Fuji Electric

REFRIGERANT R32
INVERTER

AIR CONDITIONER

Floor type

DESIGN & TECHNICAL MANUAL

INDOOR

RGG09KVCA
RGG12KVCA
RGG14KVCA

OUTDOOR

ROG09KVCA
ROG12KVCA

ROG14KVCA

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Part 1. INDOOR UNIT

FLOOR TYPE:

RGG09KVCA
RGG12KVCA
RGG14KVCA

1. Specifications

Type					Floor type		
					Inverter heat pump		
Model name					**RGG09KVCA**	**RGG12KVCA**	**RGG14KVCA**
Power supply					230 V ~ 50 Hz		
Available voltage range					198—264 V		
Capacity		Cooling	Rated	kW	2.50	3.50	4.20
				Btu/h	8,500	11,900	14,300
			Min.—Max.	kW	0.9—3.5	0.9—4.0	0.9—5.2
				Btu/h	3,100—11,900	3,100—13,700	3,100—17,700
		Heating	Rated	kW	3.50	4.50	5.20
				Btu/h	11,900	15,400	17,700
			Min.—Max.	kW	0.9—5.1	0.9—5.3	0.9—6.3
				Btu/h	3,100—17,400	3,100—18,100	3,100—21,500
Input power		Cooling	Rated	kW	0.53	0.88	1.06
			Max.		1.29	1.29	2.11
		Heating	Rated		0.81	1.22	1.41
			Max.		1.64	1.64	1.98
Current		Cooling	Rated	A	2.9	4.3	4.7
		Heating			4.1	5.7	6.2
EER		Cooling		kW/kW	4.70	4.00	3.95
COP		Heating			4.30	3.70	3.70
Power factor		Cooling		%	79.5	88.5	98.1
		Heating			85.9	93.1	98.9
Moisture removal				L/h (pints/h)	1.3 (2.3)	1.8 (3.2)	2.1 (3.7)
Maximum operating current *1		Cooling		A	7	7	11
		Heating			8.5	8.5	12
Fan	Airflow rate	Cooling	HIGH	m^3/h	570	570	650
			MED		460	460	520
			LOW		360	360	400
			QUIET		270	270	270
		Heating	HIGH		600	600	650
			MED		480	480	520
			LOW		370	370	390
			QUIET		270	270	270
	Type × Q'ty				Cross flow fan × 2		
	Motor output			W	16 × 2		
Sound pressure level *2		Cooling	HIGH	dB (A)	40	40	44
			MED		35	35	38
			LOW		29	29	31
			QUIET		22	22	22
		Heating	HIGH		41	41	43
			MED		35	35	37
			LOW		29	29	29
			QUIET		22	22	22
Heat exchanger type		Dimensions (H × W × D)		mm	378 × 550 × 26.6		
		Fin pitch			1.2		
		Rows × Stages			2 × 18		
		Pipe type			Copper tube		
		Fin type			Aluminium		
Enclosure		Material			Polystyrene		
		Color			White		
Dimensions (H × W × D)		Net		mm	600 × 740 × 200		
		Gross			700 × 820 × 310		
Weight		Net		kg	14		
		Gross			18		
Connection pipe		Size	Liquid	mm (in)	Ø 6.35 (Ø 1/4)		
			Gas		Ø 9.52 (Ø 3/8)		
		Method			Flare		
Drain hose		Material			PP + LLDPE		
		Size		mm	Ø 13.8 (I.D.), Ø 15.8 to Ø 16.7 (O.D.)		
Operation range		Cooling		°C	18 to 32		
				%RH	80 or less		
		Heating		°C	30 or less		
Remote controller type					Wireless (Wired, Mobile app*3 [FGLair™] [option])		

NOTES:

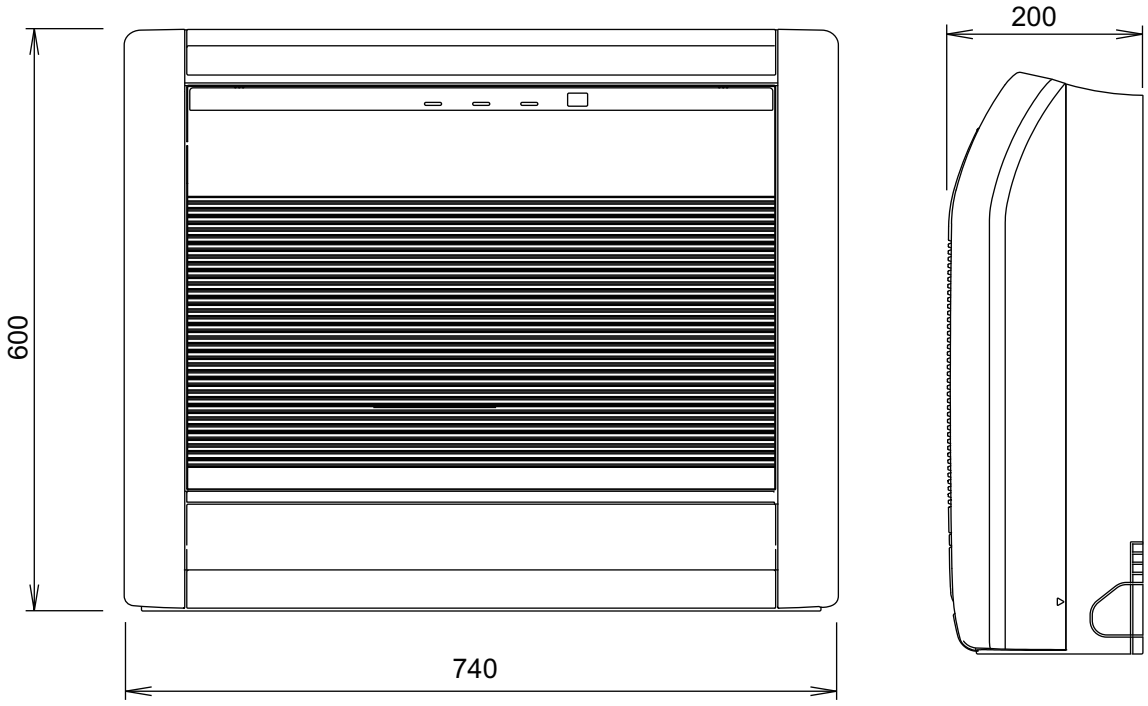
- Specifications are based on the following conditions:
  - Cooling: Indoor temperature of 27 °CDB/19 °CWB, and outdoor temperature of 35 °CDB/24 °CWB.
  - Heating: Indoor temperature of 20 °CDB/15 °CWB, and outdoor temperature of 7 °CDB/6 °CWB.
  - Pipe length: 5 m, Height difference: 0 m. (Between outdoor unit and indoor unit.)
- Protective function might work when using it outside the operation range.
- *1: Maximum current is maximum value when operated within the operation range.
- *2: Sound pressure level:
  - Measured values in manufacturer's anechoic chamber.
  - Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.
- *3: Available on Google Play™ store or on App Store®. Optional WLAN adapter is also required. For details, refer to the setting manual.

Model name				RGG09KVCA	RGG12KVCA	RGG14KVCA
Energy efficiency class	Cooling			A+++	A++	A++
	Heating (Average)			A+	A+	A+
Pdesign	Cooling		kW	2.5 (35 °C)	3.5 (35 °C)	4.2 (35 °C)
	Heating (Average)			2.6 (-10 °C)	3.5 (-10 °C)	4.2 (-10 °C)
SEER	Cooling		kWh/kWh	8.50	8.20	8.10
SCOP	Heating (Average)			4.30	4.10	4.00
Annual energy consumption	QCE		kWh/a	103	149	181
	QHE (Average)			845	1,192	1,466
Sound power level	Cooling	High	dB (A)	53	53	57
	Heating			54	54	56

