



AIR CONDITIONER

**Wall Mounted type**

# DESIGN & TECHNICAL MANUAL

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INDOOR



AS\*G09LTCA  
AS\*G12LTCA

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OUTDOOR



AO\*G09LTC



AO\*G12LTC

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**FUJITSU GENERAL LIMITED**

# 1. INDOOR UNIT

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**WALL MOUNTED TYPE :**

**AS\*G09LTCA**

**AS\*G12LTCA**

# CONTENTS

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## 1. INDOOR UNIT

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<b>1. FEATURE</b> .....	01 - 01
<b>2. WIRELESS REMOTE CONTROLLER</b> .....	01 - 03
<b>3. SPECIFICATIONS</b> .....	01 - 05
<b>4. DIMENSIONS</b> .....	01 - 06
<b>5. WIRING DIAGRAMS</b> .....	01 - 08
<b>6. CAPACITY TABLE</b> .....	01 - 09
6-1. COOLING CAPACITY.....	01 - 09
6-2. HEATING CAPACITY.....	01 - 10
<b>7. FAN PERFORMANCE</b> .....	01 - 11
7-1. AIR VELOCITY DISTRIBUTION.....	01 - 11
7-2. AIR FLOW.....	01 - 13
<b>8. OPERATION NOISE</b> .....	01 - 15
8-1. NOISE LEVEL CURVE.....	01 - 15
8-2. SOUND LEVEL CHECK POINT.....	01 - 16
<b>9. ELECTRIC CHARACTERISTICS</b> .....	01 - 17
<b>10. SAFETY DEVICES</b> .....	01 - 18
<b>11. EXTERNAL INPUT &amp; OUTPUT</b> .....	01 - 19
11-1. EXTERNAL INPUT.....	01 - 19
11-2. EXTERNAL OUTPUT.....	01 - 21
<b>12. FUNCTION SETTING</b> .....	01 - 23
<b>13. OPTIONAL PARTS</b> .....	01 - 27

# 1. FEATURE

## MODEL

AS\*G09LTCA / AO\*G09LTC  
AS\*G12LTCA / AO\*G12LTC



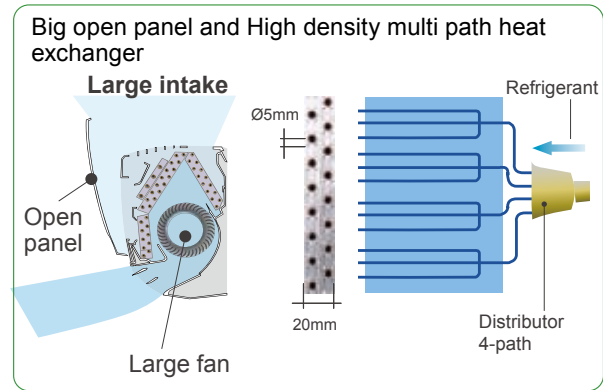
## FEATURES

### Energy-Efficiency classification A

Europe Energy-Efficiency classification A achieved

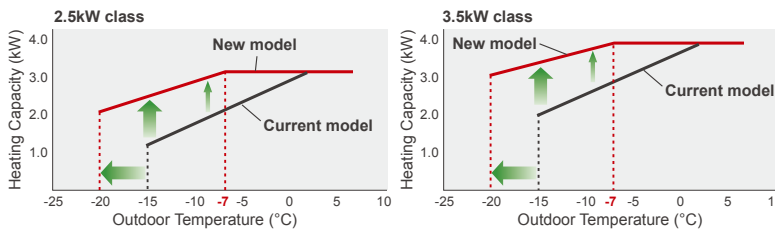
### Thin & Slim design

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



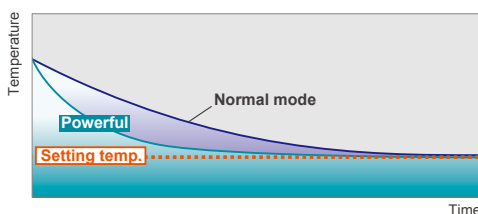
### Powerful heating

Heating capacity was improved at low outdoor temperature. Rated heating capacity is maintained even at -7 °C outdoor temperature. This new model can operate even at -20 °C low outdoor 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.



## ● 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

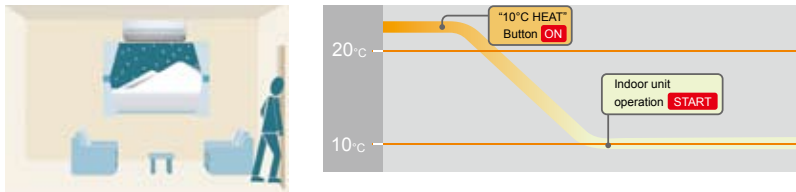


## ● 10°C HEAT Operation \*Only available with Wireless RC.

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

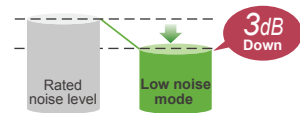
Caution)

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



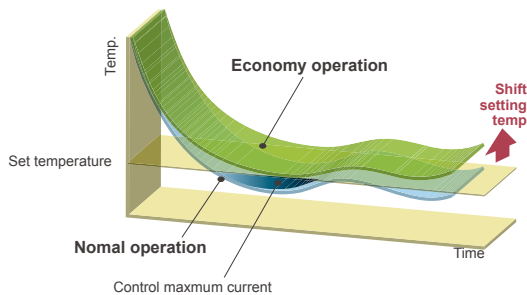
## ● Outdoor unit low noise \*Only available with Wireless RC.

When air-conditioner operates in large capacity, operation noise of outdoor unit will be suppressed. In case of room temperature being close to setting temperature, operation noise might not decrease.



## ● Economy operation

Example : Cooling operation



- Economy operation is energy saving, as the set temperature of indoor unit is shifted by 1°C and the maximum electric value of the outdoor unit is suppressed.

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

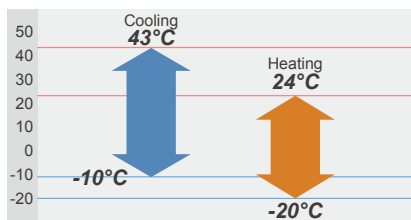
Weekly timer can be easily set by wireless remote controller.

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.



## ● Low outdoor air temperature correspondence



## 2. WIRELESS REMOTE CONTROLLER

### ■ FEATURES



- \* 3 Mode timer setup  
(Weekly / Program / Sleep) are possible.
- \* Easy operation.
- \* Easy to change signal code (4 patterns) by button operation.

#### ● Simple function setting

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

#### ● Built-in timers

Select from Three different timer programs (Weekly / Program / Sleep).

#### ● Weekly timer

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

#### ● Program timer

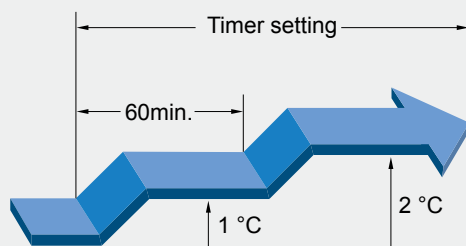
The program timer operates the on and off timer once within a 24 hour period.

#### ● Sleep timer

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

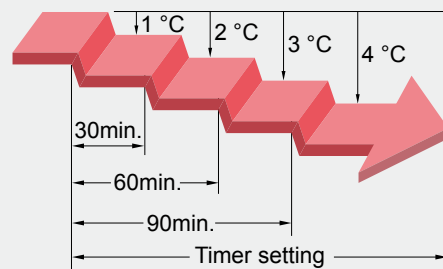
#### Cooling operation/dry operation

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

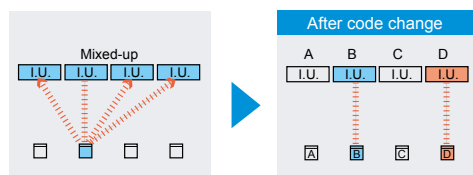


#### Heating operation

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



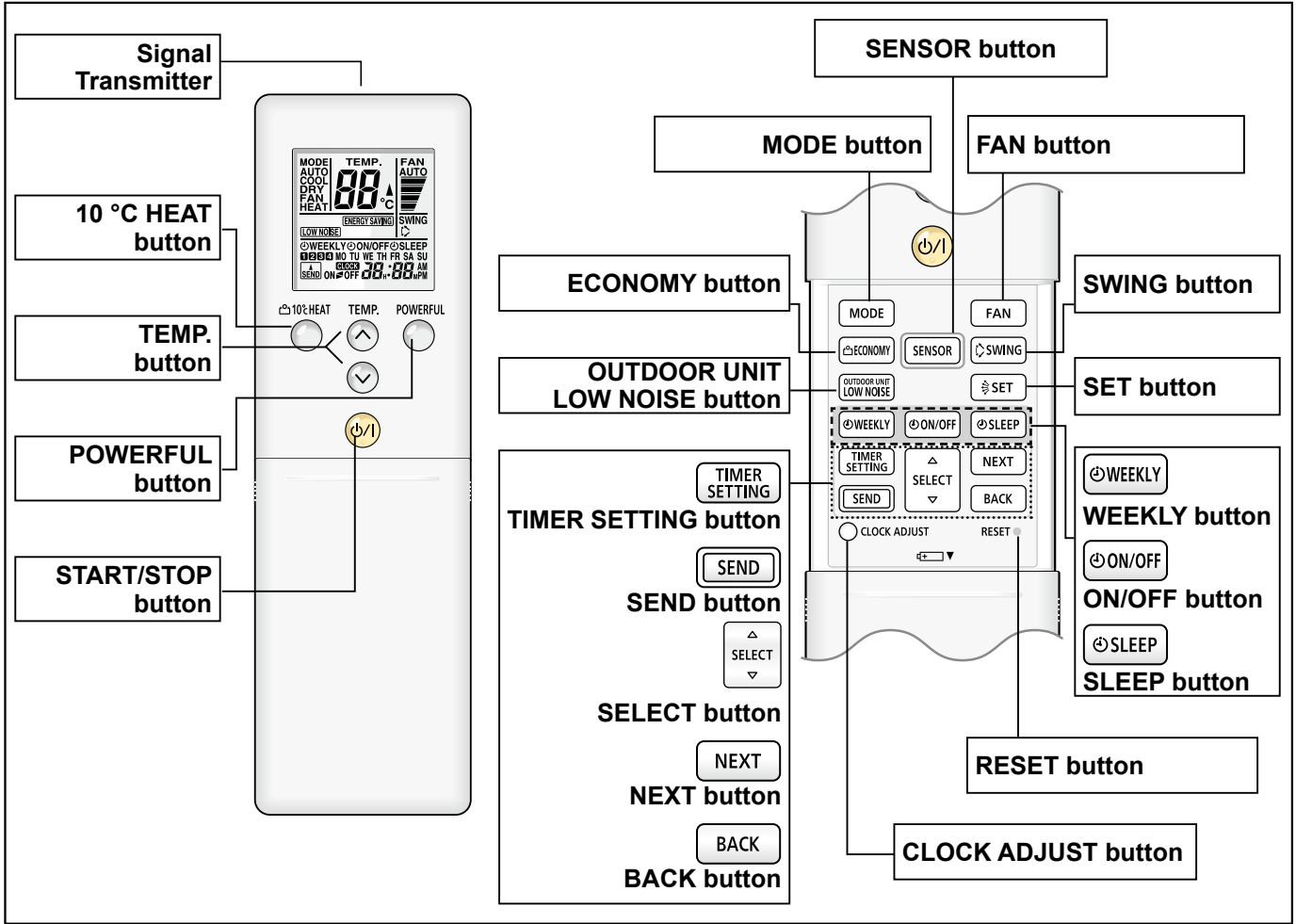
#### ● Switching remote controller signal code



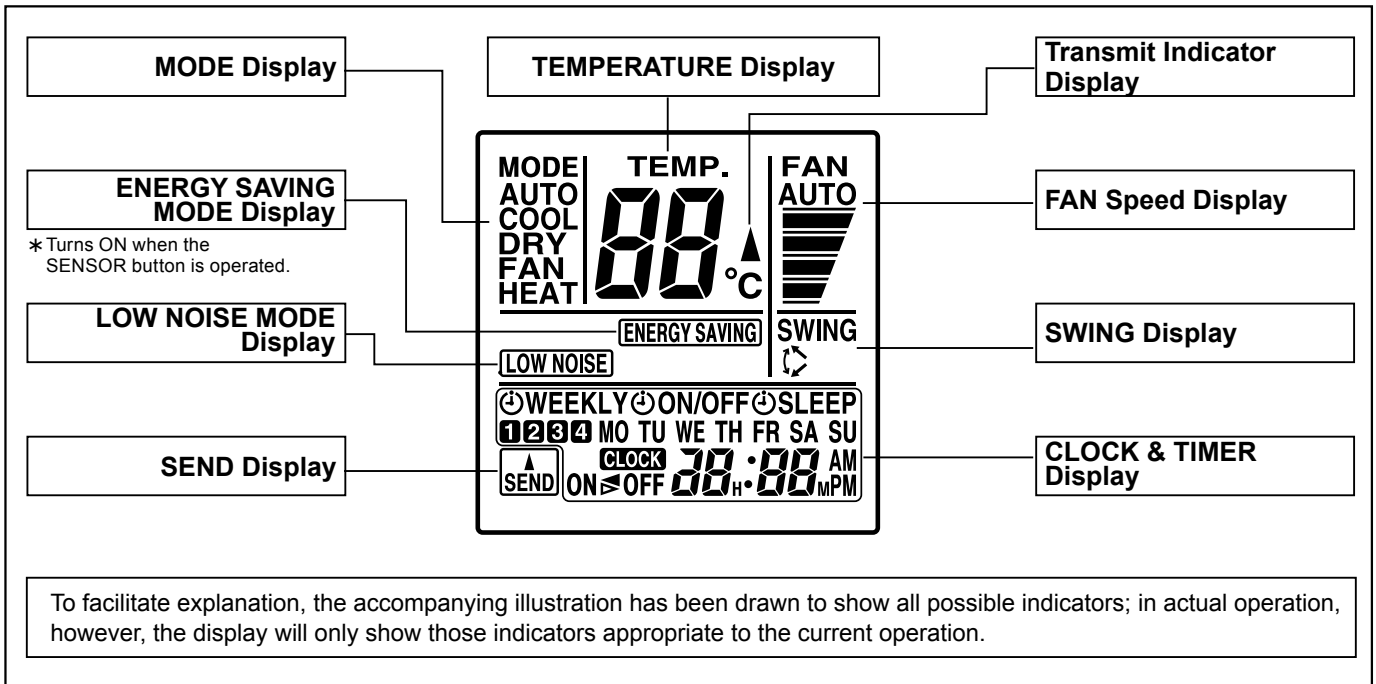
- Code selector switch eliminates unit being wrongly switched.  
(Up to 4 codes can be set.)

