Refrigerant
R410A

INDOOR UNIT

1. WALL MOUNTED TYPE :

AS＊B09LDC
AS＊B12LDC
AS＊B18LDC

D1D_AS011E/03
2008.02.20

WALL MOUNTED TYPE
AS✳B09-18LD

1. FEATURE

■MODEL : AS✳B09LDC
AS✳B12LDC
AS✳B18LDC

(AO✳S09/12LD)

(AO✳S18LD)

■FEATURES

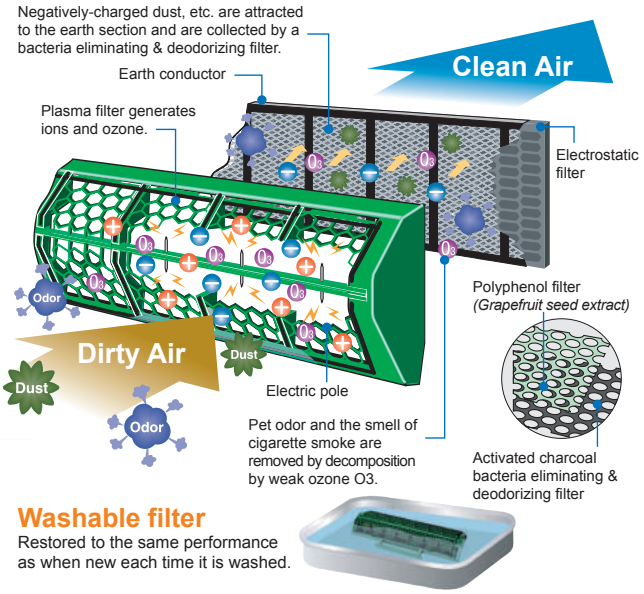
●Energy saving Rank A (09/12 TYPE) Europe energy saving Rank A achieved

●Original plasma air cleaning unit effectively cleans the air in the room.

Plasma air filter mechanism

Plasma unit

Mounts a plasma air cleaning unit.Minute dust particles are collected by an electrostatic filter and odor is suppressed by decomposition of foul odors by very weak ions. Since a filter with a lower ventilation resistance than in the past is used, high dust collection design simultaneously cleans in the air in the room.

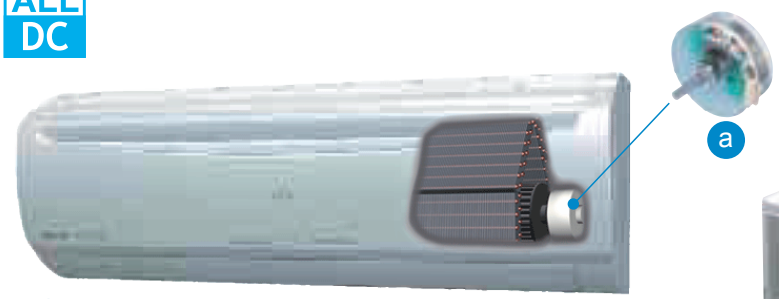


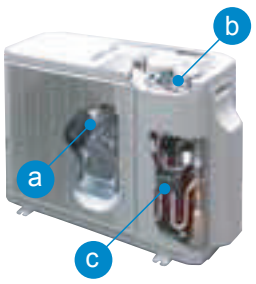
Washable filter

Restored to the same performance as when new each time it is washed.

●ALL DC

ALL DC





Front view

a **DC fan motor**

b **i-PAM control (09TYPE)**
When operation starts, the machine operates at high voltage and high power and when operation stabilizes, the set temperature is maintained at low voltage.
V-PAM control (12/18TYPE)
V-PAM technology makes a compressor more powerful.

c **DC rotary compressor**
More compact compared with conventional model

●Super quiet

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

WALL MOUNTED TYPE
AS✱B09-18LD

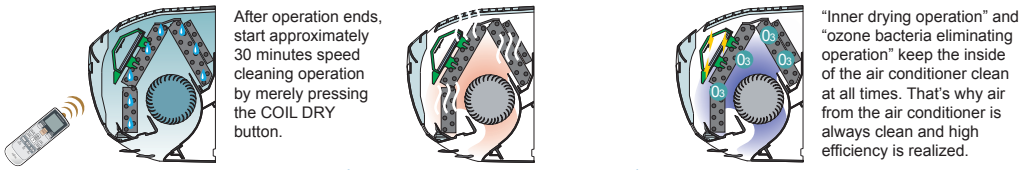
●Easy maintenance

Easy maintenance and always clean. Troublesome maintenance has been made easy.

Since the front panel is easy to remove, maintenance is also easy.

●Inner drying operation and plasma effect

This model is equipped with an inner drying function. After the power is turned off, the dry operation starts inside the air conditioner. The plasma air cleaning unit eliminates bacteria, deodorizes, and keeps the interior of the air conditioner clean by generating ozone and ions.



Covered with beading.
Bacteria grows in beading, and it causes bad odor.

→

Removes moisture.
Drying operation for approx. fifteen minutes.

→

Bacteria elimination
Ozone bacteria eliminating operation for approx. fifteen minutes.

●Low outdoor air temperature cooling correspondence

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

●Corresponds to maximum 20m long piping

WALL MOUNTED TYPE
AS✻B09-18LD

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

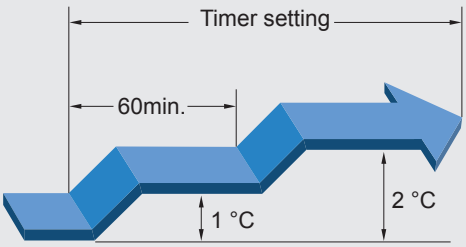
The program timer operates the ON and OFF timer once within a 24 hour period.

● 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.

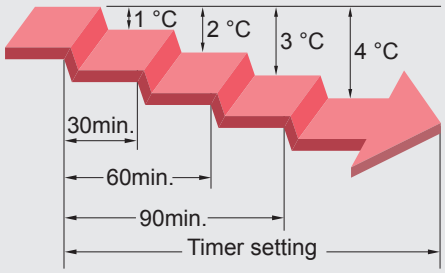
Cooling operation/dry operation

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.



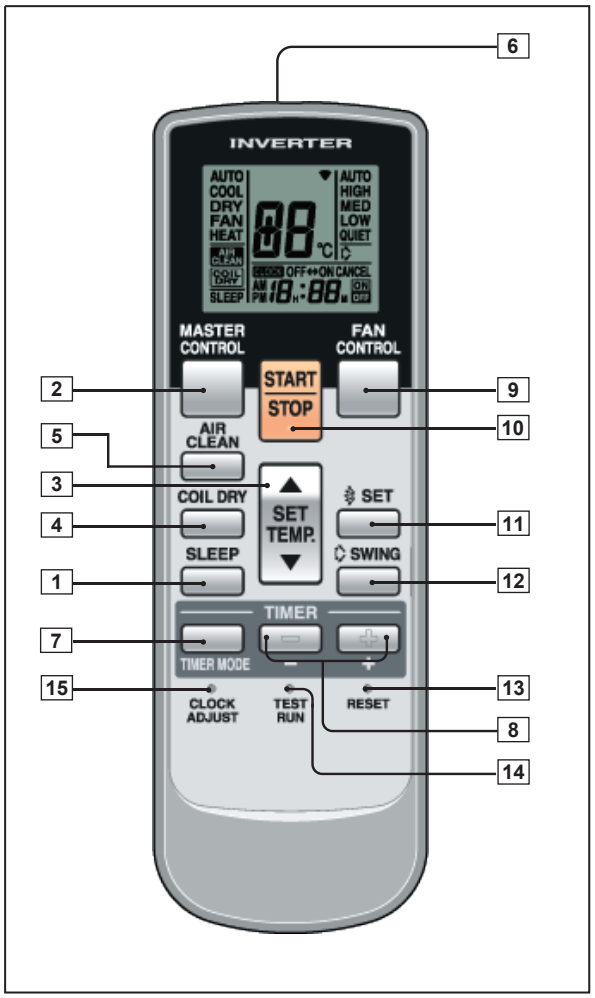
Heating operation

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.



WALL MOUNTED TYPE
AS✻B09-18LD

■ FUNCTIONS



1 **SLEEP button**

2 **MASTER CONTROL button**

3 **SET TEMP. button (▲ / ▼)**

4 **COIL DRY button**

5 **AIR CLEAN button**

6 **Signal Transmitter**

7 **TIMER MODE button**

8 **TIMER SET (⊕ / ⊖) button**

9 **FAN CONTROL button**

10 **START/STOP button**

11 **SET button**

12 **SWING button**

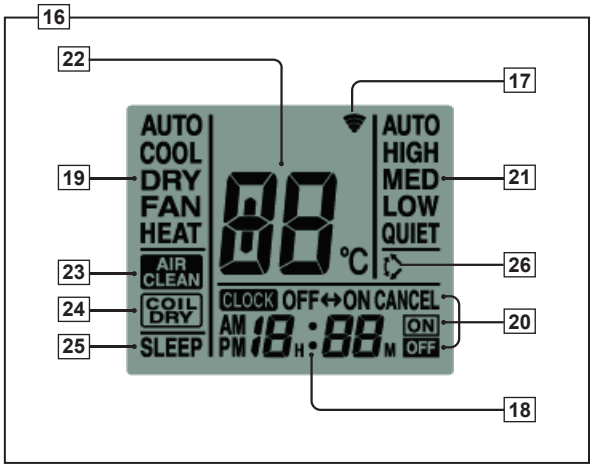
13 **RESET button**

14 **TEST RUN button**

- This button is used when installing the conditioner, and should not be used under normal conditions, as it will cause the air conditioner's thermostat function to operate incorrectly.
- If this button is pressed during normal operation, the unit will switch to test operation mode, and the Indoor Unit's OPERATION Indicator Lamp and TIMER Indicator Lamp will begin to flash simultaneously.
- To stop the test operation mode, press the START/STOP button to stop the air conditioner.

15 **CLOCK ADJUST button**

Display panel



16 **Remote Control Unit Display**

17 **Transmit Indicator**

18 **Clock Display**

19 **Operating Mode Display**

20 **Timer Mode Display**

21 **Fan Speed Display**

22 **Temperature SET Display**

23 **AIR CLEAN Display**

24 **COIL DRY Display**

25 **SLEEP Display**

26 **SWING Display**

■ SPECIFICATION

SIZE (H x W x D mm)	176 x 56 x 18
WEIGHT (g)	110
ACCESSORY	Holder

3. SPECIFICATIONS

Type					WALL MOUNTED	
					INVERTER HEAT PUMP	
Model name					AS ✳ B09LDC	AS ✳ B12LDC
Power source					230V～ 50Hz	
Available voltage range					198 - 264V～ 50Hz	
European energy label				Cooling	A	A
				Heating	A	A
Capacity	Cooling	Rated		kW	2.60	3.50
				BTU/h	8,900	11,900
		Min.-Max.		kW	0.5 - 3.7	0.9 - 4.3
		Min.-Max.		BTU/h	1,700 - 12,600	3,100 - 14,700
	Heating	Rated		kW	3.60	4.80
				BTU/h	12,300	16,400
		Min.-Max.		kW	0.5 - 6.1	0.9 - 6.7
		Min.-Max.		BTU/h	1,700 - 20,800	3,100 - 22,900
Input power	Cooling	Rated		kW	0.61	0.91
		Min.-Max.			0.25 - 1.38	0.25 - 1.61
	Heating	Rated			0.81	1.22
		Min.-Max.			0.25 - 1.96	0.25 - 2.30
Current	Cooling	Rated		A	2.9	4.3
		Max.			6.0	7.0
	Heating	Rated			3.9	5.5
		Max.			8.5	10.0
EER		Cooling		kW/kW	4.26	3.85
COP		Heating			4.44	3.93
SENSIBLE CAPACITY		Cooling		kW	1.70	2.30
POWER FACTOR		Cooling		%	90	93
		Heating			91	96
Moisture removal				l/h (pints/h)	1.3 (2.7)	1.8 (3.8)
Fan	Airflow rate	Cooling	High	m^3/h	560	595
			Med		470	485
			Low		385	385
			Quiet		260	260
		Heating	High		605	630
			Med		510	510
			Low		410	410
			Quiet		290	290
	Type × Q'ty				Cross flow fan × 1	
	Motor output			W	42	42
Noise level		Cooling	High	dB(A)	39	41
			Med		34	35
			Low		29	29
			Quiet		20	20
		Heating	High		40	41
			Med		35	35
			Low		28	28
			Quiet		21	21
Heat exchanger type		Dimensions (H × W × D)		mm	336 × 635 × 26.6	
		Fin pitch			1.2	
		Rows × Stages			2 × 16	
		Pipe type			Copper	
		Fin type			Aluminium	
Enclosure		Material			Polystyrene	
		Colour			White	
Dimensions (H × W × D)	Net			mm	283 × 790 × 230	
	Gross				316 × 835 × 360	
Weight	Net			kg (lb.)	9.5 (21)	
	Gross				12 (17)	
Connection pipe	Size	Liquid		mm	Φ6.35 (Φ1/4 in.)	
		Gas			Φ9.52 (Φ3/8 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				PP + LLDPE	
	Size			mm	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).

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AS✻B09-18LD

Type					WALL MOUNTED
					INVERTER HEAT PUMP
Model name					AS✻B18LDC
Power source					230V～ 50Hz
Available voltage range					198 - 264V～ 50Hz
European energy label				Cooling	B
				Heating	A
Capacity	Cooling	Rated		kW	5.20
				BTU/h	17,700
		Min-Max		kW	0.9 - 5.7
				BTU/h	3,100 - 19,400
	Heating	Rated		kW	6.25
				BTU/h	21,300
		Min-Max		kW	0.9 - 9.1
				BTU/h	3,100 - 31,000
Input power	Cooling	Rated		kW	1.72
		Min-Max			0.09 - 2.00
	Heating	Rated			1.73
		Min-Max			0.09 - 2.66
Current	Cooling	Rated		A	7.6
		Max			9.0
	Heating	Rated			7.7
		Max			13.5
EER		Cooling		kW/kW	3.02
COP		Heating			3.61
SENSIBLE CAPACITY		Cooling		kW	3.30
POWER FACTOR		Cooling		%	98
		Heating			98
Moisture removal				l/h (pints/h)	2.8 (5.9)
Fan	Airflow rate	Cooling	High	m^3/h	700
			Med		580
			Low		460
			Quiet		370
		Heating	High		700
			Med		600
			Low		500
			Quiet		420
	Type × Q'ty				Cross flow fan × 1
	Motor output			W	24
Sound pressure level		Cooling	High	dB(A)	45
			Med		39
			Low		33
			Quiet		26
		Heating	High		42
			Med		38
			Low		33
			Quiet		27
Heat exchanger type		Dimensions (H × W × D)		mm	MAIN : 336 × 635 × 26.6 SUB : 84 × 635 × 13.3
		Fin pitch			Main : 1.2 / Sub : 1.4
		Rows × Stages			Main : 2 × 16, Sub : 1 × 4
		Pipe type			Copper
		Fin type			Aluminium
Enclosure		Material			Polystyrene
		Colour			White
Dimensions (H × W × D)	Net			mm	283 × 790 × 230
	Gross				316 × 835 × 360
Weight	Net			kg(lb.)	10 (22)
	Gross				12.5 (28)
Connection pipe	Size	Liquid		mm	Φ6.35 (Φ1/4 in.)
		Gas			Φ12.7 (Φ1/2 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				PP + LLDPE
	Size			mm	Outer diameter : 29 / Inner diameter : 13.6

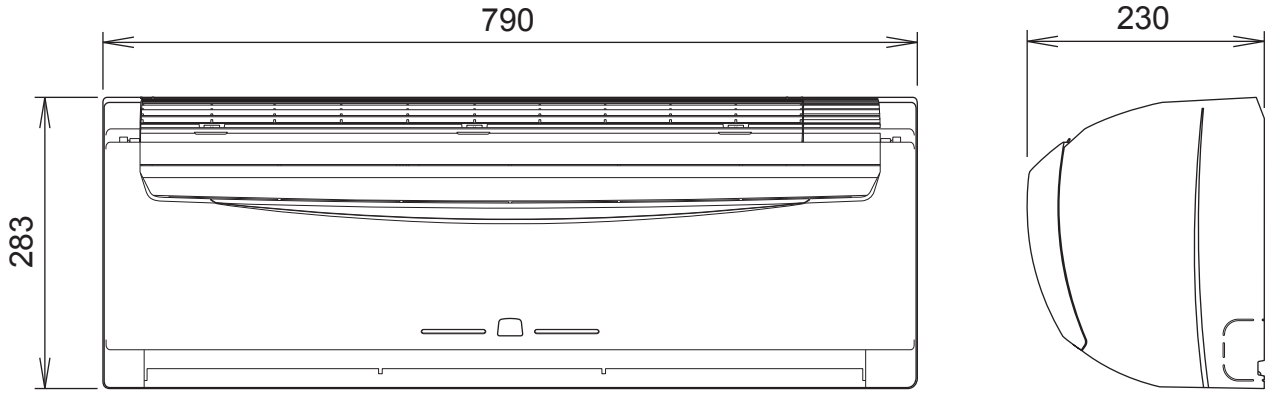
Note :
Specifications are based on the following conditions.
Cooling : Indoor temperature of 27°CDB/19°CWB. and outdoor temperature of 35°CDB/24°CWB.
Heating : Indoor temperature of 20°CDB/15°CWB. and outdoor temperature of 7°CDB/6°CWB.
Pipe length : 7.5 m, Height difference : 0 m. (Outdoor unit - Indoor unit)
The maximum current is the maximum value when operated within the operation range (temperature).

WALL MOUNTED TYPE
AS∗B09-18LD

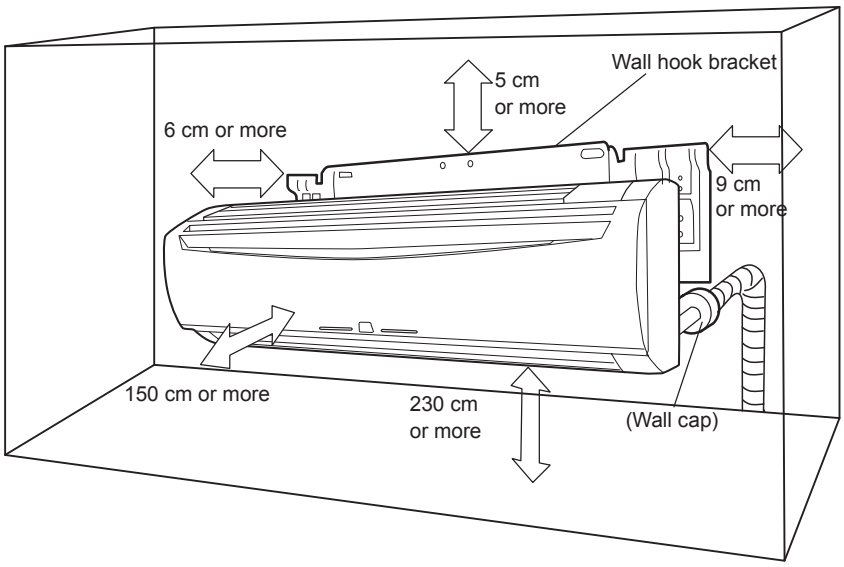
4. DIMENSIONS

■MODEL : AS∗B09LD, AS∗B12LD, AS∗B18LD

(Unit : mm)

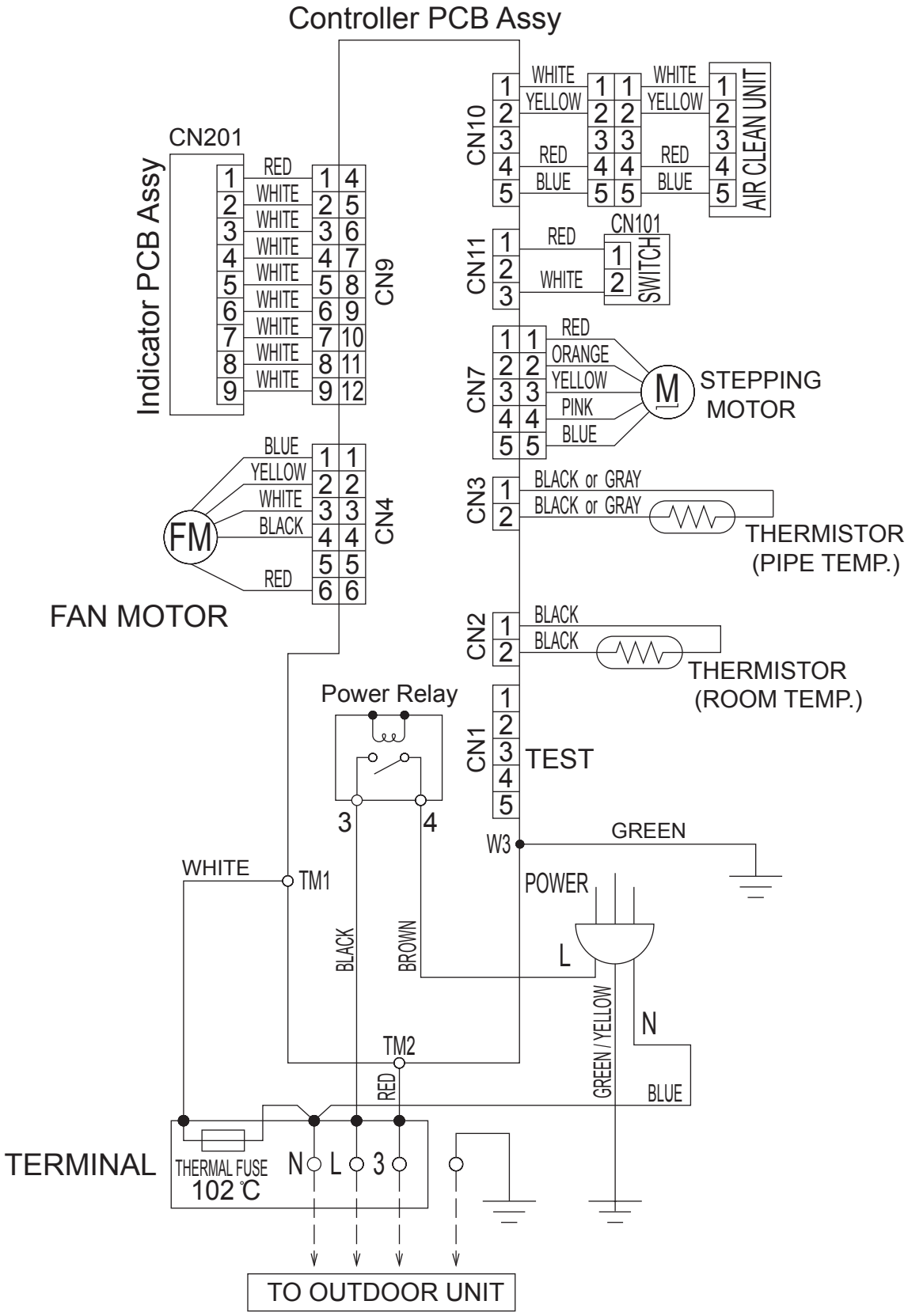


■INSTALLATION PLACE



5. WIRING DIAGRAMS

■MODEL : AS∗B09LD, AS∗B12LD, AS∗B18LD



WALL MOUNTED TYPE
AS✳B09-18LD

6. CAPACITY TABLE

6-1. COOLING CAPACITY

■MODEL : AS✳B09LD

AFR	9.3

		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	1.93	1.34	0.29	2.14	1.35	0.30	2.22	1.47	0.30	2.36	1.48	0.30	2.44	1.59	0.30	2.58	1.59	0.30	2.73	1.69	0.31
	25	2.29	1.60	0.48	2.56	1.61	0.49	2.64	1.75	0.49	2.82	1.76	0.50	2.90	1.90	0.50	3.08	1.89	0.51	3.25	2.01	0.51
	30	2.20	1.53	0.54	2.45	1.54	0.54	2.53	1.68	0.55	2.70	1.68	0.55	2.78	1.82	0.55	2.95	1.81	0.56	3.11	1.93	0.57
	35	2.05	1.43	0.59	2.29	1.44	0.60	2.37	1.57	0.60	2.52	1.57	0.61	2.60	1.70	0.61	2.76	1.69	0.62	2.91	1.80	0.62
	40	1.85	1.30	0.59	2.07	1.30	0.60	2.14	1.42	0.60	2.28	1.42	0.61	2.35	1.53	0.61	2.49	1.53	0.62	2.63	1.63	0.63
	43	1.73	1.21	0.60	1.93	1.22	0.61	2.00	1.32	0.61	2.13	1.33	0.62	2.19	1.43	0.62	2.33	1.43	0.63	2.46	1.52	0.63