2. Dimensions

2-1. Models: RGG09KVCA, RGG12KVCA, and RGG14KVCA

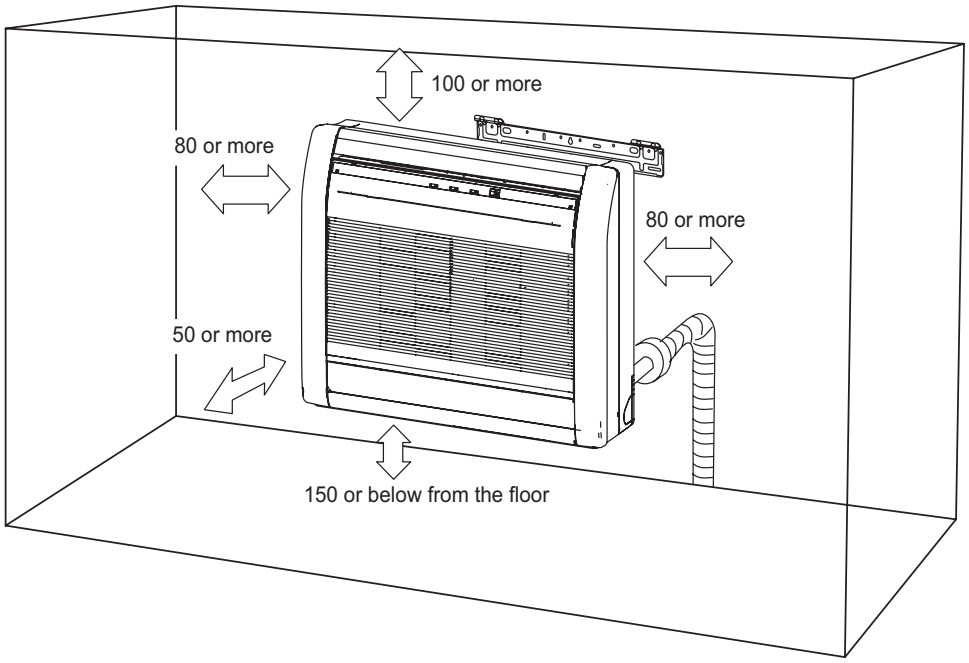
Unit: mm

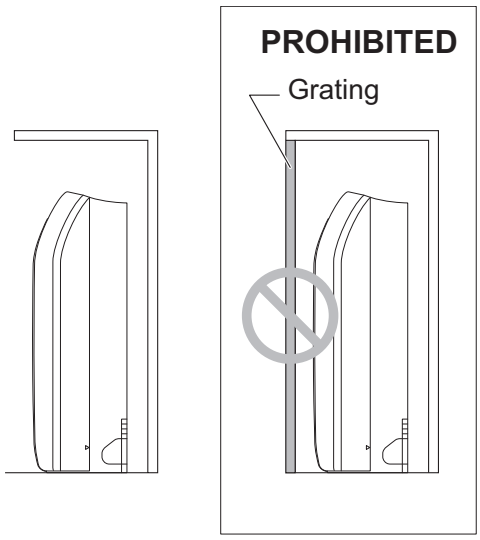


Front view

Side view

■ Installation space





⚠ WARNING

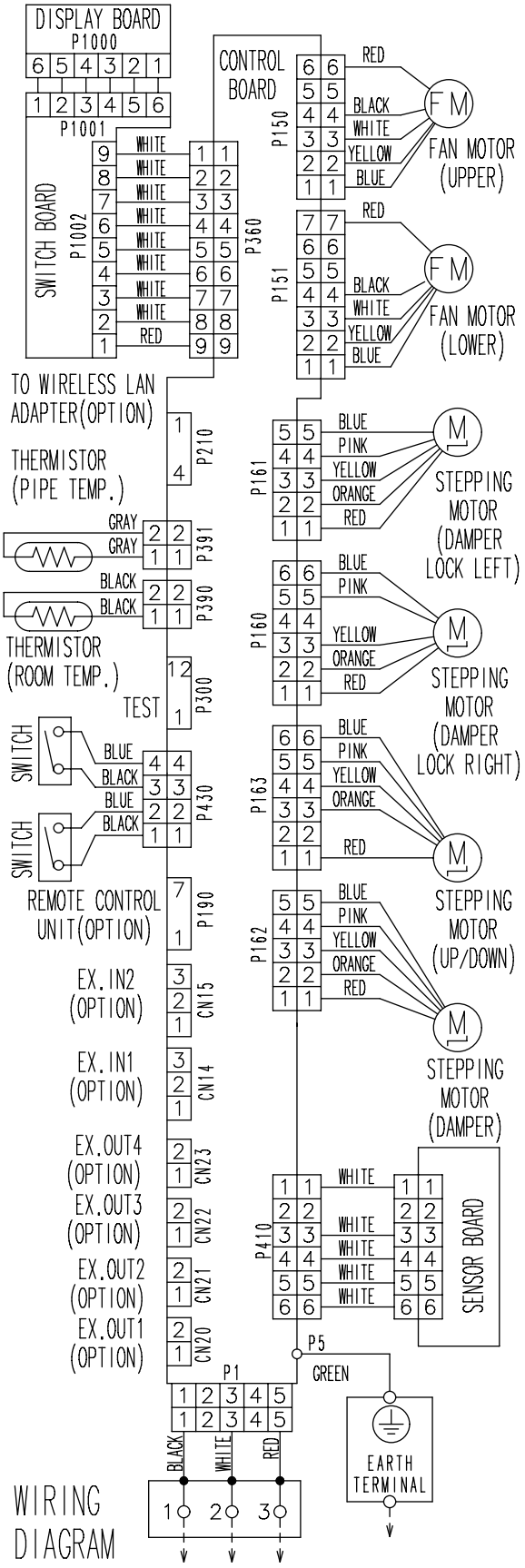
- The appliance shall be installed, operated and stored in a room with a floor area larger than X m^2.

Amount of refrigerant charge M (kg)	Minimum room area X (m^2)
M ≤ 1.22	-
1.22 < M ≤ 1.23	12.99
1.23 < M ≤ 1.50	19.31
1.50 < M ≤ 1.75	26.28
1.75 < M ≤ 2.0	34.33
2.0 < M ≤ 2.5	53.63
2.5 < M ≤ 3.0	77.23
3.0 < M ≤ 3.5	105.12
3.5 < M ≤ 4.0	137.29

(IEC 60335-2-40)

3. Wiring diagrams

3-1. Models: RGG09KVCA, RGG12KVCA, and RGG14KVCA



4. Capacity table

Capacity tables show each of following values calculated based on the outdoor temperature and the indoor temperature, under given Airflow Rate (AFR):

For cooling capacity: Total Capacity (TC), Sensible Heat Capacity (SHC), and Input Power (IP)
For heating capacity: Total Capacity (TC) and Input Power (IP)

4-1. Cooling capacity

■ Model: RGG09KVCA

AFR	m^3/h	570

		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
		kW			kW			kW			kW			kW			kW			kW		
	-10	1.69	2.08	0.28	1.86	2.06	0.28	1.90	2.06	0.28	2.03	2.04	0.29	2.09	2.04	0.29	2.24	2.04	0.29	2.38	2.02	0.29
	0	1.76	2.10	0.27	1.93	2.08	0.27	1.97	2.08	0.28	2.10	2.06	0.28	2.17	2.06	0.28	2.32	2.06	0.29	2.47	2.04	0.29
	5	1.83	2.15	0.24	2.01	2.13	0.24	2.06	2.13	0.25	2.19	2.11	0.25	2.26	2.11	0.25	2.42	2.11	0.25	2.58	2.09	0.26
	10	1.93	2.23	0.19	2.13	2.20	0.19	2.17	2.20	0.20	2.32	2.18	0.20	2.39	2.18	0.20	2.56	2.18	0.20	2.72	2.16	0.20
	15	2.12	2.33	0.23	2.33	2.31	0.24	2.38	2.31	0.24	2.54	2.28	0.24	2.62	2.28	0.24	2.80	2.28	0.25	2.98	2.26	0.25
	20	2.36	2.45	0.34	2.59	2.43	0.34	2.65	2.43	0.34	2.82	2.40	0.35	2.91	2.40	0.35	3.11	2.40	0.36	3.32	2.38	0.36
	25	2.25	2.40	0.39	2.47	2.38	0.40	2.52	2.38	0.40	2.69	2.35	0.41	2.77	2.35	0.41	2.97	2.35	0.42	3.16	2.33	0.42
	30	2.14	2.35	0.45	2.35	2.33	0.46	2.40	2.33	0.46	2.56	2.31	0.47	2.64	2.31	0.47	2.82	2.31	0.48	3.01	2.28	0.48
	35	2.03	2.30	0.51	2.23	2.28	0.51	2.28	2.28	0.52	2.43	2.26	0.52	2.50	2.26	0.53	2.68	2.26	0.54	2.85	2.23	0.54
	40	1.95	2.24	0.54	2.14	2.22	0.54	2.19	2.22	0.55	2.34	2.20	0.55	2.41	2.20	0.56	2.58	2.20	0.56	2.75	2.17	0.57
	46	1.83	2.16	0.61	2.01	2.14	0.61	2.06	2.14	0.62	2.19	2.12	0.62	2.26	2.12	0.63	2.42	2.12	0.64	2.58	2.09	0.64

■ Model: RGG12KVCA

AFR	m^3/h	570

		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
		kW			kW			kW			kW			kW			kW			kW		
	-10	2.37	2.47	0.46	2.60	2.44	0.46	2.66	2.44	0.47	2.84	2.42	0.47	2.93	2.42	0.48	3.13	2.42	0.48	3.33	2.39	0.49
	0	2.46	2.49	0.45	2.70	2.47	0.46	2.76	2.47	0.46	2.94	2.44	0.47	3.04	2.44	0.47	3.25	2.44	0.48	3.46	2.42	0.48
	5	2.56	2.55	0.40	2.82	2.52	0.41	2.88	2.52	0.41	3.07	2.50	0.41	3.17	2.50	0.42	3.39	2.50	0.42	3.61	2.47	0.43
	10	2.71	2.64	0.32	2.98	2.61	0.32	3.04	2.61	0.33	3.24	2.58	0.33	3.34	2.58	0.33	3.58	2.58	0.34	3.81	2.56	0.34
	15	2.97	2.76	0.39	3.26	2.73	0.39	3.33	2.73	0.40	3.55	2.70	0.40	3.66	2.70	0.41	3.92	2.70	0.41	4.18	2.68	0.41
	20	3.30	2.90	0.56	3.63	2.87	0.57	3.71	2.87	0.57	3.95	2.84	0.58	4.07	2.84	0.58	4.36	2.84	0.59	4.64	2.82	0.60
	25	3.15	2.84	0.66	3.46	2.81	0.66	3.53	2.81	0.67	3.77	2.79	0.68	3.88	2.79	0.68	4.15	2.79	0.69	4.43	2.76	0.70
	30	2.99	2.78	0.75	3.29	2.76	0.76	3.36	2.76	0.77	3.58	2.73	0.77	3.69	2.73	0.78	3.95	2.73	0.79	4.21	2.70	0.80
	35	2.84	2.73	0.84	3.12	2.70	0.85	3.19	2.70	0.86	3.40	2.67	0.87	3.50	2.67	0.88	3.75	2.67	0.89	3.99	2.65	0.90
	40	2.73	2.65	0.89	3.00	2.63	0.90	3.07	2.63	0.91	3.27	2.60	0.92	3.37	2.60	0.93	3.61	2.60	0.94	3.85	2.57	0.95
	46	2.57	2.56	1.01	2.82	2.53	1.02	2.88	2.53	1.03	3.07	2.51	1.04	3.17	2.51	1.05	3.39	2.51	1.06	3.61	2.48	1.07

