Refrigerant
R410A

INDOOR UNIT

1. WALL MOUNTED TYPE :

AS*A18LEC

D2D_AS027E/05
2010.02.10

WALL MOUNTED TYPE
AS∗A18LEC

1. FEATURE

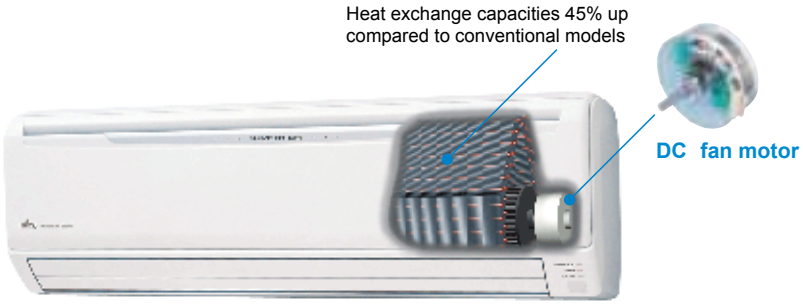
■ MODEL
AS∗A18LEC

■ FEATURES

● Energy saving Rank A

Europe energy saving Rank A achieved

● ALL DC



ⓐ **DC fan motor**

ⓑ **I-PAM control**
I-PAM technology makes a compressor more powerful.

ⓒ **DC rotary compressor**

● Super quiet

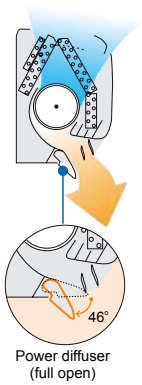
Air flow mode can be set in 4 steps and more detailed air flow setting is possible.

● Easy maintenance

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

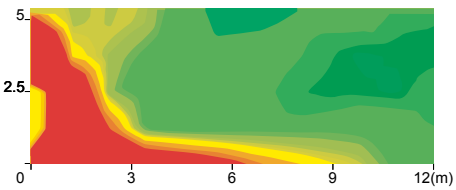
● Power diffuser

Adoption of large power diffuser

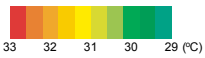


Power diffuser
(full open)

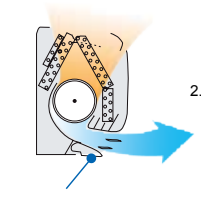
"Strong vertical air flow" provides
powerful floor level heating.



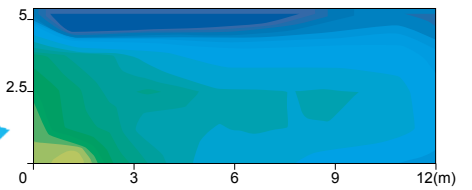
Outside air conditions: 2 °C 60%
Operation contents: Heating,
Set temperature (Max set temp)
30 °C, Air flow Hi,
Air direction downward and front



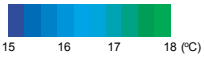
"Healthy horizontal air flow" does not blow
cool air directly at the occupants in the room.



Power diffuser



Outside air conditions: 35 °C 40%
Operation contents: Cooling,
Set temperature (Min set temp)
18 °C, Air flow Hi,
Air direction downward and front



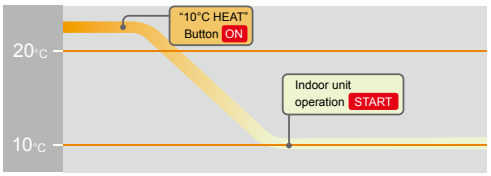
WALL MOUNTED TYPE
AS∗A18LEC

● 10°C HEAT Operation

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

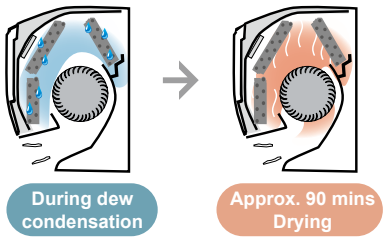
Caution)

- When the room temperature is higher than 10°C, “10°C HEAT” operation does not start. Operation starts and maintains the room temperature at 10°C when the temperature drops below 10°C.



● 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 bacteria inside the air conditioner.



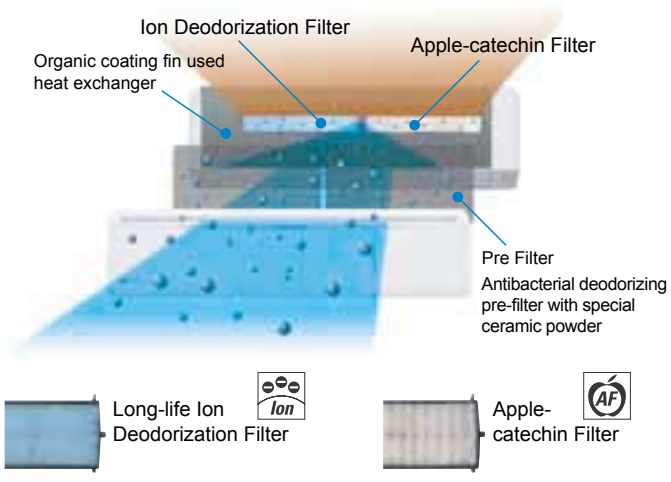
● Low outdoor air temperature correspondence

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

Cooling	Heating
-10 to 43°C	-15 to 24°C

● Corresponds to maximum 25m long piping

● Air conditioner filter features



WALL MOUNTED TYPE
AS∗A18LEC

2. REMOTE CONTROLLER

2-1. WIRED 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

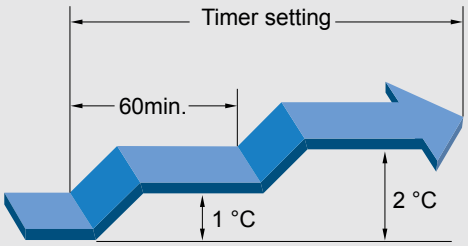
The program timer operates the ON and OFF timer once within a 24 hour period.

● 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.

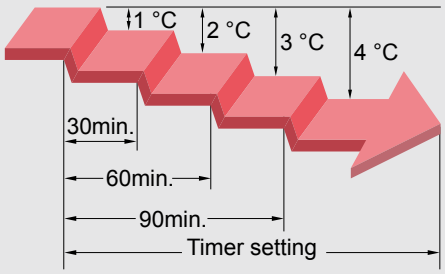
Cooling operation/dry operation

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.



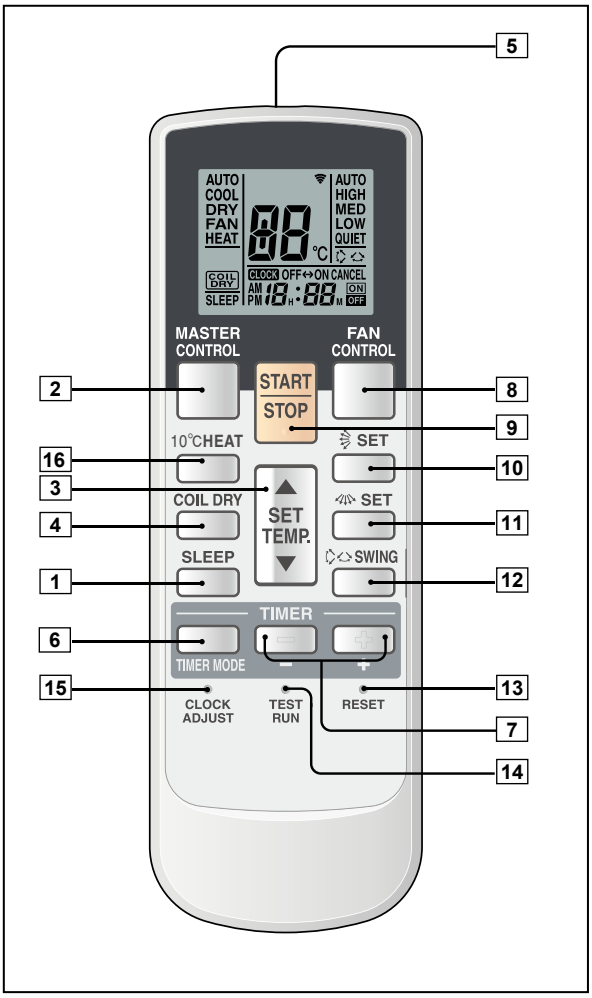
Heating operation

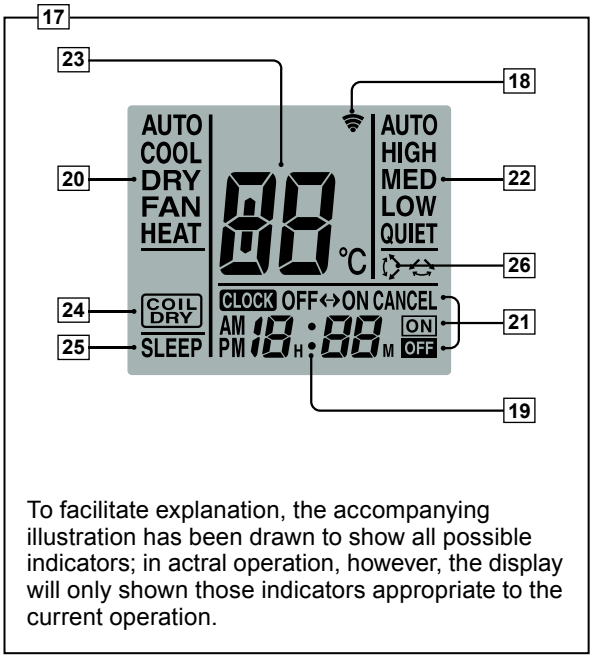
When the sleep timer is set, the set temperature automatically drops 1 °C every 30 minutes. The set temperature can drop to a maximum of 4 °C.



