

DESIGN & TECHNICAL MANUAL



Flexible
Multi
System



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Flexible Multi System

1. GENERAL INFORMATION

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1. GENERAL INFORMATION

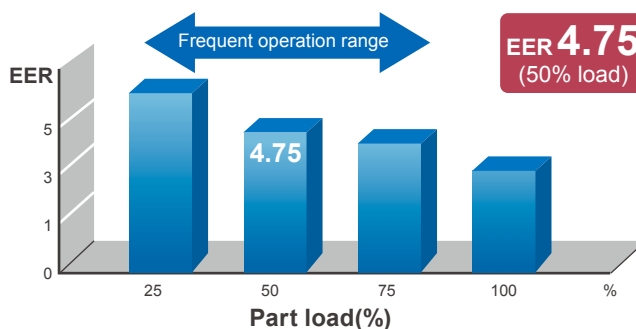
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1. FEATURES OF SYSTEM

1-1. HIGH EFFICIENCY & COMPACT

■ HIGH SEASONAL EFFICIENCY

The actual performance is conducted under various outside temperatures depending on weather and seasons, furthermore, especially for multi system, not all the rooms are operated all the time. So over 90% the actual operation time, air conditioners are operated at partial capacity instead of rated capacity.

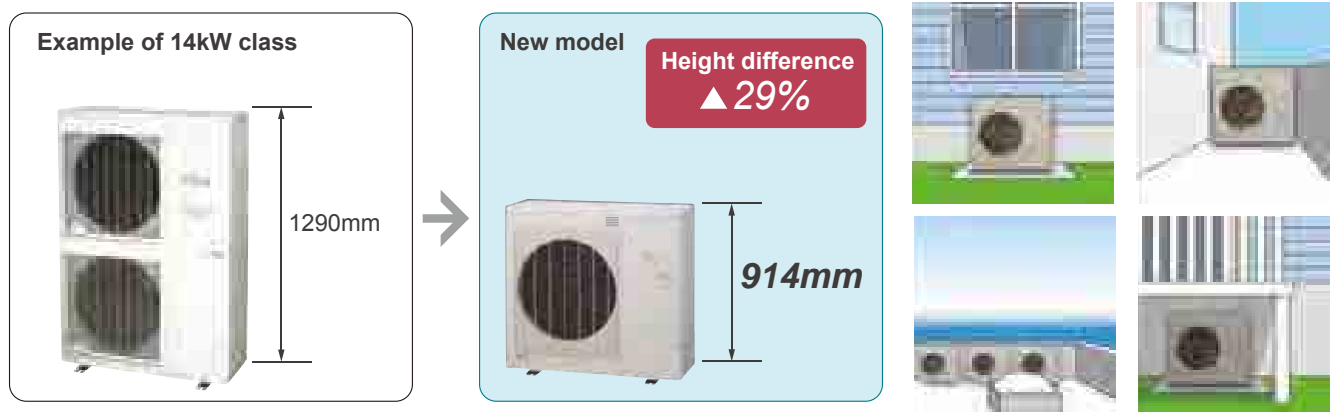


Considering these, we focused on energy-saving performance based on actual use.

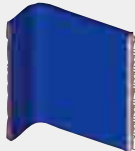
Efficiency of part load performance was drastically improved by developing an ALL DC design and our very own inverter system.

■ TOP CLASS COMPACT DESIGN

Compact and lightweight outdoor unit is easy to carry in, and it can be installed unnoticeably in various places.

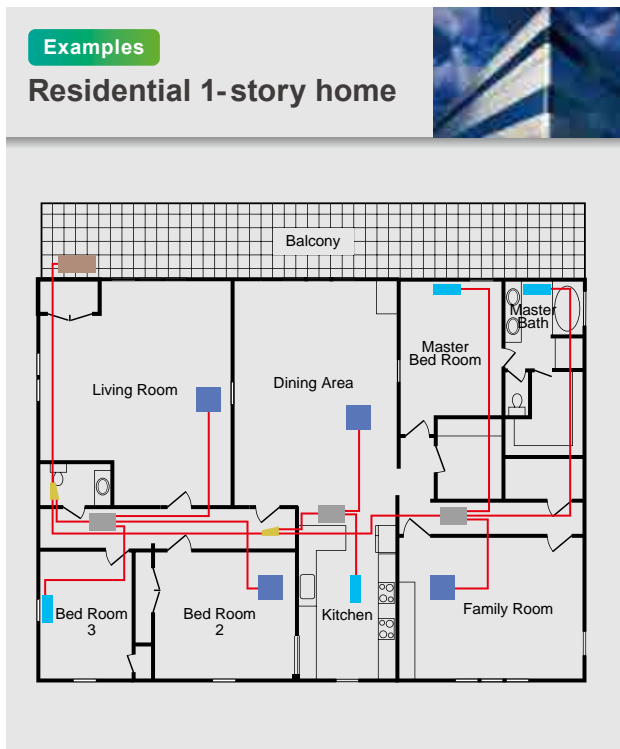


■ INNOVATIVE TECHNOLOGY

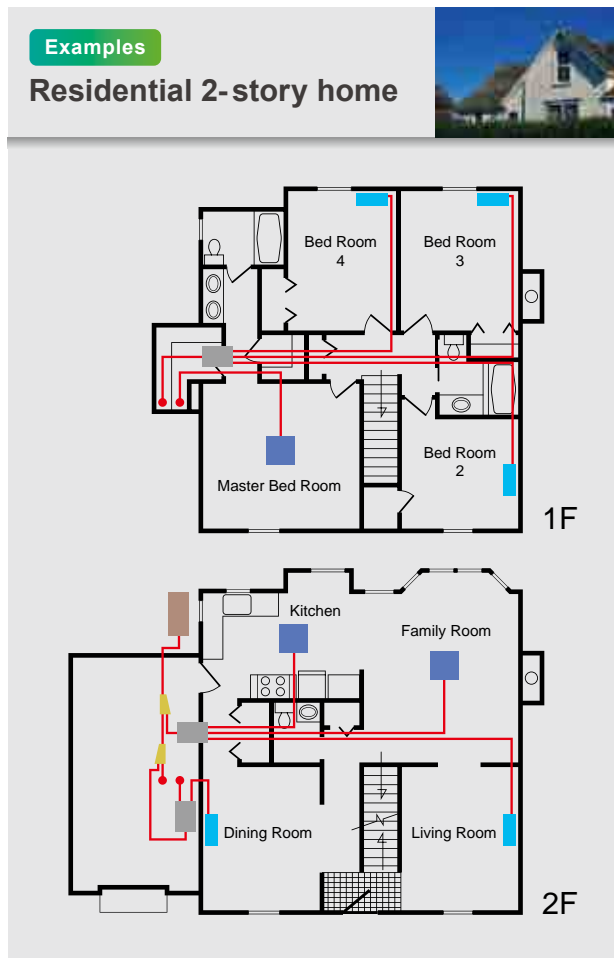
<p>High efficiency large fan: New high efficiency fan is mounted.</p> 	<p>DC Fan motor: High performance and high efficiency has been realized by using a small DC fan motor.</p> 	<p>7 segment display: Easy-to-read 7 segment LED display which explains operational and trouble status.</p> 
<p>Heat exchanger: Reduced compact size and energy saving has been realized by utilizing high density piping design and 3-Row heat exchanger.</p> 		<p>High efficiency DC twin rotary Compressor: A high performance, low noise, large capacity DC twin rotary compressor is used.</p> 

1-2. FLEXIBLE DESIGN

A variety of installation patterns can be supported using the branch box connection method.



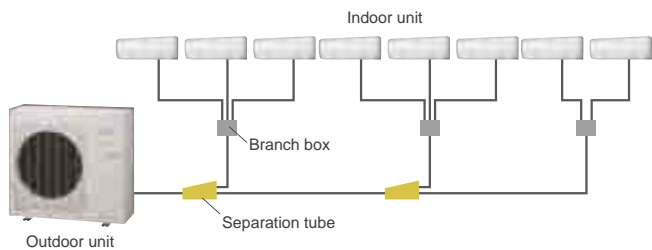
- Outdoor unit
- 2.5 kW Indoor unit
- 2.0 kW Indoor unit
- Branch box



■ LARGE CAPACITY CONNECTION

Up to 8 indoor units can be connected to one outdoor unit.

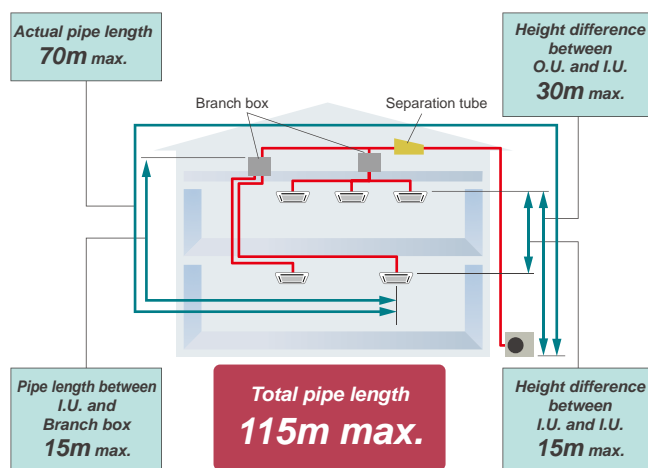
A maximum of 130% indoor unit connectable capacity. Match any room layout.



- Connectable indoor unit capacity**
80% to 130%
- Connectable indoor unit number**
2 to 8

■ LONG PIPING DESIGN

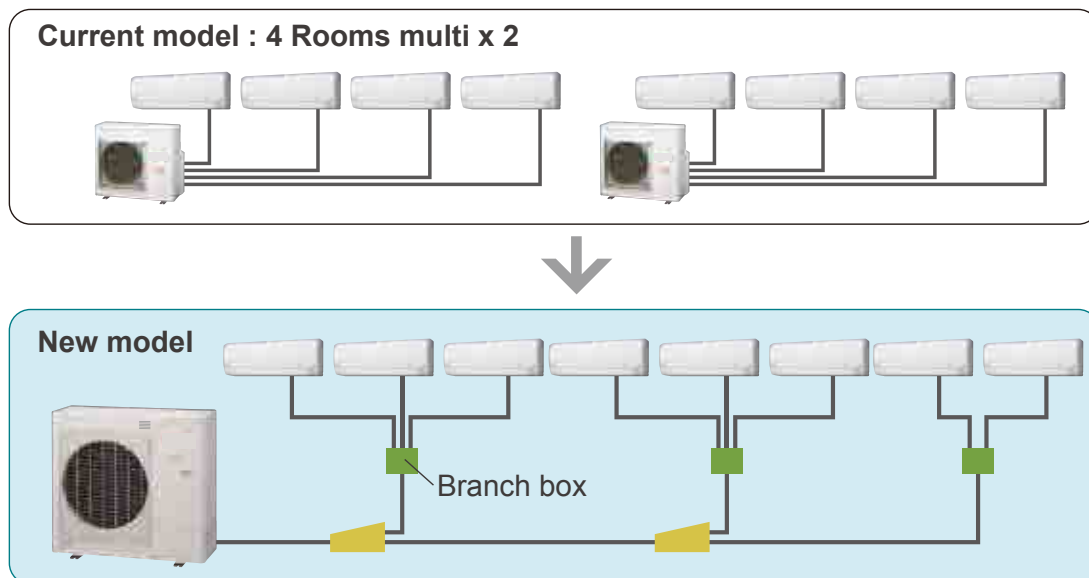
Can be installed in high rise condominiums or commercial buildings.



1-3. EASY INSTALLATION

■ EASY INSTALLATION

- Corresponding to diverse installation environments by use of branch connection system.



■ BRANCH BOX

● Allowed branch box mounting direction

Ceiling suspension



By reversing the control box position you can orient the inlet and outlet pipes into a left hand or right hand configuration.

Horizontal wall mounted



By reversing the control box position you can orient the inlet and outlet pipes into a left hand or right hand configuration.

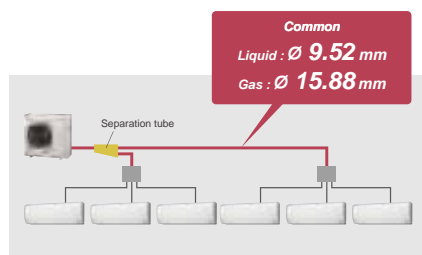
Vertical wall mounted



You cannot reverse the control box position when mounting the branch box vertically.

■ COMMON MAIN PIPE DIAMETER

Common main pipe diameter improves piping workability.

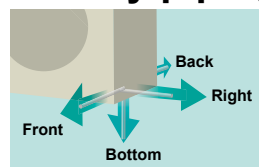


■ Lightening of outdoor unit

Easier to carry and install.



■ 4-way piping connection



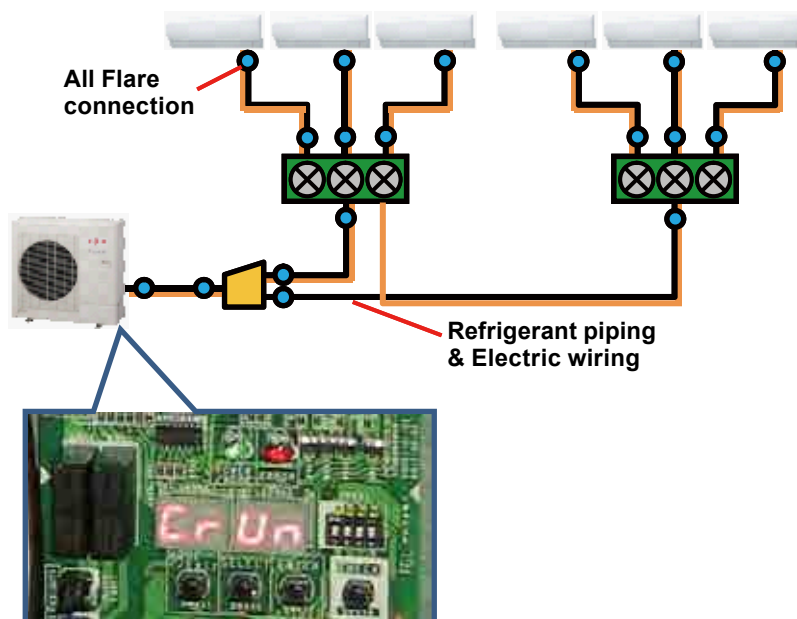
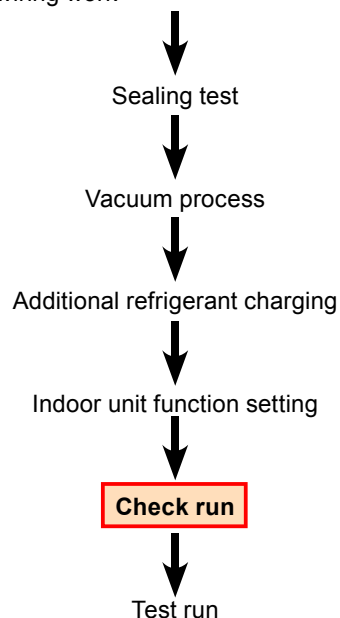
Four directions piping connection is possible. The perfect route can be selected according to the installation.

■ WIRING MISTAKE AUTOMATIC CHECK FUNCTION

- This operation allows the air conditioner to automatically check the status of the outdoor unit and check for wiring mistakes.

● Installation procedure

Refrigerant piping and electrical wiring work



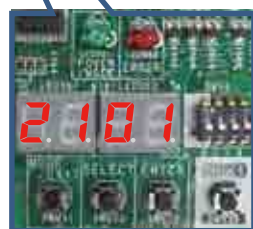
Installation mistakes and positions where errors are occurring are shown by the outdoor unit display indicators.

● Check items

- Check communication
- Check the number of connected indoor units
- Check wiring and piping connection

■ SERVICE MAINTENANCE

● 7 segment LED display



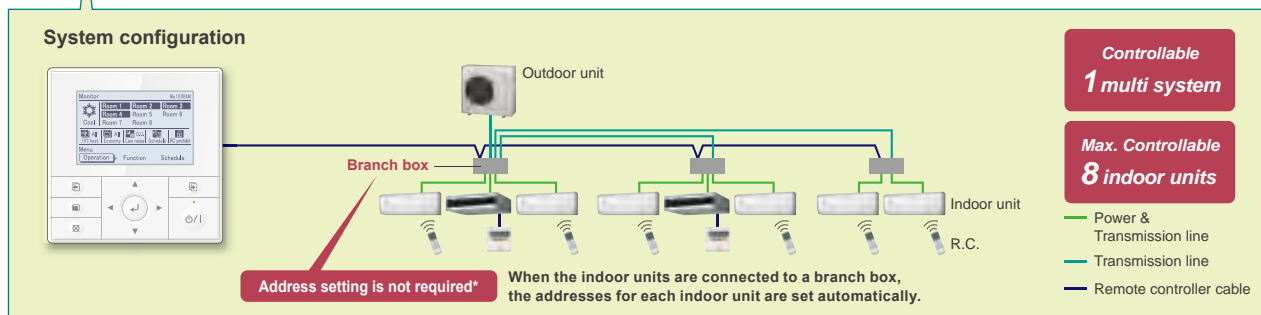
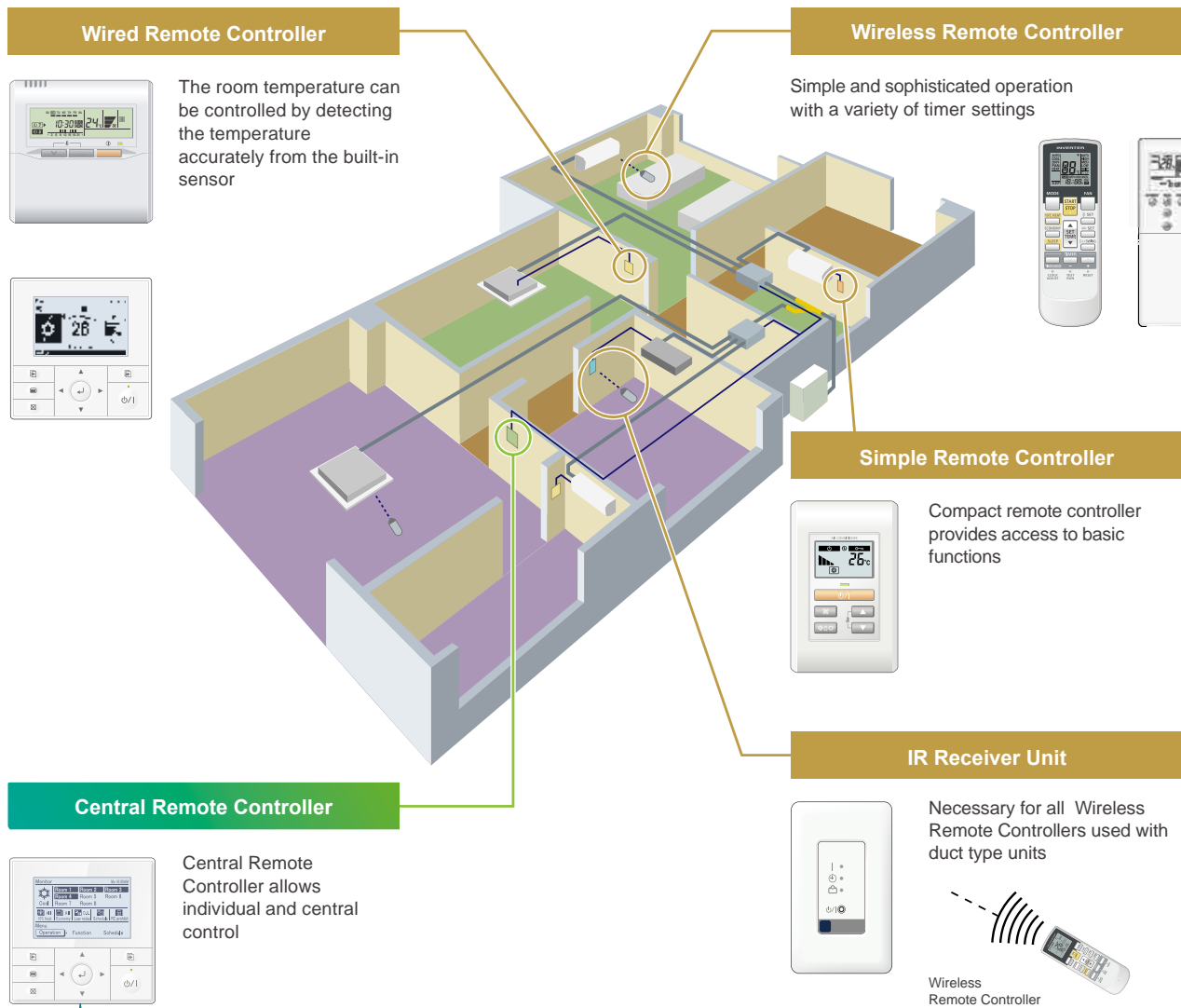
Example



Easy-to-read 7 segment LED display which explains operating and trouble status.

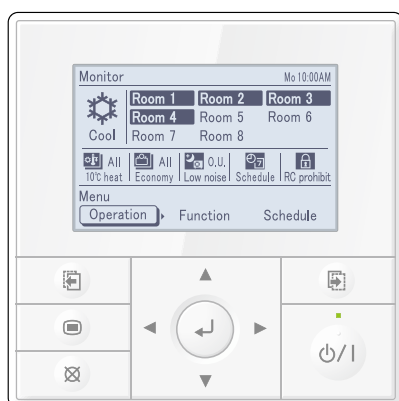
1-4. CONVENIENT CONTROL SYSTEM

All indoor units are provided with either a wireless or a wired remote controller as standard equipment. Other options, such as individual and central remote controllers, are also available. The easy-to-operate central remote controller makes it simple to control the operation mode, temperature, airflow volume, timer, and other functions of each indoor unit from a single location.



*Note : Cross-over connections are not allowed in the refrigerant system. Group settings are not allowed.

■ CENTRAL REMOTE CONTROLLER (Option)

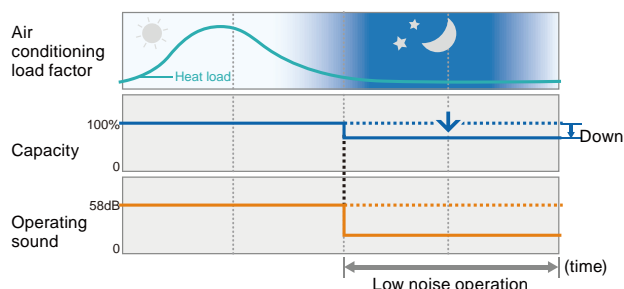


UTY-DMM*M

- Large and full-dot liquid crystal screen
- Screen with backlight can be seen even in the dark
- Wide and large keys easy to press, user-intuitive arrow key

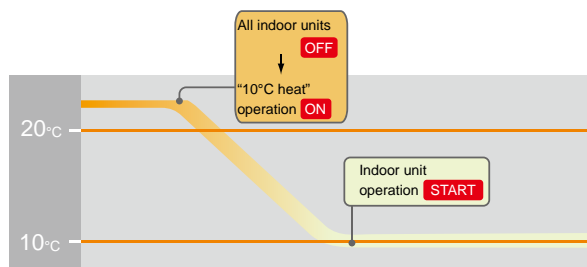
● Outdoor unit low noise operation

- Users can choose from 4 low noise levels, depending on the installation environment.



● 10°C heat (All) operation

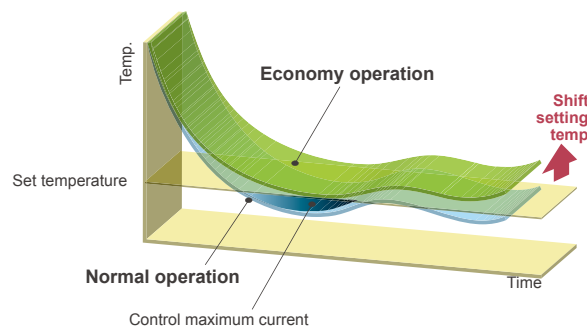
- While this function is selected, all indoor units start the 10°C heat operation when all the indoor units are stopped by operating the [On/Off button] on the central remote controller.
- When the room temperature is higher than 10°C, "10°C heat" operation does not start. Operation starts and maintains the room temperature at 10°C when the temperature drops below 10°C.
- When "10°C heat" operation stops, the room set temperature quickly returns to the preset temperature.



● Economy (All) operation

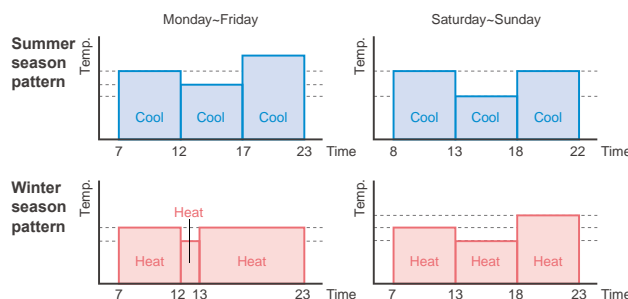
- If all the indoor and outdoor units are changed to economy mode, this can save more energy than setting each indoor unit individually.
- Economy operation is energy saving, as the set temperature of indoor unit is shifted by 1°C and the maximum electric value of the outdoor unit is suppressed.

Example : Cooling operation



● Schedule timer

- Operation setting can be changed 4 times in each day of the week, and 2 types of schedules can be set to suit users' preference.



● Prohibited Settings

The remote controller operation of all indoor units comes with a lock function to prevent unapproved operations in the various rooms.

The central remote controller also has a key lock function to prevent children from playing with it, etc.

2. MODEL LINE UP

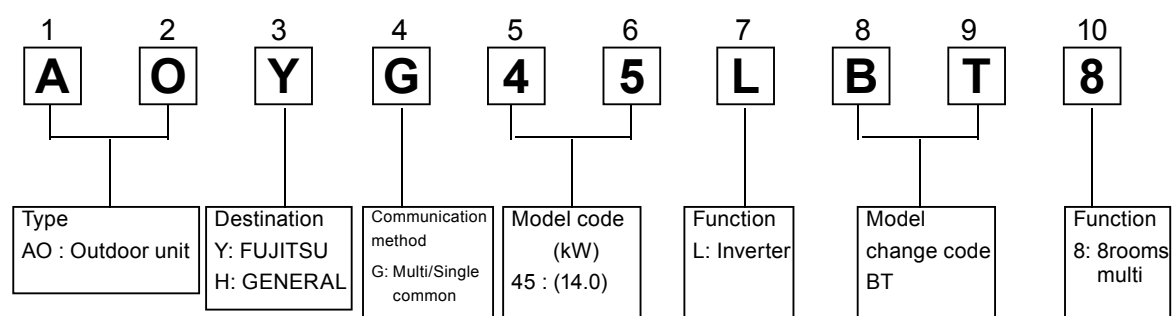
2-1. OUTDOOR UNIT

■ LINE UP

HP	Capacity (kW)	Model name	Connectable indoor unit
	5		



■ MODEL DESIGNATION



2-2. INDOOR UNIT

■ LINE UP

Various combinations of types and capacity 8 types 28 models, ranging from 2.0kW to 7.0kW(Capacity class).

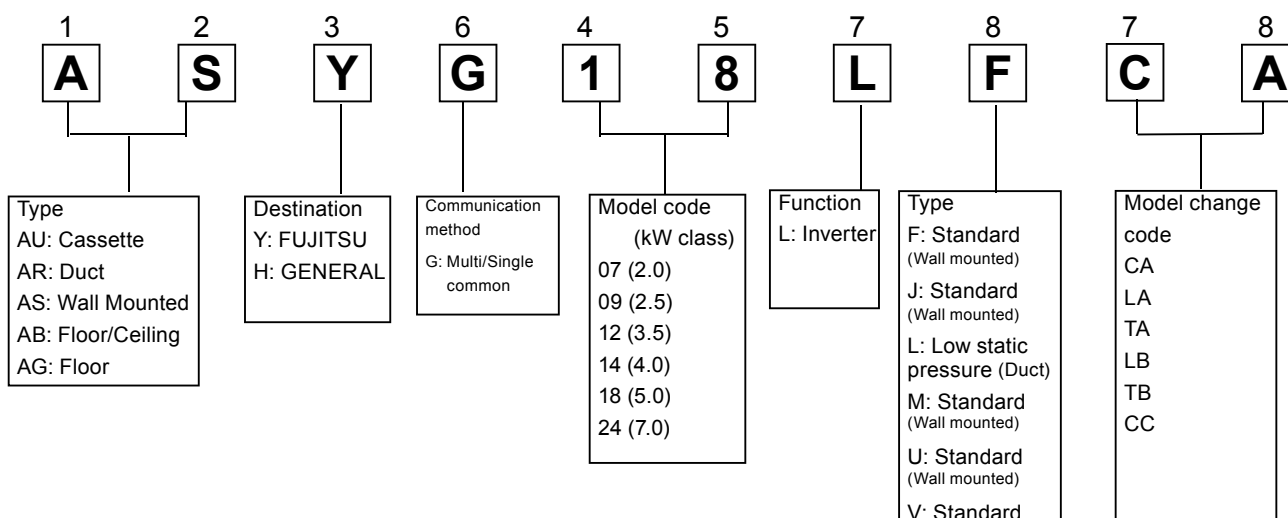
Capacity class		Compact Cassette	Slim Duct	Wall Mounted				Floor / Ceiling	Floor
kW	Model code			LJ	LU	LM	LF		
2.0	7	●	●	●	●	●			
2.5	9	●	●	●	●	●		●	
3.5	12	●	●	●	●	●		●	
4.0	14	●	●		●	●	●	●	
5.0	18	●	●				●		
7.0	24						●		

Compact Cassette	Slim Duct
AU*G07LVLA AU*G09LVLA AU*G12LVLA AU*G14LVLA AU*G18LVLA AU*G12LVLB AU*G14LVLB AU*G18LVLB	AR*G07LLTA AR*G09LLTA AR*G12LLTA AR*G14LLTA AR*G18LLTA AR*G12LLTB AR*G14LLTB AR*G18LLTB

Wall Mounted		
LJ	LU	LM
AS*G07LJCA AS*G09LJCA AS*G12LJCA	AS*G07LUCA AS*G09LUCA AS*G12LUCA AS*G14LUCA	AS*G07LMCA AS*G09LMCA AS*G12LMCA AS*G14LMCA

Wall Mounted	Floor / Ceiling	Floor
LF		
AS*G18LFCA AS*G24LFCA AS*G24LFCC	AB*G14LVTA AB*G18LVTA AB*G18LVTB	AG*G09LVCA AG*G12LVCA AG*G14LVCA

■ MODEL DESIGNATION



2-3. CONTROLLER

LINE UP

Type	Model	Indoor units							
		Compact Cassette	Slim Duct	Wall mounted				Floor / Ceiling	Floor
				LJ	LU	LM	LF		
Central Remote Controller	UTY-DMM*M	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1
Wired Remote Controller	UTY-RVN*M	○	○	○ *2	○ *3	○ *4	○	○	○
	UTY-RNN*M	○	●	○ *2	○ *3	○ *4	○	○	○
Wireless Remote Controller	AR-RAH2E	-	-	-	-	-	●	●	-
	AR-RAH1E	●	-	●	-	-	-	-	●
	AR-REA2E	-	-	-	●	-	-	-	-
	AR-REB1E	-	-	-	-	●	-	-	-
IR Receiver Unit	UTY-LRH*M	-	○	-	-	-	-	-	-
Simple Remote Controller	UTY-RSN*M	○	○	○ *2	○ *3	○ *4	○	○	○

●: Accessory, ○: Optional, -: Not applicable.

*1: Central remote controller is connected with Branch box.

*2: Optional Communication kit (UTY-XCBXZ1) is necessary for installation.

*3: Optional Communication kit (UTY-TWBXF) is necessary for installation.

*4: Optional Communication kit (UTY-XCBXZ2) is necessary for installation.

CENTRAL CONTROL

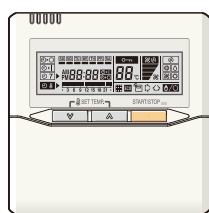
Central remote controller



UTY-DMM*M

INDIVIDUAL CONTROL

Wired Remote Controller



UTY-RNN*M



UTY-RVN*M

Simple Remote Controller



UTY-RSN*M

Wireless Remote Controller



AR-RAH2E



AR-RAH1E

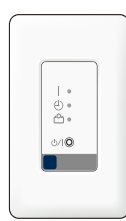


AR-REA2E



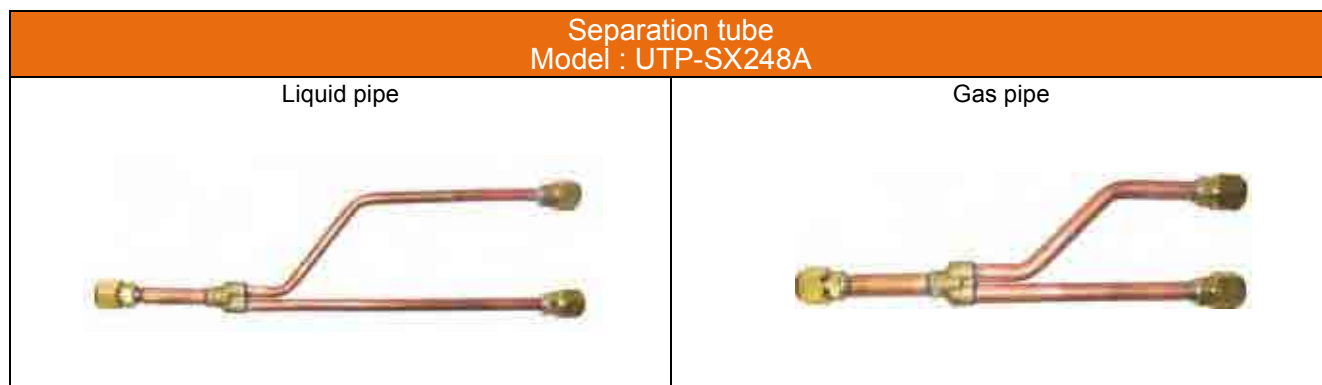
AR-REB1E

IR Receiver Unit

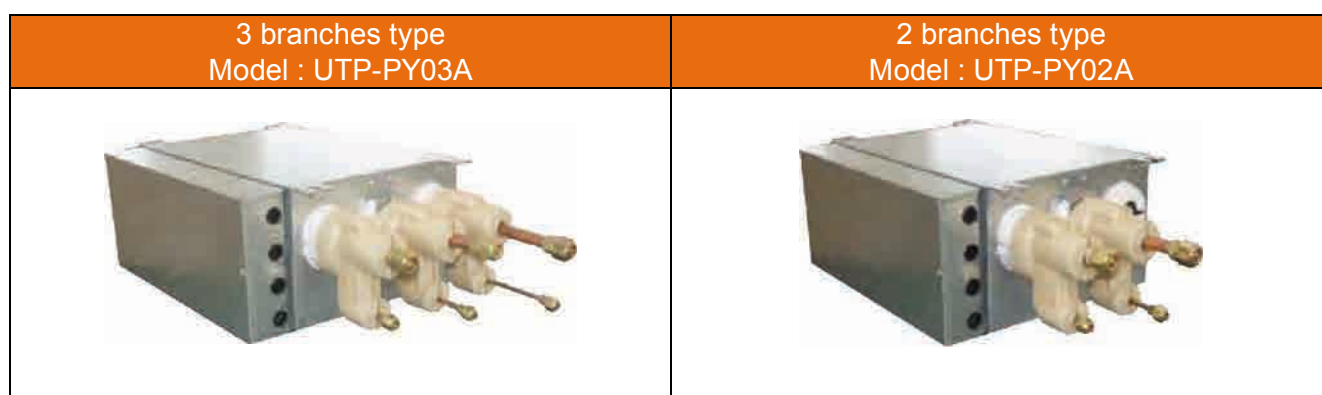


UTY-LRH*M

2-4. SEPARATION TUBE



2-5. BRANCH BOX



2-6. OTHERS

■ LINE UP

Type	Model	Indoor units								Outdoor Unit
		Compact Cassette	Slim Duct	Wall mounted				Floor / Ceiling	Floor	
				LJ	LU	LM	LF			
Cassette grille	UTG-UF*D-W	○	-	-	-	-	-	-	-	-
Air outlet shutter plate	UTR-YDZB	○	-	-	-	-	-	-	-	-
Insulation kit for high humidity	UTZ-KXGC	○	-	-	-	-	-	-	-	-
Fresh air intake kit	UTZ-VXAA	○	-	-	-	-	-	-	-	-
External control set	UTD-ECS5A	-	○	-	-	-	-	-	-	-
External connect kit	UTY-XWZX	○	-	○ *1	-	-	○	○	○	-
	UTY-XWZXZ3	-	-	-	-	-	-	-	-	○
External connect kit (For Base heater)	UTY-XWZXZ4	-	-	-	-	-	-	-	-	○
External connect kit	UTY-XWZXZ5	-	-	-	○ *2	○ *3	-	-	-	-
Remote sensor unit	UTY-XSZX	-	○	-	-	-	-	-	-	-
Auto louver grille kit	UTD-GXSA-W UTD-GXSB-W	-	○	-	-	-	-	-	-	-
Communication kit	UTY-XCBXZ1	-	-	○	-	-	-	-	-	-
	UTY-XCBXZ2	-	-	-	-	○	-	-	-	-
	UTY-TWBXF	-	-	-	○	-	-	-	-	-
Half concealed kit	UTR-STA	-	-	-	-	-	-	-	○	-

○: Optional, -: Not applicable.

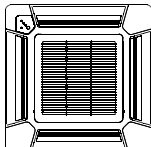
*1: Optional Communication kit (UTY-XCBXZ1) is necessary for installation.

*2: Optional Communication kit (UTY-TWBXF) is necessary for installation.

*3: Optional Communication kit (UTY-XCBXZ2) is necessary for installation.


■ PARTS

Cassette grille
Model : UTG-UF*D-W



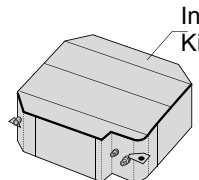
For Compact Cassette type

Air outlet shutter plate
Model : UTR-YDZB



For Compact Cassette type

Insulation kit for high humidity
Model : UTZ-KXGC



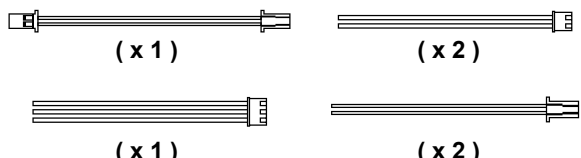
For Compact Cassette type

Fresh air intake kit
Model : UTZ-VXAA



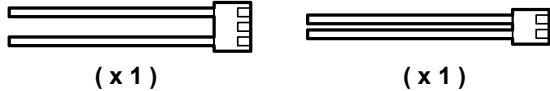
For Compact Cassette type

External control set
Model : UTD-ECS5A



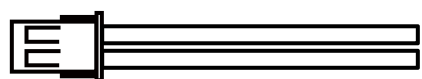
For Slim Duct type

External connect kit
Model : UTY-XWZX



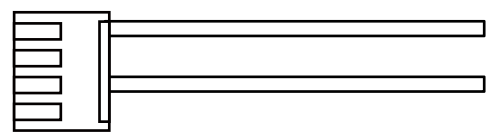
For Compact Cassette, Wall Mounted (LJ), Wall Mounted (LF), Floor/Ceiling, Floor type

External connect kit
Model : UTY-XWZXZ3




For Outdoor unit

External connect kit (For Base heater)
Model : UTY-XWZXZ4



For Outdoor unit

External connect kit
Model : UTY-XWZXZ5



For Wall Mounted (LU, LM) type

Remote sensor unit
Model : UTY-XSZX



For Slim Duct type


■ PARTS

Auto louver grille kit Models : UTD-GXSA-W *1
UTD-GXSB-W *2



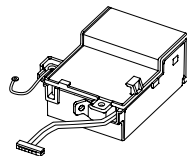
*1 For Slim Duct (07-14 models)
*2 For Slim Duct (18 model)

Communication kit Model : UTY-XCBXZ1




For Wall Mounted (LJ) type

Communication kit Model : UTY-XCBXZ2



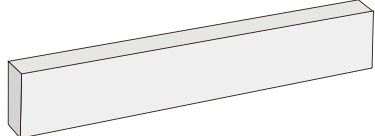
For Wall Mounted (LM) type

Communication kit Model : UTY-TWBXF



For Wall Mounted (LU) type

Half concealed kit Model : UTR-STA



For Floor type

Flexible Multi System

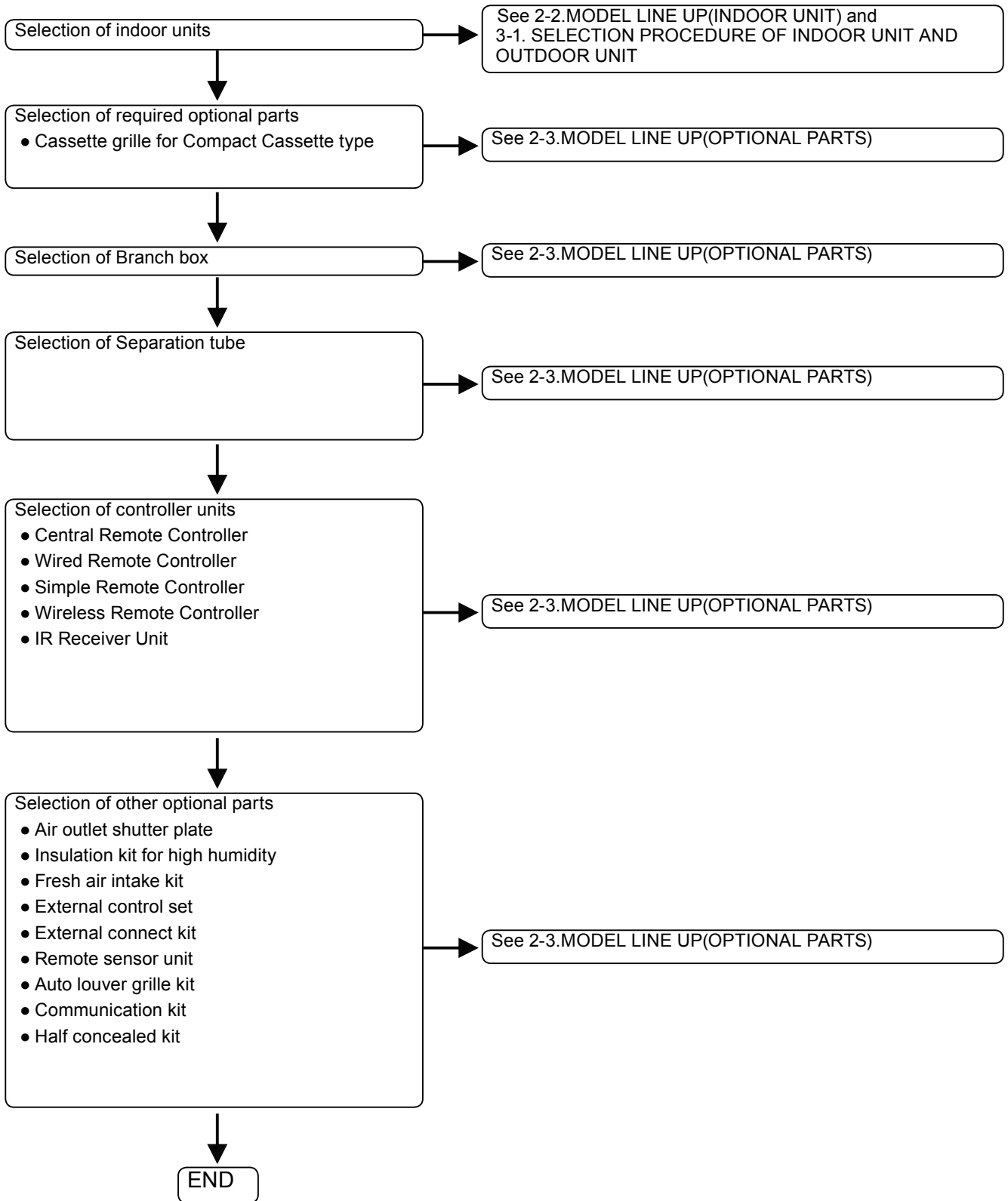
2. MODEL SELECTION

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2. MODEL SELECTION

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1. MODEL SELECTION PROCEDURE



2. MODEL LINE UP

2-1. OUTDOOR UNIT

HP	Rated capacity (kW)		Model name	Connectable indoor unit	
	Cooling	Heating		Number	Capacity (%)
5	14.0	16.0	AO*G45LBT8	2 to 8	80 to 130

2-2. INDOOR UNIT

Type	Capacity class (kW)	Rated capacity (kW)		Model name	Remarks	
		Cooling	Heating			
Compact Cassette	2.0	2.05	2.37	AU*G07LVLA	UTG-UF*D-W (Cassette grille)	
	2.5	2.64	2.99	AU*G09LVLA		
	3.5	3.52	3.96	AU*G12LVLA		
				AU*G12LVLB		
	4.0	4.10	4.80	AU*G14LVLA		
				AU*G14LVLB		
	5.0	5.27	5.86	AU*G18LVLA		
AU*G18LVLB						
Slim Duct	2.0	2.05	2.37	AR*G07LLTA		
	2.5	2.64	2.99	AR*G09LLTA		
	3.5	3.52	3.96	AR*G12LLTA		
				AR*G12LLTB		
	4.0	4.10	4.80	AR*G14LLTA		
				AR*G14LLTB		
	5.0	5.27	5.86	AR*G18LLTA		
AR*G18LLTB						
Wall Mounted	LJ	2.0	2.05	2.37	AS*G07LJCA	
		2.5	2.64	2.99	AS*G09LJCA	
		3.5	3.52	3.96	AS*G12LJCA	
	LU	2.0	2.05	2.37	AS*G07LUCA	
		2.5	2.64	2.99	AS*G09LUCA	
		3.5	3.52	3.96	AS*G12LUCA	
		4.0	4.10	4.80	AS*G14LUCA	
	LM	2.0	2.05	2.37	AS*G07LMCA	
		2.5	2.64	2.99	AS*G09LMCA	
		3.5	3.52	3.96	AS*G12LMCA	
		4.0	4.10	4.80	AS*G14LMCA	
	LF	5.0	5.27	5.86	AS*G18LFCA	
		7.0	7.03	7.91	AS*G24LFCA	
					AS*G24LFCC	
	Floor / Ceiling	4.0	4.10	4.80	AB*G14LVTA	
5.0		5.27	5.86	AB*G18LVTA		
				AB*G18LVTB		
Floor	2.5	2.64	2.99	AG*G09LVCA		
	3.5	3.52	3.96	AG*G12LVCA		
	4.0	4.10	4.80	AG*G14LVCA		

2-3. OPTIONAL PARTS

■ BRANCH BOX

Items	Model name	Remarks
3 branches type	UTP-PY03A	
2 branches type	UTP-PY02A	

■ SEPARATION TUBE

Items	Model name	Remarks
Separation tube	UTP-SX248A	

■ CONTROLLER

Items	Model name	Remarks
Central Remote Controller	UTY-DMM*M	
Wired Remote Controller	UTY-RVN*M	
	UTY-RNN*M	Accessory: Slim Duct
Simple Remote Controller	UTY-RSN*M	
Wireless Remote Controller	AR-RAH2E	Accessory: Wall Mounted(LF), Floor/Ceiling
	AR-RAH1E	Accessory: Wall Mounted(LJ), Compact Cassette, Floor
	AR-REA2E	Accessory: Wall Mounted(LU)
	AR-REB1E	Accessory: Wall Mounted(LM)
IR Receiver Unit	UTY-LRH*M	

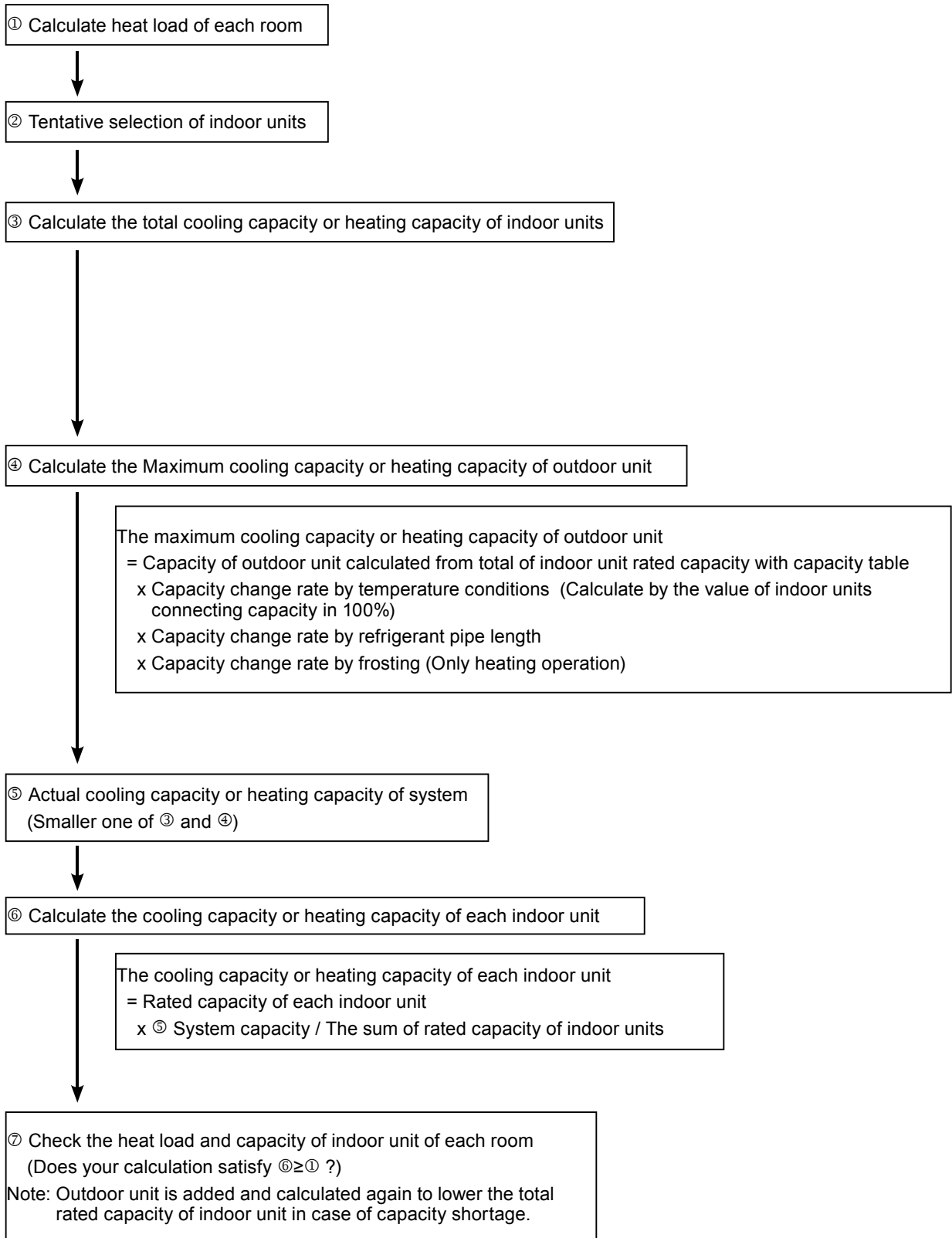
■ OTHERS

Items	Model name	Remarks
Cassette grille	UTG-UF*D-W	Refer to "7. OPTIONAL PARTS"
Air outlet shutter plate	UTR-YDZB	
Insulation kit for high humidity	UTZ-KXGC	
Fresh air intake kit	UTZ-VXAA	
External control set	UTD-ECS5A	
External connect kit	UTY-XWZX	
	UTY-XWZXZ3	
External connect kit (For Base heater)	UTY-XWZXZ4	
External connect kit	UTY-XWZXZ5	
Remote sensor unit	UTY-XSZX	
Auto louver grille kit	UTD-GXSA-W	
	UTD-GXSB-W	
Communication kit	UTY-XCBXZ1	
	UTY-XCBXZ2	
	UTY-TWBXF	
Half concealed kit	UTR-STA	

3. MODEL SELECTION AND CAPACITY CALCULATION

3-1. SELECTION PROCEDURE OF INDOOR UNIT AND OUTDOOR UNIT

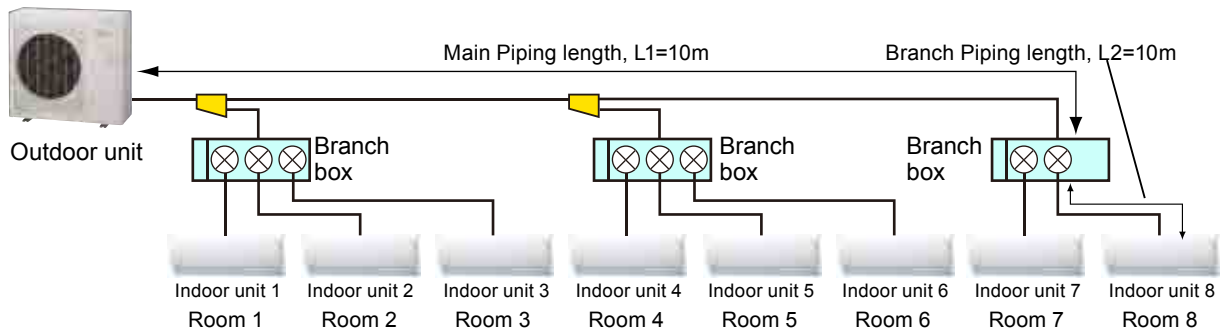
Please select indoor units and outdoor units and make the capacity of each indoor unit larger than cooling and heating load.



3-2. THE EXAMPLE OF CALCULATION

3-2-1. COOLING EXAMPLE

EXAMPLE 1 (When the connecting capacity for indoor unit is 100% or more)



● Design conditions

- Design temperature
Indoor : 23°C DB / 16°C WB
Outdoor : 30°C DB
- Pipe length
Main piping length : L1=10m
Branch piping length : L2=10m
- Operation mode: Cooling

● Selection of indoor unit

			Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8	Remark	
A-1	Cooling heat load	kW	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7		
A-2	Indoor unit models		AS07	AS07	AS07	AS07	AS07	AS07	AS07	AS07		
A-3	Rated capacity (TC _{in,r})	kW	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	Cooling	
A-4	Total capacity $\sum(TC_{in,r})$	kW	2.05 x 8 = 16.4									Sum of A-3
A-5	Connecting indoor unit capacity (Cp)		16.4 / 14.0 = 117% (80% ≤ Cp ≤ 130%)									
A-6	Capacity at design temperature (TC _{in,d})	kW	1.78	1.78	1.78	1.78	1.78	1.78	1.78	1.78	See 6-1.	
A-7	Total capacity at design temperature $\sum(TC_{in,d})$	kW	1.78 x 8 = 14.2									Sum of A-6

● Calculate the Maximum capacity of outdoor unit

				Remark
B-1	Outdoor unit model		AO*G45LBT8	
B-2	Rated capacity (TC _{out,r})	kW	14.0	Cooling
B-3	Capacity change rate by temperature conditions		13.9 / 14.0 = 0.993	See Fig.1
B-4	Capacity change rate by indoor units connecting capacity	kW	15.4	See Fig.2
B-5	Compensation coefficient of pipe length		0.98 x 0.942 = 0.923	See 5-1.
B-6	Maximum capacity of outdoor unit (TC _{out,c})	kW	15.4 x 0.993 x 0.923 = 14.1	(B-4) x (B-3) x (B-5)

● Decide system capacity

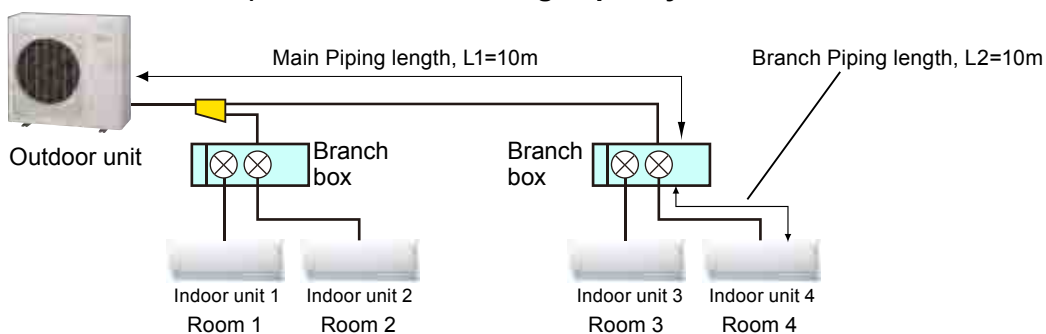
				Remark
C-1	System capacity	kW	14.1	Smaller one of (A-7) and (B-6)

● Calculate actual capacity of each indoor unit

		Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8	Remark
Actual capacity of each indoor unit	kW	1.76	1.76	1.76	1.76	1.76	1.76	1.76	1.76	(A3) x (C1) / (A4)

Actual capacity of all indoor units is larger than cooling heat load of each room.

EXAMPLE 2 (When the connecting capacity for indoor unit is 100% or less)



● Design conditions

- Design temperature
Indoor : 23.0°C DB / 16.0°C WB
Outdoor : 30.0°C DB
- Pipe length
Main piping length : L1=10m
Branch piping length : L2=10m
- Operation mode: Cooling

● Selection of indoor unit

			Room 1	Room 2	Room 3	Room 4	Remark
A-1	Cooling heat load	kW	2.2	2.2	2.9	2.9	
A-2	Indoor unit models		AS09	AS09	AS12	AS12	
A-3	Rated capacity (TC _{in}) _r	kW	2.64	2.64	3.52	3.52	Cooling
A-4	Total capacity $\sum(TC_{in})_r$		2.64 x 2 + 3.52 x 2 = 12.3				Sum of A-3
A-5	Connecting indoor unit capacity (C _p)		12.3 / 14.0 = 87.9% (80% ≤ C _p ≤ 130%)				
A-6	Capacity at design temperature (TC _{in}) _d	kW	2.30	2.30	3.06	3.06	See 6-1.
A-7	Total capacity at design temperature $\sum(TC_{in})_d$	kW	2.30 x 2 + 3.06 x 2 = 10.7				Sum of A-6

● Calculate the Maximum capacity of outdoor unit

			Remark
B-1	Outdoor unit model		AO*G45LBT8
B-2	Rated capacity (TC _{out}) _r	kW	14.0
B-3	Capacity change rate by temperature conditions		13.9 / 14.0 = 0.993
B-4	Capacity change rate by indoor units connecting capacity	kW	14.0 *1
B-5	Compensation coefficient of pipe length		0.98 x 0.942 = 0.923
B-6	Maximum capacity of outdoor unit (TC _{out}) _c	kW	14.0 x 0.993 x 0.923 = 12.8

*1: When indoor units connecting capacity is 100% or less, rated capacity is used.

● Decide system capacity

			Remark
C-1	System capacity	kW	10.7

● Calculate actual capacity of each indoor unit

		Room 1	Room 2	Room 3	Room 4	Remark
Actual capacity of each indoor unit	kW	2.30	2.30	3.06	3.06	(A3) x (C1) / (A4)

Actual capacity of all indoor units is larger than cooling heat load of each room.

● Fig 1

Indoor unit connecting capacity (%)	Outdoor temperature (°C)	Indoor temperature									
		21.0°CDB		23.0°CDB		27.0°CDB		29.0°CDB		32.0°CDB	
		15.0°CWB		16.0°CWB		19.0°CWB		21.0°CWB		23.0°CWB	
		TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
...
100	-5.0	13.2	2.00	14.5	2.11	15.6	2.25	17.5	2.40	19.0	2.50
	0.0	13.2	2.08	14.5	2.14	15.6	2.30	17.5	2.45	19.0	2.55
	5.0	13.2	2.12	14.5	2.19	15.6	2.40	17.5	2.50	19.0	2.65
	10.0	13.2	2.16	14.5	2.25	15.6	2.50	17.5	2.60	19.0	2.80
	15.0	13.2	2.21	14.5	2.40	15.6	2.75	17.5	2.80	19.0	3.00
	20.0	12.9	2.45	14.4	2.63	15.5	3.00	17.4	3.10	19.0	3.20
	25.0	12.6	2.80	14.2	3.20	15.3	3.50	17.2	3.90	18.4	4.00
	30.0	12.2	3.81	13.9	4.15	15.2	4.41	17.0	4.70	17.7	5.00
	35.0	11.7	4.67	13.5	4.95	14.0	5.20	15.6	5.26	16.0	5.34
	40.0	11.2	5.01	12.5	5.12	13.0	5.21	14.2	5.32	15.0	5.41
46.0	10.4	4.75	11.0	4.97	11.5	5.05	12.5	5.10	12.9	5.15	

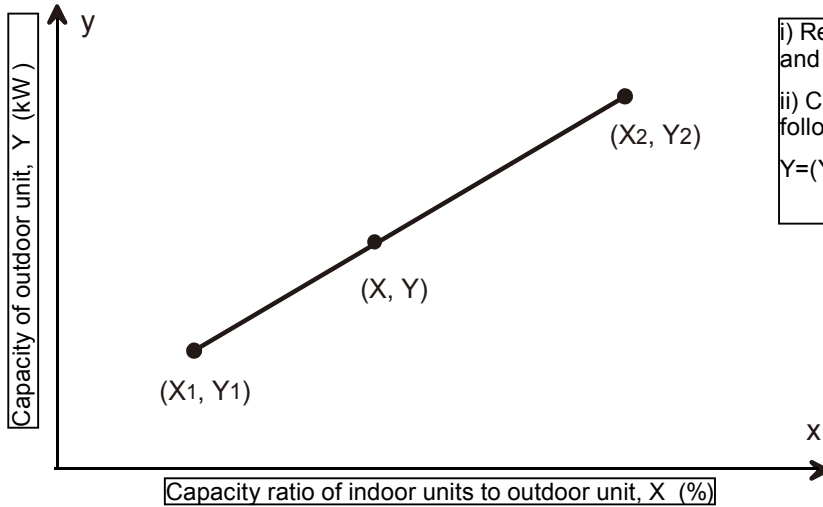
(c)

(a)

B-3: Capacity change rate by temperature conditions

$(c) / (a) = 13.9 / 14.0 = 0.993$

● Fig 2



i) Refer to 4. CAPACITY TABLE to find Y₁ and Y₂ using X₁ and X₂.
 ii) Calculate capacity of outdoor unit using following equation:
 $Y = (Y_2 - Y_1) / (X_2 - X_1) \times (X - X_1) + Y_1$

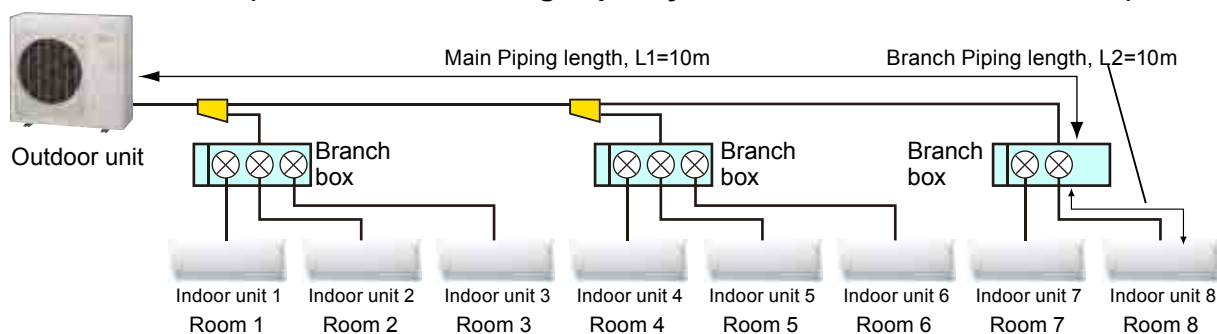
Indoor unit connecting capacity (%)	Outdoor temperature (°C)	Indoor temperature									
		21.0°CDB		23.0°CDB		27.0°CDB		29.0°CDB		32.0°CDB	
		15.0°CWB		16.0°CWB		19.0°CWB		21.0°CWB		23.0°CWB	
		TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
120 X ₂	-5.0	15.6	2.50	16.5	2.55	17.5	2.65	19.0	2.75	20.1	2.80
	0.0	15.6	2.56	16.5	2.75	17.5	2.80	19.0	2.90	20.1	2.95
	5.0	15.6	2.61	16.5	2.85	17.5	2.90	19.0	3.05	20.1	3.10
	10.0	15.6	2.70	16.5	2.95	17.5	3.05	19.0	3.05	20.1	3.20
	15.0	15.6	2.90	16.5	3.20	17.5	3.30	19.0	3.35	20.1	3.40
	20.0	15.6	3.55	16.5	3.60	17.5	4.00	19.0	4.05	20.1	4.10
	25.0	14.9	4.20	16.0	4.40	17.0	4.70	18.6	4.80	19.1	4.85
	30.0	14.0	4.76	15.1	5.13	16.2	5.33	18.0	5.45	18.5	5.51
	35.0	13.2	5.24	14.1	5.79	15.6	5.90	16.2	5.93	16.7	5.96
	40.0	12.2	5.20	12.9	5.90	15.6	5.96	14.4	5.98	15.7	5.98
46.0	10.8	4.94	11.7	5.06	15.6	5.15	12.9	5.20	13.3	5.28	
...
100 X ₁	-5.0	13.2	2.00	14.5	2.11	15.6	2.25	17.5	2.40	19.0	2.50
	0.0	13.2	2.08	14.5	2.14	15.6	2.30	17.5	2.45	19.0	2.55
	5.0	13.2	2.12	14.5	2.19	15.6	2.40	17.5	2.50	19.0	2.65
	10.0	13.2	2.16	14.5	2.25	15.6	2.50	17.5	2.60	19.0	2.80
	15.0	13.2	2.21	14.5	2.40	15.6	2.75	17.5	2.80	19.0	3.00
	20.0	12.9	2.45	14.4	2.63	15.5	3.00	17.4	3.10	19.0	3.20
	25.0	12.6	2.80	14.2	3.20	15.3	3.50	17.2	3.90	18.4	4.00
	30.0	12.2	3.81	13.9	4.15	15.2	4.41	17.0	4.70	17.7	5.00
	35.0	11.7	4.67	13.5	4.95	14.0	5.20	15.6	5.26	16.0	5.34
	40.0	11.2	5.01	12.5	5.12	14.0	5.21	14.2	5.32	15.0	5.41
46.0	10.4	4.75	11.0	4.97	14.0	5.05	12.5	5.10	12.9	5.15	

Capacity ratio of indoor units to outdoor unit	X ₁ = 100 %	X = 117 %	X ₂ = 120 %
Capacity of outdoor units (kW)	Y ₁ = 14.0	Y	Y ₂ = 15.6

$Y = (15.6 - 14.0) / (120 - 100) \times (117 - 100) + 14.0 = 15.4 \text{ (kW)}$

3-2-2. HEATING EXAMPLE

EXAMPLE 3 (When the connecting capacity for indoor unit is 100% or more)



● Design conditions

- Design temperature
Indoor : 18.0°C DB
Outdoor : 10.0°C DB / 8.0°C WB
- Pipe length
Main piping length : L1=10m
Branch piping length : L2=10m
- Operation mode: Heating

● Selection of indoor unit

			Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8	Remark
A-1	Heating heat load	kW	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
A-2	Indoor unit models		AS07	AS07	AS07	AS07	AS07	AS07	AS07	AS07	
A-3	Rated capacity (TC _{in,r})	kW	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	Heating
A-4	Total capacity $\sum(TC_{in,r})$	kW	2.37 x 8 = 19.0								Sum of A-3
A-5	Connecting indoor unit capacity (C _p)		19.0 / 16.0 = 119%								
A-6	Capacity at design temperature (TC _{in,d})	kW	2.57	2.57	2.57	2.57	2.57	2.57	2.57	2.57	See 6-2.
A-7	Total capacity at design temperature $\sum(TC_{in,d})$	kW	2.57 x 8 = 20.6								Sum of A-6

● Calculate the Maximum capacity of outdoor unit

			Remark
B-1	Outdoor unit model		AO*G45LBT8
B-2	Rated capacity (TC _{out,r})	kW	16.0
B-3	Capacity change rate by temperature conditions		17.5 / 16.0 = 1.094
B-4	Capacity change rate by indoor units connecting capacity	kW	18.2
B-5	Compensation coefficient of pipe length		0.996 x 0.962 = 0.958
B-6	Capacity change rate by frosting		1.00
B-7	Maximum capacity of outdoor unit (TC _{out,c})	kW	18.2 x 1.094 x 0.958 x 1.00 = 19.1

● Decide system capacity

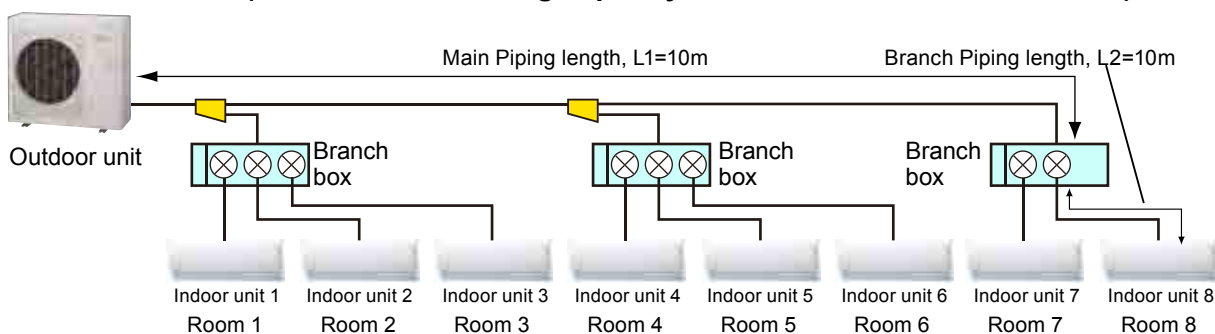
			Remark
C-1	System capacity	kW	19.1

● Calculate actual capacity of each indoor unit

		Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8	Remark
Actual capacity of each indoor unit	kW	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	(A3) x (C1) / (A4)

Actual capacity of all indoor units is larger than heating heat load of each room.

EXAMPLE 4 (When the connecting capacity for indoor unit is 100% or more)



● Design conditions

- Design temperature
Indoor : 18.0°C DB
Outdoor : 5.0°C DB / 3.0°C WB
- Pipe length
Main piping length : L1=10m
Branch piping length : L2=10m
- Operation mode: Heating

● Selection of indoor unit

			Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8	Remark
A-1	Heating heat load	kW	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	
A-2	Indoor unit models		AS07	AS07	AS07	AS07	AS07	AS07	AS07	AS07	
A-3	Rated capacity (TC _{in,r})	kW	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	Heating
A-4	Total capacity $\sum(TC_{in,r})$	kW	2.37 x 8 = 19.0								Sum of A-3
A-5	Connecting indoor unit capacity (C _p)		19.0 / 16.0 = 119%								
A-6	Capacity at design temperature (TC _{in,d})	kW	2.57	2.57	2.57	2.57	2.57	2.57	2.57	2.57	See 6-2.
A-7	Total capacity at design temperature $\sum(TC_{in,d})$	kW	2.57 x 8 = 20.6								Sum of A-6

● Calculate the Maximum capacity of outdoor unit

				Remark
B-1	Outdoor unit model		AO*G45LBT8	
B-2	Rated capacity (TC _{out,r})	kW	16.0	Heating
B-3	Capacity change rate by temperature conditions		16.2 / 16.0 = 1.013	See Fig.3
B-4	Capacity change rate by indoor units connecting capacity	kW	18.2	See Fig.4
B-5	Compensation coefficient of pipe length		0.996 x 0.962 = 0.958	See 5-1.
B-6	Capacity change rate by frosting		0.90	See 5-2.
B-7	Maximum capacity of outdoor unit (TC _{out,c})	kW	18.2 x 1.013 x 0.958 x 0.90 = 15.9	(B-4) x (B-3) x (B-5) x (B-6)

● Decide system capacity

				Remark
C-1	System capacity	kW	15.9	Smaller one of (A-7) and (B-7)

● Calculate actual capacity of each indoor unit

		Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	Room 8	Remark
Actual capacity of each indoor unit	kW	1.98	1.98	1.98	1.98	1.98	1.98	1.98	1.98	(A3) x (C1) / (A4)

Actual capacity of all indoor units is larger than heating heat load of each room.

● Fig 3

Indoor unit connecting capacity (%)	Outdoor temperature		Indoor temperature							
	DB	WB	16.0°C DB		18.0°C DB		20.0°C DB		24.0°C DB	
	°C	°C	TC	IP	TC	IP	TC	IP	TC	IP
...
100	-15.0	-16.0	10.5	5.55	10.0	5.52	9.6	5.50	9.2	5.48
	-10.0	-11.0	12.8	5.60	12.2	5.61	11.8	5.62	11.3	5.64
	-5.0	-7.0	14.4	5.70	13.8	5.78	13.3	5.75	12.9	5.72
	0.0	-2.0	15.7	5.76	15.1	5.78	14.5	5.74	13.8	5.68
	5.0	3.0	17.0	5.76	16.2	5.61	15.0	5.23	14.0	4.92
	7.0	6.0	18.5	5.70	17.4	5.35	16.0	5.07	14.5	4.55
	10.0	8.0	18.6	5.56	17.5	5.25	16.2	4.80	14.7	4.53
	15.0	10.0	18.8	5.49	17.6	4.80	16.4	4.61	15.0	4.33
	20.0	15.0	19.0	4.63	17.8	4.45	16.7	4.36	15.4	4.08

(c')

(c)

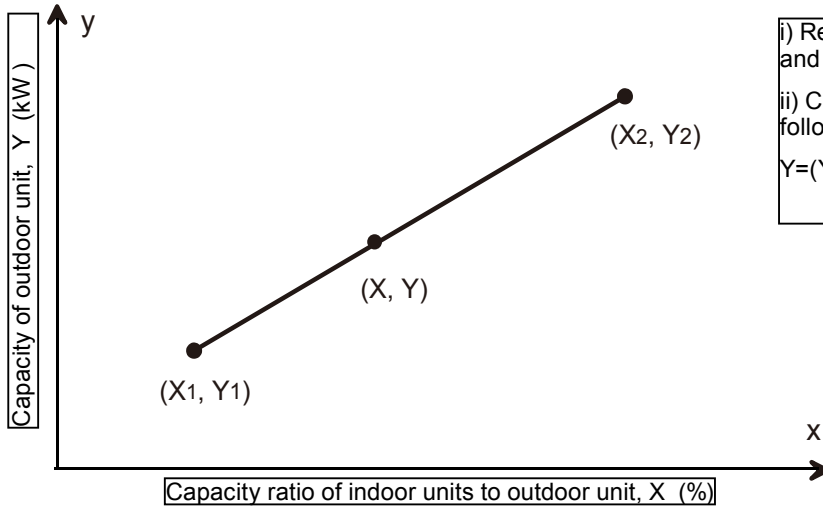
(a)

B-3: Capacity change rate by temperature conditions

(c) / (a) = 17.5 / 16.0 = 1.094 (Example 3)

(c') / (a) = 16.2 / 16.0 = 1.013 (Example 4)

● Fig 4



i) Refer to 4. CAPACITY TABLE to find Y₁ and Y₂ using X₁ and X₂.
 ii) Calculate capacity of outdoor unit using following equation:
 $Y = (Y_2 - Y_1) / (X_2 - X_1) \times (X - X_1) + Y_1$

Indoor unit connecting capacity (%)	Outdoor temperature		Indoor temperature							
	DB	WB	16.0°C DB		18.0°C DB		20.0°C DB		24.0°C DB	
	°C	°C	TC	IP	TC	IP	TC	IP	TC	IP
120 X ₂	-15.0	-16.0	11.4	5.57	11.0	5.58	10.6	5.60	10.2	5.62
	-10.0	-11.0	14.5	5.62	14.3	5.64	14.0	5.66	13.7	5.68
	-5.0	-7.0	15.6	5.71	15.4	5.74	15.1	5.77	14.9	5.79
	0.0	-2.0	16.8	5.80	16.5	5.82	16.3	5.86	16.1	5.88
	5.0	3.0	17.8	5.92	17.6	5.93	17.4	5.95	17.2	5.96
	7.0	6.0	18.7	5.98	18.5	5.98	18.2	5.98	18.0	5.98
	10.0	8.0	19.4	5.98	19.1	5.98	18.9	5.98	18.7	5.98
	15.0	10.0	20.1	5.10	19.9	5.22	19.6	5.45	19.4	5.84
20.0	15.0	20.4	4.37	20.2	4.44	20.1	4.73	19.9	5.05	
...	
100 X ₁	-15.0	-16.0	10.5	5.55	10.0	5.52	9.6	5.50	9.2	5.48
	-10.0	-11.0	12.8	5.60	12.2	5.61	11.8	5.62	11.3	5.64
	-5.0	-7.0	14.4	5.70	13.8	5.78	13.3	5.75	12.9	5.72
	0.0	-2.0	15.7	5.76	15.1	5.78	14.5	5.74	13.8	5.68
	5.0	3.0	17.0	5.76	16.2	5.61	15.0	5.23	14.0	4.92
	7.0	6.0	18.5	5.70	17.4	5.35	16.0	5.07	14.5	4.55
	10.0	8.0	18.6	5.56	17.5	5.25	16.2	4.80	14.7	4.53
	15.0	10.0	18.8	5.19	17.6	4.80	16.1	4.61	15.0	4.33
20.0	15.0	19.0	4.63	17.8	4.45	16.7	4.36	15.4	4.08	

Capacity ratio of indoor units to outdoor unit	X ₁ = 100 %	X = 120 %	X ₂ = 120 %
Capacity of outdoor units (kW)	Y ₁ = 16.0	Y	Y ₂ = 18.2

$Y = (18.2 - 16.0) / (120 - 100) \times (120 - 100) + 16.0 = 18.2 \text{ (kW)}$

4. CAPACITY TABLE (OUTDOOR UNIT)

4-1. COOLING CAPACITY

■ MODEL : AO*G45LBT8

COOLING CAPACITY

● Capacity in kW

MODEL SELECTION

MODEL SELECTION

Indoor unit connecting capacity (%)	Outdoor temperature (°C)	Indoor temperature									
		21.0°CDB		23.0°CDB		27.0°CDB		29.0°CDB		32.0°CDB	
		15.0°CWB		16.0°CWB		19.0°CWB		21.0°CWB		23.0°CWB	
		TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
130	-5.0	16.7	2.80	17.5	2.85	18.4	2.90	19.5	2.95	20.6	3.00
	0.0	16.7	2.90	17.5	3.00	18.4	3.05	19.5	3.10	20.6	3.15
	5.0	16.7	2.95	17.5	3.05	18.4	3.10	19.5	3.15	20.6	3.20
	10.0	16.7	3.10	17.5	3.25	18.4	3.30	19.5	3.35	20.6	3.40
	15.0	16.7	3.40	17.5	3.55	18.4	3.60	19.5	3.65	20.6	3.70
	20.0	16.7	4.25	17.5	4.35	18.4	4.45	19.5	4.45	20.0	4.50
	25.0	15.8	4.80	16.5	5.15	18.0	5.20	19.0	5.20	19.5	5.25
	30.0	14.5	5.11	15.7	5.49	16.6	5.55	18.3	5.61	18.8	5.68
	35.0	13.6	5.40	14.3	5.85	15.7	5.87	16.6	5.93	17.0	5.98
	40.0	12.3	5.50	13.0	5.90	14.0	5.96	14.5	5.98	15.0	5.98
46.0	11.0	5.01	12.0	5.06	12.3	5.15	13.1	5.20	13.5	5.30	
120	-5.0	15.6	2.50	16.5	2.55	17.5	2.65	19.0	2.75	20.1	2.80
	0.0	15.6	2.56	16.5	2.75	17.5	2.80	19.0	2.90	20.1	2.95
	5.0	15.6	2.61	16.5	2.85	17.5	2.90	19.0	3.05	20.1	3.10
	10.0	15.6	2.70	16.5	2.95	17.5	3.05	19.0	3.05	20.1	3.20
	15.0	15.6	2.90	16.5	3.20	17.5	3.30	19.0	3.35	20.1	3.40
	20.0	15.6	3.55	16.5	3.60	17.5	4.00	19.0	4.05	20.1	4.10
	25.0	14.9	4.20	16.0	4.40	17.0	4.70	18.6	4.80	19.1	4.85
	30.0	14.0	4.76	15.1	5.13	16.2	5.33	18.0	5.45	18.5	5.51
	35.0	13.2	5.24	14.1	5.79	15.6	5.90	16.2	5.93	16.7	5.96
	40.0	12.2	5.20	12.9	5.90	13.8	5.96	14.4	5.98	15.7	5.98
46.0	10.8	4.94	11.7	5.06	12.1	5.15	12.9	5.20	13.3	5.28	
110	-5.0	14.4	2.25	15.5	2.30	16.6	2.45	18.0	2.60	19.6	2.65
	0.0	14.4	2.29	15.5	2.35	16.6	2.55	18.0	2.65	19.6	2.75
	5.0	14.4	2.44	15.5	2.60	16.6	2.65	18.0	2.75	19.6	2.80
	10.0	14.4	2.51	15.5	2.65	16.6	2.80	18.0	2.85	19.6	3.00
	15.0	14.4	2.60	15.5	2.85	16.6	3.05	18.0	3.15	19.6	3.20
	20.0	14.4	2.95	15.5	3.20	16.6	3.55	18.0	3.65	19.6	3.75
	25.0	13.9	3.50	15.1	3.75	16.3	4.20	17.8	4.40	18.9	4.45
	30.0	13.2	4.30	14.5	4.63	15.8	5.11	17.6	5.22	18.1	5.29
	35.0	12.7	5.05	13.9	5.33	15.5	5.90	15.9	5.93	16.7	5.96
	40.0	11.7	5.00	12.7	5.90	13.5	5.96	14.3	5.98	15.4	5.98
46.0	10.6	4.82	11.4	5.01	11.8	5.11	12.7	5.18	13.1	5.26	
100	-5.0	13.2	2.00	14.5	2.11	15.6	2.25	17.5	2.40	19.0	2.50
	0.0	13.2	2.08	14.5	2.14	15.6	2.30	17.5	2.45	19.0	2.55
	5.0	13.2	2.12	14.5	2.19	15.6	2.40	17.5	2.50	19.0	2.65
	10.0	13.2	2.16	14.5	2.25	15.6	2.50	17.5	2.60	19.0	2.80
	15.0	13.2	2.21	14.5	2.40	15.6	2.75	17.5	2.80	19.0	3.00
	20.0	12.9	2.45	14.4	2.63	15.5	3.00	17.4	3.10	19.0	3.20
	25.0	12.6	2.80	14.2	3.20	15.3	3.50	17.2	3.90	18.4	4.00
	30.0	12.2	3.81	13.9	4.15	15.2	4.41	17.0	4.70	17.7	5.00
	35.0	11.7	4.67	13.5	4.95	14.0	5.20	15.6	5.26	16.0	5.34
	40.0	11.2	5.01	12.5	5.12	13.0	5.21	14.2	5.32	15.0	5.41
46.0	10.4	4.75	11.0	4.97	11.5	5.05	12.5	5.10	12.9	5.15	
90	-5.0	12.0	1.80	13.5	1.95	14.2	2.20	16.0	2.35	17.5	2.45
	0.0	12.0	1.86	13.5	2.05	14.2	2.25	16.0	2.40	17.5	2.50
	5.0	12.0	1.94	13.5	2.10	14.2	2.35	16.0	2.45	17.5	2.60
	10.0	12.0	2.01	13.5	2.20	14.2	2.45	16.0	2.55	17.5	2.75
	15.0	12.0	2.10	13.5	2.35	14.2	2.70	16.0	2.75	17.5	2.95
	20.0	12.0	2.38	13.5	2.45	14.2	2.95	16.0	3.05	17.5	3.15
	25.0	12.0	2.75	13.3	2.95	14.0	3.45	15.7	3.70	17.1	3.95
	30.0	11.8	3.35	12.7	3.60	13.5	4.10	15.4	4.27	16.0	4.41
	35.0	11.5	4.10	12.1	4.31	12.7	4.43	14.6	4.66	15.0	4.86
	40.0	10.9	4.61	11.5	4.66	12.1	4.74	13.7	4.87	14.0	4.95
46.0	10.0	4.50	10.5	4.55	11.0	4.63	12.0	4.71	12.3	4.80	
80	-5.0	10.3	1.55	11.4	1.90	12.9	2.15	14.3	2.30	15.5	2.40
	0.0	10.3	1.65	11.4	2.00	12.9	2.20	14.3	2.35	15.5	2.45
	5.0	10.3	1.80	11.4	2.05	12.9	2.30	14.3	2.40	15.5	2.55
	10.0	10.3	1.92	11.4	2.15	12.9	2.40	14.3	2.50	15.5	2.70
	15.0	10.3	2.11	11.4	2.30	12.9	2.65	14.3	2.70	15.5	2.90
	20.0	10.3	2.31	11.4	2.55	12.9	2.90	14.3	3.00	15.5	3.10
	25.0	10.2	2.70	11.3	2.90	12.6	3.19	14.1	3.29	15.3	3.41
	30.0	10.0	3.02	11.2	3.33	12.1	3.42	13.8	3.77	14.4	3.86
	35.0	9.7	3.38	10.7	3.55	11.3	3.63	13.2	4.20	13.6	4.35
	40.0	9.4	3.91	10.2	4.14	10.7	4.29	12.4	4.36	12.7	4.49
46.0	9.2	4.15	9.6	4.22	10.0	4.27	11.1	4.32	11.5	4.40	

TC : Total Capacity kW.

IP : Input Power kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

4-2. HEATING CAPACITY

■ MODEL : AO*G45LBT8

HEATING CAPACITY

● Capacity in kW

Indoor unit connecting capacity (%)	Outdoor temperature		Indoor temperature							
	DB	WB	16.0°C DB		18.0°C DB		20.0°C DB		24.0°C DB	
	°C	°C	TC	IP	TC	IP	TC	IP	TC	IP
130	-15.0	-16.0	12.0	5.59	11.5	5.61	11.2	5.64	10.6	5.69
	-10.0	-11.0	15.0	5.66	14.7	5.67	14.5	5.69	14.1	5.71
	-5.0	-7.0	15.8	5.76	15.6	5.77	15.4	5.79	15.2	5.81
	0.0	-2.0	17.0	5.86	16.7	5.88	16.5	5.90	16.3	5.91
	5.0	3.0	18.0	5.93	17.8	5.95	17.6	5.97	17.4	5.98
	7.0	6.0	19.0	5.98	18.7	5.98	18.4	5.98	18.2	5.98
	10.0	8.0	19.7	5.98	19.5	5.98	19.3	5.98	19.1	5.98
	15.0	10.0	20.4	5.98	20.2	5.98	20.0	5.98	19.8	5.98
20.0	15.0	20.7	5.98	20.5	5.98	20.4	5.98	20.1	5.98	
120	-15.0	-16.0	11.4	5.57	11.0	5.58	10.6	5.60	10.2	5.62
	-10.0	-11.0	14.5	5.62	14.3	5.64	14.0	5.66	13.7	5.68
	-5.0	-7.0	15.6	5.71	15.4	5.74	15.1	5.77	14.9	5.79
	0.0	-2.0	16.8	5.80	16.5	5.82	16.3	5.86	16.1	5.88
	5.0	3.0	17.8	5.92	17.6	5.93	17.4	5.95	17.2	5.96
	7.0	6.0	18.7	5.98	18.5	5.98	18.2	5.98	18.0	5.98
	10.0	8.0	19.4	5.98	19.1	5.98	18.9	5.98	18.7	5.98
	15.0	10.0	20.1	5.10	19.9	5.22	19.6	5.45	19.4	5.84
20.0	15.0	20.4	4.37	20.2	4.44	20.1	4.73	19.9	5.05	
110	-15.0	-16.0	11.0	5.55	10.5	5.57	10.0	5.59	9.7	5.60
	-10.0	-11.0	13.7	5.59	13.5	5.61	13.3	5.63	13.1	5.65
	-5.0	-7.0	14.8	5.56	14.6	5.71	14.4	5.74	14.2	5.73
	0.0	-2.0	15.9	5.52	15.7	5.79	15.5	5.84	15.3	5.85
	5.0	3.0	16.9	5.04	16.7	5.22	16.4	5.36	16.2	5.55
	7.0	6.0	17.8	4.75	17.6	5.00	17.4	5.30	17.2	5.37
	10.0	8.0	18.5	4.63	18.2	4.89	18.0	5.18	17.8	5.27
	15.0	10.0	19.4	4.40	19.1	4.66	18.8	4.88	18.5	5.03
20.0	15.0	19.9	4.23	19.6	4.43	19.4	4.61	19.2	4.72	
100	-15.0	-16.0	10.5	5.55	10.0	5.52	9.6	5.50	9.2	5.48
	-10.0	-11.0	12.8	5.60	12.2	5.61	11.8	5.62	11.3	5.64
	-5.0	-7.0	14.4	5.70	13.8	5.78	13.3	5.75	12.9	5.72
	0.0	-2.0	15.7	5.76	15.1	5.78	14.5	5.74	13.8	5.68
	5.0	3.0	17.0	5.76	16.2	5.61	15.0	5.23	14.0	4.92
	7.0	6.0	18.5	5.70	17.4	5.35	16.0	5.07	14.5	4.55
	10.0	8.0	18.6	5.56	17.5	5.25	16.2	4.80	14.7	4.53
	15.0	10.0	18.8	5.19	17.6	4.80	16.4	4.61	15.0	4.33
20.0	15.0	19.0	4.63	17.8	4.45	16.7	4.36	15.4	4.08	
90	-15.0	-16.0	10.2	5.45	9.7	5.41	9.4	5.38	9.1	5.32
	-10.0	-11.0	12.1	5.53	11.7	5.36	11.4	5.20	11.1	5.17
	-5.0	-7.0	13.0	5.55	12.2	5.29	12.0	5.15	11.7	5.08
	0.0	-2.0	14.1	5.30	13.0	4.96	12.6	4.84	12.4	4.77
	5.0	3.0	15.2	5.17	14.1	4.71	13.7	4.55	12.9	4.46
	7.0	6.0	16.4	5.02	15.1	4.65	14.2	4.36	13.3	4.16
	10.0	8.0	16.6	4.86	15.2	4.54	14.9	4.14	13.7	3.95
	15.0	10.0	17.1	4.47	16.0	4.11	15.5	3.92	14.0	3.77
20.0	15.0	17.5	4.14	16.6	3.83	16.2	3.73	14.4	3.53	
80	-15.0	-16.0	9.3	5.22	9.2	5.15	9.1	5.12	9.0	5.08
	-10.0	-11.0	10.7	5.01	10.3	4.98	9.9	4.95	9.7	4.92
	-5.0	-7.0	11.3	4.86	10.9	4.81	10.6	4.71	10.3	4.66
	0.0	-2.0	12.4	4.48	11.9	4.40	11.3	4.32	10.9	4.26
	5.0	3.0	13.4	4.17	12.7	4.10	12.0	4.06	11.4	3.81
	7.0	6.0	14.5	3.99	13.7	3.91	12.7	3.85	12.0	3.54
	10.0	8.0	14.8	3.95	13.9	3.84	13.1	3.82	12.3	3.50
	15.0	10.0	15.3	3.86	14.5	3.74	13.9	3.70	12.7	3.45
20.0	15.0	15.7	3.65	15.1	3.56	14.6	3.55	13.4	3.22	

TC : Total Capacity kW.

IP : Input Power kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

5. CAPACITY COMPENSATION COEFFICIENT

5-1. COMPENSATION COEFFICIENT OF PIPE LENGTH

The figures give the compensation coefficient of pipe length owing to installation position.

Total compensation coefficient of pipe length multiplies compensation coefficient of branch piping by compensation coefficient of main piping.

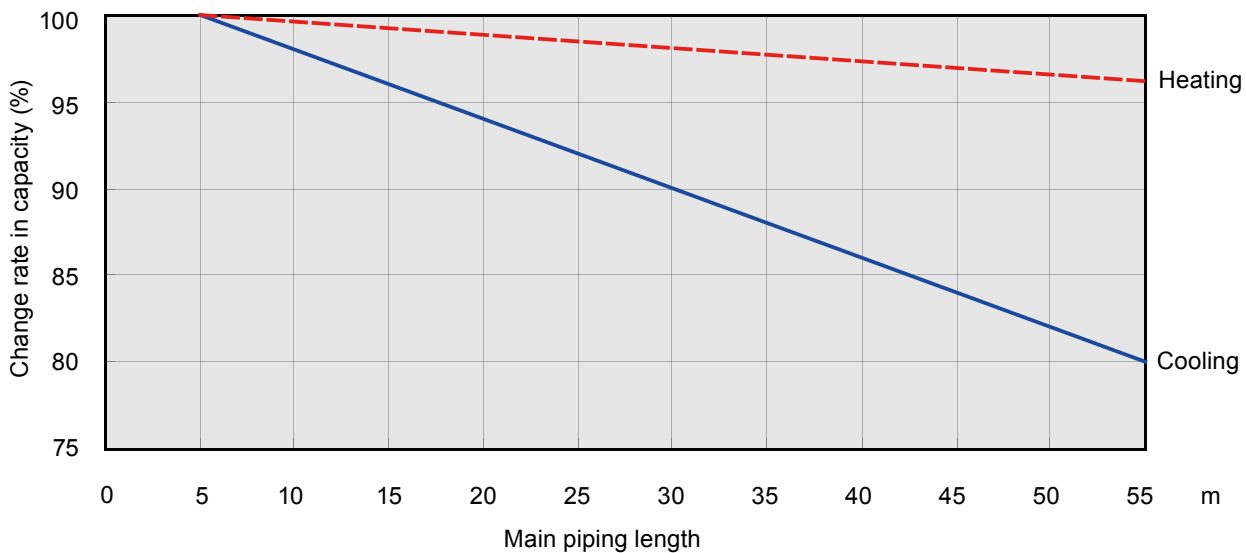
"Total compensation coefficient = main piping x branch piping" *1

*1: Branch piping use the value of the longest piping length.

■ CAPACITY CHANGE RATE BY MAIN PIPING LENGTH

● Change rate in capacity

Main piping length	m	5	10	15	20	25	30	35	40	45	50	55
Change rate in cooling capacity	%	100	98.0	96.0	94.0	92.0	90.0	88.0	86.0	84.0	82.0	80.0
Change rate in heating capacity	%	100	99.6	99.2	98.9	98.5	98.1	97.7	97.3	97.0	96.6	96.2

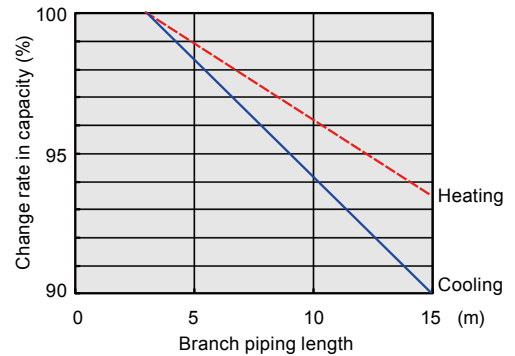


■ CAPACITY CHANGE RATE BY BRANCH PIPING LENGTH

● Change rate in capacity

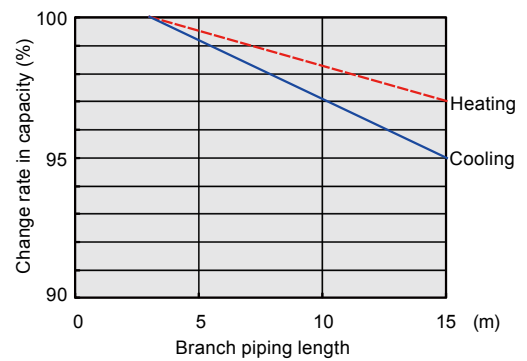
- Refrigerant piping connection diameter: Liquid $\varnothing 6.35\text{mm}$, Gas $\varnothing 9.52\text{mm}$
- Indoor unit model code: 07 / 09 / 12

Branch piping length	m	3	5	10	15
Change rate in cooling capacity	%	100	98.3	94.2	90.0
Change rate in heating capacity	%	100	98.9	96.2	93.5



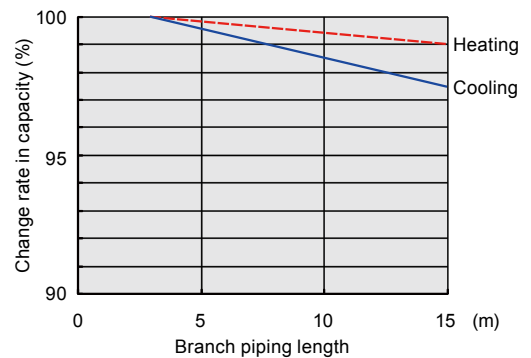
- Refrigerant piping connection diameter: Liquid $\varnothing 6.35\text{mm}$, Gas $\varnothing 12.70\text{mm}$
- Indoor unit model code: 14 / 18

Branch piping length	m	3	5	10	15
Change rate in cooling capacity	%	100	99.2	97.1	95.0
Change rate in heating capacity	%	100	99.5	98.3	97.0



- Refrigerant piping connection diameter: Liquid $\varnothing 6.35\text{mm}$, Gas $\varnothing 15.88\text{mm}$
- Indoor unit model code: 24

Branch piping length	m	3	5	10	15
Change rate in cooling capacity	%	100	99.6	98.5	97.5
Change rate in heating capacity	%	100	99.9	99.5	99.0



5-2. COMPENSATION COEFFICIENT OF FROSTING / DEFROSTING (HEATING OPERATION)

To take the effects of accumulated frost and defrosting operation on heating capacity into consideration, the capacity of outdoor units should be corrected by compensation coefficient shown in the table below.

Actual heating capacity = The value of capacity table x Capacity change rate by frosting

■ CAPACITY CHANGE RATE BY FROSTING

Outdoor temperature	°CDB / °CWB	-15.0 / -16.0	-5.0 / -7.0	0.0 / -2.0	2.0 / 1.0	5.0 / 3.0	7.0 / 6.0
Capacity change rate by frosting	%	90.4	88.8	80.0	82.0	90.0	100

6. CAPACITY TABLE (INDOOR UNIT)

6-1. COOLING CAPACITY

6-1-1. COMPACT CASSETTE TYPE

COOLING CAPACITY

MODEL : AU*G07LVLA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	1.64	1.24	1.80	1.38	1.93	1.49	2.05	1.60	2.27	1.76	2.47	1.84	2.67	1.89
0.0	1.64	1.24	1.80	1.38	1.93	1.49	2.05	1.60	2.27	1.76	2.47	1.84	2.67	1.89
5.0	1.64	1.24	1.80	1.38	1.93	1.49	2.05	1.60	2.27	1.76	2.47	1.84	2.67	1.89
10.0	1.64	1.24	1.80	1.38	1.93	1.49	2.05	1.60	2.27	1.76	2.47	1.84	2.67	1.89
15.0	1.64	1.24	1.80	1.38	1.93	1.49	2.05	1.60	2.27	1.76	2.47	1.84	2.67	1.89
20.0	1.64	1.24	1.80	1.38	1.93	1.49	2.05	1.60	2.27	1.76	2.47	1.84	2.51	1.86
25.0	1.64	1.24	1.80	1.38	1.93	1.49	2.05	1.60	2.27	1.76	2.38	1.78	2.45	1.80
30.0	1.64	1.24	1.80	1.38	1.93	1.49	2.05	1.60	2.27	1.76	2.30	1.73	2.36	1.76
35.0	1.64	1.24	1.80	1.38	1.93	1.49	2.05	1.60	2.27	1.69	2.24	1.69	2.28	1.74
40.0	1.64	1.24	1.80	1.38	1.88	1.48	1.93	1.59	2.04	1.62	2.11	1.61	2.15	1.66
46.0	1.64	1.24	1.60	1.27	1.77	1.42	1.82	1.51	1.91	1.53	1.99	1.52	2.03	1.58

MODEL : AU*G09LVLA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	2.11	1.57	2.32	1.75	2.49	1.90	2.64	2.03	2.92	2.23	3.18	2.33	3.43	2.40
0.0	2.11	1.57	2.32	1.75	2.49	1.90	2.64	2.03	2.92	2.23	3.18	2.33	3.43	2.40
5.0	2.11	1.57	2.32	1.75	2.49	1.90	2.64	2.03	2.92	2.23	3.18	2.33	3.43	2.40
10.0	2.11	1.57	2.32	1.75	2.49	1.90	2.64	2.03	2.92	2.23	3.18	2.33	3.43	2.40
15.0	2.11	1.57	2.32	1.75	2.49	1.90	2.64	2.03	2.92	2.23	3.18	2.33	3.43	2.40
20.0	2.11	1.57	2.32	1.75	2.49	1.90	2.64	2.03	2.92	2.23	3.18	2.33	3.23	2.36
25.0	2.11	1.57	2.32	1.75	2.49	1.90	2.64	2.03	2.92	2.23	3.07	2.26	3.15	2.28
30.0	2.11	1.57	2.32	1.75	2.49	1.90	2.64	2.03	2.92	2.23	2.96	2.19	3.04	2.24
35.0	2.11	1.57	2.32	1.75	2.49	1.90	2.64	2.03	2.78	2.15	2.89	2.15	2.94	2.21
40.0	2.11	1.57	2.32	1.75	2.42	1.88	2.49	2.02	2.62	2.06	2.72	2.04	2.77	2.11
46.0	2.11	1.57	2.06	1.62	2.28	1.80	2.34	1.92	2.47	1.95	2.56	1.93	2.61	2.01

MODEL : AU*G12LVLA, AU*G12LVLB

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	2.82	1.94	3.10	2.28	3.32	2.47	3.52	2.66	3.89	2.88	4.23	3.05	4.58	3.16
0.0	2.82	1.94	3.10	2.28	3.32	2.47	3.52	2.66	3.89	2.88	4.23	3.05	4.58	3.16
5.0	2.82	1.94	3.10	2.28	3.32	2.47	3.52	2.66	3.89	2.88	4.23	3.05	4.58	3.16
10.0	2.82	1.94	3.10	2.28	3.32	2.47	3.52	2.66	3.89	2.88	4.23	3.05	4.58	3.16
15.0	2.82	1.94	3.10	2.28	3.32	2.47	3.52	2.66	3.89	2.88	4.23	3.05	4.58	3.16
20.0	2.82	1.94	3.10	2.28	3.32	2.47	3.52	2.66	3.89	2.88	4.23	3.05	4.30	3.10
25.0	2.82	1.94	3.10	2.28	3.32	2.47	3.52	2.66	3.89	2.88	4.09	2.95	4.20	3.00
30.0	2.82	1.94	3.10	2.28	3.32	2.47	3.52	2.66	3.89	2.88	3.95	2.87	4.06	2.94
35.0	2.82	1.94	3.10	2.28	3.32	2.47	3.52	2.66	3.71	2.78	3.85	2.81	3.92	2.90
40.0	2.82	1.94	3.10	2.28	3.23	2.45	3.32	2.61	3.50	2.66	3.63	2.67	3.70	2.77
46.0	2.82	1.94	2.75	2.08	3.03	2.35	3.12	2.51	3.29	2.52	3.41	2.53	3.48	2.64

MODEL : AU*G14LVLA, AU*G14LVLB

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.93	3.38	5.33	3.49
0.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.93	3.38	5.33	3.49
5.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.93	3.38	5.33	3.49
10.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.93	3.38	5.33	3.49
15.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.93	3.38	5.33	3.49
20.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.93	3.38	5.01	3.43
25.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.77	3.27	4.89	3.33
30.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.60	3.18	4.73	3.26
35.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.32	3.09	4.48	3.11	4.57	3.22
40.0	3.28	2.15	3.61	2.53	3.76	2.73	3.87	2.90	4.07	2.95	4.23	2.96	4.31	3.08
46.0	3.28	2.15	3.20	2.31	3.53	2.62	3.64	2.80	3.83	2.80	3.97	2.80	4.05	2.94

TC : Total Capacity kW.

SHC : Sensible Heat Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

COOLING CAPACITY

■ MODEL : AU*G18LVLA, AU*G18LVLB

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	4.22	2.68	4.64	3.16	4.96	3.43	5.27	3.69	5.82	3.99	6.34	4.22	6.85	4.35
0.0	4.22	2.68	4.64	3.16	4.96	3.43	5.27	3.69	5.82	3.99	6.34	4.22	6.85	4.35
5.0	4.22	2.68	4.64	3.16	4.96	3.43	5.27	3.69	5.82	3.99	6.34	4.22	6.85	4.35
10.0	4.22	2.68	4.64	3.16	4.96	3.43	5.27	3.69	5.82	3.99	6.34	4.22	6.85	4.35
15.0	4.22	2.68	4.64	3.16	4.96	3.43	5.27	3.69	5.82	3.99	6.34	4.22	6.85	4.35
20.0	4.22	2.68	4.64	3.16	4.96	3.43	5.27	3.69	5.82	3.99	6.34	4.22	6.45	4.29
25.0	4.22	2.68	4.64	3.16	4.96	3.43	5.27	3.69	5.82	3.99	6.13	4.08	6.29	4.15
30.0	4.22	2.68	4.64	3.16	4.96	3.43	5.27	3.69	5.82	3.99	5.92	3.97	6.08	4.07
35.0	4.22	2.68	4.64	3.16	4.96	3.43	5.27	3.69	5.55	3.86	5.76	3.89	5.87	4.02
40.0	4.22	2.68	4.64	3.16	4.83	3.41	4.97	3.63	5.23	3.69	5.43	3.69	5.54	3.85
46.0	4.22	2.68	4.11	2.89	4.54	3.27	4.67	3.51	4.92	3.49	5.11	3.50	5.21	3.67

TC : Total Capacity kW.

SHC : Sensible Heat Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

6-1-2. SLIM DUCT TYPE

COOLING CAPACITY

MODEL : AR*G07LLTA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	1.65	1.26	1.82	1.40	1.94	1.50	2.05	1.58	2.28	1.68	2.48	1.79	2.67	1.85
0.0	1.65	1.26	1.82	1.40	1.94	1.50	2.05	1.58	2.28	1.68	2.48	1.79	2.67	1.85
5.0	1.65	1.26	1.82	1.40	1.94	1.50	2.05	1.58	2.28	1.68	2.48	1.79	2.67	1.85
10.0	1.65	1.26	1.82	1.40	1.94	1.50	2.05	1.58	2.28	1.68	2.48	1.79	2.67	1.85
15.0	1.65	1.26	1.82	1.40	1.94	1.50	2.05	1.58	2.28	1.68	2.48	1.79	2.67	1.85
20.0	1.65	1.26	1.82	1.40	1.94	1.50	2.05	1.58	2.28	1.68	2.48	1.79	2.52	1.83
25.0	1.65	1.26	1.82	1.40	1.94	1.50	2.05	1.58	2.28	1.68	2.40	1.73	2.46	1.77
30.0	1.65	1.26	1.82	1.40	1.94	1.50	2.05	1.58	2.28	1.68	2.32	1.68	2.38	1.73
35.0	1.65	1.26	1.82	1.40	1.94	1.50	2.05	1.58	2.16	1.62	2.26	1.65	2.30	1.71
40.0	1.65	1.26	1.82	1.40	1.89	1.49	1.93	1.57	2.04	1.55	2.13	1.56	2.17	1.61
46.0	1.65	1.26	1.62	1.29	1.78	1.42	1.82	1.49	1.92	1.47	2.00	1.48	2.04	1.52

MODEL : AR*G09LLTA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	2.13	1.62	2.35	1.81	2.50	1.93	2.64	2.03	2.93	2.17	3.19	2.30	3.43	2.39
0.0	2.13	1.62	2.35	1.81	2.50	1.93	2.64	2.03	2.93	2.17	3.19	2.30	3.43	2.39
5.0	2.13	1.62	2.35	1.81	2.50	1.93	2.64	2.03	2.93	2.17	3.19	2.30	3.43	2.39
10.0	2.13	1.62	2.35	1.81	2.50	1.93	2.64	2.03	2.93	2.17	3.19	2.30	3.43	2.39
15.0	2.13	1.62	2.35	1.81	2.50	1.93	2.64	2.03	2.93	2.17	3.19	2.30	3.43	2.39
20.0	2.13	1.62	2.35	1.81	2.50	1.93	2.64	2.03	2.93	2.17	3.19	2.30	3.24	2.35
25.0	2.13	1.62	2.35	1.81	2.50	1.93	2.64	2.03	2.93	2.17	3.09	2.22	3.17	2.28
30.0	2.13	1.62	2.35	1.81	2.50	1.93	2.64	2.03	2.93	2.17	2.98	2.16	3.06	2.23
35.0	2.13	1.62	2.35	1.81	2.50	1.93	2.64	2.03	2.79	2.09	2.90	2.12	2.96	2.20
40.0	2.13	1.62	2.35	1.81	2.44	1.91	2.49	2.02	2.63	2.00	2.74	2.01	2.79	2.08
46.0	2.13	1.62	2.08	1.67	2.29	1.83	2.34	1.92	2.47	1.89	2.58	1.91	2.62	1.95

MODEL : AR*G12LLTA, AR*G12LLTB

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	2.83	2.10	3.13	2.32	3.34	2.49	3.52	2.73	3.91	2.83	4.26	3.00	4.58	3.06
0.0	2.83	2.10	3.13	2.32	3.34	2.49	3.52	2.73	3.91	2.83	4.26	3.00	4.58	3.06
5.0	2.83	2.10	3.13	2.32	3.34	2.49	3.52	2.73	3.91	2.83	4.26	3.00	4.58	3.06
10.0	2.83	2.10	3.13	2.32	3.34	2.49	3.52	2.73	3.91	2.83	4.26	3.00	4.58	3.06
15.0	2.83	2.10	3.13	2.32	3.34	2.49	3.52	2.73	3.91	2.83	4.26	3.00	4.58	3.06
20.0	2.83	2.10	3.13	2.32	3.34	2.49	3.52	2.73	3.91	2.83	4.26	3.00	4.33	3.02
25.0	2.83	2.10	3.13	2.32	3.34	2.49	3.52	2.73	3.91	2.83	4.12	2.90	4.22	2.92
30.0	2.83	2.10	3.13	2.32	3.34	2.49	3.52	2.73	3.91	2.83	3.98	2.82	4.08	2.87
35.0	2.83	2.10	3.13	2.32	3.34	2.49	3.52	2.73	3.71	2.73	3.87	2.77	3.94	2.83
40.0	2.83	2.10	3.13	2.32	3.25	2.47	3.32	2.71	3.50	2.61	3.65	2.61	3.72	2.67
46.0	2.83	2.10	2.78	2.14	3.06	2.37	3.12	2.58	3.29	2.47	3.43	2.46	3.50	2.51

MODEL : AR*G14LLTA, AR*G14LLTB

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	3.30	2.44	3.65	2.70	3.89	2.90	4.10	3.18	4.55	3.30	4.96	3.50	5.33	3.56
0.0	3.30	2.44	3.65	2.70	3.89	2.90	4.10	3.18	4.55	3.30	4.96	3.50	5.33	3.56
5.0	3.30	2.44	3.65	2.70	3.89	2.90	4.10	3.18	4.55	3.30	4.96	3.50	5.33	3.56
10.0	3.30	2.44	3.65	2.70	3.89	2.90	4.10	3.18	4.55	3.30	4.96	3.50	5.33	3.56
15.0	3.30	2.44	3.65	2.70	3.89	2.90	4.10	3.18	4.55	3.30	4.96	3.50	5.33	3.56
20.0	3.30	2.44	3.65	2.70	3.89	2.90	4.10	3.18	4.55	3.30	4.96	3.50	5.04	3.52
25.0	3.30	2.44	3.65	2.70	3.89	2.90	4.10	3.18	4.55	3.30	4.80	3.38	4.92	3.41
30.0	3.30	2.44	3.65	2.70	3.89	2.90	4.10	3.18	4.55	3.30	4.63	3.29	4.75	3.34
35.0	3.30	2.44	3.65	2.70	3.89	2.90	4.10	3.18	4.33	3.18	4.51	3.22	4.59	3.30
40.0	3.30	2.44	3.65	2.70	3.78	2.88	3.87	3.15	4.08	3.04	4.25	3.04	4.33	3.11
46.0	3.30	2.44	3.24	2.49	3.56	2.76	3.64	3.00	3.84	2.88	4.00	2.86	4.07	2.92

TC : Total Capacity kW.

SHC : Sensible Heat Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

COOLING CAPACITY

MODEL : AR*G18LLTA, AR*G18LLTB

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	4.24	2.93	4.69	3.33	5.00	3.57	5.27	3.69	5.85	4.07	6.38	4.46	6.85	4.52
0.0	4.24	2.93	4.69	3.33	5.00	3.57	5.27	3.69	5.85	4.07	6.38	4.46	6.85	4.52
5.0	4.24	2.93	4.69	3.33	5.00	3.57	5.27	3.69	5.85	4.07	6.38	4.46	6.85	4.52
10.0	4.24	2.93	4.69	3.33	5.00	3.57	5.27	3.69	5.85	4.07	6.38	4.46	6.85	4.52
15.0	4.24	2.93	4.69	3.33	5.00	3.57	5.27	3.69	5.85	4.07	6.38	4.46	6.85	4.52
20.0	4.24	2.93	4.69	3.33	5.00	3.57	5.27	3.69	5.85	4.07	6.38	4.46	6.48	4.47
25.0	4.24	2.93	4.69	3.33	5.00	3.57	5.27	3.69	5.85	4.07	6.17	4.31	6.32	4.33
30.0	4.24	2.93	4.69	3.33	5.00	3.57	5.27	3.69	5.85	4.07	5.96	4.19	6.11	4.25
35.0	4.24	2.93	4.69	3.33	5.00	3.57	5.27	3.69	5.56	3.92	5.80	4.11	5.90	4.19
40.0	4.24	2.93	4.69	3.33	4.86	3.55	4.97	3.68	5.24	3.75	5.47	3.90	5.57	4.01
46.0	4.24	2.93	4.16	3.08	4.57	3.41	4.67	3.51	4.93	3.55	5.14	3.70	5.24	3.82

TC : Total Capacity kW.

SHC : Sensible Heat Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

6-1-3. WALL MOUNTED TYPE

COOLING CAPACITY

MODEL : AS*G07LJCA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.46	1.89	2.65	1.99
0.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.46	1.89	2.65	1.99
5.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.46	1.89	2.65	1.99
10.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.46	1.89	2.65	1.99
15.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.46	1.89	2.65	1.99
20.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.46	1.89	2.50	1.95
25.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.38	1.83	2.44	1.89
30.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.30	1.78	2.36	1.85
35.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.15	1.70	2.23	1.74	2.28	1.82
40.0	1.62	1.26	1.78	1.41	1.87	1.53	1.93	1.60	2.03	1.62	2.11	1.65	2.15	1.74
46.0	1.62	1.26	1.58	1.30	1.75	1.46	1.82	1.56	1.91	1.54	1.98	1.57	2.02	1.65

MODEL : AS*G09LJCA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.17	2.50	3.42	2.56
0.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.17	2.50	3.42	2.56
5.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.17	2.50	3.42	2.56
10.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.17	2.50	3.42	2.56
15.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.17	2.50	3.42	2.56
20.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.17	2.50	3.22	2.51
25.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.06	2.42	3.14	2.43
30.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	2.96	2.35	3.04	2.38
35.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.77	2.19	2.88	2.30	2.93	2.35
40.0	2.09	1.62	2.30	1.82	2.40	1.97	2.49	2.07	2.61	2.09	2.71	2.18	2.77	2.24
46.0	2.09	1.62	2.04	1.68	2.26	1.88	2.34	2.01	2.46	1.98	2.55	2.07	2.60	2.13

MODEL : AS*G12LJCA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.22	3.04	4.42	3.14
0.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.22	3.04	4.42	3.14
5.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.22	3.04	4.42	3.14
10.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.22	3.04	4.42	3.14
15.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.22	3.04	4.42	3.14
20.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.22	3.04	4.29	3.18
25.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.08	2.94	4.19	3.08
30.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	3.94	2.86	4.05	3.02
35.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.70	2.81	3.84	2.80	3.91	2.97
40.0	2.78	1.96	3.06	2.26	3.20	2.48	3.32	2.59	3.49	2.68	3.62	2.66	3.69	2.84
46.0	2.78	1.96	2.72	2.08	3.01	2.38	3.12	2.53	3.28	2.54	3.40	2.52	3.47	2.71

TC : Total Capacity kW.

SHC : Sensible Heat Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

COOLING CAPACITY

MODEL : AS*G07LUCA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.46	1.89	2.65	1.99
0.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.46	1.89	2.65	1.99
5.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.46	1.89	2.65	1.99
10.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.46	1.89	2.65	1.99
15.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.46	1.89	2.65	1.99
20.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.46	1.89	2.50	1.95
25.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.38	1.83	2.44	1.89
30.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.30	1.78	2.36	1.85
35.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.15	1.70	2.23	1.74	2.28	1.82
40.0	1.62	1.26	1.78	1.41	1.87	1.53	1.93	1.60	2.03	1.62	2.11	1.65	2.15	1.74
46.0	1.62	1.26	1.58	1.30	1.75	1.46	1.82	1.56	1.91	1.54	1.98	1.57	2.02	1.65

MODEL : AS*G09LUCA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.17	2.50	3.42	2.56
0.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.17	2.50	3.42	2.56
5.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.17	2.50	3.42	2.56
10.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.17	2.50	3.42	2.56
15.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.17	2.50	3.42	2.56
20.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.17	2.50	3.22	2.51
25.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.06	2.42	3.14	2.43
30.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	2.96	2.35	3.04	2.38
35.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.77	2.19	2.88	2.30	2.93	2.35
40.0	2.09	1.62	2.30	1.82	2.40	1.97	2.49	2.07	2.61	2.09	2.71	2.18	2.77	2.24
46.0	2.09	1.62	2.04	1.68	2.26	1.88	2.34	2.01	2.46	1.98	2.55	2.07	2.60	2.13

MODEL : AS*G12LUCA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.22	3.04	4.42	3.14
0.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.22	3.04	4.42	3.14
5.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.22	3.04	4.42	3.14
10.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.22	3.04	4.42	3.14
15.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.22	3.04	4.42	3.14
20.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.22	3.04	4.29	3.18
25.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.08	2.94	4.19	3.08
30.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	3.94	2.86	4.05	3.02
35.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.70	2.81	3.84	2.80	3.91	2.97
40.0	2.78	1.96	3.06	2.26	3.20	2.48	3.32	2.59	3.49	2.68	3.62	2.66	3.69	2.84
46.0	2.78	1.96	2.72	2.08	3.01	2.38	3.12	2.53	3.28	2.54	3.40	2.52	3.47	2.71

MODEL : AS*G14LUCA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	3.24	2.25	3.57	2.59	3.83	2.88	4.10	3.08	4.51	3.34	4.92	3.49	5.15	3.60
0.0	3.24	2.25	3.57	2.59	3.83	2.88	4.10	3.08	4.51	3.34	4.92	3.49	5.15	3.60
5.0	3.24	2.25	3.57	2.59	3.83	2.88	4.10	3.08	4.51	3.34	4.92	3.49	5.15	3.60
10.0	3.24	2.25	3.57	2.59	3.83	2.88	4.10	3.08	4.51	3.34	4.92	3.49	5.15	3.60
15.0	3.24	2.25	3.57	2.59	3.83	2.88	4.10	3.08	4.51	3.34	4.92	3.49	5.15	3.60
20.0	3.24	2.25	3.57	2.59	3.83	2.88	4.10	3.08	4.51	3.34	4.92	3.49	5.00	3.65
25.0	3.24	2.25	3.57	2.59	3.83	2.88	4.10	3.08	4.51	3.34	4.76	3.38	4.88	3.54
30.0	3.24	2.25	3.57	2.59	3.83	2.88	4.10	3.08	4.51	3.34	4.59	3.28	4.72	3.47
35.0	3.24	2.25	3.57	2.59	3.83	2.88	4.10	3.08	4.31	3.23	4.47	3.22	4.56	3.42
40.0	3.24	2.25	3.57	2.59	3.73	2.85	3.87	2.98	4.06	3.09	4.21	3.06	4.30	3.26
46.0	3.24	2.25	3.16	2.40	3.51	2.73	3.64	2.91	3.82	2.92	3.96	2.89	4.04	3.11

TC : Total Capacity kW.

SHC : Sensible Heat Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

COOLING CAPACITY

MODEL SELECTION

MODEL SELECTION

MODEL : AS*G07LMCA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.46	1.89	2.65	1.99
0.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.46	1.89	2.65	1.99
5.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.46	1.89	2.65	1.99
10.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.46	1.89	2.65	1.99
15.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.46	1.89	2.65	1.99
20.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.46	1.89	2.50	1.95
25.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.38	1.83	2.44	1.89
30.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.26	1.76	2.30	1.78	2.36	1.85
35.0	1.62	1.26	1.78	1.41	1.92	1.54	2.05	1.66	2.15	1.70	2.23	1.74	2.28	1.82
40.0	1.62	1.26	1.78	1.41	1.87	1.53	1.93	1.60	2.03	1.62	2.11	1.65	2.15	1.74
46.0	1.62	1.26	1.58	1.30	1.75	1.46	1.82	1.56	1.91	1.54	1.98	1.57	2.02	1.65

MODEL : AS*G09LMCA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.17	2.50	3.42	2.56
0.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.17	2.50	3.42	2.56
5.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.17	2.50	3.42	2.56
10.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.17	2.50	3.42	2.56
15.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.17	2.50	3.42	2.56
20.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.17	2.50	3.22	2.51
25.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	3.06	2.42	3.14	2.43
30.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.90	2.27	2.96	2.35	3.04	2.38
35.0	2.09	1.62	2.30	1.82	2.47	1.99	2.64	2.14	2.77	2.19	2.88	2.30	2.93	2.35
40.0	2.09	1.62	2.30	1.82	2.40	1.97	2.49	2.07	2.61	2.09	2.71	2.18	2.77	2.24
46.0	2.09	1.62	2.04	1.68	2.26	1.88	2.34	2.01	2.46	1.98	2.55	2.07	2.60	2.13

MODEL : AS*G12LMCA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.22	3.04	4.42	3.14
0.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.22	3.04	4.42	3.14
5.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.22	3.04	4.42	3.14
10.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.22	3.04	4.42	3.14
15.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.22	3.04	4.42	3.14
20.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.22	3.04	4.29	3.18
25.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	4.08	2.94	4.19	3.08
30.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.87	2.90	3.94	2.86	4.05	3.02
35.0	2.78	1.96	3.06	2.26	3.29	2.50	3.52	2.68	3.70	2.81	3.84	2.80	3.91	2.97
40.0	2.78	1.96	3.06	2.26	3.20	2.48	3.32	2.59	3.49	2.68	3.62	2.66	3.69	2.84
46.0	2.78	1.96	2.72	2.08	3.01	2.38	3.12	2.53	3.28	2.54	3.40	2.52	3.47	2.71

MODEL : AS*G14LMCA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	3.24	2.25	3.57	2.59	3.83	2.88	4.10	3.08	4.51	3.34	4.92	3.49	5.15	3.60
0.0	3.24	2.25	3.57	2.59	3.83	2.88	4.10	3.08	4.51	3.34	4.92	3.49	5.15	3.60
5.0	3.24	2.25	3.57	2.59	3.83	2.88	4.10	3.08	4.51	3.34	4.92	3.49	5.15	3.60
10.0	3.24	2.25	3.57	2.59	3.83	2.88	4.10	3.08	4.51	3.34	4.92	3.49	5.15	3.60
15.0	3.24	2.25	3.57	2.59	3.83	2.88	4.10	3.08	4.51	3.34	4.92	3.49	5.15	3.60
20.0	3.24	2.25	3.57	2.59	3.83	2.88	4.10	3.08	4.51	3.34	4.92	3.49	5.00	3.65
25.0	3.24	2.25	3.57	2.59	3.83	2.88	4.10	3.08	4.51	3.34	4.76	3.38	4.88	3.54
30.0	3.24	2.25	3.57	2.59	3.83	2.88	4.10	3.08	4.51	3.34	4.59	3.28	4.72	3.47
35.0	3.24	2.25	3.57	2.59	3.83	2.88	4.10	3.08	4.31	3.23	4.47	3.22	4.56	3.42
40.0	3.24	2.25	3.57	2.59	3.73	2.85	3.87	2.98	4.06	3.09	4.21	3.06	4.30	3.26
46.0	3.24	2.25	3.16	2.40	3.51	2.73	3.64	2.91	3.82	2.92	3.96	2.89	4.04	3.11

TC : Total Capacity kW.

SHC : Sensible Heat Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

COOLING CAPACITY

MODEL SELECTION

MODEL SELECTION

■ MODEL : AS*G18LFCA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	4.17	2.98	4.59	3.41	4.94	3.71	5.27	4.07	5.81	4.33	6.34	4.47	6.60	4.55
0.0	4.17	2.98	4.59	3.41	4.94	3.71	5.27	4.07	5.81	4.33	6.34	4.47	6.60	4.55
5.0	4.17	2.98	4.59	3.41	4.94	3.71	5.27	4.07	5.81	4.33	6.34	4.47	6.60	4.55
10.0	4.17	2.98	4.59	3.41	4.94	3.71	5.27	4.07	5.81	4.33	6.34	4.47	6.60	4.55
15.0	4.17	2.98	4.59	3.41	4.94	3.71	5.27	4.07	5.81	4.33	6.34	4.47	6.60	4.55
20.0	4.17	2.98	4.59	3.41	4.94	3.71	5.27	4.07	5.81	4.33	6.34	4.47	6.44	4.50
25.0	4.17	2.98	4.59	3.41	4.94	3.71	5.27	4.07	5.81	4.33	6.12	4.32	6.28	4.37
30.0	4.17	2.98	4.59	3.41	4.94	3.71	5.27	4.07	5.81	4.33	5.91	4.20	6.07	4.28
35.0	4.17	2.98	4.59	3.41	4.94	3.71	5.27	4.07	5.54	4.19	5.76	4.11	5.87	4.22
40.0	4.17	2.98	4.59	3.41	4.80	3.69	4.98	3.98	5.23	4.00	5.43	3.91	5.53	4.04
46.0	4.17	2.98	4.07	3.15	4.51	3.53	4.68	3.84	4.92	3.79	5.10	3.70	5.20	3.85

■ MODEL : AS*G24LFCA, AS*G24LFCC

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	5.55	3.76	6.12	4.24	6.57	4.61	7.03	4.97	7.66	5.07	8.44	5.80	8.79	5.86
0.0	5.55	3.76	6.12	4.24	6.57	4.61	7.03	4.97	7.66	5.07	8.44	5.80	8.79	5.86
5.0	5.55	3.76	6.12	4.24	6.57	4.61	7.03	4.97	7.66	5.07	8.44	5.80	8.79	5.86
10.0	5.55	3.76	6.12	4.24	6.57	4.61	7.03	4.97	7.66	5.07	8.44	5.80	8.79	5.86
15.0	5.55	3.76	6.12	4.24	6.57	4.61	7.03	4.97	7.66	5.07	8.44	5.80	8.79	5.86
20.0	5.55	3.76	6.12	4.24	6.57	4.61	7.03	4.97	7.66	5.07	8.44	5.80	8.58	5.98
25.0	5.55	3.76	6.12	4.24	6.57	4.61	7.03	4.97	7.66	5.07	8.15	5.60	8.37	5.79
30.0	5.55	3.76	6.12	4.24	6.57	4.61	7.03	4.97	7.66	5.07	7.87	5.45	8.08	5.68
35.0	5.55	3.76	6.12	4.24	6.57	4.61	7.03	4.97	7.38	4.96	7.66	5.34	7.81	5.60
40.0	5.55	3.76	6.12	4.24	6.40	4.59	6.63	4.82	6.96	4.78	7.23	5.07	7.37	5.35
46.0	5.55	3.76	5.42	3.93	6.01	4.40	6.24	4.72	6.55	4.50	6.80	4.81	6.93	5.11

TC : Total Capacity kW.

SHC : Sensible Heat Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

6-1-4. FLOOR / CEILING TYPE

COOLING CAPACITY

MODEL : AB*G14LVTA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.93	3.38	5.33	3.49
0.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.93	3.38	5.33	3.49
5.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.93	3.38	5.33	3.49
10.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.93	3.38	5.33	3.49
15.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.93	3.38	5.33	3.49
20.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.93	3.38	5.01	3.43
25.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.77	3.27	4.89	3.33
30.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.60	3.18	4.73	3.26
35.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.32	3.09	4.48	3.11	4.57	3.22
40.0	3.28	2.15	3.61	2.53	3.76	2.73	3.87	2.90	4.07	2.95	4.23	2.96	4.31	3.08
46.0	3.28	2.15	3.20	2.31	3.53	2.62	3.64	2.80	3.83	2.80	3.97	2.80	4.05	2.94

MODEL : AB*G18LVTA, AB*G18LVTB

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	4.22	2.68	4.64	3.16	4.96	3.43	5.27	3.69	5.82	3.99	6.34	4.22	6.85	4.35
0.0	4.22	2.68	4.64	3.16	4.96	3.43	5.27	3.69	5.82	3.99	6.34	4.22	6.85	4.35
5.0	4.22	2.68	4.64	3.16	4.96	3.43	5.27	3.69	5.82	3.99	6.34	4.22	6.85	4.35
10.0	4.22	2.68	4.64	3.16	4.96	3.43	5.27	3.69	5.82	3.99	6.34	4.22	6.85	4.35
15.0	4.22	2.68	4.64	3.16	4.96	3.43	5.27	3.69	5.82	3.99	6.34	4.22	6.85	4.35
20.0	4.22	2.68	4.64	3.16	4.96	3.43	5.27	3.69	5.82	3.99	6.34	4.22	6.45	4.29
25.0	4.22	2.68	4.64	3.16	4.96	3.43	5.27	3.69	5.82	3.99	6.13	4.08	6.29	4.15
30.0	4.22	2.68	4.64	3.16	4.96	3.43	5.27	3.69	5.82	3.99	5.92	3.97	6.08	4.07
35.0	4.22	2.68	4.64	3.16	4.96	3.43	5.27	3.69	5.55	3.86	5.76	3.89	5.87	4.02
40.0	4.22	2.68	4.64	3.16	4.83	3.41	4.97	3.63	5.23	3.69	5.43	3.69	5.54	3.85
46.0	4.22	2.68	4.11	2.89	4.54	3.27	4.67	3.51	4.92	3.49	5.11	3.50	5.21	3.67

TC : Total Capacity kW.

SHC : Sensible Heat Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

6-1-5. FLOOR TYPE

COOLING CAPACITY

MODEL : AG*G09LVCA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	2.11	1.62	2.32	1.80	2.49	1.94	2.64	2.09	2.92	2.29	3.18	2.40	3.43	2.47
0.0	2.11	1.62	2.32	1.80	2.49	1.94	2.64	2.09	2.92	2.29	3.18	2.40	3.43	2.47
5.0	2.11	1.62	2.32	1.80	2.49	1.94	2.64	2.09	2.92	2.29	3.18	2.40	3.43	2.47
10.0	2.11	1.62	2.32	1.80	2.49	1.94	2.64	2.09	2.92	2.29	3.18	2.40	3.43	2.47
15.0	2.11	1.62	2.32	1.80	2.49	1.94	2.64	2.09	2.92	2.29	3.18	2.40	3.43	2.47
20.0	2.11	1.62	2.32	1.80	2.49	1.94	2.64	2.09	2.92	2.29	3.18	2.40	3.23	2.42
25.0	2.11	1.62	2.32	1.80	2.49	1.94	2.64	2.09	2.92	2.29	3.07	2.32	3.15	2.35
30.0	2.11	1.62	2.32	1.80	2.49	1.94	2.64	2.09	2.92	2.29	2.96	2.25	3.04	2.30
35.0	2.11	1.62	2.32	1.80	2.49	1.94	2.64	2.09	2.78	2.21	2.89	2.21	2.94	2.26
40.0	2.11	1.62	2.32	1.80	2.42	1.93	2.49	2.07	2.62	2.11	2.72	2.10	2.77	2.16
46.0	2.11	1.62	2.06	1.66	2.28	1.85	2.34	1.97	2.47	2.00	2.56	1.98	2.61	2.06

MODEL : AG*G12LVCA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	2.82	1.90	3.10	2.24	3.32	2.42	3.52	2.60	3.89	2.82	4.23	2.99	4.58	3.09
0.0	2.82	1.90	3.10	2.24	3.32	2.42	3.52	2.60	3.89	2.82	4.23	2.99	4.58	3.09
5.0	2.82	1.90	3.10	2.24	3.32	2.42	3.52	2.60	3.89	2.82	4.23	2.99	4.58	3.09
10.0	2.82	1.90	3.10	2.24	3.32	2.42	3.52	2.60	3.89	2.82	4.23	2.99	4.58	3.09
15.0	2.82	1.90	3.10	2.24	3.32	2.42	3.52	2.60	3.89	2.82	4.23	2.99	4.58	3.09
20.0	2.82	1.90	3.10	2.24	3.32	2.42	3.52	2.60	3.89	2.82	4.23	2.99	4.30	3.03
25.0	2.82	1.90	3.10	2.24	3.32	2.42	3.52	2.60	3.89	2.82	4.09	2.89	4.20	2.94
30.0	2.82	1.90	3.10	2.24	3.32	2.42	3.52	2.60	3.89	2.82	3.95	2.81	4.06	2.88
35.0	2.82	1.90	3.10	2.24	3.32	2.42	3.52	2.60	3.71	2.72	3.85	2.75	3.92	2.84
40.0	2.82	1.90	3.10	2.24	3.23	2.40	3.32	2.56	3.50	2.60	3.63	2.61	3.70	2.72
46.0	2.82	1.90	2.75	2.04	3.03	2.31	3.12	2.47	3.29	2.47	3.41	2.47	3.48	2.59

MODEL : AG*G14LVCA

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.0 / 15.0		23.0 / 16.0		24.0 / 17.0		27.0 / 19.0		29.0 / 21.0		31.0 / 22.0		32.0 / 23.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.93	3.38	5.33	3.49
0.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.93	3.38	5.33	3.49
5.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.93	3.38	5.33	3.49
10.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.93	3.38	5.33	3.49
15.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.93	3.38	5.33	3.49
20.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.93	3.38	5.01	3.43
25.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.77	3.27	4.89	3.33
30.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.53	3.19	4.60	3.18	4.73	3.26
35.0	3.28	2.15	3.61	2.53	3.86	2.74	4.10	2.95	4.32	3.09	4.48	3.11	4.57	3.22
40.0	3.28	2.15	3.61	2.53	3.76	2.73	3.87	2.90	4.07	2.95	4.23	2.96	4.31	3.08
46.0	3.28	2.15	3.20	2.31	3.53	2.62	3.64	2.80	3.83	2.80	3.97	2.80	4.05	2.94

TC : Total Capacity kW.

SHC : Sensible Heat Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

6-2. HEATING CAPACITY

6-2-1. COMPACT CASSETTE TYPE

HEATING CAPACITY

■ MODEL : AU*G07LVLA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	1.87	1.73	1.59	1.45	1.26
-10.0	-11.0	2.09	1.93	1.78	1.62	1.41
-5.0	-7.0	2.33	2.15	1.98	1.80	1.57
0.0	-2.0	2.54	2.35	2.16	1.97	1.72
5.0	3.0	2.73	2.52	2.32	2.11	1.84
7.0	6.0	2.79	2.58	2.37	2.16	1.88
10.0	8.0	2.79	2.58	2.37	2.16	1.88
15.0	10.0	2.79	2.58	2.37	2.16	1.88
20.0	15.0	2.79	2.58	2.37	2.16	1.88

■ MODEL : AU*G09LVLA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	2.36	2.18	2.00	1.83	1.59
-10.0	-11.0	2.64	2.44	2.24	2.05	1.78
-5.0	-7.0	2.94	2.71	2.49	2.28	1.98
0.0	-2.0	3.21	2.96	2.72	2.49	2.17
5.0	3.0	3.44	3.18	2.92	2.67	2.32
7.0	6.0	3.52	3.25	2.99	2.73	2.38
10.0	8.0	3.52	3.25	2.99	2.73	2.38
15.0	10.0	3.52	3.25	2.99	2.73	2.38
20.0	15.0	3.52	3.25	2.99	2.73	2.38

■ MODEL : AU*G12LVLA, AU*G12LVLB

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	3.13	2.88	2.65	2.42	2.11
-10.0	-11.0	3.50	3.23	2.97	2.71	2.36
-5.0	-7.0	3.89	3.59	3.30	3.02	2.63
0.0	-2.0	4.25	3.92	3.61	3.29	2.87
5.0	3.0	4.56	4.21	3.87	3.53	3.08
7.0	6.0	4.66	4.30	3.96	3.62	3.15
10.0	8.0	4.66	4.30	3.96	3.62	3.15
15.0	10.0	4.66	4.30	3.96	3.62	3.15
20.0	15.0	4.66	4.30	3.96	3.62	3.15

■ MODEL : AU*G14LVLA, AU*G14LVLB

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	3.79	3.50	3.22	2.94	2.56
-10.0	-11.0	4.24	3.91	3.60	3.29	2.86
-5.0	-7.0	4.72	4.35	4.00	3.65	3.18
0.0	-2.0	5.15	4.75	4.37	3.99	3.48
5.0	3.0	5.52	5.10	4.69	4.28	3.73
7.0	6.0	5.65	5.22	4.80	4.38	3.82
10.0	8.0	5.65	5.22	4.80	4.38	3.82
15.0	10.0	5.65	5.22	4.80	4.38	3.82
20.0	15.0	5.65	5.22	4.80	4.38	3.82

TC : Total Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

■ MODEL : AU*G18LVLA, AU*G18LVLB

Outdoor Temperature		Indoor temperature (°CDB)				
		16.0	18.0	20.0	24.0	26.0
(°CDB)	(°CWB)	TC	TC	TC	TC	TC
-15.0	-16.0	4.63	4.27	3.93	3.58	3.12
-10.0	-11.0	5.18	4.78	4.40	4.01	3.49
-5.0	-7.0	5.76	5.31	4.89	4.46	3.89
0.0	-2.0	6.29	5.80	5.34	4.87	4.24
5.0	3.0	6.74	6.22	5.73	5.23	4.55
7.0	6.0	6.90	6.37	5.86	5.35	4.66
10.0	8.0	6.90	6.37	5.86	5.35	4.66
15.0	10.0	6.90	6.37	5.86	5.35	4.66
20.0	15.0	6.90	6.37	5.86	5.35	4.66

TC : Total Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

6-2-2. SLIM DUCT TYPE

HEATING CAPACITY

MODEL : AR*G07LLTA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	1.92	1.74	1.59	1.43	1.23
-10.0	-11.0	2.15	1.95	1.78	1.60	1.38
-5.0	-7.0	2.39	2.17	1.98	1.78	1.53
0.0	-2.0	2.61	2.37	2.16	1.94	1.67
5.0	3.0	2.79	2.54	2.32	2.08	1.79
7.0	6.0	2.86	2.60	2.37	2.13	1.84
10.0	8.0	2.86	2.60	2.37	2.13	1.84
15.0	10.0	2.86	2.60	2.37	2.13	1.84
20.0	15.0	2.86	2.60	2.37	2.13	1.84

MODEL : AR*G09LLTA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	2.42	2.20	2.00	1.80	1.55
-10.0	-11.0	2.71	2.46	2.24	2.02	1.74
-5.0	-7.0	3.01	2.74	2.49	2.24	1.93
0.0	-2.0	3.29	2.99	2.72	2.45	2.11
5.0	3.0	3.53	3.21	2.92	2.63	2.26
7.0	6.0	3.61	3.28	2.99	2.69	2.32
10.0	8.0	3.61	3.28	2.99	2.69	2.32
15.0	10.0	3.61	3.28	2.99	2.69	2.32
20.0	15.0	3.61	3.28	2.99	2.69	2.32

MODEL : AR*G12LLTA, AR*G12LLTB

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	3.20	2.91	2.65	2.39	2.06
-10.0	-11.0	3.58	3.26	2.97	2.67	2.30
-5.0	-7.0	3.99	3.63	3.30	2.97	2.56
0.0	-2.0	4.35	3.96	3.61	3.24	2.80
5.0	3.0	4.67	4.25	3.87	3.48	3.00
7.0	6.0	4.78	4.35	3.96	3.56	3.07
10.0	8.0	4.78	4.35	3.96	3.56	3.07
15.0	10.0	4.78	4.35	3.96	3.56	3.07
20.0	15.0	4.78	4.35	3.96	3.56	3.07

MODEL : AR*G14LLTA, AR*G14LLTB

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	3.88	3.53	3.22	2.89	2.49
-10.0	-11.0	4.35	3.95	3.60	3.24	2.79
-5.0	-7.0	4.83	4.40	4.00	3.60	3.10
0.0	-2.0	5.28	4.80	4.37	3.93	3.39
5.0	3.0	5.66	5.15	4.69	4.22	3.63
7.0	6.0	5.79	5.27	4.80	4.32	3.72
10.0	8.0	5.79	5.27	4.80	4.32	3.72
15.0	10.0	5.79	5.27	4.80	4.32	3.72
20.0	15.0	5.79	5.27	4.80	4.32	3.72

TC : Total Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

■ MODEL : AR*G18LLTA, AR*G18LLTB

Outdoor Temperature		Indoor temperature (°CDB)				
		16.0	18.0	20.0	24.0	26.0
(°CDB)	(°CWB)	TC	TC	TC	TC	TC
-15.0	-16.0	4.74	4.31	3.93	3.53	3.04
-10.0	-11.0	5.30	4.83	4.40	3.95	3.41
-5.0	-7.0	5.90	5.37	4.89	4.39	3.79
0.0	-2.0	6.44	5.86	5.34	4.80	4.14
5.0	3.0	6.91	6.29	5.73	5.15	4.44
7.0	6.0	7.07	6.43	5.86	5.27	4.54
10.0	8.0	7.07	6.43	5.86	5.27	4.54
15.0	10.0	7.07	6.43	5.86	5.27	4.54
20.0	15.0	7.07	6.43	5.86	5.27	4.54

TC : Total Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

6-2-3. WALL MOUNTED TYPE

HEATING CAPACITY

■ MODEL : AS*G07LJCA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	1.86	1.72	1.59	1.46	1.30
-10.0	-11.0	2.08	1.93	1.78	1.64	1.46
-5.0	-7.0	2.31	2.14	1.98	1.82	1.62
0.0	-2.0	2.53	2.34	2.16	1.99	1.77
5.0	3.0	2.71	2.51	2.32	2.13	1.90
7.0	6.0	2.77	2.57	2.37	2.18	1.94
10.0	8.0	2.77	2.57	2.37	2.18	1.94
15.0	10.0	2.77	2.57	2.37	2.18	1.94
20.0	15.0	2.77	2.57	2.37	2.18	1.94

■ MODEL : AS*G09LJCA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	2.34	2.17	2.00	1.84	1.64
-10.0	-11.0	2.62	2.43	2.24	2.06	1.84
-5.0	-7.0	2.92	2.71	2.49	2.29	2.04
0.0	-2.0	3.19	2.96	2.72	2.51	2.23
5.0	3.0	3.42	3.17	2.92	2.69	2.40
7.0	6.0	3.50	3.24	2.99	2.75	2.45
10.0	8.0	3.50	3.24	2.99	2.75	2.45
15.0	10.0	3.50	3.24	2.99	2.75	2.45
20.0	15.0	3.50	3.24	2.99	2.75	2.45

■ MODEL : AS*G12LJCA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	3.10	2.88	2.65	2.44	2.18
-10.0	-11.0	3.47	3.22	2.97	2.73	2.44
-5.0	-7.0	3.86	3.58	3.30	3.04	2.71
0.0	-2.0	4.22	3.91	3.61	3.32	2.96
5.0	3.0	4.53	4.20	3.87	3.56	3.17
7.0	6.0	4.63	4.30	3.96	3.64	3.25
10.0	8.0	4.63	4.30	3.96	3.64	3.25
15.0	10.0	4.63	4.30	3.96	3.64	3.25
20.0	15.0	4.63	4.30	3.96	3.64	3.25

TC : Total Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

HEATING CAPACITY

MODEL : AS*G07LUCA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	1.86	1.72	1.59	1.46	1.30
-10.0	-11.0	2.08	1.93	1.78	1.64	1.46
-5.0	-7.0	2.31	2.14	1.98	1.82	1.62
0.0	-2.0	2.53	2.34	2.16	1.99	1.77
5.0	3.0	2.71	2.51	2.32	2.13	1.90
7.0	6.0	2.77	2.57	2.37	2.18	1.94
10.0	8.0	2.77	2.57	2.37	2.18	1.94
15.0	10.0	2.77	2.57	2.37	2.18	1.94
20.0	15.0	2.77	2.57	2.37	2.18	1.94

MODEL : AS*G09LUCA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	2.34	2.17	2.00	1.84	1.64
-10.0	-11.0	2.62	2.43	2.24	2.06	1.84
-5.0	-7.0	2.92	2.71	2.49	2.29	2.04
0.0	-2.0	3.19	2.96	2.72	2.51	2.23
5.0	3.0	3.42	3.17	2.92	2.69	2.40
7.0	6.0	3.50	3.24	2.99	2.75	2.45
10.0	8.0	3.50	3.24	2.99	2.75	2.45
15.0	10.0	3.50	3.24	2.99	2.75	2.45
20.0	15.0	3.50	3.24	2.99	2.75	2.45

MODEL : AS*G12LUCA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	3.10	2.88	2.65	2.44	2.18
-10.0	-11.0	3.47	3.22	2.97	2.73	2.44
-5.0	-7.0	3.86	3.58	3.30	3.04	2.71
0.0	-2.0	4.22	3.91	3.61	3.32	2.96
5.0	3.0	4.53	4.20	3.87	3.56	3.17
7.0	6.0	4.63	4.30	3.96	3.64	3.25
10.0	8.0	4.63	4.30	3.96	3.64	3.25
15.0	10.0	4.63	4.30	3.96	3.64	3.25
20.0	15.0	4.63	4.30	3.96	3.64	3.25

MODEL : AS*G14LUCA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	3.76	3.49	3.22	2.96	2.64
-10.0	-11.0	4.21	3.91	3.60	3.31	2.95
-5.0	-7.0	4.68	4.34	4.00	3.68	3.28
0.0	-2.0	5.12	4.74	4.37	4.02	3.59
5.0	3.0	5.49	5.09	4.69	4.31	3.85
7.0	6.0	5.62	5.21	4.80	4.42	3.94
10.0	8.0	5.62	5.21	4.80	4.42	3.94
15.0	10.0	5.62	5.21	4.80	4.42	3.94
20.0	15.0	5.62	5.21	4.80	4.42	3.94

TC : Total Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

HEATING CAPACITY

MODEL : AS*G07LMCA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	1.86	1.72	1.59	1.46	1.30
-10.0	-11.0	2.08	1.93	1.78	1.64	1.46
-5.0	-7.0	2.31	2.14	1.98	1.82	1.62
0.0	-2.0	2.53	2.34	2.16	1.99	1.77
5.0	3.0	2.71	2.51	2.32	2.13	1.90
7.0	6.0	2.77	2.57	2.37	2.18	1.94
10.0	8.0	2.77	2.57	2.37	2.18	1.94
15.0	10.0	2.77	2.57	2.37	2.18	1.94
20.0	15.0	2.77	2.57	2.37	2.18	1.94

MODEL : AS*G09LMCA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	2.34	2.17	2.00	1.84	1.64
-10.0	-11.0	2.62	2.43	2.24	2.06	1.84
-5.0	-7.0	2.92	2.71	2.49	2.29	2.04
0.0	-2.0	3.19	2.96	2.72	2.51	2.23
5.0	3.0	3.42	3.17	2.92	2.69	2.40
7.0	6.0	3.50	3.24	2.99	2.75	2.45
10.0	8.0	3.50	3.24	2.99	2.75	2.45
15.0	10.0	3.50	3.24	2.99	2.75	2.45
20.0	15.0	3.50	3.24	2.99	2.75	2.45

MODEL : AS*G12LMCA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	3.10	2.88	2.65	2.44	2.18
-10.0	-11.0	3.47	3.22	2.97	2.73	2.44
-5.0	-7.0	3.86	3.58	3.30	3.04	2.71
0.0	-2.0	4.22	3.91	3.61	3.32	2.96
5.0	3.0	4.53	4.20	3.87	3.56	3.17
7.0	6.0	4.63	4.30	3.96	3.64	3.25
10.0	8.0	4.63	4.30	3.96	3.64	3.25
15.0	10.0	4.63	4.30	3.96	3.64	3.25
20.0	15.0	4.63	4.30	3.96	3.64	3.25

MODEL : AS*G14LMCA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	3.76	3.49	3.22	2.96	2.64
-10.0	-11.0	4.21	3.91	3.60	3.31	2.95
-5.0	-7.0	4.68	4.34	4.00	3.68	3.28
0.0	-2.0	5.12	4.74	4.37	4.02	3.59
5.0	3.0	5.49	5.09	4.69	4.31	3.85
7.0	6.0	5.62	5.21	4.80	4.42	3.94
10.0	8.0	5.62	5.21	4.80	4.42	3.94
15.0	10.0	5.62	5.21	4.80	4.42	3.94
20.0	15.0	5.62	5.21	4.80	4.42	3.94

TC : Total Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

HEATING CAPACITY

■ MODEL : AS*G18LFCA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	4.59	4.25	3.92	3.61	3.19
-10.0	-11.0	5.13	4.76	4.39	4.04	3.58
-5.0	-7.0	5.71	5.29	4.88	4.49	3.98
0.0	-2.0	6.24	5.78	5.33	4.90	4.34
5.0	3.0	6.69	6.20	5.72	5.26	4.66
7.0	6.0	6.84	6.35	5.86	5.38	4.77
10.0	8.0	6.84	6.35	5.86	5.38	4.77
15.0	10.0	6.84	6.35	5.86	5.38	4.77
20.0	15.0	6.84	6.35	5.86	5.38	4.77

■ MODEL : AS*G24LFCA, AS*G24LFCC

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	6.20	5.75	5.30	4.88	4.32
-10.0	-11.0	6.94	6.44	5.93	5.46	4.83
-5.0	-7.0	7.72	7.16	6.60	6.07	5.38
0.0	-2.0	8.43	7.82	7.21	6.63	5.87
5.0	3.0	9.04	8.38	7.73	7.11	6.30
7.0	6.0	9.25	8.58	7.91	7.28	6.45
10.0	8.0	9.25	8.58	7.91	7.28	6.45
15.0	10.0	9.25	8.58	7.91	7.28	6.45
20.0	15.0	9.25	8.58	7.91	7.28	6.45

TC : Total Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

6-2-4.FLOOR / CEILING TYPE

HEATING CAPACITY

■ MODEL : AB*G14LVTA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	3.79	3.50	3.22	2.94	2.56
-10.0	-11.0	4.24	3.91	3.60	3.29	2.86
-5.0	-7.0	4.72	4.35	4.00	3.65	3.18
0.0	-2.0	5.15	4.75	4.37	3.99	3.48
5.0	3.0	5.52	5.10	4.69	4.28	3.73
7.0	6.0	5.65	5.22	4.80	4.38	3.82
10.0	8.0	5.65	5.22	4.80	4.38	3.82
15.0	10.0	5.65	5.22	4.80	4.38	3.82
20.0	15.0	5.65	5.22	4.80	4.38	3.82

■ MODEL : AB*G18LVTA, AB*G18LVTB

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	4.63	4.27	3.93	3.58	3.12
-10.0	-11.0	5.18	4.78	4.40	4.01	3.49
-5.0	-7.0	5.76	5.31	4.89	4.46	3.89
0.0	-2.0	6.29	5.80	5.34	4.87	4.24
5.0	3.0	6.74	6.22	5.73	5.23	4.55
7.0	6.0	6.90	6.37	5.86	5.35	4.66
10.0	8.0	6.90	6.37	5.86	5.35	4.66
15.0	10.0	6.90	6.37	5.86	5.35	4.66
20.0	15.0	6.90	6.37	5.86	5.35	4.66

TC : Total Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

6-2-5. FLOOR TYPE

HEATING CAPACITY

■ MODEL : AG*G09LVCA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	2.36	2.18	2.00	1.83	1.59
-10.0	-11.0	2.64	2.44	2.24	2.05	1.78
-5.0	-7.0	2.94	2.71	2.49	2.28	1.98
0.0	-2.0	3.21	2.96	2.72	2.49	2.17
5.0	3.0	3.44	3.18	2.92	2.67	2.32
7.0	6.0	3.52	3.25	2.99	2.73	2.38
10.0	8.0	3.52	3.25	2.99	2.73	2.38
15.0	10.0	3.52	3.25	2.99	2.73	2.38
20.0	15.0	3.52	3.25	2.99	2.73	2.38

■ MODEL : AG*G12LVCA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	3.13	2.88	2.65	2.42	2.11
-10.0	-11.0	3.50	3.23	2.97	2.71	2.36
-5.0	-7.0	3.89	3.59	3.30	3.02	2.63
0.0	-2.0	4.25	3.92	3.61	3.29	2.87
5.0	3.0	4.56	4.21	3.87	3.53	3.08
7.0	6.0	4.66	4.30	3.96	3.62	3.15
10.0	8.0	4.66	4.30	3.96	3.62	3.15
15.0	10.0	4.66	4.30	3.96	3.62	3.15
20.0	15.0	4.66	4.30	3.96	3.62	3.15

■ MODEL : AG*G14LVCA

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	16.0	18.0	20.0	24.0	26.0
		TC	TC	TC	TC	TC
-15.0	-16.0	3.79	3.50	3.22	2.94	2.56
-10.0	-11.0	4.24	3.91	3.60	3.29	2.86
-5.0	-7.0	4.72	4.35	4.00	3.65	3.18
0.0	-2.0	5.15	4.75	4.37	3.99	3.48
5.0	3.0	5.52	5.10	4.69	4.28	3.73
7.0	6.0	5.65	5.22	4.80	4.38	3.82
10.0	8.0	5.65	5.22	4.80	4.38	3.82
15.0	10.0	5.65	5.22	4.80	4.38	3.82
20.0	15.0	5.65	5.22	4.80	4.38	3.82

TC : Total Capacity kW.

The data is based on the following conditions.

Pipe length : 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference : 0m [Outdoor unit - Indoor unit].

