

AIRSTAGE

AIR CONDITIONER

Wall mounted type

FUJITSU

REFRIGERANT **R32**
INVERTER

DESIGN & TECHNICAL MANUAL

INDOOR



ASEH07KMCG
ASEH09KMCG
ASEH12KMCG
ASEH14KMCG

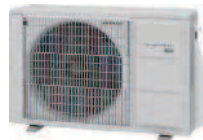


ASEH07KMCG-B
ASEH09KMCG-B
ASEH12KMCG-B
ASEH14KMCG-B

OUTDOOR



AOEH07KMCG
AOEH09KMCG
AOEH12KMCG



AOEH14KMCG

FUJITSU GENERAL LIMITED

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Part 1. INDOOR UNIT

WALL MOUNTED TYPE:

ASEH07KMCG

ASEH09KMCG

ASEH12KMCG

ASEH14KMCG

ASEH07KMCG-B

ASEH09KMCG-B

ASEH12KMCG-B

ASEH14KMCG-B

1. Specifications

Type				Wall mounted					
				Inverter, Heat pump					
Model name				ASEH07KMCG ASEH07KMCG-B	ASEH09KMCG ASEH09KMCG-B	ASEH12KMCG ASEH12KMCG-B	ASEH14KMCG ASEH14KMCG-B		
Power supply intake				Outdoor unit					
System power supply		Voltage		230					
		Frequency		50					
		Available voltage range		198—264 V					
Indoor unit power supply (from outdoor unit)				230					
Capacity	Cooling	Rated	kW	2.0	2.5	3.4	4.2		
			Btu/h	6,800	8,500	11,600	14,300		
		Min.—Max.	kW	0.9—3.0	0.9—3.2	0.9—3.9	0.9—4.4		
			Btu/h	3,100—10,200	3,100—10,900	3,100—13,300	3,100—15,000		
	Heating	Rated	kW	2.5	2.8	4.0	5.4		
			Btu/h	8,500	9,500	13,600	18,400		
		Min.—Max.	kW	0.9—3.4	0.9—4.0	0.9—5.3	0.9—6.0		
			Btu/h	3,100—11,600	3,100—13,600	3,100—18,000	3,100—20,500		
Input power	Cooling	Rated	kW	0.450	0.650	0.960	1.220		
				Min.—Max.	0.25—1.17	0.25—1.21	0.25—1.27	0.25—1.40	
		Heating		Rated	0.555	0.620	1.020	1.410	
					Min.—Max.	0.25—1.21	0.25—1.26	0.25—1.52	0.25—1.73
	Fan	HIGH		W	22.1	26.5		33.6	
					MED	15.1	16.0		20.0
					LOW	10.0		6.4	11.8
					QUIET	6.4		4.8	7.1
Current	Cooling	Rated	A	2.6	3.4	4.6	5.8		
	Heating			3.0	3.3	5.0	6.8		
Energy efficiency class		Cooling		A++					
		Heating (Average)		A++			A+		
Pdesign	Cooling		kW	2.0	2.5	3.4	4.2		
	Heating (Average)			2.3	2.4	2.5	4.0		
SEER	Cooling		kWh/kWh	8.4		7.7	7.1		
SCOP	Heating (Average)			4.6		4.1	4.1		
Annual energy consumption	QCE		kWh/a	83	104	155	207		
	QHE (Average)			700	730	761	1,366		
EER	Cooling		kW/kW	4.43	3.85	3.54	3.44		
COP	Heating			4.52		3.92	3.83		
Sensible capacity	Cooling		kW	1.2	1.6	2.2	3.2		
Power factor	Cooling		%	75	83	90	88		
	Heating			80	81	89	87		
Moisture removal			L/h (pints/h)	1.0 (1.8)	1.3 (2.3)	1.8 (3.2)	2.1 (3.7)		
Maximum operating current*1		Cooling		A	6.5				
		Heating			9.0				
Fan	Airflow rate	Cooling	m³/h	HIGH	650	700	770		
				MED	540	560	600		
				LOW	430		450		
				QUIET	270		280		
		Heating		HIGH	720	750	780	820	
				MED	580	610	640	660	
				LOW	460	470	520		
				QUIET	330		340		
		Type × Qty		Crossflow fan × 1					
		Motor output		W		27			
	Sound pressure level*2	Cooling		dB (A)	HIGH	38	40		43
MED			33		34	35	36		
LOW			29		30				
QUIET			20						
Heating		HIGH	41		42		44		
		MED	35		36	38	39		
		LOW	31		33				
		QUIET	22			24			
Sound power level	Cooling	dB (A)	54	55		57			
	Heating		56	57	58	59			
Heat exchanger	Dimensions (H × W × D)		mm	Main 1: 210 × 670 × 26.6 Main 2: 112 × 670 × 20.0			Main 1: 210 × 670 × 26.6 Main 2: 112 × 670 × 20.0 Sub 1: 84 × 670 × 13.3		
	Fin pitch			Main 1: 1.2 Main 2: 1.1			Main 1: 1.2 Main 2: 1.1 Sub 1: 1.4		
	Rows × Stages		Main 1: 2 × 10 Main 2: 2 × 7			Main 1: 2 × 10 Main 2: 2 × 7 Sub 1: 1 × 4			
	Pipe type		Copper tube						
	Fin type		Aluminum						
Enclosure	Material		Polystyrene						
	Color	KMCG: White							
		Approximate color of Munsell N9.25/ KMCG-B: Soft black							
Dimensions (H × W × D)	Net	mm	Approximate color of Munsell N3/ 270 × 834 × 222						
Gross	KMCG: 277 × 914 × 332 KMCG-B: 284 × 925 × 341								
Weight	Net	kg	10.0						
	Gross		KMCG: 12.5 KMCG-B: 13.5			KMCG: 13.0 KMCG-B: 13.5			
Connection pipe	Size	Liquid	mm (in)	Ø6.35 (Ø1/4)					
	Method	Gas		Ø9.52 (Ø3/8)					
				Flare					

Type			Wall mounted			
			Inverter, Heat pump			
Model name			ASEH07KMCG ASEH07KMCG-B	ASEH09KMCG ASEH09KMCG-B	ASEH12KMCG ASEH12KMCG-B	ASEH14KMCG ASEH14KMCG-B
Drain hose	Material		Polypropylene + High-density polyethylene			
	Tip diameter	mm	Ø13.8 (I.D.), Ø15 to Ø16.8 (O.D.)			
Operation range	Cooling	°C	18 to 32			
		%RH	80 or less			
	Heating	°C	16 to 30			
Remote controller			Wireless (Option: Wired, Mobile app*3 [AIRSTAGE Mobile])			
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/—°CWB, and outdoor temperature of 7°CDB/6°CWB. - Pipe length: 5.0 m, Height difference: 0 m. (Between outdoor unit and indoor unit.) - Protective function might work when using it outside the operation range. *1: Maximum operating current is the total current of the indoor unit and the outdoor unit. *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®. - This data is based on EN 14511 standard.						

2. Wireless LAN control

By installing mobile app on a smart device, several functions can be controlled from outside the house.

2-1. System requirement

Before using this function, prepare the following items:

- **Wireless router:**

Wireless LAN standard	IEEE802.11b/g/n
Frequency bands*	• U.S.A., Canada: 2.4 GHz (1ch—11ch) • Other countries: 2.4 GHz (1ch—13ch)
Network security standard	• Open • WEP • WPA (PSK) • WPA2 Personal (PSK) • WPS for same-LAN registration

*: Usable only in the country or region where you purchased the product.

To check whether your wireless router complies with the network security standards listed above, refer to the operation manual.

- **Smartphone:**

App-compliant operating system	iOS	Check the latest version of supported OS at Google Play store or App Store.
	Android™	

- **AIRSTAGE Mobile (mobile application):**

Mobile app is available on Google Play store or on App Store.

After installation of mobile app, user registration is required. For user registration and setup information, refer to Setting Manual attached with the product.

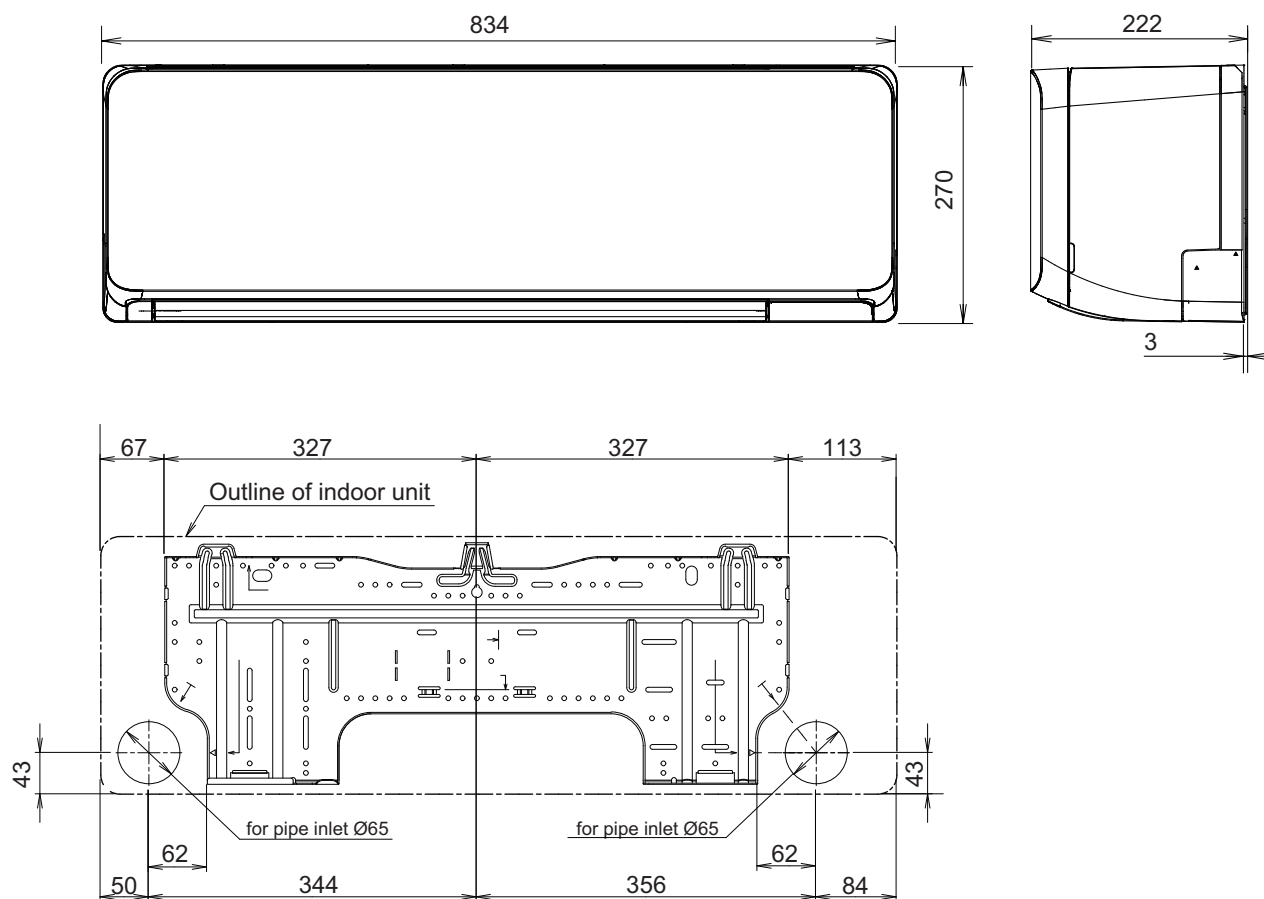
For the latest version of the wireless LAN control manuals, refer to the following web site.

<https://www.fujitsu-general.com/global/support/>

3. Dimensions

3-1. Models: ASEH07KMCG, ASEH09KMCG, ASEH12KMCG, ASEH14KMCG, ASEH07KMCG-B, ASEH09KMCG-B, ASEH12KMCG-B, and ASEH14KMCG-B

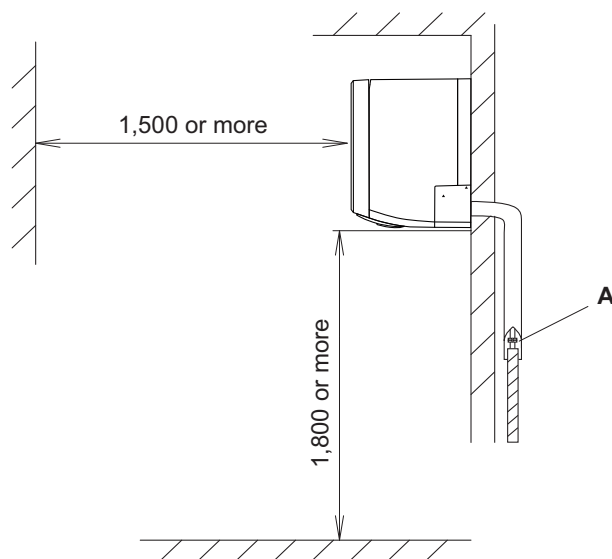
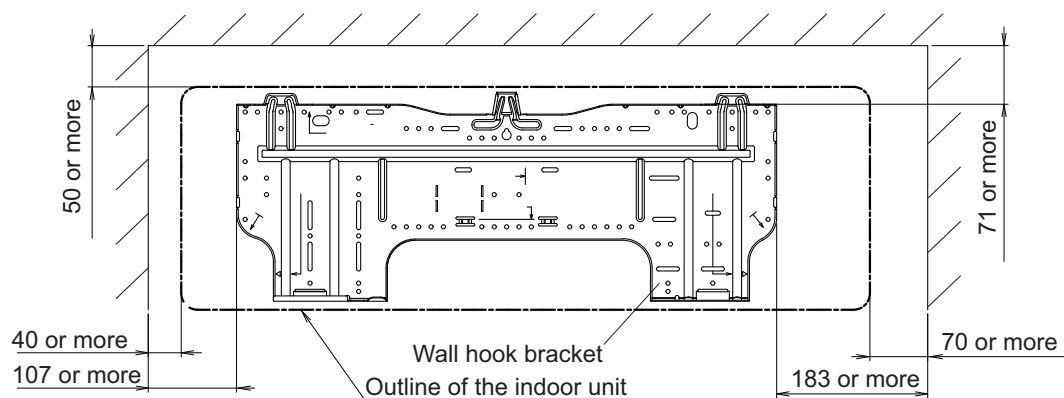
Unit: mm



■ Installation space requirement

Provide sufficient installation space for product safety.

Unit: mm



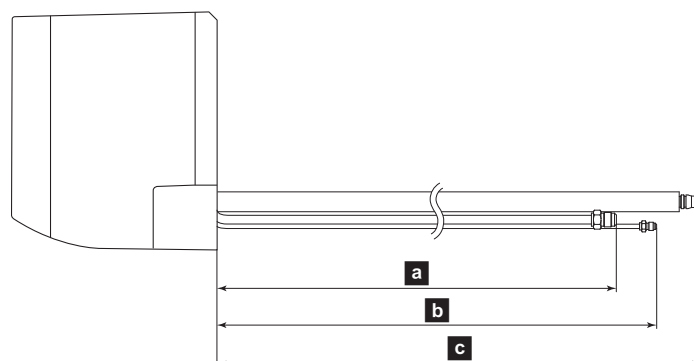
A: Install so that the flare connection part is outdoors.

3-2. Pipe exit length from the rear

Design the system considering the length of the pipes or hose exiting from the rear of the indoor unit.

NOTE: Detailed shapes of the indoor unit and the tip of each pipe or hose may vary depending on the model.

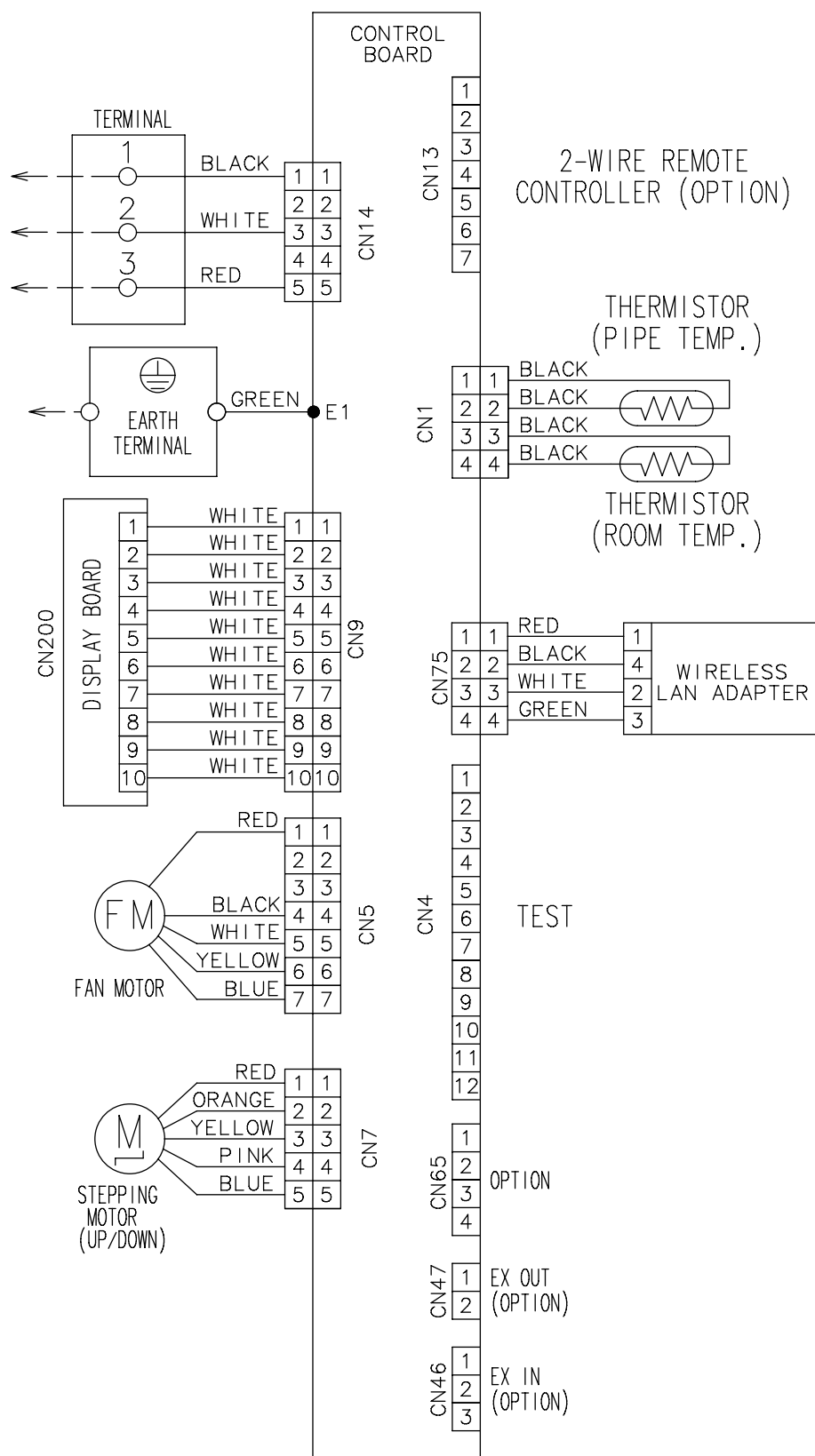
Unit: mm



Model name	Approximate length		
	a Gas pipe	b Liquid pipe	c Drain hose
ASEH07-14KMCG ASEH07-14KMCG-B	395	435	480

4. Wiring diagrams

4-1. Models: ASEH07KMCG, ASEH09KMCG, ASEH12KMCG, ASEH14KMCG, ASEH07KMCG-B, ASEH09KMCG-B, ASEH12KMCG-B, and ASEH14KMCG-B



5. 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)

5-1. Cooling capacity

■ Models: ASEH07KMCG and ASEH07KMCG-B

AFR			m³/h						650														
Outdoor temperature		Indoor temperature																					
	°CDB	18			21			23			25			27			29			32			
	°CWB	12			15			16			18			19			21			23			
	°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	2.07	1.20	0.25	2.25	1.25	0.25	2.37	1.28	0.25	2.49	1.31	0.25	2.55	1.35	0.25	2.73	1.37	0.24	2.91	1.42	0.24	
	0	2.02	1.17	0.29	2.19	1.22	0.28	2.31	1.25	0.28	2.43	1.28	0.28	2.48	1.31	0.28	2.66	1.34	0.27	2.84	1.38	0.27	
	5	1.91	1.14	0.38	2.07	1.19	0.38	2.18	1.21	0.38	2.29	1.24	0.37	2.34	1.28	0.38	2.51	1.30	0.37	2.68	1.34	0.37	
	10	1.96	1.13	0.36	2.13	1.17	0.36	2.24	1.20	0.35	2.36	1.23	0.35	2.41	1.27	0.35	2.58	1.29	0.35	2.75	1.33	0.34	
	15	1.92	1.14	0.36	2.08	1.18	0.35	2.20	1.21	0.35	2.31	1.24	0.35	2.36	1.27	0.35	2.53	1.29	0.34	2.70	1.34	0.34	
20	1.86	1.13	0.37	2.02	1.18	0.36	2.13	1.20	0.36	2.24	1.23	0.36	2.29	1.27	0.36	2.46	1.29	0.35	2.62	1.33	0.35		
25	1.80	1.12	0.39	1.95	1.16	0.38	2.06	1.19	0.38	2.16	1.22	0.38	2.21	1.25	0.38	2.37	1.28	0.37	2.53	1.32	0.37		
30	1.72	1.10	0.42	1.87	1.14	0.41	1.97	1.17	0.41	2.07	1.20	0.41	2.11	1.23	0.41	2.27	1.25	0.40	2.42	1.30	0.40		
35	1.63	1.07	0.46	1.77	1.11	0.45	1.86	1.14	0.45	1.96	1.17	0.45	2.00	1.20	0.45	2.15	1.22	0.44	2.29	1.26	0.44		
40	1.52	1.03	0.51	1.66	1.07	0.50	1.75	1.10	0.50	1.83	1.13	0.50	1.87	1.16	0.50	2.01	1.18	0.49	2.14	1.22	0.49		
46	1.39	0.98	0.59	1.51	1.02	0.58	1.59	1.04	0.58	1.67	1.07	0.57	1.70	1.10	0.58	1.83	1.12	0.57	1.95	1.15	0.56		
50	1.24	0.90	0.61	1.34	0.94	0.60	1.42	0.96	0.60	1.49	0.98	0.59	1.51	1.01	0.60	1.63	1.03	0.59	1.74	1.06	0.58		

