

INDOOR UNIT

1. CEILING WALL TYPE :

AW*Z14LBC

AW*Z18LBC

AW*Z24LBC

1. FEATURE

- **MODEL :**
AW*Z14LBC
AW*Z18LBC
AW*Z24LBC



■ FEATURES

- **Energy saving CLASS A cleared with a margin to spare**

- **Automatic filter cleaner** **WORLD FIRST** ^{*1}
Entire filter is cleaned automatically in approx. 2 minutes

Since the filter is cleaned automatically, energy saving capability is displayed without regard to the load on the air conditioner.

- **Bacteria eliminating countermeasure**

- a** Dirt and dust are bacteria-eliminated by photocatalytic filter*

* Displays double the effect of a conventional optical medium and retains its property for a long time to suck in and remove approx. 99.99% of cigarette odors and bacteria, etc.

- b** Drives away bacteria and refreshes the air by UV (ultraviolet rays) illumination

- **Our unique technology that achieved top energy efficiency in the industry**

- c** Energy saving by automatic filter cleaning function^{*1}

This function allows an energy saving of more than 25% a year and maintains a smooth airflow by preventing the filters from being clogged with dust.

- d** Computer-designed fan provides a larger airflow than conventional models

New air trunk, which provides a smooth airflow, and axial gap fan motor increase the max. airflow by 10% over that of conventional models.

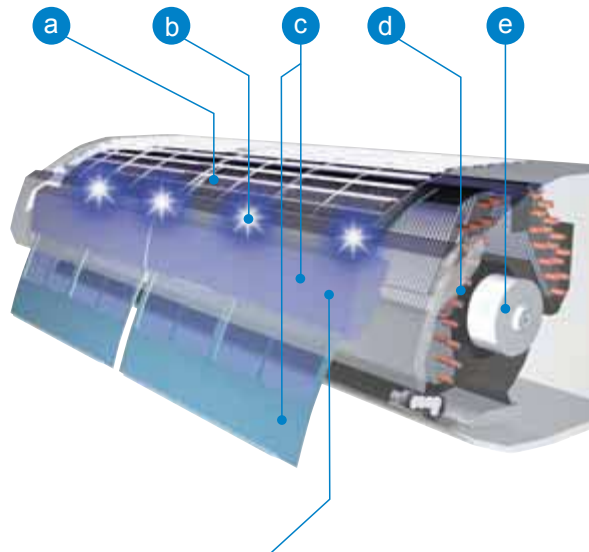
CAE:Computer aided engineering



CAE analysis

- e** Axial gap fan motor enables nonconventional high power and high efficiency^{*2}
Axial gap method

Rotor plates are installed above and below electromagnets.

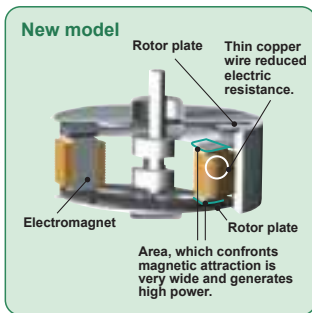
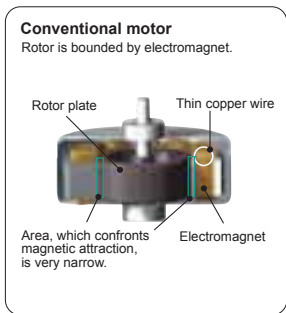


Antibacterial dust box

Removes dirt and dust by double brushes. Dust collection is approx. twice that in the past. (our company comparison)
Maintenance: Only throwing into a trash bin once every 2 years

Features (Compared to conventional models)

Compact size with 1.5 more power output Self-driven method increases rotating efficiency by 10%. Our electromagnetic field simulation technology enables low vibration and low noise.



^{*1}: Announced September 9, 2002. In room air conditioner for the home (Our company's investigation)
^{*2}: Announced December 13, 2004. As fan motor for air conditioner (Our company's investigation)

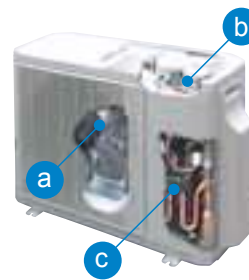
● ALL DC

a DC fan motor

b V-PAM control

V-PAM technology makes a compressor more powerful.

c DC compressor

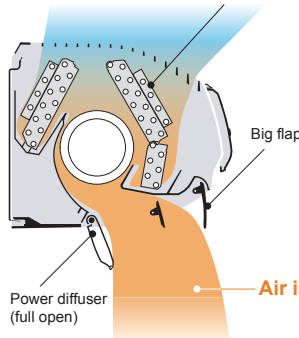


Front view

● "Vertical airflow" provides powerful floor level heating

No.1
Heating
capacity

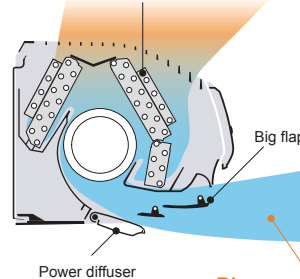
Increased heat exchange efficiency



Air is blown directly downward

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

Increased heat exchange efficiency



Blown out horizontally

● Super quiet

Air flow mode can be set in 5 steps and more detailed air flow setting is possible.

● Inner drying operation

This model is equipped with an inner drying function. After the power is turned off, the dry operation starts inside the air conditioner. This prevents the growth of mold and bacterial inside the air conditioner.

● Low outdoor air temperature cooling correspondence

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

● Low outdoor air temperature heating correspondence

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

● Corresponds to maximum 30m long piping (24TYPE)

2. REMOTE CONTROLLER

2-1. WIRELESS REMOTE CONTROLLER

■ FEATURES



- * Four kinds of timer setup (ON / OFF / PROGRAM / SLEEP) are possible.
- * Four kinds of timers. Easy operation.

● Built-in timers

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

● Program timer

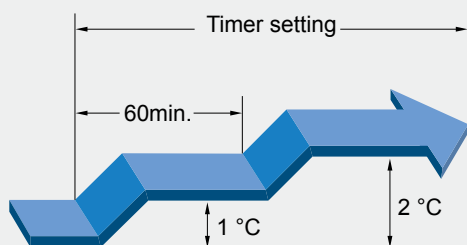
The program timer operates the ON and OFF timer once within a 24 hour period.

● 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.

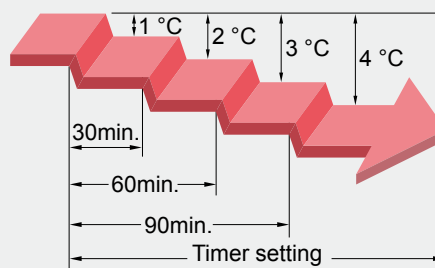
Cooling operation/dry operation

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.

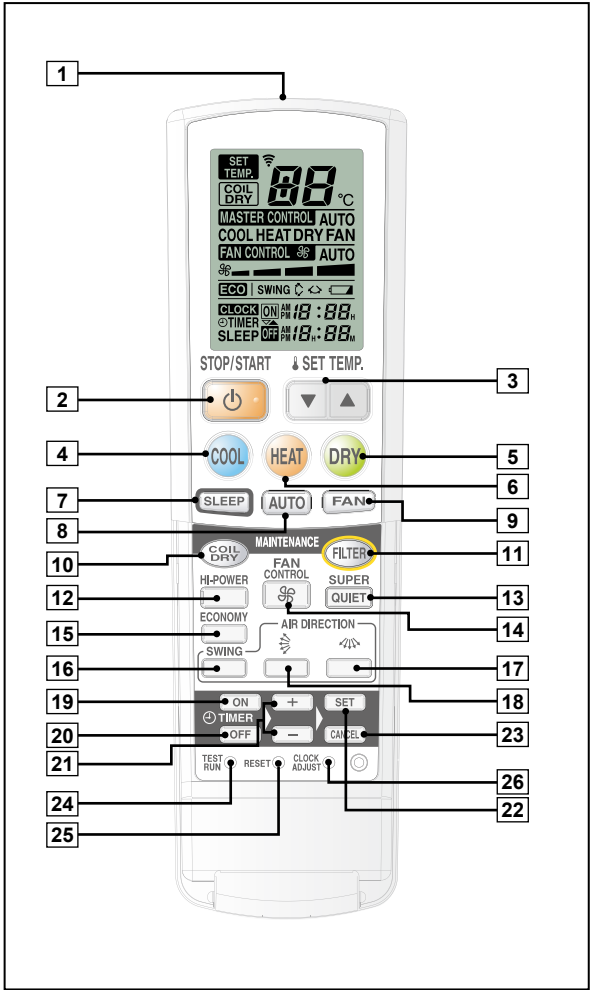


Heating operation

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.

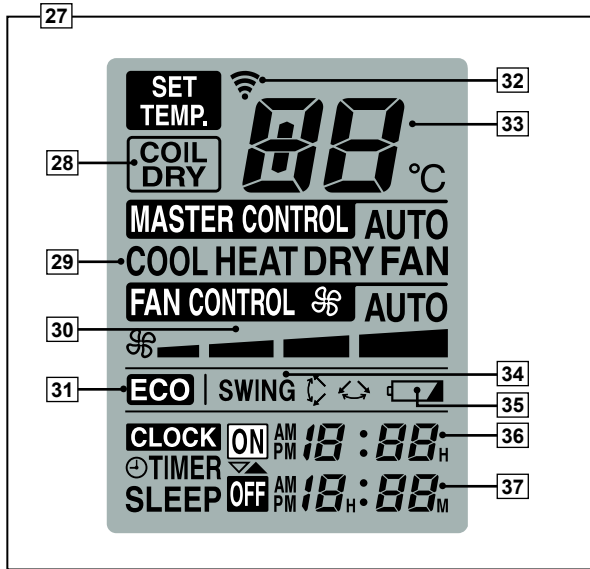


FUNCTIONS



- 1 Signal Transmitter
- 2 START/STOP button
- 3 SET TEMP. button (▲ / ▼)
- 4 COOL button
- 5 DRY button
- 6 HEAT button
- 7 SLEEP button
- 8 AUTO button
- 9 FAN button
- 10 COIL DRY button
- 11 FILTER button
- 12 HI-POWER button
- 13 SUPER QUIET button
- 14 FAN CONTROL button
- 15 ECONOMY button
- 16 SWING button
- 17 AIR DIRECTION (Left-Right) button
- 18 AIR DIRECTION (Up-Down) button
- 19 ON TIMER button
- 20 OFF TIMER button
- 21 SET TIME buttons (⊕ / ⊖)
- 22 SET (TIMER) button
- 23 CANCEL (TIMER) button
- 24 TEST RUN button
- 25 RESET button
- 26 CLOCK ADJUST button

Display panel



- 27 Remote Control Unit Display
- 28 COIL DRY Display
- 29 Operating Mode Display
- 30 FAN CONTROL Display
- 31 ECONOMY Operation
- 32 Transmit Indicator
- 33 Temperature Display
- 34 SWING Display
- 35 Battery Indicator Display
- 36 ON TIMER Display
- 37 OFF TIMER Display

SPECIFICATION

SIZE (H × W × D mm)	204 × 60 × 22
WEIGHT (g)	170
ACCESSORY	Holder

3. SPECIFICATIONS

Type					CEILING WALL				
					INVERTER HEAT PUMP				
Model name					AW*Z14LBC	AW*Z18LBC	AW*Z24LBC		
Power source					230V~ 50Hz				
Available voltage range					198-264V~ 50Hz				
European energy label				Cooling	A	A	A		
				Heating	A	A	A		
Capacity	Cooling	Rated	kW	4.20	5.20	7.10			
			BTU/h	14,300	17,700	24,200			
		Min.-Max.	kW	0.9-5.3	0.9-5.9	0.9-8.0			
			BTU/h	3,100-18,100	3,100-20,100	3,100-27,300			
	Heating	Rated	kW	6.00	6.70	8.50			
			BTU/h	20,500	22,900	29,000			
		Min.-Max.	kW	0.9-9.1	0.9-9.7	0.9-11.0			
			BTU/h	3,100-31,000	3,100-33,100	3,100-37,500			
Input power	Cooling	Rated	kW	1.02	1.58	2.21			
		Min.-Max.		0.09-1.75	0.09-2.00	0.11-2.62			
	Heating	Rated		1.35	1.63	2.35			
		Min.-Max.		0.09-2.95	0.09-3.20	0.11-3.68			
Current	Cooling	Rated	A	4.5	6.9	9.7			
		Max.*		8.5	8.5	12.5			
	Heating	Rated		5.9	7.2	10.3			
		Max.*		14.0	14.0	17.5			
EER		Cooling	kW/kW	4.12	3.29	3.21			
COP		Heating		4.44	4.11	3.62			
SENSIBLE CAPACITY		Cooling	kW	2.80	3.30	5.10			
POWER FACTOR		Cooling	%	98	99	99			
		Heating		99	99	99			
Moisture removal			l/h (pints/h)	2.1 (3.7)	2.8 (4.9)	3.0 (5.3)			
Fan	Airflow rate	Cooling	High	m³/h	850	850	880		
			Med		760	760	780		
			Low		580	580	700		
			Quiet		465	465	620		
			S-Quiet		365	365	560		
		Heating	High		940	940	980		
			Med		740	740	880		
			Low		605	605	780		
			Quiet		510	510	700		
			S-Quiet		390	390	605		
			Type × Q'ty			Cross flow fan × 1			
			Motor output		W	72			
	Sound pressure level	Cooling	High	dB (A)	46	46	47		
Med			43		43	43			
Low			35		35	40			
Quiet			29		29	36			
S-Quiet			24		24	32			
Heating		High	46		46	47			
		Med	39		39	43			
		Low	34		34	40			
		Quiet	29		29	36			
		S-Quiet	24		24	32			
Heat exchanger type		Dimensions (H × W × D)		mm	315 × 750 × 26.6				
		Fin pitch			1.2				
		Rows × Stages			2 × 15				
		Pipe type			Copper				
		Fin type			Aluminium				
Enclosure		Material			Polystyrene				
		Colour			White				
Dimensions (H × W × D)	Net		mm		250 × 899 × 298				
	Gross				356 × 960 × 378				
Weight	Net		kg (lb.)		13.5 (30)				
	Gross				17 (37)				
Connection pipe	Size	Liquid	mm		Φ6.35 (Φ1/4 in.)		Φ6.35 (Φ1/4 in.)		
		Gas			Φ12.7 (Φ1/2 in.)		Φ15.88 (Φ5/8 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		mm		PP+LLDPE				
	Size				Outer diameter : 29 / Inner diameter : 13.6				

