Refrigerant R410A

INVERTER

AIR CONDITIONER

Ceiling type

DESIGN & TECHNICAL MANUAL

INDOOR

AB∗G30LRTE
AB∗G36LRTE

OUTDOOR

AO∗G30LETL
AO∗G36LETL

FUJITSU GENERAL LIMITED

1. INDOOR UNIT

CEILING TYPE :

AB∗G30LRTE
AB∗G36LRTE

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CEILING TYPE
AB∗G30-36LRTE

CONTENTS

1. INDOOR UNIT

1. FEATURES

■ MODEL

AB∗G30LRTE / AO∗G30LETL
AB∗G36LRTE / AO∗G36LETL

■ FEATURES

● Energy efficiency class

	MODEL	
	AB∗G30LRTE	AB∗G36LRTE
Cooling	A++	A+
Heating	A+	A+

● Quiet operation

Air flow mode can be set in 4 steps and more detailed air flow setting is possible.
30 type: 32 dB / 36 type: 32 dB at operation in the Quiet mode.

● Filter sign

Dirtying of filter is detected by air conditioner operating time and the user is informed.

● Economy operation

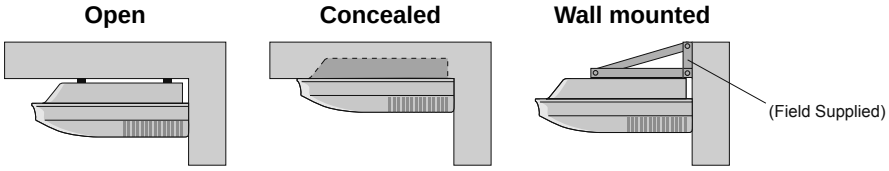
The power consumption can be reduced.

● Wired/wireless simultaneous use possible

Wired remote controller and wireless remote controller can be simultaneously used.

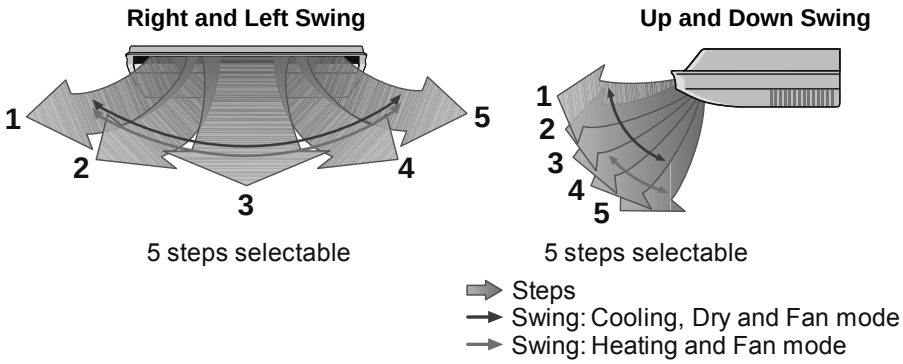
● Flexible installation

A high installation of the construction of the ceiling and degree of freedom corresponding to height is possible.



● Double auto swing

Combination of up/down and right/left air direction swing allows three-dimensional air direction control.
Since up/down air direction flaps operate automatically, according to the operating mode of the unit, it is possible to set the air direction based on the operating mode.



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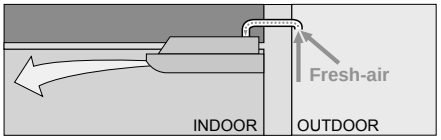
● Fresh-air intake



■ FUNCTION SETTINGS

● Ceiling switching function (standard/high ceiling)

Also delivers air to high ceilings by selecting the mode and raising the air flow according to the height of the ceiling.

Standard ...Operates at normal air flow.

Mode 1 ...Air flow becomes greater than normal.

● Auto restart

The units restart automatically when the current was returned even when there was a power interruption during operation.

● Room temperature sensor switching

Switches from room temperature judgment by room temperature sensor attached to indoor unit body to room temperature judgment by room temperature sensor attached to wired remote controller.

● Cooling room temperature correction

● Heating room temperature correction

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2. WIRELESS REMOTE CONTROLLER

■ FEATURES

∗ 4 mode timer setup available (ON / OFF / PROGRAM / SLEEP).
∗ Four kinds of timers. Easy operation.
∗ Easy to change signal code (max. 4 units) by button operation.

● Simple function setting

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

● Built-in timers

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

● Program timer

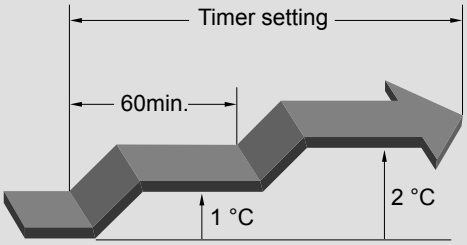
The program timer operates the ON and OFF timer once within a 24 hour period.

● 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.

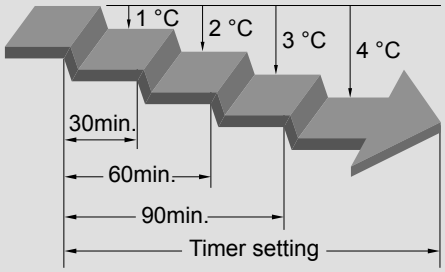
Cooling operation/dry operation

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.



● Switching remote controller signal code

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

*I.U.=Indoor unit

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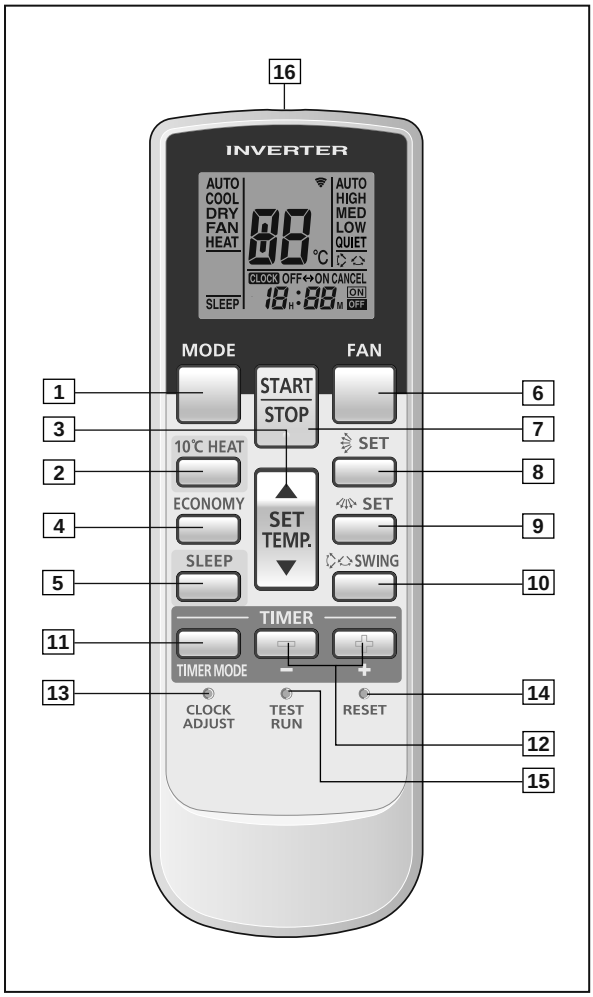
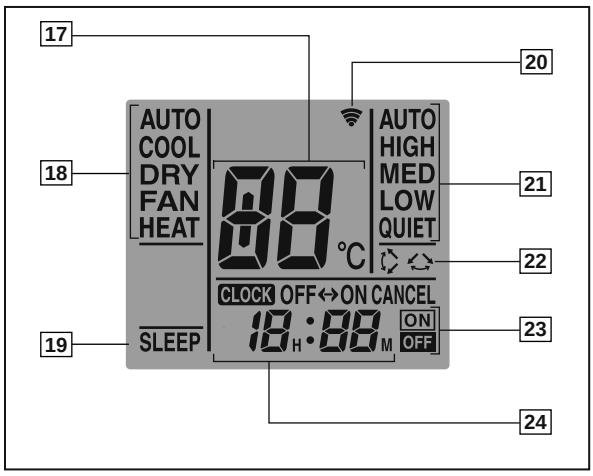
AB∗G30-36LRTE

■ FUNCTIONS



Display panel



1 MODE button
Selects the operating mode (AUTO, COOL, DRY, FAN, HEAT). /Start / end R.C. signal code change. (Max 4 types)

2 10°C HEAT button

3 SET TEMP. button (▲ / ▼)
Sets the indoor temp./ Sets R.C. signal code.

4 ECONOMY button

5 SLEEP button
Pressed to select sleep timer.

6 FAN button
Selects the fan speed (AUTO, HIGH, MED, LOW, QUIET).

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

8 SET button (Vertical)
Air flow direction vertical set button.

9 SET button (Horizontal)
Air flow direction horizontal set button.

10 SWING button
Air flow direction swing button.

11 TIMER MODE button
Pressed to select the timer mode. (OFF TIMER, ON TIMER, PROGRAM TIMER, TIMER RESET)

12 TIMER SET (⊕ / ⊖) button
Sets the current time and on-off time.

13 CLOCK ADJUST button
Sets the current time.

14 RESET button
Used when replacing batteries.

15 TEST RUN button
Used when testing the air conditioner after installation.

16 Signal transmitter

17 Temperature set display

18 Operating mode display

19 Sleep display

20 Transmit indicator

21 Fan speed display

22 Swing display

23 Timer mode display

24 Clock display

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

■ SPECIFICATION

SIZE	(H × W × D mm)	170 × 56 × 19
WEIGHT	(g)	85 (w/o batteries)
ACCESSORY		Holder

3. SPECIFICATIONS

Type					CEILING MODEL	
					INVERTER HEATPUMP	
Model name					AB✱G30LRTE	AB✱G36LRTE
Power source					230V~ 50Hz	
Available voltage range					198-264V~ 50Hz	
Capacity	Cooling	Rated		kW	8.50	9.40
				Btu/h	29000	32100
		Min.-Max.		kW	2.80 -10.00	2.80 -11.20
				Btu/h	9500 -34100	9500 -38200
	Heating	Rated		kW	10.00	11.20
				Btu/h	34100	38200
		Min.-Max.		kW	2.70 -11.20	2.70 -12.70
				Btu/h	9200 -38200	9200 -43300
Input power	Cooling	Rated		kW	2.65	2.93
		Max.			3.88	4.22
	Heating	Rated			2.77	3.02
		Max.			3.88	4.56
Current	Cooling	Rated		A	11.6	12.8
	Heating	Rated			12.2	13.2
EER		Cooling		kW/kW	3.21	3.21
COP		Heating			3.61	3.71
Moisture removal				l/h (pints/h)	2.5(5.3)	3.0 (6.3)
Maximum operating current *		Cooling	Max.	A	17.0	18.5
		Heating			17.0	20.0
Fan	Airflow rate	Cooling	High	m^3/h	1660	1900
			Med		1500	
			Low		1200	
			Quiet		1000	
		Heating	High		1660	1900
			Med		1500	
			Low		1200	
			Quiet		1000	
	Type × Q'ty				Sirocco × 4	
	Motor output			W	120	
Sound pressure level		Cooling	High	dB(A)	45	47
			Med		43	
			Low		37	
			Quiet		32	
		Heating	High		45	47
			Med		43	
			Low		37	
			Quiet		32	
Heat exchanger type		Dimensions (H × W × D)		mm	252 × 1350 × 39.9	
		Fin pitch			1.45	
		Rows x Stages			3 × 12	
		Pipe type			Copper	
		Fin type			Aluminium	
Enclosure		Material			ABS	
		Colour			WHITE Approximate colour of MUNSELL N 9.25 /	
Dimensions (H×W×D)	Net			mm	240 × 1660 × 700	
	Gross				318 × 1800 × 790	
Weight	Net			kg	46	
	Gross				58	
Connection pipe	Size	Liquid		mm	Ø 9.52 (Ø 3 / 8 in.)	
		Gas			Ø15.88 (Ø 5 / 8 in.)	
	Method				Flare	
Operation range		Cooling		°C	18 to 32	
				%RH	80 or less	
		Heating		°C	16 to 30	
Remote controller type					Wireless	
Drain port	Material				ABS	
	Size			mm	Ø 22.0 (I.D.), Ø25.6 (O.D.)	

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 protective function might work when using outside the operation range.
*The maximum current is the maximum value when operated with in the operation range.
Drain hose should be field supplied.

