	2	For power supply, transmission and remote control cord binding

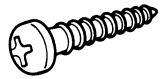
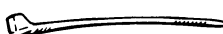
■ COMPACT WALL MOUNTED TYPE

Name and Shape	Q'ty	Use
Wall hook bracket 	1	For indoor unit installation
Seal A 	1	For wired remote controller installation

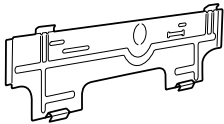
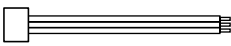
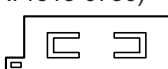
Name and Shape	Q'ty	Use
Tapping screw (big) (Ø4 x 25) 	8	For wall hook bracket installation
Cloth tape 	1	For wire assembly binding

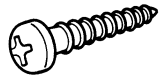
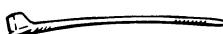
■ WALL MOUNTED TYPE

Name and Shape	Q'ty	Use
Wall hook bracket 	1	For indoor unit installation
Wire assembly 	1	For wired remote controller installation
EMI FILTER (ZCAT1518-0730) 	1	For wire assembly installation

Name and Shape	Q'ty	Use
Tapping screw (big) (Ø4 x 20) 	12	For wall hook bracket installation
Binder 	1	For wire assembly binding

■ CEILING WALL TYPE

Name and Shape	Q'ty	Use
Wall hook bracket 	1	For indoor unit installation
Wire assembly 	1	For wired remote controller installation
EMI FILTER (ZCAT1518-0730) 	1	For wire assembly installation

Name and Shape	Q'ty	Use
Tapping screw (big) (Ø4 x 20) 	12	For wall hook bracket installation
Binder 	1	For wire assembly binding

5-9 REFRIGERANT LEAKAGE CAUTION

The installer and system specialist shall secure safety against leakage according to local regulations or standards. The following standards may be applicable if local regulations are not available.

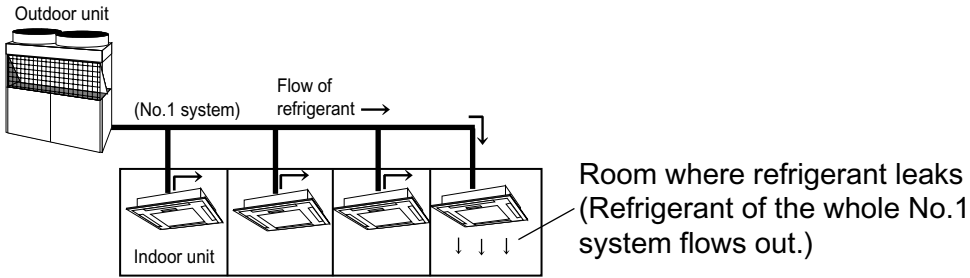
5-9-1 INTRODUCTION

Almost all our VRF type air conditioners use R22 or R407C as refrigerant. Though R22 and R407C are harmless and incombustible in themselves, the room in which the air conditioner is installed should be large enough that the refrigerant gas will not exceed the concentration limit even if the refrigerant gas leaks.

•Concentration limit

Concentration limit is the limit of Freon gas concentration where immediate measures can be taken without hurting the human body when refrigerant leaks in to the air. The concentration limit shall be described in units of Kg/m³ (Freon gas weight in /m³ air) to facilitate calculation.

Concentration limit : 0.3kg/m³ (R22),0.31kg/m³ (R407C) (ISO5149,prEN378-1)



5-9-2 CHECKING CONCENTRATION LIMIT

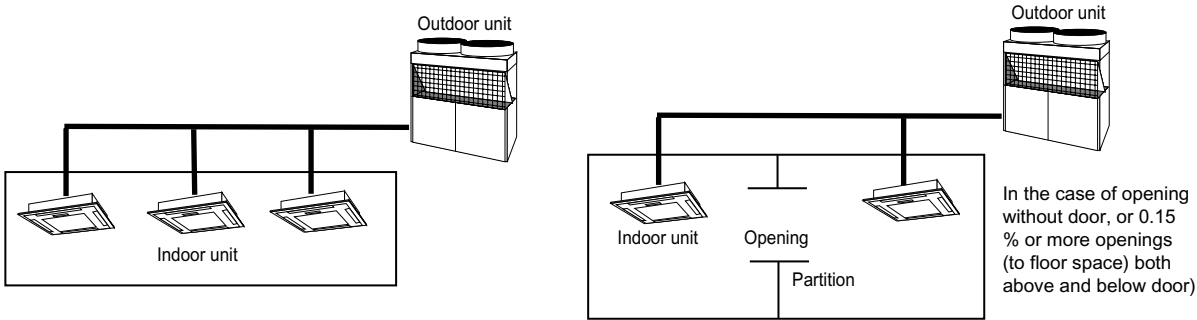
Check concentration limit following steps ① ~ ② , and take appropriate measures depending on the situation.

- ① Calculate amount of all replenished refrigerant (kg) per refrigerant system.

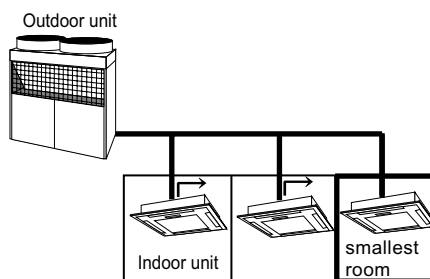
Amount of replenished refrigerant per refrigerant system	+	Amount of additional replenished refrigerant	=	Total amount of replenished refrigerant in refrigerant facility (kg)
Amount of replenished refrigerant at factory shipment		Amount of additionally replenished refrigerant depending on piping length , piping diameter and indoorunit model at customer.		

