

DESIGN & TECHNICAL MANUAL

Hybrid Flex Inverter System



CONTENTS



1. GENERAL INFORMATION

2. MODEL SELECTION

3. OUTDOOR UNITS

4. INDOOR UNITS

5. CONTROL SYSTEM

6. SYSTEM DESIGN

7. OPTIONAL PARTS

Hybrid Flex Inverter System

1. GENERAL INFORMATION

CONTENTS

1. GENERAL INFORMATION

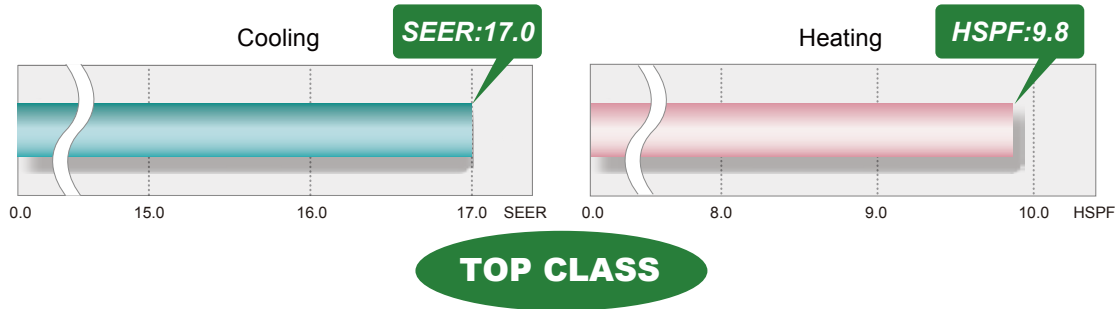
1. FEATURES OF SYSTEM	01 - 01
1-1.HIGH EFFICIENCY & COMPACT	01 - 01
1-2.FLEXIBLE DESIGN & EASY INSTALLATION.....	01 - 02
1-3.CENTRAL CONTROL	01 - 05
2. MODEL LINE UP	01 - 07
2-1.OUTDOOR UNIT	01 - 07
2-2.INDOOR UNIT	01 - 08
2-3.CONTROLLER.....	01 - 09
2-4.SEPARATION TUBE	01 - 10
2-5.BRANCH BOX.....	01 - 10
2-6.CASSETTE GRILLE.....	01 - 11
2-7.OTHERS	01 - 12

1. FEATURES OF SYSTEM

1-1. HIGH EFFICIENCY & COMPACT

■ HIGH EFFICIENCY

Adopting a large heat exchanger, high efficiency ventilation fan, DC twin rotary compressor, etc. realizes high efficiency operation.



■ TOP CLASS COMPACT DESIGN

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

About 48000Btu class

50-25/32in.
(1290mm)

➔

New model

Height difference
▲ 29%

36in.
(914mm)

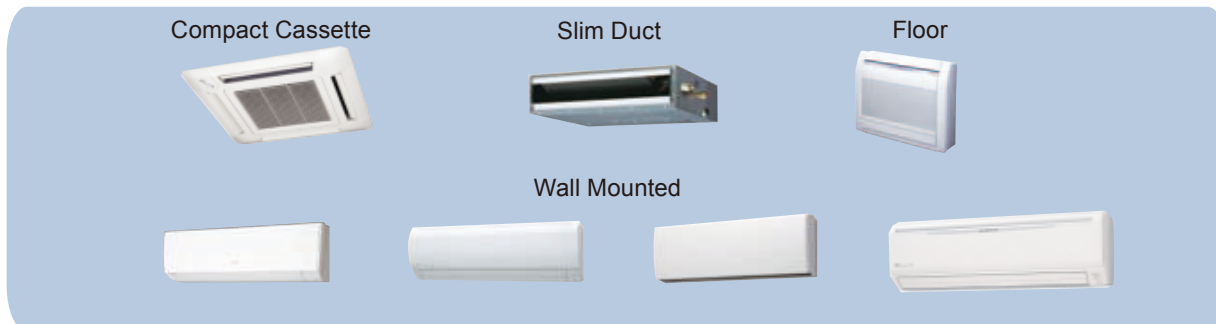
■ INNOVATIVE TECHNOLOGY

<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 & EASY INSTALLATION

■ FLEXIBLE DESIGN

- 7 types, 23 models of indoor units can be selected ranging from 7000Btu to 24000Btu in capacity.



- 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

2 to 8

For any room layout-connectable capacity of indoor units is max 130%



Total pipe length

377ft. max
(115m)

Actual pipe length

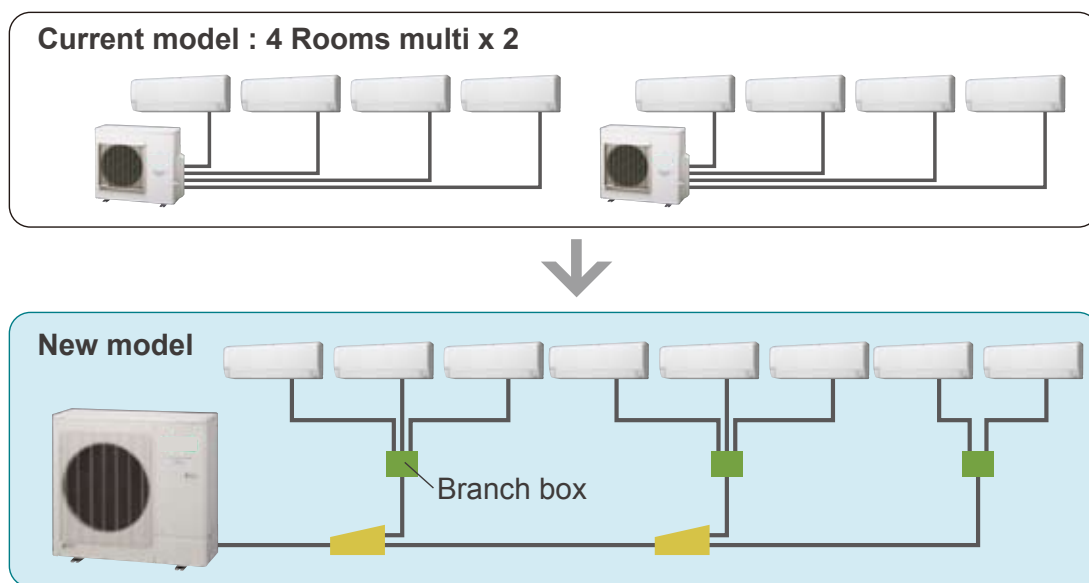
230ft. max
(70m)

Can be installed in high rise condominium or commercial building.

- Height difference between O.U and I.U **98ft.(30m)** max.
- Height difference between I.U and I.U **49ft. (15m)** max.

■ EASY INSTALLATION

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



■ BRANCH BOX

- Branch box has an electronic expansion valve built-in, so it can control the refrigerant flow to each indoor unit.
- Can be connected by flare connection and both ceiling suspension and wall mounting installation are available.

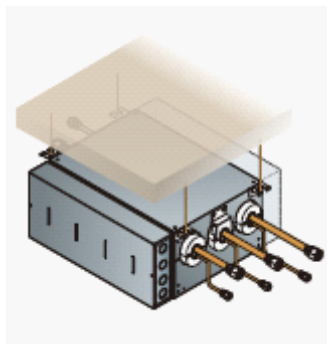


Primary type: UTP-PU03A

Secondary type: UTP-PU03B

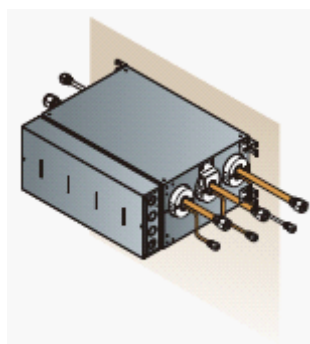
● Allowed branch box mounting direction

Ceiling suspension



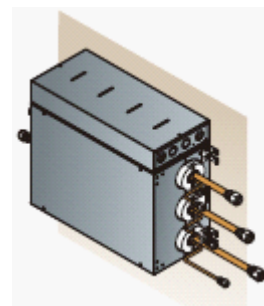
By reversing the electrical box position you can orient the inlet and outlet pipes into a left hand or right hand configuration,

Horizontal wall mounted



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

Vertical wall mounted



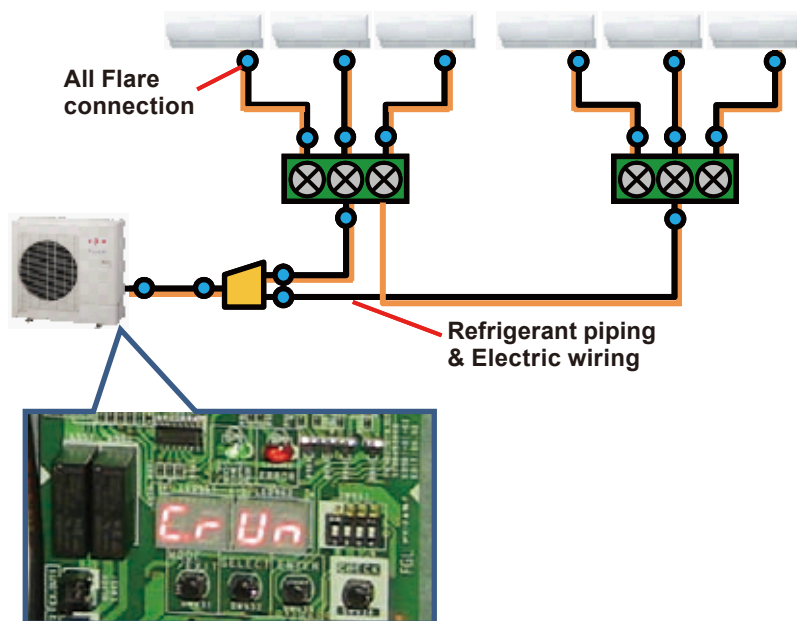
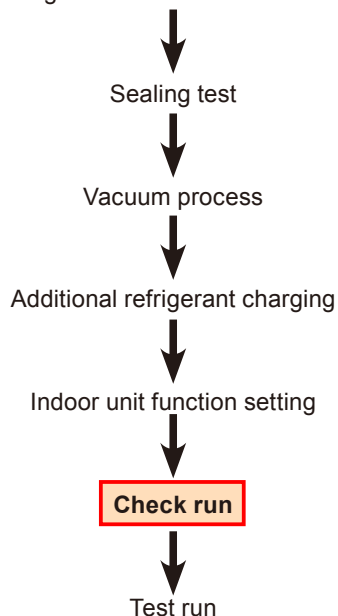
You cannot reverse the electrical box position when mounting the branch box vertically.

■ DECREASE OF INSTALLATION MISTAKE

- 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 item

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

■ SERVICE MAINTENANCE

● 7 segment LED display



Operation mode



Error display



Operating information

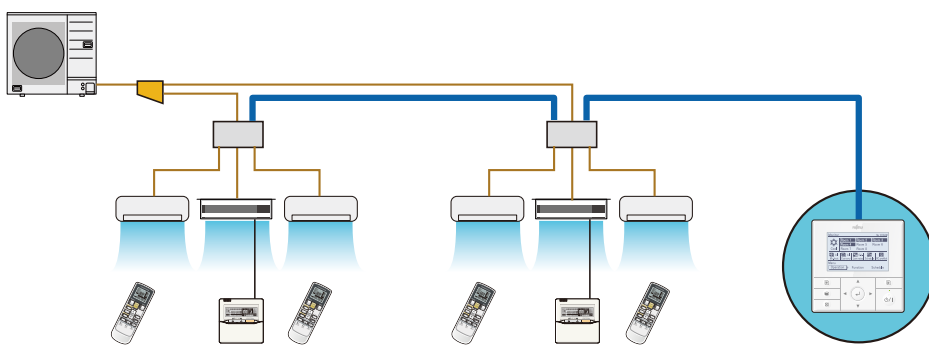
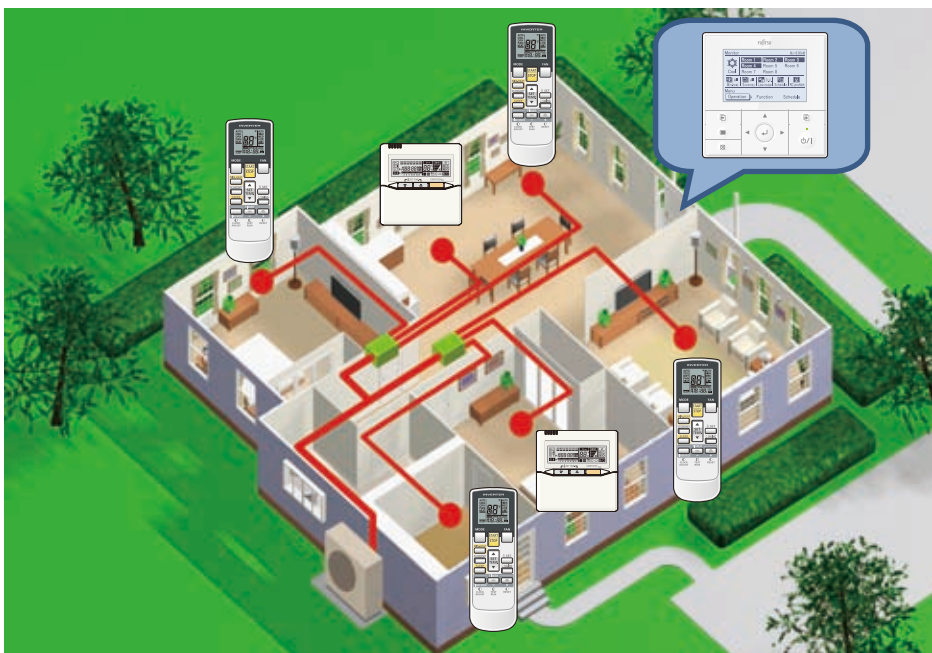


Example

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

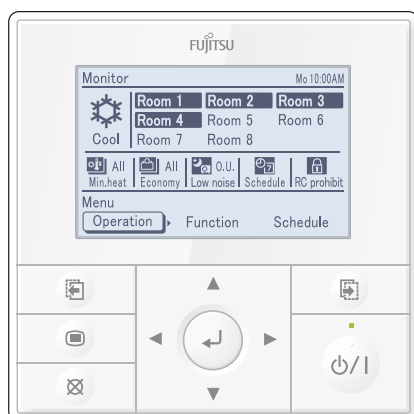
1-3. CENTRAL CONTROL

Support comfort control system for the varied needs of the home and the condominium, etc.



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

■ CENTRAL REMOTE CONTROLLER (Option)



UTY-DMMUM

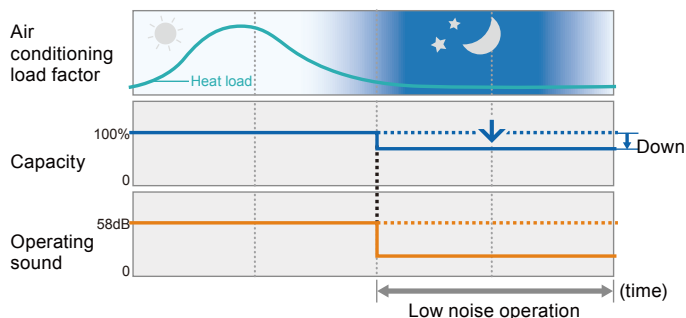
Controllable
1 Multi system

Max. controllable
8 indoor units

- 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

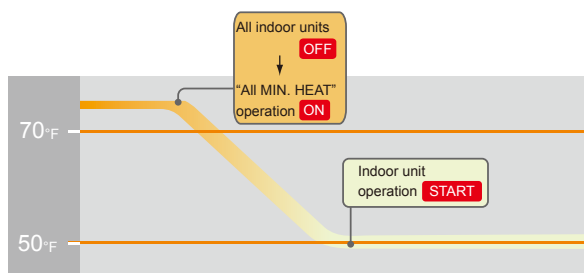
VARIOUS OPERATION MODES SET BY REMOTE CONTROLLER

Outdoor unit low noise operation



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

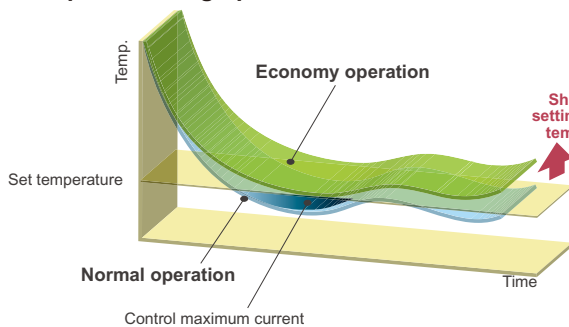
Minimum heat (All) operation



- While this function is selected, all indoor units start the minimum heat operation when all the indoor units are stopped by operation of the [On/Off button].
- When the room temperature is higher than 50°F (10°C), MIN. HEAT operation does not start and maintains the room temperature at 50°F (10°C) when the temperature drops below 50°F (10°C).
- When "MIN, HEAT operation stops, the room set temperature quickly returns to the preset temperature.

Economy (All) operation

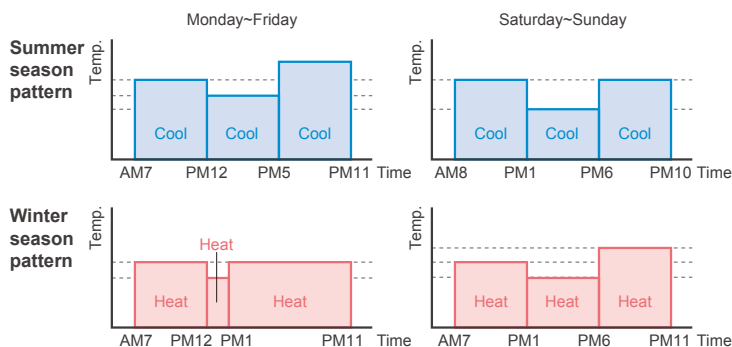
Example : Cooling operation



- If all the indoor and outdoor units are changed to economy mode, this can save more energy than setting of each indoor unit individually.
- Economy operation is energy saving, as the set temperature of indoor unit is shifted by 2°F (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 a week, and 2types of the schedule can be set to suit users' preference.

2. MODEL LINE UP

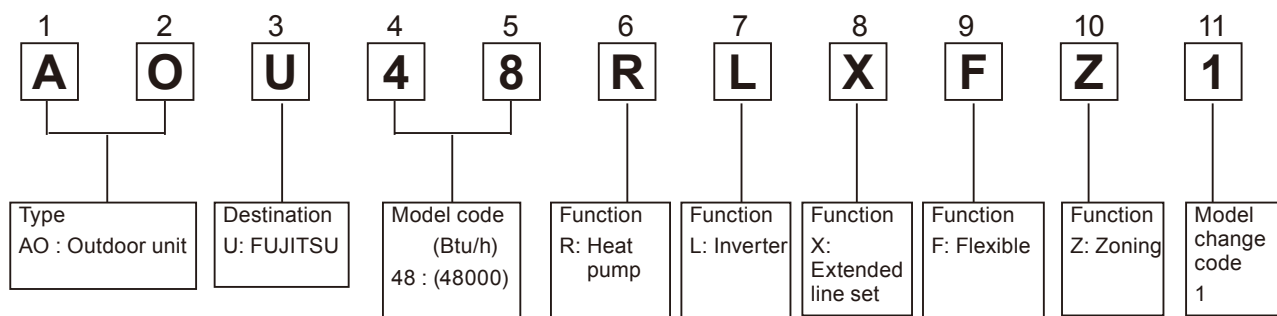
2-1. OUTDOOR UNIT

■ LINE UP

HP	Capacity (Btu/h)	Model name	Connectable indoor unit
5	48000	AOU48RLXFZ1	2 to 8



■ MODEL DESIGNATION







2-2. INDOOR UNIT


■ LINE UP

Various combinations of types and capacity 7 types 23 models, ranging from 7000Btu to 24000Btu.

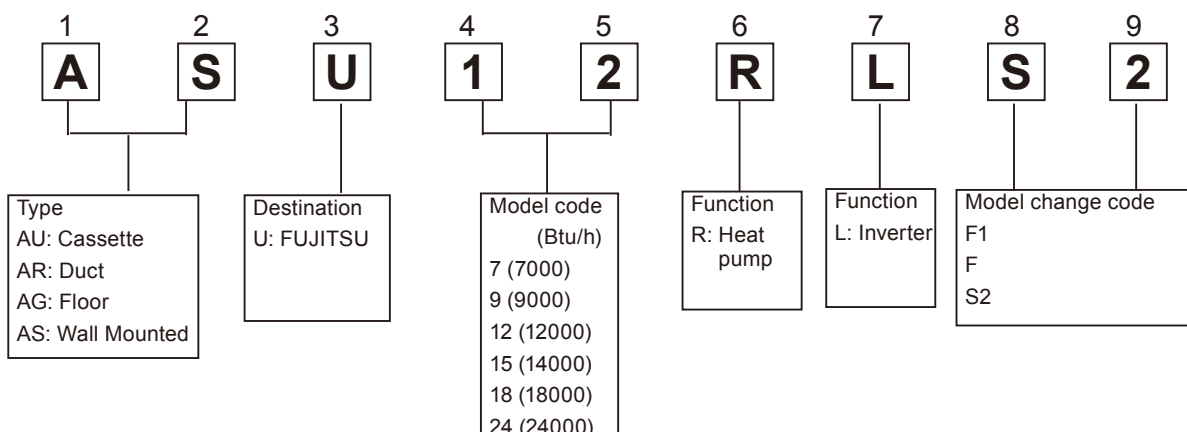
Capacity		Compact Cassette	Slim Duct	Floor	Wall Mounted			
Btu/h	Model code							
7000	7	●	●		(ASU7RLF1)	(ASU7RLF)		
9000	9	●	●	●	(ASU9RLF1)	(ASU9RLF)	(ASU9RLS2)	
12000	12	●	●	●	(ASU12RLF1)	(ASU12RLF)	(ASU12RLS2)	
14000	15			●			(ASU15RLS2)	
18000	18	●	●					(ASU18RLF)
24000	24		●					(ASU24RLF)

Compact Cassette	Slim Duct	Floor
AUU7RLF AUU9RLF AUU12RLF AUU18RLF 	ARU7RLF ARU9RLF ARU12RLF ARU18RLF ARU24RLF 	AGU9RLF AGU12RLF AGU15RLF 

Wall Mounted		
ASU7RLF1 ASU9RLF1 ASU12RLF1 	ASU7RLF ASU9RLF ASU12RLF 	ASU9RLS2 ASU12RLS2 ASU15RLS2 

Wall Mounted
ASU18RLF ASU24RLF 

■ MODEL DESIGNATION



2-3. CONTROLLER

■ LINE UP

Type	Model	Indoor units						
		Compact Cassette	Slim Duct	Floor	Wall mounted			
					ASU7RLF1 ASU9RLF1 ASU12RLF1	ASU7RLF ASU9RLF ASU12RLF	ASU9RLS2 ASU12RLS2 ASU15RLS2	ASU18RLF ASU24RLF
Central remote controller	UTY-DMMUM	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1
Wired Remote Controller	UTY-RNNUM	●	●	○	○ *4	○ *2	○ *3	○
Simple Remote Controller	UTY-RSNUM	○	○	○	○ *4	○ *2	○ *3	○
Wireless Remote Controller	UTY-LNHUM	○	-	-	-	-	-	●
	AR-RAH1U	-	-	-	-	●	-	-
	AR-RED1U	-	-	-	-	-	●	-
	AR-REG1U	-	-	●	●	-	-	-
IR Receiver Unit	UTY-LRHUM	-	○	-	-	-	-	-

●: Accessory, ○: Optional, -: It is not possible to connect it.

*1: Central remote controller is connected to Branch Box.

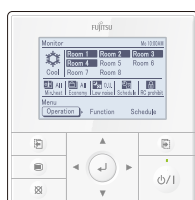
*2: Optional Communication kit (UTY-XCBXZ1) is necessary for the installation.

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

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

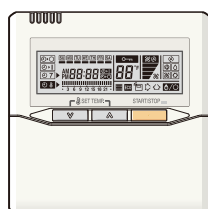
■ CENTRAL CONTROL

Central remote controller



■ INDIVIDUAL CONTROL

Wired Remote Controller



Simple Remote Controller



Wireless Remote Controller

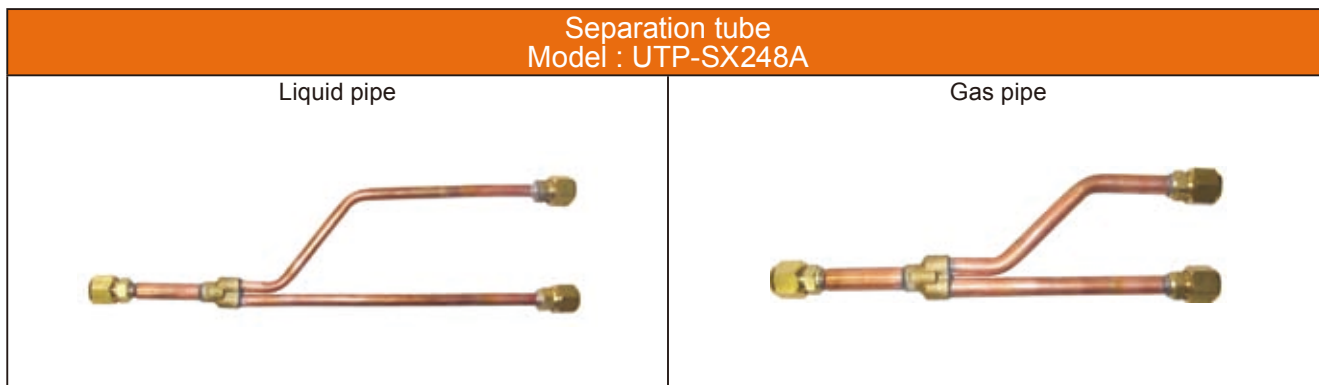


UTY-LNHUM AR-RAH1U AR-RED1U AR-REG1U

IR Receiver Unit



2-4. SEPARATION TUBE



2-5. BRANCH BOX



2-6. CASSETTE GRILLE

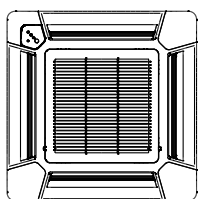
■ LINE UP

Type	Model	Indoor units						
		Compact Cassette	Slim Duct	Floor	Wall mounted			
					ASU7RLF1 ASU9RLF1 ASU12RLF1	ASU7RLF ASU9RLF ASU12RLF	ASU9RLS2 ASU12RLS2 ASU15RLS2	ASU18RLF ASU24RLF
Cassette grille	UTG-CCGF	○	-	-	-	-	-	-

■ PARTS

Cassette grille

Model : UTG-CCGF



2-7. OTHERS

■ LINE UP

Type	Model	Indoor units							Outdoor unit
		Compact Cassette	Slim Duct	Floor	Wall mounted				
					ASU7RLF1 ASU9RLF1 ASU12RLF1	ASU7RLF ASU9RLF ASU12RLF	ASU9RLS2 ASU12RLS2 ASU15RLS2	ASU18RLF ASU24RLF	
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	-	○	-
External connect kit	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 UTD-GXSC-W	-	○	-	-	-	-	-	-
Communication kit	UTY-XCBXZ1	-	-	-	-	○	-	-	-
	UTY-XCBXZ2	-	-	-	○	-	-	-	-
	UTY-TWBXF	-	-	-	-	-	○	-	-

○: Optional, -: It is not possible to connect it.

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

*2: Optional Communication kit (UTY-XCBXZ2) is necessary for the installation

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

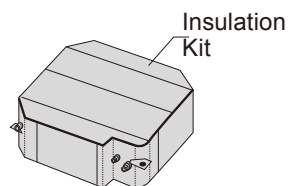
■ PARTS

Air outlet shutter plate Models : UTR-YDZB



For Compact Cassette type

Insulation kit for high humidity Model : UTZ-KXGC



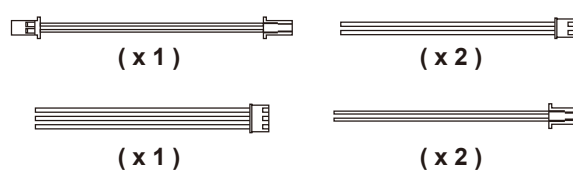
For Compact Cassette type

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



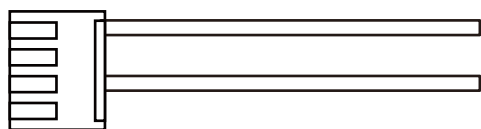
For Compact Cassette,
Wall Mounted (ASU7RLF, ASU9RLF, ASU12RLF,
ASU18RLF, ASU24RLF) type

External connect kit Model : UTY-XWZXZ3



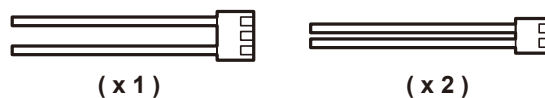
For Outdoor unit

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



For Outdoor unit

External connect kit Model : UTY-XWZXZ5



For Wall Mounted
(ASU7RLF1, ASU9RLF1, ASU12RLF1, ASU9RLS2,
ASU12RLS2, ASU15RLS2) type, Floor type

Auto louver grille kit Models : UTD-GXSA-W *1
UTD-GXSB-W *2
UTD-GXSC-W *3



*1 For Slim Duct (7-12 models)
*2 For Slim Duct (18 model)
*3 For Slim Duct (24 model)

Remote sensor unit Model : UTY-XSZX



For Slim Duct type

■ PARTS

Communication kit

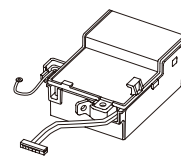
Model : UTY-XCBXZ1



For Wall Mounted
(ASU7RLF, ASU9RLF, ASU12RLF) type

Communication kit

Model : UTY-XCBXZ2



For Wall Mounted
(ASU7RLF1, ASU9RLF1, ASU12RLF1) type

Communication kit

Model : UTY-TWBXF



For Wall Mounted
(ASU9RLS2, ASU12RLS2, ASU15RLS2) type

Hybrid Flex Inverter System

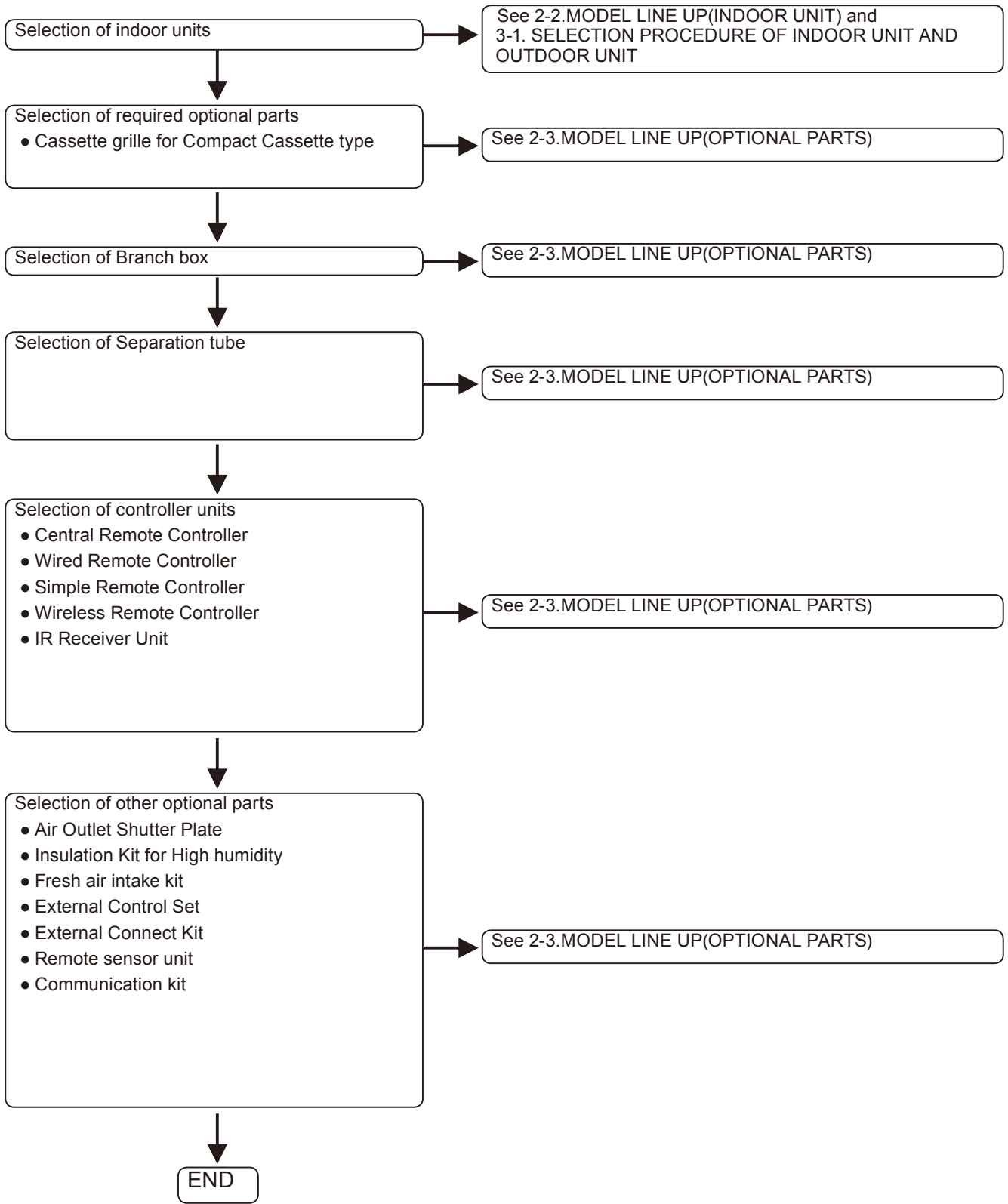
2. MODEL SELECTION

CONTENTS

2. MODEL SELECTION

1. MODEL SELECTION PROCEDURE	02 - 01
2. MODEL LINE UP	02 - 02
2-1.OUTDOOR UNIT	02 - 02
2-2.INDOOR UNIT	02 - 02
2-3.OPTIONAL PARTS.....	02 - 02
3. MODEL SELECTION AND CAPACITY CALCULATION	02 - 04
3-1.SELECTION PROCEDURE OF INDOOR UNIT AND OUTDOOR UNIT ..	02 - 04
3-2.THE EXAMPLE OF CALCULATION.....	02 - 05
3-2-1. COOLING EXAMPLE	02 - 05
3-2-2. HEATING EXAMPLE	02 - 09
4. CAPACITY TABLE (OUTDOOR UNIT)	02 - 13
4-1.COOLING CAPACITY	02 - 13
4-2.HEATING CAPACITY	02 - 15
5. CAPACITY COMPENSATION COEFFICIENT	02 - 17
5-1.COMPENSATION COEFFICIENT OF PIPE LENGTH.....	02 - 17
5-2.COMPENSATION COEFFICIENT OF FROSTING / DEFROSTING.....	02 - 19
6. CAPACITY TABLE (INDOOR UNIT)	02 - 20
6-1.COOLING CAPACITY	02 - 20
6-1-1. COMPACT CASSETTE TYPE.....	02 - 20
6-1-2. SLIM DUCT TYPE	02 - 22
6-1-3. WALL MOUNTED TYPE.....	02 - 26
6-1-4. FLOOR TYPE	02 - 34
6-2.HEATING CAPACITY	02 - 36
6-2-1. COMPACT CASSETTE TYPE.....	02 - 36
6-2-2. SLIM DUCT TYPE	02 - 38
6-2-3. WALL MOUNTED TYPE.....	02 - 40
6-2-4. FLOOR TYPE	02 - 48

1. MODEL SELECTION PROCEDURE



2. MODEL LINE UP

2-1. OUTDOOR UNIT

HP	Rated capacity (Btu/h)		Model name	Connectable indoor unit	
	Cooling	Heating		Number	Capacity (%)
5	48000	54000	AOU48RLXFZ1	2 to 8	80 to 130

2-2. INDOOR UNIT

Type	Rated capacity (Btu/h)		Model name	Remarks
	Cooling	Heating		
Compact Cassette	7000	8100	AUU7RLF	UTG-CCGF (Cassette grille)
	9000	10200	AUU9RLF	
	12000	13500	AUU12RLF	
	18000	20000	AUU18RLF	
Slim Duct	7000	8100	ARU7RLF	
	9000	10200	ARU9RLF	
	12000	13500	ARU12RLF	
	18000	20000	ARU18RLF	
	24000	27000	ARU24RLF	
Wall Mounted	7000	8100	ASU7RLF1, ASU7RLF	
	9000	10200	ASU9RLF1, ASU9RLF, ASU9RLS2	
	12000	13500	ASU12RLF1, ASU12RLF, ASU12RLS2	
	14000	16300	ASU15RLS2	
	18000	20000	ASU18RLF	
	24000	27000	ASU24RLF	
Floor	9000	10200	AGU9RLF	
	12000	13500	AGU12RLF	
	14000	16300	AGU15RLF	

2-3. OPTIONAL PARTS

■ BRANCH BOX

Items	Model name	Remarks
Primary type	UTP-PU03A	
Secondary type	UTP-PU03B	

■ SEPARATION TUBE

Items	Model name	Remarks
Separation tube	UTP-SX248A	

■ CONTROLLER

Items	Model name	Remarks
Central Remote Controller	UTY-DMMUM	
Wired Remote Controller	UTY-RNNUM	Accessory: Compact Cassette, Slim Duct
Simple Remote Controller	UTY-RSNUM	
Wireless Remote Controller	UTY-LNHUM	Accessory: Wall Mounted (ASU18RLF, ASU24RLF)
	AR-RAH1U	Accessory: Wall Mounted (ASU7RLF, ASU9RLF, ASU12RLF)
	AR-RED1U	Accessory: Wall Mounted (ASU9RLS2, ASU12RLS2, ASU15RLS2)
	AR-REG1U	Accessory: Wall Mounted (ASU7RLF1, ASU9RLF1, ASU12RLF1), Floor
IR Receiver Unit	UTY-LRHUM	

■ CASSETTE GRILLE

Items	Model name	Remarks
Cassette grille	UTG-CCGF	Refer to "7. OPTIONAL PARTS"

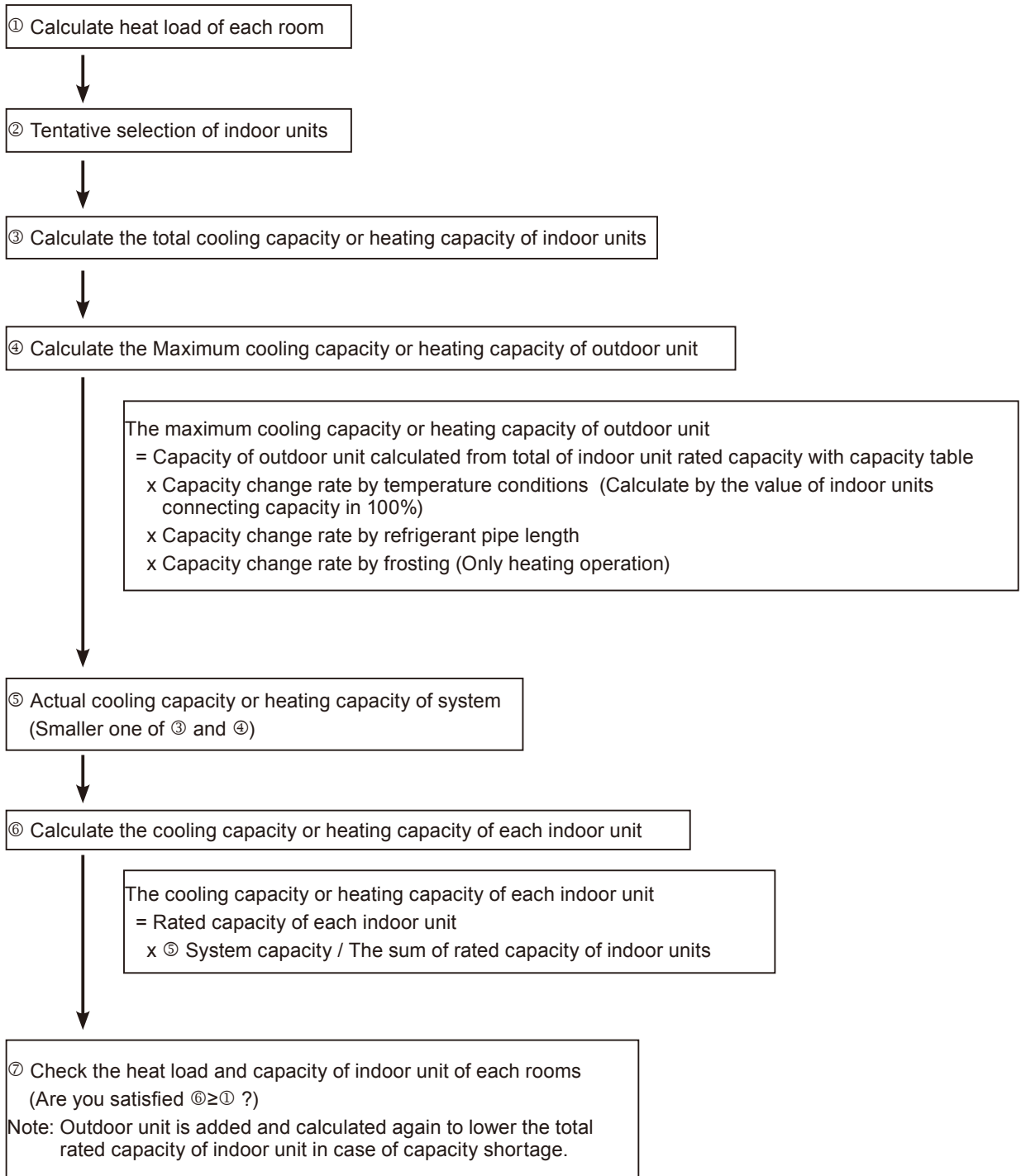
■ OTHERS

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

3. MODEL SELECTION AND CAPACITY CALCULATION

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

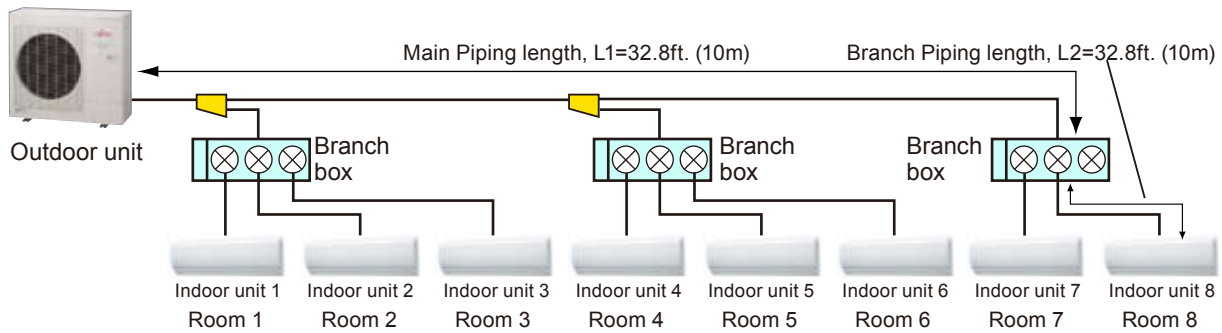
Please select indoor units and outdoor units and make the capacity of each indoor unit be larger than cooling and heating load.



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 : 75°F DB / 63°F WB (23.9°C DB / 17.2°C WB)
Outdoor : 86°F DB (30°C DB)
- Pipe length
Main piping length : L1=32.8ft. (10m)
Branch piping length : L2=32.8ft. (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	Btu	5800	5800	5800	5800	5800	5800	5800		
A-2	Indoor unit models		ASU7	ASU7	ASU7	ASU7	ASU7	ASU7	ASU7		
A-3	Rated capacity $(TC_{in})_r$	Btu	7000	7000	7000	7000	7000	7000	7000	See 2-2.	
A-4	Total rated capacity $\sum(TC_{in})_r$	Btu	7000 x 8 = 56000								Sum of A-3
A-5	Connecting indoor unit capacity (Cp)		56000 / 48000 = 117% (80% ≤ Cp ≤ 130%)								
A-6	Capacity at design temperature $(TC_{in})_d$	Btu	6510	6510	6510	6510	6510	6510	6510	See 6-1.	
A-7	Total capacity at design temperature $\sum(TC_{in})_d$	Btu	6510 x 8 = 52080								Sum of A-6

● Calculate the Maximum capacity of outdoor unit

			Remark
B-1	Outdoor unit model		AOU48RLXFZ1
B-2	Rated capacity $(TC_{out})_r$	Btu	48000
B-3	Capacity change rate by temperature conditions		47.4 / 48.0 = 0.988
B-4	Capacity change rate by indoor units connecting capacity	Btu	52400
B-5	Compensation coefficient of pipe length		0.98 x 0.942 = 0.923
B-6	Maximum capacity of outdoor unit $(TC_{out})_c$	Btu	52400 x 0.988 x 0.923 = 47780
			(B-4) x (B-3) x (B-5)

● Decide system capacity

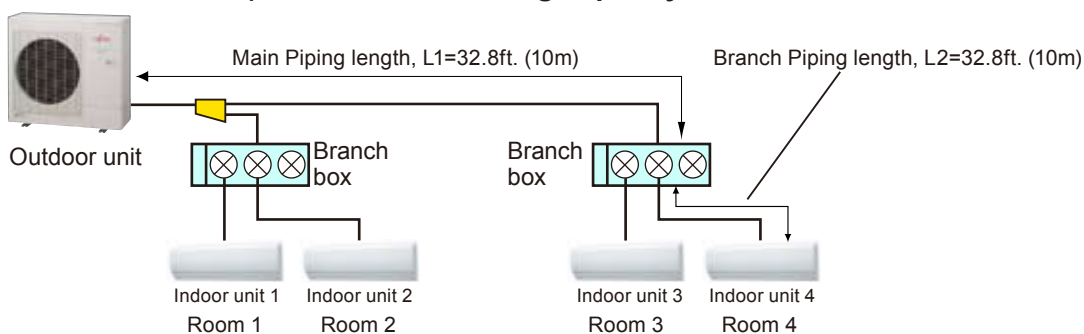
			Remark
C-1	System capacity	Btu	47780
			Smaller one of (A-7) and (B-6)

● 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	Btu	5970	5970	5970	5970	5970	5970	5970	5970	(A-3) x (C-1) / (A-4)

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 : 75°F DB / 63°F WB (23.9°C DB / 17.2°C WB)
Outdoor : 86°F DB (30°C DB)
- Pipe length
Main piping length : L1=32.8ft. (10m)
Branch piping length : L2=32.8ft. (10m)
- Operation mode: Cooling

● Selection of indoor unit

		Room 1	Room 2	Room 3	Room 4	Remark	
A-1	Cooling heat load	Btu	8000	8000	11000	11000	
A-2	Indoor unit models		ASU9	ASU9	ASU12	ASU12	
A-3	Rated capacity (TC _{in,r})	Btu	9000	9000	12000	12000	See 2-2.
A-4	Total rated capacity $\sum(TC_{in,r})$	Btu	9000 x 2 + 12000 x 2 = 42000				Sum of A-3
A-5	Connecting indoor unit capacity (Cp)		42000 / 48000 = 87.5% (80% ≤ Cp ≤ 130%)				
A-6	Capacity at design temperature (TC _{in,d})	Btu	8420	8420	11200	11200	See 6-1.
A-7	Total capacity at design temperature $\sum(TC_{in,d})$	Btu	8420 x 2 + 11200 x 2 = 39240				Sum of A-6

● Calculate the Maximum capacity of outdoor unit

			Remark
B-1	Outdoor unit model		AOU48RLXFZ1
B-2	Rated capacity (TC _{out,r})	Btu	48000
B-3	Capacity change rate by temperature conditions		47.4 / 48.0 = 0.988
B-4	Capacity change rate by indoor units connecting capacity	Btu	48000 *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})	Btu	48000 x 0.988 x 0.923 = 43770

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

● Decide system capacity

			Remark
C-1	System capacity	Btu	39240

Smaller one of (A-7) and (B-6)

● Calculate actual capacity of each indoor unit

		Room 1	Room 2	Room 3	Room 4	Remark
Actual capacity of each indoor unit	Btu	8410	8410	11210	11210	(A-3) x (C-1) / (A-4)

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

● Fig 1

Indoor unit connecting capacity (%)	Outdoor temperature (°F)	Indoor temperature									
		70°F DB		75°F DB		80°F DB		85°F DB		90°F DB	
		60°F WB		63°F WB		67°F WB		71°F WB		73°F WB	
		TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
...
100	23	45.0	2.00	49.5	2.11	53.2	2.25	59.7	2.40	64.8	2.50
	32	45.0	2.08	49.5	2.14	53.2	2.30	59.7	2.45	64.8	2.55
	41	45.0	2.12	49.5	2.19	53.2	2.40	59.7	2.50	64.8	2.65
	50	45.0	2.16	49.5	2.25	53.2	2.50	59.7	2.60	64.8	2.80
	59	45.0	2.21	49.5	2.40	53.2	2.75	59.7	2.80	64.8	3.00
	68	44.0	2.45	49.1	2.63	52.9	3.00	59.4	3.10	64.8	3.20
	77	43.0	2.80	48.5	3.20	52.2	3.50	58.7	3.90	62.8	4.00
	86	41.6	3.81	47.4	4.15	51.9	4.41	58.0	4.70	60.4	5.00
	95	39.9	4.67	46.1	4.95	48.0	5.19	53.2	5.26	54.6	5.34
	104	38.2	5.01	42.7	5.12	44.4	5.21	48.5	5.32	51.2	5.41
	115	35.5	4.75	37.5	4.97	39.2	5.05	42.7	5.10	44.0	5.15

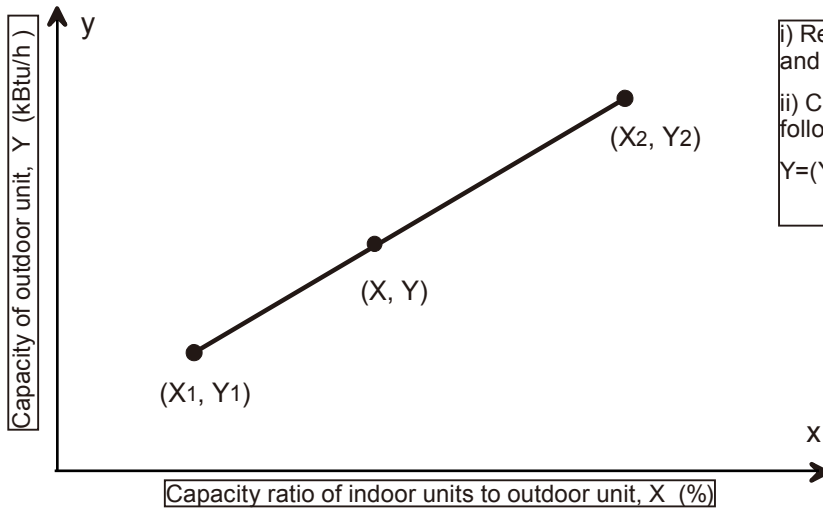
(c)

(a)

B-3: Capacity change rate by temperature conditions

(c) / (a) = 47.4 / 48.0 = 0.988

● 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:
 $Y = (Y_2 - Y_1) / (X_2 - X_1) \times (X - X_1) + Y_1$

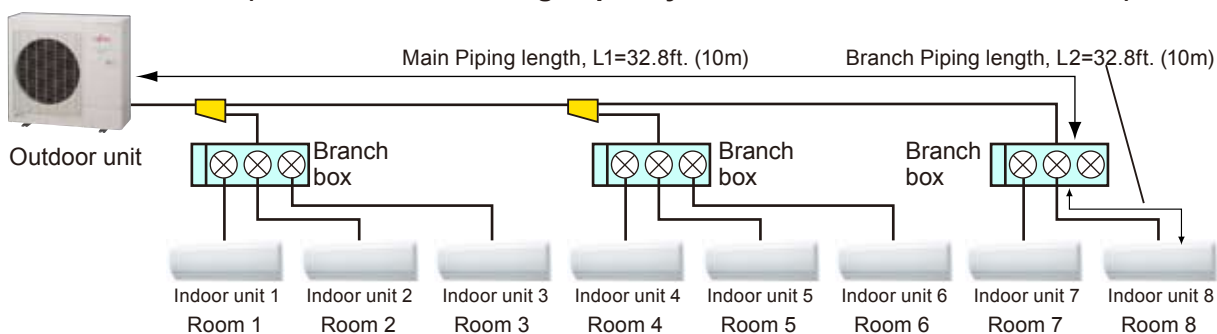
Indoor unit connecting capacity (%)	Outdoor temperature (°F)	Indoor temperature									
		70°F DB		75°F DB		80°F DB		85°F DB		90°F DB	
		60°F WB		63°F WB		67°F WB		71°F WB		73°F WB	
		TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
120 X ₂	23	53.2	2.50	56.3	2.55	59.7	2.65	64.8	2.75	68.6	2.80
	32	53.2	2.56	56.3	2.75	59.7	2.80	64.8	2.90	68.6	2.95
	41	53.2	2.61	56.3	2.85	59.7	2.90	64.8	3.05	68.6	3.10
	50	53.2	2.70	56.3	2.95	59.7	3.05	64.8	3.05	68.6	3.20
	59	53.2	2.90	56.3	3.20	59.7	3.30	64.8	3.35	68.6	3.40
	68	53.2	3.55	56.3	3.60	59.7	4.00	64.8	4.05	68.6	4.10
	77	50.8	4.20	54.6	4.40	58.0	4.70	63.5	4.80	65.2	4.85
	86	47.8	4.76	51.5	5.13	55.3	5.33	61.4	5.45	63.1	5.51
	95	45.0	5.24	48.1	5.79	53.2	5.90	55.3	5.93	57.0	5.96
	104	41.6	5.20	44.0	5.90	53.2	5.96	49.1	5.98	53.6	5.98
115	36.8	4.94	39.9	5.06	53.2	5.15	44.0	5.20	45.4	5.28	
...
100 X ₁	23	45.0	2.00	49.5	2.11	53.2	2.25	59.7	2.40	64.8	2.50
	32	45.0	2.08	49.5	2.14	53.2	2.30	59.7	2.45	64.8	2.55
	41	45.0	2.12	49.5	2.19	53.2	2.40	59.7	2.50	64.8	2.65
	50	45.0	2.16	49.5	2.25	53.2	2.50	59.7	2.60	64.8	2.80
	59	45.0	2.21	49.5	2.40	53.2	2.75	59.7	2.80	64.8	3.00
	68	44.0	2.45	49.1	2.63	52.9	3.00	59.4	3.10	64.8	3.20
	77	43.0	2.80	48.5	3.20	52.2	3.50	58.7	3.90	62.8	4.00
	86	41.6	3.81	47.4	4.15	51.9	4.41	58.0	4.70	60.4	5.00
	95	39.9	4.67	46.1	4.95	48.0	5.19	53.2	5.26	54.6	5.34
	104	38.2	5.01	42.7	5.12	48.0	5.21	48.5	5.32	51.2	5.41
115	35.5	4.75	37.5	4.97	48.0	5.05	42.7	5.10	44.0	5.15	

Capacity ratio of indoor units to outdoor unit	X ₁ = 100 %	X = 117 %	X ₂ = 120 %
Capacity of outdoor units (kBtu/h)	Y ₁ = 48.0	Y	Y ₂ = 53.2

$Y = (53.2 - 48.0) / (120 - 100) \times (117 - 100) + 48.0 = 52.4 \text{ (kBtu/h)}$

3-2-2. HEATING EXAMPLE

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



● Design conditions

- Design temperature
 - Indoor : 65°F DB (18.3°C DB)
 - Outdoor : 50°F DB / 47°F WB (10.0°C DB / 8.3°C WB)
- Pipe length
 - Main piping length : L1=32.8ft. (10m)
 - Branch piping length : L2=32.8ft. (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	Btu	8000	8000	8000	8000	8000	8000	8000	
A-2	Indoor unit models		ASU7	ASU7	ASU7	ASU7	ASU7	ASU7	ASU7	
A-3	Rated capacity (TC _{in}) _r	Btu	8100	8100	8100	8100	8100	8100	8100	See 2-2.
A-4	Total rated capacity $\sum(TC_{in})_r$	Btu	8100 x 8 = 64800							Sum of A-3
A-5	Connecting indoor unit capacity (C _p)		64800 / 54000 = 120%							
A-6	Capacity at design temperature (TC _{in}) _d	Btu	8770	8770	8770	8770	8770	8770	8770	See 6-2.
A-7	Total capacity at design temperature $\sum(TC_{in})_d$	Btu	8770 x 8 = 70160							Sum of A-6

● Calculate the Maximum capacity of outdoor unit

			Remark
B-1	Outdoor unit model		AOU48RLXFZ1
B-2	Rated capacity (TC _{out}) _r	Btu	54000
B-3	Capacity change rate by temperature conditions		59.7 / 54.0 = 1.106
B-4	Capacity change rate by indoor units connecting capacity	Btu	62100
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	Btu	62100 x 1.106 x 0.958 x 1.00 = 65800
			(B-4) x (B-3) x (B-5) x (B-6)

● Decide system capacity

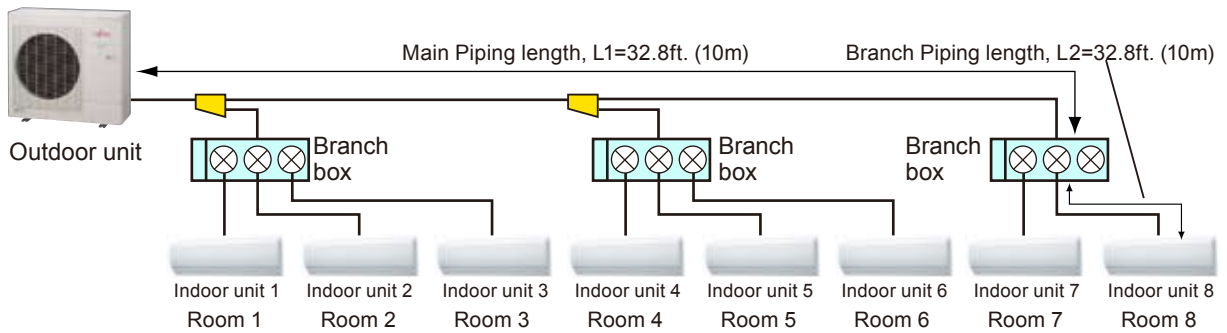
			Remark
C-1	System capacity	Btu	65800
			Smaller one of (A-7) and (B-7)

● 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	Btu	8220	8220	8220	8220	8220	8220	8220	8220	(A-3) x (C-1) / (A-4)

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 : 65°F DB (18.3°C DB)
Outdoor : 41°F DB / 37°F WB (5.0°C DB / 2.8°C WB)
- Pipe length
Main piping length : L1=32.8ft. (10m)
Branch piping length : L2=32.8ft. (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	Btu	6500	6500	6500	6500	6500	6500	6500	6500		
A-2	Indoor unit models		ASU7	ASU7	ASU7	ASU7	ASU7	ASU7	ASU7	ASU7		
A-3	Rated capacity (TC _{in}) _r	Btu	8100	8100	8100	8100	8100	8100	8100	8100	See 2-2.	
A-4	Total rated capacity Σ(TC _{in}) _r	Btu	8100 x 8 = 64800									Sum of A-3
A-5	Connecting indoor unit capacity (C _p)		64800 / 54000 = 120%									
A-6	Capacity at design temperature (TC _{in}) _d	Btu	8770	8770	8770	8770	8770	8770	8770	8770	See 6-2.	
A-7	Total capacity at design temperature Σ(TC _{in}) _d	Btu	8770 x 8 = 70160									Sum of A-6

● Calculate the Maximum capacity of outdoor unit

			Remark
B-1	Outdoor unit model		AOU48RLXFZ1
B-2	Rated capacity (TC _{out}) _r	Btu	54000
B-3	Capacity change rate by temperature conditions		55.3 / 54.0 = 1.024
B-4	Capacity change rate by indoor units connecting capacity	Btu	62100
B-5	Compensation coefficient of pipe length		0.996 x 0.962 = 0.958
B-6	Capacity change rate by frosting		0.90
B-7	Maximum capacity of outdoor unit (TC _{out}) _c	Btu	62100 x 1.024 x 0.958 x 0.90 = 54830
			(B-4) x (B-3) x (B-5) x (B-6)

● Decide system capacity

			Remark
C-1	System capacity	Btu	54830
			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	Btu	6850	6850	6850	6850	6850	6850	6850	6850	(A-3) x (C-1) / (A-4)

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	60°F DB		65°F DB		70°F DB		75°F DB		78°F DB	
	°F	°F	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
...
100	5	3	35.8	5.55	34.1	5.52	32.8	5.50	31.4	5.48	31.0	5.45
	14	12	43.7	5.60	41.6	5.61	40.3	5.62	38.6	5.64	37.5	5.66
	23	19	49.1	5.70	47.1	5.78	45.4	5.75	44.0	5.72	42.7	5.40
	32	28	53.6	5.76	51.5	5.78	49.5	5.74	47.1	5.68	43.7	5.38
	41	37	58.0	5.76	55.3	5.61	51.2	5.23	47.8	4.92	45.0	4.79
	47	43	63.1	5.70	59.4	5.35	54.0	4.89	49.5	4.55	46.1	4.46
	50	47	63.5	5.56	59.7	5.25	54.6	4.80	50.2	4.53	46.7	4.37
	59	50	64.1	5.49	60.1	4.80	56.0	4.61	51.2	4.33	47.4	4.05
	68	59	64.8	4.63	60.7	4.45	57.0	4.36	52.5	4.08	48.5	3.77
	75	65	65.2	4.05	61.4	3.92	58.0	3.81	56.0	3.73	53.9	3.51

(c')

(c)

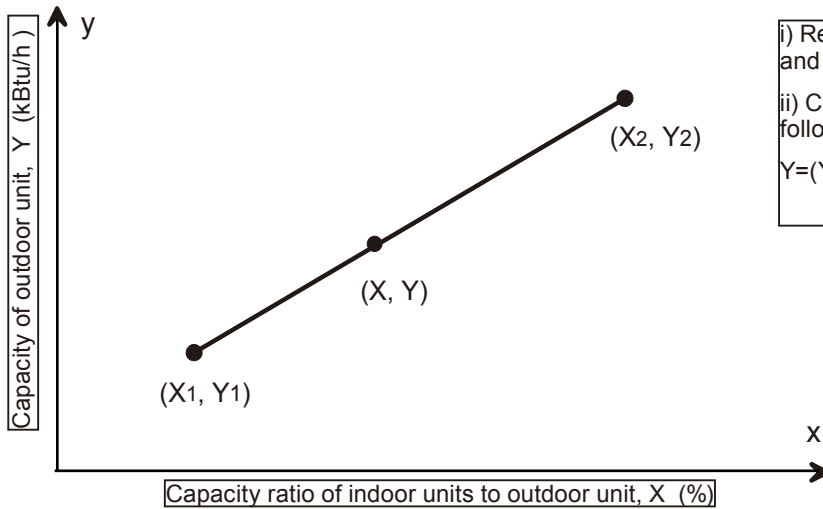
(a)

B-3: Capacity change rate by temperature conditions

$(c) / (a) = 59.7 / 54.0 = 1.106$ (Example 3)

$(c') / (a) = 55.3 / 54.0 = 1.024$ (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	60°F DB		65°F DB		70°F DB		75°F DB		78°F DB	
	°F	°F	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
120 X ₂	5	3	38.9	5.57	37.5	5.58	36.2	5.60	34.8	5.62	33.8	5.64
	14	12	49.5	5.62	48.8	5.64	47.8	5.66	46.7	5.68	45.7	5.70
	23	19	53.2	5.71	52.5	5.74	51.5	5.77	50.8	5.79	49.8	5.81
	32	28	57.3	5.80	56.3	5.82	55.6	5.86	54.9	5.88	54.3	5.90
	41	37	60.7	5.92	60.1	5.93	59.4	5.95	58.7	5.96	58.0	5.97
	47	43	63.8	5.98	63.1	5.98	62.1	5.98	61.4	5.98	60.4	5.98
	50	47	66.2	5.98	65.2	5.98	64.5	5.98	63.8	5.98	63.1	5.98
	59	50	68.6	5.10	67.9	5.22	67.2	5.45	66.2	5.84	65.2	5.98
	68	59	69.6	4.37	68.9	4.44	68.6	4.73	67.9	5.05	67.2	5.17
	75	65	70.3	4.14	69.9	4.25	69.3	4.39	68.6	4.61	67.9	4.88
...
100 X ₁	5	3	35.8	5.55	34.1	5.52	32.8	5.50	31.4	5.48	31.0	5.45
	14	12	43.7	5.60	41.6	5.61	40.3	5.62	38.6	5.64	37.5	5.66
	23	19	49.1	5.70	47.1	5.78	45.4	5.75	44.0	5.72	42.7	5.40
	32	28	53.6	5.76	51.5	5.78	49.5	5.74	47.1	5.68	43.7	5.38
	41	37	58.0	5.76	55.3	5.61	51.2	5.23	47.8	4.92	45.0	4.79
	47	43	63.1	5.70	59.4	5.35	54.0	4.89	49.5	4.55	46.1	4.46
	50	47	63.5	5.56	59.7	5.25	54.6	4.80	50.2	4.53	46.7	4.37
	59	50	64.1	5.19	60.1	4.80	54.6	4.61	51.2	4.33	47.4	4.05
	68	59	64.8	4.63	60.7	4.45	57.0	4.36	52.5	4.08	48.5	3.77
	75	65	65.2	4.05	61.4	3.92	58.0	3.81	56.0	3.73	53.9	3.51

Capacity ratio of indoor units to outdoor unit	X ₁ = 100 %	X = 120 %	X ₂ = 120 %
Capacity of outdoor units (kBtu/h)	Y ₁ = 54.0	Y	Y ₂ = 62.1

$Y = (62.1 - 54.0) / (120 - 100) \times (120 - 100) + 54.0 = 62.1 \text{ (kBtu/h)}$

4. CAPACITY TABLE (OUTDOOR UNIT)

4-1. COOLING CAPACITY

■ MODEL : AOU48RLXFZ1

COOLING CAPACITY

● Capacity in kBtu/h

MODEL SELECTION

MODEL SELECTION

Indoor unit connecting capacity (%)	Outdoor temperature (°F)	Indoor temperature									
		70°F DB		75°F DB		80°F DB		85°F DB		90°F DB	
		60°F WB		63°F WB		67°F WB		71°F WB		73°F WB	
		TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
130	23	57.0	2.80	59.7	2.85	62.8	2.90	66.5	2.95	70.3	3.00
	32	57.0	2.90	59.7	3.00	62.8	3.05	66.5	3.10	70.3	3.15
	41	57.0	2.95	59.7	3.05	62.8	3.10	66.5	3.15	70.3	3.20
	50	57.0	3.10	59.7	3.25	62.8	3.30	66.5	3.35	70.3	3.40
	59	57.0	3.40	59.7	3.55	62.8	3.60	66.5	3.65	70.3	3.70
	68	57.0	4.25	59.7	4.35	62.8	4.45	66.5	4.45	68.2	4.50
	77	53.9	4.80	56.3	5.15	61.4	5.20	64.8	5.20	66.5	5.25
	86	49.5	5.11	53.6	5.49	56.6	5.55	62.4	5.61	64.1	5.68
	95	46.4	5.40	48.8	5.85	53.6	5.87	56.6	5.93	58.0	5.98
	104	42.0	5.50	44.4	5.90	47.8	5.96	49.5	5.98	51.2	5.98
115	37.5	5.01	40.9	5.06	42.0	5.15	44.7	5.20	46.1	5.30	
120	23	53.2	2.50	56.3	2.55	59.7	2.65	64.8	2.75	68.6	2.80
	32	53.2	2.56	56.3	2.75	59.7	2.80	64.8	2.90	68.6	2.95
	41	53.2	2.61	56.3	2.85	59.7	2.90	64.8	3.05	68.6	3.10
	50	53.2	2.70	56.3	2.95	59.7	3.05	64.8	3.05	68.6	3.20
	59	53.2	2.90	56.3	3.20	59.7	3.30	64.8	3.35	68.6	3.40
	68	53.2	3.55	56.3	3.60	59.7	4.00	64.8	4.05	68.6	4.10
	77	50.8	4.20	54.6	4.40	58.0	4.70	63.5	4.80	65.2	4.85
	86	47.8	4.76	51.5	5.13	55.3	5.33	61.4	5.45	63.1	5.51
	95	45.0	5.24	48.1	5.79	53.2	5.90	55.3	5.93	57.0	5.96
	104	41.6	5.20	44.0	5.90	47.1	5.96	49.1	5.98	53.6	5.98
115	36.8	4.94	39.9	5.06	41.3	5.15	44.0	5.20	45.4	5.28	
110	23	49.1	2.25	52.9	2.30	56.6	2.45	61.4	2.60	66.9	2.65
	32	49.1	2.29	52.9	2.35	56.6	2.55	61.4	2.65	66.9	2.75
	41	49.1	2.44	52.9	2.60	56.6	2.65	61.4	2.75	66.9	2.80
	50	49.1	2.51	52.9	2.65	56.6	2.80	61.4	2.85	66.9	3.00
	59	49.1	2.60	52.9	2.85	56.6	3.05	61.4	3.15	66.9	3.20
	68	49.1	2.95	52.9	3.20	56.6	3.55	61.4	3.65	66.9	3.75
	77	47.4	3.50	51.5	3.75	55.6	4.20	60.7	4.40	64.5	4.45
	86	45.0	4.30	49.5	4.63	53.9	5.11	60.1	5.22	61.8	5.29
	95	43.3	5.05	47.4	5.33	52.9	5.90	54.3	5.93	57.0	5.96
	104	39.9	5.00	43.3	5.90	46.1	5.96	48.8	5.98	52.5	5.98
115	36.2	4.82	38.9	5.01	40.3	5.11	43.3	5.18	44.7	5.26	
100	23	45.0	2.00	49.5	2.11	53.2	2.25	59.7	2.40	64.8	2.50
	32	45.0	2.08	49.5	2.14	53.2	2.30	59.7	2.45	64.8	2.55
	41	45.0	2.12	49.5	2.19	53.2	2.40	59.7	2.50	64.8	2.65
	50	45.0	2.16	49.5	2.25	53.2	2.50	59.7	2.60	64.8	2.80
	59	45.0	2.21	49.5	2.40	53.2	2.75	59.7	2.80	64.8	3.00
	68	44.0	2.45	49.1	2.63	52.9	3.00	59.4	3.10	64.8	3.20
	77	43.0	2.80	48.5	3.20	52.2	3.50	58.7	3.90	62.8	4.00
	86	41.6	3.81	47.4	4.15	51.9	4.41	58.0	4.70	60.4	5.00
	95	39.9	4.67	46.1	4.95	48.0	5.19	53.2	5.26	54.6	5.34
	104	38.2	5.01	42.7	5.12	44.4	5.21	48.5	5.32	51.2	5.41
115	35.5	4.75	37.5	4.97	39.2	5.05	42.7	5.10	44.0	5.15	
90	23	40.9	1.80	46.1	1.95	48.5	2.20	54.6	2.35	59.7	2.45
	32	40.9	1.86	46.1	2.05	48.5	2.25	54.6	2.40	59.7	2.50
	41	40.9	1.94	46.1	2.10	48.5	2.35	54.6	2.45	59.7	2.60
	50	40.9	2.01	46.1	2.20	48.5	2.45	54.6	2.55	59.7	2.75
	59	40.9	2.10	46.1	2.35	48.5	2.70	54.6	2.75	59.7	2.95
	68	40.9	2.38	46.1	2.45	48.5	2.95	54.6	3.05	59.7	3.15
	77	40.9	2.75	45.4	2.95	47.8	3.45	53.6	3.70	58.3	3.95
	86	40.3	3.35	43.3	3.60	46.1	4.10	52.5	4.27	54.6	4.41
	95	39.2	4.10	41.3	4.31	43.3	4.43	49.8	4.66	51.2	4.86
	104	37.2	4.61	39.2	4.66	41.3	4.74	46.7	4.87	47.8	4.95
115	34.1	4.50	35.8	4.55	37.5	4.63	40.9	4.71	42.0	4.80	
80	23	35.1	1.55	38.9	1.90	44.0	2.15	48.8	2.30	52.9	2.40
	32	35.1	1.65	38.9	2.00	44.0	2.20	48.8	2.35	52.9	2.45
	41	35.1	1.80	38.9	2.05	44.0	2.30	48.8	2.40	52.9	2.55
	50	35.1	1.92	38.9	2.15	44.0	2.40	48.8	2.50	52.9	2.70
	59	35.1	2.11	38.9	2.30	44.0	2.65	48.8	2.70	52.9	2.90
	68	35.1	2.31	38.9	2.55	44.0	2.90	48.8	3.00	52.9	3.10
	77	34.8	2.70	38.6	2.90	43.0	3.19	48.1	3.29	52.2	3.41
	86	34.1	3.02	38.2	3.33	41.3	3.42	47.1	3.77	49.1	3.86
	95	33.1	3.38	36.5	3.55	38.6	3.63	45.0	4.20	46.4	4.35
	104	32.1	3.91	34.8	4.14	36.5	4.29	42.3	4.36	43.3	4.49
115	31.4	4.15	32.8	4.22	34.1	4.27	37.9	4.32	39.2	4.40	

TC : Total Capacity kBtu/h.

IP : Input Power kW.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

COOLING CAPACITY

● Capacity in kW

MODEL SELECTION	Indoor unit connecting capacity (%)	Outdoor temperature (°C)	Indoor temperature									
			21.1°CDB		23.9°CDB		26.7°CDB		29.4°CDB		32.2°CDB	
			15.6°CWB		17.2°CWB		19.4°CWB		21.7°CWB		22.8°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	
46.1	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	
46.1	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	
46.1	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	14.1	5.19	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	
46.1	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	
46.1	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	
46.1	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 : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

4-2. HEATING CAPACITY

MODEL : AOU48RLXFZ1

HEATING CAPACITY

Capacity in kBtu/h

MODEL SELECTION

MODEL SELECTION

Indoor unit connecting capacity (%)	Outdoor temperature		Indoor temperature									
	DB	WB	60°F DB		65°F DB		70°F DB		75°F DB		78°F DB	
	°F	°F	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
130	5	3	40.9	5.59	39.2	5.61	38.2	5.64	36.2	5.69	35.5	5.67
	14	12	51.2	5.66	50.2	5.67	49.5	5.69	48.1	5.71	47.4	5.72
	23	19	53.9	5.76	53.2	5.77	52.5	5.79	51.9	5.81	50.8	5.83
	32	28	58.0	5.86	57.0	5.88	56.3	5.90	55.6	5.91	54.9	5.92
	41	37	61.4	5.93	60.7	5.95	60.1	5.97	59.4	5.98	58.7	5.98
	47	43	64.8	5.98	63.8	5.98	62.8	5.98	62.1	5.98	61.4	5.98
	50	47	67.2	5.98	66.5	5.98	65.9	5.98	65.2	5.98	64.5	5.98
	59	50	69.6	5.98	68.9	5.98	68.2	5.98	67.6	5.98	66.9	5.98
	68	59	70.6	5.98	69.9	5.98	69.6	5.98	68.6	5.98	67.9	5.98
75	65	71.0	4.22	70.3	4.35	69.9	4.50	69.3	4.70	68.6	4.90	
120	5	3	38.9	5.57	37.5	5.58	36.2	5.60	34.8	5.62	33.8	5.64
	14	12	49.5	5.62	48.8	5.64	47.8	5.66	46.7	5.68	45.7	5.70
	23	19	53.2	5.71	52.5	5.74	51.5	5.77	50.8	5.79	49.8	5.81
	32	28	57.3	5.80	56.3	5.82	55.6	5.86	54.9	5.88	54.3	5.90
	41	37	60.7	5.92	60.1	5.93	59.4	5.95	58.7	5.96	58.0	5.97
	47	43	63.8	5.98	63.1	5.98	62.1	5.98	61.4	5.98	60.4	5.98
	50	47	66.2	5.98	65.2	5.98	64.5	5.98	63.8	5.98	63.1	5.98
	59	50	68.6	5.10	67.9	5.22	66.9	5.45	66.2	5.84	65.2	5.98
	68	59	69.6	4.37	68.9	4.44	68.6	4.73	67.9	5.05	67.2	5.17
75	65	70.3	4.14	69.9	4.25	69.3	4.39	68.6	4.61	67.9	4.88	
110	5	3	37.5	5.55	35.8	5.57	34.1	5.59	33.1	5.60	32.4	5.62
	14	12	46.7	5.59	46.1	5.61	45.4	5.63	44.7	5.65	44.0	5.68
	23	19	50.5	5.56	49.8	5.71	49.1	5.74	48.5	5.73	47.4	5.77
	32	28	54.3	5.52	53.6	5.79	52.9	5.84	52.2	5.85	51.5	5.89
	41	37	57.7	5.04	57.0	5.22	56.0	5.36	55.3	5.55	54.6	5.86
	47	43	60.7	4.75	60.1	5.00	59.4	5.30	58.7	5.37	58.0	5.51
	50	47	63.1	4.63	62.1	4.89	61.4	5.18	60.7	5.27	59.7	5.43
	59	50	66.2	4.40	65.2	4.66	64.1	4.88	63.1	5.03	62.1	5.19
	68	59	67.9	4.23	66.9	4.43	66.2	4.61	65.5	4.72	64.8	4.84
75	65	69.3	4.12	68.6	4.21	66.2	4.28	63.8	4.36	61.4	4.42	
100	5	3	35.8	5.55	34.1	5.52	32.8	5.50	31.4	5.48	31.0	5.45
	14	12	43.7	5.60	41.6	5.61	40.3	5.62	38.6	5.64	37.5	5.66
	23	19	49.1	5.70	47.1	5.78	45.4	5.75	44.0	5.72	42.7	5.40
	32	28	53.6	5.76	51.5	5.78	49.5	5.74	47.1	5.68	43.7	5.38
	41	37	58.0	5.76	55.3	5.61	51.2	5.23	47.8	4.92	45.0	4.79
	47	43	63.1	5.70	59.4	5.35	54.0	4.89	49.5	4.55	46.1	4.46
	50	47	63.5	5.56	59.7	5.25	54.6	4.80	50.2	4.53	46.7	4.37
	59	50	64.1	5.19	60.1	4.80	56.0	4.61	51.2	4.33	47.4	4.05
	68	59	64.8	4.63	60.7	4.45	57.0	4.36	52.5	4.08	48.5	3.77
75	65	65.2	4.05	61.4	3.92	58.0	3.81	56.0	3.73	53.9	3.51	
90	5	3	34.8	5.45	33.1	5.41	32.1	5.38	31.0	5.32	30.7	5.28
	14	12	41.3	5.53	39.9	5.36	38.9	5.20	37.9	5.17	35.8	5.14
	23	19	44.4	5.55	41.6	5.29	40.9	5.15	39.9	5.08	37.9	5.01
	32	28	48.1	5.30	44.4	4.96	43.0	4.84	42.3	4.77	39.2	4.70
	41	37	51.9	5.17	48.1	4.71	46.7	4.55	44.0	4.46	40.9	4.35
	47	43	56.0	5.02	51.5	4.65	48.5	4.36	45.4	4.16	42.0	3.99
	50	47	56.6	4.86	51.9	4.54	50.8	4.14	46.7	3.95	43.0	3.86
	59	50	58.3	4.47	54.6	4.11	52.9	3.92	47.8	3.77	44.7	3.56
	68	59	59.7	4.14	56.6	3.83	55.3	3.73	49.1	3.53	45.7	3.26
75	65	60.4	3.76	57.7	3.57	55.3	3.49	50.5	3.32	48.5	3.01	
80	5	3	31.7	5.22	31.4	5.15	31.0	5.12	30.7	5.08	30.4	5.03
	14	12	36.5	5.01	35.1	4.98	33.8	4.95	33.1	4.92	32.4	4.89
	23	19	38.6	4.86	37.2	4.81	36.2	4.71	35.1	4.66	34.1	4.59
	32	28	42.3	4.48	40.6	4.40	38.6	4.32	37.2	4.26	35.8	4.11
	41	37	45.7	4.17	43.3	4.10	40.9	4.06	38.9	3.81	36.8	3.70
	47	43	49.5	3.99	46.7	3.91	43.3	3.85	40.9	3.54	37.9	3.41
	50	47	50.5	3.95	47.4	3.84	44.7	3.82	42.0	3.50	38.6	3.33
	59	50	52.2	3.86	49.5	3.74	47.4	3.70	43.3	3.45	39.9	3.16
	68	59	53.6	3.65	51.5	3.56	49.8	3.55	45.7	3.22	40.9	2.94
75	65	55.3	3.41	53.6	3.25	51.5	3.11	47.1	2.93	42.7	2.68	

TC : Total Capacity kBtu/h.

IP : Input Power kW.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

HEATING CAPACITY

● Capacity in kW

Indoor unit connecting capacity (%)	Outdoor temperature		Indoor temperature									
	DB	WB	15.6°C DB		18.3°C DB		21.1°C DB		23.9°C DB		25.6°C DB	
	°C	°C	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
130	-15.0	-16.1	12.0	5.59	11.5	5.61	11.2	5.64	10.6	5.69	10.4	5.67
	-10.0	-11.1	15.0	5.66	14.7	5.67	14.5	5.69	14.1	5.71	13.9	5.72
	-5.0	-7.2	15.8	5.76	15.6	5.77	15.4	5.79	15.2	5.81	14.9	5.83
	0.0	-2.2	17.0	5.86	16.7	5.88	16.5	5.90	16.3	5.91	16.1	5.92
	5.0	2.8	18.0	5.93	17.8	5.95	17.6	5.97	17.4	5.98	17.2	5.98
	8.3	6.1	19.0	5.98	18.7	5.98	18.4	5.98	18.2	5.98	18.0	5.98
	10.0	8.3	19.7	5.98	19.5	5.98	19.3	5.98	19.1	5.98	18.9	5.98
	15.0	10.0	20.4	5.98	20.2	5.98	20.0	5.98	19.8	5.98	19.6	5.98
	20.0	15.0	20.7	5.98	20.5	5.98	20.4	5.98	20.1	5.98	19.9	5.98
23.9	18.3	20.8	4.22	20.6	4.35	20.5	4.50	20.3	4.70	20.1	4.90	
120	-15.0	-16.1	11.4	5.57	11.0	5.58	10.6	5.60	10.2	5.62	9.9	5.64
	-10.0	-11.1	14.5	5.62	14.3	5.64	14.0	5.66	13.7	5.68	13.4	5.70
	-5.0	-7.2	15.6	5.71	15.4	5.74	15.1	5.77	14.9	5.79	14.6	5.81
	0.0	-2.2	16.8	5.80	16.5	5.82	16.3	5.86	16.1	5.88	15.9	5.90
	5.0	2.8	17.8	5.92	17.6	5.93	17.4	5.95	17.2	5.96	17.0	5.97
	8.3	6.1	18.7	5.98	18.5	5.98	18.2	5.98	18.0	5.98	17.7	5.98
	10.0	8.3	19.4	5.98	19.1	5.98	18.9	5.98	18.7	5.98	18.5	5.98
	15.0	10.0	20.1	5.10	19.9	5.22	19.6	5.45	19.4	5.84	19.1	5.98
	20.0	15.0	20.4	4.37	20.2	4.44	20.1	4.73	19.9	5.05	19.7	5.17
23.9	18.3	20.6	4.14	20.5	4.25	20.3	4.39	20.1	4.61	19.9	4.88	
110	-15.0	-16.1	11.0	5.55	10.5	5.57	10.0	5.59	9.7	5.60	9.5	5.62
	-10.0	-11.1	13.7	5.59	13.5	5.61	13.3	5.63	13.1	5.65	12.9	5.68
	-5.0	-7.2	14.8	5.56	14.6	5.71	14.4	5.74	14.2	5.73	13.9	5.77
	0.0	-2.2	15.9	5.52	15.7	5.79	15.5	5.84	15.3	5.85	15.1	5.89
	5.0	2.8	16.9	5.04	16.7	5.22	16.4	5.36	16.2	5.55	16.0	5.86
	8.3	6.1	17.8	4.75	17.6	5.00	17.4	5.30	17.2	5.37	17.0	5.51
	10.0	8.3	18.5	4.63	18.2	4.89	18.0	5.18	17.8	5.27	17.5	5.43
	15.0	10.0	19.4	4.40	19.1	4.66	18.8	4.88	18.5	5.03	18.2	5.19
	20.0	15.0	19.9	4.23	19.6	4.43	19.4	4.61	19.2	4.72	19.0	4.84
23.9	18.3	20.3	4.12	20.1	4.21	19.4	4.28	18.7	4.36	18.0	4.42	
100	-15.0	-16.1	10.5	5.55	10.0	5.52	9.6	5.50	9.2	5.48	9.1	5.45
	-10.0	-11.1	12.8	5.60	12.2	5.61	11.8	5.62	11.3	5.64	11.0	5.66
	-5.0	-7.2	14.4	5.70	13.8	5.78	13.3	5.75	12.9	5.72	12.5	5.40
	0.0	-2.2	15.7	5.76	15.1	5.78	14.5	5.74	13.8	5.68	12.8	5.38
	5.0	2.8	17.0	5.76	16.2	5.61	15.0	5.23	14.0	4.92	13.2	4.79
	8.3	6.1	18.5	5.70	17.4	5.35	15.8	4.89	14.5	4.55	13.5	4.46
	10.0	8.3	18.6	5.56	17.5	5.25	16.0	4.80	14.7	4.53	13.7	4.37
	15.0	10.0	18.8	5.19	17.6	4.80	16.4	4.61	15.0	4.33	13.9	4.05
	20.0	15.0	19.0	4.63	17.8	4.45	16.7	4.36	15.4	4.08	14.2	3.77
23.9	18.3	19.1	4.05	18.0	3.92	17.0	3.81	16.4	3.73	15.8	3.51	
90	-15.0	-16.1	10.2	5.45	9.7	5.41	9.4	5.38	9.1	5.32	9.0	5.28
	-10.0	-11.1	12.1	5.53	11.7	5.36	11.4	5.20	11.1	5.17	10.5	5.14
	-5.0	-7.2	13.0	5.55	12.2	5.29	12.0	5.15	11.7	5.08	11.1	5.01
	0.0	-2.2	14.1	5.30	13.0	4.96	12.6	4.84	12.4	4.77	11.5	4.70
	5.0	2.8	15.2	5.17	14.1	4.71	13.7	4.55	12.9	4.46	12.0	4.35
	8.3	6.1	16.4	5.02	15.1	4.65	14.2	4.36	13.3	4.16	12.3	3.99
	10.0	8.3	16.6	4.86	15.2	4.54	14.9	4.14	13.7	3.95	12.6	3.86
	15.0	10.0	17.1	4.47	16.0	4.11	15.5	3.92	14.0	3.77	13.1	3.56
	20.0	15.0	17.5	4.14	16.6	3.83	16.2	3.73	14.4	3.53	13.4	3.26
23.9	18.3	17.7	3.76	16.9	3.57	16.2	3.49	14.8	3.32	14.2	3.01	
80	-15.0	-16.1	9.3	5.22	9.2	5.15	9.1	5.12	9.0	5.08	8.9	5.03
	-10.0	-11.1	10.7	5.01	10.3	4.98	9.9	4.95	9.7	4.92	9.5	4.89
	-5.0	-7.2	11.3	4.86	10.9	4.81	10.6	4.71	10.3	4.66	10.0	4.59
	0.0	-2.2	12.4	4.48	11.9	4.40	11.3	4.32	10.9	4.26	10.5	4.11
	5.0	2.8	13.4	4.17	12.7	4.10	12.0	4.06	11.4	3.81	10.8	3.70
	8.3	6.1	14.5	3.99	13.7	3.91	12.7	3.85	12.0	3.54	11.1	3.41
	10.0	8.3	14.8	3.95	13.9	3.84	13.1	3.82	12.3	3.50	11.3	3.33
	15.0	10.0	15.3	3.86	14.5	3.74	13.9	3.70	12.7	3.45	11.7	3.16
	20.0	15.0	15.7	3.65	15.1	3.56	14.6	3.55	13.4	3.22	12.0	2.94
23.9	18.3	16.2	3.41	15.7	3.25	15.1	3.11	13.8	2.93	12.5	2.68	

TC : Total Capacity kBtu/h.

IP : Input Power kW.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

Height difference : 0 ft.(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.

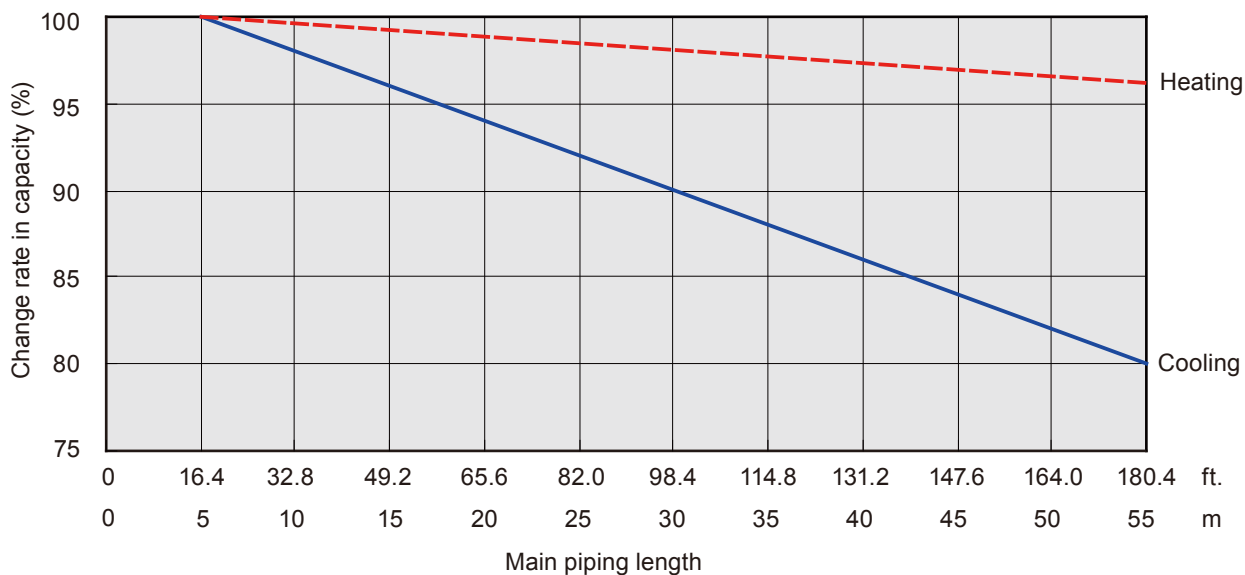
"Total compensation coefficient = main piping x branch piping" *1

*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	ft.	16.4	32.8	49.2	65.6	82.0	98.4	114.8	131.2	147.6	164.0	180.4
	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

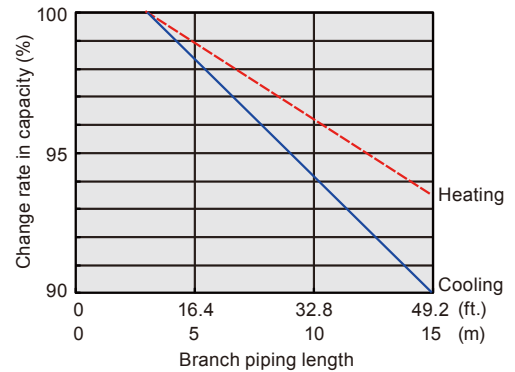


■ CAPACITY CHANGE RATE BY BRANCH PIPING LENGTH

● Change rate in capacity

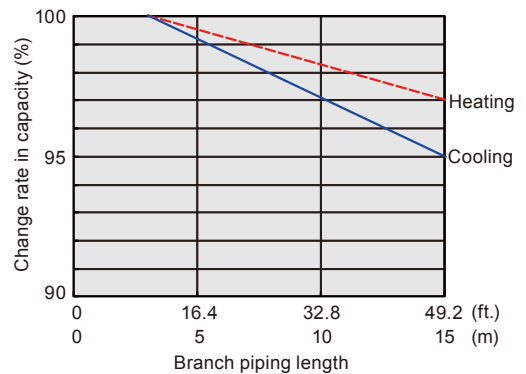
- Refrigerant piping connection diameter: Liquid \varnothing 1/4in. (6.35mm) , Gas \varnothing 3/8in. (9.52mm)
- Indoor unit model code: 7/9/12

Branch piping length	ft.	9.8	16.4	32.8	49.2
	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



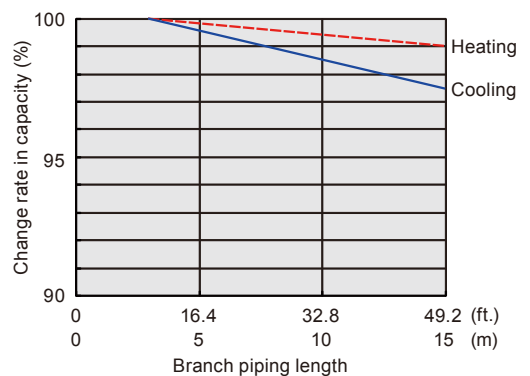
- Refrigerant piping connection diameter: Liquid \varnothing 1/4in. (6.35mm) , Gas \varnothing 1/2in. (12.70mm)
- Indoor unit model code: 15/18

Branch piping length	ft.	9.8	16.4	32.8	49.2
	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 1/4in. (6.35mm) , Gas \varnothing 5/8in. (15.88mm)
- Indoor unit model code: 24

Branch piping length	ft.	9.8	16.4	32.8	49.2
	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	°FDB / °FWB	5.0 / 3.0	23.0 / 19.0	32.0 / 28.0	35.6 / 33.8	41.0 / 37.0	47.0 / 43.0
	°CDB / °CWB	-15.0 / -16.1	-5.0 / -7.2	0.0 / -2.2	2.0 / 1.0	5.0 / 2.8	8.3 / 6.1
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
in kBtu/h

MODEL : AUU7RLF

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	5.60	4.23	6.16	4.71	6.59	5.09	7.00	5.46	7.74	5.99	8.42	6.27	9.10	6.46
32.0	5.60	4.23	6.16	4.71	6.59	5.09	7.00	5.46	7.74	5.99	8.42	6.27	9.10	6.46
41.0	5.60	4.23	6.16	4.71	6.59	5.09	7.00	5.46	7.74	5.99	8.42	6.27	9.10	6.46
50.0	5.60	4.23	6.16	4.71	6.59	5.09	7.00	5.46	7.74	5.99	8.42	6.27	9.10	6.46
59.0	5.60	4.23	6.16	4.71	6.59	5.09	7.00	5.46	7.74	5.99	8.42	6.27	9.10	6.46
68.0	5.60	4.23	6.16	4.71	6.59	5.09	7.00	5.46	7.74	5.99	8.42	6.27	8.56	6.34
77.0	5.60	4.23	6.16	4.71	6.59	5.09	7.00	5.46	7.74	5.99	8.14	6.07	8.35	6.14
86.0	5.60	4.23	6.16	4.71	6.59	5.09	7.00	5.46	7.74	5.99	7.86	5.90	8.07	6.01
95.0	5.60	4.23	6.16	4.71	6.59	5.09	7.00	5.46	7.37	5.79	7.65	5.78	7.80	5.93
104.0	5.60	4.23	6.16	4.71	6.42	5.05	6.60	5.41	6.95	5.53	7.21	5.48	7.35	5.66
115.0	5.60	4.23	5.46	4.34	6.03	4.84	6.21	5.15	6.54	5.23	6.79	5.19	6.92	5.40

MODEL : AUU9RLF

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	7.21	5.37	7.93	5.98	8.49	6.47	9.00	6.94	9.95	7.61	10.84	7.96	11.71	8.20
32.0	7.21	5.37	7.93	5.98	8.49	6.47	9.00	6.94	9.95	7.61	10.84	7.96	11.71	8.20
41.0	7.21	5.37	7.93	5.98	8.49	6.47	9.00	6.94	9.95	7.61	10.84	7.96	11.71	8.20
50.0	7.21	5.37	7.93	5.98	8.49	6.47	9.00	6.94	9.95	7.61	10.84	7.96	11.71	8.20
59.0	7.21	5.37	7.93	5.98	8.49	6.47	9.00	6.94	9.95	7.61	10.84	7.96	11.71	8.20
68.0	7.21	5.37	7.93	5.98	8.49	6.47	9.00	6.94	9.95	7.61	10.84	7.96	11.02	8.04
77.0	7.21	5.37	7.93	5.98	8.49	6.47	9.00	6.94	9.95	7.61	10.48	7.70	10.75	7.79
86.0	7.21	5.37	7.93	5.98	8.49	6.47	9.00	6.94	9.95	7.61	10.12	7.49	10.39	7.63
95.0	7.21	5.37	7.93	5.98	8.49	6.47	9.00	6.94	9.49	7.35	9.85	7.33	10.03	7.53
104.0	7.21	5.37	7.93	5.98	8.26	6.42	8.49	6.88	8.94	7.02	9.28	6.96	9.46	7.19
115.0	7.21	5.37	7.03	5.52	7.76	6.15	7.99	6.55	8.41	6.65	8.73	6.59	8.90	6.85

MODEL : AUU12RLF

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	9.58	6.61	10.54	7.77	11.28	8.40	12.00	9.04	13.23	9.79	14.41	10.37	15.57	10.74
32.0	9.58	6.61	10.54	7.77	11.28	8.40	12.00	9.04	13.23	9.79	14.41	10.37	15.57	10.74
41.0	9.58	6.61	10.54	7.77	11.28	8.40	12.00	9.04	13.23	9.79	14.41	10.37	15.57	10.74
50.0	9.58	6.61	10.54	7.77	11.28	8.40	12.00	9.04	13.23	9.79	14.41	10.37	15.57	10.74
59.0	9.58	6.61	10.54	7.77	11.28	8.40	12.00	9.04	13.23	9.79	14.41	10.37	15.57	10.74
68.0	9.58	6.61	10.54	7.77	11.28	8.40	12.00	9.04	13.23	9.79	14.41	10.37	14.65	10.55
77.0	9.58	6.61	10.54	7.77	11.28	8.40	12.00	9.04	13.23	9.79	13.93	10.03	14.29	10.22
86.0	9.58	6.61	10.54	7.77	11.28	8.40	12.00	9.04	13.23	9.79	13.45	9.75	13.81	10.01
95.0	9.58	6.61	10.54	7.77	11.28	8.40	12.00	9.04	12.61	9.46	13.09	9.56	13.34	9.87
104.0	9.58	6.61	10.54	7.77	10.98	8.35	11.29	8.87	11.89	9.04	12.34	9.07	12.58	9.44
115.0	9.58	6.61	9.35	7.08	10.32	8.00	10.62	8.55	11.19	8.56	11.61	8.59	11.83	8.99

MODEL : AUU18RLF

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	14.41	9.73	15.85	10.75	16.97	11.54	18.00	12.61	19.91	13.04	21.67	13.96	23.42	14.45
32.0	14.41	9.73	15.85	10.75	16.97	11.54	18.00	12.61	19.91	13.04	21.67	13.96	23.42	14.45
41.0	14.41	9.73	15.85	10.75	16.97	11.54	18.00	12.61	19.91	13.04	21.67	13.96	23.42	14.45
50.0	14.41	9.73	15.85	10.75	16.97	11.54	18.00	12.61	19.91	13.04	21.67	13.96	23.42	14.45
59.0	14.41	9.73	15.85	10.75	16.97	11.54	18.00	12.61	19.91	13.04	21.67	13.96	23.42	14.45
68.0	14.41	9.73	15.85	10.75	16.97	11.54	18.00	12.61	19.91	13.04	21.67	13.96	22.03	14.26
77.0	14.41	9.73	15.85	10.75	16.97	11.54	18.00	12.61	19.91	13.04	20.95	13.49	21.49	13.80
86.0	14.41	9.73	15.85	10.75	16.97	11.54	18.00	12.61	19.91	13.04	20.23	13.13	20.77	13.54
95.0	14.41	9.73	15.85	10.75	16.97	11.54	18.00	12.61	18.97	12.62	19.69	12.88	20.07	13.39
104.0	14.41	9.73	15.85	10.75	16.52	11.48	16.99	12.40	17.89	12.07	18.57	12.24	18.93	12.81
115.0	14.41	9.73	14.06	9.96	15.53	11.03	15.98	11.98	16.83	11.44	17.47	11.60	17.80	12.23

TC : Total Capacity kBtu/h.

SHC : Sensible Heat Capacity kBtu/h.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

COOLING CAPACITY in kW

MODEL : AUU7RLF

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	1.63	1.23	1.80	1.37	1.92	1.48	2.04	1.59	2.25	1.75	2.45	1.83	2.65	1.88
0.0	1.63	1.23	1.80	1.37	1.92	1.48	2.04	1.59	2.25	1.75	2.45	1.83	2.65	1.88
5.0	1.63	1.23	1.80	1.37	1.92	1.48	2.04	1.59	2.25	1.75	2.45	1.83	2.65	1.88
10.0	1.63	1.23	1.80	1.37	1.92	1.48	2.04	1.59	2.25	1.75	2.45	1.83	2.65	1.88
15.0	1.63	1.23	1.80	1.37	1.92	1.48	2.04	1.59	2.25	1.75	2.45	1.83	2.65	1.88
20.0	1.63	1.23	1.80	1.37	1.92	1.48	2.04	1.59	2.25	1.75	2.45	1.83	2.49	1.85
25.0	1.63	1.23	1.80	1.37	1.92	1.48	2.04	1.59	2.25	1.75	2.37	1.77	2.43	1.79
30.0	1.63	1.23	1.80	1.37	1.92	1.48	2.04	1.59	2.25	1.75	2.29	1.72	2.35	1.75
35.0	1.63	1.23	1.80	1.37	1.92	1.48	2.04	1.59	2.15	1.69	2.23	1.68	2.27	1.73
40.0	1.63	1.23	1.80	1.37	1.87	1.47	1.92	1.58	2.03	1.61	2.10	1.60	2.14	1.65
46.1	1.63	1.23	1.59	1.27	1.76	1.41	1.81	1.50	1.91	1.52	1.98	1.51	2.02	1.57

MODEL : AUU9RLF

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	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
46.1	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 : AUU12RLF

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	2.81	1.94	3.09	2.28	3.31	2.46	3.51	2.65	3.88	2.87	4.22	3.04	4.56	3.15
0.0	2.81	1.94	3.09	2.28	3.31	2.46	3.51	2.65	3.88	2.87	4.22	3.04	4.56	3.15
5.0	2.81	1.94	3.09	2.28	3.31	2.46	3.51	2.65	3.88	2.87	4.22	3.04	4.56	3.15
10.0	2.81	1.94	3.09	2.28	3.31	2.46	3.51	2.65	3.88	2.87	4.22	3.04	4.56	3.15
15.0	2.81	1.94	3.09	2.28	3.31	2.46	3.51	2.65	3.88	2.87	4.22	3.04	4.56	3.15
20.0	2.81	1.94	3.09	2.28	3.31	2.46	3.51	2.65	3.88	2.87	4.22	3.04	4.29	3.09
25.0	2.81	1.94	3.09	2.28	3.31	2.46	3.51	2.65	3.88	2.87	4.08	2.94	4.19	2.99
30.0	2.81	1.94	3.09	2.28	3.31	2.46	3.51	2.65	3.88	2.87	3.94	2.86	4.05	2.93
35.0	2.81	1.94	3.09	2.28	3.31	2.46	3.51	2.65	3.70	2.77	3.84	2.80	3.91	2.89
40.0	2.81	1.94	3.09	2.28	3.22	2.45	3.31	2.60	3.49	2.65	3.62	2.66	3.69	2.77
46.1	2.81	1.94	2.74	2.07	3.03	2.34	3.11	2.51	3.28	2.51	3.40	2.52	3.47	2.64

MODEL : AUU18RLF

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	4.22	2.85	4.65	3.15	4.97	3.38	5.28	3.70	5.83	3.82	6.35	4.09	6.86	4.24
0.0	4.22	2.85	4.65	3.15	4.97	3.38	5.28	3.70	5.83	3.82	6.35	4.09	6.86	4.24
5.0	4.22	2.85	4.65	3.15	4.97	3.38	5.28	3.70	5.83	3.82	6.35	4.09	6.86	4.24
10.0	4.22	2.85	4.65	3.15	4.97	3.38	5.28	3.70	5.83	3.82	6.35	4.09	6.86	4.24
15.0	4.22	2.85	4.65	3.15	4.97	3.38	5.28	3.70	5.83	3.82	6.35	4.09	6.86	4.24
20.0	4.22	2.85	4.65	3.15	4.97	3.38	5.28	3.70	5.83	3.82	6.35	4.09	6.46	4.18
25.0	4.22	2.85	4.65	3.15	4.97	3.38	5.28	3.70	5.83	3.82	6.14	3.95	6.30	4.04
30.0	4.22	2.85	4.65	3.15	4.97	3.38	5.28	3.70	5.83	3.82	5.93	3.85	6.09	3.97
35.0	4.22	2.85	4.65	3.15	4.97	3.38	5.28	3.70	5.56	3.70	5.77	3.77	5.88	3.92
40.0	4.22	2.85	4.65	3.15	4.84	3.37	4.98	3.63	5.24	3.54	5.44	3.59	5.55	3.76
46.1	4.22	2.85	4.12	2.92	4.55	3.23	4.68	3.51	4.93	3.35	5.12	3.40	5.22	3.58

TC : Total Capacity kW.

SHC : Sensible Heat Capacity kW.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

COOLING CAPACITY in kBtu/h

6-1-2. SLIM DUCT TYPE

MODEL : ARU7RLF

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	5.60	4.34	6.16	4.84	6.59	5.22	7.00	5.60	7.74	6.15	8.42	6.44	9.10	6.64
32.0	5.60	4.34	6.16	4.84	6.59	5.22	7.00	5.60	7.74	6.15	8.42	6.44	9.10	6.64
41.0	5.60	4.34	6.16	4.84	6.59	5.22	7.00	5.60	7.74	6.15	8.42	6.44	9.10	6.64
50.0	5.60	4.34	6.16	4.84	6.59	5.22	7.00	5.60	7.74	6.15	8.42	6.44	9.10	6.64
59.0	5.60	4.34	6.16	4.84	6.59	5.22	7.00	5.60	7.74	6.15	8.42	6.44	9.10	6.64
68.0	5.60	4.34	6.16	4.84	6.59	5.22	7.00	5.60	7.74	6.15	8.42	6.44	8.56	6.51
77.0	5.60	4.34	6.16	4.84	6.59	5.22	7.00	5.60	7.74	6.15	8.14	6.23	8.35	6.31
86.0	5.60	4.34	6.16	4.84	6.59	5.22	7.00	5.60	7.74	6.15	7.86	6.05	8.07	6.17
95.0	5.60	4.34	6.16	4.84	6.59	5.22	7.00	5.60	7.37	5.93	7.65	5.93	7.80	6.08
104.0	5.60	4.34	6.16	4.84	6.42	5.18	6.60	5.54	6.95	5.66	7.21	5.63	7.35	5.81
115.0	5.60	4.34	5.46	4.45	6.03	4.96	6.21	5.28	6.54	5.36	6.79	5.33	6.92	5.53

MODEL : ARU9RLF

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	7.25	5.54	8.02	6.17	8.54	6.58	9.00	6.94	10.00	7.40	10.90	7.85	11.71	8.14
32.0	7.25	5.54	8.02	6.17	8.54	6.58	9.00	6.94	10.00	7.40	10.90	7.85	11.71	8.14
41.0	7.25	5.54	8.02	6.17	8.54	6.58	9.00	6.94	10.00	7.40	10.90	7.85	11.71	8.14
50.0	7.25	5.54	8.02	6.17	8.54	6.58	9.00	6.94	10.00	7.40	10.90	7.85	11.71	8.14
59.0	7.25	5.54	8.02	6.17	8.54	6.58	9.00	6.94	10.00	7.40	10.90	7.85	11.71	8.14
68.0	7.25	5.54	8.02	6.17	8.54	6.58	9.00	6.94	10.00	7.40	10.90	7.85	11.07	8.03
77.0	7.25	5.54	8.02	6.17	8.54	6.58	9.00	6.94	10.00	7.40	10.54	7.59	10.80	7.78
86.0	7.25	5.54	8.02	6.17	8.54	6.58	9.00	6.94	10.00	7.40	10.18	7.38	10.44	7.62
95.0	7.25	5.54	8.02	6.17	8.54	6.58	9.00	6.94	9.50	7.13	9.91	7.23	10.09	7.52
104.0	7.25	5.54	8.02	6.17	8.31	6.53	8.49	6.88	8.96	6.81	9.34	6.87	9.51	7.09
115.0	7.25	5.54	7.11	5.69	7.82	6.25	7.99	6.55	8.43	6.45	8.79	6.50	8.95	6.67

MODEL : ARU12RLF

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	9.64	7.13	10.66	7.89	11.35	8.46	12.00	9.28	13.29	9.64	14.49	10.22	15.57	10.40
32.0	9.64	7.13	10.66	7.89	11.35	8.46	12.00	9.28	13.29	9.64	14.49	10.22	15.57	10.40
41.0	9.64	7.13	10.66	7.89	11.35	8.46	12.00	9.28	13.29	9.64	14.49	10.22	15.57	10.40
50.0	9.64	7.13	10.66	7.89	11.35	8.46	12.00	9.28	13.29	9.64	14.49	10.22	15.57	10.40
59.0	9.64	7.13	10.66	7.89	11.35	8.46	12.00	9.28	13.29	9.64	14.49	10.22	15.57	10.40
68.0	9.64	7.13	10.66	7.89	11.35	8.46	12.00	9.28	13.29	9.64	14.49	10.22	14.72	10.27
77.0	9.64	7.13	10.66	7.89	11.35	8.46	12.00	9.28	13.29	9.64	14.01	9.88	14.36	9.95
86.0	9.64	7.13	10.66	7.89	11.35	8.46	12.00	9.28	13.29	9.64	13.53	9.61	13.88	9.76
95.0	9.64	7.13	10.66	7.89	11.35	8.46	12.00	9.28	12.63	9.29	13.17	9.42	13.41	9.63
104.0	9.64	7.13	10.66	7.89	11.05	8.40	11.29	9.20	11.91	8.88	12.42	8.88	12.65	9.08
115.0	9.64	7.13	9.45	7.28	10.40	8.06	10.62	8.76	11.21	8.41	11.69	8.35	11.90	8.54

MODEL : ARU18RLF

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	14.50	10.01	16.03	11.38	17.08	12.21	18.00	12.61	20.00	13.90	21.80	15.24	23.42	15.46
32.0	14.50	10.01	16.03	11.38	17.08	12.21	18.00	12.61	20.00	13.90	21.80	15.24	23.42	15.46
41.0	14.50	10.01	16.03	11.38	17.08	12.21	18.00	12.61	20.00	13.90	21.80	15.24	23.42	15.46
50.0	14.50	10.01	16.03	11.38	17.08	12.21	18.00	12.61	20.00	13.90	21.80	15.24	23.42	15.46
59.0	14.50	10.01	16.03	11.38	17.08	12.21	18.00	12.61	20.00	13.90	21.80	15.24	23.42	15.46
68.0	14.50	10.01	16.03	11.38	17.08	12.21	18.00	12.61	20.00	13.90	21.80	15.24	22.14	15.28
77.0	14.50	10.01	16.03	11.38	17.08	12.21	18.00	12.61	20.00	13.90	21.08	14.73	21.60	14.80
86.0	14.50	10.01	16.03	11.38	17.08	12.21	18.00	12.61	20.00	13.90	20.36	14.33	20.88	14.51
95.0	14.50	10.01	16.03	11.38	17.08	12.21	18.00	12.61	19.01	13.40	19.82	14.05	20.18	14.33
104.0	14.50	10.01	16.03	11.38	16.63	12.14	16.99	12.57	17.92	12.81	18.69	13.34	19.03	13.70
115.0	14.50	10.01	14.22	10.52	15.64	11.65	15.98	11.98	16.86	12.14	17.58	12.64	17.90	13.06

TC : Total Capacity kBtu/h.

SHC : Sensible Heat Capacity kBtu/h.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

COOLING CAPACITY in kBtu/h

MODEL : ARU24RLF

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	19.28	13.30	21.32	15.14	22.71	16.30	24.00	17.01	26.59	18.48	28.98	20.29	31.14	20.86
32.0	19.28	13.30	21.32	15.14	22.71	16.30	24.00	17.01	26.59	18.48	28.98	20.29	31.14	20.86
41.0	19.28	13.30	21.32	15.14	22.71	16.30	24.00	17.01	26.59	18.48	28.98	20.29	31.14	20.86
50.0	19.28	13.30	21.32	15.14	22.71	16.30	24.00	17.01	26.59	18.48	28.98	20.29	31.14	20.86
59.0	19.28	13.30	21.32	15.14	22.71	16.30	24.00	17.01	26.59	18.48	28.98	20.29	31.14	20.86
68.0	19.28	13.30	21.32	15.14	22.71	16.30	24.00	17.01	26.59	18.48	28.98	20.29	29.44	20.61
77.0	19.28	13.30	21.32	15.14	22.71	16.30	24.00	17.01	26.59	18.48	28.02	19.62	28.72	19.96
86.0	19.28	13.30	21.32	15.14	22.71	16.30	24.00	17.01	26.59	18.48	27.07	19.08	27.76	19.57
95.0	19.28	13.30	21.32	15.14	22.71	16.30	24.00	17.01	25.27	17.82	26.35	18.71	26.83	19.32
104.0	19.28	13.30	21.32	15.14	22.11	16.21	22.59	16.49	23.83	17.04	24.85	17.76	25.30	18.47
115.0	19.28	13.30	18.91	13.71	20.79	15.45	21.25	15.93	22.41	16.14	23.37	16.83	23.80	17.61

TC : Total Capacity kBtu/h.

SHC : Sensible Heat Capacity kBtu/h.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

MODEL : ARU7RLF

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	1.63	1.26	1.80	1.41	1.92	1.52	2.04	1.63	2.25	1.79	2.45	1.88	2.65	1.94
0.0	1.63	1.26	1.80	1.41	1.92	1.52	2.04	1.63	2.25	1.79	2.45	1.88	2.65	1.94
5.0	1.63	1.26	1.80	1.41	1.92	1.52	2.04	1.63	2.25	1.79	2.45	1.88	2.65	1.94
10.0	1.63	1.26	1.80	1.41	1.92	1.52	2.04	1.63	2.25	1.79	2.45	1.88	2.65	1.94
15.0	1.63	1.26	1.80	1.41	1.92	1.52	2.04	1.63	2.25	1.79	2.45	1.88	2.65	1.94
20.0	1.63	1.26	1.80	1.41	1.92	1.52	2.04	1.63	2.25	1.79	2.45	1.88	2.49	1.90
25.0	1.63	1.26	1.80	1.41	1.92	1.52	2.04	1.63	2.25	1.79	2.37	1.81	2.43	1.84
30.0	1.63	1.26	1.80	1.41	1.92	1.52	2.04	1.63	2.25	1.79	2.29	1.76	2.35	1.80
35.0	1.63	1.26	1.80	1.41	1.92	1.52	2.04	1.63	2.15	1.73	2.23	1.73	2.27	1.77
40.0	1.63	1.26	1.80	1.41	1.87	1.51	1.92	1.62	2.03	1.65	2.10	1.64	2.14	1.69
46.1	1.63	1.26	1.59	1.30	1.76	1.45	1.81	1.54	1.91	1.56	1.98	1.55	2.02	1.61

MODEL : ARU9RLF

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	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
46.1	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 : ARU12RLF

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	2.83	2.09	3.12	2.31	3.33	2.48	3.51	2.72	3.90	2.82	4.25	2.99	4.56	3.05
0.0	2.83	2.09	3.12	2.31	3.33	2.48	3.51	2.72	3.90	2.82	4.25	2.99	4.56	3.05
5.0	2.83	2.09	3.12	2.31	3.33	2.48	3.51	2.72	3.90	2.82	4.25	2.99	4.56	3.05
10.0	2.83	2.09	3.12	2.31	3.33	2.48	3.51	2.72	3.90	2.82	4.25	2.99	4.56	3.05
15.0	2.83	2.09	3.12	2.31	3.33	2.48	3.51	2.72	3.90	2.82	4.25	2.99	4.56	3.05
20.0	2.83	2.09	3.12	2.31	3.33	2.48	3.51	2.72	3.90	2.82	4.25	2.99	4.31	3.01
25.0	2.83	2.09	3.12	2.31	3.33	2.48	3.51	2.72	3.90	2.82	4.11	2.90	4.21	2.92
30.0	2.83	2.09	3.12	2.31	3.33	2.48	3.51	2.72	3.90	2.82	3.97	2.82	4.07	2.86
35.0	2.83	2.09	3.12	2.31	3.33	2.48	3.51	2.72	3.70	2.72	3.86	2.76	3.93	2.82
40.0	2.83	2.09	3.12	2.31	3.24	2.46	3.31	2.70	3.49	2.60	3.64	2.60	3.71	2.66
46.1	2.83	2.09	2.77	2.13	3.05	2.36	3.11	2.57	3.28	2.46	3.42	2.45	3.49	2.50

MODEL : ARU18RLF

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	4.25	2.93	4.70	3.34	5.01	3.58	5.28	3.70	5.86	4.07	6.39	4.47	6.86	4.53
0.0	4.25	2.93	4.70	3.34	5.01	3.58	5.28	3.70	5.86	4.07	6.39	4.47	6.86	4.53
5.0	4.25	2.93	4.70	3.34	5.01	3.58	5.28	3.70	5.86	4.07	6.39	4.47	6.86	4.53
10.0	4.25	2.93	4.70	3.34	5.01	3.58	5.28	3.70	5.86	4.07	6.39	4.47	6.86	4.53
15.0	4.25	2.93	4.70	3.34	5.01	3.58	5.28	3.70	5.86	4.07	6.39	4.47	6.86	4.53
20.0	4.25	2.93	4.70	3.34	5.01	3.58	5.28	3.70	5.86	4.07	6.39	4.47	6.49	4.48
25.0	4.25	2.93	4.70	3.34	5.01	3.58	5.28	3.70	5.86	4.07	6.18	4.32	6.33	4.34
30.0	4.25	2.93	4.70	3.34	5.01	3.58	5.28	3.70	5.86	4.07	5.97	4.20	6.12	4.25
35.0	4.25	2.93	4.70	3.34	5.01	3.58	5.28	3.70	5.57	3.93	5.81	4.12	5.91	4.20
40.0	4.25	2.93	4.70	3.34	4.87	3.56	4.98	3.68	5.25	3.76	5.48	3.91	5.58	4.02
46.1	4.25	2.93	4.17	3.08	4.58	3.41	4.68	3.51	4.94	3.56	5.15	3.70	5.25	3.83

TC : Total Capacity kW.

SHC : Sensible Heat Capacity kW.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

COOLING CAPACITY in kW

MODEL : ARU24RLF

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	5.65	3.90	6.25	4.44	6.65	4.78	7.02	4.98	7.79	5.42	8.49	5.95	9.13	6.11
0.0	5.65	3.90	6.25	4.44	6.65	4.78	7.02	4.98	7.79	5.42	8.49	5.95	9.13	6.11
5.0	5.65	3.90	6.25	4.44	6.65	4.78	7.02	4.98	7.79	5.42	8.49	5.95	9.13	6.11
10.0	5.65	3.90	6.25	4.44	6.65	4.78	7.02	4.98	7.79	5.42	8.49	5.95	9.13	6.11
15.0	5.65	3.90	6.25	4.44	6.65	4.78	7.02	4.98	7.79	5.42	8.49	5.95	9.13	6.11
20.0	5.65	3.90	6.25	4.44	6.65	4.78	7.02	4.98	7.79	5.42	8.49	5.95	8.63	6.04
25.0	5.65	3.90	6.25	4.44	6.65	4.78	7.02	4.98	7.79	5.42	8.21	5.75	8.42	5.85
30.0	5.65	3.90	6.25	4.44	6.65	4.78	7.02	4.98	7.79	5.42	7.93	5.59	8.14	5.74
35.0	5.65	3.90	6.25	4.44	6.65	4.78	7.02	4.98	7.41	5.22	7.72	5.48	7.86	5.66
40.0	5.65	3.90	6.25	4.44	6.48	4.75	6.62	4.83	6.98	4.99	7.28	5.21	7.41	5.41
46.1	5.65	3.90	5.54	4.02	6.09	4.53	6.23	4.67	6.57	4.73	6.85	4.93	6.97	5.16

TC : Total Capacity kW.

SHC : Sensible Heat Capacity kW.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

COOLING CAPACITY in kBtu/h

6-1-3. WALL MOUNTED TYPE

■ MODEL : ASU7RLF1

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	5.50	4.26	6.06	4.78	6.51	5.24	7.00	5.64	7.66	5.97	8.35	6.43	9.01	6.74
32.0	5.50	4.26	6.06	4.78	6.51	5.24	7.00	5.64	7.66	5.97	8.35	6.43	9.01	6.74
41.0	5.50	4.26	6.06	4.78	6.51	5.24	7.00	5.64	7.66	5.97	8.35	6.43	9.01	6.74
50.0	5.50	4.26	6.06	4.78	6.51	5.24	7.00	5.64	7.66	5.97	8.35	6.43	9.01	6.74
59.0	5.50	4.26	6.06	4.78	6.51	5.24	7.00	5.64	7.66	5.97	8.35	6.43	9.01	6.74
68.0	5.50	4.26	6.06	4.78	6.51	5.24	7.00	5.64	7.66	5.97	8.35	6.43	8.49	6.61
77.0	5.50	4.26	6.06	4.78	6.51	5.24	7.00	5.64	7.66	5.97	8.07	6.22	8.28	6.40
86.0	5.50	4.26	6.06	4.78	6.51	5.24	7.00	5.64	7.66	5.97	7.80	6.04	8.00	6.27
95.0	5.50	4.26	6.06	4.78	6.51	5.24	7.00	5.64	7.31	5.77	7.59	5.92	7.73	6.17
104.0	5.50	4.26	6.06	4.78	6.33	5.19	6.60	5.45	6.89	5.51	7.15	5.62	7.29	5.89
115.0	5.50	4.26	5.37	4.40	5.95	4.97	6.21	5.31	6.48	5.22	6.73	5.32	6.86	5.61

■ MODEL : ASU9RLF1

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	7.12	5.53	7.84	6.21	8.42	6.78	9.00	7.30	9.91	7.73	10.81	8.54	11.66	8.75
32.0	7.12	5.53	7.84	6.21	8.42	6.78	9.00	7.30	9.91	7.73	10.81	8.54	11.66	8.75
41.0	7.12	5.53	7.84	6.21	8.42	6.78	9.00	7.30	9.91	7.73	10.81	8.54	11.66	8.75
50.0	7.12	5.53	7.84	6.21	8.42	6.78	9.00	7.30	9.91	7.73	10.81	8.54	11.66	8.75
59.0	7.12	5.53	7.84	6.21	8.42	6.78	9.00	7.30	9.91	7.73	10.81	8.54	11.66	8.75
68.0	7.12	5.53	7.84	6.21	8.42	6.78	9.00	7.30	9.91	7.73	10.81	8.54	10.99	8.57
77.0	7.12	5.53	7.84	6.21	8.42	6.78	9.00	7.30	9.91	7.73	10.45	8.25	10.72	8.31
86.0	7.12	5.53	7.84	6.21	8.42	6.78	9.00	7.30	9.91	7.73	10.09	8.02	10.36	8.13
95.0	7.12	5.53	7.84	6.21	8.42	6.78	9.00	7.30	9.46	7.47	9.82	7.85	10.01	8.01
104.0	7.12	5.53	7.84	6.21	8.20	6.72	8.49	7.05	8.92	7.14	9.26	7.45	9.44	7.64
115.0	7.12	5.53	6.95	5.72	7.70	6.43	7.98	6.87	8.39	6.75	8.71	7.05	8.88	7.28

■ MODEL : ASU12RLF1

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	9.46	6.67	10.42	7.68	11.20	8.51	12.00	9.10	13.17	9.88	14.37	10.35	15.03	10.67
32.0	9.46	6.67	10.42	7.68	11.20	8.51	12.00	9.10	13.17	9.88	14.37	10.35	15.03	10.67
41.0	9.46	6.67	10.42	7.68	11.20	8.51	12.00	9.10	13.17	9.88	14.37	10.35	15.03	10.67
50.0	9.46	6.67	10.42	7.68	11.20	8.51	12.00	9.10	13.17	9.88	14.37	10.35	15.03	10.67
59.0	9.46	6.67	10.42	7.68	11.20	8.51	12.00	9.10	13.17	9.88	14.37	10.35	15.03	10.67
68.0	9.46	6.67	10.42	7.68	11.20	8.51	12.00	9.10	13.17	9.88	14.37	10.35	14.61	10.81
77.0	9.46	6.67	10.42	7.68	11.20	8.51	12.00	9.10	13.17	9.88	13.89	10.00	14.25	10.47
86.0	9.46	6.67	10.42	7.68	11.20	8.51	12.00	9.10	13.17	9.88	13.41	9.72	13.77	10.26
95.0	9.46	6.67	10.42	7.68	11.20	8.51	12.00	9.10	12.57	9.56	13.05	9.53	13.31	10.11
104.0	9.46	6.67	10.42	7.68	10.90	8.45	11.32	8.81	11.86	9.13	12.31	9.05	12.55	9.66
115.0	9.46	6.67	9.24	7.09	10.24	8.09	10.64	8.60	11.15	8.64	11.58	8.57	11.80	9.21

TC : Total Capacity kBtu/h.

SHC : Sensible Heat Capacity kBtu/h.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

COOLING CAPACITY in kW

MODEL : ASU7RLF1

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	1.61	1.25	1.77	1.40	1.91	1.54	2.04	1.65	2.24	1.75	2.45	1.88	2.64	1.98
0.0	1.61	1.25	1.77	1.40	1.91	1.54	2.04	1.65	2.24	1.75	2.45	1.88	2.64	1.98
5.0	1.61	1.25	1.77	1.40	1.91	1.54	2.04	1.65	2.24	1.75	2.45	1.88	2.64	1.98
10.0	1.61	1.25	1.77	1.40	1.91	1.54	2.04	1.65	2.24	1.75	2.45	1.88	2.64	1.98
15.0	1.61	1.25	1.77	1.40	1.91	1.54	2.04	1.65	2.24	1.75	2.45	1.88	2.64	1.98
20.0	1.61	1.25	1.77	1.40	1.91	1.54	2.04	1.65	2.24	1.75	2.45	1.88	2.49	1.94
25.0	1.61	1.25	1.77	1.40	1.91	1.54	2.04	1.65	2.24	1.75	2.37	1.82	2.43	1.88
30.0	1.61	1.25	1.77	1.40	1.91	1.54	2.04	1.65	2.24	1.75	2.28	1.77	2.35	1.84
35.0	1.61	1.25	1.77	1.40	1.91	1.54	2.04	1.65	2.14	1.69	2.22	1.73	2.27	1.81
40.0	1.61	1.25	1.77	1.40	1.86	1.52	1.92	1.60	2.02	1.62	2.10	1.65	2.14	1.73
46.1	1.61	1.25	1.57	1.29	1.74	1.46	1.81	1.56	1.90	1.53	1.97	1.56	2.01	1.64

MODEL : ASU9RLF1

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	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
46.1	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 : ASU12RLF1

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	2.77	1.95	3.05	2.25	3.28	2.49	3.51	2.67	3.86	2.90	4.21	3.03	4.41	3.13
0.0	2.77	1.95	3.05	2.25	3.28	2.49	3.51	2.67	3.86	2.90	4.21	3.03	4.41	3.13
5.0	2.77	1.95	3.05	2.25	3.28	2.49	3.51	2.67	3.86	2.90	4.21	3.03	4.41	3.13
10.0	2.77	1.95	3.05	2.25	3.28	2.49	3.51	2.67	3.86	2.90	4.21	3.03	4.41	3.13
15.0	2.77	1.95	3.05	2.25	3.28	2.49	3.51	2.67	3.86	2.90	4.21	3.03	4.41	3.13
20.0	2.77	1.95	3.05	2.25	3.28	2.49	3.51	2.67	3.86	2.90	4.21	3.03	4.28	3.17
25.0	2.77	1.95	3.05	2.25	3.28	2.49	3.51	2.67	3.86	2.90	4.07	2.93	4.18	3.07
30.0	2.77	1.95	3.05	2.25	3.28	2.49	3.51	2.67	3.86	2.90	3.93	2.85	4.04	3.01
35.0	2.77	1.95	3.05	2.25	3.28	2.49	3.51	2.67	3.69	2.80	3.83	2.79	3.90	2.96
40.0	2.77	1.95	3.05	2.25	3.19	2.48	3.31	2.58	3.48	2.68	3.61	2.65	3.68	2.83
46.1	2.77	1.95	2.71	2.08	3.00	2.37	3.11	2.52	3.27	2.53	3.39	2.51	3.46	2.70

TC : Total Capacity kW.

SHC : Sensible Heat Capacity kW.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

COOLING CAPACITY in kBtu/h

MODEL
SELECTION

MODEL
SELECTION

MODEL : ASU7RLF

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	5.50	4.26	6.06	4.78	6.51	5.24	7.00	5.64	7.66	5.97	8.35	6.43	9.01	6.74
32.0	5.50	4.26	6.06	4.78	6.51	5.24	7.00	5.64	7.66	5.97	8.35	6.43	9.01	6.74
41.0	5.50	4.26	6.06	4.78	6.51	5.24	7.00	5.64	7.66	5.97	8.35	6.43	9.01	6.74
50.0	5.50	4.26	6.06	4.78	6.51	5.24	7.00	5.64	7.66	5.97	8.35	6.43	9.01	6.74
59.0	5.50	4.26	6.06	4.78	6.51	5.24	7.00	5.64	7.66	5.97	8.35	6.43	9.01	6.74
68.0	5.50	4.26	6.06	4.78	6.51	5.24	7.00	5.64	7.66	5.97	8.35	6.43	8.49	6.61
77.0	5.50	4.26	6.06	4.78	6.51	5.24	7.00	5.64	7.66	5.97	8.07	6.22	8.28	6.40
86.0	5.50	4.26	6.06	4.78	6.51	5.24	7.00	5.64	7.66	5.97	7.80	6.04	8.00	6.27
95.0	5.50	4.26	6.06	4.78	6.51	5.24	7.00	5.64	7.31	5.77	7.59	5.92	7.73	6.17
104.0	5.50	4.26	6.06	4.78	6.33	5.19	6.60	5.45	6.89	5.51	7.15	5.62	7.29	5.89
115.0	5.50	4.26	5.37	4.40	5.95	4.97	6.21	5.31	6.48	5.22	6.73	5.32	6.86	5.61

MODEL : ASU9RLF

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	7.12	5.53	7.84	6.21	8.42	6.78	9.00	7.30	9.91	7.73	10.81	8.54	11.66	8.75
32.0	7.12	5.53	7.84	6.21	8.42	6.78	9.00	7.30	9.91	7.73	10.81	8.54	11.66	8.75
41.0	7.12	5.53	7.84	6.21	8.42	6.78	9.00	7.30	9.91	7.73	10.81	8.54	11.66	8.75
50.0	7.12	5.53	7.84	6.21	8.42	6.78	9.00	7.30	9.91	7.73	10.81	8.54	11.66	8.75
59.0	7.12	5.53	7.84	6.21	8.42	6.78	9.00	7.30	9.91	7.73	10.81	8.54	11.66	8.75
68.0	7.12	5.53	7.84	6.21	8.42	6.78	9.00	7.30	9.91	7.73	10.81	8.54	10.99	8.57
77.0	7.12	5.53	7.84	6.21	8.42	6.78	9.00	7.30	9.91	7.73	10.45	8.25	10.72	8.31
86.0	7.12	5.53	7.84	6.21	8.42	6.78	9.00	7.30	9.91	7.73	10.09	8.02	10.36	8.13
95.0	7.12	5.53	7.84	6.21	8.42	6.78	9.00	7.30	9.46	7.47	9.82	7.85	10.01	8.01
104.0	7.12	5.53	7.84	6.21	8.20	6.72	8.49	7.05	8.92	7.14	9.26	7.45	9.44	7.64
115.0	7.12	5.53	6.95	5.72	7.70	6.43	7.98	6.87	8.39	6.75	8.71	7.05	8.88	7.28

MODEL : ASU12RLF

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	9.46	6.67	10.42	7.68	11.20	8.51	12.00	9.10	13.17	9.88	14.37	10.35	15.03	10.67
32.0	9.46	6.67	10.42	7.68	11.20	8.51	12.00	9.10	13.17	9.88	14.37	10.35	15.03	10.67
41.0	9.46	6.67	10.42	7.68	11.20	8.51	12.00	9.10	13.17	9.88	14.37	10.35	15.03	10.67
50.0	9.46	6.67	10.42	7.68	11.20	8.51	12.00	9.10	13.17	9.88	14.37	10.35	15.03	10.67
59.0	9.46	6.67	10.42	7.68	11.20	8.51	12.00	9.10	13.17	9.88	14.37	10.35	15.03	10.67
68.0	9.46	6.67	10.42	7.68	11.20	8.51	12.00	9.10	13.17	9.88	14.37	10.35	14.61	10.81
77.0	9.46	6.67	10.42	7.68	11.20	8.51	12.00	9.10	13.17	9.88	13.89	10.00	14.25	10.47
86.0	9.46	6.67	10.42	7.68	11.20	8.51	12.00	9.10	13.17	9.88	13.41	9.72	13.77	10.26
95.0	9.46	6.67	10.42	7.68	11.20	8.51	12.00	9.10	12.57	9.56	13.05	9.53	13.31	10.11
104.0	9.46	6.67	10.42	7.68	10.90	8.45	11.32	8.81	11.86	9.13	12.31	9.05	12.55	9.66
115.0	9.46	6.67	9.24	7.09	10.24	8.09	10.64	8.60	11.15	8.64	11.58	8.57	11.80	9.21

TC : Total Capacity kBtu/h.

SHC : Sensible Heat Capacity kBtu/h.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

COOLING CAPACITY in kW

MODEL : ASU7RLF

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	1.61	1.25	1.77	1.40	1.91	1.54	2.04	1.65	2.24	1.75	2.45	1.88	2.64	1.98
0.0	1.61	1.25	1.77	1.40	1.91	1.54	2.04	1.65	2.24	1.75	2.45	1.88	2.64	1.98
5.0	1.61	1.25	1.77	1.40	1.91	1.54	2.04	1.65	2.24	1.75	2.45	1.88	2.64	1.98
10.0	1.61	1.25	1.77	1.40	1.91	1.54	2.04	1.65	2.24	1.75	2.45	1.88	2.64	1.98
15.0	1.61	1.25	1.77	1.40	1.91	1.54	2.04	1.65	2.24	1.75	2.45	1.88	2.64	1.98
20.0	1.61	1.25	1.77	1.40	1.91	1.54	2.04	1.65	2.24	1.75	2.45	1.88	2.49	1.94
25.0	1.61	1.25	1.77	1.40	1.91	1.54	2.04	1.65	2.24	1.75	2.37	1.82	2.43	1.88
30.0	1.61	1.25	1.77	1.40	1.91	1.54	2.04	1.65	2.24	1.75	2.28	1.77	2.35	1.84
35.0	1.61	1.25	1.77	1.40	1.91	1.54	2.04	1.65	2.14	1.69	2.22	1.73	2.27	1.81
40.0	1.61	1.25	1.77	1.40	1.86	1.52	1.92	1.60	2.02	1.62	2.10	1.65	2.14	1.73
46.1	1.61	1.25	1.57	1.29	1.74	1.46	1.81	1.56	1.90	1.53	1.97	1.56	2.01	1.64

MODEL : ASU9RLF

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	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
46.1	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 : ASU12RLF

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	2.77	1.95	3.05	2.25	3.28	2.49	3.51	2.67	3.86	2.90	4.21	3.03	4.41	3.13
0.0	2.77	1.95	3.05	2.25	3.28	2.49	3.51	2.67	3.86	2.90	4.21	3.03	4.41	3.13
5.0	2.77	1.95	3.05	2.25	3.28	2.49	3.51	2.67	3.86	2.90	4.21	3.03	4.41	3.13
10.0	2.77	1.95	3.05	2.25	3.28	2.49	3.51	2.67	3.86	2.90	4.21	3.03	4.41	3.13
15.0	2.77	1.95	3.05	2.25	3.28	2.49	3.51	2.67	3.86	2.90	4.21	3.03	4.41	3.13
20.0	2.77	1.95	3.05	2.25	3.28	2.49	3.51	2.67	3.86	2.90	4.21	3.03	4.28	3.17
25.0	2.77	1.95	3.05	2.25	3.28	2.49	3.51	2.67	3.86	2.90	4.07	2.93	4.18	3.07
30.0	2.77	1.95	3.05	2.25	3.28	2.49	3.51	2.67	3.86	2.90	3.93	2.85	4.04	3.01
35.0	2.77	1.95	3.05	2.25	3.28	2.49	3.51	2.67	3.69	2.80	3.83	2.79	3.90	2.96
40.0	2.77	1.95	3.05	2.25	3.19	2.48	3.31	2.58	3.48	2.68	3.61	2.65	3.68	2.83
46.1	2.77	1.95	2.71	2.08	3.00	2.37	3.11	2.52	3.27	2.53	3.39	2.51	3.46	2.70

TC : Total Capacity kW.

SHC : Sensible Heat Capacity kW.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

COOLING CAPACITY in kBtu/h

MODEL : ASU9RLS2

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	7.11	5.52	7.83	6.21	8.42	6.77	9.00	7.29	9.90	7.72	10.80	8.53	11.66	8.74
32.0	7.11	5.52	7.83	6.21	8.42	6.77	9.00	7.29	9.90	7.72	10.80	8.53	11.66	8.74
41.0	7.11	5.52	7.83	6.21	8.42	6.77	9.00	7.29	9.90	7.72	10.80	8.53	11.66	8.74
50.0	7.11	5.52	7.83	6.21	8.42	6.77	9.00	7.29	9.90	7.72	10.80	8.53	11.66	8.74
59.0	7.11	5.52	7.83	6.21	8.42	6.77	9.00	7.29	9.90	7.72	10.80	8.53	11.66	8.74
68.0	7.11	5.52	7.83	6.21	8.42	6.77	9.00	7.29	9.90	7.72	10.80	8.53	10.98	8.56
77.0	7.11	5.52	7.83	6.21	8.42	6.77	9.00	7.29	9.90	7.72	10.44	8.25	10.71	8.30
86.0	7.11	5.52	7.83	6.21	8.42	6.77	9.00	7.29	9.90	7.72	10.08	8.01	10.35	8.12
95.0	7.11	5.52	7.83	6.21	8.42	6.77	9.00	7.29	9.45	7.47	9.81	7.85	10.00	8.00
104.0	7.11	5.52	7.83	6.21	8.19	6.72	8.49	7.04	8.91	7.13	9.25	7.45	9.43	7.64
115.0	7.11	5.52	6.95	5.72	7.70	6.43	7.98	6.87	8.38	6.75	8.70	7.05	8.87	7.27

MODEL : ASU12RLS2

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	9.48	6.68	10.44	7.69	11.22	8.53	12.00	9.12	13.20	9.90	14.40	10.37	15.06	10.69
32.0	9.48	6.68	10.44	7.69	11.22	8.53	12.00	9.12	13.20	9.90	14.40	10.37	15.06	10.69
41.0	9.48	6.68	10.44	7.69	11.22	8.53	12.00	9.12	13.20	9.90	14.40	10.37	15.06	10.69
50.0	9.48	6.68	10.44	7.69	11.22	8.53	12.00	9.12	13.20	9.90	14.40	10.37	15.06	10.69
59.0	9.48	6.68	10.44	7.69	11.22	8.53	12.00	9.12	13.20	9.90	14.40	10.37	15.06	10.69
68.0	9.48	6.68	10.44	7.69	11.22	8.53	12.00	9.12	13.20	9.90	14.40	10.37	14.64	10.83
77.0	9.48	6.68	10.44	7.69	11.22	8.53	12.00	9.12	13.20	9.90	13.92	10.02	14.28	10.50
86.0	9.48	6.68	10.44	7.69	11.22	8.53	12.00	9.12	13.20	9.90	13.44	9.74	13.80	10.28
95.0	9.48	6.68	10.44	7.69	11.22	8.53	12.00	9.12	12.60	9.58	13.08	9.55	13.33	10.13
104.0	9.48	6.68	10.44	7.69	10.92	8.46	11.32	8.83	11.88	9.15	12.33	9.07	12.57	9.68
115.0	9.48	6.68	9.26	7.10	10.26	8.11	10.64	8.62	11.18	8.66	11.60	8.59	11.83	9.22

MODEL : ASU15RLS2

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	11.06	7.69	12.18	8.85	13.09	9.82	14.00	10.50	15.40	11.40	16.80	11.93	17.57	12.30
32.0	11.06	7.69	12.18	8.85	13.09	9.82	14.00	10.50	15.40	11.40	16.80	11.93	17.57	12.30
41.0	11.06	7.69	12.18	8.85	13.09	9.82	14.00	10.50	15.40	11.40	16.80	11.93	17.57	12.30
50.0	11.06	7.69	12.18	8.85	13.09	9.82	14.00	10.50	15.40	11.40	16.80	11.93	17.57	12.30
59.0	11.06	7.69	12.18	8.85	13.09	9.82	14.00	10.50	15.40	11.40	16.80	11.93	17.57	12.30
68.0	11.06	7.69	12.18	8.85	13.09	9.82	14.00	10.50	15.40	11.40	16.80	11.93	17.08	12.47
77.0	11.06	7.69	12.18	8.85	13.09	9.82	14.00	10.50	15.40	11.40	16.24	11.53	16.66	12.08
86.0	11.06	7.69	12.18	8.85	13.09	9.82	14.00	10.50	15.40	11.40	15.68	11.21	16.10	11.83
95.0	11.06	7.69	12.18	8.85	13.09	9.82	14.00	10.50	14.70	11.03	15.26	10.99	15.55	11.67
104.0	11.06	7.69	12.18	8.85	12.74	9.75	13.20	10.17	13.86	10.54	14.39	10.43	14.67	11.15
115.0	11.06	7.69	10.80	8.18	11.97	9.34	12.42	9.93	13.04	9.97	13.54	9.88	13.80	10.62

TC : Total Capacity kBtu/h.