■MODEL : AS✳B12LD

AFR	9.9

		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	2.59	1.82	0.43	2.89	1.83	0.44	2.99	1.99	0.44	3.18	2.00	0.45	3.28	2.16	0.45	3.48	2.15	0.45	3.67	2.29	0.46
	25	3.09	2.17	0.72	3.44	2.18	0.73	3.56	2.37	0.74	3.79	2.38	0.74	3.91	2.57	0.75	4.14	2.56	0.75	4.38	2.73	0.76
	30	2.96	2.08	0.80	3.29	2.09	0.81	3.41	2.27	0.81	3.63	2.28	0.82	3.74	2.46	0.83	3.97	2.45	0.84	4.19	2.61	0.84
	35	2.77	1.94	0.88	3.08	1.95	0.89	3.19	2.12	0.90	3.40	2.13	0.91	3.50	2.30	0.91	3.71	2.29	0.92	3.92	2.44	0.93
	40	2.50	1.75	0.88	2.78	1.76	0.90	2.87	1.92	0.90	3.06	1.92	0.91	3.16	2.08	0.92	3.35	2.07	0.92	3.54	2.20	0.93
	43	2.33	1.64	0.89	2.60	1.65	0.91	2.69	1.79	0.91	2.86	1.80	0.92	2.95	1.94	0.92	3.13	1.93	0.93	3.31	2.06	0.94

■MODEL : AS✳B18LD

AFR	11.7

		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	3.85	2.61	0.82	4.29	2.63	0.83	4.44	2.86	0.84	4.73	2.86	0.84	4.87	3.09	0.85	5.17	3.08	0.86	5.46	3.28	0.87
	25	4.59	3.11	1.36	5.11	3.13	1.38	5.29	3.40	1.39	5.63	3.41	1.40	5.81	3.69	1.41	6.16	3.67	1.43	6.51	3.91	1.44
	30	4.39	2.98	1.51	4.89	3.00	1.53	5.06	3.26	1.54	5.39	3.27	1.56	5.56	3.53	1.56	5.89	3.51	1.58	6.23	3.74	1.59
	35	4.11	2.79	1.66	4.58	2.80	1.69	4.73	3.05	1.69	5.04	3.06	1.71	5.20	3.30	1.72	5.51	3.29	1.74	5.82	3.50	1.75
	40	3.71	2.51	1.67	4.13	2.53	1.70	4.27	2.75	1.70	4.55	2.76	1.72	4.69	2.98	1.73	4.98	2.97	1.75	5.26	3.16	1.77
	43	3.47	2.35	1.68	3.86	2.36	1.71	3.99	2.57	1.72	4.26	2.58	1.74	4.39	2.78	1.75	4.65	2.77	1.76	4.91	2.95	1.78

AFR : Air Flow Rate (m^3/min)
TC : Total Capacity (kW)
SHC : Sensible Heat Capacity (kW)
PI : Power Input (kW)

WALL MOUNTED TYPE
AS✻B09-18LD

6-2. HEATING CAPACITY

■MODEL : AS✻B09LD

AFR	10.1

		Indoor temperature											
		°CDB	16		18		20		22		24	
	°CDB	°CWB	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
Outdoor temperature	-15	-16	3.41	1.48	3.33	1.51	3.25	1.54	3.17	1.57	3.09	1.60
	-10	-11	4.05	1.62	3.95	1.65	3.86	1.68	3.76	1.72	3.66	1.75
	-5	-7	4.56	1.70	4.45	1.74	4.34	1.77	4.23	1.81	4.12	1.84
	0	-2	5.27	1.82	5.14	1.85	5.02	1.89	4.89	1.93	4.77	1.97
	5	3	5.99	1.94	5.85	1.98	5.71	2.02	5.56	2.06	5.42	2.10
	7	6	6.41	1.88	6.25	1.92	6.10	1.96	5.95	2.00	5.80	2.04
	10	8	6.63	1.88	6.48	1.92	6.32	1.96	6.16	2.00	6.00	2.04
	15	10	6.42	1.64	6.27	1.67	6.12	1.71	5.96	1.74	5.81	1.77

■MODEL : AS✻B12LD

AFR	10.5

		Indoor temperature											
		°CDB	16		18		20		22		24	
	°CDB	°CWB	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
Outdoor temperature	-15	-16	3.75	1.73	3.66	1.77	3.57	1.81	3.48	1.84	3.39	1.88
	-10	-11	4.45	1.90	4.34	1.94	4.24	1.98	4.13	2.02	4.02	2.06
	-5	-7	5.01	1.99	4.89	2.04	4.77	2.08	4.65	2.12	4.53	2.16
	0	-2	5.79	2.13	5.65	2.17	5.51	2.22	5.37	2.26	5.23	2.31
	5	3	6.58	2.27	6.42	2.32	6.27	2.37	6.11	2.42	5.95	2.46
	7	6	7.04	2.21	6.87	2.25	6.70	2.30	6.53	2.35	6.37	2.39
	10	8	7.29	2.21	7.11	2.26	6.94	2.30	6.77	2.35	6.59	2.39
	15	10	7.06	1.92	6.89	1.96	6.72	2.00	6.55	2.04	6.38	2.08

■MODEL : AS✻B18LD

AFR	11.7

		Indoor temperature											
		°CDB	16		18		20		22		24	
	°CDB	°CWB	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
Outdoor temperature	-15	-16	5.09	2.01	4.97	2.05	4.84	2.09	4.72	2.13	4.60	2.17
	-10	-11	6.04	2.19	5.90	2.24	5.75	2.29	5.61	2.33	5.46	2.38
	-5	-7	6.80	2.31	6.64	2.35	6.48	2.40	6.32	2.45	6.15	2.50
	0	-2	7.86	2.46	7.67	2.51	7.48	2.57	7.30	2.62	7.11	2.67
	5	3	8.94	2.63	8.72	2.69	8.51	2.74	8.30	2.80	8.09	2.85
	7	6	9.56	2.55	9.33	2.61	9.10	2.66	8.87	2.71	8.65	2.77
	10	8	9.90	2.56	9.66	2.61	9.43	2.66	9.19	2.72	8.96	2.77
	15	10	9.58	2.22	9.35	2.27	9.13	2.31	8.90	2.36	8.67	2.41

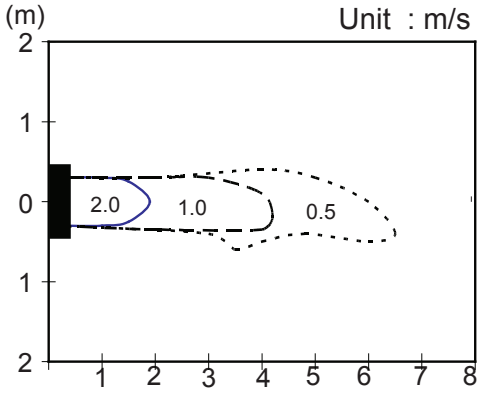
AFR: Air Flow Rate (m^3/min)
TC : Total Capacity (kW)
PI : Power Input (kW)

WALL MOUNTED TYPE
AS✳B09-18LD

7. FAN PERFORMANCE

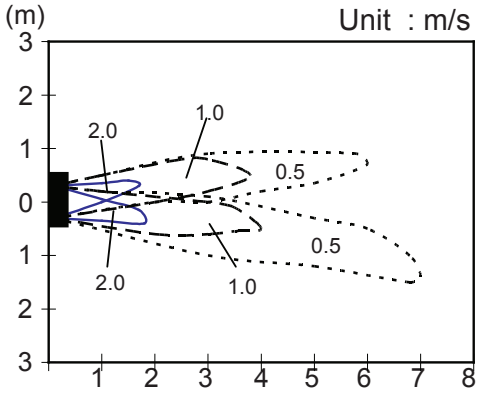
7-1. AIR VELOCITY DISTRIBUTION

■MODEL : AS✳B09LD

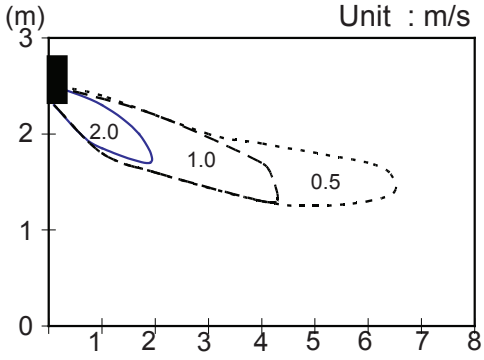


TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center

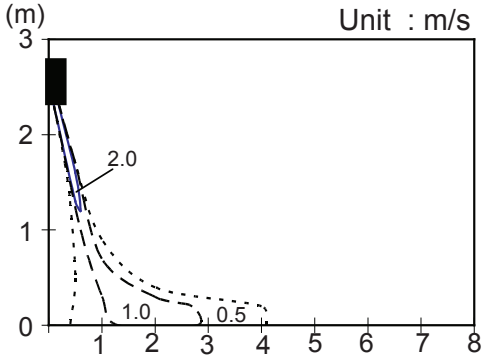
Note :
Fan speed : High
Operation mode :FAN
Voltage : 230V



TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Right & Left



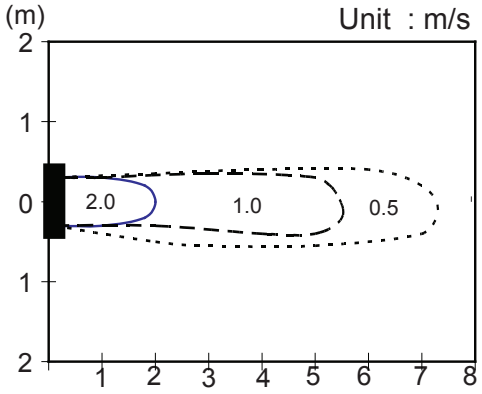
SIDE VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center



SIDE VIEW
FLOW CONTROL PANEL : Vert.
LOUVER : Center

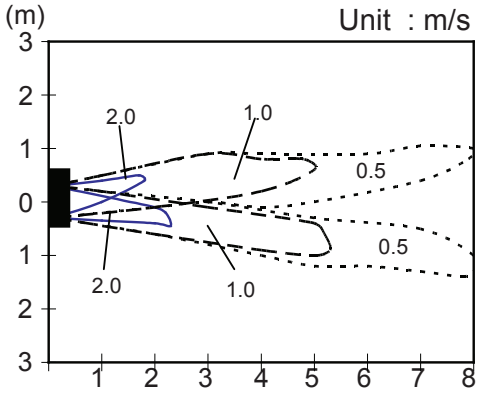
WALL MOUNTED TYPE
AS✳B09-18LD

■MODEL : AS✳B12LD

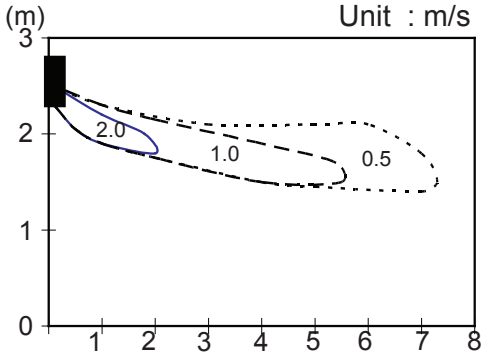


TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center

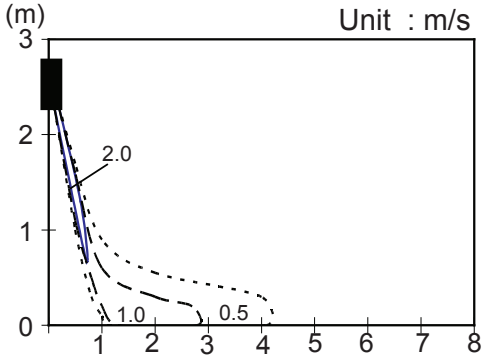
Note :
Fan speed : High
Operation mode :FAN
Voltage : 230V



TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Right & Left



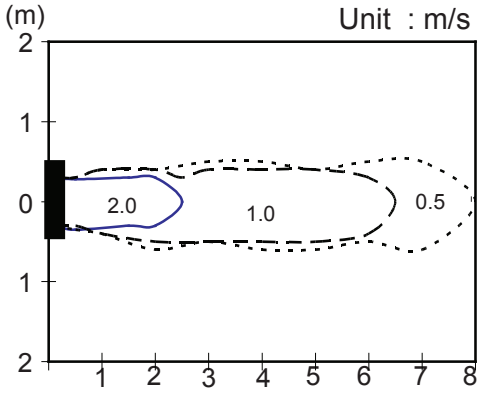
SIDE VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center



SIDE VIEW
FLOW CONTROL PANEL : Vert.
LOUVER : Center

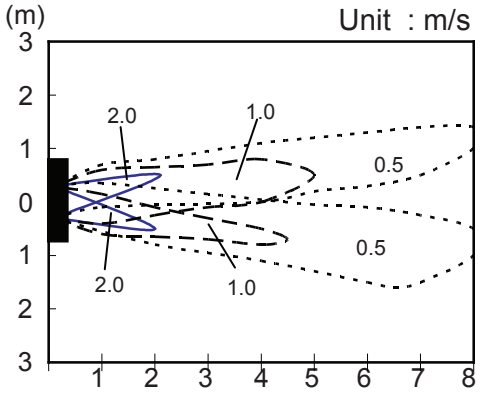
WALL MOUNTED TYPE
AS✳B09-18LD

■MODEL : AS✳B18LD

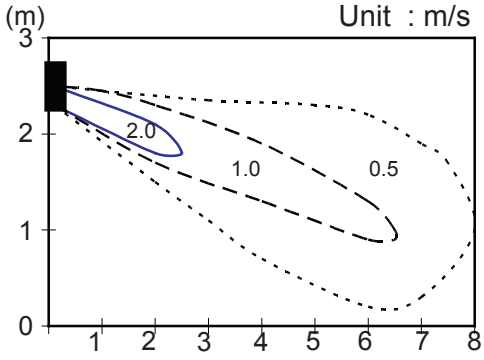


TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center

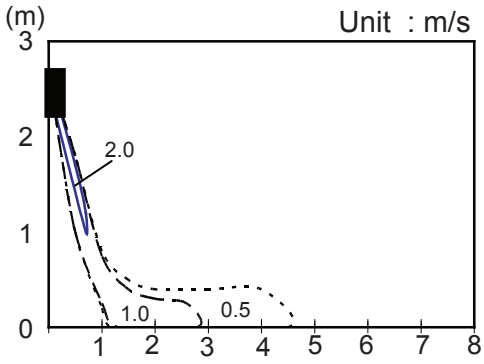
Note :
Fan speed : High
Operation mode :FAN
Voltage : 230V



TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Right & Left



SIDE VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center



SIDE VIEW
FLOW CONTROL PANEL : Vert.
LOUVER : Center

WALL MOUNTED TYPE
AS✳B09-18LD

7-2. AIR FLOW

■MODEL : AS✳B09LD

●COOLING

Fan speed	Number of rotations (r.p.m)	Airflow	
HIGH	1300	560	m^3/h
		156	l/s
		330	CFM
MED	1120	470	m^3/h
		131	l/s
		277	CFM
LOW	950	385	m^3/h
		107	l/s
		227	CFM
QUIET	700	260	m^3/h
		72	l/s
		153	CFM

●HEATING

Fan speed	Number of rotations (r.p.m)	Airflow	
HIGH	1390	605	m^3/h
		168	l/s
		356	CFM
MED	1200	510	m^3/h
		142	l/s
		300	CFM
LOW	1000	410	m^3/h
		114	l/s
		241	CFM
QUIET	760	290	m^3/h
		81	l/s
		171	CFM

WALL MOUNTED TYPE
AS✳B09-18LD

■MODEL : AS✳B12LD

●COOLING

Fan speed	Number of rotations (r.p.m)	Airflow	
HIGH	1370	595	m^3/h
		165	l/s
		350	CFM
MED	1150	485	m^3/h
		135	l/s
		285	CFM
LOW	950	385	m^3/h
		107	l/s
		227	CFM
QUIET	700	260	m^3/h
		72	l/s
		153	CFM

●HEATING

Fan speed	Number of rotations (r.p.m)	Airflow	
HIGH	1440	630	m^3/h
		175	l/s
		371	CFM
MED	1200	510	m^3/h
		142	l/s
		300	CFM
LOW	1000	410	m^3/h
		114	l/s
		241	CFM
QUIET	760	290	m^3/h
		81	l/s
		171	CFM

WALL MOUNTED TYPE
AS✳B09-18LD

■MODEL : AS✳B18LD

●COOLING

Fan speed	Number of rotations (r.p.m)	Airflow	
HIGH	1560	700	m^3/h
		194	l/s
		412	CFM
MED	1320	580	m^3/h
		161	l/s
		341	CFM
LOW	1090	460	m^3/h
		128	l/s
		271	CFM
QUIET	850	370	m^3/h
		103	l/s
		218	CFM

●HEATING

Fan speed	Number of rotations (r.p.m)	Airflow	
HIGH	1560	700	m^3/h
		194	l/s
		412	CFM
MED	1370	600	m^3/h
		167	l/s
		353	CFM
LOW	1170	500	m^3/h
		139	l/s
		294	CFM
QUIET	950	420	m^3/h
		117	l/s
		247	CFM