■ Model: RGG14KVCA

AFR	m^3/h	650

		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
		kW			kW			kW			kW			kW			kW			kW		
	-10	2.83	2.85	0.56	3.11	2.82	0.57	3.18	2.82	0.57	3.39	2.79	0.58	3.50	2.79	0.58	3.74	2.79	0.59	3.99	2.77	0.60
	0	2.82	2.85	0.56	3.10	2.82	0.56	3.17	2.82	0.57	3.38	2.80	0.58	3.48	2.80	0.58	3.73	2.80	0.59	3.97	2.77	0.59
	5	2.94	2.92	0.48	3.23	2.89	0.48	3.30	2.89	0.49	3.52	2.86	0.49	3.63	2.86	0.50	3.88	2.86	0.50	4.13	2.83	0.51
	10	3.14	3.02	0.35	3.44	2.99	0.35	3.52	2.99	0.35	3.75	2.96	0.36	3.87	2.96	0.36	4.14	2.96	0.36	4.41	2.93	0.37
	15	3.45	3.19	0.43	3.79	3.16	0.44	3.88	3.16	0.44	4.13	3.13	0.45	4.26	3.13	0.45	4.56	3.13	0.46	4.86	3.10	0.46
	20	3.84	3.40	0.67	4.22	3.37	0.68	4.32	3.37	0.68	4.60	3.34	0.69	4.74	3.34	0.70	5.08	3.34	0.70	5.41	3.30	0.71
	25	3.70	3.35	0.78	4.06	3.32	0.79	4.15	3.32	0.80	4.43	3.29	0.81	4.56	3.29	0.82	4.88	3.29	0.83	5.20	3.26	0.83
	30	3.55	3.30	0.90	3.90	3.27	0.91	3.99	3.27	0.92	4.25	3.24	0.93	4.38	3.24	0.94	4.69	3.24	0.95	4.99	3.21	0.96
	35	3.40	3.25	1.02	3.74	3.22	1.03	3.82	3.22	1.04	4.07	3.19	1.05	4.20	3.19	1.06	4.49	3.19	1.07	4.79	3.16	1.08
	40	3.19	3.04	1.10	3.51	3.01	1.11	3.59	3.01	1.12	3.82	2.99	1.13	3.94	2.99	1.14	4.22	2.99	1.16	4.49	2.96	1.17
	46	2.91	2.92	1.24	3.19	2.89	1.25	3.27	2.89	1.27	3.48	2.86	1.28	3.59	2.86	1.29	3.84	2.86	1.31	4.09	2.84	1.32

4-2. Heating capacity

■ Model: RGG09KVCA

AFR	m^3/h	600

			Indoor temperature									
			16		18		20		22		24	
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
			kW		kW		kW		kW		kW	
Outdoor temperature	-15	-16	3.22	1.31	3.12	1.34	3.03	1.36	2.94	1.39	2.85	1.42
	-10	-11	3.86	1.36	3.75	1.39	3.64	1.42	3.54	1.45	3.43	1.48
	-5	-7	4.40	1.41	4.27	1.44	4.15	1.47	4.03	1.50	3.90	1.53
	0	-2	4.77	1.45	4.63	1.48	4.50	1.51	4.36	1.54	4.23	1.57
	5	3	5.21	1.49	5.06	1.52	4.91	1.55	4.77	1.59	4.62	1.62
	7	6	5.41	1.51	5.25	1.54	5.10	1.57	4.95	1.60	4.79	1.64
	10	8	5.57	1.43	5.41	1.46	5.26	1.49	5.10	1.52	4.94	1.55
	15	10	5.39	1.20	5.24	1.22	5.09	1.25	4.93	1.27	4.78	1.30
	20	15	5.34	1.08	5.19	1.10	5.04	1.13	4.89	1.15	4.74	1.17
	24	18	5.53	1.09	5.38	1.11	5.22	1.14	5.06	1.16	4.91	1.18

■ Model: RGG12KVCA

AFR	m^3/h	600

			Indoor temperature									
			16		18		20		22		24	
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
			kW		kW		kW		kW		kW	
Outdoor temperature	-15	-16	3.34	1.36	3.25	1.39	3.15	1.42	3.06	1.44	2.96	1.47
	-10	-11	4.01	1.42	3.90	1.45	3.79	1.48	3.67	1.51	3.56	1.54
	-5	-7	4.57	1.47	4.44	1.50	4.31	1.53	4.18	1.56	4.05	1.59
	0	-2	4.95	1.51	4.81	1.54	4.67	1.57	4.53	1.60	4.39	1.63
	5	3	5.41	1.55	5.26	1.58	5.11	1.62	4.95	1.65	4.80	1.68
	7	6	5.62	1.57	5.46	1.60	5.30	1.64	5.14	1.67	4.98	1.70
	10	8	5.79	1.49	5.63	1.52	5.46	1.55	5.30	1.58	5.14	1.61
	15	10	5.60	1.24	5.44	1.27	5.29	1.30	5.13	1.32	4.97	1.35
	20	15	5.55	1.12	5.39	1.15	5.24	1.17	5.08	1.19	4.92	1.22
	24	18	5.75	1.13	5.59	1.16	5.43	1.18	5.26	1.20	5.10	1.23

■ Model: RGG14KVCA

AFR	m^3/h	650

			Indoor temperature									
			16		18		20		22		24	
	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
			kW		kW		kW		kW		kW	
Outdoor temperature	-15	-16	5.55	2.43	5.40	2.48	5.24	2.53	5.08	2.58	4.92	2.63
	-10	-11	6.03	2.49	5.86	2.54	5.69	2.59	5.52	2.64	5.35	2.70
	-5	-7	6.47	2.48	6.28	2.53	6.10	2.58	5.92	2.64	5.73	2.69
	0	-2	6.84	2.37	6.65	2.42	6.46	2.47	6.26	2.52	6.07	2.57
	5	3	6.81	2.03	6.61	2.08	6.42	2.12	6.23	2.16	6.03	2.20
	7	6	6.68	1.84	6.49	1.88	6.30	1.92	6.11	1.95	5.92	1.99
	10	8	6.64	1.67	6.45	1.70	6.26	1.74	6.07	1.77	5.89	1.81
	15	10	6.89	1.68	6.69	1.71	6.50	1.75	6.30	1.78	6.11	1.82
	20	15	6.83	1.46	6.64	1.49	6.44	1.52	6.25	1.55	6.06	1.58
	24	18	6.78	1.28	6.59	1.31	6.40	1.33	6.21	1.36	6.01	1.39

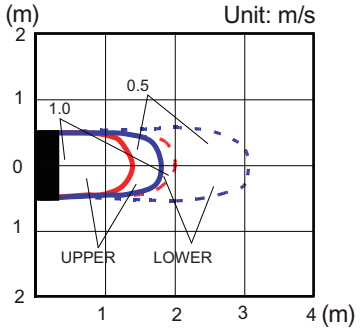
5. Fan performance

5-1. Air velocity distributions

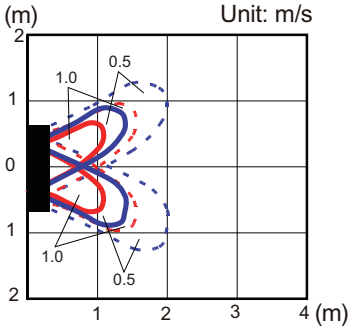
■ Models: RGG09KVCA, RGG12KVCA, and RGG14KVCA

Measuring conditions	Fan speed	Operation mode	Fan select
	HIGH	FAN	Upper and lower

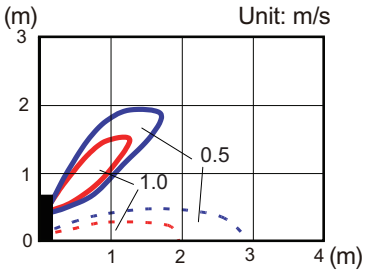
Top view
Vertical airflow direction louver: Up
Horizontal airflow direction louver: Center



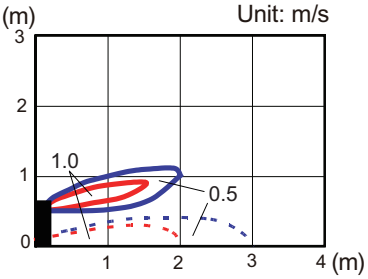
Top view
Vertical airflow direction louver: Up
Horizontal airflow direction louver: Left & Right



Side view
Vertical airflow direction louver: Up
Horizontal airflow direction louver: Center



Side view
Vertical airflow direction louver: Down
Horizontal airflow direction louver: Center



5-2. Airflow

■ Models: RGG09KVCA and RGG12KVCA

● Cooling

Fan speed	Airflow	
HIGH	m^3/h	570
	l/s	158
	CFM	335
MED	m^3/h	460
	l/s	128
	CFM	271
LOW	m^3/h	360
	l/s	100
	CFM	212
QUIET	m^3/h	270
	l/s	75
	CFM	159

● Heating

Fan speed	Airflow	
HIGH	m^3/h	600
	l/s	167
	CFM	353
MED	m^3/h	480
	l/s	133
	CFM	282
LOW	m^3/h	370
	l/s	103
	CFM	218
QUIET	m^3/h	270
	l/s	75
	CFM	159

■ Model: RGG14KVCA

● Cooling

Fan speed	Airflow	
HIGH	m^3/h	650
	l/s	181
	CFM	383
MED	m^3/h	520
	l/s	144
	CFM	306
LOW	m^3/h	400
	l/s	111
	CFM	235
QUIET	m^3/h	270
	l/s	75
	CFM	159

● Heating

Fan speed	Airflow	
HIGH	m^3/h	650
	l/s	181
	CFM	383
MED	m^3/h	520
	l/s	144
	CFM	306
LOW	m^3/h	390
	l/s	108
	CFM	230
QUIET	m^3/h	270
	l/s	75
	CFM	159

