

AIR CONDITIONER

**Cassette type**

# DESIGN & TECHNICAL MANUAL

---

---

INDOOR



AUXG24KVLA

---

OUTDOOR



AOYG24KBTB

---

FUJITSU GENERAL LIMITED

**Notices:**

- Product specifications and design are subject to change without notice for future improvement.
- For further details, please check with our authorized dealer.

**Trademarks**

FGLair™ is trademark of Fujitsu General Limited in the United States, other countries or both.

Google Play™ is trademark of Google Inc.

App Store® is a service mark of Apple Inc., registered in the U.S. and other countries.

# CONTENTS

---

<b>Part 1. INDOOR UNIT</b> .....	<b>1</b>
<b>1. Specifications</b> .....	<b>2</b>
<b>2. Dimensions</b> .....	<b>4</b>
2-1. Model: AUXG24KVLA.....	4
2-2. Installation space requirement.....	5
<b>3. Wiring diagram</b> .....	<b>6</b>
3-1. Model: AUXG24KVLA.....	6
<b>4. Capacity table</b> .....	<b>7</b>
4-1. Cooling capacity.....	7
4-2. Heating capacity.....	7
<b>5. Fan performance</b> .....	<b>8</b>
5-1. Air velocity distributions.....	8
5-2. Airflow.....	10
<b>6. Operation noise (sound pressure)</b> .....	<b>12</b>
6-1. Noise level curve.....	12
6-2. Sound level check point.....	13
<b>7. Safety devices</b> .....	<b>14</b>
<b>8. External input and output</b> .....	<b>15</b>
8-1. External input.....	15
8-2. External output.....	16
8-3. Combination of external input and output.....	17
8-4. Details of function.....	18
<b>9. Function settings</b> .....	<b>21</b>
9-1. Function settings on indoor unit.....	21
9-2. Function settings by using remote controller.....	23
<b>10. Accessories</b> .....	<b>28</b>
10-1. Model: AUXG24KVLA.....	28
<b>11. Optional parts</b> .....	<b>29</b>
11-1. Controllers.....	29
11-2. Cassette grille.....	30
11-3. Others.....	31

## CONTENTS (continued)

---

<b>Part 2. OUTDOOR UNIT</b> .....	<b>33</b>
<b>1. Specifications</b> .....	<b>34</b>
<b>2. Dimensions</b> .....	<b>35</b>
2-1. Model: AOYG24KBTB .....	35
<b>3. Installation space</b> .....	<b>36</b>
3-1. Model: AOYG24KBTB .....	36
<b>4. Refrigerant circuit</b> .....	<b>39</b>
4-1. Model: AOYG24KBTB .....	39
<b>5. Wiring diagrams</b> .....	<b>40</b>
5-1. Model: AOYG24KBTB .....	40
<b>6. Capacity compensation rate for pipe length and height difference</b> .....	<b>41</b>
6-1. Model: AOYG24KBTB .....	41
<b>7. Additional charge calculation</b> .....	<b>42</b>
7-1. Model: AOYG24KBTB .....	42
<b>8. Airflow</b> .....	<b>43</b>
8-1. Model: AOYG24KBTB .....	43
<b>9. Operation noise (sound pressure)</b> .....	<b>44</b>
9-1. Noise level curve.....	44
9-2. Sound level check point .....	44
<b>10. Electrical characteristics</b> .....	<b>45</b>
<b>11. Safety devices</b> .....	<b>46</b>
<b>12. Accessories</b> .....	<b>47</b>
12-1. Model: AOYG24KBTB .....	47

# Part 1. INDOOR UNIT

---

**CASSETTE TYPE:  
AUXG24KVLA**

# 1. Specifications

Type				Cassette	
				Inverter heat pump	
Model name				AUXG24KVLA	
Power supply				230 V ~ 50 Hz	
Power supply intake				Outdoor unit	
Available voltage range				198—264 V	
Capacity	Cooling	Rated	kW	6.80	
			Btu/h	23,200	
		Min.—Max.	kW	0.90—8.00	
	Heating	Rated	Btu/h	3,100—27,300	
			kW	7.50	
		Min.—Max.	Btu/h	25,600	
			kW	0.90—9.10	
			Btu/h	3,100—31,000	
Input power	Cooling	Rated	kW	2.21	
				Max.	3.09
	Heating	Rated		2.03	
				Max.	2.70
Current	Cooling	Rated	A	9.7	
	Heating			8.9	
Power factor	Cooling	%			
	Heating	98.7			
EER	Cooling	kW/kW			
COP	Heating	3.69			
Moisture removal			L/h (pints/h)	2.7 (4.8)	
Maximum operating current *1	Cooling	A			
	Heating	13.6			
Fan	Airflow rate	Cooling	m <sup>3</sup> /h	HIGH	
				MED	
				LOW	
				QUIET	
		Heating		HIGH	
	MED				
	LOW				
	QUIET				
	QUIET				
	Type × Q'ty			Turbo × 1	
Motor output			W		
Sound pressure level *2	Cooling	HIGH	dB (A)	930	
				830	
				600	
				450	
	Heating	HIGH		930	
				860	
				700	
				530	
				530	
				530	
Heat exchanger type	Dimensions (H × W × D)		mm	Main1: 210 × 1,360 × 13.3	
				Main2: 210 × 1,295 × 13.3	
				Main3: 210 × 1,235 × 13.3	
	Fin pitch			1.45	
	Rows × Stages			1 × 10	
	Pipe type			Copper tube	
Fin type		Aluminum			
Dimensions (H × W × D)	Net		mm	245 × 570 × 570	
	Gross			265 × 730 × 625	
Weight	Net		kg	16	
	Gross			20	
Connection pipe	Size	Liquid	mm (in)	Ø 6.35 (Ø1/4)	
		Gas		Ø12.70 (Ø1/2)	
	Method		Flare		
Operation range	Cooling	°C		18 to 32	
		%RH		80 or less	
	Heating	°C		16 to 30	
Cassette grille (Grid type: Option)	Material		Polystyrene		
	Color		White		
			Approximate color of Munsell 9PB 9.1/0.2		
	Dimensions (H × W × D)	Net	mm	49 × 620 × 620	
		Gross		120 × 765 × 755	
	Weight	Net	kg	2.3	
Gross		4.5			
Remote control (Option)	Wired remote controller, Wireless remote controller, Mobile app*3 (FGLair™)				
Drain hose	Material		PVC		
	Size		mm		
		VP25 [Ø25(I.D.), Ø32(O.D.)]			

## NOTES:

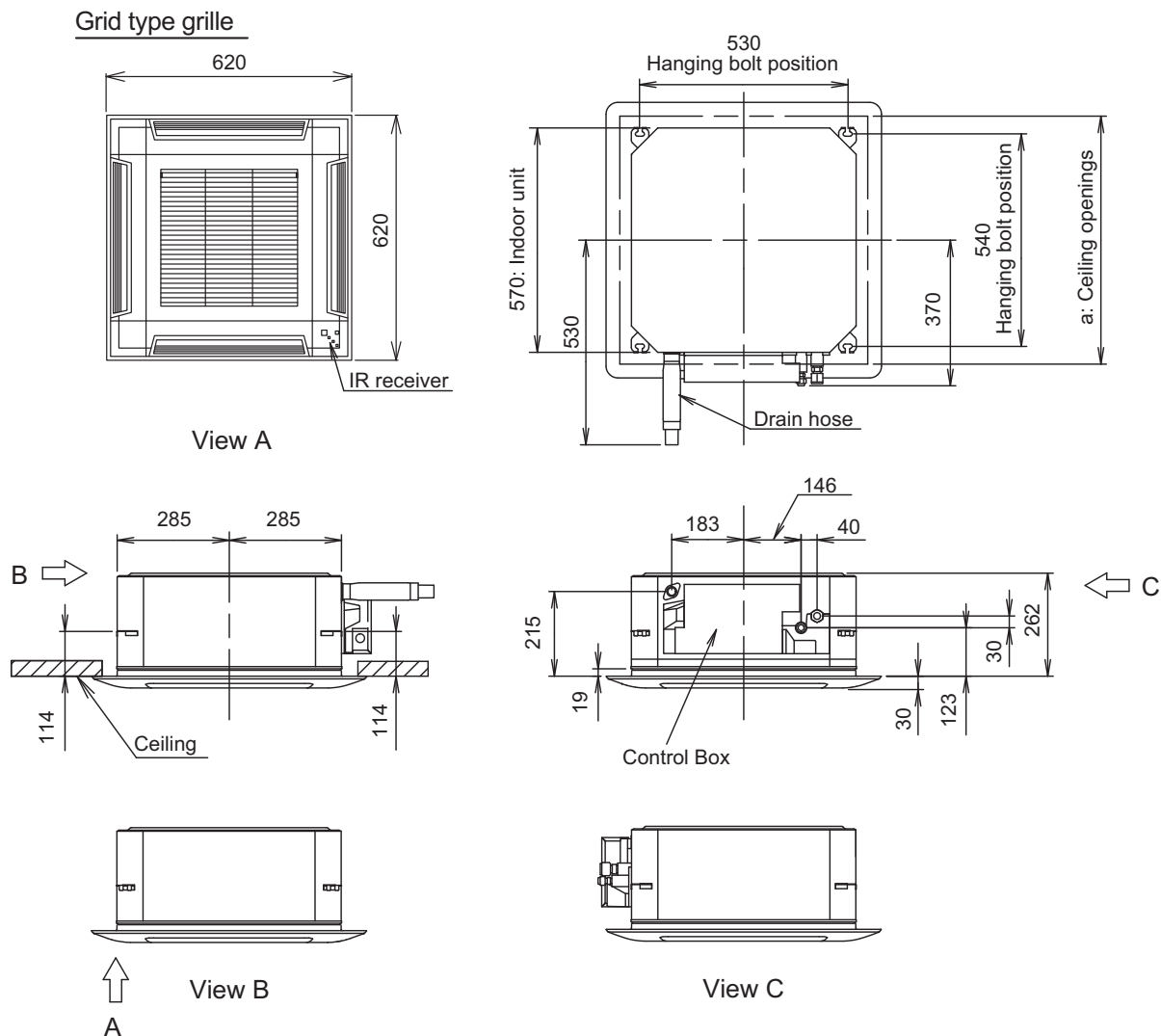
- Specifications are based on the following conditions:
  - Cooling: Indoor temperature of 27 °CDB/19 °CWB, and outdoor temperature of 35 °CDB/24 °CWB.
  - Heating: Indoor temperature of 20 °CDB/15 °CWB, and outdoor temperature of 7 °CDB/6 °CWB.
  - Pipe length: 5 m, Height difference: 0 m. (Between outdoor unit and indoor unit.)
- Protective function might work when using it outside the operation range.
- \*1: Maximum operating current is the total current of the indoor unit and the outdoor unit.
- \*2: Sound pressure level:
  - Measured values in manufacturer's anechoic chamber.
  - Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.
- \*3: Available on Google Play™ store or on App Store®. Optional WLAN adapter is also required. For details, refer to the setting manual.