- ② Calculate minimum room capacity.
Calculate room capacity by regarding portion as one room or the smallest room.
- (a) Without partition

Note : When one refrigerant facility is divided into 2 or more refrigerant systems and each system is Independent, total amount of replenished refrigerant of each system shall be adopted.



- (b) With partition and without opening which serve as passage of air to adjoining room.



- ③ Calculate refrigerant concentration from the results of ① and ②

Total amount of replenished refrigerant
in refrigerant facility(kg)

Capacity of smallest room where
Indoor unit is installed(m^3)

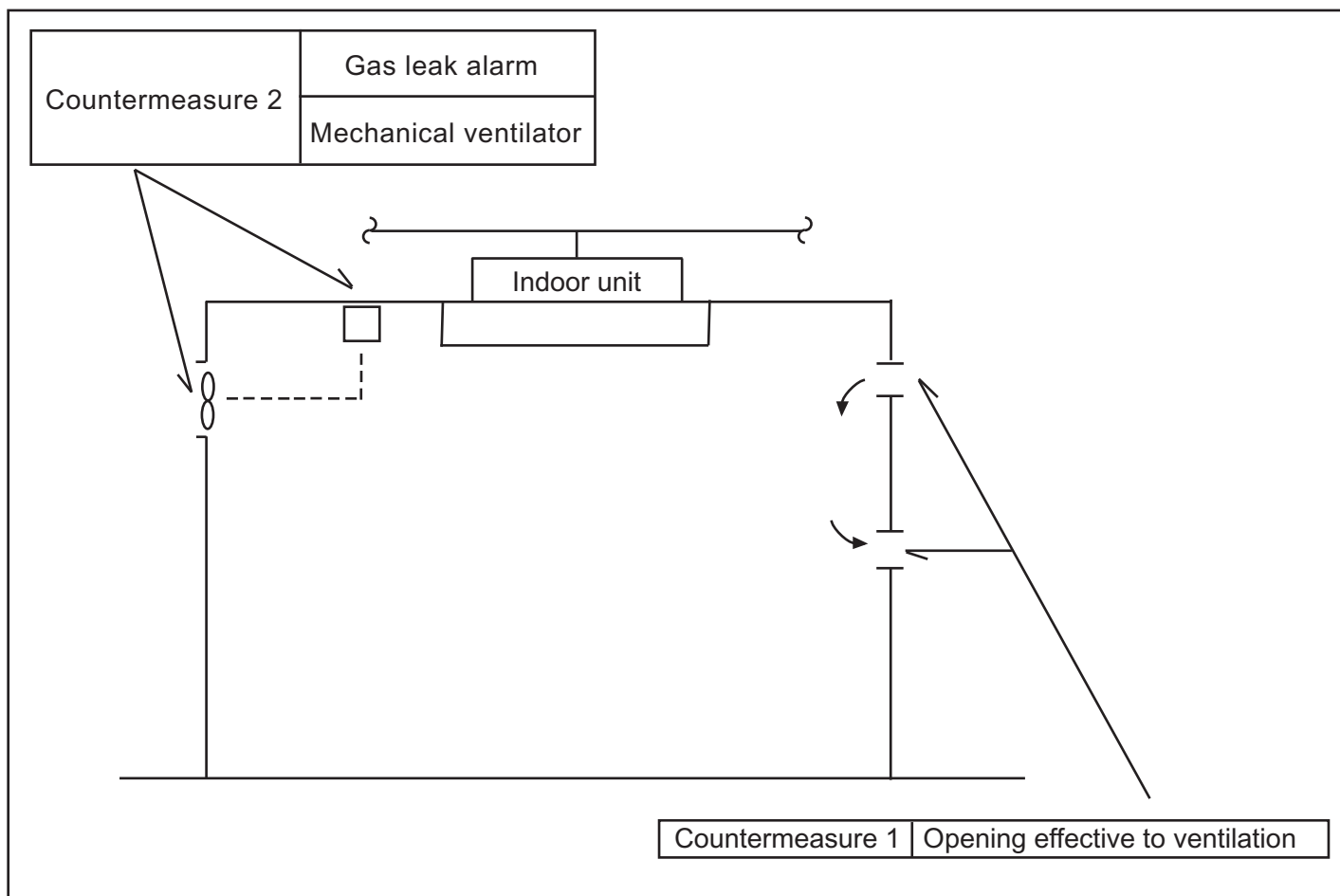
=Refrigerant concentration(kg/m^3)
(R22 or R407C)

When the result of calculation exceeds the limiting concentration, perform the same calculations by shifting to the second smallest, and the third smallest rooms until the final result is below the limiting concentration.

When concentration limit is exceeded

When the concentration limit is exceeded, change the original plan or take one of the countermeasures shown below.

- Countermeasure 1
Provide opening for ventilation.
Provide 0.15% or more opening to floor space both above and below or provide opening without door.
- Countermeasure 2
Provide gas leak alarm linked with mechanical ventilator.



Pay special attention to the place, such as a basement, etc. When refrigerant can accumulate, since refrigerant is heavier than air.