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

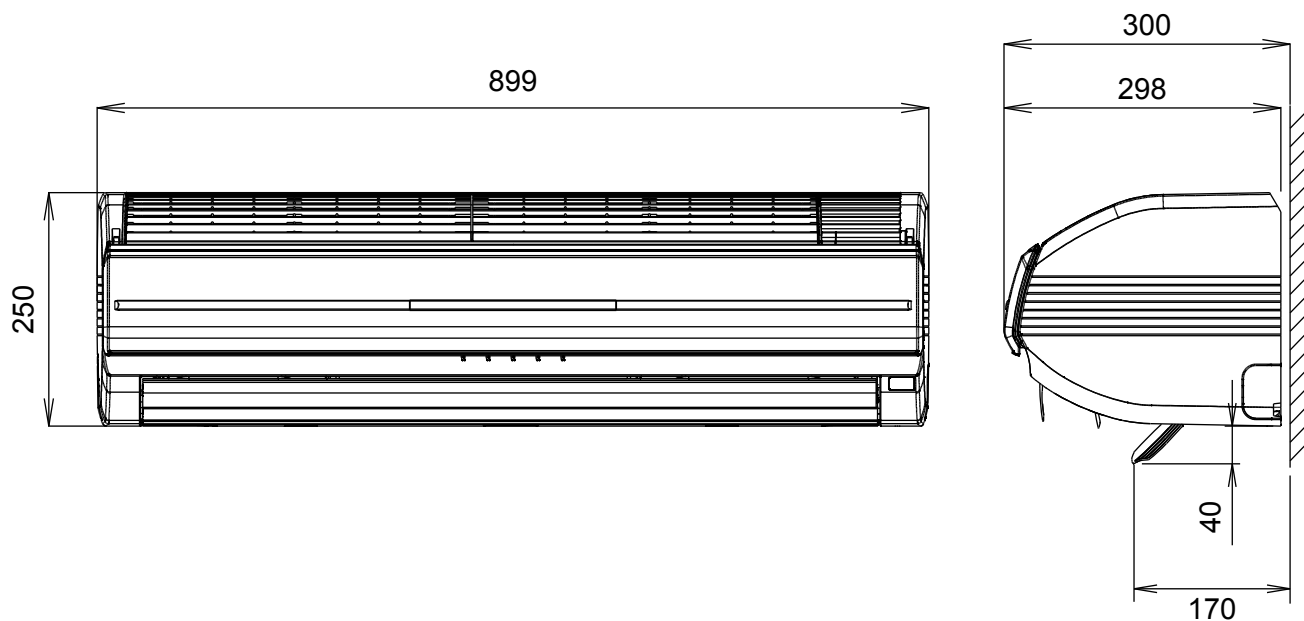
The maximum current is the maximum value when operated within the operation range (temperature).

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

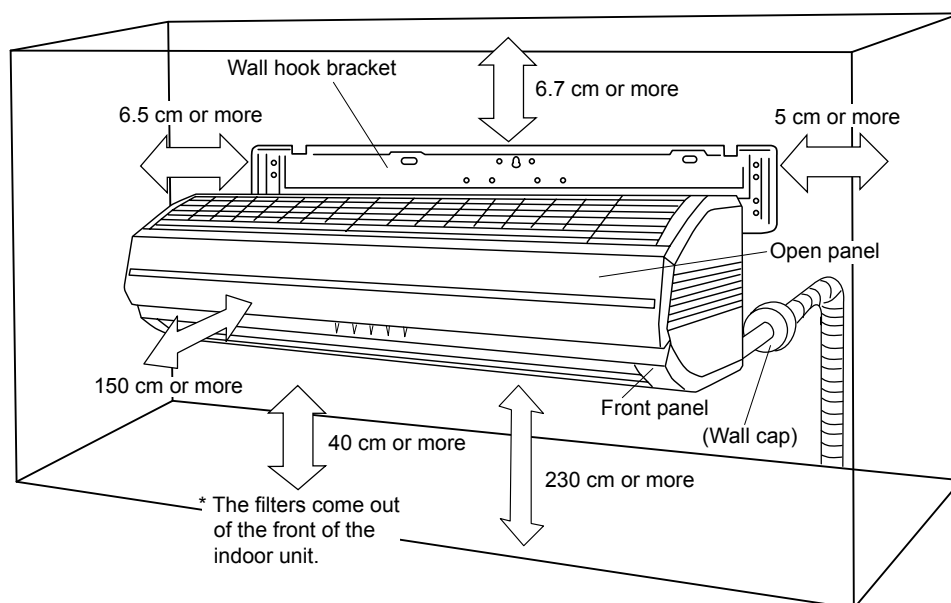
4. DIMENSIONS

■ MODEL : AW*Z14LB , AW*Z18LB , AW*Z24LB

(Unit : mm)

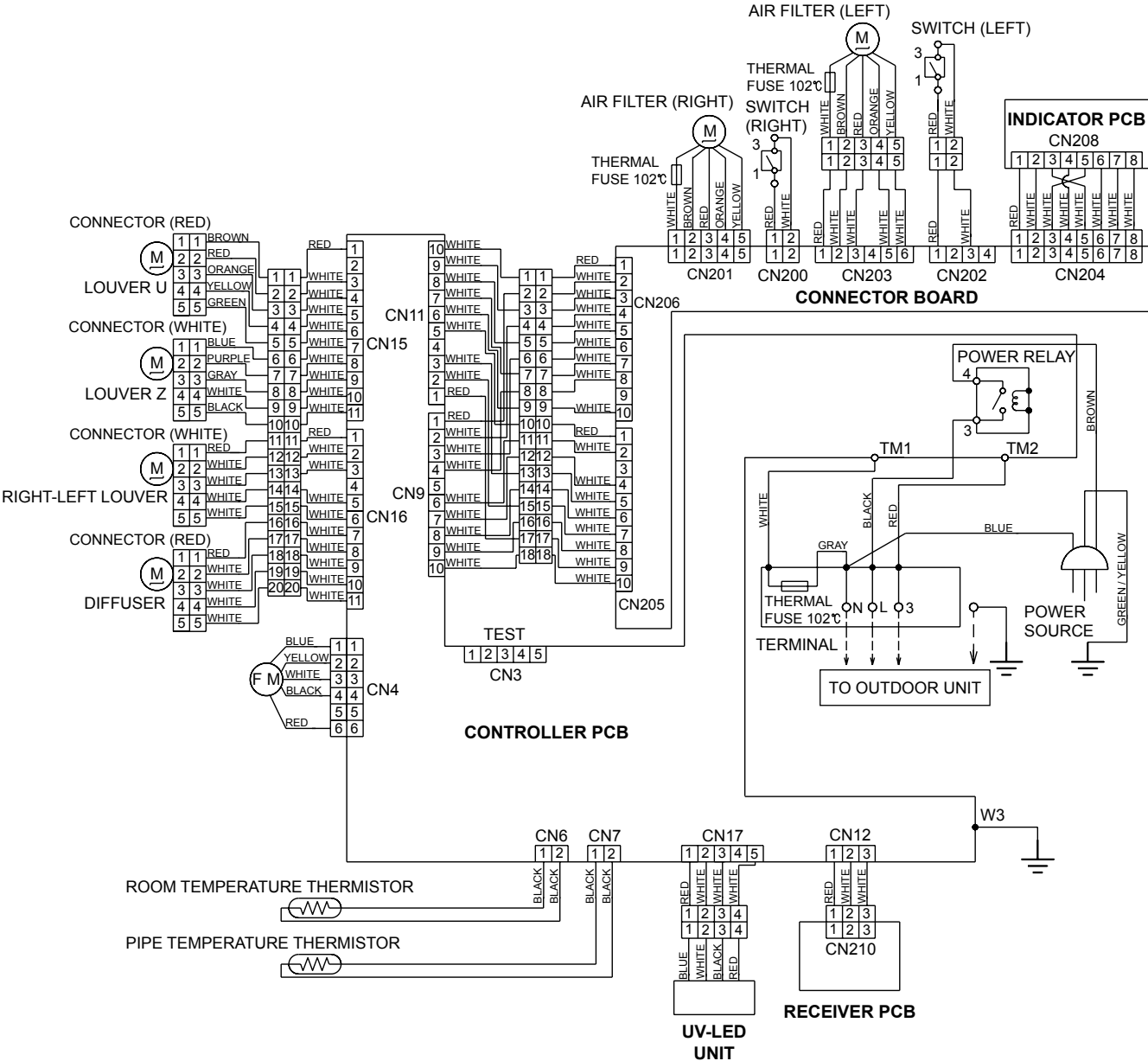


■ INSTALLATION PLACE

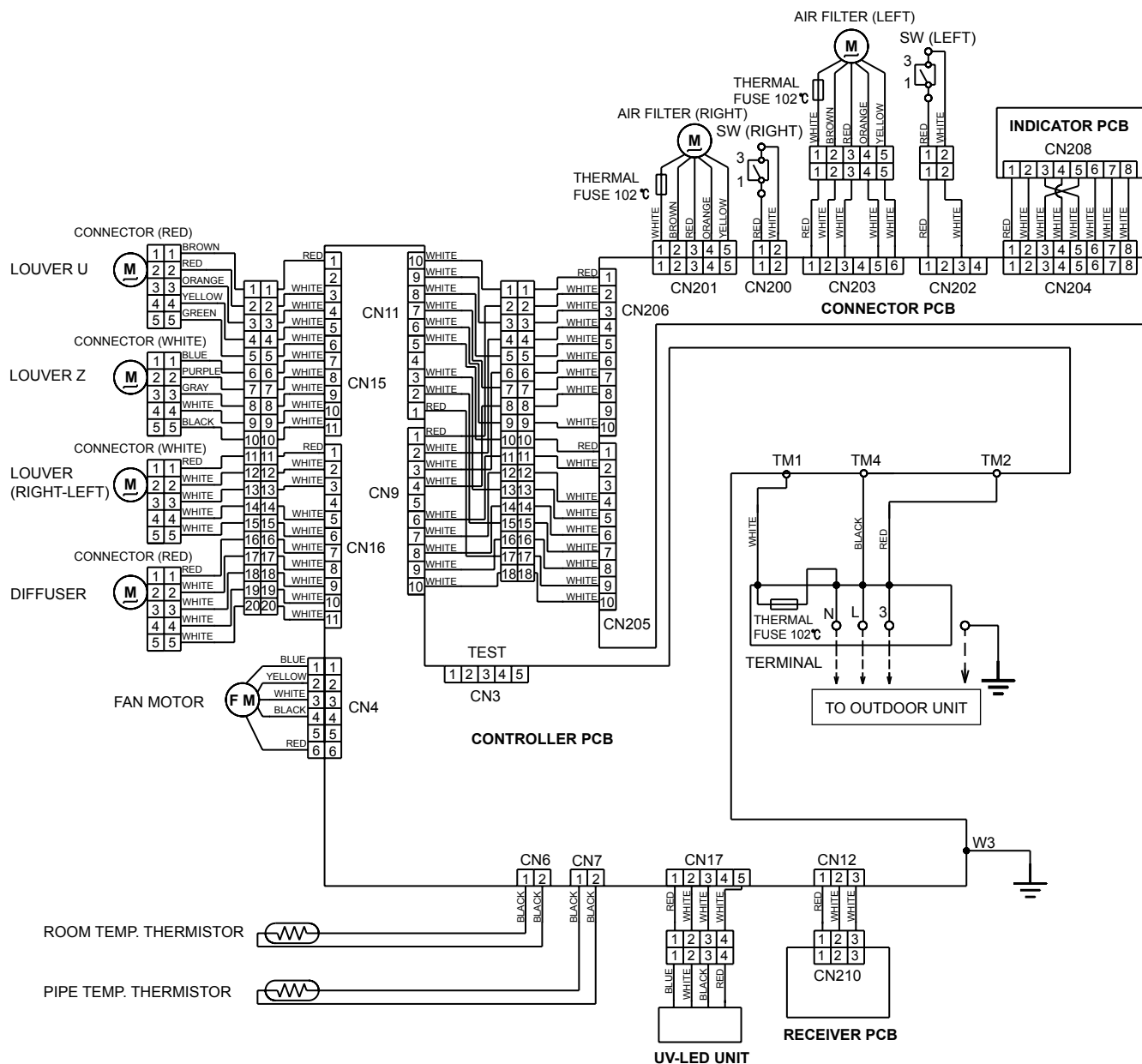


5. WIRING DIAGRAMS

■ MODEL : AW*Z14LB , AW*Z18LB



■ MODEL : AW*Z24LB



6. CAPACITY TABLE

6-1. COOLING CAPACITY

■ MODEL : AW*Z14LB

AFR	14.2
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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	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI			
	20	3.90	2.78	0.71	4.35	2.80	0.72	4.49	3.04	0.72	4.79	3.05	0.73	4.94	3.29	0.74	5.23	3.28	0.74	5.53	3.49	0.75			
	25	3.72	2.65	0.80	4.15	2.67	0.81	4.29	2.90	0.82	4.57	2.91	0.83	4.71	3.14	0.83	4.99	3.13	0.84	5.28	3.33	0.85			
	30	3.53	2.51	0.89	3.93	2.53	0.90	4.06	2.75	0.91	4.33	2.76	0.92	4.46	2.98	0.92	4.73	2.96	0.93	5.00	3.16	0.94			
	35	3.32	2.36	0.98	3.70	2.38	1.00	3.82	2.58	1.00	4.07	2.59	1.01	4.20	2.80	1.02	4.45	2.79	1.03	4.70	2.97	1.04			
	40	2.85	2.03	0.94	3.18	2.04	0.95	3.28	2.22	0.96	3.50	2.23	0.97	3.61	2.41	0.97	3.83	2.40	0.98	4.04	2.55	0.99			
43	2.63	1.87	0.93	2.93	1.88	0.95	3.03	2.05	0.95	3.23	2.05	0.96	3.33	2.22	0.97	3.53	2.21	0.98	3.73	2.35	0.98				

