

AIR CONDITIONER

Wall mounted type

DESIGN & TECHNICAL MANUAL

INDOOR



ASHH07KGTH
ASHH09KGTH
ASHH12KGTH
ASHH14KGTH

OUTDOOR



AOHH07KGCG
AOHH09KGCG
AOHH12KGCG
AOHH14KGCG

FUJITSU GENERAL LIMITED

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Part 1. INDOOR UNIT

WALL MOUNTED TYPE:

ASHH07KGTH

ASHH09KGTH

ASHH12KGTH

ASHH14KGTH

1. Specifications

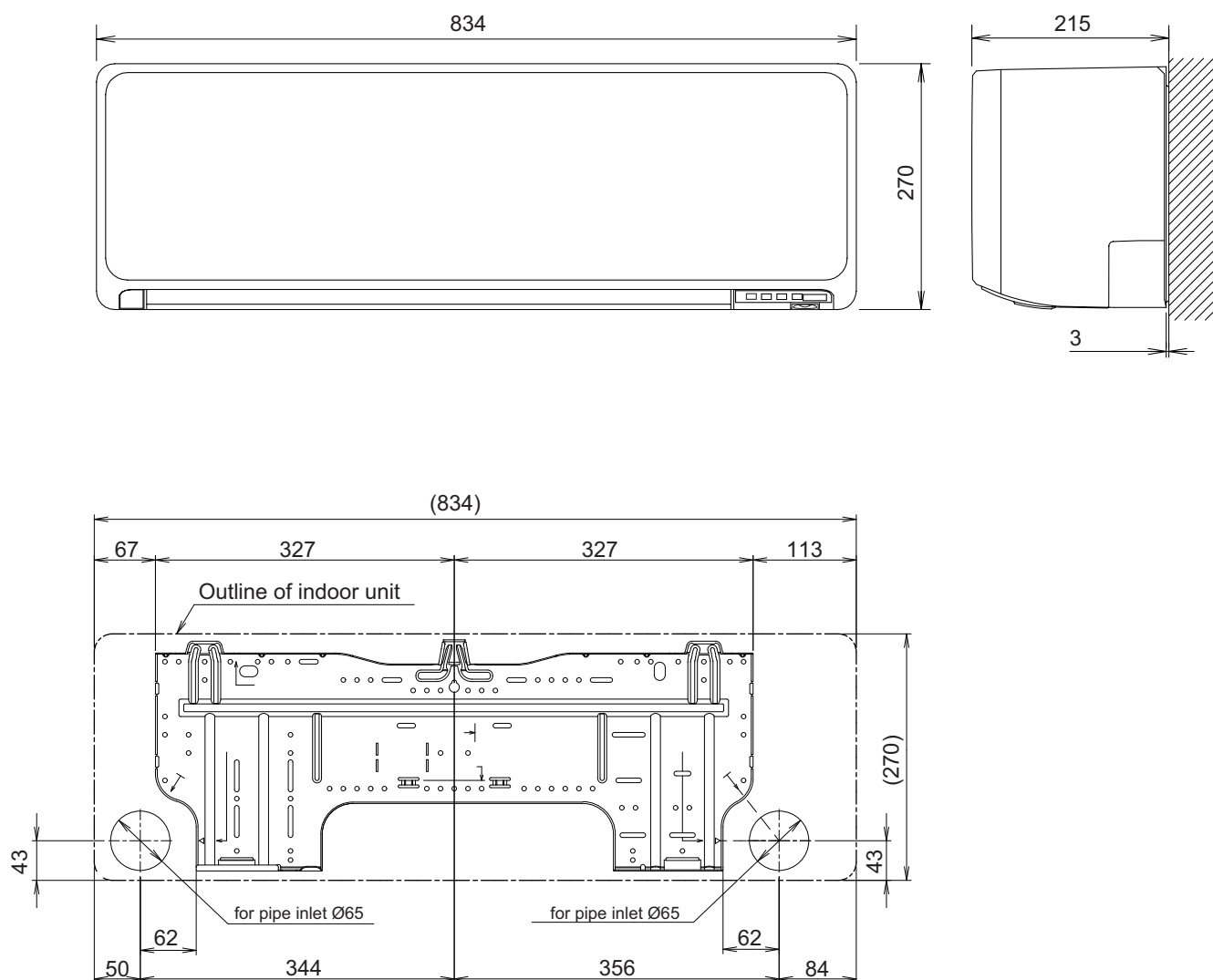
Type				Wall mounted					
				Inverter, Heat pump					
Model name				ASHH07KGTH	ASHH09KGTH	ASHH12KGTH	ASHH14KGTH		
Power supply intake				Outdoor unit					
System power supply		Voltage		230					
		Frequency		50					
		Available voltage range		198—264 V					
Indoor unit power supply (from outdoor unit)			V	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—3.3	0.9—3.6	0.9—4.1	0.9—4.5		
			Btu/h	3,100—11,200	3,100—12,300	3,100—14,000	3,100—15,400		
	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—5.2	0.9—5.4	0.9—6.1	0.9—6.4		
			Btu/h	3,100—17,700	3,100—18,400	3,100—20,800	3,100—21,800		
Input power	Cooling	Rated	kW	0.40	0.55	0.87	1.22		
		Min.—Max.		0.25—0.95	0.25—1.14	0.25—1.29	0.25—1.45		
		Rated		0.50	0.60	0.91	1.45		
	Heating	Min.—Max.	0.25—1.59	0.25—1.84	0.25—1.83	0.25—2.11			
		Fan	HIGH	W	19	23	27	33	
			MED		15	17	18	20	
	LOW		12			13			
	QUIET		8						
Current	Cooling	Rated	A	2.4	3.0	4.2	5.7		
	Heating			2.9	3.2	4.5	6.7		
Energy efficiency class		Cooling		A+++				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	9.8	9.4	8.8	8.0		
SCOP	Heating (Average)			5.2				4.6	
Annual energy consumption		QCE		71	93	135	184		
		QHE (Average)		618	646	673	1,217		
EER	Cooling		kW/kW	5.00	4.55	3.91	3.44		
COP	Heating			5.00	4.67	4.40	3.72		
Sensible capacity	Cooling		kW	2.00	2.38	2.75	3.33		
Power factor	Cooling		%	72	80	90	93		
	Heating			75	82	88	94		
Moisture removal			L/h (pints/h)	1.1 (1.9)	1.3 (2.3)	1.6 (2.8)	1.7 (3.0)		
Maximum operating current*1		Cooling		A	6.5			9.0	
		Heating			9.0			10.5	
Fan	Airflow rate	Cooling	HIGH	m³/h	570	640	680	750	
			MED		500	530	550	590	
			LOW		420			430	450
			QUIET		270			260	290
		Heating	HIGH		610	630	750	780	
			MED		530			630	700
			LOW		450			510	
			QUIET		290			320	350
	Type × Qty	Crossflow fan × 1							
	Motor output		W	30			49		
Sound pressure level*2		Cooling	HIGH	dB (A)	36	38	40	43	
			MED		32	34	35	36	
			LOW		29			30	
			QUIET		19			20	
		Heating	HIGH		38	39	42	44	
			MED		34			38	39
			LOW		31			33	
			QUIET		20			21	24
Sound power level		Cooling	HIGH	dB (A)	49	52	56	57	
		Heating			51	52	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					
		Material		Polystyrene					
Enclosure		Color		White + Pearl white (painted)					
				Approximate color of Munsell N9.25/					
Dimensions (H × W × D)		Net		mm	270 × 834 × 215				
		Gross			277 × 914 × 332				
Weight	Net		kg	10.0					
	Gross			12.5		13.0			
Connection pipe		Size	Liquid Gas	mm (in)	Ø6.35 (Ø1/4)				
					Ø9.52 (Ø3/8)				
Drain hose		Method		Flare					
		Material		Polypropylene + High-density polyethylene					
Operation range		Tip diameter		mm	Ø13.8 (I.D.), Ø15 to Ø16.8 (O.D.)				
		Cooling	°C	18 to 32					
			%RH	80 or less					
Remote controller		Heating		°C	16 to 30				
		Wireless (Option: Wired, Mobile app*3 [AIRSTAGE Mobile])							

Type	Wall mounted			
	Inverter, Heat pump			
Model name	ASHH07KGTH	ASHH09KGTH	ASHH12KGTH	ASHH14KGTH
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®. Optional WLAN Adapter is also required. For details, refer to the setting manual. - This data is based on EN 14511 standard.				

2. Dimensions

2-1. Models: ASHH07KGTH, ASHH09KGTH, ASHH12KGTH, and ASHH14KGTH

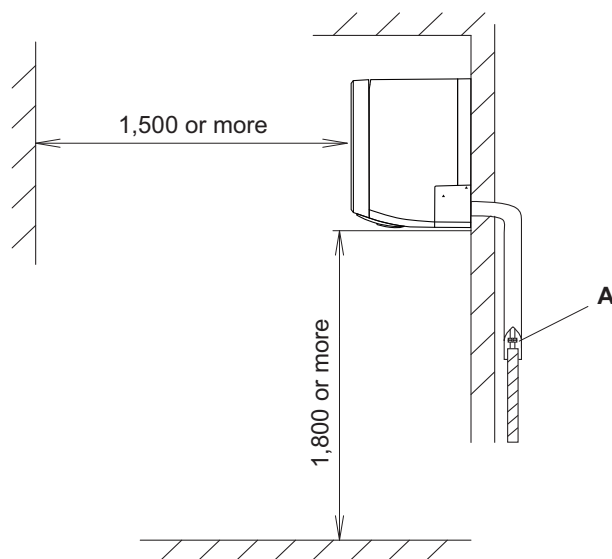
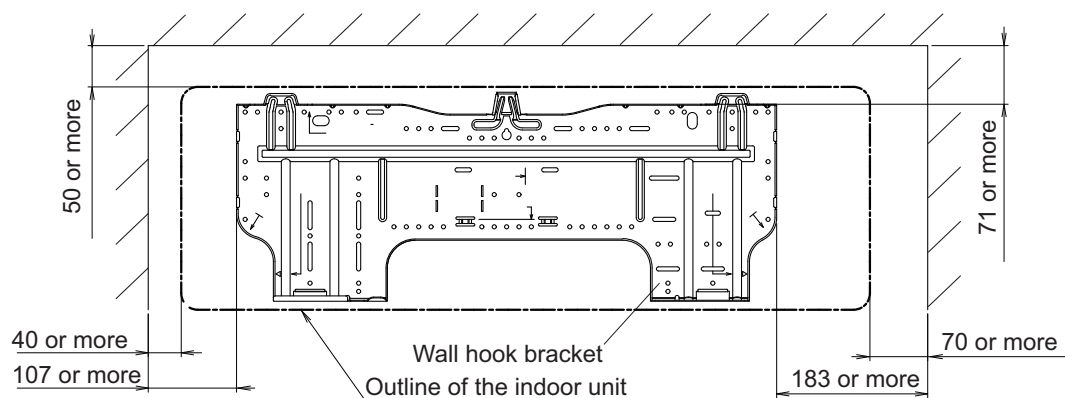
Unit: mm



■ Installation space requirement

Provide sufficient installation space for product safety.

Unit: mm



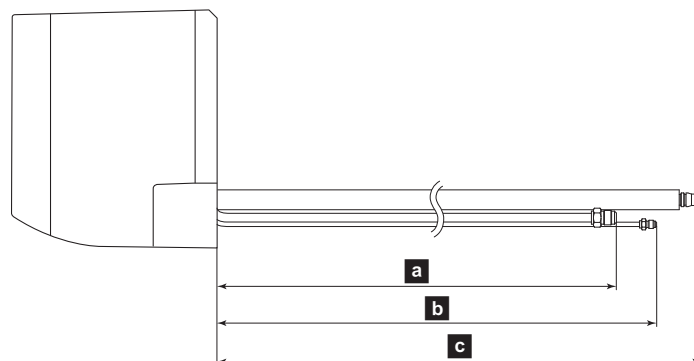
A: Install so that the flare connection part is outdoors.

2-2. 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.

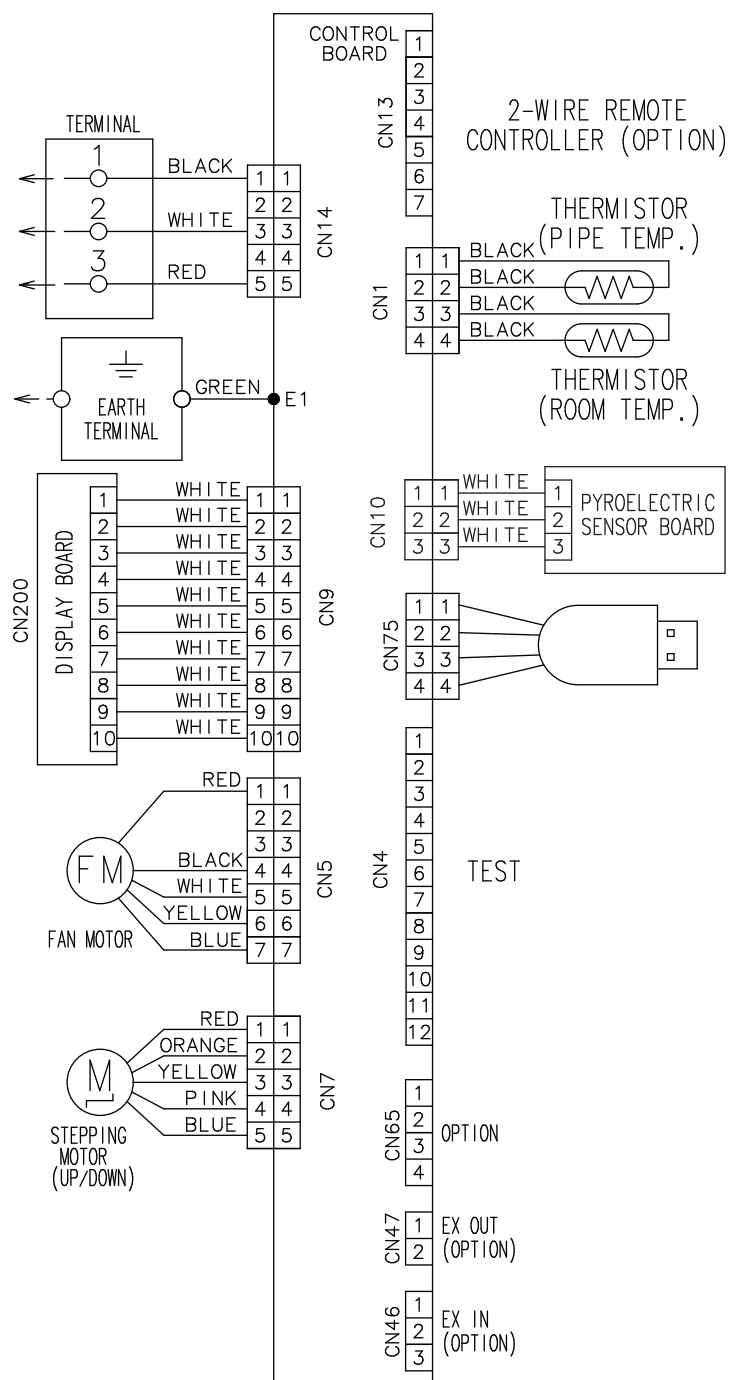
Unit: mm



Model name	Approximate length		
	a Gas pipe	b Liquid pipe	c Drain hose
ASHH07-14KGTH	380	430	480

3. Wiring diagrams

3-1. Models: ASHH07KGTH, ASHH09KGTH, ASHH12KGTH, and ASHH14KGTH



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: ASHH07KGTH

AFR				m³/h				570														
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	2.46	2.20	0.34	2.66	2.29	0.35	2.78	2.34	0.36	2.94	2.39	0.35	3.07	2.47	0.34	3.23	2.49	0.34	3.23	2.49	0.34
	0	2.36	2.17	0.39	2.55	2.25	0.40	2.67	2.30	0.41	2.82	2.36	0.40	2.94	2.43	0.39	3.09	2.46	0.39	3.09	2.46	0.39
	5	2.27	2.13	0.46	2.45	2.21	0.47	2.57	2.26	0.48	2.71	2.31	0.47	2.83	2.39	0.46	2.98	2.41	0.47	2.98	2.41	0.47
	10	2.51	2.21	0.38	2.71	2.30	0.39	2.84	2.35	0.40	3.00	2.41	0.39	3.13	2.48	0.38	3.29	2.51	0.38	3.29	2.51	0.38
	15	2.42	2.19	0.45	2.61	2.27	0.46	2.73	2.32	0.47	2.89	2.38	0.46	3.01	2.45	0.45	3.17	2.48	0.46	3.17	2.48	0.46
20	1.83	1.83	0.22	1.98	1.97	0.22	2.08	2.05	0.22	2.19	2.09	0.22	2.26	2.13	0.22	2.39	2.22	0.22	2.57	2.33	0.21	
25	1.77	1.77	0.28	1.91	1.91	0.28	2.01	2.01	0.28	2.11	2.06	0.28	2.19	2.10	0.28	2.31	2.19	0.28	2.48	2.30	0.27	
30	1.69	1.74	0.34	1.83	1.88	0.34	1.92	1.95	0.34	2.02	1.98	0.34	2.09	2.03	0.34	2.21	2.12	0.33	2.37	2.22	0.33	
35	1.62	1.62	0.39	1.75	1.75	0.40	1.84	1.84	0.40	1.93	1.93	0.40	2.00	2.00	0.40	2.12	2.09	0.39	2.27	2.19	0.39	
40	1.50	1.50	0.44	1.64	1.64	0.44	1.73	1.73	0.45	1.84	1.84	0.45	1.94	1.94	0.45	2.03	2.03	0.45	2.17	2.17	0.45	
46	1.38	1.38	0.51	1.52	1.52	0.51	1.60	1.60	0.52	1.70	1.70	0.52	1.80	1.80	0.52	1.88	1.88	0.52	2.01	2.01	0.52	
50	1.28	1.28	0.57	1.40	1.40	0.57	1.48	1.48	0.58	1.57	1.57	0.58	1.66	1.66	0.58	1.73	1.73	0.58	1.85	1.85	0.58	