■ Models: ASEH09KMCG and ASEH09KMCG-B

AFR			m³/h			700																
Outdoor temperature		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
	°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	2.59	1.60	0.38	2.82	1.66	0.37	2.97	1.70	0.37	3.12	1.74	0.37	3.18	1.79	0.37	3.42	1.83	0.36	3.64	1.89	0.36
	0	2.52	1.56	0.42	2.74	1.62	0.42	2.89	1.66	0.41	3.04	1.70	0.41	3.10	1.75	0.41	3.33	1.78	0.40	3.55	1.84	0.40
	5	2.38	1.52	0.56	2.59	1.58	0.55	2.73	1.62	0.55	2.87	1.66	0.54	2.93	1.71	0.55	3.14	1.73	0.54	3.35	1.79	0.53
	10	2.45	1.51	0.52	2.66	1.57	0.52	2.80	1.60	0.52	2.95	1.64	0.51	3.01	1.69	0.52	3.23	1.72	0.51	3.44	1.78	0.50
	15	2.40	1.51	0.52	2.61	1.57	0.52	2.74	1.61	0.51	2.88	1.65	0.51	2.95	1.70	0.51	3.16	1.73	0.50	3.37	1.78	0.50
20	2.33	1.51	0.53	2.53	1.57	0.53	2.67	1.61	0.52	2.80	1.64	0.52	2.86	1.69	0.52	3.07	1.72	0.51	3.27	1.78	0.51	
25	2.25	1.49	0.56	2.44	1.55	0.55	2.57	1.59	0.55	2.70	1.63	0.55	2.76	1.67	0.55	2.96	1.70	0.54	3.16	1.76	0.53	
30	2.15	1.47	0.60	2.33	1.52	0.60	2.46	1.56	0.59	2.58	1.60	0.59	2.64	1.64	0.59	2.83	1.67	0.58	3.02	1.73	0.58	
35	2.03	1.43	0.66	2.21	1.48	0.65	2.33	1.52	0.65	2.45	1.56	0.65	2.50	1.60	0.65	2.68	1.63	0.64	2.86	1.68	0.63	
40	1.91	1.38	0.73	2.07	1.43	0.73	2.18	1.47	0.72	2.29	1.50	0.72	2.34	1.54	0.72	2.51	1.57	0.71	2.68	1.62	0.70	
46	1.73	1.31	0.84	1.88	1.36	0.83	1.98	1.39	0.83	2.08	1.42	0.82	2.13	1.46	0.83	2.28	1.49	0.81	2.44	1.54	0.80	
50	1.54	1.21	0.87	1.67	1.25	0.85	1.76	1.28	0.85	1.85	1.31	0.84	1.90	1.34	0.85	2.03	1.37	0.83	2.17	1.42	0.82	

■ Models: ASEH12KMCG and ASEH12KMCG-B

AFR			m³/h						700														
Outdoor temperature		Indoor temperature																					
	°CDB	18			21			23			25			27			29			32			
	°CWB	12			15			16			18			19			21			23			
	°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	3.45	2.30	0.56	3.75	2.37	0.56	3.94	2.42	0.55	4.14	2.46	0.55	4.26	2.52	0.55	4.53	2.56	0.55	4.82	2.63	0.54	
	0	3.22	2.20	0.72	3.50	2.27	0.71	3.68	2.32	0.71	3.86	2.36	0.71	3.97	2.41	0.70	4.22	2.45	0.70	4.50	2.52	0.70	
	5	3.06	2.15	0.83	3.32	2.21	0.83	3.49	2.26	0.82	3.66	2.30	0.82	3.77	2.35	0.81	4.01	2.39	0.81	4.27	2.45	0.81	
	10	3.35	2.31	0.63	3.63	2.38	0.63	3.82	2.43	0.62	4.01	2.47	0.62	4.12	2.53	0.61	4.38	2.57	0.62	4.67	2.64	0.61	
	15	3.27	2.23	0.69	3.55	2.30	0.69	3.73	2.34	0.68	3.92	2.39	0.68	4.03	2.44	0.67	4.28	2.48	0.67	4.56	2.55	0.67	
20	3.17	2.16	0.75	3.44	2.22	0.75	3.62	2.27	0.75	3.80	2.31	0.74	3.91	2.36	0.73	4.16	2.40	0.74	4.43	2.47	0.73		
25	3.06	2.10	0.82	3.31	2.16	0.82	3.49	2.20	0.81	3.66	2.25	0.81	3.76	2.30	0.80	4.00	2.33	0.80	4.26	2.40	0.80		
30	2.92	2.05	0.90	3.17	2.11	0.89	3.33	2.15	0.89	3.49	2.19	0.89	3.59	2.24	0.88	3.82	2.28	0.88	4.07	2.34	0.87		
35	2.76	2.01	0.98	2.99	2.07	0.97	3.15	2.11	0.97	3.30	2.15	0.97	3.40	2.20	0.96	3.62	2.24	0.96	3.85	2.30	0.95		
40	2.58	1.98	1.07	2.80	2.04	1.06	2.95	2.08	1.06	3.09	2.12	1.05	3.18	2.17	1.04	3.38	2.21	1.04	3.60	2.27	1.03		
46	1.88	1.59	0.95	2.06	1.65	0.95	2.17	1.68	0.95	2.29	1.73	0.95	2.38	1.78	0.95	2.54	1.81	0.95	2.72	1.88	0.95		
50	1.68	1.46	0.98	1.84	1.52	0.98	1.93	1.55	0.98	2.04	1.59	0.98	2.12	1.63	0.98	2.26	1.66	0.98	2.42	1.73	0.98		

■ Models: ASEH14KMCG and ASEH14KMCG-B

AFR		m³/h									770											
Outdoor temperature		Indoor temperature																				
	°CDB	18			21			23			25			27			29			32		
	°CWB	12			15			16			18			19			21			23		
	°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	3.77	3.49	0.67	4.11	3.62	0.66	4.34	3.70	0.66	4.57	3.79	0.65	4.85	3.86	0.65	5.03	3.95	0.65	5.37	4.08	0.64
	0	3.59	3.39	0.88	3.92	3.51	0.88	4.14	3.60	0.87	4.35	3.68	0.87	4.62	3.74	0.86	4.79	3.84	0.86	5.12	3.96	0.85
	5	3.50	3.34	0.99	3.82	3.46	0.99	4.04	3.54	0.98	4.25	3.62	0.98	4.51	3.69	0.96	4.67	3.78	0.97	4.99	3.90	0.96
	10	3.64	3.40	0.63	3.97	3.52	0.62	4.19	3.60	0.62	4.41	3.68	0.62	4.68	3.75	0.61	4.85	3.84	0.61	5.19	3.97	0.61
	15	3.65	3.33	0.78	3.99	3.45	0.78	4.21	3.53	0.77	4.43	3.61	0.77	4.70	3.67	0.76	4.88	3.77	0.76	5.21	3.89	0.76
20	3.62	3.25	0.92	3.96	3.36	0.92	4.18	3.44	0.91	4.40	3.52	0.91	4.67	3.58	0.90	4.84	3.67	0.90	5.17	3.79	0.89	
25	3.55	3.15	1.05	3.87	3.26	1.04	4.09	3.33	1.04	4.31	3.41	1.03	4.57	3.47	1.02	4.74	3.56	1.02	5.06	3.67	1.01	
30	3.43	3.03	1.16	3.74	3.14	1.15	3.95	3.21	1.15	4.16	3.28	1.14	4.42	3.34	1.13	4.58	3.43	1.13	4.89	3.54	1.12	
35	3.26	2.90	1.26	3.56	3.00	1.25	3.76	3.07	1.24	3.96	3.14	1.23	4.20	3.20	1.22	4.35	3.28	1.22	4.65	3.39	1.21	
40	2.73	2.46	1.20	3.00	2.57	1.20	3.19	2.65	1.20	3.39	2.73	1.20	3.63	2.81	1.20	3.76	2.88	1.20	4.05	2.99	1.20	
46	1.84	1.72	0.95	2.02	1.80	0.95	2.14	1.84	0.95	2.26	1.89	0.95	2.44	1.96	0.95	2.53	2.00	0.95	2.72	2.08	0.95	
50	1.64	1.58	0.98	1.80	1.65	0.98	1.90	1.69	0.98	2.01	1.74	0.98	2.17	1.80	0.98	2.25	1.84	0.98	2.42	1.92	0.98	

5-2. Heating capacity

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

Models: ASEH07KMCG and ASEH07KMCG-B

AFR			m ³ /h				720					
			Indoor temperature									
			16		18		20		22		24	
			TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
			kW		kW		kW		kW		kW	
Outdoor temperature	°CDB	°CWB	2.32	0.95	2.27	0.97	2.21	0.98	2.15	1.02	2.10	1.04
	-15	-16	2.80	1.00	2.74	1.02	2.67	1.03	2.60	1.07	2.54	1.10
	-10	-11	3.26	1.05	3.18	1.07	3.10	1.09	3.02	1.12	2.95	1.15
	-5	-7	3.45	1.10	3.37	1.13	3.29	1.14	3.21	1.18	3.13	1.21
	0	-2	3.52	1.15	3.43	1.18	3.35	1.19	3.27	1.23	3.18	1.26
	5	3	3.57	1.17	3.49	1.20	3.40	1.21	3.32	1.25	3.23	1.28
	7	6	3.85	1.20	3.76	1.23	3.67	1.24	3.58	1.29	3.49	1.32
	10	8	4.08	1.11	3.99	1.14	3.89	1.15	3.79	1.19	3.70	1.22
	15	10	4.53	1.06	4.42	1.09	4.31	1.10	4.20	1.14	4.09	1.17
20	15	4.76	1.02	4.64	1.05	4.53	1.06	4.42	1.10	4.30	1.12	
24	18											

Models: ASEH09KMCG and ASEH09KMCG-B

AFR			m³/h				750							
			Indoor temperature											
			16		18		20		22		24			
			TC	IP	TC	IP	TC	IP	TC	IP	TC	IP		
			kW		kW		kW		kW		kW			
Outdoor temperature	°CDB	°CWB	2.55	0.99	2.49	1.02	2.43	1.02	2.37	1.06	2.31	1.09		
	-15	-16	2.99	1.04	2.92	1.07	2.85	1.08	2.78	1.12	2.71	1.15		
	-10	-11	3.47	1.09	3.39	1.12	3.31	1.13	3.23	1.18	3.14	1.20		
	-5	-7	3.84	1.15	3.75	1.17	3.65	1.19	3.56	1.23	3.47	1.26		
	0	-2	4.05	1.20	3.96	1.23	3.86	1.24	3.77	1.29	3.67	1.32		
	5	3	4.20	1.22	4.10	1.25	4.00	1.26	3.90	1.31	3.80	1.34		
	7	6	4.57	1.25	4.46	1.28	4.35	1.29	4.24	1.34	4.13	1.37		
	10	8	4.70	1.26	4.59	1.29	4.48	1.30	4.37	1.35	4.26	1.38		
	15	10	5.09	1.27	4.97	1.30	4.85	1.31	4.73	1.31	4.61	1.31		
20	15	5.35	1.28	5.22	1.31	5.09	1.31	4.96	1.31	4.84	1.31			
24	18													

Models: ASEH12KMCG and ASEH12KMCG-B

AFR			m³/h				780							
			Indoor temperature											
			16		18		20		22		24			
			TC	IP	TC	IP	TC	IP	TC	IP	TC	IP		
			kW		kW		kW		kW		kW			
Outdoor temperature	°CDB	°CWB	2.88	1.19	2.86	1.22	2.82	1.23	2.81	1.28	2.78	1.31		
	-15	-16	3.46	1.25	3.43	1.28	3.38	1.30	3.37	1.35	3.34	1.38		
	-10	-11	4.04	1.32	4.00	1.35	3.94	1.36	3.93	1.41	3.89	1.44		
	-5	-7	4.62	1.38	4.57	1.41	4.51	1.43	4.49	1.48	4.45	1.51		
	0	-2	5.19	1.44	5.15	1.48	5.07	1.49	5.05	1.55	5.01	1.58		
	5	3	5.42	1.47	5.38	1.50	5.30	1.52	5.28	1.58	5.23	1.61		
	7	6	5.77	1.51	5.72	1.54	5.64	1.56	5.62	1.62	5.57	1.65		
	10	8	5.73	1.40	5.68	1.43	5.60	1.45	5.58	1.50	5.53	1.53		
15	10	5.90	1.31	5.72	1.31	5.60	1.31	5.39	1.31	5.19	1.31			
20	15	6.28	1.29	6.18	1.31	6.05	1.31	5.81	1.31	5.63	1.31			
24	18													

Models: ASEH14KMCG and ASEH14KMCG-B

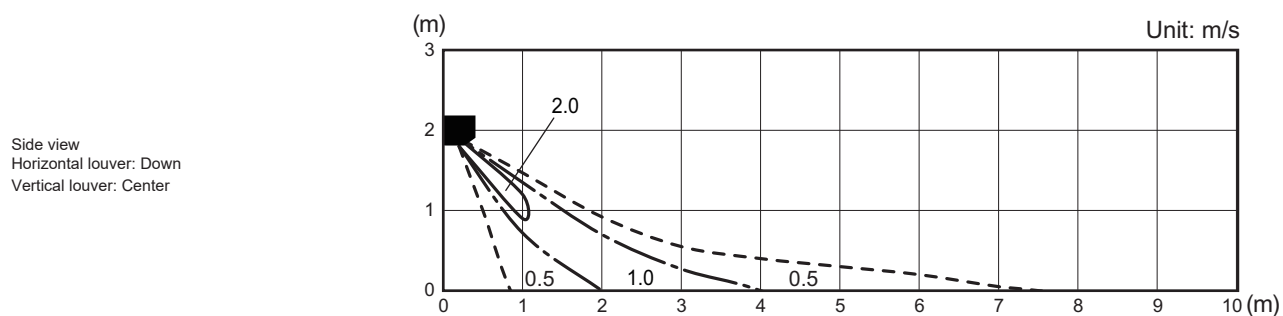
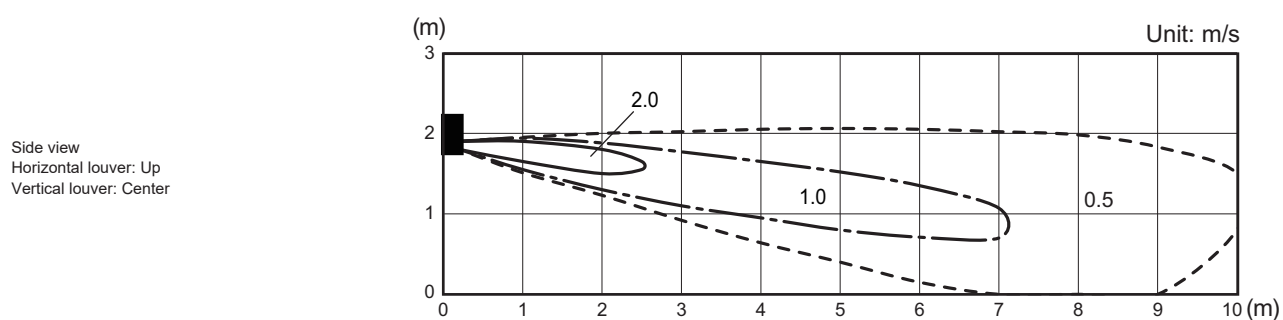
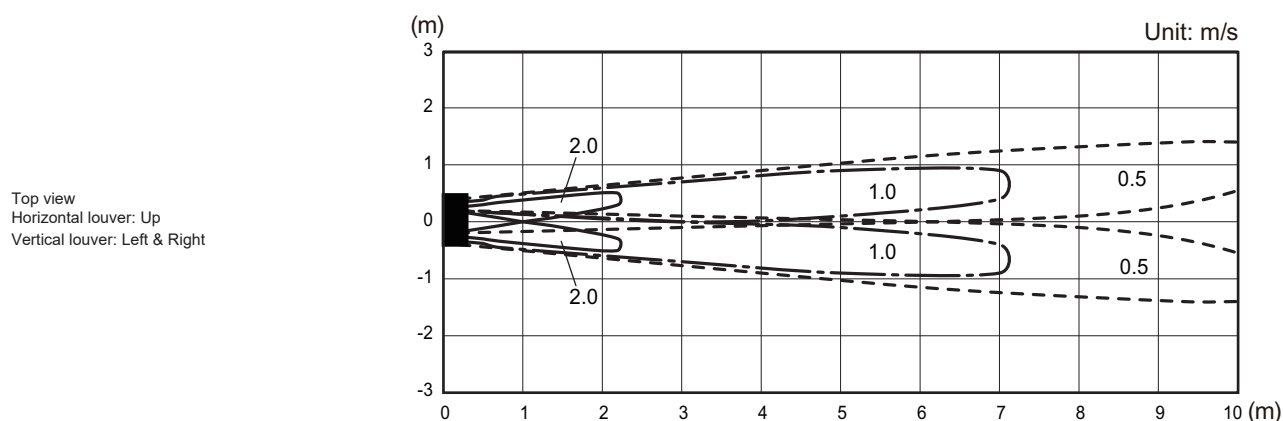
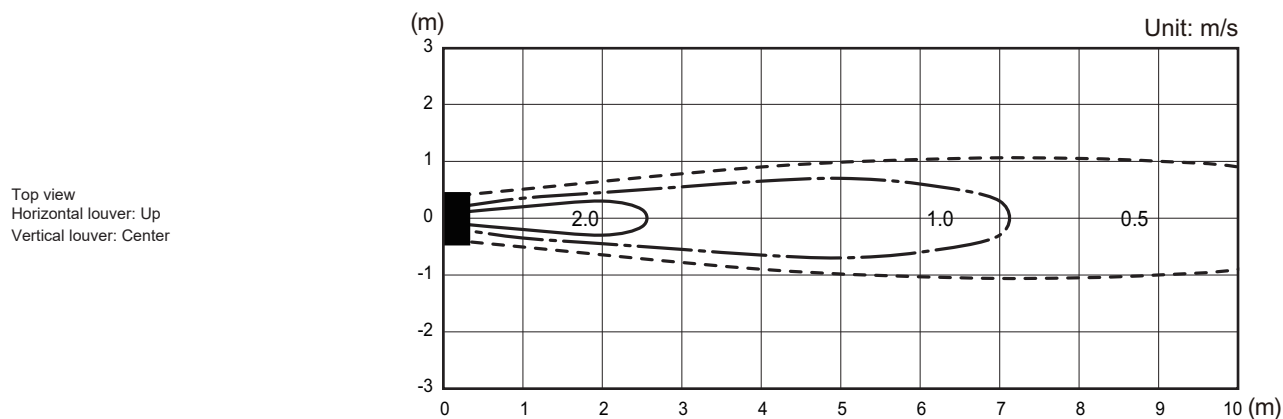
AFR			m³/h				820							
			Indoor temperature											
			16		18		20		22		24			
			TC	IP	TC	IP	TC	IP	TC	IP	TC	IP		
			kW		kW		kW		kW		kW			
Outdoor temperature	°CDB	°CWB	3.26	1.36	3.23	1.39	3.19	1.40	3.18	1.45	3.15	1.49		
	-15	-16	3.92	1.43	3.88	1.46	3.83	1.48	3.81	1.53	3.78	1.57		
	-10	-11	4.57	1.50	4.53	1.54	4.47	1.55	4.45	1.61	4.41	1.64		
	-5	-7	5.23	1.57	5.18	1.61	5.11	1.63	5.09	1.69	5.04	1.72		
	0	-2	5.99	1.67	5.93	1.71	5.84	1.73	5.66	1.74	5.48	1.74		
	5	3	6.14	1.67	6.09	1.71	6.00	1.73	5.81	1.74	5.63	1.74		
	7	6	6.53	1.72	6.41	1.74	6.27	1.74	6.01	1.74	5.83	1.74		
	10	8	6.49	1.59	6.43	1.63	6.26	1.63	6.02	1.63	5.83	1.63		
15	10	6.12	1.36	5.90	1.36	5.57	1.31	5.34	1.31	5.17	1.31			
20	15	6.58	1.36	6.39	1.36	5.99	1.31	5.77	1.31	5.58	1.31			
24	18													