AFR : Air flow rate (m³/min)

TC : Total capacity (kW)

SHC : Sensible Heat capacity (kW)

PI : Power Input (kW)

■ MODEL : AW*Z18LB

AFR	14.2
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		Indoor temperature																								
		18			21			23			25			27			29			32						
		°CDB			°CWB			12			15			16			18			19			21			23
Outdoor temperature	°CDB	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI				
	20	4.83	3.27	1.10	5.38	3.29	1.12	5.56	3.58	1.12	5.93	3.59	1.13	6.11	3.88	1.14	6.48	3.86	1.15	6.85	4.12	1.16				
	25	4.61	3.12	1.24	5.13	3.14	1.26	5.31	3.42	1.27	5.66	3.43	1.28	5.83	3.70	1.29	6.18	3.69	1.30	6.53	3.93	1.31				
	30	4.37	2.96	1.38	4.86	2.98	1.40	5.03	3.24	1.41	5.36	3.25	1.42	5.53	3.51	1.43	5.86	3.49	1.44	6.19	3.72	1.46				
	35	4.11	2.79	1.52	4.58	2.80	1.55	4.73	3.05	1.56	5.04	3.06	1.57	5.20	3.30	1.58	5.51	3.29	1.60	5.82	3.50	1.61				
	40	3.53	2.39	1.45	3.93	2.41	1.47	4.07	2.62	1.48	4.33	2.63	1.50	4.47	2.84	1.50	4.74	2.82	1.52	5.00	3.01	1.53				
43	3.26	2.21	1.44	3.63	2.22	1.47	3.75	2.41	1.47	4.00	2.42	1.49	4.12	2.62	1.50	4.37	2.60	1.51	4.62	2.77	1.53					

AFR : Air flow rate (m³/min)

TC : Total capacity (kW)

SHC : Sensible Heat capacity (kW)

PI : Power Input (kW)

■ MODEL : AW*Z24LB

AFR	14.7
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		Indoor temperature																								
		18			21			23			25			27			29			32						
		°CDB			°CWB			12			15			16			18			19			21			23
Outdoor temperature	°CDB	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI				
	20	5.79	4.44	1.15	6.45	4.47	1.17	6.67	4.86	1.17	7.11	4.87	1.19	7.33	5.26	1.19	7.77	5.24	1.20	8.20	5.58	1.22				
	25	5.52	4.24	1.33	6.15	4.26	1.35	6.36	4.63	1.36	6.78	4.65	1.37	6.99	5.02	1.38	7.41	5.00	1.39	7.83	5.33	1.41				
	30	5.94	4.56	1.91	6.62	4.59	1.94	6.84	4.99	1.95	7.30	5.00	1.97	7.52	5.40	1.98	7.97	5.38	2.00	8.42	5.73	2.02				
	35	5.61	4.30	2.13	6.25	4.33	2.17	6.46	4.71	2.18	6.89	4.72	2.20	7.10	5.10	2.21	7.53	5.08	2.23	7.95	5.41	2.25				
	40	5.26	4.04	2.36	5.86	4.06	2.39	6.06	4.42	2.41	6.46	4.43	2.43	6.66	4.78	2.44	7.06	4.76	2.47	7.46	5.08	2.49				
43	5.05	3.88	2.50	5.63	3.90	2.53	5.82	4.24	2.55	6.20	4.25	2.57	6.39	4.59	2.59	6.78	4.57	2.61	7.16	4.87	2.64					

AFR : Air flow rate (m³/min)

TC : Total capacity (kW)

SHC : Sensible Heat capacity (kW)

PI : Power Input (kW)

6-2. HEATING CAPACITY

■ MODEL : AW*Z14LB

AFR	15.7
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		Indoor temperature										
		°CDB	16		18		20		22		24	
Outdoor temperature	°CDB	°CWB	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	-15	-16	6.03	2.14	5.89	2.16	5.74	2.18	5.60	2.21	5.46	2.23
	-10	-11	7.04	2.48	6.87	2.50	6.70	2.53	6.54	2.56	6.37	2.58
	-5	-7	7.89	2.63	7.70	2.65	7.51	2.68	7.33	2.71	7.14	2.73
	0	-2	9.10	2.83	8.88	2.86	8.67	2.89	8.45	2.92	8.23	2.95
	5	3	9.14	2.25	8.92	2.27	8.71	2.30	8.49	2.32	8.27	2.34
	7	6	9.56	2.23	9.33	2.26	9.10	2.28	8.87	2.30	8.65	2.33
	10	8	9.32	2.22	9.10	2.24	8.88	2.27	8.66	2.29	8.43	2.31
	15	10	9.14	1.91	8.92	1.93	8.71	1.95	8.49	1.97	8.27	1.99

AFR : Air flow rate (m³/min)

TC : Total capacity (kW)

PI : Power Input (kW)

■ MODEL : AW*Z18LB

AFR	15.7
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		Indoor temperature										
		°CDB	16		18		20		22		24	
Outdoor temperature	°CDB	°CWB	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	-15	-16	6.43	2.33	6.28	2.35	6.12	2.38	5.97	2.40	5.82	2.42
	-10	-11	7.50	2.70	7.32	2.72	7.14	2.75	6.97	2.78	6.79	2.81
	-5	-7	8.41	2.86	8.21	2.88	8.01	2.91	7.81	2.94	7.61	2.97
	0	-2	9.70	3.08	9.47	3.11	9.24	3.14	9.01	3.17	8.78	3.20
	5	3	9.75	2.45	9.51	2.47	9.28	2.50	9.05	2.52	8.82	2.55
	7	6	10.19	2.43	9.94	2.46	9.70	2.48	9.46	2.50	9.22	2.53
	10	8	9.94	2.42	9.70	2.44	9.46	2.47	9.23	2.49	8.99	2.51
	15	10	9.74	2.08	9.51	2.10	9.28	2.12	9.05	2.14	8.82	2.16

AFR : Air flow rate (m³/min)

TC : Total capacity (kW)

PI : Power Input (kW)

■ MODEL : AW*Z24LB

AFR	16.3
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		Indoor temperature										
		°CDB	16		18		20		22		24	
Outdoor temperature	°CDB	°CWB	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	-15	-16	7.57	3.21	7.39	3.25	7.21	3.28	7.03	3.31	6.85	3.34
	-10	-11	8.69	3.33	8.48	3.36	8.28	3.40	8.07	3.43	7.86	3.46
	-5	-7	9.81	3.44	9.57	3.48	9.34	3.51	9.11	3.55	8.87	3.58
	0	-2	10.58	3.54	10.33	3.57	10.08	3.61	9.82	3.65	9.57	3.68
	5	3	10.02	3.50	9.78	3.54	9.54	3.57	9.30	3.61	9.06	3.64
	7	6	11.55	3.47	11.28	3.50	11.00	3.54	10.73	3.58	10.45	3.61
	10	8	12.49	3.47	12.20	3.50	11.90	3.54	11.60	3.57	11.30	3.61
	15	10	12.00	3.02	11.71	3.05	11.42	3.08	11.14	3.11	10.85	3.14

AFR : Air flow rate (m³/min)

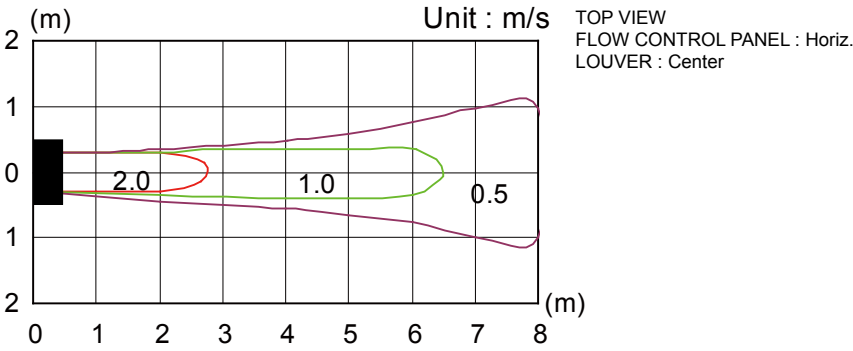
TC : Total capacity (kW)

PI : Power Input (kW)

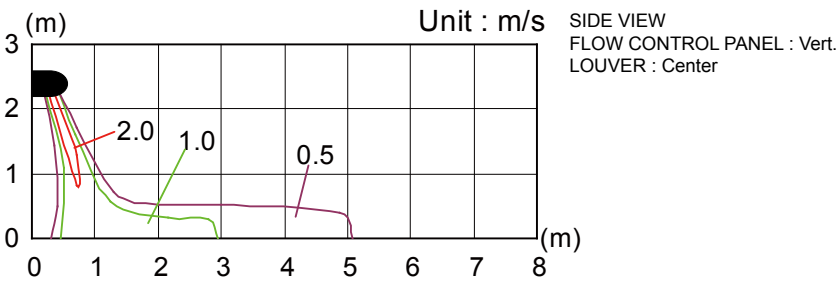
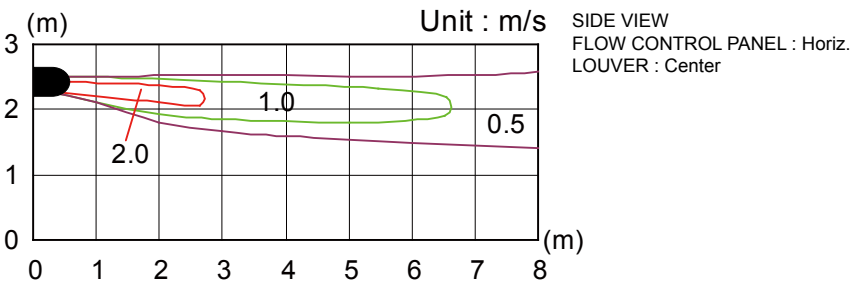
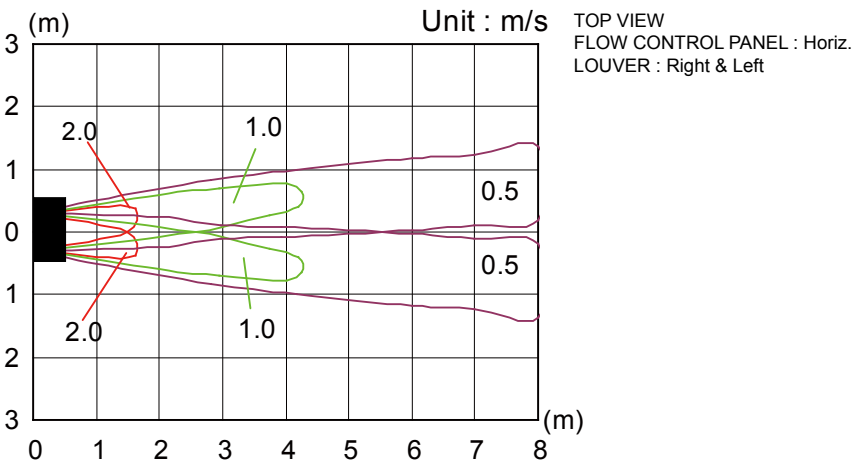
7. FAN PERFORMANCE