■ Model: ASHH09KGTH

AFR					m³/h					640												
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	2.61	2.44	0.54	2.82	2.53	0.55	2.95	2.59	0.57	3.12	2.65	0.55	3.25	2.73	0.54	3.42	2.77	0.55	3.42	2.77	0.55
	0	2.67	2.46	0.48	2.88	2.56	0.49	3.02	2.61	0.50	3.19	2.67	0.48	3.33	2.76	0.48	3.50	2.79	0.48	3.50	2.79	0.48
	5	2.57	2.41	0.55	2.77	2.50	0.56	2.90	2.56	0.57	3.07	2.62	0.56	3.20	2.70	0.55	3.36	2.73	0.55	3.36	2.73	0.55
	10	2.83	2.51	0.46	3.06	2.61	0.46	3.20	2.67	0.48	3.38	2.73	0.46	3.53	2.81	0.46	3.71	2.85	0.46	3.71	2.85	0.46
	15	2.74	2.49	0.54	2.96	2.59	0.54	3.10	2.65	0.56	3.27	2.71	0.54	3.42	2.79	0.53	3.59	2.82	0.54	3.59	2.82	0.54
20	2.34	2.17	0.34	2.52	2.35	0.34	2.65	2.44	0.34	2.79	2.48	0.34	2.88	2.53	0.34	3.05	2.65	0.34	3.27	2.77	0.33	
25	2.23	2.15	0.40	2.41	2.32	0.41	2.53	2.41	0.41	2.66	2.45	0.41	2.76	2.50	0.41	2.92	2.61	0.40	3.13	2.74	0.40	
30	2.13	2.10	0.47	2.30	2.26	0.48	2.42	2.35	0.48	2.54	2.39	0.48	2.63	2.44	0.48	2.78	2.55	0.47	2.98	2.67	0.46	
35	2.03	2.05	0.54	2.19	2.21	0.55	2.30	2.30	0.55	2.42	2.33	0.55	2.50	2.38	0.55	2.65	2.49	0.54	2.84	2.61	0.53	
40	1.82	1.82	0.60	2.00	2.00	0.60	2.11	2.11	0.61	2.24	2.24	0.61	2.37	2.37	0.61	2.47	2.47	0.61	2.64	2.64	0.61	
46	1.74	1.74	0.67	1.90	1.90	0.68	2.01	2.01	0.68	2.13	2.13	0.69	2.25	2.25	0.69	2.35	2.35	0.69	2.52	2.52	0.69	
50	1.63	1.63	0.74	1.79	1.79	0.75	1.89	1.89	0.75	2.00	2.00	0.75	2.12	2.12	0.76	2.21	2.21	0.76	2.36	2.36	0.76	

■ Model: ASHH12KGTH

AFR					m³/h					680												
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	3.07	2.54	0.36	3.43	2.78	0.43	3.80	2.96	0.50	3.98	3.01	0.51	4.11	3.09	0.45	4.38	3.14	0.51	4.59	3.21	0.50
	0	3.28	2.76	0.59	3.55	2.87	0.61	3.74	2.93	0.58	3.92	3.01	0.59	4.02	3.05	0.60	4.34	3.15	0.59	4.65	3.23	0.61
	5	3.25	2.75	0.33	3.52	2.85	0.34	3.70	2.91	0.33	3.89	2.99	0.33	3.98	3.03	0.34	4.30	3.13	0.33	4.61	3.22	0.34
	10	3.21	2.72	0.43	3.47	2.83	0.45	3.66	2.89	0.42	3.84	2.97	0.43	3.93	3.01	0.44	4.25	3.10	0.43	4.55	3.19	0.44
	15	3.15	2.69	0.52	3.41	2.80	0.54	3.59	2.86	0.52	3.77	2.93	0.53	3.86	2.98	0.53	4.18	3.07	0.53	4.47	3.15	0.54
20	3.08	2.65	0.61	3.33	2.76	0.64	3.51	2.81	0.61	3.69	2.89	0.62	3.77	2.93	0.63	4.09	3.02	0.62	4.37	3.11	0.63	
25	2.99	2.61	0.70	3.24	2.71	0.73	3.41	2.76	0.69	3.58	2.84	0.70	3.67	2.88	0.71	3.97	2.97	0.70	4.25	3.05	0.72	
30	2.89	2.55	0.78	3.13	2.65	0.81	3.29	2.70	0.77	3.46	2.78	0.78	3.54	2.82	0.80	3.83	2.90	0.78	4.11	2.98	0.81	
35	2.77	2.48	0.86	3.00	2.58	0.89	3.16	2.63	0.85	3.32	2.71	0.86	3.40	2.75	0.87	3.68	2.83	0.86	3.94	2.91	0.89	
40	2.64	2.41	0.93	2.86	2.51	0.97	3.01	2.56	0.92	3.16	2.63	0.93	3.23	2.66	0.95	3.50	2.75	0.93	3.75	2.82	0.96	
46	2.44	2.40	1.03	2.60	2.51	0.99	2.75	2.60	1.03	2.83	2.62	0.99	2.88	2.59	1.02	3.08	2.72	1.04	3.30	2.75	1.04	
50	2.13	2.09	1.05	2.34	2.29	1.05	2.47	2.42	1.06	2.62	2.56	1.06	2.65	2.51	1.09	2.89	2.83	1.07	3.09	3.03	1.07	

Model: ASHH14KGTH

AFR					m³/h					750												
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	3.35	2.71	0.36	3.74	2.97	0.43	4.14	3.16	0.50	4.34	3.22	0.51	4.48	3.30	0.45	4.78	3.35	0.51	5.01	3.43	0.51
	0	3.57	2.95	0.59	3.87	3.06	0.62	4.07	3.13	0.58	4.27	3.21	0.59	4.37	3.26	0.60	4.73	3.36	0.59	5.07	3.45	0.61
	5	3.54	2.93	0.33	3.84	3.05	0.34	4.04	3.11	0.32	4.24	3.20	0.33	4.34	3.24	0.33	4.70	3.34	0.33	5.03	3.43	0.34
	10	3.50	2.91	0.43	3.79	3.02	0.44	3.98	3.09	0.42	4.18	3.17	0.43	4.28	3.21	0.43	4.63	3.31	0.43	4.96	3.41	0.44
	15	3.44	2.88	0.53	3.72	2.99	0.55	3.91	3.05	0.52	4.11	3.13	0.53	4.21	3.18	0.54	4.55	3.28	0.53	4.88	3.37	0.55
	20	3.36	2.83	0.62	3.63	2.94	0.64	3.82	3.01	0.61	4.02	3.09	0.62	4.11	3.13	0.63	4.45	3.23	0.62	4.77	3.32	0.64
	25	3.26	2.78	0.70	3.53	2.89	0.73	3.72	2.95	0.69	3.90	3.03	0.70	3.99	3.07	0.71	4.32	3.17	0.70	4.63	3.26	0.73
	30	3.58	3.09	1.09	3.87	3.21	1.13	4.08	3.28	1.08	4.28	3.37	1.09	4.38	3.42	1.10	4.74	3.52	1.09	5.07	3.62	1.13
	35	3.43	3.01	1.19	3.71	3.13	1.24	3.90	3.19	1.17	4.11	3.28	1.20	4.20	3.33	1.22	4.55	3.43	1.20	4.87	3.53	1.23
	40	3.27	2.93	1.28	3.54	3.04	1.34	3.72	3.10	1.27	3.92	3.19	1.28	4.01	3.24	1.31	4.34	3.33	1.30	4.64	3.42	1.34
	46	3.01	2.91	1.43	3.22	3.04	1.38	3.42	3.16	1.43	3.50	3.18	1.39	3.58	3.13	1.40	3.81	3.29	1.45	4.08	3.34	1.45
50	2.64	2.54	1.45	2.89	2.79	1.46	3.05	2.94	1.47	3.23	3.12	1.48	3.31	3.03	1.49	3.57	3.45	1.49	3.82	3.68	1.49	

4-2. Heating capacity

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

■ Model: ASHH07KGTH

AFR			m³/h				610					
			Indoor temperature									
			16		18		20		22		24	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
			kW		kW		kW		kW		kW	
	-15	-16	3.12	1.22	3.13	1.30	3.13	1.30	3.13	1.34	3.07	1.35
	-10	-11	3.08	1.10	3.08	1.15	3.08	1.15	3.08	1.19	3.04	1.20
	-5	-7	3.64	1.16	3.64	1.22	3.64	1.22	3.64	1.26	3.59	1.26
	0	-2	4.23	1.34	4.16	1.38	4.16	1.38	4.16	1.41	4.09	1.44
	5	3	4.99	1.46	4.95	1.52	4.95	1.52	4.95	1.57	4.86	1.59
	7	6	5.24	1.49	5.20	1.59	5.20	1.59	5.20	1.63	5.11	1.65
	10	8	5.51	1.48	5.40	1.56	5.40	1.56	5.40	1.62	5.38	1.64
	15	10	5.21	1.21	5.08	1.30	5.08	1.30	5.08	1.32	5.08	1.34
20	15	5.34	1.17	5.19	1.16	5.19	1.16	5.19	1.15	4.93	1.17	
24	18	5.52	1.15	5.37	1.14	5.37	1.14	5.37	1.13	5.11	1.15	

■ Model: ASHH09KGTH

AFR			m³/h				630					
			Indoor temperature									
			16		18		20		22		24	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
			kW		kW		kW		kW		kW	
	-15	-16	3.13	1.23	3.14	1.29	3.14	1.29	3.14	0.62	3.09	1.34
	-10	-11	3.64	1.34	3.65	1.41	3.65	1.41	3.65	0.61	3.60	1.46
	-5	-7	4.15	1.44	4.15	1.52	4.15	1.52	4.15	0.61	4.08	1.58
	0	-2	4.57	1.56	4.51	1.61	4.51	1.61	4.51	0.59	4.42	1.67
	5	3	5.39	1.69	5.36	1.77	5.36	1.77	5.36	0.59	5.26	1.83
	7	6	5.44	1.72	5.40	1.84	5.40	1.84	5.40	0.60	5.30	1.91
	10	8	5.91	1.70	5.79	1.79	5.79	1.79	5.79	0.59	5.76	1.89
	15	10	5.21	1.19	5.09	1.27	5.09	1.27	5.09	0.37	5.08	1.32
20	15	5.47	1.19	5.31	1.19	5.31	1.19	5.31	0.28	5.05	1.19	
24	18	5.61	1.16	5.45	1.15	5.45	1.15	5.45	0.25	5.19	1.16	

■ Model: ASHH12KGTH

AFR			m³/h				750					
			Indoor temperature									
			16		18		20		22		24	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
			kW		kW		kW		kW		kW	
	-15	-16	3.40	1.35	3.39	1.32	3.36	1.32	3.34	1.33	3.30	1.36
	-10	-11	4.02	1.37	3.93	1.38	3.83	1.41	3.72	1.43	3.60	1.47
	-5	-7	4.60	1.46	4.50	1.49	4.39	1.52	4.26	1.55	4.12	1.58
	0	-2	5.29	1.58	5.17	1.61	5.04	1.64	4.89	1.67	4.73	1.70
	5	3	6.06	1.71	5.93	1.73	5.78	1.77	5.61	1.81	5.43	1.85
	7	6	6.40	1.76	6.26	1.79	6.10	1.83	5.92	1.87	5.73	1.91
	10	8	6.94	1.86	6.78	1.88	6.61	1.92	6.42	1.96	6.21	2.00
	15	10	6.33	1.53	6.19	1.55	6.03	1.58	5.86	1.61	5.67	1.65
20	15	6.61	1.34	6.46	1.37	6.29	1.38	6.11	1.41	5.91	1.45	
24	18	6.89	1.28	6.75	1.36	6.50	1.33	6.14	1.32	5.66	1.35	

■ Model: ASHH14KGTH

AFR			m³/h				780					
			Indoor temperature									
			16		18		20		22		24	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
			kW		kW		kW		kW		kW	
	-15	-16	3.57	1.55	3.56	1.53	3.52	1.52	3.51	1.54	3.46	1.57
	-10	-11	4.22	1.57	4.12	1.60	4.02	1.63	3.90	1.66	3.77	1.70
	-5	-7	4.83	1.69	4.72	1.71	4.60	1.75	4.47	1.78	4.33	1.82
	0	-2	5.55	1.82	5.42	1.85	5.29	1.88	5.13	1.93	4.97	1.97
	5	3	6.36	1.98	6.22	2.01	6.06	2.04	5.89	2.08	5.70	2.13
	7	6	6.72	2.04	6.57	2.07	6.40	2.11	6.21	2.15	6.01	2.20
	10	8	7.28	2.14	7.11	2.17	6.93	2.21	6.73	2.25	6.52	2.31
	15	10	6.64	1.76	6.49	1.78	6.33	1.82	6.15	1.85	5.95	1.91
20	15	6.93	1.55	6.77	1.57	6.60	1.60	6.41	1.63	6.20	1.67	
24	18	7.22	1.47	7.08	1.57	6.82	1.54	6.44	1.52	5.94	1.56	

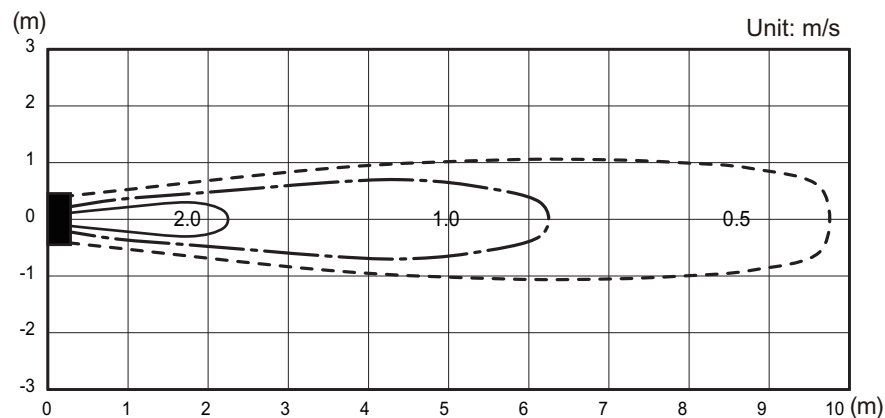
5. Fan performance

5-1. Air velocity distributions

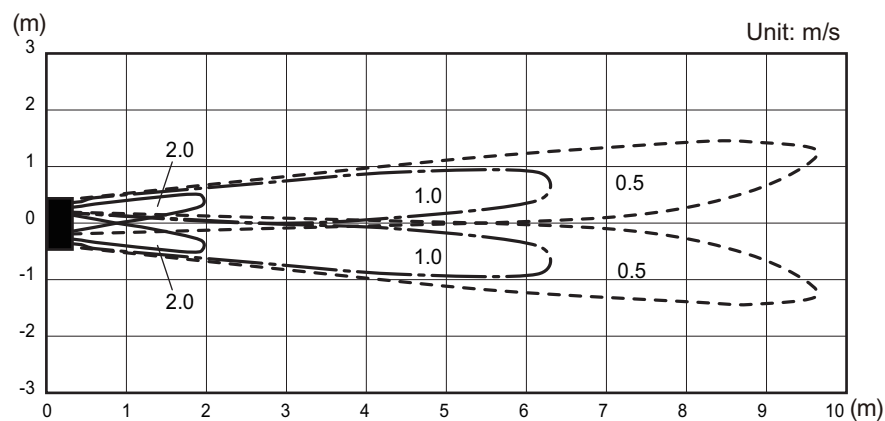
■ Model: ASHH07KGTH

Measuring conditions	Fan speed	Operation mode
	HIGH	FAN

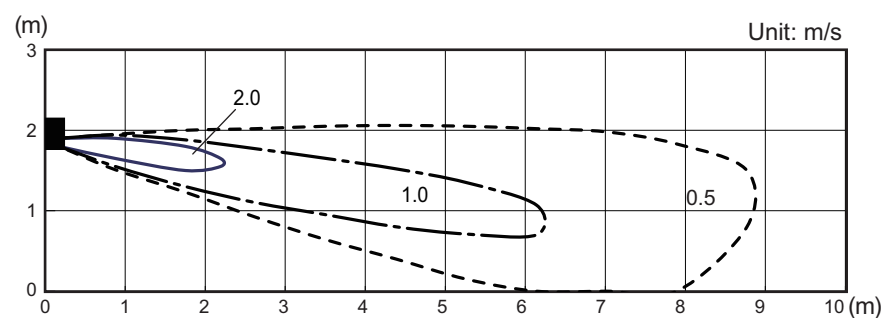
Top view
Horizontal louver: Up
Vertical louver: Center