SHC : Sensible Heat Capacity kBtu/h.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

COOLING CAPACITY in kW

MODEL : ASU9RLS2

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	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
46.1	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 : ASU12RLS2

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	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
46.1	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 : ASU15RLS2

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	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
46.1	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 : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

COOLING CAPACITY in kBtu/h

MODEL
SELECTION

MODEL
SELECTION

MODEL : ASU18RLF

Outdoor temperature	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	14.23	10.03	15.67	11.47	16.84	12.50	18.00	13.69	19.82	14.57	21.62	15.02	22.52	15.31
32.0	14.23	10.03	15.67	11.47	16.84	12.50	18.00	13.69	19.82	14.57	21.62	15.02	22.52	15.31
41.0	14.23	10.03	15.67	11.47	16.84	12.50	18.00	13.69	19.82	14.57	21.62	15.02	22.52	15.31
50.0	14.23	10.03	15.67	11.47	16.84	12.50	18.00	13.69	19.82	14.57	21.62	15.02	22.52	15.31
59.0	14.23	10.03	15.67	11.47	16.84	12.50	18.00	13.69	19.82	14.57	21.62	15.02	22.52	15.31
68.0	14.23	10.03	15.67	11.47	16.84	12.50	18.00	13.69	19.82	14.57	21.62	15.02	21.98	15.12
77.0	14.23	10.03	15.67	11.47	16.84	12.50	18.00	13.69	19.82	14.57	20.90	14.52	21.44	14.69
86.0	14.23	10.03	15.67	11.47	16.84	12.50	18.00	13.69	19.82	14.57	20.18	14.12	20.72	14.40
95.0	14.23	10.03	15.67	11.47	16.84	12.50	18.00	13.69	18.92	14.09	19.64	13.84	20.02	14.21
104.0	14.23	10.03	15.67	11.47	16.39	12.41	16.97	13.42	17.84	13.47	18.52	13.15	18.87	13.59
115.0	14.23	10.03	13.90	10.59	15.40	11.89	15.97	12.94	16.78	12.75	17.42	12.45	17.75	12.96

MODEL : ASU24RLF

Outdoor temperature	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
(°FDB)	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	18.92	12.81	20.84	14.46	22.40	15.72	24.00	16.93	26.11	17.28	28.74	19.75	29.94	19.97
32.0	18.92	12.81	20.84	14.46	22.40	15.72	24.00	16.93	26.11	17.28	28.74	19.75	29.94	19.97
41.0	18.92	12.81	20.84	14.46	22.40	15.72	24.00	16.93	26.11	17.28	28.74	19.75	29.94	19.97
50.0	18.92	12.81	20.84	14.46	22.40	15.72	24.00	16.93	26.11	17.28	28.74	19.75	29.94	19.97
59.0	18.92	12.81	20.84	14.46	22.40	15.72	24.00	16.93	26.11	17.28	28.74	19.75	29.94	19.97
68.0	18.92	12.81	20.84	14.46	22.40	15.72	24.00	16.93	26.11	17.28	28.74	19.75	29.22	20.37
77.0	18.92	12.81	20.84	14.46	22.40	15.72	24.00	16.93	26.11	17.28	27.78	19.09	28.50	19.72
86.0	18.92	12.81	20.84	14.46	22.40	15.72	24.00	16.93	26.11	17.28	26.83	18.56	27.55	19.34
95.0	18.92	12.81	20.84	14.46	22.40	15.72	24.00	16.93	25.15	16.90	26.11	18.20	26.61	19.08
104.0	18.92	12.81	20.84	14.46	21.80	15.63	22.63	16.42	23.72	16.29	24.62	17.28	25.09	18.24
115.0	18.92	12.81	18.48	13.38	20.48	14.99	21.29	16.08	22.31	15.33	23.16	16.37	23.60	17.40

TC : Total Capacity kBtu/h.

SHC : Sensible Heat Capacity kBtu/h.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

COOLING CAPACITY in kW

MODEL : ASU18RLF

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	4.17	2.94	4.59	3.36	4.94	3.66	5.28	4.01	5.81	4.27	6.34	4.40	6.60	4.49
0.0	4.17	2.94	4.59	3.36	4.94	3.66	5.28	4.01	5.81	4.27	6.34	4.40	6.60	4.49
5.0	4.17	2.94	4.59	3.36	4.94	3.66	5.28	4.01	5.81	4.27	6.34	4.40	6.60	4.49
10.0	4.17	2.94	4.59	3.36	4.94	3.66	5.28	4.01	5.81	4.27	6.34	4.40	6.60	4.49
15.0	4.17	2.94	4.59	3.36	4.94	3.66	5.28	4.01	5.81	4.27	6.34	4.40	6.60	4.49
20.0	4.17	2.94	4.59	3.36	4.94	3.66	5.28	4.01	5.81	4.27	6.34	4.40	6.44	4.43
25.0	4.17	2.94	4.59	3.36	4.94	3.66	5.28	4.01	5.81	4.27	6.12	4.26	6.28	4.30
30.0	4.17	2.94	4.59	3.36	4.94	3.66	5.28	4.01	5.81	4.27	5.91	4.14	6.07	4.22
35.0	4.17	2.94	4.59	3.36	4.94	3.66	5.28	4.01	5.54	4.13	5.76	4.06	5.87	4.16
40.0	4.17	2.94	4.59	3.36	4.80	3.64	4.98	3.93	5.23	3.95	5.43	3.85	5.53	3.98
46.1	4.17	2.94	4.07	3.10	4.51	3.49	4.68	3.79	4.92	3.74	5.10	3.65	5.20	3.80

MODEL : ASU24RLF

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
-5.0	5.55	3.75	6.11	4.24	6.56	4.61	7.02	4.96	7.65	5.07	8.42	5.79	8.78	5.85
0.0	5.55	3.75	6.11	4.24	6.56	4.61	7.02	4.96	7.65	5.07	8.42	5.79	8.78	5.85
5.0	5.55	3.75	6.11	4.24	6.56	4.61	7.02	4.96	7.65	5.07	8.42	5.79	8.78	5.85
10.0	5.55	3.75	6.11	4.24	6.56	4.61	7.02	4.96	7.65	5.07	8.42	5.79	8.78	5.85
15.0	5.55	3.75	6.11	4.24	6.56	4.61	7.02	4.96	7.65	5.07	8.42	5.79	8.78	5.85
20.0	5.55	3.75	6.11	4.24	6.56	4.61	7.02	4.96	7.65	5.07	8.42	5.79	8.56	5.97
25.0	5.55	3.75	6.11	4.24	6.56	4.61	7.02	4.96	7.65	5.07	8.14	5.59	8.35	5.78
30.0	5.55	3.75	6.11	4.24	6.56	4.61	7.02	4.96	7.65	5.07	7.86	5.44	8.07	5.67
35.0	5.55	3.75	6.11	4.24	6.56	4.61	7.02	4.96	7.37	4.95	7.65	5.33	7.80	5.59
40.0	5.55	3.75	6.11	4.24	6.39	4.58	6.62	4.81	6.95	4.78	7.22	5.07	7.35	5.35
46.1	5.55	3.75	5.42	3.92	6.00	4.39	6.23	4.71	6.54	4.49	6.79	4.80	6.92	5.10

TC : Total Capacity kW.

SHC : Sensible Heat Capacity kW.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

COOLING CAPACITY in kBtu/h

6-1-4. FLOOR TYPE

MODEL : AGU9RLF

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	7.20	5.51	7.92	6.14	8.48	6.63	9.00	7.11	9.95	7.81	10.83	8.17	11.70	8.42
32.0	7.20	5.51	7.92	6.14	8.48	6.63	9.00	7.11	9.95	7.81	10.83	8.17	11.70	8.42
41.0	7.20	5.51	7.92	6.14	8.48	6.63	9.00	7.11	9.95	7.81	10.83	8.17	11.70	8.42
50.0	7.20	5.51	7.92	6.14	8.48	6.63	9.00	7.11	9.95	7.81	10.83	8.17	11.70	8.42
59.0	7.20	5.51	7.92	6.14	8.48	6.63	9.00	7.11	9.95	7.81	10.83	8.17	11.70	8.42
68.0	7.20	5.51	7.92	6.14	8.48	6.63	9.00	7.11	9.95	7.81	10.83	8.17	11.01	8.26
77.0	7.20	5.51	7.92	6.14	8.48	6.63	9.00	7.11	9.95	7.81	10.47	7.90	10.74	8.00
86.0	7.20	5.51	7.92	6.14	8.48	6.63	9.00	7.11	9.95	7.81	10.11	7.68	10.38	7.83
95.0	7.20	5.51	7.92	6.14	8.48	6.63	9.00	7.11	9.48	7.53	9.84	7.53	10.03	7.72
104.0	7.20	5.51	7.92	6.14	8.25	6.58	8.49	7.04	8.94	7.19	9.28	7.14	9.45	7.37
115.0	7.20	5.51	7.03	5.66	7.76	6.30	7.98	6.71	8.41	6.81	8.73	6.76	8.89	7.03

MODEL : AGU12RLF

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	9.60	6.48	10.56	7.62	11.30	8.25	12.00	8.88	13.26	9.61	14.44	10.18	15.60	10.53
32.0	9.60	6.48	10.56	7.62	11.30	8.25	12.00	8.88	13.26	9.61	14.44	10.18	15.60	10.53
41.0	9.60	6.48	10.56	7.62	11.30	8.25	12.00	8.88	13.26	9.61	14.44	10.18	15.60	10.53
50.0	9.60	6.48	10.56	7.62	11.30	8.25	12.00	8.88	13.26	9.61	14.44	10.18	15.60	10.53
59.0	9.60	6.48	10.56	7.62	11.30	8.25	12.00	8.88	13.26	9.61	14.44	10.18	15.60	10.53
68.0	9.60	6.48	10.56	7.62	11.30	8.25	12.00	8.88	13.26	9.61	14.44	10.18	14.68	10.35
77.0	9.60	6.48	10.56	7.62	11.30	8.25	12.00	8.88	13.26	9.61	13.96	9.84	14.32	10.02
86.0	9.60	6.48	10.56	7.62	11.30	8.25	12.00	8.88	13.26	9.61	13.48	9.57	13.84	9.82
95.0	9.60	6.48	10.56	7.62	11.30	8.25	12.00	8.88	12.64	9.29	13.12	9.38	13.37	9.69
104.0	9.60	6.48	10.56	7.62	11.00	8.20	11.32	8.71	11.92	8.88	12.37	8.91	12.61	9.27
115.0	9.60	6.48	9.37	6.95	10.34	7.86	10.64	8.41	11.21	8.41	11.63	8.43	11.86	8.83

MODEL : AGU15RLF

Outdoor temperature (°FDB)	Indoor temperature (°FDB / °FWB)													
	70.0 / 60.0		72.0 / 61.0		75.0 / 63.0		80.0 / 67.0		85.0 / 71.0		88.0 / 72.0		90.0 / 73.0	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
23.0	11.20	7.34	12.32	8.65	13.19	9.36	14.00	10.08	15.47	10.91	16.84	11.54	18.20	11.92
32.0	11.20	7.34	12.32	8.65	13.19	9.36	14.00	10.08	15.47	10.91	16.84	11.54	18.20	11.92
41.0	11.20	7.34	12.32	8.65	13.19	9.36	14.00	10.08	15.47	10.91	16.84	11.54	18.20	11.92
50.0	11.20	7.34	12.32	8.65	13.19	9.36	14.00	10.08	15.47	10.91	16.84	11.54	18.20	11.92
59.0	11.20	7.34	12.32	8.65	13.19	9.36	14.00	10.08	15.47	10.91	16.84	11.54	18.20	11.92
68.0	11.20	7.34	12.32	8.65	13.19	9.36	14.00	10.08	15.47	10.91	16.84	11.54	17.12	11.73
77.0	11.20	7.34	12.32	8.65	13.19	9.36	14.00	10.08	15.47	10.91	16.28	11.15	16.70	11.36
86.0	11.20	7.34	12.32	8.65	13.19	9.36	14.00	10.08	15.47	10.91	15.72	10.85	16.14	11.14
95.0	11.20	7.34	12.32	8.65	13.19	9.36	14.00	10.08	14.74	10.54	15.30	10.63	15.60	11.00
104.0	11.20	7.34	12.32	8.65	12.84	9.31	13.20	9.90	13.90	10.08	14.43	10.10	14.71	10.52
115.0	11.20	7.34	10.93	7.89	12.07	8.93	12.42	9.56	13.08	9.55	13.57	9.57	13.83	10.03

TC : Total Capacity kBtu/h.

SHC : Sensible Heat Capacity kBtu/h.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

COOLING CAPACITY in kW

MODEL : AGU9RLF

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	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
46.1	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 : AGU12RLF

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	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
46.1	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 : AGU15RLF

Outdoor temperature (°CDB)	Indoor temperature (°CDB / °CWB)													
	21.1 / 15.6		22.2 / 16.1		23.9 / 17.2		26.7 / 19.4		29.4 / 21.7		31.1 / 22.2		32.2 / 22.8	
	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
46.1	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 : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

6-2. HEATING CAPACITY

6-2-1. COMPACT CASSETTE TYPE

HEATING CAPACITY
in kBtu/h

■ MODEL : AUU7RLF

Outdoor Temperature		Indoor temperature (°FDB)				
(°FDB)	(°FWB)	60.0	65.0	70.0	75.0	78.0
		TC	TC	TC	TC	TC
5.0	3.0	6.39	5.90	5.43	4.95	4.31
14.0	12.0	7.16	6.60	6.08	0.00	4.83
23.0	19.0	7.96	7.34	6.76	6.17	5.37
32.0	28.0	8.69	8.02	7.38	6.74	5.87
41.0	37.0	9.32	8.60	7.91	7.23	6.29
47.0	43.0	9.54	8.80	8.10	7.40	6.44
50.0	47.0	9.54	8.80	8.10	7.40	6.44
59.0	50.0	9.54	8.80	8.10	7.40	6.44
68.0	59.0	9.54	8.80	8.10	7.40	6.44
75.0	65.0	9.54	8.80	8.10	7.40	6.44

■ MODEL : AUU9RLF

Outdoor Temperature		Indoor temperature (°FDB)				
(°FDB)	(°FWB)	60.0	65.0	70.0	75.0	78.0
		TC	TC	TC	TC	TC
5.0	3.0	8.08	7.45	6.83	6.26	5.45
14.0	12.0	9.04	8.34	7.65	7.01	6.10
23.0	19.0	10.06	9.28	8.51	7.79	6.79
32.0	28.0	10.98	10.14	9.29	8.51	7.41
41.0	37.0	11.78	10.87	9.97	9.13	7.95
47.0	43.0	12.06	11.13	10.20	9.35	8.14
50.0	47.0	12.06	11.13	10.20	9.35	8.14
59.0	50.0	12.06	11.13	10.20	9.35	8.14
68.0	59.0	12.06	11.13	10.20	9.35	8.14
75.0	65.0	12.06	11.13	10.20	9.35	8.14

■ MODEL : AUU12RLF

Outdoor Temperature		Indoor temperature (°FDB)				
(°FDB)	(°FWB)	60.0	65.0	70.0	75.0	78.0
		TC	TC	TC	TC	TC
5.0	3.0	10.66	9.84	9.05	8.27	7.20
14.0	12.0	11.94	11.02	10.13	9.25	8.06
23.0	19.0	13.27	12.25	11.26	10.29	8.96
32.0	28.0	14.50	13.38	12.30	11.24	9.79
41.0	37.0	15.55	14.35	13.19	12.05	10.49
47.0	43.0	15.92	14.69	13.50	12.34	10.74
50.0	47.0	15.92	14.69	13.50	12.34	10.74
59.0	50.0	15.92	14.69	13.50	12.34	10.74
68.0	59.0	15.92	14.69	13.50	12.34	10.74
75.0	65.0	15.92	14.69	13.50	12.34	10.74

■ MODEL : AUU18RLF

Outdoor Temperature		Indoor temperature (°FDB)				
(°FDB)	(°FWB)	60.0	65.0	70.0	75.0	78.0
		TC	TC	TC	TC	TC
5.0	3.0	15.75	14.54	13.40	12.21	10.63
14.0	12.0	17.63	16.27	15.00	13.67	11.90
23.0	19.0	19.61	18.10	16.68	15.20	13.23
32.0	28.0	21.42	19.77	18.22	16.60	14.46
41.0	37.0	22.97	21.20	19.54	17.80	15.50
47.0	43.0	23.51	21.70	20.00	18.22	15.87
50.0	47.0	23.51	21.70	20.00	18.22	15.87
59.0	50.0	23.51	21.70	20.00	18.22	15.87
68.0	59.0	23.51	21.70	20.00	18.22	15.87
75.0	65.0	23.51	21.70	20.00	18.22	15.87

TC : Total Capacity kBtu/h.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

HEATING CAPACITY in kW

■ MODEL : AUU7RLF

Outdoor Temperature		Indoor temperature (°CDB)				
		15.6	18.3	21.1	23.9	25.6
(°CDB)	(°CWB)	TC	TC	TC	TC	TC
-15.0	-16.1	1.87	1.73	1.59	1.45	1.26
-10.0	-11.1	2.09	1.93	1.78	0.00	1.41
-5.0	-7.2	2.33	2.15	1.98	1.80	1.57
0.0	-2.2	2.54	2.35	2.16	1.97	1.72
5.0	2.8	2.73	2.52	2.32	2.11	1.84
8.3	6.1	2.79	2.58	2.37	2.16	1.88
10.0	8.3	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
23.9	18.3	2.79	2.58	2.37	2.16	1.88

■ MODEL : AUU9RLF

Outdoor Temperature		Indoor temperature (°CDB)				
		15.6	18.3	21.1	23.9	25.6
(°CDB)	(°CWB)	TC	TC	TC	TC	TC
-15.0	-16.1	2.37	2.18	2.01	1.84	1.60
-10.0	-11.1	2.65	2.45	2.25	2.05	1.79
-5.0	-7.2	2.95	2.72	2.50	2.28	1.99
0.0	-2.2	3.22	2.97	2.73	2.50	2.17
5.0	2.8	3.45	3.19	2.93	2.68	2.33
8.3	6.1	3.53	3.26	3.00	2.74	2.39
10.0	8.3	3.53	3.26	3.00	2.74	2.39
15.0	10.0	3.53	3.26	3.00	2.74	2.39
20.0	15.0	3.53	3.26	3.00	2.74	2.39
23.9	18.3	3.53	3.26	3.00	2.74	2.39

■ MODEL : AUU12RLF

Outdoor Temperature		Indoor temperature (°CDB)				
		15.6	18.3	21.1	23.9	25.6
(°CDB)	(°CWB)	TC	TC	TC	TC	TC
-15.0	-16.1	3.13	2.88	2.65	2.42	2.11
-10.0	-11.1	3.50	3.23	2.97	2.71	2.36
-5.0	-7.2	3.89	3.59	3.30	3.02	2.63
0.0	-2.2	4.25	3.92	3.61	3.29	2.87
5.0	2.8	4.56	4.21	3.87	3.53	3.08
8.3	6.1	4.66	4.30	3.96	3.62	3.15
10.0	8.3	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
23.9	18.3	4.66	4.30	3.96	3.62	3.15

■ MODEL : AUU18RLF

Outdoor Temperature		Indoor temperature (°CDB)				
		15.6	18.3	21.1	23.9	25.6
(°CDB)	(°CWB)	TC	TC	TC	TC	TC
-15.0	-16.1	4.62	4.26	3.92	3.58	3.12
-10.0	-11.1	5.17	4.77	4.39	4.01	3.49
-5.0	-7.2	5.75	5.30	4.88	4.45	3.88
0.0	-2.2	6.28	5.79	5.33	4.87	4.24
5.0	2.8	6.73	6.21	5.72	5.22	4.54
8.3	6.1	6.89	6.36	5.85	5.34	4.65
10.0	8.3	6.89	6.36	5.85	5.34	4.65
15.0	10.0	6.89	6.36	5.85	5.34	4.65
20.0	15.0	6.89	6.36	5.85	5.34	4.65
23.9	18.3	6.89	6.36	5.85	5.34	4.65

TC : Total Capacity kW.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

HEATING CAPACITY in kBtu/h

6-2-2. SLIM DUCT TYPE

■ MODEL : ARU7RLF

Outdoor Temperature		Indoor temperature (°FDB)				
		60.0	65.0	70.0	75.0	78.0
(°FDB)	(°FWB)	TC	TC	TC	TC	TC
5.0	3.0	6.39	5.90	5.43	4.95	4.31
14.0	12.0	7.16	6.60	6.08	5.55	4.83
23.0	19.0	7.96	7.34	6.76	6.17	5.37
32.0	28.0	8.69	8.02	7.38	6.74	5.87
41.0	37.0	9.32	8.60	7.91	7.23	6.29
47.0	43.0	9.54	8.80	8.10	7.40	6.44
50.0	47.0	9.54	8.80	8.10	7.40	6.44
59.0	50.0	9.54	8.80	8.10	7.40	6.44
68.0	59.0	9.54	8.80	8.10	7.40	6.44
75.0	65.0	9.54	8.80	8.10	7.40	6.44

■ MODEL : ARU9RLF

Outdoor Temperature		Indoor temperature (°FDB)				
		60.0	65.0	70.0	75.0	78.0
(°FDB)	(°FWB)	TC	TC	TC	TC	TC
5.0	3.0	8.28	7.53	6.83	6.17	5.32
14.0	12.0	9.27	8.43	7.65	6.90	5.95
23.0	19.0	10.30	9.37	8.51	7.67	6.62
32.0	28.0	11.26	10.24	9.29	8.38	7.23
41.0	37.0	12.07	10.98	9.97	8.99	7.75
47.0	43.0	12.35	11.24	10.20	9.20	7.93
50.0	47.0	12.35	11.24	10.20	9.20	7.93
59.0	50.0	12.35	11.24	10.20	9.20	7.93
68.0	59.0	12.35	11.24	10.20	9.20	7.93
75.0	65.0	12.35	11.24	10.20	9.20	7.93

■ MODEL : ARU12RLF

Outdoor Temperature		Indoor temperature (°FDB)				
		60.0	65.0	70.0	75.0	78.0
(°FDB)	(°FWB)	TC	TC	TC	TC	TC
5.0	3.0	10.93	9.94	9.05	8.14	7.02
14.0	12.0	12.23	11.13	10.13	9.11	7.85
23.0	19.0	13.60	12.37	11.26	10.13	8.73
32.0	28.0	14.86	13.52	12.30	11.07	9.54
41.0	37.0	15.93	14.49	13.19	11.87	10.23
47.0	43.0	16.31	14.84	13.50	12.15	10.47
50.0	47.0	16.31	14.84	13.50	12.15	10.47
59.0	50.0	16.31	14.84	13.50	12.15	10.47
68.0	59.0	16.31	14.84	13.50	12.15	10.47
75.0	65.0	16.31	14.84	13.50	12.15	10.47

■ MODEL : ARU18RLF

Outdoor Temperature		Indoor temperature (°FDB)				
		60.0	65.0	70.0	75.0	78.0
(°FDB)	(°FWB)	TC	TC	TC	TC	TC
5.0	3.0	16.14	14.68	13.40	12.02	10.36
14.0	12.0	18.07	16.44	15.00	13.46	11.60
23.0	19.0	20.09	18.28	16.68	14.97	12.90
32.0	28.0	21.95	19.97	18.22	16.35	14.09
41.0	37.0	23.54	21.41	19.54	17.53	15.11
47.0	43.0	24.09	21.92	20.00	17.94	15.47
50.0	47.0	24.09	21.92	20.00	17.94	15.47
59.0	50.0	24.09	21.92	20.00	17.94	15.47
68.0	59.0	24.09	21.92	20.00	17.94	15.47
75.0	65.0	24.09	21.92	20.00	17.94	15.47

■ MODEL : ARU24RLF

Outdoor Temperature		Indoor temperature (°FDB)				
		60.0	65.0	70.0	75.0	78.0
(°FDB)	(°FWB)	TC	TC	TC	TC	TC
5.0	3.0	21.85	19.88	18.09	16.28	14.03
14.0	12.0	24.46	22.25	20.25	18.22	15.71
23.0	19.0	27.20	24.75	22.52	20.26	17.47
32.0	28.0	29.71	27.03	24.60	22.13	19.08
41.0	37.0	31.87	28.99	26.38	23.73	20.46
47.0	43.0	32.62	29.67	27.00	24.29	20.94
50.0	47.0	32.62	29.67	27.00	24.29	20.94
59.0	50.0	32.62	29.67	27.00	24.29	20.94
68.0	59.0	32.62	29.67	27.00	24.29	20.94
75.0	65.0	32.62	29.67	27.00	24.29	20.94

TC : Total Capacity kBtu/h.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

HEATING CAPACITY in kW

MODEL : ARU7RLF

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	15.6	18.3	21.1	23.9	25.6
		TC	TC	TC	TC	TC
-15.0	-16.1	1.87	1.73	1.59	1.45	1.26
-10.0	-11.1	2.09	1.93	1.78	0.00	1.41
-5.0	-7.2	2.33	2.15	1.98	1.80	1.57
0.0	-2.2	2.54	2.35	2.16	1.97	1.72
5.0	2.8	2.73	2.52	2.32	2.11	1.84
8.3	6.1	2.79	2.58	2.37	2.16	1.88
10.0	8.3	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
23.9	18.3	2.79	2.58	2.37	2.16	1.88

MODEL : ARU9RLF

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	15.6	18.3	21.1	23.9	25.6
		TC	TC	TC	TC	TC
-15.0	-16.1	2.43	2.21	2.01	1.81	1.56
-10.0	-11.1	2.72	2.47	2.25	2.02	1.74
-5.0	-7.2	3.02	2.75	2.50	2.25	1.94
0.0	-2.2	3.30	3.00	2.73	2.46	2.12
5.0	2.8	3.54	3.22	2.93	2.63	2.27
8.3	6.1	3.62	3.29	3.00	2.70	2.33
10.0	8.3	3.62	3.29	3.00	2.70	2.33
15.0	10.0	3.62	3.29	3.00	2.70	2.33
20.0	15.0	3.62	3.29	3.00	2.70	2.33
23.9	18.3	3.62	3.29	3.00	2.70	2.33

MODEL : ARU12RLF

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	15.6	18.3	21.1	23.9	25.6
		TC	TC	TC	TC	TC
-15.0	-16.1	3.20	2.91	2.65	2.39	2.06
-10.0	-11.1	3.58	3.26	2.97	2.67	2.30
-5.0	-7.2	3.99	3.63	3.30	2.97	2.56
0.0	-2.2	4.35	3.96	3.61	3.24	2.80
5.0	2.8	4.67	4.25	3.87	3.48	3.00
8.3	6.1	4.78	4.35	3.96	3.56	3.07
10.0	8.3	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
23.9	18.3	4.78	4.35	3.96	3.56	3.07

MODEL : ARU18RLF

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	15.6	18.3	21.1	23.9	25.6
		TC	TC	TC	TC	TC
-15.0	-16.1	4.73	4.30	3.92	3.52	3.04
-10.0	-11.1	5.30	4.82	4.39	3.94	3.40
-5.0	-7.2	5.89	5.36	4.88	4.39	3.78
0.0	-2.2	6.43	5.85	5.33	4.79	4.13
5.0	2.8	6.90	6.28	5.72	5.14	4.43
8.3	6.1	7.06	6.42	5.85	5.26	4.53
10.0	8.3	7.06	6.42	5.85	5.26	4.53
15.0	10.0	7.06	6.42	5.85	5.26	4.53
20.0	15.0	7.06	6.42	5.85	5.26	4.53
23.9	18.3	7.06	6.42	5.85	5.26	4.53

MODEL : ARU24RLF

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	15.6	18.3	21.1	23.9	25.6
		TC	TC	TC	TC	TC
-15.0	-16.1	6.40	5.83	5.31	4.77	4.11
-10.0	-11.1	7.17	6.52	5.94	5.34	4.60
-5.0	-7.2	7.97	7.25	6.61	5.94	5.12
0.0	-2.2	8.71	7.92	7.22	6.49	5.59
5.0	2.8	9.34	8.50	7.74	6.96	6.00
8.3	6.1	9.56	8.70	7.92	7.12	6.14
10.0	8.3	9.56	8.70	7.92	7.12	6.14
15.0	10.0	9.56	8.70	7.92	7.12	6.14
20.0	15.0	9.56	8.70	7.92	7.12	6.14
23.9	18.3	9.56	8.70	7.92	7.12	6.14

TC : Total Capacity kW.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

**HEATING CAPACITY
in kBtu/h**

6-2-3. WALL MOUNTED TYPE

■ MODEL : ASU7RLF1

Outdoor Temperature		Indoor temperature (°FDB)				
(°FDB)	(°FWB)	60.0	65.0	70.0	75.0	78.0
		TC	TC	TC	TC	TC
5.0	3.0	6.34	5.88	5.42	4.98	4.44
14.0	12.0	7.10	6.58	6.06	5.58	4.97
23.0	19.0	7.89	7.32	6.74	6.20	5.53
32.0	28.0	8.62	7.99	7.37	6.78	6.04
41.0	37.0	9.24	8.57	7.90	7.27	6.48
47.0	43.0	9.46	8.77	8.10	7.44	6.63
50.0	47.0	9.46	8.77	8.10	7.44	6.63
59.0	50.0	9.46	8.77	8.10	7.44	6.63
68.0	59.0	9.46	8.77	8.10	7.44	6.63
75.0	65.0	9.46	8.77	8.10	7.44	6.63

■ MODEL : ASU9RLF1

Outdoor Temperature		Indoor temperature (°FDB)				
(°FDB)	(°FWB)	60.0	65.0	70.0	75.0	78.0
		TC	TC	TC	TC	TC
5.0	3.0	8.02	7.44	6.86	6.31	5.62
14.0	12.0	8.98	8.33	7.68	7.06	6.30
23.0	19.0	9.99	9.26	8.54	7.85	7.00
32.0	28.0	10.91	10.12	9.32	8.58	7.65
41.0	37.0	11.70	10.85	10.00	9.20	8.20
47.0	43.0	11.98	11.11	10.20	9.42	8.39
50.0	47.0	11.98	11.11	10.20	9.42	8.39
59.0	50.0	11.98	11.11	10.20	9.42	8.39
68.0	59.0	11.98	11.11	10.20	9.42	8.39
75.0	65.0	11.98	11.11	10.20	9.42	8.39

■ MODEL : ASU12RLF1

Outdoor Temperature		Indoor temperature (°FDB)				
(°FDB)	(°FWB)	60.0	65.0	70.0	75.0	78.0
		TC	TC	TC	TC	TC
5.0	3.0	10.59	9.82	9.05	8.33	7.42
14.0	12.0	11.86	10.99	10.13	9.32	8.31
23.0	19.0	13.18	12.23	11.27	10.37	9.24
32.0	28.0	14.40	13.36	12.31	11.32	10.09
41.0	37.0	15.44	14.32	13.20	12.14	10.82
47.0	43.0	15.81	14.66	13.50	12.43	11.08
50.0	47.0	15.81	14.66	13.50	12.43	11.08
59.0	50.0	15.81	14.66	13.50	12.43	11.08
68.0	59.0	15.81	14.66	13.50	12.43	11.08
75.0	65.0	15.81	14.66	13.50	12.43	11.08

TC : Total Capacity kBtu/h.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

HEATING CAPACITY in kW

MODEL : ASU7RLF1

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	15.6	18.3	21.1	23.9	25.6
		TC	TC	TC	TC	TC
-15.0	-16.1	1.86	1.72	1.59	1.46	1.30
-10.0	-11.1	2.08	1.93	1.78	1.64	1.46
-5.0	-7.2	2.31	2.14	1.98	1.82	1.62
0.0	-2.2	2.53	2.34	2.16	1.99	1.77
5.0	2.8	2.71	2.51	2.32	2.13	1.90
8.3	6.1	2.77	2.57	2.37	2.18	1.94
10.0	8.3	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
23.9	18.3	2.77	2.57	2.37	2.18	1.94

MODEL : ASU9RLF1

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	15.6	18.3	21.1	23.9	25.6
		TC	TC	TC	TC	TC
-15.0	-16.1	2.35	2.18	2.01	1.85	1.65
-10.0	-11.1	2.63	2.44	2.25	2.07	1.85
-5.0	-7.2	2.93	2.71	2.50	2.30	2.05
0.0	-2.2	3.20	2.97	2.73	2.51	2.24
5.0	2.8	3.43	3.18	2.93	2.70	2.40
8.3	6.1	3.51	3.26	3.00	2.76	2.46
10.0	8.3	3.51	3.26	3.00	2.76	2.46
15.0	10.0	3.51	3.26	3.00	2.76	2.46
20.0	15.0	3.51	3.26	3.00	2.76	2.46
23.9	18.3	3.51	3.26	3.00	2.76	2.46

MODEL : ASU12RLF1

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	15.6	18.3	21.1	23.9	25.6
		TC	TC	TC	TC	TC
-15.0	-16.1	3.10	2.88	2.65	2.44	2.18
-10.0	-11.1	3.47	3.22	2.97	2.73	2.44
-5.0	-7.2	3.86	3.58	3.30	3.04	2.71
0.0	-2.2	4.22	3.91	3.61	3.32	2.96
5.0	2.8	4.53	4.20	3.87	3.56	3.17
8.3	6.1	4.63	4.30	3.96	3.64	3.25
10.0	8.3	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
23.9	18.3	4.63	4.30	3.96	3.64	3.25

TC : Total Capacity kW.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

HEATING CAPACITY in kBtu/h

■ MODEL : ASU7RLF

Outdoor Temperature		Indoor temperature (°FDB)				
		60.0	65.0	70.0	75.0	78.0
(°FDB)	(°FWB)	TC	TC	TC	TC	TC
5.0	3.0	6.34	5.88	5.42	4.98	4.44
14.0	12.0	7.10	6.58	6.06	5.58	4.97
23.0	19.0	7.89	7.32	6.74	6.20	5.53
32.0	28.0	8.62	7.99	7.37	6.78	6.04
41.0	37.0	9.24	8.57	7.90	7.27	6.48
47.0	43.0	9.46	8.77	8.10	7.44	6.63
50.0	47.0	9.46	8.77	8.10	7.44	6.63
59.0	50.0	9.46	8.77	8.10	7.44	6.63
68.0	59.0	9.46	8.77	8.10	7.44	6.63
75.0	65.0	9.46	8.77	8.10	7.44	6.63

■ MODEL : ASU9RLF

Outdoor Temperature		Indoor temperature (°FDB)				
		60.0	65.0	70.0	75.0	78.0
(°FDB)	(°FWB)	TC	TC	TC	TC	TC
5.0	3.0	8.02	7.44	6.86	6.31	5.62
14.0	12.0	8.98	8.33	7.68	7.06	6.30
23.0	19.0	9.99	9.26	8.54	7.85	7.00
32.0	28.0	10.91	10.12	9.32	8.58	7.65
41.0	37.0	11.70	10.85	10.00	9.20	8.20
47.0	43.0	11.98	11.11	10.20	9.42	8.39
50.0	47.0	11.98	11.11	10.20	9.42	8.39
59.0	50.0	11.98	11.11	10.20	9.42	8.39
68.0	59.0	11.98	11.11	10.20	9.42	8.39
75.0	65.0	11.98	11.11	10.20	9.42	8.39

■ MODEL : ASU12RLF

Outdoor Temperature		Indoor temperature (°FDB)				
		60.0	65.0	70.0	75.0	78.0
(°FDB)	(°FWB)	TC	TC	TC	TC	TC
5.0	3.0	10.59	9.82	9.05	8.33	7.42
14.0	12.0	11.86	10.99	10.13	9.32	8.31
23.0	19.0	13.18	12.23	11.27	10.37	9.24
32.0	28.0	14.40	13.36	12.31	11.32	10.09
41.0	37.0	15.44	14.32	13.20	12.14	10.82
47.0	43.0	15.81	14.66	13.50	12.43	11.08
50.0	47.0	15.81	14.66	13.50	12.43	11.08
59.0	50.0	15.81	14.66	13.50	12.43	11.08
68.0	59.0	15.81	14.66	13.50	12.43	11.08
75.0	65.0	15.81	14.66	13.50	12.43	11.08

TC : Total Capacity kBtu/h.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

HEATING CAPACITY in kW

■ MODEL : ASU7RLF

Outdoor Temperature		Indoor temperature (°CDB)				
		15.6	18.3	21.1	23.9	25.6
(°CDB)	(°CWB)	TC	TC	TC	TC	TC
-15.0	-16.1	1.86	1.72	1.59	1.46	1.30
-10.0	-11.1	2.08	1.93	1.78	1.64	1.46
-5.0	-7.2	2.31	2.14	1.98	1.82	1.62
0.0	-2.2	2.53	2.34	2.16	1.99	1.77
5.0	2.8	2.71	2.51	2.32	2.13	1.90
8.3	6.1	2.77	2.57	2.37	2.18	1.94
10.0	8.3	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
23.9	18.3	2.77	2.57	2.37	2.18	1.94

■ MODEL : ASU9RLF

Outdoor Temperature		Indoor temperature (°CDB)				
		15.6	18.3	21.1	23.9	25.6
(°CDB)	(°CWB)	TC	TC	TC	TC	TC
-15.0	-16.1	2.35	2.18	2.01	1.85	1.65
-10.0	-11.1	2.63	2.44	2.25	2.07	1.85
-5.0	-7.2	2.93	2.71	2.50	2.30	2.05
0.0	-2.2	3.20	2.97	2.73	2.51	2.24
5.0	2.8	3.43	3.18	2.93	2.70	2.40
8.3	6.1	3.51	3.26	3.00	2.76	2.46
10.0	8.3	3.51	3.26	3.00	2.76	2.46
15.0	10.0	3.51	3.26	3.00	2.76	2.46
20.0	15.0	3.51	3.26	3.00	2.76	2.46
23.9	18.3	3.51	3.26	3.00	2.76	2.46

■ MODEL : ASU12RLF

Outdoor Temperature		Indoor temperature (°CDB)				
		15.6	18.3	21.1	23.9	25.6
(°CDB)	(°CWB)	TC	TC	TC	TC	TC
-15.0	-16.1	3.10	2.88	2.65	2.44	2.18
-10.0	-11.1	3.47	3.22	2.97	2.73	2.44
-5.0	-7.2	3.86	3.58	3.30	3.04	2.71
0.0	-2.2	4.22	3.91	3.61	3.32	2.96
5.0	2.8	4.53	4.20	3.87	3.56	3.17
8.3	6.1	4.63	4.30	3.96	3.64	3.25
10.0	8.3	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
23.9	18.3	4.63	4.30	3.96	3.64	3.25

TC : Total Capacity kW.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

HEATING CAPACITY in kBtu/h

MODEL : ASU9RLS2

Outdoor Temperature		Indoor temperature (°FDB)				
(°FDB)	(°FWB)	60.0	65.0	70.0	75.0	78.0
		TC	TC	TC	TC	TC
5.0	3.0	8.00	7.41	6.83	6.29	5.60
14.0	12.0	8.95	8.30	7.65	7.04	6.27
23.0	19.0	9.95	9.23	8.51	7.83	6.98
32.0	28.0	10.87	10.08	9.29	8.55	7.62
41.0	37.0	11.66	10.81	9.97	9.17	8.17
47.0	43.0	11.93	11.07	10.20	9.38	8.36
50.0	47.0	11.93	11.07	10.20	9.38	8.36
59.0	50.0	11.93	11.07	10.20	9.38	8.36
68.0	59.0	11.93	11.07	10.20	9.38	8.36
75.0	65.0	11.93	11.07	10.20	9.38	8.36

MODEL : ASU12RLS2

Outdoor Temperature		Indoor temperature (°FDB)				
(°FDB)	(°FWB)	60.0	65.0	70.0	75.0	78.0
		TC	TC	TC	TC	TC
5.0	3.0	10.58	9.81	9.05	8.32	7.42
14.0	12.0	11.85	10.99	10.13	9.32	8.30
23.0	19.0	13.17	12.22	11.26	10.36	9.23
32.0	28.0	14.39	13.34	12.30	11.31	10.08
41.0	37.0	15.43	14.31	13.19	12.13	10.82
47.0	43.0	15.80	14.65	13.50	12.42	11.07
50.0	47.0	15.80	14.65	13.50	12.42	11.07
59.0	50.0	15.80	14.65	13.50	12.42	11.07
68.0	59.0	15.80	14.65	13.50	12.42	11.07
75.0	65.0	15.80	14.65	13.50	12.42	11.07

MODEL : ASU15RLS2

Outdoor Temperature		Indoor temperature (°FDB)				
(°FDB)	(°FWB)	60.0	65.0	70.0	75.0	78.0
		TC	TC	TC	TC	TC
5.0	3.0	12.78	11.85	10.92	10.05	8.96
14.0	12.0	14.30	13.26	12.23	11.25	10.02
23.0	19.0	15.91	14.75	13.59	12.51	11.15
32.0	28.0	17.37	16.11	14.85	13.66	12.18
41.0	37.0	18.63	17.28	15.93	14.65	13.06
47.0	43.0	19.07	17.69	16.30	15.00	13.37
50.0	47.0	19.07	17.69	16.30	15.00	13.37
59.0	50.0	19.07	17.69	16.30	15.00	13.37
68.0	59.0	19.07	17.69	16.30	15.00	13.37
75.0	65.0	19.07	17.69	16.30	15.00	13.37

TC : Total Capacity kBtu/h.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

HEATING CAPACITY in kW

■ MODEL : ASU9RLS2

Outdoor Temperature		Indoor temperature (°CDB)				
		15.6	18.3	21.1	23.9	25.6
(°CDB)	(°CWB)	TC	TC	TC	TC	TC
-15.0	-16.1	2.34	2.17	2.00	1.84	1.64
-10.0	-11.1	2.62	2.43	2.24	2.06	1.84
-5.0	-7.2	2.92	2.71	2.49	2.29	2.04
0.0	-2.2	3.19	2.96	2.72	2.51	2.23
5.0	2.8	3.42	3.17	2.92	2.69	2.40
8.3	6.1	3.50	3.24	2.99	2.75	2.45
10.0	8.3	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
23.9	18.3	3.50	3.24	2.99	2.75	2.45

■ MODEL : ASU12RLS2

Outdoor Temperature		Indoor temperature (°CDB)				
		15.6	18.3	21.1	23.9	25.6
(°CDB)	(°CWB)	TC	TC	TC	TC	TC
-15.0	-16.1	3.10	2.88	2.65	2.44	2.18
-10.0	-11.1	3.47	3.22	2.97	2.73	2.44
-5.0	-7.2	3.86	3.58	3.30	3.04	2.71
0.0	-2.2	4.22	3.91	3.61	3.32	2.96
5.0	2.8	4.53	4.20	3.87	3.56	3.17
8.3	6.1	4.63	4.30	3.96	3.64	3.25
10.0	8.3	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
23.9	18.3	4.63	4.30	3.96	3.64	3.25

■ MODEL : ASU15RLS2

Outdoor Temperature		Indoor temperature (°CDB)				
		15.6	18.3	21.1	23.9	25.6
(°CDB)	(°CWB)	TC	TC	TC	TC	TC
-15.0	-16.1	3.76	3.49	3.22	2.96	2.64
-10.0	-11.1	4.21	3.91	3.60	3.31	2.95
-5.0	-7.2	4.68	4.34	4.00	3.68	3.28
0.0	-2.2	5.12	4.74	4.37	4.02	3.59
5.0	2.8	5.49	5.09	4.69	4.31	3.85
8.3	6.1	5.62	5.21	4.80	4.42	3.94
10.0	8.3	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
23.9	18.3	5.62	5.21	4.80	4.42	3.94

TC : Total Capacity kW.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

HEATING CAPACITY in kBtu/h

■ MODEL : ASU18RLF

Outdoor Temperature		Indoor temperature (°FDB)				
		60.0	65.0	70.0	75.0	78.0
(°FDB)	(°FWB)	TC	TC	TC	TC	TC
5.0	3.0	15.65	14.51	13.37	12.30	10.90
14.0	12.0	17.52	16.24	14.97	13.77	12.20
23.0	19.0	19.48	18.06	16.65	15.32	13.57
32.0	28.0	21.27	19.73	18.18	16.73	14.82
41.0	37.0	22.82	21.16	19.50	17.94	15.89
47.0	43.0	23.35	21.66	20.00	18.36	16.27
50.0	47.0	23.35	21.66	20.00	18.36	16.27
59.0	50.0	23.35	21.66	20.00	18.36	16.27
68.0	59.0	23.35	21.66	20.00	18.36	16.27
75.0	65.0	23.35	21.66	20.00	18.36	16.27

■ MODEL : ASU24RLF

Outdoor Temperature		Indoor temperature (°FDB)				
		60.0	65.0	70.0	75.0	78.0
(°FDB)	(°FWB)	TC	TC	TC	TC	TC
5.0	3.0	21.18	19.64	18.11	16.66	14.76
14.0	12.0	23.71	21.99	20.27	18.65	16.52
23.0	19.0	26.37	24.45	22.54	20.73	18.37
32.0	28.0	28.80	26.71	24.62	22.65	20.06
41.0	37.0	30.89	28.65	26.40	24.29	21.52
47.0	43.0	31.62	29.32	27.00	24.86	22.02
50.0	47.0	31.62	29.32	27.00	24.86	22.02
59.0	50.0	31.62	29.32	27.00	24.86	22.02
68.0	59.0	31.62	29.32	27.00	24.86	22.02
75.0	65.0	31.62	29.32	27.00	24.86	22.02

TC : Total Capacity kBtu/h.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

HEATING CAPACITY in kW

■ MODEL : ASU18RLF

Outdoor Temperature		Indoor temperature (°CDB)				
		15.6	18.3	21.1	23.9	25.6
(°CDB)	(°CWB)	TC	TC	TC	TC	TC
-15.0	-16.1	4.59	4.25	3.92	3.61	3.19
-10.0	-11.1	5.13	4.76	4.39	4.04	3.58
-5.0	-7.2	5.71	5.29	4.88	4.49	3.98
0.0	-2.2	6.24	5.78	5.33	4.90	4.34
5.0	2.8	6.69	6.20	5.72	5.26	4.66
8.3	6.1	6.84	6.35	5.85	5.38	4.77
10.0	8.3	6.84	6.35	5.85	5.38	4.77
15.0	10.0	6.84	6.35	5.85	5.38	4.77
20.0	15.0	6.84	6.35	5.85	5.38	4.77
23.9	18.3	6.84	6.35	5.85	5.38	4.77

■ MODEL : ASU24RLF

Outdoor Temperature		Indoor temperature (°CDB)				
		15.6	18.3	21.1	23.9	25.6
(°CDB)	(°CWB)	TC	TC	TC	TC	TC
-15.0	-16.1	6.21	5.76	5.31	4.88	4.32
-10.0	-11.1	6.95	6.44	5.94	5.46	4.84
-5.0	-7.2	7.73	7.17	6.61	6.08	5.38
0.0	-2.2	8.44	7.83	7.22	6.64	5.88
5.0	2.8	9.05	8.40	7.74	7.12	6.31
8.3	6.1	9.27	8.59	7.92	7.29	6.45
10.0	8.3	9.27	8.59	7.92	7.29	6.45
15.0	10.0	9.27	8.59	7.92	7.29	6.45
20.0	15.0	9.27	8.59	7.92	7.29	6.45
23.9	18.3	9.27	8.59	7.92	7.29	6.45

TC : Total Capacity kW.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

6-2-4.FLOOR TYPE

HEATING CAPACITY in kBtu/h

■ MODEL : AGU9RLF

Outdoor Temperature		Indoor temperature (°FDB)				
		60.0	65.0	70.0	75.0	78.0
(°FDB)	(°FWB)	TC	TC	TC	TC	TC
5.0	3.0	8.05	7.43	6.83	6.24	5.43
14.0	12.0	9.01	8.32	7.65	9.24	6.08
23.0	19.0	10.02	9.25	8.51	7.77	6.76
32.0	28.0	10.95	10.10	9.29	8.48	7.39
41.0	37.0	11.74	10.83	9.97	9.10	7.92
47.0	43.0	12.02	11.09	10.20	9.31	8.11
50.0	47.0	12.02	11.09	10.20	9.31	8.11
59.0	50.0	12.02	11.09	10.20	9.31	8.11
68.0	59.0	12.02	11.09	10.20	9.31	8.11
75.0	65.0	12.02	11.09	10.20	9.31	8.11

■ MODEL : AGU12RLF

Outdoor Temperature		Indoor temperature (°FDB)				
		60.0	65.0	70.0	75.0	78.0
(°FDB)	(°FWB)	TC	TC	TC	TC	TC
5.0	3.0	10.66	9.83	9.05	8.26	7.19
14.0	12.0	11.93	11.01	10.13	9.24	8.05
23.0	19.0	13.26	12.24	11.26	10.28	8.95
32.0	28.0	14.49	13.37	12.30	11.23	9.78
41.0	37.0	15.54	14.34	13.19	12.04	10.49
47.0	43.0	15.90	14.67	13.50	12.33	10.73
50.0	47.0	15.90	14.67	13.50	12.33	10.73
59.0	50.0	15.90	14.67	13.50	12.33	10.73
68.0	59.0	15.90	14.67	13.50	12.33	10.73
75.0	65.0	15.90	14.67	13.50	12.33	10.73

■ MODEL : AGU15RLF

Outdoor Temperature		Indoor temperature (°FDB)				
		60.0	65.0	70.0	75.0	78.0
(°FDB)	(°FWB)	TC	TC	TC	TC	TC
5.0	3.0	12.86	11.87	10.92	9.97	8.68
14.0	12.0	14.40	13.29	12.23	9.24	9.72
23.0	19.0	16.01	14.78	13.59	12.41	10.81
32.0	28.0	17.49	16.14	14.85	13.56	11.81
41.0	37.0	18.76	17.31	15.93	14.54	12.66
47.0	43.0	19.20	17.72	16.30	14.88	12.96
50.0	47.0	19.20	17.72	16.30	14.88	12.96
59.0	50.0	19.20	17.72	16.30	14.88	12.96
68.0	59.0	19.20	17.72	16.30	14.88	12.96
75.0	65.0	19.20	17.72	16.30	14.88	12.96

TC : Total Capacity kBtu/h.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

HEATING CAPACITY in kW

MODEL : AGU9RLF

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	15.6	18.3	21.1	23.9	25.6
		TC	TC	TC	TC	TC
-15.0	-16.1	2.37	2.18	2.01	1.84	1.60
-10.0	-11.1	2.65	2.45	2.25	2.11	1.79
-5.0	-7.2	2.95	2.72	2.50	2.28	1.99
0.0	-2.2	3.22	2.97	2.73	2.50	2.17
5.0	2.8	3.45	3.19	2.93	2.68	2.33
8.3	6.1	3.53	3.26	3.00	2.74	2.39
10.0	8.3	3.53	3.26	3.00	2.74	2.39
15.0	10.0	3.53	3.26	3.00	2.74	2.39
20.0	15.0	3.53	3.26	3.00	2.74	2.39
23.9	18.3	3.53	3.26	3.00	2.74	2.39

MODEL : AGU12RLF

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	15.6	18.3	21.1	23.9	25.6
		TC	TC	TC	TC	TC
-15.0	-16.1	3.13	2.88	2.65	2.42	2.11
-10.0	-11.1	3.50	3.23	2.97	2.71	2.36
-5.0	-7.2	3.89	3.59	3.30	3.02	2.63
0.0	-2.2	4.25	3.92	3.61	3.29	2.87
5.0	2.8	4.56	4.21	3.87	3.53	3.08
8.3	6.1	4.66	4.30	3.96	3.62	3.15
10.0	8.3	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
23.9	18.3	4.66	4.30	3.96	3.62	3.15

MODEL : AGU15RLF

Outdoor Temperature		Indoor temperature (°CDB)				
(°CDB)	(°CWB)	15.6	18.3	21.1	23.9	25.6
		TC	TC	TC	TC	TC
-15.0	-16.1	3.79	3.50	3.22	2.94	2.56
-10.0	-11.1	4.24	3.91	3.60	2.71	2.86
-5.0	-7.2	4.72	4.35	4.00	3.65	3.18
0.0	-2.2	5.15	4.75	4.37	3.99	3.48
5.0	2.8	5.52	5.10	4.69	4.28	3.73
8.3	6.1	5.65	5.22	4.80	4.38	3.82
10.0	8.3	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
23.9	18.3	5.65	5.22	4.80	4.38	3.82

TC : Total Capacity kW.

The data is based on the following conditions.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

Hybrid Flex Inverter System

3. OUTDOOR UNIT & BRANCH BOX

CONTENTS

3. OUTDOOR UNIT & BRANCH BOX

1. SPECIFICATIONS	03 - 01
1-1.OUTDOOR UNIT	03 - 01
1-2.ENERGY EFFICIENCIES	03 - 02
1-3.BRANCH BOX.....	03 - 03
2. DIMENSIONS	03 - 04
2-1.OUTDOOR UNIT	03 - 04
2-2.BRANCH BOX.....	03 - 05
3. INSTALLATION SPACE	03 - 06
3-1.OUTDOOR UNIT	03 - 06
3-1-1. SINGLE OUTDOOR UNIT INSTALLATION	03 - 06
3-1-2. MULTIPLE OUTDOOR UNIT INSTALLATION	03 - 07
3-1-3. OUTDOOR UNITS INSTALLATION IN MULTI ROW	03 - 07
3-2.BRANCH BOX.....	03 - 08
3-2-1. HORIZONTAL INSTALLATION	03 - 08
3-2-2. VERTICAL INSTALLATION	03 - 09
4. REFRIGERANT CIRCUIT	03 - 10
5. WIRING DIAGRAM	03 - 12
5-1.OUTDOOR UNIT	03 - 12
5-2.BRANCH BOX.....	03 - 13
6. OPERATION RANGE	03 - 14
7. NOISE LEVEL CURVE	03 - 15
8. ELECTRIC CHARACTERISTICS	03 - 17
8-1.OUTDOOR UNIT	03 - 17
8-2.BRANCH BOX.....	03 - 17
9. SAFETY DEVICES	03 - 18
9-1.OUTDOOR UNIT	03 - 18
9-2.BRANCH BOX.....	03 - 18

1. SPECIFICATIONS

1-1. OUTDOOR UNIT

Model name				AOU48RLXFZ1		
Power source				1 Phase ~ 208/230V 60Hz		
Available Voltage Range				187-264V		
Connectable indoor unit			Number	2 to 8		
			Capacity	80 to 130%		
Capacity	Cooling	Rated	Btu/h	48,000		
			kW	14.1		
		Max	Btu/h	51,100		
	Heating	Rated	Btu/h	54,000		
			kW	15.8		
		Max	Btu/h	57,000		
Input power *1	Cooling	Rated	kW	5.27		
				Max.	5.98	
	Heating	Rated		4.83		
				Max.	5.98	
Current *1	Cooling	Rated	A	23.4		
				Max.	26.5	
	Heating	Rated		21.4		
				Max.	26.5	
Fan	Type × Q'ty		Propeller ×1			
	Airflow rate	Cooling	CFM (m ³ /h)	2,737 (4,650)		
		Heating		2,825 (4,800)		
	Motor	Type × Q'ty		DC motor ×1		
Output		W	111			
Sound pressure level	Cooling	Rated	dB(A)	56		
	Heating	Rated		58		
Heat exchanger	Dimension		in.(mm)	34 × 37-5/8 × 2-1/4 (864 × 955 × 57.2)		
	Fin pitch		FPI	14		
	Rows × Stages		3 × 34			
	Pipe type (Material)		Grooved H-pin (Copper)			
	Fin	Type (Material)		Corrugate (Aluminum)		
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		lbs(g)	7.6 (3450)		
Refrigerant oil	Type		PVE			
Enclosure	Material		Painted galvanized steel			
	Color		Beige (10YR 7.5/1.0NN)			
Dimensions	Net	(H x W x D)	in. (mm)	36 × 38-3/16 × 14-9/16 (914 × 970 × 370)		
	Gross			41-1/4 × 41-7/8 × 18-14/16 (1048 × 1064 × 479)		
Weight	Net		lbs (kg)	216 (98)		
	Gross			234 (106)		
Connection pipe	Size	Liquid	in. (mm)	3/8 (9.52)		
		Gas		5/8 (15.88)		
	Method		Flare			
	Max. length (Total)		377 (115)			
	Max. length (BP-IN)		49 (15)			
	Max. height difference between Outdoor Unit and each Indoor Units.		ft (m)	98 (30)		
Max. height difference between Indoor Units.		49 (15)				
Operation range	Cooling		°F (°C)	23 to 115 (-5 to 46)		
	Heating			5 to 75 (-15 to 24)		

Note : Specifications are based on the following conditions.

*1: In case of connecting four indoor units (12kBtu class), Electrical data is only for outdoor unit.

Power source of specifications : 230V

Cooling : Indoor temperature of 80°F(26.7°C)DB/67°F(19.4°C)WB, and outdoor temperature of 95.0°F(35°C)DB/75°F(23.9°C)WB.

Heating : Indoor temperature of 70°F(21.1°C)DB/60°F(15.6°C)WB, and outdoor temperature of 47°F(8.3°C)DB/43°F(6.1°C)WB.

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

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

1-2. ENERGY EFFICIENCIES

Combination of indoor unit			non-Duct	Duct	Mix
			ASU12 x 4	ARU12 x 4	-
Cooling	Capacity	Btu/h	48,000	48,000	48,000
		kW	14.1	14.1	14.1
	Input power	kW	5.19	5.52	5.35
	Current	A	23.0	24.5	23.7
	EER	Btu/h/W	9.25	8.70	8.97
	SEER	-	17.0	14.7	15.8
Heating	Capacity	Btu/h	54,000	54,000	54,000
		kW	15.8	15.8	15.8
	Input power	kW	4.89	5.02	4.96
	Current	A	21.7	22.3	22.0
	COP	W/W	3.23	3.15	3.19
	HSPF	-	9.8	9.3	9.5

Note : Specifications are based on the ARI Standard 210/240.

Power source of specifications : 230V

Pipe length : 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

1-3. BRANCH BOX

Model name			UTP-PU03A (Primary)	UTP-PU03B (Secondary)
Casing color			Paintingless	Paintingless
Connectable indoor unit			1 to 3 Units	1 to 3 Units
Max. combination	Btu/h		62,000	62,000
Min. combination	Btu/h		7,000	7,000
Power source			1 Phase 208/230V 60Hz	1 Phase 208/230V 60Hz
Available voltage range			187-264V	187-264V
Input Power	W		10	10
Running current	A		0.05	0.05
Refrigerant type			R410A	R410A
Dimensions (H × W × D)	Net	in. (mm)	7-5/8 × 17 × 14-5/8 (195×433×370)	7-5/8 × 17 × 14-5/8 (195×433×370)
	Gross		10-11/16 × 36-5/8 × 17-3/16 (271×931×436)	10-11/16 × 36-5/8 × 17-3/16 (271×931×436)
Weight	Net	lbs (kg)	20 (9)	20 (9)
	Gross		29 (13)	29 (13)
Connection pipe	Size	Liquid	in. (mm)	Main : 3/8 (9.52) ×1, Branch : 1/4(6.35)×3
		Gas		Main : 5/8(15.88)×1, Branch : 1/2(12.7)×3
	Method		Flare	Flare
Operation range		°F (°C)	5 to 115 (-15 to 46)	5 to 115 (-15 to 46)
		%RH	80 or less	80 or less

Note : Specifications are based on the following conditions.

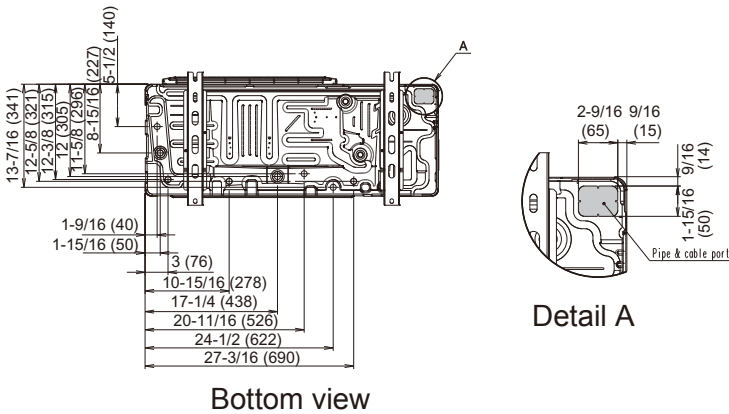
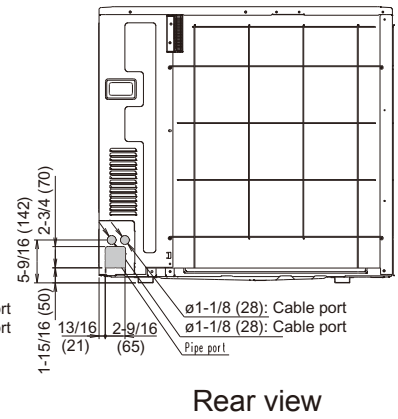
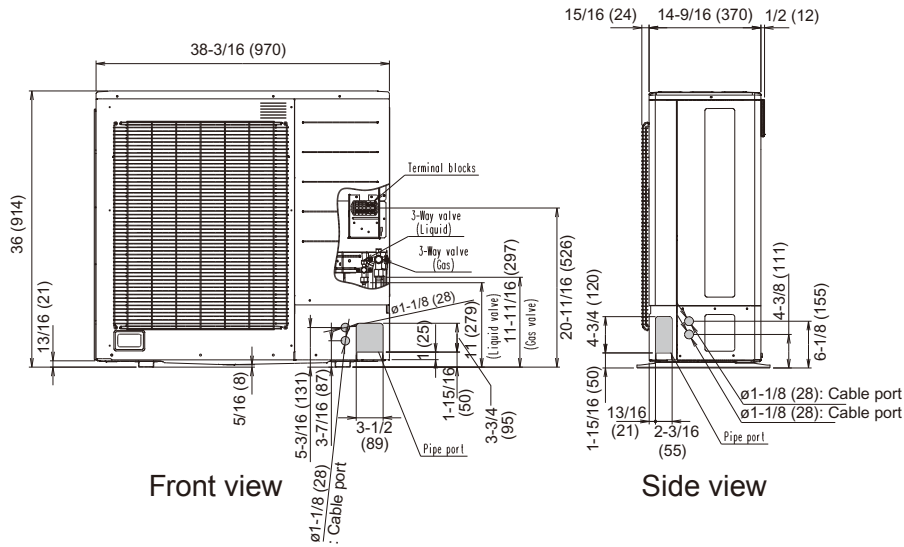
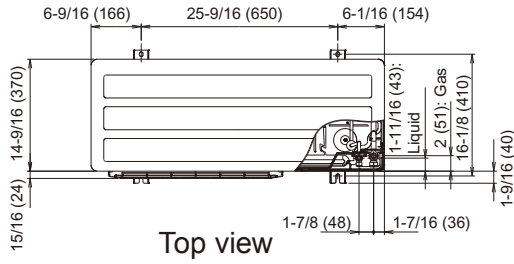
Power source of specifications : 230V.

2. DIMENSIONS

2-1. OUTDOOR UNIT

■ MODEL : AOU48RLXFZ1

Unit : in. (mm)



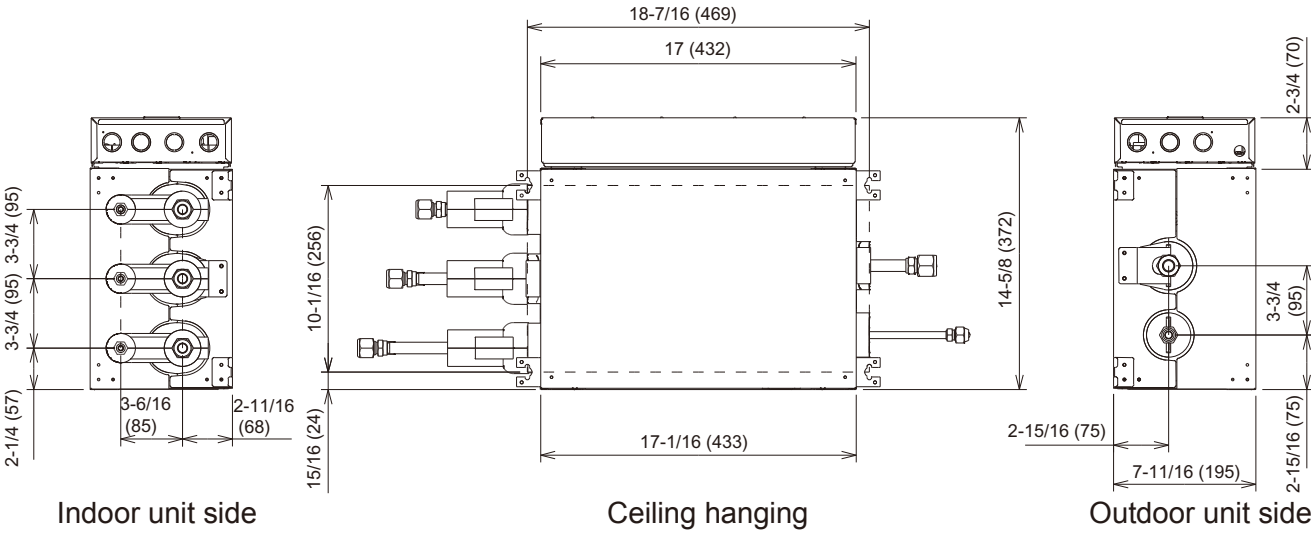
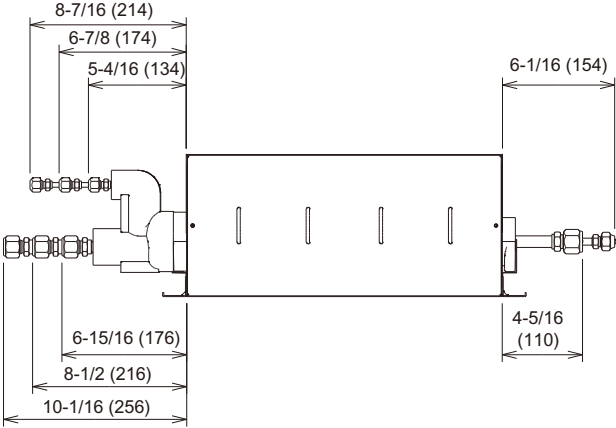
2-2. BRANCH BOX

MODELS : UTP-PU03A, UTP-PU03B

Unit : in. (mm)

OUTDOOR
UNITS

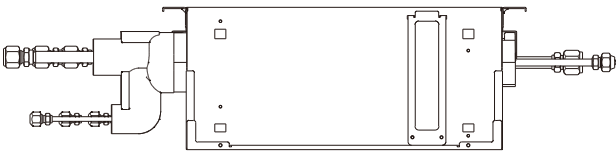
OUTDOOR
UNITS



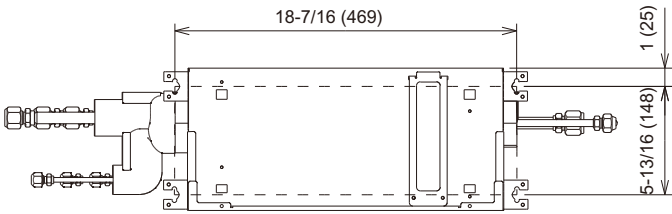
Indoor unit side

Ceiling hanging

Outdoor unit side



Wall hanging

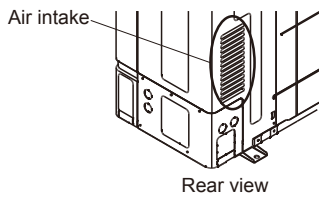


3. INSTALLATION SPACE

3-1. OUTDOOR UNIT

⚠ Caution

- The installation space shown in the following examples is based on an ambient temperature under cooling operation of 95 °F DB (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 95 °F DB (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.



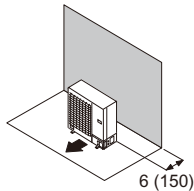
- Installation methods not shown in the following examples are not recommended. Performance may drop significantly.

3-1-1. SINGLE OUTDOOR UNIT INSTALLATION

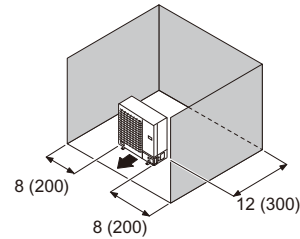
■ WHEN THE UPWARD AREA IS OPEN

Unit : in. (mm)

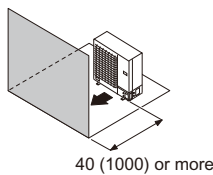
● Obstacles at rear only



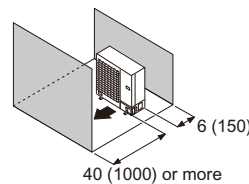
● Obstacles at rear and sides only



● Obstacles at front only

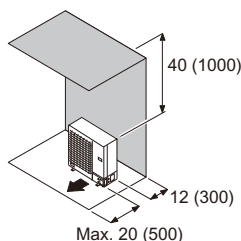


● Obstacles at front and rear only

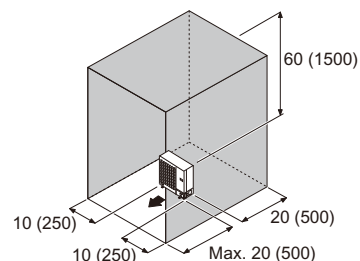


■ WHEN AN OBSTRUCTION IS PRESENT ALSO IN THE UPWARD AREA

● Obstacles at rear and above only



● Obstacles at rear, sides, and above only



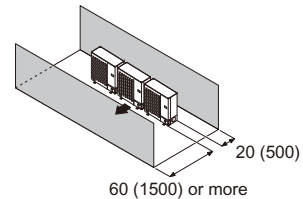
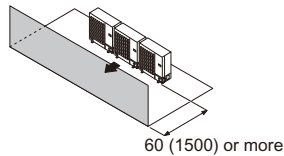
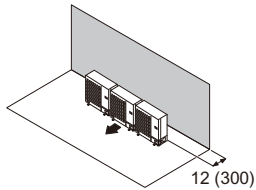
3-1-2. MULTIPLE OUTDOOR UNIT INSTALLATION

- Provide at least 1in. (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.

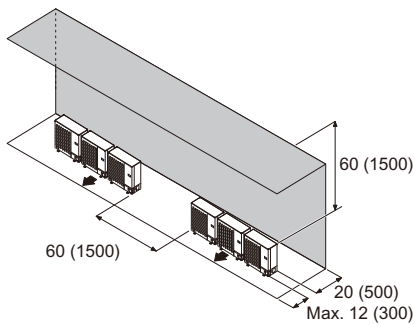
■ WHEN THE UPWARD AREA IS OPEN

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



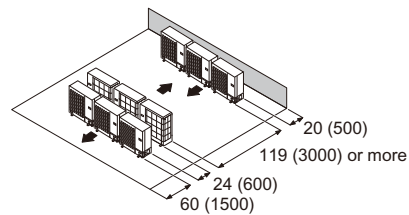
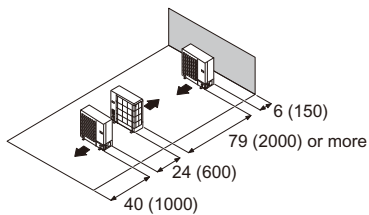
■ WHEN AN OBSTRUCTION IS PRESENT ALSO IN THE UPWARD AREA

- Obstacles at rear and above only



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

- Single parallel unit arrangement
- Multiple parallel unit arrangement

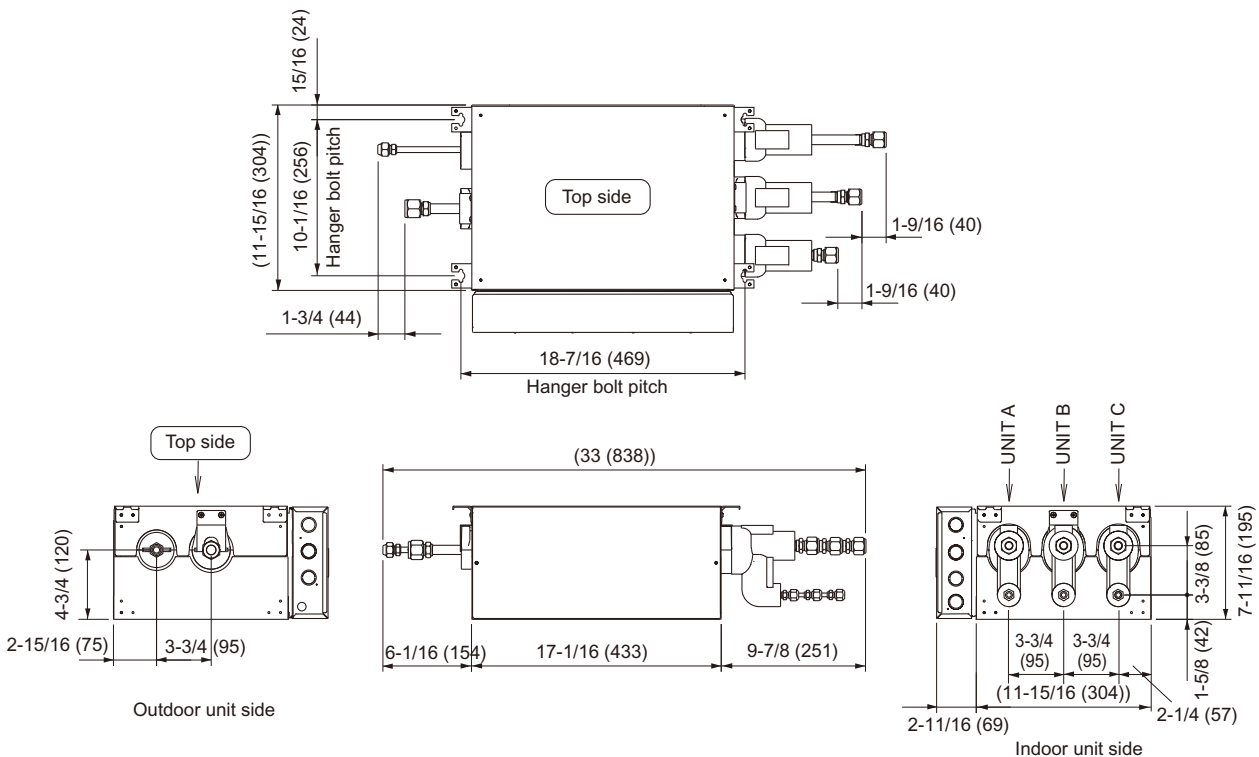


3-2. BRANCH BOX

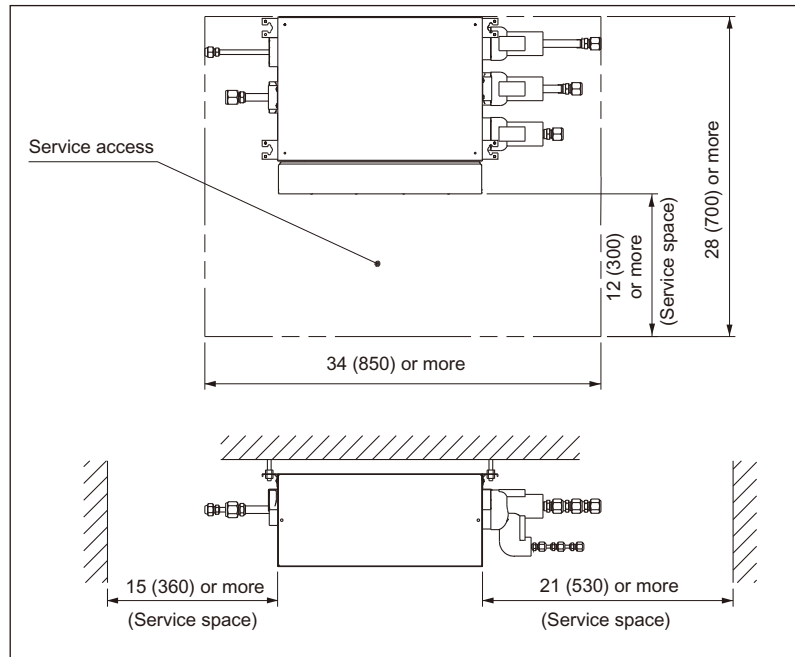
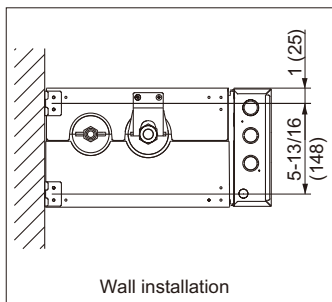
- The branch box can be installed onto the wall or hanging from the ceiling.
- The branch box can be installed and set horizontally or vertically.
- Provide a service access for maintenance and inspection purposes as shown in the figure below.
- It is not necessary to provide drainage for the branch box.
- The slope of the top side must be within $\pm 5^\circ$ in all directions of the horizontal plane.
- Use M8 or M10 (5/16" or 3/8") for the bolt size when hanging.

3-2-1. HORIZONTAL INSTALLATION

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

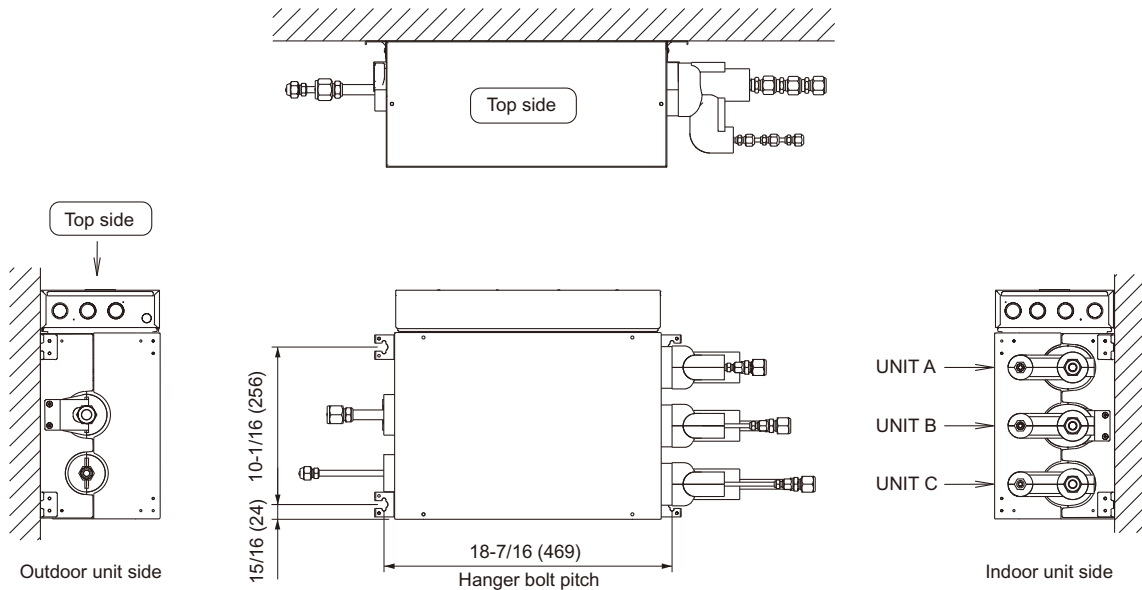


Installation dimensions

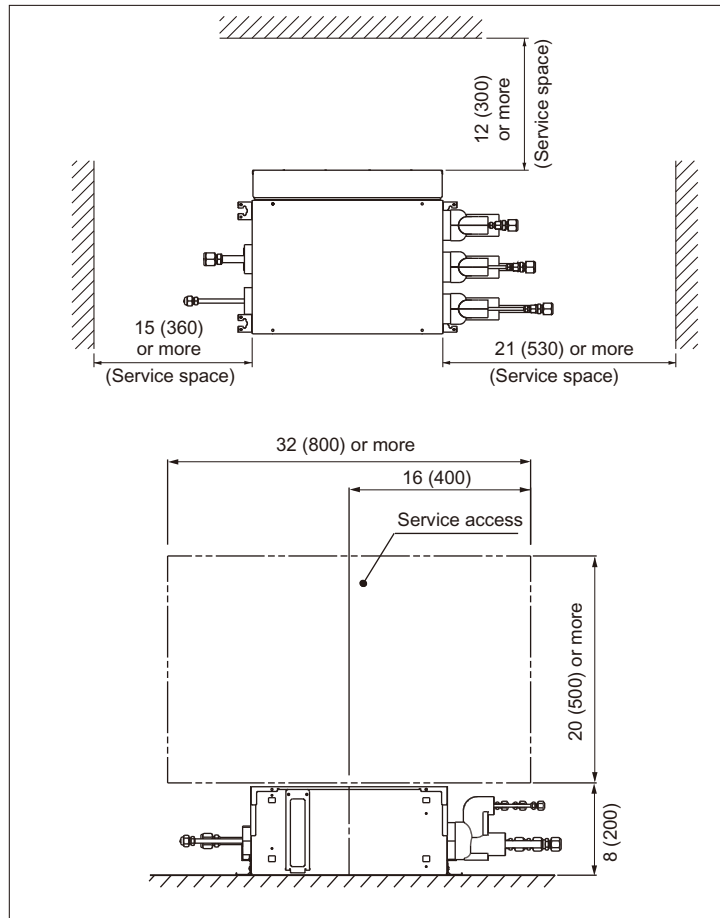


3-2-2. VERTICAL INSTALLATION

- 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.

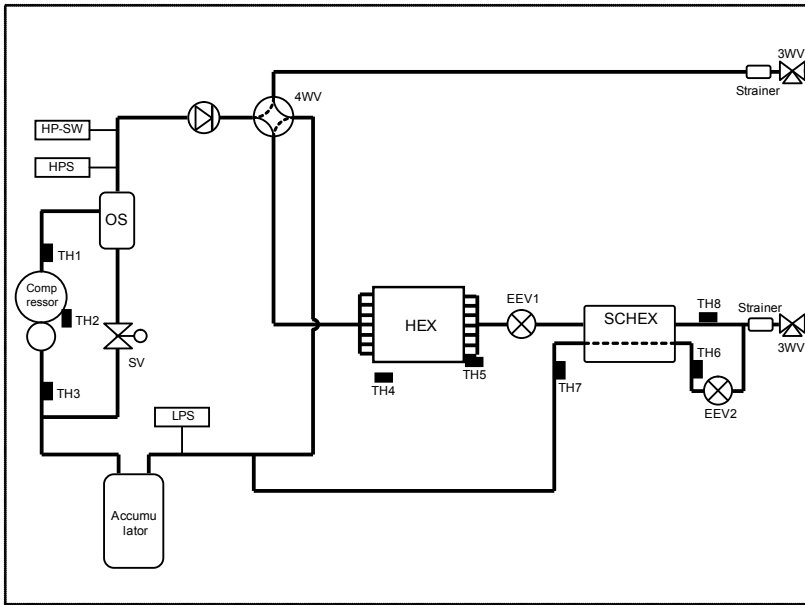


Installation dimensions

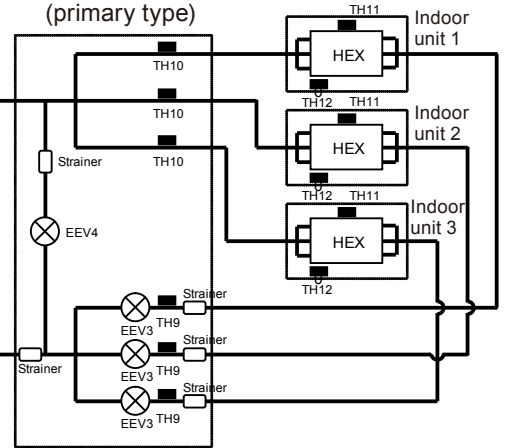


4. REFRIGERANT CIRCUIT

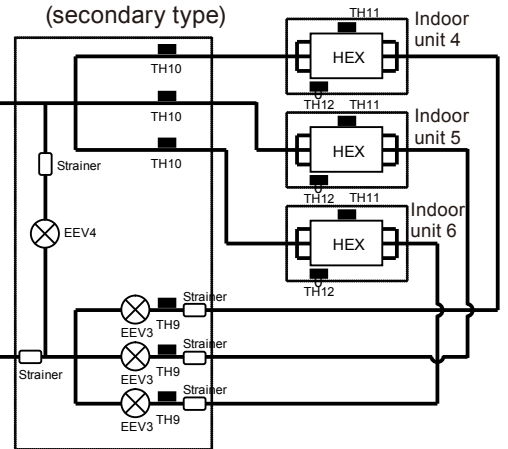
Outdoor unit



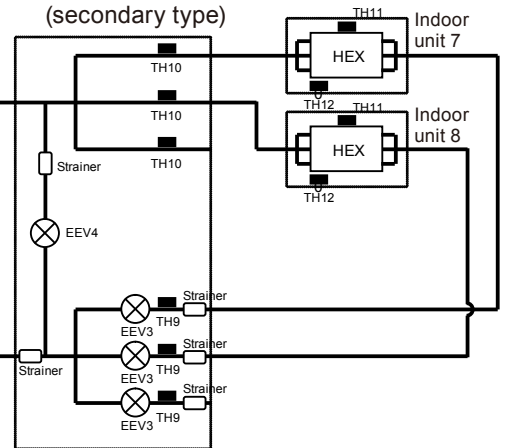
Branch box 1 (primary type)



Branch box 2 (secondary type)



Branch box 3 (secondary type)



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

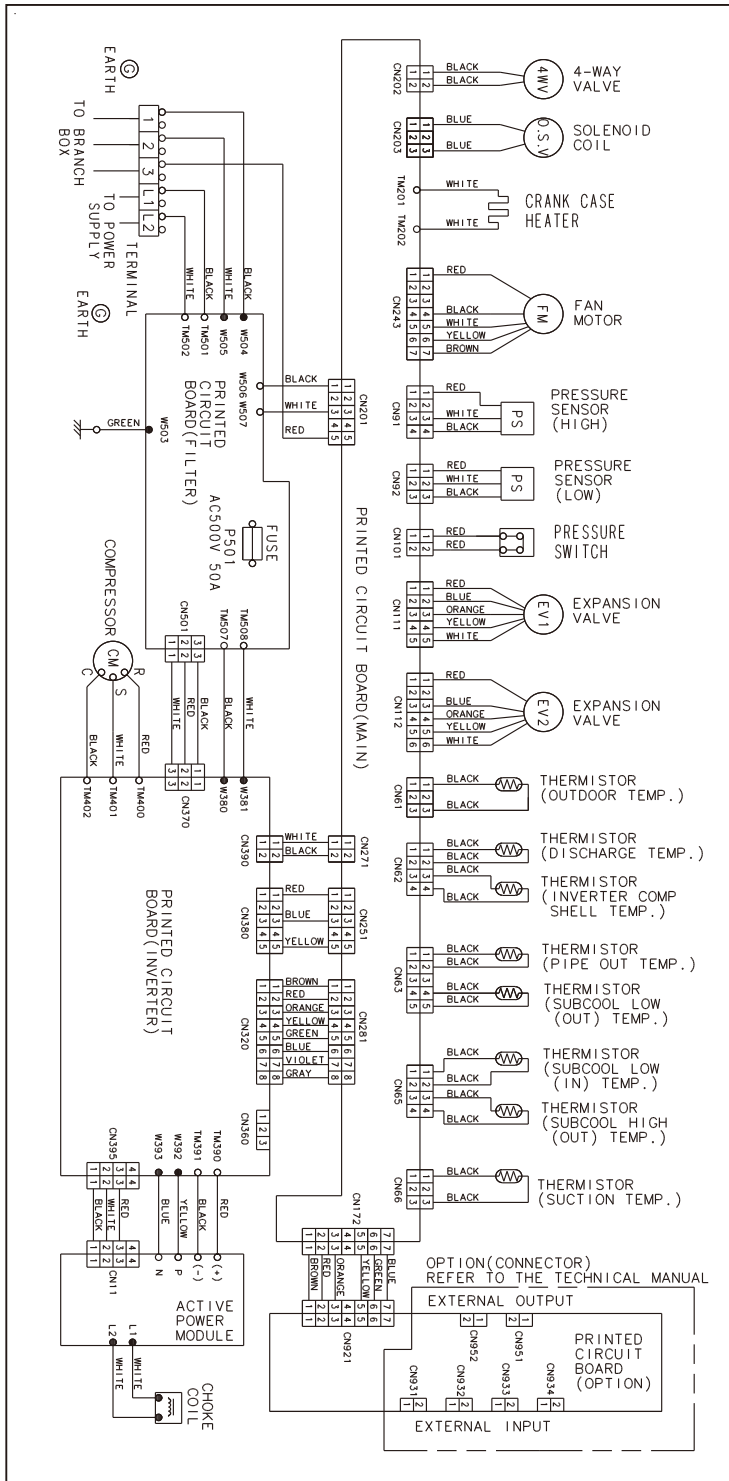
● Indoor unit

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

5. WIRING DIAGRAM

5-1. OUTDOOR UNIT

■ MODELS : AOU48RLXFZ1

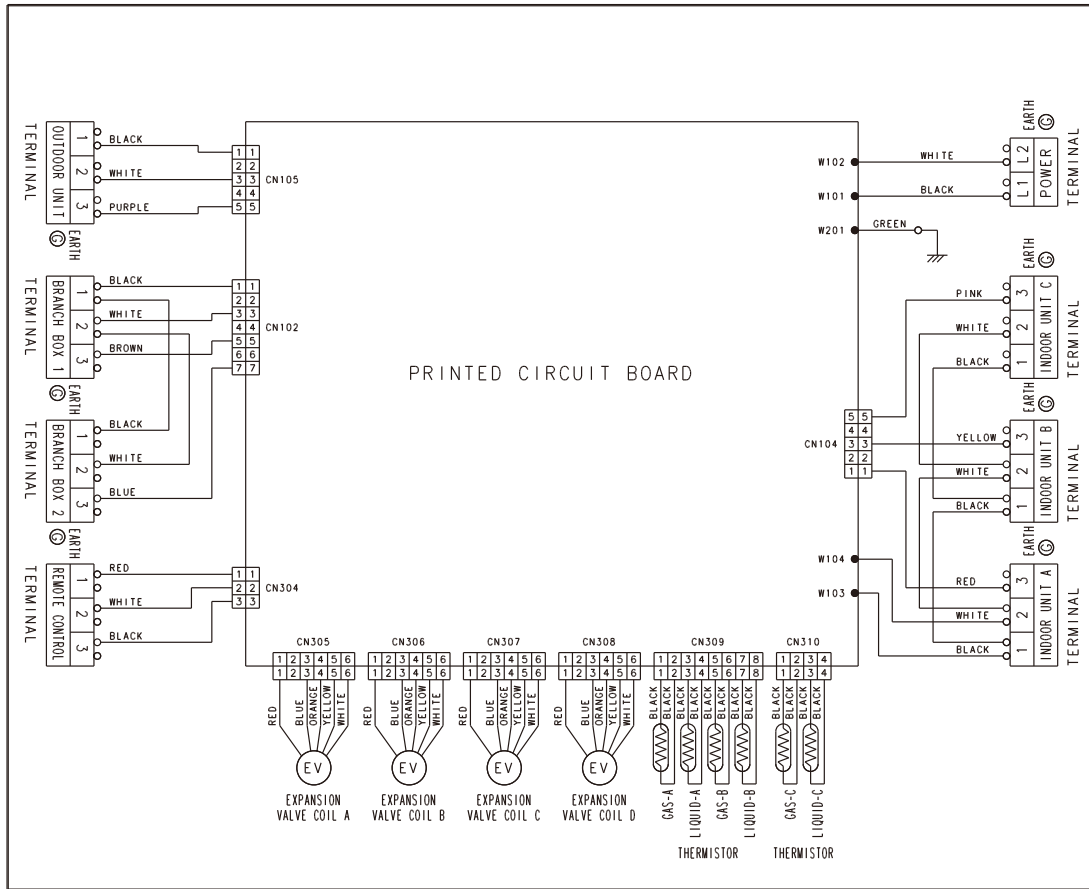


OUTDOOR UNITS

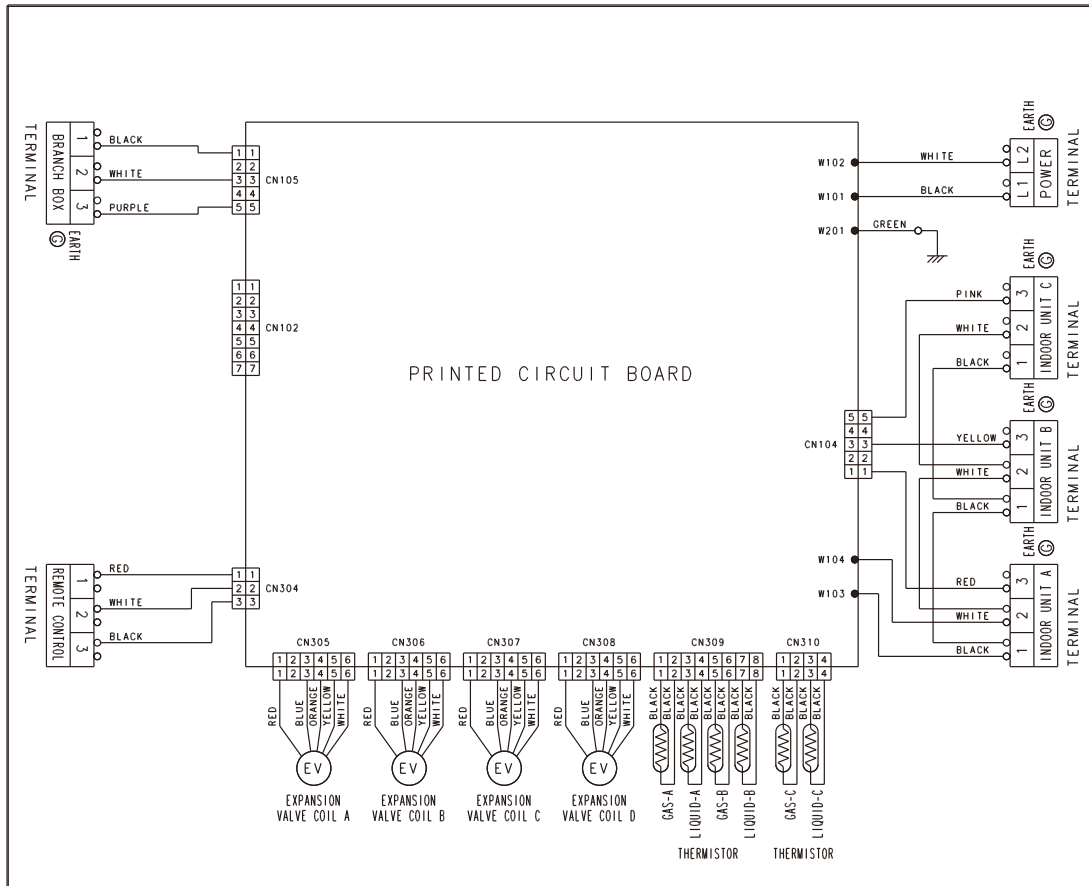
OUTDOOR UNITS

5-2. BRANCH BOX

■ MODEL : UTP-PU03A (Primary)



■ MODEL : UTP-PU03B (Secondary)



6. OPERATION RANGE

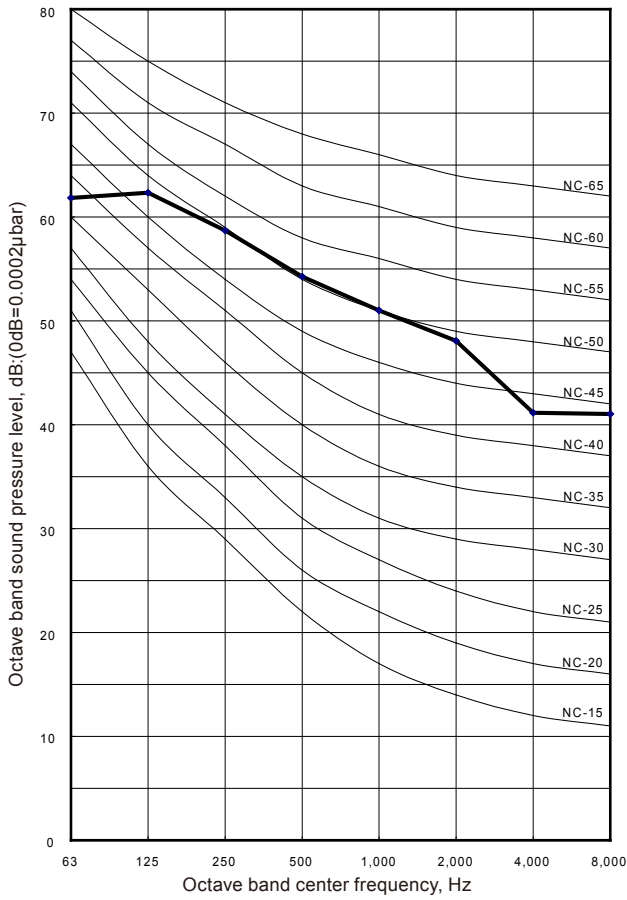
Operation mode	Operation range	
	Indoor unit	Outdoor unit
Cooling / Dry	64 to 90°F DB (18 to 32°C DB)	23 to 115°F DB (-5 to 46°C DB)
	R.H. 80% or less	
Heating	60 to 88°F DB (16 to 31°C DB)	5 to 75°F DB (-15 to 24°C DB)

R.H. : Relative Humidity.

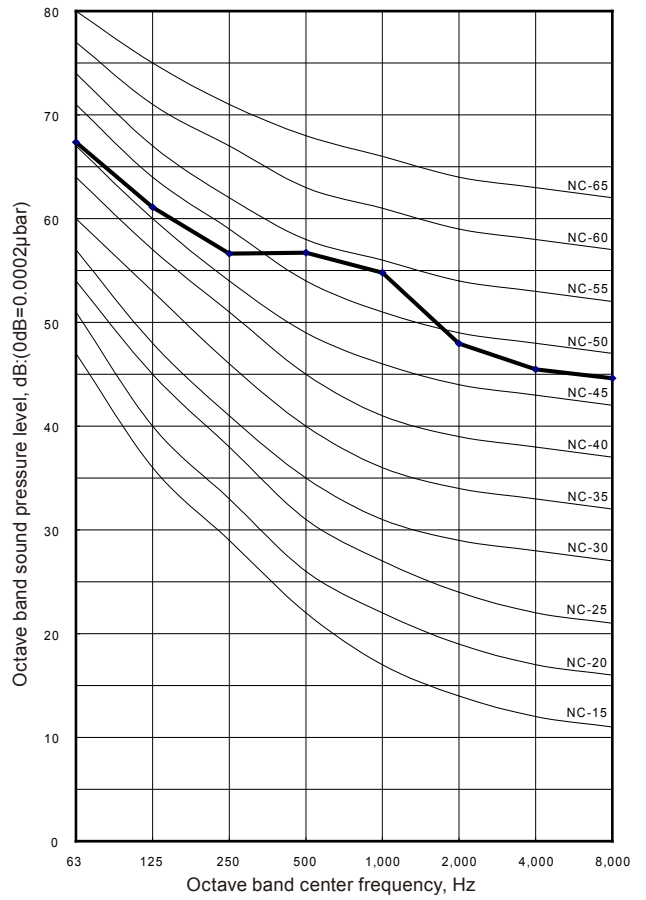
7. NOISE LEVEL CURVE

■ MODEL : AOU48RLXFZ1

● Cooling



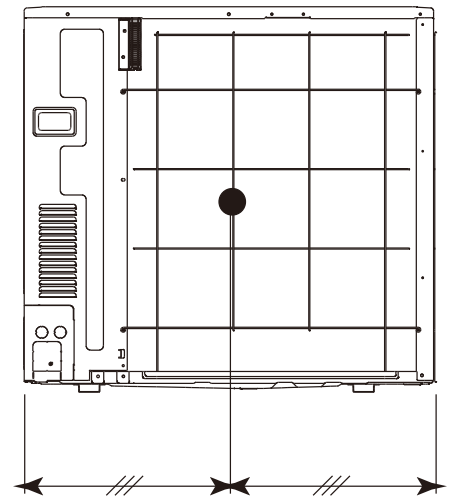
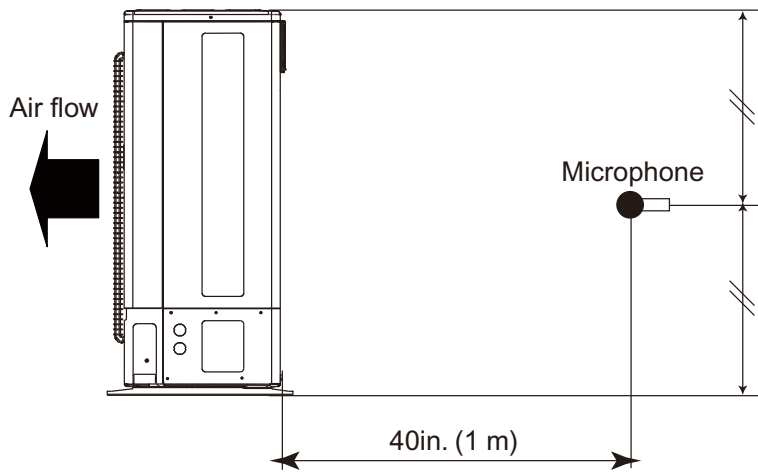
● Heating



OUTDOOR
UNITS

OUTDOOR
UNITS

■ SOUND LEVEL CHECK POINT



OUTDOOR
UNITS

OUTDOOR
UNITS

8. ELECTRIC CHARACTERISTICS

8-1. OUTDOOR UNIT

	Rated Value		Electric Characteristics									
	Power Supply		Full Load Characteristics			Wiring Specifications *1					Compressor	Outdoor Fan Motor
Model name	Hz	Voltage (V)	MCA (A)	TOCA (A)	MSC (A)	MAX. CKT. BKR (A)	Power Cable	Earth Cable	Limited Wiring Length*2	RLA (A)	Output (kW)	FLA (A)
							AWG size Cross-section	AWG size Cross-section				
AOU48RLXFZ1	60	208/230	26.5	45	23.4	40	8	8	49/55 (ft.) 15/17 (m)	21	0.11	0.9

8-2. BRANCH BOX

	Rated Value		Electric Characteristics				
	Power Supply		Full Load Characteristics		Wiring Specifications *1		
Model name	Hz	Voltage (V)	MCA (A)	TOCA (A)	MAX. CKT. BKR (A)	Power Cable	Earth Cable
						AWG size Cross-section	AWG size Cross-section
UTP-PU03A (Primary)	60	208/230	3	10	15	14	14
UTP-PU03B (Secondary)	60	208/230	3	10	15	14	14

- Select the breaker based on MCA and MAX.CKT.BKR of the table above.
- Select the wire size based on the larger value of MCA or TOCA 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.

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

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

MSC : Max Starting Current

TOCA : Total Value of Each Over Current Set

MAX.CKT.BKR : Maximum Circuit Breaker

9. SAFETY DEVICES

9-1. OUTDOOR UNIT

Safety device		AOU48RLXFZ1
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 : 239°F (115°C) On : 158°F (70°C)
High Pressure Protection		Off : 609psi (4.2MPa) On : 464psi (3.2MPa)
Low Pressure Protection		Off : 7.25psi (0.05MPa)

9-2. BRANCH BOX

Safety device		UTP-PU03A, UTP-PU03B
Fuse	PCB	AC 250V 3.15A x 2 AC 250V 10A x 1

Hybrid Flex Inverter System

4. INDOOR UNITS

CONTENTS

4. INDOOR UNITS

1. FEATURES	04 - 01
1-1. COMPACT CASSETTE TYPE.....	04 - 01
1-2. SLIM DUCT TYPE.....	04 - 02
1-3. WALL MOUNTED TYPE	04 - 03
1-4. FLOOR TYPE	04 - 07
2. SPECIFICATIONS	04 - 08
2-1. COMPACT CASSETTE TYPE.....	04 - 08
2-2. SLIM DUCT TYPE.....	04 - 09
2-3. WALL MOUNTED TYPE.....	04 - 10
2-4. FLOOR TYPE.....	04 - 14
3. ELECTRIC CHARACTERISTICS	04 - 15
4. DIMENSIONS	04 - 16
4-1. COMPACT CASSETTE TYPE.....	04 - 16
4-2. SLIM DUCT TYPE.....	04 - 18
4-3. WALL MOUNTED TYPE.....	04 - 23
4-4. FLOOR TYPE.....	04 - 31
5. WIRING DIAGRAMS	04 - 32
5-1. COMPACT CASSETTE TYPE.....	04 - 32
5-2. SLIM DUCT TYPE.....	04 - 33
5-3. WALL MOUNTED TYPE.....	04 - 34
5-4. FLOOR TYPE.....	04 - 38
6. AIR VELOCITY AND TEMPERATURE DISTRIBUTIONS	04 - 39
6-1. COMPACT CASSETTE TYPE	04 - 39
6-2. SLIM DUCT TYPE with Auto louver grille kit.....	04 - 45
6-3. WALL MOUNTED TYPE.....	04 - 55
6-4. FLOOR TYPE.....	04 - 65
7. FAN PERFORMANCE CURVE	04 - 66
7-1. SLIM DUCT TYPE.....	04 - 66
8. AIRFLOW	04 - 76

CONTENTS

4. INDOOR UNITS

9. NOISE LEVEL CURVE	04 - 78
9-1. COMPACT CASSETTE TYPE	04 - 78
9-2. SLIM DUCT TYPE	04 - 80
9-3. WALL MOUNTED TYPE	04 - 83
9-4. FLOOR TYPE	04 - 90
9-5. SOUND LEVEL CHECK POINT	04 - 92
10. SAFETY DEVICES	04 - 95

1. FEATURES

1-1. COMPACT CASSETTE TYPE

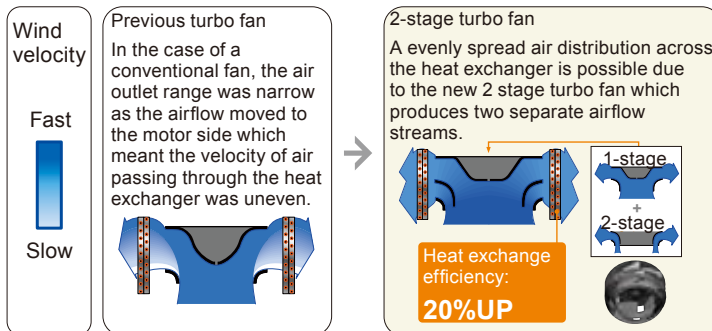
■ MODELS : AUU7RLF, AUU9RLF, AUU12RLF, AUU18RLF



■ FEATURES

● 2-stage turbo fan

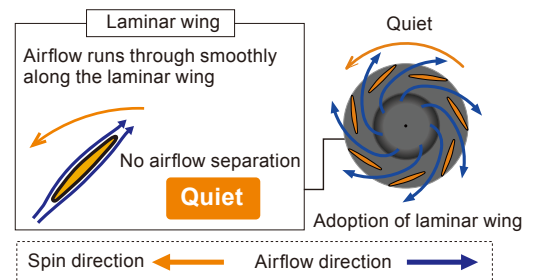
High efficiency design by 2 stage structure



● 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

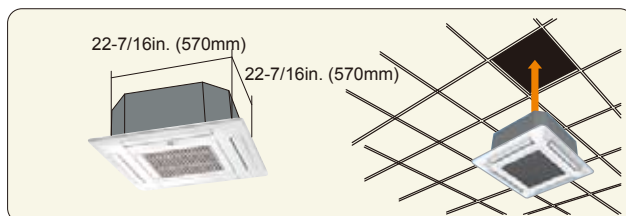
③ Adaptation of transparent drainage parts

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

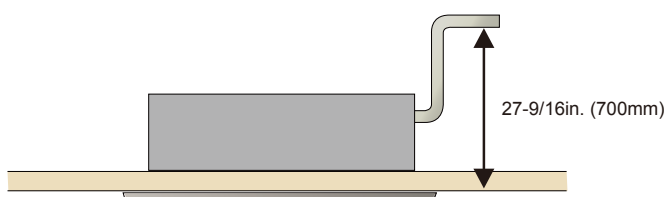


● Compact design

Easy installation by taking off ceiling panel of 23-5/8in. x 23-5/8in.(600mm x 600mm) size



● High lift drain pump



1-2. SLIM DUCT TYPE

MODELS : ARU7RLF, ARU9RLF, ARU12RLF, ARU18RLF, ARU24RLF

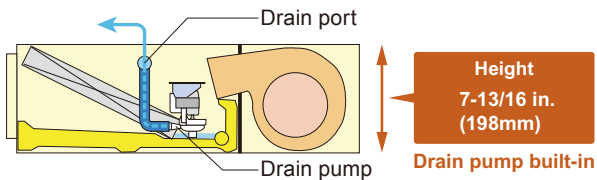


Slim design and wide range of static pressure for flexible installation.

FEATURES

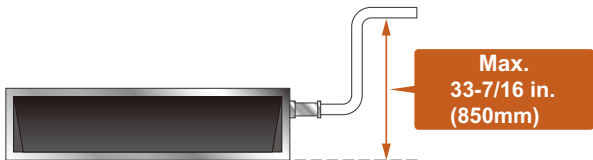
● Slim design

This model is slim design, it can install at the place where a ceiling is narrow.



● Compact design

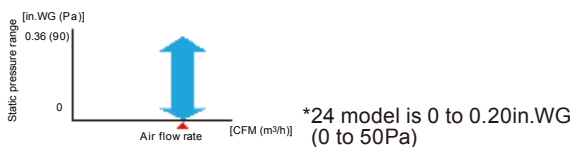
Condensate lift-up to 33-7/16in. (850mm)



Drain hose is standard accessory

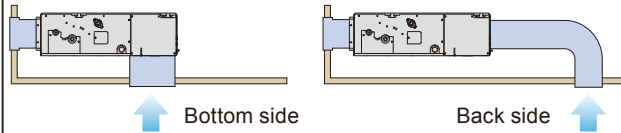
● Selectable with a wide range of static pressure

By using DC fan motor, it is possible to change of static pressure range 0 to 0.36in. WG (0 to 90Pa). The change of static pressure range is possible by remote controller.

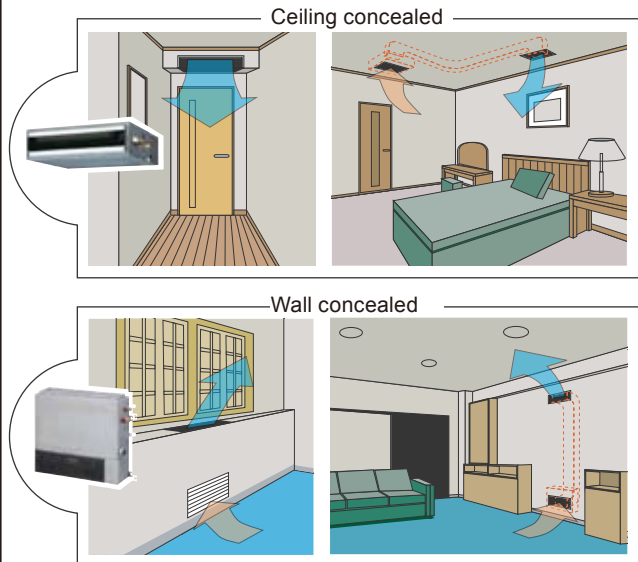


● Air - intake

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

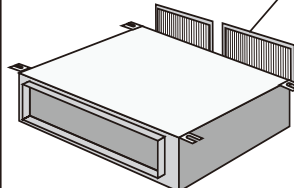


● Flexible installation



● Filter (Accessory)

Filter (ARU7/9/12/18: 2pcs.)
ARU24: 3pcs.)



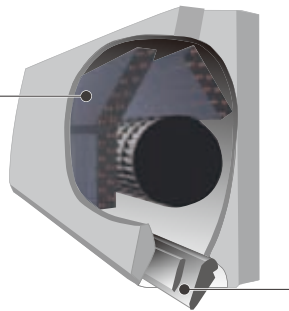
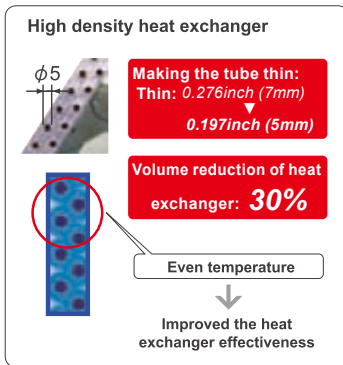
1-3. WALL MOUNTED TYPE

■ MODELS : ASU7RLF1, ASU9RLF1, ASU12RLF1

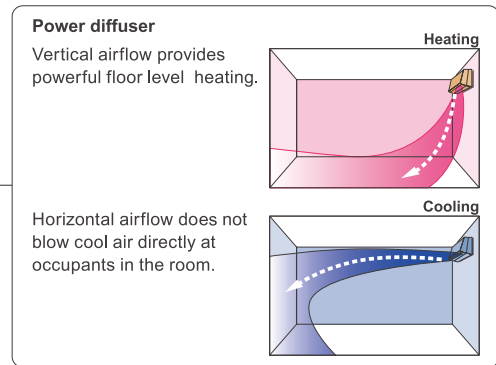


■ FEATURES

● 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)

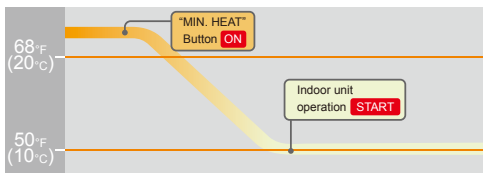
(ASU7/9/12RLF1)

● MIN. HEAT Operation *Only available with Wireless RC.

The room temperature can be set to go no lower than 50°F (10°C), thus ensuring that the room does not get too cold when not occupied

Caution)

- When the room temperature is higher than 50°F (10°C), "MIN. HEAT" operation does not start. Operation starts and maintains the room temperature at 50°F (10°C) when the temperature drops below 50°F (10°C).
- When "MIN. HEAT" operation stops, the room set temperature quickly returns to the preset temperature.



● Powerful operation *Only available with Wireless RC.

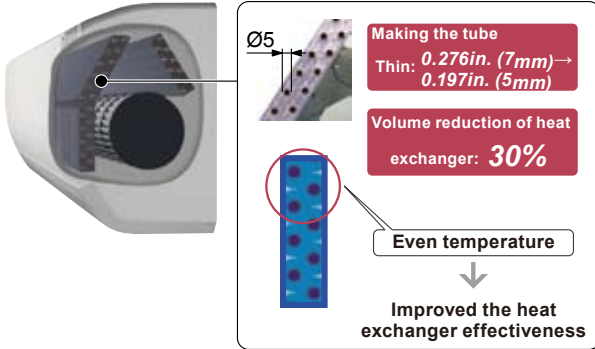
20 minutes continuous operation by maximum airflow and maximum compressor speed is possible. Rapid cooling and heating makes the room comfortable quickly.

MODELS : ASU7RLF, ASU9RLF, ASU12RLF

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.

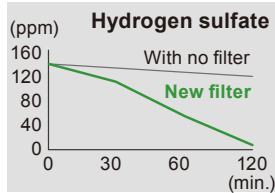
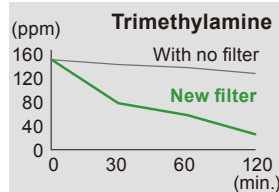
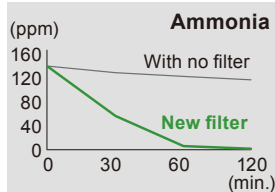
*The filter can be used for approx. 3 years if it is washed under water to restore its surface action when it is dirty.



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 ingredient 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.

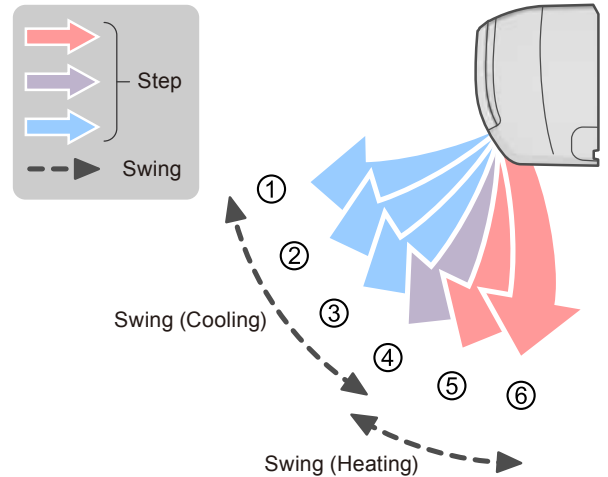
Quiet operation

Cooling mode (07/09/12 TYPE)

Fan speed Quiet	Noise level 25dB(A)
---------------------------	-------------------------------

Auto swing louvre

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

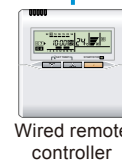


Wired control compatible



Wired and wireless remote
controller are acceptable.

* Optional communication kit is
necessary for the installation.



Wired remote
controller



Simple remote
controller

MODELS : ASU9RLS2, ASU12RLS2, ASU15RLS2

FEATURES

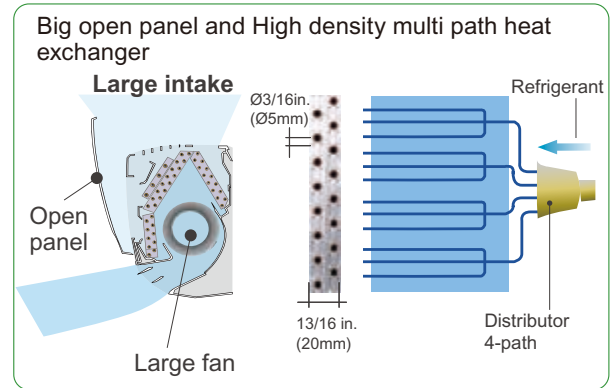
Thin & Slim design

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



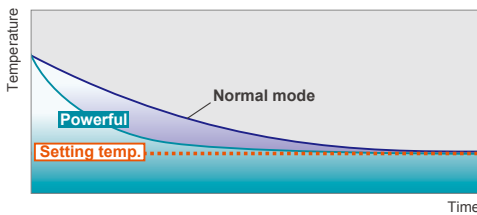
H11-1/8 × W34-1/4 × D7-5/16 in.
(H282 × W870 × D185 mm)

7-5/16 in.
(185mm)



Powerful operation *Only available with Wireless RC.

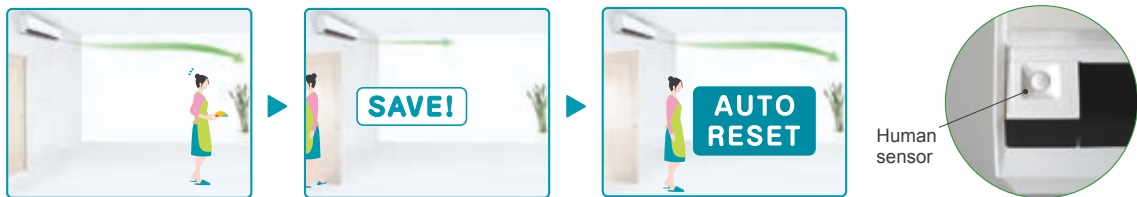
20 minutes continuous operation by maximum airflow and maximum compressor speed is possible. Rapid cooling and heating makes the room comfortable quickly.



Energy saving control

Human sensor catches movements of people in a room, and operates with lower capacity when the room is empty. When people come back to the room, it automatically returns to previous operating mode.

Energy saving operation by detecting someone's movement

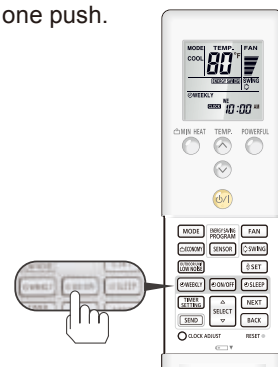


3 Mode timer (Weekly/Program/Sleep) *Only available with Wireless RC.

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 selected by one push.



MODELS : ASU18RLF, ASU24RLF

Simple & Elegant Appearance Design

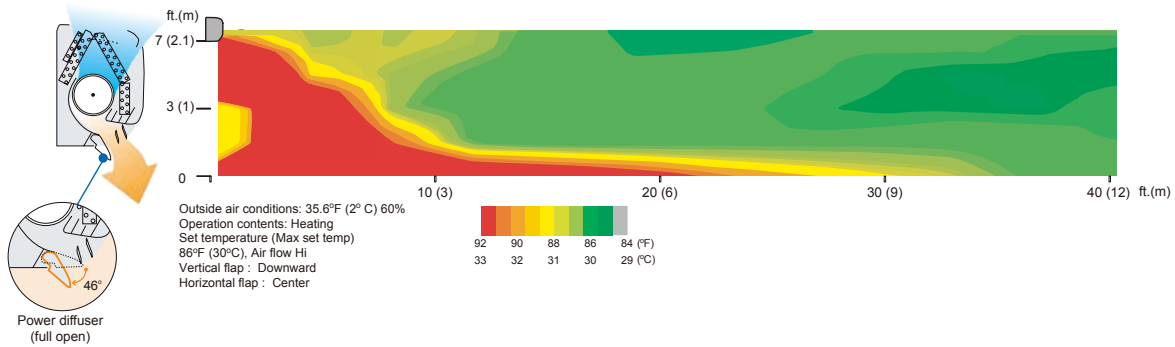
FEATURES

● Compact & Slim design

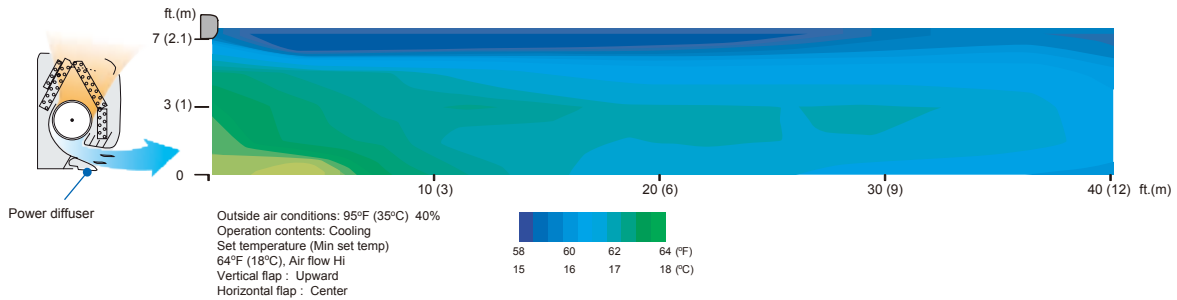


39-5/16in. (998 mm)

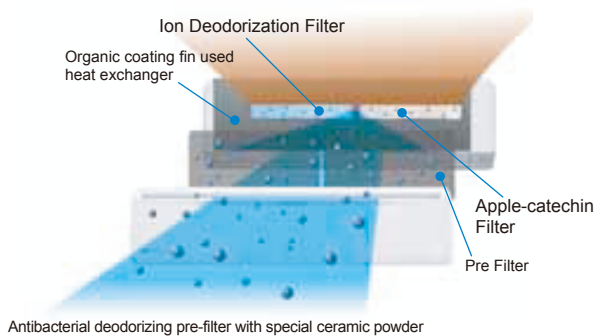
● “Vertical airflow” provides powerful floor level heating



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



● Air conditioner filter features



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

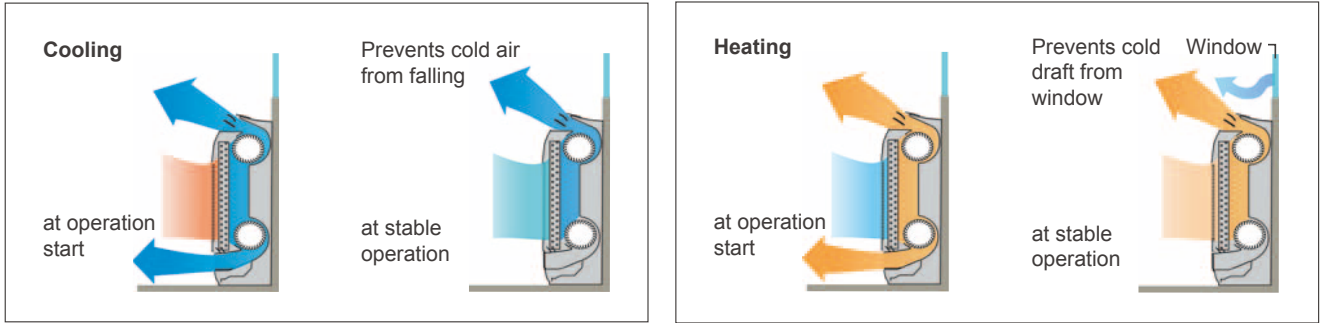
Simplification of drain pan cleaning improves maintenance-ability.

1-4. FLOOR TYPE

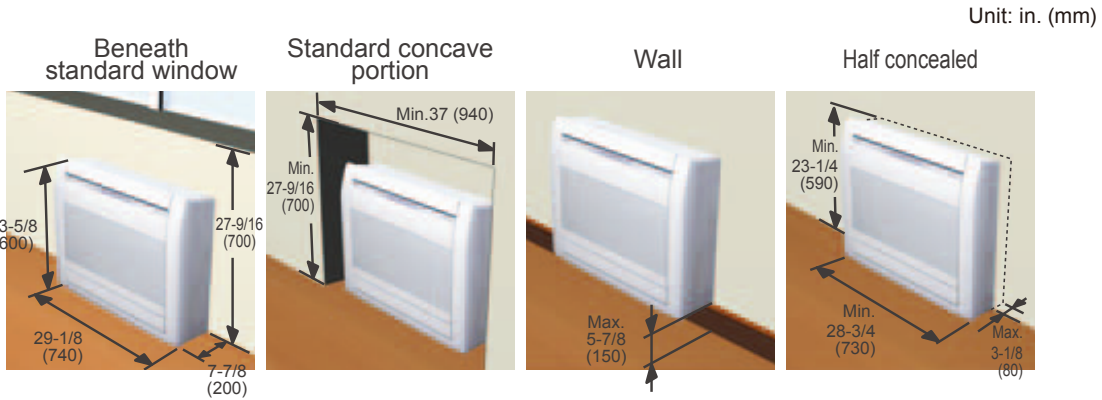
■ MODELS : AGU9RLF, AGU12RLF, AGU15RLF

■ FEATURES

● 2-Fan & Wide airflow



● Flexible & easy installation



● Filter features

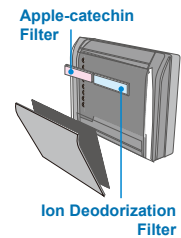
Ion deodorization filter

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

✦ Using different filters at both sides

Apple-catechin filter

Apple-catechin filter uses static electricity to clean fine particles and dust in the air.



● Easy maintenance

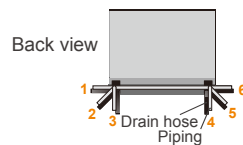
Removable and washable panel

Removable panel



● Flexible piping connection

6 direction of drain & piping



INDOOR UNITS

INDOOR UNITS

2. SPECIFICATIONS

2-1. COMPACT CASSETTE TYPE

Model name				AUU7RLF	AUU9RLF	AUU12RLF	AUU18RLF	
Power source				1ø 208/230V 60Hz				
Available voltage range				187-264V				
Capacity	Cooling	Rated	Btu/h	7,000	9,000	12,000	18,000	
			kW	2.04	2.64	3.51	5.28	
	Heating	Rated	Btu/h	8,100	10,200	13,500	20,000	
			kW	2.37	3.00	3.96	5.85	
Input Power			W	18	18	23	39	
Running current			A	0.15	0.15	0.19	0.30	
Fan	Airflow rate	Cooling	High	CFM (m ³ /h)	318 (540)	318 (540)	359 (610)	441 (750)
			Med		288 (490)	288 (490)	312 (530)	359 (610)
			Low		259 (440)	259 (440)	277 (470)	306 (520)
			Quiet		230 (390)	230 (390)	241 (410)	241 (410)
		Heating	High		318 (540)	318 (540)	359 (610)	471 (800)
			Med		288 (490)	288 (490)	312 (530)	418 (710)
			Low		259 (440)	259 (440)	277 (470)	353 (600)
			Quiet		230 (390)	230 (390)	241 (410)	265 (450)
	Fan Type × Q'ty			Turbo × 1				
	Fan Motor Output			W	54			
Sound pressure level	Cooling	High	dB (A)	33	33	37	42	
		Med		31	31	33	37	
		Low		29	29	31	33	
		Quiet		27	27	28	29	
	Heating	High		34	34	37	44	
		Med		32	32	33	40	
		Low		29	29	31	37	
		Quiet		27	27	28	30	
Heat exchanger	Dimension (H×W×D)		in.(mm)	8-1/4 × 51-9/16 × 17/32 + 8-1/4 × 49-3/16 × 1/2 (210×1310×13.3 + 210×1250×13.3)				
	Fin pitch		FPI	21				
	Rows × Stages			2×10				
	Pipe type			Copper tube				
	Fin Type			Aluminum				
Dimensions (H×W×D)	Net		in.(mm)	9-5/8 × 22-7/16 × 22-7/16 (245×570×570)				
	Gross			10-7/16 × 28-3/4 × 24-5/8 (265×730×625)				
Weight	Net		lbs.(kg)	33 (15)				
	Gross			40 (18)				
Connection pipe	Size	Liquid	in.(mm)	Ø1/4 (Ø6.35)				
		Gas		Ø3/8 (Ø9.52)		Ø1/2 (Ø12.70)		
	Method			Flare				
Operation range	Cooling		°F (°C)	64 to 90 (18 to 32)				
			%RH	80 or less				
	Heating		°F (°C)	60 to 88 (16 to 31)				
Drain hose	Material		HARD PVC					
	size		in.[mm]	Ø 1(I.D.), Ø 1-1/4(O.D.) [Ø 25 (I.D.), Ø 32 (O.D.)]				
Cassette grille	Model name		UTG-CCGF					
	Material		PS					
	Color		WHITE (Approximate color of MUNSELL N9.25 /)					
	Dimensions (H × W × D)	Net	in.(mm)	1-15/16 × 27-9/16 × 27-9/16 (49 × 700 × 700)				
		Gross		4-3/4 × 30-1/8 × 29-3/4 (120 × 765 × 755)				
	Weight	Net	lbs.(kg)	5.7 (2.6)				
Gross		10 (4.5)						
Remote controller type			Wired [Wireless (option)]					

Note: Specifications are based on the following conditions.

Power source of specifications: 230V

Cooling: Indoor temperature of 80°F(26.7°C)DB/67°F(19.4°C)WB, and outdoor temperature of 95°F(35°C)DB/75°F(23.9°C)WB.

Heating: Indoor temperature of 70°F(21.1°C)DB/60°F(15.6°C)WB, and outdoor temperature of 47°F(8.3°C)DB/43°F(6.1°C)WB.

Pipe length: 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

The protective function might work when using it out the operation range.

2-2. SLIM DUCT TYPE

Model name				ARU7RLF	ARU9RLF	ARU12RLF	ARU18RLF	ARU24RLF	
Power source				1ø 208/230V 60Hz					
Available voltage range				187-264V					
Capacity	Cooling	Rated	Btu/h	7,000	9,000	12,000	18,000	24,000	
			kW	2.04	2.64	3.51	5.28	7.02	
	Heating	Rated	Btu/h	8,100	10,200	13,500	20,000	27,000	
			kW	2.37	3.00	3.96	5.85	7.92	
Input Power			W	33	49	58	73	111	
Running current			A	0.30	0.30	0.35	0.44	0.66	
Fan	Airflow rate	Cooling	High	CFM (m ³ /h)	324 (550)	353 (600)	383 (650)	554 (940)	783 (1330)
			Med		288 (490)	324 (550)	353 (600)	518 (880)	730 (1240)
			Low		277 (470)	294 (500)	324 (550)	483 (820)	648 (1100)
			Quiet		259 (440)	265 (450)	283 (480)	442 (750)	607 (1030)
		Heating	High		324 (550)	353 (600)	383 (650)	554 (940)	783 (1330)
			Med		288 (490)	324 (550)	353 (600)	518 (880)	730 (1240)
			Low		277 (470)	294 (500)	324 (550)	483 (820)	648 (1100)
			Quiet		259 (440)	265 (450)	283 (480)	442 (750)	607 (1030)
	Fan type × Q'ty			Sirocco × 2		Sirocco × 3		Sirocco × 4	
	Fan motor output			W	80	81	81	81	81
Recommended static pressure			in.WG (Pa)	0 to 0.36 (0 to 90)	0 to 0.36 (0 to 90)	0 to 0.36 (0 to 90)	0 to 0.36 (0 to 90)	0 to 0.20 (0 to 50)	
Sound pressure level	Cooling	High	dB (A)	28	28	29	32	33	
		Med		26	27	28	31	32	
		Low		25	26	27	30	30	
		Quiet		24	25	26	29	29	
	Heating	High		28	28	29	33	35	
		Med		26	26	28	32	34	
		Low		25	25	27	31	32	
		Quiet		24	24	24	29	29	
Heat exchanger	Dimension(H × W × D)		in.(mm)	11-9/16 × 19-11/16 × 1-1/16 (294 × 500 × 26.6)	11-9/16 × 19-11/16 × 1-9/16 (294 × 500 × 39.9)		11-9/16 × 27-9/16 × 1-9/16 (294 × 700 × 39.9)	11-9/16 × 35-7/16 × 1-9/16 (294 × 900 × 39.9)	
	Fin pitch		FPI	20					
	Rows × Stages			2 × 14	3 × 14				
	Pipe type			Copper tube					
	Fin Type			Aluminum					
Enclosure	Material			GALVANIZED STEEL SHEET					
	Color			-					
Dimensions (H × W × D)	Net		in.(mm)	7-13/16 × 27-9/16 × 24-7/16 (198 × 700 × 620)			7-13/16 × 35-7/16 × 24-7/16 (198 × 900 × 620)	7-13/16 × 43-5/16 × 24-7/16 (198 × 1100 × 620)	
	Gross			10-13/16 × 37-3/16 × 30-3/8 (274 × 945 × 772)			10-13/16 × 45-1/16 × 30-3/8 (274 × 1145 × 772)	10-13/16 × 52-15/16 × 30-3/8 (274 × 1345 × 772)	
Weight	Net		lbs.(kg)	37 (17)	40 (18)	49 (22)	55 (25)		
	Gross			49 (22)	51 (23)	60 (27)	68 (31)		
Connection pipe	Size	Liquid	in.(mm)	Ø1/4 (Ø6.35)					
		Gas		Ø3/8 (Ø9.52)		Ø1/2 (Ø12.70)	Ø5/8 (Ø15.88)		
	Method			Flare					
Drain hose	Material			HARD PVC					
	size		in.[mm]	Ø 1 (I.D.), Ø 1-1/4 (O.D.) [Ø 25 (I.D.), Ø 32 (O.D.)]					
Operation range	Cooling	°F (°C)		64 to 90 (18 to 32)					
		%RH		80 or less					
Operation range	Heating	°F (°C)		60 to 88 (16 to 31)					
		Remote controller type		Wired [Wireless (option)]					

Note: Specifications are based on the following conditions.

Power source of specifications: 230V

Cooling: Indoor temperature of 80°F(26.7°C)DB/67°F(19.4°C)WB, and outdoor temperature of 95°F(35°C)DB/75°F(23.9°C)WB.

Heating: Indoor temperature of 70°F(21.1°C)DB/60°F(15.6°C)WB, and outdoor temperature of 47°F(8.3°C)DB/43°F(6.1°C)WB.

Standard static pressure: 0.10in.WG (25Pa)

Pipe length: 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

The protective function might work when using it out the operation range.

2-3. WALL MOUNTED TYPE

Model name				ASU7RLF1	ASU9RLF1	ASU12RLF1		
Power source				1ø 208/230V 60Hz				
Available voltage range				187-264V				
Capacity	Cooling	Rated	Btu/h	7,000	9,000	12,000		
			kW	2.04	2.64	3.51		
	Heating	Rated	Btu/h	8,100	10,200	13,500		
			kW	2.37	3.00	3.96		
Input Power			W	15	17	22		
Running current			A	0.13	0.15	0.19		
Fan	Airflow rate	Cooling	High	330 (560)	353 (600)	388 (660)		
			Med	294 (500)	306 (520)	330 (560)		
			Low	253 (430)	253 (430)	265 (450)		
			Quiet	200 (340)	200 (340)	200 (340)		
		Heating	High	330 (560)	353 (600)	388 (660)		
			Med	294 (500)	306 (520)	330 (560)		
			Low	253 (430)	253 (430)	277 (470)		
			Quiet	206 (350)	206 (350)	206 (350)		
			Fan type × Q'ty			Cross Flow ×1		
			Fan motor output			W	30	30
Sound pressure level	Cooling	High	36	37	40			
		Med	32	33	36			
		Low	29	29	30			
		Quiet	21	21	21			
	Heating	High	36	37	40			
		Med	32	33	36			
		Low	29	29	31			
		Quiet	22	22	22			
Heat exchanger	Dimension (H × W × D)		in. (mm)	Main: 12-5/8 × 24-13/16 × 13/16 (320 × 630 × 20) Sub: 3-5/16 × 24-13/16 × 1/2 (84 × 630 × 13.3)				
	Fin pitch		FPI	Main: 23, Sub: 18				
	Rows × Stages			Main: 2 × 20, Sub: 1 × 4				
	Pipe type			Copper tube				
	Fin Type			Aluminum				
Enclosure	Material			Polystyrene				
	Color			WHITE (Approximate color of MUNSELL N9.25 /)				
Dimensions (H × W × D)	Net		in.(mm)	10-9/16 × 33-1/16 × 8 (268 × 840 × 203)				
	Gross			10-5/8 × 34-13/16 × 14-3/4 (270 × 884 × 336)				
Weight	Net		lbs.(kg)	19 (8.5)				
	Gross			23 (10.5)				
Connection pipe	Size	Liquid	in.(mm)	Ø1/4 (Ø6.35)				
		Gas		Ø3/8 (Ø9.52)				
	Method			Flare				
Drain hose	Material			PP + LLDPE				
	size		in.[mm]	Ø 9/16(I.D.), Ø 5/8 to Ø 11/16(O.D.) [Ø 13.8(I.D.), Ø 15.8 to Ø 16.7(O.D.)]				
Operation range	Cooling		°F (°C)	64 to 90 (18 to 32)				
			%RH	80 or less				
	Heating		°F (°C)	60 to 88 (16 to 31)				
Remote controller type				Wireless [Wired (option)]				

Note: Specifications are based on the following conditions.

Power source of specifications: 230V

Cooling: Indoor temperature of 80°F(26.7°C)DB/67°F(19.4°C)WB, and outdoor temperature of 95°F(35°C)DB/75°F(23.9°C)WB.

Heating: Indoor temperature of 70°F(21.1°C)DB/60°F(15.6°C)WB, and outdoor temperature of 47°F(8.3°C)DB/43°F(6.1°C)WB.

Pipe length: 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

The protective function might work when using it out the operation range.