\*I.U.=Indoor unit

# FUNCTIONS



## Display panel



# SPECIFICATION

SIZE	(H x W x D mm)	205 x 61 x 17
WEIGHT	( g )	122
ACCESSORY		Holder

### 3. SPECIFICATIONS

Type				WALL MOUNTED INVERTER HEAT PUMP		
Model name				AS*G09LTCA	AS*G12LTCA	
Power source				230V~ 50Hz		
Available voltage range				198-264V~ 50Hz		
European energy label			Cooling	A	A	
			Heating	A	A	
Capacity	Cooling	Rated	kW	2.50	3.50	
			Btu/h	8,500	11,900	
		Min-Max	kW	0.9-3.5	1.1-4.0	
			Btu/h	3,100-11,900	3,800-13,600	
	Heating	Rated	kW	3.20	4.00	
			Btu/hh	10,900	13,600	
Min-Max		kW	0.9-5.4	0.9-6.5		
		Btu/h	3,100-18,400	3,100-22,100		
Input power	Cooling	Rated	kW	0.505	0.850	
		Min-Max		0.25-1.26	0.20-1.70	
	Heating	Rated		0.660	0.910	
		Min-Max		0.25-1.92	0.20-2.60	
Current	Cooling	Rated	A	2.6	4.0	
		Max		6.5	9.0	
	Heating	Rated		3.3	4.3	
		Max		9.0	10.5	
EER	Cooling		kW/kW	4.95	4.12	
COP	Heating			4.85	4.40	
SENSIBLE CAPACITY	Cooling		kW	1.62	2.28	
POWER FACTOR	Cooling		%	84	92	
	Heating			87	92	
Moisture removal			l/h(pints/h)	1.3(2.3)	1.8(3.2)	
FAN	Airflow rate	Cooling	High	m <sup>3</sup> /h	800	850
			Med		640	670
			Low		550	550
			Quiet		330	330
		Heating	High		800	850
			Med		670	710
			Low		550	550
			Quiet		330	330
	Type× Q'ty			Cross flow fanx1		
	Motor output			W	29	
Sound pressure level	Cooling	High	dB(A)	42	43	
		Med		36	37	
		Low		32	32	
		Quiet		21	21	
	Heating	High		42	43	
		Med		37	38	
		Low		32	32	
		Quiet		21	21	
Heat exchanger type	Dimensions (H×W×D)		mm	320x690x20 Sub 84x690x13.3		
	Fin pitch			1.1 Sub 1.4		
	Rows Stages			2x20 Sub 1x4		
	Pipe type			Copper		
	Fin type			Aluminium		
Enclosure		Material	Polystyrene			
		Colour	Pearl silver			
Dimensions (H×W×D)	Net		mm	282x870x185		
	Gross			247x920x373		
Weight	Net		kg	9.5		
	Gross			12		
Connection pipe	Size	Liquid	mm	Ø6.35(Ø1/4in)		
		Gas		Ø9.52(Ø3/8in)		
	Method			Flare		
Operation range	Cooling	°C	18 to 32			
		%RH	80 or less			
	Heating	°C	16 to 30			
Remote controller type			Wireless			
Drain pipe	Material			PP+LLDPE		
	Size		mm	Outer diameter:15.8 to 16.7 Inner diameter:13.8		

**Note:**

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:5m,Height difference:0m(Outdoor unit-Indoor unit)

The maximum current is the maximum value when the operated within the operation range(temperature).

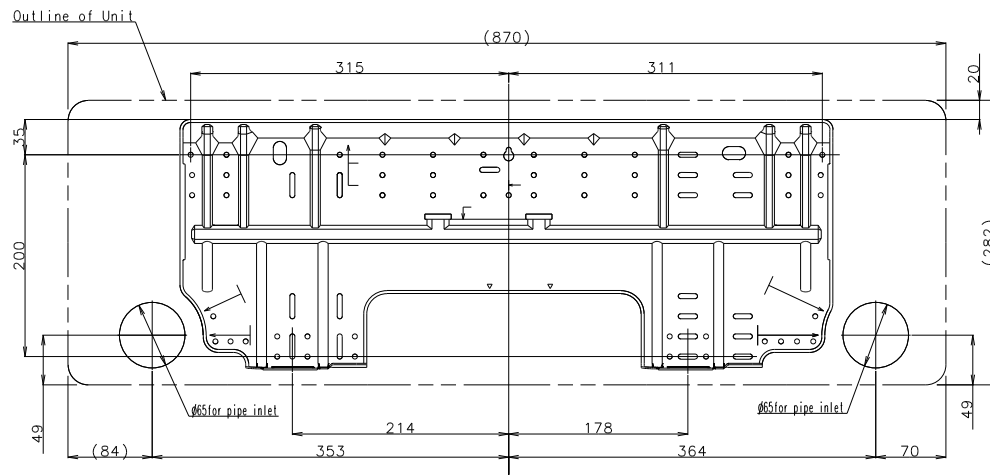
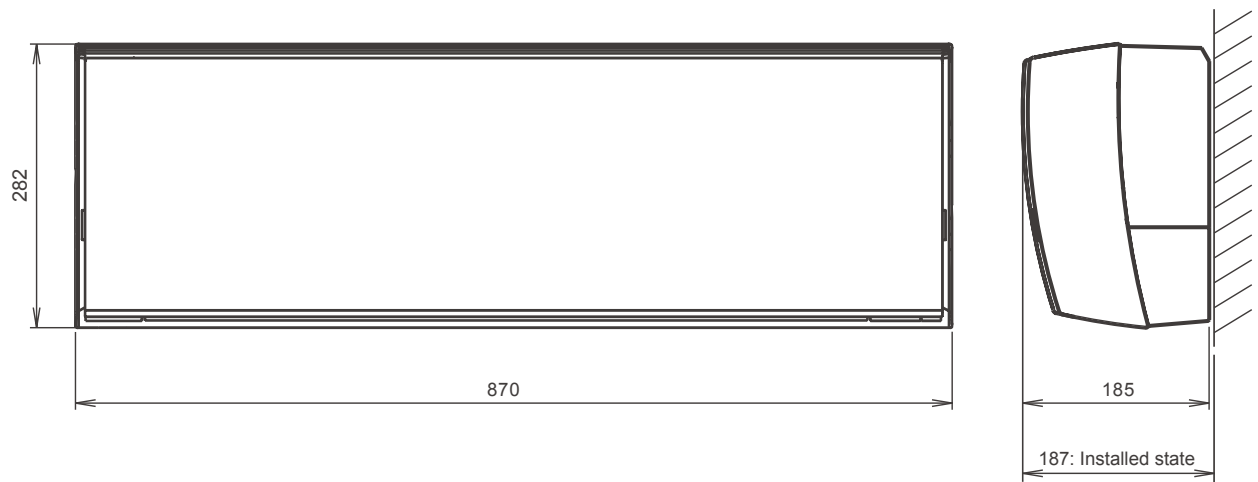
The protective function might work when using it outside the operation range.



# 4. DIMENSIONS

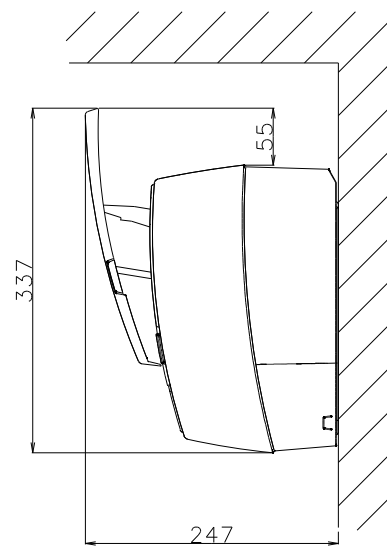
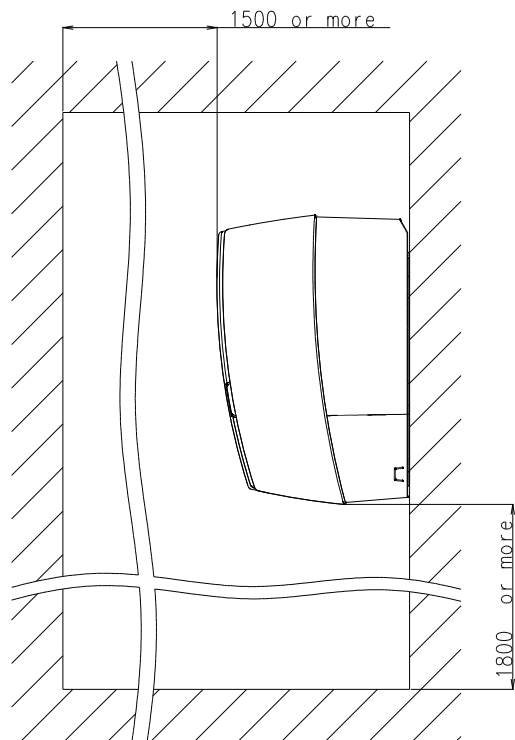
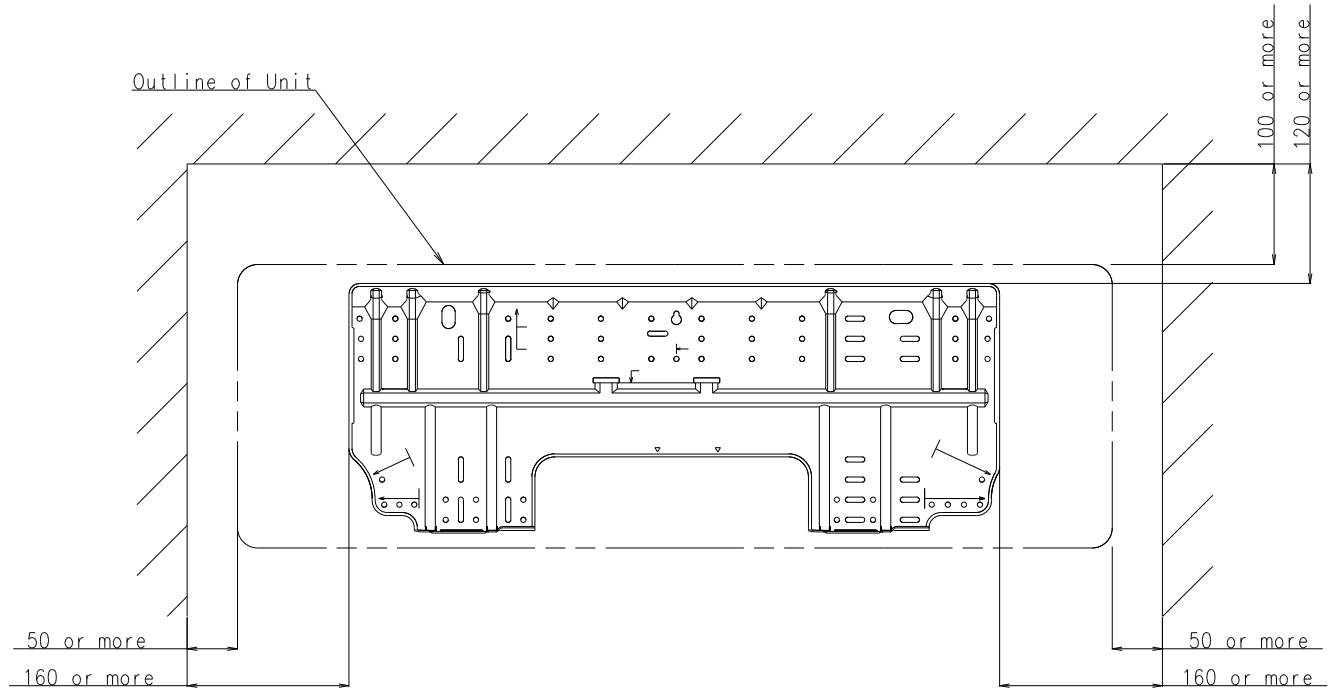
■ MODEL: AS\*G09LT, AS\*G12LT

(Unit : mm)



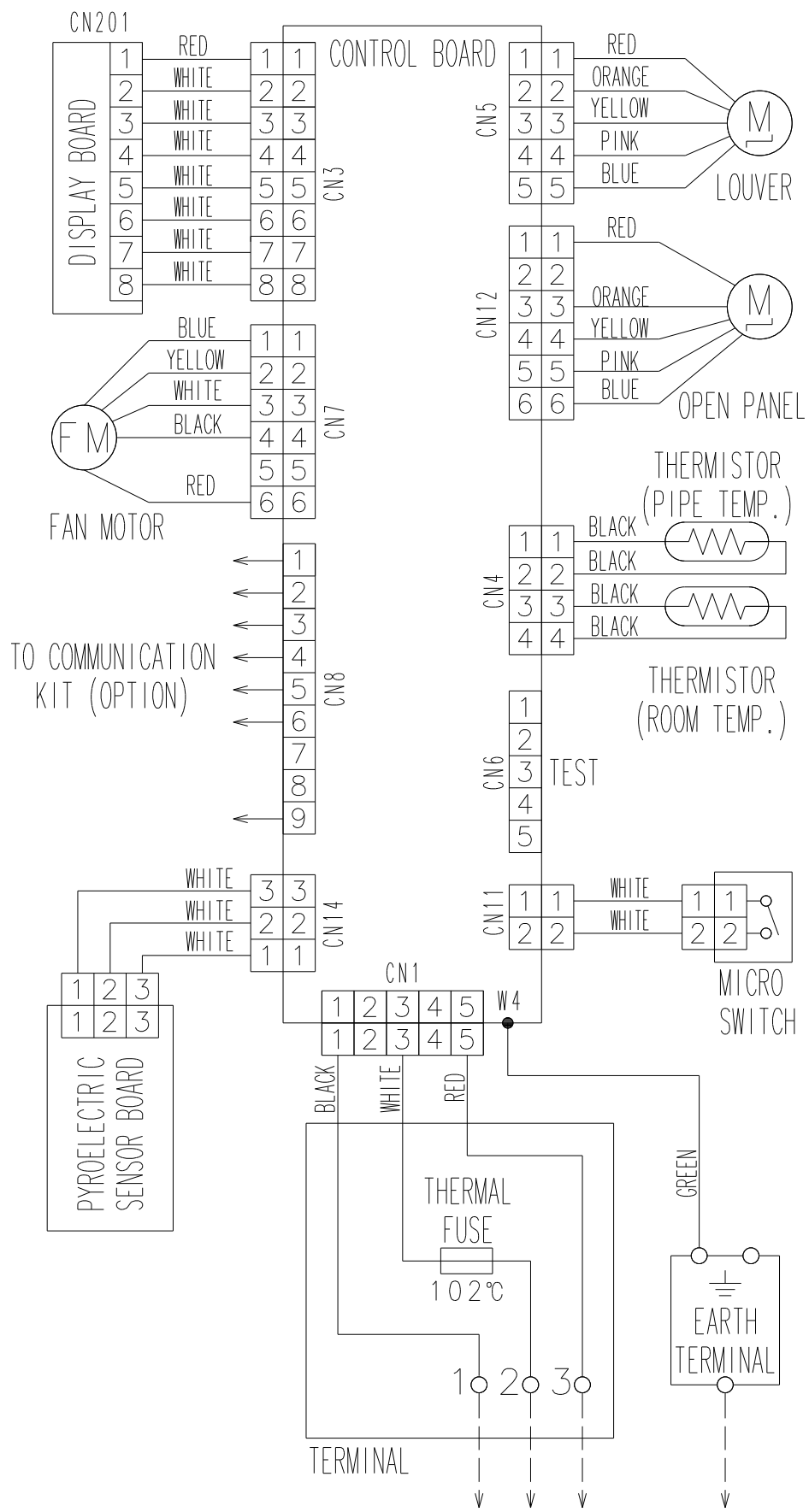
# ■ INSTALLATION PLACE

(Unit : mm)