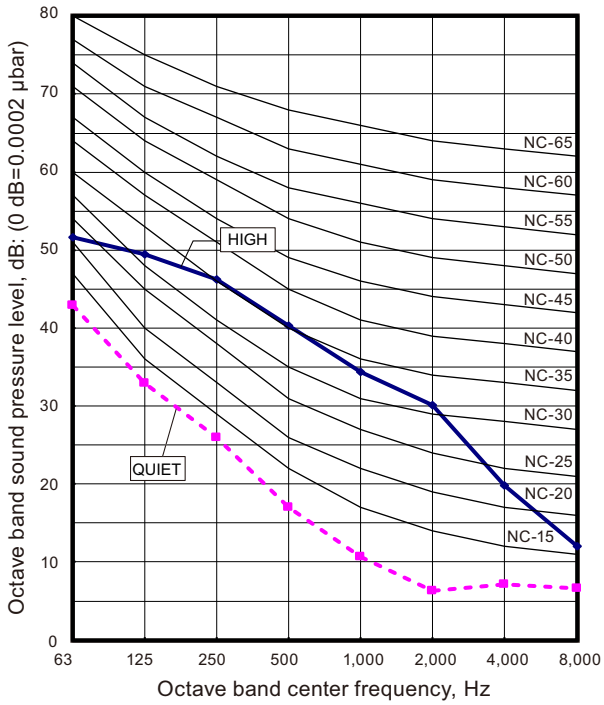
FLOOR TYPE
AGYG09-14KVCA

6. Operation noise (sound pressure)

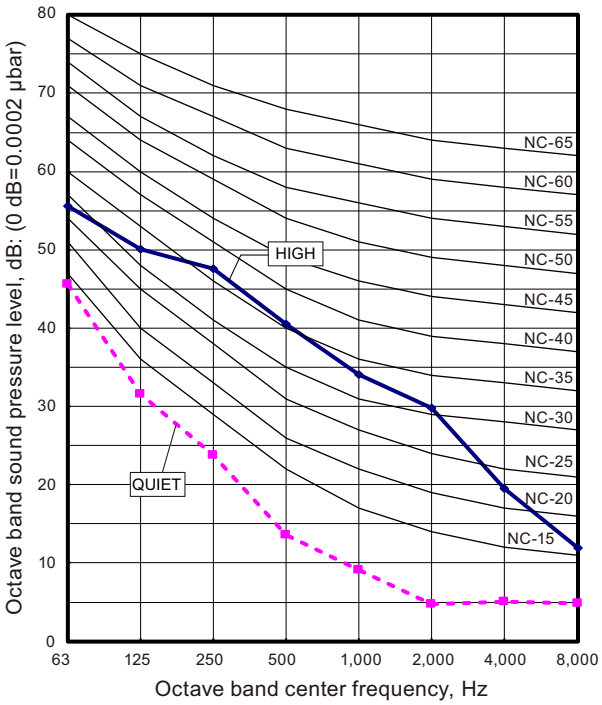
6-1. Noise level curve

■ Model: AGYG09KVCA

● Cooling

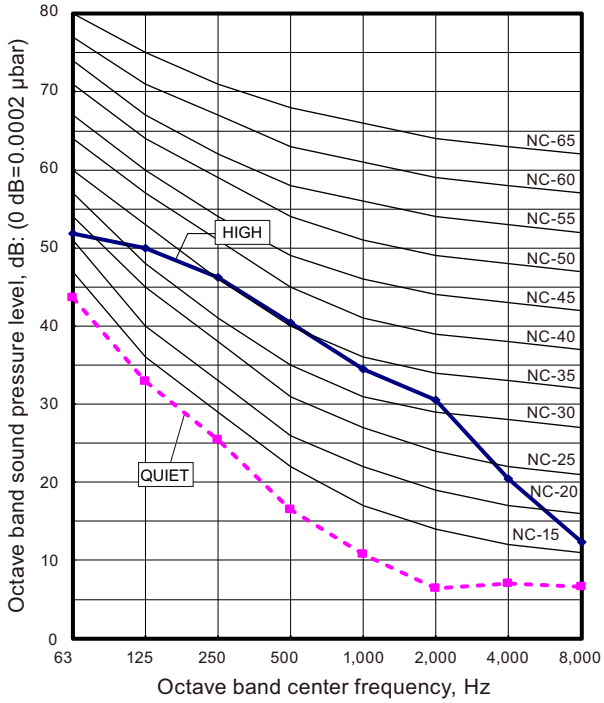


● Heating

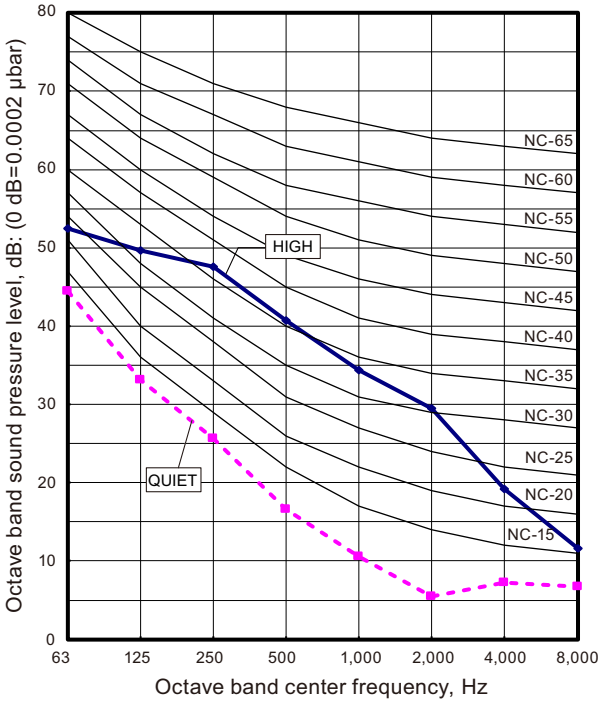


■ Model: AGYG12KVCA

● Cooling



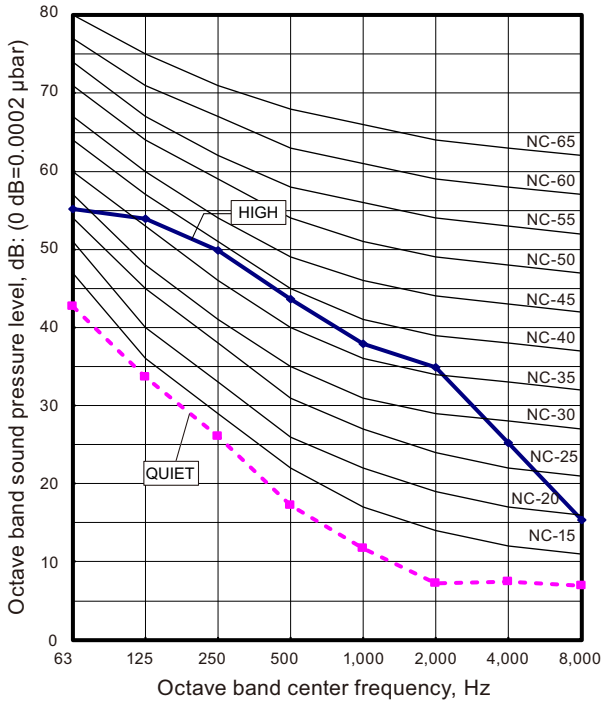
● Heating



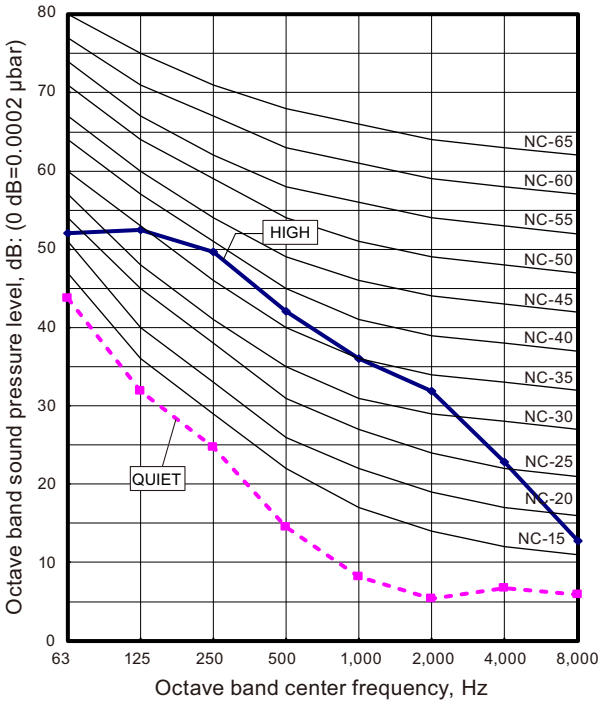
FLOOR TYPE
AGYG09-14KVCA

■ Model: AGYG14KVCA

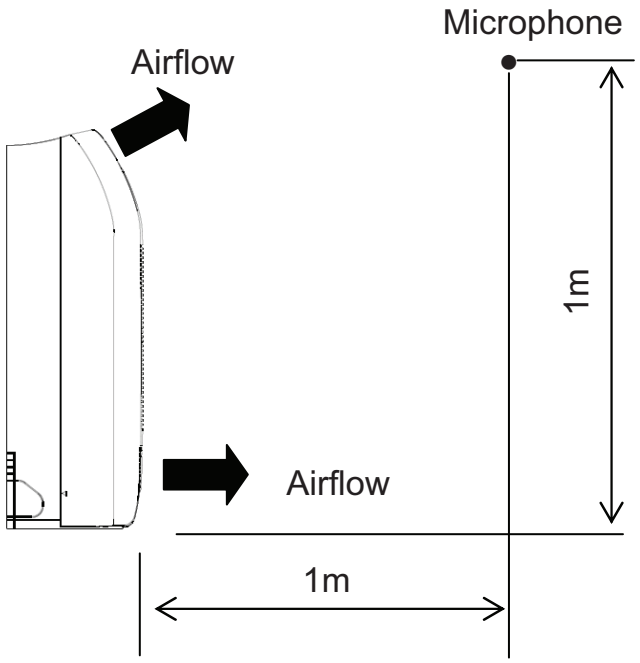
● Cooling

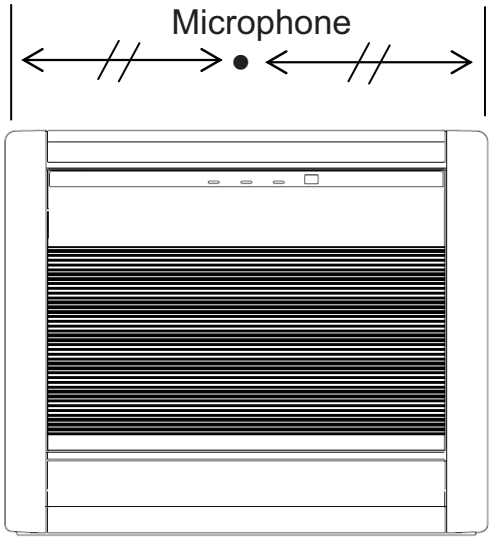


● Heating



6-2. sound level check point

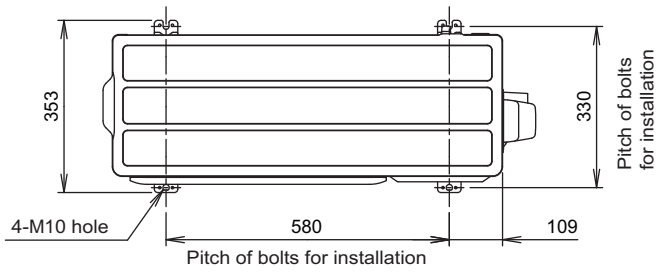




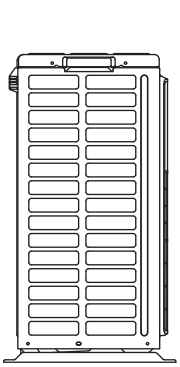
OUTDOOR UNIT
AOYG09-14KVCA

2-2. Model: AOYG14KVCA

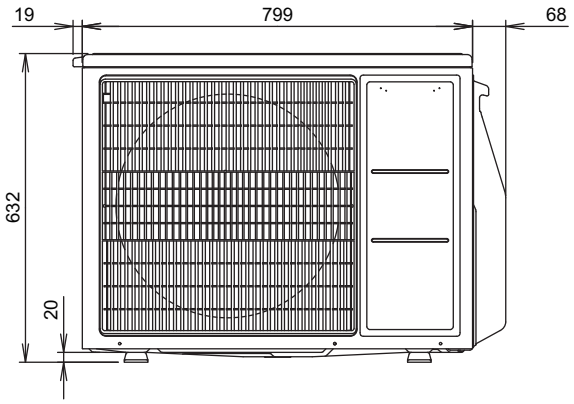
Unit: mm



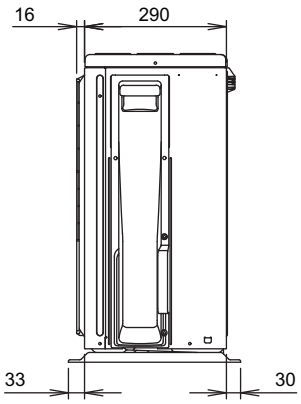
Top view



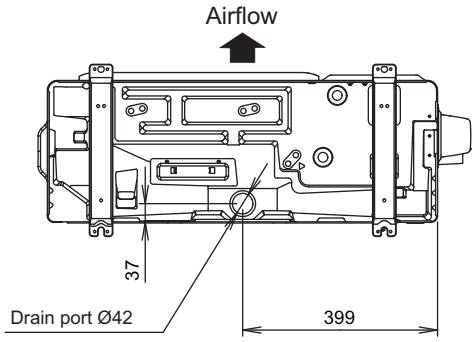
Side view



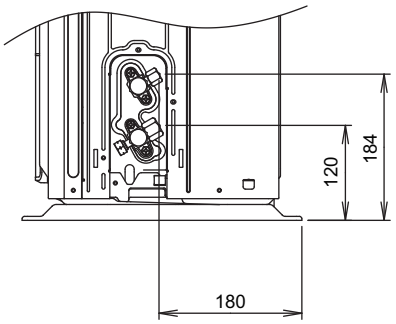
Front view



Side view



Bottom view



Side view (Valve part)

OUTDOOR UNIT
AOYG09-14KVCA

3. Installation space

3-1. Models: AOYG09KVCA, AOYG12KVCA, and AOYG14KVCA

■ Space requirement

Provide sufficient installation space for product safety.

⚠ CAUTION

Keep the space shown in the installation examples.

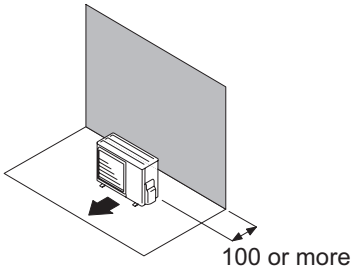
If the installation is not performed accordingly, it could cause a short circuit and result in a lack of operating performance.