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Model name				AB∗G30LRTE	AB∗G36LRTE
Energy efficiency class	Cooling			A++	A+
	Heating (Average)			A+	A+
Pdesign	Cooling		kW	8.5	9.4
	Heating (Average)			8.0	8.7
SEER	Cooling		kWh/kWh	6.10	6.00
SCOP	Heating (Average)			4.20	4.10
Annual energy consumption	QCE		kWh/a	487	548
	QHE (Average)			2662	2965
Sound power level	Cooling	High	dB (A)	57	60
	Heating			60	61

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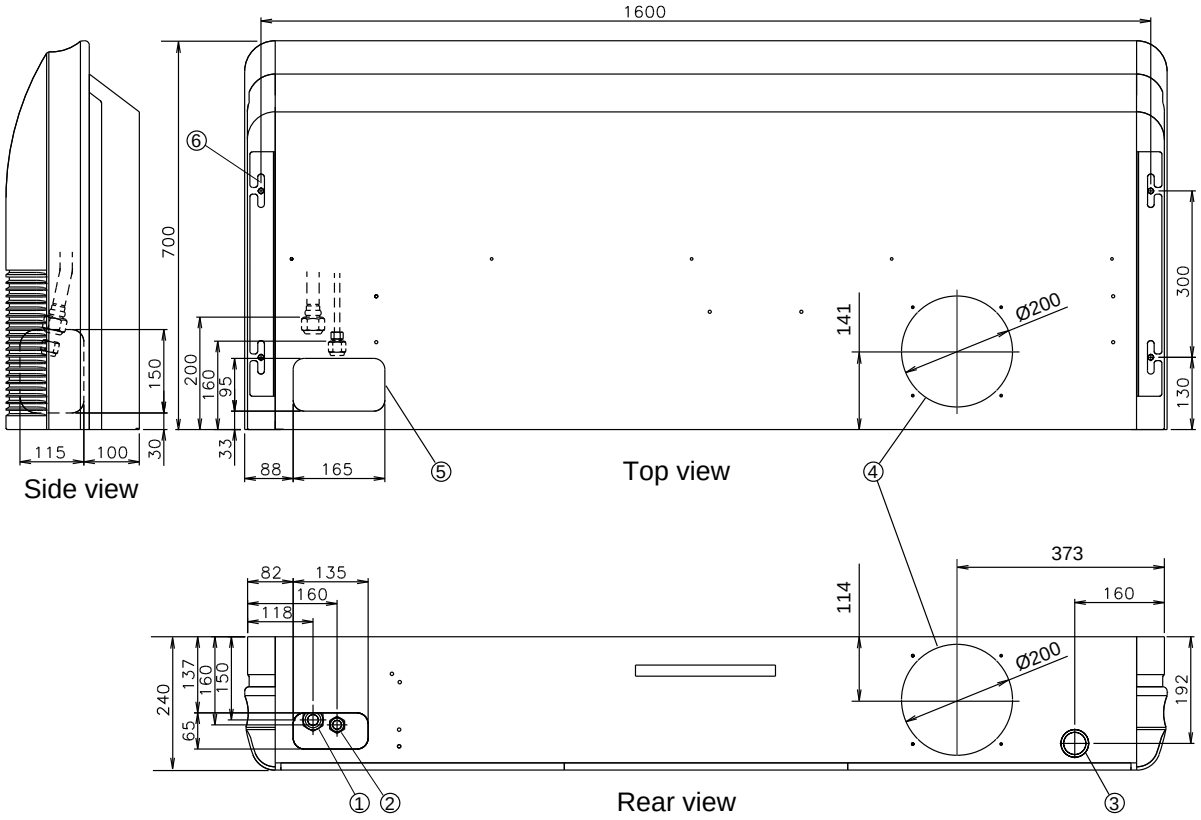
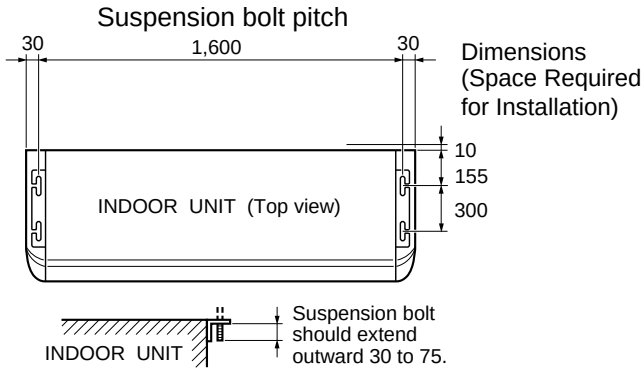
4. DIMENSIONS

■MODEL: AB∗G30LRTE, AB∗G36LRTE

(Unit : mm)





① Refrigerant piping flare connection (Gas)
② Refrigerant piping flare connection (Liquid)
③ Drain piping connection
④ Knock out hole for fresh air
⑤ Knock out hole for refrigerant piping
⑥ Hole for lifting bolt (Use M10 screw bolt)

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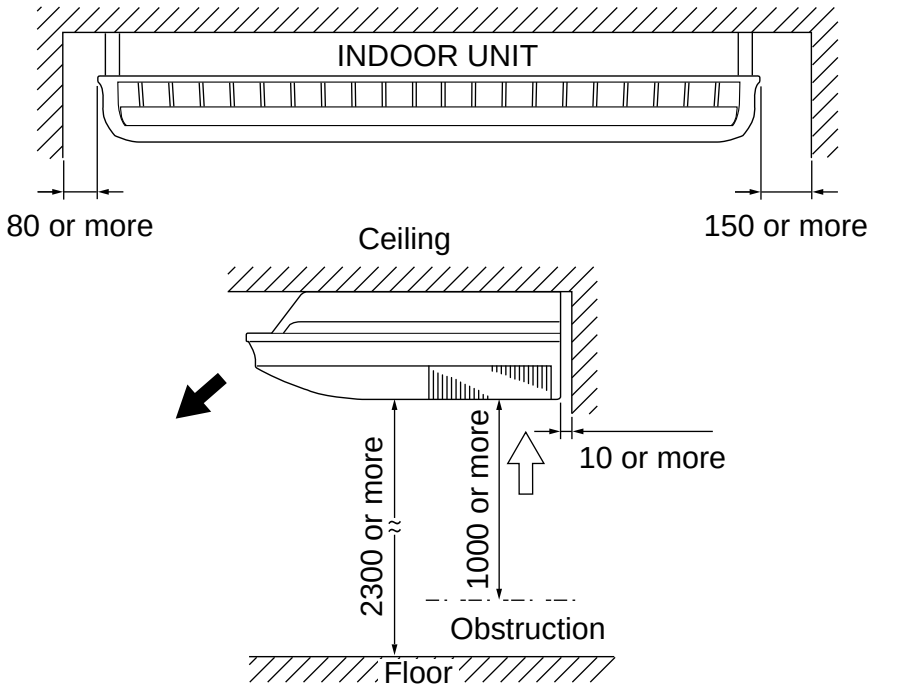
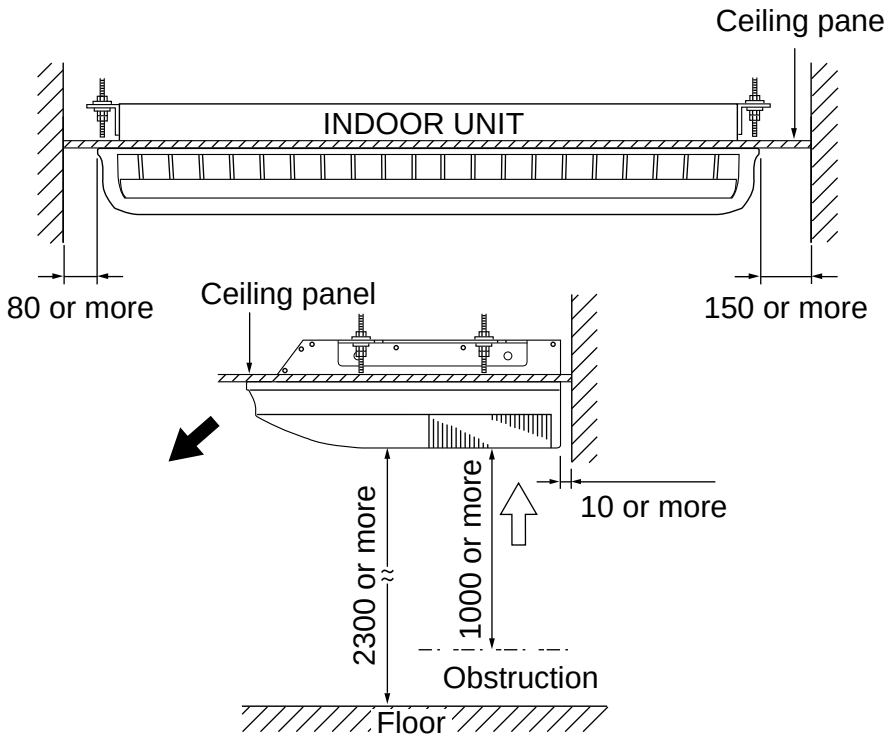
■ INSTALLATION PLACE

(Unit : mm)

Ceiling





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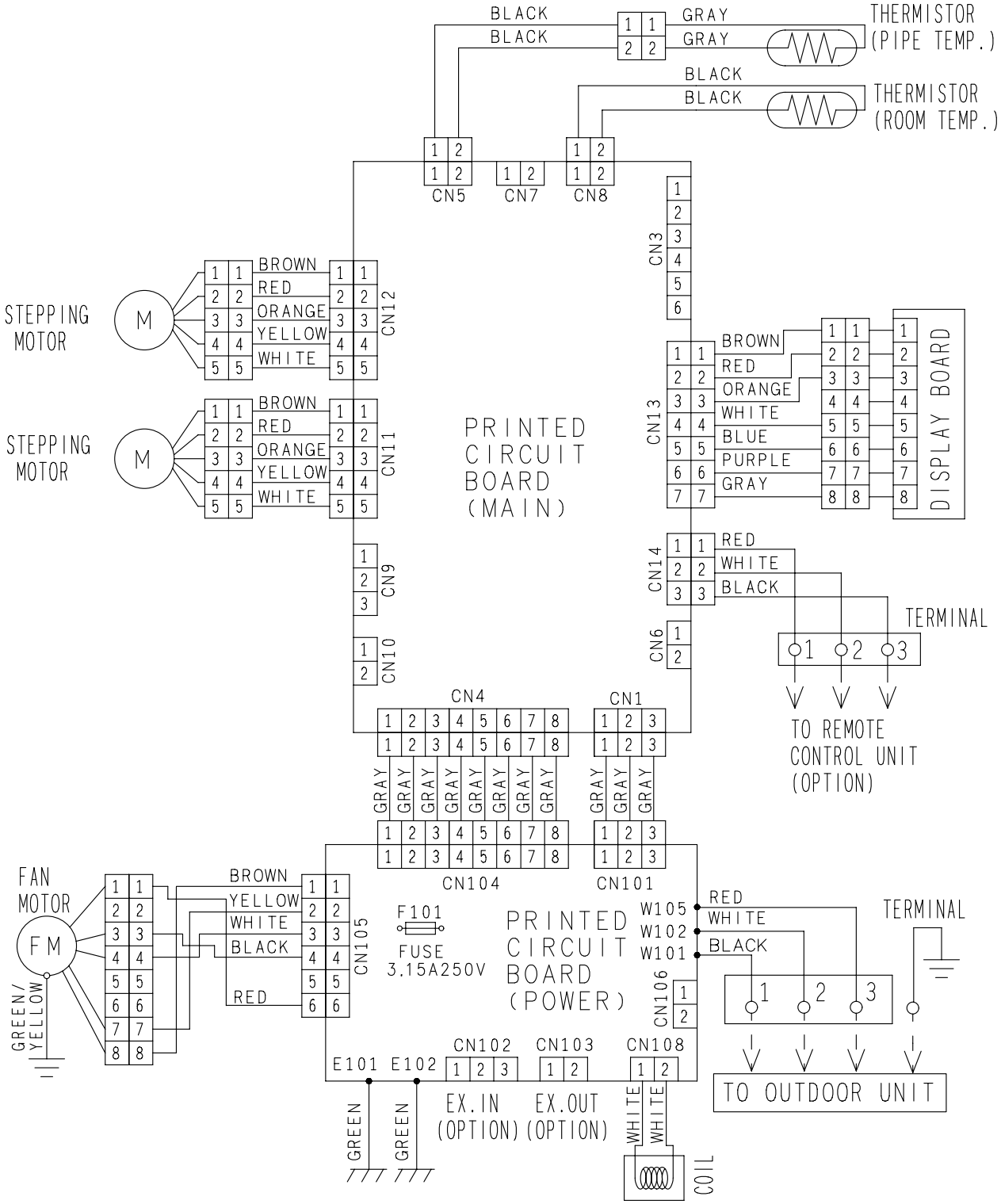
AB∗G30-36LRTE

5. WIRING DIAGRAMS

■ MODEL: AB∗G30LRTE, AB∗G36LRTE



CEILING TYPE
AB∗G30-36LRTE

6. CAPACITY TABLE

6-1. COOLING CAPACITY

This table is created using the maximum capacity.

■ MODEL: AB∗G30LRTE

AFR	27.7

		Indoor temperature																			
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	8.60	6.53	1.32	9.59	6.57	1.35	9.91	7.14	1.35	10.57	7.17	1.37	10.89	7.74	1.37	11.55	7.71	1.39	12.20	8.21	1.40
	-10	8.38	6.44	1.71	9.33	6.48	1.73	9.65	7.05	1.74	10.28	7.07	1.76	10.60	7.64	1.77	11.24	7.61	1.79	11.87	8.10	1.80
	0	7.96	6.33	2.19	8.87	6.37	2.23	9.17	6.92	2.24	9.77	6.94	2.26	10.08	7.50	2.27	10.68	7.47	2.29	11.29	7.96	2.32
	5	7.85	6.17	2.24	8.75	6.21	2.28	9.04	6.75	2.29	9.64	6.77	2.31	9.94	7.32	2.33	10.54	7.29	2.35	11.13	7.76	2.37
	10	7.82	6.27	2.27	8.71	6.31	2.30	9.00	6.86	2.31	9.60	6.88	2.34	9.89	7.43	2.35	10.49	7.40	2.37	11.08	7.89	2.39
	15	8.20	6.31	2.47	9.13	6.35	2.51	9.44	6.90	2.52	10.07	6.92	2.54	10.38	7.48	2.56	11.00	7.45	2.58	11.62	7.93	2.61
	20	9.45	6.90	3.00	10.53	6.94	3.05	10.89	7.55	3.06	11.61	7.57	3.09	11.97	8.18	3.11	12.68	8.14	3.14	13.40	8.67	3.17
	25	9.12	6.77	3.34	10.16	6.81	3.39	10.51	7.40	3.41	11.20	7.42	3.44	11.55	8.02	3.46	12.24	7.99	3.49	12.93	8.51	3.53
	30	8.71	6.67	3.35	9.70	6.71	3.40	10.03	7.30	3.42	10.69	7.32	3.45	11.02	7.91	3.47	11.68	7.88	3.51	12.34	8.39	3.54
	35	7.90	6.31	3.36	8.80	6.34	3.41	9.10	6.90	3.43	9.70	6.92	3.47	10.00	7.47	3.48	10.60	7.44	3.52	11.20	7.93	3.55
	40	6.03	5.20	2.98	6.72	5.23	3.03	6.95	5.68	3.04	7.41	5.70	3.07	7.63	6.16	3.09	8.09	6.13	3.12	8.55	6.53	3.15
	46	5.39	5.10	2.92	6.01	5.13	2.97	6.21	5.58	2.99	6.62	5.59	3.02	6.82	6.04	3.03	7.23	6.02	3.06	7.64	6.41	3.09