7-1. AIR VELOCITY DISTRIBUTION

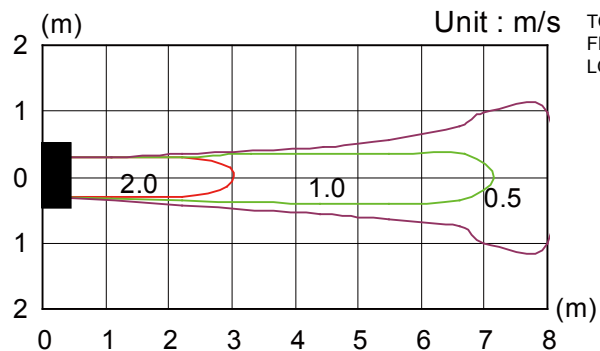
■ MODEL : AW*Z14LB , AW*Z18LB



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

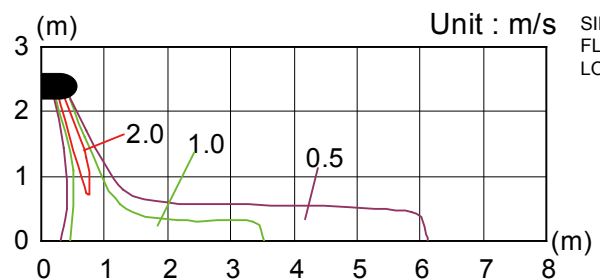
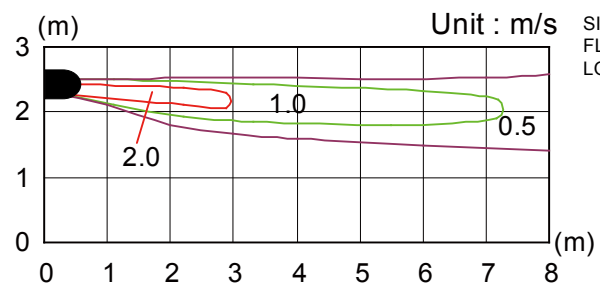
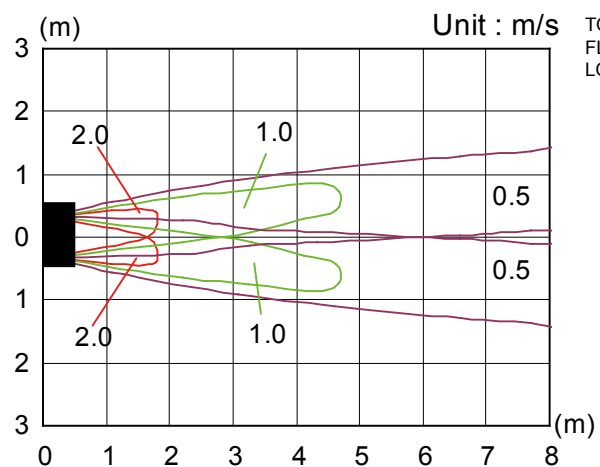


■ MODEL : AW*Z24LB



Note :

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



7-2. AIR FLOW

■ MODEL : AW*Z14LB , AW*Z18LB

● COOLING

Fan speed	Number of rotations (r.p.m)	Airflow	
HIGH	1450	850	m³/h
		236	l/s
		500	CFM
MED	1320	760	m³/h
		211	l/s
		447	CFM
LOW	1050	580	m³/h
		161	l/s
		341	CFM
QUIET	880	465	m³/h
		129	l/s
		274	CFM
SUPERQUIET	730	365	m³/h
		101	l/s
		215	CFM

● HEATING

Fan speed	Number of rotations (r.p.m)	Airflow	
HIGH	1650	940	m³/h
		261	l/s
		553	CFM
MED	1350	740	m³/h
		206	l/s
		435	CFM
LOW	1150	605	m³/h
		168	l/s
		356	CFM
QUIET	1000	510	m³/h
		142	l/s
		300	CFM
SUPERQUIET	820	390	m³/h
		108	l/s
		230	CFM

■ MODEL : AW*Z24LB

● COOLING

Fan speed	Number of rotations (r.p.m)	Airflow	
HIGH	1500	880	m ³ /h
		244	l/s
		518	CFM
MED	1370	780	m ³ /h
		217	l/s
		459	CFM
LOW	1250	700	m ³ /h
		194	l/s
		412	CFM
QUIET	1130	620	m ³ /h
		172	l/s
		365	CFM
SUPERQUIET	1030	560	m ³ /h
		156	l/s
		330	CFM

● HEATING

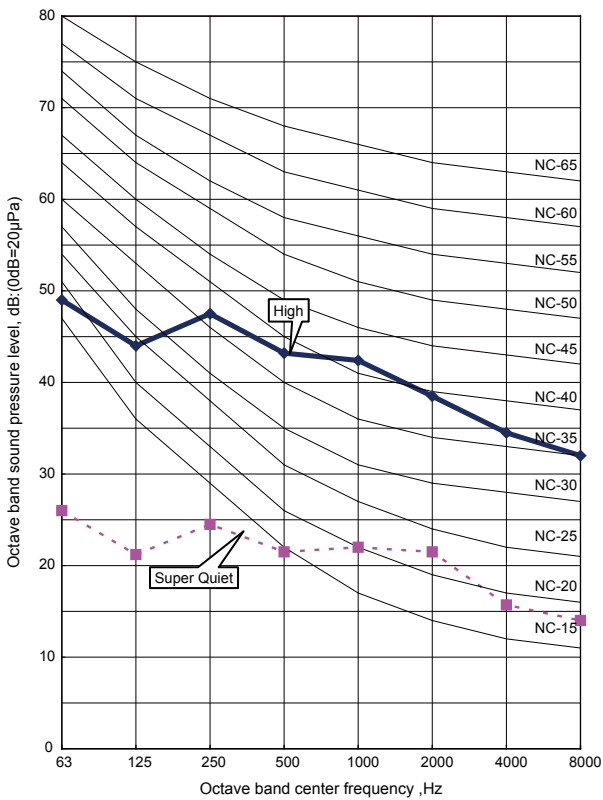
Fan speed	Number of rotations (r.p.m)	Airflow	
HIGH	1700	980	m ³ /h
		272	l/s
		577	CFM
MED	1540	880	m ³ /h
		244	l/s
		518	CFM
LOW	1390	780	m ³ /h
		217	l/s
		459	CFM
QUIET	1260	700	m ³ /h
		194	l/s
		412	CFM
SUPERQUIET	1120	605	m ³ /h
		168	l/s
		356	CFM