# 5. WIRING DIAGRAMS

## ■ MODEL: AS\*G09LT, AS\*G12LT



# 6. CAPACITY TABLE

## 6-1. COOLING CAPACITY

### ■ MODEL: AS\*G09LT

AFR	13.3
-----	------

		Indoor temperature																				
		18			21			23			25			27			29			32		
		12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	20	2.34	1.62	0.35	2.61	1.63	0.36	2.70	1.77	0.36	2.87	1.78	0.37	2.96	1.92	0.37	3.14	1.91	0.37	3.32	2.04	0.37
	25	2.22	1.54	0.40	2.48	1.55	0.40	2.56	1.68	0.41	2.73	1.69	0.41	2.81	1.82	0.41	2.98	1.82	0.42	3.15	1.93	0.42
	30	2.10	1.45	0.44	2.34	1.46	0.45	2.42	1.59	0.45	2.58	1.60	0.46	2.66	1.72	0.46	2.82	1.72	0.46	2.98	1.83	0.47
	35	1.98	1.37	0.49	2.20	1.38	0.49	2.28	1.50	0.50	2.43	1.50	0.50	2.50	1.62	0.51	2.65	1.61	0.51	2.80	1.72	0.52
	40	1.76	1.22	0.49	1.96	1.23	0.49	2.03	1.33	0.50	2.16	1.34	0.50	2.23	1.44	0.50	2.36	1.44	0.51	2.50	1.53	0.51
	43	1.63	1.13	0.49	1.82	1.14	0.49	1.88	1.24	0.50	2.00	1.24	0.50	2.07	1.34	0.50	2.19	1.33	0.51	2.31	1.42	0.51

### ■ MODEL: AS\*G12LT

AFR	14.2
-----	------

		Indoor temperature																				
		18			21			23			25			27			29			32		
		12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	20	3.28	2.28	0.58	3.65	2.30	0.59	3.77	2.50	0.59	4.02	2.50	0.60	4.15	2.70	0.60	4.40	2.69	0.61	4.64	2.87	0.62
	25	3.12	2.17	0.66	3.47	2.18	0.67	3.59	2.37	0.67	3.83	2.38	0.68	3.95	2.57	0.68	4.18	2.56	0.69	4.42	2.72	0.70
	30	2.95	2.05	0.74	3.28	2.06	0.75	3.40	2.24	0.75	3.62	2.25	0.76	3.73	2.43	0.77	3.96	2.42	0.77	4.18	2.57	0.78
	35	2.77	1.93	0.82	3.08	1.94	0.83	3.19	2.11	0.84	3.40	2.11	0.85	3.50	2.28	0.85	3.71	2.27	0.86	3.92	2.42	0.87
	40	2.34	1.72	0.76	2.60	1.73	0.77	2.69	1.88	0.78	2.87	1.88	0.79	2.96	2.03	0.79	3.14	2.02	0.80	3.31	2.16	0.81
	43	2.15	1.59	0.76	2.40	1.60	0.78	2.48	1.74	0.78	2.64	1.75	0.79	2.72	1.89	0.79	2.89	1.88	0.80	3.05	2.00	0.81

AFR : Air Flow Rate (m<sup>3</sup>/min)  
 TC : Total Capacity (kW)  
 SHC : Sensible Heat Capacity (kW)  
 IP : Input Power (kW)

# 6-2. HEATING CAPACITY

## ■ MODEL: AS\*G09LT

AFR	13.3
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		Indoor temperature											
		(°CDB)	16		18		20		22		24		
		(°CWB)	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP	
Outdoor temperature	(°CDB)	-20	-21	3.35	1.24	3.27	1.26	3.19	1.29	3.11	1.32	3.03	1.34
	-15	-16	3.74	1.31	3.65	1.34	3.56	1.37	3.47	1.39	3.38	1.42	
	-10	-11	4.03	1.40	3.93	1.43	3.84	1.46	3.74	1.49	3.64	1.51	
	-5	-7	4.25	1.45	4.15	1.48	4.04	1.51	3.94	1.54	3.84	1.57	
	0	-2	4.36	1.44	4.26	1.47	4.16	1.50	4.05	1.53	3.95	1.56	
	5	3	5.17	1.50	5.04	1.53	4.92	1.56	4.80	1.59	4.67	1.62	
	7	6	5.67	1.54	5.54	1.57	5.40	1.61	5.27	1.64	5.13	1.67	
	10	8	6.27	1.51	6.12	1.54	5.97	1.57	5.82	1.60	5.67	1.63	
	15	10	6.49	1.41	6.34	1.44	6.18	1.47	6.03	1.50	5.88	1.53	

## ■ MODEL: AS\*G12LT

AFR	14.2
-----	------

		Indoor temperature											
		(°CDB)	16		18		20		22		24		
		(°CWB)	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP	
Outdoor temperature	(°CDB)	-20	-21	4.10	2.02	4.00	2.06	3.90	2.10	3.80	2.14	3.71	2.18
	-15	-16	4.62	2.02	4.51	2.06	4.40	2.10	4.29	2.15	4.18	2.19	
	-10	-11	4.69	1.94	4.57	1.98	4.46	2.02	4.35	2.06	4.24	2.10	
	-5	-7	4.77	1.87	4.66	1.91	4.54	1.95	4.43	1.99	4.32	2.02	
	0	-2	4.89	1.80	4.77	1.84	4.66	1.88	4.54	1.91	4.42	1.95	
	5	3	6.07	1.86	5.92	1.90	5.78	1.94	5.64	1.98	5.49	2.02	
	7	6	6.83	1.92	6.66	1.96	6.50	2.00	6.34	2.04	6.18	2.08	
	10	8	7.54	1.94	7.36	1.98	7.18	2.02	7.00	2.06	6.82	2.10	
	15	10	7.82	1.95	7.63	1.99	7.44	2.03	7.26	2.07	7.07	2.11	

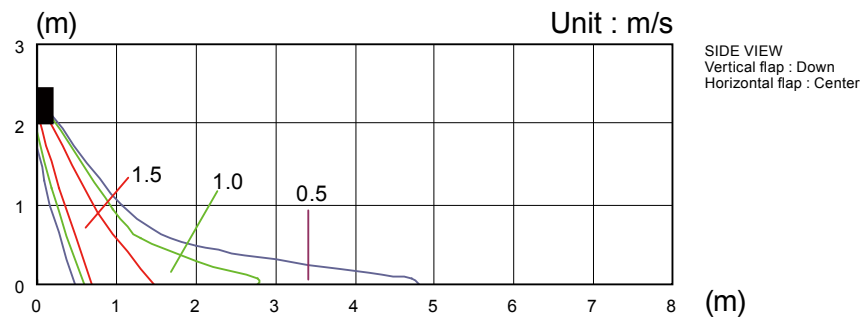
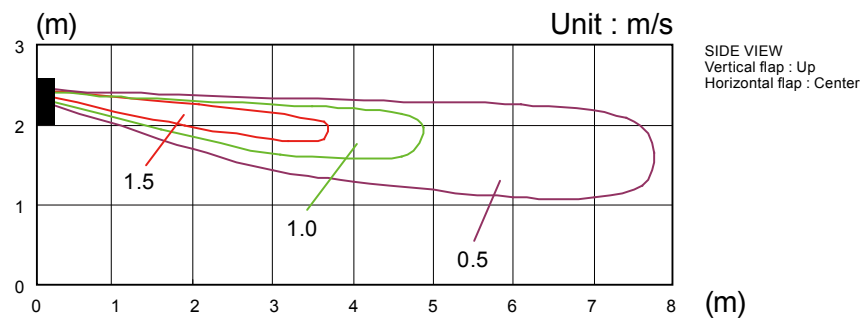
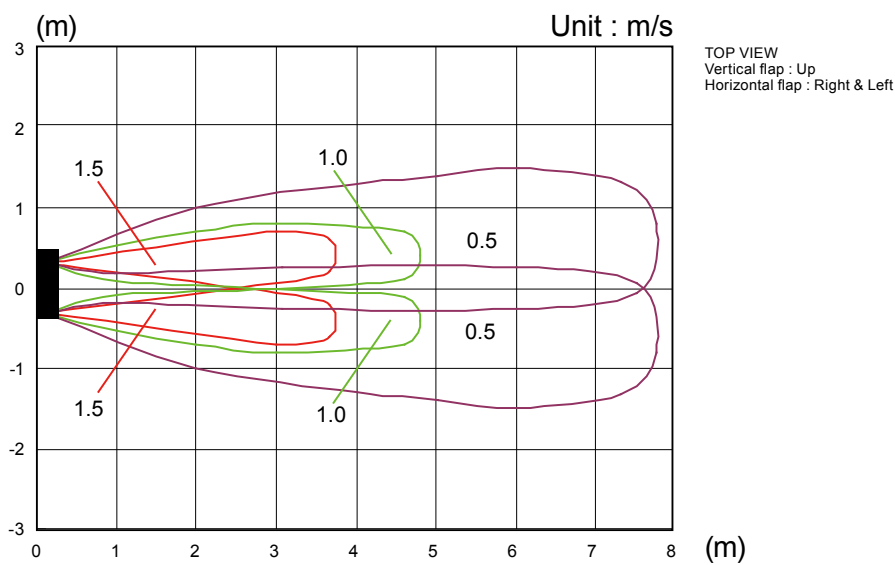
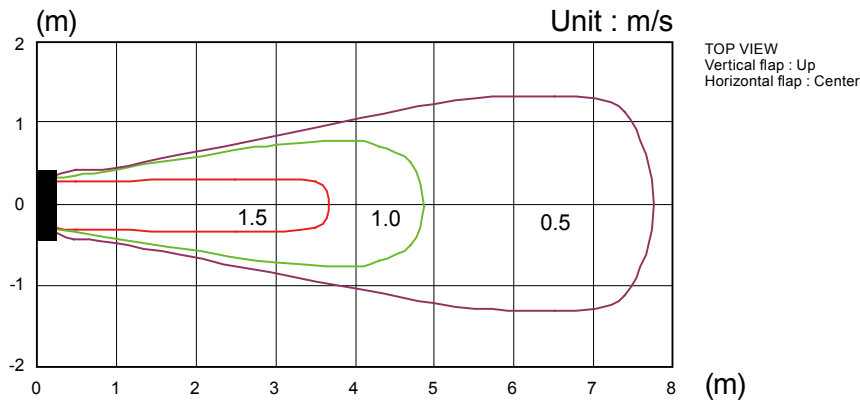
AFR : Air Flow Rate (m<sup>3</sup>/min)  
 TC : Total Capacity (kW)  
 IP : Input Power (kW)

# 7. FAN PERFORMANCE

## 7-1. AIR VELOCITY DISTRIBUTION

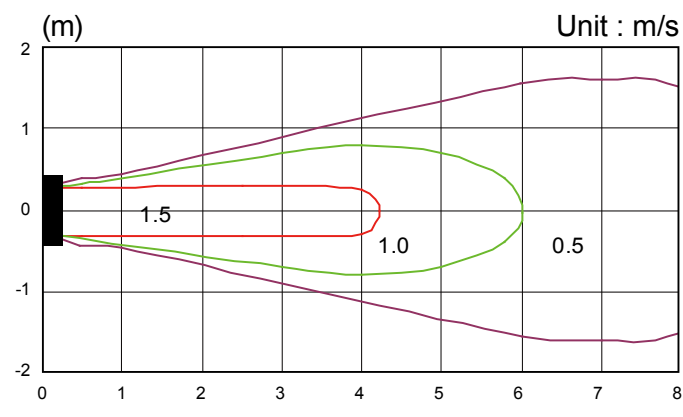
Note:  
Fan speed : High  
Operation mode : FAN

### ■ MODEL : AS\*G09LT

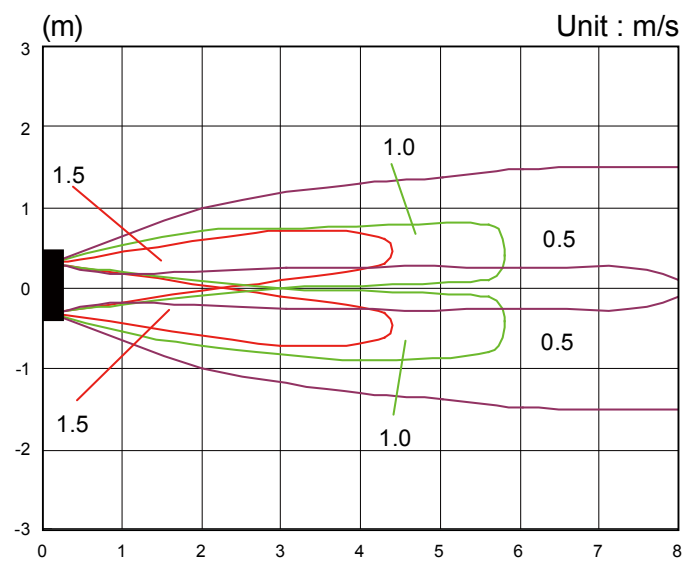


Note:  
Fan speed : High  
Operation mode : FAN

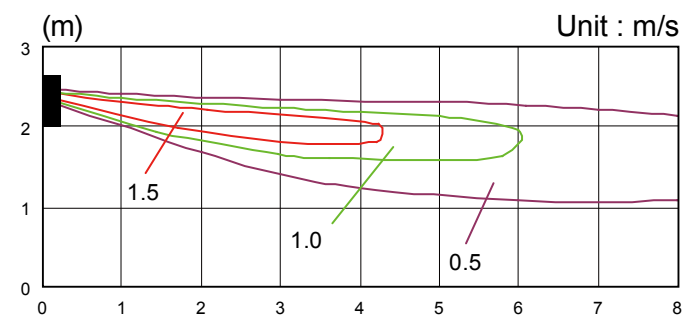
MODEL : AS\*G12LT



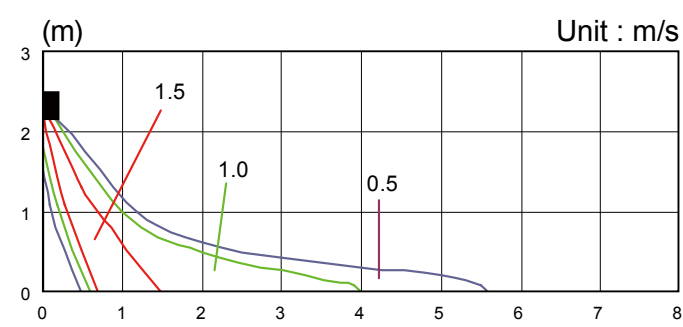
TOP VIEW  
Vertical flap : Up  
Horizontal flap : Center