■ MODEL: AB∗G36LRTE

AFR	31.7

		Indoor temperature																			
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-15	8.73	6.97	1.32	9.72	7.02	1.34	10.05	7.63	1.35	10.72	7.65	1.36	11.05	8.26	1.37	11.71	8.23	1.39	12.37	8.77	1.40
	-10	8.49	6.76	1.71	9.46	6.80	1.74	9.78	7.39	1.75	10.43	7.41	1.77	10.75	8.01	1.78	11.40	7.97	1.79	12.04	8.49	1.81
	0	8.15	6.72	2.20	9.08	6.76	2.24	9.39	7.35	2.25	10.01	7.37	2.27	10.31	7.96	2.28	10.93	7.93	2.31	11.55	8.45	2.33
	5	8.04	6.54	2.24	8.95	6.58	2.28	9.26	7.16	2.29	9.87	7.18	2.31	10.17	7.75	2.33	10.78	7.72	2.35	11.39	8.23	2.37
	10	8.01	6.65	2.26	8.92	6.69	2.30	9.22	7.28	2.31	9.83	7.30	2.33	10.13	7.88	2.35	10.74	7.85	2.37	11.35	8.37	2.39
	15	8.43	6.70	2.47	9.39	6.74	2.50	9.71	7.33	2.52	10.35	7.35	2.54	10.67	7.94	2.56	11.31	7.90	2.58	11.95	8.42	2.61
	20	9.82	7.34	3.00	10.94	7.38	3.05	11.31	8.03	3.06	12.06	8.05	3.10	12.43	8.69	3.11	13.18	8.66	3.14	13.92	9.23	3.17
	25	9.38	7.13	3.34	10.45	7.18	3.39	10.80	7.80	3.41	11.52	7.83	3.44	11.87	8.45	3.46	12.59	8.42	3.49	13.30	8.97	3.53
	30	9.20	7.05	4.06	10.25	7.09	4.13	10.60	7.71	4.15	11.30	7.74	4.19	11.65	8.36	4.21	12.35	8.32	4.25	13.05	8.86	4.30
	35	8.85	7.03	4.05	9.86	7.08	4.11	10.19	7.69	4.13	10.86	7.72	4.17	11.20	8.33	4.19	11.87	8.30	4.24	12.54	8.84	4.28
	40	6.61	5.89	3.07	7.37	5.93	3.12	7.62	6.44	3.14	8.12	6.46	3.17	8.37	6.98	3.18	8.87	6.95	3.22	9.38	7.41	3.25
	46	5.95	5.91	2.95	6.62	5.94	2.99	6.85	6.46	3.01	7.30	6.48	3.04	7.53	7.00	3.05	7.98	6.97	3.09	8.43	7.42	3.12

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

CEILING TYPE
AB∗G30-36LRTE

6-2. HEATING CAPACITY

This table is created using the maximum capacity.

■ MODEL: AB∗G30LRTE

AFR	27.7

			Indoor temperature									
		°CDB	16		18		20		22		24	
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
Outdoor temperature	-15	-16	8.22	3.38	8.02	3.45	7.83	3.52	7.63	3.59	7.44	3.67
	-10	-11	8.79	3.39	8.58	3.46	8.37	3.53	8.16	3.60	7.95	3.67
	-5	-7	9.54	3.40	9.31	3.47	9.08	3.54	8.86	3.61	8.63	3.69
	0	-2	10.11	3.41	9.87	3.48	9.63	3.55	9.39	3.62	9.15	3.69
	5	3	11.22	3.37	10.96	3.44	10.69	3.51	10.42	3.58	10.16	3.65
	7	6	11.76	3.34	11.48	3.41	11.20	3.48	10.92	3.55	10.64	3.62
	10	8	12.12	3.27	11.83	3.34	11.54	3.40	11.25	3.47	10.97	3.54
	15	10	10.86	2.56	10.60	2.61	10.34	2.67	10.08	2.72	9.82	2.76
	20	15	10.85	2.26	10.59	2.30	10.33	2.35	10.07	2.40	9.81	2.43
	24	18	11.31	2.27	11.04	2.31	10.77	2.36	10.50	2.41	10.23	2.45

■ MODEL: AB∗G36LRTE

AFR	31.7

			Indoor temperature									
		°CDB	16		18		20		22		24	
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
Outdoor temperature	-15	-16	9.17	3.97	8.95	4.05	8.73	4.13	8.51	4.22	8.29	4.30
	-10	-11	9.88	4.02	9.65	4.10	9.41	4.19	9.18	4.27	8.94	4.35
	-5	-7	10.56	4.04	10.31	4.12	10.06	4.21	9.81	4.29	9.56	4.38
	0	-2	11.81	4.06	11.53	4.15	11.25	4.23	10.97	4.32	10.69	4.40
	5	3	12.95	3.97	12.64	4.05	12.33	4.14	12.02	4.22	11.72	4.30
	7	6	13.34	3.46	13.02	3.53	12.70	3.61	12.38	3.68	12.07	3.75
	10	8	13.75	3.34	13.42	3.41	13.09	3.47	12.77	3.54	12.44	3.61
	15	10	12.18	2.59	11.89	2.65	11.60	2.70	11.31	2.76	11.02	2.80
	20	15	12.17	2.28	11.88	2.33	11.59	2.38	11.30	2.43	11.01	2.46
	24	18	12.71	2.26	12.41	2.31	12.10	2.36	11.80	2.40	11.50	2.44

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

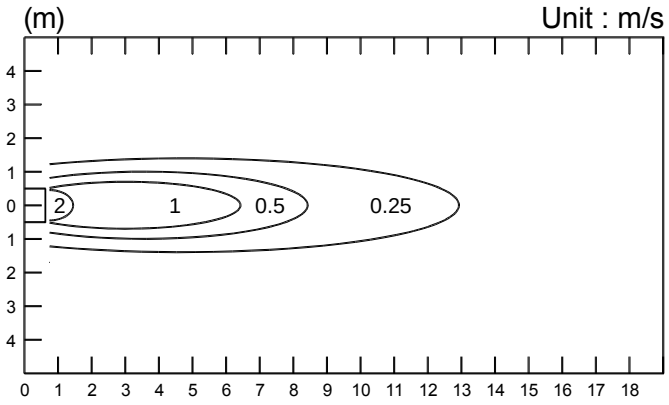
CEILING TYPE
AB∗G30-36LRTE

7. FAN PERFORMANCE

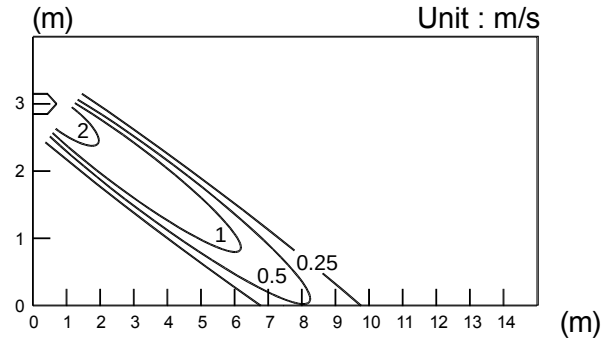
7-1. AIR VELOCITY DISTRIBUTION

■ MODEL: AB∗G30LRTE

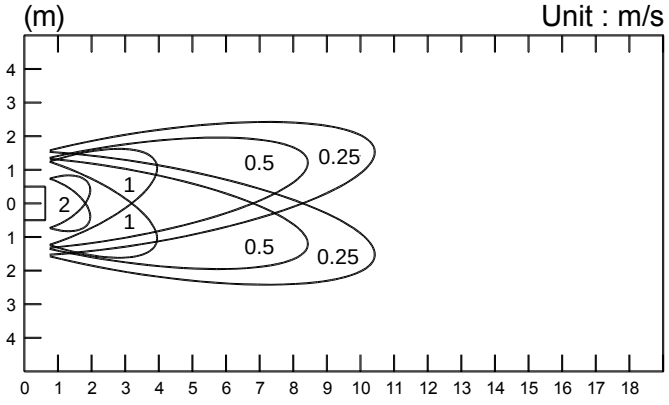
Note:
Condition
Fan speed : High
Operation mode : FAN



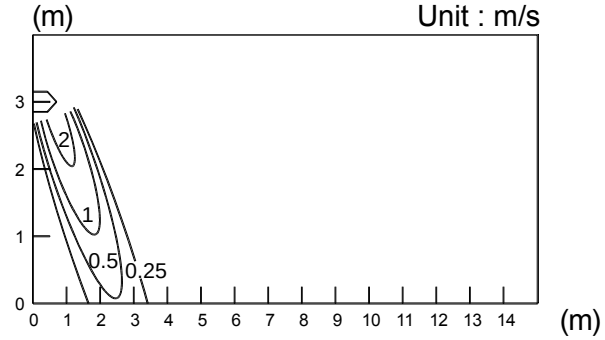
TOP VIEW
VERTICAL : UPWARD
HORIZONTAL : CENTER



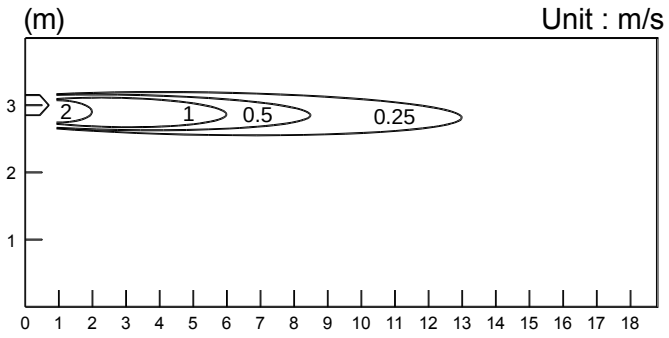
SIDE VIEW
FLAP : CENTER
HORIZONTAL : CENTER



TOP VIEW
VERTICAL : UPWARD
HORIZONTAL : RIGHT AND LEFT



SIDE VIEW
FLAP : DOWNWARD
HORIZONTAL : CENTER

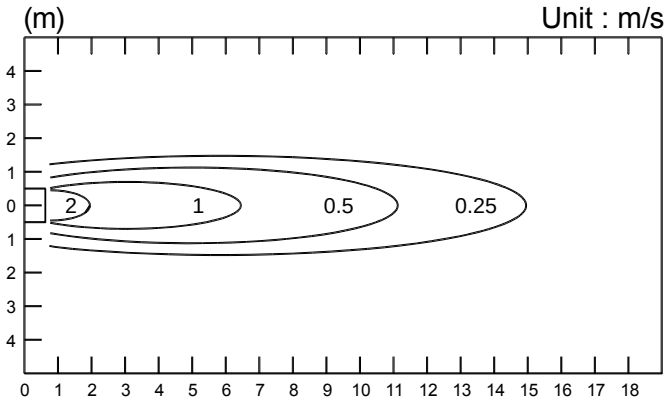


SIDE VIEW
FLAP : UPWARD
HORIZONTAL : CENTER

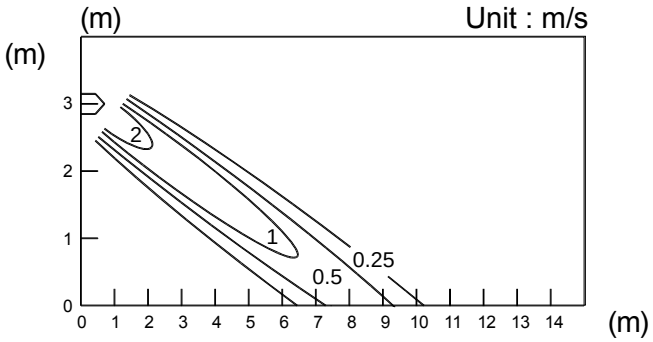
CEILING TYPE
AB∗G30-36LRTE

■MODEL: AB∗G36LRTE

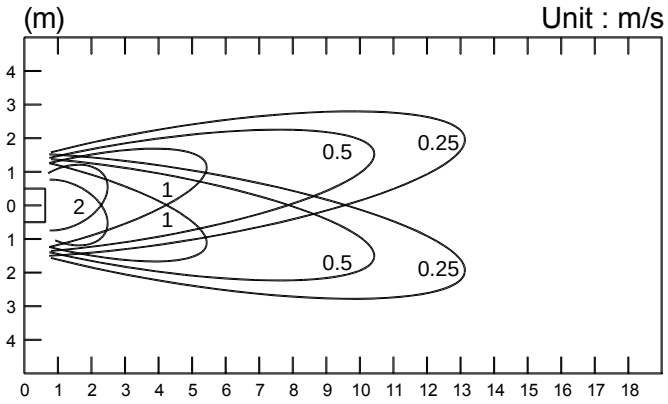
Note:
Condition
Fan speed : High
Operation mode : FAN