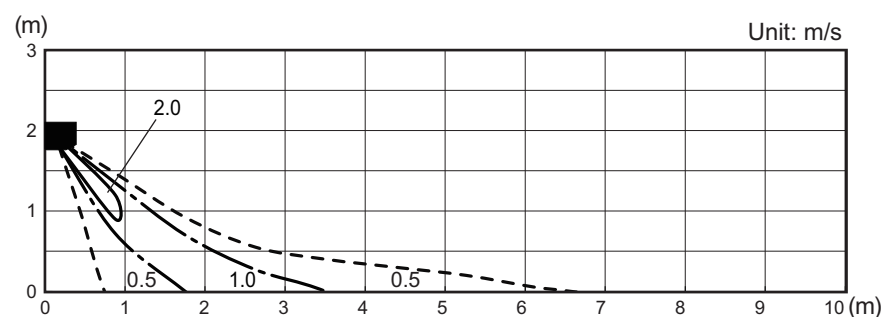
Top view
Horizontal louver: Up
Vertical louver: Left & Right



Side view
Horizontal louver: Up
Vertical louver: Center



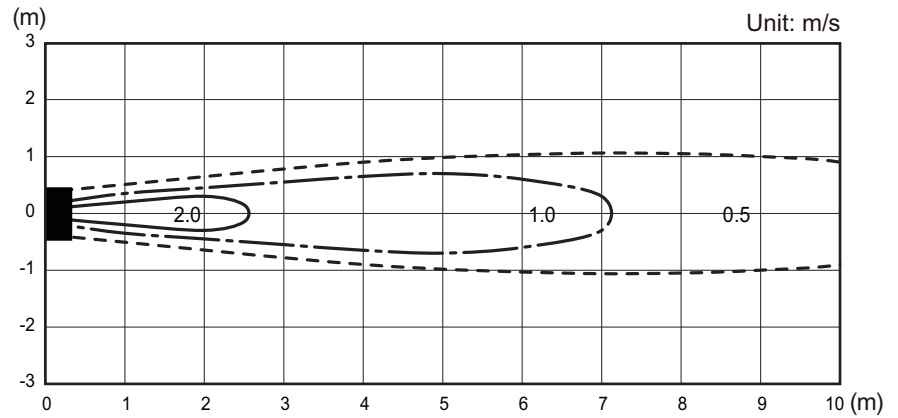
Side view
Horizontal louver: Down
Vertical louver: Center



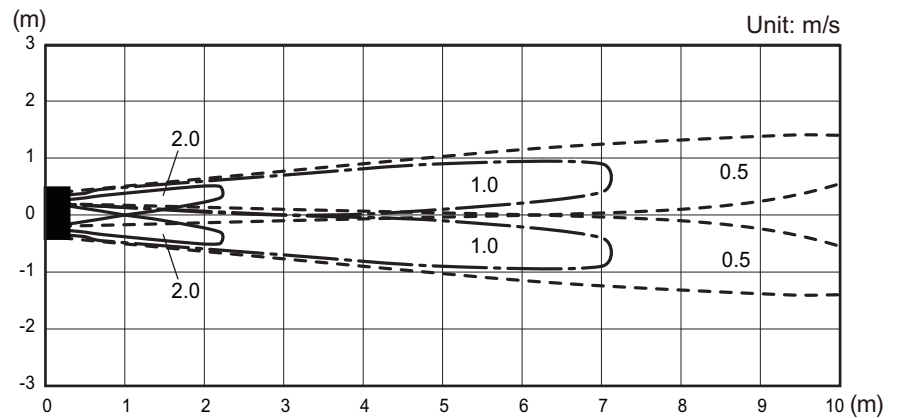
Models: ASHH09KGTH and ASHH12KGTH

Measuring conditions	Fan speed HIGH	Operation mode FAN
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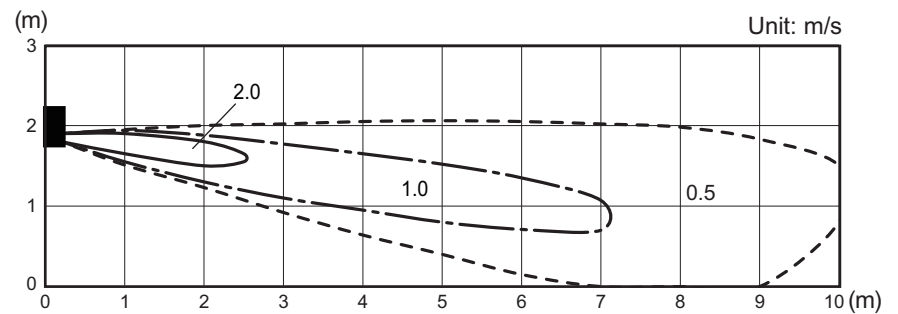
Top view
Horizontal louver: Up
Vertical louver: Center



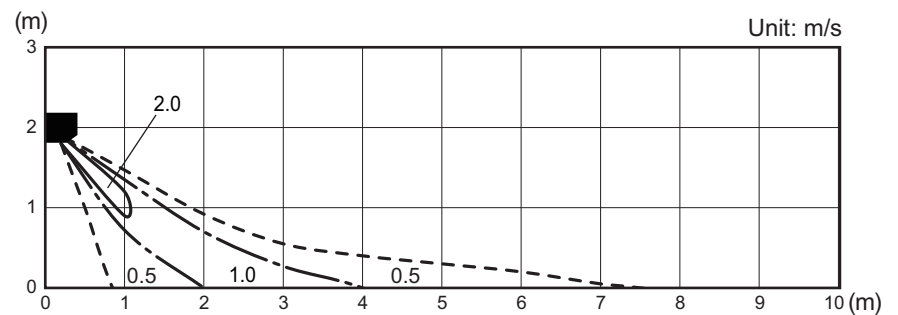
Top view
Horizontal louver: Up
Vertical louver: Left & Right



Side view
Horizontal louver: Up
Vertical louver: Center



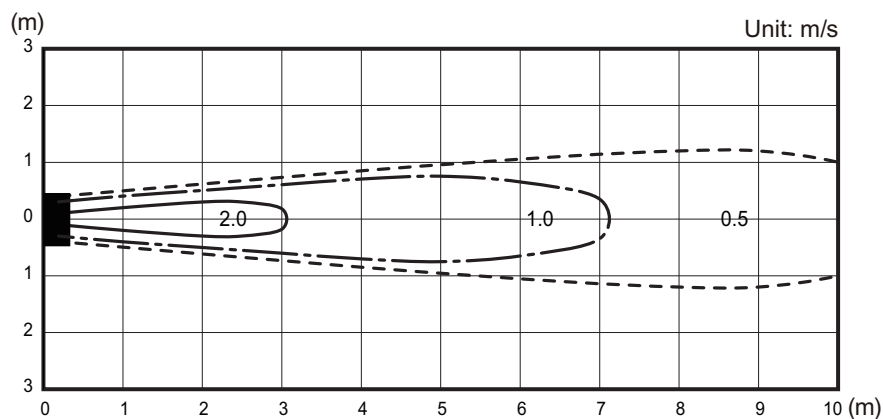
Side view
Horizontal louver: Down
Vertical louver: Center



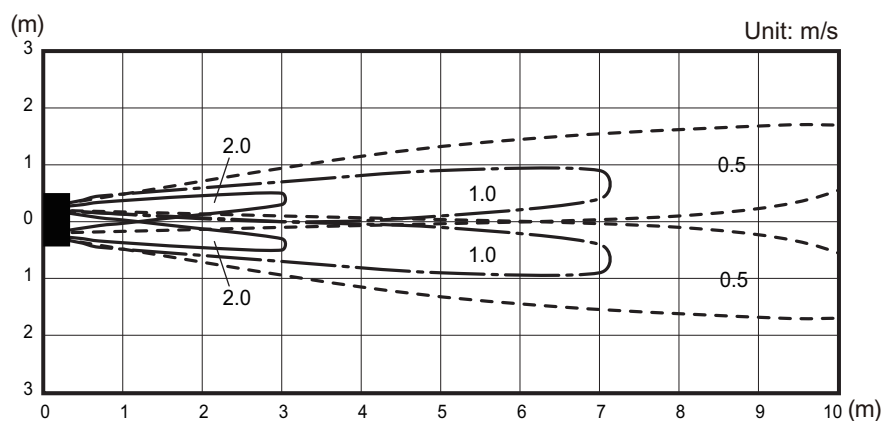
Model: ASHH14KGTH

Measuring conditions	Fan speed	Operation mode
	HIGH	FAN

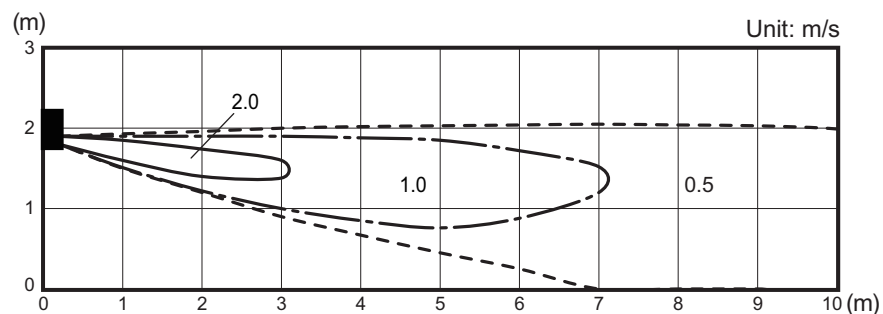
Top view
Horizontal louver: Up
Vertical louver: Center



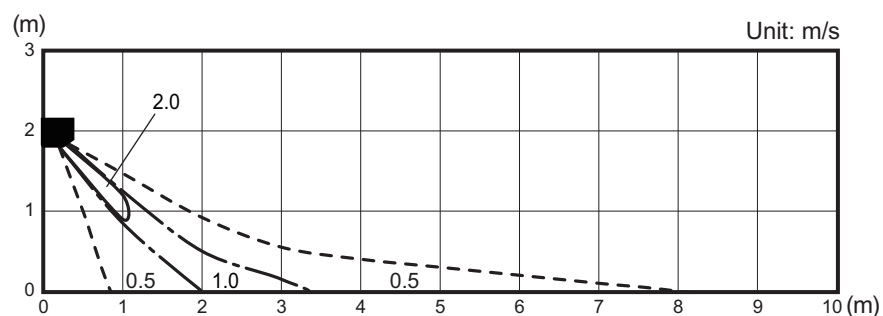
Top view
Horizontal louver: Up
Vertical louver: Left & Right



Side view
Horizontal louver: Up
Vertical louver: Center



Side view
Horizontal louver: Down
Vertical louver: Center



5-2. Airflow

■ Model: ASHH07KGTH

● Cooling

Fan speed	Airflow	
HIGH	m ³ /h	570
	l/s	158
	CFM	336
MED	m ³ /h	500
	l/s	139
	CFM	294
LOW	m ³ /h	420
	l/s	117
	CFM	247
QUIET	m ³ /h	270
	l/s	75
	CFM	159

● Heating

Fan speed	Airflow	
HIGH	m ³ /h	610
	l/s	169
	CFM	359
MED	m ³ /h	530
	l/s	147
	CFM	312
LOW	m ³ /h	450
	l/s	125
	CFM	265
QUIET	m ³ /h	290
	l/s	81
	CFM	171

■ Model: ASHH09KGTH

● Cooling

Fan speed	Airflow	
HIGH	m ³ /h	640
	l/s	178
	CFM	377
MED	m ³ /h	530
	l/s	147
	CFM	312
LOW	m ³ /h	420
	l/s	117
	CFM	247
QUIET	m ³ /h	270
	l/s	75
	CFM	159

● Heating

Fan speed	Airflow	
HIGH	m ³ /h	630
	l/s	175
	CFM	371
MED	m ³ /h	530
	l/s	147
	CFM	312
LOW	m ³ /h	450
	l/s	125
	CFM	265
QUIET	m ³ /h	290
	l/s	81
	CFM	171

■ Model: ASHH12KGTH

● Cooling

Fan speed	Airflow	
HIGH	m ³ /h	680
	l/s	189
	CFM	400
MED	m ³ /h	550
	l/s	153
	CFM	324
LOW	m ³ /h	430
	l/s	119
	CFM	253
QUIET	m ³ /h	260
	l/s	72
	CFM	153

● Heating

Fan speed	Airflow	
HIGH	m ³ /h	750
	l/s	208
	CFM	441
MED	m ³ /h	630
	l/s	175
	CFM	371
LOW	m ³ /h	510
	l/s	142
	CFM	300
QUIET	m ³ /h	320
	l/s	89
	CFM	188

■ Model: ASHH14KGTH

● Cooling

Fan speed	Airflow	
HIGH	m ³ /h	750
	l/s	208
	CFM	441
MED	m ³ /h	590
	l/s	164
	CFM	347
LOW	m ³ /h	450
	l/s	125
	CFM	265
QUIET	m ³ /h	290
	l/s	81
	CFM	171

● Heating

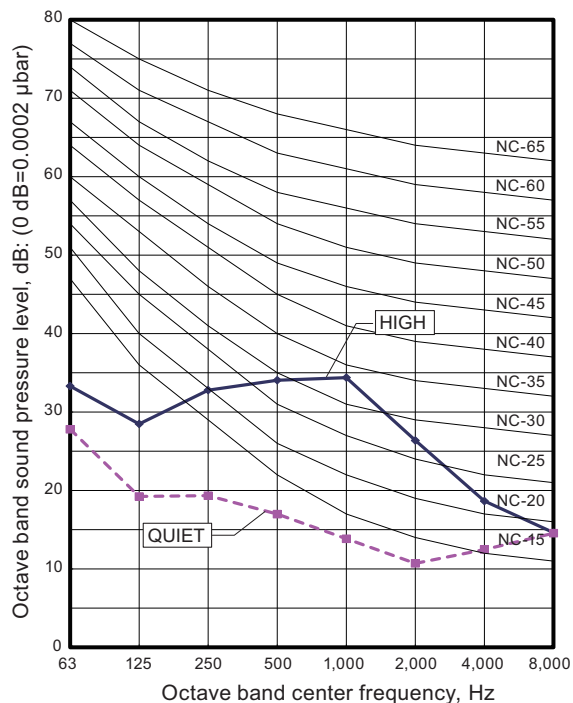
Fan speed	Airflow	
HIGH	m ³ /h	780
	l/s	217
	CFM	459
MED	m ³ /h	700
	l/s	194
	CFM	412
LOW	m ³ /h	510
	l/s	142
	CFM	300
QUIET	m ³ /h	350
	l/s	97
	CFM	206