6 . TROUBLE SHOOTING

6-1 TROUBLE SHOOTING

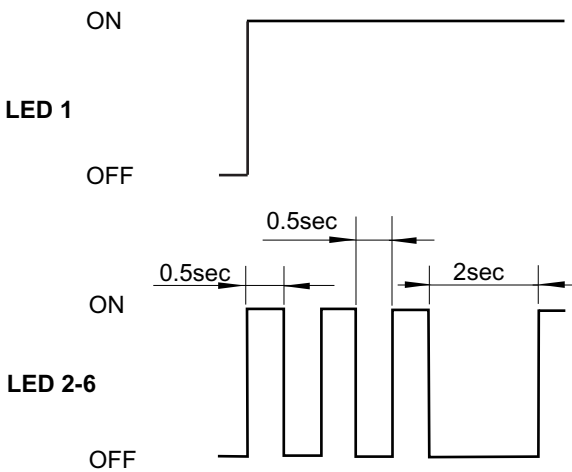
6-1-1 OUTDOOR UNIT

■NORMAL OPERATING MODE

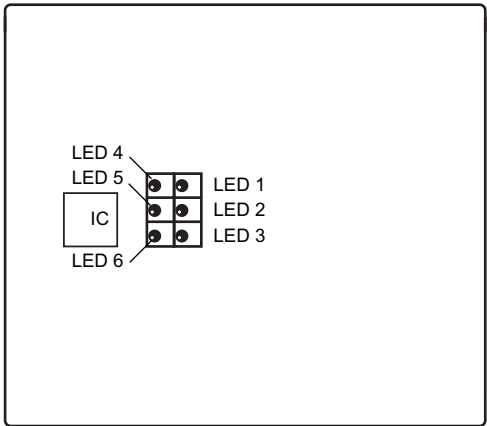
Display Type	LED 1	LED 2	LED 3	LED 4	LED 5	LED 6
Idling (stop)	⊙					
Cooling operation	⊙	○ (1)				
Heating operation	⊙	○ (2)				
Compressor 1 output	⊙		○ (1)			
Compressor 2 output	⊙		○ (2)			
Compressor 3 output	⊙		○ (3)			
Compressor 1,2 output	⊙		○ (4)			
Compressor 1,3 output	⊙		○ (5)			
Compressor 2,3 output	⊙		○ (6)			
Compressor 1,2,3 output	⊙		○ (7)			
Heat exchanger usage capacity STEP1	⊙			○ (2)		
Heat exchanger usage capacity STEP2	⊙			○ (3)		
Heat exchanger usage capacity STEP3	⊙			○ (5)		
Pressure balance operation	⊙			⊙		
Oil recovery operation	⊙				○ (1)	
Defrosting operation	⊙				○ (2)	
Test run	⊙				○ (3)	
Oil level balance operation	⊙				○ (4)	
Pump down completed	⊙	○ (2)	○ (2)	○ (2)	○ (2)	○ (2)
Liquid injection	⊙					○ (1)
Hot gas bypass	⊙					○ (2)
Recovery mode	⊙					○ (4)

Display Method ⊙ : Lighted continuously
○ : 0.5sec ON/0.5sec OFF flashing
() : Flashing times

●Operation display



●Outdoor printed circuit board layouts

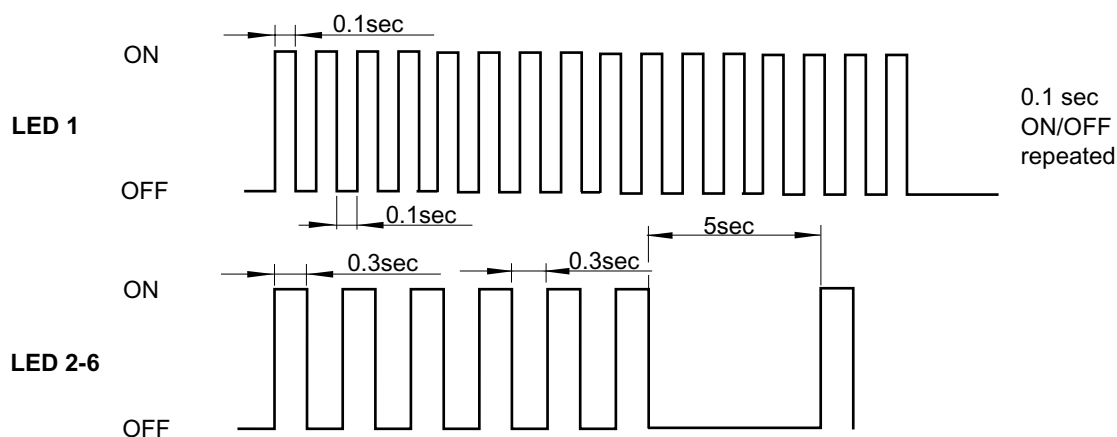


■ ABNORMAL MODE

Display type	LED 1	LED 2	LED 3	LED 4	LED 5	LED 6
Compressor 1 error	◇	● (1)				
Compressor 2 error	◇	● (2)				
Compressor 3 error	◇	● (3)				
Discharge temperature 1 error	◇	● (4)				
Discharge temperature 2 error	◇	● (5)				
Discharge temperature 3 error	◇	● (6)				
High-pressure error	◇	● (7)				
Low-pressure error	◇	● (8)				
Pump down error	◇	● (9)				
Discharge temperature thermistor 1 error	◇		● (1)			
Discharge temperature thermistor 2 error	◇		● (2)			
Discharge temperature thermistor 3 error	◇		● (3)			
Heat exchanger thermistor 1 error	◇		● (4)			
Heat exchanger thermistor 2 error	◇		● (5)			
Suction temperature thermistor error	◇		● (10)			
Outdoor temperature thermistor error	◇		● (11)			
Discharge pressure sensor error	◇			● (1)		
Suction pressure sensor error	◇			● (3)		
Reverse phase blocker error	◇				● (1)	
Power supply frequency abnormal	◇				● (2)	
EEPROM access error	◇				● (3)	
Outdoor unit circuit board error 1	◇				● (6)	
Transmission error	◇				● (8)	
Node setting error	◇				● (9)	
Indoor unit error	◇					● (1)