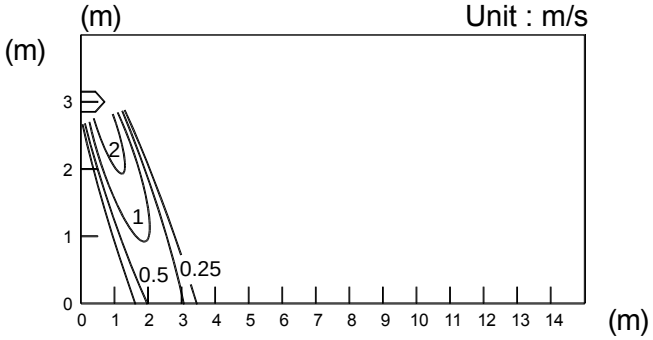
TOP VIEW
VERTICAL : UPWARD
HORIZONTAL : CENTER



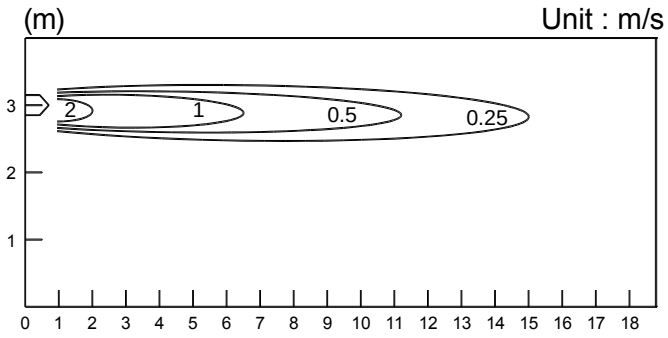
SIDE VIEW
FLAP : CENTER
HORIZONTAL : CENTER



TOP VIEW
VERTICAL : UPWARD
HORIZONTAL : RIGHT AND LEFT



SIDE VIEW
FLAP : DOWNWARD
HORIZONTAL : CENTER



SIDE VIEW
FLAP : UPWARD
HORIZONTAL : CENTER

CEILING TYPE
AB∗G30-36LRTE

7-2. AIRFLOW

■MODEL: AB∗G30LRTE

●COOLING

Fan speed	Number of rotations (r.p.m.)	Airflow	
HIGH	1000	m^3/h	1660
		l/s	461
		CFM	977
MED	910	m^3/h	1500
		l/s	417
		CFM	883
LOW	750	m^3/h	1200
		l/s	333
		CFM	706
QUIET	650	m^3/h	1000
		l/s	278
		CFM	589

●HEATING

Fan speed	Number of rotations (r.p.m.)	Airflow	
HIGH	1000	m^3/h	1660
		l/s	461
		CFM	977
MED	910	m^3/h	1500
		l/s	417
		CFM	883
LOW	750	m^3/h	1200
		l/s	333
		CFM	706
QUIET	650	m^3/h	1000
		l/s	278
		CFM	589

CEILING TYPE
AB∗G30-36LRTE

■MODEL: AB∗G36LRTE

●COOLING

Fan speed	Number of rotations (r.p.m.)	Airflow	
HIGH	1100	m^3/h	1900
		l/s	528
		CFM	1118
MED	910	m^3/h	1500
		l/s	417
		CFM	883
LOW	750	m^3/h	1200
		l/s	333
		CFM	706
QUIET	650	m^3/h	1000
		l/s	278
		CFM	589

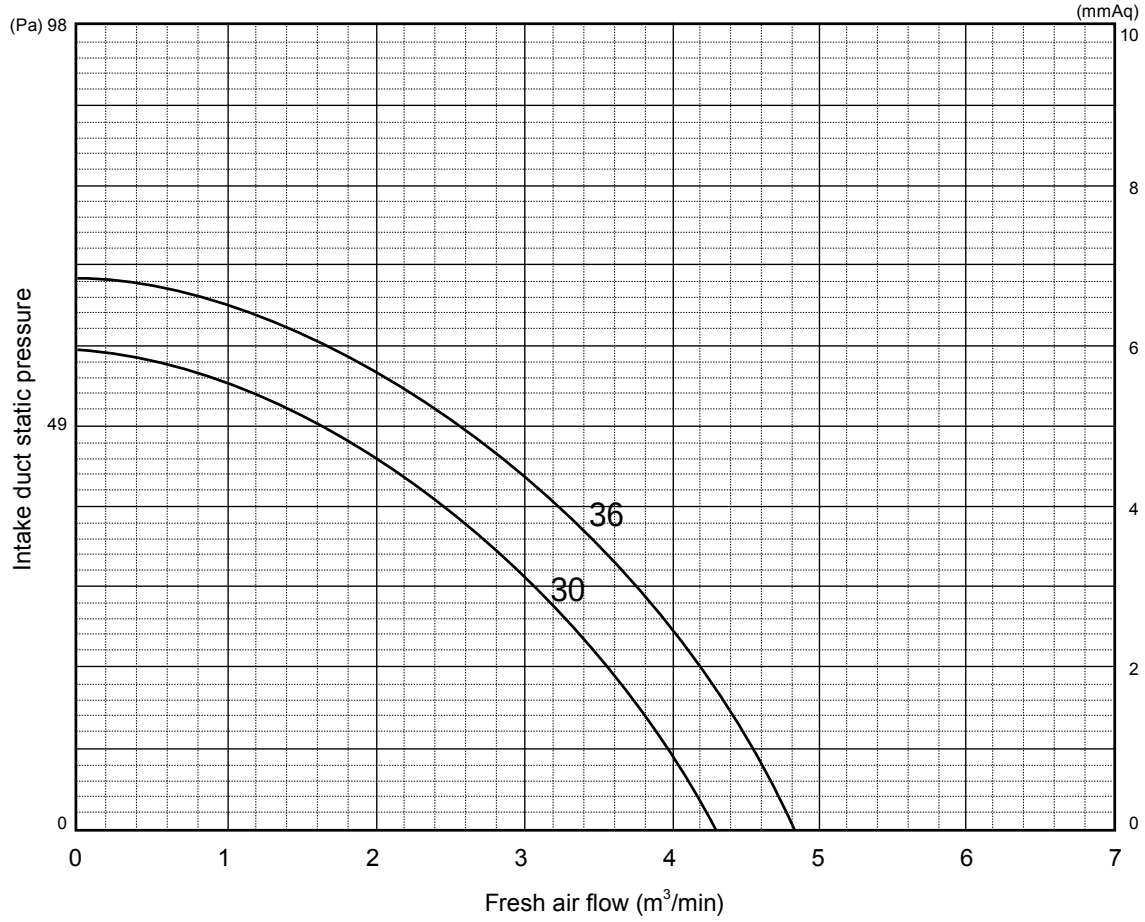
●HEATING

Fan speed	Number of rotations (r.p.m.)	Airflow	
HIGH	1100	m^3/h	1900
		l/s	528
		CFM	1118
MED	910	m^3/h	1500
		l/s	417
		CFM	883
LOW	750	m^3/h	1200
		l/s	333
		CFM	706
QUIET	650	m^3/h	1000
		l/s	278
		CFM	589

CEILING TYPE
AB∗G30-36LRTE

7-3. FRESH AIR CHARACTERISTIC

■ MODEL: AB∗G30LRTE, AB∗G36LRTE



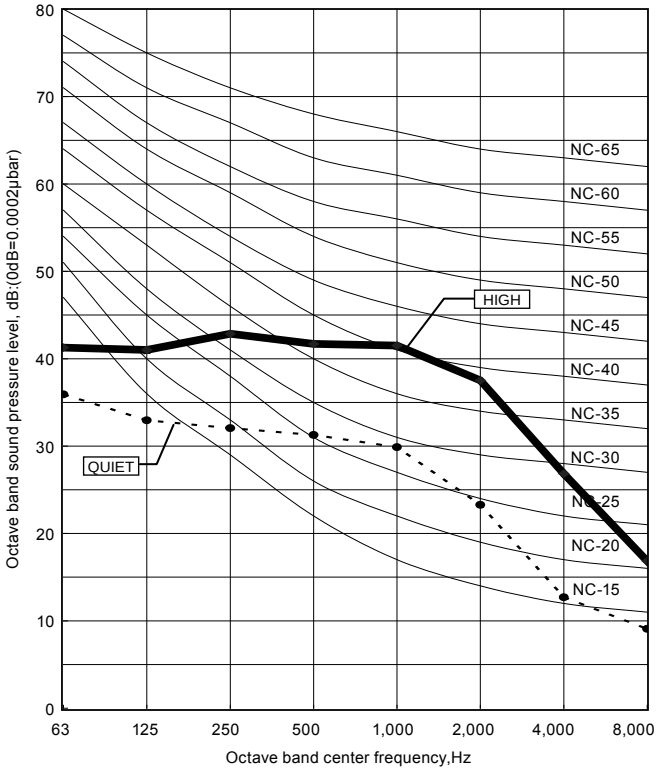
CEILING TYPE
AB∗G30-36LRTE

8. OPERATION NOISE

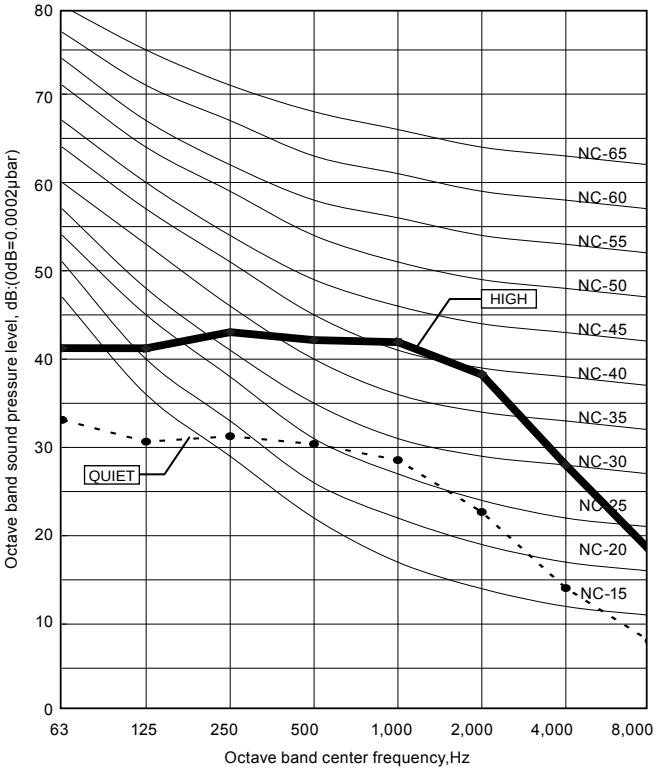
8-1. NOISE LEVEL CURVE

■ MODEL: AB∗G30LRTE

● Cooling

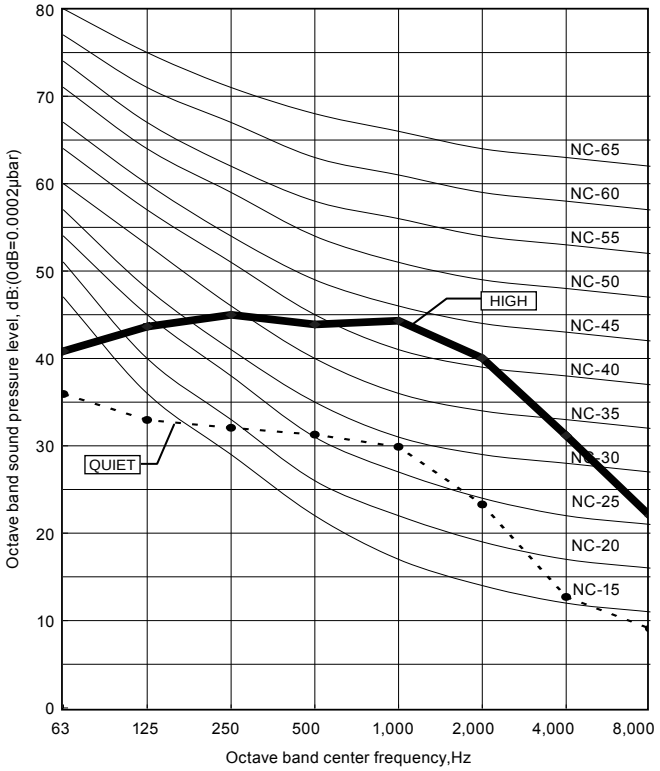


● Heating

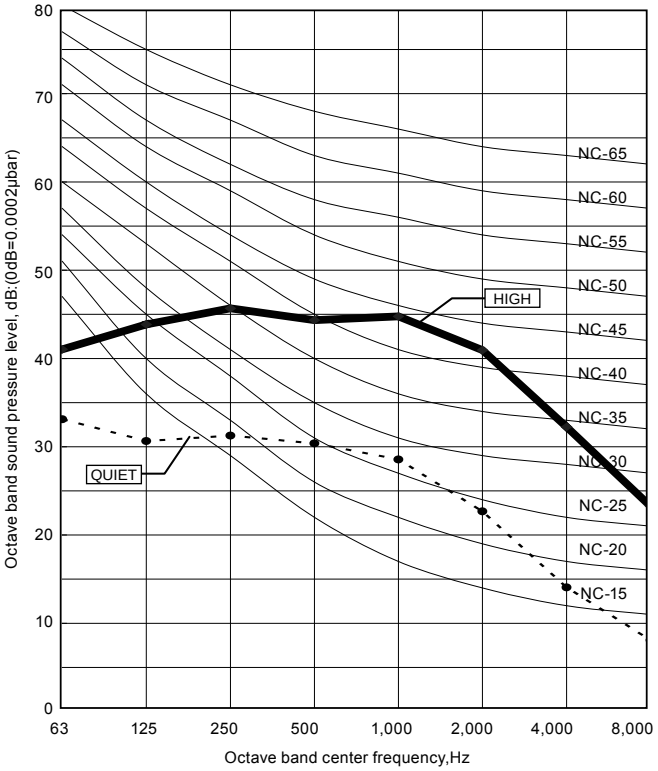


■ MODEL: AB∗G36LRTE

● Cooling

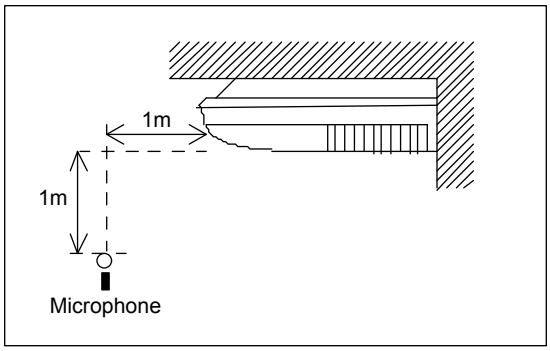


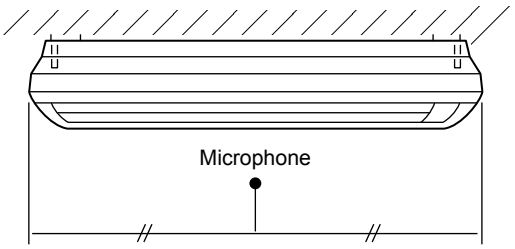
● Heating



CEILING TYPE
AB∗G30-36LRTE

8-2. SOUND LEVEL CHECK POINT





CEILING TYPE
AB∗G30-36LRTE

9. ELECTRIC CHARACTERISTICS

Model name			AB∗G30LRTE	AB∗G36LRTE
Power supply	Voltage	V	230 ~	
	Frequency	Hz	50	
Max. operating current (Indoor unit)		A	0.7	
*1) Wiring spec.	Connection cable	mm^2	1.5 - 2.5	
	Limited wiring length	m	51	