WALL MOUNTED TYPE
AS∗A18LEC

■ FUNCTIONS





To facilitate explanation, the accompanying illustration has been drawn to show all possible indicators; in actral operation, however, the display will only shown those indicators appropriate to the current operation.

1 **SLEEP button**

2 **MASTER CONTROL button**

3 **SET TEMP. button (▲ / ▼)**

4 **COIL DRY button**

5 **Signal Transmitter**

6 **TIMER MODE button**

7 **TIMER SET (⊞ / ⊟) button**

8 **FAN CONTROL button**

9 **START/STOP button**

10 **SET button (Vertical)**

11 **SET button (Horizontal)**

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**

16 **10 °C HEAT 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 **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

WALL MOUNTED TYPE
AS∗A18LEC

3. SPECIFICATIONS

Type					WALL MOUNTED
					INVERTER HEAT PUMP
Model name					AS∗A18LEC
Power source					230V~ 50Hz
Available voltage range					198-264V~ 50Hz
Capacity	Cooling	Rated		KW	5.20
				BTU/h	17,700
		Min-Max		KW	0.9~6.0
				BTU/h	3,100~20,500
	Heating	Rated		KW	6.30
				BTU/h	21,500
		Min-Max		KW	0.9~9.1
				BTU/h	3,100~31,000
Input power	Cooling	Rated		KW	1.52
		Min-Max			0.09~2.07
	Heating	Rated			1.71
		Min-Max			0.09~2.87
Current	Cooling	Rated		A	6.8
		Max			9.0
	Heating	Rated			7.6
		Max			12.5
EER	Cooling			KW/KW	3.42
COP	Heating				3.68
SENSIBLE CAPACITY	Cooling			KW	4.5
POWER FACTOR	Cooling			%	97
	Heating				98
Moiature removal				l/h(pints/h)	2.8
FAN	Airflow rate	Cooling	High	m^3/h	900
			Med		740
			Low		620
			Quiet		550
		Heating	High		900
			Med		740
			Low		620
			Quiet		550
	Type× Q'ty				Cross flow fan x 1
	Motor output			W	40
Noise level		Cooling	High	dB(A)	43
			Med		37
			Low		33
			Quiet		26
		Heating	High		42
			Med		37
			Low		33
			Quiet		25
Heat exchanger type		Dimensions(H × W × D)		mm	Main:378 x 832 x 26.6
					Sub:84 x 382 x 13.3
		Fin pitch			Main:1.2 Sub:1.4
		Rows Stages			Main:2 x 18 Sub:1 x 4
		Pipe type			Copper
		Fin type			Aluminium
Enclosure		Material			Polystyrene
		Colour			White
Dimensions(H × W × D)	Net			mm	320 x 998 x 228
	Gross				319 x 1090 x 429
Weight	Net			kg(lb)	14(30.8)
	Gross				18(39.6)
Connection pipe	Size	Liquid		mm	Φ6.35(Φ1/4in)
		Gas			Φ12.7(Φ1/2in)
	Method				Flare
Operation range		Cooling		°C	18~32
				%RH	80 or less
		Heating		°C	30 or less
Remote controller type					Wireless
Drain pipe	Material				PVC
	Size			mm	Outer diameter:28/Outer diameter:16

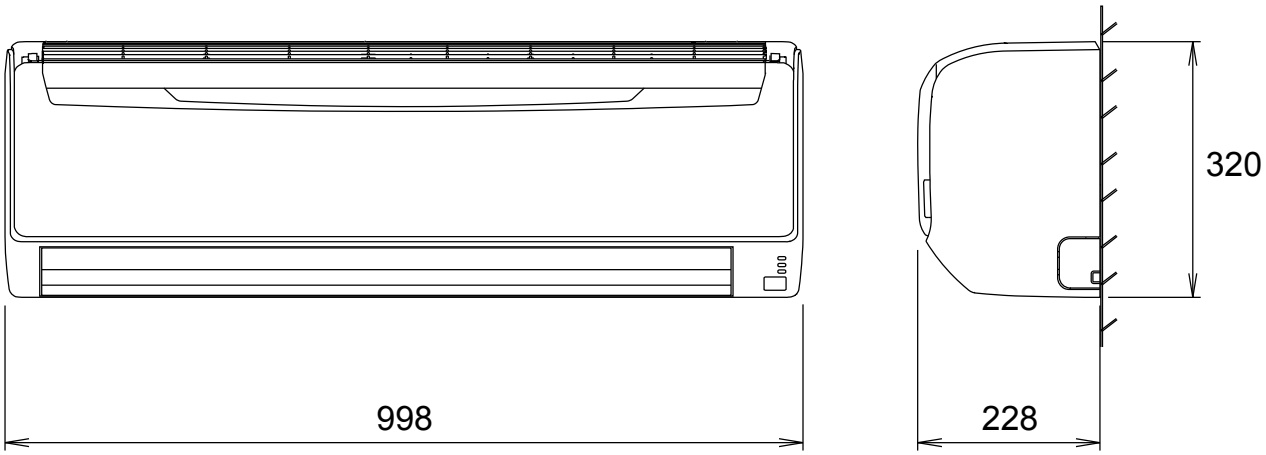
Note :
Specifications are based on the following conditions
Cooling:Indoor temperature of 27°C CDB/19°CCWB.and outdoor temperature of 35°C CDB/24°CCWB.
Heating:Indoor temperature of 20°C CDB/15°CCWB.and outdoor temperature of 7°C CDB/6°CCWB.
Pipe length:5m,Height difference:0m(Outdoor unit-Indoor unit)
The maximum current is the maximum value when the operated within the operation range(temperature).

WALL MOUNTED TYPE
AS∗A18LEC

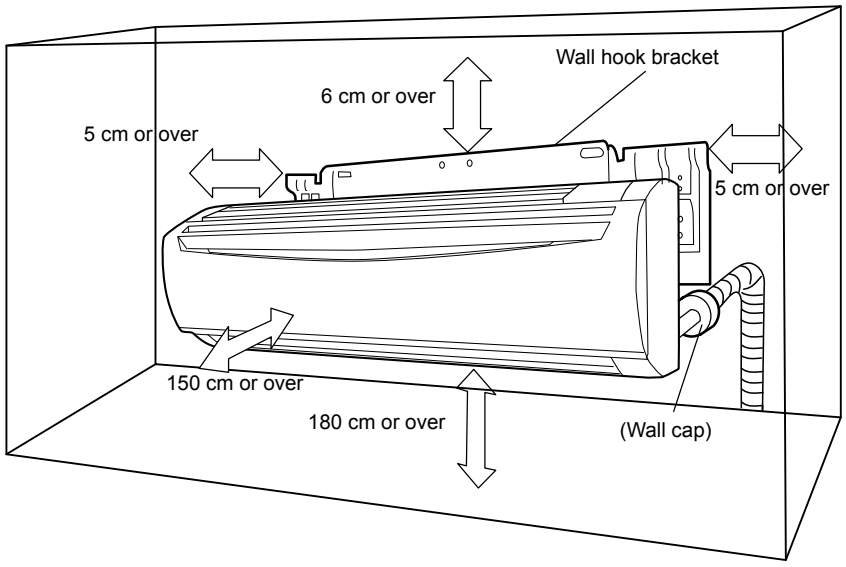
4. DIMENSIONS

■ MODEL: AS∗A18LEC

(Unit : mm)