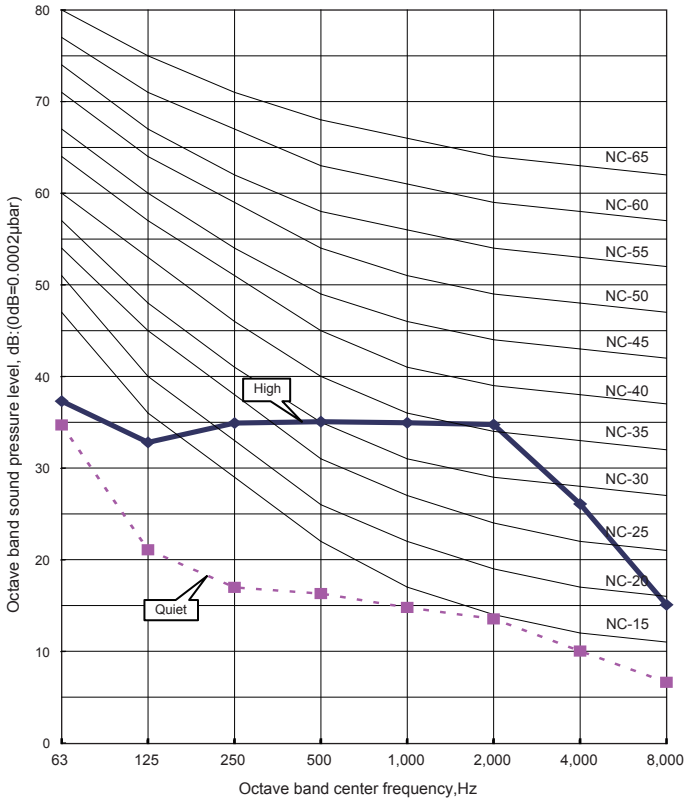
WALL MOUNTED TYPE
AS✳B09-18LD

8. OPERATION NOISE

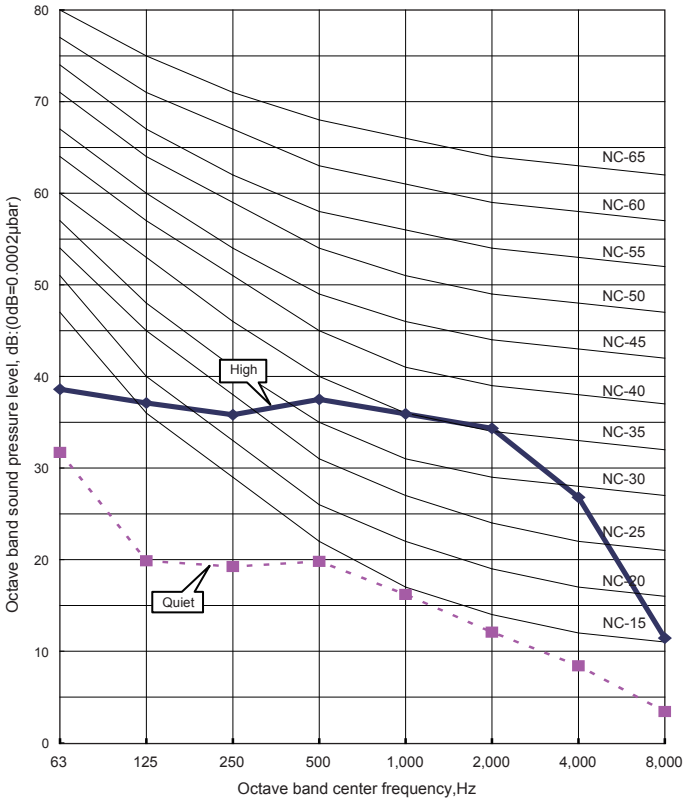
8-1. NOISE LEVEL CURVE

■MODEL : AS✳B09LD

●COOLING

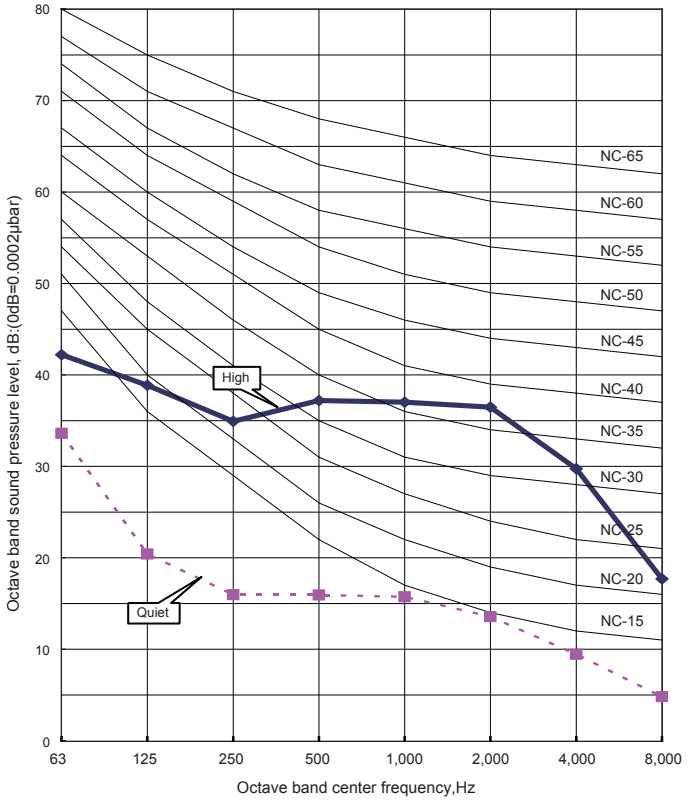


●HEATING

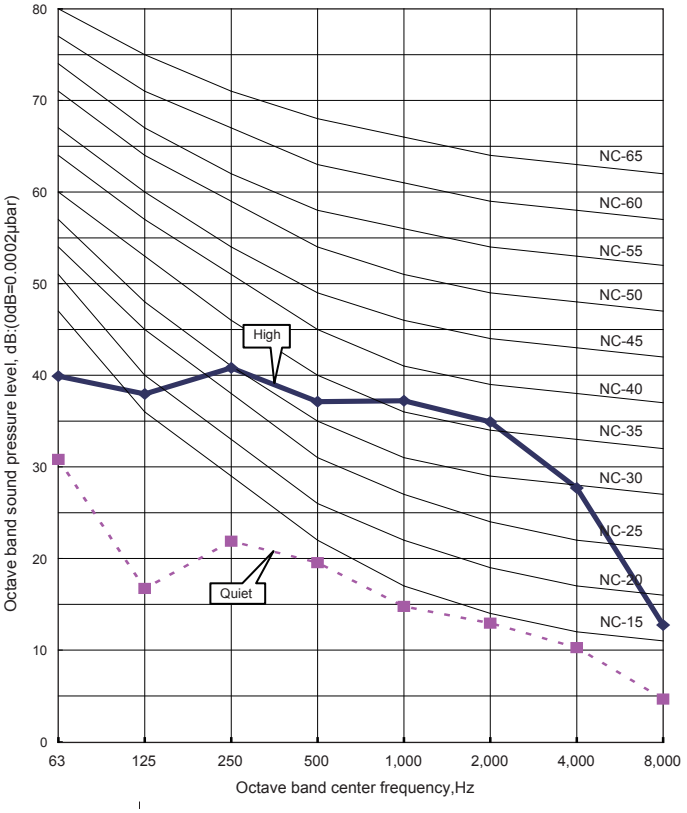


■MODEL : AS✳B12 LD

●COOLING



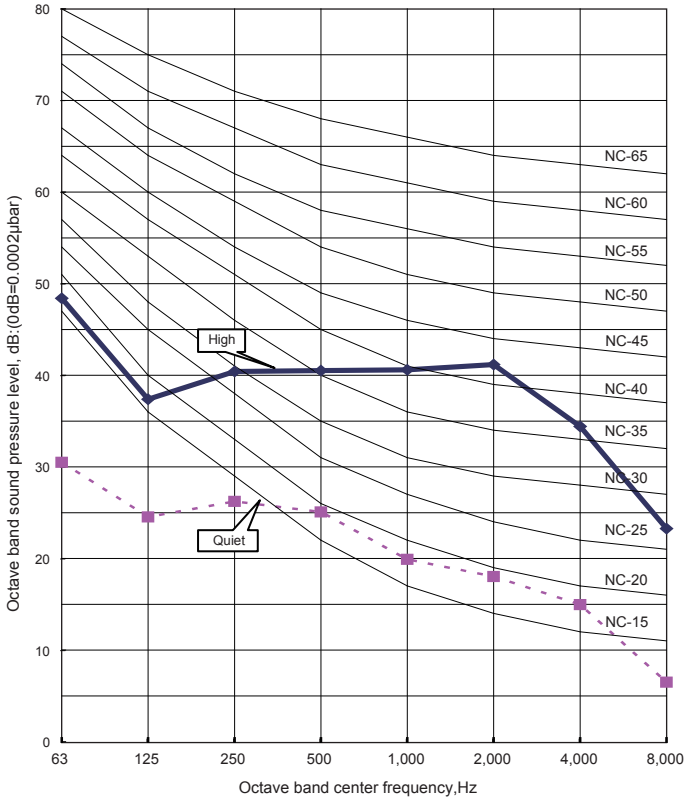
●HEATING



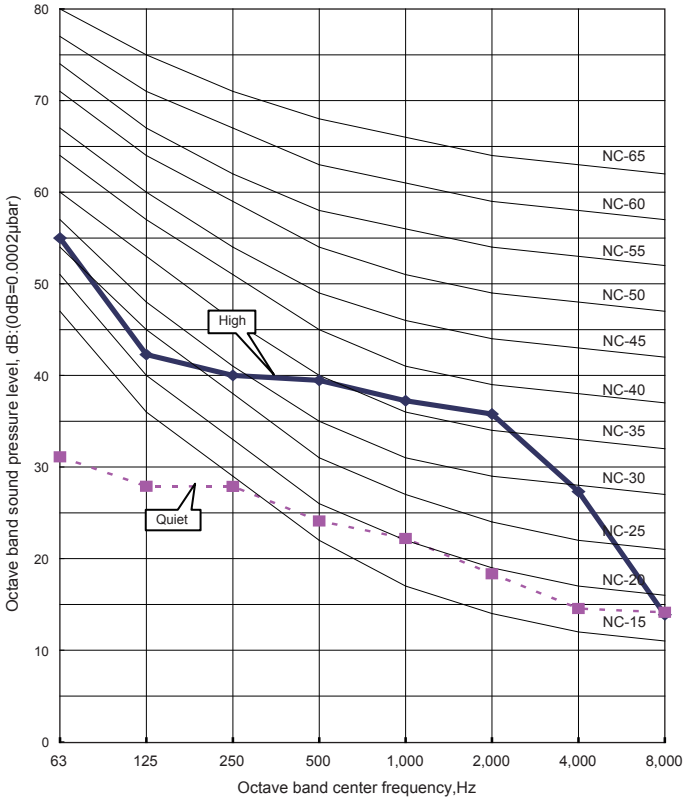
WALL MOUNTED TYPE
AS✳B09-18LD

■MODEL : AS✳B18LD

●COOLING

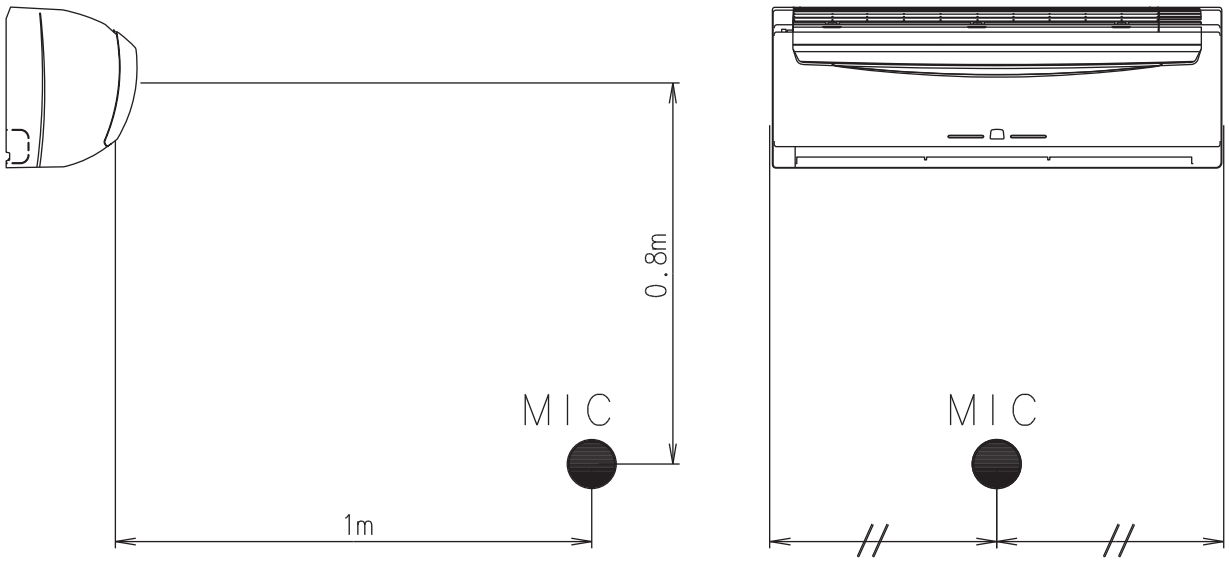


●HEATING



WALL MOUNTED TYPE
AS*B09-18LD

8-2. SOUND LEVEL CHECK POINT



9. ELECTRIC CHARACTERISTICS

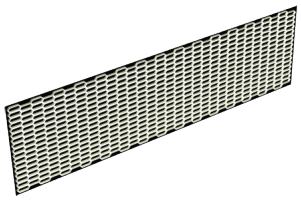
Model Name			AS ✻ B09LD	AS ✻ B12LD	AS ✻ B18LD
Power Supply	Voltage	V	230～		
	Frequency	Hz	50		
Max Operating Current		A	8.5	10.0	13.5
Starting current		A	3.8	5.6	7.7
*1)Wiring Spec.	Circuit breaker	A	15.0	20.0	20.0
	Connection Cable	mm^2	1.5 - 2.5	1.5 - 2.5	2.0 - 3.5
	Limited wiring length	m	21	21	21

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

10. SAFETY DEVICES

	Protection form	Model		
		AS ∗ B09LD	AS ∗ B12LD	AS ∗ B18LD
Circuit protection	Current fuse (PCB)	3.15A 250V		
Terminal protection	Current (thermal) fuse	3A 250V 102°C		
Fan motor protection	Thermal protection program	100^{+15}_{-10}°C OFF 95^{+5}_{-10}°C ON		

11. OPTIONAL PARTS

Exterior	Parts name	Model No.	Summary
	Air-cleaning and deodorizing filter	UTR-FA14	Negatively-charged dust, etc. are attracted to the earth section and are collected by a bacteria eliminating & deodorizing filter.

WALL MOUNTED TYPE
AS✱B09-18LD

Refrigerant
R410A

OUTDOOR UNIT

2. SINGLE TYPE :

AO＊S09LDC
AO＊S12LDC
AO＊S18LDC

D1D_AO012E/02
2007.11.26

1. SPECIFICATIONS

OUTDOOR UNIT
AO∗S09-18LD

Type					INVERTER HEAT PUMP	
Model name					AO ∗ S09LDC	AO ∗ S12LDC
Power source					230V～ 50Hz	
Available voltage range					198 - 264V～ 50Hz	
Starting current				A	3.8	5.6
Fan	Airflow rate	Cooling		m^3/h	1,970	1,830
		Heating			1,820	1,830
	Type × Q'ty				Propeller fan × 1	
	Motor output			W	54	
Sound pressure level		Cooling		dB(A)	47	47
		Heating			48	49
Heat exchanger type		Dimensions (H × W × D)		mm	508 × 852 × 22	504 × 850 × 36.4
		Fin pitch			1.3	1.4
		Rows × Stages			1 × 20	2 × 24
		Pipe type			Copper	
		Fin type			Aluminium	
Compressor	Type × Q'ty				Rotary × 1	
	Motor output			W	750	
Refrigerant		Type			R410A	
		Charge		g	950	1,050
Refrigerant oil		Type			POE (VG74)	
Enclosure		Material			Steel	
		Colour			Beige	
Dimensions (H × W × D)	Net			mm	540 × 790 × 290	
	Gross				648 × 910 × 380	
Weight	Net			kg (lb.)	34 (75)	36 (79)
	Gross				38 (84)	40 (88)
Connection pipe	Size	Liquid		mm	Φ6.35 (Φ1/4 in.)	
		Gas			Φ9.52 (Φ3/8 in.)	
	Method				Flare	
	Max. length			m	20 (chargeless : 15)	
	Max. height difference				15	
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)

OUTDOOR UNIT
AO*S09-18LD

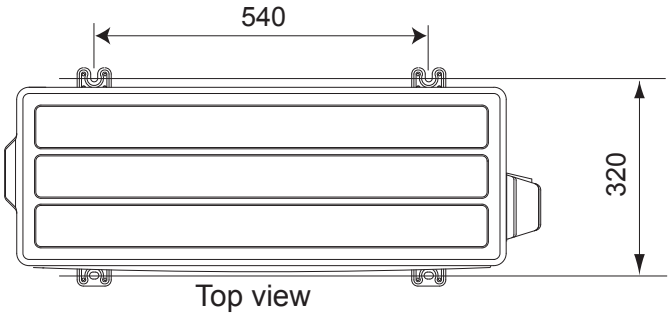
Type				INVERTER HEAT PUMP
Model name				AO＊S18LDC
Power source				230V～ 50Hz
Available voltage range				198 - 264V～ 50Hz
Starting current			A	7.7
Fan	Airflow rate	Cooling	m^3/h	2,000
		Heating		1,910
	Type × Q'ty			Propeller fan × 1
	Motor output		W	30
Sound pressure level		Cooling	dB(A)	50
		Heating		50
Heat exchanger type		Dimensions (H × W × D)	mm	546 × 876 × 36.4
		Fin pitch		1.3
		Rows × Stages		2 × 26
		Pipe type		Copper
		Fin type		Aluminium
Compressor	Type × Q'ty			Rotary × 1
	Motor output		W	1,100
Refrigerant		Type		R410A
		Charge	g	1,150
Refrigerant oil		Type		POE(VG74)
Enclosure		Material		Steel
		Colour		Beige
Dimensions (H × W × D)	Net		mm	578 × 790 × 300
	Gross			648 × 910 × 380
Weight	Net		kg(lb.)	40 (88)
	Gross			44 (97)
Connection pipe	Size	Liquid	mm	Φ6.35 (Φ1/4 in.)
		Gas		Φ12.7 (Φ1/2 in.)
	Method			Flare
	Max. length		m	20(chargeless:15)
	Max. height difference			15
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)

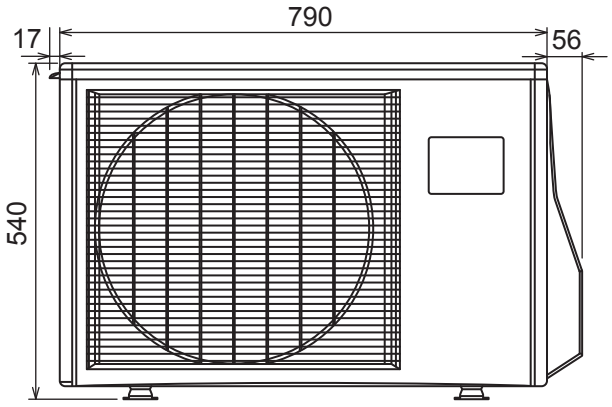
2. DIMENSIONS

■MODEL : AO∗S09LD, AO∗S12LD

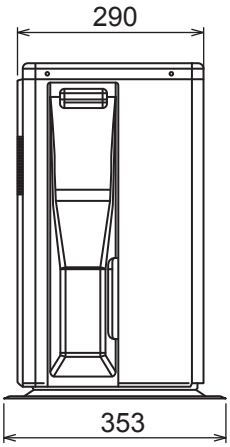
(Unit : mm)



Top view

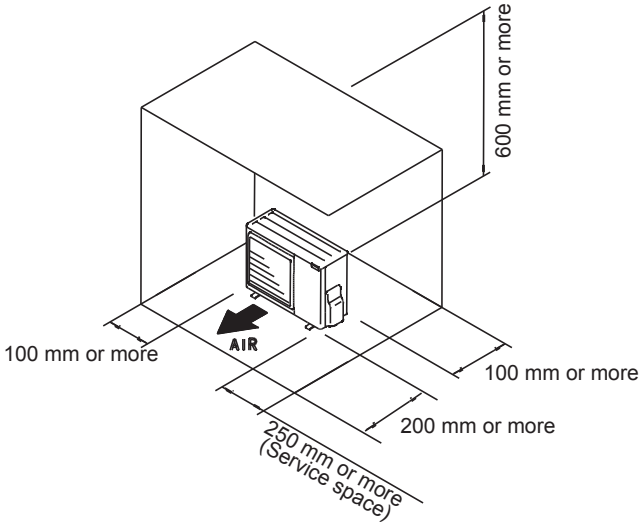


Front view



Side view

■INSTALLATION PLACE

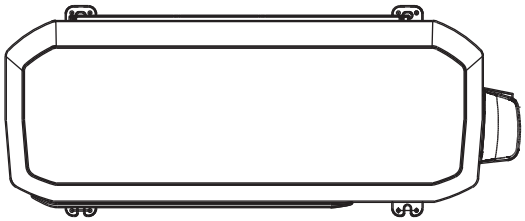


If the space is larger that is stated, the condition will be the same as that are no obstacles.