Model name				ASU7RLF	ASU9RLF	ASU12RLF		
Power source				1ø 208/230V 60Hz				
Available voltage range				187-264V				
Capacity	Cooling	Rated	Btu/h	7,000	9,000	12,000		
			kW	2.04	2.64	3.51		
	Heating	Rated	Btu/h	8,100	10,200	13,500		
			kW	2.37	3.00	3.96		
Input Power			W	15	17	22		
Running current			A	0.13	0.15	0.19		
Fan	Airflow rate	Cooling	High	330 (560)	353 (600)	388 (660)		
			Med	294 (500)	306 (520)	330 (560)		
			Low	253 (430)	253 (430)	265 (450)		
			Quiet	200 (340)	200 (340)	200 (340)		
		Heating	High	330 (560)	353 (600)	388 (660)		
			Med	294 (500)	306 (520)	330 (560)		
			Low	253 (430)	253 (430)	277 (470)		
			Quiet	206 (350)	206 (350)	206 (350)		
			Fan type × Q'ty			Cross Flow ×1		
			Fan motor output			W	30	30
Sound pressure level	Cooling	High	36	37	40			
		Med	32	33	36			
		Low	29	29	30			
		Quiet	25	25	25			
	Heating	High	36	37	40			
		Med	32	33	36			
		Low	29	29	31			
		Quiet	25	25	25			
Heat exchanger	Dimension (H × W × D)		in. (mm)	Main: 12-5/8 x 24-13/16 x 13/16 (320 x 630 x 20) Sub: 3-5/16 x 24-13/16 x 1/2 (84 x 630 x 13.3)				
	Fin pitch		FPI	Main: 23, Sub: 18				
	Rows × Stages			Main: 2 x 20, Sub: 1 x 4				
	Pipe type			Copper tube				
	Fin Type			Aluminum				
Enclosure	Material			Polystyrene				
	Color			WHITE (Approximate color of MUNSELL N9.25 /)				
Dimensions (H × W × D)	Net		in.(mm)	11-1/16 × 31-1/16 × 8 (280×790×203)				
	Gross			10-3/8 × 33-1/16 × 14-3/4 (263×840×375)				
Weight	Net		lbs.(kg)	18 (8)				
	Gross			23 (10.5)				
Connection pipe	Size	Liquid	in.(mm)	Ø1/4 (Ø6.35)				
		Gas		Ø3/8 (Ø9.52)				
	Method			Flare				
Drain hose	Material			PP + LLDPE				
	size		in.[mm]	Ø 9/16(I.D.), Ø 5/8 to Ø 11/16(O.D.) [Ø 13.8(I.D.), Ø 15.8 to Ø 16.7(O.D.)]				
Operation range	Cooling		°F (°C)	64 to 90 (18 to 32)				
			%RH	80 or less				
	Heating		°F (°C)	60 to 88 (16 to 31)				
Remote controller type				Wireless [Wired (option)]				

Note: Specifications are based on the following conditions.

Power source of specifications: 230V

Cooling: Indoor temperature of 80°F(26.7°C)DB/67°F(19.4°C)WB,and outdoor temperature of 95°F(35°C)DB/75°F(23.9°C)WB.

Heating: Indoor temperature of 70°F(21.1°C)DB/60°F(15.6°C)WB,and outdoor temperature of 47°F(8.3°C)DB/43°F(6.1°C)WB.

Pipe length: 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

The protective function might work when using it out the operation range.

Model name				ASU9RLS2	ASU12RLS2	ASU15RLS2
Power source				1ø 208/230V 60Hz		
Available voltage range				187-264V		
Capacity	Cooling	Rated	Btu/h	9,000	12,000	14,000
			kW	2.64	3.51	4.10
	Heating	Rated	Btu/h	10,200	13,500	16,300
			kW	3.00	3.96	4.80
Input power			W	16	19	23
Running current			A	0.14	0.17	0.20
Fan	Airflow rate	Cooling	High	353 (600)	388 (660)	418 (710)
			Med	324 (550)	353 (600)	377 (640)
			Low	277 (470)	312 (530)	336 (570)
			Quiet	194 (330)	194 (330)	230 (390)
		Heating	High	353 (600)	388 (660)	418 (710)
			Med	324 (550)	353 (600)	377 (640)
			Low	277 (470)	312 (530)	347 (590)
			Quiet	194 (330)	194 (330)	253 (430)
	Fan type × Q'ty		Cross flow × 1			
	Fan motor output		W	36		
Sound pressure level	Cooling	High	36	37	41	
		Med	32	34	36	
		Low	28	31	33	
		Quiet	21	21	25	
	Heating	High	36	37	41	
		Med	32	34	36	
		Low	28	31	34	
		Quiet	21	21	27	
Heat exchanger	Dimension (H × W × D)		in.(mm)	Main: 12-5/8 × 27-3/16 × 13/16 (320 × 690 × 20) Sub: 3-5/16 × 27-3/16 × 1/2 (84 × 690 × 13.3)		
	Fin pitch		FPI	Main: 23, Sub: 18		
	Rows × Stages			Main: 2 × 20, Sub: 1 × 4		
	Pipe type			Copper tube		
	Fin Type			Aluminum		
Enclosure	Material		Polystyrene			
	Color		WHITE (Approximate colour of MUNSELL N9.3/)			
Dimensions (H × W × D)	Net		in.(mm)	11-1/8 × 34-1/4 × 7-5/16 (282 × 870 × 185)		
	Gross			9-3/4 × 36-1/4 × 14-11/16 (247 × 920 × 373)		
Weight	Net		lbs.(kg)	21 (9.5)		
	Gross			27 (12)		
Connection pipe	Size	Liquid	in.(mm)	Ø1/4 (Ø6.35)		
		Gas		Ø3/8 (Ø9.52)		Ø1/2 (Ø12.70)
	Method			Flare		
Drain hose	Material		PP + LLDPE			
	size		in. [mm]	Ø 9/16(I.D.), Ø 5/8 to Ø11/16(O.D.) [Ø 13.8(I.D.), Ø 15.8 to Ø 16.7(O.D.)]		
Operation range	Cooling	°F (°C)	64 to 90 (18 to 32)			
		%RH	80 or less			
	Heating	°F (°C)	60 to 88 (16 to 31)			
Remote controller type				Wireless [Wired (option)]		

Note: Specifications are based on the following conditions.

Power source of specifications: 230V

Cooling: Indoor temperature of 80°F(26.7°C)DB/67°F(19.4°C)WB, and outdoor temperature of 95°F(35°C)DB/75°F(23.9°C)WB.

Heating: Indoor temperature of 70°F(21.1°C)DB/60°F(15.6°C)WB, and outdoor temperature of 47°F(8.3°C)DB/43°F(6.1°C)WB.

Pipe length: 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

The protective function might work when using it out the operation range.

Model name				ASU18RLF	ASU24RLF
Power source				1ø 208/230V 60Hz	
Available voltage range				187-264V	
Capacity	Cooling	Rated	Btu/h	18,000	24,000
			kW	5.28	7.02
	Heating	Rated	Btu/h	20,000	27,000
			kW	5.85	7.92
Input Power			W	41	69
Running current			A	0.32	0.53
Fan	Airflow rate	Cooling	High	542 (920)	659 (1120)
			Med	436 (740)	530 (900)
			Low	365 (620)	436 (740)
			Quiet	324 (550)	365 (620)
		Heating	High	542 (920)	647 (1100)
			Med	436 (740)	530 (900)
			Low	365 (620)	436 (740)
			Quiet	324 (550)	365 (620)
	Fan type × Q'ty			Cross flow ×1	
	Fan motor output			W	42
Sound pressure level	Cooling	High	43	49	
		Med	37	42	
		Low	33	37	
		Quiet	31	33	
	Heating	High	44	48	
		Med	37	42	
		Low	33	37	
		Quiet	31	33	
Heat exchanger	Dimension (H × W × D)		in.(mm)	Main:15-7/8 x 33-3/4 x 1-1/16 (378 x 832 x 26.6) Sub:3-5/16 x 33-3/4 x 1/2 (84 x 832 x 13.3)	
	Fin pitch		FPI	Main: 21, Sub: 18	
	Rows × Stages			Main:2 x 18, Sub:1 x 4	
	Pipe type			Copper tube	
	Fin Type			Aluminum	
Enclosure	Material			Polystyrene	
	Color			WHITE (Approximate color of MUNSELL N9.25 /)	
Dimensions (H × W × D)	Net		mm	12-5/8 x 39-1/4 x 9 (320×998×228)	
	Gross			12-9/16 x 42-15/16 x 16-7/8 (319×1090×429)	
Weight	Net		lbs.(kg)	31(14)	
	Gross			40(18)	
Connection pipe	Size	Liquid	in.(mm)	Ø1/4 (Ø6.35)	
		Gas		Ø1/2 (Ø12.70)	Ø5/8 (Ø15.88)
	Method			Flare	
Drain hose	Material			PVC	
	size		in.[mm]	Ø 1/2(I.D.), Ø 5/8(O.D.) [Ø 12(I.D.), Ø 16(O.D.)]	
Operation range	Cooling	°F (°C)		64 to 90 (18 to 32)	
		%RH		80 or less	
Operation range	Heating	°F (°C)		60 to 88 (16 to 31)	
		Remote controller type		Wireless [Wired (option)]	

Note: Specifications are based on the following conditions.

Power source of specifications: 230V

Cooling: Indoor temperature of 80°F(26.7°C)DB/67°F(19.4°C)WB,and outdoor temperature of 95°F(35°C)DB/75°F(23.9°C)WB.

Heating: Indoor temperature of 70°F(21.1°C)DB/60°F(15.6°C)WB,and outdoor temperature of 47°F(8.3°C)DB/43°F(6.1°C)WB.

Pipe length: 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

The protective function might work when using it out the operation range.

2-4. FLOOR TYPE

Model name			AGU09RLF	AGU12RLF	AGU15RLF	
Power source			1ø 208/230V 60Hz			
Available voltage range			187-264V			
Capacity	Cooling	Rated	Btu/h	9,000	12,000	14,000
			kW	2.64	3.51	4.10
	Heating	Rated	Btu/h	10,200	13,500	16,300
			kW	3.00	3.96	4.80
Input Power			W	16	20	23
Running current			A	0.15	0.18	0.20
Fan	Airflow rate	Cooling	High	312 (530)	353 (600)	383 (650)
			Med	259 (440)	288 (490)	306 (520)
			Low	212 (360)	224 (380)	235 (400)
			Quiet	159 (270)	159 (270)	159 (270)
		Heating	High	312 (530)	353 (600)	383 (650)
			Med	270 (460)	300 (510)	318 (540)
			Low	224 (380)	241 (410)	253 (430)
			Quiet	159 (270)	159 (270)	159 (270)
	Fan type × Q'ty			Crossflow × 2		
	Fan motor output			W	16	
Sound pressure level	Cooling	High	39	42	44	
		Med	34	36	38	
		Low	28	30	31	
		Quiet	22	22	22	
	Heating	High	39	42	44	
		Med	35	38	39	
		Low	30	32	33	
		Quiet	22	22	22	
Heat exchanger	Dimension (H × W × D)		in. (mm)	14-7/8 × 21-5/8 × 1-1/16 (378 × 550 × 26.6)		
	Fin pitch		FPI	21		
	Rows × Stages			2 × 18		
	Pipe type			Copper tube		
	Fin Type			Aluminium		
Enclosure	Material			Polystyrene		
	Color			WHITE (Approximate colour of MUNSELL N9.25/)		
Dimensions (H × W × D)	Net		in.(mm)	23-5/8 × 29-1/8 × 7-7/8 (600 × 740 × 200)		
	Gross			27-9/16 × 32-5/16 × 12-3/16 (700 × 820 × 310)		
Weight	Net		lbs.(kg)	31 (14)		
	Gross			37 (17)		
Connection pipe	Size	Liquid	in.(mm)	Ø1/4in. (Ø 6.35)		
		Gas		Ø3/8in. (Ø 9.52)	Ø1/2in. (Ø 12.70)	
	Method			Flare		
Drain hose	Material			PVC		
	size		in.[mm]	Ø 9/16(I.D.), Ø 11/16(O.D.) [Ø 13.8 (I.D.), Ø 16.7 (O.D.)]		
Operation range	Cooling	°F (°C)	64 to 90 (18 to 32)			
		%RH	80 or less			
	Heating	°F (°C)	60 to 86 (16 to 30)			
Remote controller type				Wireless [Wired (option)]		

Note: Specifications are based on the following conditions.

Power source of specifications: 230V

Cooling: Indoor temperature of 80°F(26.7°C)DB/67°F(19.4°C)WB, and outdoor temperature of 95°F(35°C)DB/75°F(23.9°C)WB.

Heating: Indoor temperature of 70°F(21.1°C)DB/60°F(15.6°C)WB, and outdoor temperature of 47°F(8.3°C)DB/43°F(6.1°C)WB.

Pipe length: 16.4ft.(5m) [Outdoor unit - Branch box], 9.8ft. (3m) [Branch box - Indoor unit]

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

The protective function might work when using it out the operation range.

3. ELECTRIC CHARACTERISTICS

Type	Model name	Power Supply			Indoor Rated	
		Hz	Voltage (V)	MCA (A)	Input Power (W)	FLA (A)
Compact Cassette	AUU7RLF	60	208 / 230	0.19 / 0.19	17 / 18	0.15 / 0.15
	AUU9RLF	60	208 / 230	0.19 / 0.19	17 / 18	0.15 / 0.15
	AUU12RLF	60	208 / 230	0.24 / 0.24	22 / 23	0.19 / 0.19
	AUU18RLF	60	208 / 230	0.41 / 0.38	38 / 39	0.32 / 0.30
Slim Duct	ARU7RLF	60	208 / 230	0.40 / 0.41	47 / 33	0.32 / 0.30
	ARU9RLF	60	208 / 230	0.40 / 0.38	47 / 49	0.32 / 0.30
	ARU12RLF	60	208 / 230	0.47 / 0.44	56 / 58	0.37 / 0.35
	ARU18RLF	60	208 / 230	0.59 / 0.55	71 / 73	0.47 / 0.44
	ARU24RLF	60	208 / 230	0.89 / 0.83	109 / 111	0.71 / 0.66
Wall Mounted	ASU7RLF1	60	208 / 230	0.18 / 0.16	15 / 15	0.14 / 0.13
	ASU9RLF1	60	208 / 230	0.20 / 0.19	17 / 17	0.16 / 0.15
	ASU12RLF1	60	208 / 230	0.25 / 0.24	22 / 22	0.20 / 0.19
	ASU7RLF	60	208 / 230	0.18 / 0.17	15 / 15	0.14 / 0.13
	ASU9RLF	60	208 / 230	0.20 / 0.19	17 / 17	0.16 / 0.15
	ASU12RLF	60	208 / 230	0.25 / 0.24	22 / 22	0.20 / 0.19
	ASU9RLS2	60	208 / 230	0.19 / 0.18	16 / 16	0.15 / 0.14
	ASU12RLS2	60	208 / 230	0.22 / 0.21	19 / 19	0.18 / 0.17
	ASU15RLS2	60	208 / 230	0.26 / 0.25	23 / 23	0.21 / 0.20
	ASU18RLF	60	208 / 230	0.42 / 0.40	40 / 41	0.34 / 0.32
Floor	AGU9RLF	60	208 / 230	0.36 / 0.33	35 / 32	0.29 / 0.26
	AGU12RLF	60	208 / 230	0.36 / 0.33	35 / 32	0.29 / 0.26
	AGU15RLF	60	208 / 230	0.41 / 0.38	40 / 36	0.33 / 0.30

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

FLA : Full Load Amps.

INDOOR UNITS

INDOOR UNITS

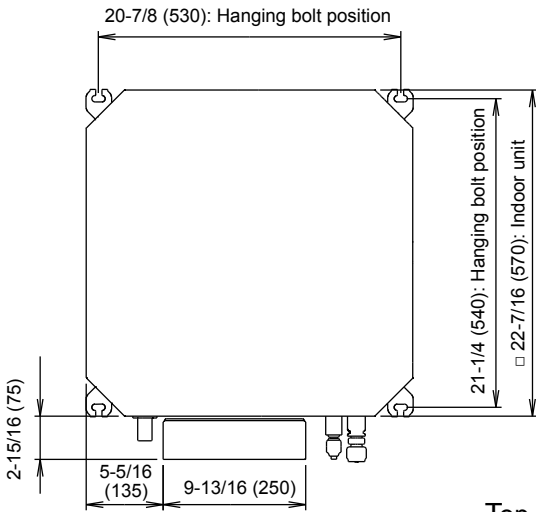
4. DIMENSIONS

4-1. COMPACT CASSETTE TYPE

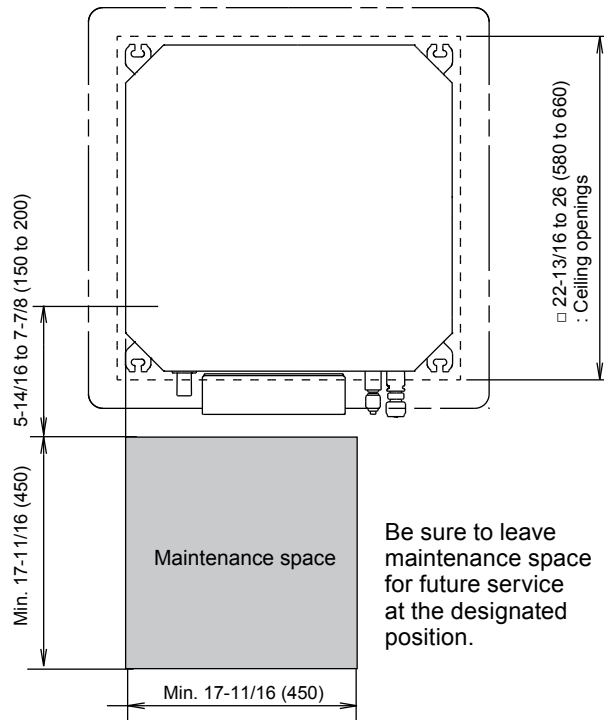
■ MODELS : AUU7RLF, AUU9RLF, AUU12RLF, AUU18RLF

Unit: in. (mm)

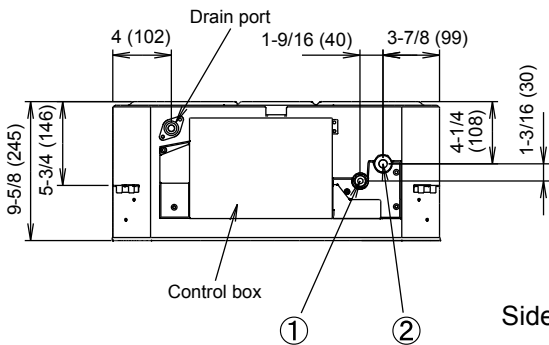
• Cassette grille mounting state



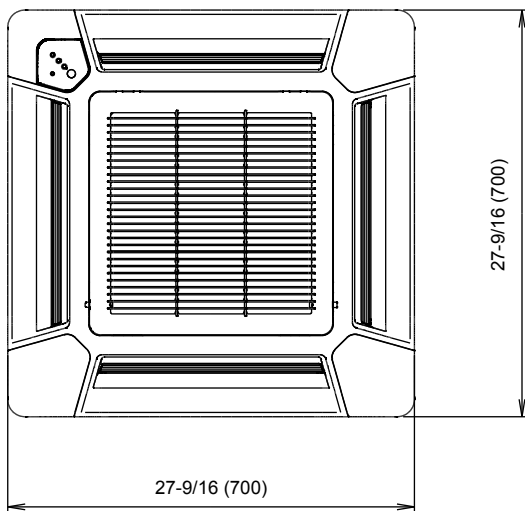
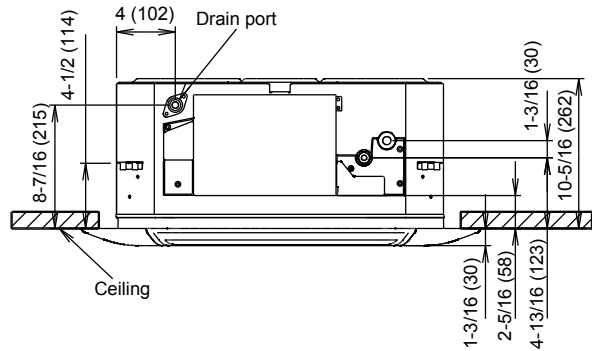
Top view



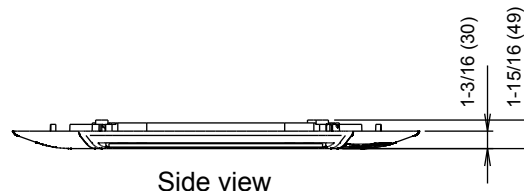
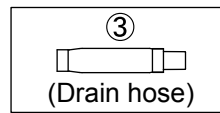
Be sure to leave maintenance space for future service at the designated position.



Side view



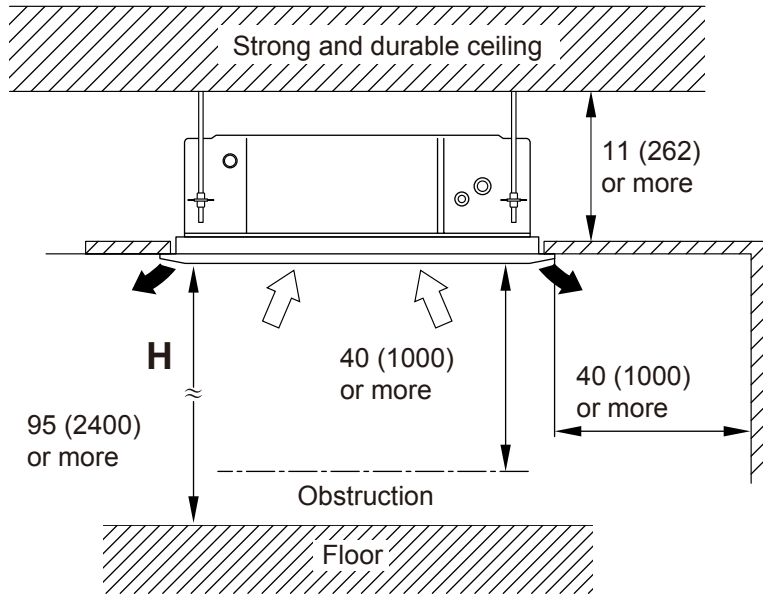
Bottom view



			AUU7RLF, AUU9RLF, AUU12RLF	AUU18RLF
①	Refrigerant pipe flare connection	Liquid	ø 1/4 in. (ø 6.35 mm)	ø 1/4 in. (ø 6.35 mm)
②		Gas	ø 3/8 in. (ø 9.52 mm)	ø 1/2 in. (ø 12.70 mm)
③	Drain hose connection	Drain hose	I.D.: ø 1 in.(ø 25 mm), O.D.: ø 1-1/4 in.(ø 32 mm)	

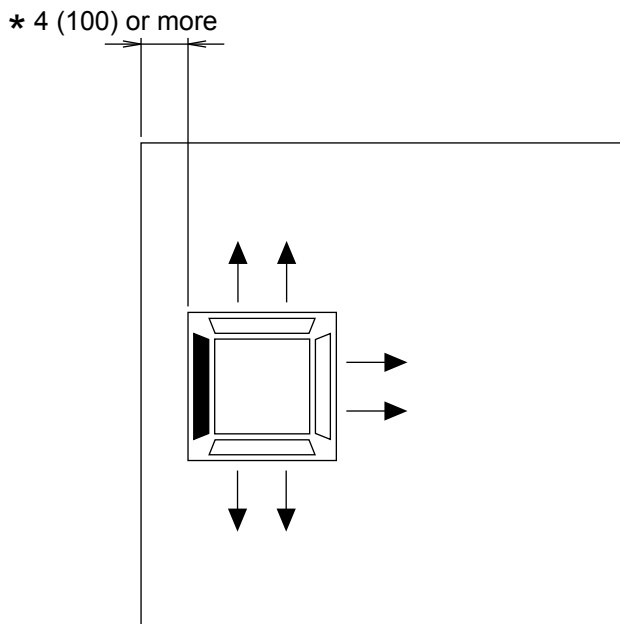
■ INSTALLATION PLACE

Unit : in. (mm)



	H (The maximum height from floor to ceiling) Unit: in. (mm)			
Model name	AUU7	AUU9	AUU12	AUU18
Standard mode	107 (2700)	107 (2700)	107 (2700)	107 (2700)
High Ceiling mode	-	-	119 (3000)	119 (3000)

● 3-way directions setting



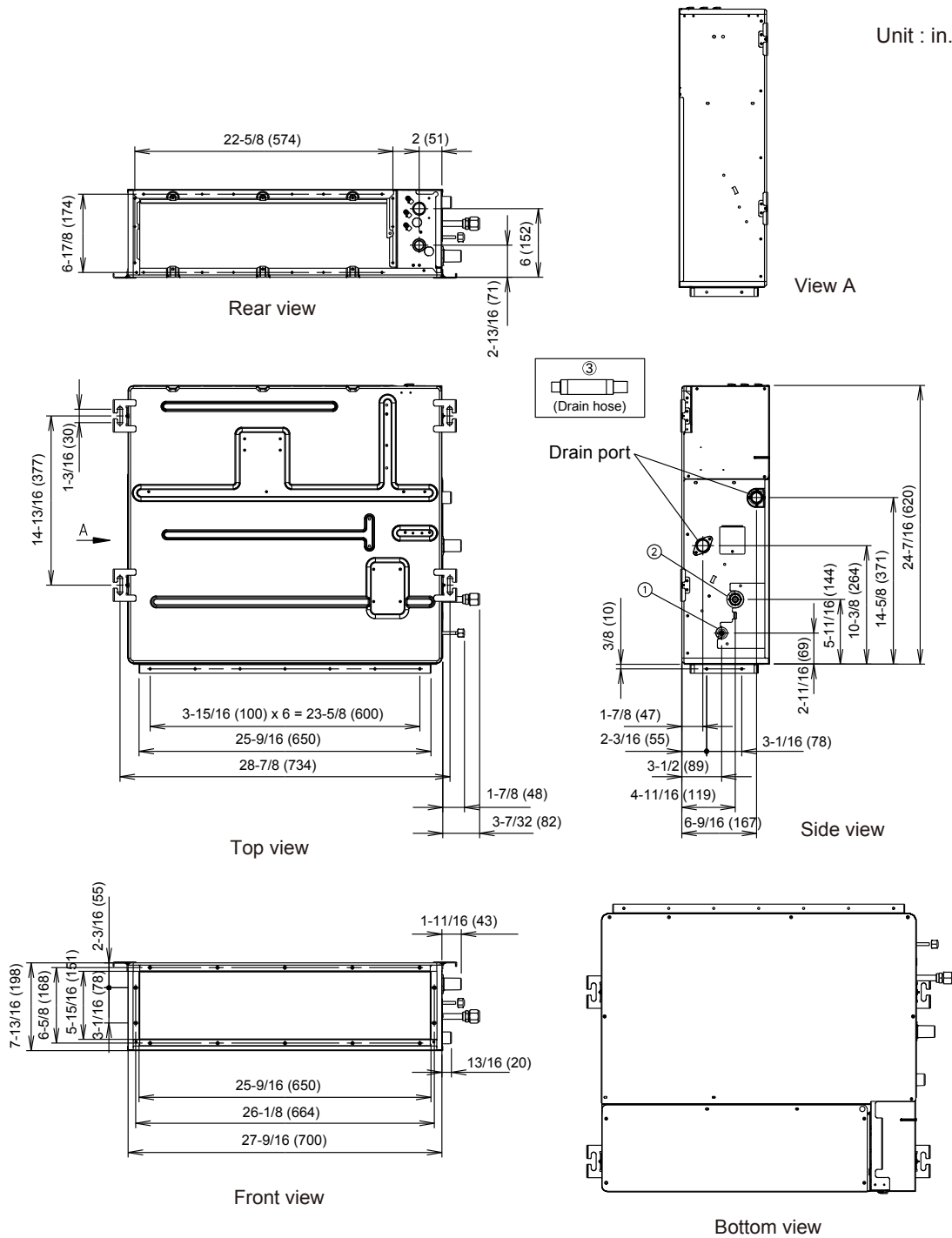
To set “3-way directions”, the air outlet shutter plate (UTR-YDZB) sold separately must be installed and “outlet-direction” switched to “3-way” by remote controller.

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

4-2. SLIM DUCT TYPE

■ MODELS : ARU7RLF, ARU9RLF, ARU12RLF

Unit : in. (mm)



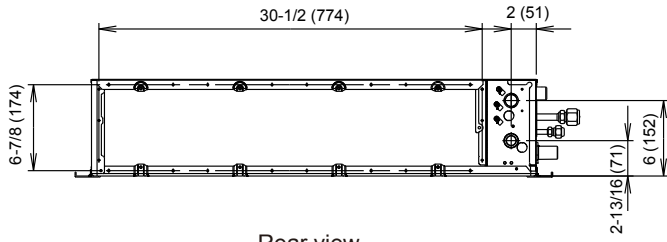
INDOOR UNITS

INDOOR UNITS

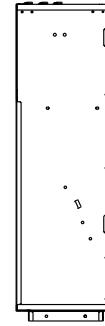
			ARU7, ARU9, ARU12
①	Refrigerant pipe flare connection	Liquid	ø 1/4 in. (ø 6.35 mm)
②		Gas	ø 3/8 in. (ø 9.52 mm)
③	Drain hose connection	Drain hose	I.D.: Ø 1 in.(Ø 25 mm), O.D.: Ø 1-1/4 in.(Ø 32 mm)

MODEL : ARU18RLF

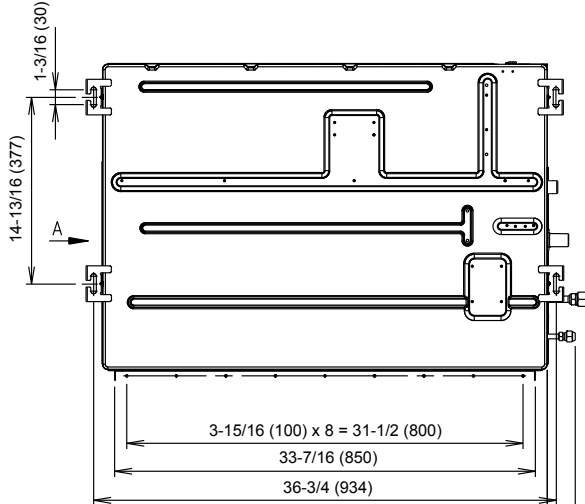
Unit : in. (mm)



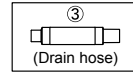
Rear view



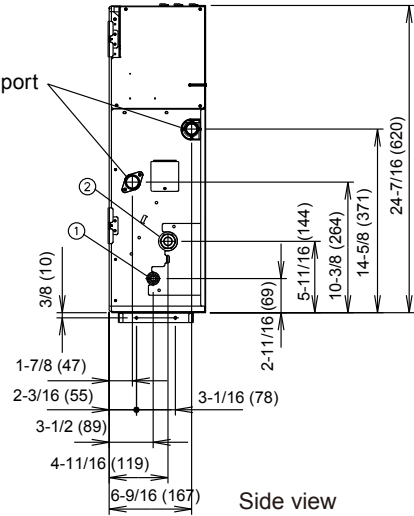
View A



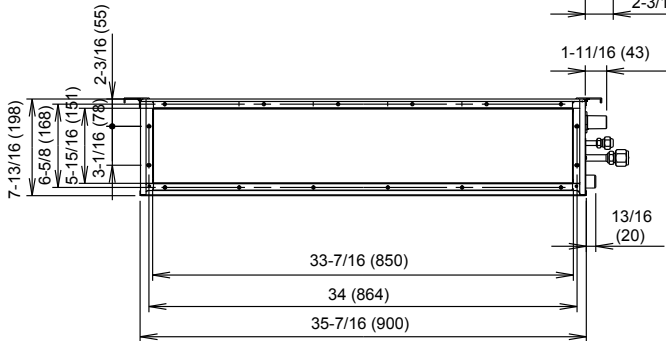
Top view



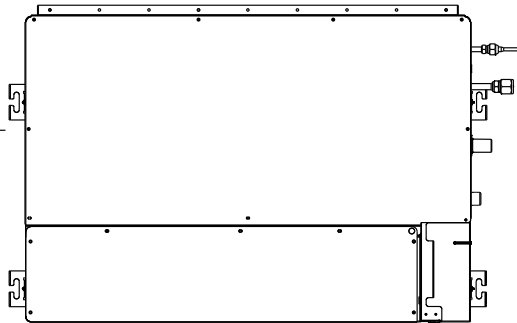
Drain port



Side view



Front view



Bottom view

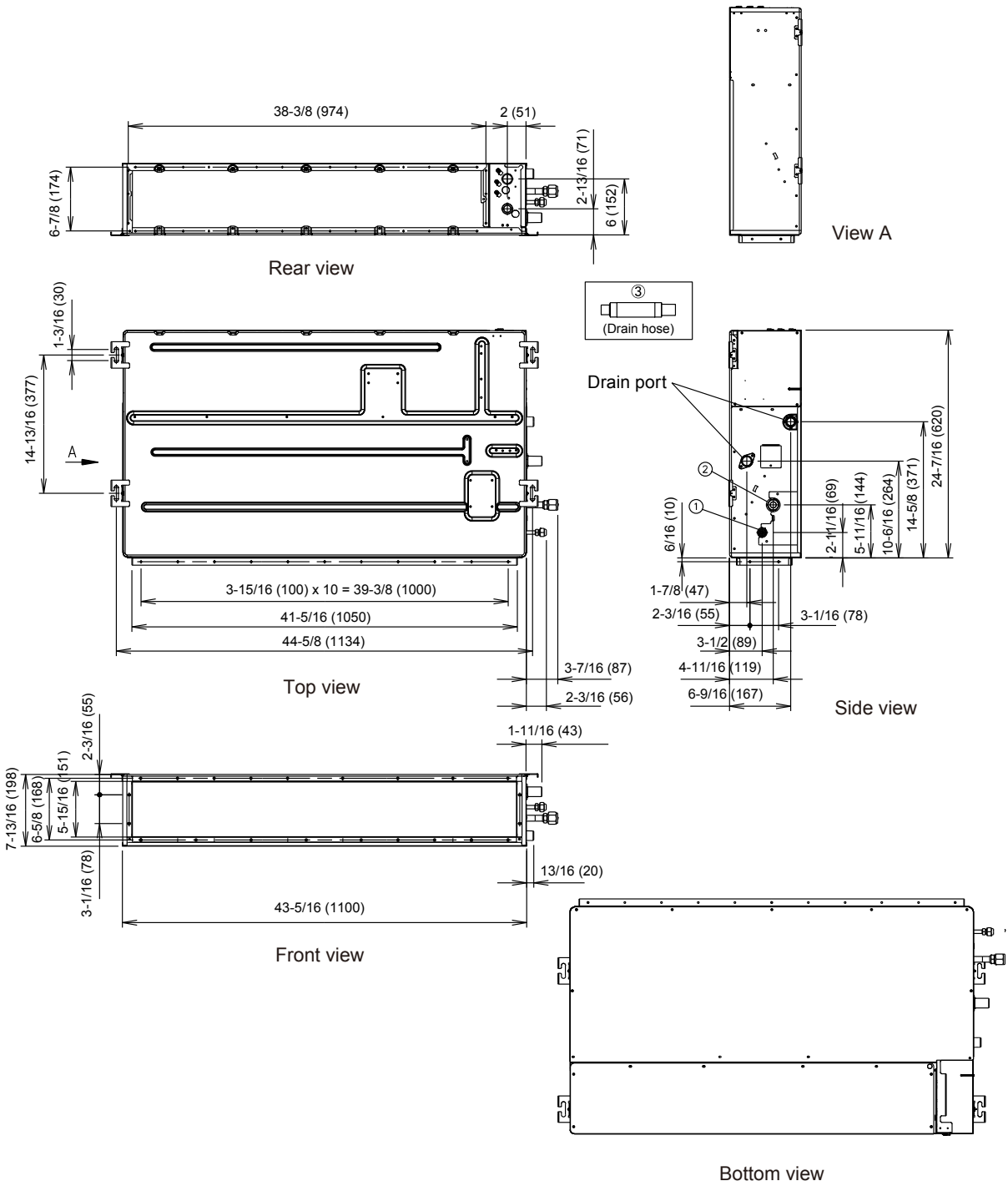
			ARU18
①	Refrigerant pipe flare connection	Liquid	ø 1/4 in. (ø 6.35 mm)
②		Gas	ø 1/2 in. (ø 12.70 mm)
③	Drain hose connection	Drain hose	I.D.: Ø 1 in.(Ø 25 mm), O.D.: Ø 1-1/4 in.(Ø 32 mm)

INDOOR UNITS

INDOOR UNITS

MODEL : ARU24RLF

Unit : in. (mm)



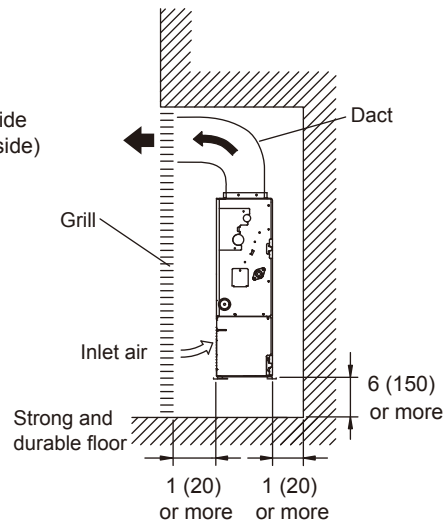
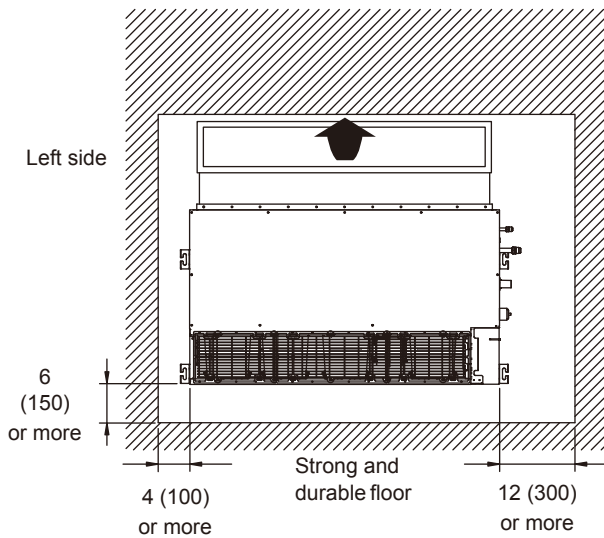
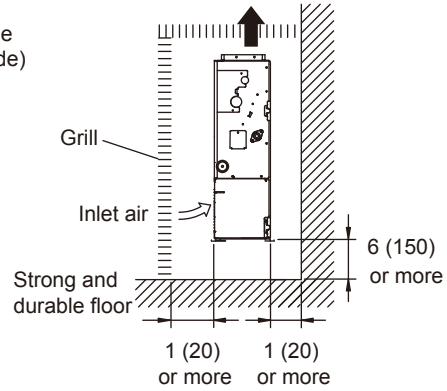
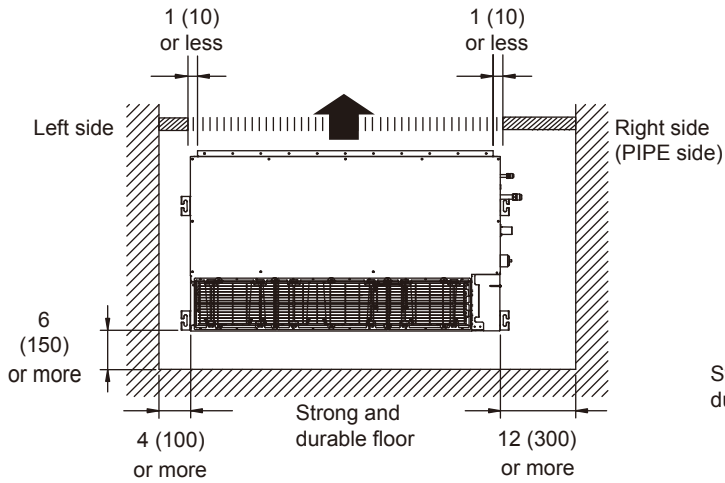
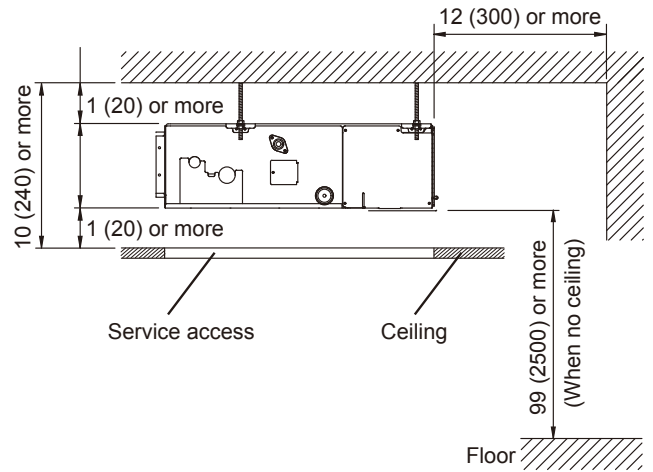
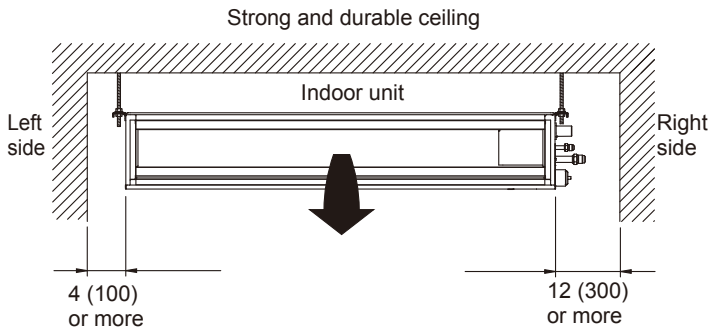
INDOOR UNITS

INDOOR UNITS

			ARU24
①	Refrigerant pipe flare connection	Liquid	ø 1/4 in. (ø 6.35 mm)
②		Gas	ø 5/8 in. (ø 15.88 mm)
③	Drain hose connection	Drain hose	I.D.: ø 1 in. (ø 25 mm), O.D.: ø 1-1/4 in. (ø 32 mm)

■ INSTALLATION PLACE

Unit : in. (mm)

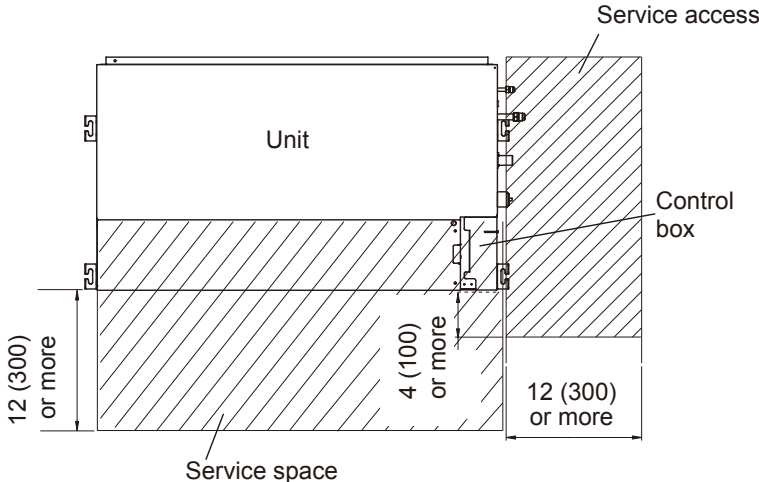


INDOOR UNITS

INDOOR UNITS

■ 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.



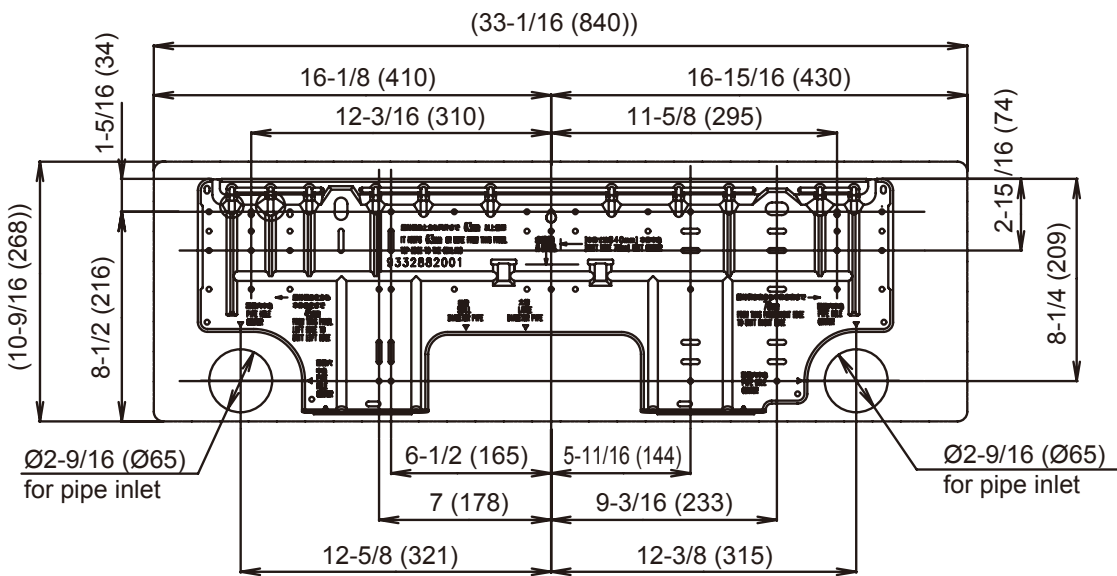
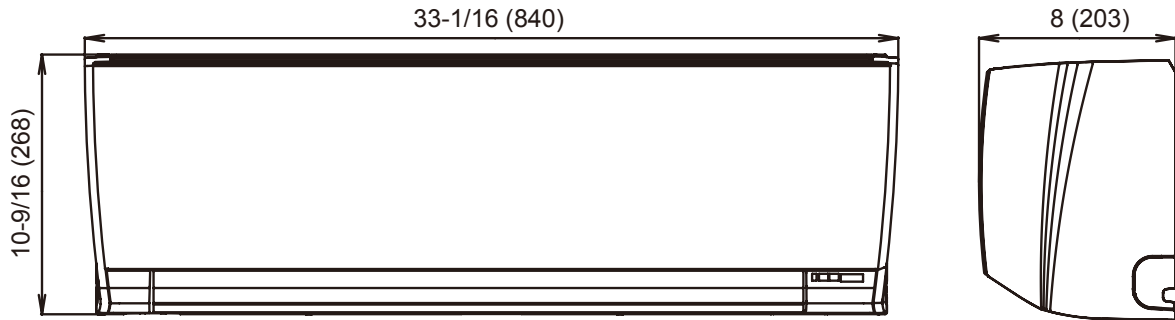
INDOOR
UNITS

INDOOR
UNITS

4-3. WALL MOUNTED TYPE

■ MODELS : ASU7RLF1, ASU9RLF1, ASU12RLF1

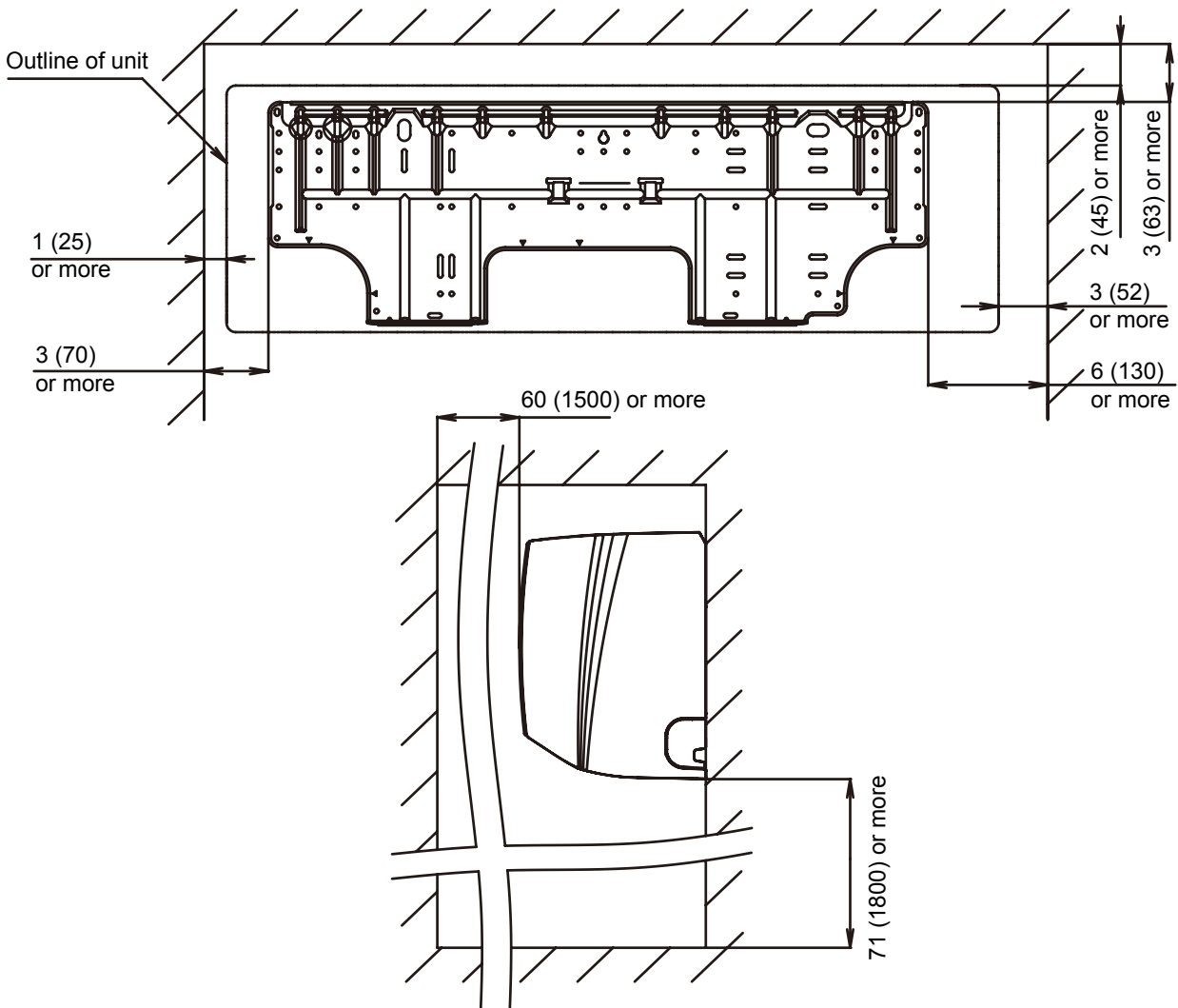
Unit : in. (mm)



			ASU7RLF1, ASU9RLF1, ASU12RLF1
①	Refrigerant pipe flare connection	Liquid	ø 1/4 in. (ø 6.35 mm)
②		Gas	ø 3/8 in. (ø 9.52 mm)
③	Drain hose connection	Drain hose	I.D. 9/16 in. (13.8 mm), O.D. 5/8 to 11/16 in. (15.8 to 16.7 mm) Drain hose : L=23-5/8 in. (600mm)

■ INSTALLATION PLACE

Unit : in. (mm)

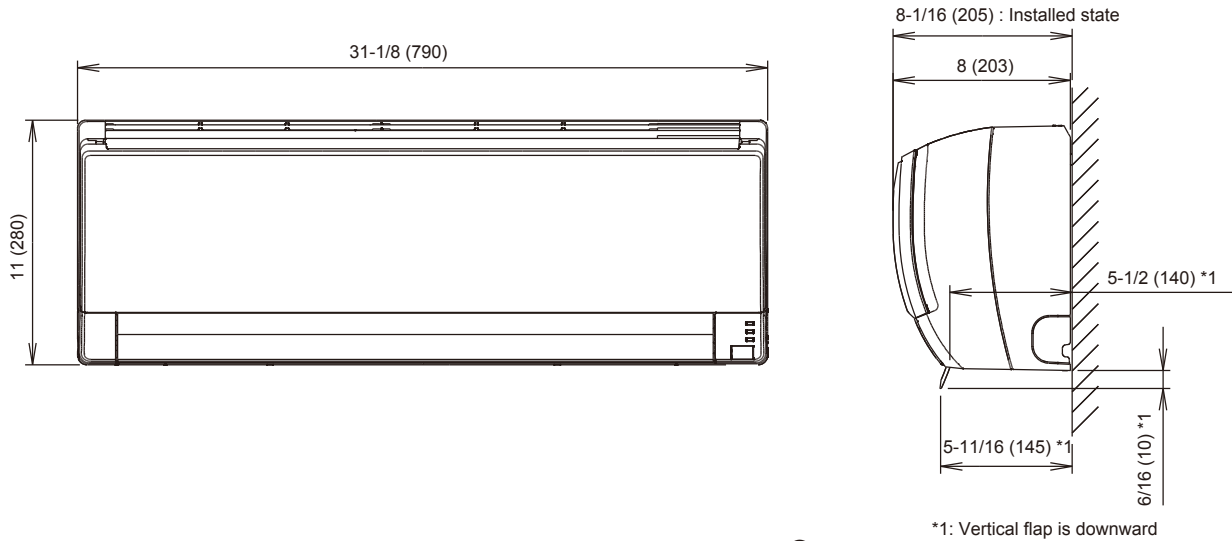


INDOOR
UNITS

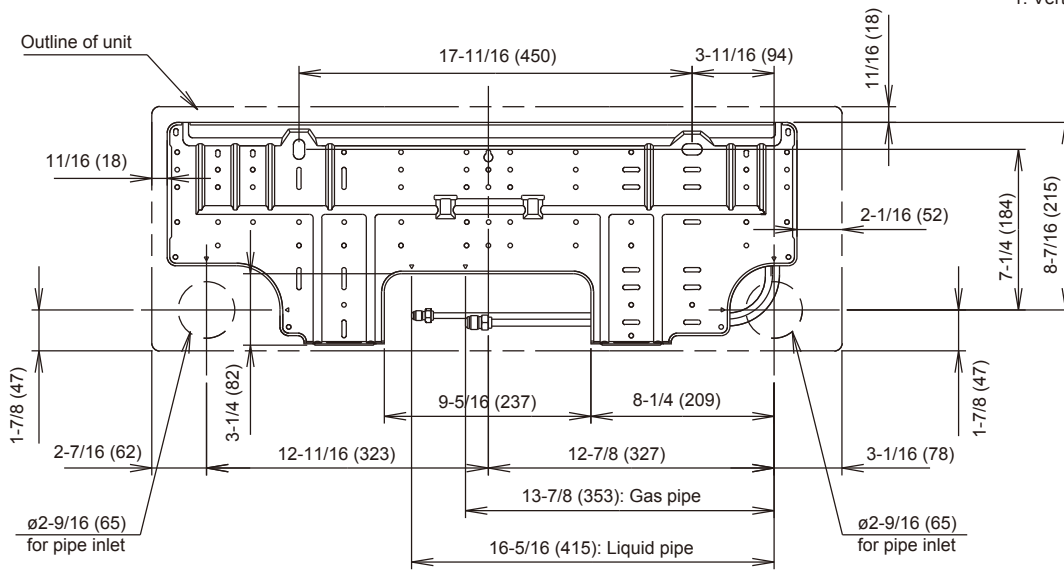
INDOOR
UNITS

MODELS : ASU7RLF, ASU9RLF, ASU12RLF

Unit : in. (mm)



*1: Vertical flap is downward



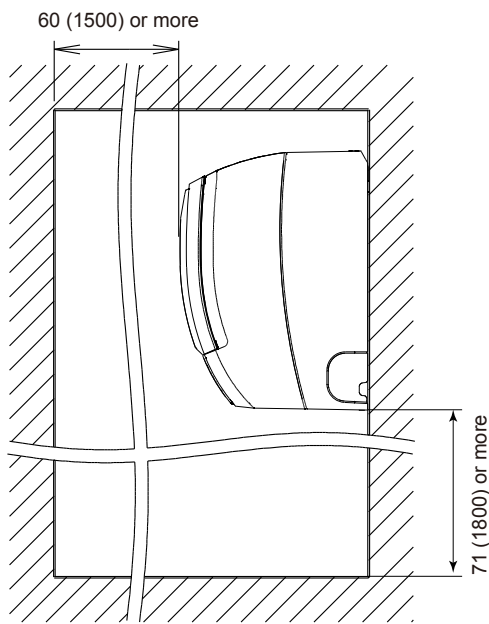
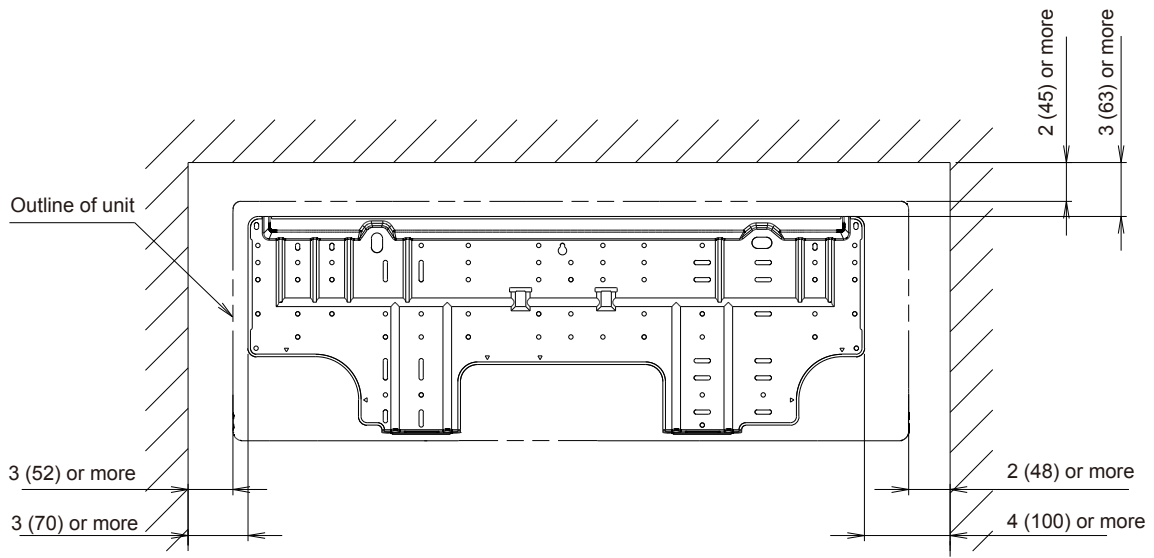
INDOOR UNITS

INDOOR UNITS

			ASU7RLF, ASU9RLF, ASU12RLF
①	Refrigerant pipe flare connection	Liquid	ø 1/4 in. (ø 6.35 mm)
②		Gas	ø 3/8 in. (ø 9.52 mm)
③	Drain hose connection	Drain hose	I.D. 9/16 in. (13.8 mm), O.D. 5/8 to 11/16 in. (15.8 to 16.7 mm) Drain hose : L=23-5/8 in. (600mm)

■ INSTALLATION PLACE

Unit : in. (mm)

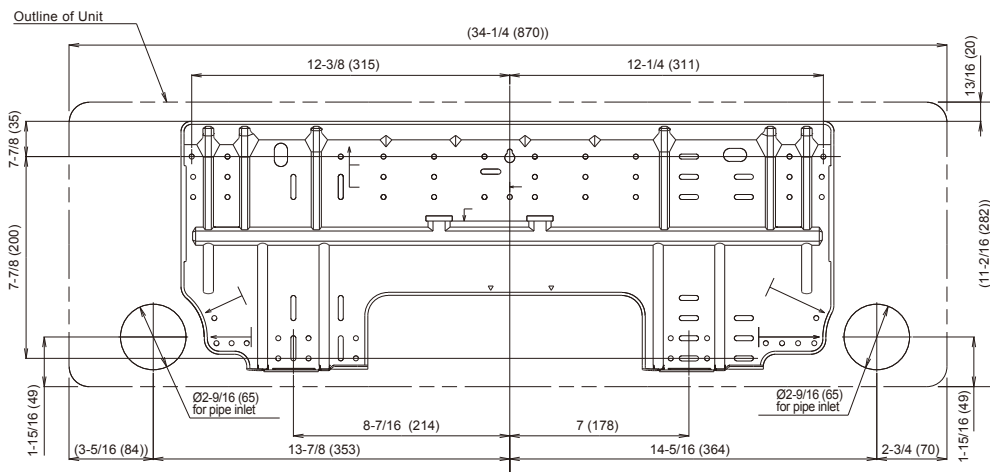
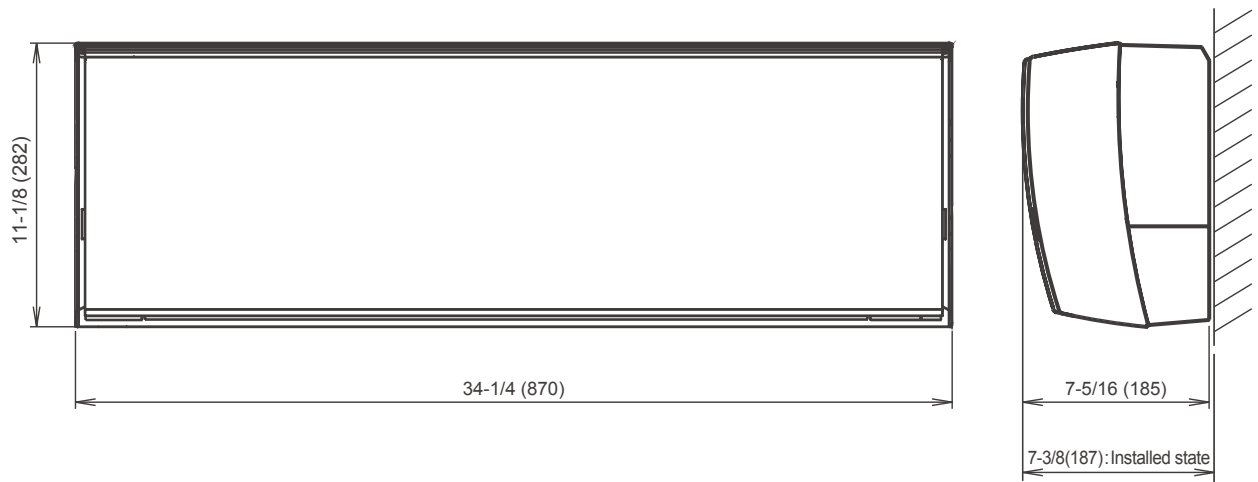


INDOOR
UNITS

INDOOR
UNITS

MODELS : ASU9RLS2, ASU12RLS2, ASU15RLS2

Unit : in. (mm)



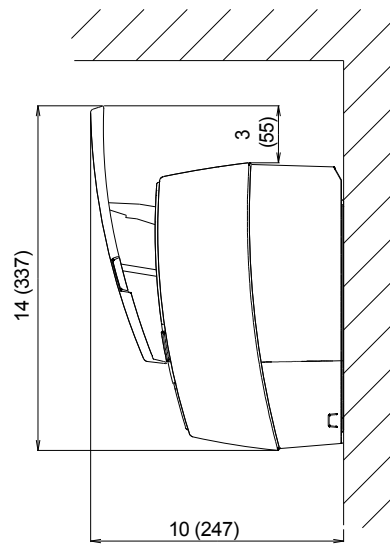
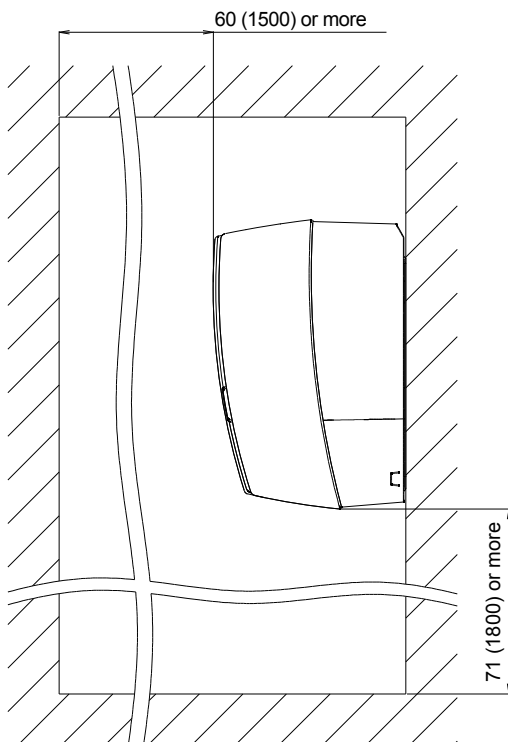
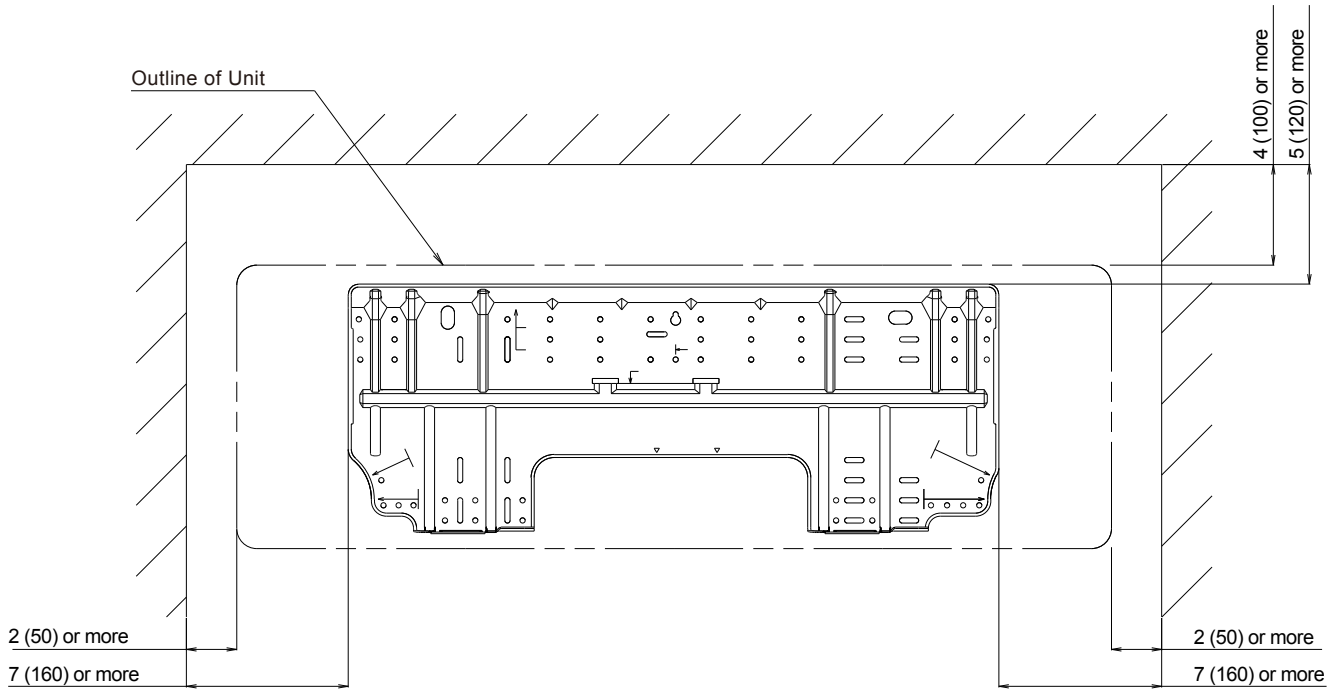
		ASU9RLS2, ASU12RLS2	ASU15RLS2
①	Refrigerant pipe flare connection	Liquid	ø 1/4 in. (ø 6.35 mm)
②		Gas	ø 3/8 in. (ø 9.52 mm) ø 1/2 in. (ø 12.70 mm)
③	Drain hose connection	Drain hose	I.D. 9/16 in. (13.8 mm), O.D. 5/8 to 11/16 in. (15.8 to 16.7 mm) Drain hose : L=23-5/8 in. (600mm)

INDOOR UNITS

INDOOR UNITS

■ INSTALLATION PLACE

Unit : in. (mm)

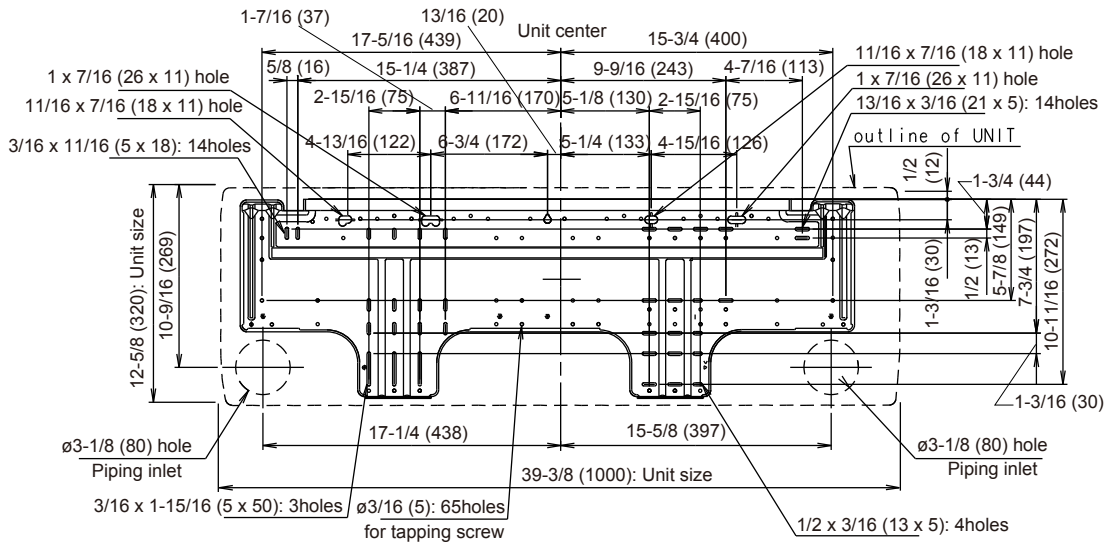
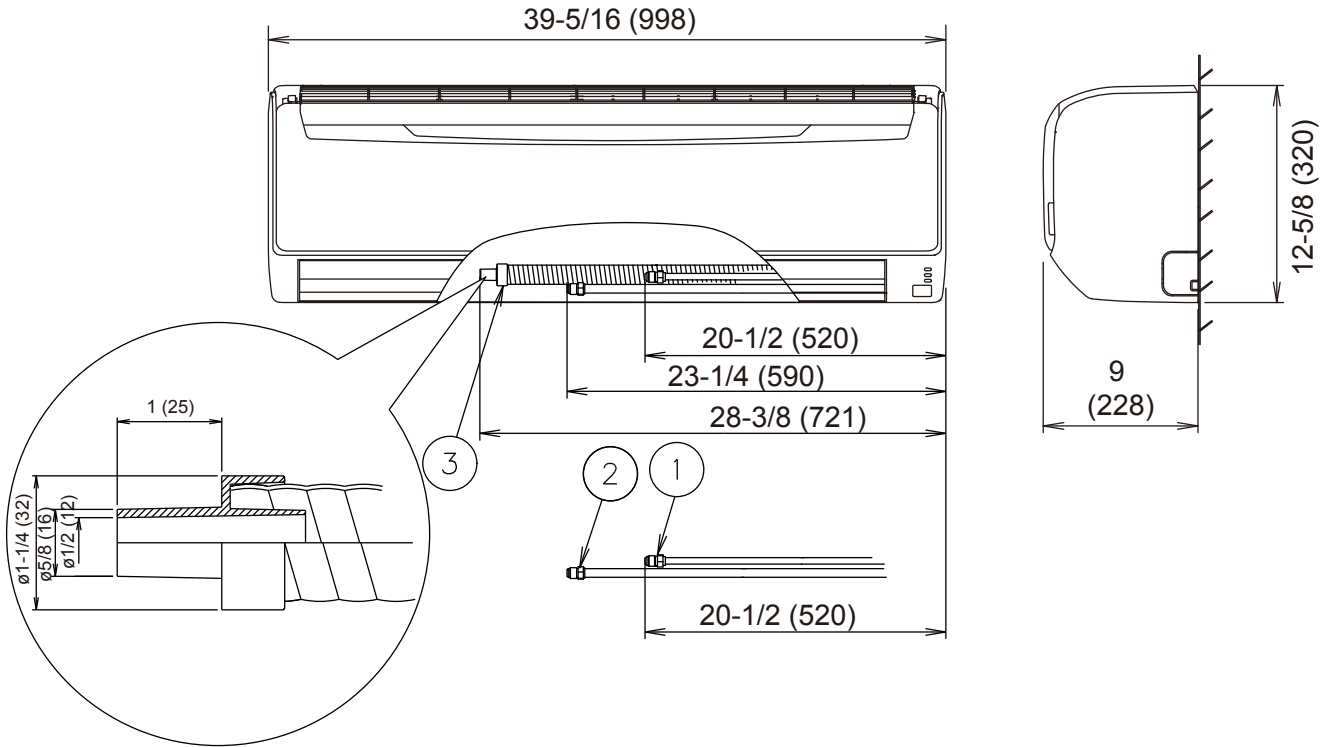


INDOOR
UNITS

INDOOR
UNITS

MODELS : ASU18RLF, ASU24RLF

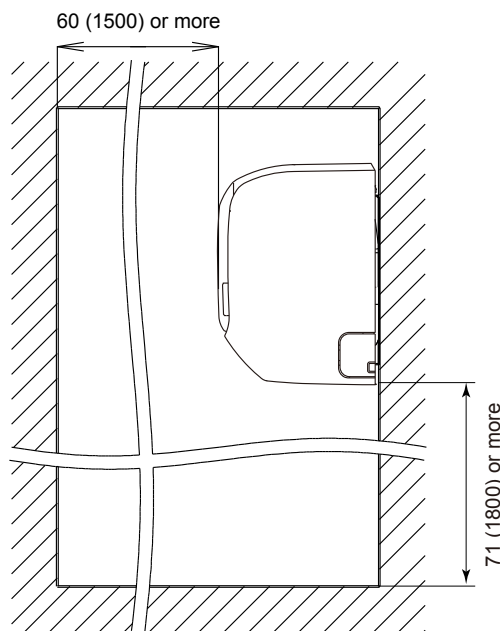
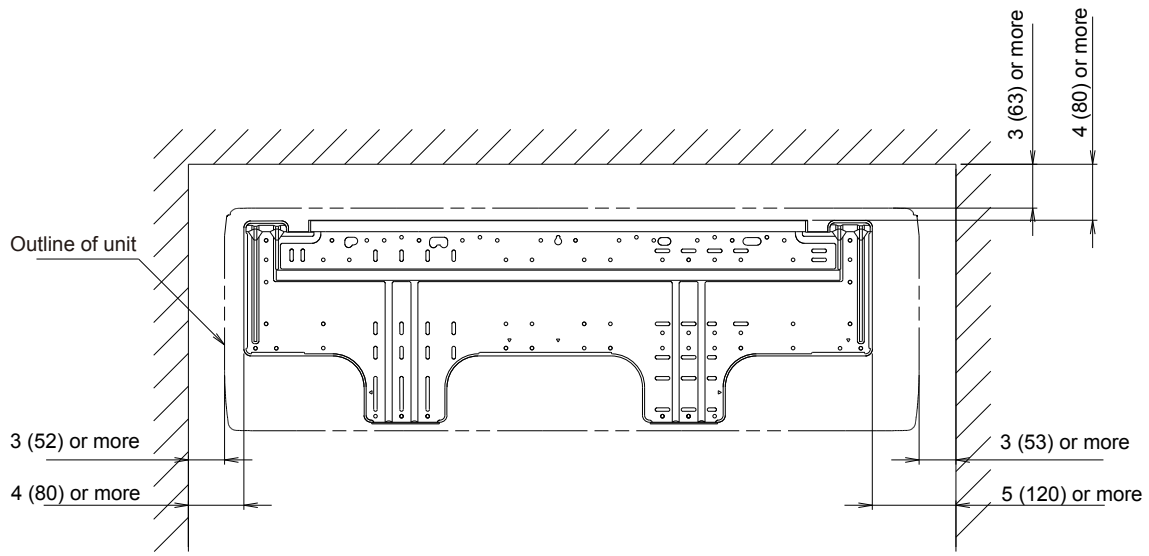
Unit : in. (mm)



		ASU18RLF		ASU24RLF	
①	Refrigerant pipe flare connection	Liquid	$\phi 1/4$ in. ($\phi 6.35$ mm)	$\phi 1/4$ in. ($\phi 6.35$ mm)	
②		Gas	$\phi 1/2$ in. ($\phi 12.70$ mm)	$\phi 5/8$ in. ($\phi 15.88$ mm)	
③	Drain hose connection	Drain hose	I.D. $1/2$ in. (12 mm), O.D. $5/8$ in. (16 mm) Drain hose : L= $26-3/8$ in. (670mm)		

■ INSTALLATION PLACE

Unit : in. (mm)



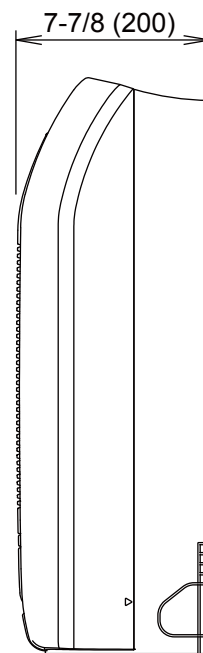
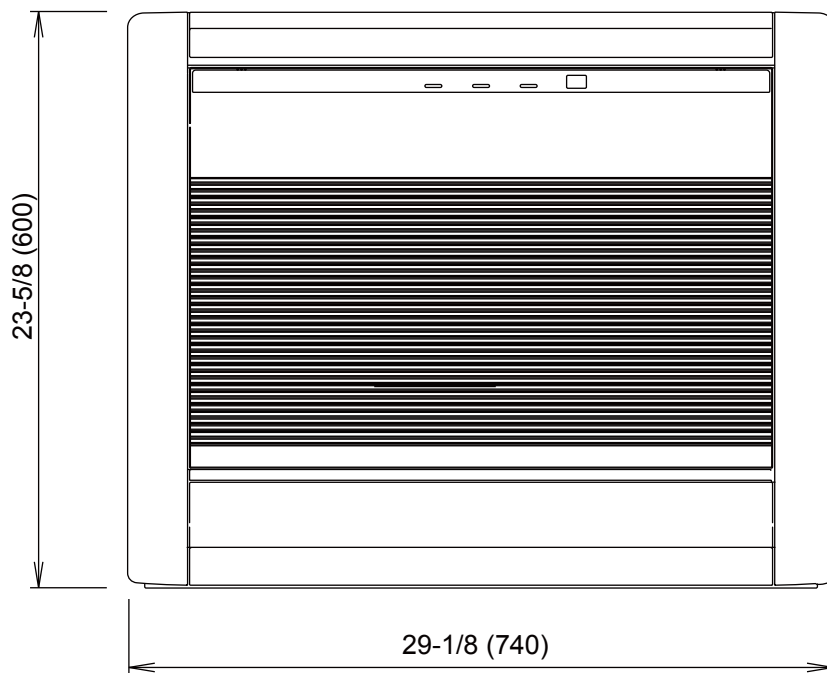
INDOOR
UNITS

INDOOR
UNITS

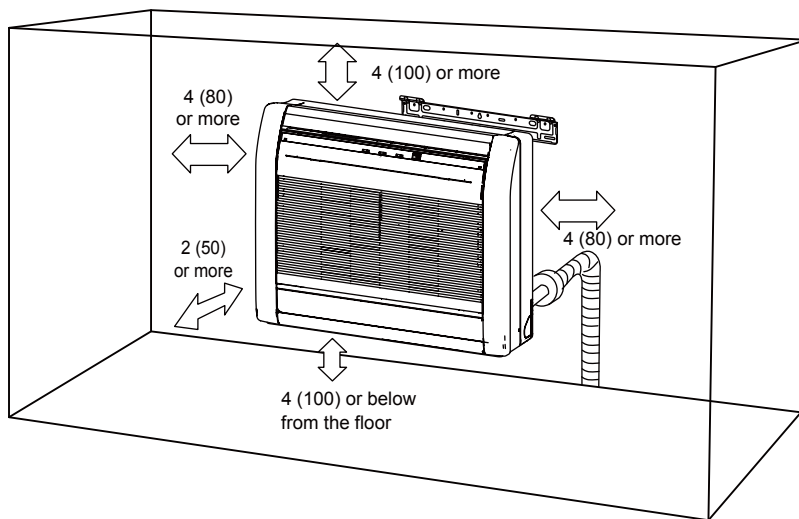
4-4. FLOOR TYPE

■ MODELS : AGU9RLF, AGU12RLF, AGU15RLF

Unit : in. (mm)



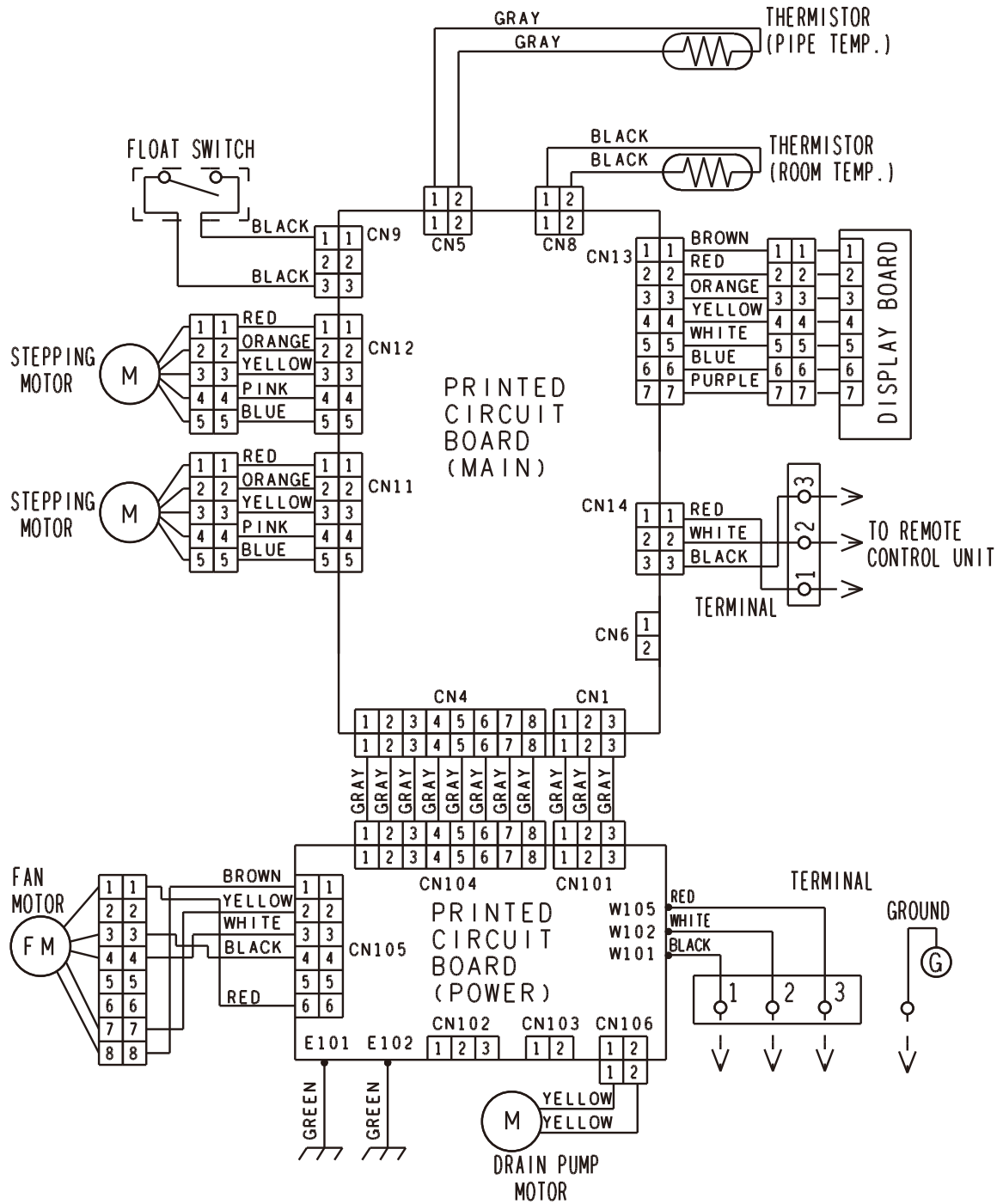
■ INSTALLATION PLACE



5. WIRING DIAGRAMS

5-1. COMPACT CASSETTE TYPE

■ MODELS : AUU7RLF, AUU9RLF, AUU12RLF, AUU18RLF

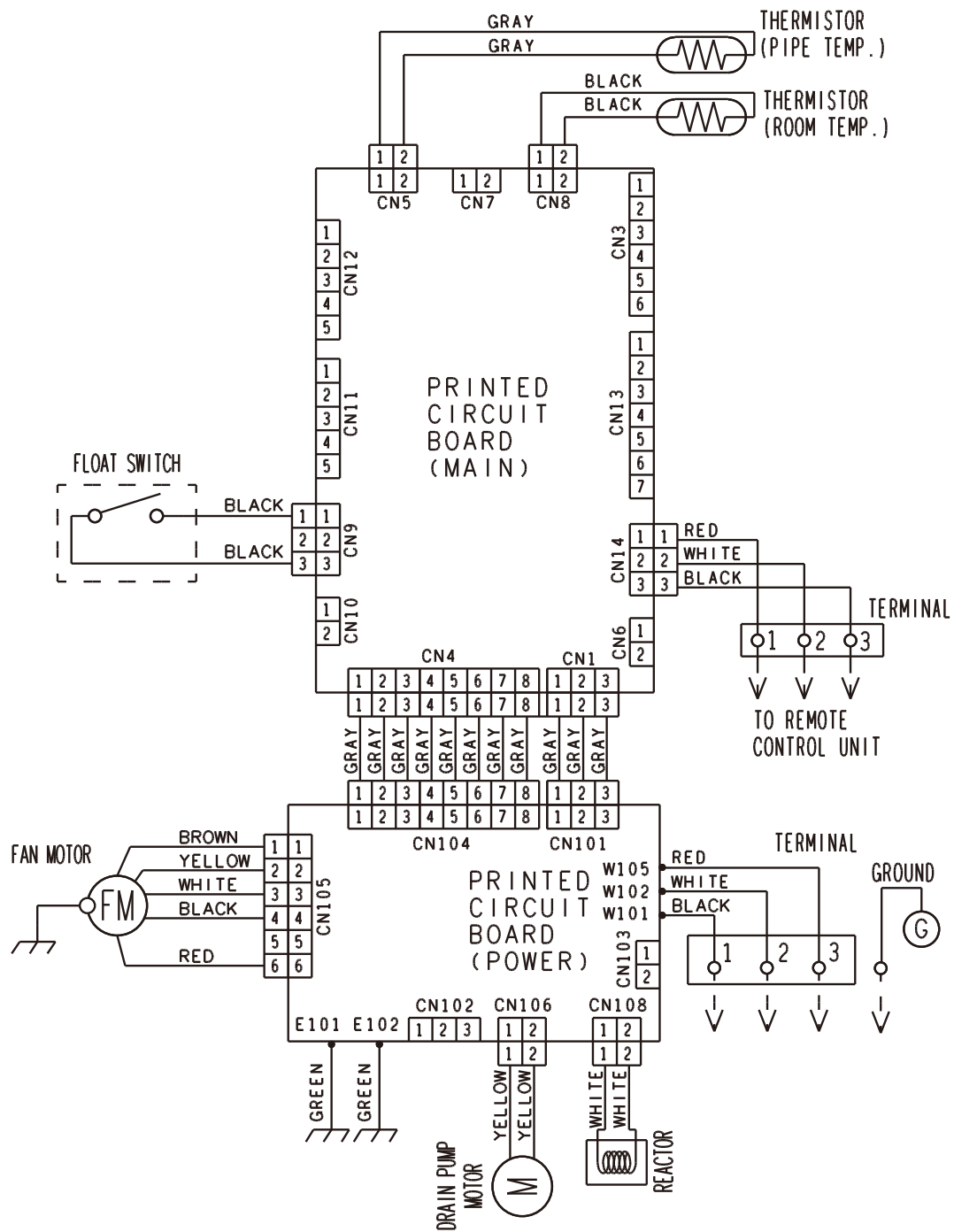


INDOOR UNITS

INDOOR UNITS

5-2. SLIM DUCT TYPE

■ MODELS : ARU7RLF, ARU9RLF, ARU12RLF, ARU18RLF, ARU24RLF

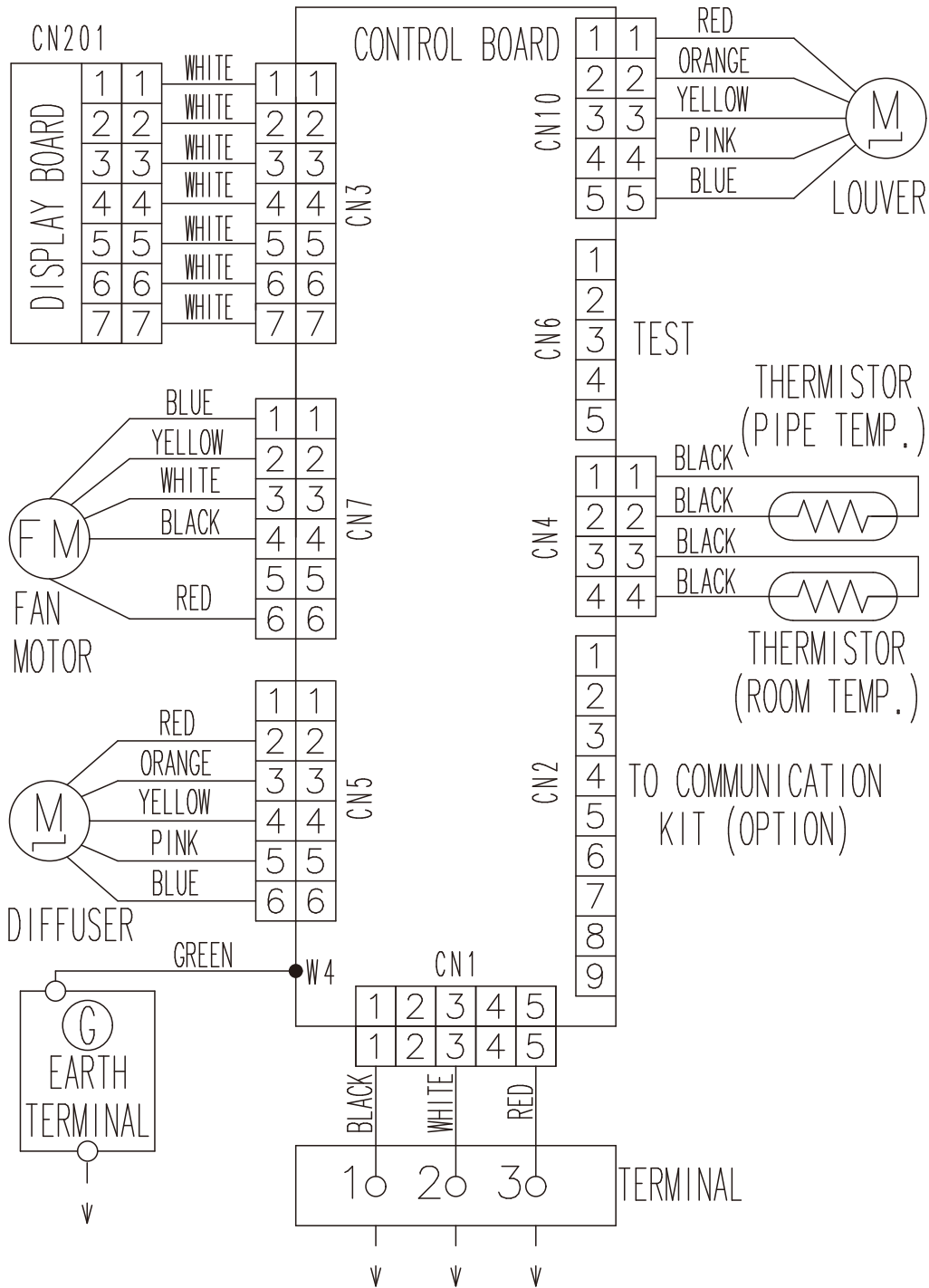


INDOOR UNITS

INDOOR UNITS

5-3. WALL MOUNTED TYPE

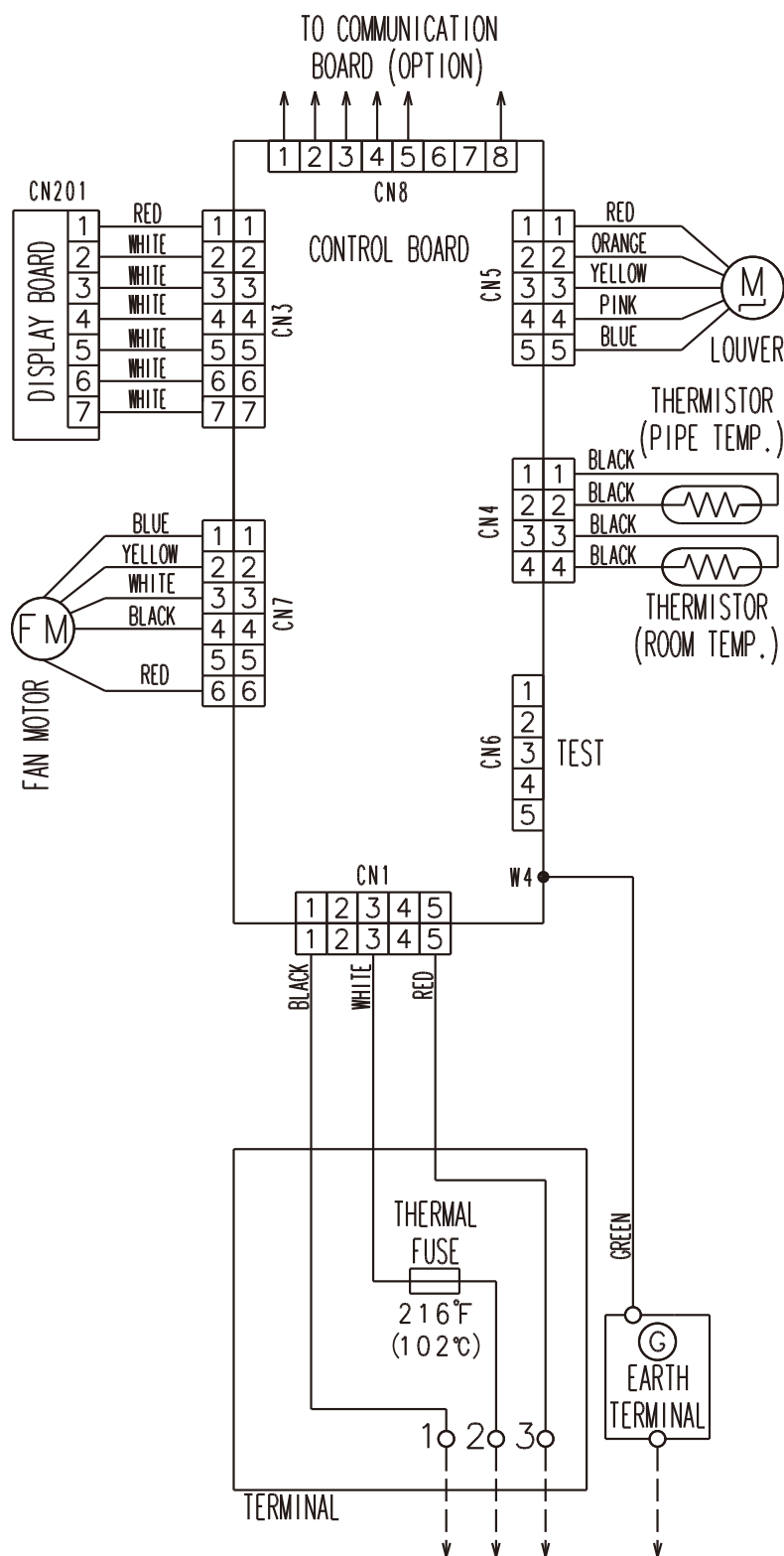
■ MODELS : ASU7RLF1, ASU9RLF1, ASU12RLF1



INDOOR UNITS

INDOOR UNITS

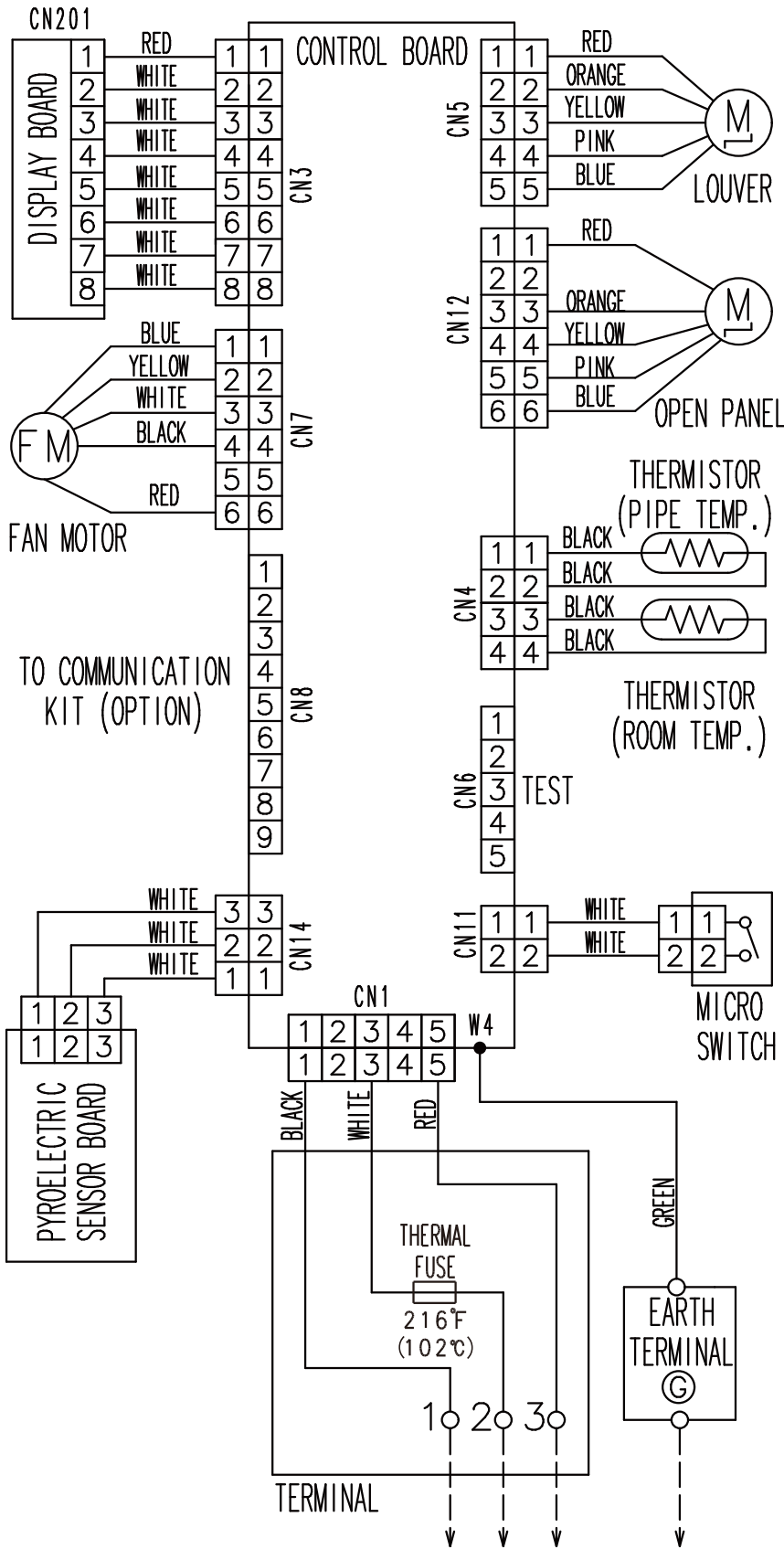
■ MODELS : ASU7RLF, ASU9RLF, ASU12RLF



INDOOR UNITS

INDOOR UNITS

■ MODELS : ASU9RLS2, ASU12RLS2, ASU15RLS2



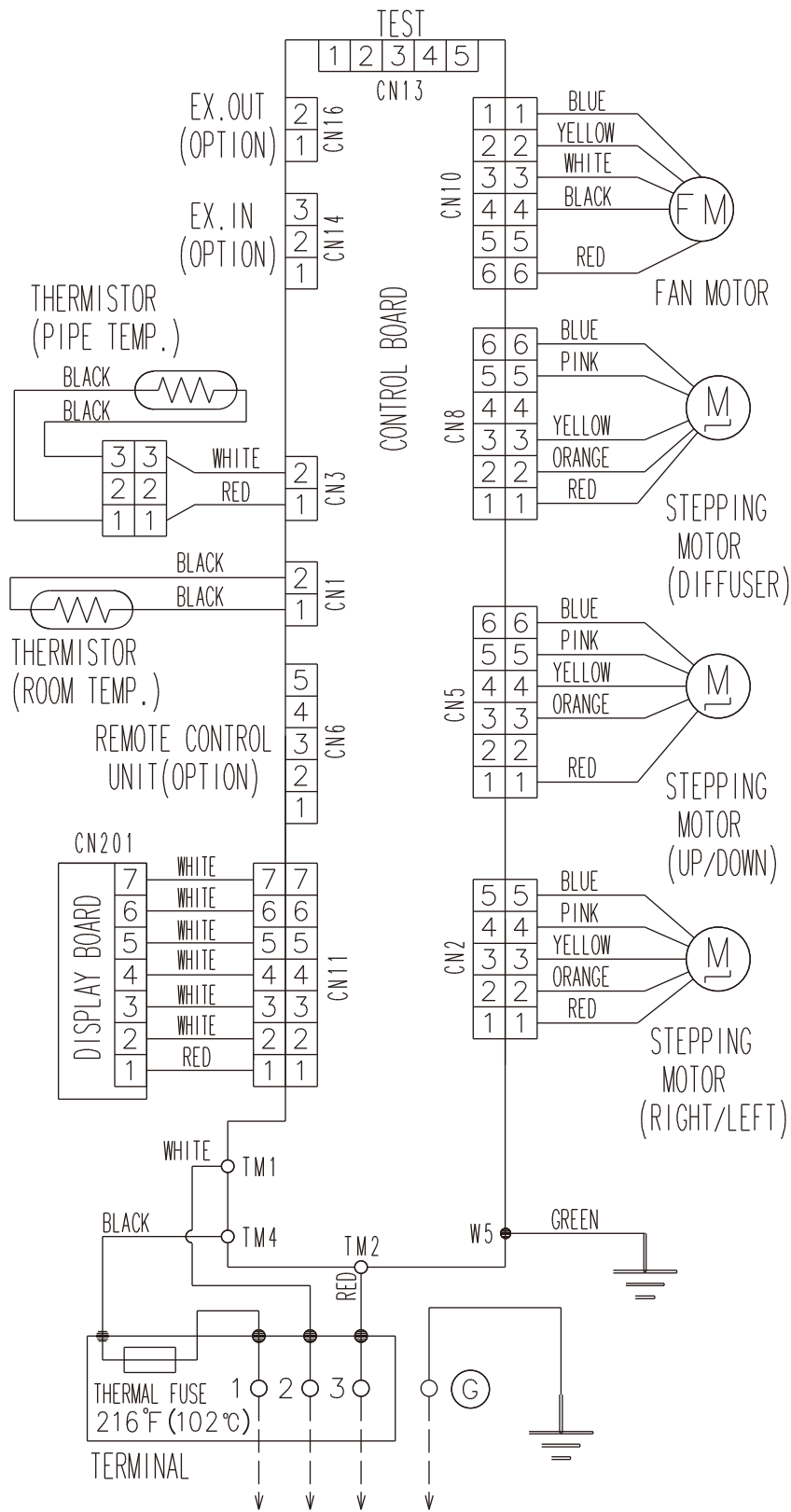
INDOOR
UNITS

INDOOR
UNITS

MODELS : ASU18RLF, ASU24RLF

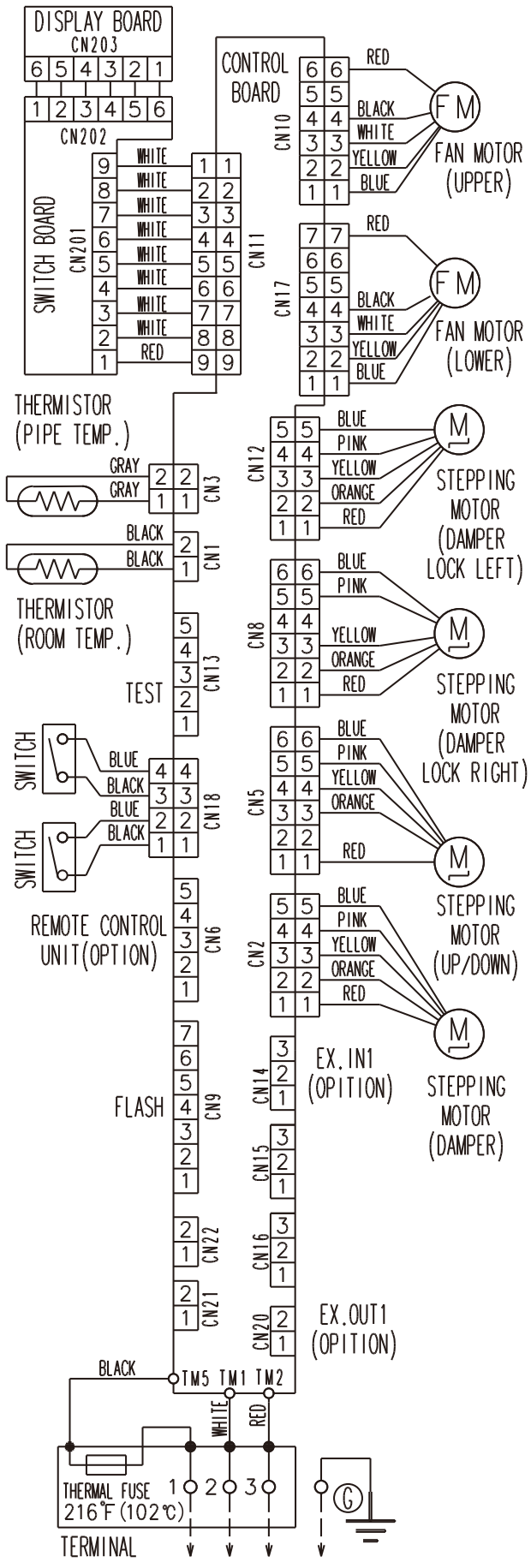
INDOOR UNITS

INDOOR UNITS



5-4. FLOOR TYPE

■ MODELS : AGU9RLF, AGU12RLF, AGU15RLF



INDOOR UNITS

INDOOR UNITS

6. AIR VELOCITY AND TEMPERATURE DISTRIBUTIONS

6-1. COMPACT CASSETTE TYPE

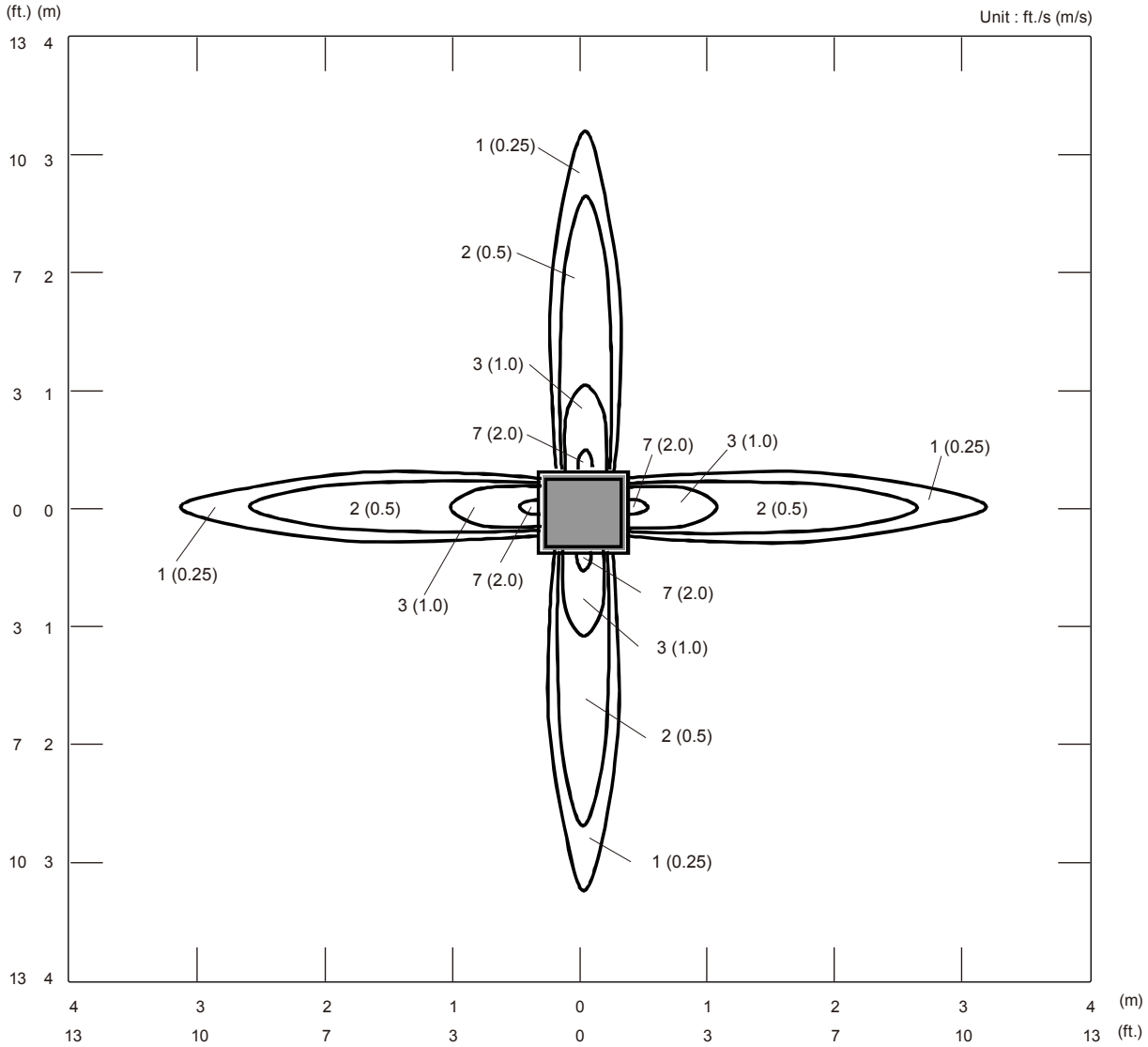
Conditions	
Fan speed	: High
Operation mode	: FAN

MODEL : AUU7RLF, AUU9RLF

● Air velocity distribution

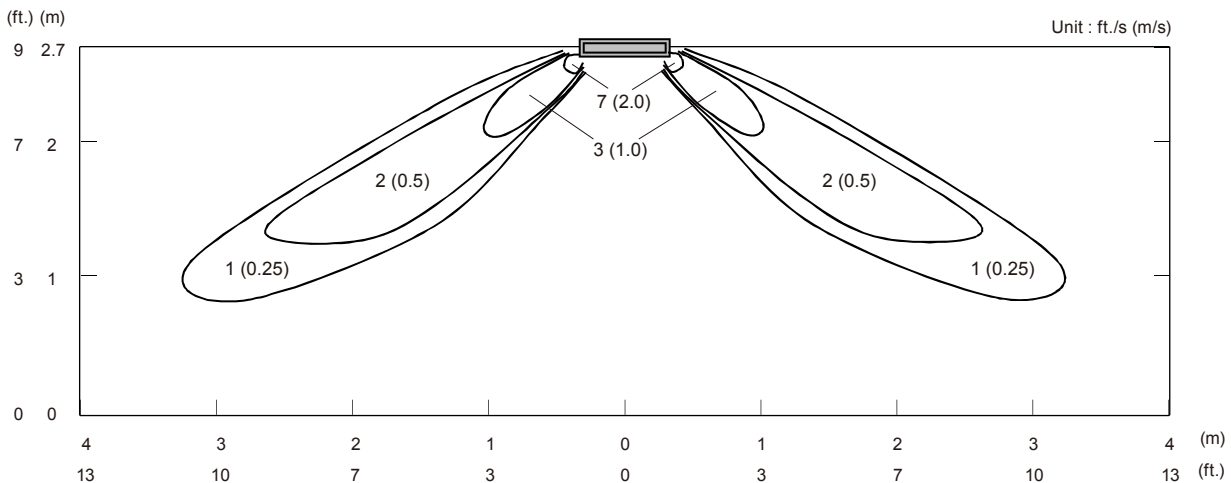
Top view

Vertical airflow direction louver : Up



Side view

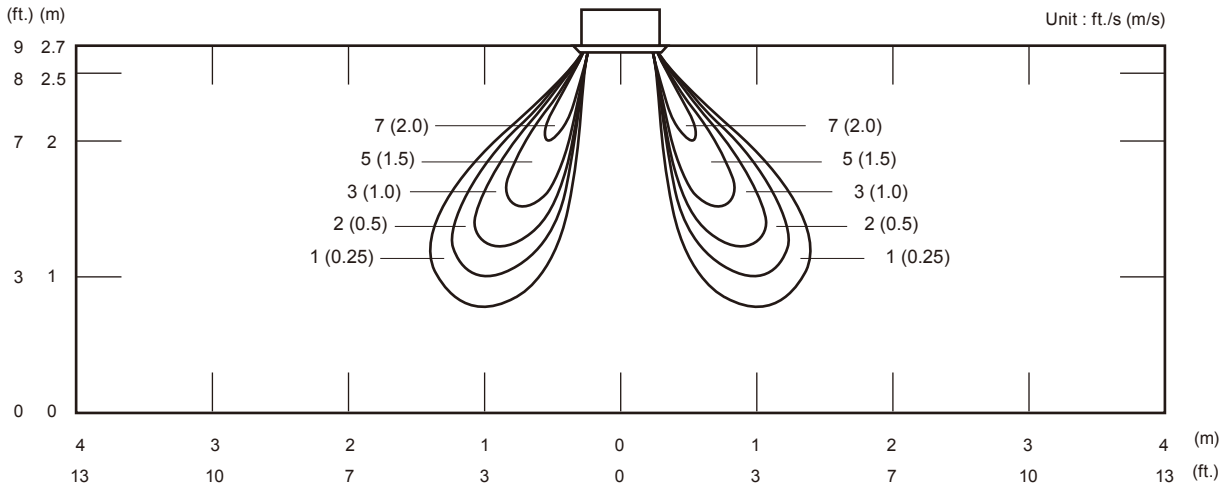
Vertical airflow direction louver : Up



Note: Reference data
 Conditions
 Fan speed : High
 Operation mode : Heating
 Vertical airflow direction louver: Downward (4Way)

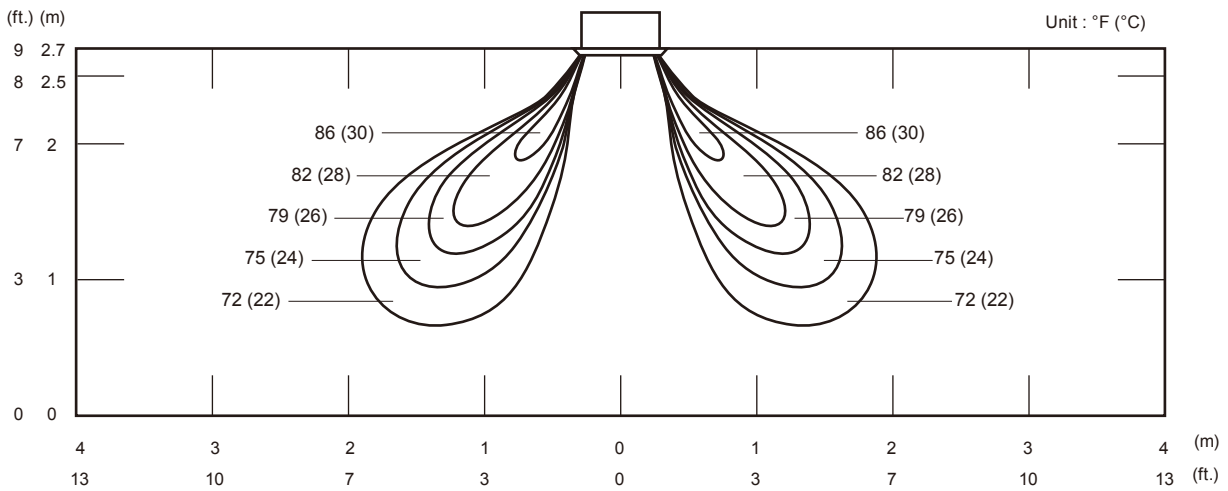
● Air velocity distribution

Side view
 Vertical airflow direction louver : Down



● Air temperature distribution

Side view
 Vertical airflow direction louver : Down



INDOOR
UNITS

INDOOR
UNITS

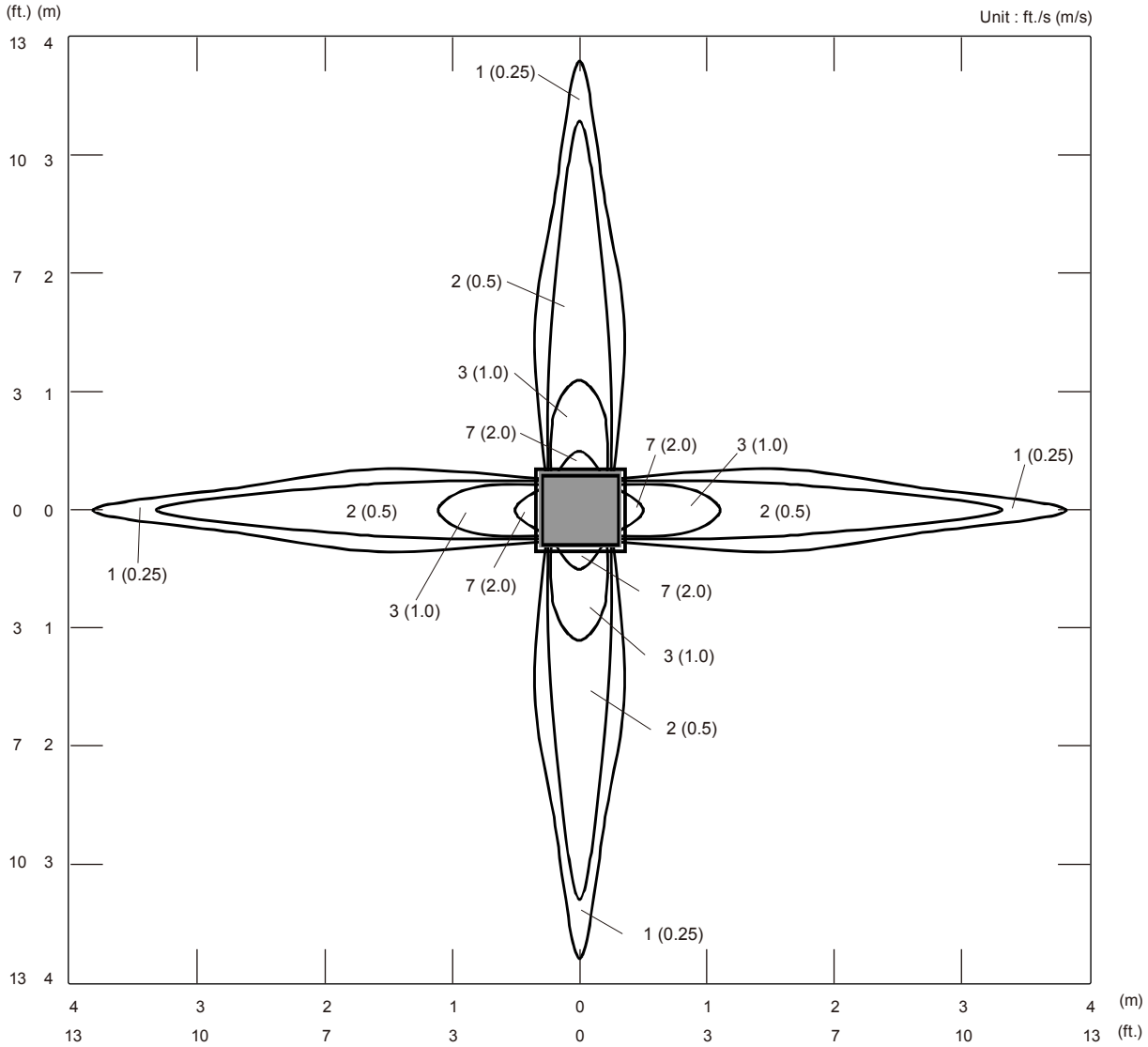
Conditions	
Fan speed	: High
Operation mode	: FAN

MODEL : AUU12RLF

Air velocity distribution

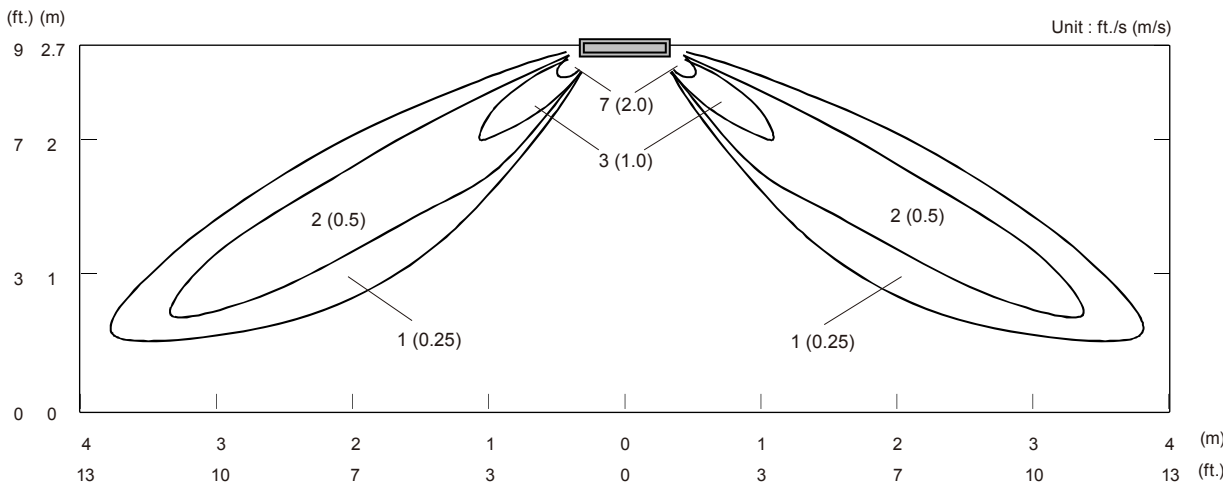
Top view

Vertical airflow direction louver : Up



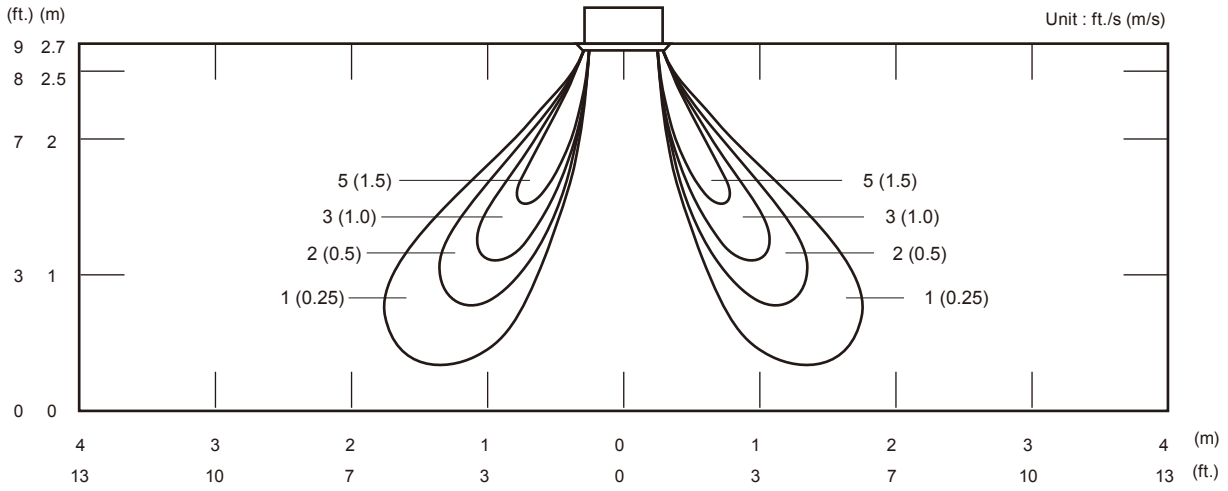
Side view

Vertical airflow direction louver : Up

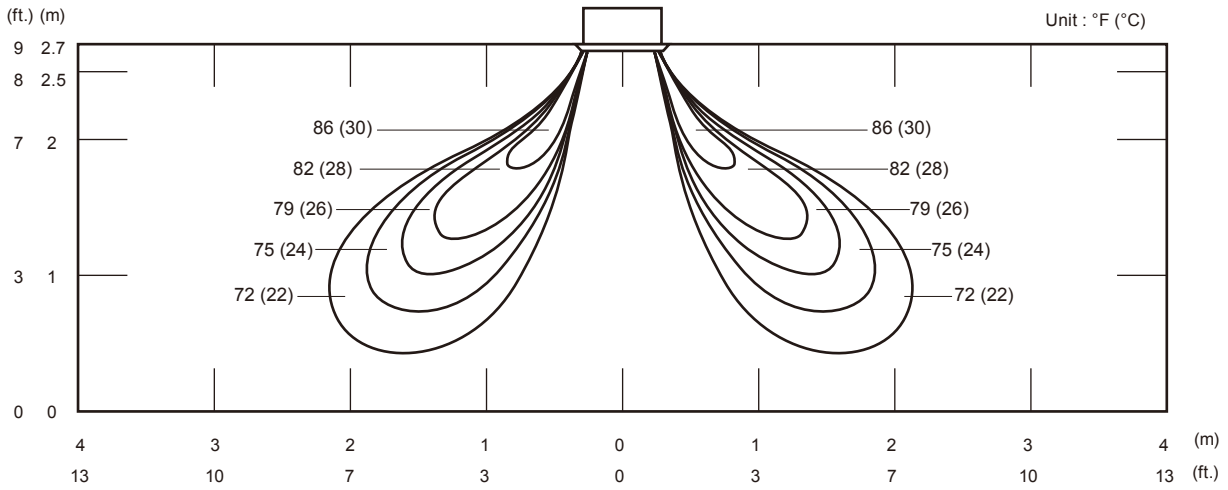


Note: Reference data
 Conditions
 Fan speed : High
 Operation mode : Heating
 Vertical airflow direction louver:
 Downward (4Way)

● Air velocity distribution



● Air temperature distribution



INDOOR UNITS

INDOOR UNITS

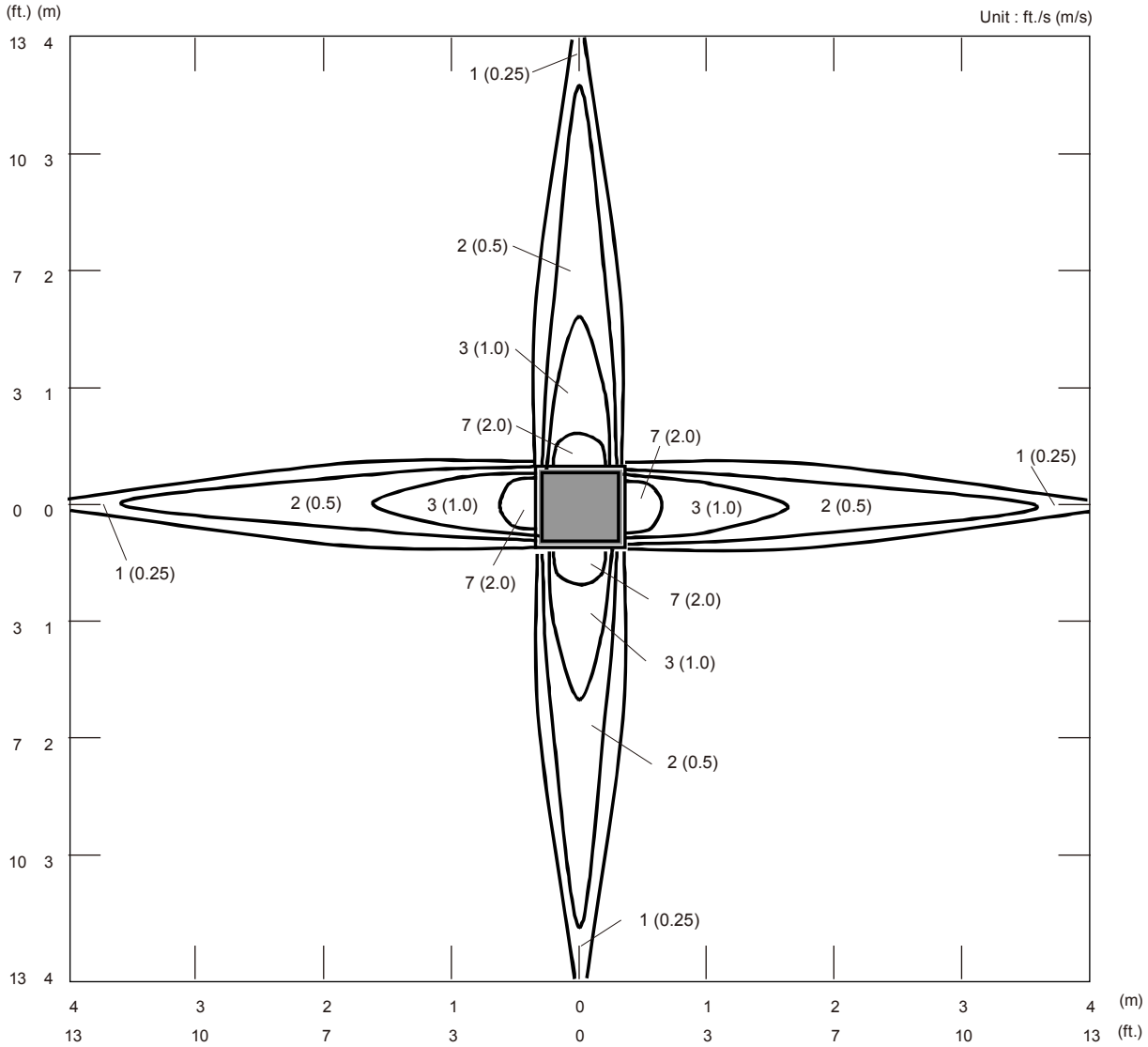
Conditions	
Fan speed	: High
Operation mode	: FAN

MODEL : AUU18RLF

Air velocity distribution

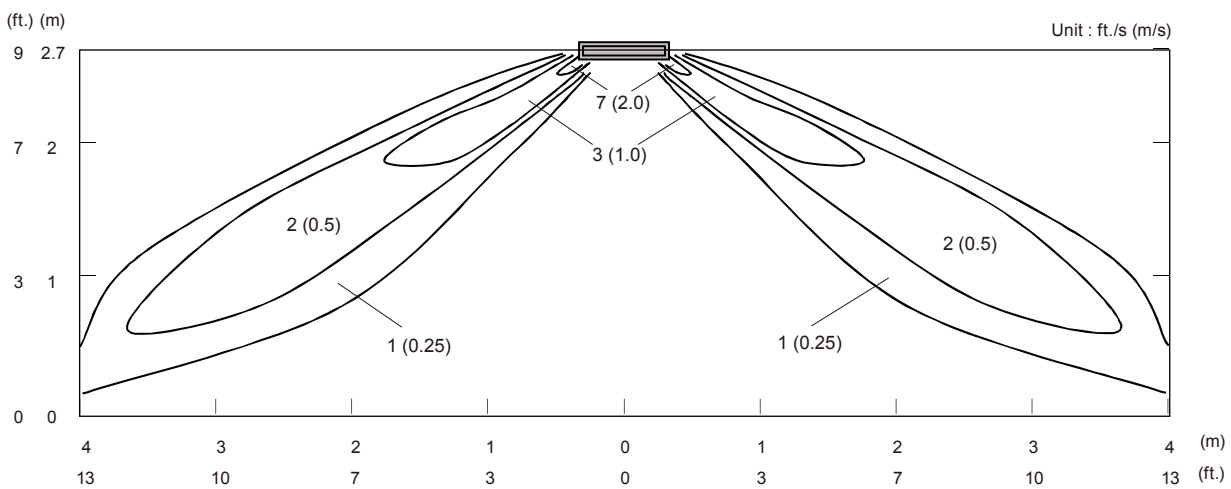
Top view

Vertical airflow direction louver : Up



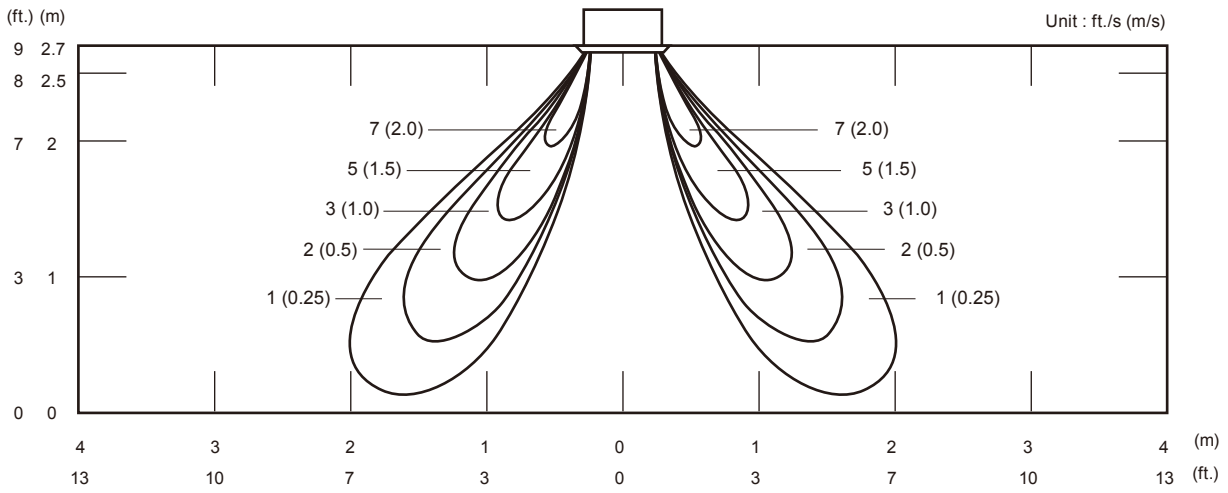
Side view

Vertical airflow direction louver : Up

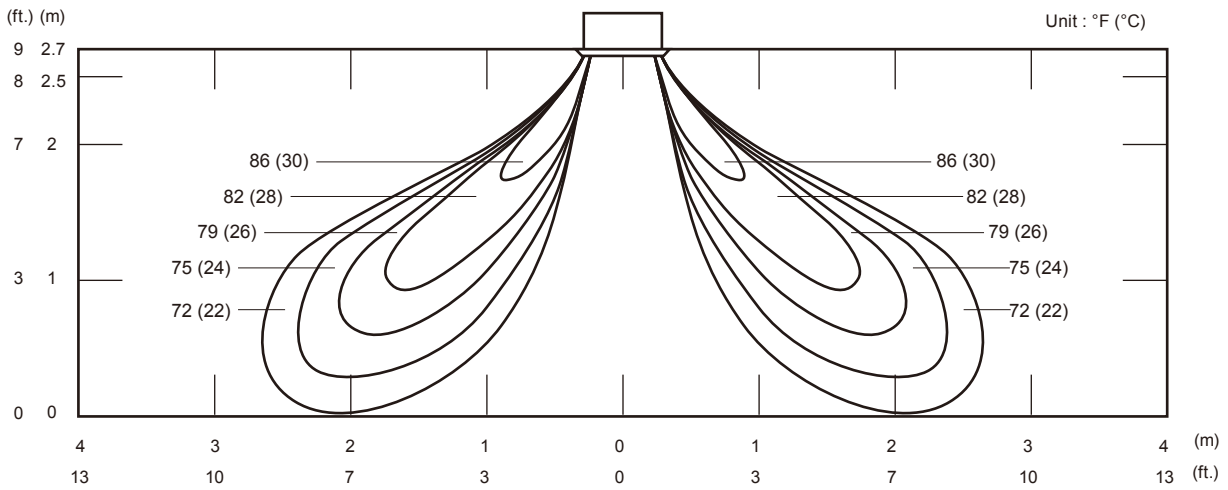


Note: Reference data
 Conditions
 Fan speed : High
 Operation mode : Heating
 Vertical airflow direction louver:
 Downward (4Way)

● Air velocity distribution



● Air temperature distribution



INDOOR
UNITS

INDOOR
UNITS

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

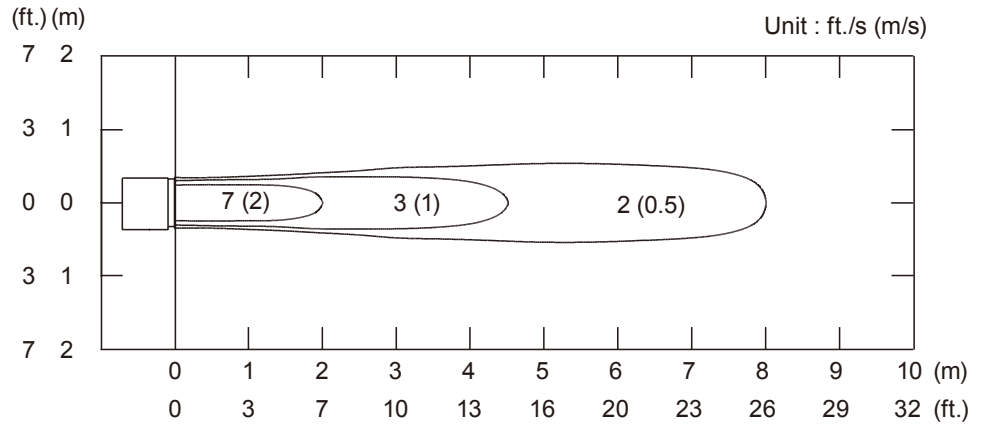
MODEL : ARU7RLF

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

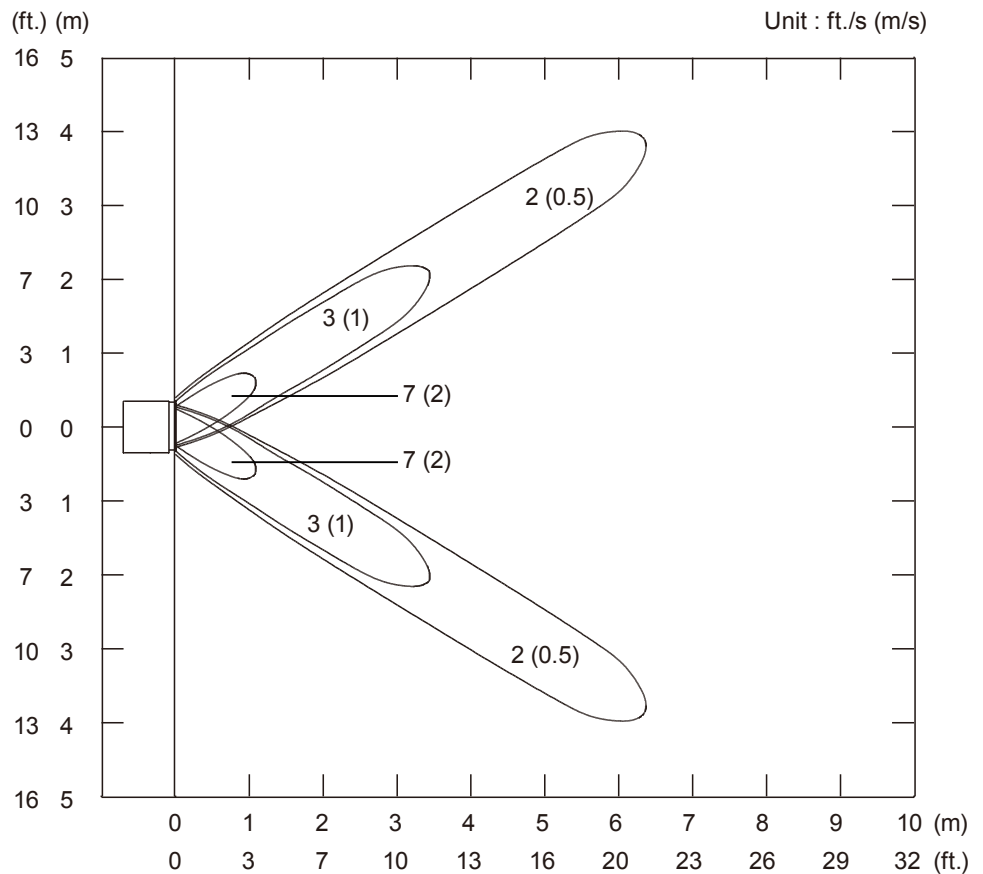
Conditions	
Fan speed	: High
Operation mode	: Fan
Voltage	: 230V

● Air velocity distribution

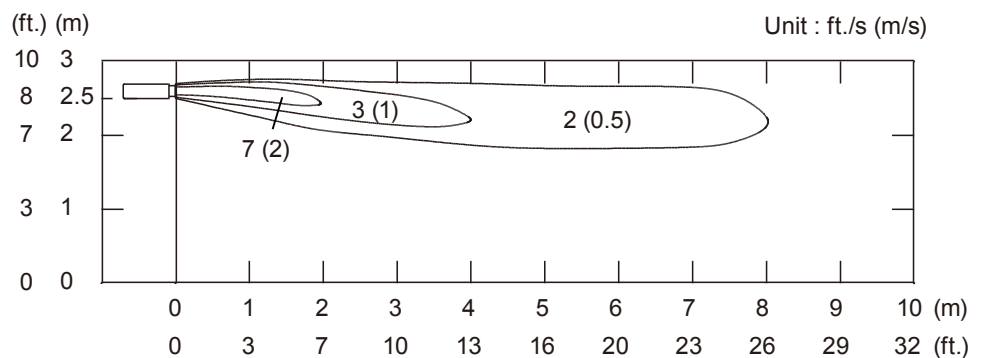
Top view
Vertical airflow
direction louver : Up
Horizontal airflow
direction louver : Center



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

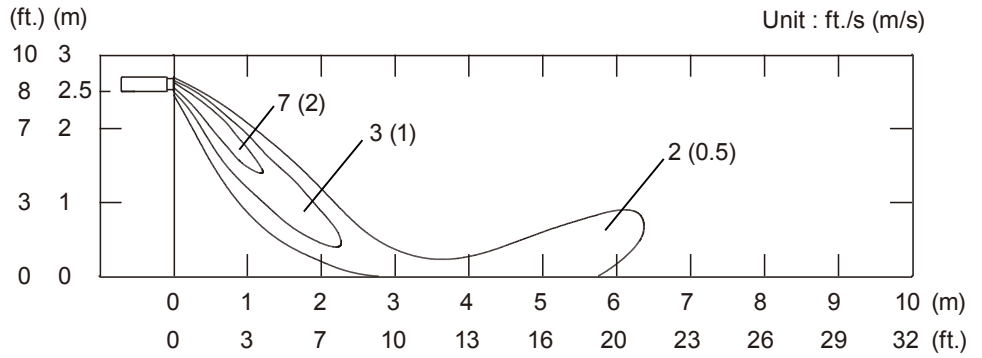


Note: This data is measured installing the Auto louver grille kit(option).