● Single outdoor unit installation

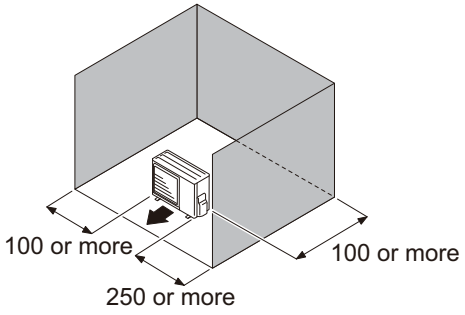
- **When the upper space is open:**

Unit: mm

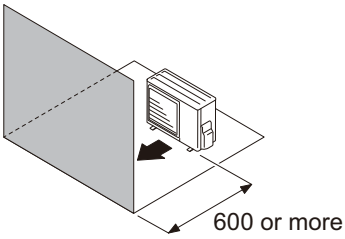
Obstacles at rear only



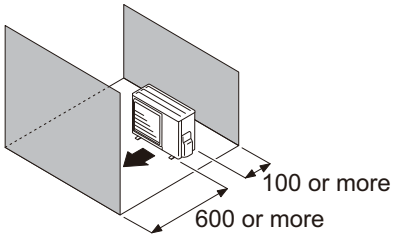
Obstacles at rear and sides



Obstacles at front



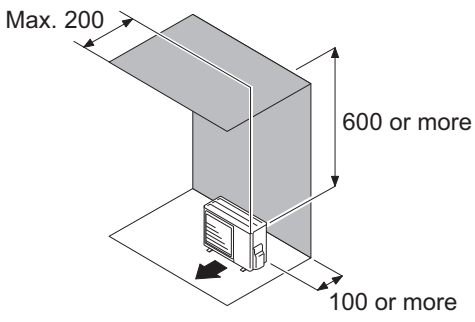
Obstacles at front and rear



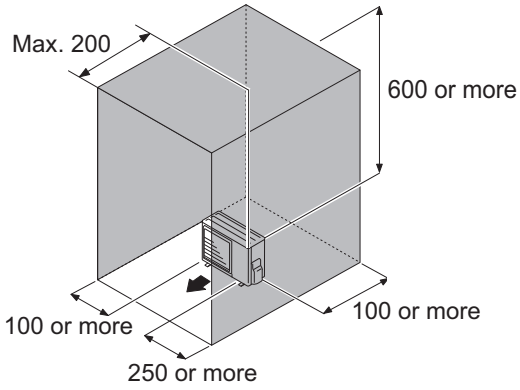
- **When an obstruction in the upper space:**

Unit: mm

Obstacles at rear and above



Obstacles at rear, sides, and above



OUTDOOR UNIT
AOYG09-14KVCA

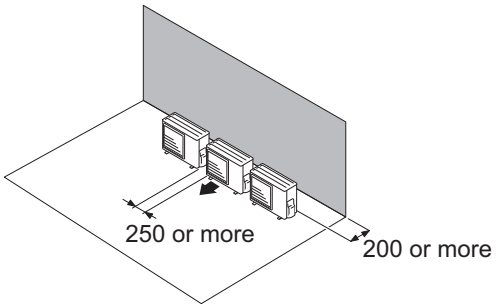
● Multiple outdoor unit installation

- Provide at least 250 mm of space between the outdoor units if multiple units are installed.
- When routing the piping from the side of an outdoor unit, provide space for piping.
- No more than 3 units must be installed side by side.
  When 4 units or more are arranged in a line, provide the space as shown in the following example "**When an obstruction in the upper space:**".

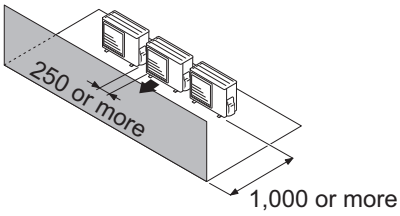
- **When the upper space is open:**

Unit: mm

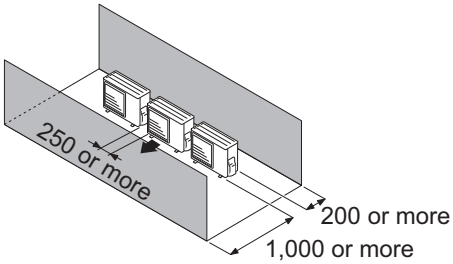
Obstacles at rear only



Obstacles at front only



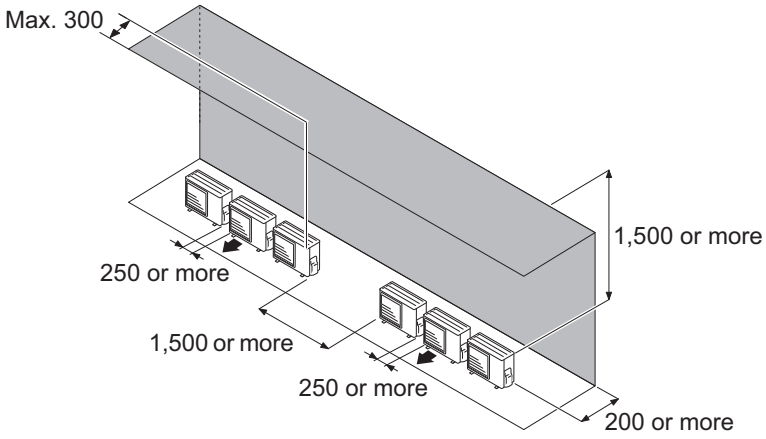
Obstacles at front and rear



- **When an obstruction in the upper space:**

Unit: mm

Obstacles at rear and above.