TOP VIEW  
Vertical flap : Up  
Horizontal flap : Right & Left



SIDE VIEW  
Vertical flap : Up  
Horizontal flap : Center



SIDE VIEW  
Vertical flap : Down  
Horizontal flap : Center

## 7-2. AIR FLOW

### ■ MODEL: AS\*G09LT

#### ● Cooling

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1300	800	m <sup>3</sup> /h
		222	l/s
		471	CFM
MED	1080	640	m <sup>3</sup> /h
		178	l/s
		376	CFM
LOW	960	550	m <sup>3</sup> /h
		153	l/s
		324	CFM
QUIET	650	330	m <sup>3</sup> /h
		92	l/s
		194	CFM

#### ● Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1300	800	m <sup>3</sup> /h
		222	l/s
		471	CFM
MED	1120	670	m <sup>3</sup> /h
		186	l/s
		394	CFM
LOW	960	550	m <sup>3</sup> /h
		153	l/s
		324	CFM
QUIET	650	330	m <sup>3</sup> /h
		92	l/s
		194	CFM



**MODEL: AS\*G12LT**

**● Cooling**

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1370	850	m <sup>3</sup> /h
		236	l/s
		500	CFM
MED	1120	670	m <sup>3</sup> /h
		186	l/s
		394	CFM
LOW	960	550	m <sup>3</sup> /h
		153	l/s
		324	CFM
QUIET	650	330	m <sup>3</sup> /h
		92	l/s
		194	CFM

**● Heating**

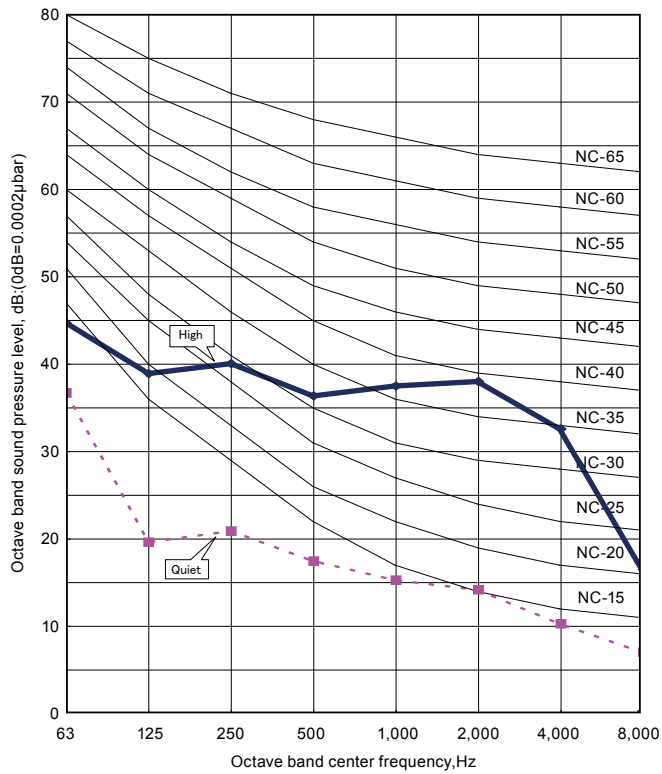
Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1370	850	m <sup>3</sup> /h
		236	l/s
		500	CFM
MED	1180	710	m <sup>3</sup> /h
		197	l/s
		418	CFM
LOW	960	550	m <sup>3</sup> /h
		153	l/s
		324	CFM
QUIET	650	330	m <sup>3</sup> /h
		92	l/s
		194	CFM

# 8. OPERATION NOISE

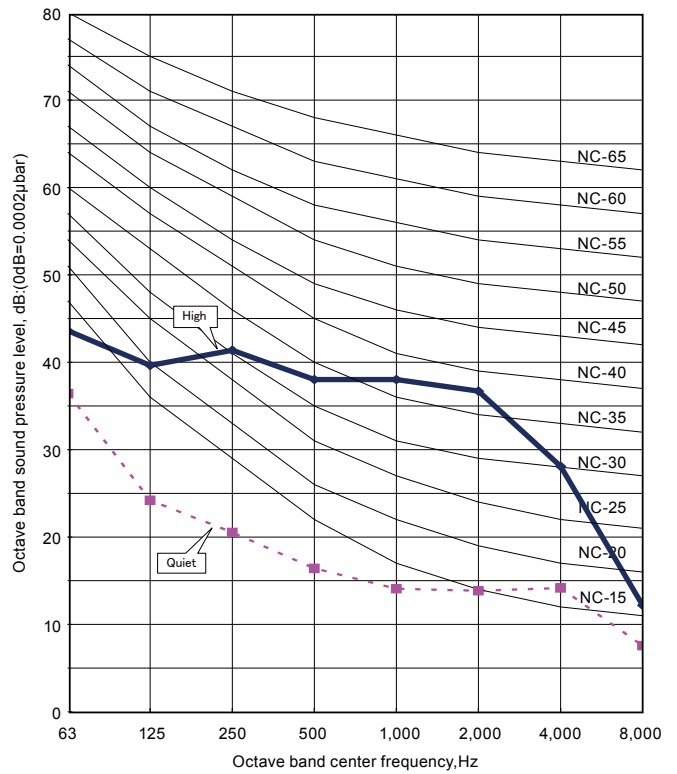
## 8-1. NOISE LEVEL CURVE

### MODEL: AS\*G09LT

#### ● Cooling

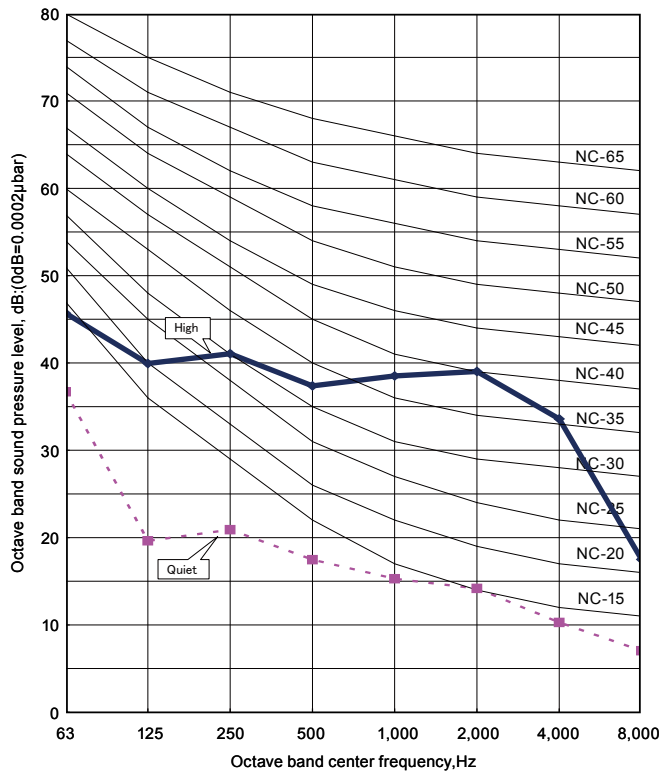


#### ● Heating

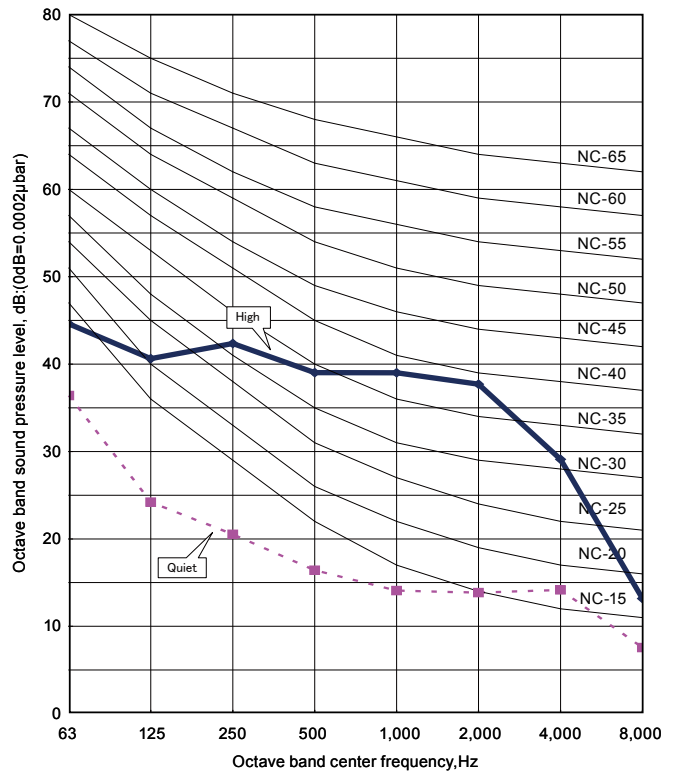


### MODEL: AS\*G12LT

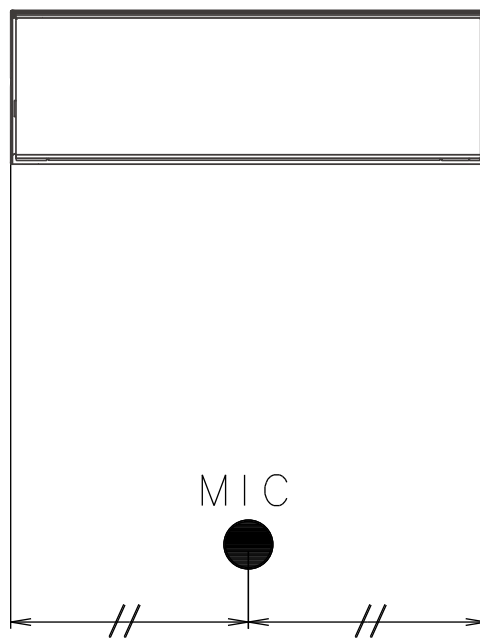
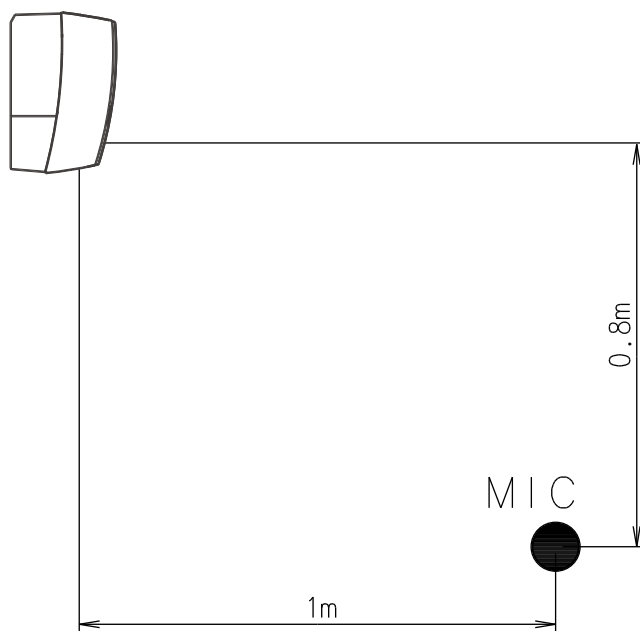
#### ● Cooling



#### ● Heating



## 8-2. SOUND LEVEL CHECK POINT



## 9. ELECTRIC CHARACTERISTICS

Model name			AS*G09LT	AS*G12LT
Power supply	Voltage	V	230~	
	Frequency	Hz	50	
Max. operating current		A	0.4	
*1)Wiring Spec.	Connection cable	mm <sup>2</sup>	1.0-1.5	1.5
	Limited wiring length	m	21	

\*1) Wiring Spec.

Selected Sample

(Selected based on Japan Electrotechnical Standard and Codes Committee E0005)

## 10. SAFETY DEVICES

	Protection form	Model
		AS*G09LT AS*G12LT
Circuit protection	Current fuse (PCB)	3.15A 250V
Terminal protection	Current (thermal) fuse	3A 250V
Fan motor protection	Thermal protector program	100 <sup>+15</sup> <sub>-10</sub> °C OFF 95 <sup>+5</sup> <sub>-10</sub> °C ON

# 11. EXTERNAL INPUT & OUTPUT

Connector	INPUT	OUTPUT	REMARKS
CNA01	Control input	-	See external input/output settings for details.
CNB01	-	Operation status output	
CNB02	-	Error status output	

## 11-1. EXTERNAL INPUT

### ■ CONTROL INPUT (Operation/Stop or Forced stop)

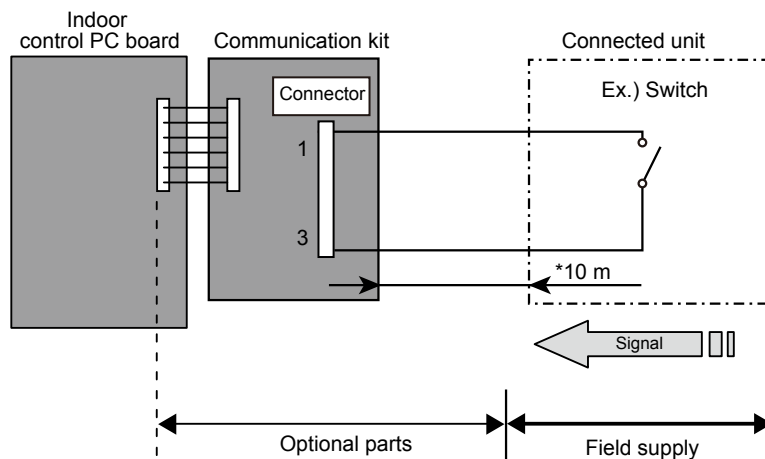
The air conditioner can be remotely operated by means of the following on-site work.

"Operation/Stop" mode or "Forced stop" mode can be selected with function setting of indoor unit.

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.