Flexible Multi System

3. OUTDOOR UNIT & BRANCH BOX

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3. OUTDOOR UNIT & BRANCH BOX

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1. SPECIFICATIONS

1-1. OUTDOOR UNIT

Model name				AO*G45LBT8	
Power source				1ø 230V ~ 50Hz	
Available Voltage Range				198-264V	
Connectable indoor unit			Number	2 to 8	
			Capacity	80 to 130%	
Capacity	Cooling	Rated	kW	14.0	
			Btu/h	48,000	
	Heating		kW	16.0	
			Btu/h	54,000	
Input power *1	Cooling	Rated	kW	5.20	
	Heating			5.07	
Current *1	Cooling	Rated	A	23.1	
	Heating			22.5	
EER	Cooling	Rated	kW / kW	2.69	
COP	Heating			3.16	
Fan	Type × Q'ty			Propeller ×1	
	Airflow rate	Cooling	m ³ /h	4,650	
		Heating		4,800	
	Motor	Type × Q'ty			DC motor ×1
Output			W		
Sound power level				Cooling	71
Sound pressure level *2	Cooling	Rated	dB(A)	56	
	Heating			58	
Heat exchanger	Dimension			mm	864×955×57.2
	Fin pitch			mm	1.8
	Rows × Stages				3 × 34
	Pipe type (Material)				Grooved H-pin (Copper)
	Fin	Type (Material)			Corrugate (Aluminium)
Surface treatment			Corrosion resistance (Blue Fin)		
Compressor	Type × Q'ty			DC TWIN ROTARY ×1	
	Motor output		W	2700	
	Crankcase heater		W	25	
Refrigerant	Type			R410A	
	Charge		g	3450	
Refrigerant oil				Type	PVE
Enclosure	Material			Painted galvanized steel	
	Colour			Beige (Approximate colour of MUNSELL 10YR 7.5/1.0NN)	
Dimensions	Net	(H x W x D)	mm	914 x 970 x 370	
	Gross			1048 x 1064 x 479	
Weight	Net			kg	98
	Gross			kg	106
Connection pipe	Size	Liquid	mm	9.52	
		Gas		15.88	
	Method			Flare	
	Max. length (Total)			m	115
	Max. length (BP-IN)			m	15
	Max. height difference between Outdoor Unit and each Indoor Units.			m	30
Max. height difference between Indoor Units.			m	30	
Operation range	Cooling			°C	-5 to 46
	Heating			°C	-15 to 24

NOTE:

Specifications are based on the following conditions.

*1: In case of connecting two indoor units (7 kW class).

*2: These are the measured values in the manufacturer's anechoic chamber.

Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

Power source of specifications : 230 V

Cooling:Indoor temperature of 27 °CDB /19 °CWB,and outdoor temperature of 35 °CDB/24 °CWB.

Heating:Indoor temperature of 20 °CDB / 15 °CWB,and outdoor temperature of 7 °CDB/6 °CWB.

Pipe length : 5 m [Outdoor unit - Branch box], 3 m [Branch box - Indoor unit]

Height difference : 0 m [Outdoor unit - Indoor unit].

The protective function may work when using it outside the operation range.

1-2. BRANCH BOX

Model name		UTP-PY03A		UTP-PY02A		
Casing color		Paintingless		Paintingless		
Connectable indoor unit		1 to 3 Units		1 to 2 Units		
Power source		1ø 230V ~ 50Hz		1ø 230V ~ 50Hz		
Available voltage range		198-264V		198-264V		
Input Power	W	10		10		
Running current	A	0.05		0.05		
Refrigerant type		R410A		R410A		
Dimensions (H × W × D)	Net	mm	195×433×370		195×433×370	
	Gross		271×931×436		271×931×436	
Weight	Net	kg	9		9	
	Gross		13		13	
Connection pipe	Size	Liquid	Main : 9.52 ×1, Branch : 6.35 ×3		Main : 9.52 ×1, Branch : 6.35 ×2	
		Gas	Main : 15.88 ×1, Branch : 12.7 ×3		Main : 15.88 ×1, Branch : 12.7 ×2	
	Method		Flare		Flare	
Operation range	°C	-15 to 46		-15 to 46		
	%RH	80 or less		80 or less		

Note :

Specifications are based on the following conditions.

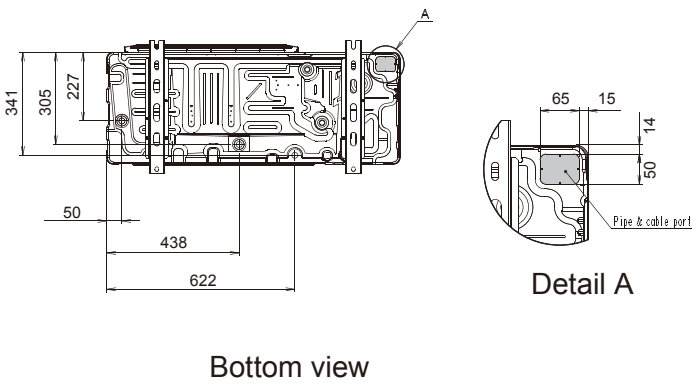
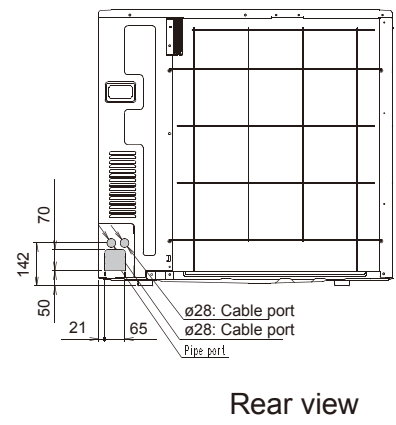
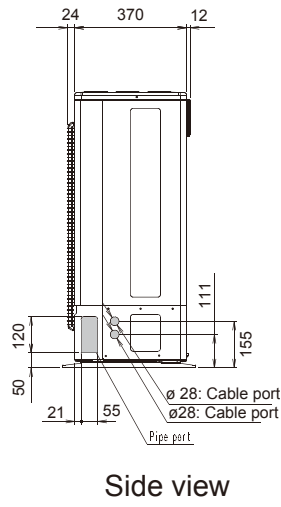
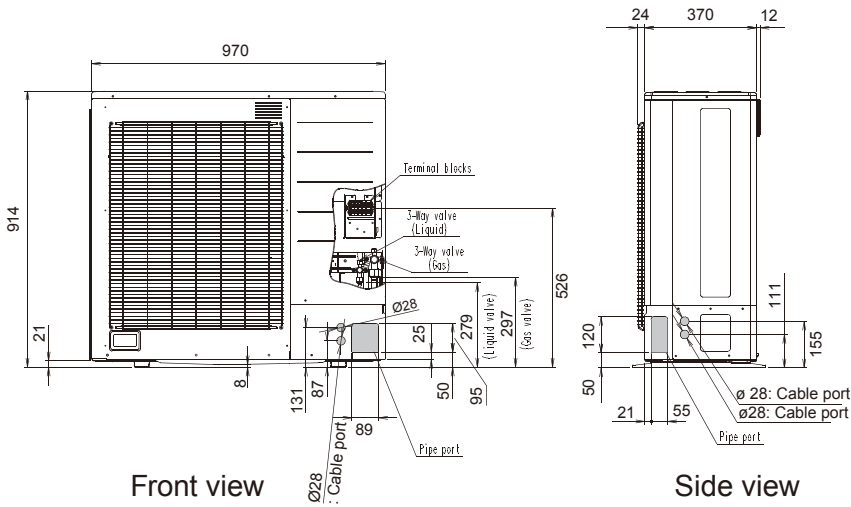
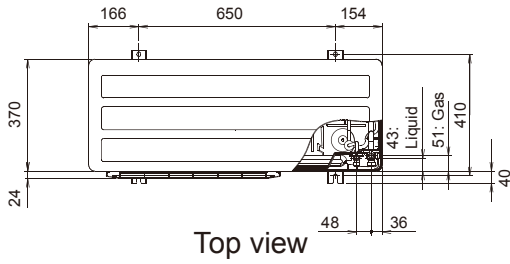
Power source of specifications : 230V.

2. DIMENSIONS

2-1. OUTDOOR UNIT

■ MODEL : AO*G45LBT8

Unit : mm



OUTDOOR
UNITS

OUTDOOR
UNITS

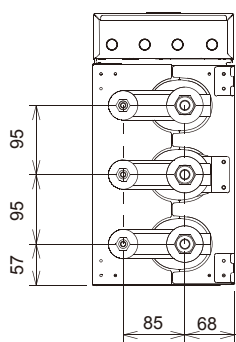
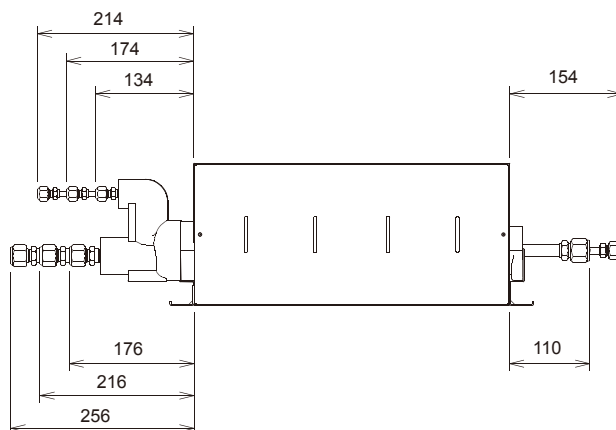
2-2. BRANCH BOX

■ MODEL : UTP-PY03A

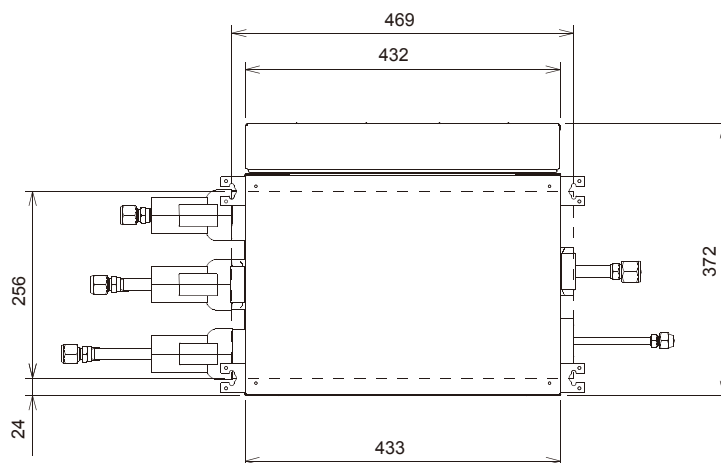
Unit : mm

OUTDOOR
UNITS

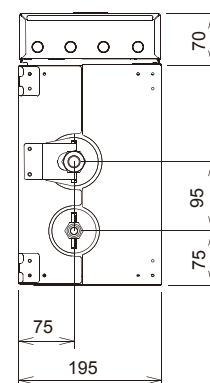
OUTDOOR
UNITS



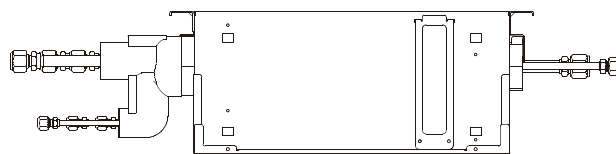
Indoor unit side



Ceiling hanging



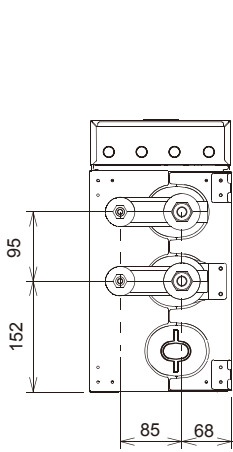
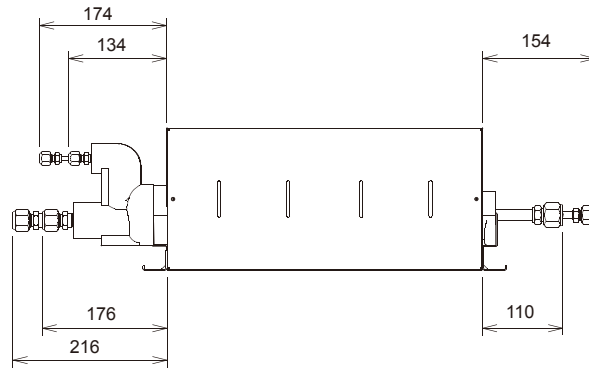
Outdoor unit side



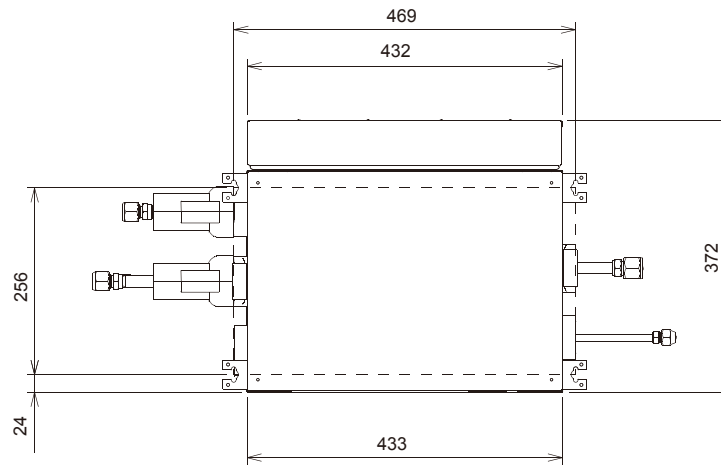
Wall hanging

■ MODEL : UTP-PY02A

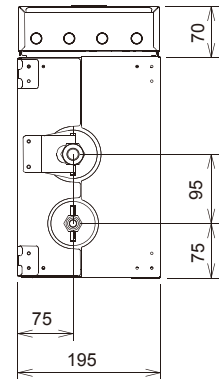
Unit : mm



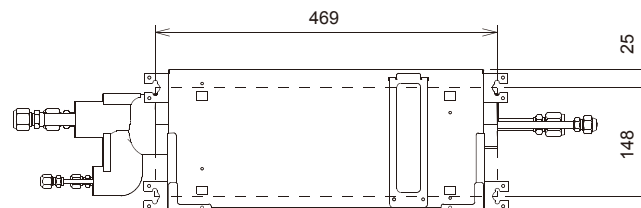
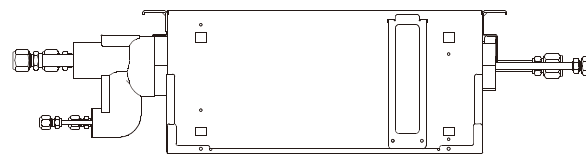
Indoor unit side



Ceiling hanging



Outdoor unit side



Wall hanging

OUTDOOR
UNITS

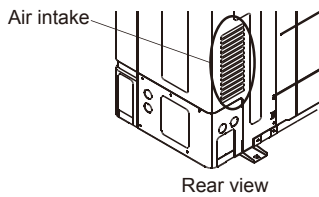
OUTDOOR
UNITS

3. INSTALLATION SPACE

3-1. OUTDOOR UNIT

⚠ Caution

- The installation space shown in the following examples is based on an ambient temperature under cooling operation of 35 °C DB at the air intake of the outdoor unit. Provide more space around the air intake than shown in the examples if the ambient temperature exceeds 35 °C DB or if the thermal load of all of the outdoor units exceeds the capacity.
- Consider the transportation route, installation space, maintenance space, and access, and install the unit in a location with sufficient space for the refrigerant piping.
- Observe the installation space specifications that are shown in the figures. Provide the same space for the air intake at the rear of the outdoor unit. If the installation is not performed according to the specifications, it could cause a short circuit and result in a lack of operating performance. As a result, the outdoor unit might easily be stopped by high-pressure protection.



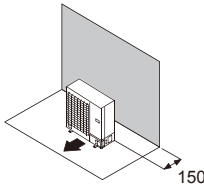
- Installation methods not shown in the following examples are not recommended. Performance may drop significantly.

3-1-1. SINGLE OUTDOOR UNIT INSTALLATION

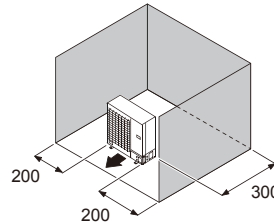
■ WHEN THE UPWARD AREA IS OPEN

Unit : mm

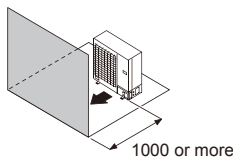
● Obstacles at rear only



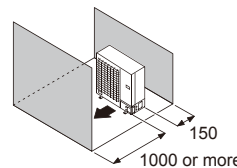
● Obstacles at rear and sides only



● Obstacles at front only

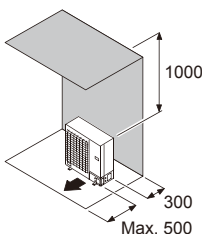


● Obstacles at front and rear only

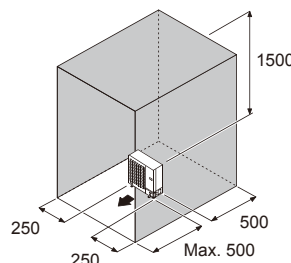


■ WHEN AN OBSTRUCTION IS PRESENT ALSO IN THE UPWARD AREA

● Obstacles at rear and above only



● Obstacles at rear, sides, and above only



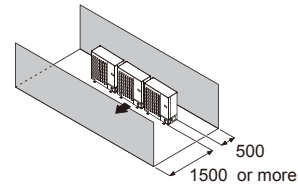
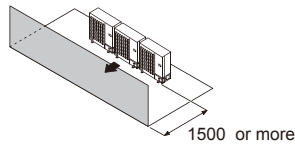
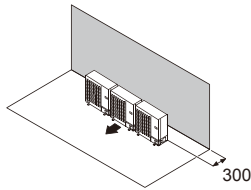
3-1-2. MULTIPLE OUTDOOR UNIT INSTALLATION

- Provide at least 25mm of space between the outdoor units if multiple units are installed.
 - When routing the piping from the side of an outdoor unit, provide space for the piping.
 - No more than 3 units must be installed side by side.
- When 3 units or more are arranged in a line, provide the space as shown in the following example when an obstruction is present also in the upward area.

■ WHEN THE UPWARD AREA IS OPEN

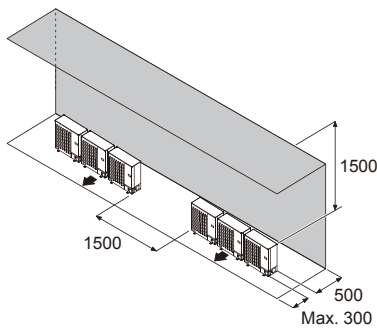
Unit : mm

- Obstacles at rear only
- Obstacles at front only
- Obstacles at front and rear only



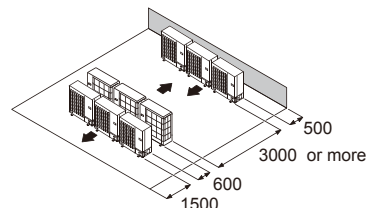
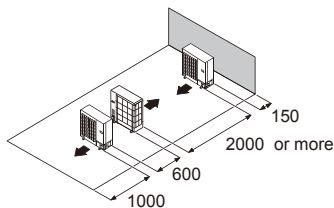
■ WHEN AN OBSTRUCTION IS PRESENT ALSO IN THE UPWARD AREA

- Obstacles at rear and above only



3-1-3. OUTDOOR UNITS INSTALLATION IN MULTI ROW

- Single parallel unit arrangement
- Multiple parallel unit arrangement



3-2. BRANCH BOX

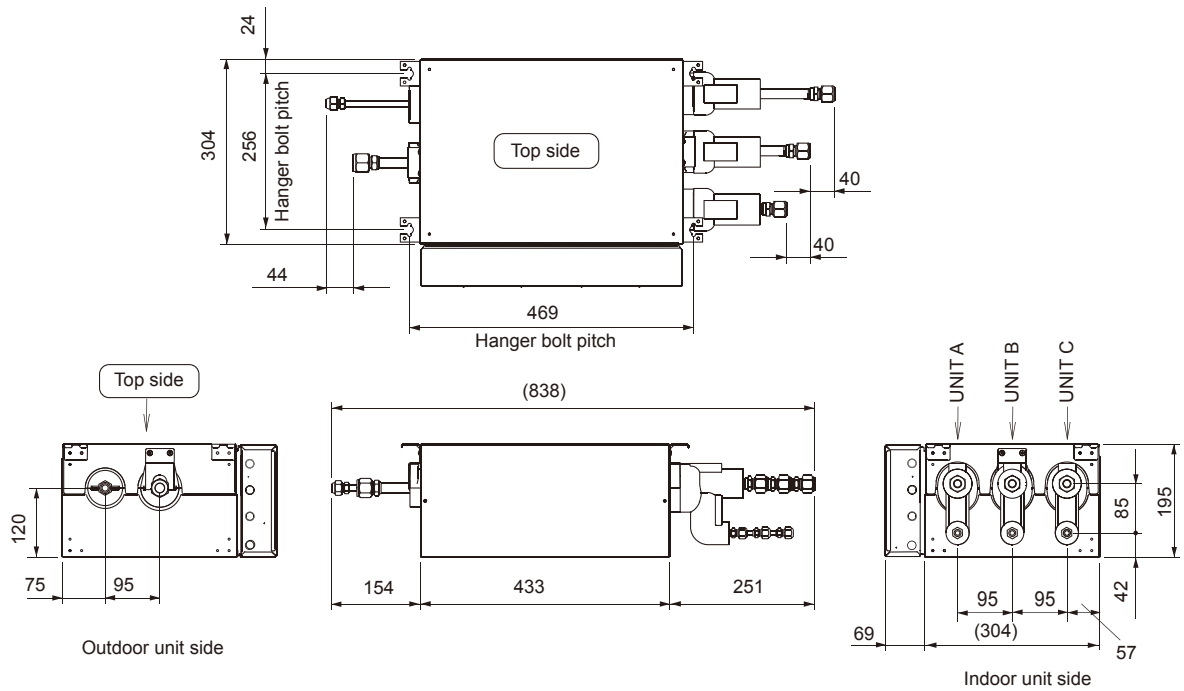
- The branch box can be installed on a wall or suspended from the ceiling.
- The branch box can be installed and set horizontally or vertically.
- Provide a service hole for maintenance and inspection purposes as shown in the figure below.
- It is not necessary to perform any draining procedures on the branch box.
- The slope of the top side must be within $\pm 5^\circ$ in all directions of the horizontal plane.
- Use M8 or M10 for the bolt size when hanging.

3-2-1. HORIZONTAL INSTALLATION

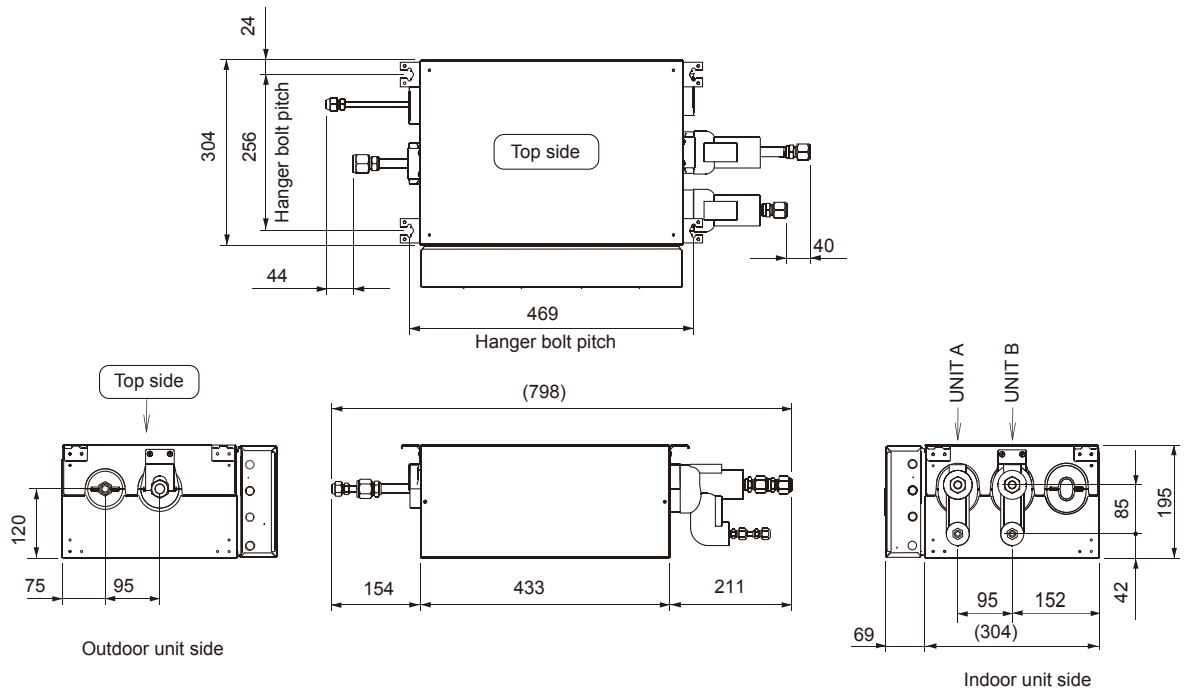
Be sure to install so that the top side faces up.

[3 branches type]

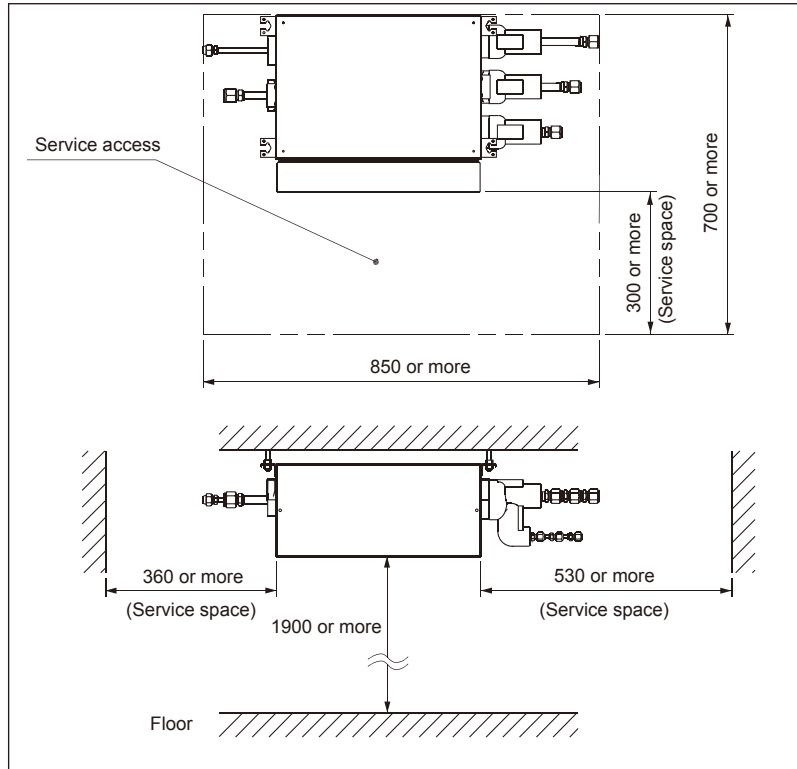
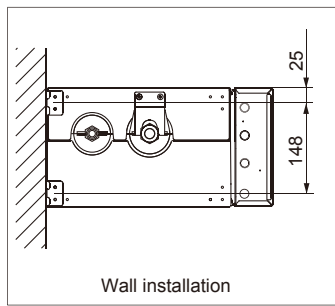
Unit : mm



[2 branches type]



Installation dimensions



OUTDOOR
UNITS

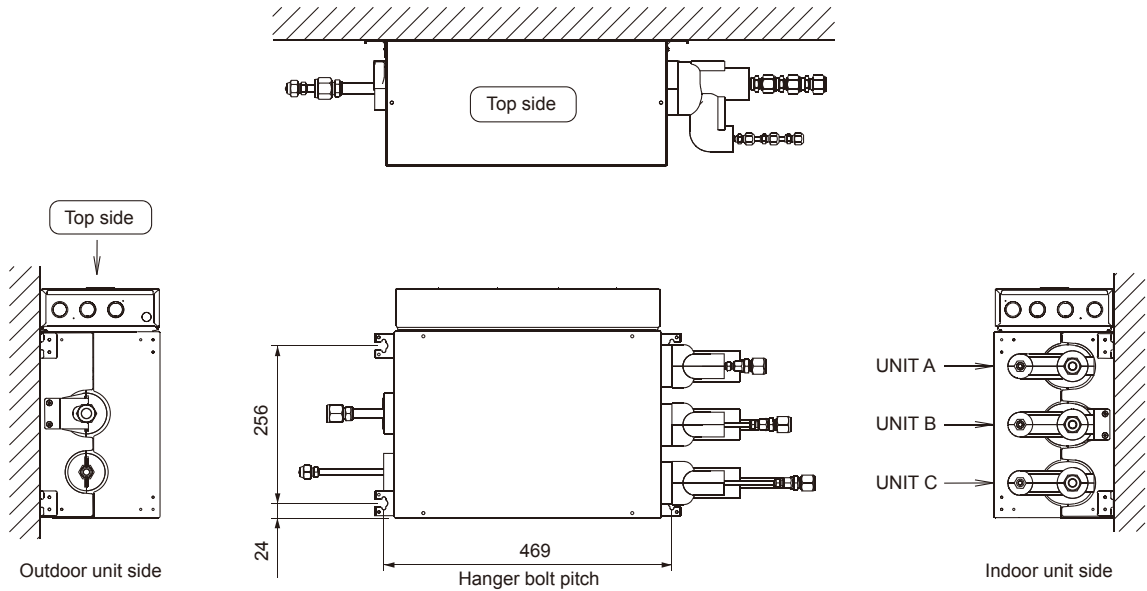
OUTDOOR
UNITS

3-2-2. VERTICAL INSTALLATION

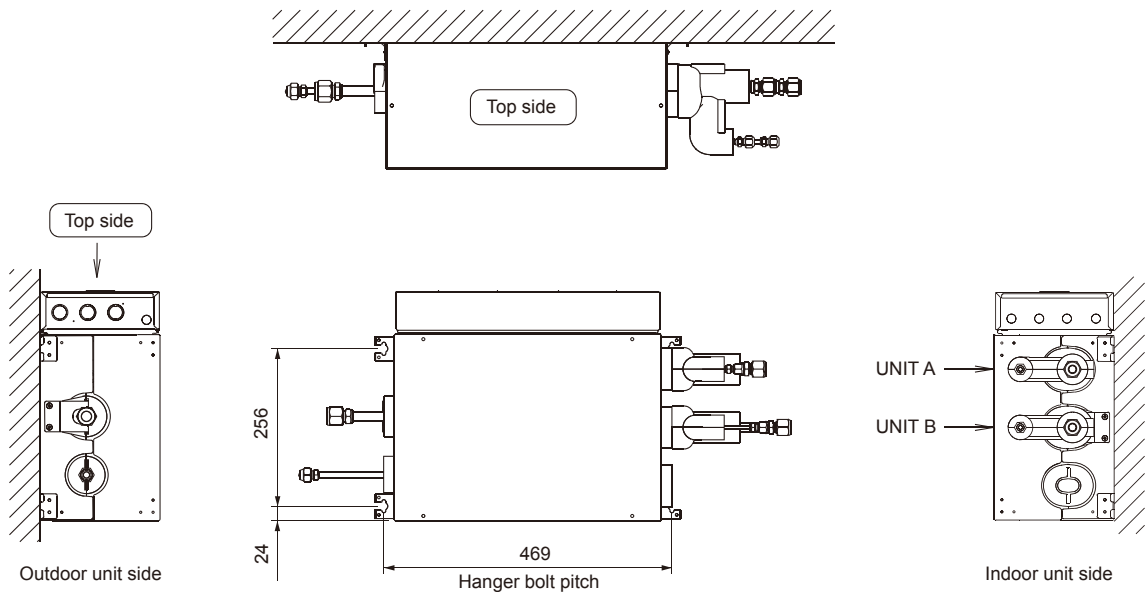
- A vertical installation can only be performed when mounting on the wall.
(A vertical installation cannot be hung from the ceiling.)
- Be sure to install the control box so that the top side faces up.
- The positioning of the control box cannot be changed when performing a vertical installation.

[3 branches type]

Unit : mm

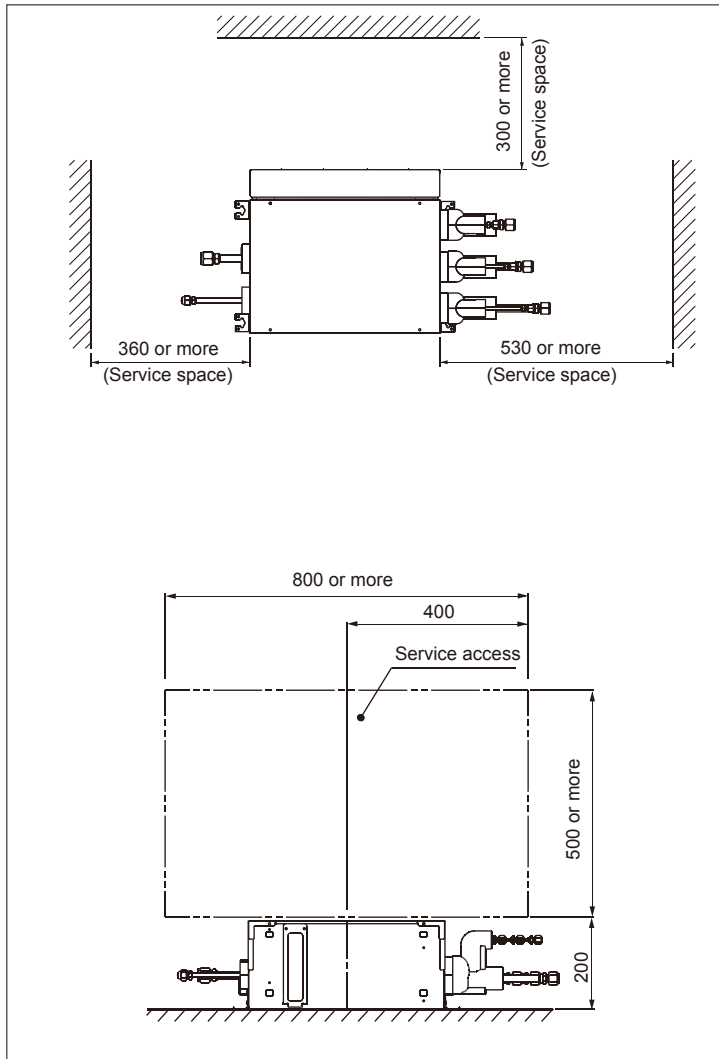


[2 branches type]



Unit : mm

Installation dimensions

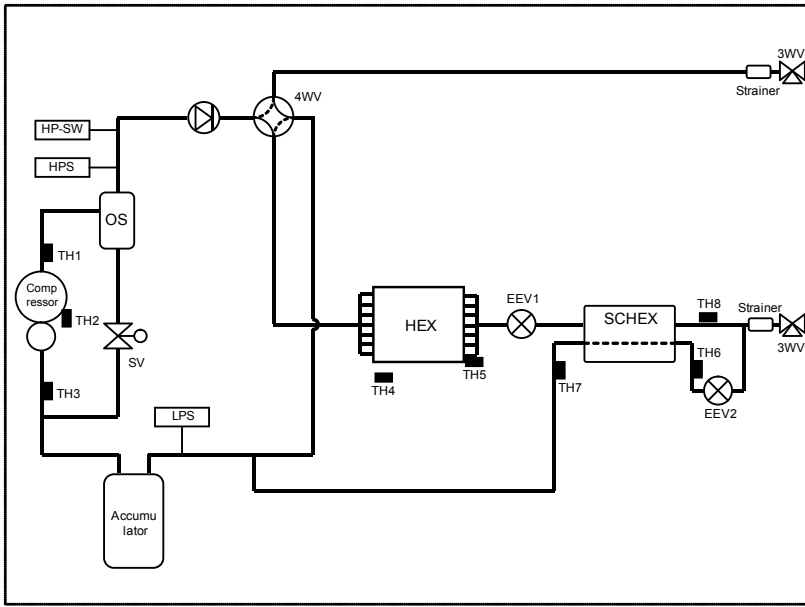


OUTDOOR
UNITS

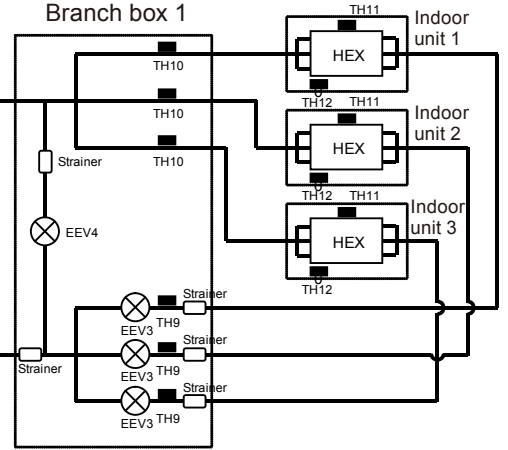
OUTDOOR
UNITS

4. REFRIGERANT CIRCUIT

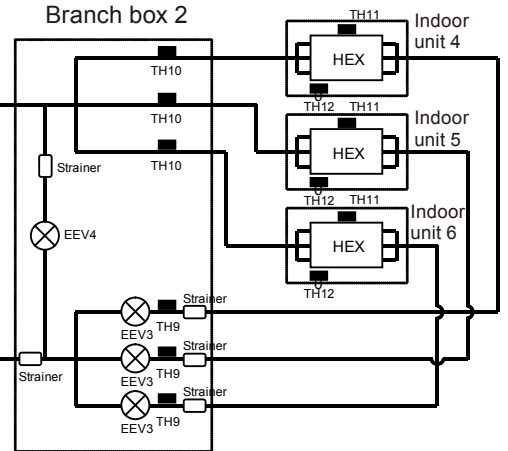
Outdoor unit



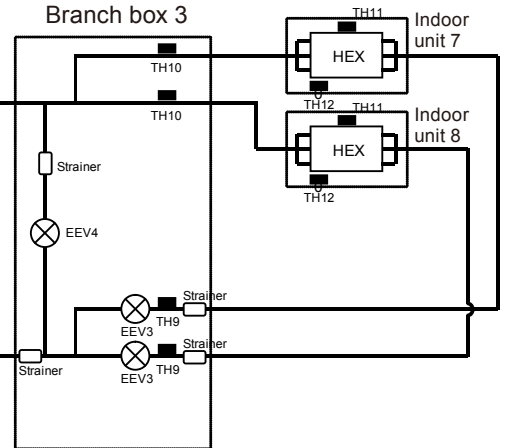
Branch box 1



Branch box 2



Branch box 3



OUTDOOR UNITS

OUTDOOR UNITS

■ SYMBOL DESCRIPTION

● Outdoor unit

MARK	DESCRIPTION
HEX	Heat exchanger
OS	Oil separator
SCHEX	Sub-cool heat exchanger
HPS	High pressure sensor
HP-SW	High pressure sensor switch
LPS	Low pressure sensor
4WV	4-way valve
3WV	3-way valve
EEV 1	Electric expansion valve 1
EEV 2	Electric expansion valve 2
SV	Solenoid valve
TH 1	Discharge temperature thermistor
TH 2	Compressor temperature thermistor
TH 3	Suction temperature thermistor
TH 4	Outdoor temperature thermistor
TH 5	Heat exchanger (outlet) thermistor
TH 6	Sub-cool heat exchanger (inlet) thermistor
TH 7	Sub-cool heat exchanger (outlet) thermistor
TH 8	Liquid temperature thermistor

● Branch box

MARK	DESCRIPTION
EEV 3	Electric expansion valve 3
EEV 4	Electric expansion valve 4
TH 9	Branch box liquid temperature thermistor
TH 10	Branch box gas temperature thermistor

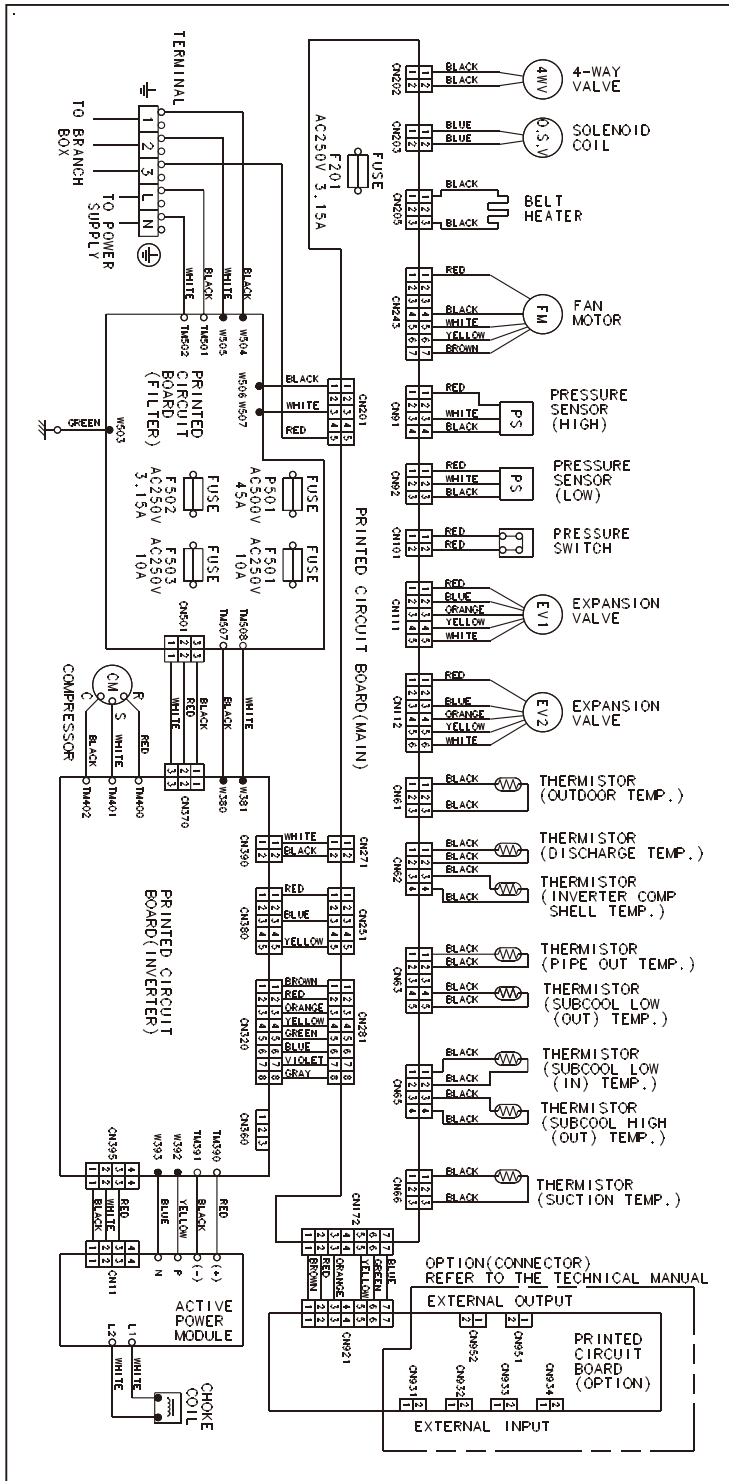
● Indoor unit

MARK	DESCRIPTION
HEX	Heat exchanger
TH 11	Heat exchanger (middle) thermistor
TH 12	Room temperature thermistor

5. WIRING DIAGRAM

5-1. OUTDOOR UNIT

■ MODEL : AO*G45LBT8

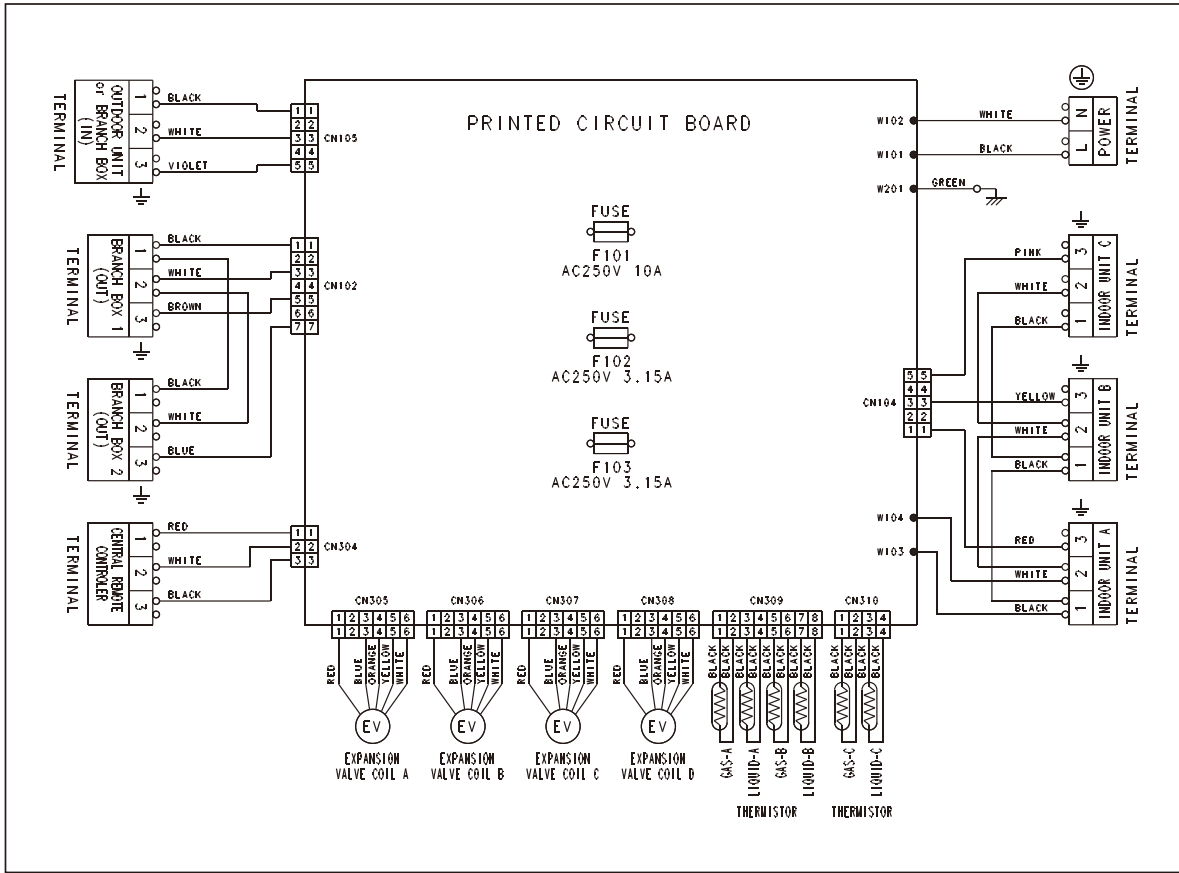


OUTDOOR UNITS

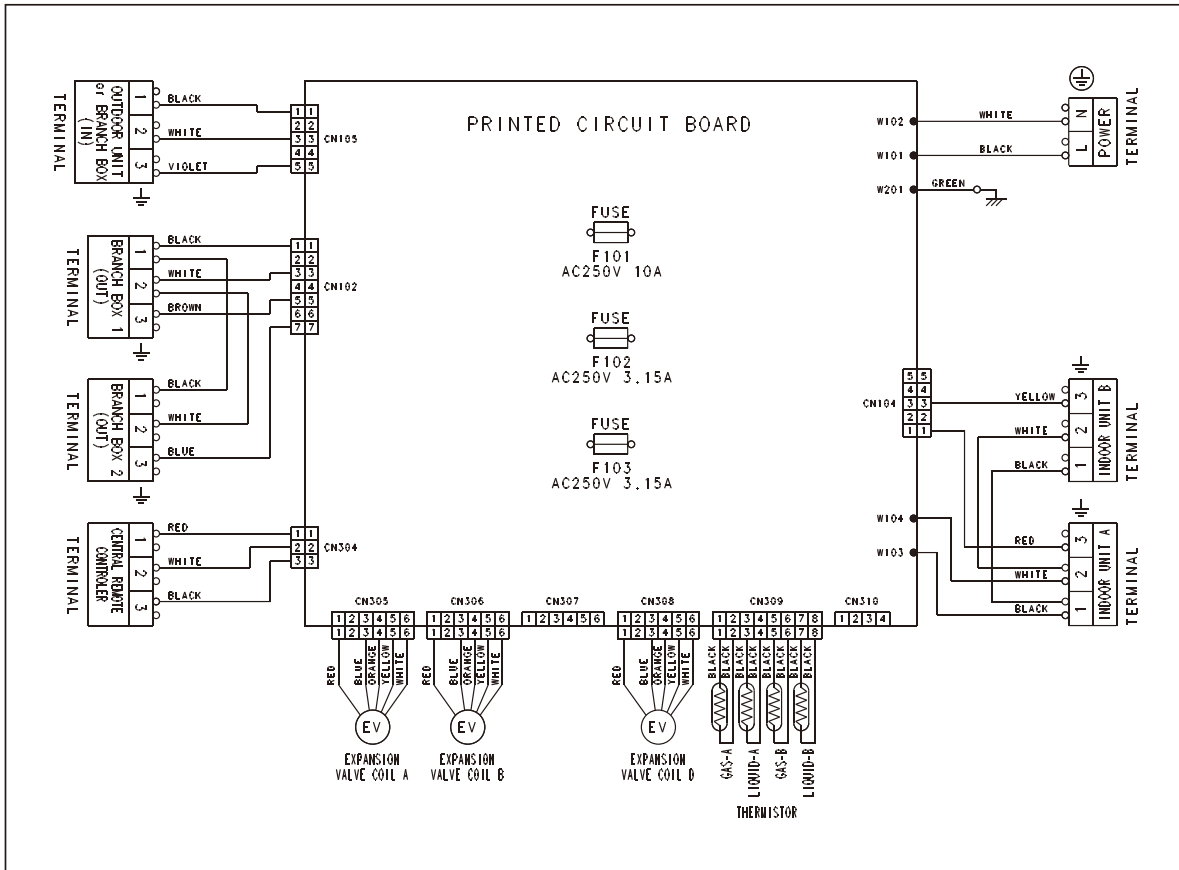
OUTDOOR UNITS

5-2. BRANCH BOX

MODEL : UTP-PY03A



MODEL : UTP-PY02A



6. OPERATION RANGE

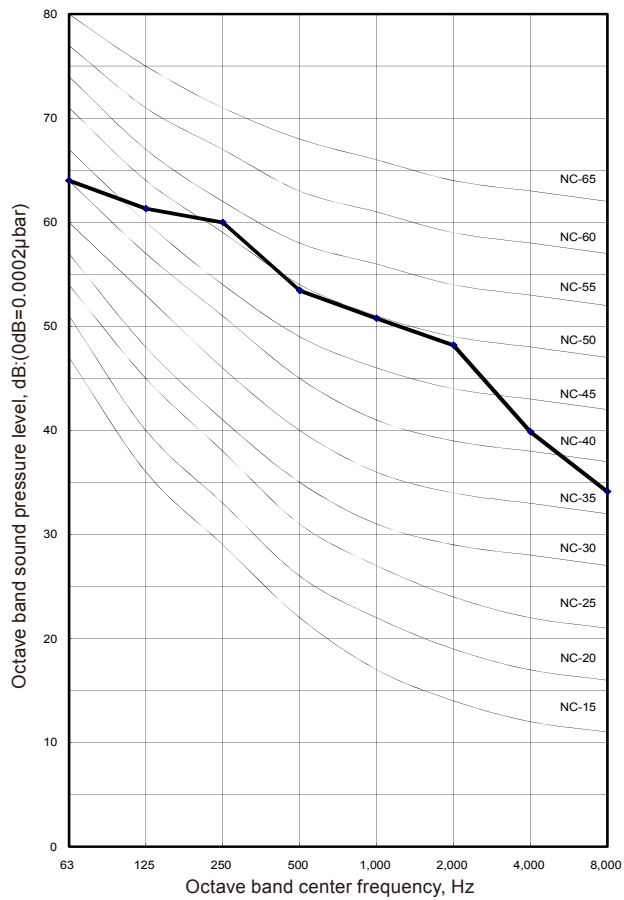
Operation mode	Operation range	
	Indoor unit	Outdoor unit
Cooling / Dry	18 to 32°C DB	-5 to 46°C DB
	R.H. 80% or less	
Heating	16 to 31°C DB	-15 to 24°C DB

R.H. : Relative Humidity.

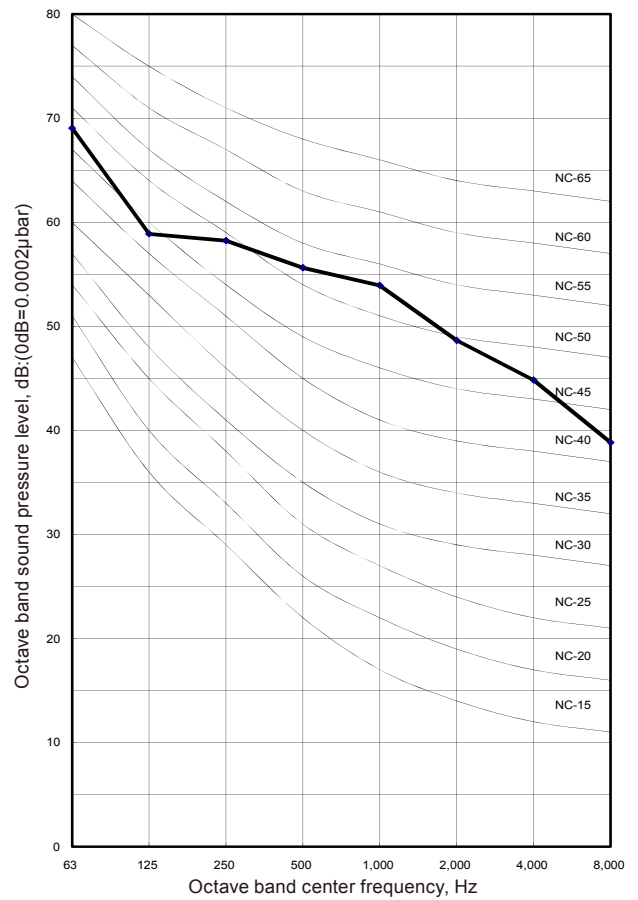
7. NOISE LEVEL CURVE

■ MODEL : AO*G45LBT8

● Cooling



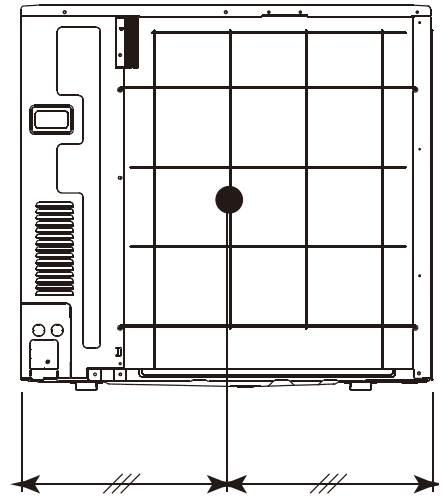
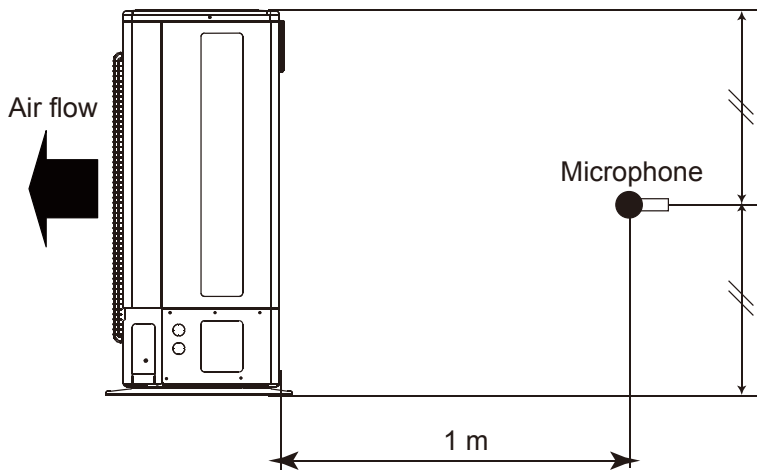
● Heating



OUTDOOR
UNITS

OUTDOOR
UNITS

■ SOUND LEVEL CHECK POINT



OUTDOOR
UNITS

OUTDOOR
UNITS

8. ELECTRIC CHARACTERISTICS

8-1. OUTDOOR UNIT

Model name	Power Supply		Full Load Characteristics			Wiring Specifications *1			Compressor	Outdoor Fan Motor	
	Hz	Voltage (V)	MCA (A)	MFA (A)	MSC (A)	Power Cable (mm ²)	Earth Cable (mm ²)	Limited Wiring Length*2 (m)	RLA (A)	Output (kW)	FLA (A)
AO*G45LBT8	50	230	26.5	32	23.4	6	6	16	21	0.11	0.9

8-2. BRANCH BOX

Model name	Power Supply		Full Load Characteristics		Wiring Specifications *1		
	Hz	Voltage (V)	MCA (A)	MFA (A)	Power Cable (mm ²)	Earth Cable (mm ²)	Limited Wiring Length*2 (m)
UTP-PY03A	50	230	3	15	2.5	2.5	14
UTP-PY02A	50	230	3	15	2.5	2.5	14

- Select the breaker based on MFA of the table above.
- Select the wire size based on the larger value of MCA or MFA of the table above.

*1 Wiring Spec : These values are recommended data. Please select the wiring spec in accordance with local rules.

*2 Limited Wiring Length : This wiring length is in case voltage drop less than 2%. When wiring length extend longer, select the wiring size of larger diameter.

MCA : Min Circuit Amp = Max Operating Current (Full Load)

MFA : Main Fuse (Circuit Breaker) Current

MSC : Max Starting Current

RLA : Rated Load Amp of compressor under the standard condition.

FLA : Full Load Amp of fan motor under the standard condition.

9. SAFETY DEVICES

9-1. OUTDOOR UNIT

Safety device		AO*G45LBT8
Fuse	Main PCB	AC 250V 3.15A
	INV PCB	DC 400V 5A
	Filter	AC 250V 10A AC 250V 3.15A
Protector	Filter	AC 500V 50A
Compressor Protector		Overcurrent protection - Temperature protection Off : 115°C On : 70°C
High Pressure Protection		Off : 4.2MPa On : 3.2MPa
Low Pressure Protection		Off : 0.05MPa

9-2. BRANCH BOX

Safety device		UTP-PY03A, UTP-PY02A
Fuse	PCB	AC 250V 3.15A x 2 AC 250V 10A x 1

Flexible Multi System

4. INDOOR UNITS

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4. INDOOR UNITS

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1. FEATURES

1-1. COMPACT CASSETTE TYPE

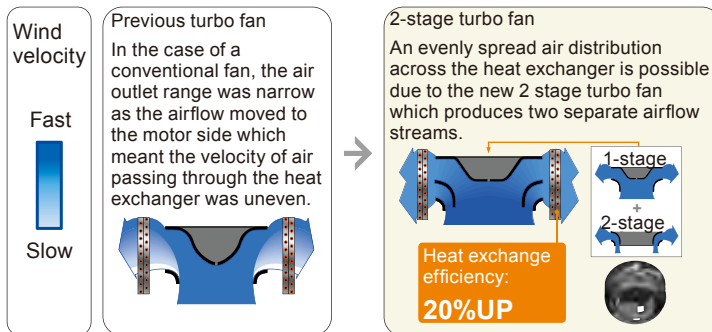
- MODELS : AU*G07LVLA, AU*G09LVLA, AU*G12LVLA, AU*G14LVLA, AU*G18LVLA, AU*G12LVLB, AU*G14LVLB, AU*G18LVLB**



FEATURES

2-stage turbo fan

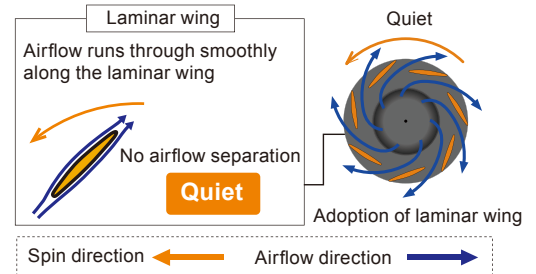
High efficiency design by 2 stage structure



Quiet quality

Optimization of wing form (laminar wing type) and wing number (7 blades each)

Designed by CFD-analysis (fluid) simulations



Easy maintenance

① Maintenance of fan motor and fan

Maintenance of the fan motor and fan can be done easily after taking off the panel as the bell mouth of the fan can be removed easily.

A : Fan motor B : 2-stage turbo fan

C : Bell-mouth D : Panel

② Long life filter

: standard equipment

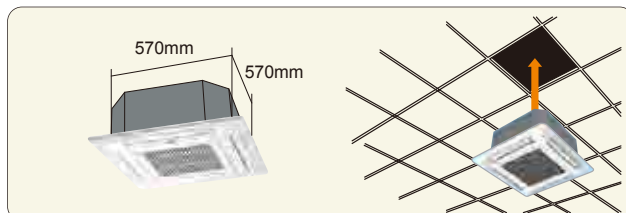
③ Adaptation of transparent drainage parts

During installation, maintenance and operation, the drain pump and kit can be checked easily.

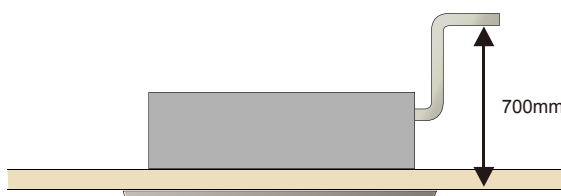


Compact design

Easy installation by taking off ceiling panel of 600mm x 600mm size



High lift drain pump



1-2. SLIM DUCT TYPE

- MODELS : AR*G07LLTA, AR*G09LLTA, AR*G12LLTA, AR*G14LLTA, AR*G18LLTA, AR*G12LLTB, AR*G14LLTB, AR*G18LLTB

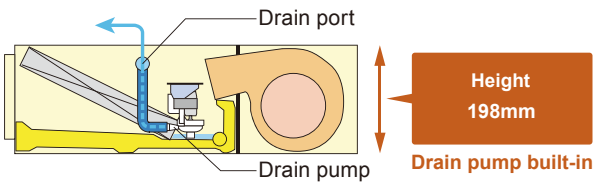


Slim design and wide range of static pressure for flexible installation.

FEATURES

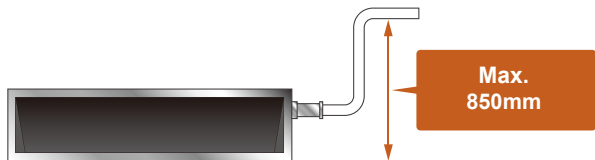
● Slim design

The slim design allows installations where ceilings are narrow.



● Compact design

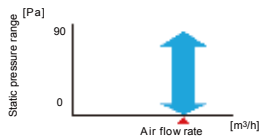
Condensate lift-up to 850mm.



Drain hose is standard accessory

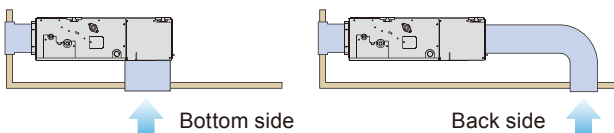
● Selectable wide range of static pressure

By using DC fan motor, it is possible to change static pressure range from 0 to 90Pa. The change of static pressure range is possible by remote controller.

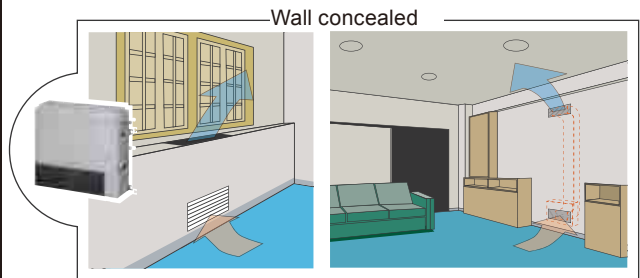
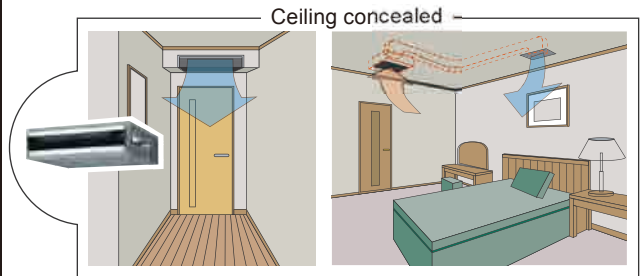


● Air - intake

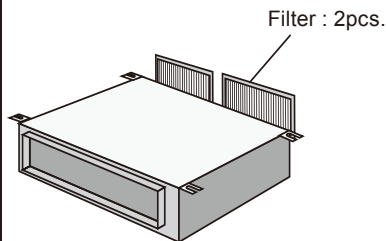
Air intake direction can be selected to match the installation site.



● Flexible installation



● Filter (Accessory)



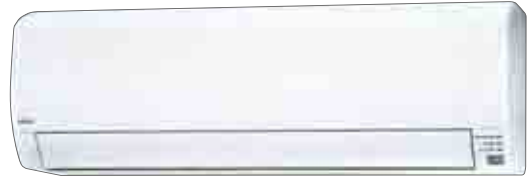
INDOOR UNITS

INDOOR UNITS

1-3. WALL MOUNTED TYPE

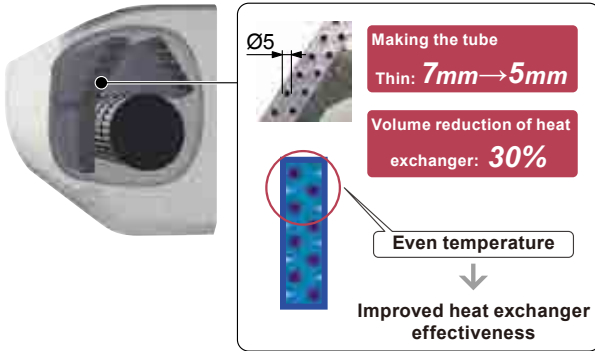
MODELS : AS*G07LJCA, AS*G09LJCA, AS*G12LJCA

Compact and Stylish design indoor unit



FEATURES

● High density heat transfer tube arrangement



● Filter features



Long-life*
Ion deodorization filter

The filter deodorizes by powerfully decomposing absorbed odors using the oxidizing and reducing effects of ions generated by the ultra-fine particle ceramic.

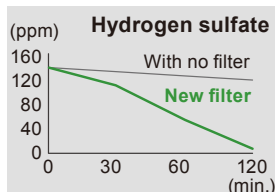
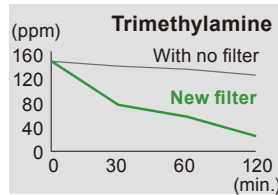
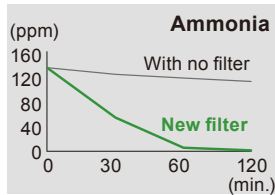
*The filter can be used for approx. 3 years if it is washed under water to restore its surface action when it is dirty.



Apple-catechin filter

Fine dust, invisible mold spores, and harmful microorganisms are absorbed onto the filter by static electricity, and further growth is inhibited and deactivated by the polyphenol extracted from apples.

Deodorizing effect (Odor reduction rate)



Testing organization :
Environmental Sanitary Inspection
Center

Test method :
Deodorization Test

● Easy maintenance

Removable &
washable
panel



● Dry operation

Dry operation removes moisture and keeps the air conditioner clean.

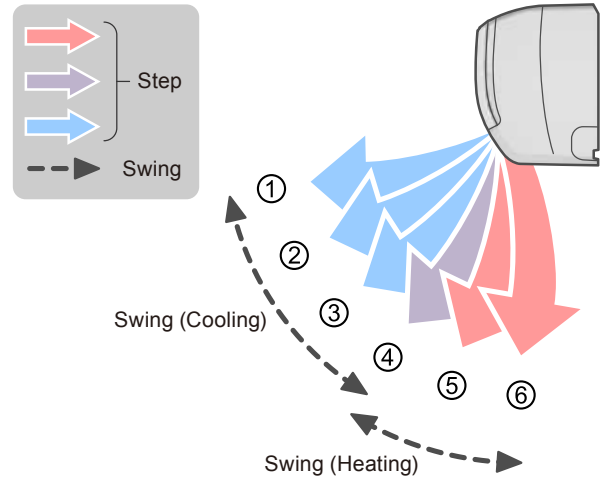
● Quiet operation

Cooling mode (07/09/12 TYPE)

Fan speed	Noise level
Quiet	25dB(A)

● Auto swing louvre

The Auto Swing Louvre function ensures that the air direction corresponds to the mode selected.



● Wired control compatible



Wired and wireless remote controllers are acceptable.

* Optional communication kit is necessary for installation.



Wired remote controller

Simple remote controller

■ MODELS : AS*G07LUCA, AS*G09LUCA, AS*G12LUCA, AS*G14LUCA

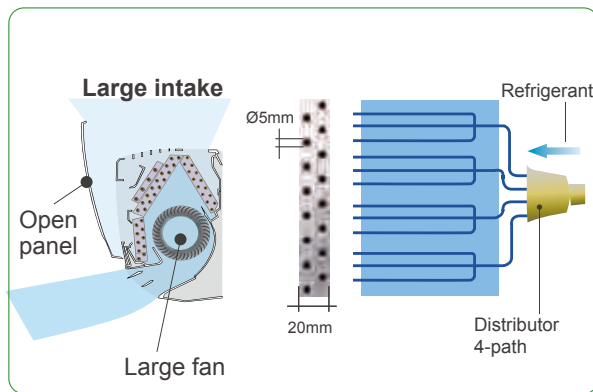
■ FEATURES

● Thin & Slim design

Thin and slim design is realized by Ø5mm heat exchanger and high efficiency wind blower.



Big open panel and High density multi path heat exchanger



● Powerful operation

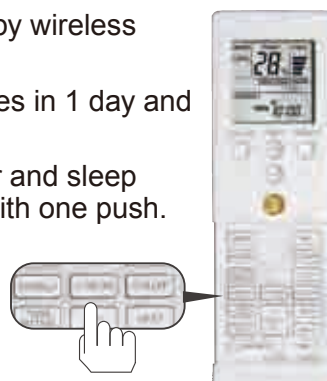
20 minutes continuous operation by maximum airflow and maximum compressor speed is possible. Rapid cooling and heating makes the room comfortable quickly.

● 5 Mode timer (On/Off/Weekly/Program/Sleep)

Weekly timer can be easily set by wireless remote controller.

ON, OFF can be set up to 4 times in 1 day and up to 28 times in 1 week.

For other modes, program timer and sleep timer can be also be selected with one push.

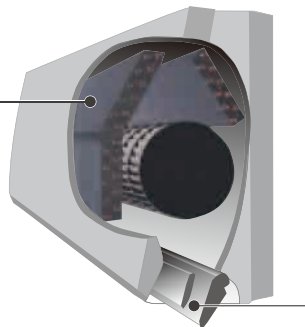
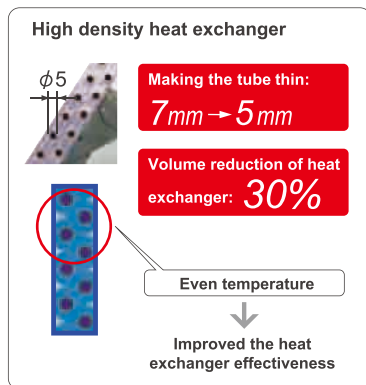


MODELS : AS*G07LMCA, AS*G09LMCA, AS*G12LMCA, AS*G14LMCA

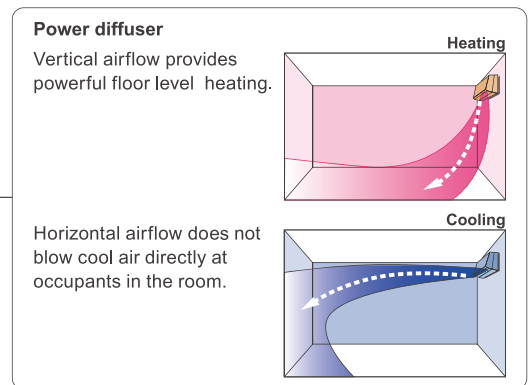
FEATURES



High efficient compact design



More comfortable airflow



Quiet operation

INDOOR UNIT

Airflow mode can be set in 4 steps and more detailed airflow setting is possible.
 21dB only at cooling operation (22dB at heating operation).

Fan speed	Noise level
Quiet	21dB(A)

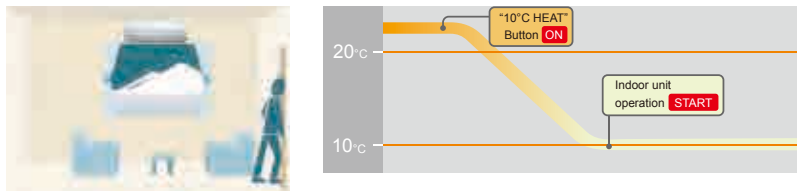
(AS*G07/09/12LMCA)

10°C HEAT Operation *Only available with Wireless RC.

The room temperature can be set to go no lower than 10°C, thus ensuring that the room does not get too cold when not occupied.

Caution)

When the room temperature is higher than 10°C, "10°C HEAT" operation does not start. Operation starts and maintains the room temperature at 10°C when the temperature drops below 10°C.



Powerful operation *Only available with Wireless RC.

20 minutes continuous operation by maximum airflow and maximum compressor speed is possible. Rapid cooling and heating makes the room comfortable quickly.

MODELS : AS*G18LFCA, AS*G24LFCA AS*G24LFCC

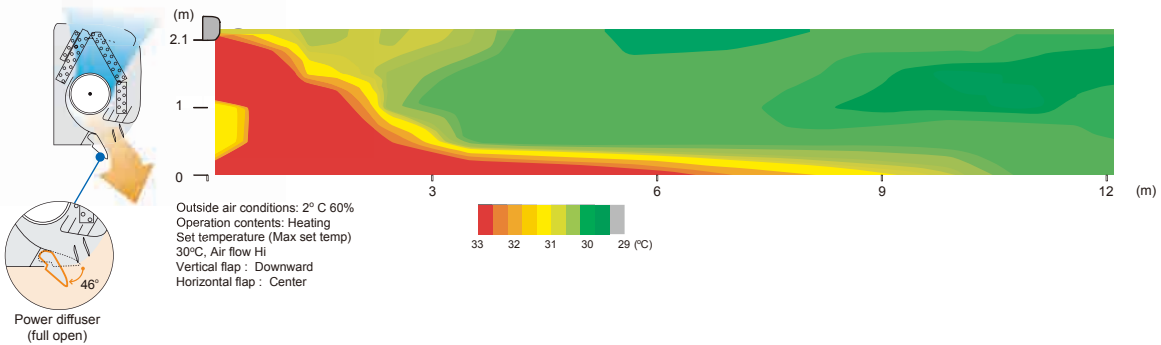
Simple & Elegant Appearance Design

FEATURES

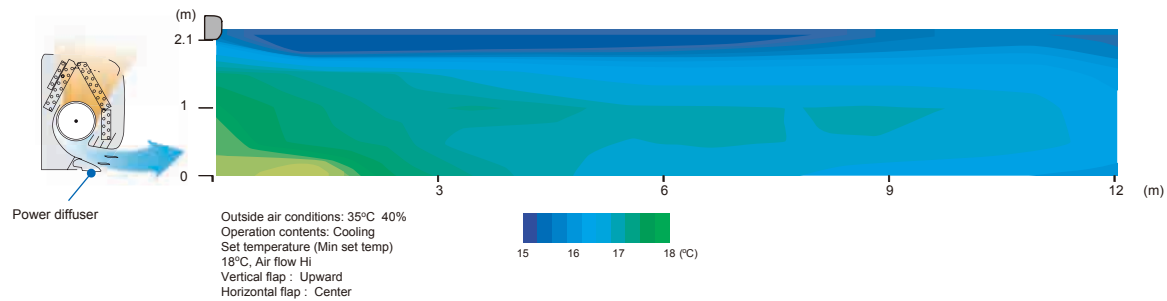
● Compact & Slim design



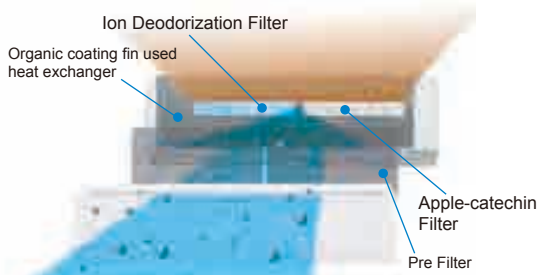
● “Vertical airflow” provides powerful floor level heating



● “Horizontal airflow” does not blow cool air directly at the occupants in the room



● Air conditioner filter features



Antibacterial deodorizing pre-filter with special ceramic powder



Long-life*
Ion deodorization filter

The filter deodorizes by powerfully decomposing absorbed odors using the oxidizing and reducing effects of ions generated by the ultra-fine-particle ceramic.

(*The filter can be used for approx. 3 years if it is washed under water to restore its surface action when it is dirty.)



Using different filters at both sides



Apple-catechin filter

● Easy maintenance

Simplification of drain pan cleaning improves maintenance-ability.

Fine dust, invisible mold spores, and harmful microorganisms are absorbed onto the filter by static electricity, and further growth is inhibited and deactivated by the polyphenol extracted from apples.

INDOOR UNITS

INDOOR UNITS

1-4. FLOOR / CEILING TYPE

■ **MODELS : AB*G14LVTA, AB*G18LVTA, AB*G18LVTB**

■ FEATURES

● Flexible installation

Example for floor installation



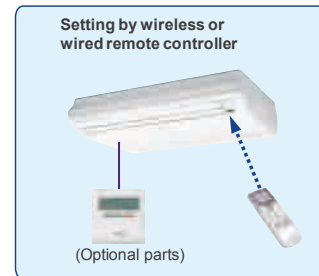
Example for ceiling installation



● Easy installation

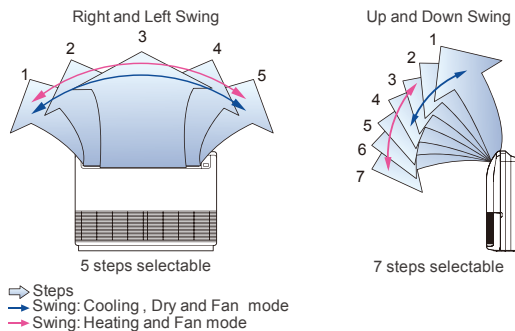
Main work settings can be done easily from the remote controller at installation

- | Main work settings |
|---|
| <ul style="list-style-type: none"> ● High ceiling setting ● Auto restart ● Temperature adjustment when cooling / heating |



● Double auto swing

A combination of right/left and up/down directional swing allows 3-dimensional air direction control



INDOOR UNITS

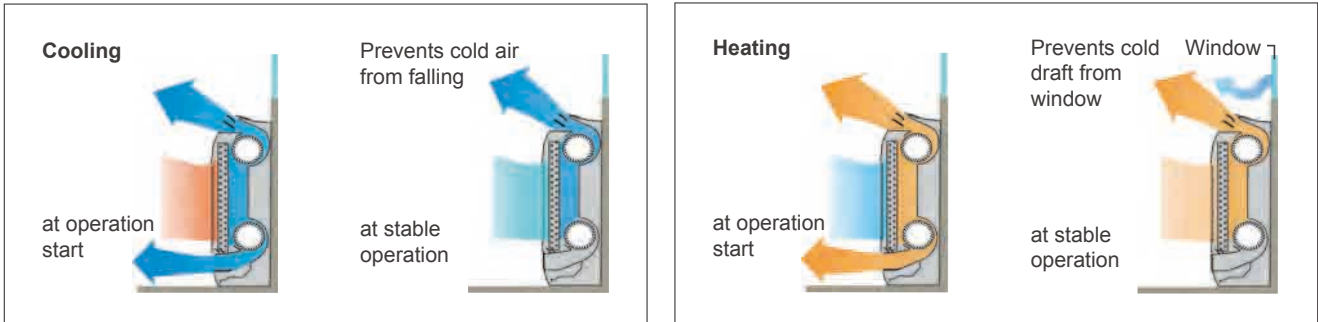
INDOOR UNITS

1-5. FLOOR TYPE

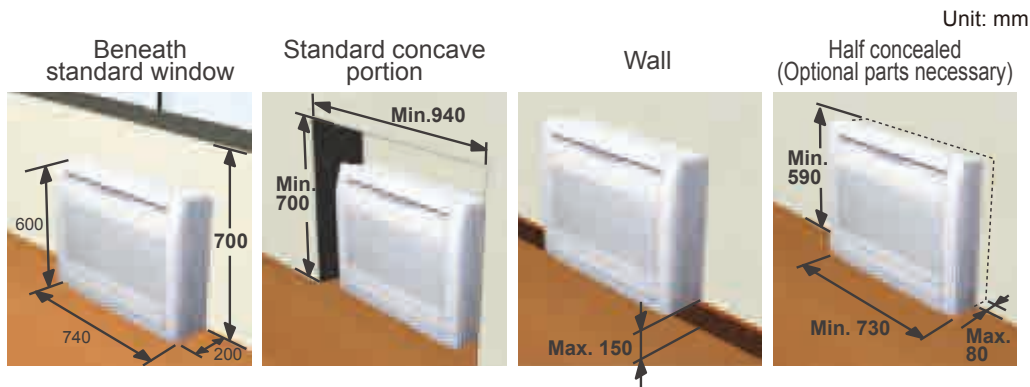
■ MODELS : AG*G09LVCA, AG*G12LVCA, AG*G14LVCA

■ FEATURES

● 2-Fan & Wide airflow



● Flexible & easy installation



● Filter features

Long-life* ion deodorization filter

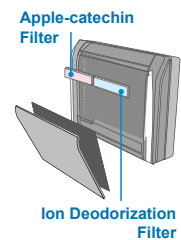
The filter deodorizes by powerfully decomposing absorbed odors using the oxidizing and reducing effects of ions generated by the ultra-fine-particle ceramic.

*The filter can be used for approx. 3 years if it is washed under water to restore its surface action when it is dirty.

✦ Using different filters at both sides

Apple-catechin filter

Fine dust, invisible mold spores, and harmful microorganisms are absorbed onto the filter by static electricity, and further growth is inhibited and deactivated by the polyphenol extracted from apples.



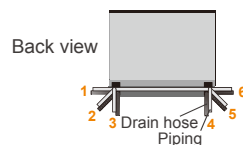
● Easy maintenance

Washable and removeable panel



● Flexible piping connection

6 direction of drain & piping



INDOOR UNITS

INDOOR UNITS

2. SPECIFICATIONS

2-1. COMPACT CASSETTE TYPE

Model name			AU*G07LVLA	AU*G09LVLA	AU*G12LVLA	AU*G14LVLA	AU*G18LVLA		
			AU*G12LVLB	AU*G14VLB	AU*G18VLB				
Power source			1ø 230V ~ 50Hz						
Available voltage range			198-264V						
Capacity			2.0kW Class	2.5kW Class	3.5kW Class	4.0kW Class	5.0kW Class		
Input Power		W	18	18	23	28	39		
Running current		A	0.15	0.15	0.19	0.22	0.30		
Fan	Airflow rate	Cooling	High	m ³ /h	540	540	610	680	750
			Med		490	490	530	580	610
			Low		440	440	470	490	520
			Quiet		390	390	410	410	410
		Heating	High		540	540	610	700	800
			Med		490	490	530	620	710
			Low		440	440	470	550	600
			Quiet		390	390	410	430	450
	Type × Q'ty		Turbo × 1						
	Motor Output		W	42					
Sound pressure level *	Cooling	High	dB (A)	33	33	37	40	42	
		Med		31	31	33	35	37	
		Low		29	29	31	32	33	
		Quiet		27	27	28	29	29	
	Heating	High		34	34	37	40	44	
		Med		32	32	33	37	40	
		Low		29	29	31	34	37	
		Quiet		27	27	28	29	30	
Sound power level	Cooling	High	db(A)	46	46	49	52	54	
	Heating			47	47	49	52	56	
Heat exchanger	Dimension (H × W × D)		mm	210×1310×13.3 + 210×1250×13.3					
	Fin pitch			1.2					
	Rows × Stages			2 × 10					
	Pipe type			Copper tube					
	Fin Type			Aluminium					
Dimensions (H × W × D)	Net		mm	245 × 570 × 570					
	Gross			265 × 730 × 625					
Weight	Net		kg	15					
	Gross			18					
Connection pipe	Size	Liquid	mm	Φ6.35 (Φ1/4in.)					
		Gas		Φ9.52 (Φ3/8in.)		Φ12.7 (Φ1/2in.)			
	Method			Flare					
Operation range	Cooling		°C	18 to 32					
			%RH	80 or less					
	Heating		°C	16 to 30					
Drain hose	Material		HARD PVC						
	Size		mm	Φ25 (I.D.), Φ32 (O.D.)					
Cassette grille	Model name		UTG-UF*D-W						
	Material		PS						
	Colour		White (Approximate colour of MUNSELL N9.25)						
	Dimensions (H × W × D)	Net		mm	49x700x700				
		Gross			120x765x755				
	Weight	Net		kg	2.6				
Gross		4.5							
Remote controller type			Wireless [Wired (option)]						

NOTE:

Specifications are based on the following conditions.

Power source of specifications : 230 V

Cooling: Indoor temperature of 27 °CDB/19 °CWB, and outdoor temperature of 35 °CDB/24 °CWB.

Heating: Indoor temperature of 20 °CDB/15 °CWB, and outdoor temperature of 7 °CDB/6 °CWB.

Pipe length: 5 m [Outdoor unit - Branch box], 3 m [Branch box - Indoor unit]

Height difference: 0 m [Outdoor unit - Indoor unit].

The protective function may work when using it outside the operation range.

*: These are the measured values in the manufacturer's anechoic chamber.

Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

2-2. SLIM DUCT TYPE

Model name			AR*G07LLTA	AR*G09LLTA	AR*G12LLTA	AR*G14LLTA	AR*G18LLTA	
Power source			1ø 230V ~ 50Hz					
Available voltage range			198-264V					
Capacity			2.0kW Class	2.5kW Class	3.5kW Class	4.0kW Class	5.0kW Class	
Input Power		W	33	49	58	76	73	
Running current		A	0.33	0.30	0.35	0.51	0.44	
Fan	Airflow rate	Cooling	High	550	600	650	800	940
			Med	490	550	600	700	880
			Low	470	500	550	600	820
			Quiet	440	450	480	480	750
		Heating	High	550	600	650	800	940
			Med	490	550	600	700	880
			Low	470	500	550	600	820
			Quiet	440	450	480	480	750
	Type × Q'ty		Sirocco × 2					Sirocco × 3
	Motor output		W	80	81			96
Recommended static pressure			Pa	0 to 90				
Sound pressure level *	Cooling	High	28	28	29	32	32	
		Med	26	27	28	30	31	
		Low	25	26	27	28	30	
		Quiet	24	25	26	26	29	
	Heating	High	28	28	29	33	33	
		Med	26	26	28	30	32	
		Low	25	25	27	28	31	
		Quiet	24	24	24	25	29	
Sound power level	Cooling	High	db(A)	57	57	58	60	58
	Heating		57	57	58	61	59	
Heat exchanger	Dimension (H × W × D)		mm	294 × 500 × 26.6	294 × 500 × 39.9			294 × 700 × 39.9
	Fin pitch		mm	1.3				
	Rows × Stages			2 × 14	3 × 14			
	Pipe type			Copper tube				
	Fin Type			Aluminium				
Enclosure	Material		GALVANIZED STEEL SHEET					
	Colour		-					
Dimensions (H × W × D)	Net		mm	198 × 700 × 620			198 × 900 × 620	
	Gross			276 × 968 × 772			276 × 1168 × 772	
Weight	Net		kg	17	19		23	
	Gross			24	26		30	
Connection pipe	Size	Liquid	mm	Φ6.35 (Φ1/4in.)				
		Gas		Φ9.52 (Φ3/8in.)		Φ12.7 (Φ1/2in.)		
	Method		Flare					
Drain hose	Material		HARD PVC					
	size		mm	Φ25 (I.D.), Φ32 (O.D.)				
Operation range	Cooling	°C	18 to 32					
		%RH	80 or less					
	Heating	°C	16 to 30					
Remote controller type			Wired [Wireless (option)]					

NOTE:

Specifications are based on the following conditions.

Power source of specifications : 230 V

Cooling: Indoor temperature of 27 °CDB/19 °CWB, and outdoor temperature of 35 °CDB/24 °CWB.

Heating: Indoor temperature of 20 °CDB/15 °CWB, and outdoor temperature of 7 °CDB/6 °CWB.

Pipe length: 5 m [Outdoor unit - Branch box], 3 m [Branch box - Indoor unit]

Height difference: 0 m [Outdoor unit - Indoor unit].

Static Pressure: 25 Pa

The protective function may work when using it outside the operation range.

*: These are the measured values in the manufacturer's anechoic chamber.

Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

2-3. WALL MOUNTED TYPE

Model name				AS*G07LJCA	AS*G09LJCA	AS*G12LJCA	
Power source				1ø 230V ~ 50Hz			
Available voltage range				198-264V			
Capacity				2.0kW Class	2.5kW Class	3.5kW Class	
Input Power		W		15	17	22	
Running current		A		0.13	0.15	0.19	
Fan	Airflow rate	Cooling	High	m ³ /h	560	600	660
			Med		500	520	560
			Low		430	430	450
			Quiet		310	310	310
		Heating	High		560	600	660
			Med		500	520	560
			Low		430	430	470
			Quiet		330	330	330
	Type × Q'ty				Crossflow × 1		
	Motor output		W		30		
Sound pressure level *	Cooling	dB (A)	High	36	37	40	
			Med	32	33	36	
			Low	29	29	30	
			Quiet	21	21	21	
	Heating	dB (A)	High	36	37	40	
			Med	32	33	36	
			Low	29	29	31	
			Quiet	22	22	22	
Sound power level	Cooling	High	db(A)	51	52	54	
	Heating			51	52	54	
Heat exchanger	Dimension (H × W × D)		mm	Main: 320 × 630 × 20 Sub: 84 × 630 × 13.3			
	Fin pitch		mm	Main: 1.1, Sub: 1.4			
	Rows × Stages			Main: 2 × 20, Sub: 1 × 4			
	Pipe type			Copper tube			
	Fin Type			Aluminium			
Enclosure	Material			Polystyrene			
	Colour			White (Approximate colour of MUNSELL N9.25)			
Dimensions (H × W × D)	Net		mm	280 × 790 × 203			
	Gross			263 × 840 × 375			
Weight	Net		kg	8			
	Gross			10.5			
Connection pipe	Size	Liquid	mm	Φ6.35 (Φ1/4in.)			
		Gas		Φ9.52 (Φ3/8in.)			
	Method			Flare			
Drain hose	Material			PP+LLDPE			
	size		mm	Φ13.8 (I.D.), Φ15.8 to 16.7 (O.D.)			
Operation range	Cooling		°C	18 to 32			
			%RH	80 or less			
	Heating		°C	16 to 30			
Remote controller type				Wireless [Wired (option)]			

NOTE:

Specifications are based on the following conditions.

Power source of specifications: 230 V

Cooling: Indoor temperature of 27 °CDB/19 °CWB, and outdoor temperature of 35 °CDB/24 °CWB.

Heating: Indoor temperature of 20 °CDB/15 °CWB, and outdoor temperature of 7 °CDB/6 °CWB.

Pipe length: 5 m [Outdoor unit - Branch box], 3 m [Branch box - Indoor unit]

Height difference: 0 m [Outdoor unit - Indoor unit]

The protective function may work when using it outside the operation range.

*: These are the measured values in the manufacturer's anechoic chamber.

Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

Model name			AS*G07LUCA	AS*G09LUCA	AS*G12LUCA	AS*G14LUCA	
Power source			1ø 230V ~ 50Hz				
Available voltage range			198-264V				
Capacity			2.0kW Class	2.5kW Class	3.5kW Class	4.0kW Class	
Input power		W	13	16	19	23	
Running current		A	0.13	0.14	0.17	0.20	
Fan	Airflow rate	Cooling	High	570	600	660	710
			Med	520	550	600	640
			Low	470	470	530	570
			Quiet	330	330	330	390
		Heating	High	570	600	660	710
			Med	520	550	600	640
			Low	470	470	530	590
			Quiet	330	330	330	430
	Type × Q'ty		Crossflow × 1				
	Motor output		W	29			
Sound pressure level *	Cooling	High	35	36	37	41	
		Med	30	32	34	36	
		Low	28	28	31	33	
		Quiet	21	21	21	25	
	Heating	High	35	36	37	41	
		Med	30	32	34	36	
		Low	28	28	31	34	
		Quiet	21	21	21	27	
Sound power level	Cooling	High	53	54	55	59	
	Heating	High	53	54	55	59	
Heat exchanger	Dimensions (H × W × D)		mm	Main: 320 × 690 × 20 Sub: 84 × 690 × 13.3			
	Fin pitch			Main: 1.1, Sub: 1.4			
	Rows × Stages		Main: 2 × 20, Sub: 1 × 4				
	Pipe type		Copper tube				
Fin type		Aluminium					
Enclosure	Material		Polystyrene				
	Colour		WHITE (Approximate colour of MUNSELL N9.3)				
Dimensions (H × W × D)	Net		mm	282 × 870 × 185			
	Gross			247 × 920 × 373			
Weight	Net		kg	9.5			
	Gross			12			
Connection pipe	Size	Liquid	mm	Φ6.35 (Φ1/4in)			
		Gas		Φ9.52 (Φ3/8in)		Φ12.7 (Φ1/2in)	
	Method		Flare				
Drain hose	Material		PP+LLDPE				
	Size		mm Φ13.8 (I.D.), Φ15.8 to 16.7 (O.D.)				
Operation range	Cooling	°C	18 to 32				
		%RH	80 or less				
	Heating	°C	16 to 30				
Remote controller type			Wireless [Wired (option)]				

NOTE:

Specifications are based on the following conditions.

Power source of specifications: 230 V

Cooling: Indoor temperature of 27 °CDB/19 °CWB, and outdoor temperature of 35 °CDB/24 °CWB.

Heating: Indoor temperature of 20 °CDB/15 °CWB, and outdoor temperature of 7 °CDB/6 °CWB.

Pipe length: 5 m [Outdoor unit - Branch box], 3 m [Branch box - Indoor unit]

Height difference: 0 m [Outdoor unit - Indoor unit]

The protective function may work when using it outside the operation range.

*: These are the measured values in the manufacturer's anechoic chamber.

Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

Model name			AS*G07LMCA	AS*G09LMCA	AS*G12LMCA	AS*G14LMCA	
Power source			1ø 230V ~ 50Hz				
Available voltage range			198-264V				
Capacity			2.0kW Class	2.5kW Class	3.5kW Class	4.0kW Class	
Input power		W	15	17	22	28	
Running current		A	0.13	0.15	0.19	0.25	
Fan	Airflow rate	Cooling	High	560	600	660	730
			Med	500	520	560	600
			Low	430	430	450	530
			Quiet	310	310	310	360
		Heating	High	560	600	660	730
			Med	500	520	560	615
			Low	430	430	470	560
			Quiet	330	330	330	375
	Type × Q'ty		Crossflow × 1				
	Motor output		W	30			
Sound pressure level *	Cooling	High	36	37	40	42	
		Med	32	33	36	38	
		Low	29	29	30	33	
		Quiet	21	21	21	25	
	Heating	High	36	37	40	42	
		Med	32	33	36	38	
		Low	29	29	31	35	
		Quiet	22	22	22	27	
Sound power level	Cooling	High	51	52	54	56	
	Heating	High	51	52	55	57	
Heat exchanger	Dimensions (H × W × D)		mm	Main: 320 × 630 × 20 Sub: 84 × 630 × 13.3			
	Fin pitch			Main: 1.1, Sub: 1.4			
	Rows × Stages		Main: 2 × 20, Sub: 1 × 4				
	Pipe type		Copper tube				
Fin type		Aluminium					
Enclosure	Material		Polystyrene				
	Colour		WHITE (Approximate colour of MUNSELL N9.25)				
Dimensions (H × W × D)	Net		mm	268 × 840 × 203			
	Gross			270 × 884 × 336			
Weight	Net		kg	8.5			
	Gross			10.5			
Connection pipe	Size	Liquid	mm	Φ6.35 (Φ1/4in)			
		Gas		Φ9.52 (Φ3/8in)		Φ12.7 (Φ1/2in)	
	Method		Flare				
Drain hose	Material		PP+LLDPE				
	Size		mm Φ13.8 (I.D.), Φ15.8 to 16.7 (O.D.)				
Operation range	Cooling	°C	18 to 32				
		%RH	80 or less				
	Heating	°C	16 to 30				
Remote controller type			Wireless [Wired (option)]				

NOTE:

Specifications are based on the following conditions.

Power source of specifications: 230 V

Cooling: Indoor temperature of 27 °CDB/19 °CWB, and outdoor temperature of 35 °CDB/24 °CWB.

Heating: Indoor temperature of 20 °CDB/15 °CWB, and outdoor temperature of 7 °CDB/6 °CWB.

Pipe length: 5 m [Outdoor unit - Branch box], 3 m [Branch box - Indoor unit]

Height difference: 0 m [Outdoor unit - Indoor unit]

The protective function may work when using it outside the operation range.

*: These are the measured values in the manufacturer's anechoic chamber.

Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

Model name			AS*G18LFCA	AS*G24LFCA	
Power source			1ø 230V ~ 50Hz		
Available voltage range			198 - 264V		
Capacity			5.0kW Class	7.0kW Class	
Input Power		W	37	69	
Running current		A	0.33	0.53	
Fan	Airflow rate	Cooling	High	900	1120
			Med	740	900
			Low	620	740
			Quiet	550	620
		Heating	High	900	1100
			Med	740	900
			Low	620	740
			Quiet	550	620
	Type × Q'ty		Crossflow × 1		
	Motor output		W	40	64
Sound pressure level *	Cooling	High	43	49	
		Med	37	42	
		Low	33	37	
		Quiet	26	33	
	Heating	High	42	48	
		Med	37	42	
		Low	33	37	
		Quiet	25	33	
Sound power level	Cooling	High	58	64	
	Heating		58	64	
Heat exchanger	Dimension (H × W × D)		mm Main: 378 × 832 × 26.6 Sub: 84 × 832 × 13.3		
	Fin pitch		mm Main: 1.2, Sub: 1.4		
	Rows × Stages		Main: 2 × 18, Sub: 1 × 4	Main: 2 × 18, Sub: 1 × 4 + 1 × 4	
	Pipe type		Copper tube		
	Fin Type		Aluminium		
Enclosure	Material		Polystyrene		
	Colour		White (Approximate colour of MUNSSELL N9.25)		
Dimensions (H × W × D)	Net	mm	320 × 998 × 238		
	Gross		329 × 1090 × 420		
Weight	Net	kg	14		
	Gross		18		
Connection pipe	Size	Liquid	Φ6.35 (Φ1/4in.)		
		Gas	Φ12.7 (Φ1/2in.)	Φ15.88 (Φ5/8in.)	
	Method		Flare		
Drain hose	Material		PVC		
	size		mm Φ12 (I.D.), Φ16 (O.D.)		
Operation range	Cooling	°C	18 to 32		
		%RH	80 or less		
	Heating	°C	16 to 30		
Remote controller type			Wireless [Wired (option)]		

NOTE:

Specifications are based on the following conditions.

Power source of specifications: 230 V

Cooling: Indoor temperature of 27 °CDB/19 °CWB, and outdoor temperature of 35 °CDB/24 °CWB.

Heating: Indoor temperature of 20 °CDB/15 °CWB, and outdoor temperature of 7 °CDB/6 °CWB.

Pipe length: 5 m [Outdoor unit - Branch box], 3 m [Branch box - Indoor unit]

Height difference: 0 m [Outdoor unit - Indoor unit]

The protective function may work when using it outside the operation range.

*: These are the measured values in the manufacturer's anechoic chamber.

Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

2-4. FLOOR / CEILING TYPE

Model name				AB*G14LVTA	AB*G18LVTA	
					AB*G18LVTB	
Power source				1ø 230V ~ 50Hz		
Available voltage range				198 - 264V		
Capacity				4.0kW Class	5.0kW Class	
Input Power			W	26	47	
Running current			A	0.21	0.36	
Fan	Airflow rate	Cooling	High	m ³ /h	640	780
			Med		590	700
			Low		540	560
			Quiet		480	500
		Heating	High		640	780
			Med		590	700
			Low		540	560
			Quiet		480	500
	Type × Q'ty				Sirocco × 2	
	Motor output			W	80	
Sound pressure level *	Cooling	High	dB (A)	36 (Under ceiling)	41 (Under ceiling)	
				39 (Floor console)	44 (Floor console)	
				34 (Under ceiling)	38 (Under ceiling)	
				37 (Floor console)	41 (Floor console)	
		Low		33 (Under ceiling)	34 (Under ceiling)	
				36 (Floor console)	37 (Floor console)	
				29 (Under ceiling)	32 (Under ceiling)	
				32 (Floor console)	35 (Floor console)	
	Heating	High		36 (Under ceiling)	41 (Under ceiling)	
				39 (Floor console)	44 (Floor console)	
				34 (Under ceiling)	38 (Under ceiling)	
				37 (Floor console)	41 (Floor console)	
		Low		33 (Under ceiling)	34 (Under ceiling)	
				36 (Floor console)	37 (Floor console)	
				29 (Under ceiling)	32 (Under ceiling)	
				32 (Floor console)	35 (Floor console)	
Sound power level	Cooling	High	db(A)	51	55	
	Heating			51	55	
Heat exchanger	Dimension (H × W × D)		mm	252 × 800 × 26.6	252 × 800 × 39.9	
	Fin pitch		mm	1.2	1.3	
	Rows × Stages			2 × 12	3 × 12	
	Pipe type			Copper tube		
	Fin Type			Aluminium		
Enclosure	Material			ABS		
	Colour			White (Approximate colour of MUNSELL N9.25)		
Dimensions (H × W × D)	Net		mm	199 × 990 × 655		
	Gross			320 × 1150 × 790		
Weight	Net		kg	27		
	Gross			36		
Connection pipe	Size	Liquid	mm	Φ6.35 (Φ1/4in.)		
		Gas		Φ12.7 (Φ1/2in.)		
	Method				Flare	
Drain hose	Material			Hard PVC		
	size		mm	Φ25 (I.D.), Φ32 (O.D.)		
Operation range	Cooling		°C	18 to 32		
			%RH	80 or less		
	Heating		°C	16 to 30		
Remote controller type				Wireless [Wired (option)]		

NOTE:

Specifications are based on the following conditions.

Power source of specifications: 230 V

Cooling: Indoor temperature of 27 °CDB/19 °CWB, and outdoor temperature of 35 °CDB/24 °CWB.

Heating: Indoor temperature of 20 °CDB/15 °CWB, and outdoor temperature of 7 °CDB/6 °CWB.

Pipe length: 5 m [Outdoor unit - Branch box], 3 m [Branch box - Indoor unit]

Height difference: 0 m [Outdoor unit - Indoor unit]

The protective function may work when using it outside the operation range.

*: These are the measured values in the manufacturer's anechoic chamber.

Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

2-5. FLOOR TYPE

Model name				AG*G09LVCA	AG*G12LVCA	AG*G14LVCA	
Power source				1ø 230V ~ 50Hz			
Available voltage range				198 - 264V			
Capacity				2.5kW Class	3.5kW Class	4.0kW Class	
Input Power		W		16	20	23	
Running current		A		0.15	0.18	0.20	
Fan	Airflow rate	Cooling	High	m ³ /h	530	600	650
			Med		440	490	520
			Low		360	380	400
			Quiet		270	270	270
		Heating	High		530	600	650
			Med		460	510	540
			Low		380	410	430
			Quiet		270	270	270
	Type × Q'ty				Crossflow Fan × 2		
	Motor output		W		42		
Sound pressure level *	Cooling	dB(A)	High	39	42	44	
			Med	34	36	38	
			Low	28	30	31	
			Quiet	22	22	22	
	Heating	dB(A)	High	39	42	44	
			Med	35	38	39	
			Low	30	32	33	
			Quiet	22	22	22	
Sound power level	Cooling	High	db(A)	52	55	56	
	Heating			52	55	56	
Heat exchanger	Dimension (H×W×D)		mm	378 × 550 × 26.6			
	Fin pitch		mm	1.2			
	Rows × Stages			2 × 18			
	Pipe type			Copper tube			
	Fin Type			Aluminium			
Enclosure	Material			Polystyrene			
	Colour			White (Approximate colour of MUNSELL N9.25)			
Dimensions (H×W ×D)	Net		mm	600 × 740 × 200			
	Gross			700 × 820 × 310			
Weight	Net		kg	14			
	Gross			17			
Connection pipe	Size	Liquid	mm	Φ6.35 (Φ1/4in.)			
		Gas		Φ9.52 (Φ3/8in.)	Φ12.7 (Φ1/2in.)		
	Method				Flare		
Drain hose	Material			PVC			
	size		mm	Φ13.8 (I.D.), Φ16.7 (O.D.)			
Operation range	Cooling	°C		18 to 32			
		%RH		80 or less			
	Heating	°C		16 to 30			
Remote controller type				Wireless [Wired (option)]			

NOTE:

Specifications are based on the following conditions.

Power source of specifications: 230 V

Cooling: Indoor temperature of 27 °CDB/19 °CWB, and outdoor temperature of 35 °CDB/24 °CWB.

Heating: Indoor temperature of 20 °CDB/15 °CWB, and outdoor temperature of 7 °CDB/6 °CWB.

Pipe length: 5m [Outdoor unit - Branch box], 3m [Branch box - Indoor unit]

Height difference: 0 m [Outdoor unit - Indoor unit]

The protective function may work when using it outside the operation range.

*: These are the measured values in the manufacturer's anechoic chamber.

Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

3. ELECTRIC CHARACTERISTICS

Type	Model name	Power Supply			Indoor Rated		
		Hz	Voltage (V)	MCA (A)	Input Power (W)	FLA (A)	
Compact Cassette	AU*G07LVLA	50	230	0.19	18	0.15	
	AU*G09LVLA	50	230	0.19	18	0.15	
	AU*G12LVLA	50	230	0.24	23	0.19	
	AU*G12LVLB						
	AU*G14LVLA	50	230	0.28	28	0.22	
	AU*G14LVLB						
	AU*G18LVLA	50	230	0.38	39	0.30	
AU*G18LVLB							
Slim Duct	AR*G07LLTA	50	230	0.41	33	0.33	
	AR*G09LLTA	50	230	0.38	49	0.30	
	AR*G12LLTA	50	230	0.44	58	0.35	
	AR*G12LLTB						
	AR*G14LLTA	50	230	0.64	76	0.51	
	AR*G14LLTB						
	AR*G18LLTA	50	230	0.55	73	0.44	
AR*G18LLTB							
Wall Mounted	LJ	AS*G07LJCA	50	230	0.17	15	0.13
		AS*G09LJCA	50	230	0.19	17	0.15
		AS*G12LJCA	50	230	0.24	22	0.19
	LU	AS*G07LUCA	50	230	0.16	13	0.13
		AS*G09LUCA	50	230	0.18	16	0.14
		AS*G12LUCA	50	230	0.21	19	0.17
		AS*G14LUCA	50	230	0.25	23	0.20
	LM	AS*G07LMCA	50	230	0.16	15	0.13
		AS*G09LMCA	50	230	0.19	17	0.15
		AS*G12LMCA	50	230	0.24	22	0.19
		AS*G14LMCA	50	230	0.31	28	0.25
	LF	AS*G18LFCA	50	230	0.41	37	0.33
		AS*G24LFCA	50	230	0.66	69	0.53
		AS*G24LFCC					
	Floor / Ceiling	AB*G14LVTA	50	230	0.26	26	0.21
AB*G18LVTA		50	230	0.45	47	0.36	
AB*G18LVTB							
Floor	AG*G09LVCA	50	230	0.19	16	0.15	
	AG*G12LVCA	50	230	0.23	20	0.18	
	AG*G14LVCA	50	230	0.25	23	0.20	

MCA : Min Circuit Amps = Max Operating Current (Full Load).

FLA : Full Load Amps (Fan Motor)

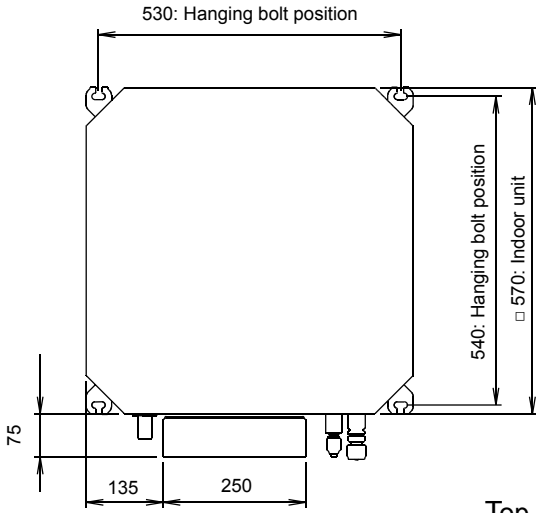
4. DIMENSIONS

4-1. COMPACT CASSETTE TYPE

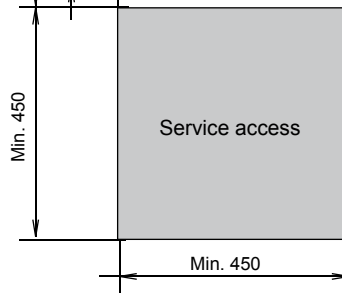
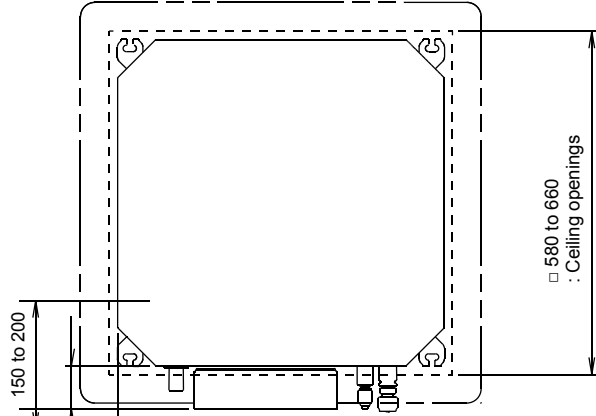
■ MODELS : AU*G07LVLA, AU*G09LVLA, AU*G12LVLA, AU*G14LVLA, AU*G18LVLA, AU*G12LVLB, AU*G14LVLB, AU*G18LVLB

Unit : mm

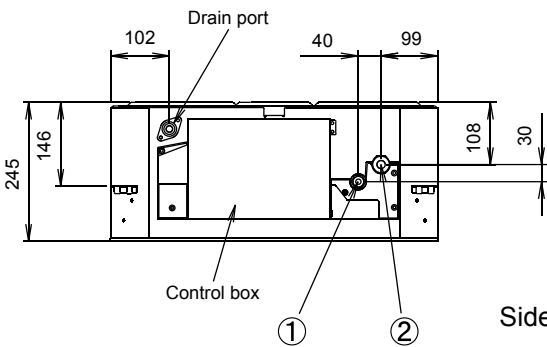
• Cassette Grille mounting state



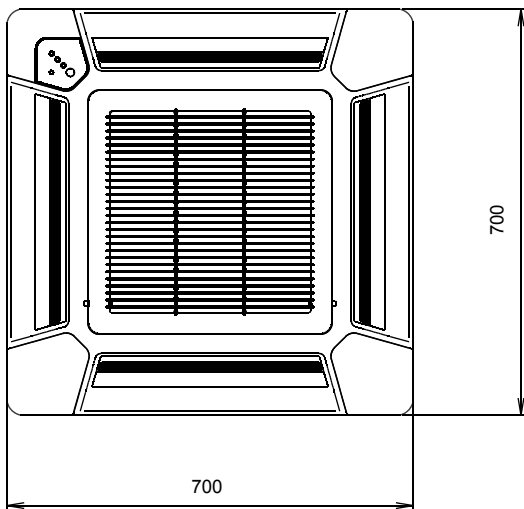
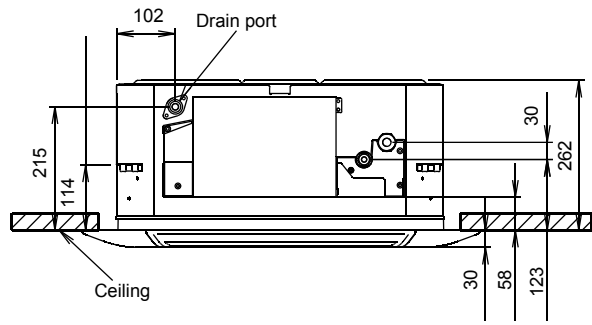
Top view



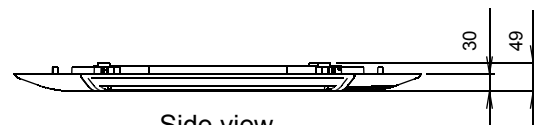
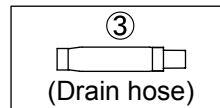
Be sure to leave service access for future service at the designated position.



Side view



Bottom view



Side view

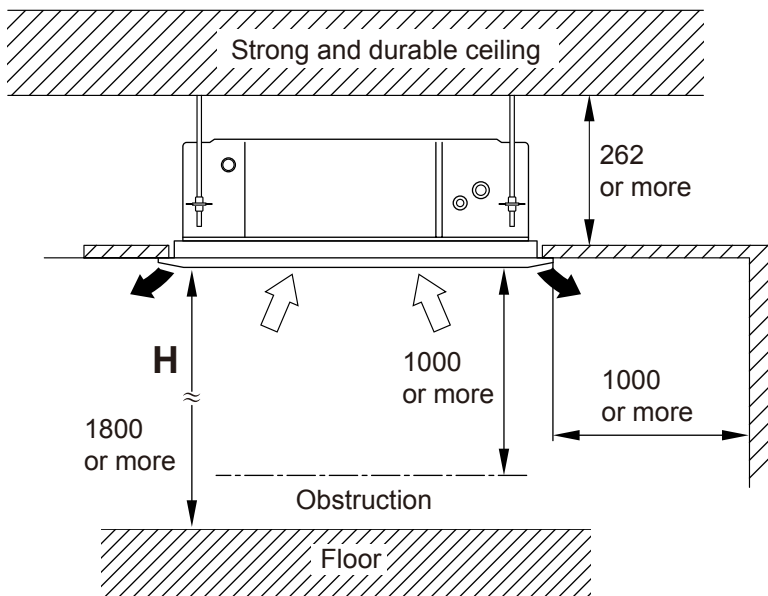
			AU*G07LV, AU*G09LV, AU*G12LV	AU*G14LV, AU*G18LV
①	Refrigerant pipe flare connection	Liquid	ø 6.35 mm (1/4 in.)	ø 6.35 mm (1/4 in.)
		Gas	ø 9.52 mm (3/8 in.)	ø 12.70 mm (1/2 in.)
③	Drain hose connection	Drain hose	O.D. 32mm (VP25)	

INDOOR UNITS

INDOOR UNITS

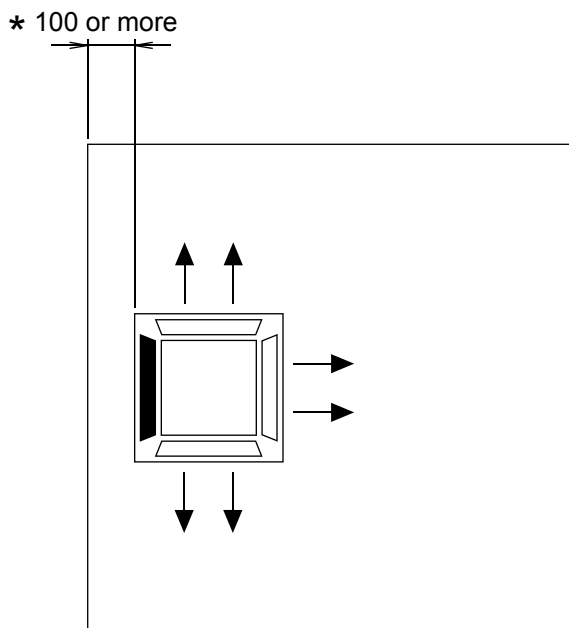
■ INSTALLATION PLACE

Unit : mm



	H (The maximum height from floor to ceiling) Unit: mm				
Model name	AU*G07	AU*G09	AU*G12	AU*G14	AU*G18
Standard mode	2700	2700	2700	2700	2700
High Ceiling mode	-	-	3000	3000	3000

● 3-way directions setting



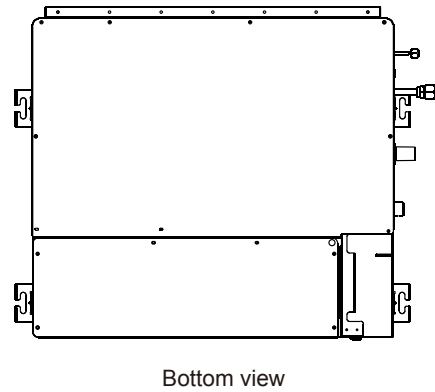
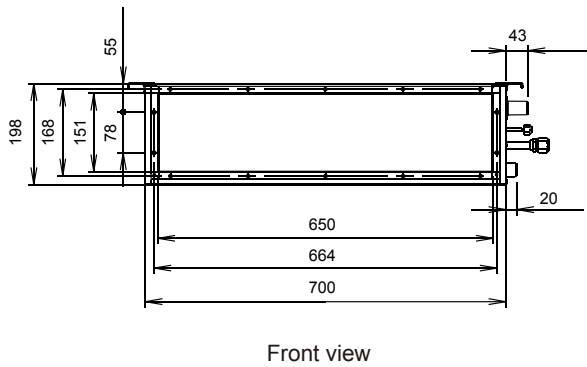
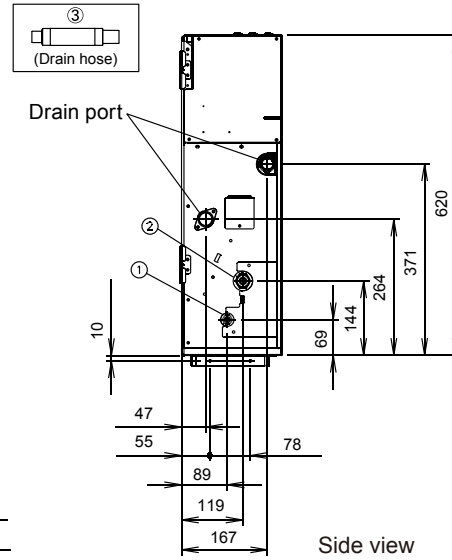
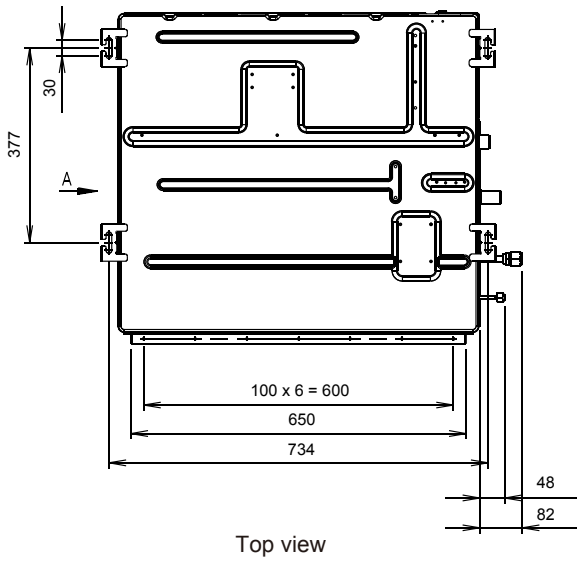
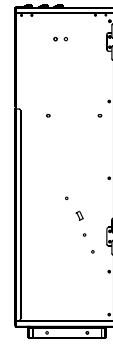
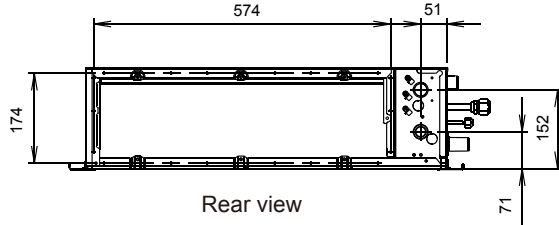
To set "3-way directions", the air outlet shutter plate (UTR-YDZB) sold separately must be installed and "outlet-direction" switched to "3-way" by remote controller.

*When installing the indoor unit, be careful to keep the maintenance space.

4-2. SLIM DUCT TYPE

■ MODELS : AR*G07LLTA, AR*G09LLTA, AR*G12LLTA,
AR*G14LLTA,
AR*G12LLTB, AR*G14LLTB

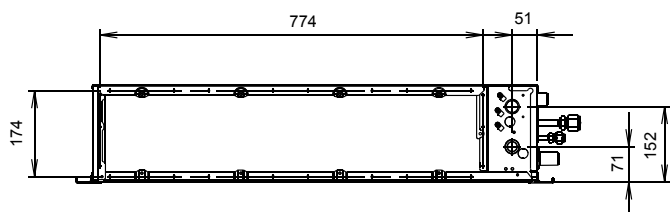
Unit : mm



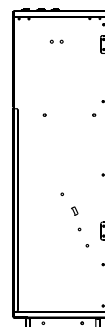
		AR*G07LL, AR*G09LL, AR*G12LL		AR*G14L
①	Refrigerant pipe flare connection	Liquid	ø 6.35 mm (1/4 in.)	
②		Gas	ø 9.52 mm (3/8 in.)	ø 12.7 mm (1/2 in.)
③	Drain hose connection	Drain hose	O.D. 32mm (VP25)	

MODEL : AR*G18LLTA, AR*G18LLTB

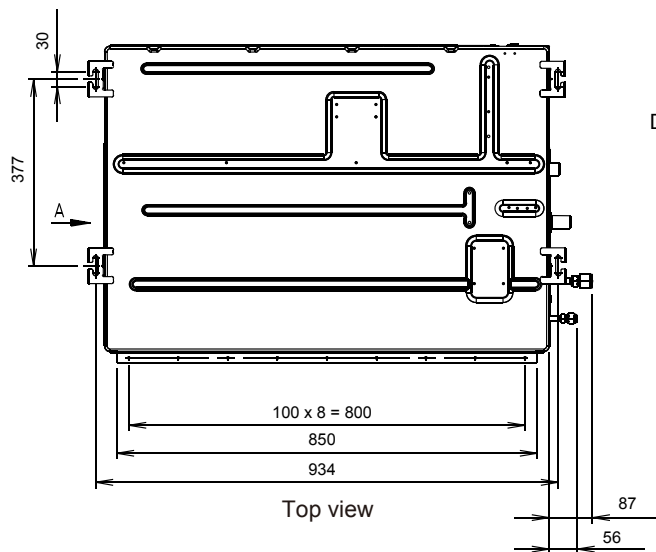
Unit : mm



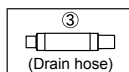
Rear view



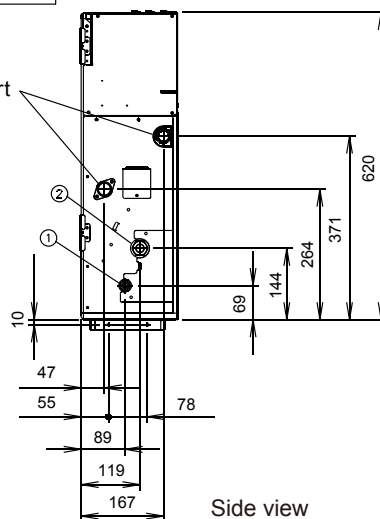
View A



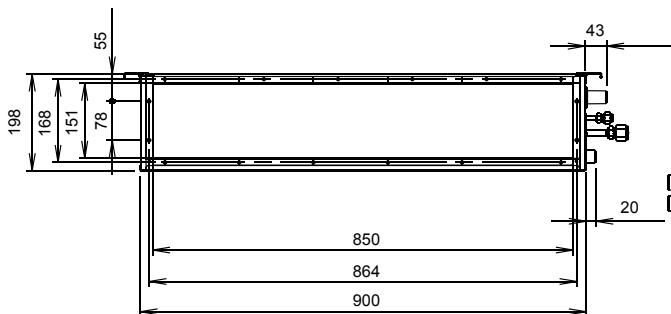
Top view



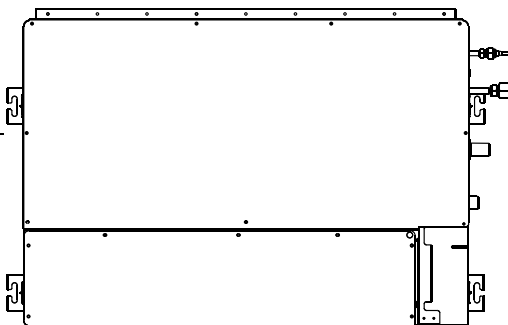
Drain port



Side view



Front view



Bottom view

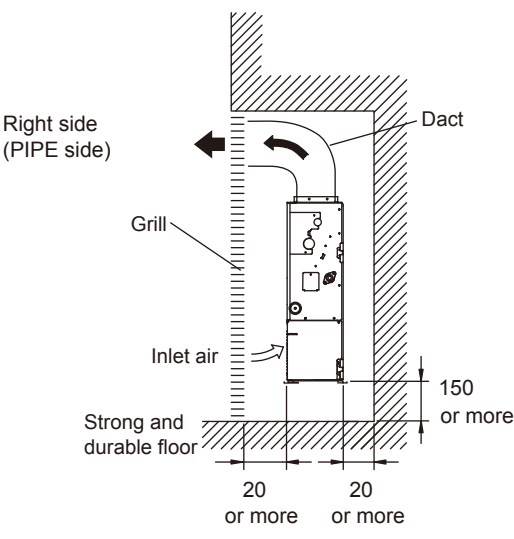
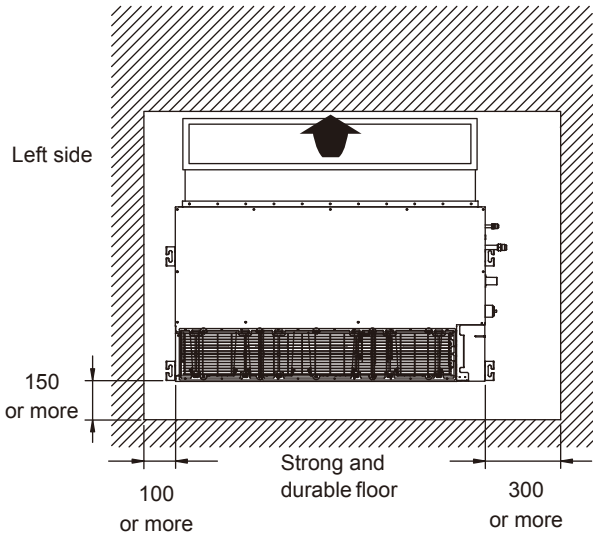
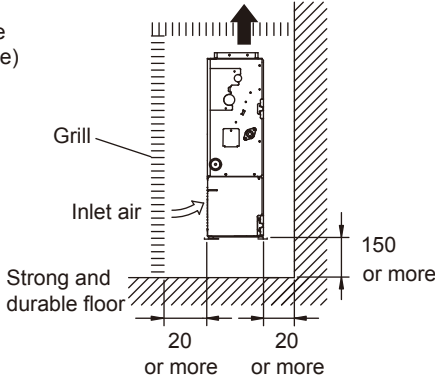
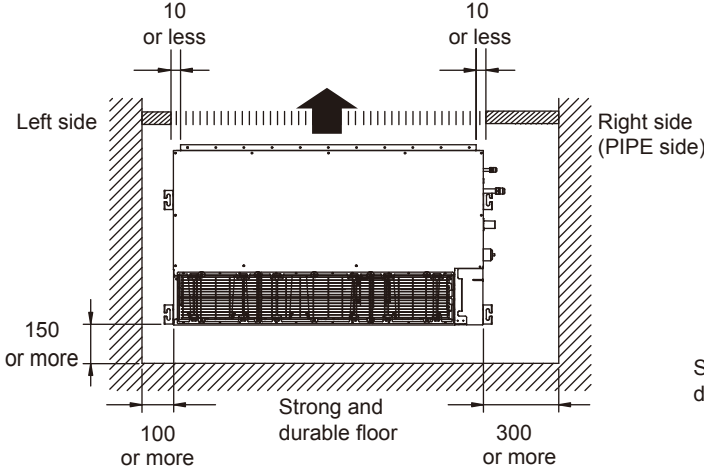
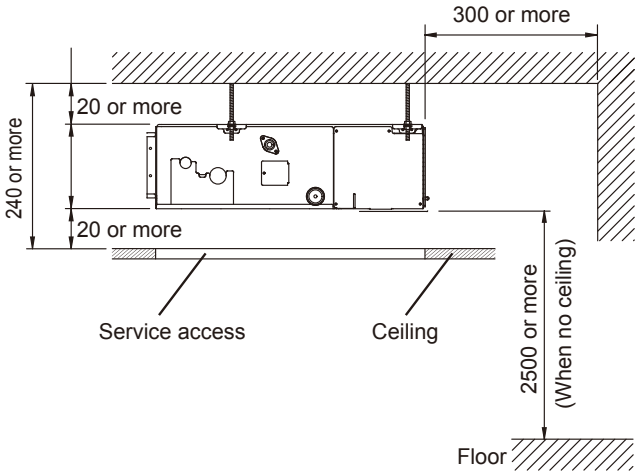
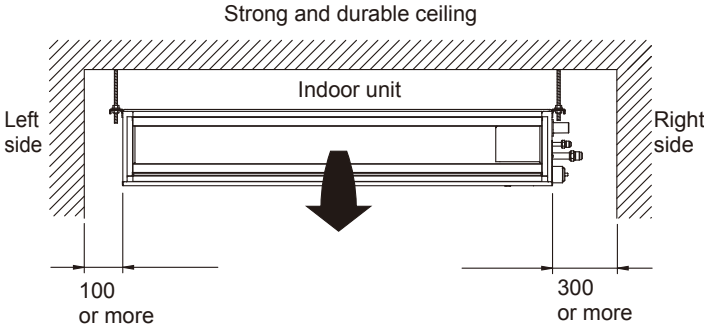
			AR*G18LL
①	Refrigerant pipe flare connection	Liquid	ø 6.35 mm (1/4 in.)
②		Gas	ø 12.7 mm (1/2 in.)
③	Drain hose connection	Drain hose	O.D. 32mm (VP25)

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Unit : mm

INSTALLATION PLACE

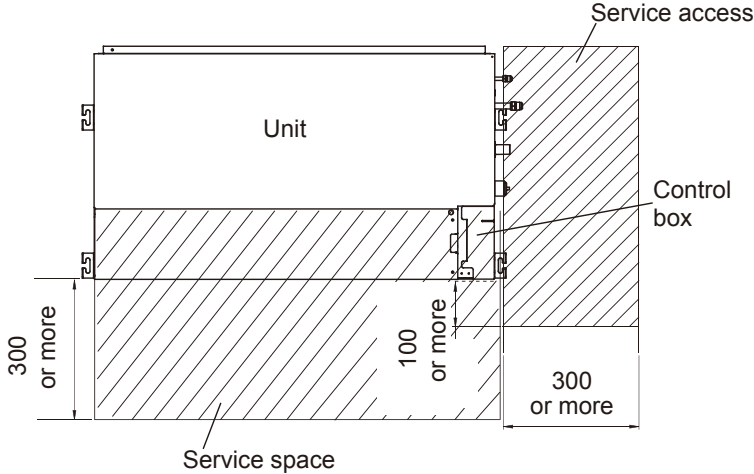


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■ MAINTENANCE SPACE

Provide a service access for inspection purposes as shown below.
Do not place any wiring or illumination in the service space, as they will impede service.



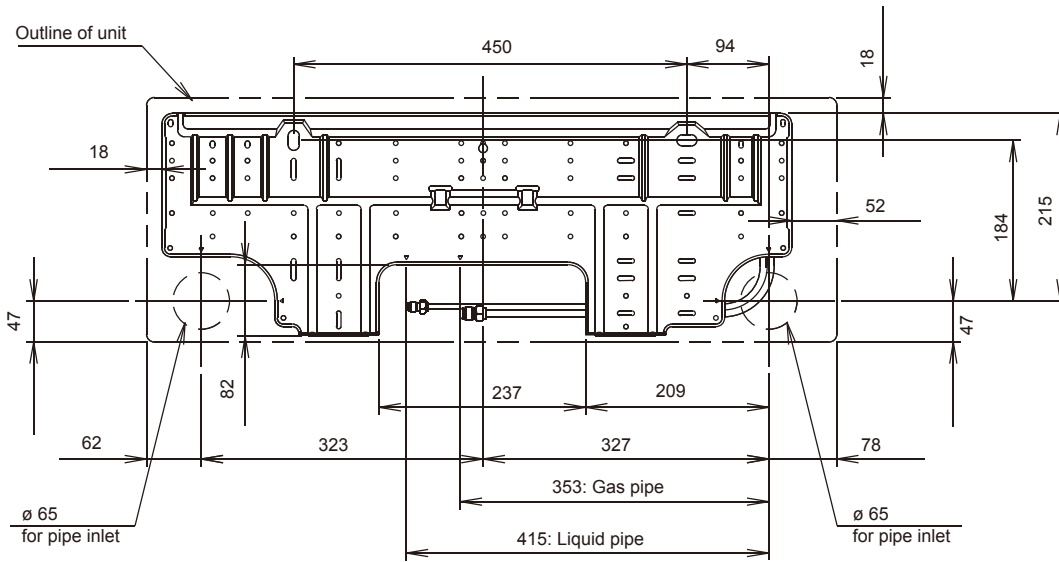
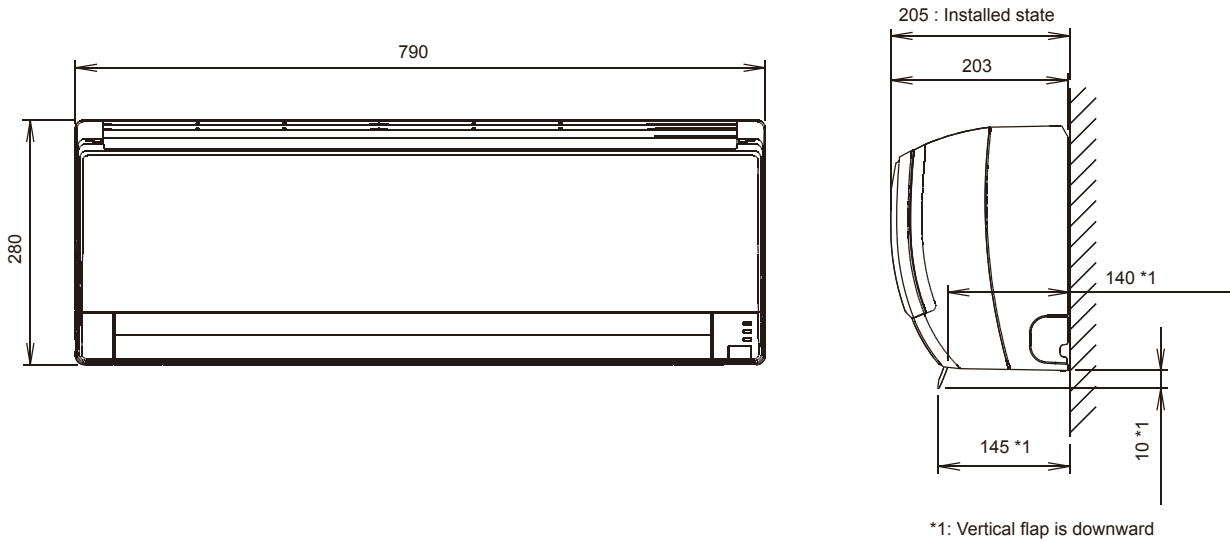
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4-3. WALL MOUNTED TYPE

■ MODELS : AS*G07LJCA, AS*G09LJCA, AS*G12LJCA

Unit : mm



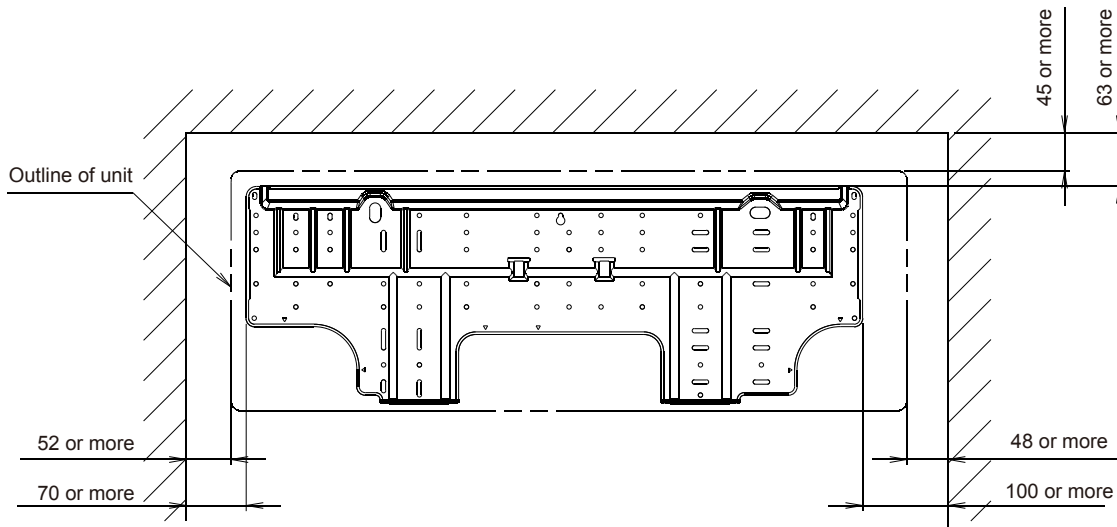
			AS*G07LJ, AS*G09LJ, AS*G12LJ
①	Refrigerant pipe flare connection	Liquid	ø 6.35 mm (1/4 in.)
②		Gas	ø 9.52 mm (3/8 in.)
③	Drain hose connection	Drain hose	I.D. 13.8 mm, O.D. 15.8 to 16.7 mm Total length : 600mm

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■ INSTALLATION PLACE

Unit : mm

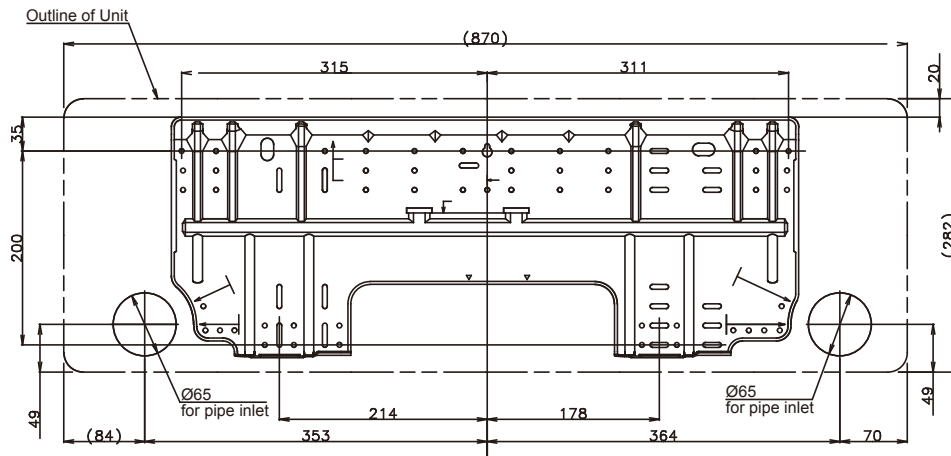
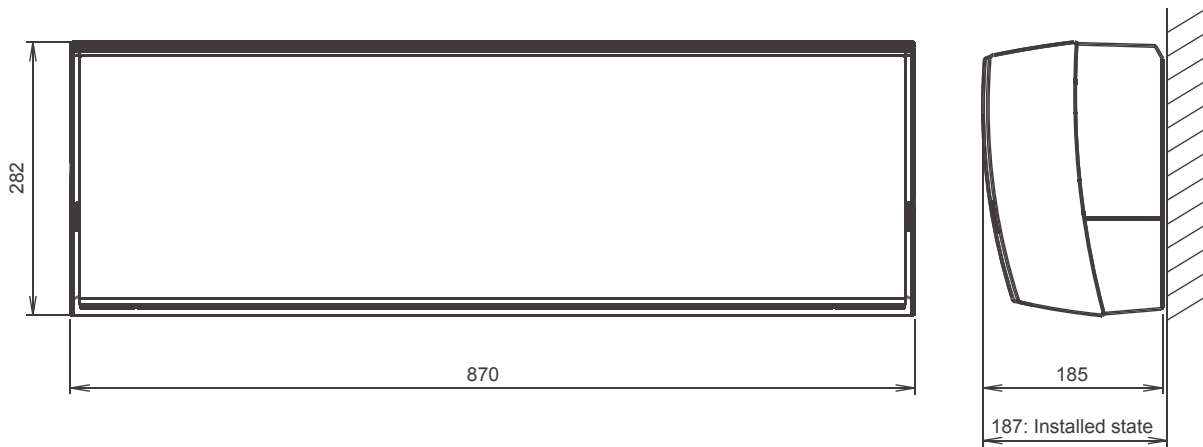


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MODELS : AS*G07LUCA, AS*G09LUCA, AS*G12LUCA, AS*G14LUCA

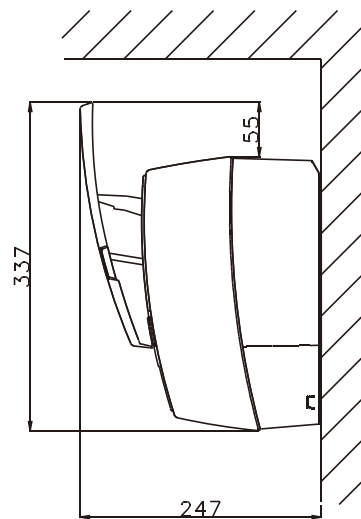
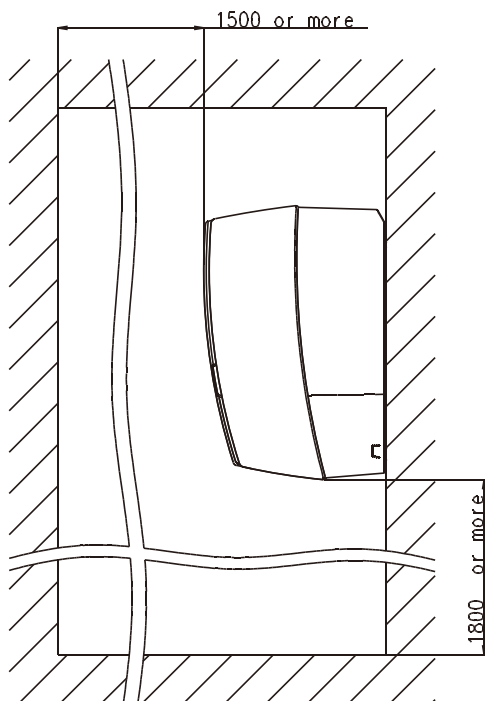
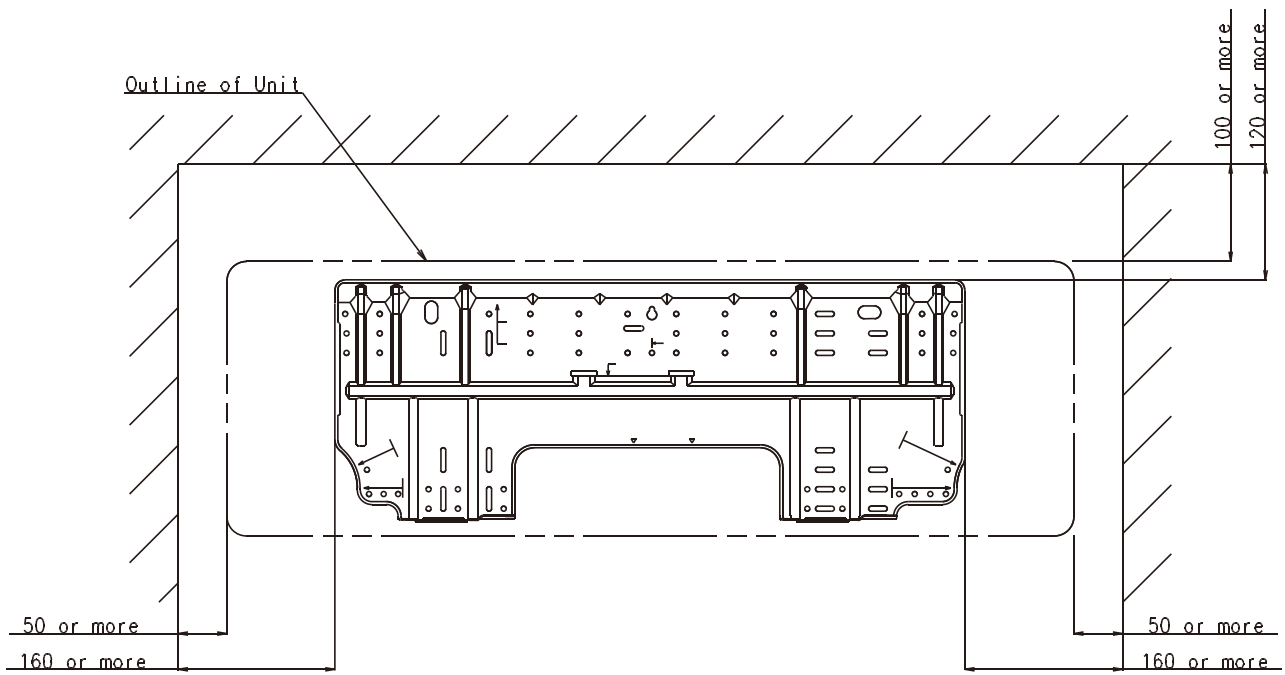
Unit : mm



			AS*G07LU, AS*G09LU, AS*G12LU	AS*G14LU
①	Refrigerant pipe flare connection	Liquid	$\varnothing 6.35$ mm (1/4 in.)	$\varnothing 6.35$ mm (1/4 in.)
②		Gas	$\varnothing 9.52$ mm (3/8 in.)	$\varnothing 12.70$ mm (1/2 in.)
③	Drain hose connection	Drain hose	I.D. 13.8 mm, O.D. 15.8 to 16.7 mm Total length : 600mm	

■ INSTALLATION PLACE

Unit : mm

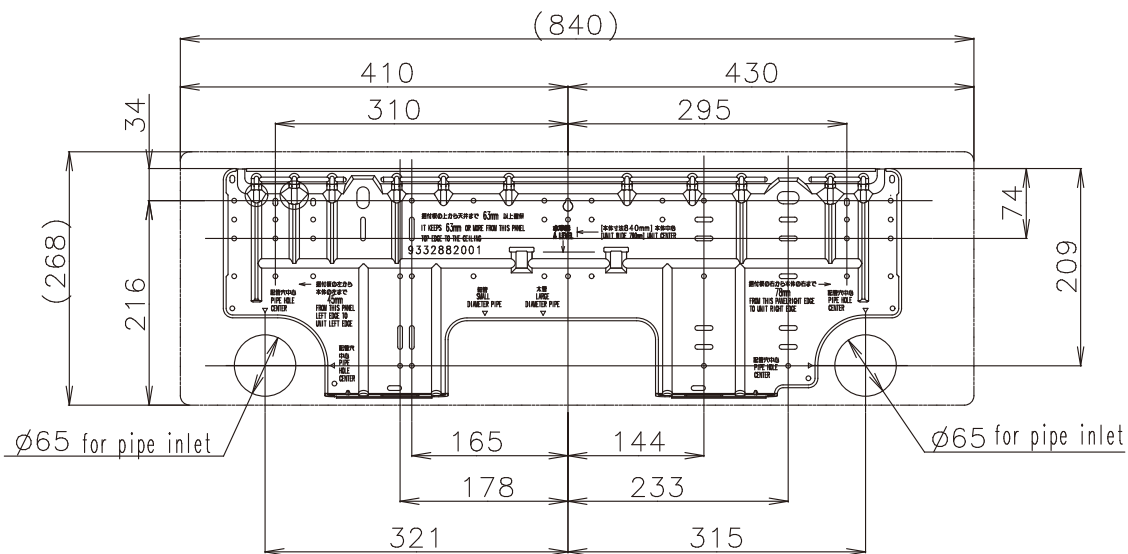
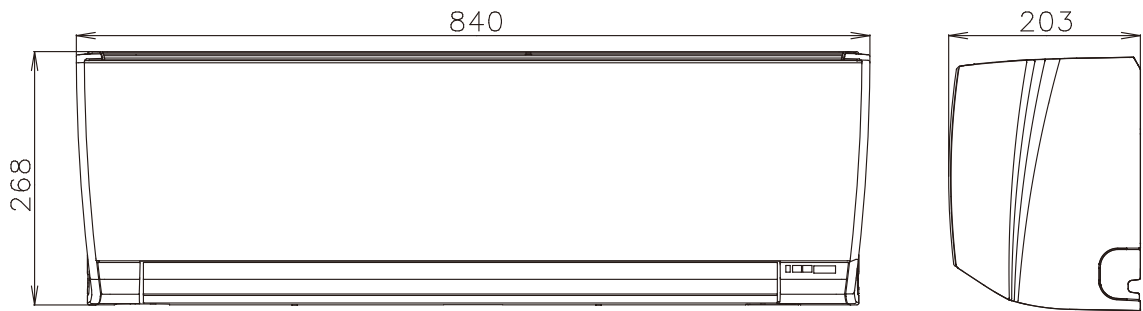


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■ MODELS : AS*G07LMCA, AS*G09LMCA, AS*G12LMCA, AS*G14LMCA

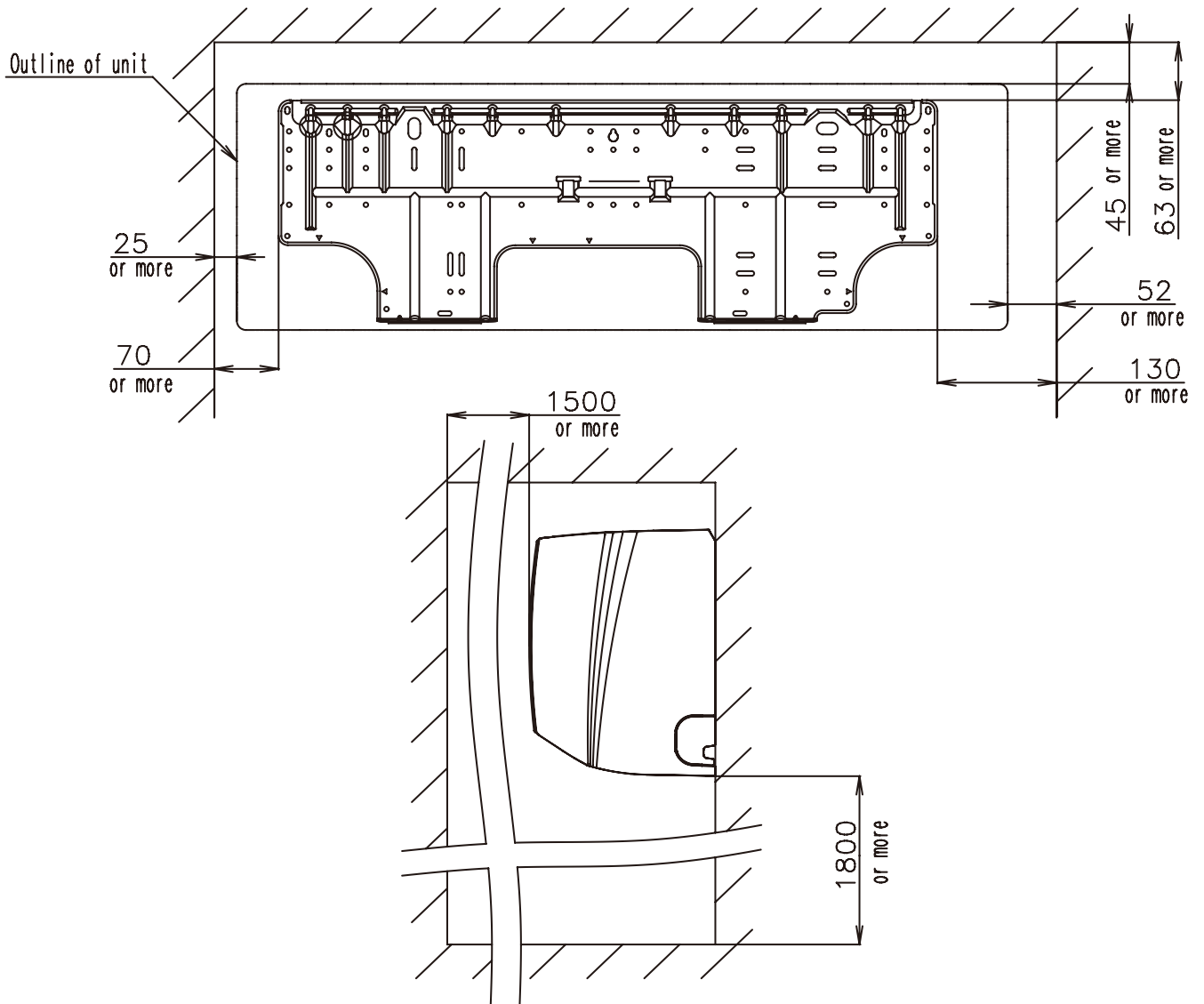
(Unit : mm)



			AS*G07LM, AS*G09LM, AS*G12LM	AS*G14LM
①	Refrigerant pipe flare connection	Liquid	ø 6.35 mm (1/4 in.)	ø 6.35 mm (1/4 in.)
②		Gas	ø 9.52 mm (3/8 in.)	ø 12.70 mm (1/2 in.)
③	Drain hose connection	Drain hose	I.D. 13.8 mm, O.D. 15.8 to 16.7 mm Total length : 600mm	

■ INSTALLATION PLACE

(Unit : mm)