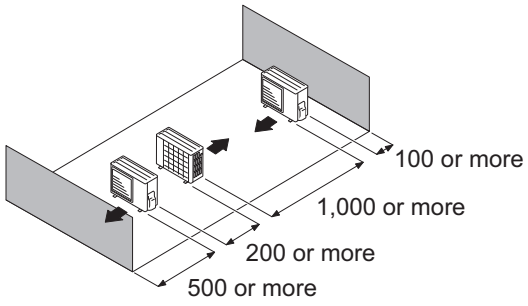


OUTDOOR UNIT
AOYG09-14KVCA

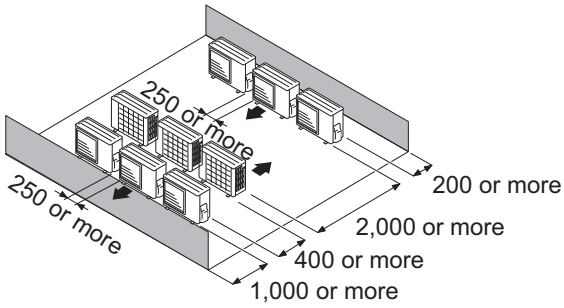
● Outdoor units installation in multi-row

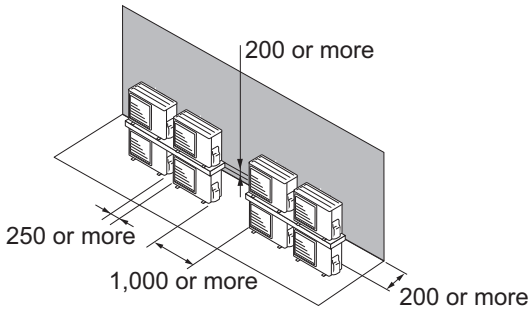
Unit: mm

Single parallel unit arrangement



Multiple parallel unit arrangement



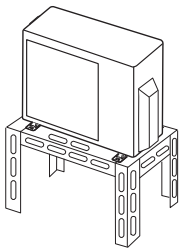


NOTES:

- If the space is larger than stated above, the condition will be the same as when there is no obstacle.
- When installing the outdoor unit, be sure to open the front and left side to obtain better operation efficiency.

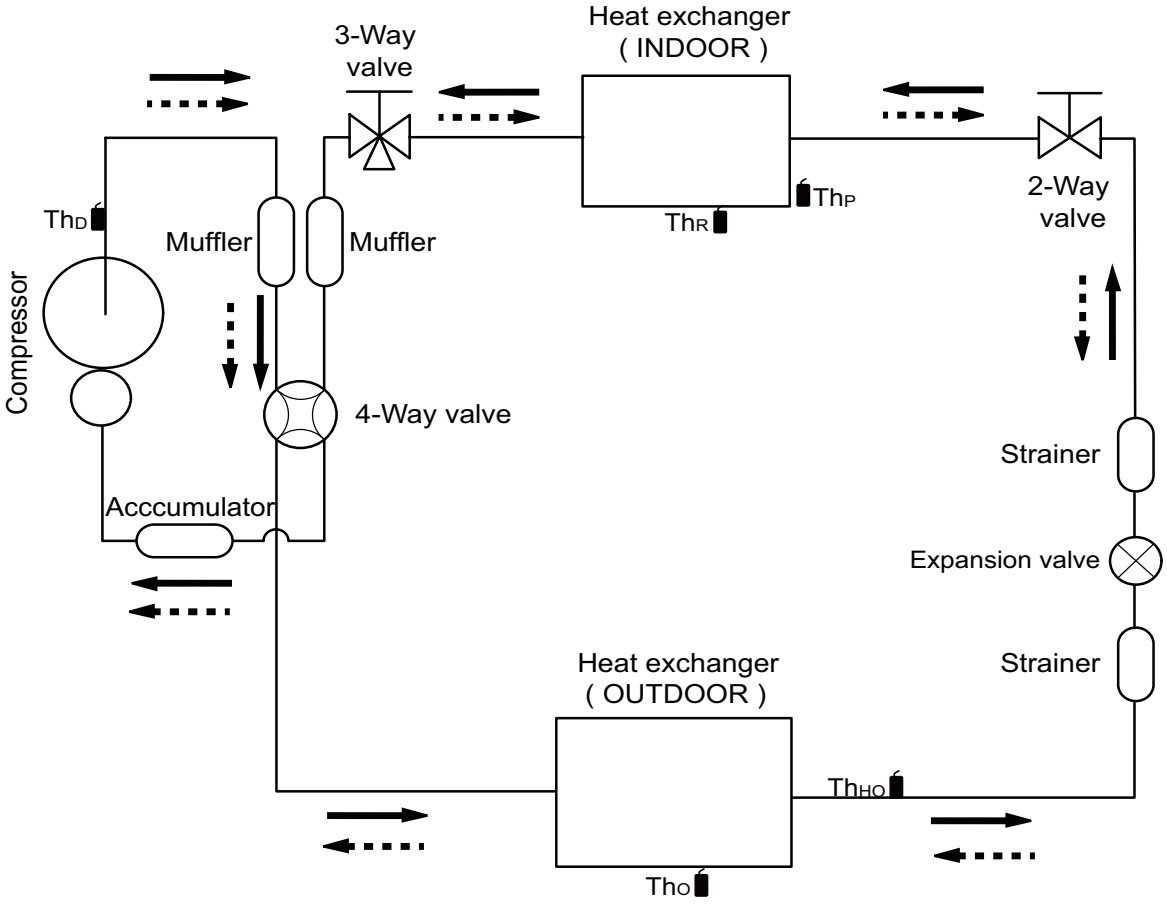
⚠ CAUTION

- Do not install the outdoor unit in two-stage where the drain water could freeze. Otherwise the drainage from the upper unit may form ice and cause a malfunction of the lower unit.
- When the outdoor temperature is 0 °C or less, do not use the accessory drain pipe and drain cap. If the drain pipe and drain cap are used, the drain water in the pipe may freeze in extremely cold climate. (For reverse cycle model only.)
- In area with heavy snowfall, if the inlet and outlet of the outdoor unit is blocked with snow, it might become difficult to get warm, and it is likely to cause product malfunction. Construct a canopy and a pedestal, or place the unit on a high stand that is locally installed.



4. Refrigerant circuit

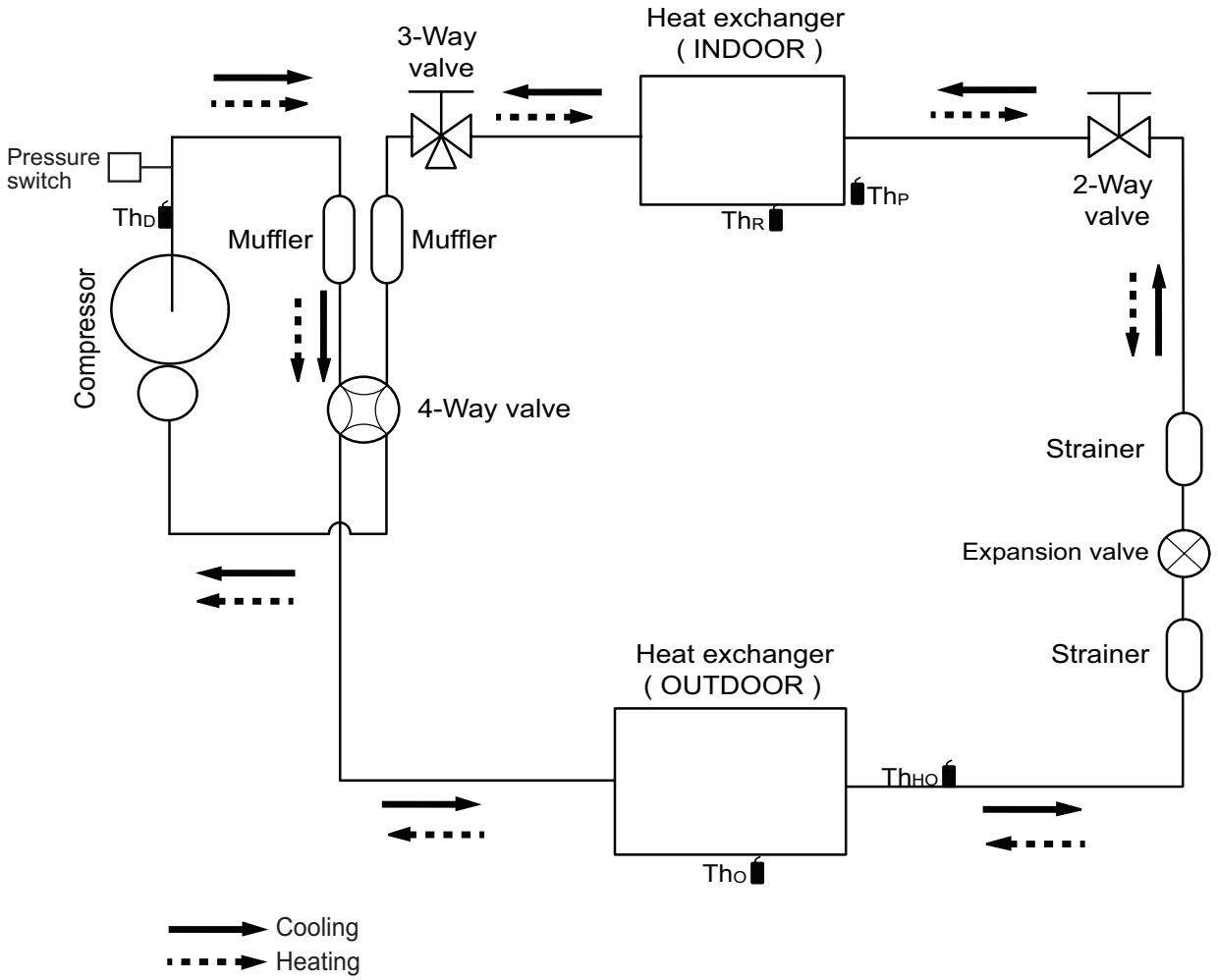
4-1. Models: AOYG09KVCA and AOYG12KVCA



ThD : Thermistor (Discharge Temp.)
ThO : Thermistor (Outdoor Temp.)
ThHO : Thermistor (Heat Exchanger Out Temp.)
ThR : Thermistor (Room Temp.)
ThP : Thermistor (Pipe Temp.)

OUTDOOR UNIT
AOYG09-14KVCA

4-2. Model: AOYG14KVCA



ThD : Thermistor (Discharge Temp.)

ThO : Thermistor (Outdoor Temp.)

ThHO : Thermistor (Heat Exchanger Out Temp.)