Specifications for ErP Lot10				
Model name			AUXG24KVL	
Energy efficiency class	Cooling			A <sup>++</sup>
	Heating (Average)			A <sup>+</sup>
Pdesign	Cooling	kW		6.8 (35°C)
	Heating (Average)			
SEER	Cooling	kWh/kWh		6.10
SCOP	Heating (Average)			
Annual energy consumption	QCE	kWh/a		390
	QHE (Average)			
Sound power level	Cooling	HIGH	dB (A)	59
	Heating			61

## 2. Dimensions

### 2-1. Model: AUXG24KVLA

Unit: mm

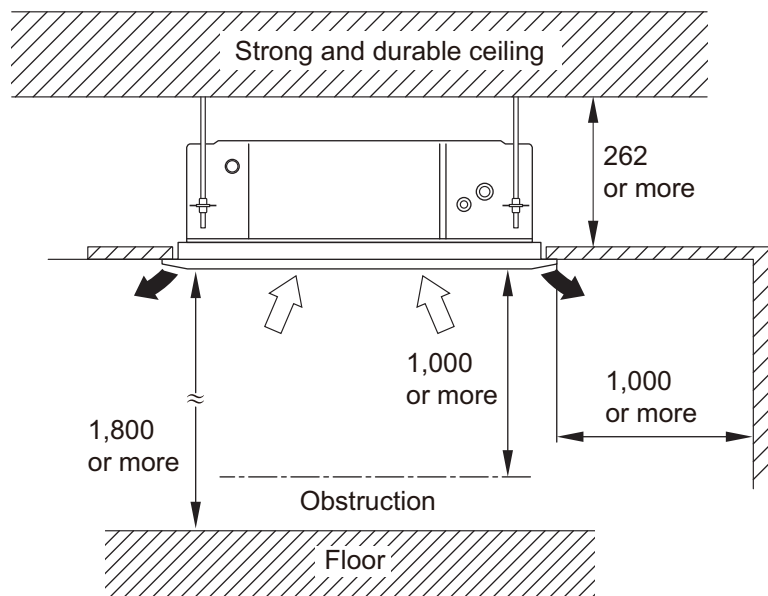


a: Ceiling openings		
Cassette grille (Option [Grid type])	mm	580 to 610



## 2-2. Installation space requirement

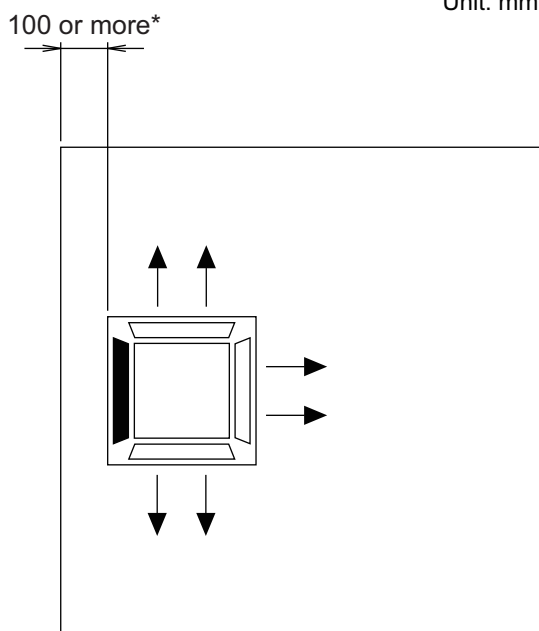
Unit: mm



Maximum height from floor to ceiling (Unit: mm)	
Standard	2,700
High ceiling	3,000

### 3-way direction setting:

Unit: mm

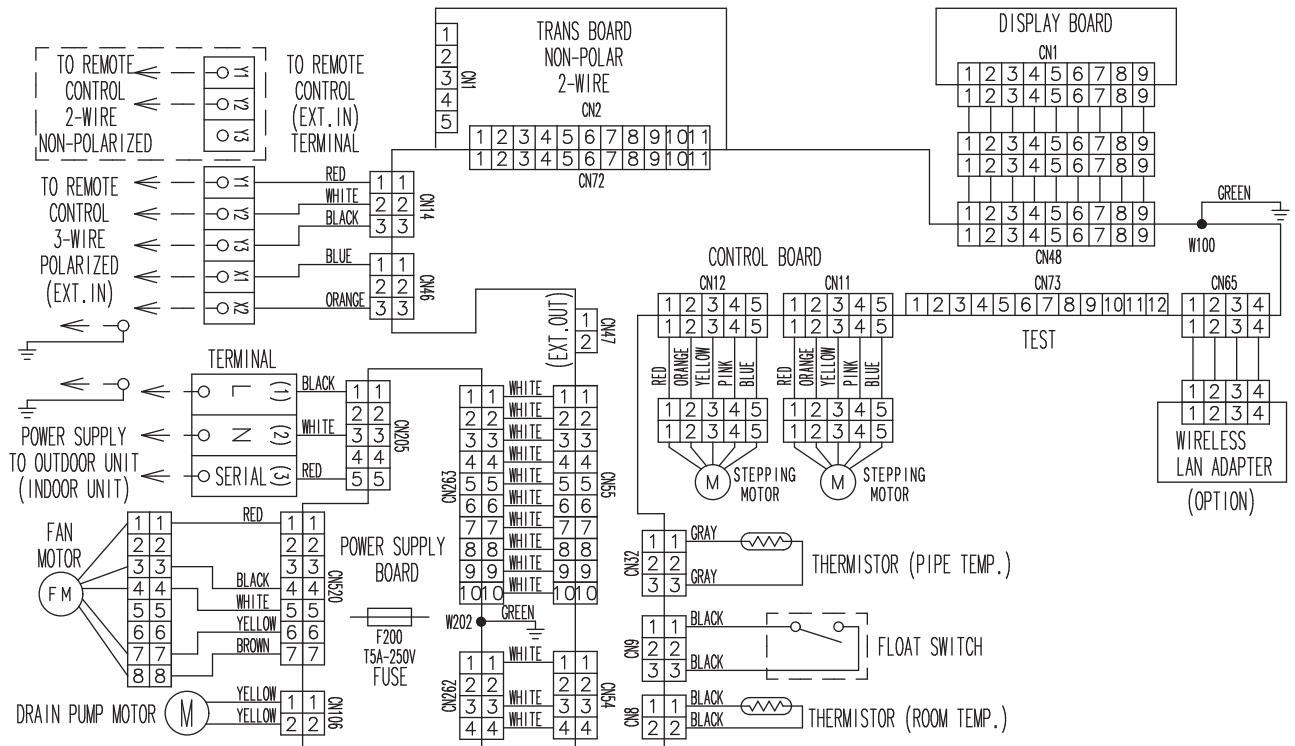


### NOTES:

- To set "3-direction", optional Air outlet shutter plate (UTR-YDZB) must be installed, and the "outlet-direction" need to be switched to "3-way" by remote controller.  
\*When installing the indoor unit, be careful about the maintenance space.
- The ceiling height cannot be set in the 3-way outlet mode. Therefore, ceiling height setting change by function setting 20 is prohibited. For details, refer to "[Contents of function setting](#)" on page 23.

### 3. Wiring diagram

#### 3-1. Model: AUXG24KVLA



## 4. Capacity table

Capacity tables show each of following values calculated based on the outdoor temperature and the indoor temperature, under given Airflow Rate (AFR):

**For cooling capacity:** Total Capacity (TC), Sensible Heat Capacity (SHC), and Input Power (IP)

**For heating capacity:** Total Capacity (TC) and Input Power (IP)

### 4-1. Cooling capacity

#### ■ Model: AUXG24KVL

AFR		m <sup>3</sup> /h																		930		
Outdoor temperature	Indoor temperature																					
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
		kW			kW			kW			kW			kW			kW			kW		
-15	5.66	4.25	0.70	6.30	4.27	0.71	6.52	4.64	0.72	6.95	4.66	0.72	7.16	5.03	0.73	7.59	5.01	0.74	8.02	5.34	0.74	
-10	5.70	4.26	0.60	6.35	4.28	0.61	6.57	4.65	0.61	7.00	4.67	0.62	7.22	5.04	0.62	7.65	5.02	0.63	8.09	5.35	0.63	
0	5.56	4.20	0.61	6.19	4.22	0.62	6.40	4.59	0.62	6.83	4.60	0.63	7.04	4.97	0.63	7.46	4.95	0.64	7.88	5.28	0.64	
5	5.41	4.14	0.77	6.02	4.16	0.79	6.23	4.52	0.79	6.64	4.54	0.80	6.85	4.90	0.80	7.26	4.88	0.81	7.67	5.20	0.82	
10	5.37	4.13	0.75	5.98	4.15	0.76	6.19	4.51	0.77	6.60	4.53	0.77	6.80	4.89	0.78	7.21	4.87	0.78	7.62	5.19	0.79	
15	5.20	4.06	0.91	5.79	4.08	0.93	5.99	4.44	0.93	6.39	4.45	0.94	6.58	4.81	0.95	6.98	4.79	0.96	7.37	5.10	0.97	
20	6.54	4.63	1.62	7.29	4.66	1.64	7.54	5.07	1.65	8.04	5.08	1.67	8.28	5.49	1.68	8.78	5.47	1.69	9.28	5.82	1.71	
25	6.15	4.48	1.79	6.85	4.51	1.82	7.09	4.90	1.83	7.55	4.92	1.85	7.79	5.31	1.86	8.25	5.29	1.88	8.72	5.64	1.90	
30	5.76	4.34	1.97	6.41	4.36	2.00	6.63	4.74	2.01	7.07	4.76	2.03	7.29	5.14	2.04	7.72	5.12	2.06	8.16	5.45	2.08	
35	5.37	4.19	2.13	5.98	4.21	2.17	6.19	4.58	2.18	6.60	4.59	2.20	6.80	4.96	2.21	7.21	4.94	2.23	7.62	5.26	2.25	
40	5.09	4.06	2.31	5.67	4.08	2.34	5.87	4.44	2.36	6.26	4.45	2.38	6.45	4.81	2.39	6.84	4.79	2.42	7.22	5.10	2.44	
46	4.18	3.59	1.99	4.66	3.61	2.02	4.82	3.93	2.03	5.13	3.94	2.05	5.29	4.25	2.06	5.61	4.24	2.08	5.93	4.51	2.11	

### 4-2. Heating capacity

**NOTE:** Values mentioned in the table are calculated based on the maximum capacity.

#### ■ Model: AUXG24KVL

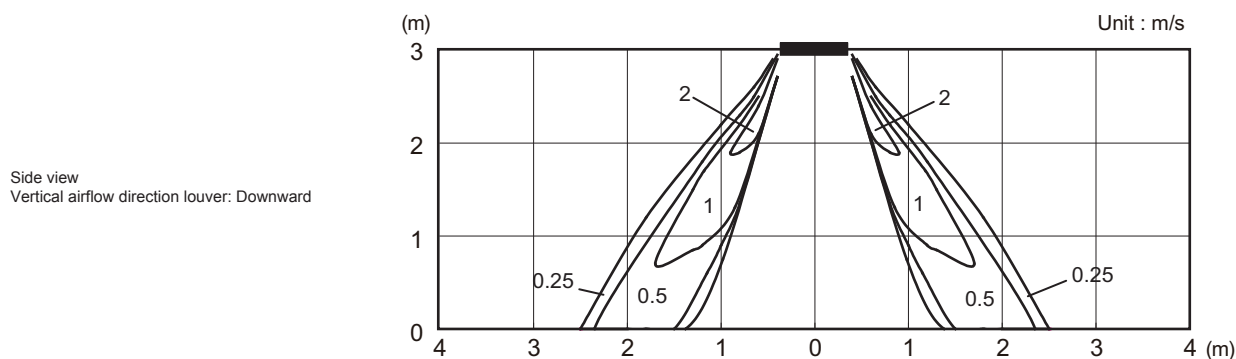
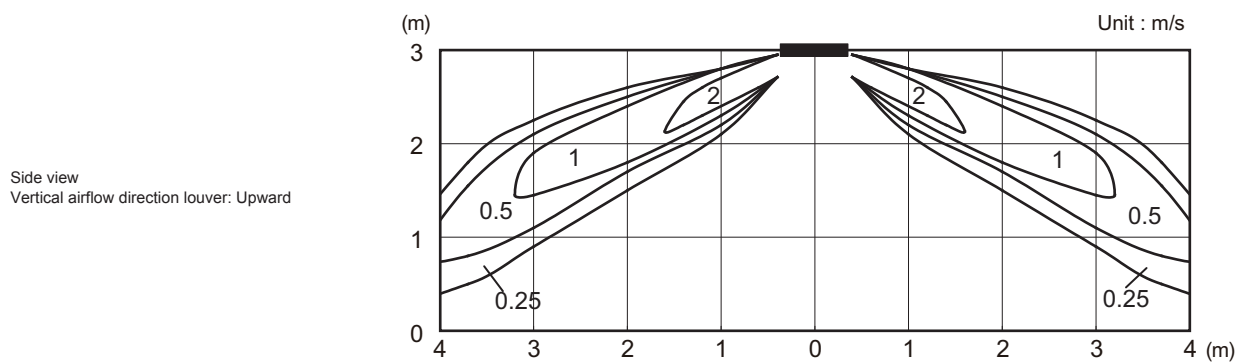
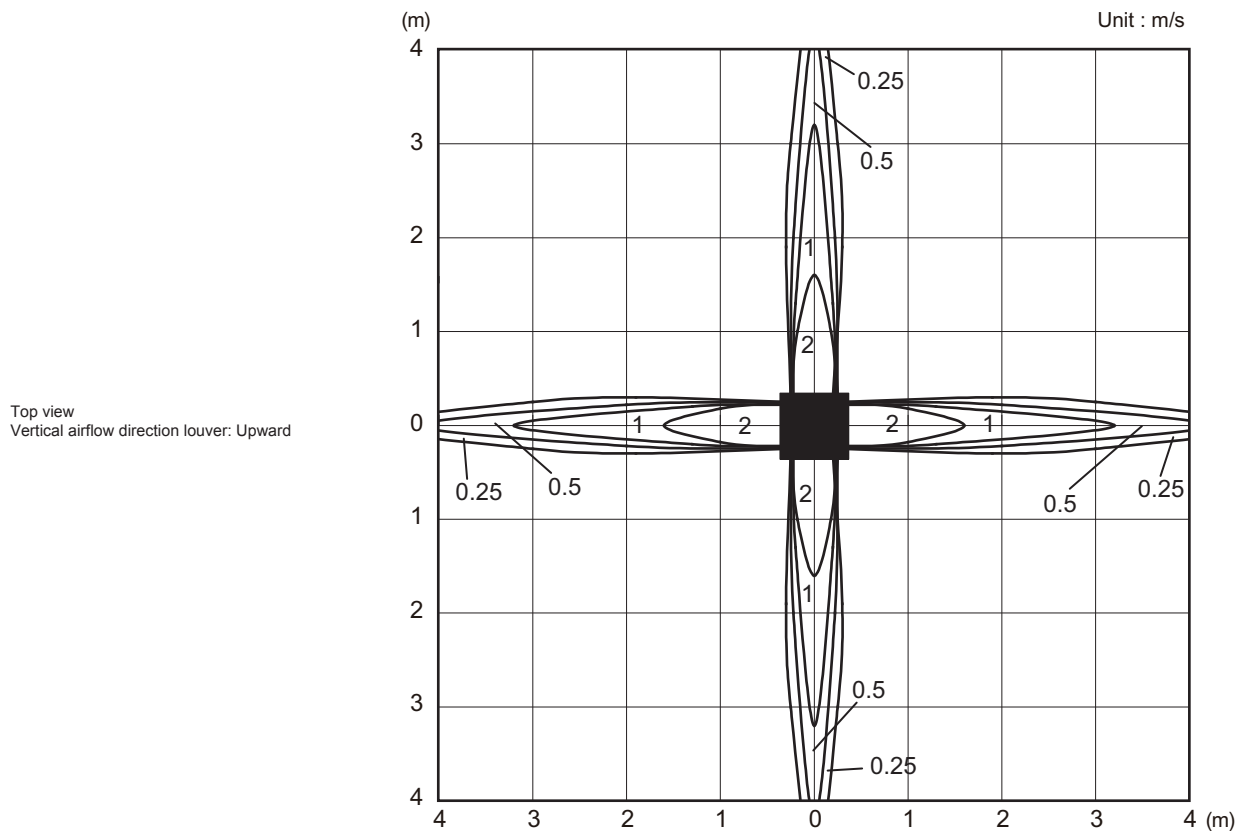
AFR		m <sup>3</sup> /h												930	
Outdoor temperature	Indoor temperature														
	°CDB	°CWB	16		18		20		22		24				
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP			
			kW		kW		kW		kW		kW				
-15	-16	6.37	2.26	6.21	2.31	6.06	2.35	5.91	2.40	5.76	2.45				
-10	-11	6.99	2.35	6.82	2.40	6.65	2.45	6.49	2.50	6.32	2.55				
-5	-7	7.62	2.43	7.44	2.48	7.26	2.53	7.08	2.58	6.89	2.63				
0	-2	8.25	2.51	8.06	2.56	7.86	2.62	7.66	2.67	7.47	2.72				
5	3	8.89	2.59	8.67	2.65	8.46	2.70	8.25	2.75	8.04	2.81				
7	6	9.56	2.59	9.33	2.65	9.10	2.70	8.87	2.75	8.65	2.81				
10	8	9.16	2.45	8.94	2.50	8.72	2.55	8.51	2.60	8.29	2.66				
15	10	8.52	2.21	8.31	2.26	8.11	2.30	7.91	2.35	7.70	2.38				
20	15	8.00	1.88	7.81	1.92	7.62	1.96	7.43	2.00	7.24	2.03				
24	18	8.32	1.86	8.13	1.90	7.93	1.94	7.73	1.97	7.53	2.00				