Display method { ◇ : 0.1 sec ON / 0.1 sec OFF flashing
 ● : 0.3 sec ON / 0.3 sec OFF flashing
 () : Flashing times

● Error display



6-1-2 INDOOR UNIT

Error display				Error contents
OPERATION lamp	TIMER lamp	VERTICAL SWING lamp	HORIZONTAL SWING lamp	
0.1sec ON/OFF	0.1 sec ON/OFF		Goes off	Model information abnormal
0.1sec ON/OFF	0.1 sec ON/OFF	0.1 sec ON/OFF	0.1 sec ON/OFF	Power supply frequency abnormal
2 times flashing	0.1 sec ON/OFF		Goes off	Room temperature thermistor error
3 times flashing	0.1 sec ON/OFF	1 times flashing	Goes off	Indoor unit heat exchanger thermistor (inlet) error
3 times flashing	0.1 sec ON/OFF	2 times flashing	Goes off	Indoor unit heat exchanger thermistor (middle) error
3 times flashing	0.1 sec ON/OFF	3 times flashing	Goes off	Indoor unit heat exchanger thermistor (outlet) error
4 times flashing	0.1 sec ON/OFF		Goes off	Drain abnormal
5 times flashing	0.1 sec ON/OFF	1 times flashing	Goes off	Communication error 1 (indoor unit ↔ Wired / Simple remote controller)
5 times flashing	0.1 sec ON/OFF	2 times flashing	Goes off	Microcomputer error
5 times flashing	0.1 sec ON/OFF	4 times flashing	Goes off	Communication error 2 (indoor unit ↔ Wired / Simple remote controller)
6 times flashing	0.1 sec ON/OFF		Goes off	Indoor unit fan error
7 times flashing	0.1 sec ON/OFF		Goes off	Blower temperature thermistor error
0.1 sec ON/OFF	3 times flashing	3 times flashing	Goes off	Outdoor unit error
0.1 sec ON/OFF	4 times flashing	1 times flashing	Goes off	EEPROM access error
0.1 sec ON/OFF	4 times flashing	2 times flashing	Goes off	EEPROM deletion error
0.1 sec ON/OFF	5 times flashing	1 times flashing	Goes off	Transmission error
0.1 sec ON/OFF	5 times flashing	2 times flashing	Goes off	Node setting error
0.1 sec ON/OFF	6 times flashing		Goes off	Parallel communication error
0.1 sec ON/OFF	7 times flashing		Goes off	Room temperature abnormal

6-1-3 WIRED,SIMPLE REMOTE CONTROLLER

Error cord	Error contents
E : 00	No error
E : 02	Model information abnormal
E : 04	Power supply frequency abnormal
E : 06	EEPROM access error
E : 07	EEPROM deletion error
E : 09	Room temperature thermistor error
E : 0A	Indoor unit heat exchanger thermistor (middle) error
E : 0b	Indoor unit heat exchanger thermistor (inlet) error
E : 0C	Indoor unit heat exchanger thermistor (outlet) error
E : 0d	Blower temperature thermistor error
E : 11	Drain abnormal
E : 12	Room temperature abnormal
E : 13	indoor unit fan error
E : 1F	Transmission error
E : 20	Node setting error
E : 21	Parallel communication error
E : 32	Outdoor unit error

6-1-4 CENTRAL REMOTE CONTROLLER / PC CONTROLLER

Error Code	Indoor unit error	Outdoor unit error	Central remote controller
00	No error	No error	No error
01	—	—	—
02	Model information abnormal	Model information error	Printed circuit board error (Control panel)
03	Microcomputer communication error	Microcomputer communication error	Printed circuit board error (Transmission adaptor)
04	Power supply frequency abnormal	Power supply frequency abnormal	Memory error
05	—	Reverse phase blocker error	Node setting error
06	EEPROM access error	EEPROM access error	Parallel communication error
07	EEPROM deletion error	—	—
08	—	—	—
09	Room temperature thermistor error	Compressor 1 error	—
0A	Heat exchanger thermistor (middle) error	Compressor 2 error	—
0B	Heat exchanger thermistor (inlet) error	Compressor 3 error	—
0C	Heat exchanger thermistor (outlet) error	—	—
0D	Blower temperature thermistor error	Discharge temperature thermistor 1 error	—
0E	—	Discharge temperature thermistor 2 error	—
0F	—	Discharge temperature thermistor 3 error	—
10	—	Outdoor temperature thermistor error	—
11	Drain abnormal	Heat exchanger inlet thermistor 1 error	—
12	Room temperature abnormal	Heat exchanger inlet thermistor 2 error	—
13	Indoor unit fan error	Heat exchanger inlet thermistor 3 error	—
14	—	Heat exchanger outlet thermistor 1 error	—
15	—	Heat exchanger outlet thermistor 2 error	—
16	—	Heat exchanger outlet thermistor 3 error	—
17	—	Suction thermistor error	—
18	Standard wired remote controller communication error 1,2	—	—
19	—	Discharge pressure sensor error	—
1A	—	Liquid pressure sensor error	—
1B	—	Suction pressure sensor error	—
1C	—	—	Connection error
1D	—	—	Initial setting error
1E	—	—	Manual storing 2 error
1F	Transmission error	Transmission error	Transmission error
20	—	—	—
21	—	Discharge temperature 1 error	Software error (Output)
22	—	Discharge temperature 2 error	Software error (Input)
23	—	Discharge temperature 3 error	—
24	—	High-pressure error	—
25	—	Low-pressure error	—
26	—	—	—
27	—	—	—
28	—	Pump down error	—