*1) Wiring spec.
Selected Sample
(Selected based on Japan Electrotechnical Standards and Committee E0005)

10. SAFETY DEVICES

	Protection form	Model	
		AB∗G30LRTE	AB∗G36LRTE
Circuit protection	Current fuse (PCB)	250V 3.15A	
Fan motor protection	Thermal protection program	135±15°C OFF 115±15°C ON	

CEILING TYPE
AB∗G30-36LRTE

11. EXTERNAL INPUT & OUTPUT

Connector	INPUT	OUTPUT	REMARKS
CN102	Control input	—	See external input/output settings for details.
CN103	—	Operation status output	
CN6	—	Fresh air control output	

11-1. EXTERNAL INPUT

■ CONTROL INPUT (Operation/Stop or Forced stop)

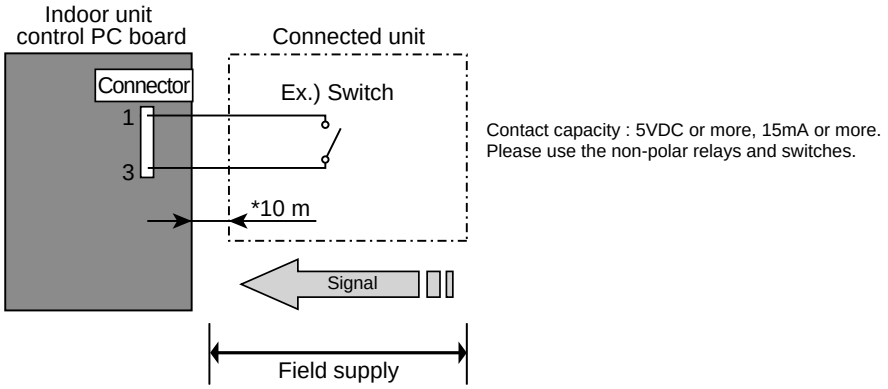
The air conditioner can be remotely operated by means of the following on-site work.

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

Unit operation is started at the following contents by adding the contact input of a commercial ON/OFF switch to a connector on the external control PC board and turning it ON.

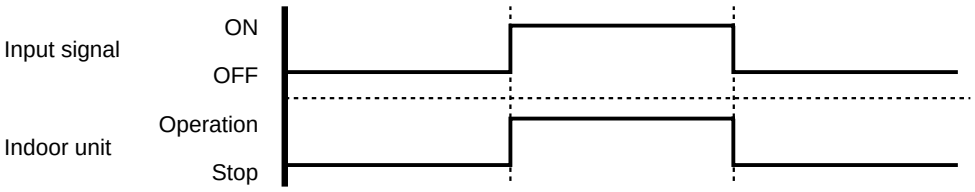
Unit operation	Initial starting after turned power on	Other than initial starting
Operation mode	Auto changeover	Mode at previous operation
Set temperature	24°C	Temperature at previous operation
Air flow mode	AUTO	Mode at previous operation
Up-down air direction (swing)	Standard air direction (swing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

● Circuit diagram example

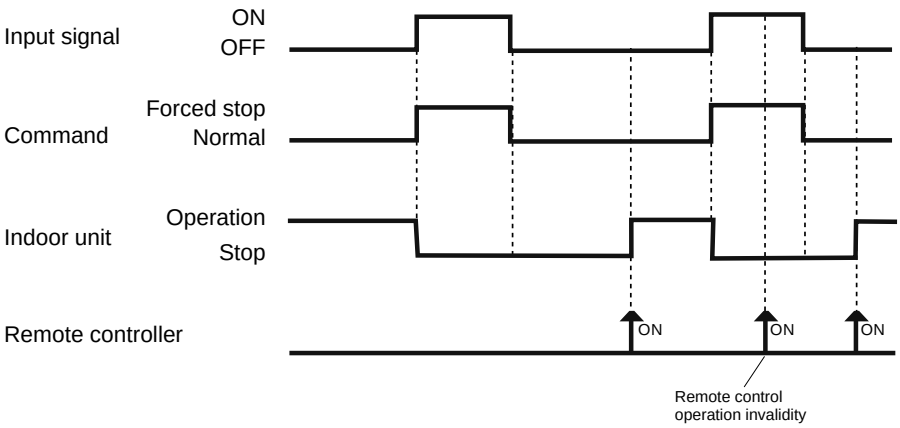


* Make the distance from the PC board to the connected unit within 10m.

● When function setting is "Operation/Stop" mode



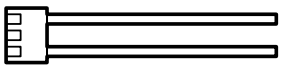
● When function setting is "Forced stop" mode



● Parts (Optional)

Model name
UTY-XWZX

Wire (External input)



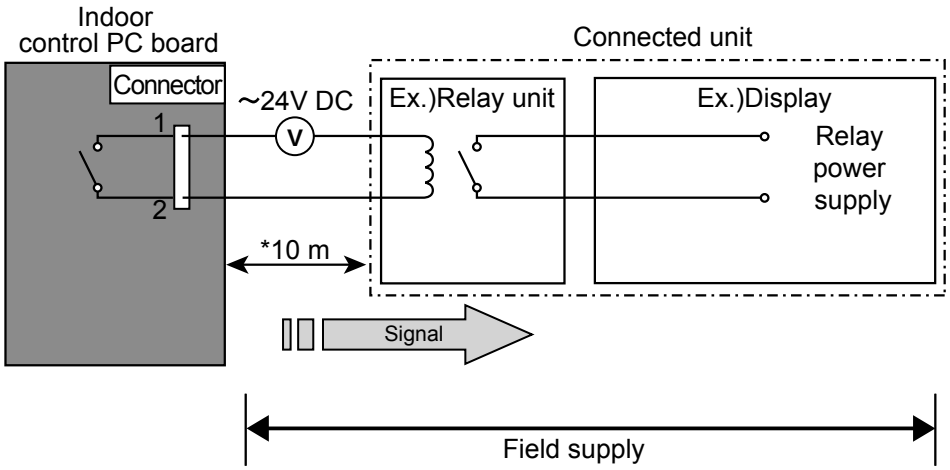
CEILING TYPE
AB∗G30-36LRTE

11-2. EXTERNAL OUTPUT

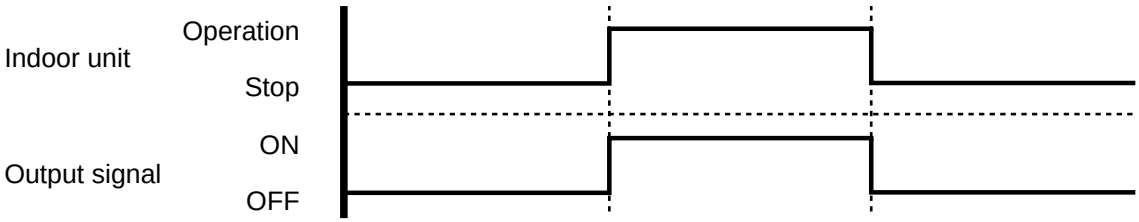
■ OPERATION STATUS OUTPUT

An air conditioner operation status signal can be output.

● Circuit diagram example



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



● Parts (Optional)

Model name
UTY-XWZX

Wire (External output)

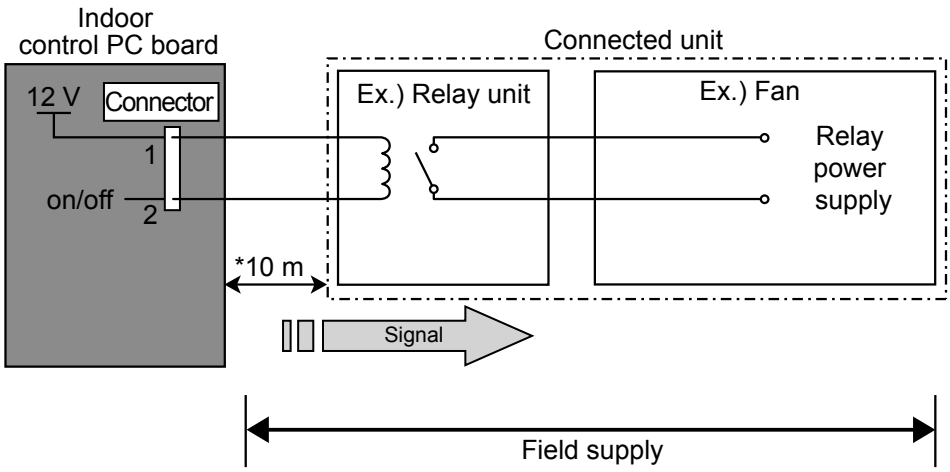
CEILING TYPE
AB∗G30-36LRTE

■ FRESH AIR CONTROL OUTPUT

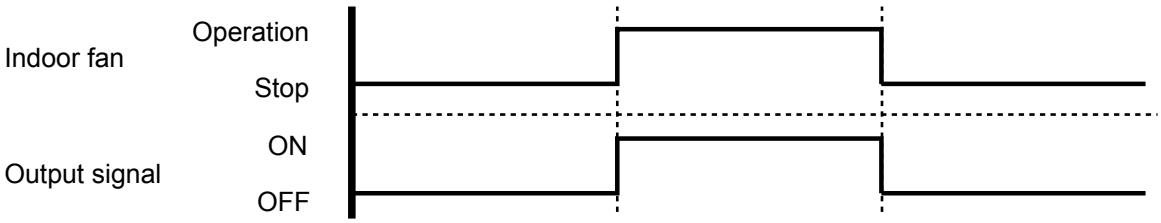
A signal linked to air conditioner indoor fan ON can be output.

* However, signal becomes OFF during cold air prevention control operation.

● Circuit diagram example



* Make the distance from the PC board to the connected unit within 10m.
Relay spec. : Rated 12VDC, 50mA or less.



● Parts (Optional)

Model name
UTD-ECS5A

Wire (Fresh air output)

CEILING TYPE
AB∗G30-36LRTE

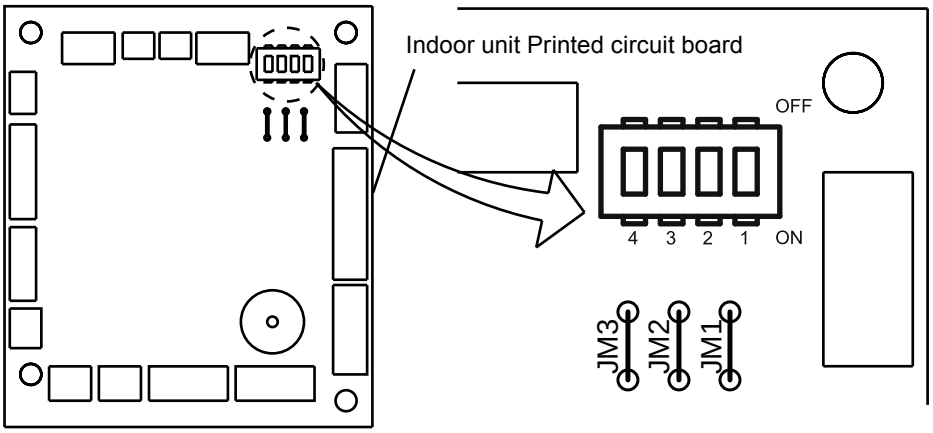
12. FUNCTION SETTINGS

12-1. INDOOR UNIT

INDOOR UNIT		
DIP SW	1	Remote controller address setting
	2	
	3	
	4	
Jumper Wire	JM1	Setting forbidden
	JM2	
	JM3	

■ SWITCH POSITION

MAIN PCB



■ DIP-SW SETTING

● Remote controller address setting

A number of indoor units can be operated at the same time using a wired remote controller.
Set the unit number of each indoor unit using the DIP switches on the indoor unit circuit board.
(See the following table.)
The DIP switches are normally set to make the unit number 00.

(◆. . .Factory setting)

	Remote controller address	DIP switch No.			
		1	2	3	4
◆	00	OFF	OFF	OFF	OFF
	01	ON	OFF	OFF	OFF
	02	OFF	ON	OFF	OFF
	03	ON	ON	OFF	OFF
	04	OFF	OFF	ON	OFF
	05	ON	OFF	ON	OFF
	06	OFF	ON	ON	OFF
	07	ON	ON	ON	OFF
	08	OFF	OFF	OFF	ON
	09	ON	OFF	OFF	ON
	10	OFF	ON	OFF	ON
	11	ON	ON	OFF	ON
	12	OFF	OFF	ON	ON
	13	ON	OFF	ON	ON
	14	OFF	ON	ON	ON
	15	ON	ON	ON	ON

CEILING TYPE
AB∗G30-36LRTE

12-2. INDOOR UNIT (Setting by remote controller)

- The function settings of the control of the indoor unit can be changed by this procedure according to the installation conditions. Incorrect settings can cause the indoor unit malfunction.
- After the power is turned on, perform the “FUNCTION SETTING” according to the installation conditions using the remote controller.
- The settings may be selected between the following two: Function Number or Setting Value.
- Settings will not be changed if invalid numbers or setting values are selected.