6. Fan performance

6-1. Air velocity distributions

■ **Models: ASEH07KMCG, ASEH09KMCG, and ASEH12KMCG, ASEH07KMCG-B, ASEH09KMCG-B, and ASEH12KMCG-B**

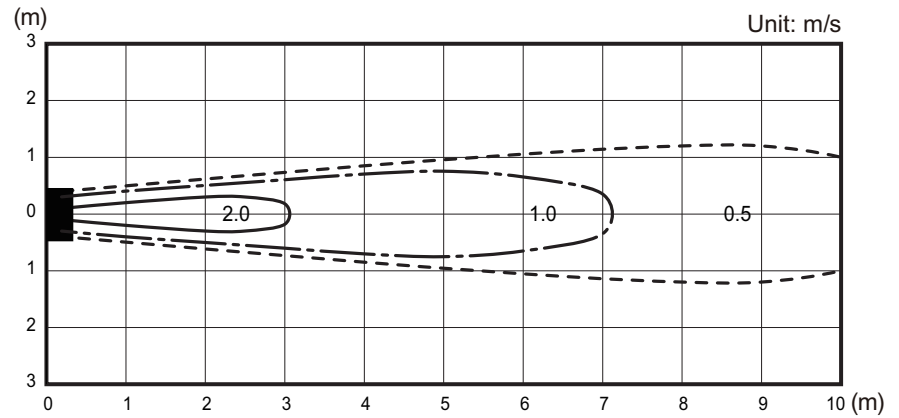
Measuring conditions	Fan speed	Operation mode
	HIGH	FAN



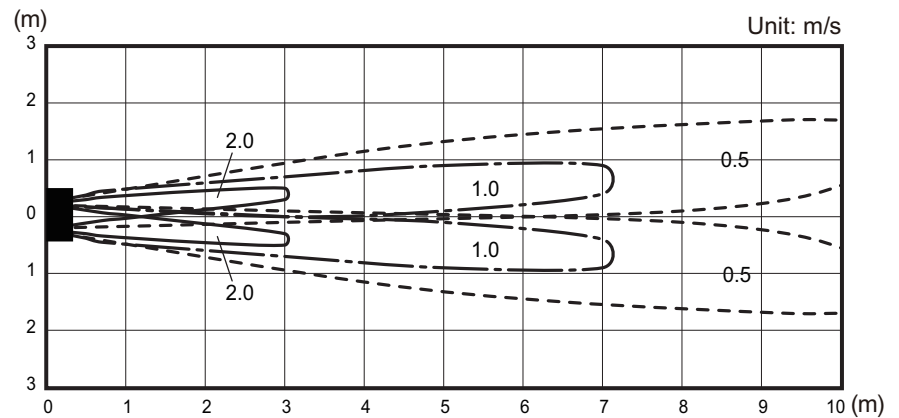
Models: ASEH14KMCG and ASEH14KMCG-B

Measuring conditions	Fan speed HIGH	Operation mode FAN
----------------------	-------------------	-----------------------

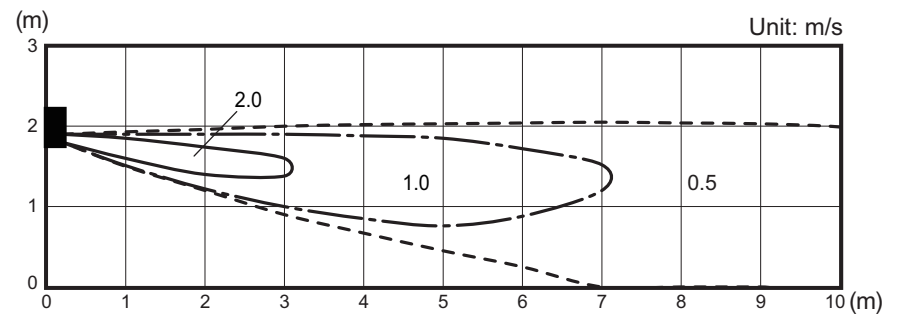
Top view
Horizontal louver: Up
Vertical louver: Center



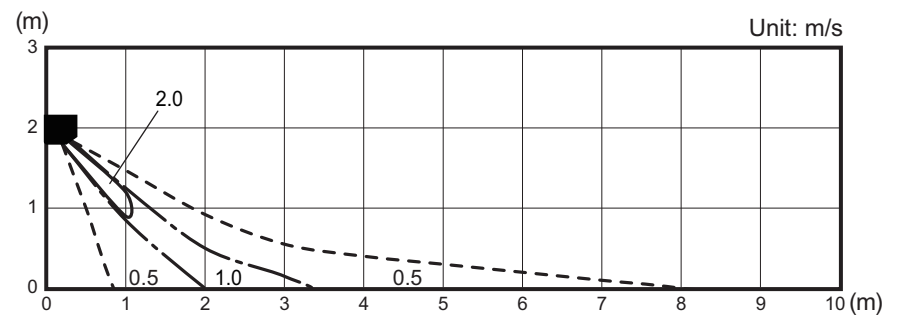
Top view
Horizontal louver: Up
Vertical louver: Left & Right



Side view
Horizontal louver: Up
Vertical louver: Center



Side view
Horizontal louver: Down
Vertical louver: Center



6-2. Airflow

■ Models: ASEH07KMCG and ASEH07KMCG-B

● Cooling

Fan speed	Airflow	
HIGH	m ³ /h	650
	l/s	181
	CFM	383
MED	m ³ /h	540
	l/s	150
	CFM	318
LOW	m ³ /h	430
	l/s	119
	CFM	253
QUIET	m ³ /h	270
	l/s	75
	CFM	159

● Heating

Fan speed	Airflow	
HIGH	m ³ /h	720
	l/s	200
	CFM	424
MED	m ³ /h	580
	l/s	161
	CFM	341
LOW	m ³ /h	460
	l/s	128
	CFM	271
QUIET	m ³ /h	330
	l/s	92
	CFM	194

■ Models: ASEH09KMCG and ASEH09KMCG-B

● Cooling

Fan speed	Airflow	
HIGH	m ³ /h	700
	l/s	194
	CFM	412
MED	m ³ /h	560
	l/s	156
	CFM	330
LOW	m ³ /h	430
	l/s	119
	CFM	253
QUIET	m ³ /h	270
	l/s	75
	CFM	159

● Heating

Fan speed	Airflow	
HIGH	m ³ /h	750
	l/s	208
	CFM	441
MED	m ³ /h	610
	l/s	169
	CFM	359
LOW	m ³ /h	470
	l/s	131
	CFM	277
QUIET	m ³ /h	330
	l/s	92
	CFM	194

■ Models: ASEH12KMCG and ASEH12KMCG-B

● Cooling

Fan speed	Airflow	
HIGH	m ³ /h	700
	l/s	194
	CFM	412
MED	m ³ /h	560
	l/s	156
	CFM	330
LOW	m ³ /h	430
	l/s	119
	CFM	253
QUIET	m ³ /h	270
	l/s	75
	CFM	159

● Heating

Fan speed	Airflow	
HIGH	m ³ /h	780
	l/s	217
	CFM	459
MED	m ³ /h	640
	l/s	178
	CFM	377
LOW	m ³ /h	520
	l/s	144
	CFM	306
QUIET	m ³ /h	330
	l/s	92
	CFM	194

■ Models: ASEH14KMCG and ASEH14KMCG-B

● Cooling

Fan speed	Airflow	
HIGH	m ³ /h	770
	l/s	214
	CFM	453
MED	m ³ /h	600
	l/s	167
	CFM	353
LOW	m ³ /h	450
	l/s	125
	CFM	265
QUIET	m ³ /h	280
	l/s	78
	CFM	165

● Heating

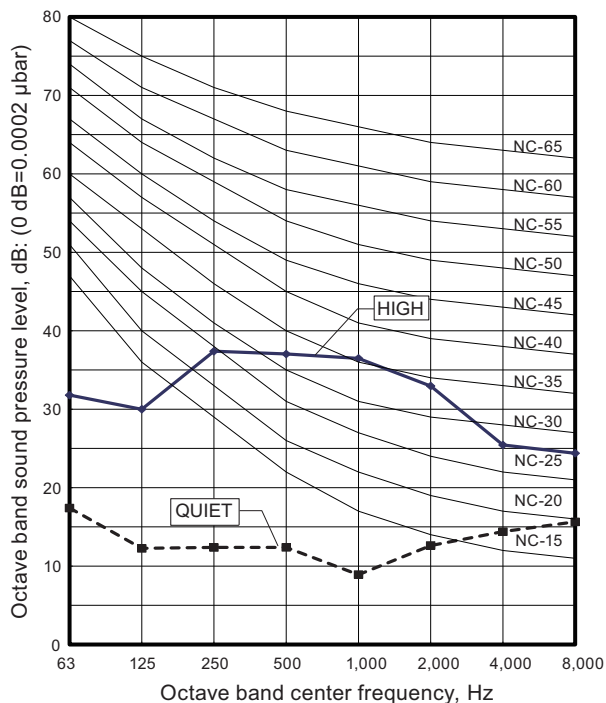
Fan speed	Airflow	
HIGH	m ³ /h	820
	l/s	228
	CFM	483
MED	m ³ /h	660
	l/s	183
	CFM	388
LOW	m ³ /h	520
	l/s	144
	CFM	306
QUIET	m ³ /h	340
	l/s	94
	CFM	200

7. Operation noise (sound pressure)

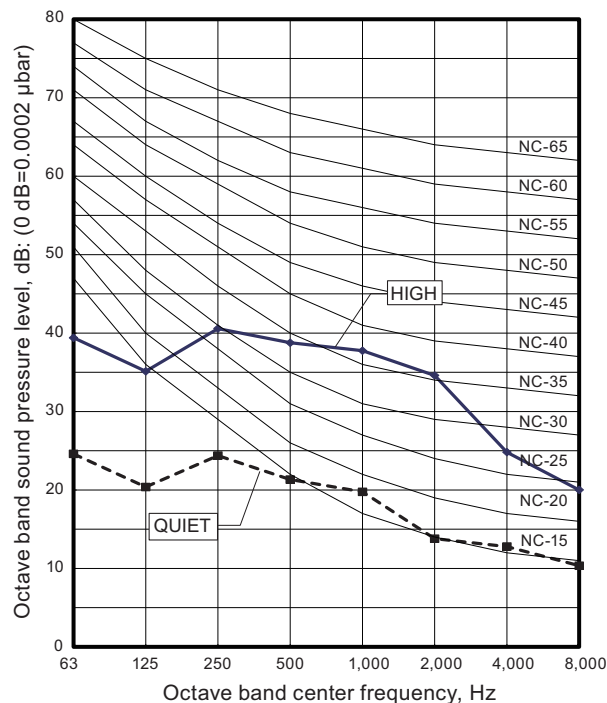
7-1. Noise level curve

■ Models: ASEH07KMCG and ASEH07KMCG-B

● Cooling

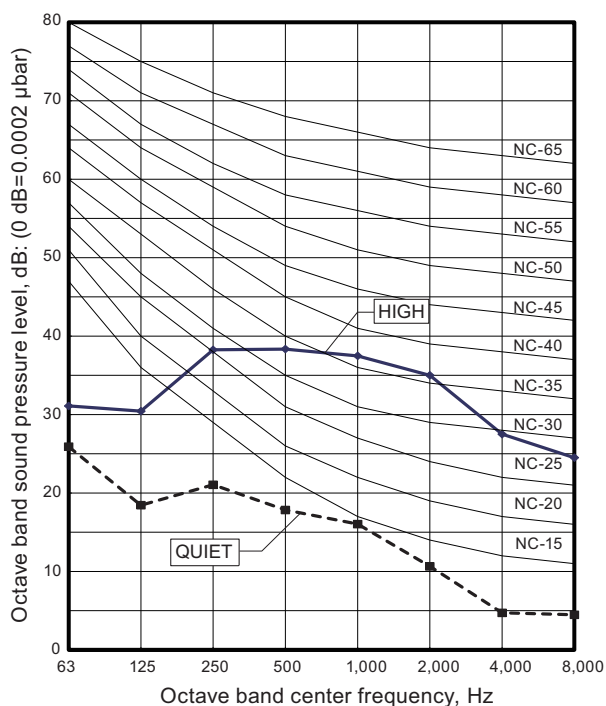


● Heating

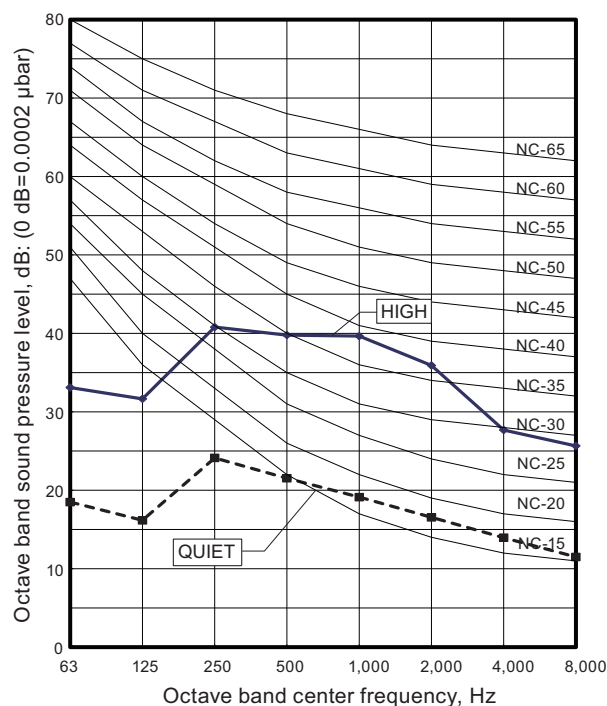


■ Models: ASEH09KMCG and ASEH09KMCG-B

● Cooling

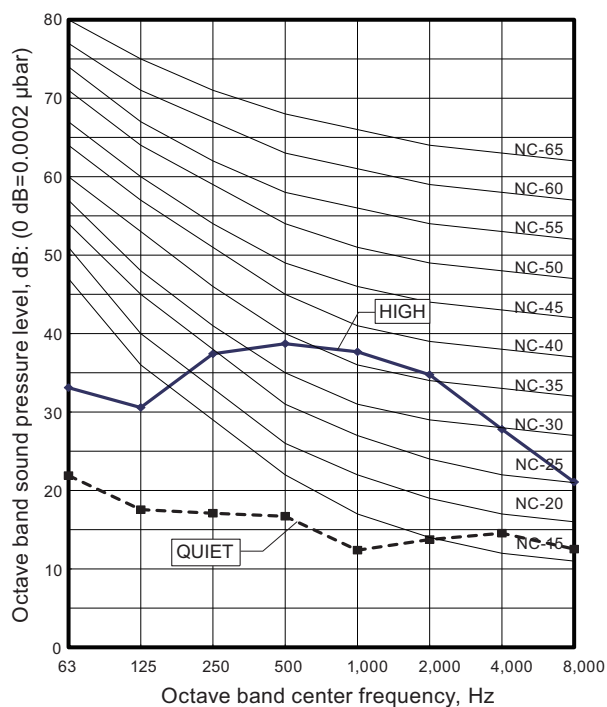


● Heating

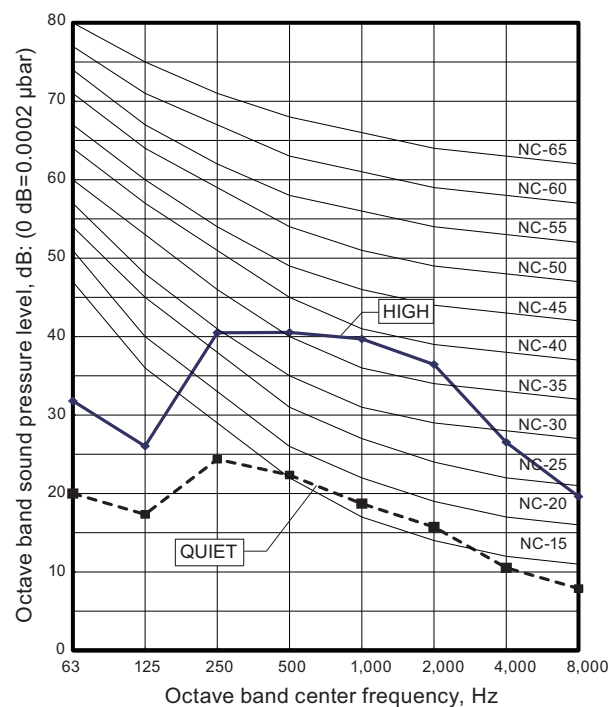


Models: ASEH12KMCG and ASEH12KMCG-B

Cooling

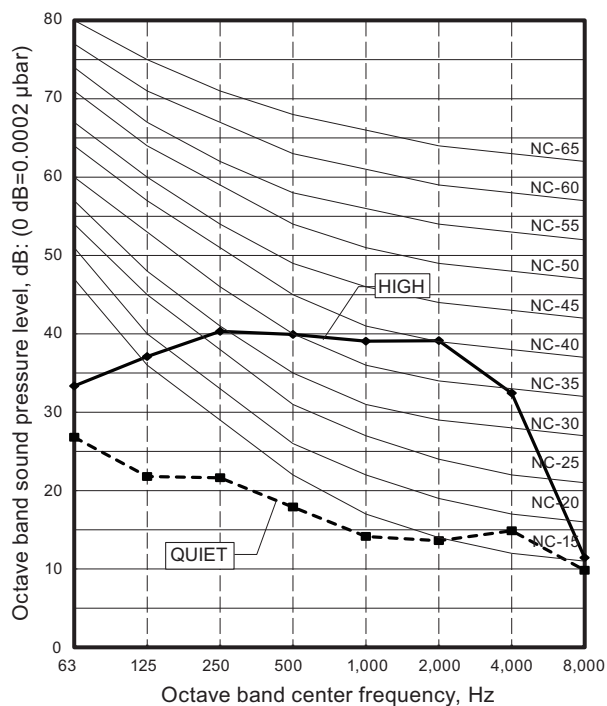


Heating

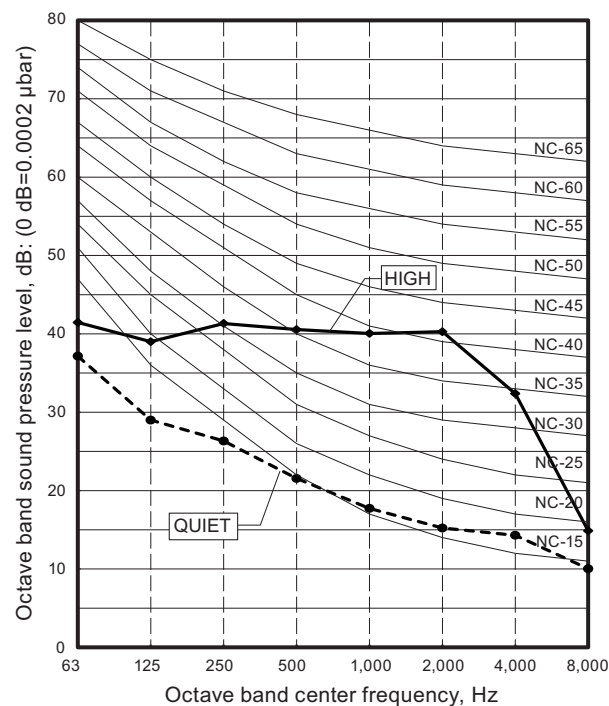


Models: ASEH14KMCG and ASEH14KMCG-B

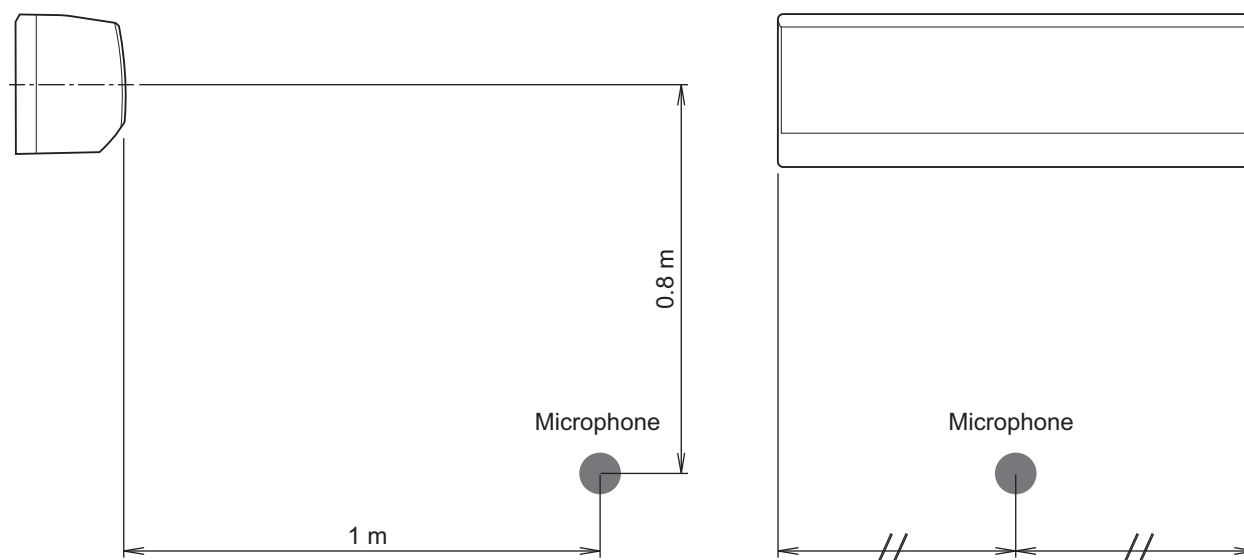
Cooling



Heating



7-2. Sound level check point



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

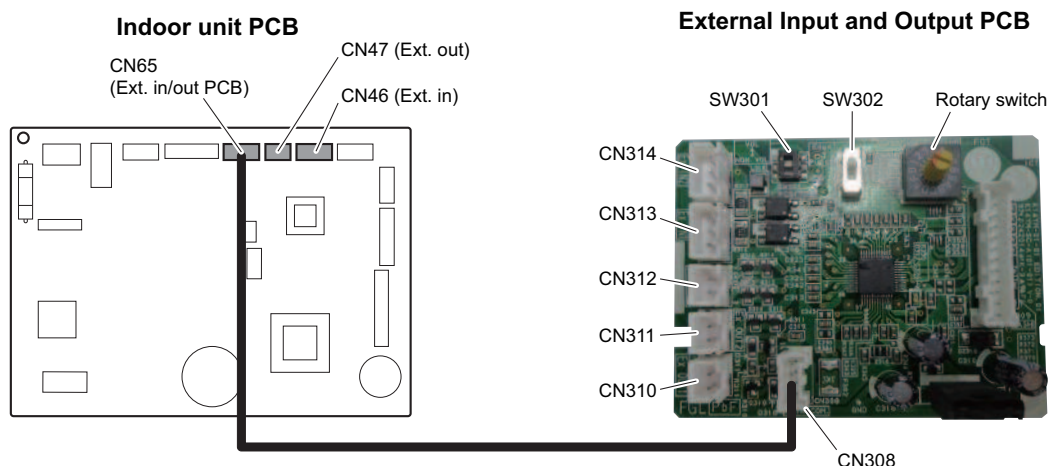
8. Safety devices

Type of protection	Protection form		Model		
			ASEH07KMCG ASEH07KMCG-B	ASEH09KMCG ASEH09KMCG-B	ASEH12KMCG ASEH12KMCG-B
Circuit protection	Current fuse (PCB*)		250 V, 3.15 A		
Fan motor protection	Thermal protection	Activate	170 ⁺²⁵ ₋₃₀ °C Fan motor stop		
		Reset	145 ⁺²⁵ ₋₃₀ °C Fan motor restart		

