

AIR CONDITIONER

Wall Mounted type

DESIGN & TECHNICAL MANUAL

INDOOR



AS*G18LFCA
AS*G24LFCA
AS*G30LFCA

OUTDOOR



AO*G18LFC



AO*G24LFL



AO*G30LFT

FUJITSU GENERAL LIMITED

1. INDOOR UNIT

WALL MOUNTED TYPE :

AS*G18LFCA

AS*G24LFCA

AS*G30LFCA

CONTENTS

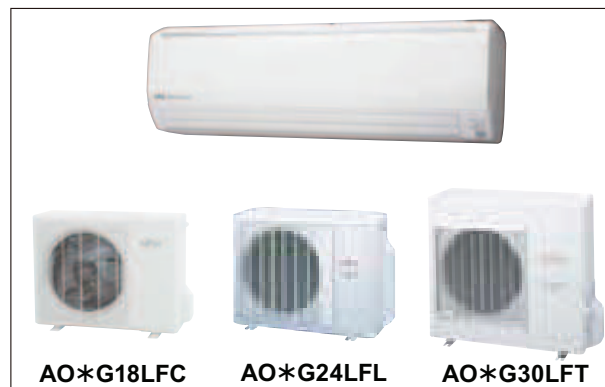
1. INDOOR UNIT

1. FEATURE.....	01 - 01
2. WIRELESS REMOTE CONTROLLER.....	01 - 04
3. SPECIFICATIONS.....	01 - 06
4. DIMENSIONS	01 - 07
5. WIRING DIAGRAMS.....	01 - 09
6. CAPACITY TABLE	01 - 10
6-1. COOLING CAPACITY	01 - 10
6-2. HEATING CAPACITY	01 - 11
7. FAN PERFORMANCE	01 - 12
7-1. AIR VELOCITY DISTRIBUTION.....	01 - 12
7-2. AIR FLOW.....	01 - 14
8. OPERATION NOISE.....	01 - 17
8-1. NOISE LEVEL CURVE	01 - 17
8-2. SOUND LEVEL CHECK POINT	01 - 19
9. ELECTRIC CHARACTERISTICS.....	01 - 20
10. SAFETY DEVICES	01 - 21
11. EXTERNAL INPUT & OUTPUT	01 - 22
11-1. EXTERNAL INPUT	01 - 22
11-2. EXTERNAL OUTPUT	01 - 24
12. FUNCTION SETTING.....	01 - 25
12-1. INDOOR UNIT (Setting by remote controller).....	01 - 25
13. OPTIONAL PARTS	01 - 29

1. FEATURE

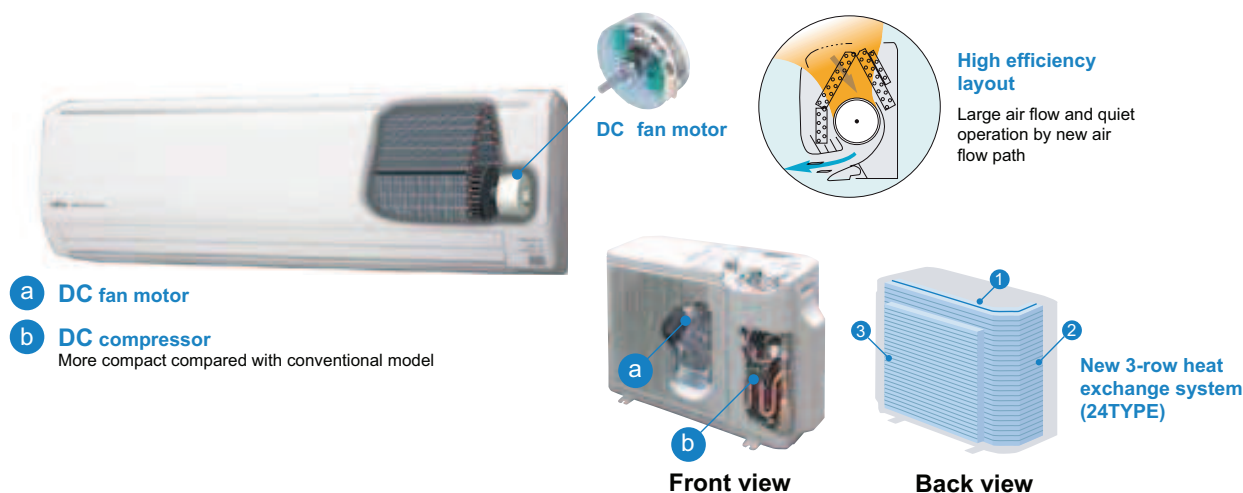
■ MODEL

AS*G18LFCA
AS*G24LFCA
AS*G30LFCA



■ FEATURES

● ALL DC



● Super quiet

Air flow mode can be set in 4 steps and more detailed air flow setting is possible.

● Easy maintenance

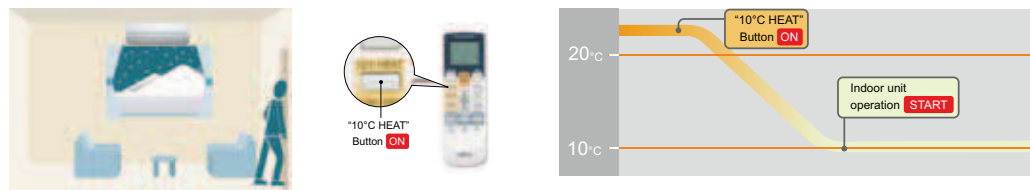
Easy maintenance and always clean. Troublesome maintenance has been made easy.
Since the front panel is easy to remove, maintenance is also easy.

● 10°C HEAT Operation

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

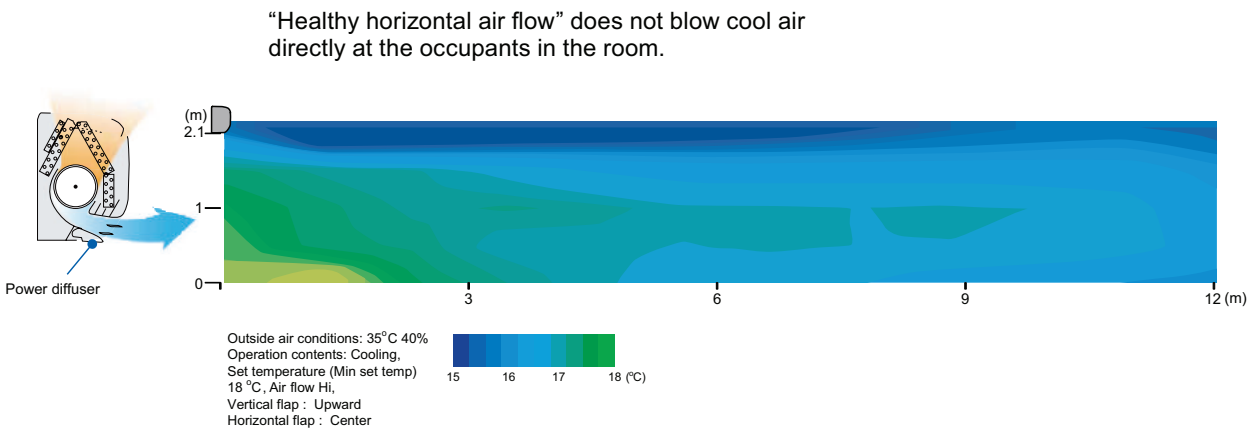
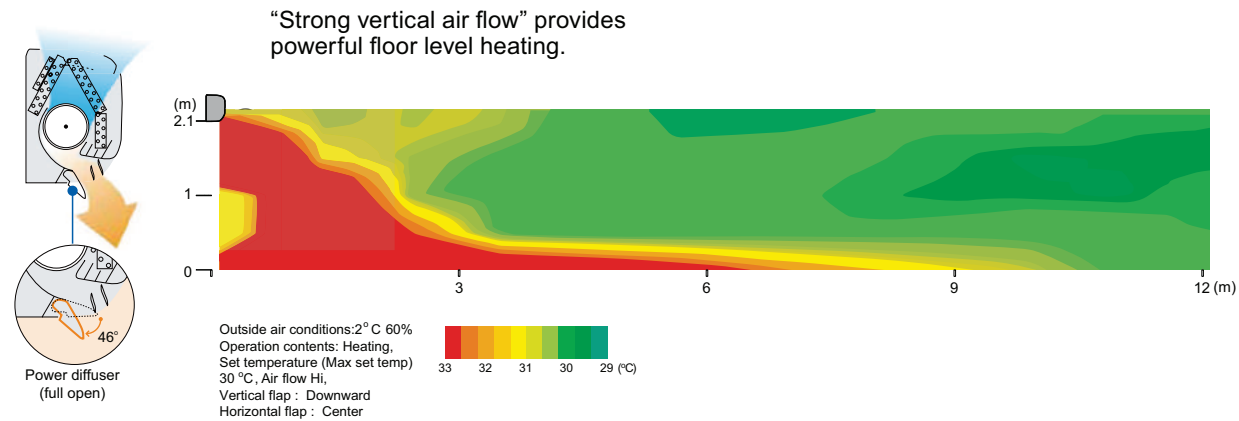
Caution)

- 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.



● Power diffuser

Adoption of large power diffuser



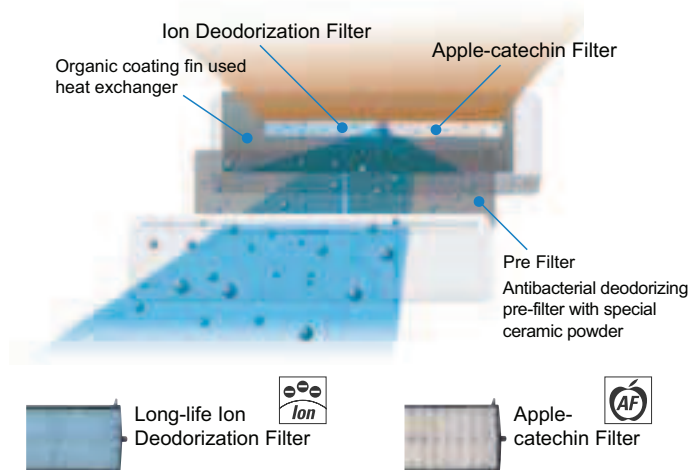
● Low outdoor air temperature cooling and heating correspondence

Corresponds to cooling operation at -10°C and heating operation at -15°C outdoor air temperature

Cooling	-10°C
Heating	-15°C

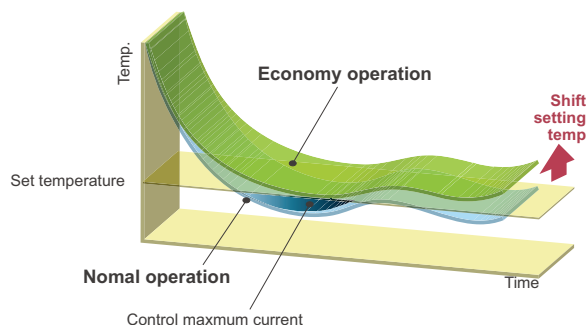
● Corresponds to maximum 50m long piping (30type)

● Air conditioner filter features



● Economy operation

Example : Cooling operation

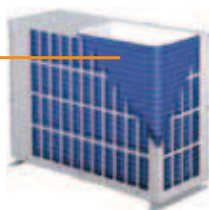
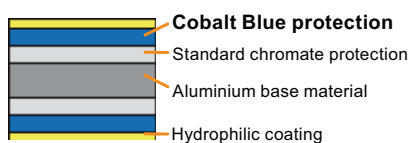


- Economy operation is energy saving, as the set temperature of indoor unit is shifted by 1°C and the maximum electric value of the outdoor unit is suppressed.

● Blue fin heat exchanger (30type)

Corrosion-resistance of the heat exchanger even in coastal areas has been improved by blue fin treatment of the outdoor unit heat exchanger.

Blue fin heat exchanger



2. WIRELESS REMOTE CONTROLLER

■ FEATURES



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

● Built-in timers

Select from four different timer programs (On / Off / Program / Sleep).

● Program timer

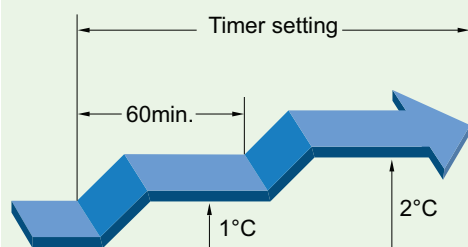
The program timer operates the ON and OFF timer once within a 24 hour period.

● Sleep timer

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

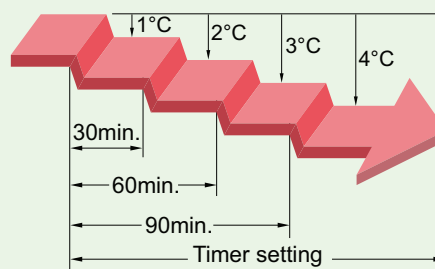
Cooling operation / dry operation

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

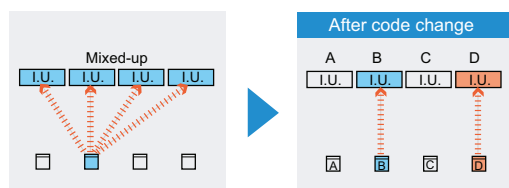


Heating operation

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.



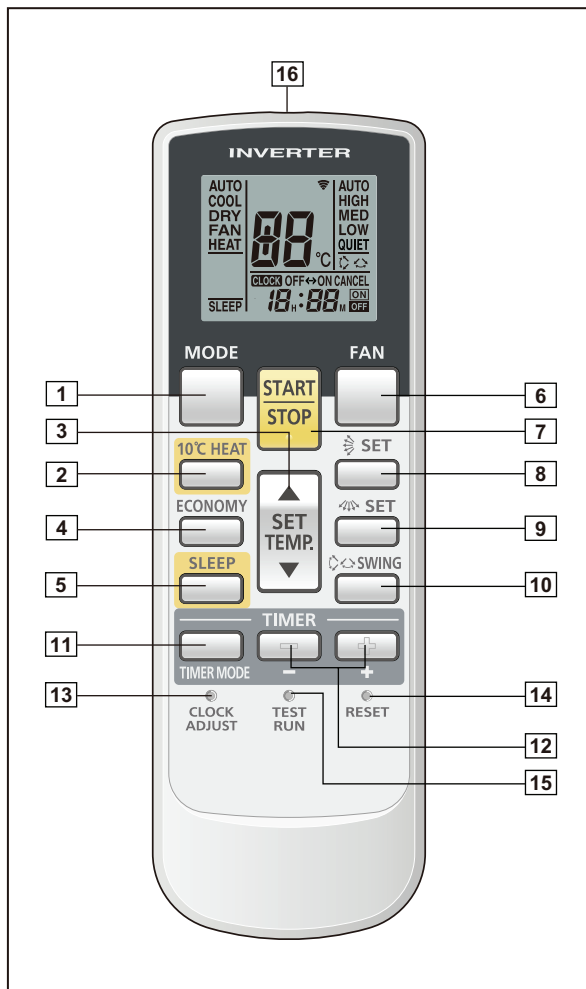
● Easy installation and operation



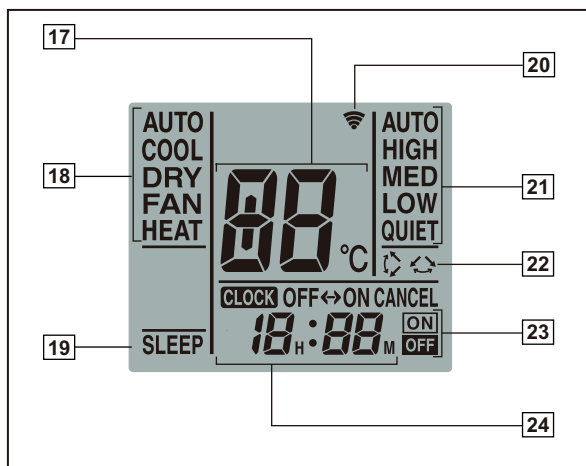
- Code selector switch eliminates unit being wrongly switched.
(Up to 4 codes can be set.)