Reference Data	
Conditions	
Fan speed	: High
Operation mode	: Heating
Voltage	: 230V

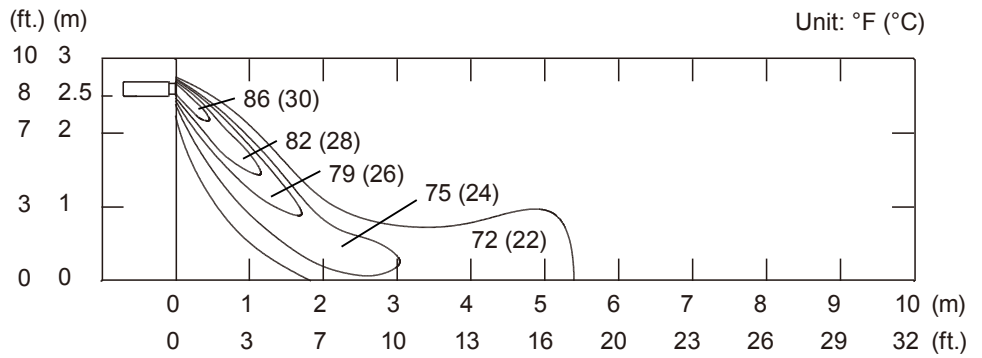
● Air velocity distribution

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

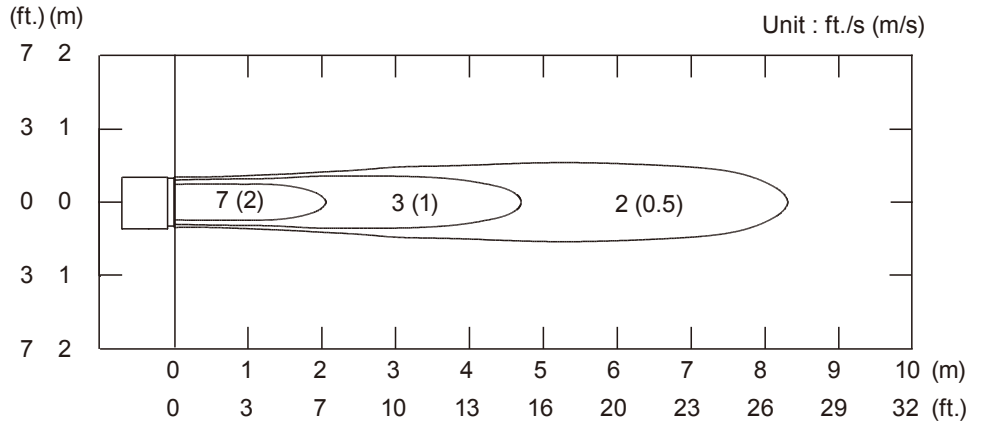
MODEL : ARU9RLF

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

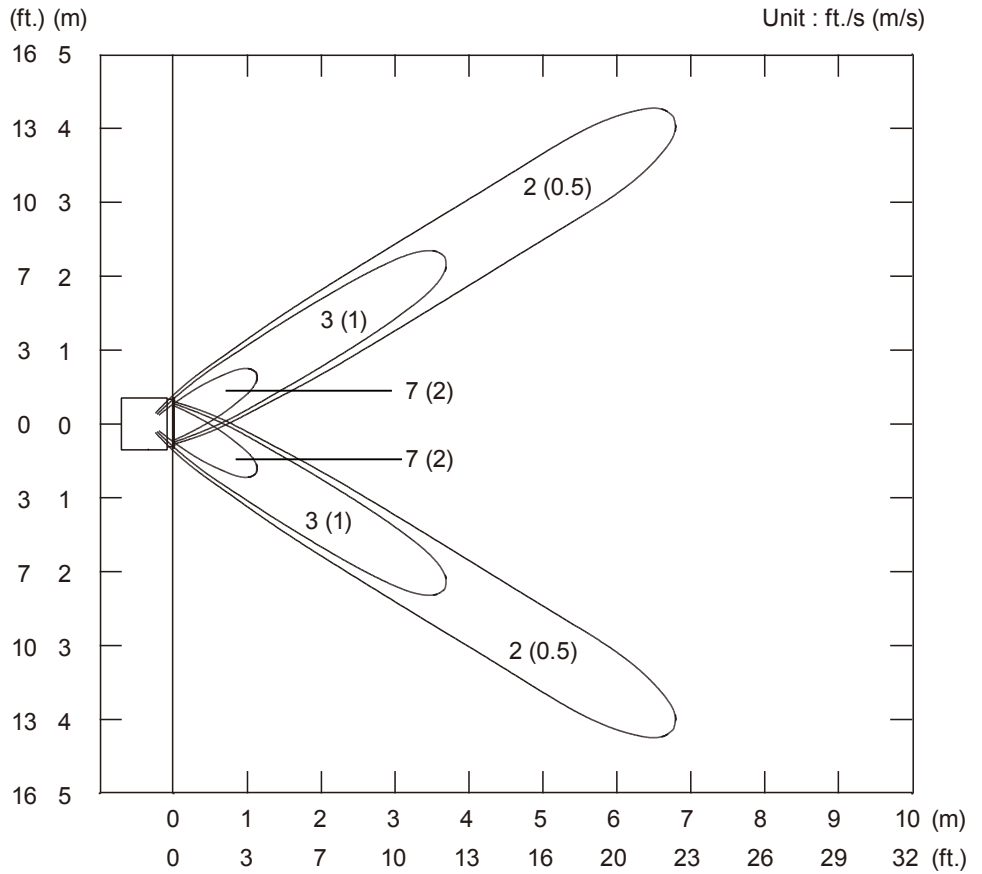
Conditions	
Fan speed	: High
Operation mode	: Fan
Voltage	: 230V

Air velocity distribution

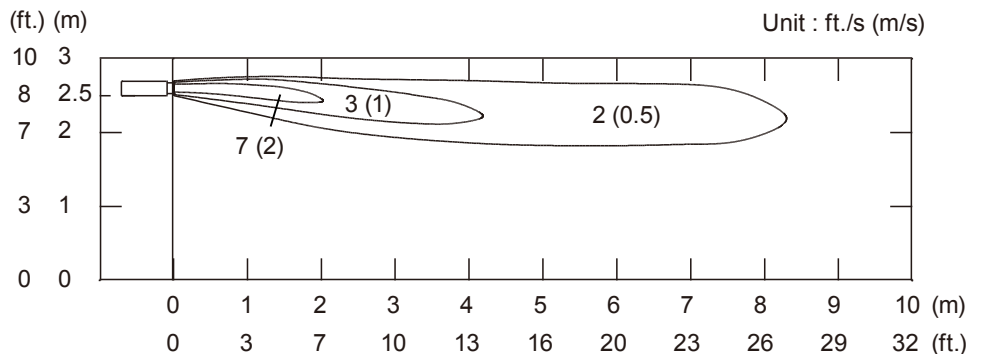
Top view
 Vertical airflow direction louver : Up
 Horizontal airflow direction louver : Center



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

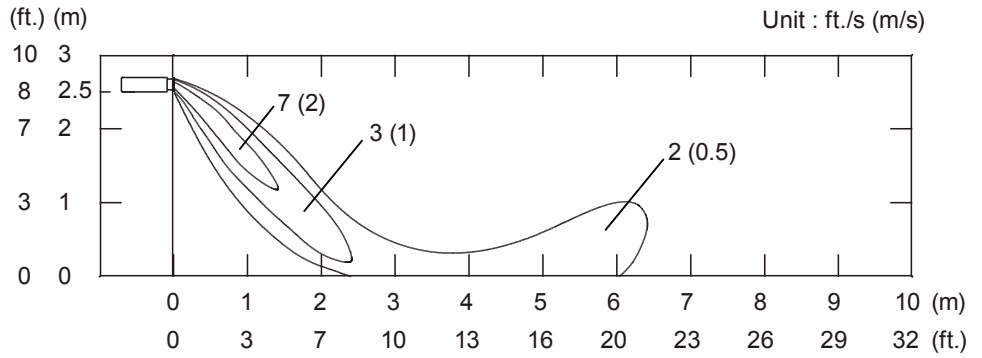


Note: This data is measured installing the Auto louver grille kit(option).

Reference Data	
Conditions	
Fan speed	: High
Operation mode	: Heating
Voltage	: 230V

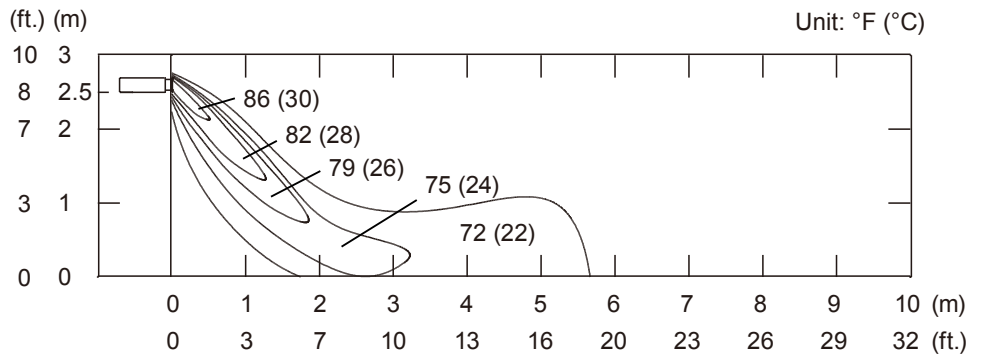
● Air velocity distribution

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

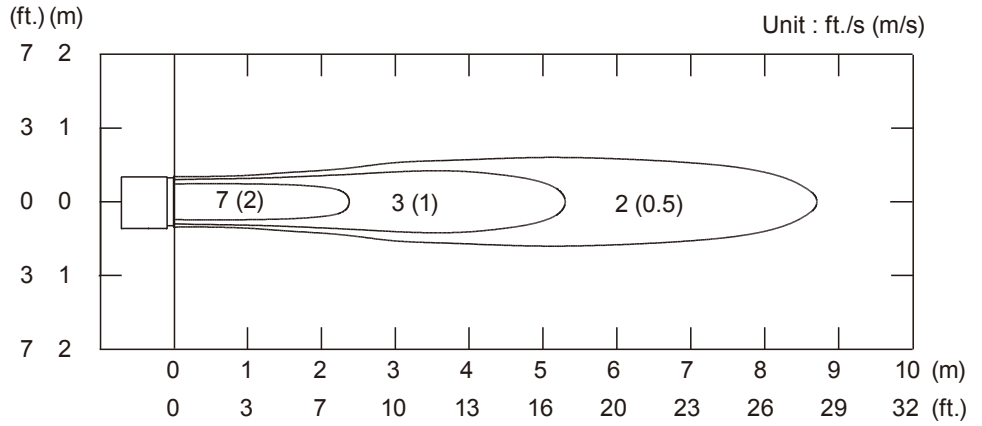
MODELS : ARU12RLF

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

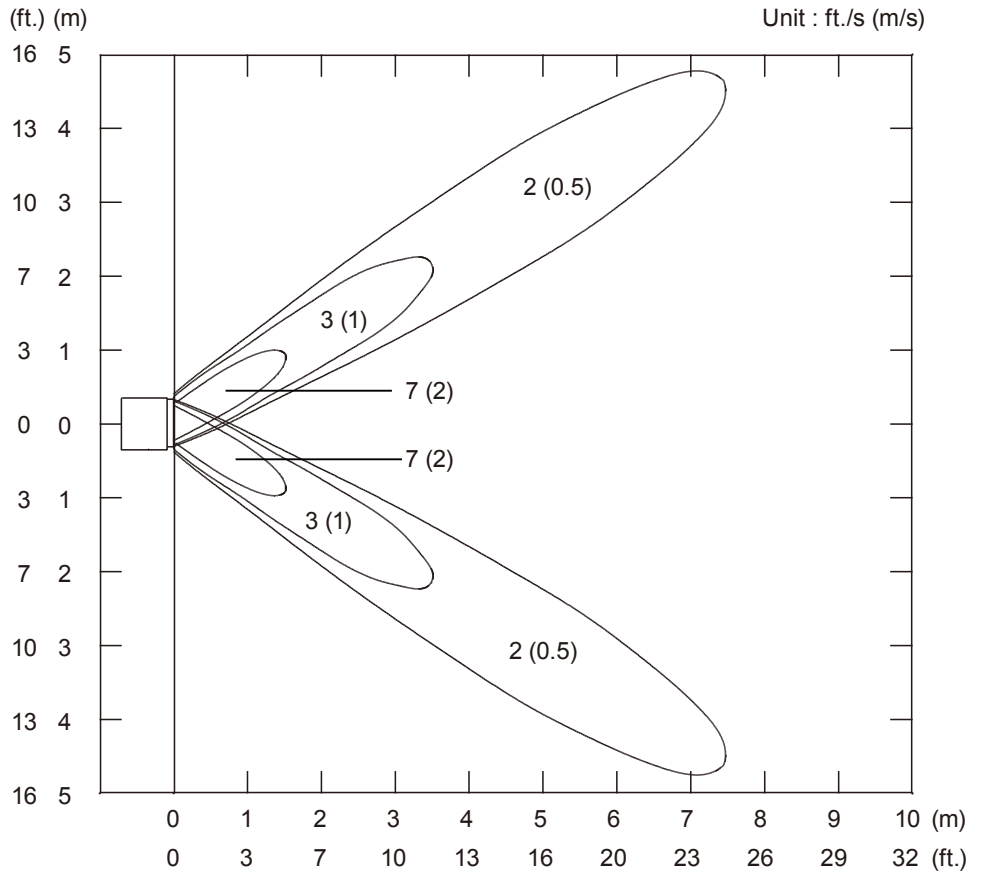
Conditions	
Fan speed	: High
Operation mode	: Fan
Voltage	: 230V

Air velocity distribution

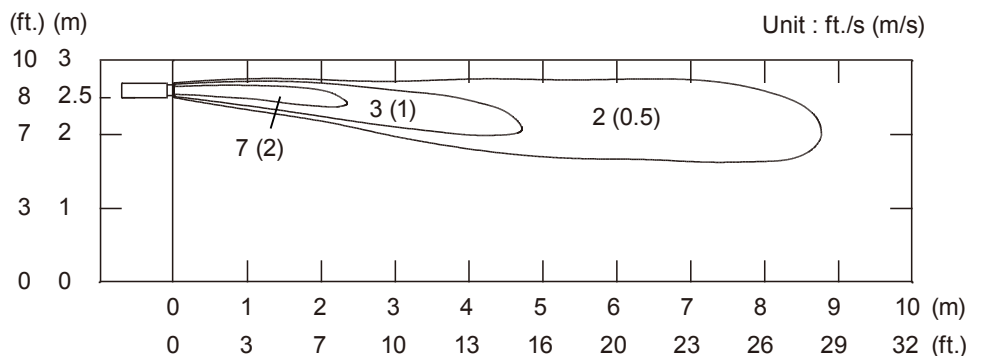
Top view
 Vertical airflow direction louver : Up
 Horizontal airflow direction louver : Center



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

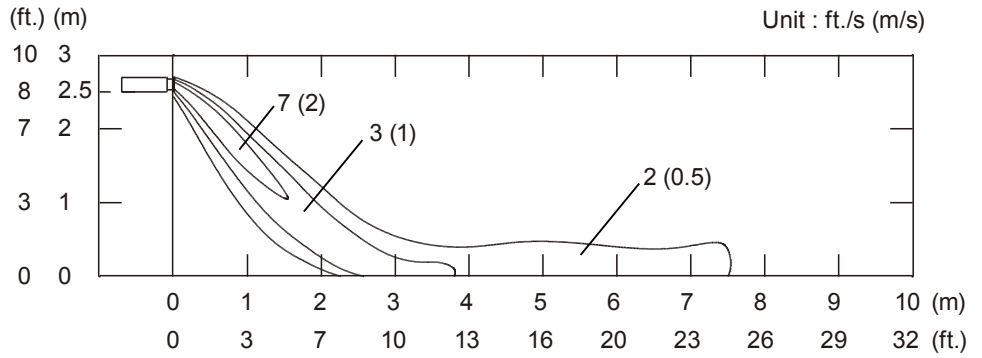
INDOOR UNITS

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

Reference Data	
Conditions	
Fan speed	: High
Operation mode	: Heating
Voltage	: 230V

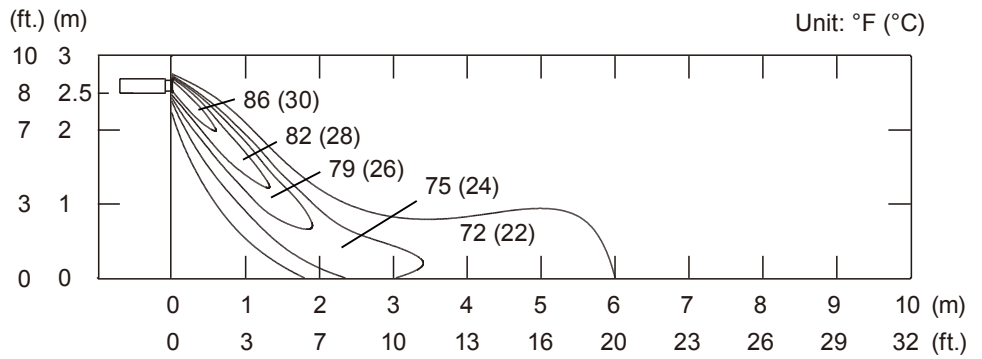
● Air velocity distribution

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

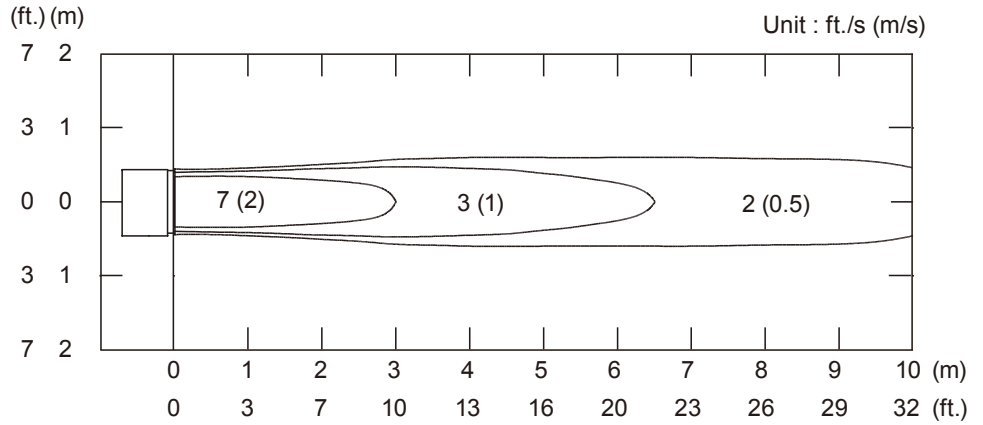
MODELS : ARU18RLF

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

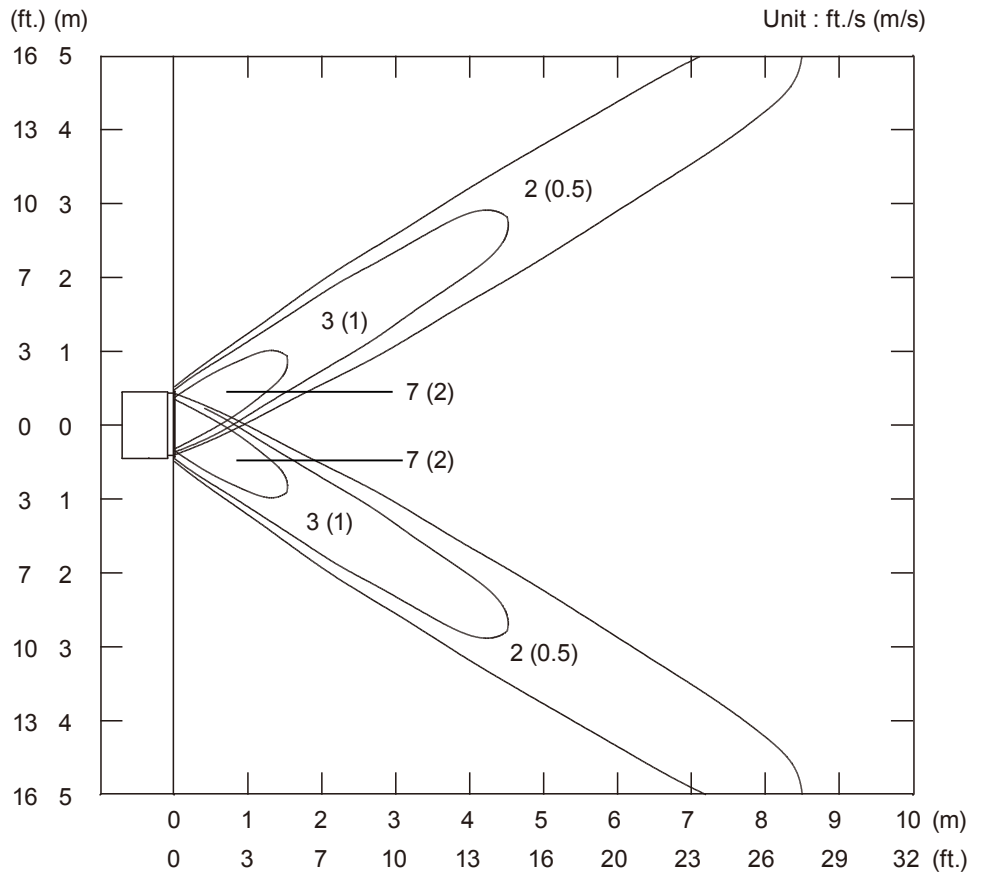
Conditions	
Fan speed	: High
Operation mode	: Fan
Voltage	: 230V

● Air velocity distribution

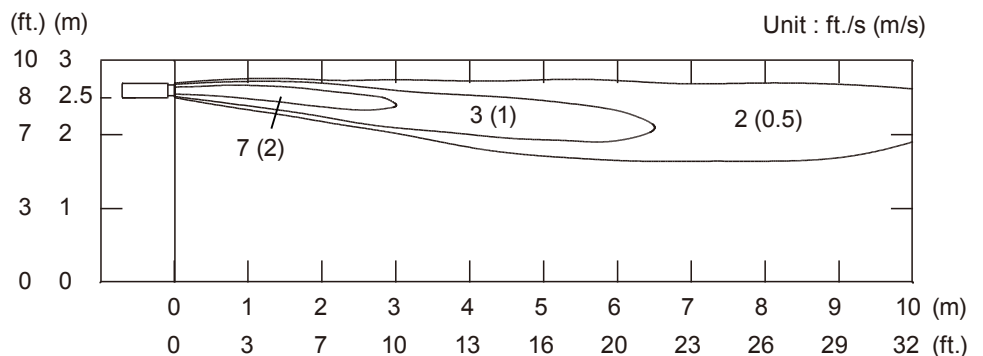
Top view
Vertical airflow direction louver : Up
Horizontal airflow direction louver : Center



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

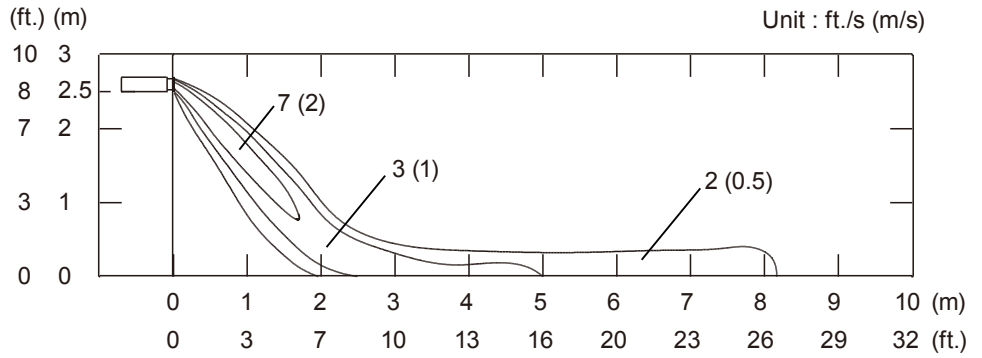
INDOOR UNITS

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

Reference Data	
Conditions	
Fan speed	: High
Operation mode	: Heating
Voltage	: 230V

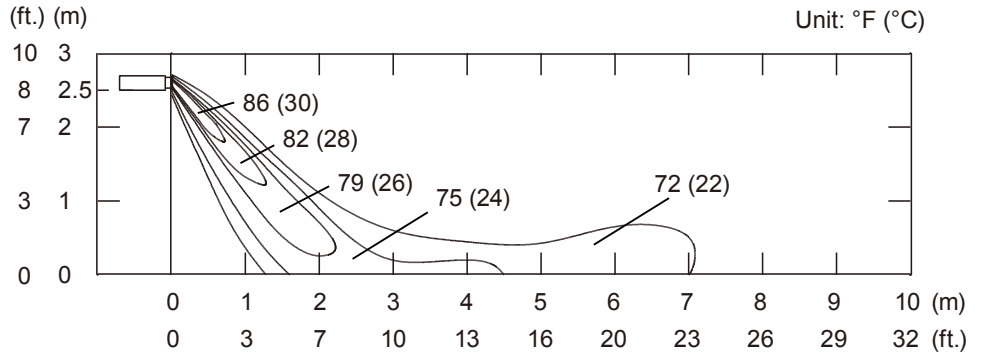
● Air velocity distribution

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

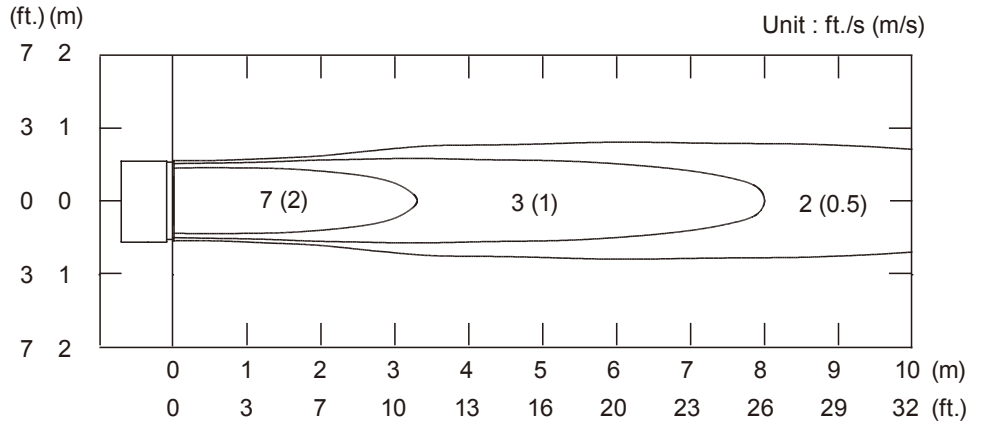
MODEL : ARU24RLF

Note: This data is a measurement of Auto louver grille kit(option) by installing it.

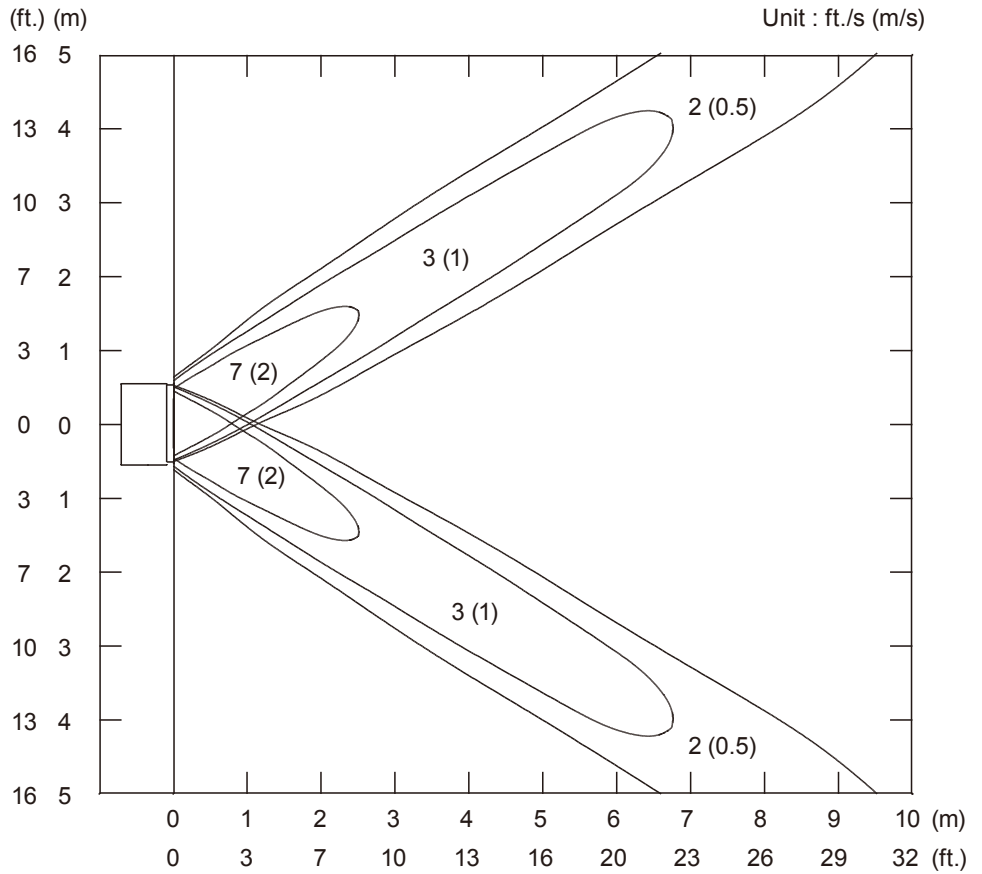
Conditions	
Fan speed	: High
Operation mode	: Fan
Voltage	: 230V

● Air velocity distribution

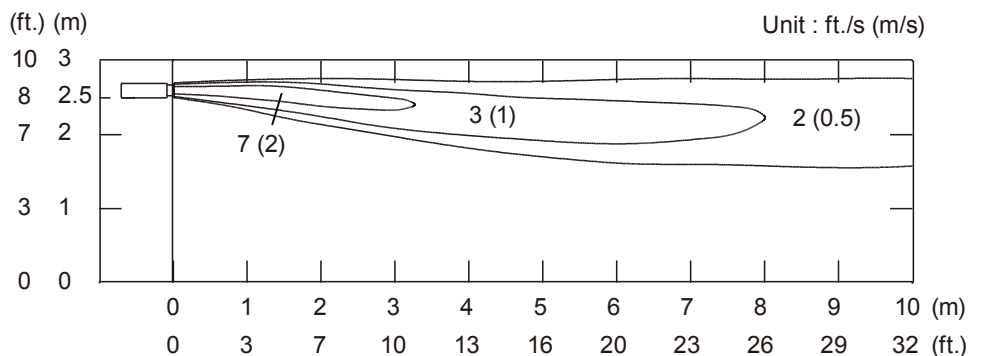
Top view
 Vertical airflow direction louver : Up
 Horizontal airflow direction louver : Center



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

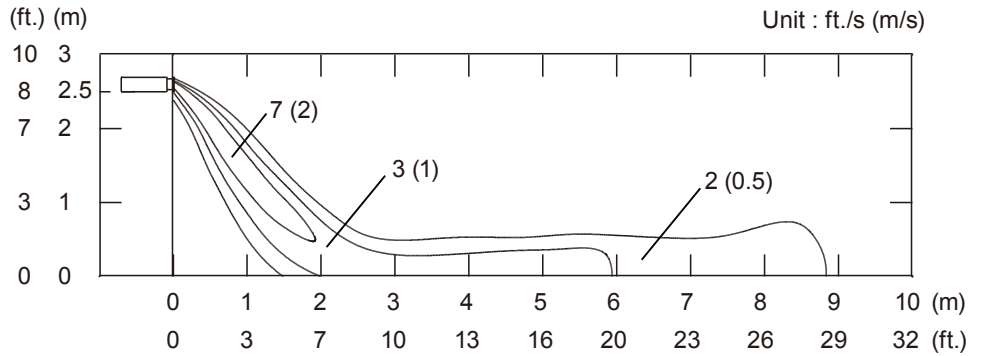
INDOOR UNITS

Note: This data is a measurement of Auto louver grille kit(option) by installing it.

Conditions	
Fan speed	: High
Operation mode	: Heat
Voltage	: 230V
Reference Data	

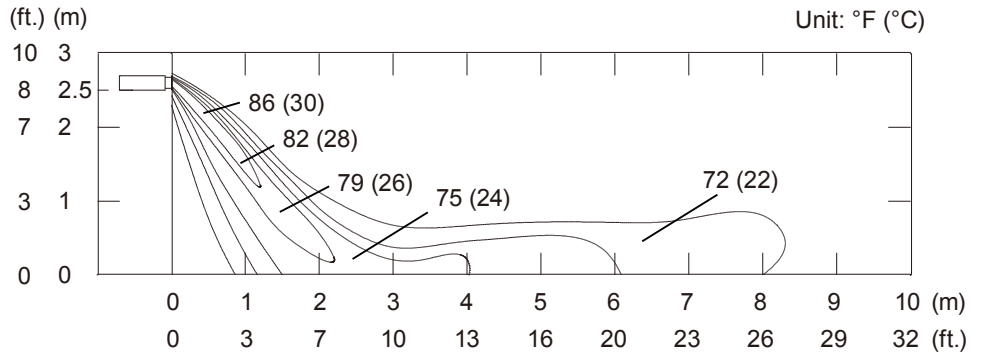
● Air velocity distribution

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

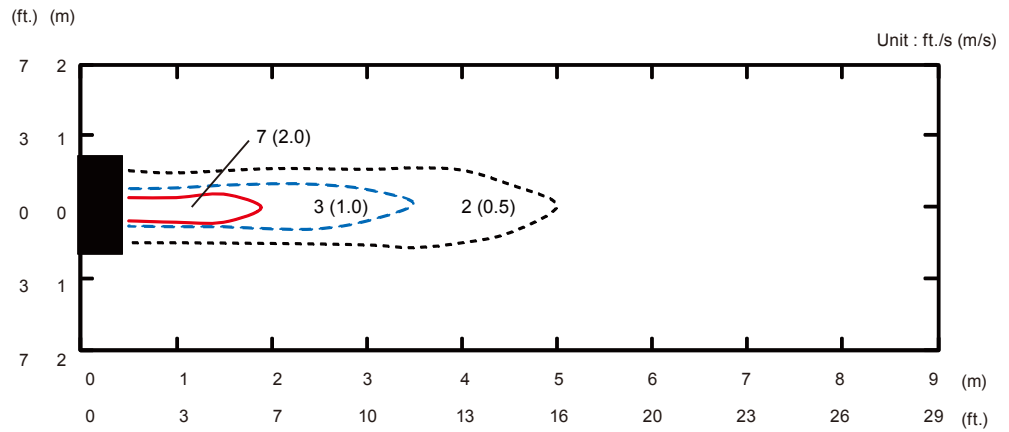
INDOOR UNITS

6-3. WALL MOUNTED TYPE

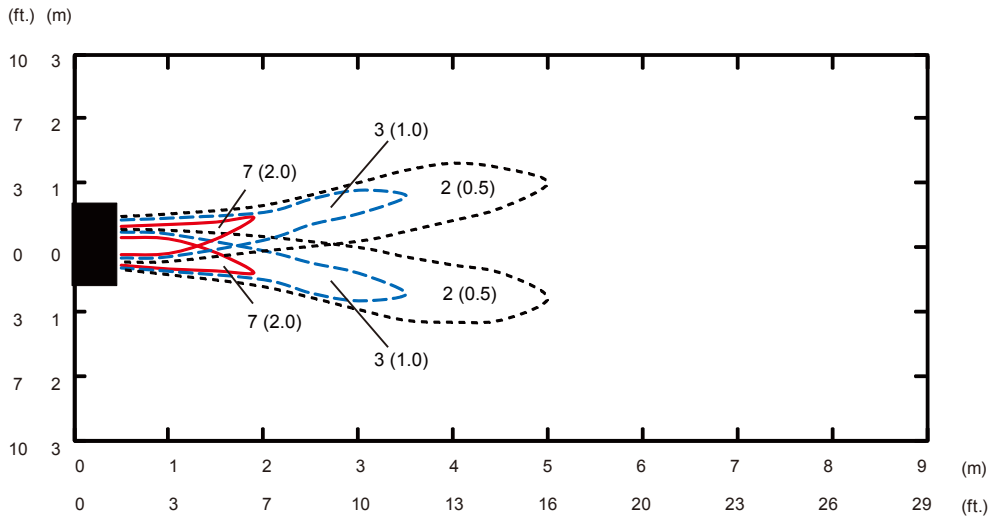
MODEL : ASU7RLF1

Conditions
 Fan speed : High
 Operation mode : Fan

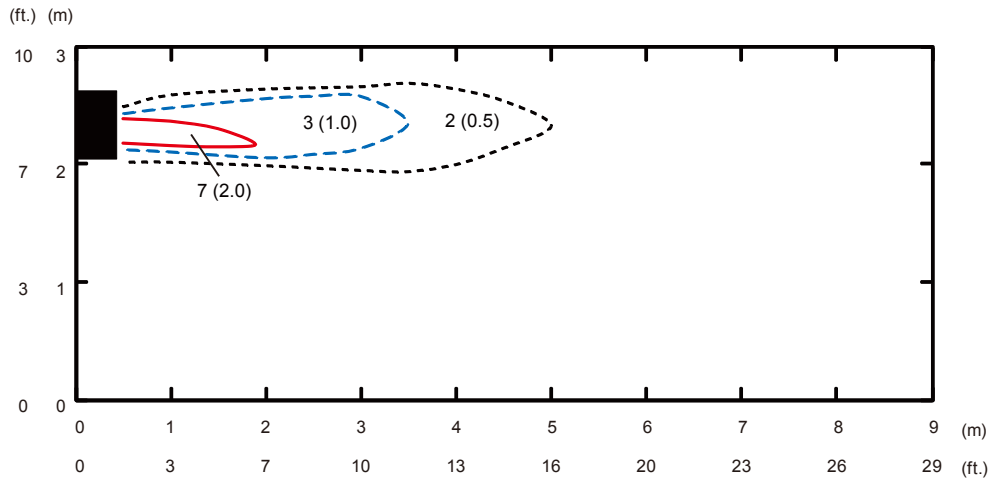
Top view
 Vertical airflow
 direction louver : Up
 Horizontal airflow
 direction louver :
 Center



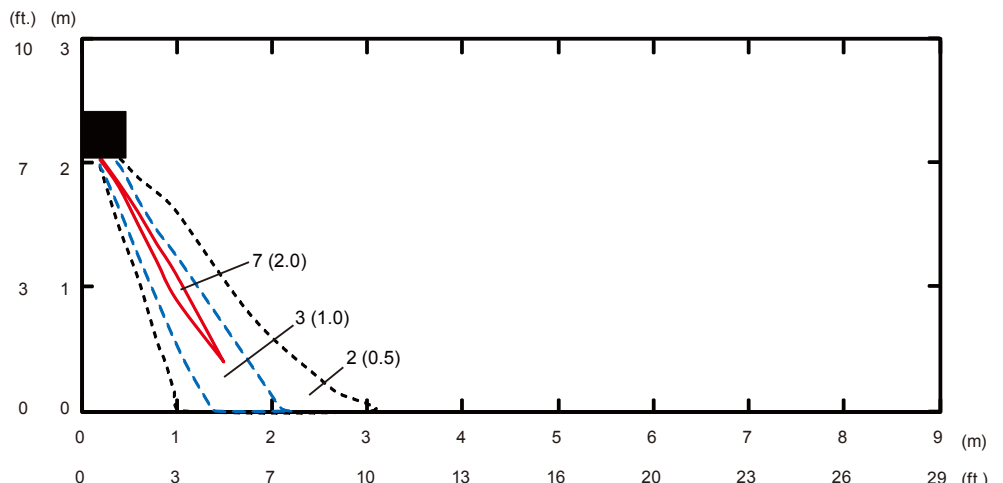
Top view
 Vertical airflow
 direction louver : Up
 Horizontal airflow
 direction louver : Right & Left



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



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



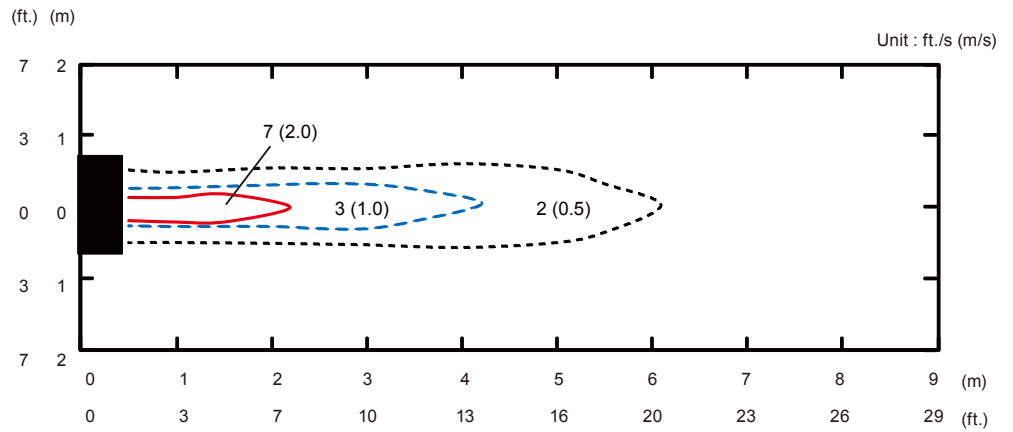
INDOOR UNITS

INDOOR UNITS

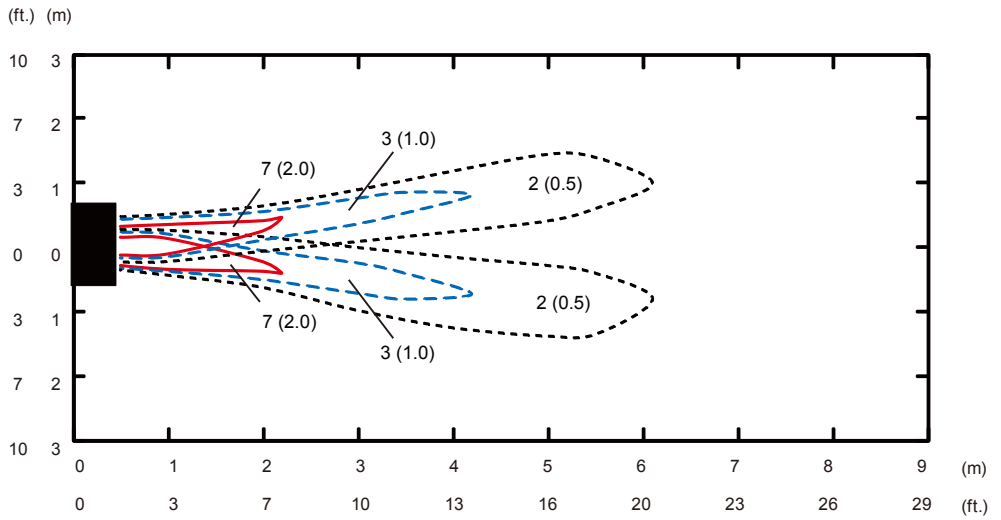
MODEL : ASU9RLF1

Conditions
 Fan speed : High
 Operation mode : Fan

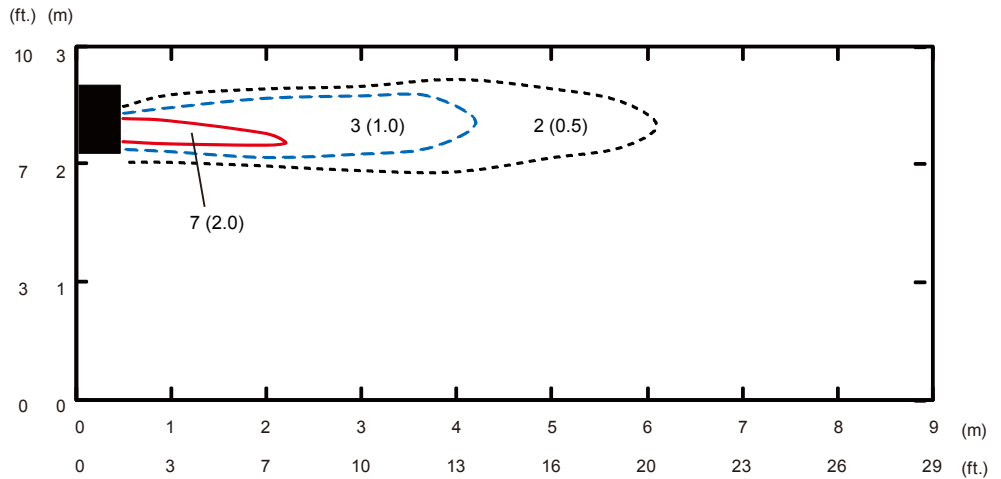
Top view
 Vertical airflow
 direction louver : Up
 Horizontal airflow
 direction louver :
 Center



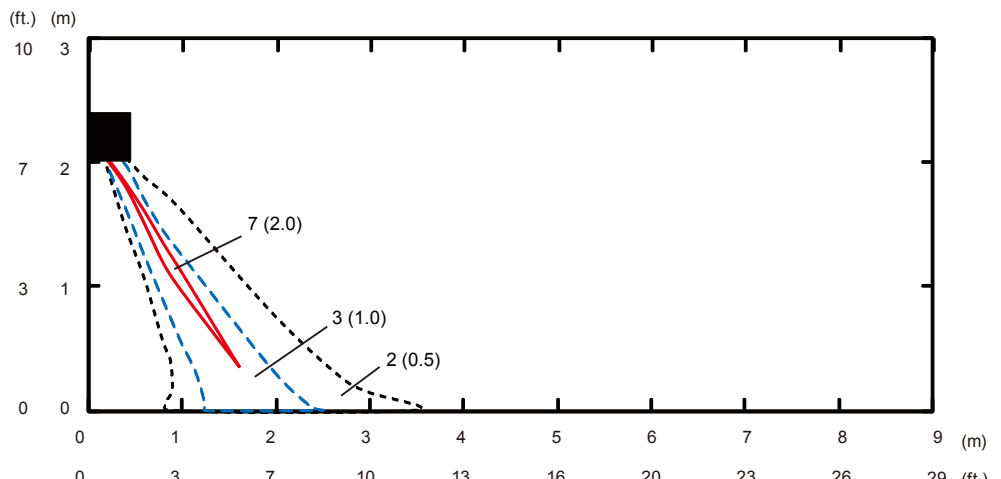
Top view
 Vertical airflow
 direction louver : Up
 Horizontal airflow
 direction louver : Right & Left



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



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



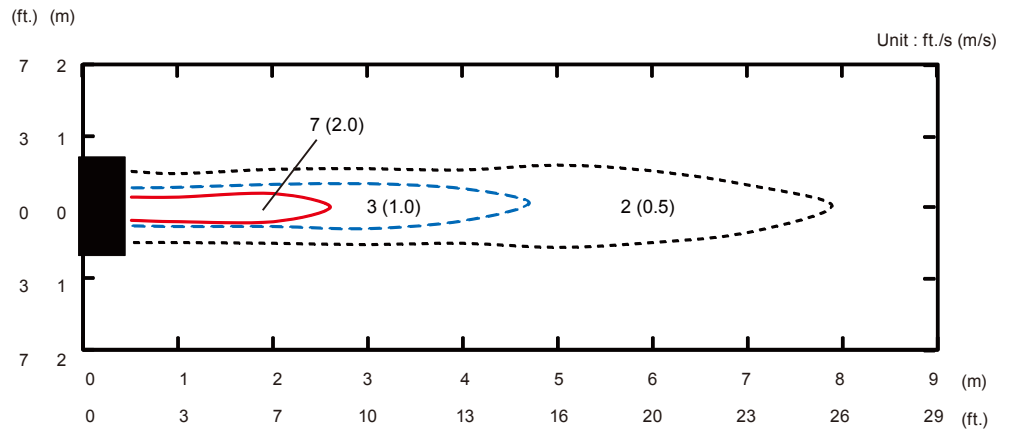
INDOOR UNITS

INDOOR UNITS

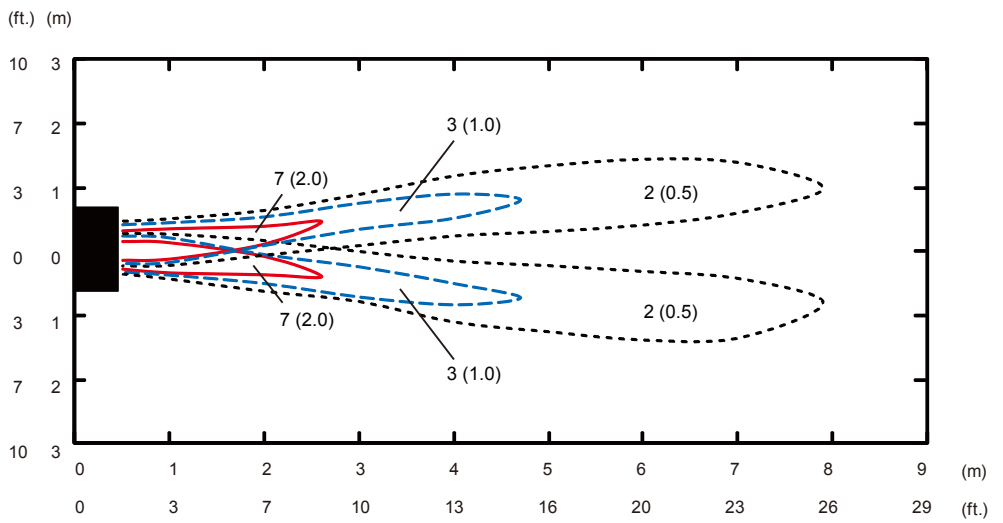
MODEL : ASU12RLF1

Conditions
 Fan speed : High
 Operation mode : Fan

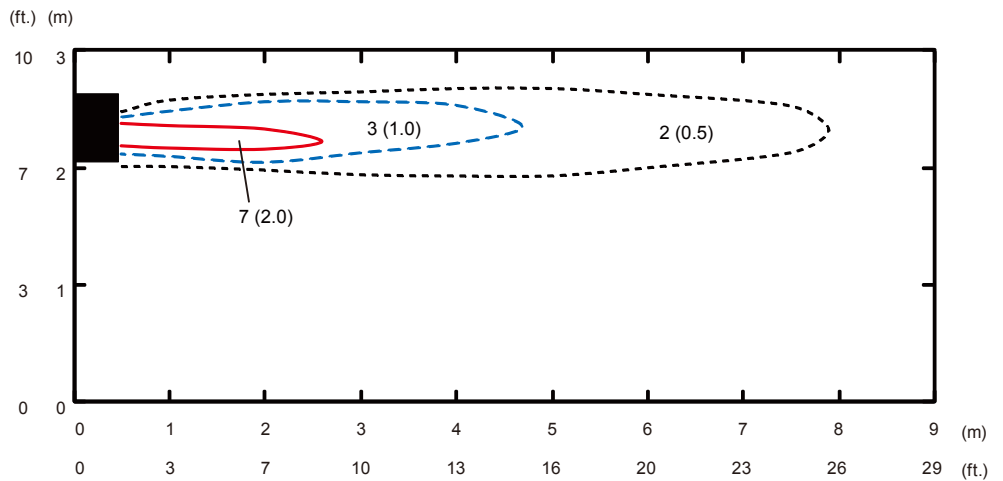
Top view
 Vertical airflow
 direction louver : Up
 Horizontal airflow
 direction louver :
 Center



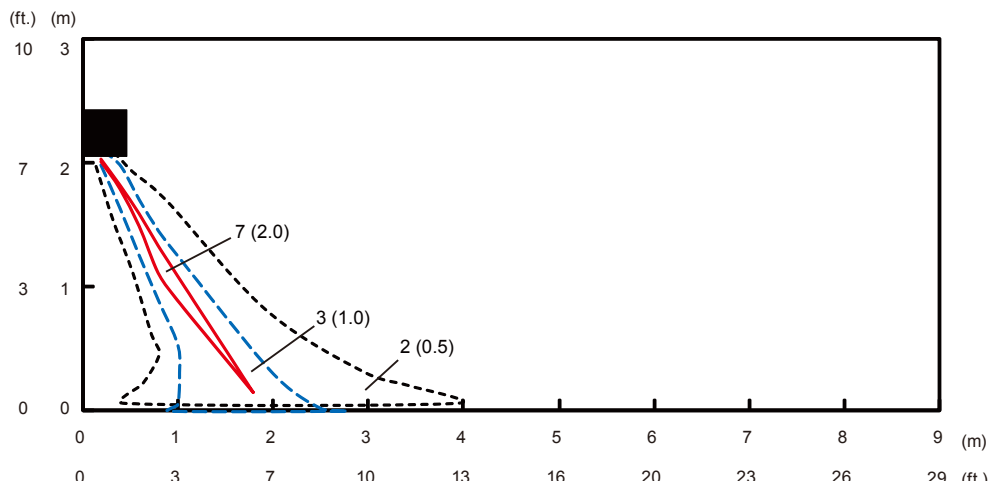
Top view
 Vertical airflow
 direction louver : Up
 Horizontal airflow
 direction louver : Right & Left



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



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



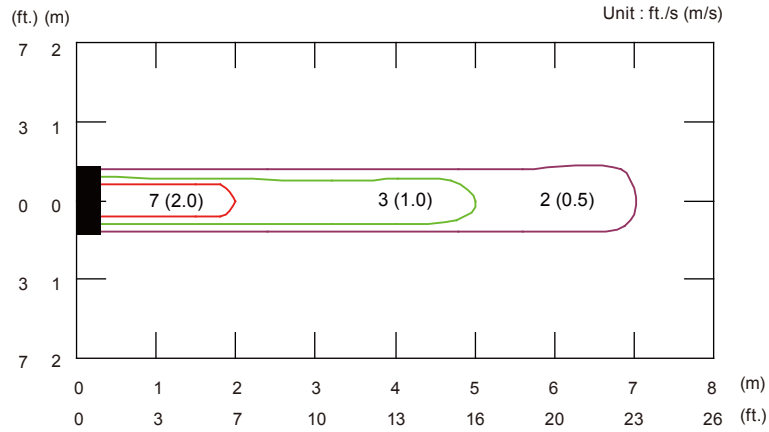
INDOOR UNITS

INDOOR UNITS

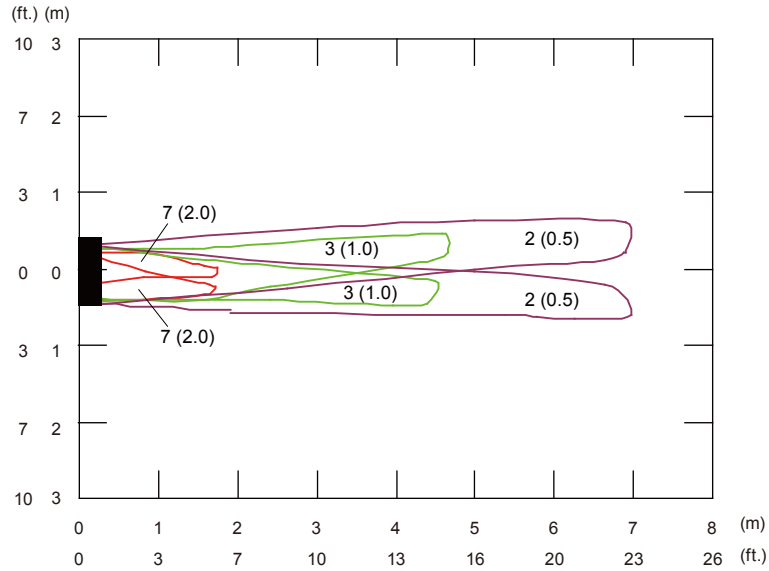
MODELS : ASU7RLF

Conditions
 Fan speed : High
 Operation mode : Fan

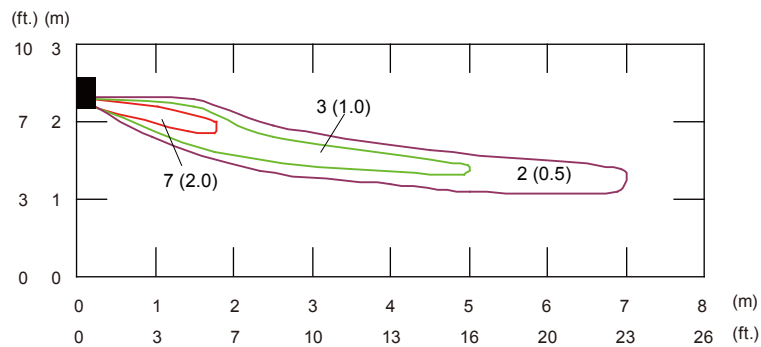
Top view
 Vertical airflow direction louver : Up
 Horizontal airflow direction louver : Center



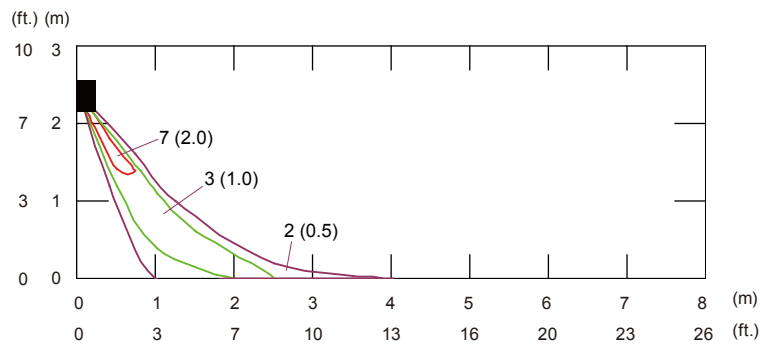
Top view
 Vertical airflow direction louver : Up
 Horizontal airflow direction louver : Right & Left



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



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



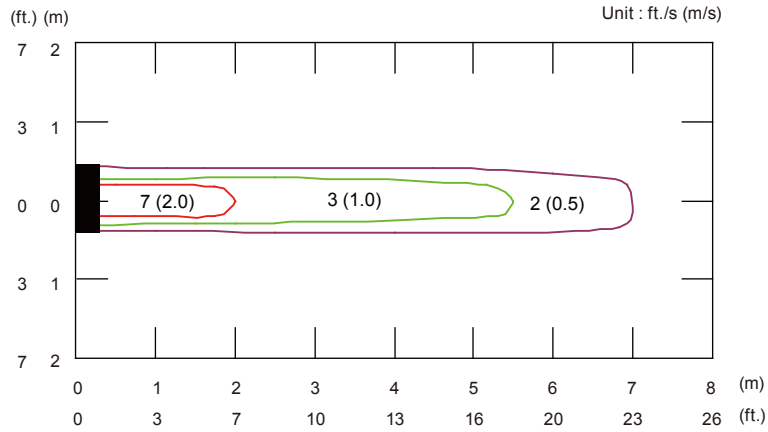
INDOOR UNITS

INDOOR UNITS

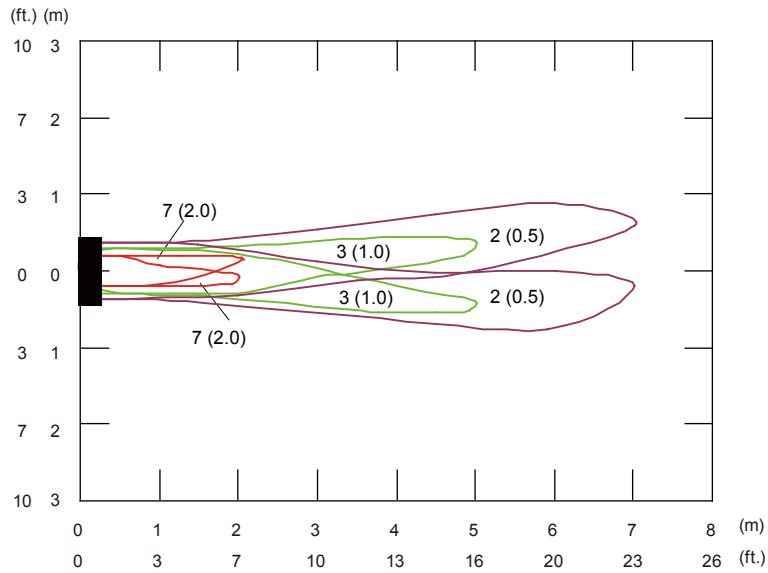
MODELS : ASU9RLF

Conditions
 Fan speed : High
 Operation mode : Fan

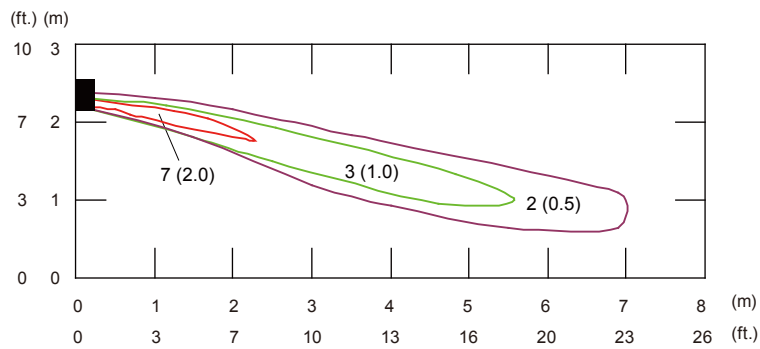
Top view
 Vertical airflow direction louver : Up
 Horizontal airflow direction louver : Center



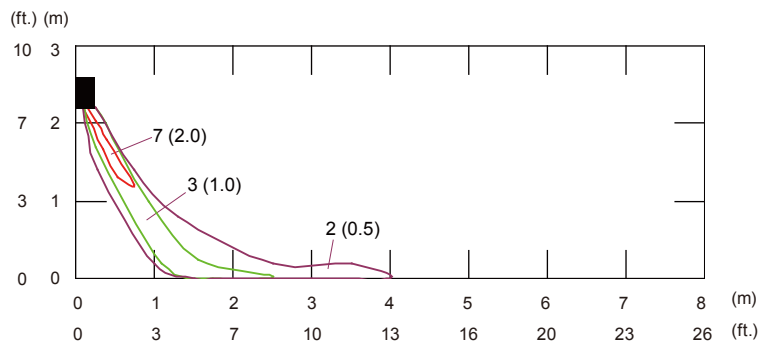
Top view
 Vertical airflow direction louver : Up
 Horizontal airflow direction louver : Right & Left



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



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



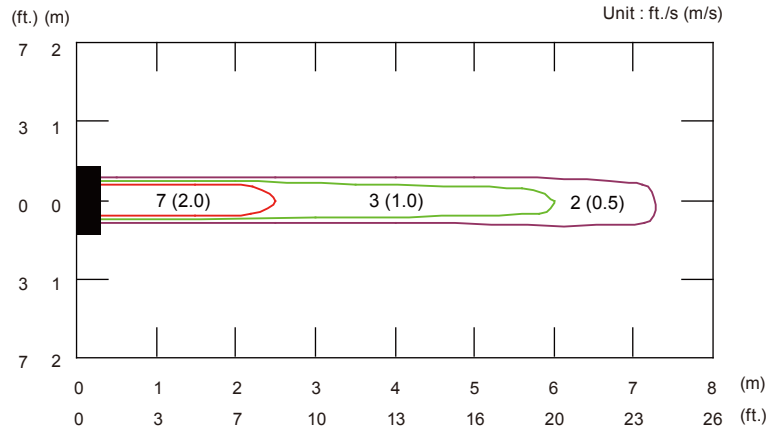
INDOOR UNITS

INDOOR UNITS

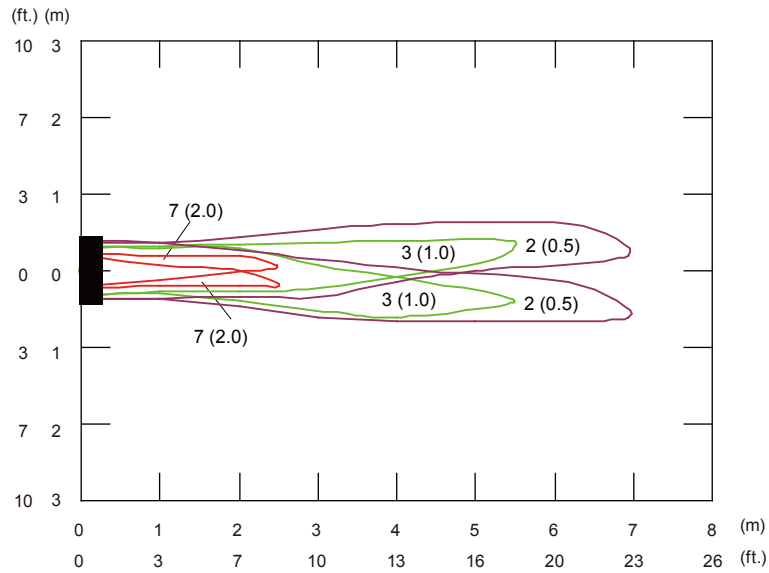
MODELS : ASU12RLF

Conditions
 Fan speed : High
 Operation mode : Fan

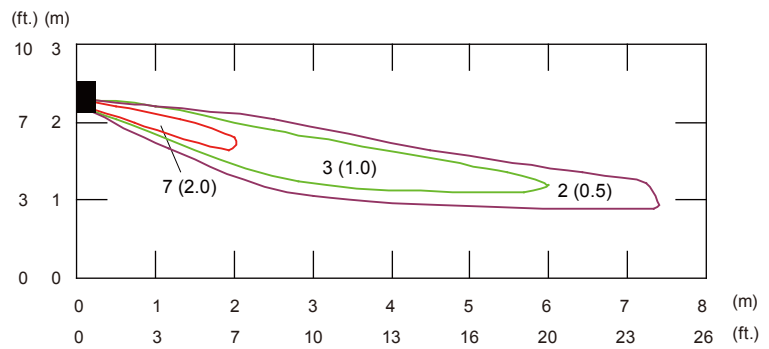
Top view
 Vertical airflow
 direction louver : Up
 Horizontal airflow
 direction louver : Center



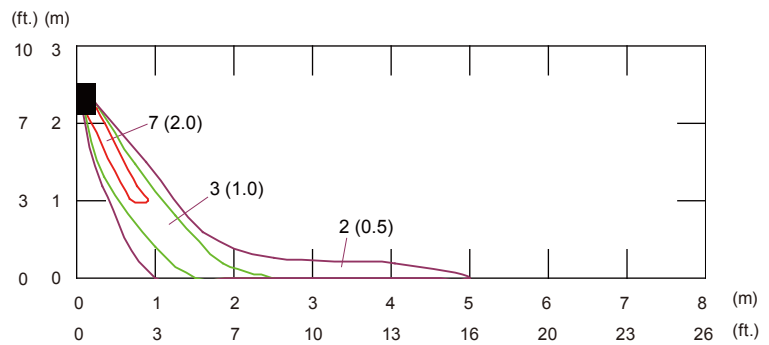
Top view
 Vertical airflow
 direction louver : Up
 Horizontal airflow
 direction louver : Right & Left



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



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



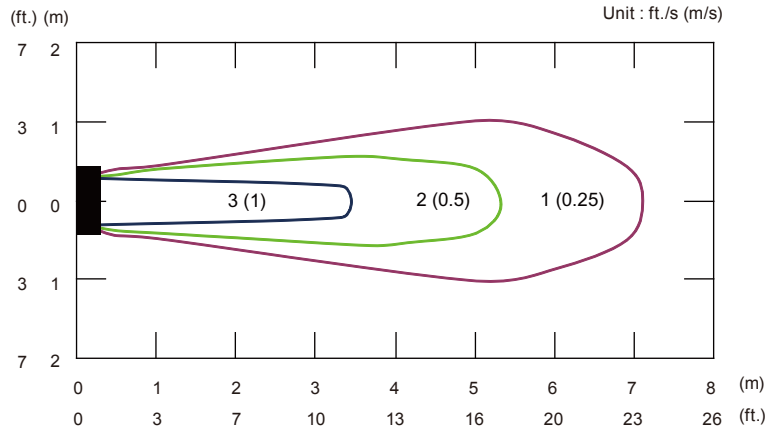
INDOOR UNITS

INDOOR UNITS

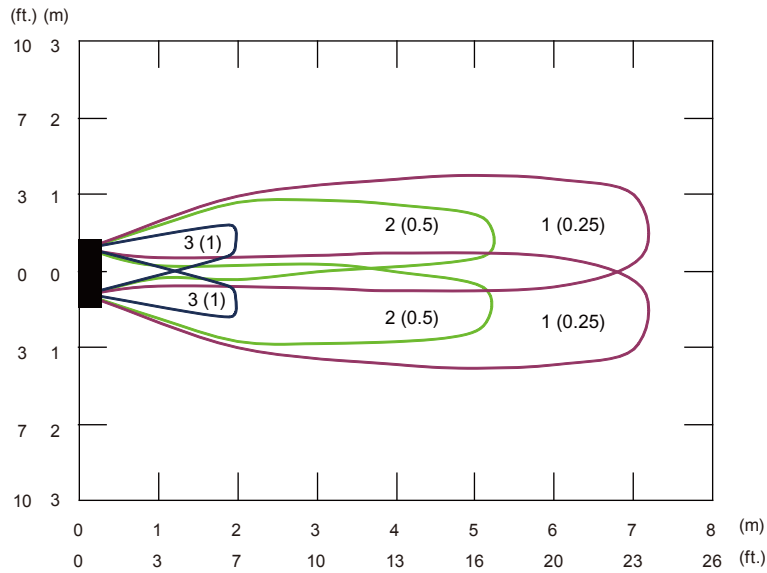
MODEL : ASU9RLS2

Conditions
 Fan speed : High
 Operation mode : Fan

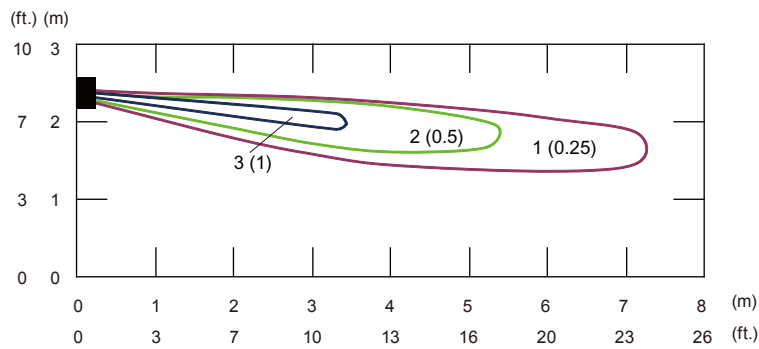
Top view
 Vertical airflow direction louver : Up
 Horizontal airflow direction louver : Center



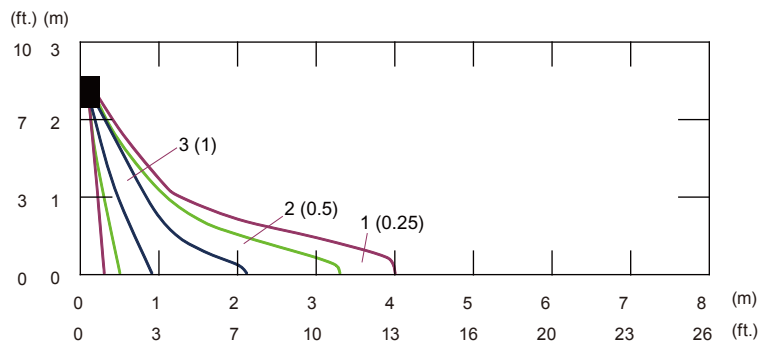
Top view
 Vertical airflow direction louver : Up
 Horizontal airflow direction louver : Right & Left



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



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



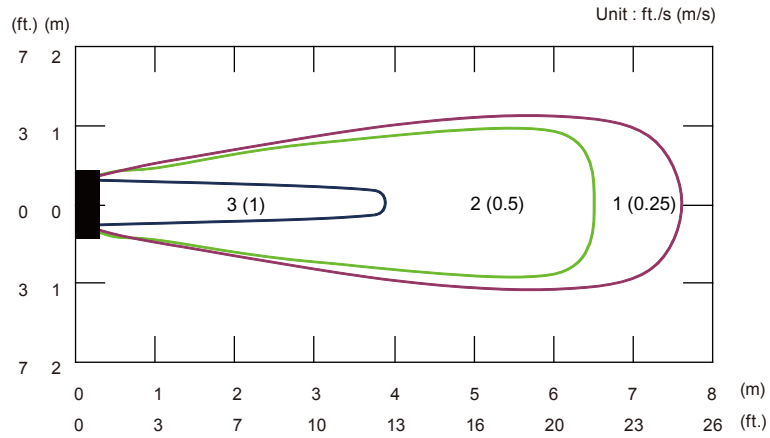
INDOOR UNITS

INDOOR UNITS

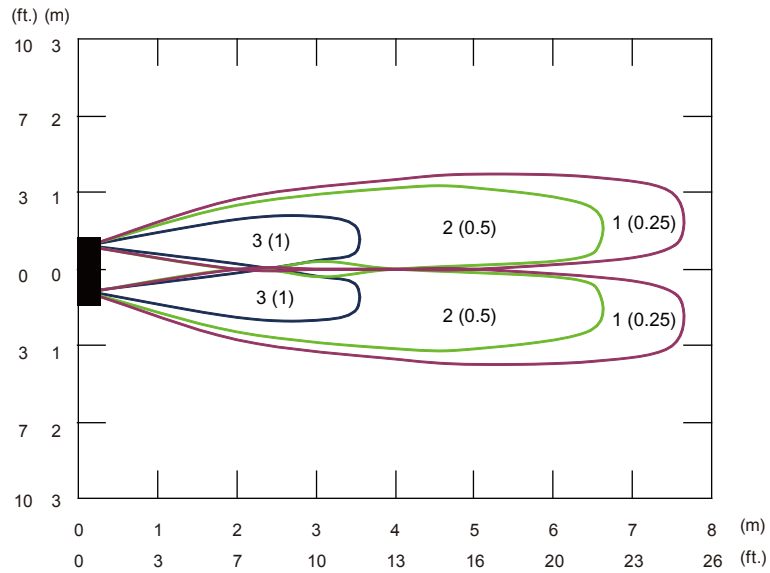
MODEL : ASU12RLS2, ASU15RLS2

Conditions
 Fan speed : High
 Operation mode : Fan

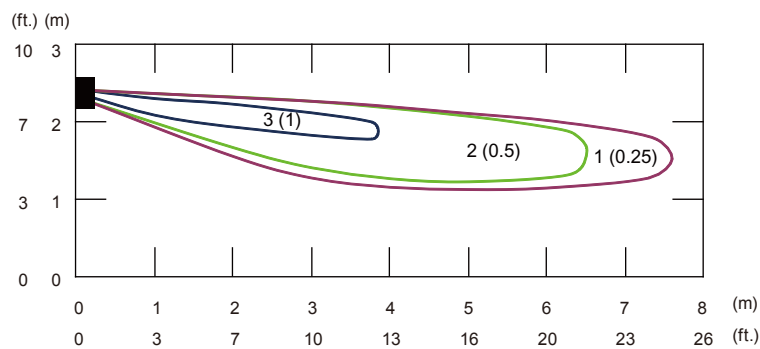
Top view
 Vertical airflow direction louver : Up
 Horizontal airflow direction louver : Center



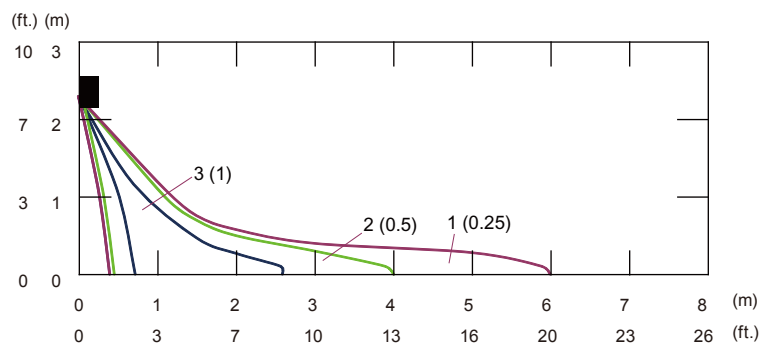
Top view
 Vertical airflow direction louver : Up
 Horizontal airflow direction louver : Right & Left



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



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



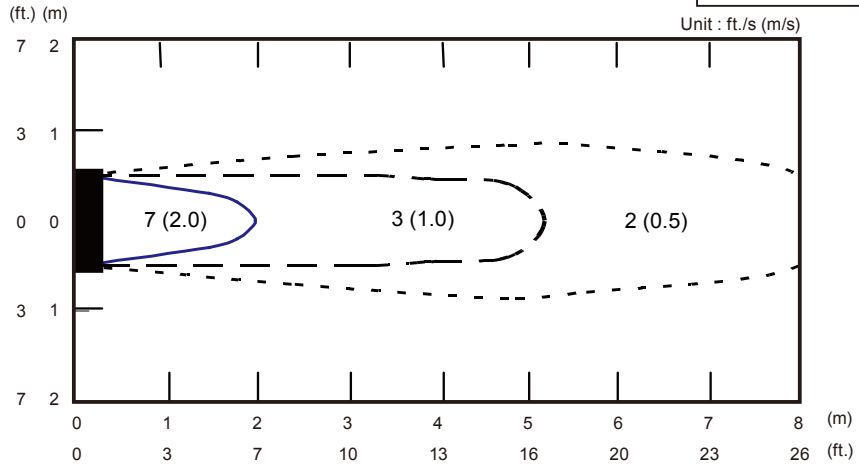
INDOOR UNITS

INDOOR UNITS

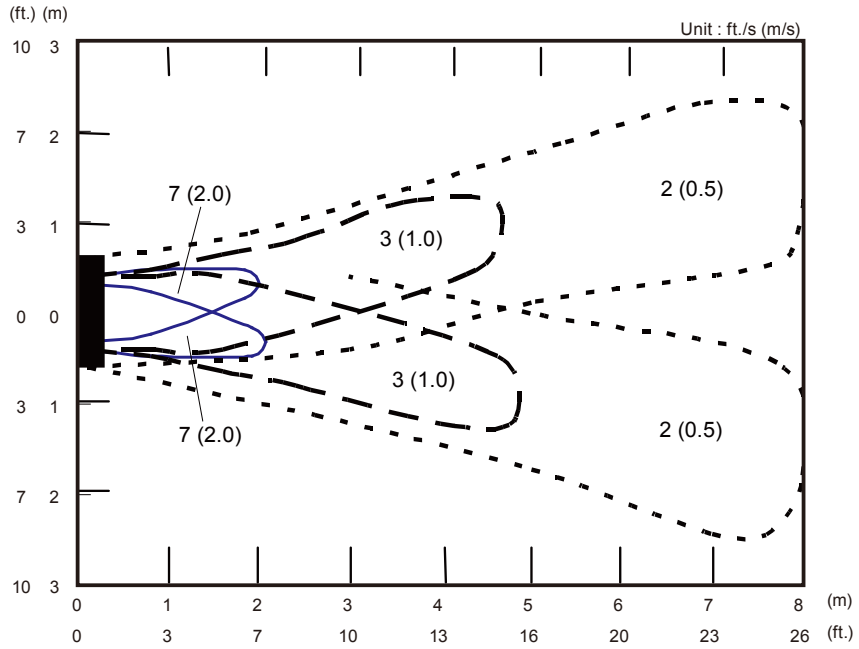
MODEL : ASU18RLF

Conditions
 Fan speed : High
 Operation mode : Fan

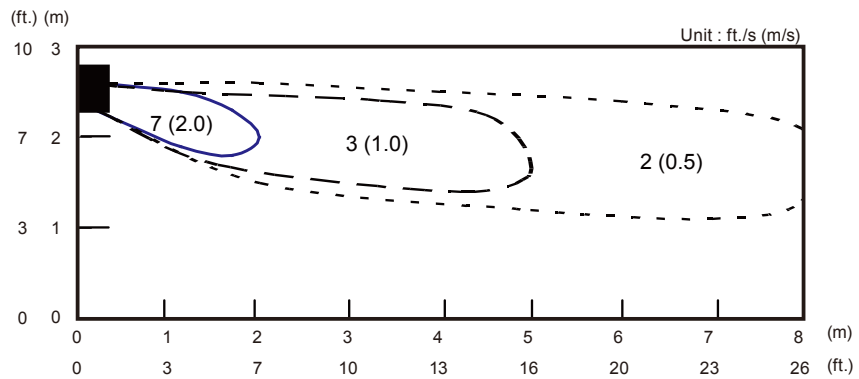
Top view
 Vertical airflow direction louver : Up
 Horizontal airflow direction louver : Center



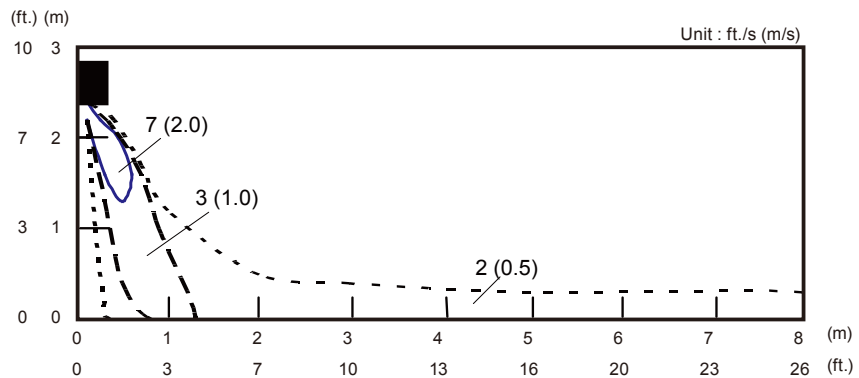
Top view
 Vertical airflow direction louver : Up
 Horizontal airflow direction louver : Right & Left



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



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



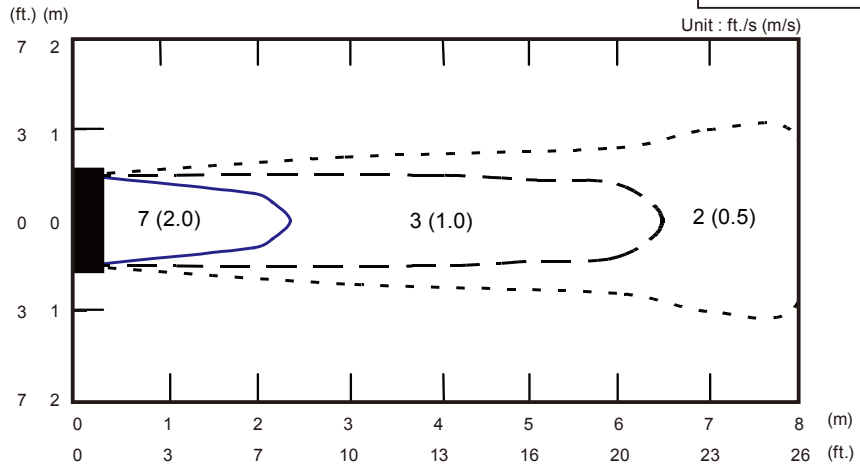
INDOOR UNITS

INDOOR UNITS

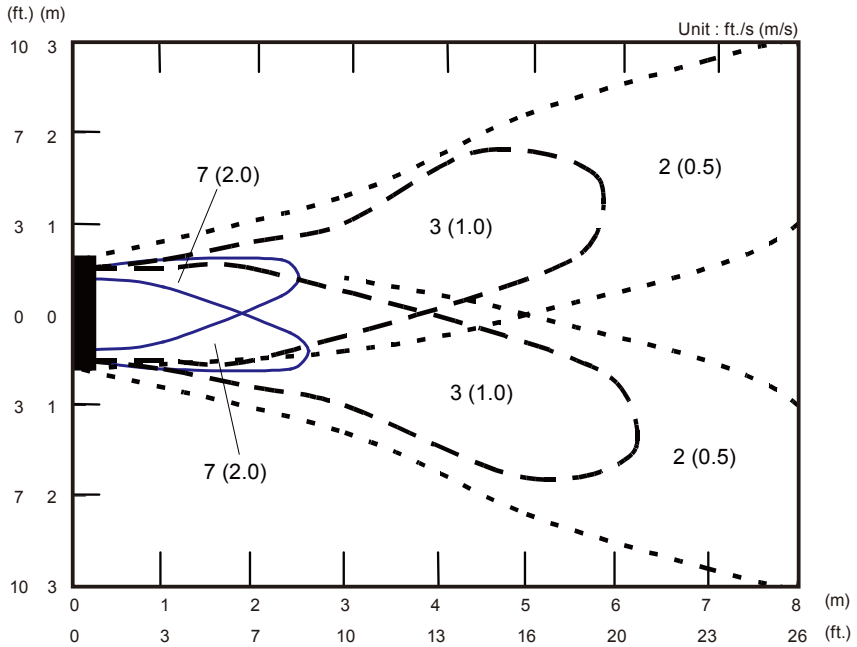
MODEL : ASU24RLF

Conditions
 Fan speed : High
 Operation mode : Fan

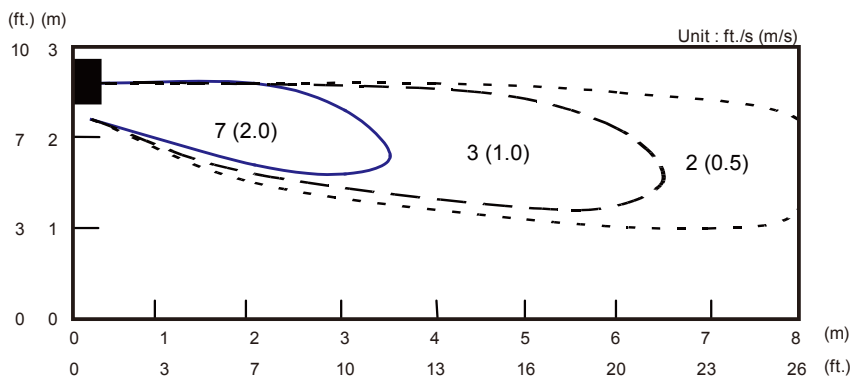
Top view
 Vertical airflow direction louver : Up
 Horizontal airflow direction louver : Center



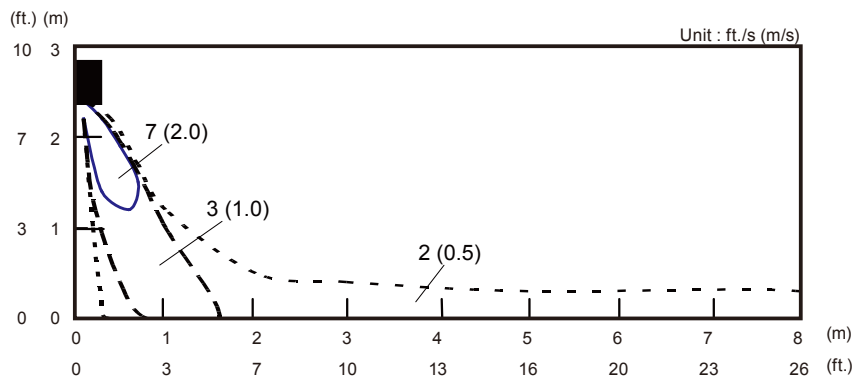
Top view
 Vertical airflow direction louver : Up
 Horizontal airflow direction louver : Right & Left



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

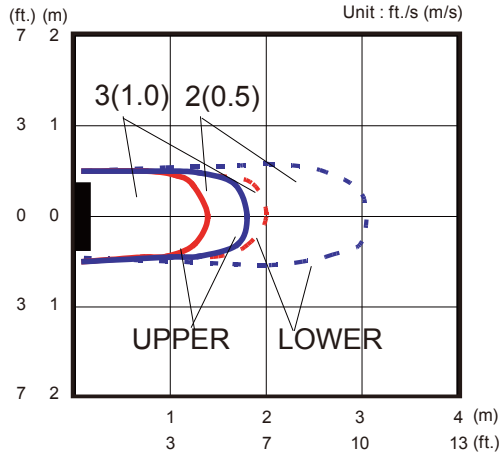
INDOOR UNITS

6-4. FLOOR TYPE

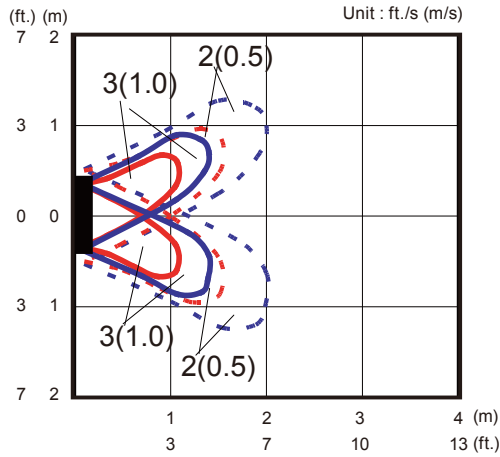
MODELS : AGU9RLF, AGU12RLF, AGU15RLF

Conditions	
Fan speed	: High
Operation mode	: Fan
Fan select	: UPPER & LOWER

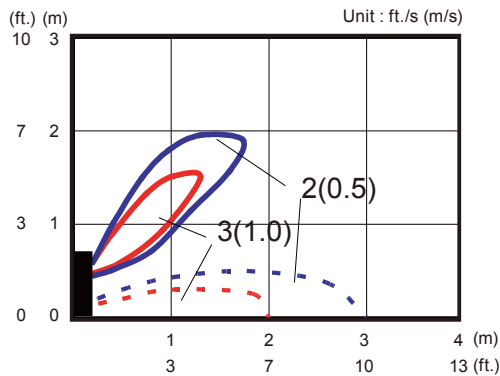
Top view
 Vertical airflow direction louver : Up
 Horizontal airflow direction louver : Center



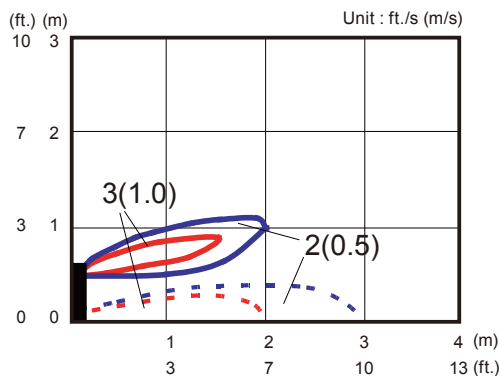
Top view
 Vertical airflow direction louver : Up
 Horizontal airflow direction louver : Right & Left



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



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



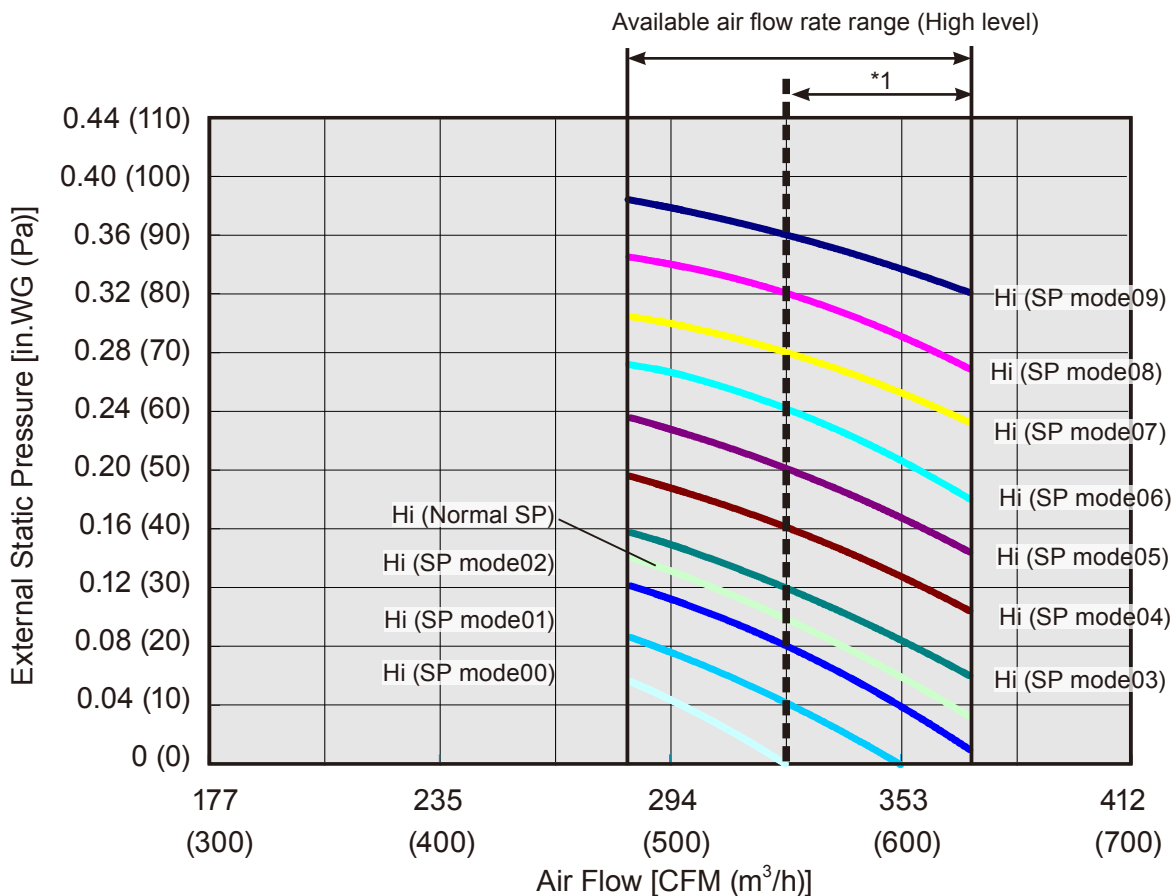
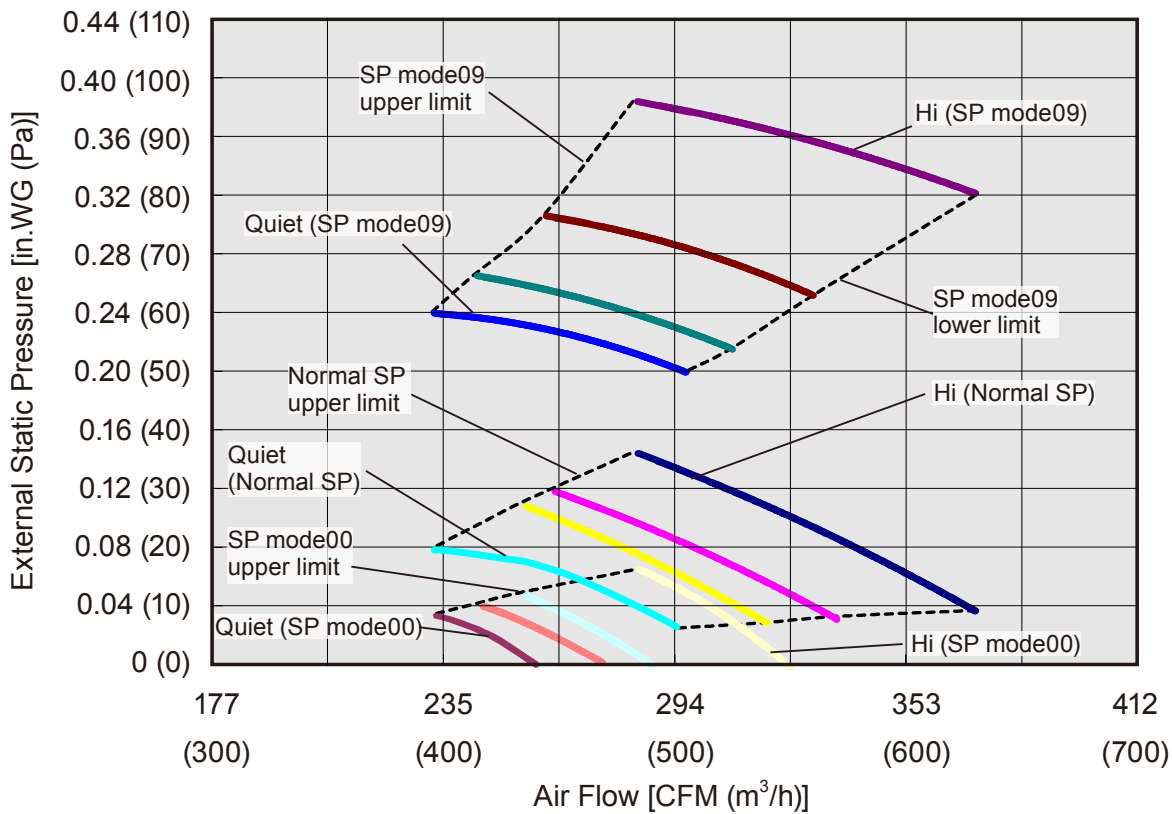
INDOOR UNITS

INDOOR UNITS

7. FAN PERFORMANCE CURVE

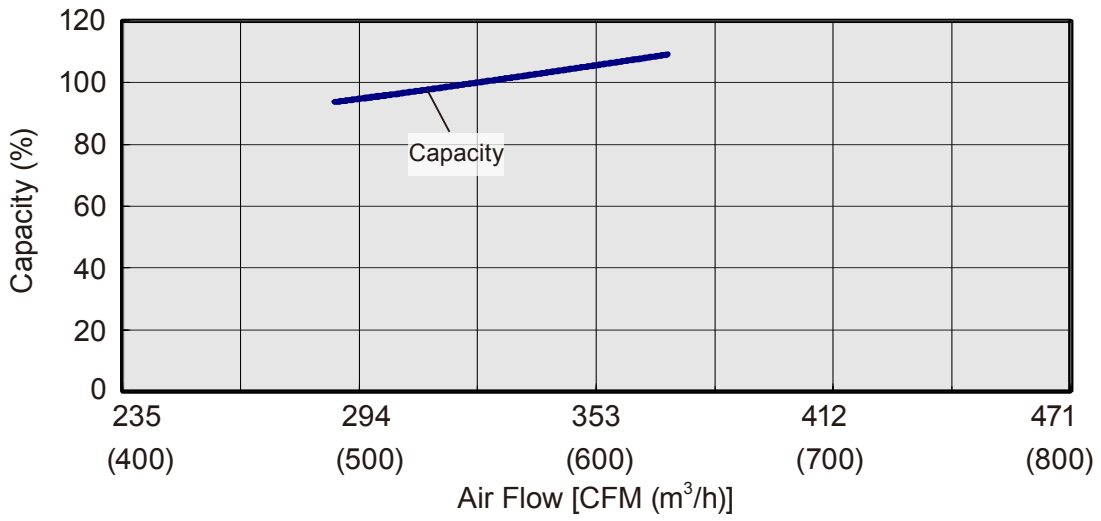
7-1. SLIM DUCT TYPE

■ MODEL : ARU7RLF

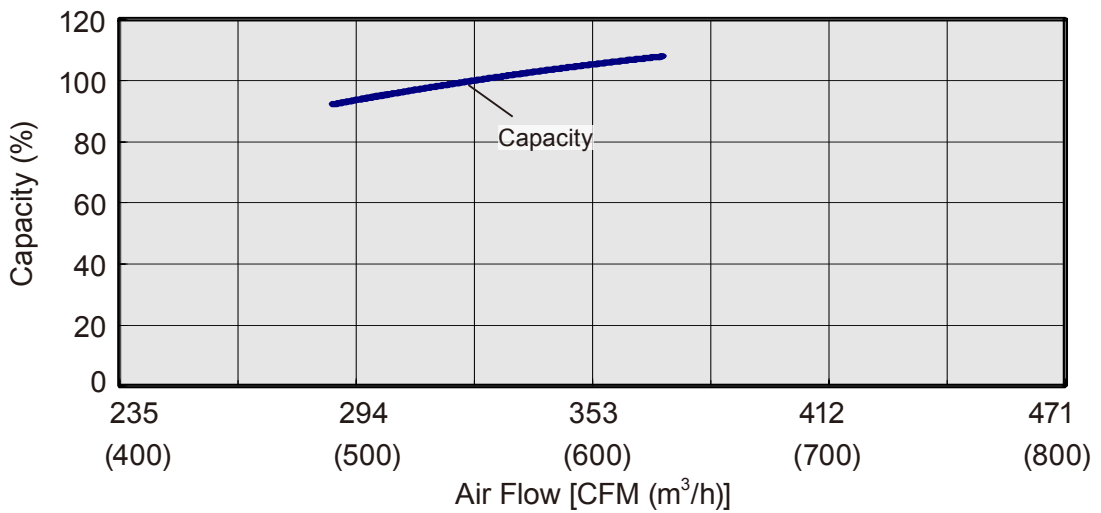


*1: Available air flow rate range when Auto louver grille (option) is installed.
 Fan speed : High
 Vertical airflow direction louver : Up

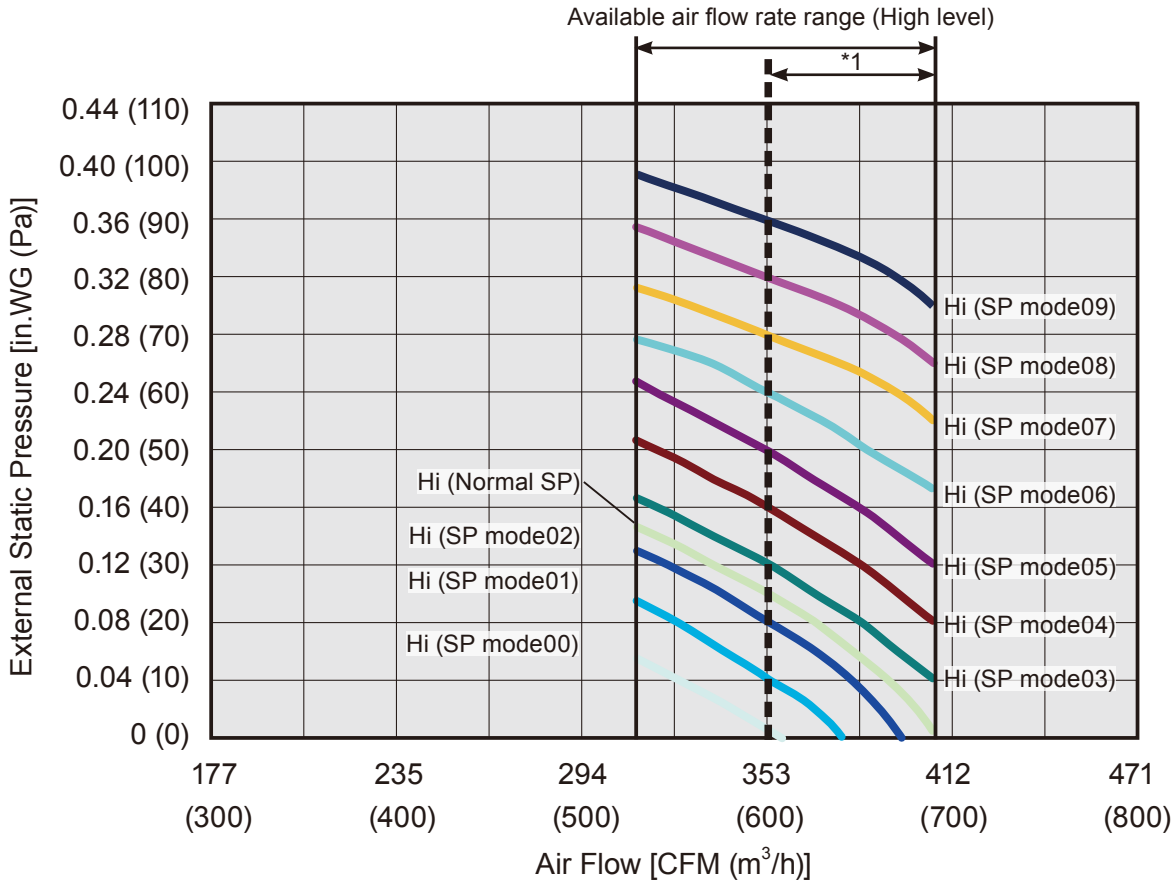
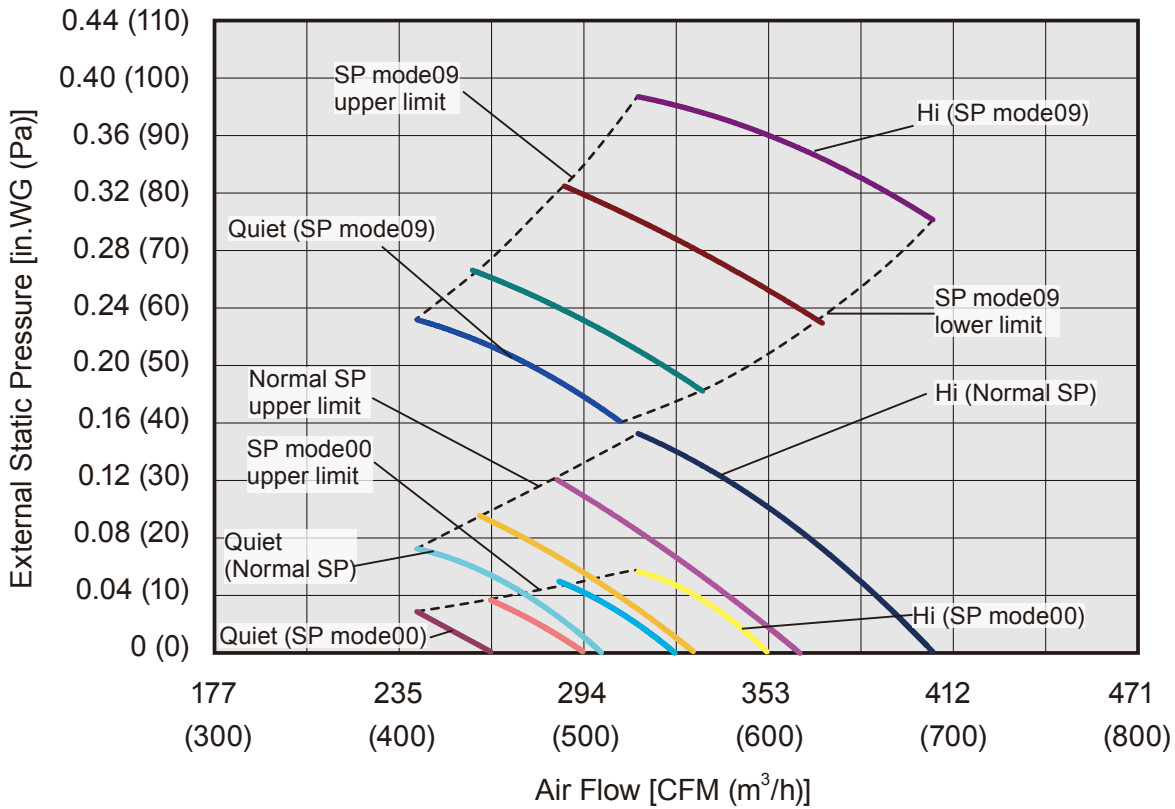
● Cooling



● Heating

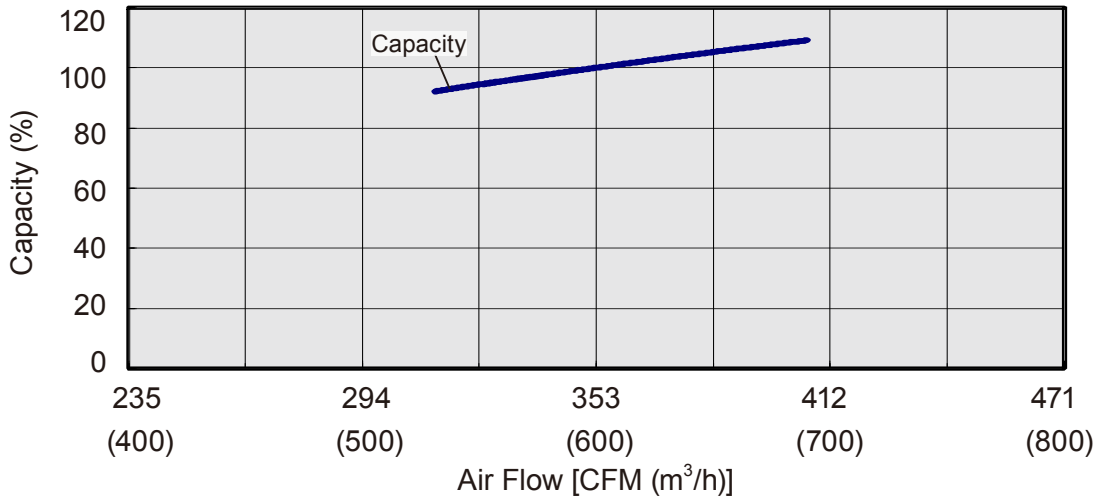


MODEL : ARU9RLF

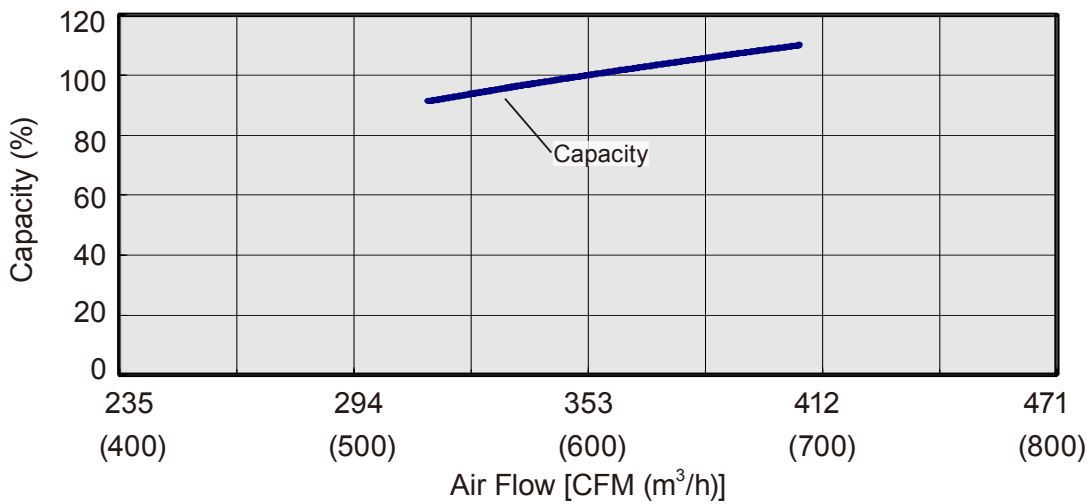


*1: Available air flow rate range when Auto louver grille (option) is installed.
 Fan speed : High
 Vertical airflow direction louver : Up

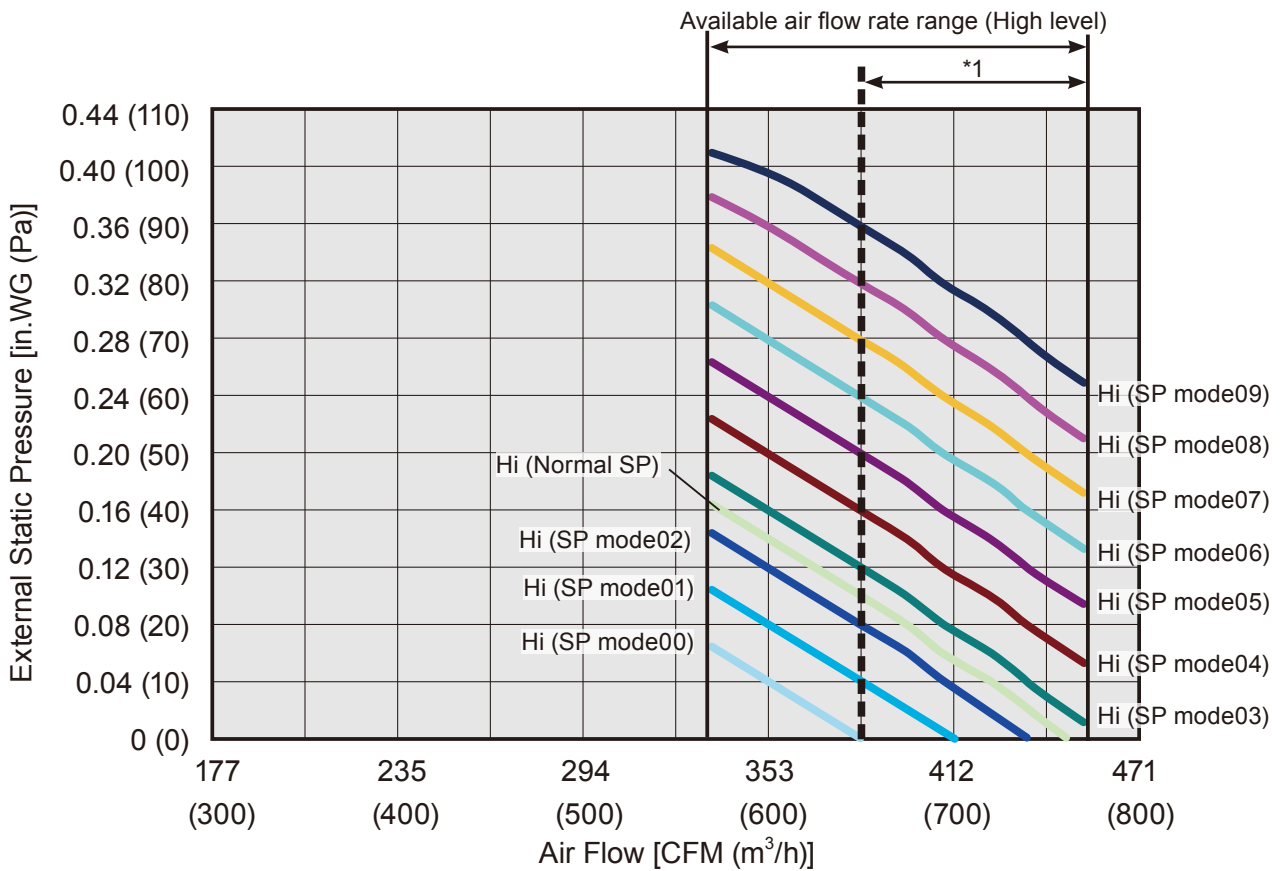
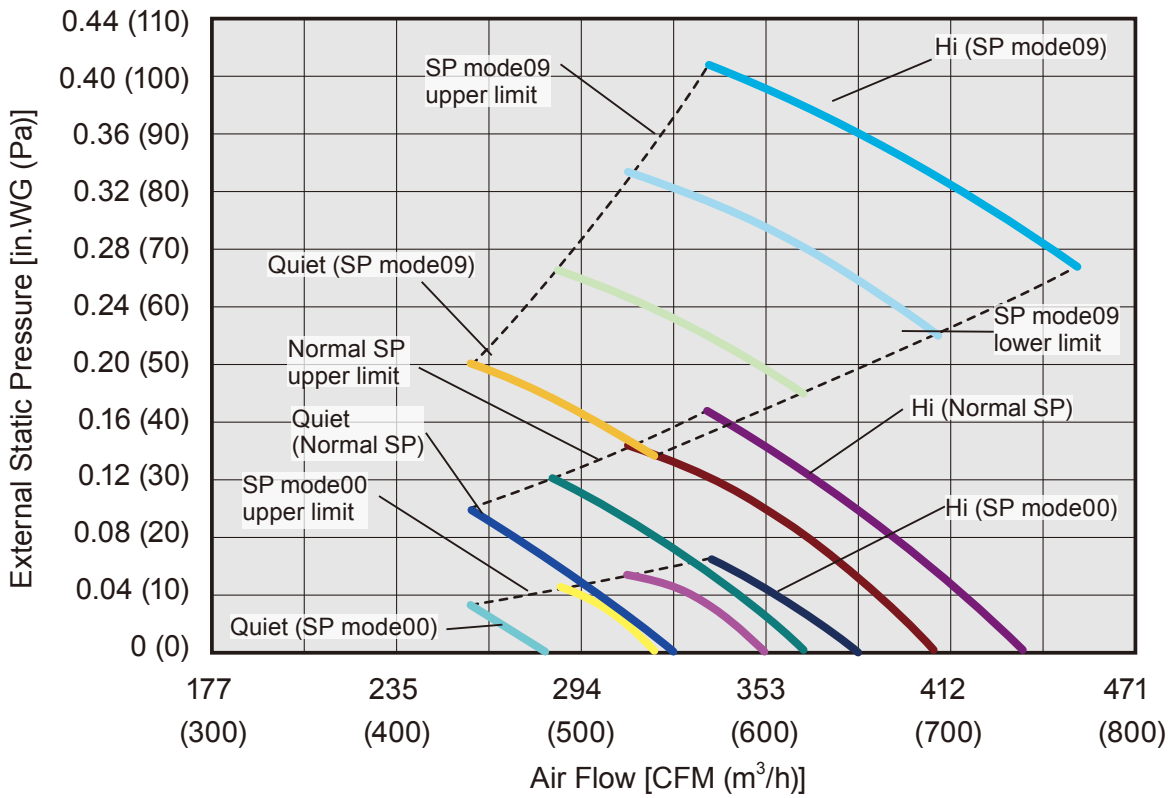
● Cooling



● Heating

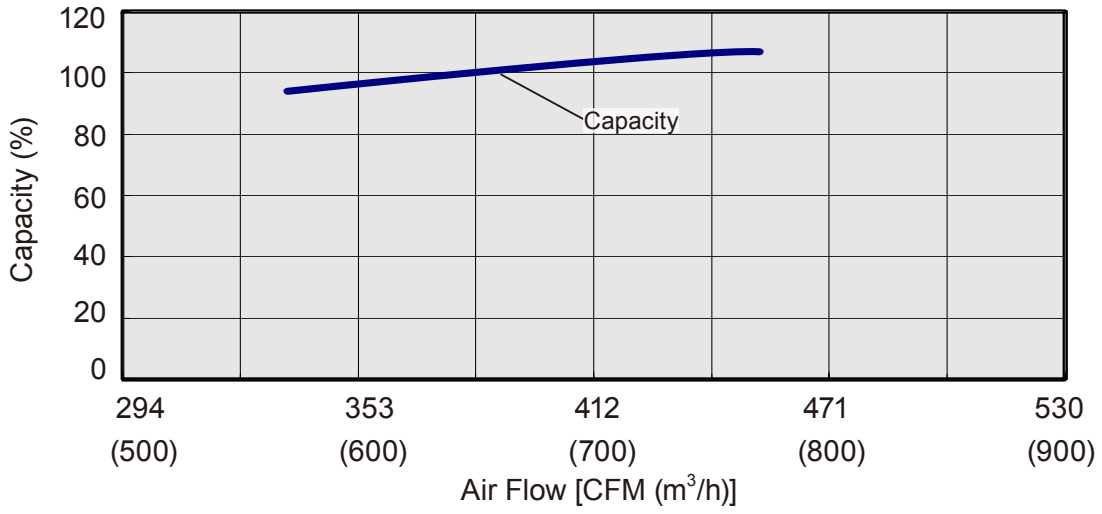


MODEL : ARU12RLF

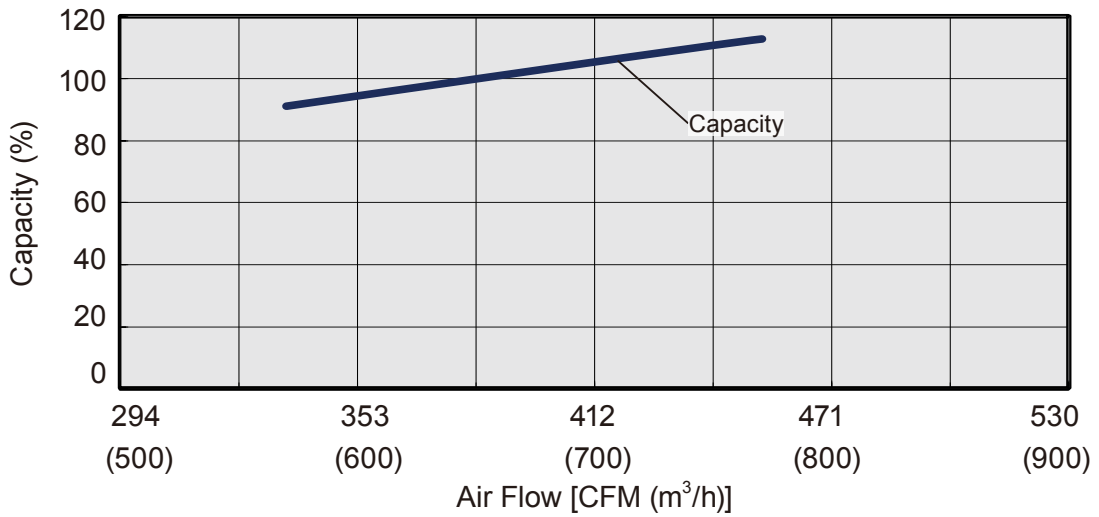


*1: Available air flow rate range when Auto louver grille (option) is installed.
 Fan speed : High
 Vertical airflow direction louver : Up

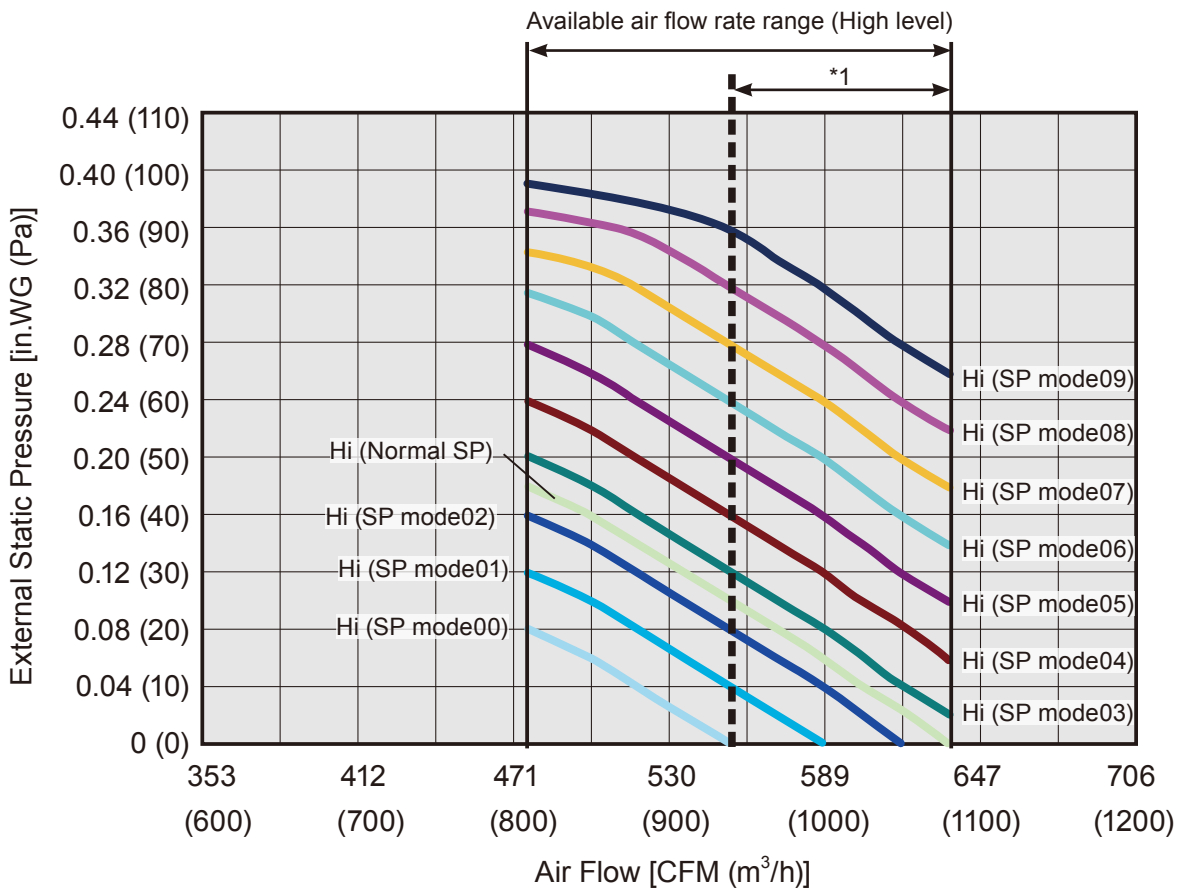
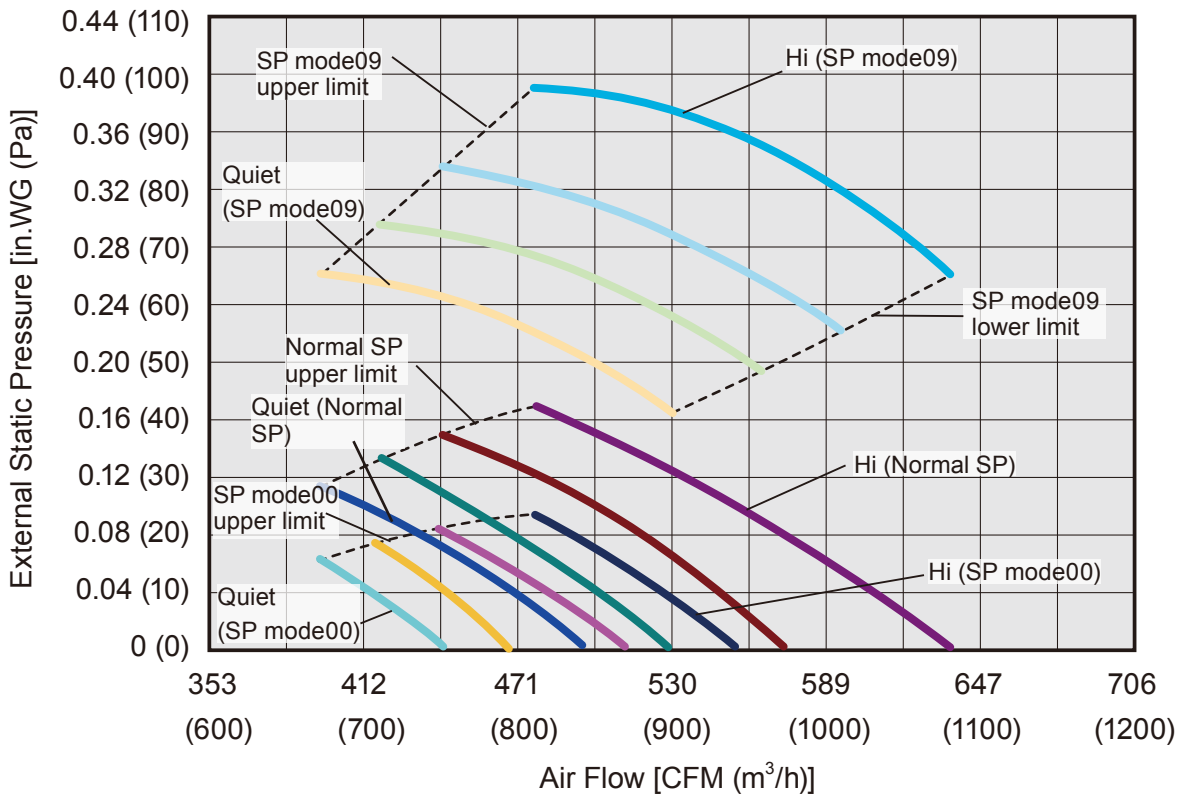
● Cooling



● Heating

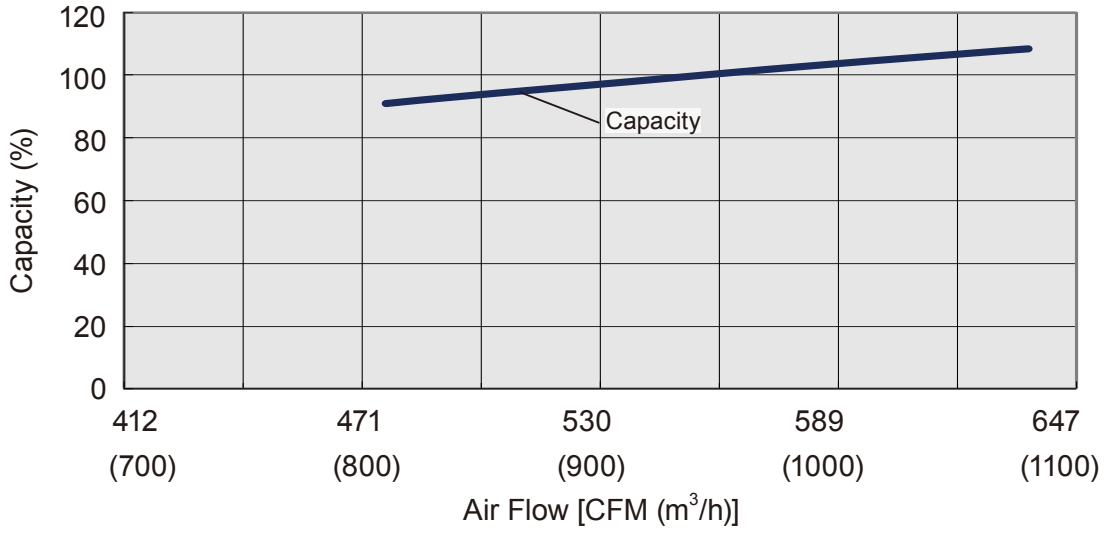


MODEL : ARU18RLF

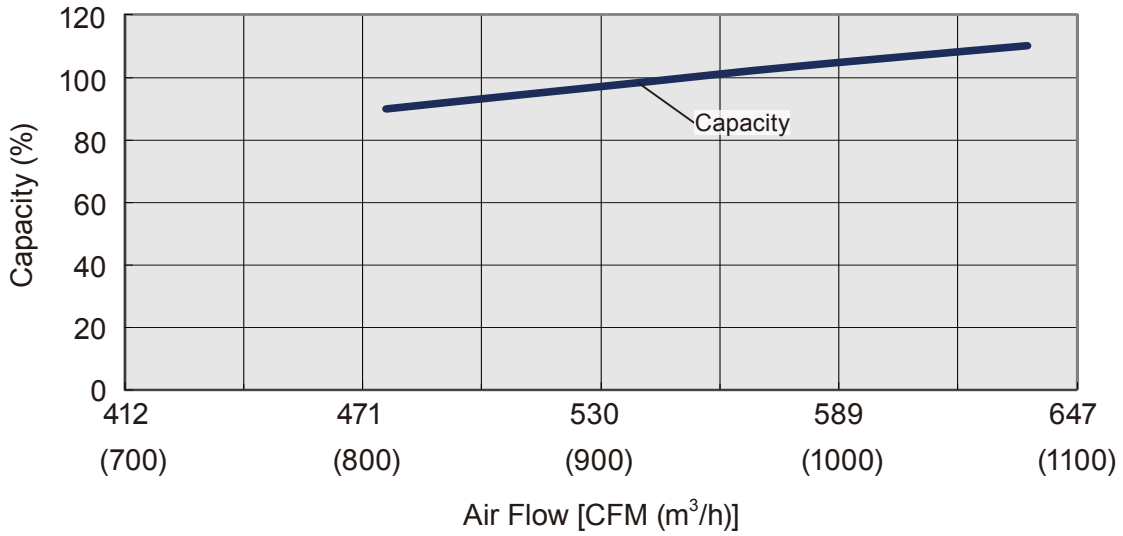


*1: Available air flow rate range when Auto louver grille (option) is installed.
 Fan speed : High
 Vertical airflow direction louver : Up

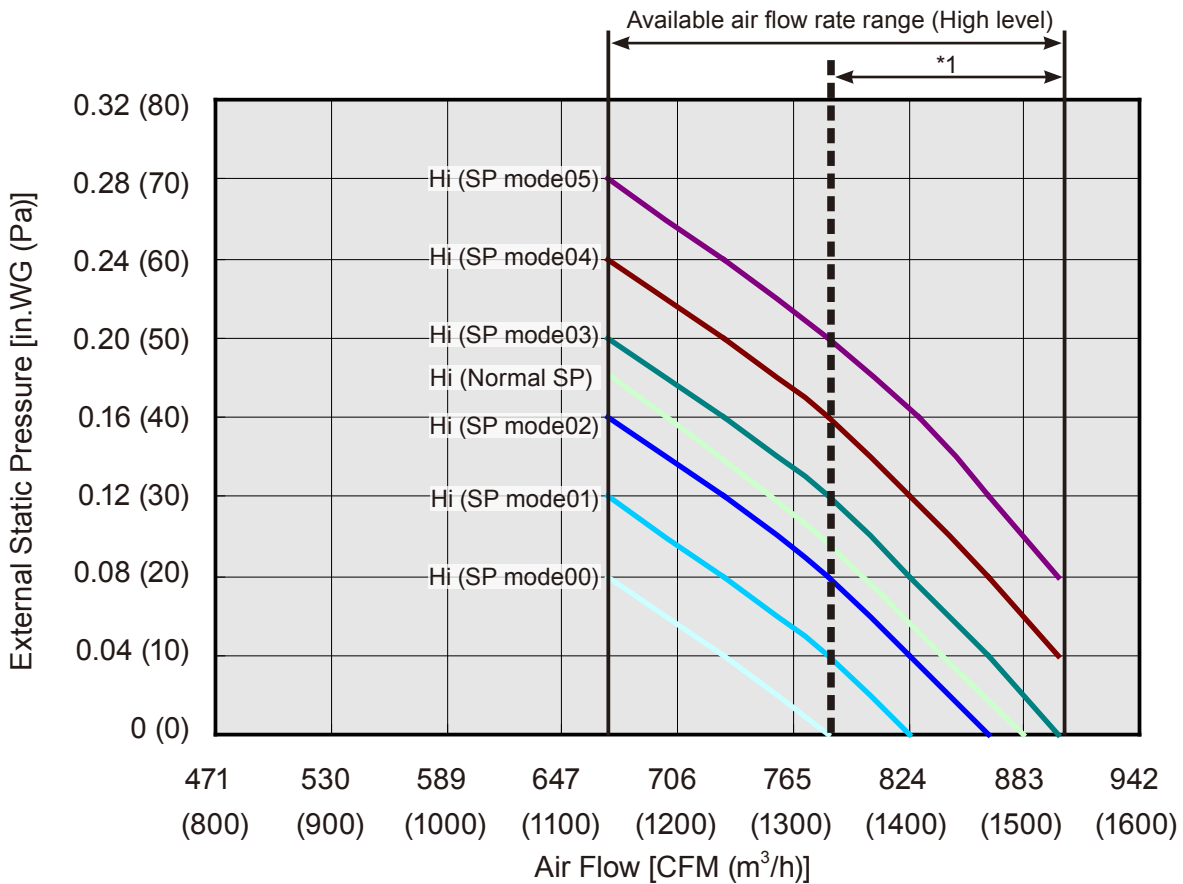
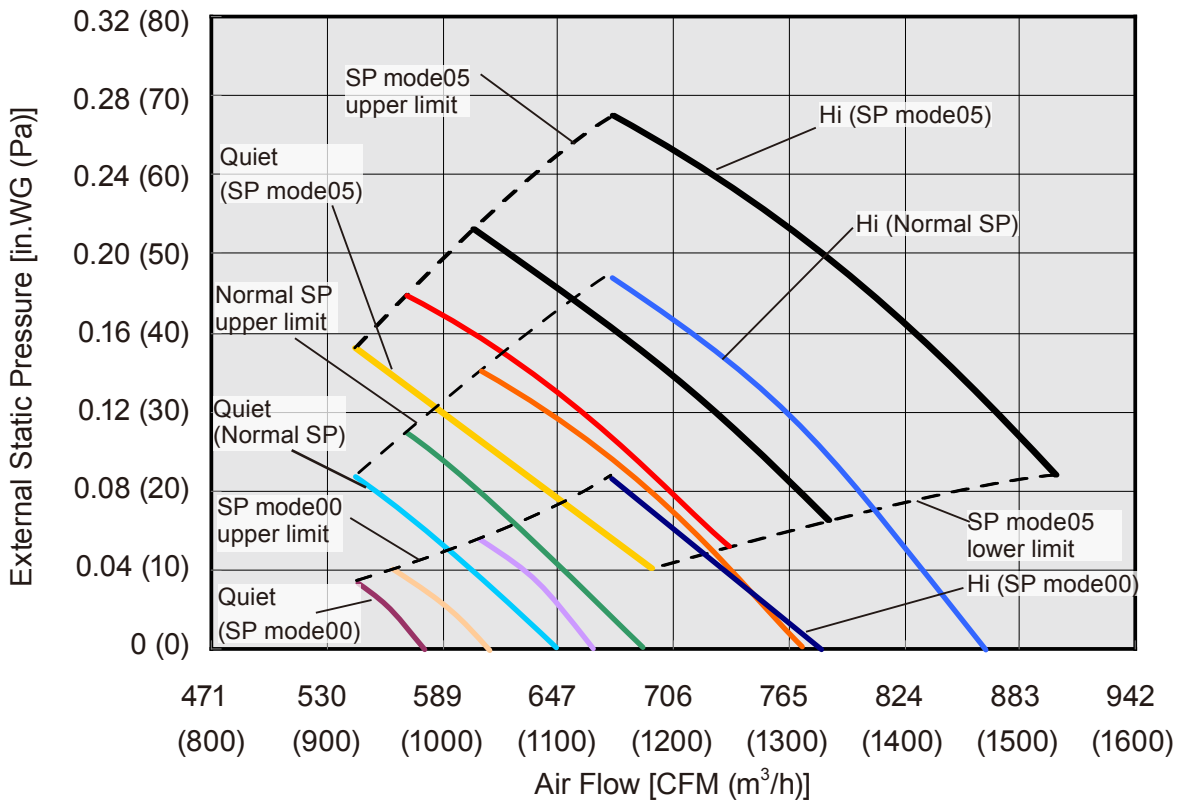
● Cooling