6. Operation noise (sound pressure)

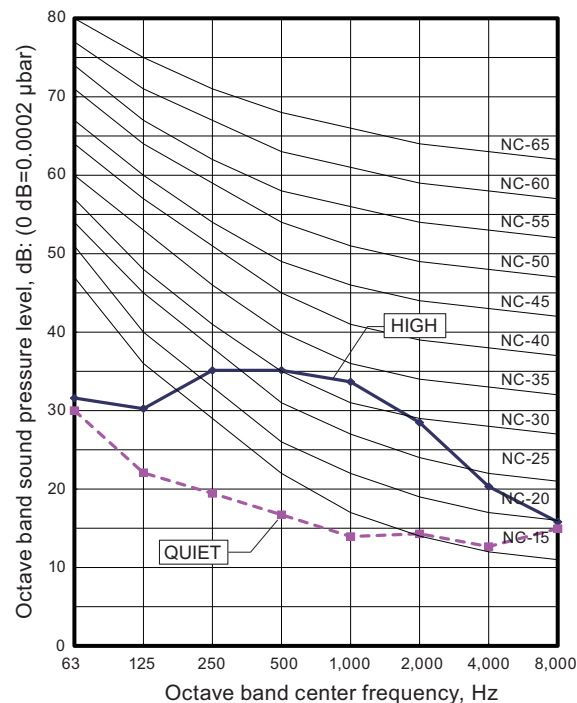
6-1. Noise level curve

■ Model: ASHH07KGTH

● Cooling

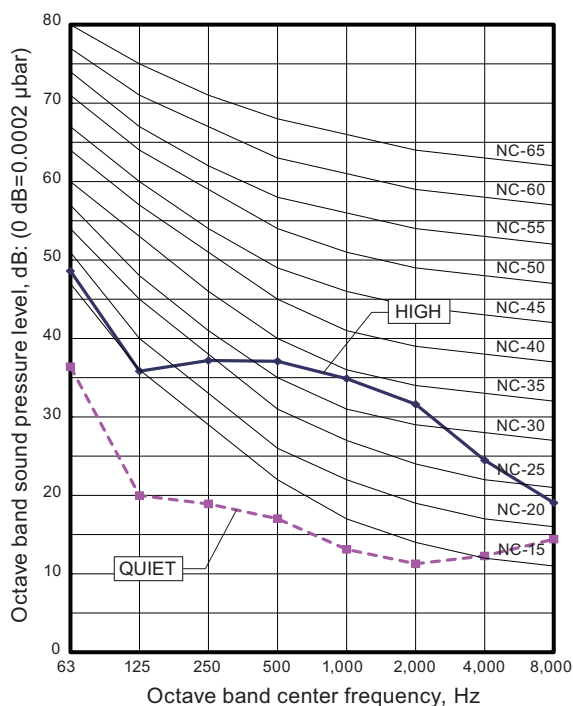


● Heating

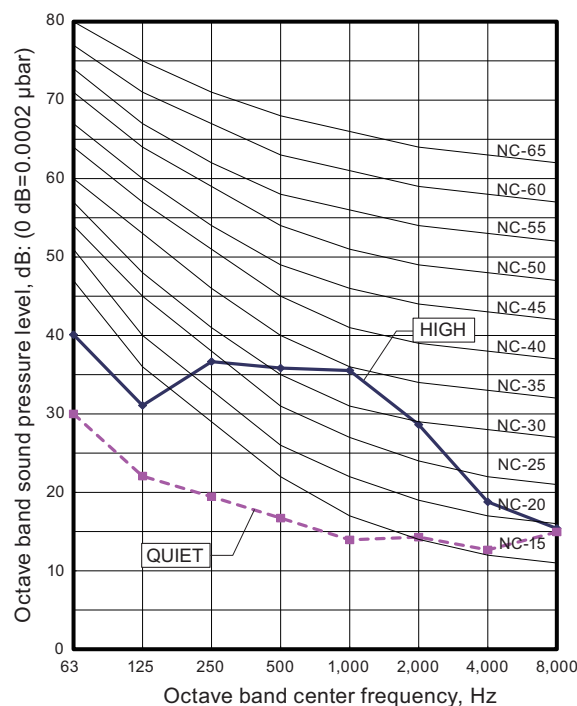


■ Model: ASHH09KGTH

● Cooling

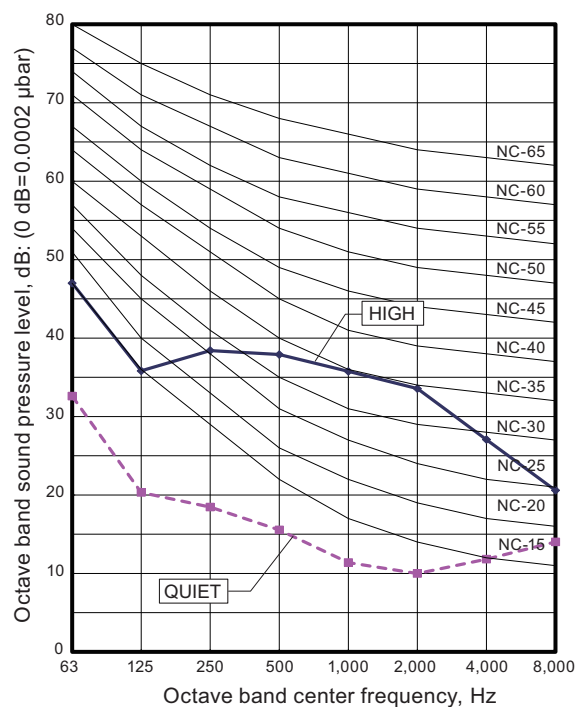


● Heating

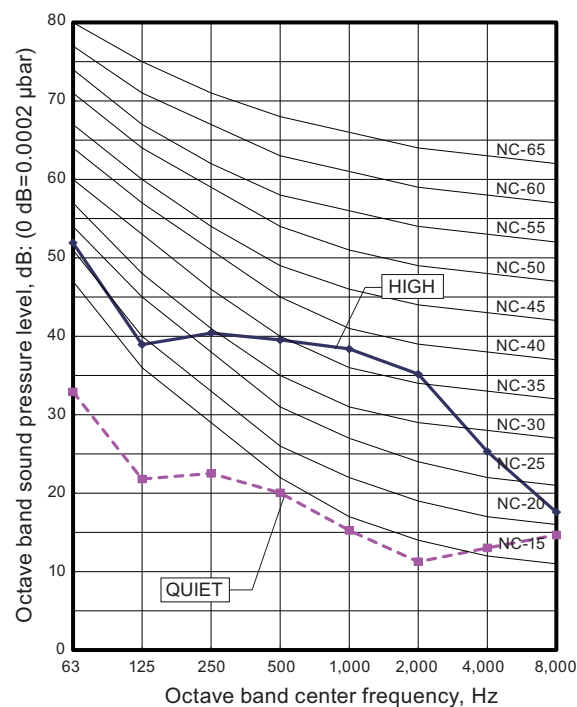


Model: ASHH12KGTH

Cooling

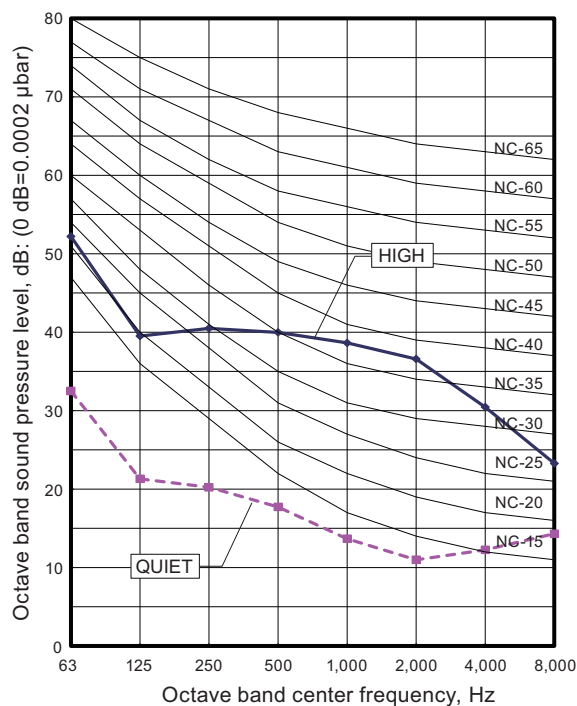


Heating

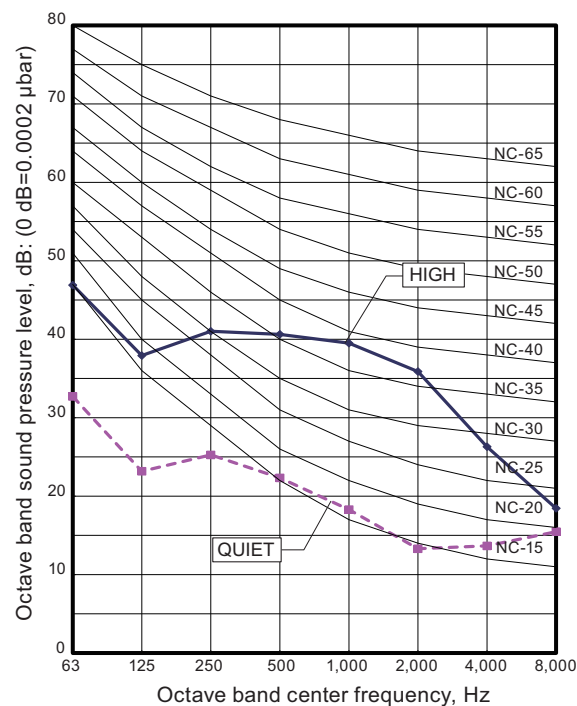


Model: ASHH14KGTH

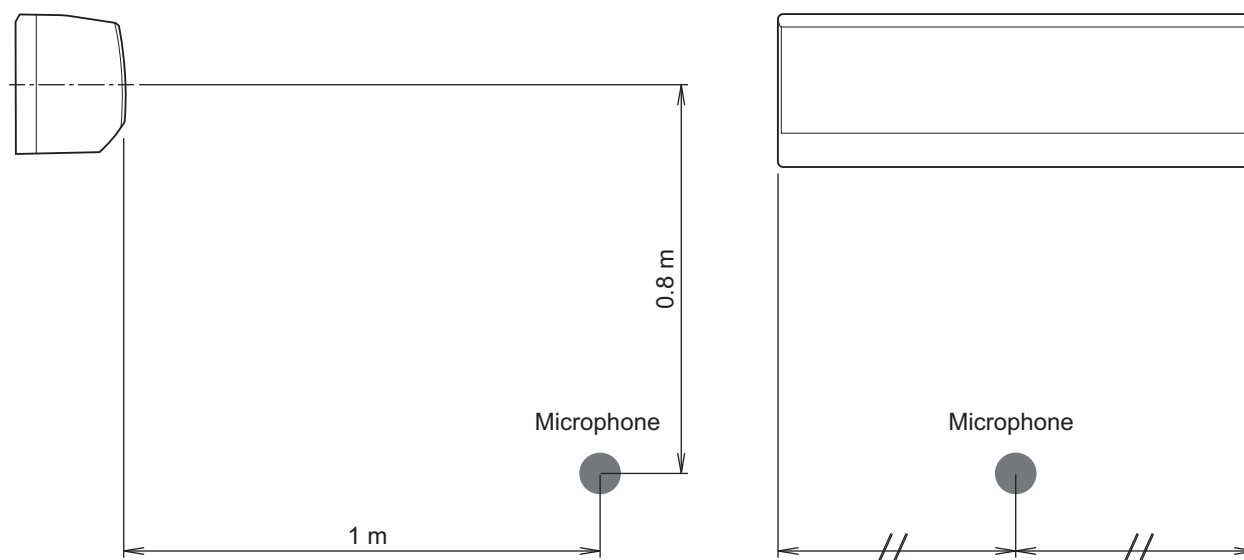
Cooling



Heating



6-2. Sound level check point



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

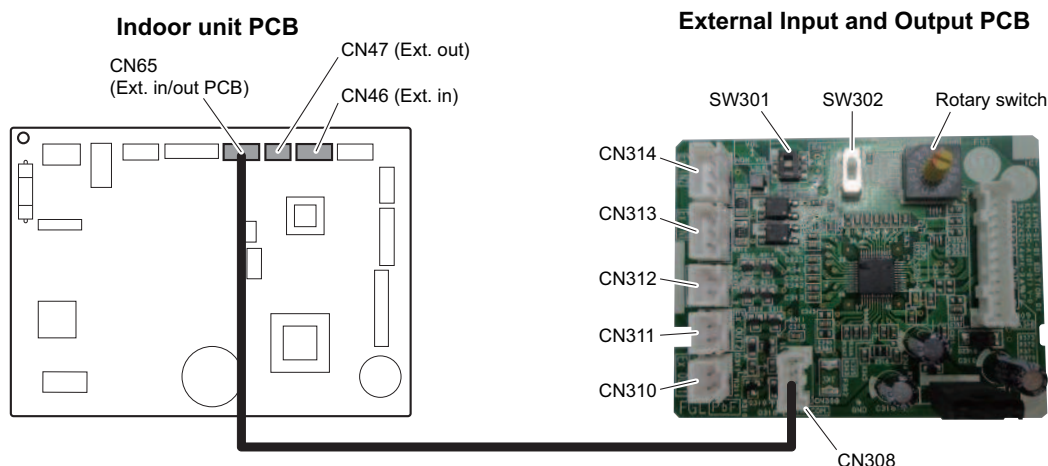
7. Safety devices

Type of protection	Protection form		Model	
			ASHH07KGTH	ASHH09KGTH
Circuit protection	Current fuse (PCB*)		250 V, 3.15 A	
Fan motor protection	Thermistor protection	Activate	110 ±15°C Fan motor speed down	
		Reset	110 ±15°C Fan motor speed recover	

Type of protection	Protection form		Model	
			ASHH12KGTH	ASHH14KGTH
Circuit protection	Current fuse (PCB*)		250 V, 3.15 A	
Fan motor protection	Power IC thermal shutdown protection	Activate	125 ±10°C Fan motor stop	
		Reset	100 ±10°C Fan motor restart	

*PCB: Printed Circuit Board

8. 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		
			Indoor unit fan operation 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.

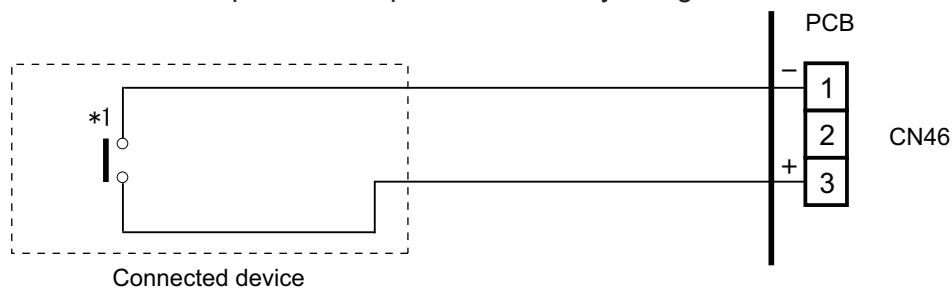
8-1. External input

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

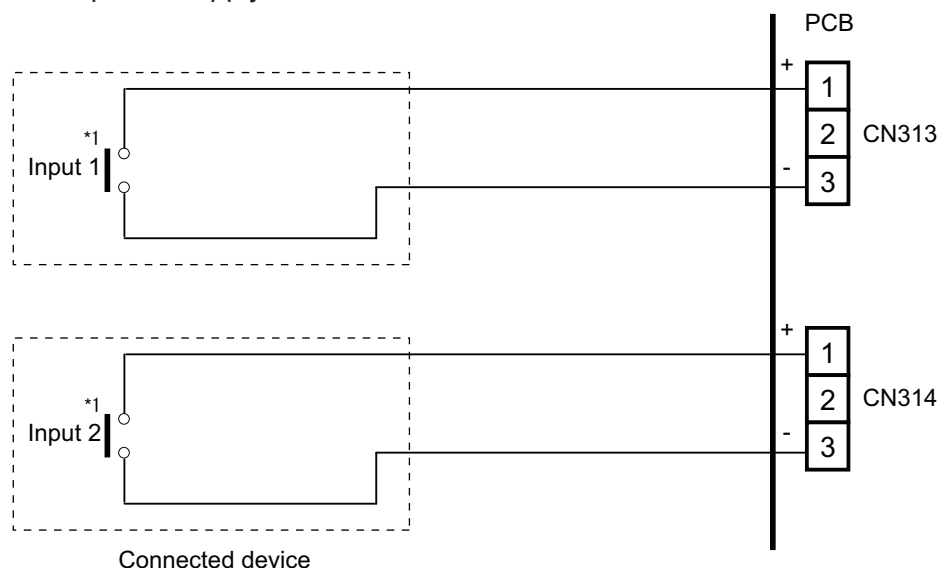
The indoor unit Operation/Stop can be set by using the input connector on the PCB.

• Input select

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

– Dry contact

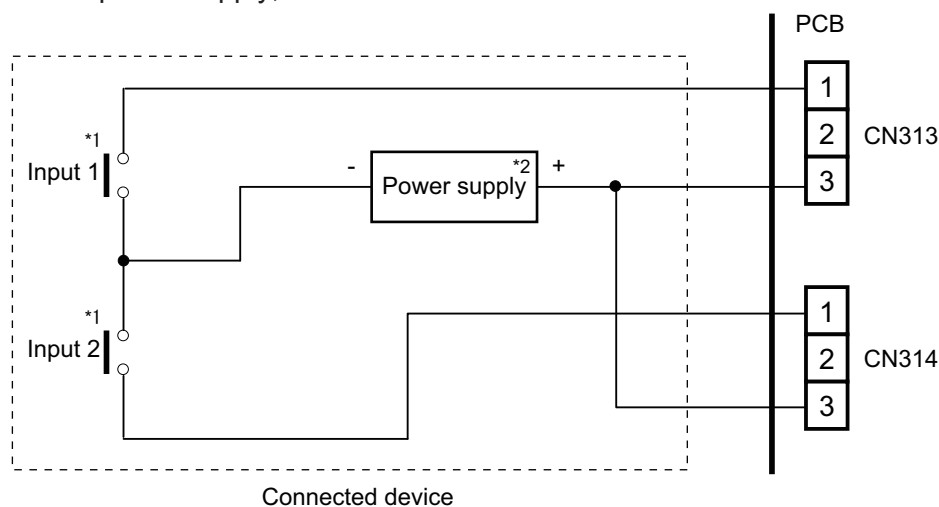
In case of internal power supply, set the slide switch of SW301 to "NON VOL" side.



*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.