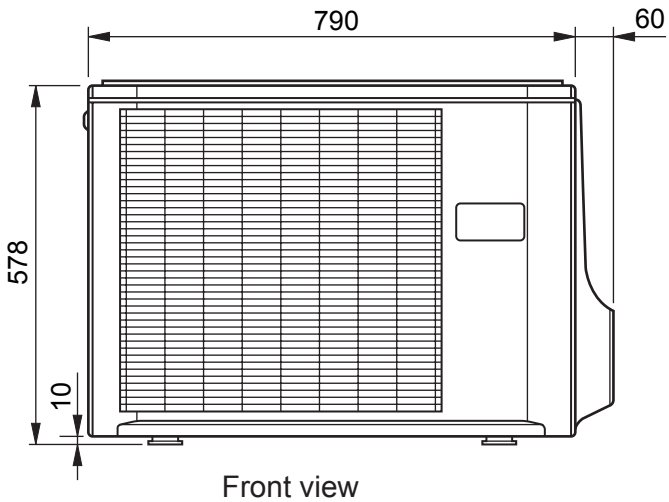
OUTDOOR UNIT
AO*S09-18LD

■MODEL : AO*S18LD

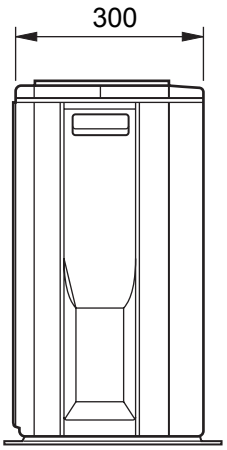
(Unit : mm)



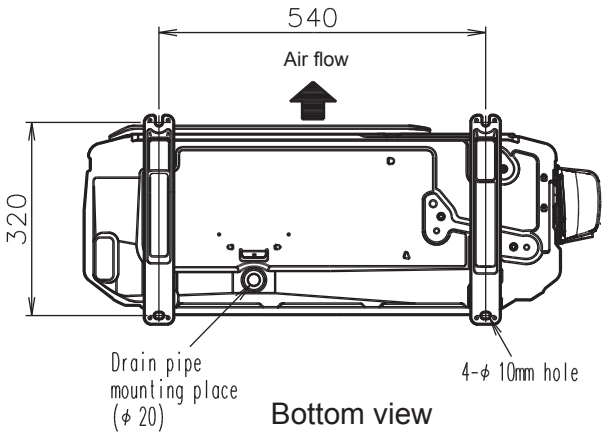
Top view



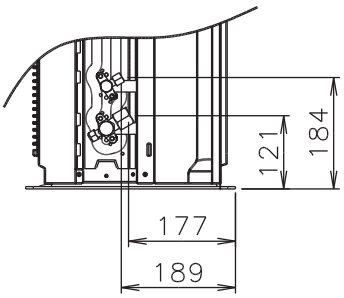
Front view



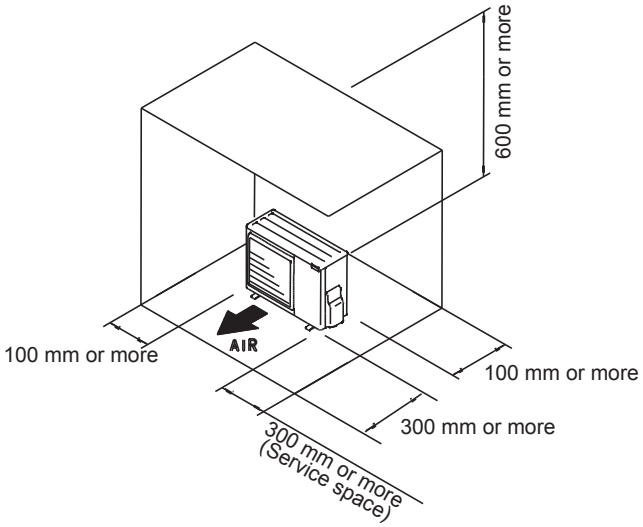
Side view



Bottom view



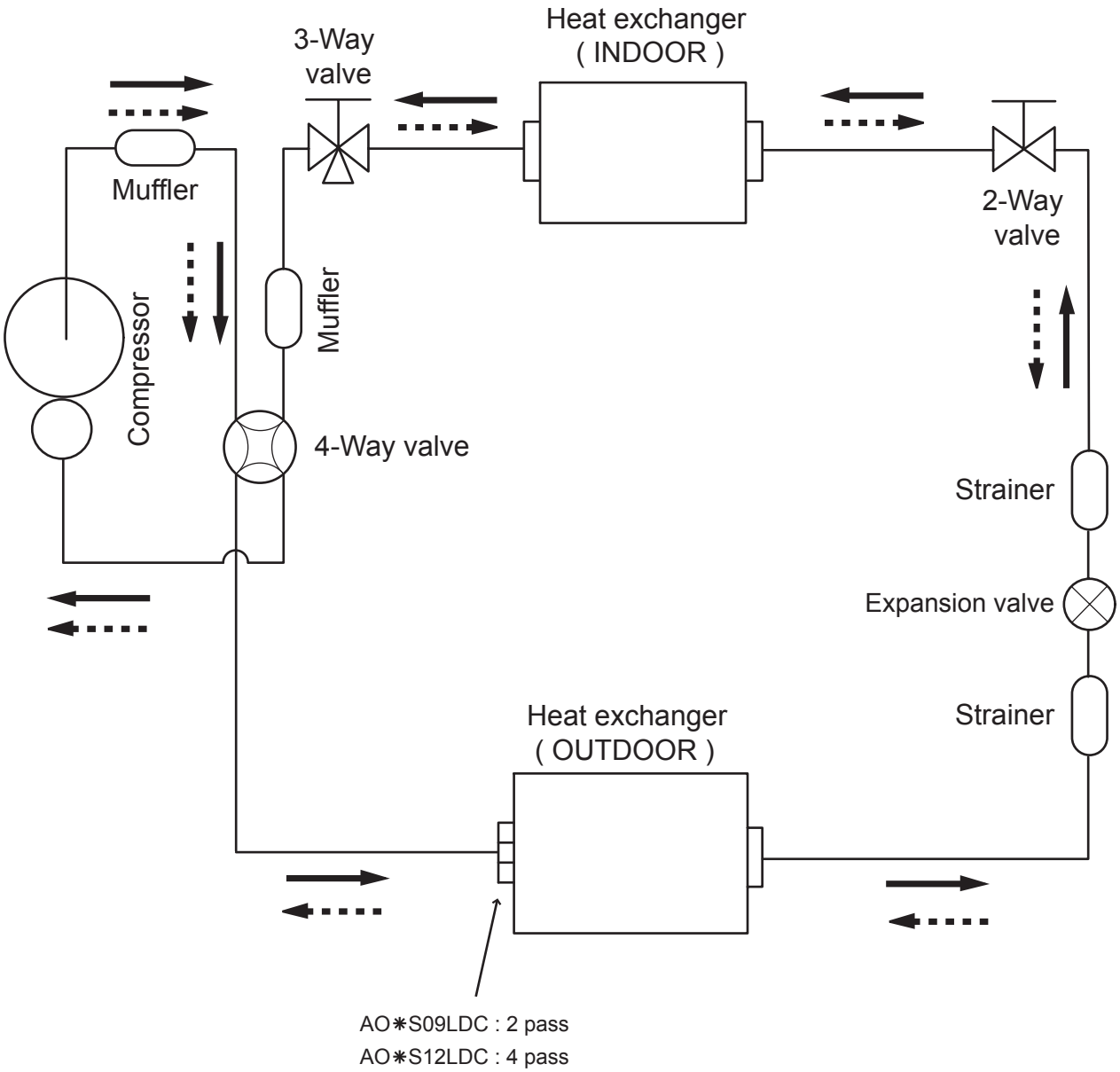
■INSTALLATION PLACE



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

3. REFRIGERANT CIRCUIT

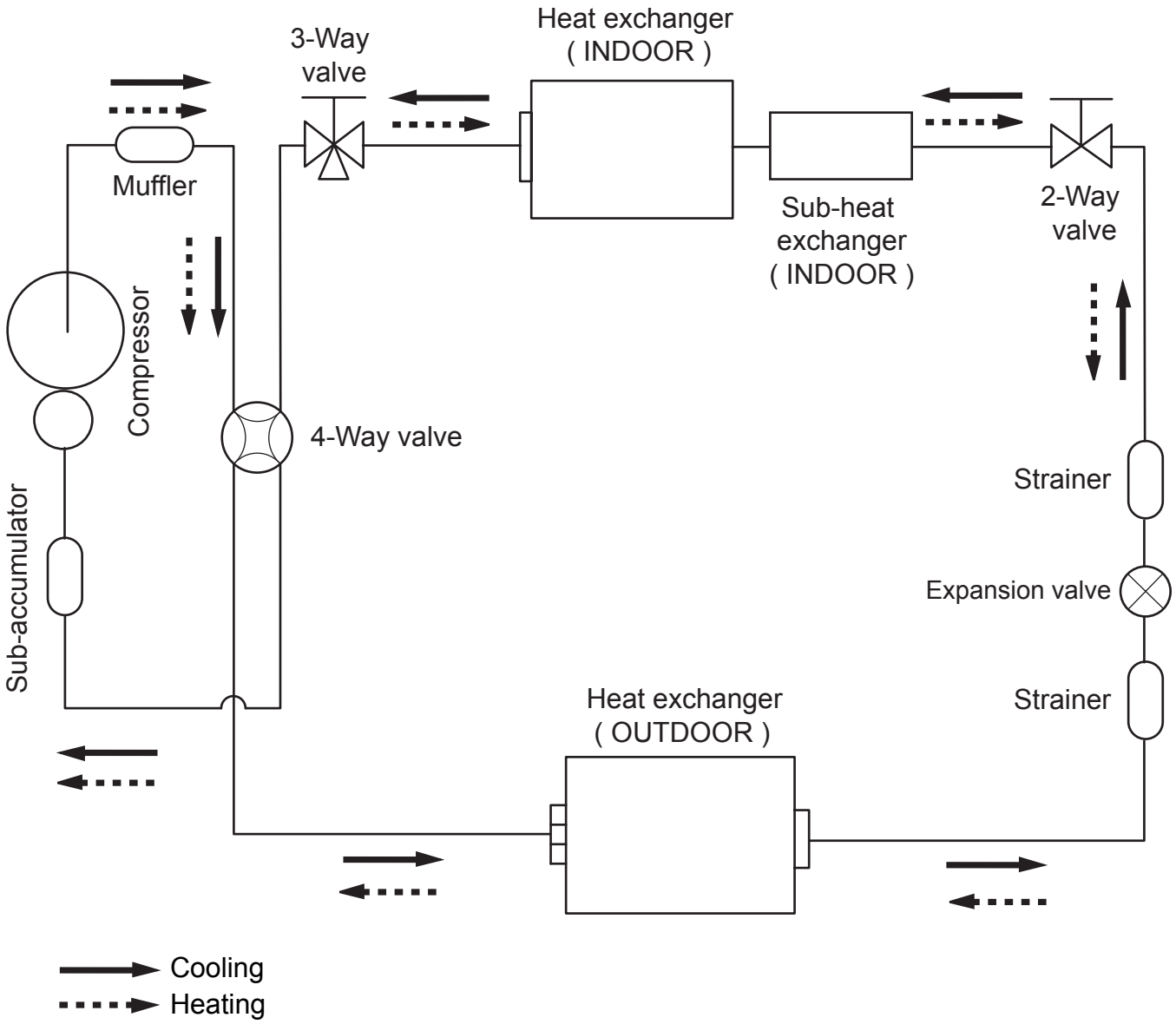
■MODEL : AO∗S09LD, AO∗S12LD



Cooling
Heating

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

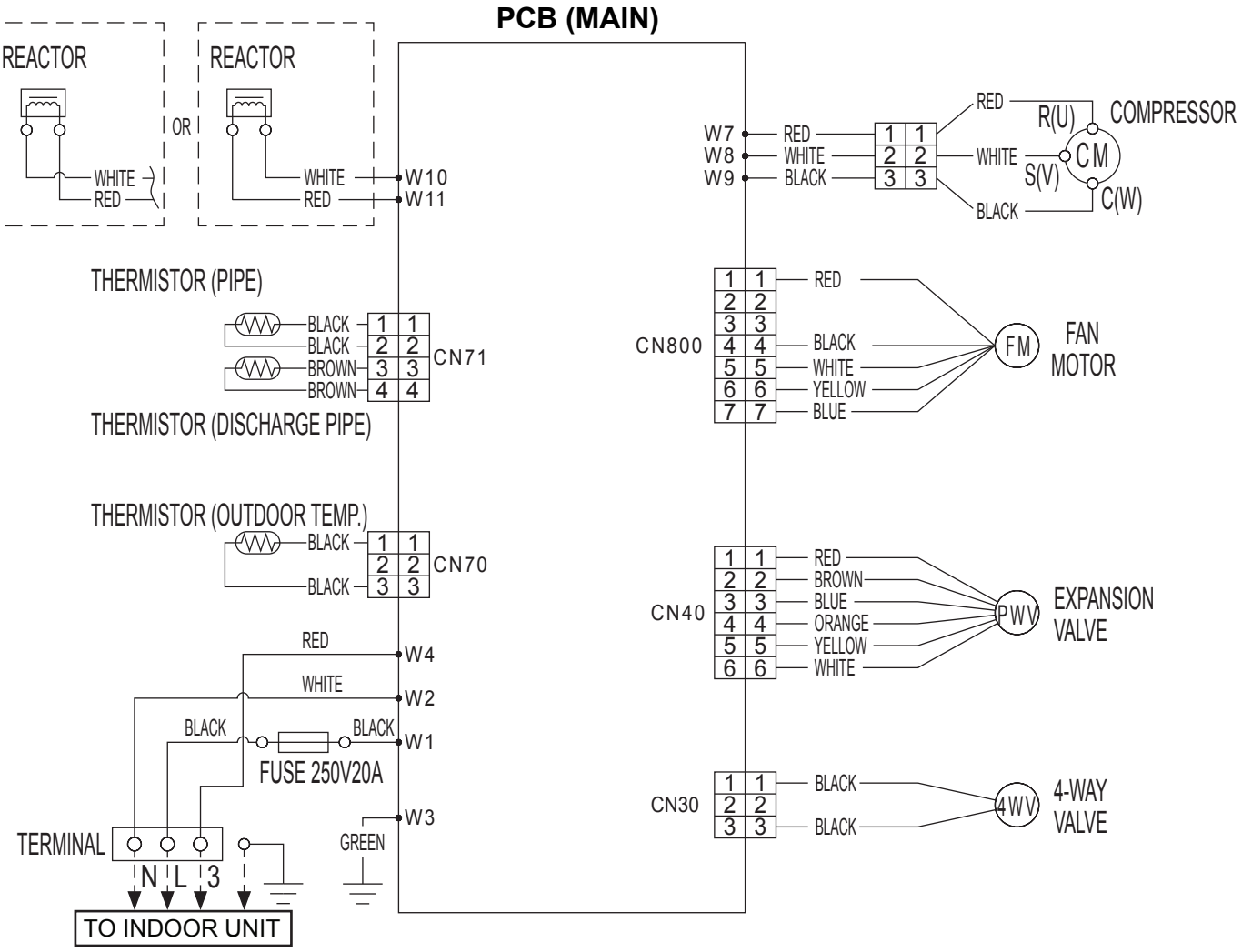
■MODEL : AO∗S18LD



Refrigerant pipe diameter
Liquid : 1/4" (6.35 mm)
Gas : 1/2" (12.7 mm)

4. WIRING DIAGRAMS

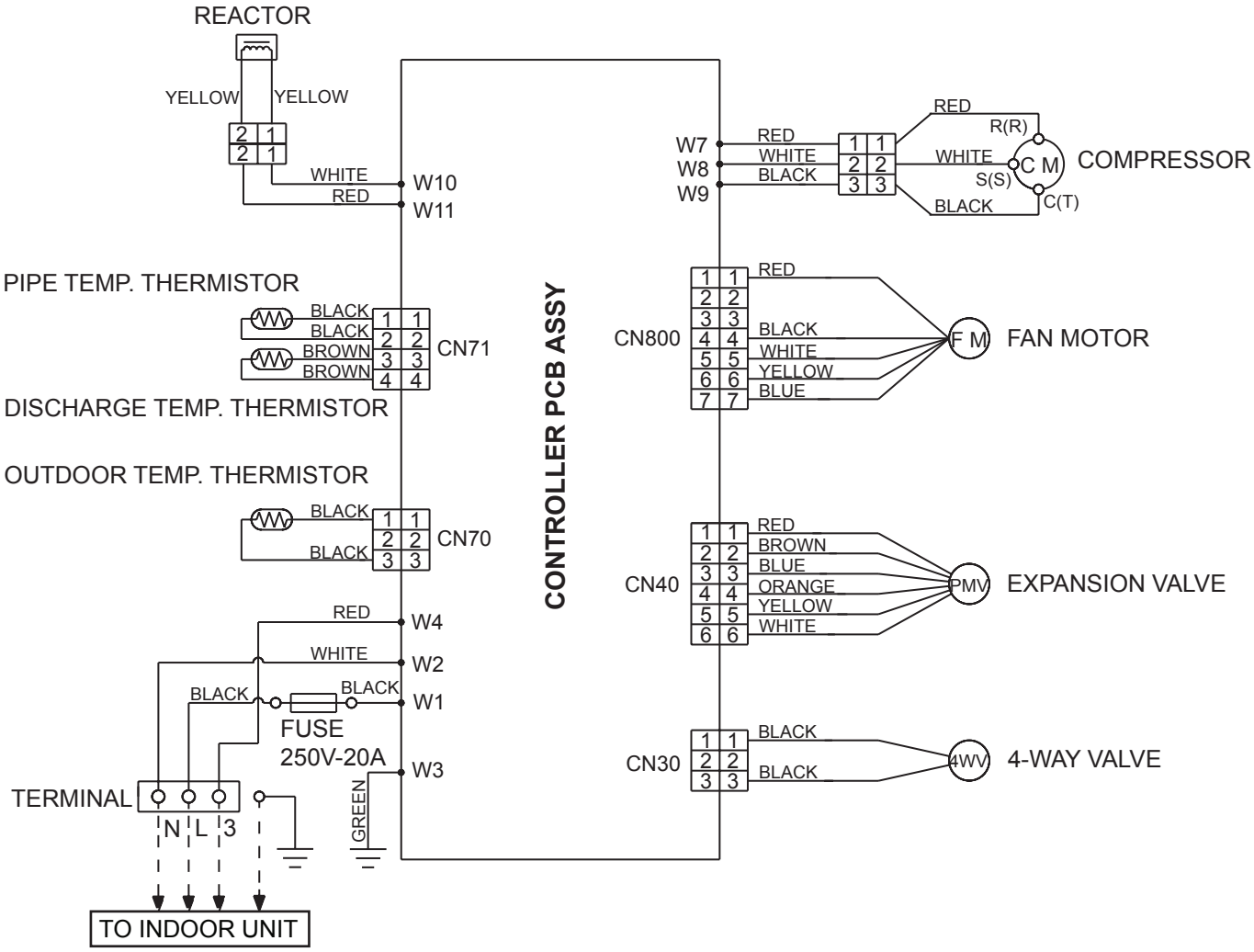
■MODEL : AO∗S09LD, AO∗S12LD



OUTDOOR UNIT
AO∗S09-18LD

OUTDOOR UNIT
AO*S09-18LD

■MODEL : AO*S18LD



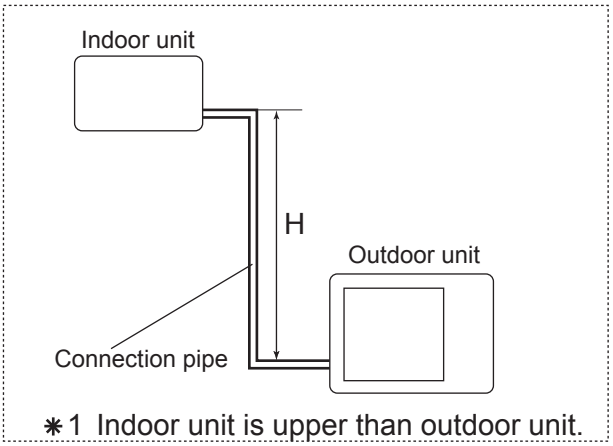
5. COEFFICIENT OF COMPENSATION FOR PIPE LENGTH AND HEIGHT DIFFERENCE

■MODEL : AO∗S09LD, AO∗S12LD, AO∗S18LD

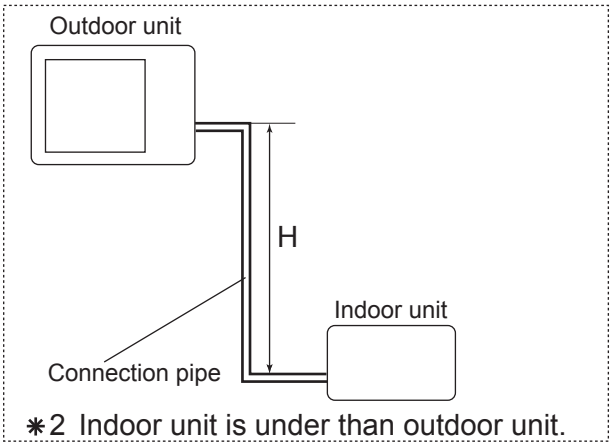
COOLING			Pipe length (m)				
			5	7.5	10	15	20
Height difference H (m)	∗1 Indoor unit is upper than outdoor unit.	15	-	-	-	0.953	0.950
		10	-	-	0.983	0.968	0.966
		7.5	-	0.988	0.987	0.972	0.970
		5	0.992	0.992	0.991	0.976	0.974
		0	1.000	1.000	0.999	0.984	0.982
	∗2 Indoor unit is under than outdoor unit	-5	1.000	1.000	0.999	0.984	0.982
		-7.5	-	1.000	0.999	0.984	0.982
		-10	-	-	0.999	0.984	0.982
		-15	-	-	-	0.984	0.982

HEATING			Pipe length (m)				
			5	7.5	10	15	20
Height difference H (m)	∗1 Indoor unit is upper than outdoor unit.	15	-	-	-	0.920	0.894
		10	-	-	0.982	0.920	0.894
		7.5	-	1.000	0.982	0.920	0.894
		5	0.993	1.000	0.982	0.920	0.894
		0	0.993	1.000	0.982	0.920	0.894
	∗2 Indoor unit is under than outdoor unit	-5	0.988	0.995	0.977	0.916	0.889
		-7.5	-	0.993	0.975	0.913	0.887
		-10	-	-	0.972	0.911	0.885
		-15	-	-	-	0.902	0.876

Height difference H



∗1 Indoor unit is upper than outdoor unit.



∗2 Indoor unit is under than outdoor unit.