Type of protection	Protection form		Model		
			ASEH14KMCG ASEH14KMCG-B		
Circuit protection	Current fuse (PCB*)		250 V, 3.15 A		
Fan motor protection	Thermal protection	Activate	170 ⁺²⁵ ₋₃₀ °C Fan motor stop		
		Reset	145 ⁺²⁵ ₋₃₀ °C Fan motor restart		

*PCB: Printed Circuit Board

9. External input and output



Connecting point		Input/Output	Function	Input select	Input signal
Indoor unit	CN46	Input	Operation/Stop	Dry contact	Edge
			Forced stop		
	CN47	Output	Operation/Stop	—	—
			Error status		
External Input and Output PCB (UTY-XCSXZ2)	CN313 CN314	Input	Operation/Stop	Dry contact/Apply voltage	Edge/Pulse
			Forced stop		Edge
	CN313		Forced thermostat off		
	CN310 CN311 CN312	Output	Operation/Stop	—	—
			Error status		
			Indoor unit fan operation status		

NOTE: For details of the switching function, refer to ["Setting of external input and output"](#) on page 28.

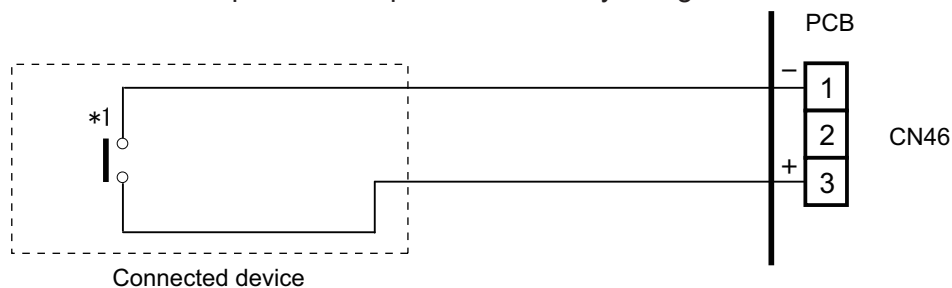
9-1. External input

With using external input function, some functions on this product can be controlled from an external device.

- "Operation/Stop" mode or "Forced stop" mode can be selected with function setting of indoor unit.
- A twisted pair cable should be used. Maximum length of cable is 150 m.
- Use an external input and output cable with appropriate external dimension, depending on the number of cables to be installed.
- The wire connection should be separate from the power cable line.

Indoor unit

Indoor unit functions such as Operation/Stop can be done by using indoor unit connectors.



*1: The switch can be used on the following condition: DC 12 V to 24 V, 1 mA to 15 mA.

■ External Input and Output PCB

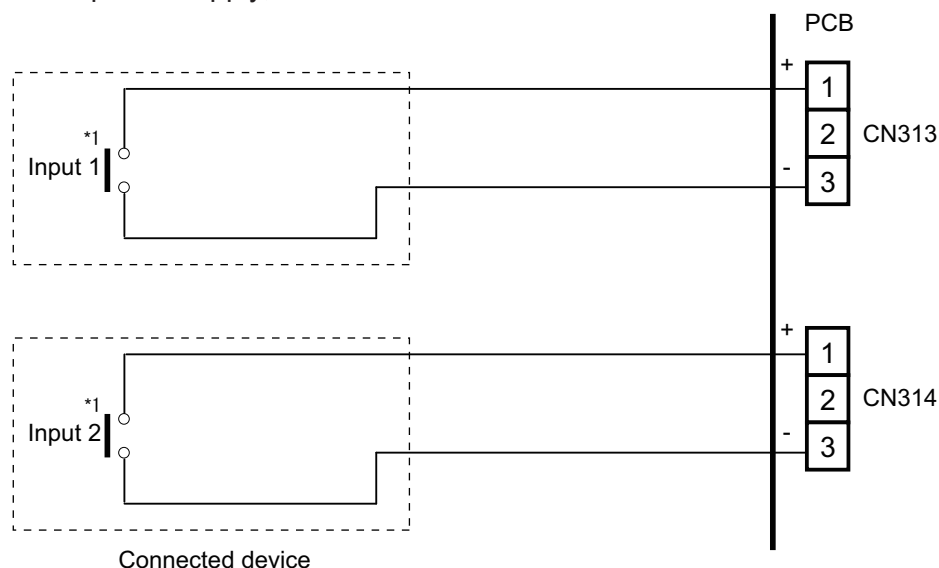
The indoor unit Operation/Stop can be set by using the input connector on the PCB.

• Input select

Use either one of these types of connectors according to the application. (Both types of connectors cannot be used simultaneously.)

– Dry contact

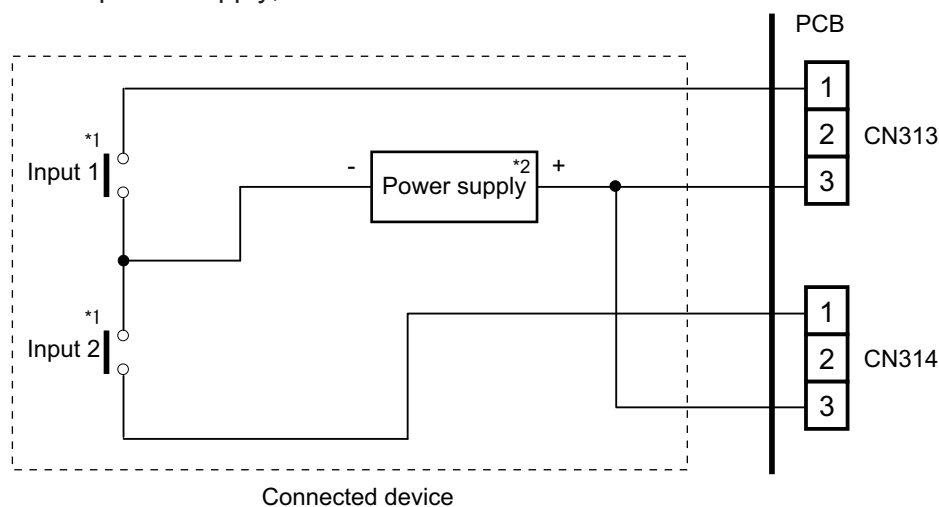
In case of internal power supply, set the slide switch of SW301 to "NON VOL" side.



*1: The switches can be used on the following condition: DC 12 V to 24 V, 1 mA to 15 mA.

– Apply voltage

In case of external power supply, set the slide switch of SW301 to "VOL" side.



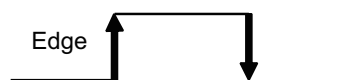
*1: The switches can be used on the following condition: DC 12 V to 24 V, 1 mA to 15 mA.

*2: Make the power supply DC 12 V to 24 V, 10 mA or more.

Input signal type

- **Indoor unit**

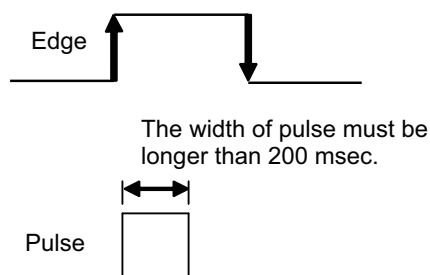
Input signal type is only "Edge".



- **External Input and Output PCB**

The input signal type can be selected.

Signal type (edge or pulse) can be switched by the DIP switch 2 (SW302) on the External Input and Output PCB.



NOTE: The input signal supports the following switch type:

- Edge: Alternate type switch
- Pulse: Momentary type switch

9-2. External output

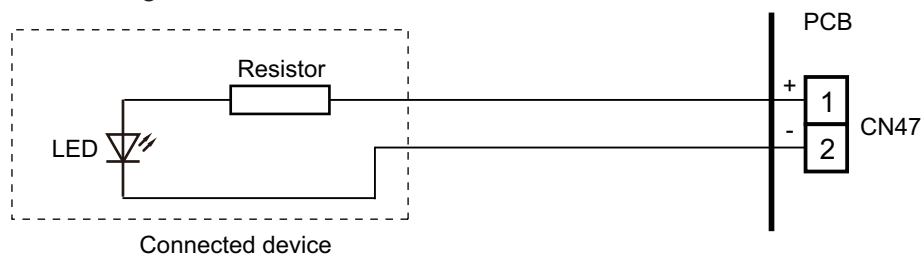
Use an external output cable with appropriate external dimension, depending on the number of cables to be installed.

Indoor unit

- A twisted pair cable should be used. Maximum length of cable is 25 m.
- Output voltage: High DC 12 V $\pm$ 2 V, Low 0 V.
- Permissible current: 50 mA
- For details, refer to ["Setting of external input and output"](#) on page 28.

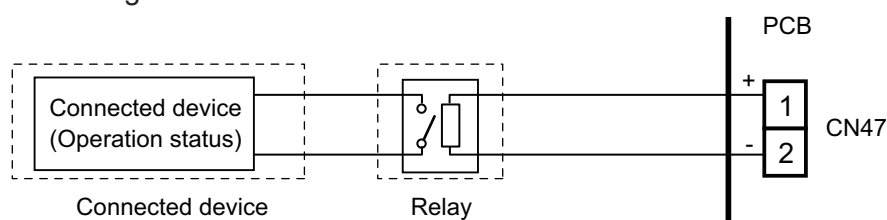
- **When indicator, etc. are connected directly**

Example: Function setting number 60 is set to "00"



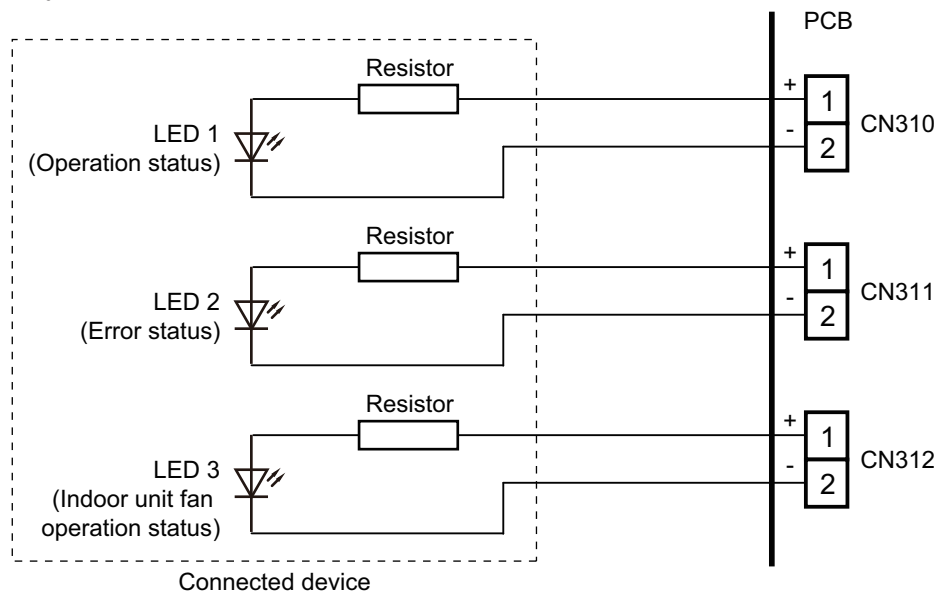
- **When connecting with a device equipped with a power supply**

Example: Function setting number 60 is set to "00"

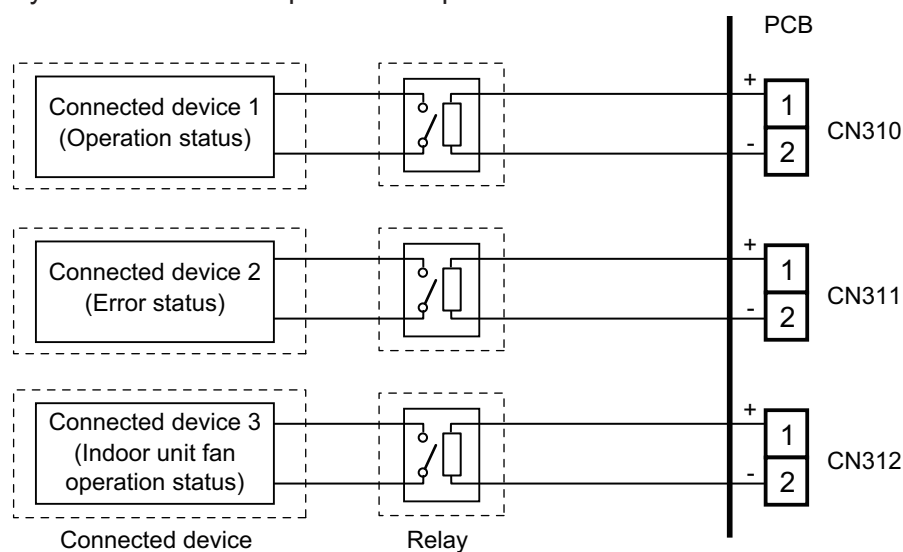


External Input and Output PCB

- A twisted pair cable should be used. Maximum length of cable is 25 m.
- Output voltage: High DC 12 V $\pm$ 2 V, Low 0 V.
- Permissible current: 50 mA
- For details, refer to ["Setting of external input and output"](#) on page 28.
- **When indicator or other components are connected directly:**
Example: Rotary SW on External Input and Output PCB is set to "1".



- **When connecting with a device equipped with a power supply:**
Example: Rotary SW on External Input and Output PCB is set to "1".



9-3. Setting of external input and output

- Indoor unit

Input		
Connection point	Function setting number 46	Function
CN46	00	Operation/Stop mode 1 (R.C. enabled)
	01	(Setting prohibited)
	02	Forced stop mode
	03	Operation/Stop mode 2 (R.C. disabled)

Output		
Connection point	Function setting number 60	Function
CN47	00	Operation/Stop
	01 to 08	(Setting prohibited)
	09	Error status
	10	Indoor unit fan operation status
	11	(Setting prohibited)

- External Input and Output PCB

Switch setting		Input		Output		
Rotary switch	SW302	CN313	CN314	CN310	CN311	CN312
1	Edge	Operation/Stop	Not available	Operation/Stop	Error status	Indoor unit fan operation status
	Pulse	Operation	Stop			
2	Edge*	Forced thermostat off	Not available	Error status	Indoor unit fan operation status	Not available
3 to 9, A		(Setting prohibited)				
B		Forced thermostat off	Not available	Operation/Stop	Indoor unit fan operation status	Not available
C		Forced thermostat off	Not available	Operation/Stop	Error status	Not available
D		Forced thermostat off	Not available	Operation/Stop	Indoor unit fan operation status	Error status

NOTES:

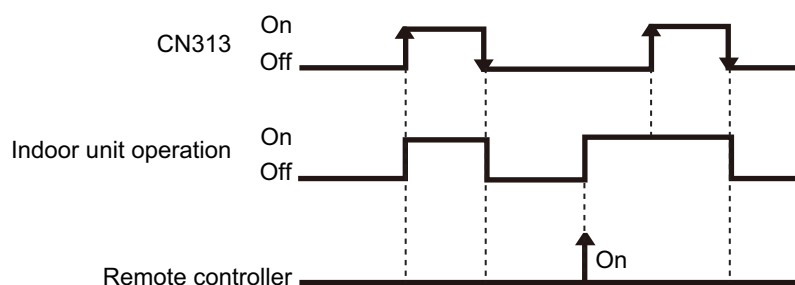
- When the rotary switch is selected to "1", the operation of the connector input of the indoor unit and the External Input and Output PCB input are the same. The operation content depends on the setting of function setting number 46.
- *: The external input other than "Operation/Stop" is available only when the SW302 is set to "Edge".

9-4. Details of control input function

■ Operation/Stop mode 1

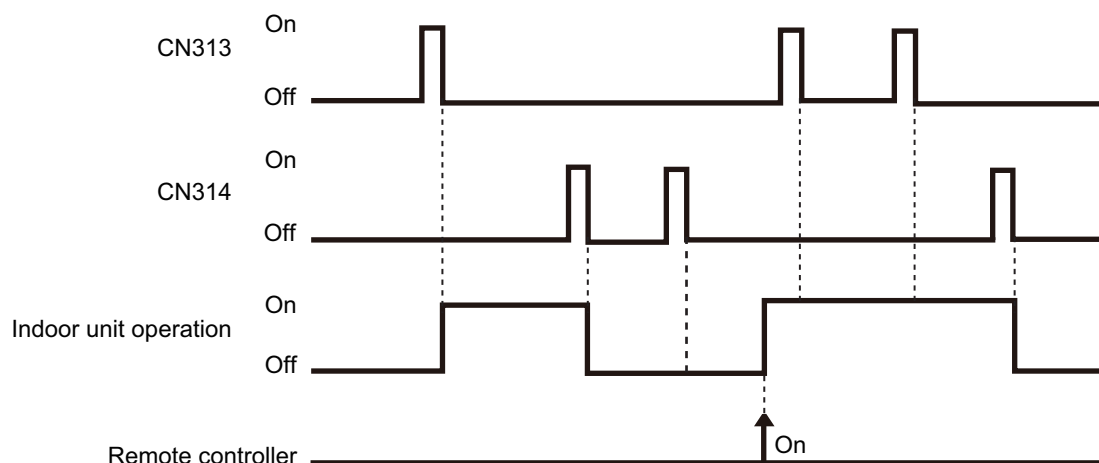
- In the case of "Edge" input

Function setting	External Input and Output PCB		External input		Input signal	Command
	Rotary switch	SW302				
46-00	—		Input of indoor unit	CN46	Off → On	Operation
	—		Input of indoor unit	CN46	On → Off	Stop
	1	Edge	External Input and Output PCB	CN313	Off → On	Operation
					On → Off	Stop



- In the case of "Pulse" input

Function setting	External Input and Output PCB		External input		Input signal	Command
	Rotary switch	SW302				
46-00	1	Pulse	External Input and Output PCB	CN313	Pulse	Operation
				CN314		Stop



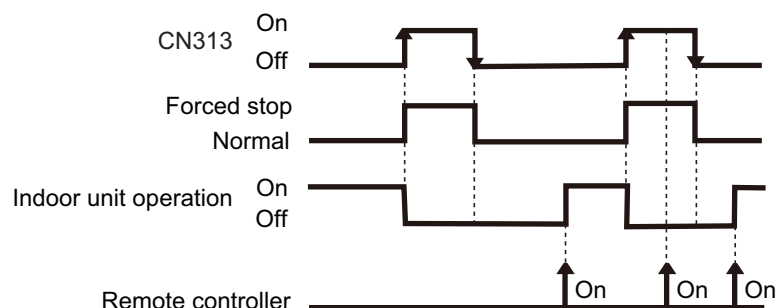
NOTES:

- The last command has priority.
- The indoor units within the same remote controller group operates in the same mode.