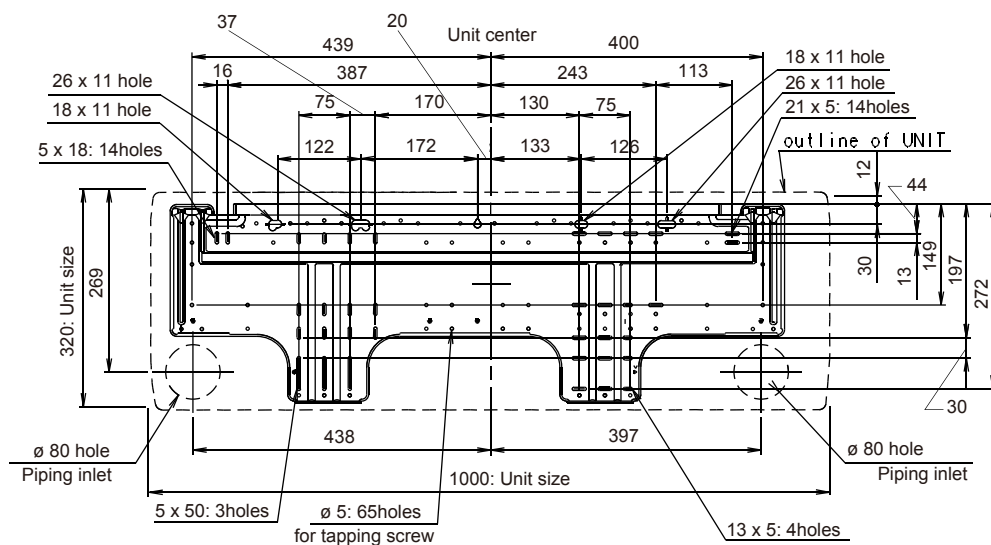
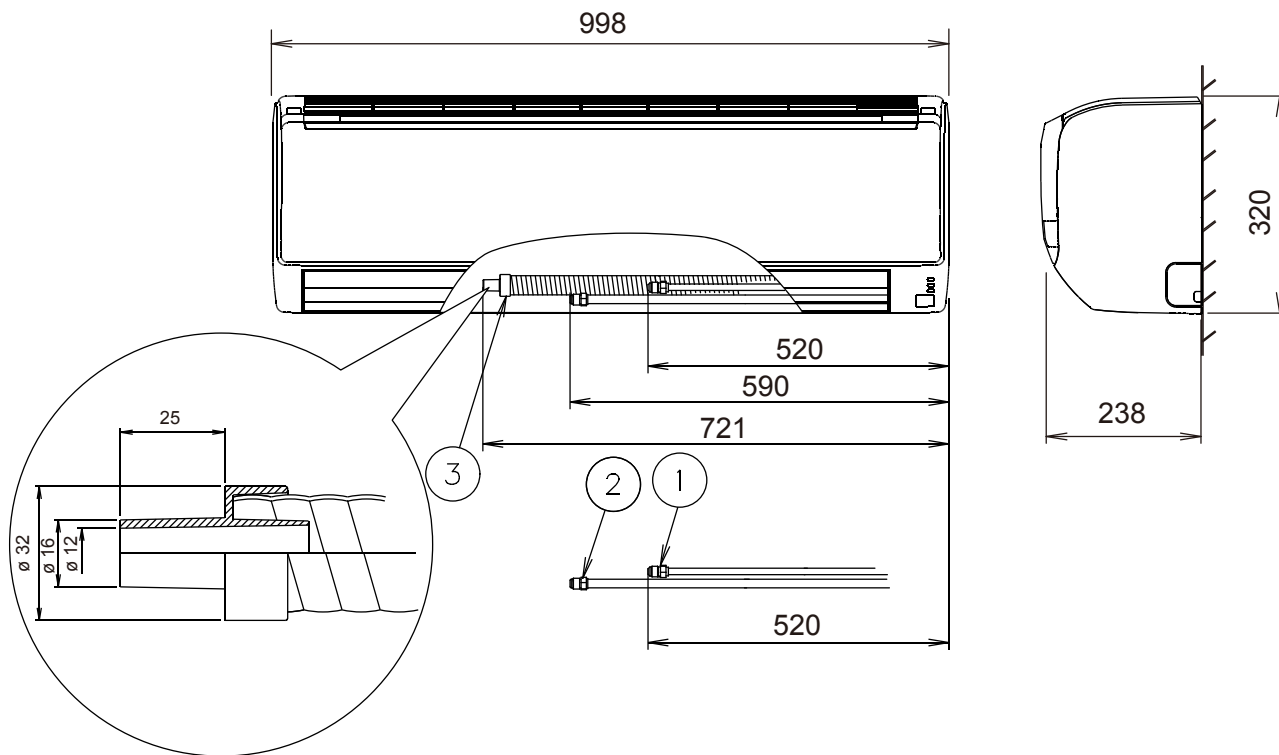


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■ MODELS : AS*G18LFCA, AS*G24LFCA
AS*G24LFCC

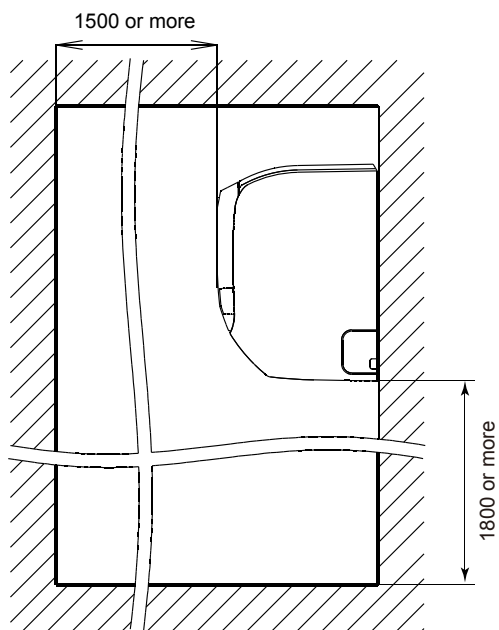
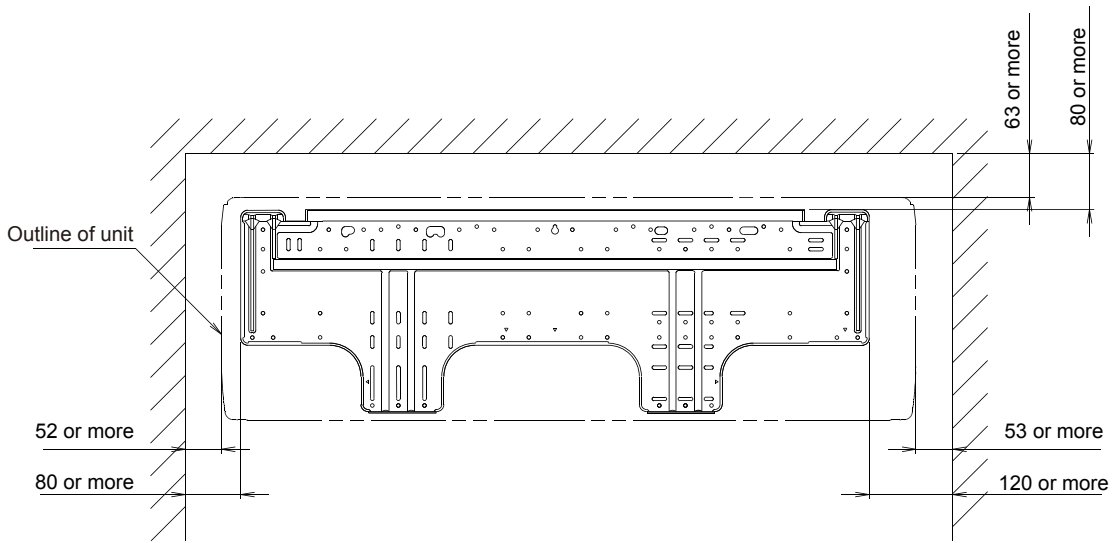
Unit : mm



			AS*G18LF	AS*G24LF
①	Refrigerant pipe flare connection	Liquid	ø 6.35 mm (1/4 in.)	ø 6.35 mm (1/4 in.)
②		Gas	ø 12.70 mm (1/2 in.)	ø 15.88 mm (5/8 in.)
③	Drain hose connection	Drain hose	I.D. 12 mm , O.D. 16 mm Total length : 670mm	

■ INSTALLATION PLACE

Unit : mm

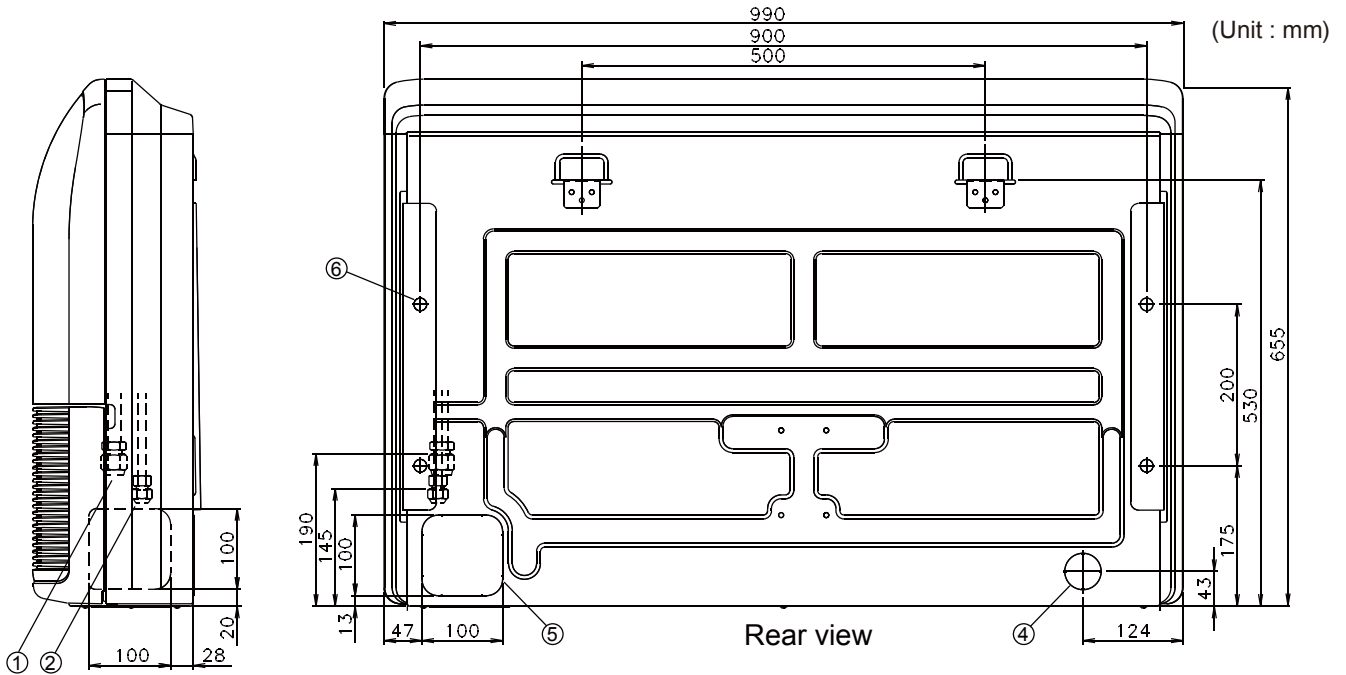


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4-4. FLOOR / CEILING TYPE

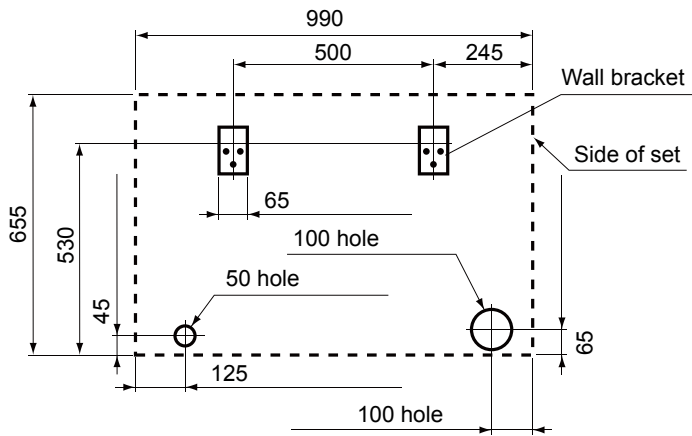
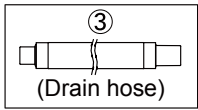
■ MODELS : AB*G14LVTA, AB*G18LVTA, AB*G18LVTB



Side view

Rear view

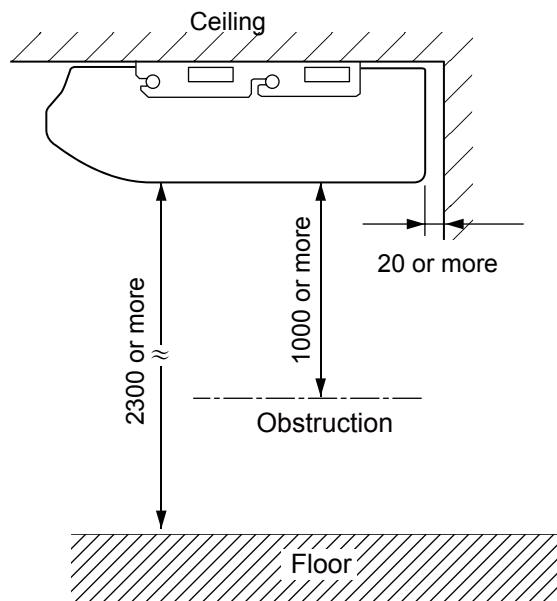
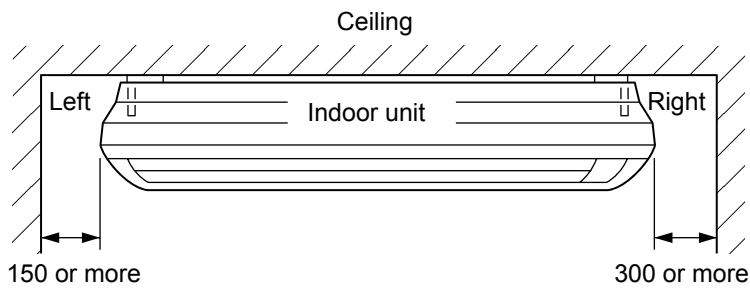
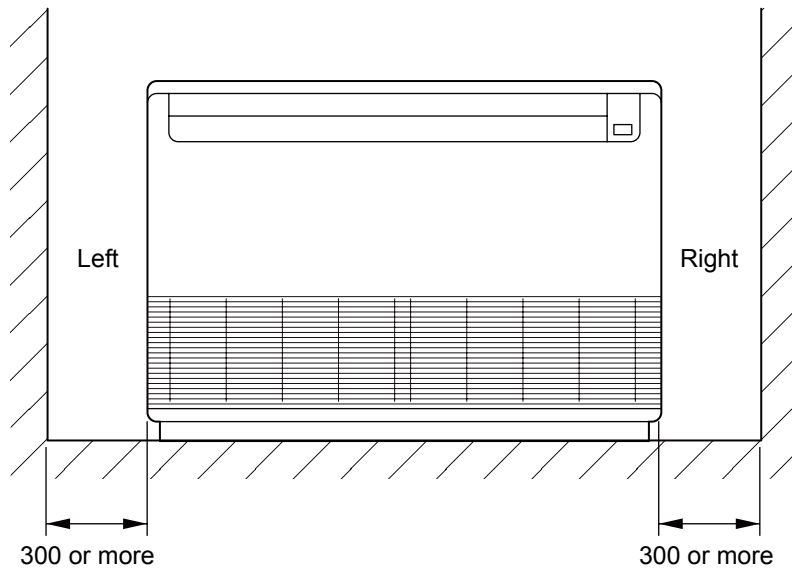
Bottom view



			AB*G14LV, AB*G18LV
①	Refrigerant pipe flare connection	Liquid	ø 6.35 mm (1/4 in.)
②		Gas	ø 12.70 mm (1/2 in.)
③	Drain hose connection	Drain hose	O.D. 32 mm (VP25)
④	Knock out hole	Drain outlet	ø 45 mm
⑤		-	-
⑥	Hole for suspension bolt	-	Use M10 bolt

■ INSTALLATION PLACE

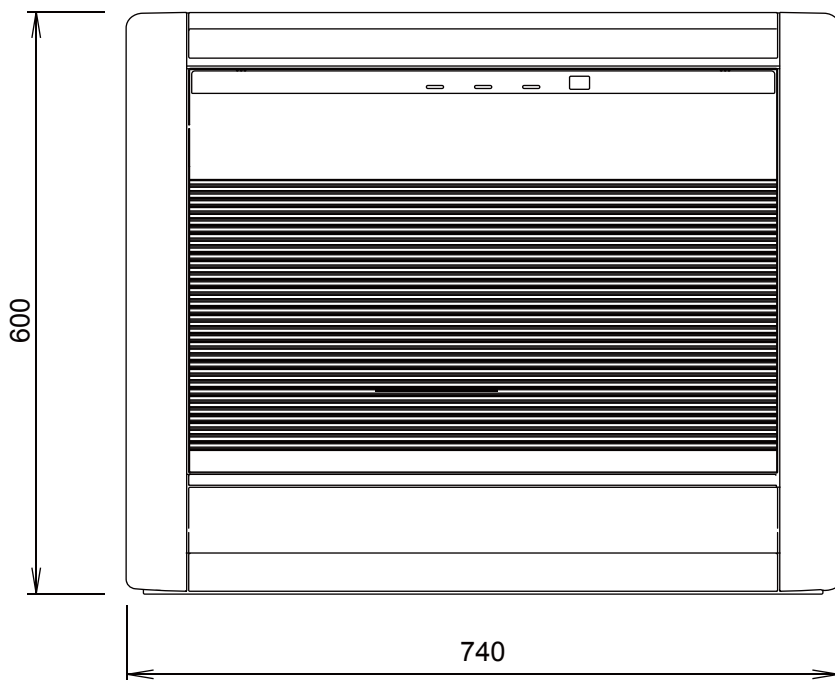
(Unit : mm)



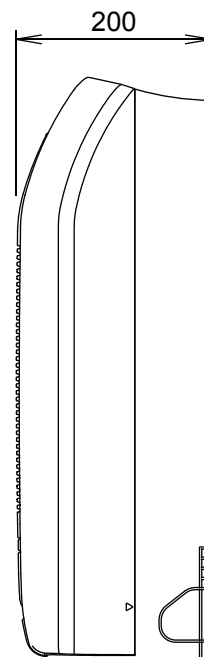
4-5. FLOOR TYPE

■ MODELS : AG*G09LVCA, AG*G12LVCA, AG*G14LVCA

(Unit : mm)

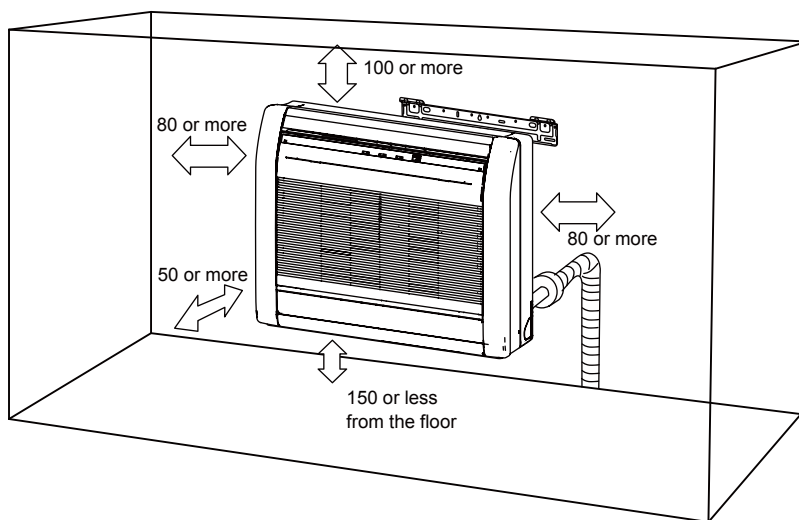


Front view



Side view

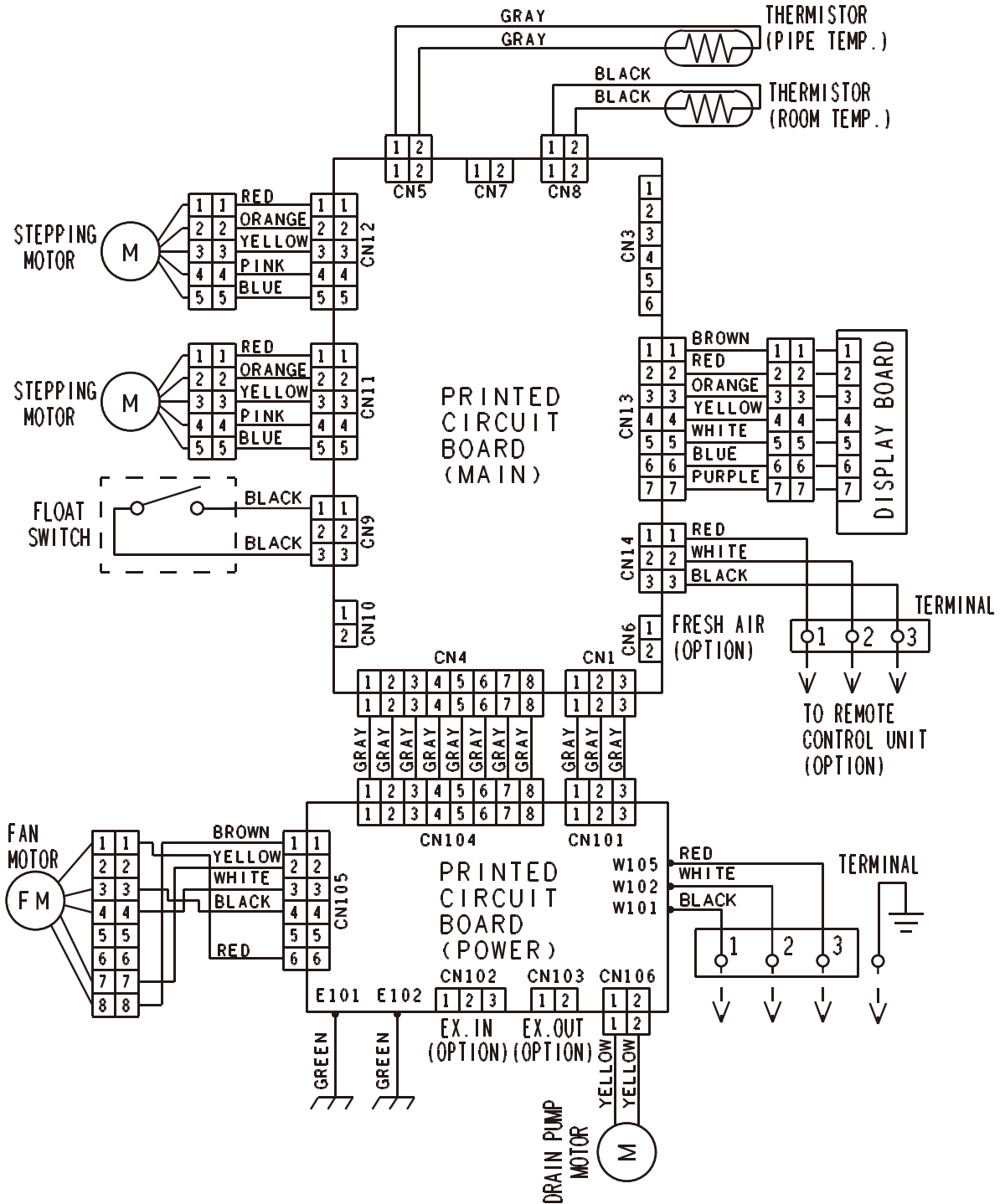
■ INSTALLATION PLACE



5. WIRING DIAGRAMS

5-1. COMPACT CASSETTE TYPE

- MODELS : AU*G07LVLA, AU*G09LVLA, AU*G12LVLA, AU*G14LVLA, AU*G18LVLA, AU*G12LVLB, AU*G14LVLB, AU*G18LVLB

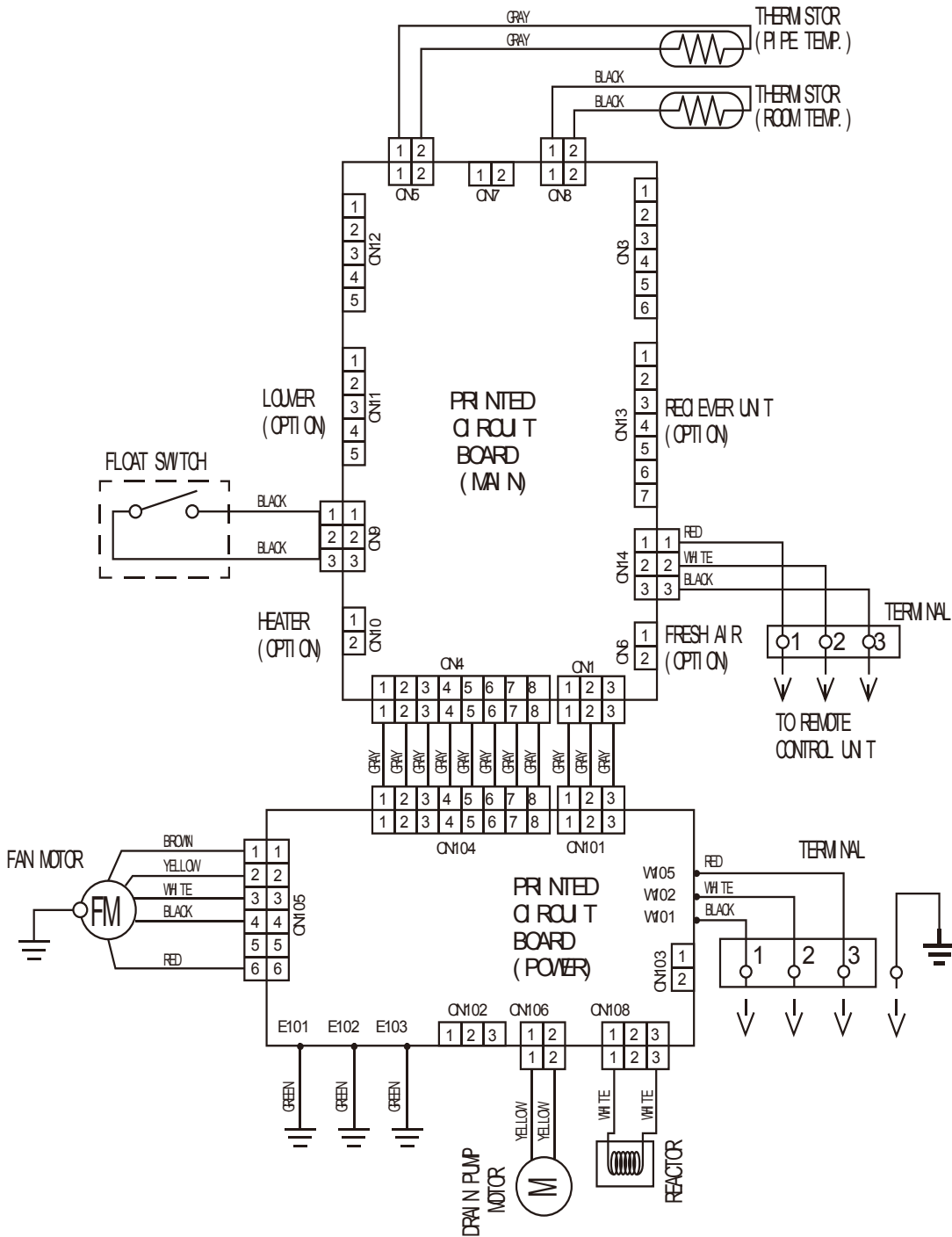


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5-2. SLIM DUCT TYPE

■ MODELS : AR*G07LLTA, AR*G09LLTA, AR*G12LLTA,
AR*G14LLTA, AR*G18LLTA,
AR*G12LLTB, AR*G14LLTB, AR*G18LLTB

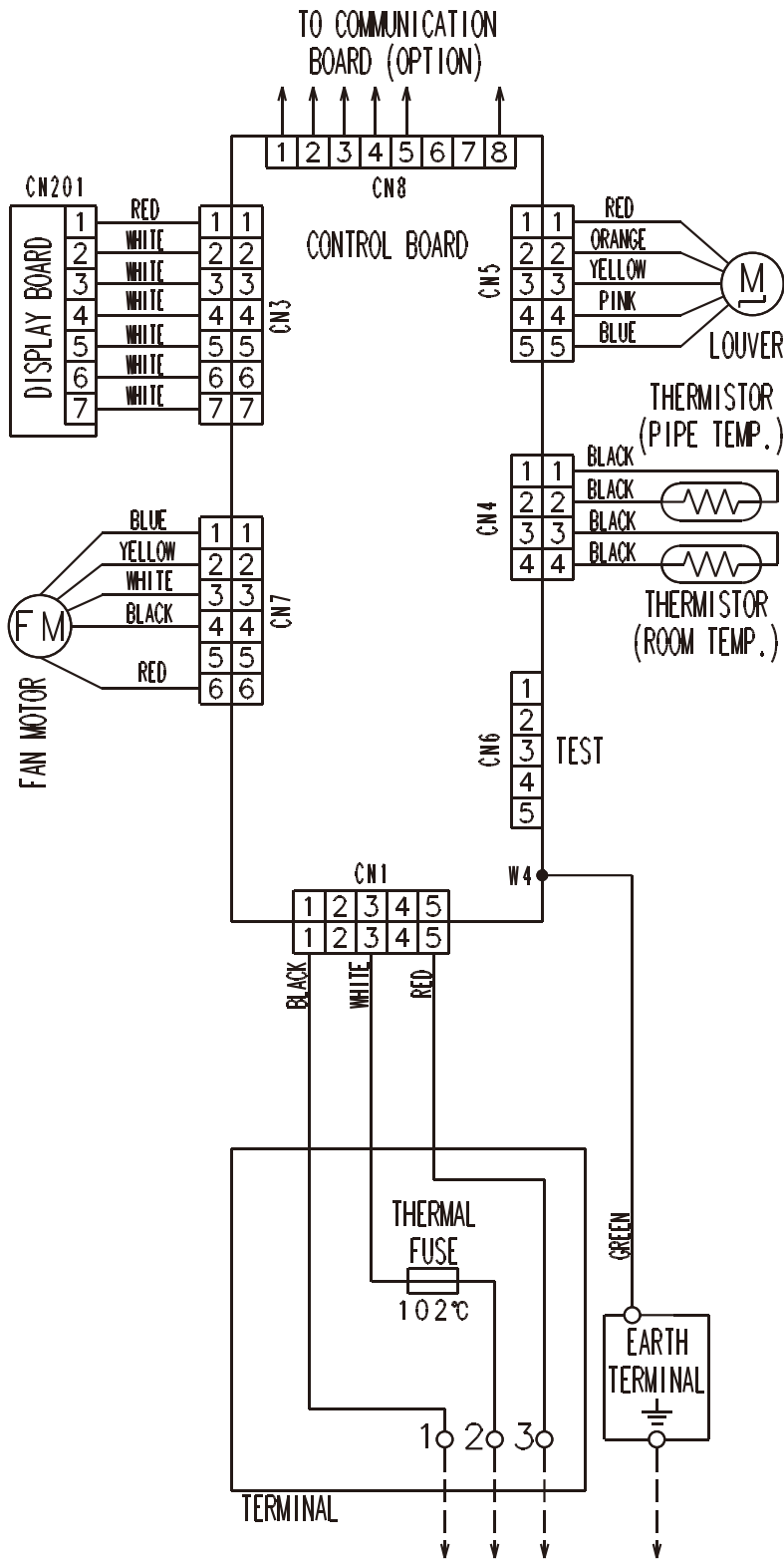


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5-3. WALL MOUNTED TYPE

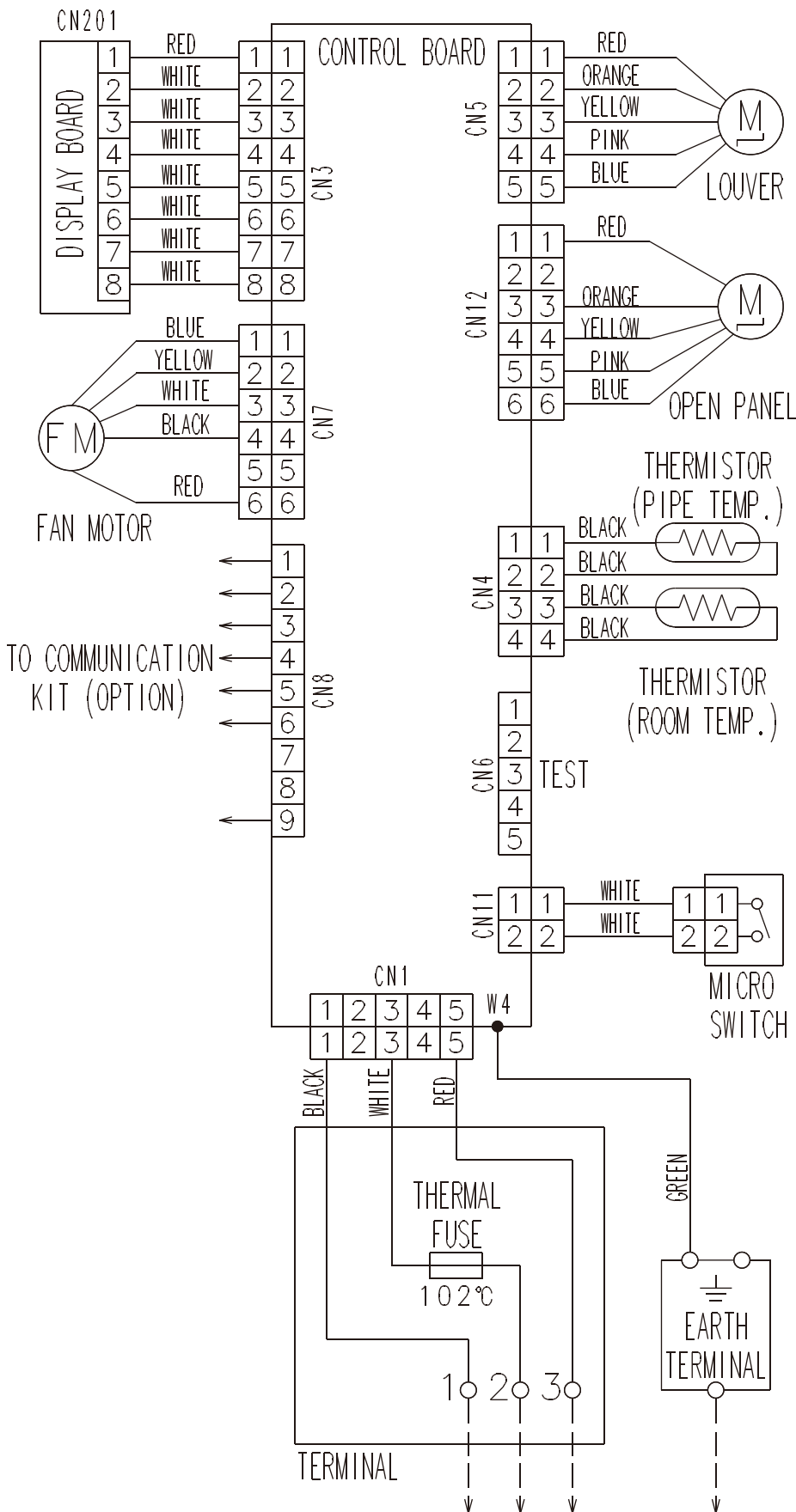
■ MODELS : AS*G07LJCA, AS*G09LJCA, AS*G12LJCA



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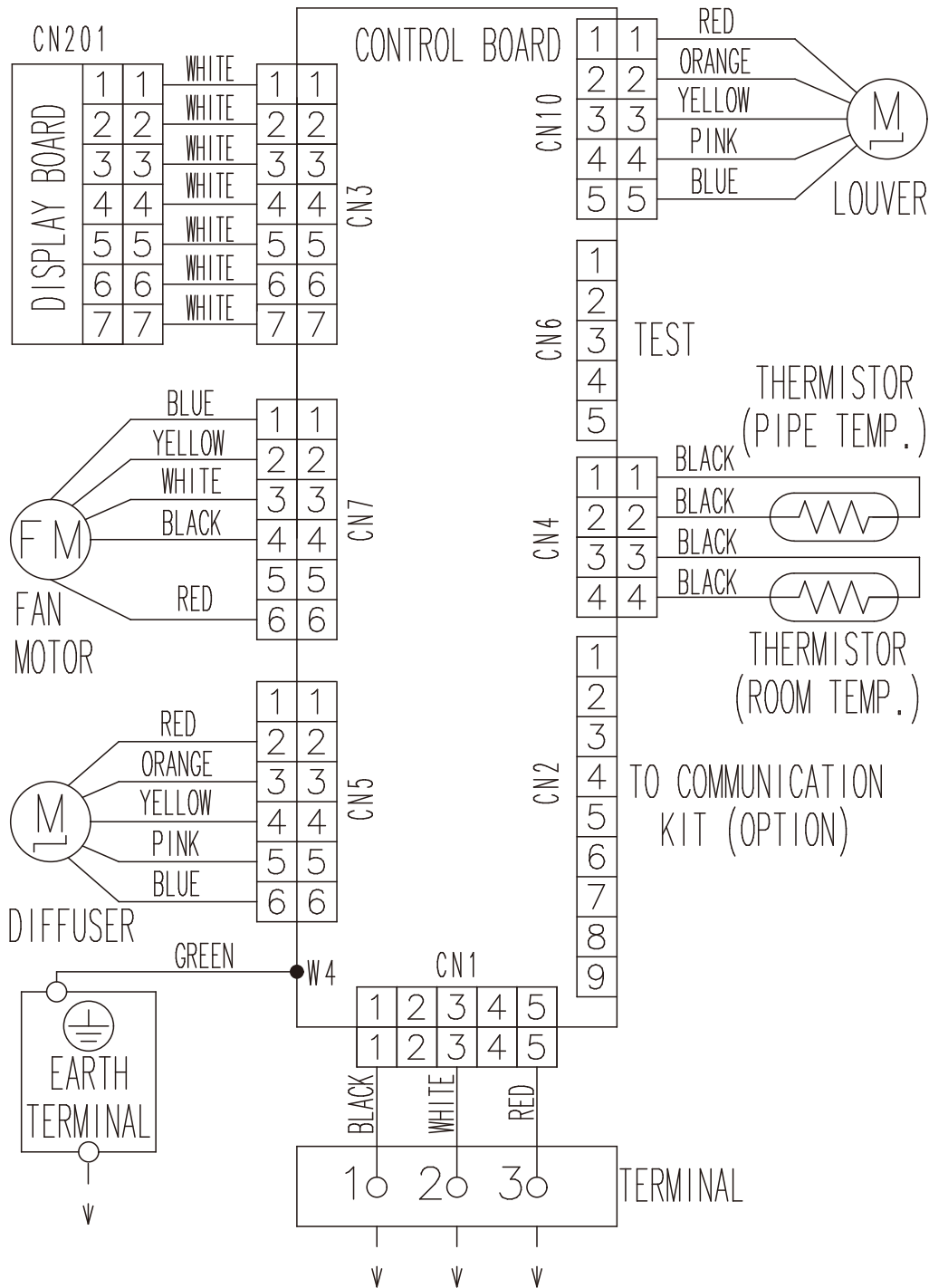
MODELS : AS*G07LUCA, AS*G09LUCA, AS*G12LUCA, AS*G14LUCA



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MODELS : AS*G07LMCA, AS*G09LMCA, AS*G12LMCA, AS*G14LMCA



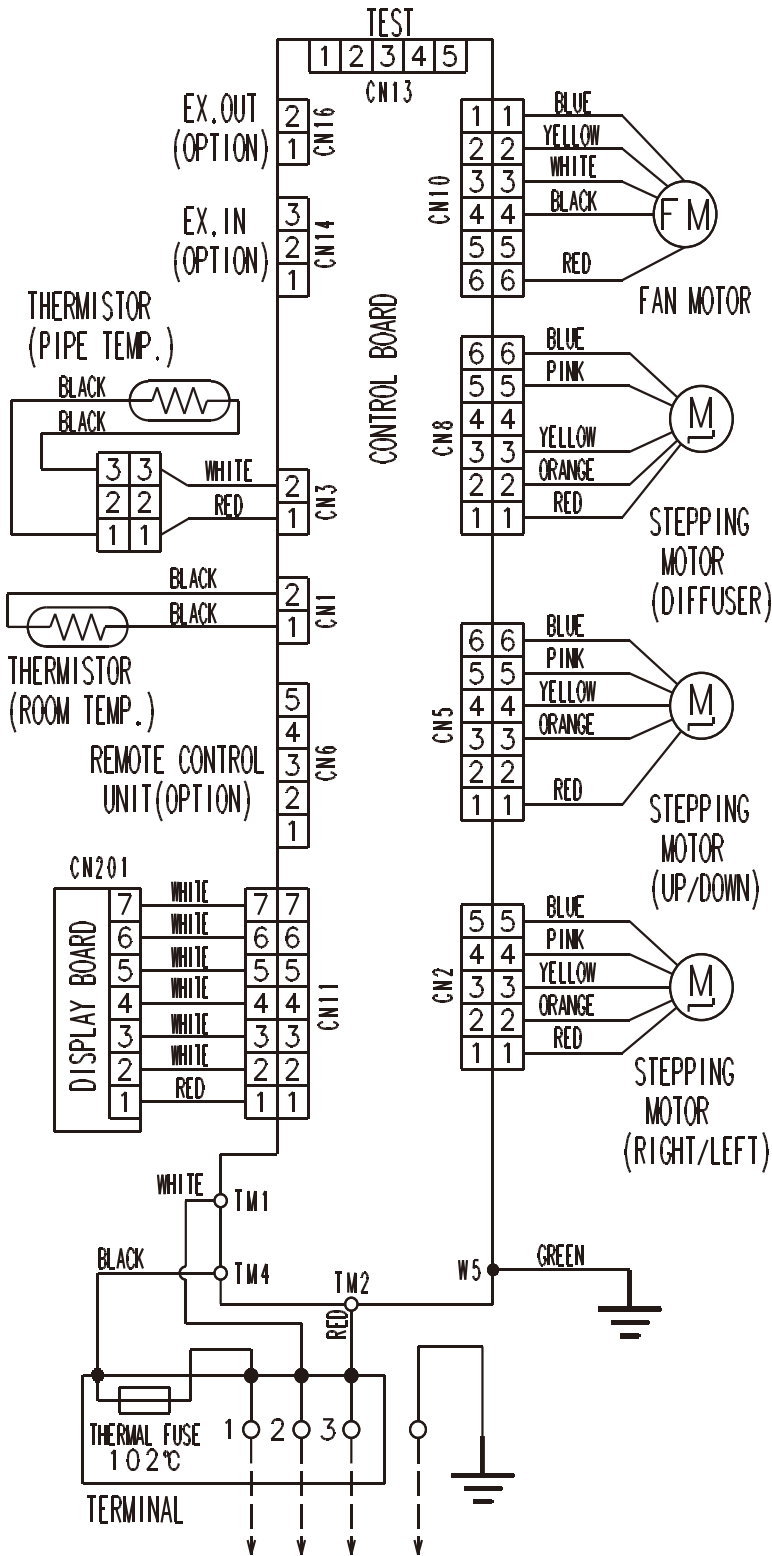
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■ MODELS : AS*G18LFCA, AS*G24LFCA
AS*G24LFCC

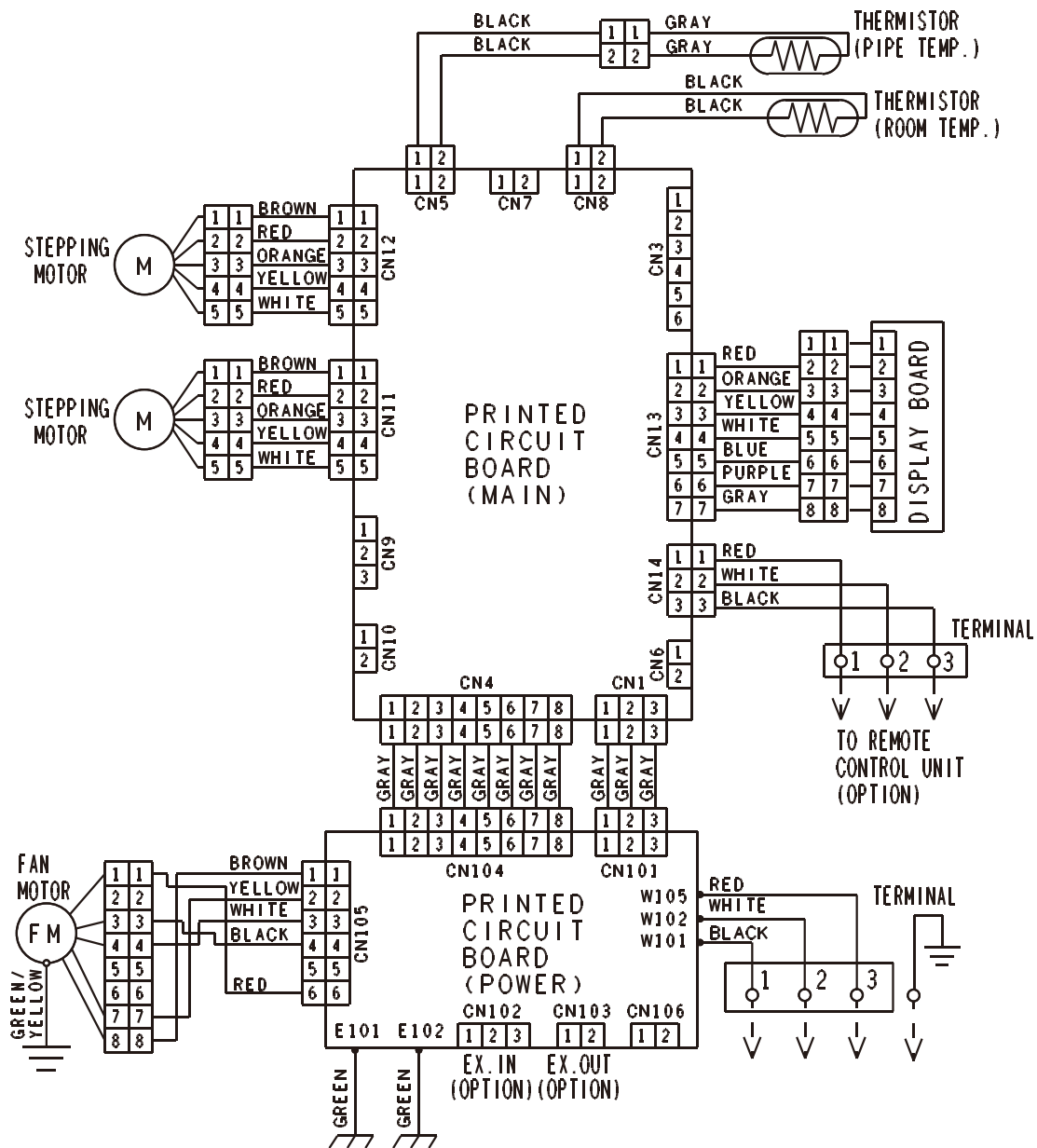
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5-4. FLOOR / CEILING TYPE

■ MODELS : AB*G14LVTA, AB*G18LVTA,
AB*G18LVTB

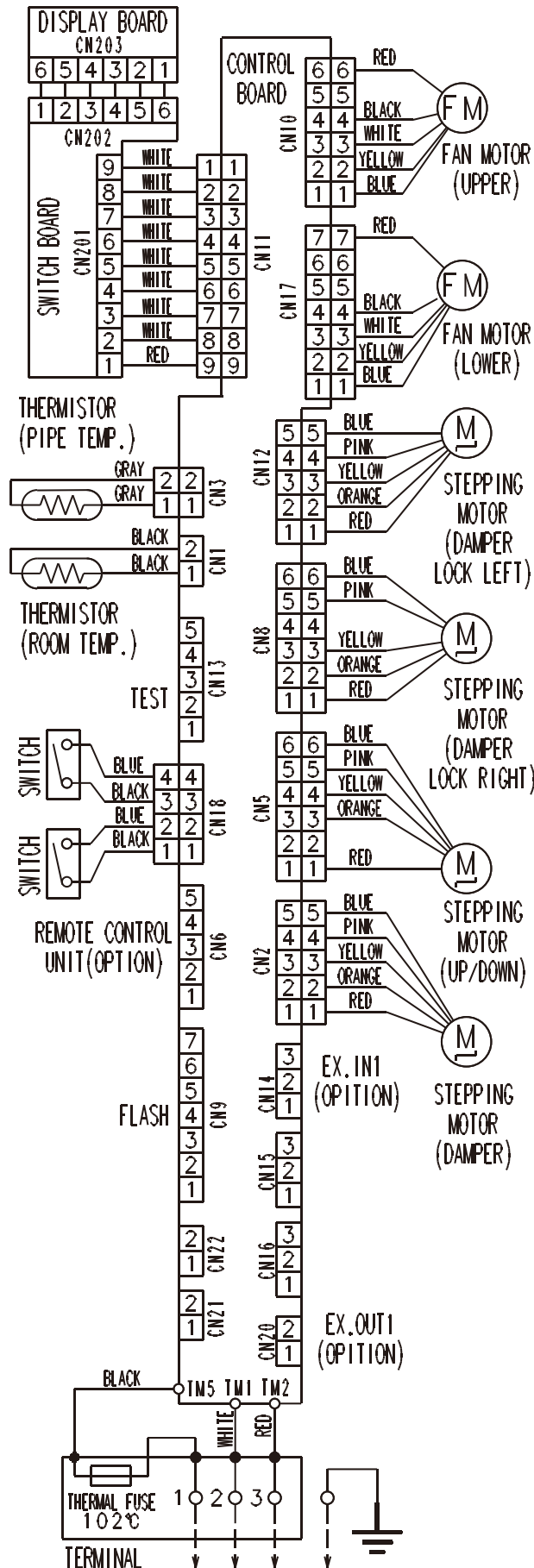


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5-5. FLOOR TYPE

■ MODELS : AG*G09LVCA, AG*G12LVCA, AG*G14LVCA



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6. AIR VELOCITY AND TEMPERATURE DISTRIBUTIONS

6-1. COMPACT CASSETTE TYPE

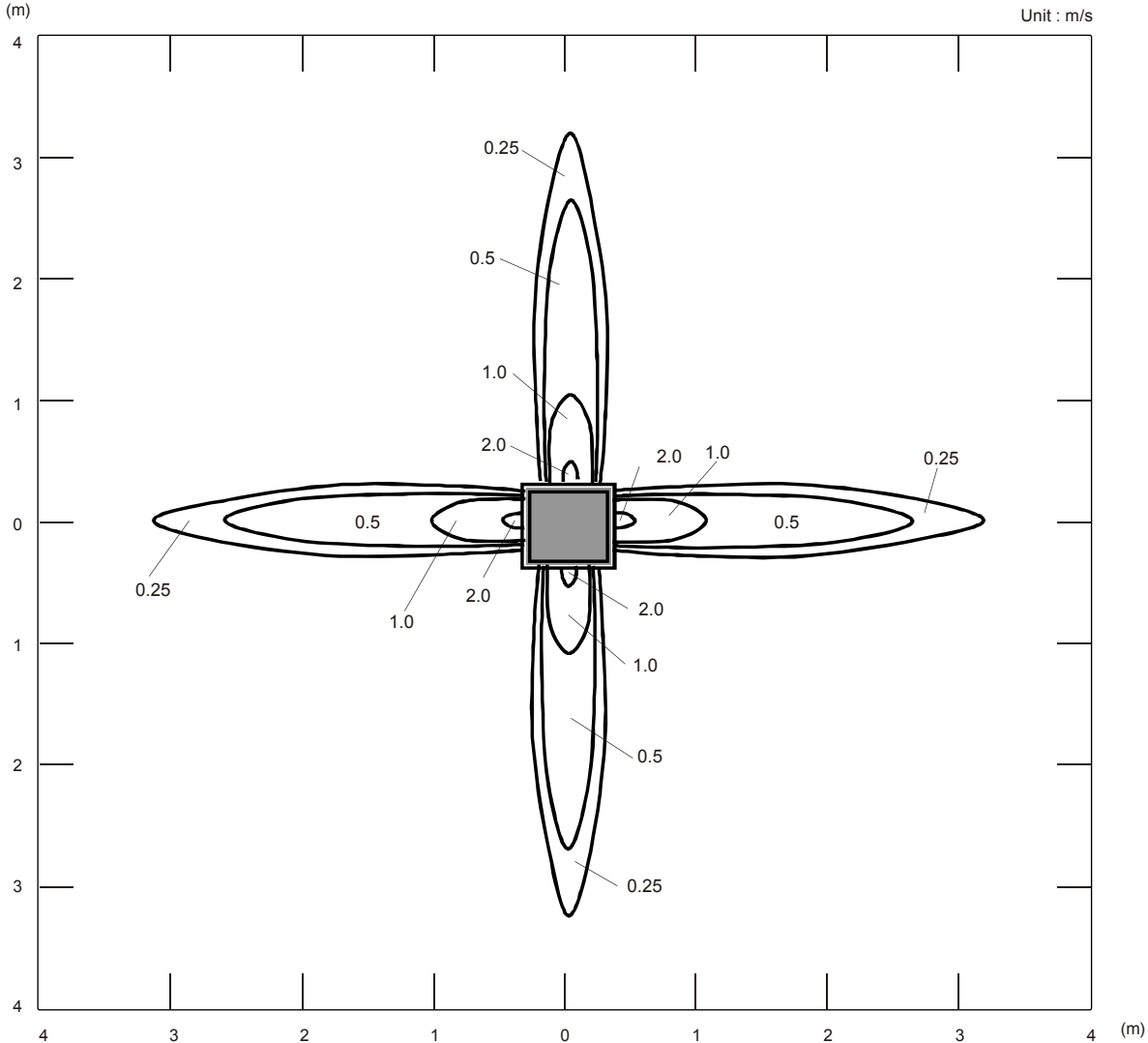
Conditions
 Fan speed: HIGH
 Operation mode: FAN

■ MODELS : AU*G07LVLA, AU*G09LVLA

● Air velocity distribution

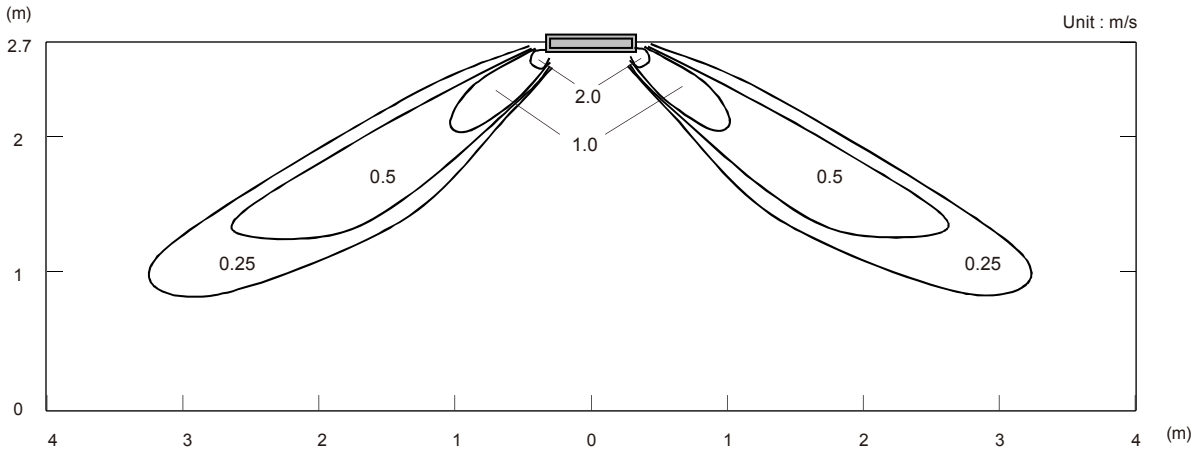
Top view

Vertical airflow direction louver: Up



Side view

Vertical airflow direction louver: Up



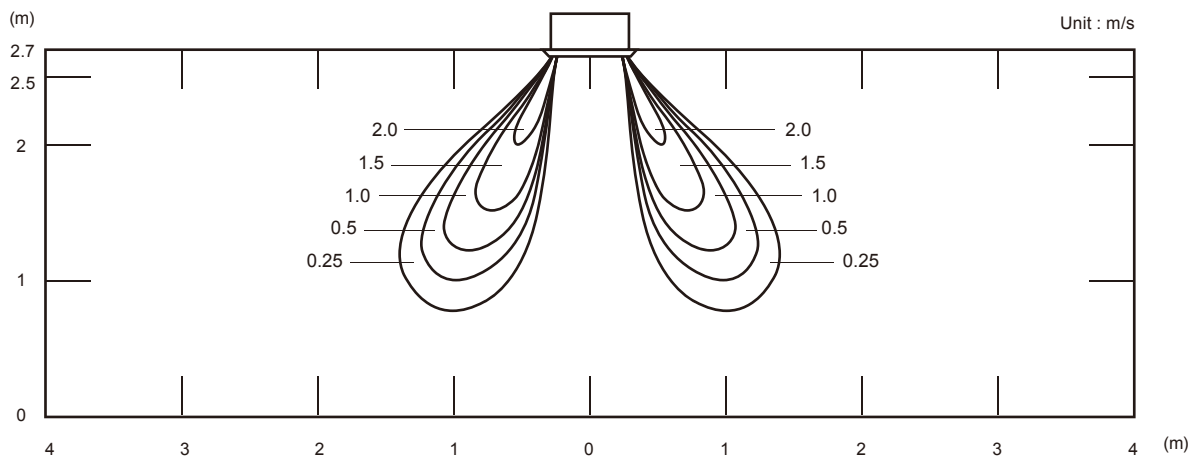
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Reference data
 Conditions
 Fan speed: HIGH
 Operation mode: HEATING
 Vertical airflow direction louver: 4 WAY

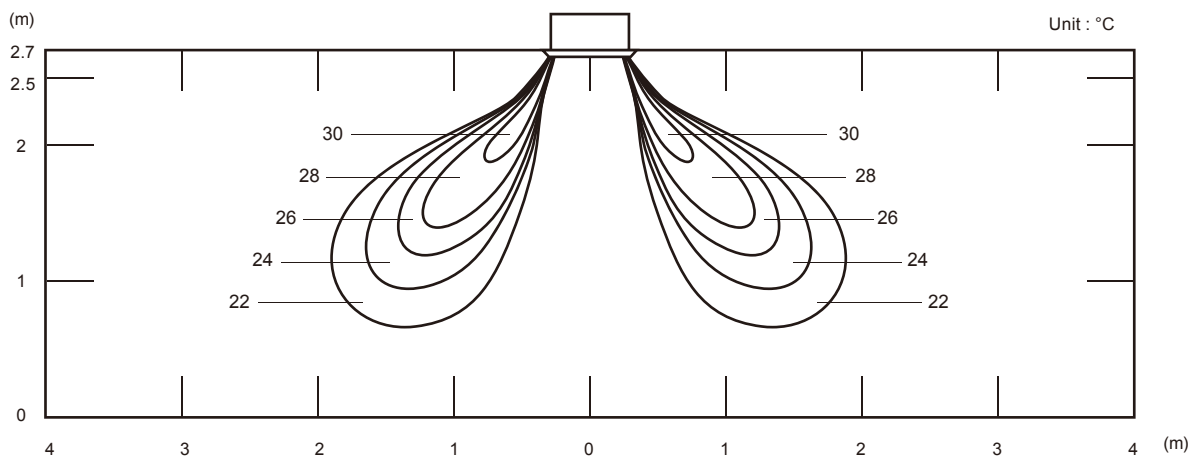
● Air velocity distribution

Side view
 Vertical airflow direction louver: Down



● Air temperature distribution

Side view
 Vertical airflow direction louver: Down



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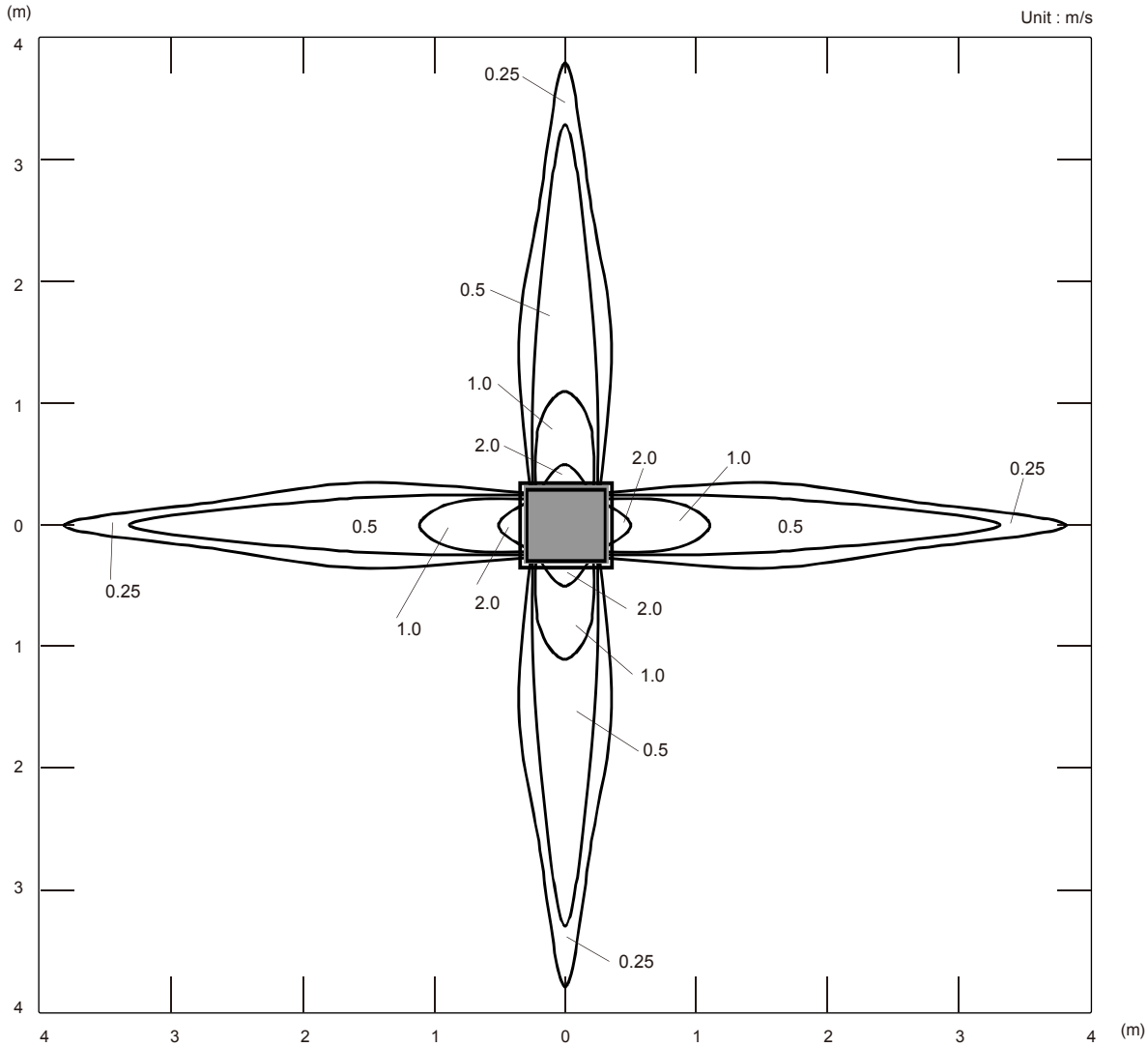
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■ MODELS : AU*G12LVLA, AU*G12LVLB

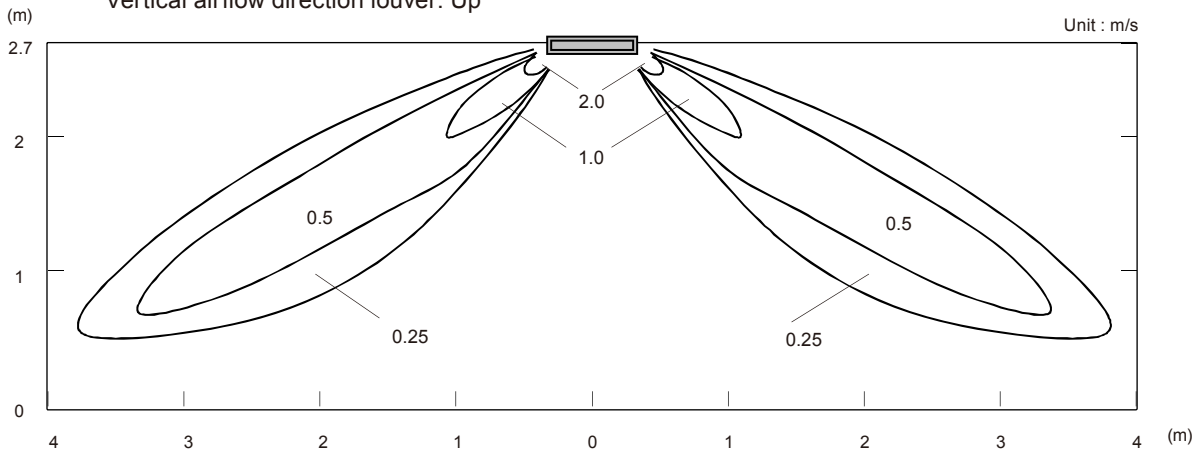
Conditions
 Fan speed: HIGH
 Operation mode: FAN

● Air velocity distribution

Top view
 Vertical airflow direction louver: Up



Side view
 Vertical airflow direction louver: Up



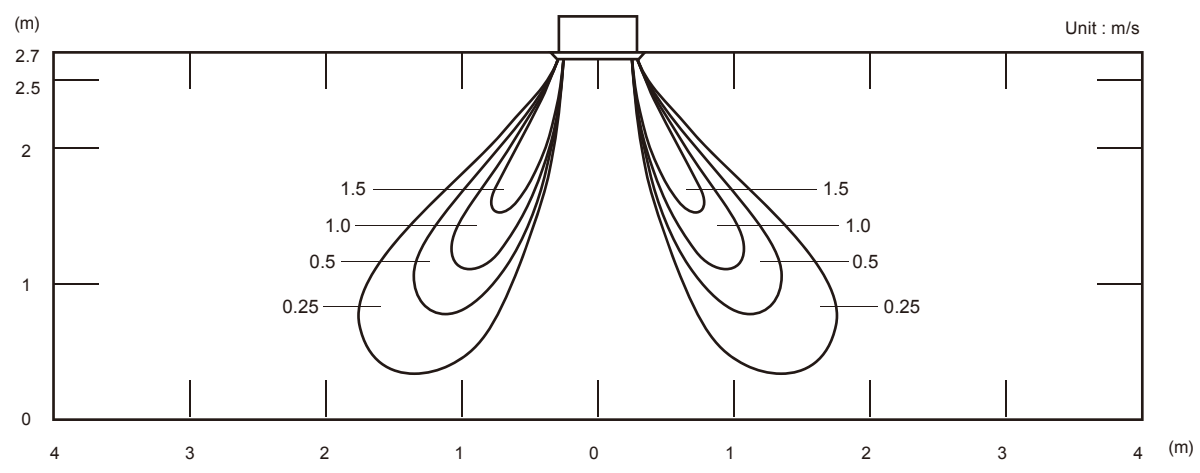
INDOOR
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Reference data
 Conditions
 Fan speed: HIGH
 Operation mode: HEATING
 Vertical airflow direction louver: 4 WAY

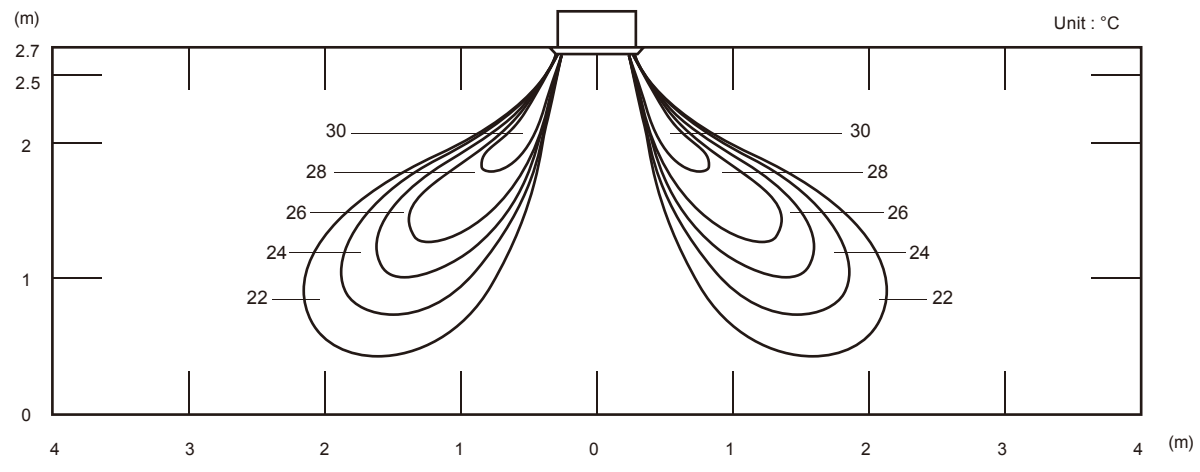
● Air velocity distribution

Side view
 Vertical airflow direction louver: Down



● Air temperature distribution

Side view
 Vertical airflow direction louver: Down



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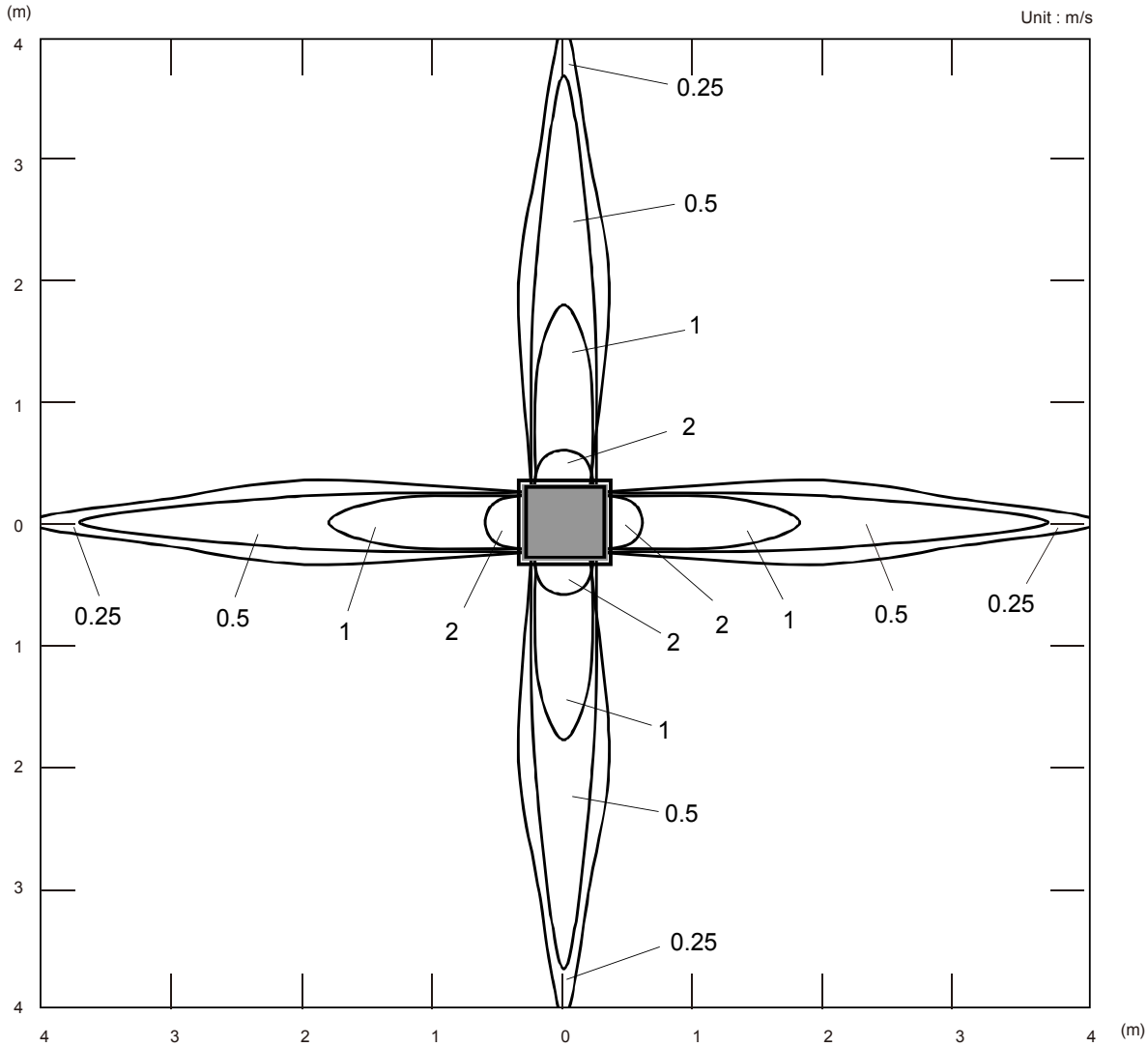
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■ MODELS : AU*G14LVLA, AU*G14LVLB

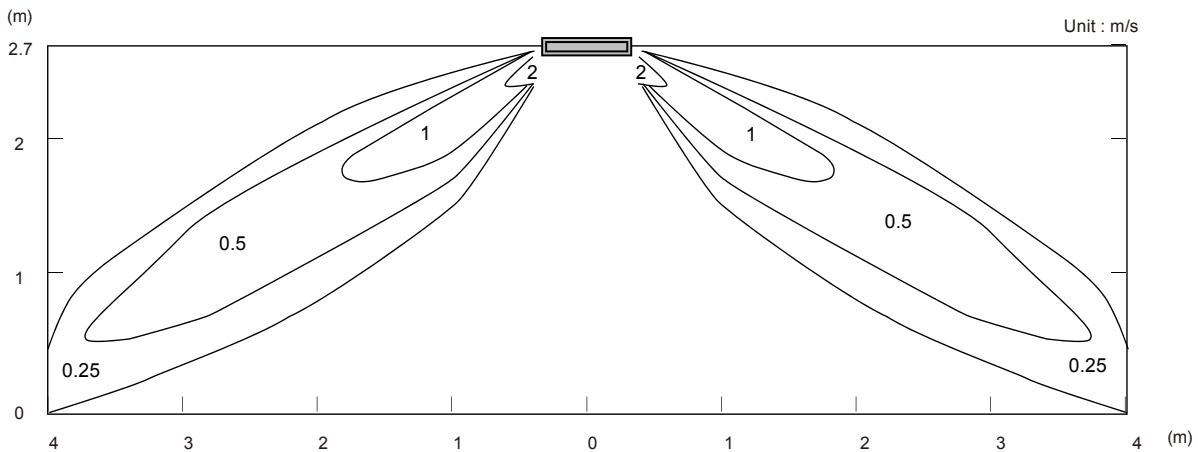
Conditions
 Fan speed: HIGH
 Operation mode: FAN

● Air velocity distribution

Top view
 Vertical airflow direction louver: Up



Side view
 Vertical airflow direction louver: Up



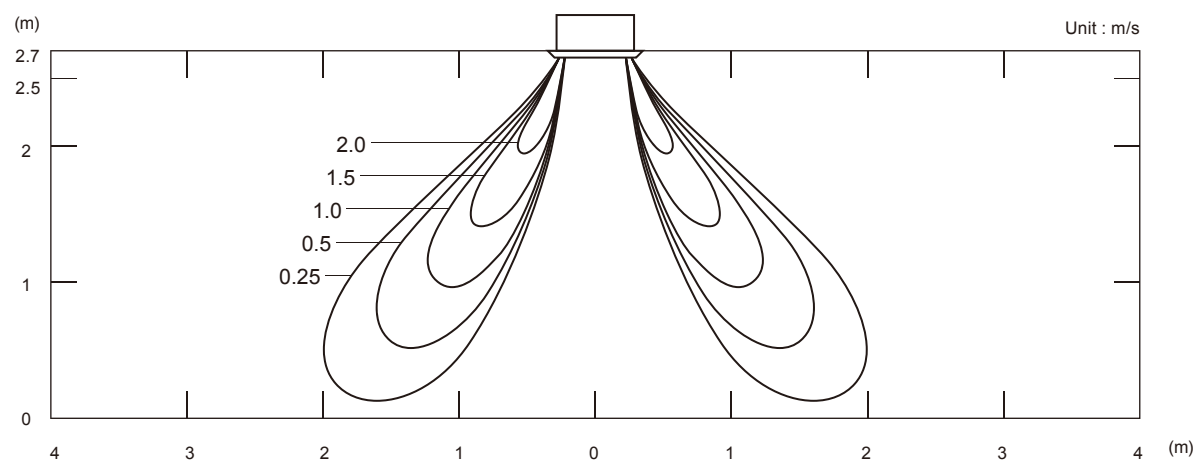
INDOOR
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Reference data
 Conditions
 Fan speed: HIGH
 Operation mode: HEATING
 Vertical airflow direction louver: 4 WAY

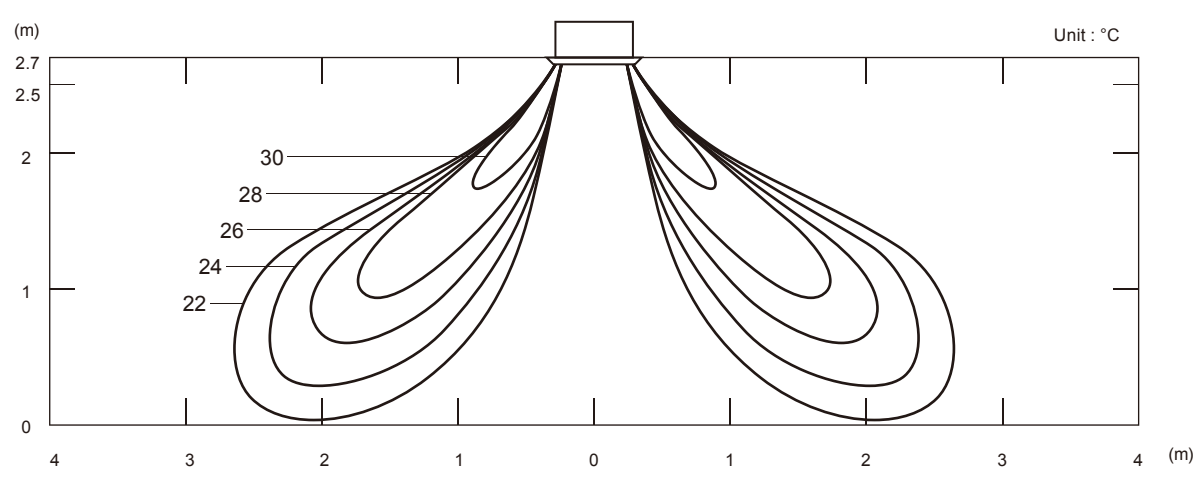
● Air velocity distribution

Side view
 Vertical airflow direction louver: Down



● Air temperature distribution

Side view
 Vertical airflow direction louver: Down



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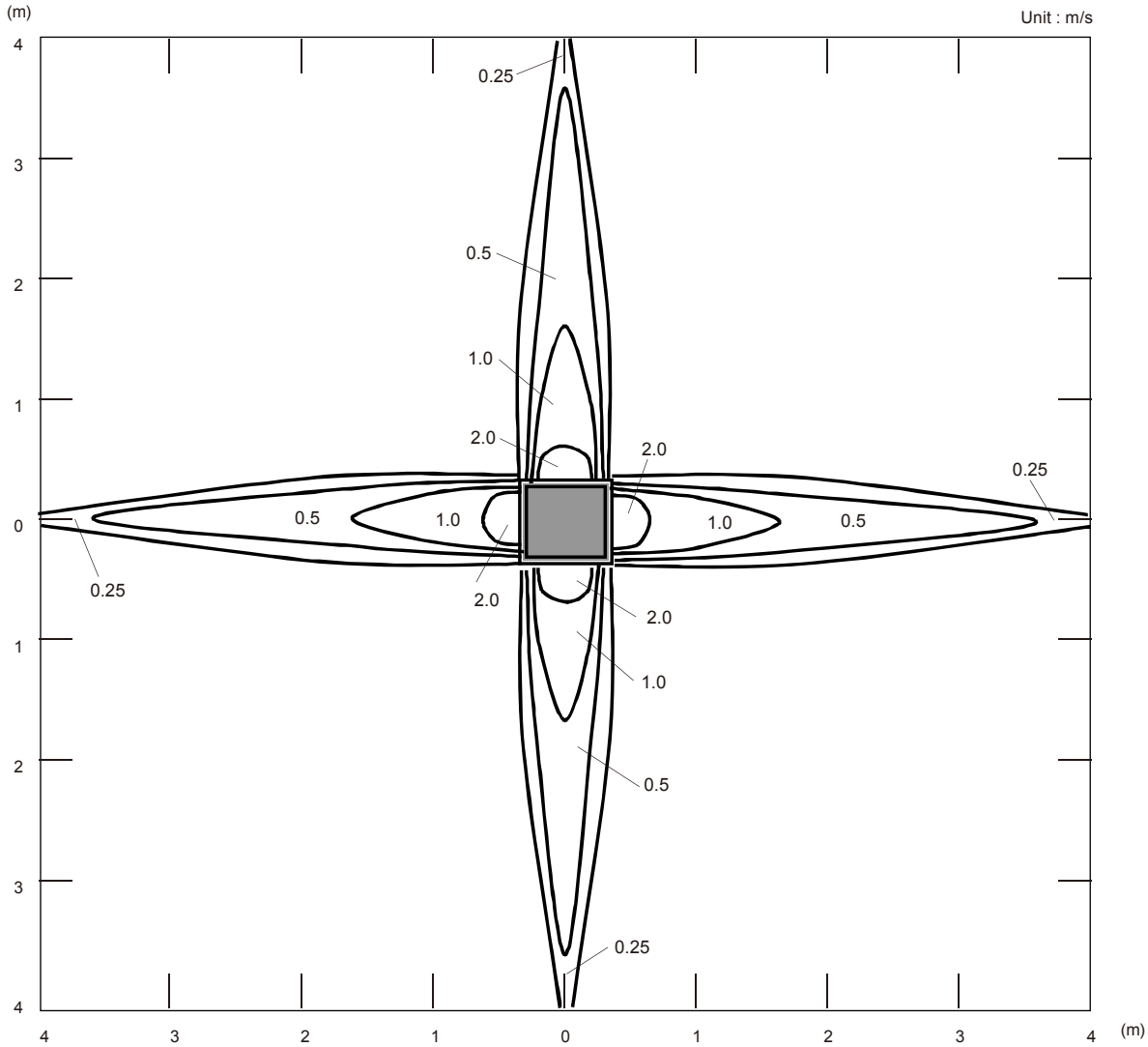
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■ MODELS : AU*G18LVLA, AU*G18LVLB

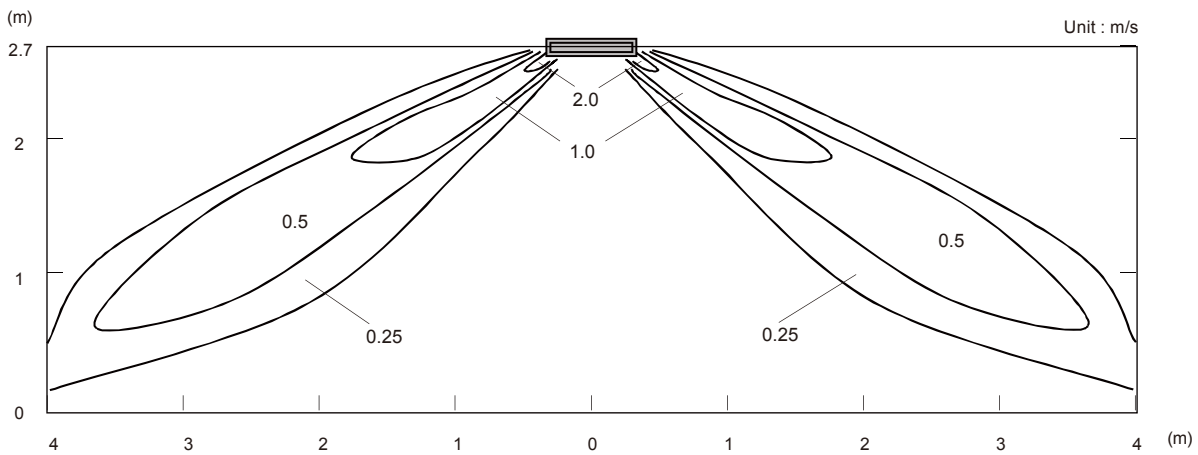
Conditions
 Fan speed: HIGH
 Operation mode: FAN

● Air velocity distribution

Top view
 Vertical airflow direction louver: Up



Side view
 Vertical airflow direction louver: Up



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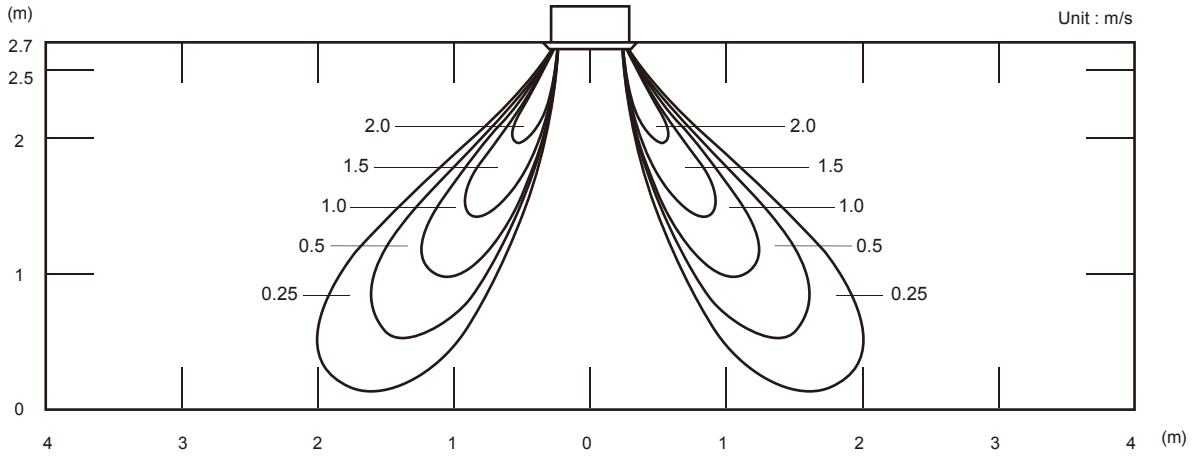
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● Air velocity distribution

Reference data
Conditions
Fan speed: HIGH
Operation mode: HEATING
Vertical airflow direction louver: 4 WAY

Side view

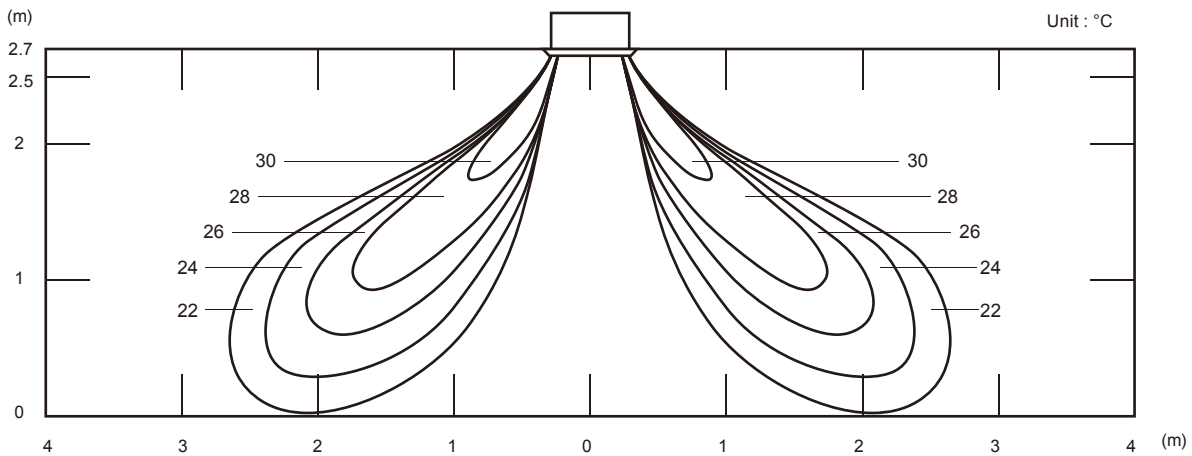
Vertical airflow direction louver: Down



● Air temperature distribution

Side view

Vertical airflow direction louver: Down



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6-2. SLIM DUCT TYPE with Auto louver grille kit

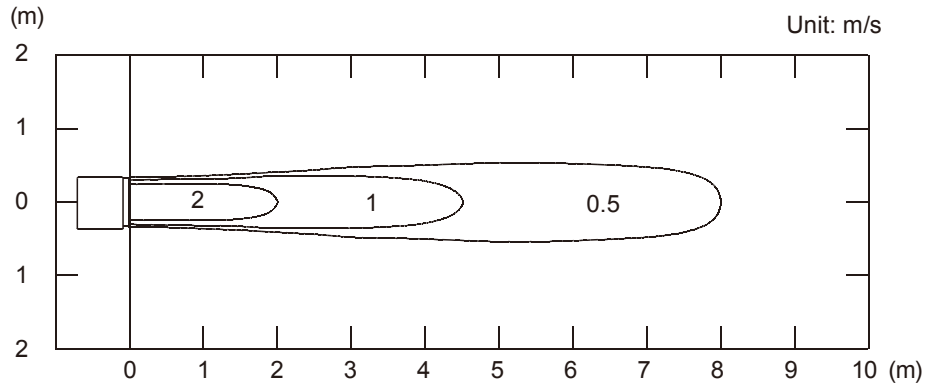
MODEL : AR*G07LLTA (UTD-GXSA-W)

Note: This data is measured installing the Auto louver grille kit(option).

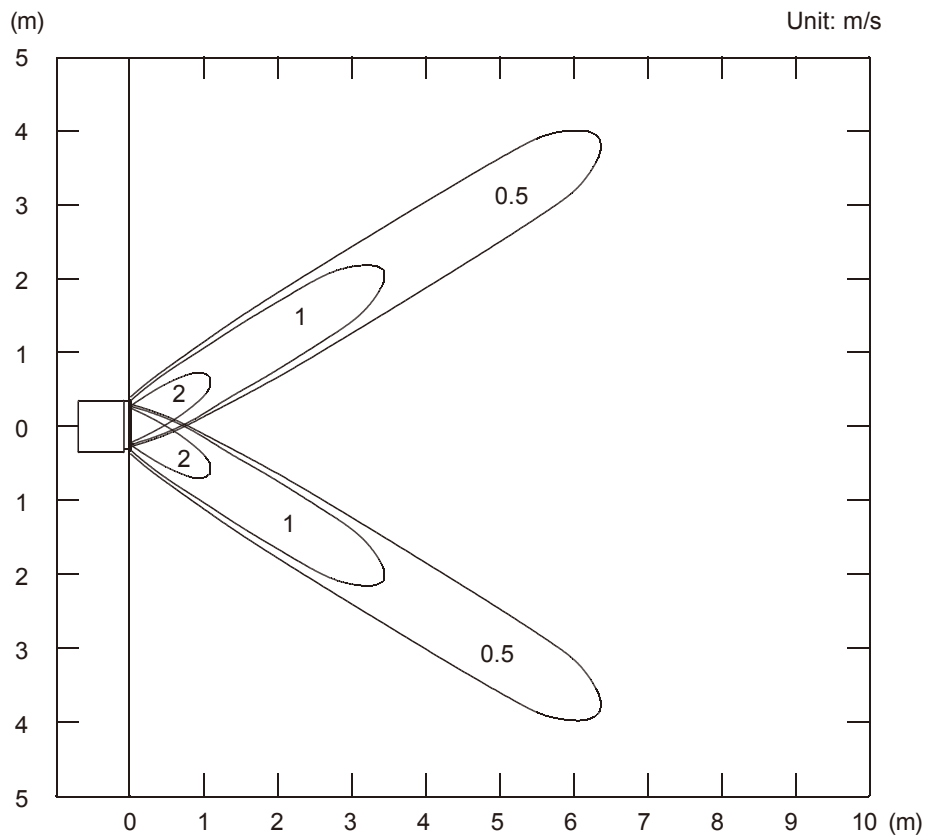
Conditions
 Fan speed: HIGH
 Operation mode: FAN

● Air velocity distribution

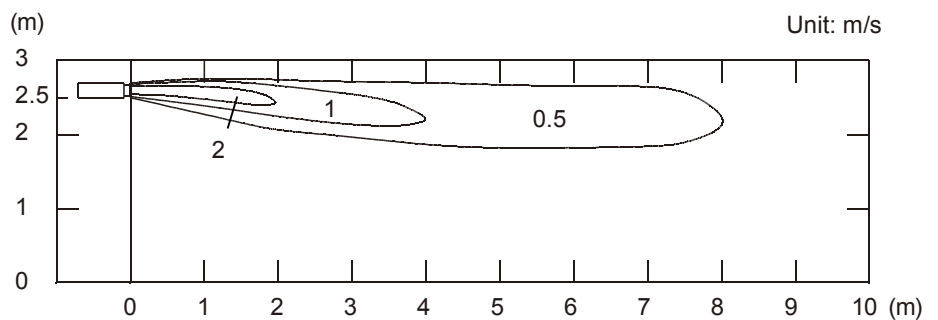
Top view
 Vertical airflow direction louver: Up
 Horizontal airflow direction louver: Center



Top view
 Vertical airflow direction louver: Up
 Horizontal airflow direction louver: Right & Left



Side view
 Vertical airflow direction louver: Up
 Horizontal airflow direction louver: Center



INDOOR UNITS

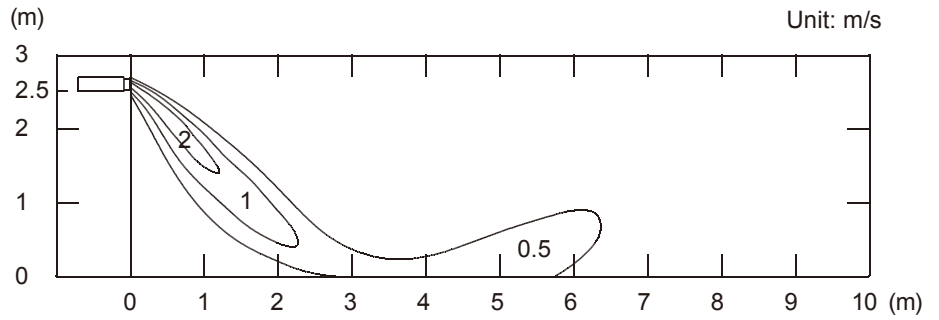
INDOOR UNITS

Note: This data is measured installing the Auto louver grille kit(option).

Reference Data
Conditions
Fan speed: HIGH
Operation mode: HEATING

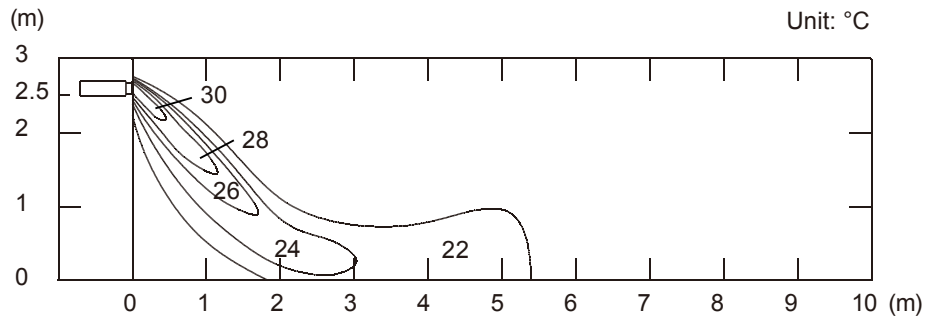
● Air velocity distribution

Side view
Vertical airflow direction louver:
Down
Horizontal airflow direction louver:
Center



● Air temperature distribution

Side view
Vertical airflow direction louver:
Down
Horizontal airflow direction louver:
Center



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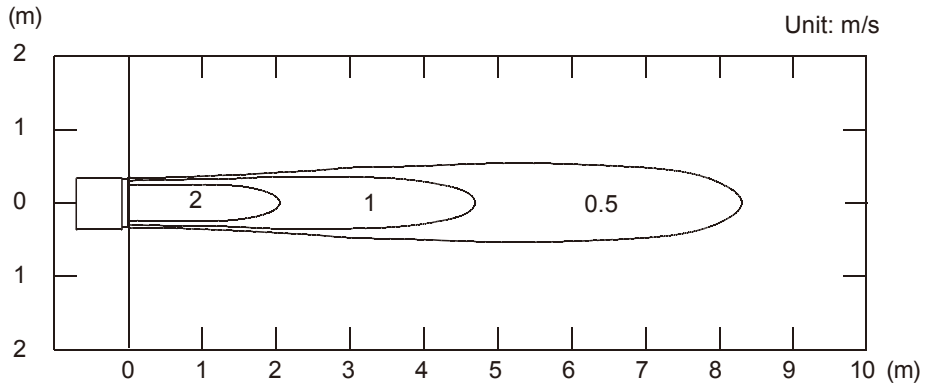
MODEL : AR*G09LLTA (UTD-GXSA-W)

Note: This data is measured installing the Auto louver grille kit(option).

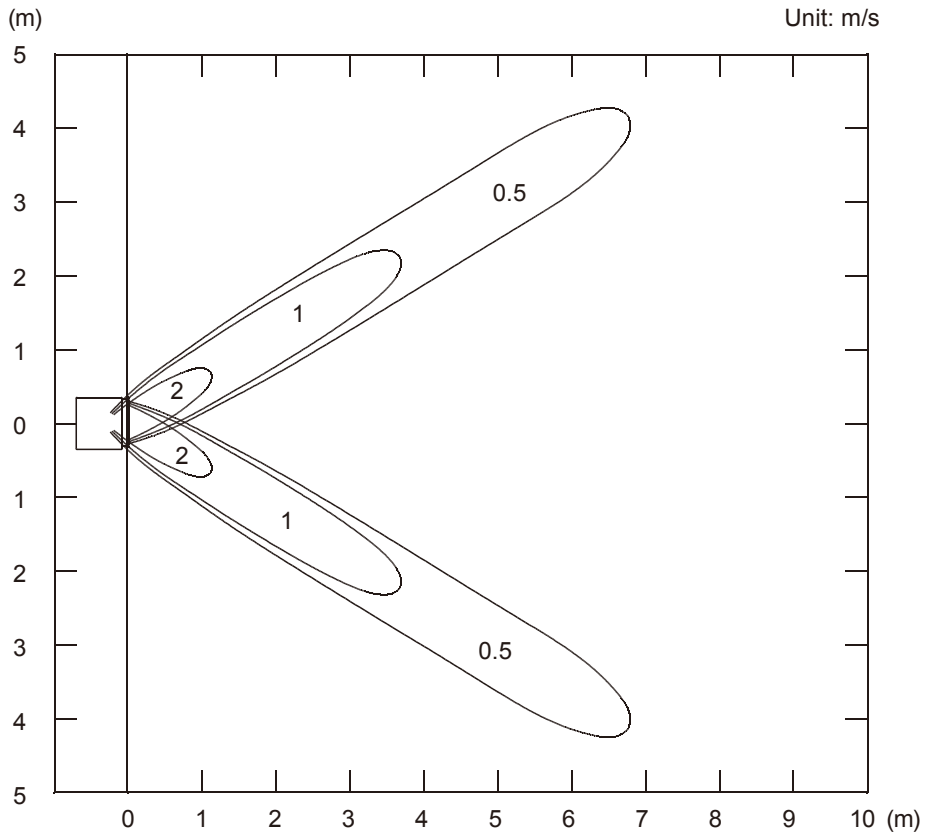
Conditions
 Fan speed: HIGH
 Operation mode: FAN

Air velocity distribution

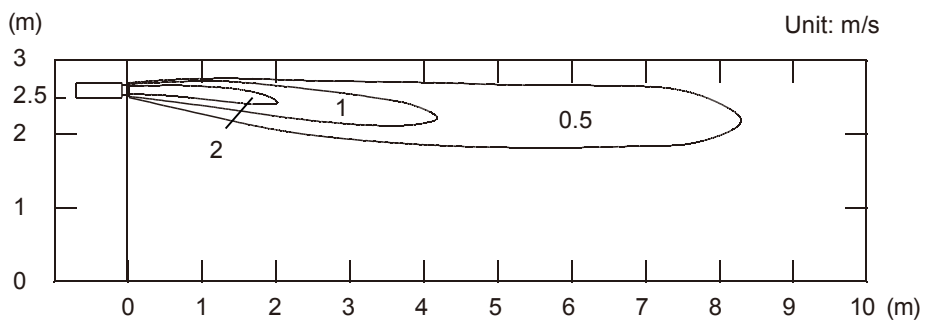
Top view
 Vertical airflow direction louver: Up
 Horizontal airflow direction louver: Center



Top view
 Vertical airflow direction louver: Up
 Horizontal airflow direction louver: Right & Left



Side view
 Vertical airflow direction louver: Up
 Horizontal airflow direction louver: Center



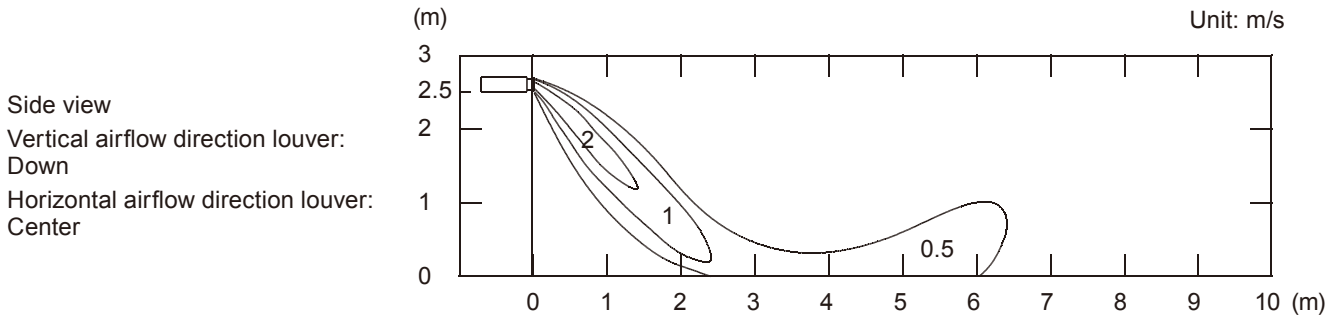
INDOOR UNITS

INDOOR UNITS

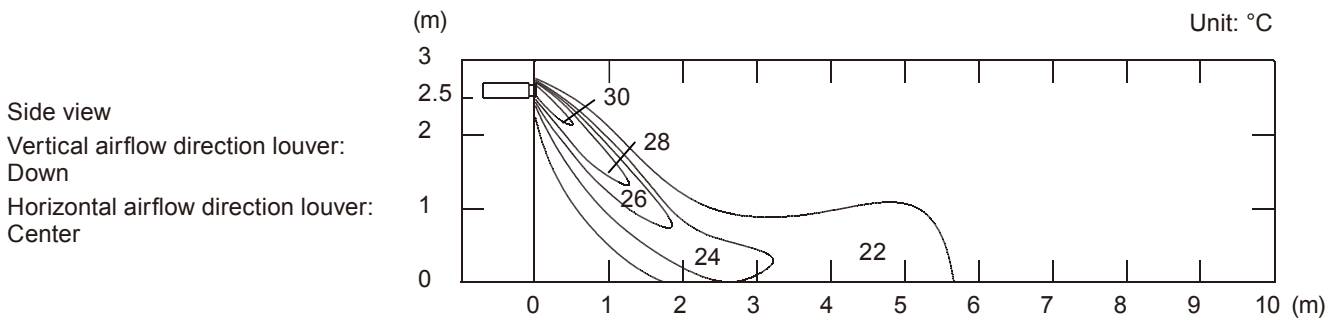
Note: This data is measured installing the Auto louver grille kit(option).

Reference Data
Conditions
Fan speed: HIGH
Operation mode: HEATING

● Air velocity distribution



● Air temperature distribution



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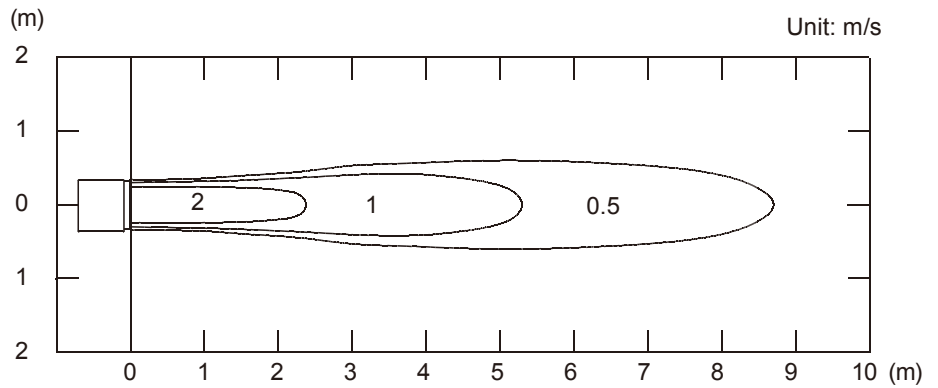
MODELS : AR*G12LLTA, AR*G12LLTB (UTD-GXSA-W)

Conditions
 Fan speed: HIGH
 Operation mode: FAN

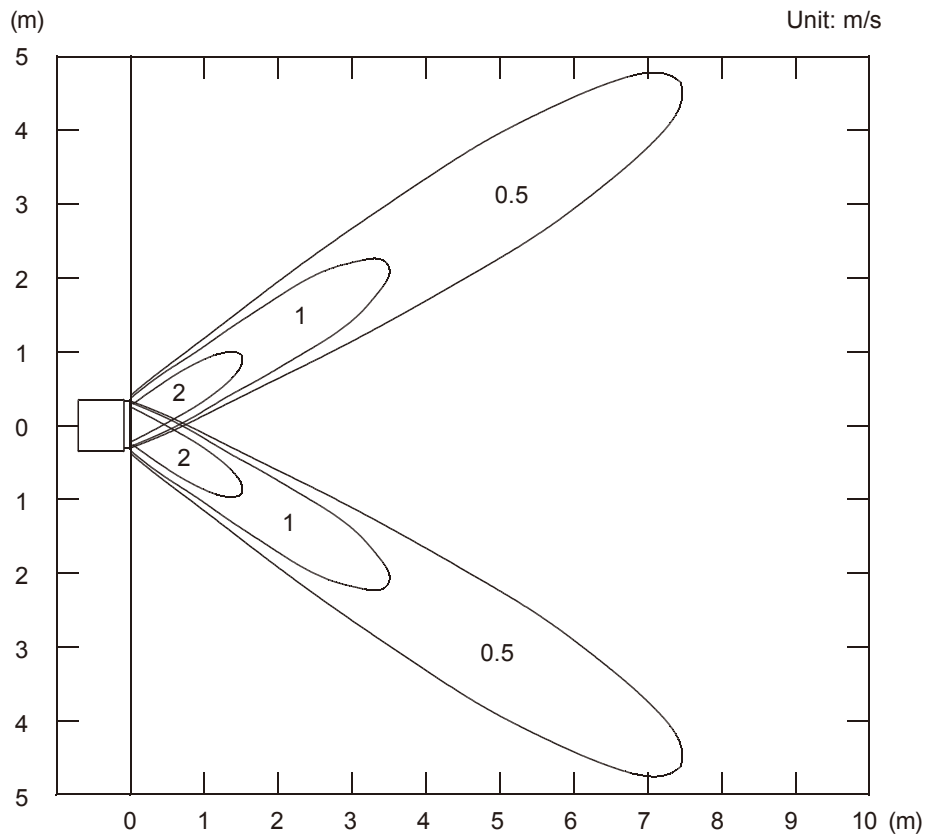
Note: This data is measured installing the Auto louver grille kit(option).

● Air velocity distribution

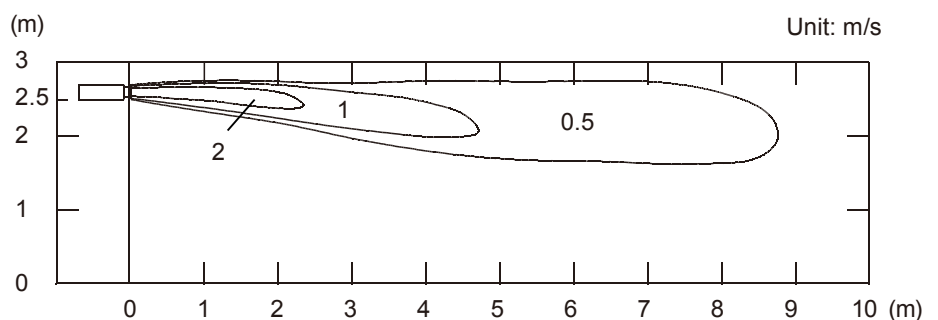
Top view
 Vertical airflow direction louver: Up
 Horizontal airflow direction louver: Center



Top view
 Vertical airflow direction louver: Up
 Horizontal airflow direction louver: Right & Left



Side view
 Vertical airflow direction louver: Up
 Horizontal airflow direction louver: Center



INDOOR UNITS

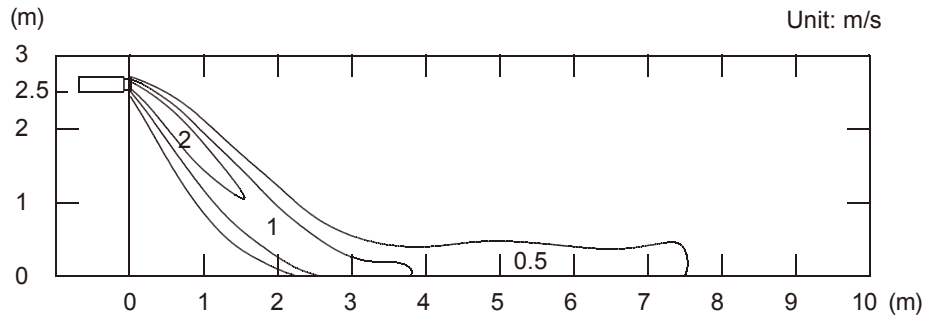
INDOOR UNITS

Note: This data is measured installing the Auto louver grille kit(option).

Reference Data
Conditions
Fan speed: HIGH
Operation mode: HEATING

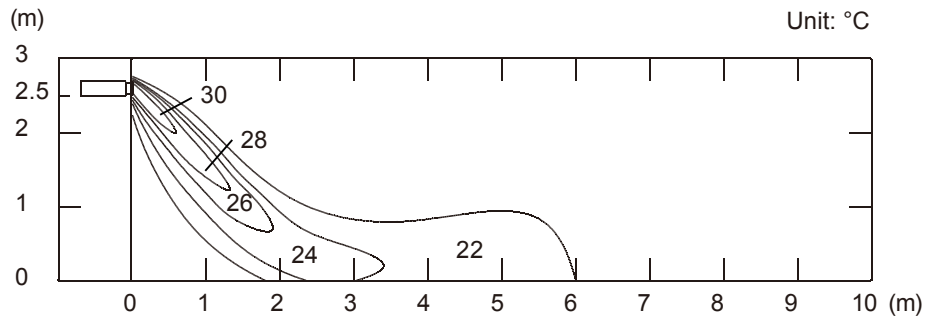
● Air velocity distribution

Side view
 Vertical airflow direction louver:
 Down
 Horizontal airflow direction louver:
 Center



● Air temperature distribution

Side view
 Vertical airflow direction louver:
 Down
 Horizontal airflow direction louver:
 Center



INDOOR UNITS

INDOOR UNITS

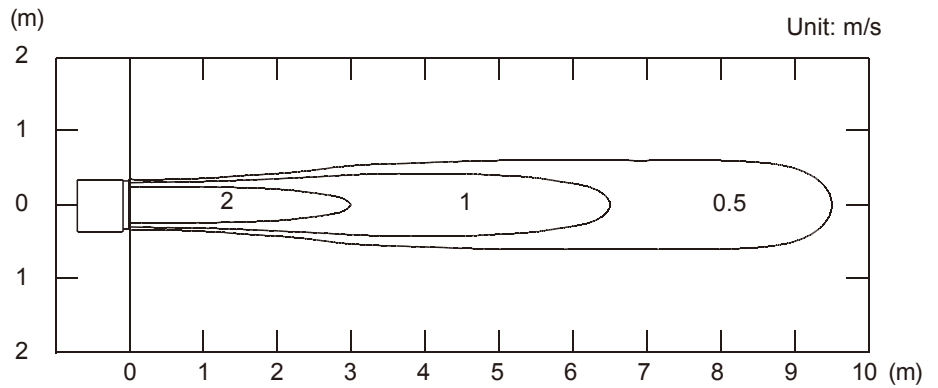
MODELS : AR*G14LLTA, AR*G14LLTB (UTD-GXSA-W)

Conditions
 Fan speed: HIGH
 Operation mode: FAN

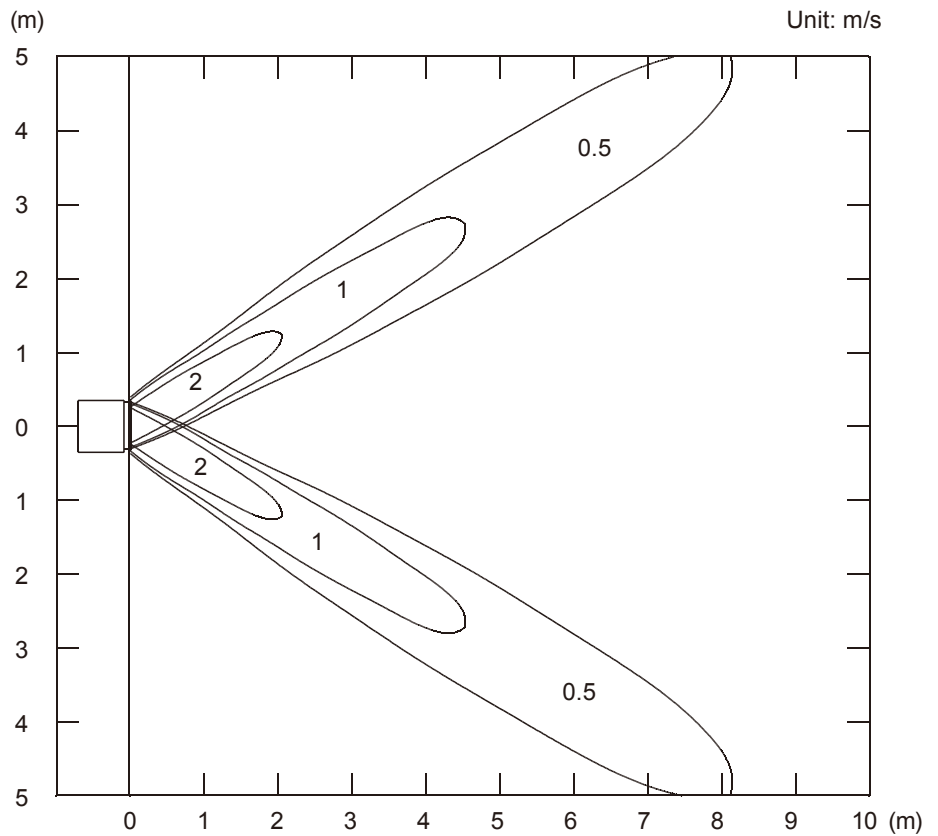
Note: This data is measured installing the Auto louver grille kit(option).

● Air velocity distribution

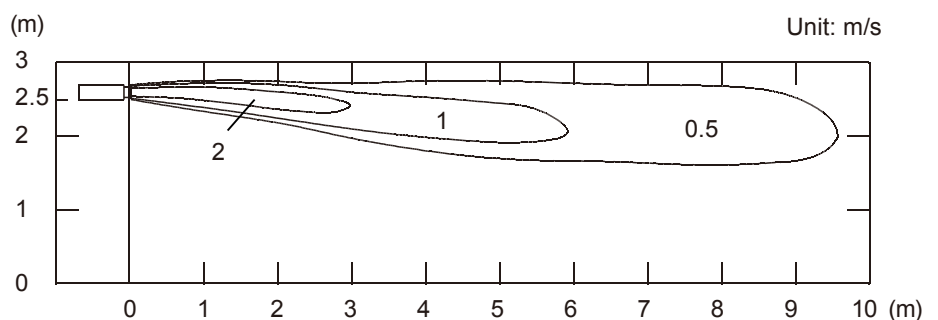
Top view
 Vertical airflow direction louver: Up
 Horizontal airflow direction louver: Center



Top view
 Vertical airflow direction louver: Up
 Horizontal airflow direction louver: Right & Left



Side view
 Vertical airflow direction louver: Up
 Horizontal airflow direction louver: Center



INDOOR UNITS

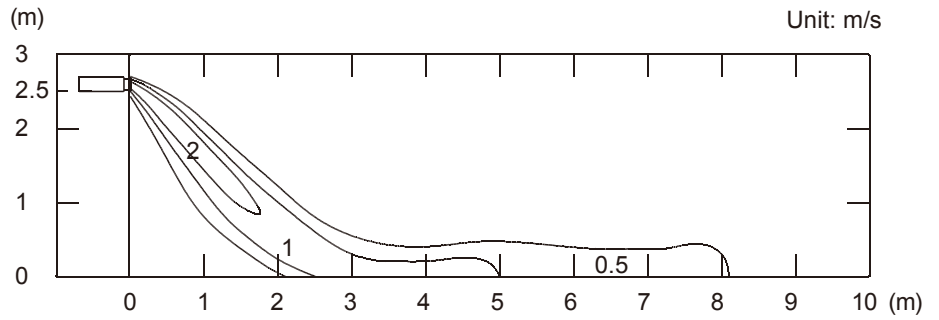
INDOOR UNITS

Note: This data is measured installing the Auto louver grille kit(option).

Reference Data
Conditions
Fan speed: HIGH
Operation mode: HEATING

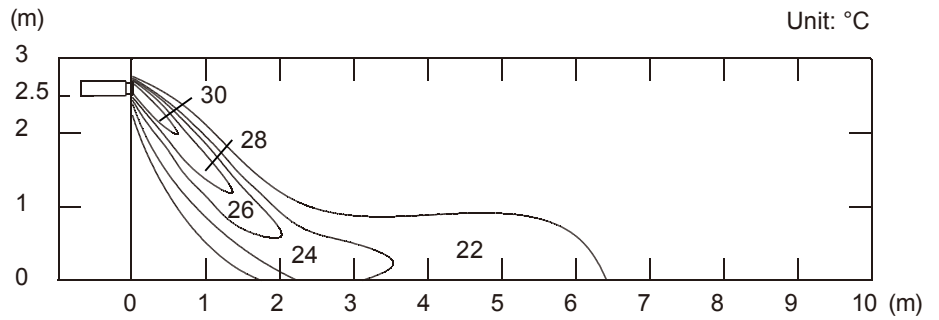
● Air velocity distribution

Side view
Vertical airflow direction louver:
Down
Horizontal airflow direction louver:
Center



● Air temperature distribution

Side view
Vertical airflow direction louver:
Down
Horizontal airflow direction louver:
Center



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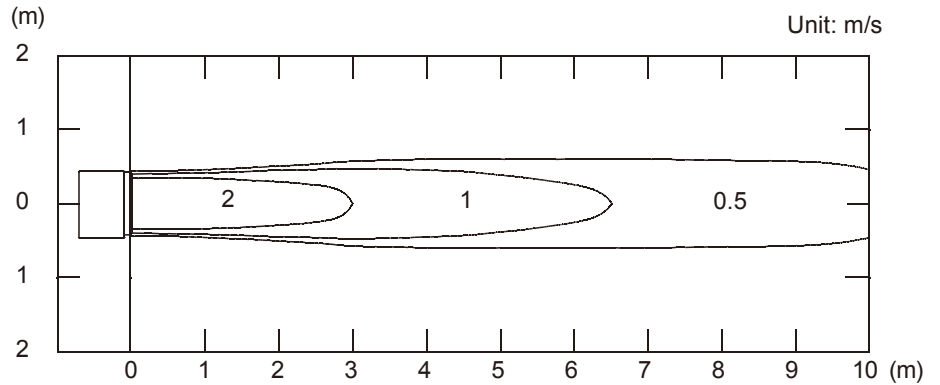
**MODELS : AR*G18LLTA, AR*G18LLTB
(UTD-GXSB-W)**

Conditions
Fan speed: HIGH
Operation mode: FAN

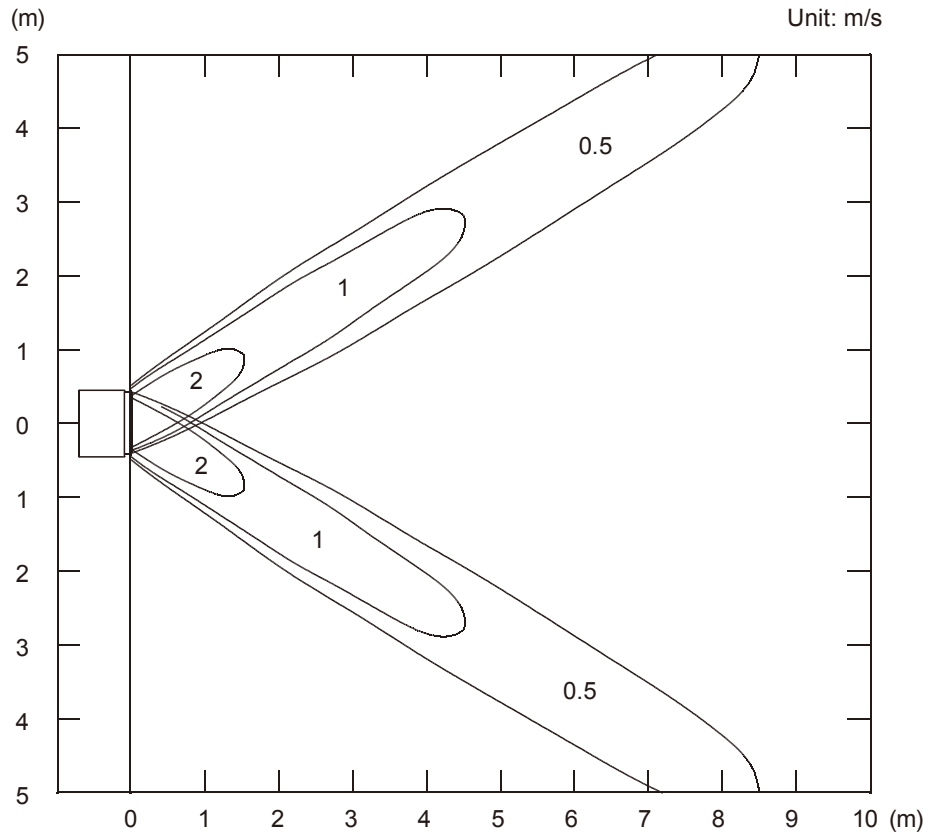
Note: This data is measured installing the Auto louver kit(option).

● Air velocity distribution

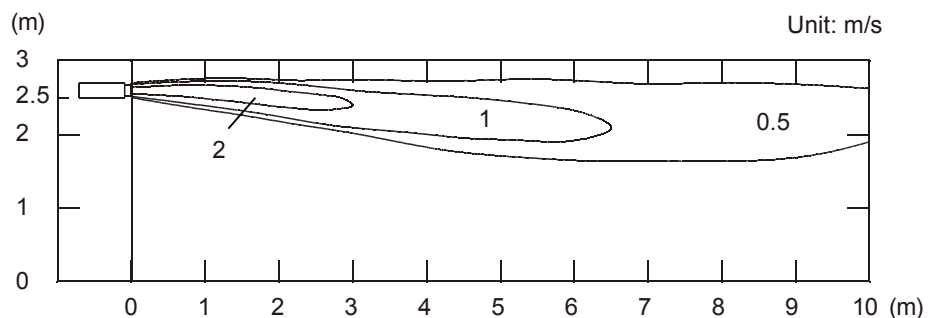
Top view
Vertical airflow direction louver: Up
Horizontal airflow direction louver: Center



Top view
Vertical airflow direction louver: Up
Horizontal airflow direction louver: Right & Left



Side view
Vertical airflow direction louver: Up
Horizontal airflow direction louver: Center



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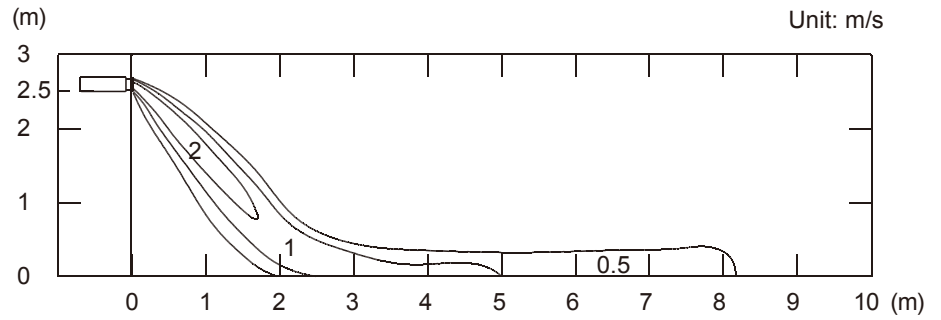
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Note: This data is measured installing the Auto louver grille kit(option).

Reference Data
Conditions
Fan speed: HIGH
Operation mode: HEATING

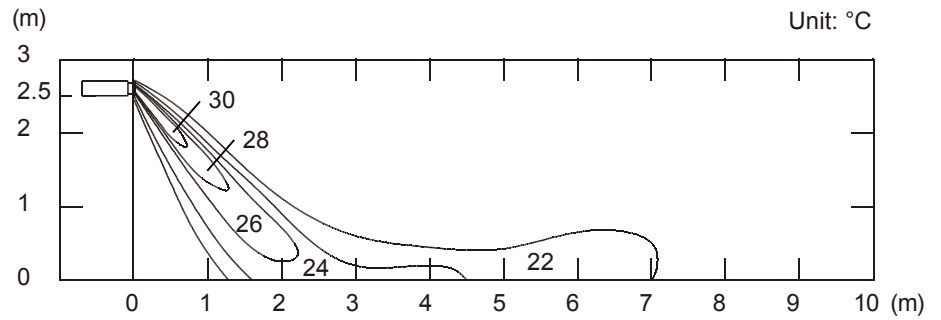
● Air velocity distribution

Side view
Vertical airflow direction louver:
Down
Horizontal airflow direction louver:
Center



● Air temperature distribution

Side view
Vertical airflow direction louver:
Down
Horizontal airflow direction louver:
Center



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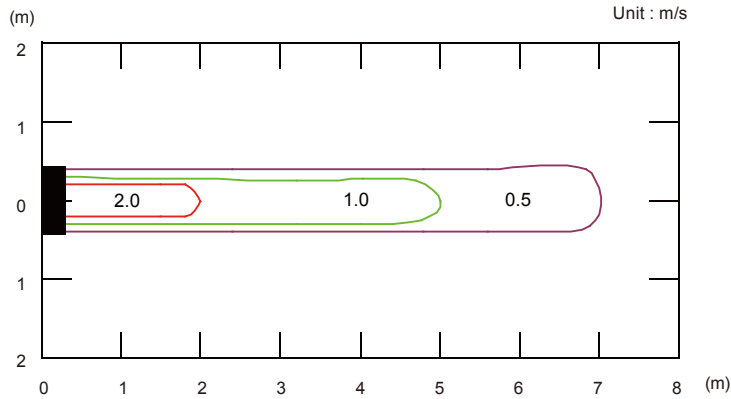
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6-3. WALL MOUNTED TYPE

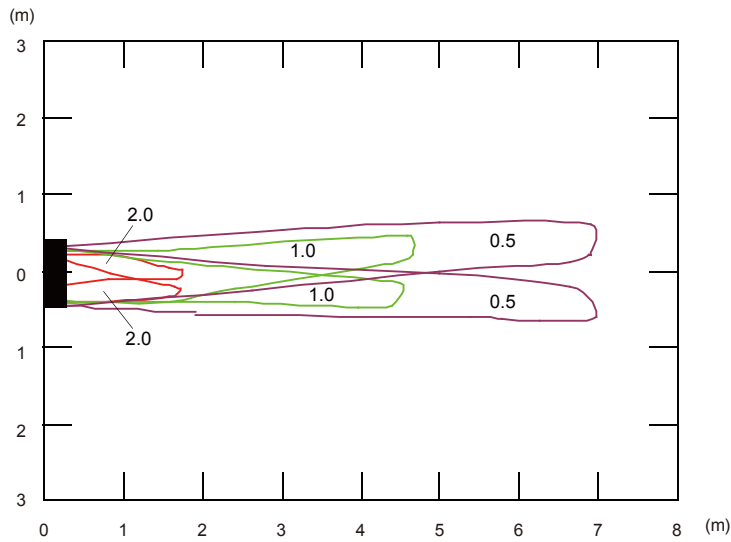
■ MODEL : AS*G07LJCA

Conditions
 Fan speed: HIGH
 Operation mode: FAN

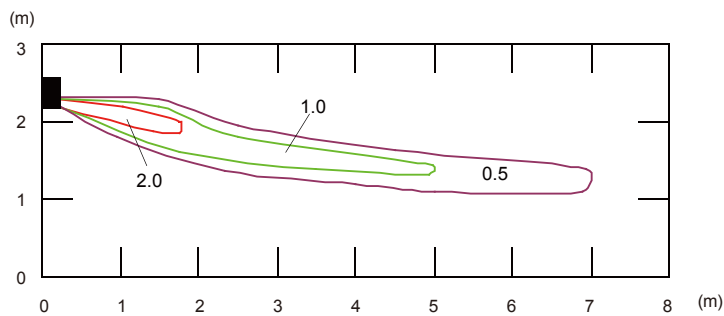
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



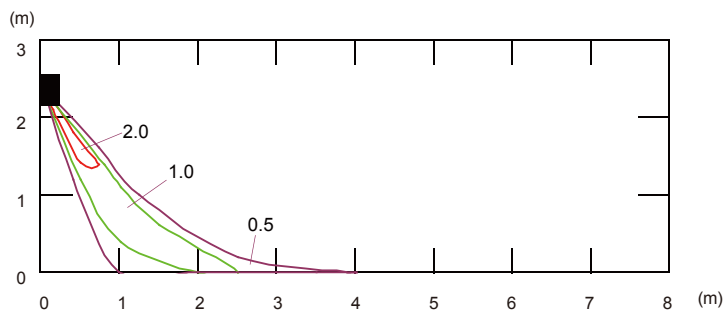
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Right & Left



Side view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



Side view
 Vertical airflow direction
 louver: Down
 Horizontal airflow direction
 louver: Center



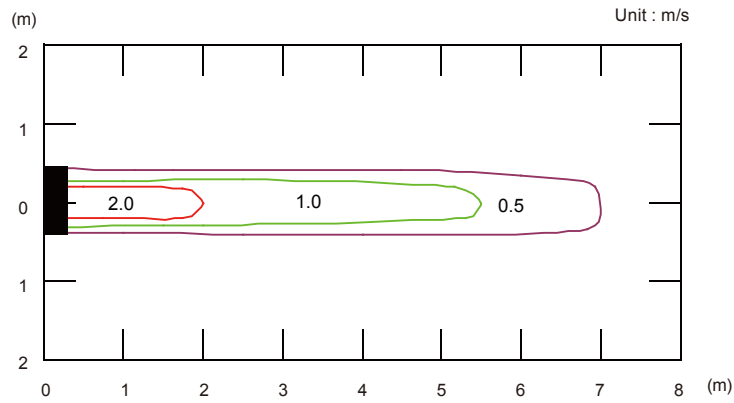
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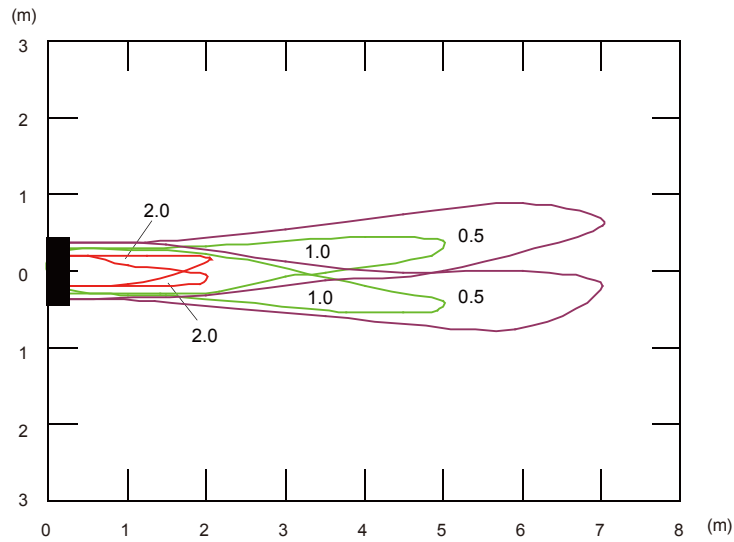
MODEL : AS*G09LJCA

Conditions
 Fan speed: HIGH
 Operation mode: FAN

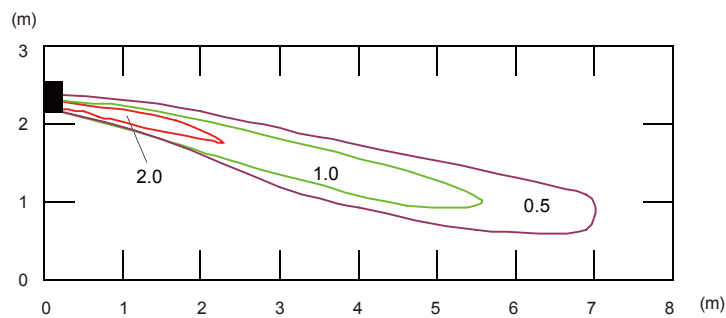
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



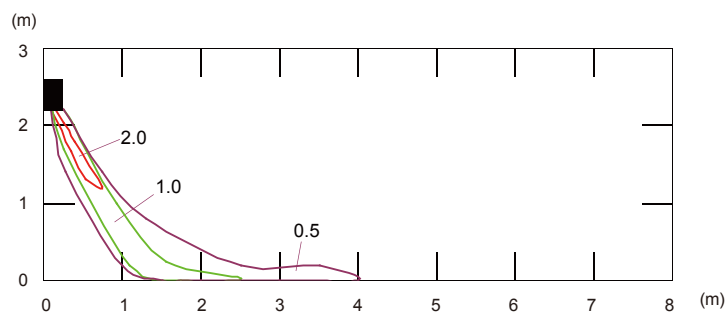
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Right & Left



Side view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



Side view
 Vertical flap : Down
 Horizontal flap : Center



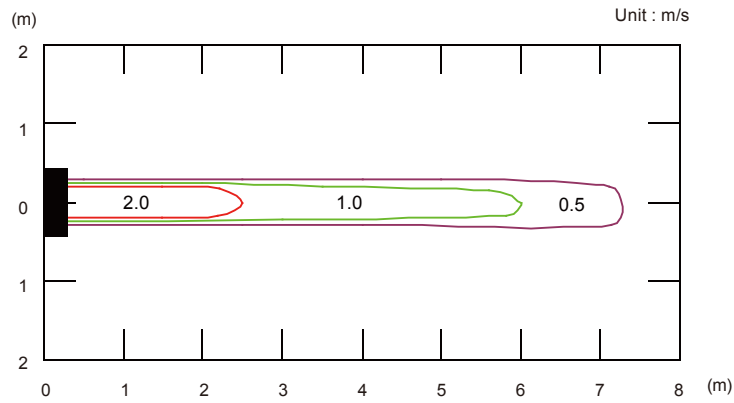
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INDOOR
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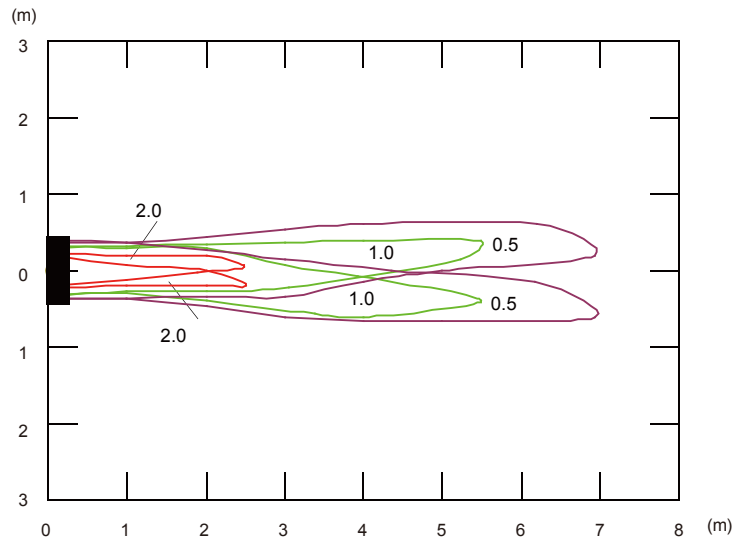
MODEL : AS*G12LJCA

Conditions
 Fan speed: HIGH
 Operation mode: FAN

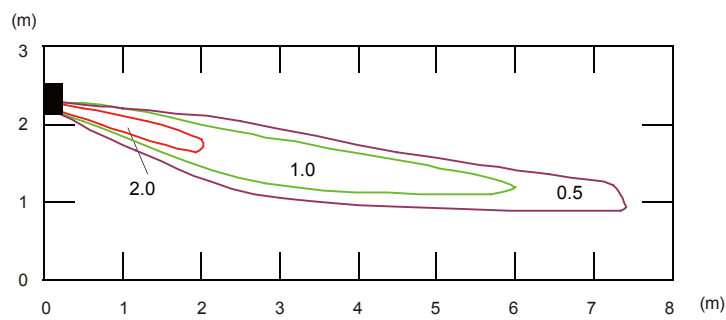
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



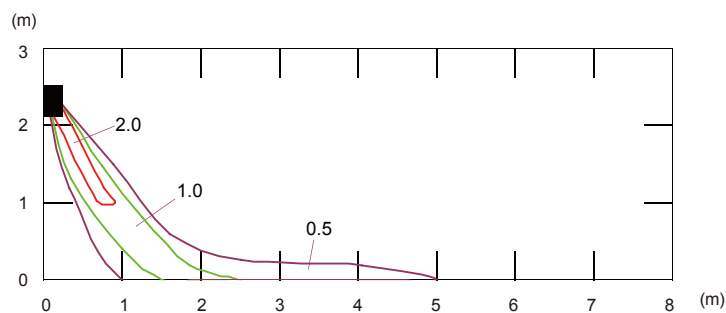
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Right & Left



Side view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



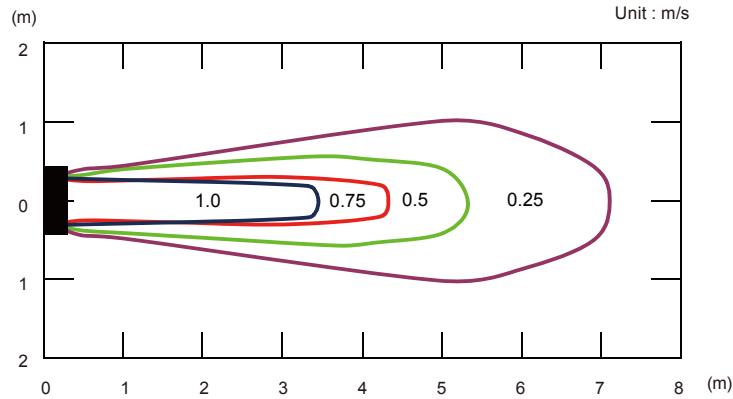
Side view
 Vertical airflow direction
 louver: Down
 Horizontal airflow direction
 louver: Center



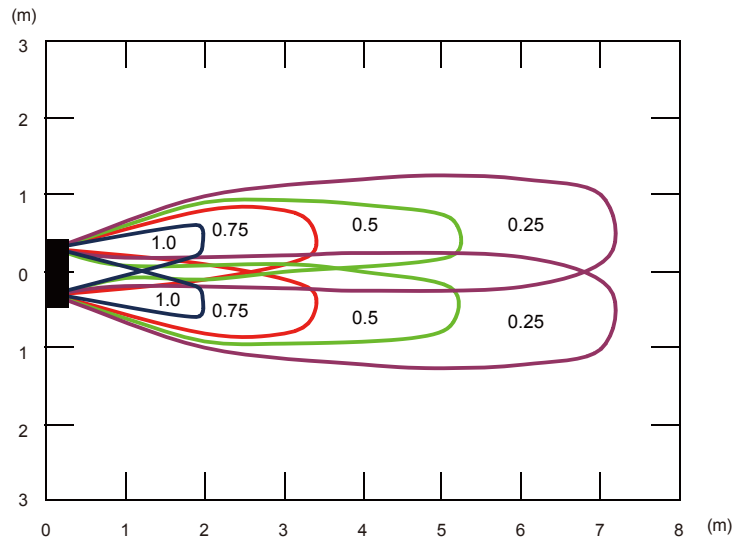
MODELS : AS*G07LUCA, AS*G09LUCA

Conditions
 Fan speed: HIGH
 Operation mode: FAN

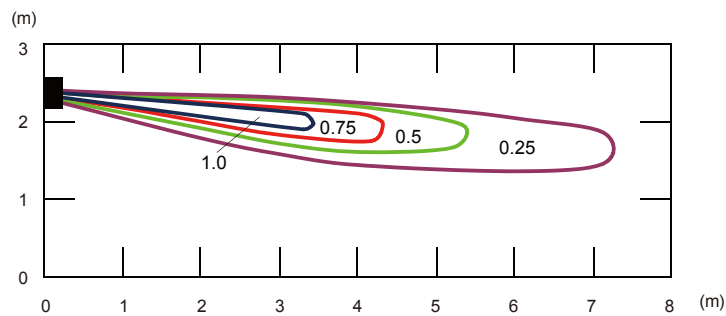
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



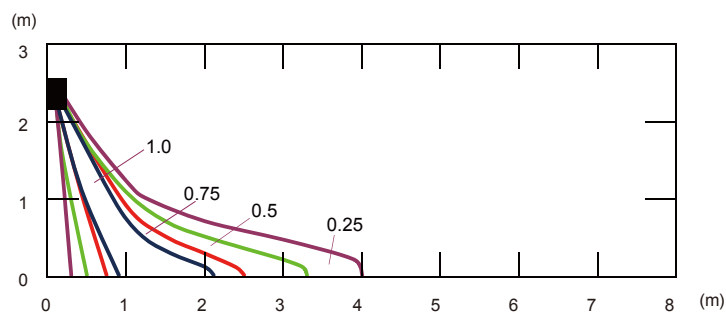
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Right & Left



Side view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



Side view
 Vertical airflow direction
 louver: Down
 Horizontal airflow direction
 louver: Center



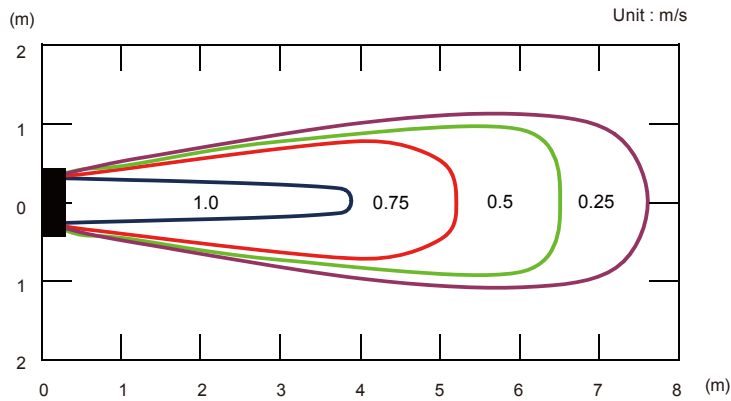
INDOOR
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INDOOR
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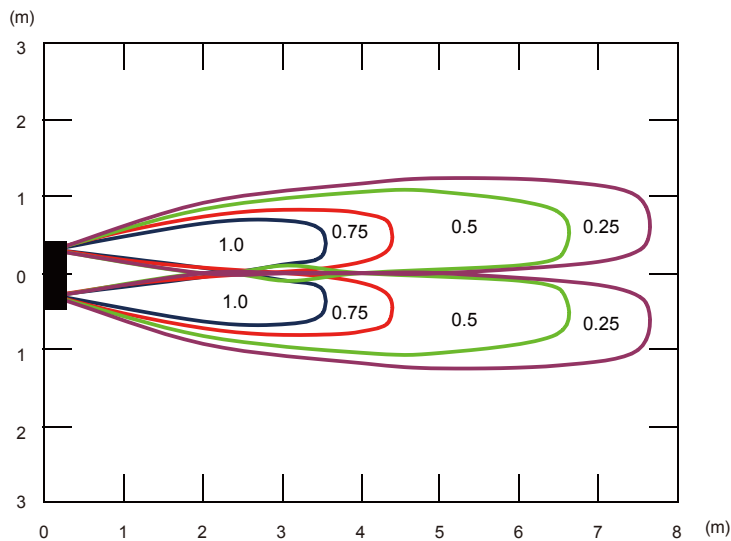
MODELS : AS*G12LUCA, AS*G14LUCA

Conditions
 Fan speed: HIGH
 Operation mode: FAN

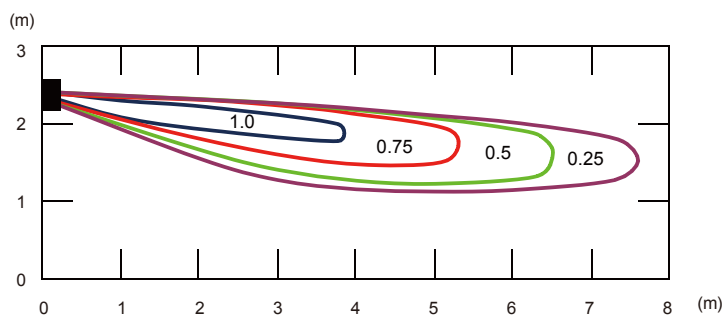
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



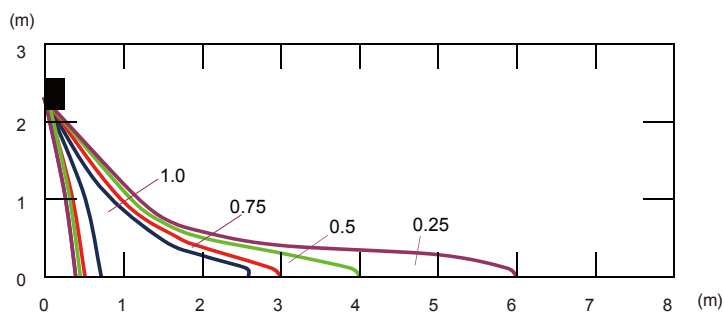
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Right & Left



Side view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



Side view
 Vertical airflow direction
 louver: Down
 Horizontal airflow direction
 louver: Center



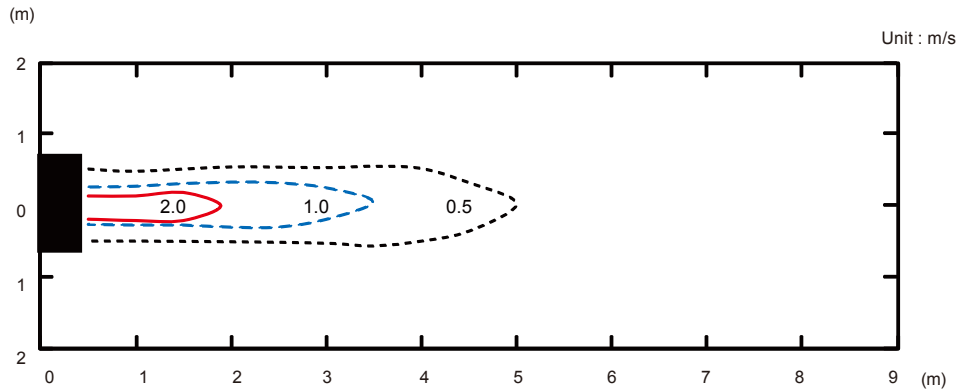
INDOOR UNITS

INDOOR UNITS

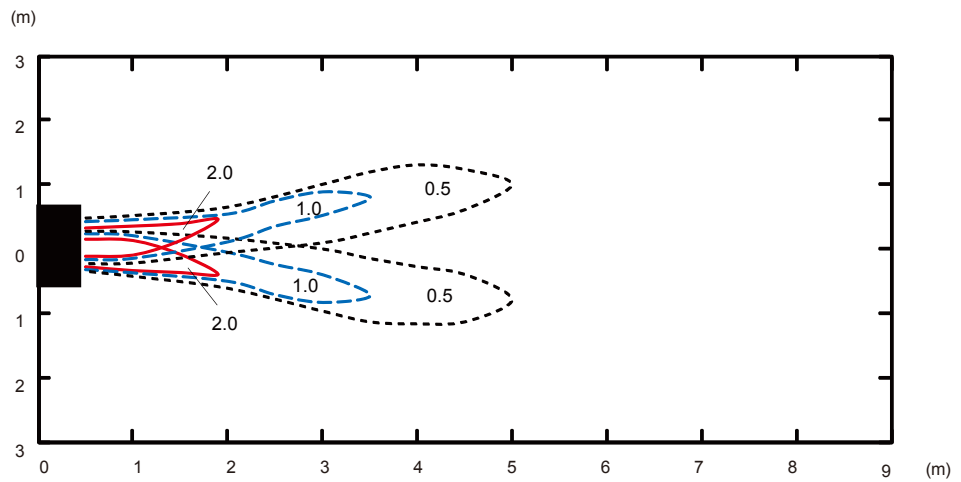
MODEL : AS*G07LMCA

Conditions
 Fan speed: HIGH
 Operation mode: FAN

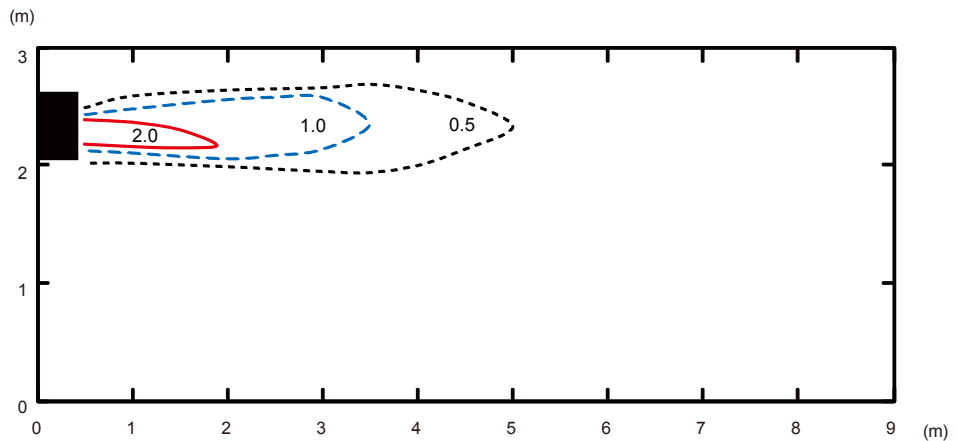
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



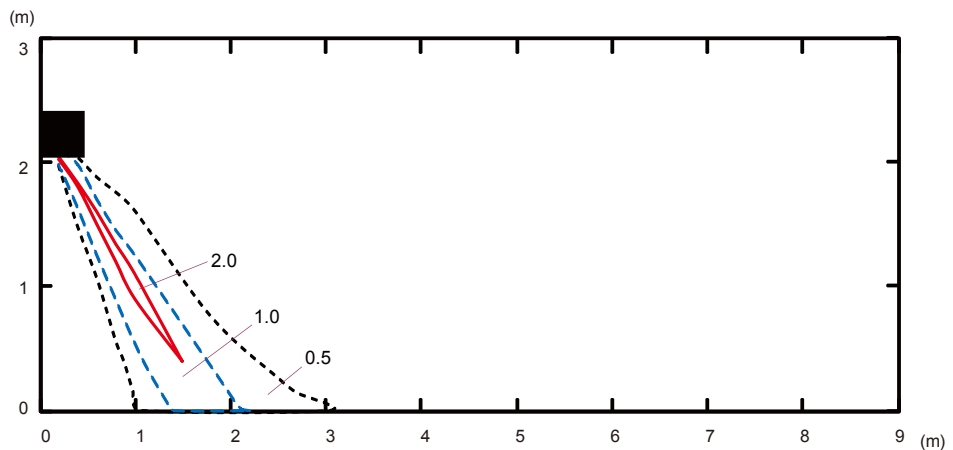
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Right & Left



Side view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



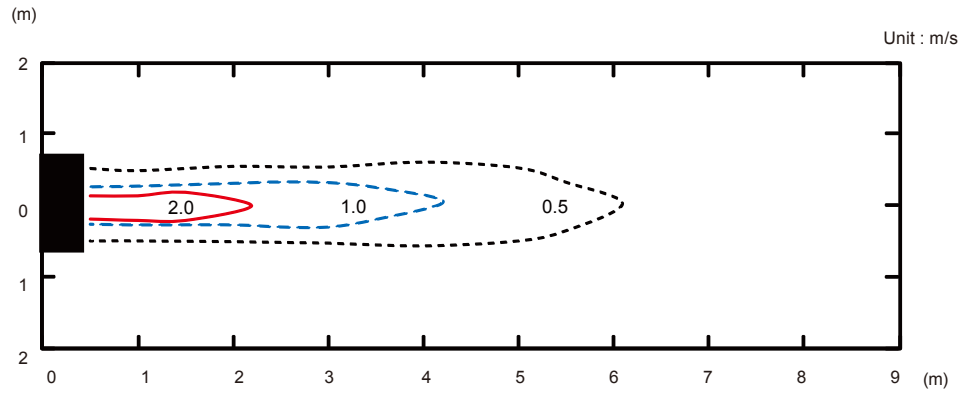
Side view
 Vertical airflow direction
 louver: Down
 Horizontal airflow direction
 louver: Center



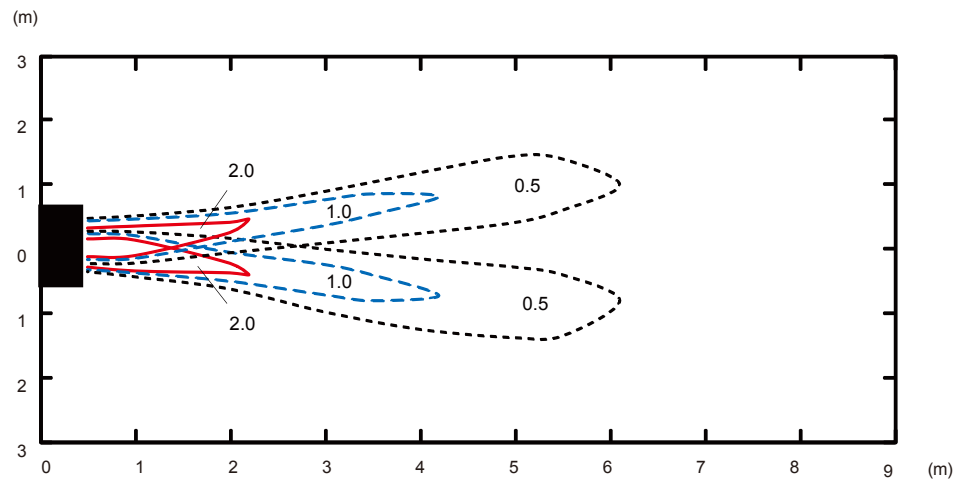
MODEL : AS*G09LMCA

Conditions
 Fan speed: HIGH
 Operation mode: FAN

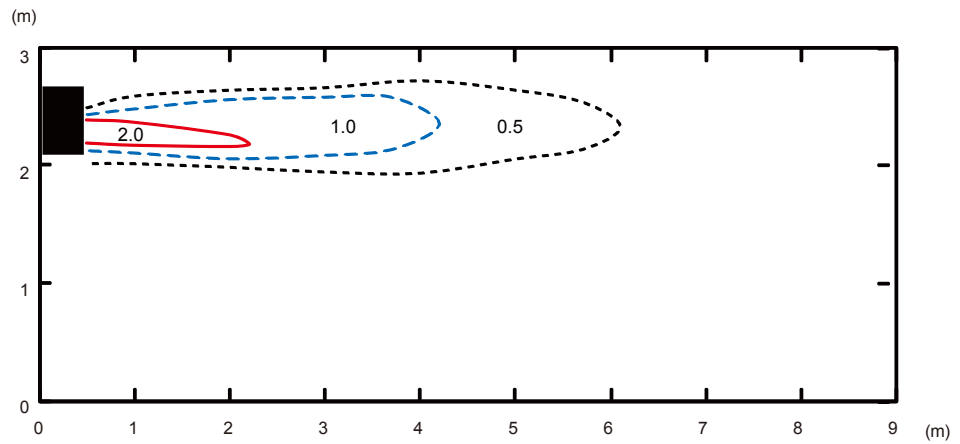
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