6-1-5 CASES SUCH AS THESE ARE NORMAL

■ Operation not trouble

From the standpoint of control, the following operations are incorporated for air conditioner operation and protection. They do not indicate trouble.

Operation		Description	Indoor unit	Remote indication
Red and green lamps flash alternately.		Indicates that the power came on normally when power was applied (at power failure recovery). Indication is cleared by RUN command.	The red and green lamps flash alternately in the operation stop state.	
		When test run is performed, the unit operates without regard to the temperature setting. Stopped by remote controller stop. or reset after 60 minutes.	The red and green lamps flash simultaneously in the operation state.	TEST
Red lamp flashes.		Operation is stopped and refrigerant is passed through the indoor unit to remove the outdoor unit frost (defrosting operation) or to recover the refrigerant oil (oil recovery operation). The indoor unit stops in about 5-10 minutes.	The fan stops and the refrigerant passes through. The red lamp flashes slowly.	DEFROST
Indoor unit fan does not operate even through the RUN signal has entered.		The fan is stopped to prevent blowing out of cold air when the machine is still not warm at the start of heating operation. About 3 minutes are necessary.	The fan stops and the red lamp lights steadily.	
Fan turns on/off periodically.		When the room temperature at heating operation reaches the set temperature, the FAN is stopped and room temperature rise is prevented. At this time, the fan is operated periodically to detect the room temperature. (4 minutes stop, 1minute operate)	The fan continues to operate and the red lamp lights steadily.	
Remote controller airflow indication flashes.		This is the filter cleaning time. After cleaning the filter, press the ZONE/SET key for a few seconds to be released .	Same as normal.	Airflow indication flashes
Heating operation is performed when stopped.		Anti-freeze operation is set so that the water pipe and electronic devices do not freeze. Operation starts at room temperature 5°C or less and continues until the room temperature reaches 8°C or more.	At standby, the red lamp flashes and the fan continues to operate. At operation, the heating operation is performed.	ANTIFREEZE
RUN signal is input, but is not accepted. Buzzer sounds.		When operation is inhibited during central control by central remote controller, the buzzer that denies the wireless remote controller signals sounds.	Buzzer buzzes 5 times and setting is not received. Operation before setting continues.	CENTRAL
		When an [AUTO], [FAN] and an operation other than the operation another indoor unit is already performing at cooling/heating selection type or [HEAT] operation at a cooling only unit is commanded, operation cannot be performed at that setting.	Buzzer buzzes 5 times and setting is not received. Operation before setting continues.	
		Timer setting cannot be performed by wireless remote controller at an indoor unit with wired remote controller connected. Set the timer from the wired remote controller.	Buzzer buzzes 5 times and setting is not received. Operation before setting continues.	
Makes a sound even after operation stops.		The valve opens to return the refrigerant collected inside the indoor unit to the outdoor unit even after operation stops. Remains for about 4 minutes maximum.		
		After cooling operation stops, the drain pump is operated. Remains for 3 minutes.		
Makes a sound while operating.	Flowing liquid sound during operation	A sound changed by the refrigerant flow may be made by operation of another indoor unit connected to the same outdoor unit. A switching sound may be made at the start and after the end of defrosting operation and oil recovery operation.		
	Squeaking sound	This is due to expansion and contraction of resin parts by the temperature change during heating operation and oil recovery operation.		
	Switching sound	A sound is generated when the internal valve is switched at operation switching and at the start of defrosting operation and oil recovery operation.		

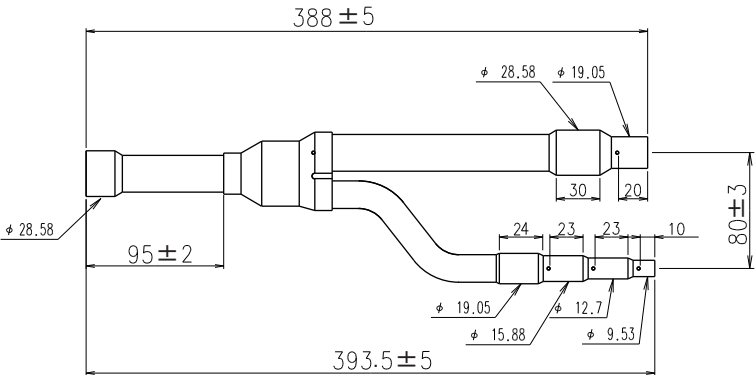
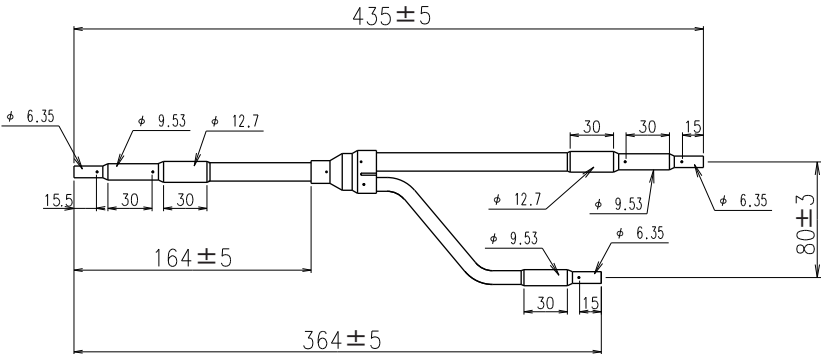
When operation and indication other than the above occurs, call the manager.