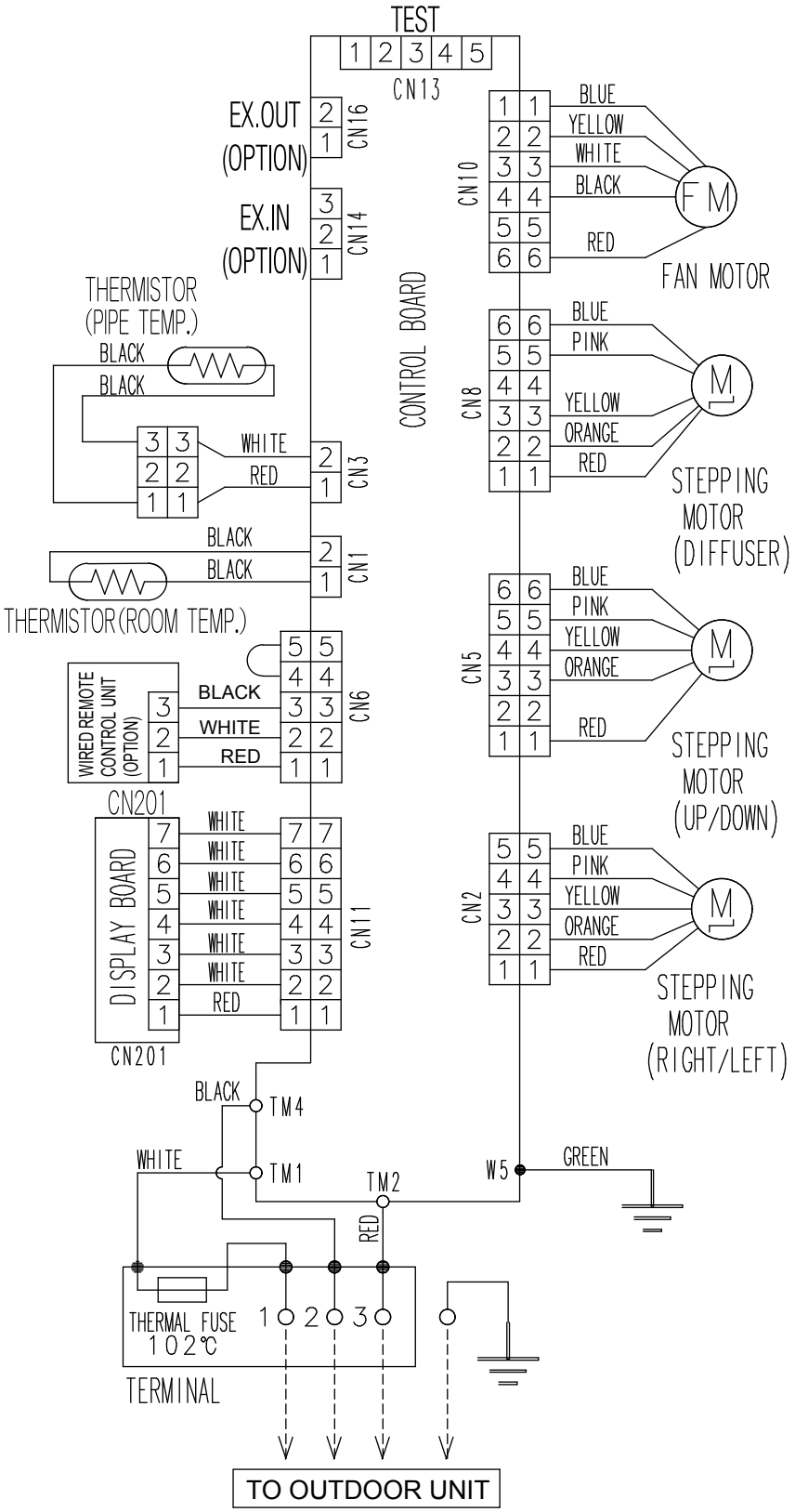
■ INSTALLATION PLACE



WALL MOUNTED TYPE
AS∗A18LEC

5. WIRING DIAGRAMS

■ MODEL: AS∗A18LEC



WALL MOUNTED TYPE
AS∗A18LEC

6. CAPACITY TABLE

6-1. COOLING CAPACITY

■ MODEL: AS∗A18LEC

AFR	15.0

		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	4.62	3.14	1.03	5.15	3.15	1.05	5.33	3.43	1.05	5.68	3.44	1.06	5.85	3.71	1.07	6.20	3.70	1.08	6.56	3.94	1.09
	25	4.63	3.14	1.17	5.16	3.16	1.19	5.34	3.43	1.20	5.69	3.45	1.21	5.86	3.72	1.22	6.21	3.71	1.23	6.57	3.95	1.24
	30	4.38	2.97	1.32	4.88	2.99	1.34	5.04	3.25	1.35	5.38	3.26	1.36	5.54	3.52	1.37	5.87	3.50	1.38	6.21	3.73	1.39
	35	4.11	2.79	1.47	4.58	2.80	1.49	4.73	3.05	1.50	5.04	3.06	1.51	5.20	3.30	1.52	5.51	3.29	1.54	5.82	3.50	1.55
	40	3.56	2.41	1.35	3.96	2.43	1.38	4.10	2.64	1.38	4.37	2.65	1.40	4.50	2.86	1.40	4.78	2.85	1.42	5.05	3.03	1.43
	43	3.29	2.23	1.37	3.66	2.24	1.39	3.79	2.44	1.40	4.04	2.44	1.41	4.16	2.64	1.42	4.41	2.63	1.43	4.66	2.80	1.45

AFR : Air flow rate (m^3/min)
TC : Total capacity (kW)
SHC : Sensible Heat capacity (kW)
PI : Power Input (kW)

WALL MOUNTED TYPE
AS∗A18LEC

6-2. HEATING CAPACITY

■ MODEL: AS∗A18LEC

AFR	15.0

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

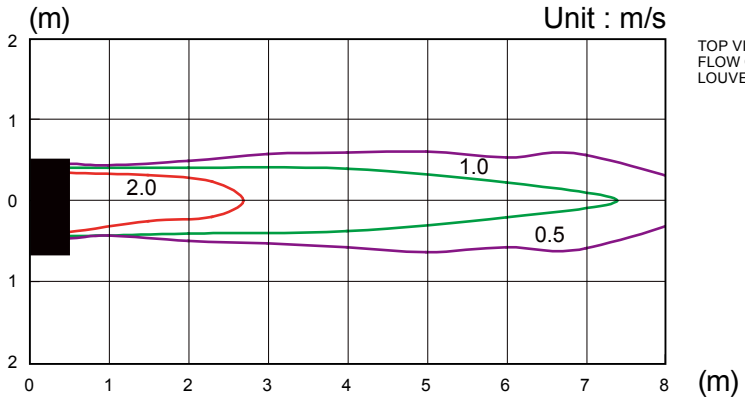
AFR : Air flow rate (m^3/min)
TC : Total capacity (kW)
PI : Power Input (kW)

WALL MOUNTED TYPE
AS∗A18LEC

7. FAN PERFORMANCE AND CAPACITY

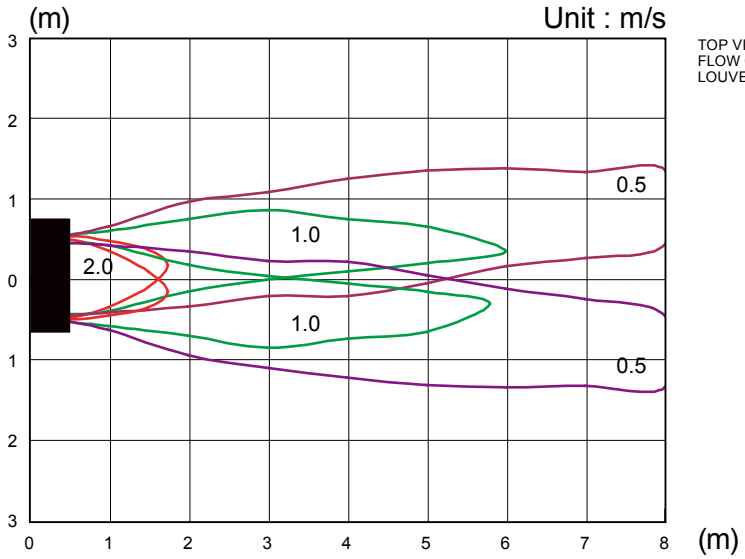
7-1. AIR VELOCITY DISTRIBUTION

■ MODEL: AS∗A18LEC

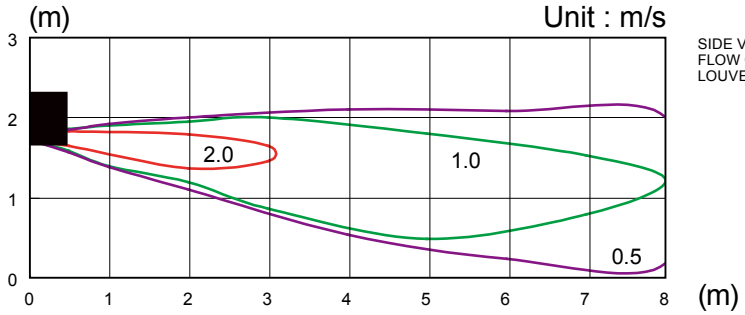


TOP VIEW
FLOW CONTROL PANEL : Horiz.
LOUVER : Center

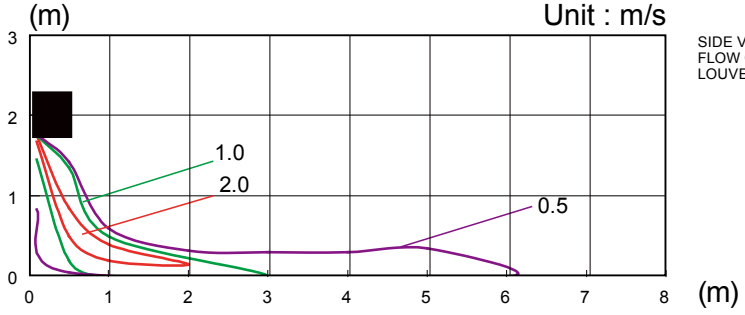
Note:
Fan speed : High
Operation mode : FAN
Voltage : 230V