■ PREPARATION

- Turn on the power.

* By turning on the power indoor units, so make sure the piping air-tight test and vacuuming have been conducted before turning on the power.

* Also check again to make sure no wiring mistakes were made before turning on the power.

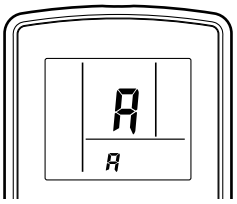
■ FUNCTION SETTING METHOD (for Wireless remote controller)

Entering the Function Setting Mode

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

STEP 1

Setting the Remote controller Signal Code



Use the following steps to select the signal code of the remote controller. (Note that the air conditioner cannot receive a signal code if the air conditioner has not been set for the signal code.) The signal codes that are set through this process are applicable only to the signals in the FUNCTION SETTING. For details on how to set the signal codes through the normal process, refer to REMOTE CONTROLLER SIGNAL CODE SETTING.

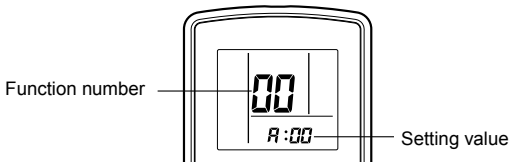
1. Press the SET TEMP. (▲) (▼) button to change the signal code between A → b → c → d Match the code on the display to the air conditioner signal code. (initially set to A)
   (If the signal code does not need to be selected, press the MODE button and proceed to STEP 2.)
2. Press the TIMER MODE button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

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

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

STEP 2

Selecting the Function Number and Setting Value



1. Press the SET TEMP. (▲) (▼) buttons to select the function number.
   (Press the MODE button to switch between the left and right digits.)
2. Press the FAN button to proceed to setting the value.
   Press the FAN button again to return to the function number selection.)
3. Press the SET TEMP. (▲) (▼) buttons to select the setting value.
   (Press the MODE button to switch between the left and right digits.)
4. Press the TIMER MODE button, and START/STOP button, in the order listed to confirm the settings.
5. Press the RESET button to cancel the function setting mode.
6. After completing the FUNCTION SETTING, be sure to turn off the power and turn it on again.

⚠CAUTION
After turning off the power, wait 10 seconds or more before turning on it again. The FUNCTION SETTING doesn’t become effective if it doesn’t do so.

CEILING TYPE
AB∗G30-36LRTE

■ CONTENTS OF FUNCTION SETTING

- Follow the instructions in the Local Setup Procedure, which is supplied with the remote control, in accordance with the installed condition.
  After the power is turned on, perform the Function Setting on the remote control.
- The settings may be selected between the following two: Function Number or Setting Value.
- Settings will not be changed if invalid numbers or setting values are selected.

1)	Filter sign
2)	Ceiling height
3)	Cooler room temperature correction
4)	Heater room temperature correction
5)	Auto restart
6)	Indoor room temperature sensor switching function
7)	Remote controller signal code
8)	External input control
9)	Indoor unit fan control for energy saving

1) Filter sign

The indoor unit has a sign to inform the user that it is time to clean the filter. Select the time setting for the filter sign display interval in the table below according to the amount of dust or debris in the room. If you do not wish the filter sign to be displayed, select the setting value for "No indication".

(◆. . .Factory setting)

	Setting Description	Function Number	Setting Value
	"Standard (2,500 hours)"	11	00
	"Long interval (4,400 hours)"		01
	"Short interval (1,250 hours)"		02
◆	No indication		03

2) Ceiling height

Select the setting values in the table below according to the height of the ceiling.

(◆. . .Factory setting)

	Setting Description	Function Number	Setting Value
◆	Standard (2.5m to 3.0m)	20	00
	High ceiling (3.0m or more)		01

3) Cooler room temperature correction

Depending on the installed environment, the room temperature sensor may require a correction. The settings may be selected as shown in the table below.

(◆. . .Factory setting)

	Setting Description	Function Number	Setting Value
◆	Standard	30	00
	Slightly Lower control		01
	Lower control		02
	Warmer control		03

4) Heater room temperature correction

Depending on the installed environment, the room temperature sensor may require a correction. The settings may be changed as shown in the table below.

(◆. . .Factory setting)

	Setting Description	Function Number	Setting Value
◆	Standard	31	00
	Lower control		01
	Slightly warmer control		02
	Warmer control		03

CEILING TYPE
AB∗G30-36LRTE

5) Auto restart

Enable or disable automatic system restart after a power outage.

(◆. . .Factory setting)

	Setting Description	Function Number	Setting Value
◆	Yes	40	00
	No		01

* Auto restart is an emergency function such as for power failure etc.
Do not start and stop the indoor unit by this function in normal operation.
Be sure to operate by the control unit, or external input device.

6) Indoor room temperature sensor switching function

(Only for Wired remote controller)

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

(◆. . .Factory setting)

	Setting Description	Function Number	Setting Value
◆	No	42	00
	Yes		01

• If setting value is “00”,
room temperature is controlled by the indoor unit temperature sensor.

• If setting value is “01”,
room temperature is controlled by either indoor unit temperature sensor or remote controller unit sensor.

7) Remote controller signal code

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

(◆. . .Factory setting)

	Setting Description	Function Number	Setting Value
◆	A	44	00
	B		01
	C		02
	D		03

8) External input control

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

(◆. . .Factory setting)

	Setting Description	Function Number	Setting Value
◆	Operation/Stop mode	46	00
	(Setting forbidden)		01
	Forced stop mode		02

9) Indoor unit fan control for energy saving (Only cooling mode)

Enable or disable indoor unit fan control when the outdoor unit is stopped.

(◆. . .Factory setting)

	Setting Description	Function Number	Setting Value
	No	49	00
◆	Yes		01

• If setting value is “00”:
When the outdoor unit is stopped, the indoor unit fan operates following the setting on the remote controller continuously.

• If setting value is “01”:
When the outdoor unit is stopped, the indoor unit fan operates at very low speed intermittently.

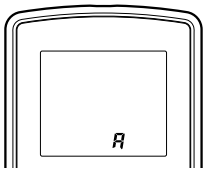
CEILING TYPE
AB∗G30-36LRTE

■ REMOTE CONTROLLER SIGNAL CODE SETTING

Use the following steps to select the signal code of the remote controller.

(Note that the air conditioner cannot receive a signal code if the air conditioner has not been set for the signal code.)

1. Press the START/STOP button until only the clock is displayed on the remote controller display.
2. Press the MODE button for at least five seconds to display the current signal code (initially set to A).
3. Press the SET TEMP. (▲) (▼) button to change the signal code between A → b → c → d.
   Match the code on the display to the air conditioner signal code.
4. Press the MODE button again to return to the clock display. The signal code will be changed.



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

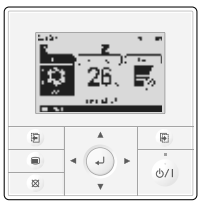
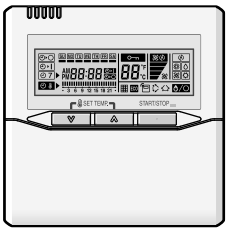
The air conditioner signal code is set to A prior to shipment. Contact your retailer to change the signal code.

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

CEILING TYPE
AB∗G30-36LRTE

13. OPTIONAL PARTS

13-1. CONTROLLER

Exterior	Parts name	Model No.	Summary
	Wired remote controller	UTY-RVN∗M	Large and full-dot liquid crystal screen, wide and large keys easy to press, user-intuitive arrow key.
	Wired remote controller	UTY-RNN∗M	Unit control is performed by wired remote controller
	Simple Remote Controller	UTY-RSN∗M	Unit control is performed by simple remote controller.

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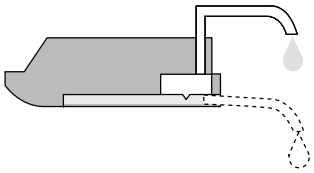
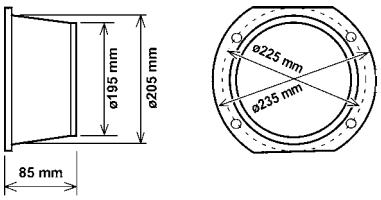
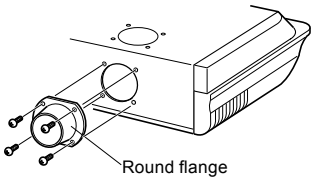
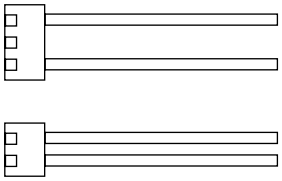
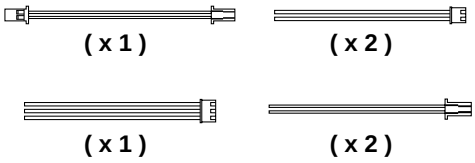
13-2. OTHERS

Exterior	Parts name	Model No.	Summary
	Drain Pump unit	UTR-DPB24T	Optional drain lift-up mechanism allows more flexible installation.
	Round flange	UTD-RF204	Round flange is used when the fresh air duct is installed. 
	External connect kit	UTY-XWZX	Use to connect with various peripheral devices and air conditioner PC board.
	External control set	UTD-ECS5A	Use to connect with various peripheral devices and air conditioner PC board. (Set of 6)

2. OUTDOOR UNIT

SINGLE TYPE :

AO∗G30LETL
AO∗G36LETL

DTR_AO135E_01
2013.02.28

CONTENTS

2. OUTDOOR UNIT

OUTDOOR UNIT
AO∗G30-36LETL

1. SPECIFICATIONS

Type				INVERTER HEATPUMP	
Model name				AO∗G30LETL	AO∗G36LETL
Power source				230V ~ 50Hz	
Available voltage range				198-264V ~ 50Hz	
Starting current			A	12.2	13.7
Fan	Airflow rate	Cooling	m^3/h	3600	3800
		Heating		3600	3800
	Type × Q'ty			Propeller × 1	
	Motor output		W	100	100
Sound pressure level		Cooling	dB(A)	53	54
		Heating		55	55
Sound power level		Cooling	dB(A)	68	69
		Heating		69	70
Heat exchanger type		Dimensions (H × W × D)	mm	798 × 900 × 36.4	798 × 900 × 36.4
		Fin pitch		1.30	1.30
		Rows x Stages		2 × 38	2 × 38
		Pipe type		Copper	
		Fin type		Aluminium	
Compressor	Type × Q'ty			Twin Rotary × 1	
	Motor output		W	2100	
Refrigerant		Type (Global Warming Potential)		R410A (1975)	
		Charge	g	2100	
Refrigerant oil		Type		POE (RB68)	
Enclosure		Material		Steel sheet	
		Colour		BEIGE Approximate colour of MUNSELL 10YR 7.5/1.0	
Dimensions (H×W×D)	Net		mm	830 × 900 × 330	
	Gross			970 × 1050 × 445	
Weight	Net		kg	61	
	Gross			68	
Connection pipe	Size	Liquid	mm	Ø 9.52 (Ø 3/8 in.)	
		Gas		Ø 15.88 (Ø 5/8 in.)	
	Method			Flare	
	Pre-charge length		m	20	
	Max. length			50	
	Max. height difference			30	
Operation range		Cooling	˚C	-15 to 46	
		Heating		-15 to 24	

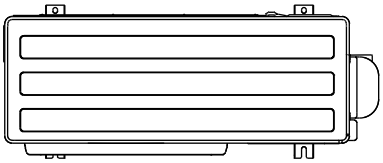
Note :
Specifications are based on the following conditions.
Cooling : Indoor temperature of 27 °CDB / 19 °CWB.and outdoor temperature of 35 °CDB/24 °CWB.
Heating : Indoor temperature of 20 °CDB / 15 °CWB.and outdoor temperature of 7 °CDB/6 °CWB.
Pipe length : 5 m, Height difference : 0 m.(Outdoor unit - Indoor unit)
The protective function may work when using it outside the operation range.