● Heating

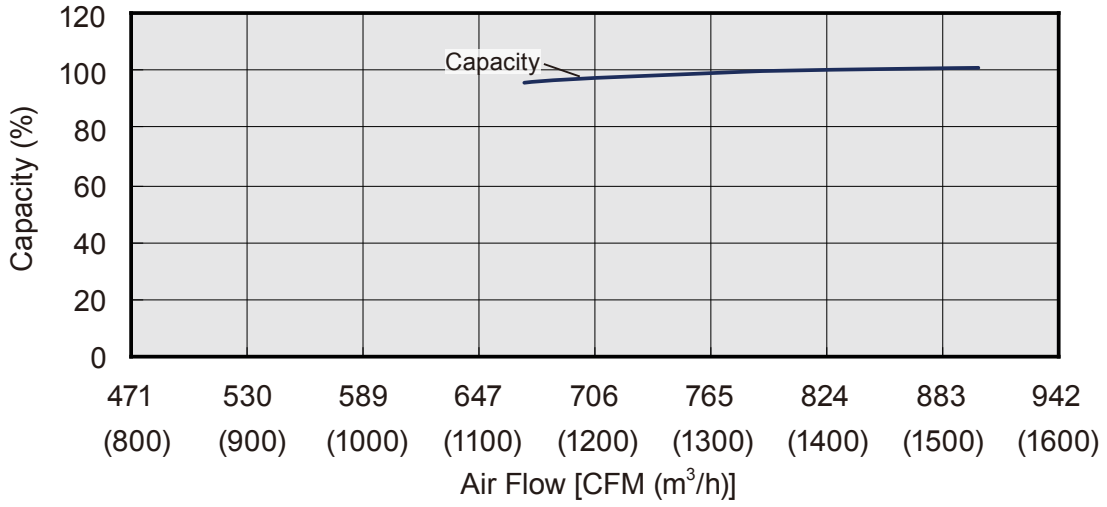


MODEL : ARU24RLF

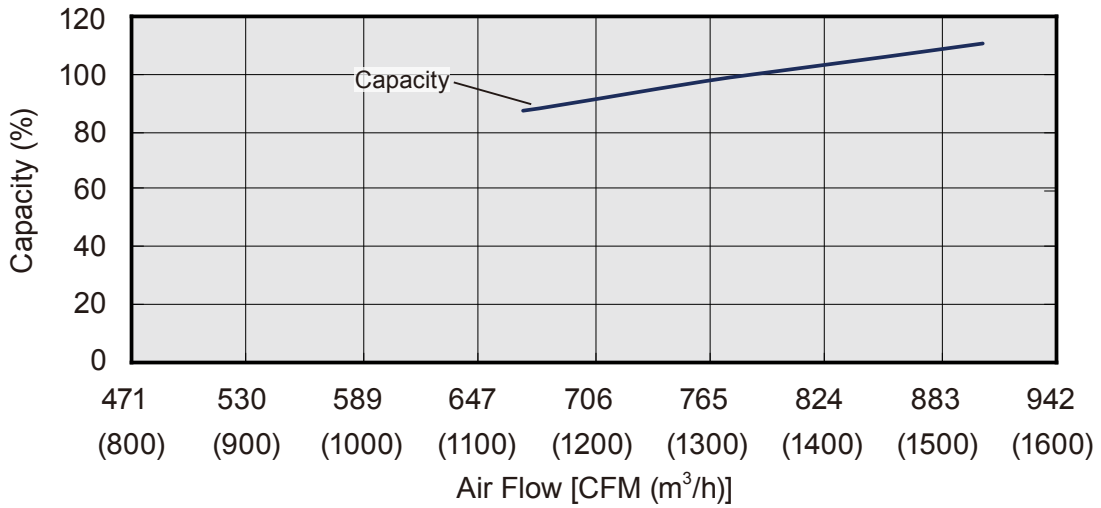


*1: Available air flow rate range when Auto louver grille (option) is installed.
 Fan speed : High
 Vertical airflow direction louver : Up

● **Cooling**



● **Heating**



8. AIRFLOW

Type	Model	Operation mode	Fan speed	Air flow			Type	Model	Operation mode	Fan speed	Air flow		
				m ³ /h	l/s	CFM					m ³ /h	l/s	CFM
Compact Cassette	AUU7RLF	Cooling	High	540	150	318	Slim Duct	ARU7RLF	Cooling	High	550	153	324
			Med	490	136	288				Med	490	136	288
			Low	440	122	259				Low	470	131	277
			Quiet	390	108	230				Quiet	440	122	259
		Heating	High	540	150	318			Heating	High	550	153	324
			Med	490	136	288				Med	490	136	288
			Low	440	122	259				Low	470	131	277
			Quiet	390	108	230				Quiet	440	122	259
	AUU9RLF	Cooling	High	540	150	318		ARU9RLF	Cooling	High	600	167	353
			Med	490	136	288				Med	550	153	324
			Low	440	122	259				Low	500	139	294
			Quiet	390	108	230				Quiet	450	125	265
		Heating	High	540	150	318			Heating	High	600	167	353
			Med	490	136	288				Med	550	153	324
			Low	440	122	259				Low	500	139	294
			Quiet	390	108	230				Quiet	450	125	265
	AUU12RLF	Cooling	High	610	169	359		ARU12RLF	Cooling	High	650	181	383
			Med	530	147	312				Med	600	167	353
			Low	470	131	277				Low	550	153	324
			Quiet	410	114	241				Quiet	480	133	283
		Heating	High	610	169	359			Heating	High	650	181	383
			Med	530	147	312				Med	600	167	353
			Low	470	131	277				Low	550	153	324
			Quiet	410	114	241				Quiet	480	133	283
	AUU18RLF	Cooling	High	750	208	441		ARU18RLF	Cooling	High	940	261	553
			Med	610	169	359				Med	880	244	518
			Low	520	144	306				Low	820	227	483
			Quiet	410	114	241				Quiet	750	208	441
		Heating	High	800	222	471			Heating	High	940	261	553
			Med	710	197	418				Med	880	244	518
			Low	600	167	353				Low	820	227	483
			Quiet	450	125	265				Quiet	750	208	441
	ARU24RLF	Cooling	High	1330	369	783		ARU24RLF	Cooling	High	1330	369	783
			Med	1240	344	730				Med	1240	344	730
			Low	1100	306	647				Low	1100	306	647
			Quiet	1030	286	606				Quiet	1030	286	606
		Heating	High	1330	369	783			Heating	High	1330	369	783
			Med	1240	344	730				Med	1240	344	730
			Low	1100	306	647				Low	1100	306	647
			Quiet	1030	286	606				Quiet	1030	286	606

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

INDOOR UNITS

INDOOR UNITS

Type	Model	Operation mode	Fan speed	Air flow			Type	Model	Operation mode	Fan speed	Air flow		
				m³/h	l/s	CFM					m³/h	l/s	CFM
Wall Mounted	ASU7RLF1	Cooling	High	560	156	330	Wall Mounted	ASU12RLS2	Cooling	High	660	183	388
			Med	500	139	294				Med	600	167	353
			Low	430	119	253				Low	530	147	312
			Quiet	310	86	182				Quiet	330	92	194
		Heating	High	560	156	330			Heating	High	660	183	388
			Med	500	139	294				Med	600	167	353
			Low	430	119	253				Low	530	147	312
			Quiet	330	92	194				Quiet	330	92	194
	ASU9RLF1	Cooling	High	600	167	353		ASU15RLS2	Cooling	High	710	197	418
			Med	520	144	306				Med	640	178	377
			Low	430	119	253				Low	570	158	336
			Quiet	310	86	182				Quiet	390	108	230
		Heating	High	600	167	353			Heating	High	710	197	418
			Med	520	144	306				Med	640	178	377
			Low	430	119	253				Low	590	164	347
			Quiet	330	92	194				Quiet	430	119	253
	ASU12RLF1	Cooling	High	660	183	388		ASU18RLF	Cooling	High	920	256	542
			Med	560	156	330				Med	740	206	436
			Low	450	125	265				Low	620	172	365
			Quiet	310	86	182				Quiet	550	153	324
		Heating	High	660	183	388			Heating	High	920	256	542
			Med	560	156	330				Med	740	206	436
			Low	470	131	277				Low	620	172	365
			Quiet	330	92	194				Quiet	550	153	324
	ASU7RLF	Cooling	High	560	156	330		ASU24RLF	Cooling	High	1120	311	659
			Med	500	139	294				Med	900	250	530
			Low	430	119	253				Low	740	206	436
			Quiet	340	94	200				Quiet	620	172	365
		Heating	High	560	156	330			Heating	High	1100	306	647
			Med	500	139	294				Med	900	250	530
			Low	430	119	253				Low	740	206	436
			Quiet	350	97	206				Quiet	620	172	365
	ASU9RLF	Cooling	High	600	167	353		AGU9RLF	Cooling	High	530	147	312
			Med	520	144	306				Med	440	122	259
			Low	430	119	253				Low	360	100	212
			Quiet	340	94	200				Quiet	270	75	159
		Heating	High	600	167	353			Heating	High	530	147	312
			Med	520	144	306				Med	460	128	270
			Low	430	119	253				Low	380	106	224
			Quiet	350	97	206				Quiet	270	75	159
	ASU12RLF	Cooling	High	660	183	388		AGU12RLF	Cooling	High	600	167	353
			Med	560	156	330				Med	490	136	288
			Low	450	125	265				Low	380	106	224
			Quiet	340	94	200				Quiet	270	75	159
		Heating	High	660	183	388			Heating	High	600	167	353
			Med	560	156	330				Med	510	142	300
			Low	470	131	277				Low	410	114	241
			Quiet	350	97	206				Quiet	270	75	159
ASU9RLS2	Cooling	High	600	167	353	AGU15RLF	Cooling	High	650	181	383		
		Med	550	153	324			Med	520	144	306		
		Low	470	131	277			Low	400	111	235		
		Quiet	330	92	194			Quiet	270	75	159		
	Heating	High	600	167	353		Heating	High	650	181	383		
		Med	550	153	324			Med	540	150	318		
		Low	470	131	277			Low	430	119	253		
		Quiet	330	92	194			Quiet	270	75	159		

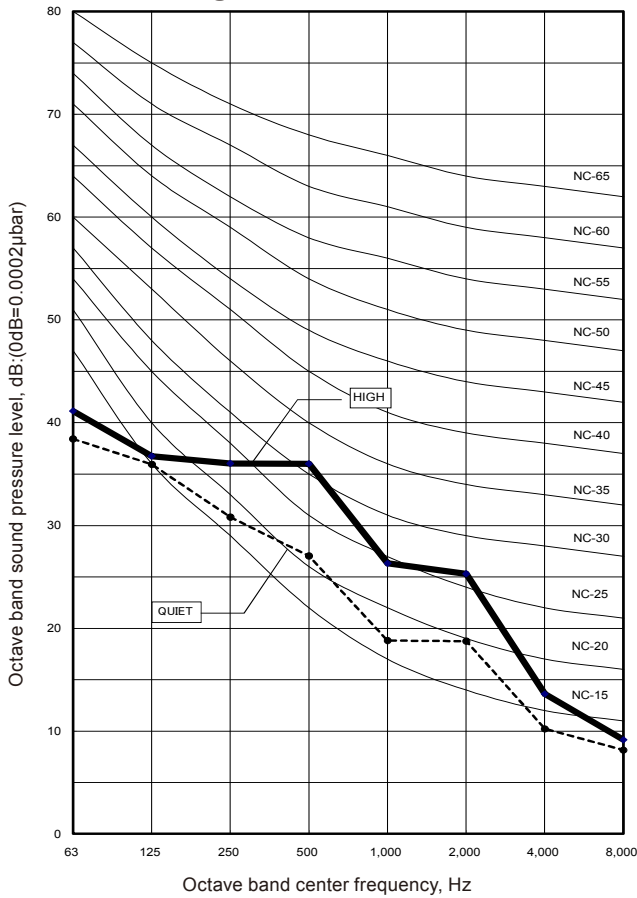
Conversion Factor
 1 m³/h = 0.2778 l/s = 0.5886 CFM
 3.6 m³/h = 1 l/s
 1.699 m³/h = 1 CFM

9. NOISE LEVEL CURVE

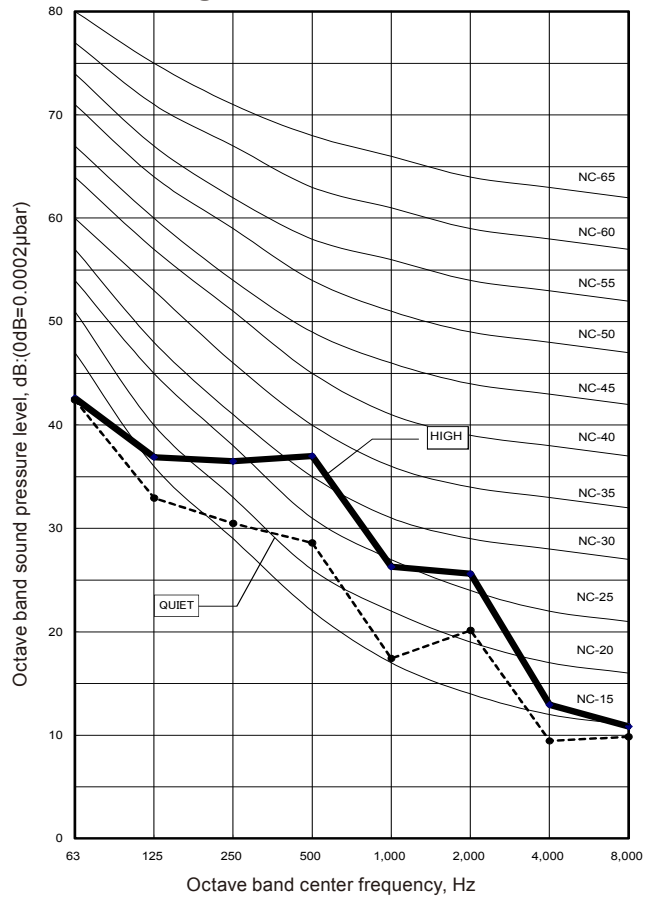
9-1. COMPACT CASSETTE TYPE

MODEL : AUU7RLF

● Cooling

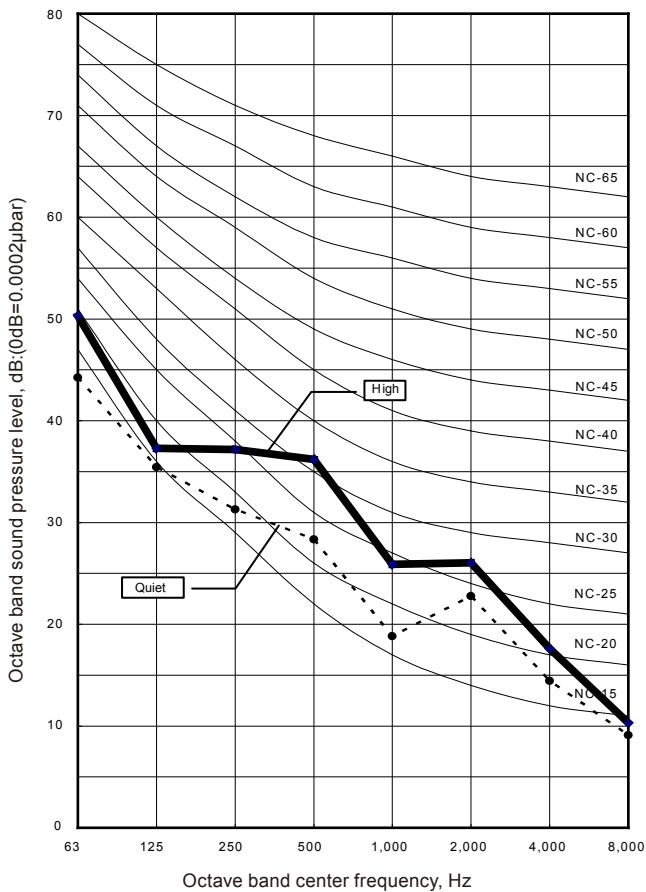


● Heating

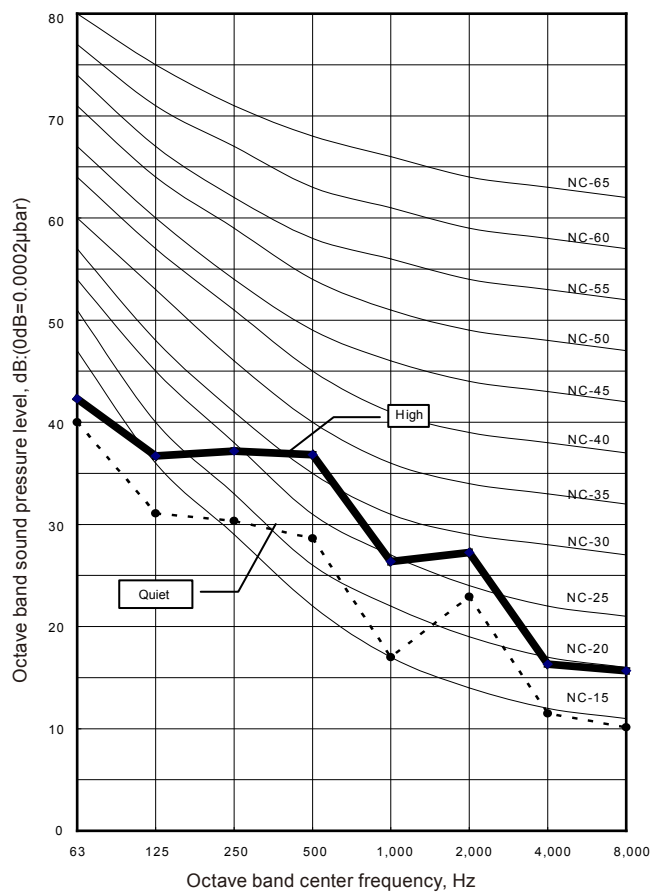


MODEL : AUU9RLF

● Cooling



● Heating

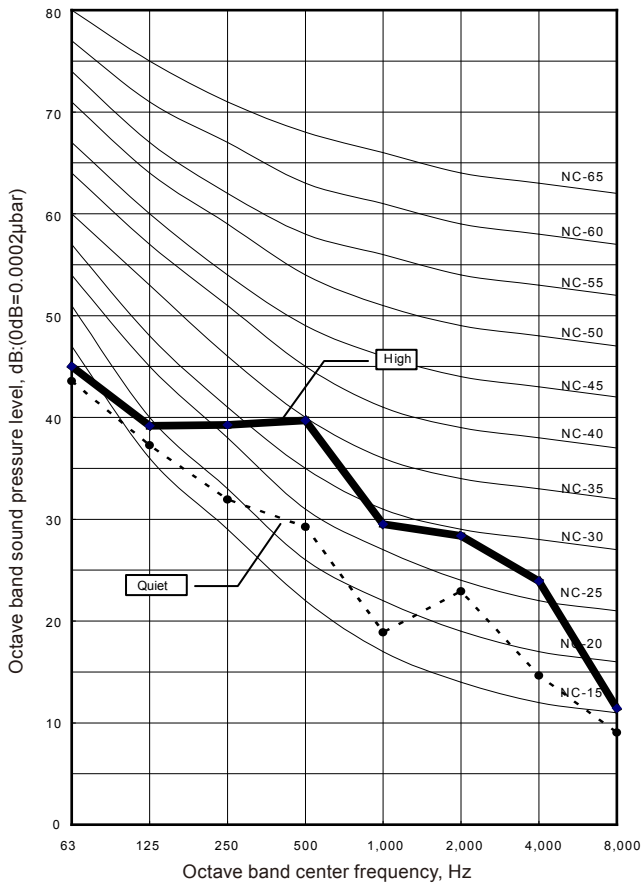


INDOOR UNITS

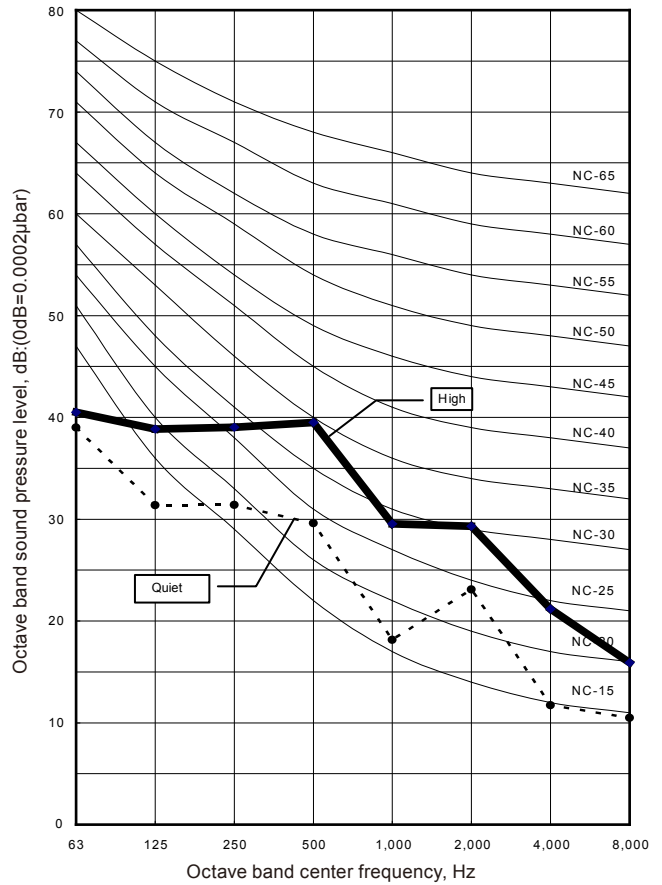
INDOOR UNITS

MODEL : AUU12RLF

● Cooling

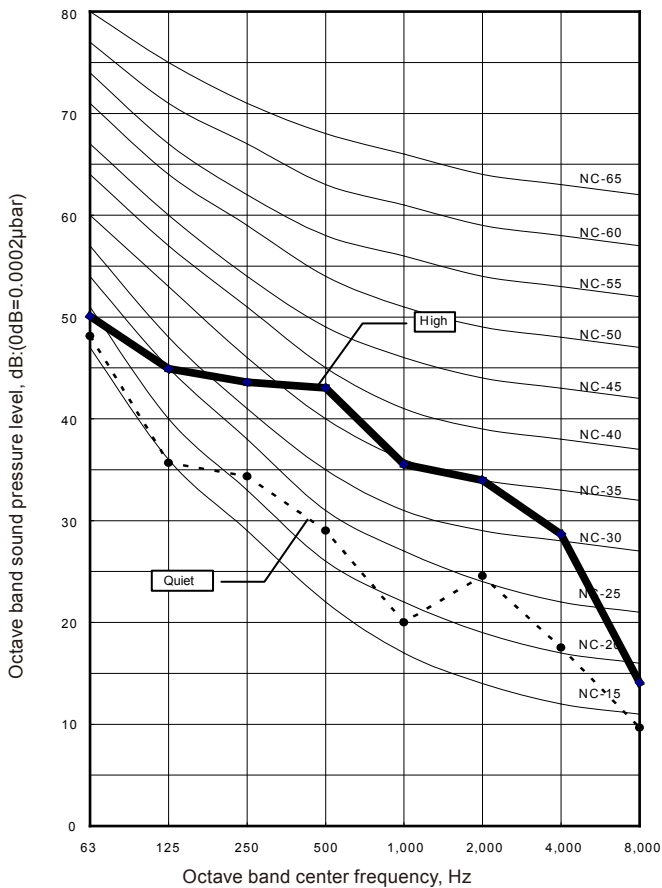


● Heating

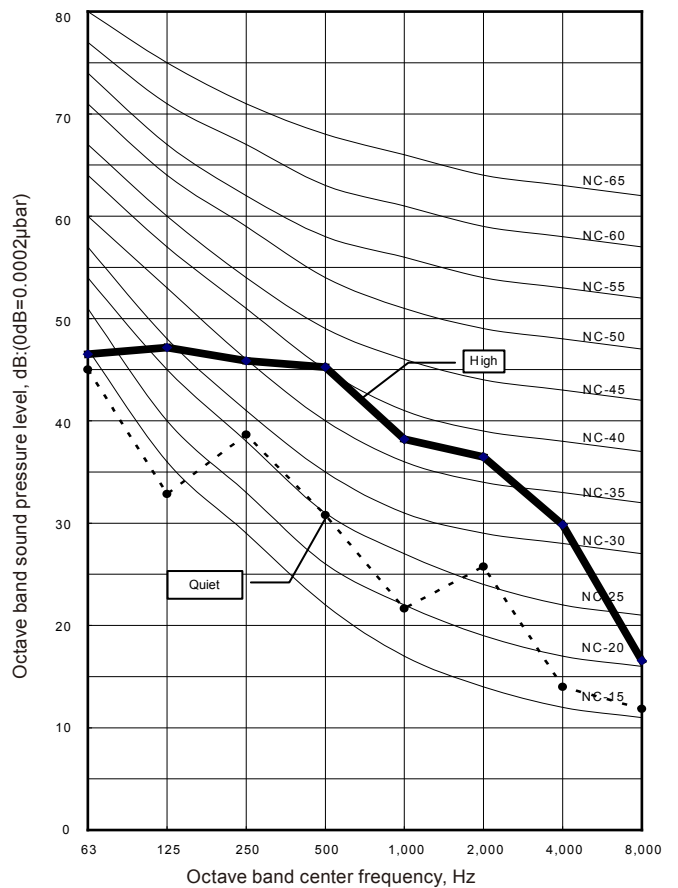


MODEL : AUU18RLF

● Cooling



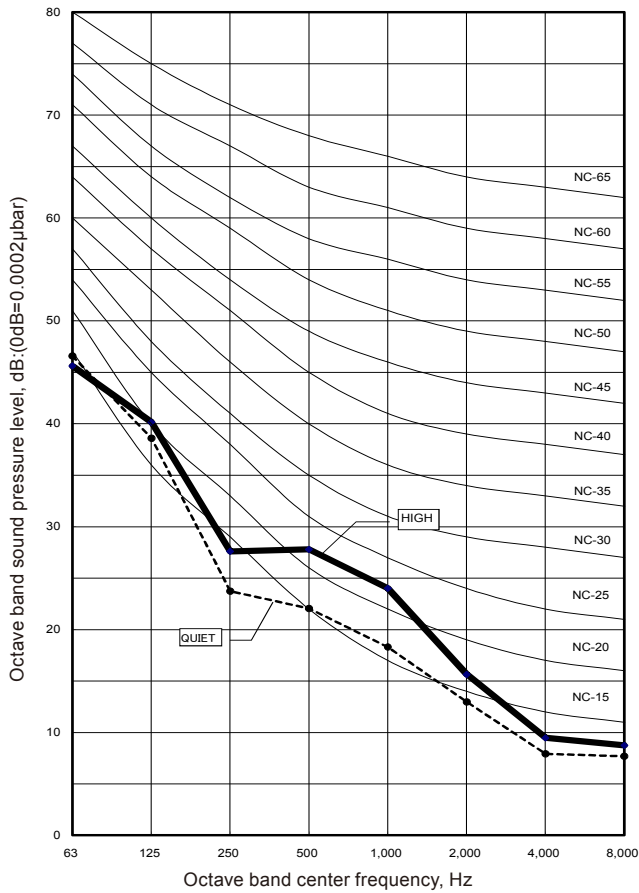
● Heating



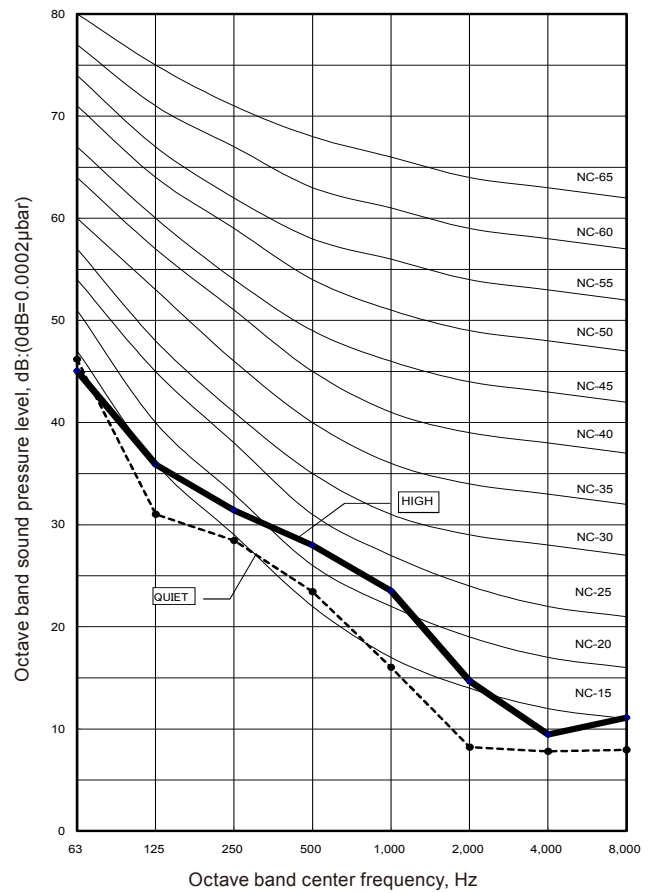
9-2. SLIM DUCT TYPE

MODEL : ARU7RLF

● Cooling

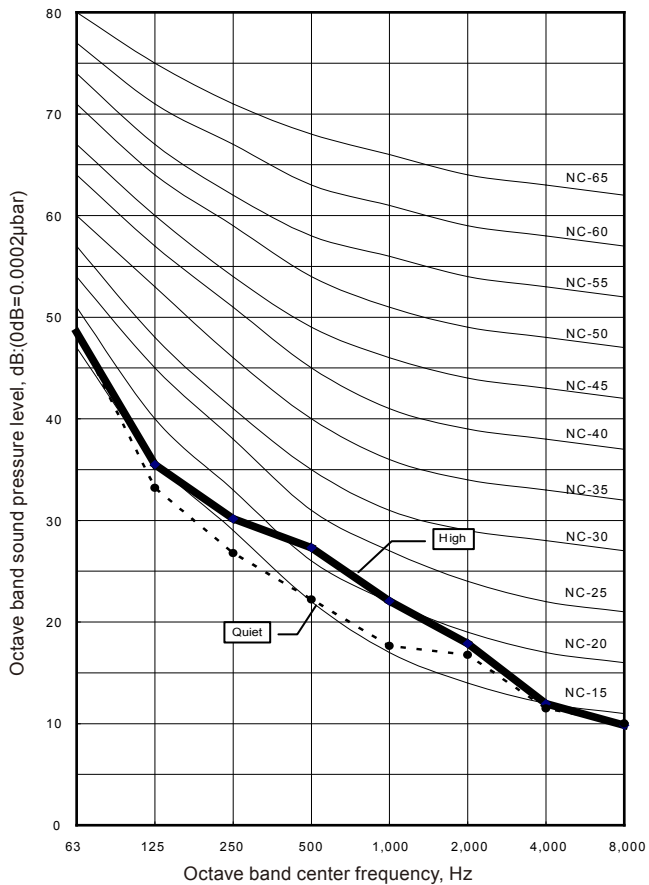


● Heating

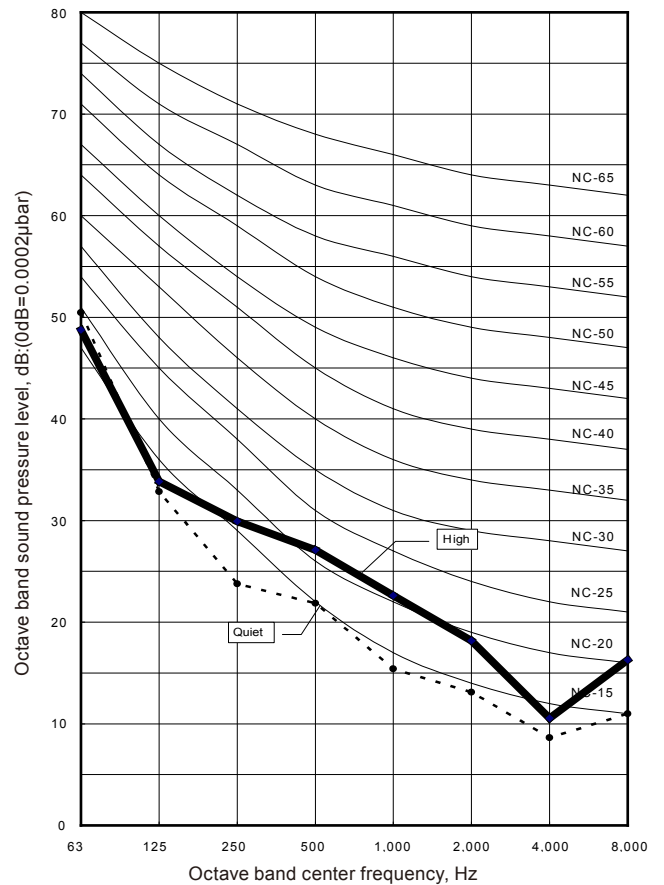


MODEL : ARU9RLF

● Cooling



● Heating

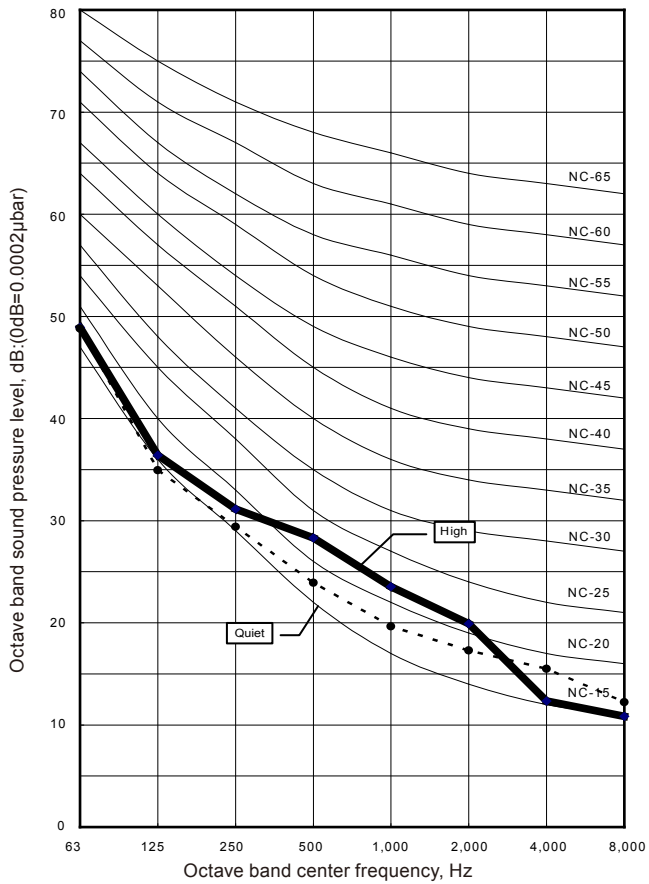


INDOOR UNITS

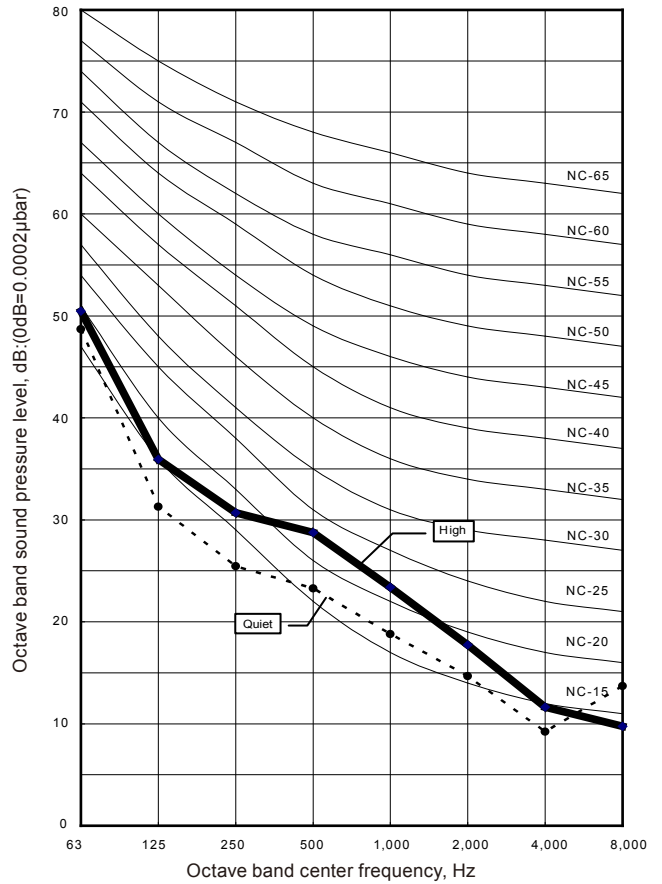
INDOOR UNITS

MODEL : ARU12RLF

● Cooling

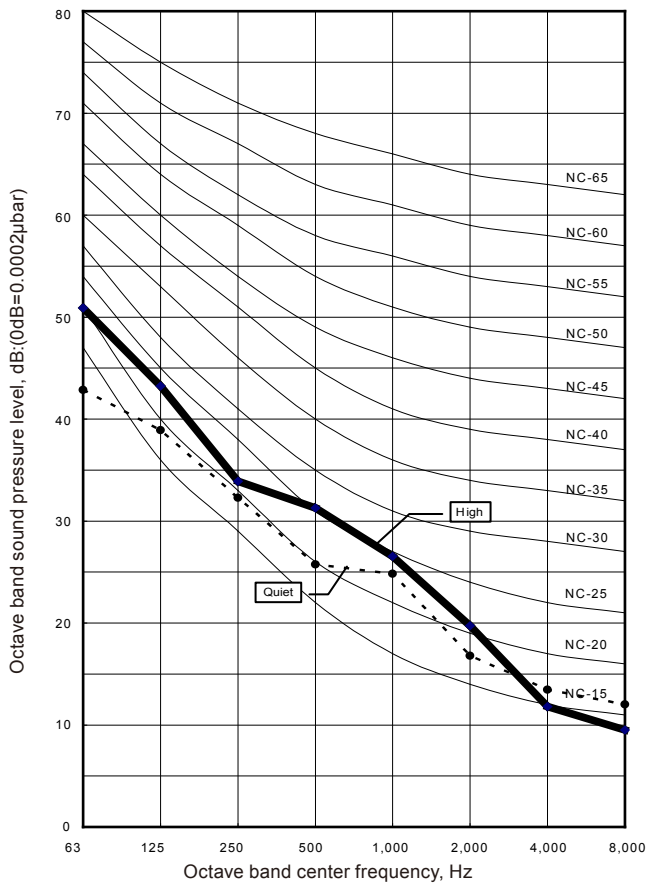


● Heating

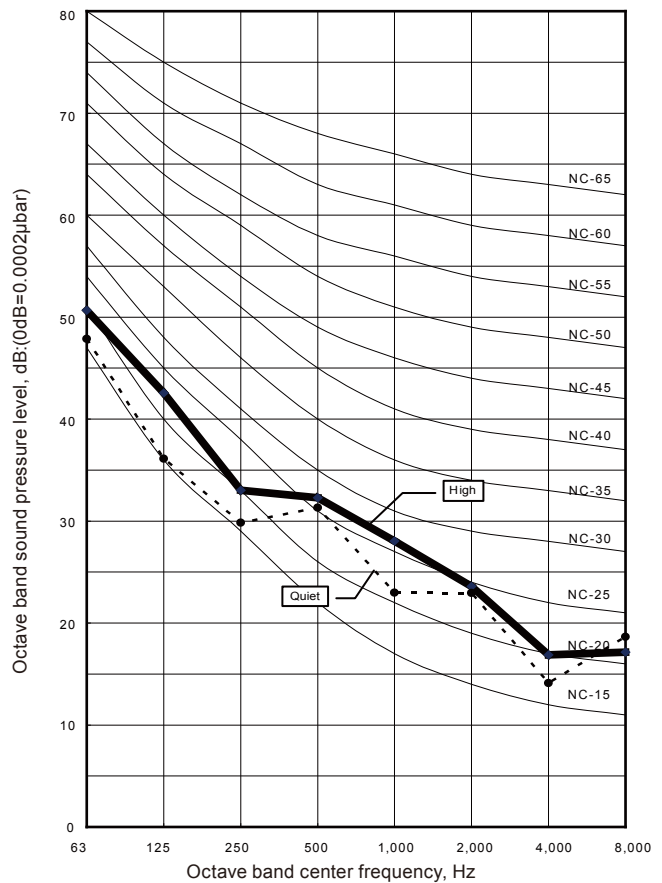


MODEL : ARU18RLF

● Cooling

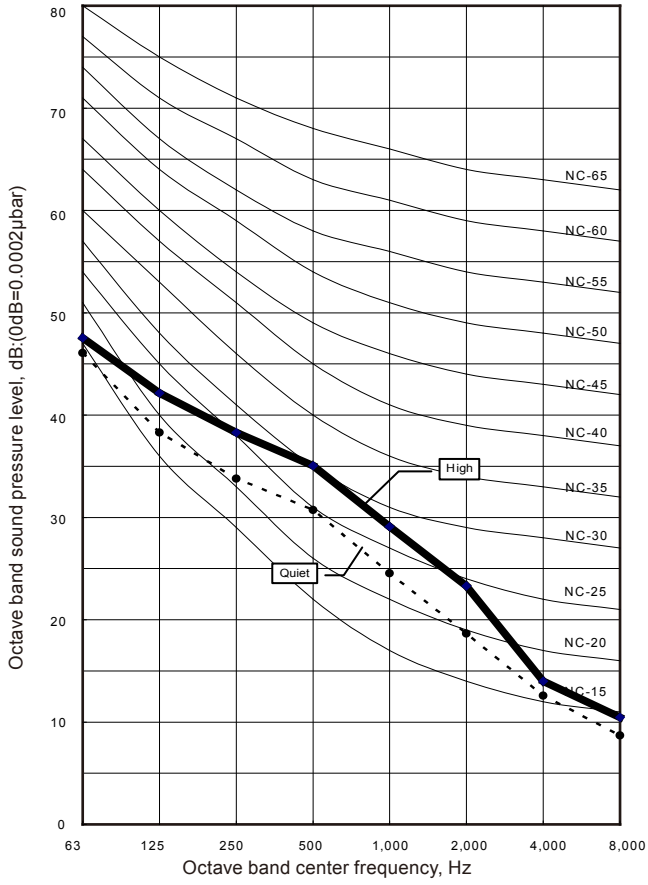


● Heating

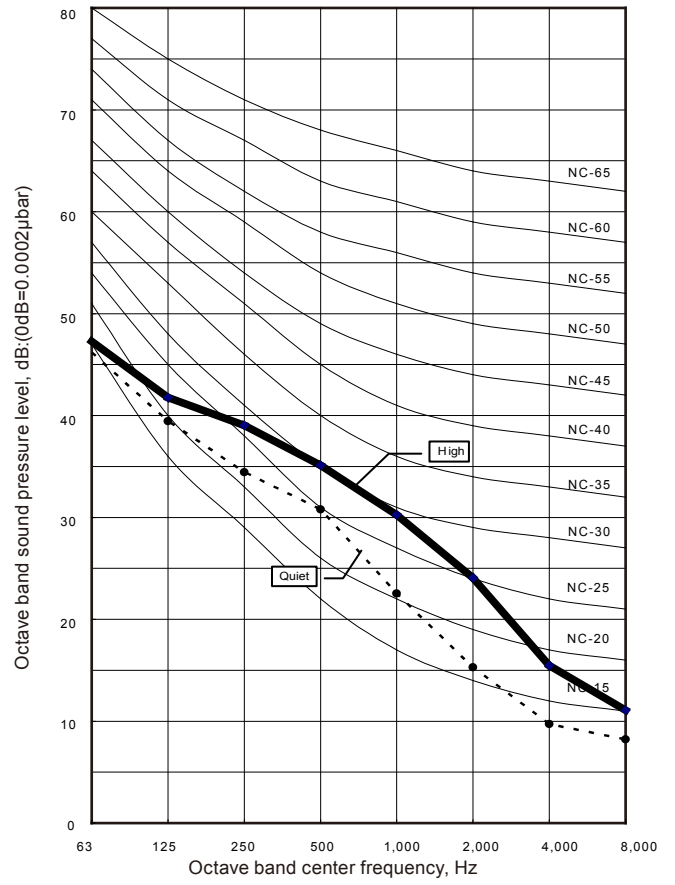


MODEL : ARU24RLF

● Cooling



● Heating



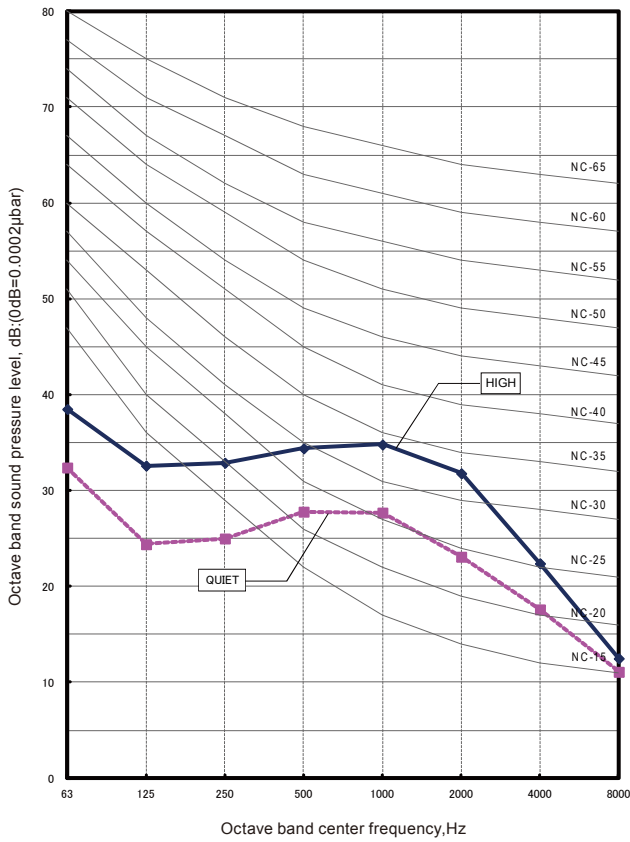
INDOOR UNITS

INDOOR UNITS

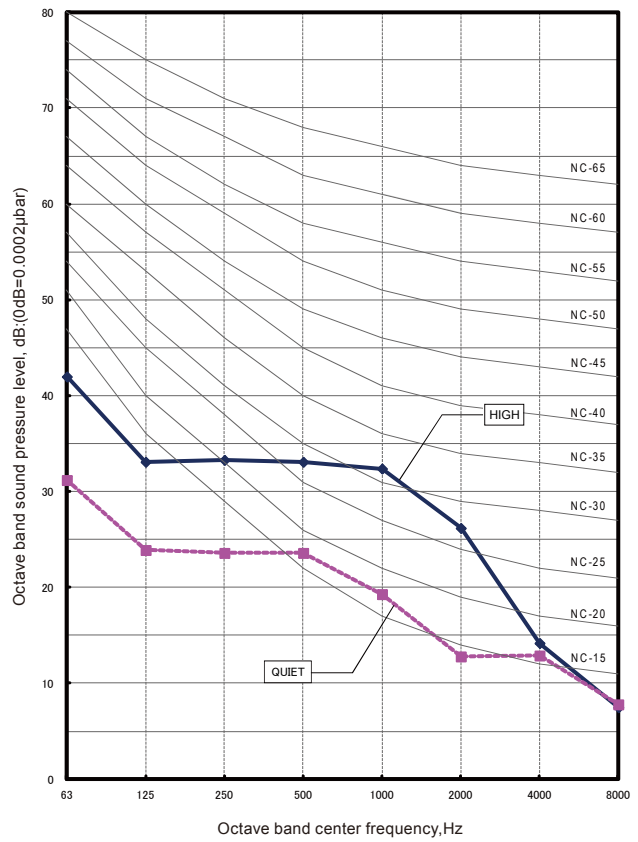
9-3. WALL MOUNTED TYPE

MODEL : ASU7RLF1

Cooling

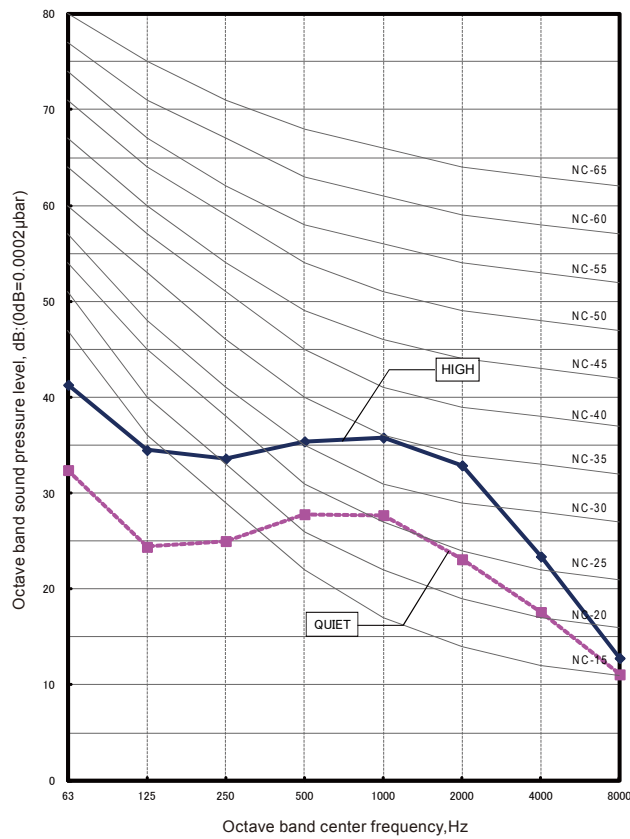


Heating

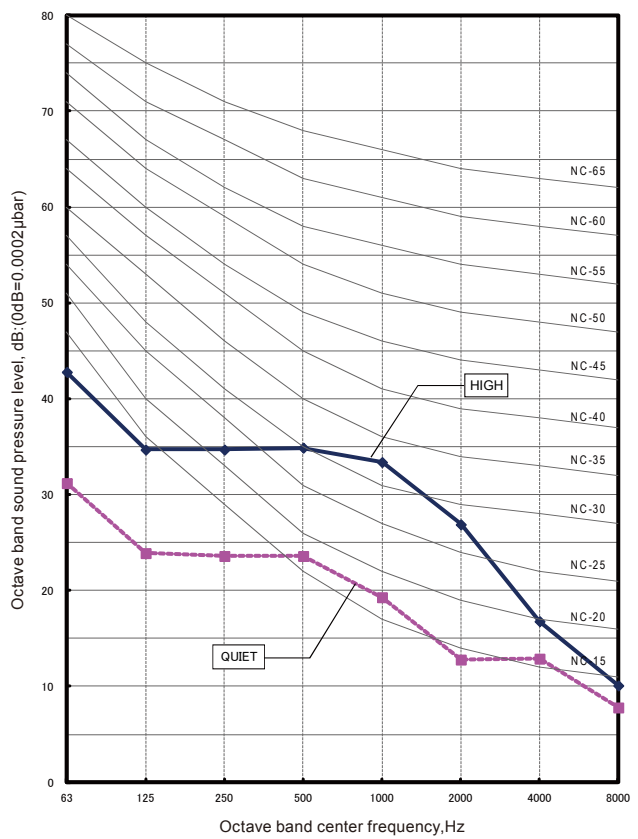


MODEL : ASU9RLF1

Cooling



Heating

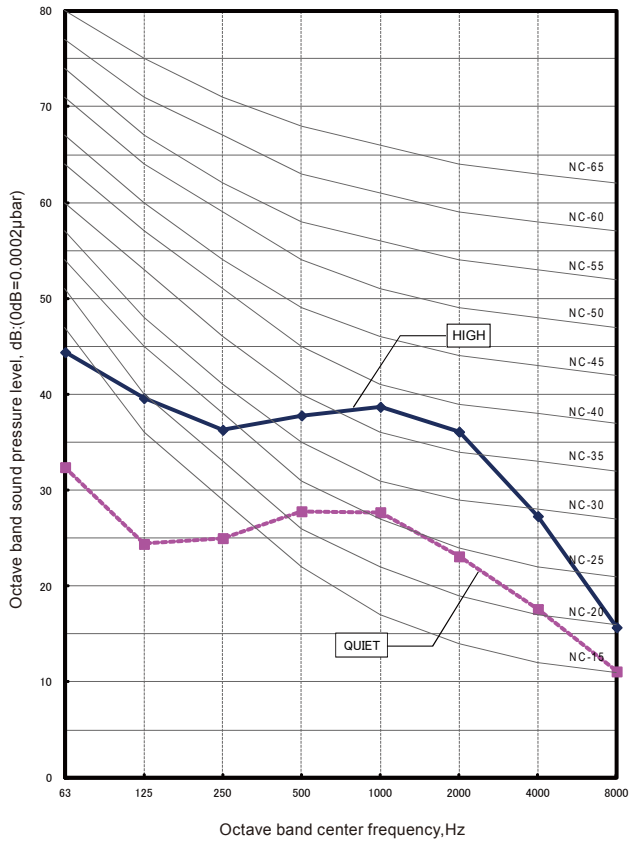


INDOOR UNITS

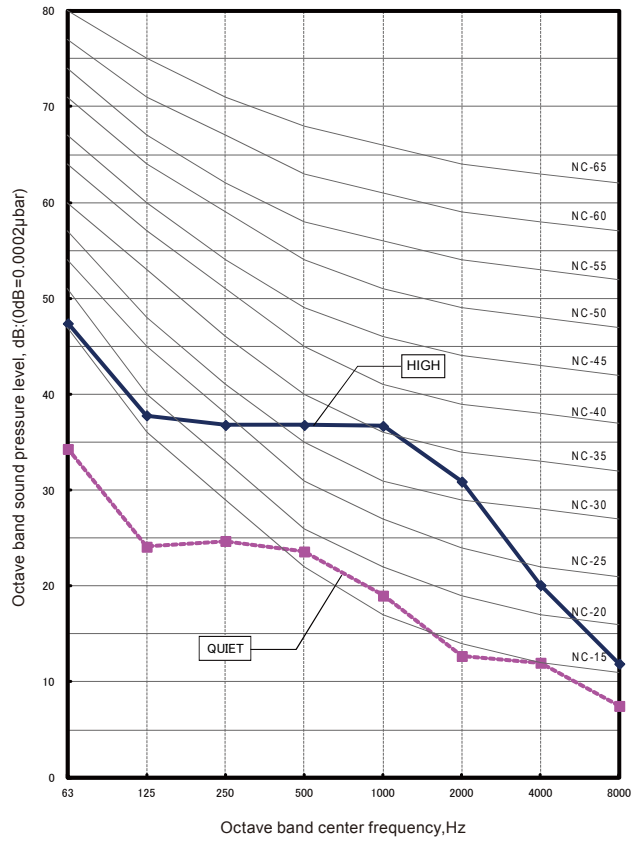
INDOOR UNITS

MODEL : ASU12RLF1

● Cooling



● Heating

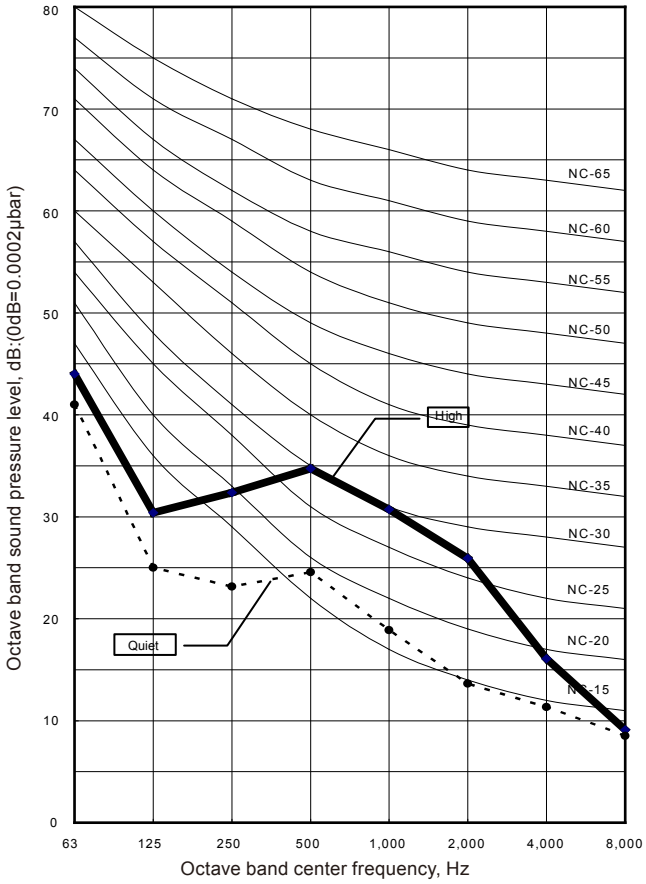


INDOOR UNITS

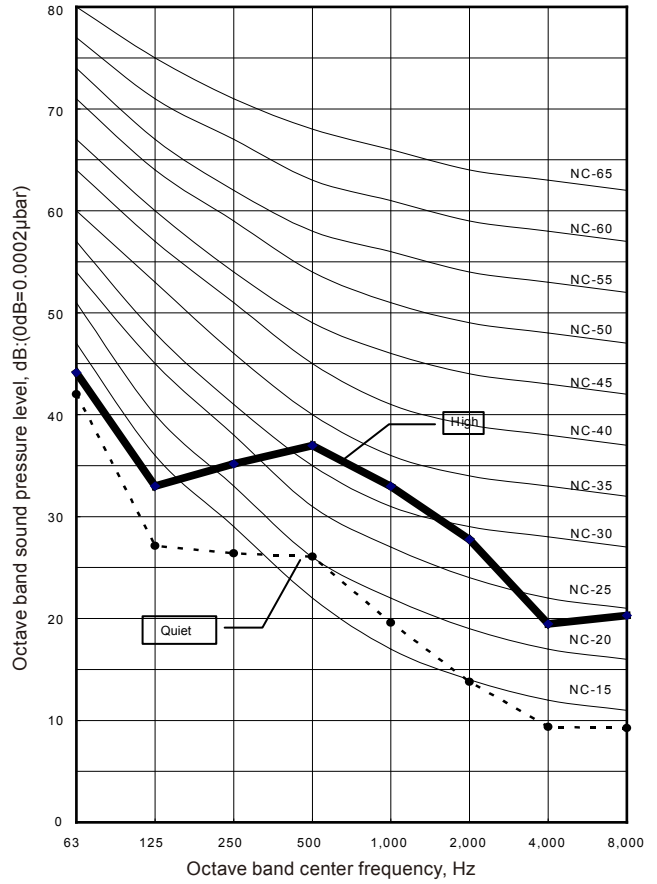
INDOOR UNITS

MODEL : ASU7RLF

● Cooling

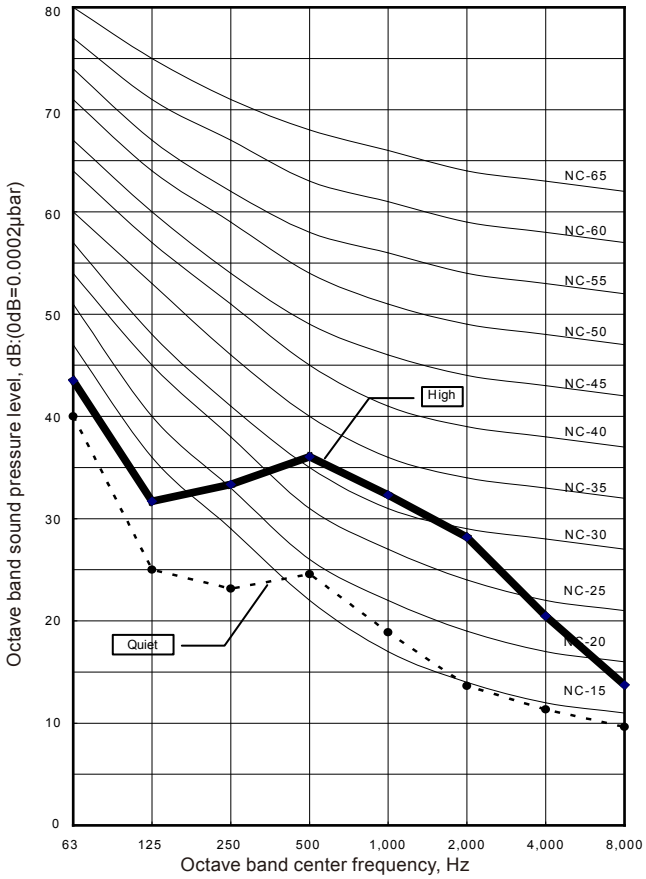


● Heating

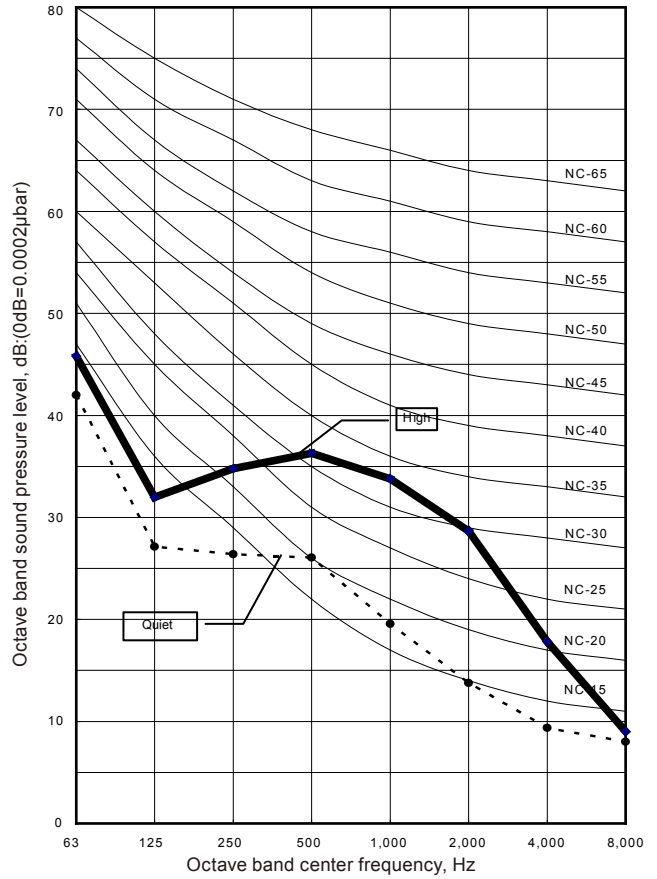


MODEL : ASU9RLF

● Cooling

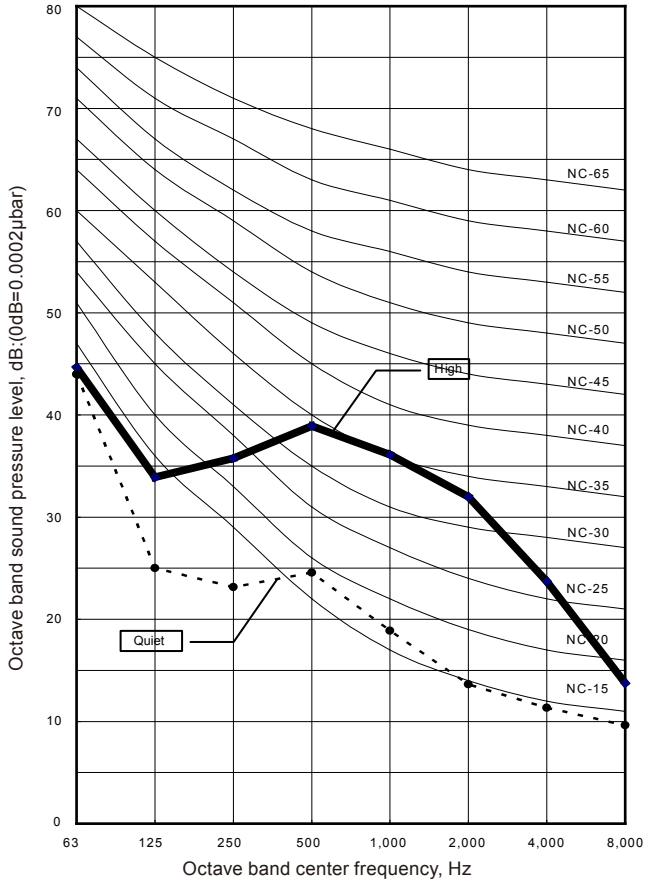


● Heating

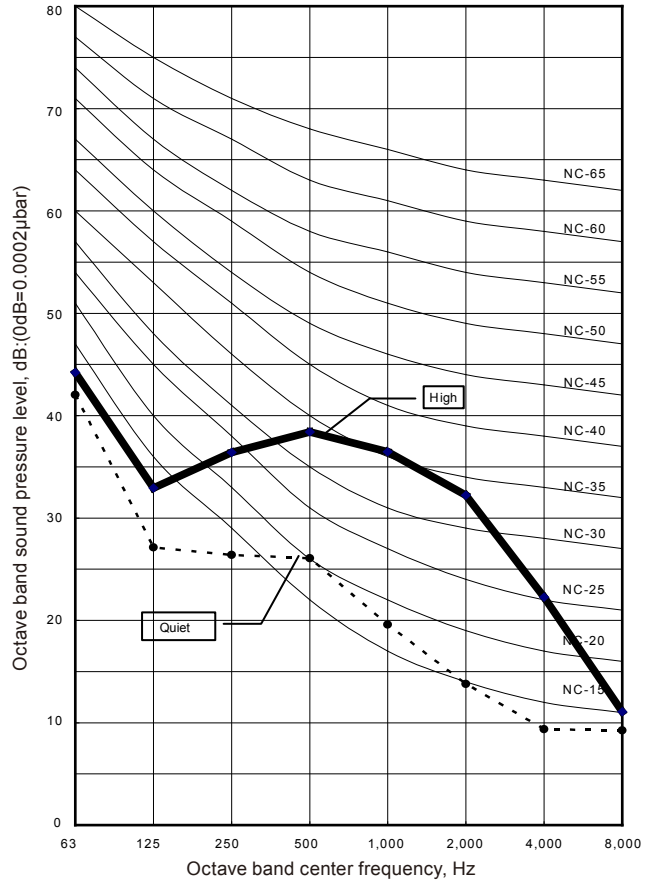


MODEL : ASU12RLF

● Cooling



● Heating

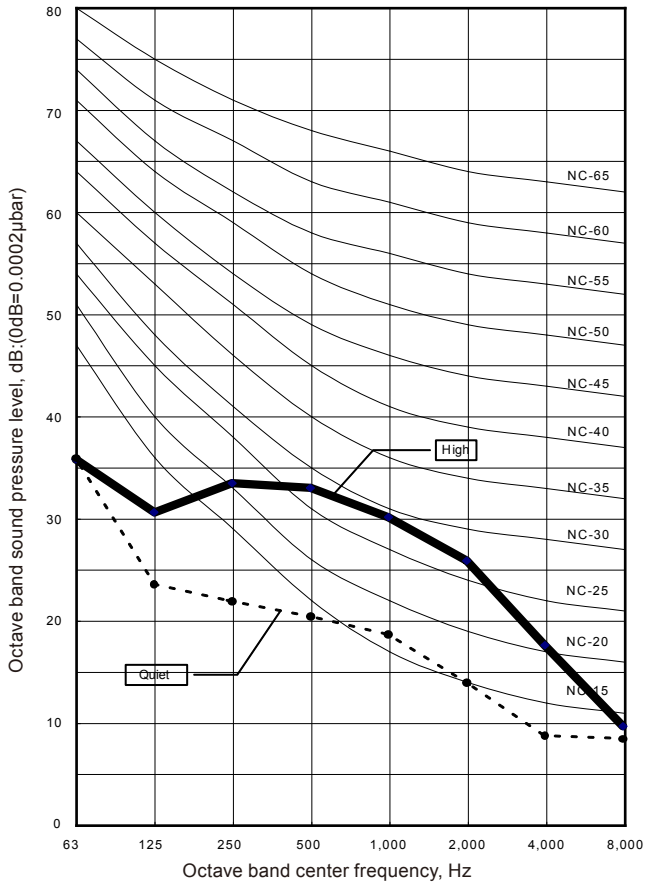


INDOOR UNITS

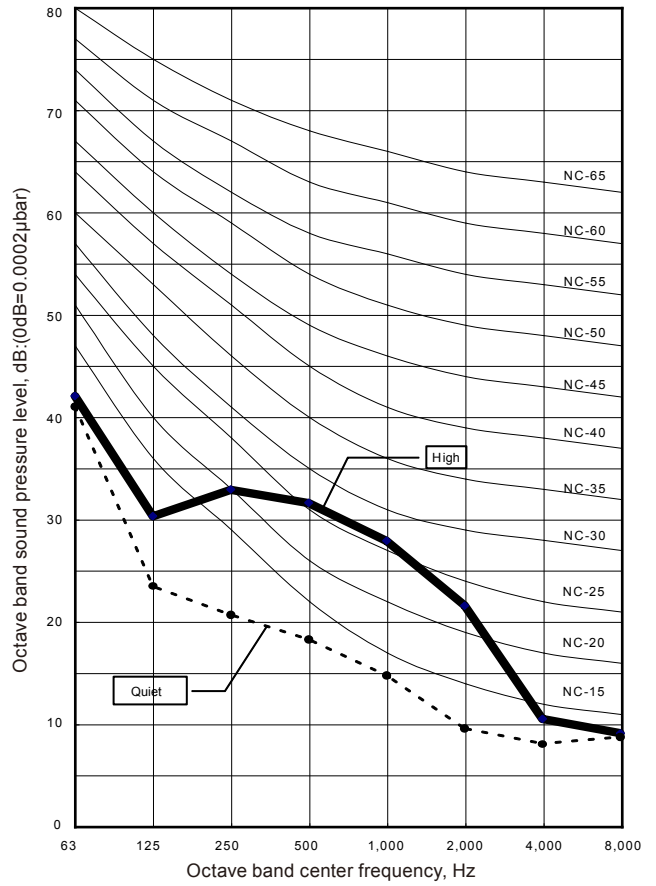
INDOOR UNITS

MODEL : ASU9RLS2

● Cooling

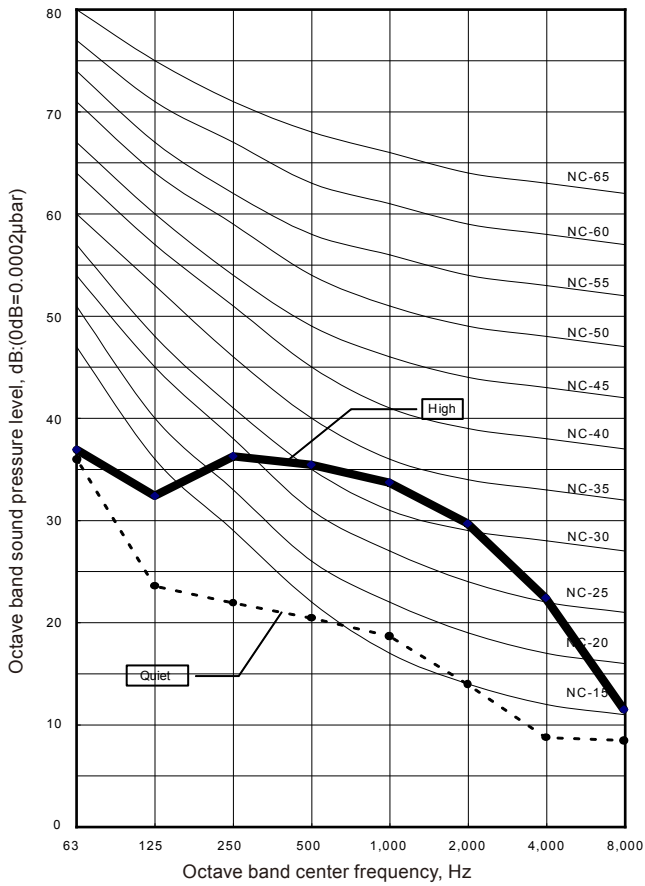


● Heating

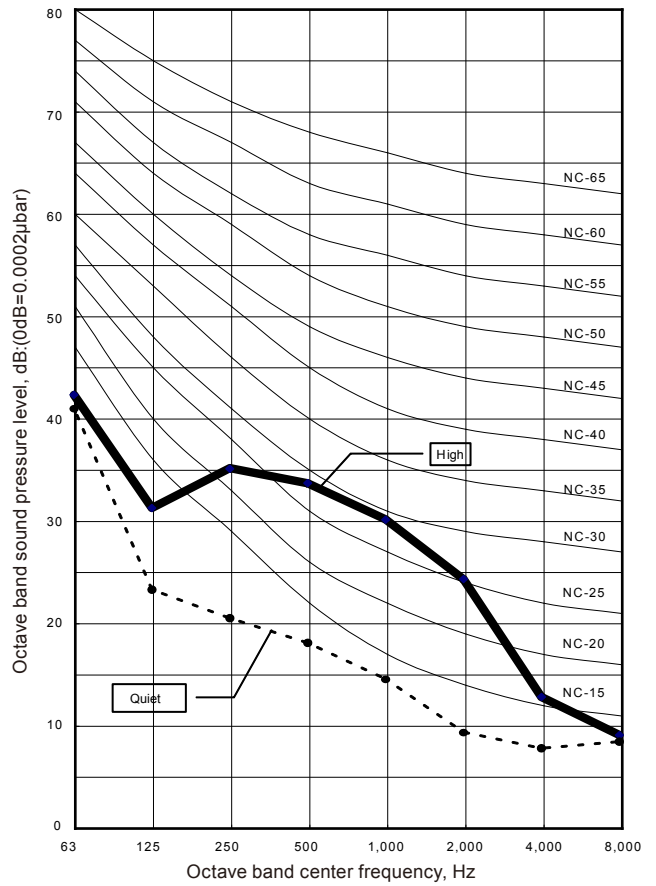


MODEL : ASU12RLS2

● Cooling

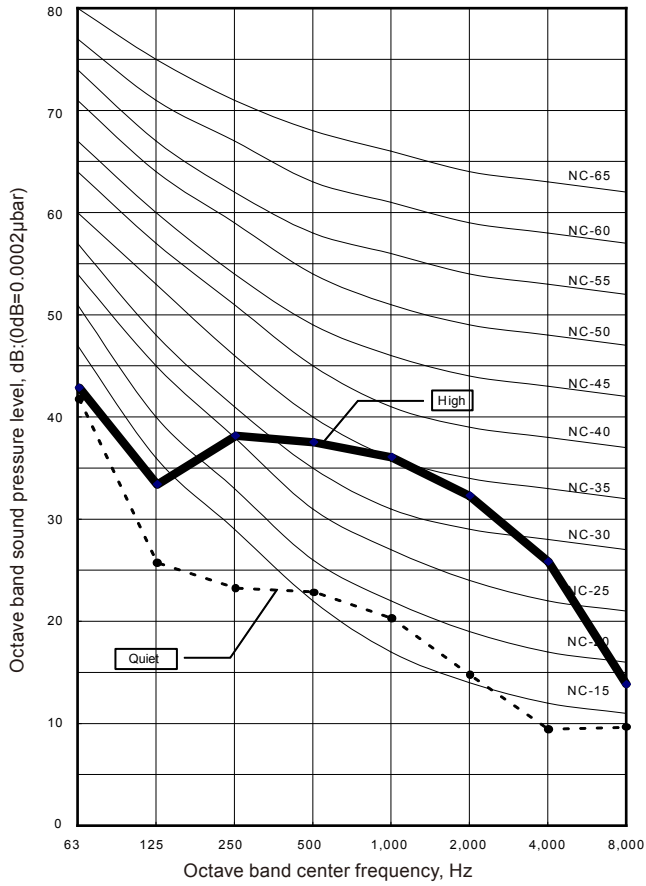


● Heating

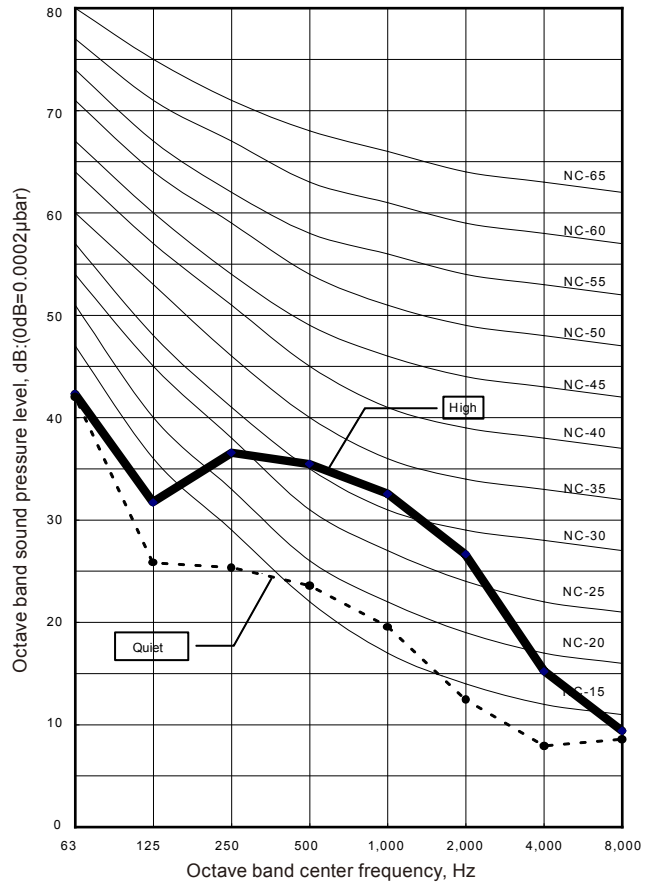


MODEL : ASU15RLS2

● Cooling



● Heating

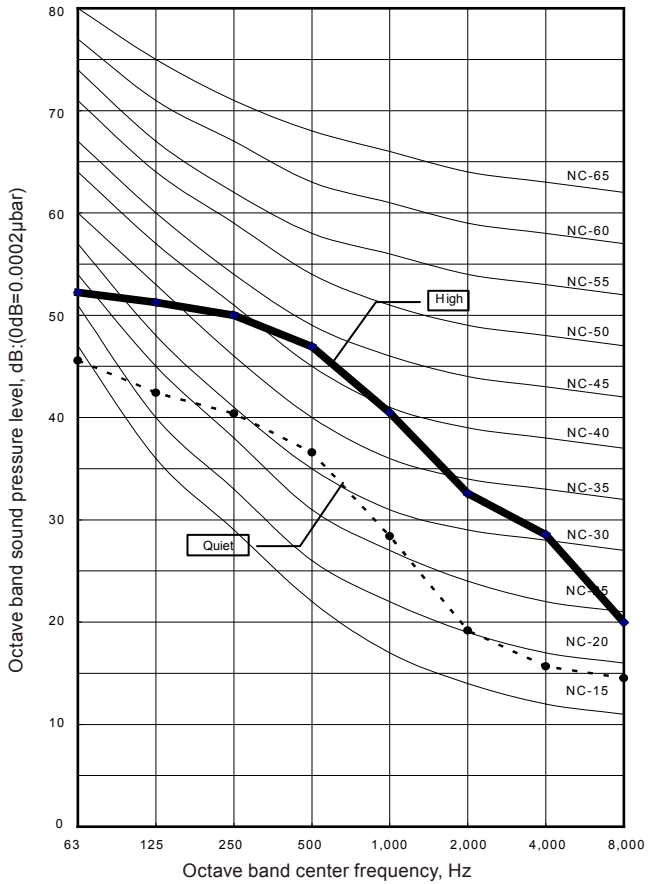


INDOOR UNITS

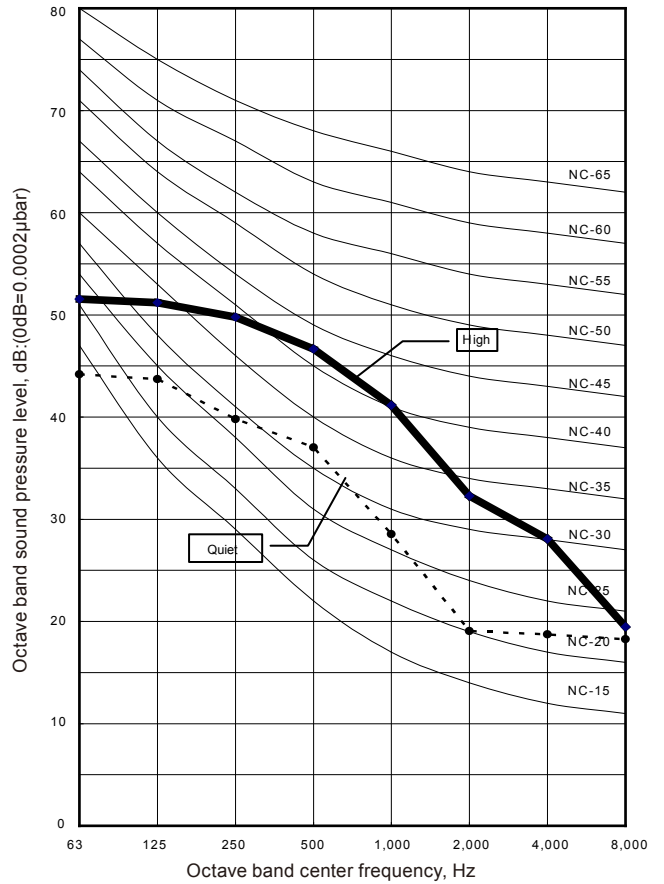
INDOOR UNITS

MODEL : ASU18RLF

● Cooling

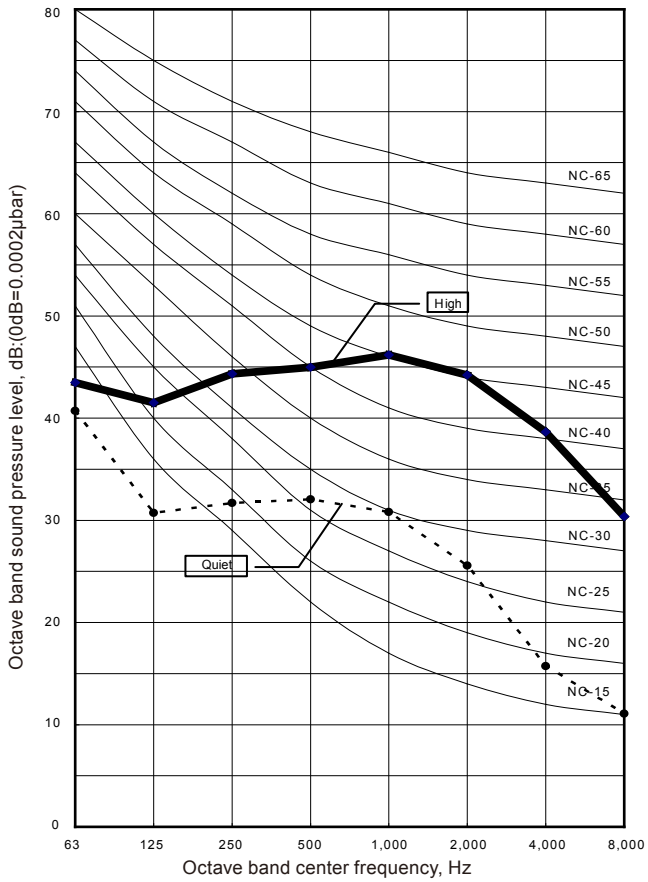


● Heating

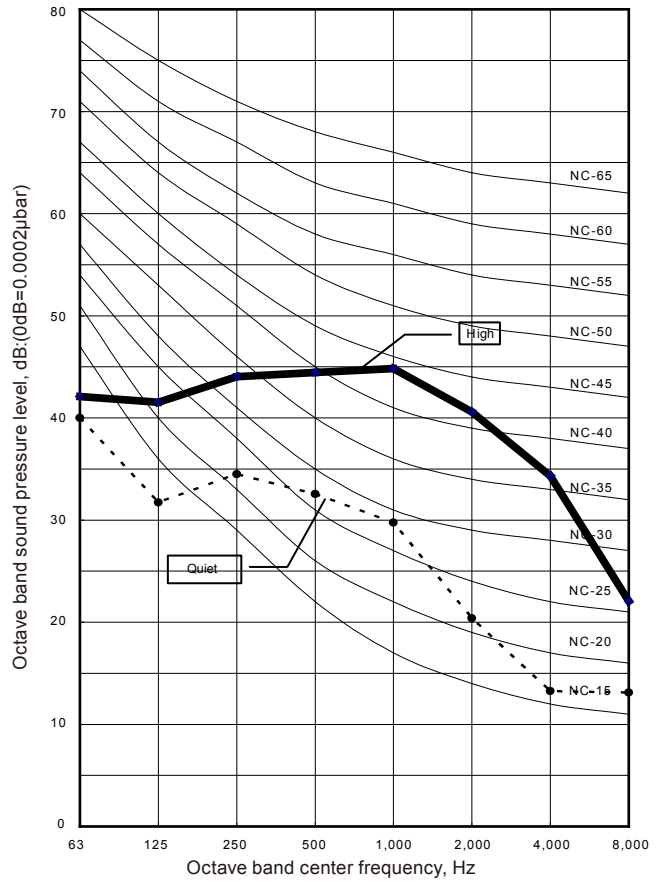


MODEL : ASU24RLF

● Cooling



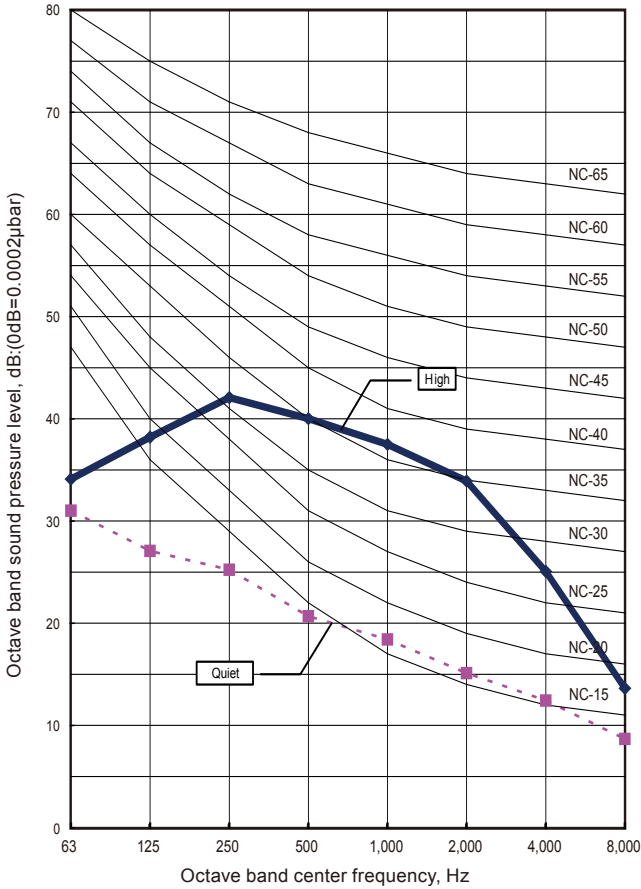
● Heating



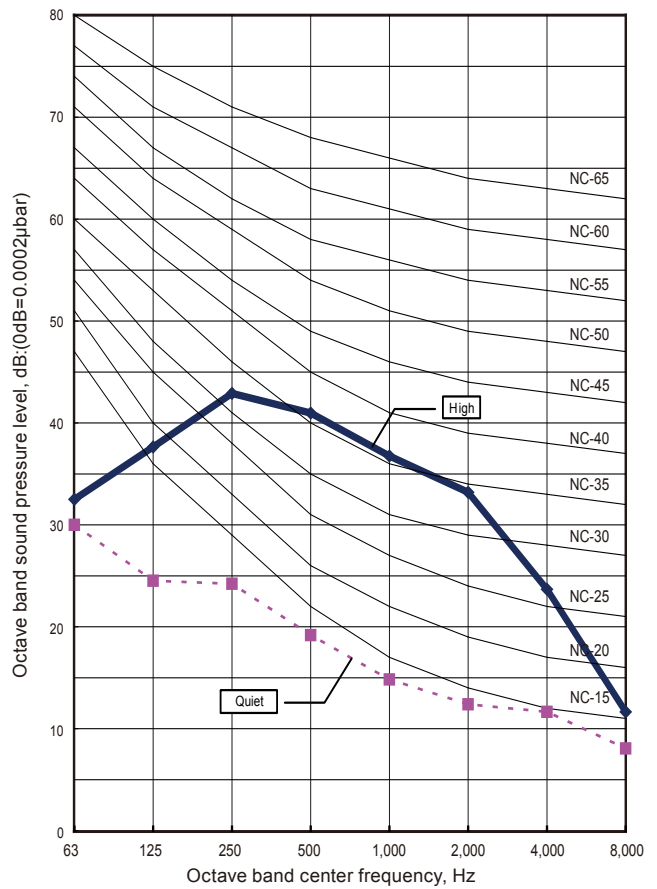
9-4. FLOOR TYPE

MODEL : AGU9RLF

● Cooling

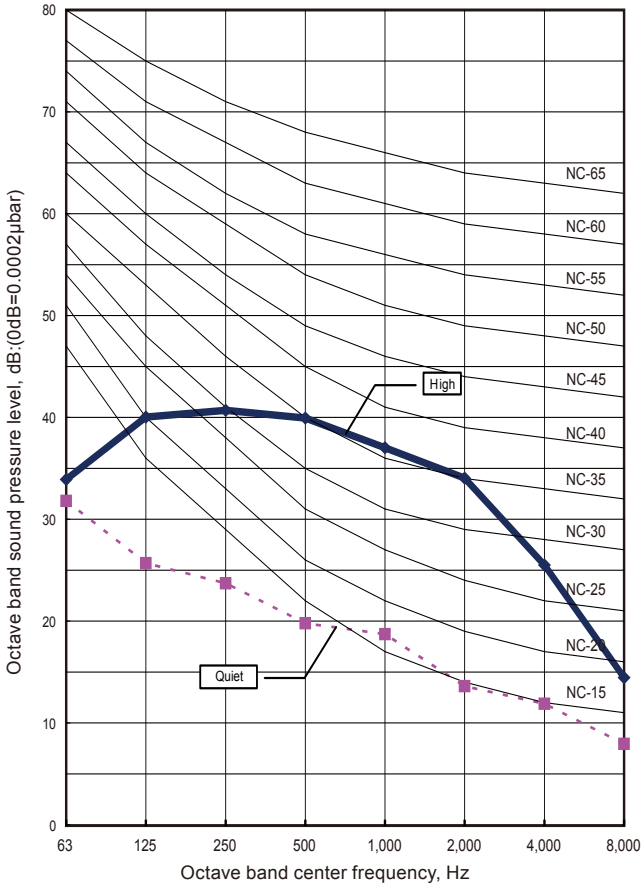


● Heating

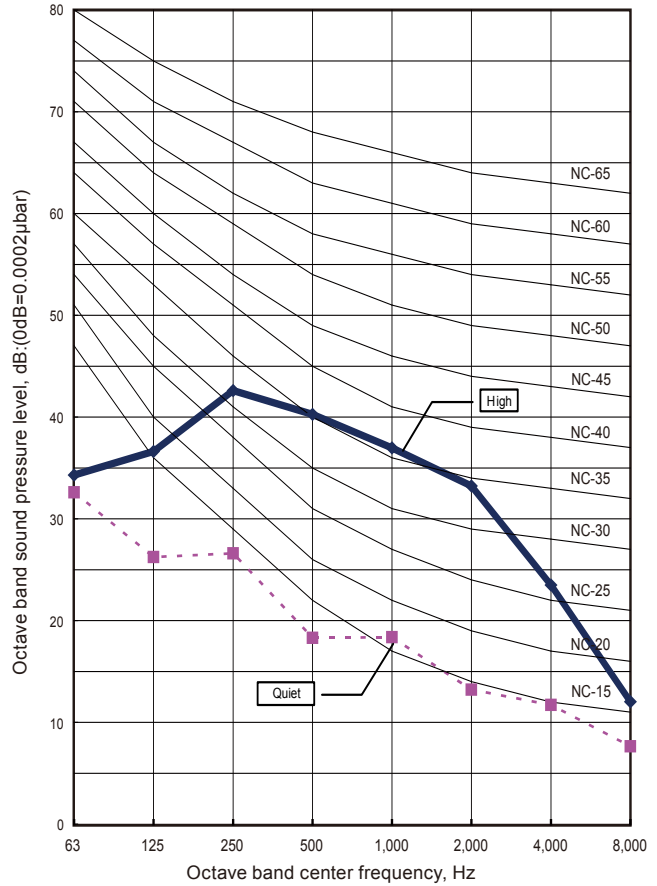


MODEL : AGU12RLF

● Cooling



● Heating

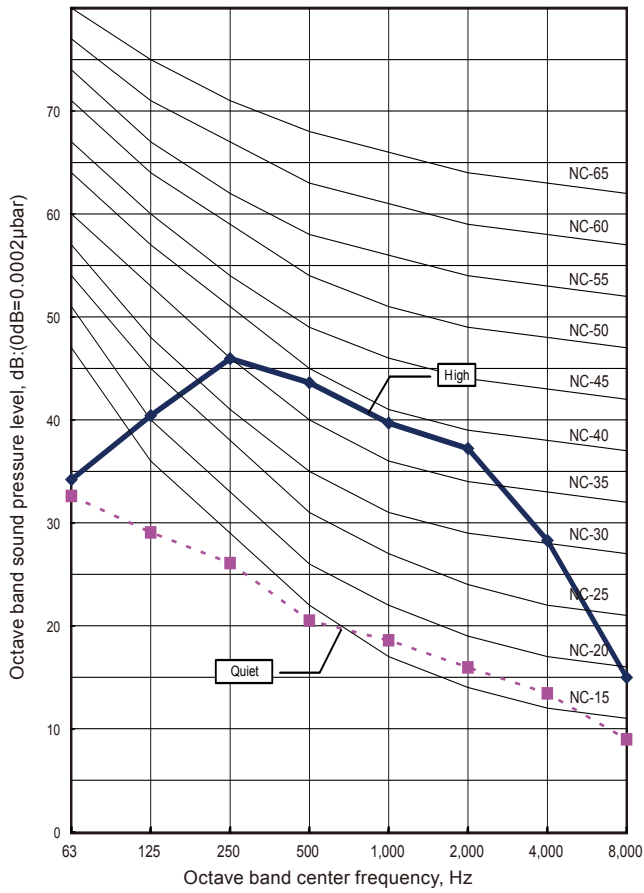


INDOOR UNITS

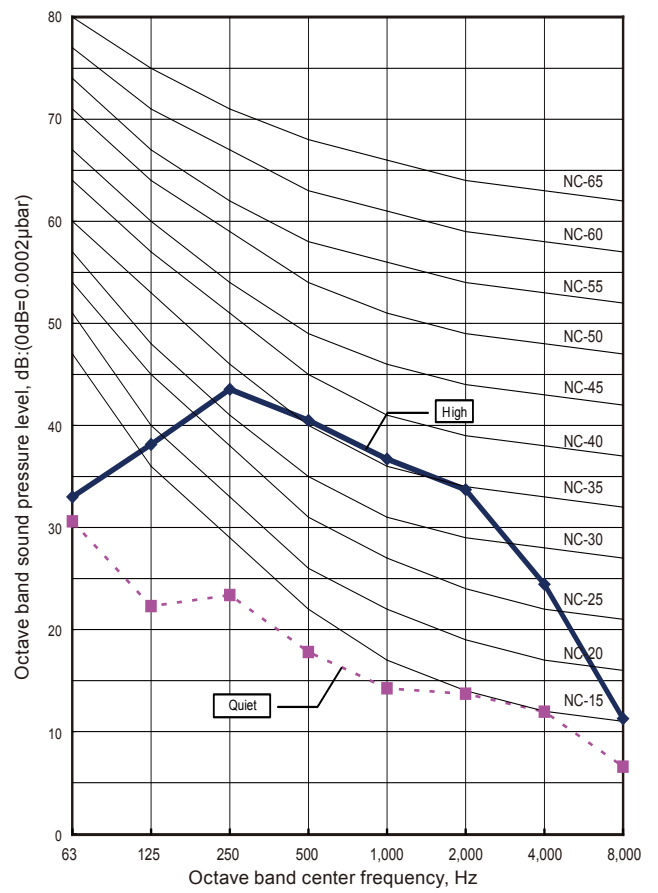
INDOOR UNITS

MODEL : AGU15RLF

● Cooling



● Heating

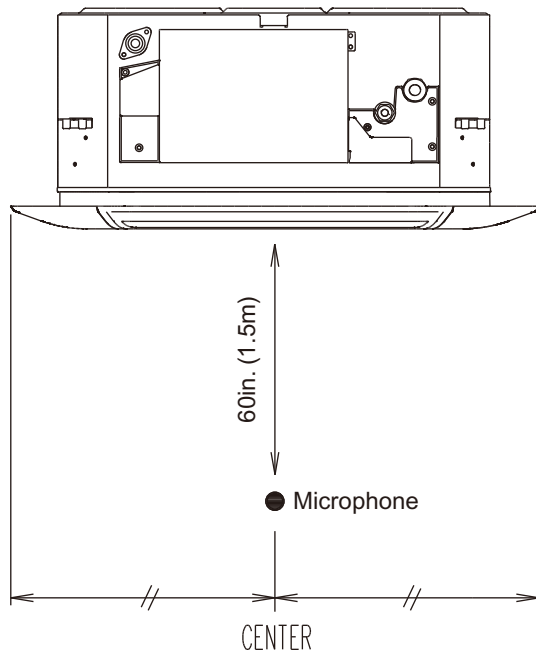
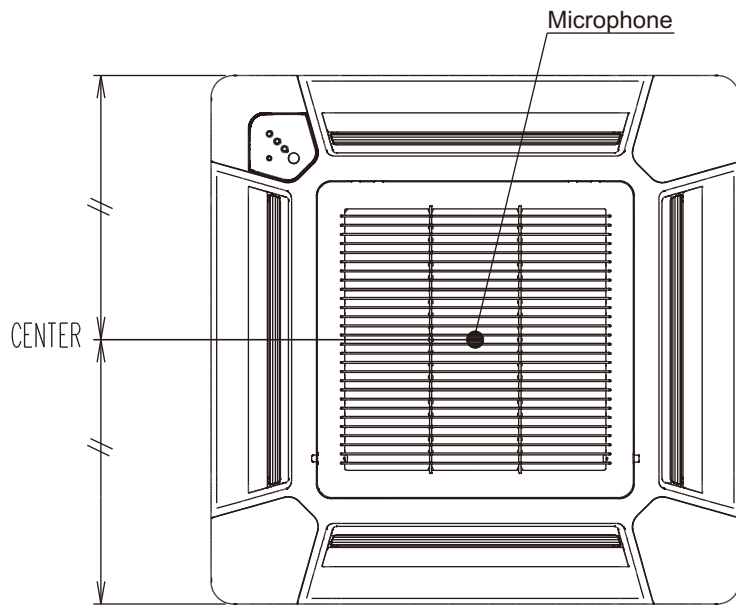


INDOOR UNITS

INDOOR UNITS

9-5. SOUND LEVEL CHECK POINT

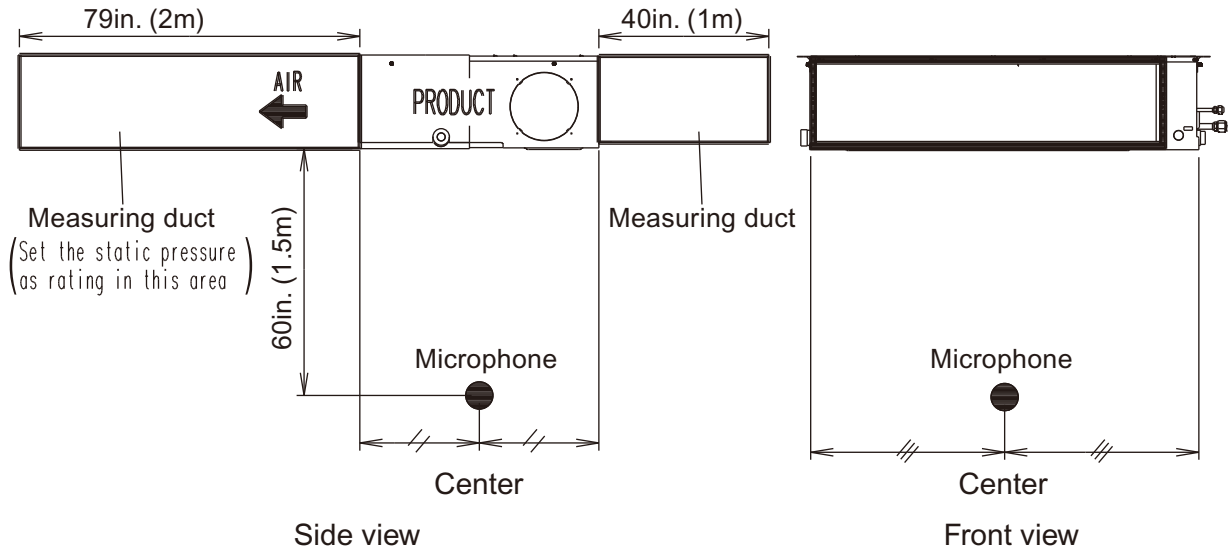
■ COMPACT CASSETTE TYPE



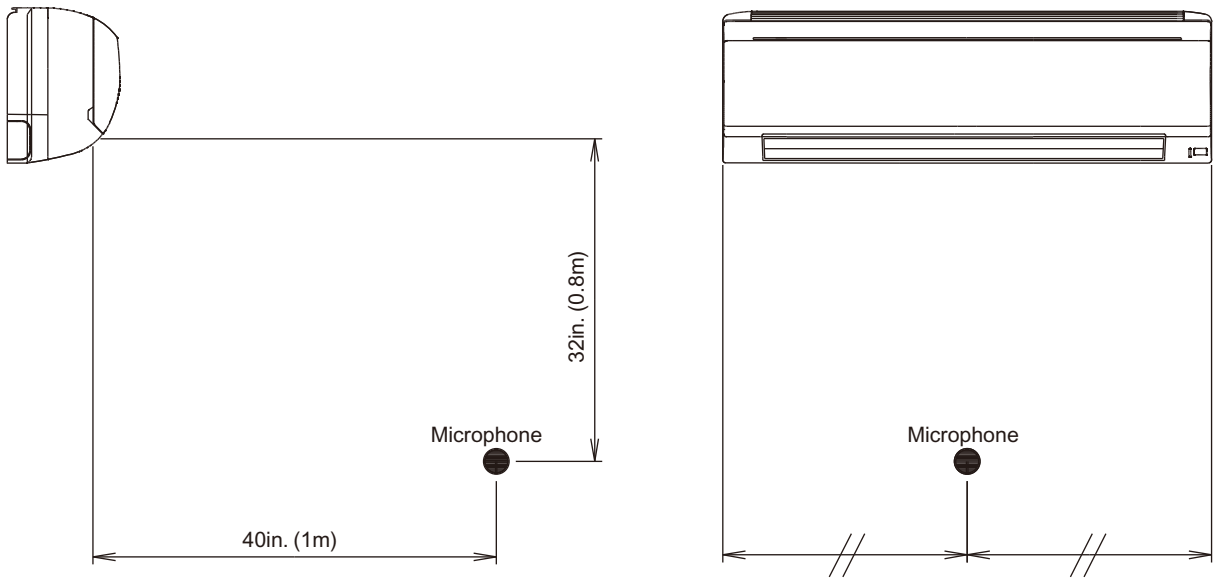
INDOOR
UNITS

INDOOR
UNITS

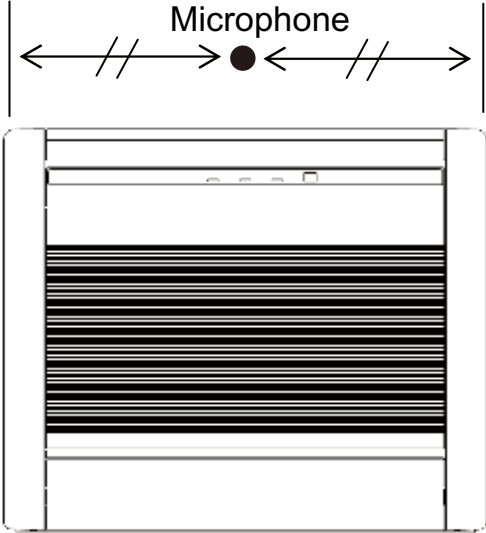
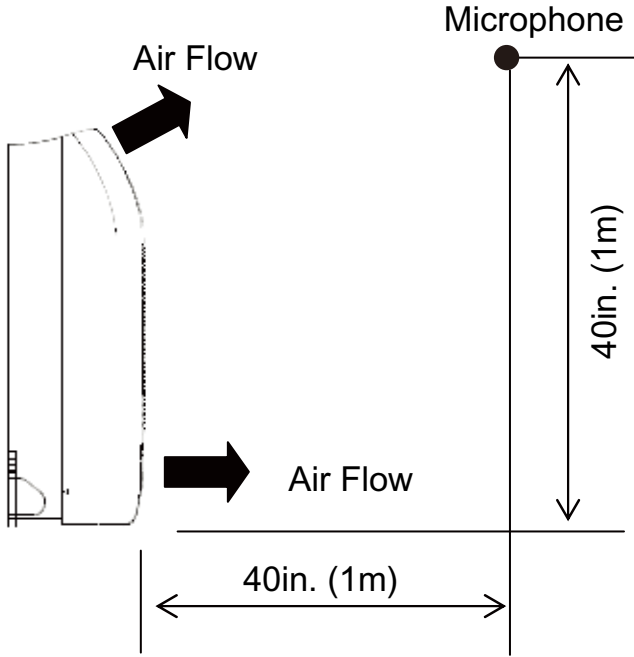
■ SLIM DUCT TYPE



■ WALL MOUNTED TYPE



■ FLOOR TYPE



INDOOR
UNITS

INDOOR
UNITS

10. SAFETY DEVICES

Model and type		PCB fuse	Fan motor thermal protector	Terminal thermal fuse	Float switch
Compact Cassette	AUU7RLF	250V 3.15A	OFF: 268^{+30}_{-34} °F (131 ⁺¹⁷ ₋₁₉ °C) ON: 210^{+38}_{-34} °F (99 ⁺²¹ ₋₁₉ °C)	—	○
	AUU9RLF				
	AUU12RLF				
	AUU18RLF				
Slim Duct	ARU7RLF	250V 3.15A	OFF: 275 ± 27 °F (135 ± 15 °C) ON: 239 ± 27 °F (115 ± 15 °C)	—	○
	ARU9RLF				
	ARU12RLF				
	ARU18RLF				
	ARU24RLF				
Wall Mounted	ASU7RLF1	250V 3.15A	OFF: 221 ± 18 °F (105 ± 10 °C) ON: 194 ± 18 °F (90 ± 10 °C)	—	—
	ASU9RLF1				
	ASU12RLF1				
	ASU7RLF	250V 3.15A	OFF: 230 ± 27 °F (110 ± 15 °C) ON: 203 ± 27 °F (95 ± 15 °C)	OFF: 216 °F (OFF: 102 °C)	—
	ASU9RLF				
	ASU12RLF				
	ASU9RLS2				
	ASU12RLS2				
	ASU15RLS2				
	ASU18RLF	250V 3.15A	OFF: 302 ± 27 °F (150 ± 15 °C) ON: 248 ± 27 °F (120 ± 15 °C)	OFF: 216 °F (OFF: 102 °C)	—
ASU24RLF					
Floor	AGU9RLF	250V 3.15A	OFF: 302 ± 27 °F (150 ± 15 °C) ON: 248 ± 27 °F (120 ± 15 °C)	OFF: 216 °F (OFF: 102 °C)	—
	AGU12RLF				
	AGU15RLF				

INDOOR UNITS

INDOOR UNITS

Hybrid Flex Inverter System

5. CONTROL SYSTEM

CONTENTS

5. CONTROL SYSTEM

1. CONTROL SYSTEM.....	05 - 01
1-1. LINE UP OF CONTROLLERS	05 - 01
1-2. CONTROL SYSTEM DESIGN	05 - 02
1-3. SYSTEM CONFIGURATION EXAMPLES	05 - 03
1-4. CONTROL EQUIPMENT DESIGN LIMITATION.....	05 - 05
2. CONTROL UNITS.....	05 - 06
2-1. CENTRAL REMOTE CONTROLLER	05 - 07
2-2. WIRED REMOTE CONTROLLER	05 - 13
2-3. SIMPLE REMOTE CONTROLLER.....	05 - 19
2-4. WIRELESS REMOTE CONTROLLER.....	05 - 25
2-5. IR RECEIVER UNIT	05 - 38
2-6. REMOTE SENSOR UNIT	05 - 41
2-7. GROUP CONTROL METHOD	05 - 43
2-8. COMPARISON TABLE OF CONTROLLERS	05 - 44

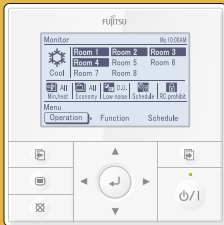
1. CONTROL SYSTEM

1-1. LINE UP OF CONTROLLERS

■ FEATURES OF CONTROL SYSTEM

Air Conditioning Central Control

Central controller specially designs for centralized control.



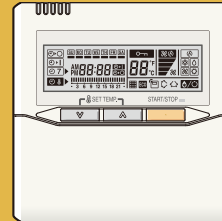
Central Remote Controller

UTY-DMMUM

Control of indoor units with simple operation and weekly timer.

Air Conditioning Individual Control

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



Wired Remote Controller

UTY-RNNUM

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



Simple Remote Controller

UTY-RSNUM

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

Wireless Remote Controller



UTY-LNHUM AR-RAH1U AR-RED1U
AR-REG1U

Simple and sophisticated operations with a choice of 4 daily timers.



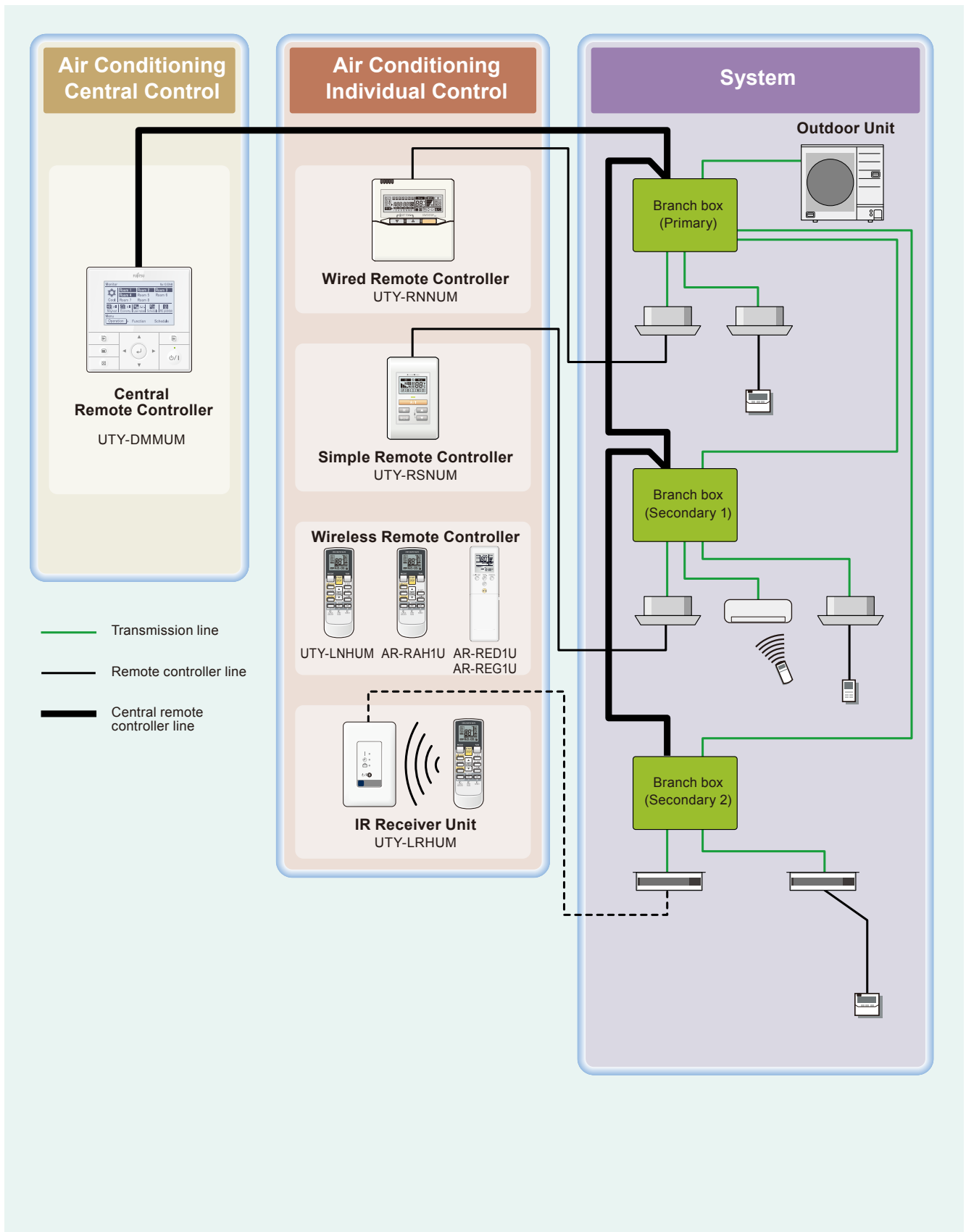
IR Receiver Unit

UTY-LRHUM

Wireless remote controller for duct type

1-2. CONTROL SYSTEM DESIGN

■ ADVANCED INTEGRATED CONTROL SYSTEM

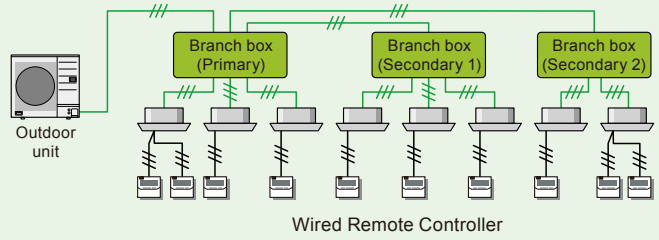


1-3. SYSTEM CONFIGURATION EXAMPLES

INDIVIDUAL CONTROL

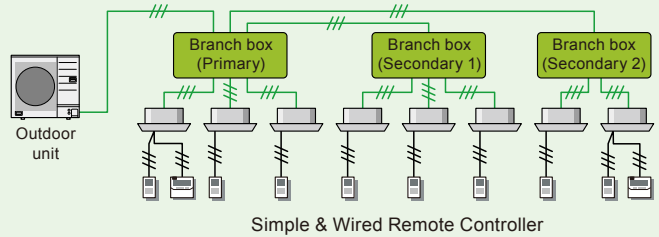
Wired Remote Controller

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



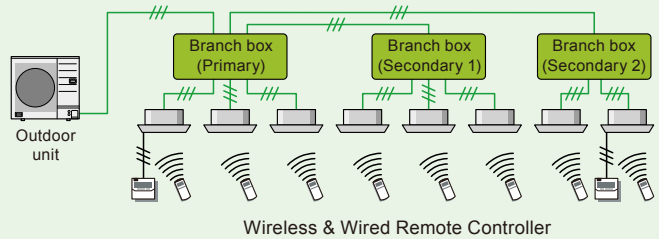
Simple Remote Controller

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



Wireless Remote Controller

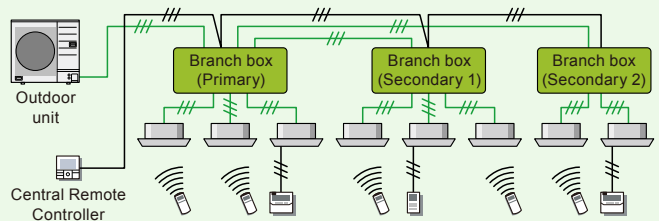
- Wired, simple, and wireless remote controllers can be used jointly.



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	Floor	Wallmounted			
					ASU7RLF1 ASU9RLF1 ASU12RLF1	ASU7RLF ASU9RLF ASU12RLF	ASU9RLS2 ASU12RLS2 ASU15RLS2	ASU18RLF ASU24RLF
Central Remote Controller	UTY-DMMUM	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1
Wired Remote Controller	UTY-RNNUM	●	●	○	○ *4	○ *2	○ *3	○
Simple Remote Controller	UTY-RSNUM	○	○	○	○ *4	○ *2	○ *3	○
Wireless Remote Controller	UTY-LNHUM	○	-	-	-	-	-	●
	AR-RAH1U	-	-	-	-	●	-	-
	AR-RED1U	-	-	-	-	-	●	-
	AR-REG1U	-	-	●	●	-	-	-
IR Receiver Unit	UTY-LRHUM	-	○	-	-	-	-	-

●: Accessory, ○: Optional, -: It is not possible to connect it.

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

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

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

*4: Optional Communication kit (UTY-XCBXZ2) is necessary for the 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-RAH1U UTY-LNHUM UTY-LRHUM	TIMER	○	×	×	×
	SLEEP TIMER	○	×	×	×
	MIN. HEAT	○	×	○	×
AR-RED1U	SENSOR (ENERGY SAVING)	○	×	×	×
	WEEKLY TIMER	○	×	×	×
AR-REG1U	TIMER	○	×	×	×
	SLEEP TIMER	○	×	×	×
	MIN. HEAT	○	×	○	×
	POWERFUL	○	×	×	×

○: This function is available.

×: This function is not available.

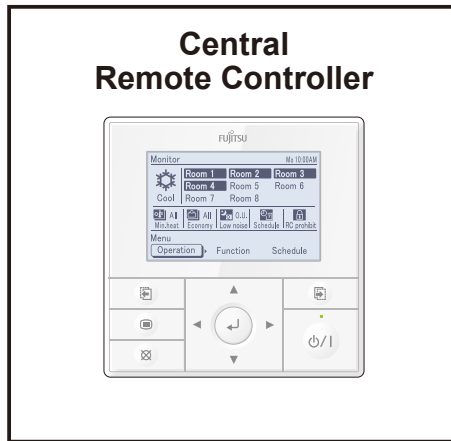
1-4. CONTROL EQUIPMENT DESIGN LIMITATION

		Model	The number that can be connected	
Controller	Central Controller	Central Remote Controller	UTY-DMMUM	1 / Multi system
	Individual Controller	Wired Remote Controller	UTY-RNNUM	2 / Indoor unit
		Simple Remote Controller	UTY-RSNUM	2 / Indoor unit
		Wireless Remote Controller	UTY-LNHUM	-
			AR-RAH1U	
			AR-REG1U	
	AR-RED1U			
IR Receiver Unit	UTY-LRHUM	1 / Indoor unit		

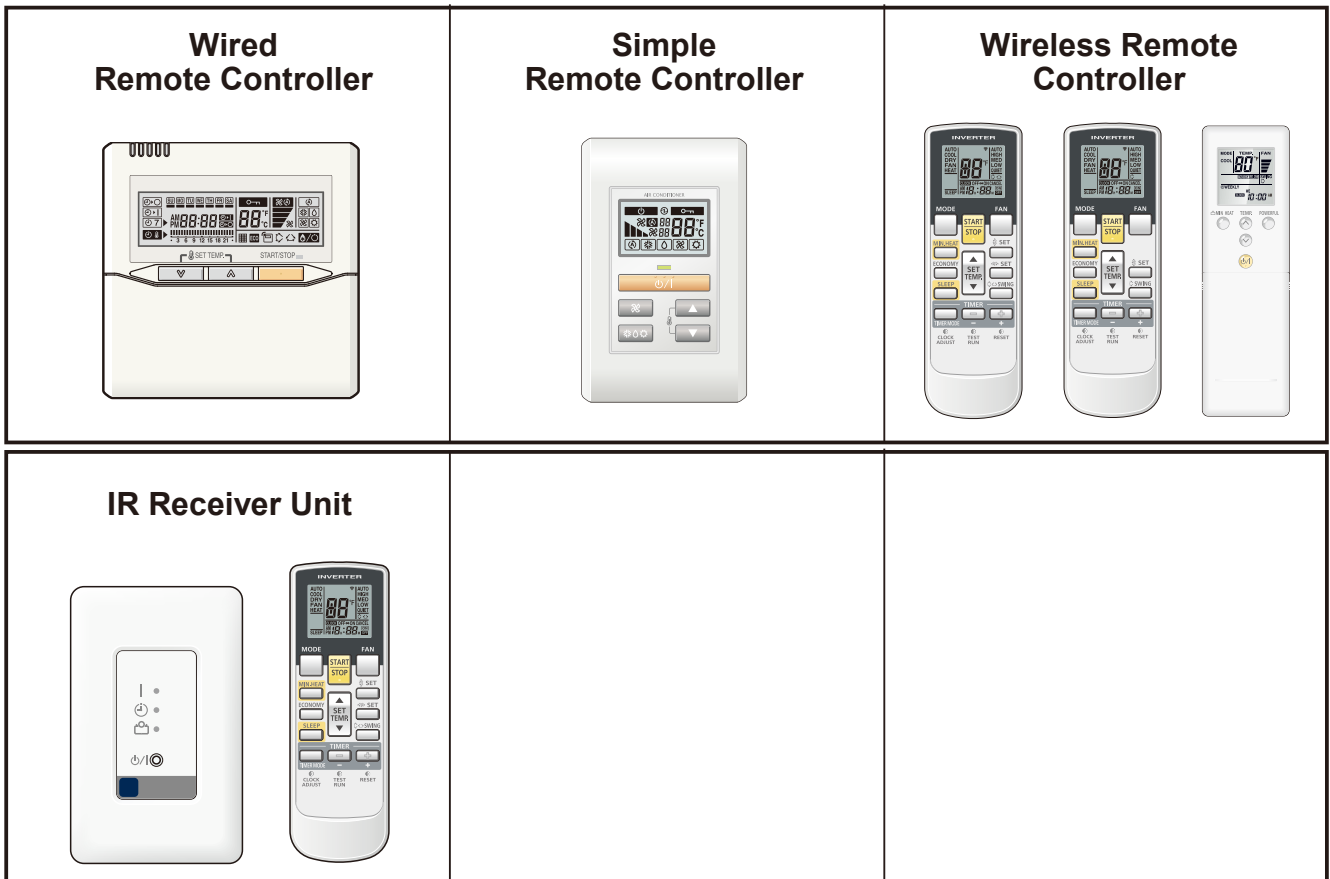
2. CONTROL UNITS

- 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 - DMMUM



- 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

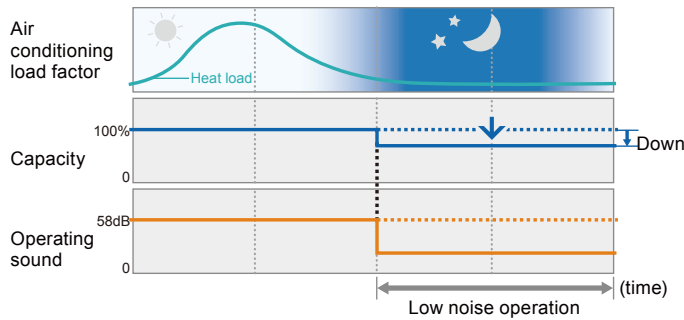
- Large backlight LED screen
- Large easy-to-see operation panel

● Easy installation

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

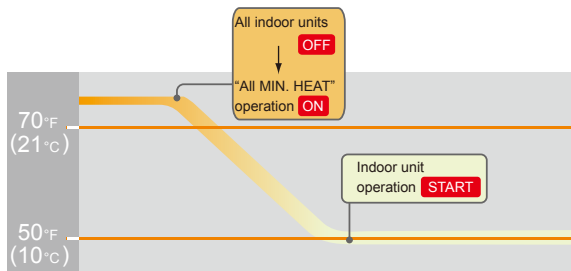
MAIN FUNCTIONS

Outdoor unit low noise operation



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

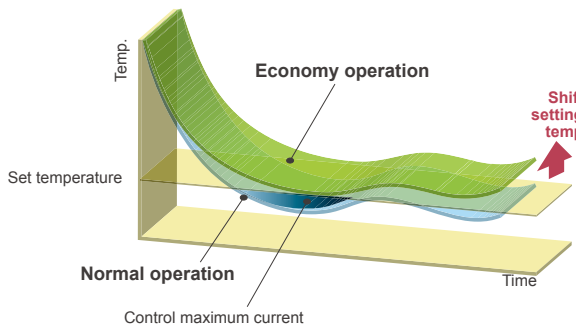
Minimum heat (All) operation



- While this function is selected, all indoor units start the minimum heat operation when all the indoor units are stopped by operation of the [On/Off button].
- When the room temperature is higher than 50°F (10°C), MIN. HEAT operation does not start. Operation starts and maintains the room temperature at 50°F (10°C) when the temperature drops below 50°F (10°C).
- When "MIN, HEAT operation stops, the room set temperature quickly returns to the preset temperature.

Economy (All) operation

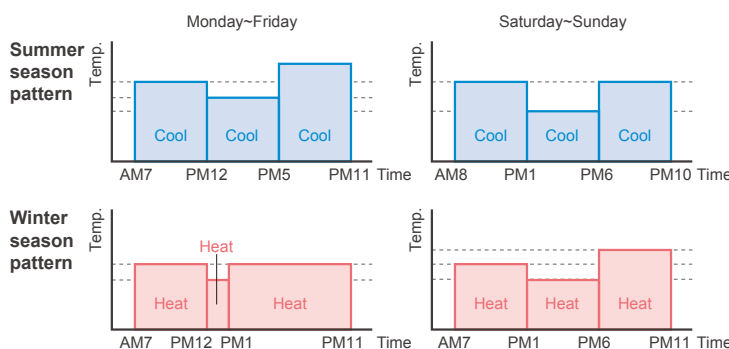
Example : Cooling operation



- If all the indoor and outdoor units are changed to economy mode, this can save more energy than setting of each indoor unit individually.
- Economy operation is energy saving, as the set temperature of indoor unit is shifted by 2°F (1°C) and the maximum electric value of the outdoor unit is suppressed.

Schedule timer

Example

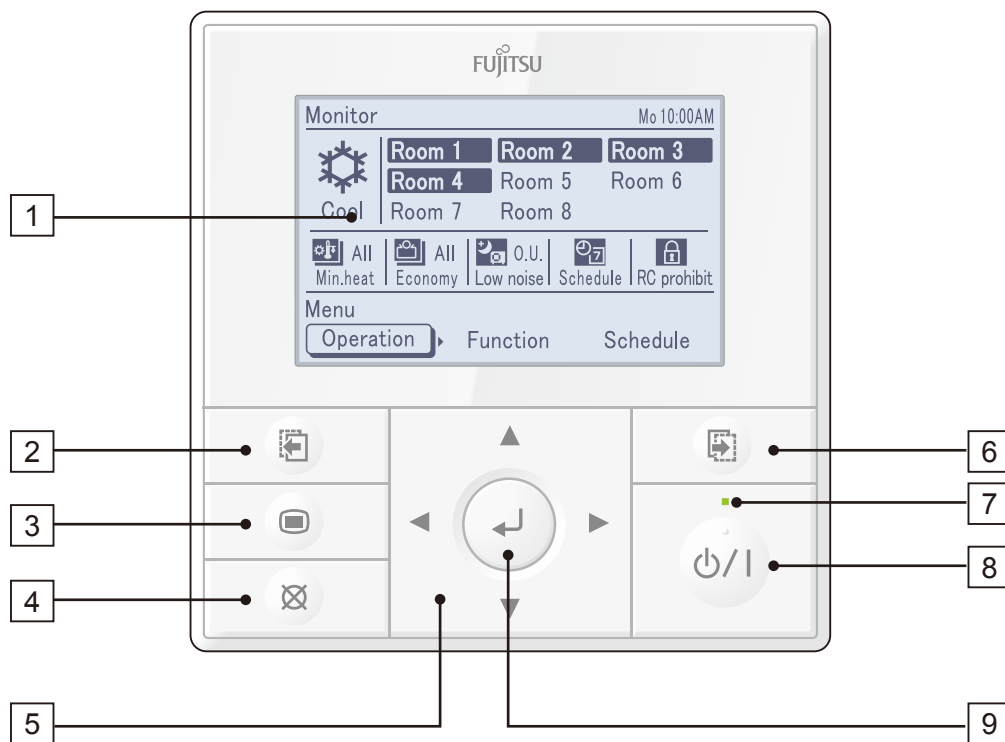


- Operation setting can be changed 4 times in each day of a week, and 2 types of the schedule can be set to suit users' preference.

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

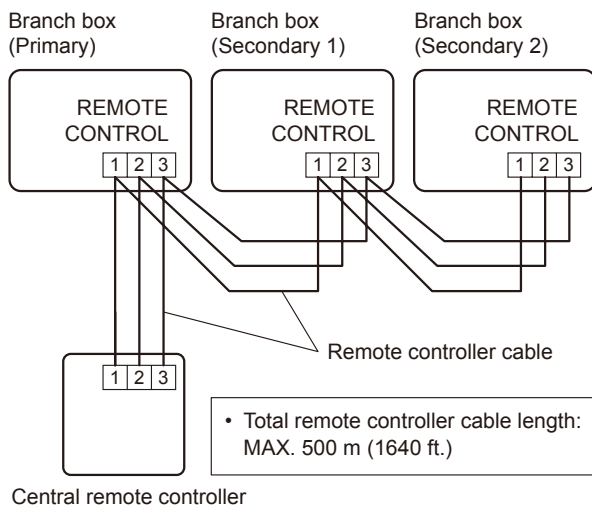
FUNCTIONS



- | | |
|----------------------------------|--------------------------------|
| 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 | |

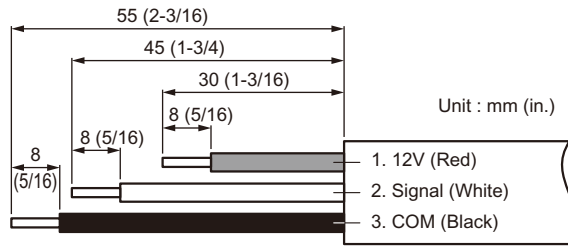
ELECTRICAL WIRING

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

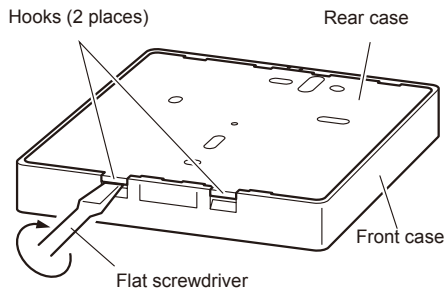


■ INSTALLATION

1) Remove the insulation of the remote controller cable.



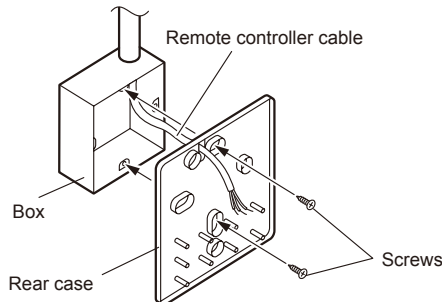
2) Insert the flat-blade screwdriver and remove the front case and rear case by twisting it slightly.



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.

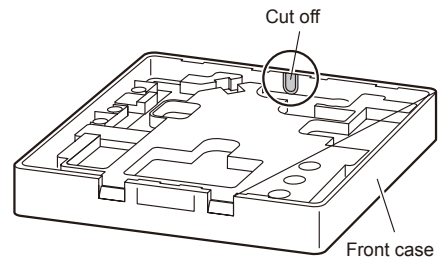
A. When mounting on the box:

- Attach the case after leading the cable.



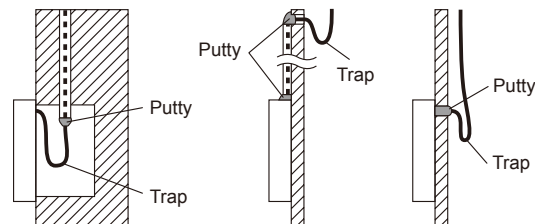
B. When the cable is along the wall:

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



⚠ CAUTION

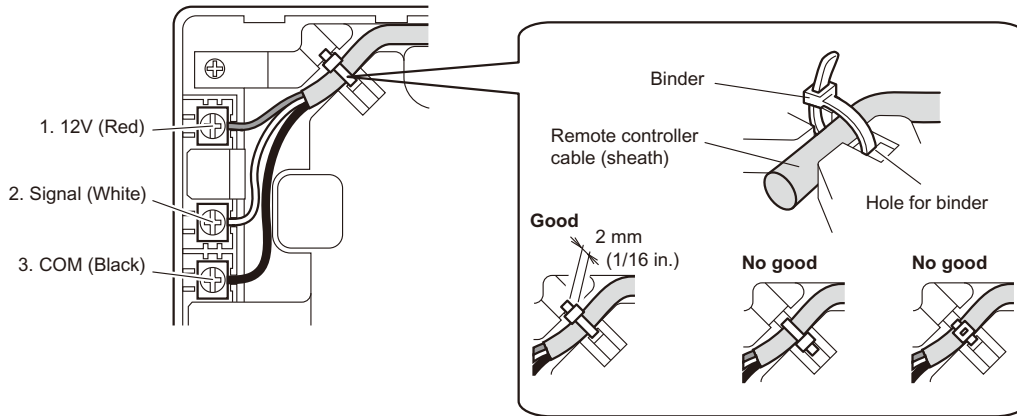
- When connecting the remote controller cable, take measures to prevent the water or insects coming into the remote controller through the cable, such as to provide the trap or close the hole for cabling with the putty.



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 binder. Cut off the excess binder.

Tightening torque	
Terminal screw	0.8 to 1.2N • m (7 to 10 lbf • in)

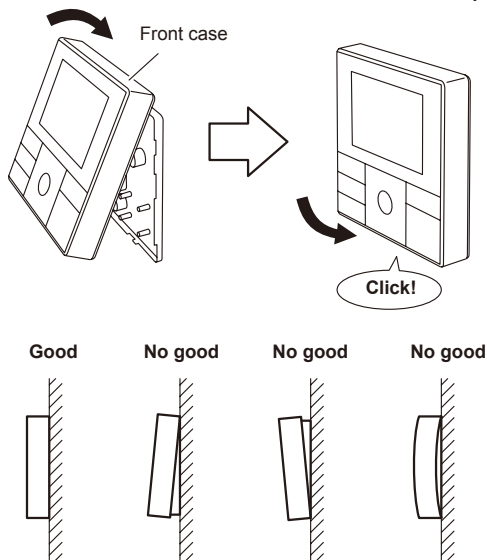


CAUTION

- Be careful to avoid breaking the cable by over-tightening the binder.
- 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 insert the front case, do not pinch the cable.

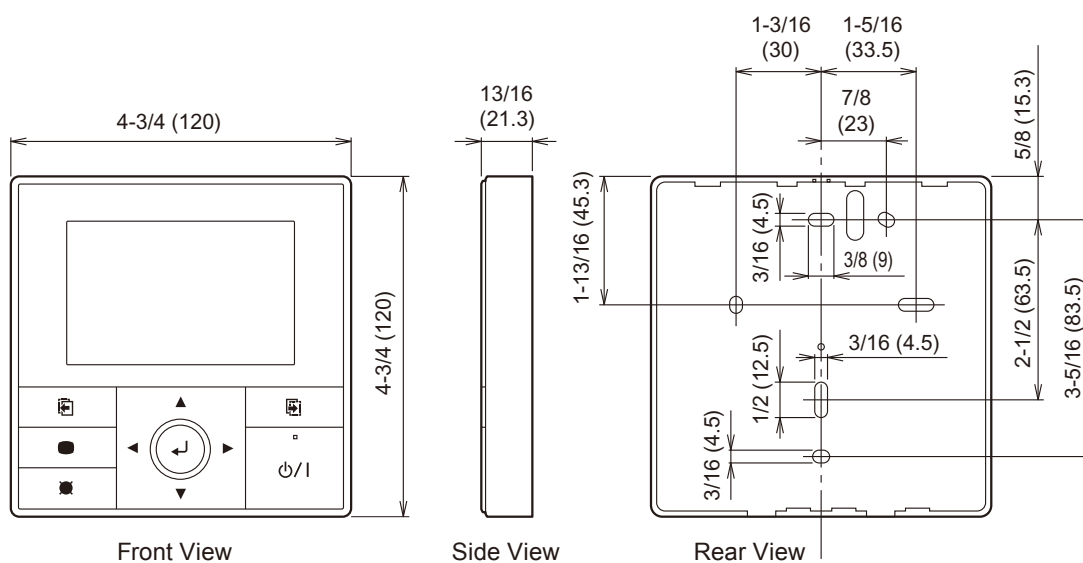


CAUTION

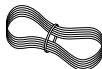

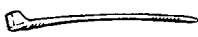


- Insert the upper case firmly. If improperly attached, it will cause the upper case to fall off.

■ DIMENSIONS

Unit : in. (mm)



■ PACKING LIST

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

■ WIRING SPECIFICATIONS

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

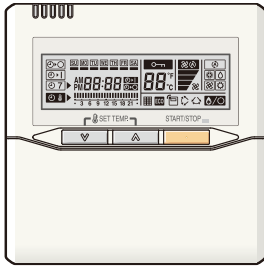
■ SPECIFICATIONS

Dimensions [H x W x D]: in.(mm)	4-3/4 (120) x 4-3/4 (120) x 13/16 (21.3)
Weight: oz. (g)	7.8 (220)

2-2. WIRED REMOTE CONTROLLER

■ MODEL : UTY - RNUM

■ FEATURES



- Various timer setup (ON / OFF / WEEKLY) are possible.
- Equipped with weekly timer as standard function. (Start / Stop function is twice per day for a week)
- When setting up a timer, start / stop and a 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 can be controlled by being detected the temperature accurately with Built-in thermo sensor.

● Powerful features and compact size

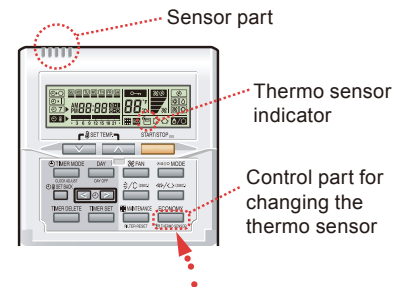


● Accurate and comfortable

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.

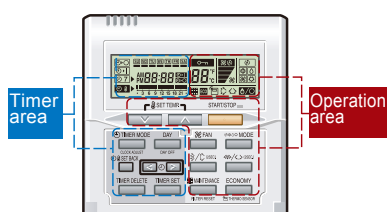
This wired remote controller and the optional remote sensor allows flexibility in sensor location, and suitable for all requirements.



● 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>Screen after setup</p> <p>Example : setup screen (Set to Wednesday: 8:00 to 20:00.)</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> <p>76°F (24°C) → 84°F (28°C) → 76°F (24°C) 24°C → 28°C → 24°C</p>	

● Easy-to-understand operation

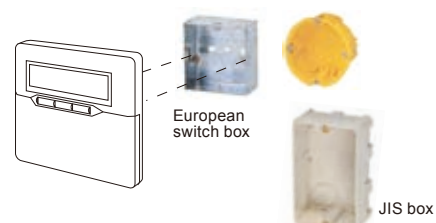


[Variable timer control]

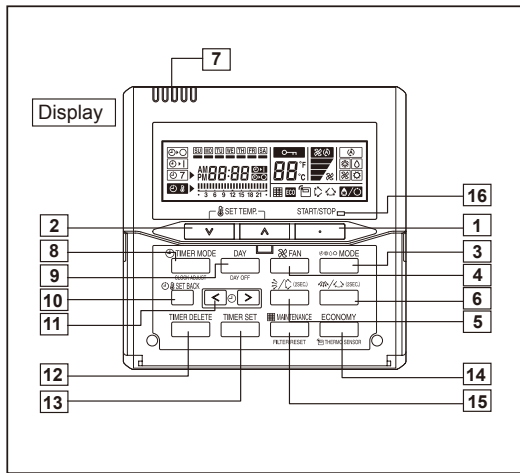
The operation/display sections are zoned according to time and operation, enabling variable programming to match application.

● Simple installation

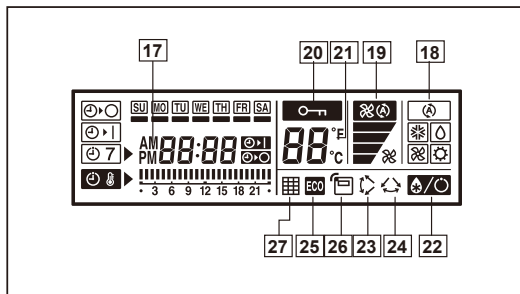
Components are compatible with standard switch boxes. Flat back surface allows equipment to be installed wherever it is needed.



FUNCTIONS



Display panel

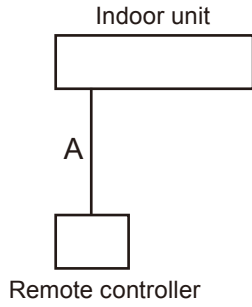


- 1 START/STOP button
Pressed to start and stop operation.
- 2 SET TEMP. button
Selects the setting temperature.
- 3 MODE button
Selects the operating mode (AUTO (A), COOL (❄️), DRY (🌀), FAN (🌀), HEAT (🔥)).
- 4 FAN button
Selects the fan speed (AUTO (🌀), HIGH (🌀), MED (🌀), LOW (🌀), QUIET (🌀)).
- 5 Vertical air flow direction and swing button
Press for two seconds to change the swing mode
- 6 Horizontal air flow direction and swing button
Press for two seconds to change the swing mode.
- 7 Built-in thermo sensor
Detect room temperature.
- 8 TIMER MODE (CLOCK ADJUST) button
Selects the timer mode (OFF TIMER, ON TIMER, WEEKLY TIMER)
Set the current time.
- 9 DAY (DAY OFF) button
Temporarily cancels of one day timer.
- 10 SET BACK button
Pressed select the set back timer.
- 11 SET TIME button
Pressed to select the set back timer.
- 12 TIMER DELETE button
The schedule of a weekly timer is deleted.
- 13 TIME 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 during the oil recovery and defrosting operation.
- 23 Vertical swing indicator
- 24 Horizontal swing indicator
- 25 Economy indicator
- 26 Thermo sensor indicator
- 27 Filter indicator

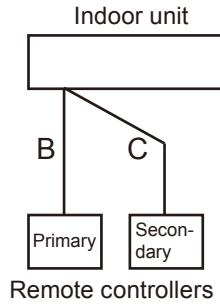
Note: Functions will be different due to type of indoor unit.
For details, please see operation manual.