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∗A18LEC

7-2. AIR FLOW

■ MODEL: AS∗A18LEC

● COOLING / HEATING

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

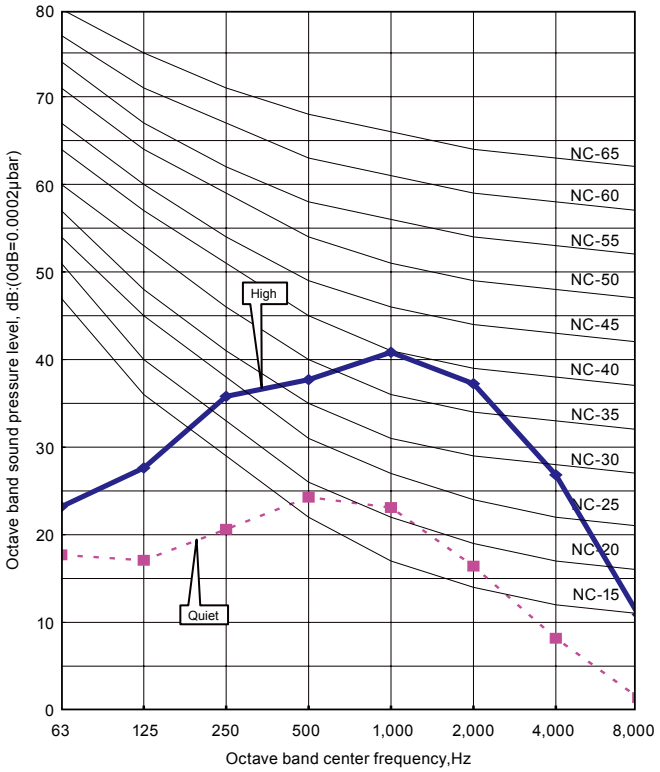
WALL MOUNTED TYPE
AS∗A18LEC

8. OPERATION NOISE

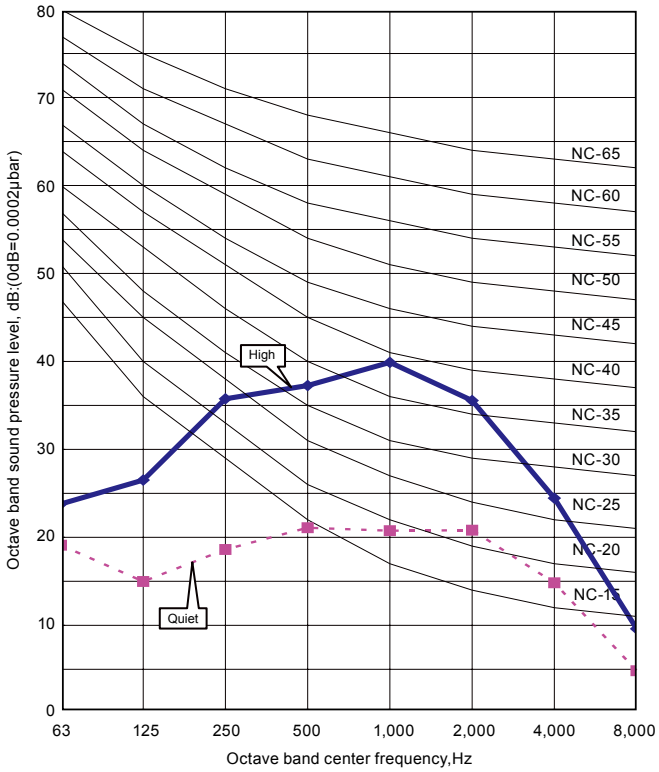
8-1. NOISE LEVEL CURVE

■ MODEL: AS∗A18LEC

● Cooling

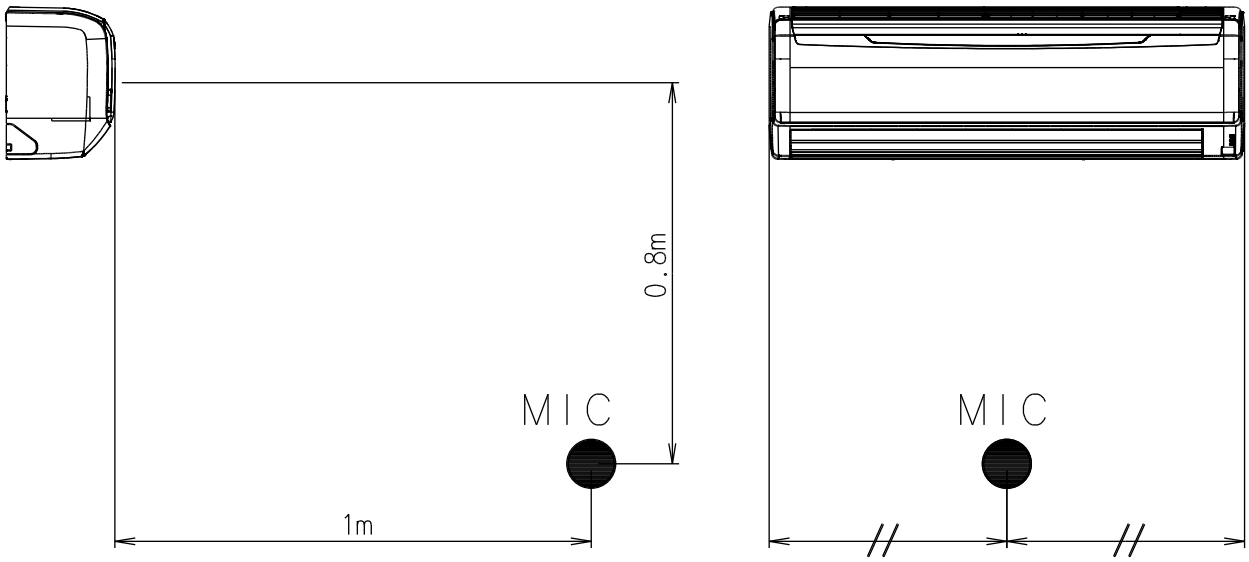


● Heating



WALL MOUNTED TYPE
AS∗A18LEC

8-2. SOUND LEVEL CHECK POINT



WALL MOUNTED TYPE
AS∗A18LEC

9. ELECTRIC CHARACTERISTICS

Model Name			AS∗A18LEC
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	26

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

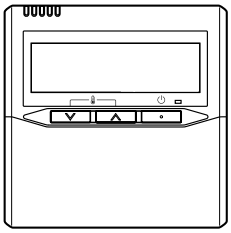
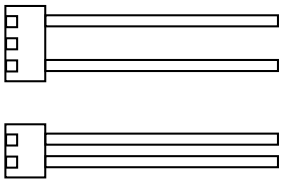
WALL MOUNTED TYPE
AS∗A18LEC

10. SAFETY DEVICES

	Protection form	Model
		AS∗A18LEC
Circuit protection	Current fuse (PCB)	3.15A 250V
Terminal protection	Current (thermal) fuse	3A 250V
Fan Motor protection	Terminal protection program	OFF: 100^{+15}_{-10}°C ON: 95^{+5}_{-10}°C

WALL MOUNTED TYPE
AS∗A18LEC

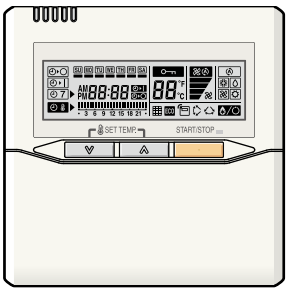
11. OPTIONAL PARTS

Exterior	Parts name	Model No.	Summary
	Wired remote controller	UTB-∗UD	Unit control is performed by **wired remote controller**
	Apple-catechin filter	UTR-FA13-1	Fine dust, invisible mold spores, and harmful microorganisms are absorbed onto the filter by **static electricity**, and further growth is inhibited and deactivated by the polyphenol ingredient extracted from apples.
	Ion deodorisation filter	UTR-FA13-2	The filter deodorizes by powerfully decomposing absorbed odors using the oxidizing and reducing effects of ions generated by the ultra fine-particle ceramic.
	External connect kit	UTY-XWZX	Use to connect with various peripheral devices and air conditioner PC board.

WALL MOUNTED TYPE
AS∗A18LEC

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.