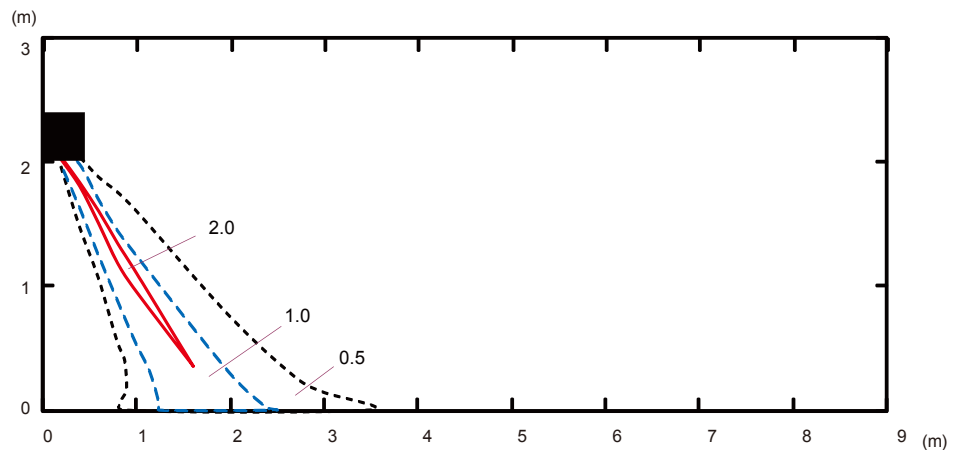
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Right & Left



Side view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



Side view
 Vertical airflow direction
 louver: Down
 Horizontal airflow direction
 louver: Center



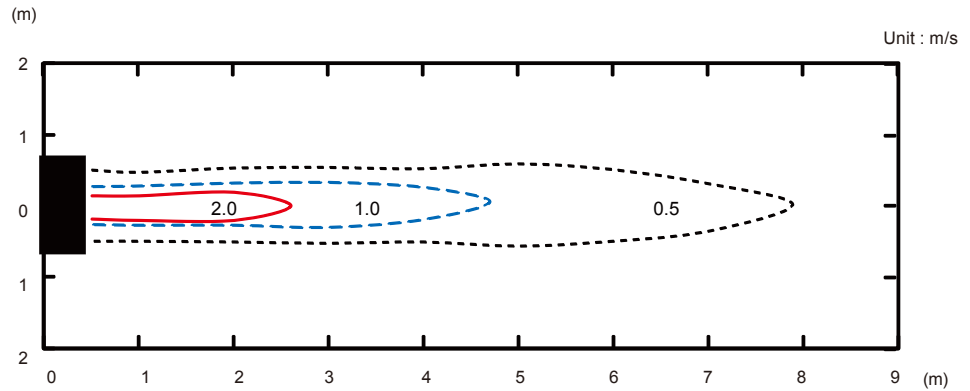
INDOOR UNITS

INDOOR UNITS

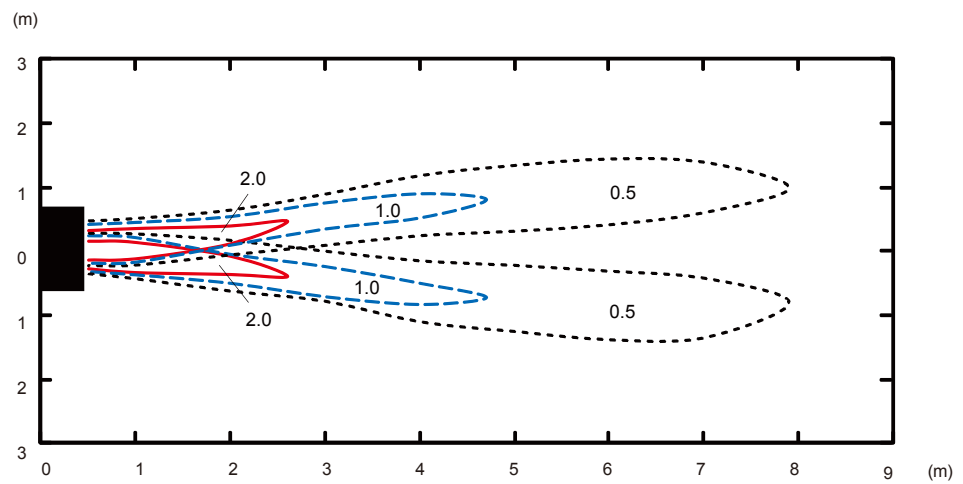
MODEL : AS*G12LMCA

Conditions
 Fan speed: HIGH
 Operation mode: FAN

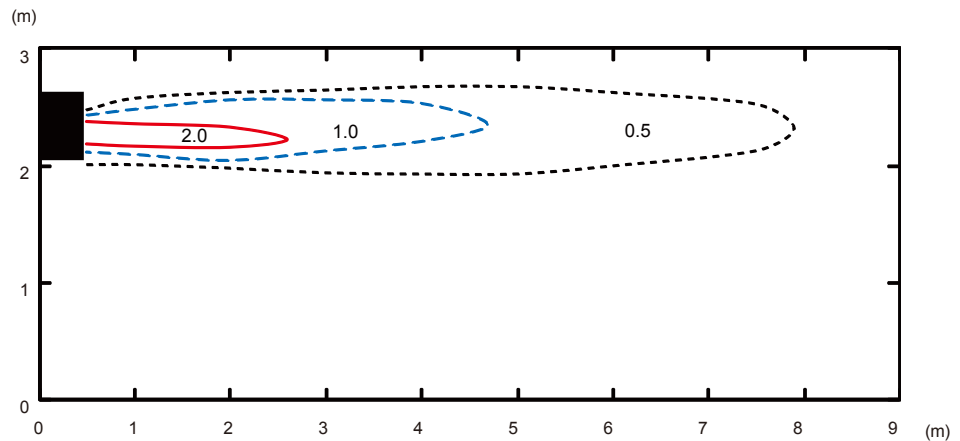
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



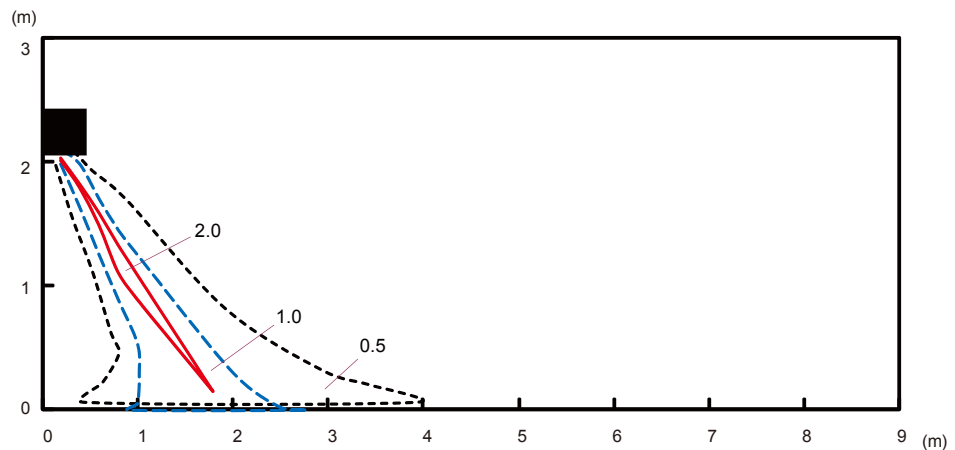
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Right & Left



Side view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



Side view
 Vertical airflow direction
 louver: Down
 Horizontal airflow direction
 louver: Center



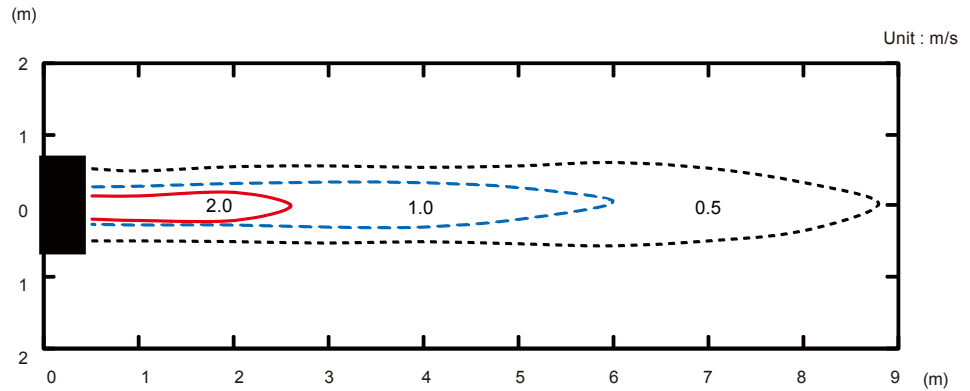
INDOOR UNITS

INDOOR UNITS

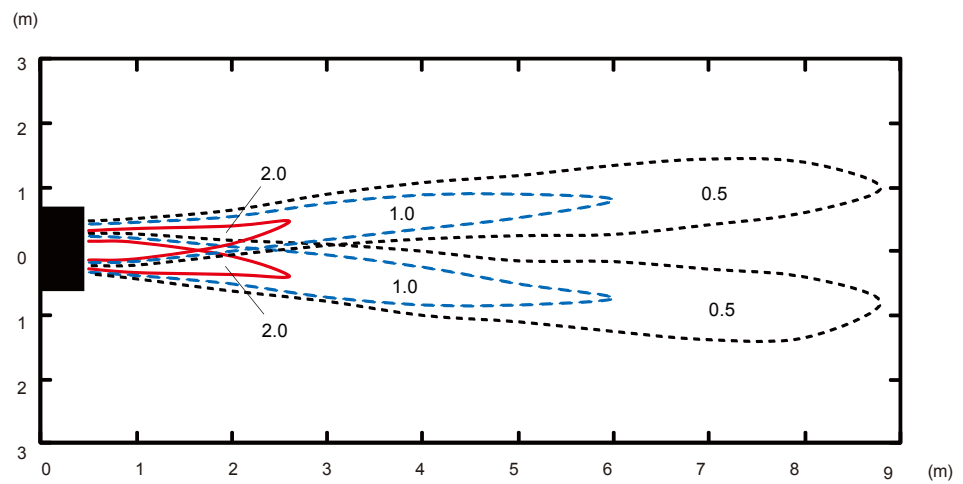
MODEL : AS*G14LMCA

Conditions
 Fan speed: HIGH
 Operation mode: FAN

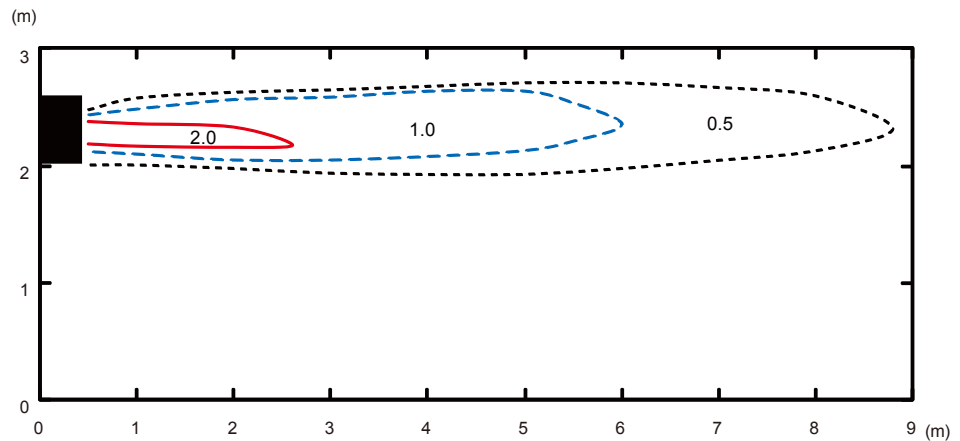
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



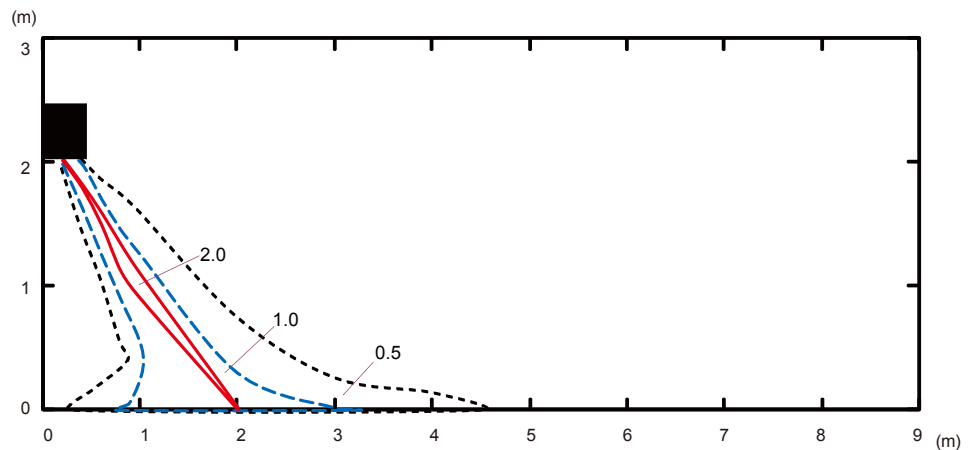
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Right & Left



Side view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



Side view
 Vertical airflow direction
 louver: Down
 Horizontal airflow direction
 louver: Center



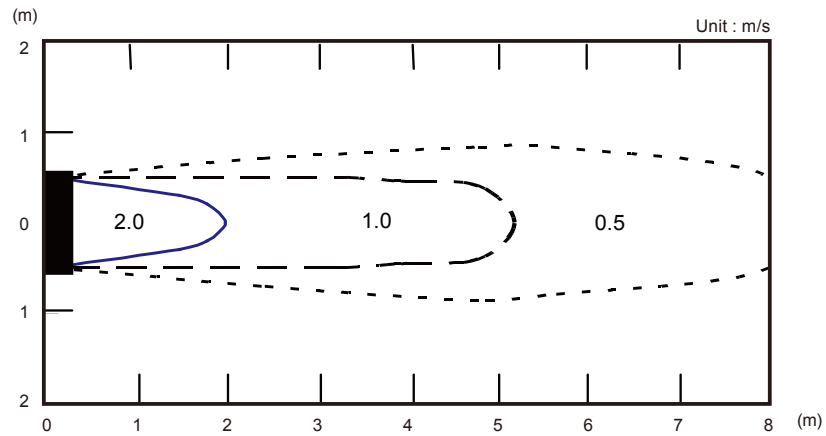
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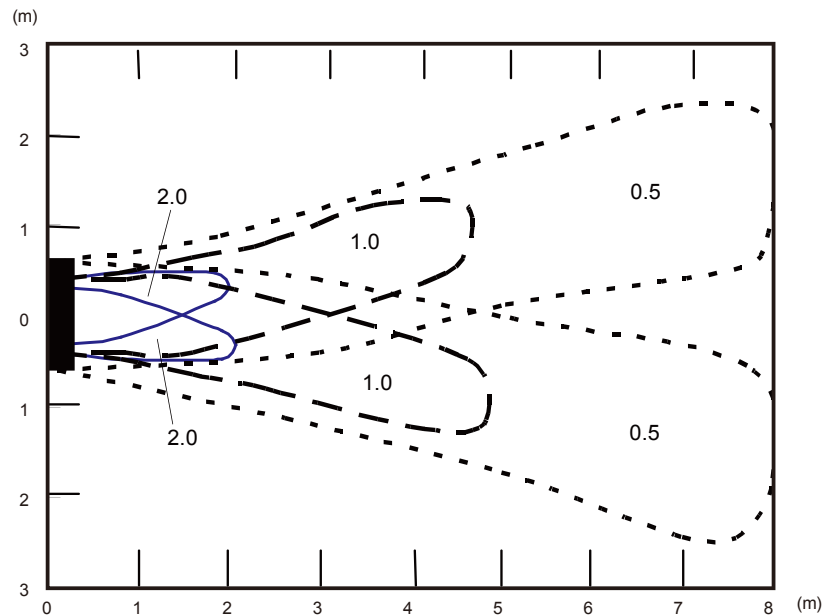
MODEL : AS*G18LFCA

Conditions
 Fan speed: HIGH
 Operation mode: FAN

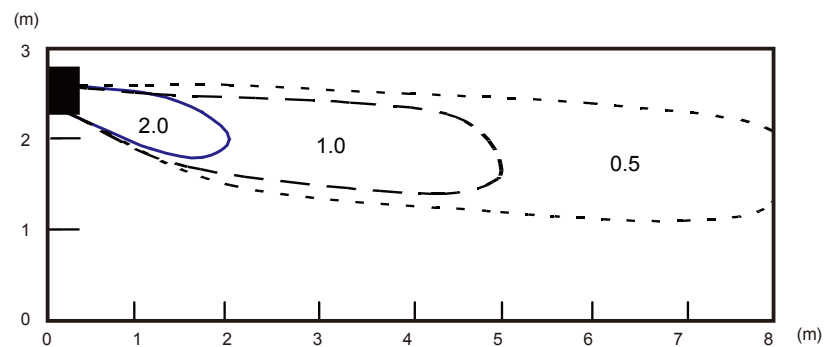
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



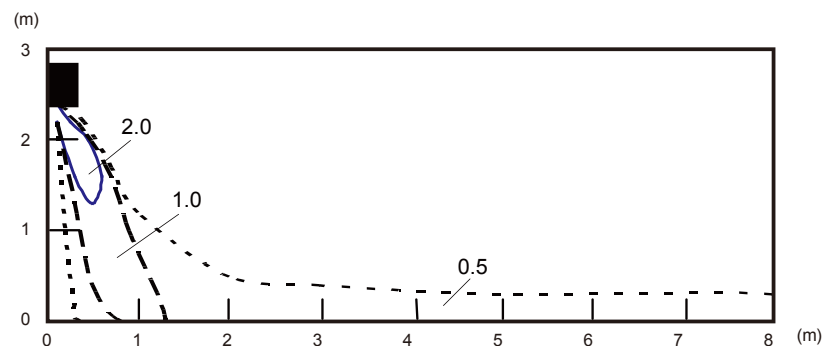
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Right & Left



Side view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



Side view
 Vertical airflow direction
 louver: Down
 Horizontal airflow direction
 louver: Center



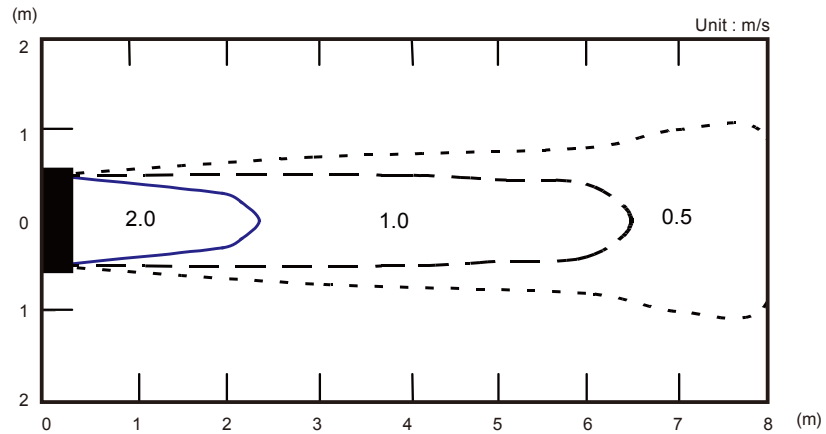
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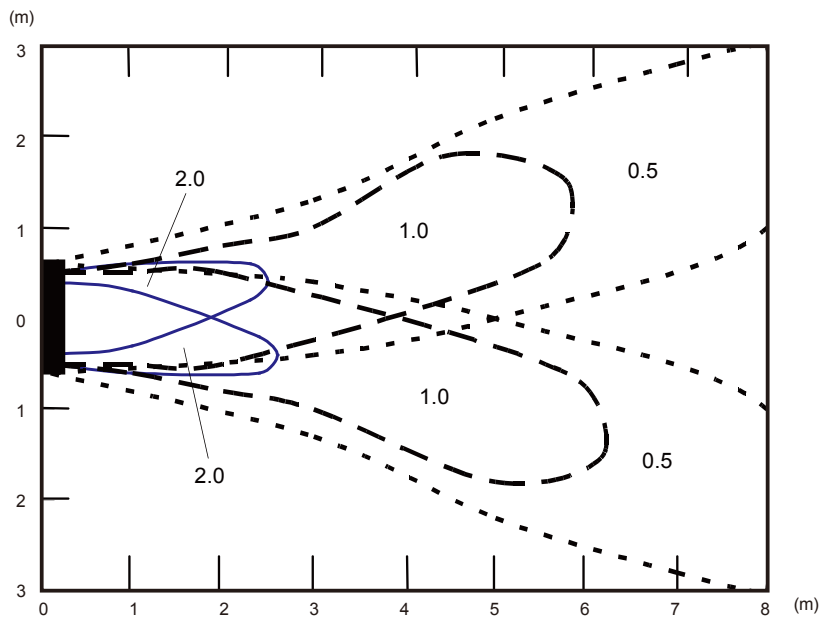
MODELS : AS*G24LFCA, AS*G24LFCC

Conditions
 Fan speed: HIGH
 Operation mode: FAN

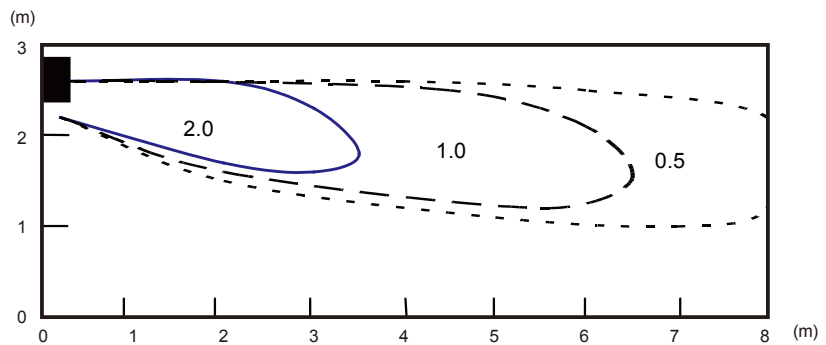
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



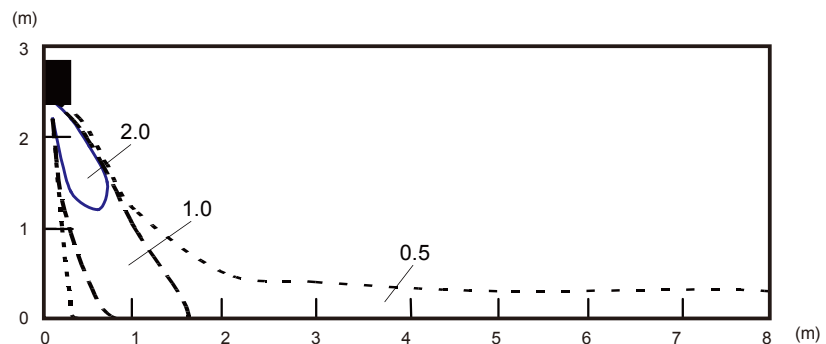
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Right & Left



Side view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



Side view
 Vertical airflow direction
 louver: Down
 Horizontal airflow direction
 louver: Center



INDOOR UNITS

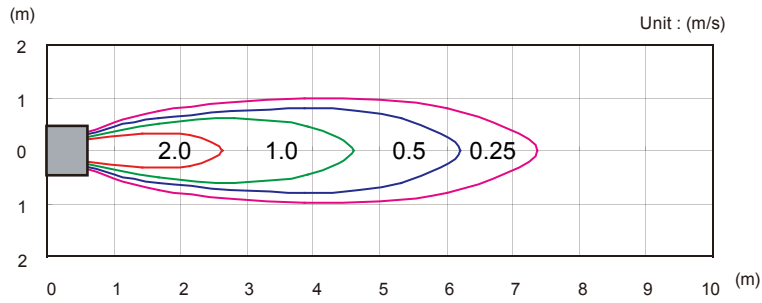
INDOOR UNITS

6-4. FLOOR / CEILING TYPE

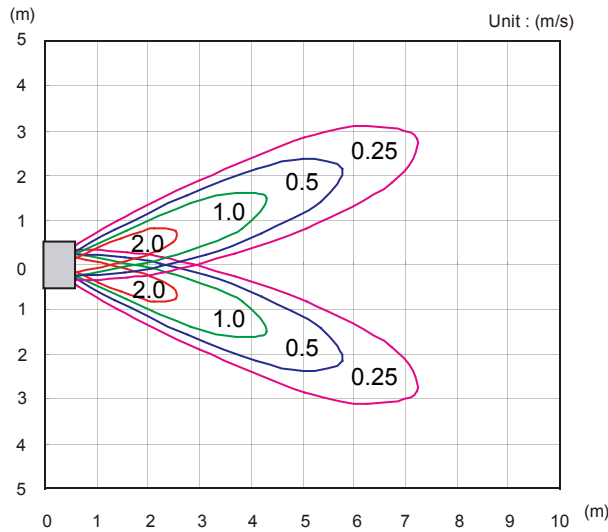
■ MODEL : AB*G14LVTA (UNDER CEILING)

Conditions
 Fan speed: HIGH
 Operation mode: FAN

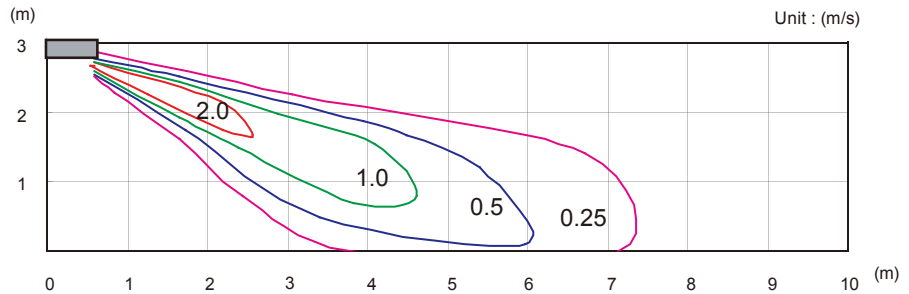
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



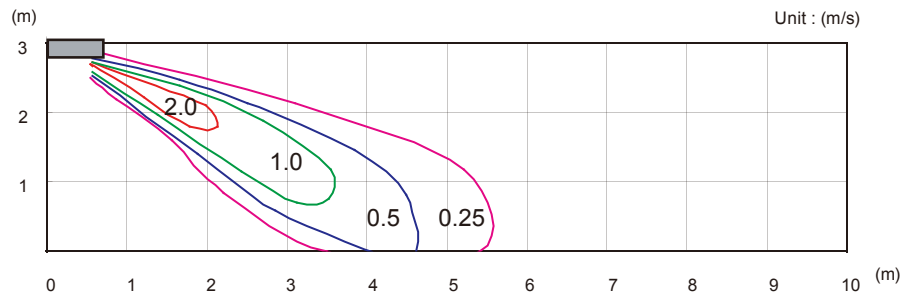
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Right & Left



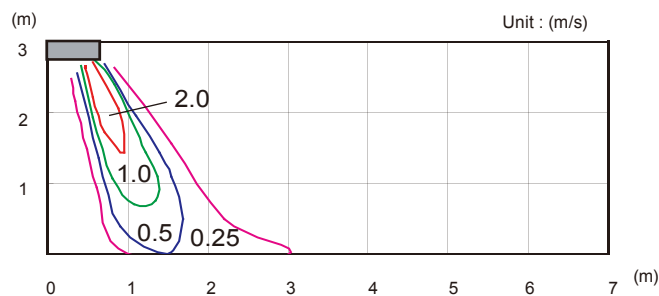
Side view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



Side view
 Vertical airflow direction
 louver: Center
 Horizontal airflow direction
 louver: Center



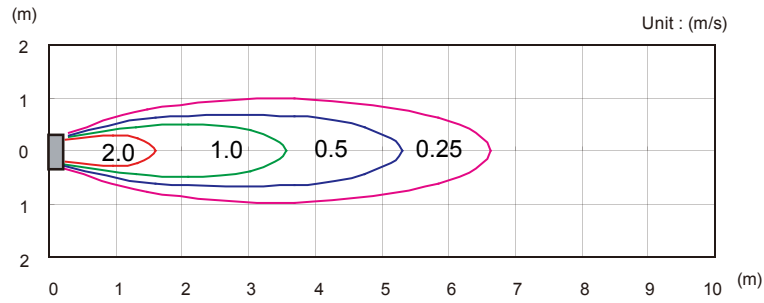
Side view
 Vertical airflow direction
 louver: Down
 Horizontal airflow direction
 louver: Center



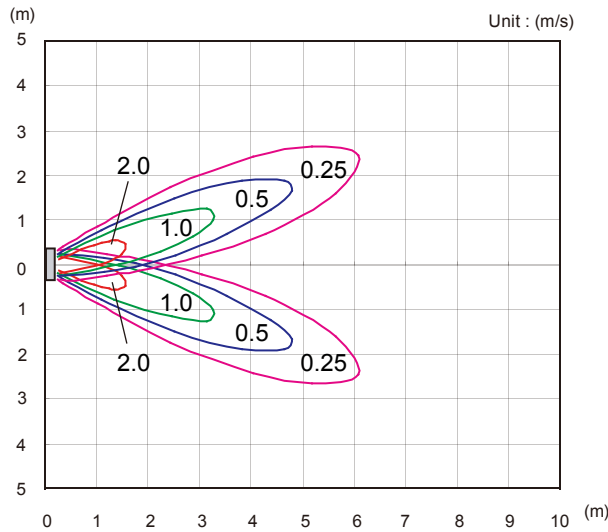
MODEL : AB*G14LVTA (FLOOR CONSOLE)

Conditions
 Fan speed: HIGH
 Operation mode: FAN

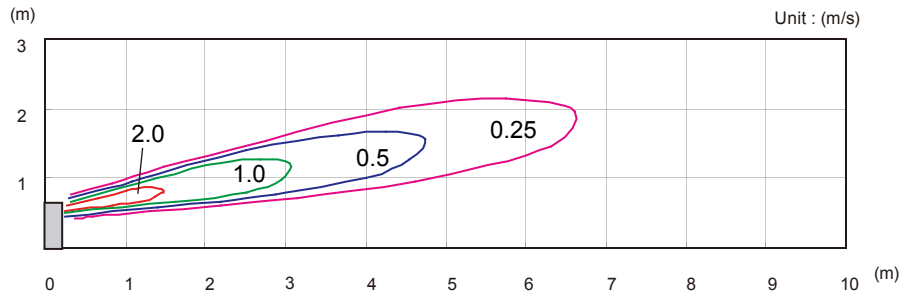
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



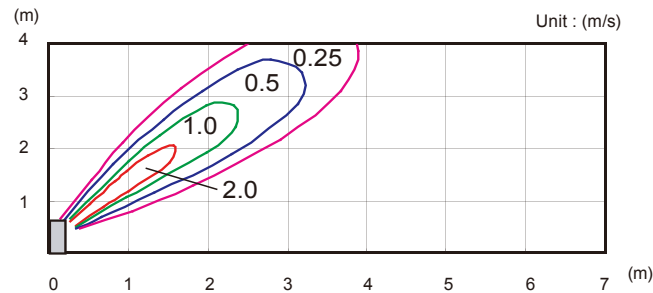
Top view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Right & Left



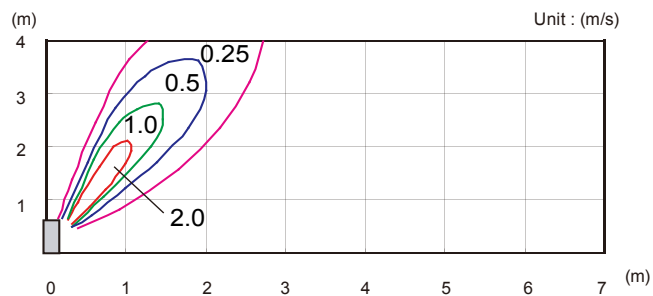
Side view
 Vertical airflow direction
 louver: Down
 Horizontal airflow direction
 louver: Center



Side view
 Vertical airflow direction
 louver: Center
 Horizontal airflow direction
 louver: Center



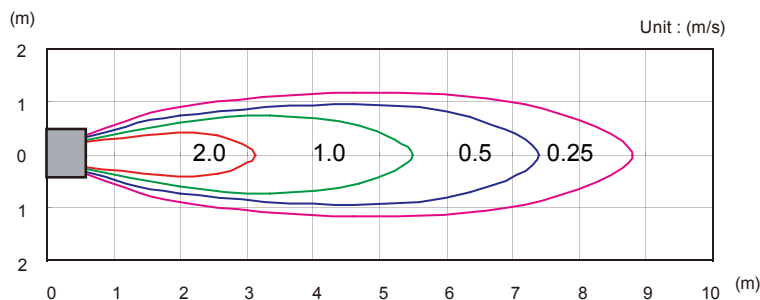
Side view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



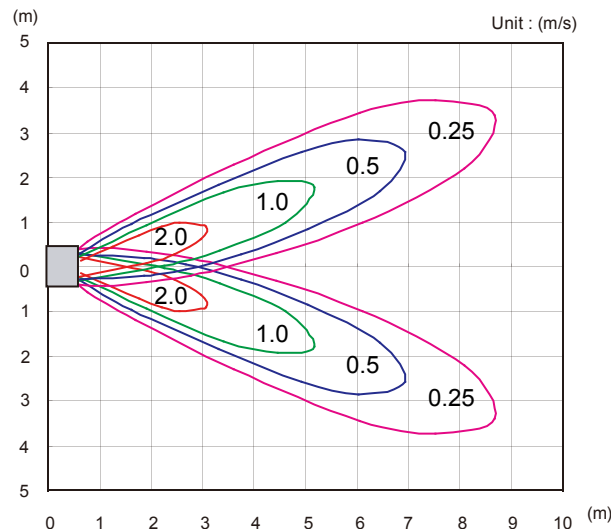
MODELS : AB*G18LVTA, AB*G18LVTB (UNDER CEILING)

Conditions
Fan speed: HIGH
Operation mode: FAN

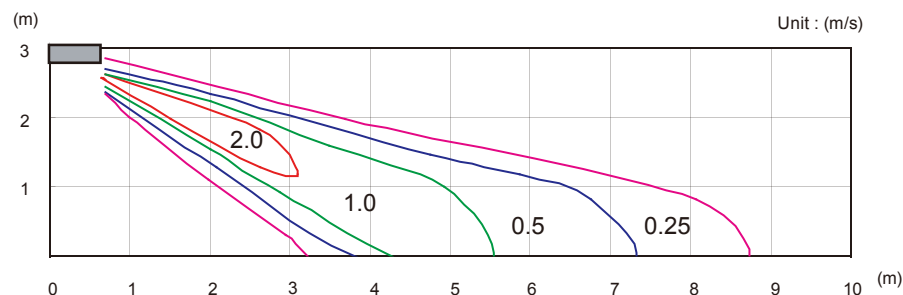
Top view
Vertical airflow direction
louver: Up
Horizontal airflow direction
louver: Center



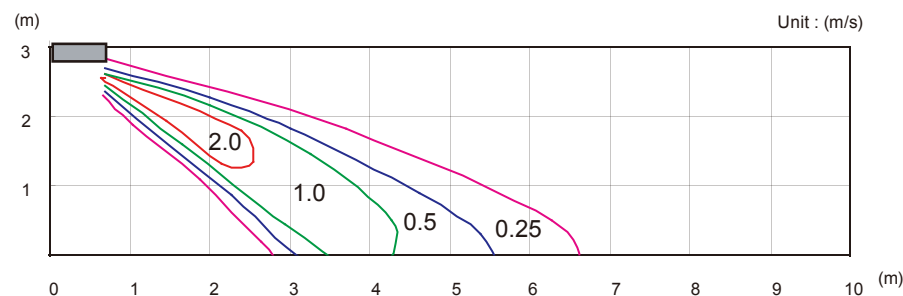
Top view
Vertical airflow direction
louver: Up
Horizontal airflow direction
louver: Right & Left



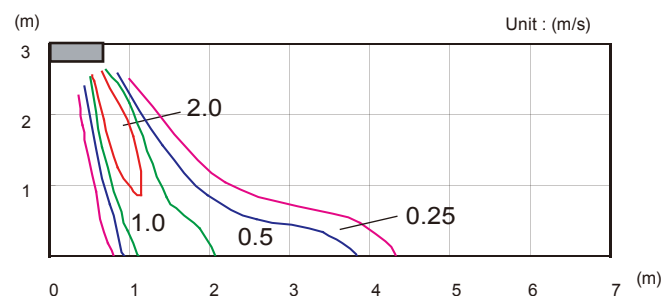
Side view
Vertical airflow direction
louver: Up
Horizontal airflow direction
louver: Center



Side view
Vertical airflow direction
louver: Center
Horizontal airflow direction
louver: Center



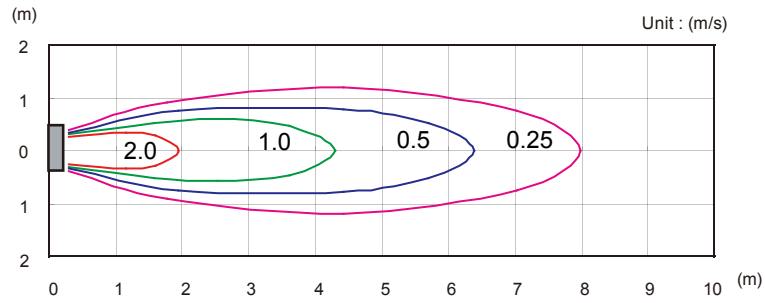
Side view
Vertical airflow direction
louver: Down
Horizontal airflow direction
louver: Center



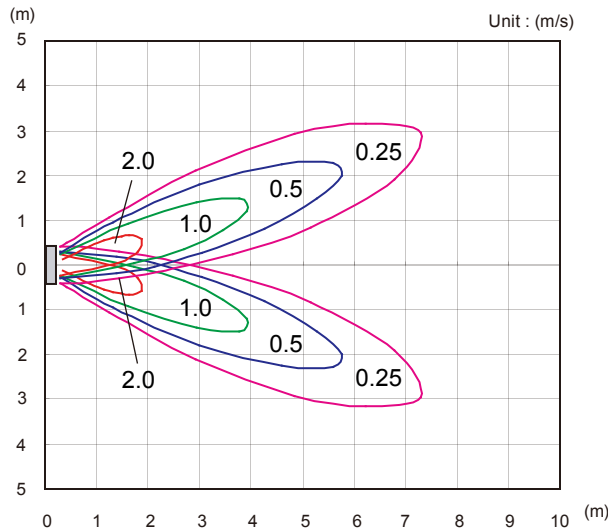
MODELS : AB*G18LVTA, AB*G18LVTB (FLOOR CONSOLE)

Conditions
Fan speed: HIGH
Operation mode: FAN

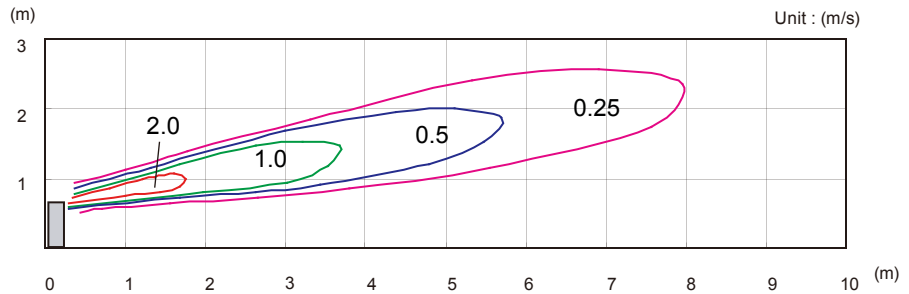
Top view
Vertical airflow direction
louver: Up
Horizontal airflow direction
louver: Center



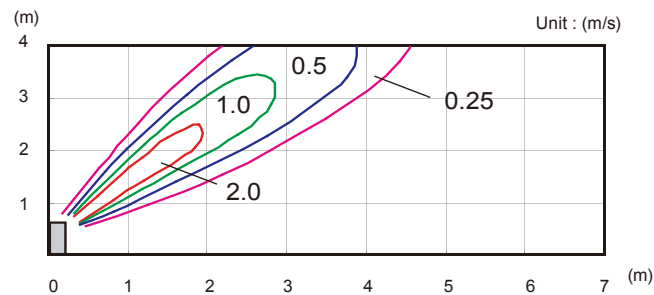
Top view
Vertical airflow direction
louver: Up
Horizontal airflow direction
louver: Right & Left



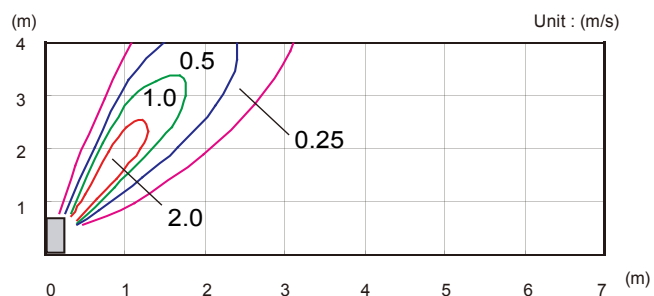
Side view
Vertical airflow direction
louver: Down
Horizontal airflow direction
louver: Center



Side view
Vertical airflow direction
louver: Center
Horizontal airflow direction
louver: Center



Side view
Vertical airflow direction
louver: Up
Horizontal airflow direction
louver: Center



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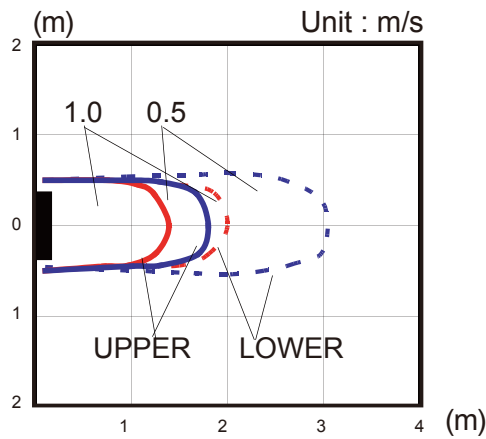
INDOOR UNITS

6-5. FLOOR TYPE

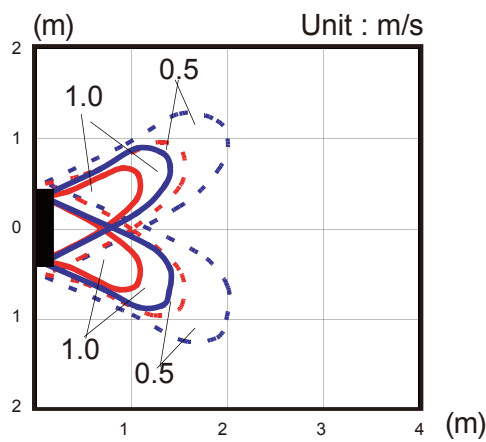
MODELS : AG*G09LVCA, AG*G12LVCA, AG*G14LVCA

Conditions
 Fan speed: HIGH
 Operation mode: FAN
 Fan select: UPPER & LOWER

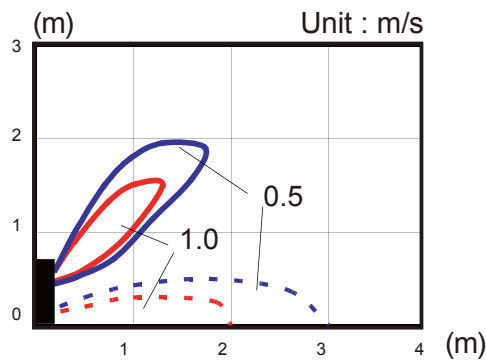
Top view
 Vertical airflow direction
 louver: Down
 Horizontal airflow direction
 louver: Center



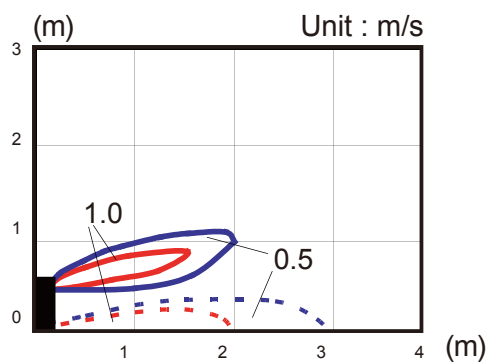
Top view
 Vertical airflow direction
 louver: Down
 Horizontal airflow direction
 louver: Right & Left



Side view
 Vertical airflow direction
 louver: Up
 Horizontal airflow direction
 louver: Center



Side view
 Vertical airflow direction
 louver: Down
 Horizontal airflow direction
 louver: Center



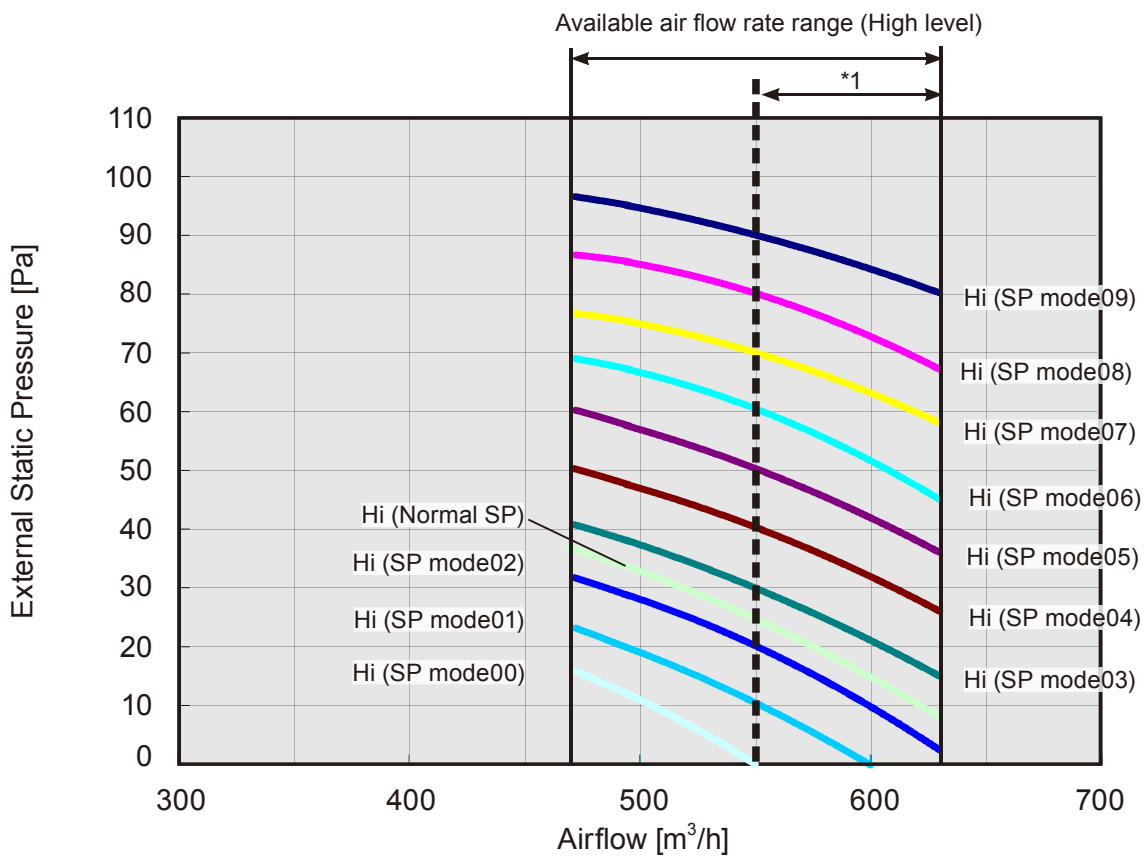
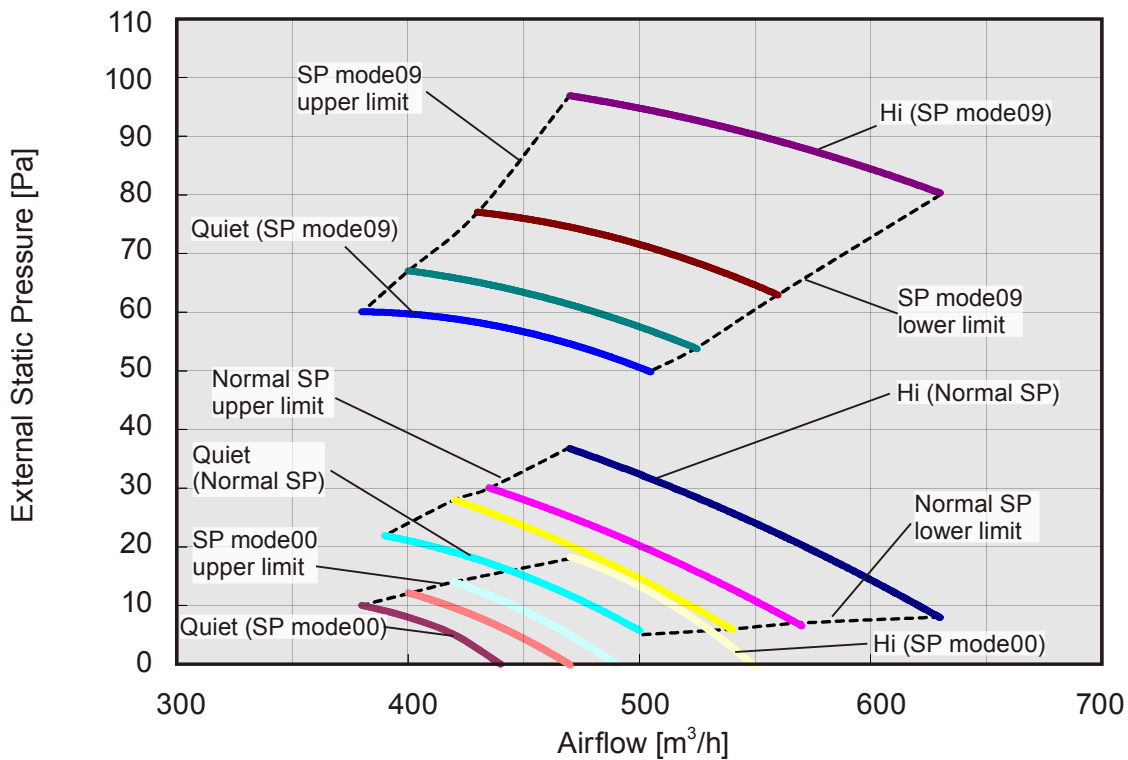
INDOOR UNITS

INDOOR UNITS

7. FAN PERFORMANCE CURVE

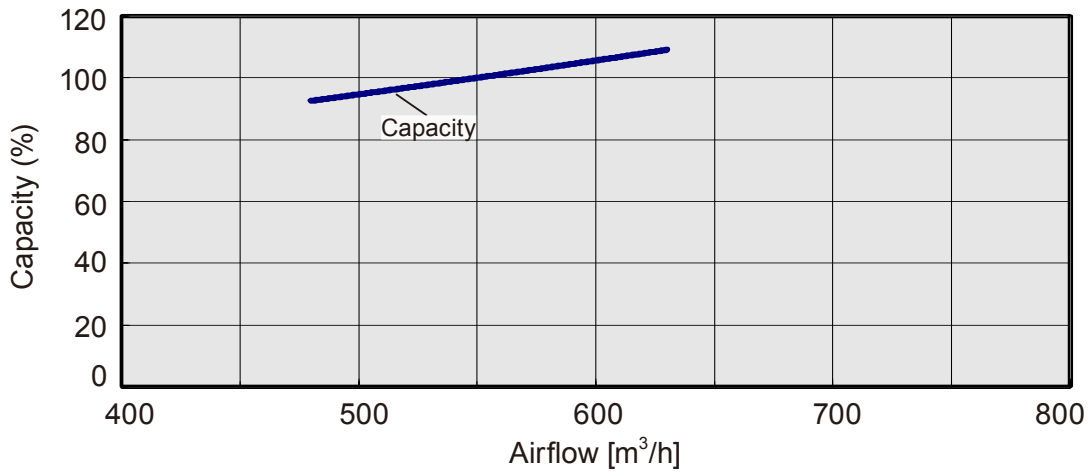
7-1. SLIM DUCT TYPE

■ MODEL : AR*G07LLTA

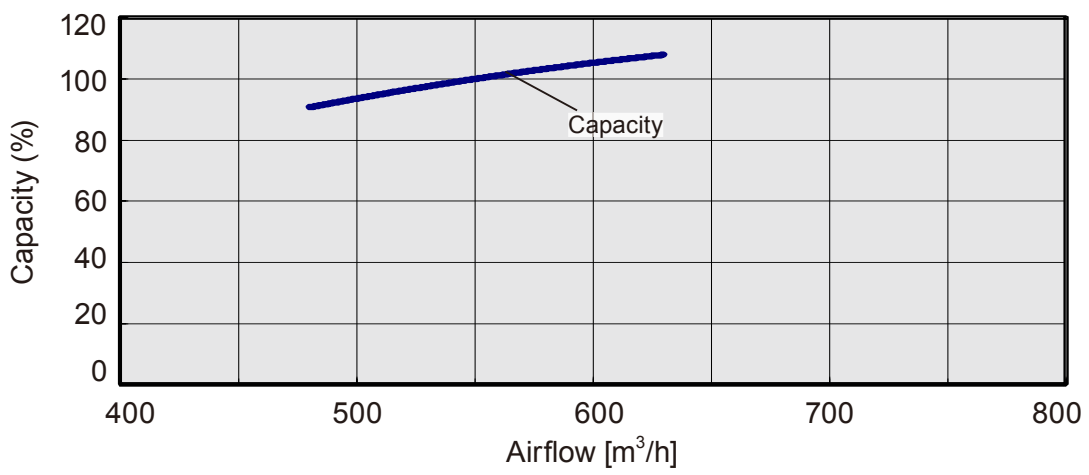


*1: Available air flow rate range when Auto louver grille (option) is installed.
 Fan speed : High
 Vertical flap : Up

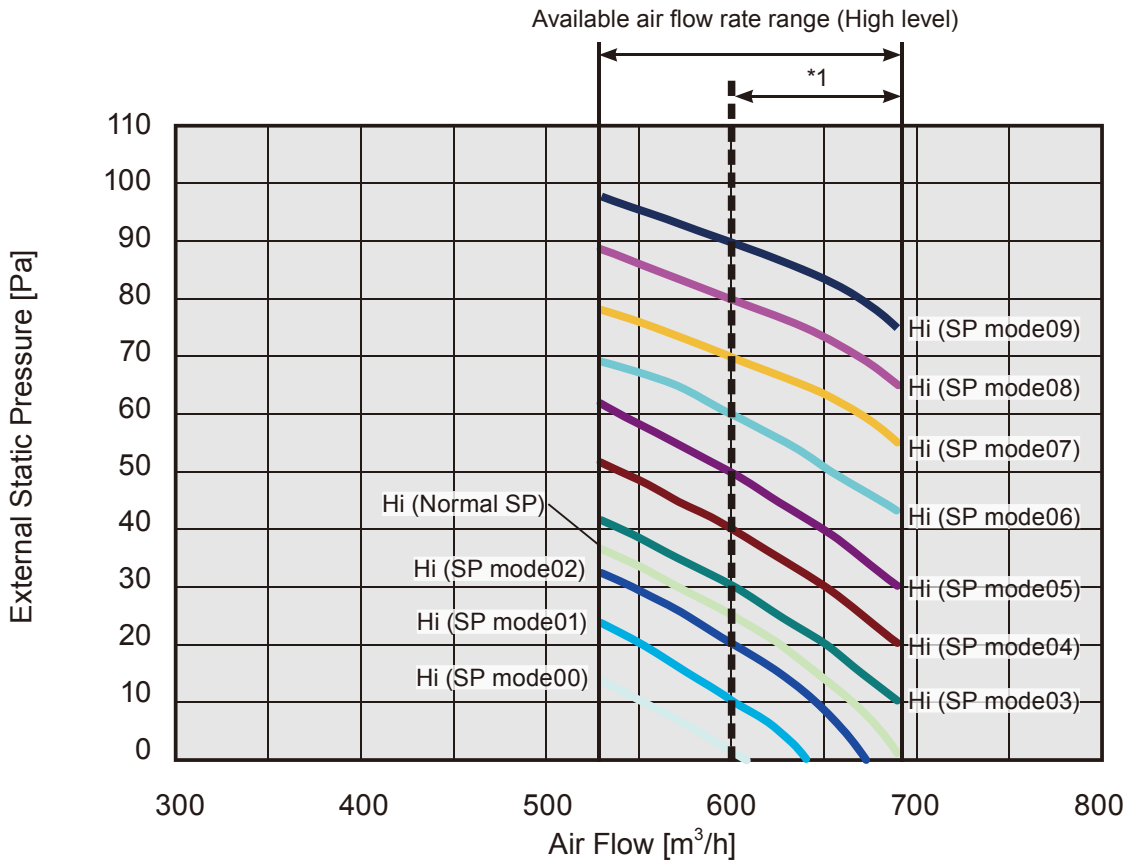
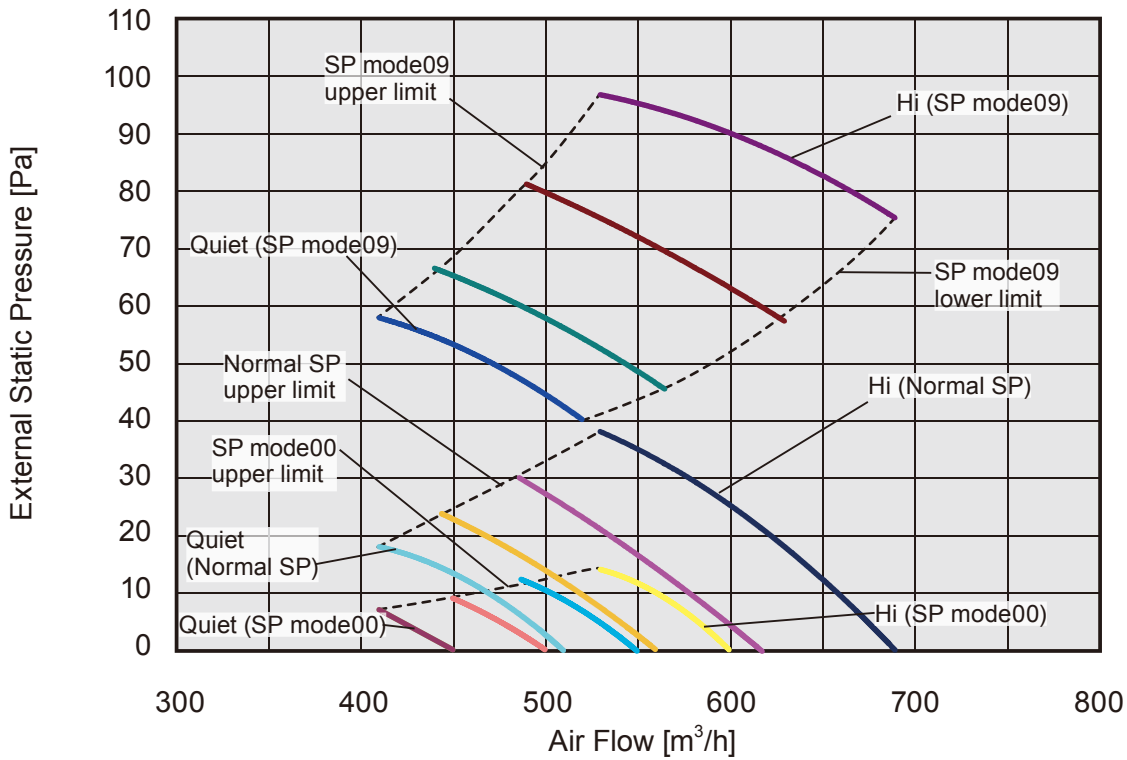
● **Cooling**



● **Heating**

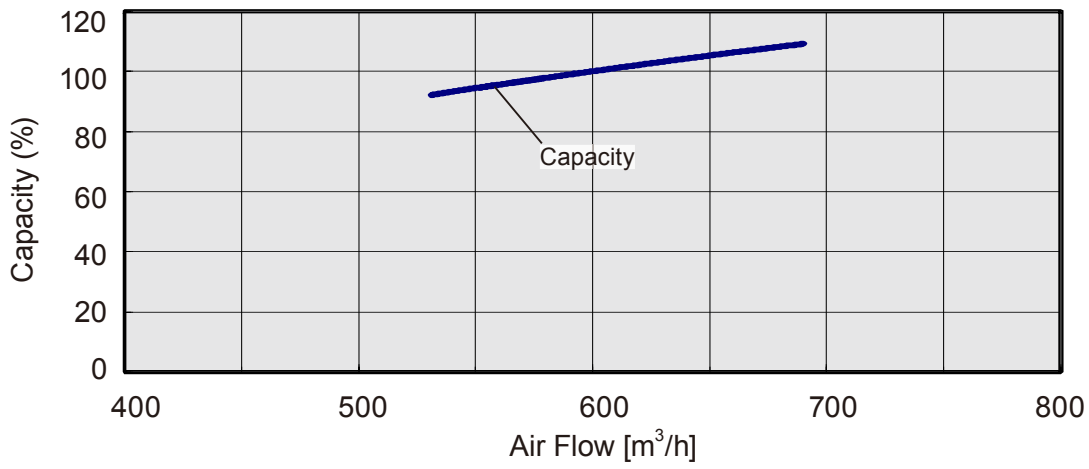


MODEL : AR*G09LLTA

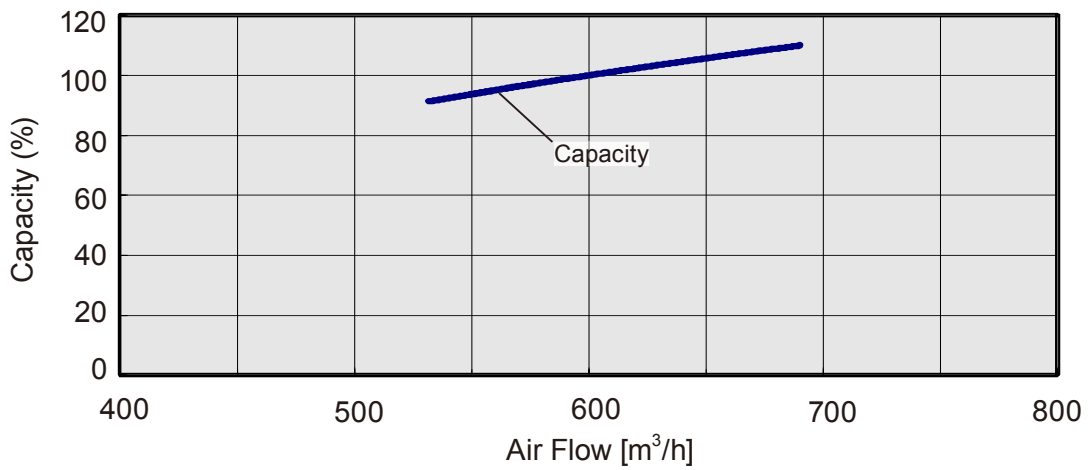


*1: Available air flow rate range when Auto louver grille (option) is installed.
 Fan speed : High
 Vertical flap : Up

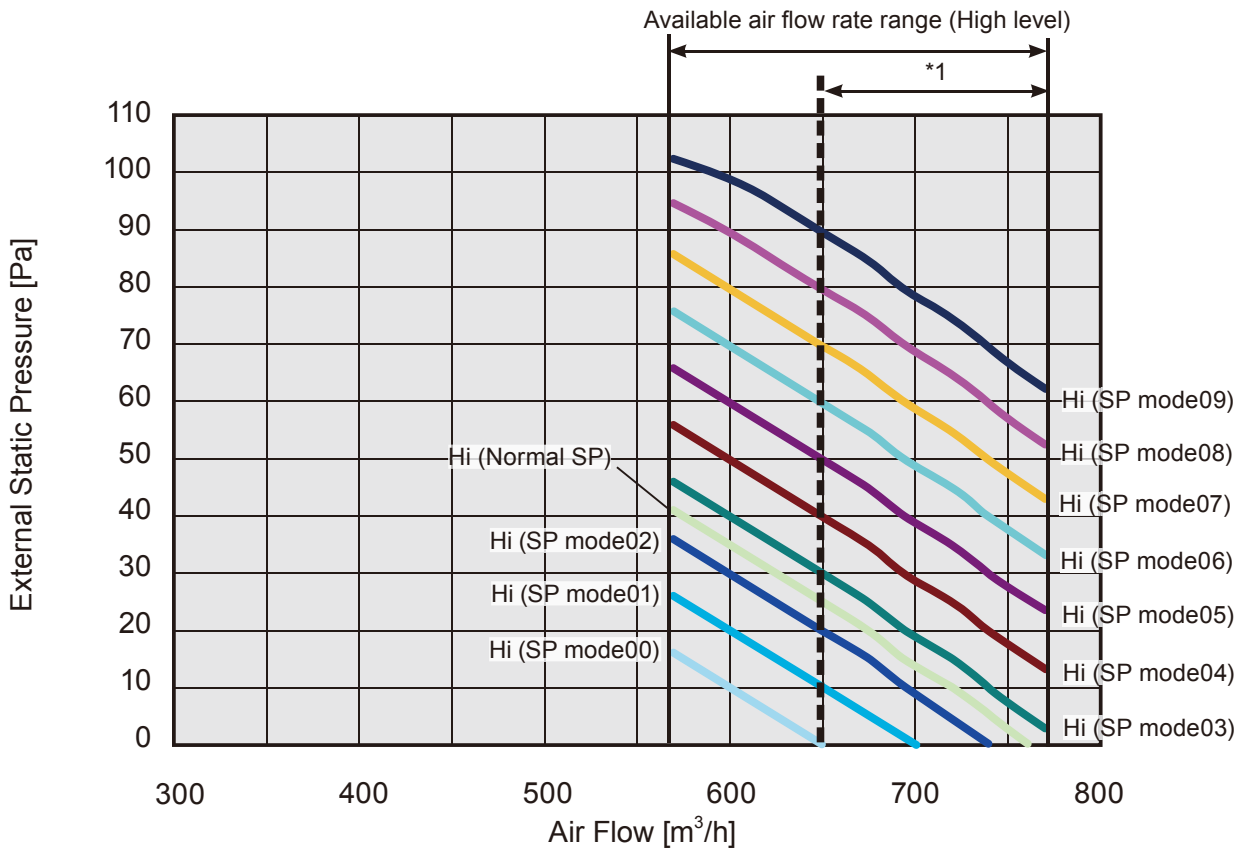
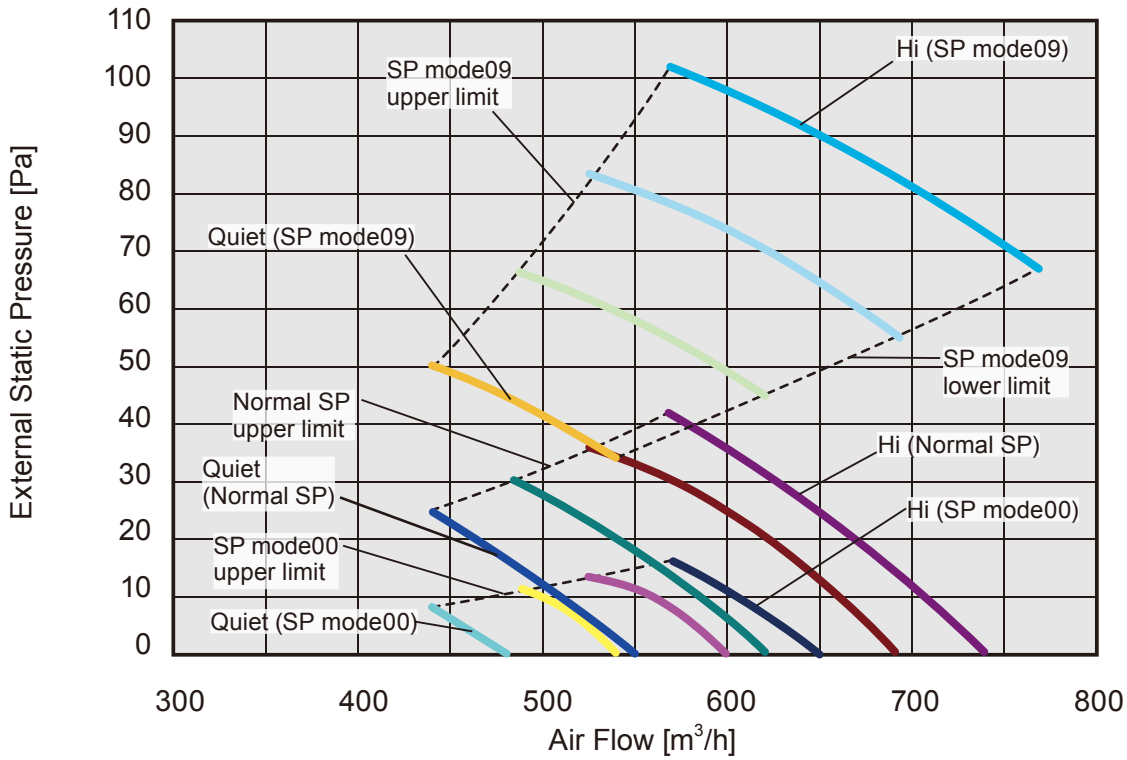
● Cooling



● Heating

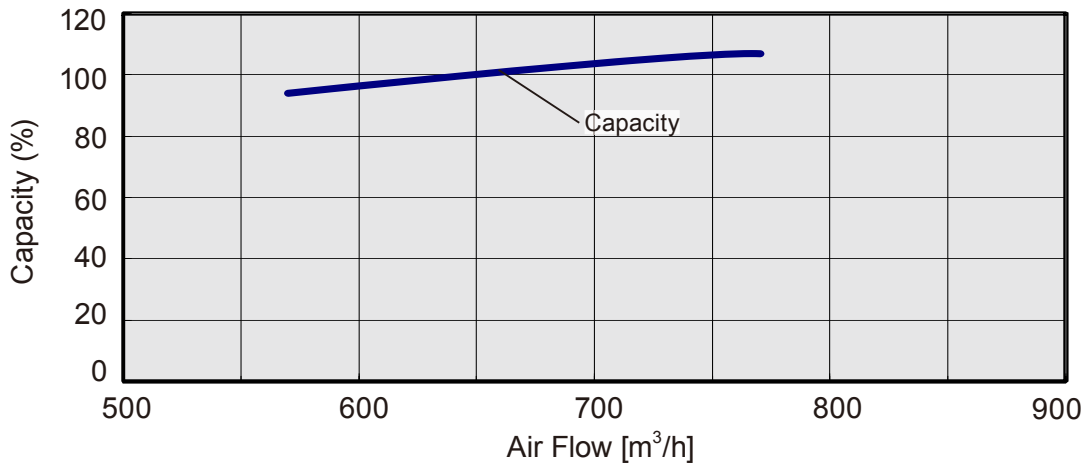


MODELS : AR*G12LLTA, AR*G12LLTB

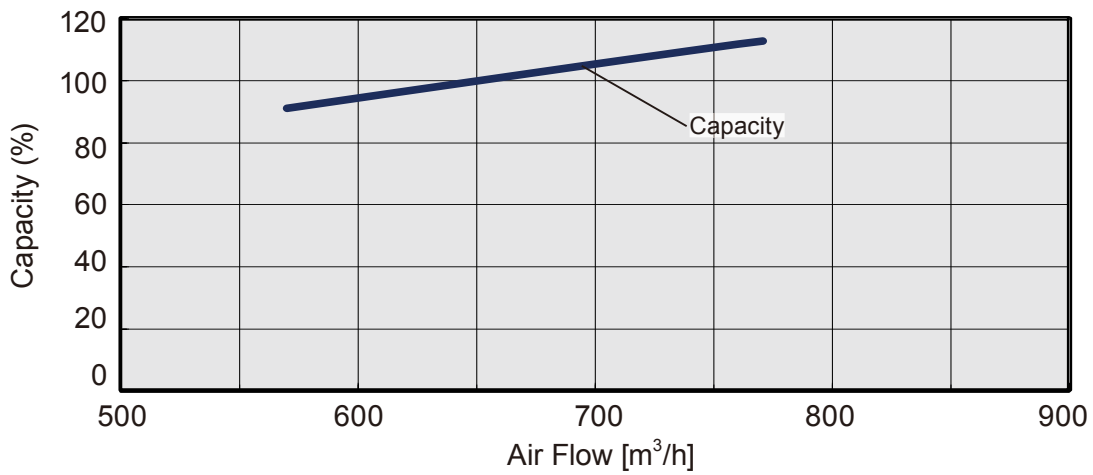


*1: Available air flow rate range when Auto louver grille (option) is installed.
 Fan speed : High
 Vertical flap : Up

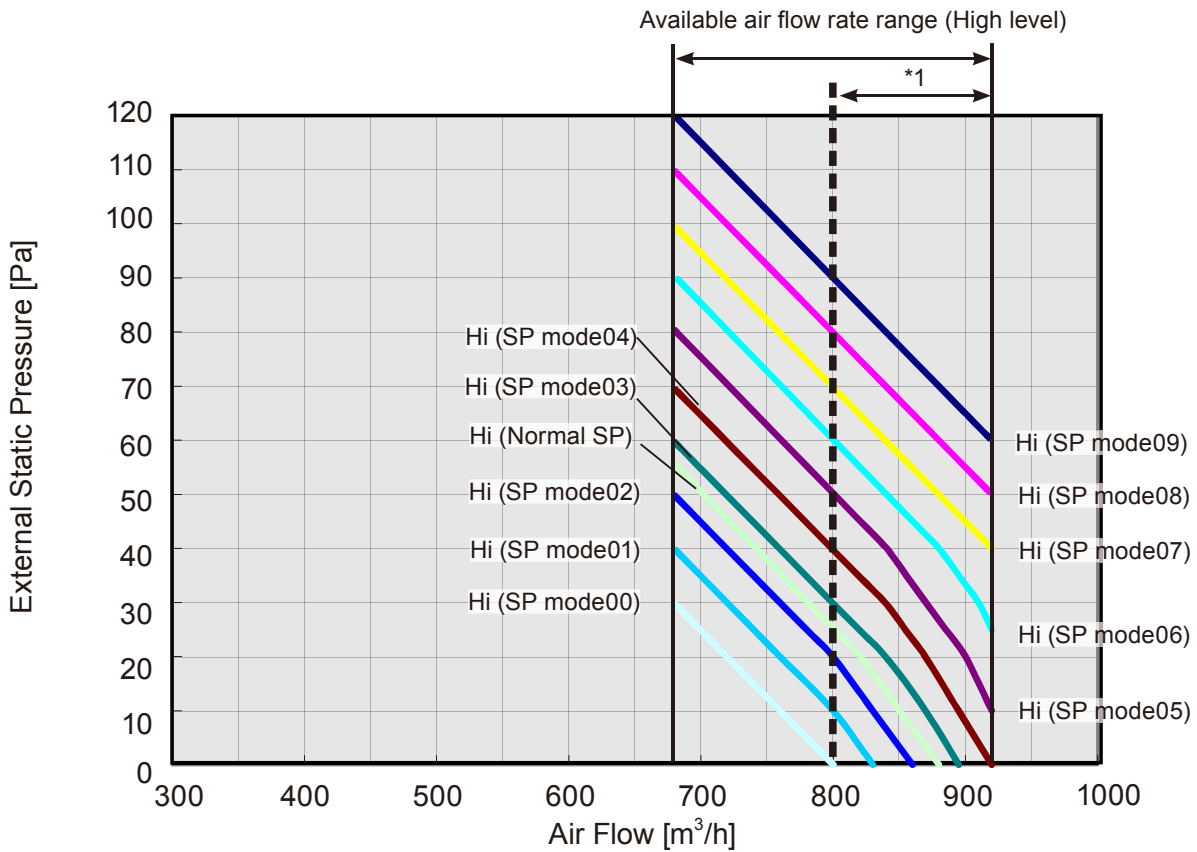
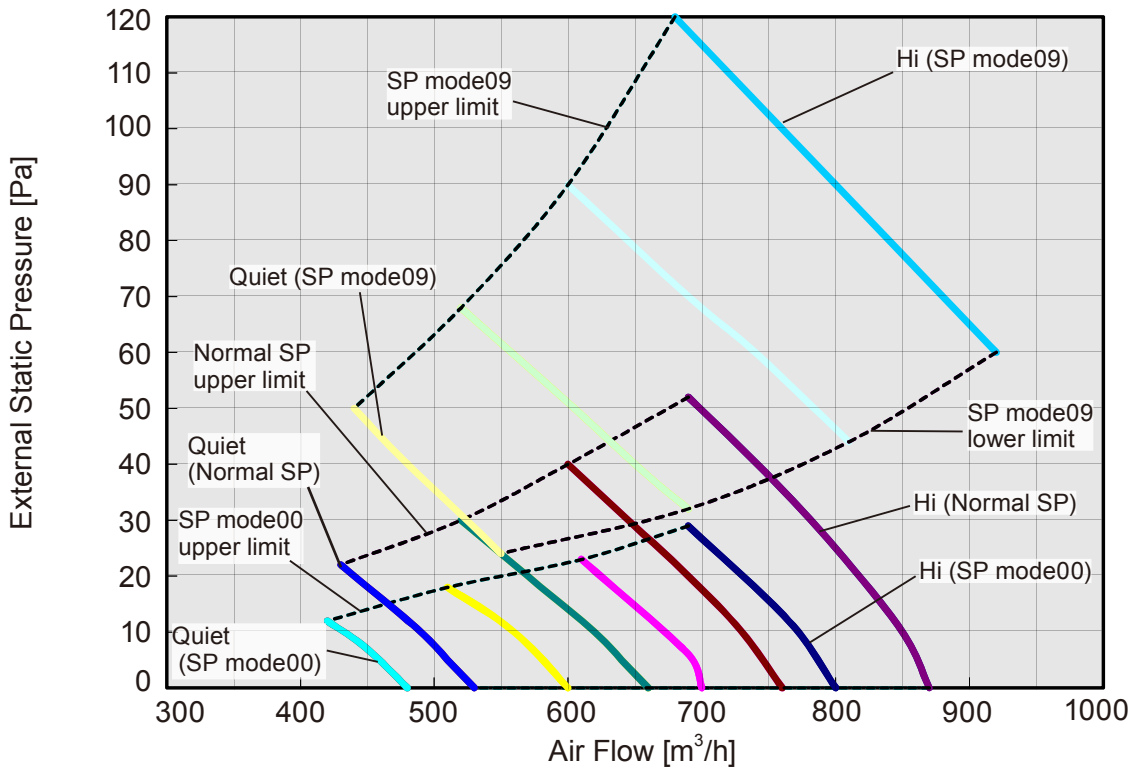
● Cooling



● Heating

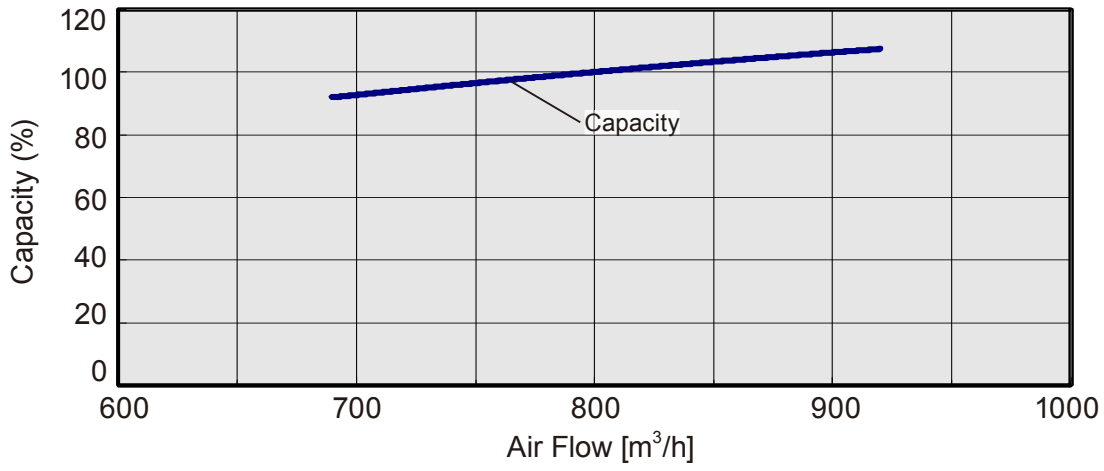


MODELS : AR*G14LLTA, AR*G14LLTB

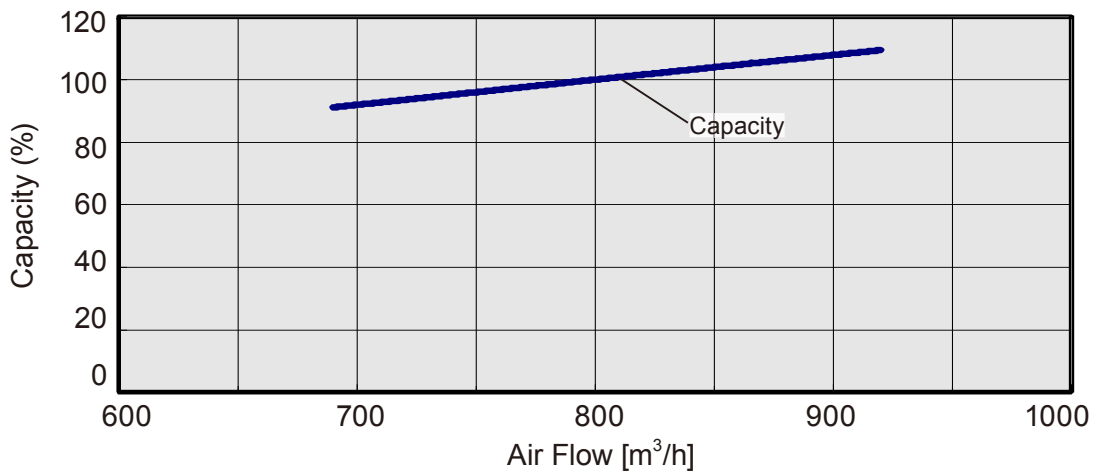


*1: Available air flow rate range when Auto louver grille (option) is installed.
 Fan speed : High
 Vertical flap : Up

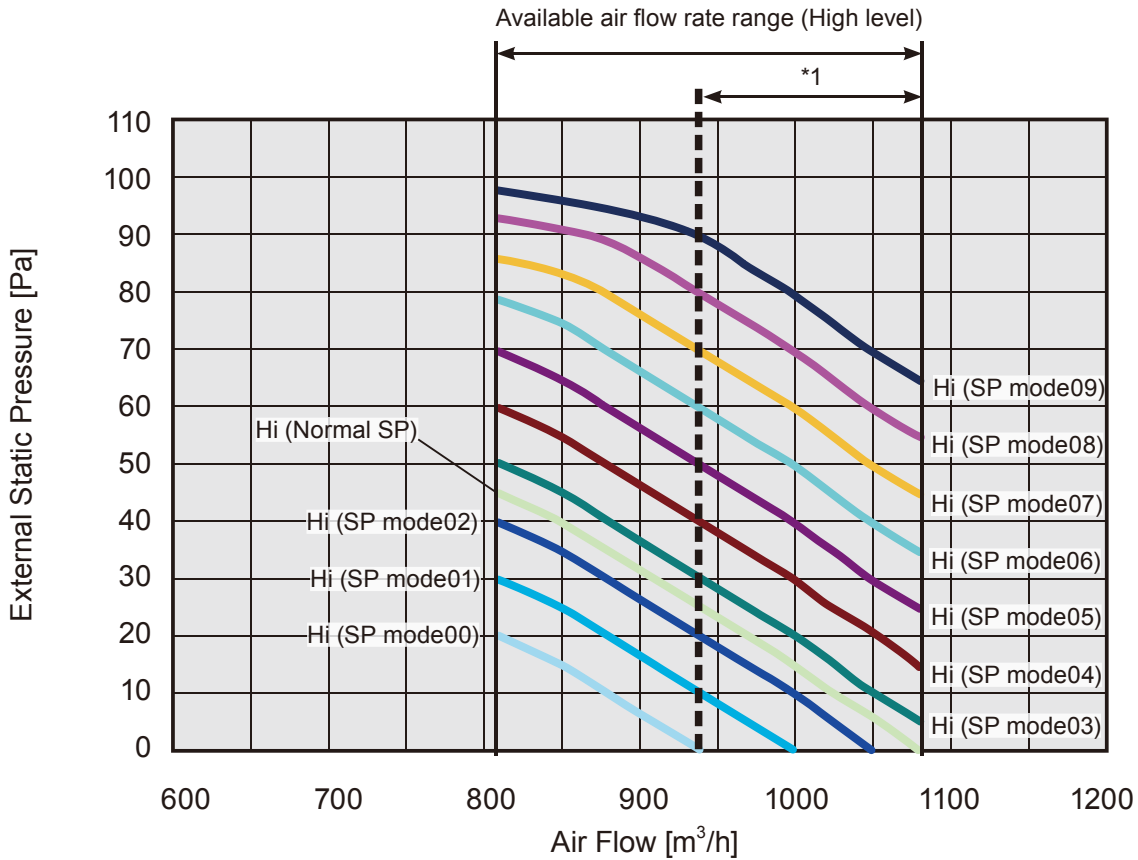
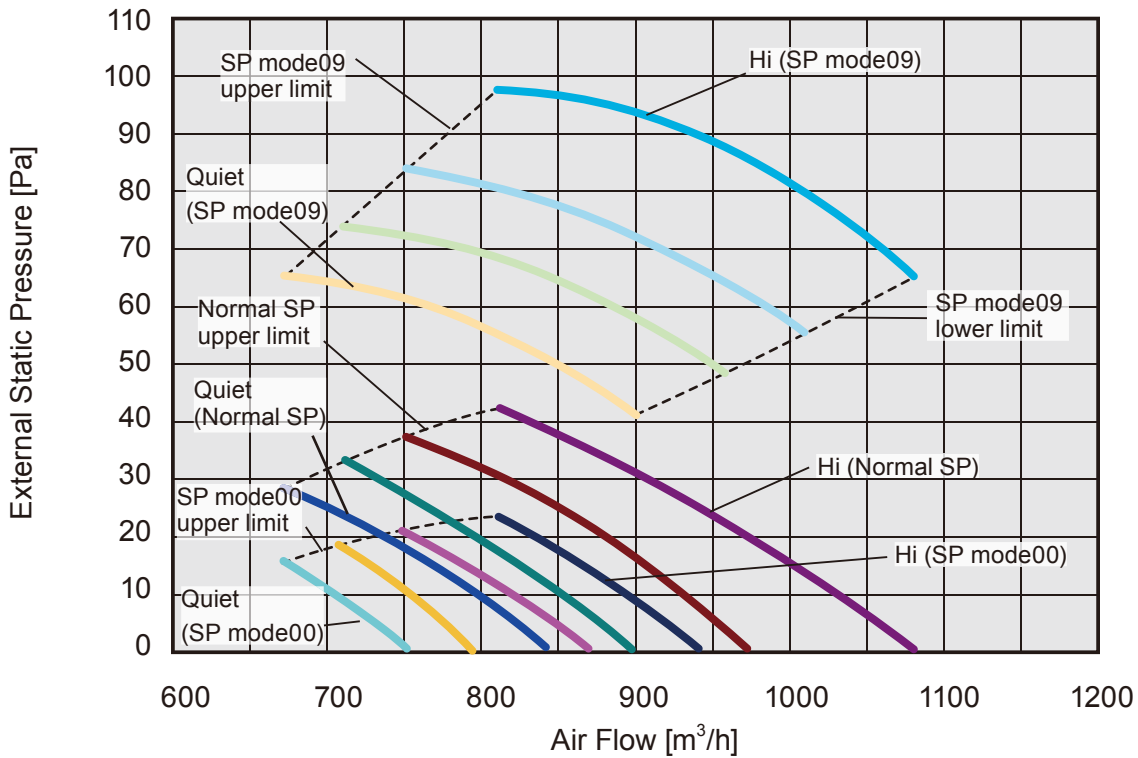
● Cooling



● Heating

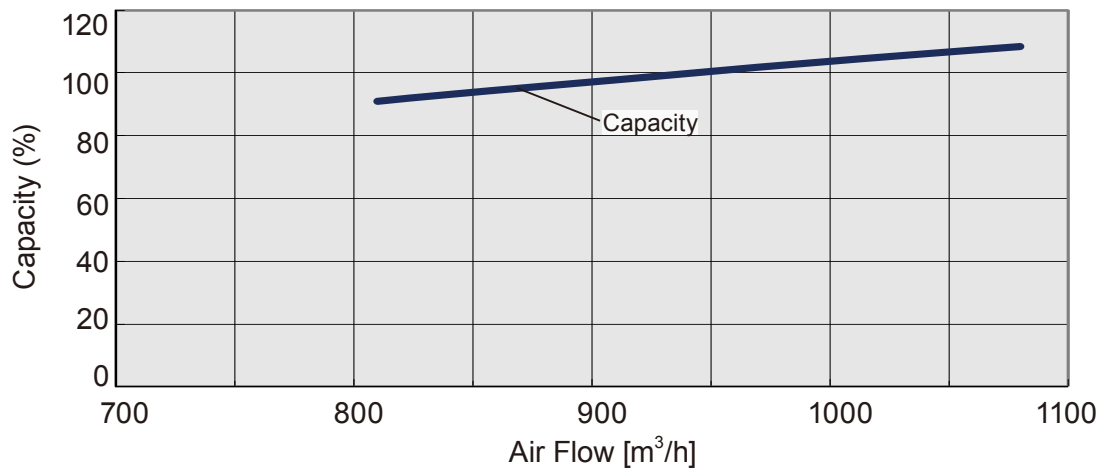


MODELS : AR*G18LLTA, AR*G18LLTB

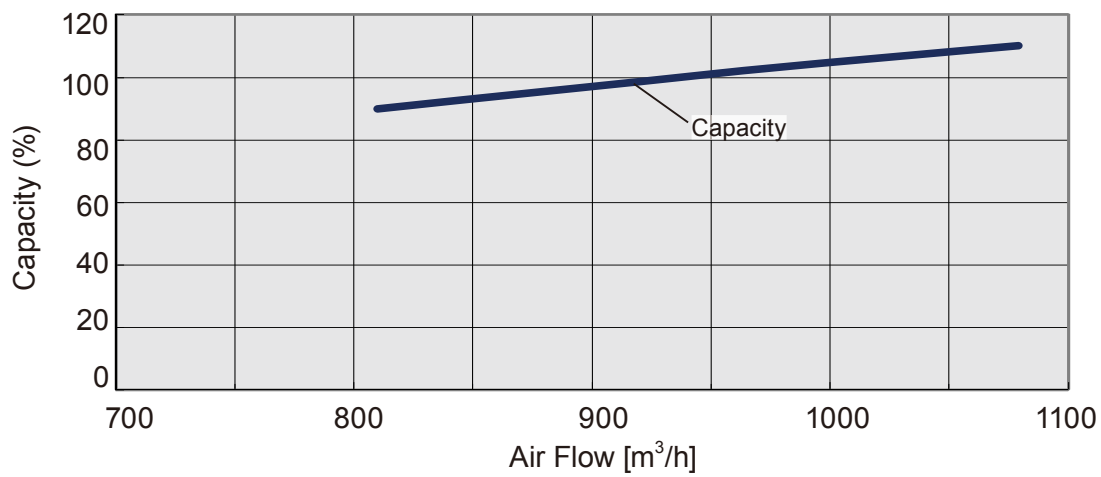


*1: Available air flow rate range when Auto louver grille (option) is installed.
 Fan speed : High
 Vertical flap : Up

● **Cooling**



● **Heating**



8. AIRFLOW

Type	Model	Operation mode	Fan speed	Airflow			Type	Model	Operation mode	Fan speed	Airflow		
				m³/h	l/s	CFM					m³/h	l/s	CFM
Compact Cassette	AU*G07LVLA AU*G09LVLA	Cooling	High	540	150	318	LJ	AS*G07LJCA	Cooling	High	560	156	330
			Med	490	136	288				Med	500	139	294
			Low	440	122	259				Low	430	119	253
			Quiet	390	108	230				Quiet	310	86	182
		Heating	High	540	150	318			Heating	High	560	156	330
			Med	490	136	288				Med	500	139	294
			Low	440	122	259				Low	430	119	253
			Quiet	390	108	230				Quiet	330	92	194
	AU*G12LVLA AU*G12LVLB	Cooling	High	610	169	359		AS*G09LJCA	Cooling	High	600	167	353
			Med	530	147	312				Med	520	144	306
			Low	470	131	277				Low	430	119	253
			Quiet	410	114	241				Quiet	310	86	182
		Heating	High	610	169	359			Heating	High	600	167	353
			Med	530	147	312				Med	520	144	306
			Low	470	131	277				Low	430	119	253
			Quiet	410	114	241				Quiet	330	92	194
	AU*G14LVLA AU*G14LVLB	Cooling	High	680	189	400		AS*G12LJCA	Cooling	High	660	183	388
			Med	580	161	341				Med	560	156	330
			Low	490	136	288				Low	450	125	265
			Quiet	410	114	241				Quiet	310	86	182
		Heating	High	700	194	412			Heating	High	660	183	388
			Med	620	172	365				Med	560	156	330
			Low	550	153	324				Low	470	131	277
			Quiet	430	119	253				Quiet	330	92	194
AU*G18LVLA AU*G18LVLB	Cooling	High	750	208	441	AS*G07LUCA	Cooling	High	570	158	335		
		Med	610	169	359			Med	520	144	306		
		Low	520	144	306			Low	470	131	276		
		Quiet	410	114	241			Quiet	330	92	194		
	Heating	High	800	222	471		Heating	High	570	158	335		
		Med	710	197	418			Med	520	144	306		
		Low	600	167	353			Low	470	131	276		
		Quiet	450	125	265			Quiet	330	92	194		
Slim Duct	AR*G07LLTA	Cooling	High	550	153	324	LU	AS*G09LUCA	Cooling	High	600	167	353
			Med	490	136	288				Med	550	153	324
			Low	470	131	277				Low	470	131	276
			Quiet	440	122	259				Quiet	330	92	194
		Heating	High	550	153	324			Heating	High	600	167	353
			Med	490	136	288				Med	550	153	324
			Low	470	131	277				Low	470	131	276
			Quiet	440	122	259				Quiet	330	92	194
	AR*G09LLTA	Cooling	High	600	167	353		AS*G12LUCA	Cooling	High	660	183	388
			Med	550	153	324				Med	600	167	353
			Low	500	139	294				Low	530	147	312
			Quiet	450	125	265				Quiet	330	92	194
		Heating	High	600	167	353			Heating	High	660	183	388
			Med	550	153	324				Med	600	167	353
			Low	500	139	294				Low	530	147	312
			Quiet	450	125	265				Quiet	330	92	194
	AR*G12LLTA AR*G12LLTB	Cooling	High	650	181	383		AS*G14LUCA	Cooling	High	710	197	418
			Med	600	167	353				Med	640	178	376
			Low	550	153	324				Low	570	158	335
			Quiet	480	133	283				Quiet	390	108	229
		Heating	High	650	181	383			Heating	High	710	197	418
			Med	600	167	353				Med	640	178	376
			Low	550	153	324				Low	590	164	347
			Quiet	480	133	283				Quiet	430	119	253
AR*G14LLTA AR*G14LLTB	Cooling	High	800	222	471				High	800	222	471	
		Med	700	194	412				Med	700	194	412	
		Low	600	167	353				Low	600	167	353	
		Quiet	480	133	283				Quiet	480	133	283	
	Heating	High	800	222	471					High	800	222	471
		Med	700	194	412					Med	700	194	412
		Low	600	167	353					Low	600	167	353
		Quiet	480	133	283					Quiet	480	133	283
AR*G18LLTA AR*G18LLTB	Cooling	High	940	261	553				High	940	261	553	
		Med	880	244	518				Med	880	244	518	
		Low	820	227	483				Low	820	227	483	
		Quiet	750	208	441				Quiet	750	208	441	
	Heating	High	940	261	553					High	940	261	553
		Med	880	244	518					Med	880	244	518
		Low	820	227	483					Low	820	227	483
		Quiet	750	208	441					Quiet	750	208	441

Conversion Factor
 1 m³/h = 0.2778 l/s = 0.5886 CFM
 3.6 m³/h = 1 l/s
 1.699 m³/h = 1 CFM

Type	Model	Operation mode	Fan speed	Airflow			Type	Model	Operation mode	Fan speed	Airflow			
				m³/h	l/s	CFM					m³/h	l/s	CFM	
Wall Mounted	AS*G07LMCA	Cooling	High	560	156	330	Floor / Ceiling	AB*G14LVTA	Cooling	High	640	178	377	
			Med	500	139	294				Med	590	164	347	
			Low	430	119	253				Low	540	150	318	
			Quiet	310	86	182				Quiet	480	133	283	
		Heating	High	560	156	330			Heating	High	640	178	377	
			Med	500	139	294				Med	590	164	347	
			Low	430	119	253				Low	540	150	318	
			Quiet	330	92	194				Quiet	480	133	283	
	AS*G09LMCA	Cooling	High	600	167	353		Floor / Ceiling	AB*G18LVTA AB*G18LVTB	Cooling	High	780	217	459
			Med	520	144	306					Med	700	194	412
			Low	430	119	253					Low	560	156	330
			Quiet	310	86	182					Quiet	500	139	294
		Heating	High	600	167	353				Heating	High	780	217	459
			Med	520	144	306					Med	700	194	412
			Low	430	119	253					Low	560	156	330
			Quiet	330	92	194					Quiet	500	139	294
	AS*G12LMCA	Cooling	High	660	183	388	Floor		AG*G09LVCA	Cooling	High	530	147	312
			Med	560	156	330					Med	440	122	259
			Low	450	125	265					Low	360	100	212
			Quiet	310	86	182					Quiet	270	75	159
		Heating	High	660	183	388				Heating	High	530	147	312
			Med	560	156	330					Med	460	128	270
			Low	470	131	277					Low	380	106	224
			Quiet	330	92	194					Quiet	270	75	159
	AS*G14LMCA	Cooling	High	730	203	430		Floor	AG*G12LVCA	Cooling	High	600	167	353
			Med	600	167	353					Med	490	136	288
			Low	530	147	312					Low	380	106	224
			Quiet	360	100	212					Quiet	270	75	159
Heating		High	730	203	430	Heating				High	600	167	353	
		Med	615	171	362					Med	510	142	300	
		Low	560	156	330					Low	410	114	241	
		Quiet	375	104	221					Quiet	270	75	159	
AS*G18LFCA	Cooling	High	900	250	530	Floor	AG*G14LVCA		Cooling	High	650	181	383	
		Med	740	206	436					Med	520	144	306	
		Low	620	172	365					Low	400	111	235	
		Quiet	550	153	324					Quiet	270	75	159	
	Heating	High	900	250	530				Heating	High	650	181	383	
		Med	740	206	436					Med	540	150	318	
		Low	620	172	365					Low	430	119	253	
		Quiet	550	153	324					Quiet	270	75	159	
AS*G24LFCA AS*G24LFCC	Cooling	High	1120	311	659		Floor	AG*G14LVCA	Cooling	High	650	181	383	
		Med	900	250	530					Med	520	144	306	
		Low	740	206	436					Low	400	111	235	
		Quiet	620	172	365					Quiet	270	75	159	
	Heating	High	1100	306	647				Heating	High	650	181	383	
		Med	900	250	530					Med	540	150	318	
		Low	740	206	436					Low	430	119	253	
		Quiet	620	172	365					Quiet	270	75	159	

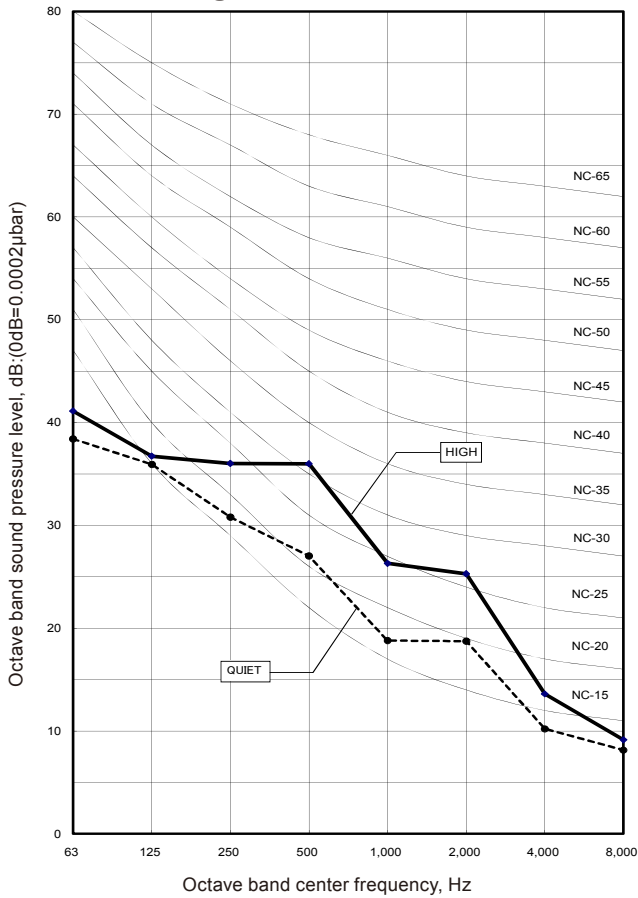
Conversion Factor
 1 m³/h = 0.2778 l/s = 0.5886 CFM
 3.6 m³/h = 1 l/s
 1.699 m³/h = 1 CFM

9. NOISE LEVEL CURVE

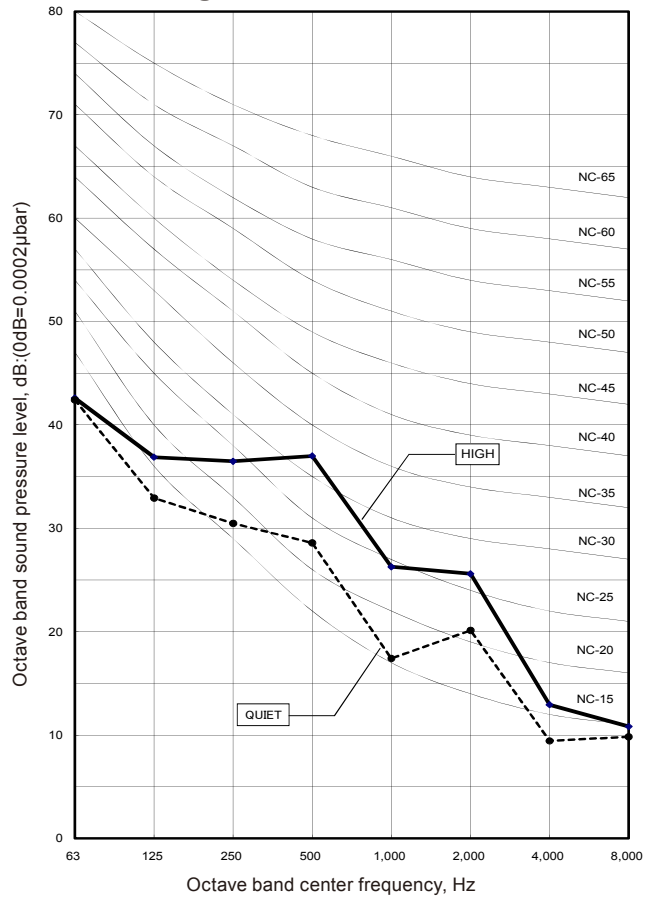
9-1. COMPACT CASSETTE TYPE

■ MODEL : AU*G07LVLA

● Cooling

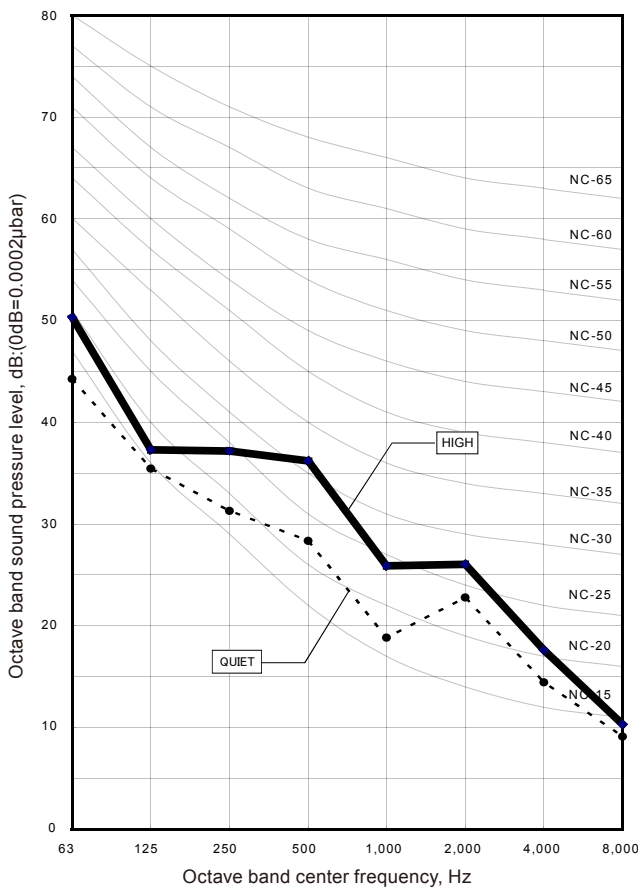


● Heating

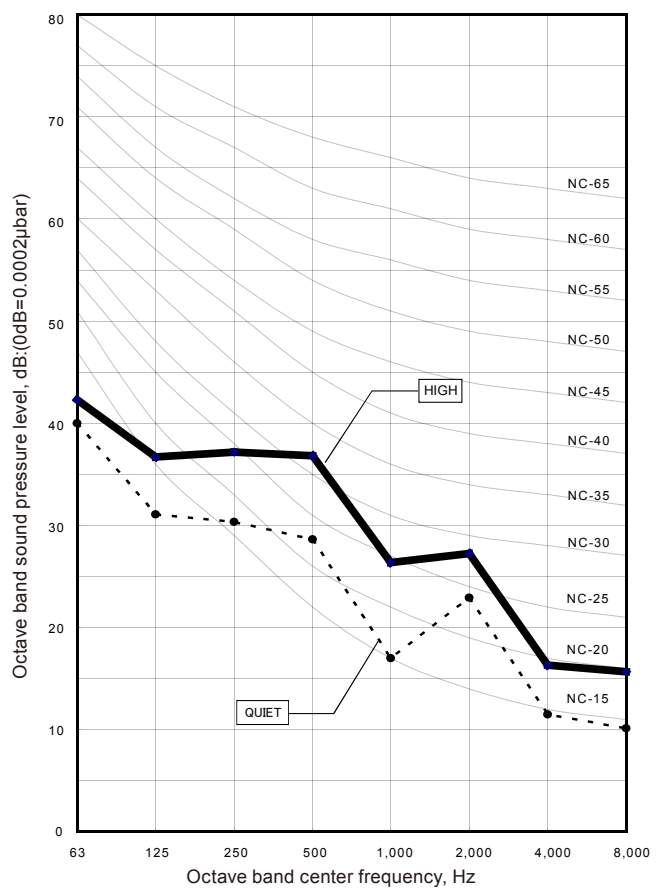


■ MODEL : AU*G09LVLA

● Cooling



● Heating



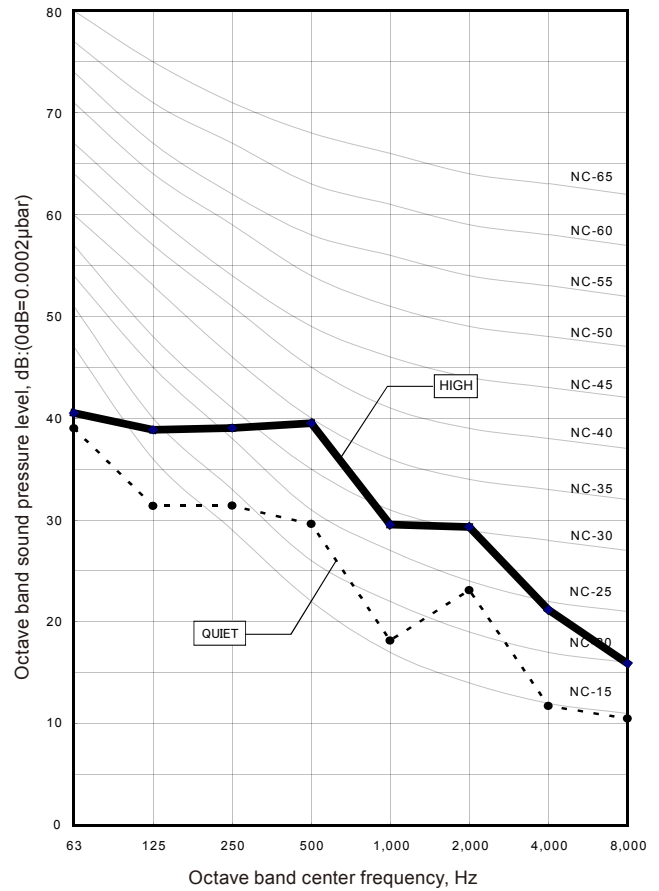
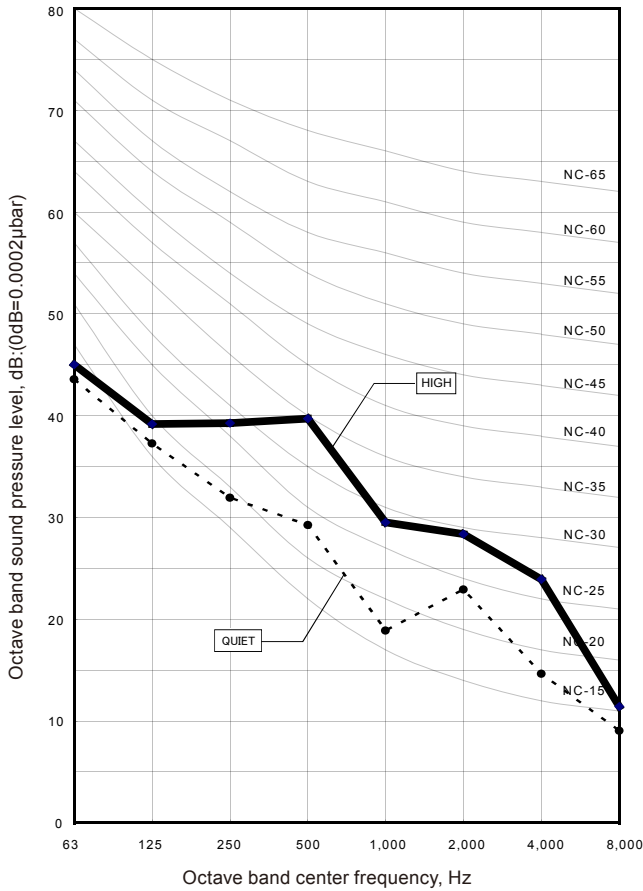
INDOOR UNITS

INDOOR UNITS

MODELS : AU*G12LVLA, AU*G12LVLB

● Cooling

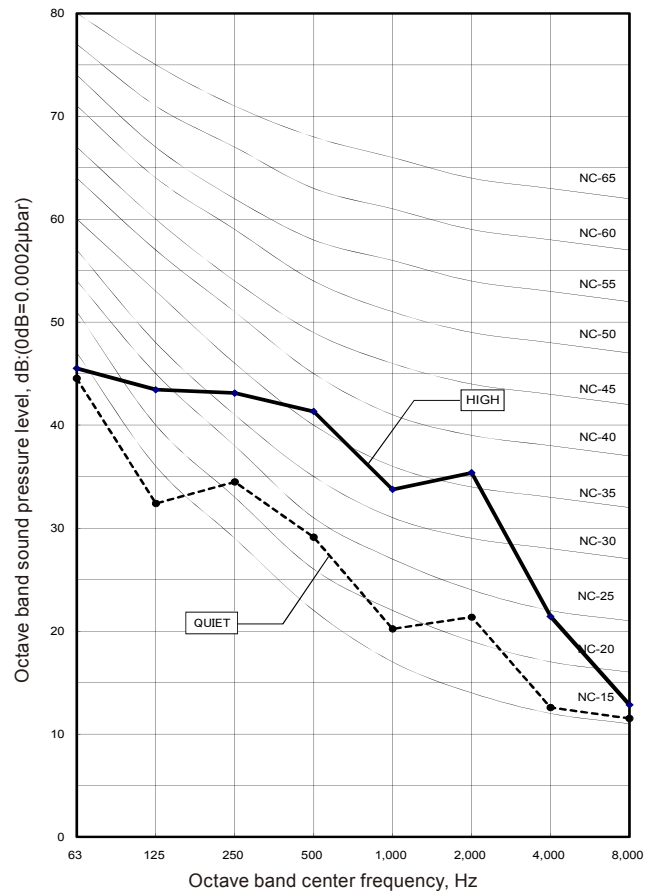
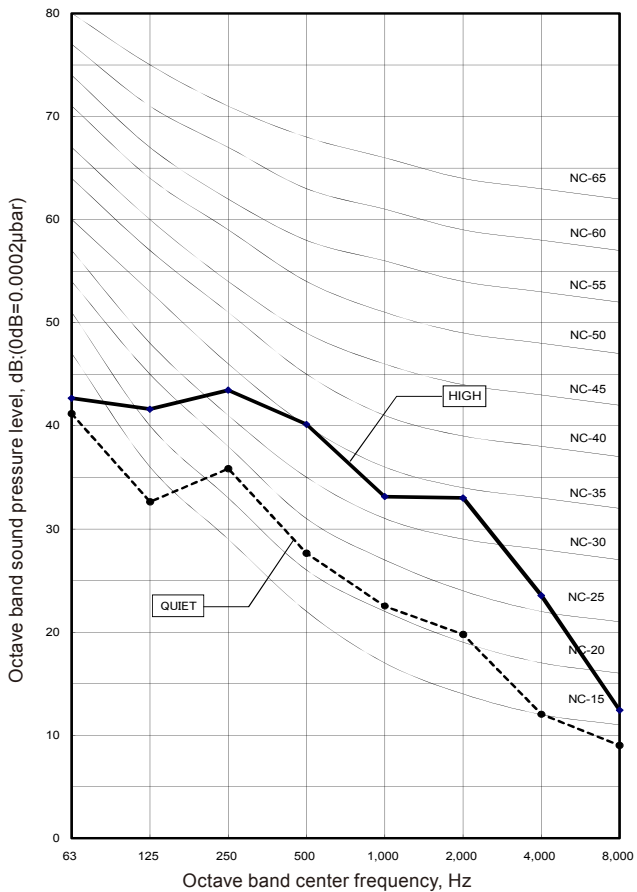
● Heating



MODELS : AU*G14LVLA, AU*G14LVLB

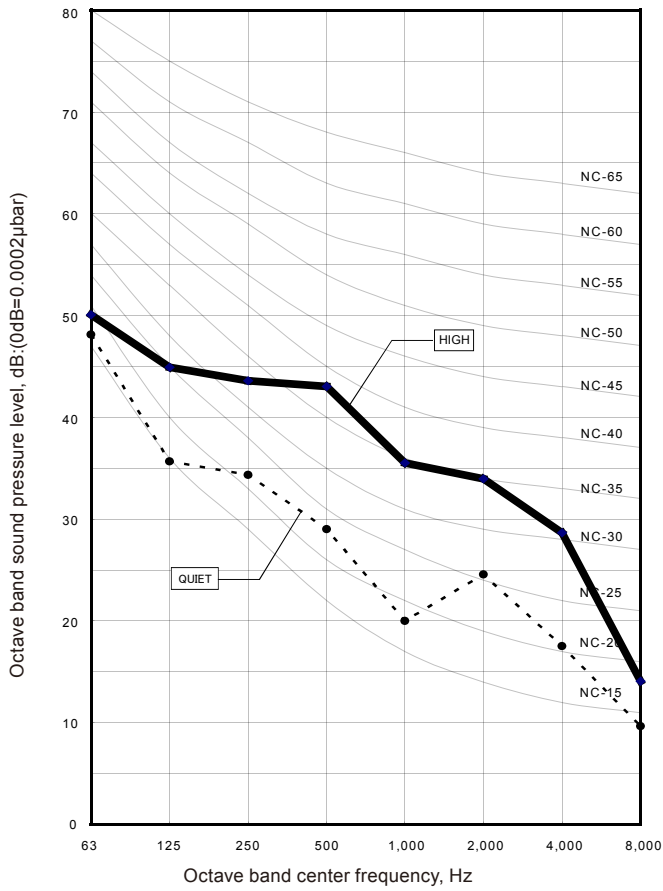
● Cooling

● Heating

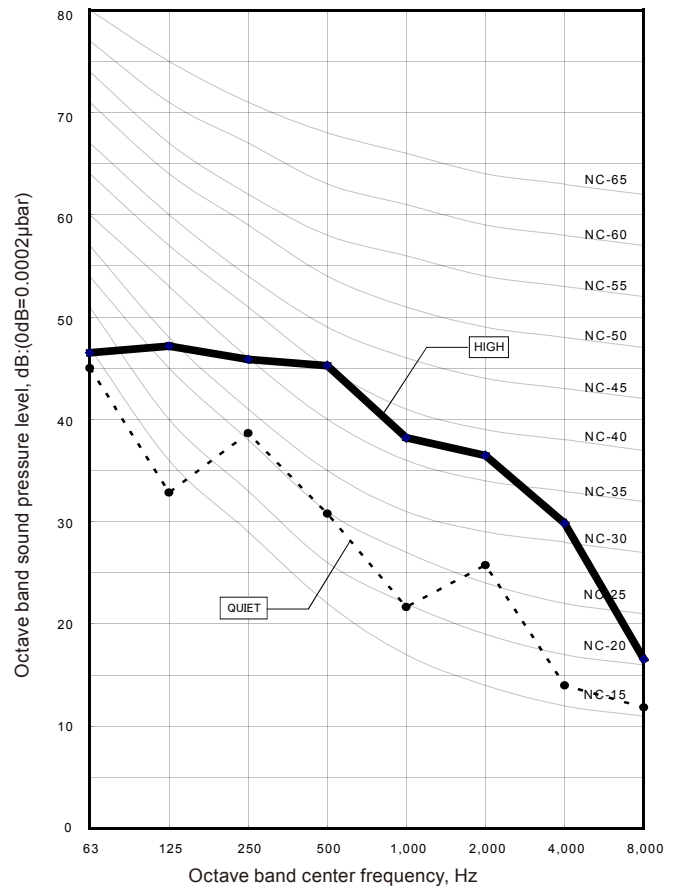


MODELS : AU*G18LVLA, AU*G18LVLB

● Cooling



● Heating



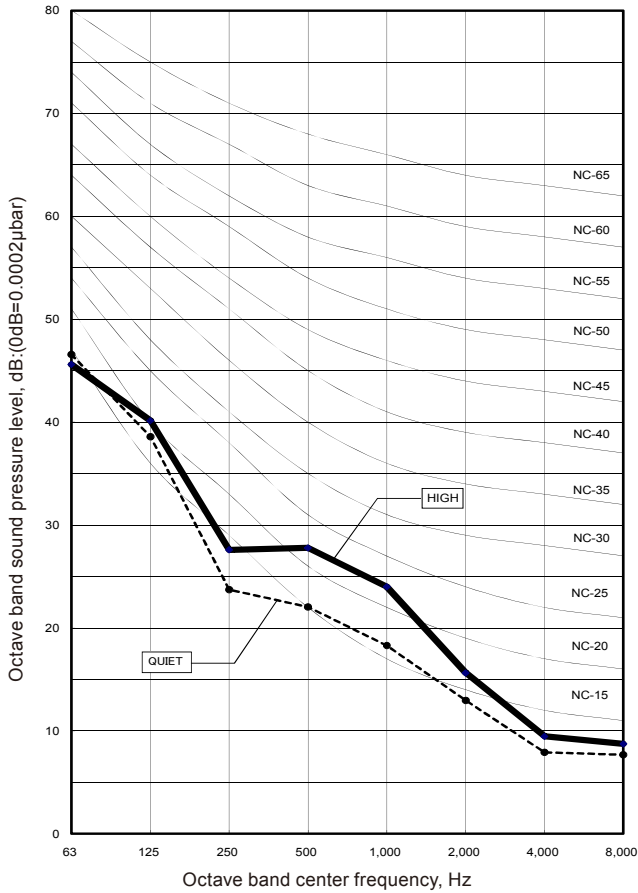
INDOOR UNITS

INDOOR UNITS

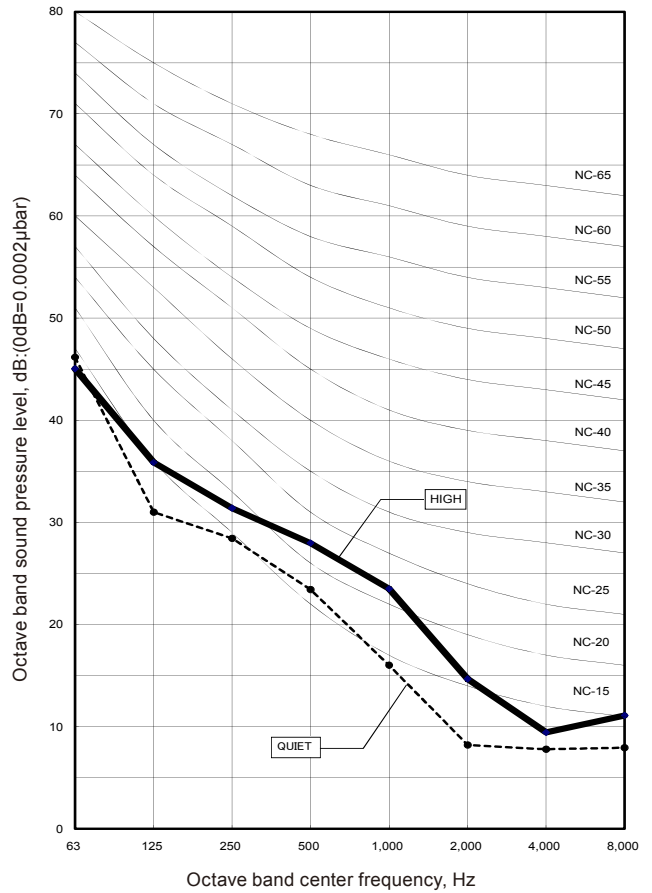
9-2. SLIM DUCT TYPE

■ MODEL : AR*G07LLTA

● Cooling

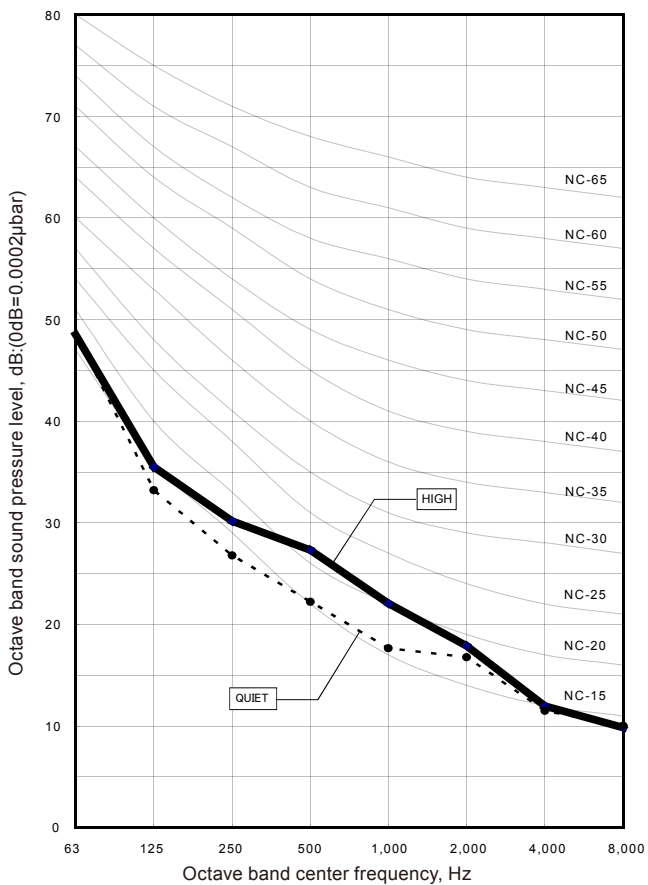


● Heating

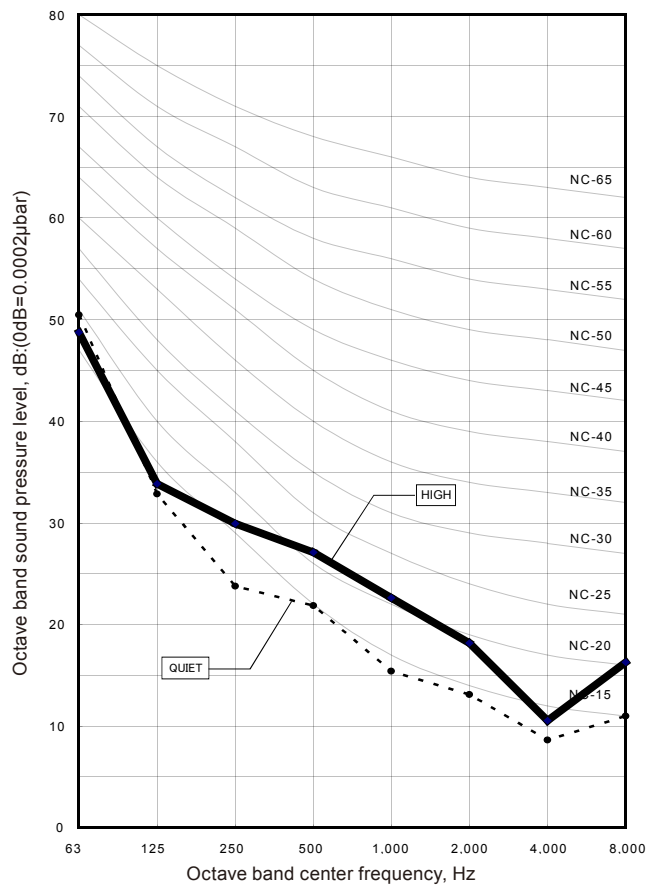


■ MODEL : AR*G09LLTA

● Cooling

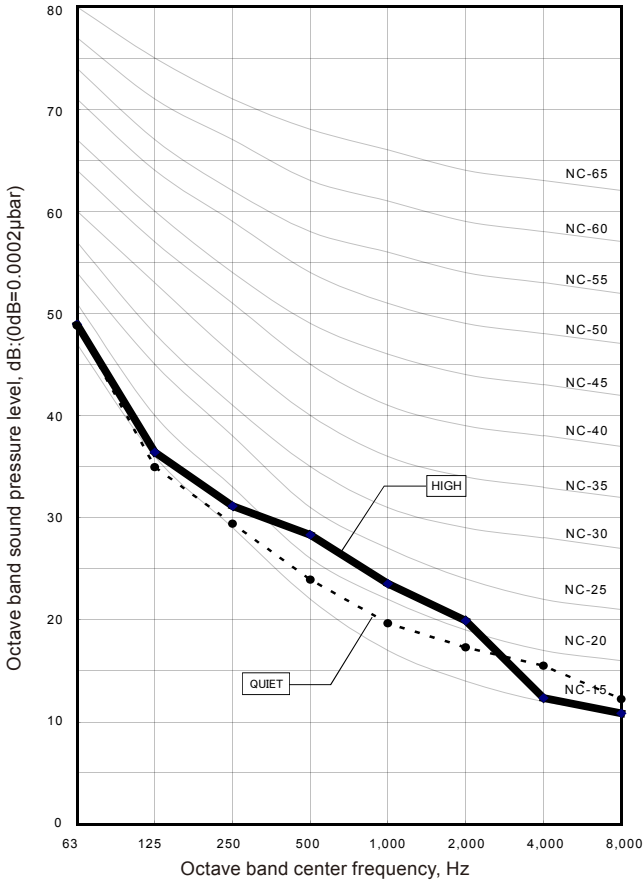


● Heating

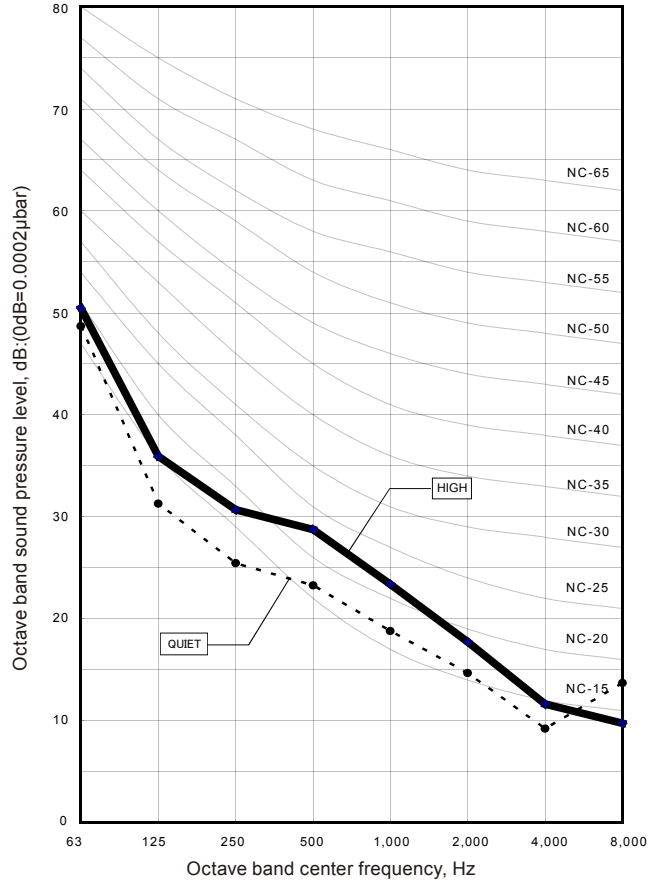


MODELS : AR*G12LLTA, AR*G12LLTB

● Cooling

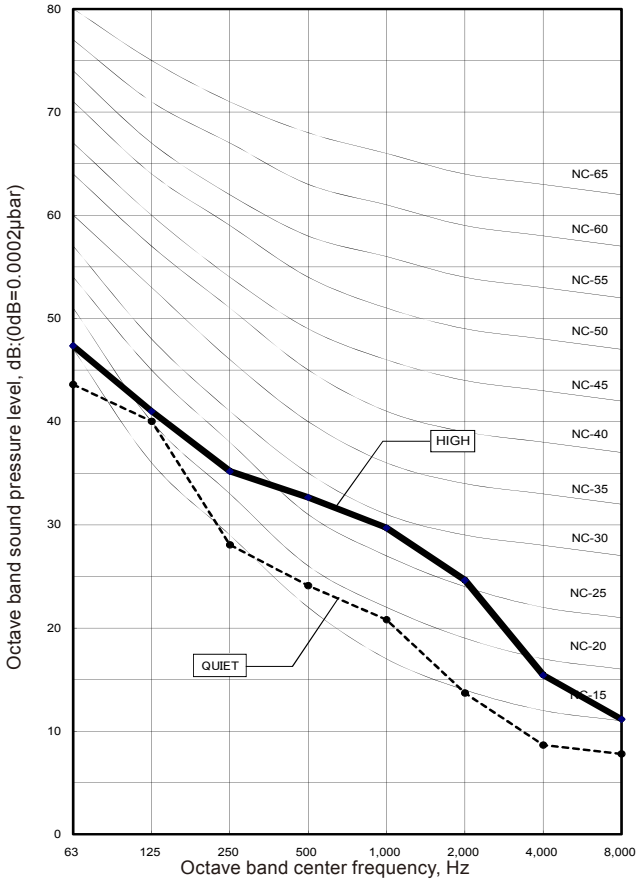


● Heating

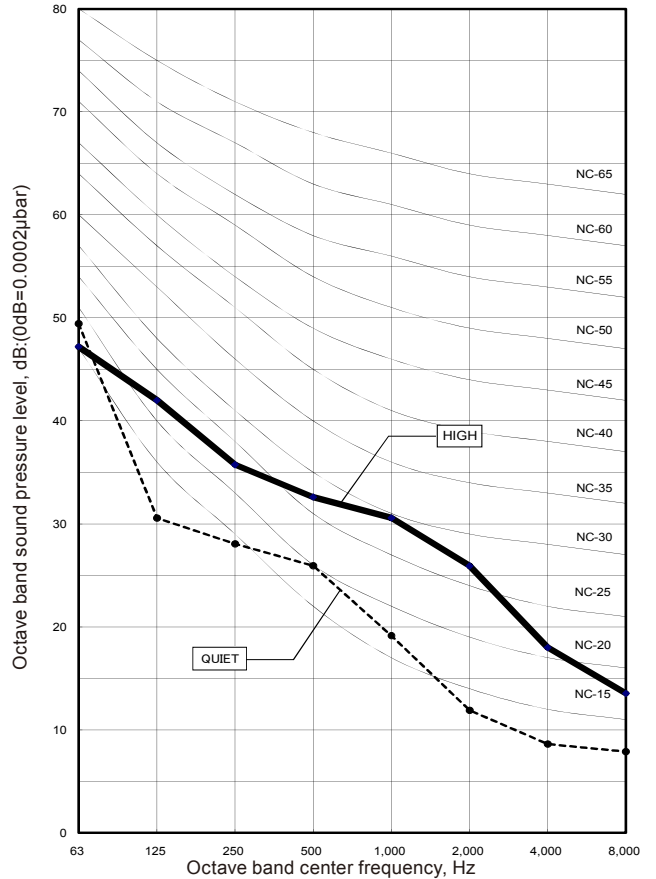


MODELS : AR*G14LLTA, AR*G14LLTB

● Cooling



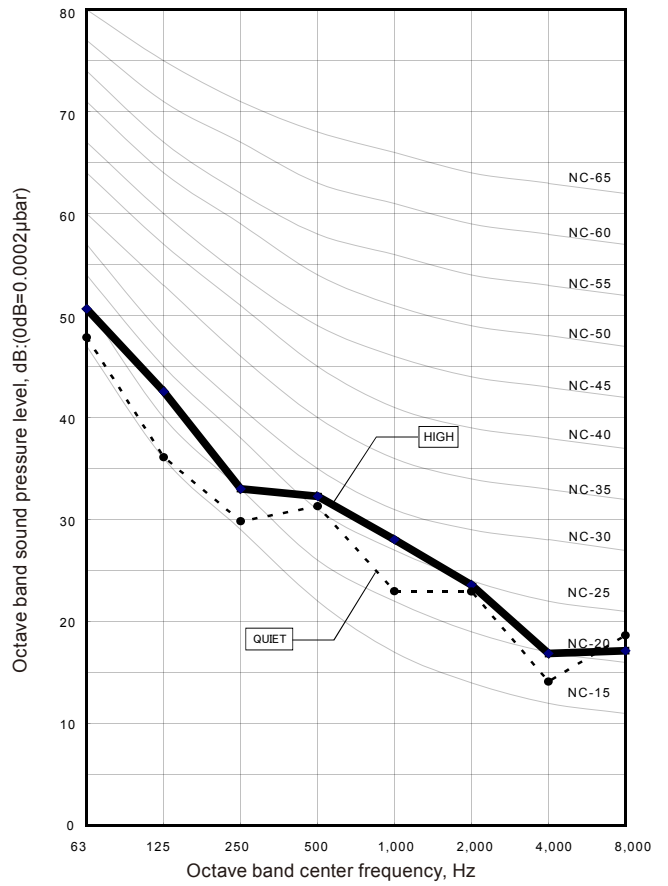
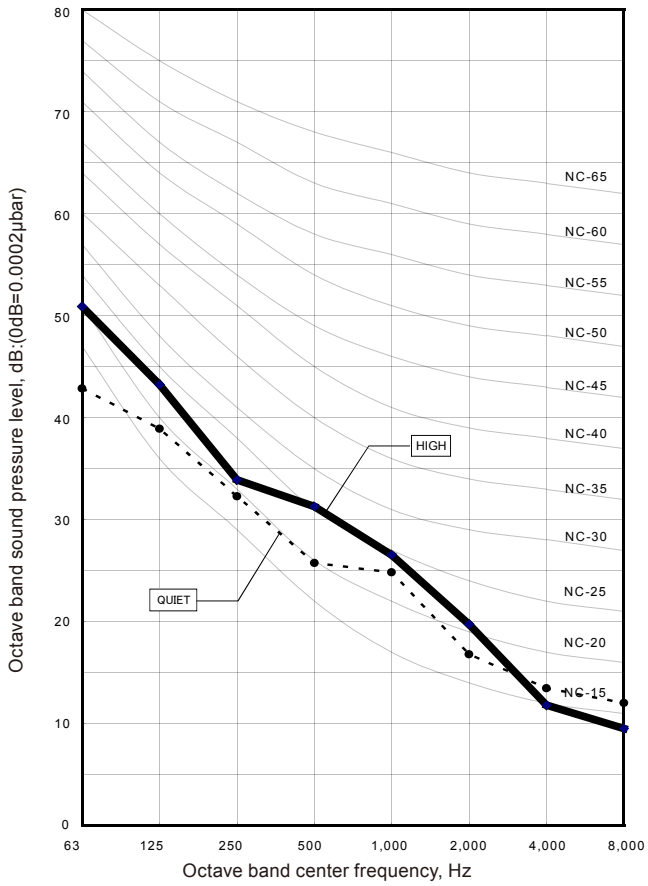
● Heating