SYSTEM DIAGRAM

1 remote controller



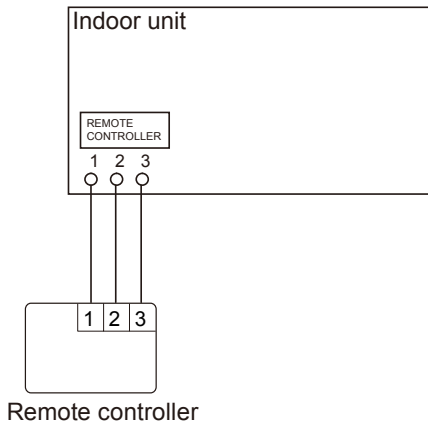
2 remote controllers



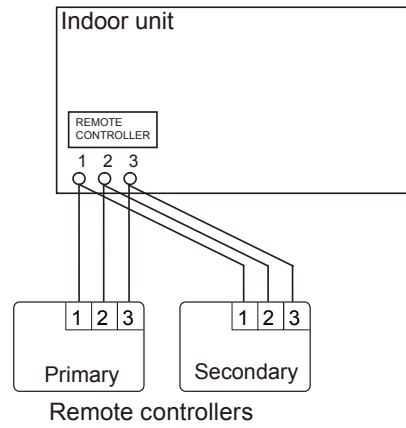
A, B, C : Remote controller cable.
 $A \leq 1640\text{ft (500m)}$; $B+C \leq 1640\text{ft (500m)}$

ELECTRICAL WIRING

1 remote controller

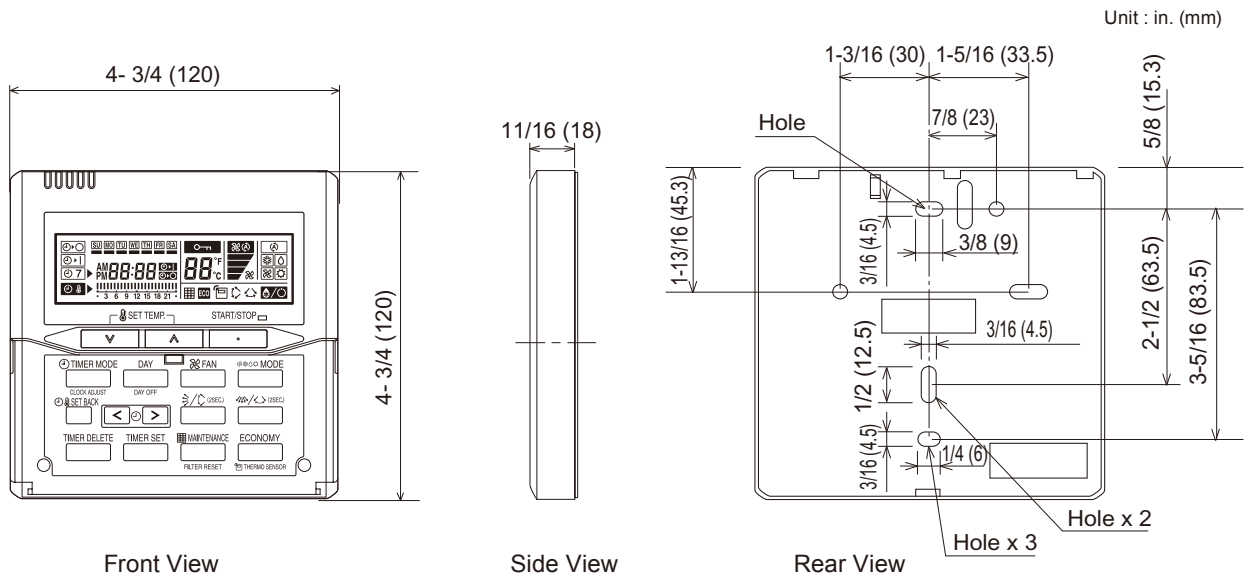


2 remote controllers



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

DIMENSIONS



■ INSTALLATION

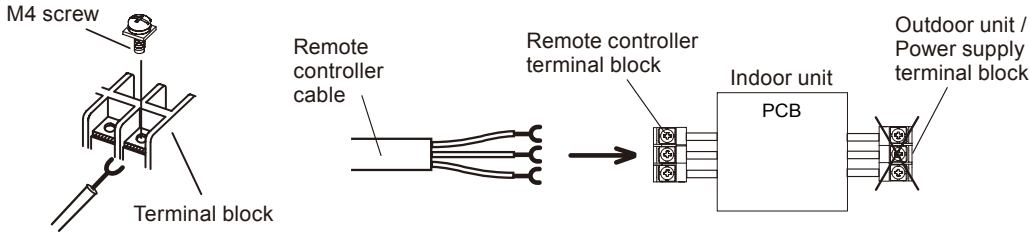
● Connection Pattern

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

Indoor unit types		Connection Pattern
Compact Cassette type		Pattern A
Slim Duct type		
Wall Mounted type	ASU7RLF1, ASU9RLF1, ASU12RLF1	Pattern B
	ASU7RLF, ASU9RLF, ASU12RLF	
	ASU9RLS2, ASU12RLS2, ASU15RLS2	
	ASU18RLF, ASU24RLF	Pattern C
Floor type		

● Pattern A

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

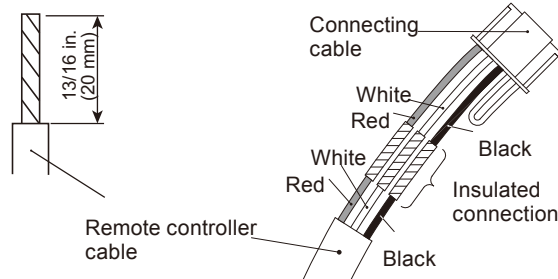


Note: It may be failed if it is connected to the outdoor unit or the terminal block for power supply.

● 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.

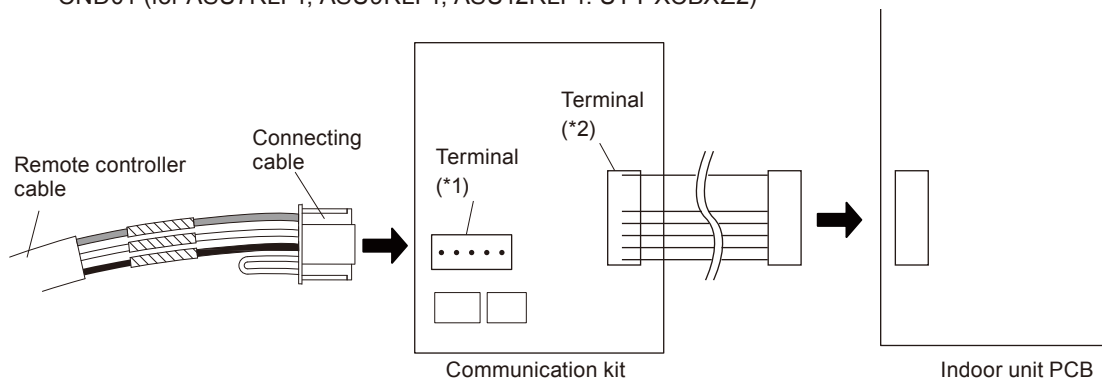


2) Method of connecting remote controller cable

- Connecting cable made by above-mentioned 1) is connected with terminal (*1) of optional communication kit.
- Cable connected with terminal (*2) of communication kit is connected with PCB of Indoor unit.

*1: CN305 (for ASU7RLF, ASU9RLF, ASU12RLF: UTY-XCBXZ1)
 CNC01 (for ASU9RLS2, ASU12RLS2, ASU15RLS2: UTY-TWBXF)
 CNC01 (for ASU7RLF1, ASU9RLF1, ASU12RLF1: UTY-XCBXZ2)

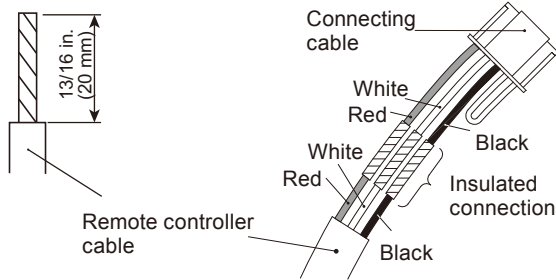
*2: CN301 (for ASU7RLF, ASU9RLF, ASU12RLF: UTY-XCBXZ1)
 CND01 (for ASU9RLS2, ASU12RLS2, ASU15RLS2: UTY-TWBXF)
 CND01 (for ASU7RLF1, ASU9RLF1, ASU12RLF1: UTY-XCBXZ2)



● Pattern C

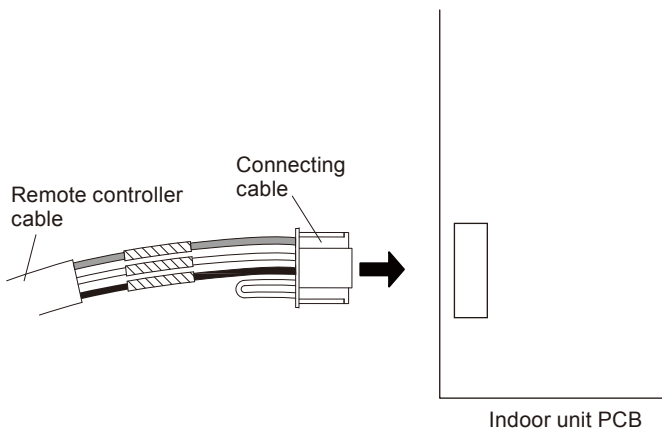
1) Modify the remote controller cable as per below methods.

- 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.

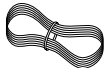

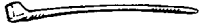







2) Method of connecting remote controller cable

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



■ PACKING LIST

Name and shape	Quantity	Application
Remote controller cable [33ft(10m)] 	1	For connecting the remote controller
Screw (M4 x 16mm) 	2	For installing the remote controller
Binder 	1	For remote controller and remote controller cable binding
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
Installation manual 	1	
Operating manual 	1	

*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	22AWG (0.33 mm ²)	Polar 3 core	Use sheathed PVC cable

■ SPECIFICATIONS

Dimensions [H x W x D]: in.(mm)	4-3/4 (120) x 4-3/4 (120) x 11/16 (18)
Weight: oz. (g)	5.6 (160)

■ PART (OPTIONAL)

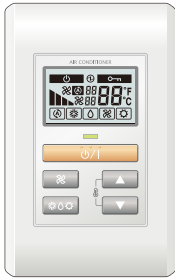
	Wall mounted type		
Model name	ASU7RLF ASU9RLF ASU12RLF	ASU9RLS2 ASU12RLS2 ASU15RLS2	ASU7RLF1 ASU9RLF1 ASU12RLF1
	UTY-XCBXZ1	UTY-TWBXF	UTY-XCBXZ2

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

2-3. SIMPLE REMOTE CONTROLLER

■ MODEL : UTY - RSNUM

■ FEATURES



- Easy operation.
- Built-in background light function.
- Easy installation with a slim shape with no bulge in the back.
- Error history.(Last 16 error codes can be accessed.)
- Can be installed onto SW-BOX. (applies to European and other country's standard)

● 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.

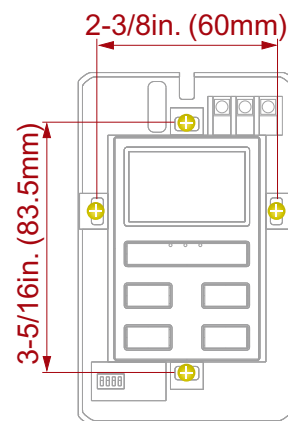
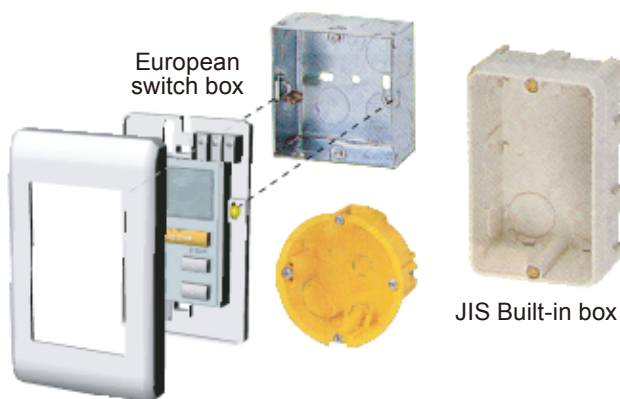
● Background light

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

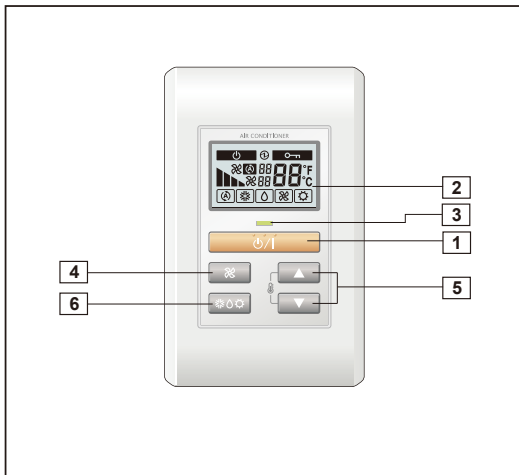


● Simple installation

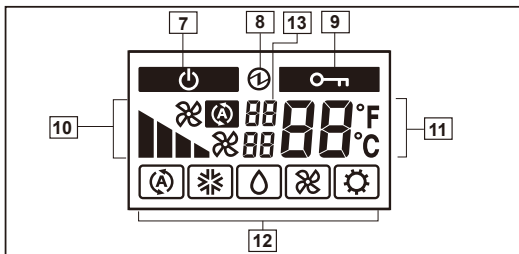
Can be mounted on the European switch Box (installation dimension: 2-3/8in. (60mm)) or the JIS Built-in Box (installation dimension: 3-3/16in. (83.5mm))













FUNCTIONS



Display panel



- 1 START/STOP button
Pressed to start and stop operation.
- 2 Display background light
Lights during operation.
- 3 Operation lamp
Lights during operation.
- 4 FAN button
Selects the fan speed (AUTO , HIGH , MED , LOW , QUIET ).
- 5 SET TEMP. button
Selects the setting temperature.
- 6 MODE button
Selects the operating mode (AUTO , COOL , DRY , FAN , HEAT ).
- 7 Standby indicator
Indicates during the 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
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

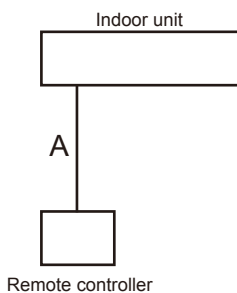
*1: during Error code history display mode.

*2: during address display mode.

*3: during self Diagnosis mode.

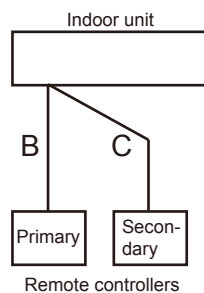
SYSTEM DIAGRAM

● 1 remote controller



Remote controller

● 2 remote controllers



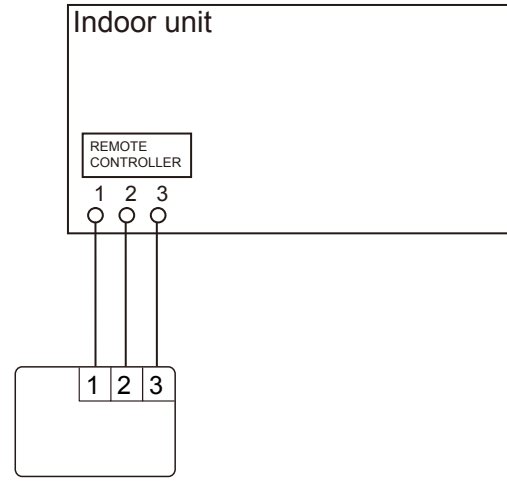
Remote controllers

A, B, C : Remote controller cable.

A ≤ 1640ft (500m) ; B+C ≤ 1640ft (500m)

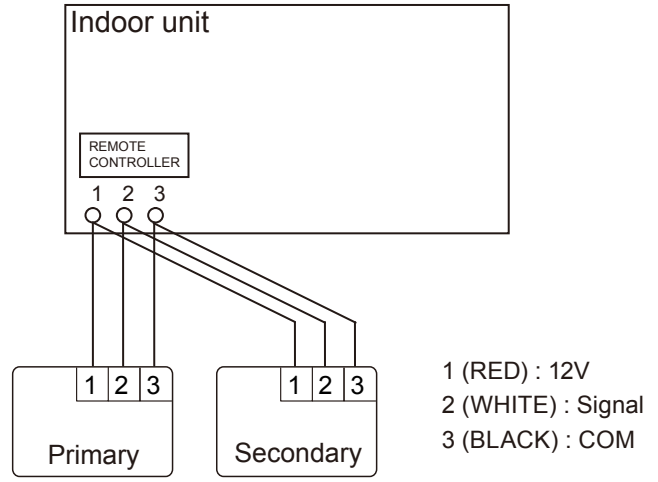
■ ELECTRICAL WIRING

● 1 remote controller



Remote controller

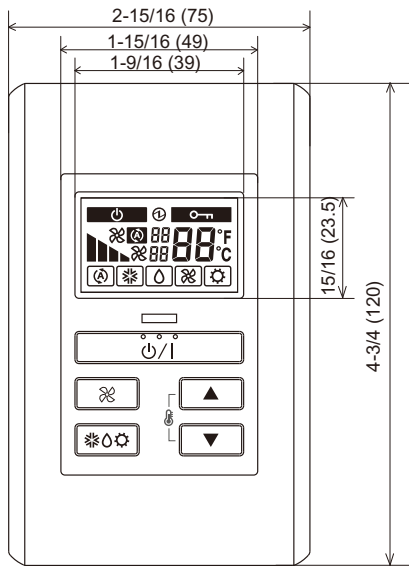
● 2 remote controllers



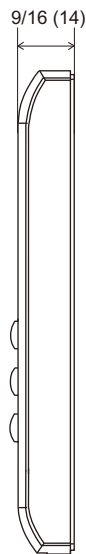
Remote controllers

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

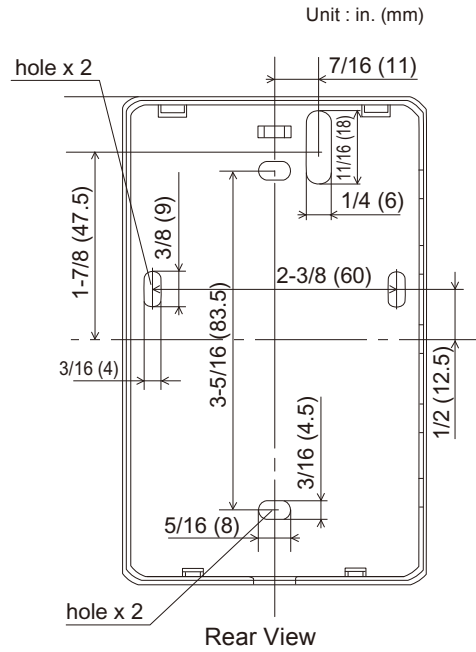
■ DIMENSIONS



Front View



Side View



Rear View

■ INSTALLATION

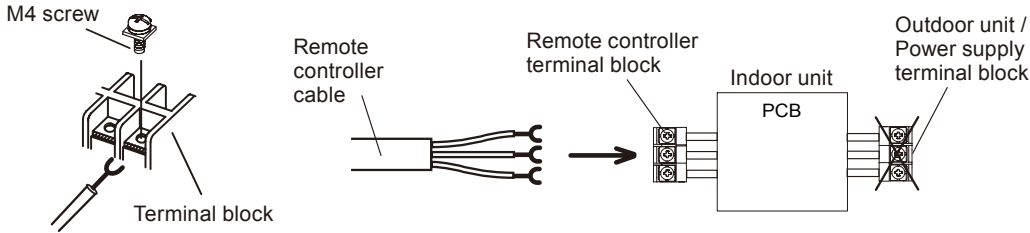
● Connection Pattern

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

Indoor unit types		Connection Pattern
Compact Cassette type		Pattern A
Slim Duct type		
Wall Mounted type	ASU7RLF1, ASU9RLF1, ASU12RLF1	Pattern B
	ASU7RLF, ASU9RLF, ASU12RLF	
	ASU9RLS2, ASU12RLS2, ASU15RLS2	
	ASU18RLF, ASU24RLF	Pattern C
Floor type		

● Pattern A

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

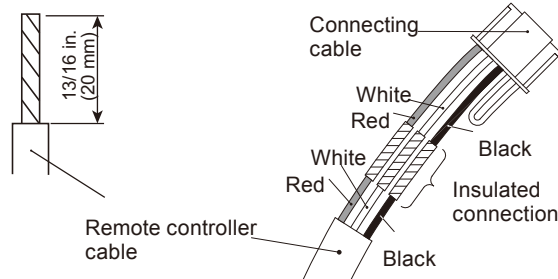


Note: It may be failed if it is connected to the outdoor unit or the terminal block for power supply.

● Pattern B

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

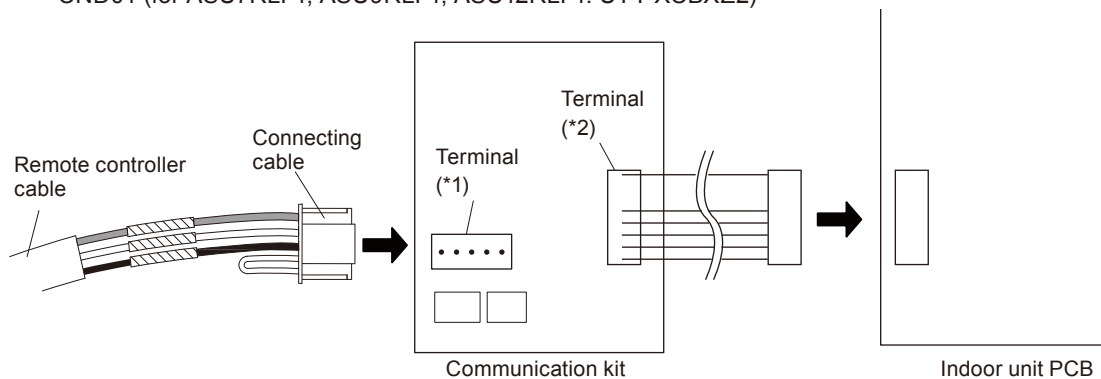
- Use a tool to cut off the terminal on the end of the remote controller cable and then remove the insulation from the cut end of the cable as shown in Fig.
- Connect the remote controller cable and connecting cable as shown in Fig.
- Be sure to insulate the connection between the cables.



2) Method of connecting remote controller cable

- Connecting cable made by above-mentioned 1) is connected with terminal (*1) of optional communication kit.
- Cable connected with terminal (*2) of communication kit is connected with PCB of Indoor unit.

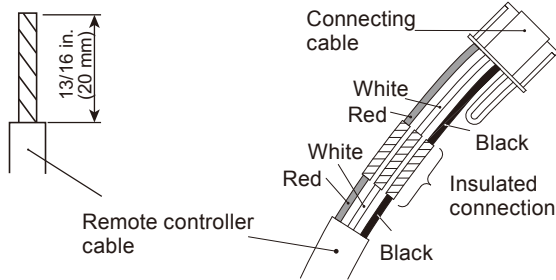
- *1: CN305 (for ASU7RLF, ASU9RLF, ASU12RLF: UTY-XCBXZ1)
CNC01 (for ASU9RLS2, ASU12RLS2, ASU15RLS2: UTY-TWBXF)
CNC01 (for ASU7RLF1, ASU9RLF1, ASU12RLF1: UTY-XCBXZ2)
- *2: CN301 (for ASU7RLF, ASU9RLF, ASU12RLF: UTY-XCBXZ1)
CND01 (for ASU9RLS2, ASU12RLS2, ASU15RLS2: UTY-TWBXF)
CND01 (for ASU7RLF1, ASU9RLF1, ASU12RLF1: UTY-XCBXZ2)



● Pattern C

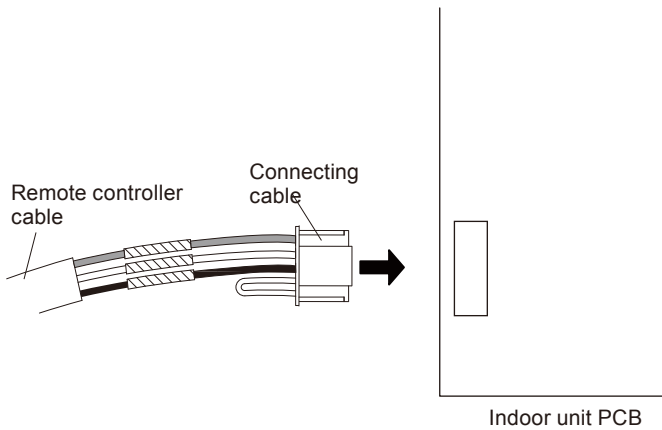
1) Modify the remote controller cable as per below methods.

- 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.

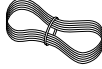

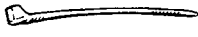







2) Method of connecting remote controller cable

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



■ PACKING LIST

Name and shape	Quantity	Application
Remote controller cable [33ft(10m)] 	1	For connecting the remote controller
Screw (M4 x 16mm) 	2	For installing the remote controller
Binder 	1	For remote controller and remote controller cable binding
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 clamber *1 	1	For installing the remote controller cable to the indoor unit
Installation manual 	1	
Operating manual 	1	

*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	22AWG (0.33 mm ²)	Polar 3 core	Use sheathed PVC cable

■ SPECIFICATIONS

Dimensions [H x W x D]: in. (mm)	4-3/4 (120) x 2-15/16 (75) x 9/16 (14)
Weight: oz. (g)	3.2 (90)

■ PART (OPTIONAL)

	Wall mounted type		
Model name	ASU7RLF ASU9RLF ASU12RLF	ASU9RLS2 ASU12RLS2 ASU15RLS2	ASU7RLF1 ASU9RLF1 ASU12RLF1
	UTY-XCBXZ1	UTY-TWBXF	UTY-XCBXZ2

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

2-4. WIRELESS REMOTE CONTROLLER

■ MODEL : UTY - LNHUM / AR-RAH1U

■ FEATURES



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

● Built-in timers

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

● Program timer

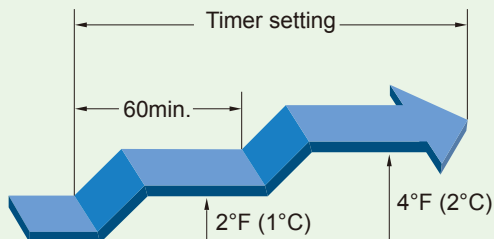
The program timer operates the ON and OFF timer once within a 24 hour period.

● 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.

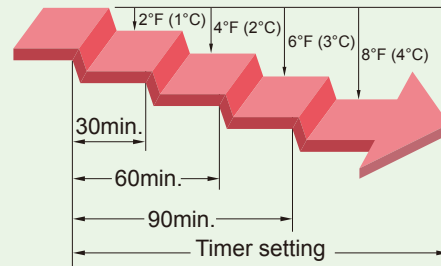
Cooling operation / dry operation

When the sleep timer is set, the set temperature automatically rises 2°F (1°C) every hour. The set temperature can rise up to a maximum of 4°F (2°C).

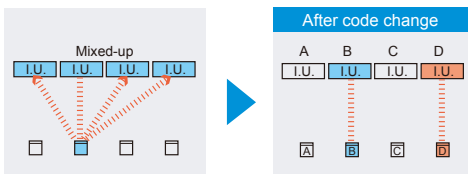


Heating operation

When the sleep timer is set, the set temperature automatically drops 2°F (1°C) every 30 minutes. The set temperature can drop to a maximum of 8°F (4°C).



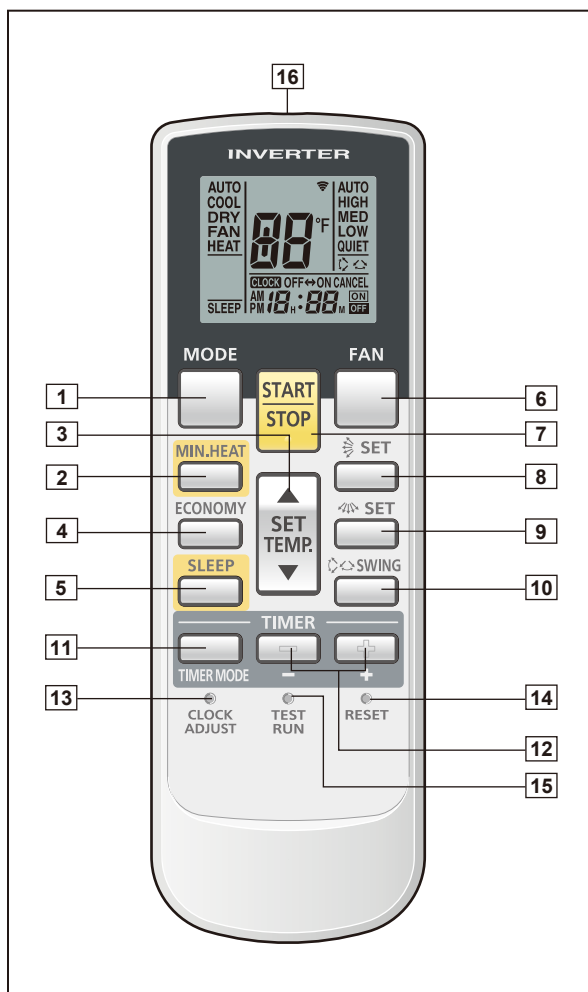
● Switching remote controller custom code



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

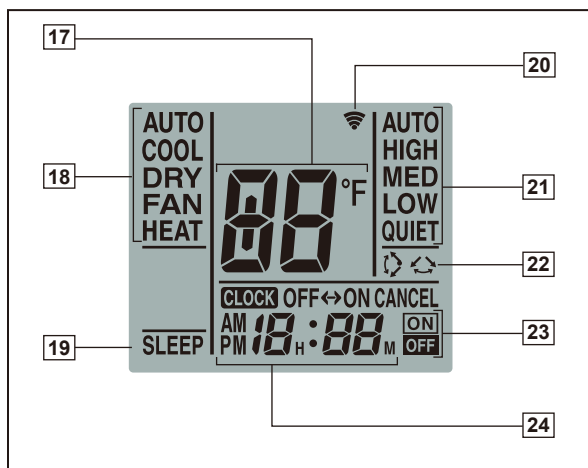
*I.U.=Indoor unit

FUNCTIONS (UTY-LNHUM)



- 1 MODE button
Selects the operating mode (AUTO, COOL, DRY, FAN, HEAT). /Start / end R.C. custom code change. (Max 4 types)
- 2 MIN.HEAT button
- 3 Set temp. button (▲ / ▼)
Sets the indoor temp./ Sets R.C. signal 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)
Air flow direction vertical set button.
- 9 SET button (Horizontal)
Air flow direction horizontal set button.
- 10 SWING button
Air flow 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.

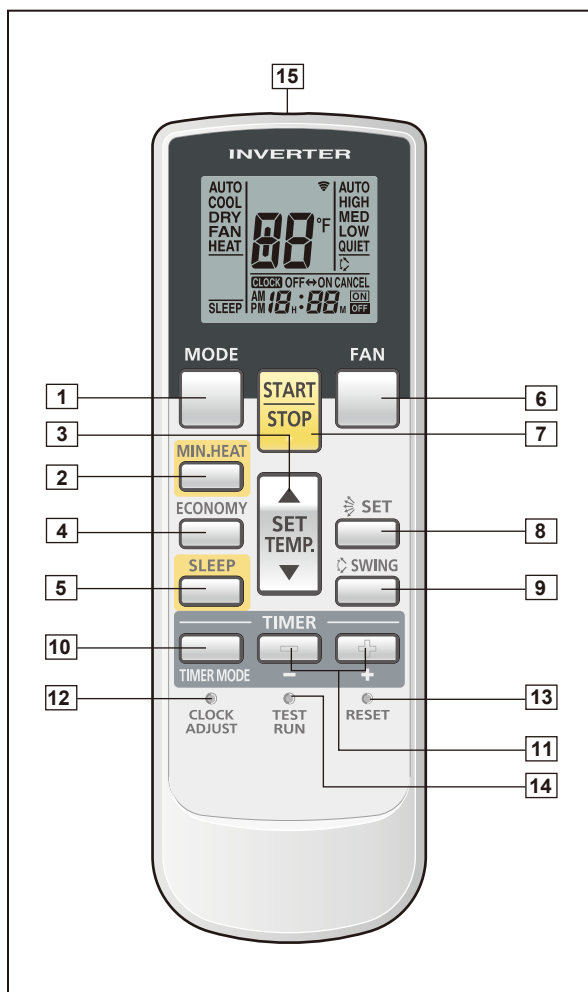
Display panel



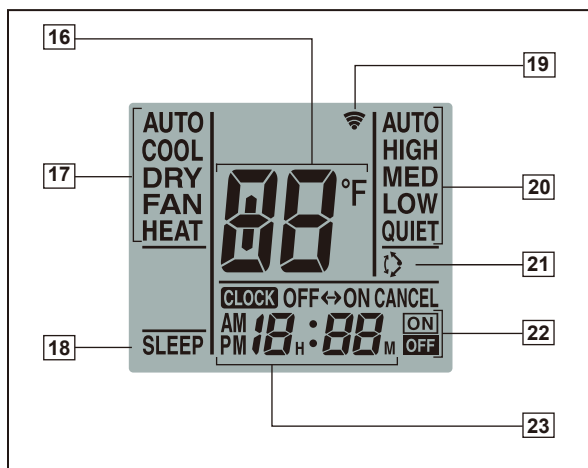
- 16 Signal transmitter
- 17 Temperature set indicator
- 18 Operating mode indicator
- 19 Sleep indicator
- 20 Transmit indicator
- 21 Fan speed indicator
- 22 Swing indicator
- 23 Timer mode indicator
- 24 Clock indicator

Note: Functions will be different due to type of indoor unit.
For details, please see operation manual.

FUNCTIONS (AR-RAH1U)



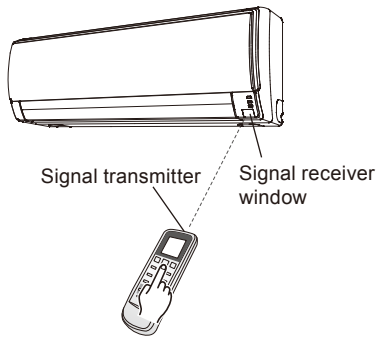
Display panel



- 1 MODE button
Selects the operating mode (AUTO, COOL, DRY, FAN, HEAT). /Start / end R.C. custom code change. (Max 4 types)
- 2 MIN.HEAT button
- 3 Set temp. button (▲ / ▼)
Sets the indoor temp./ Sets R.C. signal 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)
Air flow direction vertical set button.
- 9 SWING button
Air flow 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.
- 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: Functions will be different due to type of indoor unit.
For details, please see operation manual.

SYSTEM DIAGRAM

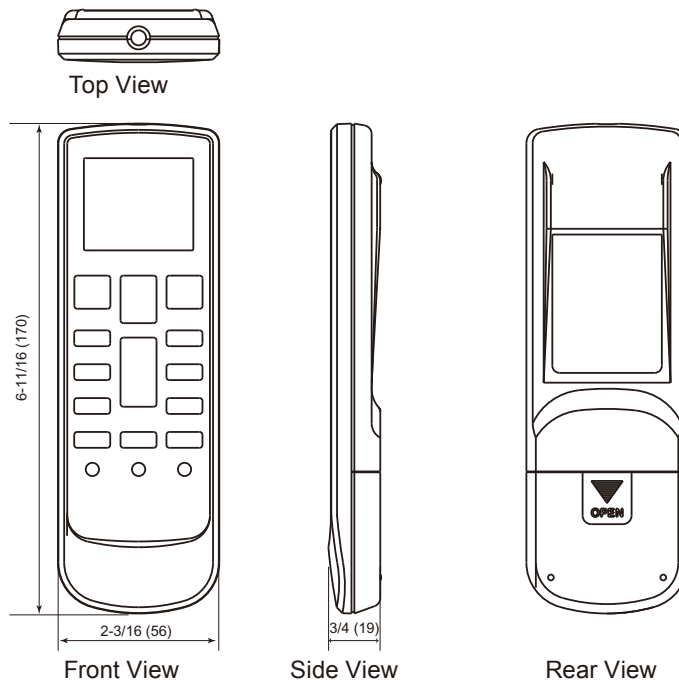


- Control signal might not be recognized in following cases:
 - A curtain or a wall, etc. exists between transmitter and receiver.
 - There is an instant-start type (inverter type, etc.) fluorescent lamp in the room.
- Air conditioner might not work correctly when strong light hits the signal receiver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

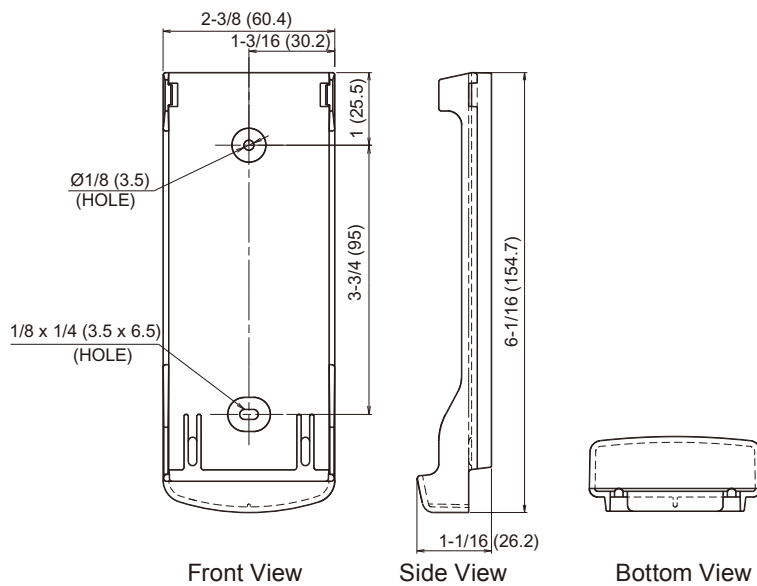
DIMENSIONS

Controller




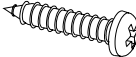
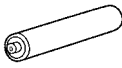
Unit : in. (mm)



Holder



■ PACKING LIST

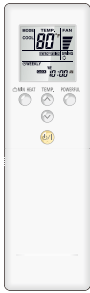
Name and shape	Quantity	Application
Installation manual 	1	
Operating manual 	1	
Remote controller holder 	1	Use as remote controller holder
Tapping screw 	2	For remote controller holder installation
Battery [1.5V (R03 / AAA)] 	2	For remote controller

■ SPECIFICATIONS

Dimensions [H x W x D]: in. (mm)	6-11/16 (170) x 2-3/16 (56) x 3/4 (19)
Weight : oz. (g)	3 (85) [w/o batteries]

■ MODEL: AR-RED1U

■ FEATURES



- * 5 Mode timer setup (ON / OFF / WEEKLY / PROGRAM / SLEEP) are possible.
- * Easy operation.
- * Easy to change custom code (4 patterns) by button operation.

● 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

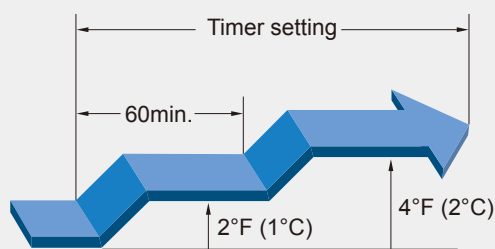
The program timer operates the on and off timer once within a 24 hour period.

● 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.

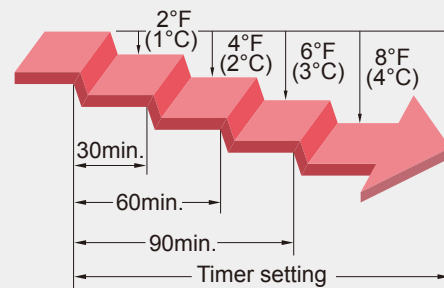
Cooling operation/dry operation

When the sleep timer is set, the set temperature automatically rises 2°F (1°C) every hour. The set temperature can rise up to a maximum of 4°F (2°C).



Heating operation

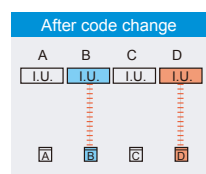
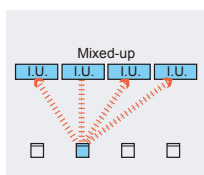
When the sleep timer is set, the set temperature automatically drops 2°F (1°C) every 30 minutes. The set temperature can drop to a maximum of 8°F (4°C).



● Simple function setting

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

● Switching remote controller custom code



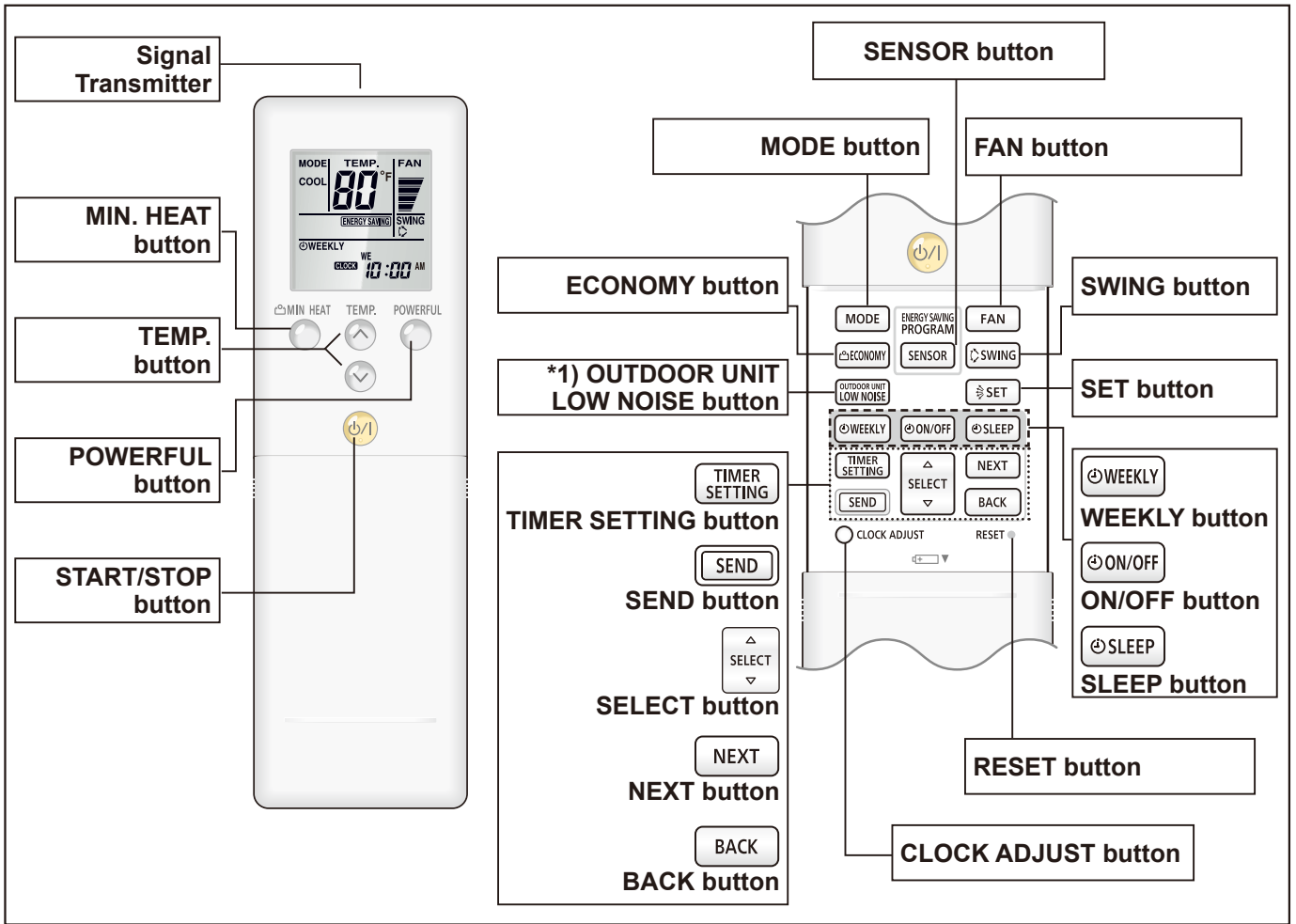
- Code selector switch eliminates unit being wrongly switched. (Up to 4 codes can be set.)

*I.U.=Indoor unit

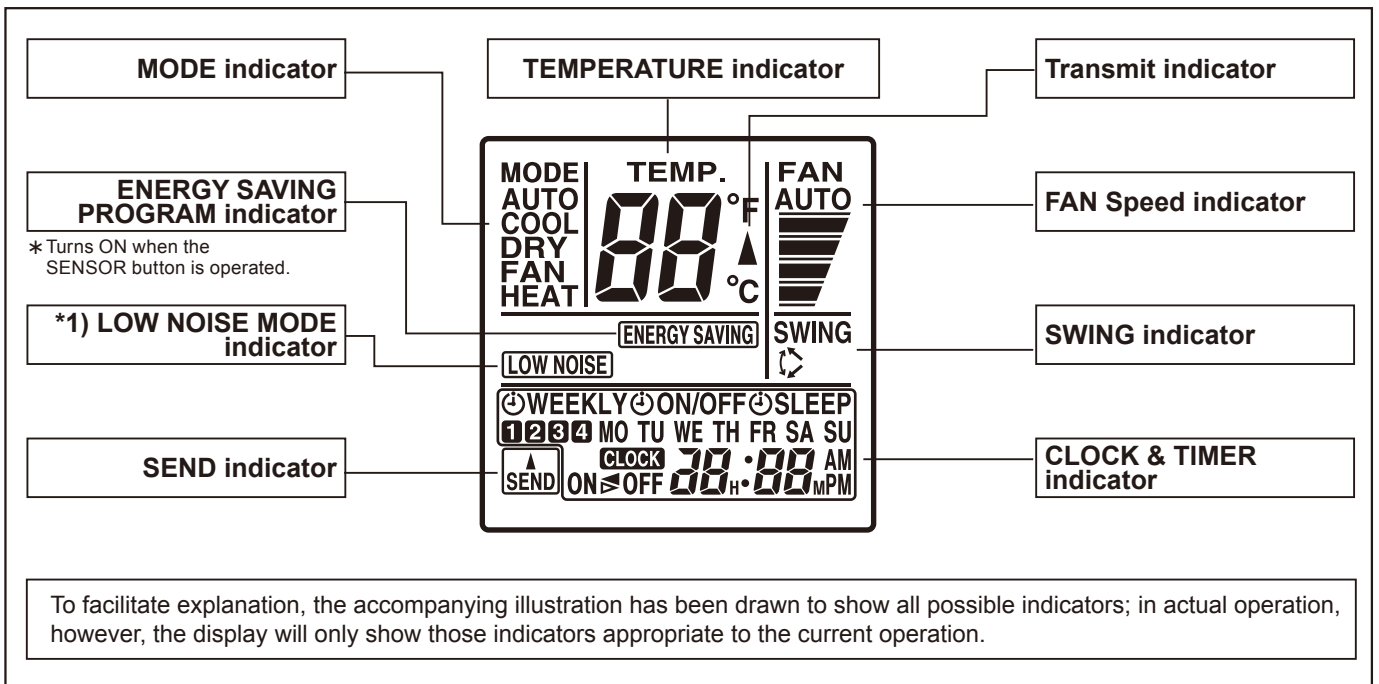
● To change the temperature unit

Easy to change the temperature unit (°F ↔ °C) by button operation.

FUNCTIONS (AR-RED1U)



Display panel

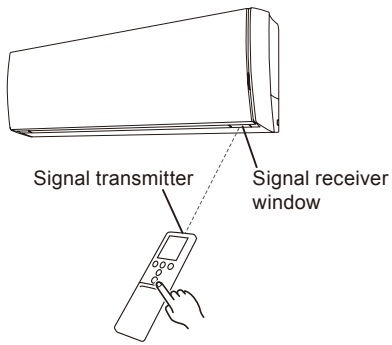


Note: Functions will be different due to type of indoor unit.

For details, please see operation manual.

*1) This function does not operate in a multi-type air conditioner.

SYSTEM DIAGRAM

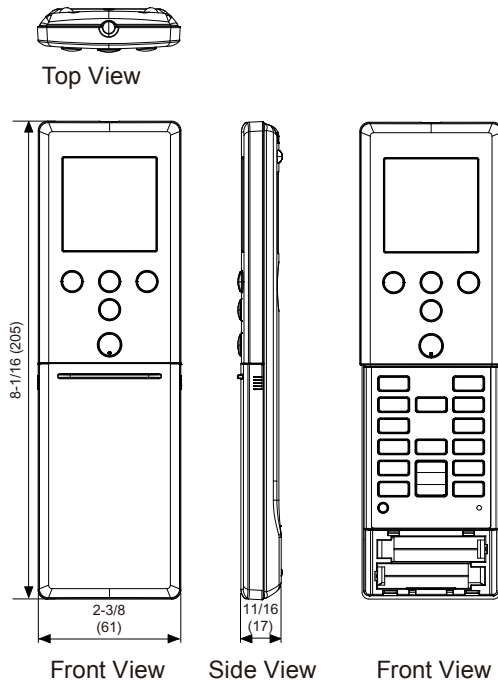


- Control signal might not be recognized in following cases:
 - A curtain or a wall, etc. exists between transmitter and receiver.
 - There is an instant-start type (inverter type, etc.) fluorescent lamp in the room.
- Air conditioner might not work correctly when strong light hits the signal receiver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

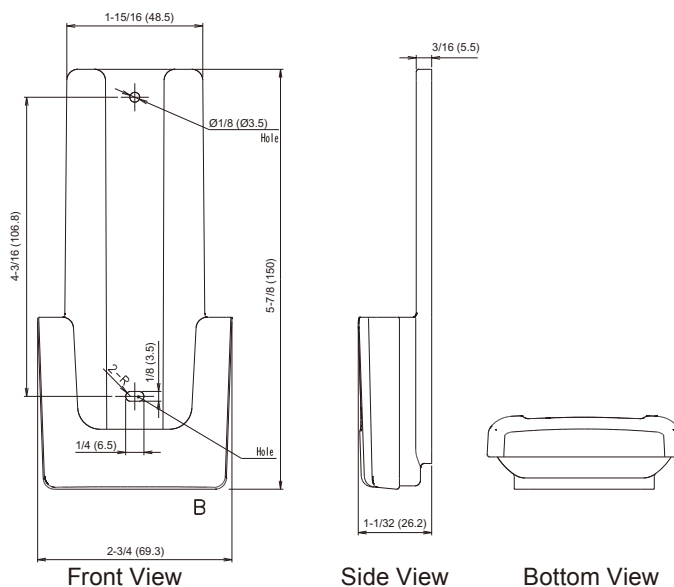
DIMENSIONS

Controller



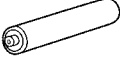
[Unit: in.(mm)]



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 (LR03 / AAA)] 	2	For remote controller

■ SPECIFICATIONS

Dimensions [H x W x D]: in.(mm)	8-1/16 (205) × 2-3/8 (61) × 11/16 (17)
Weight: oz.(g)	4.3 (122) [w/o batteries]

■ MODEL: AR-REG1U

■ 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

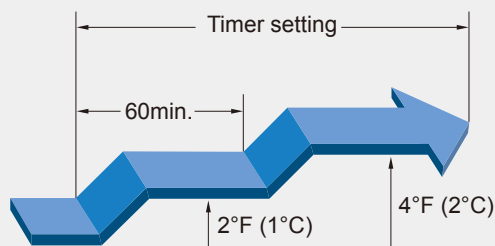
The program timer operates the on and off timer once within a 24-hour period.

● 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.

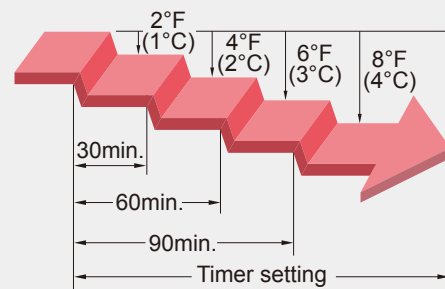
Cooling operation/dry operation

When the sleep timer is set, the set temperature automatically rises 2°F (1°C) every hour. The set temperature can rise up to a maximum of 4°F (2°C).



Heating operation

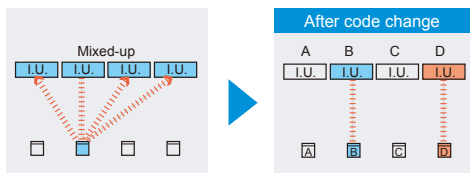
When the sleep timer is set, the set temperature automatically drops 2°F (1°C) every 30 minutes. The set temperature can drop to a maximum of 8°F (4°C).



● Simple function setting

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

● Switching remote controller custom code



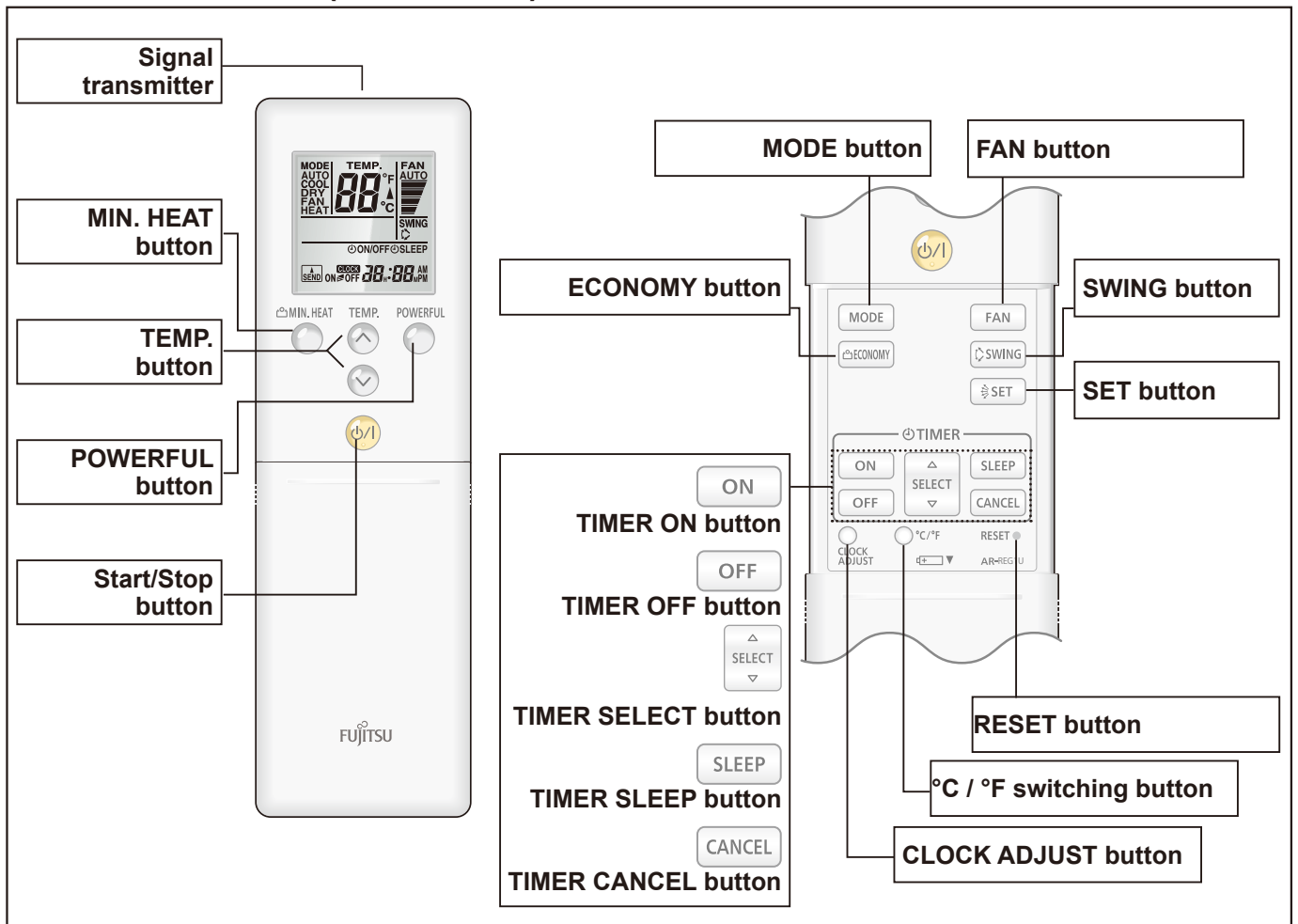
- Code selector switch eliminates unit being wrongly switched. (Up to 4 custom codes can be set.)

*I.U.=Indoor unit

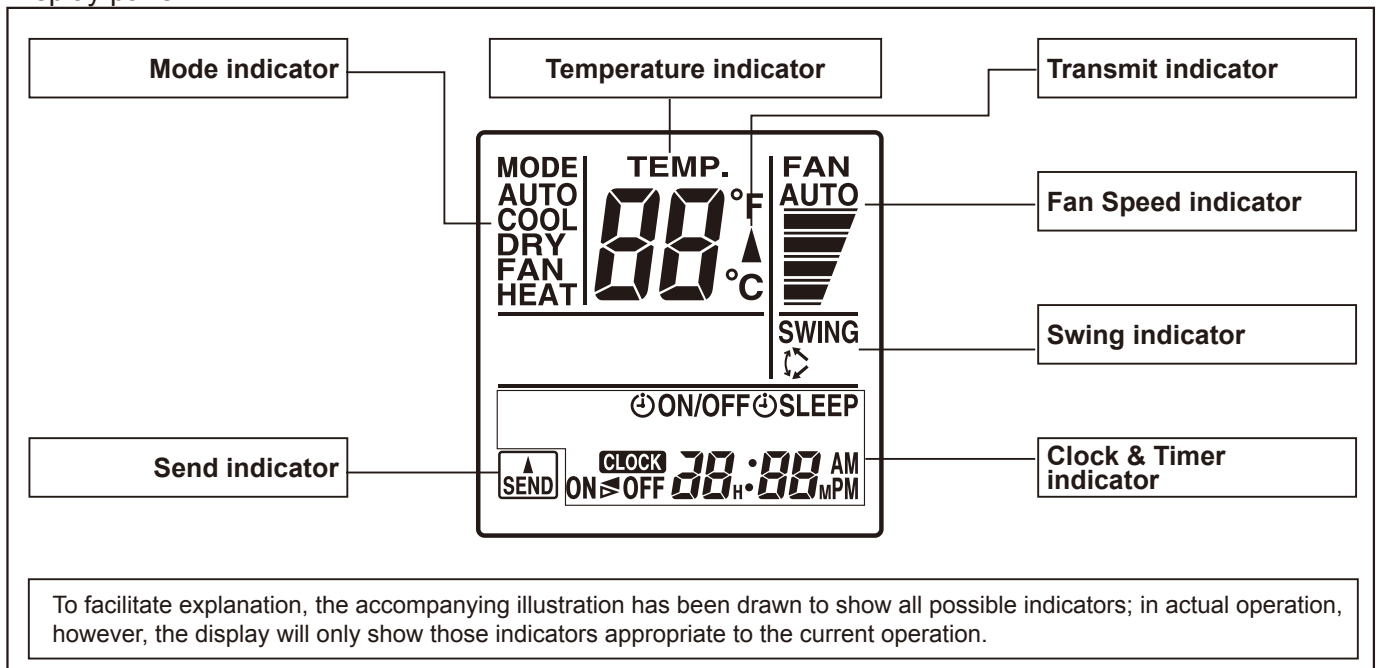
● To change the temperature unit

Easy to change the temperature unit (°F ↔ °C) by button operation.

FUNCTIONS (AR-REG1U)



Display panel

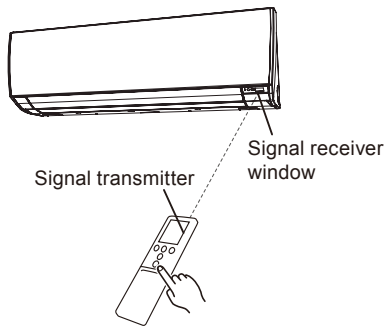


SPECIFICATION

DIMENSIONS [H × W × D]: in. (mm)	8-1/16 (205) × 2-3/8 (61) × 11/16 (17)
WEIGHT oz. (g)	4.3 (122)
ACCESSORY	Holder

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

SYSTEM DIAGRAM

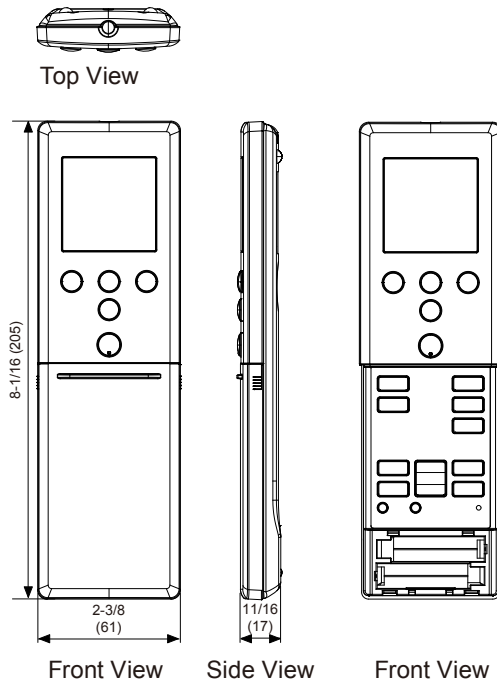


- Control signal might not be recognized in following cases:
 - A curtain or a wall, etc. exists between transmitter and receiver.
 - There is an instant-start type (inverter type, etc.) fluorescent lamp in the room.
- Air conditioner might not work correctly when strong light hits the signal receiver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

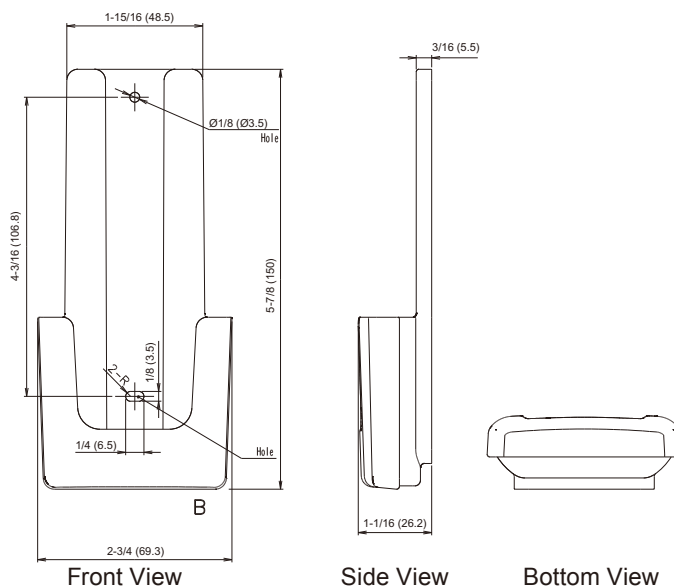
DIMENSIONS

Controller



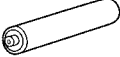
[Unit: in.(mm)]



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 (LR03 / AAA)] 	2	For remote controller

■ SPECIFICATIONS

Dimensions [H x W x D]: in.(mm)	8-1/16 (205) × 2-3/8 (61) × 11/16 (17)
Weight: oz.(g)	4.3 (122) [w/o batteries]

2-5. IR RECEIVER UNIT

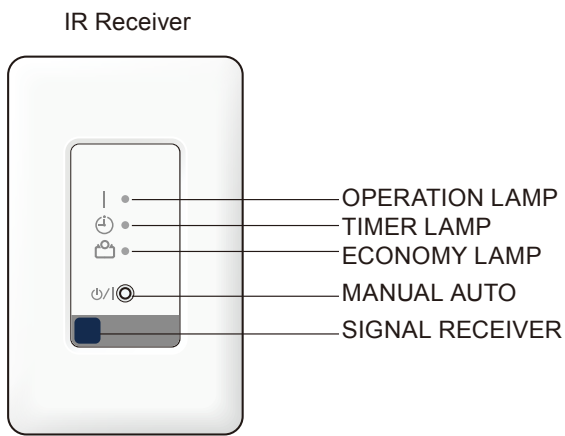
■ MODEL : UTY - LRHUM

■ FEATURES



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

■ FUNCTIONS



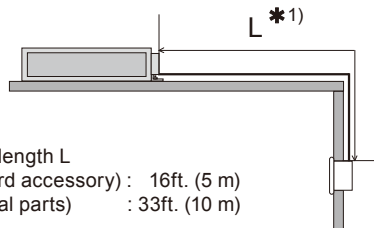
Wireless remote controller



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

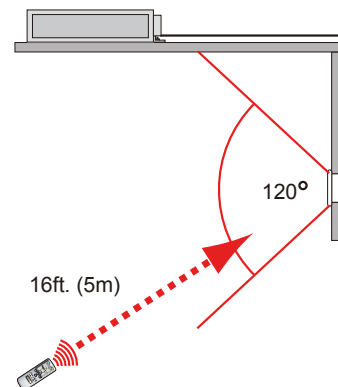
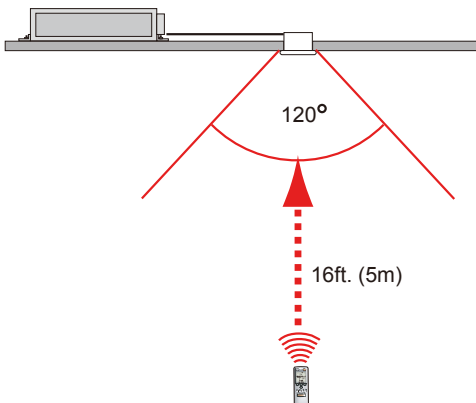
■ SYSTEM DIAGRAM

● ATTACHMENT RANGE

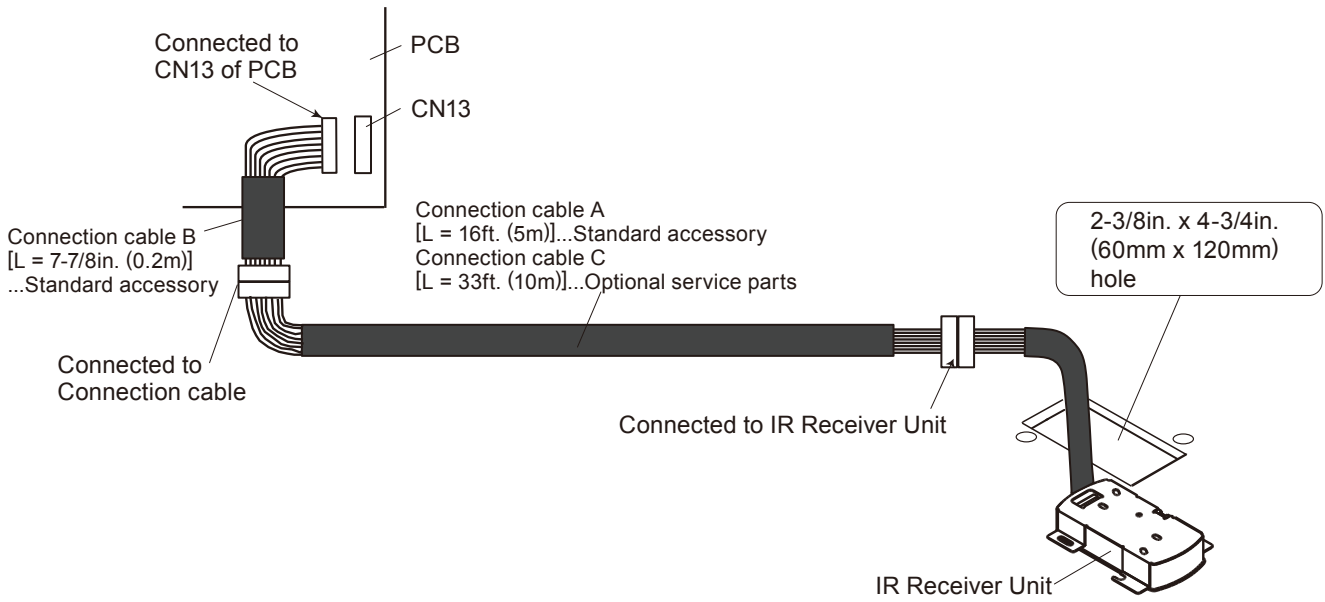


*1) Connection cable length L
 Cable A (standard accessory) : 16ft. (5 m)
 Cable C (Optional parts) : 33ft. (10 m)

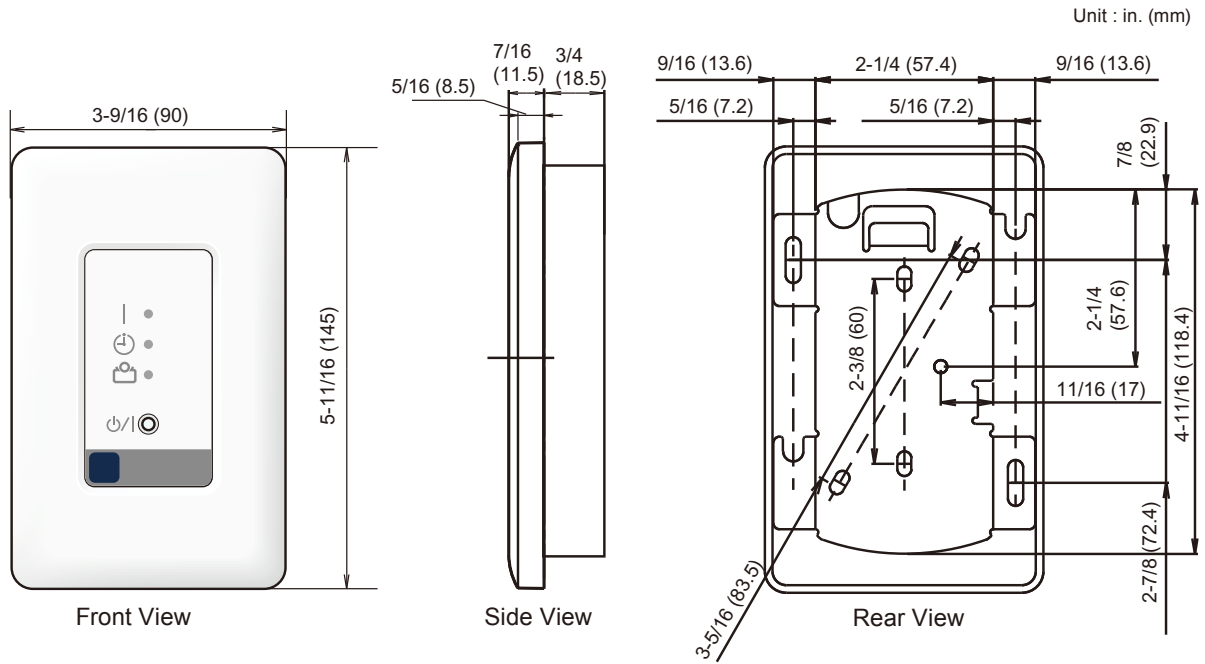
● SIGNAL ANGLE






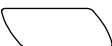
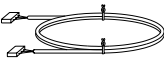

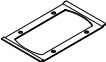




ELECTRICAL WIRING



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 [16ft. (5m)] 	1	For connecting PCB of indoor unit to receiver unit
Connection cable B [7-7/8in. (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]: in. (mm)	5-11/16 (145) x 3-9/16 (90) x 1-3/16 (30)
Weight: oz. (g)	5.3 (150)

■ OPTIONAL SERVICE PARTS

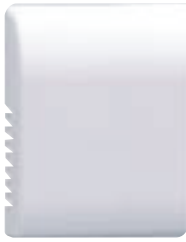
Please use the parts number shown below to order the cable from your sales representative.

Select shielded type connection cable in accordance with the standard of the country.

Name and shape	Parts No.
Connection cable C [33ft. (10m)]	9707598025

2-6. REMOTE SENSOR UNIT

■ MODEL : UTY - XSZX

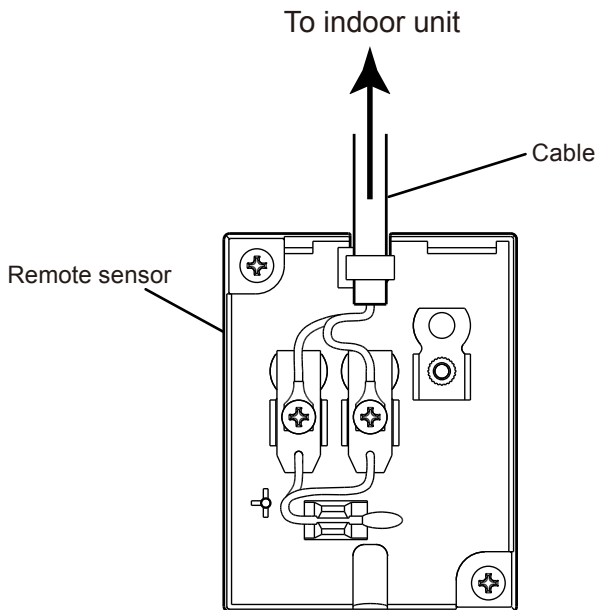


■ FEATURES

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

■ ELECTRICAL WIRING

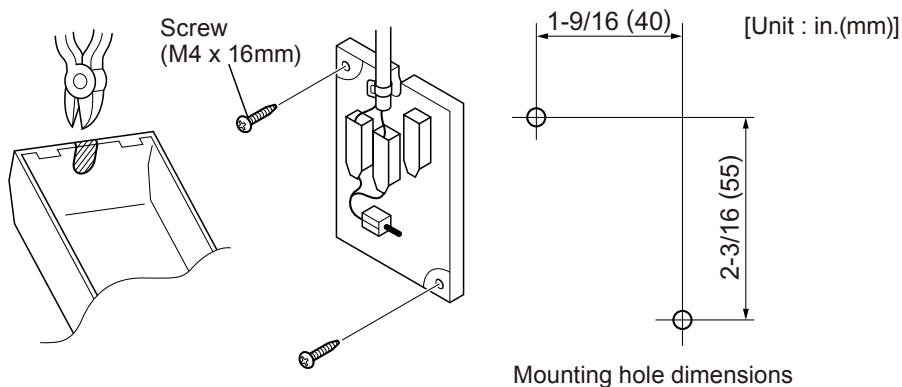
- Remove the screws from the remote sensor, and remove the cover.
- Connect the cable to the remote sensor as shown below.
- Ensure that the wires do not contact each other.



■ INSTALLATION

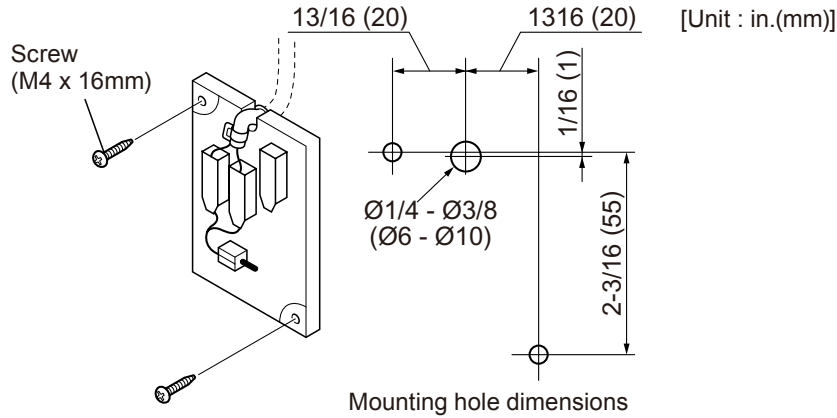
● When the cable is attached to the wall

- 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

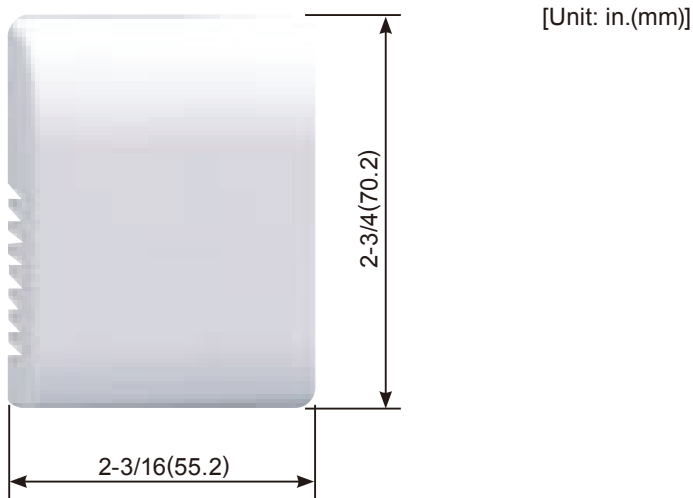
- Remove the material (thinner than the surrounding material) in the wiring hole in the remote sensor using a pair of cutters.
- Drill a hole in the wall for the cable.
- Seal the area around the cable penetration with putty.




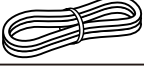
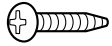


● Finish

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

■ DIMENSIONS



■ PACKING LIST

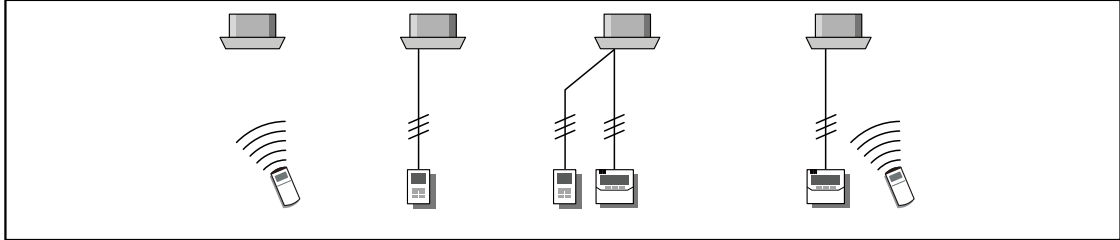
Name and shape	Quantity	Application
Installation manual 	1	
Cable [32ft. (10m)] 	1	
Screw (M4 x 16mm) 	2	
Screw (M4 x 10mm) 	2	
Cord clamp 	1	

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-DMMUM	UTY-RNNUM	UTY-RSNUM	UTY-LNHUM AR-RAH1U AR-RED1U AR-REG1U
Max. controllable indoor units		8	1	1	1
Air conditioning control function	Start/Stop	●	●	●	●
	Operation mode setting	●	●	●	●
	Fan speed setting	●	●	●	●
	Room temp. setting	●	●	●	●
	Test operation	-	●	●	●
	Up/down air direction flap setting	-	●	-	●
	Right/left air direction flap setting	-	●	-	● / - / - / -
	RC prohibition	●	-	-	-
	Min. heat setting	●	-	-	●
	Economy setting	●	●	-	●
	Low noise mode setting for outdoor unit (Outdoor Unit Quiet)	●	-	-	-
	Failure	●	●	●	-
Indicator	Defrosting	-	●	●	-
	Current time	●	●	-	●
	Day of week	●	●	-	-
	RC prohibition	●	●	●	-
	Address indicator	-	●	●	-
	Multi language	●	-	-	-
	Summer time	●	-	-	-
	Filter sign	-	●	●	-
	Backlight	●	-	●	-
	Schedule timer	Period	Week	Week	-
	On/off, Temp., Mode, Time, per day	4 times per day × 2 patterns	4 (On/off, times, per day)	-	4 times per day*
Timer	On/Off timer	-	●	-	●
	Sleep timer	-	-	-	●
	Program timer	-	-	-	●
	Day off	●	●	-	-
	Status monitoring system	●	-	-	-
Control	Error history	-	●	●	-
	Remote controller sensor control	-	●	-	-
	Key lock	●	●	-	-

*: This function is subject only AR-RED1U.

Hybrid Flex Inverter System

6. SYSTEM DESIGN

CONTENTS

6. SYSTEM DESIGN

1. SYSTEM DESIGN	06 - 01
1-1. SYSTEM OUTLINE	06 - 01
1-2. REFRIGERANT SYSTEM	06 - 02
1-3. WIRING SYSTEM.....	06 - 07
1-4. MOUNTING POSITION.....	06 - 08
2. PIPING DESIGN	06 - 10
2-1. IMPORTANT ITEMS WHEN USING NEW REFRIGERANT (R410A) ...	06 - 10
2-2. PIPING LIMITATION	06 - 12
2-3. PIPE SIZE.....	06 - 14
2-4. SELECTION OF PIPE HEAT INSULATING MATERIAL	06 - 16
2-5. ADDITIONAL CHARGE CALCULATION	06 - 17
2-6. EXAMPLE OF PIPING DESIGN	06 - 18
3. INSTALLATION	06 - 26
3-1. OUTDOOR UNIT	06 - 26
3-2. SEPARATION TUBE	06 - 29
3-3. BRANCH BOX	06 - 31
4. WIRING DESIGN	06 - 37
4-1. ELECTRICAL WIRING.....	06 - 37
4-2. POWER SUPPLY CABLE WIRING.....	06 - 39
4-3. TRANSMISSION LINE.....	06 - 43
4-4. CONTROLLER CABLE WIRING	06 - 46
5. FUNCTION SETTINGS	06 - 50
5-1. OUTDOOR UNIT	06 - 50
5-2. INDOOR UNIT (setting by jumper wire).....	06 - 54
5-3. INDOOR UNIT (setting by wireless remote controller).....	06 - 55
5-3-1. UTY-LNHUM/AR-RAH1U	06 - 56
5-3-2. AR-RED1U.....	06 - 61
5-3-3. AR-REG1U.....	06 - 66
5-4. INDOOR UNIT (setting by wired remote controller).....	06 - 71
5-5. INDOOR UNIT (setting by simple remote controller).....	06 - 75
5-7. CENTRAL REMOTE CONTROLLER	06 - 83
5-8. WIRED REMOTE CONTROLLER	06 - 86

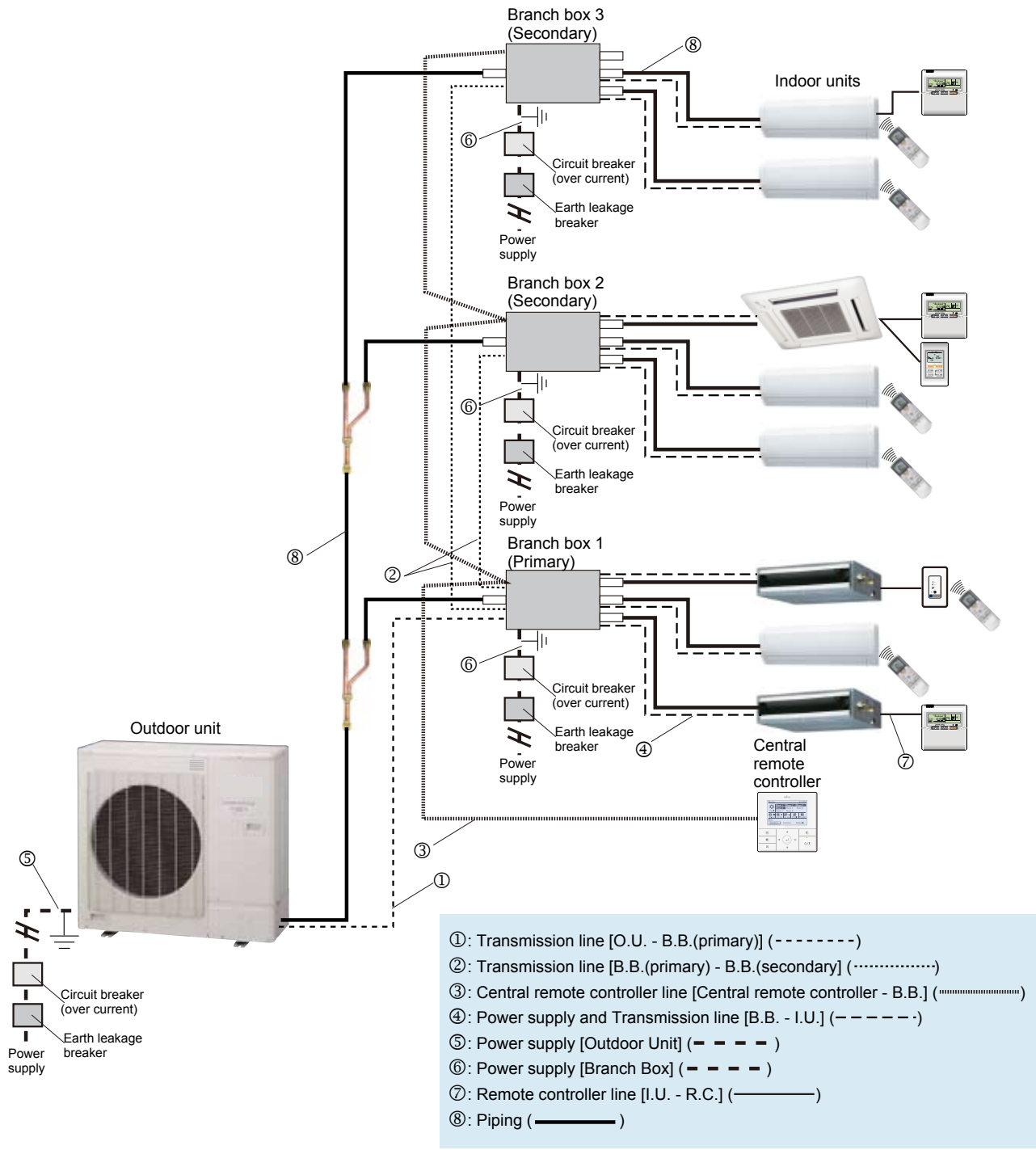
CONTENTS

6. SYSTEM DESIGN

5-9. SIMPLE REMOTE CONTROLLER	06 - 89
5-10. DUCT STATIC PRESSURE SETTING	06 - 92
6. CHECK RUN.....	06 - 93
6-1. PRECAUTIONS & PREPARATION	06 - 93
6-2. CHECK RUN CHECK ITEMS AND PROCEDURE	06 - 95
6-3. CHECK RUN EXAMPLES	06 - 96
6-4. RELOCATION AND INCREASE OF UNIT.....	06 - 100
7. EXTERNAL INPUT & OUTPUT.....	06 - 101
7-1. OUTDOOR UNIT	06 - 101
7-1-1. EXTERNAL INPUT	06 - 102
7-1-2. EXTERNAL OUTPUT	06 - 107
7-2. INDOOR UNIT	06 - 110
7-2-1. EXTERNAL INPUT	06 - 110
7-2-2. EXTERNAL OUTPUT	06 - 112
8. DRAIN CONNECTION	06 - 116
8-1. OUTDOOR UNIT	06 - 116
8-2. INDOOR UNIT	06 - 117
9. STANDARD ACCESSORIES	06 - 123
9-1. OUTDOOR UNIT	06 - 123
9-2. INDOOR UNIT	06 - 124
10. OPTIONAL PARTS INSTALLATION.....	06 - 129
10-1. FRESH AIR INTAKE KIT	06 - 129
11. REFRIGERANT CONCENTRATION PRECAUTIONS	06 - 140
11-1. INTRODUCTION	06 - 140
11-2. CHECKING CONCENTRATION LIMIT	06 - 141
11-3. REFRIGERATION CONCENTRATION COUNTERMEASURES.....	06 - 142
12. INSTALLATION PRECAUTIONS	06 - 143
12-1. INDOOR UNIT INSTALLATION PRECAUTIONS	06 - 143
12-2. OUTDOOR UNIT INSTALLATION PRECAUTIONS	06 - 146

1. SYSTEM DESIGN

1-1. SYSTEM OUTLINE



SYSTEM DESIGN

SYSTEM DESIGN

1-2. REFRIGERANT SYSTEM

■ CONNECTABLE UNIT WITHIN 1 REFRIGERANT SYSTEM

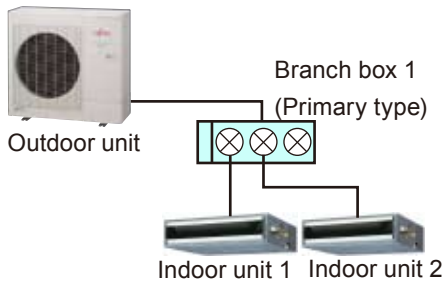
Unit	Quantity	Remarks
Outdoor unit	1 unit	
Indoor unit	2 to Max. 8 units	Connectable indoor unit capacity : 80% to 130%
Branch box	1 to Max. 3 units	One Branch box of primary type is always necessary

● 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 of "connectable capacity range" and "maximum connectable indoor unit", otherwise it may cause hinder the return of the refrigerant oil and cause a compressor breakdown.

■ EXAMPLE OF REFRIGERANT SYSTEM

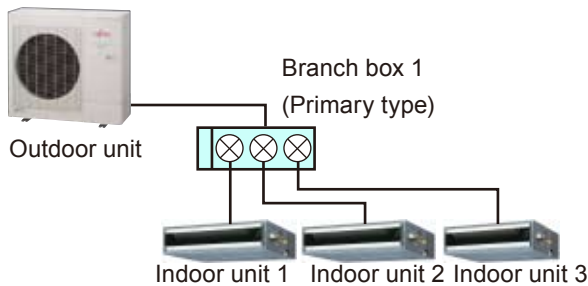
● Example 1 (OK)



Capacity ratio
88%

	Model	Capacity (Btu/h)	Total capacity (Btu/h)	Connectable indoor unit capacity (Btu/h)		Judgement
				Min.	Max.	
Outdoor unit	AOU48	48000	48000	② 80% 38400	③ 130% 62400	② ≤ ① ≤ ③ 38400 < 42000 < 62400 → OK
Indoor unit 1	ARU24	24000	①			
Indoor unit 2	ARU18	18000	42000			
Branch box 1	UTP-PU03A	-	-	-	-	-

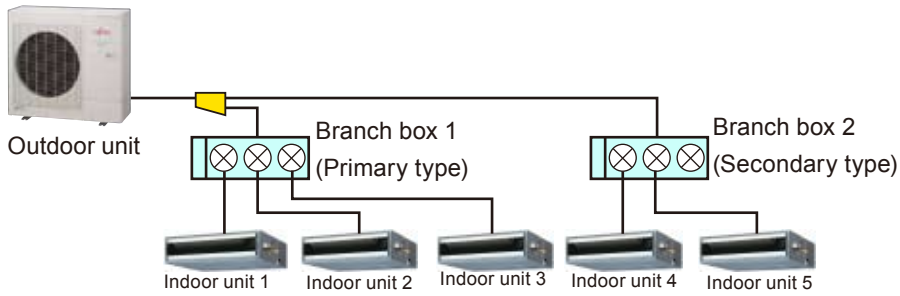
● Example 2 (OK)



Capacity ratio
125%

	Model	Capacity (Btu/h)	Total capacity (Btu/h)	Connectable indoor unit capacity (Btu/h)		Judgement
				Min.	Max.	
Outdoor unit	AOU48	48000	48000	② 80% 38400	③ 130% 62400	② ≤ ① ≤ ③ 38400 < 60000 < 62400 → OK
Indoor unit 1	ARU24	24000	① 60000			
Indoor unit 2	ARU24	24000				
Indoor unit 3	ARU12	12000				
Branch box 1	UTP-PU03A	-	-	-	-	-

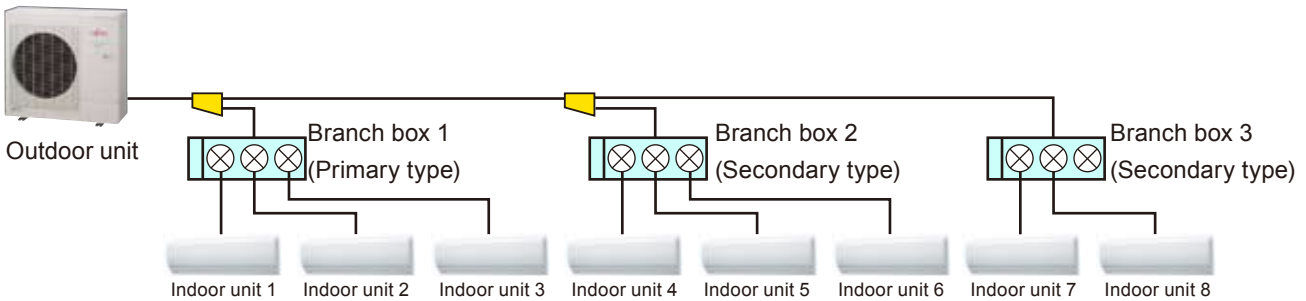
● Example 3 (OK)



Capacity ratio
119%

	Model	Capacity (Btu/h)	Total capacity (Btu/h)	Connectable indoor unit capacity (Btu/h)		Judgement
				Min.	Max.	
Outdoor unit	AOU48	48000	① 57000	② 80% 38400	③ 130% 62400	② ≤ ① ≤ ③ 38400 < 57000 < 62400 → OK
Indoor unit 1	ARU18	18000				
Indoor unit 2	ARU12	12000				
Indoor unit 3	ARU9	9000				
Indoor unit 4	ARU9	9000				
Indoor unit 5	ARU9	9000				
Branch box 1	UTP-PU03A	-	-	-	-	-
Branch box 2	UTP-PU03B	-	-	-	-	-

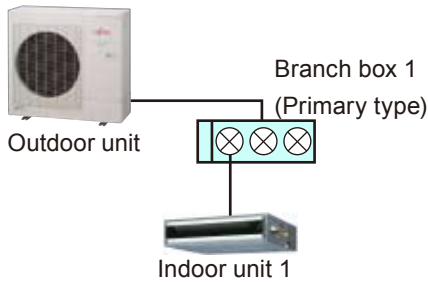
● Example 4 (OK)



Capacity ratio
117%

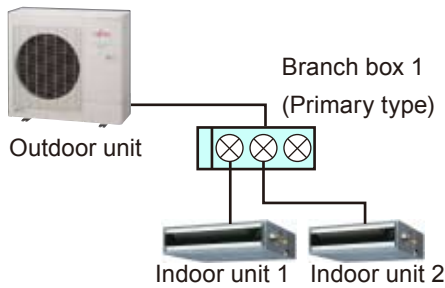
	Model	Capacity (Btu/h)	Total capacity (Btu/h)	Connectable indoor unit capacity (Btu/h)		Judgement
				Min.	Max.	
Outdoor unit	AOU48	48000	① 56000	② 80% 38400	③ 130% 62400	② ≤ ① ≤ ③ 38400 < 56000 < 62400 → OK
Indoor unit 1	ASU7	7000				
Indoor unit 2	ASU7	7000				
Indoor unit 3	ASU7	7000				
Indoor unit 4	ASU7	7000				
Indoor unit 5	ASU7	7000				
Indoor unit 6	ASU7	7000				
Indoor unit 7	ASU7	7000				
Indoor unit 8	ASU7	7000				
Branch box 1	UTP-PU03A	-	-	-	-	-
Branch box 2	UTP-PU03B	-	-	-	-	-
Branch box 3	UTP-PU03B	-	-	-	-	-

● Example 5 (Not good)



	Model	Capacity (Btu/h)	Total capacity (Btu/h)	Connectable indoor unit capacity (Btu/h)		Judgement
				Min.	Max.	
Outdoor unit	AOU48	48000	48000	② 80%	③ 130%	Not good → Because only one indoor unit is connected
Indoor unit 1	ARU24	24000	① 24000	38400	62400	
Branch box 1	UTP-PU03A	-	-	-	-	-

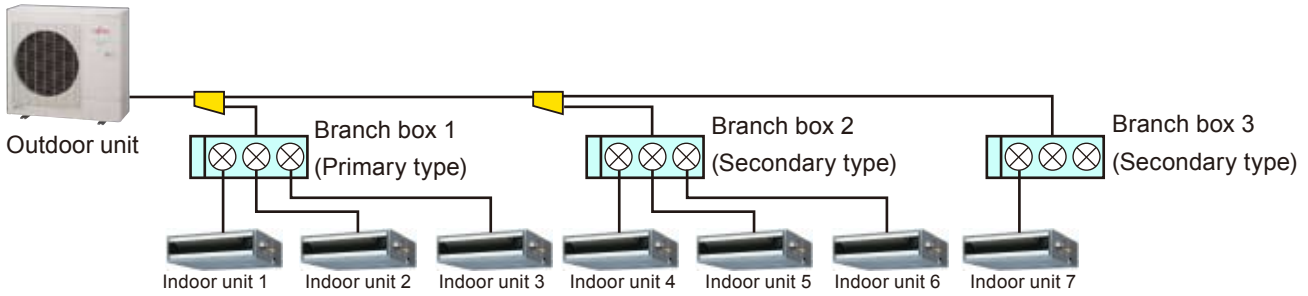
● Example 6 (Not good)



Capacity ratio
75%

	Model	Capacity (Btu/h)	Total capacity (Btu/h)	Connectable indoor unit capacity (Btu/h)		Judgement
				Min.	Max.	
Outdoor unit	AOU48	48000	48000	② 80%	③ 130%	① < ② 36000 < 38400 → Not good
Indoor unit 1	ARU24	24000	①	38400	62400	
Indoor unit 2	ARU12	12000	36000			
Branch box 1	UTP-PU03A	-	-	-	-	-

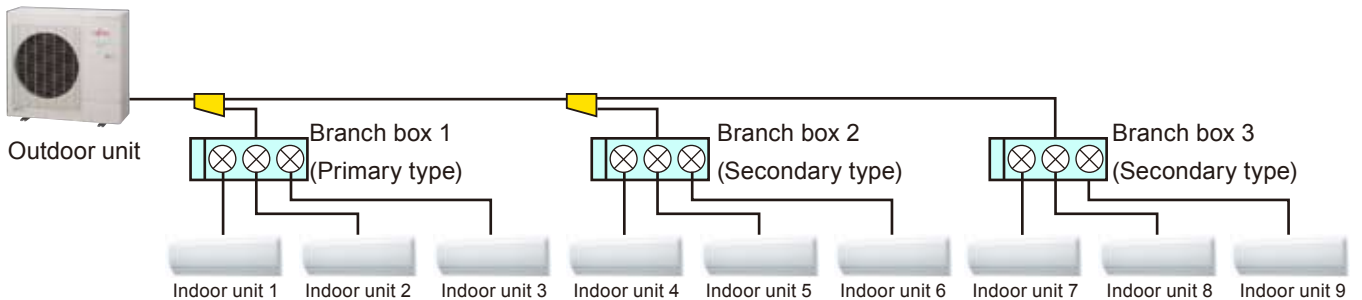
● Example 7 (Not good)



Capacity ratio
138%

	Model	Capacity (Btu/h)	Total capacity (Btu/h)	Connectable indoor unit capacity (Btu/h)		Judgement
				Min.	Max.	
Outdoor unit	AOU48	48000	48000			
Indoor unit 1	ARU12	12000	① 66000	② 80% 38400	③ 130% 62400	③ < ① 62400 < 66000 → Not good
Indoor unit 2	ARU9	9000				
Indoor unit 3	ARU9	9000				
Indoor unit 4	ARU9	9000				
Indoor unit 5	ARU9	9000				
Indoor unit 6	ARU9	9000				
Indoor unit 7	ARU9	9000				
Branch box 1	UTP-PU03A	-	-	-	-	-
Branch box 2	UTP-PU03B	-	-	-	-	-
Branch box 3	UTP-PU03B	-	-	-	-	-

● Example 8 (Not good)








	Model	Capacity (Btu/h)	Total capacity (Btu/h)	Connectable indoor unit capacity (Btu/h)		Judgement
				Min.	Max.	
Outdoor unit	AOU48	48000	48000			
Indoor unit 1	ASU7	7000	① 63000	② 80% 38400	③ 130% 62400	Not good → Because nine indoor units are connected
Indoor unit 2	ASU7	7000				
Indoor unit 3	ASU7	7000				
Indoor unit 4	ASU7	7000				
Indoor unit 5	ASU7	7000				
Indoor unit 6	ASU7	7000				
Indoor unit 7	ASU7	7000				
Indoor unit 8	ASU7	7000				
Indoor unit 9	ASU7	7000				
Branch box 1	UTP-PU03A	-	-	-	-	-
Branch box 2	UTP-PU03B	-	-	-	-	-
Branch box 3	UTP-PU03B	-	-	-	-	-

1-3. WIRING SYSTEM

■ MAXIMUM WIRING LENGTH

Transmission line	Maximum wiring length ft (m)
Between outdoor unit and branch box	246 (75)
Between branch box and indoor unit	246 (75)
Between branch box and branch box	246 (75)
Between branch box and Central remote controller	1640 (500)
Between indoor unit and Wired R.C. or Simple R.C.	1640 (500)
Between indoor unit and IR Receiver unit	16 (5)

■ CONTROLLER

			Maximum connectable units in one multi system	Maximum 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 by 2 wired remote controllers (Wired remote controller or Simple remote controller).
		Simple Remote Controller		16 (*1)	1	
		Wireless Remote Controller		-	1	
		IR Receiver unit		8 (*2)	1	*2: One indoor unit can be connected by 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 to 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 the spaces. Also install the unit where the filter can be removed.
- Install the unit where satisfy the pipe length and height.

● Indoor unit mounting limitation

- Install at a place that can withstand the weight of the indoor unit and install positively 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 the 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 of dust.
- Install the unit where drainage does not cause any trouble.
- Control 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 3ft. (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 3ft. (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 a 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 NEW 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 609 psi (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 609 psi (4.2 MPa).

Please select the pipe size in accordance with local rules.

■ LUBRICANT

Refrigerant	R410A (Mixed refrigerant)
Lubricant	Synthetic oil

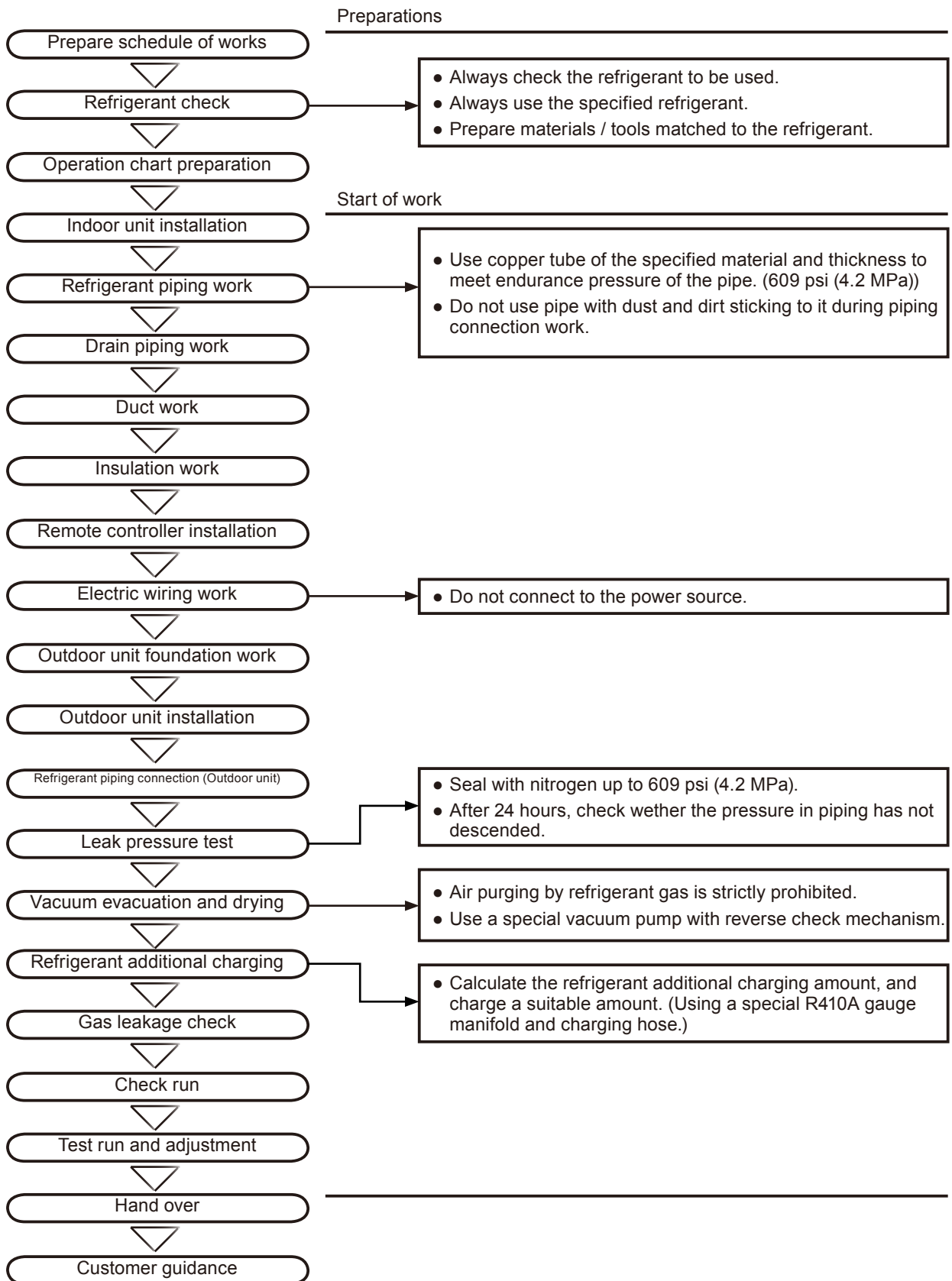
■ TOOLS

R410A work requires a number of special tools. Since the tools (with *4 symbol) 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	
Gauge manifold *4	Vacuum evacuation and refrigerant charging Operation check	Air tightness test ~ Refrigerant additional charging
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	

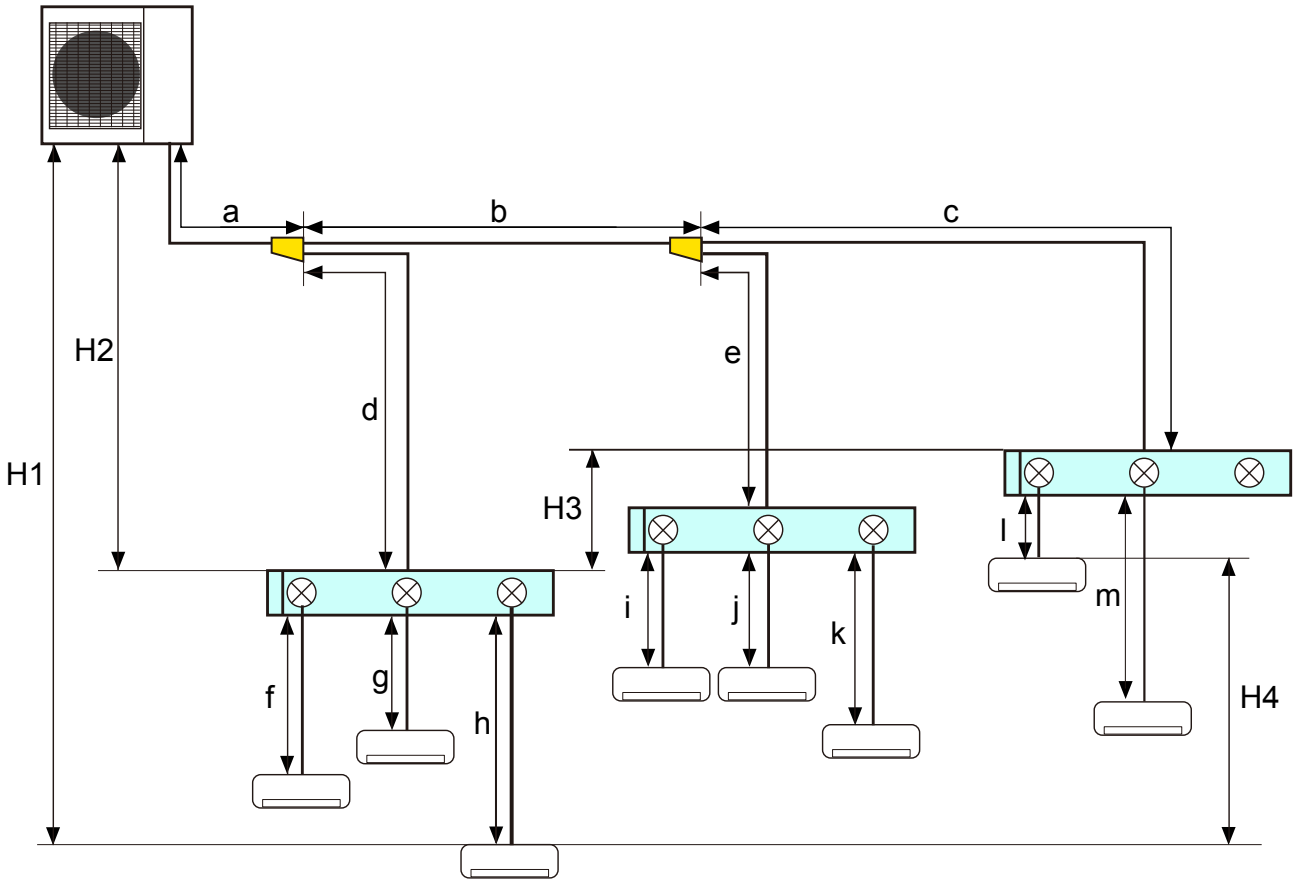
*4: Please refer to a service manual for details.

WORK FLOW (EXAMPLE)



2-2. PIPING LIMITATION

■ LIMITATION



		Limitation ft (m)	Diagram	
Allowable pipe length (actual pipe length)	Total pipe length	377 (115) or less	Total	
	Between outdoor unit and the farthest indoor unit	230 (70) or less	a + b + c + m	
	Between outdoor unit and branch boxes	180 (55) or less	a + b + c + d + e	
	Between branch box and indoor unit	Total	197 (60) or less	f + g + h + i + j + k + l + m
		Each unit	Between 10 to 49 (3 to 15)	f, g, h, i, j, k, l, m
	Between outdoor unit and the first separation tube	16 (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	98 (30) or less	H1	
	Between outdoor unit and branch box	98 (30) or less	H2	
	Between branch box and branch box	49 (15) or less	H3	
	Between indoor unit and indoor unit	49 (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

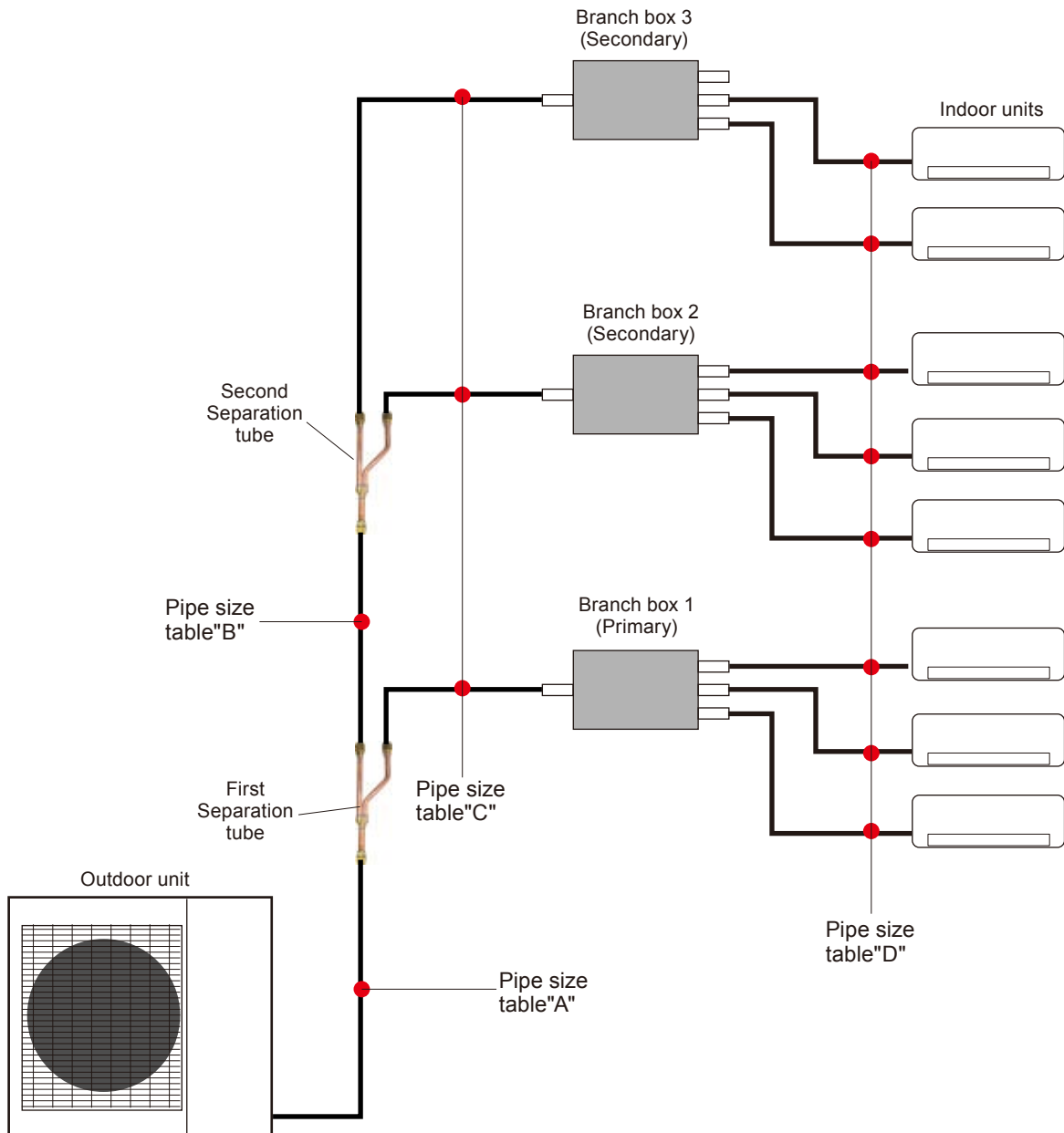
Nominal Diameter	(in)	1/4"	3/8"	1/2"	5/8"	3/4"
Outside Diameter	(mm)	6.35	9.52	12.70	15.88	19.05
Material	JIS H3300 C1220T-O or equivalent *1					
Wall Thickness *2	(mm)	0.8	0.8	0.8	1.0	1.2

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

*2: Endurance pressure of the pipe must be 609 psi (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
3/8" (9.52)	5/8" (15.88)

● **Pipe size table "B"**

(Between first separation tube and second separation tube)

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

● **Pipe size table "C"**

(Between separation tube and branch box)

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

● **Pipe size table "D"**

(Between branch box and indoor unit)

Model code of indoor unit	Cooling capacity of indoor unit (BTU/h)	Outside diameter mm (in.)	
		Liquid pipe	Gas pipe
7, 9, 12	7000 to 12000	1/4" (6.35)	3/8" (9.52)
15, 18	14000 to 18000	1/4" (6.35)	1/2" (12.70)
24	24000	1/4" (6.35)	5/8" (15.88)

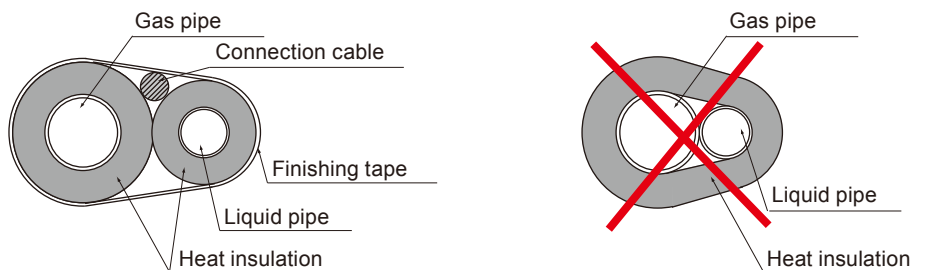
2-4. SELECTION OF PIPE HEAT INSULATING MATERIAL

- 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=90°F DB (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 [in. (mm)]			
		≤70%	≤75%	≤80%	≤85%
Refrigerant pipe	1/4" (6.35)	5/16 (8)	3/8 (10)	1/2 (13)	11/16 (17)
	3/8" (9.52)	3/8 (9)	7/16 (11)	9/16 (14)	11/16 (18)
Outside diameter [in. (mm)]	1/2" (12.70)	3/8 (10)	1/2 (12)	9/16 (15)	3/4 (19)
	5/8" (15.88)	3/8 (10)	1/2 (12)	5/8 (16)	13/16 (20)
	3/4" (19.05)	3/8 (10)	1/2 (13)	5/8 (16)	13/16 (21)

- When an ambient temperature and relative humidity exceed 90°F DB (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 248°F (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 is charged refrigerant 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

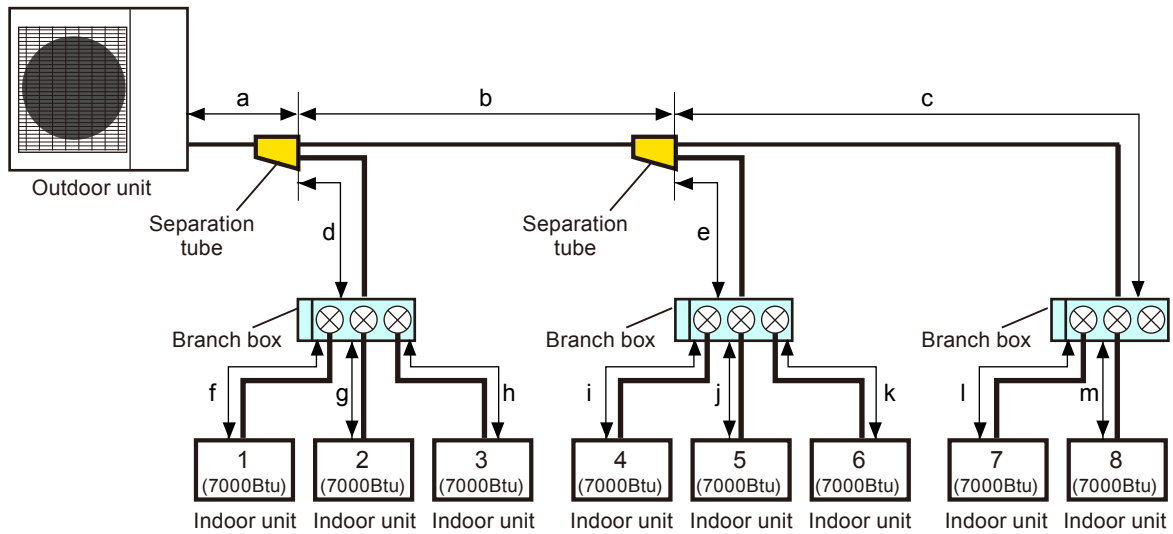
Diameter of liquid pipe unit: in. (mm)	Additional amount for pipe length unit: oz./ft. (g/m)
ø1/4 (6.35)	0.224 (21)
ø3/8 (9.52)	0.624 (58)

● Calculation of additional amount for pipe length

<table border="1" style="border-collapse: collapse; width: 100%;"> <tr> <td style="padding: 2px;">Total length of ø3/8in. (9.52mm) liquid pipe</td> <td style="padding: 2px;">x 0.624 oz./ft. (58g/m)</td> </tr> <tr> <td style="padding: 2px;">ft (m)</td> <td></td> </tr> <tr> <td colspan="2" style="padding: 2px; text-align: center;">oz. (g)</td> </tr> </table>	Total length of ø3/8in. (9.52mm) liquid pipe	x 0.624 oz./ft. (58g/m)	ft (m)		oz. (g)		+	<table border="1" style="border-collapse: collapse; width: 100%;"> <tr> <td style="padding: 2px;">Total length of ø1/4in. (6.35mm) liquid pipe</td> <td style="padding: 2px;">x 0.224 oz./ft. (21g/m)</td> </tr> <tr> <td style="padding: 2px;">ft (m)</td> <td></td> </tr> <tr> <td colspan="2" style="padding: 2px; text-align: center;">oz. (g)</td> </tr> </table>	Total length of ø1/4in. (6.35mm) liquid pipe	x 0.224 oz./ft. (21g/m)	ft (m)		oz. (g)		=	<table border="1" style="border-collapse: collapse; width: 100%;"> <tr> <td style="padding: 2px;">Total</td> </tr> <tr> <td style="padding: 2px;">oz. (g)</td> </tr> </table>	Total	oz. (g)	=	<table border="1" style="border-collapse: collapse; width: 100%;"> <tr> <td style="padding: 2px;">Total</td> </tr> <tr> <td style="padding: 2px;">lbs (kg)</td> </tr> </table>	Total	lbs (kg)
Total length of ø3/8in. (9.52mm) liquid pipe	x 0.624 oz./ft. (58g/m)																					
ft (m)																						
oz. (g)																						
Total length of ø1/4in. (6.35mm) liquid pipe	x 0.224 oz./ft. (21g/m)																					
ft (m)																						
oz. (g)																						
Total																						
oz. (g)																						
Total																						
lbs (kg)																						

2-6. EXAMPLE OF PIPING DESIGN

EXAMPLE 1



System configuration (Indoor units)

	1	2	3	4	5	6	7	8	Total Capacity (Btu)
Model name	ASU7	ASU7	ASU7	ASU7	ASU7	ASU7	ASU7	ASU7	56000
Capacity (Btu)	7000	7000	7000	7000	7000	7000	7000	7000	

Capacity ratio

$$\begin{aligned} & \text{(Total indoor unit capacity) / (Total outdoor unit capacity)} \\ & = (56000) / (48000) = 116.7\% \text{ (Within 80\% to 130\%)} \end{aligned}$$

Selection of separation tube

Model	Q'ty
UTP-SX248A	2

Selection of branch box

Model	Q'ty
UTP-PU03A (primary)	1
UTP-PU03B (secondary)	2

Selection of pipe size

	a	b	c	d	e	f	g
Liquid pipe size	3/8	3/8	3/8	3/8	3/8	1/4	1/4
in. (mm)	(9.52)	(9.52)	(9.52)	(9.52)	(9.52)	(6.35)	(6.35)
Gas pipe size	5/8	5/8	5/8	5/8	5/8	3/8	3/8
in. (mm)	(15.88)	(15.88)	(15.88)	(15.88)	(15.88)	(9.52)	(9.52)
Pipe length	23	33	33	16	16	16	16
ft (m)	(7)	(10)	(10)	(5)	(5)	(5)	(5)
	h	i	j	k	l	m	
Liquid pipe size	1/4	1/4	1/4	1/4	1/4	1/4	
in. (mm)	(6.35)	(6.35)	(6.35)	(6.35)	(6.35)	(6.35)	
Gas pipe size	3/8	3/8	3/8	3/8	3/8	3/8	
in. (mm)	(9.52)	(9.52)	(9.52)	(9.52)	(9.52)	(9.52)	
Pipe length	16	16	16	16	16	26	
ft (m)	(5)	(5)	(5)	(5)	(5)	(8)	

● Limitation check

	Diagram	Example ft (m)	Limitation ft (m)	Judge
Total pipe length	Total	259 (80)	Less than 377 (115)	OK
Between outdoor unit and the farthest indoor unit	a + b + c + m	115 (35)	Less than 230 (70)	OK
Between outdoor unit and branch boxes	a + b + c + d + e	121 (37)	Less than 180 (55)	OK
Between branch box and indoor unit	Total	f + g + h + i + j + k + l + m 138 (43)	Less than 197 (60)	OK
	Each unit	f, g, h, i, j, k, l, m 16 to 26 (5 to 8)	Between 10 to 49 (3 to 15)	OK
Between outdoor unit and the first separation tube	a	23 (7)	Greater than 16 (5)	OK

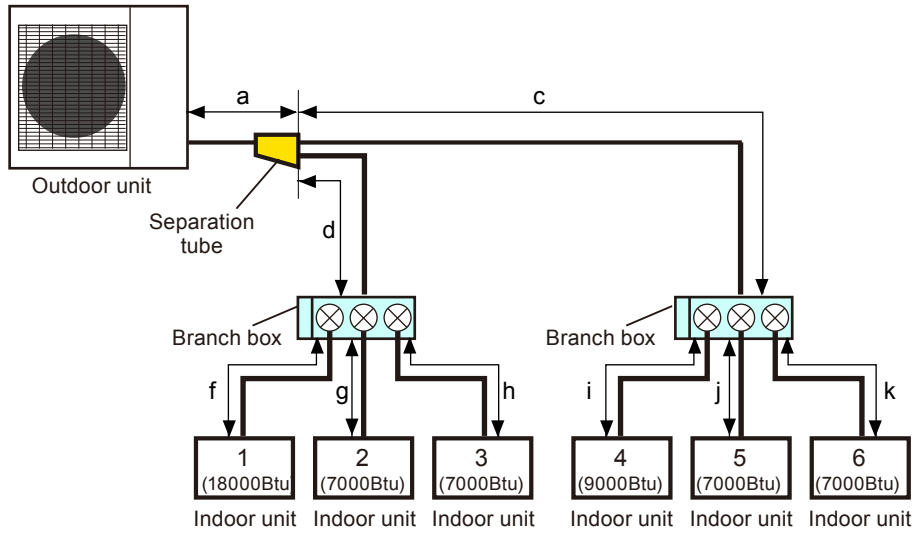
● Calculation of additional charge refrigerant

Liquid pipe size in. (mm)	1/4 (6.35)	3/8 (9.52)
Additional refrigerant oz./ft. (g/m)	0.224 (21)	0.624 (58)
Liquid pipe length ft (m)	138 (43)	121 (37)

Additional charge = (0.224 x 138) + (0.624 x 121) = 106.42 oz. = 6.65 lbs.

[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 (Btu)
Model name	ASU18	ASU7	ASU7	ASU9	ASU7	ASU7			55000
Capacity (Btu)	18000	7000	7000	9000	7000	7000			

Capacity ratio

$$\begin{aligned} & \text{(Total indoor unit capacity) / (Total outdoor unit capacity)} \\ & = (55000) / (48000) = 114.6\% \text{ (Within 80\% to 130\%)} \end{aligned}$$

Selection of separation tube

Model	Q'ty
UTP-SX248A	1

Selection of branch box

Model	Q'ty
UTP-PU03A (primary)	1
UTP-PU03B (secondary)	1

Selection of pipe size

	a	b	c	d	e	f	g
Liquid pipe size in. (mm)	3/8 (9.52)		3/8 (9.52)	3/8 (9.52)		1/4 (6.35)	1/4 (6.35)
Gas pipe size in. (mm)	5/8 (15.88)		5/8 (15.88)	5/8 (15.88)		1/2 (12.70)	3/8 (9.52)
Pipe length ft (m)	23 (7)		82 (25)	33 (10)		16 (5)	16 (5)
	h	i	j	k	l	m	
Liquid pipe size in. (mm)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)	1/4 (6.35)			
Gas pipe size in. (mm)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)			
Pipe length ft (m)	16 (5)	16 (5)	16 (5)	16 (5)			

● Limitation check

	Diagram	Example ft (m)	Limitation ft (m)	Judge
Total pipe length	Total	234 (72)	Less than 377 (115)	OK
Between outdoor unit and the farthest indoor unit	a + c + k	121 (37)	Less than 230 (70)	OK
Between outdoor unit and branch boxes	a + c + d	138 (42)	Less than 180 (55)	OK
Between branch box and indoor unit	Total	96 (30)	Less than 197 (60)	OK
	Each unit	f, g, h, i, j, k 16 (5)	Between 10 to 49 (3 to 15)	OK
Between outdoor unit and the first separation tube	a	23 (7)	Greater than 16 (5)	OK

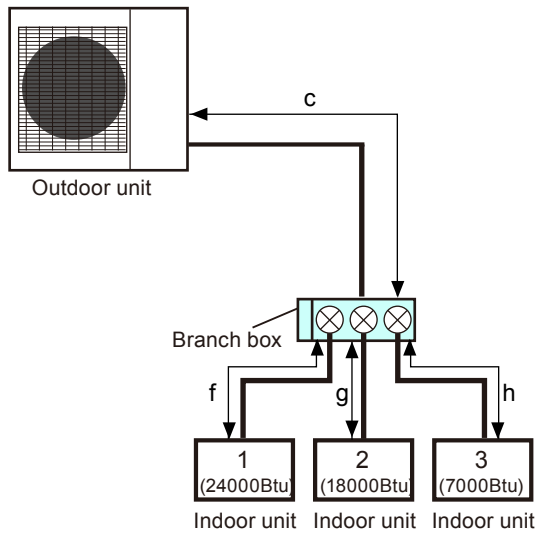
● Calculation of additional charge refrigerant

Liquid pipe size in. (mm)	1/4 (6.35)	3/8 (9.52)
Additional refrigerant oz./ft. (g/m)	0.224 (21)	0.624 (58)
Liquid pipe length ft (m)	96 (30)	138 (42)

Additional charge = (0.224 x 96) + (0.624 x 138) = 107.62 oz. = 6.73 lbs

[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 (Btu)
Model name	ASU24	ASU18	ASU7						49000
Capacity (Btu)	24000	18000	7000						

● Capacity ratio

$$\begin{aligned} & \text{(Total indoor unit capacity) / (Total outdoor unit capacity)} \\ & = (49000) / (48000) = 102.1\% \text{ (Within 80\% to 130\%)} \end{aligned}$$

● Selection of separation tube

Model	Q'ty
UTP-SX248A	None

● Selection of branch box

Model	Q'ty
UTP-PU03A (primary)	1
UTP-PU03B (secondary)	None

● Selection of pipe size

	a	b	c	d	e	f	g
Liquid pipe size in. (mm)			3/8 (9.52)			1/4 (6.35)	1/4 (6.35)
Gas pipe size in. (mm)			5/8 (15.88)			5/8 (15.88)	1/2 (12.70)
Pipe length ft (m)			148 (45)			39 (12)	39 (12)
	h	i	j	k	l	m	
Liquid pipe size in. (mm)	1/4 (6.35)						
Gas pipe size in. (mm)	3/8 (9.52)						
Pipe length ft (m)	49 (15)						

● Limitation check

	Diagram	Example ft (m)	Limitation ft (m)	Judge
Total pipe length	Total	275 (84)	Less than 377 (115)	OK
Between outdoor unit and the farthest indoor unit	c + h	197 (60)	Less than 230 (70)	OK
Between outdoor unit and branch box	c	148 (45)	Less than 180 (55)	OK
Between branch box and indoor unit	Total	127 (39)	Less than 197 (60)	OK
	Each unit	f, g, h 39 to 49 (12 to 15)	Between 10 to 49 (3 to 15)	OK
Between outdoor unit and branch box (When there is no separation tube)	c	148 (45)	Greater than 16 (5)	OK

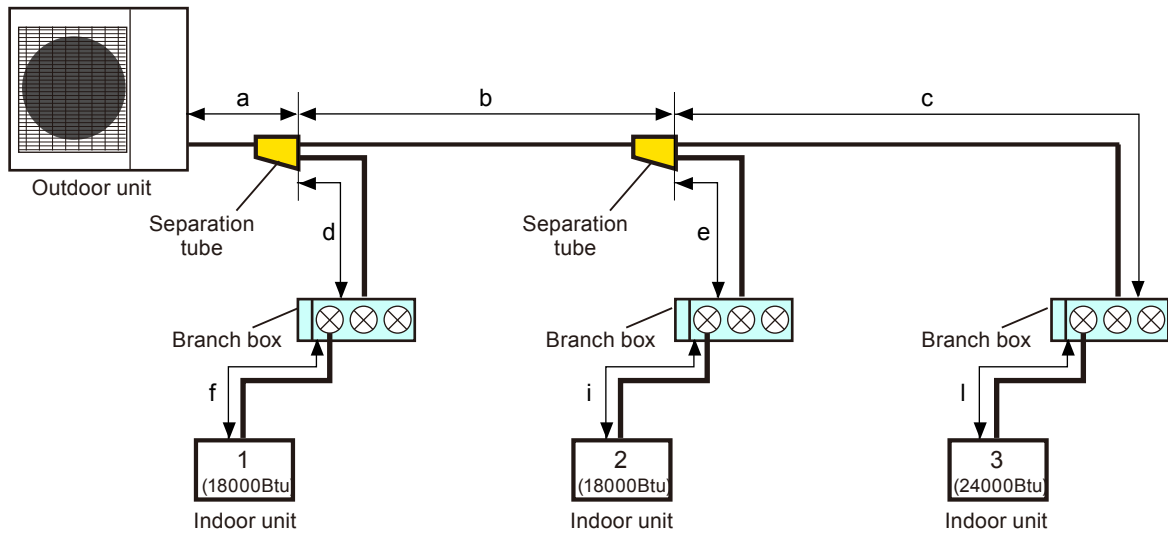
● Calculation of additional charge refrigerant

Liquid pipe size in. (mm)	1/4 (6.35)	3/8 (9.52)
Additional refrigerant oz./ft. (g/m)	0.224 (21)	0.624 (58)
Liquid pipe length ft (m)	127 (39)	148 (45)

Additional charge = (0.224 x 127) + (0.624 x 148) = 120.80 oz. = 7.55 lbs

[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 (Btu)
Model name	ASU18	ASU18	ASU24						60000
Capacity (Btu)	18000	18000	24000						

Capacity ratio

$$\begin{aligned} & \text{(Total indoor unit capacity) / (Total outdoor unit capacity)} \\ & = (60000) / (48000) = 125.0\% \text{ (Within 80\% to 130\%)} \end{aligned}$$

Selection of separation tube

Model	Q'ty
UTP-SX248A	2

Selection of branch box

Model	Q'ty
UTP-PU03A (primary)	1
UTP-PU03B (secondary)	2

Selection of pipe size

	a	b	c	d	e	f	g
Liquid pipe size in. (mm)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	3/8 (9.52)	1/4 (6.35)	
Gas pipe size in. (mm)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	5/8 (15.88)	1/2 (12.70)	
Pipe length ft (m)	23 (7)	59 (18)	59 (18)	16 (5)	16 (5)	39 (12)	
	h	i	j	k	l	m	
Liquid pipe size in. (mm)		1/4 (6.35)			1/4 (6.35)		
Gas pipe size in. (mm)		1/2 (12.70)			5/8 (15.88)		
Pipe length ft (m)		39 (12)			39 (12)		

● Limitation check

		Diagram	Example ft (m)	Limitation ft (m)	Judge
Total pipe length		Total	290 (89)	Less than 377 (115)	OK
Between outdoor unit and the farthest indoor unit		a + b + c + l	180 (55)	Less than 230 (70)	OK
Between outdoor unit and branch boxes		a + b + c + d + e	173 (53)	Less than 180 (55)	OK
Between branch box and indoor unit	Total	f + i + l	117 (36)	Less than 197 (60)	OK
	Each unit	f, i, l	39 (12)	Between 10 to 49 (3 to 15)	OK
Between outdoor unit and the first separation tube		a	23 (7)	Greater than 16 (5)	OK

● Calculation of additional charge refrigerant

Liquid pipe size in. (mm)	1/4 (6.35)	3/8 (9.52)
Additional refrigerant oz./ft. (g/m)	0.224 (21)	0.624 (58)
Liquid pipe length ft (m)	117 (36)	173 (53)

Additional charge = (0.224 x 117) + (0.624 x 173) = 134.16 oz. = 8.39 lbs

[Additional charge = (21 x 36) + (58 x 53) = 3830 g = 3.83 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

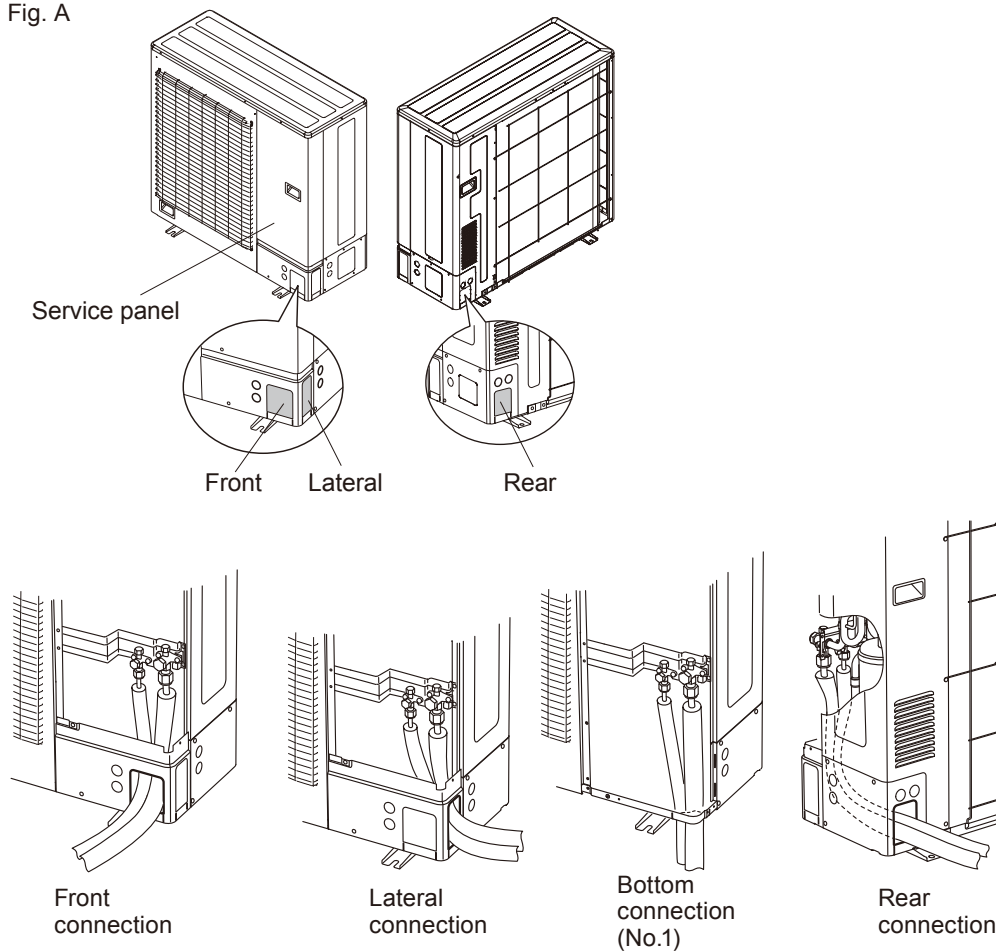


Fig. B

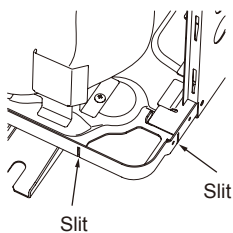
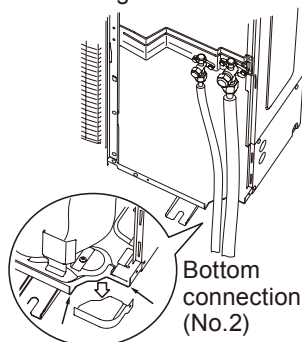


Fig. C

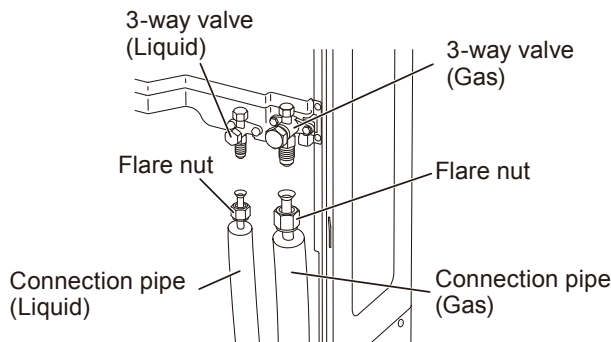


■ PIPE CONNECTION

⚠ 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.