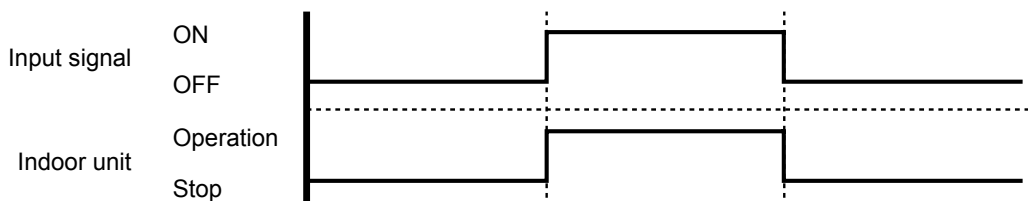
	Initial starting after power turned on	Starting other than at the left
Operation mode	Auto changeover	Mode at previous operation
Set temperature	24°C	Temperature at previous operation
Air flow mode	AUTO	Mode at previous operation
Up-down air direction (swing)	Standard air direction (swing OFF)	Air direction at previous operation
Left-right air direction (swing)	Standard air direction (swing OFF)	Air direction at previous operation

### ● Circuit diagram example

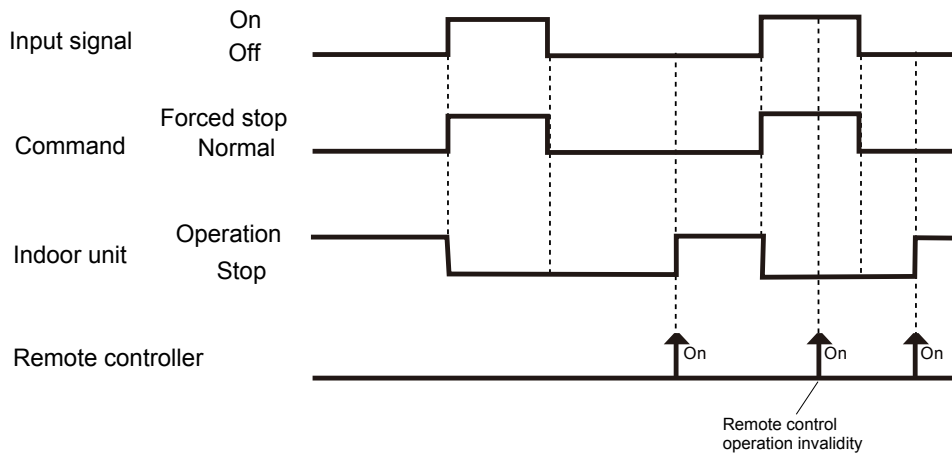


\* Make the distance from the PC board to the connected unit within 10m.  
Contact capacity : 24VDC or more, 10mA or more.  
Please use the non-polar relays and switches.

### ● When function setting is "Operation/Stop" mode



● When function setting is "Forced stop" mode

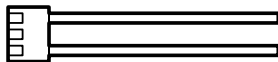


● Parts (Optional)

Parts name	Model name
External connect kit	UTY-XWZXZ5
Communication kit	UTY-TWBXF

\*For operating the EXTERNAL function, the Compact wall mounted type requires the communication kit in addition to the wire (UTY-XWZXZ5).

Wire (External input) : UTY-XWZXZ5

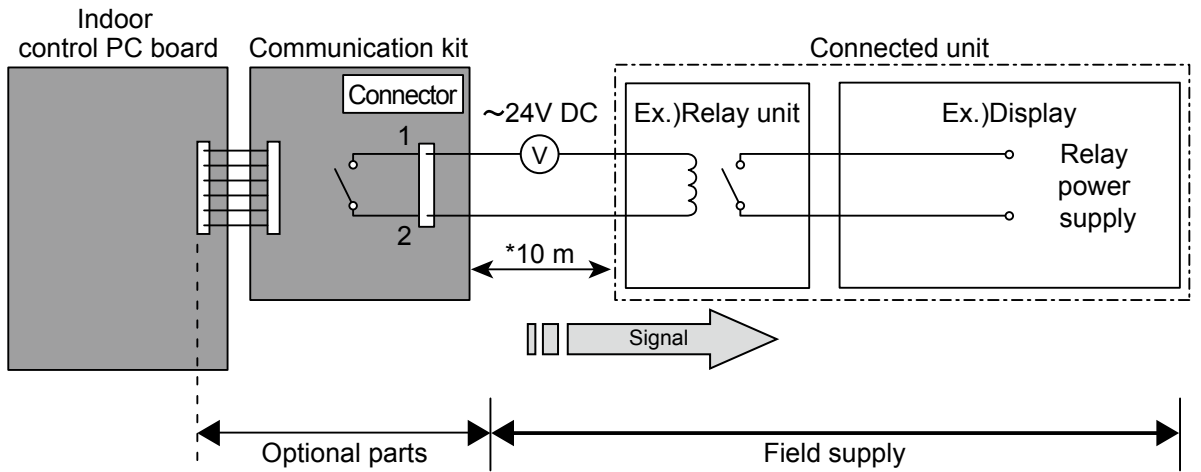


# 11-2. EXTERNAL OUTPUT

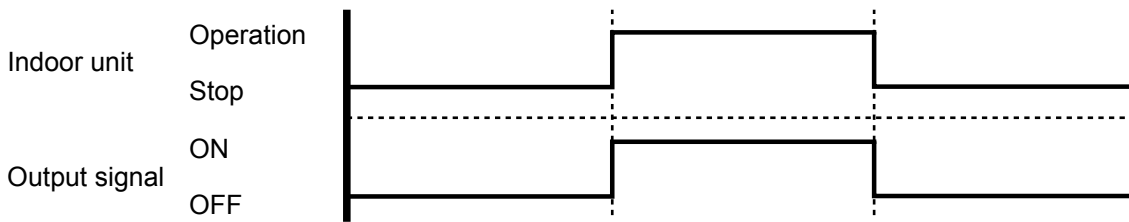
## ■ OPERATION STATUS OUTPUT

An air conditioner operation status signal can be output.

### ● Circuit diagram example



\* Make the distance from the PC board to the connected unit within 10m.  
Relay spec. : Max.24VDC, 10mA to less than 500mA.

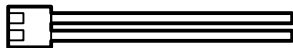


### ● Parts (Optional)

Parts name	Model name
External connect kit	UTY-XWZXZ5
Communication kit	UTY-TWBXF

\*For operating the EXTERNAL function, the wall mounted type requires the communication kit in addition to the wire (UTY-XWZXZ5).

Wire (External output) : UTY-XWZXZ5

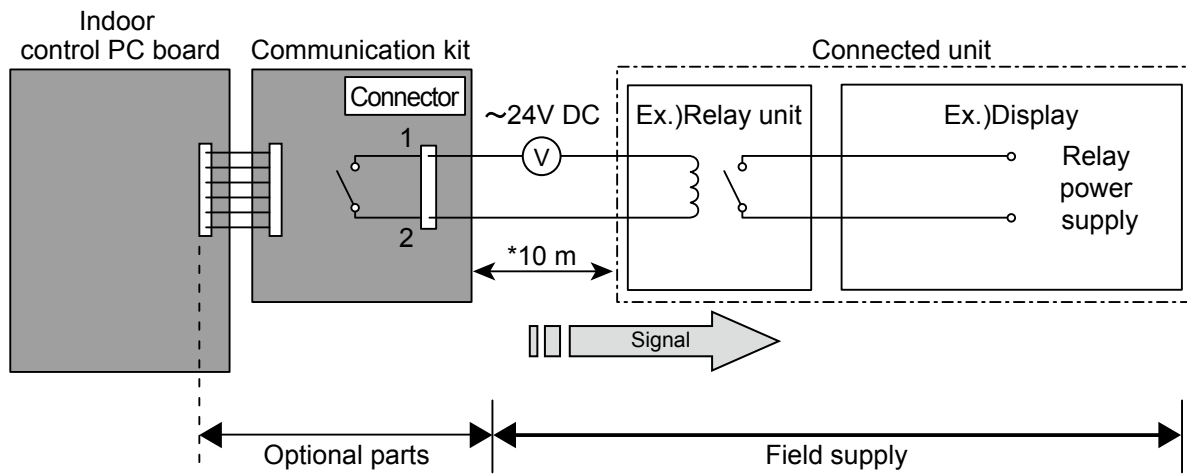




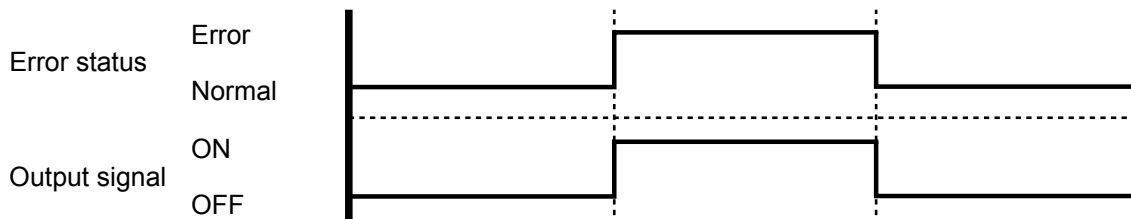
## ■ ERROR STATUS OUTPUT

An air conditioner error status signal can be output.

### ● Circuit diagram example



\* Make the distance from the PC board to the connected unit within 10m.  
Relay spec. : Max.24VDC, 10mA to less than 500mA.



### ● Parts (Optional)

Parts name	Model name
External connect kit	UTY-XWZXZ5
Communication kit	UTY-TWBXF

\*For operating the EXTERNAL function, the wall mounted type requires the communication kit in addition to the wire (UTY-XWZXZ5).

Wire (External output) : UTY-XWZXZ5



## 12. FUNCTION SETTING

### 12-1. INDOOR UNIT (Setting by 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 Value.
- Settings will not be changed if invalid numbers or setting values are selected.

#### ■ PREPARATION

- Turn on the power
  - \* 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.

#### ■ FUNCTION SETTING METHOD (for Wireless remote controller)

Perform the "FUNCTION SETTING" according to the installation conditions using the remote controller.

⚠ CAUTION
Confirm whether the wiring work for Outdoor unit has been finished.
Confirm that the cover for the electrical enclosure on the outdoor unit is in place.

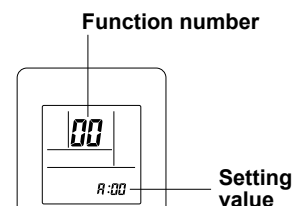
- This procedure changes to the function settings used to control the indoor unit according to the installation conditions. Incorrect settings can cause the indoor unit to malfunction.
- After the power is turned on, perform the "FUNCTION SETTING" according to the installation conditions using the remote controller.
- The settings may be selected between the following two: Function Number or Setting Value.
- Settings will not be changed if invalid numbers or setting values are selected.
- Refer to the installation manual enclosed with the remote control unit when the wired remote control unit (option) is used.
- Adjust the signal code of the indoor unit and the signal code of the remote controller.

#### Entering the Function Setting Mode

While pressing the POWERFUL button and SET TEMP. (Λ / ∨) simultaneously, press the RESET button to enter the function setting mode.

#### Selecting the Function Number and Setting Value

- (1) Press the SET TEMP. (Λ / ∨) buttons to select the function number.  
(Press the 10°C HEAT button to switch between the left and right digits.)
- (2) Press the POWERFUL button to proceed to setting the value.  
(Press the POWERFUL button again to return to the function number selection.)
- (3) Press the SET TEMP. (Λ / ∨) buttons to select the setting value.  
(Press the 10°C HEAT button to switch between the left and right digits.)
- (4) Press the MODE button, in the order listed to confirm the settings.  
Please confirm that the beep sounds.
- (5) Next, please press START/STOP (⏻ / ⏩) button. Please confirm that the beep sounds.
- (6) Press the RESET button to cancel the function setting mode.
- (7) After completing the FUNCTION SETTING, be sure to turn off the power and turn it on again.



⚠ CAUTION
After turning off the power, wait 10 seconds or more before turning it on again. The Function Setting does not become active unless the power is turned off then on again.

## FUNCTION DETAILS

	Functions	Compact wall mounted
1)	Filter sign	●
2)	Cooler room temperature correction	●
3)	Heater room temperature correction	●
4)	Auto restart	●
5)	Indoor room temperature sensor switching function	●
6)	Remote controller signal code	●
7)	External input control	●

### 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	Compact Wall Mounted
Standard	400 hours
Long interval	1000 hours
Short interval	200 hours

### 2) Cooler room temperature correction

Depending on the installed environment, the room temperature sensor may require a correction.

The settings may be selected as shown in the table below.

(◆... Factory setting)

Setting description	Function number	Setting value
Standard	30	00
Slightly lower control		01
Lower control		02
Warmer control		03

### 3) Heater room temperature correction

Depending on the installed environment, the room temperature sensor may require a correction.

The settings may be changed as shown in the table below.

(◆... Factory setting)

Setting description	Function number	Setting value
Standard	31	00
Lower control		01
Slightly warmer control		02
Warmer control		03

#### 4) 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 failure etc.  
Do not start and stop the indoor unit by this function in normal operation.  
Be sure to operate by the control unit, or external input device.

#### 5) Indoor room temperature sensor switching function

(Only for Wired remote controller)

The following settings are needed when use the control by Wired remote controller temperature sensor.

(◆... Factory setting)

Setting description	Function number	Setting value
◆ No	42	00
Yes		01

\*If setting value is "00" :  
Room temperature is controlled by the indoor unit temperature sensor.

\*If setting value is "01" :  
Room temperature is controlled by either indoor unit temperature sensor or remote controller unit sensor.

#### 6) Remote controller signal code

Change the indoor unit Signal Code, depending on the remote controllers.

(◆... Factory setting)

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

#### 7) External input control

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

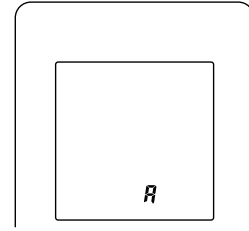
(◆... Factory setting)

Setting description	Function number	Setting value
◆ Operation/Stop mode	46	00
(Setting forbidden)		01
Forced stop mode		02

## ■ REMOTE CONTROLLER SIGNAL CODE SETTING

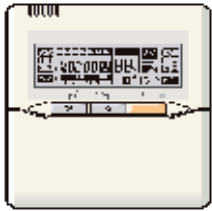


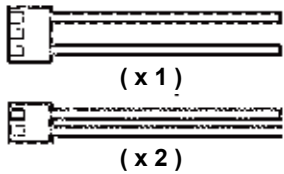


Use the following steps to select the signal code of the remote controller. (Note that the air conditioner cannot receive a signal code if the air conditioner has not been set for the signal code.)

- (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. (∧ / ∨) buttons to change the signal code between **A** → **b** → **c** → **d**.  
Match the code on the display to the air conditioner signal code.
- (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.

## 13. OPTIONAL PARTS

Exterior	Parts name	Model No.	Summary
	Wired remote controller	UTY-RNNYM	Unit control is performed by wired remote controller. *Optional communication kit is necessary for the installation.
	Simple remote controller	UTY-RSNYM	Unit control is performed by simple remote controller. *Optional communication kit is necessary for the installation.
	Communication kit	UTY-TWBXF	Use to connect with optional devices and air conditioner PC board.
 <p>( x 1 )</p> <p>( x 2 )</p>	External connect kit	UTY-XWZXZ5	Required when external device is connected. *Optional communication kit is necessary for the installation.
	Apple-catechin filter	UTR-FA16	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.
	Ion deodorisation filter	UTR-FA16-2	The filter deodorizes by powerfully decomposing absorbed odors using the oxidizing and reducing effects of ions generated by the ultra fine-particle ceramic.