*I.U.=Indoor unit

FUNCTIONS



Display panel



- 1 **MODE button**
Selects the operating mode (AUTO, COOL, DRY, FAN, HEAT). /Start / end R.C. custom code change. (Max 4 types)
- 2 **10°C HEAT button**
- 3 **SET TEMP. button (▲ / ▼)**
Set remote controller custom code buttons
Sets the indoor temp./ Sets R.C. custom code.
- 4 **ECONOMY button**
- 5 **SLEEP button**
Pressed to select sleep timer.
- 6 **FAN button**
Selects the fan speed (AUTO, HIGH, MED, LOW, QUIET).
- 7 **START/STOP button**
Pressed to start and stop operation.
- 8 **SET button (Vertical)**
Air flow direction vertical set button.
- 9 **SET button (Horizontal)**
Air flow direction horizontal set button.
- 10 **SWING button**
Air flow direction swing button.
- 11 **TIMER MODE button**
Pressed to select the timer mode. (OFF TIMER, ON TIMER, PROGRAM TIMER, TIMER RESET)
- 12 **TIMER SET (+ / -) button**
Sets the current time and on-off time.
- 13 **CLOCK ADJUST button**
Sets the current time.
- 14 **RESET button**
Used when replacing batteries.
- 15 **TEST RUN button**
Used when testing the air conditioner after installation.
- 16 **Signal transmitter**
- 17 **Temperature set display**
- 18 **Operating mode display**
- 19 **Sleep display**
- 20 **Transmit indicator**
- 21 **Fan speed display**
- 22 **Swing display**
- 23 **Timer mode display**
- 24 **Clock display**

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

3. SPECIFICATIONS

Type				WALL MOUNTED					
				INVERTER HEAT PUMP					
Model name				AS*G18LFCA	AS*G24LFCA	AS*G30LFCA			
Power source				230V~ 50Hz					
Available voltage range				198-264V ~ 50Hz					
Capacity	Cooling	Rated	kW	5.20	7.10	8.00			
			BTU/h	17,700	24,200	27,300			
		Min.-Max.	kW	0.9~6.0	0.9-8.0	2.9-9.0			
		BTU/h	3,100~20,500	3,100-27,300	9,900-30,700				
	Heating	Rated	kW	6.30	8.00	8.80			
			BTU/h	21,500	27,300	30,000			
Min.-Max.		kW	0.9~9.1	0.9-10.6	2.2-11.0				
		BTU/h	3,100~31,000	3,100-36,200	7,500-37,600				
Input power	Cooling	Rated	kW	1.52	2.20	2.49			
		Min.-Max.		0.09~2.07	0.30-3.07	0.58-3.87			
	Heating	Rated		1.71	2.21	2.44			
		Min.-Max.		0.09~2.87	0.28-4.21	0.50-4.33			
Current	Cooling	Rated	A	6.8	9.7	10.9			
		Max.*		9.0	13.5	17.0			
	Heating	Rated		7.6	9.7	10.7			
		Max.*		12.5	18.5	19.0			
EER		Cooling	kW/kW	3.42	3.23	3.21			
COP		Heating		3.68	3.61	3.61			
SENSIBLE CAPACITY		Cooling	kW	3.45	5.25	6.00			
POWER FACTOR		Cooling	%	97	99	99			
		Heating		98	99	99			
Moisture removal			l/h (pints/h)	2.6(4.6)	2.7(4.8)	3.2(5.6)			
Fan	Airflow rate	Cooling	High	m³/h	900	1100	1100		
			Med		740	900	900		
			Low		620	740	740		
			Quiet		550	580	620		
		Heating	High		900	1120	1150		
			Med		740	900	900		
			Low		620	740	740		
			Quiet		550	580	620		
	Type × Q'ty			Cross flow fan × 1					
	Motor output			W	42	42	42		
Sound pressure level		Cooling	High	dB(A)	43	47	48		
			Med		37	42	42		
			Low		33	37	37		
			Quiet		26	32	33		
		Heating	High		42	48	49		
			Med		37	42	42		
			Low		33	37	37		
			Quiet		25	32	33		
Heat exchanger type		Dimensions (H × W × D)		mm	Main:378 × 832 × 26.6 Sub:84 × 382 × 13.3		Main : 378 × 832 × 26.6 Sub1 : 84 × 832 × 13.3, Sub2 : 84 × 832 × 13.3		
		Fin pitch			Main:1.2 Sub:1.4		Main : 1.2, Sub1 : 1.4, Sub2 : 1.4		
		Rows x Stages			Main:2 x 18 Sub:1 x 4		Main : 2 × 18, Sub1 : 1 × 4, Sub2 : 1 × 4		
		Pipe type			Copper				
		Fin type			Aluminium				
Enclosure		Material		Polystyrene					
		Colour		WHITE Approximate colour of MUNSELL N 9.25/					
Dimensions (H×W ×D)		Net		mm	320 × 998 × 238				
		Gross			329 × 1090 × 420				
Weight		Net		kg(lbs.)	14 (30.8)				
		Gross			18 (39.6)				
Connection pipe		Size	Liquid	mm	Ø6.35 (Ø1/4 in)	Ø6.35 (Ø1/4 in.)	Ø9.52 (Ø3/8 in.)		
			Gas		Ø12.7 (Ø1/2in)	Ø15.88 (Ø5/8 in.)	Ø15.88 (Ø5/8 in.)		
		Method		Flare					
Operation range		Cooling	°C	18 to 32					
			%RH	80 or less					
		Heating	°C	30 or less					
Remote controller type				Wireless					
Drain pipe		Material		PVC					
		Size		Outer diameter : 28 / Inner diameter : 16					

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 : 5/7.5 m (*1), Height difference : 0 m. (Outdoor unit - Indoor unit)

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

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

*1 18LFCA:5m, 24/30LFCA:7.5m

■ **MODEL: AS*G18LF, AS*G24LF, AS*G30LF**

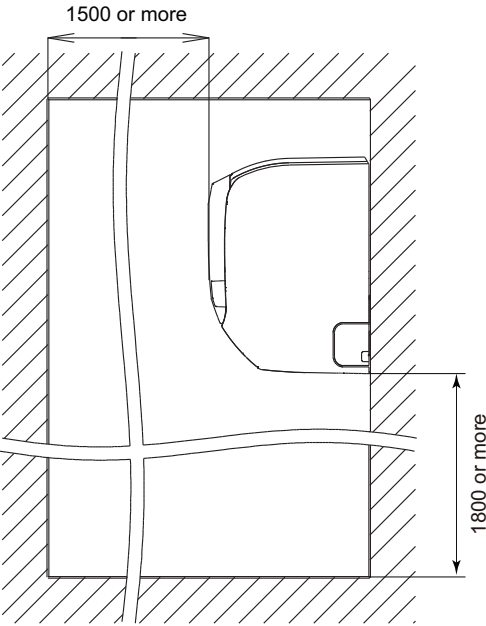
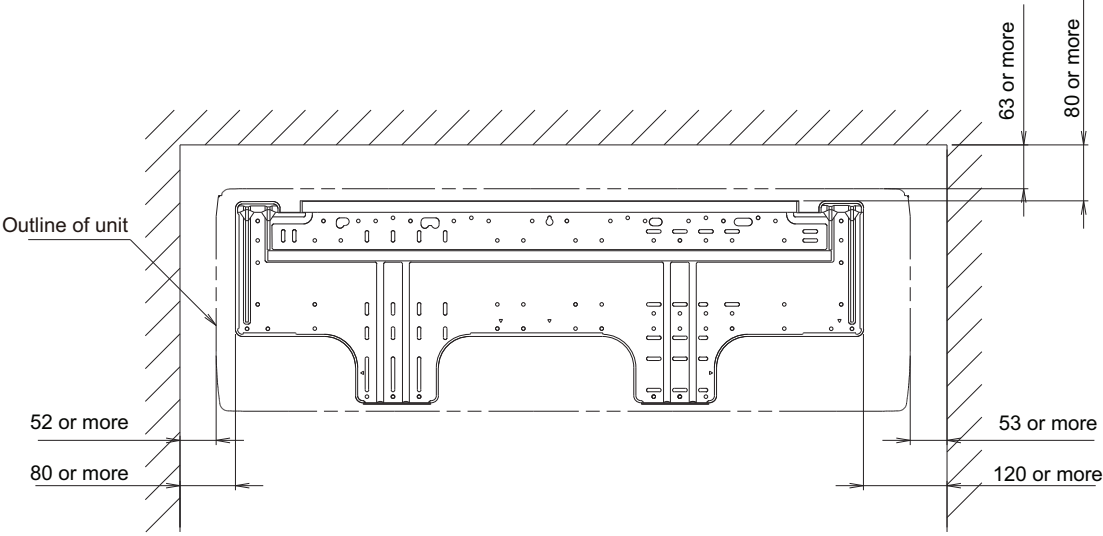
The drawing consists of three main views: a top view, a side view, and a front view.

- Top View:** Shows the unit's footprint with a total width of 998 and a depth of 520. A circular detail on the left shows a cross-section of the unit's base with dimensions: 25, 32, 16, and 12. Callouts 1, 2, and 3 point to specific mounting or connection points.
- Side View:** Shows the unit's profile with a height of 320 and a depth of 238.
- Front View:** Shows the unit's front panel with a total width of 998 and a height of 272. It includes numerous dimensions for internal components and mounting points, such as 16, 37, 439, 20, 387, 243, 113, 18 x 11 hole, 26 x 11 hole, 21 x 5: 14holes, 5 x 18: 14holes, 122, 172, 133, 126, 170, 130, 75, 438, 397, 13, 149, 197, 30, 44, 12, 30, 16, 75, 170, 130, 75, 113, 243, 387, 439, 20, 37, 16, 18 x 11 hole, 26 x 11 hole, 21 x 5: 14holes, 5 x 18: 14holes, 122, 172, 133, 126, 170, 130, 75, 438, 397, 13, 149, 197, 30, 44, 12, 30, 16, 75, 170, 130, 75, 113, 243, 387, 439, 20, 37, 16. It also indicates the "Unit center" and "outline of UNIT".

			AS*G18LF	AS*G24LF	AS*G30LF
①	Refrigerant pipe flare connection	Liquid	ø 6.35 mm (1/4 in.)		ø 9.52 mm(3/8 in.)
②		Gas	ø 12.7 mm(1/2 in.)	ø 15.88 mm(5/8 in.)	
③	Drain hose connection	Drain hose	I.D. 12 mm , O.D. 16 mm Drain hose : L=670mm		

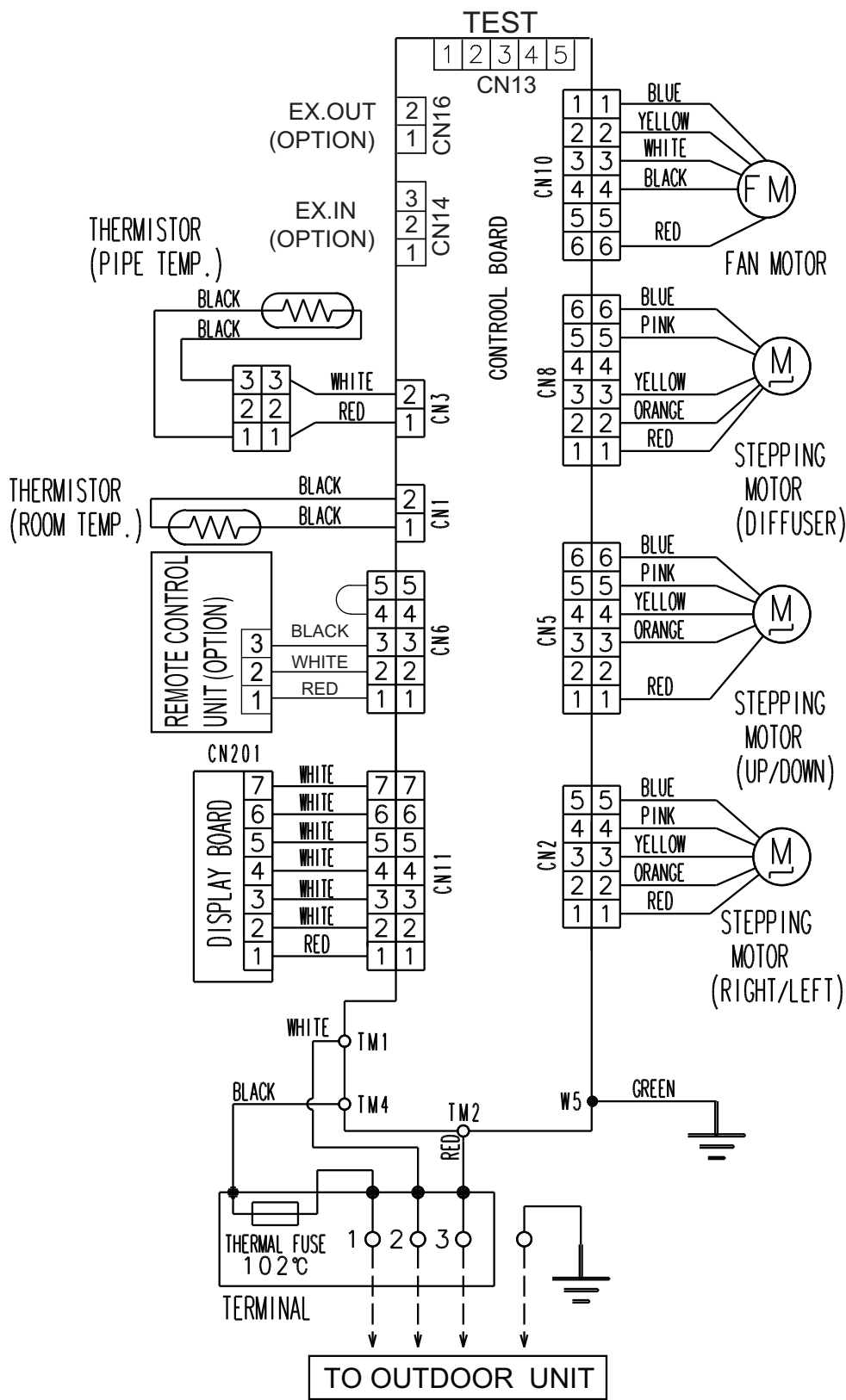
■ INSTALLATION PLACE

(Unit : mm)



5. WIRING DIAGRAMS

■ MODEL: AS*G18LF, AS*G24LF, AS*G30LF



6. CAPACITY TABLE

6-1. COOLING CAPACITY

■ MODEL: AS*G18LF

AFR	15.0
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		Indoor temperature																					
		°CDB	18			21			23			25			27			29			32		
		°CWB	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	4.62	3.14	1.03	5.15	3.15	1.05	5.33	3.43	1.05	5.68	3.44	1.06	5.85	3.71	1.07	6.20	3.70	1.08	6.56	3.94	1.09	
	25	4.63	3.14	1.17	5.16	3.16	1.19	5.34	3.43	1.20	5.69	3.45	1.21	5.86	3.72	1.22	6.21	3.71	1.23	6.57	3.95	1.24	
	30	4.38	2.97	1.32	4.88	2.99	1.34	5.04	3.25	1.35	5.38	3.26	1.36	5.54	3.52	1.37	5.87	3.50	1.38	6.21	3.73	1.39	
	35	4.11	2.91	1.47	4.58	2.93	1.49	4.73	3.18	1.50	5.04	3.19	1.51	5.20	3.45	1.52	5.51	3.44	1.54	5.82	3.66	1.55	
	40	3.56	2.41	1.35	3.96	2.43	1.38	4.10	2.64	1.38	4.37	2.65	1.40	4.50	2.86	1.40	4.78	2.85	1.42	5.05	3.03	1.43	
	46	3.08	2.09	1.65	3.43	2.10	1.68	3.55	2.28	1.68	3.78	2.29	1.70	3.90	2.48	1.71	4.13	2.47	1.73	4.37	2.63	1.74	

■ MODEL: AS*G24LF

AFR	18.3
-----	------

		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	5.72	4.53	1.17	6.37	4.56	1.19	6.59	4.96	1.19	7.02	4.97	1.20	7.24	5.37	1.21	7.67	5.35	1.22	8.11	5.70	1.23
	25	6.41	4.90	1.84	7.15	4.93	1.87	7.39	5.36	1.88	7.88	5.38	1.90	8.12	5.81	1.91	8.61	5.79	1.93	9.09	6.16	1.95
	30	6.19	4.71	2.02	6.90	4.74	2.05	7.13	5.15	2.06	7.60	5.17	2.08	7.84	5.58	2.09	8.31	5.56	2.11	8.78	5.92	2.13
	35	5.61	4.43	2.09	6.25	4.46	2.13	6.46	4.85	2.14	6.89	4.86	2.16	7.10	5.25	2.21	7.53	5.23	2.19	7.95	5.57	2.21
	40	5.08	4.11	2.08	5.66	4.13	2.12	5.85	4.50	2.13	6.24	4.51	2.15	6.43	4.87	2.16	6.82	4.85	2.18	7.20	5.17	2.20
	46	4.62	3.88	2.24	5.15	3.91	2.27	5.32	4.25	2.29	5.68	4.26	2.31	5.85	4.60	2.32	6.20	4.58	2.34	6.55	4.88	2.37

■ MODEL: AS*G30LF

AFR	18.3
-----	------

		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	6.31	5.01	1.29	7.03	5.04	1.31	7.27	5.48	1.32	7.75	5.50	1.33	7.99	5.94	1.34	8.47	5.92	1.35	8.95	6.30	1.37
	25	6.99	5.45	2.03	7.79	5.48	2.06	8.05	5.96	2.07	8.58	5.98	2.09	8.85	6.46	2.10	9.38	6.43	2.12	9.91	6.85	2.14
	30	6.66	5.23	2.26	7.42	5.26	2.29	7.67	5.72	2.30	8.18	5.74	2.33	8.43	6.20	2.34	8.94	6.18	2.36	9.44	6.58	2.39
	35	6.32	5.06	2.40	7.04	5.09	2.44	7.28	5.54	2.45	7.76	5.56	2.48	8.00	6.00	2.49	8.48	5.98	2.51	8.96	6.37	2.54
	40	5.68	4.63	2.68	6.33	4.66	2.72	6.54	5.07	2.74	6.97	5.08	2.77	7.19	5.49	2.78	7.62	5.47	2.81	8.05	5.82	2.84
	46	5.17	4.22	2.89	5.76	4.25	2.93	5.96	4.62	2.95	6.35	4.63	2.98	6.55	5.00	2.99	6.94	4.98	3.02	7.34	5.31	3.05

AFR : Air flow rate (m³/min)
TC : Total capacity (kW)
SHC : Sensible Heat capacity (kW)
IP : Input Power (kW)

6-2. HEATING CAPACITY

MODEL: AS*G18LF

AFR	15.0
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			Indoor temperature									
			16		18		20		22		24	
			TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
Outdoor temperature	(°CDB)	(°CWB)										
	-15	-16	5.09	2.16	4.96	2.21	4.84	2.26	4.72	2.30	4.60	2.35
	-10	-11	6.04	2.36	5.89	2.42	5.75	2.47	5.61	2.52	5.47	2.57
	-5	-7	6.81	2.48	6.64	2.54	6.48	2.59	6.32	2.64	6.16	2.69
	0	-2	7.86	2.65	7.67	2.72	7.48	2.77	7.29	2.83	7.11	2.89
	5	3	8.94	2.83	8.72	2.90	8.51	2.96	8.30	3.01	8.09	3.08
	7	6	9.56	2.75	9.33	2.82	9.10	2.87	8.87	2.92	8.65	2.99
	10	8	9.91	2.75	9.66	2.82	9.43	2.87	9.19	2.92	8.97	2.99
	15	10	9.59	2.38	9.36	2.44	9.13	2.49	8.90	2.54	8.68	2.59