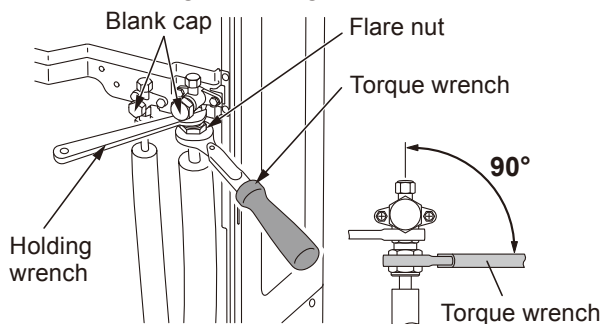
- (1) Detach the caps and plugs from the pipes.
- (2) Center the pipe against the port on the outdoor unit, and then turn the flare nut by hand.
- (3) Tighten the flare nut of the connection pipe at the outdoor unit valve connector.
- (4) After tightening the flare nut by hand, use a torque wrench to 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 [in. (mm)]	Tightening torque [lbf·ft (N·m)]
1/4 (6.35)	11.8 to 13.3 (16 to 18)
3/8 (9.52)	23.6 to 31.0 (32 to 42)
1/2 (12.70)	36.1 to 45.0 (49 to 61)
5/8 (15.88)	46.5 to 55.3 (63 to 75)
3/4 (19.05)	66.4 to 81.1 (90 to 110)

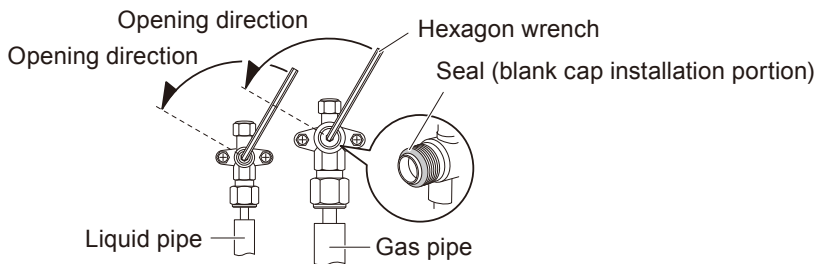
● Handling precautions for the valves

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

Blank cap [in. (mm)]	Tightening torque [lbf·ft (N·m)]
1/4 (6.35)	14.8 to 18.4 (20 to 25)
3/8 (9.52)	14.8 to 18.4 (20 to 25)
1/2 (12.70)	18.4 to 22.1 (25 to 30)
5/8 (15.88)	22.1 to 25.8 (30 to 35)
3/4 (19.05)	25.8 to 29.5 (35 to 40)

Operating the valves

- Use a hexagon wrench [size 3/16 in. (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

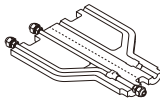
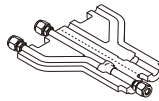
⚠ CAUTION

- 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 [in. (mm)]	Tightening torque [lbf·ft (N·m)]
1/4 (6.35)	11.8 to 13.3 (16 to 18)
3/8 (9.52)	23.6 to 31.0 (32 to 42)
1/2 (12.70)	36.1 to 45.0 (49 to 61)
5/8 (15.88)	46.5 to 55.3 (63 to 75)
3/4 (19.05)	66.4 to 81.1 (90 to 110)

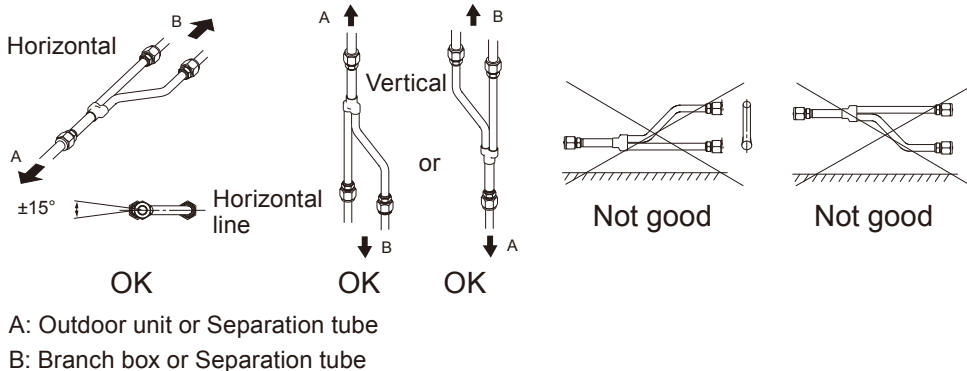
● Type of separation tube

Name and shape	
Liquid pipe 	Gas pipe 

● Positioning of separation tube

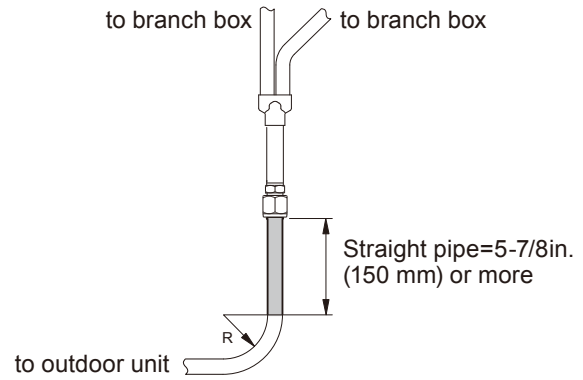
⚠ CAUTION

- 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 far as possible. Only place the separation tube as shown below during unavoidable circumstances.



● Straight pipe length

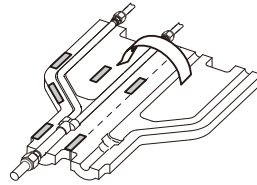
- When connecting the main piping, do not bend it near the connection section.
- If the main pipe must be bent due to unavoidable circumstances, ensure that the linear section is 5-7/8 in. (150 mm) or more.



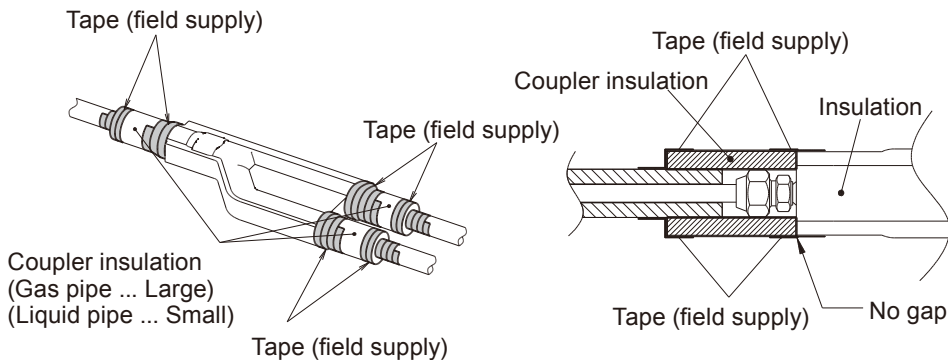
■ HEAT INSULATION INSTALLATION

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.

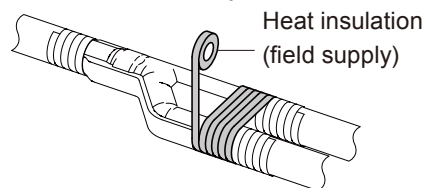


- Use tape (field supply) to seal the seam so that there will be no gap at the junction between the aforementioned heat insulation and coupler insulation, and between coupler insulation and the heat insulation on the local piping.



⚠ 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.

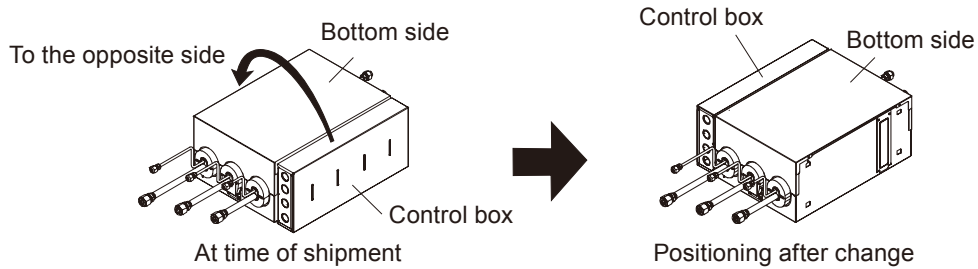
● Changing the positioning of the control box

⚠ CAUTION

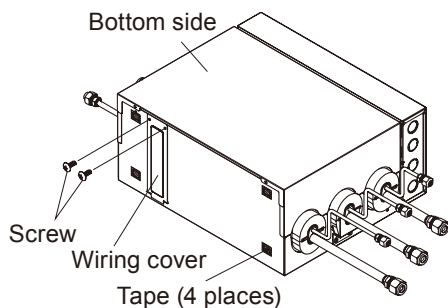
- Change the positioning of the control box on-site before performing the installation.

The positioning of the control box can be changed.

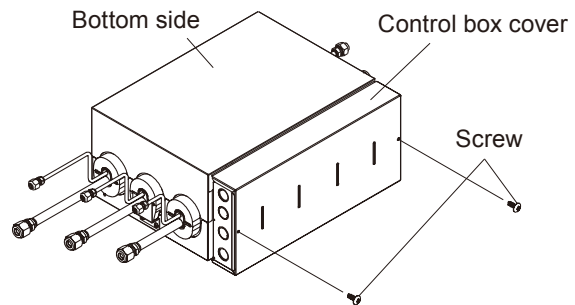
(Only when installed horizontally. When vertically installed, the positioning cannot be changed.)



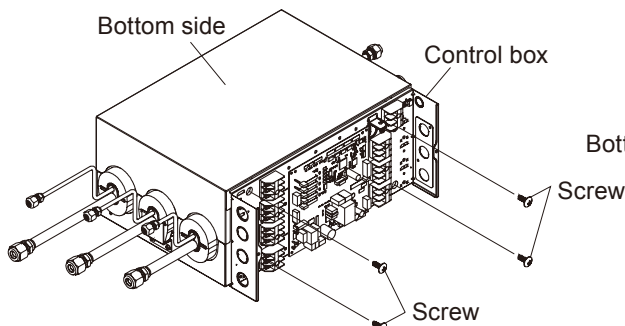
- (1) Remove the screws (2 pieces) to remove the wiring cover.
Remove the tapes (4 places) on the main unit.



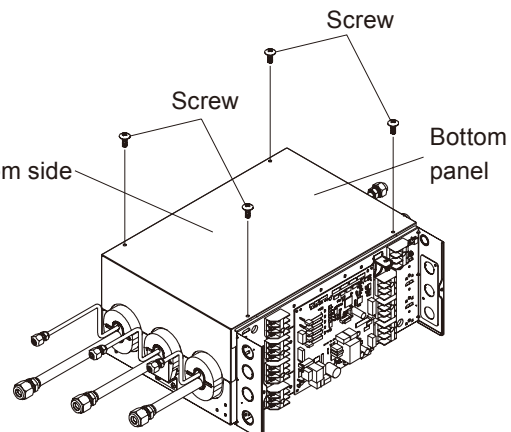
- (2) Remove the screws (2 pieces) to remove the control box cover.



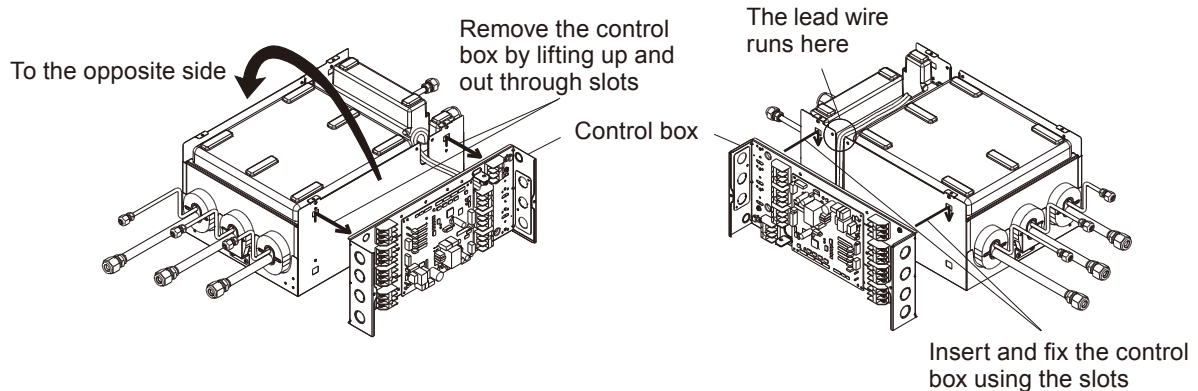
- (3) Remove the screws (4 pieces).
(Note: Do not remove the control box.)



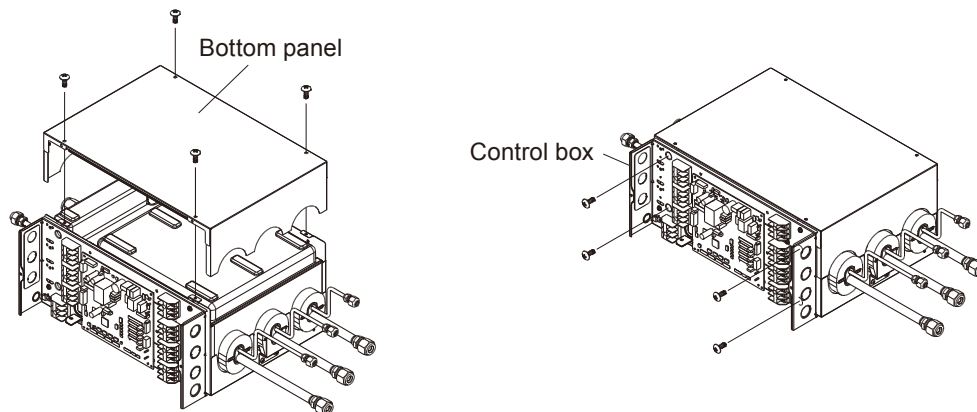
- (4) Remove the screws (4 pieces) to remove the bottom panel.



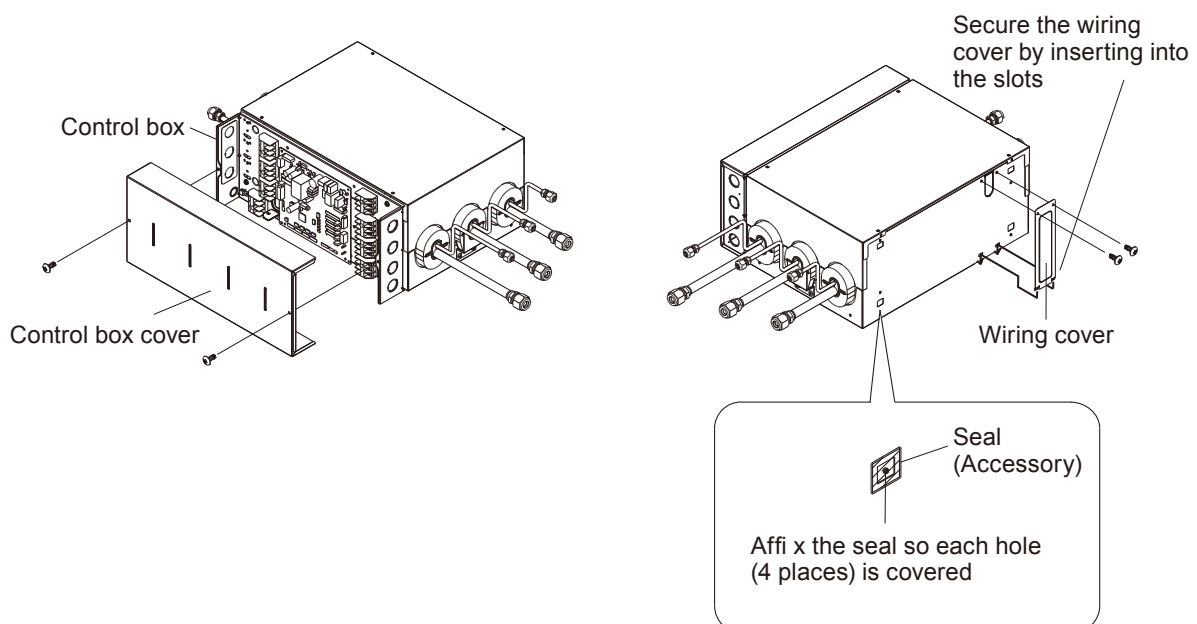
- (5) Remove the control box as shown in the figure, (6) Attach the control box to the main unit and then change the positioning to the opposite side shown in the figure.



- (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).

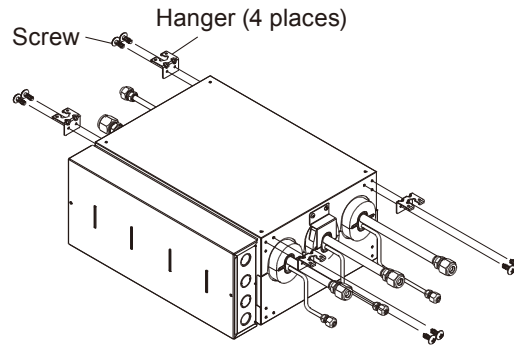


● Fix the unit (When hanging from the ceiling)

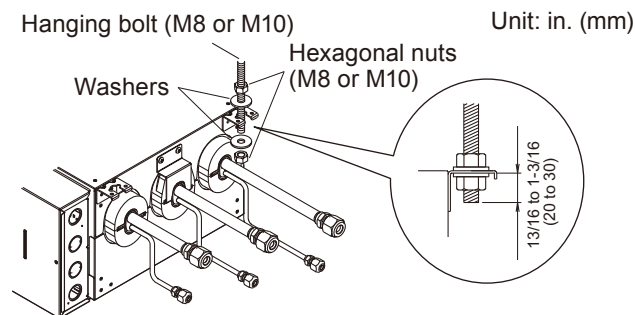
⚠ CAUTION

- Do not hang from the ceiling when performing a vertical installation.

- (1) Secure the hangers (accessories) with the screws [2 pieces, $\text{Ø } 3/16 \times 3/8 \text{ in. (4 x 10 mm)}$, accessories]. (4 places)



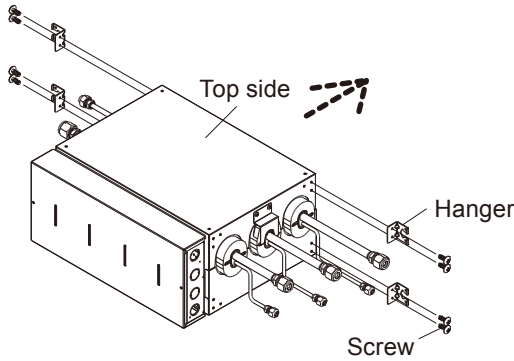
- (2) Secure the attachment section with the hanging bolt. (Use M8 or M10 for the hanging bolt)
- (3) Secure the hangers with hexagonal nuts (field supply) and the washers (accessories) as shown in the figure below.
- (4) Once you have checked the unit is flat, fasten the hexagonal nuts. (The unit's slope must be within $\pm 5^\circ$ in all directions.)



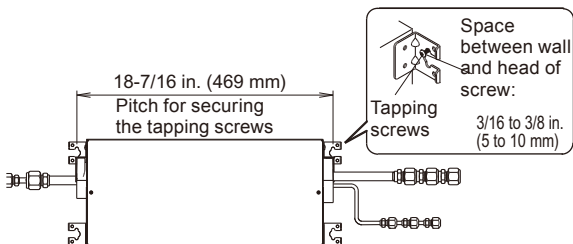
● Fix the unit (For wall installation)

<Horizontal installation>

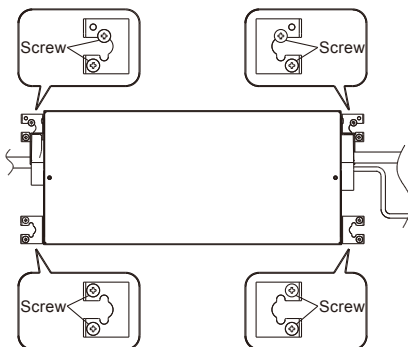
- Secure the hangers (accessories) with the screws [2 pieces, $\text{Ø } 3/16 \times 3/8 \text{ in. (4 x 10 mm)}$, accessories]. (4 places)
 - Install the unit with its top side facing upwards.



- For temporary mounting of the unit, install two of the $\text{Ø } 3/16 \times 1 \text{ in. (4 x 25 mm)}$ screws in the wall, allowing the space of $3/16$ to $3/8 \text{ in. (5 to 10 mm)}$ between the wall and the screw heads. Then hook the unit over these two screws.

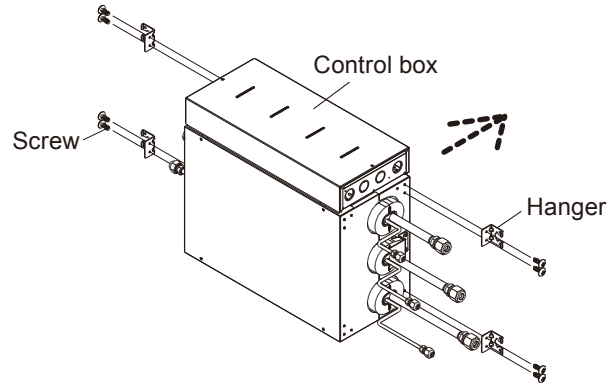


- After checking that the unit is flat, secure and mount the branch box with the 8 screws [$\text{Ø } 3/16 \times 1 \text{ in. (4 x 25 mm)}$, accessories] provided including the tapping screws. (The unit's slope must be within $\pm 5^\circ$ in all directions.)

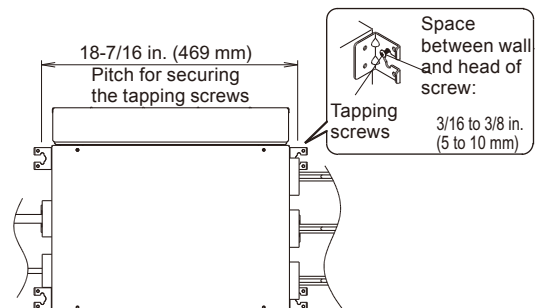


<Vertical installation>

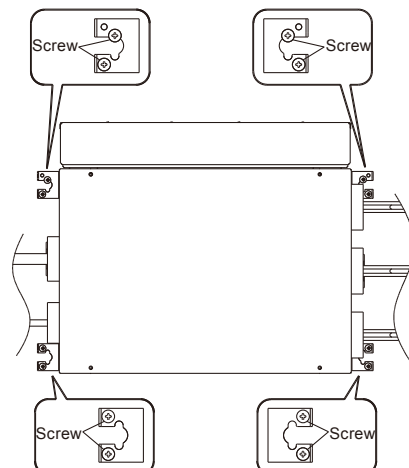
- Secure the hangers (accessories) with the screws [2 pieces, $\text{Ø } 3/16 \times 3/8 \text{ in. (4 x 10 mm)}$, accessories]. (4 places)
 - Install the unit with the control box facing upwards.



- For temporary mounting of the unit, install two of the $\text{Ø } 3/16 \times 1 \text{ in. (4 x 25 mm)}$ screws in the wall, allowing the space of $3/16$ to $3/8 \text{ in. (5 to 10 mm)}$ 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 [$\text{Ø } 3/16 \times 1 \text{ in. (4 x 25 mm)}$, accessories] provided including the tapping screws. (The unit's slope must be within $\pm 5^\circ$ in all directions.)



PIPE CONNECTION

⚠ WARNING

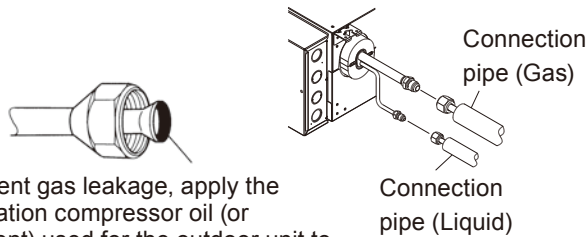
- Be sure to perform flare connection. It causes a malfunction and a fire of this unit when connecting the pipes other than flare connection (brazing etc.).

(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.

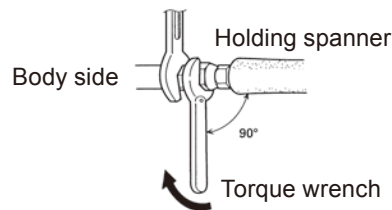
(2) Centering the pipe against port on the unit, turn the flare nut with your hand.



To prevent gas leakage, apply the refrigeration compressor oil (or equivalent) used for the outdoor unit to the flare surface.

(3) When the flare nut is tightened properly by your hand, use a torque wrench to finally tighten it.

Flare nut [in. (mm)]	Tightening torque [lbf·ft (N·m)]
1/4 (6.35)	11.8 to 13.3 (16 to 18)
3/8 (9.52)	23.6 to 31.0 (32 to 42)
1/2 (12.70)	36.1 to 45.0 (49 to 61)
5/8 (15.88)	46.5 to 55.3 (63 to 75)



Do not remove the cap from the connection pipe before connecting the pipe.

⚠ CAUTION

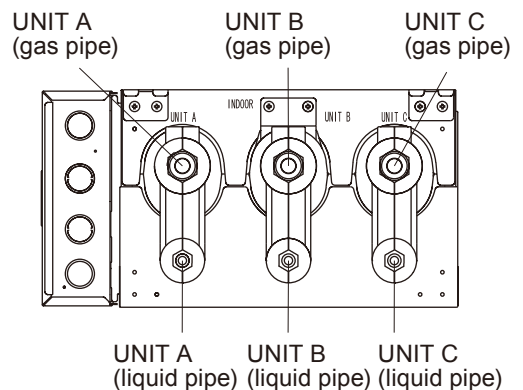
- Be sure to connect the large pipe after connecting the small pipe completely.

(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



⚠ CAUTION

- Label all the refrigerant piping (liquid pipe, gas pipe) specifying to which indoor units they will be connected.

ADAPTER INSTALLATION

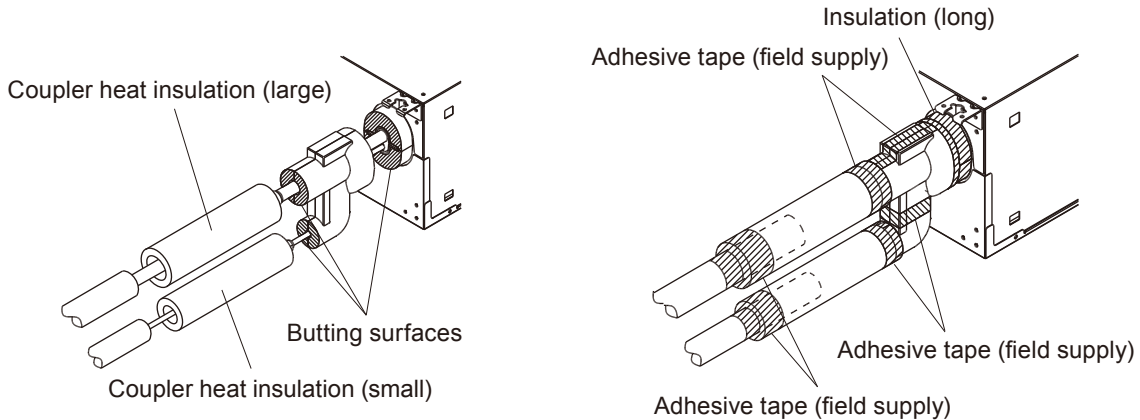
- Attach the adapters (accessories) to the ports on the gas pipe side of the indoor unit according to the size of the pipe to be connected.
- Apply the refrigeration compressor oil (or equivalent) used for the outdoor unit to the attaching portion of the adapters.
- Tighten the adapter using a torque wrench according to the tightening torque values in the table below.

Adapter [in. (mm)]	Tightening torque [lbf·ft (N·m)]
Ø 1/2 (12.7) → Ø 3/8 (9.52)	36.1 to 45.0 (49 to 61)
Ø 1/2 (12.7) → Ø 5/8 (15.88)	

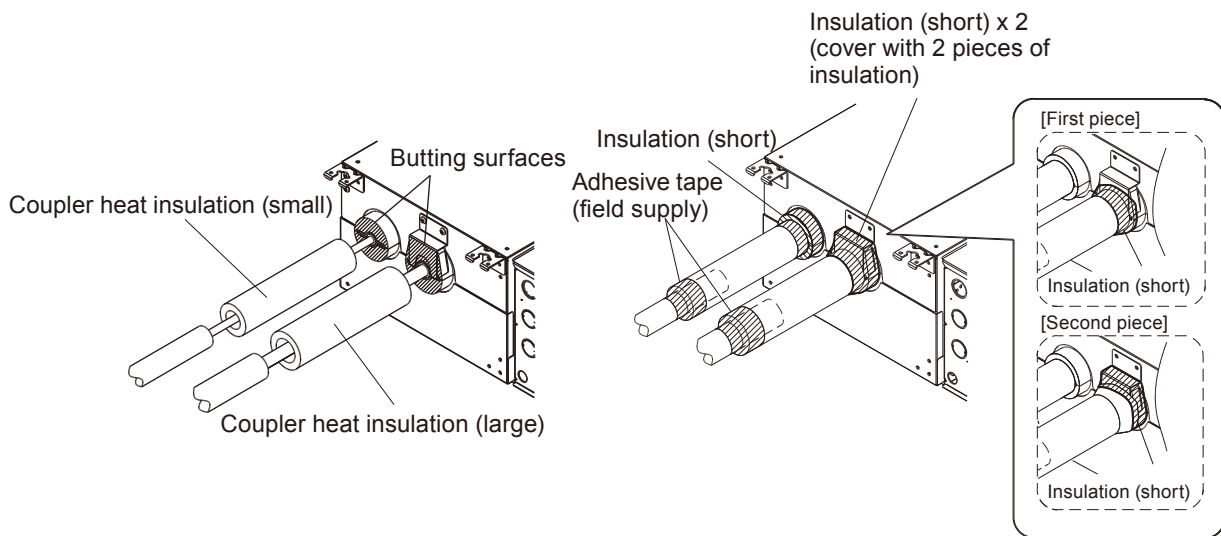
■ PIPING INSULATION

- (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

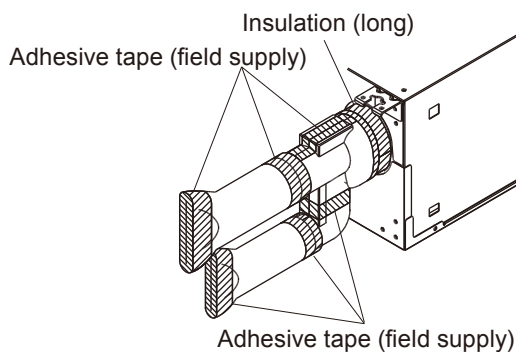


● Outdoor unit side



■ 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

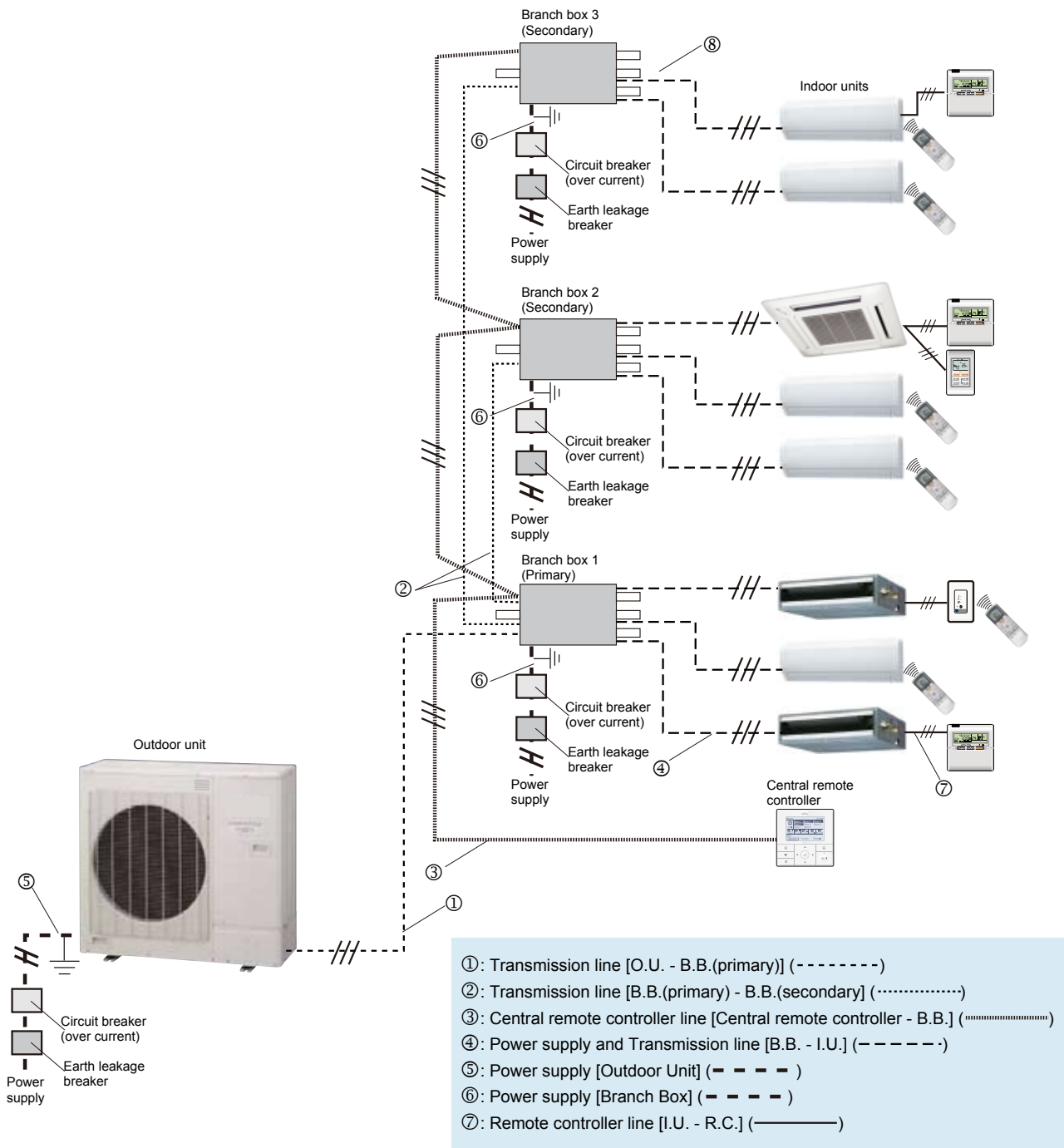
- Do not turn on the power until all installation work is complete.
- Before starting work, check that power is not being supplied to the unit.
- Connect the connection cable firmly to the terminal board. Imperfect installation may cause a fire.
- Always fasten the outside covering of the connection cable with the cord clamp. (If the insulator is chafed, electric leakage may occur.)
- 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 abnormally hot.)
- When installing this system in high humidity locations, install using Ground fault equipment breakers (often referred to in other countries as an ELCB earth leakage current breaker) to reduce the risk of leaking current which may result in electric shock or potential fire.

⚠ Caution

- We suggest installing GFEB breakers or follow local electrical code. This system uses an inverter, which means that when used with a ground fault breaker you must use breakers that can handle higher harmonics such as a (GFEB) Ground Fault Equipment Breaker (30 mA or greater) in order to prevent malfunctioning of ground fault device.
- 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 in accordance with local rules.
- To prevent the electrical noise malfunction and hazards from insulation failure, the unit should be connected to ground.
- A disconnect switch may be required for ease of maintenance in accordance with local regulation for each unit. Please check the local rules and regulations. Make the wire length between disconnect switch and unit terminal as short as possible.
- 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.

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.)

● Outdoor unit

Model	cable size	Maximum current MCA	Circuit breaker MOCP	Earth leakage breaker	Remarks
AOU48RLXFZ1	8 AWG *1	26.5 A	40 A	30 mA 0.1 sec or less	208/230V 60Hz 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-PU03A	14 AWG *1	*2	15 A *3	30 mA 0.1 sec or less	208/230 V 60 Hz 2Wire + ground
UTP-PU03B					

- Select cable size based 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	14 AWG *1	208/230V 60 Hz 3Wire + ground

- The branch box provides power to the indoor units.
- Total Minimum Circuit Ampacity of connected indoor units and branch boxes must be less than 15A.

*MCA : Minimum Circuit Ampacity

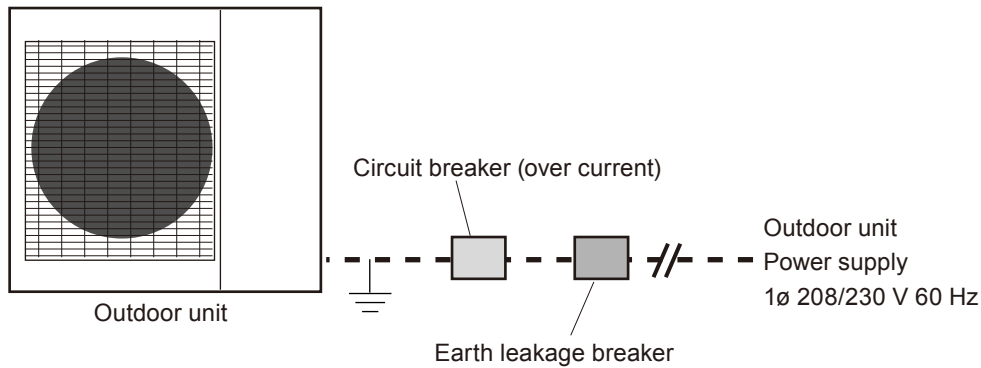
*MOCP : Maximum Over Current Protection

■ POWER SUPPLY CABLE WIRING

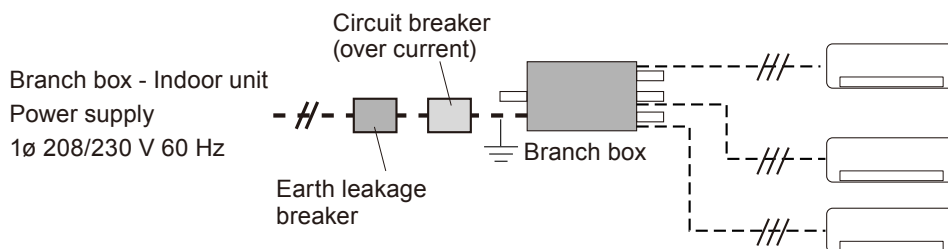
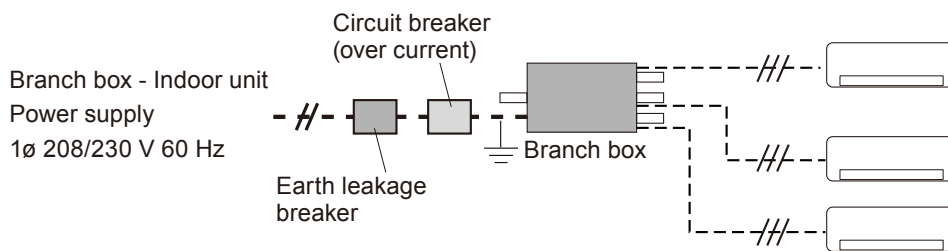
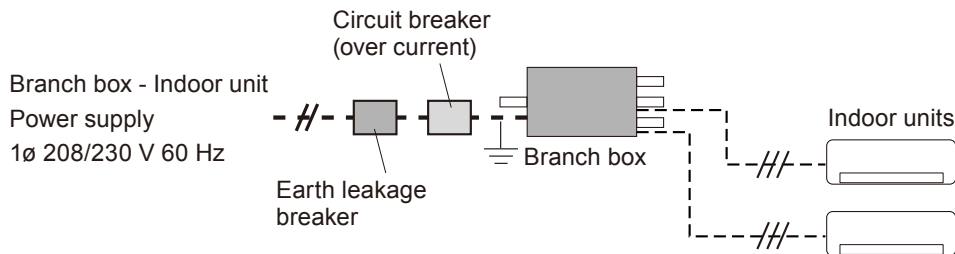
⚠ Caution

- 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 the daily work.
- Regulation of wire size and circuit breaker differs from each locality, please refer in accordance with local rules.

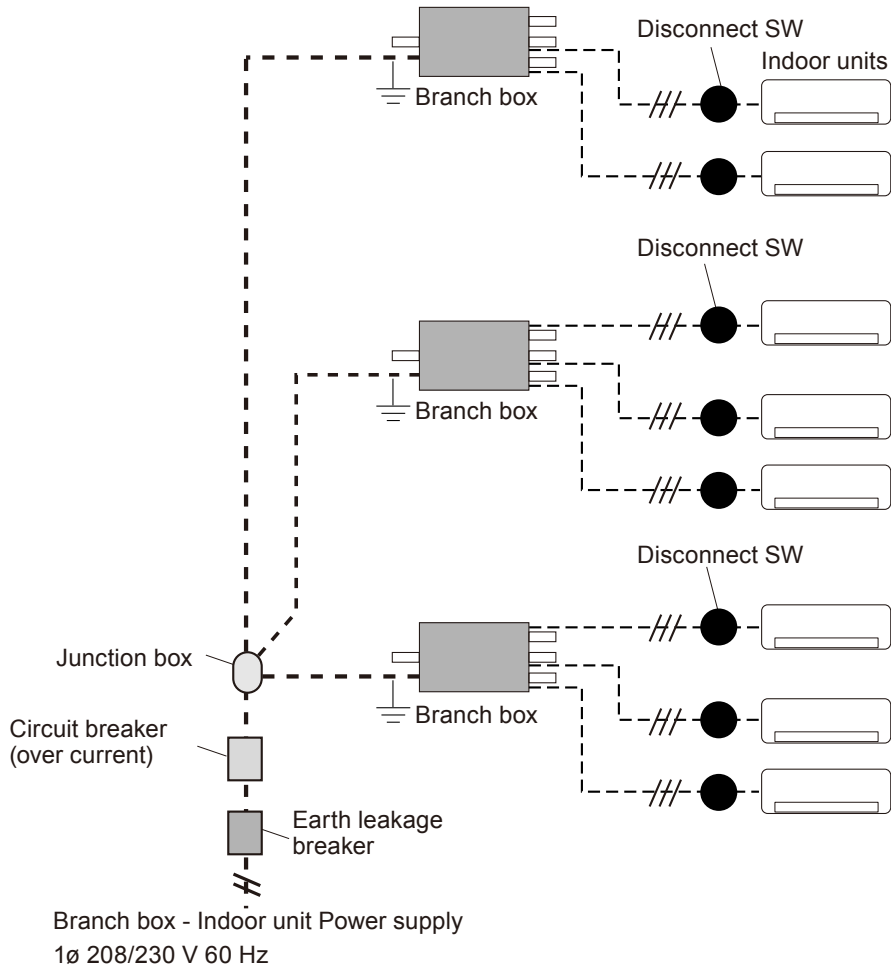
● Example 1 (Outdoor unit)



● Example 2 (Branch box & indoor unit)

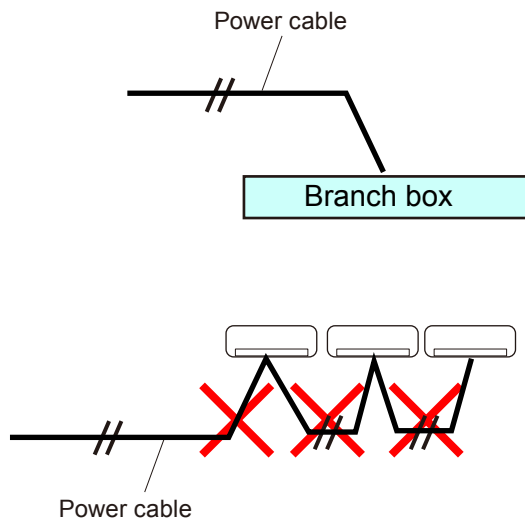


● Example 3 (Branch box & indoor unit)



■ WIRING RULES

● Example 1 (Not good)



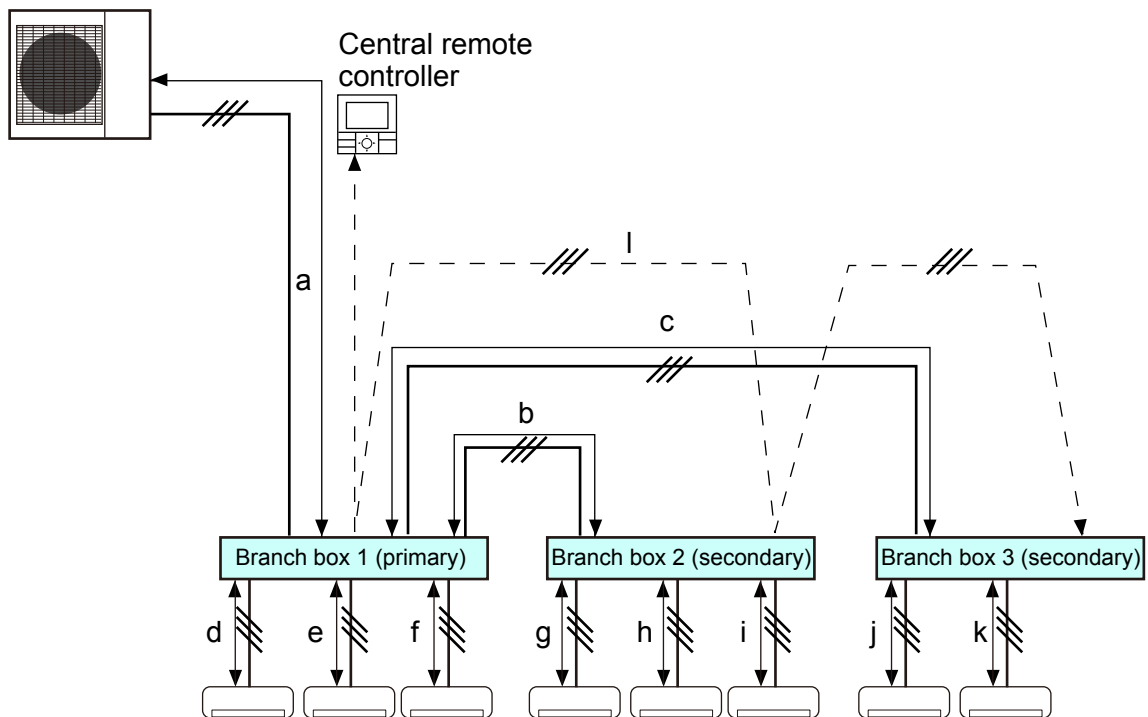
Do not connect the power cable directly to indoor units.
Always supply power to indoor units from a branch box.

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 	14 AWG	208/230V 60Hz 3Wire + ground
<ul style="list-style-type: none"> • Between Central remote controller to Branch box 	22 AWG	Sheathed PVC cable Polar 3core

■ TRANSMISSION WIRING LIMITATION



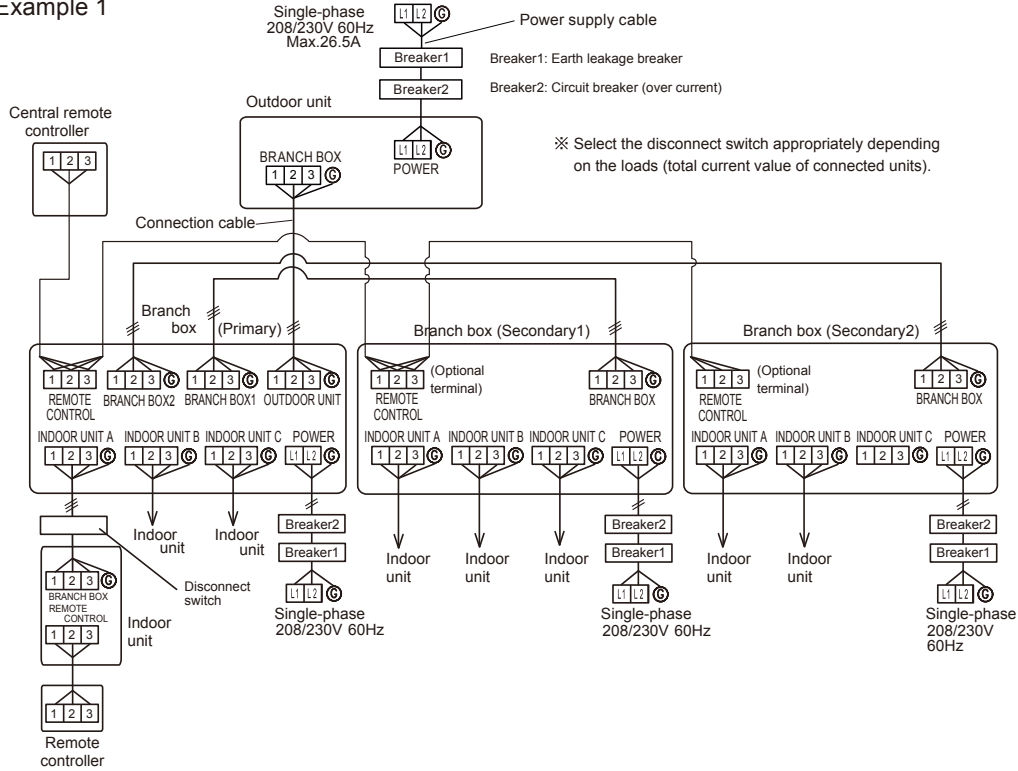
		Maximum length [ft. (m)]
Outdoor unit - Branch box (primary)	a	246 (75)
Branch box (primary) - Branch box (secondary) (each unit)	b, c	246 (75)
Branch box - Indoor unit (each unit)	d, e, f, g, h, i, j, k	246 (75)
Central remote controller - Branch box (Total length)	l	1640 (500)

WIRING METHOD

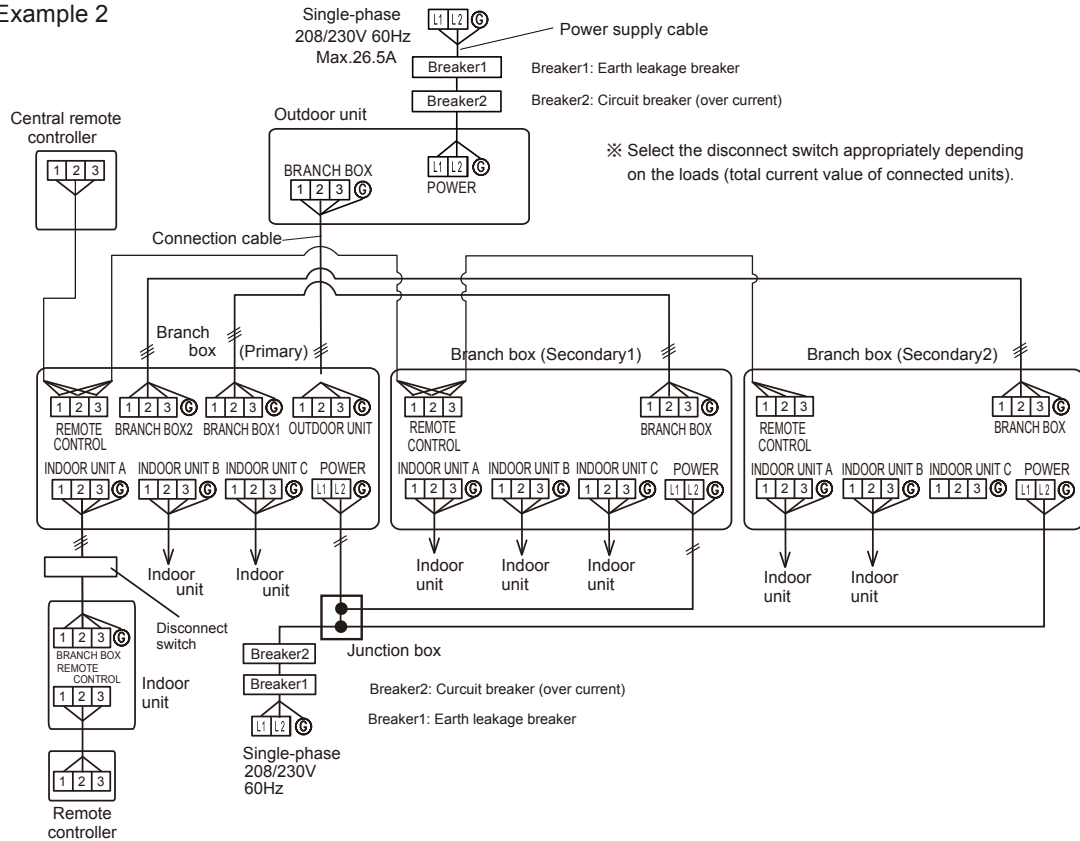
Practical transmission wiring method is shown below.

Each terminal has to be connected the following rules.

Example 1

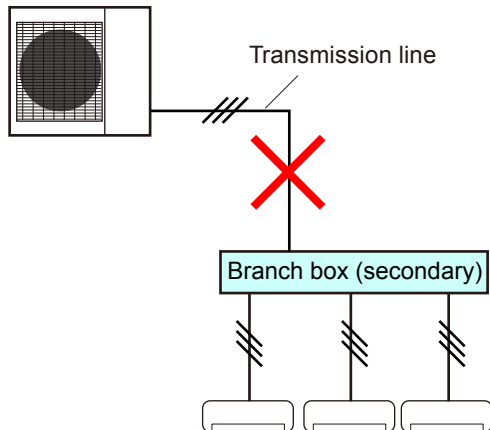


Example 2



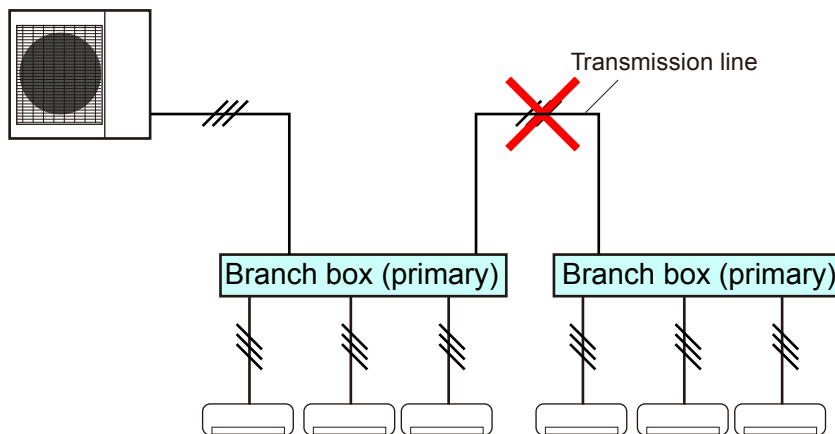
■ WIRING RULES

● Example 1 (Not good)



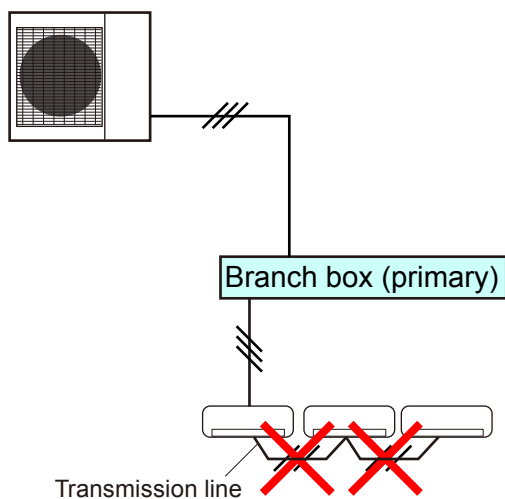
Do not connect outdoor unit to secondary type branch box.
Always connect primary type branch box to outdoor unit.

● Example 2 (Not good)



Do not interconnect primary type branch boxes.
Only 1 primary type branch box can be connected in 1 multi system.

● Example 3 (Not good)



Do not interconnect indoor units.
Always connect branch box to indoor unit.

4-4. CONTROLLER CABLE WIRING

■ WIRING SPECIFICATIONS

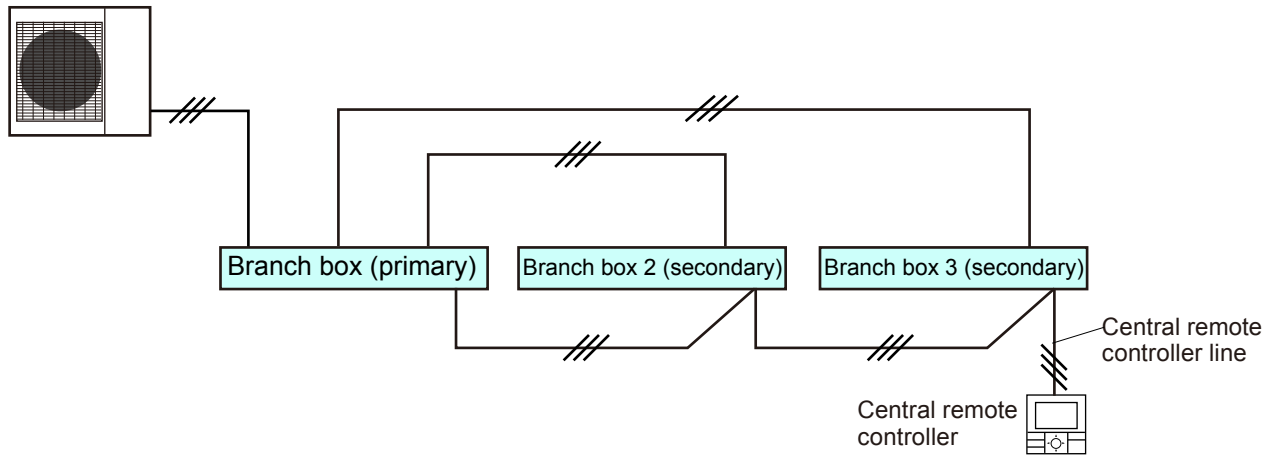
Model type	Connection to	Wire	Cable size	Specification
Central remote controller	Branch box	Remote controller cable	22 AWG	Sheathed PVC cable Polar 3core
Wired Remote Controller	Indoor unit	Remote controller cable	22 AWG	
Simple Remote Controller	Indoor unit			
IR Receiver Unit	Indoor unit	Connection cable	-	[16 ft. (5 m) 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 for shielded cable both end.
- For detail specification and connection, please refer to "5 Control system".

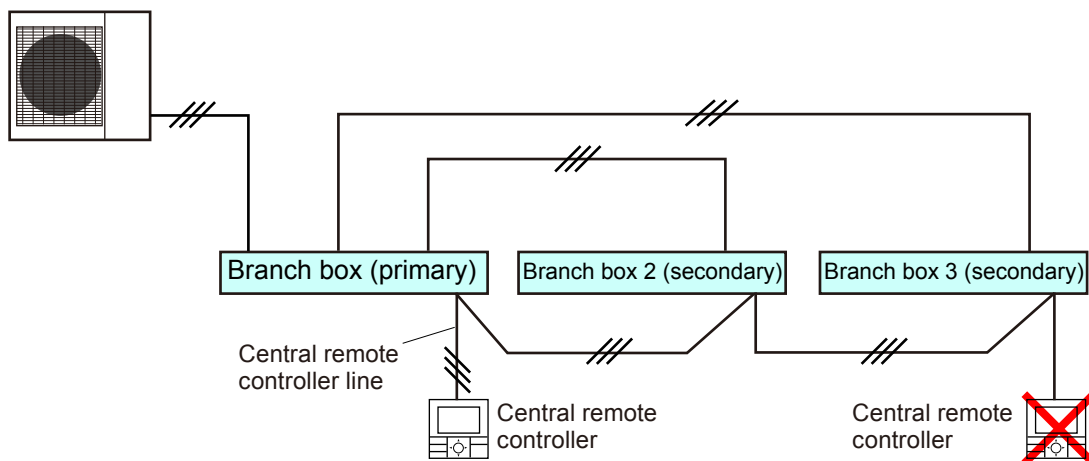
■ WIRING RULES

● Example 1 (good)



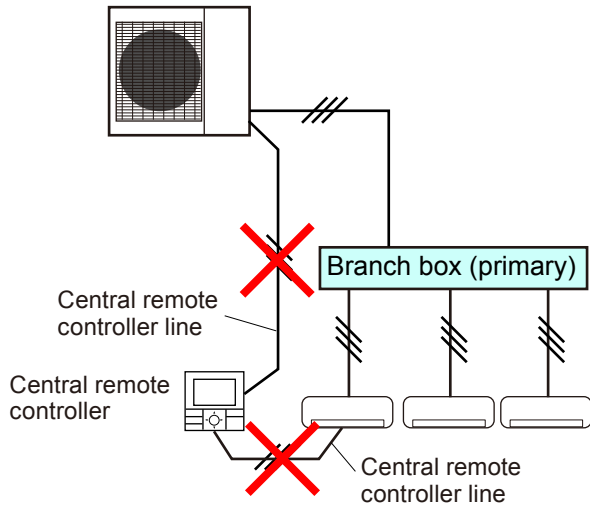
One Central remote controller can be connected any branch box in 1 refrigerant system.

● Example 2 (Not good)



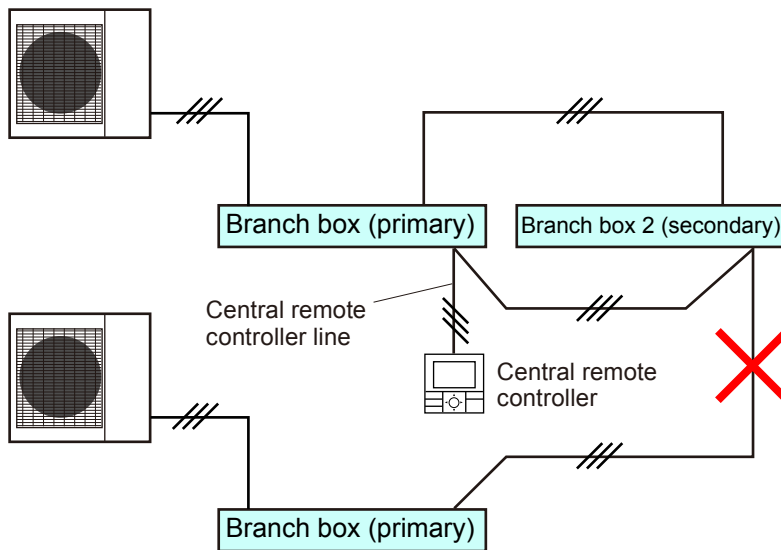
Do not connect two or more Central remote controllers in 1 refrigerant system.

● **Example 3 (Not good)**



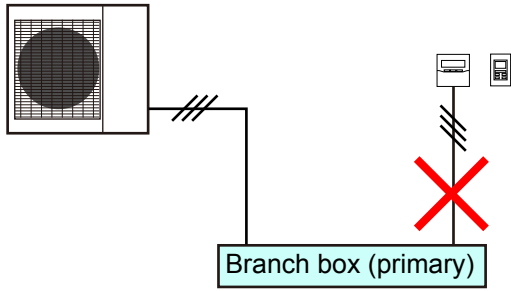
Do not connect Central remote controller to outdoor unit or indoor unit.
Always connect branch box to Central remote controller.

● **Example 4 (Not good)**



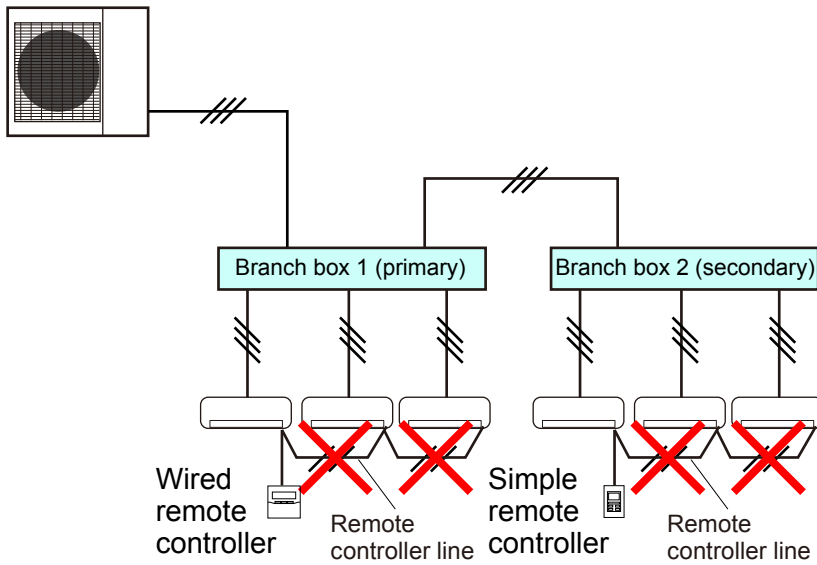
Do not connect one Central remote controllers to two refrigerant system.

● **Example 5 (Not good)**



Do not connect a wired remote controller or simple remote controller to branch box.
Connect them to each indoor unit.

● **Example 6 (Not good)**

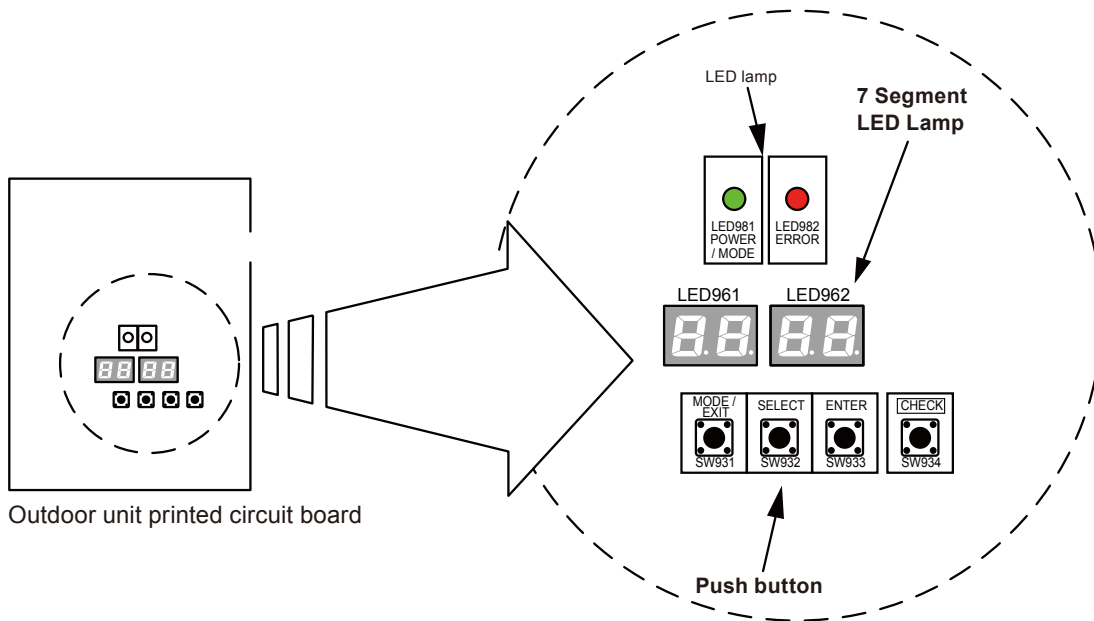


Do not connect a wired remote controller or simple remote controller to multiple indoor units.
One wired remote controller or simple remote controller cannot control multiple indoor units.

5. FUNCTION SETTINGS

5-1. OUTDOOR UNIT

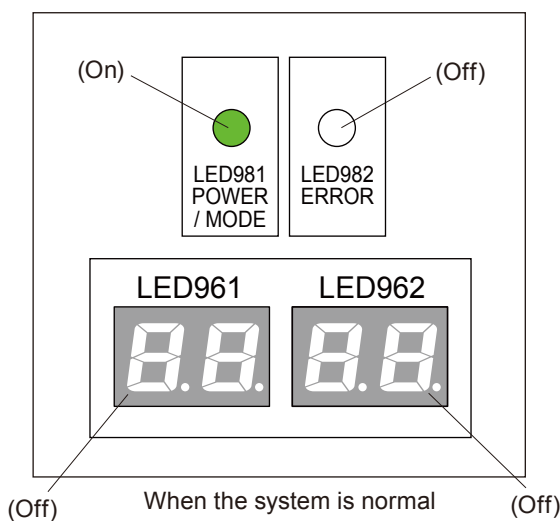
■ SWITCH POSITION



- Set the functions of an 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.



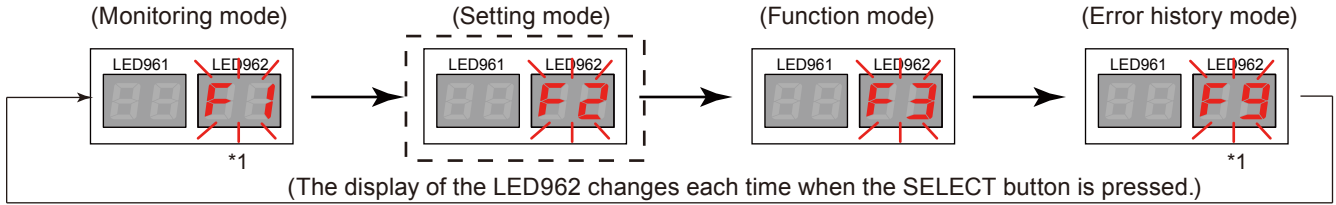
- If the ERROR indicator lamp (LED982) flashes, it indicates that an error has occurred. Check wiring and power supply. After making sure that the ERROR indicator lamp (LED982) has turned off, proceed to the next step.

■ FUNCTION SETTING

- 1) After verifying that the system is normally, press the MODE/EXIT button (SW931) once.



- 2) Press the SELECT button (SW932), and display "F2" on the LED962.



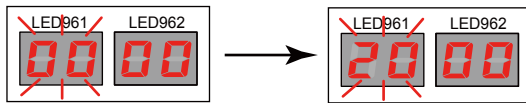
*1: The "F1" and "F9" modes are used for maintenance, so do not set them in regular operation.

- 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.

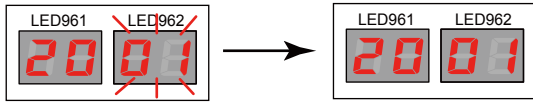
A flashing display on the LED961 changes to an illuminated display, and an illuminated display on the LED962 changes to a flashing display.



- 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.



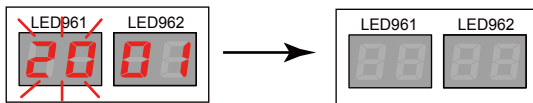
A flashing display on the LED962 changes to an illuminated display.
This completes FUNCTION SETTING.

- 6) To exit FUNCTION SETTING, press the ENTER button (SW933) in the setting completed status shown in step 5) above.

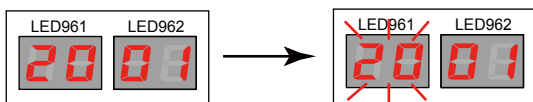


*2 : 5 seconds after, even if ENTER button(SW933) is not pressed , LED961 changes to a flashing display automatically.

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

- * 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

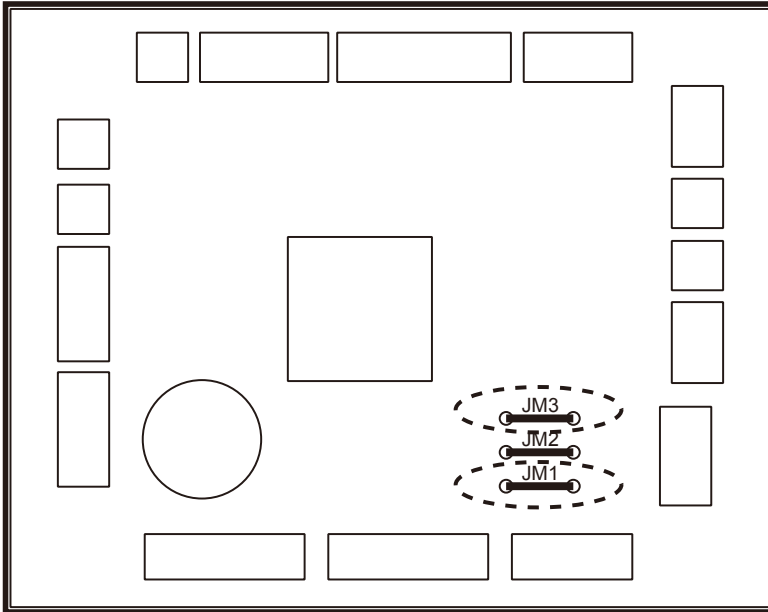
LED961 CODE No.		Setting Mode	LED962 CODE No.		Setting Function	Factory setting	Remarks
1	1	Cooling capacity shift	0	0	Standard	●	Use it when becoming cooling capacity shortage. Use High power mode 2 when becoming cooling capacity shortage in High power mode 1.
			0	1	High power mode 1		
			0	2	High 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. •Emergency stop: When emergency stop is actuated, 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 operate indoor unit by the remote controller.
			0	1	Emergency stop		
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. •Priority given to external input of outdoor unit: Priority is given to the operation mode which is set by the external input terminal (CN932).
			0	1	Priority given to external input of outdoor unit		
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 to 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. 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.
			0	1	On (Low noise mode)		
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 Slim Duct type only.

SWITCH POSITION

● Slim Duct type



JUMPER WIRE SETTING

● Drainage function setting (JM1)

(◆...Factory setting)

	JM1	Drainage function
◆	Connect	Valid
	Disconnect	Invalid

● 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	Invalid
	Disconnect	Valid

● Fan delay setting (JM3)

(◆...Factory setting)

	JM3	Fan delay
◆	Connect	Invalid
	Disconnect	Valid

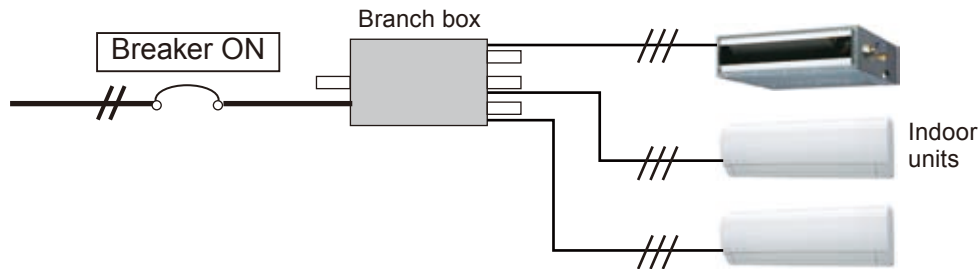
5-3. INDOOR UNIT (setting by wireless remote controller)

- 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 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 invalid numbers or setting numbers are selected.

■ PREPARATION

(1) Turn on the power to the Branch box.

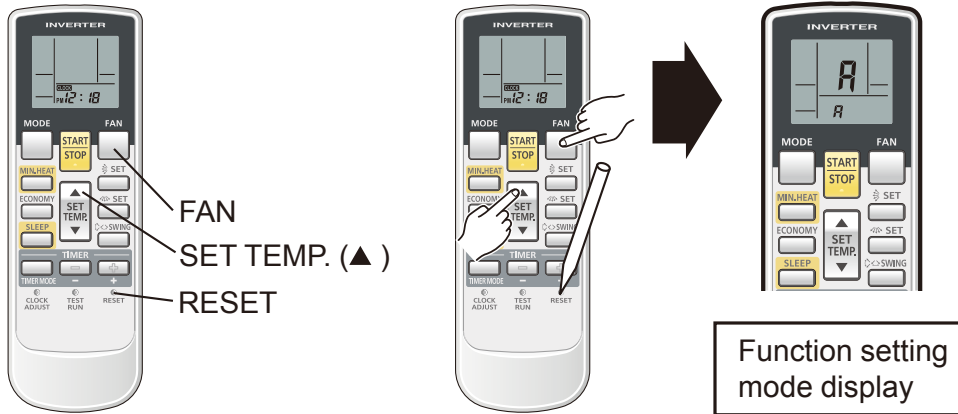
- * By turning on the power indoor units, so make sure the piping air-tight test and vacuuming have been conducted before turning on the power.
- * Also check again to make sure no wiring mistakes were made before turning on the power.



5-3-1. UTY-LNHUM/AR-RAH1U

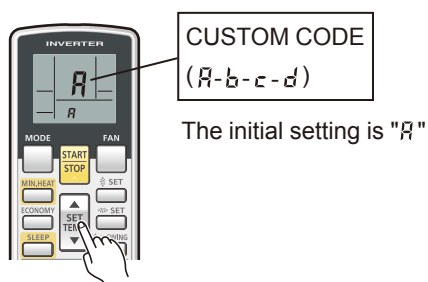
■ SWITCHING SELECTION OF FUNCTION SETTING MODE

(2) Press and hold the "FAN" and the " SET TEMP. ▲ " buttons. While holding these 2 buttons, press the "RESET" button.

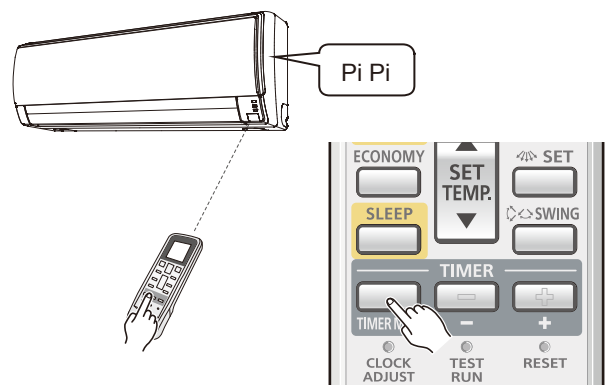


■ SELECTION AND CONFIRMATION OF SIGNAL CODE

(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 become possible.

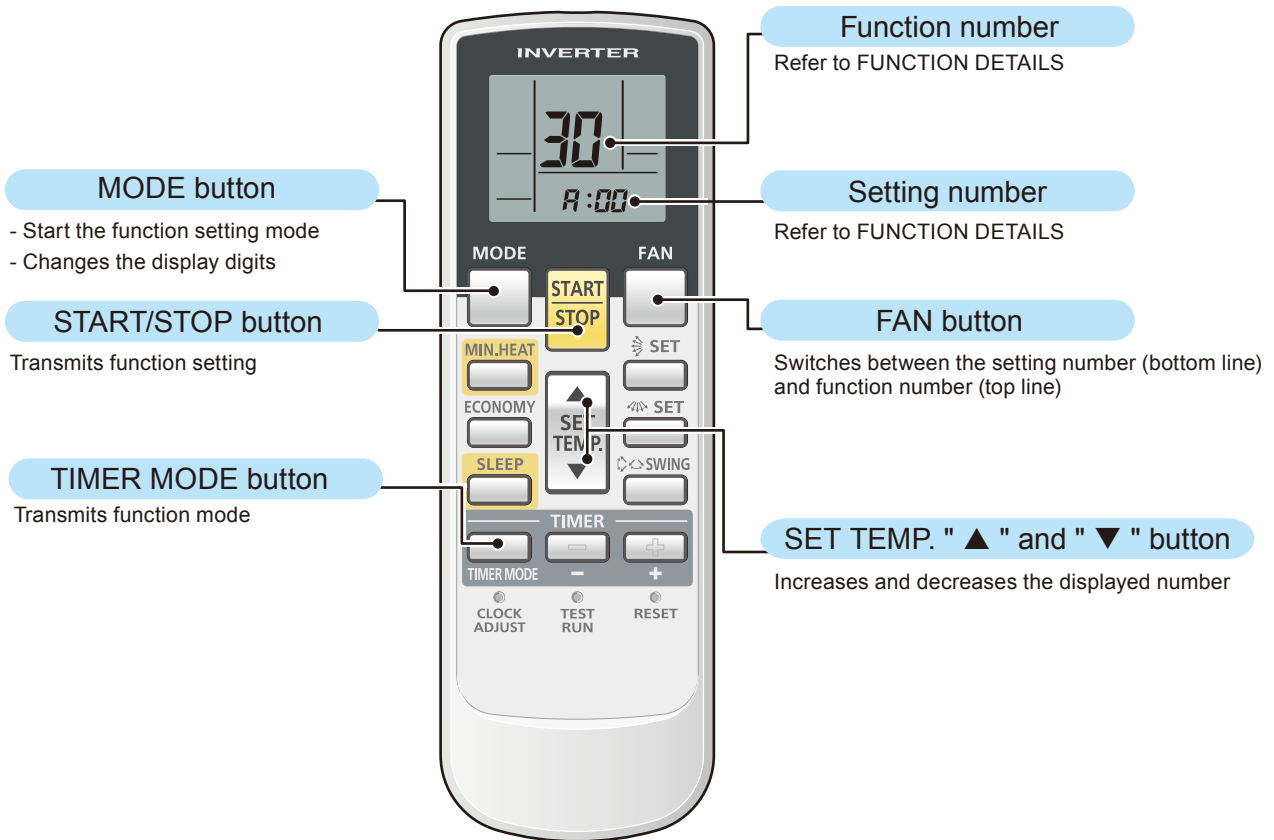


(4) Press the "TIMER MODE" button to send the code to the indoor unit.



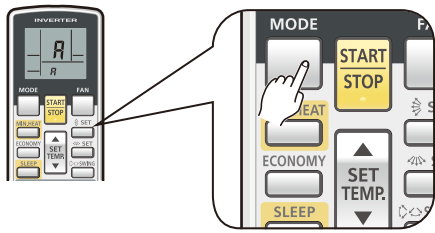
■ BUTTON NAME AND FUNCTION

- During address setting mode, indoor unit reject the any operation command from remote controller.



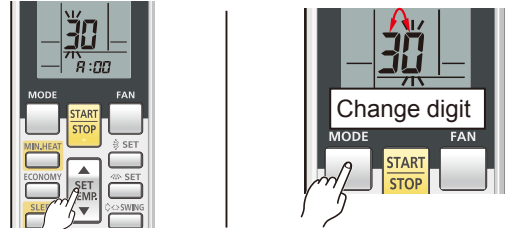
FUNCTION SETTING

- (5) Press the “MODE” button to access the function setting mode.



- (6) Press the “▲” or the “▼” buttons to select the function number.

Each time the “MODE” button is pressed, it switches between the one's place and the ten's place positions.

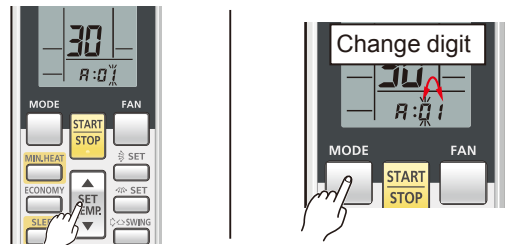


- (7) Press the FAN button to proceed to setting the number. (Press the FAN button again to return to the function number selection.)

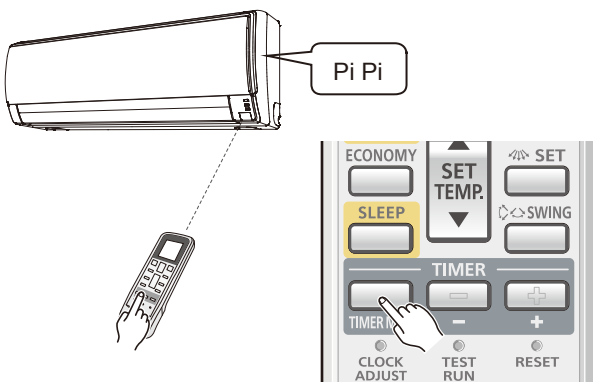


- (8) Press the “▲” or the “▼” buttons to select the setting number.

Each time the “MODE” button is pressed, it switches between the one's place and the ten's place positions.

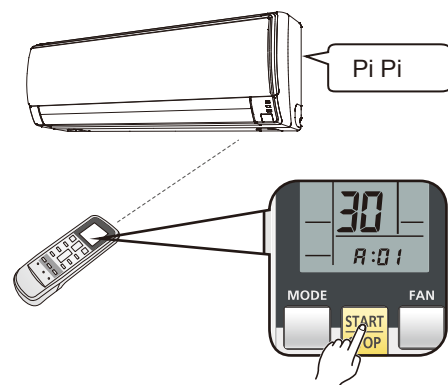


- (9) Press the “TIME MODE” button once to send the function mode information.



- (10) Press the “START/STOP” button once to send the function setting information. A beeping noise will be heard if the command is accepted.

*Wrong code: No Response



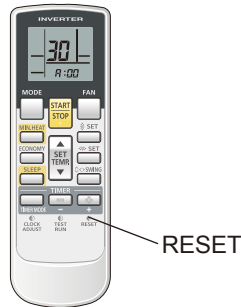
Note: Please push "START/STOP" button within 30 seconds after pushing "TIME MODE" button.

FUNCTION DETAILS

Refer to 5-6. FUNCTION DETAILS

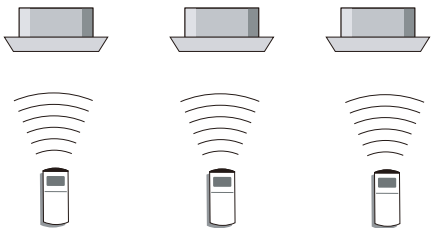
■ COMPLETION OF FUNCTION SETTING MODE

(11) Press the "RESET" button.



After pressing the RESET button, please set the signal code again if b,c,d setting.

■ SETTING UP EACH INDOOR UNIT



Repeat steps (1) through to (11). Steps (1) through to (4) and (11) only need to be carried out if the signal code is different to the factory setting of "A".

■ 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".

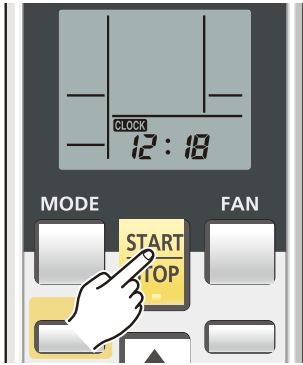
Please adjust the OPERATION MODE to either "COOLING" or "HEATING" before trying to operate the air conditioner.

* Note : If Signal code is set to anything other than "A", the remote control must be set accordingly to the INDOOR UNIT setting.

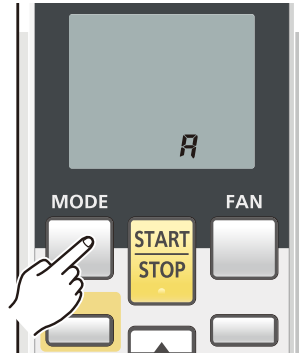
■ REMOTE CONTROLLER SIGNAL CODE SETTING

In function setting, please change to the setting that signal code setting of Wireless remote controller is the same as indoor unit according to the following content when you change signal code setting of indoor unit.

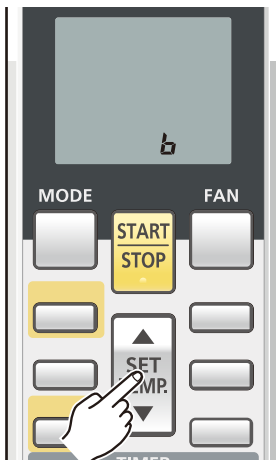
1. Press the "START/STOP" button until only the clock is displayed on the remote controller display.



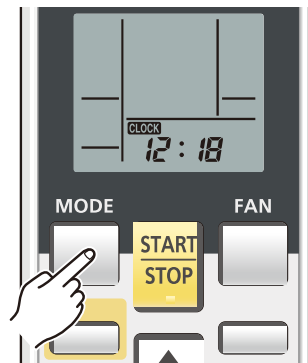
2. Press the "MODE" button for at least five seconds to display the current signal code (initially set to A).



3. Press the SET TEMP. "▲" or the "▼" button to change the signal code between "A→b→c→d".



4. Press the "MODE" button again to return to the clock display. The signal code will be changed.

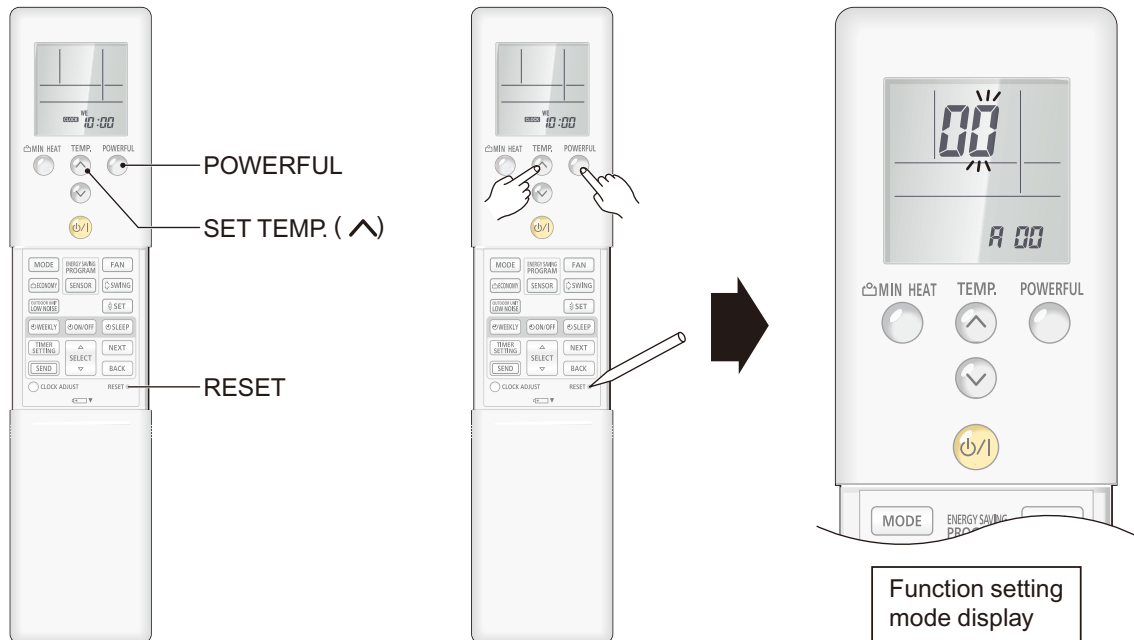


- If no buttons are pressed within 30 seconds after the signal code is displayed, the system returns to the original clock display. In this case, start again from step 1.
- The air conditioner signal code is set to A prior to shipment.
- The remote controller resets to signal code A when the batteries in the remote controller are replaced. If you use a signal code other than signal code A, reset the signal code after replacing the batteries. If you do not know the air conditioner signal code setting, try each of the signal codes ("A→b→c→d") until you find the code which operates the air conditioner.

5-3-2.AR-RED1U

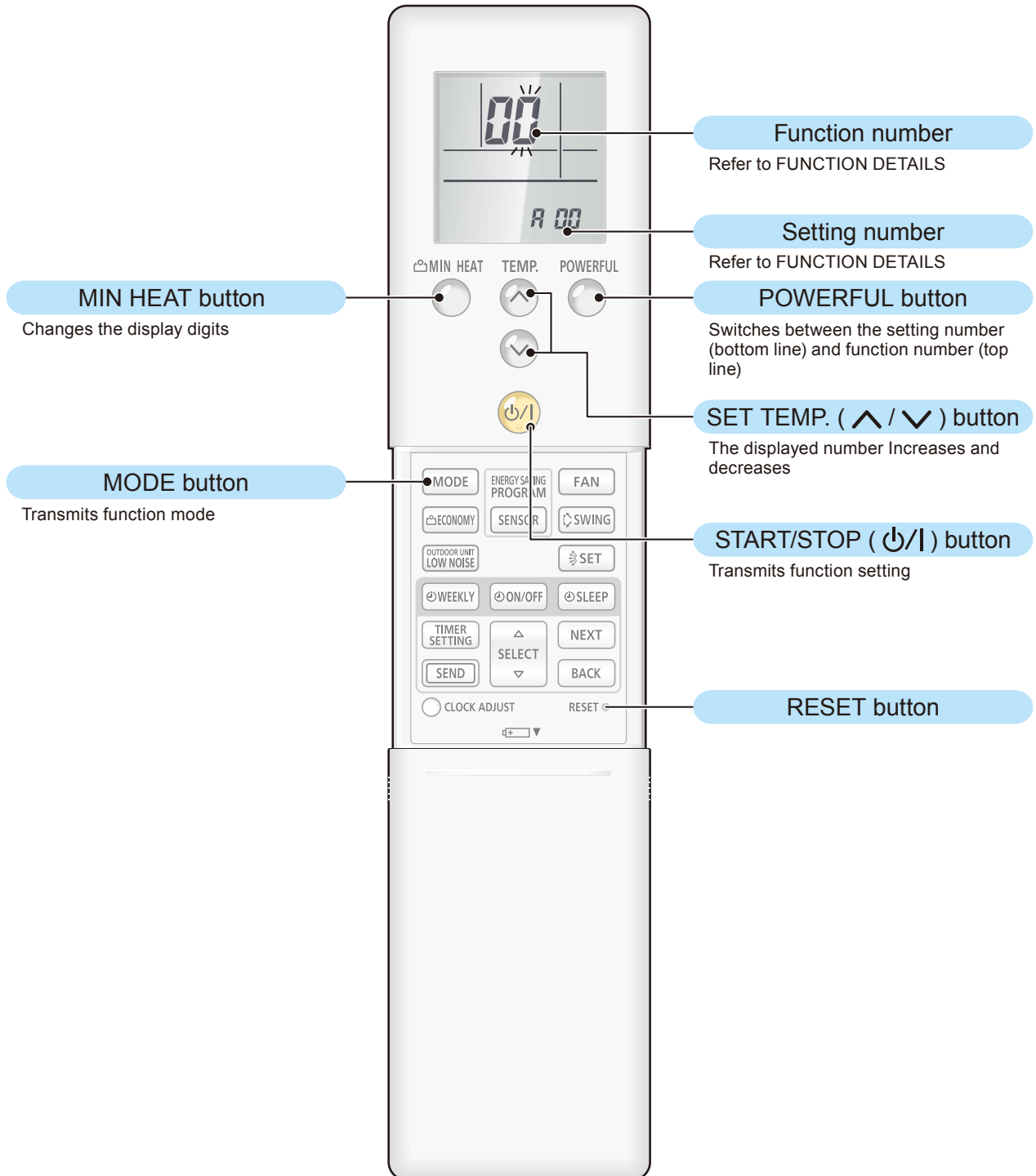
■ SWITCHING SELECTION OF FUNCTION SETTING MODE

(2) Press and hold the "POWERFUL" and "SET TEMP. ^" buttons. While holding these 2 buttons, press the "RESET" button.



■ BUTTON NAME AND FUNCTION

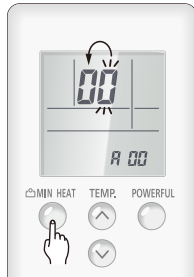
- During function setting mode, indoor unit reject the any operation command from remote controller.



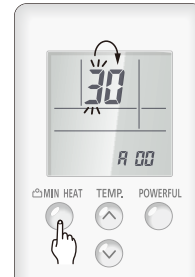
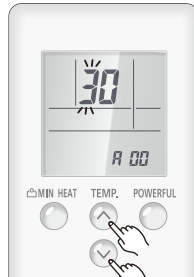
■ FUNCTION SETTING

(3) Press the " ^ " or the " v " buttons to select the function number.

Each time the "MIN HEAT" button is pressed, it switches between the one's place and the ten's place positions.



Change digit



Change digit

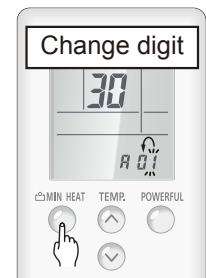
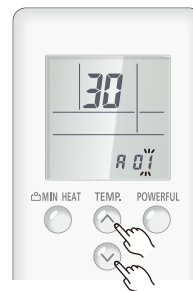
(4) Press the "POWERFUL" button to proceed to the setting number.

(Press the "POWERFUL" button again to return to the function number selection.)



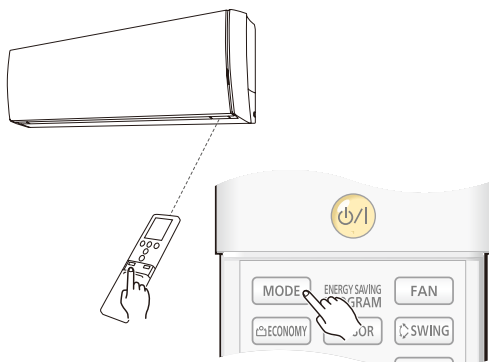
(5) Press the " ^ " or the " v " buttons to select the setting number.

Each time the "MIN HEAT" button is pressed, it switches between the one's place and the ten's place positions.



Change digit

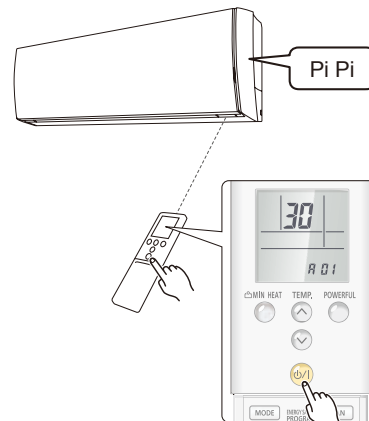
(6) Press the "MODE" button once to send the function mode information.



(7) Press the " ϕ / I " button once to send the function setting information.

A beeping noise will be heard if the command is accepted.

*Wrong code: No response



Note: Please push " ϕ / I " button within 30 seconds after pushing "MODE" button.

■ FUNCTION DETAILS

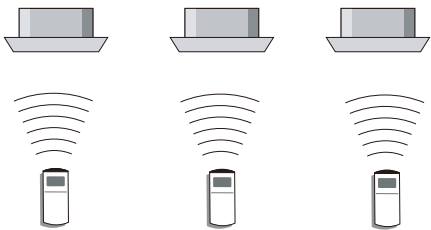
Refer to 5-6. FUNCTION DETAILS

■ COMPLETION OF FUNCTION SETTING MODE

(8) Press the "RESET" button.



■ SETTING UP EACH INDOOR UNIT



Repeat steps (1) through to (8). Steps (1) through to (2) and (8) only need to be carried out if the signal code is different to the factory setting of "A".

■ 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 SIGNAL CODE is set to anything other than "A", the remote control must be set accordingly to the INDOOR UNIT setting.

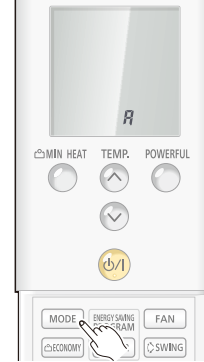
■ REMOTE CONTROLLER SIGNAL CODE SETTING

In function setting, please change to the setting that signal code setting of Wireless remote controller is the same as indoor unit according to the following content when you change signal code setting of indoor unit.

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 5 seconds to display the current signal code (initially set to A).



3. Press the SET TEMP. "▲" or the "▼" button to change the signal code between "A→b→c→d".



4. Press the "MODE" button again to return to the clock display. The signal code will be changed.

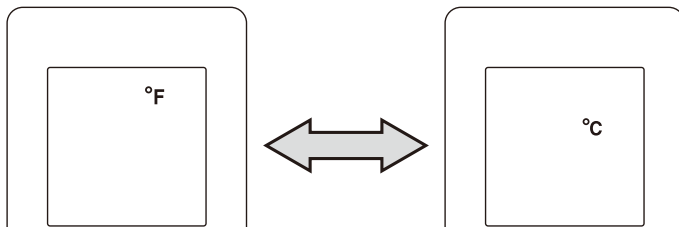


- If no buttons are pressed within 30 seconds after the signal code is displayed, the system returns to the original clock display. In this case, start again from step 1.
- The air conditioner signal code is set to A prior to shipment.
- If you do not know the air conditioner signal code setting, try each of the signal codes ("A→b→c→d") until you find the code which operates the air conditioner.

■ REMOTE CONTROLLER TEMPERATURE UNIT

To change the temperature unit:

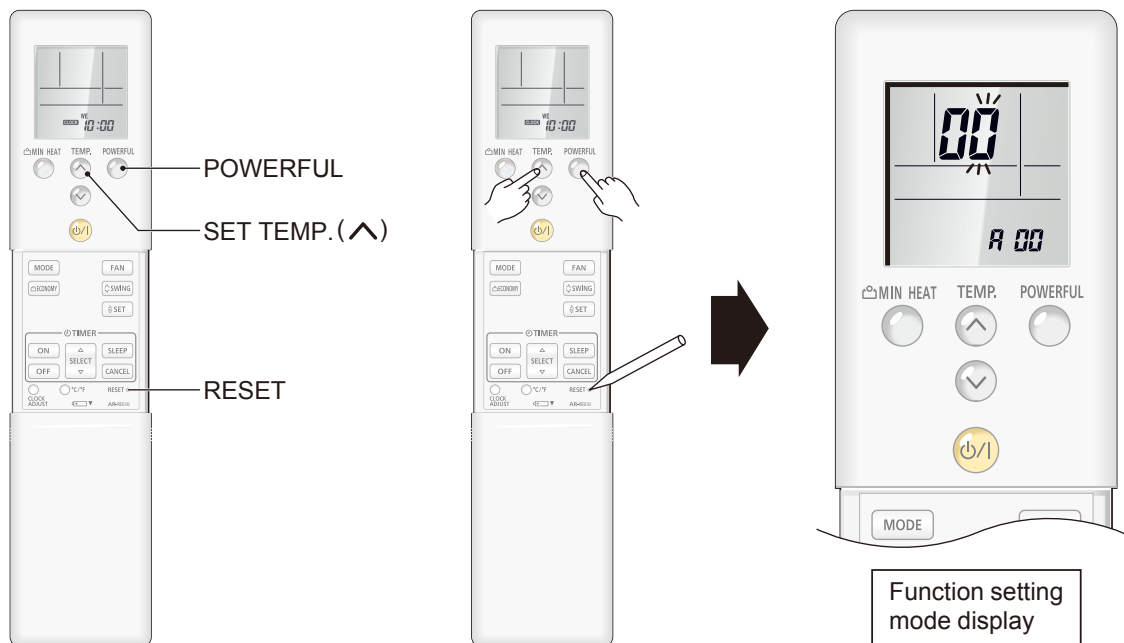
- (1) Press the "TEMP. (Up)" button (▲) for at least 5 seconds to display the current temperature unit. (Factory setting: °F)
- (2) Press the "TEMP." buttons (▲ / ▼) to switch the temperature unit. (°F ↔ °C)
- (3) With either of pressing the START/STOP button or no additional button operation for 30 seconds in step 2., the temperature unit currently selected will be set.



5-3-3.AR-REG1U

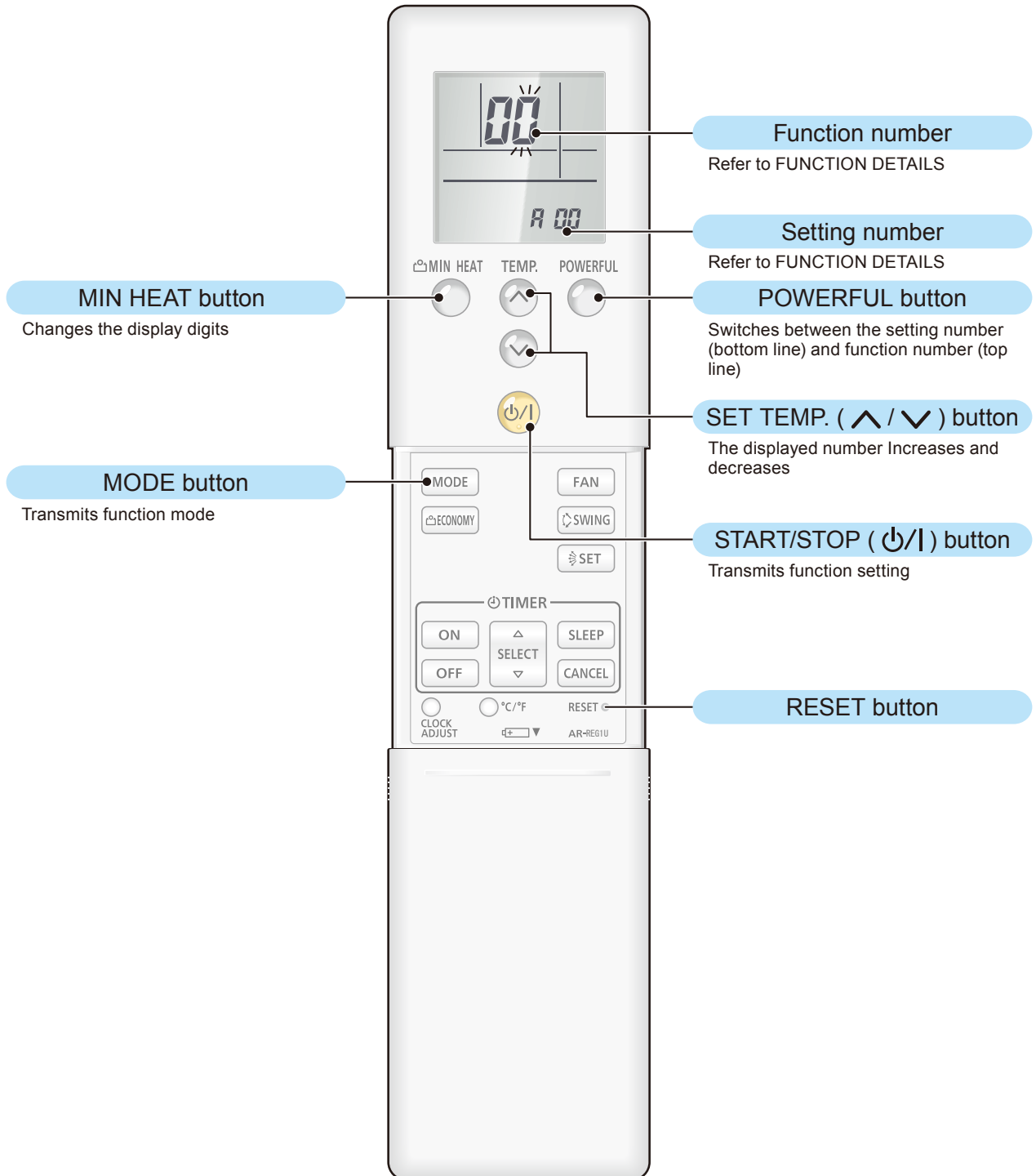
■ SWITCHING SELECTION OF FUNCTION SETTING MODE

(2) Press and hold the "POWERFUL" and "SET TEMP. ^" buttons. While holding these 2 buttons, press the "RESET" button.



■ BUTTON NAME AND FUNCTION

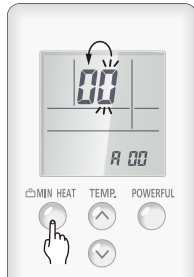
- During function setting mode, indoor unit reject the any operation command from remote controller.



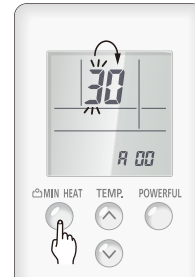
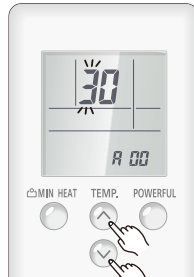
FUNCTION SETTING

(3) Press the " ^ " or the " v " buttons to select the function number.

Each time the "MIN HEAT" button is pressed, it switches between the one's place and the ten's place positions.



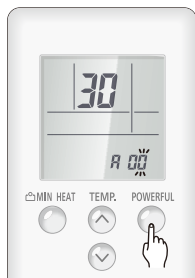
Change digit



Change digit

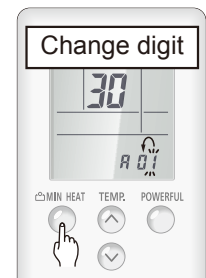
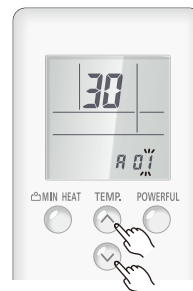
(4) Press the "POWERFUL" button to proceed to the setting number.

(Press the "POWERFUL" button again to return to the function number selection.)



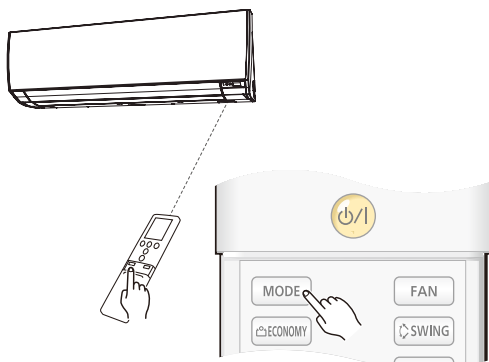
(5) Press the " ^ " or the " v " buttons to select the setting number.

Each time the "MIN HEAT" button is pressed, it switches between the one's place and the ten's place positions.



Change digit

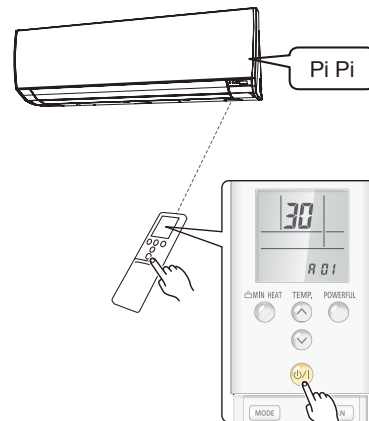
(6) Press the "MODE" button once to send the function mode information.



(7) Press the " P/I " button once to send the function setting information.

A beeping noise will be heard if the command is accepted.

*Wrong code: No response



Note: Please push " P/I " button within 30 seconds after pushing "MODE" button.

FUNCTION DETAILS

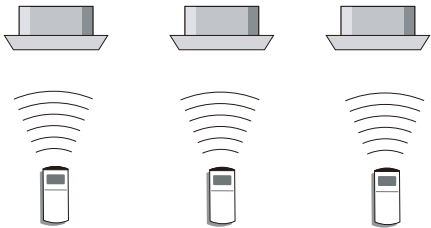
Refer to 13-5. FUNCTION DETAILS

■ COMPLETION OF FUNCTION SETTING MODE

(8) Press the "RESET" button.



■ SETTING UP EACH INDOOR UNIT



Repeat steps (1) through to (8). Steps (1) through to (2) and (8) only need to be carried out if the custom code is different to the factory setting of "A".

■ 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 SIGNAL CODE SETTING

In function setting, please change to the setting that custom code setting of Wireless remote controller is the same as indoor unit according to the following content when you change custom code setting of indoor unit.

1. Press the START/STOP "ϕ/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 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 display. The custom code will be changed.

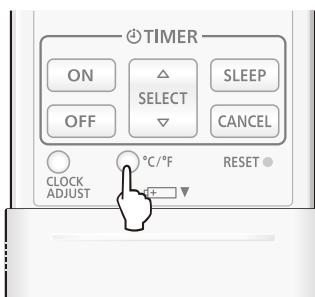


- If no buttons are pressed within 30 seconds after the custom code is displayed, the system returns to the original clock display. In this case, start again from step 1.
- The air conditioner custom code is set to A prior to shipment.
- If you do not know the air conditioner custom code setting, try each of the custom codes ("A→b→c→d") until you find the code which operates the air conditioner.

■ REMOTE CONTROLLER TEMPERATURE UNIT

To change the temperature unit:

- Press the "°C / °F" switching button to select the preferred temperature unit. (Factory setting is "°F".)



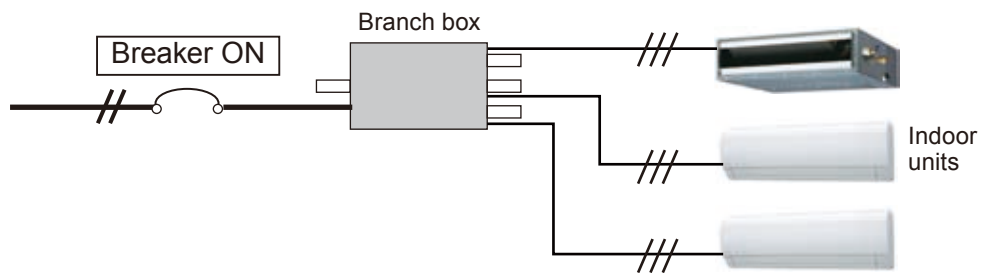
5-4. INDOOR UNIT (setting by wired remote controller)

- 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 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 invalid numbers or setting numbers are selected.
- This function cannot be used on the secondary units.

■ PREPARATION

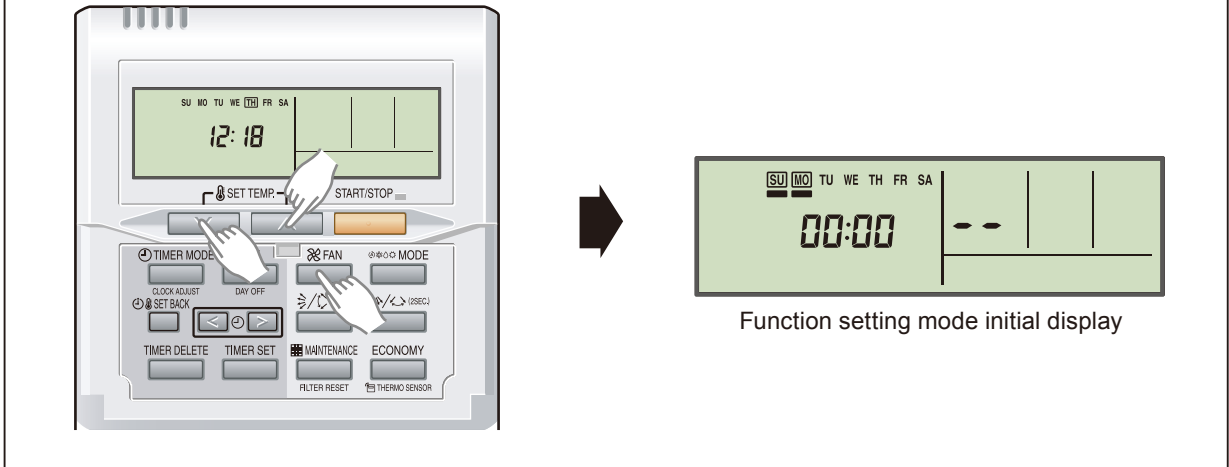
(1) Turn on the power to the Branch box.

- By turning on the power indoor units, so make sure the piping air-tight test and vacuuming have been conducted before turning on the power.
- Also check again to make sure no wiring mistakes were made before turning on the power.



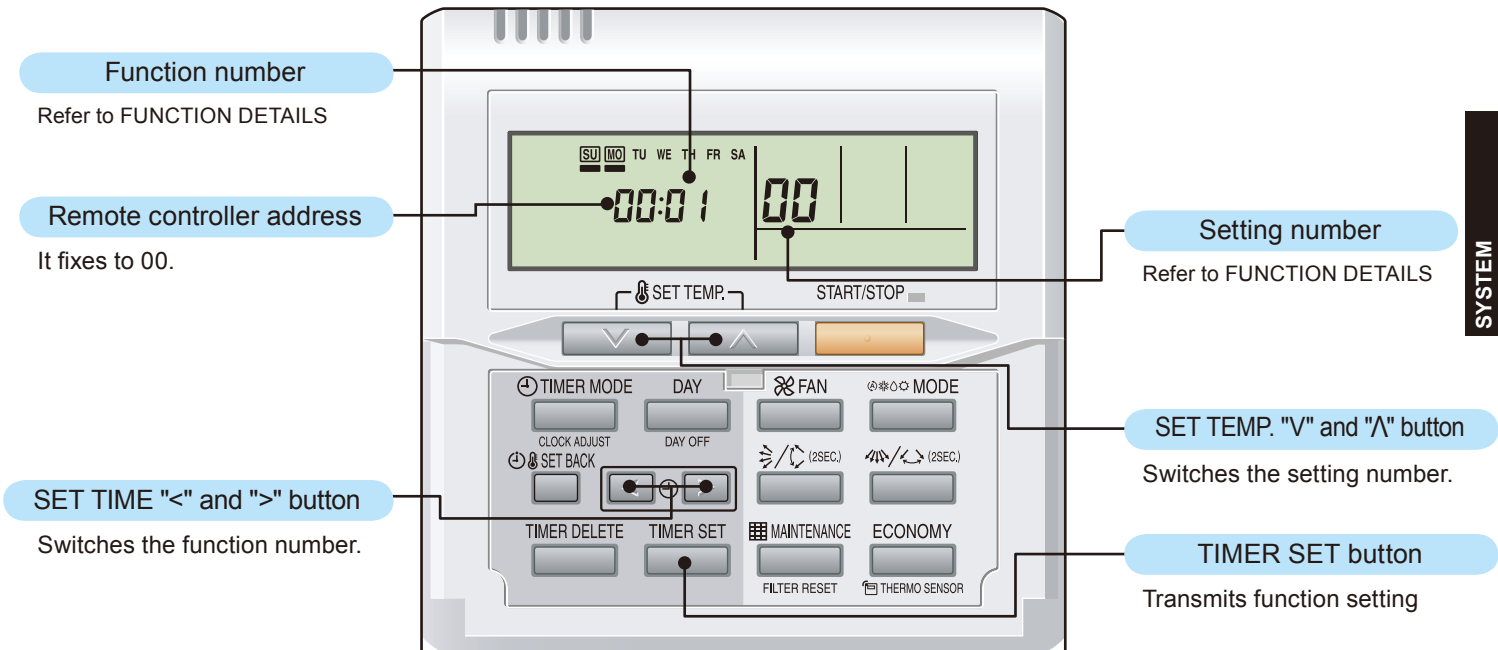
■ SWITCHING SELECTION OF FUNCTION SETTING MODE

- 2) To activate the function setting mode, hold down the three buttons of SET TEMP. V, SET TEMP. ^ and FAN at the same time for 5 seconds or longer.



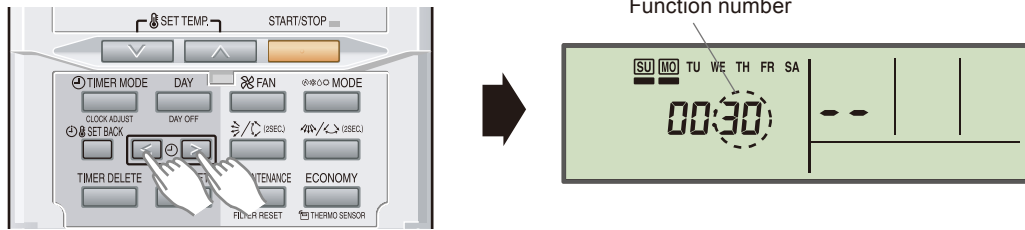
■ BUTTON NAME AND FUNCTION

- During address setting mode, indoor unit reject the any operation command from remote controller.

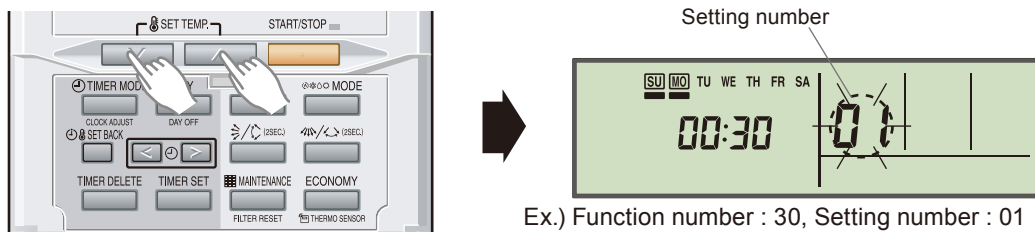


FUNCTION SETTING

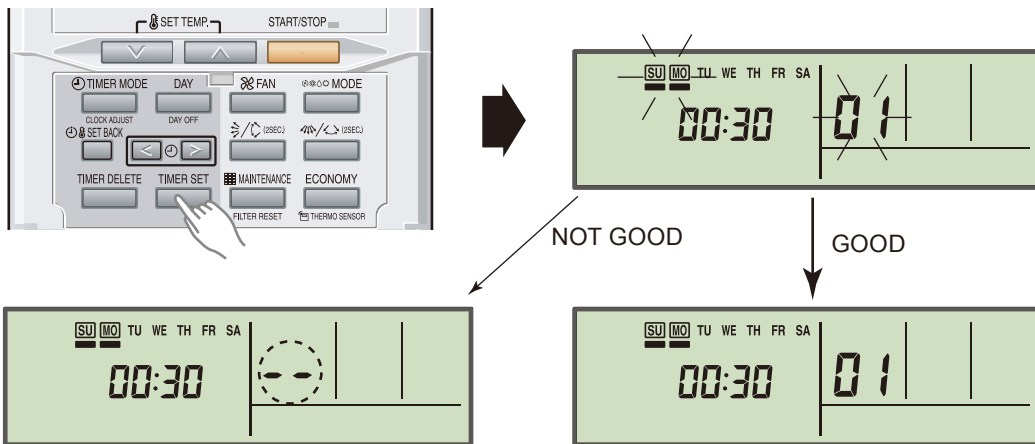
3) Pressing the SET TIME < button or the SET TIME > button, to select the function number.



4) Pressing the SET TEMP. V button or the SET TEMP. ^ button, to select the setting number. The display flashes during setting number selection.



5) Pressing 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.

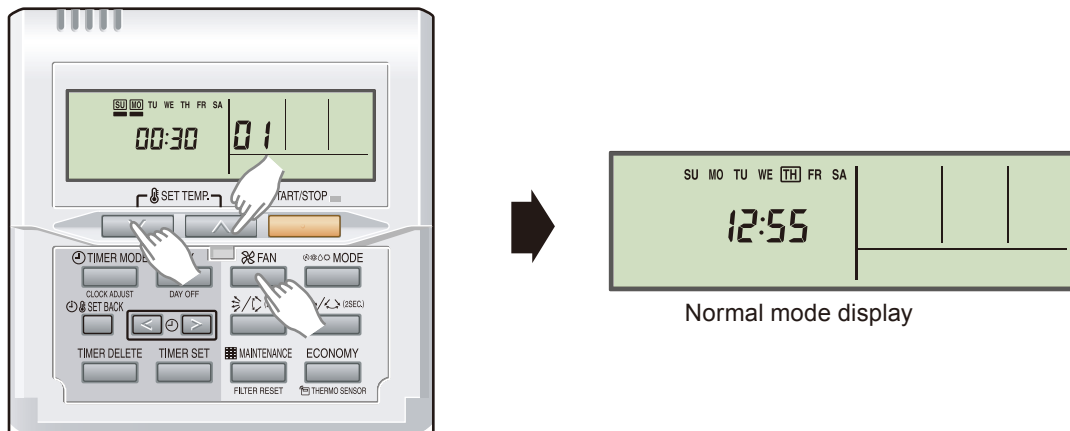
When the data was normally set up on the indoor unit
(Flashing display changes to illuminated display.)

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 of SET TEMP. V, SET TEMP. \wedge 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) above.)

■ 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 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.

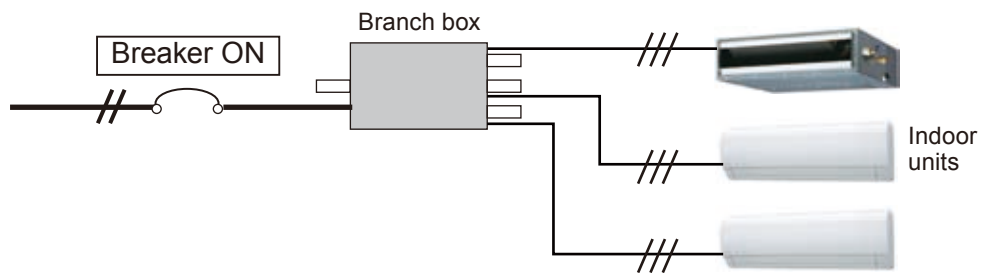
5-5. INDOOR UNIT (setting by simple remote controller)

- 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 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 invalid numbers or setting numbers are selected.
- This function cannot be used on the secondary units.

■ PREPARATION

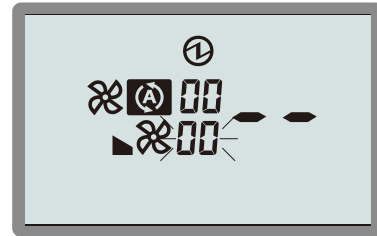
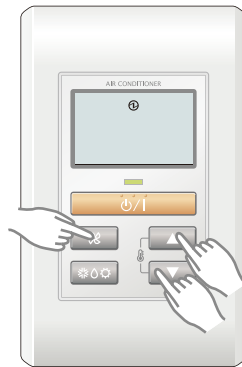
(1) Turn on the power to the Branch box.

- By turning on the power indoor units, so make sure the piping air-tight test and vacuuming have been conducted before turning on the power.
- Also check again to make sure no wiring mistakes were made before turning on the power.



■ SWITCHING SELECTION OF FUNCTION SETTING MODE

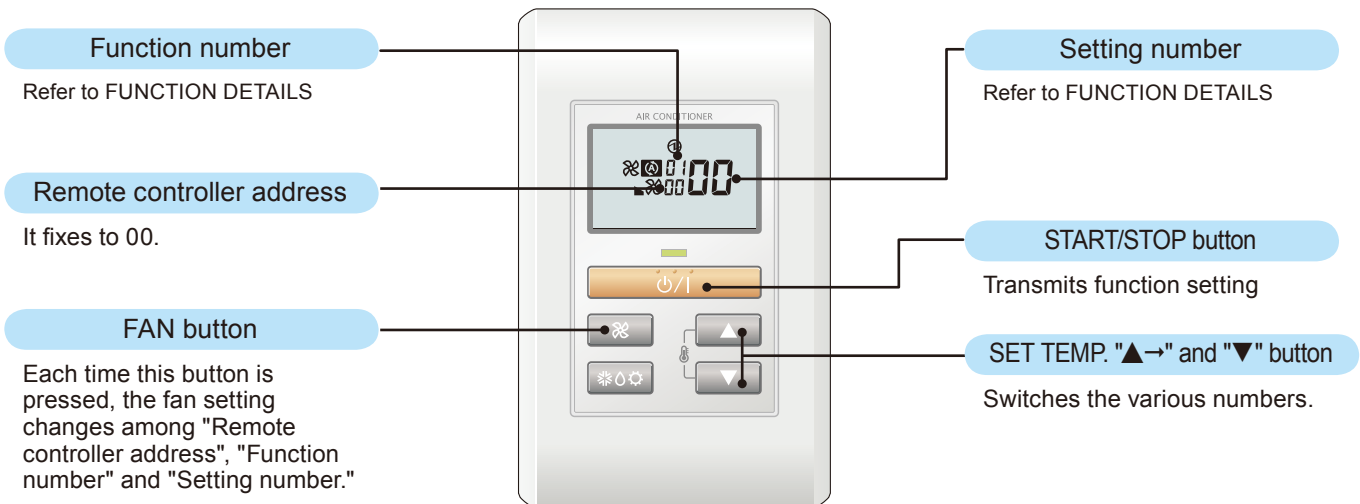
2) To activate the function setting mode, hold down the three buttons of SET TEMP. ▼, SET TEMP. ▲ and FAN at the same time for 5 seconds or longer.



Function setting mode initial display

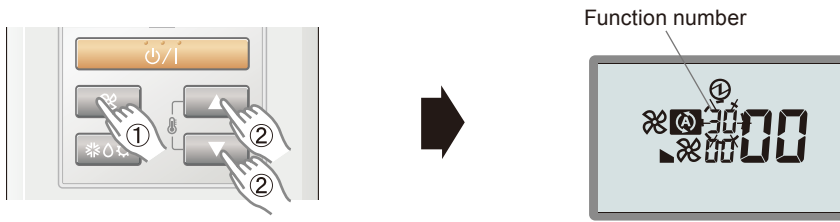
■ BUTTON NAME AND FUNCTION

- During function setting mode, indoor unit reject the any operation command from remote controller.

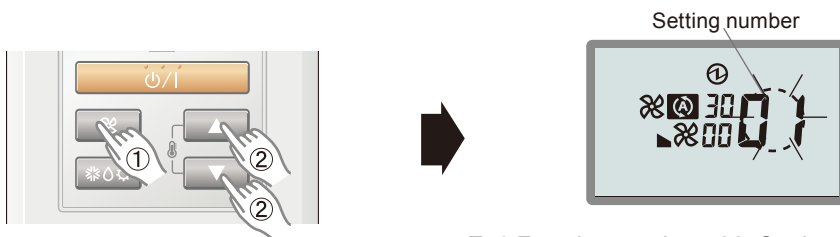


FUNCTION SETTING

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.

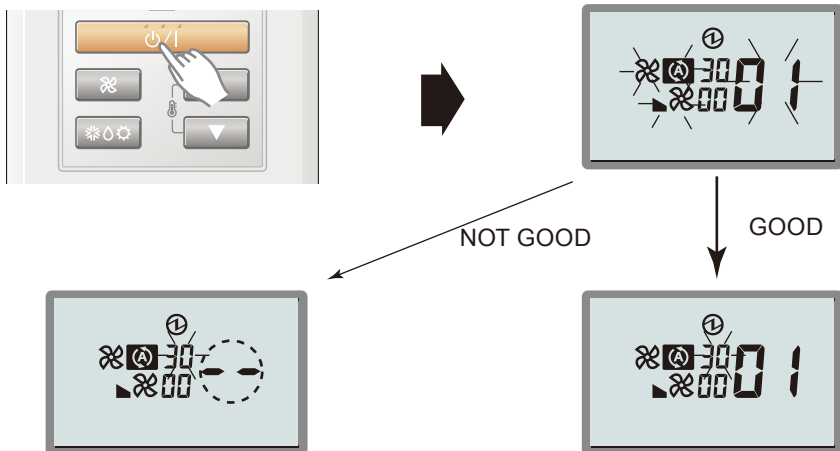


4) Press the FAN button so that the "Setting number" display flashes. Then, press either the SET TEMP. ▲ button or the SET TEMP. ▼ button to set up the setting number.



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.

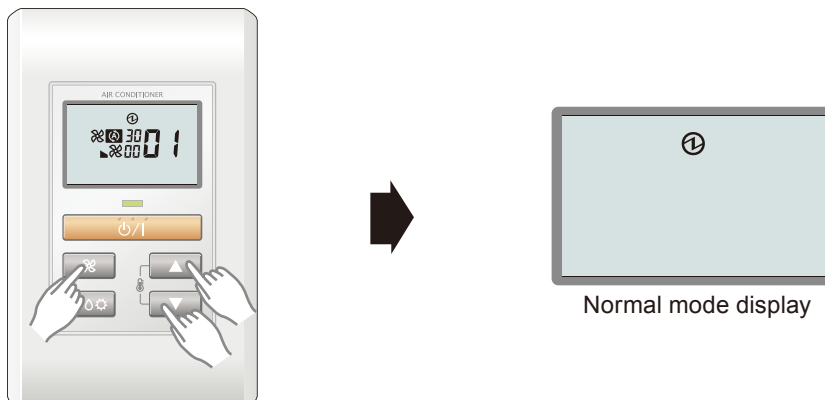
When the data was normally set up on the indoor unit.

FUNCTION DETAILS

Refer to 5-6. FUNCTION DETAILS

■ COMPLETION OF FUNCTION SETTING MODE

6) Press the three buttons of 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) above.)

■ 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 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.

5-6. FUNCTION DETAILS

	Functions	Compact cassette	Slim duct	Wall mounted	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	-	-	● (ASU**RLF1)	●

1) Filter sign

The indoor unit has a sign to inform the user that it is time to clean the filter. Select the time setting for the filter sign display interval in the table below according to the amount of dust or debris in the room. If you do not wish the filter sign to be displayed, select the setting value for "No indication".

(◆... Factory setting)

Setting description	Function number	Setting value
Standard	11	00
Long interval		01
Short interval		02
No indication		03

The filter sign interval time is different according to Indoor unit type as follows.

Setting description	Comapact Cassette	Slim Duct	Wall Mounted	Floor
Standard	2500 hours	400 hours		
Long interval	4400 hours	1000 hours		
Short interval	1250 hours	200 hours		

2) Ceiling height

Select the setting values in the table below according to the height of the ceiling.

(◆... Factory setting)

Setting description	Function number	Setting value
Standard [9 ft. (2.7m)]	20	00
High ceiling [10 ft. (3.0m)]		01

3) Outlet directions

Select the setting values in the table below for using a 3-way outlet.

(◆... 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 prohibited)		01
Fixed (Concealed)		02

5) Static pressure

Select appropriate static pressure according to the installation conditions.

(◆... Factory setting)

Setting description	Function number	Setting value
0 in.WG (0 Pa)	26	00
0.04 in.WG (10 Pa)		01
0.08 in.WG (20 Pa)		02
0.12 in.WG (30 Pa)		03
0.16 in.WG (40 Pa)		04
0.20 in.WG (50 Pa)		05
0.24 in.WG (60 Pa)		06
0.28 in.WG (70 Pa)		07
0.32 in.WG (80 Pa)		08
0.36 in.WG (90 Pa)		09
0.10 in.WG (25 Pa) [Standard]		31

Range of static pressure is different from one model to other.

Model name	Range of static pressure
ARU7RLF	0 to 0.36 in.WG (0 to 90 Pa)
ARU9RLF	
ARU12RLF	
ARU18RLF	
ARU24RLF	0 to 0.20 in.WG (0 to 50 Pa)

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

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

8) Auto restart

Enable or disable automatic system restart after a power outage.

(◆... Factory setting)

Setting description	Function number	Setting value
Yes	40	00
No		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 input 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 forbidden)		01
Forced stop mode		02

12) Room temperature sensor switching (Aux.)

To use the 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

Enables 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

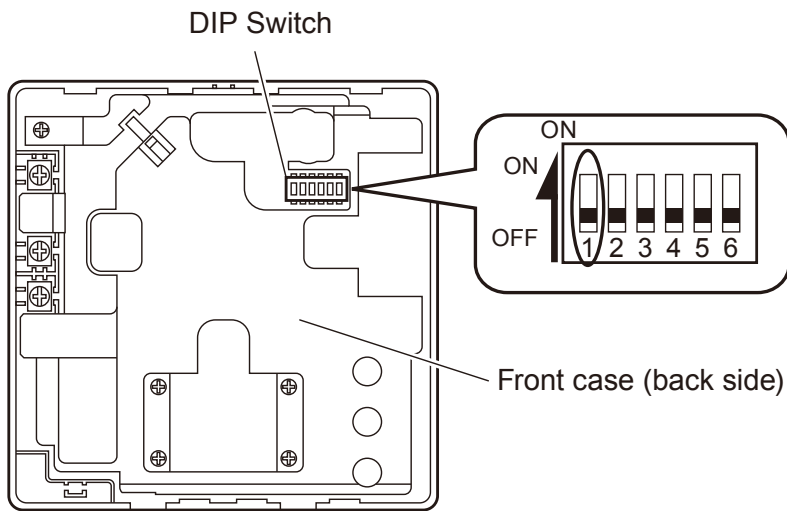
*00: When the outdoor unit is stopped, the indoor unit fan operates continuously following the setting on the remote controller..

*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	Invalidity
ON	Validity

● SW2 setting forbidden

(◆...Factory setting)

SW2	
OFF	Fixed at OFF
ON	Setting forbidden

● SW3 setting forbidden

(◆...Factory setting)

SW3	
OFF	Fixed at OFF
ON	Setting forbidden

● SW4 setting forbidden

(◆...Factory setting)

SW4	
OFF	Fixed at OFF
ON	Setting forbidden

● SW5 setting forbidden

(◆...Factory setting)

	SW5	
◆	OFF	Fixed at OFF
	ON	Setting forbidden

● SW6 setting forbidden

(◆...Factory setting)

	SW6	
◆	OFF	Fixed at OFF
	ON	Setting forbidden

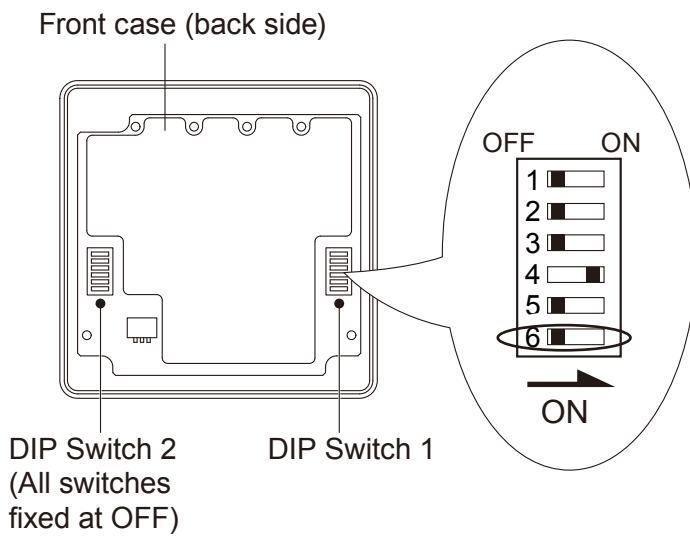
5-8. WIRED REMOTE CONTROLLER

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

● SW1 setting prohibited

(◆...Factory setting)

SW1	
OFF	Fixed at OFF
ON	Setting prohibited

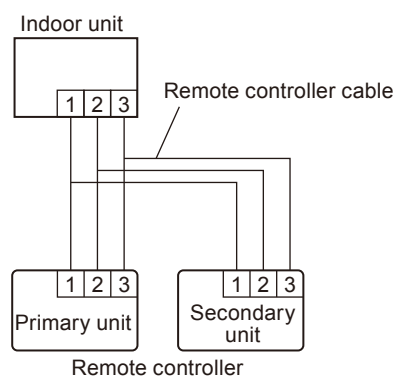
● SW2 setting

● 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 prohibited

(◆...Factory setting)

SW3	
OFF	Fixed at OFF
ON	Setting prohibited

● SW4 setting

● °F / °C switch

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

(◆...Factory setting)

SW4	
OFF	°C
ON	°F

● SW5 setting prohibited

(◆...Factory setting)

SW5	
OFF	Fixed at OFF
ON	Setting prohibited

● SW6 setting

● Memory backup setting (Wired remote controller only)

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

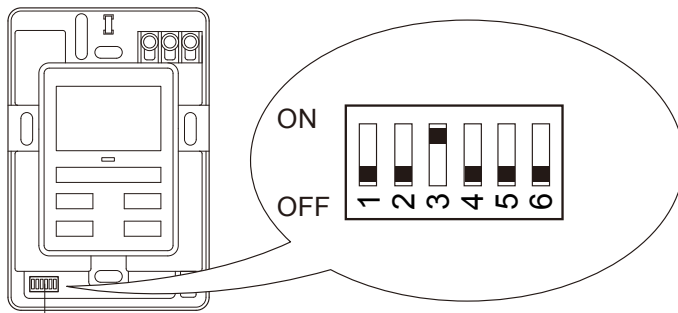
Never turn it ON in the case of simple remote controller.

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

■ DIP SWITCH 1 SETTING

● SW1 setting prohibited

(◆...Factory setting)

SW1	
OFF	Fixed at OFF
ON	Setting prohibited

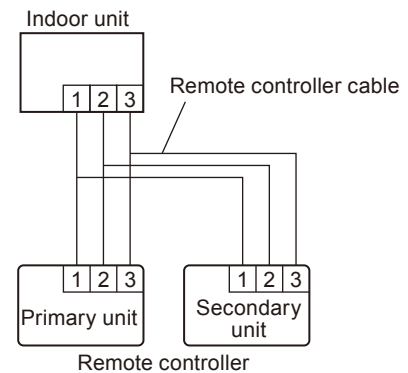
● SW2 setting

● 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 prohibited

(◆...Factory setting)

SW3	
OFF	Fixed at OFF
ON	Setting prohibited

● SW4 setting

● °F / °C switch

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

(◆...Factory setting)

SW4	
OFF	°C
ON	°F

● SW5 setting prohibited

(◆...Factory setting)

SW5	
OFF	Fixed at OFF
ON	Setting prohibited

● SW6 setting prohibited

(◆...Factory setting)

SW6	
OFF	Fixed at OFF
ON	Setting prohibited

5-10. DUCT STATIC PRESSURE SETTING

■ MODELS : ARU7RLF, ARU9RLF, ARU12RLF, ARU18RLF, ARU24RLF

The air flow setting other than the default value of 0.1inWG (25 Pa) may be changed to the required external static pressure.

Setting of the air flow can be changed with the wireless remote controller, wired remote controller, and simple remote controller.

How to set air flow (external static pressure)

- Wireless remote controller

Air flow 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

Air flow 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

Air flow 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

Note
<ul style="list-style-type: none">● If air flow setting is unmatched, it is caused to be air flow down or water leakage due to wrong operation.● Range of static pressure at ARU24 model is different from the others.

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		
		42°F (5°C) or more	Between 32°F (0°C) to 42°F (5°C)	Less than 32°F (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.

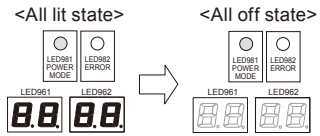
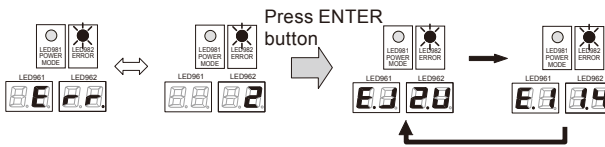
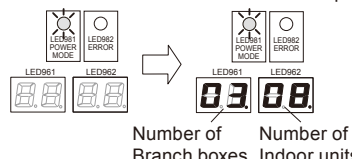
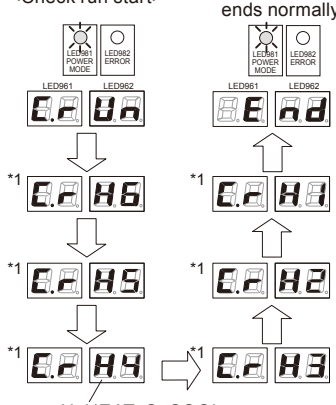
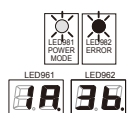
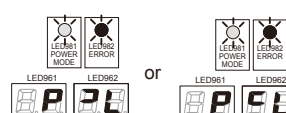
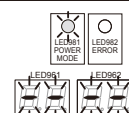
Check Item
1) Check that all work on the piping connecting the outdoor unit, indoor units and branch box has been completed
2) Check that all work on the wiring connecting the outdoor unit, indoor units and branch box has been completed
3) Is there a gas leakage? (At pipe connections {flange connections 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 5 to 115°F (-15 to 46°C); indoor temperature for cooling 64 to 114°F (18 to 46°C); indoor temperature for heating 5 to 98°F (-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

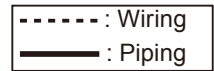
Use the following procedure to perform the Check run.