# 5. Fan performance

## 5-1. Air velocity distributions

### Model: AUXG24KVL (4-way air outlet)

Measuring conditions	Fan speed	Operation mode	Ceiling mode
	HIGH	FAN	STANDARD



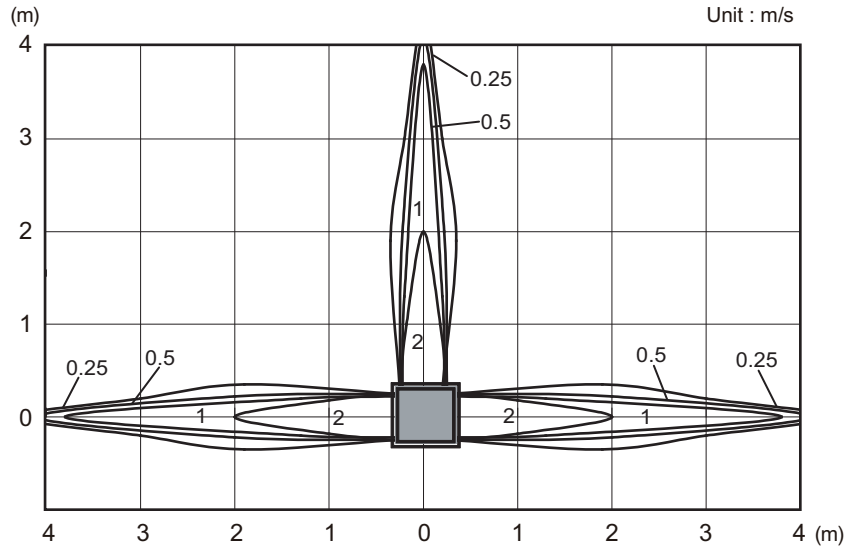
# Model: AUXG24KVL A (3-way air outlet)

CASSETTE TYPE  
AUXG24KVL A

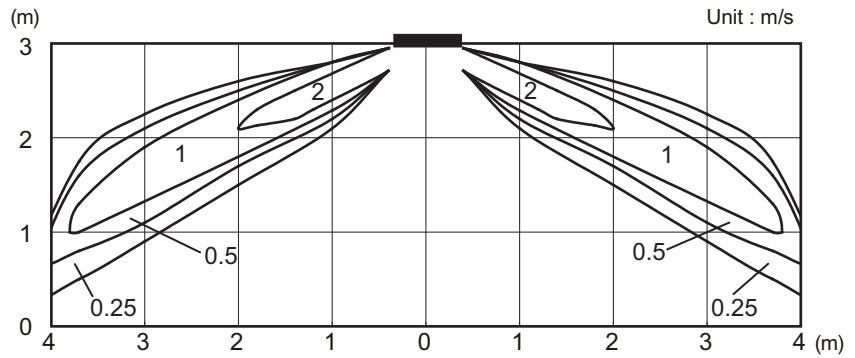
CASSETTE TYPE  
AUXG24KVL A

Measuring conditions	Fan speed	Operation mode	Ceiling mode
	HIGH	FAN	STANDARD

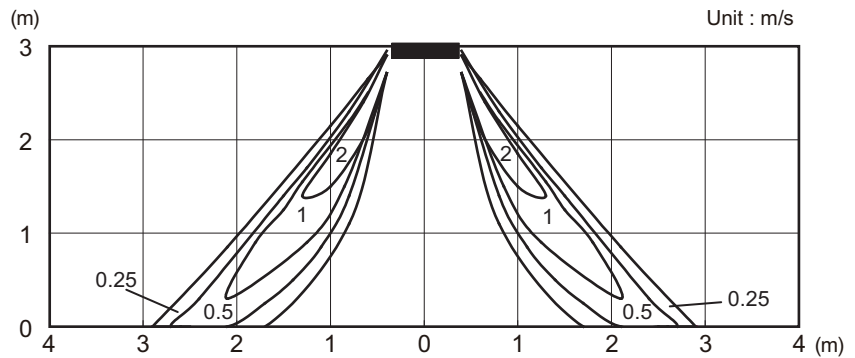
Top view  
Vertical airflow direction louver: Upward



Side view  
Vertical airflow direction louver: Upward



Side view  
Vertical airflow direction louver: Downward



## 5-2. Airflow

### ■ Model: AUXG24KVL (Standard ceiling mode)

#### ● Cooling

Fan speed	Airflow	
HIGH	m <sup>3</sup> /h	930
	l/s	258
	CFM	547
MED	m <sup>3</sup> /h	830
	l/s	231
	CFM	489
LOW	m <sup>3</sup> /h	600
	l/s	167
	CFM	353
QUIET	m <sup>3</sup> /h	450
	l/s	125
	CFM	265

#### ● Heating

Fan speed	Airflow	
HIGH	m <sup>3</sup> /h	930
	l/s	258
	CFM	547
MED	m <sup>3</sup> /h	860
	l/s	239
	CFM	506
LOW	m <sup>3</sup> /h	700
	l/s	194
	CFM	412
QUIET	m <sup>3</sup> /h	530
	l/s	147
	CFM	312

## ■ Model: AUXG24KVL (High ceiling mode)

### ● Cooling

Fan speed	Airflow	
HIGH	m <sup>3</sup> /h	1,030
	l/s	286
	CFM	606
MED	m <sup>3</sup> /h	930
	l/s	258
	CFM	547
LOW	m <sup>3</sup> /h	710
	l/s	197
	CFM	418
QUIET	m <sup>3</sup> /h	450
	l/s	125
	CFM	265

### ● Heating

Fan speed	Airflow	
HIGH	m <sup>3</sup> /h	1,000
	l/s	278
	CFM	589
MED	m <sup>3</sup> /h	960
	l/s	267
	CFM	565
LOW	m <sup>3</sup> /h	820
	l/s	228
	CFM	483
QUIET	m <sup>3</sup> /h	530
	l/s	147
	CFM	312

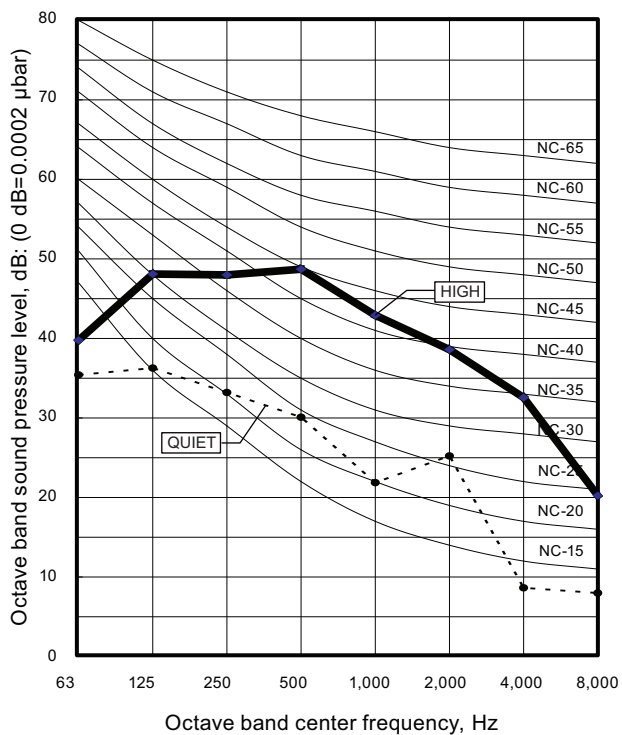
# 6. Operation noise (sound pressure)

## 6-1. Noise level curve

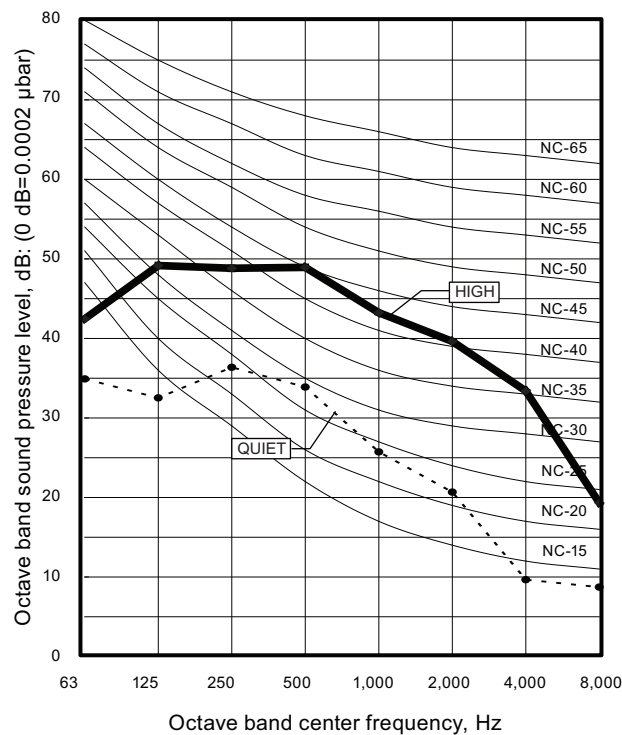
Measuring conditions	Ceiling height	Outlet directions
	Standard	4-way air outlet