## **2. OUTDOOR UNIT**

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**SINGLE TYPE :**

**AO\*G09LTC**

**AO\*G12LTC**

# CONTENTS

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## 2. OUTDOOR UNIT

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1. SPECIFICATIONS.....	02 - 01
2. DIMENSIONS .....	02 - 02
3. REFRIGERANT CIRCUIT .....	02 - 04
4. WIRING DIAGRAMS.....	02 - 05
5. CAPACITY COMPENSATION RATE FOR PIPE LENGTH AND HEIGHT DIFFERENCE .....	02 - 07
6. ADDITIONAL CHARGE CALCULATION.....	02 - 09
7. AIR FLOW.....	02 - 10
8. OPERATION NOISE.....	02 - 11
8-1. NOISE LEVEL CURVE .....	02 - 11
8-2. SOUND LEVEL CHECK POINT .....	02 - 12
9. ELECTRIC CHARACTERISTICS.....	02 - 13
10. SAFETY DEVICES .....	02 - 14



# 1. SPECIFICATIONS

OUTDOOR UNIT  
AO\*G09-12LT

OUTDOOR UNIT  
AO\*G09-12LT

Type			INVERTER HEAT PUMP		
Model name			AO*G09LTC	AO*G12LTC	
Power source			230V ~ 50Hz		
Available voltage range			198-264V ~ 50Hz		
Starting current			A		
			3.3	4.3	
Fan	Airflow rate	Cooling	m <sup>3</sup> /h	1,700	2,050
		Heating		1,700	2,000
	Type×Q'ty		Propeller fan×1		
	Motor output		W	50	115
Sound pressure level	Cooling	dB(A)	50	48	
	Heating		50	49	
Heat exchanger type	Dimensions(H×W×D)		mm	504 × 896 × 36.4	588 × 881 × 36.4
	Fin pitch			1.3	1.3
	Rows×Stages		2 × 24	2 × 28	
	Pipe type		Copper		
	Fin Type		Aluminium		
Compressor	Type×Q'ty		Rotary ×1		
	Motor output		W	750	850
Refrigerant	Type		R410A		
	Charge	g	1,050	1,200	
Refrigerant oil	Type		POE(VG74)		
Enclosure	Material		Steel		
	Colour		Beige Approximate colour of MUNSELL 10YR7.5/1.0		
Dimensions (H×W×D)	Net		mm	540 × 790 × 290	620 × 790 × 290
	Gross			633 × 945 × 395	713 × 945 × 395
Weight	Net		kg (lbs.)	33(72.8)	40(88.2)
	Gross			37(81.6)	43(94.8)
Connention pipe	Size	Liquid	mm	Ø6.35 (Ø1/4 in.)	
		Gas		Ø9.52 (Ø3/8 in.)	
	Method		Flare		
	Pre-charge length		m	15	
	Max. length			20	
Max. height difference		15			
Operation range	Cooling	°C	-10 to 43		
	Heating		-20 to 24		

Note :

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.(Outdoor unit - Indoor unit)

The maximum current is the maximum value when the operated within the operation range (temperature).

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

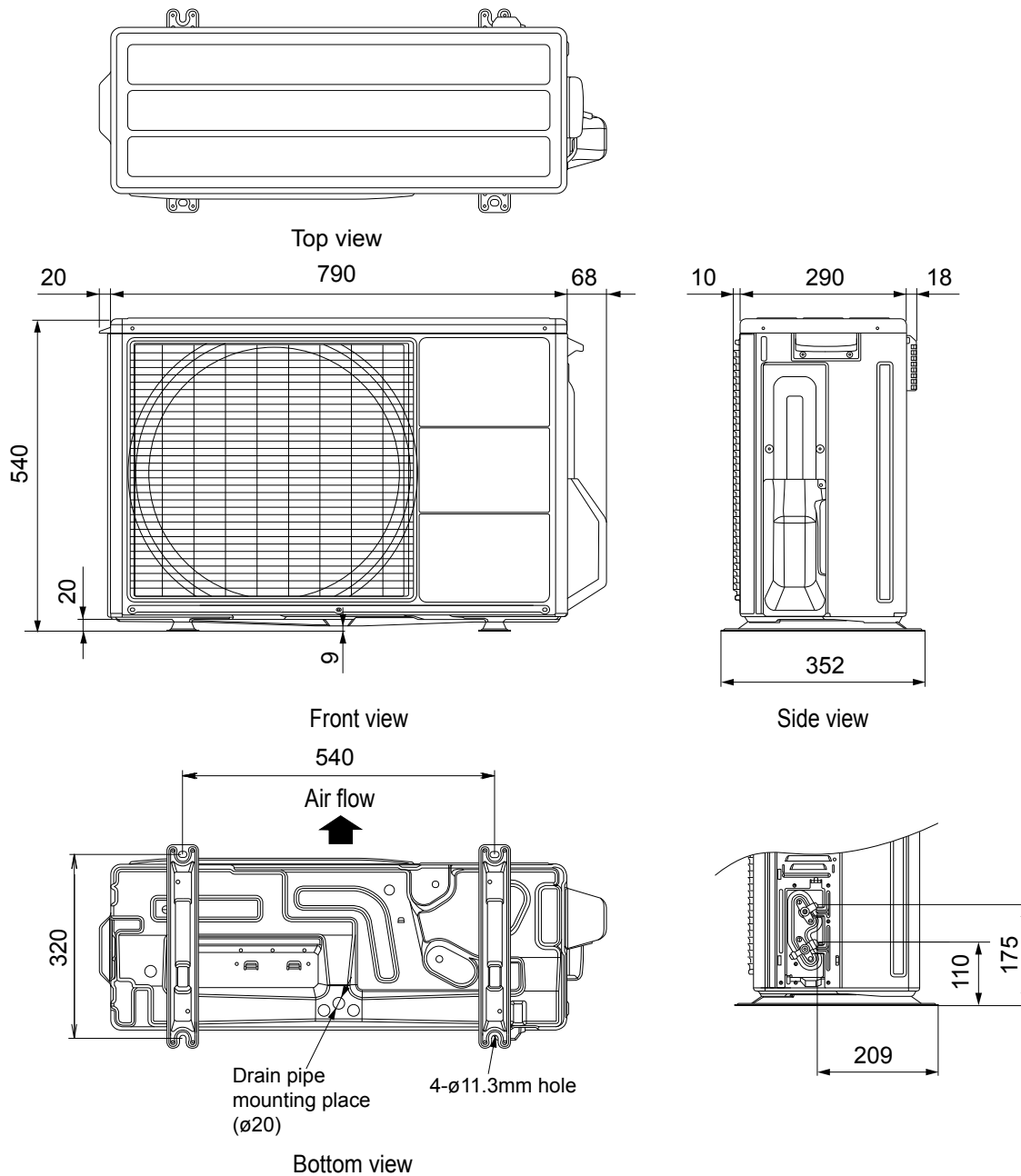
## 2. DIMENSIONS

### MODEL: AO\*G09LT

(Unit : mm)

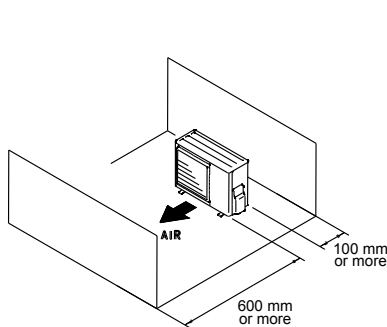
OUTDOOR UNIT  
AO\*G09-12LT

OUTDOOR UNIT  
AO\*G09-12LT

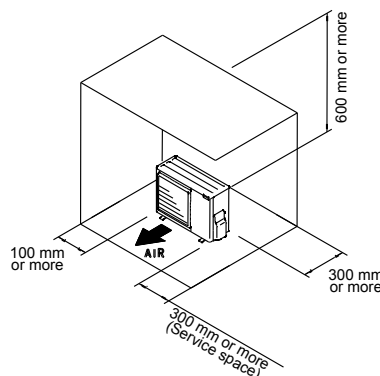


### INSTALLATION PLACE

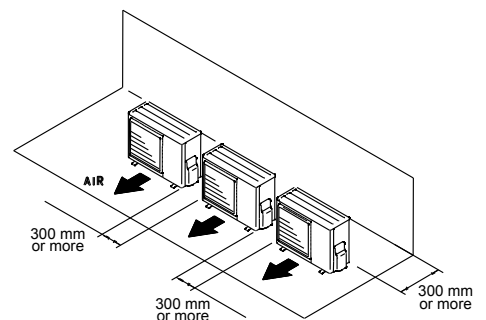
When there are obstacles at the back or front sides.



When there are obstacles at the back, side(s), and top.



When there are obstacles at the back, side with the installation of more than one unit.

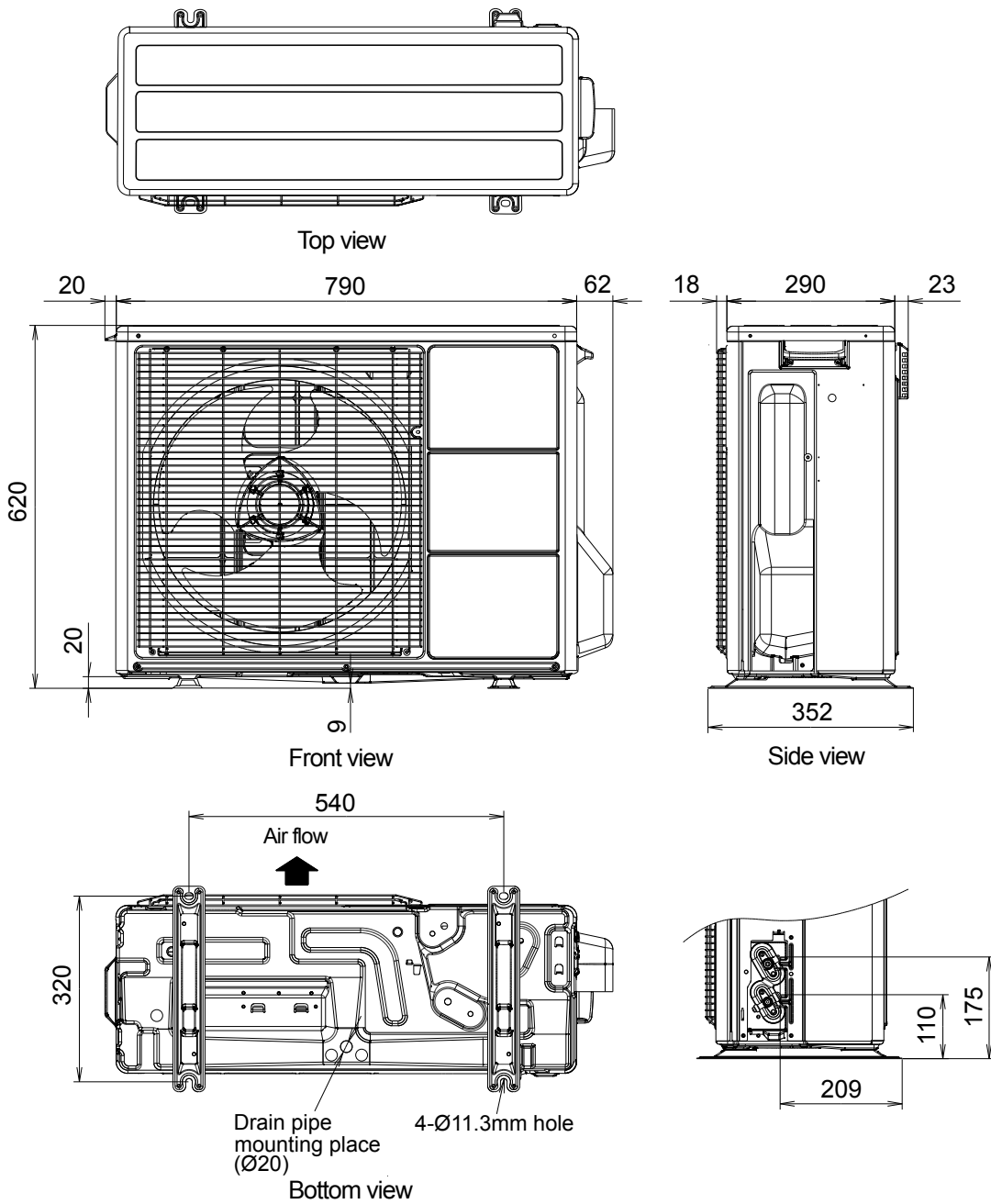


# MODEL: AO\*G12LT

(Unit : mm)

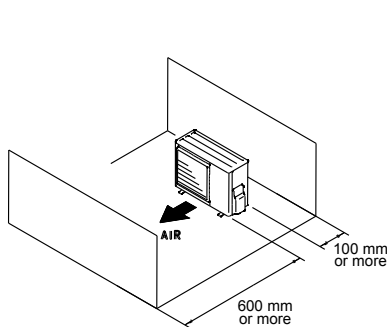
OUTDOOR UNIT  
AO\*G09-12LT

OUTDOOR UNIT  
AO\*G09-12LT

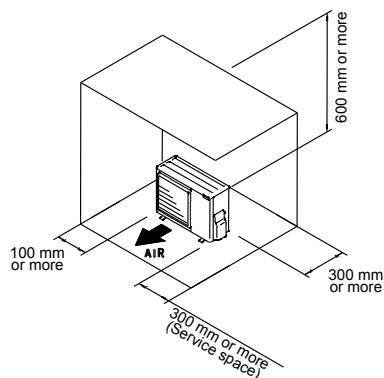


## INSTALLATION PLACE

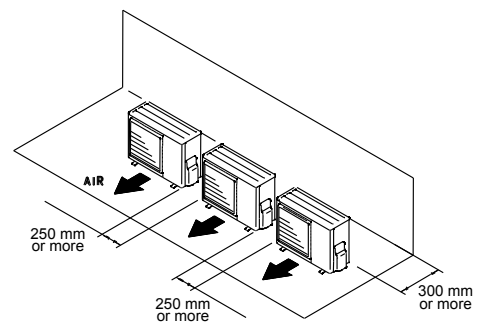
When there are obstacles at the back or front sides.



When there are obstacles at the back, side(s), and top.



When there are obstacles at the back, side with the installation of more than one unit.