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>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>*1 Note: First generation for AOU48RLXFZ1 may not display which indoor unit number is checked during Check run.</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

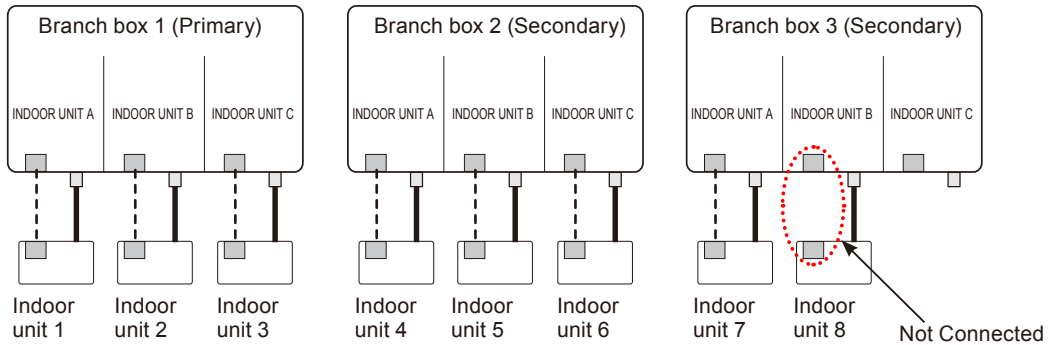
SYSTEM DESIGN

6-3. CHECK RUN EXAMPLES

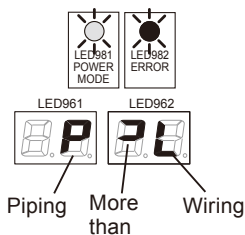


EXAMPLE 1

When the number of piping is more than the number of wiring.



[Display (Check run ends)]

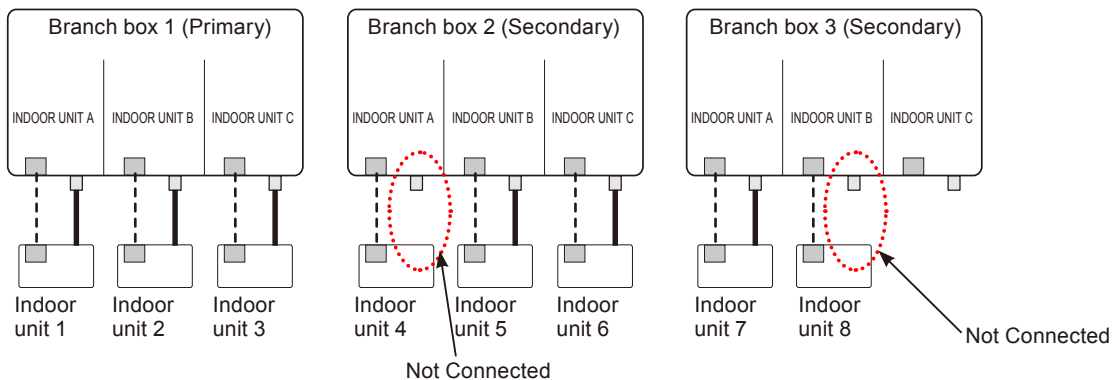


[Coping process]

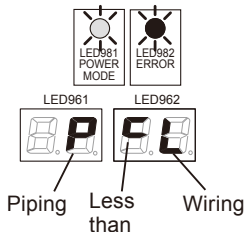
The terminal INDOOR UNIT B of Branch box 3(Secondary) is connected with the wiring for Indoor unit 8.

EXAMPLE 2

When the number of piping is less than the number of wiring.



[Display (Check run ends)]

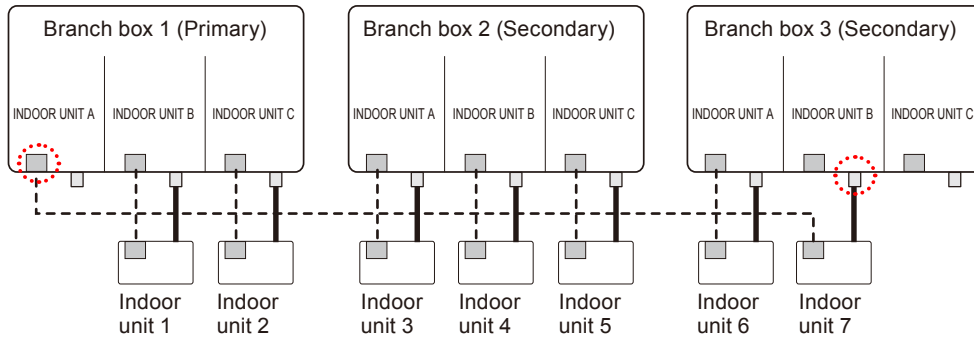


[Coping process]

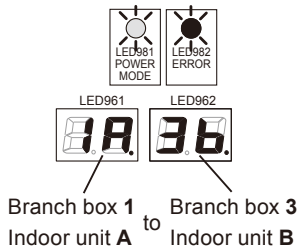
Connect Indoor unit A of Branch box 2(Secondary) with the piping of Indoor unit 4 and Indoor unit B of Branch box 3(Secondary) and the piping of Indoor unit 8.

EXAMPLE 3

When connection destination does not match.



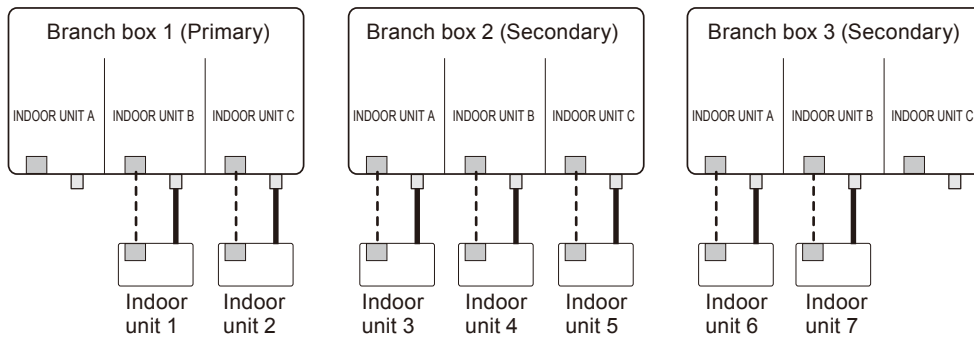
[Display (Check run ends)]



[Coping process]

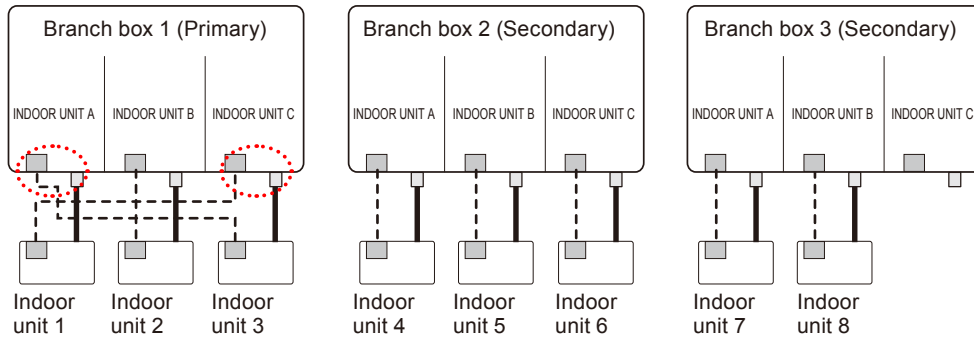
The wire connected to Terminal Indoor unit A of Branch box1(Primary) must be rewired to Terminal Indoor unit B of Branch box 3(Secondary).

[After correcting wiring]

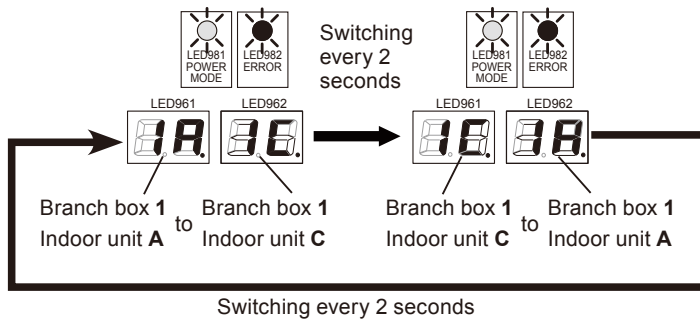


EXAMPLE 4

When connection destination does not match.



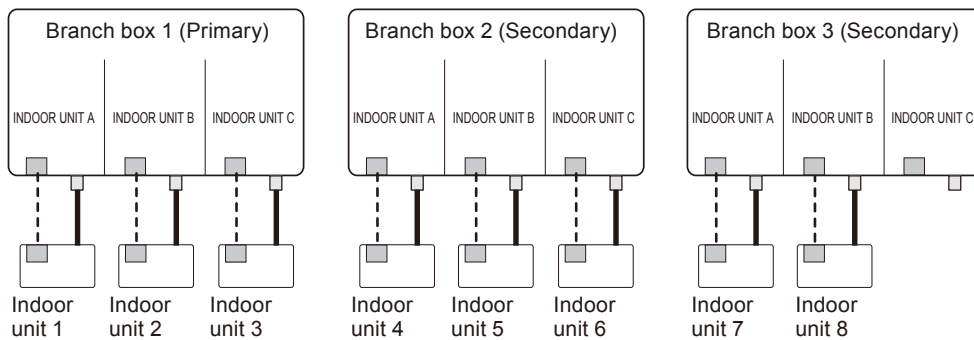
[Display (Check run ends)]



[Coping process]

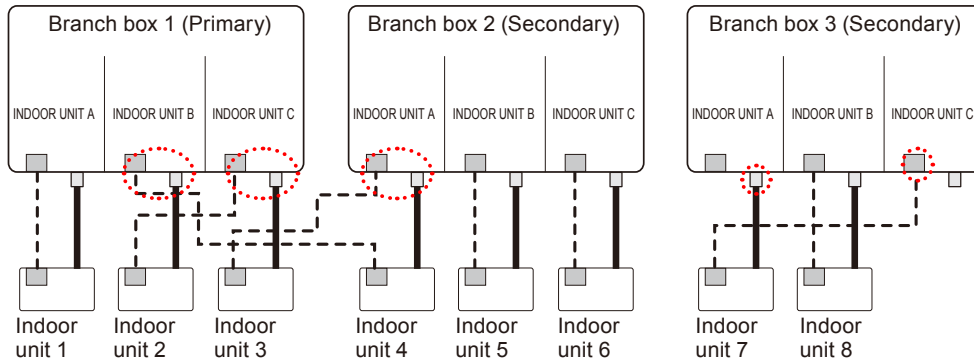
- 1) The wire connected to Terminal Indoor unit A of Branch box1(Primary) must be rewired to Terminal Indoor unit C of Branch box 1(Primary).
- 2) The wire connected to Terminal Indoor unit C of Branch box1(Primary) must be rewired to Terminal Indoor unit A of Branch box 1(Primary).

[After correcting wiring]

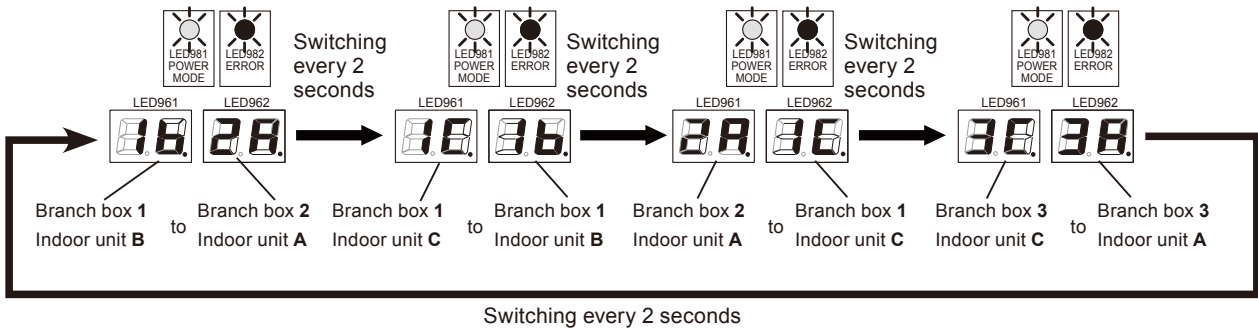


EXAMPLE 5

When connection destination does not match



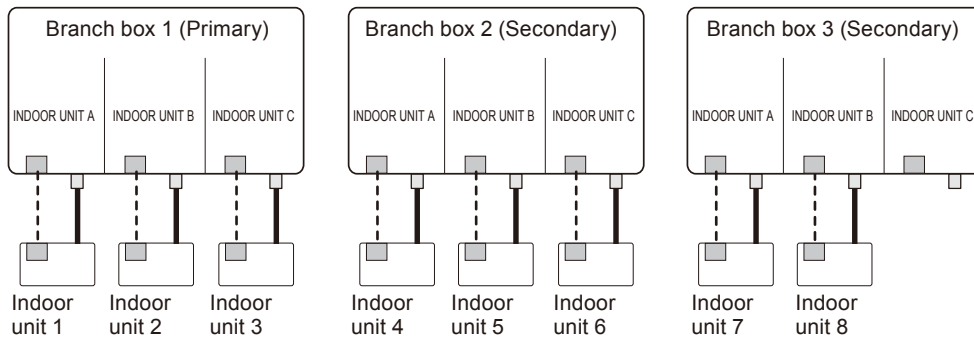
[Display (Check run ends)]



[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]



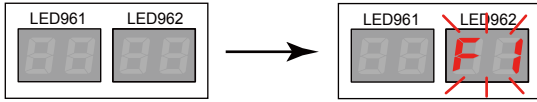
6-4. RELOCATION AND INCREASE OF UNIT

Perform the following operation when the number of indoor unit/branch box is changed or circuit board of branch box/outdoor unit are exchanged.

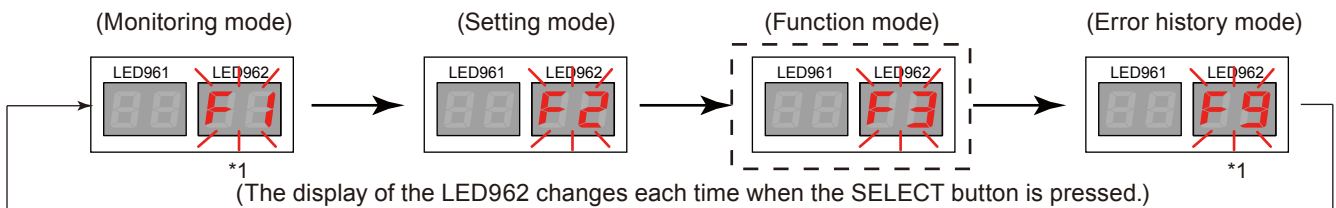
The air conditioner doesn't work normally if the following operation is not performed.

■ 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.

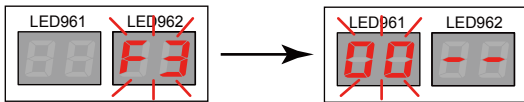


- 3) Match the 7seg.display to "F3" by press the "SELECT" button.



*1: The "F1" and "F9" modes are used for maintenance, so do not set them in regular operation.

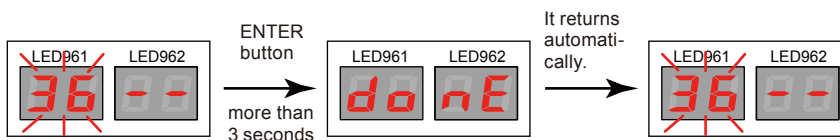
- 4) Press the "ENTER" button.



- 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

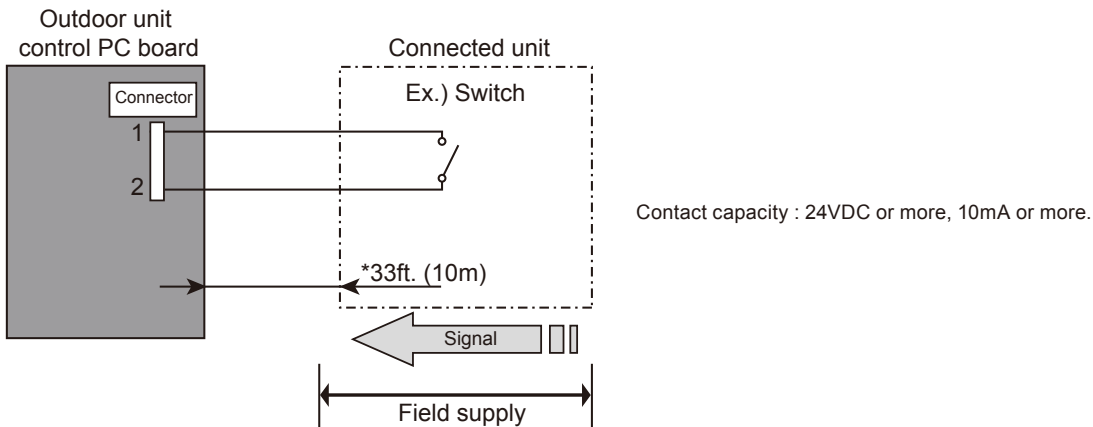
ON/OFF of the "Low noise mode", "External input priority mode", "Peak cut mode", and "Stop operation mode" functions can be enable with an external field device.

■ 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.

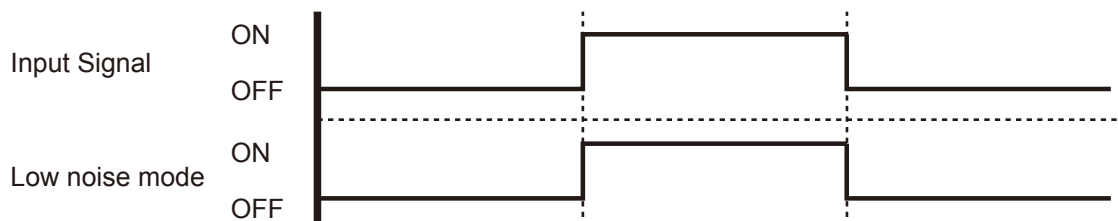
* Performance may drop depending on the outside air temperature condition, etc.

● Circuit diagram example



* Make the distance from the PC board to the connected unit within 33ft (10m).

- 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)

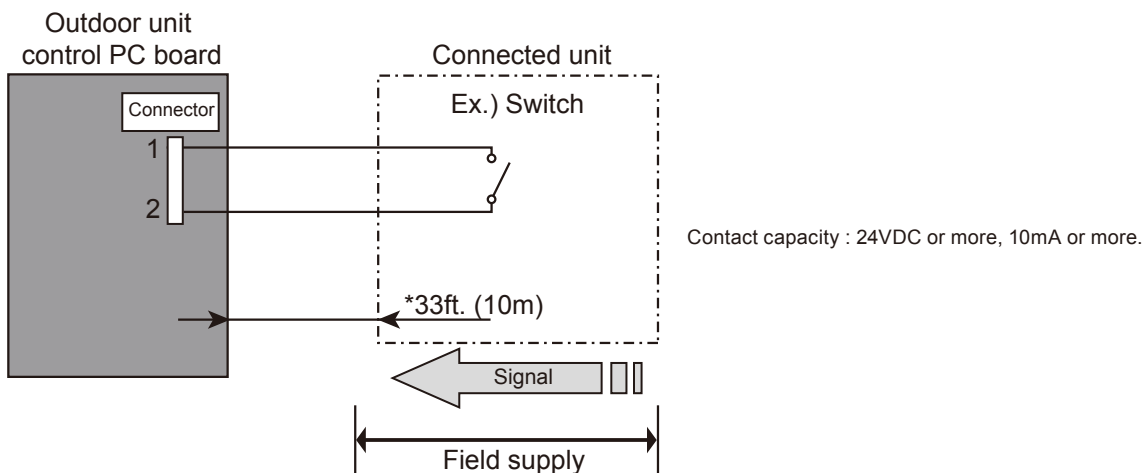
Parts name	External connect kit
Model name	UTY-XWZXZ3



EXTERNAL INPUT PRIORITY MODE

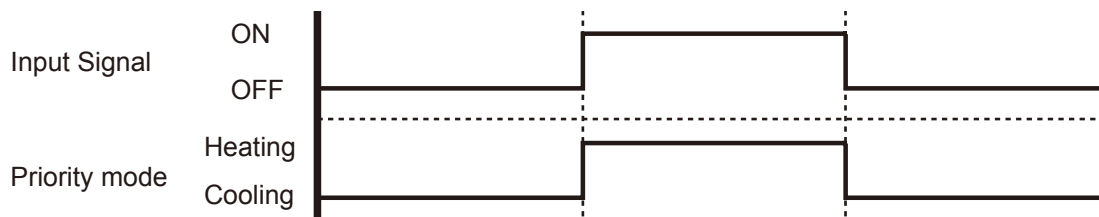
- It is possible to switch to cooling operation or heating operation by using external input.

Circuit diagram example



* Make the distance from the PC board to the connected unit within 33ft. (10m).

- 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)

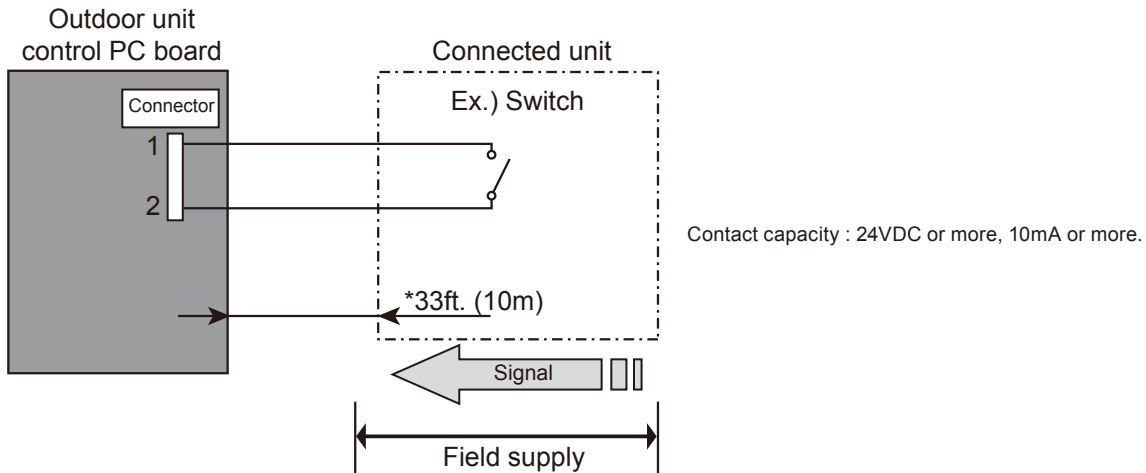
Parts name	External connect kit
Model name	UTY-XWZXZ3



■ PEAK CUT MODE

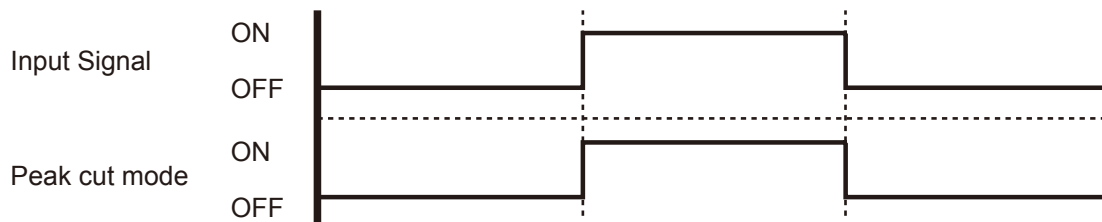
- Operation that suppressed the current value can be performed by means of the following on-site work. The air conditioner is set to the Peak cut mode when closing the contact input of a commercial ON/OFF switch to a connector on the outdoor control PC board.

● Circuit diagram example



* Make the distance from the PC board to the connected unit within 33ft. (10m).

- 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)

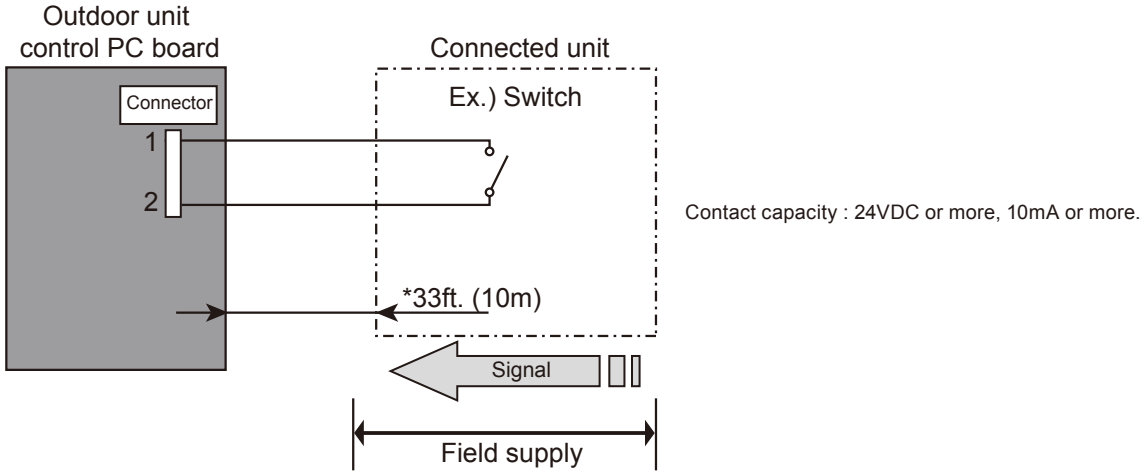
Parts name	External connect kit
Model name	UTY-XWZXZ3



■ STOP OPERATION MODE

- It is possible to switch to Batch stop or Emergency stop and Normal operation by using external input.

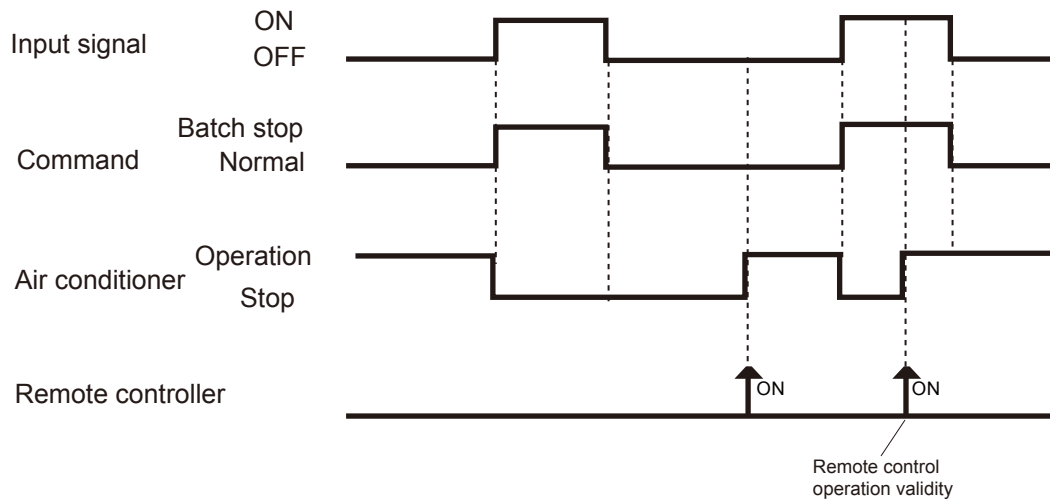
● Circuit diagram example



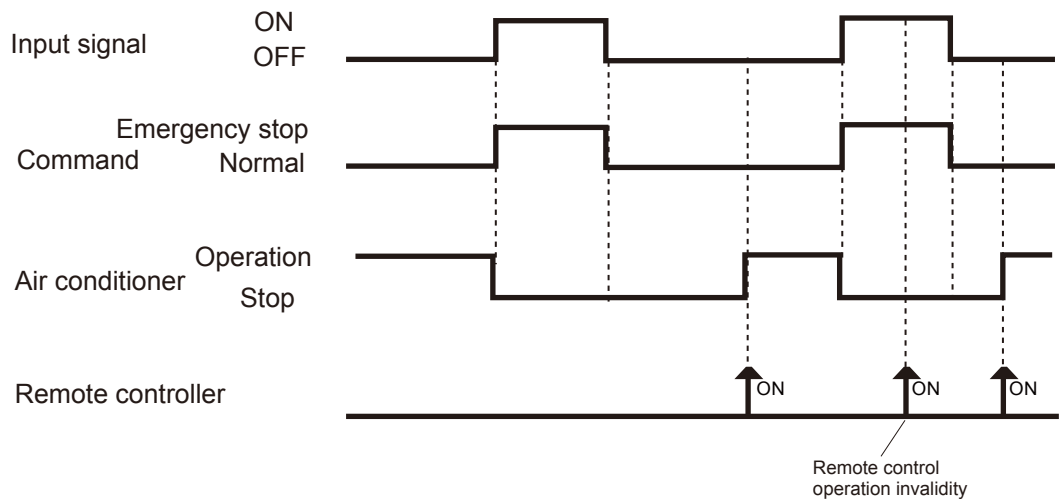
* Make the distance from the PC board to the connected unit within 33ft. (10m).

- 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 "Batch stop" mode



- When function setting is "Emergency stop" mode



● Parts (Optional)

Parts name	External connect kit
Model name	UTY-XWZXZ3

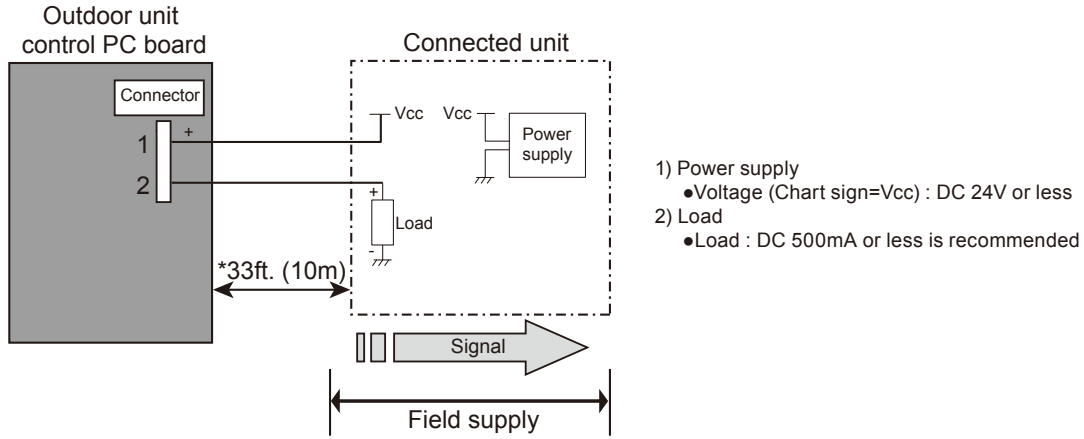


7-1-2. EXTERNAL OUTPUT

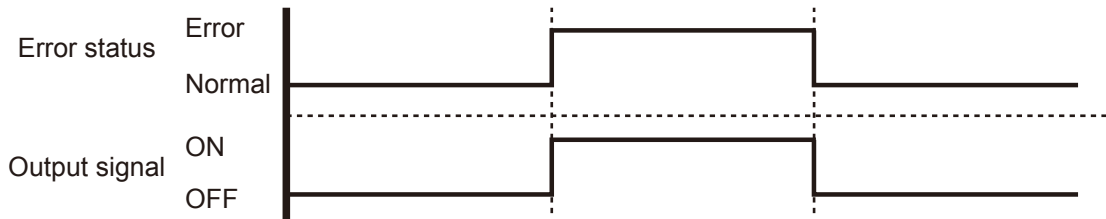
■ ERROR STATUS OUTPUT

• 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 33ft. (10m).



● Parts (Optional)

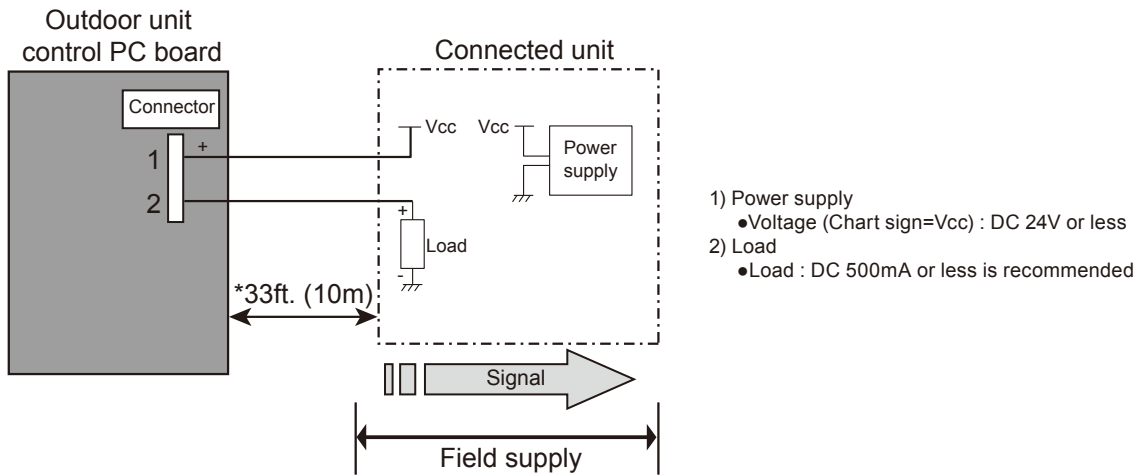
Parts name	External connect kit
Model name	UTY-XWZXZ3



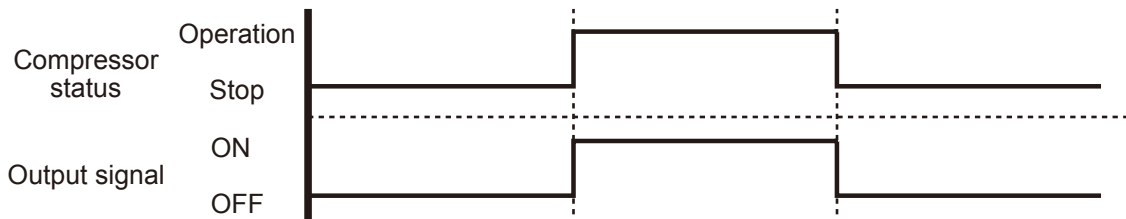
■ COMPRESSOR STATUS OUTPUT

- 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 33ft. (10m).



● Parts (Optional)

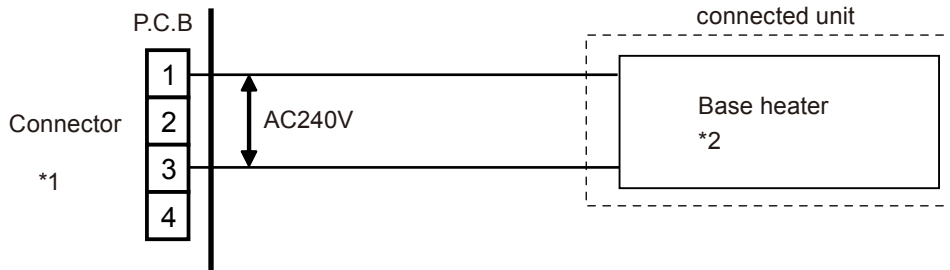
Parts name	External connect kit
Model name	UTY-XWZXZ3



■ BASE HEATER

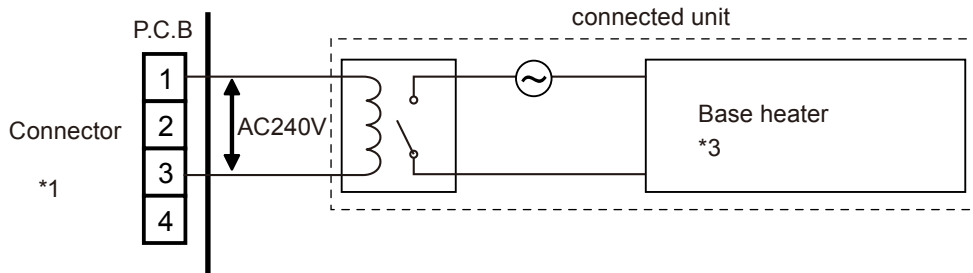
- A base heater is a heating element that may be installed to melt the ice that may accumulate in the condenser drain pan.
- This output signal is produced when the outdoor temperature drops down to 36°F (2°C), and releases at 39°F (4°C).

● Circuit diagram example

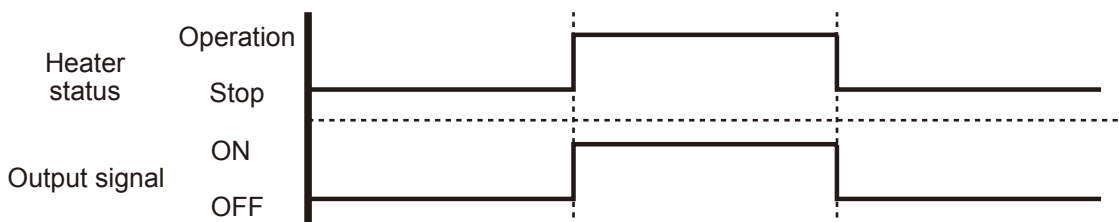


*1: Connect to pin 1 and pin 3. No connection pin2 and pin4.

*2: The allowable Input Power is 25W or less.

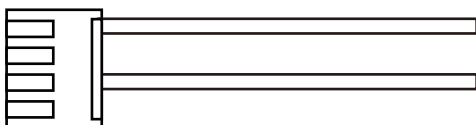


*3: If a load greater than 25W is applied, a contactor or relay should be used to operate and control the base heater.



● 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	●	●	—	—	● (ASU9RLS2, ASU12RLS2, ASU15RLS2 ASU7RLF1 ASU9RLF1 ASU12RLF1)
Floor	●	●	—	—	●

7-2-1. EXTERNAL INPUT

■ CONTROL INPUT (Operation/Stop or Forced stop)

	Compact Cassette	Slim Duct	Wall Mounted			Floor
			ASU7RLF ASU9RLF ASU12RLF	ASU9RLS2 ASU12RLS2 ASU15RLS2	ASU7RLF1 ASU9RLF1 ASU12RLF1	ASU18RLF ASU24RLF
Connector	CN102	CN102	CN303	CNA01	CN14	CN14

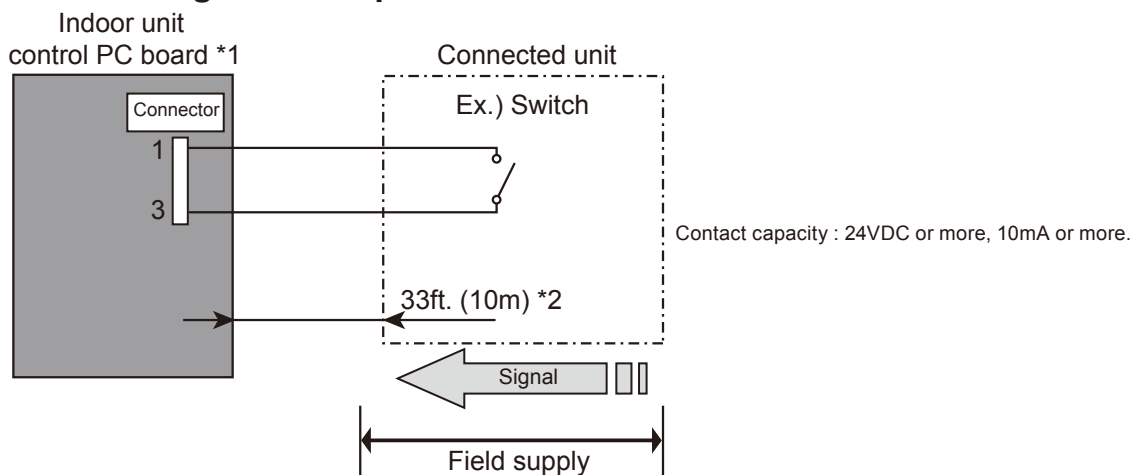
The air conditioner can be remotely operated by means of the following on-site work.

"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.

	Initial starting after turned power on	Other than initial starting
Operation mode	Auto changeover	Mode at previous operation
Set temperature	76°F (24°C)	Temperature at previous operation
Air flow mode	AUTO	Mode at previous operation
Up-down air direction (swing)	Standard air direction (swing OFF)	Air direction at previous operation
Left-right air direction (swing)	Standard air direction (swing OFF)	Air direction at previous operation

● Circuit diagram example

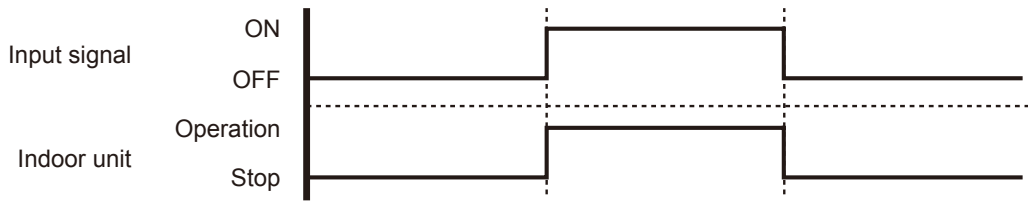


*1: PC board of Communication kit is used for Wall mounted (ASU7RLF, ASU9RLF, ASU12RLF/ASU9RLS2, ASU12RLS2, ASU15RLS2, ASU7RLF1, ASU9RLF1, ASU12RLF1) type.

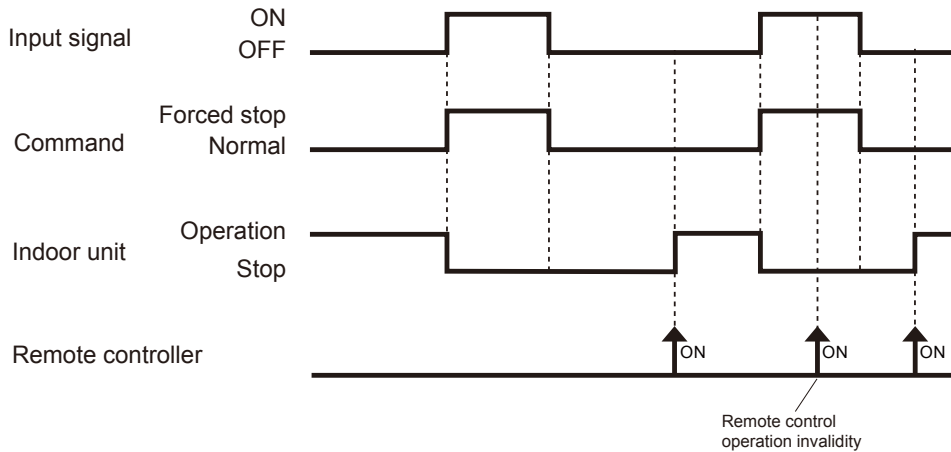
*2: Make the distance from the PC board to the connected unit within 33ft. (10m).

Indoor unit type		1 Pin (Polarity)	3 Pin (Polarity)
Compact Cassette		-	+
Slim Duct		-	+
Wall Mounted	ASU7RLF, ASU9RLF, ASU12RLF	+	-
	ASU9RLS2, ASU12RLS2, ASU15RLS2, ASU7RLF1, ASU9RLF1, ASU12RLF1, ASU18RLF, ASU24RLF	-	+
Floor	AGU9RLF, AGU12RLF, AGU15RLF	-	+

● When function setting is "Operation/Stop" mode



● When function setting is "Forced stop" mode



● Parts (Optional)

	Compact Cassette	Slim Duct	Wall Mounted				Floor
			ASU7RLF ASU9RLF ASU12RLF	ASU9RLS2 ASU12RLS2 ASU15RLS2	ASU7RLF1 ASU9RLF1 ASU12RLF1	ASU18RLF ASU24RLF	AGU9RLF AGU12RLF AGU15RLF
Parts name	External connect kit						
Model name	UTY-XWZX	UTD-ECS5A	UTY-XWZX	UTY-XWZXZ5	UTY-XWZX	UTY-XWZXZ5	



(UTY-XWZX)



(UTD-ECS5A)



(UTY-XWZXZ5)

	Compact Cassette	Slim Duct	Wall Mounted				Floor
			ASU7RLF ASU9RLF ASU12RLF	ASU9RLS2 ASU12RLS2 ASU15RLS2	ASU7RLF1 ASU9RLF1 ASU12RLF1	ASU18RLF ASU24RLF	AGU9RLF AGU12RLF AGU15RLF
Parts name	—	—	Communication kit			—	—
Model name	—	—	UTY-XCBXZ1	UTY-TWBXF	UTY-XCBXZ2	—	—

*For operating the EXTERNAL INPUT function, the Wall mounted type requires the communication kit in addition to the wire.

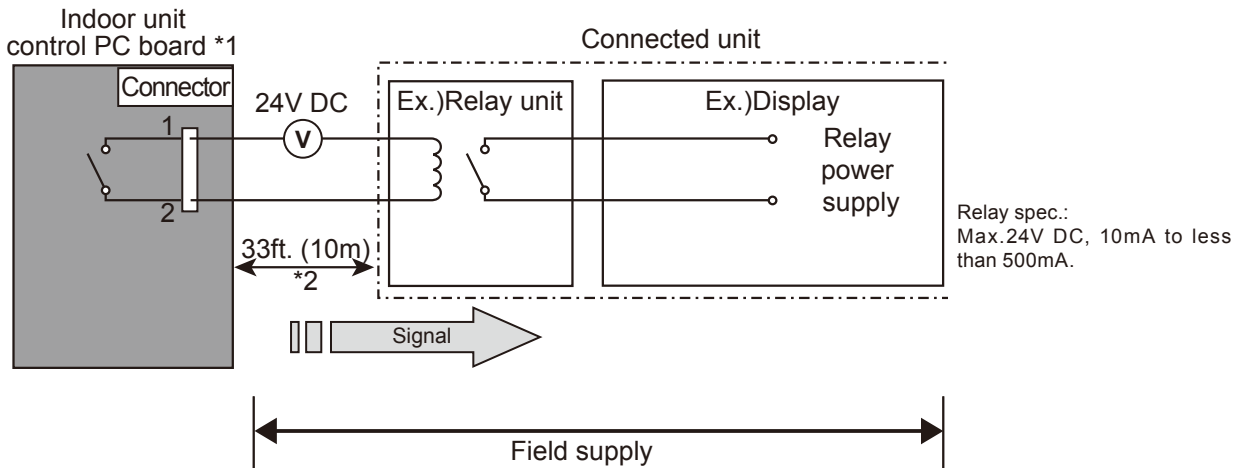
7-2-2. EXTERNAL OUTPUT

■ OPERATION STATUS OUTPUT

	Compact Cassette	Slim Duct	Wall Mounted			Floor
			ASU7RLF ASU9RLF ASU12RLF	ASU9RLS2 ASU12RLS2 ASU15RLS2	ASU7RLF1 ASU9RLF1 ASU12RLF1	ASU18RLF ASU24RLF
Connector	CN103	CN103	CN304	CNB01		CN20

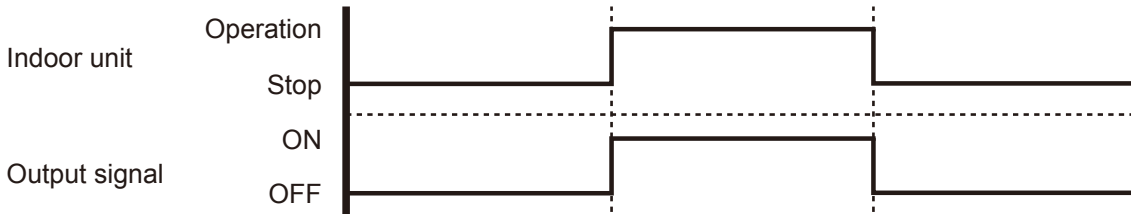
An air conditioner operation status signal can be output.

● Circuit diagram example



*1: PC board of Communication kit is used for Wall mounted (ASU7RLF, ASU9RLF, ASU12RLF/ASU9RLS2, ASU12RLS2, ASU15RLS2, ASU7RLF1, ASU9RLF1, ASU12RLF1) type.

*2: Make the distance from the PC board to the connected unit within 33ft. (10m).



● Parts (Optional)

	Compact Cassette	Slim Duct	Wall Mounted			Floor
			ASU7RLF ASU9RLF ASU12RLF	ASU9RLS2 ASU12RLS2 ASU15RLS2	ASU7RLF1 ASU9RLF1 ASU12RLF1	ASU18RLF ASU24RLF
Parts name	External connect kit					
Model name	UTY-XWZX	UTD-ECS5A	UTY-XWZX	UTY-XWZXZ5		UTY-XWZXZ5



	Compact Cassette	Slim Duct	Wall Mounted			Floor
			ASU7RLF ASU9RLF ASU12RLF	ASU9RLS2 ASU12RLS2 ASU15RLS2	ASU7RLF1 ASU9RLF1 ASU12RLF1	ASU18RLF ASU24RLF
Parts name	—	—	Communication kit			—
Model name	—	—	UTY-XCBXZ1	UTY-TWBXF	UTY-XCBXZ2	—

*For operating the EXTERNAL OUTPUT function, the Wall mounted type requires the communication kit in addition to the wire.

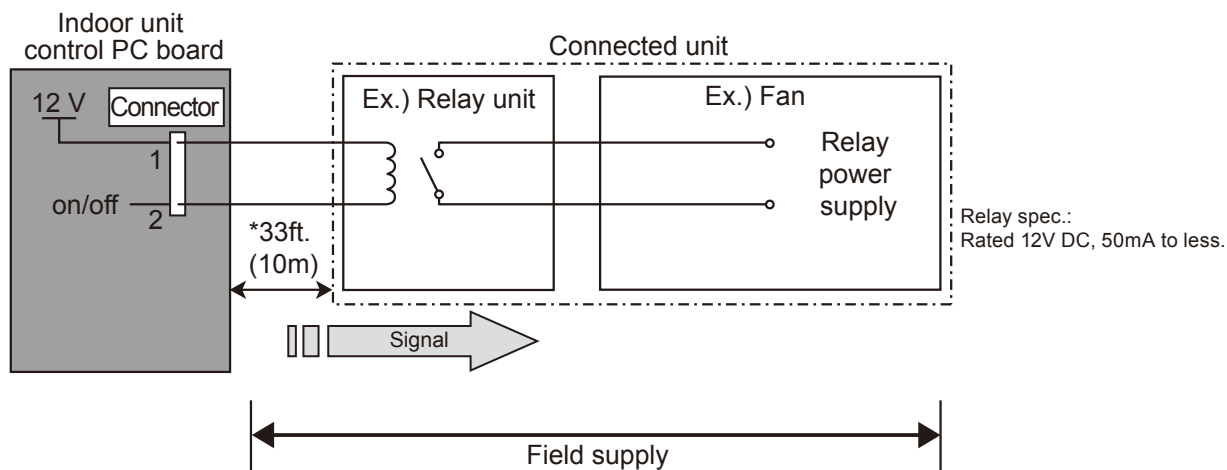
■ FRESH AIR CONTROL OUTPUT

	Compact Cassette	Slim Duct	Wall Mounted	Floor
Connector	CN6	CN6	—	—

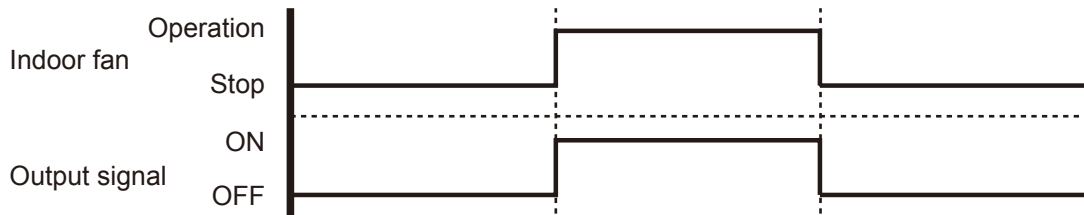
A signal linked to air conditioner indoor fan ON can be output.

* 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 33ft. (10m).



● Parts (Optional)

	Compact Cassette	Slim Duct	Wall Mounted	Floor
Parts name	Fresh air intake kit	External control set	—	—
Model name	UTZ-VXAA *1	UTD-ECS5A	—	—



Note

*1: Please prepare External control set (UTD-ESC5A) when using it excluding Fresh air intake kit (UTZ-VXAA).

■ AUXILIARY HEATER OUTPUT

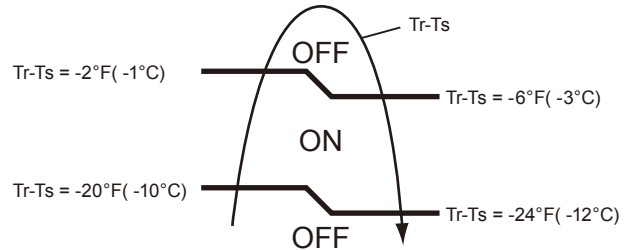
	Compact Cassette	Slim Duct	Wall Mounted	Floor
Connector	-	CN10	—	—

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 72°F(22°C)

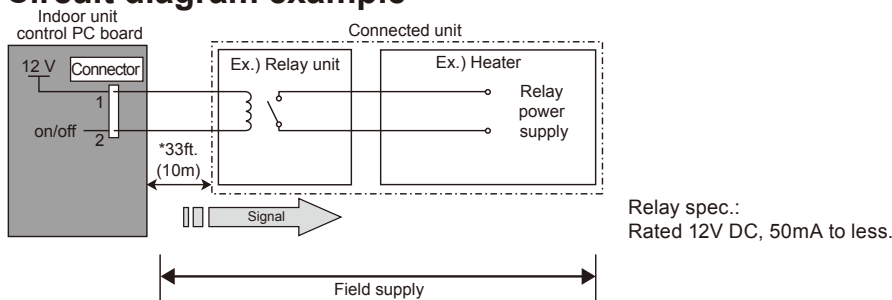
- and Room Temperature(T_r) increase above 52°F(12°C), signal output is on.
- and Room Temperature(T_r) increase above 70°F(21°C), signal output is off.
- and Room Temperature(T_r) decrease below 66°F(19°C), signal output is on.
- and Room Temperature(T_r) decrease below 48°F(10°C), signal output is off.



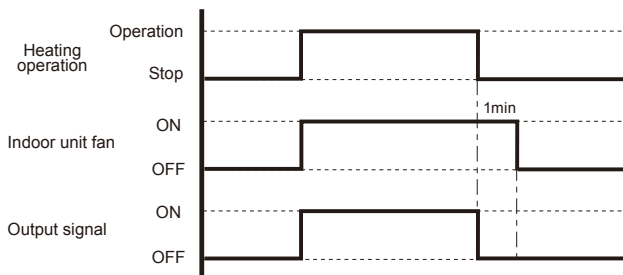
● Jumper wire (Indoor Unit)

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



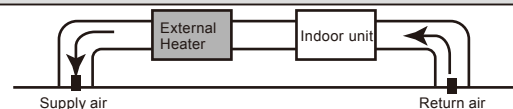
* Make the distance from the PC board to the connected unit within 33ft. (10m).



CAUTION

Please locate an external heater between the indoor unit and the outlet.

Please be sure to use delay control of a fan.



● Parts (Optional)

	Compact Cassette	Slim Duct	Wall Mounted	Floor
Parts name	—	External control set	—	—
Model name	—	UTD-ECS5A	—	—

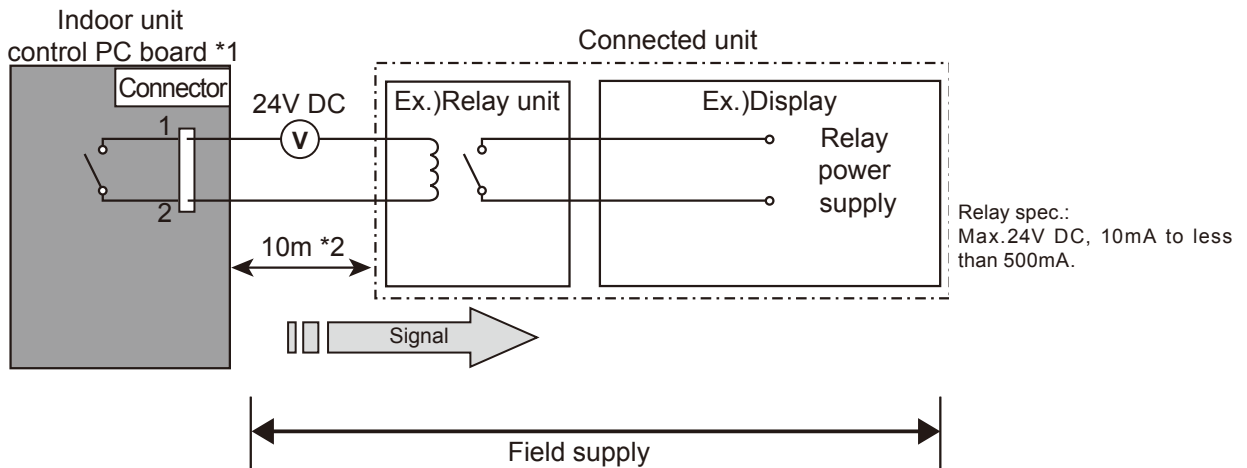


■ ERROR STATUS OUTPUT

	Compact Cassette	Slim Duct	Wall Mounted			Floor
			ASU7RLF ASU9RLF ASU12RLF	ASU9RLS2 ASU12RLS2 ASU15RLS2	ASU7RLF1 ASU9RLF1 ASU12RLF1	ASU18RLF ASU24RLF
Connector	—	—	—	CNB02	—	CN21

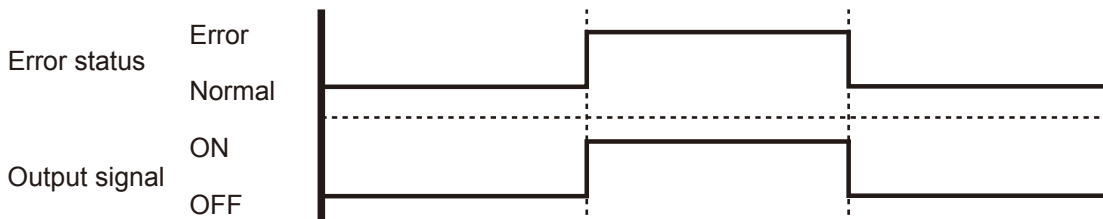
An air conditioner error status signal can be output.

● Circuit diagram example



*1 PC board of Communication kit is used for Wall mounted (ASU9RLS2, ASU12RLS2, ASU15RLS2, ASU7RLF1, ASU9RLF1, ASU12RLF1) type.

*2 Make the distance from the PC board to the connected unit within 33ft. (10m).



● Parts (Optional)

	Compact Cassette	Slim Duct	Wall Mounted			Floor
			ASU7RLF ASU9RLF ASU12RLF	ASU9RLS2 ASU12RLS2 ASU15RLS2	ASU7RLF1 ASU9RLF1 ASU12RLF1	ASU18RLF ASU24RLF
Parts name	—	—	—	External connect kit	—	External connect kit
Model name	—	—	—	UTY-XWZXZ5	—	UTY-XWZXZ5



	Compact Cassette	Slim Duct	Wall Mounted			Floor
			ASU7RLF ASU9RLF ASU12RLF	ASU9RLS2 ASU12RLS2 ASU15RLS2	ASU7RLF1 ASU9RLF1 ASU12RLF1	ASU18RLF ASU24RLF
Parts name	—	—	—	Communication kit	—	—
Model name	—	—	—	UTY-TWBXF	—	—

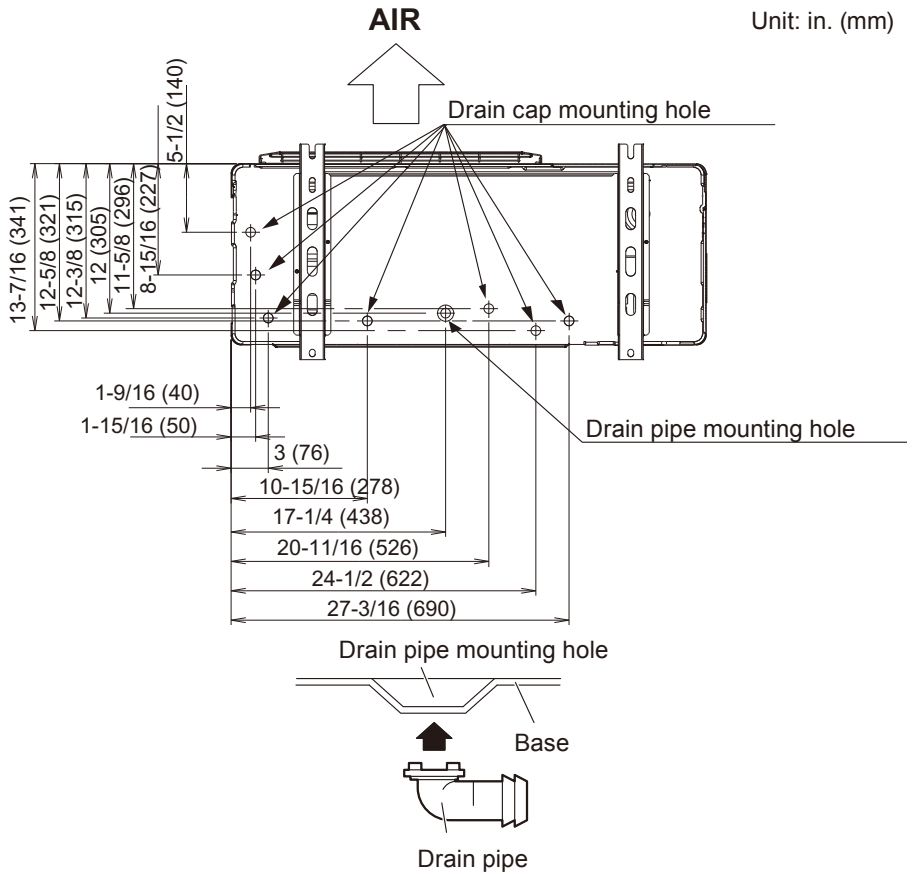
*For operating the EXTERNAL OUTPUT function, the wall mounted type requires the communication kit in addition to the wire.

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 32°F (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 5/8 inch (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.



SYSTEM DESIGN

SYSTEM DESIGN

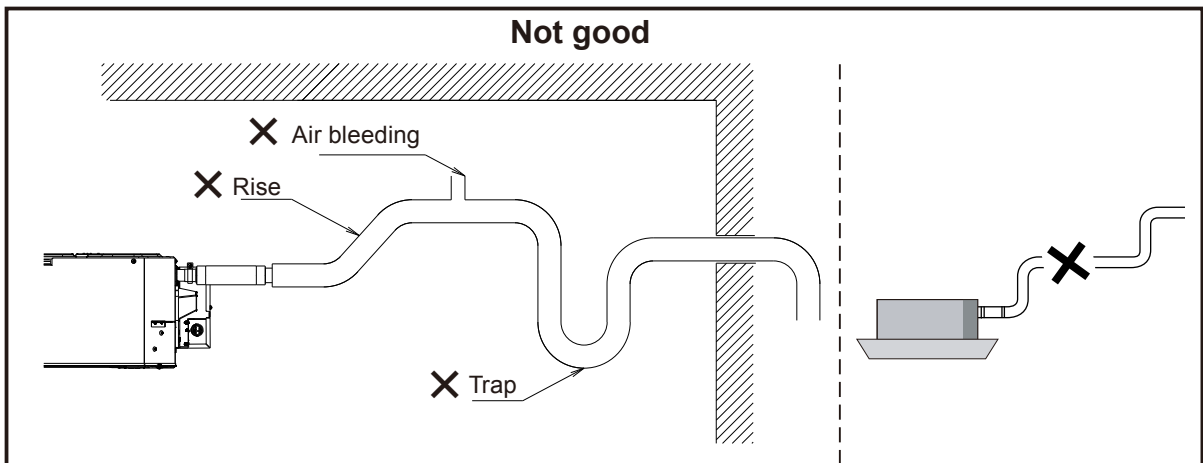
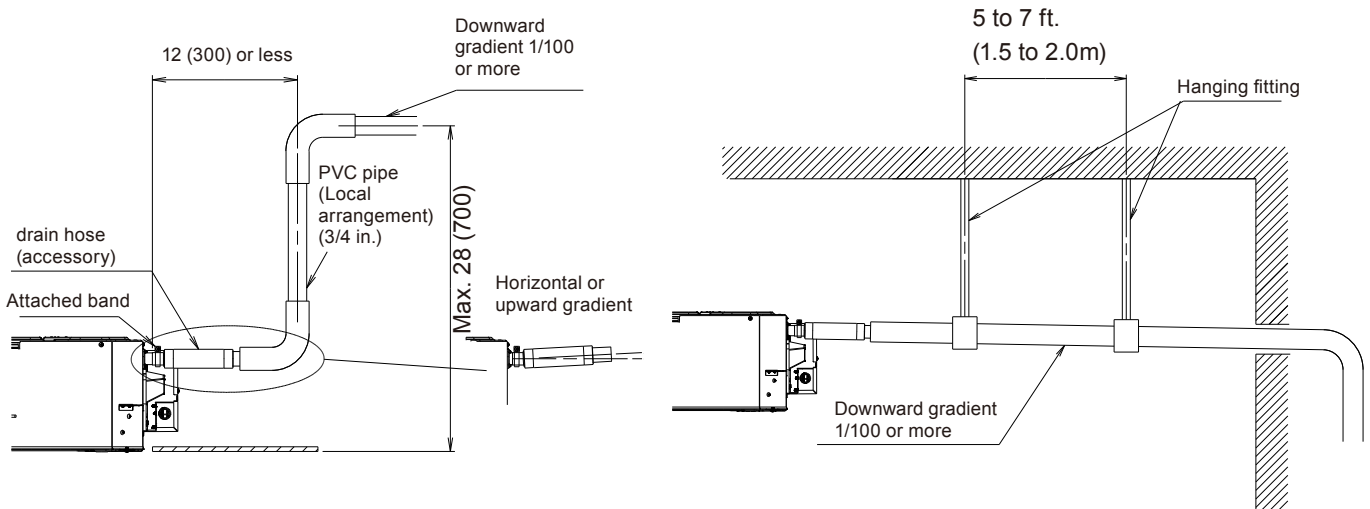
8-2. INDOOR UNIT

■ 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 5 to 7 ft. (1.5 to 2.0 m)
- 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: in. (mm)

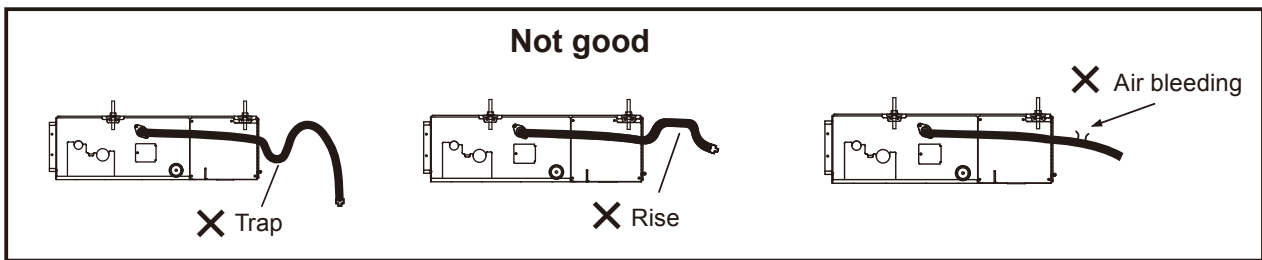
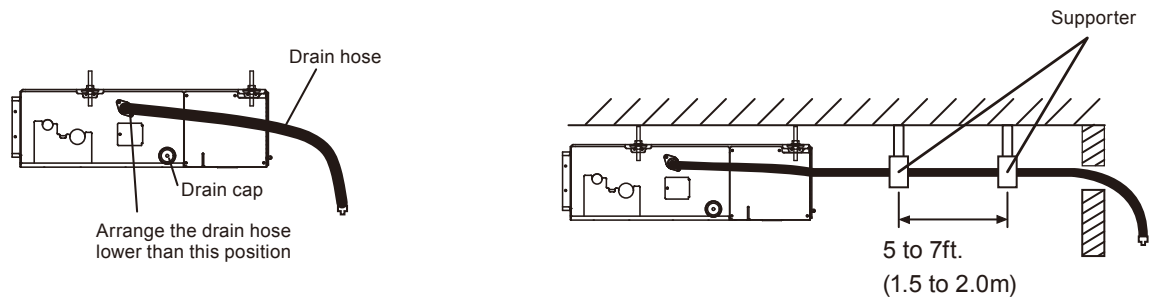


⚠ CAUTION

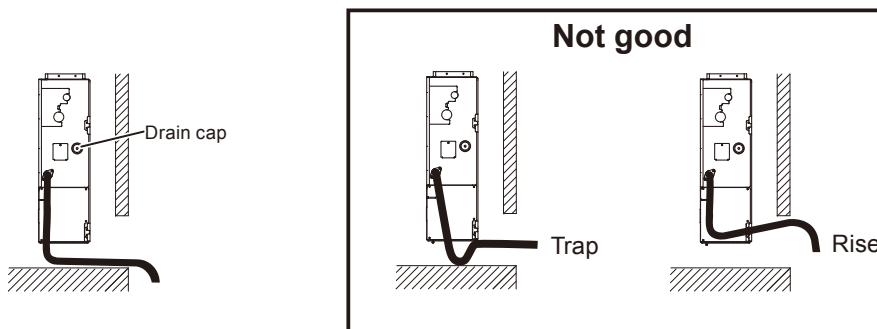
- Drain lift-up pipe restrictions:
 - (1) Lift-up height \leq 28 in. (700 mm) (from ceiling)
 - (2) Drain hose (pipe) length \leq 12 in. (300mm) (between indoor unit and lift-up pipe)
- When a dimensions exceed the above restrictions will cause water leakage.

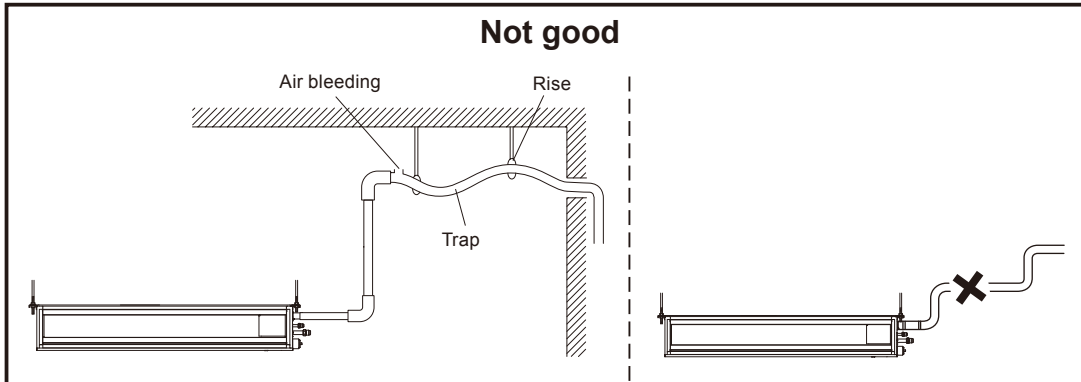
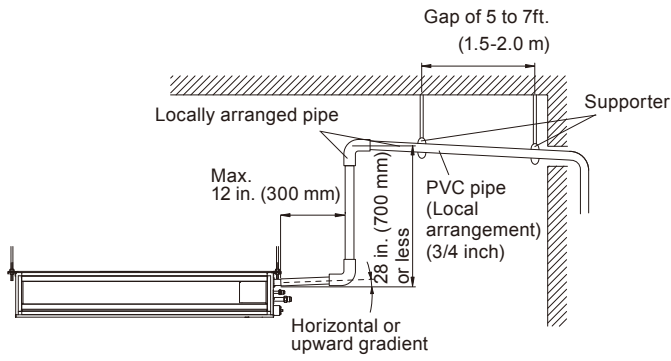
■ SLIM DUCT TYPE

● Ceiling concealed setting



● Floor standing concealed setting

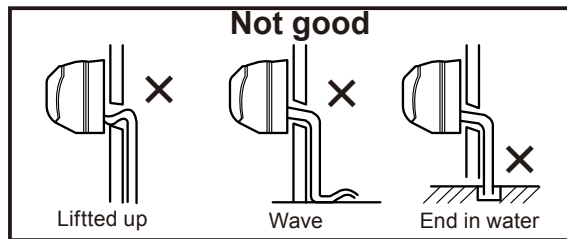
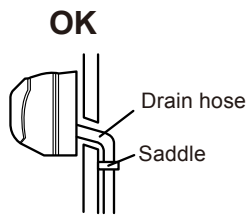
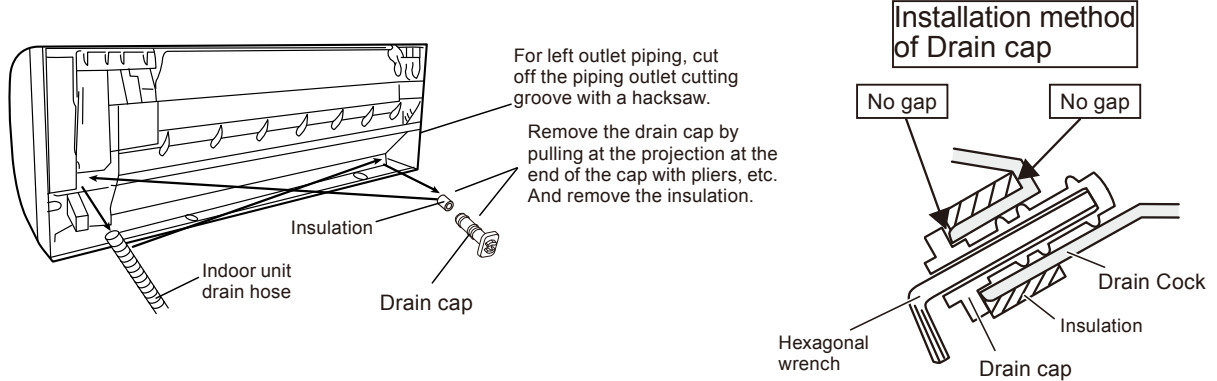




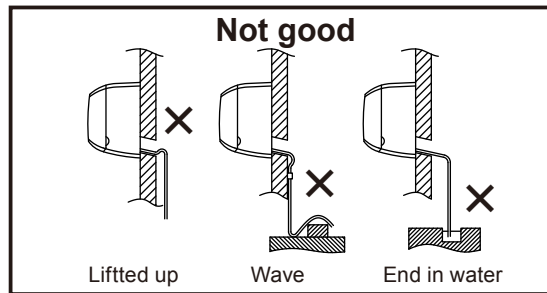
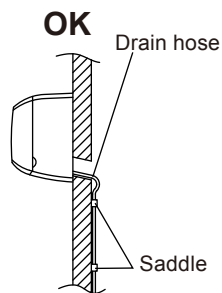
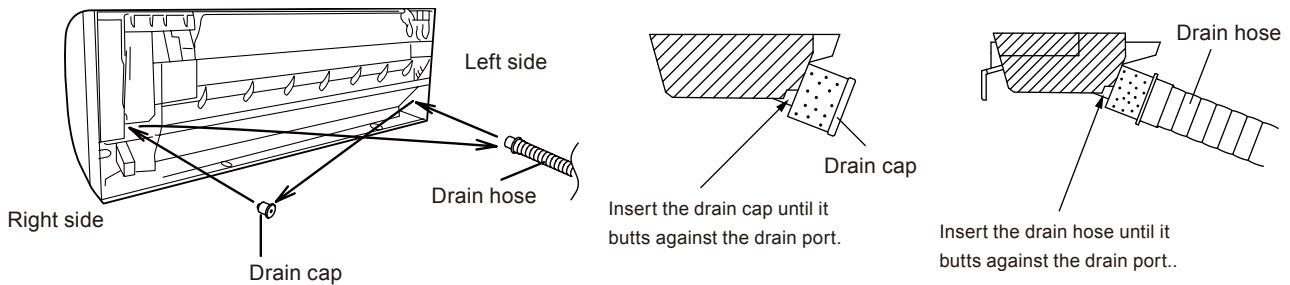
⚠ CAUTION

- Drain lift-up pipe restrictions:
 - (1) Lift-up height \leq 28 in. (700 mm) (from ceiling)
 - (2) Drain hose (pipe) length \leq 12 in. (300 mm) (between indoor unit and lift-up pipe)
- When a dimensions exceed the above restrictions will cause water leakage.

WALL MOUNTED TYPE
(ASU7RLF1, ASU9RLF1, ASU12RLF1, ASU7RLF, ASU9RLF,
ASU12RLF, ASU9RLS2, ASU12RLS2, ASU15RLS2)

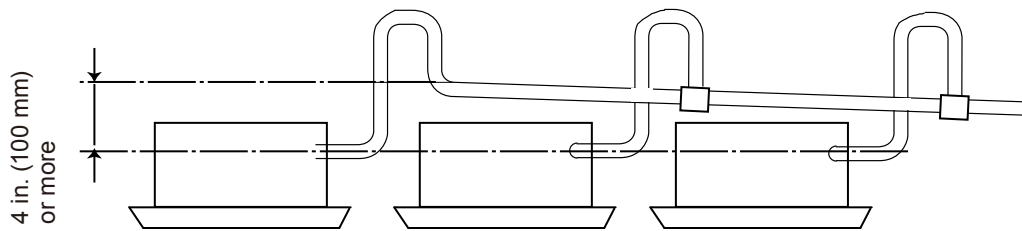
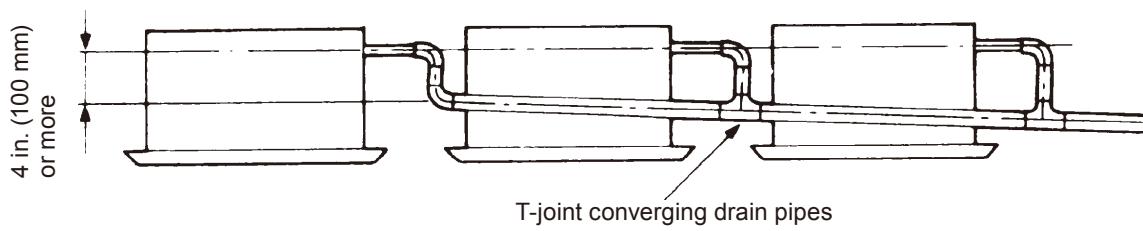


WALL MOUNTED TYPE (ASU18RLF, ASU24RLF)



■ CENTRAL DRAIN PROCESS

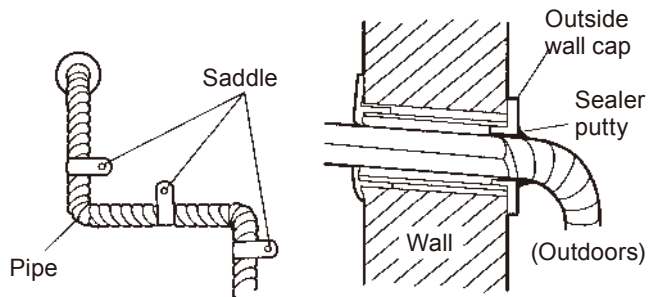
When converging multiple drain pipes, install according to the procedure shown below.



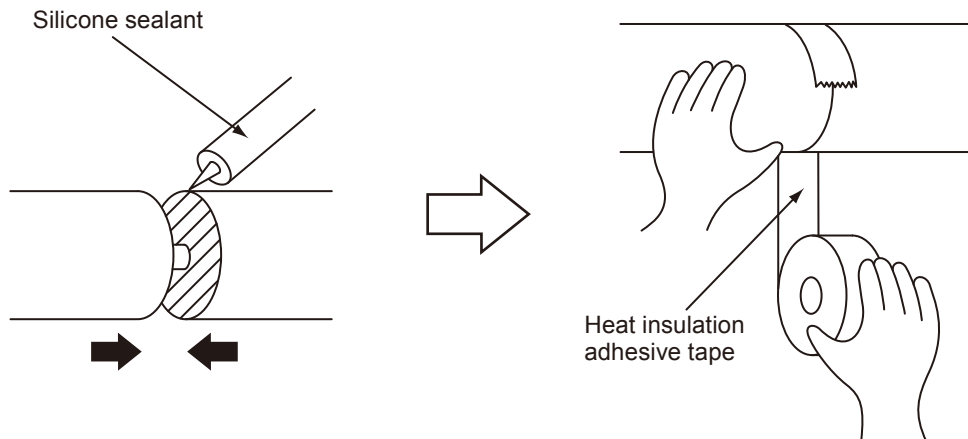
Select converging drain pipes whose diameter is suitable for the operating capacity of the unit.

■ 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 water leak part in the Drain piping.
- Please insulate it from heat by the heat insulator of enough thickness so that there is no dewy when the confirmation ends.
- Fix the drain pipe on to the wall with saddle.



- After put out 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.








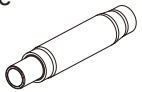

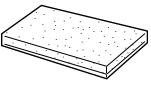



Do not discard any accessories until the installation work has been completed.

Name and shape	Q'ty	Application
Installation manual 	1	
Drain pipe 	1	For outdoor unit drain piping work
Drain cap 	7	For outdoor unit drain piping work
Wire clamper 	3	For binding power cable and connection cable
Conduit plate 	1	For conduit fixed








9-2. INDOOR UNIT

■ COMPACT CASSETTE TYPE



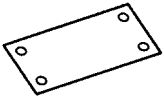


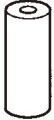
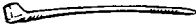
INDOOR UNIT ACCESSORIES

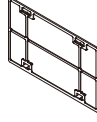
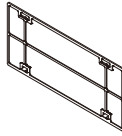
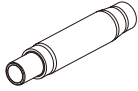





Name and shape	Q'ty	Application
Operating manual 	1	
Installation manual 	1	
Coupler heat insulation (Small) 	1	For indoor side pipe joint (Liquid pipe)
Coupler heat insulation (Large) 	1	For indoor side pipe joint (Gas pipe)
Special nut A (Large flange) 	4	For installing indoor unit
Special nut B (Small flange) 	4	For installing indoor unit
Template (Carton top) 	1	For ceiling openings cutting Also used as packing
Drain hose 	1	For installing drain pipe (3/4 inch)
Hose band 	1	For installing drain hose
Drain hose insulation 	1	For installing drain pipe
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

CASSETTE GRILLE ACCESSORIES



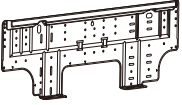

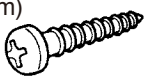

Name and shape	Q'ty	Application
Connector cover 	1	For covering connector
Tapping screw (M5 x 12mm) 	4	For mounting cassette grille
Tapping screw (M4 x 12mm) 	1	For mounting connector cover
L angle 	2	For mounting the Hook wire to the Cassette grille
Hook wire 	2	For suspending the Cassette grille
Screw [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)

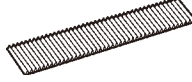

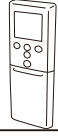


■ SLIM DUCT TYPE

Name and shape	Q'ty	Application
Operating manual 	1	
Installation manual 	1	
Installation template 	1	For positioning the indoor unit
Washer 	8	For installing indoor unit
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 	Medium 3	For power supply and transmission and remote control cable binding.
	Large 4	For fixing the coupler heat insulation.

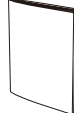

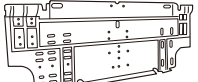
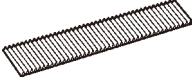

Name and shape	Q'ty	Application
Filter (Small) 	2 (AR9/ 12/24)	
Filter (Big) 	2 (AR18)	
	1 (AR24)	
Drain hose 	1	For installing drain pipe (3/4 inch)
Hose band 	1	For installing drain hose
Drain hose insulation B 	1	Insulates the drain hose
Wired remote controller 	1	
Remote controller cable 	1	For connecting the Wired remote controller
Tapping screw (M4 x 16mm) 	2	For installing the Wired remote controller

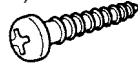
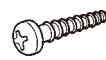



■ WALL MOUNTED TYPE (ASU7RLF1, ASU9RLF1, ASU12RLF1)

Name and shape	Q'ty	Application
Operating manual 	1	
Installation manual 	1	
Wall hook bracket 	1	For indoor unit installation
Cloth tape 	1	For indoor unit installation
Tapping screw (M4 x 25mm) 	5	For wall hook bracket installation
Tapping screw (M3 x 12mm) 	2	



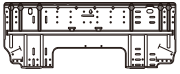

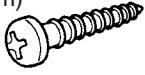

Name and shape	Q'ty	Application
Air cleaning filter 	2	
Filter holders 	2	
Wireless remote controller 	1	
Battery 	2	
Wireless remote controller holder 	1	


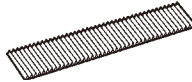
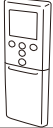


■ WALL MOUNTED TYPE (ASU7RLF, ASU9RLF, ASU12RLF)

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



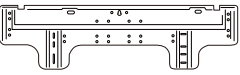

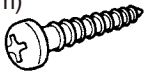

Name and shape	Q'ty	Application
Tapping screw (M4 x 25mm) 	8	For wall hook bracket installation
Tapping screw (M3 x 12mm) 	2	
Wireless remote controller 	1	
Battery 	2	
Wireless remote controller holder 	1	


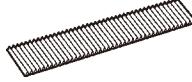
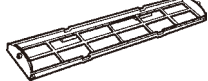



■ WALL MOUNTED TYPE (ASU9RLS2, ASU12RLS2, ASU15RLS2)

Name and shape	Q'ty	Application
Operating manual 	1	
Installation manual 	1	
Wall hook bracket 	1	For indoor unit installation
Cloth tape 	1	For indoor unit installation
Tapping screw (M4 x 25mm) 	5	For wall hook bracket installation
Tapping screw (M3 x 12mm) 	2	



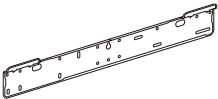

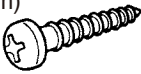

Name and shape	Q'ty	Application
Seal A 	1	It is used when the diameter of gas pipe is $\varnothing 12.70$ or more. It is necessary when using AS15.
Air cleaning filter 	2	
Wireless remote controller 	1	
Battery 	2	
Wireless remote controller holder 	1	


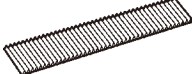
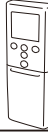


■ WALL MOUNTED TYPE (ASU18RLF, ASU24RLF)

Name and shape	Q'ty	Application
Operating manual 	1	
Installation manual 	1	
Wall hook bracket 	1	For indoor unit installation
Cloth tape 	1	For indoor unit installation
Tapping screw (M4 x 25mm) 	8	For wall hook bracket installation
Tapping screw (M3 x 12mm) 	2	

Name and shape	Q'ty	Application
Drain hose Insulation 	1	For installing drain hose
Air cleaning filter 	2	
Air cleaning filter frame 	2	
Wireless remote controller 	1	
Battery 	2	
Wireless remote controller holder 	1	

■ FLOOR TYPE (AGU9RLF, AGU12RLF, AGU15RLF)

Name and shape	Q'ty	Application
Operating manual 	1	
Installation manual 	1	
Wall hook bracket 	1	For indoor unit installation
Cloth tape 	1	For indoor unit installation
Tapping screw (M4 x 25mm) 	9	For wall hook bracket installation
Tapping screw (M3 x 12mm) 	2	

Name and shape	Q'ty	Application
Cable tie 	1	
Air cleaning filter 	2	
Wireless remote controller 	1	
Battery 	2	
Wireless remote controller holder 	1	

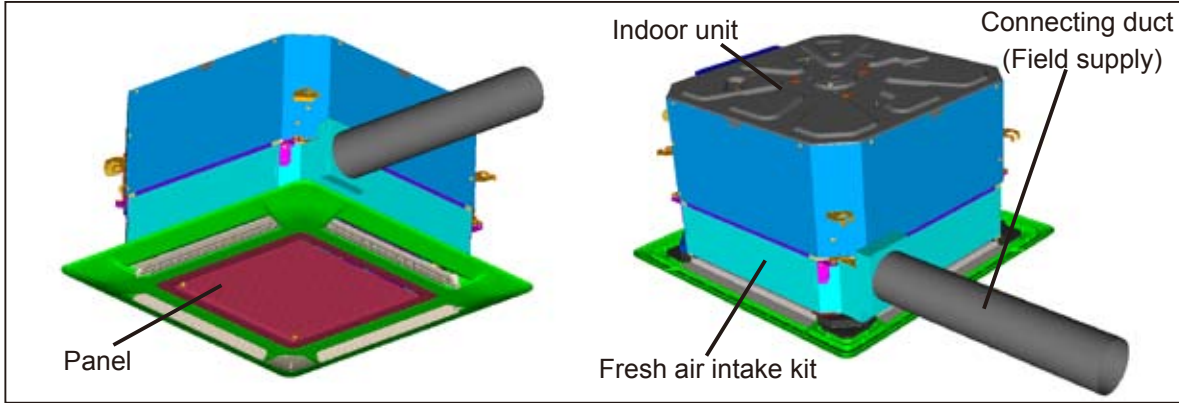
10. OPTIONAL PARTS INSTALLATION

10-1. FRESH AIR INTAKE KIT

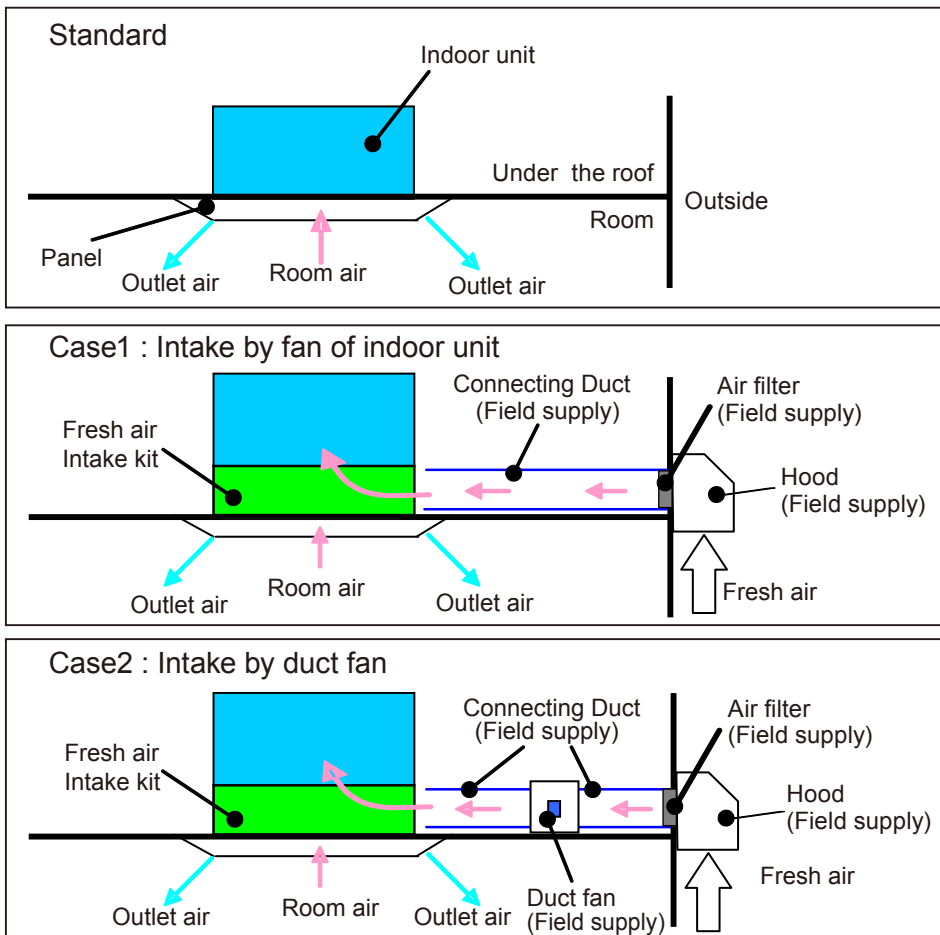
■ MODEL : UTZ-VXAA

■ FEATURE

- It can be taken in fresh air of up to 10% of "high" air volume of the indoor unit by attaching Fresh Air Intake Kit to cassette type indoor unit.



■ INSTALLATION EXAMPLE



■ SPECIFICATIONS

Model name			UTZ-VXAA
Fresh air intake	Max. fresh air intake volume	%(for High)	10
Connection duct type		in. (mm)	ø 3-15/16 (100)
		Pcs	1
Dimension (HxWxD)	Net	in. (mm)	4-3/4 x 22-7/16 x 22-7/16 (120 x 570 x 570)
	Gross		6-1/2 x 23-1/16 x 23-1/16 (165 x 585 x 585)
Weight	Net	lbs. (kg)	8 (3.5)
	Gross		12 (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 all 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 as 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 it 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 32°F (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

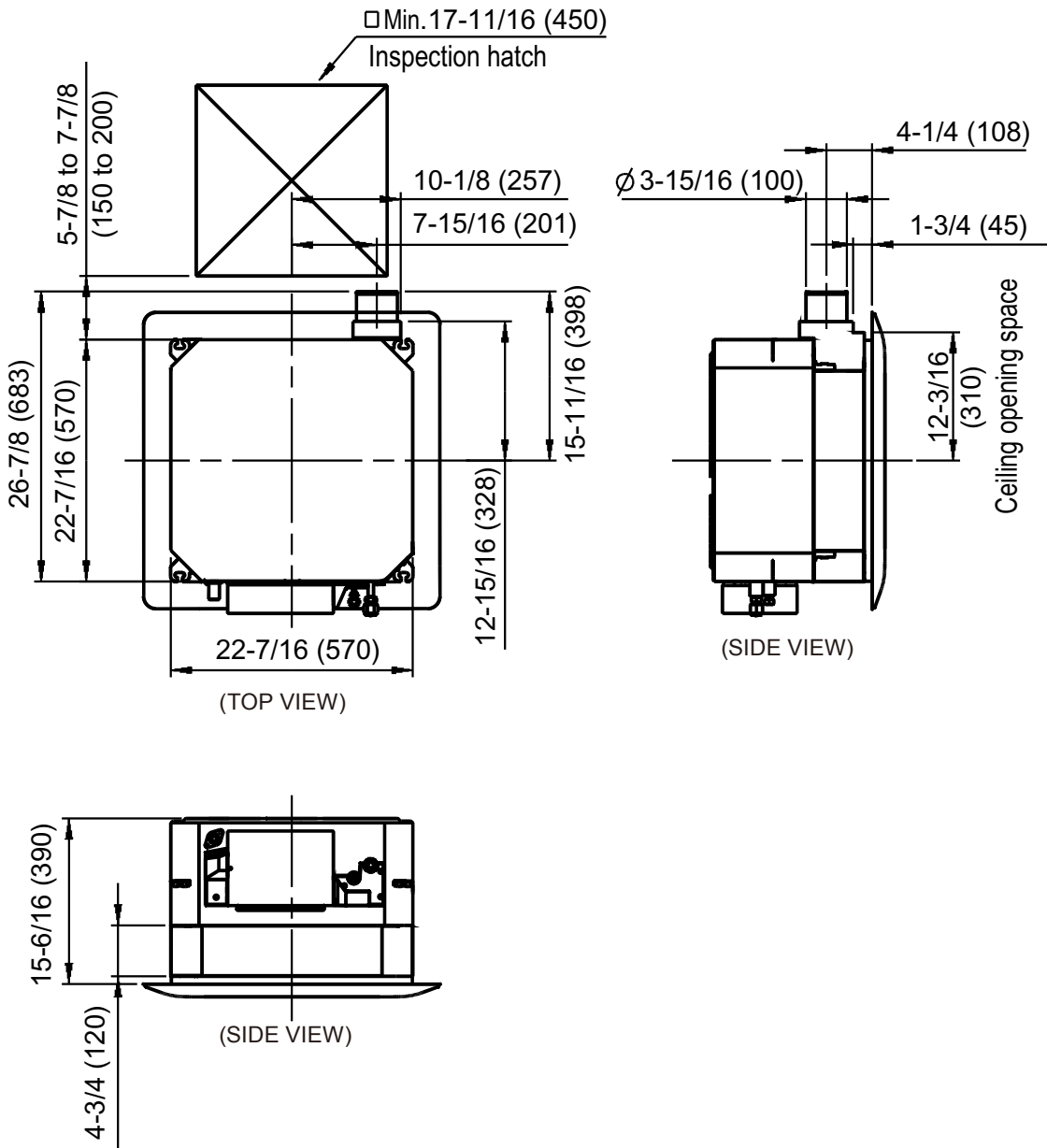
- When installing the duct fan, connect the drive relay (field supplied) and operate with the indoor unit.
- Please ensure the intake air volume is below 10% of the product's air volume HI. When the intaken air volume becomes too large there the operating noise may increase and room temperature detection 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 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.

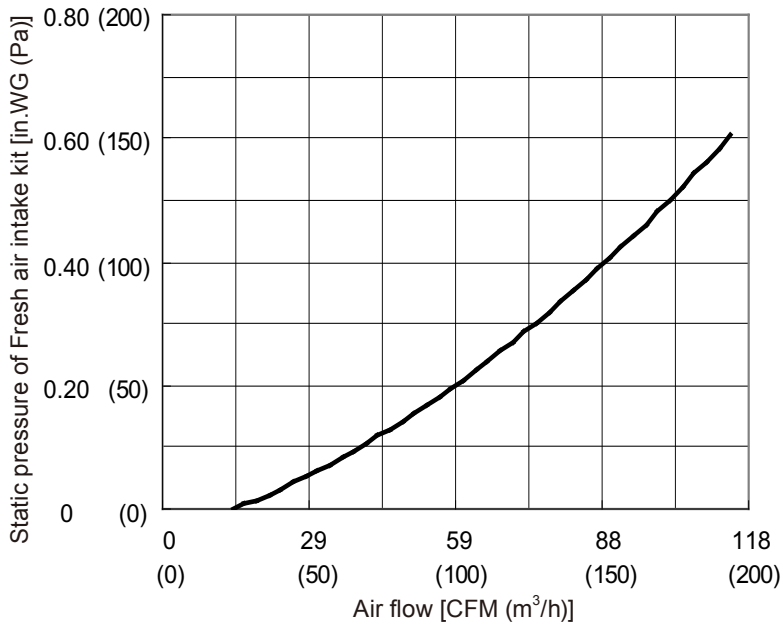
■ DIMENSIONS

Unit : in. (mm)

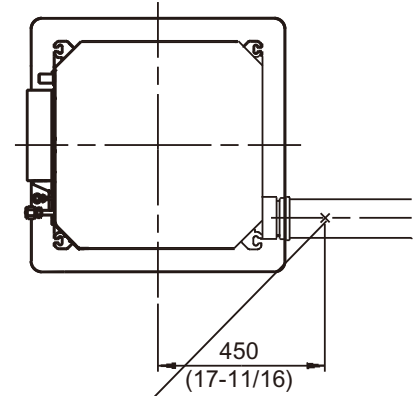


- When installing this kit, inspection hatch is necessary. (It is necessary when servicing.)

■ AIR FLOW



Unit : in. (mm)



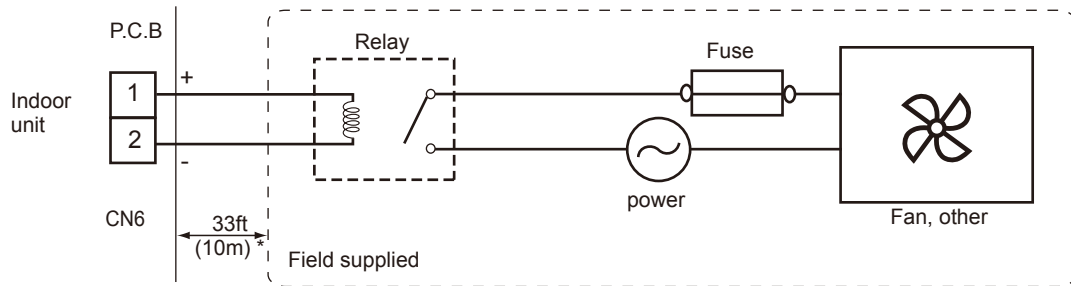
Measurement position of shown in the graph

■ 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. 33ft. (10m)

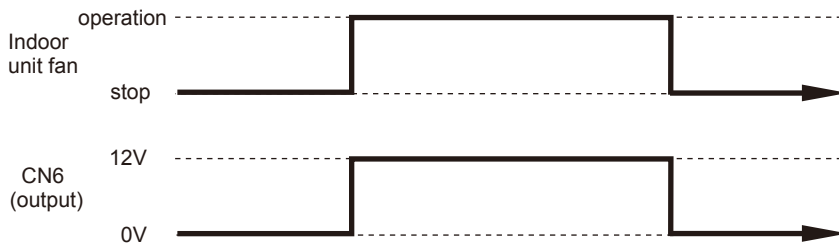
● Connection diagram

- For Relay Output voltage : DC12V \pm 2V
Permissible current : 15mA



*:Make the distance from the PC board to the Relay Unit within 33ft. (10m)



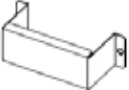


● Indoor unit status








● Wire (External output ①)



■ ACCESSORY PARTS

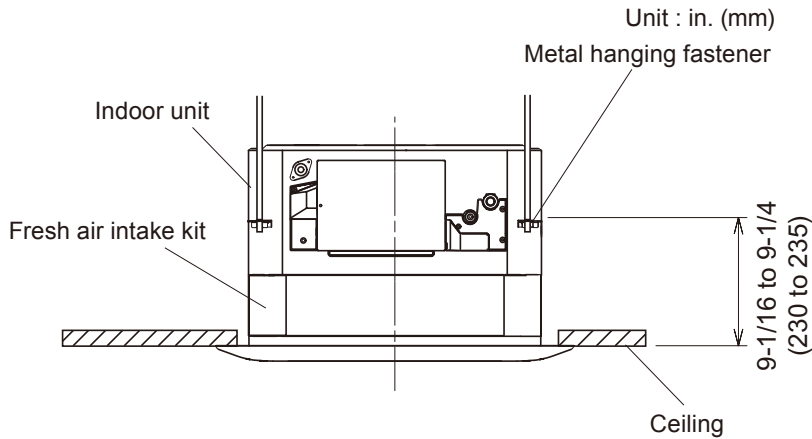
Name and shape	Q'ty	Application
Installation manual 	1	
Chamber 	1	Air joint for connection duct
Wire cover 	1	Cover for extension wire
Screw 	4	Attaching for chamber Attaching for wire cover
Extension wire for louver 	2	Extension wire for louver

Name and shape	Q'ty	Application
Extension wire for receiver kit 	1	Extension wire for receiving kit
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)
Bolt 	4	For attaching kit to indoor unit
Cable tie 	1	For fixing wire

■ INSTALLATION

● Mounting of indoor unit

- Please refer to the installation manual provided with the indoor unit for mounting.
- Please refer to the diagram below for installation height.
- When installing this product to existing indoor units, please adjust the installation height of the indoor units to height 9-1/16 to 9-1/4 in. (230 to 235 mm)

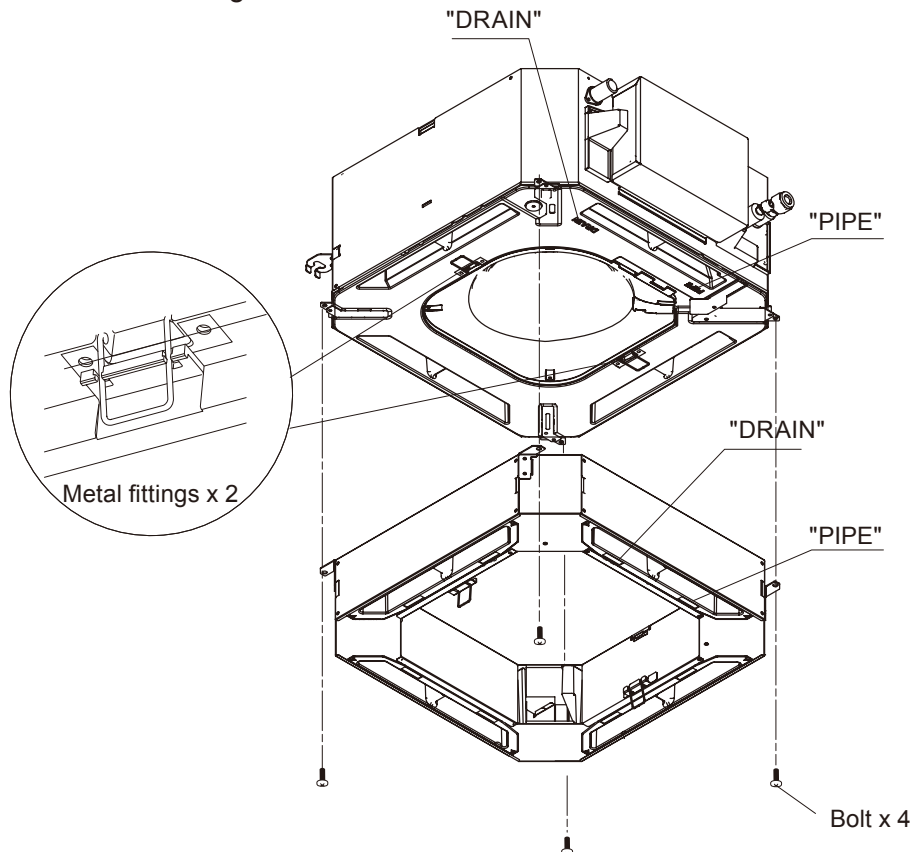


● Installation of the fresh air intake kit

⚠ CAUTION

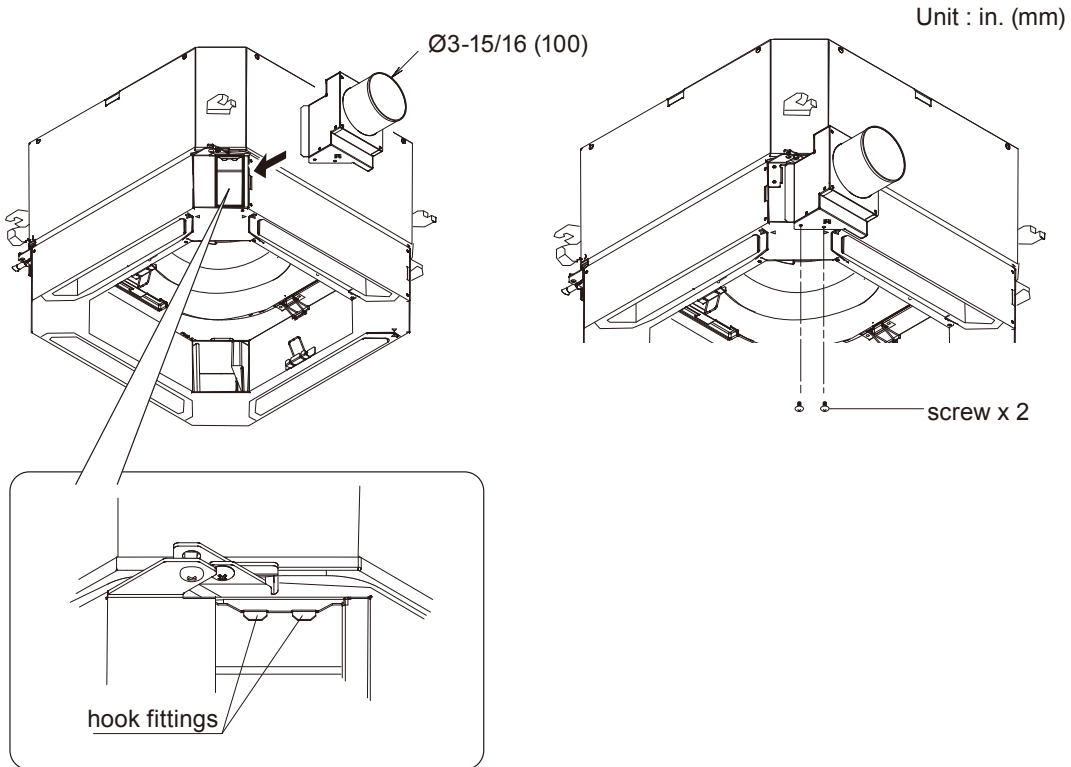
Installing the Fresh Air Intake Kit with the wrong direction is a cause of water leakage.

- Provisionally attach the "DRAIN", "PIPE" of the Fresh Air Intake Kit to the indoor unit foam-sealed "DRAIN", "PIPE", following the direction of the indoor unit, using the metal fittings of the combined diagram.

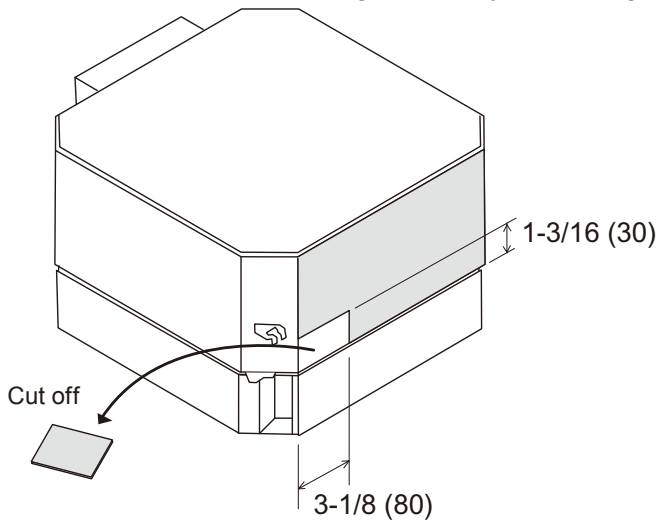


● Chamber installation

Fit the four-sided holes of the chamber together with the hook fittings of the Fresh Air Intake Kit (in two places), and secure the attached chamber in place with screws provided.



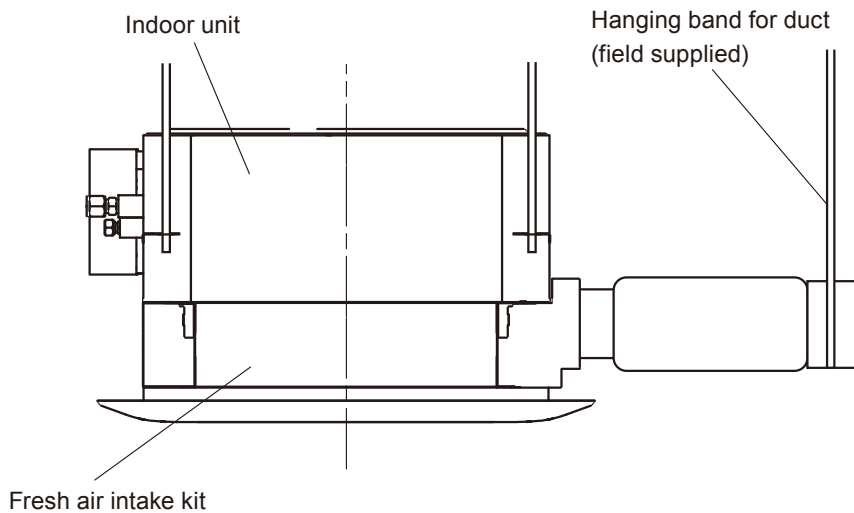
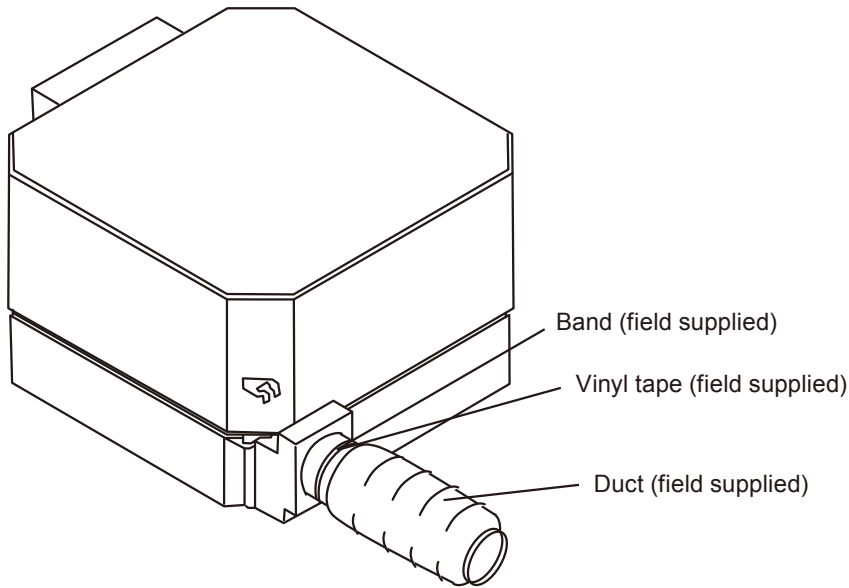
- When using the “UTZ-KXGC” kit for high humidity, please first cut off and remove the heat insulation as shown in the figure.
- Please install the kit for high humidity according to the installation instruction sheet provided.



● Duct installation

- Please fasten the connecting parts of the ducts with band, and wrap with vinyl tape to ensure no air leaks. [Carry out the work to ensure no air leakage at a pressure of 0.80in.WG (200 Pa)]
- Please do not construct the duct in the manner of below.
 - Extreme Bends
 - Highly Repetitive Bends
 - Making the Connecting Duct Diameters Smaller

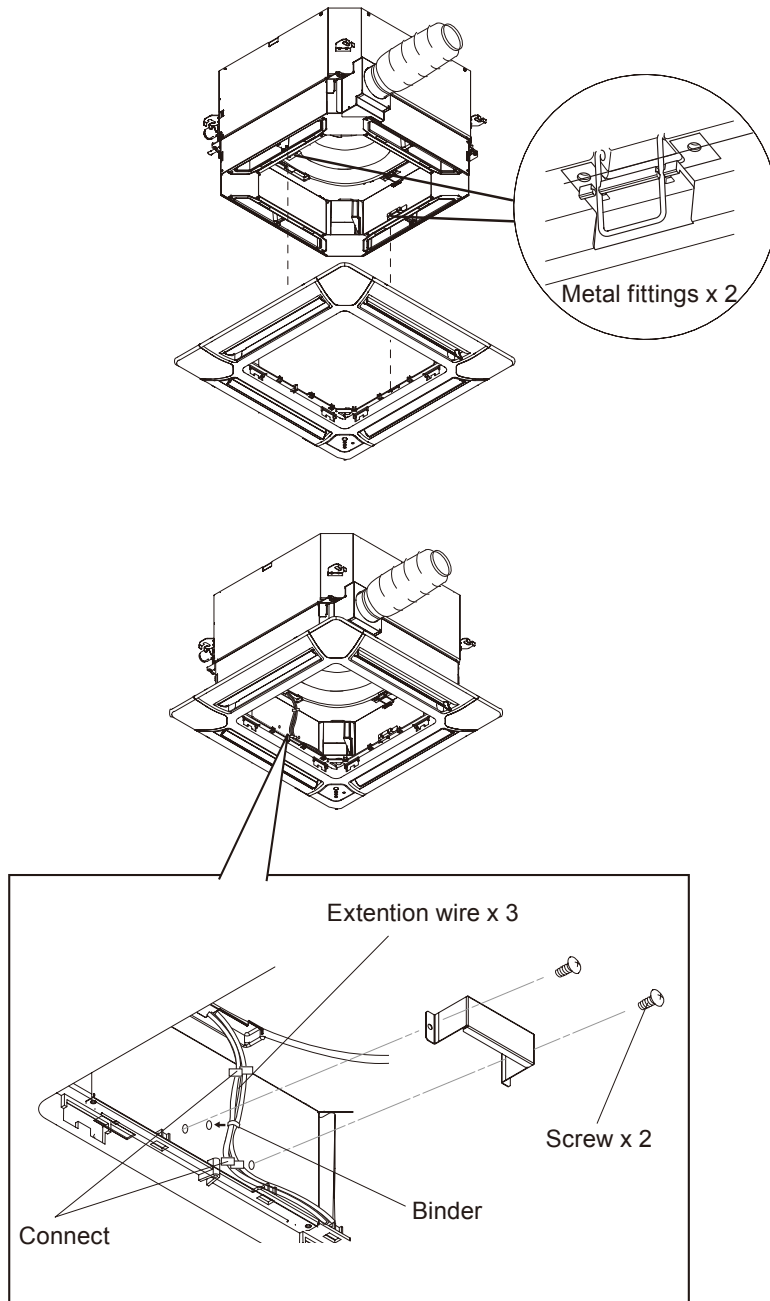
Completion figure



When wiring of the duct fan is required please refer to “■FRESH AIR CONTROL OUTPUT”.

● Installation of cassette grille

- 1) Please connect extension wires for use with louvers, or extension wire for optical receiver after provisional attaching of the cassette grille.
- 2) Tie the wires together with the fasteners provided and insert into the hole of the Fresh Air Intake Kit.
- 3) Install the wire-cover provided on the Fresh Air Intake Kit.
- 4) Please install cassette grille according to the installation instruction sheet provided.



11. REFRIGERANT CONCENTRATION PRECAUTIONS

The system designer and installer are to ensure that the system adheres to all local regulations regarding refrigerant leakage.

11-1. INTRODUCTION

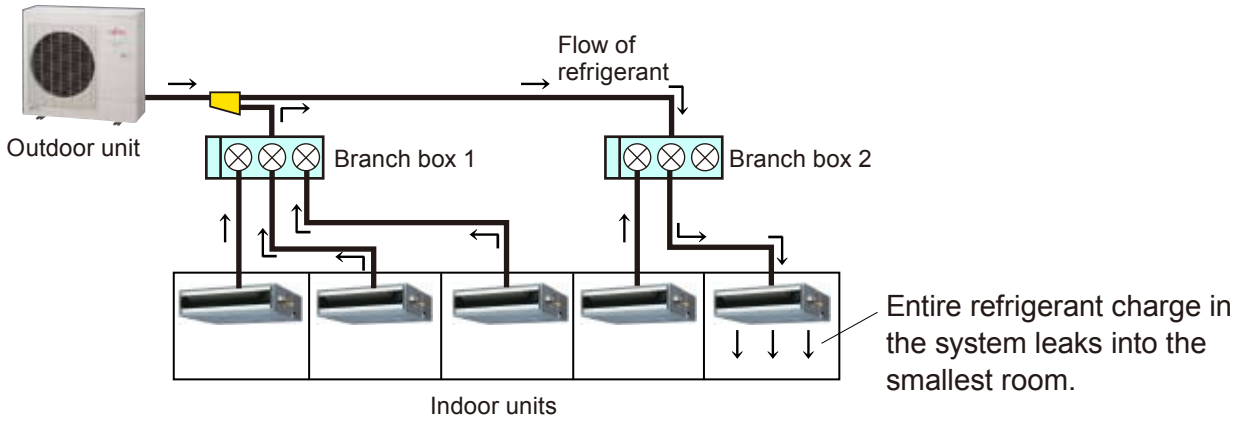
Designing HFI systems requires special attention to codes and standards relating to Refrigeration Concentration Limit (RCL). The RCL is intended to “reduce the risks of acute toxicity, asphyxiation and flammability hazards in normally occupied, enclosed spaces”. Because R-410A is neither toxic nor flammable; the primary safety concern is asphyxiation due to oxygen deprivation.

● Concentration limit

The purpose of the concentration limit is to protect occupants in the unlikely event that the entire refrigerant system leaks into the smallest room served by the system. To calculate the potential refrigerant concentration, divide the total refrigerant in the system by the volume of the smallest space served by the system.

The Concentration Limit for R-410A : 25lbs./1,000 ft³ (0.40kg/m³)*.

*Based on ASHRAE 34-2007 and IMC-2009



11-2. CHECKING CONCENTRATION LIMIT

Check concentration limit following steps ①②, and take appropriate measures depending on the situation.

① Calculate amount of refrigerant [lbs. (kg)] per refrigerant system.

Amount of refrigerant per refrigerant system	+	Amount of additional refrigerant	=	Total amount of refrigerant in system (lbs, kg)
--	---	----------------------------------	---	---

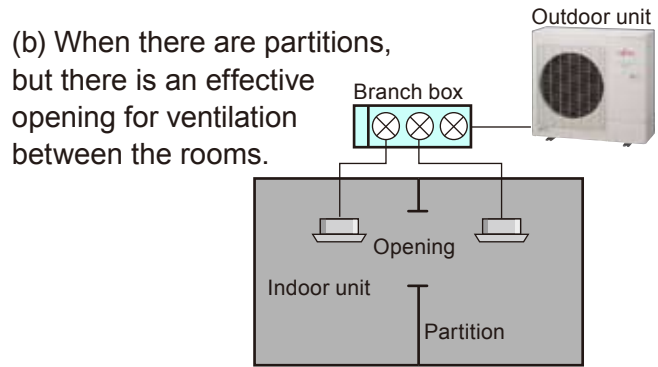
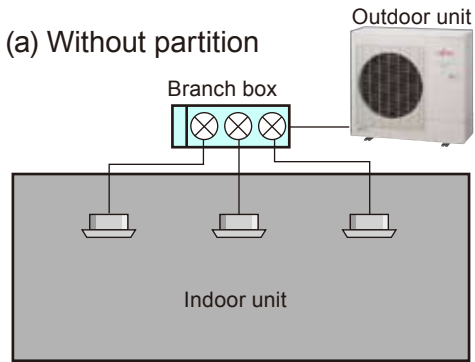
Amount of factory charged refrigerant

Amount of refrigerant added to system based on pipe length, pipe size and indoor units.

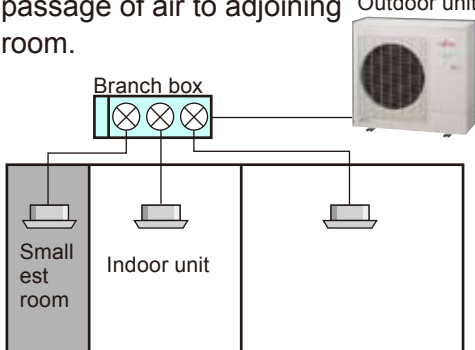
Note: When one refrigerant system is divided into 2 or more refrigerant systems and each system is independent, total amount of refrigerant of each system shall be adopted.

② Smallest room volume.

Calculate room volume by regarding portion as one room or the smallest room.



(c) With partition and without opening which serve as passage of air to adjoining room.



③ Calculate refrigerant concentration from the results of ① and ②

$$\frac{\text{Total amount of refrigerant in refrigerant system (lbs,kg)}}{\text{Capacity of smallest room where indoor unit is installed [cf (m}^3\text{)]}} \leq \text{Refrigerant concentration [lb/Mcf (kg/m}^3\text{)]}$$

(R410A)

When the result of calculation exceeds the limiting concentration, perform the same calculations by shifting to the second smallest, and the third smallest rooms until the final result is below the limiting concentration.

11-3. REFRIGERATION CONCENTRATION COUNTERMEASURES

When the concentration limit is exceeded, the designer will need to change the original design or use one of the countermeasures below to reduce potential exposure to refrigerant. Always consult local codes to ensure proper design.

- Countermeasure 1

Provide opening for ventilation.

Provide 0.15% or more opening to floor space both above and below or provide opening without door. (0.15% floor opening based on standard ceiling height of 8.8 ft. (2.7m))

- Countermeasure 2

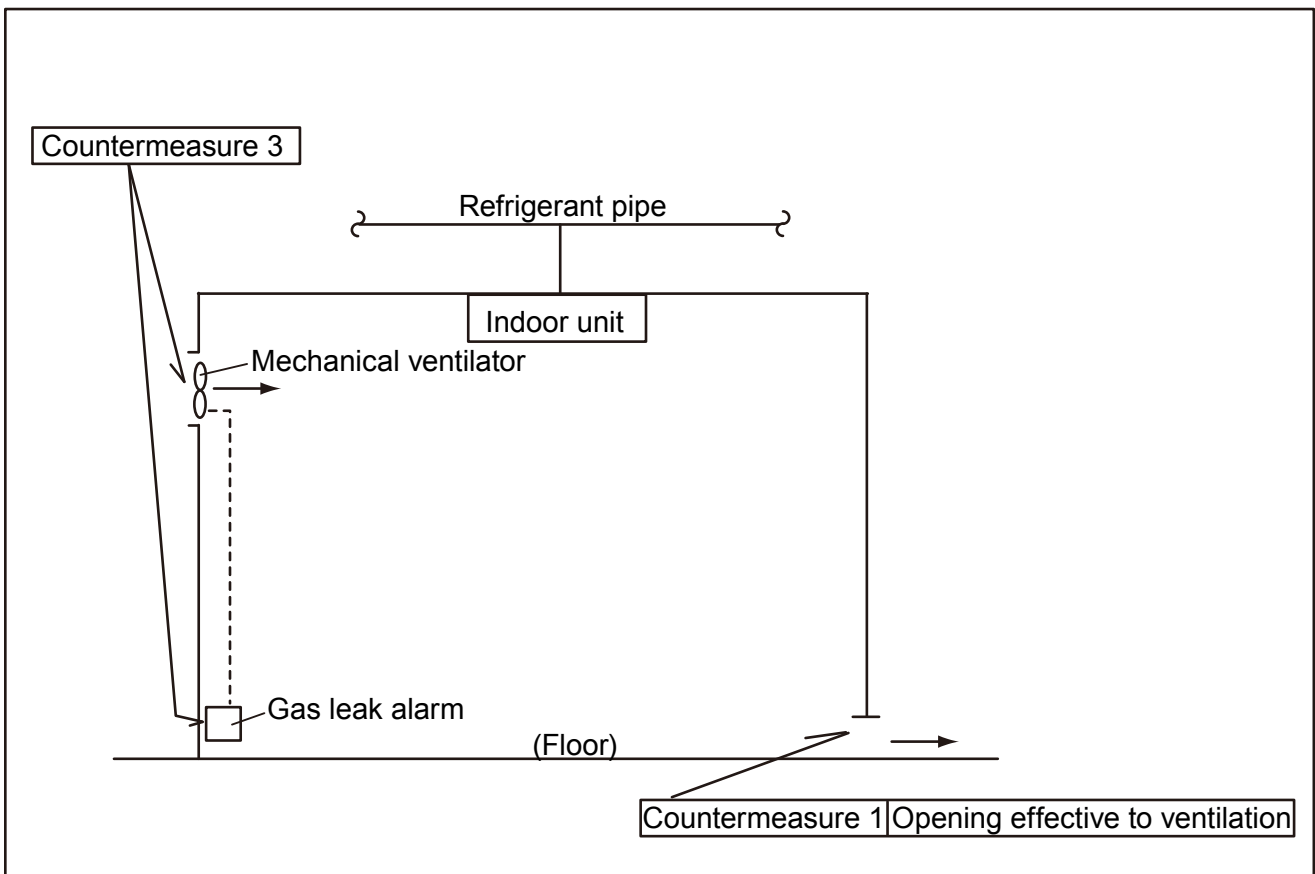
Reduce the total refrigerant charging amount of the refrigerant equipment

(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. If using the mechanical ventilator, The back up power supply is required.



Pay special attention to areas where refrigerant can accumulate (like a basement), 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 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	<p>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.</p> <p>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.</p>	<ol style="list-style-type: none"> 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.	<p>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.</p> <p>In this case, your feet will feel cold even if the room temperature is suitable.</p>	
When the air flow distribution is poor	<p>When an indoor unit is installed in a position where the outlet air flow will directly contact people, a draft may be felt.</p> <p>In addition, when there are obstructions in the path of the intake and outlet air flow, the air distribution may become extremely bad.</p>	<ol style="list-style-type: none"> 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>

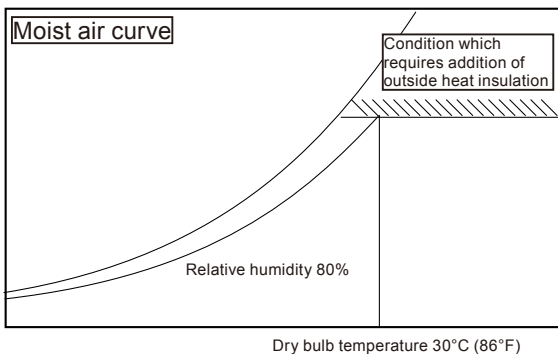


Fig.A

Work method when reinforcing the heat insulation of on-site piping

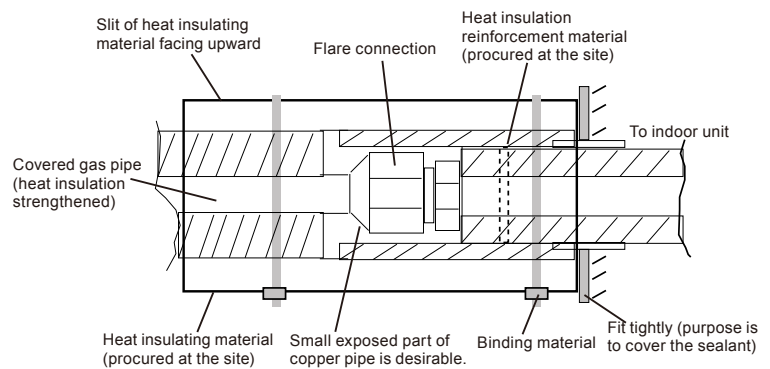


Fig.B

	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 1 in. (25mm) 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 was 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. If the indoor unit does not receive the signals, consult an authorized service personnel.
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 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.

Hybrid Flex Inverter System

7. OPTIONAL PARTS

CONTENTS

7. OPTIONAL PARTS

1. SEPARATION TUBE	07 - 01
2. BRANCH BOX.....	07 - 02
3. CONTROLLER	07 - 04
4. CASSETTE GRILLE.....	07 - 05
5. OTHERS	07 - 06

1. SEPARATION TUBE

■ MODEL : UTP-SX248A

Unit: in. (mm)

● Port diameters

Liquid pipe	Q'ty	Gas pipe	Q'ty
<p>ø 3/8 (9.52)</p>	1	<p>ø 5/8 (15.88)</p>	1

● Heat insulation

For liquid pipe	Q'ty	For gas pipe	Q'ty
	1		1

● Dimensions

Liquid pipe	Gas pipe
<p>15-3/16 (386)</p> <p>3-5/32 (80)</p>	<p>14-13/16 (376)</p> <p>3-9/16 (90)</p>

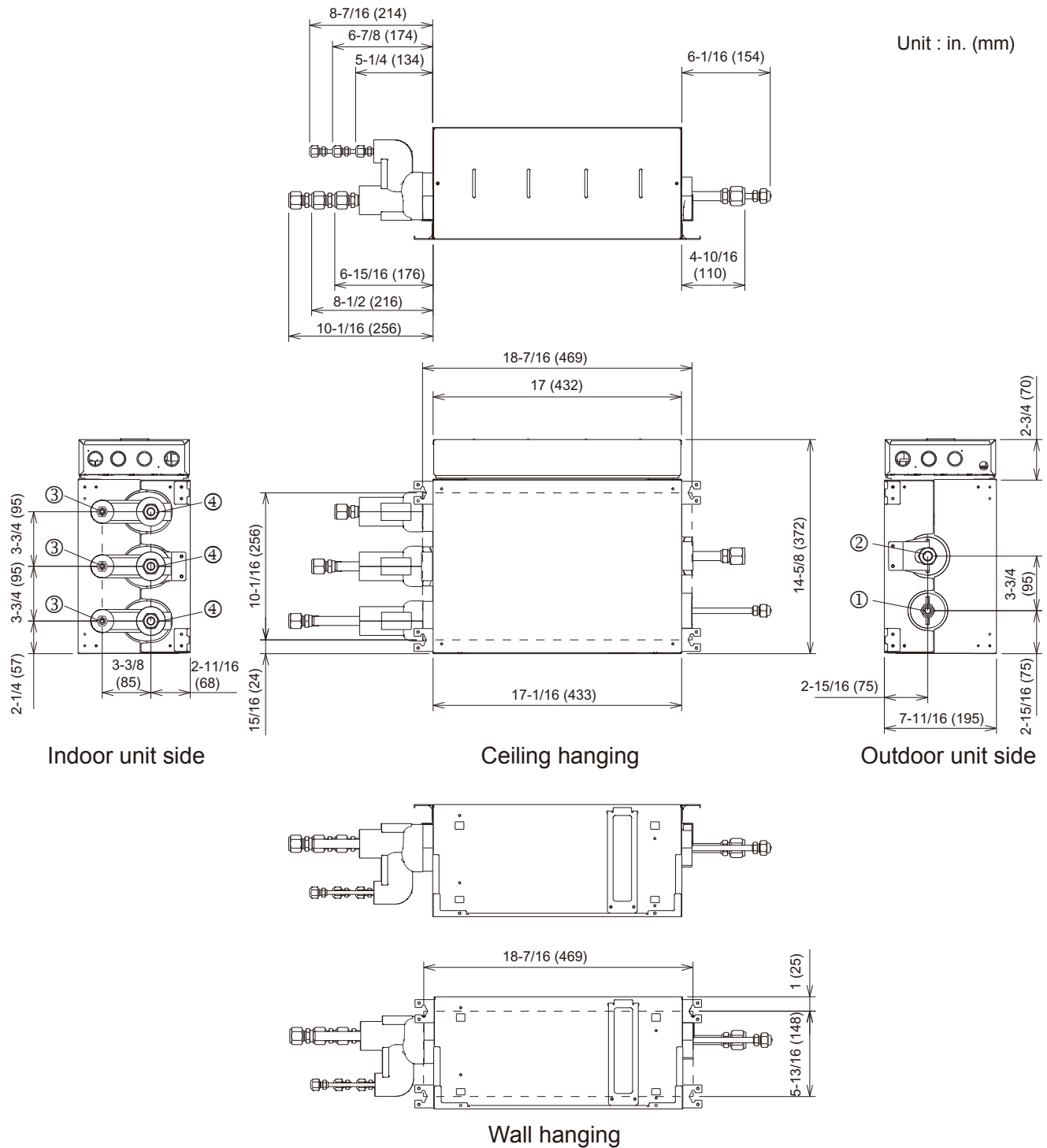
OPTIONAL PARTS

OPTIONAL PARTS

2. BRANCH BOX

Model	Type
UTP-PU03A	Primary
UTP-PU03B	Secondary



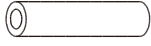


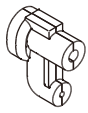

■ DIMENSION



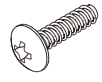
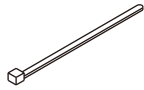





■ PIPE DIAMETER

①	Main pipe	Liquid pipe	ø 3/8 in. (9.52 mm)
②		Gas pipe	ø 5/8 in. (15.88 mm)
③	Branch pipe	Liquid pipe	ø 1/4 in. (6.35 mm)
④		Gas pipe	ø 1/2 in. (12.70 mm)

■ ACCESSORIES

Name and Shape	Q'ty	Application
Installation Manual 	1	
Coupler heat insulation (large) 	4	For indoor and outdoor side pipe joint (gas pipe)
Coupler heat insulation (small) 	4	For indoor and outdoor side pipe joint (liquid pipe)
Insulation (long) 	3	For use on the section where the insulation fits onto this equipment (indoor unit side)
Insulation (short) 	3	For use on the section where the insulation fits onto this equipment (outdoor unit side)
Insulation 	3	To be used with this equipment's (indoor unit side) piping
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	For remote controller cable binding
Seal 	1	To prevent small animals from entering inside
Adapter 1/2 in.(12.7 mm)→ 3/8 in.(9.52 mm) 	3	For indoor unit connection
Adapter 1/2 in.(12.7 mm)→ 5/8 in.(15.88 mm) 	3	For indoor unit connection

3. CONTROLLER

LINE UP

Type	Model	Indoor units						
		Compact Cassette	Slim Duct	Floor	Wall mounted			
					ASU7RLF1 ASU9RLF1 ASU12RLF1	ASU7RLF ASU9RLF ASU12RLF	ASU9RLS2 ASU12RLS2 ASU15RLS2	ASU18RLF ASU24RLF
Central remote controller	UTY-DMMUM	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1	○ *1
Wired Remote Controller	UTY-RNNUM	●	●	○	○ *4	○ *2	○ *3	○
Simple Remote Controller	UTY-RSNUM	○	○	○	○ *4	○ *2	○ *3	○
Wireless Remote Controller	UTY-LNHUM	○	-	-	-	-	-	●
	AR-RAH1U	-	-	-	-	●	-	-
	AR-RED1U	-	-	-	-	-	●	-
	AR-REG1U	-	-	●	●	-	-	-
IR Receiver Unit	UTY-LRHUM	-	○	-	-	-	-	-

●: Accessory, ○: Optional, -: It is not possible to connect it.

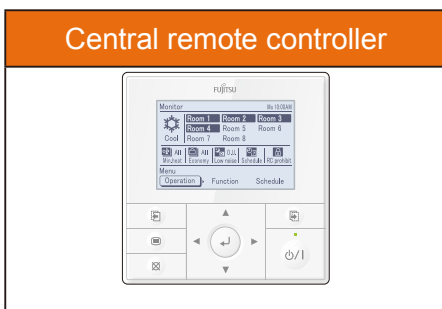
*1: Central remote controller is connected to Branch Box.

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

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

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

CENTRAL CONTROL



INDIVIDUAL CONTROL

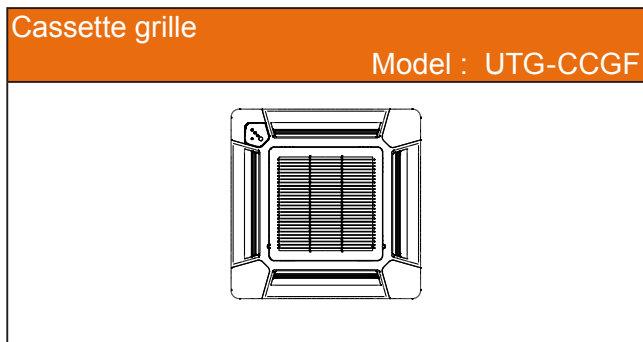
Wired Remote Controller				Simple Remote Controller	
Wireless Remote Controller				IR Receiver Unit	
UTY-LNHUM	AR-RAH1U	AR-RED1U	AR-REG1U		

4. CASSETTE GRILLE

■ LINE UP

Type	Model	Indoor units						
		Compact Cassette	Slim Duct	Floor	Wall mounted			
					ASU7RLF1 ASU9RLF1 ASU12RLF1	ASU7RLF ASU9RLF ASU12RLF	ASU9RLS2 ASU12RLS2 ASU15RLS2	ASU18RLF ASU24RLF
Cassette grille	UTG-CCGF	○	-	-	-	-	-	-

■ PARTS



5. OTHERS

■ LINE UP

Type	Model	Indoor units							Outdoor unit
		Compact Cassette	Slim Duct	Floor	Wall mounted				
					ASU7RLF1 ASU9RLF1 ASU12RLF1	ASU7RLF ASU9RLF ASU12RLF	ASU9RLS2 ASU12RLS2 ASU15RLS2	ASU18RLF ASU24RLF	
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	-	○	-
External connect kit	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 UTD-GXSC-W	-	○	-	-	-	-	-	-
Communication kit	UTY-XCBXZ1	-	-	-	-	○	-	-	-
	UTY-XCBXZ2	-	-	-	○	-	-	-	-
	UTY-TWBXF	-	-	-	-	-	○	-	-

○: Optional, -: It is not possible to connect it.


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

*2: Optional Communication kit (UTY-XCBXZ2) is necessary for the installation

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

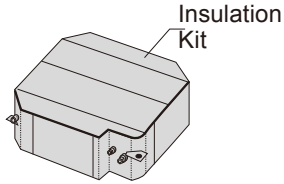
■ PARTS

Air outlet shutter plate Models : UTR-YDZB



For Compact Cassette type

Insulation kit for high humidity Model : UTZ-KXGC



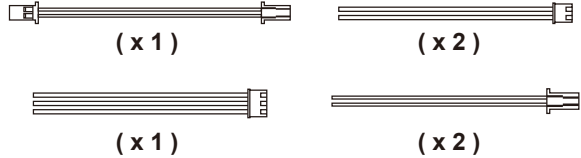
For Compact Cassette type

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



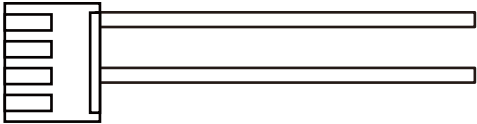
For Compact Cassette, Wall Mounted (ASU7RLF, ASU9RLF, ASU12RLF, ASU18RLF, ASU24RLF) type

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 (ASU7RLF1, ASU9RLF1, ASU12RLF1, ASU9RLS2, ASU12RLS2, ASU15RLS2) type, Floor type

Auto louver grille kit Models : UTD-GXSA-W *1
UTD-GXSB-W *2
UTD-GXSC-W *3



*1 For Slim Duct (7-12 models)
*2 For Slim Duct (18 model)
*3 For Slim Duct (24 model)

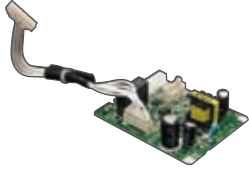
Remote sensor unit Model : UTY-XSZX



For Slim Duct type

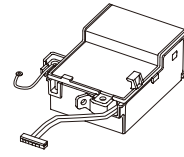
■ PARTS

Communication kit
Model : UTY-XCBXZ1



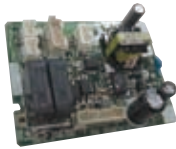
For Wall Mounted
(ASU7RLF, ASU9RLF, ASU12RLF) type

Communication kit
Model : UTY-XCBXZ2



For Wall Mounted
(ASU7RLF1, ASU9RLF1, ASU12RLF1) type

Communication kit
Model : UTY-TWBXF



For Wall Mounted
(ASU9RLS2, ASU12RLS2, ASU15RLS2) type

Hybrid Flex Inverter System



FUJITSU GENERAL LIMITED

1116, Suenaga, Takatsu-ku, Kawasaki 213-8502, Japan

URL : <http://www.fujitsu-general.com>

Copyright© 2010-2013 Fujitsu General Limited. All rights reserved.

Product specifications are subject to change without notice.

Printed in Japan 2013.12.18