OUTDOOR UNIT
AO∗S09-18LD

OUTDOOR UNIT
AO*S09-18LD

6. ADDITIONAL CHARGE CALCULATION

■MODEL : AO*S09LD

Refrigerant type		R410A
Refrigerant amount	g	950

●REFRIGERANT CHARGE

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

■MODEL : AO*S12LD

Refrigerant type		R410A
Refrigerant amount	g	1,050

●REFRIGERANT CHARGE

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

■MODEL : AO*S18LD

Refrigerant type		R410A
Refrigerant amount	g	1150

●REFRIGERANT CHARGE

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

OUTDOOR UNIT
AO*S09-18LD

7. AIR FLOW

■MODEL : AO*S09LD

●COOLING

Number of rotations (r.p.m)	Airflow	
820	1970	m^3/h
	547	l/s
	1159	CFM

●HEATING

Number of rotations (r.p.m)	Airflow	
760	1820	m^3/h
	506	l/s
	1071	CFM

■MODEL : AO*S12LD

●COOLING

Number of rotations (r.p.m)	Airflow	
820	1830	m^3/h
	508	l/s
	1077	CFM

●HEATING

Number of rotations (r.p.m)	Airflow	
820	1830	m^3/h
	508	l/s
	1077	CFM

OUTDOOR UNIT
AO✳S09-18LD

■MODEL : AO✳S18LD

●COOLING

Number of rotations (r.p.m)	Airflow	
860	2000	m^3/h
	556	l/s
	1177	CFM

●HEATING

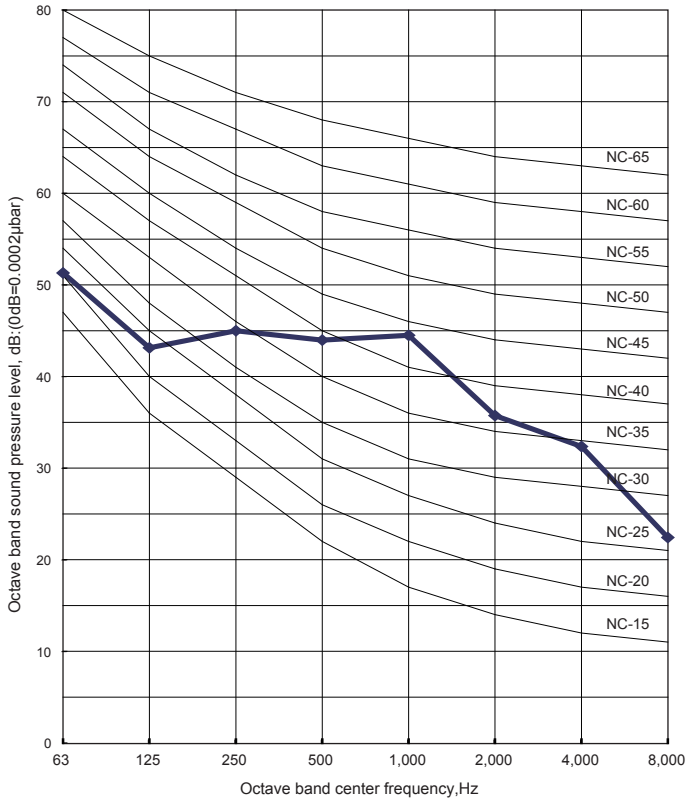
Number of rotations (r.p.m)	Airflow	
820	1910	m^3/h
	531	l/s
	1124	CFM

8. OPERATION NOISE

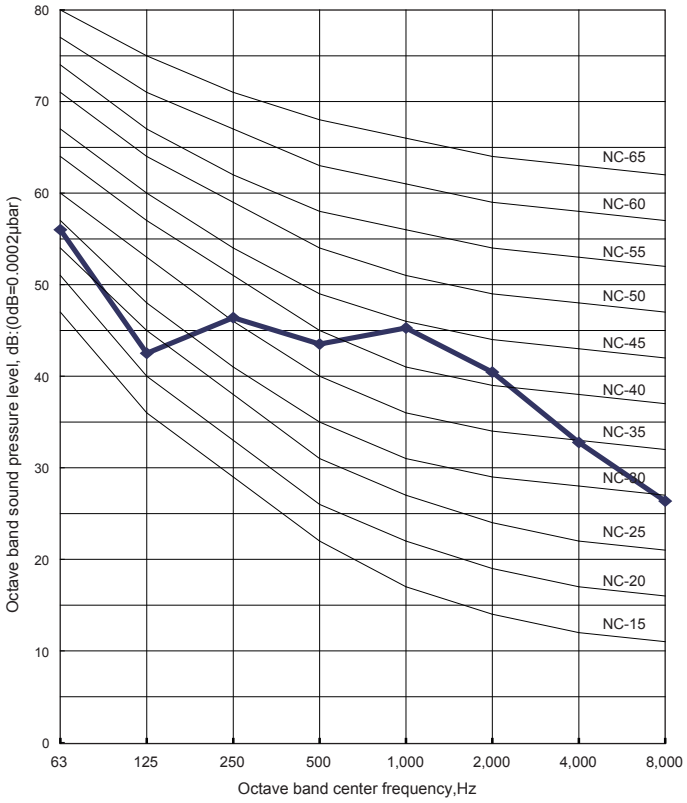
8-1. NOISE LEVEL CURVE

■MODEL : AO*S09LD

●COOLING

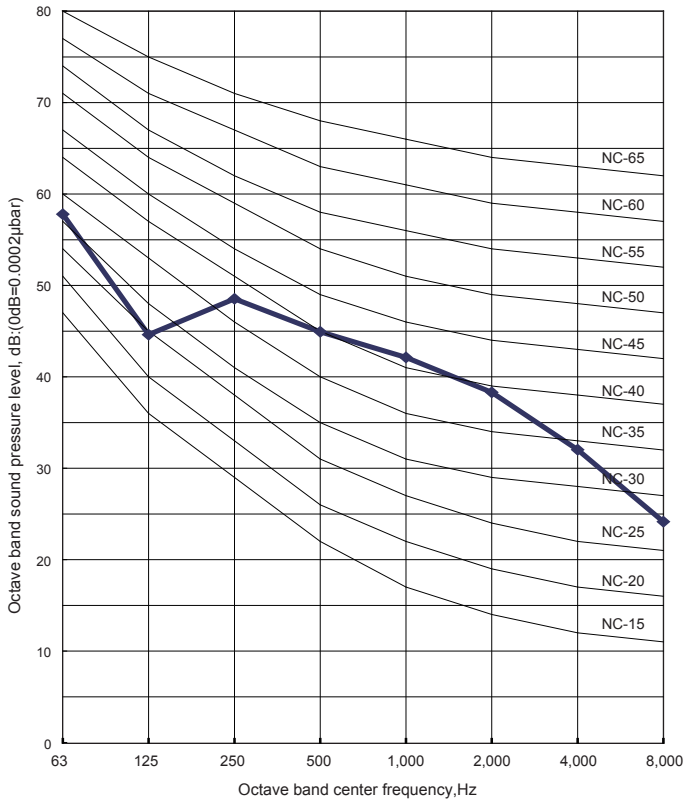


●HEATING

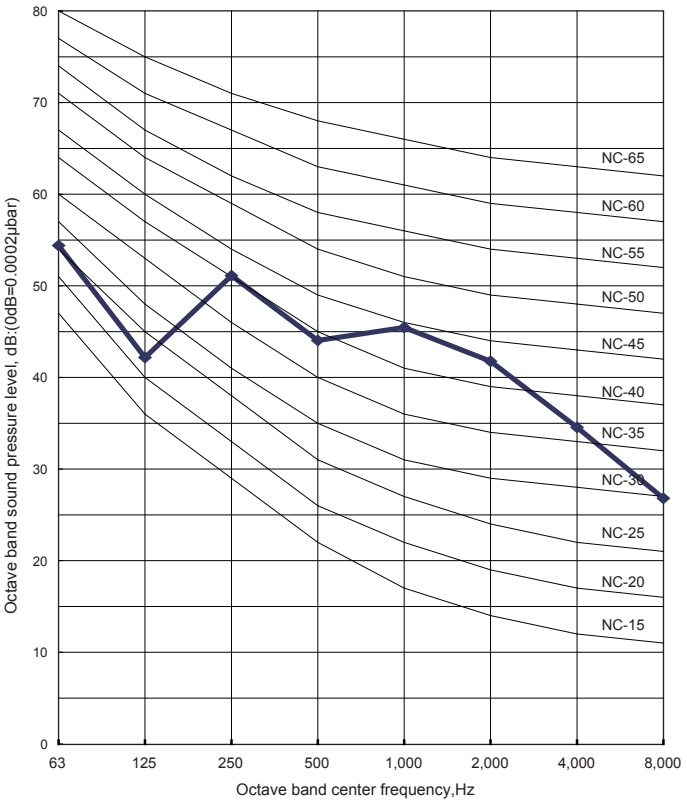


■MODEL : AO*S12LD

●COOLING



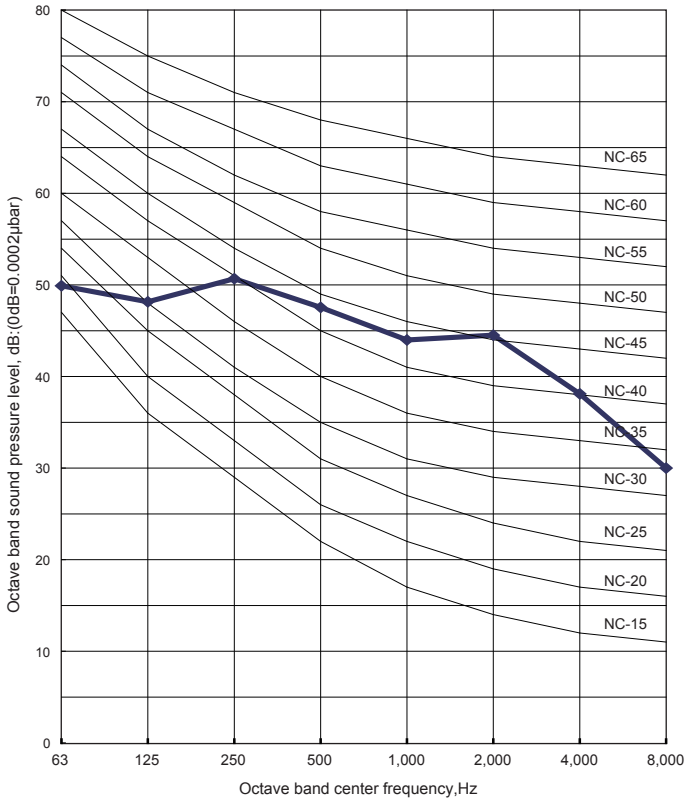
●HEATING



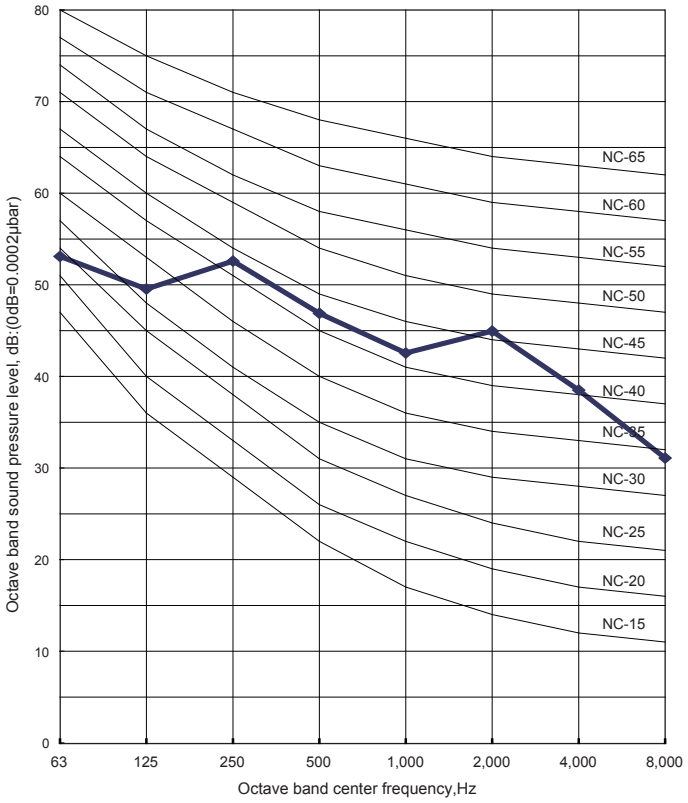
OUTDOOR UNIT
AO*S09-18LD

■MODEL : AO*S18LD

●COOLING

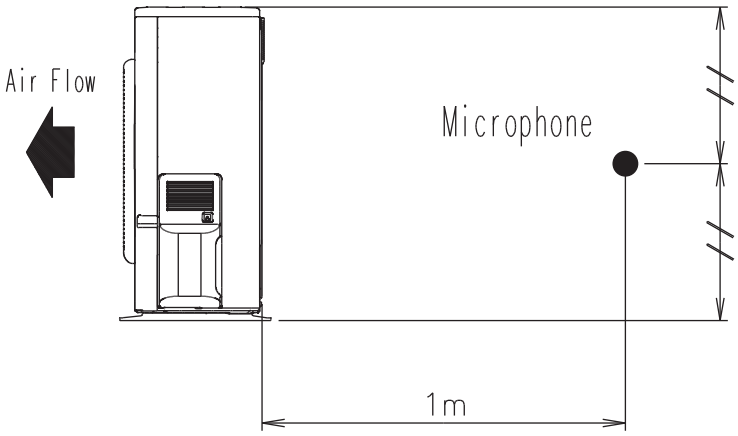


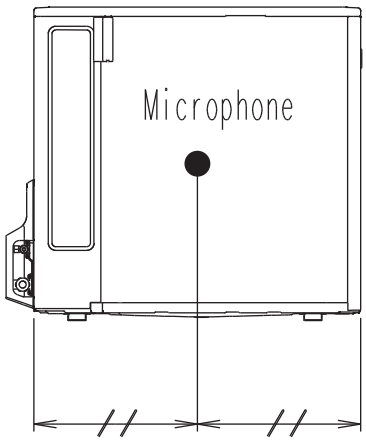
●HEATING



OUTDOOR UNIT
AO*S09-18LD

8-2. SOUND LEVEL CHECK POINT





OUTDOOR UNIT
AO*S09-18LD

9. ELECTRIC CHARACTERISTICS

Model Name			AO ∗ S09LD	AO ∗ S12LD	AO ∗ S18LD
Power Supply	Voltage	V	230～		
	Frequency	Hz	50		
Starting Current		A	3.8	5.6	7.7

OUTDOOR UNIT
AO∗S09-18LD

10. SAFETY DEVICES

	Protection form	Model		
		AO ∗ S09LD	AO ∗ S12LD	AO ∗ S18LD
Circuit protection	Current fuse (NEAR THE TERMINAL)	20A 250V		
	Current fuse (MAIN PRINTED CIRCUIT BOARD)	15A 250V		
		3.15A 250V		
Fan motor protection	Thermal protection program	OFF : 135^{+5}_{-5}°C ON : 95^{+15}_{-15}°C		OFF : 100^{+15}_{-10}°C ON : 95^{+15}_{-10}°C
Compressor protection	Thermal protection program (DISCHARGE TEMP.)	OFF : 110°C ON : After 7 minutes		

OUTDOOR UNIT
AO∗S09-18LD

Refrigerant
R410A

INDOOR UNIT

1. WALL MOUNTED TYPE :

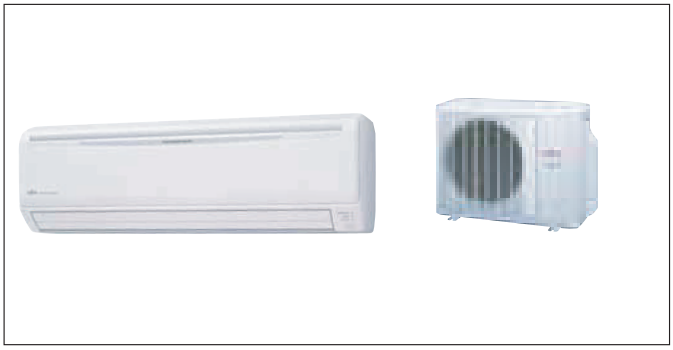
AS＊B24LDC

D1D_AS004E/03
2010.02.10

WALL MOUNTED TYPE
AS∗B24LD

1. FEATURE

■MODEL : AS∗B24LDC



■FEATURES

●Energy saving Rank A

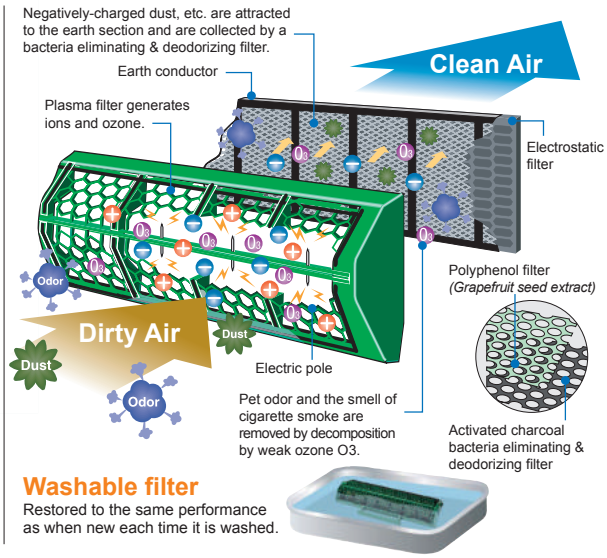
Europe energy saving Rank A achieved

●Original plasma air cleaning unit effectively cleans the air in the room.

Plasma air filter mechanism

Plasma unit

Mounts a plasma air cleaning unit.Minute dust particles are collected by an electrostatic filter and odor is suppressed by decomposition of foul odors by very weak ions. Since a filter with a lower ventilation resistance than in the past is used, high dust collection design simultaneously cleans in the air in the room.



Washable filter

Restored to the same performance as when new each time it is washed.

●ALL DC

ALL DC

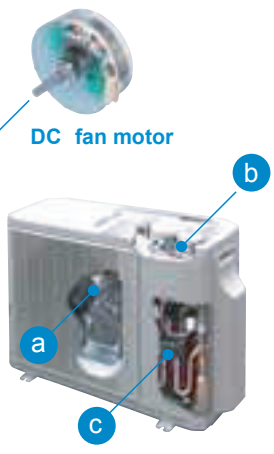
a DC fan motor

b V-PAM control

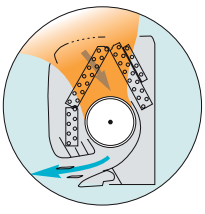
V-PAM technology makes a compressor more powerful.

c DC scroll compressor

More compact compared with conventional model

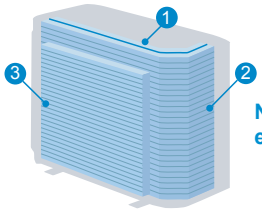


Front view



High efficiency layout

Large air flow and quiet operation by new air flow path



New 3-row heat exchange system

Back view

●Super quiet

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

WALL MOUNTED TYPE
AS*B24LD

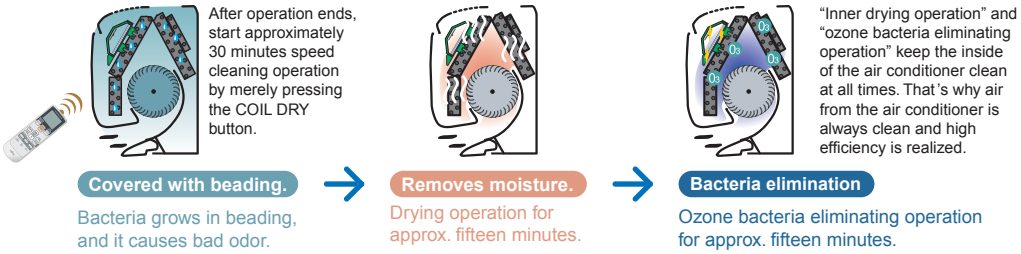
● Easy maintenance

Easy maintenance and always clean. Troublesome maintenance has been made easy.

Since the front panel is easy to remove, maintenance is also easy.

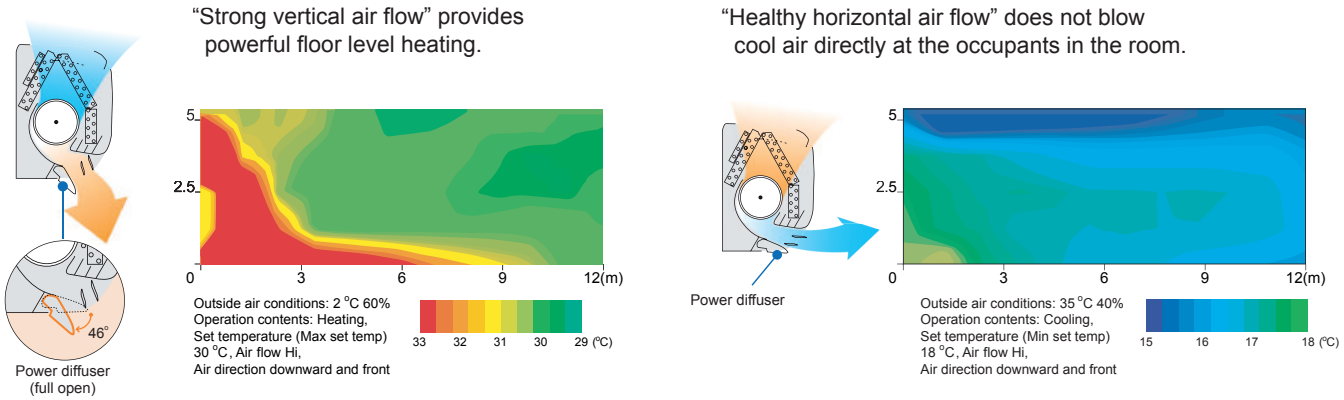
● Inner drying operation and plasma effect

This model is equipped with an inner drying function. After the power is turned off, the dry operation starts inside the air conditioner. The plasma air cleaning unit eliminates bacteria, deodorizes, and keeps the interior of the air conditioner clean by generating ozone and ions.



● Power diffuser

Adoption of large power diffuser



● Compact design

998mm width compact design

New model

H320 x W998 x D228

(unit:mm)

● Low outdoor air temperature cooling correspondence

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

● Corresponds to maximum 30m long piping

WALL MOUNTED TYPE
AS✱B24LD

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

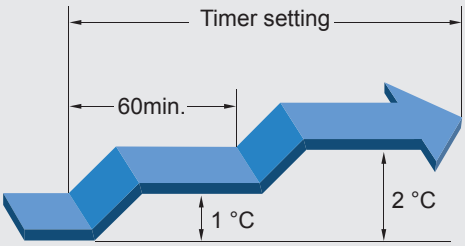
The program timer operates the ON and OFF timer once within a 24 hour period.

● 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.

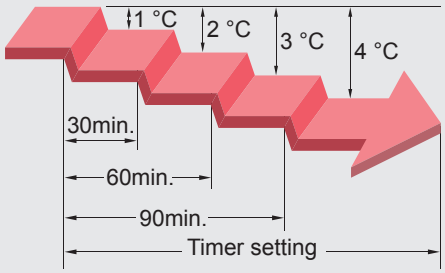
Cooling operation/dry operation

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.