OUTDOOR UNIT
AO∗G30-36LETL

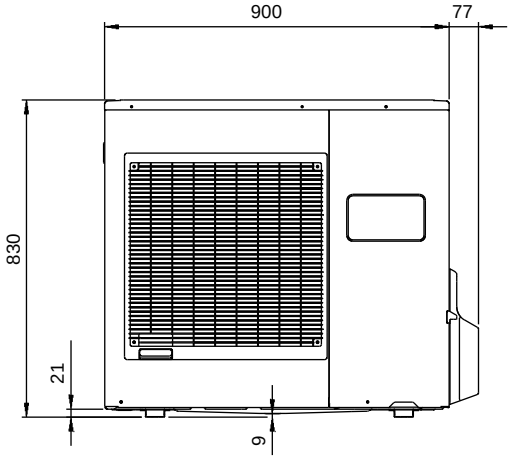
2. DIMENSIONS

■ MODELS: AO∗G30LETL, AO∗G36LETL

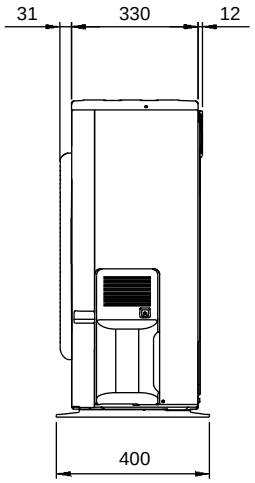
(Unit : mm)



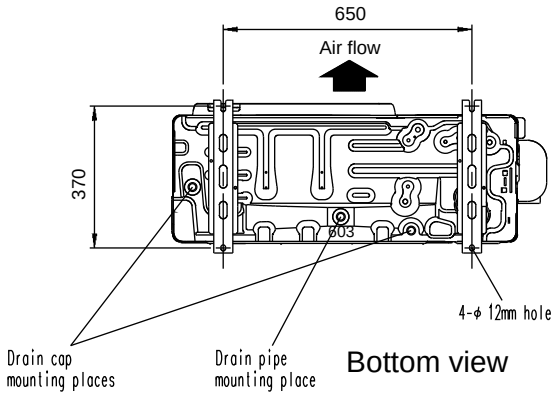
Top view



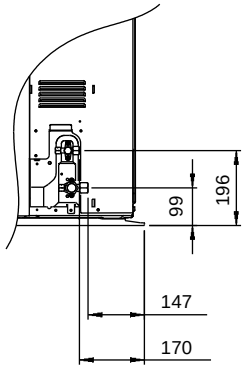
Front view



Side view

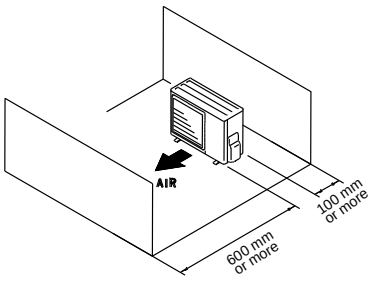


Bottom view

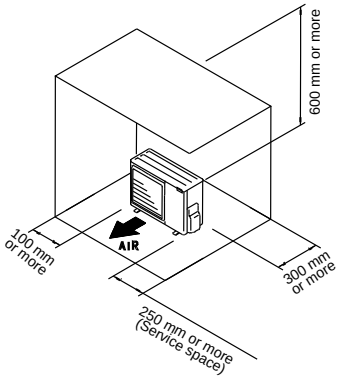


■ INSTALLATION PLACE

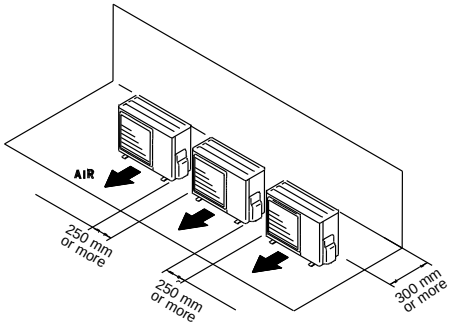
When there are obstacles at the back or front sides.



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



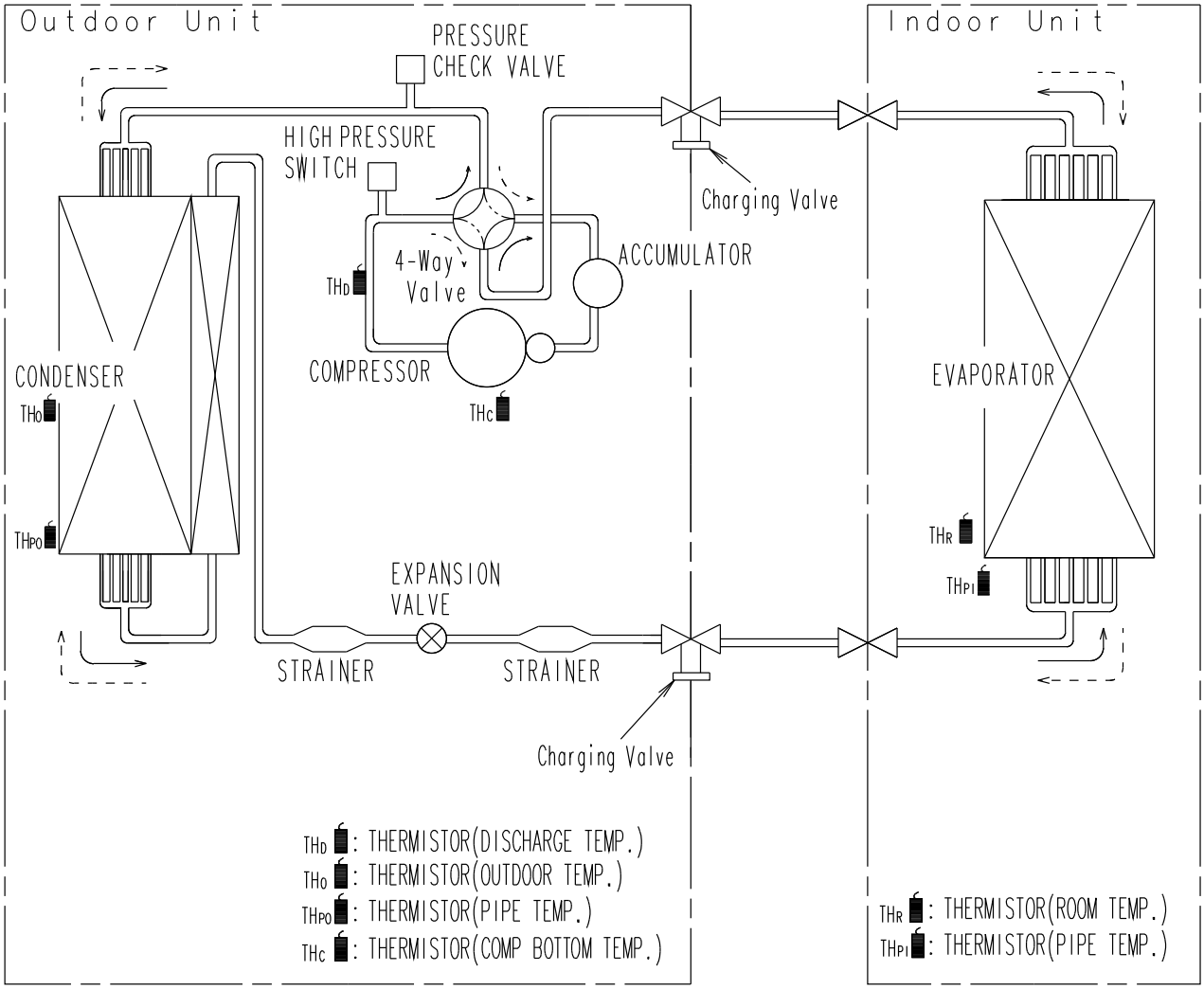
When there are obstacles at the back, side with the installation of more than one unit.



If the space is larger than stated, the condition will be the same as those without any obstacles.

3. REFRIGERANT CIRCUIT

■ MODELS: AO∗G30LETL, AO∗G36LETL



Refrigerant direction

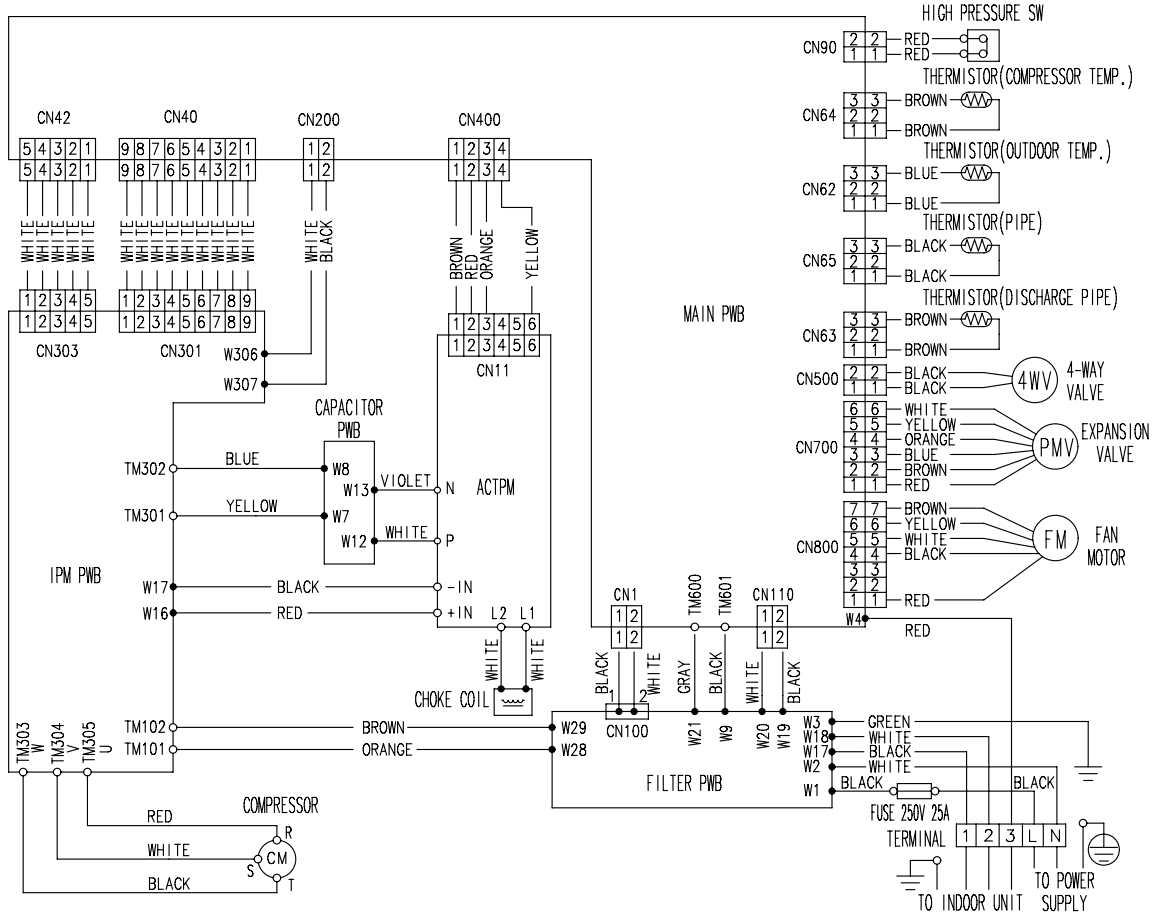
——→ : Cooling

- - -> : Heating

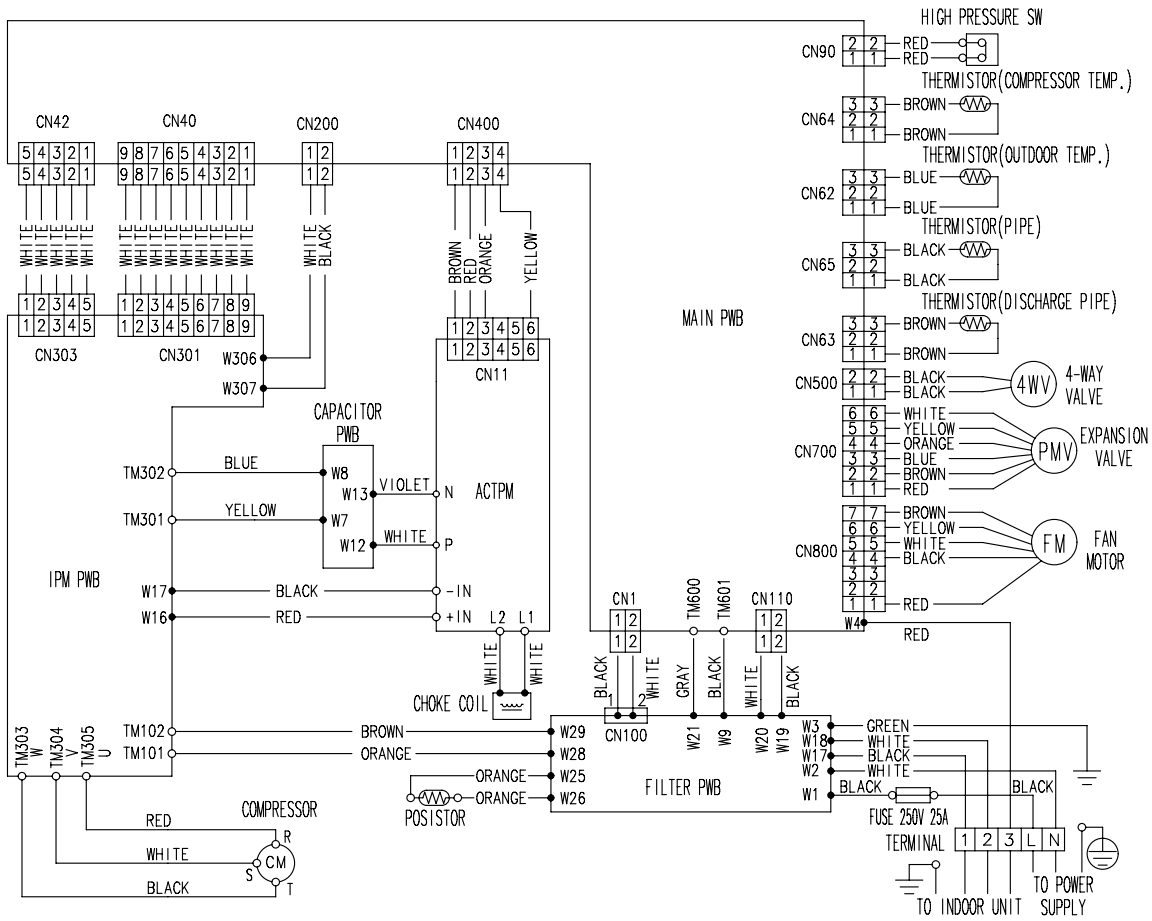
Refrigerant pipe diameter
Liquid : 9.52 mm (3/8")
Gas : 15.88 mm (5/8")