■ Forced stop

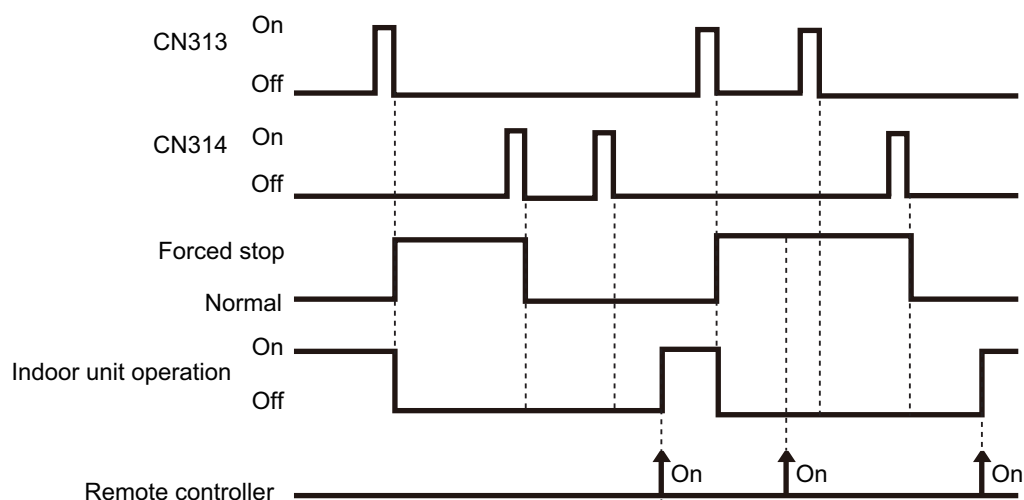
- In the case of "Edge" input

Function setting	External Input and Output PCB		External input		Input signal	Command
	Rotary switch	SW302				
46-02	—		Input of indoor unit	CN46	Off → On	Forced stop (R.C. disabled)
					On → Off	Normal (R.C. enabled)
	1	Edge	External Input and Output PCB	CN313	Off → On	Forced stop (R.C. disabled)
					On → Off	Normal (R.C. enabled)



- In the case of "Pulse" input

Function setting	External Input and Output PCB		External input		Input signal	Command
	Rotary switch	SW302				
46-02	1	Pulse	External Input and Output PCB	CN313	Pulse	Forced stop (R.C. disabled)
				CN314		Normal (R.C. enabled)



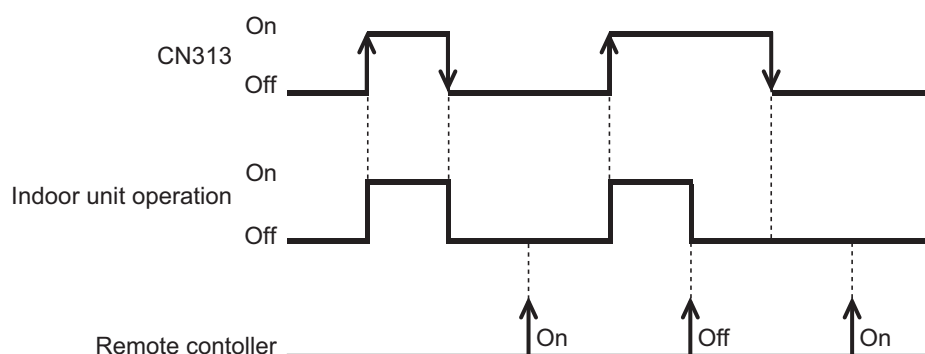
NOTES:

- When the forced stop is triggered, indoor unit stops and Operation/Stop operation by the remote controller is restricted.
- When forced stop function is used with forming a remote controller group, connect the same equipment to each indoor unit within the group.

■ Operation/Stop mode 2

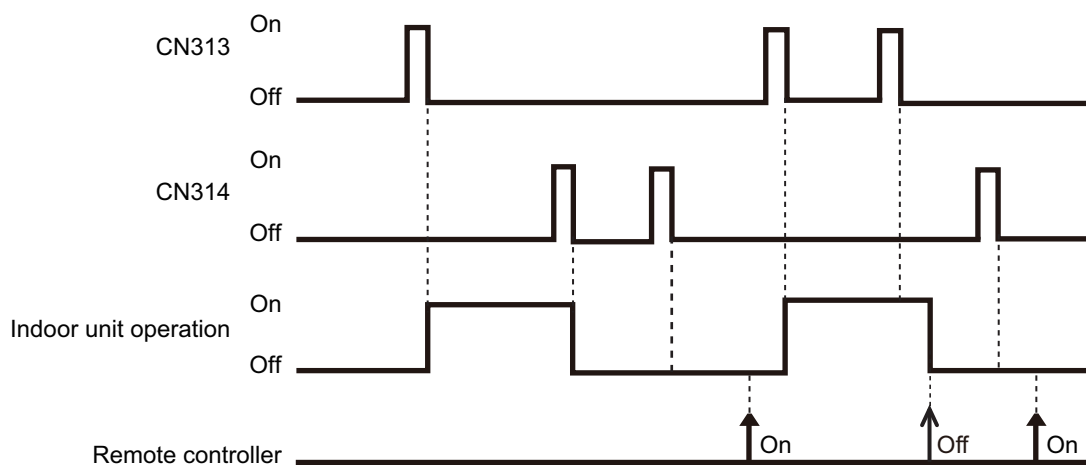
- In the case of “Edge” input

Function setting	External Input and Output PCB		External input		Input signal	Command
	Rotary switch	SW302				
46-03	—		Input of indoor unit	CN46	Off → On	Operation (R.C. enabled)
					On → Off	Stop (R.C. disabled)
	1	Edge	External Input and Output PCB	CN313	Off → On	Operation (R.C. enabled)
					On → Off	Stop (R.C. disabled)



- In the case of “Pulse” input

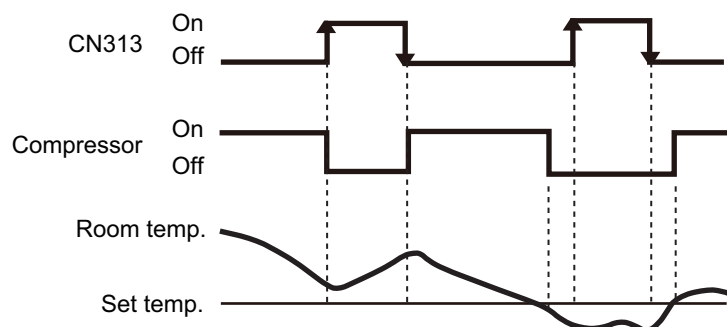
Function setting	External Input and Output PCB		External input		Input signal	Command
	Rotary switch	SW302				
46-03	1	Pulse	External Input and Output PCB	CN313	Pulse	Operation (R.C. enabled)
				CN314		Stop (R.C. disabled)



NOTE: When “Operation/Stop” mode 2 function is used with forming a remote controller group, connect the same equipment to each indoor unit within the group.

■ Forced thermostat off

External Input and Output PCB	External input		Input signal	Command
Rotary switch				
2, B, C, D	External Input and Output PCB	CN313	Off → On	Thermostat off
			On → Off	Normal operation

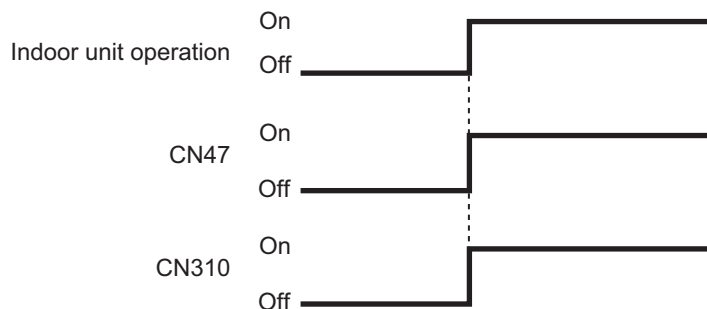


9-5. Details of control output function

■ Operation status

Function setting	External Input and Output PCB	External output		Output signal	Status
	Rotary switch				
60-00	1, 2	Output of indoor unit	CN47	Off → On	Operation
				On → Off	Stop
—	1, B, C, D	External Input and Output PCB	CN310	Off → On	Operation
				On → Off	Stop

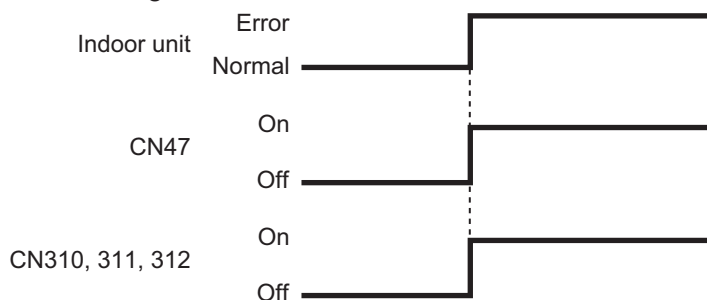
The output is low when the unit is stopped.



■ Error status

Function setting	External Input and Output PCB	External output		Output signal	Status
	Rotary switch				
60-09	—	Output of indoor unit	CN47	Off → On	Error
				On → Off	Normal
—	2	External Input and Output PCB	CN310	Off → On	Error
				On → Off	Normal
—	1, C	External Input and Output PCB	CN311	Off → On	Error
				On → Off	Normal
—	D	External Input and Output PCB	CN312	Off → On	Error
				On → Off	Normal

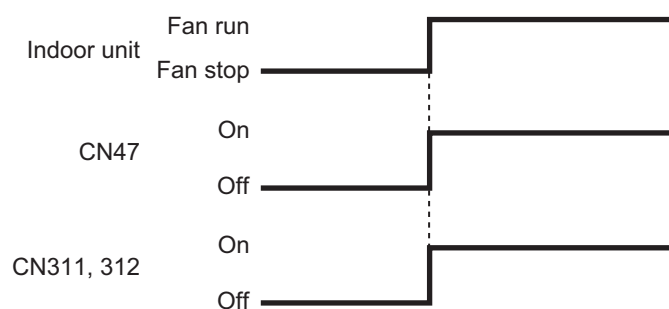
The output is on when an error is generated for the indoor unit.



Indoor unit fan operation status

Function setting	External Input and Output PCB	External output		Output signal	Status
	Rotary switch				
60-10	C	Output of indoor unit	CN47	Off → On	Fan run
				On → Off	Fan stop
—	2, B, D	External Input and Output PCB	CN311	Off → On	Fan run
				On → Off	Fan stop
—	1	External Input and Output PCB	CN312	Off → On	Fan run
				On → Off	Fan stop

Output signal	Condition
On	The indoor unit fan is operating.
Off	The fan is stopped or during cold air prevention. During thermostat off when in dry mode operation.



10. Group connection

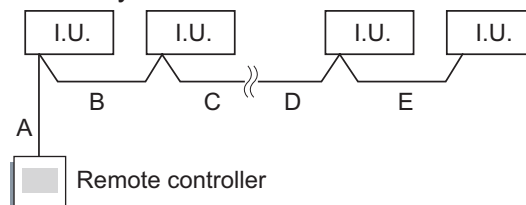
NOTE: Group control cannot be used together with WLAN Adapter.

Installation procedure for group control system:

A number of indoor units can be operated at the same time using a single remote controller.

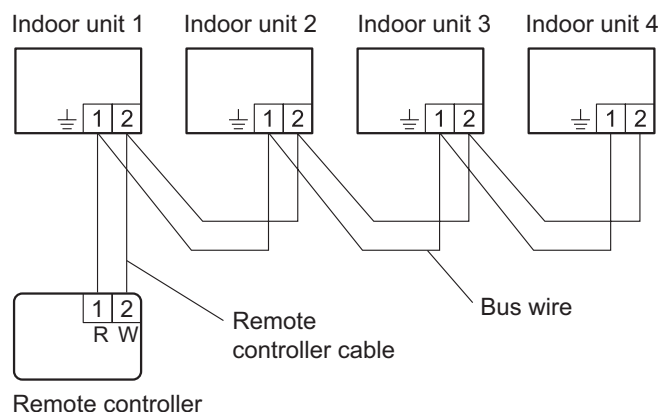
NOTE: When different type of indoor units (such as wall-mounted type and cassette type, cassette type and duct type, or other combinations) are connected using group control system, some functions may no longer be available.

1. Connect up to 16 indoor units in a system.



A, B, C, D, E: Remote controller cable		
Wiring length limitation	UTY-RVRY	$A + B + C + D + E \leq 70 \text{ m}$
	Other than UTY-RVRY	$A + B + C + D + E \leq 500 \text{ m}$

Example of wiring method



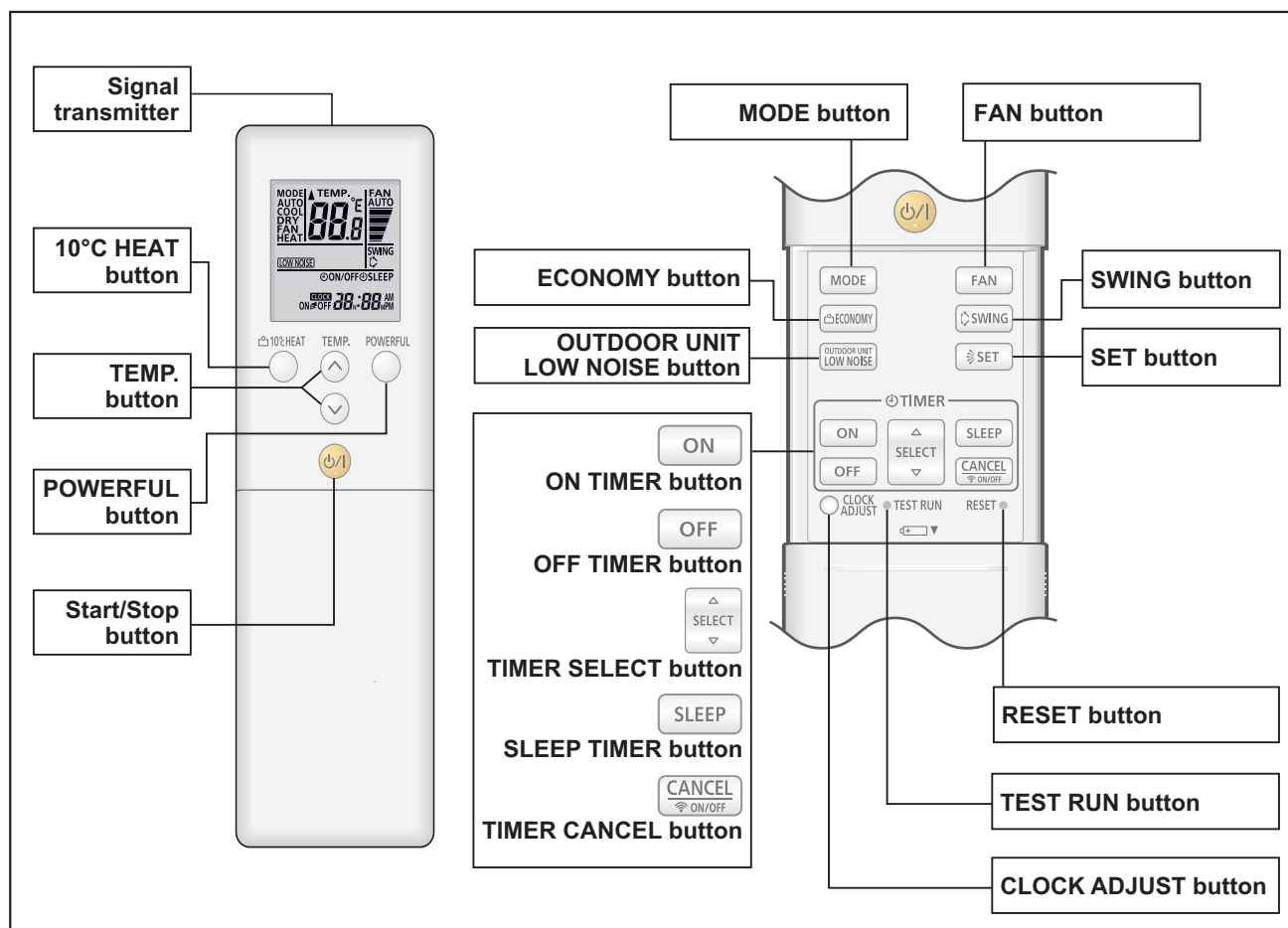
2. Automatic address setting

After the remote controller connection in the system, the automatic address setting runs in the initial starting up. Do not change the remote controller address for the indoor unit.

11. Remote controller

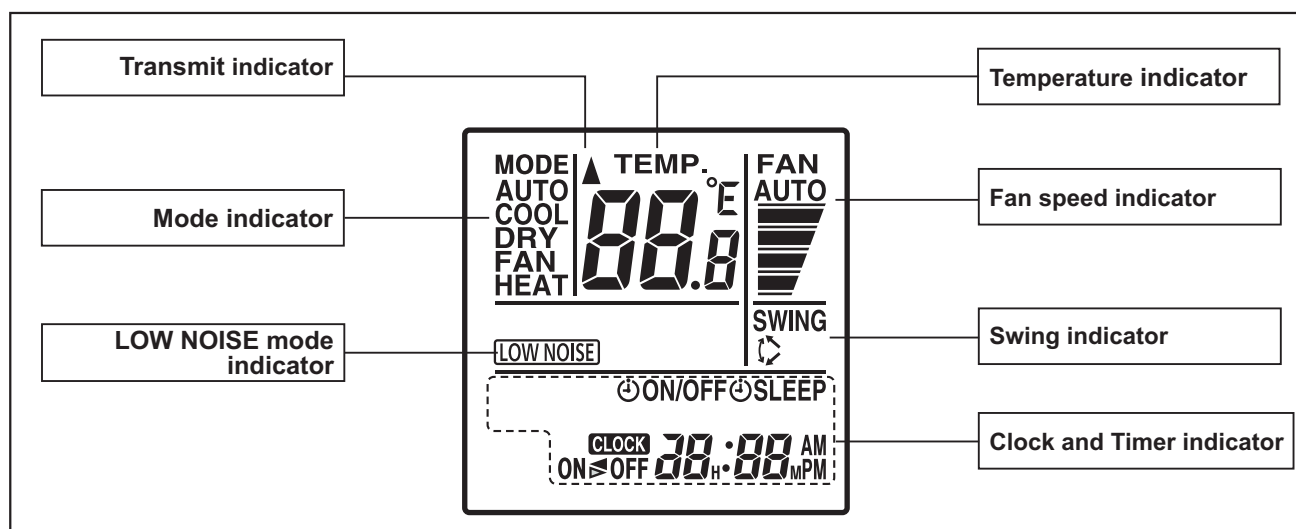
11-1. Wireless remote controller

Overview



NOTE: Functions may differ by type of the indoor unit. For details, refer to the operation manual.

Display panel

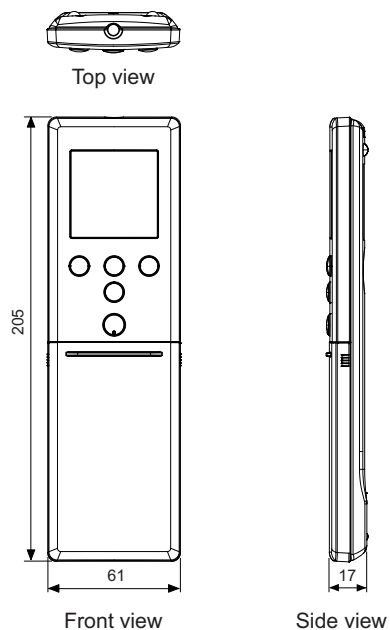


To facilitate explanation, the accompanying illustration has been drawn to show all possible indicators; in actual operation, however, the display will only show those indicators appropriate to the current operation.

■ Specifications

● Controller

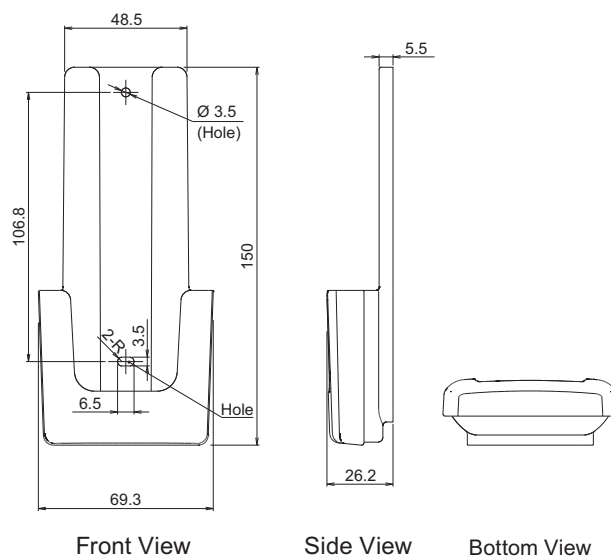
Unit: mm



Size (H × W × D)	mm	205 × 61 × 17
Weight	g	124 (without batteries)

● Holder

Unit: mm



Size (H × W × D)	mm	150 × 69.3 × 26.2
Weight	g	27

12. Function settings

To adjust the functions of this product according to the installation environment, various types of function settings are available.