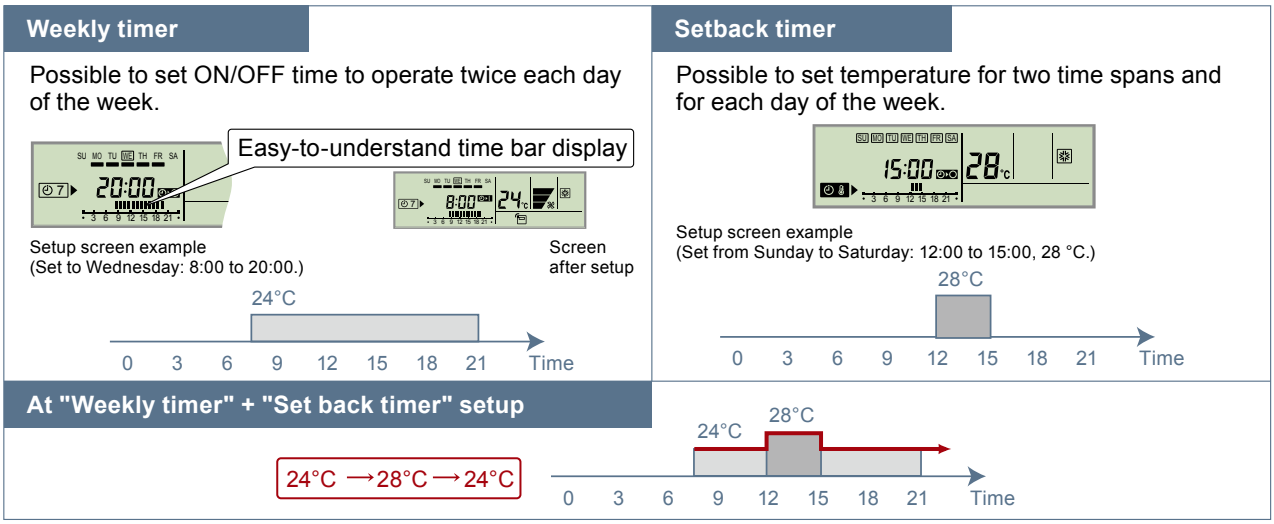
● Simple function setting

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

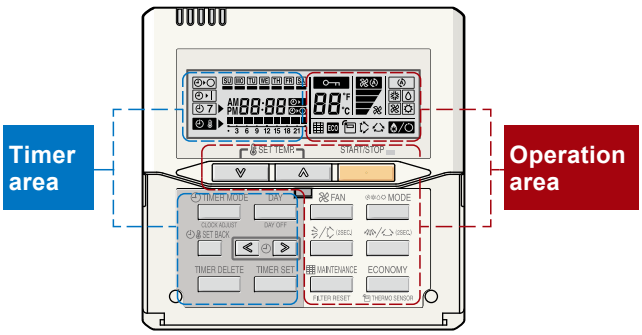
● High performance and compact size

Three functions are combined in one unit.

● Built-in timers



● Easy-to-understand operation

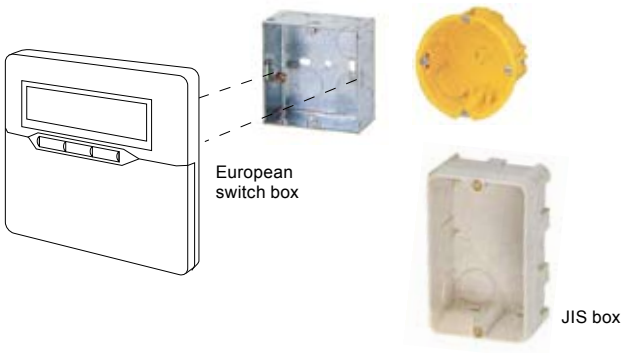


[Variable timer control]

The operation/display sections are zoned according to time and operation, enabling variable programming to match application.

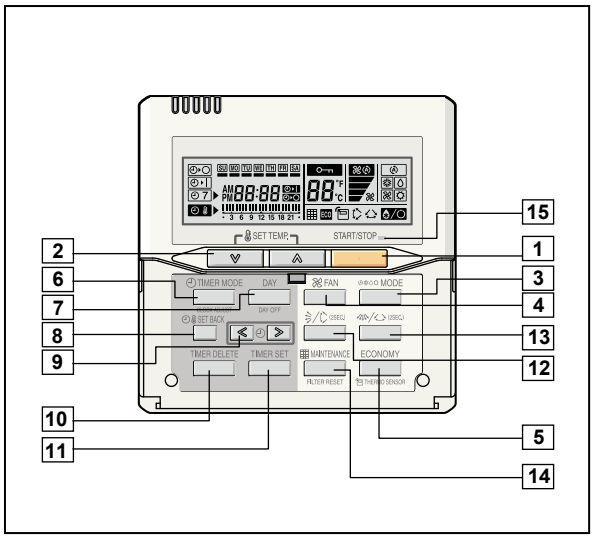
● Simple installation

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

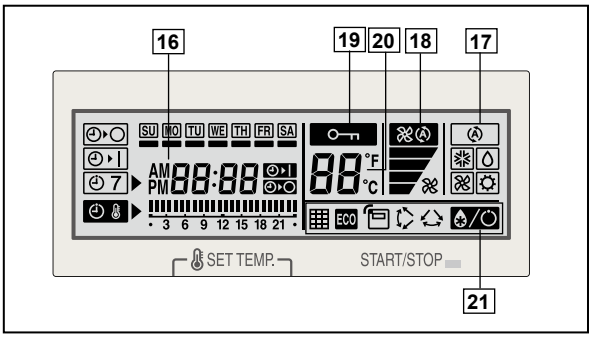


WALL MOUNTED TYPE
AS∗A18LEC

■ 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**

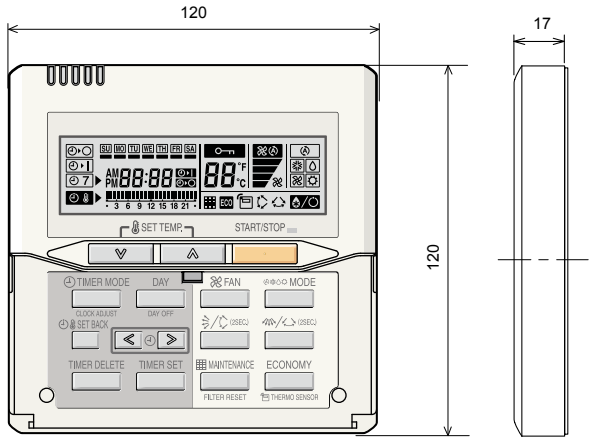
21 **Function display**

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

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

■ DIMENSION

[Unit : mm]



■ SPECIFICATION

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

WALL MOUNTED TYPE
AS∗A18LEC

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.

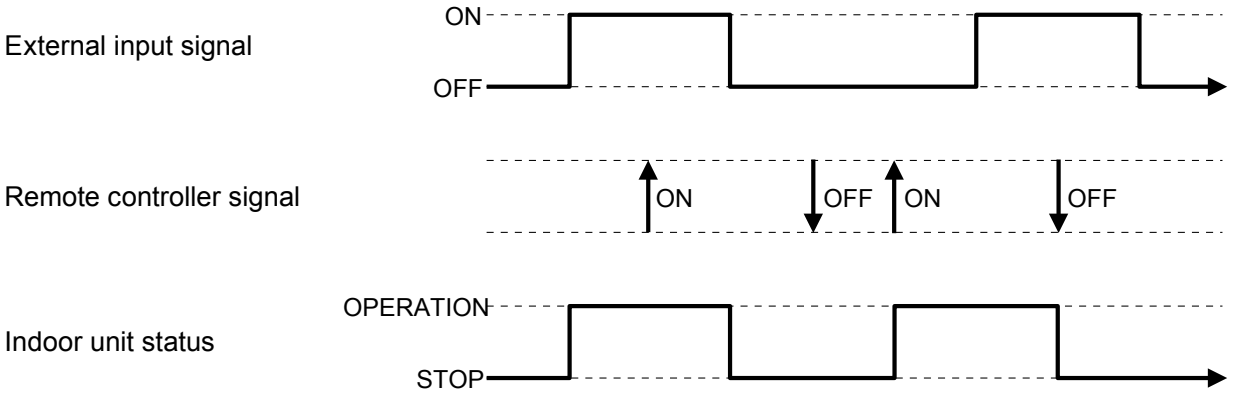
- Only operation and stop signals will be output.
  Use the remote control to check the operation mode, temperature, and airflow.
  Check the error information on the display area of the main unit.
- Operation mode, temperature, and airflow cannot be set by external input. Use the remote controller to 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.