8. OPERATION NOISE

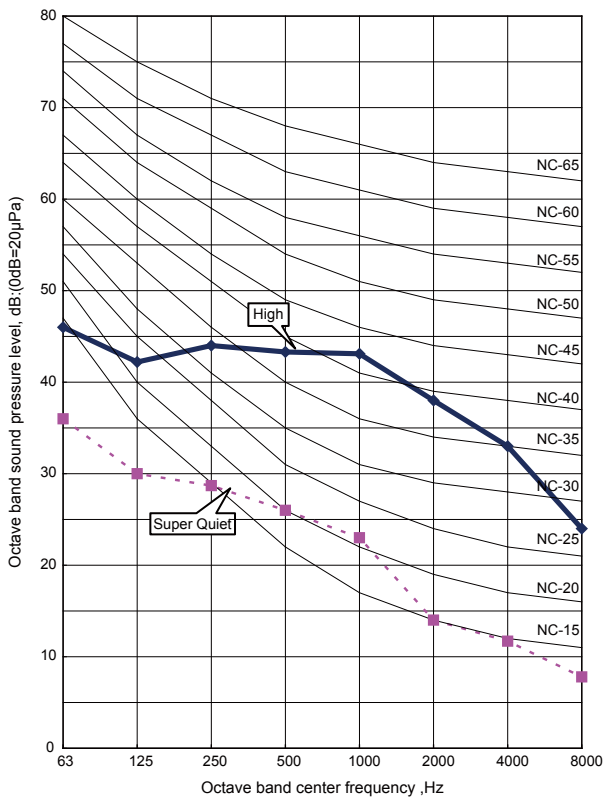
8-1. NOISE LEVEL CURVE

■ MODEL : AW*Z14LB

● COOLING

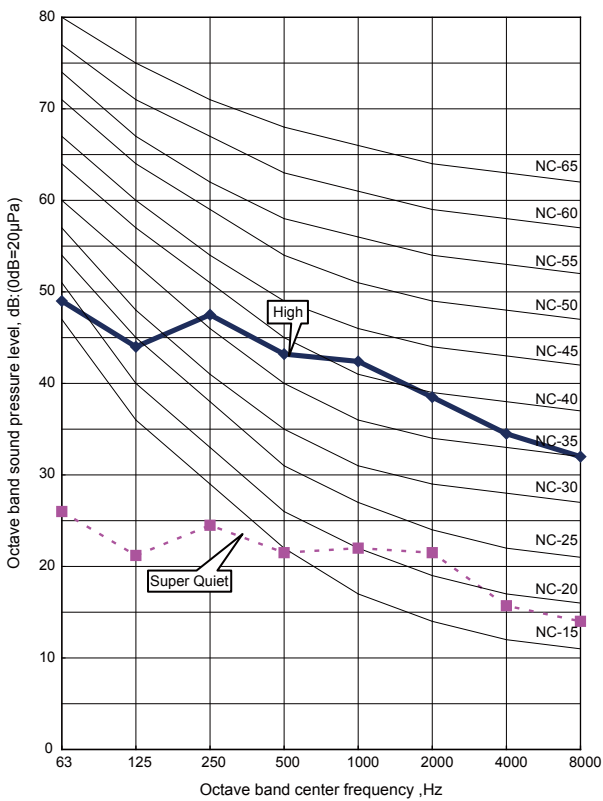


● HEATING

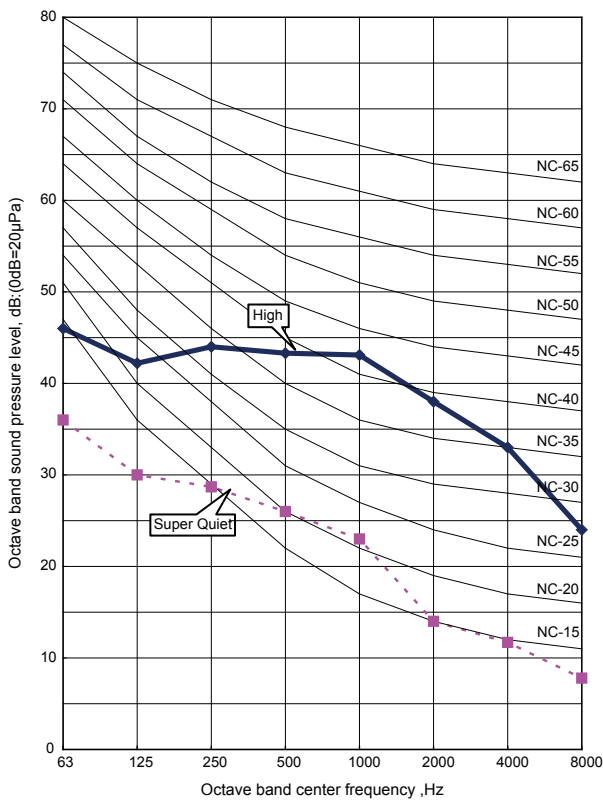


■ MODEL : AW*Z18LB

● COOLING

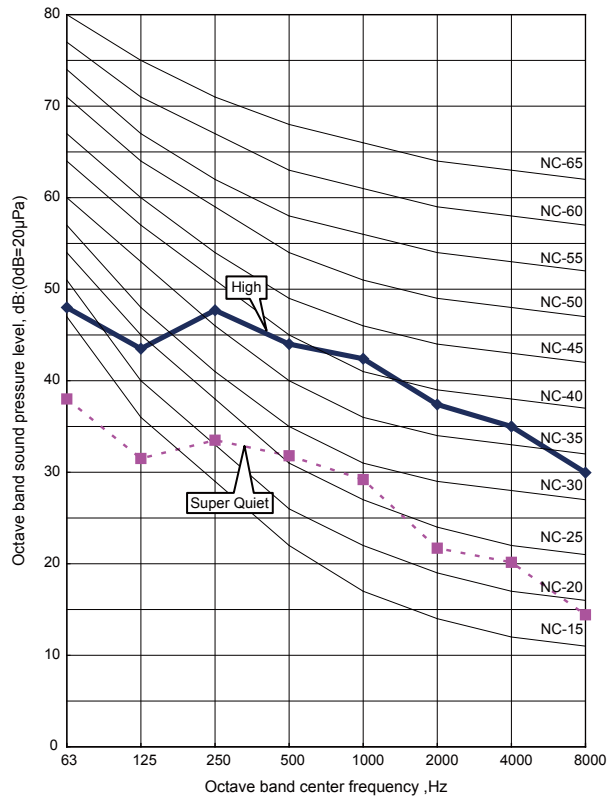


● HEATING

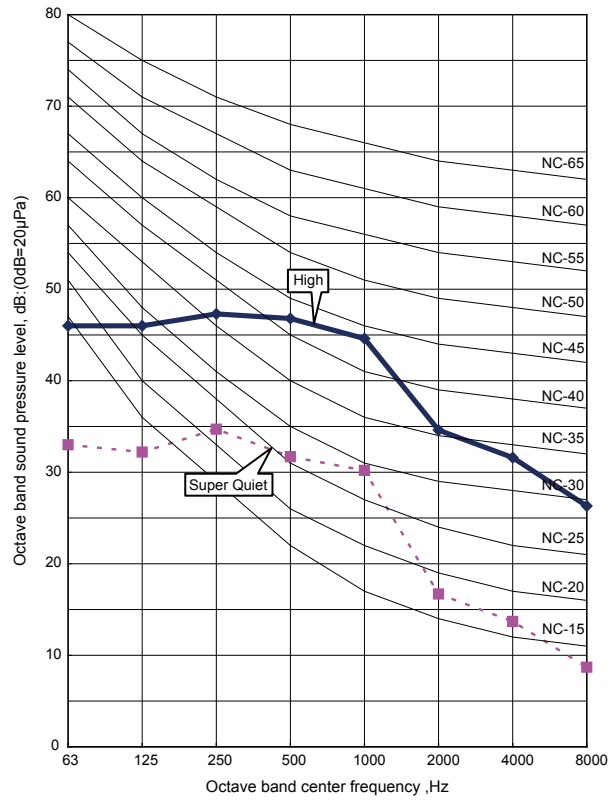


■ **MODEL : AW*Z24LB**

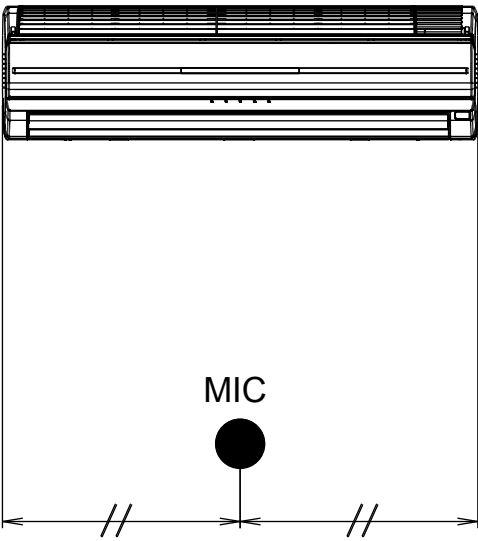
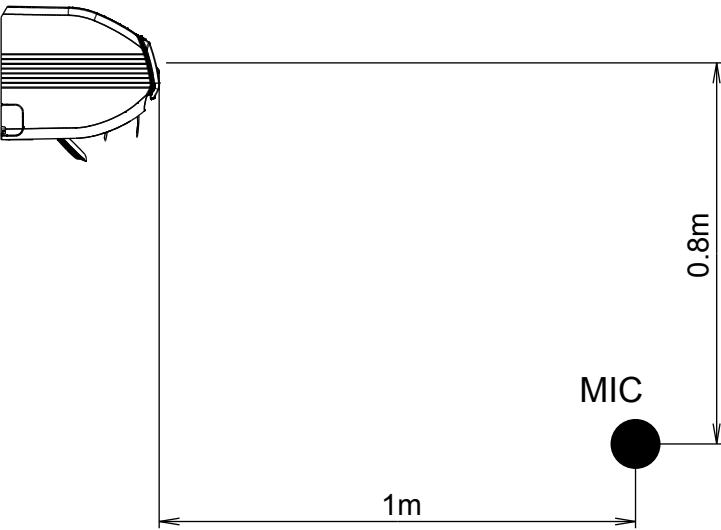
● **COOLING**



● **HEATING**



8-2. SOUND LEVEL CHECK POINT



9. ELECTRIC CHARACTERISTICS

Model Name			AW*Z14LB	AW*Z18LB	AW*Z24LB
Power Supply	Voltage	V	230~		
	Frequency	Hz	50		
*1) Max Operating Current		A	14.0	14.0	0.3 (Indoor unit)
*2) Wiring Spec.	Main Fuse (circuit breaker) Current	A	20	20	—
	Connection Cable	mm ²	2.0-3.5	2.0-3.5	1.5-2.5
	Limited wiring length	m	21	21	31

- *1) The maximum current is the total current of indoor unit and outdoor unit.
(14, 18 model only)
- *2) Wiring Spec.
Selected Sample
(Selected based on Japan Electrotechnical Standard and Codes Committee E0005)

10. SAFETY DEVICES

	Protection form	Model		
		AW*Z14LB	AW*Z18LB	AW*Z24LB
Circuit protection	Current fuse (PCB)	3.15A 250V		
Terminal protection	Current (thermal) fuse	3A 250V 102°C		
Fan motor protection	Thermal protection program	130 ⁺²⁰ ₋₂₀ °C OFF 100 ⁺²⁰ ₋₂₀ °C ON		

OUTDOOR UNIT

2. SINGLE TYPE :

AO*Z14LBC

AO*Z18LBC

AO*Z24LBT

1. SPECIFICATIONS

Type				INVERTER HEAT PUMP		
Model name				AO*Z14LBC	AO*Z18LBC	AO*Z24LBT
Power source				230V~ 50Hz		
Available voltage range				198-264V~ 50Hz		
Starting current			A	5.9	7.2	10.3
Fan	Airflow rate	Cooling	m³/h	1,910	1,910	3,600
		Heating		1,910	1,910	3,320
	Type × Q'ty		Propeller fan × 1			
	Motor output		W	60		103
Sound pressure level		Cooling	dB (A)	46	47	53
		Heating		47	48	54
Heat exchanger type		Dimensions (H × W × D)	mm	546 × 876 × 36.4		798 × 900 × 36.4
		Fin pitch		1.3		1.3
		Rows × Stages		2 × 26		2 × 38
		Pipe type		Copper		
		Fin type		Aluminium		
Compressor	Type × Q'ty			Rotary × 1		
	Motor output		W	900		1,700
Refrigerant		Type		R410A		
		Charge	g	1,350		1,900
Refrigerant oil		Type		POE (α68SZ)		POE (FV50S)
Enclosure		Material		Steel		
		Colour		Beige		
Dimensions (H × W × D)	Net		mm	578 × 790 × 300		830 × 900 × 330
	Gross			648 × 910 × 380	970 × 1,050 × 445	
Weight	Net		kg (lb.)	39 (86)		62 (137)
	Gross			43 (95)	70 (154)	
Connection pipe	Size	Liquid	mm	Φ6.35 (Φ1/4 in.)		Φ6.35 (Φ1/4 in.)
		Gas		Φ12.7 (Φ1/2 in.)		Φ15.88 (Φ5/8 in.)
	Method			Flare		
	Max. length		m	20 (chargeless:15)		30 (chargeless:15)
	Max. height difference			15	20	
Operation range		Cooling	°C	-10 to 43		
		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.

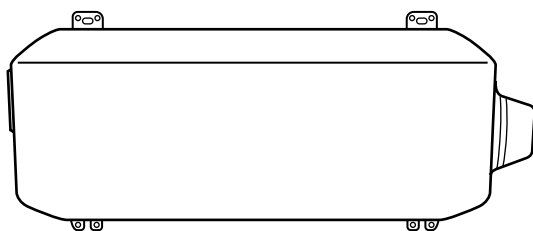
Heating : Indoor temperature of 20°CDB / 15°CWB. and outdoor temperature of 7°CDB/6°CWB.

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

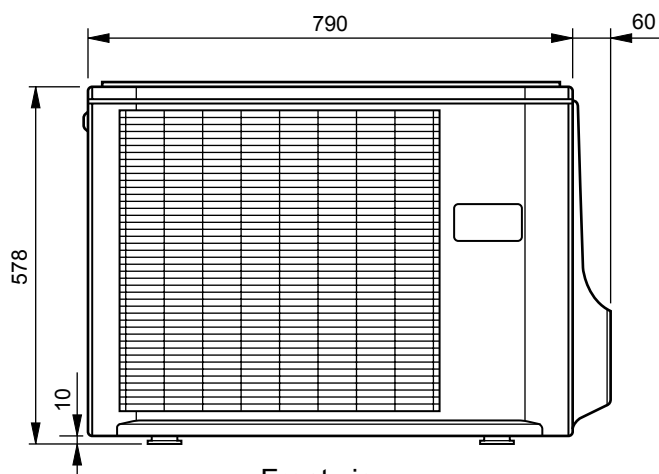
2. DIMENSIONS

■ MODEL : AO*Z14LB , AO*Z18LB

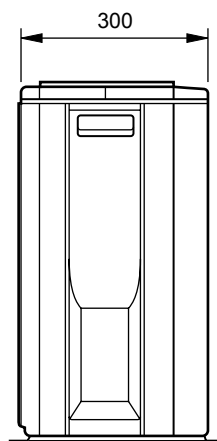
(Unit : mm)



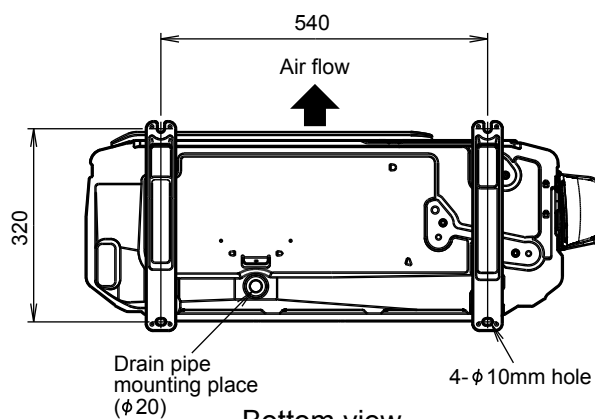
Top view



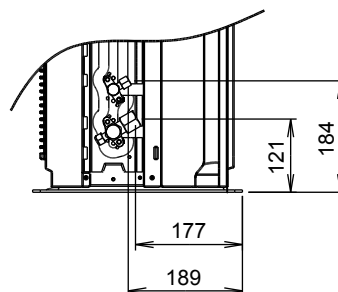
Front view



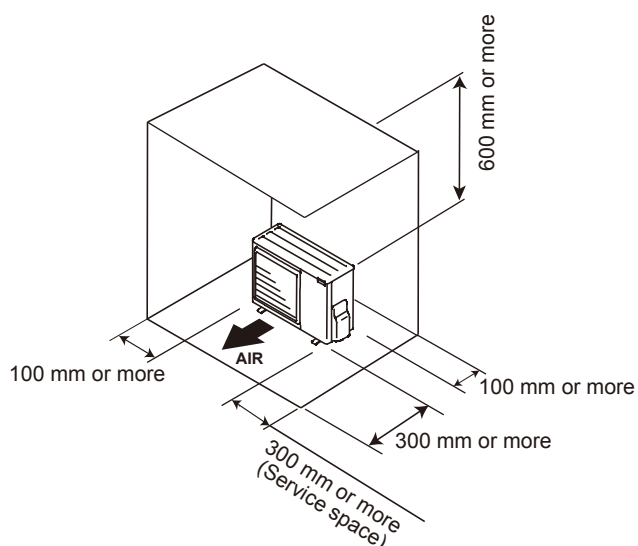
Side view



Bottom view



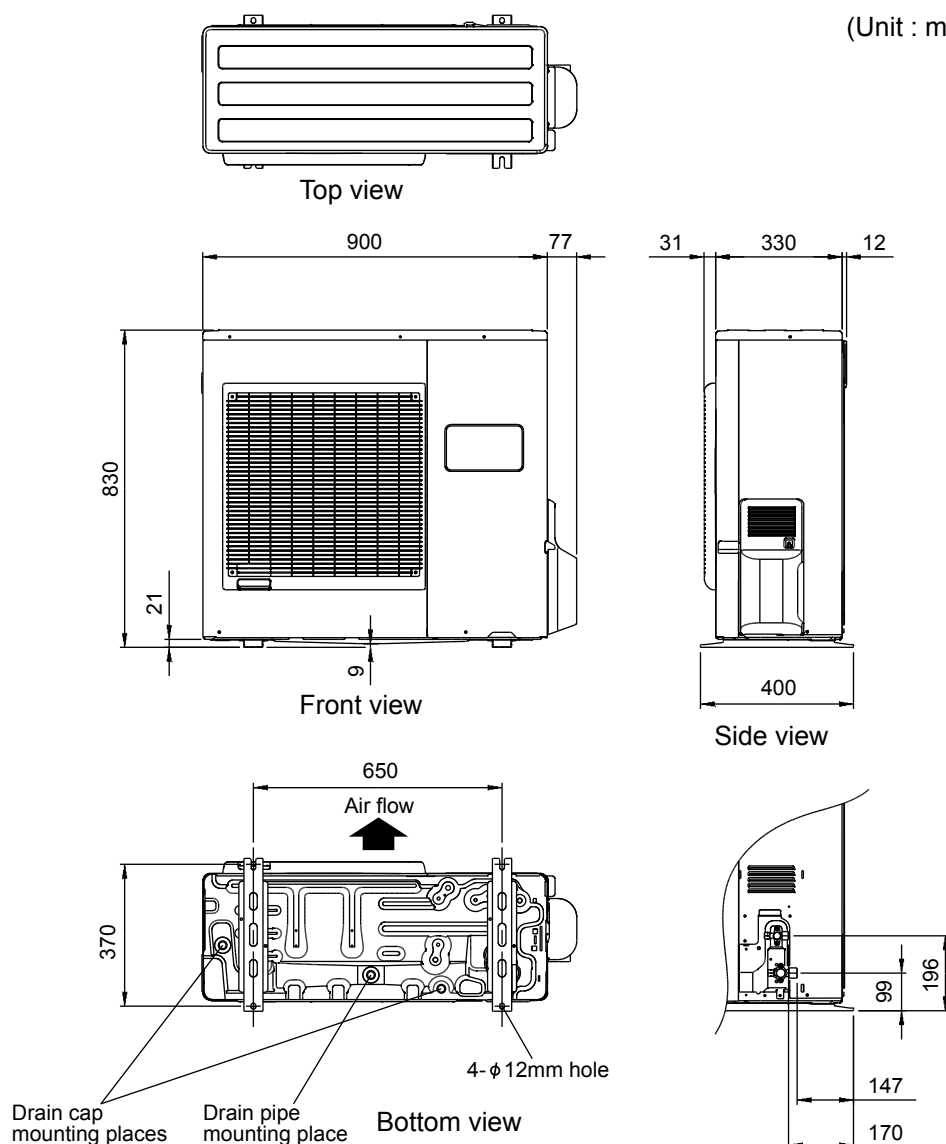
■ INSTALLATION PLACE



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

MODEL : AO*Z24LB

(Unit : mm)