### Model: AUXG24KVL

#### ● Cooling

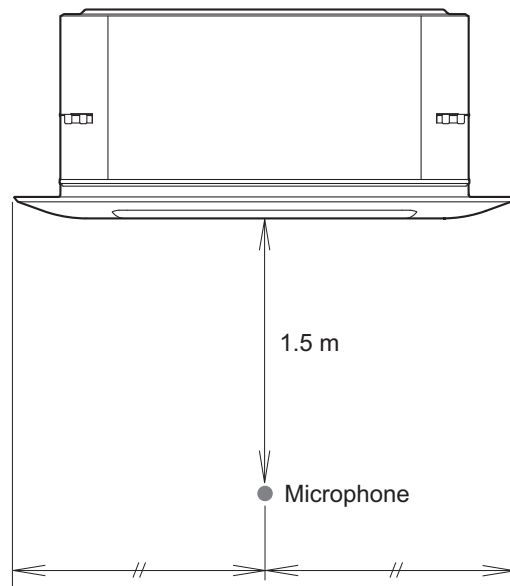
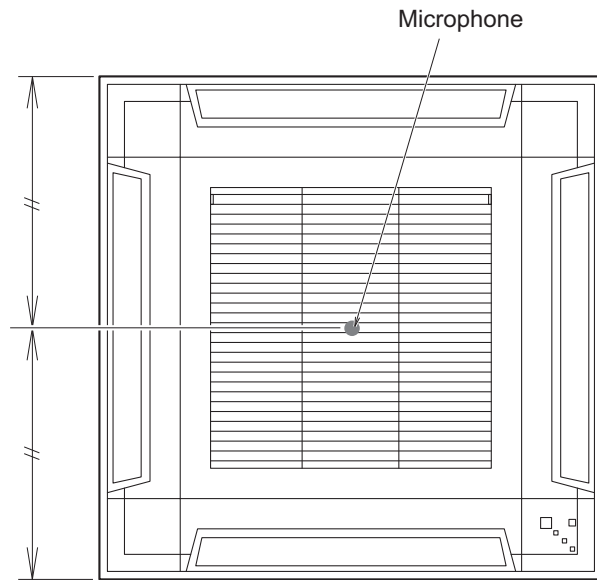


#### ● Heating





## 6-2. Sound level check point

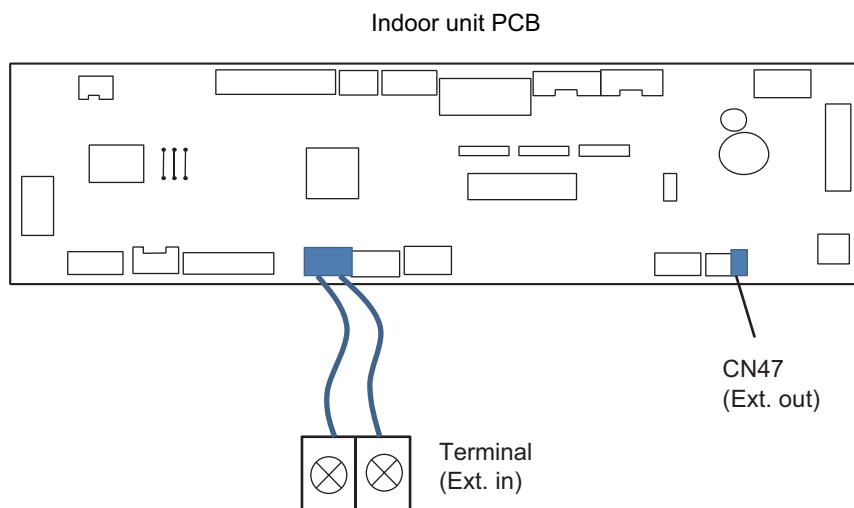


## 7. Safety devices

Type of protection	Protection form		Model
			AUXG24KVLA
Circuit protection	Current fuse (PCB*)		250 V, 5 A
Fan motor protection	Thermal protection program	Activate	100 ± 10 °C Fan motor stop
		Reset	95 ± 10 °C Fan motor restart

\*PCB: Printed Circuit Board

## 8. External input and output

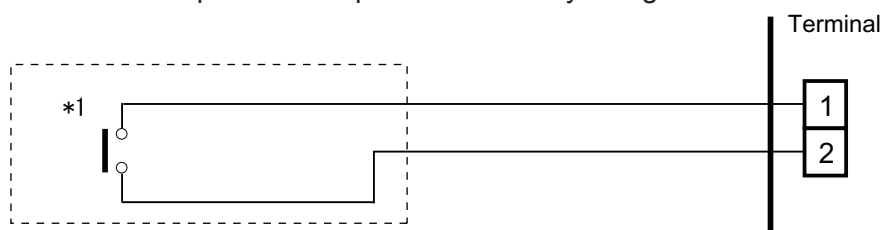


External input and output		Connector	Input select	Input signal	External connect kit (Optional parts)
External input	Operation/Stop Forced stop	Terminal	Dry contact	Edge	—
External output	Operation status	CN47	—	—	UTY-XWZXZG
	Error status				
	Indoor unit fan operation status				
	External heater output				

### 8-1. External input

- “Operation/Stop” mode or “Forced stop” mode can be selected with function setting of indoor unit.
- A twisted pair cable (22AWG) should be used. Maximum length of cable is 150 m.
- The wire connection should be separate from the power cable line.

Indoor unit functions such as Operation/Stop can be done by using indoor unit terminals.



\*1: The switch can be used on the following condition: DC 12 V to 24 V, 1 mA to 15 mA.

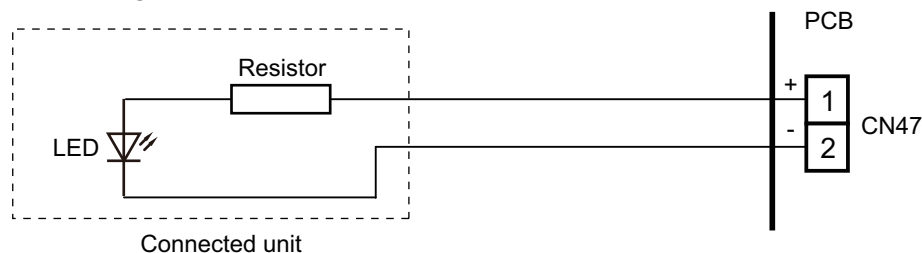
## 8-2. External output

Use an external output cable with appropriate external dimension, depending on the number of cables to be installed.

- A twisted pair cable (22AWG) should be used. Maximum length of cable is 25 m.
- Output voltage: High DC 12 V  $\pm$  2 V, Low 0 V.
- Permissible current: 50 mA
- For details, refer to ["Combination of external input and output"](#) on page 17.

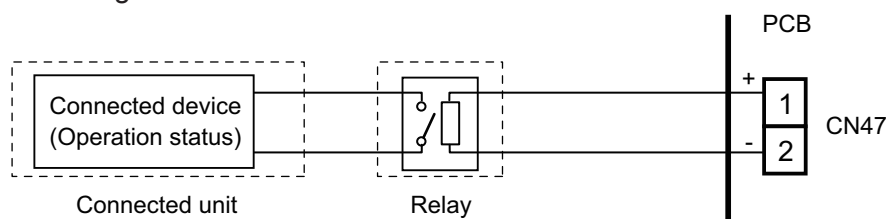
### ● When indicator, etc. are connected directly

**Example:** Function setting 60 is set to "00"



### ● When connecting with a device equipped with a power supply

**Example:** Function setting 60 is set to "00"



## 8-3. Combination of external input and output

By combining the function setting of the indoor unit, you can select various combinations of functions.

Combination examples of external input and output are as follows:

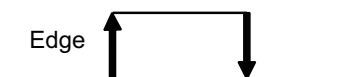
Mode	Function setting	External input	External output
		Terminal	CN47
0	60—00	Operation/Stop	
1—8	60—01 to 60—08	(Setting prohibited)	
9	60—09	Operation/Stop	Error status
10	60—10	Operation/Stop	Indoor unit fan operation status
11	60—11	Operation/Stop	External heater output

**NOTE:** Input of Operation/Stop depends on the setting of function setting 46.

- 00: Operation/Stop mode 1 (R.C. enabled)
- 01: (Setting prohibited)
- 02: Forced stop
- 03: Operation/Stop mode 2 (R.C. disabled)

### ■ Input signal type

- Indoor unit  
Input signal type is only "Edge".

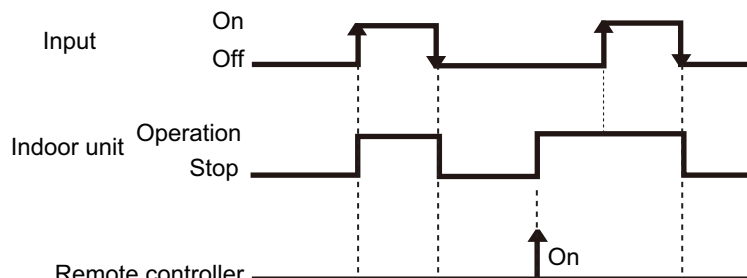


## 8-4. Details of function

### ■ Control input function

- When function setting is "Operation/Stop" mode 1

Function setting	External input	Input signal	Command
46—00	Terminal	Off → On	Operation
		On → Off	Stop

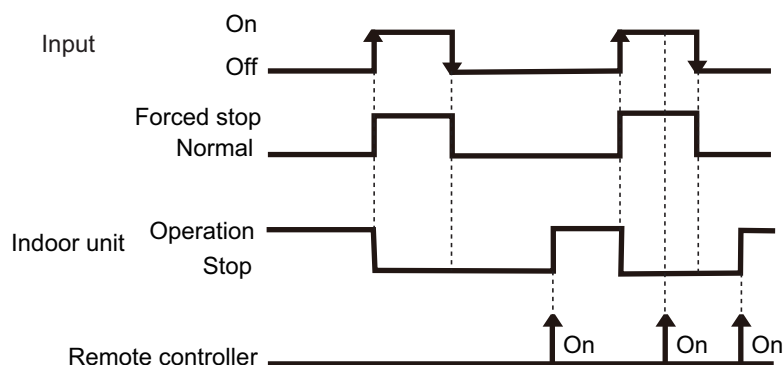


#### NOTES:

- The last command has priority.
- The indoor units within the same remote controller group operates in the same mode.

- When function setting is "Forced stop" mode

Function setting	External input	Input signal	Command
46—02	Terminal	Off → On	Forced stop
		On → Off	Normal

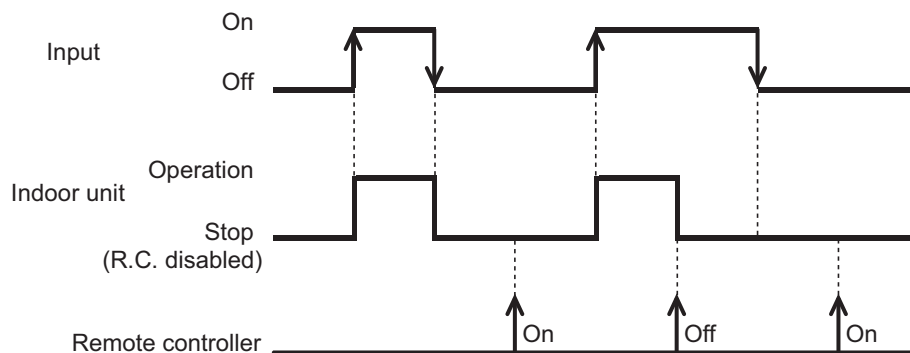


#### NOTES:

- When the forced stop is triggered, indoor unit stops and Operation/Stop operation by the remote controller is restricted.
- When forced stop function is used with forming a remote controller group, connect the same equipment to each indoor unit within the group.

- When function setting is "Operation/Stop" mode 2

Function setting	External input	Input signal	Command
46—03	Terminal	Off → On	Operation
		On → Off	Stop (R.C. disabled)

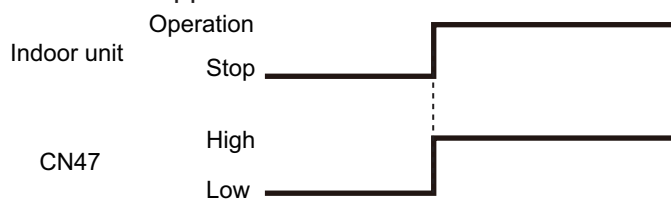


**NOTE:** When "Operation/Stop" mode 2 function is used with forming a remote controller group, connect the same equipment to each indoor unit within the group.

## Control output function

Function setting	External output	Output signal	Command
60—00	CN47	Low → High	Operation
		High → Low	Stop

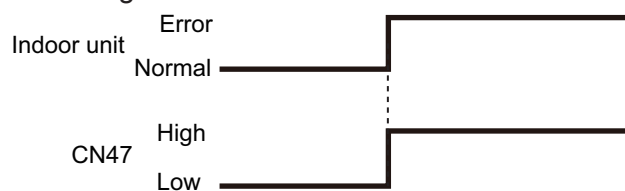
The output is low when the unit is stopped.