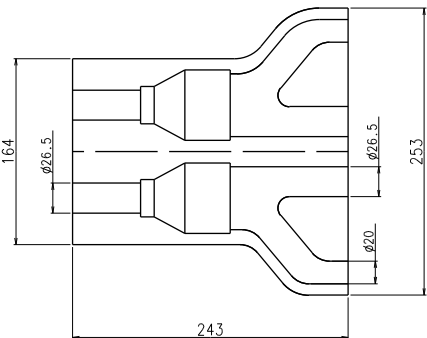
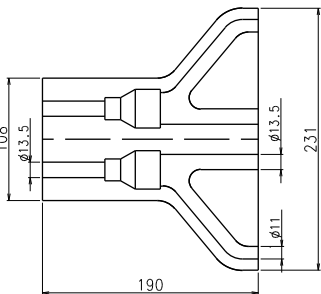


7 . OPTIONAL PARTS

7-1 SEPARATION TUBE

■ UTR - BP90TA

SEPARATION TUBE GAS PIPE side Q'ty 1	
SEPARATION TUBE LIQUID PIPE side Q'ty 1	

SEPARATION TUBE INSULATION GAS PIPE side	SEPARATION TUBE INSULATION LIQUID PIPE side
 Q'ty 1	 Q'ty 1

BINDER Q'ty 4	
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OPTIONAL
PARTS

OPTIONAL
PARTS

■ UTR - BP54TA

SEPARATION TUBE GAS PIPE side Q'ty 1	
SEPARATION TUBE LIQUID PIPE side Q'ty 1	

SEPARATION TUBE INSULATION GAS PIPE side Q'ty 1	SEPARATION TUBE INSULATION LIQUID PIPE side Q'ty 1

BINDER Q'ty 4	
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OPTIONAL
PARTS

OPTIONAL
PARTS

7-2 HEADER

■ UTR - HD908A

BRANCH HEADER A

Q'ty 1

BRANCH HEADER C

Q'ty 1

HEADER INSULATION- A	HEADER INSULATION- C
160 10 662 $\phi 20$ $\phi 13.5$ Q'ty 1	120 10 590 $\phi 20$ $\phi 10.5$ Q'ty 1

REDUCER I	REDUCER F
Technical drawing of Reducer I. It is a horizontal cylinder with a flange on the left end. Dimensions are indicated with dimension lines and arrows. The outer diameter of the flange is $\phi 12.9_{(u.o.)}$. The inner diameter of the flange is $\phi 16_{(u.o.)}$. The total length of the cylinder is 85. The diameter of the right end is $\phi 19.1$. <u>Q'ty 2</u>	Technical drawing of Reducer F. It is a horizontal cylinder with a flange on the left end. Dimensions are indicated with dimension lines and arrows. The outer diameter of the flange is $\phi 9.7_{(u.o.)}$. The inner diameter of the flange is $\phi 12.7$. The total length of the cylinder is 35. <u>Q'ty 8</u>

CLOSED PIPE A	CLOSED PIPE C	CLOSED PIPE E
 <u>Q'ty 1</u>	 <u>Q'ty 1</u>	 <u>Q'ty 1</u>

Technical drawing of a closed pipe insulation. The top view shows a circular cross-section with an outer diameter of 140 and an inner diameter of 100. The side view shows a rectangular block with a length of 150 and a height of 140.

■ UTR - HD906A

BRANCH HEADER D Q'ty 1	
BRANCH HEADER F Q'ty 1	

HEADER INSULATION- D Q'ty 1	REDUCER I Q'ty 4	REDUCER F Q'ty 6
HEADER INSULATION- F Q'ty 1		

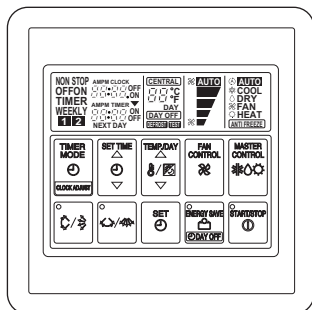
CLOSED PIPE A Q'ty 3	CLOSED PIPE C Q'ty 3	CLOSED PIPE E Q'ty 4