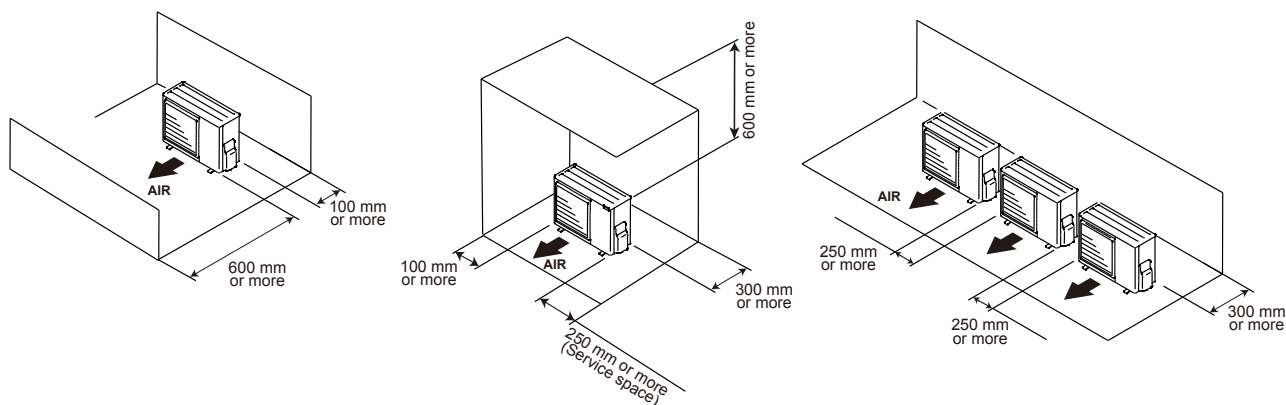


INSTALLATION PLACE

When there are obstacles at the back or front sides.

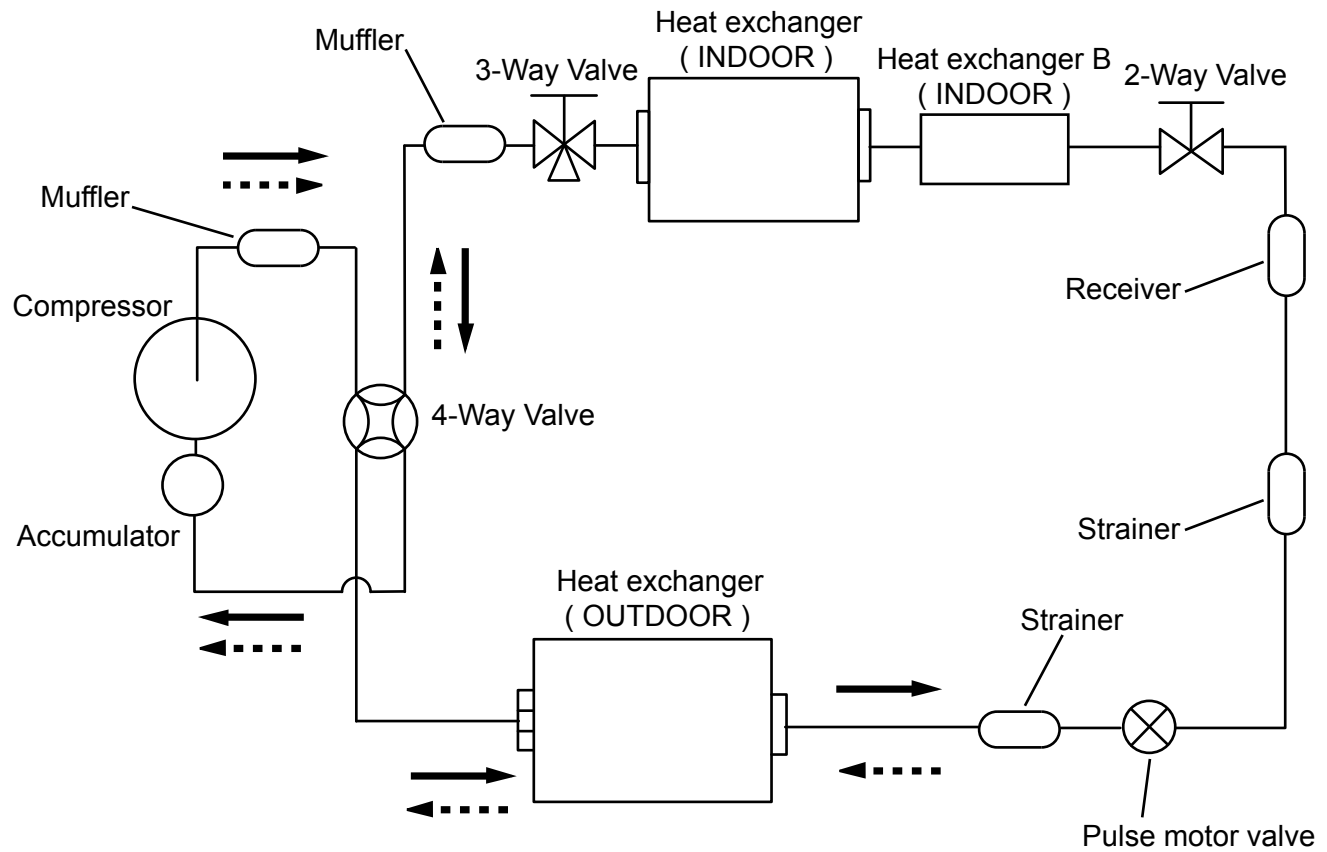
When there are obstacles at the back, side(s), and top.