## Error status

Function setting	External output	Output signal	Command
60—09	CN47	Low → High	Error
		High → Low	Normal

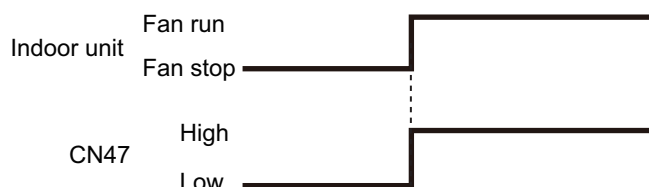
The output is ON when an error is generated for the indoor unit.



## Indoor unit fan operation status

Function setting	External output	Output signal	Command
60—10	CN47	Low → High	Fan run
		High → Low	Fan stop

Output signal	Condition
On	The indoor unit fan is operating.
Low → High	
Off	The fan is stopped or during cold air prevention. During thermostat off when in dry mode operation.
High → Low	



## External heater output

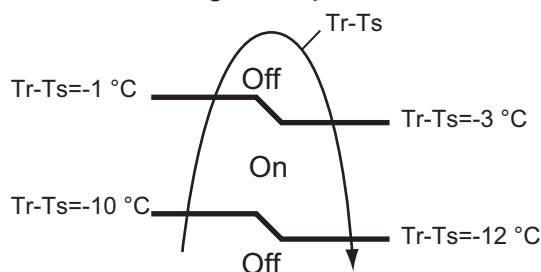
Function setting	External output	Output signal	Command
60—11	CN47	Low → High	Heater on
		High → Low	Heater off

Output signal	Condition
Low → High	Heater turns on as shown in diagram of heating temperature
Off → On	
High → Low	Heater turns off as shown in diagram of heating temperature
On → Off	<ul style="list-style-type: none"> <li>• Other than Heating mode</li> <li>• Error occurred</li> <li>• Forced thermo off</li> <li>• Fan stop protection</li> </ul>

Specifications of the signal output performance are as shown as follows:

**Example** When set temperature ( $T_s$ ) is set at 22 °C;

- And room temperature ( $T_r$ ) increase above 12 °C, signal output is on.
- And  $T_r$  increase above 21 °C, signal output is off.
- And  $T_r$  decrease below 19 °C, signal output is on.
- And  $T_r$  decrease below 10 °C, signal output is off.



The output also turns off in defrost operation.



## 9. Function settings

To adjust the functions of this product according to the installation environment, various types of function settings are available.

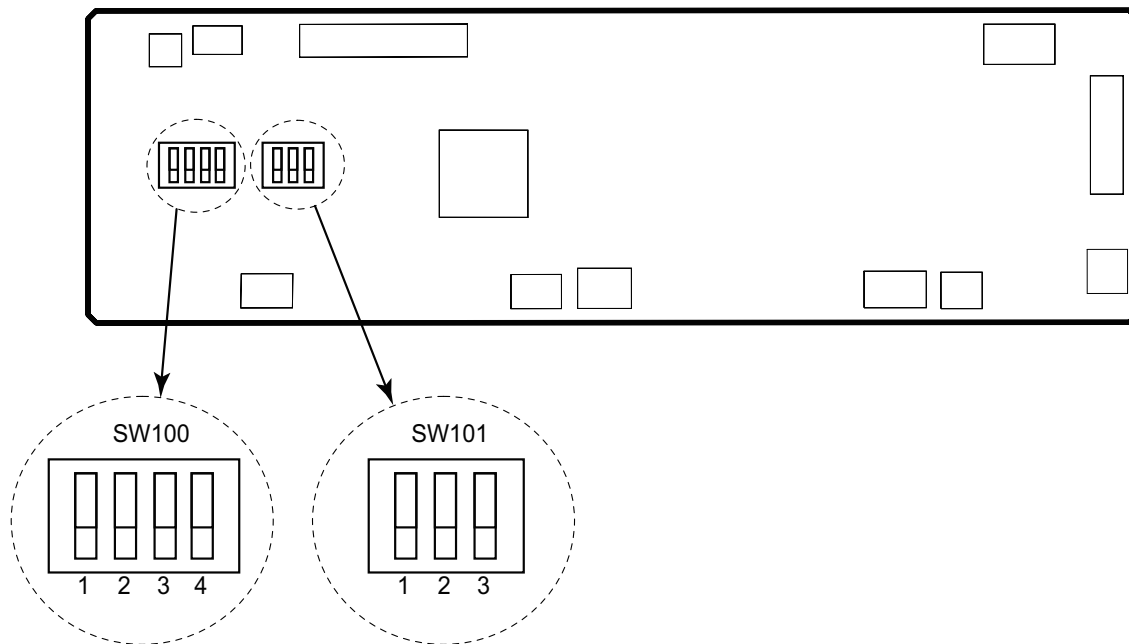
**NOTE:** Incorrect settings can cause a product malfunction.

### 9-1. Function settings on indoor unit

By using some components on the PCB, you can change the function settings.

#### ■ Component location

Components on the indoor unit main PCB used for the function settings are located as shown in the following figure.



## ■ DIP switch setting

### • SW100: Remote controller address setting

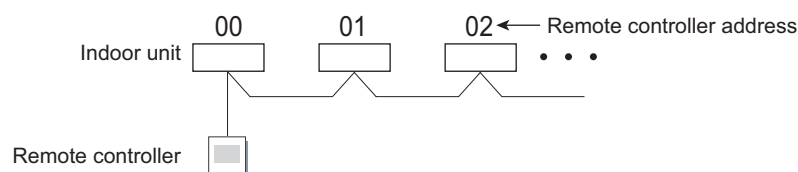
**NOTE:** Because this setting is normally done automatically when 2-core wired remote controller is installed, setting is unnecessary.

Multiple indoor units can be operated by using one wired remote controller.  
Set the unit number of each indoor unit.

Remote controller address	DIP switch number				Factory setting
	1	2	3	4	
00	OFF	OFF	OFF	OFF	◆
01	ON	OFF	OFF	OFF	
02	OFF	ON	OFF	OFF	
03	ON	ON	OFF	OFF	
04	OFF	OFF	ON	OFF	
05	ON	OFF	ON	OFF	
06	OFF	ON	ON	OFF	
07	ON	ON	ON	OFF	
08	OFF	OFF	OFF	ON	
09	ON	OFF	OFF	ON	
10	OFF	ON	OFF	ON	
11	ON	ON	OFF	ON	
12	OFF	OFF	ON	ON	
13	ON	OFF	ON	ON	
14	OFF	ON	ON	ON	
15	ON	ON	ON	ON	

#### NOTES:

- When connecting Polar 3-core wired remote controller, set the remote controller address in the order of 0, 1, 2, ....., and 15.
- When different type of indoor units (such as wall-mounted type and cassette type, cassette type and duct type, or other combinations) are connected using group control system, some functions may no longer be available.



### • SW101: Setting change prohibited

## 9-2. Function settings by using remote controller

Some function settings can be changed on the remote controller. After confirming the setting procedure and the content of each function setting, select appropriate functions for your installation environment.

### ■ Setting procedure by using remote controller

Remote controller is not attached for this product. For details of the installing remote controller, refer to following information.

- Overview information: Operating manual of the remote controller
- Setting procedure: Installation manual of the remote controller

### ■ Contents of function setting

Each function setting listed in this section is adjustable in accordance with the installation environment.

**NOTE:** Setting will not be changed if invalid numbers or setting values are selected.

### ● Function setting list

	Function no.	Functions
1)	11	Filter sign
2)	20	Ceiling height
3)	22	Outlet directions
4)	30/31	Room temperature control for indoor unit sensor
5)	35/36	Room temperature control for wired remote controller sensor
6)	40	Auto restart
7)	42	Room temperature sensor switching
8)	44	Remote controller custom code
9)	46	External input control
10)	48	Room temperature sensor switching (Aux.)
11)	49	Indoor unit fan control for energy saving for cooling
12)	60	Switching functions for external output terminal

#### 1) Filter sign

Select appropriate intervals for displaying the filter sign on the indoor unit according to the estimated amount of dust in the air of the room.

If the indication is not required, select "No indication" (03).

Function number	Setting value	Setting description	Factory setting
11	00	Standard (2,500 hours)	
	01	Long interval (4,400 hours)	
	02	Short interval (1,250 hours)	
	03	No indication	◆

## 2) Ceiling height

Select the appropriate ceiling height according to the place of installation.

Function number	Setting value	Setting description	Factory setting
20	00	Standard	◆
	01	High ceiling	

For the specific height for each setting value, refer to "Installation space" in Chapter 2. "Dimensions" on page 4.

### In case of cassette type models:

The ceiling height values are for the 4-way outlet. Do not change this setting in the 3-way outlet mode.

## 3) Outlet directions

Select the appropriate number of outlet directions according to the installation conditions.

Function number	Setting value	Setting description	Factory setting
22	00	4-way	◆
	01	3-way	

## 4) Room temperature control for indoor unit sensor

Depending on the installed environment, correction of the room temperature sensor may be required. Select the appropriate control setting according to the installed environment.

The temperature correction values show the difference from the Standard setting "00" (manufacturer's recommended value).

Function number	Setting value	Setting description	Factory setting		
30 (For cooling)	31 (For heating)	00	Standard setting	◆	
		01	No correction 0.0 °C		
		02	-0.5 °C	More cooling Less heating	
		03	-1.0 °C		
		04	-1.5 °C		
		05	-2.0 °C		
		06	-2.5 °C		
		07	-3.0 °C		
		08	-3.5 °C		
		09	-4.0 °C		
		10	+0.5 °C	Less cooling More heating	
		11	+1.0 °C		
		12	+1.5 °C		
		13	+2.0 °C		
		14	+2.5 °C		
		15	+3.0 °C		
		16	+3.5 °C		
17	+4.0 °C				

### 5) Room temperature control for wired remote controller sensor

Depending on the installed environment, correction of the wire remote temperature sensor may be required. Select the appropriate control setting according to the installed environment.

To change this setting, set Function 42 to Both "01".

Ensure that the Thermo Sensor icon is displayed on the remote controller screen.

Function number		Setting value	Setting description	Factory setting	
35 (For cooling)	36 (For heating)	00	No correction	◆	
		01	No correction 0.0°C		
		02	-0.5 °C	More cooling Less heating	
		03	-1.0 °C		
		04	-1.5 °C		
		05	-2.0 °C		
		06	-2.5 °C		
		07	-3.0 °C		
		08	-3.5 °C		
		09	-4.0 °C		
		10	+0.5 °C	Less cooling More heating	
		11	+1.0 °C		
		12	+1.5 °C		
		13	+2.0 °C		
		14	+2.5 °C		
		15	+3.0 °C		
		16	+3.5 °C		
17	+4.0 °C				

### 6) Auto restart

Enables or disables automatic restart after a power interruption.

Function number	Setting value	Setting description	Factory setting
40	00	Enable	◆
	01	Disable	

**NOTE:** Auto restart is an emergency function such as for power outage etc. Do not attempt to use this function in normal operation. Be sure to operate the unit by remote controller or external device.

### 7) Room temperature sensor switching

(Only for wired remote controller)

When using the wired remote controller temperature sensor, change the setting to "Both" (01).

Function number	Setting value	Setting description	Factory setting
42	00	Indoor unit	◆
	01	Both	

00: Sensor on the indoor unit is active.

01: Sensors on both indoor unit and wired remote controller are active.

**NOTE:** Remote controller sensor must be turned on by using the remote controller.

**8) Remote controller custom code**

(Only for wireless remote controller)

The indoor unit custom code can be changed. Select the appropriate custom code.

Function number	Setting value	Setting description	Factory setting
44	00	A	◆
	01	B	
	02	C	
	03	D	

**9) External input control**

"Operation/Stop" mode or "Forced stop" mode can be selected.

Function number	Setting value	Setting description	Factory setting
46	00	Operation/Stop mode 1	◆
	01	(Setting prohibited)	
	02	Forced stop mode	
	03	Operation/Stop mode 2	

**10) Room temperature sensor switching (Aux.)**

To use the temperature sensor on the wired remote controller only, change the setting to "Wired remote controller" (01).

This function will only work if the function setting 42 is set at "Both" (01).

When the setting value is set to "Both" (00), more suitable control of the room temperature is possible by setting function setting 30 and 31 too.

Function number	Setting value	Setting description	Factory setting
48	00	Both	◆
	01	Wired remote controller	

**11) 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.

Function number	Setting value	Setting description	Factory setting
49	00	Disable	
	01	Enable	
	02	Remote controller	◆

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.

02: Enable or disable this function by remote controller setting.