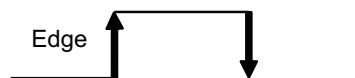
*1: The switches can be used on the following condition: DC 12 V to 24 V, 1 mA to 15 mA.

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

■ Input signal type

- **Indoor unit**

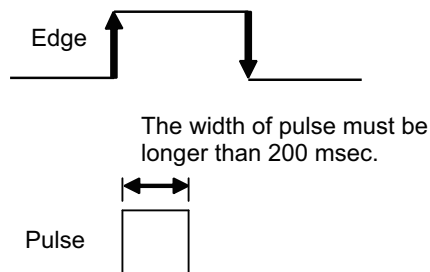
Input signal type is only "Edge".



- **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

8-2. External output

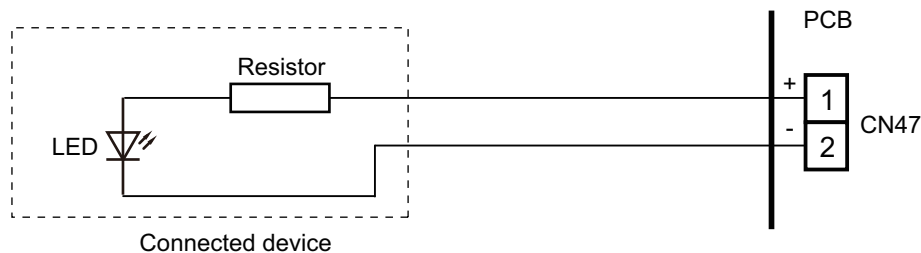
Use an external output cable with appropriate external dimension, depending on the number of cables to be installed.

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.

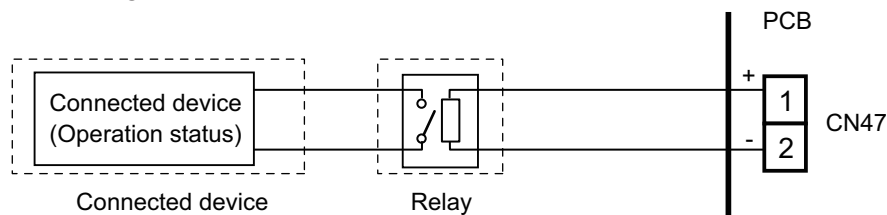
- **When indicator, etc. are connected directly**

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



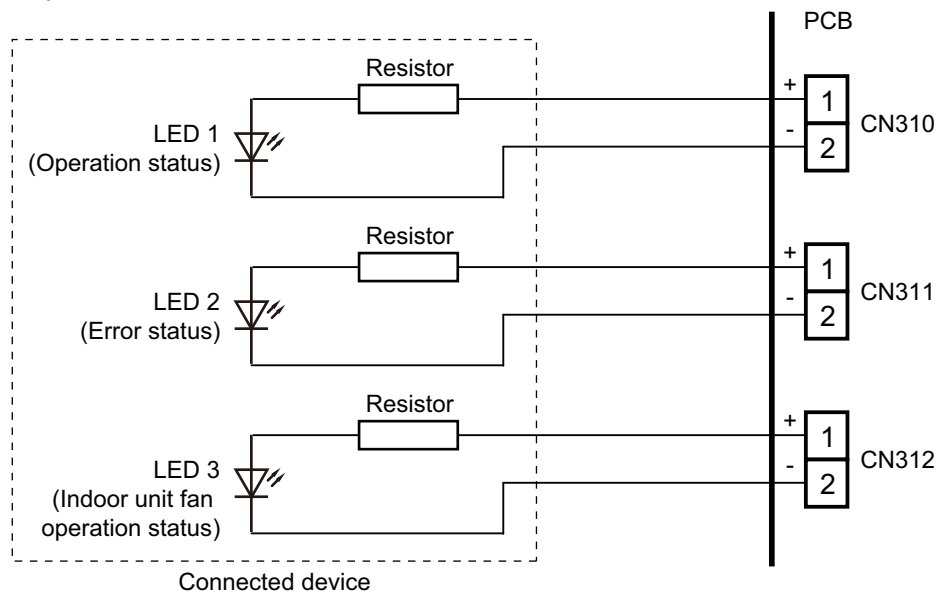
- **When connecting with a device equipped with a power supply**

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

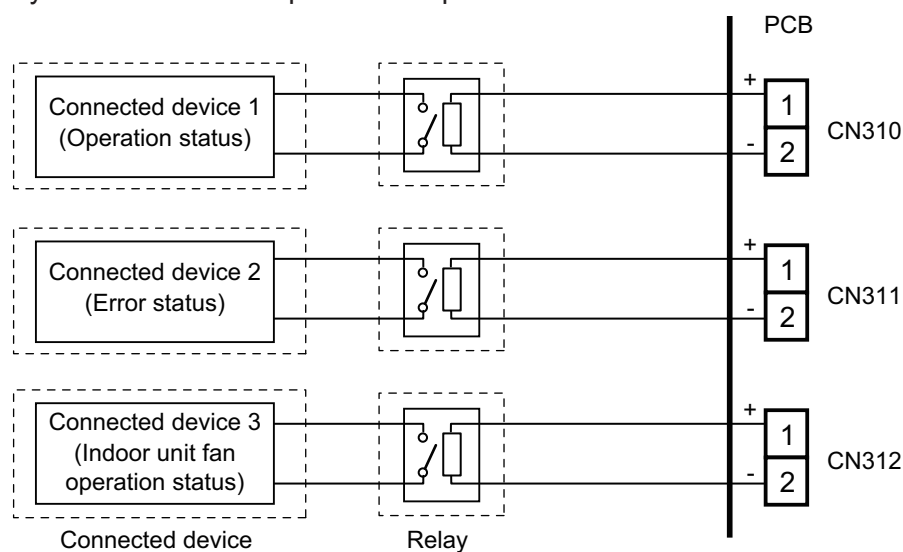


External Input and Output PCB

- 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".



8-3. 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:

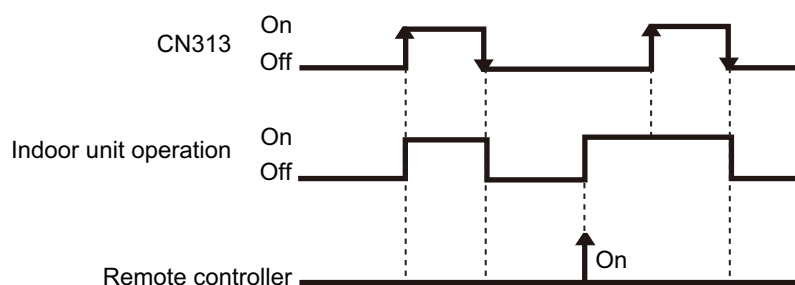
- When the rotary switch is selected to "1", the operation of the connector input of the indoor unit and the External Input and Output PCB input are the same. The operation content depends on the setting of function setting number 46.
- *: The external input other than "Operation/Stop" is available only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

8-4. Details of control input function

■ Operation/Stop mode 1

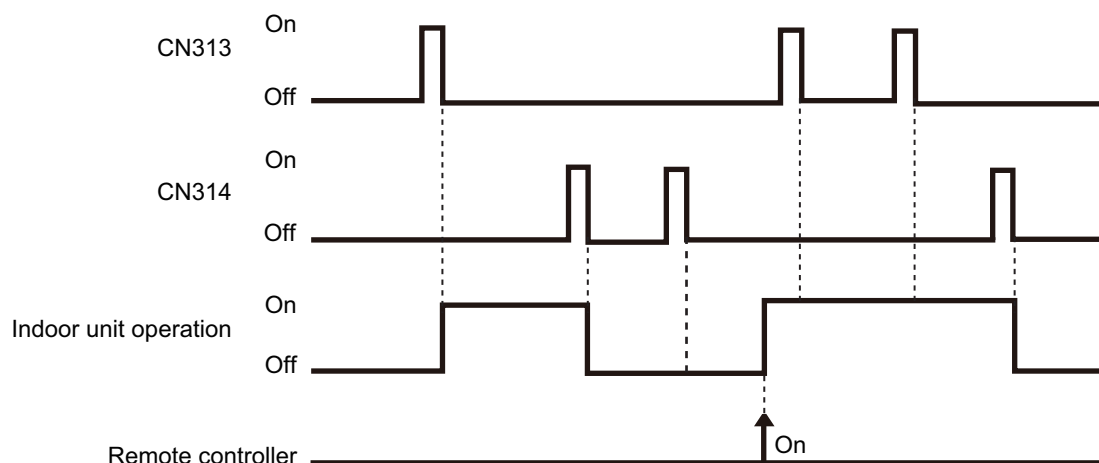
- In the case of "Edge" input

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



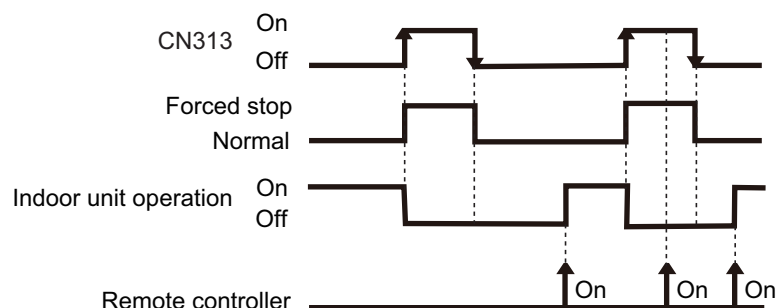
NOTES:

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

■ Forced stop

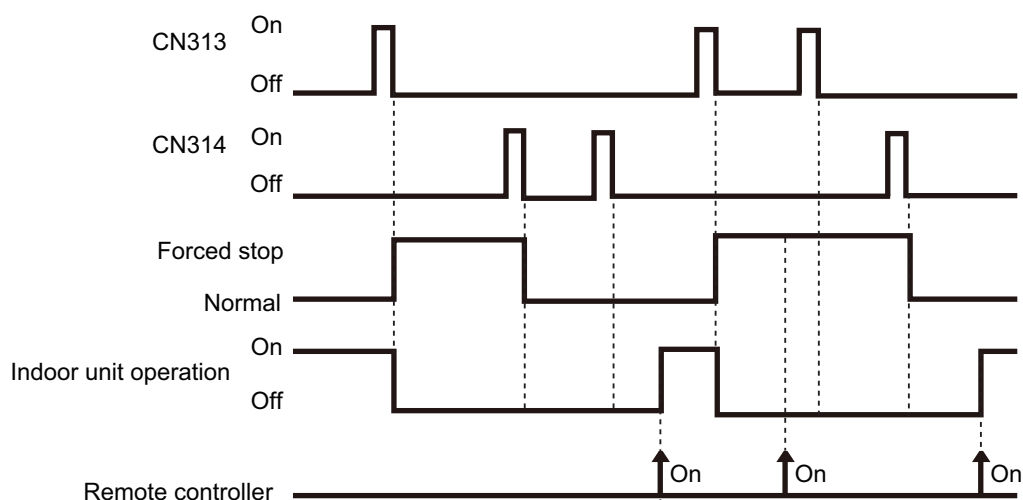
- In the case of "Edge" input

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)



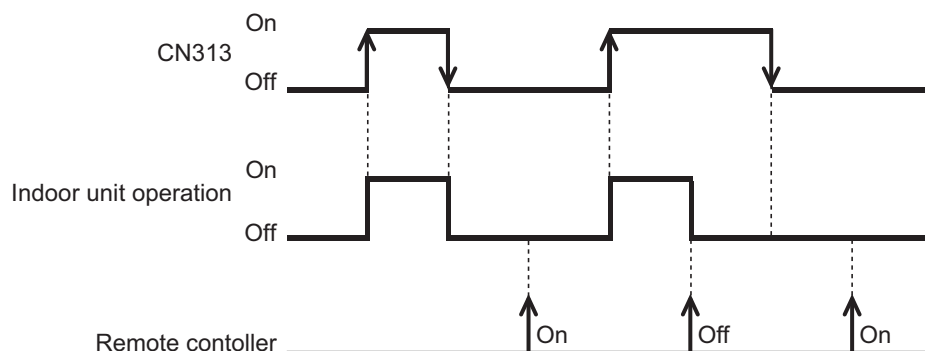
NOTES:

- 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

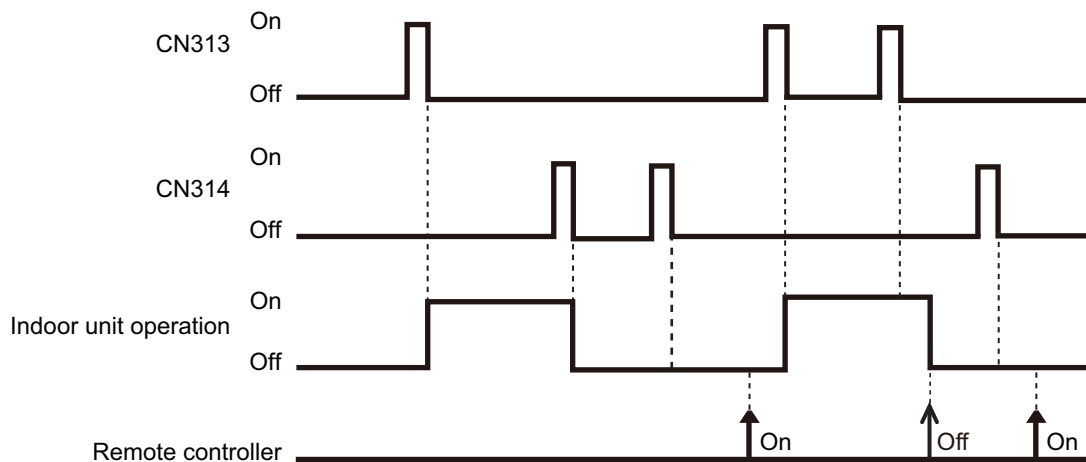
- In the case of “Edge” input

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

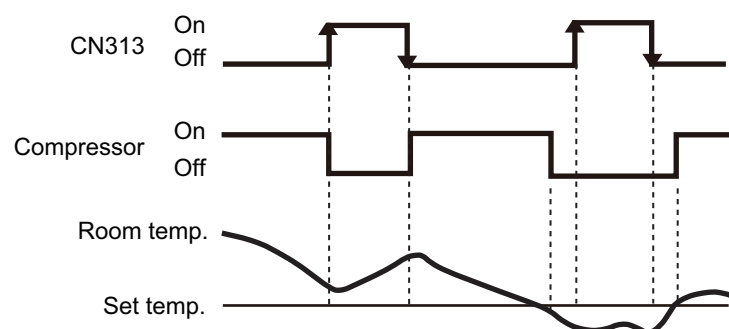
Function setting	External Input and Output PCB		External input		Input signal	Command
	Rotary switch	SW302				
46-03	1	Pulse	External Input and Output PCB	CN313	Pulse	Operation (R.C. enabled)
				CN314		Stop (R.C. disabled)



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

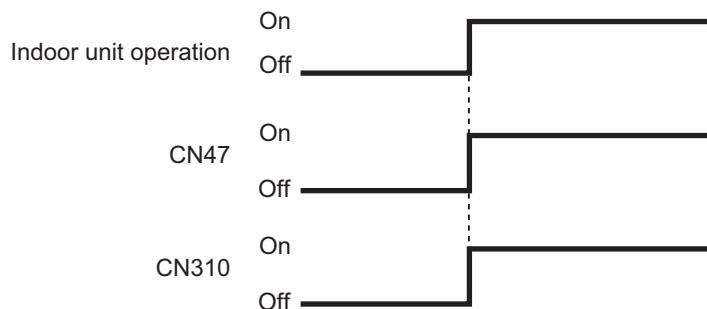


8-5. Details of control output function

■ 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

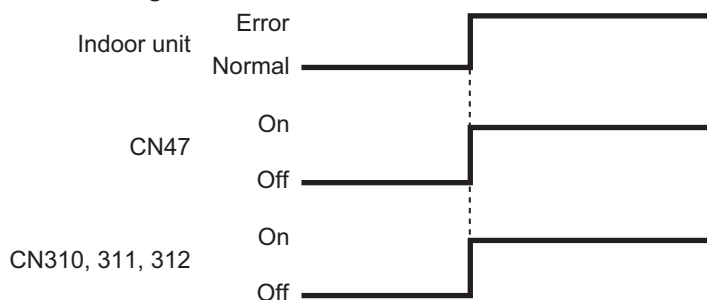
The output is low when the unit is stopped.



■ 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

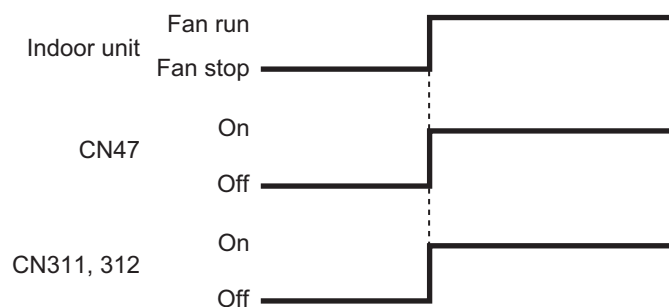
The output is on when an error is generated for the indoor unit.