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



3. REFRIGERANT CIRCUIT

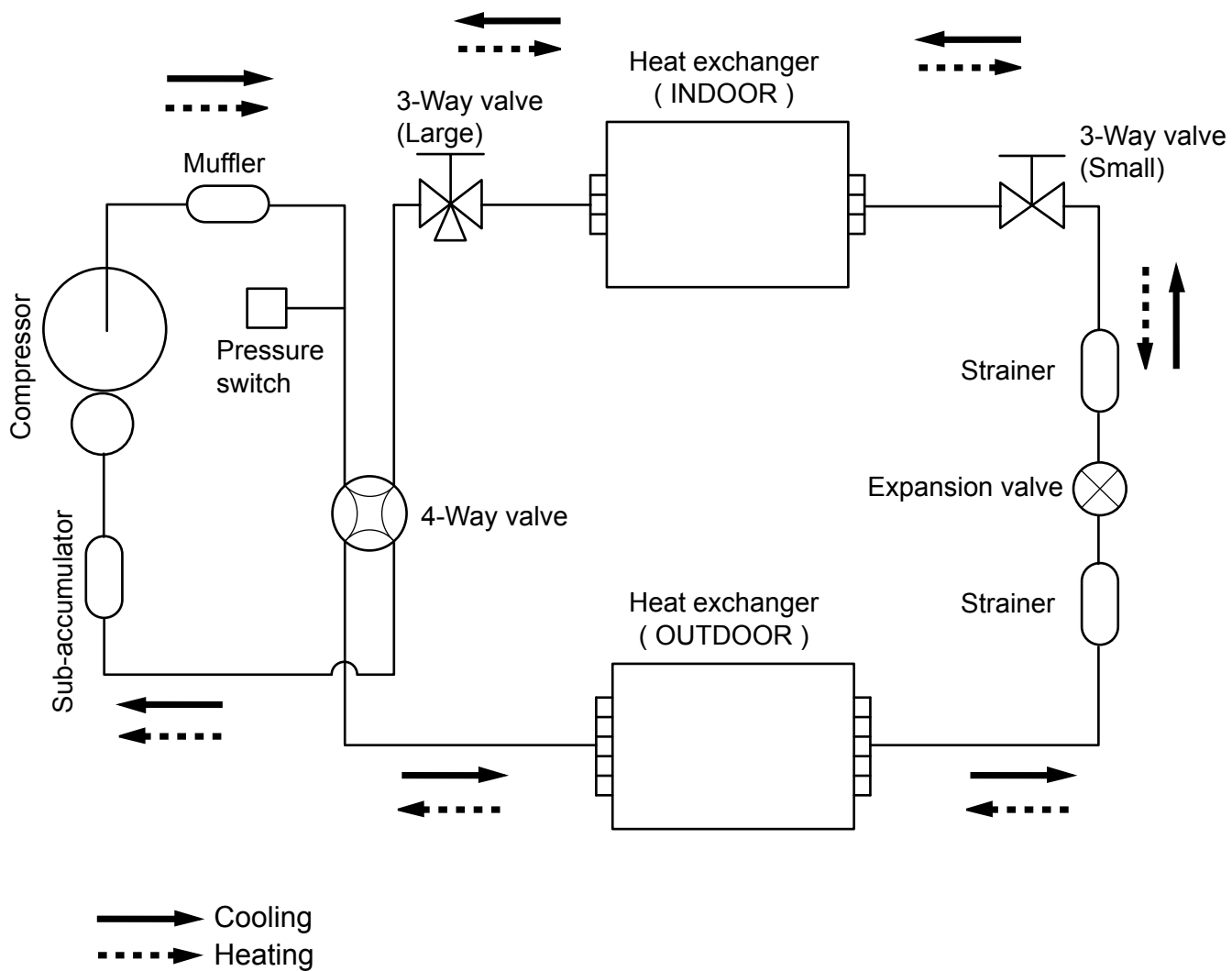
■ MODEL : AO*Z14LB , AO*Z18LB



→ Cooling
 → Heating

Refrigerant pipe diameter
 Liquid pipe : 6.35 mm
 Gas pipe : 12.7 mm

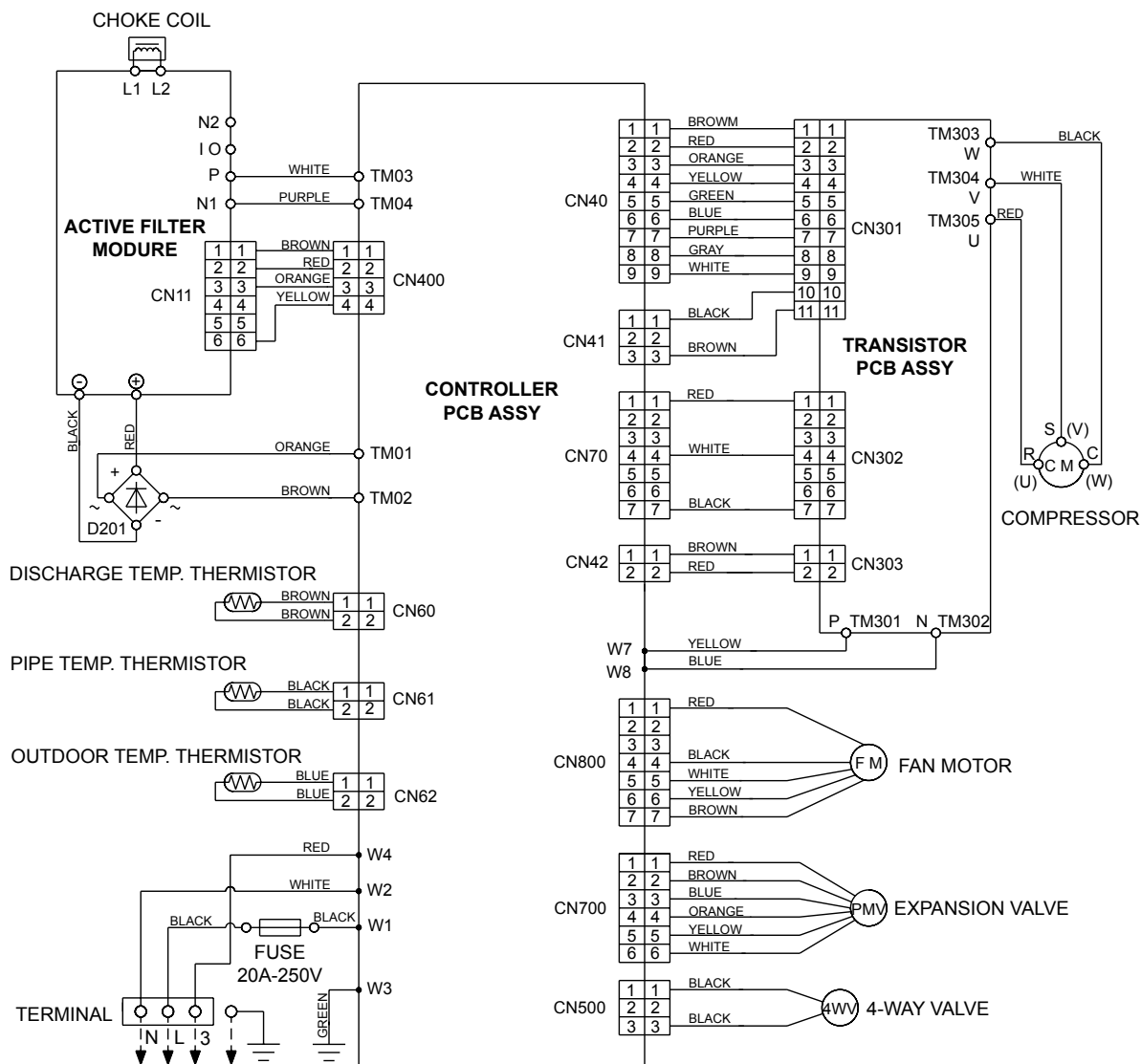
■ MODEL : AO*Z24LB



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

4. WIRING DIAGRAMS

■ MODEL : AO*Z14LB , AO*Z18LB

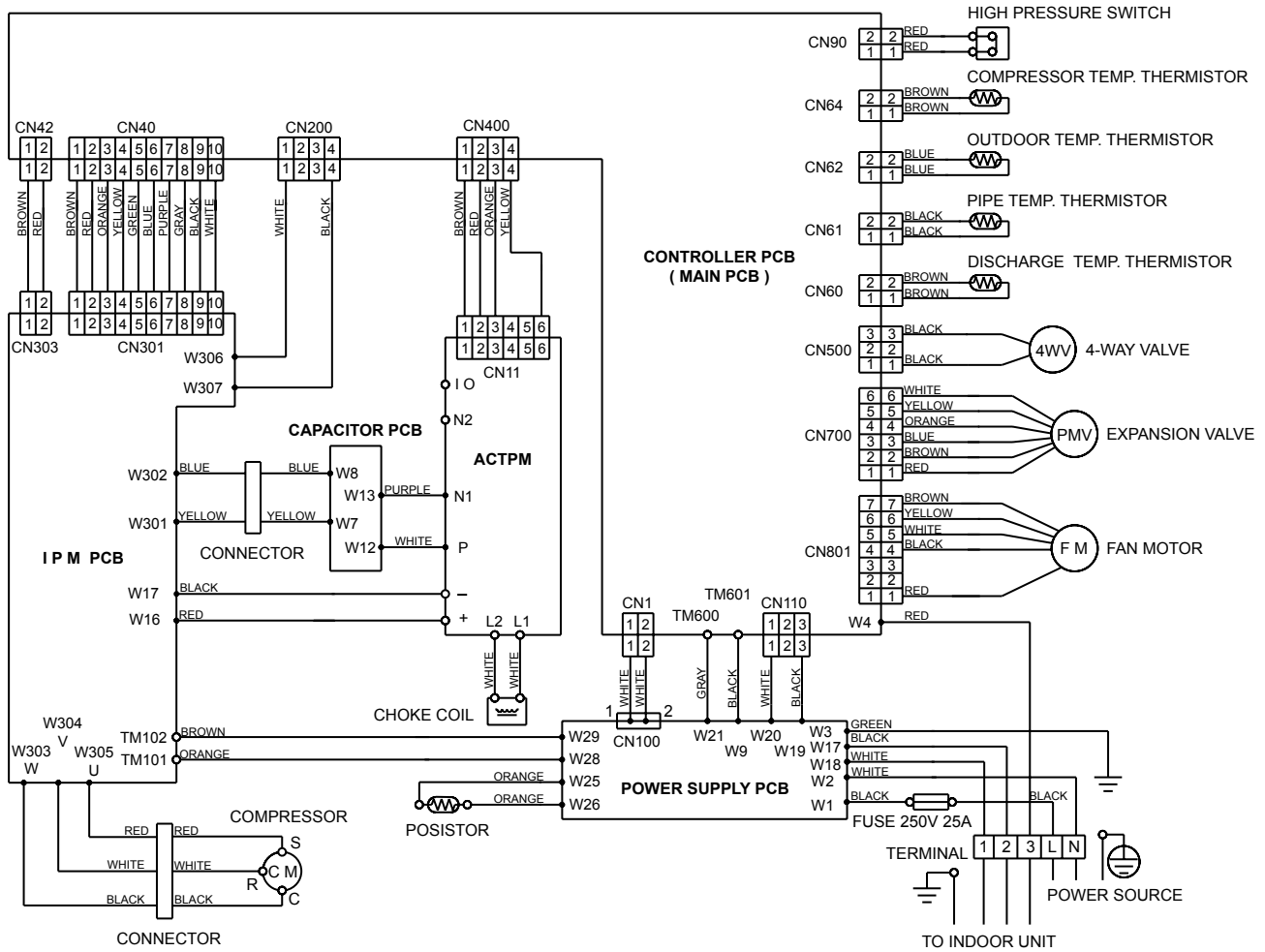


OUTDOOR UNIT
AO*Z14-24LB

■ MODEL : AO*Z24LB

OUTDOOR UNIT
AO*Z14-24LB

OUTDOOR UNIT
AO*Z14-24LB



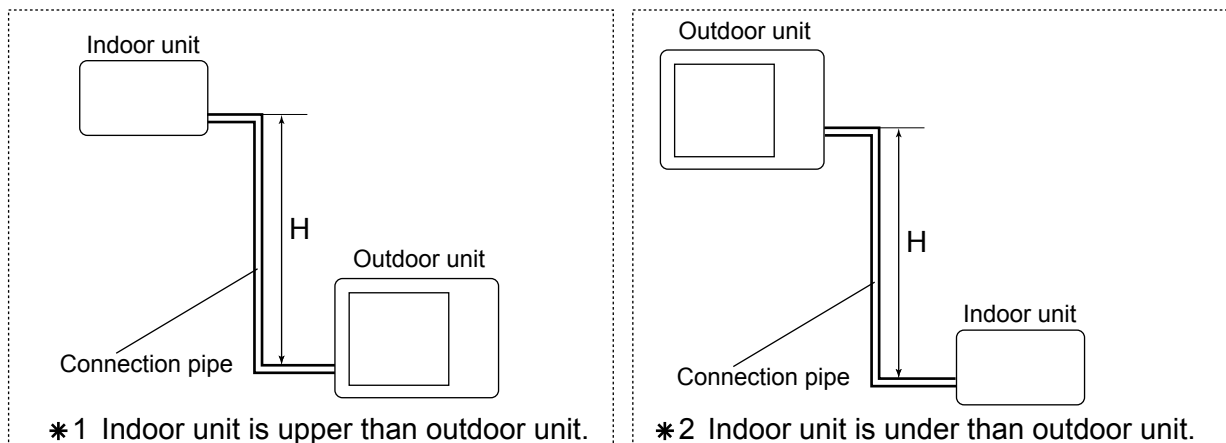
5. CAPACITY COMPENSATION RATE FOR PIPE LENGTH AND HEIGHT DIFFERENCE

■ MODEL : AO*Z14LB , AO*Z18LB

COOLING			Pipe length (m)				
			5	7.5	10	15	20
Height difference H (m)	*1 Indoor unit is upper than outdoor unit.	15	—	—	—	0.953	0.951
		10	—	—	0.981	0.969	0.967
		7.5	—	0.988	0.985	0.973	0.971
		5	0.994	0.992	0.989	0.977	0.975
		0	1.002	1.000	0.997	0.984	0.983
	*2 Indoor unit is under than outdoor unit	-5	1.002	1.000	0.997	0.984	0.983
		-7.5	—	1.000	0.997	0.984	0.983
		-10	—	—	0.997	0.984	0.983
		-15	—	—	—	0.984	0.983

HEATING			Pipe length (m)				
			5	7.5	10	15	20
Height difference H (m)	*1 Indoor unit is upper than outdoor unit.	15	—	—	—	0.946	0.923
		10	—	—	0.987	0.946	0.923
		7.5	—	1.000	0.987	0.946	0.923
		5	1.008	1.000	0.987	0.946	0.923
		0	1.008	1.000	0.987	0.946	0.923
	*2 Indoor unit is under than outdoor unit	-5	1.003	0.995	0.982	0.941	0.918
		-7.5	—	0.993	0.979	0.939	0.916
		-10	—	—	0.977	0.936	0.913
		-15	—	—	—	0.927	0.904

Height difference H



■ MODEL : AO*Z24LB

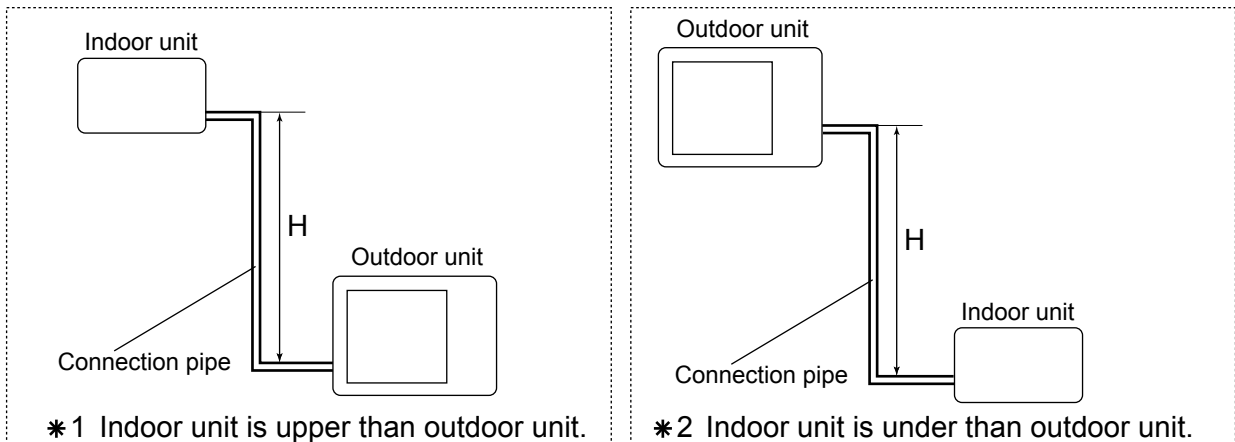
OUTDOOR UNIT
AO*Z14-24LB

OUTDOOR UNIT
AO*Z14-24LB

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	—	—	—	0.964	0.964	0.964	0.965
		10	—	—	0.984	0.980	0.979	0.980	0.981
		7.5	—	0.988	0.988	0.984	0.983	0.984	0.985
		5	0.992	0.992	0.992	0.988	0.987	0.988	0.989
	*2 Indoor unit is under than outdoor unit	0	1.000	1.000	1.000	0.996	0.995	0.996	0.997
		-5	1.000	1.000	1.000	0.996	0.995	0.996	0.997
		-7.5	—	1.000	1.000	0.996	0.995	0.996	0.997
		-10	—	—	1.000	0.996	0.995	0.996	0.997
		-20	—	—	—	0.996	0.995	0.996	0.997

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	—	—	—	0.959	0.935	0.912	0.889
		10	—	—	0.993	0.959	0.935	0.912	0.889
		7.5	—	1.000	0.993	0.959	0.935	0.912	0.889
		5	1.005	1.000	0.993	0.959	0.935	0.912	0.889
	*2 Indoor unit is under than outdoor unit	0	1.005	1.000	0.993	0.959	0.935	0.912	0.889
		-5	1.000	0.995	0.988	0.954	0.930	0.908	0.884
		-7.5	—	0.993	0.985	0.952	0.928	0.906	0.882
		-10	—	—	0.983	0.949	0.926	0.903	0.880
		-20	—	—	—	0.940	0.916	0.894	0.871

Height difference H



6. ADDITIONAL CHARGE CALCULATION

■ MODEL : AO*Z14LB , AO*Z18LB

Refrigerant type		R410A
Refrigerant amount	g	1,350

● REFRIGERANT CHARGE

Pipe length	m	~15	20	20g/m
Additional charge	g	0 (Charge less)	+100	

■ MODEL : AO*Z24LB

Refrigerant type		R410A
Refrigerant amount	g	1,900

● REFRIGERANT CHARGE

Pipe length	m	~15	20	25	30	20g/m
Additional charge	g	0 (Charge less)	+100	+200	+300	