**NOTES:**

- As the factory setting, this setting is initially activated.
- Set to "00" or "01" when connecting a remote controller that cannot set the Fan control for energy saving function or connecting a network converter.  
To confirm if the remote controller has this setting, refer to the operating manual of each remote controller.


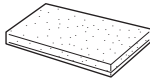
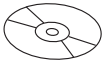


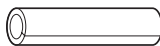
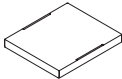
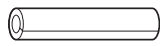




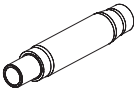
**12) Switching functions for external output terminal**

Functions of the external output terminal can be switched. For details, refer to “External input and output”.

Function number	Setting value	Setting description	Factory setting
60	00	Operation status	◆
	01—08	(Setting prohibited)	
	09	Error status	
	10	Indoor unit fan operation status	
	11	External heater	

## 10. Accessories

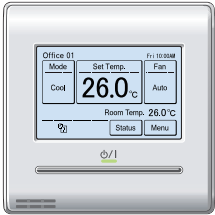
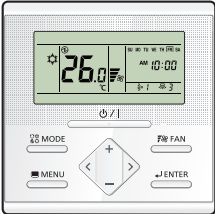
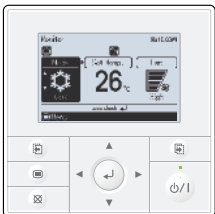
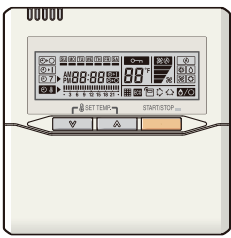
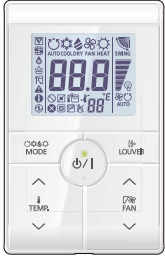
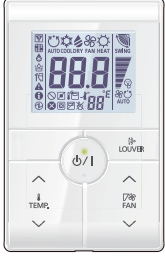

### 10-1. Model: AUXG24KVLA


Part name	Exterior	Q'ty	Part name	Exterior	Q'ty
Operating manual		1	Drain hose insulation		1
Operating manual (CD-ROM)		1	Hose band		1
Installation manual		1	Coupler heat insulation (large)		1
Template (Carton top)		1	Coupler heat insulation (small)		1
M10 nut A (with flange)		4	Cable tie		2
M10 nut B (with spring lock washer)		4	Wire crammer		1
Drain hose		1			



# 11. Optional parts

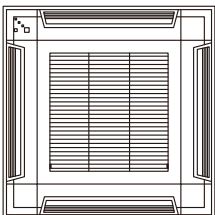
## 11-1. Controllers

Exterior	Part name	Model name	Summary
	Wired remote controller	UTY-RNRYZ*	Easy finger touch operation with LCD panel. Backlit LCD enables easy operation in a dark room. Wire type: Non-polar 2-wire
	Wired remote controller	UTY-RLRY	High visibility and easy operation. Room temperature can be accurately controlled using the built-in thermo sensor. Wire type: Non-polar 2-wire
	Wired remote controller	UTY-RVNYM	Large and full-dot liquid crystal screen, wide and large keys easy to press, user-intuitive arrow key. Wire type: Polar 3-wire
	Wired remote controller	UTY-RNNYM	Room temperature can be controlled by detecting the temperature accurately with built-in thermo sensor. Wire type: Polar 3-wire
	Simple remote controller	UTY-RSRY	Compact remote controller concentrates on the basic functions such as Start/Stop, fan control, temperature setting, and operation mode. Wire type: Non-polar 2-wire
	Simple remote controller	UTY-RHRY	Compact remote controller concentrates on the basic functions such as Start/Stop, fan control, and temperature setting. Wire type: Non-polar 2-wire
	Simple remote controller	UTY-RSNYM	Compact remote controller concentrates on the basic functions such as Start/Stop, fan control, temperature setting, and operation mode. Wire type: Polar 3-wire




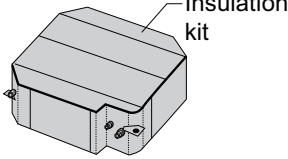




Exterior	Part name	Model name	Summary
	Wireless remote controller	UTY-LNTY	Unit control is performed by wireless remote controller.

**NOTE:** Available functions may differ by the remote controller. For details, refer to the operation manual.

## 11-2. Cassette grille

Exterior	Part name	Model name	Summary
	Cassette grille	UTG-UFYF-W	This cassette grille can be installed appropriately on the grid type ceiling common in the office.

## 11-3. Others

Exterior	Part name	Model name	Summary
	External connect kit	UTY-XWZXZG	Use to connect with various peripheral devices and air conditioner PCB. For control output port.
	Air outlet shutter plate	UTR-YDZB	Installed at the air outlet when 3-directions mode is performed.
	Fresh-air intake kit	UTZ-VXAA	By attaching Fresh-air intake kit to the indoor unit, it can be taken in fresh air of up to 10% of "high" air volume of the indoor unit.
	Insulation for high humidity	UTZ-KXGC	Install when the under-roof condition is expected to be the humidity of over 80% and the temperature of over 30 °C.
	Wireless LAN adapter	UTY-TFSXZ1	Remotely manage an air conditioning system using mobile devices such as smartphones and tablets. For connection indoor unit with UART interface.
	Modbus converter	UTY-VMSX	For connection between indoor unit with UART interface and a Modbus open network.
	KNX converter	UTY-VKSX	For connection between indoor unit with UART interface and a KNX open network.
	External switch controller	UTY-TERX	Air conditioner switching can be controlled by connecting other external sensor switches.

**NOTE:** Combined use of following optional parts and Wireless LAN adapter (UTY-TFSXZ1) is not allowed.

- Modbus converter
- KNX converter



# **Part 2. OUTDOOR UNIT**

---

**SINGLE TYPE:  
AOYG24KBTB**

# 1. Specifications

Type			Inverter heat pump		
Model name			AOYG24KBTB		
Power supply			230 V ~ 50 Hz		
Power supply intake			Outdoor unit		
Available voltage range			198—264 V		
Starting current			9.7		
Fan	Airflow rate	Cooling	2,700		
		Heating	2,700		
	Type × Q'ty		Propeller × 1		
	Motor output		W	49	
Sound pressure level *1	Cooling	dB (A)		53	
		Heating		54	
Sound power level	Cooling	dB (A)		65	
		Heating		66	
Heat exchanger type	Dimensions (H × W × D)		mm	Main1: 672 × 881 × 18.2 Main2: 672 × 851 × 18.2	
	Fin pitch			1.3	
	Rows × Stages		2 × 32		
	Pipe type		Copper tube		
	Fin	Type (Material)	Aluminum		
		Surface treatment	PC fin		
Compressor	Type × Q'ty		DC Twin rotary × 1		
	Motor output		W		1,060
Refrigerant	Type (Global warming potential)		R32 (675)		
	Factory charge		g		1,250
Refrigerant oil	Type		RmM68AF		
	Amount		cm <sup>3</sup>		400
Enclosure	Material		Steel sheet		
	Color		Beige Approximate color of Munsell 10YR 7.5/1.0		
Dimensions (H × W × D)	Net		mm		716 × 820 × 315
	Gross				776 × 961 × 450
Weight	Net		kg		42
	Gross				46
Connection pipe	Size	Liquid	mm (in)	Ø6.35 (1/4)	
		Gas		Ø12.70 (1/2)	
	Method		Flare		
	Pre-charge length		m	20	
	Max. length			30	
	Max. height difference			25	
Operation range	Cooling	°C		-15 to 46	
		Heating		-15 to 24	
Drain hose	Material		PP		
	Size		mm		Ø13.0 (I. D.), Ø16.0 to Ø16.8 (O. D.)

## NOTES:

- Specifications are based on the following conditions:
  - Cooling: Indoor temperature of 27 °CDB/19 °CWB, and outdoor temperature of 35 °CDB/24 °CWB.
  - Heating: Indoor temperature of 20 °CDB/15 °CWB, and outdoor temperature of 7 °CDB/6 °CWB.
  - Pipe length: 5 m, Height difference: 0 m. (Between outdoor unit and indoor unit.)
- Protective function might work when using it outside the operation range.
- \*1: Sound pressure level
  - Measured values in manufacturer's anechoic chamber.
  - Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

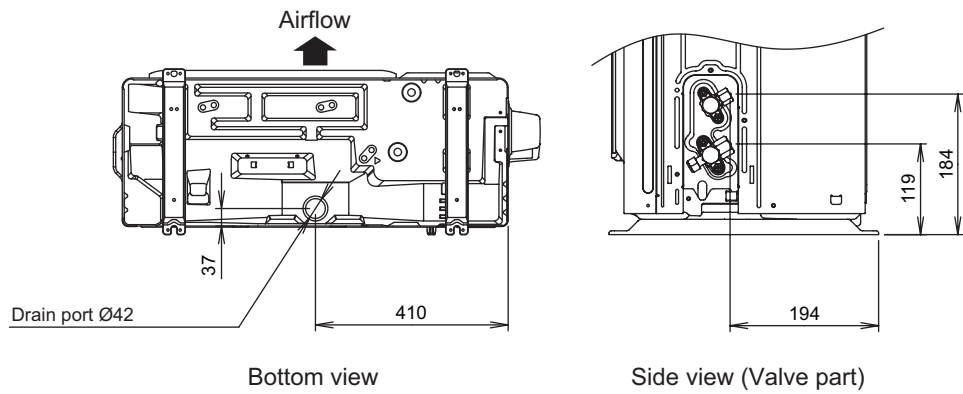
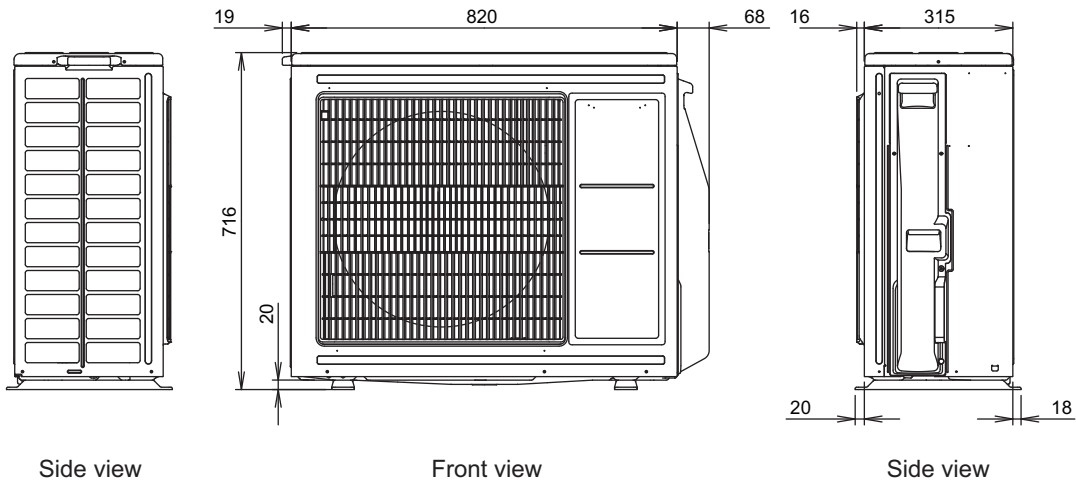
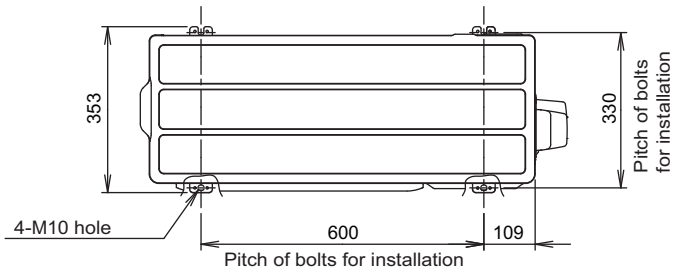
## 2. Dimensions

### 2-1. Model: AOYG24KBTB

Unit: mm

OUTDOOR UNIT  
AOYG24KBTB

OUTDOOR UNIT  
AOYG24KBTB



## 3. Installation space

### 3-1. Model: AOYG24KBTB

#### ■ Space requirement

Provide sufficient installation space for product safety.

#### ⚠ CAUTION

Keep the space shown in the installation examples.

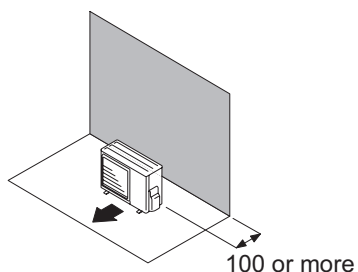
If the installation is not performed accordingly, it could cause a short circuit and result in a lack of operating performance.