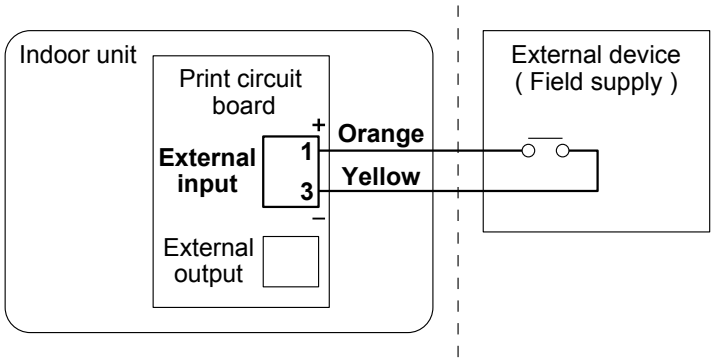
● Signal specification

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

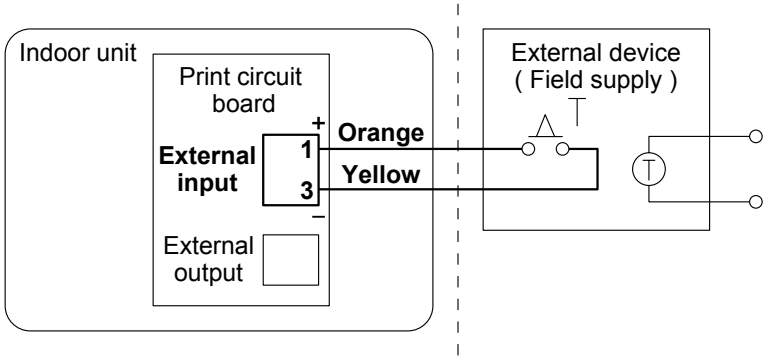


● Installation example

- For remote operation



- For external timer operation



WALL MOUNTED TYPE
AS∗A18LEC

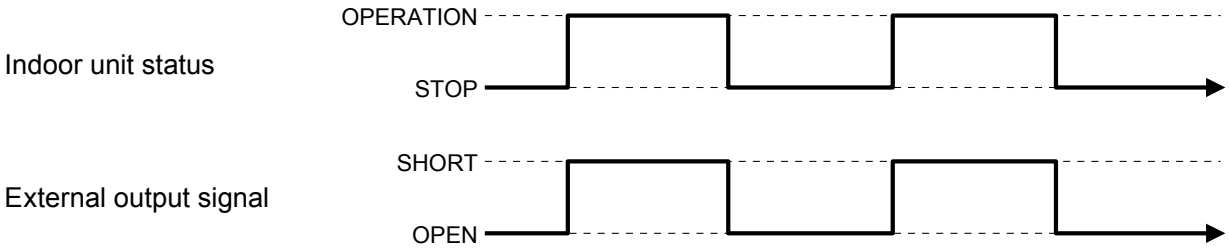
11-2-2. Operating output setting

• You can display air conditioner ON / OFF operation by e xternal o utput.

● Signal specification

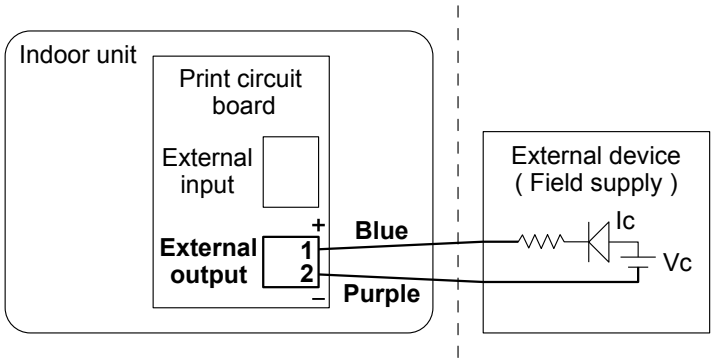
• No voltage contact.

• Contact capacity : Max. DC24V 10mA to 1A or less



● Installation example

• For operation display



Refrigerant
R410A

OUTDOOR UNIT

2. SINGLE TYPE :

AO∗R18LEC

D2D_AO029E/02
2008.12.26

1. SPECIFICATIONS

Type				INVERTER COOLING & HEATING
Model name				AO∗R18LEC
Power source				230V~ 50Hz
Available voltage range				198-264V~ 50Hz
Starting current			A	7.6
Fan	Airflow rate	Cooling	m^3/h	2,070
		Heating		2,070
	Type × Q'ty			Propeller fan × 1
	Motor output		W	40
Sound pressure level		Cooling	dB(A)	50
		Heating		52
Heat exchanger type		Dimensions (H × W × D)	mm	588 × 881 × 36.4
		Fin pitch		1.3
		Rows x Stages		2 × 28
		Pipe type		Copper
		Fin type		Aluminium
Compressor	Type × Q'ty			Rotary × 1
	Motor output		W	900
Refrigerant		Type		R410A
		Charge	g	1,200
Refrigerant oil		Type		FREOLα68SZ
Enclosure		Material		Steel
		Colour		Beige
Dimensions (H × W × D)	Net		mm	620 × 790 × 298
	Gross			712 × 935 × 400
Weight	Net		kg(lb.)	40(88)
	Gross			45 (99)
Connection pipe	Size	Liquid	mm	Ø6.35 (Ø 1/4 in.)
		Gas		Ø12.7 (Ø1/2 in.)
	Method			Flare
	Max. length		m	25(chargeless:15)
	Max. height difference			20
Operation range		Cooling	°C	-10 to 43
		Heating		-15 to 24

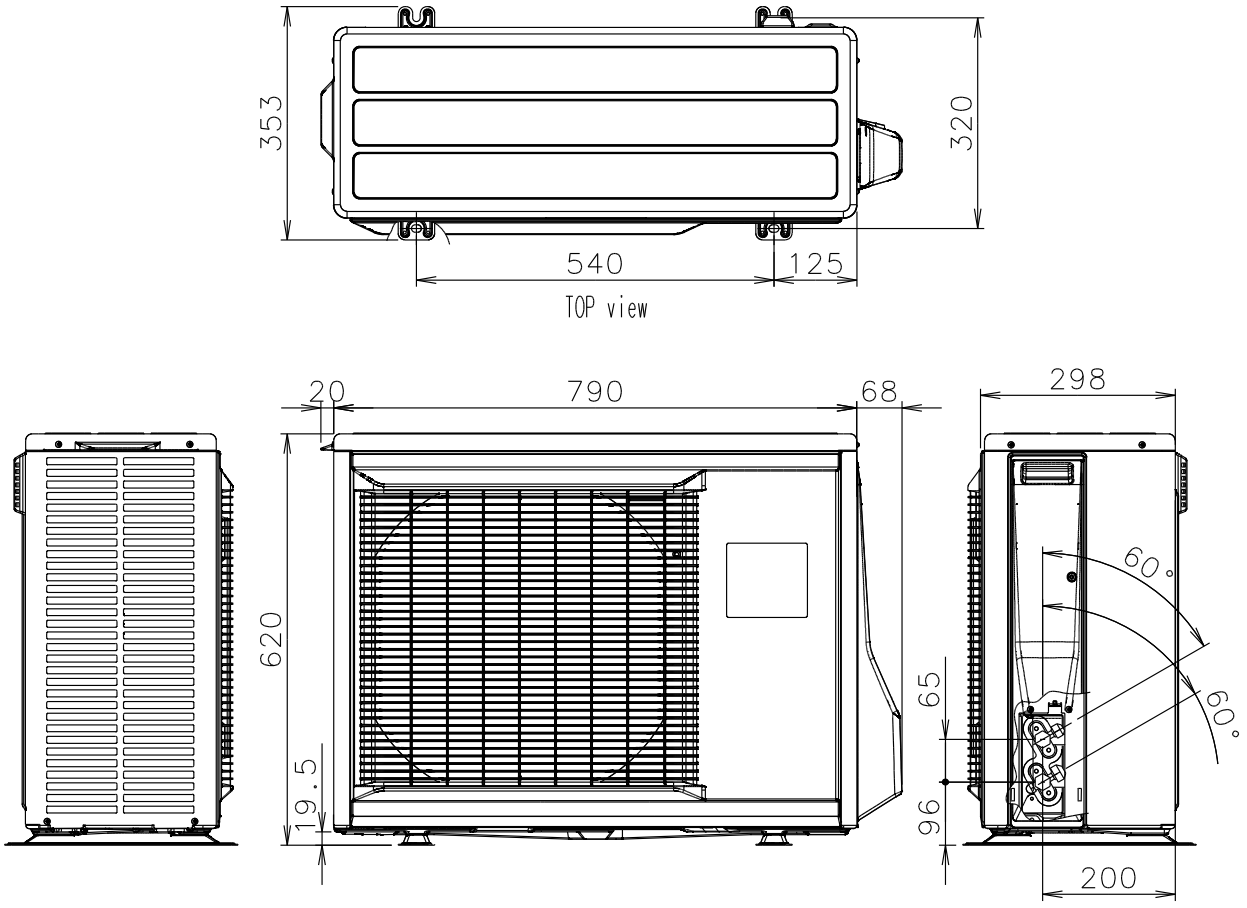
Note :
Specifications are based on the following conditions.
Cooling : Indoor temperature of 27 °CDB / 19 °CWB.and outdoor temperature of 35 °CDB/24 °CWB.
Heating : Indoor temperature of 20 °CDB / 15 °CWB.and outdoor temperature of 7 °CDB/6 °CWB.
Pipe length : 5 m, Height difference : 0 m.(Outdoor unit - Indoor unit)
The maximum current is the maximum value when the operated within the operation range(temperature).