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.



9. Group connection

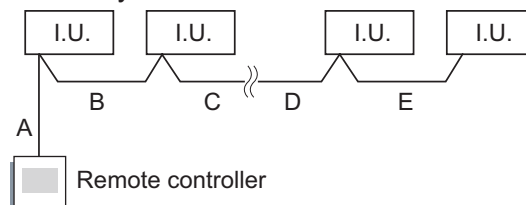
NOTE: Group control cannot be used together with WLAN Adapter.

Installation procedure for group control system:

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

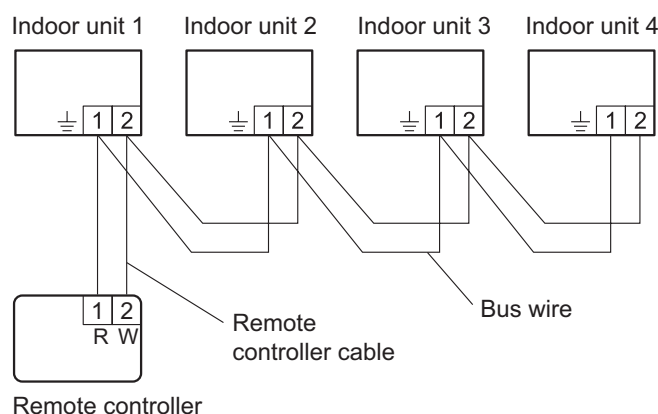
NOTE: When different type of indoor units (such as wall-mounted type and cassette type, cassette type and duct type, or other combinations) are connected using group control system, some functions may no longer be available.

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



A, B, C, D, E: Remote controller cable	
Wiring length limitation	$A + B + C + D + E \leq 500 \text{ m}$

Example of wiring method



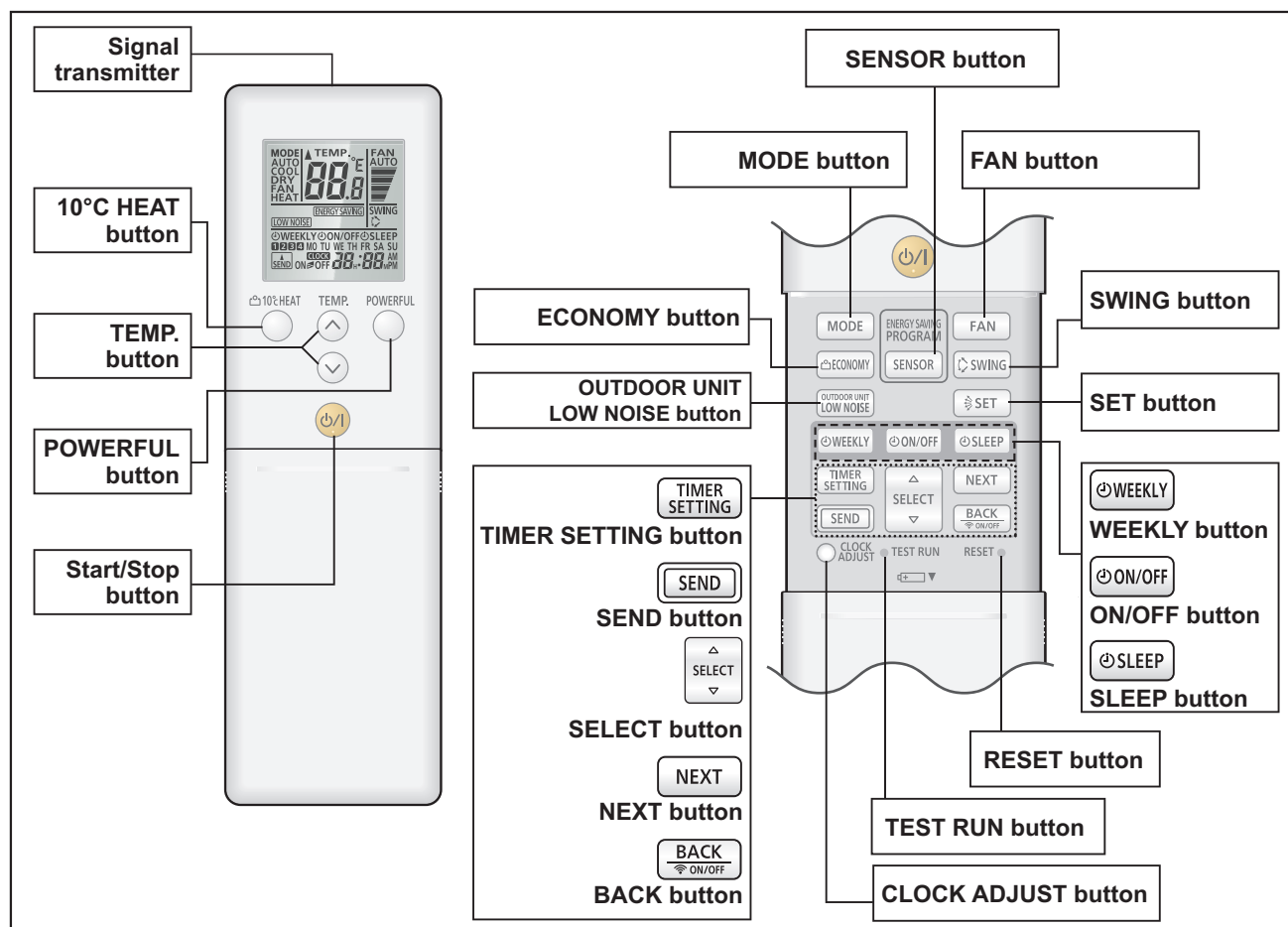
2. Automatic address setting

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.

10. Remote controller

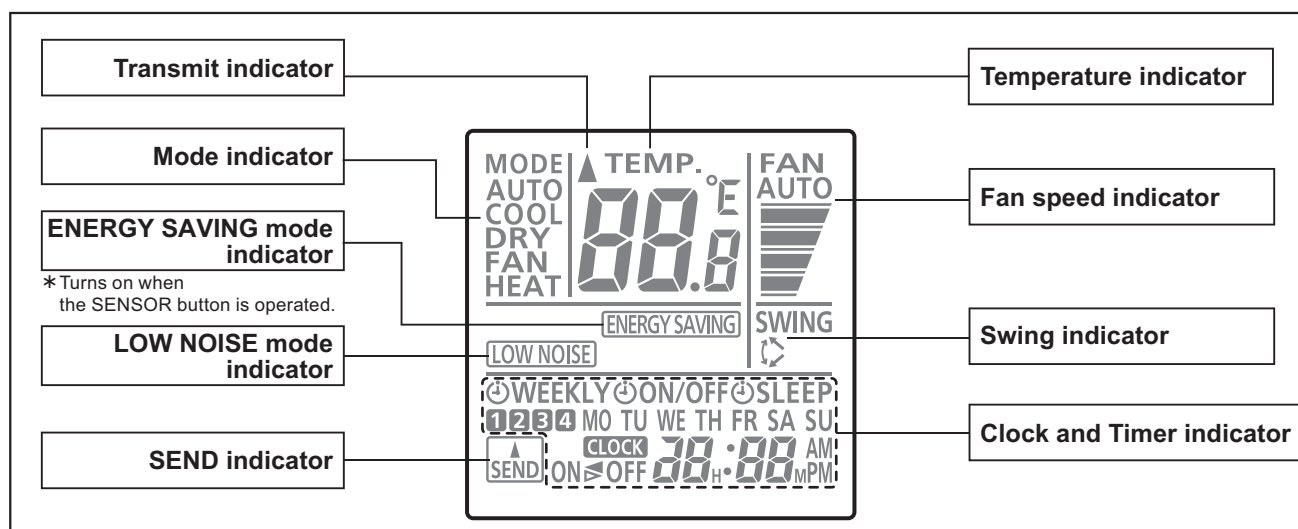
10-1. Wireless remote controller

Overview



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

Display panel

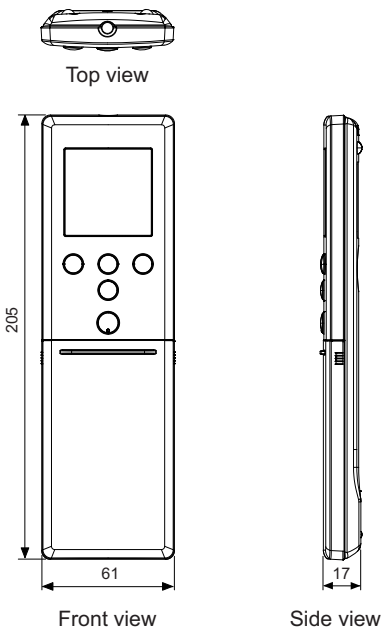


To facilitate explanation, the accompanying illustration has been drawn to show all possible indicators; in actual operation, however, the display will only show those indicators appropriate to the current operation.

■ Specifications

● Controller

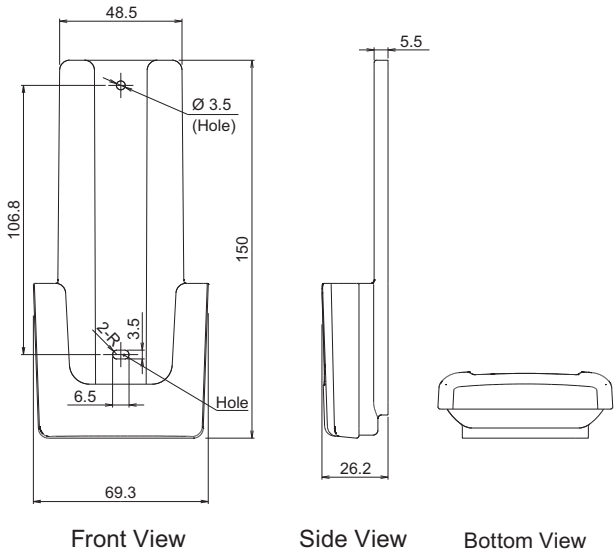
Unit: mm



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

11. 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.

11-1. 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.

Function number
Setting value



⚠ 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)	

11-2. 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.

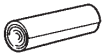
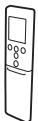
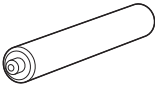
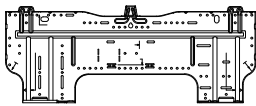
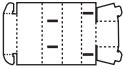
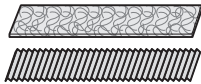


NOTES:

- 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.

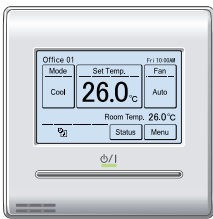
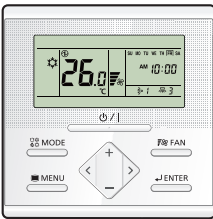
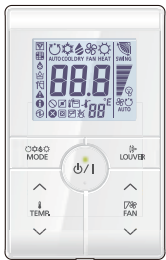
12. Accessories

12-1. Models: ASHH07KGTH, ASHH09KGTH, ASHH12KGTH, and ASHH14KGTH

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

13. Optional parts

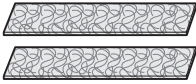
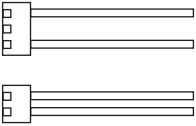
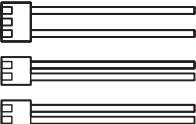
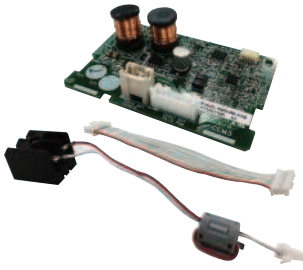
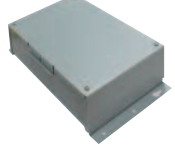
13-1. Controllers

Exterior	Part name	Model name	Summary
	Wired Remote Controller (Touch Panel)	UTY-RVRG	Remote controller that provides the functions you need in a sleek design that uniquely transforms itself to blend with any interior. Wire type: Non-polar 2-wire Optional Communication Kit is necessary for installation. Connecting point: CN13 on Main PCB via Communication Kit.
	Wired Remote Controller	UTY-RNRGZ*	Easy finger touch operation with LCD panel. Backlit LCD enables easy operation in a dark room. Wire type: Non-polar 2-wire Optional Communication Kit is necessary for installation. Connecting point: CN13 on Main PCB via Communication Kit.
	Wired Remote Controller	UTY-RLRG	High visibility and easy operation. Room temperature can be accurately controlled using the thermo sensor. Wire type: Non-polar 2-wire Optional Communication Kit is necessary for installation. Connecting point: CN13 on Main PCB via Communication Kit.
	Compact Wired Remote Controller	UTY-RCRGZ1	Compact body and easy operation. Room temperature can be accurately controlled using the thermo sensor. Wire type: Non-polar 2-wire Optional Communication Kit is necessary for installation. Connecting point: CN13 on Main PCB via Communication Kit.
	Simple Remote Controller	UTY-RSRG	Compact remote controller concentrates on the basic functions such as Start/Stop, fan control, temperature setting, and operation mode. Wire type: Non-polar 2-wire Optional Communication Kit is necessary for installation. Connecting point: CN13 on Main PCB via Communication Kit.
	Simple Remote Controller	UTY-RHRG	Compact remote controller concentrates on the basic functions such as Start/Stop, fan control, and temperature setting. Wire type: Non-polar 2-wire Optional Communication Kit is necessary for installation. Connecting point: CN13 on Main PCB via Communication Kit.

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.

13-2. 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 is necessary for installation. 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
	WLAN Adapter	UTY-TFSXH3	Remotely manage an air conditioning system using mobile devices such as smartphones and tablets. Appropriate application for each region is required to use this option. For details, contact FGL sales company. Connecting point: CN75 on Main PCB via USB connector
	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. Connecting point: CN13 on Main PCB via Communication Kit.
	Network Converter (AC power supply)	UTY-VTGXV	This converter is required when connecting single split system to VRF network system. Connecting point: CN13 on Main PCB via Communication Kit.

Exterior	Part name	Model name	Summary
	External Switch Controller	UTY-TERX	Air conditioner switching can be controlled by connecting other external sensor switches. Connecting point: CN13 on Main PCB via Communication Kit.

Part 2. OUTDOOR UNIT

SINGLE TYPE:

AOHH07KGCG

AOHH09KGCG

AOHH12KGCG

AOHH14KGCG

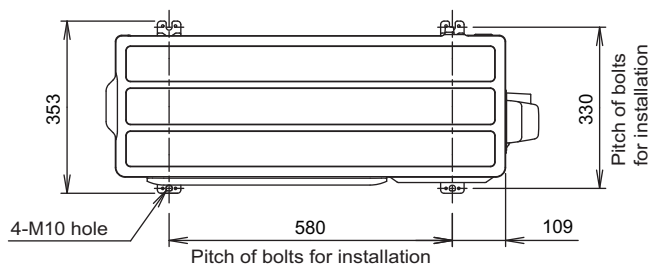
1. Specifications

Type				Inverter, Heat pump				
Model name				AOHH07KGCG	AOHH09KGCG	AOHH12KGCG	AOHH14KGCG	
Power supply				230 V~ 50 Hz				
Power supply intake				Outdoor unit				
Available voltage range				198—264 V				
Starting current			A	2.9	3.2	4.5	6.7	
Fan	Airflow rate	Cooling	m³/h	1,390	1,480	1,800		
		Heating		1,350	1,420	1,690		
	Type × Qty			Propeller fan × 1				
Motor output			W	23				
Sound pressure level*		Cooling	dB (A)	42	44	50		
		Heating		43	45	50		
Sound power level		Cooling		56	58	65		
		Heating		56	58	66		
Heat exchanger type		Dimensions (H × W × D)	mm	Main 1: 504 × 888 × 18.19 Main 2: 504 × 510 × 18.19		Main 1: 504 × 881 × 18.19 Main 2: 504 × 801 × 18.19		
		Fin pitch		Main 1: 1.3 Main 2: 1.3				
		Rows × Stages		Main 1: 1 × 24 Main 2: 1 × 24				
		Pipe type		Copper tube				
		Fin type		Type (Material)	Aluminum			
				Surface treatment	PC fin			
Compressor		Type		DC rotary				
		Motor output	W	900				
Refrigerant		Type (Global warming potential)		R32 (675)				
		Charge	g	750		850		
Refrigerant oil		Type		POE (RB68A)				
		Amount	cm³	340				
Enclosure		Material		Steel sheet				
		Color		Beige Approximate color of Munsell 10YR 7.5/1.0				
Dimensions (H × W × D)		Net	mm	542 × 799 × 290				
		Gross		602 × 940 × 375				
Weight		Net	kg	30		31	32	
		Gross		34		35	36	
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: 5.0 m, Height difference: 0 m. (Between outdoor unit and indoor unit.) - 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.								