#### ● Single outdoor unit installation

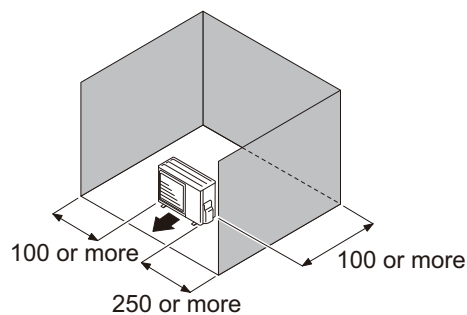
- When the upper space is open:

Unit: mm

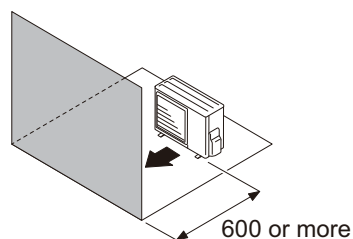
Obstacles at rear only



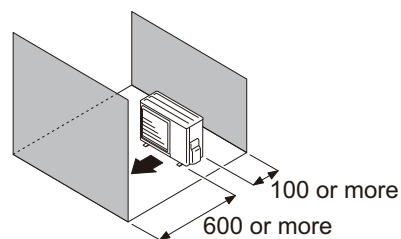
Obstacles at rear and sides



Obstacles at front



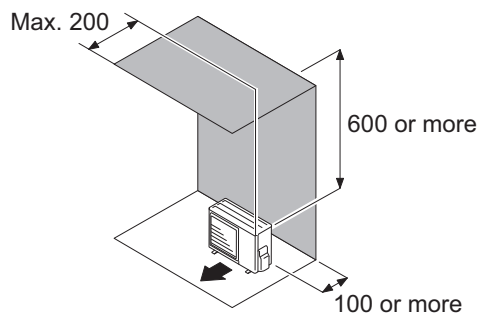
Obstacles at front and rear



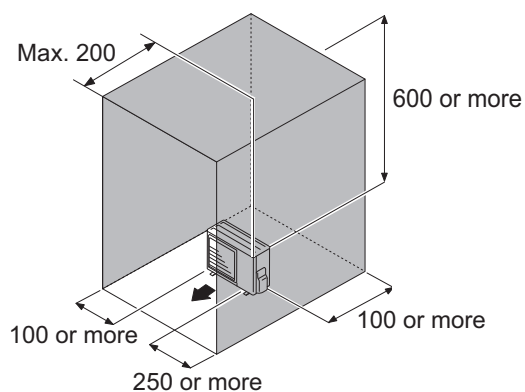
- When there is an obstruction in the upper space:

Unit: mm

Obstacles at rear and above



Obstacles at rear, sides, and above





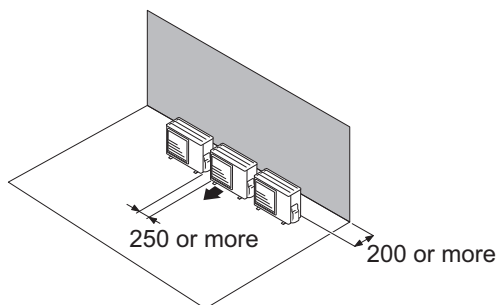
## ● Multiple outdoor unit installation

- Provide at least 250 mm 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 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 in the upper space:”**.

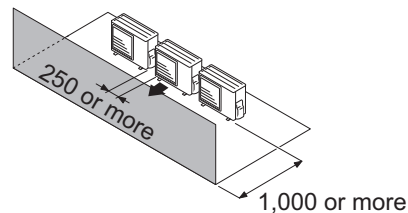
- **When the upper space is open:**

Unit: mm

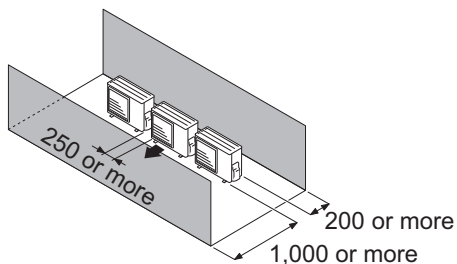
Obstacles at rear only



Obstacles at front only



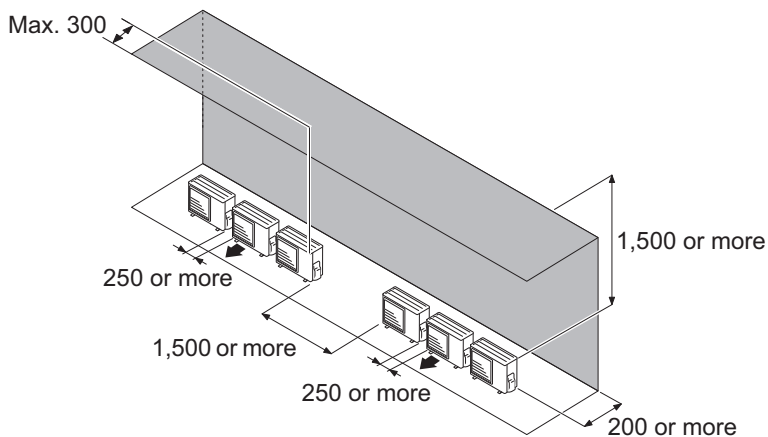
Obstacles at front and rear



- **When an obstruction in the upper space:**

Unit: mm

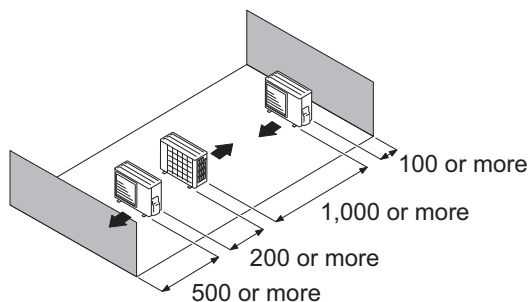
Obstacles at rear and above.



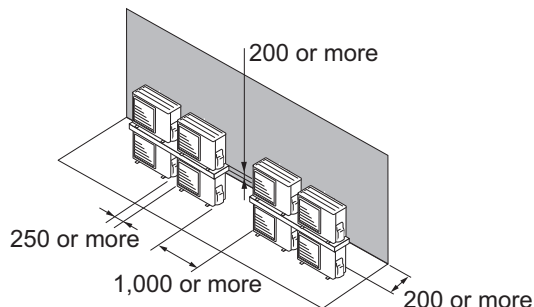
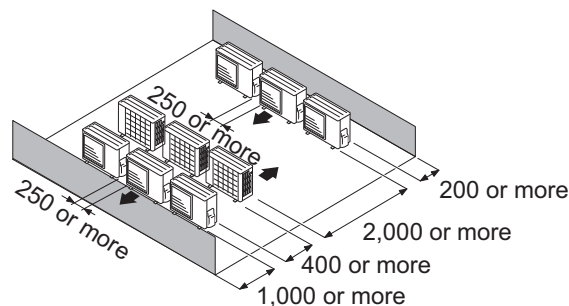
## ● Outdoor units installation in multi-row

Unit: mm

Single parallel unit arrangement



Multiple parallel unit arrangement

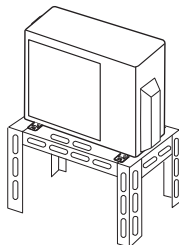


### NOTES:

- If the space is larger than stated above, the condition will be the same as when there is no obstacle.
- When installing the outdoor unit, be sure to open the front and left side to obtain better operation efficiency.

### ⚠ CAUTION

- Do not install the outdoor unit in two-stage where the drain water could freeze. Otherwise the drainage from the upper unit may form ice and cause a malfunction of the lower unit.
- When the outdoor temperature is 0 °C or less, do not use the accessory drain pipe and drain cap. If the drain pipe and drain cap are used, the drain water in the pipe may freeze in extremely cold climate. (For reverse cycle model only.)
- In area with heavy snowfall, if the inlet and outlet of the outdoor unit is blocked with snow, it might become difficult to get warm, and it is likely to cause product malfunction. Construct a canopy and a pedestal, or place the unit on a high stand that is locally installed.