7. AIR FLOW

■ MODEL : AO*Z14LB , AO*Z18LB

● COOLING

Number of rotations (r.p.m)	Airflow	
820	1,910	m ³ /h
	531	l/s
	1,142	CFM

● HEATING

Number of rotations (r.p.m)	Airflow	
820	1,910	m ³ /h
	531	l/s
	1,124	CFM

■ MODEL : AO*Z24LB

● COOLING

Number of rotations (r.p.m)	Airflow	
850	3,600	m ³ /h
	1,000	l/s
	2,119	CFM

● HEATING

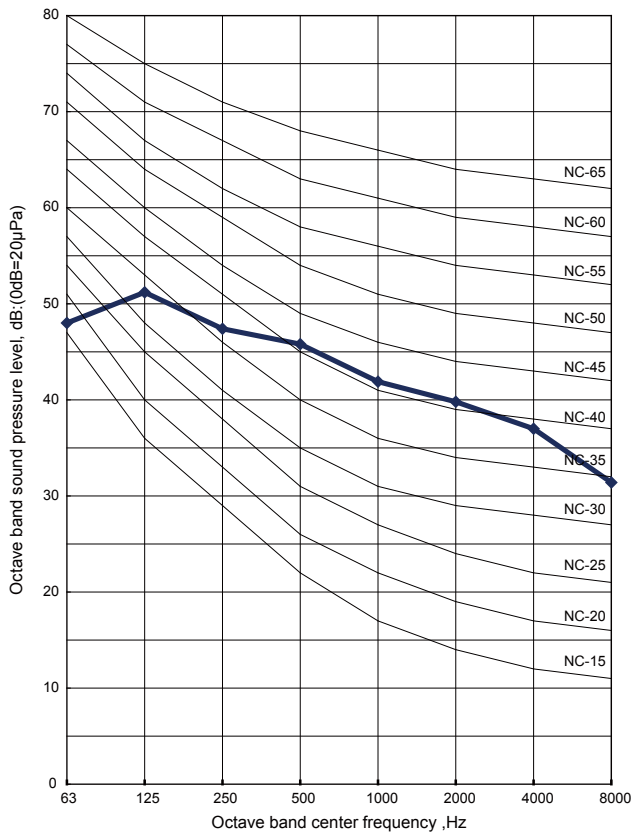
Number of rotations (r.p.m)	Airflow	
780	3,320	m ³ /h
	922	l/s
	1,954	CFM

8. OPERATION NOISE

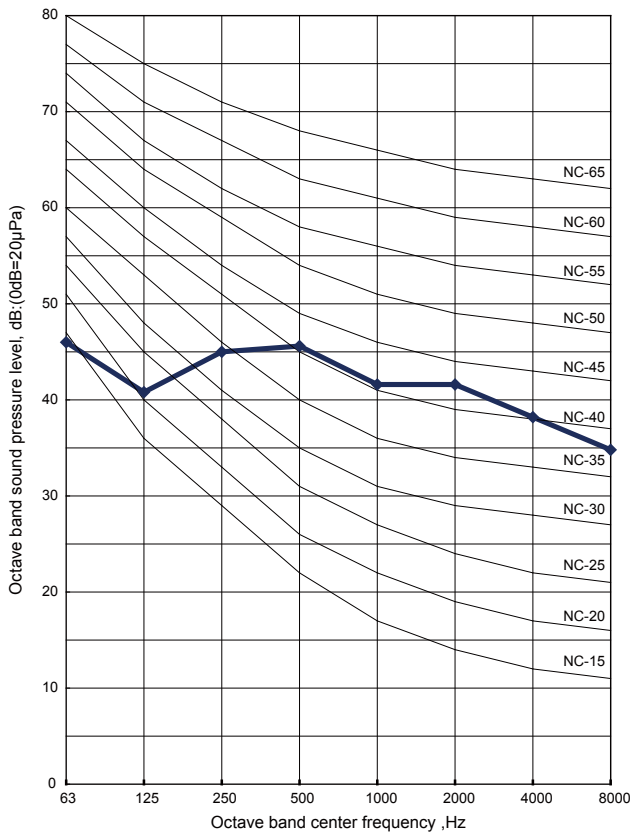
8-1. NOISE LEVEL CURVE

■ MODEL : AO*Z14LB

● COOLING

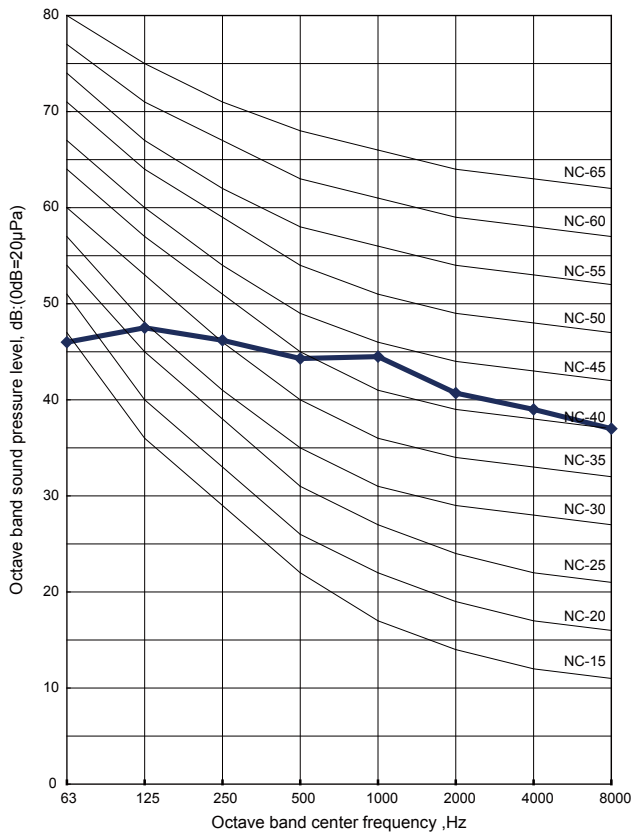


● HEATING

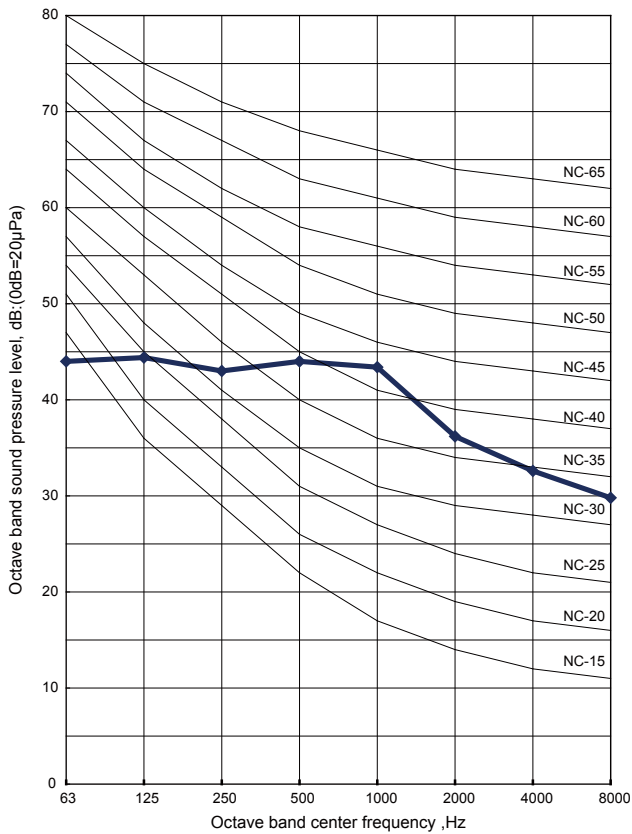


■ MODEL : AO*Z18LB

● COOLING

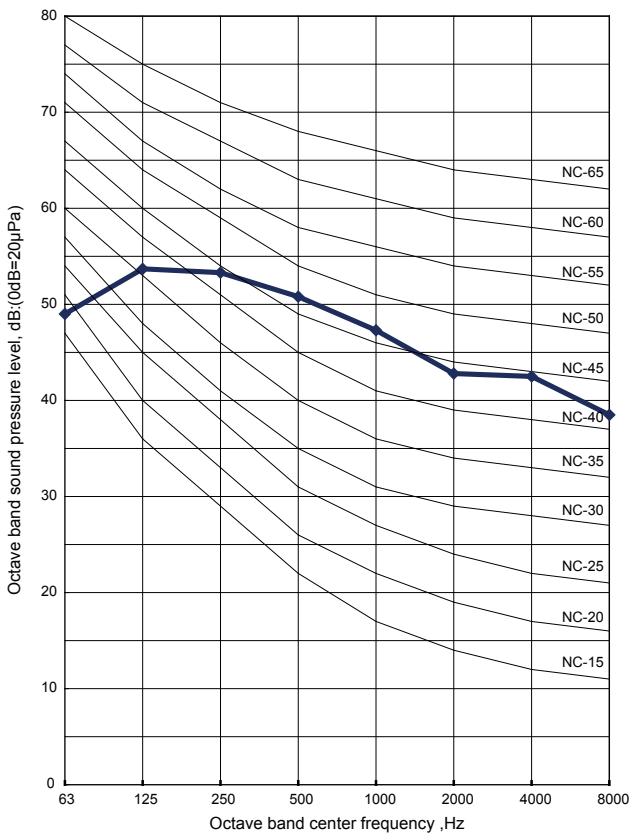


● HEATING

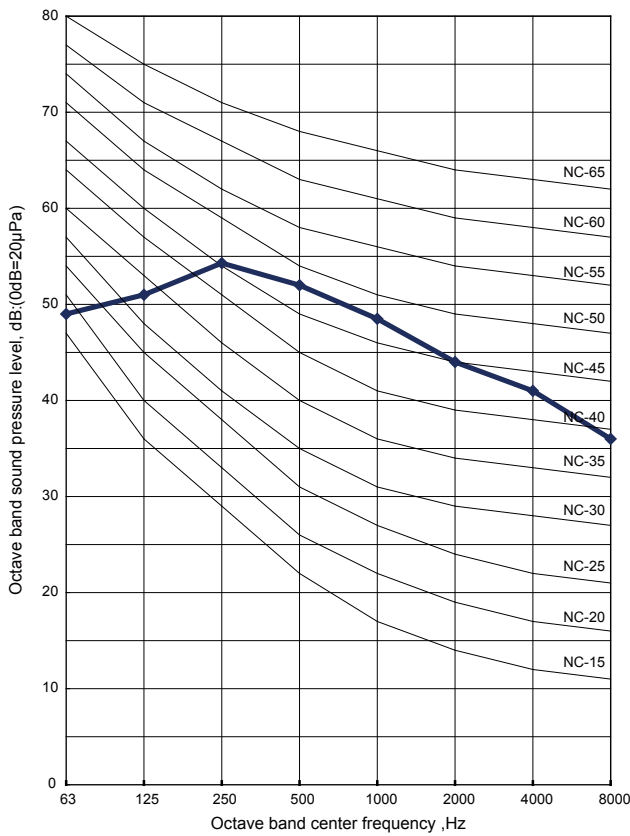


■ **MODEL : AO*Z24LB**

● **COOLING**

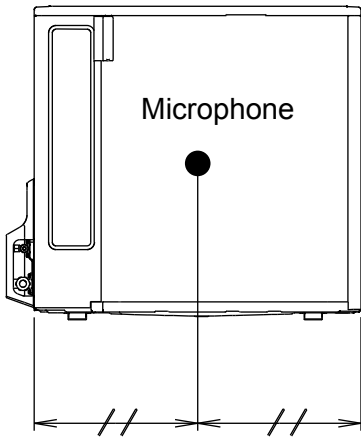
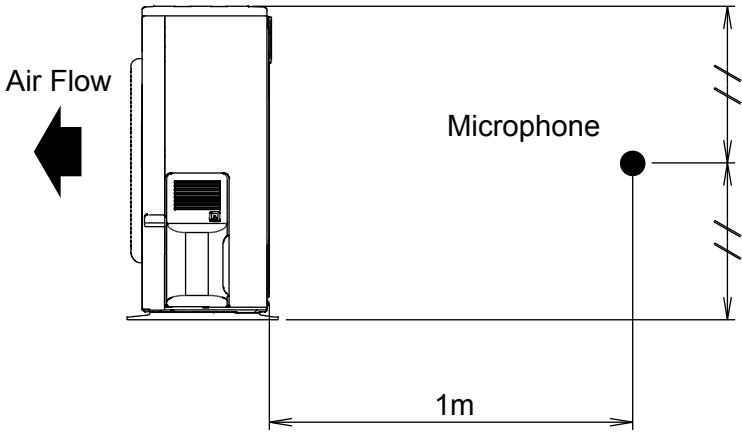


● **HEATING**



8-2. SOUND LEVEL CHECK POINT

OUTDOOR UNIT
AO*Z14-24LB



OUTDOOR UNIT
AO*Z14-24LB

9. ELECTRIC CHARACTERISTICS

Model Name			AO*Z14LB	AO*Z18LB	AO*Z24LB
Power Supply	Voltage	V	230~		
	Frequency	Hz	50		
Starting Current		A	5.9	7.2	10.3
*1) Wiring Spec.	Main Fuse (Circuit breaker) Current	A	—	—	30
	Power Cable	mm ²	—	—	3.5-4.0
	*2) Limited wiring length	m	—	—	20

***1) Wiring Spec.**

Selected Sample

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

***2) 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*Z14LB	AO*Z18LB	AO*Z24LB
Circuit protection	Current fuse (NEAR THE TERMINAL)	20A 250V		20A 250V
		5A 250V		5A 250V
	Current fuse (MAIN PRINTED CIRCUIT BOARD)	15A 250V		15A 250V
		3.15A 250V		3.15A 250V
Fan motor protection	Thermal protection program	OFF : 110 ⁺¹⁵ ₋₁₀ °C ON : 105 ⁺¹⁵ ₋₁₀ °C		OFF : 130±20°C ON : 100±20°C
High Pressure Protection	Pressure Switch	—		OFF : 4.2±0.1MPa ON : 3.2±0.15MPa
Compressor protection	Thermal protection program (COMPRESSOR TEMP.)	—		OFF : 110°C ON : After 40 minutes
	Thermal protection program (DISCHARGE TEMP.)	OFF : 110°C ON : After 7 minutes		OFF : 110°C ON : After 7 minutes

OUTDOOR UNIT
AO*Z14-24LB

OUTDOOR UNIT
AO*Z14-24LB