MODELS : AR*G18LLTA, AR*G18LLTB

● Cooling

● Heating



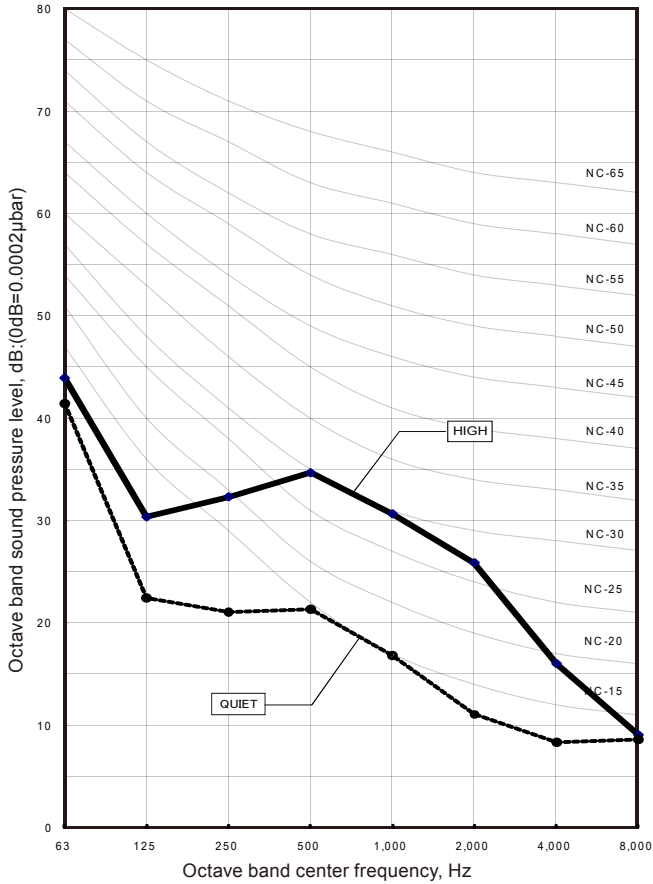
INDOOR UNITS

INDOOR UNITS

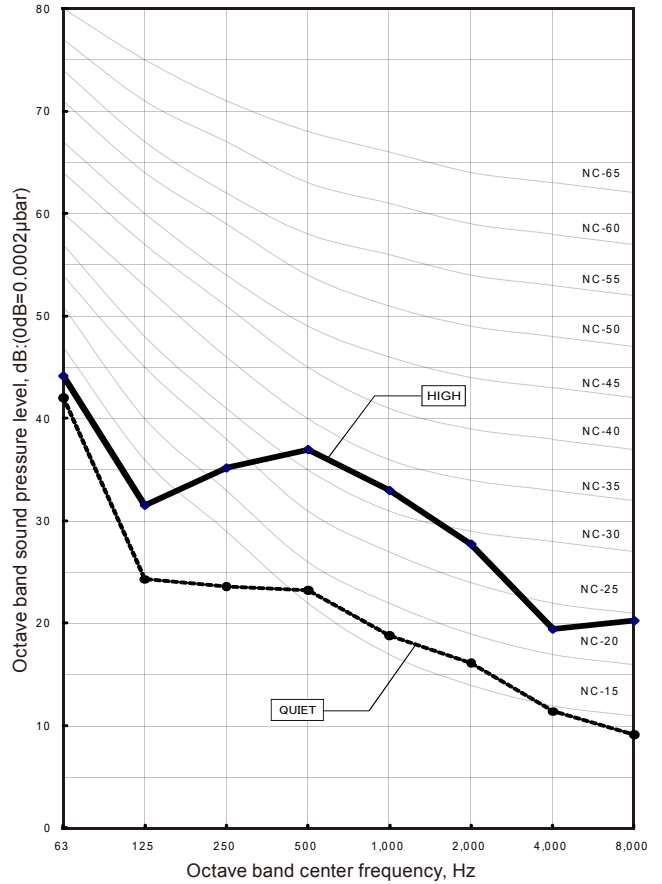
9-3. WALL MOUNTED TYPE

■ MODEL : AS*G07LJCA

● Cooling

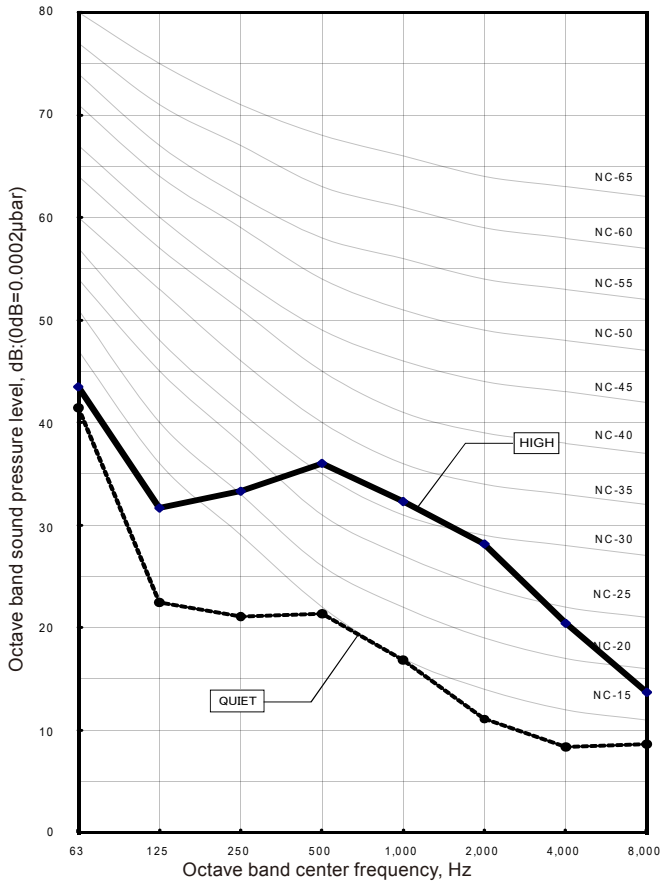


● Heating

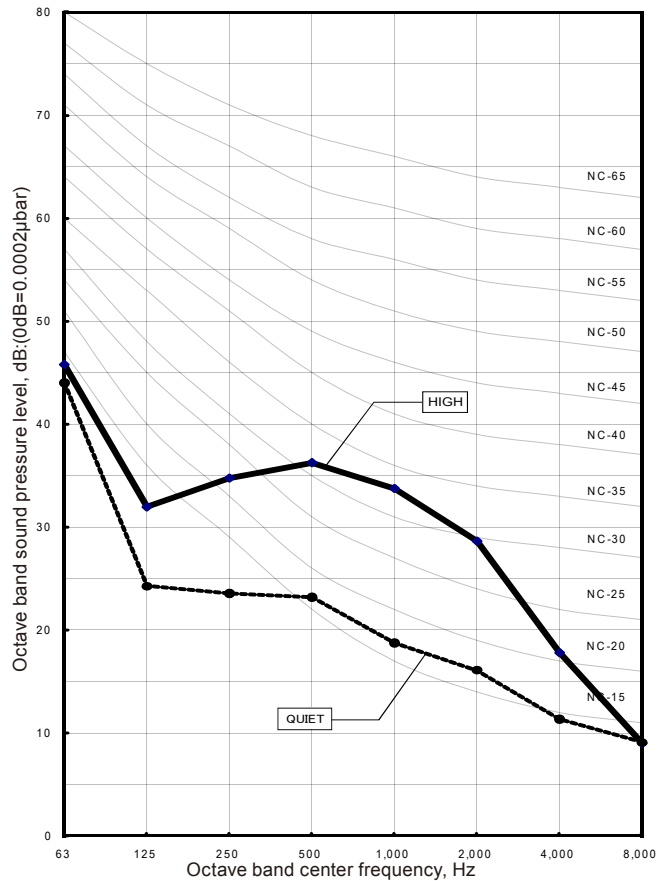


■ MODEL : AS*G09LJCA

● Cooling



● Heating

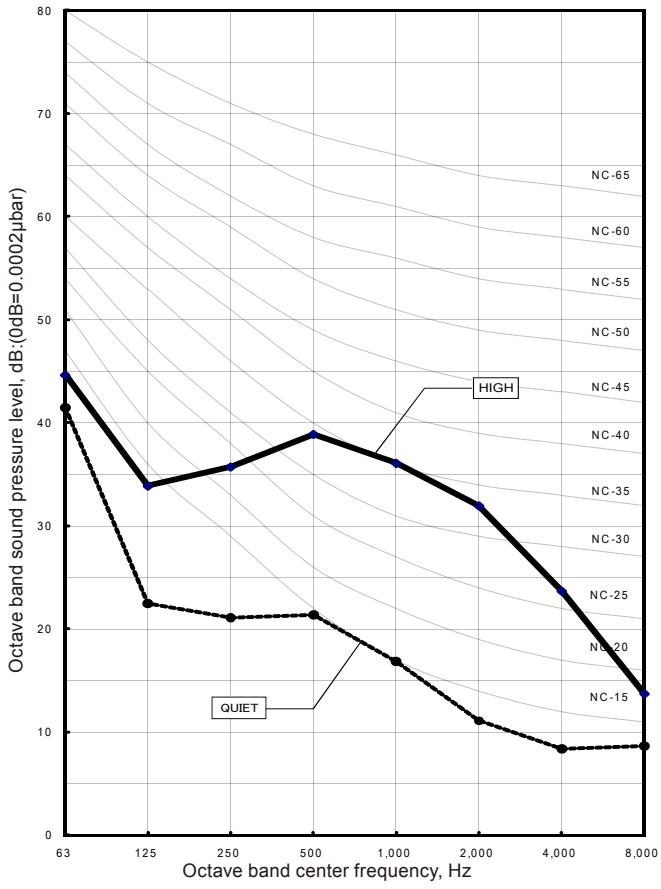


INDOOR UNITS

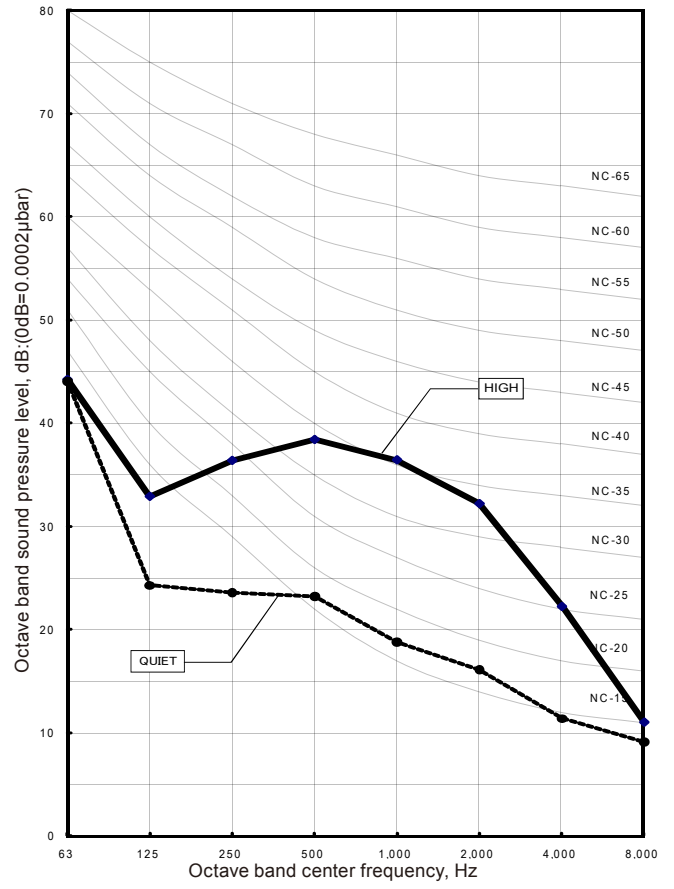
INDOOR UNITS

■ MODEL : AS*G12LJCA

● Cooling



● Heating

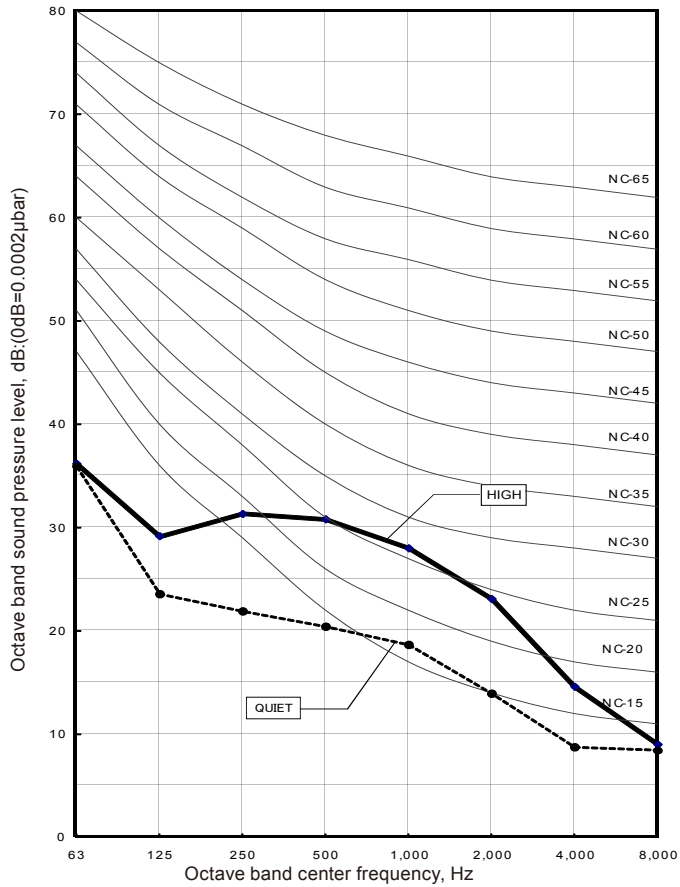


INDOOR UNITS

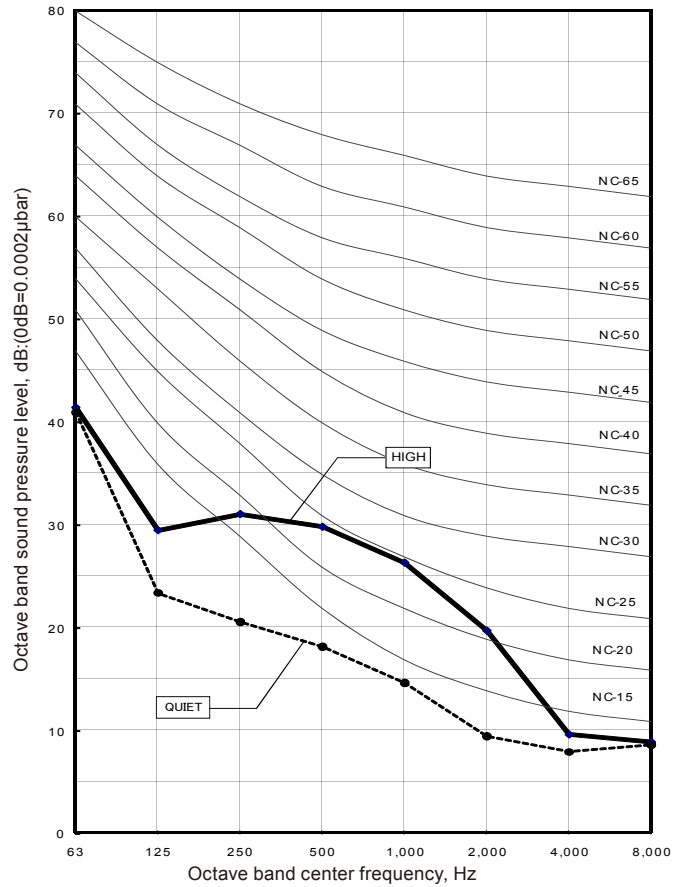
INDOOR UNITS

MODEL : AS*G07LUCA

● Cooling

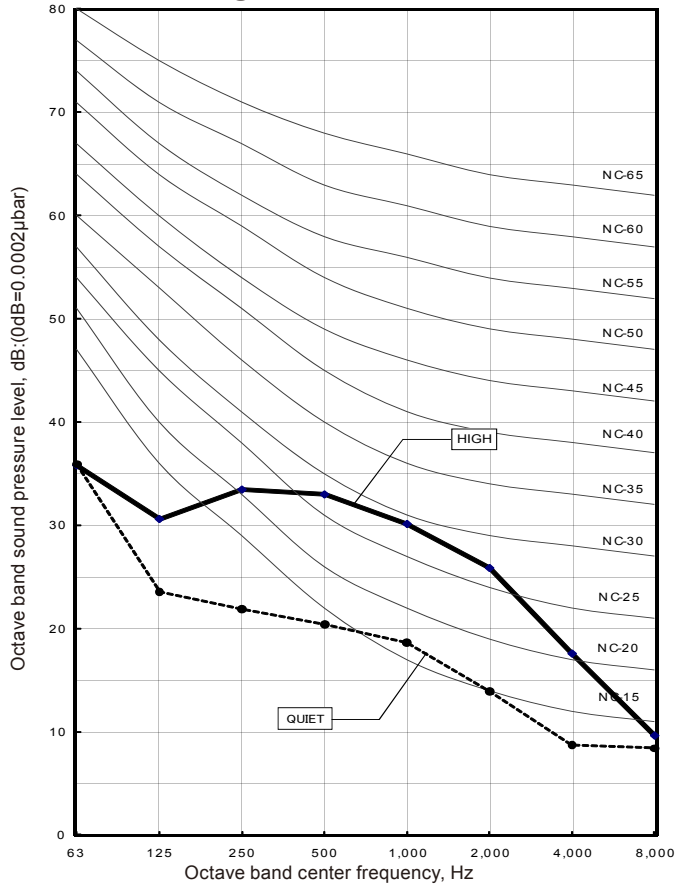


● Heating

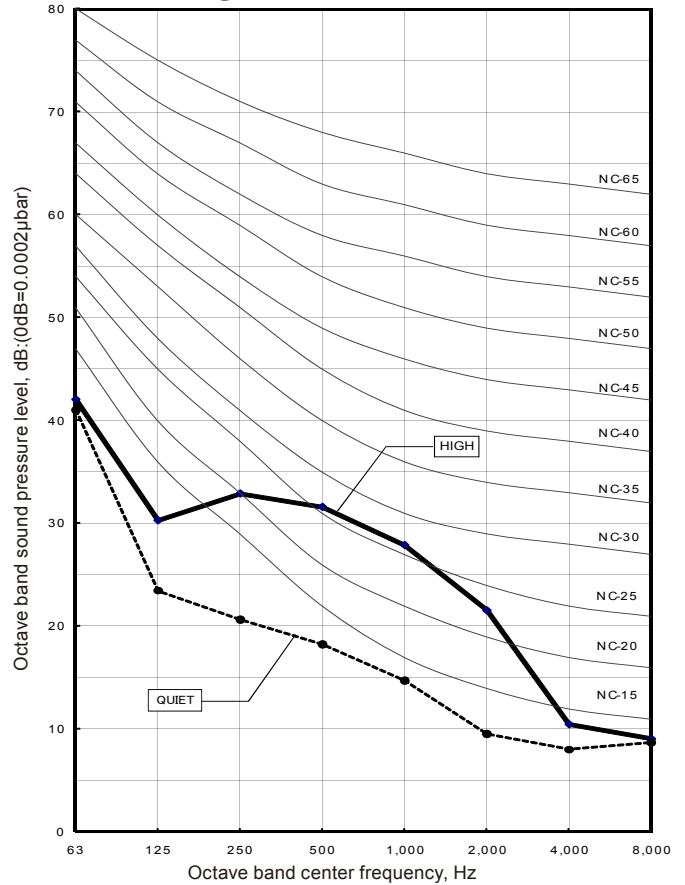


MODEL : AS*G09LUCA

● Cooling

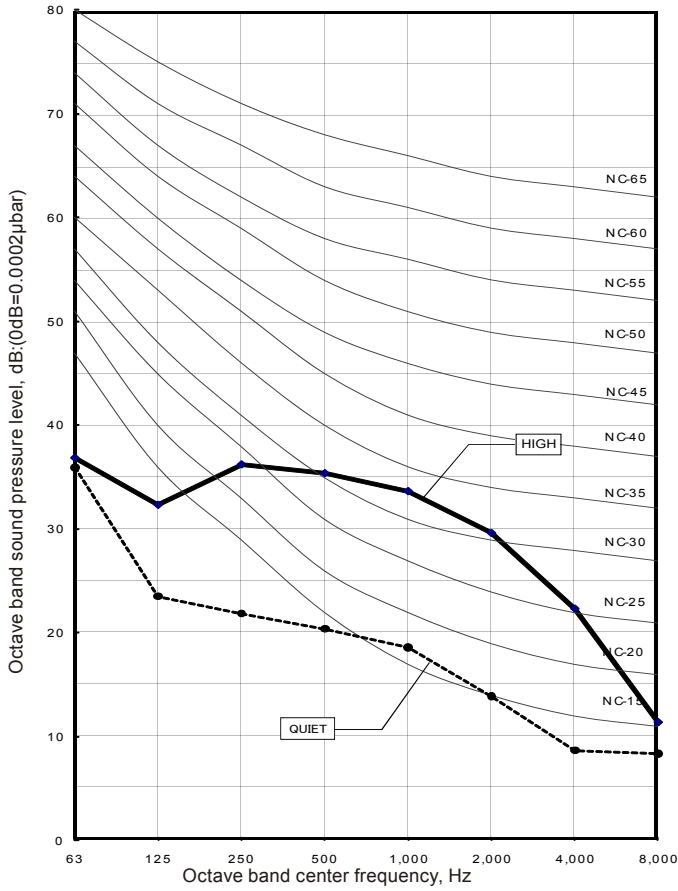


● Heating

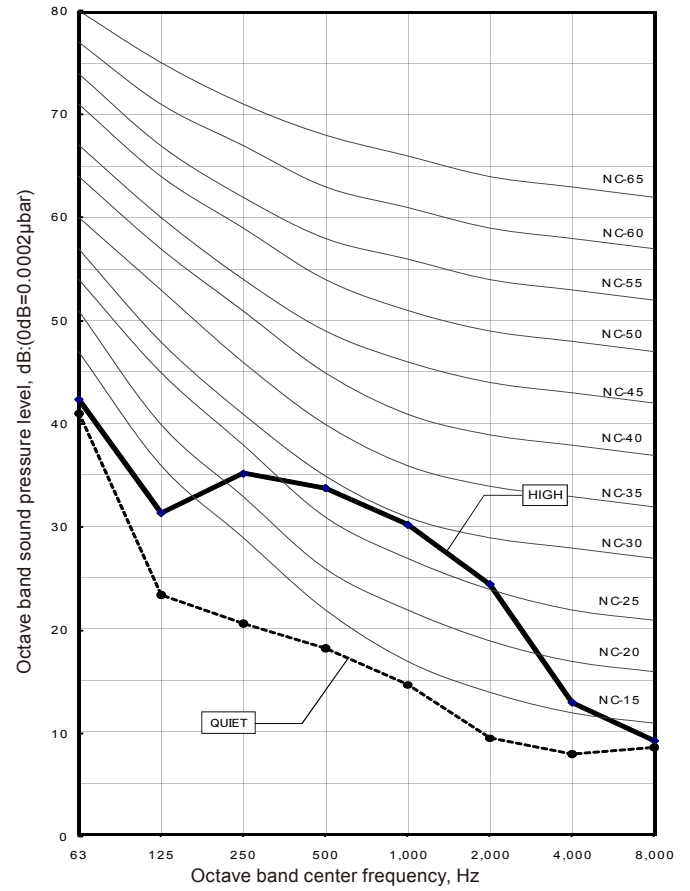


MODEL : AS*G12LUCA

● Cooling

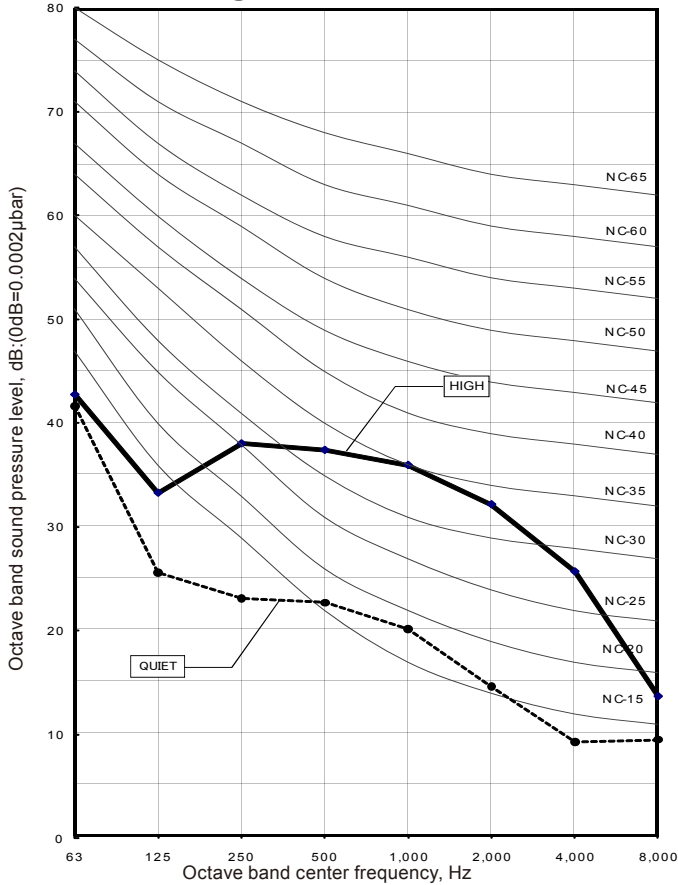


● Heating

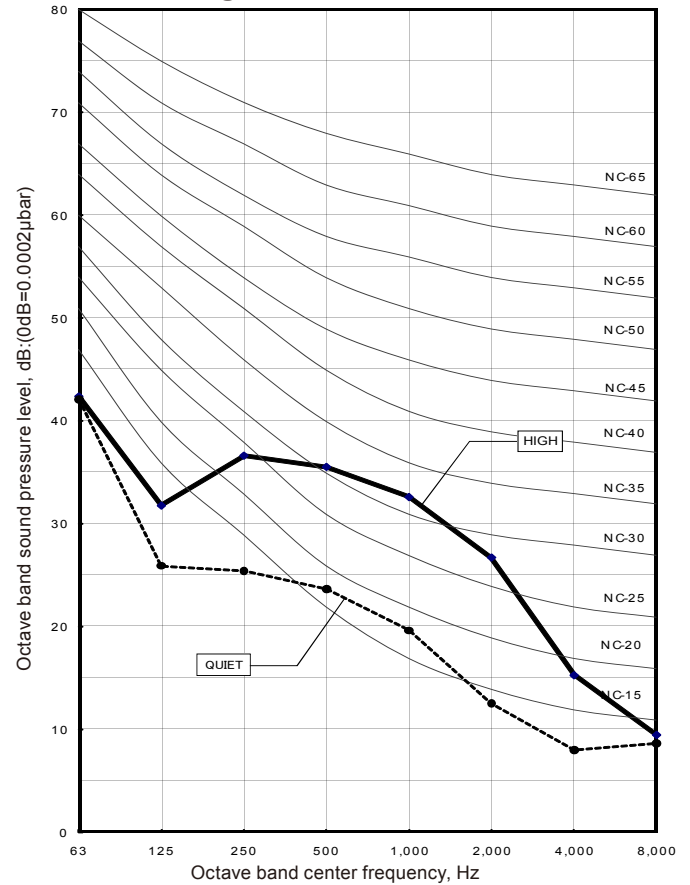


MODEL : AS*G14LUCA

● Cooling

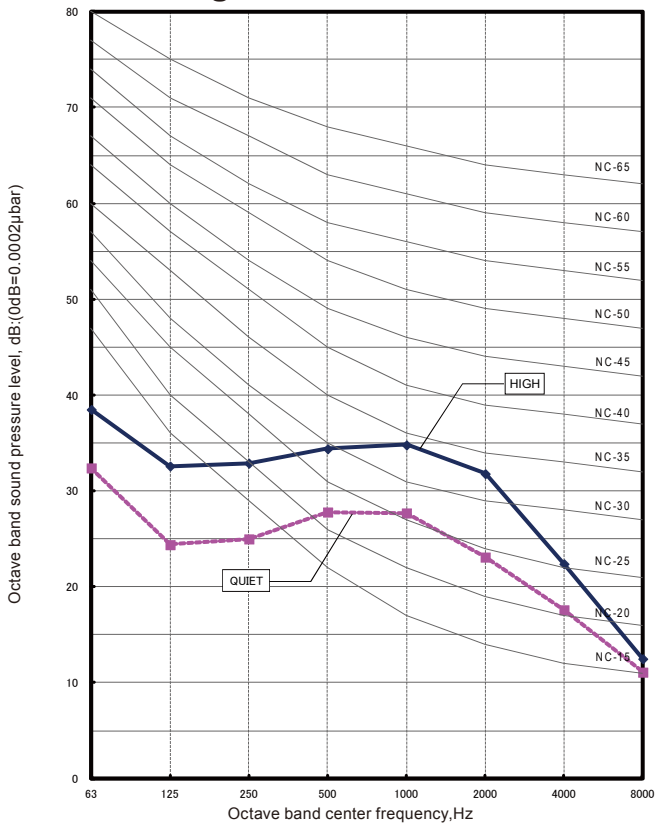


● Heating

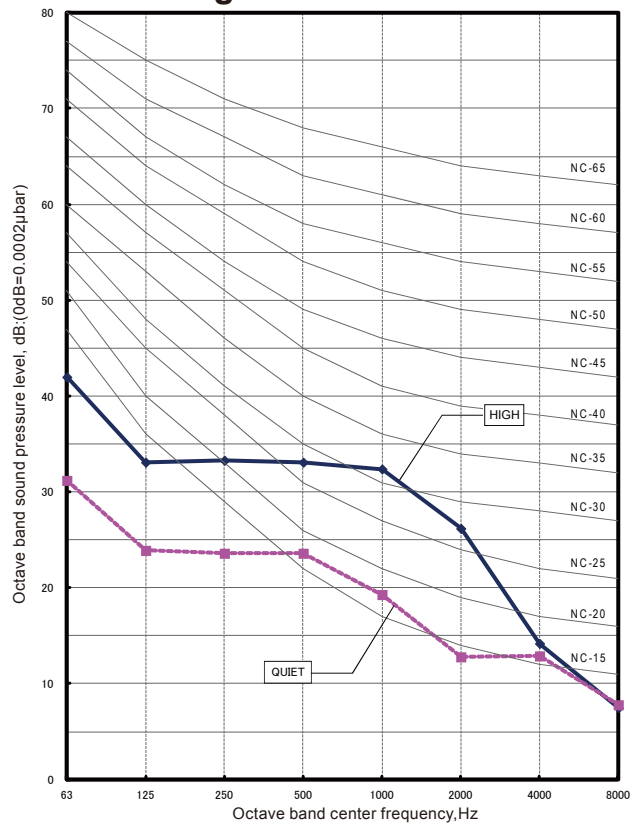


MODEL : AS*G07LMCA

● Cooling

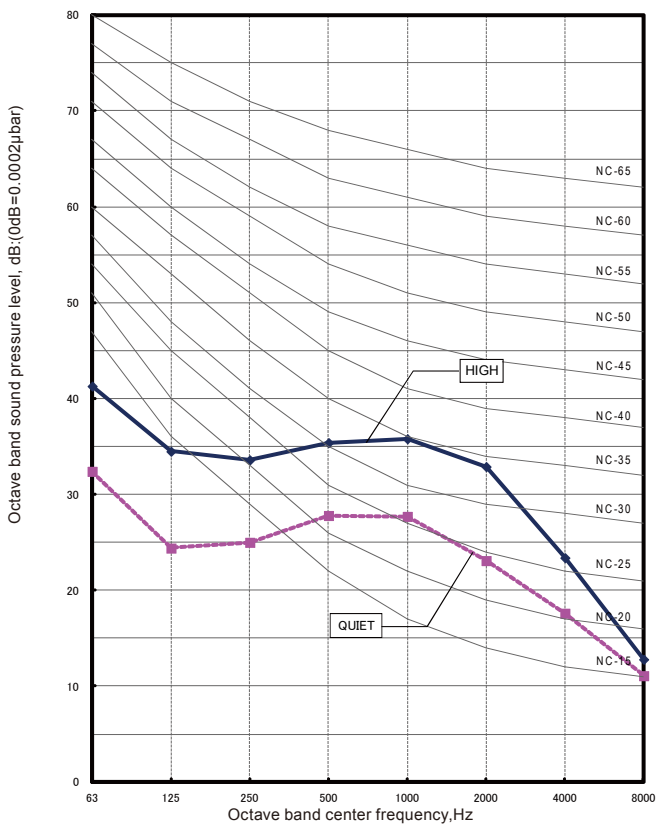


● Heating

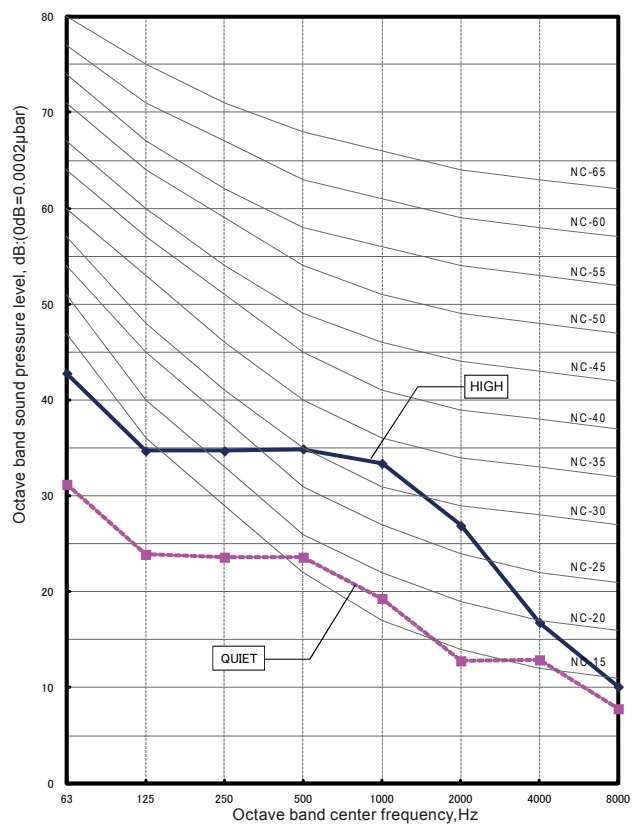


MODEL : AS*G09LMCA

● Cooling

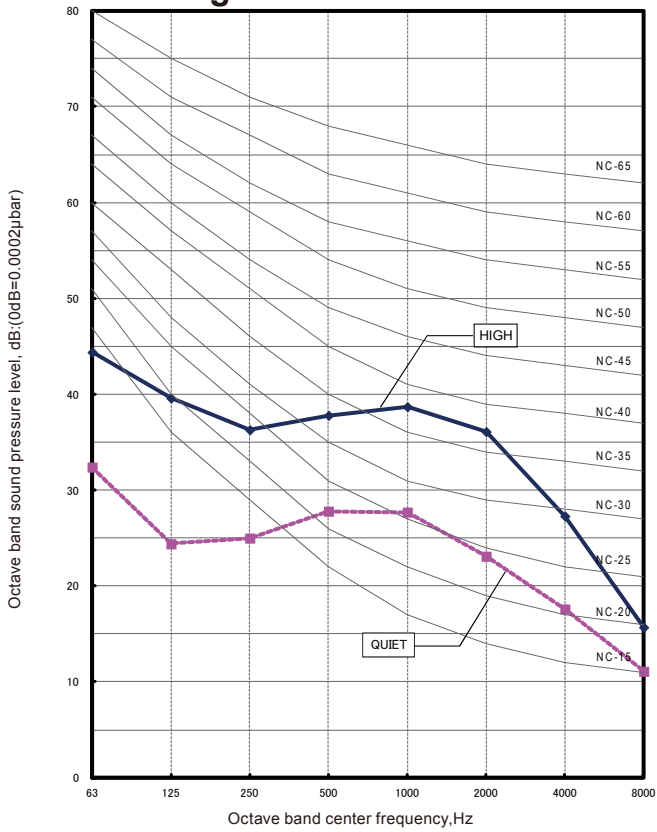


● Heating

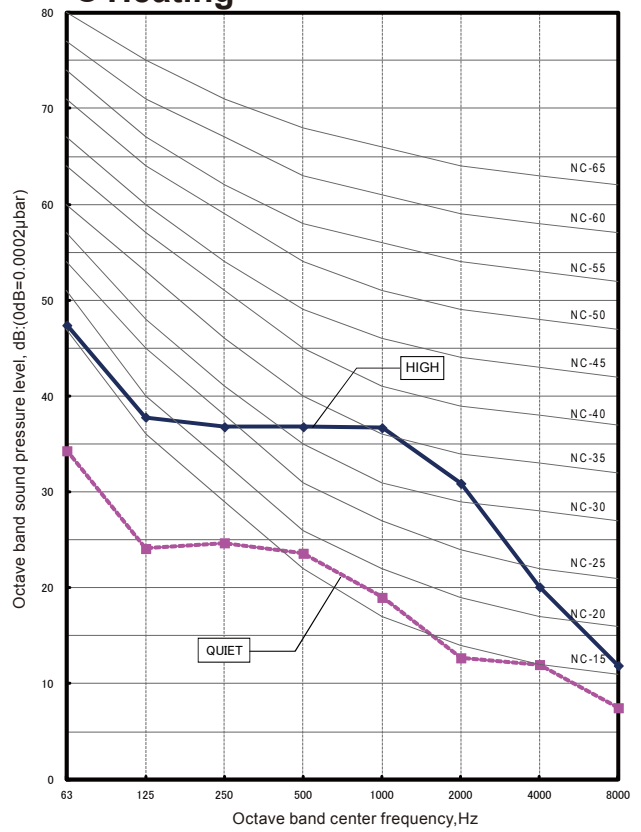


MODEL : AS*G12LMCA

● Cooling

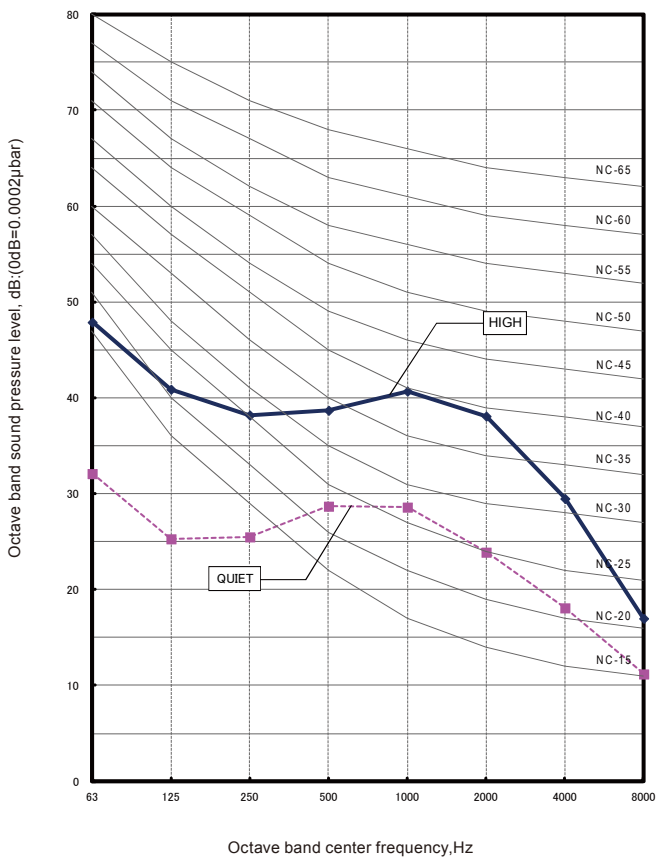


● Heating

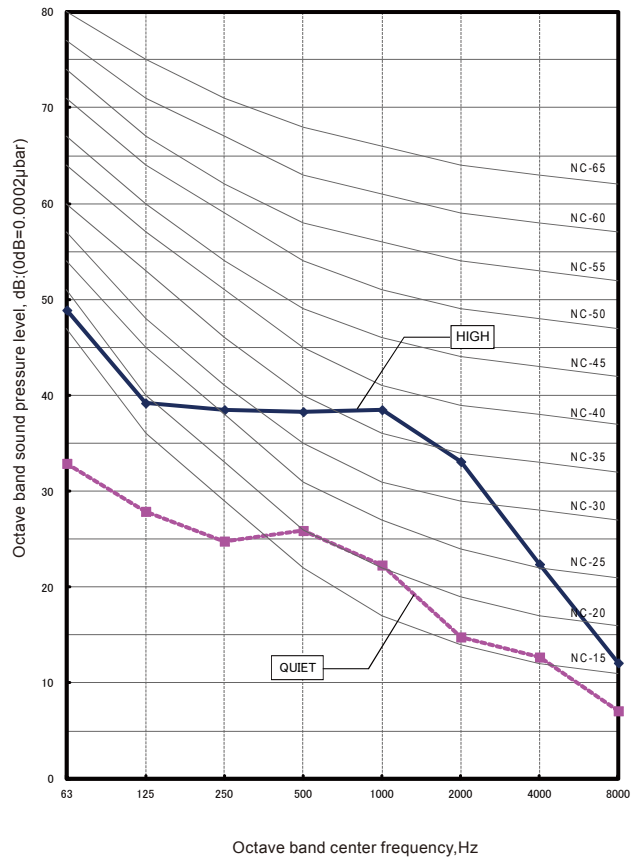


MODEL : AS*G14LMCA

● Cooling

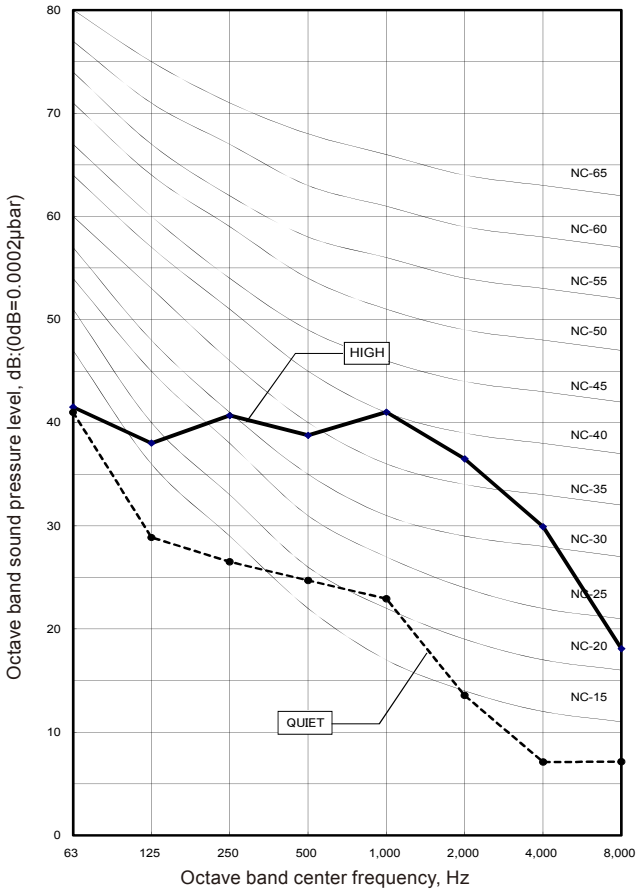


● Heating

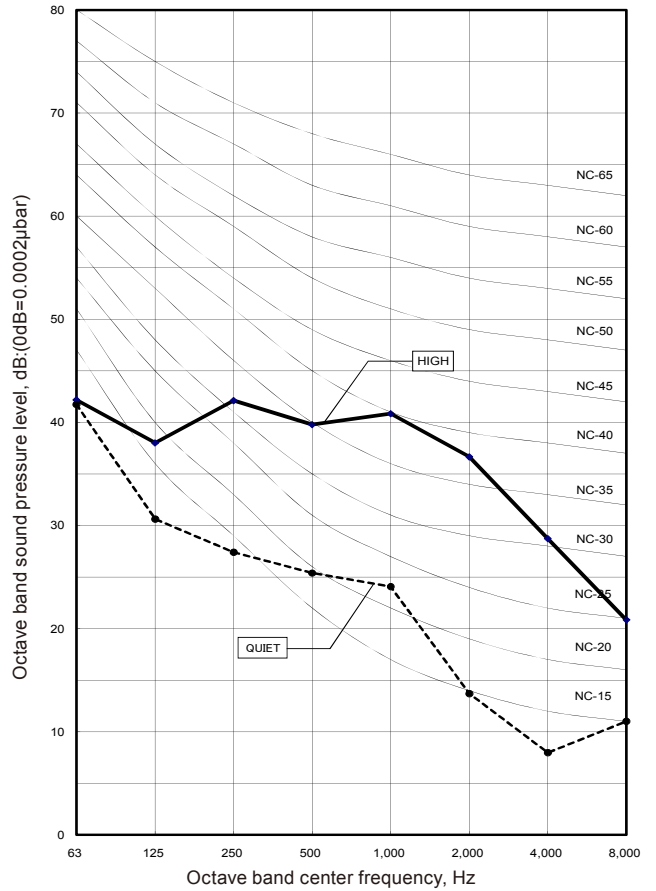


■ MODEL : AS*G18LFCA

● Cooling

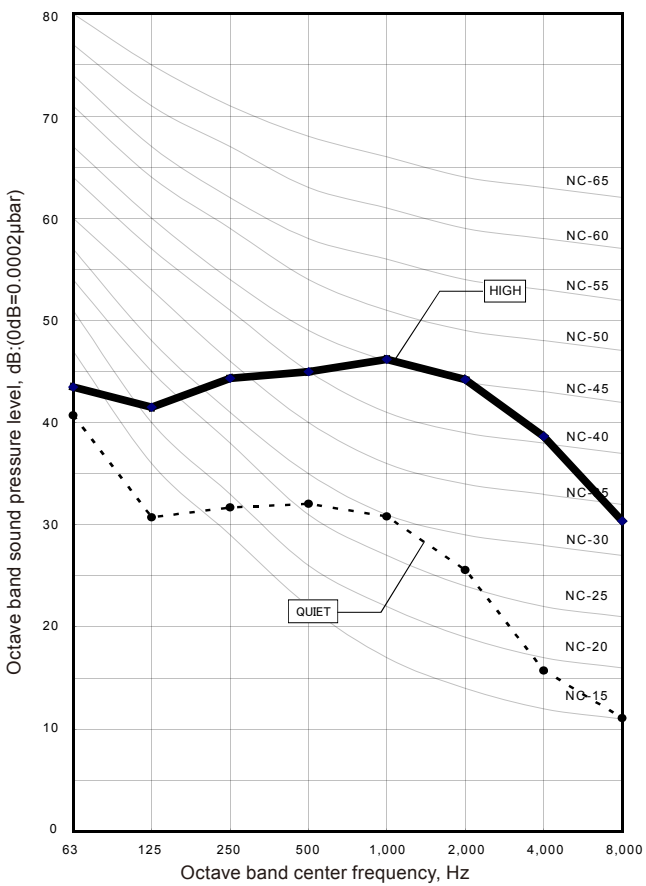


● Heating

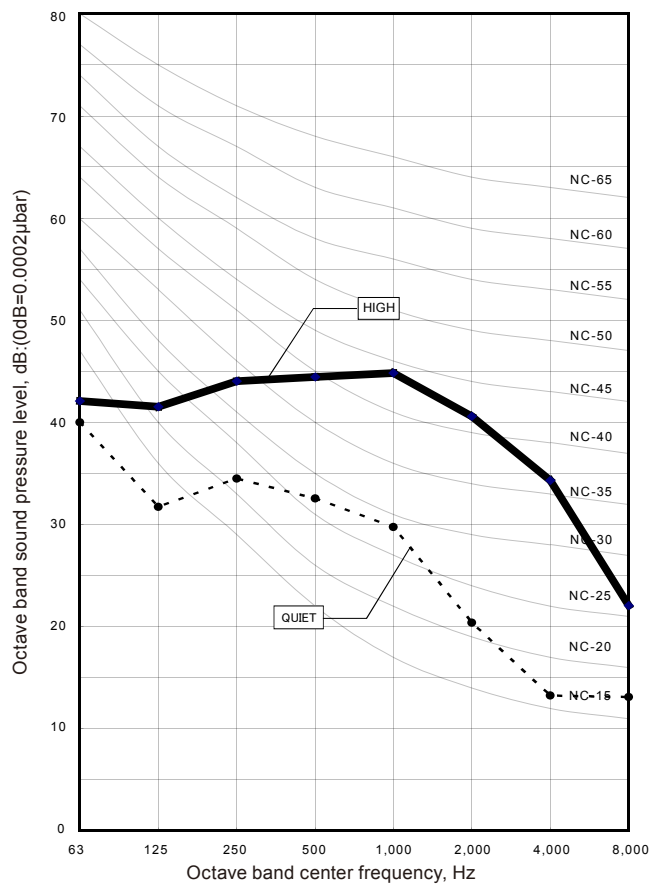


■ MODELS : AS*G24LFCA, AS*G24LFCC

● Cooling



● Heating

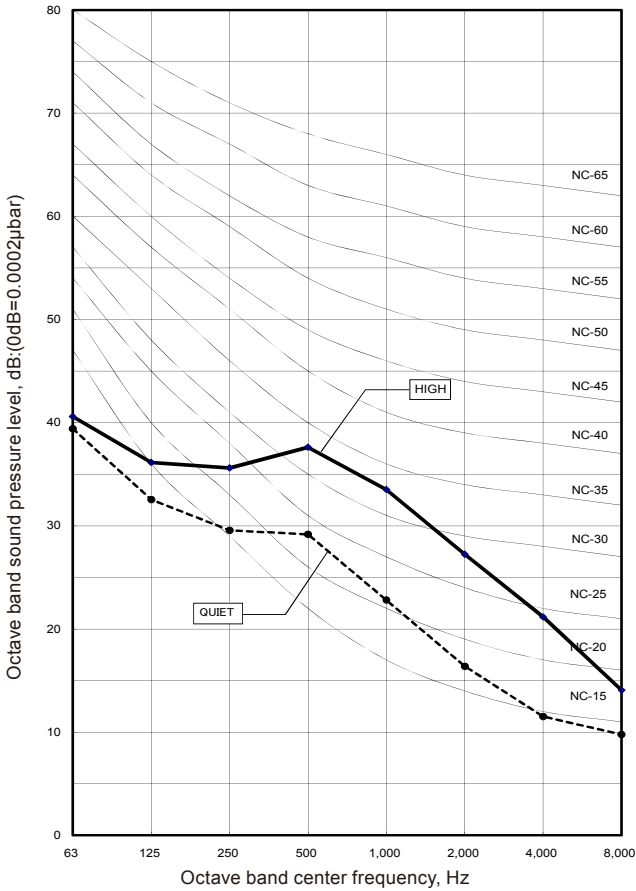


9-4. FLOOR / CEILING TYPE

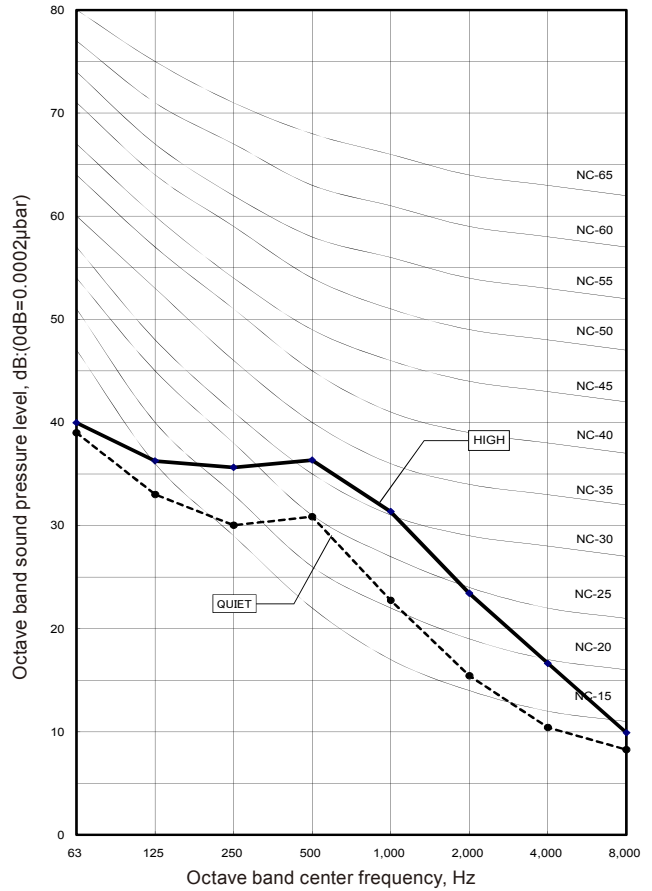
MODEL : AB*G14LVTA

NOTE:
Installation : Under ceiling

● Cooling



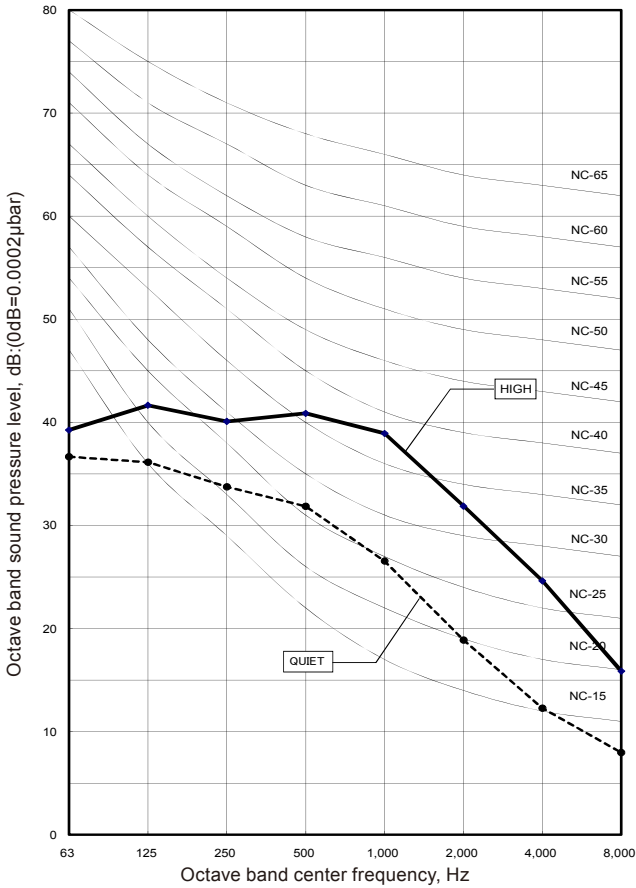
● Heating



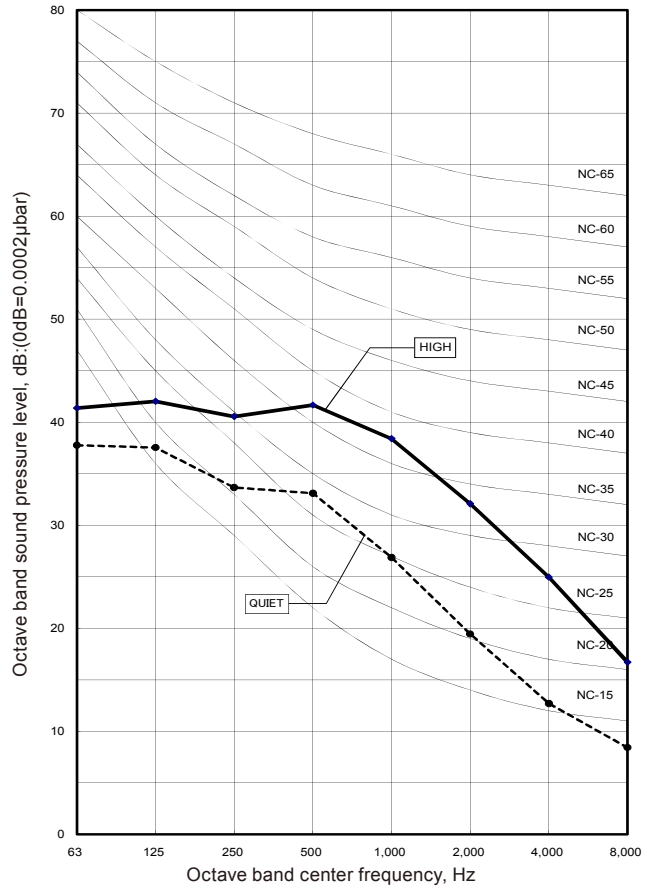
MODELS : AB*G18LVTA, AB*G18LVTB

NOTE:
Installation : Under ceiling

● Cooling



● Heating



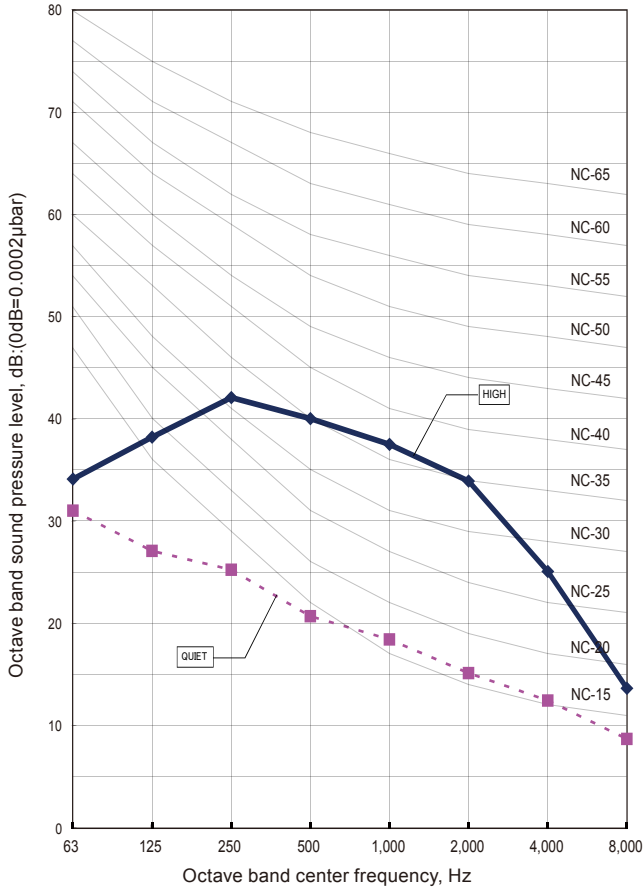
INDOOR UNITS

INDOOR UNITS

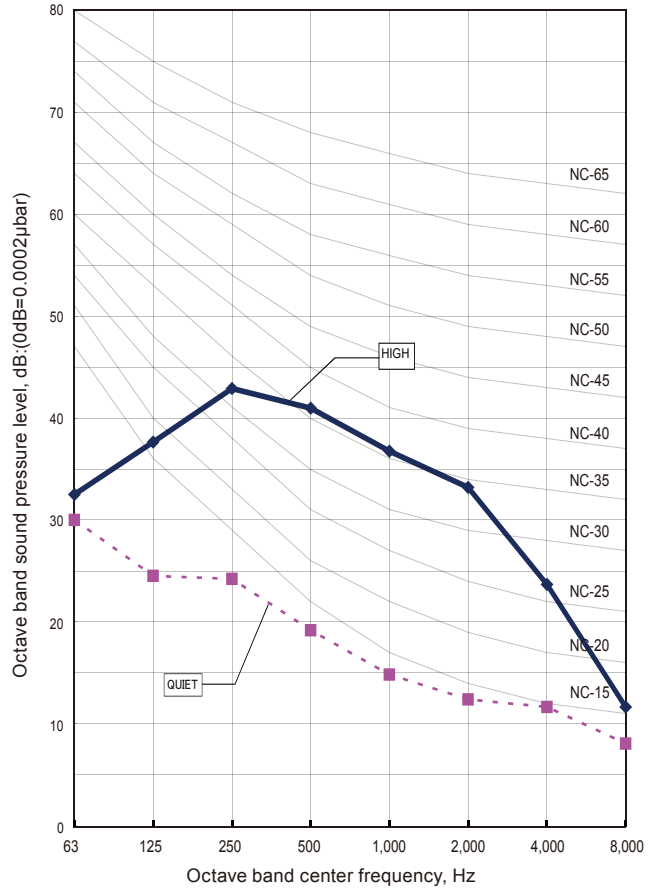
9-5. FLOOR TYPE

MODEL : AG*G09LVCA

● Cooling

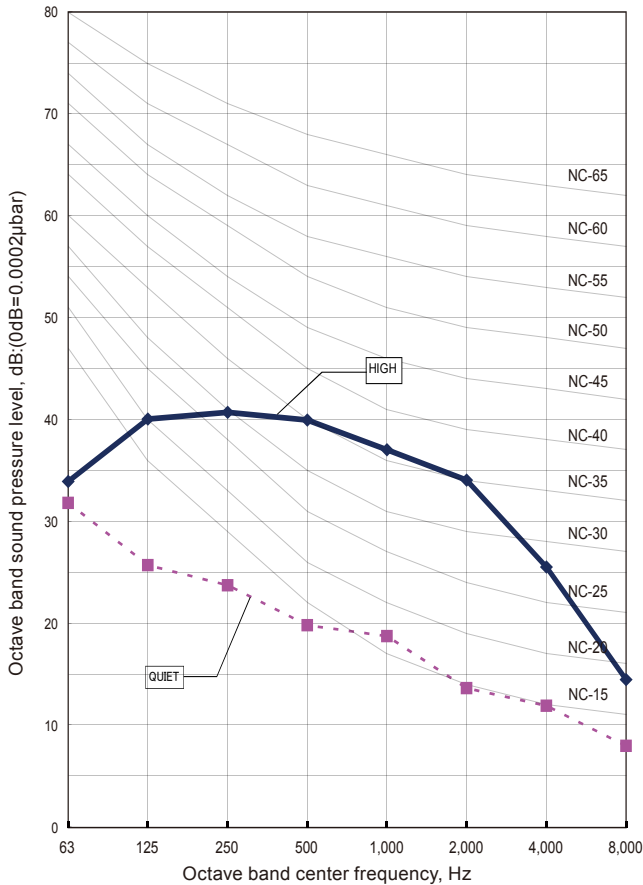


● Heating

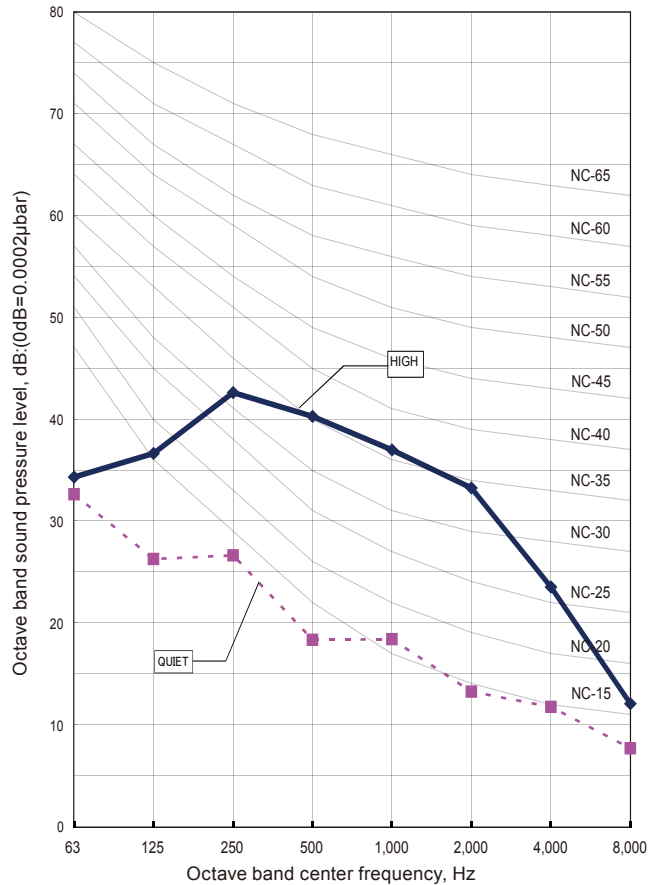


MODEL : AG*G12LVCA

● Cooling



● Heating

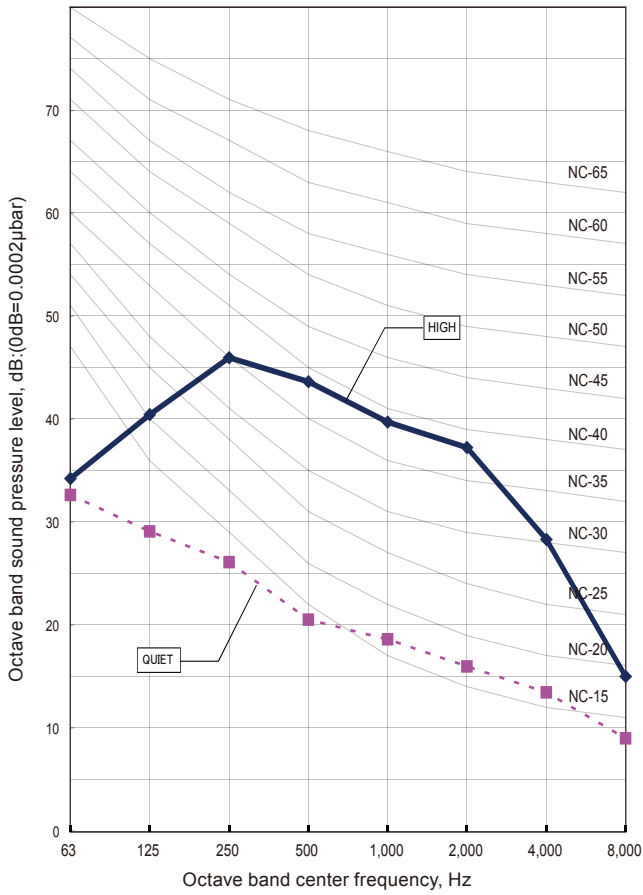


INDOOR UNITS

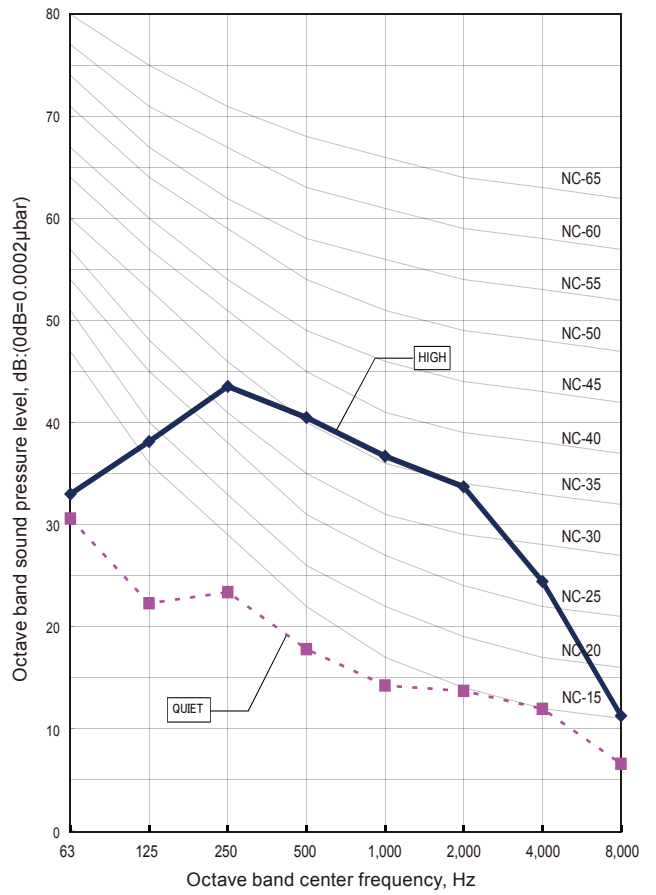
INDOOR UNITS

MODEL : AG*G14LVCA

● Cooling



● Heating

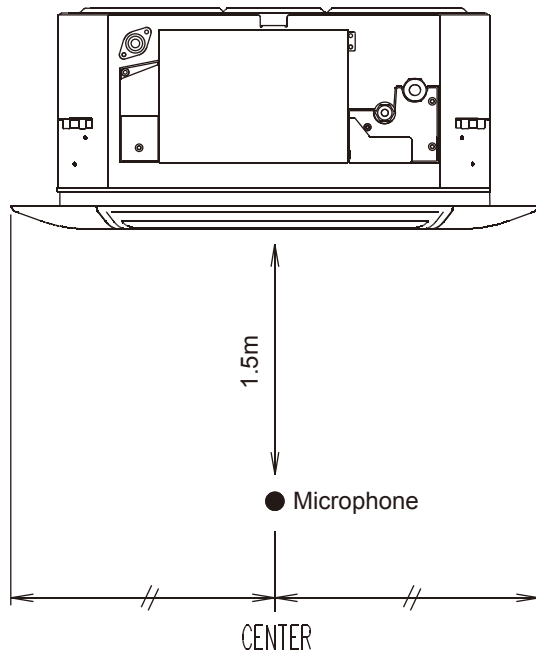
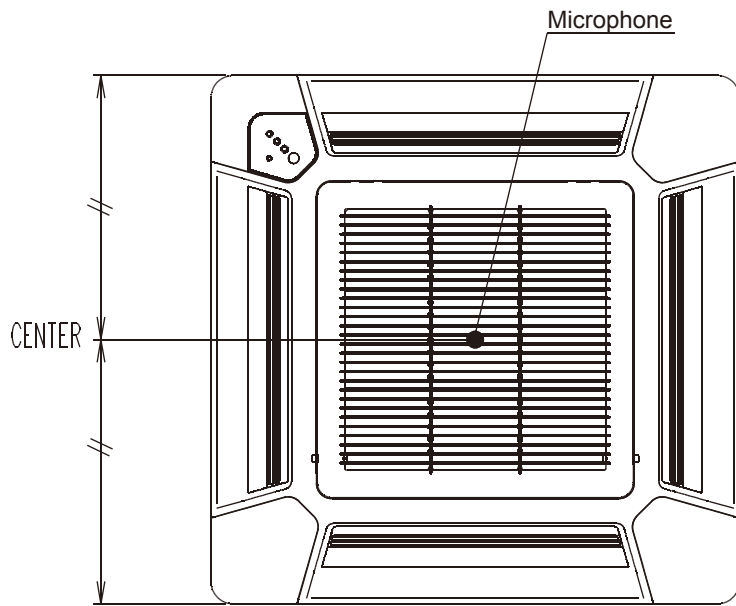


INDOOR UNITS

INDOOR UNITS

9-6. SOUND LEVEL CHECK POINT

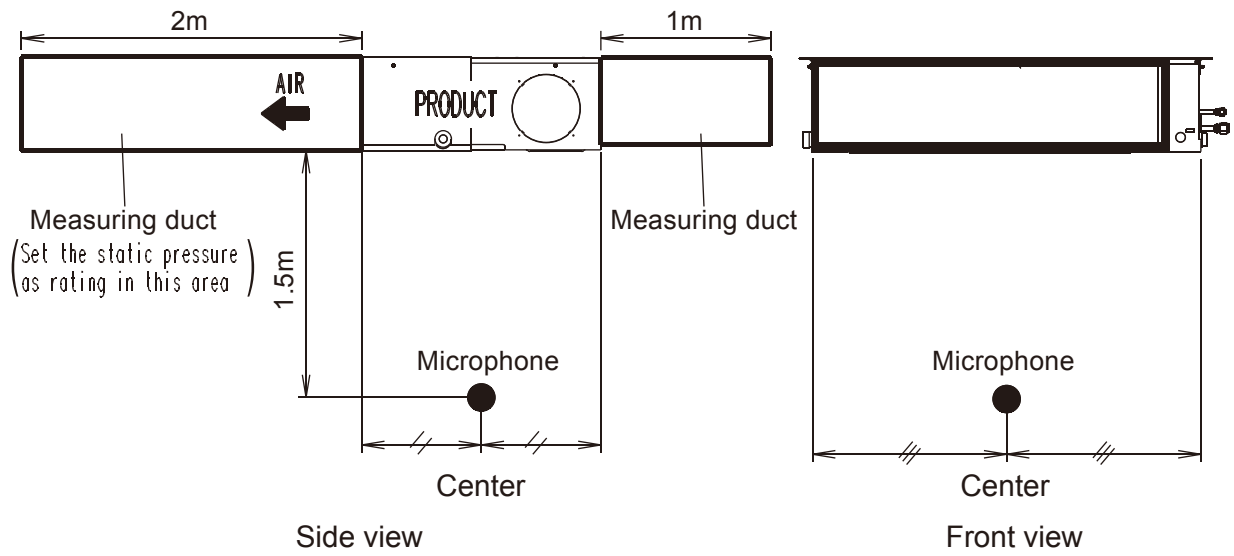
■ COMPACT CASSETTE TYPE



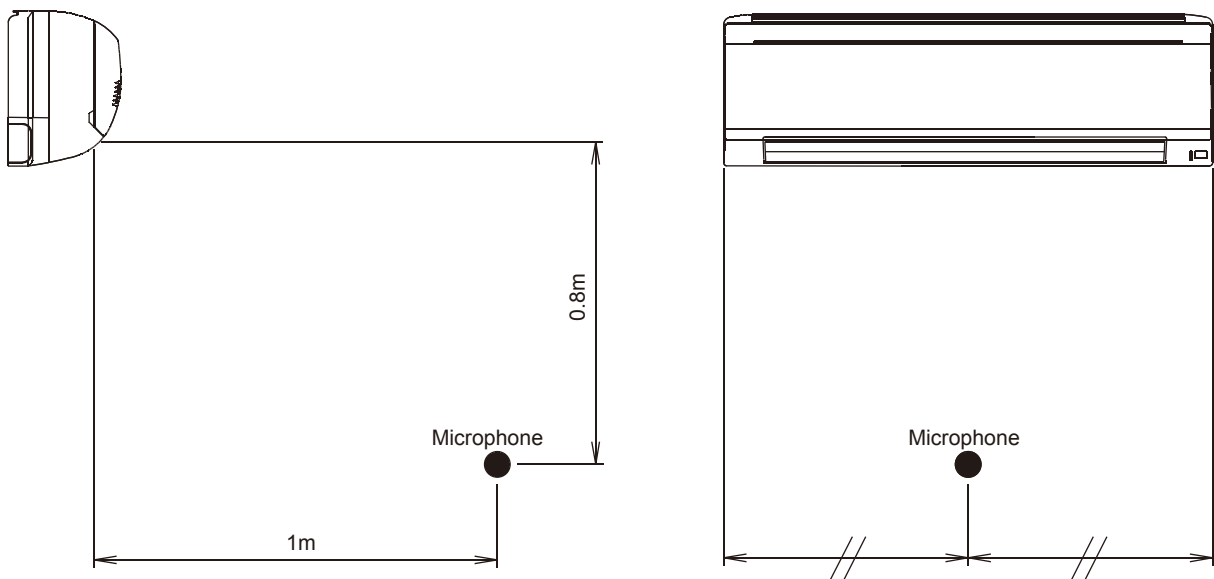
INDOOR
UNITS

INDOOR
UNITS

■ SLIM DUCT TYPE

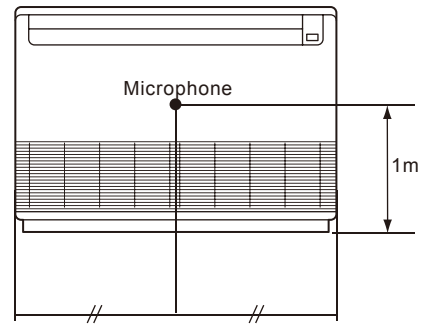
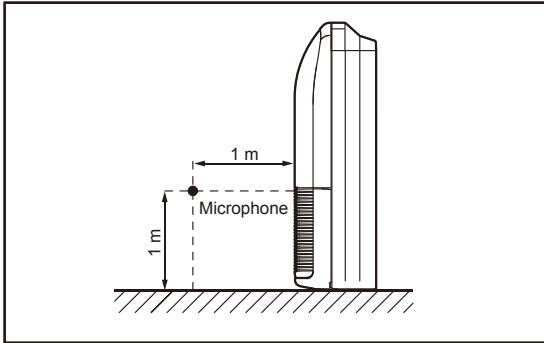


■ WALL MOUNTED TYPE

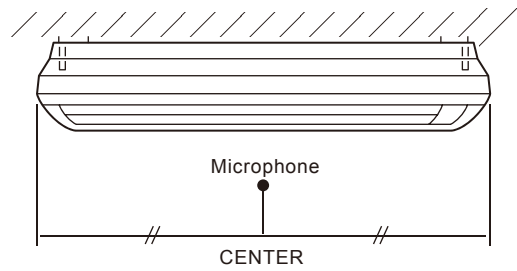
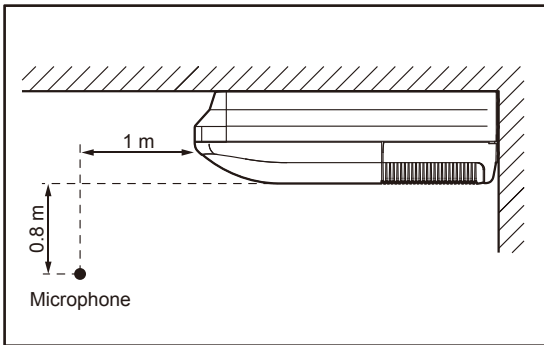


■ FLOOR / CEILING TYPE

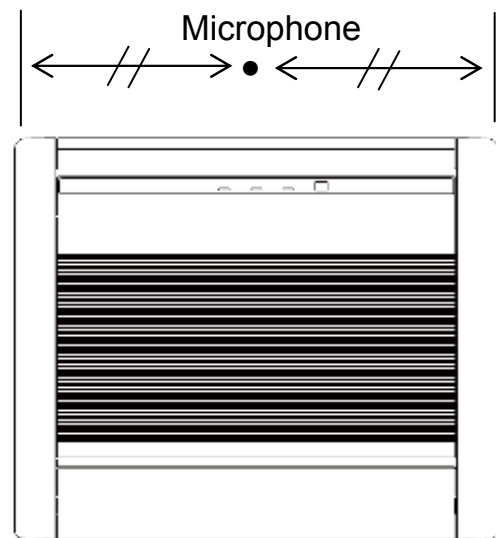
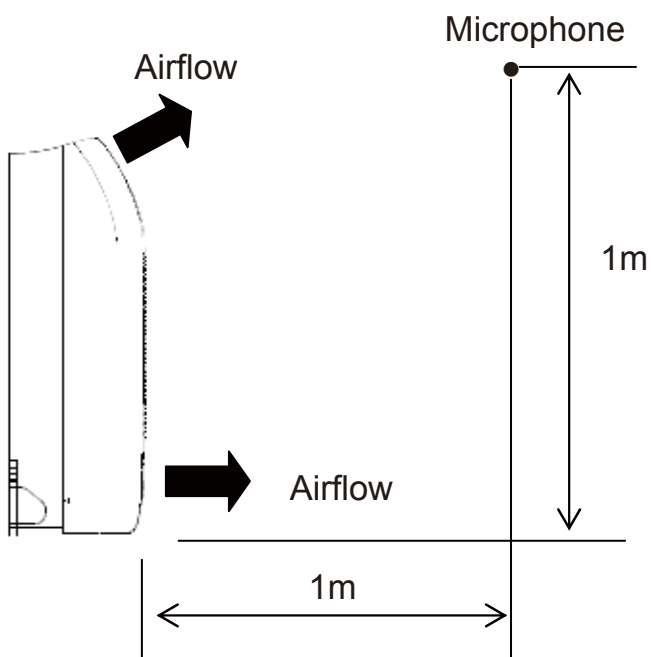
● Floor console



● Under ceiling



■ FLOOR TYPE



10. SAFETY DEVICES

Model and type		PCB fuse	Fan motor thermal protector	Terminal thermal fuse	Float switch	
Compact Cassette	AU*G07LVLA	250V 3.15A	130 +17°C -9°C	—	○	
	AU*G09LVLA					
	AU*G12LVLA					
	AU*G12LVLB					
	AU*G14LVLA					
	AU*G14LVLB					
	AU*G18LVLA					
AU*G18LVLB						
Slim Duct	AR*G07LLTA	250V 3.15A	135 ± 15°C	—	○	
	AR*G09LLTA					
	AR*G12LLTA					
	AR*G12LLTB					
	AR*G14LLTA					
	AR*G14LLTB					
	AR*G18LLTA					
AR*G18LLTB						
Wall Mounted	LJ	AS*G07LJCA	250V 3.15A	120 ± 15°C	102°C OFF	—
		AS*G09LJCA				
		AS*G12LJCA				
	LU	AS*G07LUCA	250V 3.15A	120 ± 15°C	102°C OFF	—
		AS*G09LUCA				
		AS*G12LUCA				
		AS*G14LUCA				
	LM	AS*G07LMCA	250V 3.15A	160 ± 25°C	—	—
		AS*G09LMCA				
		AS*G12LMCA				
		AS*G14LMCA				
	LF	AS*G18LFCA	250V 3.15A	150 ± 15°C	102°C OFF	—
		AS*G24LFCA				
AS*G24LFCC						
Floor / Ceiling	AB*G14LVTA	250V 3.15A	135 ± 15°C	—	—	
	AB*G18LVTA					
	AB*G18LVTB					
Floor	AG*G09LVCA	250V 3.15A	150 ± 15°C	102°C OFF	—	
	AG*G12LVCA					
	AG*G14LVCA					

INDOOR
UNITS

INDOOR
UNITS

Flexible Multi System

5. CONTROL SYSTEM

CONTENTS

5. CONTROL SYSTEM

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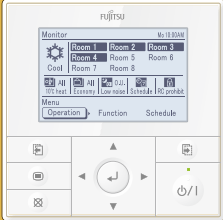
1. CONTROL SYSTEM

1-1. LINE UP OF CONTROLLERS

■ FEATURES OF CONTROL SYSTEM

Air Conditioning Central Control

Central controller specially designed for centralized control.



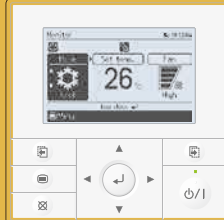
Central Remote Controller

UTY-DMMM***

Control of indoor units with simple operation and weekly timer.

Air Conditioning Individual Control

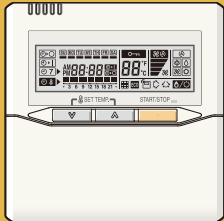
A range of remote controllers suitable for individual control situations, using various built-in timers.



Wired Remote Controller

UTY-RVNM***

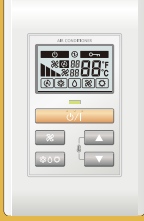
Large and full-dot liquid crystal screen, wide and large keys easy to press, user-intuitive arrow key.



Wired Remote Controller

UTY-RNNM***

The room temperature can be controlled and detected accurately with built-in thermo sensor.



Simple Remote Controller

UTY-RSNM***

Compact remote controller concentrates on the basic functions such as Start/Stop, Fan Control, Temperature Setting and Operation mode.



Wireless Remote Controller

Simple and sophisticated operation with a variety of timer settings.

AR-RAH2E AR-REA2E
AR-RAH1E AR-REB1E



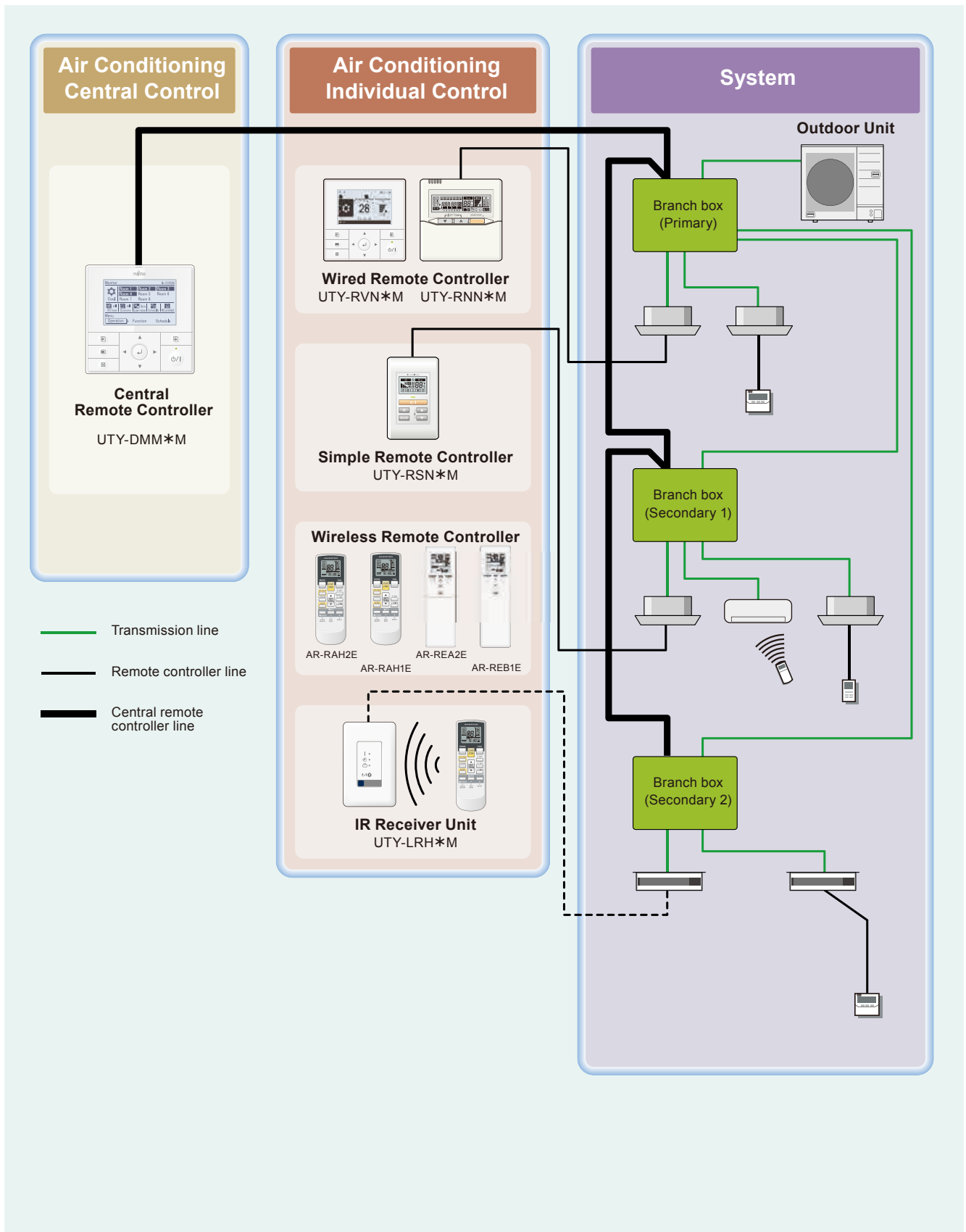
IR Receiver Unit

UTY-LRHM***

Wireless remote controller for duct type

1-2. CONTROL SYSTEM DESIGN

■ ADVANCED INTEGRATED CONTROL SYSTEM

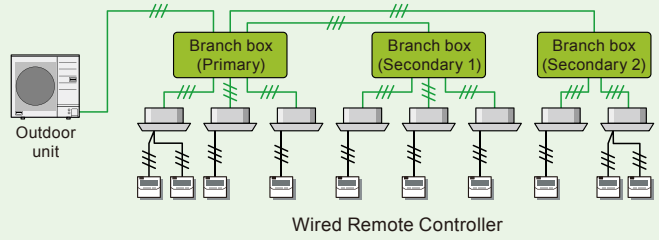


1-3. SYSTEM CONFIGURATION EXAMPLES

INDIVIDUAL CONTROL

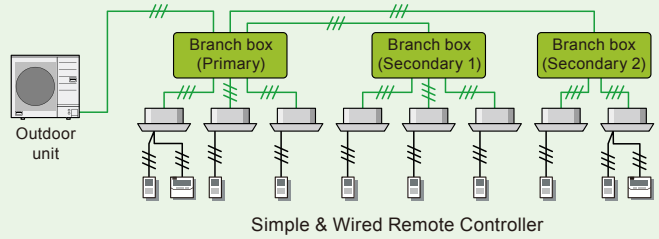
Wired Remote Controller

- Wired, simple, and wireless remote controllers can be used jointly.
- Two remote controllers can be connected to a single indoor unit.



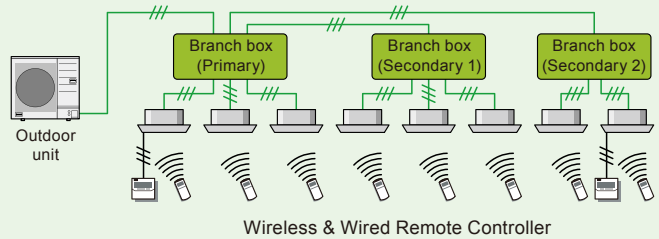
Simple Remote Controller

- Enables easy control of basic functions by the hotel or office guest.
- Two remote controllers can be connected to a single indoor unit.



Wireless Remote Controller

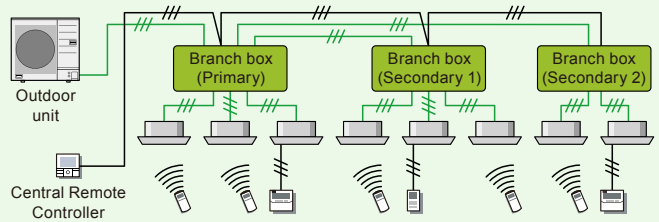
- Wired, simple, and wireless remote controllers can be used jointly.



CENTRAL CONTROL

Central Remote Controller

- Up to 8 indoor units can be controlled with one central remote controller.
- The central remote controller can be used simultaneously with wired, simple, and wireless remote controller.
- Only one can be used for one system.



INDOOR UNIT TYPE AND THE APPLICABLE CONTROL METHOD

Type	Model	Indoor units							
		Compact Cassette	Slim Duct	Wall mounted				Floor / Ceiling	Floor
				LJ	LU	LM	LF		
Central Remote Controller	UTY-DMM*M	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1
Wired Remote Controller	UTY-RVN*M	○	○	○ *2	○ *3	○ *4	○	○	○
	UTY-RNN*M	○	●	○ *2	○ *3	○ *4	○	○	○
Wireless Remote Controller	AR-RAH2E	-	-	-	-	-	●	●	-
	AR-RAH1E	●	-	●	-	-	-	-	●
	AR-REA2E	-	-	-	●	-	-	-	-
	AR-REB1E	-	-	-	-	●	-	-	-
IR Receiver Unit	UTY-LRH*M	-	○	-	-	-	-	-	-
Simple Remote Controller	UTY-RSN*M	○	○	○ *2	○ *3	○ *4	○	○	○

●: Accessory, ○: Optional, -: Not Applicable.

*1: Central remote controller is connected with Branch box.

*2: Optional Communication kit (UTY-XCBXZ1) is necessary for installation.

*3: Optional Communication kit (UTY-TWBXF) is necessary for installation.

*4: Optional Communication kit (UTY-XCBXZ2) is necessary for installation.

RESTRICTION OF WIRELESS REMOTE CONTROLLER FUNCTIONS

The following indicates the restrictions of the wireless remote controller when used in combination with other controllers to one indoor unit.

Model name	Wireless remote controller functions	Wireless Remote Controller only	Wireless Remote Controller + Wired / Simple Remote Controller	Wireless Remote Controller + Central Remote Controller	Wireless Remote Controller + Wired / Simple Remote Controller + Central Remote Controller
AR-RAH1E	TIMER	○	×	×	×
	SLEEP TIMER	○	×	×	×
AR-RAH2E	10°C HEAT	○	×	○	×
UTY-LRH*M	TIMER	○	×	×	×
	SLEEP TIMER	○	×	×	×
	10°C HEAT	○	×	○	×
	WEEKLY TIMER	○	×	×	×
	POWERFUL	○	×	×	×
	LOW NOISE	×	×	×	×
AR-REA2E	TIMER	○	×	×	×
	SLEEP TIMER	○	×	×	×
	10°C HEAT	○	×	○	×
	WEEKLY TIMER	○	×	×	×
	POWERFUL	○	×	×	×
AR-REB1E	TIMER	○	×	×	×
	SLEEP TIMER	○	×	×	×
	10°C HEAT	○	×	○	×
	POWERFUL	○	×	×	×
	LOW NOISE	×	×	×	×

○: This function is available.

×: This function is not available.

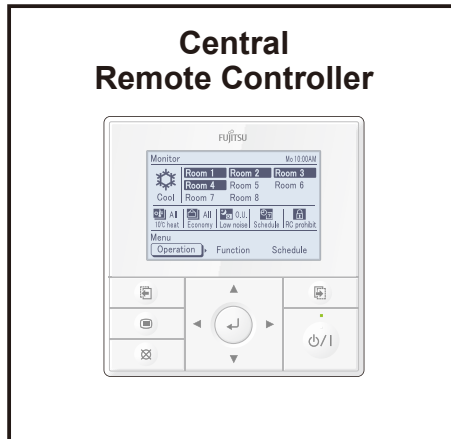
1-4. CONTROL EQUIPMENT DESIGN LIMITATION

			Model	The number that can be connected
Controller	Central Controller	Central Remote Controller	UTY-DMM*M	1 / Multi system
	Individual Controller	Wireless Remote Controller	AR-RAH2E	-
			AR-RAH1E	
			AR-REA2E	
			AR-REB1E	
		Wired Remote Controller	UTY-RVN*M	2 / Indoor unit
			UTY-RNN*M	
		Simple Remote Controller	UTY-RSN*M	
	IR Receiver Unit	UTY-LRH*M	1 / Indoor unit	

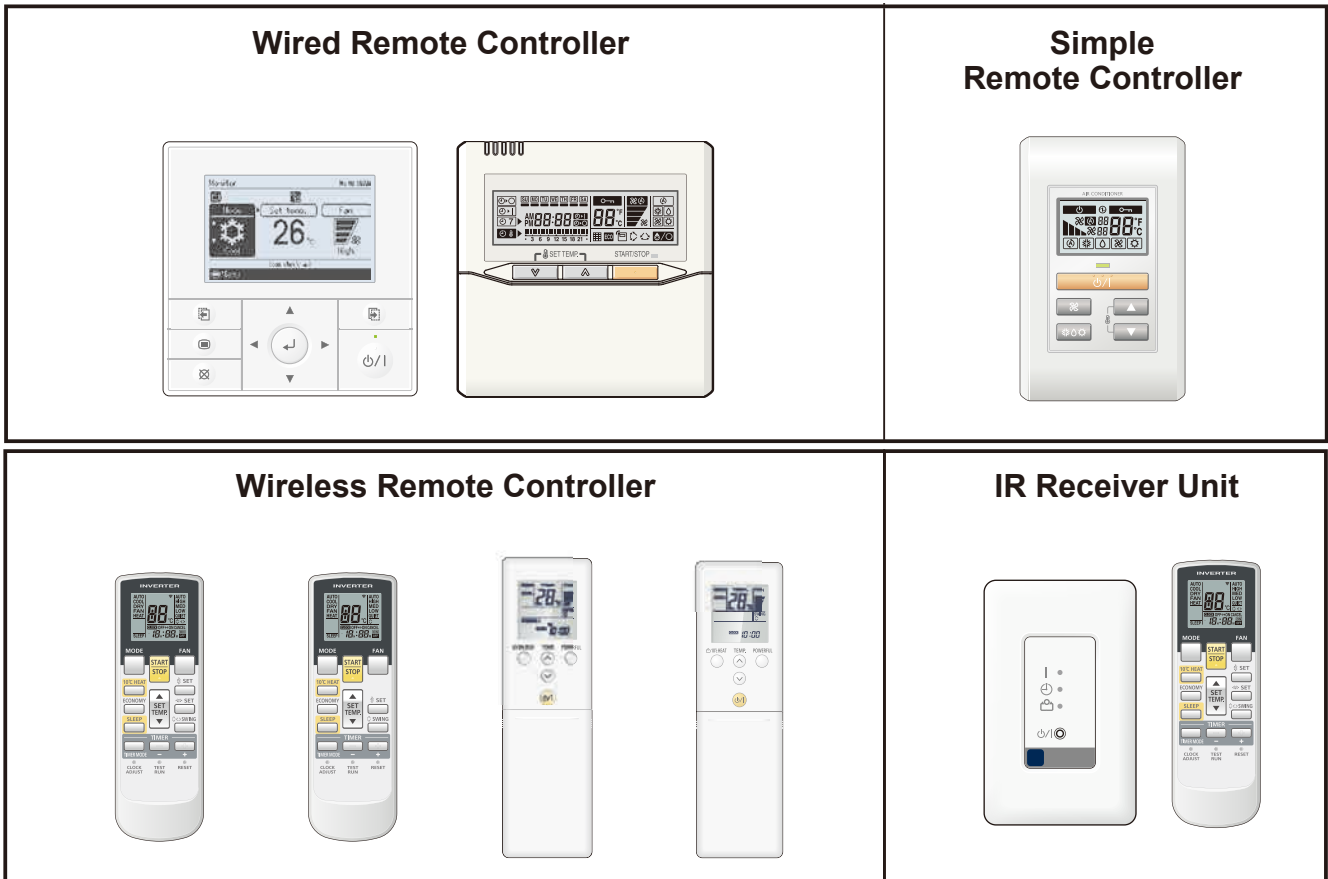
2. CONTROL UNITS

- Central Remote Controller
- Wired Remote Controller
- Simple Remote Controller
- Wireless Remote Controller
- IR Receiver Unit

Central Control



Individual Control



2-1. CENTRAL REMOTE CONTROLLER

■ MODEL : UTY - DMM*M



- Large and full-dot liquid crystal screen
- Screen with backlight can be seen even in the dark
- Wide and large keys easy to press, user-intuitive arrow key

■ FEATURES

● Central & Individual Control

Batched control of up to 8 indoor units.

The temperature, airflow volume, and remote control prohibition settings of all indoor units can be batched.

● User-friendly operation

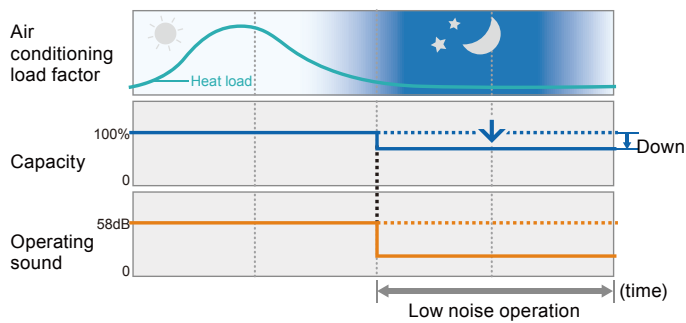
- Large backlight LED screen
- Large easy-to-see operation panel

● Easy installation

- Central remote controller is connected directly to the branch box, making the installation process easier.
- Once the controller is connected, it can automatically register and display all the indoor units.

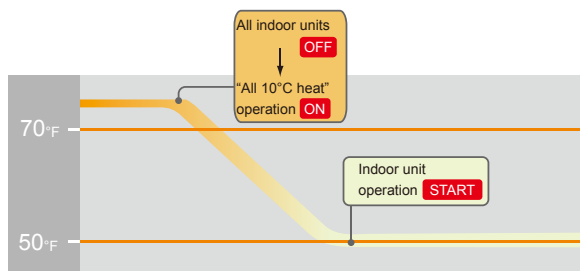
MAIN FUNCTIONS

Outdoor unit low noise operation



- Users can choose from 4 low noise levels, depending on the installation environment.

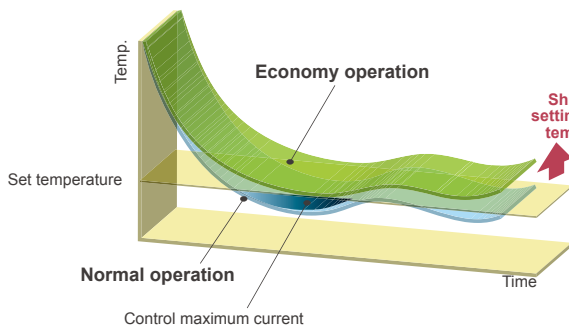
10°C heat (All) operation



- While this function is selected, all indoor units start the “10°C heat” operation when all the indoor units are stopped by operating the [On/Off button] on the central remote controller.
- When the room temperature is higher than 10°C, “10°C heat” operation does not start. Operation starts and maintains the room temperature at 10°C when the temperature drops below 10°C.
- When “10°C heat” operation stops, the room set temperature quickly returns to the preset temperature.

Economy (All) operation

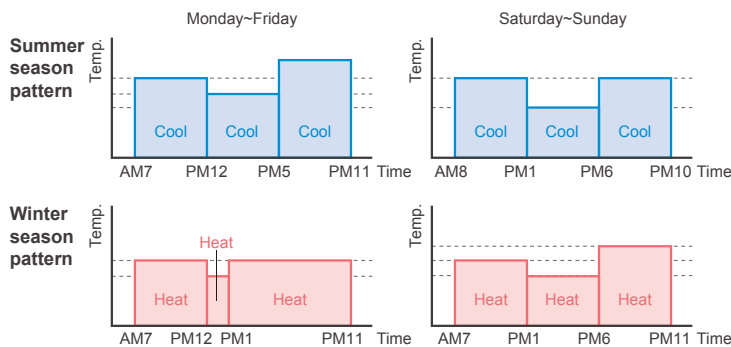
Example : Cooling operation



- If all the indoor and outdoor units are changed to economy mode, this can save more energy than setting each indoor unit individually.
- Economy operation is energy saving, as the set temperature of indoor unit is shifted by 1°C and the maximum electric value of the outdoor unit is suppressed.

Schedule timer

Example

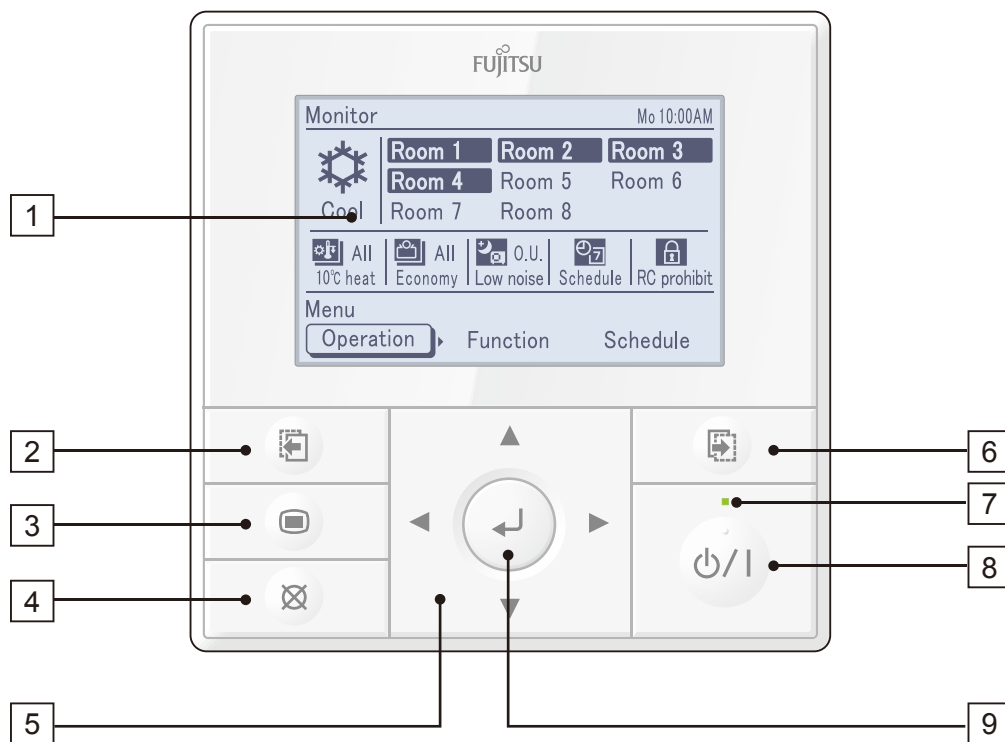


- Operation setting can be changed 4 times in each day of the week, and 2 types of schedules can be set to suit users' preference.

Prohibited Settings

The remote controller operation of all indoor units comes with a lock function to prevent unapproved operations in the various rooms. The central remote controller also has a key lock function to prevent children from playing with it, etc.

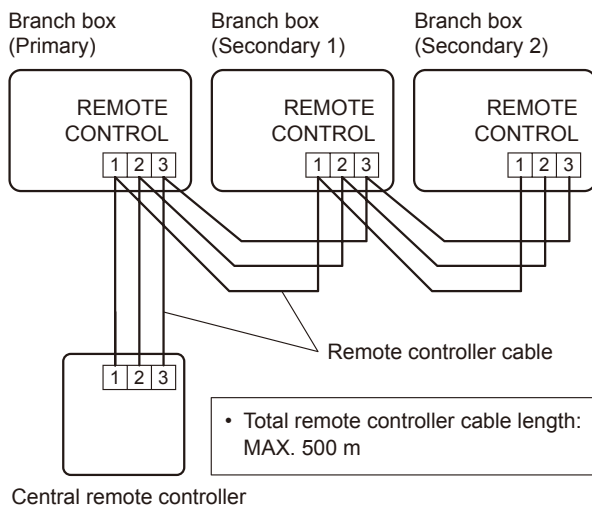
FUNCTIONS



- | | |
|----------------------------------|--------------------------------|
| 1 Display panel (with backlight) | 6 Screen switch button (Right) |
| 2 Screen switch button (Left) | 7 Power indicator |
| 3 Menu button | 8 On / Off button |
| 4 Cancel button | 9 Enter button |
| 5 Cursor button | |

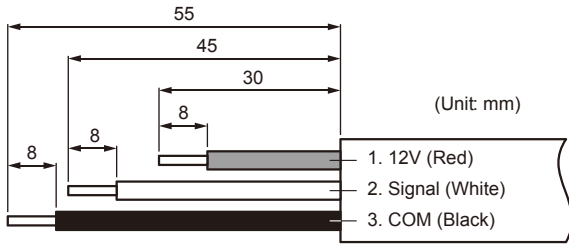
ELECTRICAL WIRING

Example: Wiring diagram when 3 units of branch boxes are connected

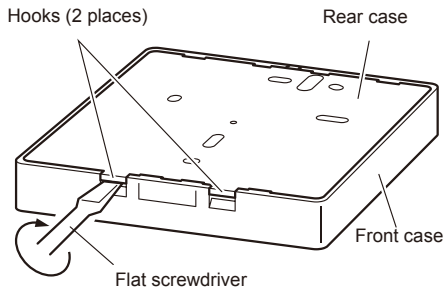


■ INSTALLATION

1) Remove the insulation of the remote controller cable.



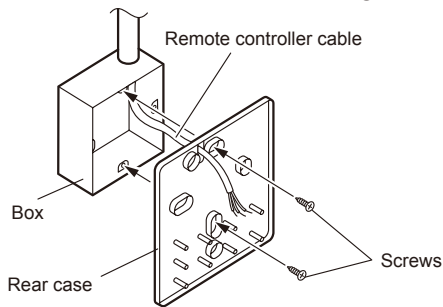
2) Insert a flat-blade screwdriver and remove the front case and rear case by twisting it slightly.



3) Install the rear case to the wall, box, etc. with 2 screws (M4 × 16 mm). Fix the 2 screws in either horizontal or vertical position.

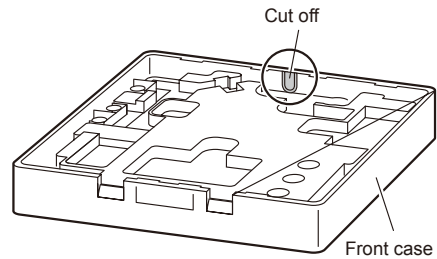
A. When mounting on the box:

- Attach the case after leading the cable.



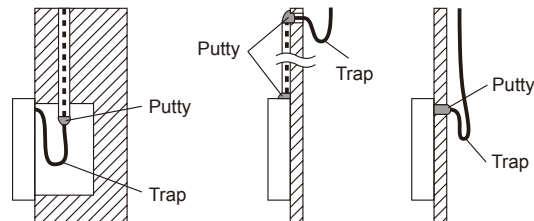
B. When the cable is along the wall:

- Mount the rear case on the wall.
- Cut off a hole for cabling in the front case.



⚠ CAUTION

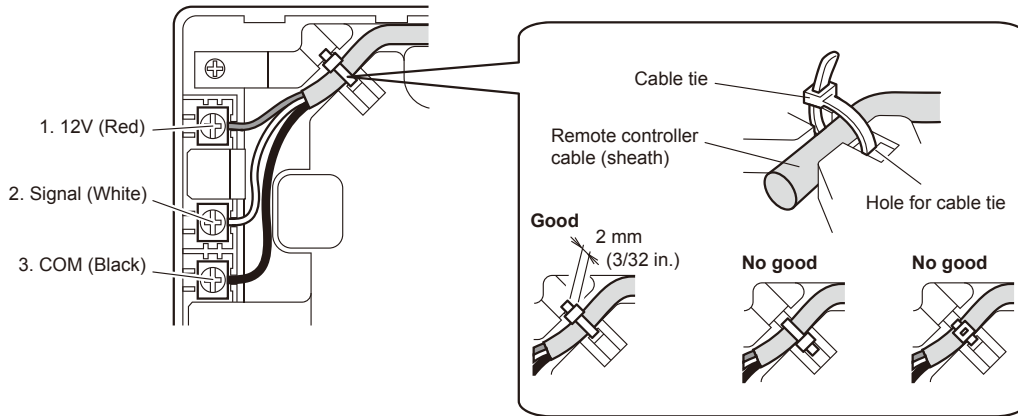
- When connecting the remote controller cable, take measures to prevent water or insects coming into the remote controller through the cable, such as to provide a trap or close the hole for cabling with putty.



4) Setting up the DIP switch. Refer to "6. SYSTEM DESIGN".

5) Connect the cable to the terminals on the front case. Fix the cable together with the sheath with the cable tie. Cut off the excess cable tie.

Tightening torque	
Terminal screw	0.8 to 1.2N • m

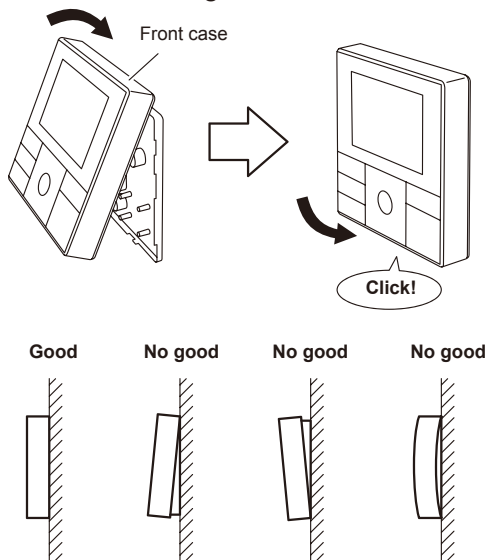


⚠ CAUTION

- Be careful to avoid breaking the cable by over-tightening the cable tie.
- When connecting the remote controller cables, do not over-tighten the screws.

6) Attach the front case.

- Insert after adjusting upper part of front case.
- When inserting the front case, do not pinch the cable.

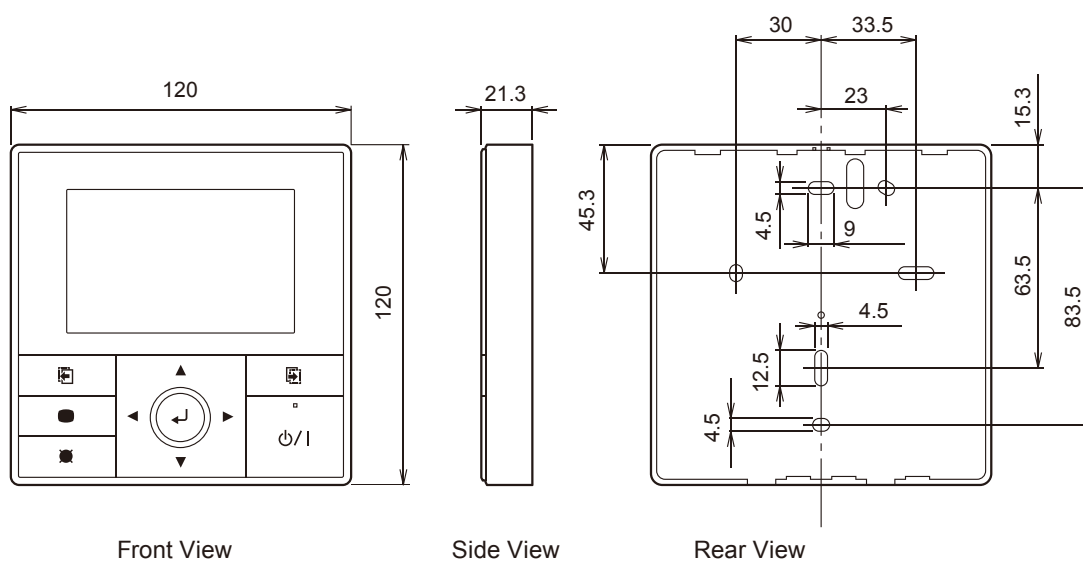


⚠ CAUTION



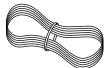


- Insert the upper case firmly. If improperly attached, it will cause the upper case to fall off.

■ DIMENSIONS

(Unit : mm)



■ PACKING LIST

Name and shape	Quantity	Application
Operating manual 	1	
Installation manual 	1	
Remote controller cable 	1	For connecting the remote controller
Screw (M4 x 16mm) 	2	For installing the remote controller
Cable tie 	1	To tie the remote controller and cables

■ WIRING SPECIFICATIONS

Use	Cable size	Wire type	Remarks
Remote controller cable	0.33 mm ² (22AWG)	Polar 3 core	Use sheathed PVC cable

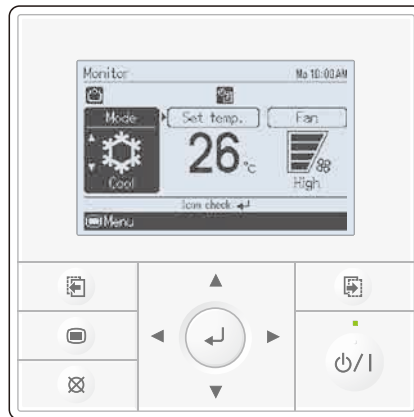
■ SPECIFICATIONS

Dimensions [H x W x D]: (mm)	120 x 120 x 21.3
Weight: (g)	220

2-2. WIRED REMOTE CONTROLLER

■ MODEL UTY-RVN*M

- Large and full-dot liquid crystal screen
- Screen with backlight can be seen even in the dark
- Wide and large keys easy to press, user-intuitive arrow key



■ FEATURES

● Individual Control

- Two remote controllers are installable to one indoor unit.

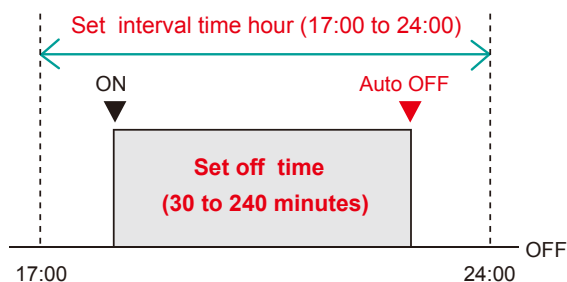
● User-friendly operation

- Large backlight LED screen
- Large easy-to-see operation panel
- Multiple Language Support
(English, German, French, Spanish, Russian, Portuguese, Italian, Greek and Turkish)

■ MAIN FUNCTIONS

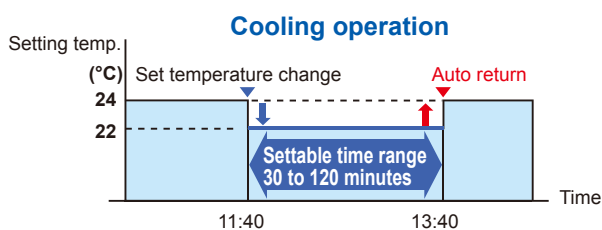
● Auto off timer

Ex) At interval time hour (17:00 to 24:00) to prevent forgetting to turn off

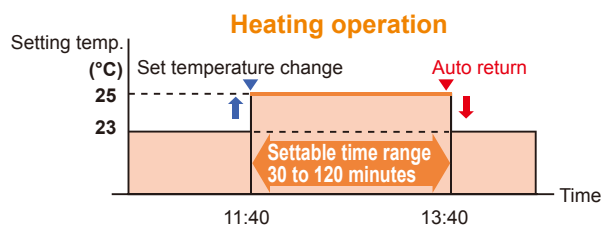


- The indoor unit automatically turns off after a set time has passed.
- The time interval for which auto off works can be set.

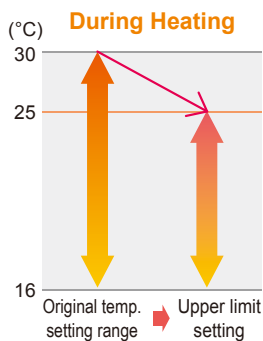
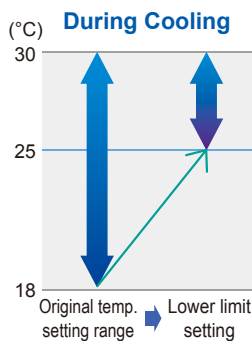
● Set temperature auto return



- The setting temperature automatically returns to the previous setting temperature.
- The time range in which the set temperature can be changed is 30 to 120 minutes.



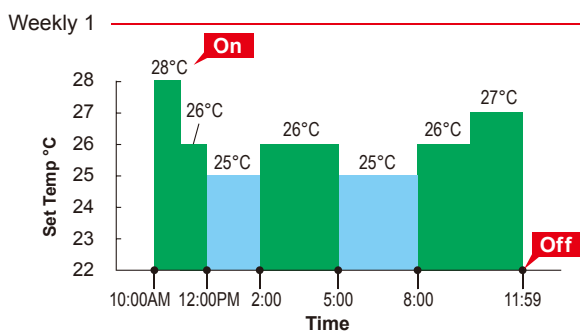
● Set temperature upper and lower limit setting



- The set temperature range can be set for each operation mode. (Cooling / Heating / Auto)

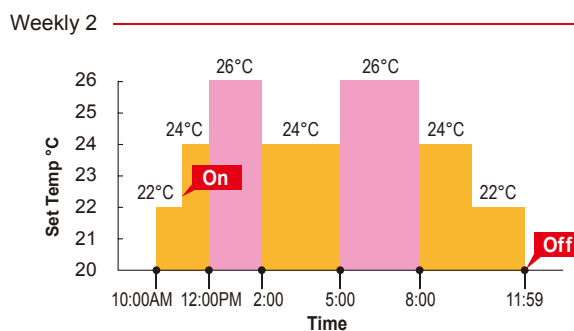
● Weekly timer function

- Not only the On/Off setting, but also the operation mode setting and the temperature setting can be set by this weekly timer function.
Two types of settings: Weekly 1 and Weekly 2 for summer and winter are possible.



Setting menu in remote controller

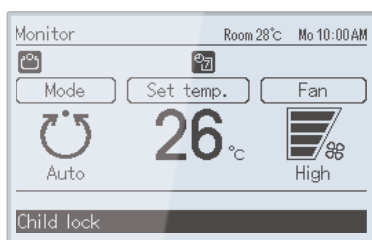
Weekly timer setting		Su 10:00AM	
Weekly 1	Su	Mo	Tu
Day	1	10:00 AM	On
Time	2	11:00 AM	On
End	3	12:00 AM	On
	4	2:00 PM	On



Setting menu in remote controller

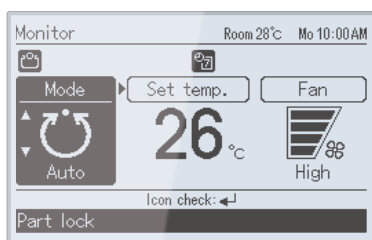
Weekly timer setting		Su 10:00AM	
Weekly 2	Su	Mo	Tu
Day	1	10:00 AM	On
Time	2	11:00 AM	On
End	3	12:00 AM	On
	4	2:00 PM	On

● Child lock



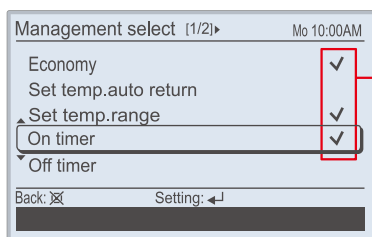
- This function locks all control.

● Part lock



- This function locks the setting of functions other than Mode, Set temp. and Fan.

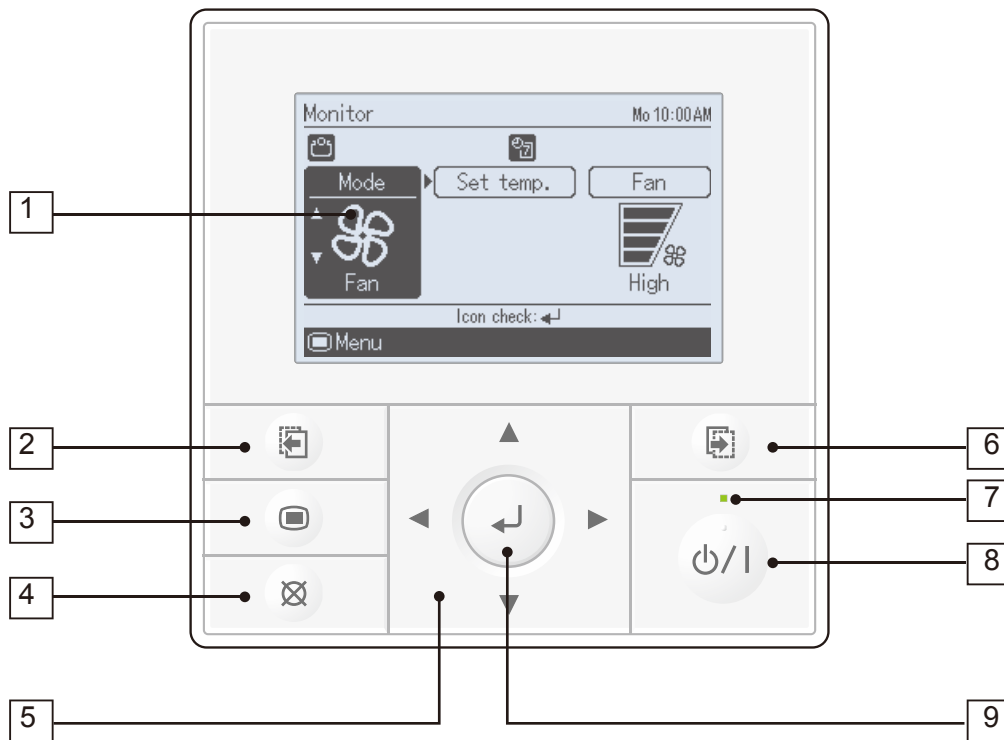
● Management (Password)



Functions with this mark are restricted. ←

- Unwanted functions can be restricted.
- Password is necessary to operate.

■ FUNCTIONS



1 Display panel (with backlight)

2 Screen switch button (Left)

3 Menu button

4 Cancel button

5 Cursor button

6 Screen switch button (Right)

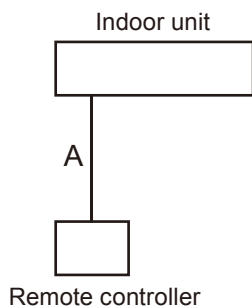
7 Power indicator

8 On / Off button

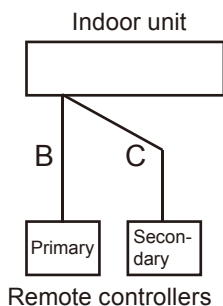
9 Enter button

SYSTEM DIAGRAM

1 remote controller



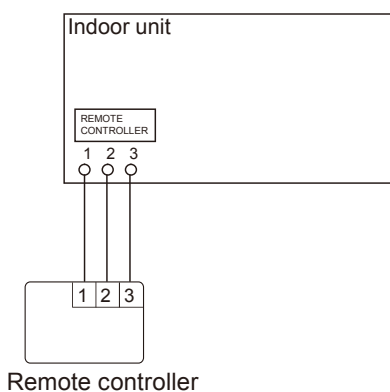
2 remote controllers



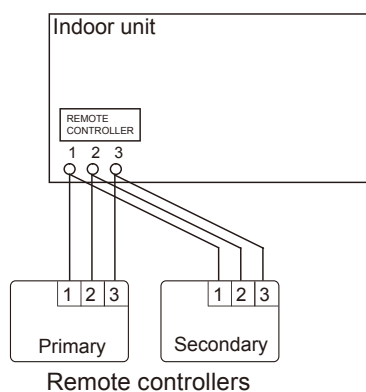
A , B , C : Remote controller cable.

ELECTRICAL WIRING

1 remote controller



2 remote controllers

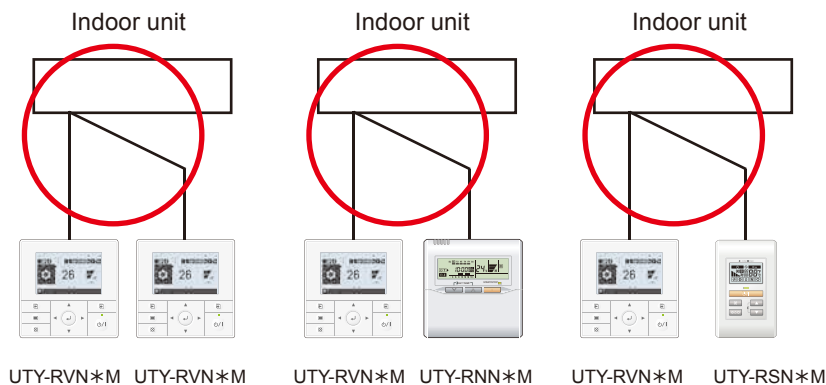


1 (RED) : 12V
2 (WHITE) : Signal
3 (BLACK) : COM

CONTROLLER COMBINATION

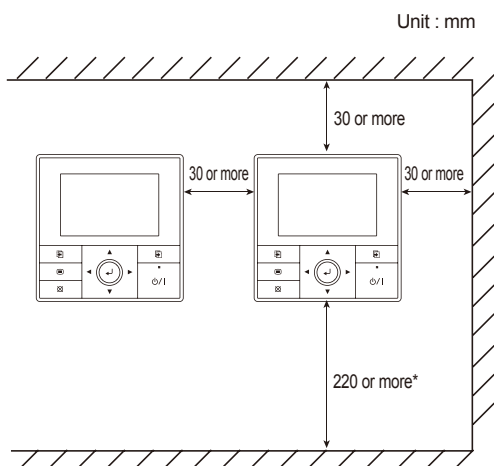
As for the combined usage of remote controllers, refer to following figures.

Good



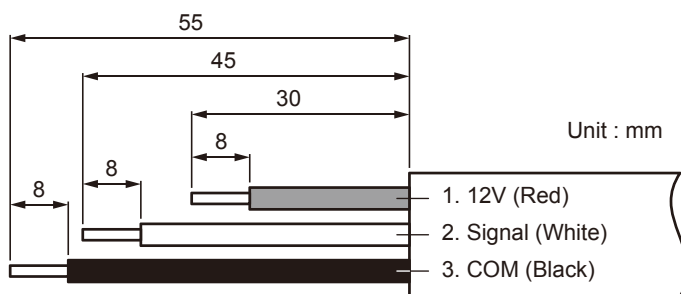
■ INSTALLATION

1) Installation space.

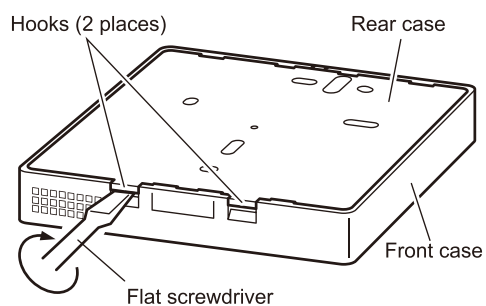


* Please secure enough space where a flat screwdriver can be inserted to take off the case.

2) Processing of the remote controller cable.



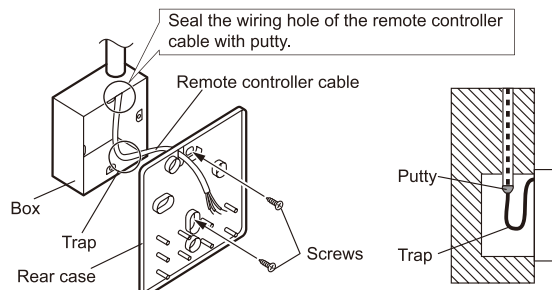
3) Insert a flat-blade screwdriver and remove the front case and rear case by twisting it slightly.



4) Installing the remote controller

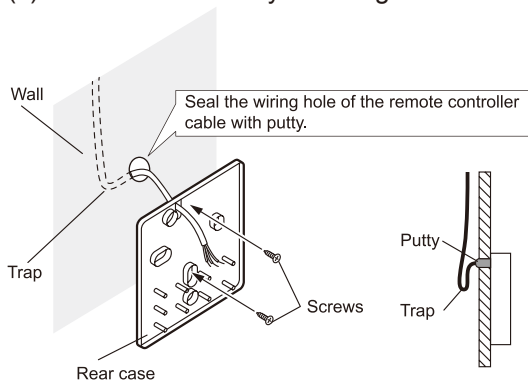
A. When attaching to switch box:

- (1) Seal the wiring hole of the remote controller cable.
- (2) Put a remote controller cable through the hole of the rear case.
- (3) Fix the rear case by securing it with attached screws (2 places).



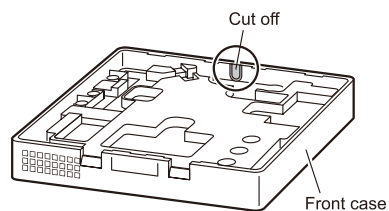
B. When attaching to the wall directly:

- (1) Seal the wiring hole of the remote controller cable.
- (2) Put the remote controller cable through the back hole of the rear case of the main body.
- (3) Fix the rear case by securing it with attached screws (2 places).

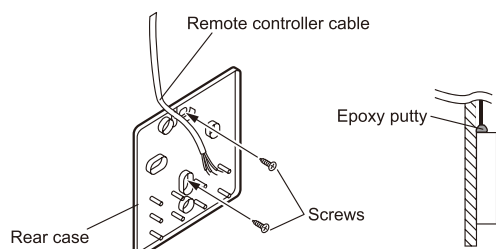


C. When routing the cable on-wall:

- (1) Cut off the cable guide of the front case with using a knife or a nipper.
- (2) Deburr the edge of the cable guide.

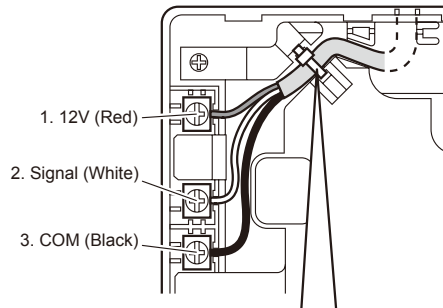


- (3) Fix the rear case by securing it with attached screws (2 places).

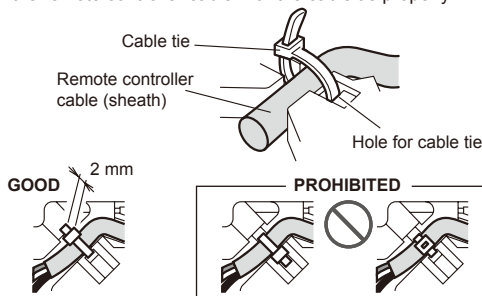


- 5) Connect the cable to the terminals on the front case. Fix the cable together with the sheath with the cable tie. Cut off the excess cable tie.

Tightening torque	
Terminal screw	0.8 to 1.2N • m



To avoid an excessive tension or pressure to the terminal block, fix the remote controller cable with the cable tie properly.

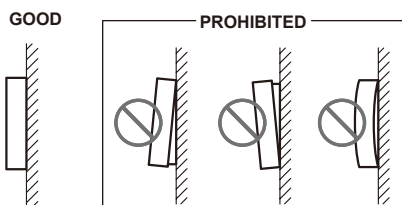
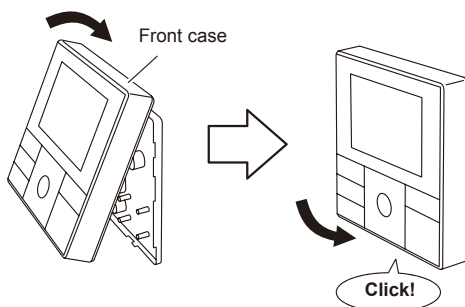


⚠ CAUTION

- Be careful to avoid breaking the cable by over-tightening the cable tie.
- When connecting the remote controller cables, do not over-tighten the screws.

- 6) Attach the front case.

- Insert after adjusting upper part of front case.
- When inserting the front case, do not pinch the cable.



⚠ CAUTION

- Insert the upper case firmly. If improperly attached, it will cause the upper case to fall off.

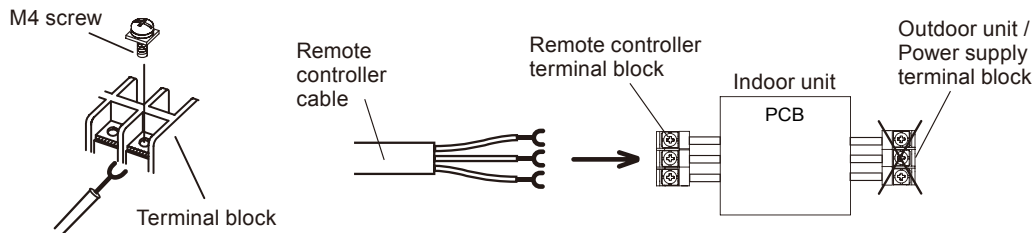
● Connection Pattern

Note: Connection pattern is different according to type of Indoor unit.

Indoor unit types		Connection Pattern
Compact Cassette type		Pattern A
Slim Duct type		
Floor / Ceiling type		
Wall Mounted type	LJ	Pattern B
	LU	
	LM	
	LF	
Floor type		Pattern C

● Pattern A

Connect the end of remote controller cable directly to the exclusive terminal block.

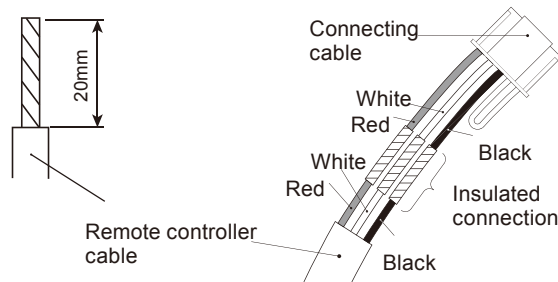


Note: It may fail to work if it is connected to the outdoor unit or the terminal block for power supply.

● Pattern B

1) Modify the remote controller cable as per below methods.

- Use a tool to cut off the terminal on the end of the remote controller cable and then remove the insulation from the cut end of the cable as shown in Fig.
- Connect the remote controller cable and connecting cable as shown in Fig.
- Be sure to insulate the connection between the cables.

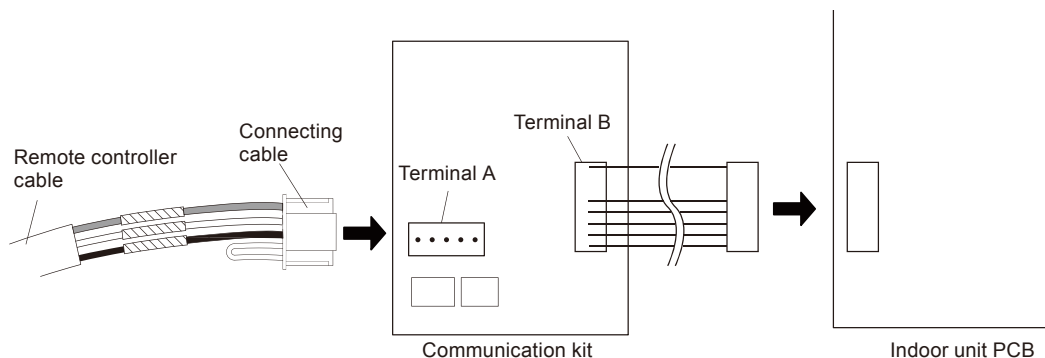


2) Method of connecting remote controller cable

- Connecting cable made by above-mentioned 1) is connected with Terminal A of optional communication kit.
- Cable connected with Terminal B of communication kit is connected with PCB of Indoor unit.

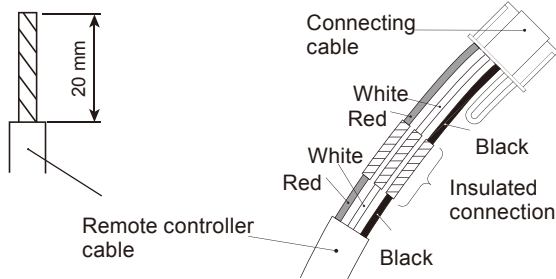
A: (CN305)-(LJ type: UTY-XCBXZ1)
 (CNC01)-(LU type: UTY-TWBXF)
 (CNC01)-(LM type: UTY-XCBXZ2)

B: (CN301)-(LJ type: UTY-XCBXZ1)
 (CND01)-(LU type: UTY-TWBXF)
 (CND01)-(LM type: UTY-XCBXZ2)



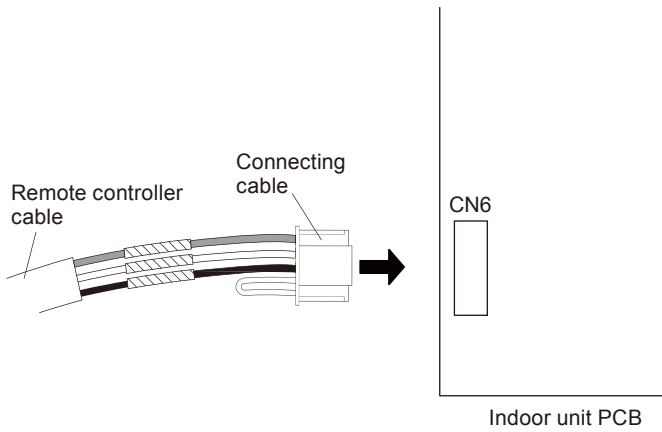
● Pattern C

- 1) Modify the remote controller cable as per below methods.
 - Use a tool to cut off the terminal on the end of the remote controller cable and then remove the insulation from the cut end of the cable as shown in Fig.
 - Connect the remote controller cable and connecting cable as shown in Fig.
 - Be sure to insulate the connection between the cables.

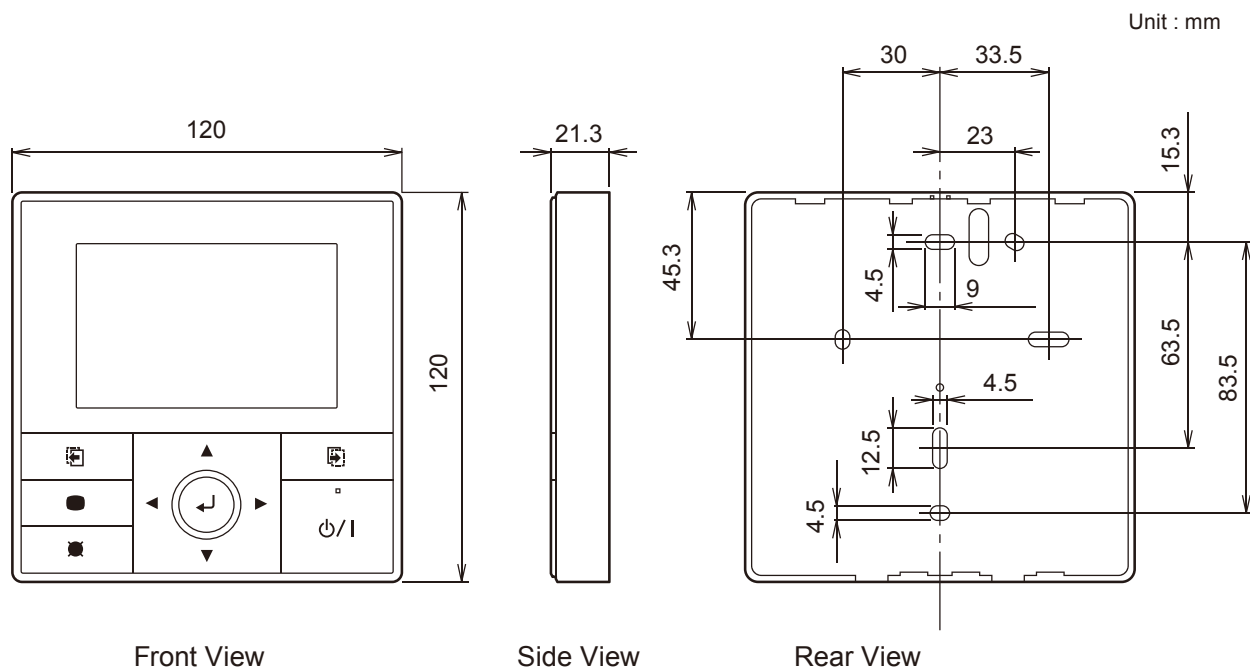


2) Method of connecting remote controller cable

- Connecting cable made by above-mentioned 1) is connected with PCB of Indoor unit.



■ DIMENSIONS




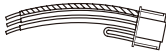

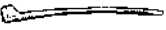




Front View

Side View

Rear View

■ PACKING LIST

Name and shape	Quantity	Application
Installation manual 	1	Instruction book for installation
Operating manual 	1	Instruction book for operation
Remote controller cable 	1	For connecting the remote controller
Connecting cable 	1	For connecting the remote controller cable to the wall mounted type indoor unit
Screw (M4 × 16 mm) 	2	For installing the remote controller
Cable tie 	1	To tie the remote controller and cables
Screw (M4 × 14 mm) 	1	For installing the remote controller cable to the indoor unit
Cable clasper 	1	For installing the remote controller cable to the indoor unit

■ WIRING SPECIFICATIONS

Use	Cable size	Wire type	Remarks
Remote controller cable	0.33 mm ² (22AWG)	Polar 3 core	Use sheathed PVC cable

■ SPECIFICATIONS

Dimensions [H x W x D]: mm	120 x 120 x 21.3
Weight: g	220

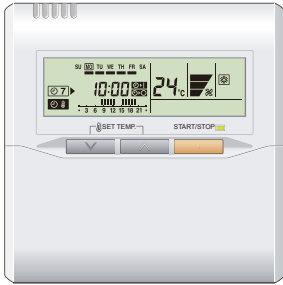
■ PARTS (OPTIONAL)

	Wall mounted type		
Model name	AS*G07LJCA AS*G09LJCA AS*G12LJCA	AS*G07LUCA AS*G09LUCA AS*G12LUCA AS*G14LUCA	AS*G07LMCA AS*G09LMCA AS*G12LMCA AS*G14LMCA
	UTY-XCBXZ1	UTY-TWBXF	UTY-XCBXZ2

*The communication kit is necessary for connecting the wired remote controller to the Wall mounted type.

MODEL : UTY - RNN*M

FEATURES



- Various timer setup available (ON / OFF / WEEKLY).
- Equipped with weekly timer as standard function. (Start / Stop function is twice per day for a week)
- When setting up the timer, start / stop and temperature setup can be changed.
- When a failure occurs, the error code is displayed.
- Error history.(Last 16 error codes can be accessed.)
- The room temperature is detected and controlled accurately by the built-in thermo sensor.

Powerful features and compact size

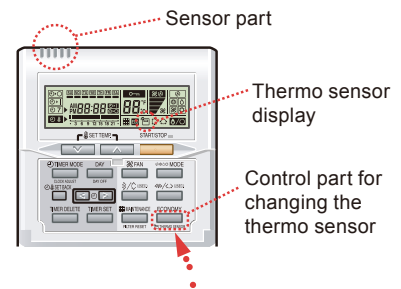


Accurate and comfortable

Indoor temperature can be detected accurately by the inclusion of a thermo sensor in the body of the wired controller.

Our system can correspond to various scenes.

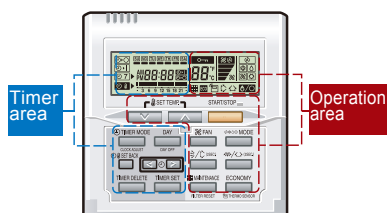
This wired remote controller and the optional remote sensor allows flexibility in sensor location, and suitable for all requirements.



Built-in timers

Weekly timer	Setback timer
<p>Possible to set ON/OFF time to operate twice each day of the week.</p> <p>Easy-to-understand time bar display</p> <p>Example : setup screen (Set to Wednesday: 8:00 to 20:00.)</p> <p>Screen after setup</p>	<p>Possible to set temperature for two time spans and for each day of the week.</p> <p>Example : setup screen (Set from Sunday to Saturday: 12:00 to 15:00, 28 °C.)</p>
<p>At "Weekly timer" + "Set back timer" setup</p>	

Easy-to-understand operation

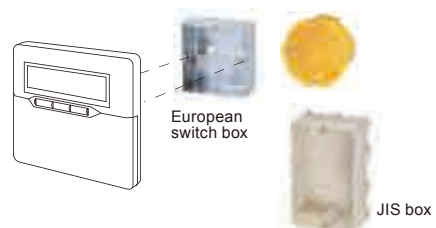


[Variable timer control]

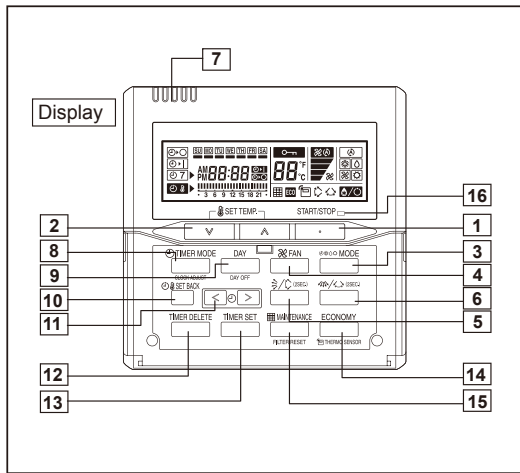
The operation/display sections are zoned according to time and operation, enabling variable programming to match application.

Simple installation

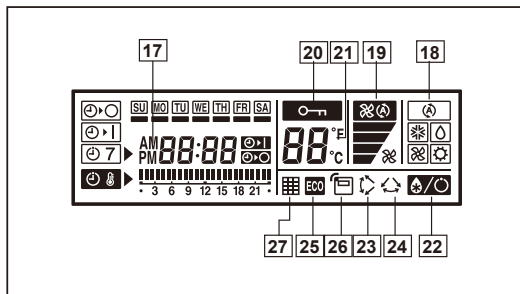
Components are compatible with standard switch boxes. Flat back surface allows equipment to be installed wherever it is needed.



FUNCTIONS



Display panel

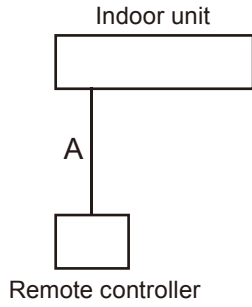


- 1 START/STOP button
Pressed to start and stop operation.
- 2 SET TEMP. button
Selects the setting temperature.
- 3 MODE button
Selects the operating mode (AUTO (A), COOL (❄️), DRY (☁️), FAN (🌀), HEAT (🔥)).
- 4 FAN button
Selects the fan speed (AUTO (🌀), HIGH (🌀), MED (🌀), LOW (🌀), QUIET (🌀)).
- 5 Vertical airflow direction and swing button
Press for two seconds to change the swing mode
- 6 Horizontal airflow direction and swing button
Press for two seconds to change the swing mode.
- 7 Built-in thermo sensor
Detects the room temperature.
- 8 TIMER MODE (CLOCK ADJUST) button
Selects the timer mode (OFF TIMER, ON TIMER, WEEKLY TIMER)
Sets the current time.
- 9 DAY (DAY OFF) button
Temporarily cancels one day timer.
- 10 SET BACK button
Pressed to select the set back timer.
- 11 Set time button
Pressed to set time.
- 12 TIMER DELETE button
Deletes the weekly timer schedule.
- 13 TIMER SET button
Sets the date, hour, minute and on-off time.
- 14 ECONOMY (THERMO SENSOR) button
- 15 FILTER RESET button
- 16 Operation lamp
Lights during operation and when the timer is on.
- 17 Timer and clock indicator
- 18 Operation mode indicator
- 19 Fan speed indicator
- 20 Operation lock indicator
- 21 Temperature indicator
Displayed temperature is set temperature.
- 22 Defrost indicator
Indicates oil recovery and defrosting operation.
- 23 Vertical swing indicator
- 24 Horizontal swing indicator
- 25 Economy indicator
- 26 Thermo sensor indicator
- 27 Filter indicator

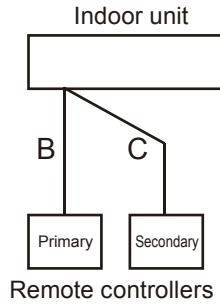
NOTE: Some button operations may not be available for all units or systems. For details, please see operation manual.

SYSTEM DIAGRAM

1 remote controller



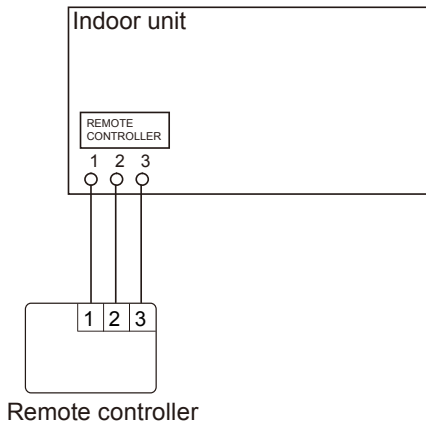
2 remote controllers



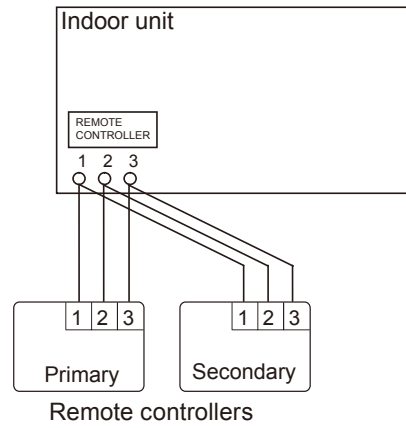
A, B, C : Remote controller cable.
 $A \leq 500\text{m}$; $B+C \leq 500\text{m}$

ELECTRICAL WIRING

1 remote controller

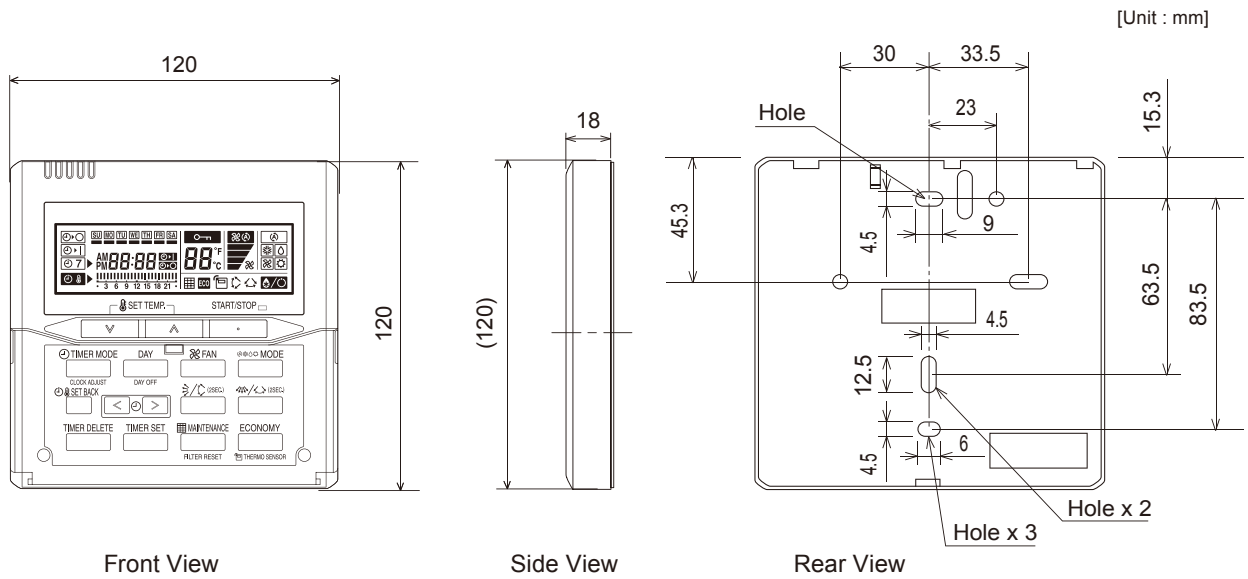


2 remote controllers



1 (RED) : 12V
 2 (WHITE) : Signal
 3 (BLACK) : COM

DIMENSIONS



■ INSTALLATION

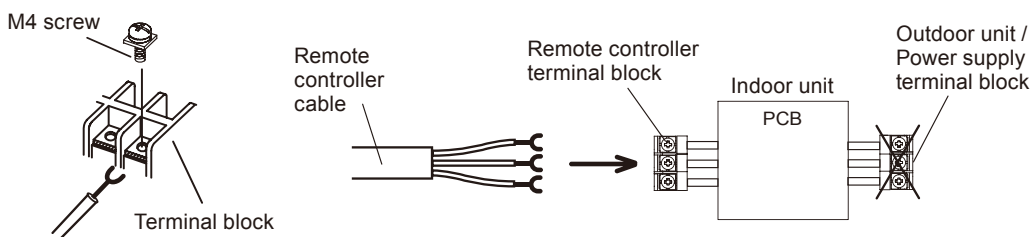
● Connection Pattern

Note: Connection pattern is different according to type of Indoor unit.

Indoor unit types		Connection Pattern
Compact Cassette type		Pattern A
Slim Duct type		
Floor / Ceiling type		
Wall Mounted type	LJ	Pattern B
	LU	
	LM	
	LF	
Floor type		Pattern C

● Pattern A

Connect the end of remote controller cable directly to the exclusive terminal block.

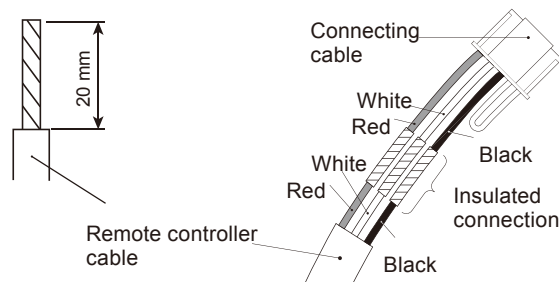


Note: It may fail to work if it is connected to the outdoor unit or the terminal block for power supply.

● Pattern B

1) Modify the remote controller cable as per below methods.

- Use a tool to cut off the terminal on the end of the remote controller cable and then remove the insulation from the cut end of the cable as shown in Fig.
- Connect the remote controller cable and connecting cable as shown in Fig.
- Be sure to insulate the connection between the cables.

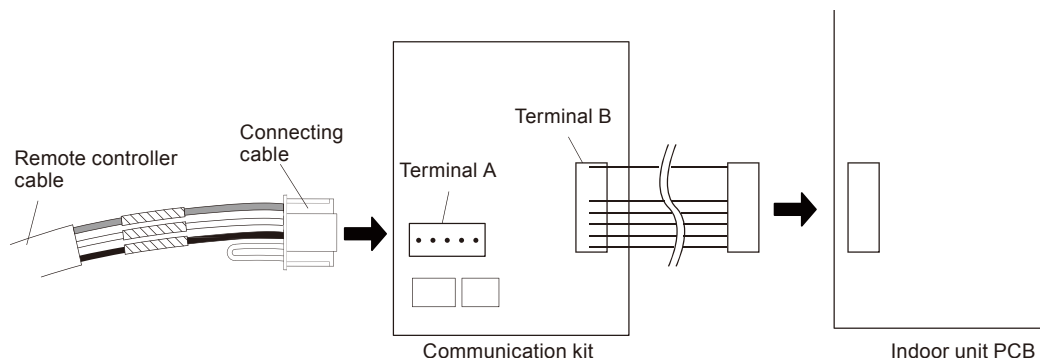


2) Method of connecting remote controller cable

- Connecting cable made by above-mentioned 1) is connected with Terminal A of optional communication kit .
- Cable connected with Terminal B of communication kit is connected with PCB of Indoor unit.

A:(CNC01)-(LJ type: UTY-XCBXZ1)
 (CNC01)-(LU type: UTY-TWBXF)
 (CNC01)-(LM type: UTY-XCBXZ2)

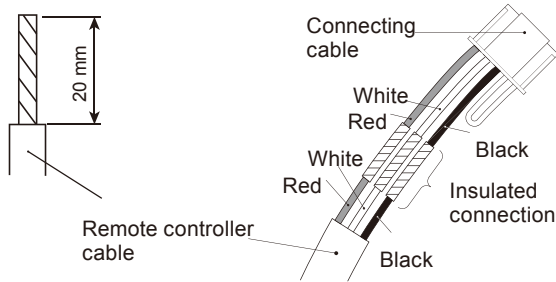
B:(CNC301)-(LJ type: UTY-XCBXZ1)
 (CND01)-(LU type: UTY-TWBXF)
 (CND01)-(LM type: UTY-XCBXZ2)



● Pattern C

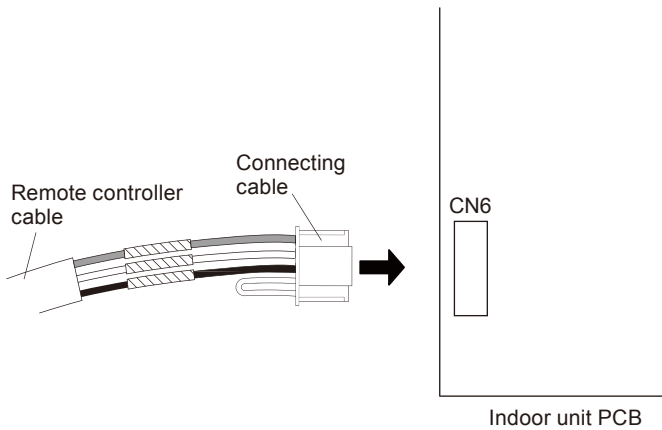
1) Modify the remote controller cable as per below methods.

- Use a tool to cut off the terminal on the end of the remote controller cable and then remove the insulation from the cut end of the cable as shown in Fig.
- Connect the remote controller cable and connecting cable as shown in Fig.
- Be sure to insulate the connection between the cables.



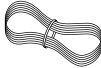







2) Method of connecting remote controller cable

- Connecting cable made by above-mentioned 1) is connected with PCB of Indoor unit.



■ PACKING LIST

Name and shape	Quantity	Application
Operating manual 	1	
Installation manual 	1	
Remote controller cable (10m) 	1	For connecting the remote controller
Screw (M4 x 16mm) 	2	For installing the remote controller
Cable tie 	1	To tie the remote controller and cables
Connecting cable *1 	1	For connecting the remote controller cable to the Wall mounted type indoor unit
Screw *1 (M4 x 14mm) 	1	For installing the remote controller cable to the indoor unit
Cable clasper *1 	1	For installing the remote controller cable to the indoor unit

*1: Use only if the remote controller cable must be modified for the indoor unit model.

■ WIRING SPECIFICATIONS

Use	Cable size	Wire type	Remarks
Remote controller cable	0.33 mm ² (22AWG)	Polar 3 core	Use sheathed PVC cable

■ SPECIFICATIONS

Dimensions [H x W x D]: (mm)	120 x 120 x 18
Weight: (g)	160

■ PART (OPTIONAL)

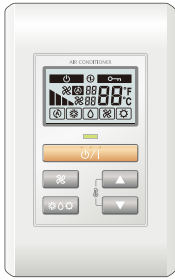
	Wall mounted type		
Model name	AS*G07LJCA AS*G09LJCA AS*G12LJCA	AS*G07LUCA AS*G09LUCA AS*G12LUCA AS*G14LUCA	AS*G07LMCA AS*G09LMCA AS*G12LMCA AS*G14LMCA
	UTY-XCBXZ1	UTY-TWBXF	UTY-XCBXZ2

*The communication kit is necessary for connecting the wired remote controller to the Wall mounted type.

2-3. SIMPLE REMOTE CONTROLLER

■ MODEL : UTY - RSN*M

■ FEATURES



- Easy operation.
- Built-in background light function.
- Easy installation with slim shape with no bulge in the back.
- Error history.(Last 16 error codes can be accessed.)
- Can be installed on switch boxes. (Applicable to European and other countries' standards)

● User-friendly operation

- Provides access to basic operations, such as Start / Stop, Fan speed, operation mode and room temperature setting.
- A large Start / Stop button is provided in the centre of the remote controller unit for easy operation.
- Following an error display, diagnostics can be carried out on the controller.

● Background light

- Background light enables easy operation in a darkened room.
- Background light activates during all button operations which lasts 10 seconds in operating mode and 5 seconds in stop mode after a button is pressed.

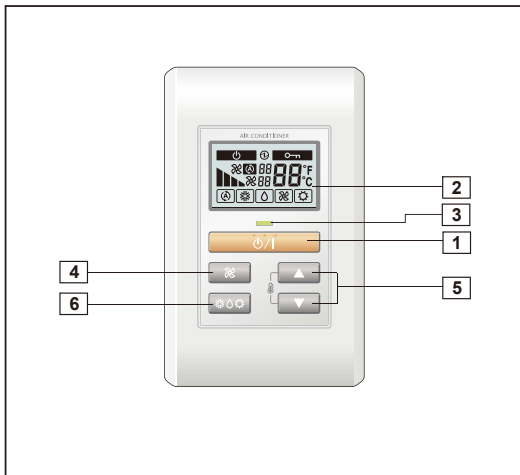












● Simple installation

Can be mounted on the European switch boxes (installation dimension: 60mm) or the JIS built-in box (installation dimension: 83.5mm).

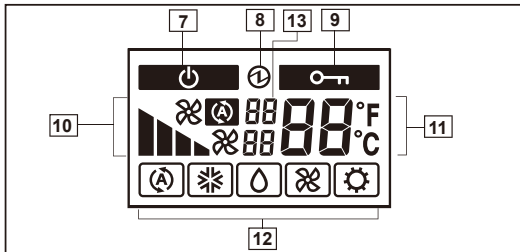


FUNCTIONS



- 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 button
Selects the fan speed (AUTO , HIGH , MED , LOW , QUIET ).
- 5 Set temp. button
Selects the setting temperature.
- 6 Mode button
Selects operating mode (AUTO , COOL , DRY , FAN , HEAT ).
- 7 Standby indicator
Indicates oil recovery and defrosting operation.
- 8 Power source indicator
Indicates the main power ON.
- 9 Central control indicator
Indicates when function is locked.
- 10 Fan speed indicator
- 11 Set temperature indicator
Indicates error history number. *1
Indicates Indoor unit address. *2
- 12 Operating mode indicator
- 13 (Upper) Indicates the error code *1 *3 / the refrigerant system address. *2
(Lower) Indicates the remote controller address. *1 *2 *3

Display panel

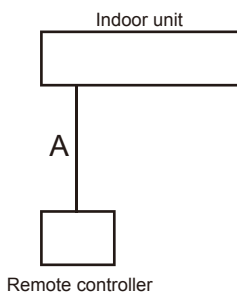


- *1: during Error code history display mode.
- *2: during address display mode.
- *3: during self Diagnosis mode.

Note: Some button operations may not be available for all units or systems. For details, please see operation manual.

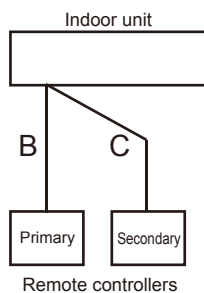
SYSTEM DIAGRAM

● 1 remote controller



Remote controller

● 2 remote controllers

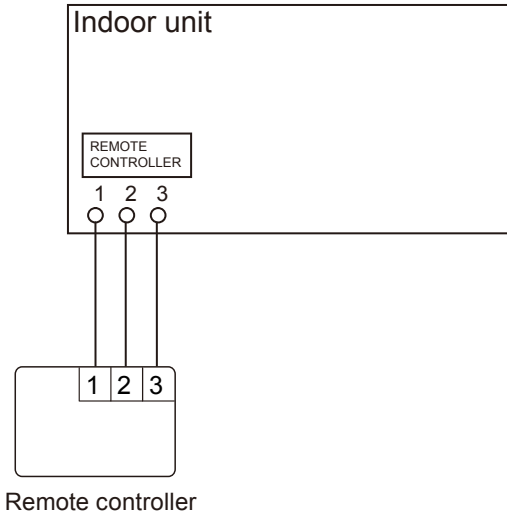


Remote controllers

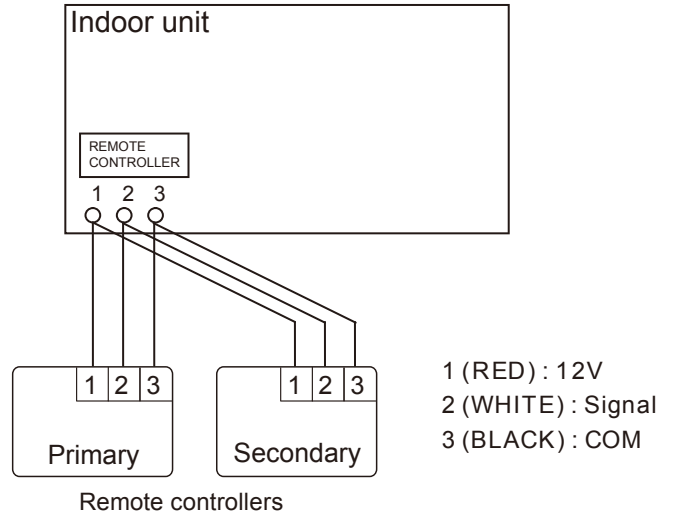
A, B, C : Remote controller cable.
 $A \leq 500m$; $B+C \leq 500m$

■ ELECTRICAL WIRING

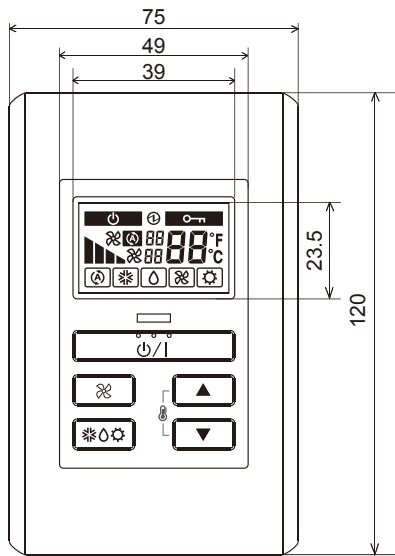
● 1 remote controller



● 2 remote controllers



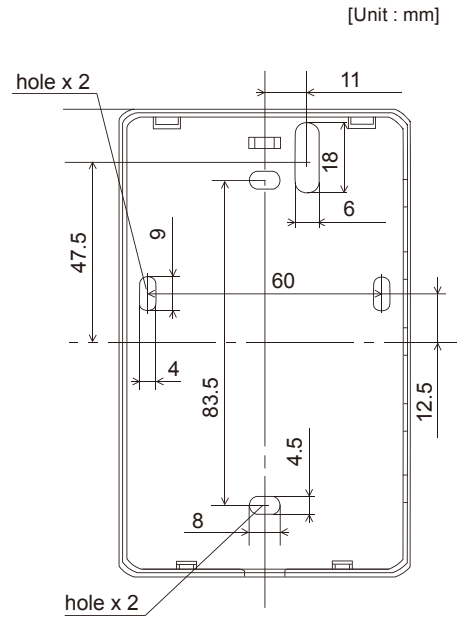
■ DIMENSIONS



Front View



Side View



Rear View

■ INSTALLATION

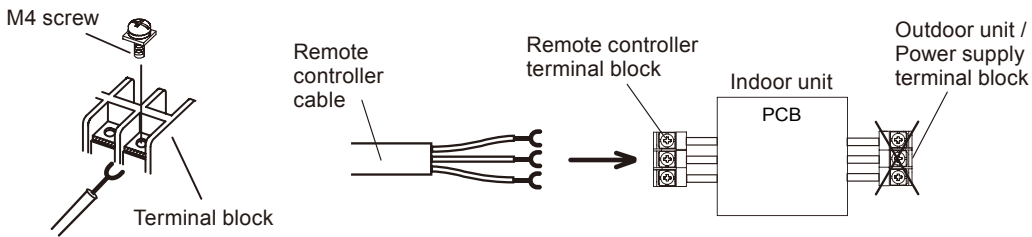
● Connection Pattern

Note: Connection pattern is different according to type of Indoor unit.

Indoor unit types		Connection Pattern
Compact Cassette type		Pattern A
Slim Duct type		
Floor / Ceiling type		
Wall Mounted type	LJ	Pattern B
	LU	
	LM	
	LF	
Floor type		Pattern C

● Pattern A

Connect the end of remote controller cable directly to the exclusive terminal block.

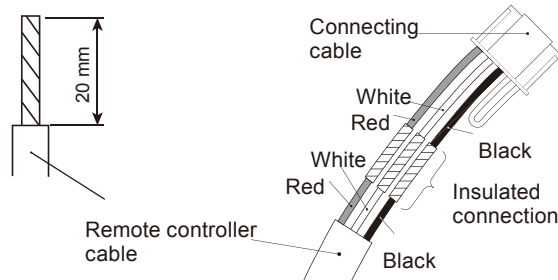


Note: It may fail to work if it is connected to the outdoor unit or the terminal block for power supply.

● Pattern B

1) Modify the remote controller cable as per below methods.

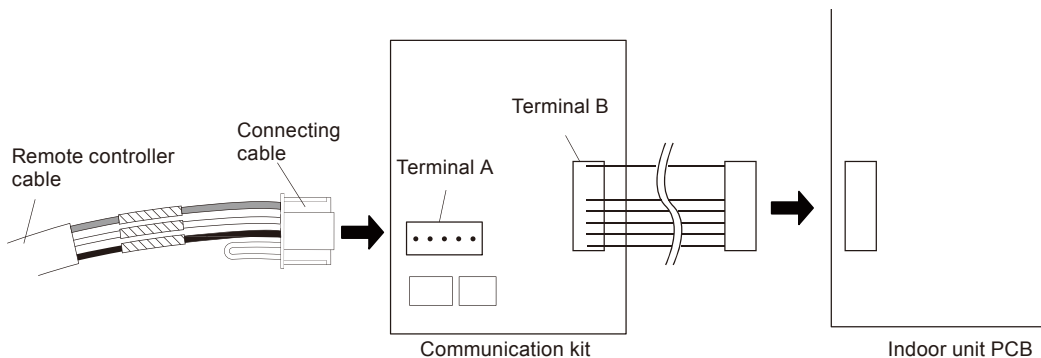
- Use a tool to cut off the terminal on the end of the remote controller cable and then remove the insulation from the cut end of the cable as shown in Fig.
- Connect the remote controller cable and connecting cable as shown in Fig.
- Be sure to insulate the connection between the cables.



2) Method of connecting remote controller cable

- Connecting cable made by above-mentioned 1) is connected with Terminal A of optional communication kit .
- Cable connected with Terminal B of communication kit is connected with PCB of Indoor unit.