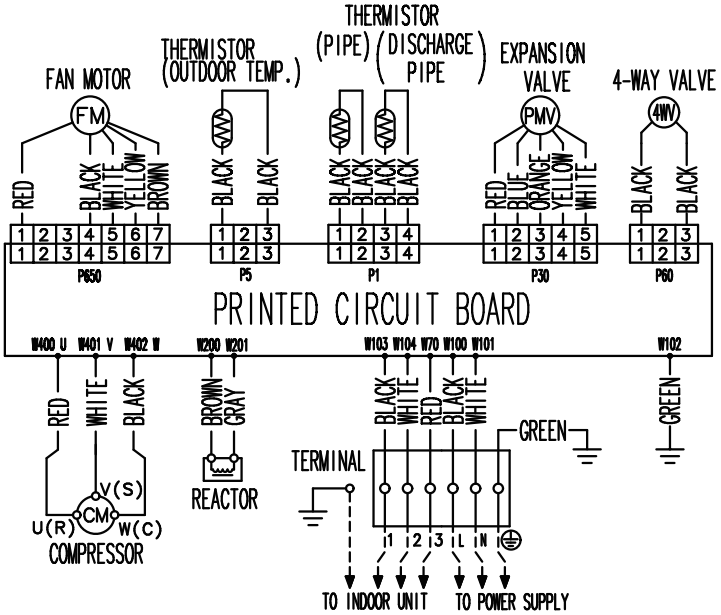
ThR : Thermistor (Room Temp.)

ThP : Thermistor (Pipe Temp.)

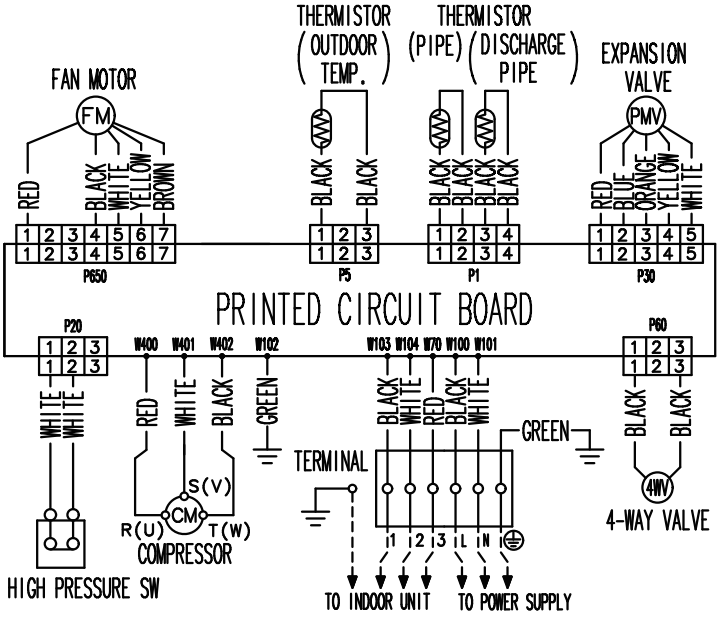
OUTDOOR UNIT
AOYG09-14KVCA

5. Wiring diagrams

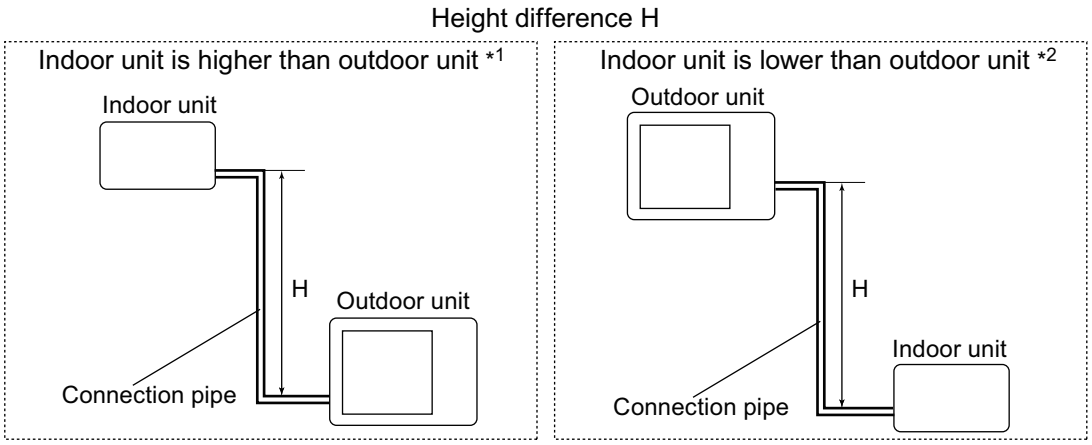
5-1. Models: AOYG09KVCA and AOYG12KVCA



5-2. Model: AOYG14KVCA



6. Capacity compensation rate for pipe length and height difference



6-1. Models: AOYG09KVCA and AOYG12KVCA

NOTE: Values mentioned in the table are calculated based on the maximum capacity.

COOLING			Pipe length (m)				
			5	7.5	10	15	20
Height difference H (m)	Indoor unit is higher than outdoor unit *1	15	—	—	—	0.915	0.905
		10	—	—	0.955	0.922	0.912
		7.5	—	0.974	0.959	0.926	0.916
		5	0.992	0.978	0.963	0.930	0.920
		0	1.000	0.986	0.971	0.937	0.927
	Indoor unit is lower than outdoor unit *2	-5	1.000	0.986	0.971	0.937	0.927
		-7.5	—	0.986	0.971	0.937	0.927
		-10	—	—	0.971	0.937	0.927
		-15	—	—	—	0.937	0.927

HEATING			Pipe length (m)				
			5	7.5	10	15	20
Height difference H (m)	Indoor unit is higher than outdoor unit *1	15	—	—	—	0.863	0.846
		10	—	—	0.944	0.863	0.846
		7.5	—	0.978	0.944	0.863	0.846
		5	1.000	0.978	0.944	0.863	0.846
		0	1.000	0.978	0.944	0.863	0.846
	Indoor unit is lower than outdoor unit *2	-5	0.995	0.973	0.939	0.858	0.842
		-7.5	—	0.971	0.937	0.856	0.840
		-10	—	—	0.934	0.854	0.838
		-15	—	—	—	0.794	0.778

6-2. Model: AOYG14KVCA

NOTE: Values mentioned in the table are calculated based on the maximum capacity.

COOLING			Pipe length (m)				
			5	7.5	10	15	20
Height difference H (m)	Indoor unit is higher than outdoor unit *1	15	—	—	—	0.950	0.946
		10	—	—	0.976	0.958	0.954
		7.5	—	0.984	0.980	0.962	0.958
		5	0.992	0.988	0.984	0.966	0.962
		0	1.000	0.996	0.992	0.974	0.969
	Indoor unit is lower than outdoor unit *2	-5	1.000	0.996	0.992	0.974	0.969
		-7.5	—	0.996	0.992	0.974	0.969
		-10	—	—	0.992	0.974	0.969
		-15	—	—	—	0.974	0.969

HEATING			Pipe length (m)				
			5	7.5	10	15	20
Height difference H (m)	Indoor unit is higher than outdoor unit *1	15	—	—	—	0.853	0.824
		10	—	—	0.943	0.853	0.824
		7.5	—	0.982	0.943	0.853	0.824
		5	1.000	0.982	0.943	0.853	0.824
		0	1.000	0.982	0.943	0.853	0.824
	Indoor unit is lower than outdoor unit *2	-5	0.995	0.977	0.938	0.848	0.820
		-7.5	—	0.975	0.936	0.846	0.818
		-10	—	—	0.933	0.844	0.816
		-15	—	—	—	0.785	0.758

7. Additional charge calculation

7-1. Models: AOYG09KVCA and AOYG12KVCA

Refrigerant type		R32
Refrigerant amount	g	850

Refrigerant charge				
Total pipe length	m	15 or less	20 (Max.)	20 g/m
Additional charge	g	0	100	

7-2. Model: AOYG14KVCA

Refrigerant type		R32
Refrigerant amount	g	940

Refrigerant charge				
Total pipe length	m	15 or less	20 (Max.)	20 g/m
Additional charge	g	0	100	