MODEL: AS*G24LF

AFR	18.7
-----	------

			Indoor temperature									
			16		18		20		22		24	
			TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
Outdoor temperature	(°CDB)	(°CWB)										
	-15	-16	6.20	2.75	6.05	2.80	5.90	2.86	5.75	2.92	5.61	2.97
	-10	-11	7.06	2.94	6.89	3.00	6.72	3.06	6.55	3.12	6.38	3.18
	-5	-7	8.23	3.23	8.04	3.29	7.84	3.36	7.64	3.43	7.45	3.49
	0	-2	9.05	3.20	8.84	3.26	8.62	3.33	8.40	3.40	8.19	3.46
	5	3	10.05	3.34	9.81	3.41	9.57	3.48	9.33	3.55	9.09	3.62
	7	6	11.13	3.38	10.87	3.45	10.60	3.52	10.34	3.59	10.07	3.66
	10	8	11.19	3.38	10.93	3.45	10.66	3.52	10.39	3.59	10.13	3.66
	15	10	10.71	2.90	10.46	2.96	10.20	3.02	9.95	3.08	9.69	3.13

MODEL: AS*G30LF

AFR	19.2
-----	------

			Indoor temperature									
			16		18		20		22		24	
			TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
Outdoor temperature	(°CDB)	(°CWB)										
	-15	-16	7.75	4.07	7.56	4.16	7.38	4.24	7.20	4.32	7.01	4.41
	-10	-11	8.34	4.06	8.14	4.15	7.94	4.23	7.74	4.31	7.54	4.40
	-5	-7	9.61	4.08	9.38	4.17	9.15	4.25	8.92	4.34	8.69	4.42
	0	-2	10.54	4.04	10.29	4.13	10.04	4.21	9.79	4.29	9.54	4.38
	5	3	11.53	4.09	11.25	4.17	10.98	4.26	10.71	4.35	10.43	4.43
	7	6	11.55	3.39	11.28	3.46	11.00	3.53	10.73	3.60	10.45	3.67
	10	8	11.90	3.38	11.61	3.45	11.33	3.52	11.05	3.59	10.76	3.66
	15	10	11.48	2.95	11.20	3.01	10.93	3.07	10.66	3.13	10.38	3.19

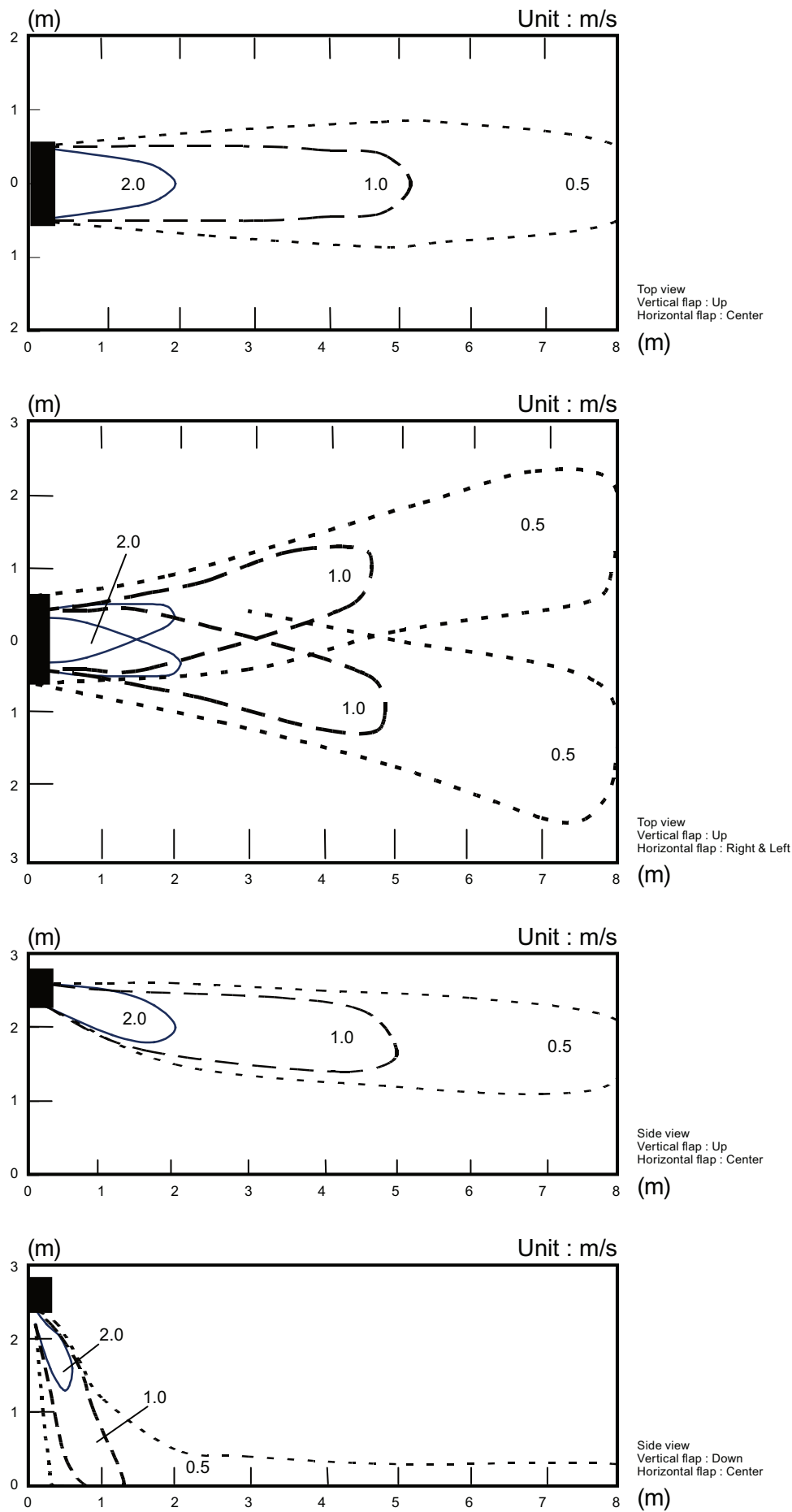
AFR: Air flow rate (m³/min)
TC : Total capacity (kW)
IP : Input Power (kW)

7. FAN PERFORMANCE

7-1. AIR VELOCITY DISTRIBUTION

■ **MODEL: AS*G18LF**

Note:
Fan speed : High
Operation mode : FAN
Voltage : 230V



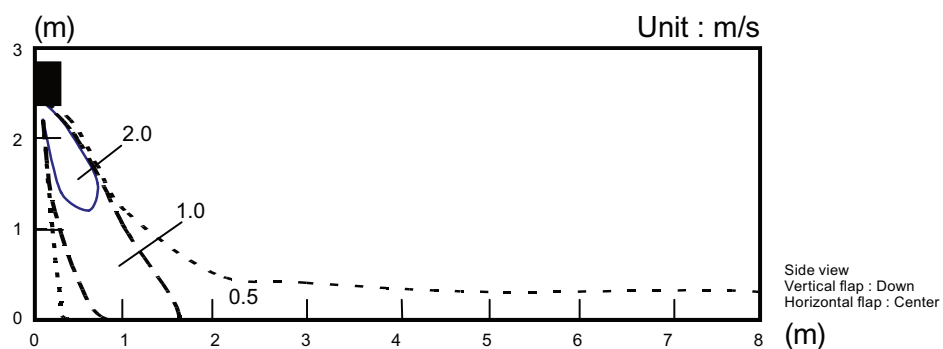
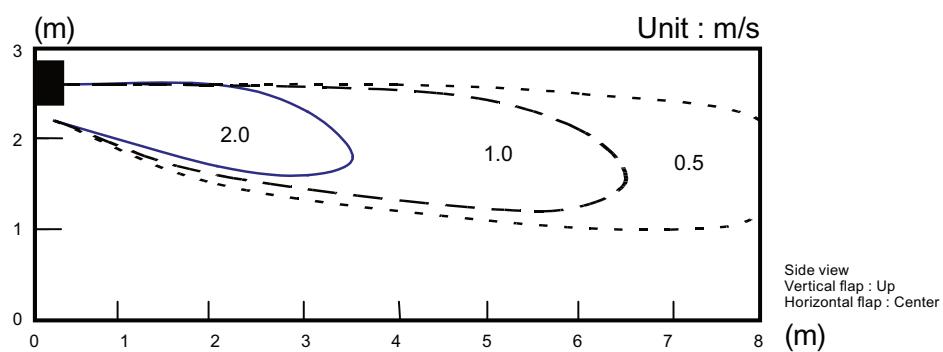
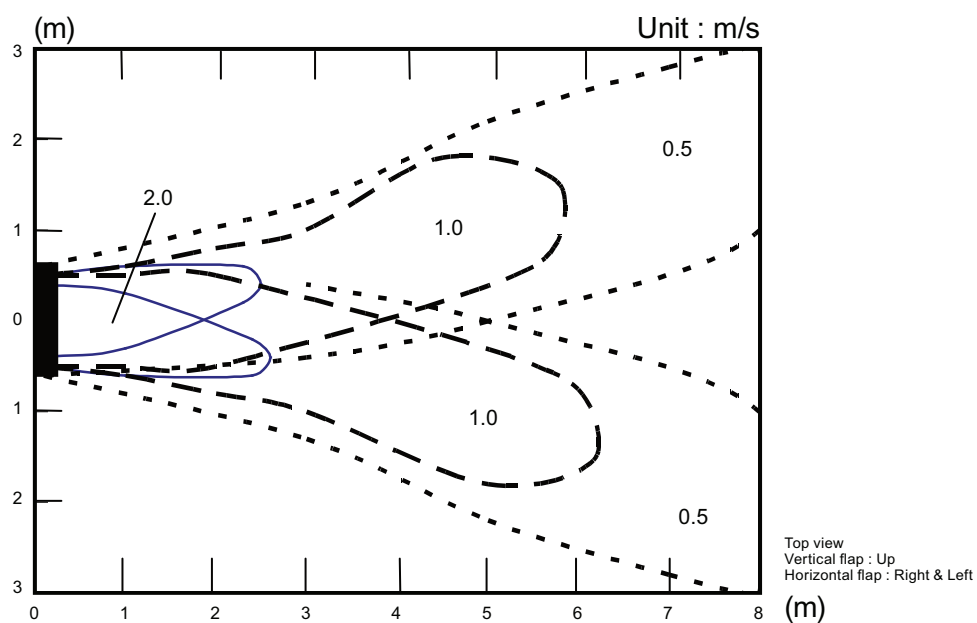
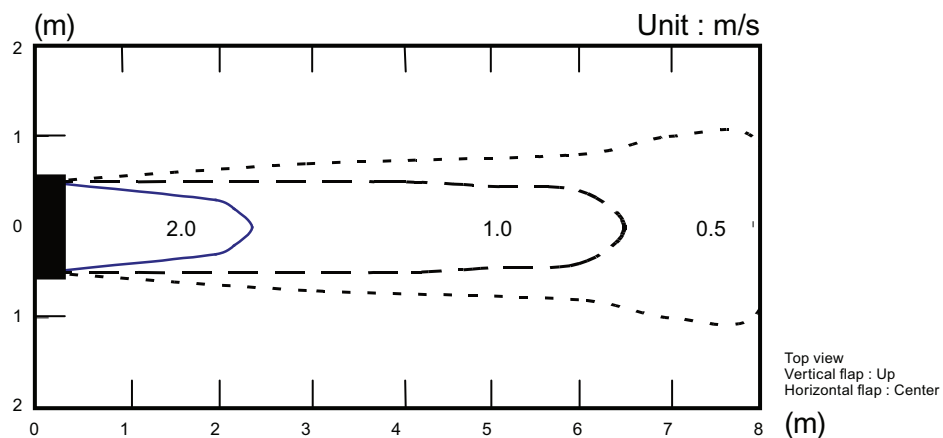
Note:

Fan speed : High

Operation mode : FAN

Voltage : 230V

MODEL: AS*G24LF, AS*G30LF



7-2. AIR FLOW

■ MODEL: AS*G18LF

● Cooling / Heating

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1220	900	m ³ /h
		250	l/s
		530	CFM
MED	1020	740	m ³ /h
		206	l/s
		435	CFM
LOW	900	620	m ³ /h
		172	l/s
		365	CFM
QUIET	710	550	m ³ /h
		153	l/s
		324	CFM

■ **MODEL: AS*G24LF**

● **Cooling**

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1430	1100	m ³ /h
		306	l/s
		647	CFM
MED	1220	900	m ³ /h
		250	l/s
		530	CFM
LOW	1020	740	m ³ /h
		206	l/s
		435	CFM
QUIET	860	580	m ³ /h
		161	l/s
		341	CFM

● **Heating**

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1480	1120	m ³ /h
		311	l/s
		659	CFM
MED	1220	900	m ³ /h
		250	l/s
		530	CFM
LOW	1020	740	m ³ /h
		206	l/s
		435	CFM
QUIET	860	580	m ³ /h
		161	l/s
		341	CFM

■ MODEL: AS*G30LF

● Cooling

Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1430	1100	m ³ /h
		306	l/s
		647	CFM
MED	1220	900	m ³ /h
		250	l/s
		530	CFM
LOW	1020	740	m ³ /h
		206	l/s
		435	CFM
QUIET	900	620	m ³ /h
		172	l/s
		365	CFM

● Heating

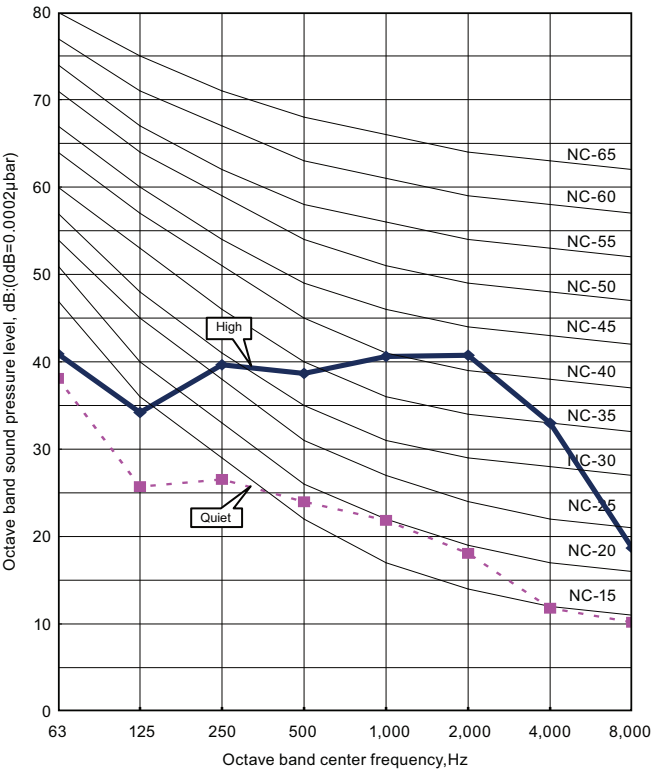
Fan speed	Number of rotations (r.p.m.)	Air flow	
HIGH	1530	1150	m ³ /h
		319	l/s
		677	CFM
MED	1220	900	m ³ /h
		250	l/s
		530	CFM
LOW	1020	740	m ³ /h
		206	l/s
		435	CFM
QUIET	900	620	m ³ /h
		172	l/s
		365	CFM