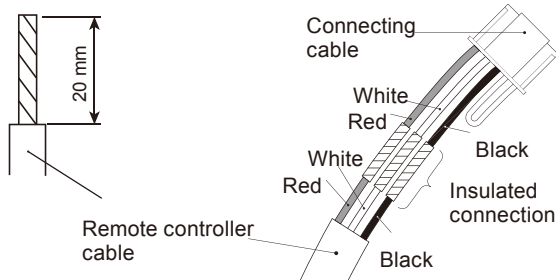
- A: (CN305)-(LJ type: UTY-XCBXZ1) B: (CN301)-(LJ type: UTY-XCBXZ1)
 (CNC01)-(LU type: UTY-TWBXF) (CND01)-(LU type: UTY-TWBXF)
 (CNC01)-(LM type: UTY-XCBXZ2) (CND01)-(LM type: UTY-XCBXZ2)



● Pattern C

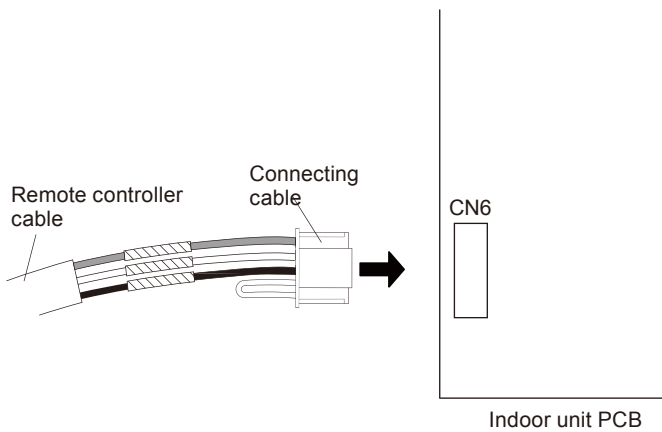
1) Modify the remote controller cable as per below methods.

- Use a tool to cut off the terminal on the end of the remote controller cable and then remove the insulation from the cut end of the cable as shown in Fig.
- Connect the remote controller cable and connecting cable as shown in Fig.
- Be sure to insulate the connection between the cables.



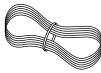







2) Method of connecting remote controller cable

- Connecting cable made by above-mentioned 1) is connected with PCB of Indoor unit.



■ PACKING LIST

Name and shape	Quantity	Application
Installation manual 	1	
Operating manual 	1	
Remote controller cable (10m) 	1	For connecting the remote controller
Screw (M4 x 16mm) 	2	For installing the remote controller
Cable tie 	1	To tie the remote controller and cables
Connecting cable *1 	1	For connecting the remote controller cable to the Wall mounted type indoor unit
Screw *1 (M4 x 14mm) 	1	For installing the remote controller cable to the indoor unit
Cable clasper *1 	1	For installing the remote controller cable to the indoor unit

*1: Use only if the remote controller cable must be modified for the indoor unit model.

■ WIRING SPECIFICATIONS

Use	Cable size	Wire type	Remarks
Remote controller cable	0.33 mm ² (22AWG)	Polar 3 core	Use sheathed PVC cable

■ SPECIFICATIONS

Dimensions [H x W x D]: (mm)	120 x 75 x 14
Weight: (g)	90

■ PART (OPTIONAL)

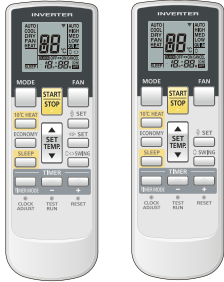
	Wall mounted type		
Model name	AS*G07LJCA AS*G09LJCA AS*G12LJCA	AS*G07LUCA AS*G09LUCA AS*G12LUCA AS*G14LUCA	AS*G07LMCA AS*G09LMCA AS*G12LMCA AS*G14LMCA
	UTY-XCBXZ1	UTY-TWBXF	UTY-XCBXZ2

*The communication kit is necessary for connecting the wired remote controller to the Wall mounted type.

2-4. WIRELESS REMOTE CONTROLLER

■ MODEL : AR-RAH2E / AR-RAH1E

■ FEATURES



AR-RAH2E AR-RAH1E

- Four kinds of timer setup available (ON/OFF/PROGRAM/SLEEP).
- Can be used jointly with wired remote controllers.
- Easy to change custom code (max. 4 custom codes).

● Built-in timers

Select from four different timer programs (ON/OFF/PROGRAM/SLEEP).

● Program timer

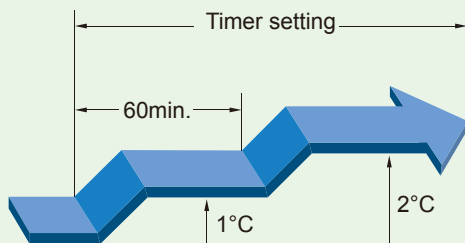
The program timer operates the ON and OFF timer once within a 24 hour period.

● Sleep timer

The sleep timer function automatically corrects the temperature thermostat setting according to the time setting to prevent excessive cooling and heating while sleeping.

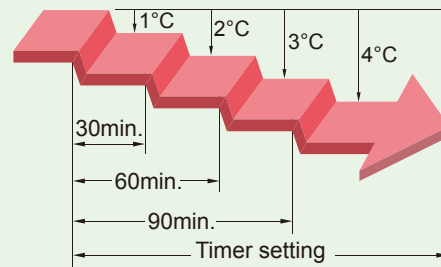
Cooling operation / dry operation

When the sleep timer is set, the set temperature automatically rises 1°C every hour. The set temperature can rise up to a maximum of 2°C.

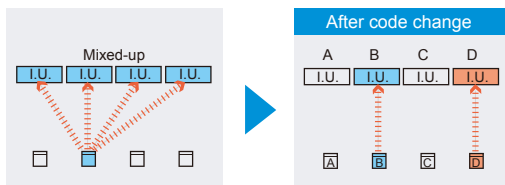


Heating operation

When the sleep timer is set, the set temperature automatically drops 1°C every 30 minutes. The set temperature can drop to a maximum of 4°C.



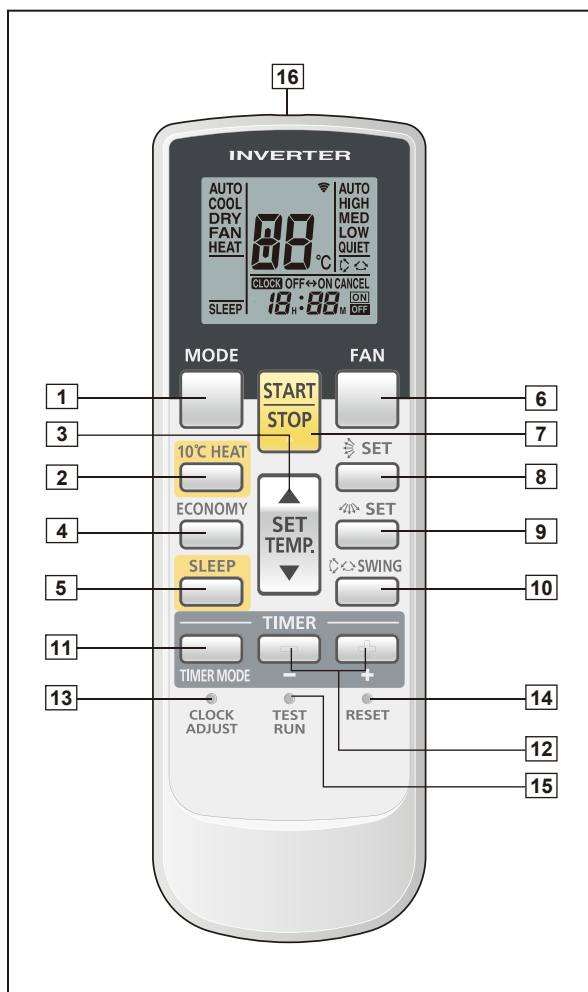
● Switching remote controller custom code



- Code selector switch eliminates unit being wrongly switched.
(Up to 4 custom codes can be set.)

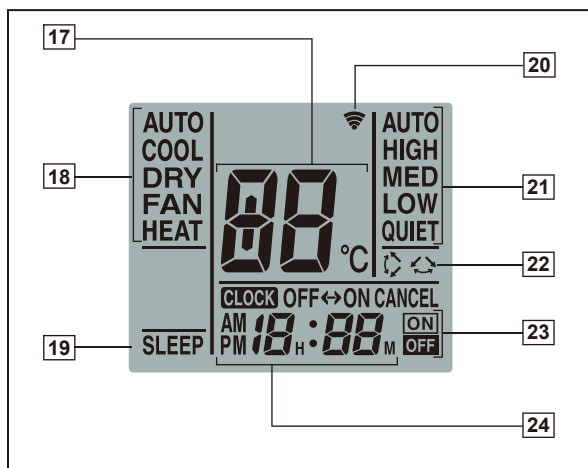
*I.U.=Indoor unit

FUNCTIONS (AR-RAH2E)



- 1 MODE button
Selects the operating mode (AUTO, COOL, DRY, FAN, HEAT).
/Start / end R.C. custom code change. (Max. 4 custom codes)
- 2 10°C HEAT button
- 3 SET TEMP. button (▲ / ▼)
Sets the indoor temp./ Sets R.C. custom code.
- 4 ECONOMY button
- 5 SLEEP button
Pressed to select sleep timer.
- 6 FAN button
Selects the fan speed (AUTO, HIGH, MED, LOW, QUIET).
- 7 START/STOP button
Pressed to start and stop operation.
- 8 SET button (Vertical)
Airflow direction vertical set button.
- 9 SET button (Horizontal)
Airflow direction horizontal set button.
- 10 SWING button
Airflow direction swing button.
- 11 TIMER MODE button
Pressed to select the timer mode. (OFF TIMER, ON TIMER, PROGRAM TIMER, TIMER RESET)
- 12 TIMER Set (+/ -)button
Sets the current time and on-off time.
- 13 CLOCK ADJUST button
Sets the current time.
- 14 RESET button
Used when replacing batteries.
- 15 TEST RUN button
Used when testing the air conditioner after installation.

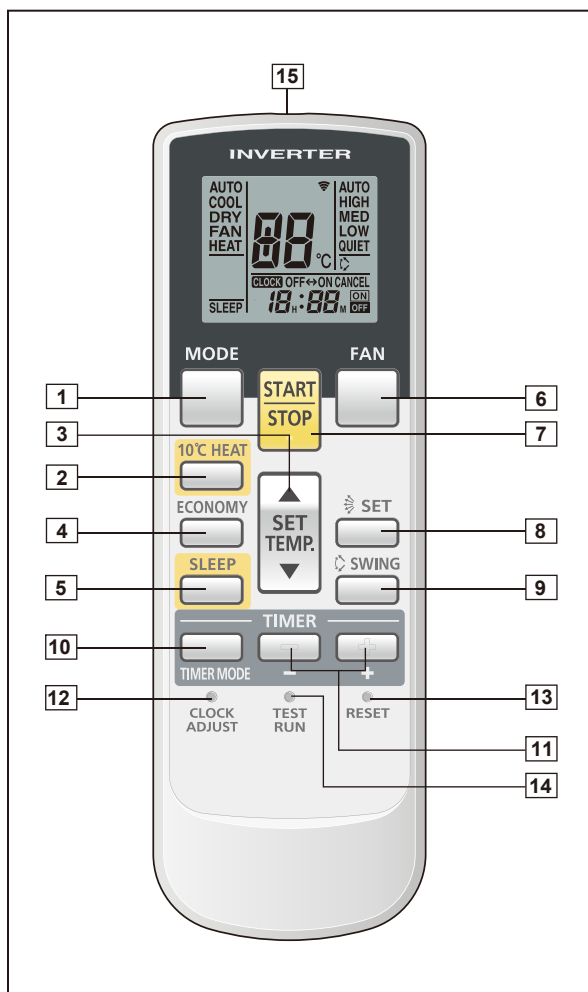
Display panel



- 16 Signal transmitter
- 17 Temperature set indicator
- 18 Operating mode indicator
- 19 Sleep indicator
- 20 Transmit indicator
- 21 Fan speed indicator
- 22 Swing indicator
- 23 Timer mode indicator
- 24 Clock indicator

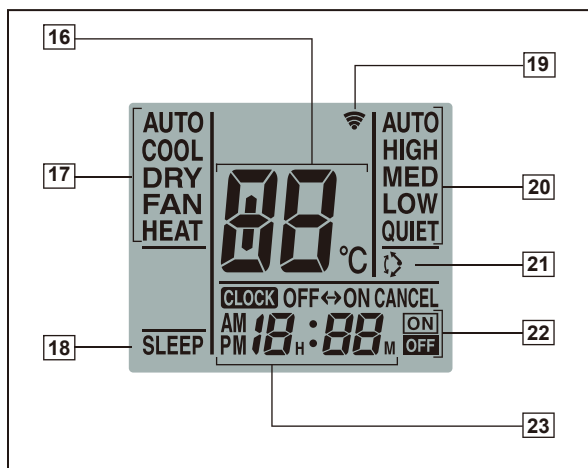
Note: Some button operations may not be available for all units or systems. For details, please see operation manual.

FUNCTIONS (AR-RAH1E)



- 1 **MODE button**
Selects the operating mode (AUTO, COOL, DRY, FAN, HEAT). /Start / end R.C. custom code change. (Max. 4 custom codes)
- 2 **10°C HEAT button**
- 3 **SET TEMP. button (▲ / ▼)**
Sets the indoor temp./ Sets R.C. custom code.
- 4 **ECONOMY button**
- 5 **SLEEP button**
Pressed to select sleep timer.
- 6 **FAN button**
Selects the fan speed (AUTO, HIGH, MED, LOW, QUIET).
- 7 **START/STOP button**
Pressed to start and stop operation.
- 8 **SET button (Vertical)**
Airflow direction vertical set button.
- 9 **SWING button**
Airflow direction swing button.
- 10 **TIMER MODE button**
Pressed to select the timer mode. (OFF TIMER, ON TIMER, PROGRAM TIMER, TIMER RESET)
- 11 **TIMER Set (+ / -) button**
Sets the current time and on-off time.
- 12 **CLOCK ADJUST button**
Sets the current time.
- 13 **RESET button**
Used when replacing batteries.
- 14 **TEST RUN button**
Used when testing the air conditioner after installation.

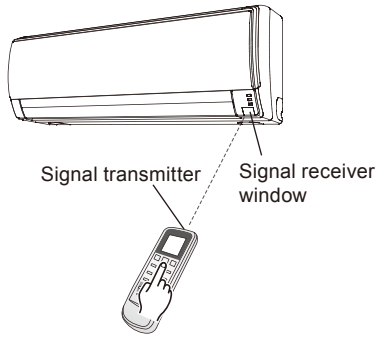
Display panel



- 15 **Signal transmitter**
- 16 **Temperature set indicator**
- 17 **Operating mode indicator**
- 18 **Sleep indicator**
- 19 **Transmit indicator**
- 20 **Fan speed indicator**
- 21 **Swing indicator**
- 22 **Timer mode indicator**
- 23 **Clock indicator**

Note: Some button operations may not be available for all units or systems. For details, please see operation manual.

SYSTEM DIAGRAM

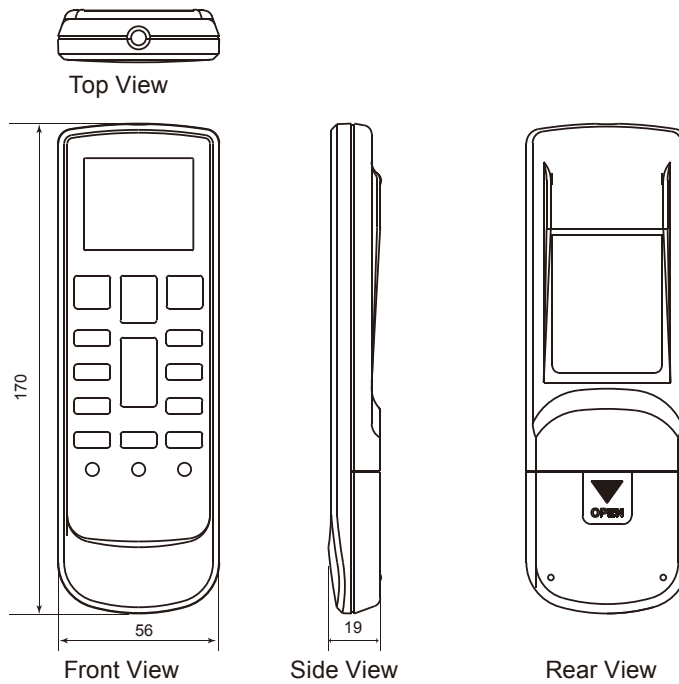


- Control signal may not be recognized in following cases:
 - A curtain or a wall, etc. exists between transmitter and receiver.
 - There is an instant-start type (inverter type, etc.) fluorescent lamp in the room.
- Air conditioner may not work correctly when strong light hits the signal receiver window. Shut off direct sunlight and also place illuminator far away from the receiver window.

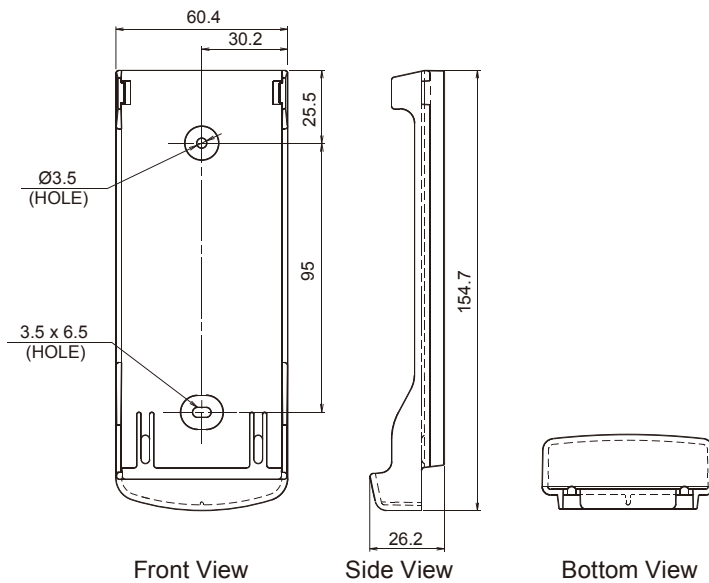
DIMENSIONS

Controller


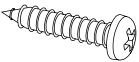
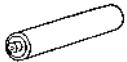
[Unit : mm]



Holder



■ PACKING LIST

Name and shape	Quantity	Application
Remote controller holder 	1	Use as remote controller holder
Tapping screw 	2	For remote controller holder installation
Battery [1.5V (R03 / AAA)] 	2	For remote controller

■ SPECIFICATIONS

Dimensions [H x W x D]: (mm)	170 x 56 x 19
Weight : (g)	85 [w/o batteries]

■ MODEL : AR-REA2E

■ FEATURES



- * 5 mode timer setup available (ON/OFF/WEEKLY/PROGRAM/SLEEP).
- * Easy operation.
- * Easy to change custom code (max. 4 custom codes) by button operation.

● Simple function setting

Setting of the air conditioner selection function is performed by remote controller.

● Built-in timers

Select from five different timer programs (ON/OFF/WEEKLY/PROGRAM/SLEEP).

● Weekly timer

Weekly timer can be easily set by wireless remote controller. ON, OFF can be set up to 4 times in 1 day and up to 28 times in 1 week.

● Program timer

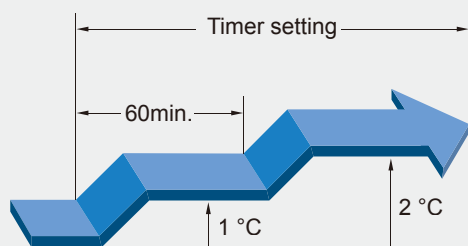
The program timer operates the ON and OFF timer once within a 24 hour period.

● Sleep timer

The sleep timer function automatically corrects the temperature thermostat setting according to the timer setting to prevent excessive cooling and heating while sleeping.

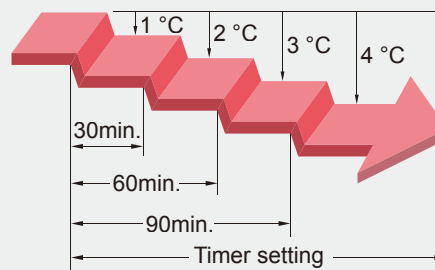
Cooling operation/dry operation

When the sleep timer is set, the set temperature automatically rises 1 °C every hour. The set temperature can rise up to a maximum of 2 °C.

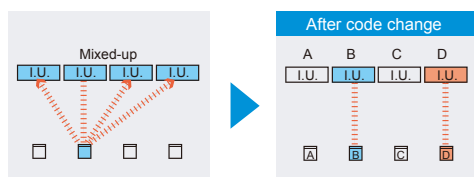


Heating operation

When the sleep timer is set, the set temperature automatically drops 1 °C every 30 minutes. The set temperature can drop to a maximum of 4 °C.



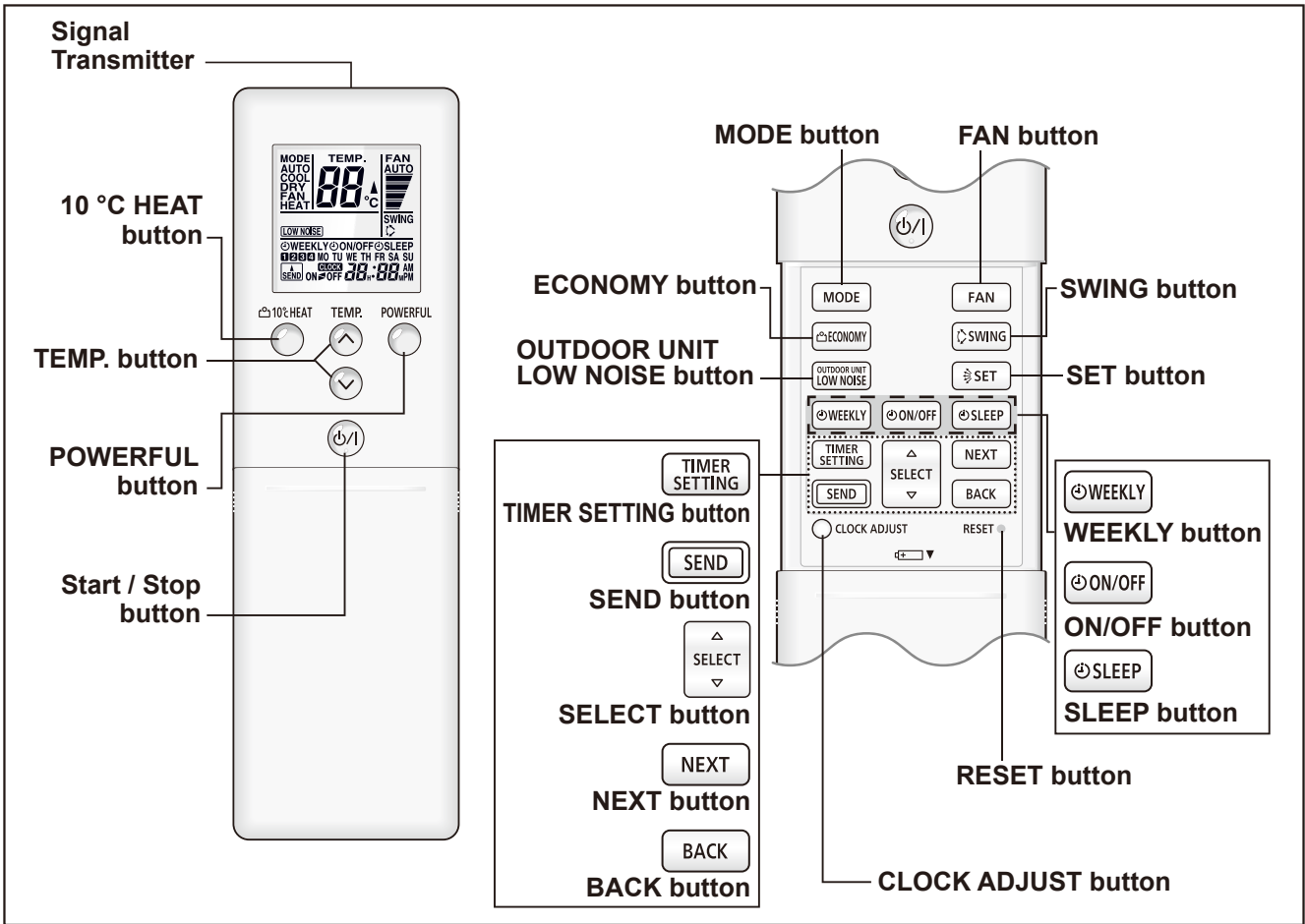
● Switching remote controller custom code



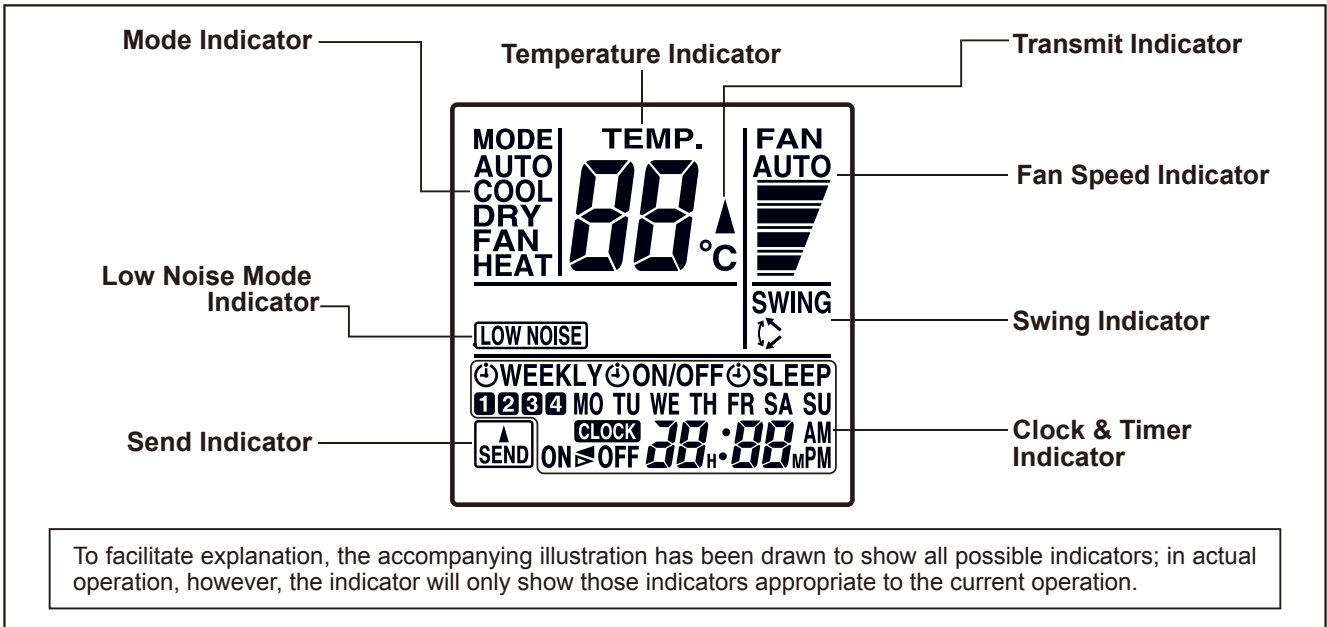
- Code selector switch eliminates unit being wrongly switched. (Up to 4 custom codes can be set.)

*I.U.=Indoor unit

FUNCTIONS (AR-REA2E)



Display panel



Note: Some button operations may not be available for all units or systems. For details, please see operation manual.

■ MODEL: AR-REB1E

■ FEATURES



- * 4 mode timer setup available (ON/OFF/PROGRAM/SLEEP).
- * Easy operation.
- * Easy to change custom code (max. 4 custom codes) by button operation.

● Simple function setting

Setting of the air conditioner selection function is performed by remote controller.

● Built-in timers

Select from four different timer programs (ON/OFF/PROGRAM/SLEEP).

● Program timer

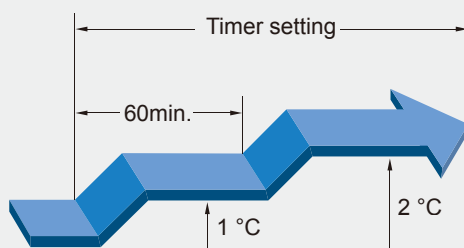
The program timer operates the ON and OFF timer once within a 24 hour period.

● Sleep timer

The sleep timer function automatically corrects the temperature thermostat setting according to the timer setting to prevent excessive cooling and heating while sleeping.

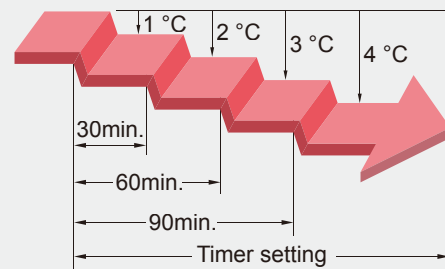
Cooling operation/dry operation

When the sleep timer is set, the set temperature automatically rises 1 °C every hour. The set temperature can rise up to a maximum of 2 °C.

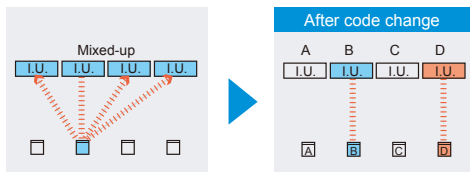


Heating operation

When the sleep timer is set, the set temperature automatically drops 1 °C every 30 minutes. The set temperature can drop to a maximum of 4 °C.



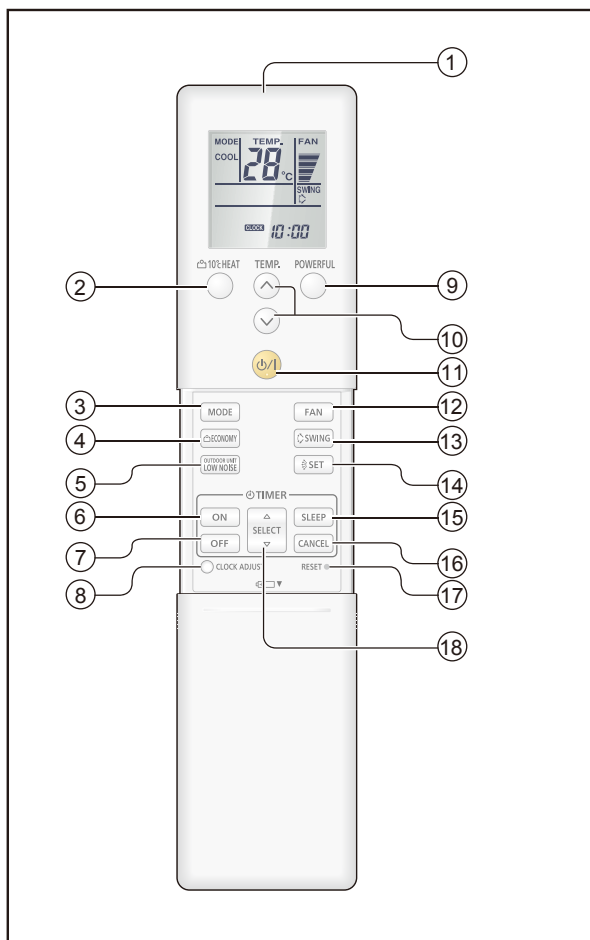
● Switching remote controller custom code



- Code selector switch eliminates unit being wrongly switched.
(Up to 4 custom codes can be set.)

*I.U.=Indoor unit

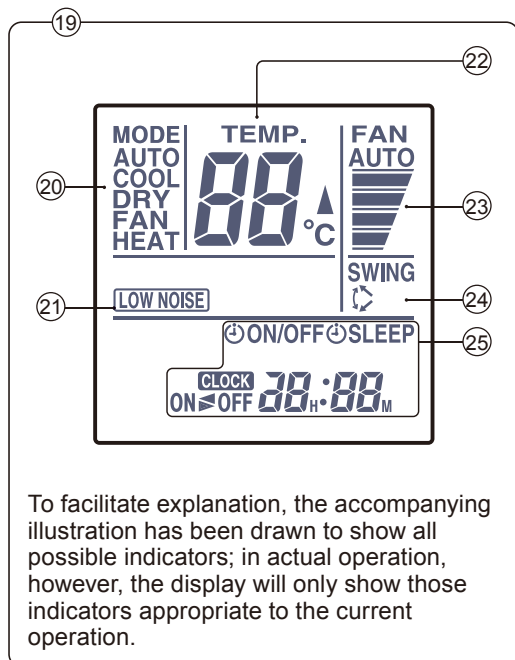
FUNCTIONS (AR-REB1E)



- ① Signal Transmitter
- ② 10 °C HEAT button
- ③ MODE button
- ④ ECONOMY button
- ⑤ OUTDOOR UNIT LOW NOISE button
- ⑥ ON TIMER button
- ⑦ OFF TIMER button
- ⑧ CLOCK ADJUST button
- ⑨ POWERFUL button
- ⑩ TEMP. Set button (▲ / ▼)
- ⑪ Start/Stop button
- ⑫ FAN button
- ⑬ SWING button
- ⑭ SET button
- ⑮ SLEEP TIMER button
- ⑯ CANCEL button
- ⑰ RESET button
- ⑱ TIMER SELECT button (▲ / ▼)

- ⑲ Remote Controller Display
- ⑳ Operation Mode Indicator
- ㉑ Low Noise Mode Indicator
- ㉒ Temperature Set Indicator
- ㉓ Fan Speed Indicator
- ㉔ Swing Indicator
- ㉕ Clock & Timer Indicator

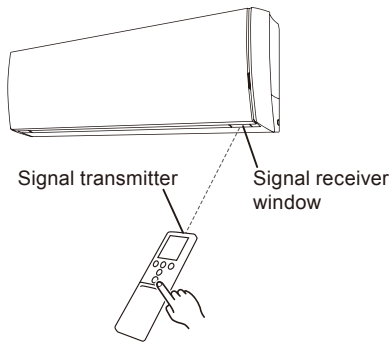
Display panel



To facilitate explanation, the accompanying illustration has been drawn to show all possible indicators; in actual operation, however, the display will only show those indicators appropriate to the current operation.

Note: Some button operations may not be available for all units or systems. For details, please see operation manual.

■ SYSTEM DIAGRAM (AR-REA2E, AR-REB1E)

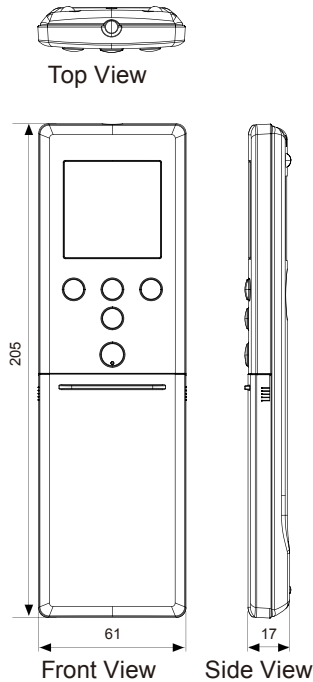


- Control signal may not be recognized in following cases:
 - (i) A curtain or a wall, etc. exists between transmitter and receiver.
 - (ii) There is an instant-start type (inverter type, etc.) fluorescent lamp in the room.
- Air conditioner may not work correctly when strong light hits the signal receiver window. Shut off direct sunlight and also place illuminator far away from the receiver window.

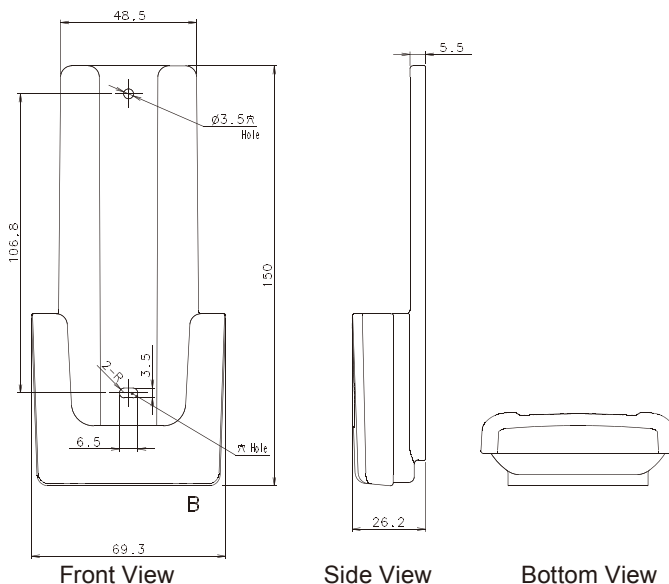
■ DIMENSIONS

● Controller



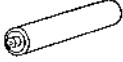
[Unit : mm]



● Holder



■ PACKING LIST

Name and shape	Quantity	Application
Remote controller holder 	1	Use as remote controller holder
Tapping screw 	2	For remote controller holder installation
Battery [1.5V (R03 / AAA)] 	2	For remote controller

■ SPECIFICATIONS

Dimensions [H x W x D]: (mm)	205 x 61 x 17
Weight : (g)	122 [w/o batteries]

2-5. IR RECEIVER UNIT

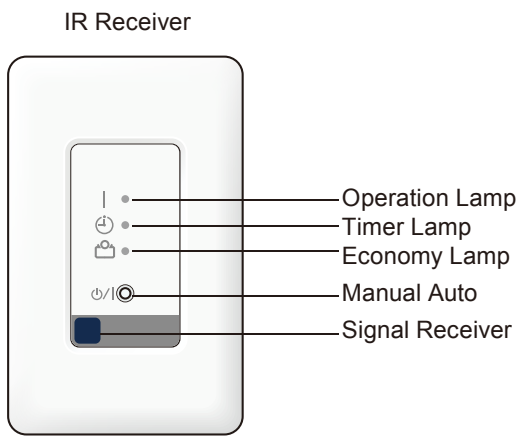
■ MODEL : UTY - LRH*M

■ FEATURES

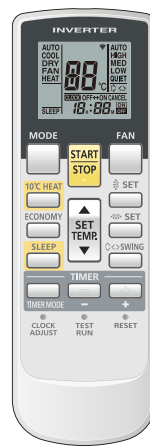


Duct type indoor unit can be controlled with wireless remote controller if the IR receiver unit is used.

■ FUNCTIONS



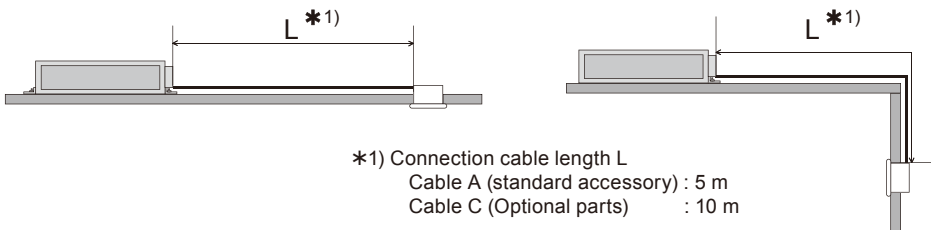
Wireless remote controller



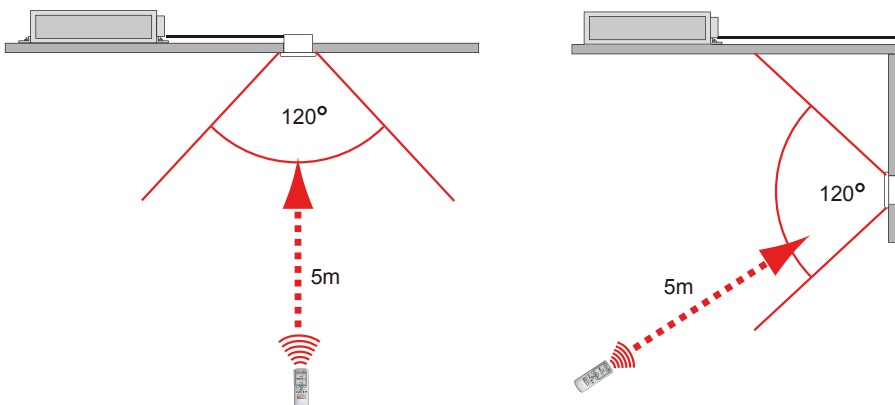
Refer to 2-4.WIRELESS REMOTE CONTROLLER for details.

■ SYSTEM DIAGRAM

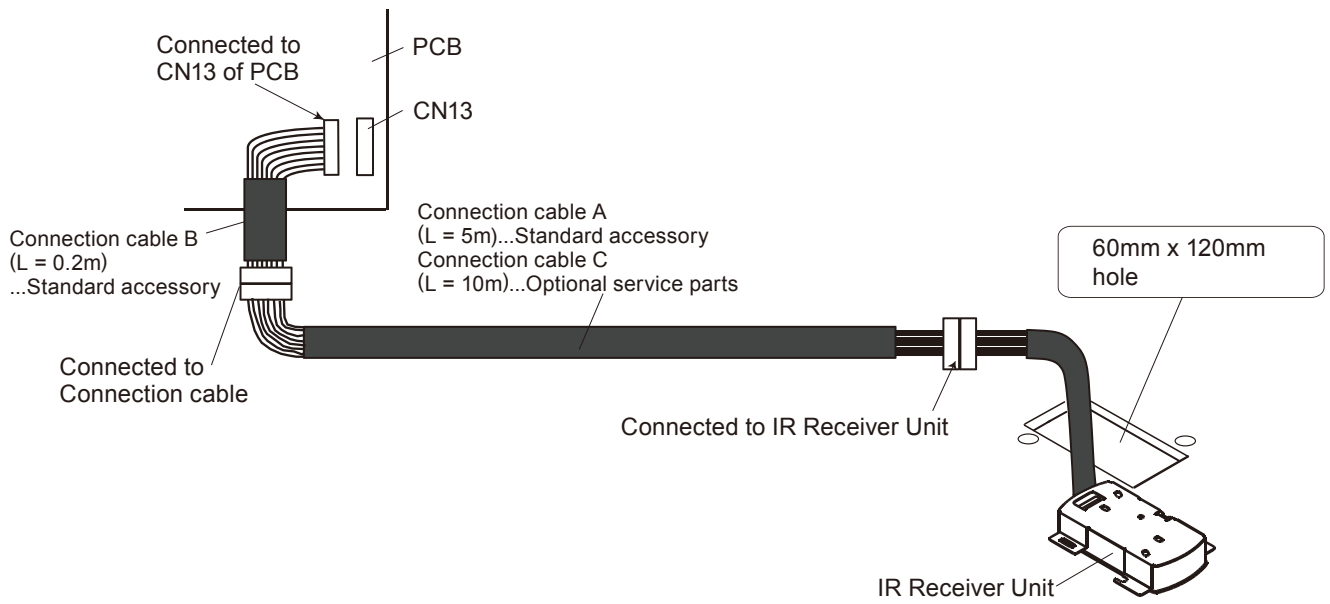
● ATTACHMENT RANGE



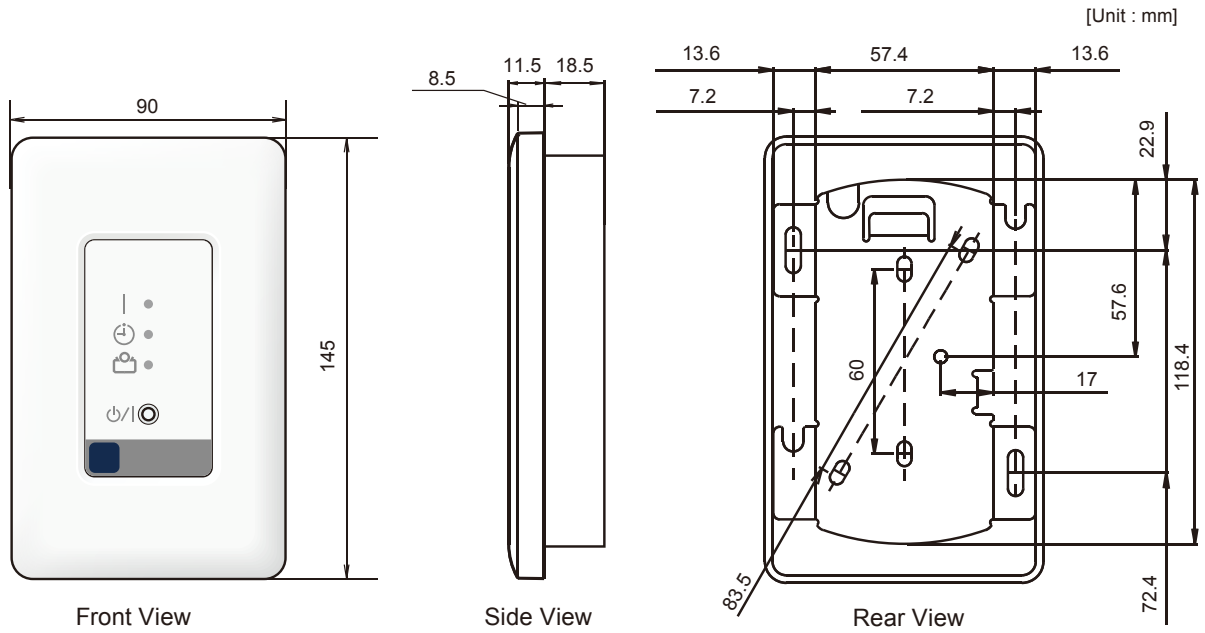
● SIGNAL ANGLE







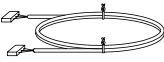

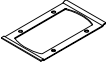




■ ELECTRICAL WIRING



■ DIMENSIONS



■ PACKING LIST

Name and shape	Quantity	Application
Installation manual 	1	
Operating manual 	1	
Cover 	1	For covering receiver unit
Insulation 	1	For protecting PCB from dust
Connection cable A (5m) 	1	For connecting PCB of indoor unit to receiver unit
Connection cable B (0.2m) 	1	For connecting PCB of indoor unit to receiver unit
Bracket (cover) 	1	For fixing receiver unit to the wall or ceiling
Screw (M3 x 12mm) 	2	For installing remote control unit holder to the wall
Screw (M4 x 20mm) 	2	For installing receiver unit to the wall or ceiling
Battery (R03/LR03) 	2	For remote controller
Remote controller holder 	1	Use as remote controller holder

■ SPECIFICATIONS (IR Receiver)

Dimensions [H x W x D]: (mm)	145 x 90 x 30
Weight: (g)	150

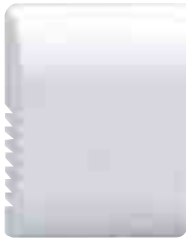
■ OPTIONAL SERVICE PARTS

Please use the parts number shown below to order the cable from your sales representative.
Select shielded type connection cable in accordance with the standard of the country.

Name and shape	Parts No.
Connection cable C (10m)	9707598025

2-6. REMOTE SENSOR UNIT

■ MODEL : UTY - XSZX

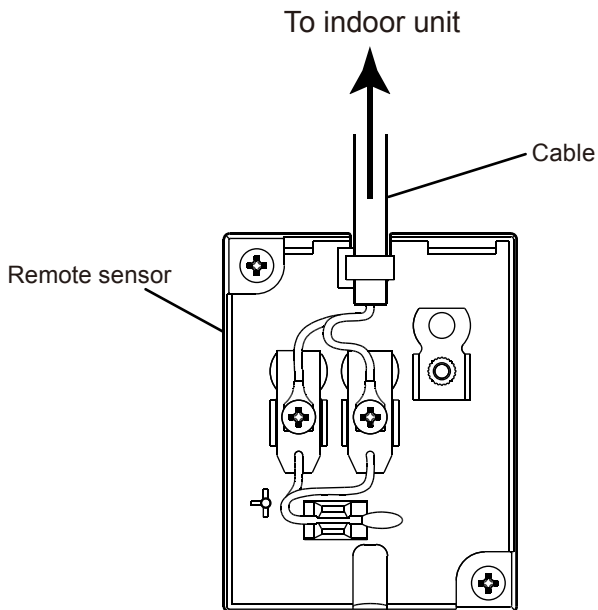


■ FEATURES

New amenity space can be offered by installing the Remote sensor.

■ ELECTRICAL WIRING

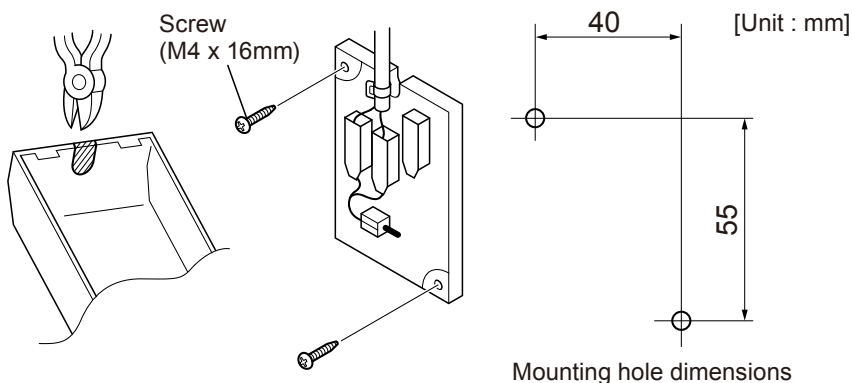
- Remove the screws from the remote sensor, and remove the cover.
- Connect the cable to the remote sensor as shown below.
- Ensure that the wires do not contact each other.



■ INSTALLATION

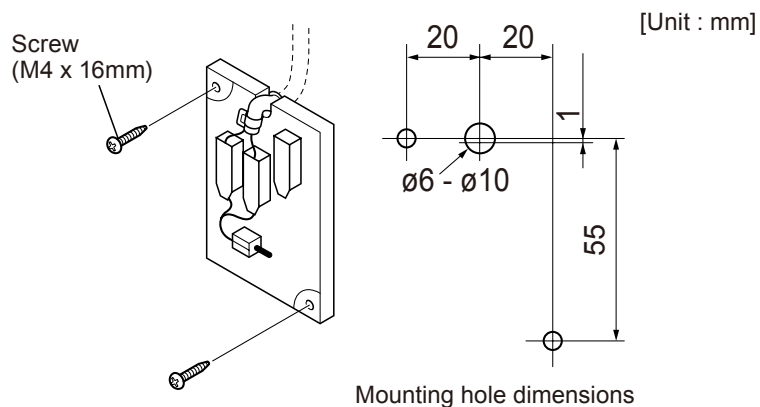
● When the cable is attached to the wall

- Remove the material covering the wiring penetration (thin material) in the cover of the sensor unit with a pair of cutters. The cable passes through this hole.
- Now the remote sensor on the wall using the screws.



● When the cable is buried in the wall

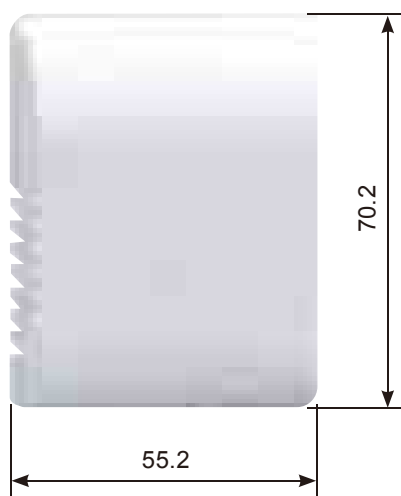
- Remove the material (thinner than the surrounding material) in the wiring hole in the remote sensor using a pair of cutters.
- Drill a hole in the wall for the cable.
- Seal the area around the cable penetration with putty.





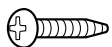


● Finish

- Fit the cover on the remote sensor and screw it in place.

■ DIMENSIONS



■ PACKING LIST

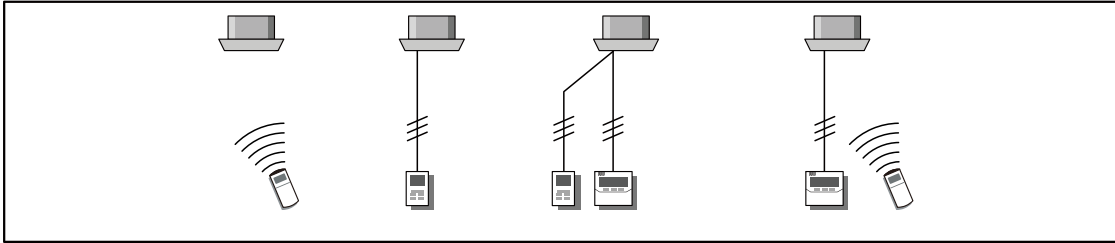
Name and shape	Quantity	Application
Installation manual 	1	
Cable (10m) 	1	
Screw (M4 x 16mm) 	2	
Screw (M4 x 10mm) 	2	
Cord clamp 	1	

2-7. GROUP CONTROL METHOD

■ REMOTE CONTROLLER GROUP

Wired, Simple and Wireless Remote Controllers can be used jointly in the following combinations.

Example of combination for "Remote controller group"



2-8. COMPARISON TABLE OF CONTROLLERS

■ LIST OF CONTROLLER FUNCTION

Item		Central Remote Controller	Wired Remote Controller		Simple Remote Controller	Wireless Remote Controller	
Model		UTY-DMM*M	UTY-RVN*M	UTY-RNN*M	UTY-RSN*M	AR-RAH2E AR-RAH1E AR-REA2E AR-REB1E	
Max. controllable indoor units		8	1	1	1	1	
Air conditioning control function	Start/Stop	•	•	•	•	•	
	Operation mode setting	•	•	•	•	•	
	Fan speed setting	•	•	•	•	•	
	Room temp. setting	•	•	•	•	•	
	Set temp. range limitation	-	•	-	-	-	
	Test operation	-	•	•	•	•	
	Up/down air direction flap setting	-	•	•	-	•	
	Right/left air direction flap setting	-	•	•	-	• / - / - / -	
	RC prohibition	•	-	-	-	-	
	10°C heat setting	•	-	-	-	•	
	Economy setting	•	•	•	-	•	
	Set temp. auto return	-	•	-	-	-	
	Low noise mode setting for outdoor unit (Outdoor Unit Quiet)	•	-	-	-	-	
	Display	Failure	•	•	•	•	-
Defrosting		-	•	•	•	-	
Current time		•	•	•	-	•	
Day of week		•	•	•	-	-	
RC prohibition		•	•	•	•	-	
Address display		-	•	•	•	-	
Room temp.		-	•	-	-	-	
Multi language		•	•	-	-	-	
Summer time		•	•	-	-	-	
Filter sign		-	•	•	•	-	
Backlight		•	•	-	•	-	
Timer		Schedule timer	Period	Week	Week	Week	- / - / Week / -
			On/off, Temp., Mode, Time, per day	4 times per day × 2 patterns	8 times per day × 2 patterns	4 (On/off, times, per day)	-
	On/Off timer	-	•	•	-	•	
	Auto off timer **	-	•	-	-	-	
	Sleep timer	-	-	-	-	•	
	Program timer	-	-	-	-	•	
Control	Day off	•	•	•	-	-	
	Status monitoring system	•	-	-	-	-	
	Error history	-	•	•	•	-	
	Remote controller sensor control	-	•	•	-	-	
	Key lock	•	•	•	-	-	
	Operation mode exemption	-	•	-	-	-	
Management (Password)	-	•	-	-	-		

*: This function is subject only AR-REA2E.

** : Counting down of the Auto-off timer is valid only if the air conditioning operation has been started with the [On/Off button] of this remote controller.

Flexible Multi System

6. SYSTEM DESIGN

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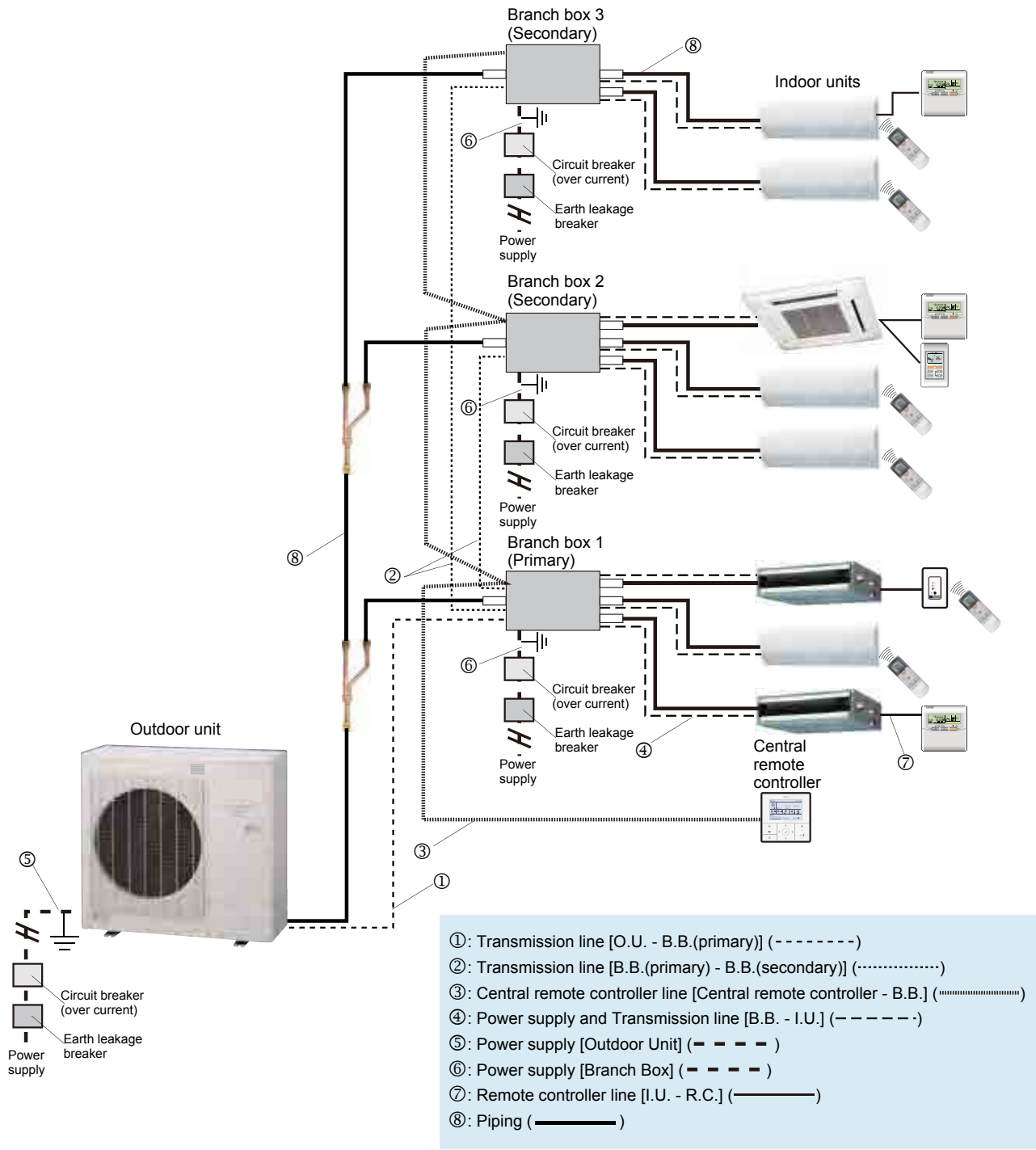
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1. SYSTEM DESIGN

1-1. SYSTEM OUTLINE



SYSTEM DESIGN

SYSTEM DESIGN

1-2. REFRIGERANT SYSTEM

■ CONNECTABLE UNIT WITHIN 1 REFRIGERANT SYSTEM

Unit	Quantity	Remarks
Outdoor unit	1 unit	
Indoor unit	2 to Max. 8 units	Connectable indoor unit capacity : 80% to 130%
Branch box	1 to Max. 3 units	One Branch box is always necessary

● CAUTION

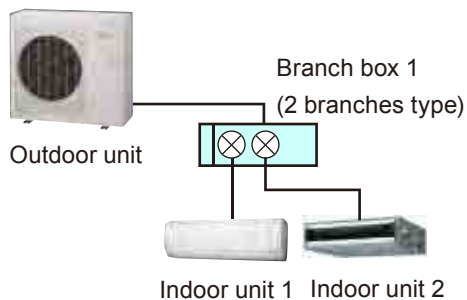
- When all indoor units are operating at maximum capacity, individual indoor unit operate at a slightly lower capacity. (When connecting more than 100%)
- Do not exceed both "connectable capacity range" and "maximum connectable indoor unit", otherwise it may cause hinder the return of the refrigerant oil and cause a compressor breakdown.
- Regardless of the conditions above, the following combinations when including at least one unit of model AS*G14LMCA is prohibited.
3 branches type
1) Model code 12 + 14 + 14
2) Model code 14 + 14 + 14
Example 1) AS*G12LMCA + AS*G14LUCA + AS*G14LUCA → OK
Example 2) AS*G12LMCA + AS*G14LUCA + AS*G14LMCA → Prohibited

EXAMPLE OF REFRIGERANT SYSTEM

Rated capacity of cooling

Model code	Capacity class (kW)	Rated capacity of cooling (kW)
07	2.0	2.05
09	2.5	2.64
12	3.5	3.52
14	4.0	4.10
18	5.0	5.27
24	7.0	7.03

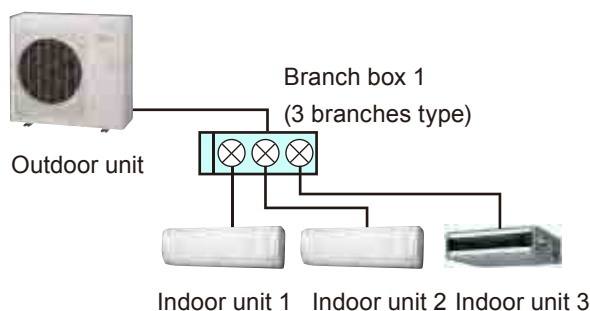
Example 1 (OK)



Capacity ratio
88%

	Model	Rated capacity of cooling (kW)	Total capacity (kW)	Connectable indoor unit capacity (kW)		Judgement
				Min.	Max.	
Outdoor unit	AO45	14.0	14.0	② 80%	③ 130%	② ≤ ① ≤ ③ 11.2 < 12.3 < 18.2 → OK
Indoor unit 1	AS24	7.03	①			
Indoor unit 2	AR18	5.27	12.3			
Branch box 1	UTP-PY02A	-	-	-	-	-

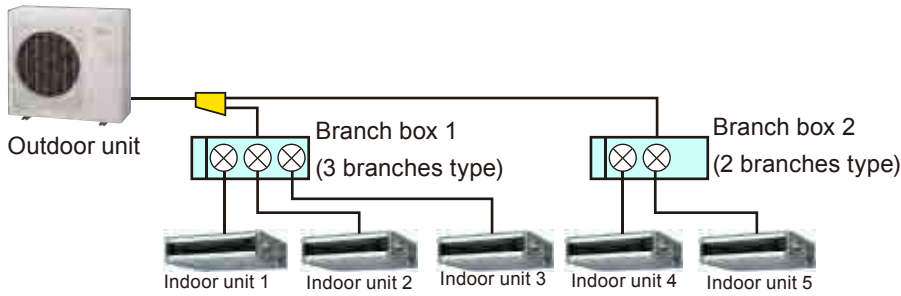
Example 2 (OK)



Capacity ratio
126%

	Model	Rated capacity of cooling (kW)	Total capacity (kW)	Connectable indoor unit capacity (kW)		Judgement
				Min.	Max.	
Outdoor unit	AO45	14.0	14.0	② 80%	③ 130%	② ≤ ① ≤ ③ 11.2 < 17.58 < 18.2 → OK
Indoor unit 1	AS24	7.03	①			
Indoor unit 2	AS24	7.03	17.58			
Indoor unit 3	AR12	3.52				
Branch box 1	UTP-PY03A	-	-	-	-	-

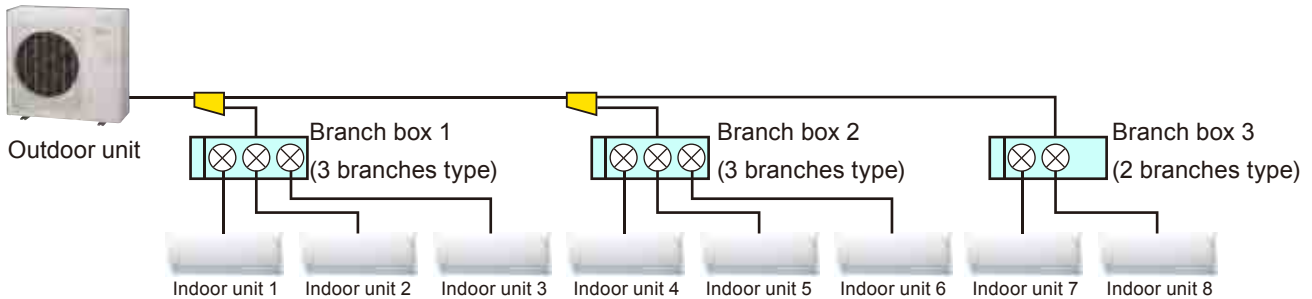
● Example 3 (OK)



Capacity ratio
119%

	Model	Rated capacity of cooling (kW)	Total capacity (kW)	Connectable indoor unit capacity (kW)		Judgement
				Min.	Max.	
Outdoor unit	AO45	14.0	14.0	② 80% 11.2	③ 130% 18.2	② ≤ ① ≤ ③ 11.2 < 16.71 < 18.2 → OK
Indoor unit 1	AR18	5.27	① 16.71			
Indoor unit 2	AR12	3.52				
Indoor unit 3	AR09	2.64				
Indoor unit 4	AR09	2.64				
Indoor unit 5	AR09	2.64				
Branch box 1	UTP-PY03A	-	-	-	-	-
Branch box 2	UTP-PY02A	-	-	-	-	-

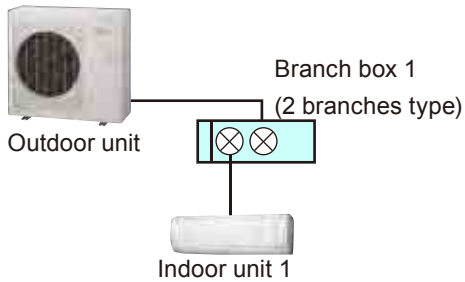
● Example 4 (OK)



Capacity ratio
117%

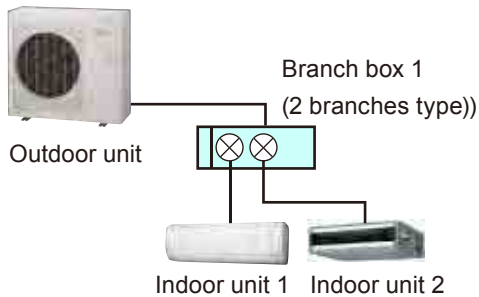
	Model	Rated capacity of cooling (kW)	Total capacity (kW)	Connectable indoor unit capacity (kW)		Judgement
				Min.	Max.	
Outdoor unit	AO48	14.0	14.0	② 80% 11.2	③ 130% 18.2	② ≤ ① ≤ ③ 11.2 < 16.4 < 18.2 → OK
Indoor unit 1	AS07	2.05	① 16.4			
Indoor unit 2	AS07	2.05				
Indoor unit 3	AS07	2.05				
Indoor unit 4	AS07	2.05				
Indoor unit 5	AS07	2.05				
Indoor unit 6	AS07	2.05				
Indoor unit 7	AS07	2.05				
Indoor unit 8	AS07	2.05				
Branch box 1	UTP-PY03A	-	-	-	-	-
Branch box 2	UTP-PY03A	-	-	-	-	-
Branch box 3	UTP-PY02A	-	-	-	-	-

● Example 5 (Prohibited)



	Model	Rated capacity of cooling (kW)	Total capacity (kW)	Connectable indoor unit capacity (kW)		Judgement
				Min.	Max.	
Outdoor unit	AO45	14.0	14.0	② 80% 11.2	③ 130% 18.2	Prohibited → Because only one indoor unit is connected
Indoor unit 1	AS24	7.03	① 7.03			
Branch box 1	UTP-PY02A	-	-	-	-	

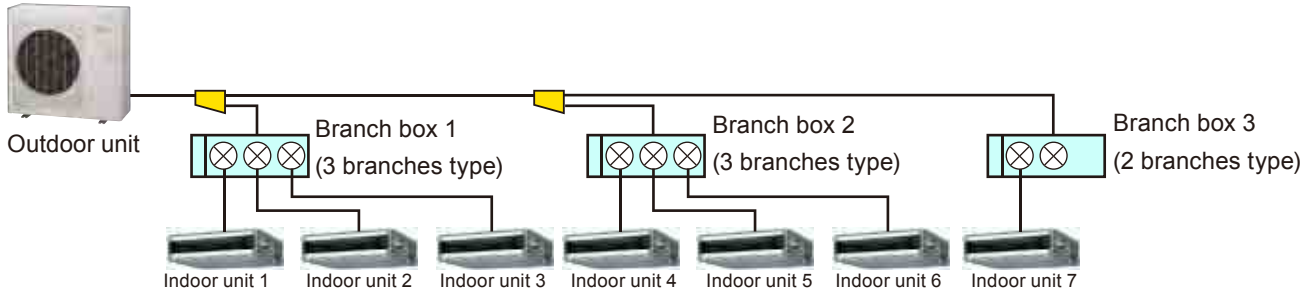
● Example 6 (Prohibited)



Capacity ratio
75%

	Model	Rated capacity of cooling (kW)	Total capacity (kW)	Connectable indoor unit capacity (kW)		Judgement
				Min.	Max.	
Outdoor unit	AO45	14.0	14.0	② 80% 11.2	③ 130% 18.2	① < ② 10.55 < 11.2 → Prohibited
Indoor unit 1	AS24	7.03	①			
Indoor unit 2	AR12	3.52	10.55			
Branch box 1	UTP-PY02A	-	-	-	-	-

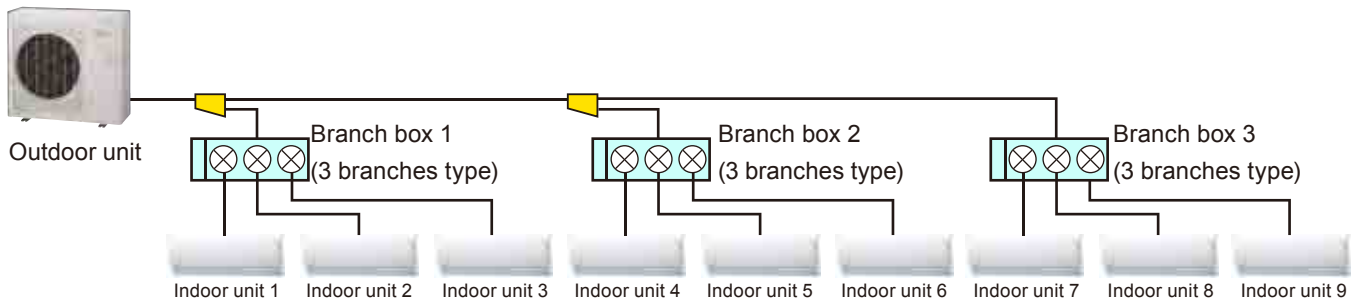
● Example 7 (Prohibited)



Capacity ratio
138%

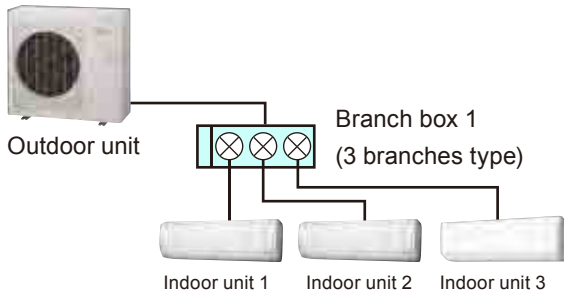
	Model	Rated capacity of cooling (kW)	Total capacity (kW)	Connectable indoor unit capacity (kW)		Judgement
				Min.	Max.	
Outdoor unit	AO45	14.0	① 19.36	② 80% 11.2	③ 130% 18.2	③ < ① 18.2 < 19.4 → Prohibited
Indoor unit 1	AR12	3.52				
Indoor unit 2	AR09	2.64				
Indoor unit 3	AR09	2.64				
Indoor unit 4	AR09	2.64				
Indoor unit 5	AR09	2.64				
Indoor unit 6	AR09	2.64				
Indoor unit 7	AR09	2.64				
Branch box 1	UTP-PY03A	-	-	-	-	-
Branch box 2	UTP-PY03A	-	-	-	-	-
Branch box 3	UTP-PY02A	-	-	-	-	-

● Example 8 (Prohibited)



	Model	Rated capacity of cooling (kW)	Total capacity (kW)	Connectable indoor unit capacity (kW)		Judgement
				Min.	Max.	
Outdoor unit	AO48	14.0	① 18.45	② 80% 11.2	③ 130% 18.2	Prohibited → Because nine indoor units are connected
Indoor unit 1	AS07	2.05				
Indoor unit 2	AS07	2.05				
Indoor unit 3	AS07	2.05				
Indoor unit 4	AS07	2.05				
Indoor unit 5	AS07	2.05				
Indoor unit 6	AS07	2.05				
Indoor unit 7	AS07	2.05				
Indoor unit 8	AS07	2.05				
Indoor unit 9	AS07	2.05				
Branch box 1	UTP-PY03A	-	-	-	-	-
Branch box 2	UTP-PY03A	-	-	-	-	-
Branch box 3	UTP-PY03A	-	-	-	-	-

● Example 9 (Prohibited)



	Model	Rated capacity of cooling (kW)	Total capacity (kW)	Connectable indoor unit capacity (kW)		Judgement
				Min.	Max.	
Outdoor unit	AO45	14.0	14.0	② 80% 11.2	③ 130% 18.2	Prohibited → Because AS14LM is included in this combination.
Indoor unit 1	AS12LM	3.52	① 11.72			
Indoor unit 2	AS14LU	4.10				
Indoor unit 3	AS14LM	4.10				
Branch box 1	UTP-PY03A	-	-	-	-	-








* Combination prohibited when including at least one AS14LM (Model code) : 12 + 14 + 14
14 + 14 + 14

1-3. WIRING SYSTEM

■ MAXIMUM WIRING LENGTH

Transmission line	Maximum wiring length m
Between outdoor unit and branch box	75
Between branch box and indoor unit	75
Between branch box and branch box	75
Between branch box and Central remote controller	500
Between indoor unit and Wired R.C. or Simple R.C.	500
Between indoor unit and IR Receiver unit	5

■ CONTROLLER

			Maximum connectable units in one multi system	Individually controllable indoor units	Remarks
Controller	Central Control	Central remote controller 	1	8	
	Individual Control	Wired Remote Controller  	16 (*1)	1	*1: One indoor unit can be connected to 2 wired remote controllers (Wired remote controller or Simple remote controller).
		Simple Remote Controller	16 (*1)	1	
	Individual Control	Wireless Remote Controller  	-	1	
			-	1	
	Individual Control	IR Receiver unit  	8 (*2)	1	*2: One indoor unit can be connected to 1 IR receiver unit.

1-4. MOUNTING POSITION

■ OUTDOOR UNIT

For the air conditioner to operate satisfactorily, install it as outlined in installation manual.

● Outdoor unit mounting position

- A position where satisfies the mounting space described in "3-3 Installation space".
- A position where the unit can be installed horizontally.
- A position with enough space for performing pipe work, service and maintenance.

● Outdoor unit mounting limitation

- A position that is not exposed to strong or seasonal winds.
- A position where the blown air does not accumulate.
- A position where there are no obstructions to the air near the inlet and outlet.
- A position not exposed to radiation from other heat sources.
- A position where the discharge air will not affect animals or plants.
- A position where the noise and hot air will not disturb the neighbour.
- A position with strong installation fixings, which can sufficiently bear the product weight.
- A position that does not transmit noise or vibration.
- A position where drain water discharge is not a problem.
- A position where snow does not accumulate.
- A position not easily affected by electrical noise.
- A position out of reach of children.
- A position where there is no danger of the generation, influx or accumulation of flammable gas.
- A position that does not have a special environment such as large amounts of oil, vapor or sulfide gas.

■ INDOOR UNIT

For the air conditioner to operate satisfactorily, install it as outlined in installation manual.

● Indoor unit mounting position

- Decide the mounting position with the customer
- Install the unit level on a strong wall, floor, ceiling 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.
- 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 space. Also install the unit where the filter can be removed.
- Install the unit where the pipe length and height is satisfactory.

● Indoor unit mounting limitation

- Install at a place that can withstand the weight of the indoor unit and install firmly so that the unit will not topple or fall.
- Do not install the unit where there is the danger of combustible gas leakage.
- Do not install the unit near heat sources and location with high temperature.
- Do not install the unit near a source of heat, steam, or flammable gas.
- Do not use the unit for air conditioning or saving precision instrument, food, art, plants and animal as special place.
- If children may approach the unit, take preventive measures so that they cannot reach the unit.
- Do not install where there is oily smoke, machine oil (i.e. factory), salty environment with direct sea breeze, and too much dust.
- Install the unit where drainage does not cause any trouble.
- Controllers may not operate correctly if the unit is installed near machinery which emit electromagnetic wave.
- Install the unit in a well-ventilated place avoiding rains and direct sunlight.
- Install the unit where air from the outlet and noise do not disturb the neighbour.
- Install the indoor and outdoor units, power wiring, signal wiring and remote control wiring 1m away from television and radio to avoid distorted images and noise. (However, distorted noise may not be avoidable even if units and wiring mentioned above are installed 1m away from television and radio depending on conditions of electromagnetic disturbance.)
- When installing an indoor unit in a small room, a countermeasure must be taken to keep refrigerant concentration limitations will never be exceeded even if there is a refrigerant leak.

■ BRANCH BOX

Install the unit in a location such as above the ceiling or on the wall surface, following the conditions below.

- The branch box is for indoor installation only.
- Install the branch box in a location that has strong support and no vibrations.
- Install in a location that is not close to any heat or steam source.
- Install in a location that has enough space for branch box installation.
- Install in a location that is not exposed to high temperatures or humidity over long periods.
- Install in a well-ventilated area.
- Do not install the unit near a bedroom. Refrigerant noise may be heard from the piping.

2. PIPING DESIGN

2-1. IMPORTANT ITEMS WHEN USING REFRIGERANT R410A

R410A operates at higher pressure and has less solubility with mineral oil than traditional R22 refrigerant. Therefore, the lubricant and a part of pipe material are different. Some special tools are necessary.

■ REFRIGERANT PIPING MATERIAL AND WALL THICKNESS

It is necessary to use seamless copper tubes for refrigerant use.

Thickness of tubes are shown in table below.

Endurance pressure of the pipe must be 4.2 MPa.

Nominal Diameter	(in)	1/4"	3/8"	1/2"	5/8"	3/4"
Outside Diameter	(mm)	6.35	9.52	12.70	15.88	19.05
Material	JIS H3300 C1220T-O or equivalent *1					
Wall Thickness *2	(mm)	0.8	0.8	0.8	1.0	1.2

*1: Allowable tensile stress ≥ 33 (N/mm²)

*2: Endurance pressure of the pipe must be 4.2 MPa.

Please select the pipe size in accordance with local rules.

■ LUBRICANT

Refrigerant	R410A (Mixed refrigerant)
Lubricant	Synthetic oil

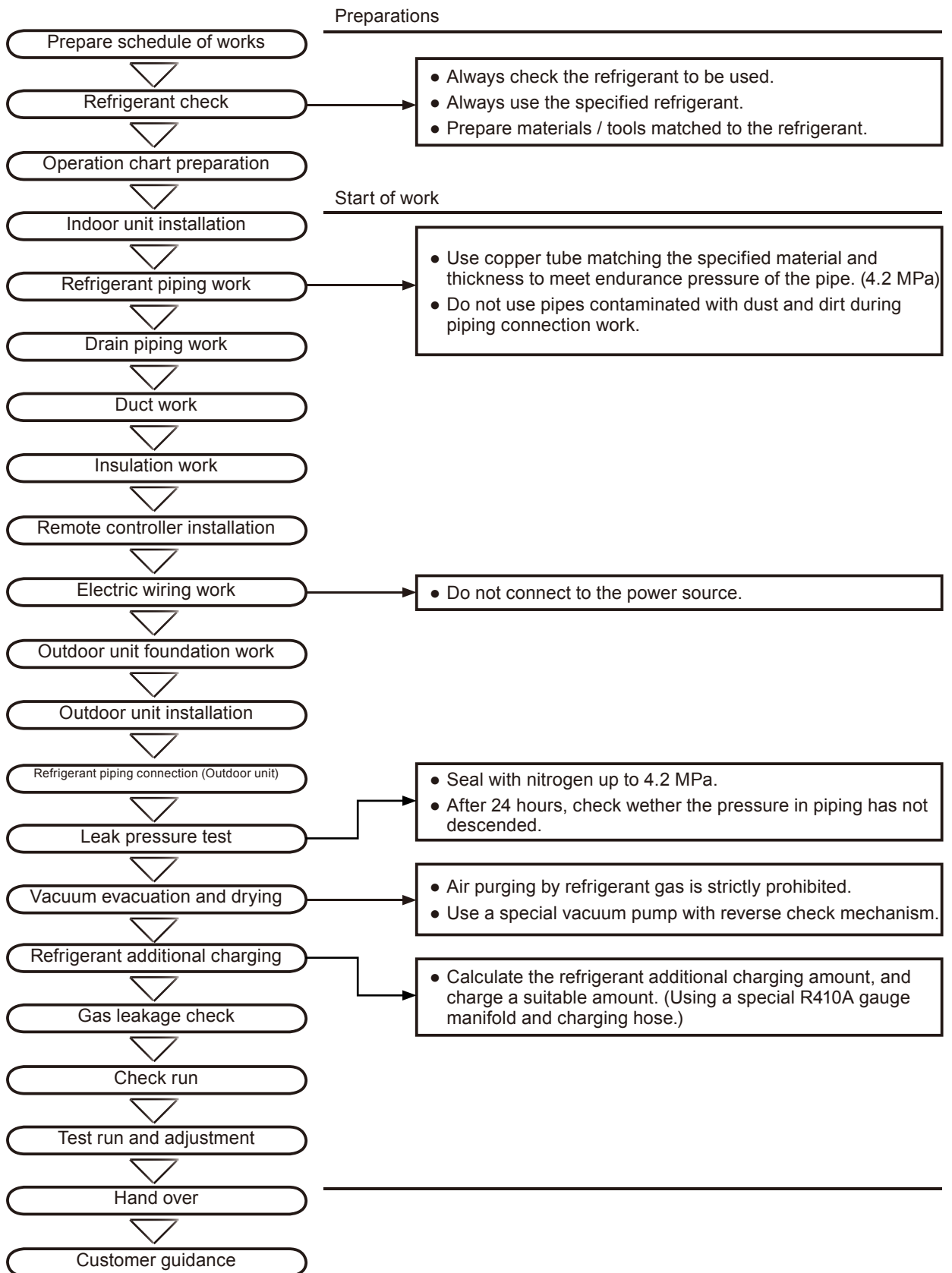
■ TOOLS

R410A work requires a number of special tools. Since the tools (marked *4 below) for R22 work cannot be used for R410A, prepare them beforehand.

Tool name	Process and application	
Pipe cutter	Pipe cutting	Refrigerant piping work
Flaring tool *4	Pipe flaring work	
Torque wrench *4	Flare nut connection	
Expander	Expansion at pipe connection	
Pipe bender	Pipe bending work	
Nitrogen gas	Pipe interior oxidation prevention	Air tightness test
Welder	Pipe brazing	Air tightness test ~ Refrigerant additional charging
Gauge manifold *4	Vacuum evacuation and refrigerant charging Operation check	
Charging hose *4		
Vacuum pump (with adaptor) *4		Vacuum drying
Electronic scale for refrigerant charging		Refrigerant additional charging
Gas leak tester *4	Gas leakage test	

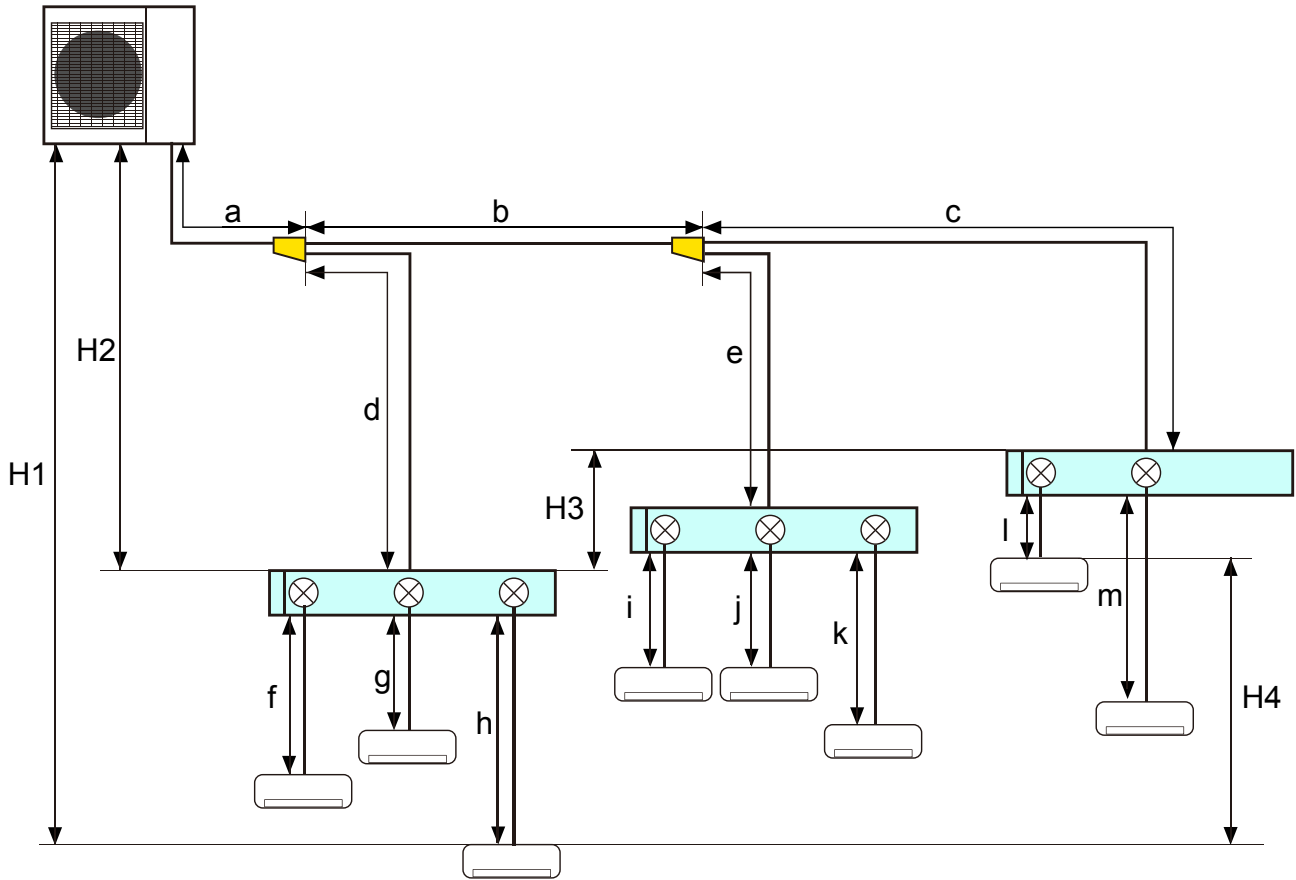
*4: Please refer to the service manual for details.

■ WORK FLOW (EXAMPLE)



2-2. PIPING LIMITATION

■ LIMITATION



		Limitation m	Diagram	
Allowable pipe length (actual pipe length)	Total pipe length	115 or less	Total	
	Between outdoor unit and the farthest indoor unit	70 or less	a + b + c + m	
	Between outdoor unit and branch boxes	55 or less	a + b + c + d + e	
	Between branch box and indoor unit	Total	60 or less	f + g + h + i + j + k + l + m
		Each unit	Between 3 to 15	f, g, h, i, j, k, l, m
	Between outdoor unit and the first separation tube	5 or more	a	
	Between outdoor unit and branch box (When there is no separation tube)		a + d	
Allowable height difference	Between outdoor unit and indoor unit	30 or less	H1	
	Between outdoor unit and branch box	30 or less	H2	
	Between branch box and branch box	15 or less	H3	
	Between indoor unit and indoor unit	15 or less	H4	

SYSTEM DESIGN

SYSTEM DESIGN

■ CAUTION

Keep the "piping limitation" for correct operation.

● Allowable height difference:

If the height difference between the indoor unit and outdoor unit is larger than the allowable value:

- * The pressure loss will be larger → Insufficient cooling and heating
- * The refrigerant in liquid pipe will flush → Refrigerant flow noise generate at indoor unit
- * The refrigerant oil will not return → Insufficient refrigerant oil resulting in compressor damage

If the height difference between indoor unit is larger than the allowable value:

- * The refrigerant flow balance will be poor → Insufficient cooling and heating (poor balance)
- * Refrigerant oil will collect in the piping or non-operating indoor units
→ Insufficient refrigerant oil resulting in compressor damage

● Pipe length:

If the pipe length is longer than prescribed:

- * The pressure loss will be larger → Insufficient cooling and heating
- * Too much refrigerant will be charged → Liquid backs up resulting in compressor damage
- * The refrigerant oil will not return → Insufficient refrigerant oil resulting in compressor damage

● Pipe size:

If the pipe size is larger than designated size:

- * The refrigerant flow velocity will drop. Refrigerant oil will not return to the outdoor unit.
→ Insufficient refrigerant oil resulting in compressor damage
- * The refrigerant in liquid pipe will flush easily → Insufficient cooling and heating

If the pipe size is smaller than designated size:

- * The refrigerant circulation volume will drop → Insufficient cooling and heating
- * The pressure loss will be larger → Insufficient cooling and heating

● Indoor unit connected capacity:

If the indoor unit connected capacity is larger than the system capable capacity:

- * Insufficient system performance → Insufficient cooling and heating
- * When heating, refrigerant will collect in non-operating indoor units resulting in an insufficient refrigerant circulation volume → Insufficient cooling and heating
- * The refrigerant oil will not return → Compressor damage

If the indoor unit connected capacity is too small compared to the system capacity:

- * The liquid return will be too great → Compressor damage
- * The refrigerant will concentrate in the operating unit
→ Continuous operation will become difficult due to triggering of the protection in response to the pressure high-rise, etc., and noise will be generated by the refrigerant flow when heating

2-3. PIPE SIZE

PIPE DIAMETER, RECOMMENDED MATERIAL AND WALL THICKNESS

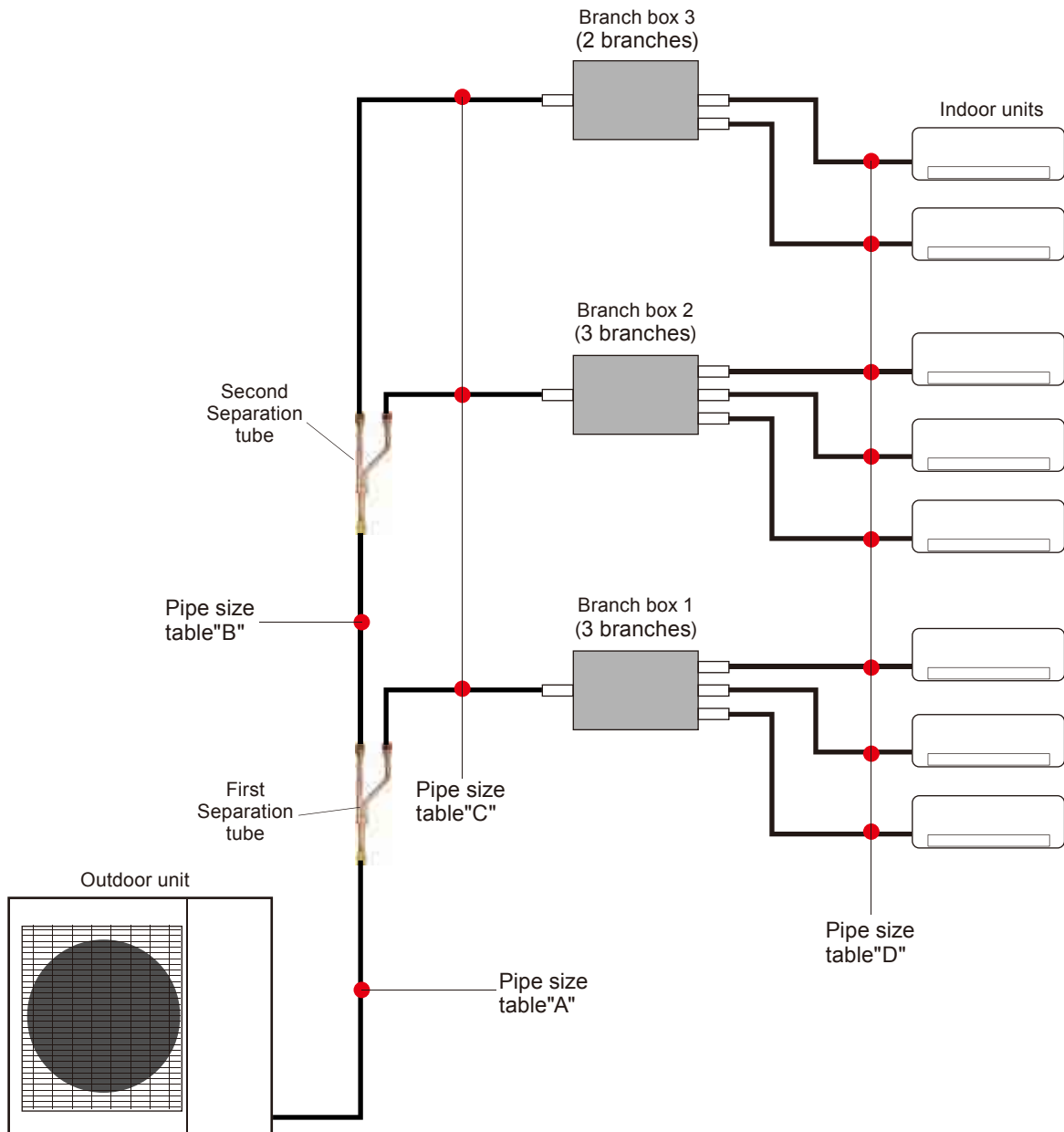
Nominal Diameter	(in)	1/4"	3/8"	1/2"	5/8"	3/4"
Outside Diameter	(mm)	6.35	9.52	12.70	15.88	19.05
Material	JIS H3300 C1220T-O or equivalent *1					
Wall Thickness *2	(mm)	0.8	0.8	0.8	1.0	1.2

*1: Allowable tensile stress ≥ 33 (N/mm²)

*2: Endurance pressure of the pipe must be 4.2 MPa.

Please select the pipe size in accordance with local rules.

PIPE SIZE SELECTION



● Pipe size table "A"

(Between outdoor unit and first separation tube)

Outside diameter mm (in)	
Liquid pipe	Gas pipe
9.52 (3/8")	15.88 (5/8")

● Pipe size table "B"

(Between first separation tube and second separation tube)

Outside diameter mm (in)	
Liquid pipe	Gas pipe
9.52 (3/8")	15.88 (5/8")

● Pipe size table "C"

(Between separation tube and branch box)

Outside diameter mm (in)	
Liquid pipe	Gas pipe
9.52 (3/8")	15.88 (5/8")

● Pipe size table "D"

(Between branch box and indoor unit)

Model code of indoor unit	Outside diameter mm (in)	
	Liquid pipe	Gas pipe
07, 09, 12	6.35 (1/4")	9.52 (3/8")
14, 18	6.35 (1/4")	12.70 (1/2")
24	6.35 (1/4")	15.88 (5/8")

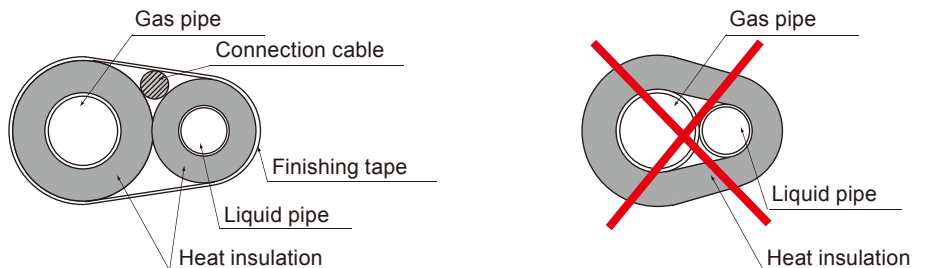
2-4. SELECTION OF PIPE HEAT INSULATING MATERIAL

- Always insulate the refrigerant pipe to prevent condensation and water droplets by the refrigerant pipe.
- Decide the thickness of the heat insulating material by referring to the recommended minimum thickness in Table 1. (For installation condition T=32°C DB, humidity≤70%, humidity≤75%, humidity≤80%, humidity≤85%)
- When the outdoor unit is installed in a higher position than the indoor unit, fill the connecting part gap with putty, etc. to prevent the dew condensation water of the valve of the outdoor unit from flowing to the indoors from the gap between the pipe and the heat insulating material.
- Liquid pipe and gas pipe should be completely insulated with same specification.
- In case not to insulate and not to seal refrigerant pipe completely, it will become the cause of water leak.

Table1 Size of refrigerant pipe and recommended minimum thickness of heat insulating material (In case a heat insulating material which thermal conductivity is equal to or less than 0.040 W/(m·k) is used.)

Relative humidity		Recommended minimum thickness for heat insulating material (mm)			
		≤70%	≤75%	≤80%	≤85%
Refrigerant pipe	6.35 (1/4")	8	10	13	17
	9.52 (3/8")	9	11	14	18
Outside diameter mm (in.)	12.70 (1/2")	10	12	15	19
	15.88 (5/8")	10	12	16	20
	19.05 (3/4")	10	13	16	21

- When an ambient temperature and relative humidity exceed 32°C DB and 85% respectively, please strengthen heat insulation of refrigerant pipe. If necessary put a heat insulation on indoor unit casing. When not strengthening heat insulation of refrigerant pipe, the surface of the heat insulation may be dewed.
- Since gas pipe becomes high temperature at heating operation for heatpump type, please select the heat insulating material which heat-resistant temperature is 120°C or more.



- Make sure that pipe is covered completely by the heat insulation, not exposing to air. Inadequate heat insulation may cause condensation.
- Do not cover heat insulation gas and liquid pipes together as above figure. It may cause condensation and capacity drop by heat loss.

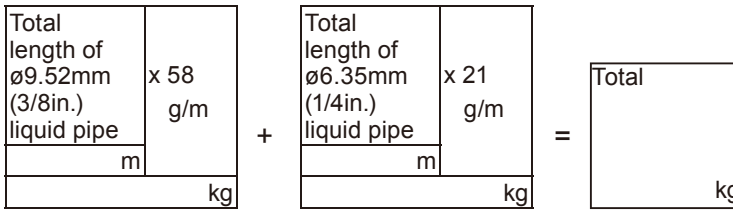
2-5. ADDITIONAL CHARGE CALCULATION

- The outdoor unit refrigerant is charged at the factory.
- Additional refrigerant required to be charged on site depending on pipe length.
- The additional refrigerant charge amount is calculated according to the following formula.
- Round up the calculated result to two decimal places.

■ CALCULATION OF ADDITIONAL CHARGE REFRIGERANT

Diameter of liquid pipe unit: mm (in.)	Additional amount for pipe length unit: g/m
ø6.35 (1/4)	21
ø9.52 (3/8)	58

● Calculation of additional amount for pipe length

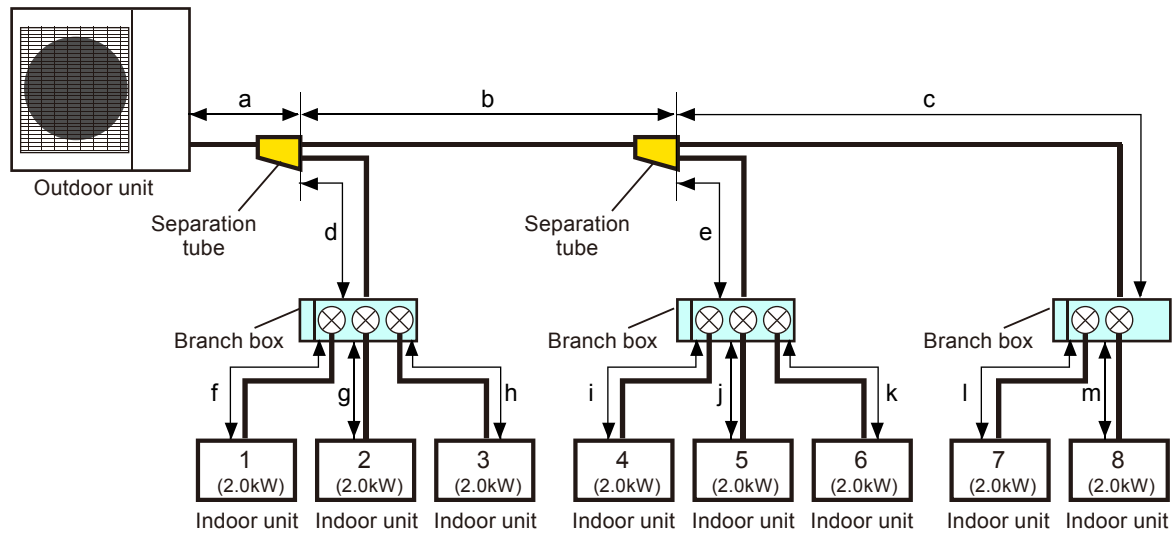


2-6. EXAMPLE OF PIPING DESIGN

● Rated capacity of cooling

Model code	Capacity class (kW)	Rated capacity of cooling (kW)
07	2.0	2.05
09	2.5	2.64
12	3.5	3.52
14	4.0	4.10
18	5.0	5.27
24	7.0	7.03

■ EXAMPLE 1



● System configuration (Indoor units)

	1	2	3	4	5	6	7	8	Total capacity (kW)
Model name	AS07	AS07	AS07	AS07	AS07	AS07	AS07	AS07	16.4
Capacity class (kW)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Rated capacity of cooling (kW)	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	

● Capacity ratio

$$\begin{aligned} & (\text{Total capacity of indoor units}) / (\text{Capacity of outdoor unit}) \\ & = (16.4) / (14.0) = 117.1\% \text{ (Within 80\% to 130\%)} \end{aligned}$$

● Selection of separation tube

Model	Q'ty
UTP-SX248A	2

● Selection of branch box

Model	Q'ty
UTP-PY03A (3 branches)	2
UTP-PY02A (2 branches)	1

● Selection of pipe size

	a	b	c	d	e	f	g
Liquid pipe size mm (in.)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	6.35 (1/4)	6.35 (1/4)
Gas pipe size mm (in.)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	9.52 (3/8)	9.52 (3/8)
Pipe length m	7	10	10	5	5	5	5
	h	i	j	k	l	m	
Liquid pipe size mm (in.)	6.35 (1/4)	6.35 (1/4)	6.35 (1/4)	6.35 (1/4)	6.35 (1/4)	6.35 (1/4)	
Gas pipe size mm (in.)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	
Pipe length m	5	5	5	5	5	8	

● Limitation check

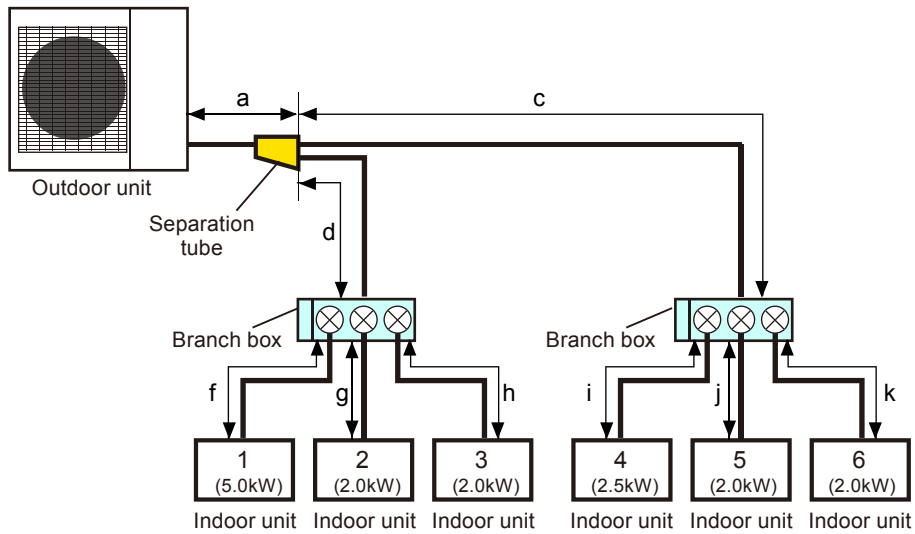
	Diagram	Example m	Limitation m	Judge	
Total pipe length	Total	80	115 or less	OK	
Between outdoor unit and the farthest indoor unit	a + b + c + m	35	70 or less	OK	
Between outdoor unit and branch boxes	a + b + c + d + e	37	55 or less	OK	
Between branch box and indoor unit	Total	f + g + h + i + j + k + l + m	43	60 or less	OK
	Each unit	f, g, h, i, j, k, l, m	5 to 8	Between 3 to 15	OK
Between outdoor unit and the first separation tube	a	7	5 or more	OK	

● Calculation of additional charge refrigerant

Liquid pipe size mm (in.)	6.35 (1/4)	9.52 (3/8)
Additional refrigerant g/m	21	58
Liquid pipe length m	43	37

Additional charge = (21 x 43) + (58 x 37) = 3049 g = 3.05 kg

EXAMPLE 2



● System configuration (Indoor units)

	1	2	3	4	5	6	7	8	Total capacity (kW)
Model name	AS18	AS07	AS07	AS09	AS07	AS07			16.11
Capacity class (kW)	5.0	2.0	2.0	2.5	2.0	2.0			
Rated capacity of cooling (kW)	5.27	2.05	2.05	2.64	2.05	2.05			

● Capacity ratio

(Total capacity of indoor units) / (Capacity of outdoor unit)
 = (16.11) / (14.0) = 115.1% (Within 80% to 130%)

● Selection of separation tube

Model	Q'ty
UTP-SX248A	1

● Selection of branch box

Model	Q'ty
UTP-PY03A (3 branches)	2
UTP-PY02A (2 branches)	None

● Selection of pipe size

	a	b	c	d	e	f	g
Liquid pipe size mm (in.)	9.52 (3/8)		9.52 (3/8)	9.52 (3/8)		6.35 (1/4)	6.35 (1/4)
Gas pipe size mm (in.)	15.88 (5/8)		15.88 (5/8)	15.88 (5/8)		12.70 (1/2)	9.52 (3/8)
Pipe length m	7		25	10		5	5
	h	i	j	k	l	m	
Liquid pipe size mm (in.)	6.35 (1/4)	6.35 (1/4)	6.35 (1/4)	6.35 (1/4)			
Gas pipe size mm (in.)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)			
Pipe length m	5	5	5	5			

● Limitation check

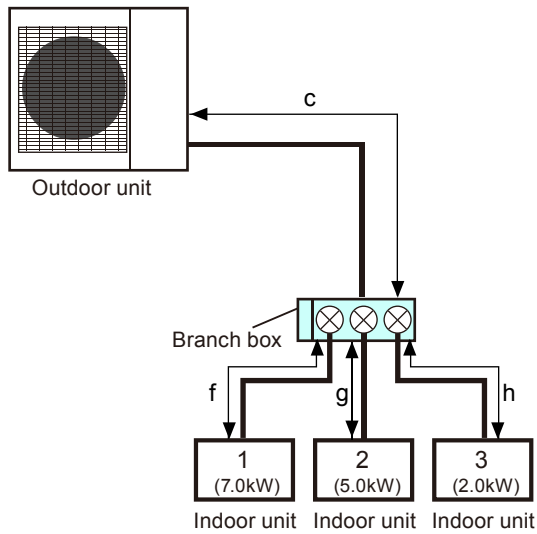
	Diagram	Example m	Limitation m	Judge	
Total pipe length	Total	72	115 or less	OK	
Between outdoor unit and the farthest indoor unit	a + c + k	37	70 or less	OK	
Between outdoor unit and branch boxes	a + c + d	42	55 or less	OK	
Between branch box and indoor unit	Total	f + g + h + i + j + k	30	60 or less	OK
	Each unit	f, g, h, i, j, k	5	Between 3 to 15	OK
Between outdoor unit and the first separation tube	a	7	5 or more	OK	

● Calculation of additional charge refrigerant

Liquid pipe size mm (in.)	6.35 (1/4)	9.52 (3/8)
Additional refrigerant g/m	21	58
Liquid pipe length m	30	42

Additional charge = (21 x 30) + (58 x 42) = 3066 g = 3.07 kg

EXAMPLE 3



● System configuration (Indoor units)

	1	2	3	4	5	6	7	8	Total capacity (kW)
Model name	AS24	AS18	AS07						14.35
Capacity class (kW)	7.0	5.0	2.0						
Rated capacity of cooling (kW)	7.03	5.27	2.05						

● Capacity ratio

$$\begin{aligned} & \text{(Total capacity of indoor units)} / \text{(Capacity of outdoor unit)} \\ & = (14.35) / (14.0) = 102.5\% \text{ (Within 80\% to 130\%)} \end{aligned}$$

● Selection of separation tube

Model	Q'ty
UTP-SX248A	None

● Selection of branch box

Model	Q'ty
UTP-PY03A (3 branches)	1
UTP-PY02A (2 branches)	None

● Selection of pipe size

	a	b	c	d	e	f	g
Liquid pipe size mm (in.)			9.52 (3/8)			6.35 (1/4)	6.35 (1/4)
Gas pipe size mm (in.)			15.88 (5/8)			15.88 (5/8)	12.70 (1/2)
Pipe length m			45			12	12
	h	i	j	k	l	m	
Liquid pipe size mm (in.)	6.35 (1/4)						
Gas pipe size mm (in.)	9.52 (3/8)						
Pipe length m	15						

● Limitation check

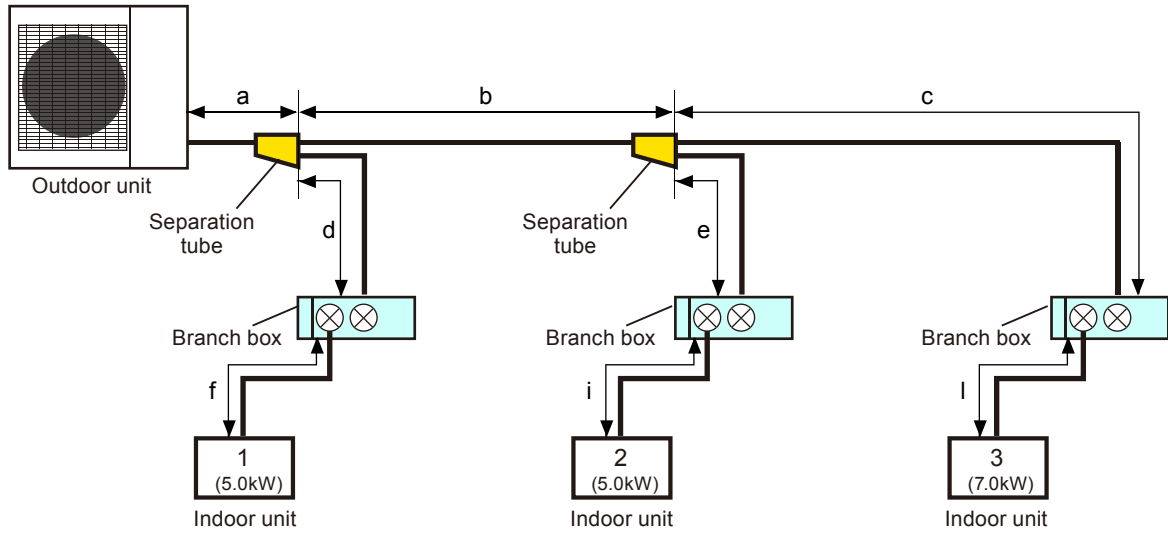
		Diagram	Example m	Limitation m	Judge
Total pipe length		Total	84	115 or less	OK
Between outdoor unit and the farthest indoor unit		c + h	60	70 or less	OK
Between outdoor unit and branch box		c	45	55 or less	OK
Between branch box and indoor unit	Total	f + g + h	39	60 or less	OK
	Each unit	f, g, h	12 to 15	Between 3 to 15	OK
Between outdoor unit and branch box (When there is no separation tube)		c	45	5 or more	OK

● Calculation of additional charge refrigerant

Liquid pipe size mm (in.)	6.35 (1/4)	9.52 (3/8)
Additional refrigerant g/m	21	58
Liquid pipe length m	39	45

Additional charge = (21 x 39) + (58 x 45) = 3429 g = 3.43 kg

EXAMPLE 4



● System configuration (Indoor units)

	1	2	3	4	5	6	7	8	Total capacity (kW)
Model name	AS18	AS18	AS24						17.57
Capacity class (kW)	5.0kW	5.0kW	7.0kW						
Rated capacity of cooling (kW)	5.27	5.27	7.03						

● Capacity ratio

(Total capacity of indoor units) / (Capacity of outdoor unit)
 = (17.57) / (14.0) = 125.5% (Within 80% to 130%)

● Selection of separation tube

Model	Q'ty
UTP-SX248A	2

● Selection of branch box

Model	Q'ty
UTP-PY03A (3 branches)	None
UTP-PY02A (2 branches)	3

● Selection of pipe size

	a	b	c	d	e	f	g
Liquid pipe size mm (in.)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	6.35 (1/4)	
Gas pipe size mm (in.)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	12.70 (1/2)	
Pipe length m	7	18	18	5	5	12	
	h	i	j	k	l	m	
Liquid pipe size mm (in.)		6.35 (1/4)			6.35 (1/4)		
Gas pipe size mm (in.)		12.70 (1/2)			15.88 (5/8)		
Pipe length m		12			12		

● Limitation check

		Diagram	Example m	Limitation m	Judge
Total pipe length		Total	89	115 or less	OK
Between outdoor unit and the farthest indoor unit		$a + b + c + l$	55	70 or less	OK
Between outdoor unit and branch boxes		$a + b + c + d + e$	53	55 or less	OK
Between branch box and indoor unit	Total	$f + i + l$	36	60 or less	OK
	Each unit	f, i, l	12	Between 3 to 15	OK
Between outdoor unit and the first separation tube		a	7	5 or more	OK

● Calculation of additional charge refrigerant

Liquid pipe size mm (in.)	6.35 (1/4)	9.52 (3/8)
Additional refrigerant g/m	21	58
Liquid pipe length m	36	53

Additional charge = $(21 \times 36) + (58 \times 53) = 3830 \text{ g} = 3.83 \text{ kg}$

3. INSTALLATION

3-1. OUTDOOR UNIT

■ OPENING A KNOCKOUT HOLE

⚠ CAUTION

- Be careful not to deform or scratch the panel while opening the knock out holes.
- To protect the piping insulation after opening a knock out hole, remove any burrs from the edge of the hole. It is recommended to apply rust prevention paint to the edge of the hole.

- Pipes can be connected from 4 directions, front, lateral side, rear side and bottom. (Fig. A)
- When connecting at the bottom, remove the service panel and piping cover on the front of the outdoor unit, and open the knock out hole provided at the bottom corner of the piping outlet.
- It can be installed as shown on "Fig. B" cutting out the 2 slits as indicated on "Fig. C". (When cutting slits, use a steel saw.)

Fig. A

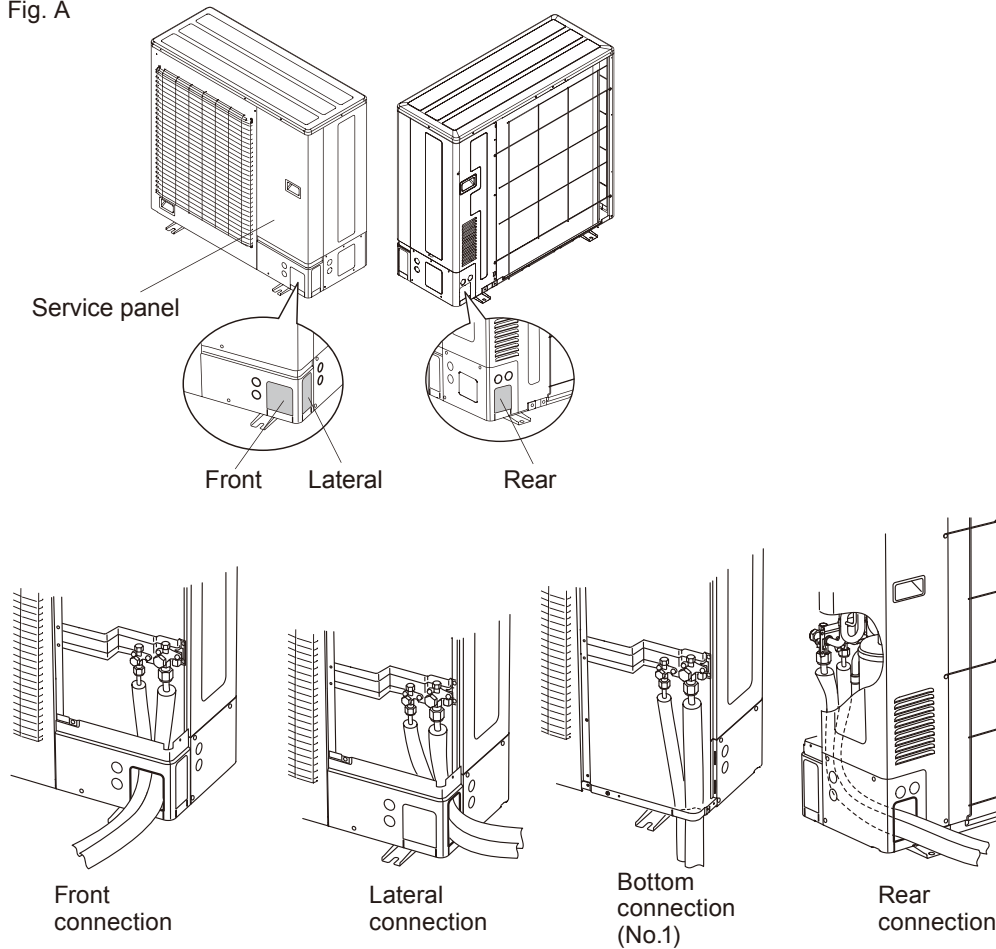


Fig. B

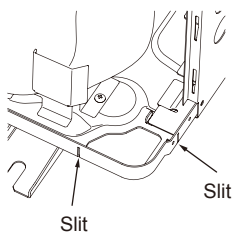
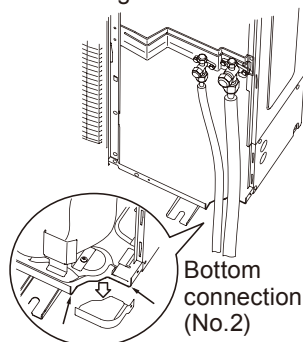


Fig. C

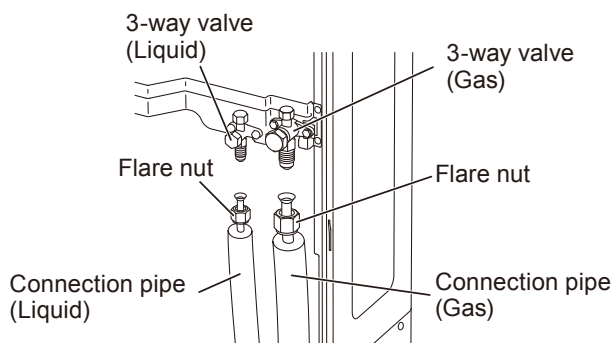


PIPE CONNECTION

⚠ CAUTION

- Be sure to install the pipe against the port on the indoor unit and the outdoor unit correctly. If the centering is improper, the flare nut cannot be tightened smoothly. If the flare nut is forced to turn, the threads will be damaged.
- Do not remove the flare nut from the outdoor unit pipe until immediately before connecting the connection pipe.
- After installing the piping, make sure that the connection pipes do not touch the compressor or outer panel. If the pipes touch the compressor or outer panel, they will vibrate and produce noise.

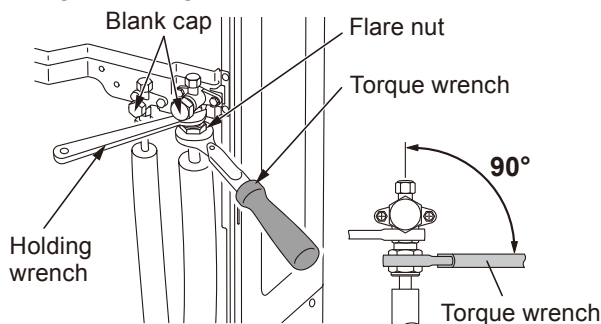
- (1) Detach the caps and plugs from the pipes.
- (2) Center the pipe against the port on the outdoor unit, and then turn the flare nut by hand.
- (3) Tighten the flare nut of the connection pipe at the outdoor unit valve connector.
- (4) After tightening the flare nut by hand, use a torque wrench to fully tighten it.



⚠ CAUTION

- Hold the torque wrench at its grip, keeping it in a right angle with the pipe, in order to tighten the flare nut correctly.

- Outer panel may be distorted if fastened only with a wrench. Be sure to fix the elementary part with a spanner and fasten with a wrench (refer to below diagram).
- Do not apply force to the blank cap of the valve or hang a wrench, etc., on the cap. It may cause leakage of refrigerant.



Flare nut [mm (in.)]	Tightening torque [N·m]
6.35 (1/4) dia.	16 to 18
9.52 (3/8) dia.	32 to 42
12.70 (1/2) dia.	49 to 61
15.88 (5/8) dia.	63 to 75
19.05 (3/4) dia.	90 to 110

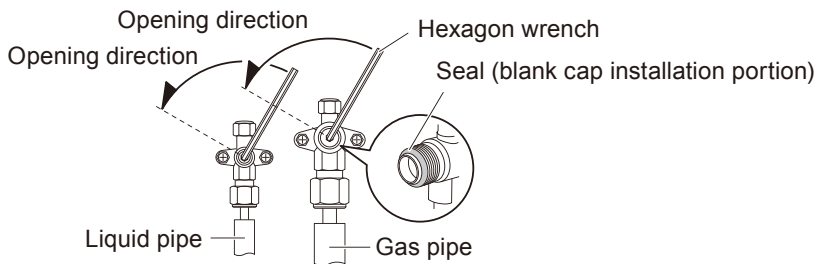
● Handling precautions for the valves

- Mounted part of Blank cap is sealed for protection.
- Fasten blank cap tightly after opening valves.

Blank cap [mm (in.)]	Tightening torque [N·m]
6.35 (1/4)	20 to 25
9.52 (3/8)	20 to 25
12.70 (1/2)	25 to 30
15.88 (5/8)	30 to 35
19.05 (3/4)	35 to 40

Operating the valves

- Use a hexagon wrench (size 4 mm).
- Opening (1) Insert the hexagon wrench into the valve shaft, and turn it counterclockwise.
(2) Stop turning when the valve shaft can no longer be turned. (Open position)
- Closing (1) Insert the hexagon wrench into the valve shaft, and turn it clockwise.
(2) Stop turning when the valve shaft can no longer be turned. (Closed position)



3-2. SEPARATION TUBE

■ PIPE CONNECTION

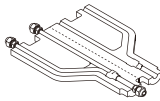
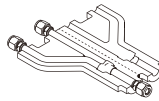
⚠ CAUTION

- Be sure to apply the pipe against the port on the indoor unit correctly. If the centering is improper, the flare nut cannot be tightened smoothly. If the flare nut is forced to turn, the threads will be damaged.
- Do not remove the flare nut from the indoor unit pipe until immediately before connecting the connection pipe.
- Hold the torque wrench at its grip, keeping it in the right angle with the pipe, in order to tighten the flare nut correctly.
- Tighten the flare nuts with a torque wrench using the specified tightening method. Otherwise, the flare nuts could break after a prolonged period, causing refrigerant to leak and generate a hazardous gas if the refrigerant comes into contact with a flame.

When the flare nut is tightened properly by your hand, hold the body side coupling with a separate spanner, then tighten with a torque wrench. (See the table below for the flare nut tightening torques.)

Flare nut [mm (in.)]	Tightening torque [N·m]
6.35 (1/4)	16 to 18
9.52 (3/8)	32 to 42
12.70 (1/2)	49 to 61
15.88 (5/8)	63 to 75
19.05 (3/4)	90 to 110

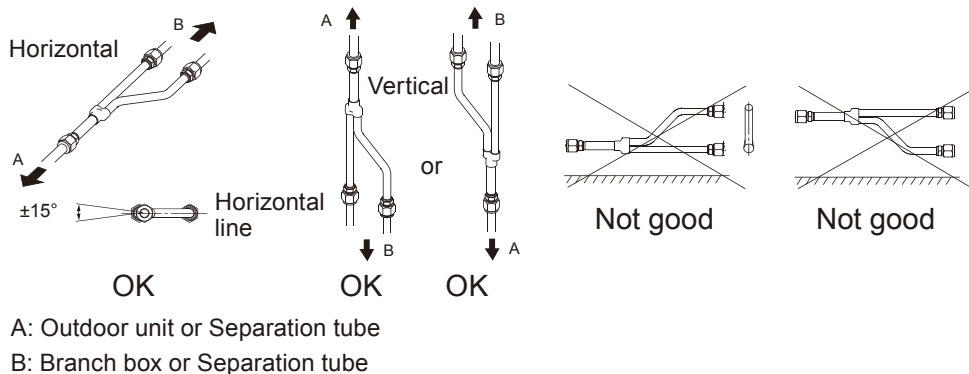
● Type of separation tube

Name and shape	
Liquid pipe 	Gas pipe 

● Positioning of separation tube

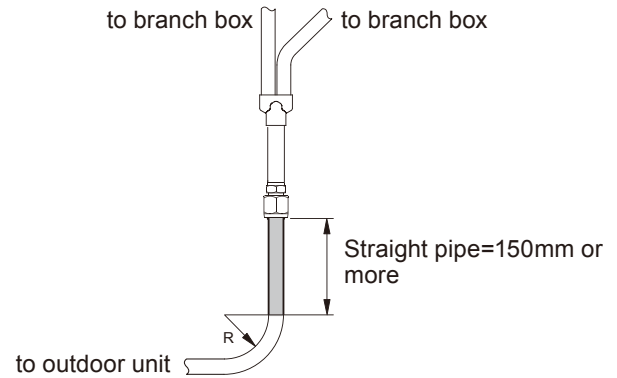
⚠ CAUTION

- If it is placed horizontally, keep it within $\pm 15^\circ$. Otherwise, it will not separate the refrigerant evenly, causing a reduction in performance.
- Place the separation tube in a horizontal position as much as possible. Only place the separation tube as shown below during unavoidable circumstances.



● Straight pipe length

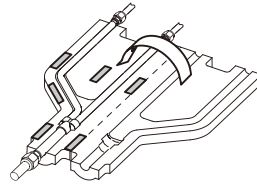
- When connecting the main piping, do not bend it near the connection section.
- If the main pipe must be bent due to unavoidable circumstances, ensure that the linear section is 150mm or more.



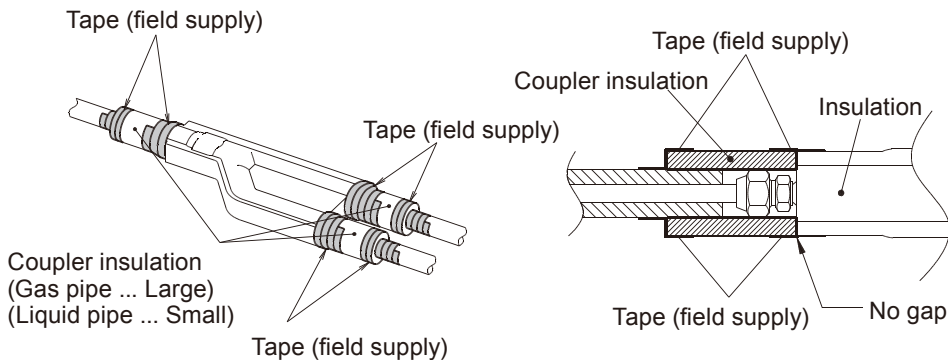
■ HEAT INSULATION INSTALLATION

After connection the pipes, use the supplied heat insulation to insulate them.

- Remove the protective sheet from the double-stick tape that is affixed to the heat insulation.

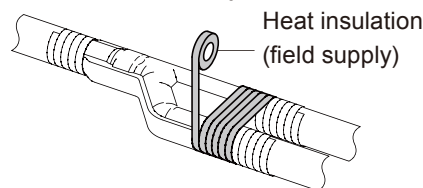


- Use tape (field supply) to seal the seam so that there will be no gap at the junction between the aforementioned heat insulation and coupler insulation, and between coupler insulation and the heat insulation on the local piping.



⚠ CAUTION

- Be sure to install the heat insulation on liquid pipes and gas pipes. Unless they are thermally insulated, water condensation can cause accidents or reduction in performance.
- After installing the heat insulation, if you worry about possible condensation due to the high humidity of installation position, please use locally procured heat insulation to reinforce insulation.



3-3. BRANCH BOX

■ INSTALLATION THE UNIT

⚠ WARNING

- Perform installation in a location which can properly withstand the weight of the unit. Failure to install in a robust location or a faulty installment may cause the equipment to fall, a water leakage, electric shock or fire.
- During installation, secure the hanger bolt so it does not come off.

⚠ CAUTION

- Be sure to provide adequate maintenance space when installing the unit above the ceiling.

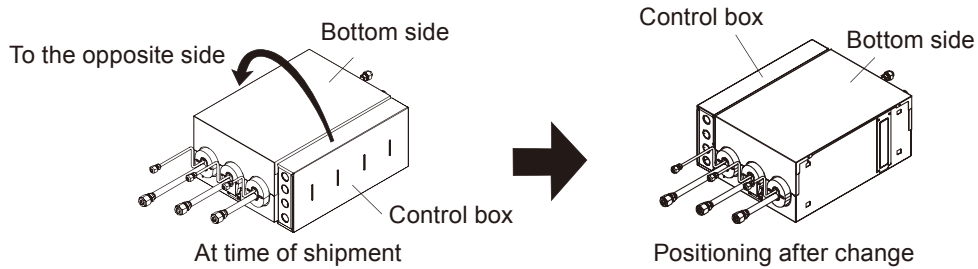
● Changing the positioning of the control box

⚠ CAUTION

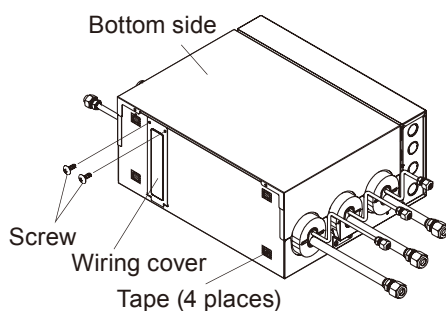
- Change the positioning of the control box on-site before performing the installation.

The positioning of the control box can be changed.

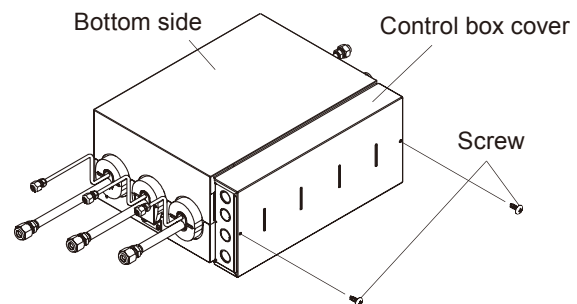
(Only when installed horizontally. When vertically installed, the positioning cannot be changed.)



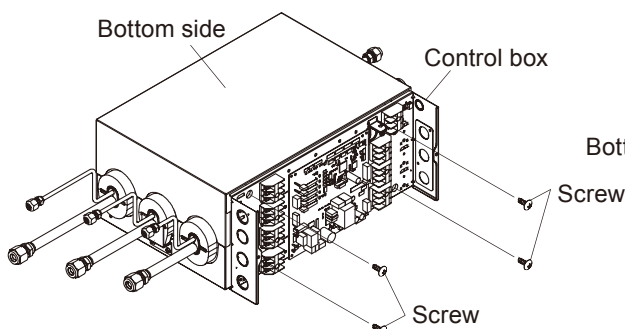
- (1) Remove the screws (2 pieces) to remove the wiring cover.
Remove the tapes (4 places) on the main unit.



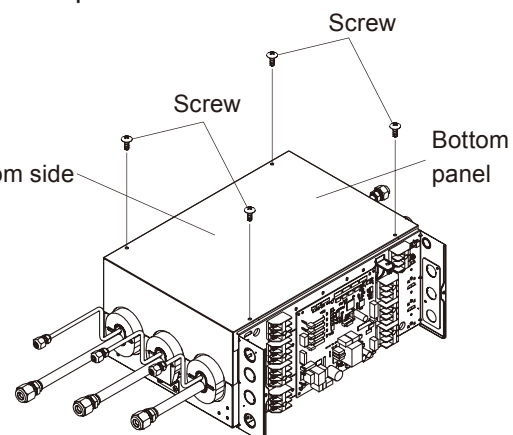
- (2) Remove the screws (2 pieces) to remove the control box cover.



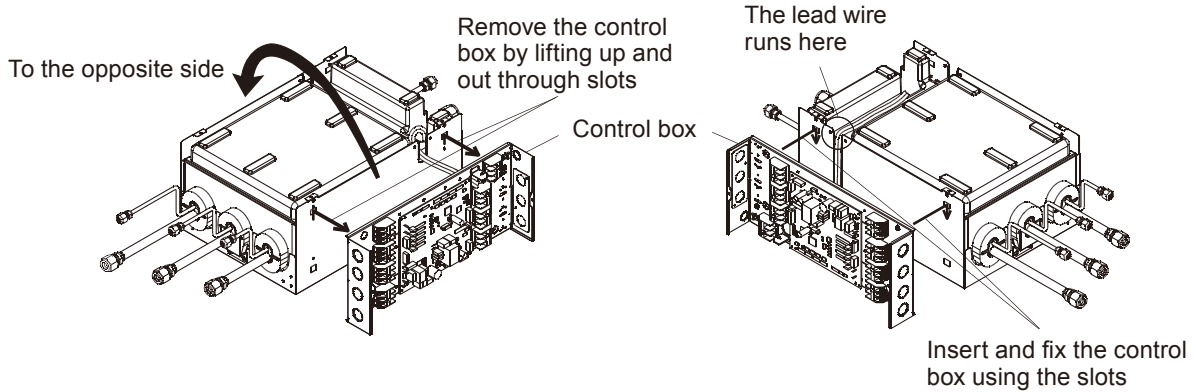
- (3) Remove the screws (4 pieces).
(Note: Do not remove the control box.)



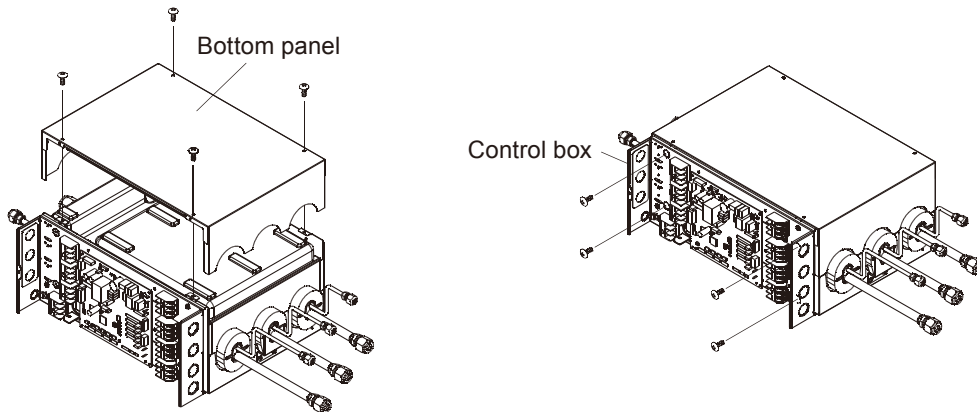
- (4) Remove the screws (4 pieces) to remove the bottom panel.



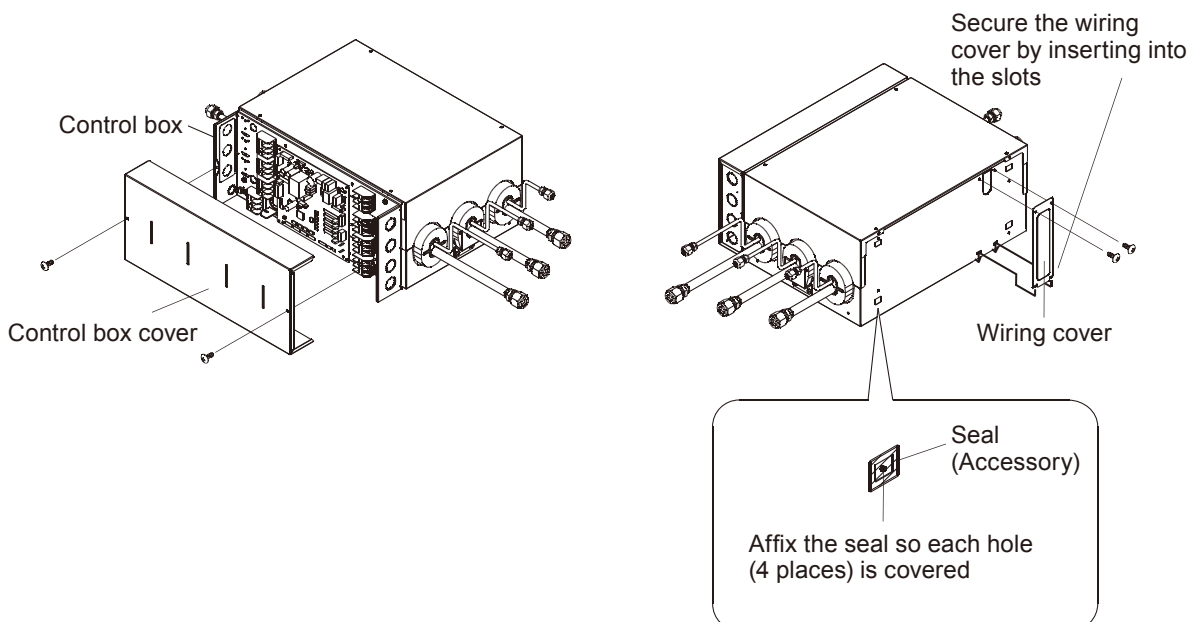
- (5) Remove the control box as shown in the figure, (6) Attach the control box to the main unit as and then change the positioning to the opposite side shown in the figure.



- (7) Attach the bottom panel and secure it with the screws (4 pieces). (8) Secure the control box with the screws (4 pieces).



- (9) Attach the control box cover and secure it with the screws (2 places). (10) Attach the wiring cover and secure it with the screws (2 places). Affix the seals on the main unit (4 places).

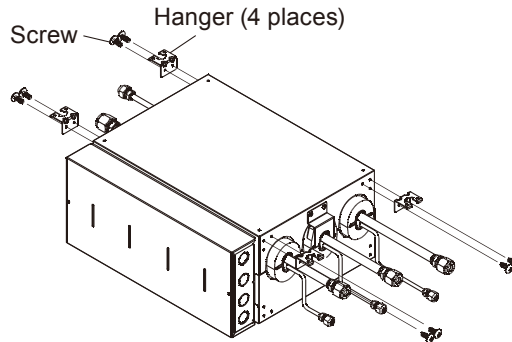


● Fix the unit (When hanging from the ceiling)

⚠ CAUTION

- Do not hang from the ceiling when performing a vertical installation.

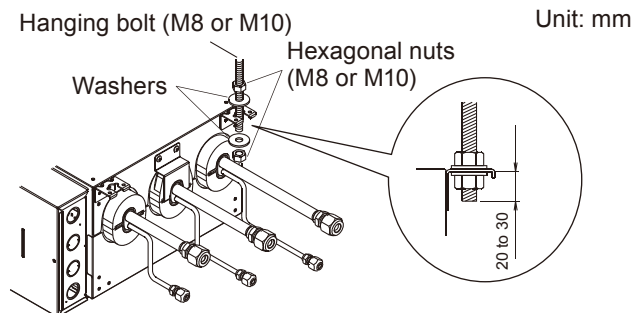
- (1) Secure the hangers (accessories) with the screws (2 pieces, $\varnothing 4 \times 10\text{mm}$, accessories). (4 places)



- (2) Secure the attachment section with the hanging bolt. (Use M8 or M10 for the hanging bolt)

- (3) Secure the hangers with hexagonal nuts (field supply) and the washers (accessories) as shown in the figure below.

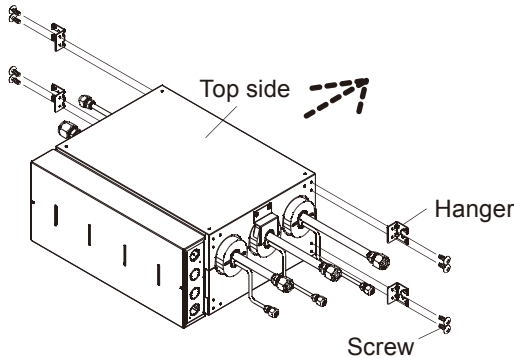
- (4) Once you have checked the unit is flat, fasten the hexagonal nuts.
(The unit's slope must be within $\pm 5^\circ$ in all directions.)



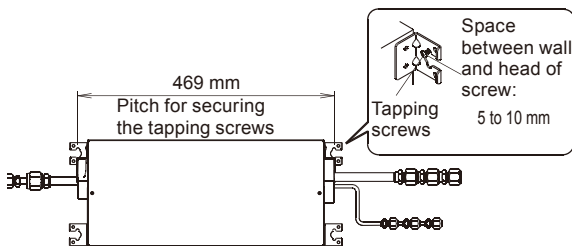
● Fix the unit (For wall installation)

<Horizontal installation>

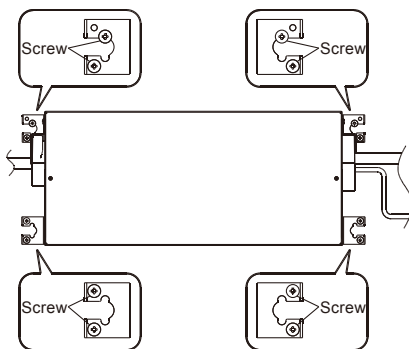
- Secure the hangers (accessories) with the screws (2 pieces, $\text{Ø} 4 \times 10\text{mm}$, accessories). (4 places)
 - Install the unit with its top side facing upwards.



- For temporary mounting of the unit, install two of the $\text{Ø} 4 \times 25\text{mm}$ screws in the wall, allowing the space of 5 to 10mm between the wall and the screw heads. Then hook the unit over these two screws.

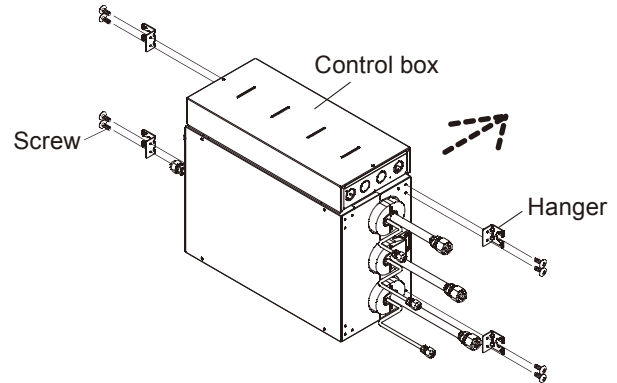


- After checking that the unit is flat, secure and mount the branch box with the 8 screws ($\text{Ø} 4 \times 25\text{mm}$, accessories) provided including the tapping screws. (The unit's slope must be within $\pm 5^\circ$ in all directions.)

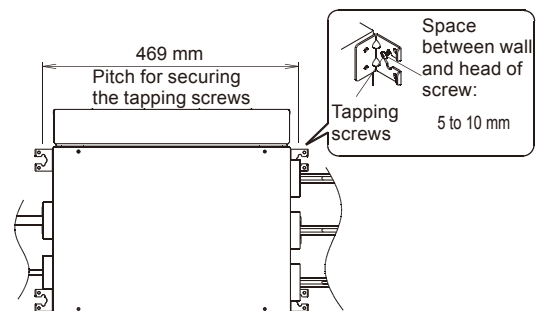


<Vertical installation>

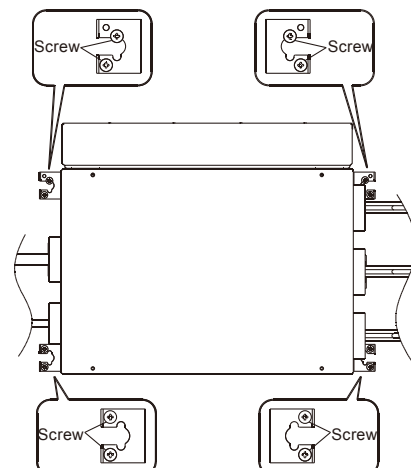
- Secure the hangers (accessories) with the screws (2 pieces, $\text{Ø} 4 \times 10\text{mm}$, accessories). (4 places)
 - Install the unit with the control box facing upwards.



- For temporary mounting of the unit, install two of the $\text{Ø} 4 \times 25\text{mm}$ screws in the wall, allowing the space of 5 to 10mm between the wall and the screw heads. Then hook the unit over these two screws.



- After checking that the unit is flat, secure and mount the branch box with the 8 screws ($\text{Ø} 4 \times 25\text{mm}$, accessories) provided including the tapping screws. (The unit's slope must be within $\pm 5^\circ$ in all directions.)



PIPE CONNECTION

⚠ WARNING

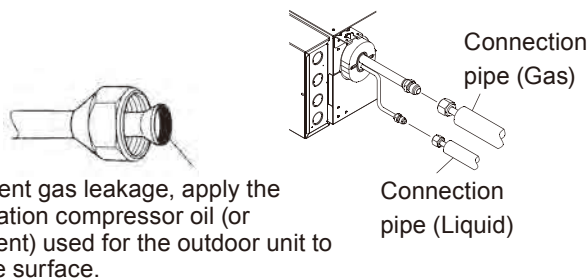
- Be sure to perform flare connection. It causes a malfunction and a fire of this unit when connecting the pipes other than flare connection (brazing etc.).

(1) Detach the caps and plugs from the pipes.

⚠ CAUTION

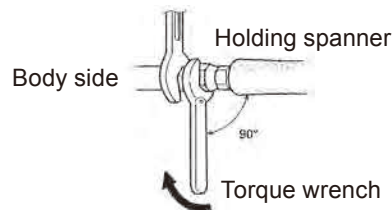
- Be sure to apply the pipe against the port on the unit correctly. If the centering is improper, the flare nut cannot be tightened smoothly. If the flare nut is forced to turn, the threads will be damaged.
- Do not remove the flare nut from the pipe until immediately before connecting the connection pipe.
- Hold the torque wrench at its grip, keeping it in the right angle with the pipe, in order to tighten the flare nut correctly.

(2) Centering the pipe against port on the unit, turn the flare nut with your hand.



(3) When the flare nut is tightened properly by your hand, use a torque wrench to finally tighten it.

Flare nut [mm (in.)]	Tightening torque [N·m]
6.35 (1/4) dia.	16 to 18
9.52 (3/8) dia.	32 to 42
12.70 (1/2) dia.	49 to 61
15.88 (5/8) dia.	63 to 75



Do not remove the cap from the connection pipe before connecting the pipe.

⚠ CAUTION

- Be sure to connect the large pipe after connecting the small pipe completely.

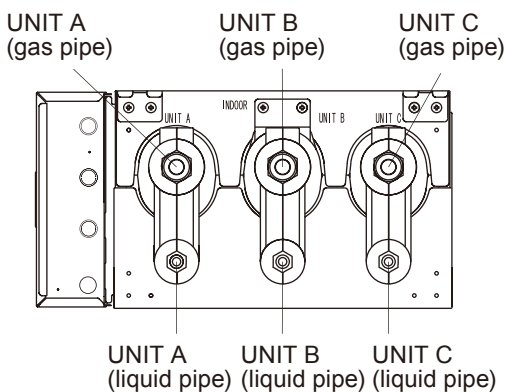
(4) Branch box is marked with engraved letters indicating each corresponding indoor unit (UNIT A, UNIT B and UNIT C).

UNIT A : Refrigerant pipe connection port for UNIT A

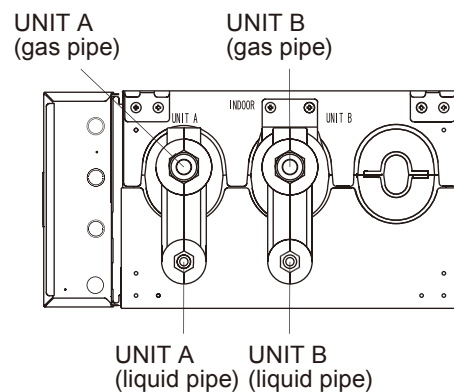
UNIT B : Refrigerant pipe connection port for UNIT B

UNIT C : Refrigerant pipe connection port for UNIT C

[3 branches type]



[2 branches type]



⚠ CAUTION

- Label all the refrigerant piping (liquid pipe, gas pipe) specifying to which indoor units they will be connected.

ADAPTER INSTALLATION

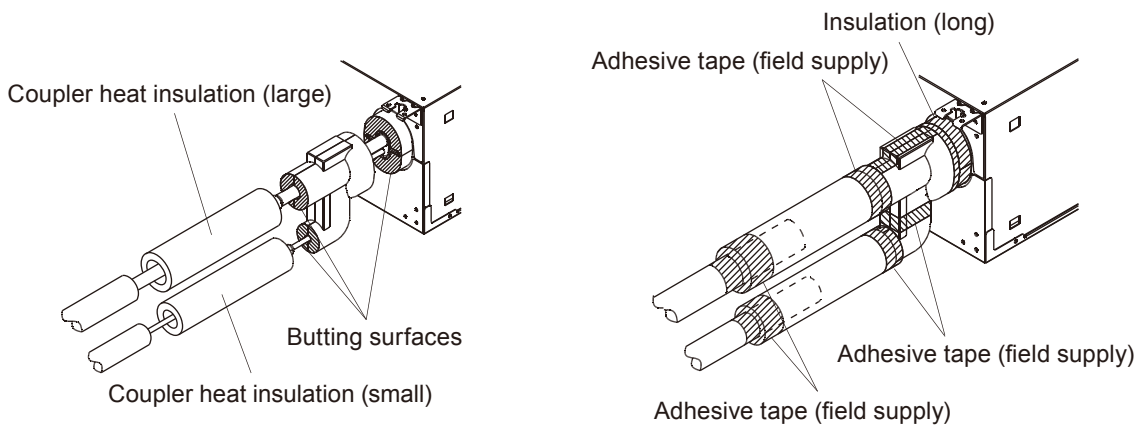
- Attach the adapters (accessories) to the ports on the gas pipe side of the indoor unit according to the size of the pipe to be connected.
- Apply the refrigeration compressor oil (or equivalent) used for the outdoor unit to the attaching portion of the adapters.
- Tighten the adapter using a torque wrench according to the tightening torque values in the table below.

Adapter [mm (in.)]	Tightening torque [N·m]
∅ 12.7 (1/2) → ∅ 9.52 (3/8)	49 to 61
∅ 12.7 (1/2) → ∅ 15.88 (5/8)	

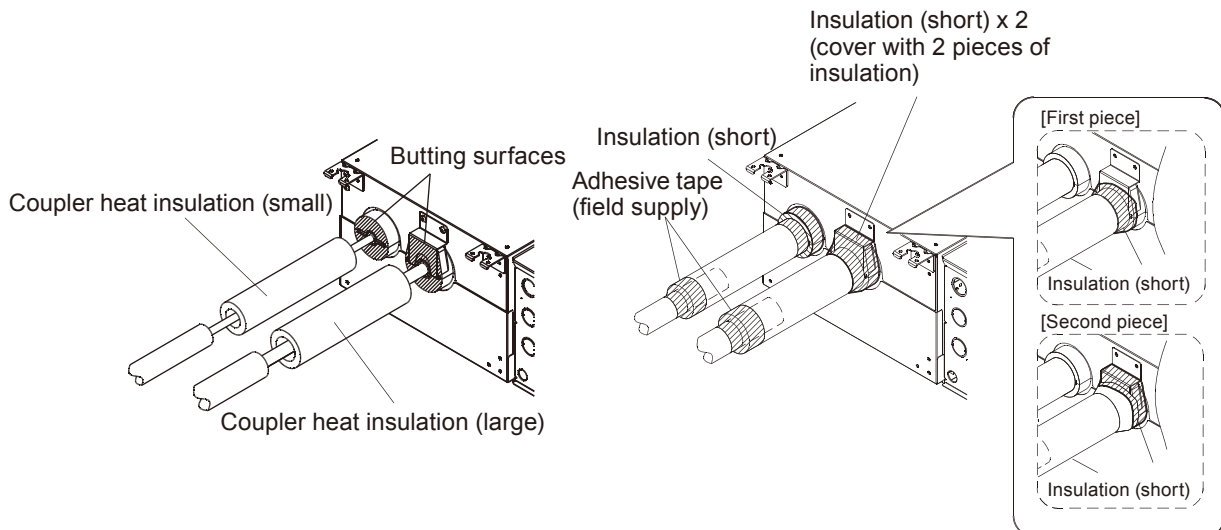
PIPING INSULATION

- (1) Install the coupler heat insulation (large and small) and insulation (long and short) on each pipe as shown in the figures below.
- (2) Attach the butting surface with no gap to eliminate any gap between the insulations.
- (3) During the pipe insulation work, prevent air from getting inside the insulation with an adhesive tape (field supply).

Indoor unit side

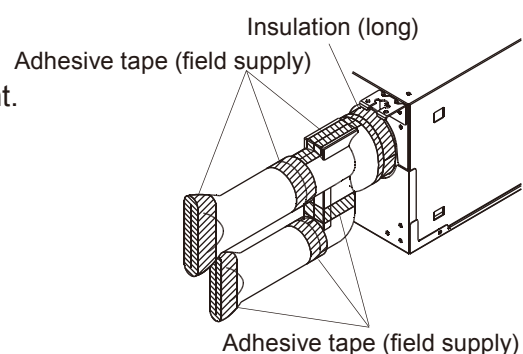


Outdoor unit side



NON-CONNECTING PIPES

- (1) Install the coupler heat insulation (large and small) and insulation (long) as shown in the figure on the right.
- (2) Apply an adhesive tape (field supply) to prevent air from getting inside the insulation.



4. WIRING DESIGN

4-1. ELECTRICAL WIRING

■ PRECAUTION FOR ELECTRICAL WIRING

Regulation on wire diameter and selecting circuit breaker size differ from locality.