OUTDOOR UNIT
AO∗R18LE

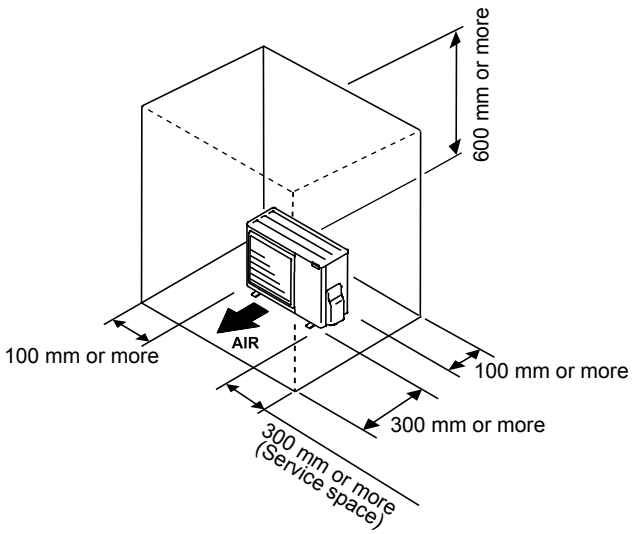
2. DIMENSIONS

■ MODEL: AO∗R18LE

(Unit : mm)