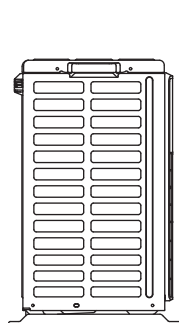
2. Dimensions

2-1. Models: AOHH07KGCG, AOHH09KGCG, AOHH12KGCG, and AOHH14KGCG

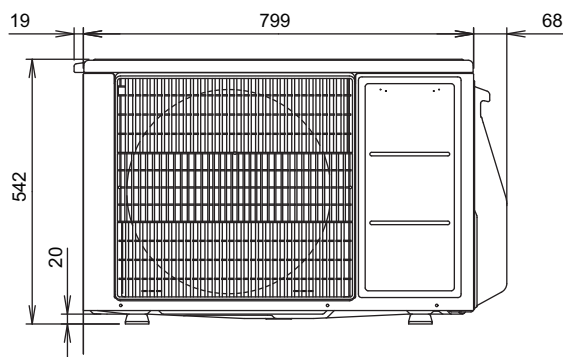
Unit: mm



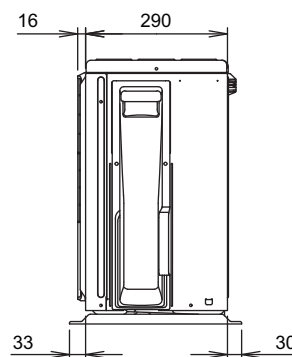
Top view



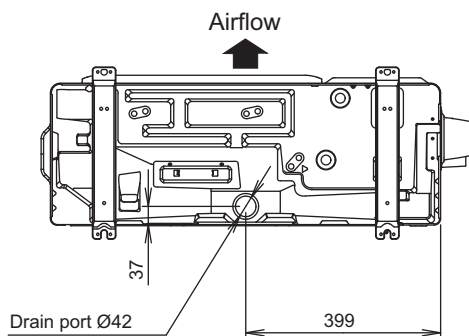
Side view



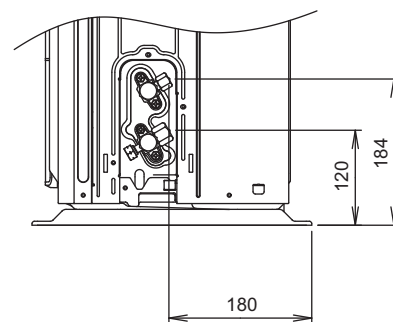
Front view



Side view



Bottom view



Side view (Valve part)

3. Installation space

3-1. Models: AOHH07KGCG, AOHH09KGCG, AOHH12KGCG, and AOHH14KGCG

■ Space requirement

Provide sufficient installation space for product safety.

⚠ CAUTION

Keep the space shown in the installation examples.

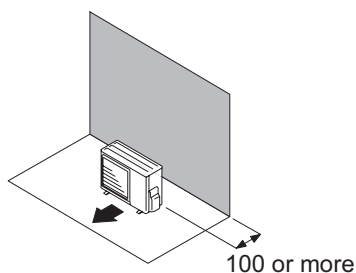
If the installation is not performed accordingly, it could cause a short circuit and result in a lack of operating performance.

● Single outdoor unit installation

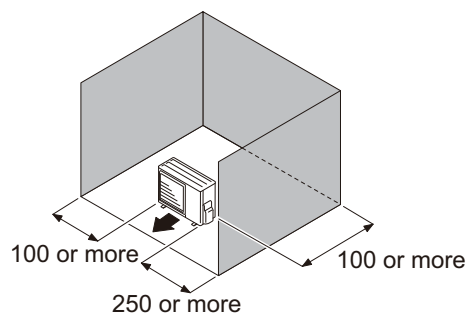
- When the upper space is open:

Unit: mm

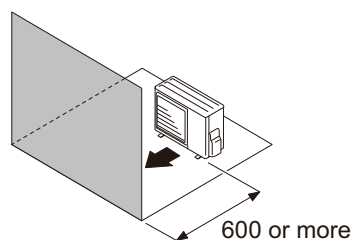
Obstacles at rear only



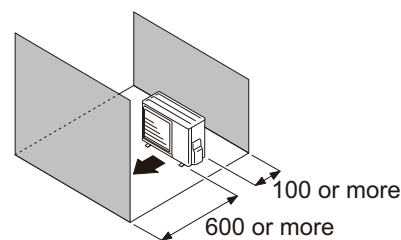
Obstacles at rear and sides



Obstacles at front



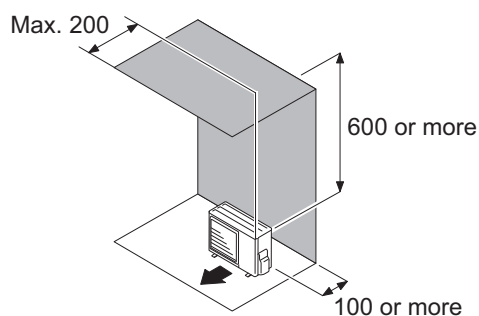
Obstacles at front and rear



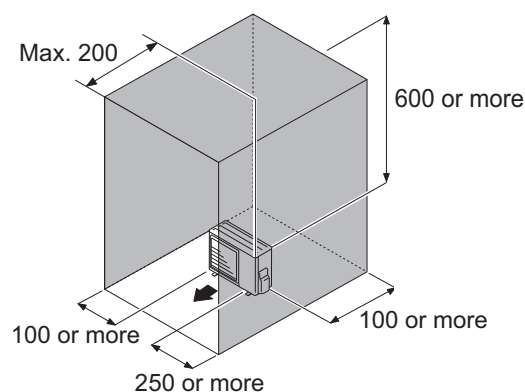
- When an obstruction in the upper space:

Unit: mm

Obstacles at rear and above



Obstacles at rear, sides, and above



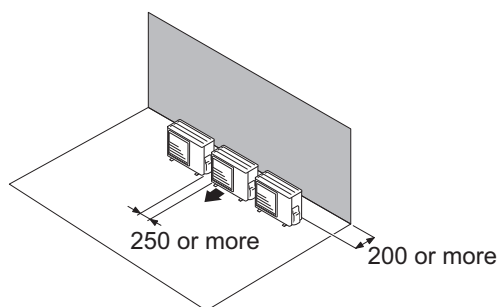
● Multiple outdoor unit installation

- 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:”**.

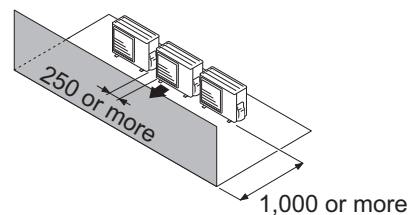
- **When the upper space is open:**

Unit: mm

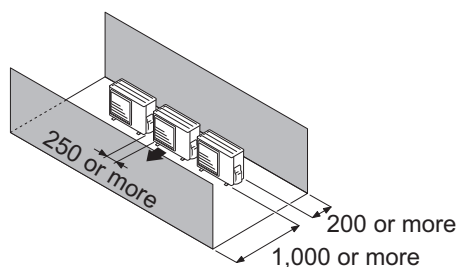
Obstacles at rear only



Obstacles at front only



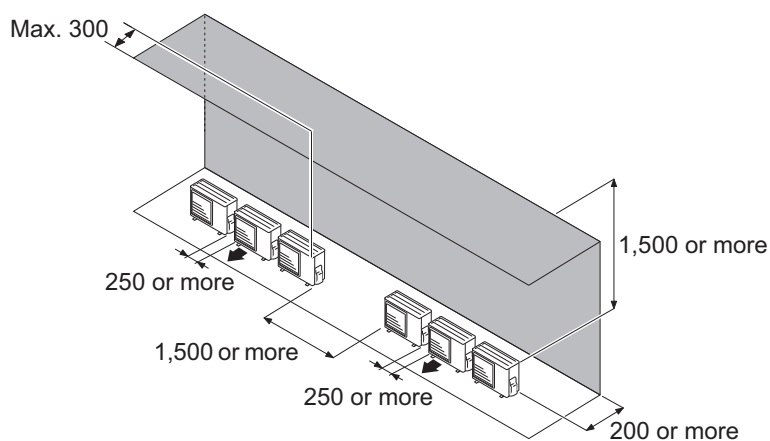
Obstacles at front and rear



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

Unit: mm

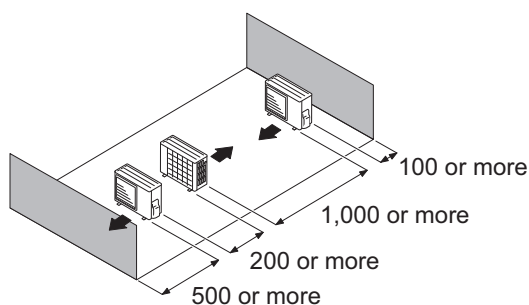
Obstacles at rear and above.



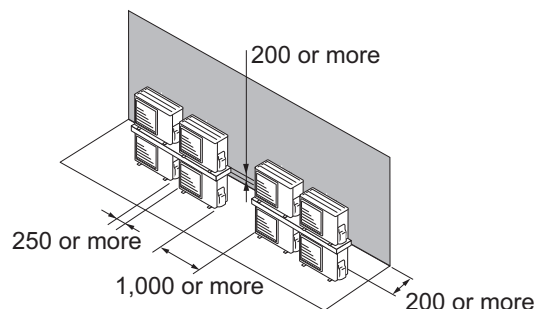
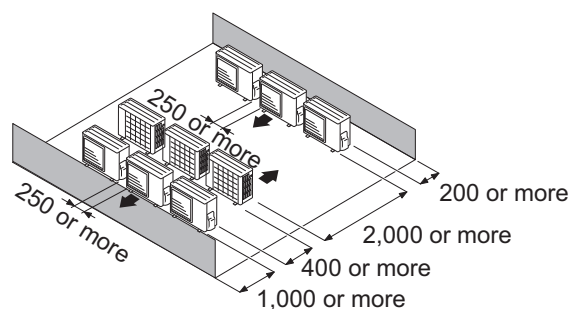
● Outdoor units installation in multi-row

Unit: mm

Single parallel unit arrangement



Multiple parallel unit arrangement

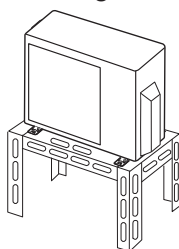


NOTES:

- 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.

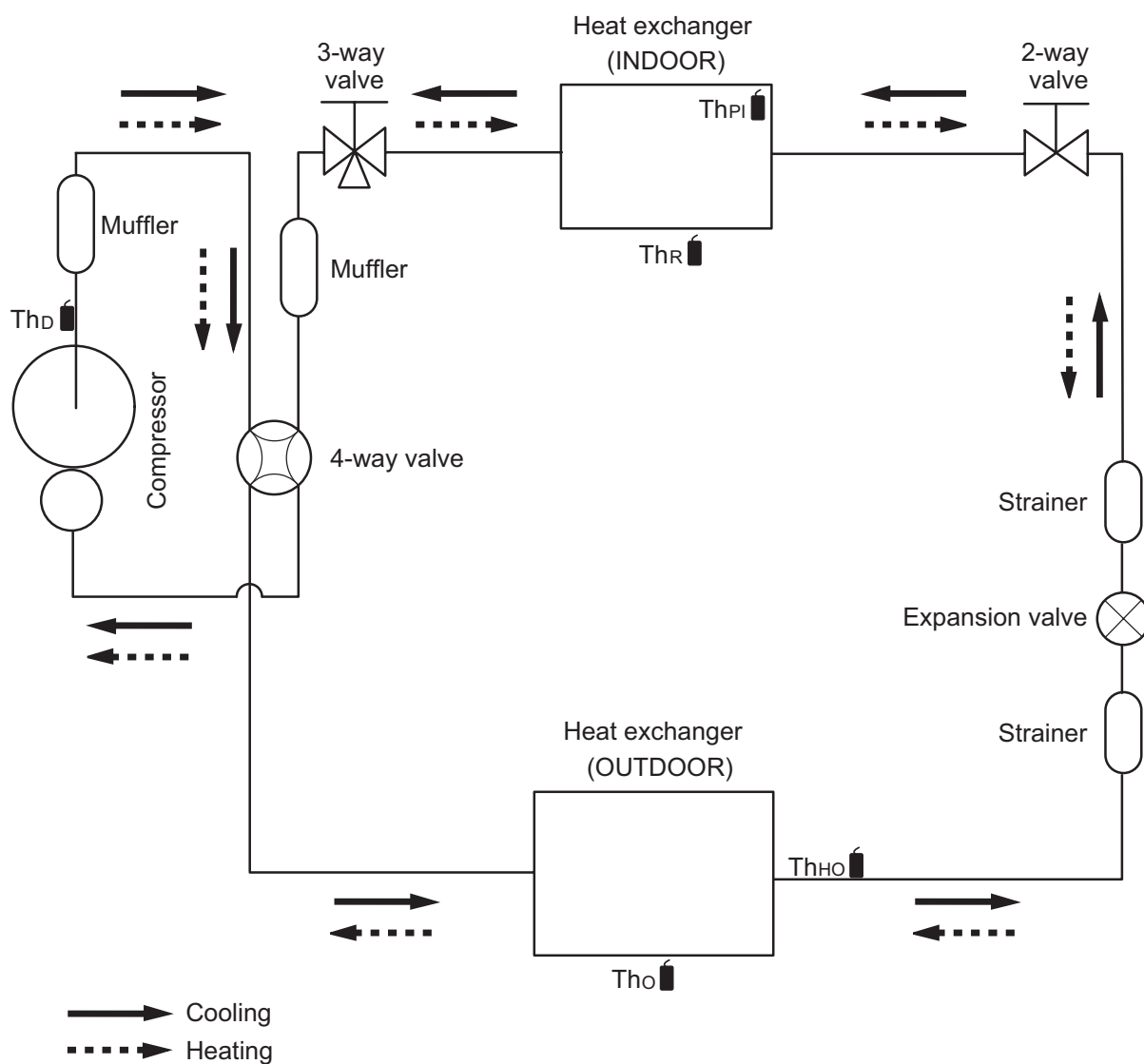
⚠ CAUTION

- 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: AOHH07KGCG, AOHH09KGCG, AOHH12KGCG, and AOHH14KGCG



ThD : Thermistor (Discharge temperature)

ThO : Thermistor (Outdoor temperature)

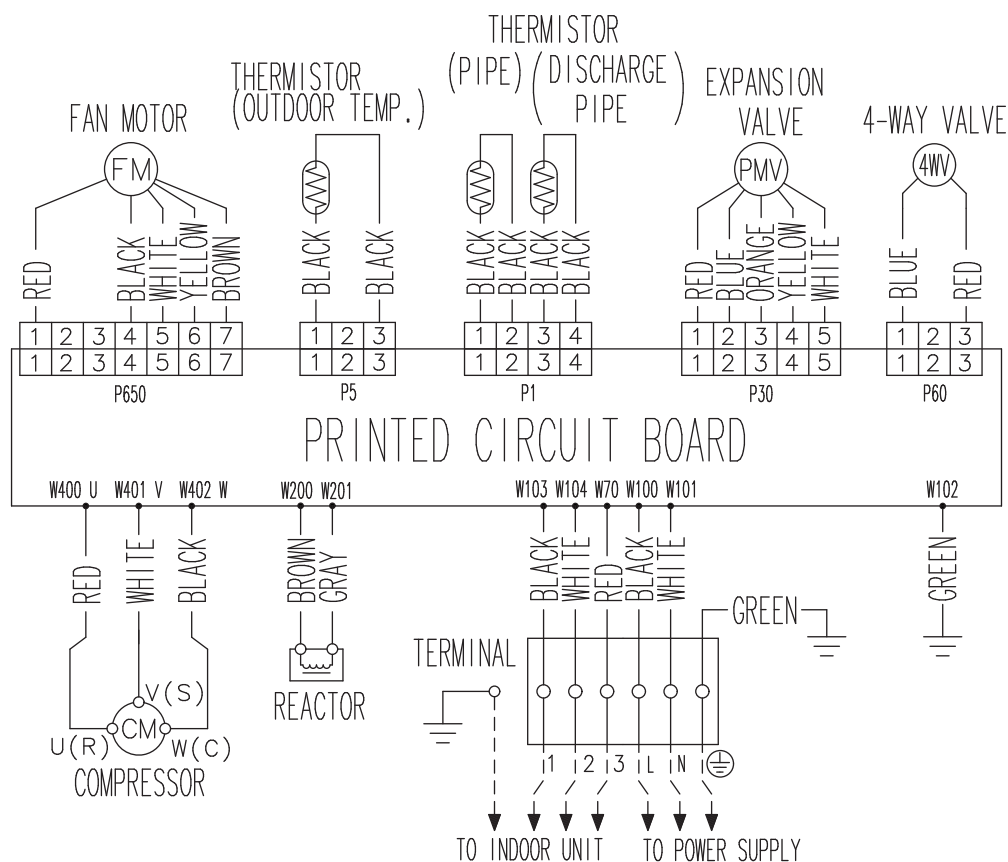
ThHO : Thermistor (Heat exchanger out temperature)

ThPI : Thermistor (Pipe temperature)