CLOSED PIPE INSULATION

7-3 CONTROLLER

■ WIRED REMOTE CONTROLLER

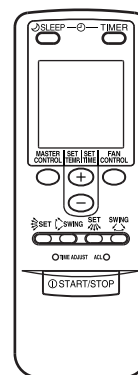
- UTB-YLB
- UTB-GLB
- UTB-TLB



- * On/Off weekly timer
- * Double auto swing louver

■ WIRELESS REMOTE CONTROLLER

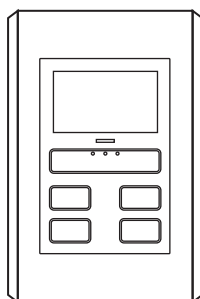
- UTB-YVA
- UTB-GVA



- * On/Off sleep timer
- * Double auto swing louver

■ SIMPLE REMOTE CONTROLLER

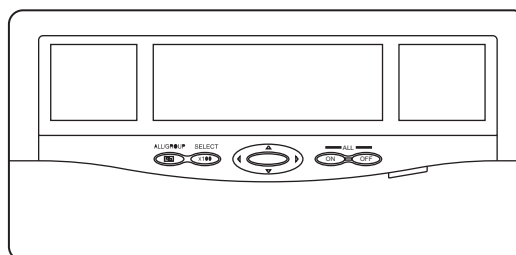
- UTB-YPA
- UTB-GPA
- UTB-TPA



- * Background light
- * Easy operation

■ CENTRAL REMOTE CONTROLLER

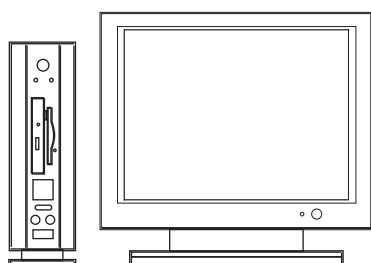
- UTB-YCA
- UTB-GCA



- * Up to 64 groups/400 indoor units can be controlled.
- * With weekly timer

■ PC (Personal Computer) CONTROLLER

- UTR-YOTA

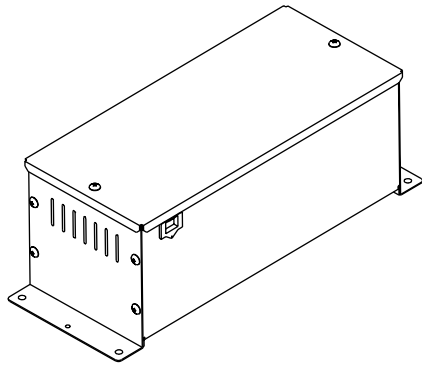


- * Maximum 400 groups/400 indoor units can be controlled.
- * Monitoring state of operation

7-4 ADAPTOR / CONVERTOR

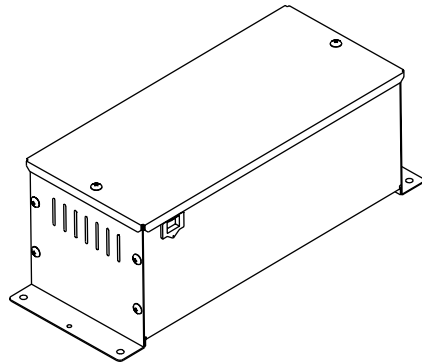
■ TRANSMISSION ADAPTOR

• UTR-YTMA



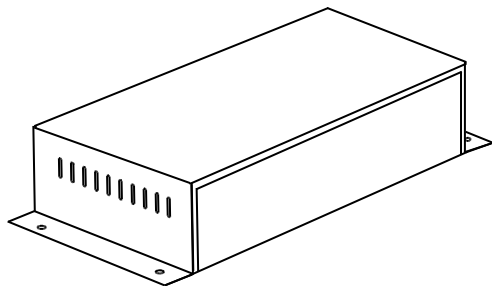
■ SIGNAL AMPLIFIER

• UTR-YRPA



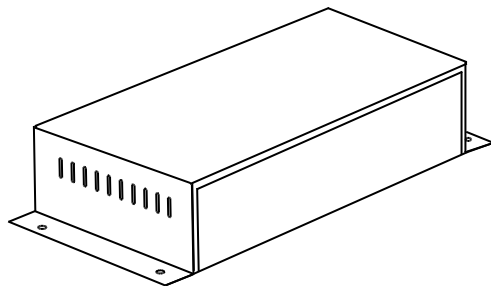
■ NETWORK CONVERTOR

• UTR-YSSA



■ NETWORK CONVERTOR

• UTR-YLLA



(LON / LON CONVERTOR)

■ NETWORK CONVERTOR

• UTR-YLEA

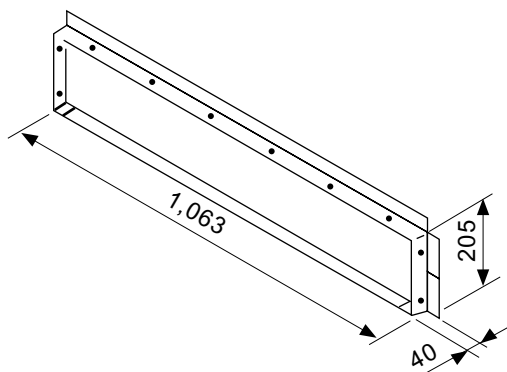
(LON / ETHRNET CONVERTOR)

7-5 OTHERS

■ FLANGE (square)