8. OPERATION NOISE

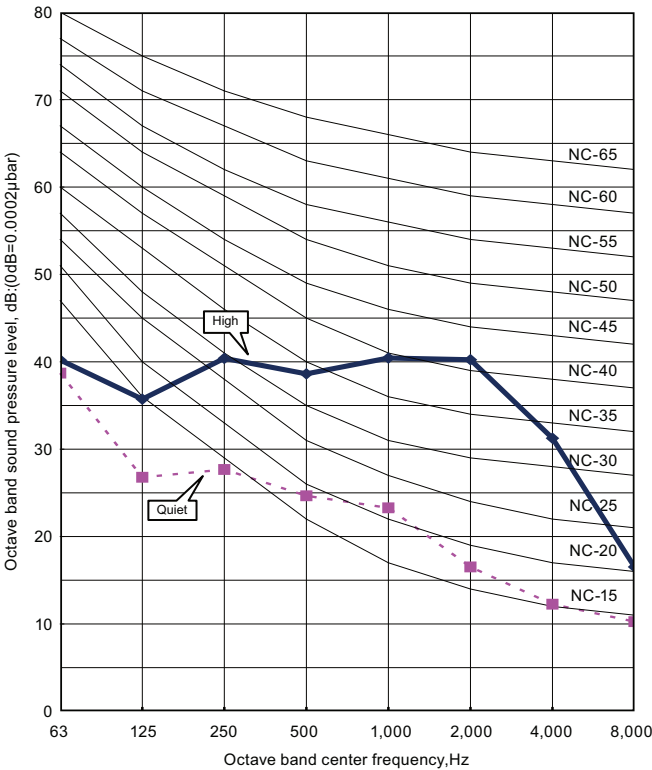
8-1. NOISE LEVEL CURVE

■ MODEL: AS*G18LF

● Cooling

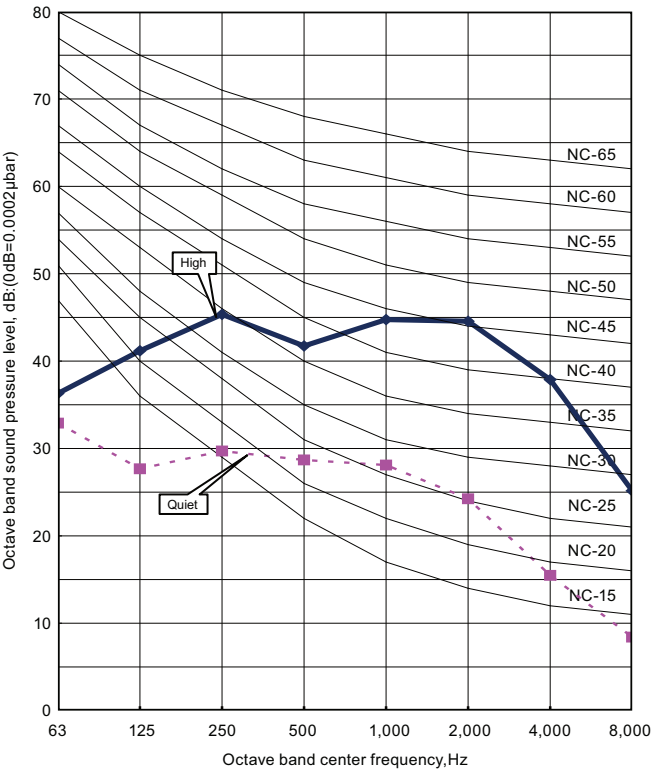


● Heating

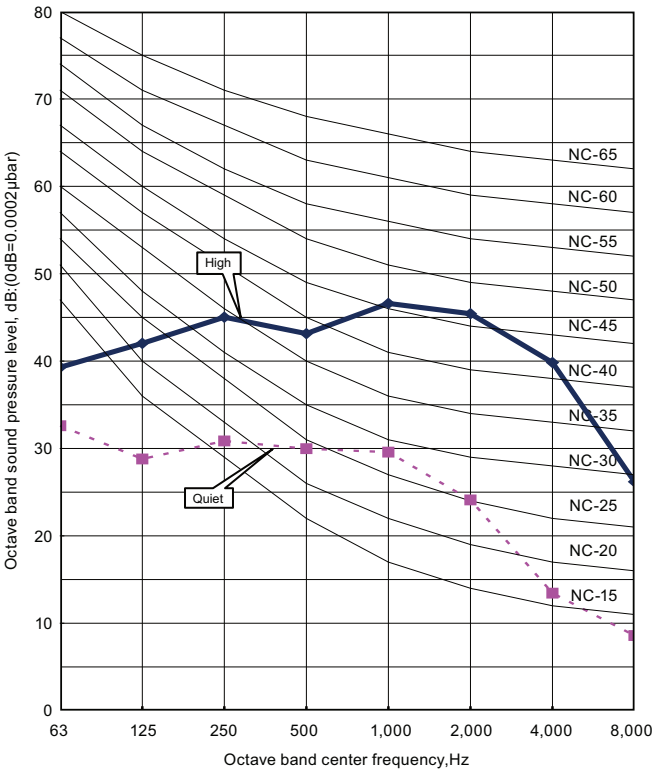


■ MODEL: AS*G24LF

● Cooling

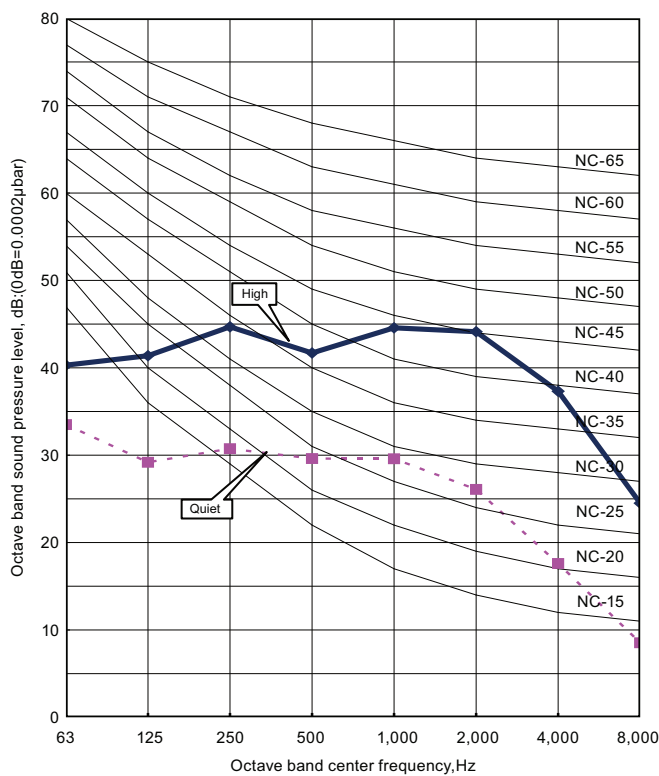


● Heating

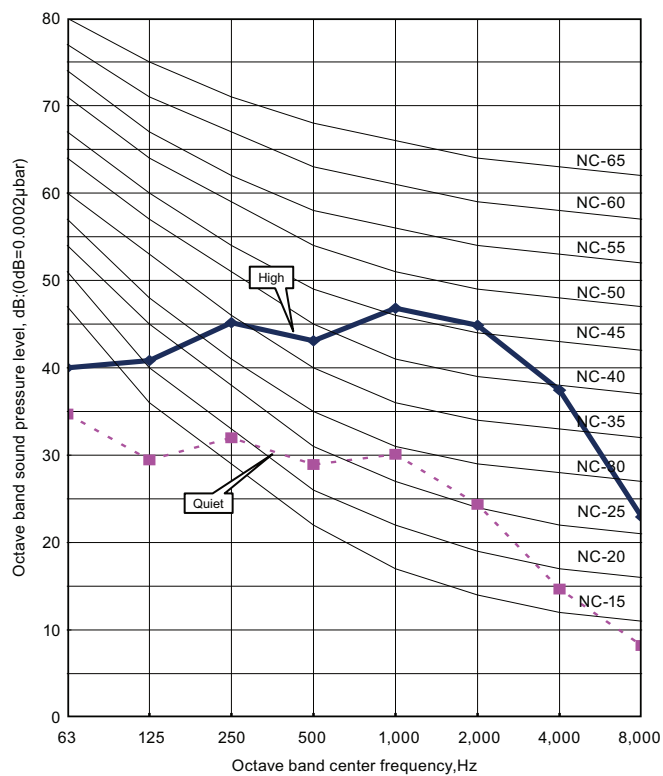


■ **MODEL: AS*G30LF**

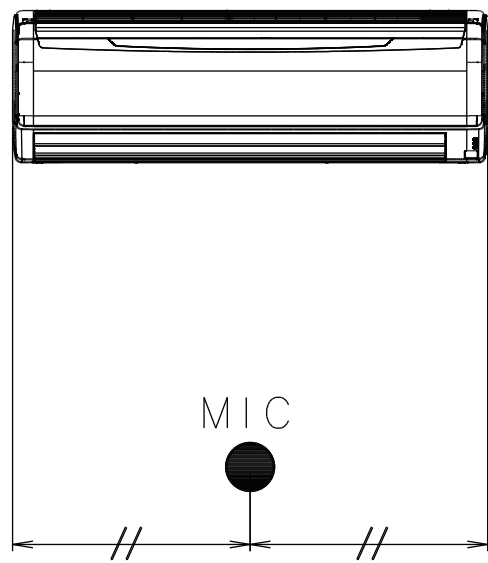
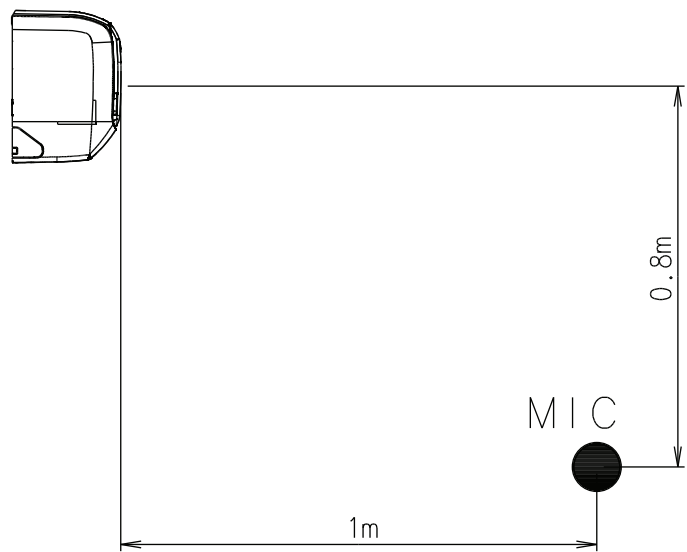
● **Cooling**



● **Heating**



8-2. SOUND LEVEL CHECK POINT



9. ELECTRIC CHARACTERISTICS

Model name			AS*G18LF	AS*G24LF	AS*G30LF
Power supply	Voltage	V	230 ~		
	Frequency	Hz	50		
Max. operating current		A	0.3		
*1)Wiring Spec.	Connection cable	mm ²	1.5 - 2.5		
	Limited wiring length	m	26	31	51

*1) Wiring Spec.
Selected Sample
(Selected based on Japan Electrotechnical Standard and Codes Committee E0005)

10. SAFETY DEVICES

	Protection form	Model
		AS*G18LF, AS*G24LF, AS*G30LF
Circuit protection	Current fuse (PCB)	3.15A 250V
Terminal protection	Current (thermal) fuse	3A 250V
Fan motor protection	Thermal protector program	100^{+15}_{-10} °C OFF 95^{+5}_{-10} °C ON

11. EXTERNAL INPUT & OUTPUT

Connector	INPUT	OUTPUT	REMARKS
CN14	Control input	-	See external input/output settings for details.
CN16	-	Operation status output	

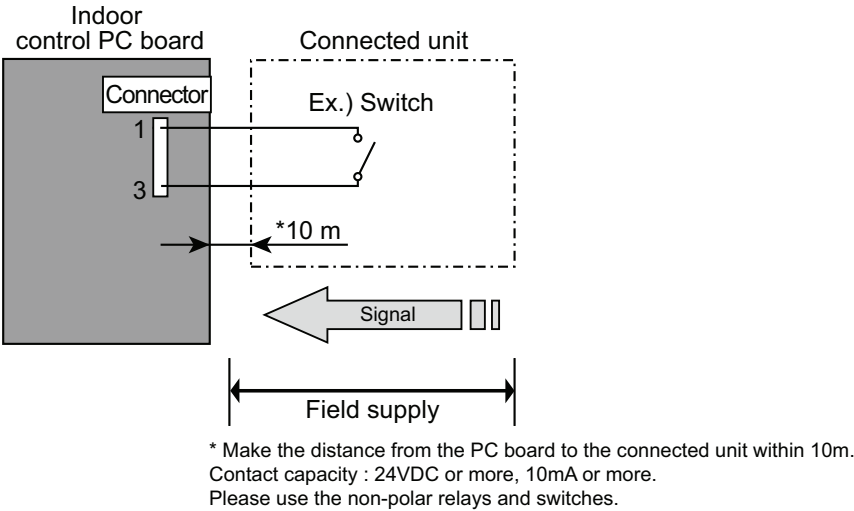
11-1. EXTERNAL INPUT

■ CONTROL INPUT (Operation/Stop or Forced stop)

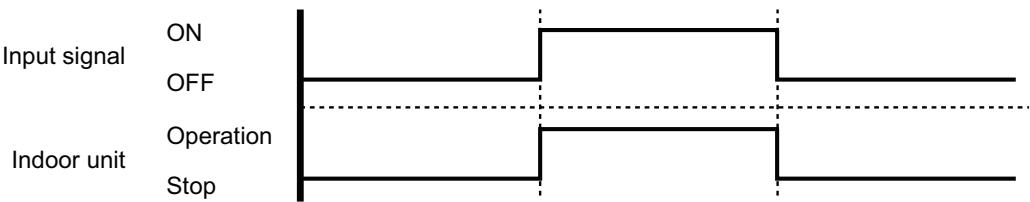
The air conditioner can be remotely operated by means of the following on-site work.
"Operation/Stop" mode or "Forced stop" mode can be selected with function setting of indoor unit.
Operation is started at the following contents by adding the contact input of a commercial ON/OFF switch to a connector 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

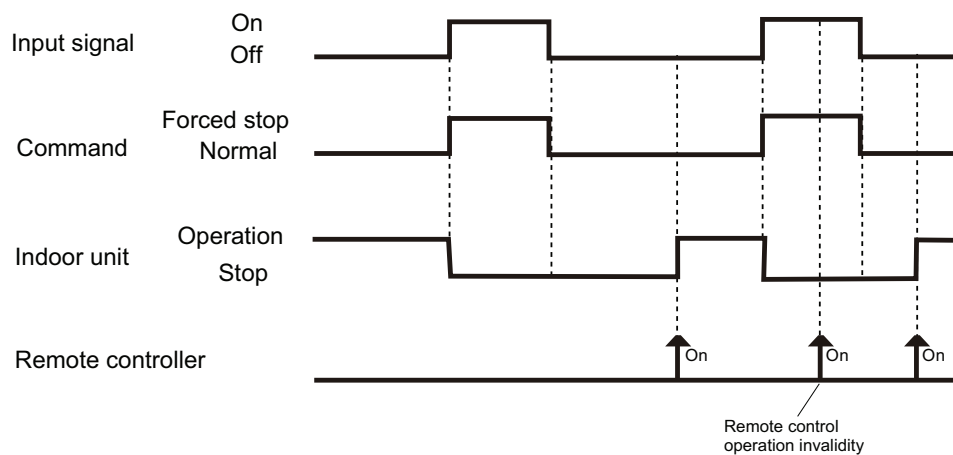
● Circuit diagram example



● When function setting is "Operation/Stop" mode



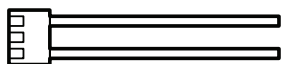
- When function setting is "Forced stop" mode



● Parts (Optional)

Parts name	Model name
External connect kit	UTY-XWZX

Wire (External input) : UTY-XWZX

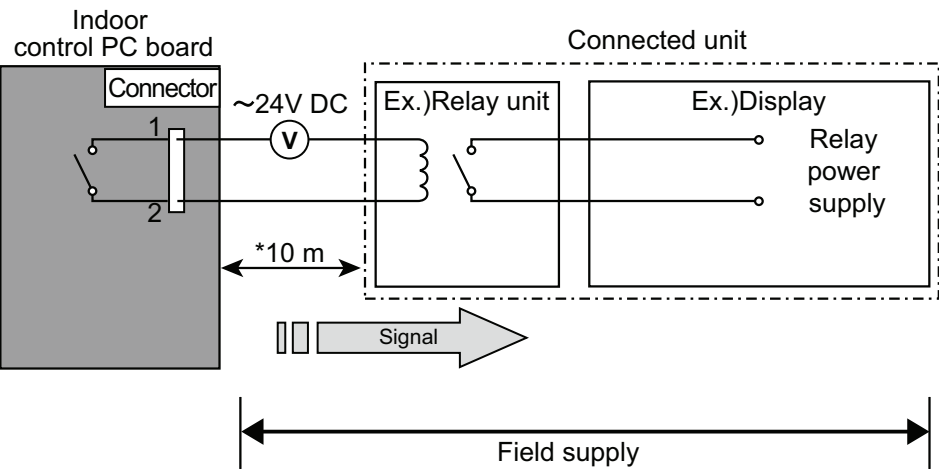


11-2. EXTERNAL OUTPUT

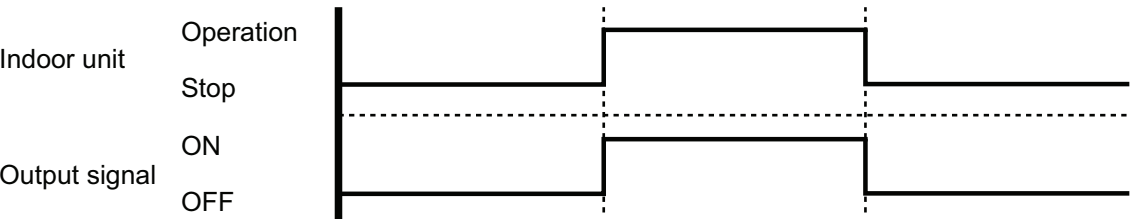
■ OPERATION STATUS OUTPUT

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-XWZX

Wire (External input) : UTY-XWZX



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.

■ FUNCTION SETTING METHOD (for Wireless remote controller)

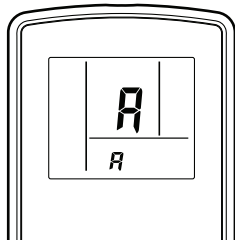
Entering the Function Setting Mode

- While pressing the FAN button and SET TEMP. (▲) simultaneously, press the RESET button to enter the function setting mode.

STEP 1

Setting the Remote controller Signal Code

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.) The signal codes that are set through this process are applicable only to the signals in the FUNCTION SETTING. For details on how to set the signal codes through the normal process, refer to SELECTING THE REMOTE CONTROLLER SIGNAL CODE.



1. Press the SET TEMP. (▲) (▼) button to change the signal code between $A \rightarrow b \rightarrow c \rightarrow d$. Match the code on the display to the air conditioner signal code. (initially set to A)
(If the signal code does not need to be selected, press the MODE button and proceed to STEP 2.)
2. Press the TIMER MODE button and check that the indoor unit can receive signals at the displayed signal code.
3. Press the MODE button to accept the signal code, and proceed to STEP 2.