OUTDOOR UNIT
AOYG09-14KVCA

OUTDOOR UNIT
AOYG09-14KVCA

8. Airflow

8-1. Model: AOYG09KVCA

● Cooling

m^3/h	1,530
l/s	425
CFM	901

● Heating

m^3/h	1,510
l/s	419
CFM	889

8-2. Model: AOYG12KVCA

● Cooling

m^3/h	1,530
l/s	425
CFM	901

● Heating

m^3/h	1,510
l/s	419
CFM	889

8-3. Model: AOYG14KVCA

● Cooling

m^3/h	2,210
l/s	614
CFM	1,301

● Heating

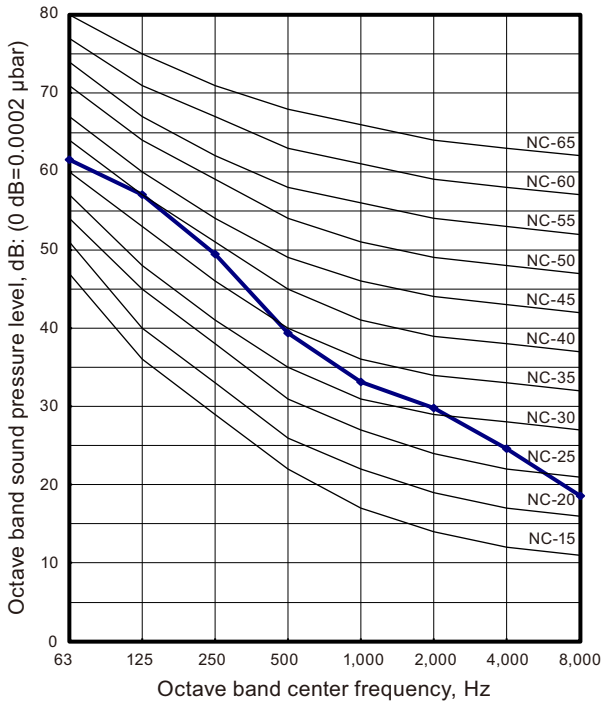
m^3/h	2,100
l/s	583
CFM	1,236

9. Operation noise (sound pressure)

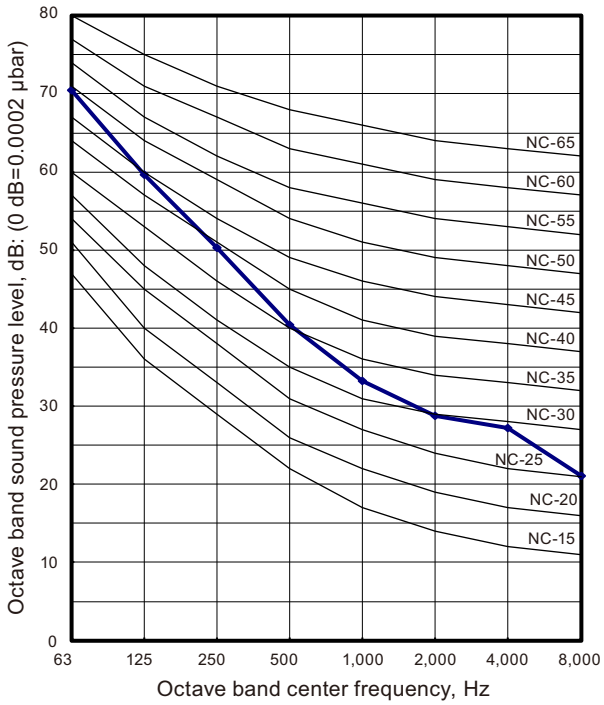
9-1. Noise level curve

■ Model: AOYG09KVCA

● Cooling

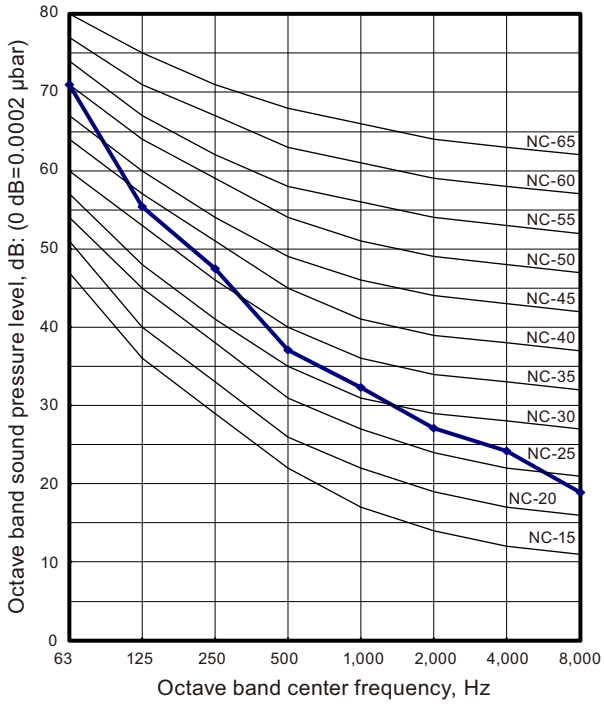


● Heating

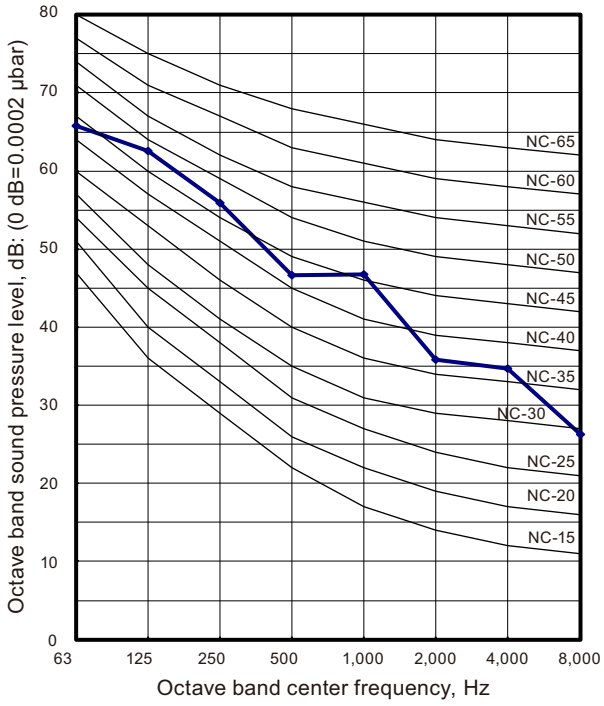


■ Model: AOYG12KVCA

● Cooling



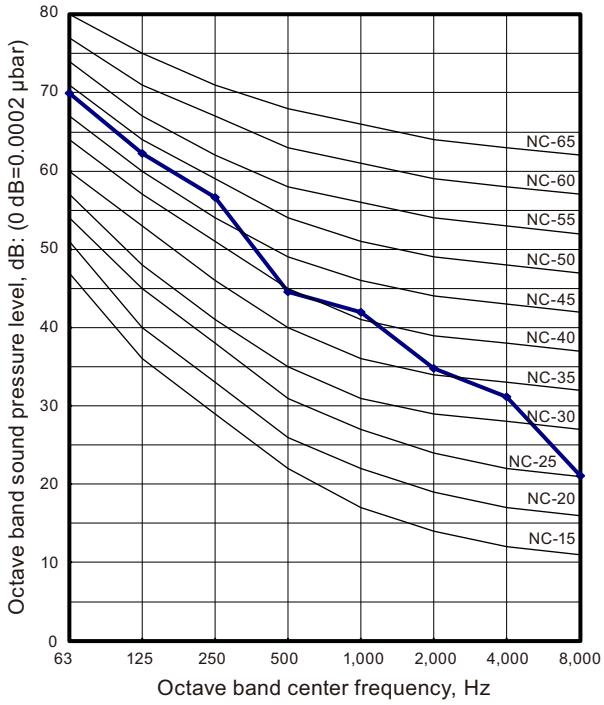
● Heating



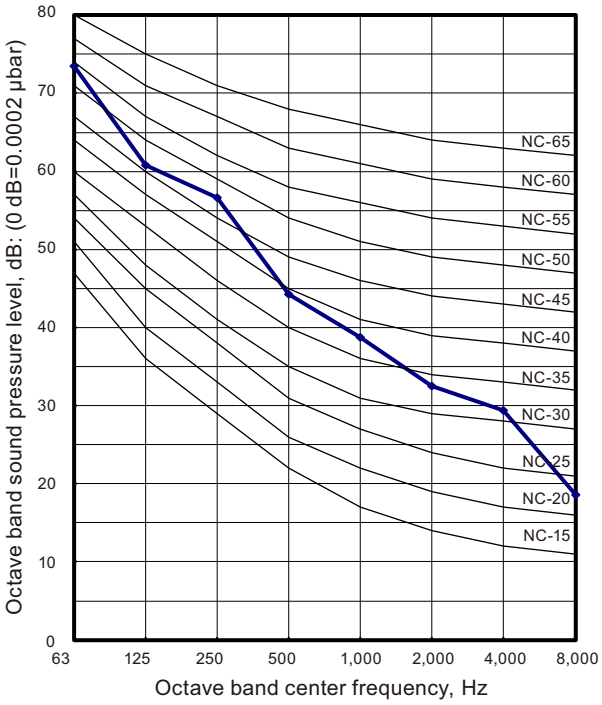
OUTDOOR UNIT
AOYG09-14KVCA

■ Model: AOYG14KVCA

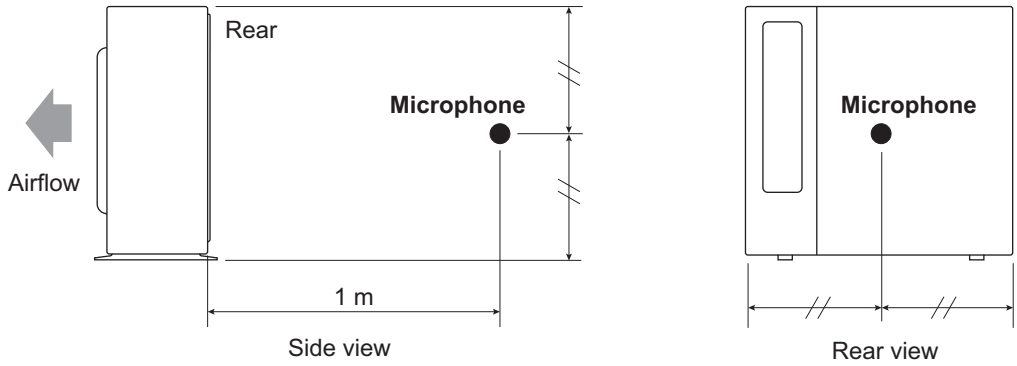
● Cooling



● Heating



9-2. Sound level check point



NOTE: Detailed shape of the actual outdoor unit might be slightly different from the one illustrated above.

10. Electrical characteristics

Model name				AOYG09KVCA	AOYG12KVCA	AOYG14KVCA
Power supply	Voltage		V	230		
	Frequency		Hz	50		
Max operating current *1			A	8.5	8.5	12
Starting current			A	4.1	5.7	6.2
Wiring spec. *2	Circuit breaker current		A	10	10	16
	Power cable		mm^2	1.5		
	Connection cable *3	Cross-sectional area	mm^2	1.5		
		Limited wiring length	m	21		

*1: Maximum operating current is the total current of the indoor unit and the outdoor unit.

*2: Selected sample based on Japan Electrotechnical Standards and Codes Committee E0005. As the regulations of wire size and circuit breaker differ in each country or region, select appropriate devices complied to the regional standard.

*3: Limit voltage drop to less than 2%. If voltage drop is 2% or more, increase cable conductor size.

11. Safety devices

Type of protection	Protection form		Model		
			AOYG09KVCA	AOYG12KVCA	AOYG14KVCA
Circuit protection	Current fuse (PCB*)		250 V, 20 A		250 V, 25 A
			250 V, 5 A		250 V, 5 A
			250 V, 3.15 A		250 V, 3.15 A
Fan motor protection	Thermal protection program	Activate	100±15 °C Fan motor stop		125±10 °C Fan motor stop
		Reset	95±10 °C Fan motor restart		120±10 °C Fan motor restart
Compressor protection	Thermal protection program (Discharge temp.)	Activate	110 °C Compressor stop		
		Reset	After 7 minutes Compressor restart		

*PCB: Printed Circuit Board

OUTDOOR UNIT
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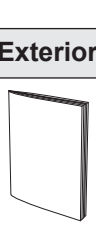
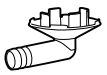
12. Accessories

12-1. Models: AOYG09KVCA, AOYG12KVCA, and AOYG14KVCA

Part name	Exterior	Q'ty	Part name	Exterior	Q'ty
Installation manual		1	Drain pipe		1

OUTDOOR UNIT
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