Model : UTD-SF045

- For low pressure duct type

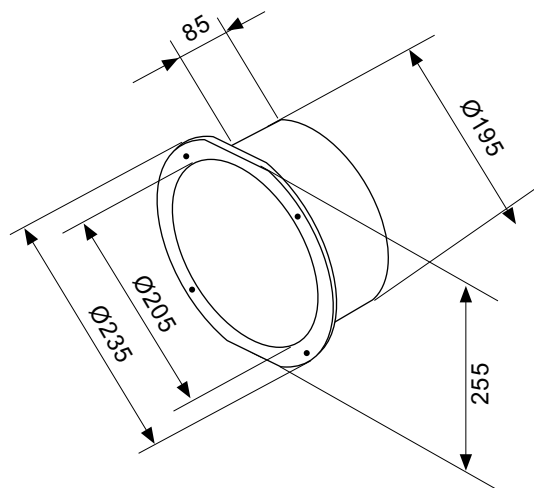


■ FLANGE (round)

Model : UTD-RF204

- For low pressure duct type

(Unit : mm)



■ FLEXIBLE DUCT

Model : UTD-RD202

- For high / low static pressure duct type

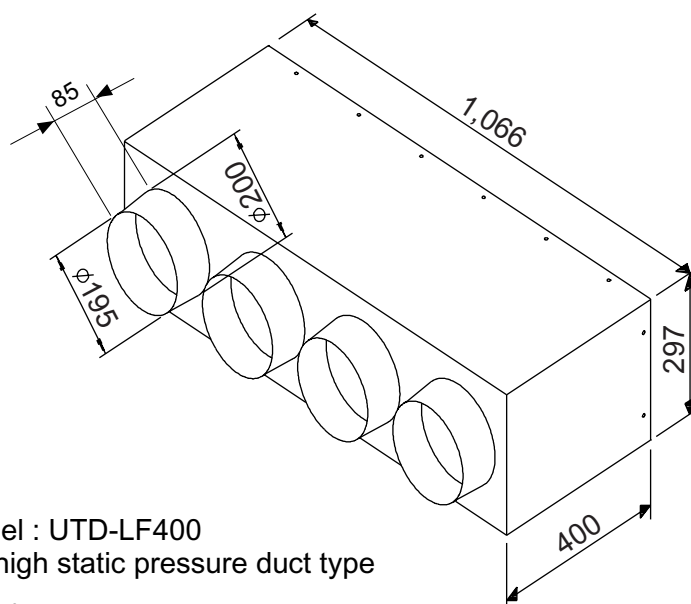
ø200 mm L 2 m



■ OUTLET CHAMBER

Model : UTD-BC200

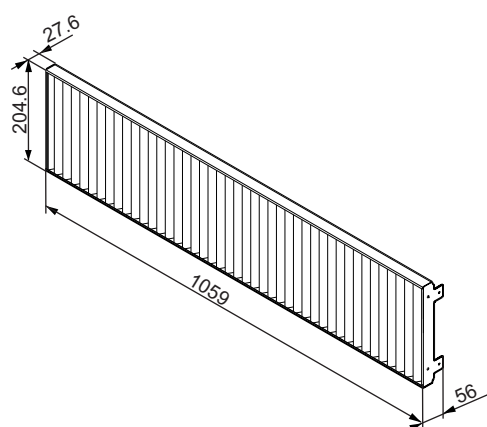
- For high static pressure duct type



■ LONG-LIFE FILTER

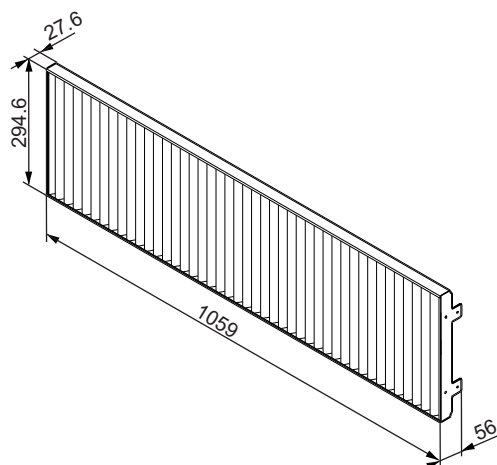
Model : UTD-LF270

- For low static pressure duct type



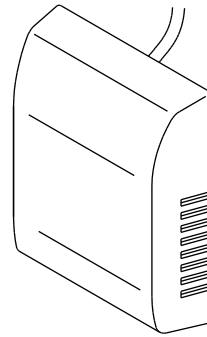
Model : UTD-LF400

- For high static pressure duct type



■ REMOTE SENSOR UNIT

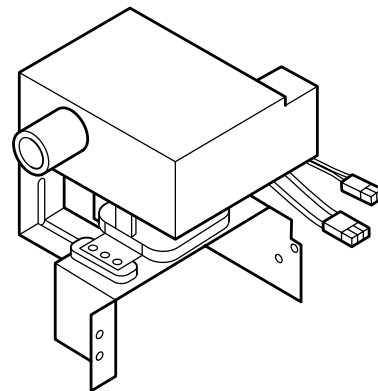
Model : UTD-RS100



■ DRAIN WATER RISER KIT

Model : UTR-DPB241

For large ceiling type

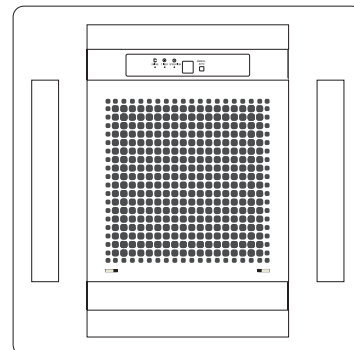


■ GRILLE KIT

Model : UTG-UDYD-W

UTG-UDGD-W

For compact cassette type





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Product specifications are subject to change without notice.

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