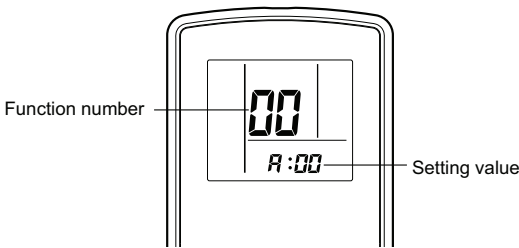
The air conditioner signal code is set to A prior to shipment.

The remote controller resets to signal code A when the batteries in the remote controller are replaced. If you use a signal code other than signal code A, reset the signal code after replacing the batteries.
If you do not know the air conditioner signal code setting, try each of the signal codes ($A \rightarrow b \rightarrow c \rightarrow d$) until you find the code which operates the air conditioner.

STEP 2

Selecting the Function Number and Setting Value

1. Press the SET TEMP. (▲) (▼) buttons to select the function number.
(Press the MODE button to switch between the left and right digits.)
2. Press the FAN button to proceed to setting the value.
Press the FAN button again to return to the function number selection.)
3. Press the SET TEMP. (▲) (▼) buttons to select the setting value.
(Press the MODE button to switch between the left and right digits.)
4. Press the TIMER MODE button, and START/STOP button, in the order listed to confirm the settings.
5. Press the RESET button to cancel the function setting mode.
6. 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 on it again.
The FUNCTION SETTING doesn't become effective if it doesn't do so.

FUNCTION DETAILS

	Functions	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	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)

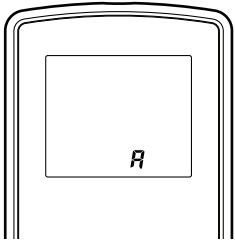
	Setting description	Function number	Setting value
◆	Operation/Stop mode	46	00
	(Setting forbidden)		01
	Forced stop mode		02

■ 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 five seconds to display the current signal code (initially set to **A**).
3. Press the SET TEMP. (**▲**) (**▼**) button 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.

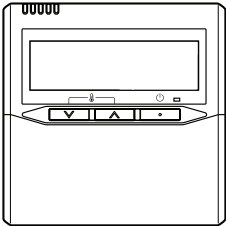
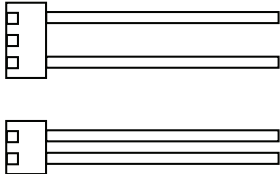


If no buttons are pressed within 30 seconds after the signal code is displayed, the system returns to the original clock display. In this case, start again from step 1.

The air conditioner signal code is set to A prior to shipment.
Contact your retailer to change the signal code.

The remote controller resets to signal code A when the batteries in the remote controller are replaced. If you use a signal code other than signal code A, reset the signal code after replacing the batteries. If you do not know the air conditioner signal code setting, try each of the signal codes (**A** → **b** → **c** → **d**) until you find the code which operates the air conditioner.

13. OPTIONAL PARTS

Exterior	Parts name	Model No.	Summary
	Wired remote controller	UTY-RNNYM	Unit control is performed by wired remote controller.
	Apple-catechin filter	UTR-FA13-1	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-FA13-2	The filter deodorizes by powerfully decomposing absorbed odors using the oxidizing and reducing effects of ions generated by the ultra fine-particle ceramic.
	External connect kit	UTY-XWZX	Use to connect with various peripheral devices and air conditioner PC board.

2. OUTDOOR UNIT

SINGLE TYPE :

AO*G18LFC

AO*G24LFL

AO*G30LFT

CONTENTS

2. OUTDOOR UNIT

1. SPECIFICATIONS.....	02 - 01
2. DIMENSIONS	02 - 02
3. REFRIGERANT CIRCUIT	02 - 05
4. WIRING DIAGRAMS.....	02 - 08
5. CAPACITY COMPENSATION RATE FOR PIPE LENGTH AND HEIGHT DIFFERENCE	02 - 11
6. ADDITIONAL CHARGE CALCULATION.....	02 - 14
7. AIR FLOW	02 - 15
8. OPERATION NOISE.....	02 - 17
8-1. NOISE LEVEL CURVE	02 - 17
8-2. SOUND LEVEL CHECK POINT	02 - 19
9. ELECTRIC CHARACTERISTICS.....	02 - 20
10. SAFETY DEVICES	02 - 21

1. SPECIFICATIONS

Type				INVERTER HEAT PUMP		
Model name				AO*G18LFC	AO*G24LFL	AO*G30LFT
Power source				230V~ 50Hz		
Available voltage range				198-264V ~ 50Hz		
Starting current			A	7.6	9.7	10.9
Fan	Airflow rate	Cooling	m³/h	2,150	2,340	3,600
		Heating		2,070	2,570	3,600
	Type × Q'ty		Propeller fan×1			
	Motor output		W	40	115	100
Sound pressure level		Cooling	dB(A)	50	53	53
		Heating		51	56	55
Heat exchanger type		Dimensions (H × W × D)	mm	588 × 881 × 36.4	Main : 546 × 866 × 36.4 Sub : 504 × 589 × 18.2	798×900×36.4
		Fin pitch		1.3	Main:1.4, Sub:1.4	1.3
		Rows x Stages		2 × 28	Main:2 × 26, Sub:1 × 24	2×38
		Pipe type		Copper		
		Fin	Type(Material) Surface treat-ment	Corrugate (Aluminum) Corrosion resistance		
Compressor	Type × Q'ty			Rotary ×1		
	Motor output		W	900	1,000	2,100
Refrigerant		Type	R410A			
		Charge	g	1,200	1,650	2,100
Refrigerant oil		Type	FREOLα68SZ		POE (RB68)	
Enclosure		Material		Steel		
		Colour		BEIGE Approximate colour of MUNSELL 10YR7.5/1.0		
Dimensions (H×W×D)	Net		mm	620 × 790 × 290	578×790×315	830×900×330
	Gross			712 × 935 × 400	648×910×380	970×1050×445
Weight	Net		kg(lbs.)	41 (90)	43 (95)	61 (135)
	Gross			45 (99)	47 (104)	68 (150)
Connection pipe	Size	Liquid	mm	Ø6.35 (Ø1/4 in.)		Ø9.52 (Ø3/8 in.)
		Gas		Ø12.7 (Ø1/2 in.)	Ø15.88 (Ø5/8 in.)	
	Method			Flare		
	Pre-charge length		m	15	15	20
	Max. length			25	30	50
	Max. height difference			20	20	30
Operation range		Cooling	°C	-10 to 46		
		Heating		-15 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.

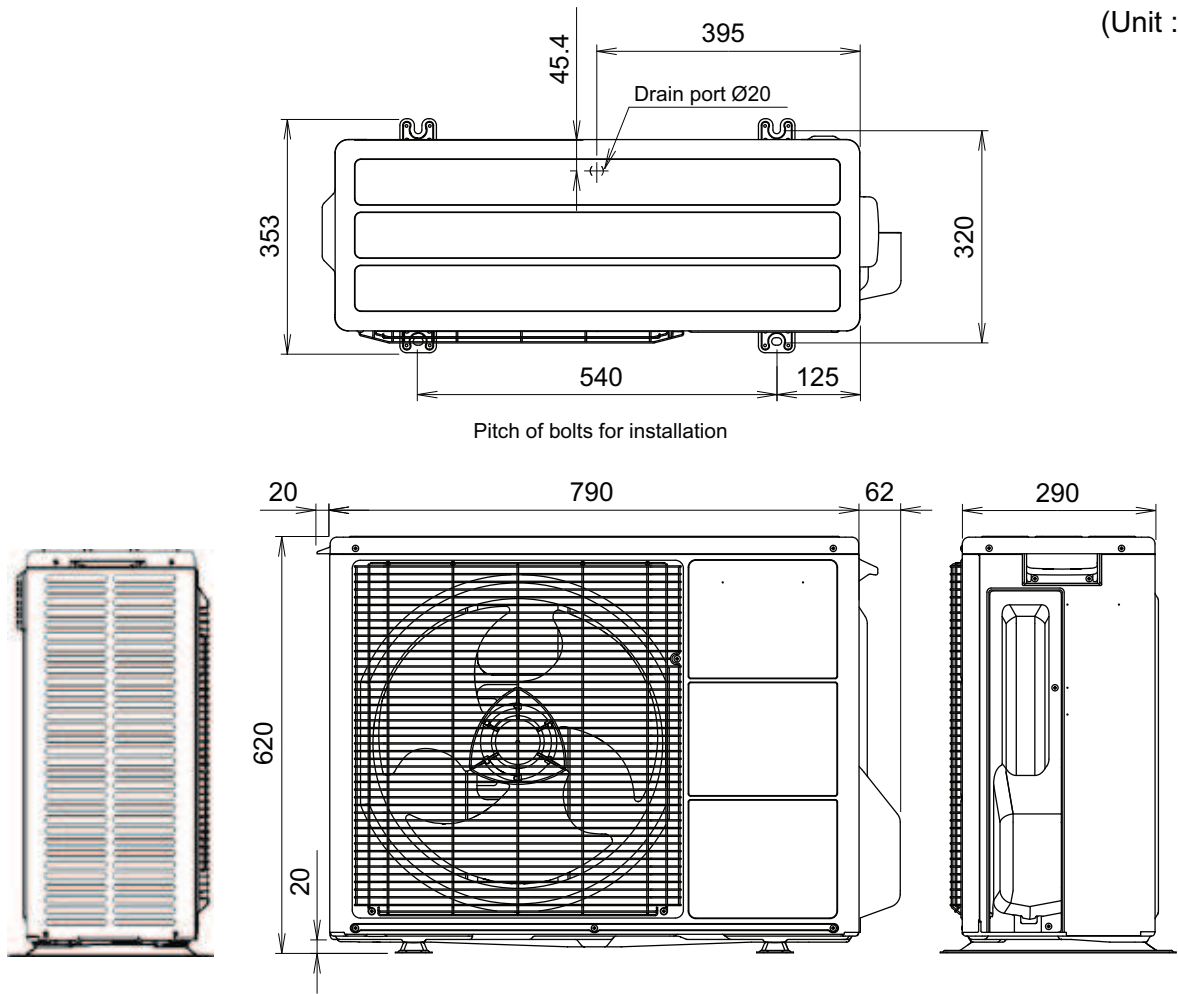
Pipe length : 5/7.5 m (*1), Height difference : 0 m.(Outdoor unit - Indoor unit)

*1 18LFC : 5m, 24 /30LFT : 7.5m

2. DIMENSIONS

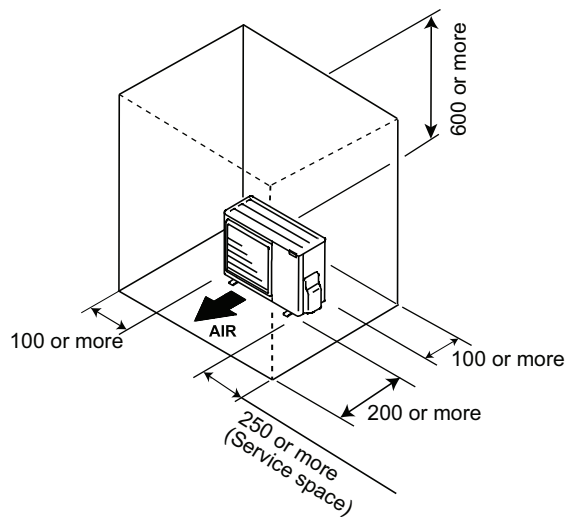
■ MODEL: AO*G18LF

(Unit : mm)



■ INSTALLATION PLACE

(Unit : mm)



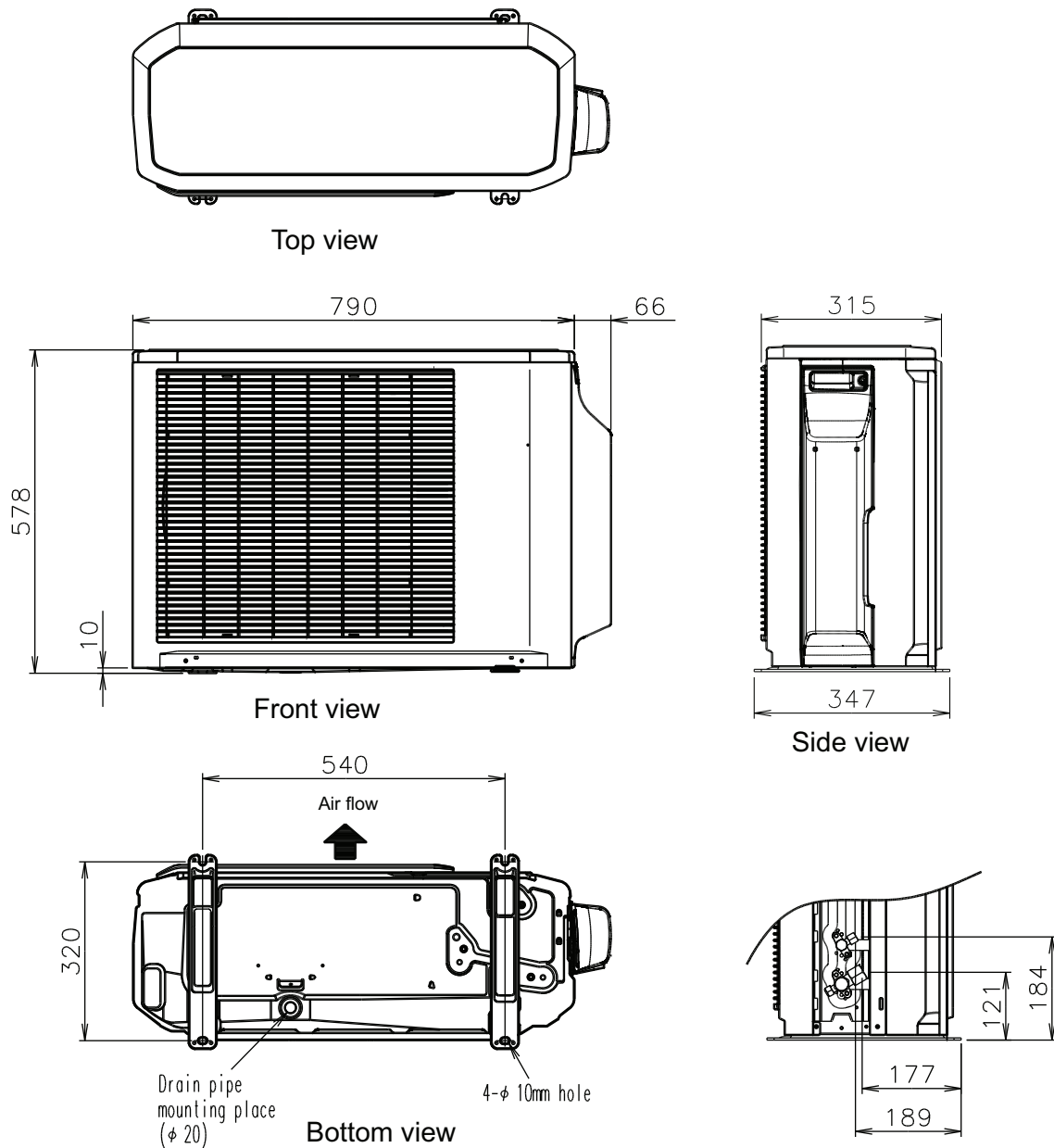
If the space is larger that is stated, the condition will be the same as that are no obstacles.

MODEL: AO*G24LF

(Unit : mm)

OUTDOOR UNIT
AO*G18-30LF

OUTDOOR UNIT
AO*G18-30LF

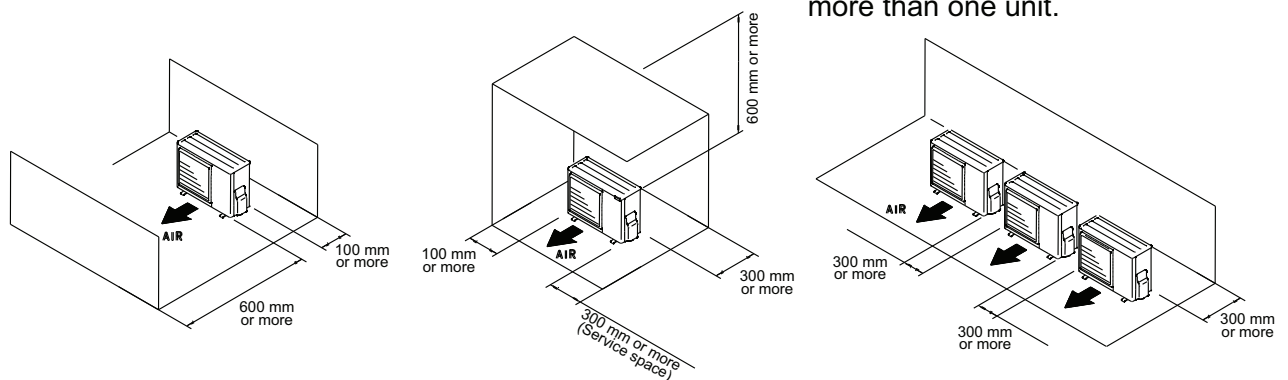


INSTALLATION PLACE

When there are obstacles at the back or front sides.