NOTE: Incorrect settings can cause a product malfunction.

12-1. Function settings by using remote controller

Some function settings can be changed on the remote controller. After confirming the setting procedure and the content of each function setting, select appropriate functions for your installation environment.

■ Setting procedure by using wireless remote controller

The function number and the associated setting value are displayed on the LCD of the remote controller. Follow the instructions written in the local setup procedure supplied with the remote controller, and select appropriate setting according to the installation environment.

Before connecting the power supply of the indoor unit, reconfirm following items:

- Cover for the electrical enclosure on the outdoor unit is in place.
- There is no wiring mistake.
- Piping air tightness test and vacuuming have been performed firmly.
- All the necessary wiring work for outdoor unit has been finished.

After reconfirming the items listed above, connect the power supply of the indoor unit.

NOTES:

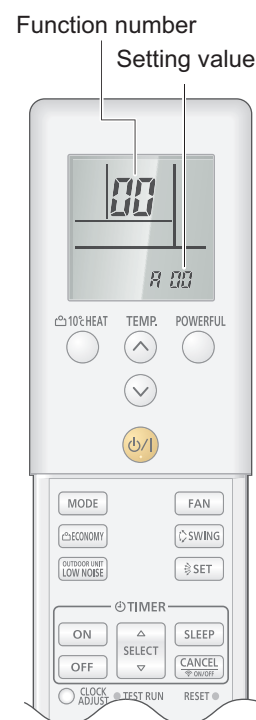
- Settings will not be changed if invalid numbers or setting values are selected.
- When optional wired remote controller is used, refer to the installation manual enclosed with the remote controller.

Entering function setting mode:

While pressing the POWERFUL button and TEMP. (△) button simultaneously, press the RESET button to enter the function setting mode.

Selecting the function number and setting value:

1. Press the TEMP. (△) (▽) buttons to select the function number. To switch between the left and right digits, press the 10 °C HEAT button.
2. Press the POWERFUL button to proceed to value setting. To return the function number selection, press the POWERFUL button again.
3. Press the TEMP. (△) (▽) buttons to select the setting value. To switch between the left and right digits, press the 10 °C HEAT button.
4. Press the MODE button once. Confirm that you hear the beep sound.
5. Press the START/STOP button to fix the function setting. Confirm that you hear the beep sound.
6. Press the RESET button to end the function setting mode.
7. After completing the function setting, be sure to disconnect the power supply and then reconnect it.



⚠ CAUTION

After disconnecting the power supply, wait 30 seconds or more before reconnecting it. The function setting will not become active unless the power supply is disconnected and then reconnected.

NOTES:

- The air conditioner custom code is set to $\overline{H}$ prior to shipment.
- If you do not know the air conditioner custom code setting, try each of the custom codes ($\overline{H} \rightarrow \overline{b}$
 $\rightarrow \overline{c} \rightarrow \overline{d}$) until you find the code that operates the air conditioner.

■ Contents of function setting

Each function setting listed in this section is adjustable in accordance with the installation environment.

NOTE: Setting will not be changed if invalid numbers or setting values are selected.

● Function setting list

	Function no.	Functions
1)	11	Filter sign
2)	30/31	Room temperature control for indoor unit sensor
3)	35/36	Room temperature control for wired remote controller sensor
4)	40	Auto restart
5)	42	Room temperature sensor switching
6)	44	Remote controller custom code
7)	46	External input control
8)	48	Room temperature sensor switching (Aux.)
9)	49	Indoor unit fan control for energy saving for cooling
10)	60	Switching functions for external output terminal

1) Filter sign

Select appropriate intervals for displaying the filter sign on the indoor unit according to the estimated amount of dust in the air of the room.

If the indication is not required, select "No indication" (03).

Function number	Setting value	Setting description	Factory setting
11	00	Standard (400 hours)	
	01	Long interval (1,000 hours)	
	02	Short interval (200 hours)	
	03	No indication	◆

2) Room temperature control for indoor unit sensor

Depending on the installed environment, correction of the room temperature sensor may be required. Select the appropriate control setting according to the installed environment.

The temperature of the room temperature sensor is corrected as follows:

Corrected temp. = Temp. of the room temp. sensor - Correction temp. value

Example of correction:

When the temperature of the room temp. sensor is 26°C and the setting value is "03" (-1.0°C), corrected temp. will be 27°C (26°C - [-1.0°C]).

The temperature correction values show the difference from the Standard setting "00" (manufacturer's recommended value).

Function number		Setting value	Setting description	Factory setting
30 (For cooling)	31 (For heating)	00	Standard setting	◆
		01	No correction 0.0°C	
		02	-0.5°C	More cooling Less heating
		03	-1.0°C	
		04	-1.5°C	
		05	-2.0°C	
		06	-2.5°C	
		07	-3.0°C	
		08	-3.5°C	
		09	-4.0°C	
		10	+0.5°C	Less cooling More heating
		11	+1.0°C	
		12	+1.5°C	
		13	+2.0°C	
		14	+2.5°C	
		15	+3.0°C	
		16	+3.5°C	
		17	+4.0°C	

3) Room temperature control for wired remote controller sensor

Depending on the installed environment, correction of the wire remote temperature sensor may be required. Select the appropriate control setting according to the installed environment.

To change this setting, set Function 42 to Both "01".

Ensure that the Thermo Sensor icon is displayed on the remote controller screen.

Function number		Setting value	Setting description	Factory setting
35 (For cooling)	36 (For heating)	00	Standard setting	◆
		01	No correction 0.0°C	
		02	-0.5°C	More cooling Less heating
		03	-1.0°C	
		04	-1.5°C	
		05	-2.0°C	
		06	-2.5°C	
		07	-3.0°C	
		08	-3.5°C	
		09	-4.0°C	
		10	+0.5°C	Less cooling More heating
		11	+1.0°C	
		12	+1.5°C	
		13	+2.0°C	
		14	+2.5°C	
		15	+3.0°C	
		16	+3.5°C	
		17	+4.0°C	

4) Auto restart

Enables or disables automatic restart after a power interruption.

Function number	Setting value	Setting description	Factory setting
40	00	Enable	◆
	01	Disable	

NOTE: Auto restart is an emergency function such as for power outage etc. Do not attempt to use this function in normal operation. Be sure to operate the unit by remote controller or external device.

5) Room temperature sensor switching

(Only for wired remote controller)

When using the wired remote controller temperature sensor, change the setting to "Both" (01).

Function number	Setting value	Setting description	Factory setting
42	00	Indoor unit	◆
	01	Both	

00: Sensor on the indoor unit is active.

01: Sensors on both indoor unit and wired remote controller are active.

NOTE: Remote controller sensor must be turned on by using the remote controller.

6) Remote controller custom code

(Only for wireless remote controller)

The indoor unit custom code can be changed. Select the appropriate custom code.

Function number	Setting value	Setting description	Factory setting
44	00	A	◆
	01	B	
	02	C	
	03	D	

7) External input control

“Operation/Stop” mode or “Forced stop” mode can be selected.

Function number	Setting value	Setting description	Factory setting
46	00	Operation/Stop mode 1 (Remote controller enabled)	◆
	01	(Setting prohibited)	
	02	Forced stop mode	
	03	Operation/Stop mode 2 (Remote controller disabled)	

8) Room temperature sensor switching (Aux.)

To use the temperature sensor on the wired remote controller only, change the setting to “Wired remote controller” (01).

This function will only work if the function setting 42 is set at “Both” (01).

When the setting value is set to “Both” (00), more suitable control of the room temperature is possible by setting function setting 30 and 31 too.

Function number	Setting value	Setting description	Factory setting
48	00	Both	◆
	01	Wired remote controller	

9) Indoor unit fan control for energy saving for cooling

Enables or disables the power-saving function by controlling the indoor unit fan rotation when the outdoor unit is stopped during cooling operation.

Function number	Setting value	Setting description	Factory setting
49	00	Disable	
	01	Enable	
	02	Remote controller	◆

00: When the outdoor unit is stopped, the indoor unit fan operates continuously following the setting on the remote controller.

01: When the outdoor unit is stopped, the indoor unit fan operates intermittently at a very low speed.

02: Enable or disable this function by remote controller setting.

NOTE: Set to “00” or “01” when connecting a remote controller that cannot set the Fan control for energy saving function or connecting a network converter. To confirm if the remote controller has this setting, refer to the operating manual of each remote controller.

10) Switching functions for external output terminal

Functions of the external output terminal can be switched. For details, refer to “External input and output”.

Function number	Setting value	Setting description	Factory setting
60	00	Operation status	◆
	01—08	(Setting prohibited)	
	09	Error status	
	10	Indoor unit fan operation status	
	11	(Setting prohibited)	

12-2. Custom code setting for wireless remote controller

To interconnect the air conditioner and the wireless remote controller, assignment of the custom code for the wireless remote controller is required.

NOTE: Air conditioner cannot receive a signal if the air conditioner has not been set for the custom code.

When 2 or more air conditioners are installed in a room, and the remote controller is operating an air conditioner other than the one you wish to set, change the custom code of the remote controller to operate only the air conditioner you wish to set. (4 selections possible.)

Confirm the setting of the remote controller custom code and the function setting. If these do not match, the remote controller cannot be used to operate for the air conditioner.

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 5 seconds to display the current custom code. (Initially set to $\overline{A}$.)
3. Press the TEMP. ($\wedge$) ($\vee$) buttons to change the custom code between $\overline{A} \rightarrow \overline{B} \rightarrow \overline{C} \rightarrow \overline{D}$. Match the code on the display to the air conditioner custom code. (Initially set to $\overline{A}$.)
4. Press the MODE button again to return to the clock display. The custom code will be changed.

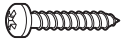
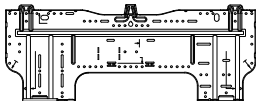
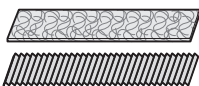


NOTES:

- If no button is pressed within 30 seconds after the custom code is displayed, the system returns to the original clock indicator. In this case, start again from step 1.
- The air conditioner custom code is set to $\overline{A}$ prior to shipment. To change the custom code, contact your retailer.
- If you do not know the assigned code for the air conditioner, try each of the custom code ($\overline{A} \rightarrow \overline{B} \rightarrow \overline{C} \rightarrow \overline{D}$) until you find the code which operates the air conditioner.

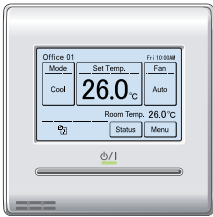
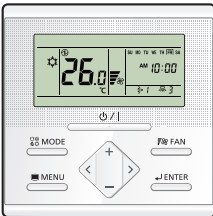
13. Accessories

13-1. Models: ASEH07KMCG, ASEH09KMCG, ASEH12KMCG, ASEH14KMCG, ASEH07KMCG-B, ASEH09KMCG-B, ASEH12KMCG-B, and ASEH14KMCG-B

Part name	Exterior	Qty	Part name	Exterior	Qty
Operation manual		1	Cloth tape		1
Installation manual		1	Self-tapping screw (large)		5
Remote controller		1	Self-tapping screw (small)		2
Battery		2	Wall hook bracket		1
Remote controller holder		1	Filter holder		2
Installation spacer		1	Air cleaning filters		1
Operation manual (CD-ROM)		1			

14. Optional parts

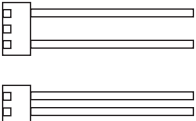
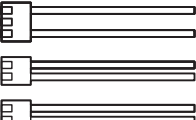
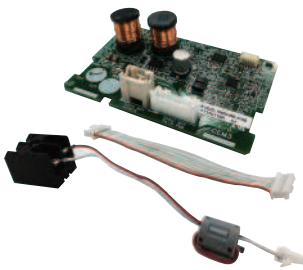
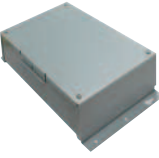
14-1. Controllers

Exterior	Part name	Model name	Summary
	Wired Remote Controller (Touch Panel)	UTY-RVRY	Remote controller that provides the functions you need in a sleek design that uniquely transforms itself to blend with any interior. Optional Communication Kit is necessary for installation.
	Wired Remote Controller (Touch Panel)	UTY-RNRYZ*	Easy finger touch operation with LCD panel. Backlit LCD enables easy operation in a dark room. Optional Communication Kit is necessary for installation.
	Wired Remote Controller	UTY-RLRY	High visibility and easy operation. Room temperature can be accurately controlled using the thermo sensor. Optional Communication Kit is necessary for installation.
	Compact Wired Remote Controller	UTY-RCRYZ1	Compact body and easy operation. Room temperature can be accurately controlled using the thermo sensor. Optional Communication Kit is necessary for installation.
	Simple Remote Controller	UTY-RSRY	Compact remote controller concentrates on the basic functions such as Start/Stop, fan control, temperature setting, and operation mode. Optional Communication Kit is necessary for installation.
	Simple Remote Controller	UTY-RHRY	Compact remote controller concentrates on the basic functions such as Start/Stop, fan control, and temperature setting. Optional Communication Kit is necessary for installation.

NOTES:

- Available functions may differ by the remote controller. For details, refer to the operation manual.
- When using the group controlling system of the Wired Remote Controller, using WLAN Adapter is prohibited.

14-2. Others

Exterior	Part name	Model name	Summary
	Air Cleaning Filter	UTR-FA16-5	Air Cleaning Filter can be mounted to the indoor unit. (For antibacterial)
	External Connect Kit	UTY-XWZX	Use to connect with various peripheral devices and air conditioner PCB. Connecting point: CN46 and CN47 on Main PCB
	External Connect Kit	UTY-XWZXZ5	Required when external device is connected. Connecting point: CN46 and CN47 on Main PCB
	External Input and Output PCB	UTY-XCSXZ2	Use to connect with external devices and air conditioner PCB. Optional External Connect Kit might be required to connect locally purchased devices via this PCB. Connecting point: CN65 on Main PCB
	Communication Kit	UTY-TWRXZ2	Use to connect Non-polar 2-core wired remote controller. Connecting point: CN13 on Main PCB
	Modbus Converter	UTY-VMSX	For connection between indoor unit with UART interface and a Modbus open network. Connecting point: CN65 on Main PCB
	KNX Converter	UTY-VKSX	For connection between indoor unit with UART interface and a KNX open network. Connecting point: CN65 on Main PCB
	Network Converter	UTY-VTGX	This converter is required when connecting single split system to VRF network system. Optional Communication Kit is necessary for installation.
	Network Converter (AC power supply)	UTY-VTGXV	This converter is required when connecting single split system to VRF network system. Optional Communication Kit is necessary for installation.
	External Switch Controller	UTY-TERX	Air conditioner switching can be controlled by connecting other external sensor switches. Optional Communication Kit is necessary for installation.

Part 2. OUTDOOR UNIT

SINGLE TYPE:

AOEH07KMCG

AOEH09KMCG

AOEH12KMCG

AOEH14KMCG

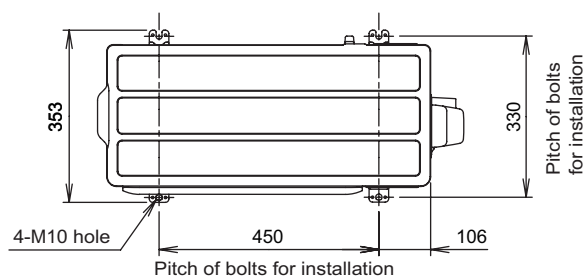
1. Specifications

Type				Inverter, Heat pump				
Model name				AOEH07KMCG	AOEH09KMCG	AOEH12KMCG	AOEH14KMCG	
Power supply				230 V~ 50 Hz				
Power supply intake				Outdoor unit				
Available voltage range				198—264 V				
Starting current			A	3.0	3.4	5.1	6.8	
Fan	Airflow rate	Cooling	m³/h	1,650		1,700	1,680	
		Heating		1,450		1,470	1,580	
	Type × Qty			Propeller fan × 1				
Motor output			W	23				
Sound pressure level *		Cooling	dB (A)	46		50		
		Heating		46		50		
Sound power level		Cooling	dB (A)	61		65		
		Heating		61	62	65	66	
Heat exchanger type		Dimensions (H × W × D)	mm	504 × 650 × 18.2		504 × 630 × 36.4	504 × 881 × 36.4	
		Fin pitch		1.3				
		Rows × Stages		1 × 24		2 × 24		
		Pipe type		Copper tube				
		Fin type		Type (Material)	Aluminum			
				Surface treatment	PC fin			
Compressor	Type			DC rotary				
	Motor output		W	550		900		
Refrigerant		Type (Global warming potential)		550		900		
		Charge	g	600		700	850	
Refrigerant oil		Type		RB74AF			RB68A	
		Amount	cm³	240		340		
Enclosure		Material		Steel sheet				
		Color		Beige Approximate color of Munsell 10YR 7.5/1.0				
Dimensions (H × W × D)	Net	mm	541 × 663 × 290		542 × 799 × 290			
	Gross		602 × 804 × 375		602 × 940 × 375			
Weight	Net	kg	22		24		31	
	Gross		25		27		35	
Connection pipe	Size	Liquid	mm (in)	Ø6.35 (Ø1/4)				
		Gas		Ø9.52 (Ø3/8)				
	Method		Flare					
	Pre-charge length		m	15				
	Max. length			20				
	Max. height difference			15				
Operation range		Cooling	°C	-10 to 50				
		Heating		-15 to 24				
Drain hose		Material		Polypropylene				
		Tip diameter		mm Ø13.0 (I.D.), Ø16.0 to Ø16.8 (O.D.)				
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/—°CWB, and outdoor temperature of 7°CDB/6°CWB. - Pipe length: 5 m, Height difference: 0 m. - Protective function might work when using it outside the operation range. *: Sound pressure level - Measured values in manufacturer's semi-anechoic chamber. - Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here. - This data is based on EN 14511 standard.								

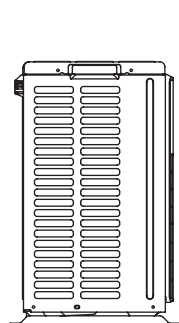
2. Dimensions

2-1. Models: AOEH07KMCG, AOEH09KMCG, and AOEH12KMCG

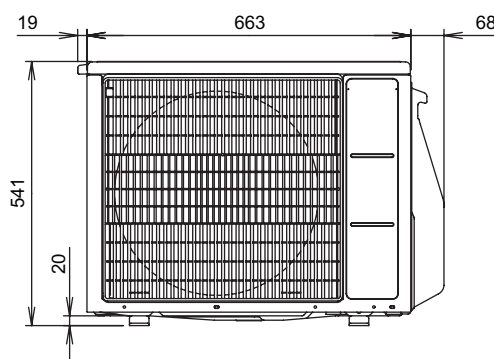
Unit: mm



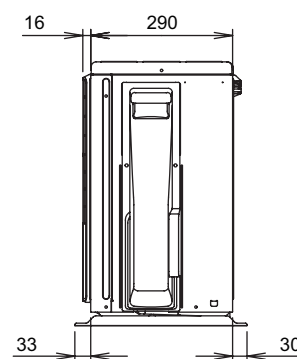
Top view



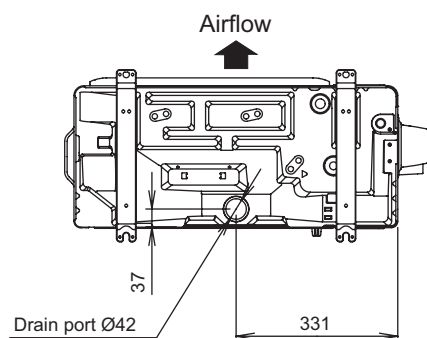
Side view



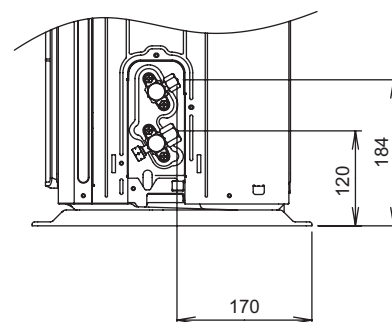
Front view



Side view



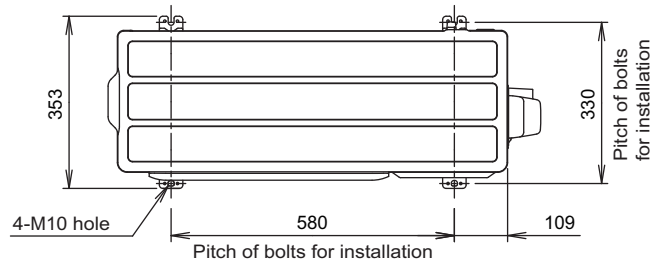
Bottom view



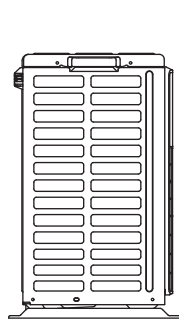
Side view (Valve part)

2-2. Model: AOEH14KMCG

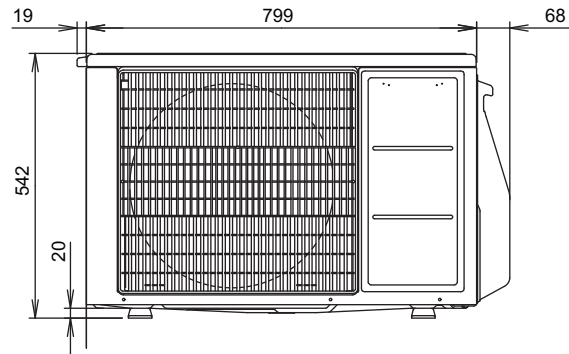
Unit: mm



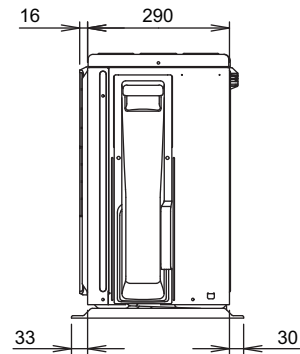
Top view



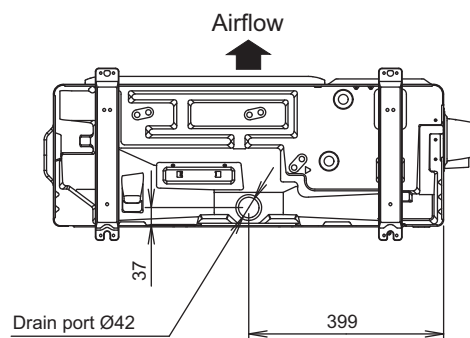
Side view



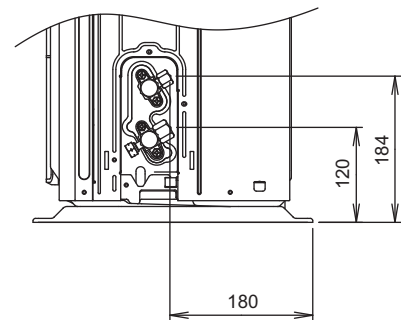
Front view



Side view



Bottom view



Side view (Valve part)

3. Installation space

3-1. Models: AOEH07KMCG, AOEH09KMCG, AOEH12KMCG, and AOEH14KMCG

■ Space requirement

Provide sufficient installation space for product safety.