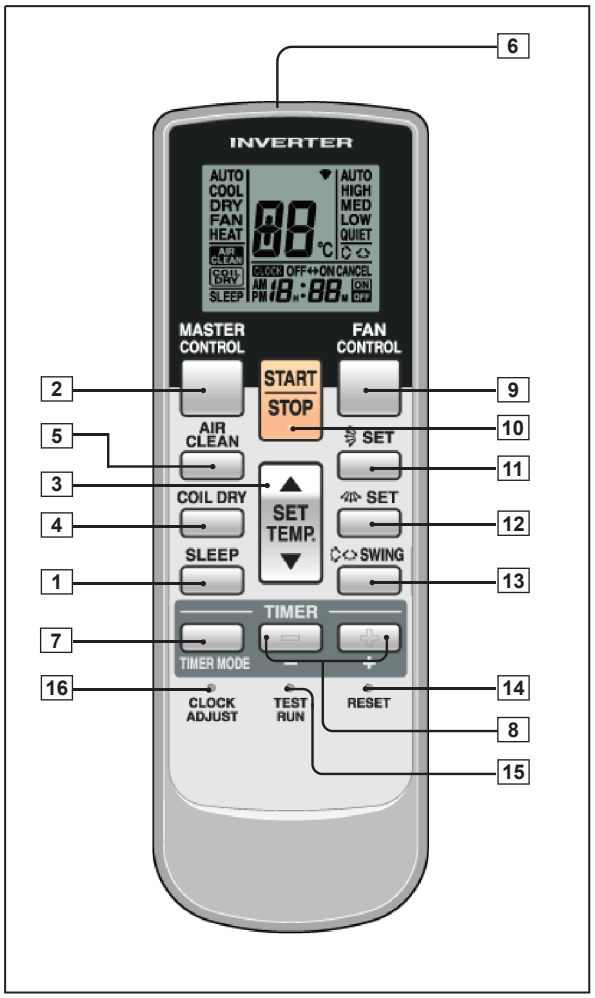
Heating operation

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.



WALL MOUNTED TYPE
AS*B24LD

■ FUNCTIONS



1 **SLEEP button**

2 **MASTER CONTROL button**

3 **SET TEMP. button (▲ / ▼)**

4 **COIL DRY button**

5 **AIR CLEAN button**

6 **Signal Transmitter**

7 **TIMER MODE button**

8 **TIMER SET (⊕ / ⊖) button**

9 **FAN CONTROL button**

10 **START/STOP button**

11 **SET button (Vertical)**

12 **SET button (Horizontal)**

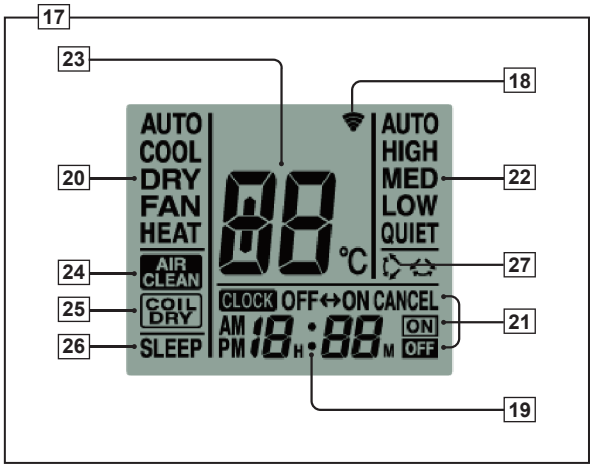
13 **SWING button**

14 **RESET button**

15 **TEST RUN button**

- This button is used when installing the conditioner, and should not be used under normal conditions, as it will cause the air conditioner's thermostat function to operate incorrectly.
- If this button is pressed during normal operation, the unit will switch to test operation mode, and the Indoor Unit's OPERATION Indicator Lamp and TIMER Indicator Lamp will begin to flash simultaneously.
- To stop the test operation mode, press the START/STOP button to stop the air conditioner.

Display panel



16 **CLOCK ADJUST button**

17 **Remote Control Unit Display**

18 **Transmit Indicator**

19 **Clock Display**

20 **Operating Mode Display**

21 **Timer Mode Display**

22 **Fan Speed Display**

23 **Temperature SET Display**

24 **AIR CLEAN Display**

25 **COIL DRY Display**

26 **SLEEP Display**

27 **SWING Display**

■ SPECIFICATION

SIZE (H x W x D mm)	176 x 56 x 18
WEIGHT (g)	110
ACCESSORY	Holder

WALL MOUNTED TYPE
AS*B24LD

3. SPECIFICATIONS

Type					WALL MOUNTED INVERTER HEAT PUMP
Model name					AS*B24LDC
Power source					230V～ 50Hz
Available voltage range					198 - 264V～ 50Hz
European energy label				Cooling	A
				Heating	A
Capacity	Cooling	Rated		kW	7.10
				BTU/h	24,200
		Min-Max		kW	0.9 - 8.0
				BTU/h	3,100 - 27,300
	Heating	Rated		kW	8.10
				BTU/h	27,600
		Min-Max		kW	0.9 - 10.6
				BTU/h	3,100 - 36,200
Input power	Cooling	Rated		kW	2.21
		Min-Max			0.11 - 2.62
	Heating	Rated			2.24
		Min-Max			0.11 - 3.68
Current	Cooling	Rated		A	9.7
		Max			12
	Heating	Rated			9.8
		Max			17.5
EER		Cooling		kW/kW	3.21
COP		Heating			3.62
SENSIBLE CAPACITY		Cooling		kW	5.54
POWER FACTOR		Cooling		%	99
		Heating			99
Moisture removal				l/h (pints/h)	3.0 (5.3)
Fan	Airflow rate	Cooling	High	m^3/h	1170
			Med		970
			Low		785
			Quiet		685
		Heating	High		1170
			Med		970
			Low		785
			Quiet		685
	Type × Q'ty				Cross flow fan × 1
	Motor output			W	42
Sound pressure level		Cooling	High	dB(A)	49
			Med		43
			Low		38
			Quiet		33
		Heating	High		48
			Med		42
			Low		37
			Quiet		33
Heat exchanger type		Dimensions (H × W × D)		mm	Main : 378 × 832 × 26.6 Sub : 84 × 832 × 13.3
		Fin pitch			Main : 1.2, Sub : 1.4
		Rows × Stages			Main : 2 × 18, Sub : 1 × 4
		Pipe type			Copper
		Fin type			Aluminium
Enclosure		Material			Polystyrene
		Colour			White
Dimensions (H × W × D)	Net			mm	320 × 998 × 228
	Gross				319 × 1090 × 429
Weight	Net			kg(lb.)	14 (30.8)
	Gross				18 (39.6)
Connection pipe	Size	Liquid		mm	Φ6.35 (Φ1/4 in.)
		Gas			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				PVC
	Size			mm	Outer diameter : 28 / Inner diameter : 16

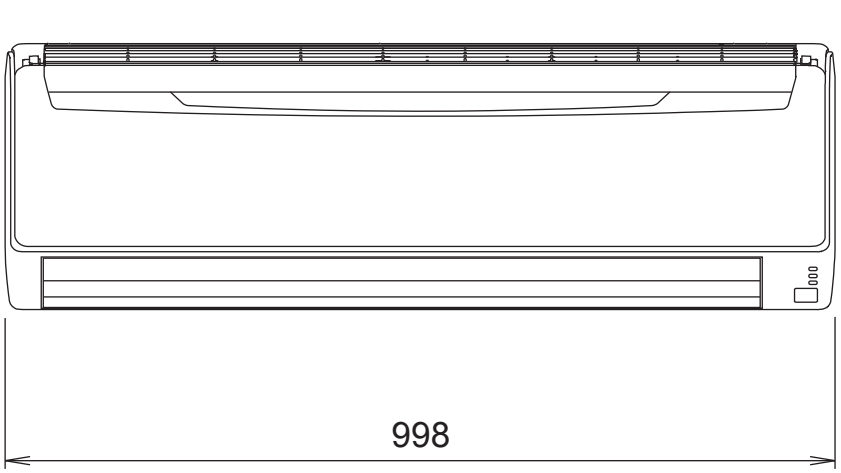
Note :
Specifications are based on the following conditions.
Cooling : Indoor temperature of 27°CDB/19°CWB. and outdoor temperature of 35°CDB/24°CWB.
Heating : Indoor temperature of 20°CDB/15°CWB. and outdoor temperature of 7°CDB/6°CWB.
Pipe length : 7.5 m, Height difference : 0 m. (Outdoor unit - Indoor unit)

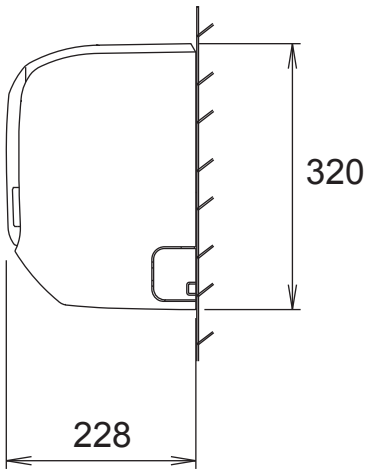
WALL MOUNTED TYPE
AS∗B24LD

4. DIMENSIONS

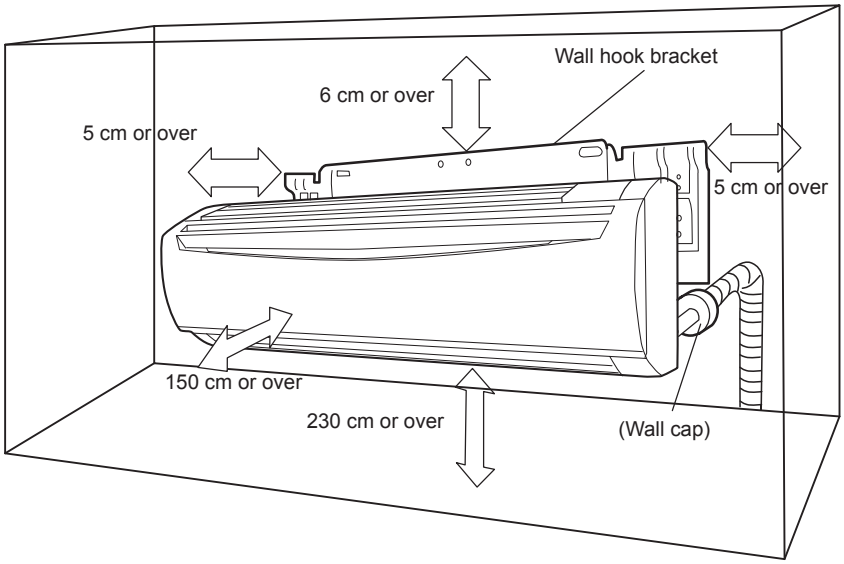
■ MODEL : AS∗B24LD

(Unit : mm)



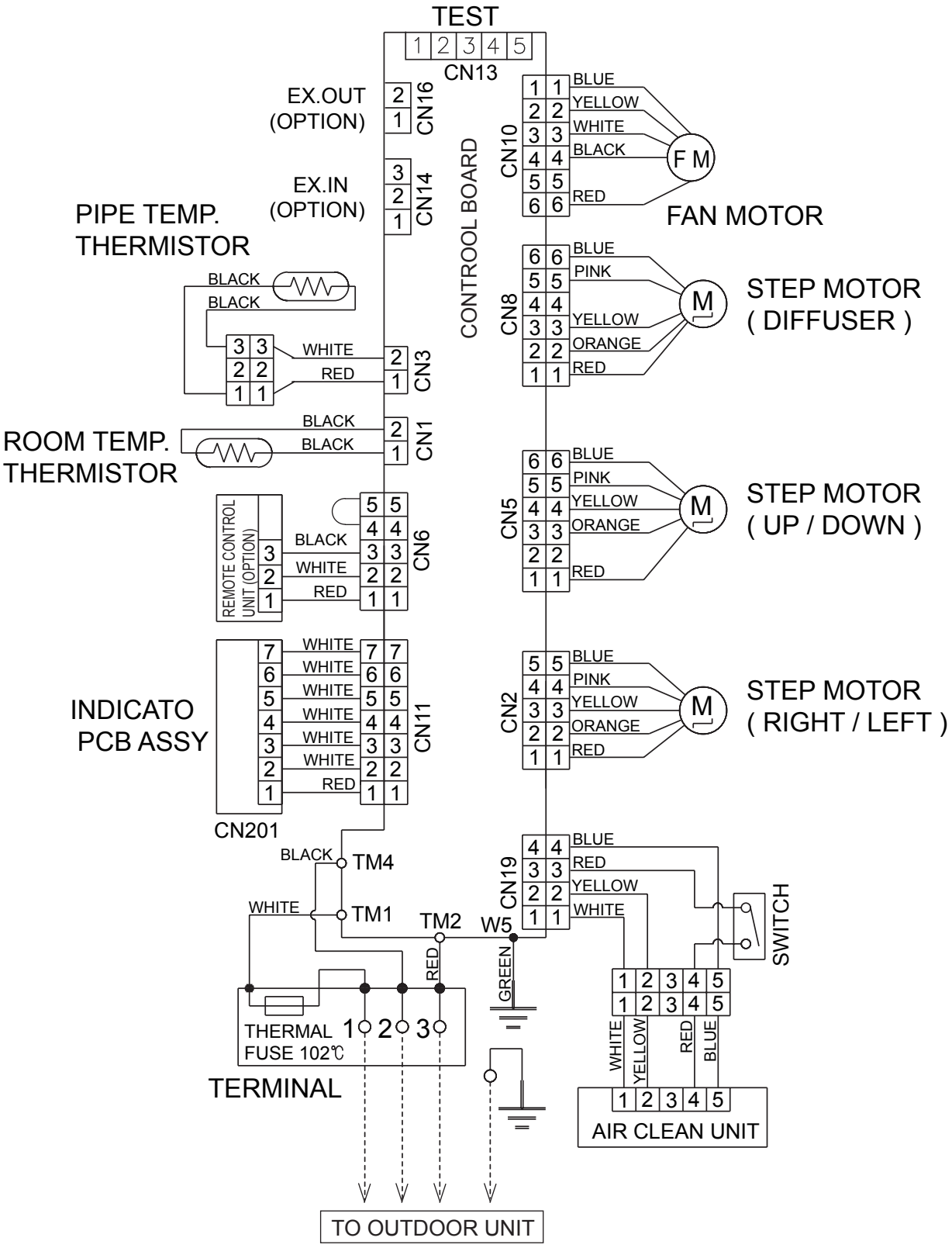


■ MOUNTING POSITION



5. WIRING DIAGRAMS

■MODEL : AS∗B24LD



WALL MOUNTED TYPE
AS✳B24LD

6. CAPACITY TABLE

6-1. COOLING CAPACITY

■ MODEL : AS✳B24LD

AFR	18.3

		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	5.26	4.97	1.05	5.86	5.00	1.07	6.06	5.43	1.07	6.46	5.45	1.09	6.66	5.88	1.09	7.05	5.86	1.10	7.45	6.24	1.11
	25	6.26	5.61	1.75	6.98	5.64	1.78	7.22	6.13	1.79	7.69	6.15	1.80	7.93	6.65	1.81	8.41	6.62	1.83	8.88	7.05	1.85
	30	6.00	5.21	1.94	6.68	5.24	1.97	6.91	5.70	1.98	7.36	5.71	2.00	7.59	6.17	2.01	8.05	6.15	2.03	8.50	6.55	2.05
	35	5.61	4.67	2.13	6.25	4.70	2.17	6.46	5.11	2.18	6.89	5.13	2.20	7.10	5.54	2.21	7.53	5.51	2.23	7.95	5.87	2.25
	40	5.06	4.08	2.15	5.64	4.10	2.18	5.83	4.46	2.19	6.22	4.47	2.21	6.41	4.83	2.22	6.79	4.81	2.25	7.18	5.13	2.27
	43	4.73	3.72	2.16	5.27	3.74	2.20	5.45	4.07	2.21	5.81	4.08	2.23	5.99	4.41	2.24	6.35	4.39	2.27	6.71	4.67	2.29

AFR : Air Flow Rate (m^3/min)
TC : Total Capacity (kW)
SHC : Sensible Heat Capacity (kW)
PI : Power Input (kW)

WALL MOUNTED TYPE
AS*B24LD

6-2. HEATING CAPACITY

■MODEL : AS*B24LD

AFR	18.3

			Indoor temperature									
		°CDB	16		18		20		22		24	
Outdoor temperature	°CDB	°CWB	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	-15	-16	5.93	2.69	5.78	2.74	5.64	2.80	5.50	2.85	5.36	2.91
	-10	-11	7.04	2.94	6.87	3.00	6.70	3.06	6.53	3.12	6.37	3.18
	-5	-7	7.92	3.09	7.73	3.15	7.54	3.22	7.36	3.28	7.17	3.34
	0	-2	9.15	3.30	8.94	3.37	8.72	3.43	8.50	3.50	8.28	3.57
	5	3	10.41	3.52	10.16	3.59	9.91	3.67	9.67	3.74	9.42	3.81
	7	6	11.13	3.42	10.87	3.49	10.60	3.56	10.34	3.63	10.07	3.70
	10	8	11.53	3.42	11.25	3.49	10.98	3.56	10.71	3.64	10.43	3.71
	15	10	11.16	2.97	10.90	3.04	10.63	3.10	10.37	3.16	10.10	3.22

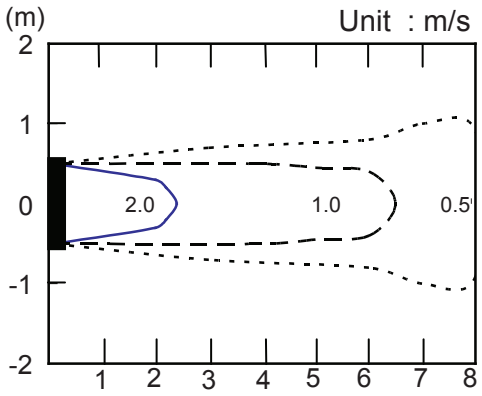
AFR: Air Flow Rate (m^3/min)
TC : Total Capacity (kW)
PI : Power Input (kW)

WALL MOUNTED TYPE
AS∗B24LD

7. FAN PERFORMANCE

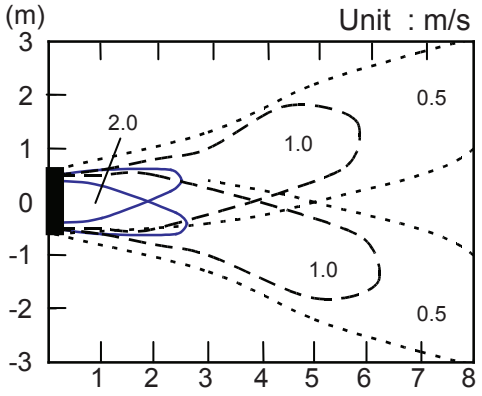
7-1. AIR VELOCITY DISTRIBUTION

■MODEL : AS∗B24LD

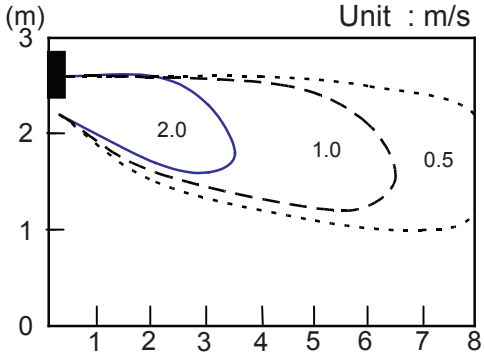


TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center

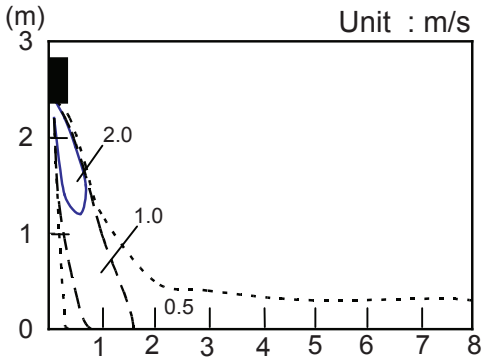
Note :
Fan speed : High
Operation mode :FAN
Voltage : 230V



TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Right & Left



SIDE VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center



SIDE VIEW
FLOW CONTROL PANEL : Vert.
LOUVER : Center

WALL MOUNTED TYPE
AS✳B24LD

7-2. AIR FLOW

■MODEL : AS✳B24LD

●COOLING

Fan speed	Number of rotations (r.p.m)	Air flow	
HIGH	1380	1170	m^3/h
		325	l/s
		689	CFM
MED	1170	970	m^3/h
		269	l/s
		571	CFM
LOW	980	785	m^3/h
		218	l/s
		462	CFM
QUIET	860	685	m^3/h
		190	l/s
		403	CFM

●HEATING

Fan speed	Number of rotations (r.p.m)	Air flow	
HIGH	1380	1170	m^3/h
		325	l/s
		689	CFM
MED	1170	970	m^3/h
		269	l/s
		571	CFM
LOW	980	785	m^3/h
		218	l/s
		462	CFM
QUIET	860	685	m^3/h
		190	l/s
		403	CFM