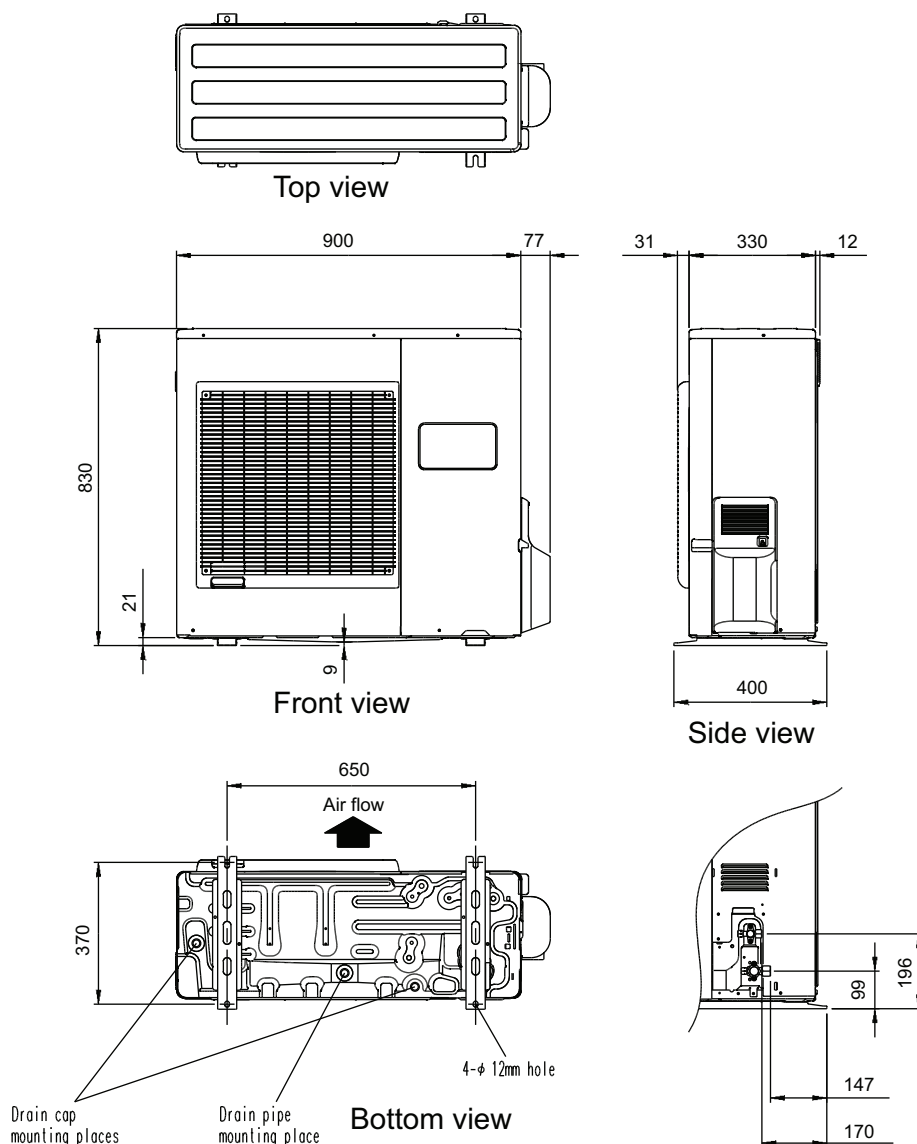
When there are obstacles at the back, side(s), and top.

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



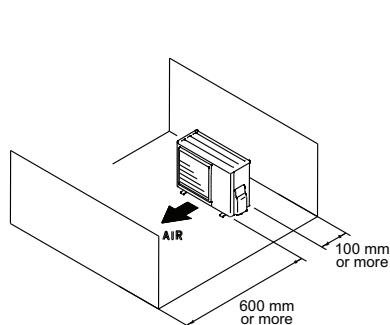
MODEL: AO*G30LF

(Unit : mm)

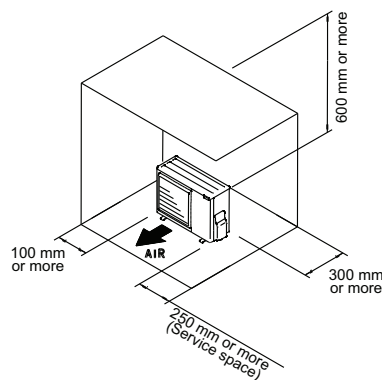


INSTALLATION PLACE

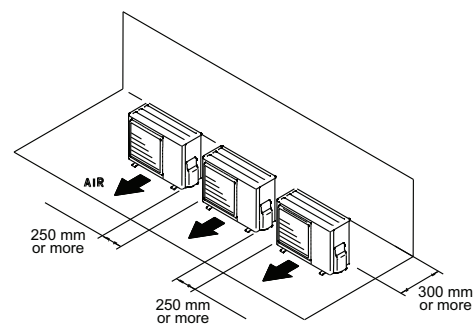
When there are obstacles at the back or front sides.



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

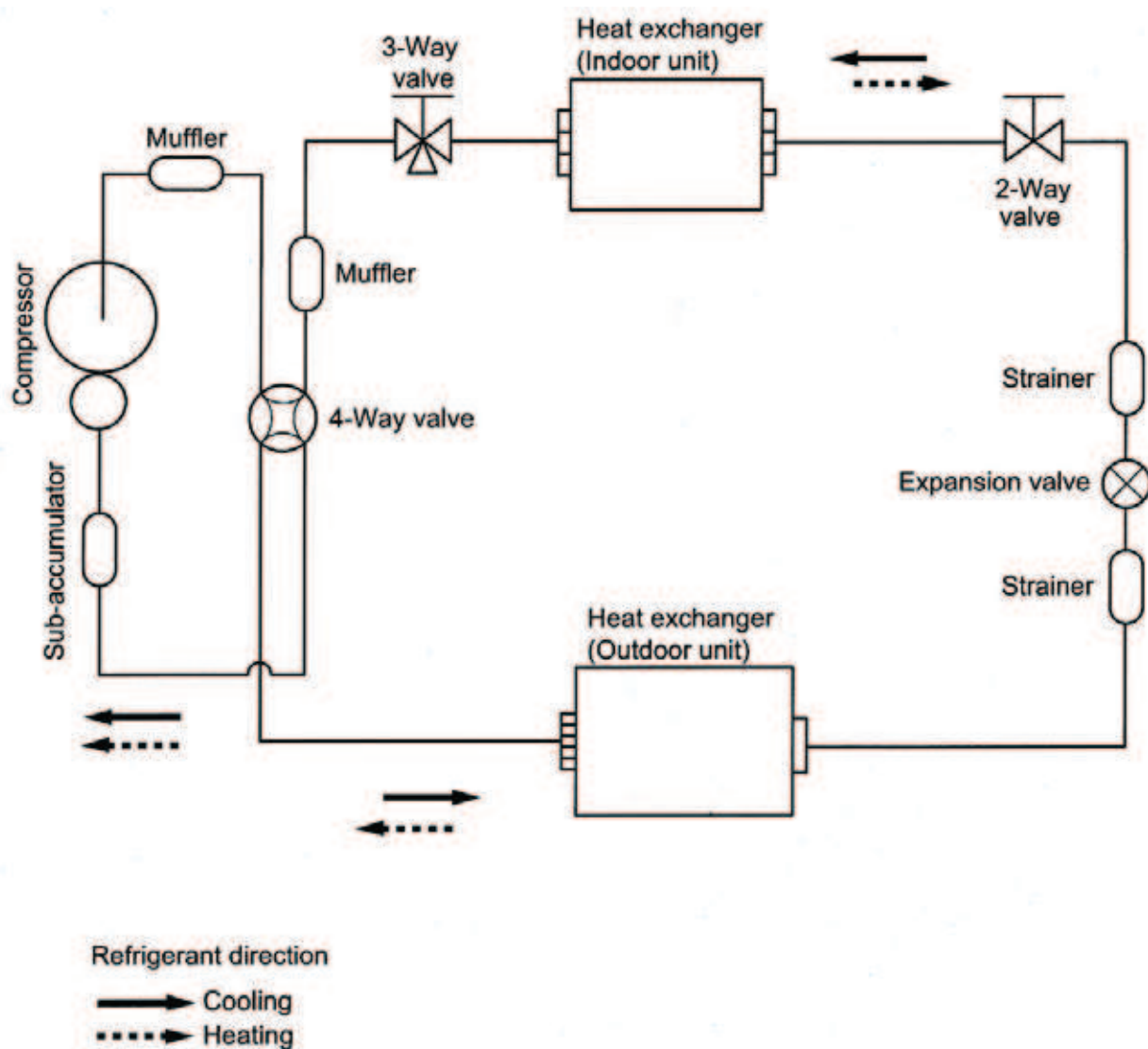


When there are obstacles at the back, side with the installation of more than one unit.



3. REFRIGERANT CIRCUIT

■ MODEL: AO*G18LF



Refrigerant pipe diameter

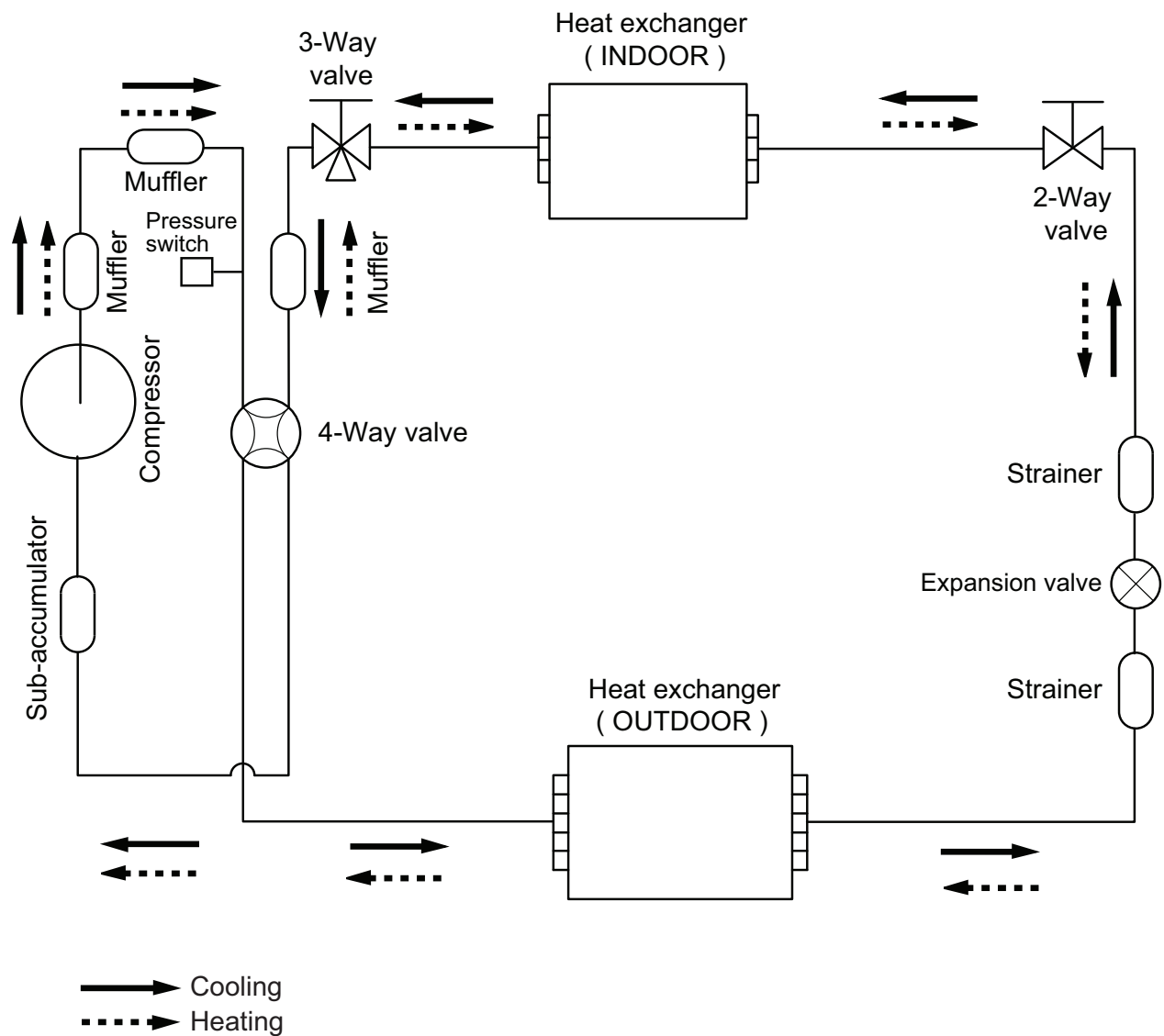
Liquid : 1/4" (6.35 mm)

Gas : 1/2" (12.7 mm)

■ MODEL: AO*G24LF

OUTDOOR UNIT
AO*G18-30LF

OUTDOOR UNIT
AO*G18-30LF

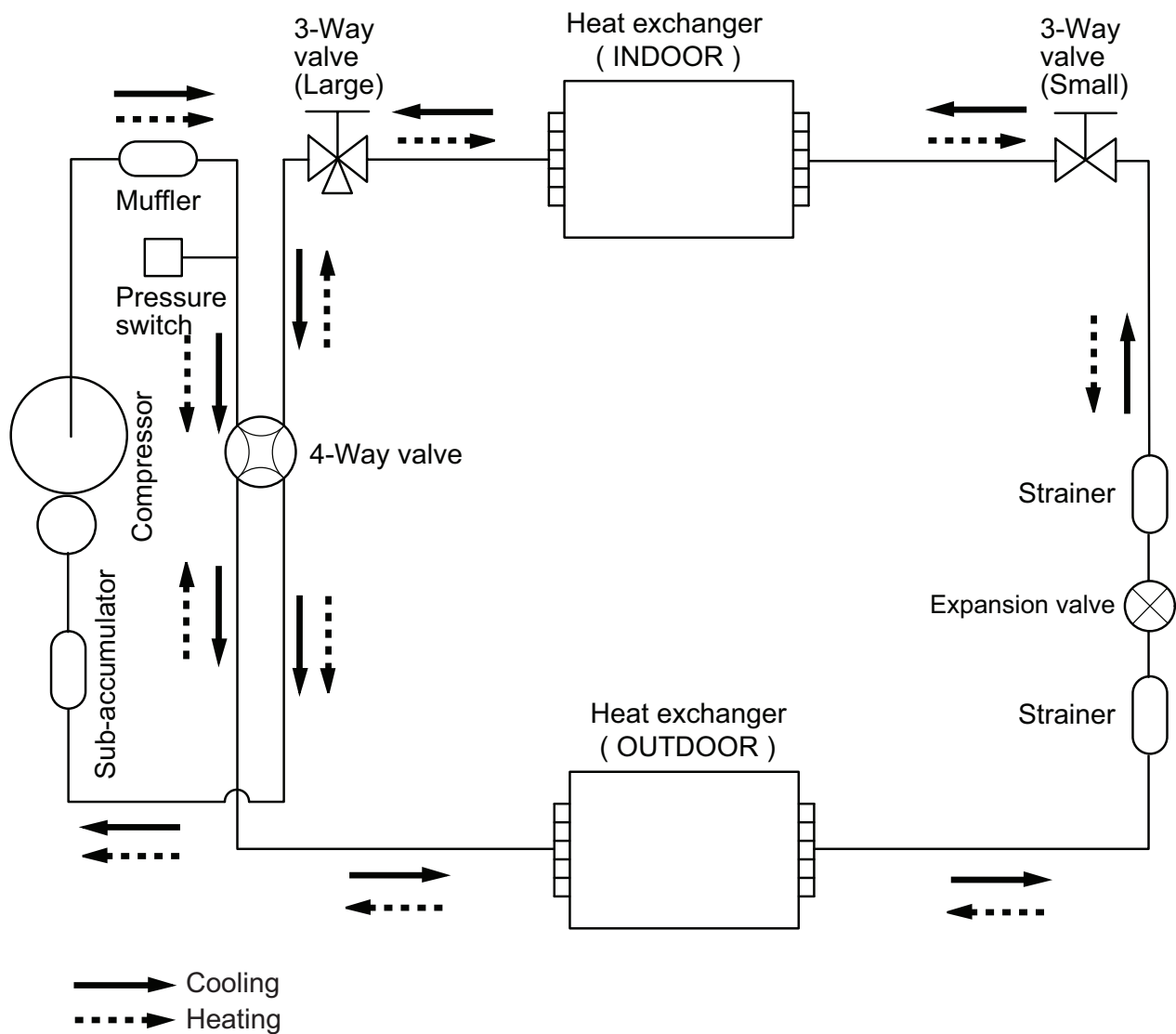


Refrigerant pipe diameter
 Liquid : 1/4" (6.35 mm)
 Gas : 5/8" (15.88 mm)