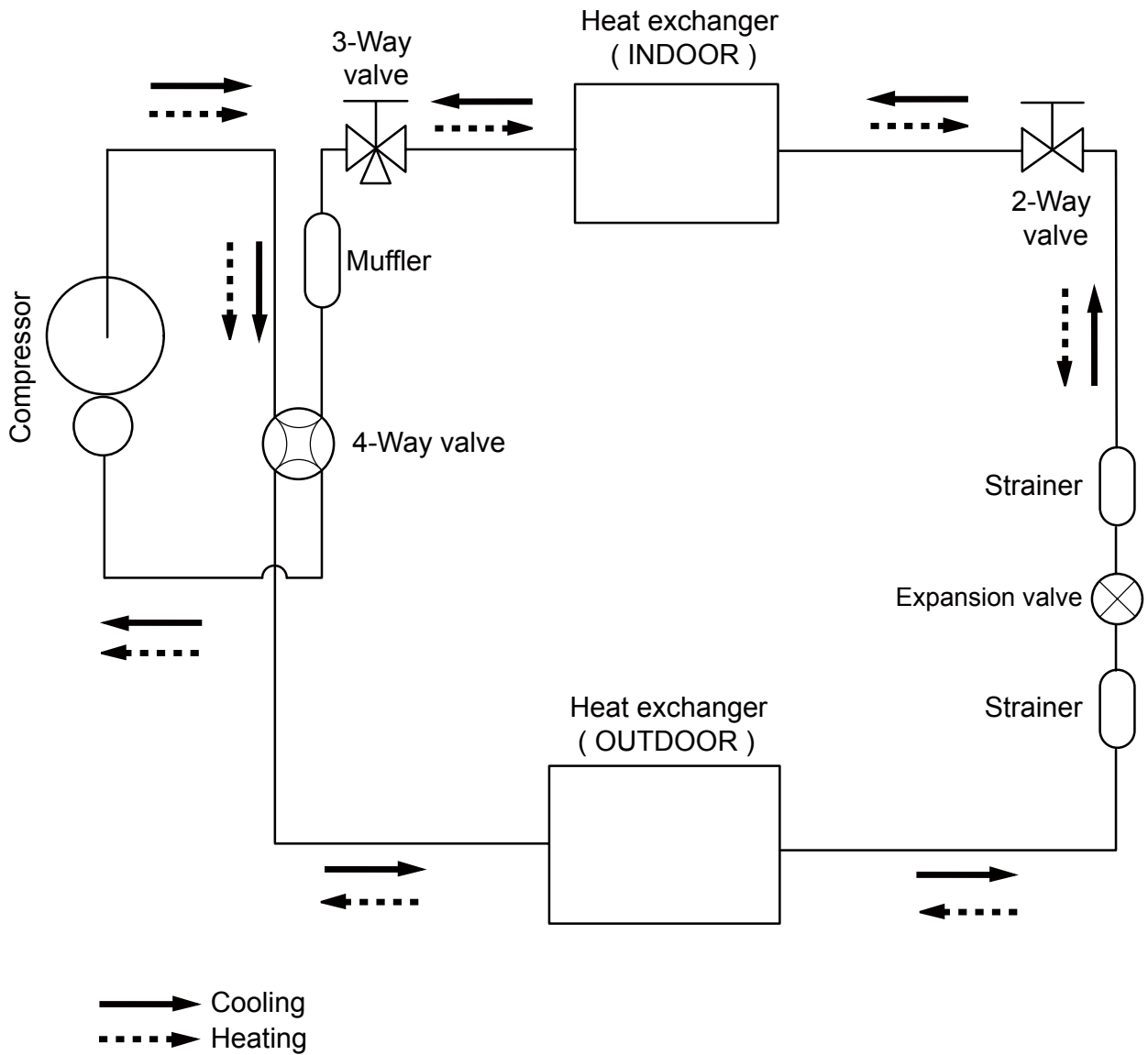


### 3. REFRIGERANT CIRCUIT

■ MODEL: AO\*G09LT, AO\*G12LT

OUTDOOR UNIT  
AO\*G09-12LT

OUTDOOR UNIT  
AO\*G09-12LT



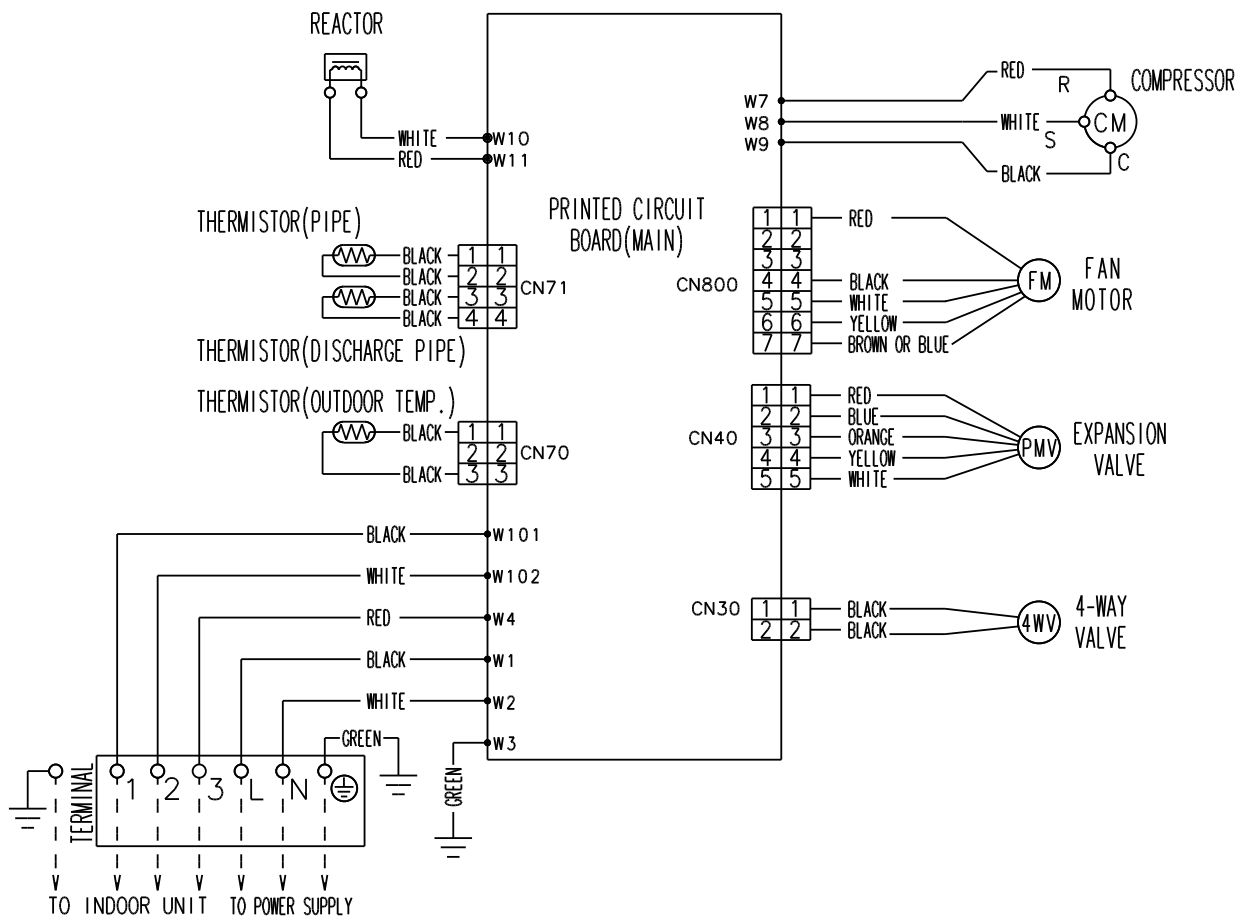
Refrigerant pipe diameter  
Liquid : 1/4" (6.35 mm)  
Gas : 3/8" (9.52 mm)

# 4. WIRING DIAGRAMS

## MODEL: AO\*G09LT

OUTDOOR UNIT  
AO\*G09-12LT

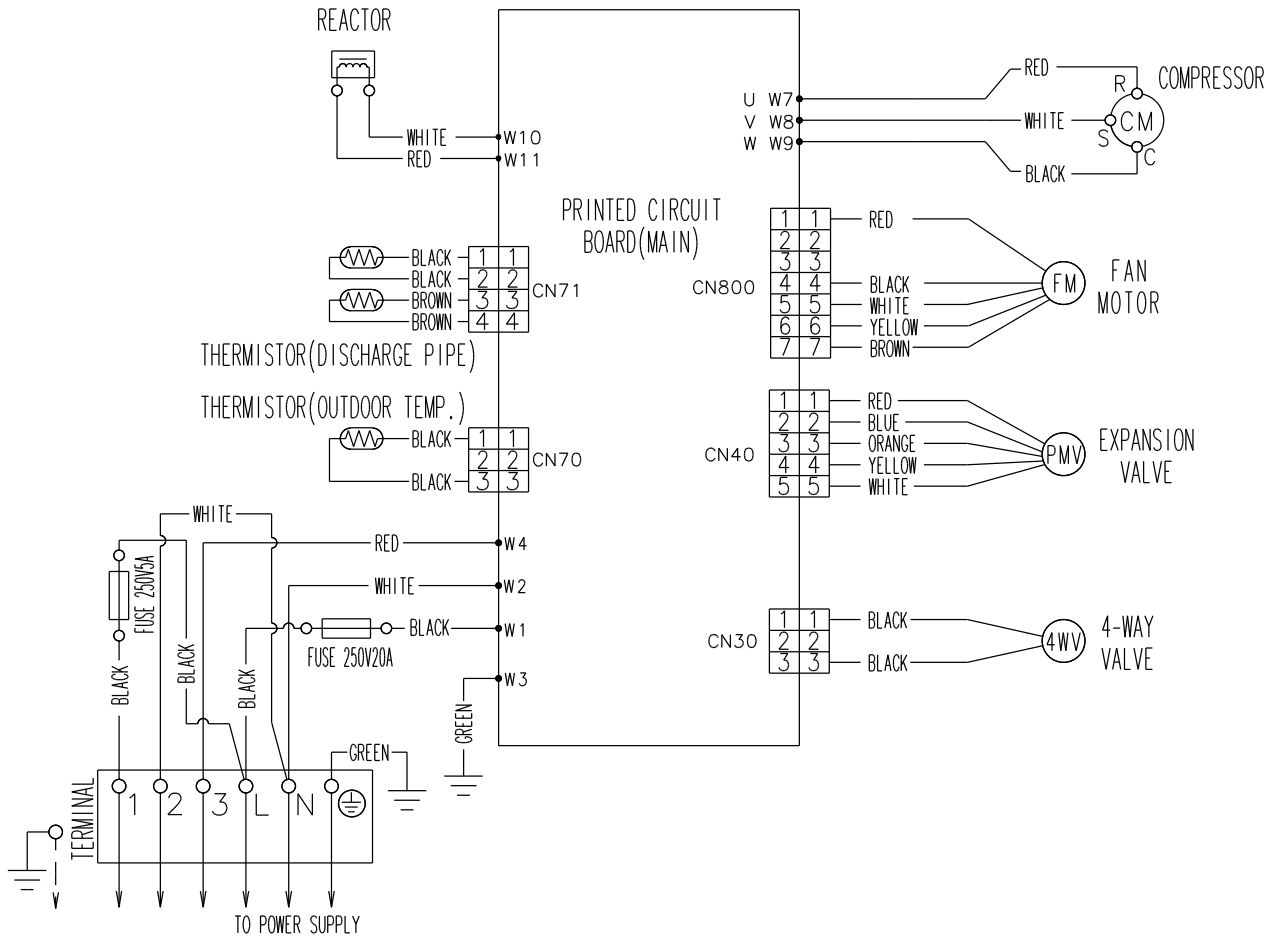
OUTDOOR UNIT  
AO\*G09-12LT



# MODEL: AO\*G12LT

OUTDOOR UNIT  
AO\*G09-12LT

OUTDOOR UNIT  
AO\*G09-12LT



# 5. CAPACITY COMPENSATION RATE FOR PIPE LENGTH AND HEIGHT DIFFERENCE

## MODEL: AO\*G09LT

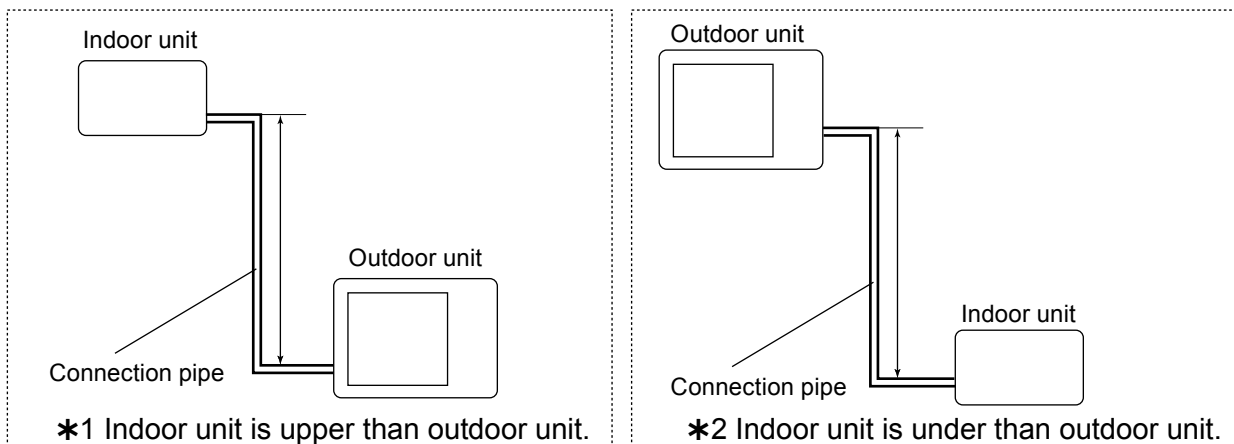
OUTDOOR UNIT  
AO\*G09-12LT

OUTDOOR UNIT  
AO\*G09-12LT

COOLING			Pipe length (m)				
			5	7.5	10	15	20
Height difference H (m)	*1 Indoor unit is upper than outdoor unit.	15	-	-	-	0.858	0.868
		10	-	-	0.929	0.872	0.882
		7.5	-	0.960	0.933	0.876	0.885
		5	0.992	0.964	0.937	0.879	0.889
	0	1.000	0.972	0.944	0.887	0.896	
	*2 Indoor unit is under than outdoor unit	-5	1.000	0.972	0.944	0.887	0.896
		-7.5	-	0.972	0.944	0.887	0.896
		-10	-	-	0.944	0.887	0.896
		-15	-	-	-	0.887	0.896

HEATING			Pipe length (m)				
			5	7.5	10	15	20
Height difference H (m)	*1 Indoor unit is upper than outdoor unit.	15	-	-	-	0.896	0.879
		10	-	-	0.968	0.890	0.879
		7.5	-	0.994	0.968	0.896	0.879
		5	1.000	0.994	0.968	0.896	0.879
	0	1.000	0.994	0.968	0.896	0.879	
	*2 Indoor unit is under than outdoor unit	-5	0.995	0.989	0.963	0.891	0.875
		-7.5	-	0.987	0.961	0.889	0.873
		-10	-	-	0.959	0.887	0.871
		-15	-	-	-	0.878	0.862