ThR : Thermistor (Room temperature)

5. Wiring diagrams

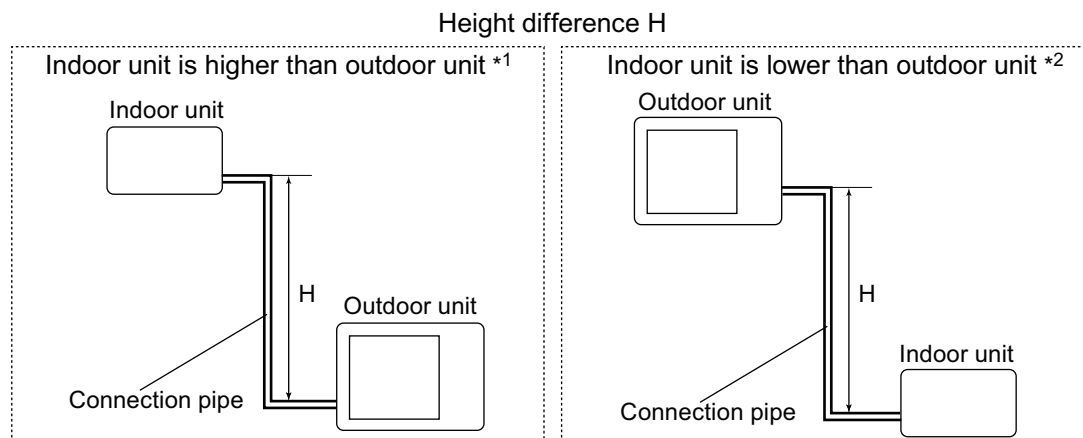
5-1. Models: AOHH07KGCG, AOHH09KGCG, AOHH12KGCG, and AOHH14KGCG



OUTDOOR UNIT
AOHH07-14KGCG

OUTDOOR UNIT
AOHH07-14KGCG

6. Capacity compensation rate for pipe length and height difference



6-1. Models: AOHH07KGCG, AOHH09KGCG, AOHH12KGCG, and AOHH14KGCG

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

7. Additional charge calculation

7-1. Models: AOHH07KGCG and AOHH09KGCG

Refrigerant type		R32
Factory charge amount	g	750

■ Refrigerant charge

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

7-2. Models: AOHH12KGCG and AOHH14KGCG

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: AOHH07KGCG

● Cooling

m ³ /h	1,390
l/s	386
CFM	818

● Heating

m ³ /h	1,350
l/s	375
CFM	795

8-2. Model: AOHH09KGCG

● Cooling

m ³ /h	1,480
l/s	411
CFM	871

● Heating

m ³ /h	1,420
l/s	394
CFM	836

8-3. Models: AOHH12KGCG and AOHH14KGCG

● Cooling

m ³ /h	1,800
l/s	500
CFM	1,059

● Heating

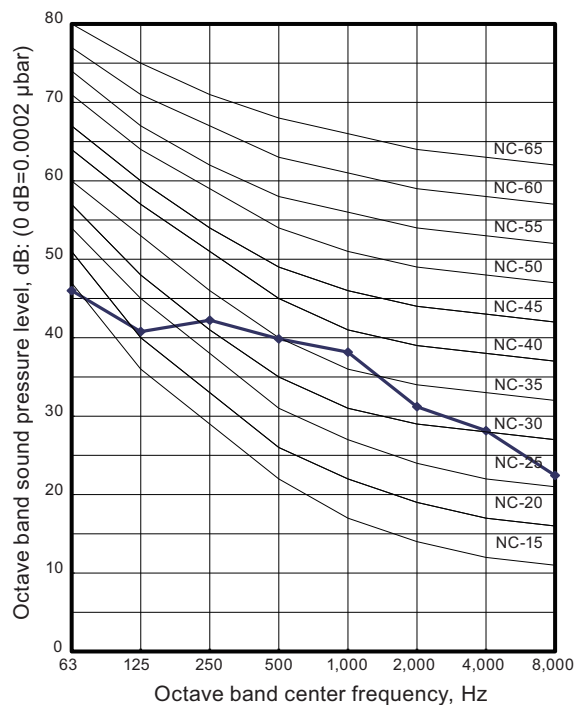
m ³ /h	1,690
l/s	469
CFM	995

9. Operation noise (sound pressure)

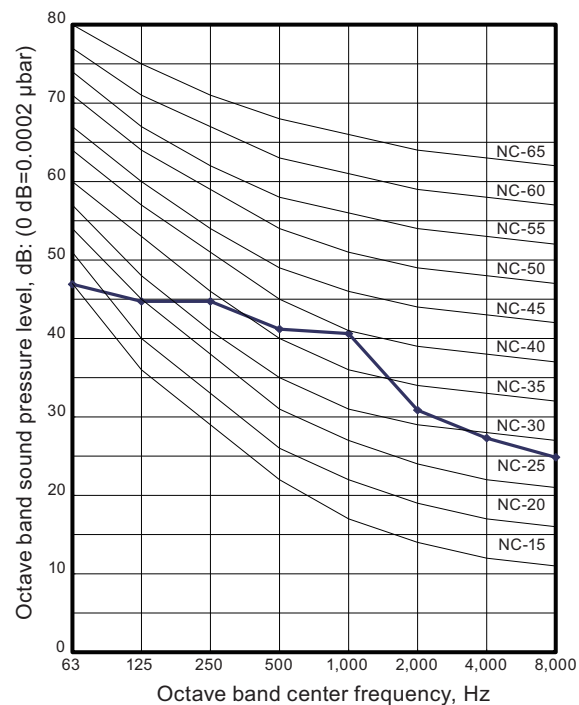
9-1. Noise level curve

■ AOHH07KGCG

● Cooling

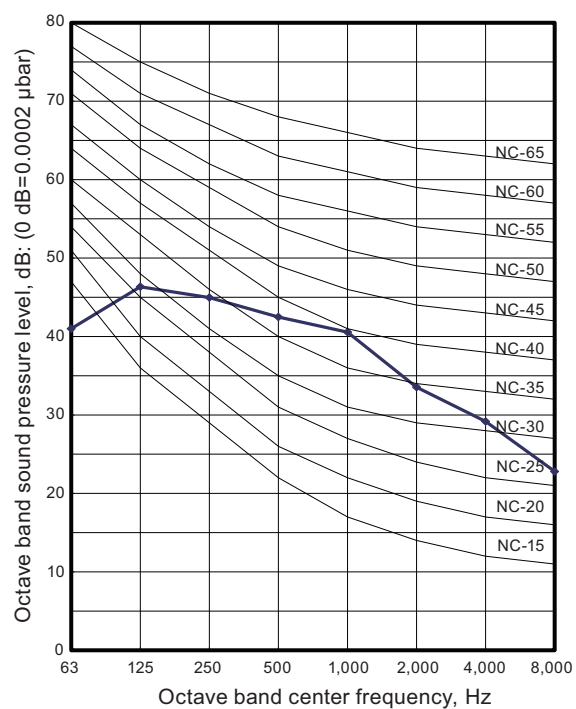


● Heating

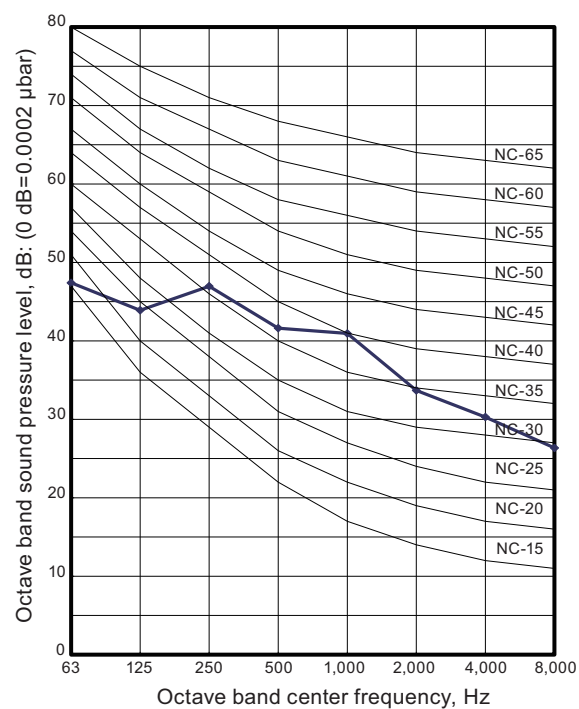


■ AOHH09KGCG

● Cooling

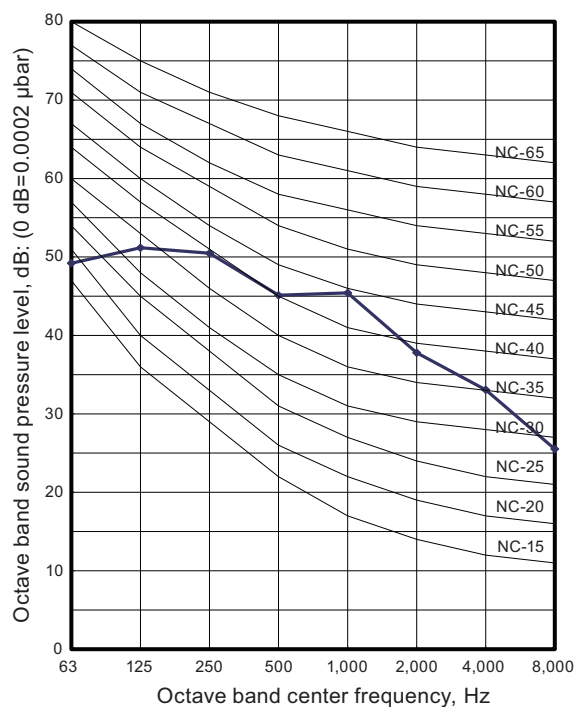


● Heating

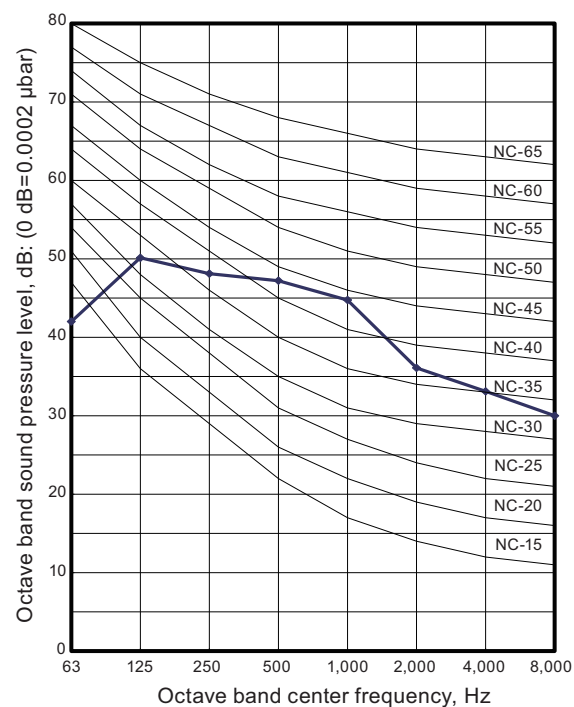


■ AOHH12KGCG

● Cooling

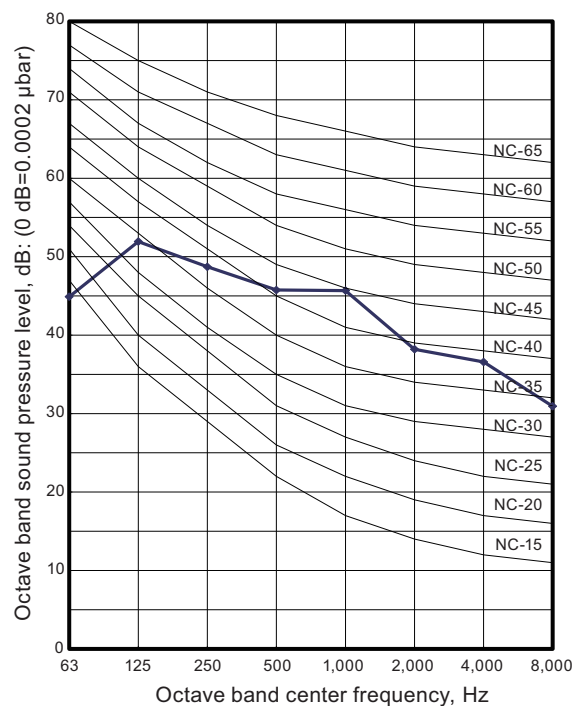


● Heating

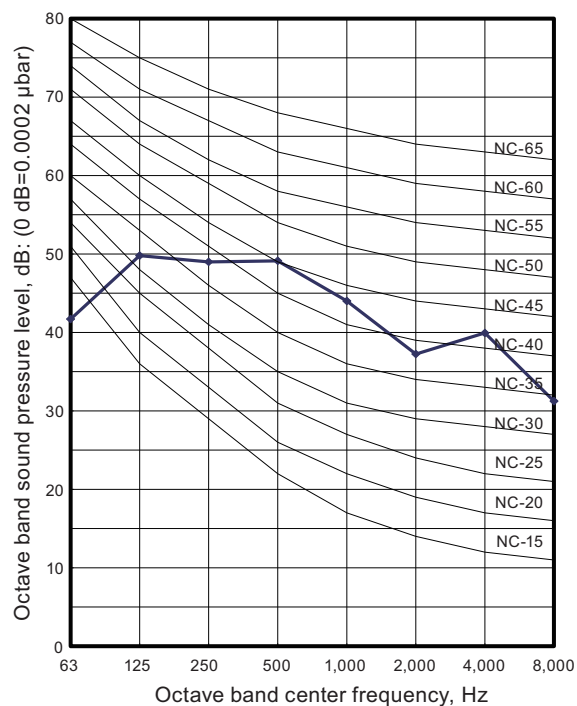


■ AOHH14KGCG

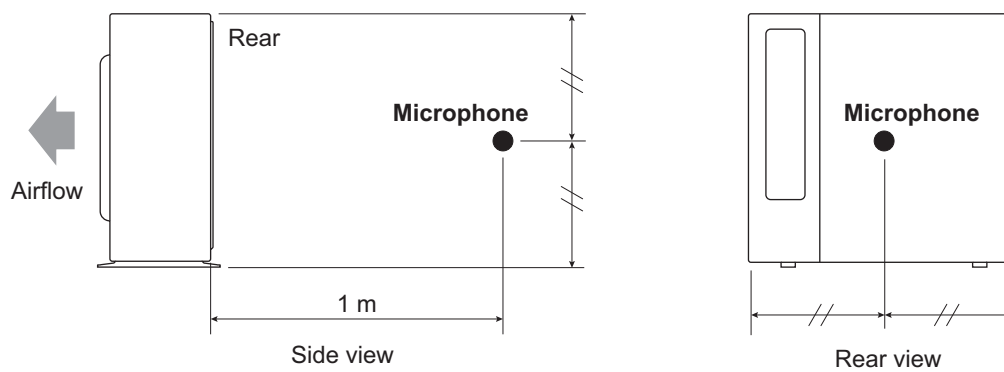
● Cooling



● 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			AOHH07KGCG	AOHH09KGCG	AOHH12KGCG	AOHH14KGCG
Power supply	Voltage	V	230 ~			
	Frequency	Hz	50			
Max operating current* ¹		A	9.0			10.5
Starting current		A	2.9	3.2	4.5	6.7
Wiring spec.* ²	Circuit breaker current	A	10			13
	Power cable	mm ²	1.5			
	Connection cable* ³	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

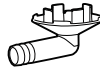
Type of protection	Protection form		Model	
			AOHH07KGCG	AOHH09KGCG
Circuit protection	Current fuse (Main PCB)		250 V, 20 A	
			250 V, 5 A	
Fan motor protection	Terminal protection program	Activate	103 ±18°C Fan motor stop	
		Reset	95 ±18°C Fan motor restart	
Compressor protection	Terminal protection program (Discharge temp.)	Activate	110°C Compressor stop	
		Reset	After 7 minutes Compressor restart	
Terminal protection program (Outdoor temp.) (Only in COOL or DRY mode)		Activate	COOL or DRY: -15°C Compressor stop	
		Reset	COOL or DRY: -10°C Compressor restart	

Type of protection	Protection form		Model	
			AOHH12KGCG	AOHH14KGCG
Circuit protection	Current fuse (Main PCB)		250 V, 20 A	
			250 V, 5 A	
Fan motor protection	Terminal protection program	Activate	103 ±18°C Fan motor stop	
		Reset	95 ±18°C Fan motor restart	
Compressor protection	Terminal protection program (Discharge temp.)	Activate	110°C Compressor stop	
		Reset	After 7 minutes Compressor restart	
Terminal protection program (Outdoor temp.) (Only in COOL or DRY mode)		Activate	COOL or DRY: -15°C Compressor stop	
		Reset	COOL or DRY: -10°C Compressor restart	

*PCB: Printed Circuit Board

12. Accessories

12-1. Models: AOHH07KGCG, AOHH09KGCG, AOHH12KGCG, and AOHH14KGCG

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