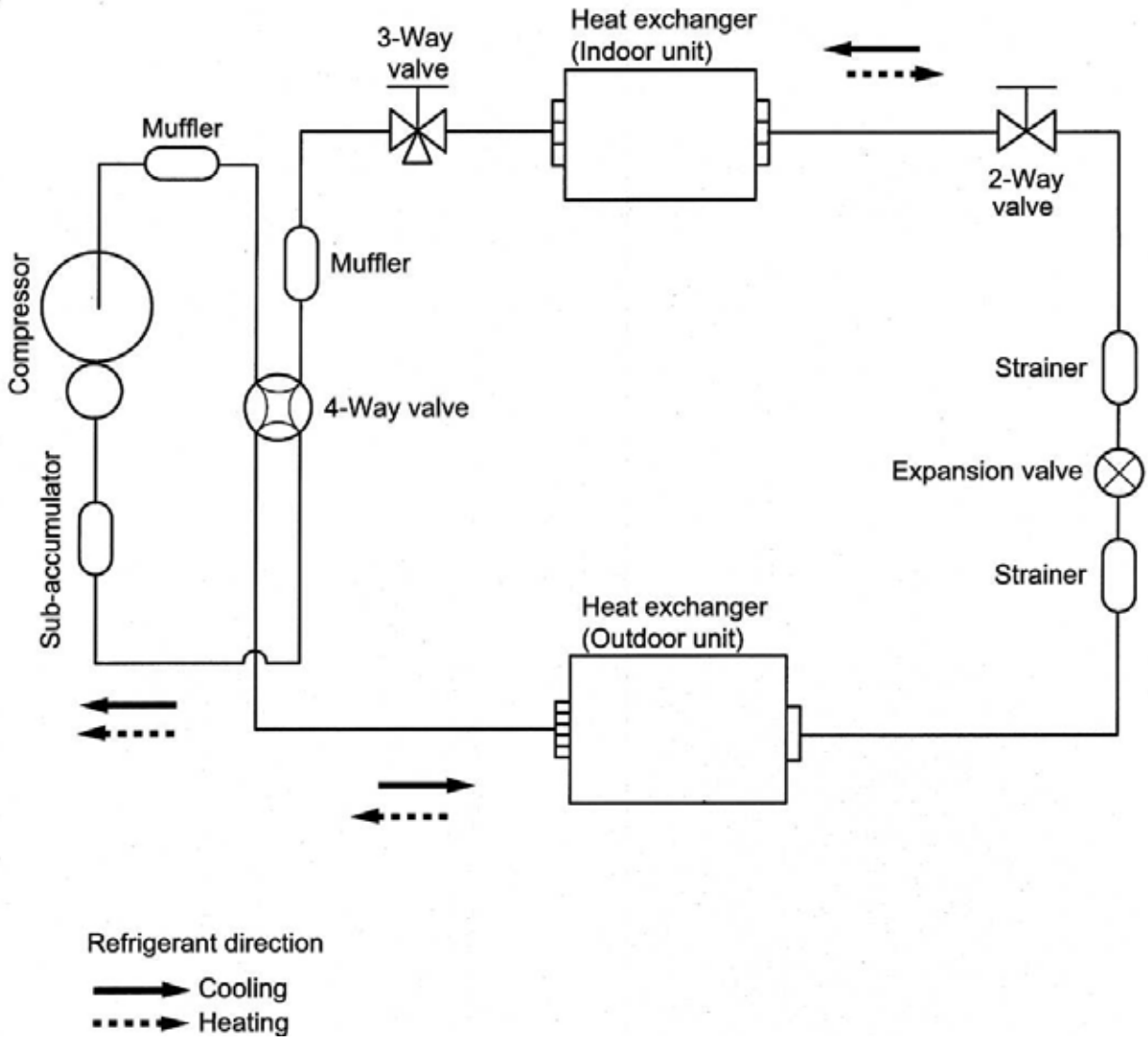
■ INSTALLATION PLACE



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

3. REFRIGERANT CIRCUIT

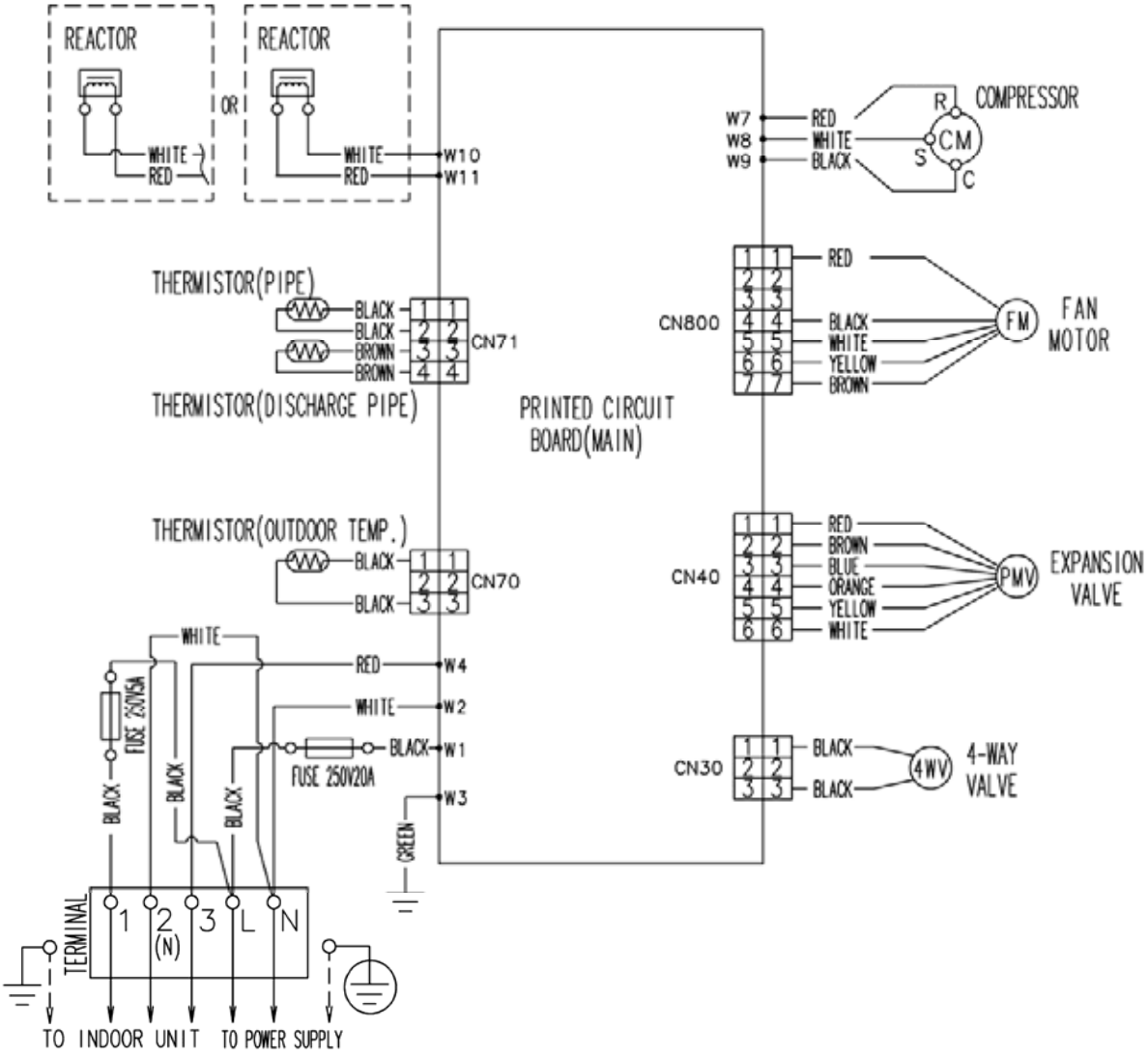
■ MODEL: AO∗R18LE



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

4. WIRING DIAGRAMS

■ MODEL: AO*R18LE



OUTDOOR UNIT
AO*R18LE

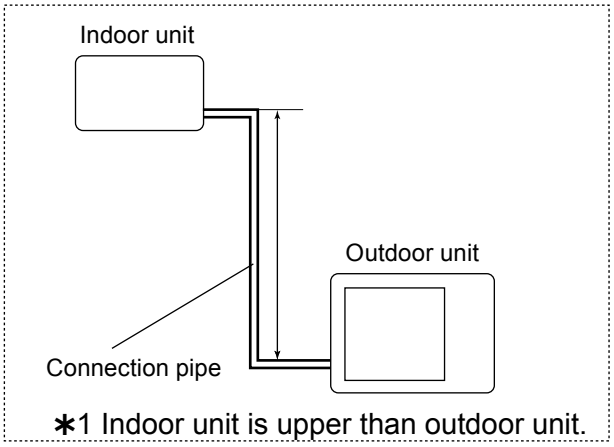
5. CAPACITY COMPENSATION RATE FOR PIPE LENGTH AND HEIGHT DIFERENCE

■ MODEL: AO∗R18LE

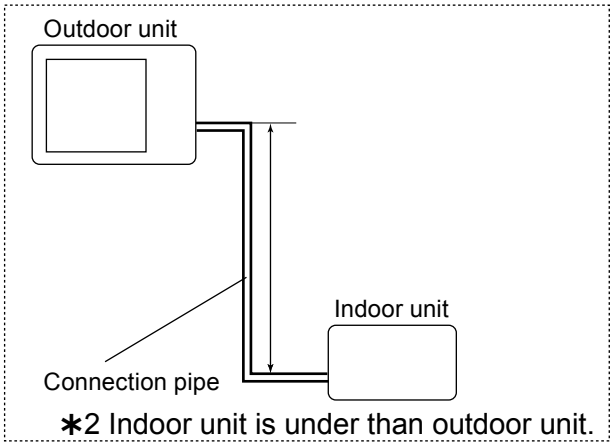
COOLING			Pipe length (m)				
			5	10	15	20	25
Height difference H (m)	∗1 Indoor unit is upper than outdoor unit.	20	-	-	-	0.869	0.867
		10	-		0.911	0.885	0.883
		5	0.992	0.981	0.919	0.893	0.891
		0	1.000	0.989	0.927	0.901	0.899
	∗2 Indoor unit is under than outdoor unit	-5	1.000	0.989	0.927	0.901	0.899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

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

Height difference H



∗1 Indoor unit is upper than outdoor unit.



∗2 Indoor unit is under than outdoor unit.

OUTDOOR UNIT
AO∗R18LE

6. ADDITIONAL CHARGE CALCULATION

■ MODEL: AO∗R18LE

Refrigerant type		R410A
Refrigerant amount	g	1200

● REFRIGERANT CHARGE

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

7. AIR FLOW

■ MODEL: AO∗R18LE

● COOLING & HEATING

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

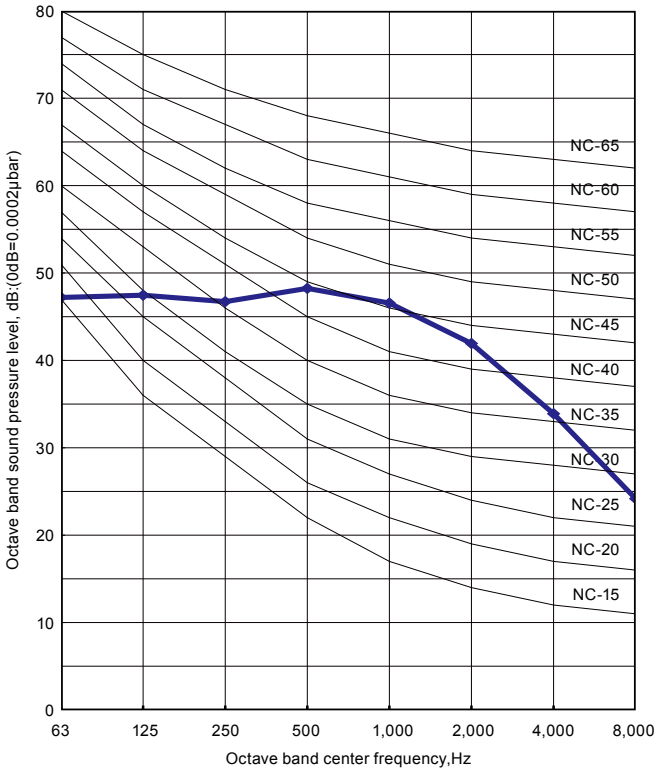
OUTDOOR UNIT
AO∗R18LE

8. OPERATION NOISE

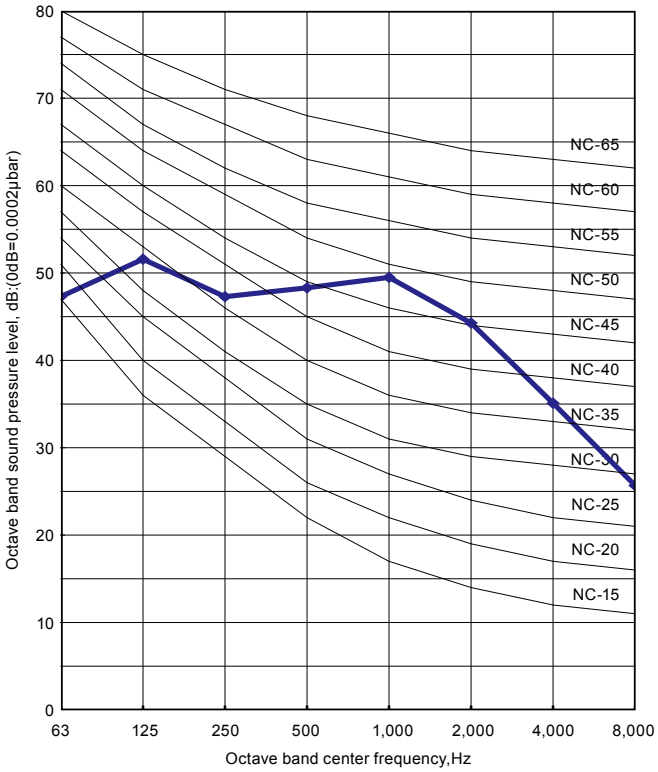
8-1. NOISE LEVEL CURVE

■ MODEL: AO∗R18LE

● COOLING

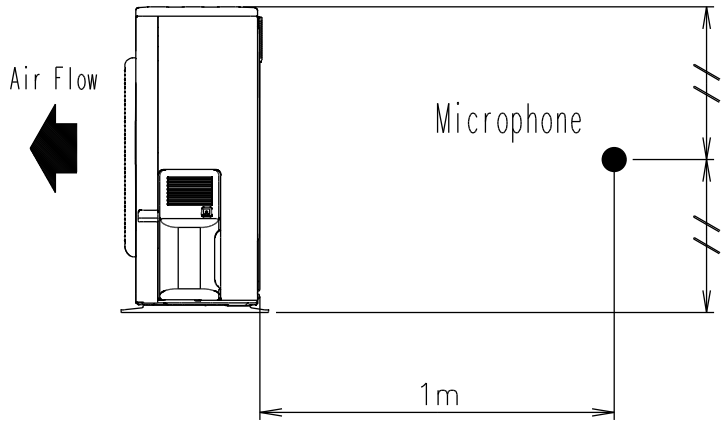


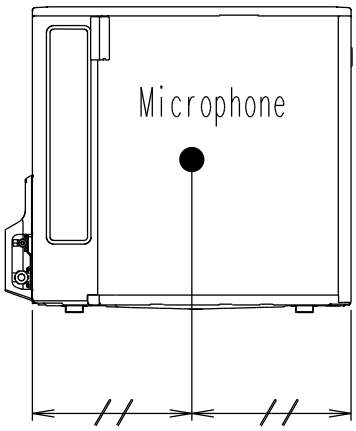
● HEATING



OUTDOOR UNIT
AO∗R18LE

8-2. SOUND LEVEL CHECK POINT





OUTDOOR UNIT
AO*R18LE

9. ELECTRIC CHARACTERISTICS

Model Name			AO∗R18LEC
Power Supply	Voltage	V	230 ~
	Frequency	Hz	50
Max Operating Current		A	12.5
Starting Current		A	7.6
*)Wiring Spec	Main Fuse (Circuit breaker)Current	A	20
	Power Cable	mm^2	3.5-4.0
	*2)Limited Wiring length	m	20

*)Wiring Spec
Seleted Sample
(Seleted based on Japan Electrotechnical Standard and Codes Committee E0005)

*2)Limited Wiring length
This is the wiring length in case voltage descent is less then 2%
When the wiring length becomes long ,please select the wiring of a more larger diameter.

OUTDOOR UNIT
AO∗R18LE

10. SAFETY DEVICES

	Protection form	Model
		AO∗R18LEC
Circuit protection	Current fuse (IN THE INVERTER CASE)	20A 250V
		5A 250V
	Current fuse (MAIN PRINTED CIRCUIT BOARD)	15A 250V
		3.15A 250V
Fan Motor protection	Terminal protection program	OFF:100^{+10}_{-10}°C ON:95^{+10}_{-10}°C
Compressor protection	Terminal protection program COMPRESSOR TEMP.	-
	Terminal protection program COMPRESSOR TEMP.	OFF:110°C ON:After 7 minutes

OUTDOOR UNIT
AO∗R18LE