Height difference H



# MODEL: AO\*G12LT

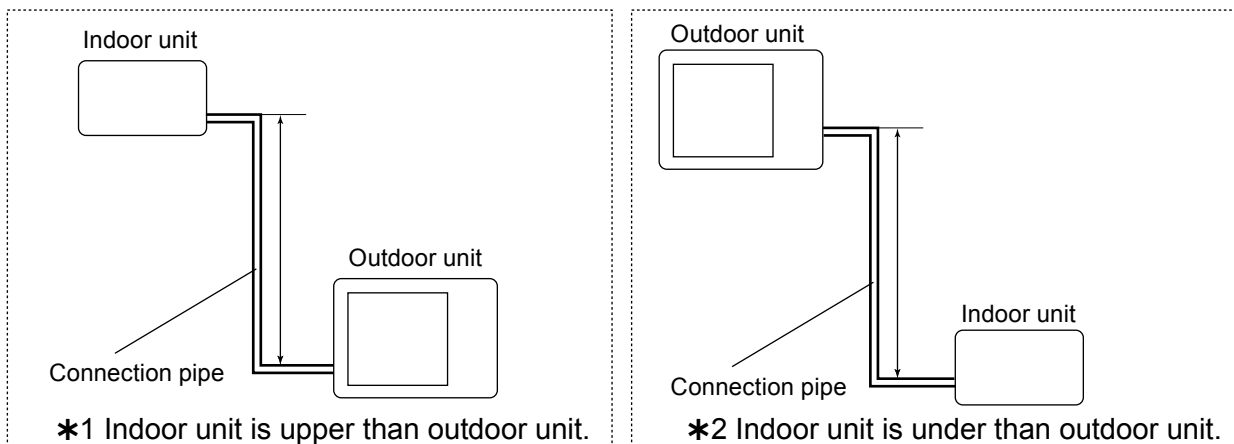
OUTDOOR UNIT  
AO\*G09-12LT

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AO\*G09-12LT

COOLING			Pipe length (m)				
			5	7.5	10	15	20
Height difference H (m)	*1 Indoor unit is upper than outdoor unit.	15	-	-	-	0.893	0.909
		10	-	-	0.955	0.908	0.924
		7.5	-	0.975	0.959	0.912	0.928
		5	0.992	0.979	0.963	0.916	0.931
	0	1.000	0.987	0.970	0.923	0.939	
	*2 Indoor unit is under than outdoor unit	-5	1.000	0.987	0.970	0.923	0.939
		-7.5	-	0.987	0.970	0.923	0.939
		-10	-	-	0.970	0.923	0.939
		-15	-	-	-	0.923	0.939

HEATING			Pipe length (m)				
			5	7.5	10	15	20
Height difference H (m)	*1 Indoor unit is upper than outdoor unit.	15	-	-	-	0.956	0.938
		10	-	-	1.004	0.956	0.938
		7.5	-	1.013	1.004	0.956	0.938
		5	1.000	1.013	1.004	0.956	0.938
	0	1.000	1.013	1.004	0.956	0.938	
	*2 Indoor unit is under than outdoor unit	-5	0.995	1.008	0.999	0.951	0.933
		-7.5	-	1.005	0.997	0.948	0.931
		-10	-	-	0.994	0.946	0.929
		-15	-	-	-	0.937	0.919

## Height difference H





## 6. ADDITIONAL CHARGE CALCULATION

### ■ MODEL: AO\*G09LT

Refrigerant type		R410A
Refrigerant amount	g	1050

#### ● Refrigerant charge

Total pipe length	m	15 or less	20 (MAX)	20g/m
Additional charge	g	0	100	

### ■ MODEL: AO\*G12LT

Refrigerant type		R410A
Refrigerant amount	g	1200

#### ● Refrigerant charge

Total pipe length	m	15 or less	20 (MAX)	20g/m
Additional charge	g	0	100	

## 7. AIR FLOW

### ■ MODEL: AO\*G09LT

#### ● Cooling

Number of rotations (r.p.m.)	Air flow	
750	1700	m <sup>3</sup> /h
	472	l/s
	1000	CFM

#### ● Heating

Number of rotations (r.p.m.)	Air flow	
750	1700	m <sup>3</sup> /h
	472	l/s
	1000	CFM

### ■ MODEL: AO\*G12LT

#### ● Cooling

Number of rotations (r.p.m.)	Air flow	
870	2050	m <sup>3</sup> /h
	569	l/s
	1206	CFM

#### ● Heating

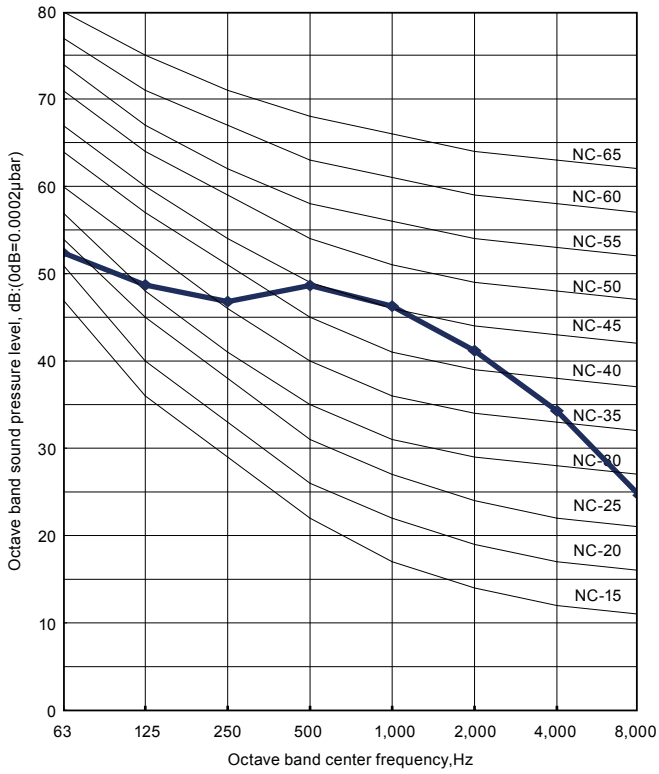
Number of rotations (r.p.m.)	Air flow	
780	2000	m <sup>3</sup> /h
	556	l/s
	1176	CFM

# 8. OPERATION NOISE

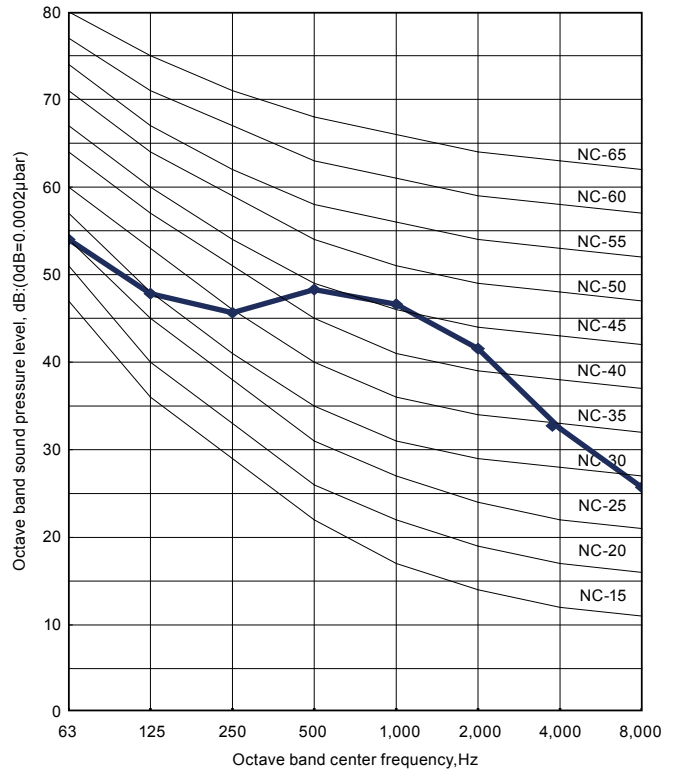
## 8-1. NOISE LEVEL CURVE

### MODEL: AO\*G09LT

#### ● Cooling

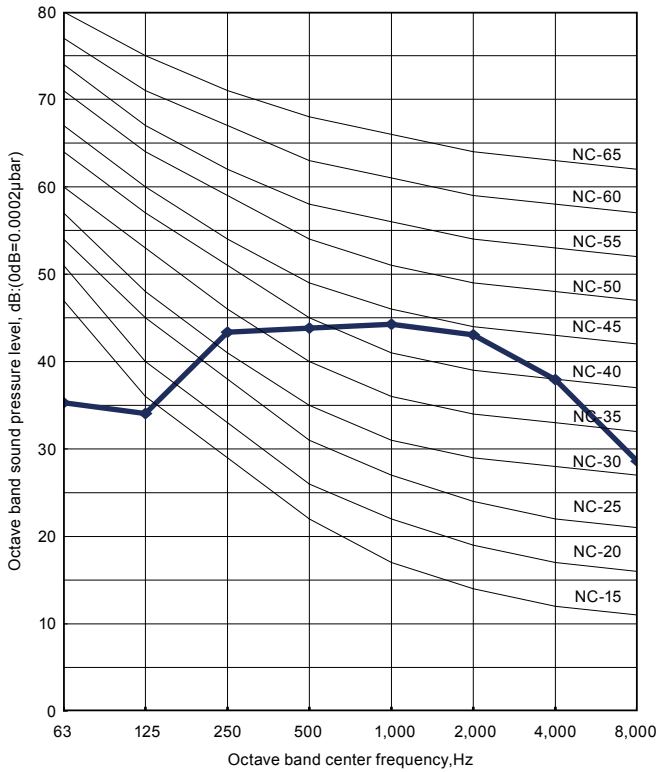


#### ● Heating

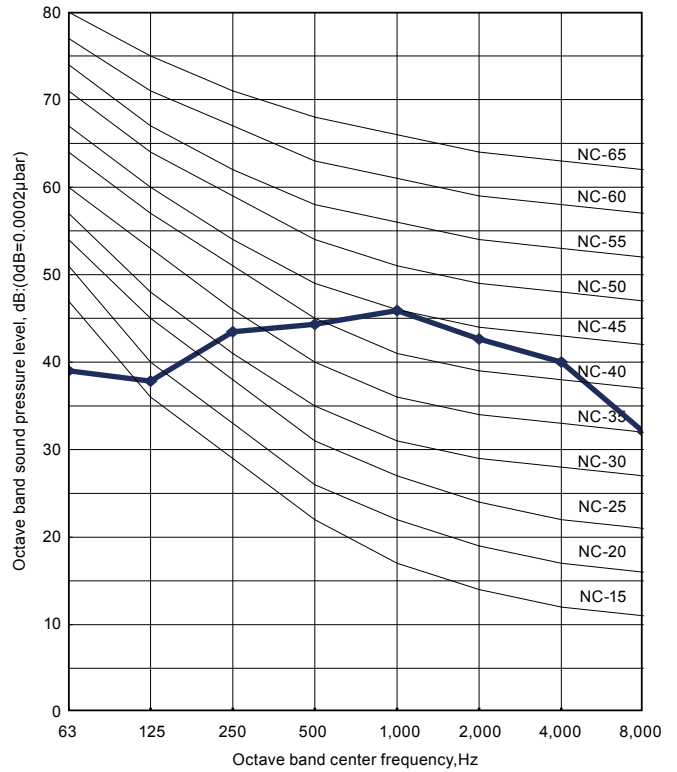


### MODEL: AO\*G12LT

#### ● Cooling



#### ● Heating

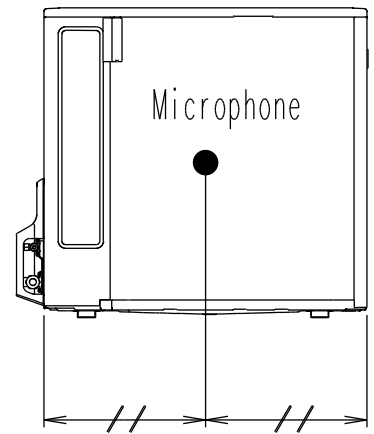
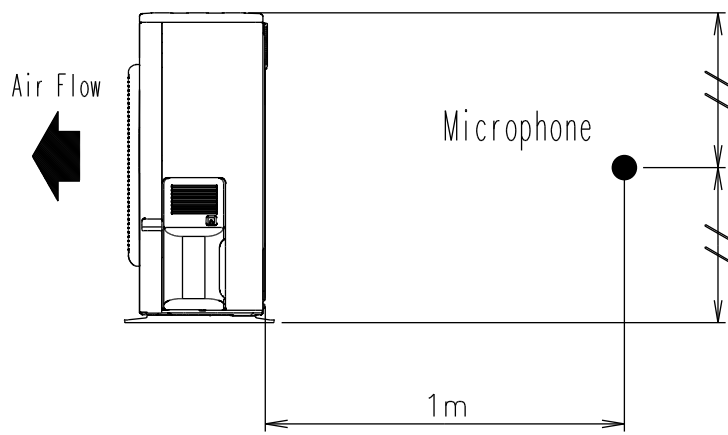


OUTDOOR UNIT  
AO\*G09-12LT

OUTDOOR UNIT  
AO\*G09-12LT

## 8-2. SOUND LEVEL CHECK POINT

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OUTDOOR UNIT  
AO\*G09-12LT

## 9. ELECTRIC CHARACTERISTICS

Model name			AO*G09LT	AO*G12LT
Power supply	Voltage	V	230 ~	
	Frequency	Hz	50	
*1) Max operating current		A	9.0	10.5
Starting Current		A	3.3	4.3
*2) Wiring Spec.:	Main Fuse (Circuit breaker) Current	A	20	
	Power Cable	mm <sup>2</sup>	1.5	
	*3) Limited wiring length :	m	21	

\*1) The maximum current is the total current of indoor unit and outdoor unit.

\*2) Wiring Spec.:

Selected Sample

(Selected based on Japan Electrotechnical Standard and Codes Committee E0005)

\*3) Limited wiring length :

This is the wiring length in case voltage descent is less than 2%.

When the wiring length becomes long, please select the wiring of a more larger diameter.

# 10. SAFETY DEVICES

	Protection form	Model	
		AO*G09LT	AO*G12LT
Circuit protection	Current fuse (MAIN PRINTED CIRCUIT BOARD)	20A/250V 5A/250V	
Fan motor protection	Thermal protection program	OFF : 100 <sup>+10</sup> <sub>-10</sub> °C ON : 95 <sup>+10</sup> <sub>-10</sub> °C	
High Pressure Protection	Terminal protection program COMPRESSOR TEMP.	OFF:110°C ON:After 7 minutes	

OUTDOOR UNIT  
AO\*G09-12LT

OUTDOOR UNIT  
AO\*G09-12LT