■ MODEL: AO*G30LF

OUTDOOR UNIT
AO*G18-30LF

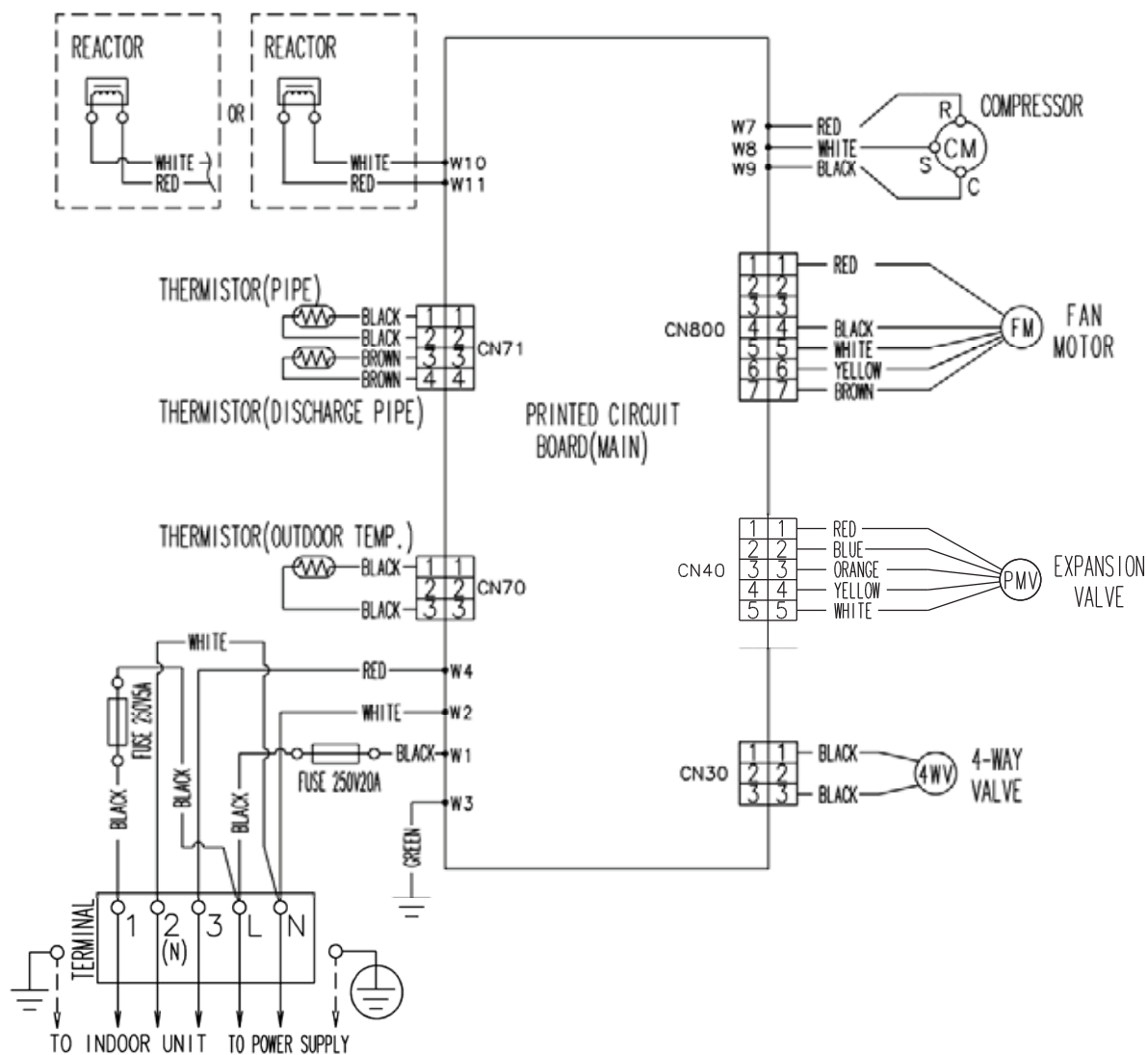
OUTDOOR UNIT
AO*G18-30LF



Refrigerant pipe diameter
Liquid : 3/8" (9.52 mm)
Gas : 5/8" (15.88 mm)

4. WIRING DIAGRAMS

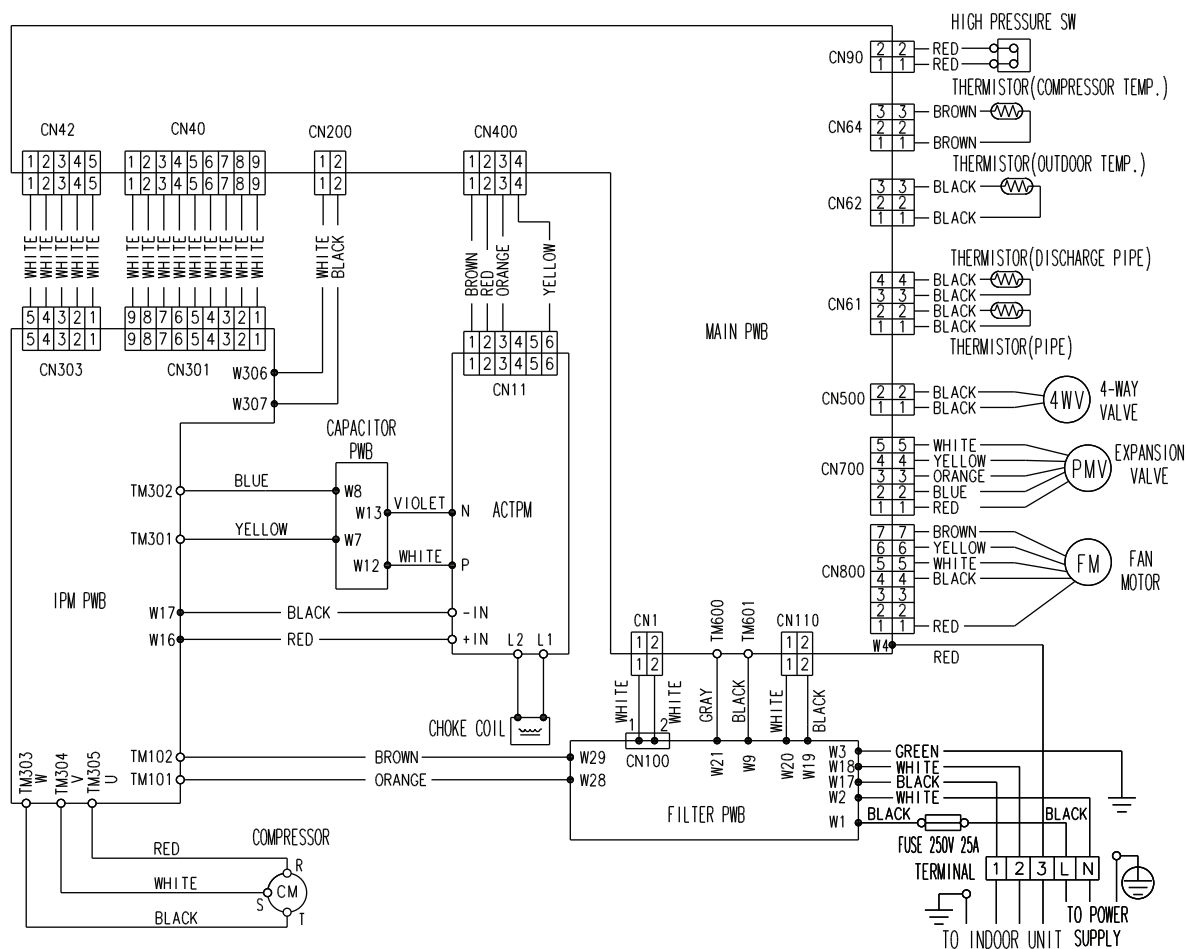
■ MODEL: AO*G18LF



■ MODEL: AO*G24LF

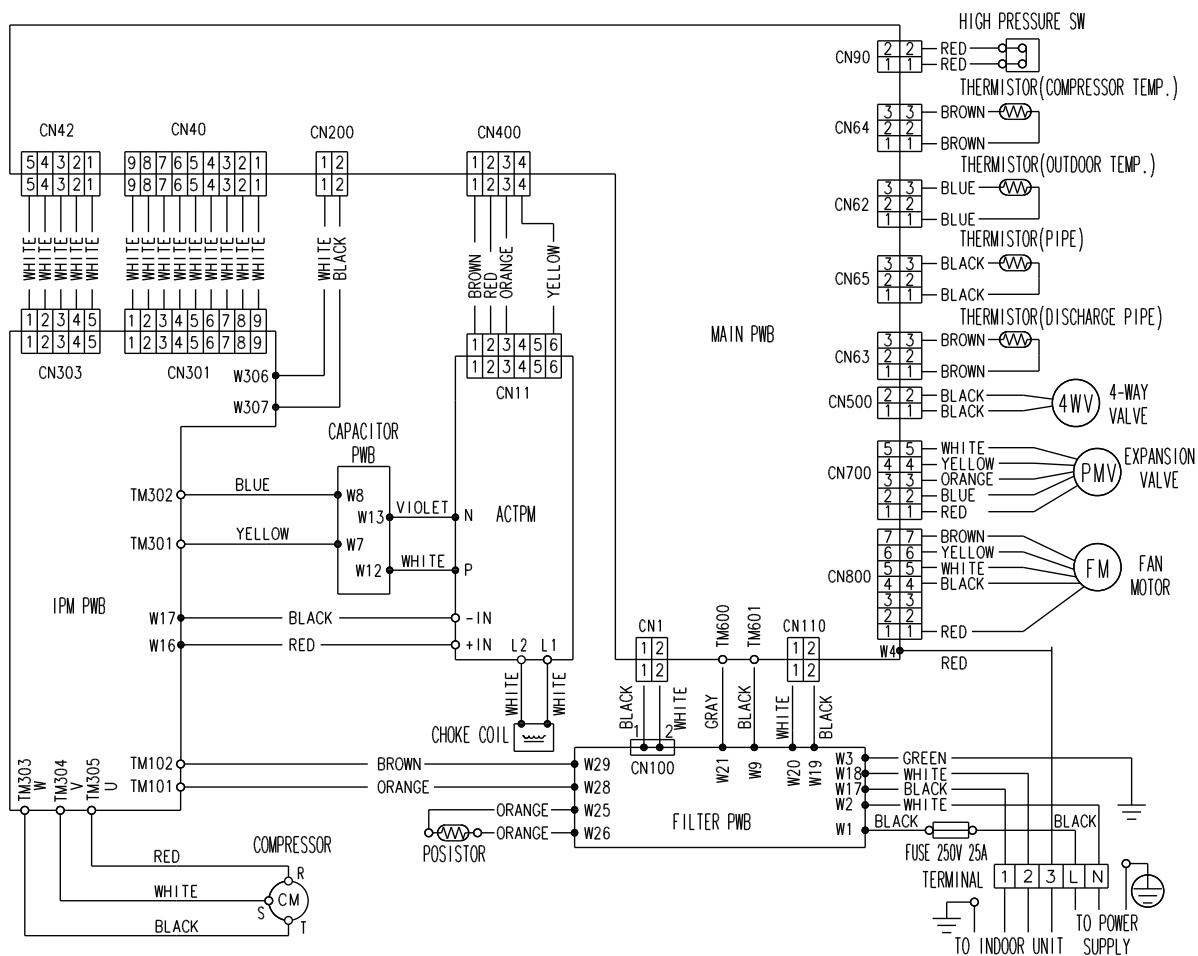
OUTDOOR UNIT
AO*G18-30LF

OUTDOOR UNIT
AO*G18-30LF



MODEL: AO*G30LF

OUTDOOR UNIT
AO*G18-30LF



OUTDOOR UNIT
AO*G18-30LF

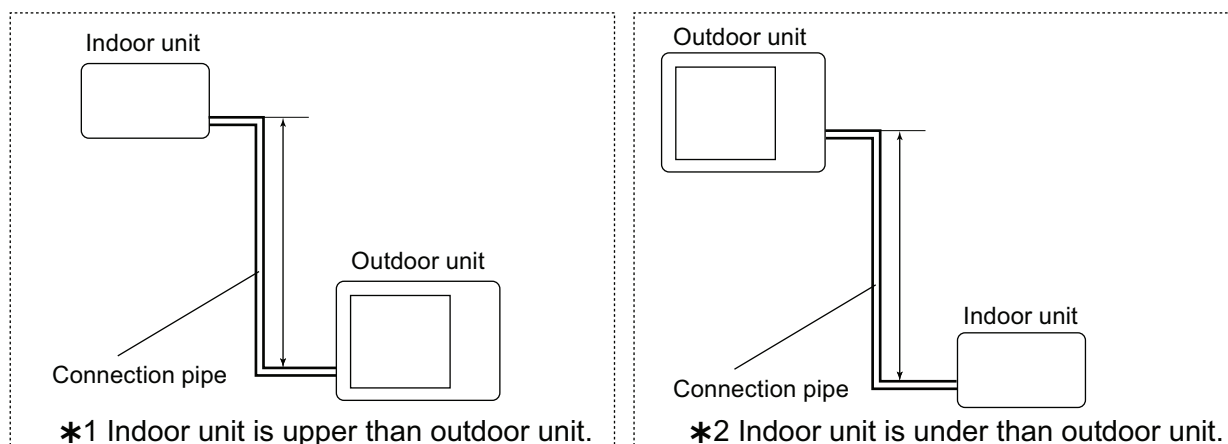
5. CAPACITY COMPENSATION RATE FOR PIPE LENGTH AND HEIGHT DIFFERENCE

■ MODEL: AO*G18LF

COOLING			Pipe length (m)				
			5	10	15	20	25
Height difference H (m)	*1 Indoor unit is upper than outdoor unit.	20	-	-	-	0.869	0.867
		10	-	0.973	0.911	0.885	0.883
		5	0.992	0.981	0.919	0.893	0.891
		0	1.000	0.989	0.927	0.901	0.899
	*2 Indoor unit is under than outdoor unit	-5	1.000	0.989	0.927	0.901	0.899
		-10	-	0.989	0.927	0.901	0.899
		-20	-	-	-	0.901	0.899

HEATING			Pipe length (m)				
			5	10	15	20	25
Height difference H (m)	*1 Indoor unit is upper than outdoor unit.	20	-	-	-	0.901	0.879
		10	-	0.989	0.927	0.901	0.879
		5	1.000	0.989	0.927	0.901	0.879
		0	1.000	0.989	0.927	0.901	0.879
	*2 Indoor unit is under than outdoor unit	-5	0.995	0.984	0.922	0.896	0.874
		-10	-	0.979	0.917	0.892	0.869
		-20	-	-	-	0.876	0.853

Height difference H



■ MODEL: AO*G24LF

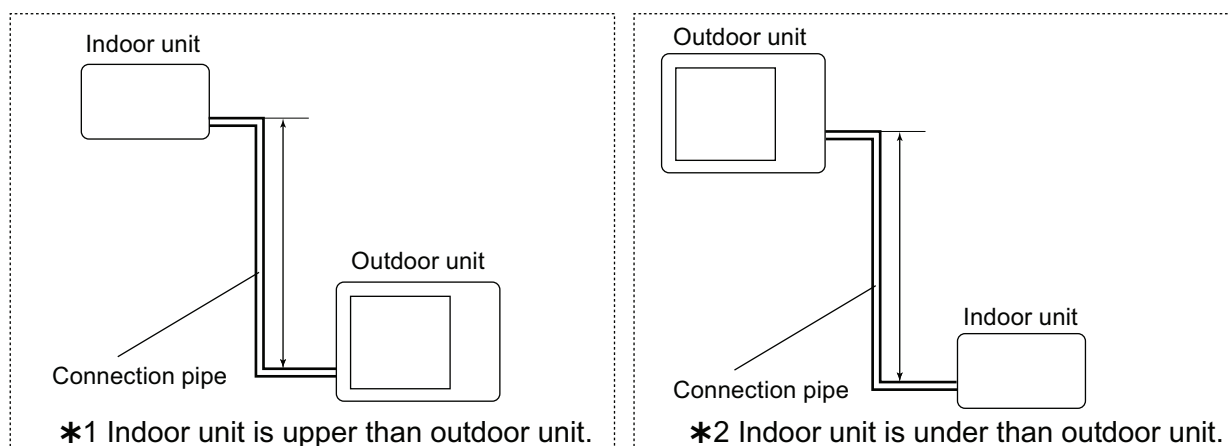
OUTDOOR UNIT
AO*G18-30LF

OUTDOOR UNIT
AO*G18-30LF

COOLING			Pipe length (m)						
			5	7.5	10	15	20	25	30
Height difference H (m)	*1 Indoor unit is upper than outdoor unit.	20	-	-	-	-	0.952	0.951	0.951
		10	-	-	0.980	0.966	0.968	0.967	0.966
		7.5	-	0.988	0.984	0.970	0.972	0.971	0.970
		5	0.995	0.992	0.988	0.974	0.976	0.975	0.974
		0	1.003	1.000	0.996	0.982	0.983	0.983	0.982
	*2 Indoor unit is under than outdoor unit	-5	1.003	1.000	0.996	0.982	0.983	0.983	0.982
		-7.5	-	1.000	0.996	0.982	0.983	0.983	0.982
		-10	-	-	0.996	0.982	0.983	0.983	0.982
		-20	-	-	-	-	0.983	0.983	0.982

HEATING			Pipe length (m)						
			5	7.5	10	15	20	25	30
Height difference H (m)	*1 Indoor unit is upper than outdoor unit.	20	-	-	-	-	0.954	0.932	0.908
		10	-	-	0.998	0.975	0.954	0.932	0.908
		7.5	-	1.000	0.998	0.975	0.954	0.932	0.908
		5	0.989	1.000	0.998	0.975	0.954	0.932	0.908
		0	0.989	1.000	0.998	0.975	0.954	0.932	0.908
	*2 Indoor unit is under than outdoor unit	-5	0.984	0.995	0.993	0.970	0.950	0.927	0.903
		-7.5	-	0.993	0.991	0.968	0.947	0.925	0.901
		-10	-	-	0.988	0.965	0.945	0.923	0.899
		-20	-	-	-	-	0.935	0.914	0.890