⚠ CAUTION

Keep the space shown in the installation examples.

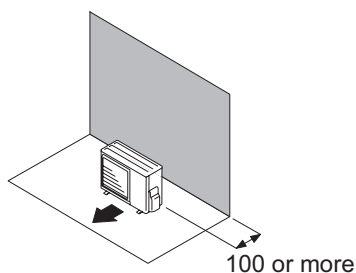
If the installation is not performed accordingly, it could cause a short circuit and result in a lack of operating performance.

● Single outdoor unit installation

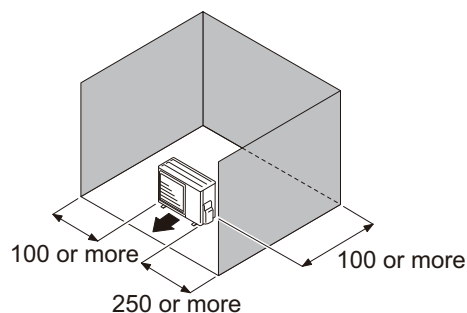
- When the upper space is open:

Unit: mm

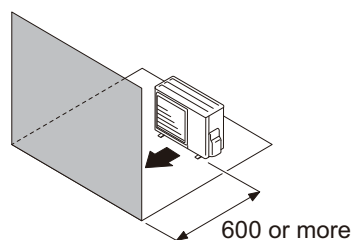
Obstacles at rear only



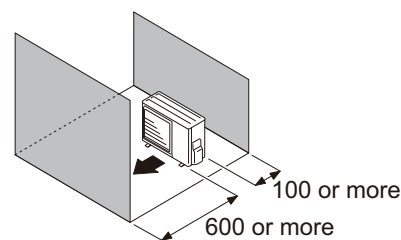
Obstacles at rear and sides



Obstacles at front



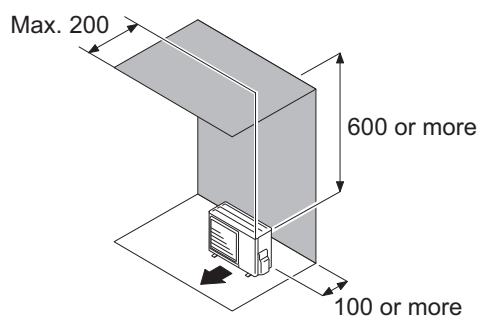
Obstacles at front and rear



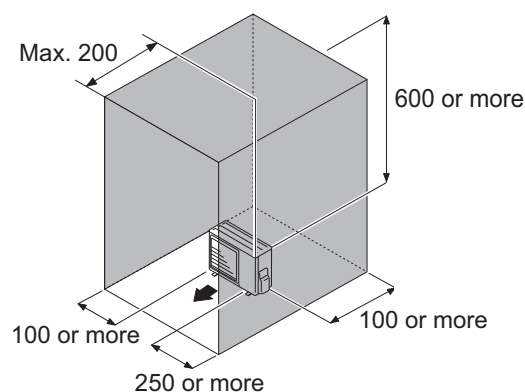
- When an obstruction in the upper space:

Unit: mm

Obstacles at rear and above



Obstacles at rear, sides, and above



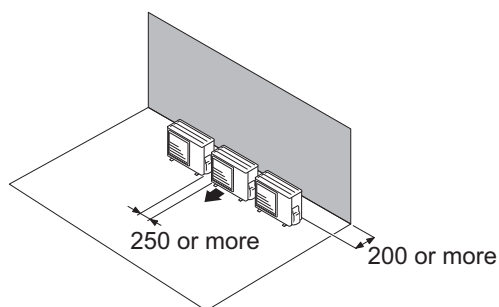
● Multiple outdoor unit installation

- 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:”**.

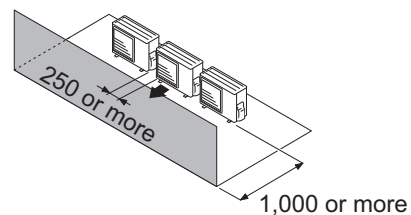
- **When the upper space is open:**

Unit: mm

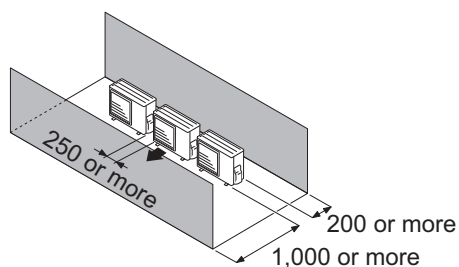
Obstacles at rear only



Obstacles at front only



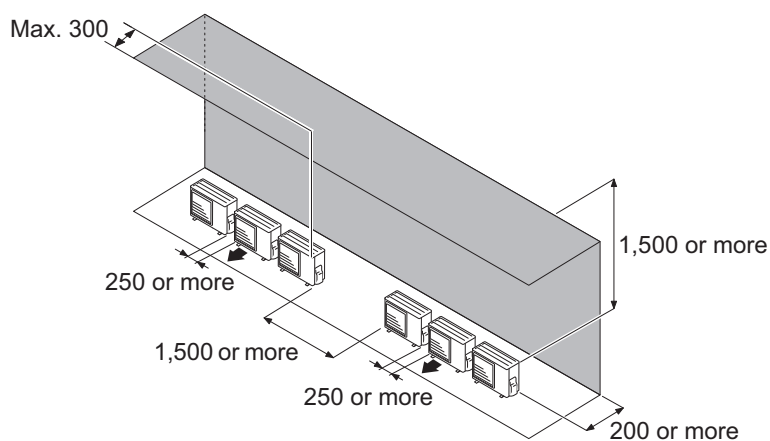
Obstacles at front and rear



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

Unit: mm

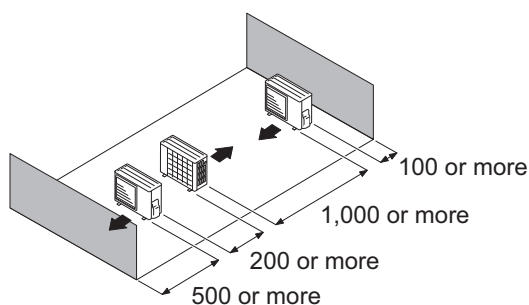
Obstacles at rear and above.



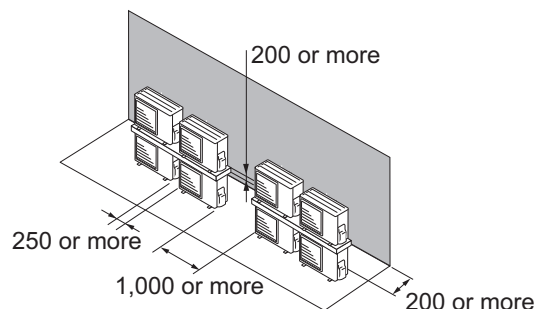
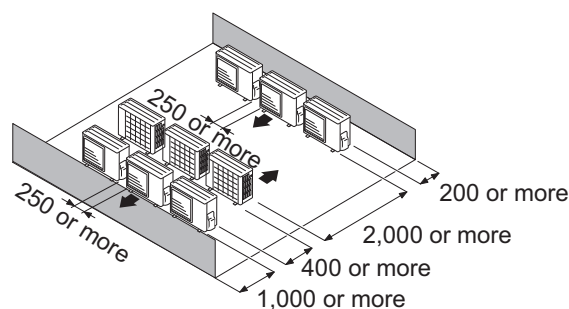
● Outdoor units installation in multi-row

Unit: mm

Single parallel unit arrangement



Multiple parallel unit arrangement

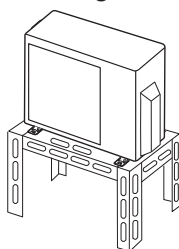


NOTES:

- 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.

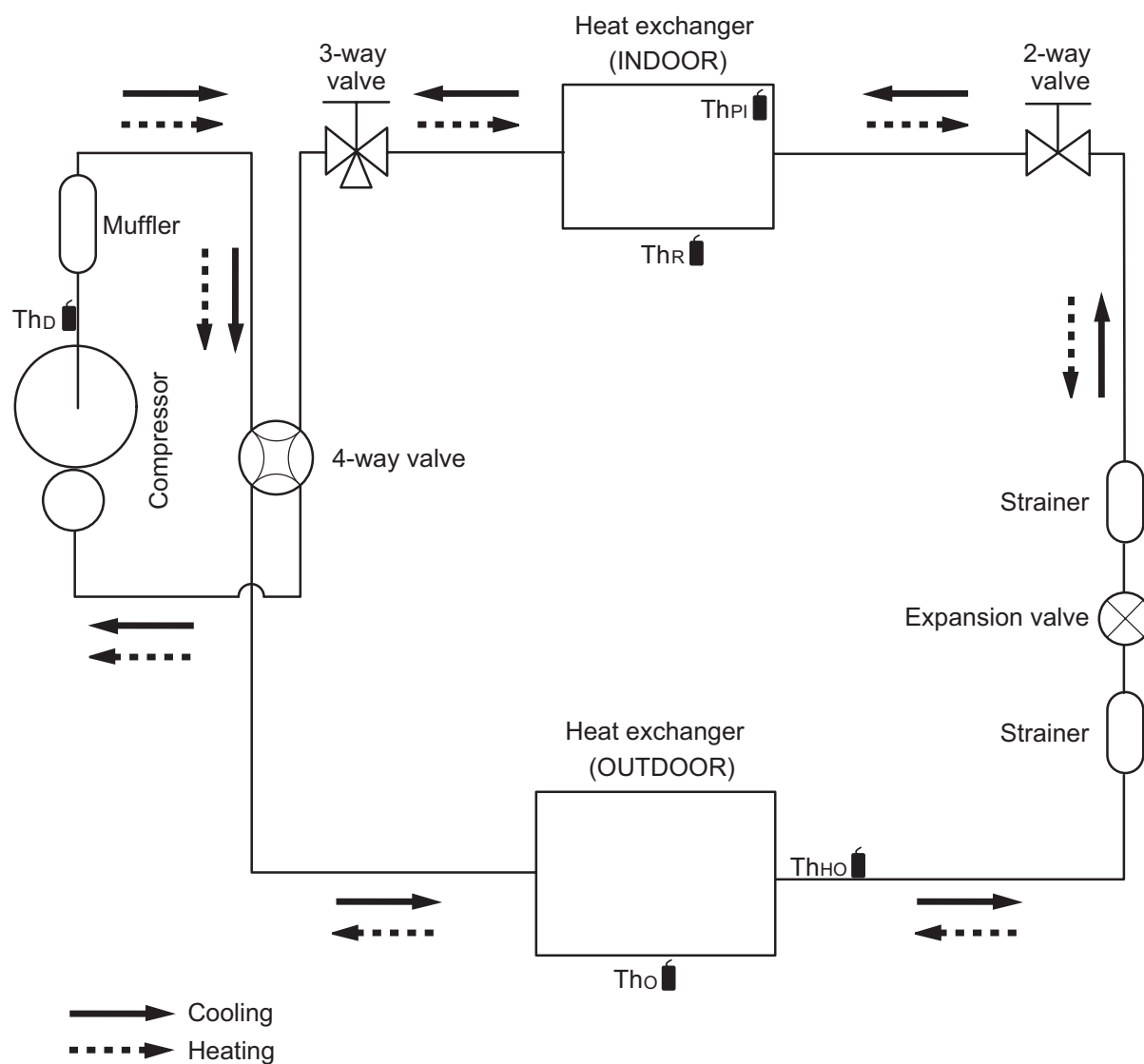
⚠ CAUTION

- 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: AOEH07KMCG, AOEH09KMCG, and AOEH12KMCG



ThD : Thermistor (Discharge temperature)

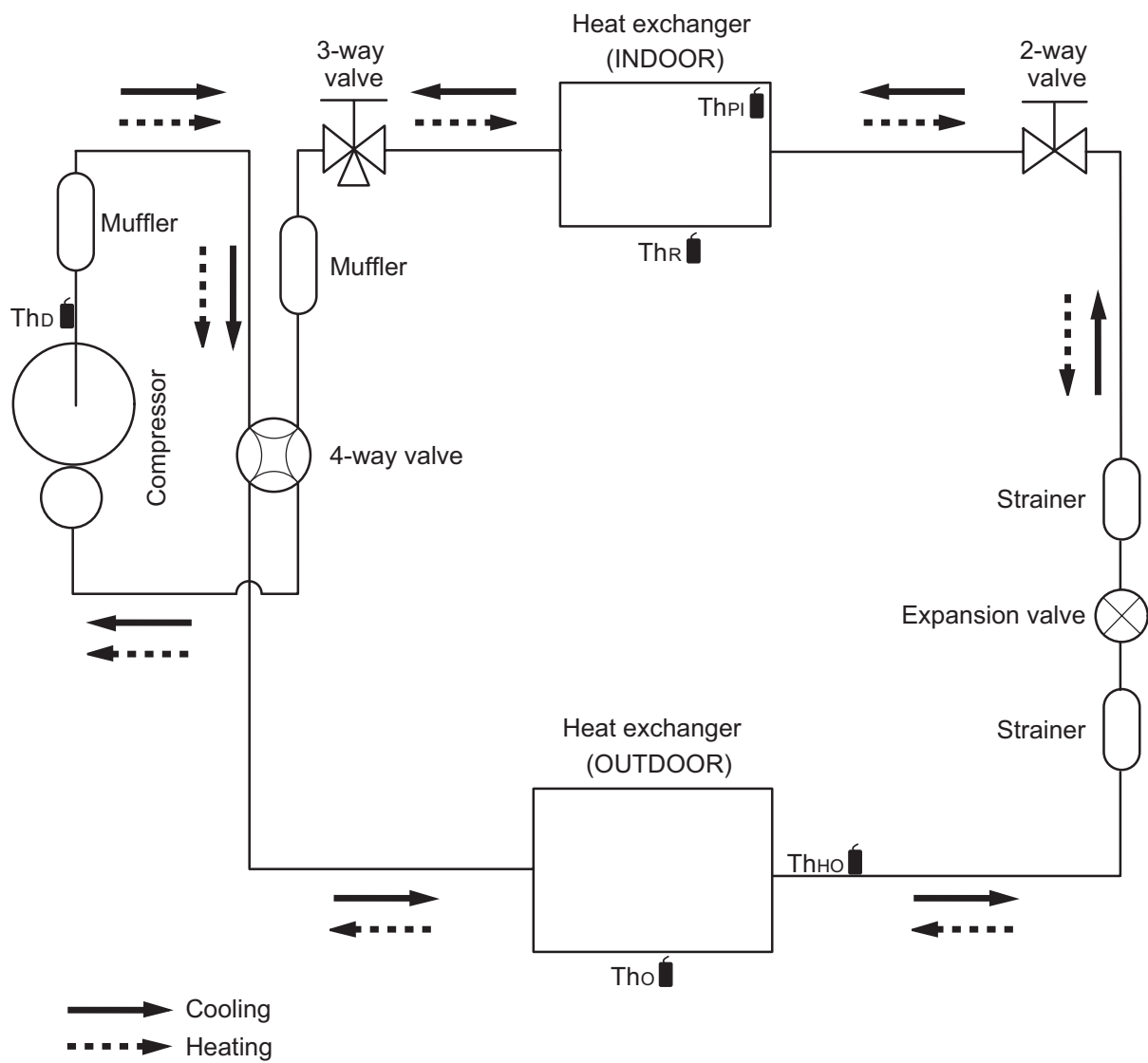
Tho : Thermistor (Outdoor temperature)

ThHo : Thermistor (Heat exchanger out temperature)

ThPI : Thermistor (Pipe temperature)

ThR : Thermistor (Room temperature)

4-2. Model: AOEH14KMCG



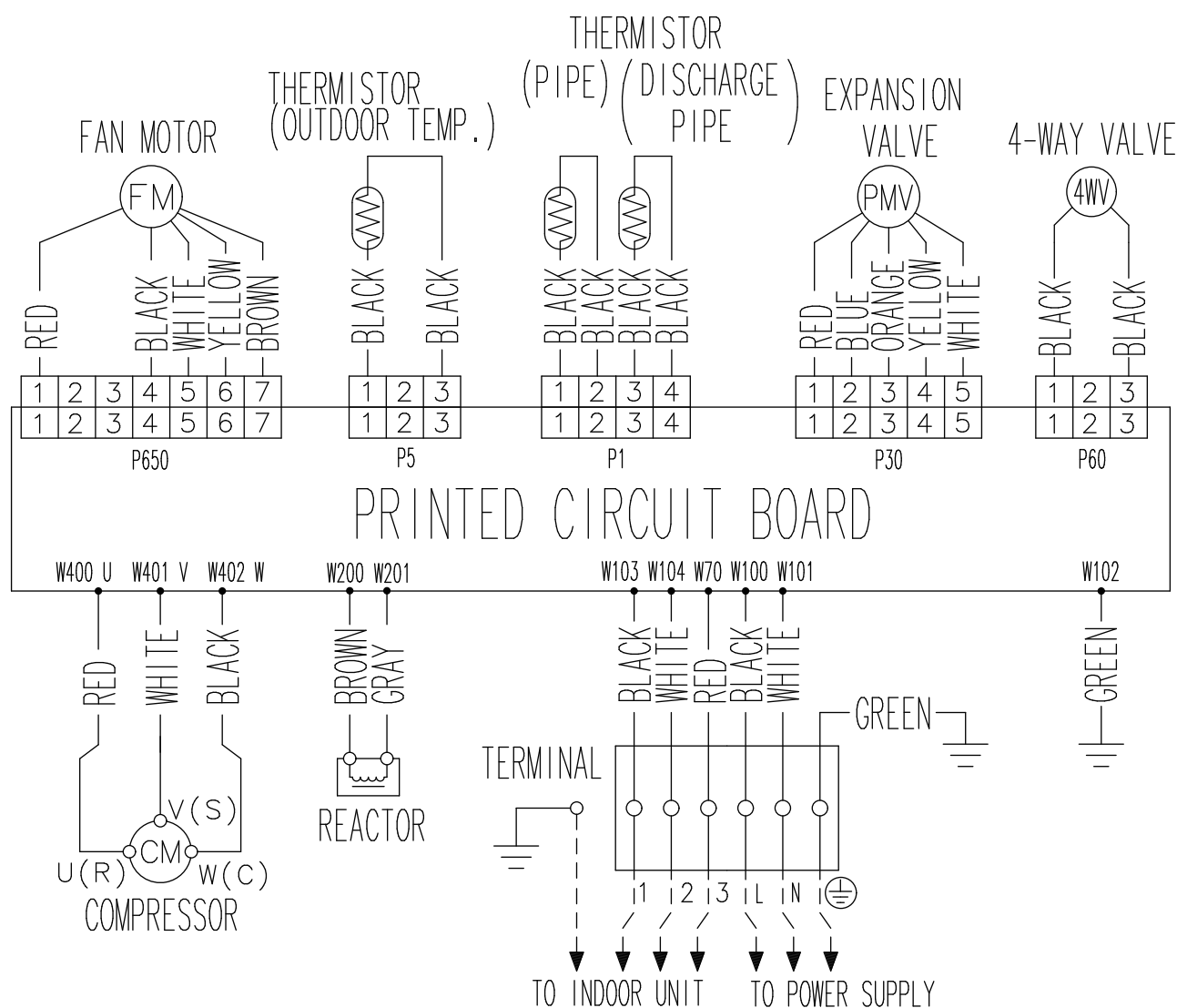
- Th_D : Thermistor (Discharge temperature)
 Th_o : Thermistor (Outdoor temperature)
 Th_{HO} : Thermistor (Heat exchanger out temperature)
 Th_{PI} : Thermistor (Pipe temperature)
 Th_R : Thermistor (Room temperature)