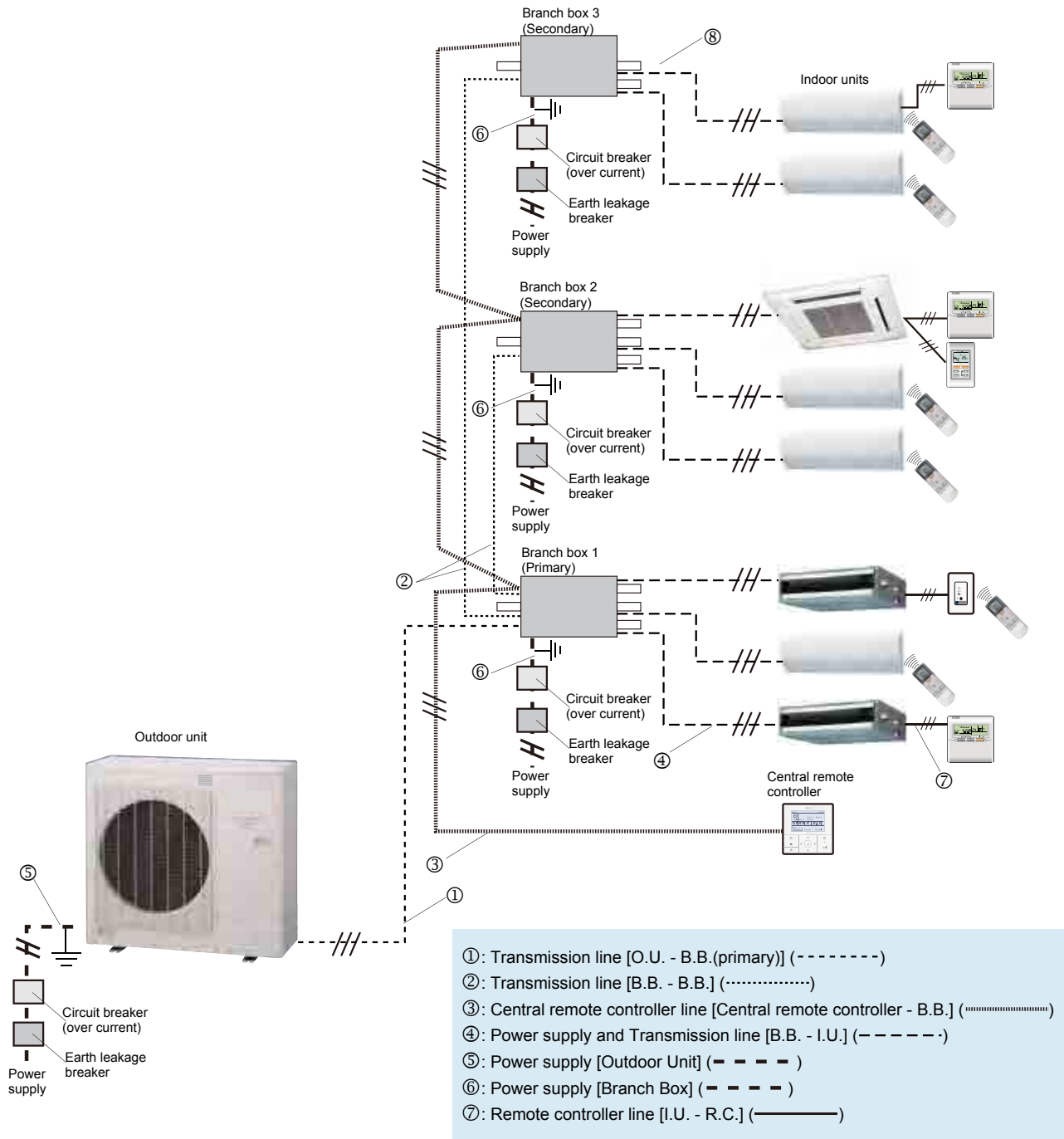
Install in accordance with local rules and regulations.

Warning

- Do not turn on the power until all installation work is complete.
- Before starting work, check that power is not being supplied to the unit.
- Connect the connection cable firmly to the terminal board. Imperfect installation may cause a fire.
- Always fasten the outside covering of the connection cable with the cord clamp. (If the insulator is chafed, electric leakage may occur.)
- Make sure to install Earth leakage breaker. Otherwise, it may cause electric shock or a fire.
- Always connect the ground wire.
- Never install a condenser for improving the power factor. (It will not improve the power factor and the condenser will become extremely hot.)

■ WIRING SYSTEM LAYOUT

For installation of the outdoor unit, branch boxes, and indoor units, follow the instructions in the installation manual for each unit.



SYSTEM DESIGN

SYSTEM DESIGN

4-2. POWER SUPPLY CABLE WIRING

■ POWER SUPPLY CABLE SPECIFICATIONS

Use a separate power supply for the outdoor unit and branch box.

Note: *1: Selected sample (Select an appropriate diameter of cable and the kind of cable according to each country and a local rule.)

*2: It is a total value of connected indoor units and branch box. (Refer to "3.OUTDOOR UNIT & BRANCH BOX" and "4.INDOOR UNITS")

*3: Selected sample (Select the one that the rush current when the power supply is turned on can be endured.)

*4: Select the breaker that enough load current can pass through it.

● Outdoor unit

Model	Cable size	Maximum current MCA	Circuit breaker MOCP	Earth leakage breaker	Remarks
AO*G45LBT8	6.0 mm ² *1	26.5 A	32 A	30mA 0.1sec or less *4	230V 50Hz 2Wire + ground

- Select cable size base on the value of MCA and MOCP. In the table of "3. OUTDOOR UNIT AND BRANCH BOX", example of wiring specification for outdoor unit is given.
- Select circuit breaker for outdoor unit based on the value of MOCP.

● Branch box

Model	Cable size	Maximum current MCA	Circuit breaker MOCP	Earth leakage breaker	Remarks
UTP-PY03A	2.5 mm ² *1	*2	15 A *3	30mA 0.1sec or less *4	230V 50Hz 2Wire + ground
UTP-PY02A					

- Select cable size base on the value of total MCA of the indoor units and branch box connected.
- In order to be influenced of a breaker stop, please divide a power supply circuit for every branch box.
- Each branch box must be connected to a circuit breaker.
- Please design the power supply circuit to keep the voltage drop within 2%.

● Indoor unit

Model	Cable size	Remarks
All models	1.5 mm ² *1	230V 50Hz 3Wire + ground

- The branch box provides power to the indoor units.

*MCA : Minimum Circuit Ampacity

*MOCP : Maximum Over Current Protection

⚠ Caution

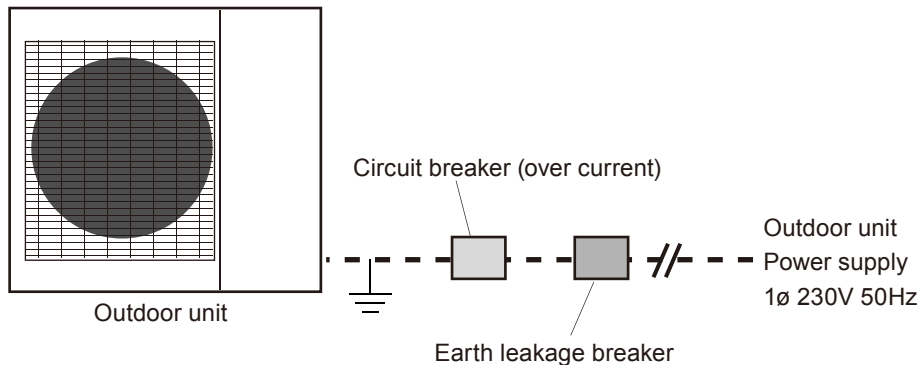
- This product is intended for professional use. Be sure to use a dedicated power circuit. Never use a power supply shared by another appliance.
- Above "Wire size" and "Breaker" are examples.
- Regulation of wire and circuit breaker differs from each locality, refer to and be in accordance with local rules.
- To prevent electrical noise malfunction and hazards from insulation failure, the unit should be connected to ground.
- All field wiring and components must be provided by a licensed electrician.
- Use copper conductors only.
- Use crimp-type terminals and tighten the terminal screws to the specified torques, otherwise, abnormal overheating may be produced and possibly cause serious damage inside the unit.
- Prepare the one that the load current can be thrown enough in the capacity of the power supply.

POWER SUPPLY CABLE WIRING

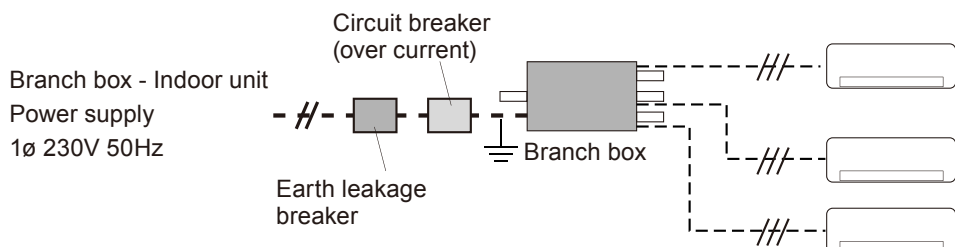
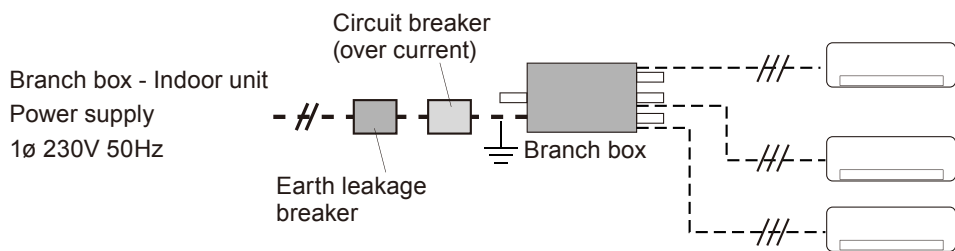
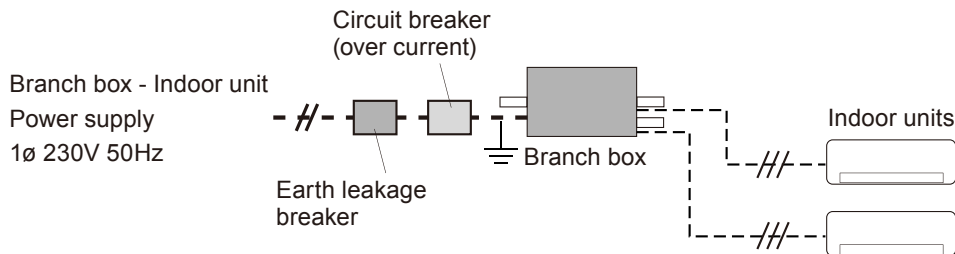
⚠ Caution

- Except for EMERGENCY, never turn off main as well as sub breaker of the indoor units during operation. It will cause compressor failure as well as water leakage.
- First, stop the indoor unit by operating the control unit or external input device and then cut the breaker.
- Make sure to operate through the control unit or external input device.
- When the breaker is designed, locate it at a place where the users cannot start and stop in an ordinary manner.
- Regulation of wire size and circuit breaker differs from each locality, please refer to and be in accordance with local rules.

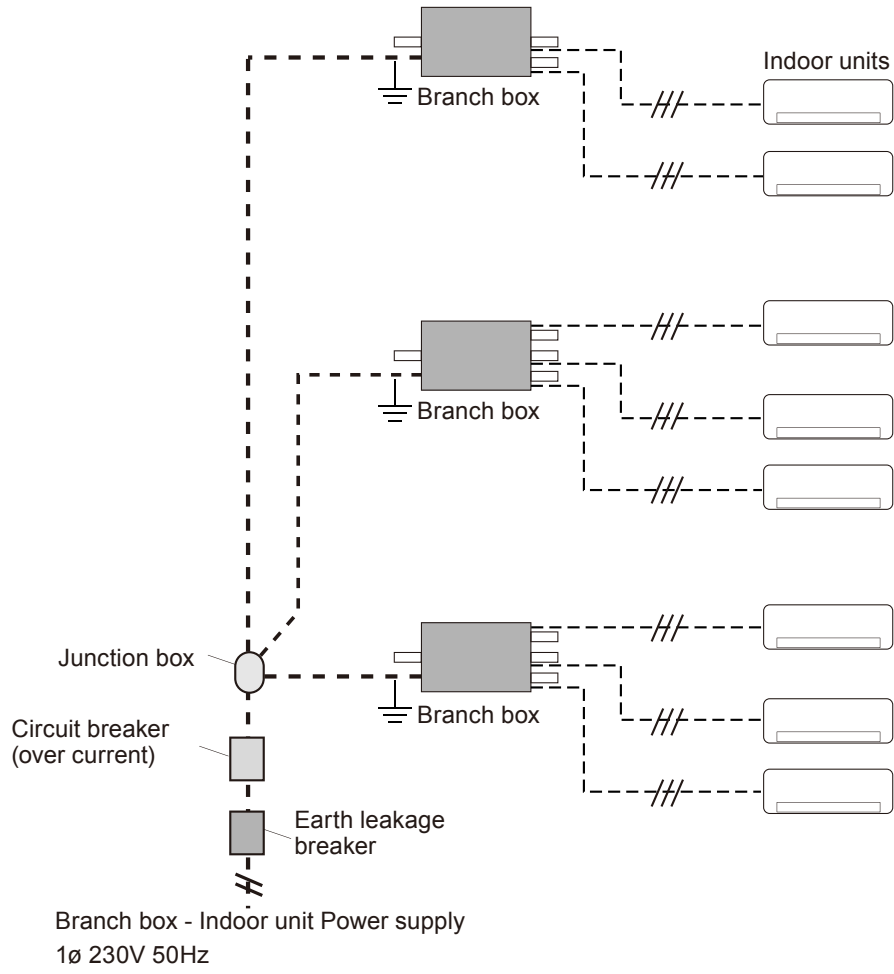
● Example 1 (Outdoor unit)



● Example 2 (Branch box & indoor unit)

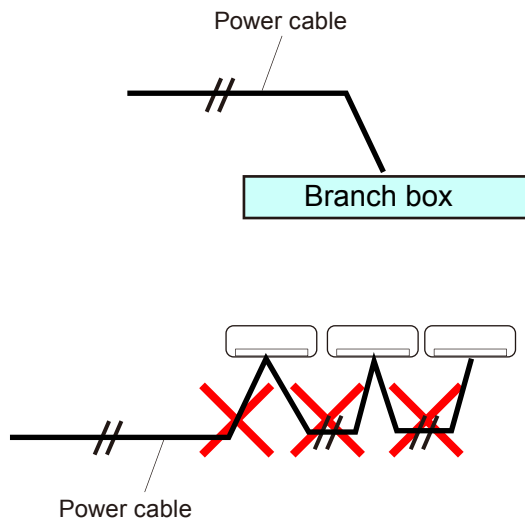


● Example 3 (Branch box & indoor unit)



■ WIRING RULES

● Example 1 (prohibited)



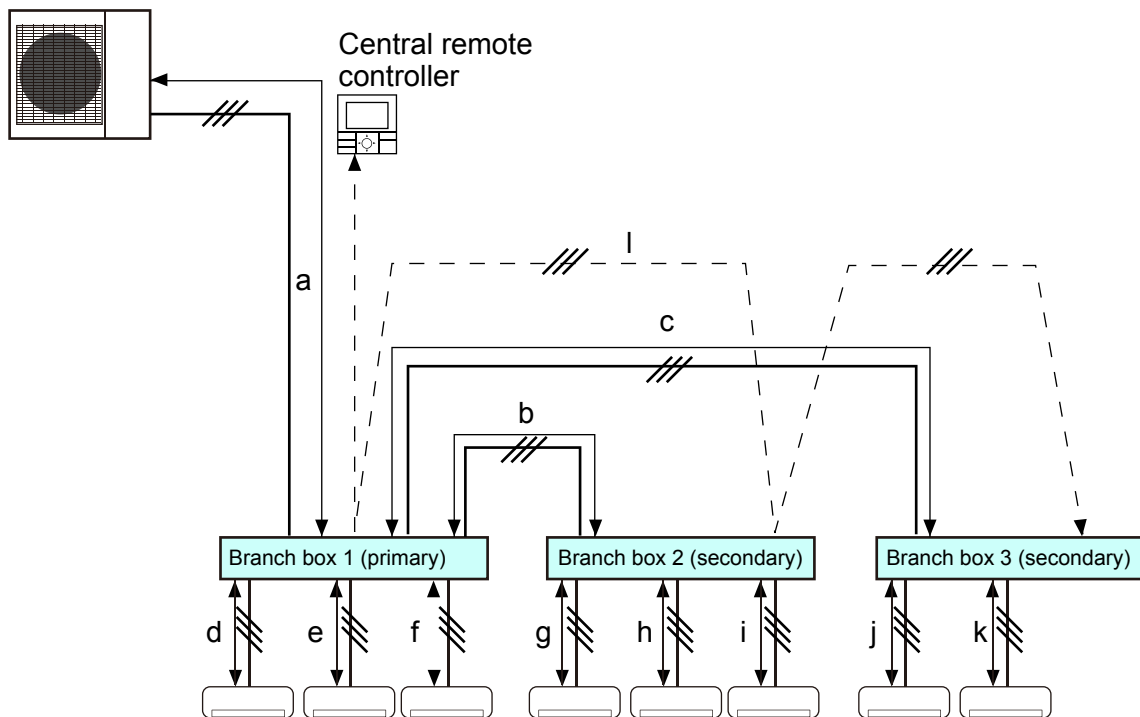
Do not connect the power cable directly to indoor units.
Always supply power to indoor units from a branch box.

4-3. TRANSMISSION LINE

■ TRANSMISSION WIRING SPECIFICATIONS

Use	Cable size	Remarks
<ul style="list-style-type: none"> • Between Outdoor unit to Branch box • Between Branch box to Branch box • Between Branch box to Indoor unit 	1.5 mm ²	230V 50Hz 3Wire + ground
<ul style="list-style-type: none"> • Between Central remote controller to Branch box 	0.33 mm ²	Sheathed PVC cable Polar 3core

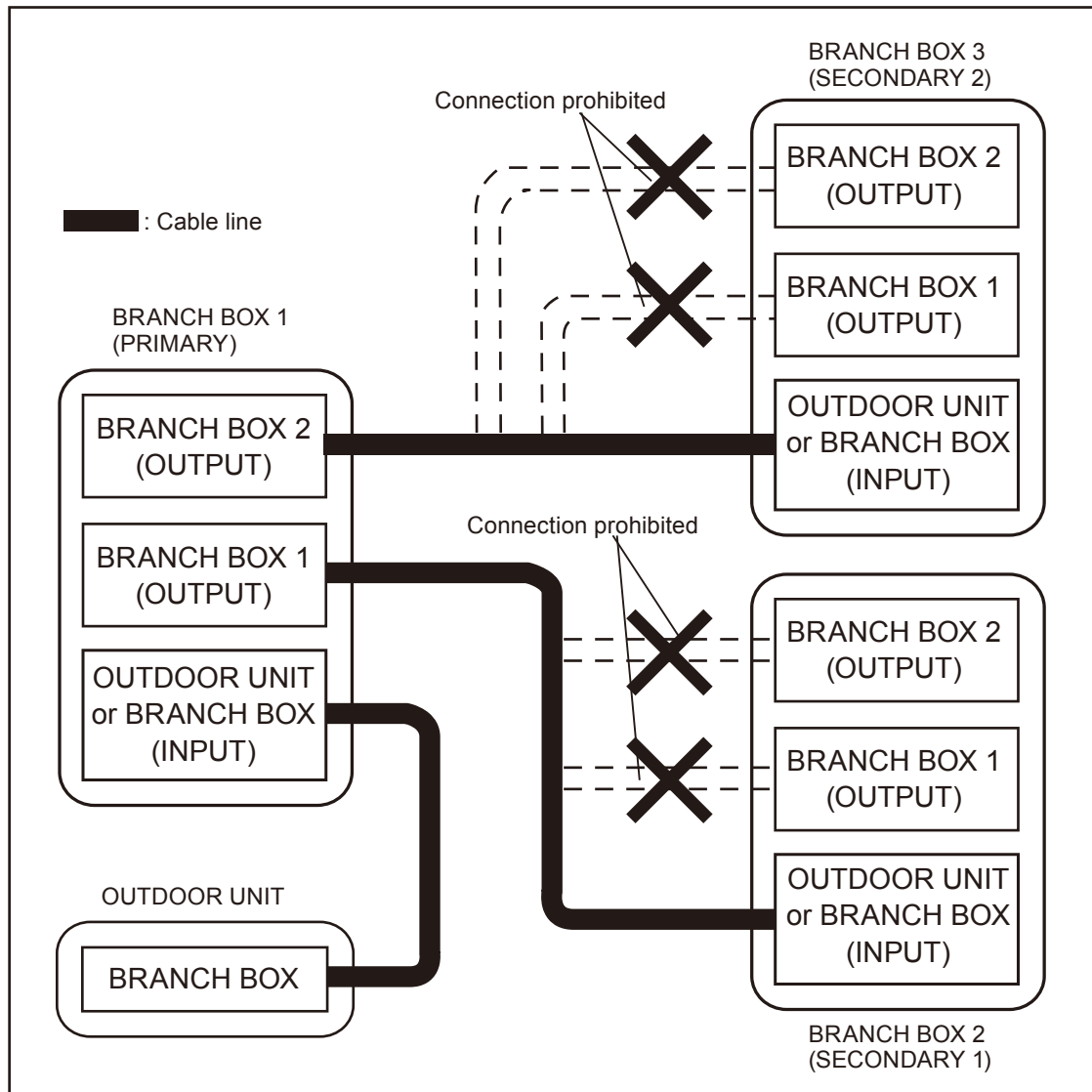
■ TRANSMISSION WIRING LIMITATION



		Maximum length (m)
Outdoor unit - Branch box (primary)	a	75
Branch box (primary) - Branch box (secondary) (each unit)	b, c	75
Branch box - Indoor unit (each unit)	d, e, f, g, h, i, j, k	75
Central remote controller - Branch box (Total length)	l	500

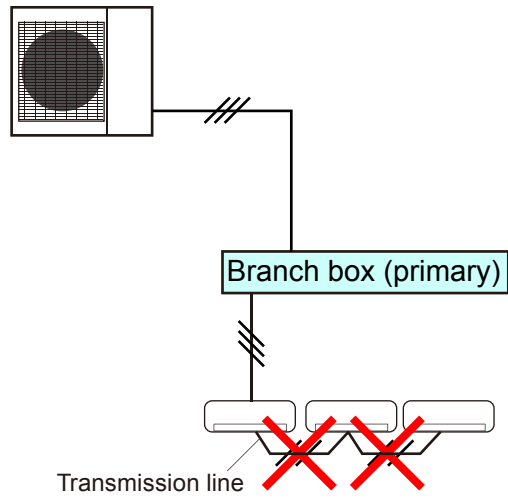
● Caution of wiring method

Note the connection between branch box enough according to the figure below.



■ WIRING RULES

● Example (prohibited)



Do not interconnect indoor units.

Always connect branch box to indoor unit.

4-4. CONTROLLER CABLE WIRING

■ WIRING SPECIFICATIONS

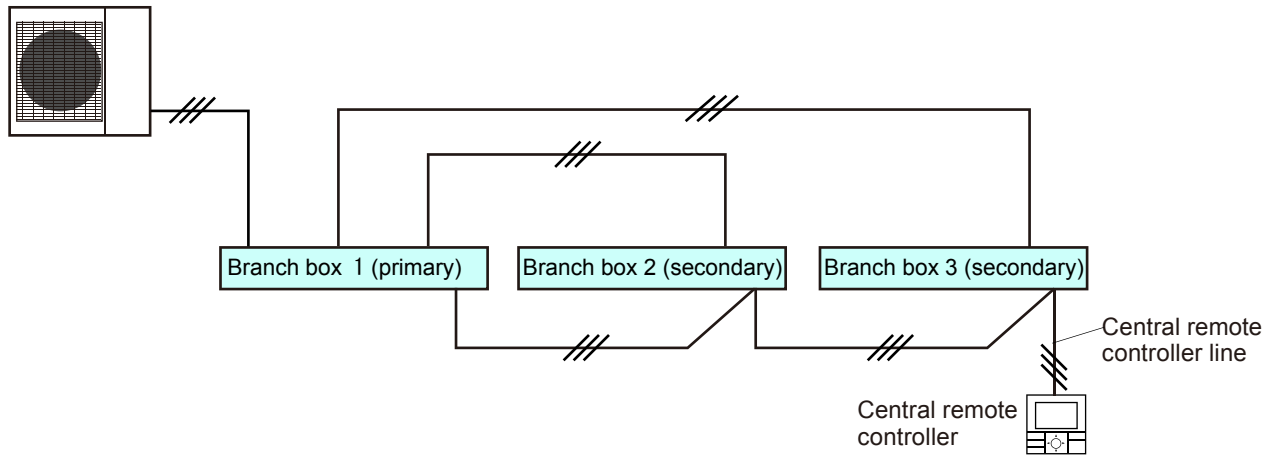
Model type	Connection to	Wire	Cable size	Specification
Central remote controller	Branch box	Remote controller cable	0.33 mm ²	Sheathed PVC cable Polar 3core
Wired Remote Controller	Indoor unit	Remote controller cable	0.33 mm ²	
Simple Remote Controller	Indoor unit			
IR Receiver Unit	Indoor unit	Connection cable	-	(5m cable attached)

Caution

- Install in accordance with local rules and regulations.
- Never bundle the power supply cable and controller cable together. Bundling these cords together will cause misoperation.
- Always ground the shielded cable at both ends.
- For detail specification and connection, please refer to "5 Control system".

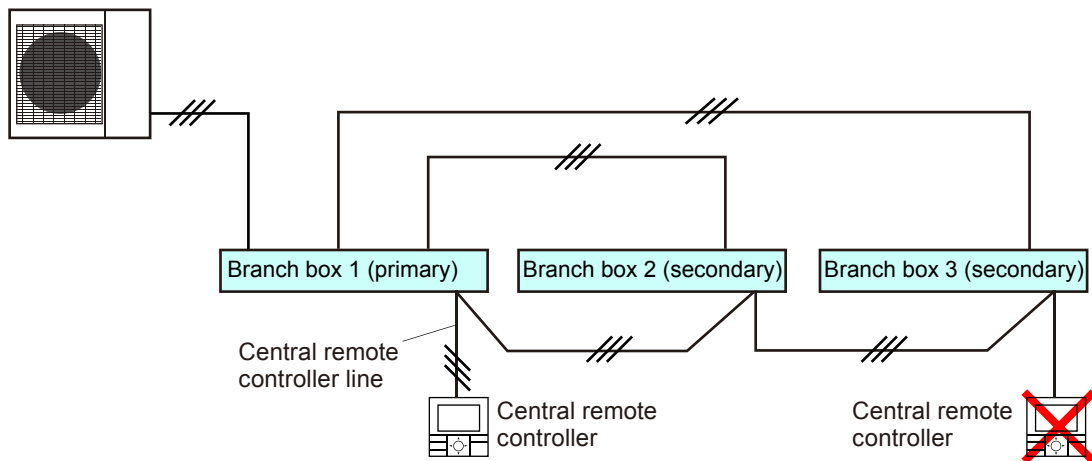
■ WIRING RULES

● Example 1 (good)



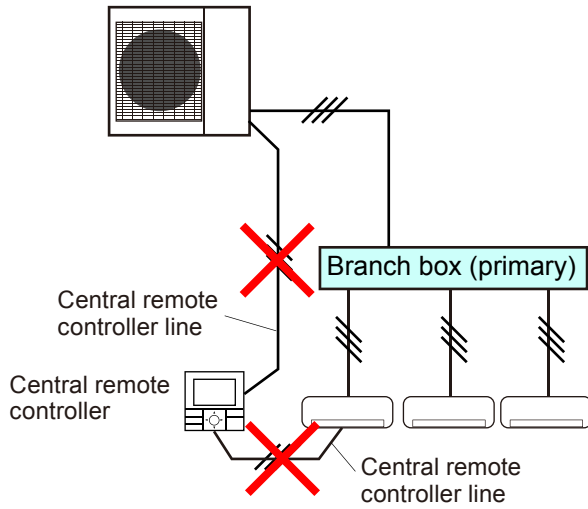
One Central remote controller can be connected to any branch box in 1 refrigerant system.

● Example 2 (prohibited)



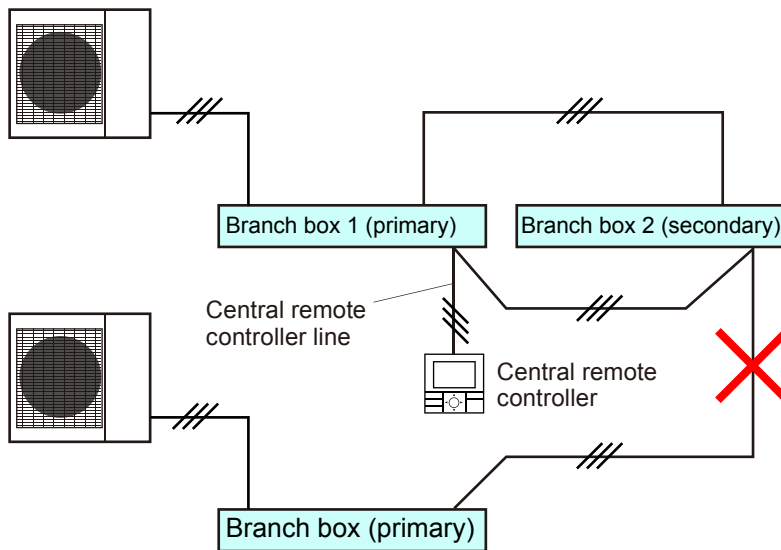
Do not connect two or more Central remote controllers in 1 refrigerant system.

● Example 3 (prohibited)



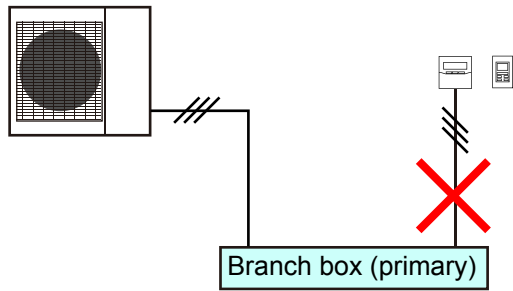
Do not connect Central remote controller to outdoor unit or indoor unit.
Always connect branch box to Central remote controller.

● Example 4 (prohibited)



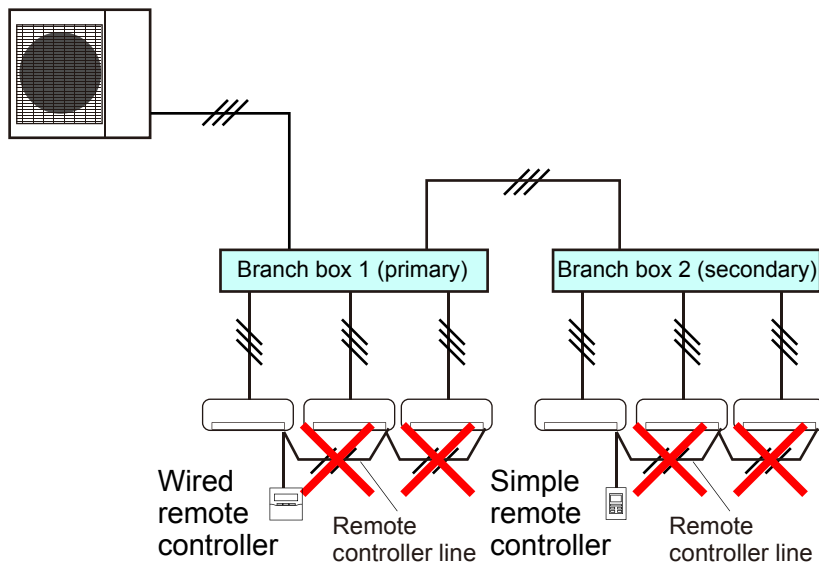
Do not connect one Central remote controller to two refrigerant systems.

● **Example 5 (prohibited)**



Do not connect a wired remote controller or simple remote controller to branch box.
Connect them to each indoor unit.

● **Example 6 (prohibited)**

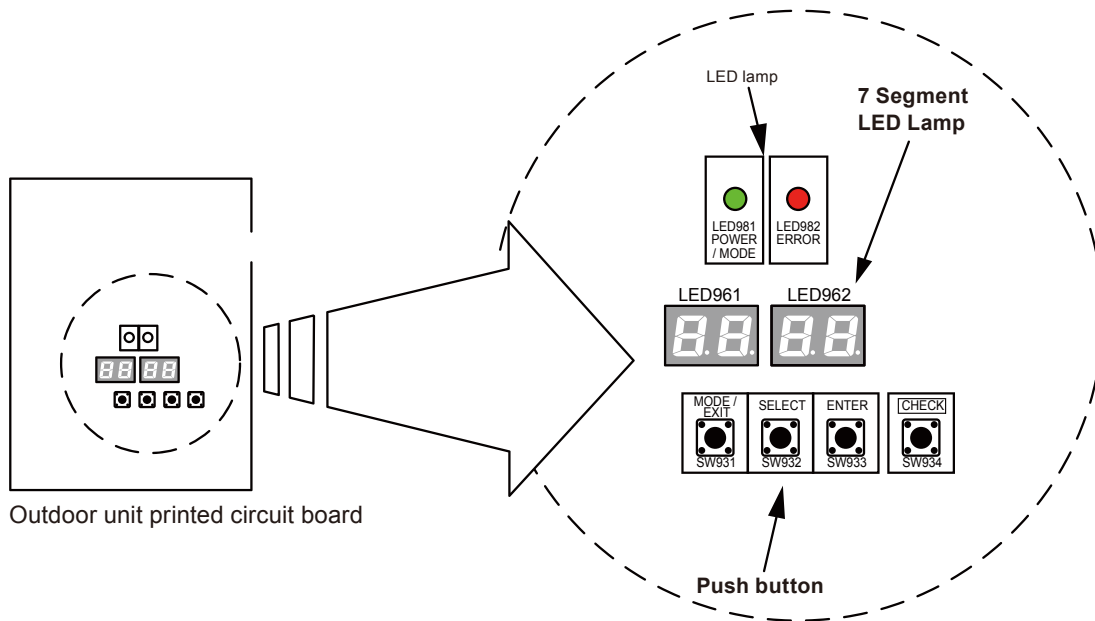


Do not connect a wired remote controller or simple remote controller to multiple indoor units.
One wired remote controller or simple remote controller cannot control multiple indoor units.

5. FUNCTION SETTING

5-1. OUTDOOR UNIT

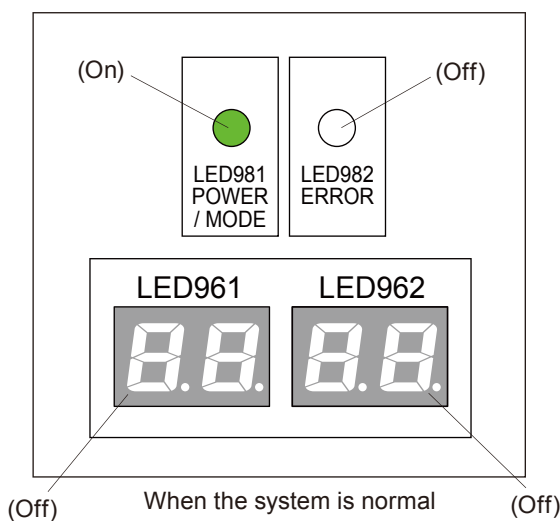
■ SWITCH POSITION



- Set the functions of the outdoor unit with the push buttons (SW931, SW932 and SW933) while observing the 7-segment LED lamps (LED961 and LED962) on the printed circuit board.

■ PREPARATION

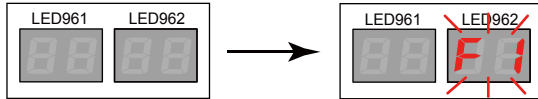
- 1) Be sure to check that the operation of the outdoor unit has stopped (be sure to stop the operation if it is still running), and turn off the power.
 - 2) Remove the front panel of the outdoor unit, and remove the lid of the electrical component box in order to expose the printed circuit board.
 - 3) Turn on the power of the outdoor unit.
- As shown in the figure below, make sure that the POWER/MODE indicator lamp (LED981) is on and the ERROR indicator lamp (LED982) is off.



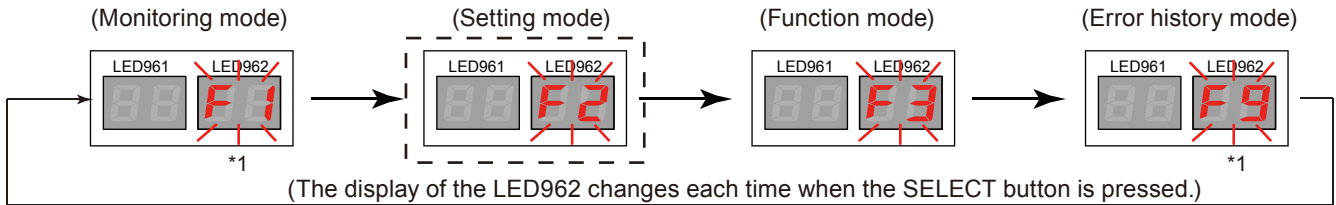
- If the ERROR indicator lamp (LED982) flashes, it indicates that an error has occurred. Check wiring and power supply. After making sure that the ERROR indicator lamp (LED982) has turned off, proceed to the next step.

FUNCTION SETTING

- 1) After verifying that the system is normal, press the MODE/EXIT button (SW931) once.

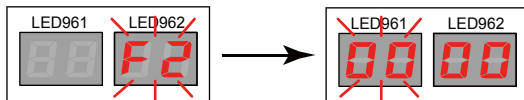


- 2) Press the SELECT button (SW932), and display "F2" on the LED962.



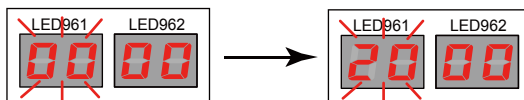
*1: The "F1" and "F9" modes are used for maintenance, so do not set them in regular operation.

- 3) When "F2" appears on the LED962, press the ENTER button (SW933).
A flashing display appears on the LED961, and the flashing display of "F2" on the LED962 changes to the illuminated display of a number.



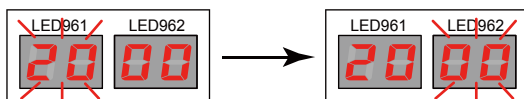
- 4) Referring to the Settings List shown below, press the SELECT button (SW932) and display the code number of the mode you want to set on the LED961.

Ex.) To select switching between Forced Stop and Emergency Stop

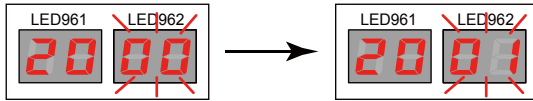


Next, press the ENTER button (SW933), and confirm the selection of the mode you want to set.

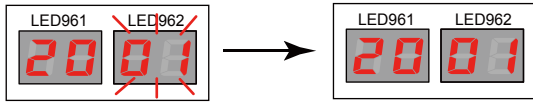
A flashing display on the LED961 changes to an illuminated display, and an illuminated display on the LED962 changes to a flashing display.



- 5) Again, referring to the Settings List shown below, press the SELECT button (SW932), and display the code number of the function you want to set on the LED962.
 Ex.) To select the Emergency Stop function

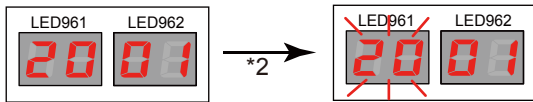


Next, press the ENTER button (SW933), and confirm the selection of the function you want to set.



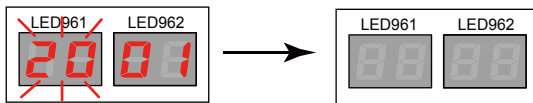
A flashing display on the LED962 changes to an illuminated display. This completes FUNCTION SETTING.

- 6) To exit FUNCTION SETTING, press the ENTER button (SW933) in the setting completed status shown in step 5) above.

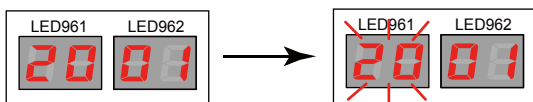


*2 : 5 seconds after, even if ENTER button(SW933) is not pressed , LED961 changes to a flashing display automatically.

Then, press the MODE/EXIT button (SW931) to exit FUNCTION SETTING MODE.



- 7) To set another function, press the ENTER button (SW933) in the setting completed status shown in step 5) above.



Repeat steps 4) and 5) above to set other functions.

When all settings are complete, perform the operation described in step 6) above to exit.

■ RESET THE POWER AFTER SETTING UP FUNCTION OF OUTDOOR UNIT

Important
<ul style="list-style-type: none"> * If the reset is not performed, function can not be read in normally. * After all the functions have been set, the circuit breaker needs to be switched off for at least 2 minutes. After the 2 minutes has passed, power can be restored. * The set function is stored in the PCB and will remain in memory even when the power is turned off. However setting function is effective after power reset. Record the function set in the outdoor unit on a label, etc., and affix the label to the unit so it can be used for after-sales service operations.

■ SETTINGS LIST

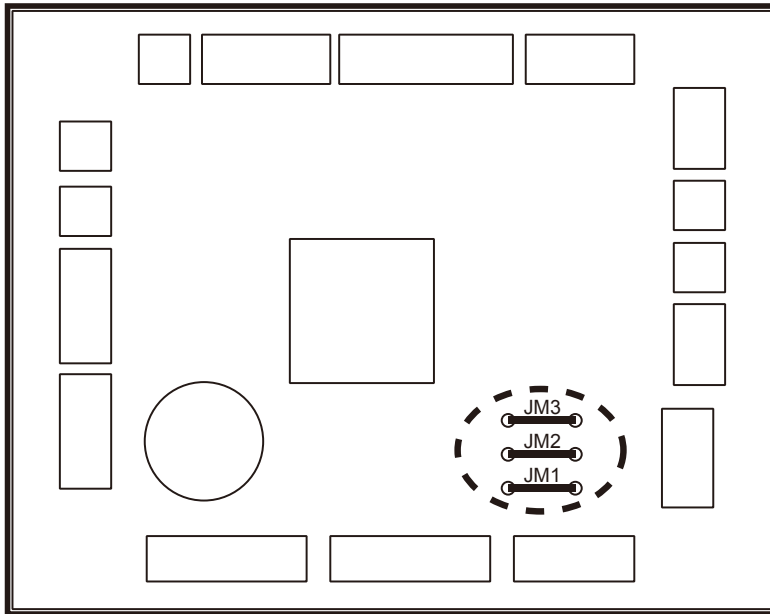
LED961 CODE No.		Setting Mode	LED962 CODE No.		Setting Function	Factory setting	Remarks
1	1	Cooling capacity shift	0	0	Standard	●	Use it when showing cooling capacity shortage.
			0	1	High power mode 1		Use High power mode 2 when showing cooling capacity shortage in High power mode 1.
			0	2	High power mode 2		
2	0	Switching between batch stop or emergency stop	0	0	Batch stop	●	This mode selects the pattern of the stop function to be operated by the external input terminal (CN934). •Batch stop: The stop of all indoor units connected to same refrigerant system due to input signal coming from CN934.
			0	1	Emergency stop		•Emergency stop: When emergency stop is activated, the indoor unit does not accept the operation command from the remote controller. On the other hand, when the emergency stop is released (no input from CN934), the air conditioner does not return to the original operation until the indoor unit is operated by the remote controller.
2	1	Operation mode selecting method	0	0	Priority given to the first command	●	Select the priority setting of the operation mode. •Priority given to the first command: Priority is given to the operation mode which is set first.
			0	1	Priority given to external input of outdoor unit		•Priority given to external input of outdoor unit: Priority is given to the operation mode which is set by the external input terminal (CN932).
2	8	Forbidden	0	0	Forbidden	●	Setting forbidden
			0	1	Forbidden		
2	9	Forbidden	0	0	Forbidden	●	Setting forbidden
			0	1	Forbidden		
3	0	Energy saving level setting	0	0	Level 1 (stop)		The capacity limit can be selected when operating with the "Energy Saving Peak Cut function." The operation selection can be done by external input terminal(CN933). The lower the level, the more the effect of energy saving, but the cooling/heating performance decreases.
			0	1	Level 2 (Limited at 50%)		
			0	2	Level 3 (Limited at 75%)	●	
			0	3	Level 4 (Limited at 100%)		
3	4	Frost protection fan mode	0	0	On	●	This mode is the function to prevent frosting of the propeller fan of outdoor unit during heating operation.
			0	1	Off		
4	1	Low noise mode setting	0	0	Off (Normal)	●	When "Low noise mode ON" is selected, the operating noise will be suppressed.
			0	1	On (Low noise mode)		Without external input terminal: It operates by selecting Low noise mode ON. With external input terminal: The operation selection can be done by external input terminal(CN931) by selecting Low noise mode OFF.
4	2	Low noise mode operation level setting	0	0	Level 1 (-3dB)	●	The noise level when operating in the low noise mode can be set. Cooling/heating performance decreases by lowering operation noise level.
			0	1	Level 2 (-6dB)		
			0	2	Level 3 (-9dB)		

5-2. INDOOR UNIT (setting by jumper wire)

Note: This function is for Slim Duct type only.

SWITCH POSITION

● Slim Duct type



JUMPER WIRE SETTING

● Drainage function setting (JM1)

(◆...Factory setting)

JM1	Drainage function
◆ Connect	Enable
Disconnect	Disable

● Auto louver grille setting (JM2)

When Auto louver grille kit (optional parts) is attached, set the Auto louver grille setting to "Valid".

(◆...Factory setting)

JM2	Auto louver grille setting
◆ Connect	Disable
Disconnect	Enable

● Fan delay setting (JM3)

(◆...Factory setting)

JM3	Fan delay
◆ Connect	Disable
Disconnect	Enable

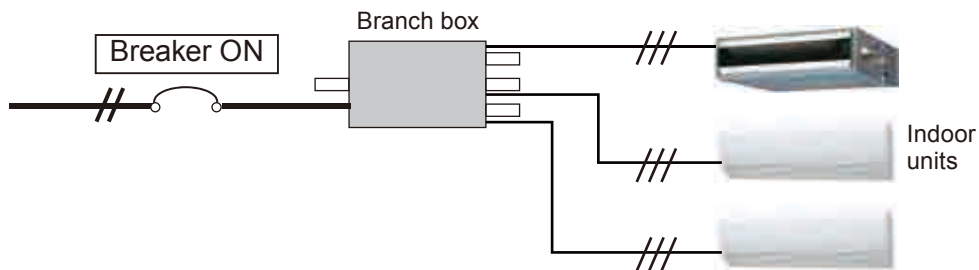
5-3. INDOOR UNIT (setting by wireless remote controller)

- The function settings of the control of the indoor unit can be changed by this procedure according to the installation conditions. Incorrect settings can cause the indoor unit to malfunction.
- After the power is turned on, perform the “FUNCTION SETTING” according to the installation conditions using the remote controller.
- The settings may be selected between the following two: Function Number or Setting Number.
- Settings will not be changed if disable numbers or setting numbers are selected.

■ PREPARATION

(1) Turn on the power through the Branch box.

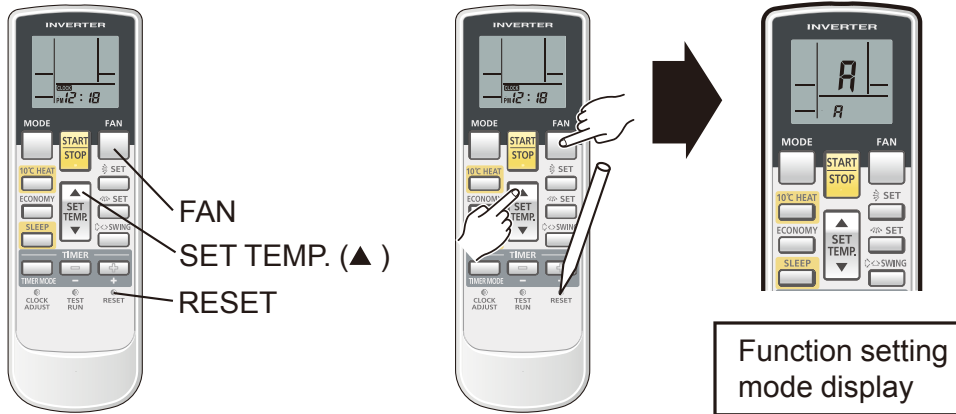
- * Before turning on the power of the indoor units, make sure the piping air-tight test and vacuuming have been conducted.
- * Also check again to make sure no wiring mistakes were made before turning on the power.



5-3-1. AR-RAH2E / AR-RAH1E

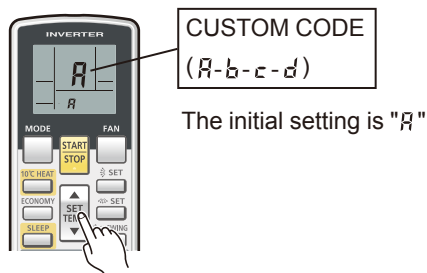
■ SWITCHING SELECTION OF FUNCTION SETTING MODE

(2) Press and hold the "FAN" and the " SET TEMP. ▲ " buttons. While holding these 2 buttons, press the "RESET" button.

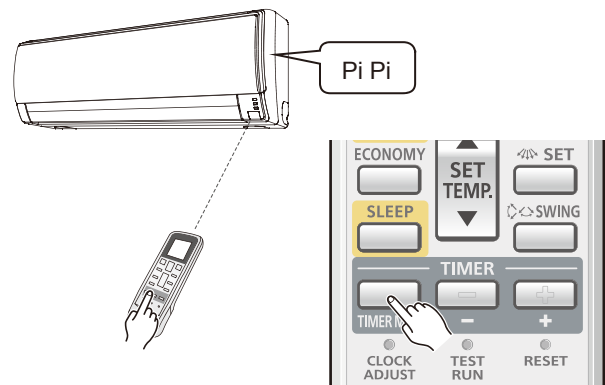


■ SELECTION AND CONFIRMATION OF CUSTOM CODE

(3) Press the " SET TEMP. ▲ " or " SET TEMP. ▼ " buttons to select the signal code that matches the setting with the indoor unit. By selecting the appropriate signal code, the communication between the indoor unit and the wireless RC becomes possible.

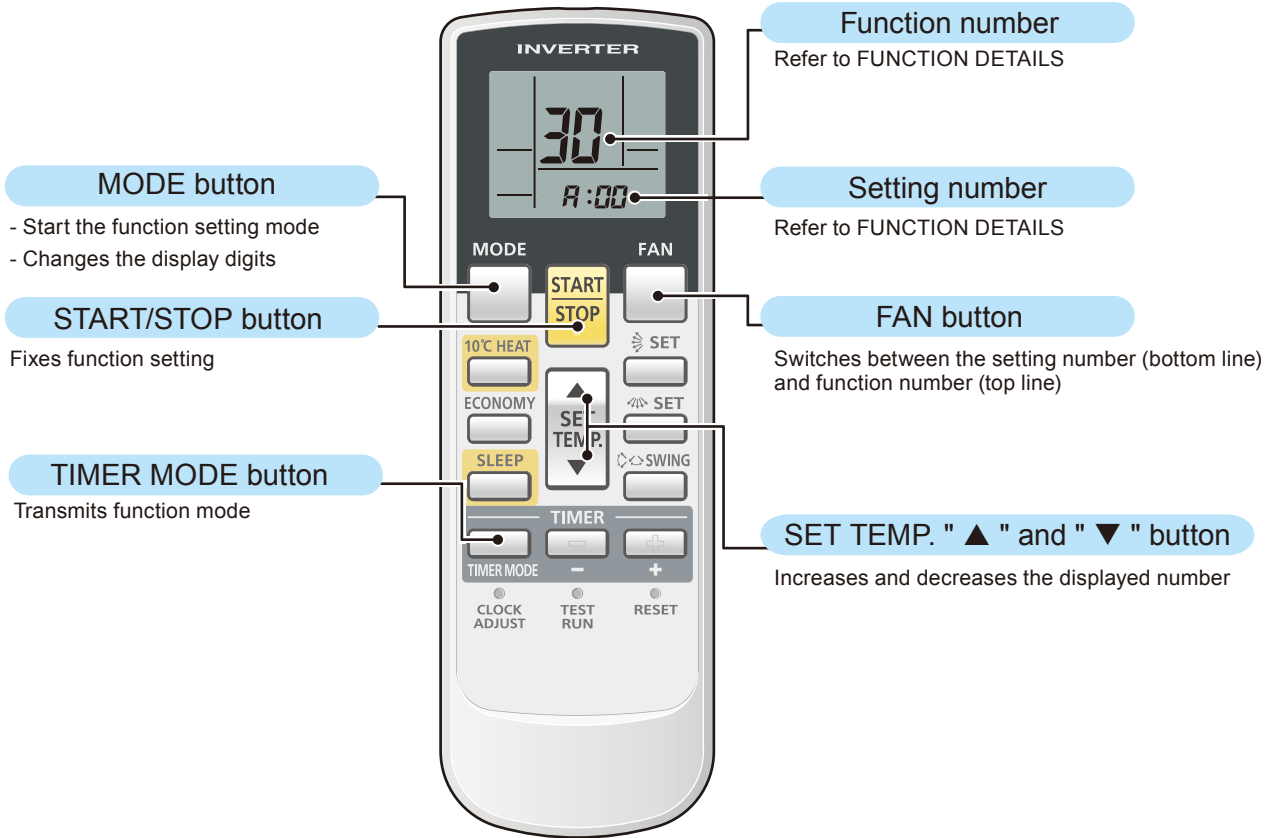


(4) Press the "TIMER MODE" button to send the code to the indoor unit.



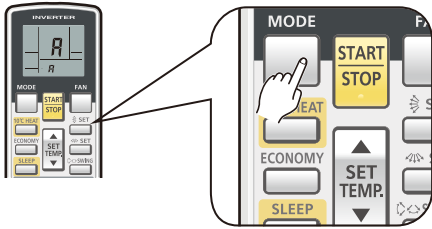
■ BUTTON NAME AND FUNCTION

- During address setting mode, indoor unit rejects any operation command from remote controller.



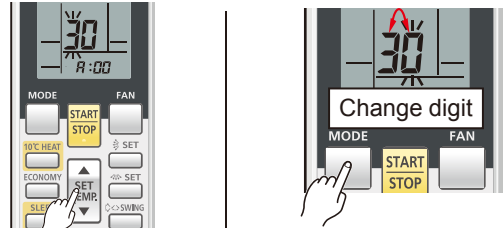
FUNCTION SETTING

- (5) Press the "MODE" button to access the function setting mode.



- (6) Press the "▲" or the "▼" buttons to select the function number.

Press the "MODE" button to switch between the left and right digits.

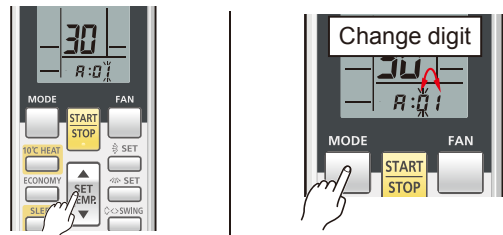


- (7) Press the FAN button to proceed to setting the number. (Press the FAN button again to return to the function number selection.)

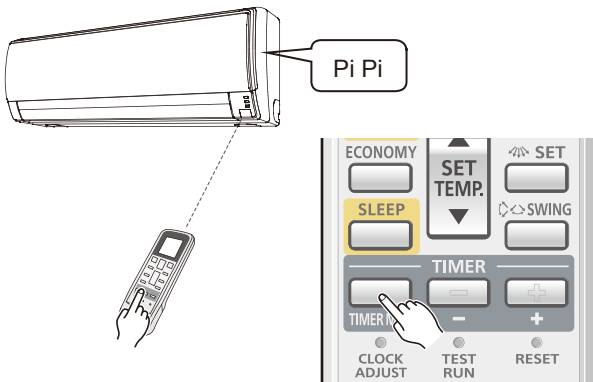


- (8) Press the "▲" or the "▼" buttons to select the setting number.

Press the "MODE" button to switch between the left and right digits.



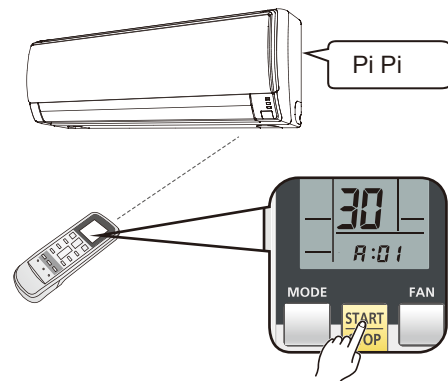
- (9) Press the "TIME MODE" button once to send the function mode information.



- (10) Press the "START/STOP" button once to fix the function setting.

A beeping noise will be heard if the command is accepted.

*Wrong code: No Response



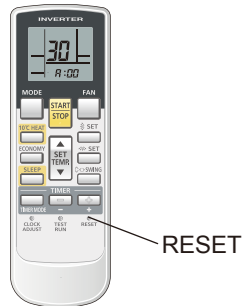
Note: Please push the "START/STOP" button within 30 seconds after pushing the "TIME MODE" button.

FUNCTION DETAILS

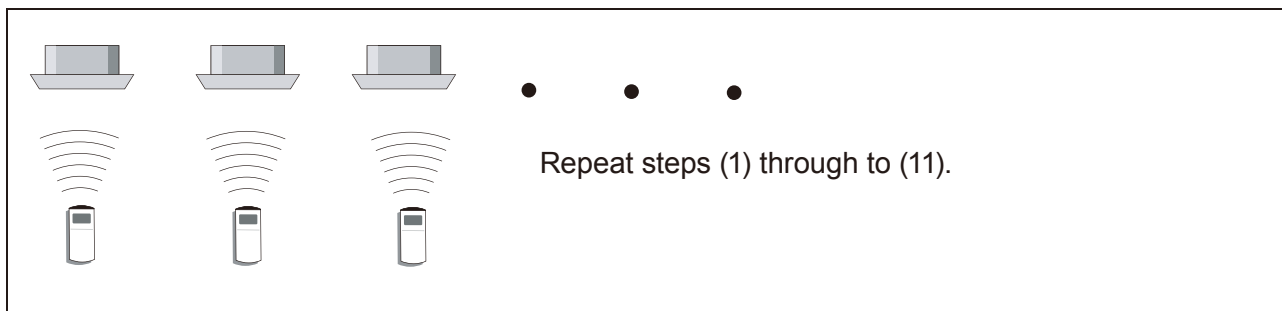
Refer to 5-6. FUNCTION DETAILS

■ COMPLETION OF FUNCTION SETTING MODE

(11) Press the "RESET" button.



■ SETTING UP EACH INDOOR UNIT



■ RESET THE POWER AFTER SETTING UP FUNCTION OF ALL INDOOR UNITS

Important

- If the reset is not performed, function can not be read in normally.
- After all the functions have been set, the circuit breaker needs to be switched off for at least 2 minutes.
After the 2 minutes has passed, power can be restored.
- The set function is stored in the PCB and will remain in memory even when the power is turned off.
However setting function is effective after power reset.
Record the function set in the indoor unit on a label, etc., and affix the label to the unit so it can be used for after-sales service operations.

* Once the "RESET" button is pressed on the remote controller, the OPERATION MODE will be set in the "AUTO MODE".

Please adjust the OPERATION MODE to either "COOLING" or "HEATING" before trying to operate the air conditioner.

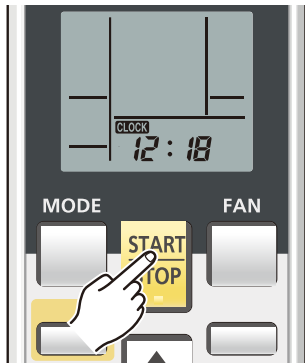
* **Note:** If CUSTOM CODE is set to anything other than "A", the remote control must be set accordingly to the INDOOR UNIT setting.

■ REMOTE CONTROLLER CUSTOM CODE SETTING

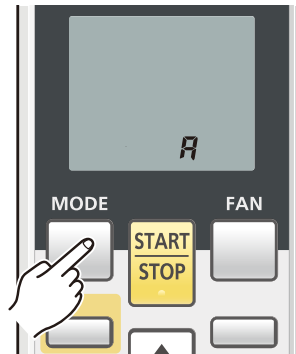
According to the following instructions, please set the custom code setting of the Wireless remote controller to match any changes in the custom code setting of the indoor unit.

(Note that the air conditioner cannot receive a signal if the right custom codes has not been set.)

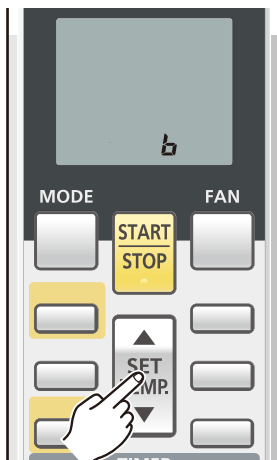
1. Press the START/STOP button until only the clock is displayed on the remote controller display.



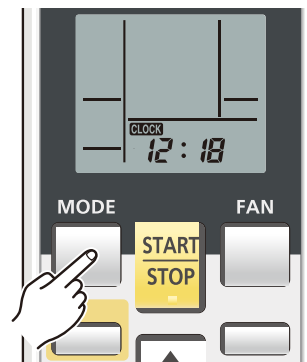
2. Press the MODE button for at least five seconds to display the current custom code (initially set to "A").



3. Press the SET TEMP. "▲" or the "▼" button to change the custom code between "A"→"b"→"c"→"d".



4. Press the MODE button again to return to the clock indicator. The custom code will be changed.



- If no buttons are pressed within 30 seconds after the custom code is displayed, the system returns to the original clock indicator. In this case, start again from step 1.
- The air conditioner custom code is set to "A" prior to shipment.
- The remote controller resets to custom code "A" when the batteries in the remote controller are replaced. If you use a custom code other than custom code "A", reset the custom code after replacing the batteries. If you do not know the air conditioner custom code setting, try each of the custom codes ("A"→"b"→"c"→"d") until you find the code which operates the air conditioner.

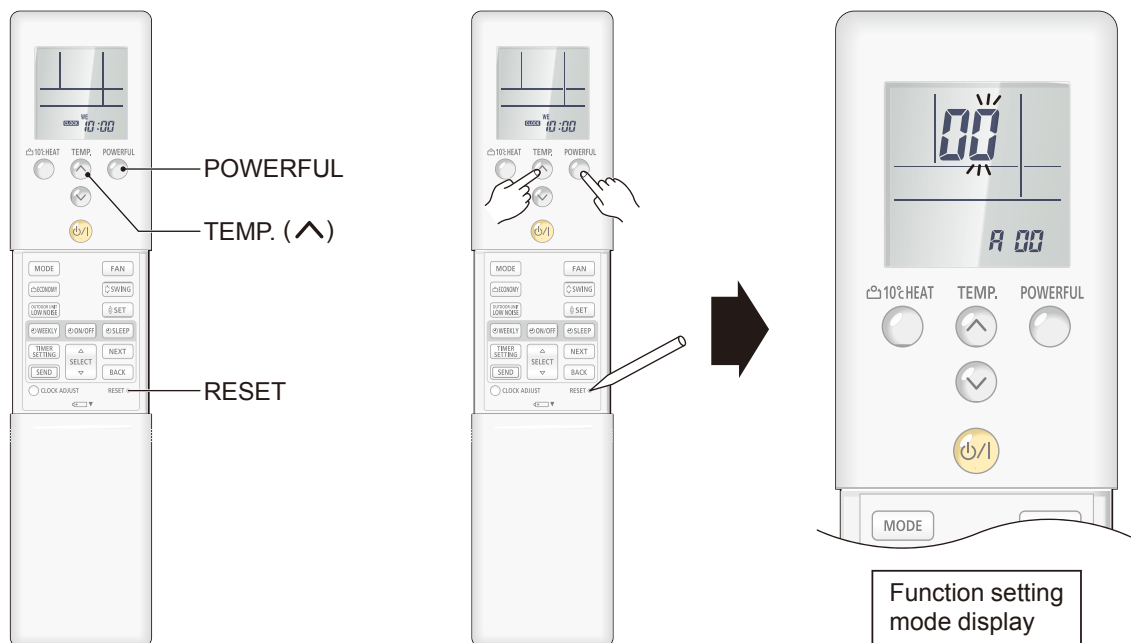
5-3-2. AR-REA2E

■ CONFIRMATION OF CUSTOM CODE

(2) Prior to entering the function setting mode, adjust the signal code of the remote controller to match the custom code of the indoor unit as specified in Remote Controller Custom Code Setting

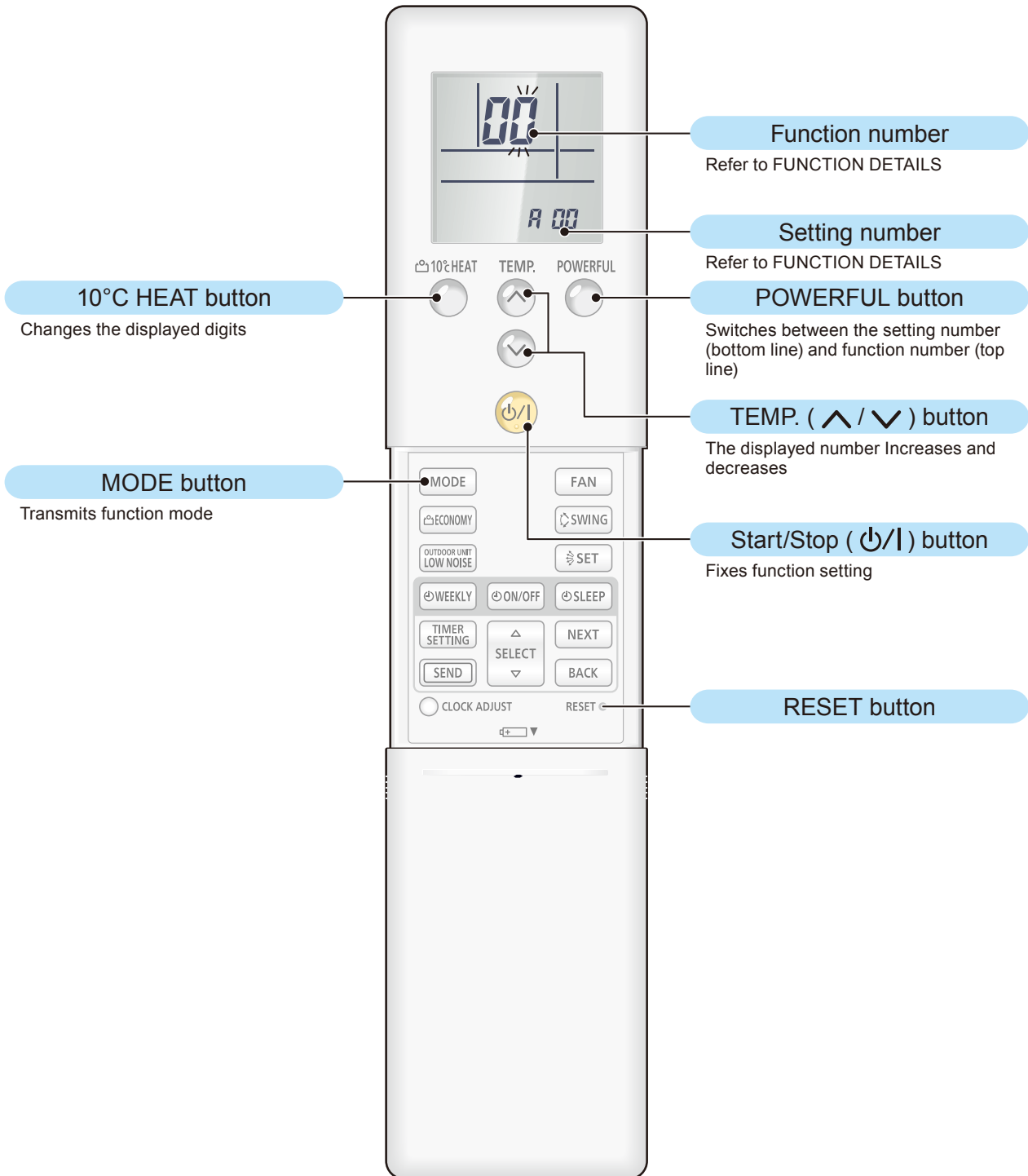
■ SWITCHING SELECTION OF FUNCTION SETTING MODE

(3) Press and hold the "POWERFUL" and "TEMP. ^" buttons. While holding these 2 buttons, press the "RESET" button.



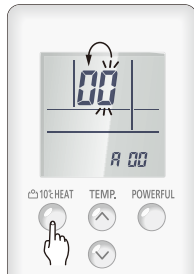
■ BUTTON NAME AND FUNCTION

- During the function setting mode, indoor unit will reject any operation command from remote controller.

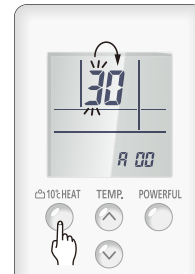


FUNCTION SETTING

- (4) Press the "TEMP. ^" or "TEMP. v" buttons to select the function number.
Press the "10°C HEAT" button to switch between left and right digits.



Change digit

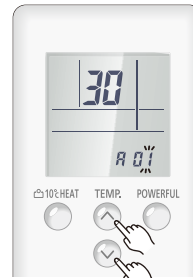


Change digit

- (5) Press the "POWERFUL" button to proceed to the setting number.
(Press the "POWERFUL" button again to return to the function number selection.)

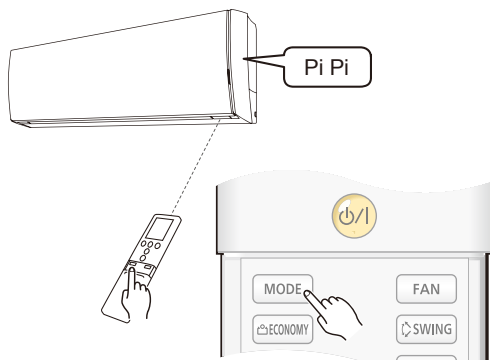


- (6) Press the "TEMP. ^" or the "TEMP. v" buttons to select the setting number.
Press the "10°C HEAT" button to switch between left and right digits.



Change digit

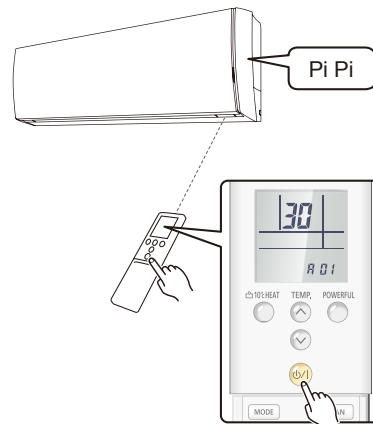
- (7) Press the "MODE" button once to send the function mode information.



- (8) Press the "ϕ/I" button once to fix the function setting.

A beeping noise will be heard if the command is accepted.

*Wrong code: No Response



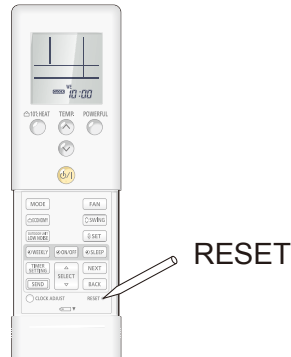
Note: Please push the "ϕ/I" button within 30 seconds after pushing the "MODE" button.

FUNCTION DETAILS

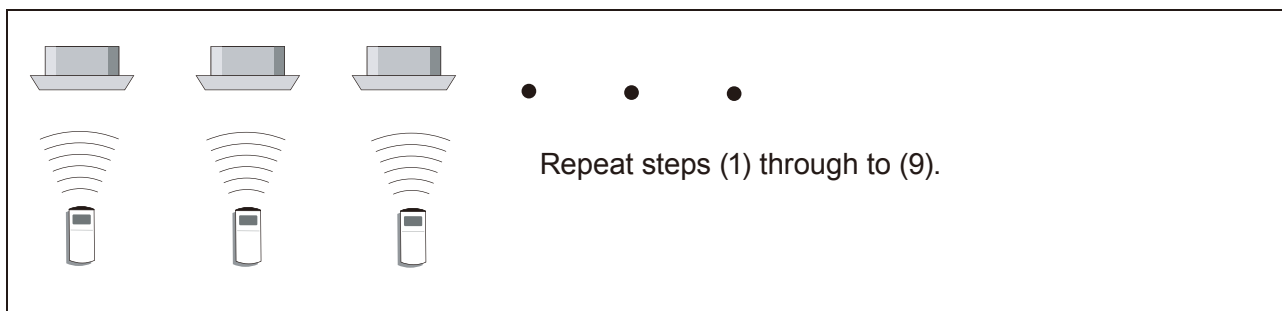
Refer to 5-6. FUNCTION DETAILS

■ COMPLETION OF FUNCTION SETTING MODE

(9) Press the "RESET" button.



■ SETTING UP EACH INDOOR UNIT



■ RESET THE POWER AFTER SETTING UP FUNCTION OF ALL INDOOR UNITS

Important

- If the reset is not performed, function settings cannot be read in normally.
- After all the functions have been set, the circuit breaker needs to be switched off for at least 2 minutes.
After the 2 minutes has passed, power can be restored.
- The set function is stored in the PCB and will remain in memory even when the power is turned off.
However the settings are only effective after the power is reset.
Record the function settings of the indoor unit on a label, etc., and affix the label to the unit so it can be used for after-sales service operations.

* Once the "RESET" button is pressed on the remote controller, the OPERATION MODE will be set in the "AUTO MODE".

Please adjust the OPERATION MODE to either "COOLING" or "HEATING" before trying to operate the air conditioner.

* **NOTE:** If CUSTOM CODE is set to anything other than "A", the remote control must be set accordingly to the INDOOR UNIT setting.

■ REMOTE CONTROLLER CUSTOM CODE SETTING

According to the following instructions, please set the custom code setting of the Wireless remote controller to match any changes in the custom code setting of the indoor unit.

(Note that the air conditioner cannot receive a signal if the right custom code has not been set.)

1. Press the Start/Stop “ $\phi/|$ ” button until only the clock is displayed on the remote controller display.



2. Press the "MODE" button for at least 5 seconds to display the current custom code (initially set to "A").



3. Press the “TEMP. \wedge ” or the “TEMP. \vee ” button to change the custom code between "A"→"b"→"c"→"d".



4. Press the "MODE" button again to return to the clock display. The custom code will be changed.

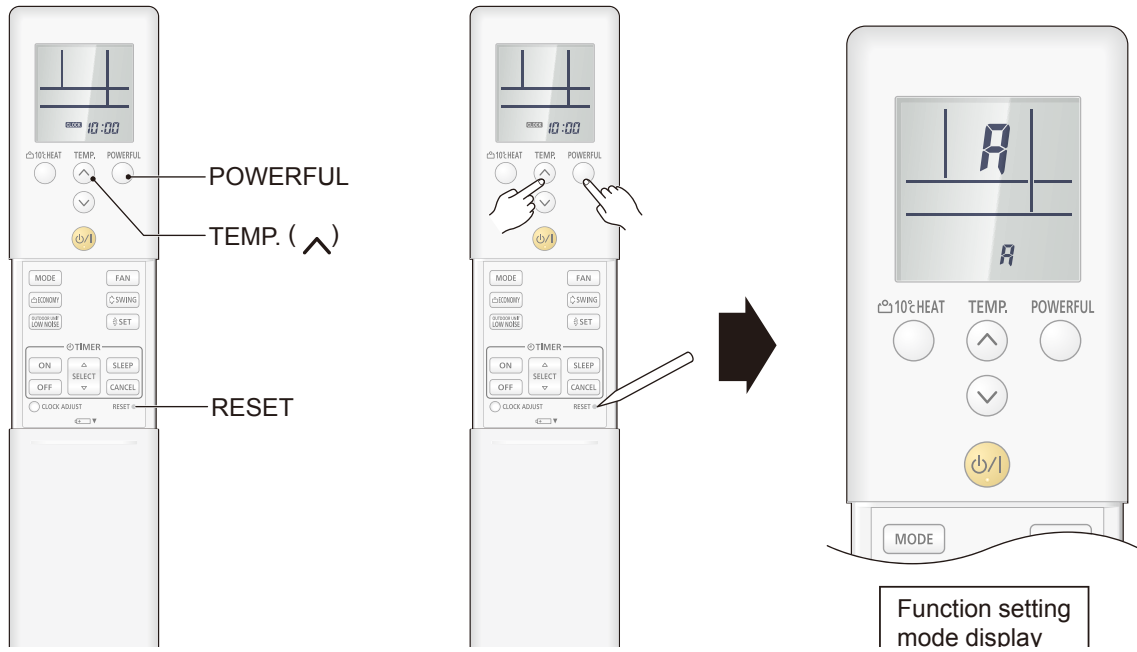


- If no buttons are pressed within 30 seconds after the custom code is displayed, the system returns to the original clock indicator. In this case, start again from step 1.
- The air conditioner custom code is set to "A" prior to shipment.
- If you do not know the air conditioner custom code setting, try each of the custom codes ("A"→"b"→"c"→"d") until you find the code which operates the air conditioner.

5-3-3. AR-REB1E

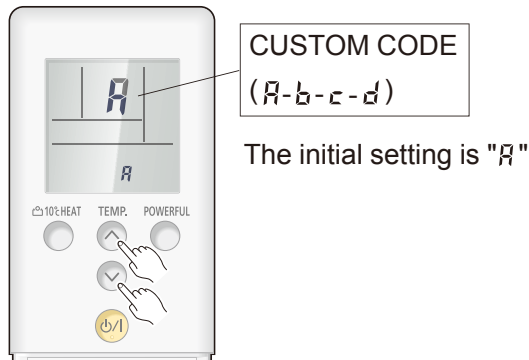
■ SWITCHING SELECTION OF FUNCTION SETTING MODE

(2) Press and hold the "POWERFUL" and "TEMP. ^" buttons. While holding these 2 buttons, press the "RESET" button.

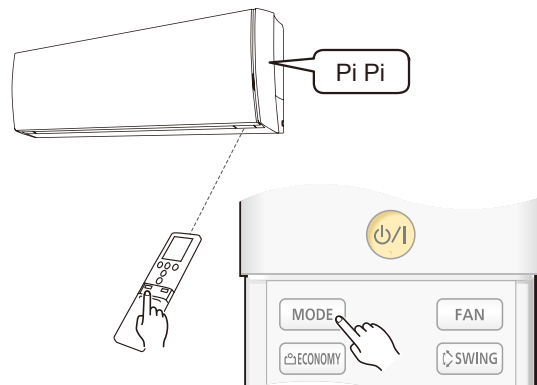


■ CONFIRMATION OF CUSTOM CODE

(3) Press the "TEMP. ^" or "TEMP. v" buttons to select the custom code that matches the setting with the indoor unit. By selecting the appropriate custom code, the communication between the indoor unit and the wireless RC becomes possible.

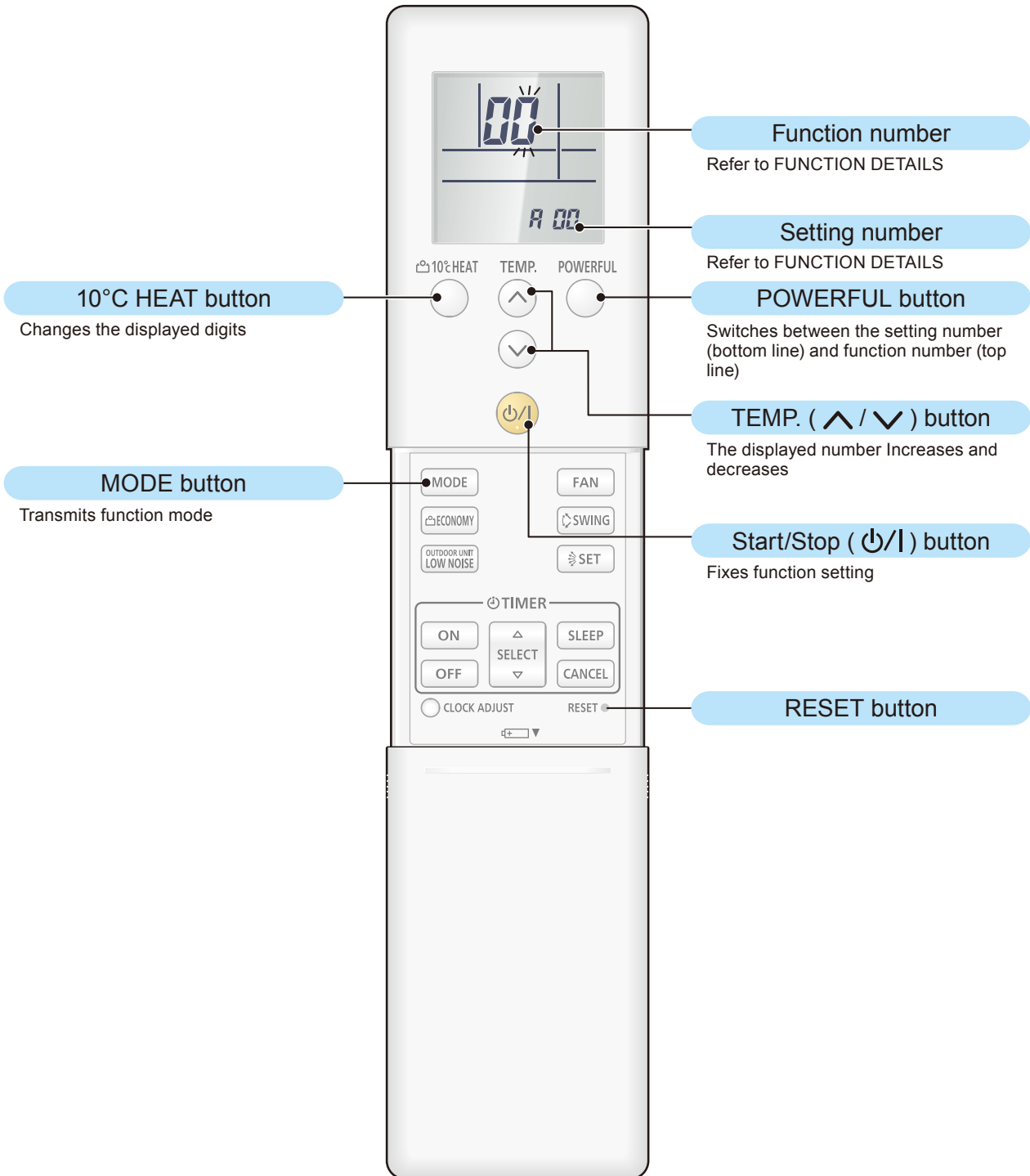


(4) Press the "MODE" button to send the code to the indoor unit.



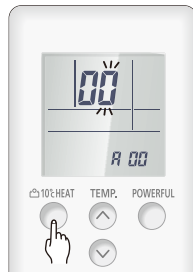
■ BUTTON NAME AND FUNCTION

- During the function setting mode, indoor unit will reject any operation command from remote controller.

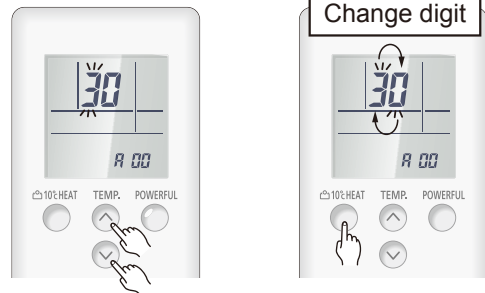


FUNCTION SETTING

- (5) Press the "10°C HEAT" button to access the function setting mode.



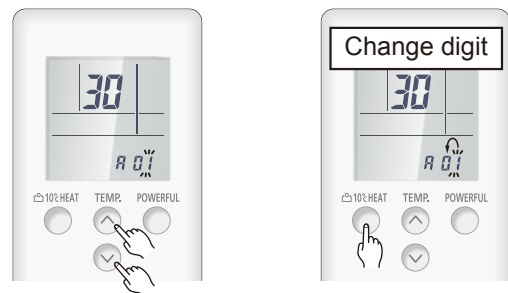
- (6) Press the "TEMP. ^" or "TEMP. v" buttons to select the function number. Press the "10°C HEAT" button to switch between left and right digits.



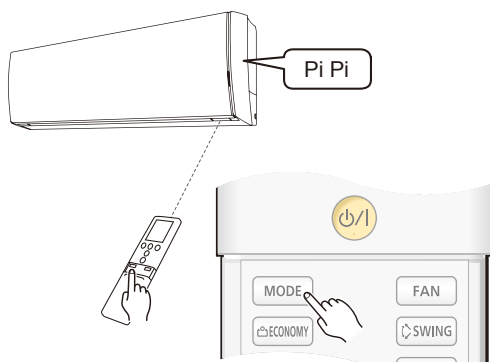
- (7) Press the "POWERFUL" button to proceed to the setting number. (Press the "POWERFUL" button again to return to the function number selection.)



- (8) Press the "TEMP. ^" or the "TEMP. v" buttons to select the setting number. Press the "10°C HEAT" button to switch between left and right digits.



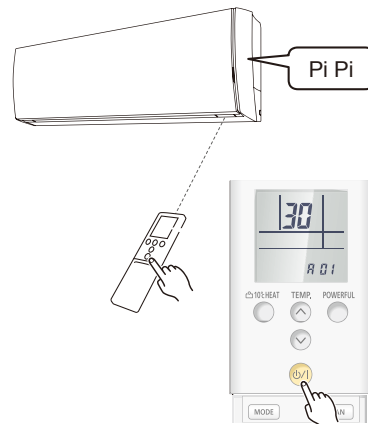
- (9) Press the "MODE" button once to send the function mode information.



- (10) Press the "ϕ / I" button once to fix the function setting.

A beeping noise will be heard if the command is accepted.

*Wrong code: No Response



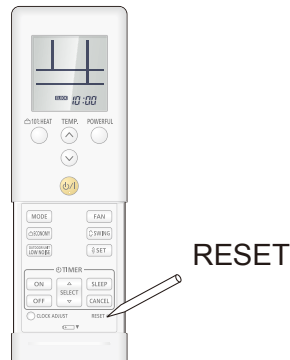
Note: Please push the "ϕ / I" button within 30 seconds after pushing the "MODE" button.

FUNCTION DETAILS

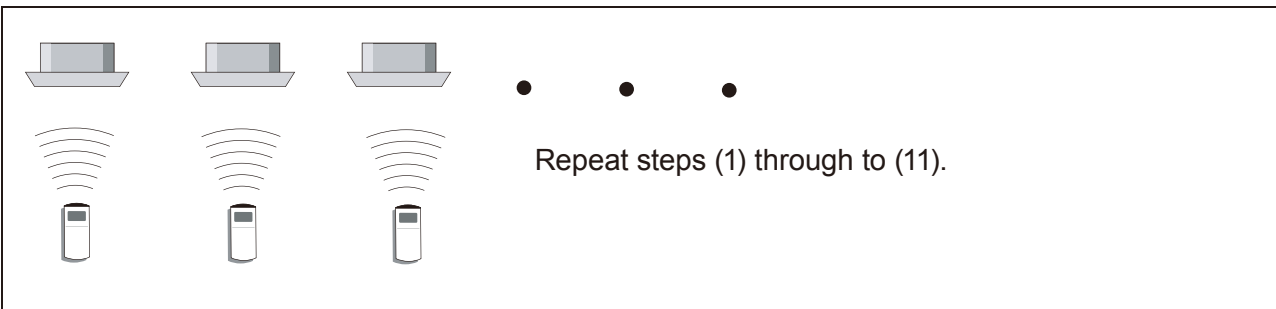
Refer to 5-6. FUNCTION DETAILS

■ COMPLETION OF FUNCTION SETTING MODE

(11) Press the "RESET" button.



■ SETTING UP EACH INDOOR UNIT



■ RESET THE POWER AFTER SETTING UP FUNCTION OF ALL INDOOR UNITS

Important

- If the reset is not performed, function settings cannot be read in normally.
- After all the functions have been set, the circuit breaker needs to be switched off for at least 2 minutes.
After the 2 minutes has passed, power can be restored.
- The set function is stored in the PCB and will remain in memory even when the power is turned off.
However the settings are only effective after the power is reset.
Record the function settings of the indoor unit on a label, etc., and affix the label to the unit so it can be used for after-sales service operations.

* Once the "RESET" button is pressed on the remote controller, the OPERATION MODE will be set in the "AUTO MODE".


Please adjust the OPERATION MODE to either "COOLING" or "HEATING" before trying to operate the air conditioner.

* **NOTE:** If CUSTOM CODE is set to anything other than "A", the remote control must be set accordingly to the INDOOR UNIT setting.

■ REMOTE CONTROLLER CUSTOM CODE SETTING

According to the following instructions, please set the custom code setting of the Wireless remote controller to match any changes in the custom code setting of the indoor unit.



(Note that the air conditioner cannot receive a signal if the right custom codes has not been set.)

1. Press the Start/Stop “/I” button until only the clock is displayed on the remote controller display.



2. Press the "MODE" button for at least 5 seconds to display the current custom code (initially set to "A")



3. Press the “TEMP. ” or the “TEMP. ” button to change the custom code between "A"→"b"→"c"→"d".



4. Press the "MODE" button again to return to the clock display. The custom code will be changed.



- If no buttons are pressed within 30 seconds after the custom code is displayed, the system returns to the original clock display. In this case, start again from step 1.
- The air conditioner custom code is set to "A" prior to shipment.
- The remote controller resets to custom code "A" when the batteries in the remote controller are replaced. If you use a custom code other than custom code "A", reset the custom code after replacing the batteries. If you do not know the air conditioner custom code setting, try each of the custom codes ("A"→"b"→"c"→"d") until you find the code which operates the air conditioner.

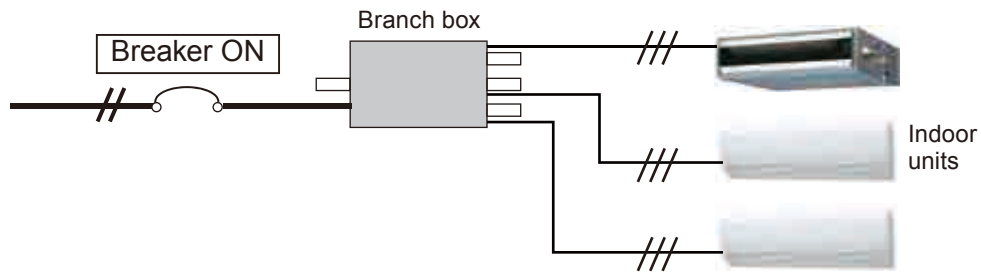
5-4. INDOOR UNIT (setting by wired remote controller)

- The function settings of the control of the indoor unit can be changed by this procedure according to the installation conditions. Incorrect settings can cause the indoor unit to malfunction.
- After the power is turned on, perform the Function Setting according to the installation conditions using the remote controller.
- The settings may be selected between the following two: Function Number and Setting Number.
- Settings will not be changed if disable numbers or setting numbers are selected.
- This function cannot be used on secondary units.

■ PREPARATION

(1) Turn on the power through the Branch box.

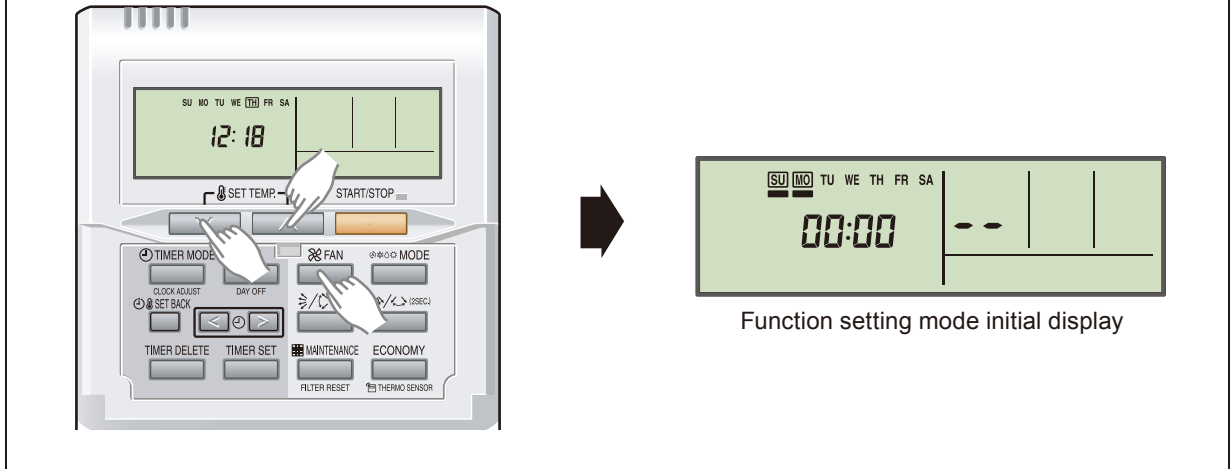
- Before turning on the power of the indoor units, make sure the piping air-tight test and vacuuming have been conducted.
- Also check again to make sure no wiring mistakes were made before turning on the power.



5-4-1. MODEL: UTY-RNN*M

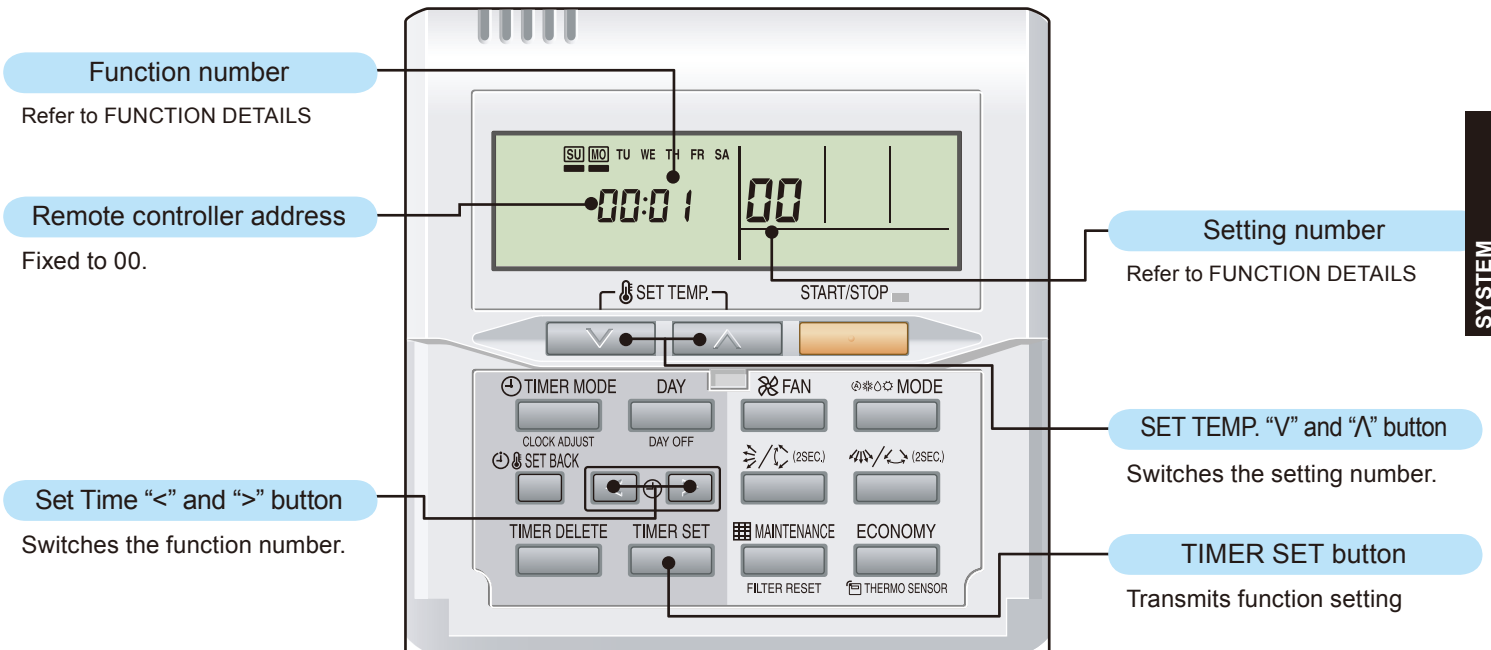
■ SWITCHING SELECTION OF FUNCTION SETTING MODE

- 2) To activate the function setting mode, hold down the three buttons "SET TEMP. V", "SET TEMP. ^" and "FAN" at the same time for 5 seconds or longer.



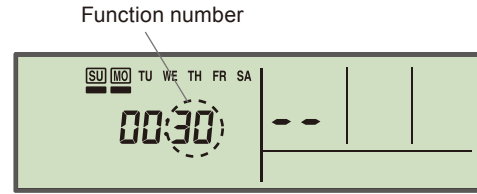
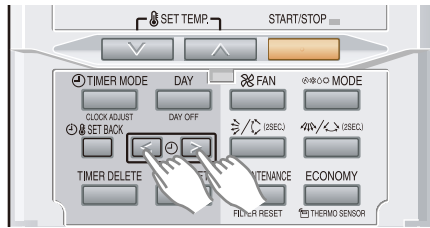
■ BUTTON NAME AND FUNCTION

- During address setting mode, indoor unit will reject any operation command from the remote controller.

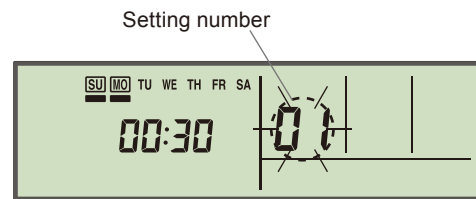
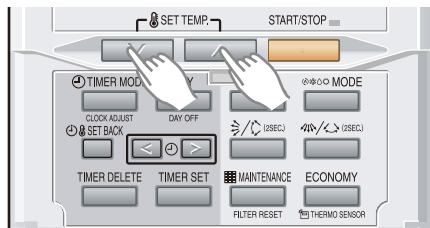


FUNCTION SETTING

3) Press the "Set Time <" button or the "Set Time >" button, to select the function number.

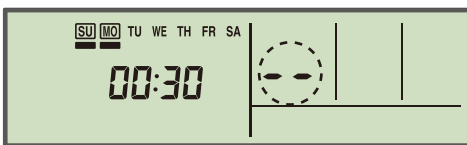
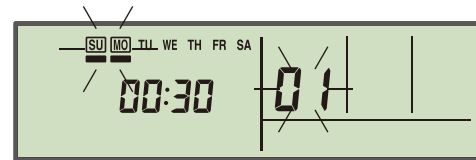
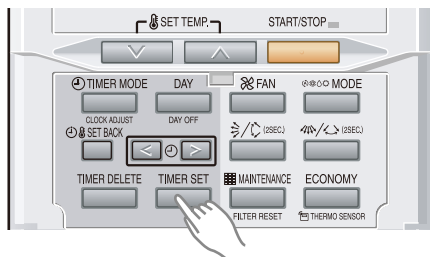


4) Press the "SET TEMP. V" button or the "SET TEMP. ^" button, to select the setting number. The display flashes during setting number selection.

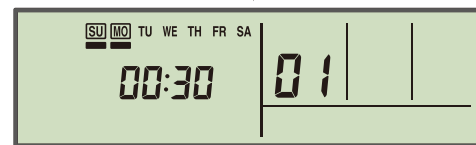


Ex.) Function number : 30, Setting number : 01

5) Press the "TIMER SET" button, confirm the setting.
(The data will be transferred to the indoor unit.)



- When the data was not set up on the indoor unit "--" is displayed.
- Set up the data again according to the procedure in step 3), 4) above.



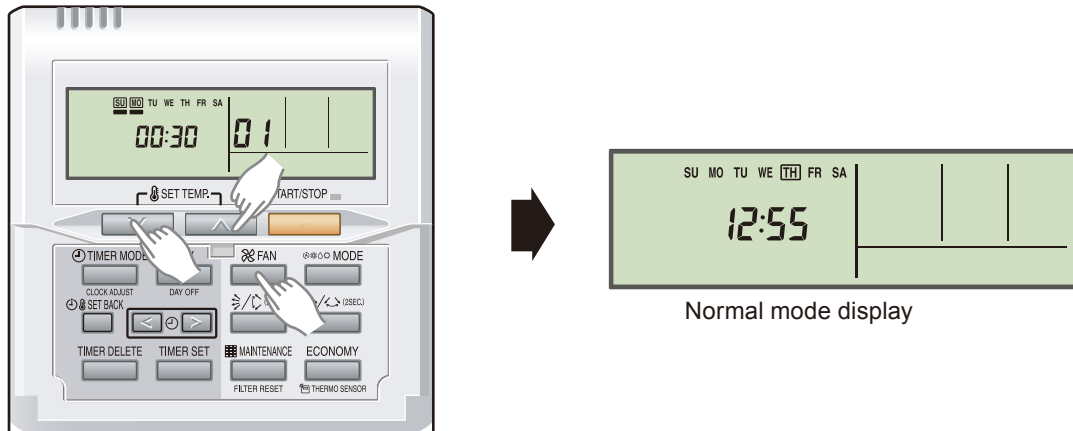
When the data was correctly set up on the indoor unit.
(Flashing display changes to illuminated display.)

FUNCTION DETAILS

Refer to 5-6. FUNCTION DETAILS

■ COMPLETION OF FUNCTION SETTING MODE

6) To clear the function setting mode and return to the regular display, hold down the three buttons "SET TEMP. V", "SET TEMP. Λ" and "FAN" at the same time.



*If no key entry is made for 60 seconds, even though none of the above buttons is pressed, the function setting mode will automatically be cleared.
(If the function setting mode is automatically cleared while setting addresses, activate the mode again according to the procedure in step 2.)

■ SETTING UP EACH INDOOR UNIT

Repeat the procedures in steps 1) through 6), and set up the indoor units requiring function setting.

■ RESET THE POWER AFTER SETTING UP FUNCTION OF ALL INDOOR UNITS

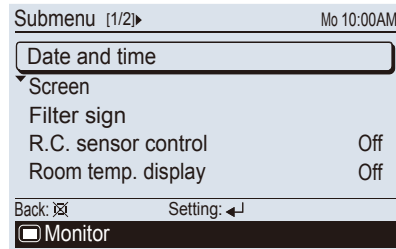
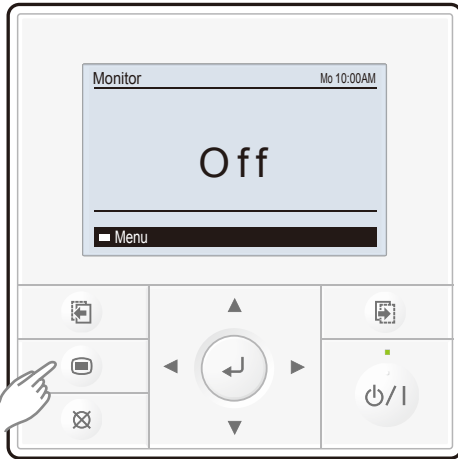
Important

- * If the reset is not performed, function settings cannot be read in normally.
- * After all the functions have been set, the circuit breaker needs to be switched off for at least 2 minutes.
After the 2 minutes has passed, power can be restored.
- * The set function is stored in the PCB and will remain in memory even when the power is turned off.
However, the settings are only effective after the power is reset.
Record the function settings of the indoor unit on a label, etc., and affix the label to the unit so it can be used for after-sales service operations.

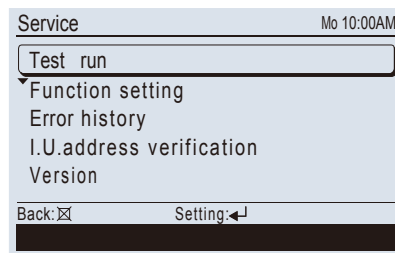
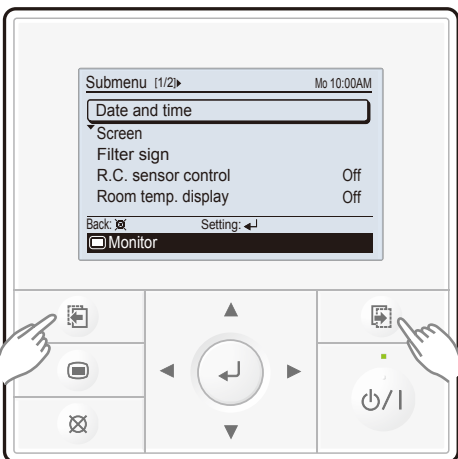
5-4-2.MODEL: UTY-RVN*M

■ SWITCHING SELECTION OF FUNCTION SETTING MODE

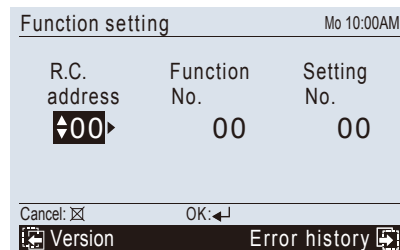
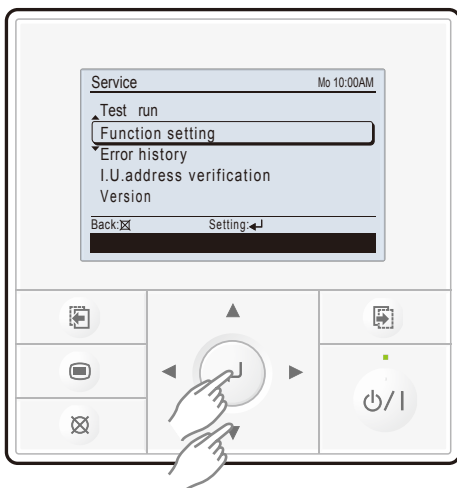
2) When [Menu button] is pressed twice while “Monitor” screen is displayed, it switches to the “Submenu” screen. If [Menu button] is pressed while the “Submenu” screen is displayed, the display returns to the “Monitor” screen.



Press the [Screen switch button (Left)] and [Screen switch button (Right)] simultaneously for 5 seconds to switch to “Service” screen.

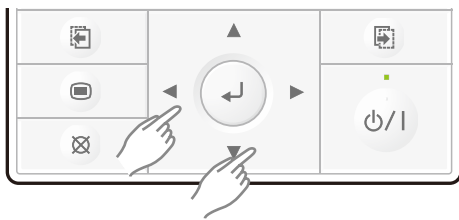


Select [Function setting] with pressing the [Cursor button (Up/Down)], and press the [Enter button].



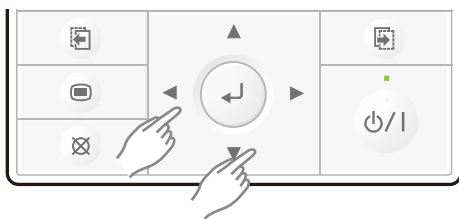
FUNCTION SETTING

- 3) Select the [Function No.] by pressing the [Cursor button (Left/Right)], and select the Function No. to be set by pressing the [Cursor button (Up/Down)].



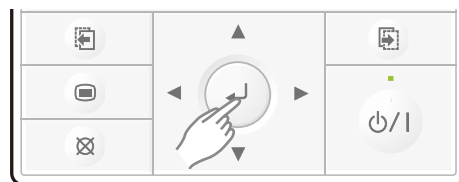
Function setting			Mo 10:00AM
R.C. address	Function No.	Setting No.	
00	◀30▶	00	
Cancel: [X]			OK: [↵]
Version		Error history	

- 4) Select the [Setting No.] by pressing the [Cursor button (Left/Right)], and select the Setting No. to be set by pressing the [Cursor button (Up/Down)].



Function setting			Mo 10:00AM
R.C. address	Function No.	Setting No.	
00	30	◀01▶	
Cancel: [X]			OK: [↵]
Version		Error history	

- 5) Pressing the [Enter button], confirm the setting.
(The data will be transferred to the indoor unit.)



Function setting			Mo 10:00AM
R.C. address	Function No. /	Setting No. /	
00	30	◀01▶	
Cancel: [X]			OK: [↵]
Version		Error history	

ERROR

GOOD

Function setting			Mo 10:00AM
R.C. address	Function No.	Setting No.	
00	30	◀--▶	
Cancel: [X]			OK: [↵]
Version		Error history	

Function setting			Mo 10:00AM
R.C. address	Function No.	Setting No.	
00	30	◀01▶	
Cancel: [X]			OK: [↵]
Version		Error history	

- When the data was not set up on the indoor unit "--" is displayed.
- Set up the data again according to the procedure in step 3), 4) above.

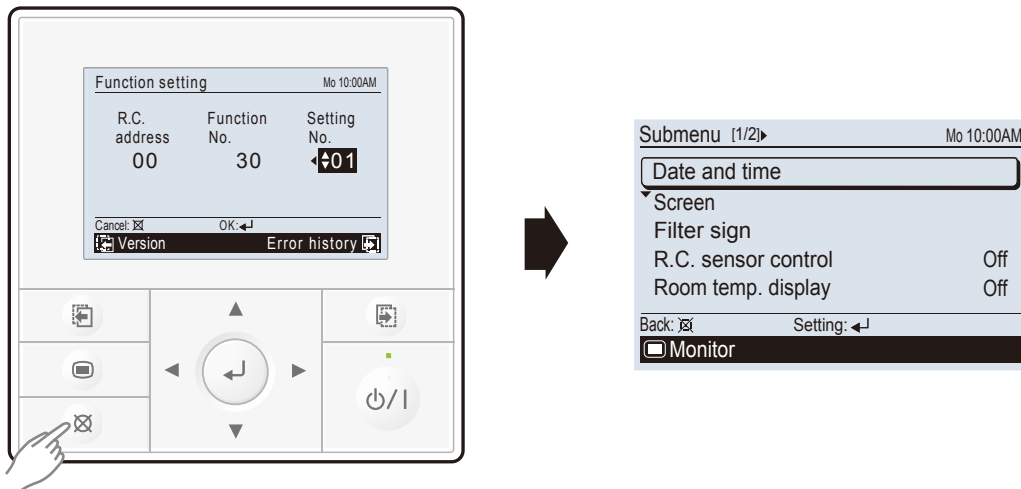
When the data was correctly set up on the indoor unit
(Flashing display changes to illuminated display.)

FUNCTION DETAILS

Refer to 5-6. FUNCTION DETAILS

■ COMPLETION OF FUNCTION SETTING MODE

6) When [Cancel button] is pressed twice while “Function setting” screen is displayed, it switches to the “Submenu” screen.



*If no key entry is made for 60 seconds, even though none of the above buttons is pressed, the function setting mode will automatically be cleared.
(If the function setting mode is automatically cleared while setting addresses, activate the mode again according to the procedure in step 2).

■ SETTING UP EACH INDOOR UNIT

Repeat the procedures in steps 1) through 6), and set up the indoor units requiring function setting.

■ RESET THE POWER AFTER SETTING UP FUNCTION OF ALL INDOOR UNITS

Important

- * If the reset is not performed, function settings cannot be read in normally.
- * After all the functions have been set, the circuit breaker needs to be switched off for at least 2 minutes.
After the 2 minutes has passed, power can be restored.
- * The set function is stored in the PCB and will remain in memory even when the power is turned off.
However the function setting are only effective after the power is reset.
Record the function settings of the indoor unit on a label, etc., and affix the label to the unit so it can be used for after-sales service operations.

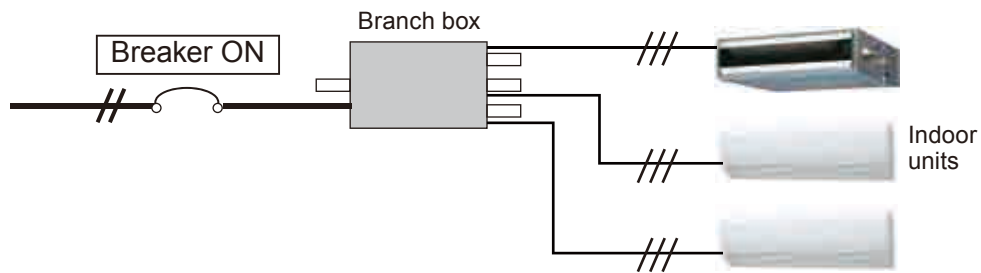
5-5. INDOOR UNIT (setting by simple remote controller)

- The function settings of the control of the indoor unit can be changed by this procedure according to the installation conditions. Incorrect settings can cause the indoor unit to malfunction.
- After the power is turned on, perform the Function Setting according to the installation conditions using the remote controller.
- The settings may be selected between the following two: Function Number or Setting Number.
- Settings will not be changed if disable numbers or setting numbers are selected.
- This function cannot be used on secondary units.

■ PREPARATION

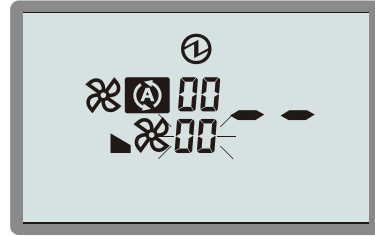
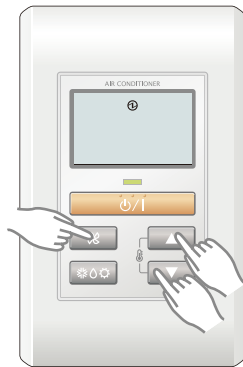
(1) Turn on the power through the Branch box.

- Before turning on the power of the indoor units, make sure the piping air-tight test and vacuuming have been conducted.
- Also check again to make sure no wiring mistakes were made before turning on the power.



■ SWITCHING SELECTION OF FUNCTION SETTING MODE

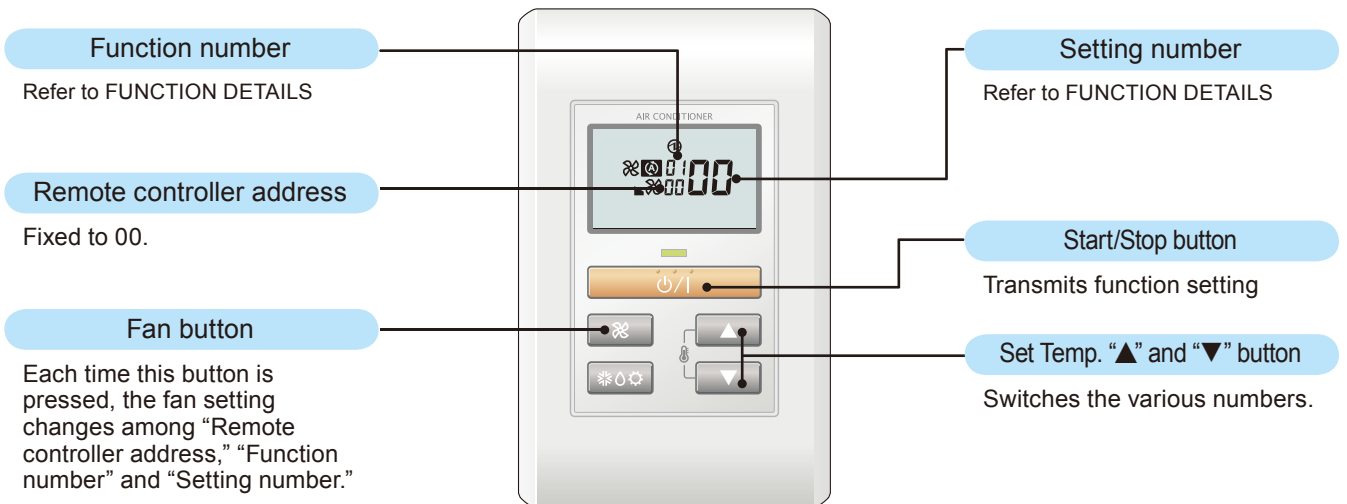
2) To activate the function setting mode, hold down the three buttons "Set Temp. ▼", "Set Temp. ▲" and "Fan" at the same time for 5 seconds or longer.



Function setting mode initial display

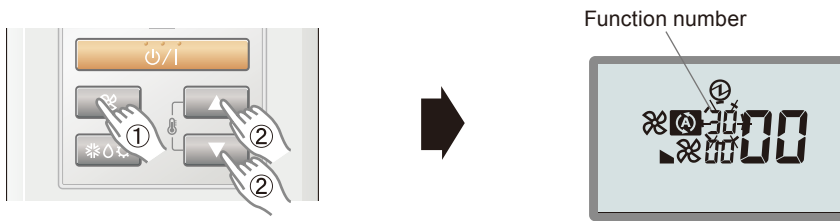
■ BUTTON NAME AND FUNCTION

- During function setting mode, indoor unit will reject any operation command from the remote controller.

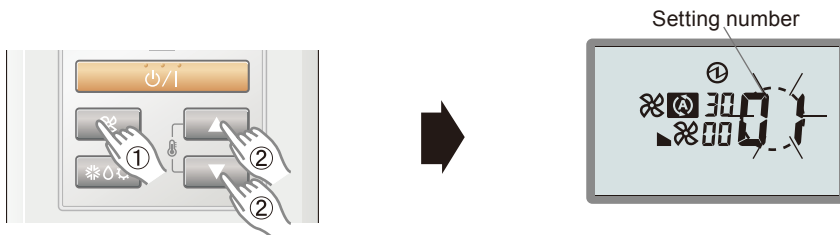


FUNCTION SETTING

3) Press the "Fan" button so that the "Function number" display flashes. Then, press either the "Set Temp. ▲" button or the "Set Temp. ▼" button to set up the function number.

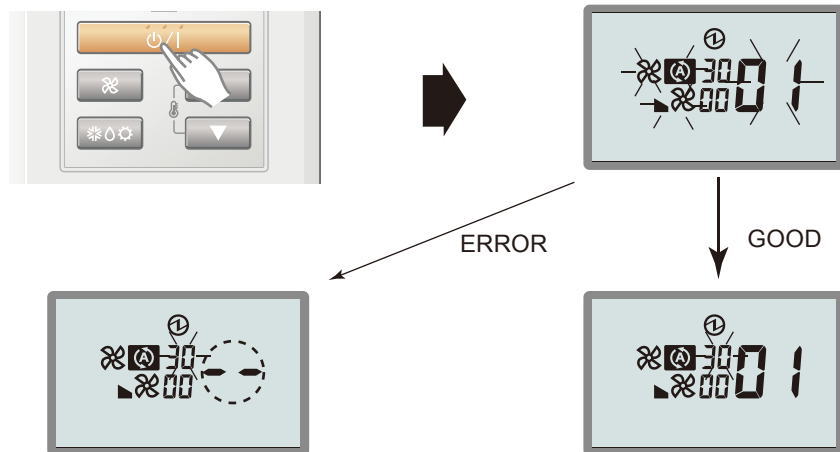


4) Press the Fan button so that the "Setting number" display flashes. Then, press either the Set Temp. ▲ button or the Set Temp. ▼ button to set up the setting number.



Ex.) Function number : 30, Setting number : 01

5) Pressing the Start/Stop button, confirm the setting.
(The data will be transferred to the indoor unit.)



- When the data was not set up on the indoor unit "--" is displayed.
- Set up the data again according to the procedure in step 3), 4) above.

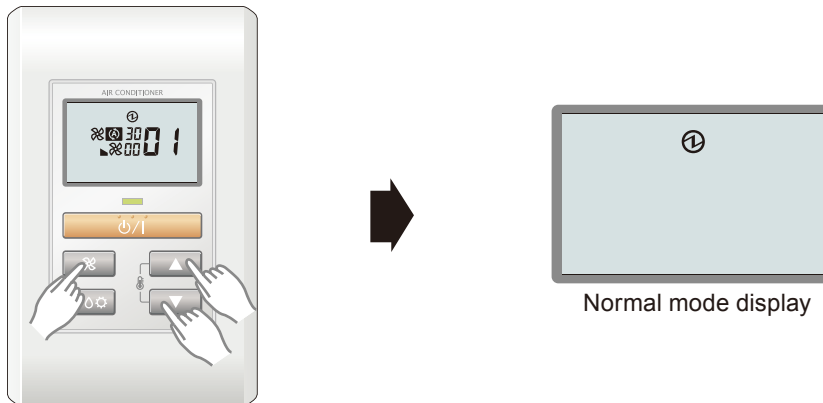
When the data was correctly set up on the indoor unit.

FUNCTION DETAILS

Refer to 5-6. FUNCTION DETAILS

■ COMPLETION OF FUNCTION SETTING MODE

6) Press the three buttons "Set Temp. ▲", "Set Temp. ▼" and "Fan" at the same time for 5 seconds or longer. The function setting mode will be cleared and the regular display will be restored.



*If no key entry is made for 60 seconds, even though none of the above buttons is pressed, the function setting mode will automatically be cleared.

(If the function setting mode is automatically cleared while setting addresses, activate the mode again according to the procedure in step 2).

■ SETTING UP EACH INDOOR UNIT

Repeat the procedures in steps 1) through 6), and set up the indoor units requiring function setting.

■ RESET THE POWER AFTER SETTING UP FUNCTION OF ALL INDOOR UNITS

Important

- * If the reset is not performed, function settings cannot be read in normally.
- * After all the functions have been set, the circuit breaker needs to be switched off for at least 2 minutes.
After the 2 minutes has passed, power can be restored.
- * The set function is stored in the PCB and will remain in memory even when the power is turned off.
However, the settings are only effective after the power is reset.
Record the function settings of the indoor unit on a label, etc., and affix the label to the unit so it can be used for after-sales service operations.

5-6. FUNCTION DETAILS

	Functions	Compact cassette	Slim duct	Wall mounted	Floor / Ceiling	Floor
1)	Filter sign	●	●	●	●	●
2)	Ceiling height	●	-	-	●	-
3)	Outlet directions	●	-	-	-	-
4)	Vertical airflow direction range control	-	-	-	-	●
5)	Static pressure	-	●	-	-	-
6)	Room temperature control for cooling	●	●	●	●	●
7)	Room temperature control for heating	●	●	●	●	●
8)	Auto restart	●	●	●	●	●
9)	Room temperature sensor switching	●	●	●	●	●
10)	Remote controller custom code	●	●	●	●	●
11)	External input control	●	●	●	●	●
12)	Room temperature sensor switching (Aux.)	●	●	●	●	●
13)	Indoor unit fan control for energy saving for cooling	●	●	●	●	●

1) Filter sign

Select appropriate intervals for displaying the filter sign on the indoor unit according to the estimated amount of dust in the air of the room.

If the indication is not required, select "No indication" (03).

(◆... Factory setting)

Setting description	Function number	Setting value
Standard	11	00
Long interval		01
Short interval		02
No indication		03

Intervals will differ depending on the Indoor unit type as follows.

Setting description	Comapact Cassette	Slim Duct	Wall Mounted	Floor / Ceiling	Floor
Standard	2500 hours			400 hours	
Long interval	4400 hours			1000 hours	
Short interval	1250 hours			200 hours	

2) Ceiling height

Select the appropriate ceiling height according to the place of installation.

(◆... Factory setting)

Setting description	Function number	Setting value
Standard (2.7m)	20	00
High ceiling (3.0m)		01

In case of Cassette type models: The ceiling height values are for the 4-way outlet.

Do not change this setting in the 3-way outlet mode.
7000, 9000 Btu/h models cannot be installed in high ceilings. Do not change this setting.

3) Outlet directions

Select the appropriate number of outlet directions according to the installation conditions.

(◆... Factory setting)

Setting description	Function number	Setting value
4-way	22	00
3-way		01

4) Vertical airflow direction range control

In a concealed installation, change the setting to "Fixed" (02) to restrict the movement of the upper air outlet so that the airflow is only towards the horizontal direction.

(◆... Factory setting)

Setting description	Function number	Setting value
Standard	23	00
(Setting forbidden)		01
Fixed (Concealed)		02

5) Static pressure

Select the appropriate static pressure according to the installation conditions.

(◆... Factory setting)

Setting description	Function number	Setting value
0 Pa	26	00
10 Pa		01
20 Pa		02
30 Pa		03
40 Pa		04
50 Pa		05
60 Pa		06
70 Pa		07
80 Pa		08
90 Pa		09
25 Pa [Standard]	31	

6) Room temperature control for cooling

Depending on the installed environment, correction of the room temperature sensor may be required.

Select the appropriate control setting according to the installed environment.

(◆... Factory setting)

Setting description	Function number	Setting value
Standard	30	00
Slightly lower control		01
Lower control		02
Higher control		03

In case of Slim duct type and Floor/Ceiling type models: In floor console installations, select "01".

7) Room temperature control for heating

Depending on the installed environment, correction of the room temperature sensor may be required.

Select the appropriate control setting according to the installed environment.

(◆... Factory setting)

Setting description	Function number	Setting value
Standard	31	00
Lower control		01
Slightly higher control		02
Higher control		03

In case of Slim duct type and Floor/Ceiling type models: In floor console installations, select "01".

8) Auto restart

Enable or disable automatic restart after a power interruption.

(◆... Factory setting)

Setting description	Function number	Setting value
◆ Enable	40	00
Disable		01

*Auto restart is an emergency function such as for power outage etc.

Do not attempt to use this function in normal operation.

Be sure to operate the unit by remote controller or external device.

9) Room temperature sensor switching

(Only for Wired remote controller)

When using the Wired remote controller temperature sensor, change the setting to "Both" (01).

(◆... Factory setting)

Setting description	Function number	Setting value
◆ Indoor unit	42	00
Both		01

00: Sensor on the indoor unit is active.

01: Sensors on both indoor unit and wired remote controller is active.

*Remote controller sensor must be turned on by using the remote controller.

10) Remote controller custom code

(Only for wireless remote controller)

The indoor unit custom code can be changed.

Select the appropriate custom code.

(◆... Factory setting)

Setting description	Function number	Setting value
◆ A	44	00
B		01
C		02
D		03

11) External input control

"Operation/Stop" mode or "Forced stop" mode can be selected.

(◆... Factory setting)

Setting description	Function number	Setting value
◆ Operation/Stop mode	46	00
(Setting prohibited)		01
Forced stop mode		02

12) Room temperature sensor switching (Aux.)

To use the temperature sensor on the wired remote controller only, change the setting to "Wired remote controller" (01). This function will only work if the function setting 42 is set at "Both" (01)

(◆... Factory setting)

Setting description	Function number	Setting value
◆ Both	48	00
Wired remote controller		01

13) Indoor unit fan control for energy saving for cooling

Enable or disables the power-saving function by controlling the indoor unit fan rotation when the outdoor unit is stopped during cooling operation.

(◆... Factory setting)

Setting description	Function number	Setting value
Disable	49	00
◆ Enable		01

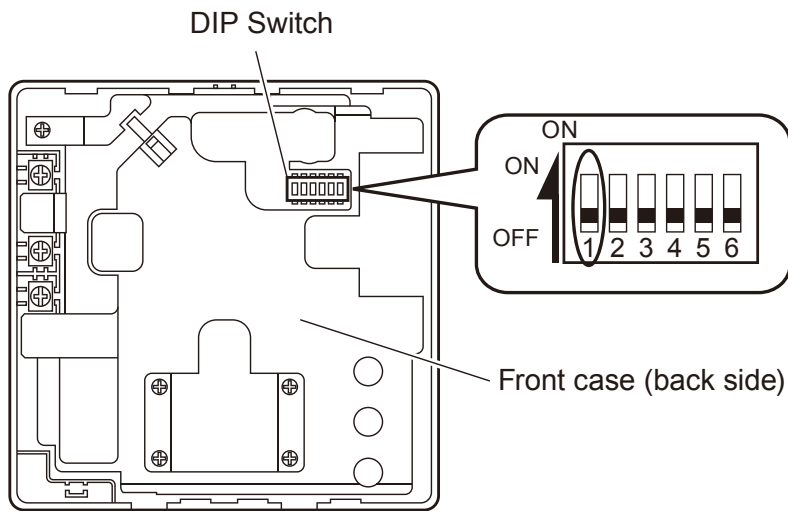
00: When the outdoor unit is stopped, the indoor unit fan operates continuously following the setting on the remote controller.

01: When the outdoor unit is stopped, the indoor unit fan operates intermittently at a very low speed..

5-7. CENTRAL REMOTE CONTROLLER

DIP Switch	SW1	Memory backup setting
	SW2	Prohibited
	SW3	Prohibited
	SW4	Prohibited
	SW5	Prohibited
	SW6	Prohibited

■ SWITCH POSITION



■ DIP SWITCH SETTING

● SW1 setting

- **Memory backup setting**

Set to ON to use batteries for the memory backup.

If batteries are not used, all of settings stored in memory will be deleted if there is a power failure.

(◆...Factory setting)

SW1	Memory backup
OFF	Disable
ON	Enable

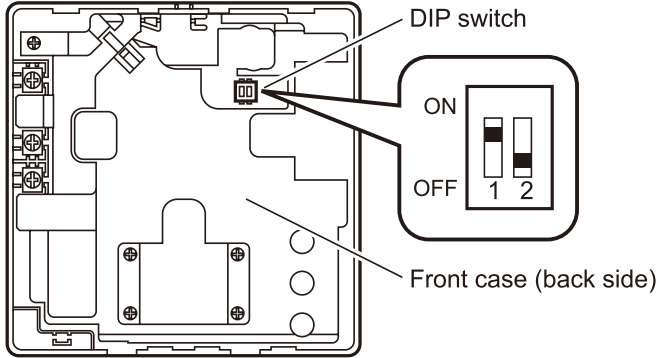
5-8. WIRED REMOTE CONTROLLER

5-8-1. MODEL: UTY-RVN*M

DIP Switch	SW1	Memory backup setting
	SW2	Dual remote controller setting

SWITCH POSITION

Wired remote controller



DIP SWITCH SETTING

Memory backup setting

Set to ON to use batteries for the memory backup.

If batteries are not used, all of settings stored in memory will be deleted if there is a power failure.

(◆...Factory setting)

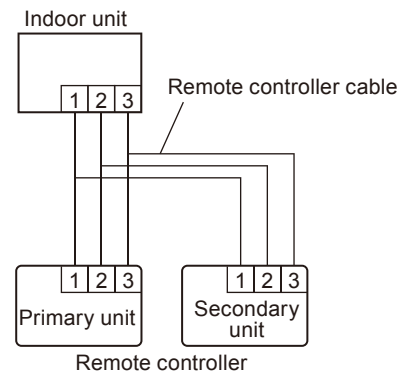
SW1	Memory backup
OFF	Disable
ON	Enable

Dual remote controller setting

Set the remote controller SW2 according to the following table.

(◆...Factory setting)

Number of remote controller	Primary unit	Secondary unit
	SW2	SW2
1 (Normal)	OFF	-
2 (Dual)	OFF	ON



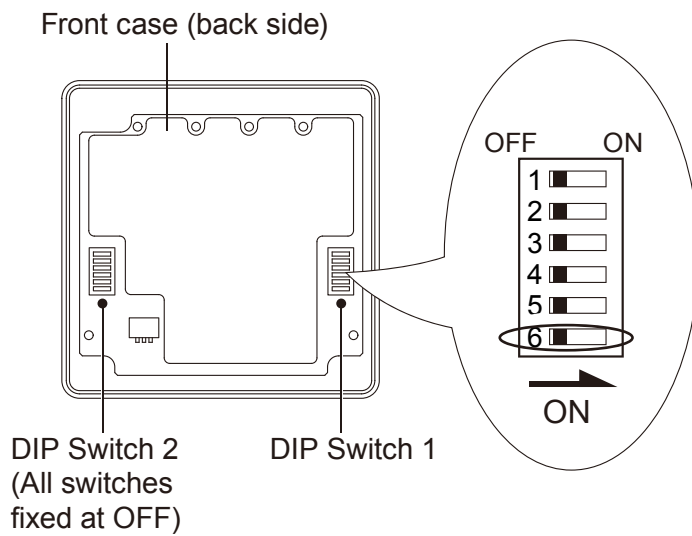
5-8-2.MODEL: UTY-RNN*M

DIP Switch 1	SW1	Prohibited
	SW2	Dual remote controller setting
	SW3	Prohibited
	SW4	°F / °C switch
	SW5	Prohibited
	SW6	Memory backup setting

* Do not use DIP Switch 2

SWITCH POSITION

Wired remote controller



■ DIP SWITCH 1 SETTING

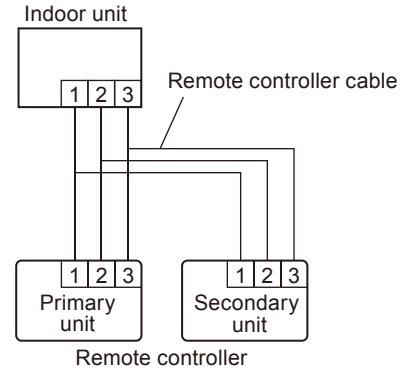
● SW2 setting

- **Dual remote controller setting**

Set the remote controller SW2 according to the following table.

(◆...Factory setting)

Number of remote controller	Primary unit	Secondary unit
	SW2	SW2
◆ 1 (Normal)	OFF	-
2 (Dual)	OFF	ON



● SW4 setting

- **°F / °C switch**

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

(◆...Factory setting)

SW4	
◆ OFF	°C
ON	°F

● SW6 setting

- **Memory backup setting**

Set to ON to use batteries for the memory backup.

If batteries are not used, all of settings stored in memory will be deleted if there is a power failure.

(◆...Factory setting)

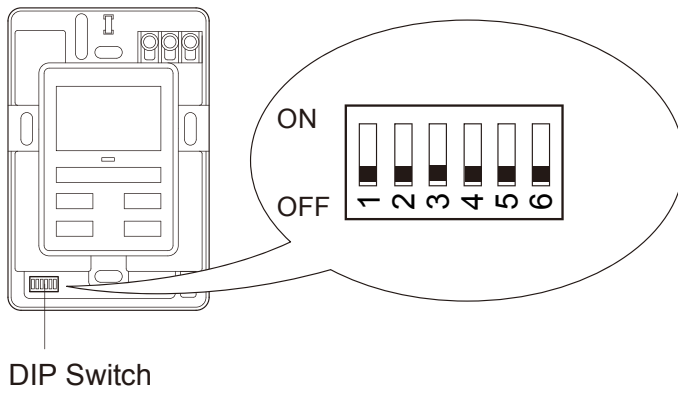
SW6	Memory backup
◆ OFF	Invalidity
ON	Validity

5-9. SIMPLE REMOTE CONTROLLER

DIP Switch	SW1	Prohibited
	SW2	Dual remote controller setting
	SW3	°F / °C switch
	SW4	Prohibited
	SW5	Prohibited
	SW6	Prohibited

■ SWITCH POSITION

● Simple remote controller



■ DIP SWITCH SETTING

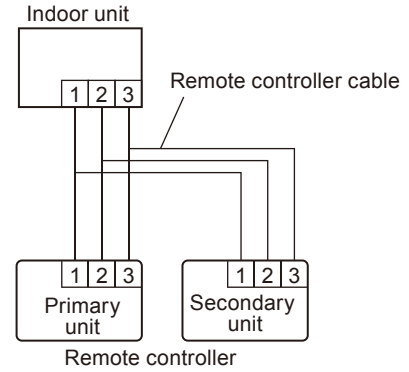
● SW2 setting

● Dual remote controller setting

Set the remote controller SW2 according to the following table.

(◆...Factory setting)

Number of remote controller	Primary unit	Secondary unit
	SW2	SW2
◆ 1 (Normal)	OFF	-
2 (Dual)	OFF	ON



● SW3 setting

● °F / °C switch

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

(◆...Factory setting)

SW3	
◆ OFF	°C
ON	°F

5-10. DUCT STATIC PRESSURE SETTING

■ MODELS : AR*G07LLTA, AR*G09LLTA, AR*G12LLTA, AR*G14LLTA, AR*G18LLTA, AR*G12LLTB, AR*G14LLTB, AR*G18LLTB

The airflow setting other than the default value of 25 Pa may be changed to the required external static pressure.

Setting of the airflow can be changed with the wireless remote controller, wired remote controller and simple remote controller.

How to set airflow (external static pressure)

- Wireless remote controller

Airflow is set by function number 26 (static pressure).

Refer to "BUTTON NAME AND FUNCTION", "FUNCTION SETTING" and "FUNCTION DETAILS" in 5-3 INDOOR UNIT (setting by wireless remote controller).

- Wired remote controller

Airflow is set by function number 26 (static pressure).

Refer to "BUTTON NAME AND FUNCTION", "FUNCTION SETTING" and "FUNCTION DETAILS" in 5-4. INDOOR UNIT (setting by wired remote controller).

- Simple remote controller

Airflow is set by function number 26 (static pressure).

Refer to "BUTTON NAME AND FUNCTION", "FUNCTION SETTING" and "FUNCTION DETAILS" in 5-5 INDOOR UNIT (setting by simple remote controller).

- FAN PERFORMANCE CURVE

Refer to Chapter 4. INDOOR UNITS

Caution

- If airflow setting is inadequate, it may cause a decrease in airflow or water leakage due to wrong operation.

6. CHECK RUN

This operation allows the air conditioner to automatically check the status of the outdoor unit and check for wiring mistakes.

Installation mistakes and positions where errors are occurring are shown by the outdoor unit display indicators.

*The Check run time is used only as a guide. This time differs depending on the surrounding temperature conditions.

Check run time

		Outdoor temperature		
		5°C or more	Between 0°C to 5°C	Less than 0°C
Number of indoor unit	2 to 4 units	Between 30 to 50 minutes	Between 40 to 110 minutes	Between 100 to 170 minutes
	5 to 8 units	Between 50 to 70 minutes	Between 50 to 180 minutes	Between 160 to 260 minutes

6-1. PRECAUTIONS & PREPARATION

■ SAFETY PRECAUTIONS

Check run is performed using the switch on the outdoor unit circuit board.

When making the setting, there is a risk of electric shock, so only touch the push button.

■ CHECK RUN PRECAUTIONS

Do not operate the indoor unit before performing Check run.

When operating the indoor unit without performing Check run, an error code is displayed on the indoor unit. (Main unit: Operation lamp blinks 1 time / Timer lamp blinks 5 times, Wired remote controller: 15) Check run and normal operation cannot be performed in this state. Stop the indoor unit operation by remote controller. When the indoor unit is in the stopped state and error display disappears, perform Check run.

■ PREPARATION

To ensure safety, check that the following work, inspections and operations have been completed.

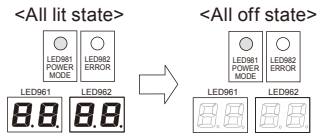
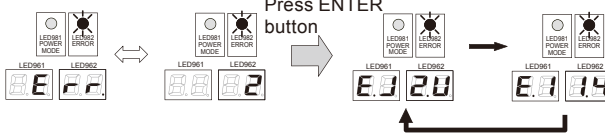
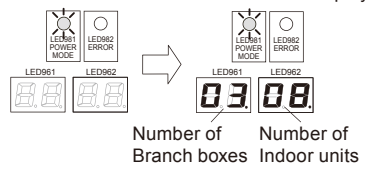
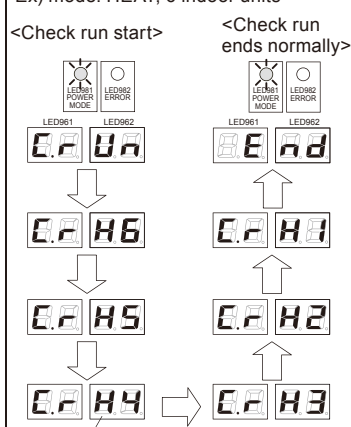
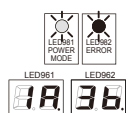
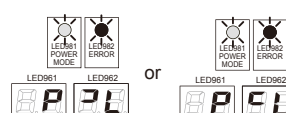
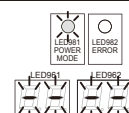
Check Item
1) Check that all work on the piping connecting the outdoor unit, indoor units and branch box has been completed
2) Check that all work on the wiring connecting the outdoor unit, indoor units and branch box has been completed
3) Is there a gas leakage? (At pipe connections {flange connections and brazed areas})
4) Is the system charged with the specified volume of refrigerant?
5) Is a breaker installed at the power supply cable of outdoor unit and every Branch boxes?
6) Are the wires connected to the terminals without looseness, and in accordance with the specifications?
7) Is the 3-way valve of the outdoor unit open? (Gas pipe and liquid pipe)
8) Is power supplied to the crank case heater for more than 12 hours?
9) Has the power supply of the all indoor units turned off ? (Remote controller)

■ RESTRICTIONS APPLICABLE WHEN PERFORMING THE CHECK RUN

- When the Check run starts, all indoor units connected to the outdoor unit will start to run automatically. During the Check run, you cannot check the operation of the indoor units separately. After the Check run, check the operation of the indoor units separately in normal operation.
- The operable temperature ranges for the Check run are: outdoor temperature -15 to 46°C; indoor temperature for cooling 18 to 46°C; indoor temperature for heating -15 to 37°C.
- In the check run, the conditioner will automatically switch between cooling and heating depending on the outdoor temperature and indoor temperature. If the outdoor temperature or indoor temperature is outside the above operable temperature range, wait until the temperature is within the operable range and then perform the Check run.
- Please do not conduct the Check run with all the windows in the room closed. Otherwise the indoor temperature could get too low or too high.
- Depending on the difference of the indoor temperature of each room, a judgment may be impossible.

6-2. CHECK RUN CHECK ITEMS AND PROCEDURE

Use the following procedure to perform the Check run.

Check Item	Procedure	When an Error Occurs
1. Turn on power	<p>1.1 Check communications</p> <ul style="list-style-type: none"> The power is on to the outdoor unit, connected branch boxes, and indoor units. Automatically determined after the power is turned on. The determination takes about 2 minutes. (During this time, the outdoor unit 7 seg. displays are all lit.) The determination is pass if all 7 seg. displays of the outdoor unit turn off. <p><All lit state> <All off state></p> 	<p>When an error occurred</p> <ul style="list-style-type: none"> The number of error is automatically displayed. The error codes can be checked using the ENTER button. After checking the error code, turn off the power and resolve the problem. <p>[Ex] When a branch box error and serial signal error occurred (error during operation).</p> <p><Displays the number of error> <Displays error code></p> <p>The error code switches each time the SELECT button is pressed.</p> <p>Press ENTER button</p> 
	<p>1.2 Compressor preheat operation</p> <ul style="list-style-type: none"> The power is on to the outdoor unit, connected branch boxes, and indoor units. After the power is turned on, preheating of the compressor starts automatically. (Conduct preheating for at least 12 hours.) Confirm that all the outdoor unit 7 seg. displays are off. (If there is an indoor unit, branch box, or outdoor unit error, preheating of the compressor will not be performed.) 	<p>[Caution]</p> <p>If the power has been off for more than 6 hours, preheat the compressor for at least 12 hours before conducting the Check run.</p> <p>When an error occurred</p> <ul style="list-style-type: none"> The number of error is automatically displayed. The error codes can be checked using the ENTER button. After checking the error code, turn off the power and resolve the problem. Turn the power on again.
2. Check run	<p>2.1 Check the number of connected units</p> <ul style="list-style-type: none"> Continue pressing the CHECK button for more than 3 seconds to begin checking the number of connected units. After the number of connected units is shown in the outdoor unit 7 seg. display, check if the number of installed branch boxes and indoor units has been detected correctly. <p><All off state> <Number of units display></p>  <p>Number of Branch boxes Number of Indoor units</p>	<p>If the number of displayed units does not match the number of installed units</p> <p>If the number of units displayed by the outdoor unit indicators does not match the number of installed branch boxes and indoor units, <u>recheck the wiring work and perform the Check run again.</u></p>
	<p>2.2 Check connected positions</p> <ul style="list-style-type: none"> Continue pressing the CHECK button for more than 3 seconds to begin operation to check the connected positions. The determination takes about 1 hour. (During this time the outdoor unit 7 seg. display will show "C.rUn".) The determination is pass when "End" is displayed on the outdoor unit 7 seg. display. <p>Ex) mode: HEAT, 6 indoor units</p> <p><Check run start> <Check run ends normally></p>  <p>H: HEAT, C: COOL</p> <p><u>Check run has been completed. Please conduct the test run.</u></p>	<p>Wiring Mistake Case 1</p> <p>Connection destination does not match</p>  <p>[Display Explanation]</p> <p>The wire connected to Terminal A of Branch box 1 (left 2-digit) must be rewired to Terminal B of Branch box 3 (right 2-digit).</p> <p>[Caution]</p> <p>The displayed wiring mistake positions are displayed by the indicators in order. Make a note of all of them before turning off the power and rewiring.</p> <p>Wiring Mistake Case 2</p> <p>Problem with the wiring or piping connection</p>  <p>[Display Explanation]</p> <p>Recheck how the wiring and piping are installed. (The number of wires and pipes does not match.)</p> <p>State in which automatic determination cannot be conducted</p>  <p>is displayed</p> <p>This shows the state in which automatic determination of whether there are error positions during operation for the 2.2 Check connected positions cannot be conducted. In this case, press the MODE/EXIT button to end the Check run. Since automatic determination is not possible, visually inspect the wiring and piping and then conduct the test run.</p>
Stopping Check run	<ul style="list-style-type: none"> When you want to stop Check run before it is completed, press the MODE/EXIT button while "C.rUn" is displayed. When Check run has been stopped before it is completed, the system is not in a state where it will run normally. Perform Check run again. 	

SYSTEM DESIGN

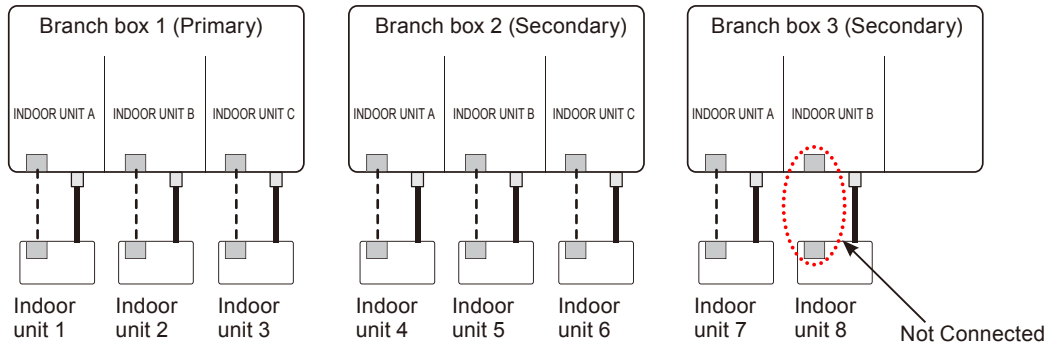
SYSTEM DESIGN

6-3. CHECK RUN EXAMPLES

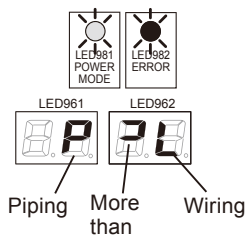
EXAMPLE1



When the number of piping is more than the number of wiring.



[Display (Check run ends)]

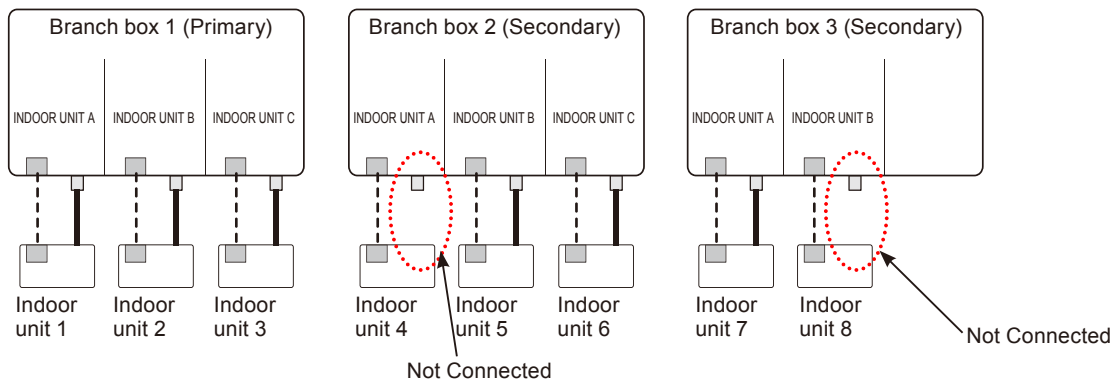


[Coping process]

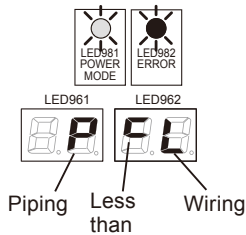
The terminal INDOOR UNIT B of Branch box 3(Secondary) is connected with the wiring for Indoor unit 8.

EXAMPLE2

When the number of piping is less than the number of wiring.



[Display (Check run ends)]

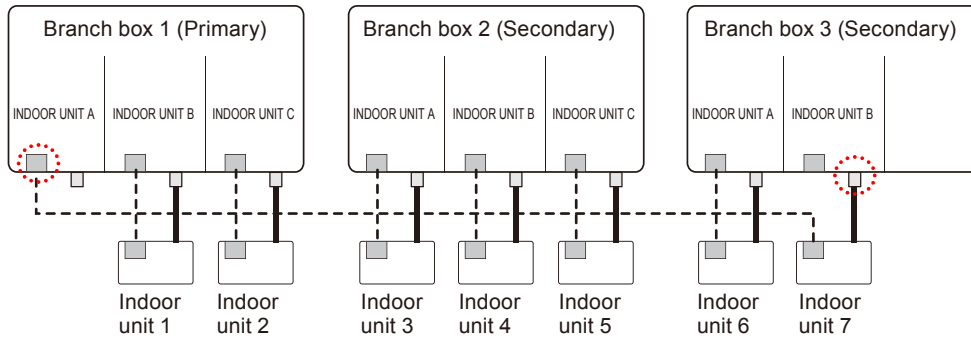


[Coping process]

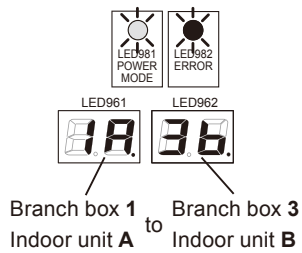
Connect Indoor unit A of Branch box 2(Secondary) with the piping of Indoor unit 4 and Indoor unit B of Branch box 3(Secondary) and the piping of Indoor unit 8.

EXAMPLE 3

When connection destination does not match.



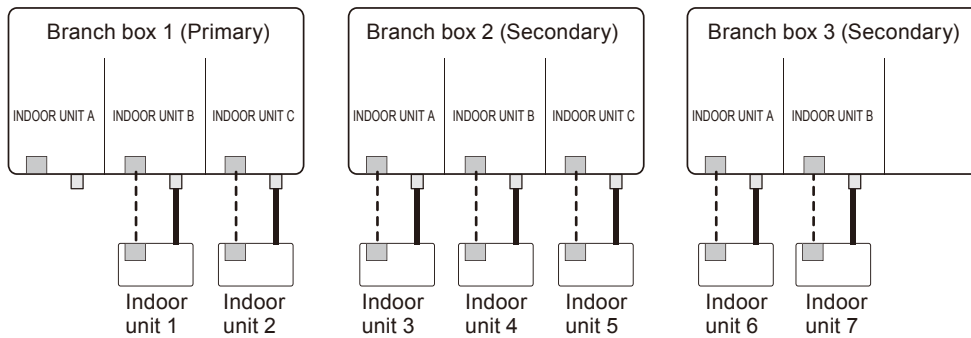
[Display (Check run ends)]



[Coping process]

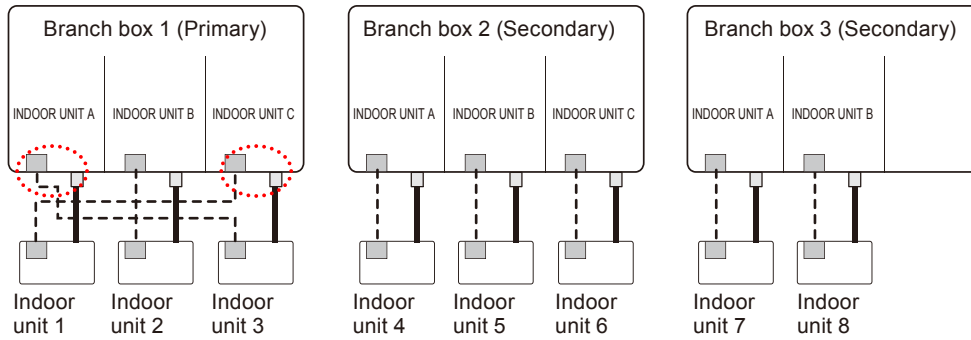
The wire connected to Terminal Indoor unit A of Branch box1(Primary) must be rewired to Terminal Indoor unit B of Branch box 3(Secondary).

[After correcting wiring]

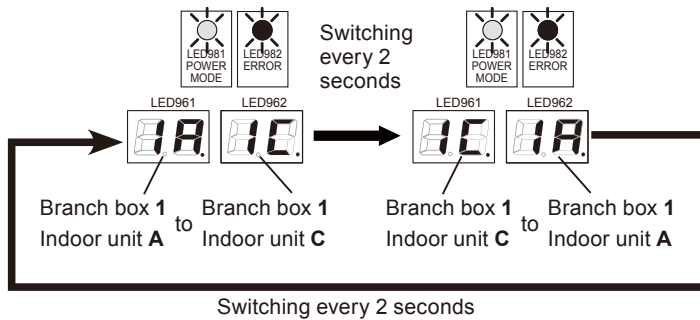


EXAMPLE 4

When connection destination does not match.



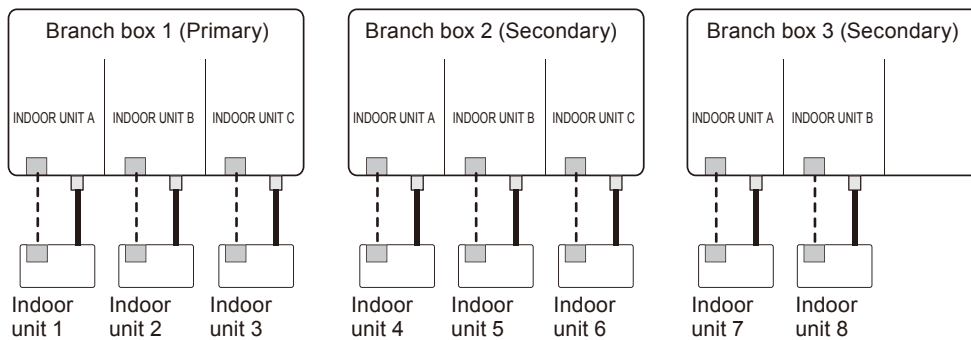
[Display (Check run ends)]



[Coping process]

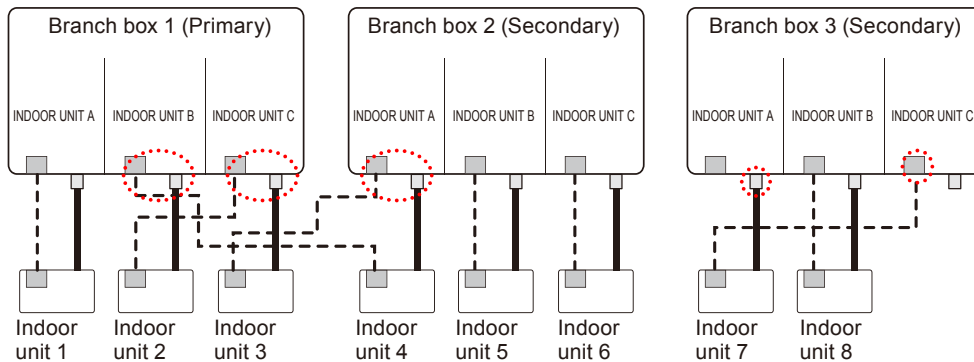
- 1) The wire connected to Terminal Indoor unit A of Branch box1(Primary) must be rewired to Terminal Indoor unit C of Branch box 1(Primary).
- 2) The wire connected to Terminal Indoor unit C of Branch box1(Primary) must be rewired to Terminal Indoor unit A of Branch box 1(Primary).