Height difference H

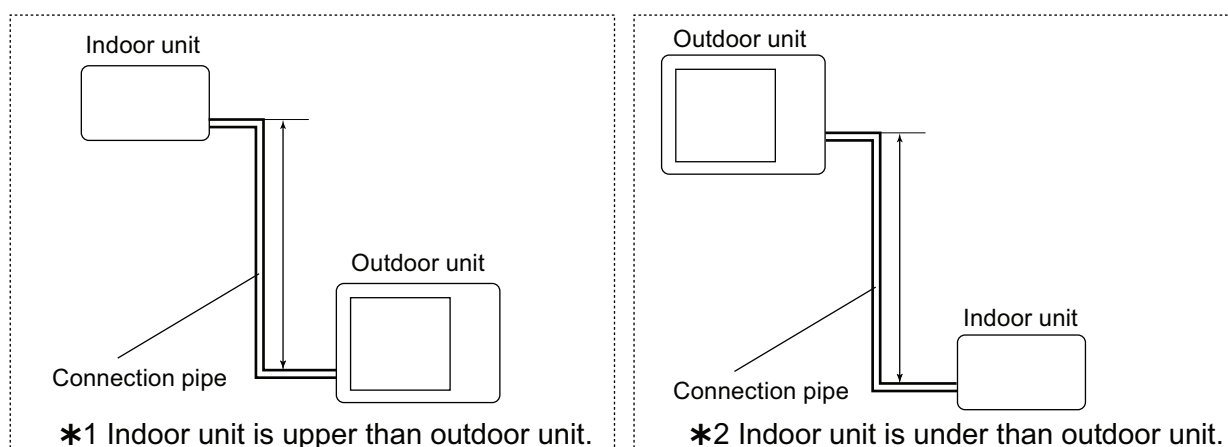


■ MODEL: AO*G30LF

COOLING			Pipe length (m)						
			5	7.5	10	20	30	40	50
Height difference H (m)	*1 Indoor unit is upper than outdoor unit.	30	-	-	-	-	0.932	0.929	0.924
		20	-	-	-	0.945	0.947	0.945	0.940
		10	-	-	0.984	0.961	0.963	0.960	0.956
		7.5	-	0.988	0.988	0.965	0.967	0.964	0.959
		5	0.990	0.992	0.992	0.968	0.971	0.968	0.963
	*2 Indoor unit is under than outdoor unit	0	0.998	1.000	1.000	0.976	0.979	0.976	0.971
		-5	0.998	1.000	1.000	0.976	0.979	0.976	0.971
		-7.5	-	1.000	1.000	0.976	0.979	0.976	0.971
		-10	-	-	1.000	0.976	0.979	0.976	0.971
		-20	-	-	-	0.976	0.979	0.976	0.971
		-30	-	-	-	-	0.979	0.976	0.971

HEATING			Pipe length (m)						
			5	7.5	10	20	30	40	50
Height difference H (m)	*1 Indoor unit is upper than outdoor unit.	30	-	-	-	-	0.816	0.756	0.686
		20	-	-	-	0.872	0.816	0.756	0.686
		10	-	-	0.991	0.872	0.816	0.756	0.686
		7.5	-	1.000	0.991	0.872	0.816	0.756	0.686
		5	0.986	1.000	0.991	0.872	0.816	0.756	0.686
	*2 Indoor unit is under than outdoor unit	0	0.986	1.000	0.991	0.872	0.816	0.756	0.686
		-5	0.981	0.995	0.986	0.868	0.812	0.752	0.683
		-7.5	-	0.993	0.983	0.866	0.810	0.750	0.681
		-10	-	-	0.981	0.864	0.808	0.748	0.679
		-20	-	-	-	0.855	0.799	0.740	0.672
		-30	-	-	-	-	0.791	0.733	0.665

Height difference H



6. ADDITIONAL CHARGE CALCULATION

■ MODEL: AO*G18LF

Refrigerant type		R410A
Refrigerant amount	g	1200

● Refrigerant charge

Total pipe length	m	15 or less	20	25(MAX)	20g/m
Additional charge	g	0	100	200	

■ MODEL: AO*G24LF

Refrigerant type		R410A
Refrigerant amount	g	1650

● Refrigerant charge

Total pipe length	m	15 or less	20	25	30(MAX)	20g/m
Additional charge	g	0	100	200	300	

■ MODEL: AO*G30LF

Refrigerant type		R410A
Refrigerant amount	g	2100

● Refrigerant charge

Total pipe length	m	20 or less	30	40	50(MAX)	40g/m
Additional charge	g	0	400	800	1200	

7. AIR FLOW

■ MODEL: AO*G18LF

● Cooling

Number of rotations (r.p.m.)	Air flow	
920	2150	m ³ /h
	597	l/s
	1265	CFM

● Heating

Number of rotations (r.p.m.)	Air flow	
870	2070	m ³ /h
	575	l/s
	1218	CFM

■ MODEL: AO*G24LF

● Cooling

Number of rotations (r.p.m.)	Air flow	
1050	2470	m ³ /h
	686	l/s
	1454	CFM

● Heating

Number of rotations (r.p.m.)	Air flow	
1100	2570	m ³ /h
	714	l/s
	1512	CFM

■ **MODEL: AO*G30LF**

● **Cooling**

Number of rotations (r.p.m.)	Air flow	
850	3600	m ³ /h
	1000	l/s
	2119	CFM

● **Heating**

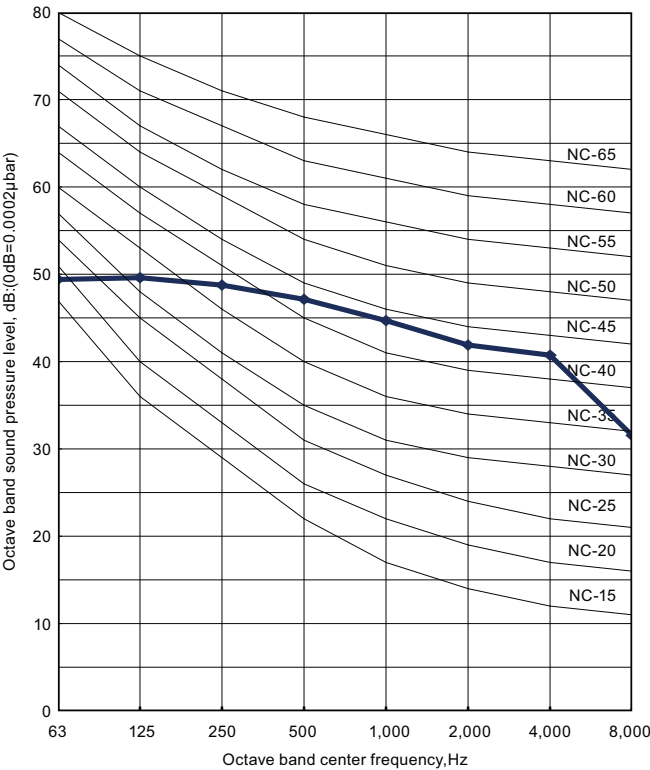
Number of rotations (r.p.m.)	Air flow	
850	3600	m ³ /h
	1000	l/s
	2119	CFM

8. OPERATION NOISE

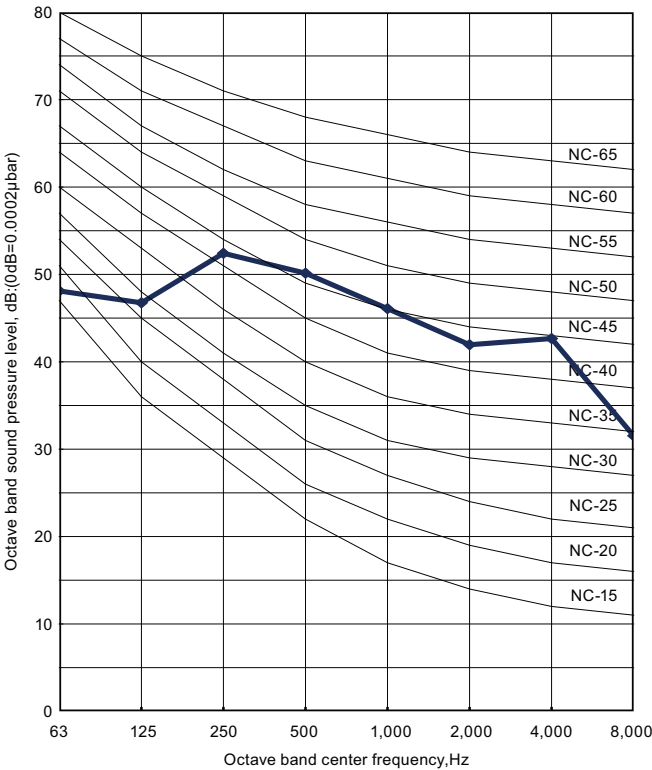
8-1. NOISE LEVEL CURVE

MODEL: AO*G18LF

Cooling

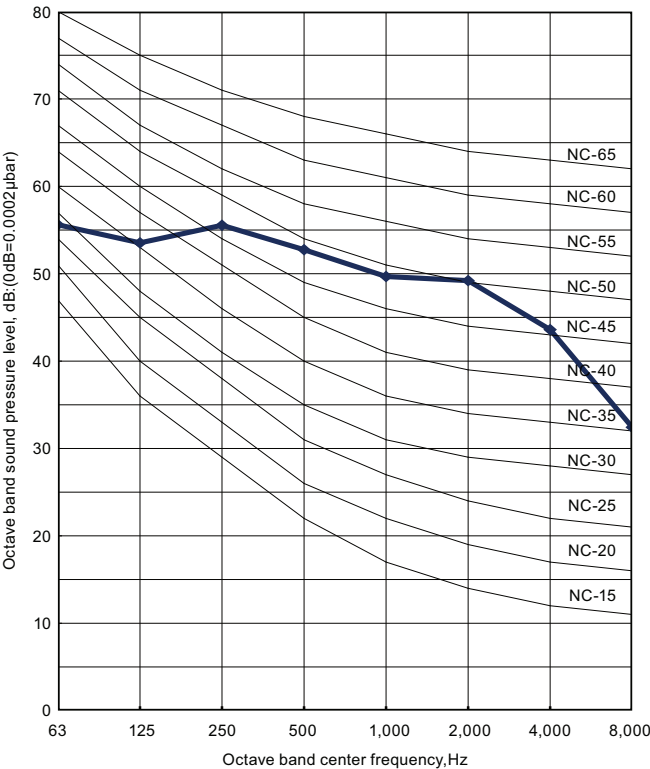


Heating

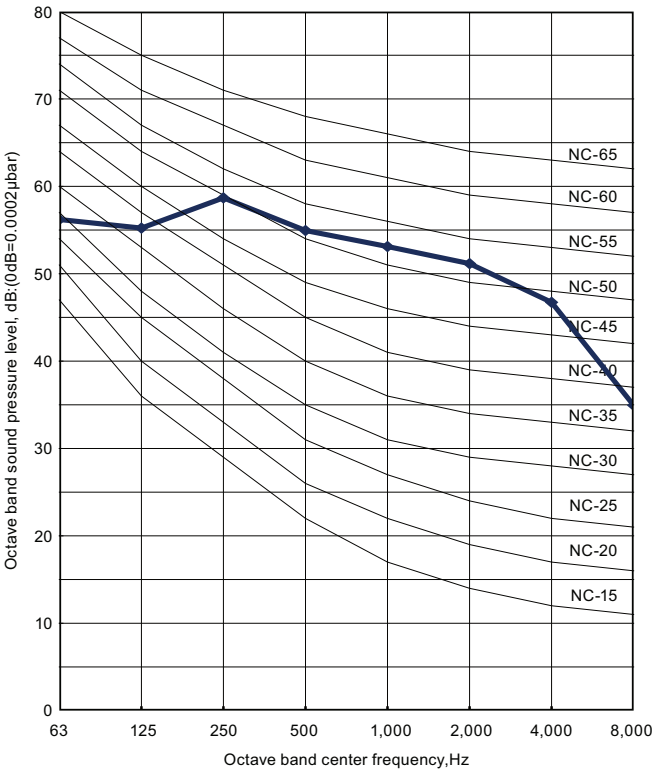


MODEL: AO*G24LF

Cooling

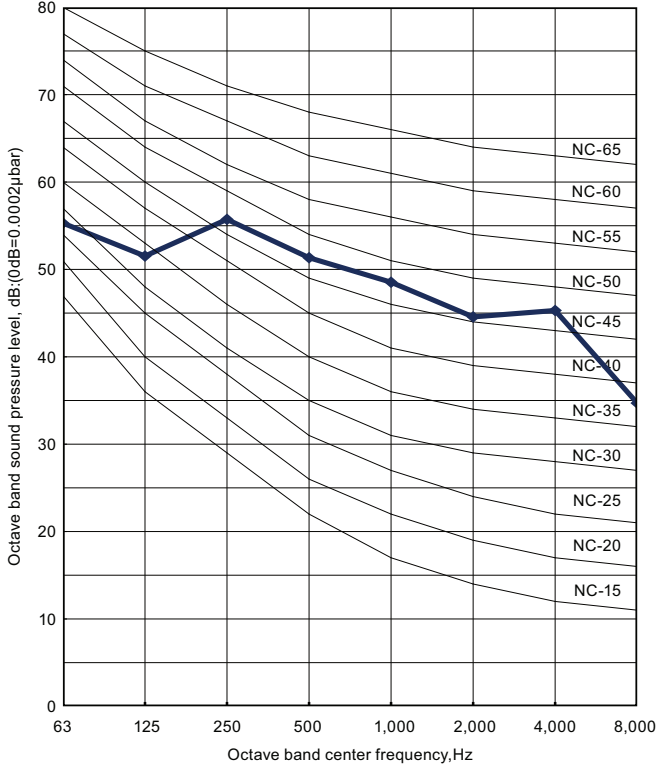


Heating

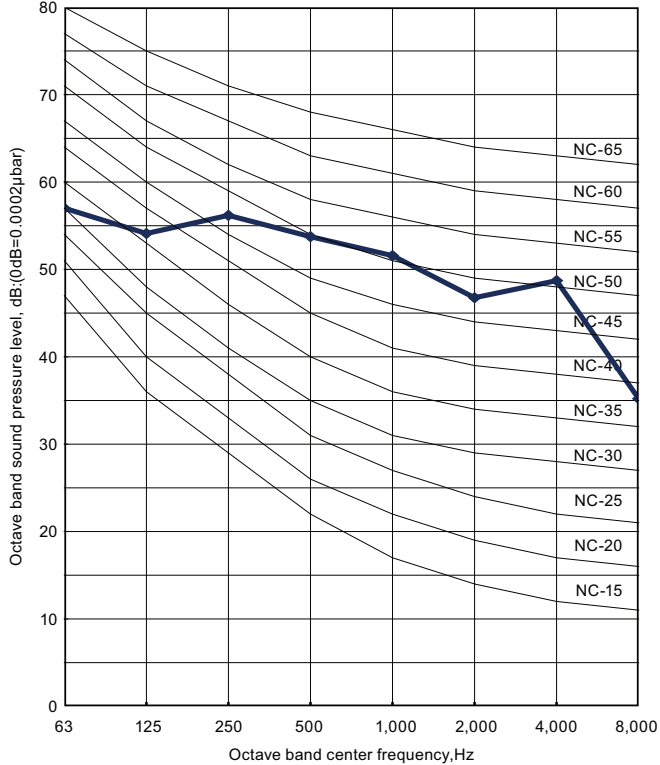


MODEL: AO*G30LF

● Cooling

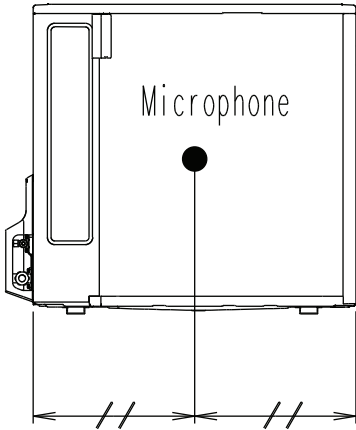
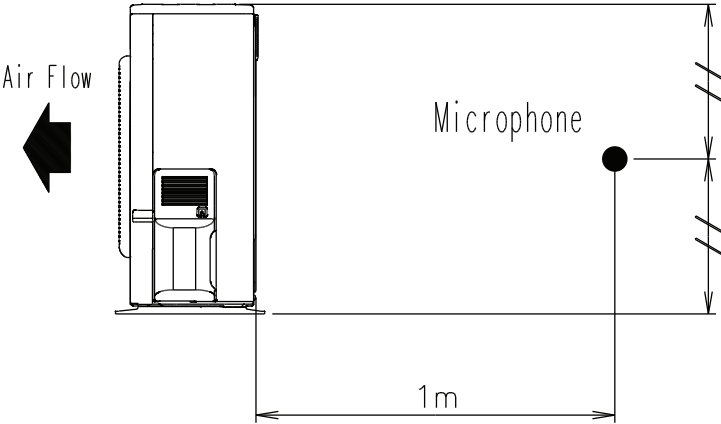


● Heating



8-2. SOUND LEVEL CHECK POINT

OUTDOOR UNIT
AO*G18-30LF



OUTDOOR UNIT
AO*G18-30LF

9. ELECTRIC CHARACTERISTICS

Model name			AO*G18LF	AO*G24LF	AO*G30LF
Power supply	Voltage	V	230V ~		
	Frequency	Hz	50		
*1) Max operating current		A	12.5	18.5	19.0
Starting Current		A	7.6	9.7	10.9
*2) Wiring spec.	Main Fuse (Circuit breaker) Current	A	20	30	
	Power Cable	mm ²	3.5-4.0	3.5-4.5	
	*3) Limited wiring length	m	20		

*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*G18LF	AO*G24LF	AO*G30LF
Circuit protection	Current fuse (NEAR THE TERMINAL)	20A 250V	20A 250V	20A 250V
		5A 250V	10A 250V	5A 250V
	Current fuse (MAIN PRINTED CIRCUIT BOARD)	15A 250V	3.15A 250V	15A 250V
		3.15A 250V		3.15A 250V
Fan motor protection	Thermal protection program	OFF : 100±10°C ON : 95±10°C	OFF : 100±10°C ON : 95±10°C	OFF : 130±20°C ON : 100±20°C
Compressor protection	Thermal protection program (COMPRESSOR TEMP.)	—	OFF : 110°C ON : After 40 minutes	OFF : 108°C ON : After 40 minutes
	Thermal protection program (DISCHARGE TEMP.)	OFF:110°C ON: After 7 minutes	OFF:110°C ON: After 7 minutes	OFF:110°C ON: After 7 minutes
High Pressure Protection	Pressure Switch	—	OFF : 4.2±0.1MPa ON : 3.2±0.15MPa	OFF : 4.2±0.1MPa ON : 3.2±0.15MPa