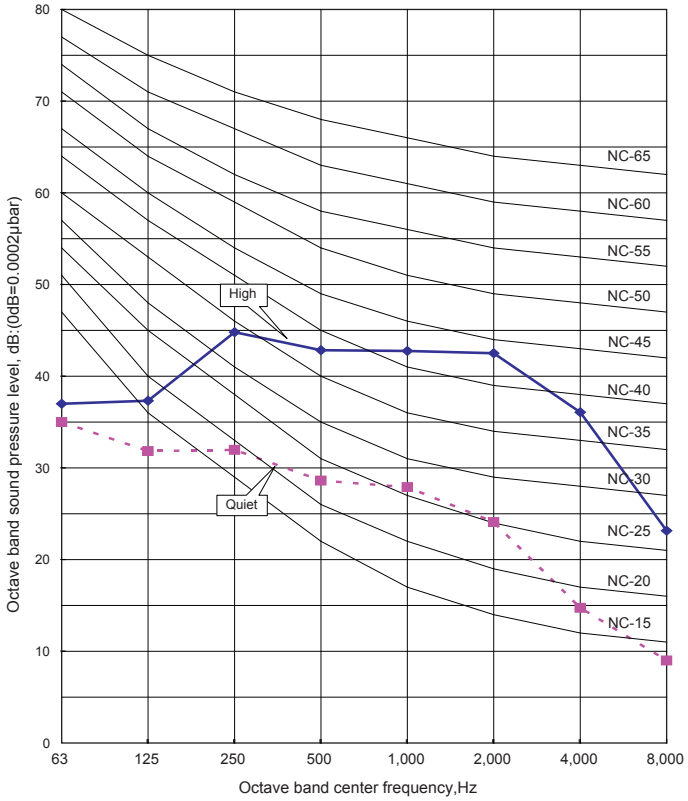
WALL MOUNTED TYPE
AS∗B24LD

8. OPERATION NOISE

8-1. NOISE LEVEL CURVE

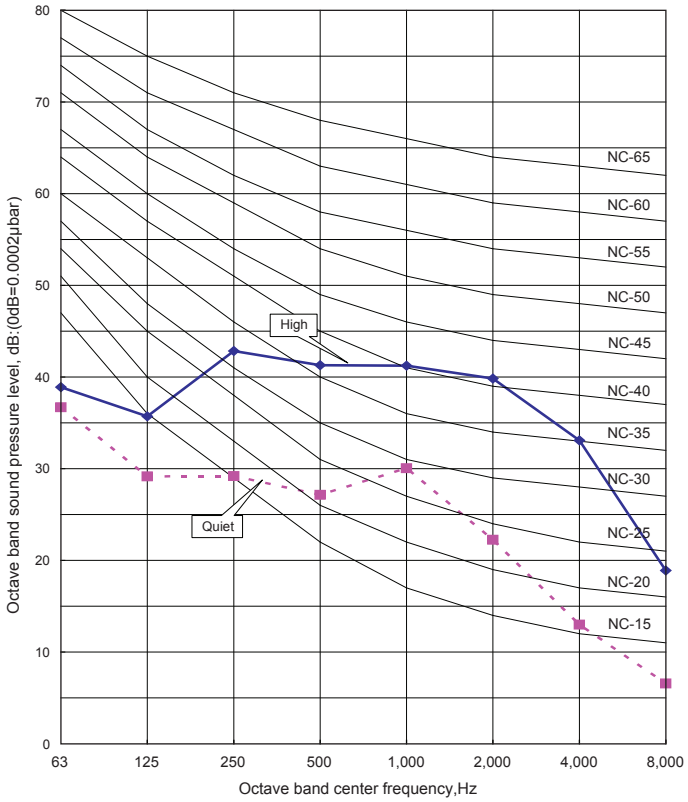
■ COOLING

● MODEL : AS∗B24LD



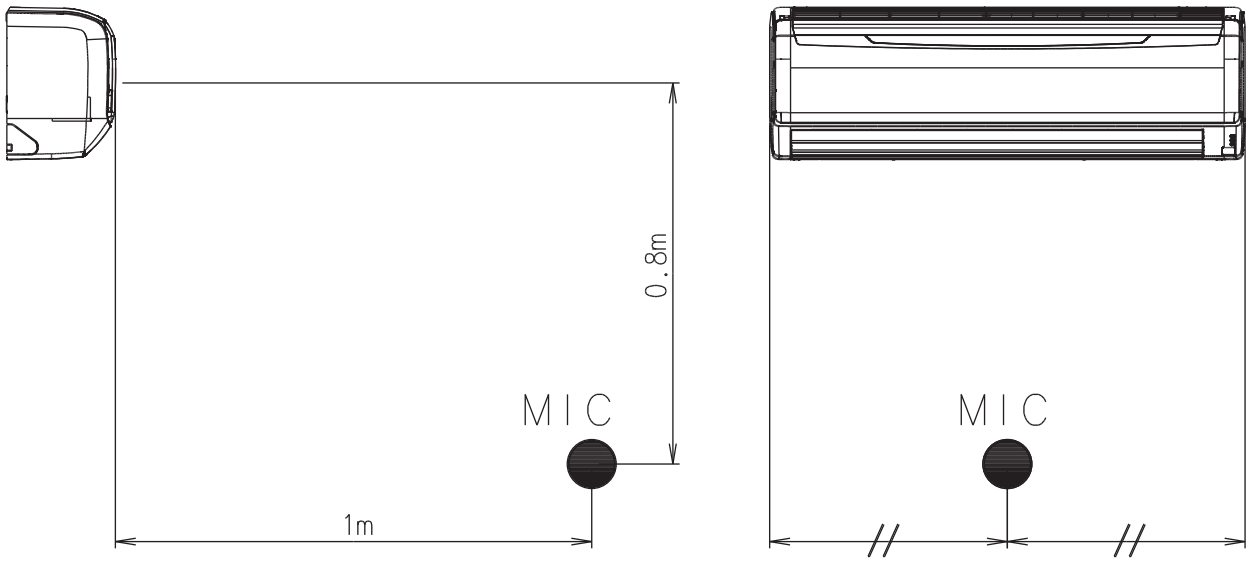
■ HEATING

● MODEL : AS∗B24LD



WALL MOUNTED TYPE
AS*B24LD

8-2. SOUND LEVEL CHECK POINT



9. ELECTRIC CHARACTERISTICS

Model Name			AS ∗ B24LD
Power Supply	Voltage	V	230～
	Frequency	Hz	50
Max Operating Current		A	0.3
*1)Wiring Spec.	Circuit breaker	A	0.4
	Connection Cable	mm^2	1.5 - 2.5
	Limited wiring length	m	31

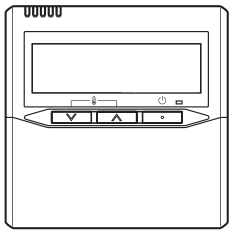
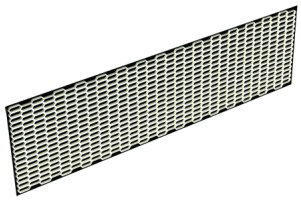
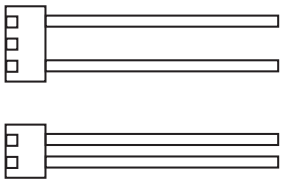
*1) Wiring Spec.
Selected Sample
(Selected based on Japan Electrotechnical Standard and Codes Committee E0005)

10. SAFETY DEVICES

	Protection form	Model
		AS ∗ B24LD
Circuit protection	Current fuse (PCB)	3.15A 250V
Terminal protection	Current fuse	3A 250V
Fan motor protection	Thermal protection program	100^{+15}_{-10}°C OFF 95^{+5}_{-10}°C ON

WALL MOUNTED TYPE
AS∗B24LD

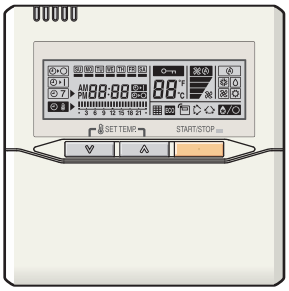
11. OPTIONAL PARTS

Exterior	Parts name	Model No.	Summary
	Wired remote controller	UTB-✱UD	Unit control is performed by **wired remote controller**
	Air-cleaning and deodorizing filter	UTR-FA14	Negatively-charged dust, etc. are attracted to the earth section and are collected by a bacteria eliminating & deodorizing filter.
	External connect kit	UTY-XWZX	Use to connect with various peripheral devices and air conditioner PC board.

WALL MOUNTED TYPE
AS*B24LD

11-1. WIRED REMOTE CONTROLLER

■ FEATURES



* Various timer setup (ON / OFF / WEEKLY) are possible.
* Equipped with weekly timer as standard function.
  (2 times Start / Stop per day for a week)
* When setting up a timer, operation mode and a temperature setup can be changed.
* When a failure occurs,the error code is displayed.
* Error indication.
* Easy installation with a slim shape with no bulge in the back.

● Simple function setting

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

● High performance and compact size

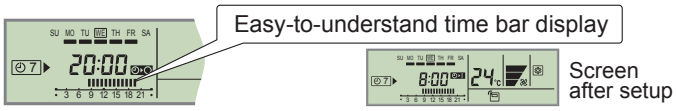
Three functions are combined in one unit.

Wired remote controller + Weekly timer + Setback timer

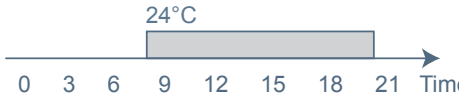
● Built-in timers

Weekly timer

Possible to set ON/OFF time to operate twice each day of the week.

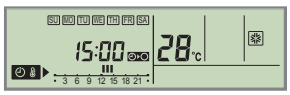


Setup screen example
(Set to Wednesday: 8:00 to 20:00.)

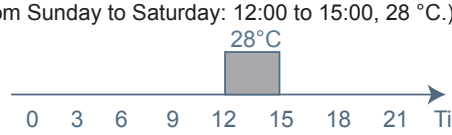


Setback timer

Possible to set temperature for two time spans and for each day of the week.

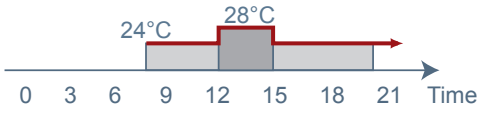


Setup screen example
(Set from Sunday to Saturday: 12:00 to 15:00, 28 °C.)

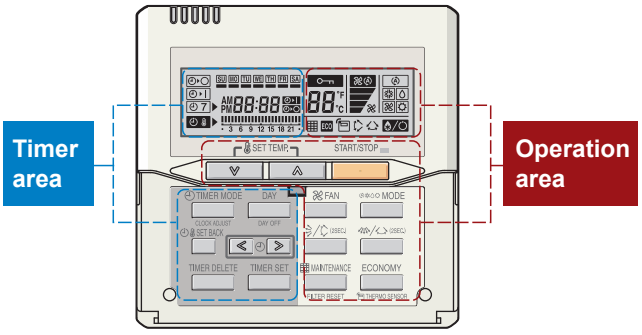


At "Weekly timer" + "Set back timer" setup

24°C → 28°C → 24°C



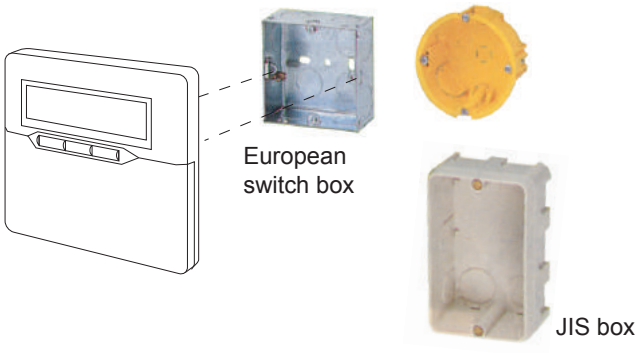
● Easy-to-understand operation



[Variable timer control]
The operation/display sections are zoned according to time and operation, enabling variable programming to match application.

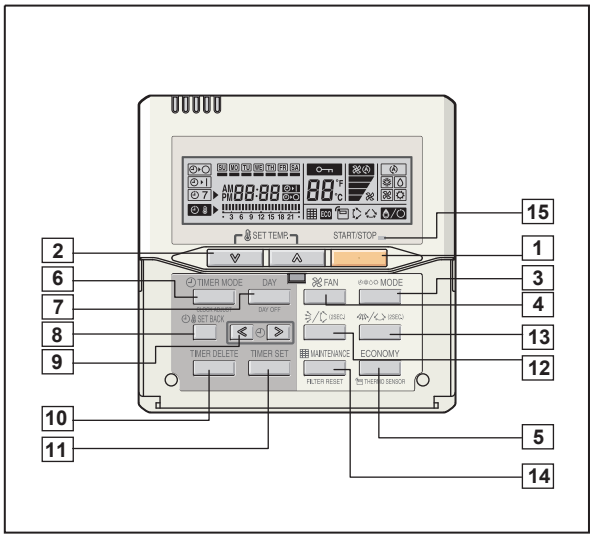
● Simple installation

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

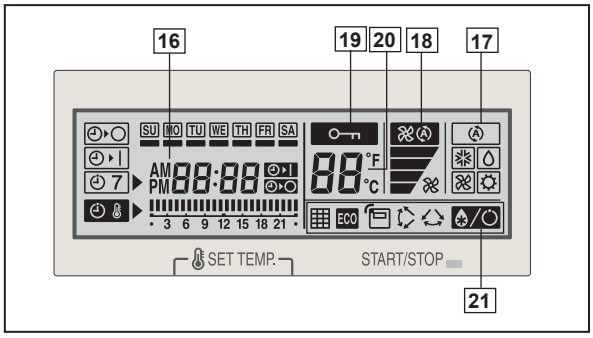


WALL MOUNTED TYPE
AS✻B24LD

■FUNCTIONS



Display panel



1 START/STOP button
Pressed to start and stop operation.

2 Set temperature button
Selects the setting temperature.

3 Master control button
Selects the operating mode(AUTO, HEAT, FAN, COOL, DRY).

4 Fan control button
Selects the fan speed (AUTO, QUIET, LOW, MED, HIGH).

5 Economy button*1)
Turns the economy efficient mode on and off.

6 Timer mode (CLOCK ADJUST) button
Selects the timer mode (OFF TIMER, ON TIMER, WEEKLY TIMER)
Set the current time.

7 Day (DAY OFF) button
Temporarily cancels of one day timer.

8 Set back button
Pressed to select the set back timer.

9 Set time button
Pressed to set time.

10 Delete button
The schedule of a weekly timer is deleted.

11 Set button
Sets the date, hour, minute and on-off time.

12 Vertical airflow direction and swing button
Push for two seconds to change the swing mode.

13 Horizontal airflow direction and swing button
Push for two seconds to change the swing mode.

14 Filter button*1)

15 Operation lamp
Lights during operation and when the timer is on.

16 Timer and clock display

17 Operation mode display

18 Fan speed display

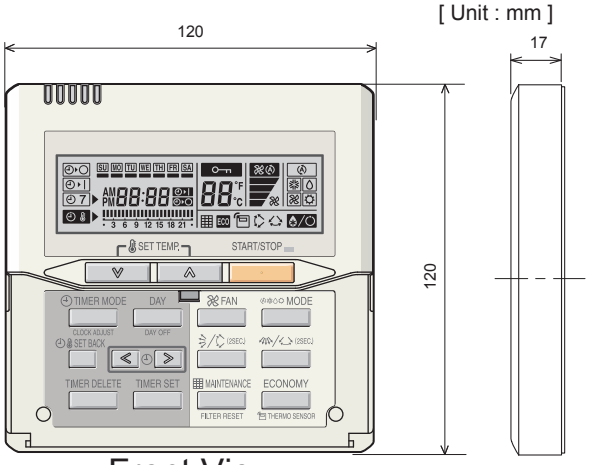
19 Operation lock display

20 Temperature display

21 Function display
- Defrost display
- Thermo sensor display
- Economy display
- Vertical swing display
- Horizontal swing display
- Filter display

■DIMENSION

[Unit : mm]



Front View

■SPECIFICATION

SIZE (H x W x D mm)	120 x 120 x 17
WEIGHT (g)	160
CABLE LENGTH (m)	10
POWER (V)	12

*1) Button number 5 and 14 can not be operated.

WALL MOUNTED TYPE
AS✻B24LD

11-2. EXTERNAL CONNECT KIT

This kit allows to operate the air conditioner, such as stopping and starting, using an external device, and output the operation status of the air conditioner.

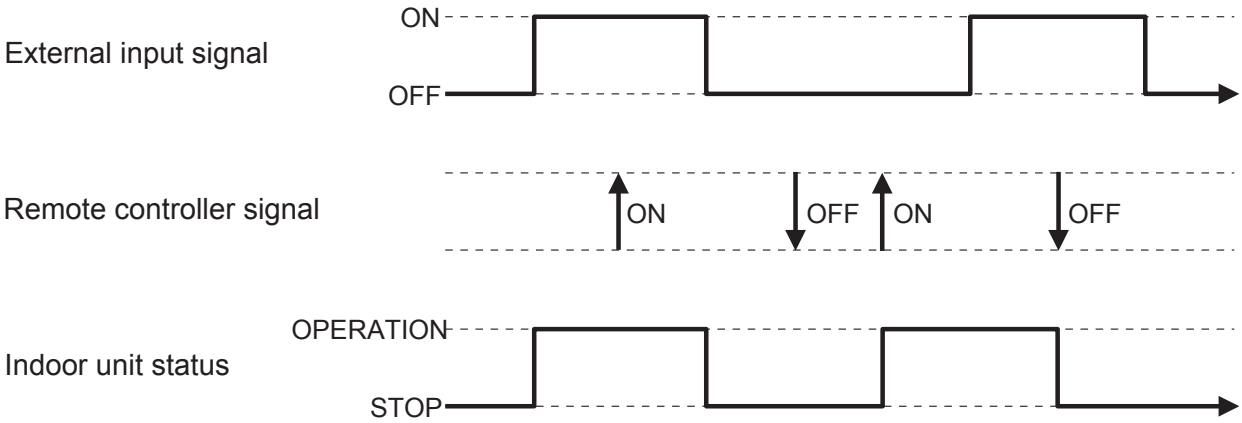
- Only operation and stop signals will be output.
  Use the remote control to check the operation mode, temperature, and airflow.
  Check the error information on the display area of the main unit.
- Operation mode, temperature, and airflow cannot be set by external input. Use the remote controller to set.
- If the air-conditioner is activated by external input, it will operate in the settings before stop.
  To change the settings, use the remote controller.

11-2-1. CONTROL INPUT SETTING

- You can control air conditioner ON / OFF operation by external input.

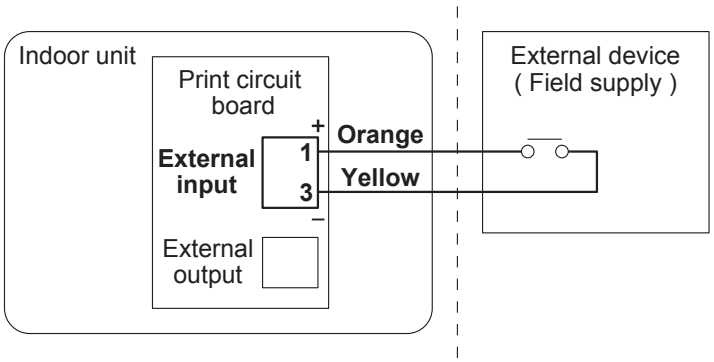
● Signal specification

- No voltage ON/OFF continuous signal.
- Contact capacity : DC12V 10mA

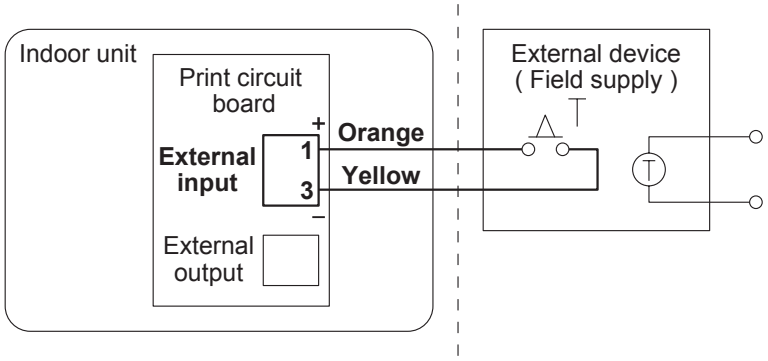


● Installation example

- For remote operation



- For external timer operation



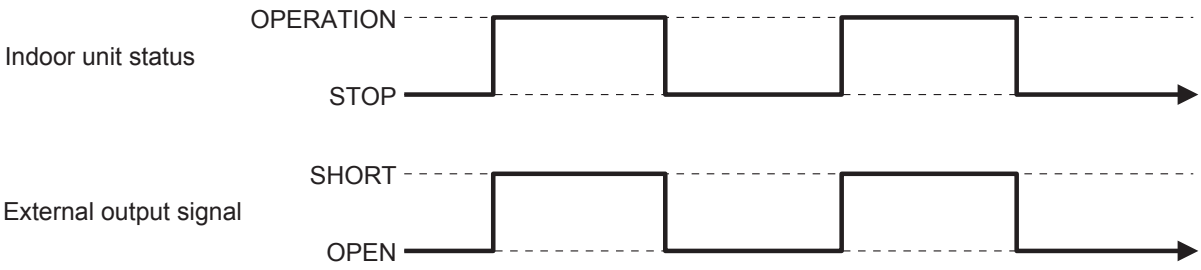
WALL MOUNTED TYPE
AS✻B24LD

11-2-2. Operating output setting

- You can display air conditioner ON / OFF operation by external output.