4. WIRING DIAGRAMS

■ MODEL: AO∗G30LETL



■MODEL: AO*G36LETL



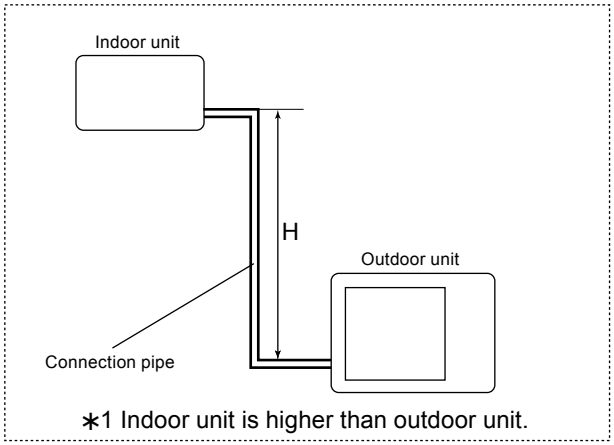
5. CAPACITY COMPENSATION RATE FOR PIPE LENGTH AND HEIGHT DIFFERENCE

■ MODELS: AO∗G30LETL, AO∗G36LETL

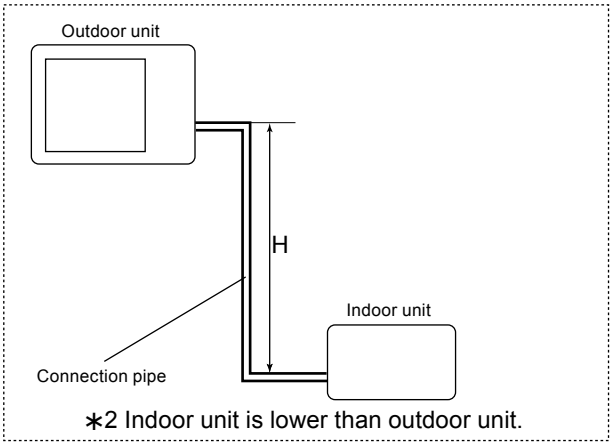
COOLING			Pipe length (m)						
			5	7.5	10	20	30	40	50
Height difference H (m)	∗1 Indoor unit is higher than outdoor unit	30	-	-	-	-	0.908	0.894	0.876
		20	-	-	-	0.935	0.923	0.909	0.891
		10	-	-	0.968	0.951	0.938	0.924	0.906
		7.5	-	0.982	0.972	0.954	0.942	0.928	0.909
		5	0.992	0.986	0.976	0.958	0.946	0.932	0.913
		0	1.000	0.994	0.983	0.966	0.954	0.939	0.920
	∗2 Indoor unit is lower than outdoor unit	-5	1.000	0.994	0.983	0.966	0.954	0.939	0.920
		-7.5	-	0.994	0.983	0.966	0.954	0.939	0.920
		-10	-	-	0.983	0.966	0.954	0.939	0.920
		-20	-	-	-	0.966	0.954	0.939	0.920
		-30	-	-	-	-	0.954	0.939	0.920

HEATING			Pipe length (m)						
			5	7.5	10	20	30	40	50
Height difference H (m)	∗1 Indoor unit is higher than outdoor unit	30	-	-	-	-	0.931	0.914	0.899
		20	-	-	-	0.954	0.931	0.914	0.899
		10	-	-	0.990	0.954	0.931	0.914	0.899
		7.5	-	0.991	0.990	0.954	0.931	0.914	0.899
		5	1.000	0.991	0.990	0.954	0.931	0.914	0.899
		0	1.000	0.991	0.990	0.954	0.931	0.914	0.899
	∗2 Indoor unit is lower than outdoor unit	-5	0.995	0.986	0.986	0.949	0.926	0.909	0.895
		-7.5	-	0.983	0.983	0.946	0.924	0.907	0.892
		-10	-	-	0.981	0.944	0.921	0.904	0.890
		-20	-	-	-	0.935	0.912	0.895	0.881
		-30	-	-	-	-	0.903	0.886	0.872

Height difference H



∗1 Indoor unit is higher than outdoor unit.



∗2 Indoor unit is lower than outdoor unit.

6. ADDITIONAL CHARGE CALCULATION

■ MODELS: AO∗G30LETL, AO∗G36LETL

Refrigerant type		R410A
Refrigerant amount	g	2100

● Refrigerant Charge

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

OUTDOOR UNIT
AO∗G30-36LETL

7. AIRFLOW

■MODEL: AO∗G30LETL

●COOLING

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

●HEATING

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

■MODEL: AO∗G36LETL

●COOLING

Number of rotations (r.p.m)	Airflow	
900	m^3/h	3800
	l/s	1056
	CFM	2236

●HEATING

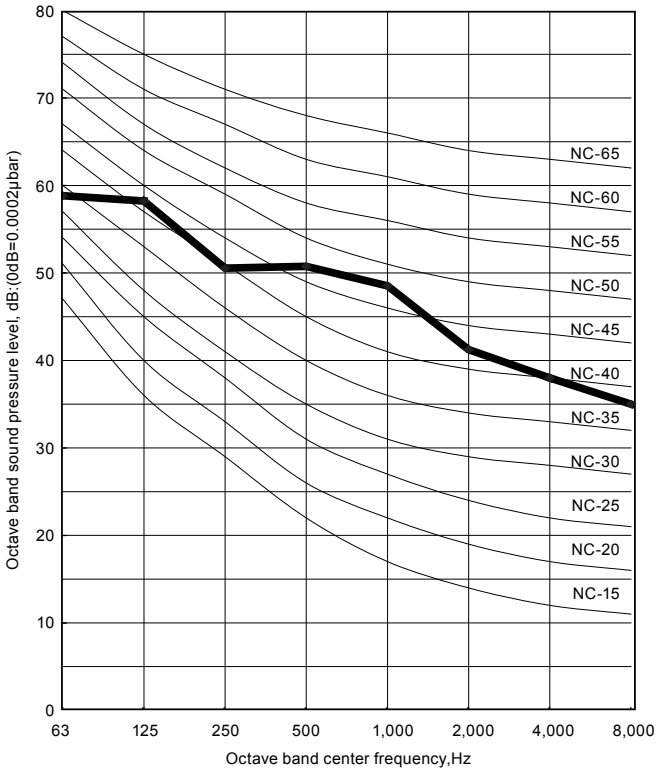
Number of rotations (r.p.m)	Airflow	
900	m^3/h	3800
	l/s	1056
	CFM	2236

8. OPERATION NOISE (SOUND PRESSURE)

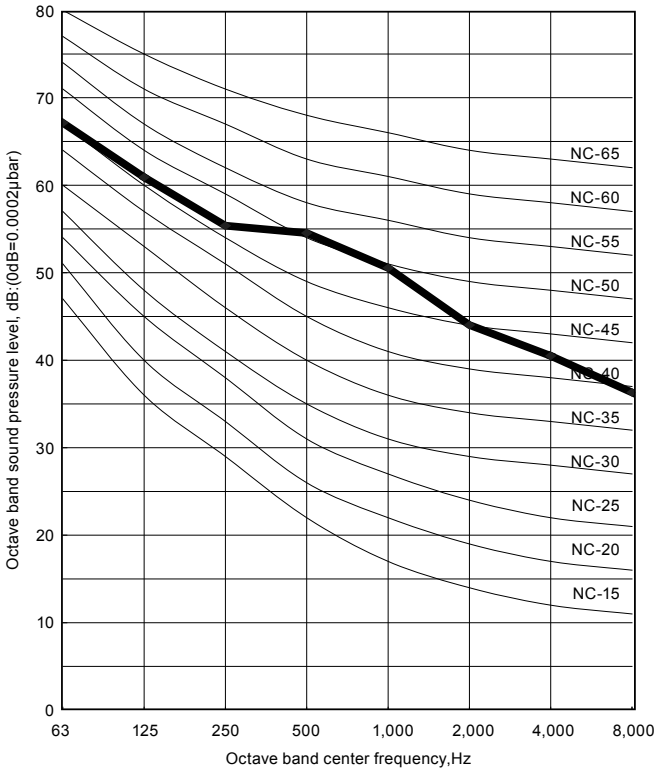
8-1. NOISE LEVEL CURVE

■ MODEL: AO∗G30LETL

● COOLING

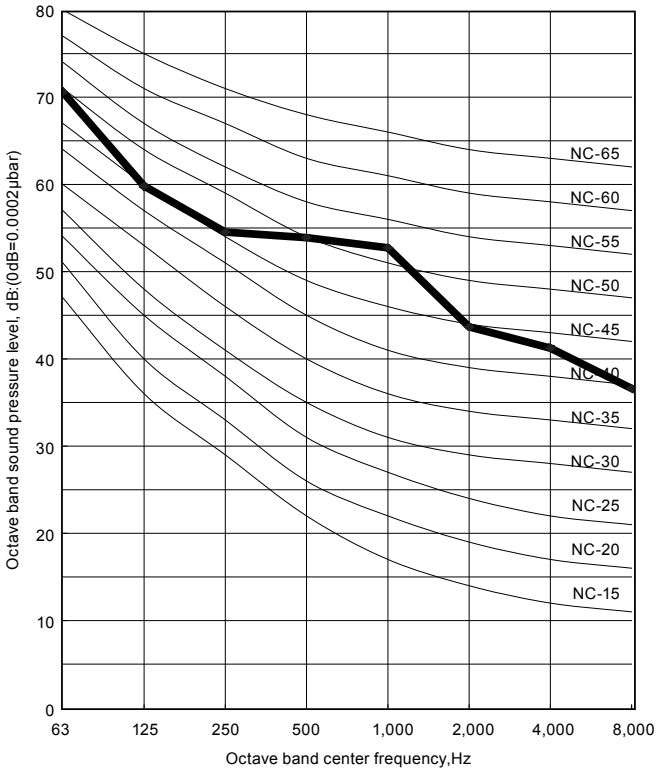


● HEATING

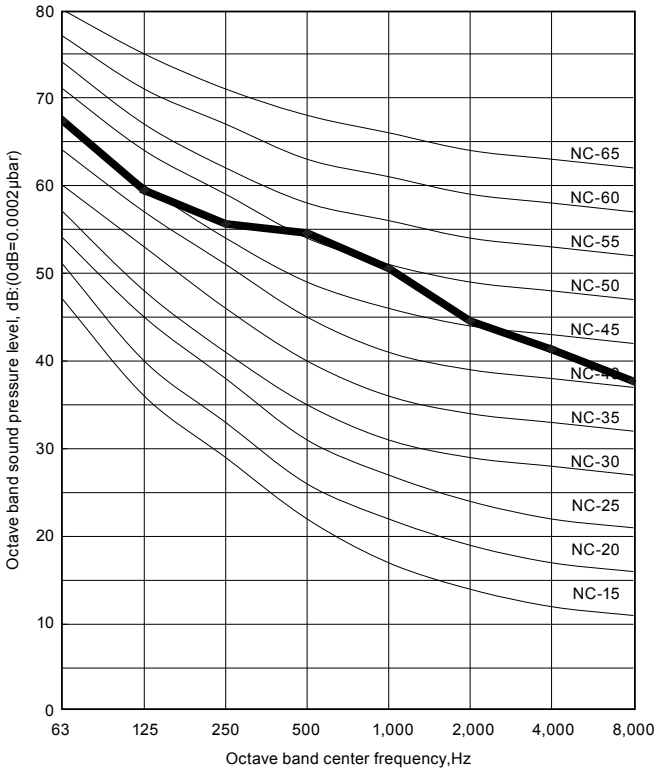


■ MODEL: AO∗G36LETL

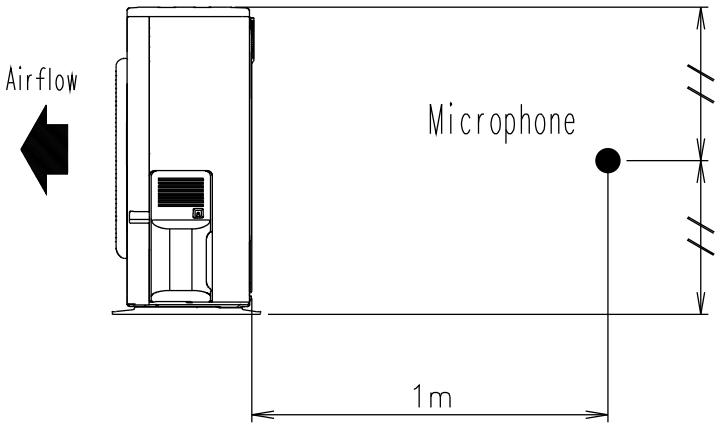
● COOLING

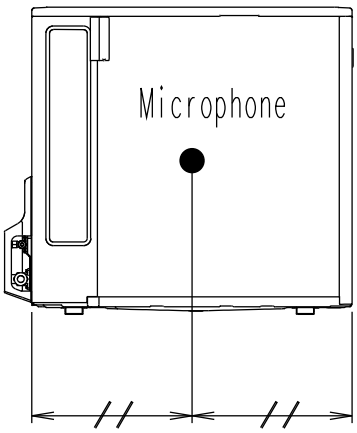


● HEATING



8-2. SOUND LEVEL CHECK POINT





OUTDOOR UNIT
AO∗G30-36LETL

9. ELECTRIC CHARACTERISTICS

Model name			AO∗G30LETL	AO∗G36LETL
Power supply	Voltage	V	230 ~	
	Frequency	Hz	50	
*1) Max. operating current		A	17.0	20.0
Starting current		A	12.2	13.7
*2) Wiring spec.	Main fuse (Circuit breaker) current	A	30	
	Power cable	mm^2	3.5	

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

*2) Wiring spec.
Selected sample
(Selected based on Japan Electrotechnical Standards and Codes Committee E0005)

10. SAFETY DEVICES

	Protection form	Model	
		AO∗G30LETL	AO∗G36LETL
Circuit protection	Current fuse (Near the terminal)	250V 25A	
	Current fuse (Filter printed circuit board)	250V 10A	
	Current fuse (Main printed circuit board)	250V 3.15A	
Fan motor protection	Thermal protection program	OFF : 140±20°C ON : 110±20°C	
High pressure protection	Pressure switch	OFF : 4.2±0.1MPa ON : 3.2±0.15MPa	
Compressor protection	Thermal protection program (Compressor temp.)	OFF : 120°C ON : 80°C	
	Thermal protection program (Discharge temp.)	OFF : 110°C ON : After 7 minutes	

OUTDOOR UNIT
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