5. Wiring diagrams

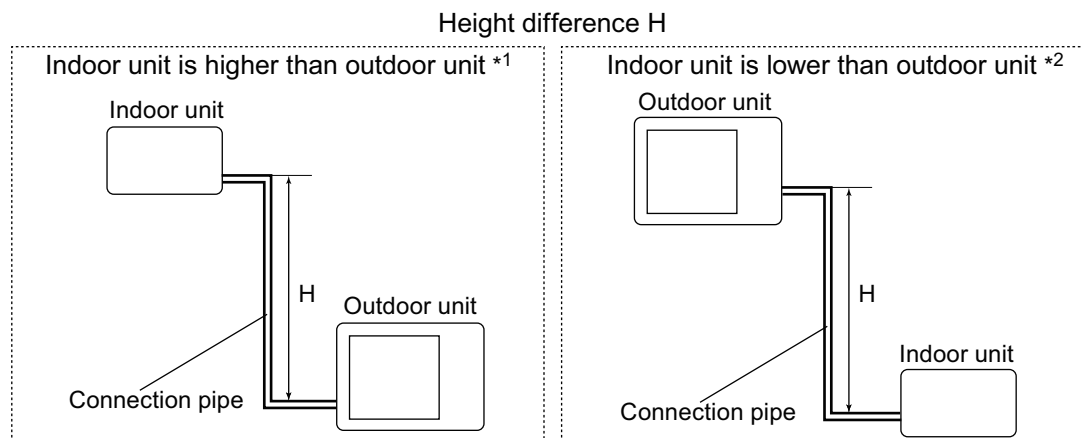
5-1. Models: AOEH07KMCG, AOEH09KMCG, AOEH12KMCG, and AOEH14KMCG

OUTDOOR UNIT
AOEH07-14KMCG

OUTDOOR UNIT
AOEH07-14KMCG



6. Capacity compensation rate for pipe length and height difference



6-1. Models: AOEH07KMCG and AOEH09KMCG

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	—	—	—	0.872	0.910
		10	—	—	0.961	0.886	0.925
		7.5	—	0.979	0.965	0.890	0.929
		5	0.992	0.983	0.969	0.893	0.933
		0	1.000	0.991	0.976	0.901	0.940
	Indoor unit is lower than outdoor unit *2	-5	1.000	0.991	0.976	0.901	0.940
		-7.5	—	0.991	0.976	0.901	0.940
		-10	—	—	0.976	0.901	0.940
		-15	—	—	—	0.901	0.940

HEATING			Pipe length (m)				
			5	7.5	10	15	20
Height difference H (m)	Indoor unit is higher than outdoor unit *1	15	—	—	—	0.832	0.822
		10	—	—	0.917	0.832	0.822
		7.5	—	0.961	0.917	0.832	0.822
		5	1.000	0.961	0.917	0.832	0.822
		0	1.000	0.961	0.917	0.832	0.822
	Indoor unit is lower than outdoor unit *2	-5	0.955	0.956	0.912	0.828	0.818
		-7.5	—	0.954	0.910	0.826	0.816
		-10	—	—	0.908	0.824	0.814
		-15	—	—	—	0.815	0.805

6-2. Model: AOEH12KMCG

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	—	—	—	0.858	0.868
		10	—	—	0.929	0.872	0.882
		7.5	—	0.960	0.933	0.876	0.885
		5	0.992	0.964	0.937	0.879	0.889
	Indoor unit is lower than outdoor unit *2	0	1.000	0.972	0.944	0.887	0.896
		-5	1.000	0.972	0.944	0.887	0.896
		-7.5	—	0.972	0.944	0.887	0.896
		-10	—	—	0.944	0.887	0.896
		-15	—	—	—	0.887	0.896

HEATING			Pipe length (m)				
			5	7.5	10	15	20
Height difference H (m)	Indoor unit is higher than outdoor unit *1	15	—	—	—	0.896	0.879
		10	—	—	0.968	0.890	0.879
		7.5	—	0.994	0.968	0.896	0.879
		5	1.000	0.994	0.968	0.896	0.879
	Indoor unit is lower than outdoor unit *2	0	1.000	0.994	0.968	0.896	0.879
		-5	0.995	0.989	0.963	0.891	0.875
		-7.5	—	0.987	0.961	0.889	0.873
		-10	—	—	0.959	0.887	0.871
		-15	—	—	—	0.878	0.862

6-3. Model: AOEH14KMCG

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	—	—	—	0.893	0.909
		10	—	—	0.955	0.908	0.924
		7.5	—	0.975	0.959	0.912	0.928
		5	0.992	0.979	0.963	0.916	0.931
	Indoor unit is lower than outdoor unit *2	0	1.000	0.987	0.970	0.923	0.939
		-5	1.000	0.987	0.970	0.923	0.939
		-7.5	—	0.987	0.970	0.923	0.939
		-10	—	—	0.970	0.923	0.939
		-15	—	—	—	0.923	0.939

HEATING			Pipe length (m)				
			5	7.5	10	15	20
Height difference H (m)	Indoor unit is higher than outdoor unit *1	15	—	—	—	0.956	0.938
		10	—	—	1.004	0.956	0.938
		7.5	—	1.013	1.004	0.956	0.938
		5	1.000	1.013	1.004	0.956	0.938
	Indoor unit is lower than outdoor unit *2	0	1.000	1.013	1.004	0.956	0.938
		-5	0.995	1.008	0.999	0.951	0.938
		-7.5	—	1.005	0.997	0.948	0.931
		-10	—	—	0.994	0.946	0.929
		-15	—	—	—	0.937	0.919

7. Additional charge calculation

7-1. Models: AOEH07KMCG and AOEH09KMCG

Refrigerant type		R32
Factory charge amount	g	600

■ Refrigerant charge

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

7-2. Model: AOEH12KMCG

Refrigerant type		R32
Factory charge amount	g	700

■ Refrigerant charge

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

7-3. Model: AOEH14KMCG

Refrigerant type		R32
Factory charge amount	g	850

■ Refrigerant charge

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

8. Airflow

8-1. Model: AOEH07KMCG

● Cooling

m ³ /h	1,650
l/s	458
CFM	971

● Heating

m ³ /h	1,450
l/s	403
CFM	853

8-2. Model: AOEH09KMCG

● Cooling

m ³ /h	1,650
l/s	458
CFM	971

● Heating

m ³ /h	1,450
l/s	403
CFM	853

8-3. Model: AOEH12KMCG

● Cooling

m ³ /h	1,700
l/s	472
CFM	1,001

● Heating

m ³ /h	1,470
l/s	408
CFM	865

8-4. Model: AOEH14KMCG

● Cooling

m ³ /h	1,680
l/s	467
CFM	989

● Heating

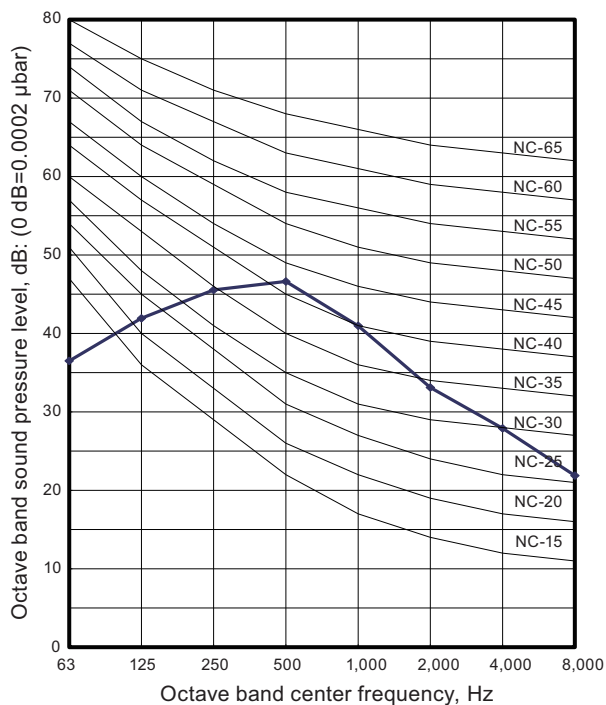
m ³ /h	1,580
l/s	439
CFM	930

9. Operation noise (sound pressure)

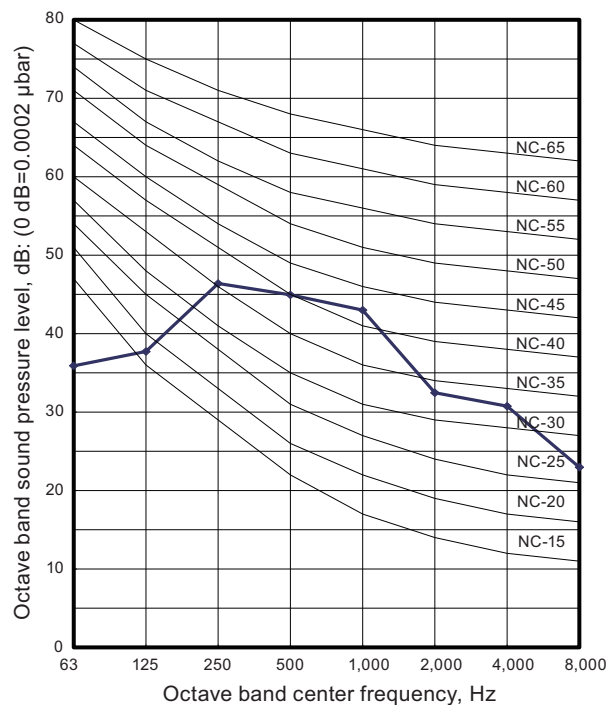
9-1. Noise level curve

■ AOEH07KMCG

● Cooling

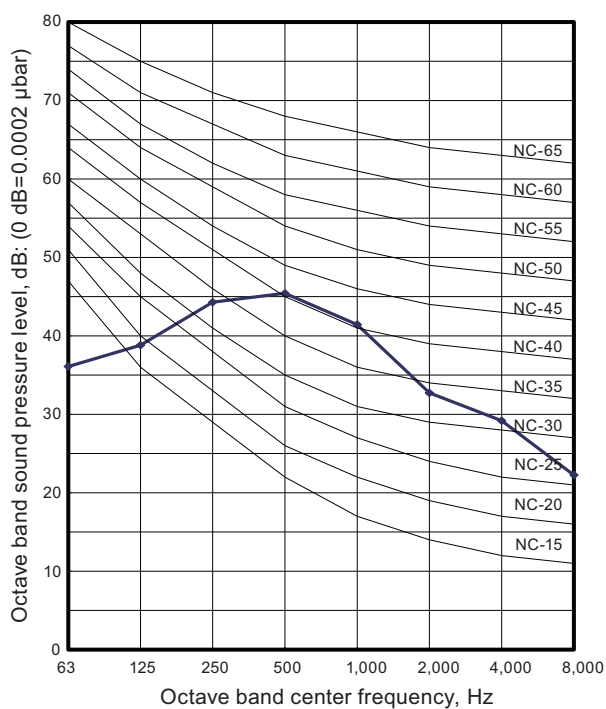


● Heating

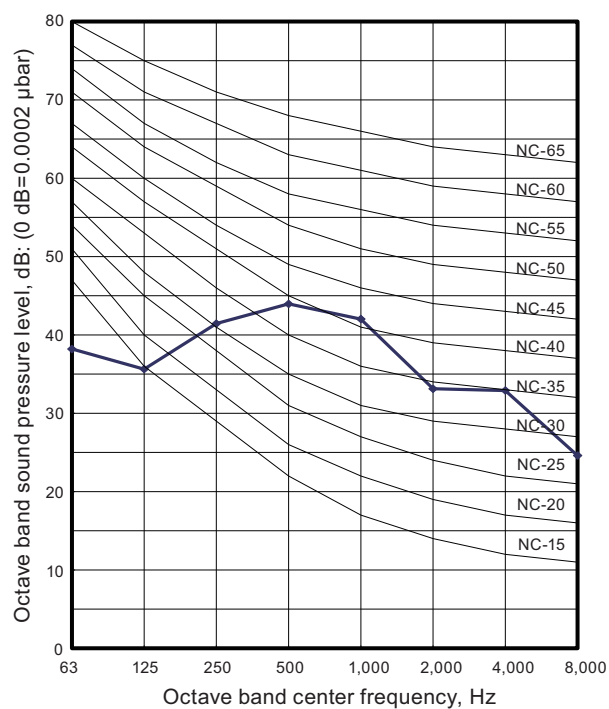


■ AOEH09KMCG

● Cooling

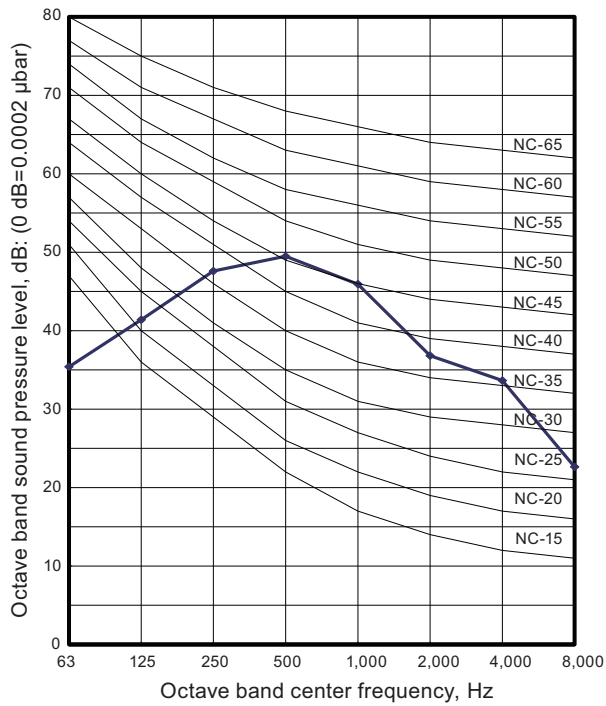


● Heating

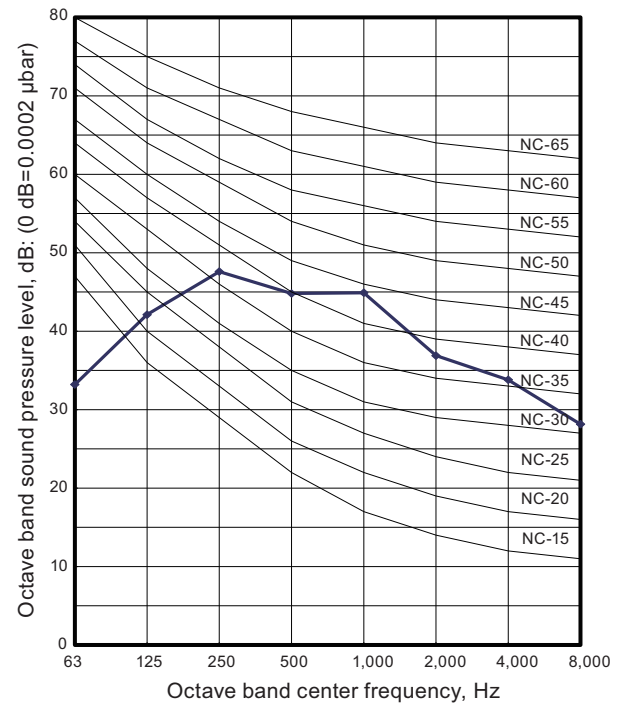


■ AOEH12KMCG

● Cooling

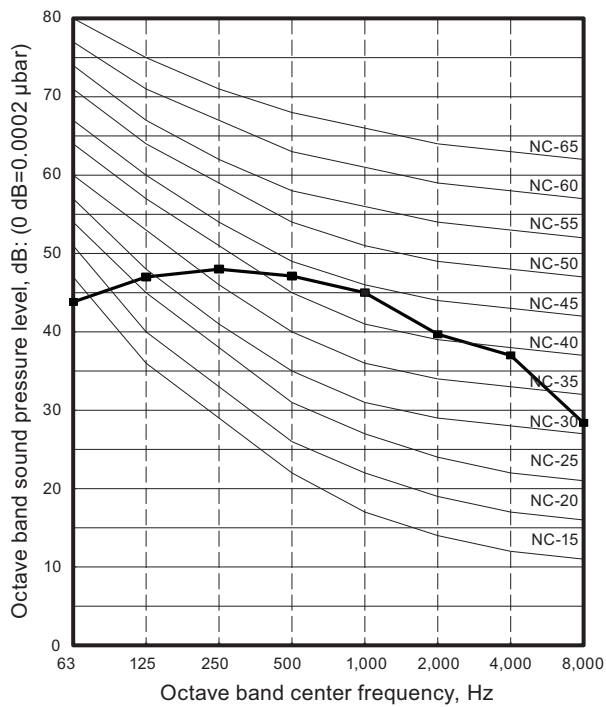


● Heating

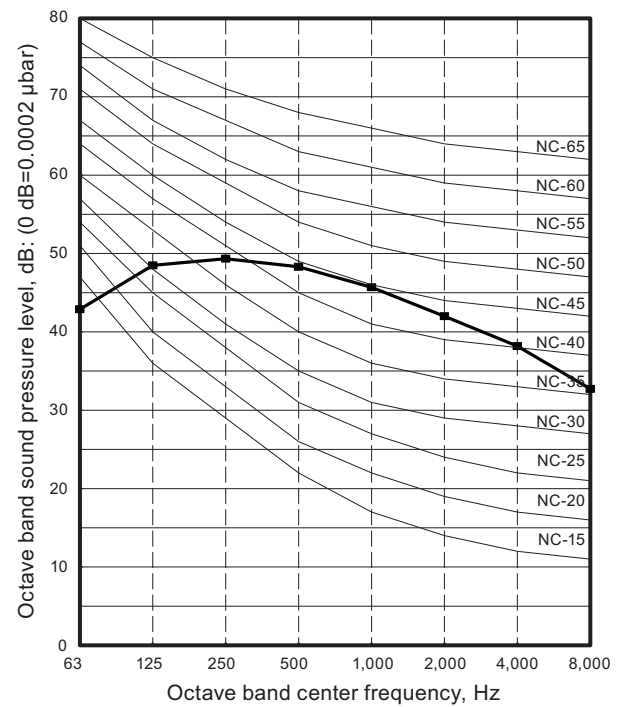


■ AOEH14KMCG

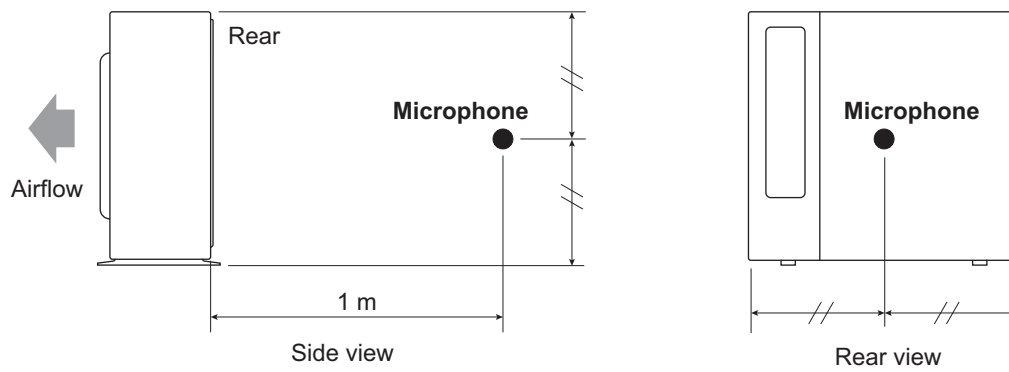
● Cooling



● 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			AOEH07KMCG	AOEH09KMCG	AOEH12KMCG	AOEH14KMCG
Power supply	Voltage	V	230~			
	Frequency	Hz	50			
Max operating current *1		A	9.0			
Starting current		A	3.0	3.4	5.1	6.8
Wiring spec. *2	Circuit breaker current		A	15		
	Power cable		mm ²	1.5		
	Connection cable *3	Cross-sectional area	mm ²	1.5		
		Limited wiring length	m	21		

NOTES:

- *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.

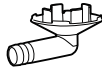
11. Safety devices

Type of protection	Protection form		Model			
			AOEH07KM CG	AOEH09KM CG	AOEH12KM CG	AOEH14KM CG
Circuit protection	Current fuse (Main PCB*)		250 V, 20 A			
			250 V, 5 A			
Fan motor protection	Thermal protection	Activate	100 ±15°C Fan motor stop			
		Reset	95 ±10°C Fan motor restart			
Compressor protection	Terminal protection program (Discharge temp.)	Activate	110°C Compressor stop			
		Reset	After 7 minutes Compressor restart			

*PCB: Printed Circuit Board

12. Accessories

12-1. Models: AOEH07KMCG, AOEH09KMCG, AOEH12KMCG, and AOEH14KMCG

Part name	Exterior	Qty	Part name	Exterior	Qty
Installation manual		1	Drain pipe		1