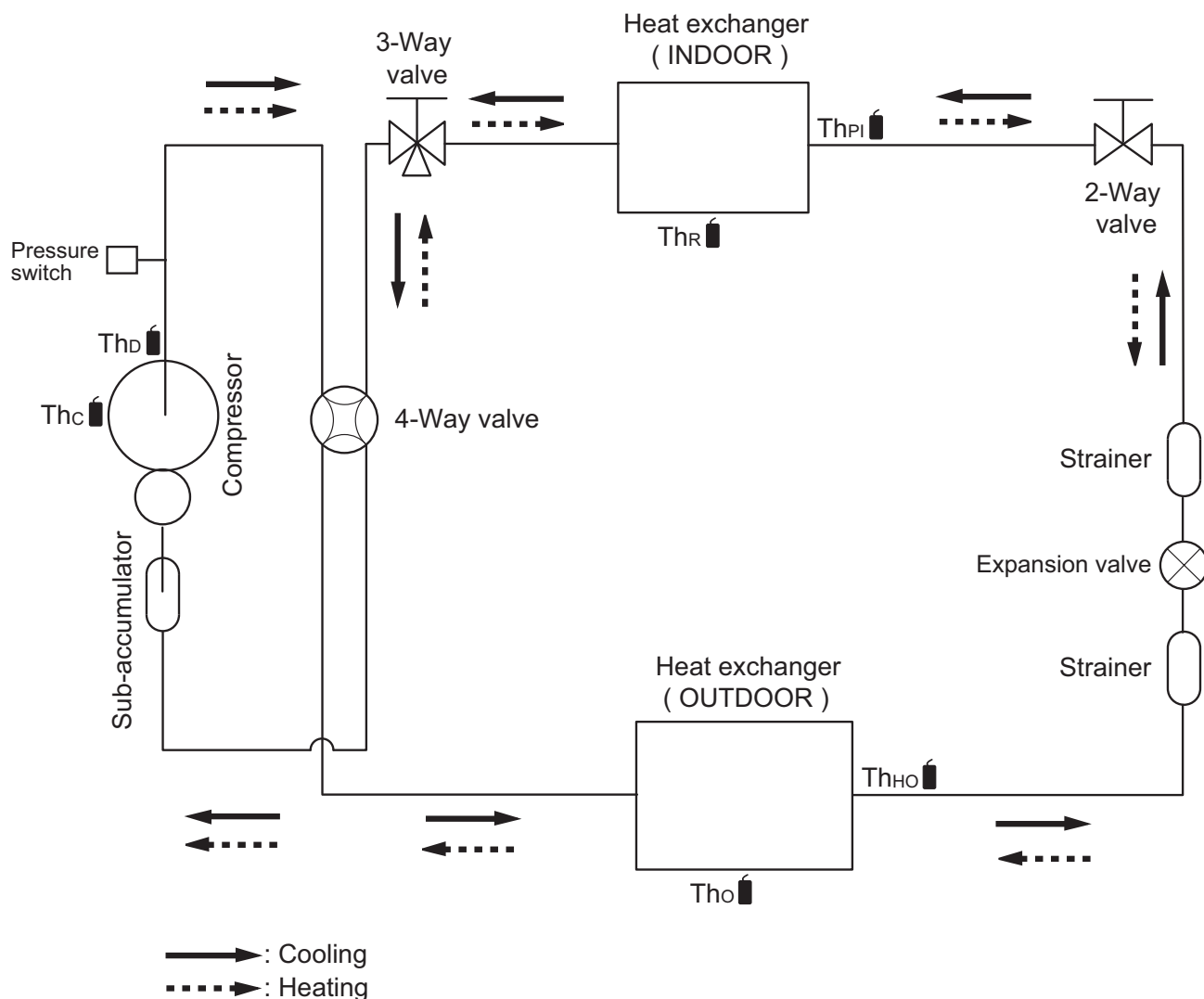








## 4. Refrigerant circuit

### 4-1. Model: AOYG24KBTB

OUTDOOR UNIT  
AOYG24KBTB

OUTDOOR UNIT  
AOYG24KBTB



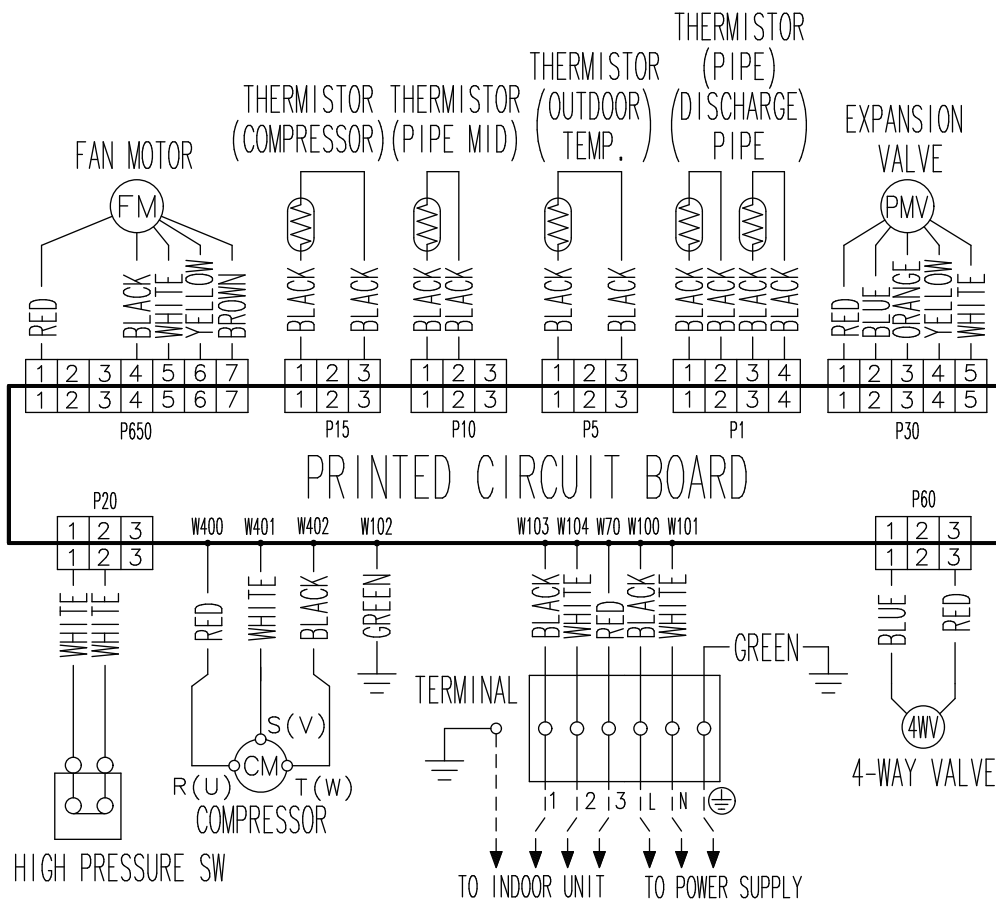
- Thc  : Thermistor (Compressor temperature)
- ThD  : Thermistor (Discharge temperature)
- Tho  : Thermistor (Outdoor temperature)
- ThHO  : Thermistor (Heat Exchanger Out temperature)
- ThR  : Thermistor (Room temperature)
- ThPI  : Thermistor (Pipe temperature)

# 5. Wiring diagrams

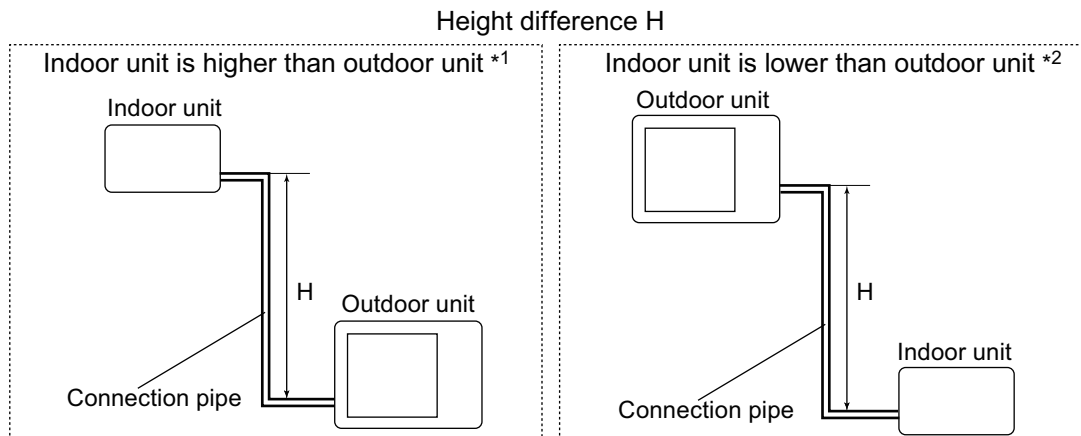
## 5-1. Model: AOYG24KBTB

OUTDOOR UNIT  
AOYG24KBTB

OUTDOOR UNIT  
AOYG24KBTB



## 6. Capacity compensation rate for pipe length and height difference



### 6-1. Model: AOYG24KBTB

**NOTE:** Values mentioned in the table are calculated based on the maximum capacity.

COOLING			Pipe length (m)						
			5	7.5	10	15	20	25	30
Height difference H (m)	Indoor unit is higher than outdoor unit *1	25	—	—	—	—	—	0.893	0.877
		20	—	—	—	—	0.917	0.900	0.885
		10	—	—	0.966	0.947	0.932	0.914	0.899
		7.5	—	0.979	0.970	0.951	0.936	0.918	0.903
		5	0.992	0.983	0.974	0.955	0.939	0.922	0.906
	Indoor unit is lower than outdoor unit *2	0	1.000	0.991	0.981	0.963	0.946	0.930	0.914
		-5	1.000	0.991	0.981	0.963	0.946	0.930	0.914
		-7.5	—	0.991	0.981	0.963	0.946	0.930	0.914
		-10	—	—	0.981	0.963	0.946	0.930	0.914
		-20	—	—	—	—	0.946	0.930	0.914
-25	—	—	—	—	—	0.930	0.914		

HEATING			Pipe length (m)						
			5	7.5	10	15	20	25	30
Height difference H (m)	Indoor unit is higher than outdoor unit *1	25	—	—	—	—	—	0.871	0.855
		20	—	—	—	—	0.887	0.871	0.855
		10	—	—	0.952	0.903	0.887	0.871	0.855
		7.5	—	0.976	0.952	0.903	0.887	0.871	0.855
		5	1.000	0.976	0.952	0.903	0.887	0.871	0.855
	Indoor unit is lower than outdoor unit *2	0	1.000	0.976	0.952	0.903	0.887	0.871	0.855
		-5	0.995	0.971	0.947	0.899	0.883	0.866	0.850
		-7.5	—	0.969	0.945	0.897	0.881	0.865	0.849
		-10	—	—	0.942	0.894	0.879	0.863	0.847
		-20	—	—	—	—	0.869	0.854	0.838
-25	—	—	—	—	—	0.850	0.834		

## 7. Additional charge calculation

### 7-1. Model: AOYG24KBTB

Refrigerant type		R32
Refrigerant amount	g	1,250

#### ■ Refrigerant charge

Total pipe length	m	20 or less	25	30 (Max.)	20 g/m
Additional charge amount	g	0	100	200	

## 8. Airflow

### 8-1. Model: AOYG24KBTB

#### ● Cooling

m <sup>3</sup> /h	2,700
l/s	750
CFM	1,589

#### ● Heating

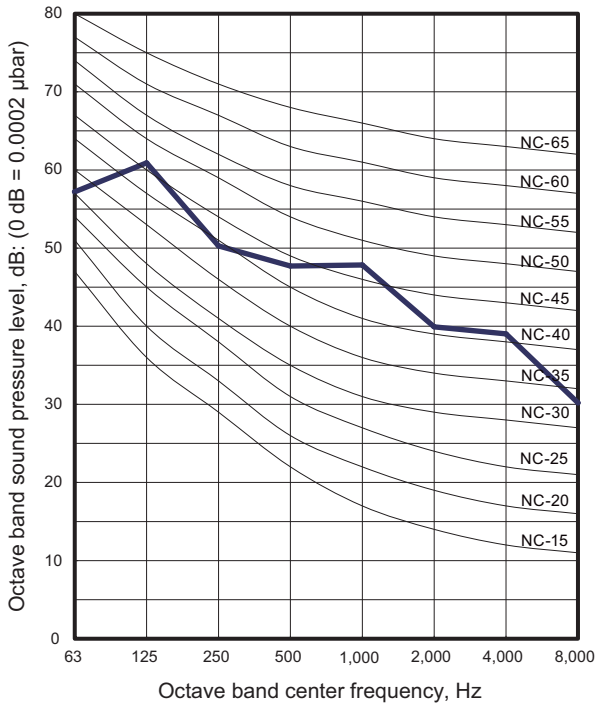
m <sup>3</sup> /h	2,700
l/s	750
CFM	1,589

## 9. Operation noise (sound pressure)

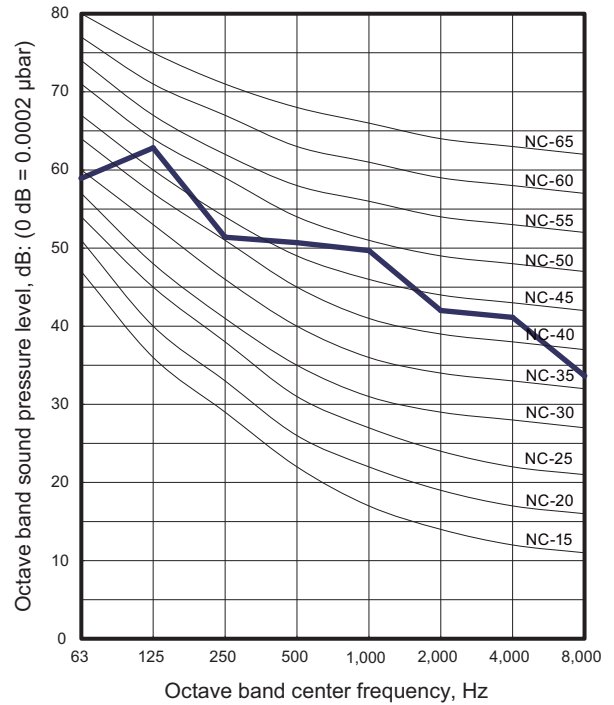
### 9-1. Noise level curve

#### Model: AOYG24KBTB

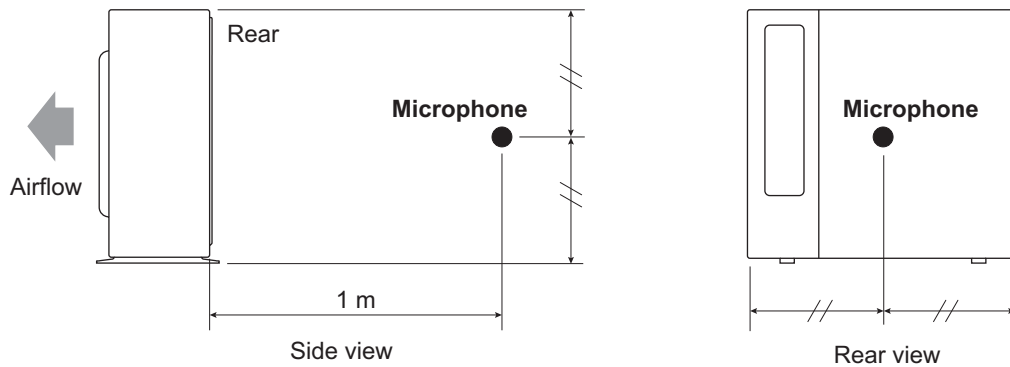
##### ● Cooling



##### ● Heating



### 9-2. Sound level check point



**NOTE:** Detailed shape of the actual outdoor unit might be slightly different from the one illustrated above.



## 10. Electrical characteristics

Model name			AOYG24KBTB
Power supply	Voltage	V	230 ~
	Frequency	Hz	50
Max operating current *1		A	13.6
Starting current		A	9.7
Wiring spec. *2	Circuit breaker current		A
	Power cable		mm <sup>2</sup>
	Connection cable *3	Cross-sectional area	mm <sup>2</sup>
		Limited wiring length	m
			20
			2.5
			1.5
			31

\*1: Maximum current is the total current of the indoor unit and the outdoor unit.

\*2: Selected sample based on Japan Electrotechnical Standards and Codes Committee E0005. As the regulations of wire size and circuit breaker differ in each country or region, select appropriate devices complied to the regional standard.



\*3: Limit voltage drop to less than 2%. Increase conductor size if voltage drop is 2% or more.

# 11. Safety devices

Type of protection	Protection form		Model
			AOYG24KBTB
Circuit protection	Current fuse (Main PCB)		250 V, 25 A 250 V, 5 A 250 V, 3.15 A
Fan motor protection	Thermal protection program	Activate	125 ±10 °C Fan motor stop
		Reset	120 ±10 °C Fan motor restart
Compressor protection	Thermal protection program (Discharge temp.)	Activate	110 °C Compressor stop
		Reset	After 7 minutes Compressor restart
	Thermal protection program (Compressor temp.)	Activate	108 °C Compressor stop
		Reset	80 °C or less Compressor restart
	Thermal protection program (Outdoor temp.) (Only in COOL or DRY mode)	Activate	-20 °C Compressor stop
		Reset	-15 °C Compressor restart

## 12. Accessories

### 12-1. Model: AOYG24KBTB

Part name	Exterior	Q'ty	Part name	Exterior	Q'ty
Installation manual		1	Drain pipe		1