[After correcting wiring]

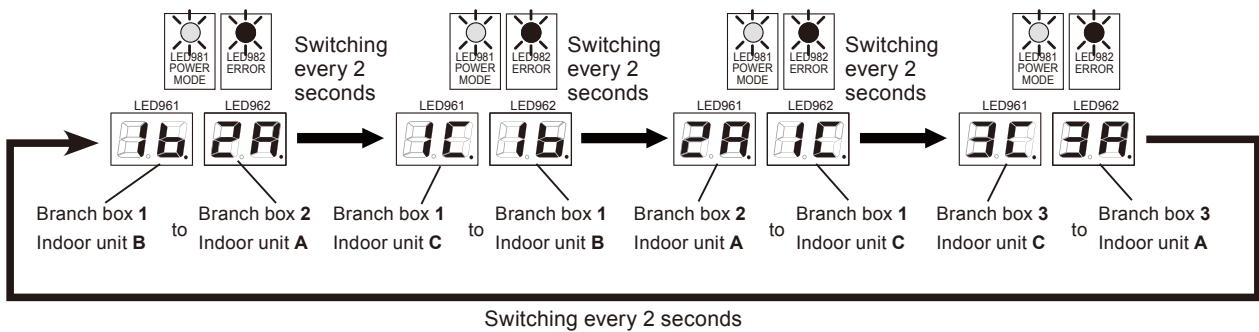


EXAMPLE 5

When connection destination does not match



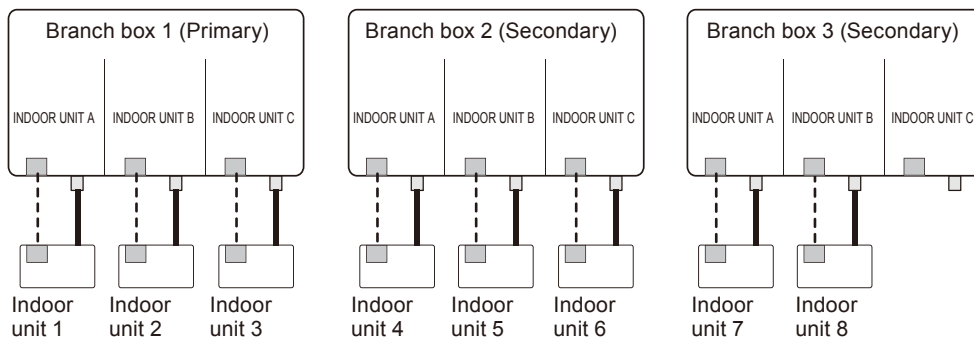
[Display (Check run ends)]



[Coping process]

- 1) The wire connected to Terminal Indoor unit B of Branch box1(Primary) must be rewired to Terminal Indoor unit A of Branch box 2(Secondary).
- 2) The wire connected to Terminal Indoor unit C of Branch box1(Primary) must be rewired to Terminal Indoor unit B of Branch box 1(Primary).
- 3) The wire connected to Terminal Indoor unit A of Branch box2(Secondary) must be rewired to Terminal Indoor unit C of Branch box 1(Primary).
- 4) The wire connected to Terminal Indoor unit C of Branch box3(Secondary) must be rewired to Terminal Indoor unit A of Branch box 3(Secondary).

[After correcting wiring]



6-4. RELOCATION AND INCREASE OF UNIT

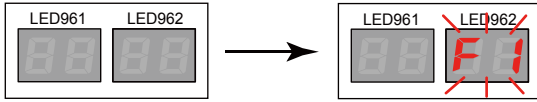
Perform the following operation when the number of indoor unit/branch box is changed or circuit board of branch box/outdoor unit are exchanged.

The air conditioner doesn't work normally if the following operation is not performed.

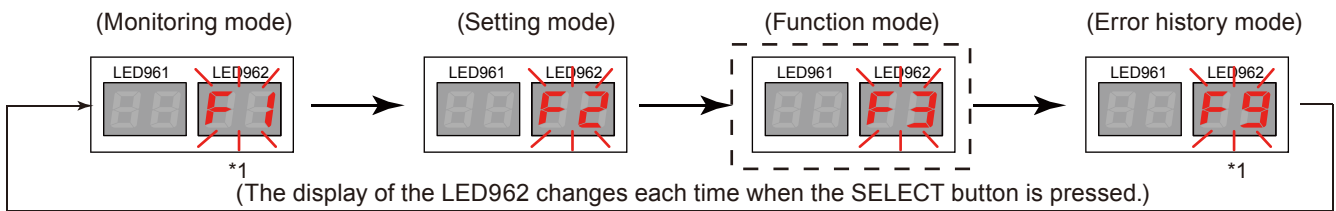
■ OPERATION METHOD

1) Turn on both the power supplies of the outdoor unit and the branch boxes.

2) Press the "MODE/EXIT" button of the outdoor unit when all units are in stop operation state.

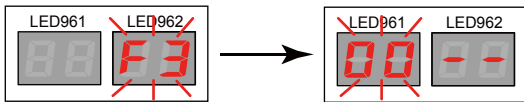


3) Match the 7seg.display to "F3" by press the "SELECT" button.

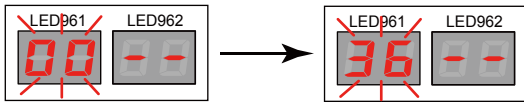


*1: The "F1" and "F9" modes are used for maintenance, so do not set them in regular operation.

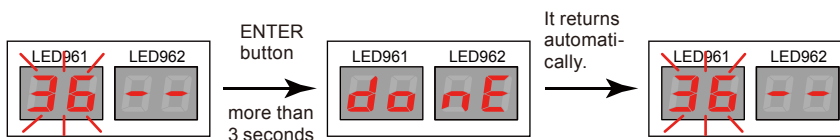
4) Press the "ENTER" button.



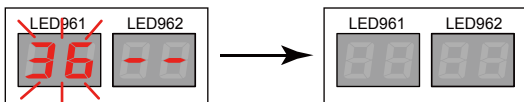
5) Match the 7seg.display to "36" by press the "SELECT" button.



6) Press the "ENTER" button for **more than 3 seconds**.



7) When 7seg.display returns to "36" display, it ends press "MODE/EXIT" button.



Note: Please do not operate anything from the operation of 7) for **more than one minute**.

8) Perform check run (Refer to 6-2). *2

When check run is performed, the relocation and the increase are recognized.

*2: Press the check button, now "-- --" is displayed, please press check button again

7. EXTERNAL INPUT & OUTPUT

7-1. OUTDOOR UNIT

Input	Output	Connector	Remarks
Low noise mode	—	CN931	See external input/output settings for details.
External input priority mode	—	CN932	
Peak cut mode	—	CN933	
Stop operation mode	—	CN934	
—	Error status	CN951	
—	Compressor status	CN952	
—	Base heater	CN206	

7-1-1. EXTERNAL INPUT

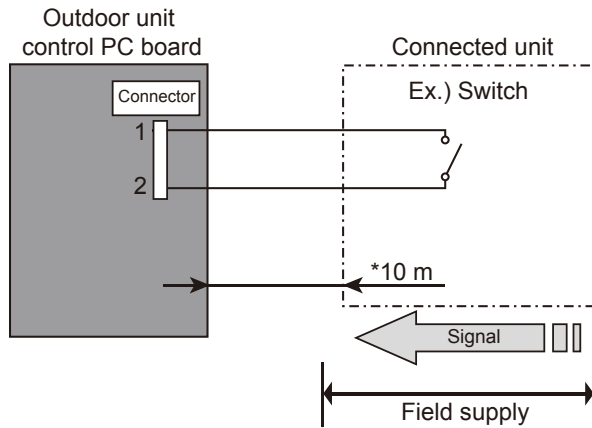
ON/OFF of the "Low noise mode", "External input priority mode", "Peak cut mode", and "Stop operation mode" functions can be changed with an external field device.

■ LOW NOISE MODE

- The following reduces the operating sound of the outdoor unit from the normal sound. The air conditioner is set to the "Low noise mode" when closing the contact input of a commercial timer or ON/OFF switch to a connector on the outdoor control PC board.

* Performance may drop depending on the outside air temperature condition, etc.

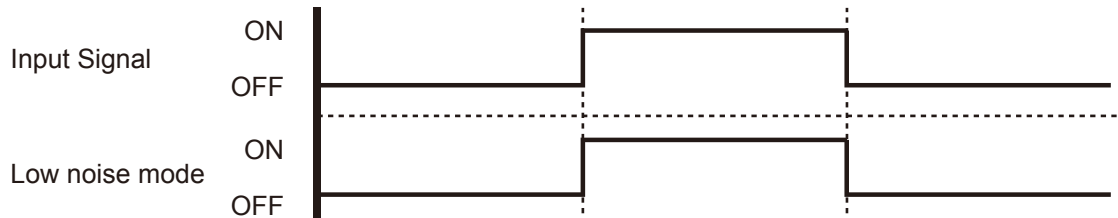
● Circuit diagram example



* Make the distance from the PC board to the connected unit within 10 m.

- Contact capacity: DC 24 V or more, 10 mA or more.
- Use the following parts and construct a circuit as shown above.
- Input Signal...ON: Low noise mode, Input Signal...OFF: Normal operation

* Set the "Low noise mode" level, refer to "5. FUNCTION SETTING".



● Parts (Optional)

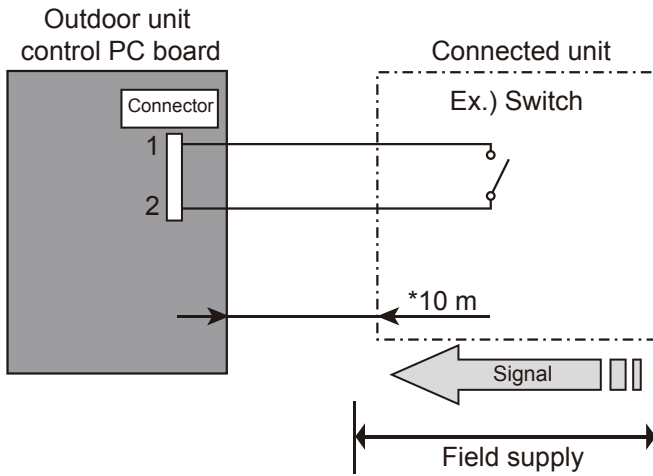
Parts name	External connect kit
Model name	UTY-XWZXZ3



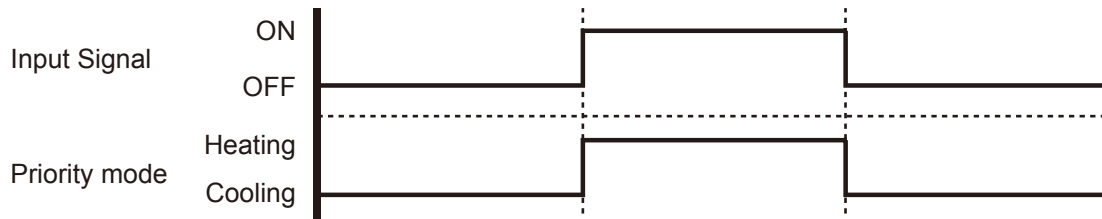
EXTERNAL INPUT PRIORITY MODE

- It is possible to switch to cooling operation or heating operation by using external input.

● Circuit diagram example



- * Make the distance from the PC board to the connected unit within 10 m.
- Contact capacity: DC 24 V or more, 10 mA or more.
- Use the following parts and construct a circuit as shown above.
- Input Signal...OFF: Cooling operation, Input Signal...ON: Heating operation
- *Set the "External input priority mode", refer to "5. FUNCTION SETTING".



● Parts (Optional)

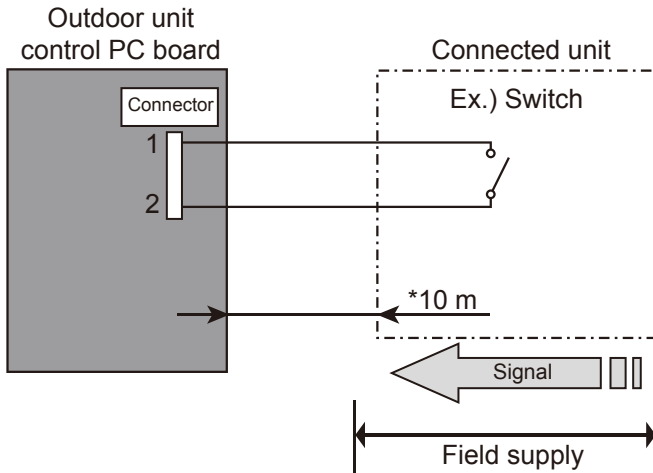
Parts name	External connect kit
Model name	UTY-XWZXZ3



■ PEAK CUT MODE

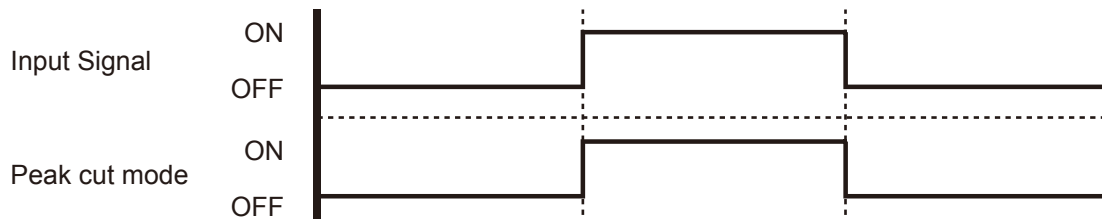
- Operation that suppressed the current value can be performed by means of the following on-site work. The air conditioner is set to the Peak cut mode when closing the contact input of a commercial ON/OFF switch to a connector on the outdoor control PC board.

● Circuit diagram example



* Make the distance from the PC board to the connected unit within 10 m.

- Contact capacity: DC 24 V or more, 10 mA or more.
- Use the following parts and construct a circuit as shown above.
- Input Signal...ON : Peak cut mode, Input Signal...OFF : Normal operation
- *Set the "Peak cut mode" level, refer to "5. FUNCTION SETTING".



● Parts (Optional)

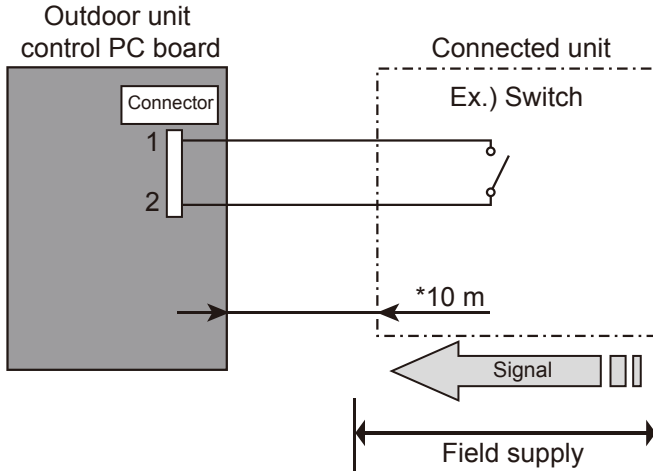
Parts name	External connect kit
Model name	UTY-XWZXZ3



■ STOP OPERATION MODE

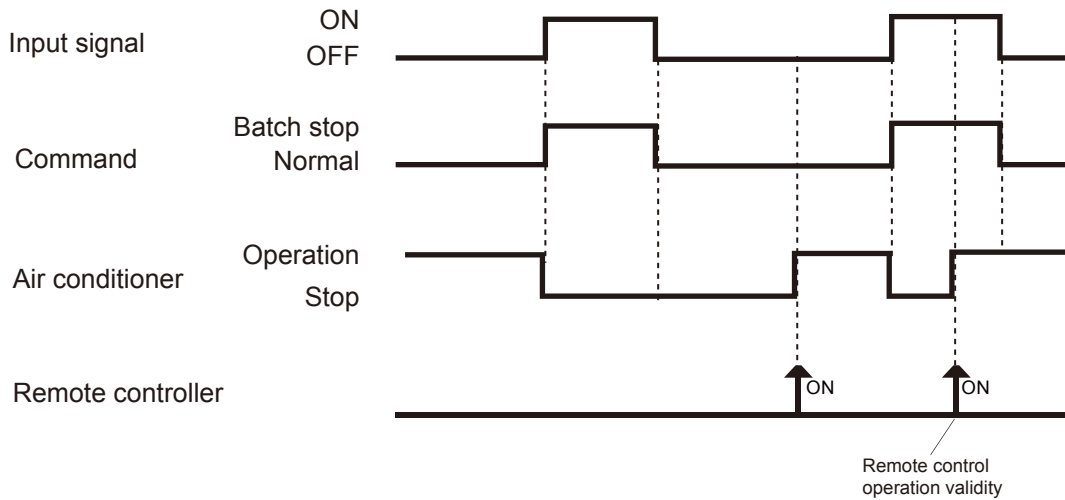
- It is possible to switch to Batch stop or Emergency stop and Normal operation by using external input.

● Circuit diagram example

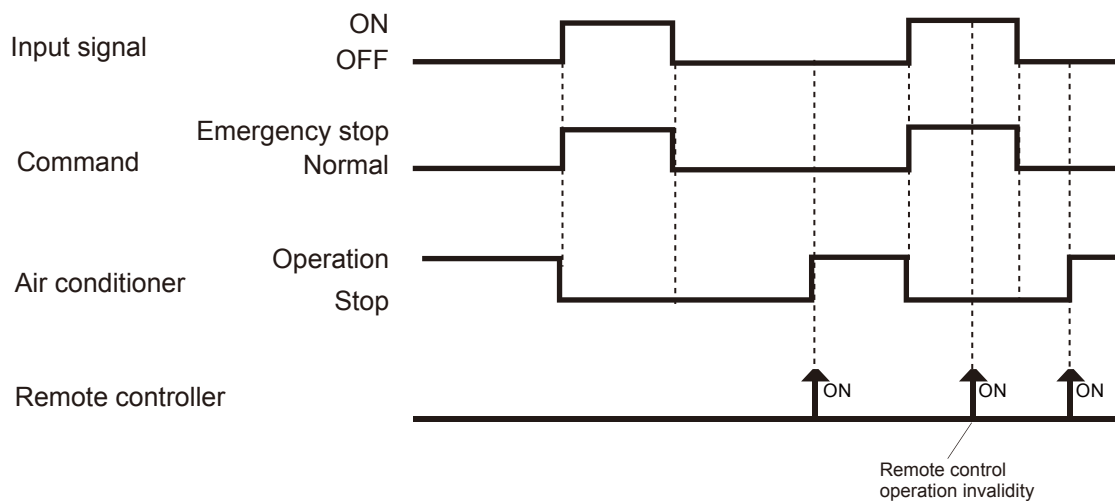


- * Make the distance from the PC board to the connected unit within 10 m.
- Contact capacity: DC 24 V or more, 10 mA or more.
- Use the following parts and construct a circuit as shown above.
- * Set the "Batch stop" or "Emergency stop" pattern, refer to "5. FUNCTION SETTING"

● When function setting is in "Batch stop" mode



- When function setting is in "Emergency stop" mode



● Parts (Optional)

Parts name	External connect kit
Model name	UTY-XWZXZ3

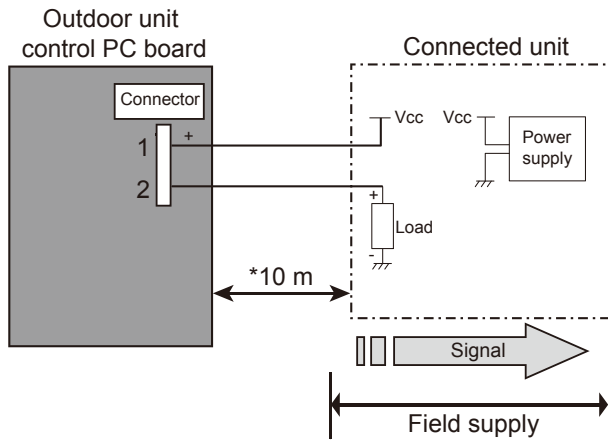


7-1-2. EXTERNAL OUTPUT

■ ERROR STATUS OUTPUT

• An air conditioner error status signal is produced when a malfunction occurs.

● Circuit diagram example



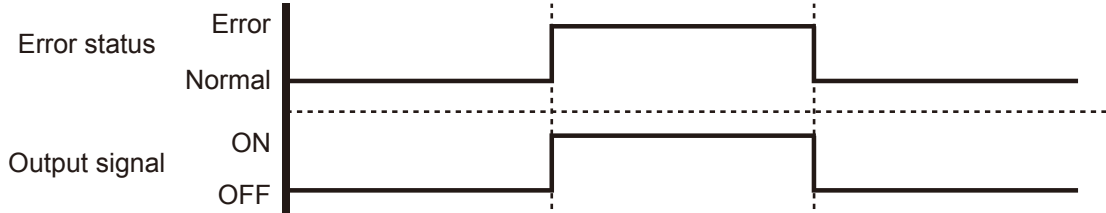
* Make the distance from the PC board to the connected unit within 10 m.

1) Power supply

• Voltage(Chart sign=Vcc): DC 24 V or less

2) Load

• Load: DC 500 mA or less is recommended



● Parts (Optional)

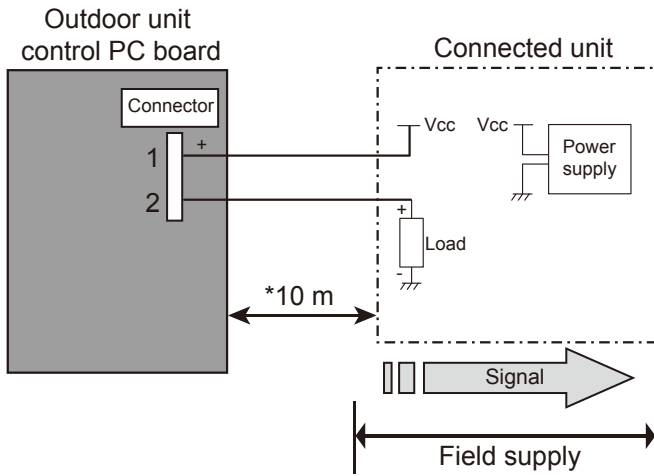
Parts name	External connect kit
Model name	UTY-XWZXZ3



■ COMPRESSOR STATUS OUTPUT

- Compressor operation status signal is produced when the compressor is running.

● Circuit diagram example



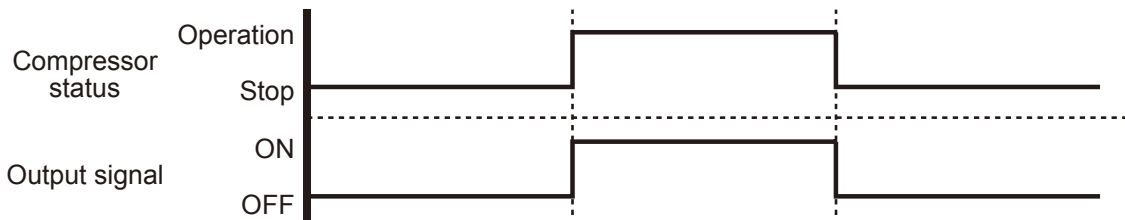
* Make the distance from the PC board to the connected unit within 10 m.

1) Power supply

- Voltage (Chart sign=Vcc): DC 24 V or less

2) Load

- Load: DC 500 mA or less is recommended



● Parts (Optional)

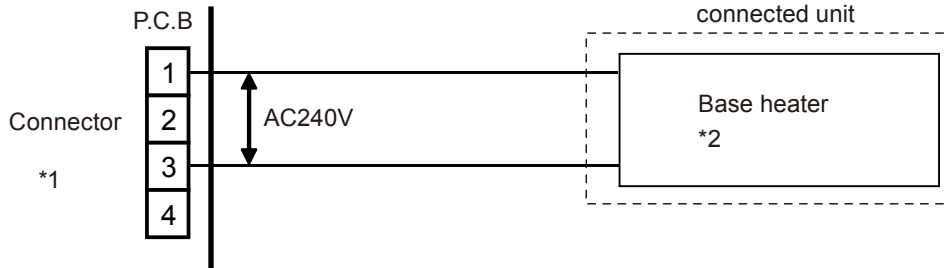
Parts name	External connect kit
Model name	UTY-XWZXZ3



■ BASE HEATER

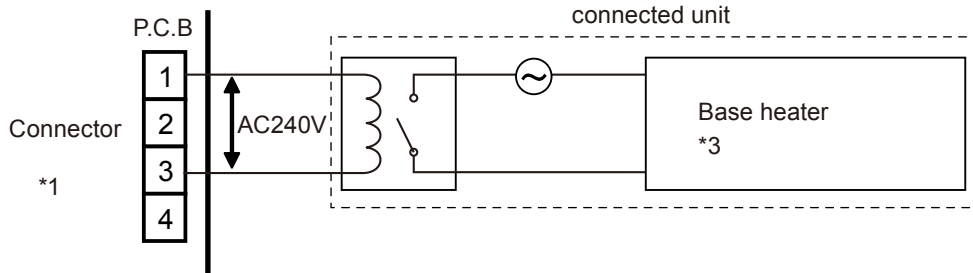
- A base heater is a heating element that may be installed to melt the ice that may accumulate in the condenser drain pan.
- This output signal is produced when the outdoor temperature drops down to 2°C, and releases at 4°C.

● Circuit diagram example

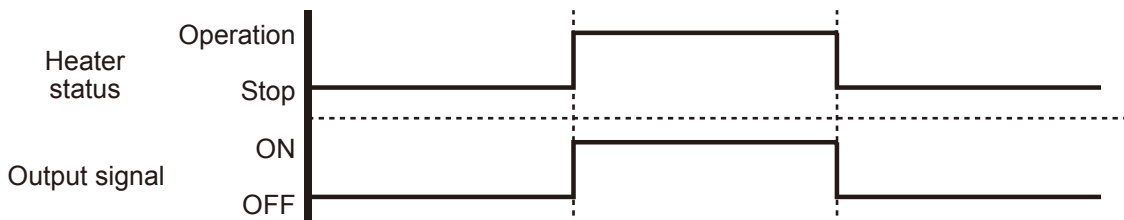


*1: Connect to pin 1 and pin 3. No connection pin 2 and pin 4.

*2: The allowable Input Power is 25W or less.

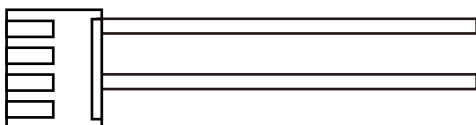


*3: If a load greater than 25W is applied, a contactor or relay should be used to operate and control the base heater.



● Parts (Optional)

Parts name	External connect kit
Model name	UTY-XWZXZ4



7-2. INDOOR UNIT

Indoor unit type	EXTERNAL INPUT		EXTERNAL OUTPUT		
	Control input	Operation status output	Fresh air control output	Auxiliary heater output	Error status output
Compact Cassette	●	●	●	-	-
Slim Duct	●	●	●	●	-
Wall Mounted	●	●	-	-	● (LU / LM types)
Floor / Ceiling	●	●	-	-	-
Floor	●	●	-	-	-

7-2-1. EXTERNAL INPUT

■ CONTROL INPUT (Operation/Stop or Forced stop)

	Compact Cassette	Slim Duct	Wall Mounted			Floor / Ceiling	Floor
			LJ	LU / LM	LF		
Connector	CN102	CN102	CN303	CNA01	CN14	CN102	CN14

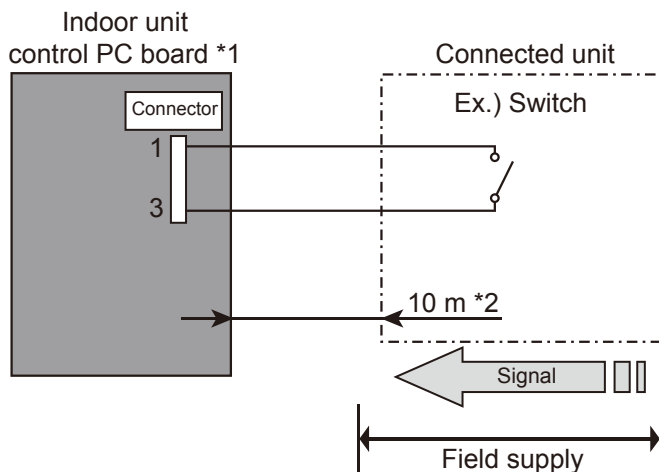
The air conditioner can be remotely operated by means of the following on-site work.

"Operation/Stop" mode or "Forced stop" mode can be selected with function setting of indoor unit.

Unit operation is started at the following contents by adding the contact input of a commercial ON/OFF switch to a connector on the external control PC board and turning it ON.

Unit operation	Initial setting after power is ON	Starting mode other than initial setting
Operation mode	Auto changeover	Mode at previous operation
Set temperature	24°C	Temperature at previous operation
Air flow mode	AUTO	Mode at previous operation
Air direction (swing)	Standard air direction (swing OFF)	Air direction at previous operation

● Circuit diagram example



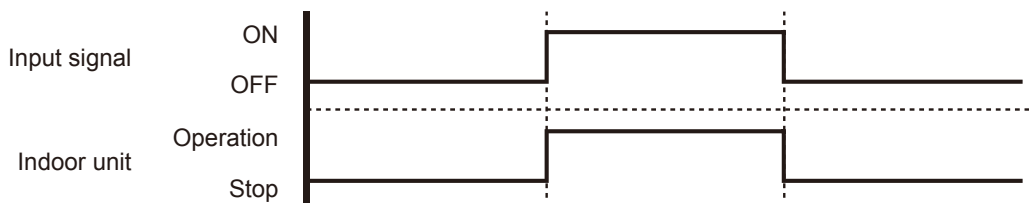
*1 PC board of Communication kit is used for Wall mounted type (LJ, LU, LM).

*2 Make the distance from the PC board to the connected unit within 10 m.

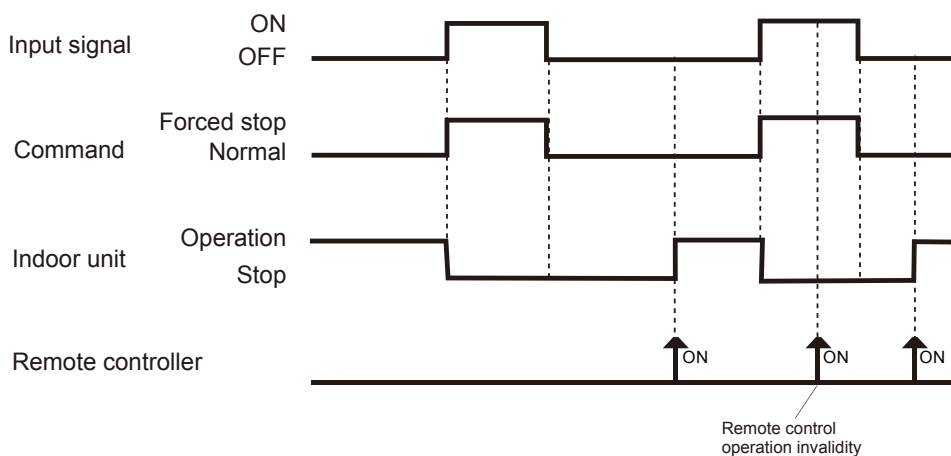
• Contact capacity: DC 24 V or more, 10 mA or more.

Indoor unit type		1 Pin (Polarity)	3 Pin (Polarity)
Compact Cassette		-	+
Slim Duct		-	+
Wall Mounted	LJ	+	-
	LU	-	+
	LM	-	+
	LF	-	+
Floor / Ceiling		-	+
Floor		-	+

- When function setting is in "Operation/Stop" mode



- When function setting is in "Forced stop" mode



● Parts (Optional)

	Compact Cassette	Slim Duct	Wall Mounted			Floor / Ceiling	Floor
			LJ	LU / LM	LF		
Parts name	External connect kit						
Model name	UTY-XWZX	UTD-ECS5A	UTY-XWZX	UTY-XWZXZ5	UTY-XWZX		



(UTY-XWZX)



(UTD-ECS5A)



(UTY-XWZXZ5)

	Compact Cassette	Slim Duct	Wall Mounted				Floor / Ceiling	Floor
			LJ	LU	LM	LF		
Parts name	-	-	Communication kit				-	-
Model name	-	-	UTY-XCBXZ1	UTY-TWBXF	UTY-XCBXZ2	-	-	-

*For operating the EXTERNAL INPUT function, the wall mounted type (LJ, LU, LM) requires the communication kit (UTY-XCBXZ1, UTY-TWBXF, UTY-XCBXZ2) in addition to the wire (UTY-XWZX, UTY-XWZXZ5).

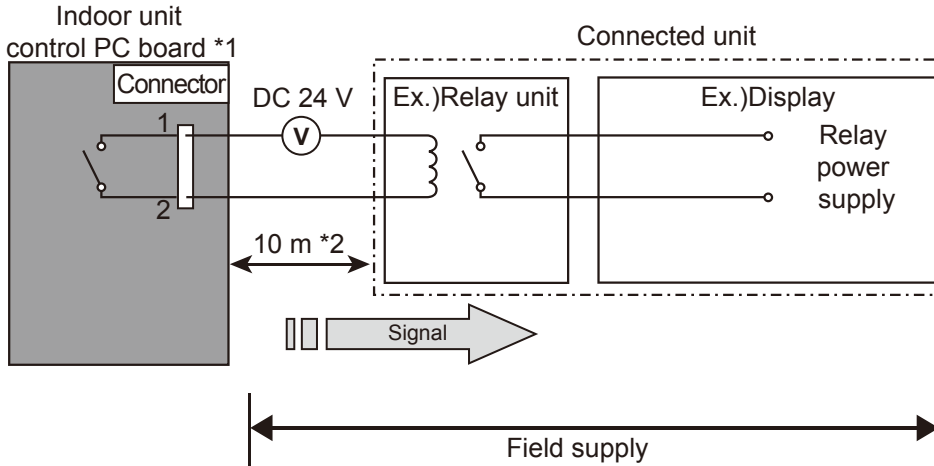
7-2-2. EXTERNAL OUTPUT

■ OPERATION STATUS OUTPUT

	Compact Cassette	Slim Duct	Wall Mounted			Floor / Ceiling	Floor
			LJ	LU / LM	LF		
Connector	CN103	CN103	CN304	CNB01	CN16	CN103	CN20

An air conditioner operation status signal can be output.

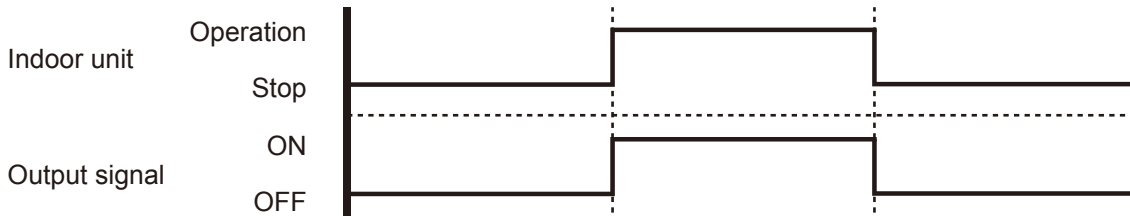
● Circuit diagram example



*1 PC board of Communication kit is used for Wall mounted type..

*2 Make the distance from the PC board to the connected unit within 10 m.

• Relay spec.: Max. DC 24 V, 10 mA to less than 500 mA.



● Parts (Optional)

	Compact Cassette	Slim Duct	Wall Mounted			Floor / Ceiling	Floor
			LJ	LU / LM	LF		
Parts name	External connect kit						
Model name	UTY-XWZX	UTD-ECS5A	UTY-XWZX	UTY-XWZXZ5	UTY-XWZX		



	Compact Cassette	Slim Duct	Wall Mounted				Floor / Ceiling	Floor
			LJ	LU	LM	LF		
Parts name	-	-	Communication kit				-	-
Model name	-	-	UTY-XCBXZ1	UTY-TWBXF	UTY-XCBXZ2	-	-	-

*For operating the EXTERNAL OUTPUT function, the Wall mounted type (LJ, LU, LM) requires the communication kit (UTY-XCBXZ1, UTY-TWBXF, UTY-XCBXZ2) in addition to the wire (UTY-XWZX, UTY-XWZXZ5).

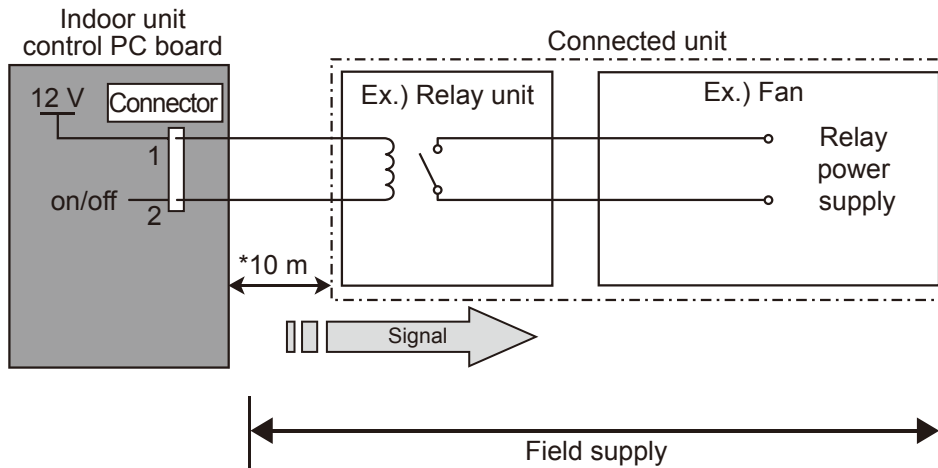
■ FRESH AIR CONTROL OUTPUT

	Compact Cassette	Slim Duct	Wall Mounted	Floor / Ceiling	Floor
Connector	CN6	CN6	-	-	-

A signal linked to air conditioner indoor fan ON can be output.

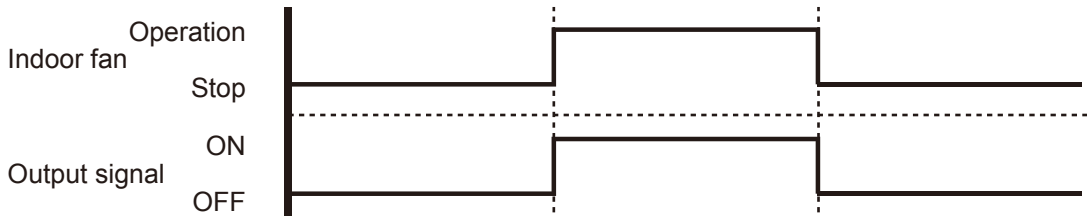
* However, signal becomes OFF during cold air prevention control operation.

● Circuit diagram example



* Make the distance from the PC board to the connected unit within 10 m.

• Relay spec.: Rated DC 12 V, 50 mA to less.



● Parts (Optional)

	Compact Cassette	Slim Duct	Wall Mounted	Floor / Ceiling	Floor
Parts name	Fresh air intake kit	External control set	-	-	-
Model name	UTZ-VXAA *1	UTD-ECS5A	-	-	-



NOTE: This wire is included in Fresh air intake kit (UTZ-VXAA).

AUXILIARY HEATER OUTPUT

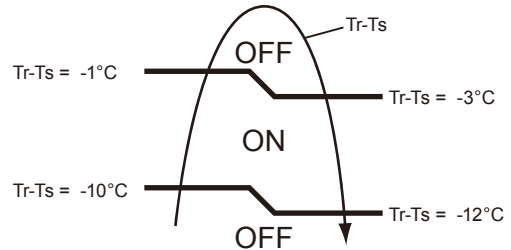
	Compact Cassette	Slim Duct	Wall Mounted	Floor / Ceiling	Floor
Connector	-	CN10	-	-	-

A signal is outputted from Connector when indoor fan and compressor turn on under heating operation.

*Signal output performance specifications are as shown on the right

Ex. When Set Temperature(T_s) is 22°C;

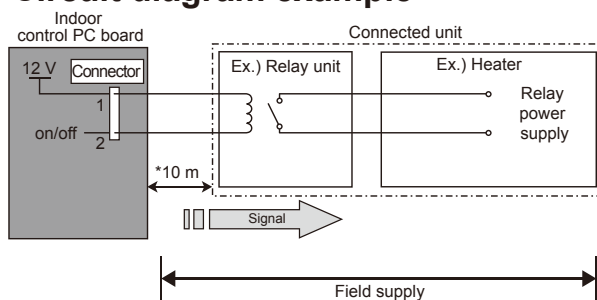
- and Room Temperature(T_r) increase above 12°C, signal output is on.
- and Room Temperature(T_r) increase above 21°C, signal output is off.
- and Room Temperature(T_r) decrease below 19°C, signal output is on.
- and Room Temperature(T_r) decrease below 10°C, signal output is off.



Fan delay setting (JM3)

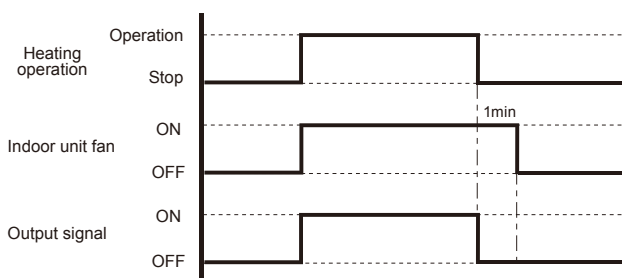
This is used to continue indoor unit fan operation for 1 minute after thermo OFF in heating mode. 1 minute delay control set by cutting jumper wire on PCB.

Circuit diagram example



* Make the distance from the PC board to the connected unit within 10 m.

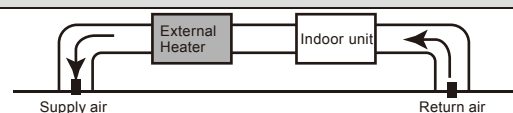
- Relay spec.: DC 12 V, 50 mA to less.



CAUTION

Please place an external heater between the indoor unit and the outlet.

Please be sure to use delay control of the fan.



Parts (Optional)

	Compact Cassette	Slim Duct	Wall Mounted	Floor / Ceiling	Floor
Parts name	-	External control set	-	-	-
Model name	-	UTD-ECS5A	-	-	-

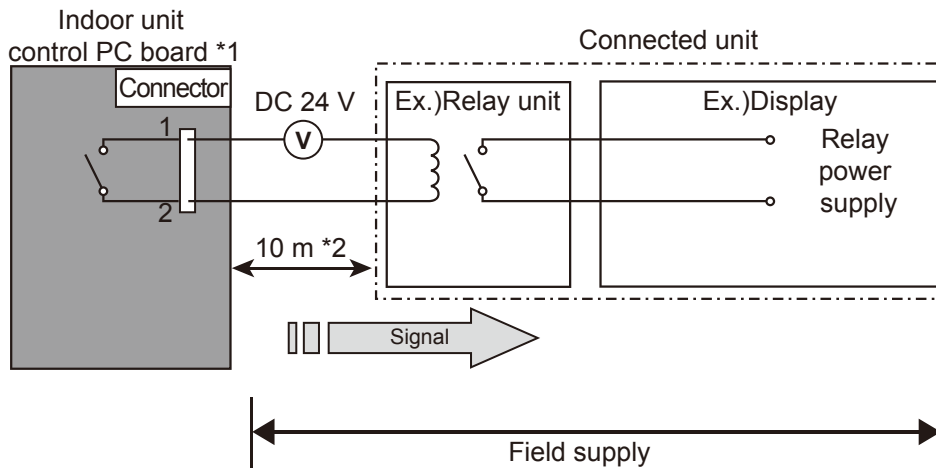


■ ERROR STATUS OUTPUT

	Compact Cassette	Slim Duct	Wall Mounted			Floor / Ceiling	Floor
			LJ	LU / LM	LF		
Connector	-	-	-	CNB02	-	-	-

An air conditioner error status signal can be output.

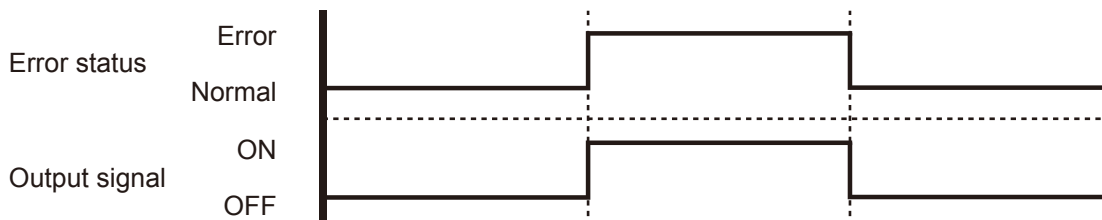
● Circuit diagram example



*1 PC board of Communication kit is used for Wall mounted type..

*2 Make the distance from the PC board to the connected unit within 10 m.

• Relay spec.: Max. DC 24 V, 10 mA to less than 500 mA.



● Parts (Optional)

	Compact Cassette	Slim Duct	Wall Mounted			Floor / Ceiling	Floor
			LJ	LU / LM	LF		
Parts name	-	-	-	External connect kit	-	-	-
Model name	-	-	-	UTY-XWZXZ5	-	-	-



	Compact Cassette	Slim Duct	Wall Mounted				Floor / Ceiling	Floor
			LJ	LU	LM	LF		
Parts name	-	-	-	Communication kit		-	-	
Model name	-	-	-	UTY-TWBXF	UTY-XCBXZ2	-	-	

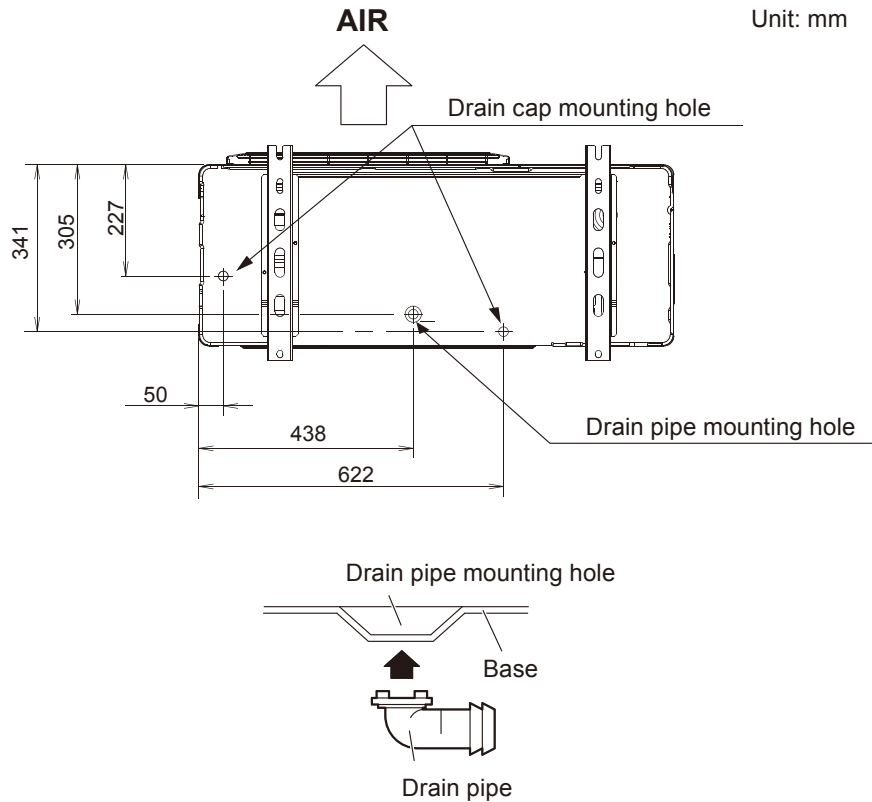
*For operating the EXTERNAL OUTPUT function, the Wall mounted type (LU, LM) requires the communication kit (UTY-TWBXF, UTY-XCBXZ2) in addition to the wire (UTY-XWZXZ5).

8. DRAIN CONNECTION

8-1. OUTDOOR UNIT

⚠ CAUTION
Perform drain work in accordance with this Manual, and ensure that the drain water is properly drained. If the drain work is not carried out correctly, water may drip down from the unit, wetting the furniture.
When the outdoor temperature is 0 °C or less, do not use the accessory drain pipe and drain cap. If the drain pipe and drain cap are used, the drain water in the pipe may freeze in extremely cold weather.

- As the drain water flows out of the outdoor unit during heating operation, install the drain pipe and connect it to a commercial 16 mm hose.
- When installing the drain pipe, plug all the holes other than the drain pipe mounting hole in the bottom of the outdoor unit with drain cap so there is no water leakage.



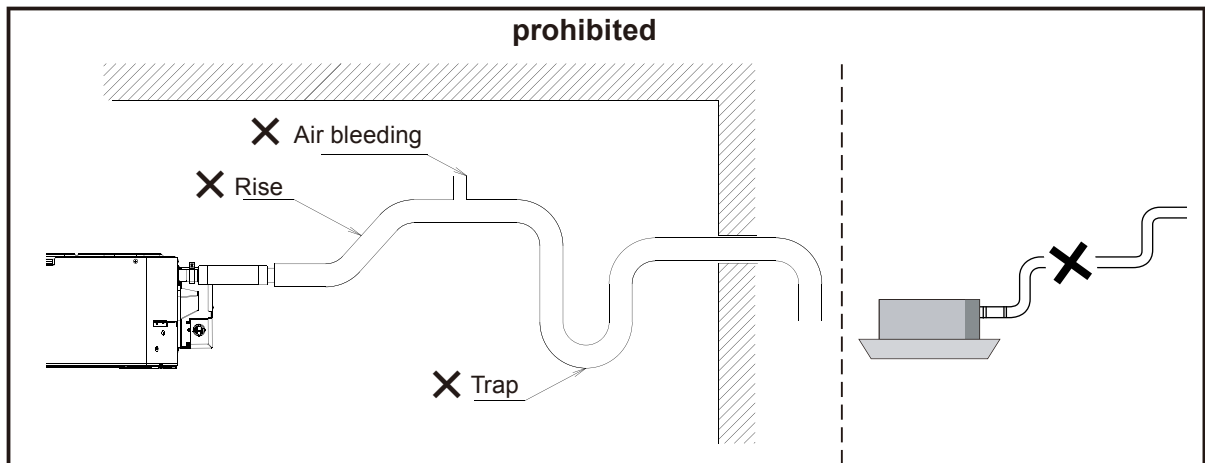
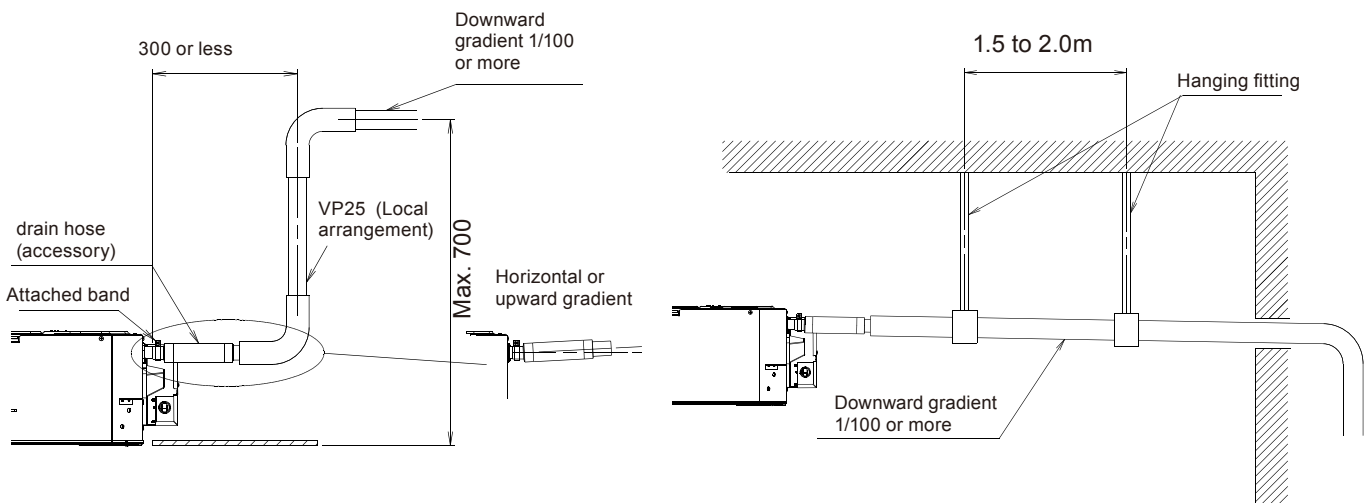
8-2. INDOOR UNIT

■ GENERAL RULES OF DRAIN PROCESS

- Install the drain pipe with downward gradient (1/100 or more) and so there are no rises in the pipe.
- Use general hard polyvinyl chloride pipe and connect it with adhesive (polyvinyl chloride) so that there is no leakage.
- Support the drain pipe with supporters each 1.5 to 2.0m.
- Do not perform air bleeding.
- Always heat insulate the indoor side of the drain pipe.
- When connecting the drain hose to the indoor unit, use the accessory band. (Except wall mounted type)

■ COMPACT CASSETTE TYPE

Unit: mm

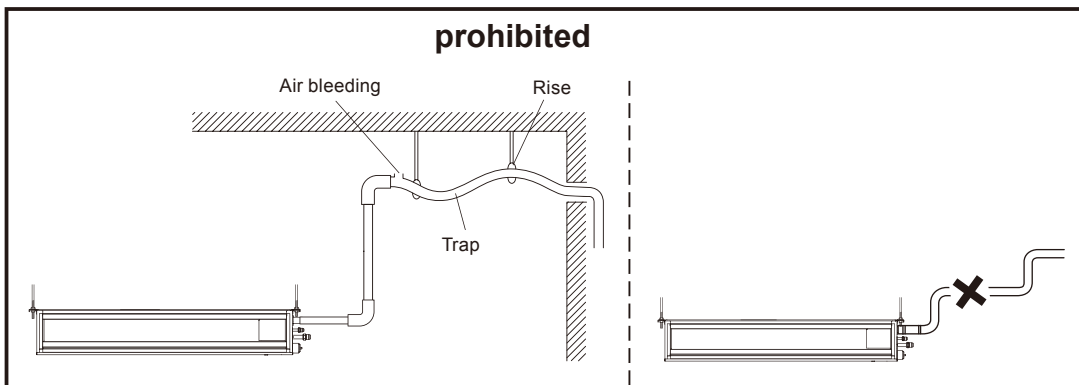
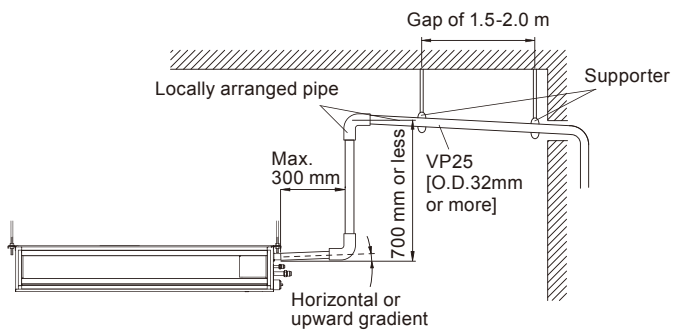
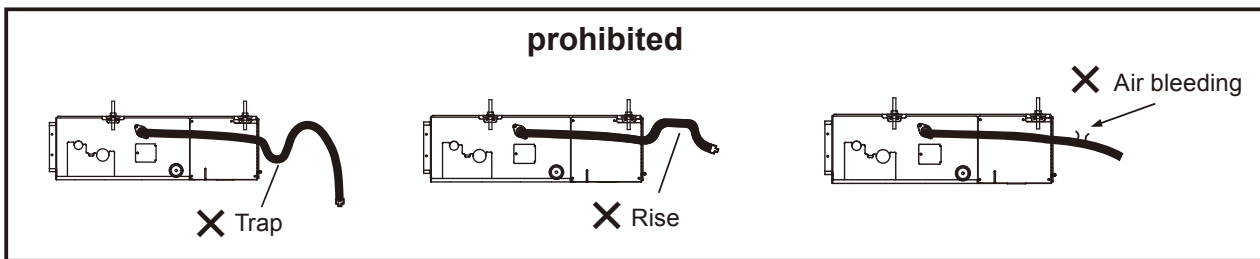
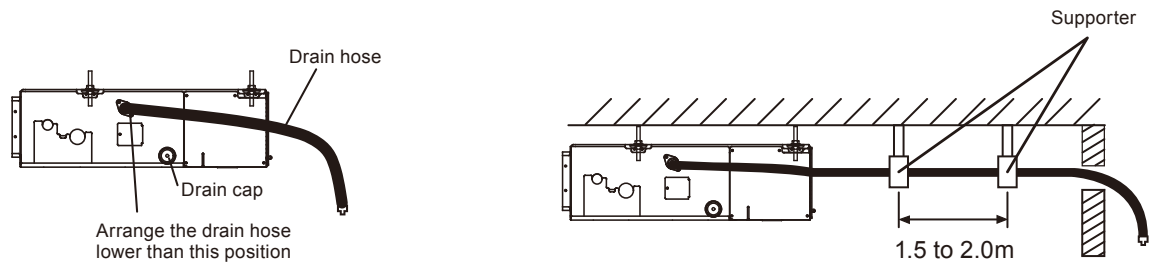


⚠ CAUTION

- Drain lift-up pipe restrictions:
 - (1) Lift-up height ≤ 700 mm (from ceiling)
 - (2) Drain hose (pipe) length ≤ 300 mm (between indoor unit and lift-up pipe)
- When dimensions exceed the above restrictions, it will cause water leakage.

■ SLIM DUCT TYPE

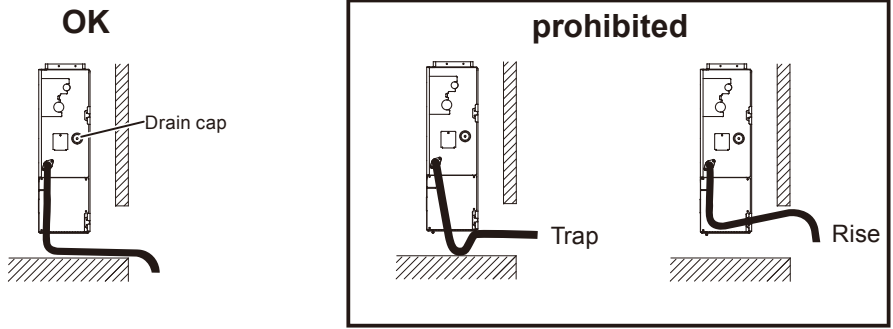
● Ceiling concealed setting



⚠ CAUTION

- Drain lift-up pipe restrictions:
 - (1) Lift-up height \leq 700mm (from ceiling)
 - (2) Drain hose (pipe) length \leq 300mm (between indoor unit and lift-up pipe)
- When dimensions exceed the above restrictions, it will cause water leakage.

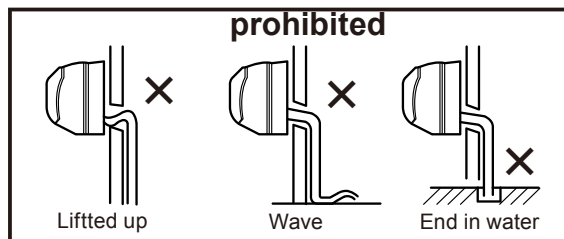
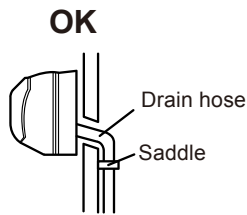
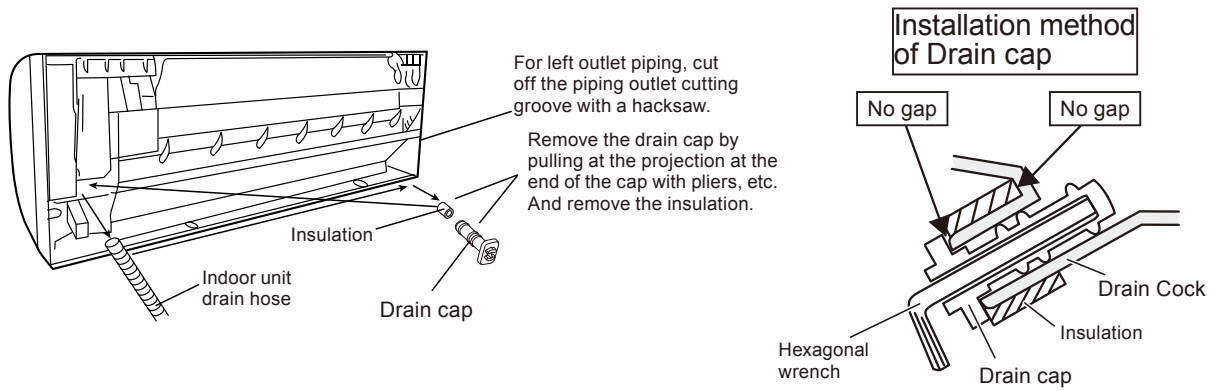
● Floor standing concealed setting



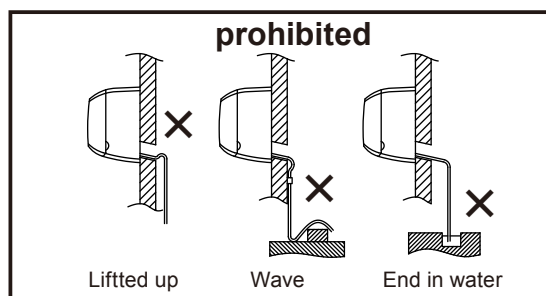
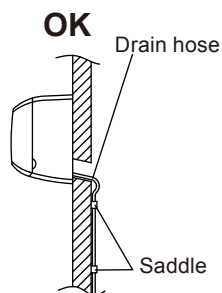
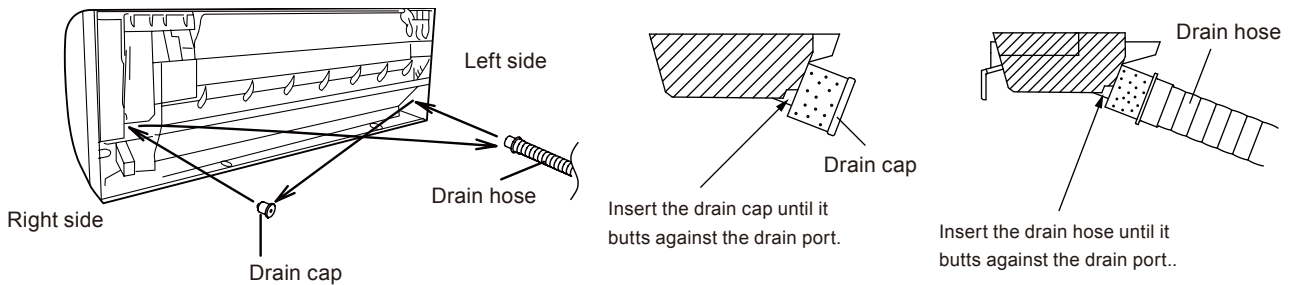
⚠ CAUTION

- Drain lift-up cannot be done for Floor standing concealed setting.

■ WALL MOUNTED TYPE (LJ, LU, LM)

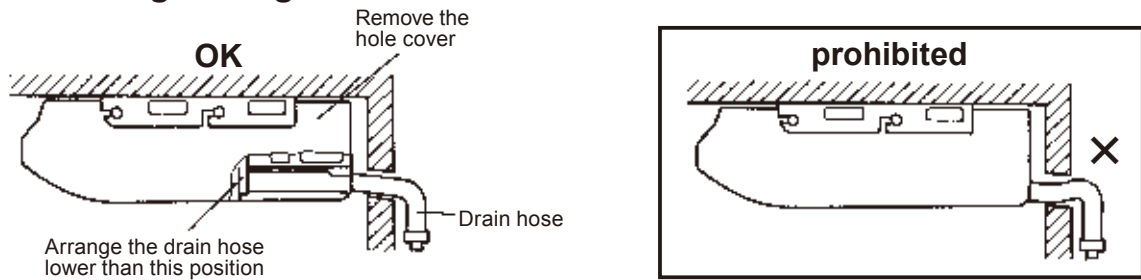


■ WALL MOUNTED TYPE (LF)

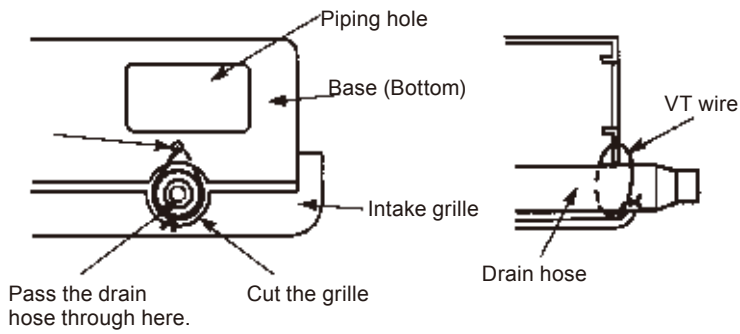


■ FLOOR / CEILING TYPE

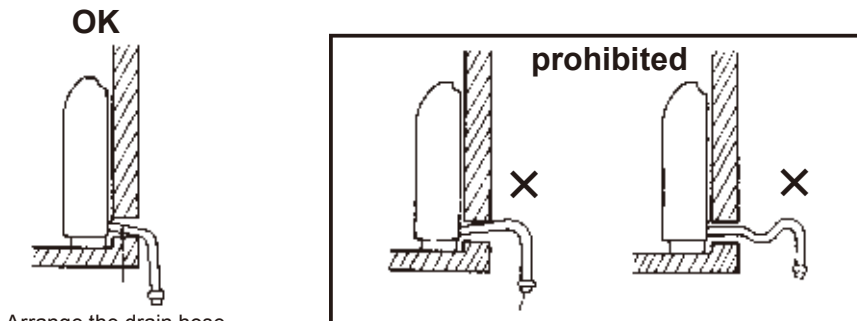
● Under ceiling setting



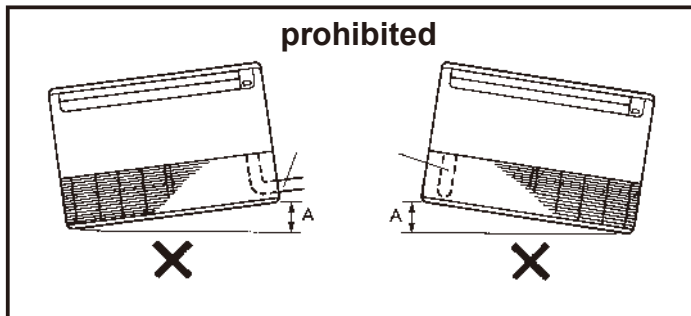
When drain hose is arranged backward.
Secure the drain hose with the VT wire.



● Floor console setting



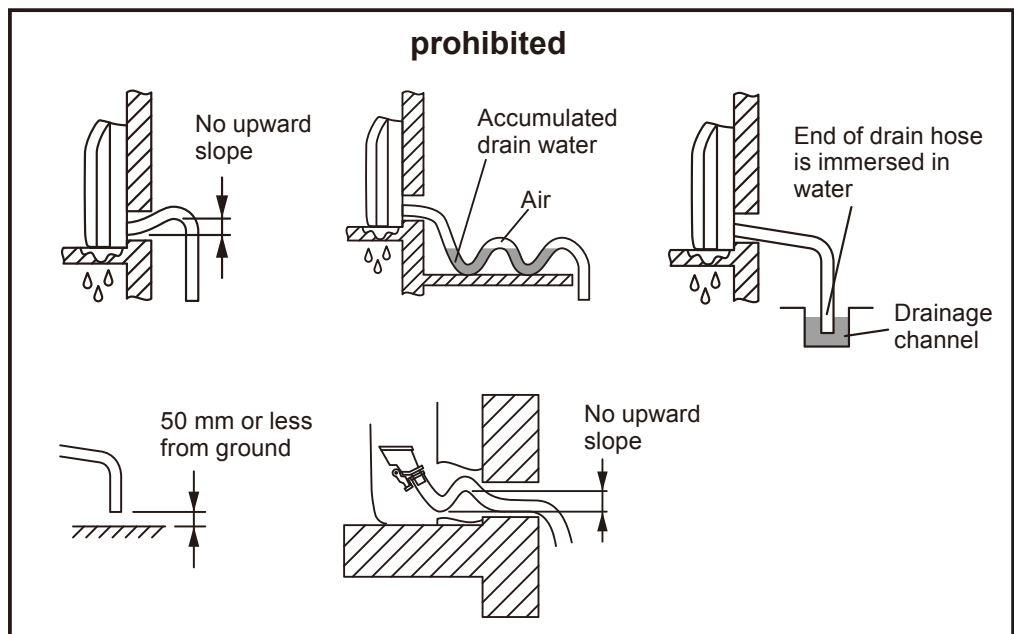
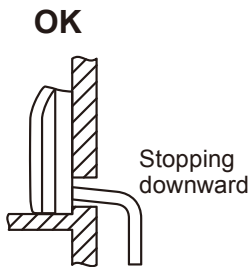
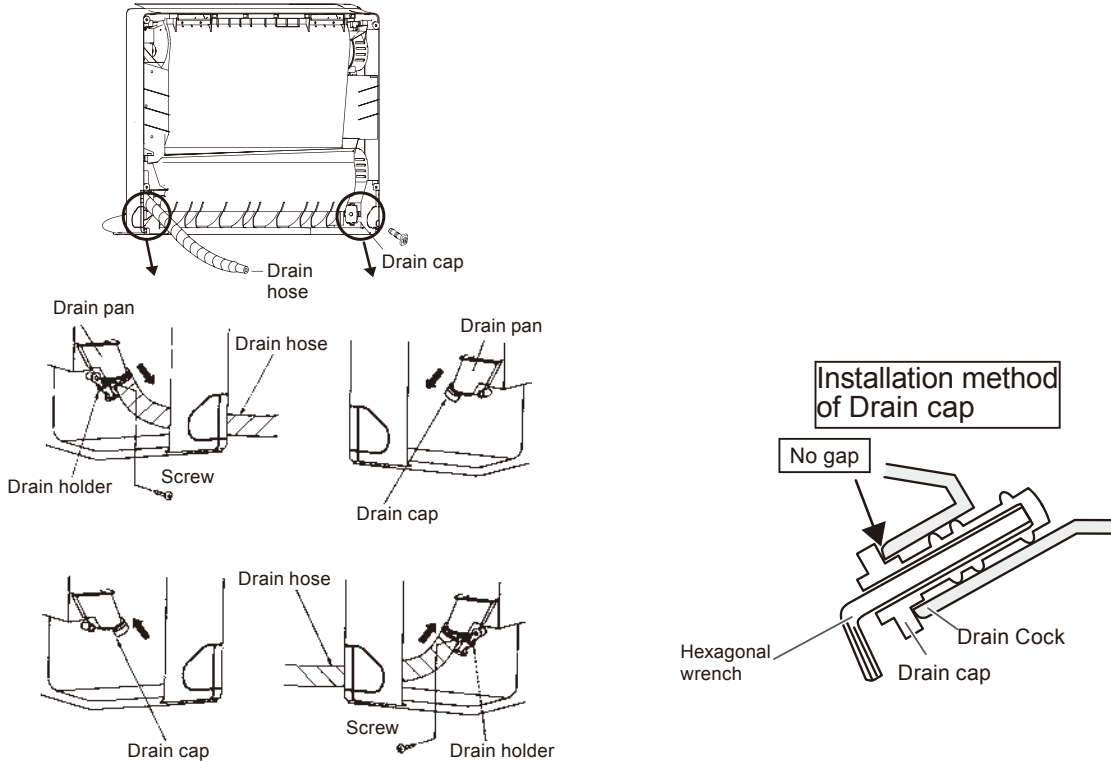
Arrange the drain hose lower than this position



- Do not install the unit so that the drain hose side is too high.
- Height A should be less than 5mm.

■ FLOOR TYPE

- The drain hose can be connected at either side of the indoor unit.
- The unit has been shipped with the drain hose connected at left (viewed from the back of the unit) and the drain cap applied at right.

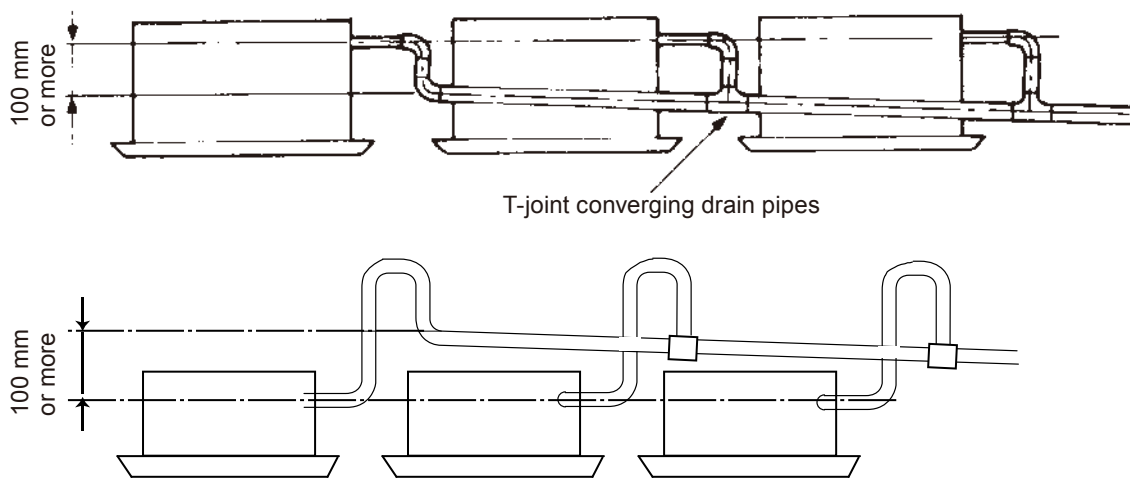


⚠ CAUTION

- In order to align the drain hose and drain cap, be sure to insert securely and vertically. Incline insertion will cause water leakage.
- When inserting, be sure not to attach any material besides water. If any other material is attached, it will cause deterioration and water leakage.
- After removing drain hose, be sure not to forget mounting drain cap.
- Be sure to fix the drain hose with tape to the bottom of piping.

■ CENTRAL DRAIN PROCESS

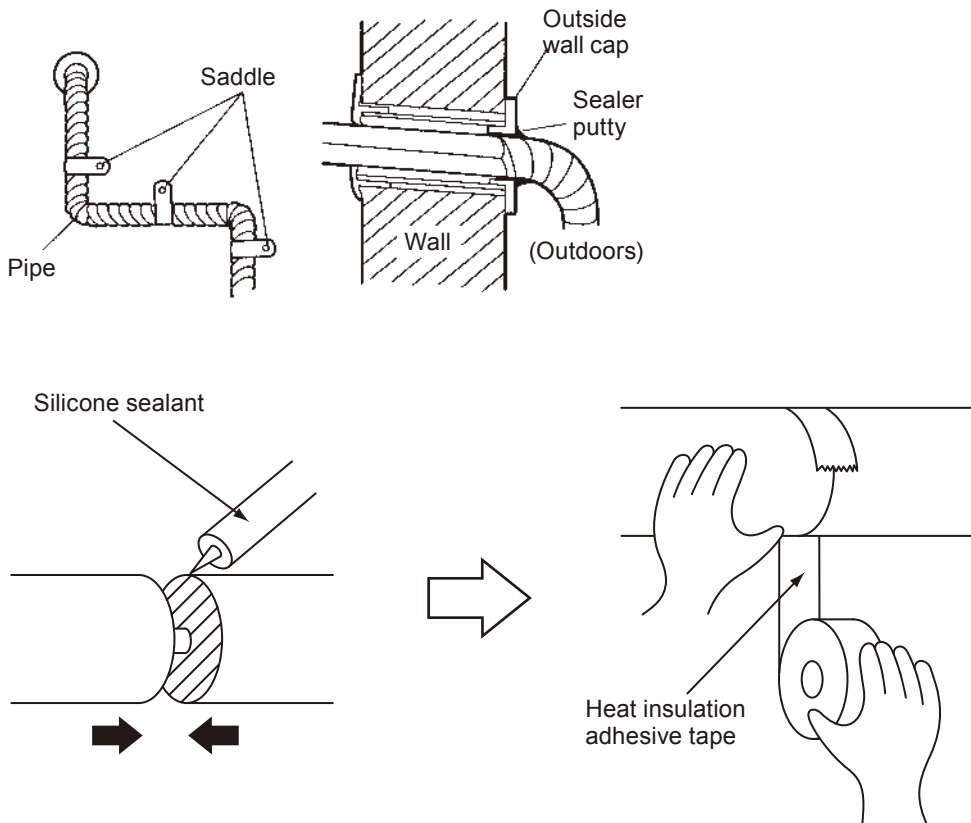
When converging multiple drain pipes, install according to the procedure shown below.



Select converging drain pipes whose diameter is suitable for the operating capacity of the unit.

■ DRAIN INSULATION

- Please confirm water flows 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 any water leak in the Drain piping.
- Please insulate the pipe from heat using a heat insulator with enough thickness so that there is no dew.
- Fix the drain pipe on to the wall with saddle.
- After putting out the Drain hose from the wall, please cover the space with the putty etc.
- Be sure to coat the entire end surface. If there is a gap, it could cause condensation.








9. STANDARD ACCESSORIES

9-1. OUTDOOR UNIT

The following installation parts are supplied. Use them as required.







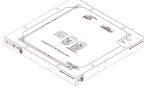


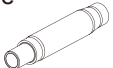






Do not discard any accessories until the installation work has been completed.

Name and shape	Q'ty	Application
Installation manual 	1	
Drain pipe 	1	For outdoor unit drain piping work
Drain cap 	2	For outdoor unit drain piping work
Cable tie 	3	For binding power cable and connection cable
One-touch bush 	2	For power supply cable and connection cable installation





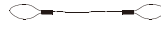


9-2. INDOOR UNIT

■ COMPACT CASSETTE TYPE



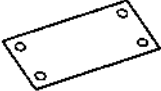
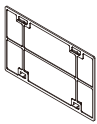
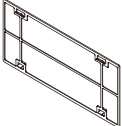


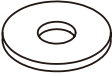

INDOOR UNIT ACCESSORIES

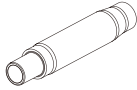





Name and shape	Q'ty	Application
Operating manual 	1	
Installation manual 	1	
Coupler heat insulation (Large) 	1	For indoor side pipe joint (Gas pipe)
Coupler heat insulation (Small) 	1	For indoor side pipe joint (Liquid pipe)
Special nut A (Large flange) 	4	For installing indoor unit
Special nut B (Small flange) 	4	For installing indoor unit
Template (Carton top) 	1	For ceiling openings cutting Also used as packing
Cable tie 	2	For electrical wiring
Wire clammer 	1	For electrical wiring
Drain hose 	1	For installing drain pipe VP25 (O.D.32, I.D.25)
Hose band 	1	For installing drain hose
Drain hose insulation 	1	For installing drain pipe
Remote controller 	1	
Battery 	2	
Remote controller holder 	1	
Tapping screw (M3 x 12mm) 	2	For mounting the remote controller holder

CASSETTE GRILLE ACCESSORIES

Name and shape	Q'ty	Application
Connector cover 	1	For covering connector
Tapping screw (M5 x 12mm) 	4	For mounting decoration panel
Tapping screw (M4 x 12mm) 	1	For mounting connector cover
L angle 	2	For mounting the Hook wire to the Decoration panel
Hook wire 	2	For suspending the Decoration panel
Screw [pitch small] (M4 x 10mm) 	2	For mounting the Hook wire (for metals)
Screw [pitch large] (M4 x 10mm) 	4	For mounting the L angle and Hook wire (for resins)




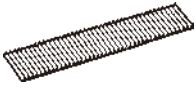

■ SLIM DUCT TYPE




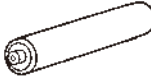

Name and shape	Q'ty	Application
Operating manual 	1	
Installation manual 	1	
Installation template 	1	For positioning the indoor unit
Filter (Small) 	2 (AR07/ 09/12/ 14)	
Filter (Big) 	2 (AR18)	
Coupler heat insulation (Large) 	1	For indoor side pipe joint (Large pipe)
Coupler heat insulation (Small) 	1	For indoor side pipe joint (Small pipe)
Washer 	8	For installing indoor unit
Cable tie 	Medium 3	For power supply and transmission and remote control cable binding.
	Large 4	For fixing the coupler heat insulation.

Name and shape	Q'ty	Application
Drain hose 	1	For installing drain pipe VP25 (O.D.32, I.D.25)
Hose band 	1	For installing drain hose
Drain hose insulation B 	1	Insulates the drain hose
Wired remote controller 	1	
Remote controller cable 	1	For connecting the Wired remote controller
Tapping screw (M4 x 16mm) 	2	For installing the Wired remote controller



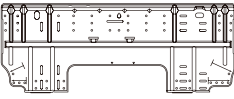
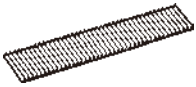


■ WALL MOUNTED TYPE



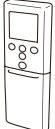
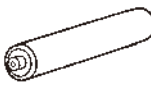

● LJ

Name and shape	Q'ty	Application
Operating manual 	1	
Installation manual 	1	
Wall hook bracket 	1	For indoor unit installation
Air cleaning filter 	2	
Cloth tape 	1	For indoor unit installation



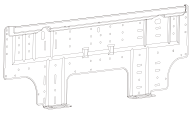
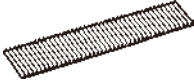
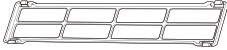
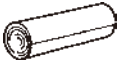
Name and shape	Q'ty	Application
Tapping screw (M4 x 25mm) 	8	For wall hook bracket installation
Tapping screw (M3 x 12mm) 	2	
Remote controller 	1	
Battery 	2	
Remote controller holder 	1	




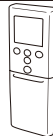
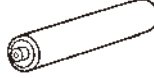

● LU

Name and shape	Q'ty	Application
Operating manual 	1	
Installation manual 	1	
Wall hook bracket 	1	For indoor unit installation
Air cleaning filter 	2	
Cloth tape 	1	For indoor unit installation
Seal A 	1	It is used when the diameter of gas pipe is $\varnothing 12.70$ or more. It is necessary when using AS14.





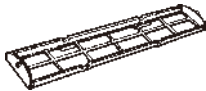

Name and shape	Q'ty	Application
Tapping screw (M4 x 25mm) 	5	For wall hook bracket installation
Tapping screw (M3 x 12mm) 	2	
Remote controller 	1	
Battery 	2	
Remote controller holder 	1	





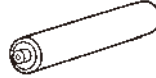

● LM

Name and shape	Q'ty	Application
Operating manual 	1	
Installation manual 	1	
Wall hook bracket 	1	For indoor unit installation
Air cleaning filter 	2	
Filter holder 	2	
Cloth tape 	1	For indoor unit installation



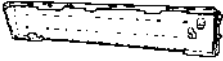


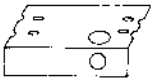

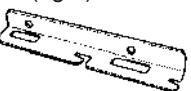



Name and shape	Q'ty	Application
Seal A 	1	It is used when the diameter of gas pipe is $\varnothing 12.70$ or more. It is necessary when using AS14.
Tapping screw (M4 x 25mm) 	5	For wall hook bracket installation
Tapping screw (M3 x 12mm) 	2	
Remote controller 	1	
Battery 	2	
Remote controller holder 	1	


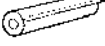










● LF

Name and shape	Q'ty	Application
Operating manual 	1	
Installation manual 	1	
Wall hook bracket 	1	For indoor unit installation
Air cleaning filter 	2	
Air cleaning filter frame 	2	
Cloth tape 	1	For indoor unit installation



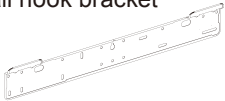


Name and shape	Q'ty	Application
Drain hose Insulation 	1	For installing drain hose
Tapping screw (M4 x 25mm) 	8	For wall hook bracket installation
Tapping screw (M3 x 12mm) 	2	
Remote controller 	1	
Battery 	2	
Remote controller holder 	1	






■ FLOOR / CEILING TYPE

Name and shape	Q'ty	Application
Operating manual 	1	
Installation manual 	1	
Cover plate (left) 	1	
Cover plate (right) 	1	
Tapping screw (M4 x 10mm) 	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	
Special nut 	4	
Wall bracket 	2	For suspending the indoor unit on the wall
Tapping screw (M4 x 20mm) 	6	For fixing the wall bracket

Name and shape	Q'ty	Application
Coupler heat insulation (Large) 	1	For indoor side pipe joint (Large pipe)
Coupler heat insulation (Small) 	1	For indoor side pipe joint (Small pipe)
Cable tie 	Large 1	For binding the drain hose
	Small 2	For electric wiring
Wire clasper 	1	For electrical wiring
Drain hose 	1	For installing drain pipe VP25 (O.D.32, I.D.25)
Hose band 	1	For installing drain hose
Insulation (drain hose) 	1	Adhesive type 70 x 230 (mm)
VT wire 	1	For fixing the drain hose L=280 (mm)
Remote controller 	1	
Battery 	2	
Remote controller holder 	1	
Tapping screw (M3 x 12mm) 	2	For mounting the remote controller holder

■ FLOOR TYPE

Name and shape	Q'ty	Application
Operating manual 	1	
Installation manual 	1	
Wall hook bracket 	1	For indoor unit installation
Air cleaning filter 	2	
Cloth tape 	1	For indoor unit installation

Name and shape	Q'ty	Application
Tapping screw (M4 x 25mm) 	9	For wall hook bracket installation
Tapping screw (M3 x 12mm) 	2	
Remote controller 	1	
Battery 	2	
Remote controller holder 	1	

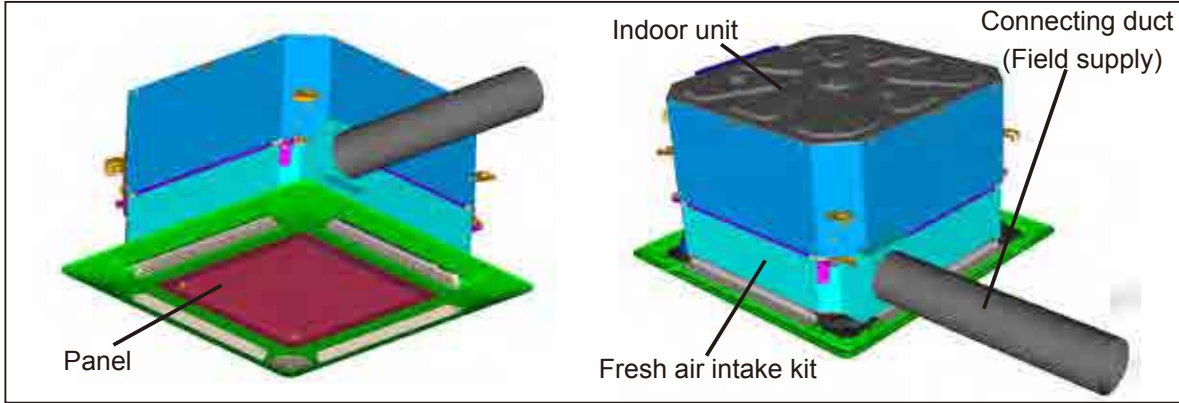
10. OPTIONAL PARTS INSTALLATION

10-1. FRESH AIR INTAKE KIT

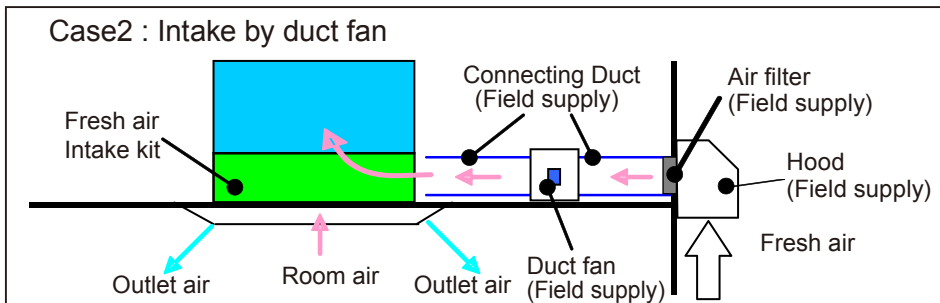
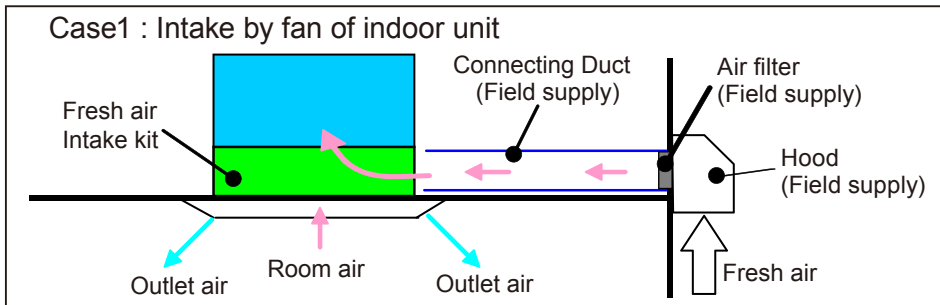
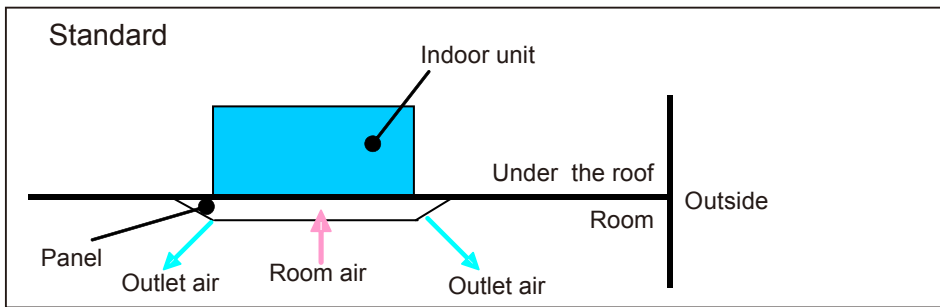
■ MODEL : UTZ-VXAA

■ FEATURE

- Enables to take in fresh air of up to 10% of “high” air volume of the indoor unit by attaching the Fresh Air Intake Kit to cassette type indoor units.



■ INSTALLATION EXAMPLE



SYSTEM DESIGN

SYSTEM DESIGN

■ SPECIFICATIONS

Model name			UTZ-VXAA
Fresh air intake	Max. fresh air intake volume	%(for High)	10
Connection duct type		mm	ø 100
		Pcs	1
Dimension (HxWxD)	Net	mm	120 x 570 x 570
	Gross		165 x 585 x 585
Weight	Net	kg	3.5
	Gross		5.5

■ PRECAUTION

● About fresh air intake kit

- The Fresh Air Intake Kit can be installed onto cassette type air conditioners.
- The volume of ventilated air provided by the Fresh Air Intake Kit may be unable to fulfill ventilation regulations in some countries.
On such occasions we ask that this kit be used along with Energy recovery ventilators.
- When intaking outside air please ensure correct air-conditioning design based on air conditioning load calculations.
As outside air is not being processed, an increase in outside air load can affect air conditioning.

● Installation location

- Area that generate substances that adversely affect the equipment, such as sulfuric gas, chlorine gas, acid, or alkali will cause the copper pipes and brazed joints to corrode, which can cause refrigerant leakage.
- Area with high salt content, such as at the seaside. It will deteriorate metal parts, causing the parts to fall or the unit to leak water.
- Be certain to use electric dampers and shutters to avoid infiltration of cold air, wind and fog during shutdown in areas with cold climates, strong winds, or where fogs are common.
- Please ensure the product is installed a distance of at least three times the duct diameter away from exterior wall air inlets, or air exhausts for the prevention of short circuits.

● Temperature conditions

- Condensation may form on the product when outside air temperature is low, and the temperature and humidity surrounding the product are high. Don't intake the air of below 0°C into the Fresh air intake kit.
- The upper limit of the product's temperature range should respond to the outdoor temperature range.

● About duct fan

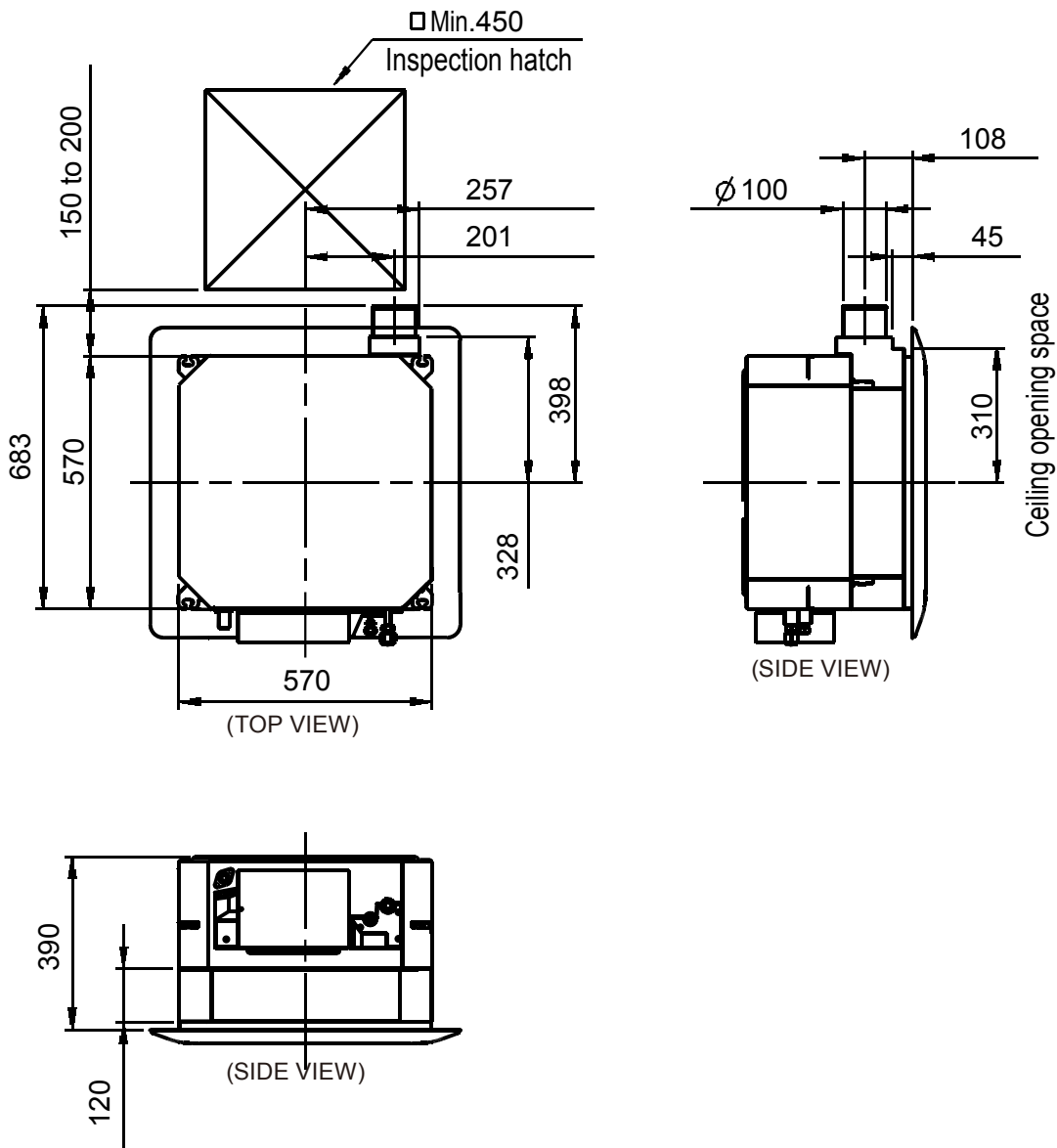
- When installing the duct fan, connect the drive relay (field supplied) and operate with the indoor unit.
- Please ensure the intake air volume is below 10% of the product's air volume HI. When the intaken air volume becomes too large there the operating noise may increase and room temperature detection may be affected.

● About the duct connection

- Procure a duct with internal diameter that fits the external diameter of the duct flange.
- Please note that regulations of some countries may require the use of a nonflammable duct.
- If the duct penetrates a fire-retarding division or other fire-proofing measures, the installation of fire dampers, or a construction that does not adversely affect fire control measures is a regulatory requirement of some countries.
- When using metallic ducts please ensure metals (i.e., metal lath, wire lath, stainless sheeting) are electrically insulated. (A short circuit occurring by electrical connection can cause fire)
- Please ensure to thermally insulate connected ducts to prevent condensation.
- Please make certain that netting or other measures are installed in parts exposed to the outside air to prevent infiltration of small animals such as birds and insects.
- Please be certain to install external air filters to parts exposed to the outside air for heat exchanger protection of indoor equipment.
- Please avoid the infiltration of rain water by installing outside ducts with an incline of at least 1/30, and fitting hoods on openings.

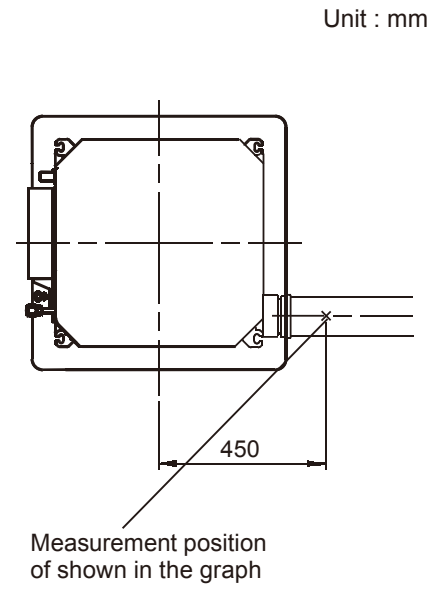
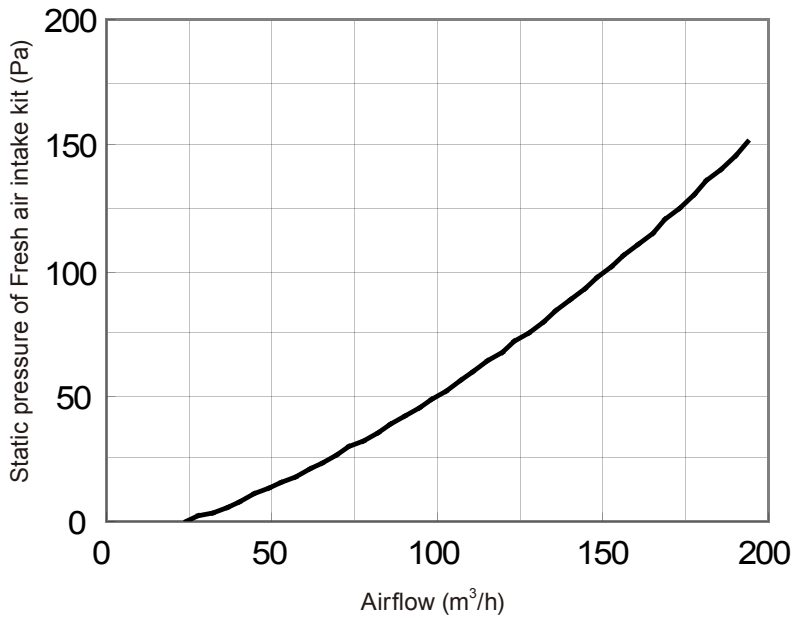
■ DIMENSIONS

Unit : mm



- When installing this kit, an inspection hatch is necessary. (For service and maintenance.)

■ AIRFLOW

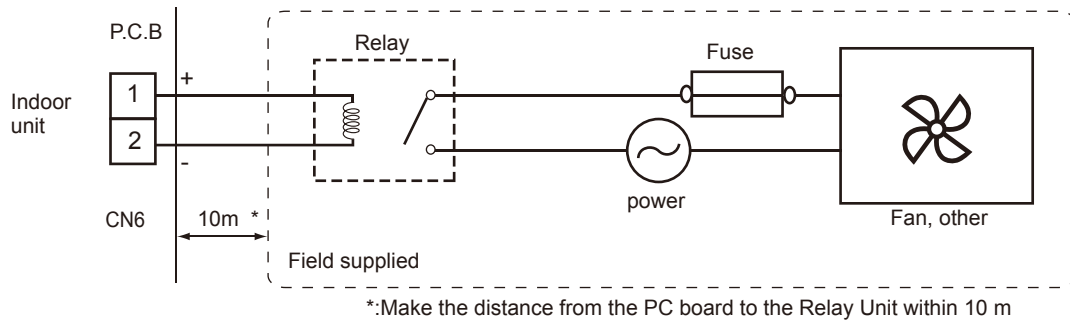


■ FRESH AIR CONTROL OUTPUT

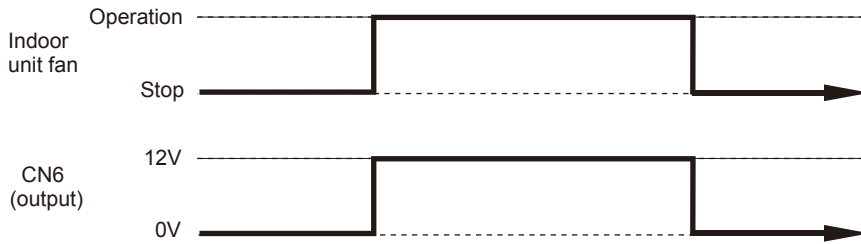
- You can control duct fan by synchronization with fan operation of indoor unit.
- Wire for fresh air control output is supplied with Fresh Air Intake Kit.
- Extended length of the wire : For Single & Multi split system : Max. 10m

● Connection diagram

- For Relay Output voltage : DC12V \pm 2V
Permissible current : 15mA





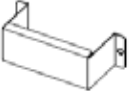


● Indoor unit status









● Wire (External output ①)



■ ACCESSORY PARTS

Name and shape	Q'ty	Application
Installation manual 	1	
Chamber 	1	Air joint for connection duct
Wire cover 	1	Cover for extension wire
Screw 	4	For attaching chamber For attaching wire cover
Extension wire for louver  white red	2	Extension wire for louver

Name and shape	Q'ty	Application
Extension wire for receiver 	1	Extension wire for receiver
Wire (External output ①) 	1	For connect indoor unit to relay of duct fan (For single or multi)
Wire (External output ②) 	1	For connect indoor unit to relay of duct fan (For VRF)
Wire (External output ③) 	1	For connect indoor unit to relay of duct fan (For VRF)
Bolt 	4	For attaching kit to indoor unit
Cable tie 	1	For fixing wire

10-2. AUTO LOUVER GRILLE KIT

■ MODELS

UTD-GXSA-W

UTD-GXSB-W

■ FEATURE

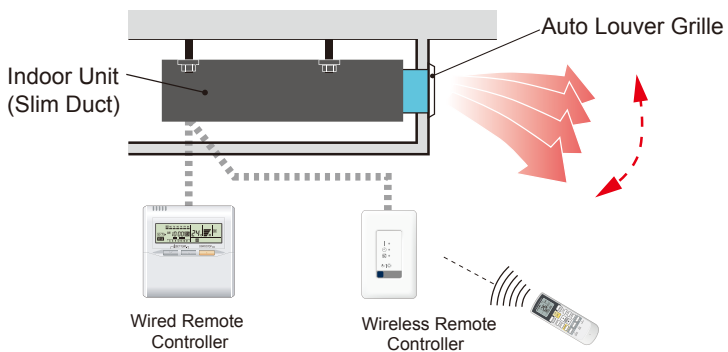
Simple flat Auto Louver will provide comfort airflow and harmonize with luxury interior.



Closed louver
[Operation is stopped.]

Opened louver
[During operation]

● Flexible control



★ Operation with Indoor Unit

Auto Louver can be operated by synchronizing remote controller of Indoor Unit.

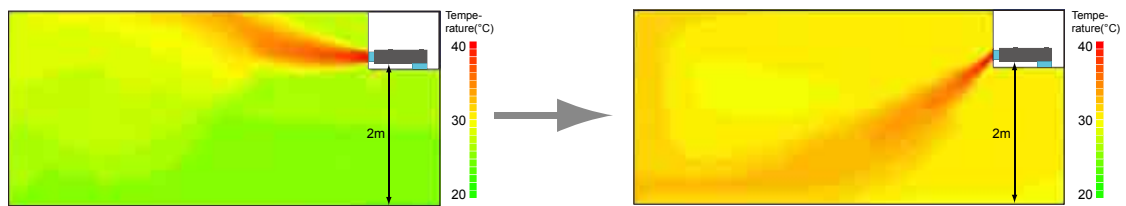
★ UP and Down auto swing

- Auto airflow direction and auto swing
- 4 steps selectable

★ Auto-closing louver

When operation of Indoor Unit is stopped, the louver will automatically close.

● Ideal warm airflow



Without Auto Louver

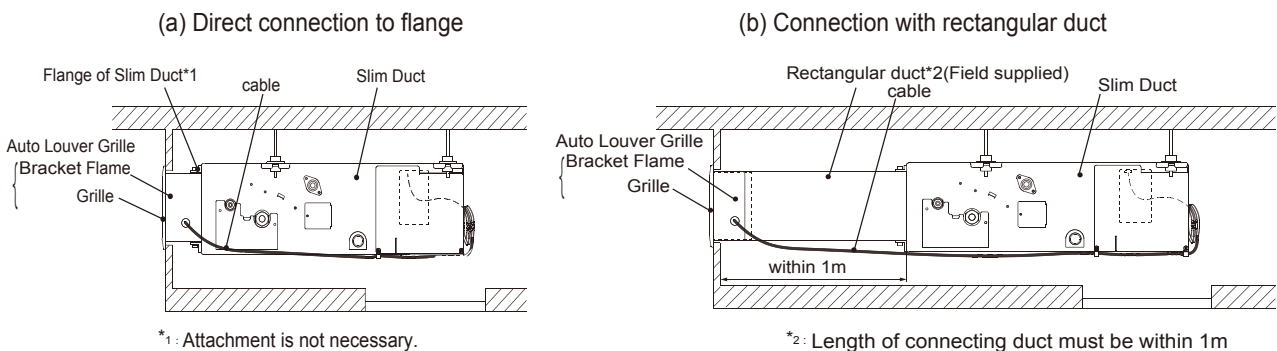
[Condition]
 Model (Indoor unit): AR*G12LLTA
 Outdoor temperature: 2°C
 Operation contents: Heating
 Set temperature: 30°C
 Air flow: Hi

With Auto Louver

[Condition]
 Model (Indoor unit): AR*G12LLTA
 Model (Auto louver grille): UTD-GXSA-W
 Outdoor temperature: 2°C
 Operation contents: Heating
 Set temperature: 30°C
 Air flow: Hi
 Vertical flap: Downward

● Flexible installation

Auto Louver Grille can be connected either directly with indoor unit or through the rectangular duct.



*1: Attachment is not necessary.

*2: Length of connecting duct must be within 1m

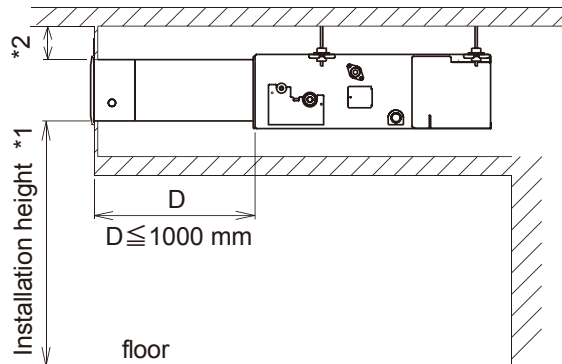
■ SPECIFICATIONS

Model name		UTD-GXSA-W		UTD-GXSB-W	
Power Supply		Connecting with Control box of indoor unit			
Fixing of Auto Louver Grille		Screw fixing to Flange or Rectangular duct			
Extension Square Duct Limit		1.0m (Max. duct length between indoor unit and Grille)			
Net Dimension (H x W x D)		mm (inch)	180x683x(84+9) [7-3/32x26-7/8x(3-5/16+11/32)]	180x883x(84+9) [7-3/32x34-3/4x(3-5/16+11/32)]	
Weight	Net	kg (lb.)	2.0 (4.4)	2.5 (5.6)	
	Gross		3.0 (6.7)	3.5 (7.8)	
Color		White			
Louver Motor		Stepping Motor			
Material		Flame retardant ABS			
Accessories		Fitting Flame, etc.			
Operation range	Cooling	°C (°F)	18 to 32 (64 to 90)		
		% RH	80% or less		
	Heating	°C (°F)	16 to 30 (60 to 88)		

■ PRECAUTION

- Select the installation location that meets the following requirement and that is approved by the customer.

- Cold and warm air should reach the entire room.



*1) Refer to Design & Technical manual for Air velocity distribution and Air temperature distribution during heating.

*2) If the distance from the ceiling is not adequate, it may cause mildew stains on the wall or the ceiling. (Ensure to fix at least 150 mm away from any surface of the equipment.)

- Do not install the unit in the following areas

- The upper part of the vicinity of room entrance. It may cause condensation on the outlet port.
- Near a wall surface. It may cause condensation on the wall during cooling.
- Area filled with mineral oil or containing a large amount of splashed oil or steam, such as a kitchen.
- The place where it will be exposed to direct sunlight. Or else, it may cause a change in color.

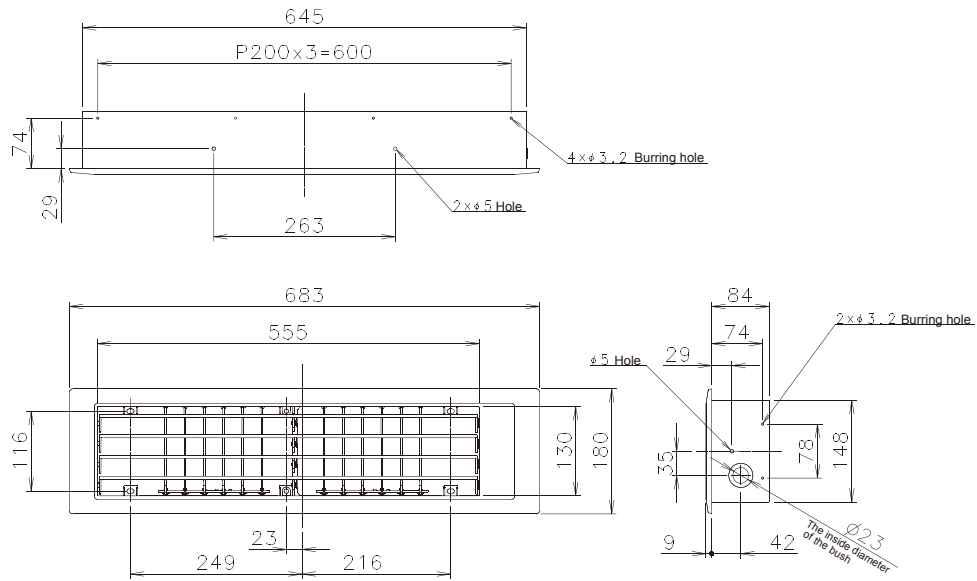
- When the installation area is exposed to direct sunlight, take measures to block the light such as covering the grille surface with a sheet. Or else, it may cause a change in color.

- Use an appropriate Grille that is compatible with the indoor unit. If not used with the correct combination, it may cause condensation.

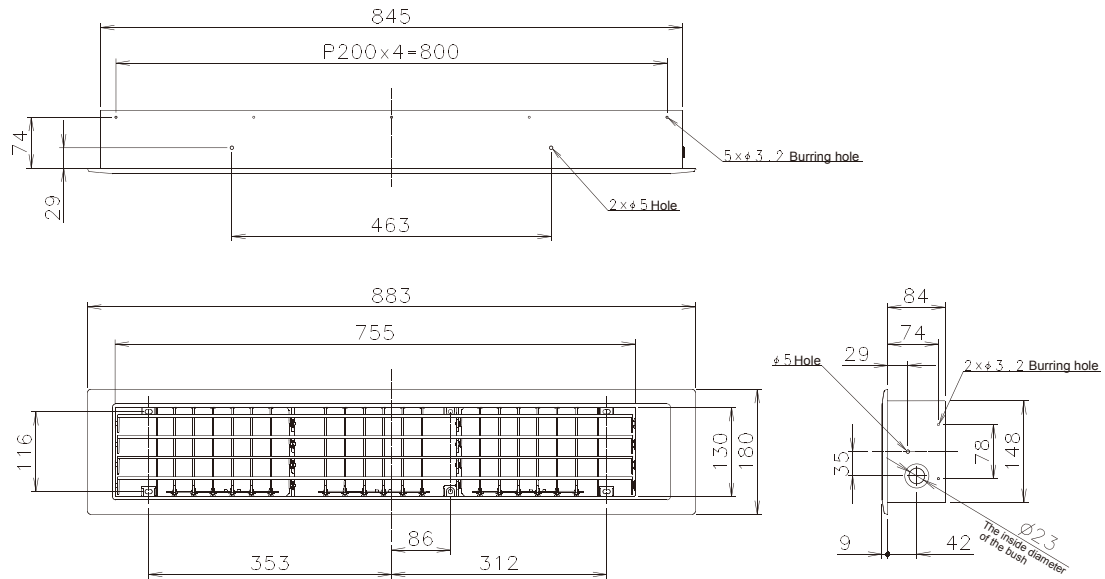
- Perform heat insulation and field setting according the Design & Technical manual of Indoor unit. Not installing as per the instructions may cause condensation.

■ DIMENSIONS



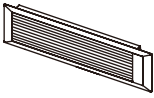
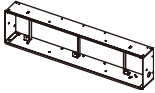
● MODEL : UTD-GXSA-W








● MODEL : UTD-GXSB-W



■ ACCESSORY PARTS

Name and shape	Q'ty
Installation manual 	1
Operating manual 	1
Grille 	1
Bracket frame 	1

Name and shape	Q'ty
Screw-A 	16
Screw-B 	6
Cable clip 	2
Cable tie 	3
Bushing 	1

11. 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.

11-1. INTRODUCTION

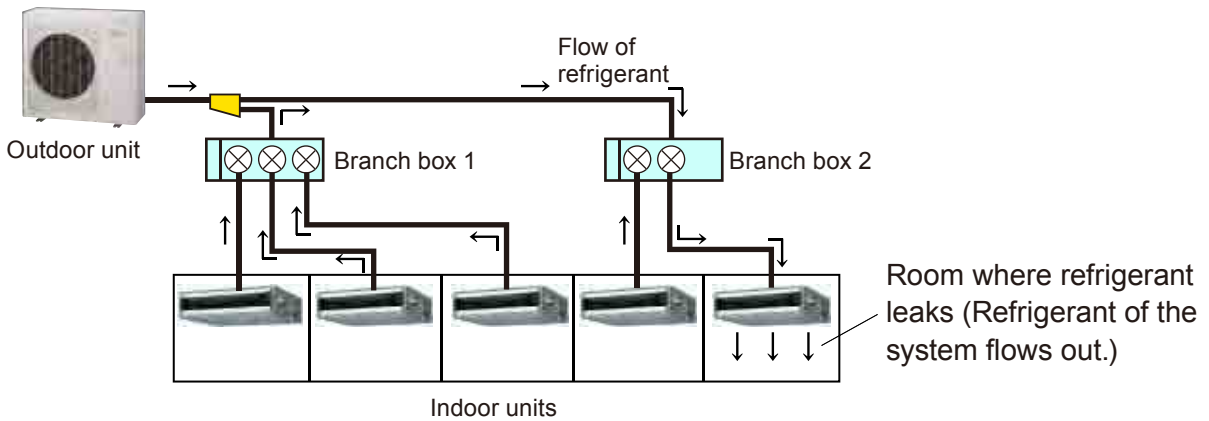
This air conditioners use R410A as refrigerant. Though R410A is harmless and incombustible in itself, the room in which the air conditioner is installed should be large enough that the refrigerant gas will not exceed the concentration limit even if the refrigerant gas leaks.

● 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/m^3 (Freon gas weight in per m^3 air) to facilitate calculation.

Concentration limit : 0.3kg/m^3



11-2. CHECKING CONCENTRATION LIMIT

Check concentration limit following steps ①②, 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 system (kg)
--	---	--	---	--

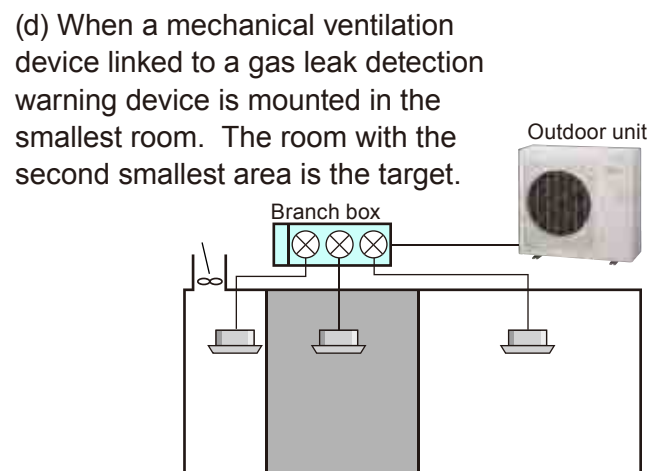
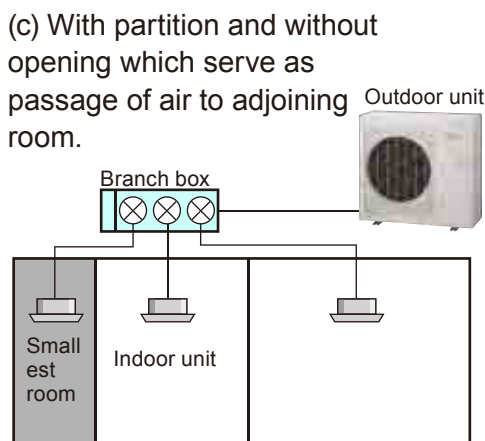
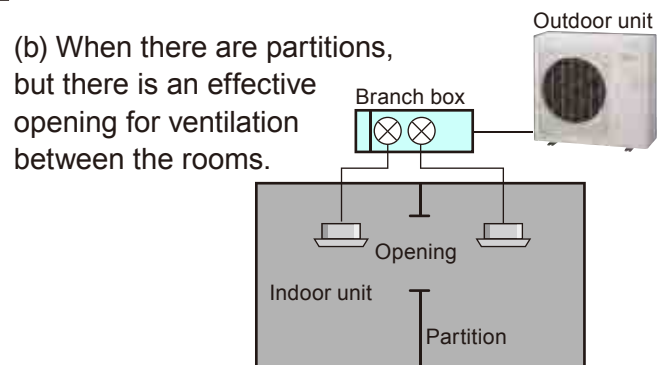
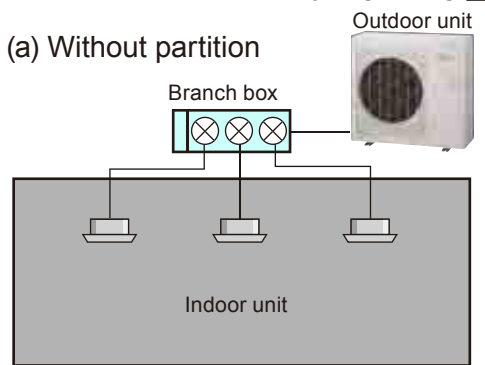
Amount of replenished refrigerant at factory shipment

Amount of additionally replenished refrigerant depending on piping length, piping diameter and indoor unit model at customer.

Note : When one refrigerant system is divided into 2 or more refrigerant systems and each system is independent, total amount of replenished refrigerant of each system shall be adopted.

② Smallest room volume.

Calculate room volume by regarding portion as one room or the smallest room.



③ Calculate refrigerant concentration from the results of ① and ②

$$\frac{\text{Total amount of replenished refrigerant in refrigerant facility (kg)}}{\text{Capacity of smallest room where indoor unit is installed (m}^3\text{)}} \leq \text{Refrigerant concentration (kg/m}^3\text{)}$$

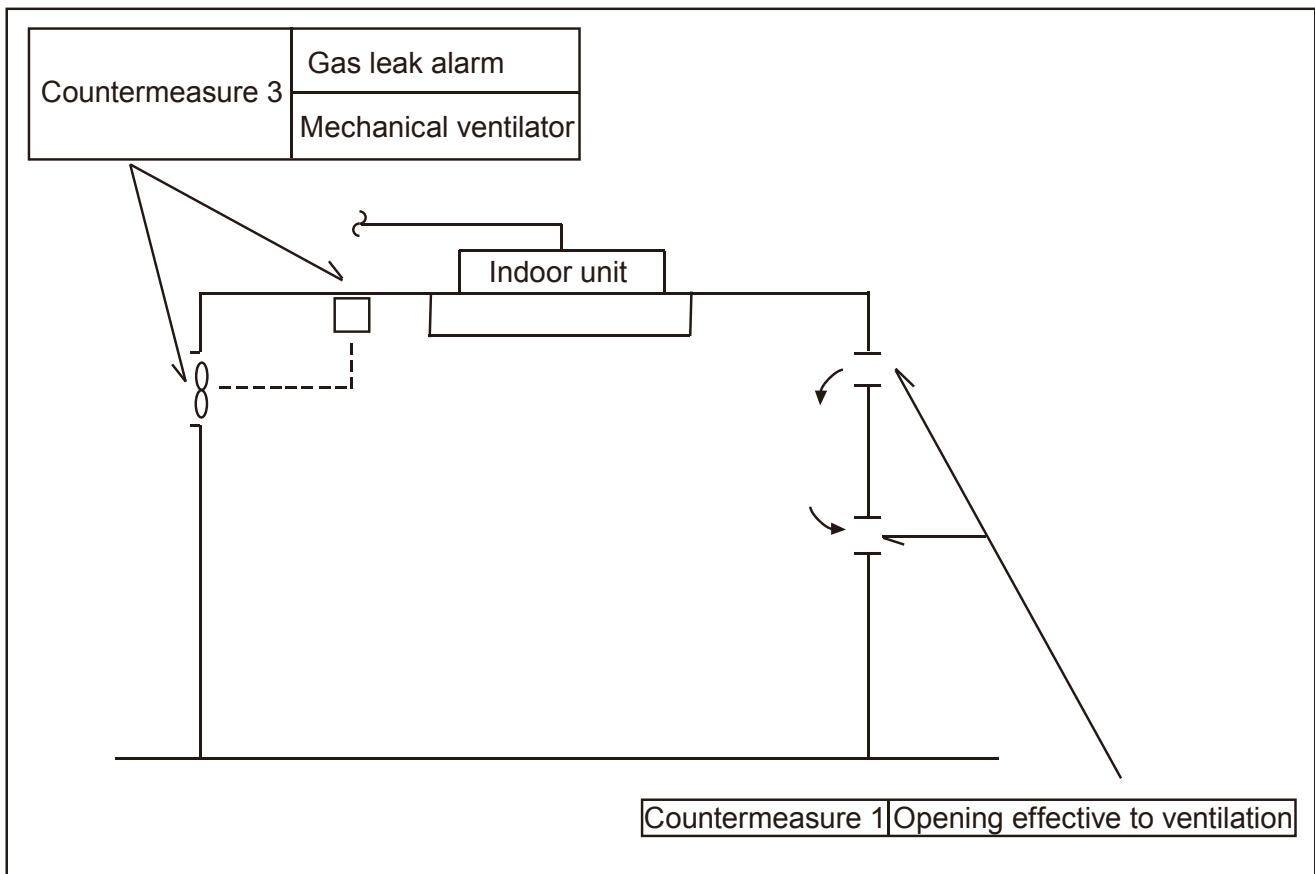
(R410A)

When the result of calculation exceeds the concentration limit, perform the same calculations by shifting to the second smallest, and the third smallest rooms until the final result is below the concentration limit.

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
Reduce the total refrigerant charging amount of the refrigerant equipment
(1) Shorten the length of the refrigerant pipes
Move the location of the outdoor unit closer to the indoor unit, and reduce the total refrigerant charging amount by shortening the length of the refrigerant pipes.
- Countermeasure 3
Provide gas leak alarm linked with mechanical ventilator.



Pay special attention to places such as the basement, etc. where refrigerant can accumulate, since refrigerant is heavier than air.

12. INSTALLATION PRECAUTIONS

12-1. INDOOR UNIT INSTALLATION PRECAUTIONS

Note: The information listed below are general precautions. Some models also include items that do not apply.

■ PLACES WHERE USE IS PROHIBITED

- Places where there is the danger of combustible gas leakage.
- Places where sulfur gas, chlorine gas, acid, alkali, or other matter which effects equipment is generated
- Places where there is a lot of oil splash and steam (kitchen, machinery room, etc.)
- Places where machinery which generates high frequencies is used
- Ocean beaches and other areas where there is a lot of salt
- Places where carbon fibers and metal powder, powder, etc. suspended in the air
- Installation in vehicles, ships, and other conveyances
- Factory, etc. where voltage fluctuations are large

■ POINTS TO REMEMBER WHEN INSTALLING

- 1) The set shall be installed at a place which can withstand the weight and vibration of the indoor unit
 - 2) To allow maintenance after refrigerant piping, drain piping, and electric wiring connection and installation, provide an installation service space and an inspection port, as required.
- *Installation service space is shown on " DIMENSIONS " .
- 3) Be careful when installing the set at the following places.

[Installation precautions]

	Contents	Countermeasures (Reference)
When the ceiling is high	If the indoor unit is installed where the installation height given in the installation manual is exceeded, the temperature difference between the floor and ceiling of the room will be large and the heating effect will be poor. Moreover, even if the indoor unit is installed within the installation height, a similar phenomena will occur when installed in a room in which the doors are opened and closed frequently and hot air circulation is obstructed by desks, chairs, etc.	1) Switch the setting to the high ceiling mode. 2) Install a circulator. 3) Arrange the furniture in the room so that it does not obstruct the hot air.
When lower level directly contacts the outside air.	When the lower level of the shop and office is a warehouse, parking lot, etc., the surface temperature of the flooring will become low and the radiation of cold from the floor will increase. In this case, your feet will feel cold even if the room temperature is suitable.	
When the air flow distribution is poor	When an indoor unit is installed in a position where the outlet air flow will directly contact people, a draft may be felt. In addition, when there are obstructions in the path of the intake and outlet air flow, the air distribution may become extremely bad.	1) Adjust the louver fins or take other measures matched to the site. 2) Change the indoor unit outlet.

[Installation precautions]

	Contents	Countermeasures (Reference)
When inside the ceiling is high temperature and high humidity	<p>When the indoor unit is installed where the inside of the ceiling is 30°C (86°F) RH80% or greater, the dew point temperature of the outer perimeter may become higher than the cabinet surface temperature and moisture will condense on the surface of the cabinet and water drops may fall inside the room.</p> <p>→Refer to Fig.A</p> <p>In addition, the humidity may vary considerably the same as when the inside of the ceiling is close to hermetically sealed and used as the outside air intake path.</p>	<p>1) Add heat insulating material to the outside of the indoor unit cabinet.</p> <p>*Regarding the cassette type, use of the “high humidity correspondence kit (option)” is recommended.</p> <p>2) Strengthen the heat insulating material of the refrigerant piping and drain piping also</p> <p>→Refer to Fig.B</p> <p>3) When the humidity inside the ceiling changes considerably, install a ventilation port</p>

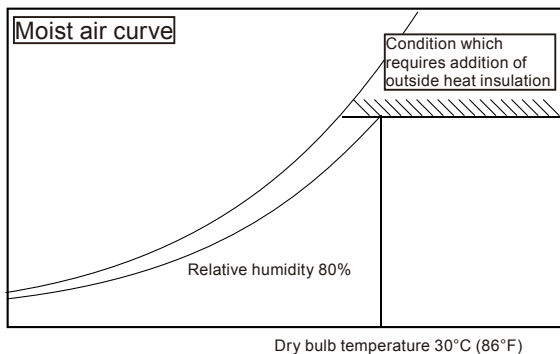


Fig.A

Work method when reinforcing the heat insulation of on-site piping

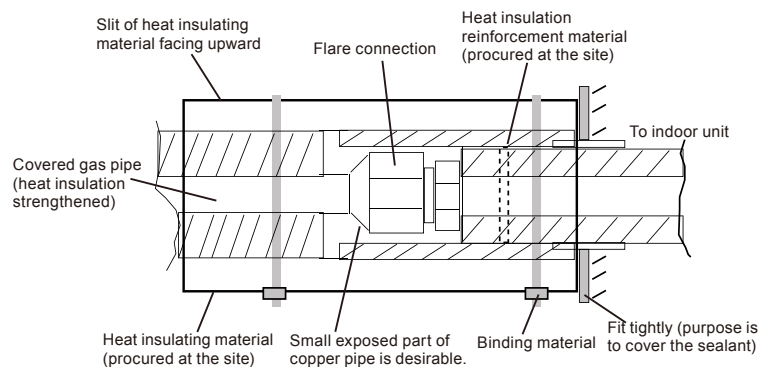


Fig.B

	Contents	Countermeasures (Reference)
When using an external duct	<p>When using an external duct to take in new fresh air, etc., condensation may form on the surface of the duct due to the effect of the outside air temperature and the humidity inside the ceiling.</p>	<p>1) Always perform heat insulation processing. (Heat insulating material: Glass wool 25mm (31/32 in.) thick or more.)</p>
When the remote controller installation site is bad	<p>If the cold or warm air blown out from the air conditioner directly contacts the thermostat section of the remote controller, the outlet temperature of the air conditioner may be sensed and room temperature control will be different from the room temperature and “not cooled” or “not heated” or other trouble may occur.</p> <p>In addition, there is the possibility that the same kind of trouble may also occur when the remote controller is effected by direct sunlight.</p>	<p>1) Install the remote controller where it will not be directly exposed to the cold or hot air.</p> <p>2) Install the remote controller where it will not be directly exposed to sunlight or strong lighting.</p>

[Installation precautions]

	Contents	Countermeasures (Reference)
When installation environment is quiet	When the wall mounting type is installed in a bedroom, living room, or other quiet place, the sound of the refrigerant flow may be sensed as noise and must be taken into account.	<ol style="list-style-type: none"> 1) Plan installation of a model with external expansion valve. 2) Plan installation of a branch box farther from indoor unit. 3) Plan installation using another air conditioner.
When installing duct type in ceiling chamber system	<p>In the case of the ceiling chamber system (duct is not installed at indoor unit inlet side and room air is sucked into the indoor unit through the inside of the ceiling), the thermistor inside the indoor unit may not correctly detect the room temperature.</p> <p>Heating operation: Room is not heated because the indoor unit is easily turned off by the thermostat.</p> <p>Cooling operation: Room is too cold because the indoor unit is difficult to turn off by the thermostat.</p>	<ol style="list-style-type: none"> 1) Replace the indoor unit thermistor with a Remote sensor unit (optional parts) and install the sensor where the room temperature can be correctly detected
When the outlet air is sucked in at duct type	Cooling operation does not cool the room and heating operation does not heat the room because the short circuited indoor unit is not turned on by the thermostat.	<ol style="list-style-type: none"> 1) Reconsider the ventilation port construction 2) Replace the indoor unit thermistor with a Remote sensor unit (optional parts) and install the sensor where the room temperature can be correctly detected.
When using the wireless remote controller	Signals may not be received when using it in a room illuminated by an inverter fluorescent lamp.	<ol style="list-style-type: none"> 1) Turn on the fluorescent lamp and check if the indoor unit receives the signals from the remote controller. <p>If the indoor unit does not receive the signals, consult an authorized service personnel.</p>
When installing the inverter type	It may generate noise in TV sets, stereos and PCs.	<ol style="list-style-type: none"> 1) The inverter type should be installed at a sufficient distance from these equipments.

12-2. OUTDOOR UNIT INSTALLATION PRECAUTIONS

Note: The information listed below are general precautions. Some models also include items that do not apply.

■ PLACES WHERE USE IS PROHIBITED

- Places where there is the danger of combustible gas leakage
- Places where sulfur gas, chlorine gas, acid, alkali, or other matter which effects equipment is generated
- Places not affected by heat radiation from other heat sources
- Places where the air is not stagnant
- Places where machinery which generates high frequencies is used
- Ocean beaches and other areas where there is a lot of salt
- Installation in vehicles, ships, and other conveyances
- Factory, etc. where voltage fluctuations are large

■ POINTS TO REMEMBER WHEN INSTALLING

- 1) The set shall be installed at a place which can withstand the weight and vibration of the outdoor unit
 - 2) To allow maintenance after refrigerant piping, drain piping, and electric wiring connection and installation, provide an installation service space.
- *Installation service space is shown on " INSTALLATION PLACE ".
- 3) Be careful when installing the set at the following places.

[Installation precautions]

	Contents	Countermeasures (Reference)
When installed near adjacent houses	Perform installation work so that operating sound does not disturb the neighbors.	1) Install a soundproof barrier 2) Change the installation site
When there is the possibility of strong wind	1) If the outdoor unit is exposed to strong wind, capacity may drop, frost may form during heating, and operation may be stopped by high pressure rise. In addition, when a very strong wind blows, the fan may be damaged. 2) When a very strong wind blows, there is the possibility of the outdoor unit being toppled over if held only by foundation bolts	1) Install with the outlet side keep a sufficient distance away from a facing wall or fence. 2) Make the outlet direction and wind direction perpendicular. 3) Fasten the outdoor unit using toppling prevention hardware (procured at the site).
When snow accumulates	If the outdoor unit is covered by accumulated snow, it may not be able to operate.	1) Make the foundation as high as possible. 2) Perform snow prevention work.
When installing the inverter type	It may generate noise in TV sets, stereos and PCs.	1) The inverter type should be installed at a sufficient distance from these equipments.

Flexible Multi System

7. OPTIONAL PARTS

CONTENTS

7. OPTIONAL PARTS

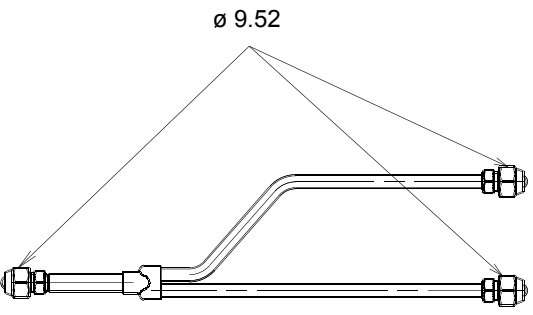
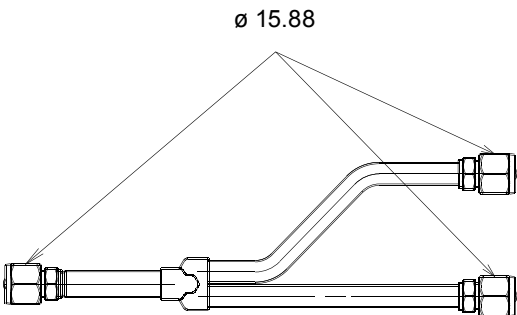
1. SEPARATION TUBE	07 - 01
2. BRANCH BOX.....	07 - 02
3. CONTROLLER	07 - 05
4. OTHERS	07 - 06

1. SEPARATION TUBE

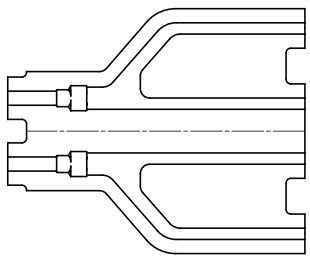
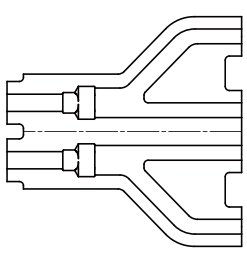
■ MODEL : UTP-SX248A

Unit: mm

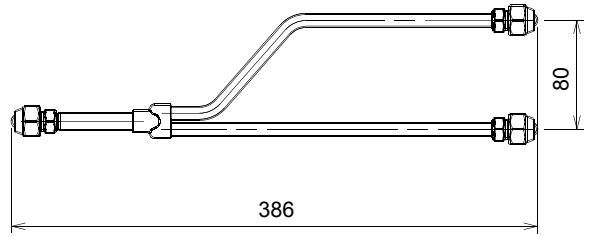
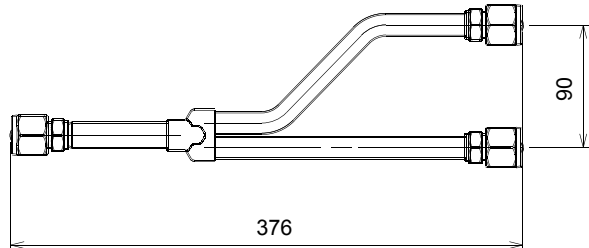
● Port diameters

Liquid pipe	Q'ty	Gas pipe	Q'ty
 <p>ø 9.52</p>	1	 <p>ø 15.88</p>	1

● Heat insulation

For liquid pipe	Q'ty	For gas pipe	Q'ty
	1		1

● Dimensions

Liquid pipe	Gas pipe
 <p>386</p> <p>80</p>	 <p>376</p> <p>90</p>

OPTIONAL PARTS

OPTIONAL PARTS

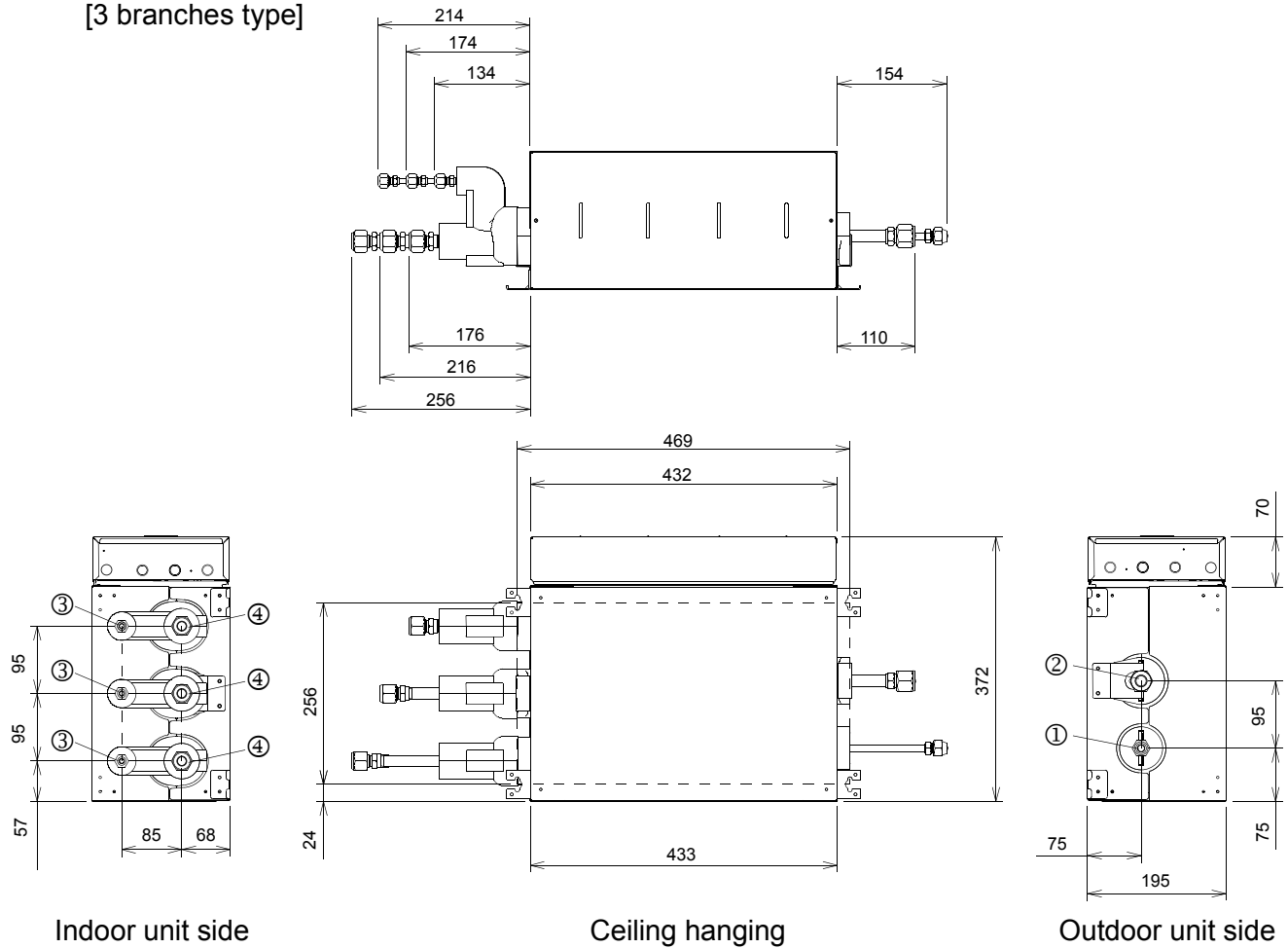
2. BRANCH BOX

Model	Type
UTP-PY03A	3 branches
UTP-PY02A	2 branches

■ DIMENSION

[3 branches type]

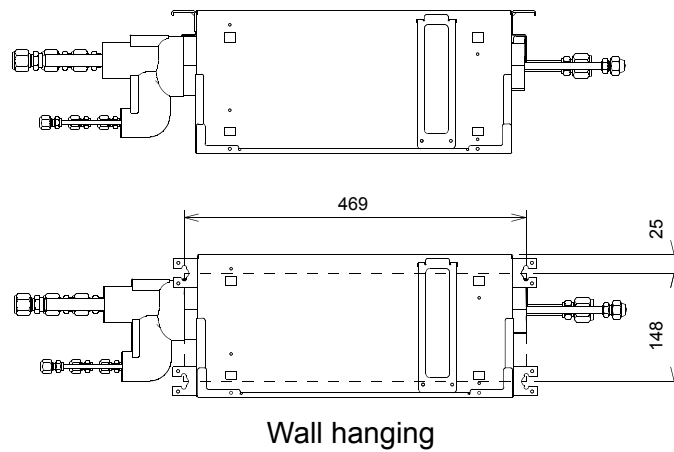
Unit : mm



Indoor unit side

Ceiling hanging

Outdoor unit side

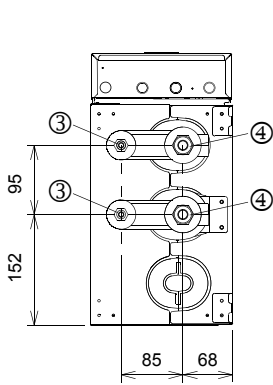
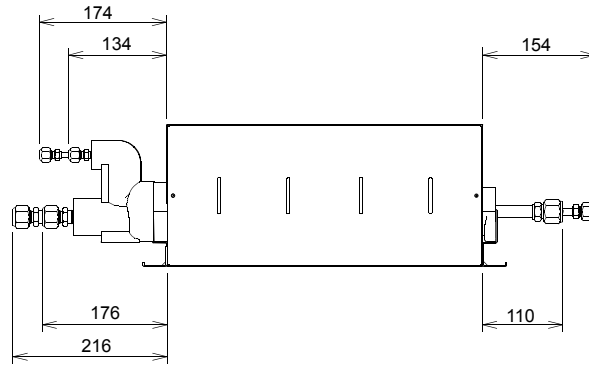


Wall hanging

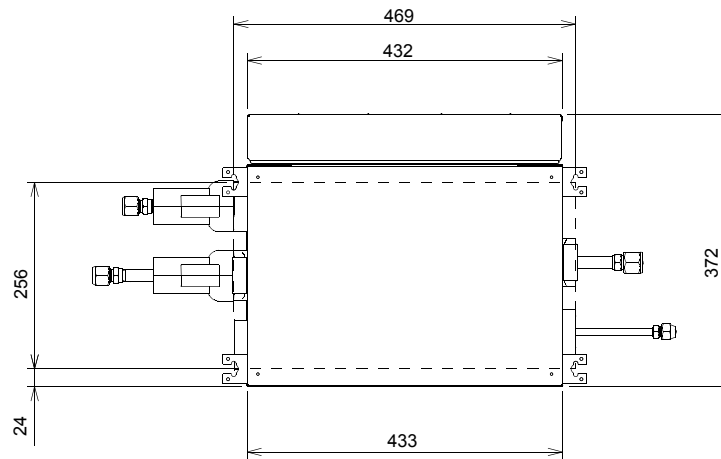
OPTIONAL PARTS

OPTIONAL PARTS

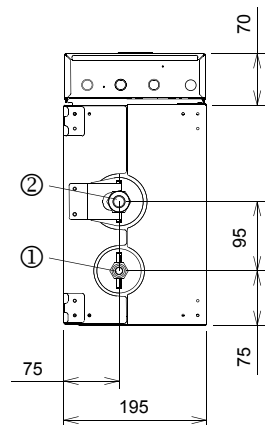
[2 branches type]



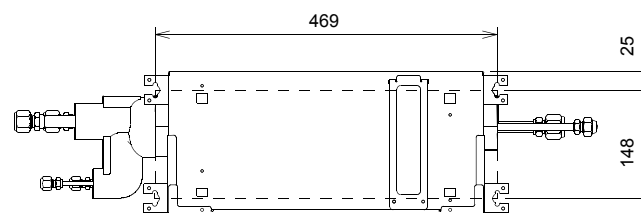
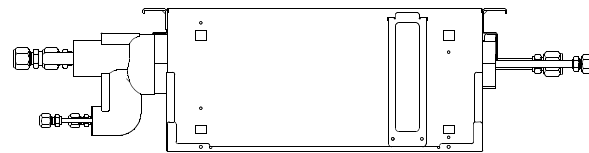
Indoor unit side



Ceiling hanging



Outdoor unit side

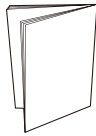

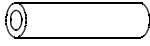
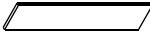

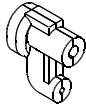






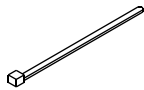



Wall hanging

PIPE DIAMETER

①	Main pipe	Liquid pipe	ø 3/8 inch (9.52 mm)
②		Gas pipe	ø 5/8 inch (15.88 mm)
③	Branch pipe	Liquid pipe	ø 1/4 inch (6.35 mm)
④		Gas pipe	ø 1/2 inch (12.70 mm)

■ ACCESSORIES

Name and Shape	Q'ty	Application
Installation Manual 	1	
Coupler heat insulation (large) 	[PY03A] 4 [PY02A] 3	For indoor and outdoor side pipe joint (gas pipe)
Coupler heat insulation (small) 	[PY03A] 4 [PY02A] 3	For indoor and outdoor side pipe joint (liquid pipe)
Insulation (long) 	[PY03A] 3 [PY02A] 2	For insulation on the indoor unit side.
Insulation (short) 	3	For insulation on the outdoor unit side
Insulation 	[PY03A] 3 [PY02A] 2	For piping insulation on the indoor unit side
Hanger 	4	For suspending the Branch box from ceiling

Name and Shape	Q'ty	Application
Washer 	8	For suspending the Branch box from ceiling
Tapping screw (M4×10) 	8	For installing the Hanger
Tapping screw (M4×25) 	8	For installing the Branch box on the wall
Cable tie 	1	To tie the remote controller and cables
Seal 	1	To prevent small animals from entering inside
Adapter 12.7mm(1/2in.)→9.52mm(3/8in.) 	[PY03A] 3 [PY02A] 2	For indoor unit connection
Adapter 12.7mm(1/2in.)→15.88mm(5/8in.) 	[PY03A] 3 [PY02A] 2	For indoor unit connection

3. CONTROLLER

LINE UP

Type	Model	Indoor units							
		Compact Cassette	Slim Duct	Wall mounted				Floor / Ceiling	Floor
				LJ	LU	LM	LF		
Central Remote Controller	UTY-DMM*M	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1
Wired Remote Controller	UTY-RVN*M	○	○	○ *2	○ *3	○ *4	○	○	○
	UTY-RNN*M	○	●	○ *2	○ *3	○ *4	○	○	○
Wireless Remote Controller	AR-RAH2E	-	-	-	-	-	●	●	-
	AR-RAH1E	●	-	●	-	-	-	-	●
	AR-REA2E	-	-	-	●	-	-	-	-
	AR-REB1E	-	-	-	-	●	-	-	-
IR Receiver Unit	UTY-LRH*M	-	○	-	-	-	-	-	-
Simple Remote Controller	UTY-RSN*M	○	○	○ *2	○ *3	○ *4	○	○	○

●: Accessory, ○: Optional, -: Not applicable.

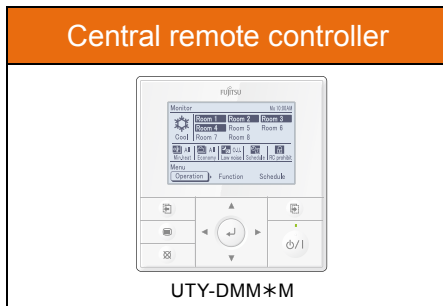
*1: Central remote controller is connected with Branch box.

*2: Optional Communication kit (UTY-XCBXZ1) is necessary for installation.

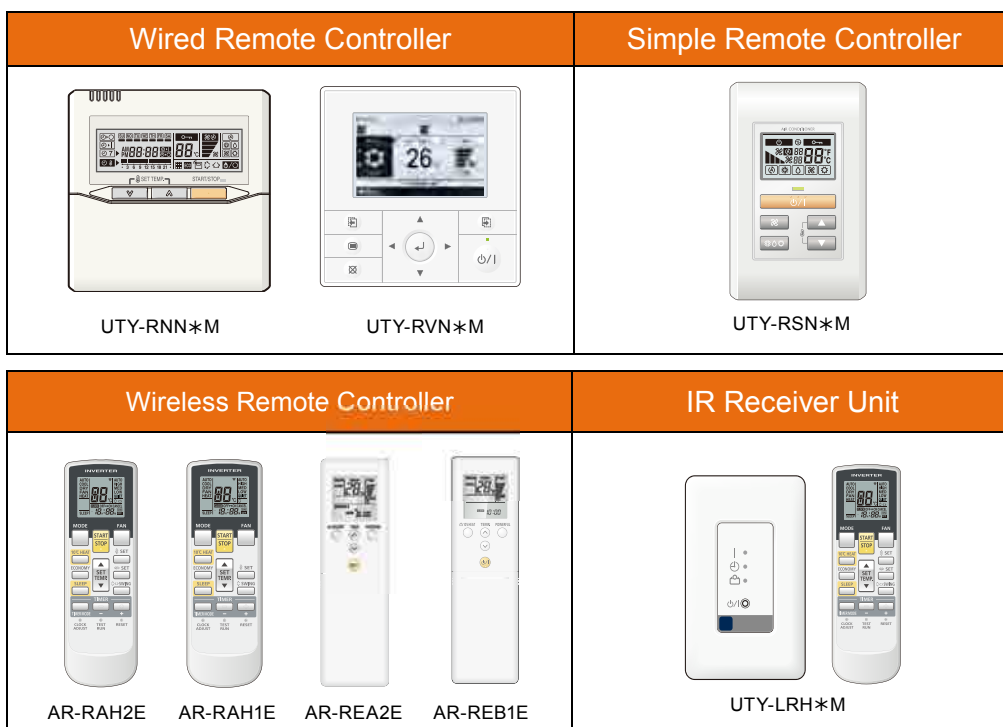
*3: Optional Communication kit (UTY-TWBXF) is necessary for installation.

*4: Optional Communication kit (UTY-XCBXZ2) is necessary for installation.

CENTRAL CONTROL



INDIVIDUAL CONTROL



4. OTHERS

■ LINE UP

Type	Model	Indoor units								Outdoor unit
		Compact Cassette	Slim Duct	Wall Mounted				Floor / Ceiling	Floor	
				LJ	LU	LM	LF			
Cassette Grille	UTG-UF*D-W	○	-	-	-	-	-	-	-	-
Air outlet shutter plate	UTR-YDZB	○	-	-	-	-	-	-	-	-
Insulation kit for high humidity	UTZ-KXGC	○	-	-	-	-	-	-	-	-
Fresh air intake kit	UTZ-VXAA	○	-	-	-	-	-	-	-	-
External control set	UTD-ECS5A	-	○	-	-	-	-	-	-	-
External connect kit	UTY-XWZX	○	-	○ *1	-	-	○	○	○	-
	UTY-XWZXZ3	-	-	-	-	-	-	-	-	○
External connect kit (For Base heater)	UTY-XWZXZ4	-	-	-	-	-	-	-	-	○
External connect kit	UTY-XWZXZ5	-	-	-	○ *2	○ *3	-	-	-	-
Remote sensor unit	UTY-XSZX	-	○	-	-	-	-	-	-	-
Auto louver grille kit	UTD-GXSA-W UTD-GXSB-W	-	○	-	-	-	-	-	-	-
Communication kit	UTY-XCBXZ1	-	-	○	-	-	-	-	-	-
	UTY-XCBXZ2	-	-	-	-	○	-	-	-	-
	UTY-TWBXF	-	-	-	○	-	-	-	-	-
Half concealed kit	UTR-STA	-	-	-	-	-	-	-	○	-

○: Optional, -: Not applicable.

*1: Optional Communication kit (UTY-XCBXZ1) is necessary for installation.

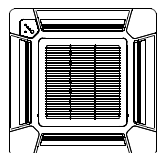
*2: Optional Communication kit (UTY-TWBXF) is necessary for installation.

*3: Optional Communication kit (UTY-XCBXZ2) is necessary for installation.

■ PARTS

Cassette grille

Model : UTG-UF*D-W



For Compact Cassette type

Air outlet shutter plate

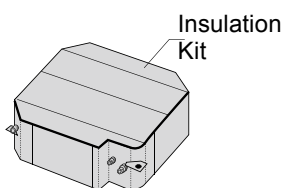
Model : UTR-YDZB



For Compact Cassette type

Insulation kit for high humidity

Model : UTZ-KXGC



For Compact Cassette type

Fresh air intake kit

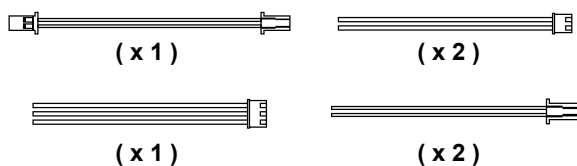
Model : UTZ-VXAA



For Compact Cassette type

External control set

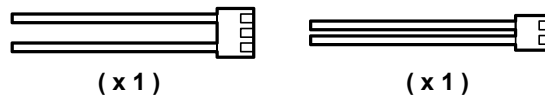
Model : UTD-ECS5A



For Slim Duct type

External connect kit

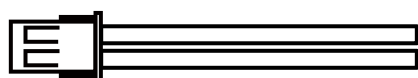
Model : UTY-XWZX



For Compact Cassette, Wall Mounted (LJ, LF),
Floor/Ceiling, Floor type

External connect kit

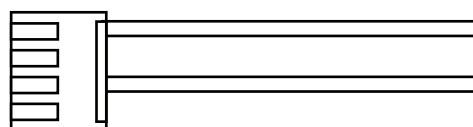
Model : UTY-XWZXZ3



For Outdoor unit

External connect kit

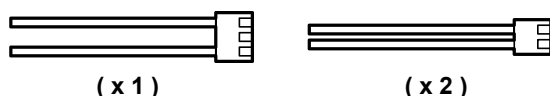
(For Base heater) Model : UTY-XWZXZ4



For Outdoor unit

External connect kit

Model : UTY-XWZXZ5



For Wall Mounted (LU, LM) type

Remote sensor unit

Model : UTY-XSZX



For Slim Duct type

Flexible Multi System



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