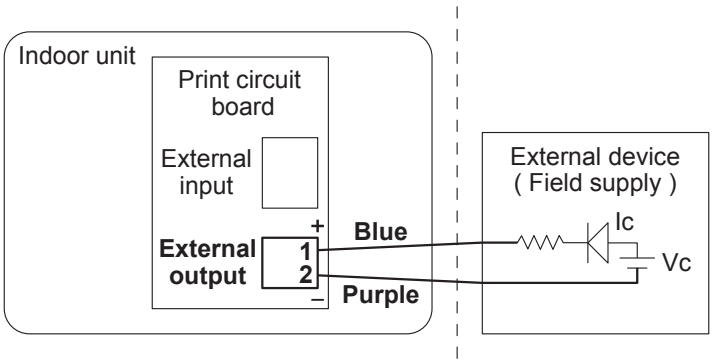
● Signal specification

- No voltage contact.
- Contact capacity : Max. DC24V 10mA to 1A or less



● Installation example

For operation display



Refrigerant
R410A

OUTDOOR UNIT

2. SINGLE TYPE :

AO＊S24LDC

D1D_AO004E/02
2009.03.04

1. SPECIFICATIONS

OUTDOOR UNIT
AO*S24LD

Type				INVERTER HEAT PUMP
Model name				AO*S24LDC
Power source				230V～ 50Hz
Available voltage range				198-264V～ 50Hz
Starting current			A	9.8
Fan	Airflow rate	Cooling	m^3/h	2,340
		Heating		2,470
	Type × Q'ty			Propeller fan × 1
	Motor output		W	65
Sound pressure level		Cooling	dB(A)	52
		Heating		54
Heat exchanger type		Dimensions (H × W × D)	mm	Main : 546 × 866 × 36.4 Sub : 504 × 589 × 18.2
		Fin pitch		Main : 1.4, Sub : 1.4
		Rows × Stages		Main : 2 × 26, Sub : 1 × 24
		Pipe type		Copper
		Fin type		Aluminium
Compressor	Type × Q'ty			Scroll × 1
	Motor output		W	1,200
Refrigerant		Type		R410A
		Charge	g	1,600
Refrigerant oil		Type		PVE (FV50S)
Enclosure		Material		Steel
		Colour		Beige
Dimensions (H × W × D)	Net		mm	578 × 790 × 315
	Gross			648 × 910 × 380
Weight	Net		kg(lb.)	44 (97)
	Gross			48 (105.8)
Connection pipe	Size	Liquid	mm	Φ6.35 (Φ1/4 in.)
		Gas		Φ15.88 (Φ5/8 in.)
	Method			Flare
	Max. length		m	30 (chargeless : 15)
	Max. height difference			20
Operation range		Cooling	°C	-10 to 43
		Heating		-15 to 24

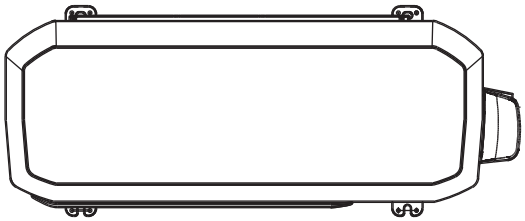
Note :
Specifications are based on the following conditions.
Cooling : Indoor temperature of 27°CDB/19°CWB. and outdoor temperature of 35°CDB/24°CWB.
Heating : Indoor temperature of 20°CDB/15°CWB. and outdoor temperature of 7°CDB/6°CWB.
Pipe length : 7.5 m, Height difference : 0 m. (Outdoor unit - Indoor unit)

OUTDOOR UNIT
AO*S24LD

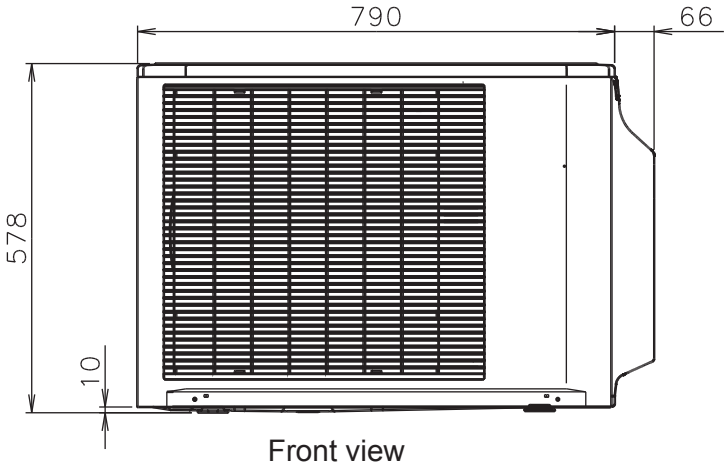
2. DIMENSIONS

■MODEL : AO*S24LD

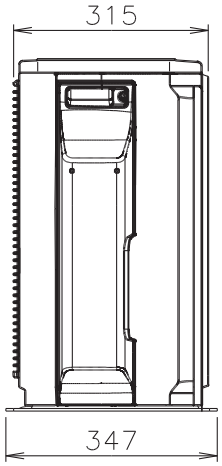
(Unit : mm)



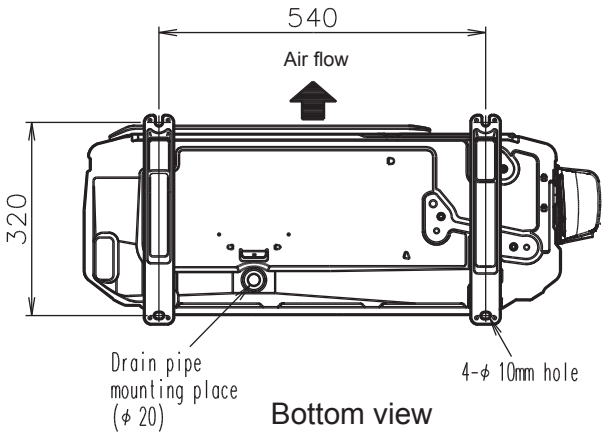
Top view



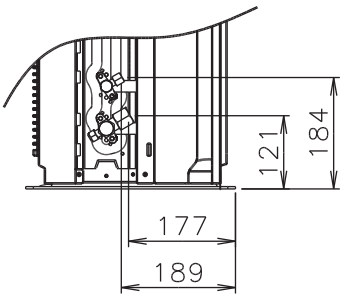
Front view



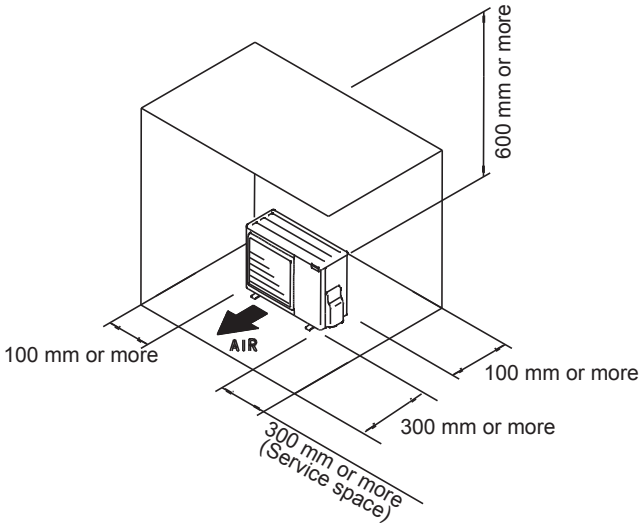
Side view



Bottom view



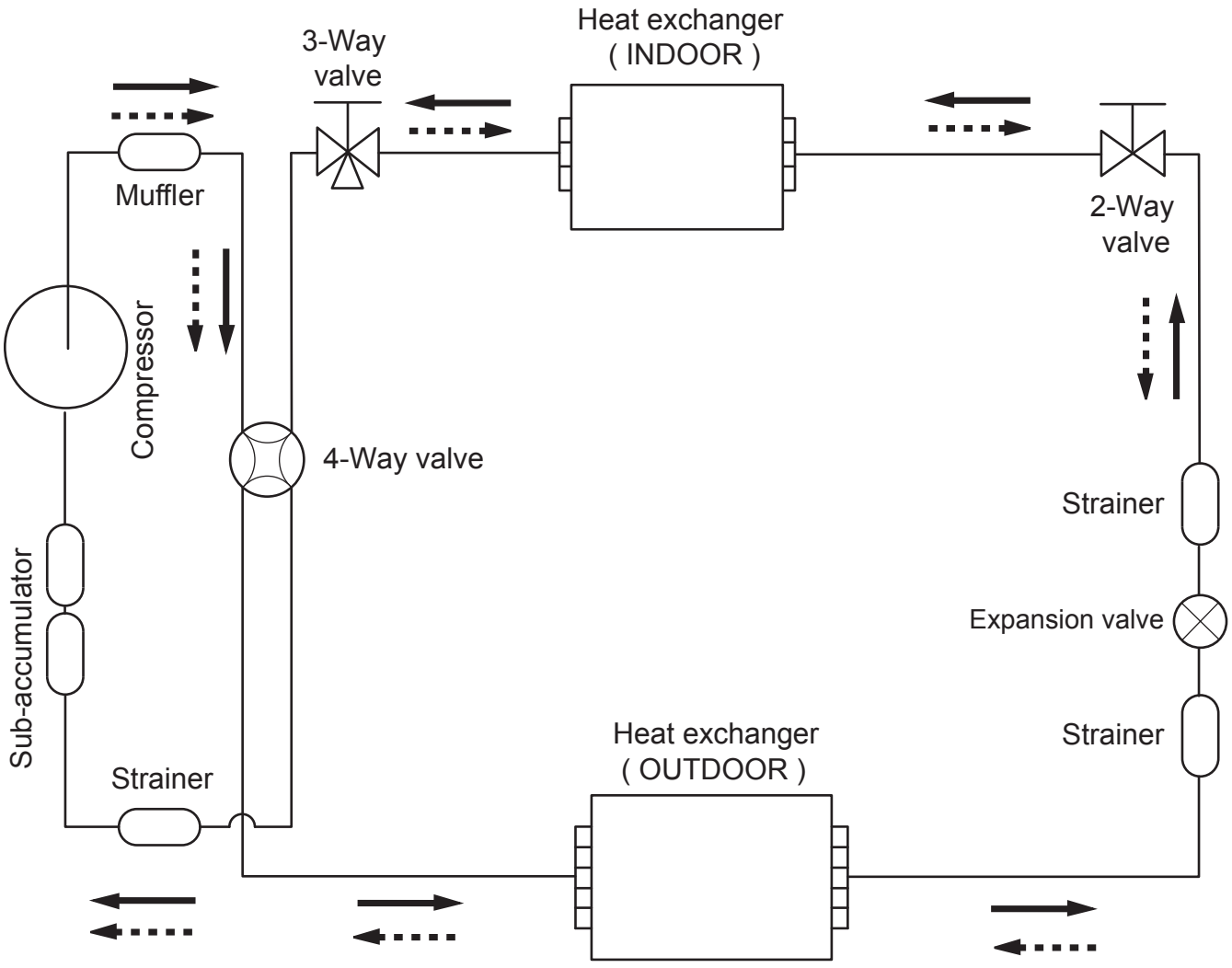
■MOUNTING POSITION



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

3. REFRIGERANT CIRCUIT

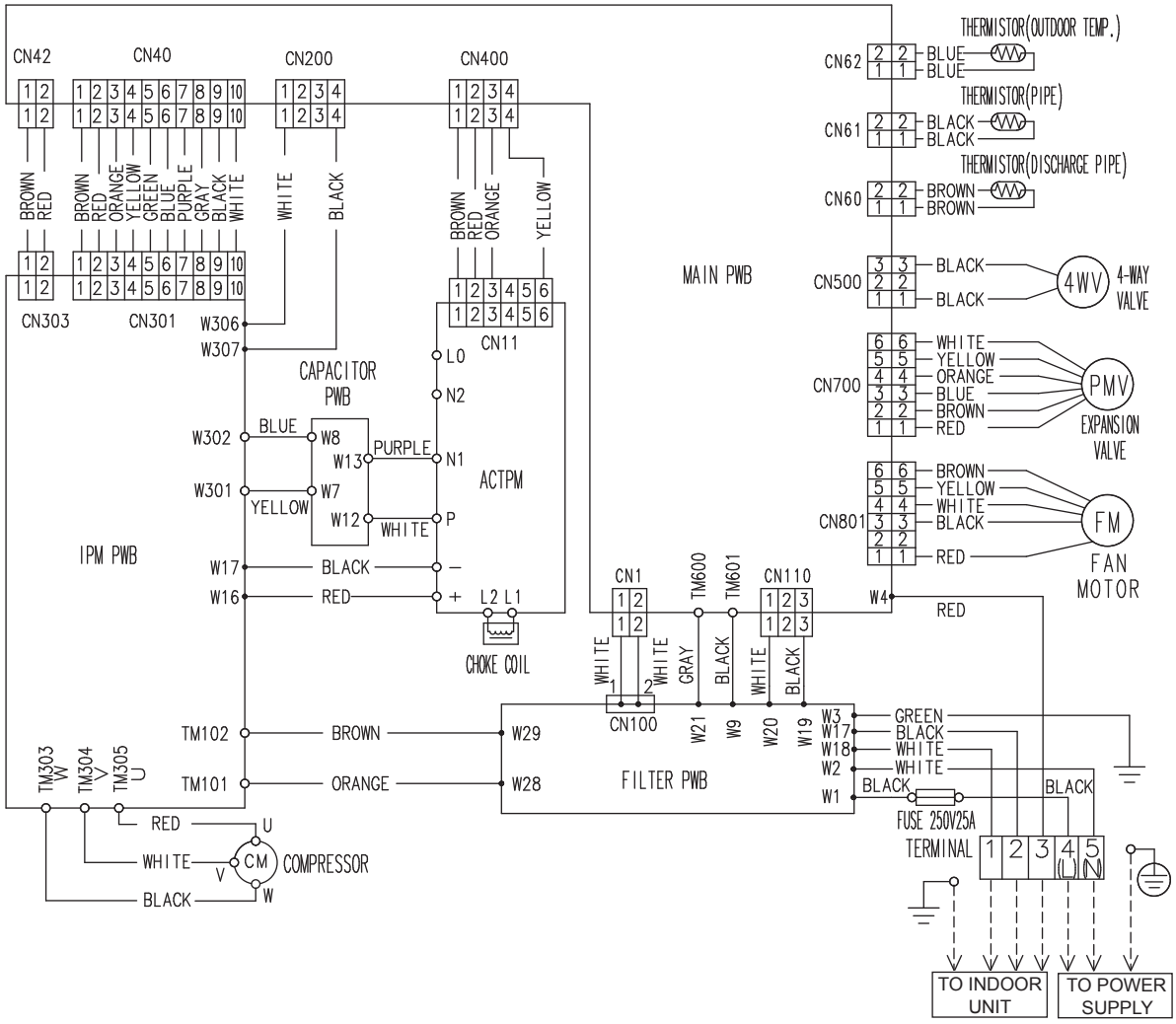
■MODEL : AO∗S24LD



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

4. WIRING DIAGRAMS

■MODEL : AO*S24LD



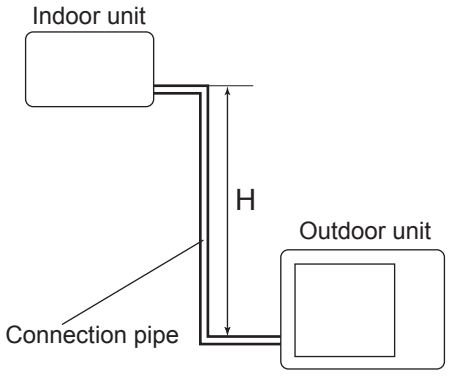
5. COEFFICIENT OF COMPENSATION FOR PIPE LENGTH AND HEIGHT DIFFERENCE

■MODEL : AO✳S24LD

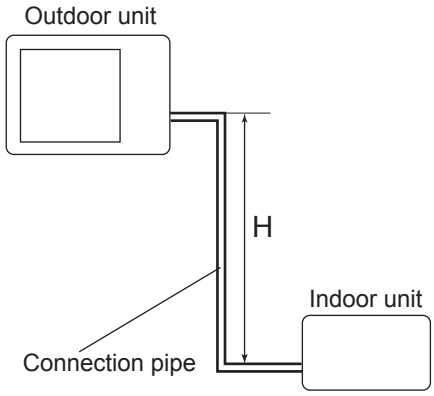
COOLING			Pipe length (m)						
			5	7.5	10	15	20	25	30
Height difference H (m)	*1 Indoor unit is upper than outdoor unit.	20	-	-	-	0.951	0.952	0.951	0.951
		10	-	-	0.980	0.966	0.968	0.967	0.966
		7.5	-	0.988	0.984	0.970	0.972	0.971	0.970
		5	0.995	0.992	0.988	0.974	0.976	0.975	0.974
		0	1.003	1.000	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	-	-	-	0.982	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	-	-	-	0.975	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	-	-	-	0.956	0.935	0.914	0.890

Height difference H



✳1 Indoor unit is upper than outdoor unit.



✳2 Indoor unit is under than outdoor unit.

6. ADDITIONAL CHARGE CALCULATION

OUTDOOR UNIT
AO*S24LD

■MODEL : AO*S24LD

Refrigerant type		R410A
Refrigerant amount	g	1600

●REFRIGERANT CHARGE

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

OUTDOOR UNIT
AO*S24LD

7. AIR FLOW

■MODEL : AO*S24LD

●COOLING

Number of rotations (r.p.m)	Air flow	
1000	2340	m^3/h
	650	l/s
	1377	CFM

●HEATING

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

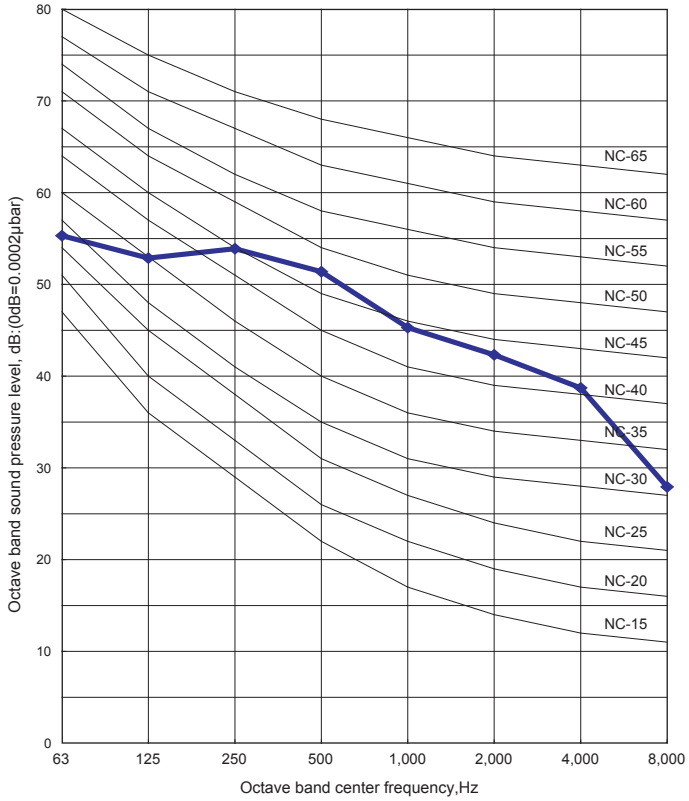
OUTDOOR UNIT
AO∗S24LD

8. OPERATION NOISE

8-1. NOISE LEVEL CURVE

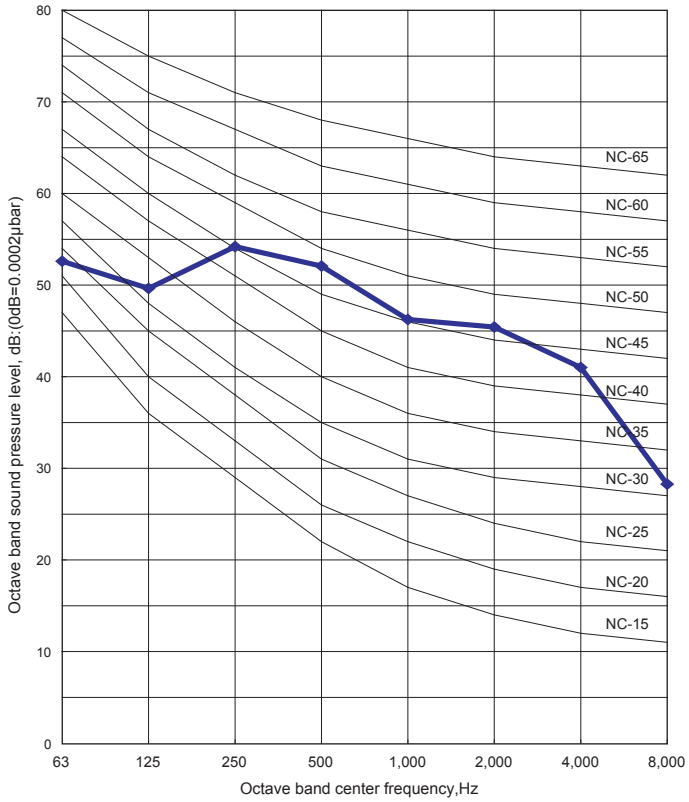
■COOLING

●MODEL : AO∗S24LD

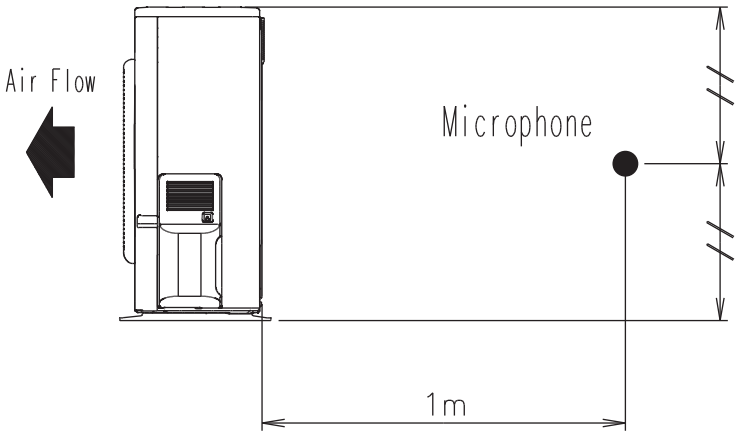


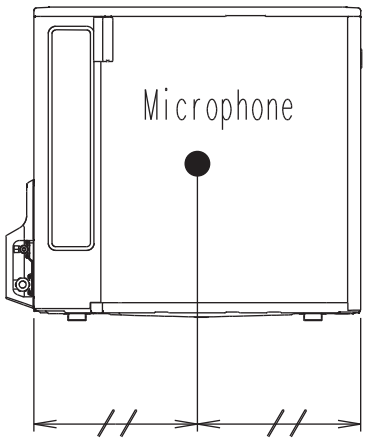
■HEATING

●MODEL : AO∗S24LD



8-2. SOUND LEVEL CHECK POINT





OUTDOOR UNIT
AO*S24LD

9. ELECTRIC CHARACTERISTICS

Model Name			AO＊S24LD
Power Supply	Voltage	V	230～
	Frequency	Hz	50
Max Operating Current		A	17.5
Starting Current		A	9.8
*1) Wiring Spec.	Main Fuse (Circuit breaker) Current	A	30
	Power Cable	mm^2	3.5 - 4.5
	*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.

OUTDOOR UNIT
AO*S24LD

10. SAFETY DEVICES

	Protection form	Model
		AO ∗ S24LD
Circuit protection	Current fuse (NEAR THE TERMINAL)	20A 250V
		5A 250V
	Current fuse (MAIN PRINTED CIRCUIT BOARD)	15A 250V
		3.15A 250V
Fan motor protection	Thermal protection program	OFF : 110^{+15}_{-10}°C ON : 105^{+15}_{-10}°C
Compressor protection	Thermal protection program (DISCHARGE TEMP.)	OFF : 110°C ON : After 7 minutes

OUTDOOR UNIT
AO∗S24LD