

AIR CONDITIONER

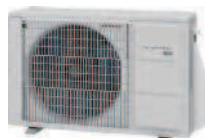
Duct type

DESIGN & TECHNICAL MANUAL

INDOOR

ARXG12KHTAP
ARXG14KHTAPARXG18KHTAP
ARXG22KHTAP

OUTDOOR

AOHG12KBTB
AOHG14KBTBAOHG18KBTB
AOHG22KBTB

FUJITSU GENERAL LIMITED

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Part 1. INDOOR UNIT

DUCT TYPE:

ARXG12KHTAP

ARXG14KHTAP

ARXG18KHTAP

ARXG22KHTAP

1. Specifications

Type				Duct				
				Inverter heat pump				
Model name				ARXG12KHTAP	ARXG14KHTAP	ARXG18KHTAP	ARXG22KHTAP	
Power supply				230 V ~ 50 Hz				
Power supply intake				Outdoor unit				
Available voltage range				198—264 V				
Capacity	Cooling	Rated	kW	3.5	4.3	5.2	6.0	
			Btu/h	11,950	14,650	17,700	20,500	
		Min.—Max.	kW	0.9 — 4.4	0.9 — 5.4	0.9 — 5.9	0.9 — 6.7	
			Btu/h	3,100 — 15,000	3,100 — 18,400	3,100 — 20,100	3,100 — 22,900	
	Heating	Rated	kW	4.1	5.0	6.0	7.0	
			Btu/h	14,000	17,050	20,500	23,900	
		Min.—Max.	kW	0.9 — 5.7	0.9 — 6.5	0.9 — 7.5	0.9 — 8.0	
			Btu/h	3,100 — 19,400	3,100 - 22,100	3,100 — 25,600	3,100 — 27,300	
Input power	Cooling	Rated Max.	kW	0.87	1.17	1.36	1.71	
				2.24	2.35	2.79	2.80	
	Heating	Rated Max.		1.00	1.25	1.56	1.81	
				2.24	2.35	2.79	2.80	
Current	Cooling	Rated	A	3.9	5.1	6.0	7.5	
	Heating			4.4	5.5	6.8	7.9	
Power factor	Cooling		%	97.0	99.7	98.6	99.1	
	Heating			98.8	98.8	99.7	99.6	
EER	Cooling		kW/kW	4.02	3.68	3.82	3.51	
COP	Heating			4.10	4.00	3.85	3.87	
Moisture removal			L/h (pints/h)	0.7 (1.2)	0.9 (1.6)	1.2 (2.1)	1.5 (2.6)	
Maximum operating current *1	Cooling		A	9.7	10.2	12.1	12.6	
	Heating			9.7	10.2	12.1	12.6	
Fan	Airflow rate	Cooling	HIGH	m³/h	850	950	1,050	1,050
			MED		680	760	840	840
			LOW		590	670	740	740
			QUIET		510	570	630	630
		Heating	HIGH		850	950	1,050	1,050
			MED		680	760	840	840
			LOW		590	670	740	740
			QUIET		510	570	630	630
	Type × Q'ty			Sirocco fan × 1			Sirocco fan × 2	
	Motor output			W	154		197	
Recommended static pressure range			Pa	30 to 200				
Sound pressure level *2	Cooling	HIGH	dB (A)	32	33	28	28	
		MED		27	28	25	25	
		LOW		26	27	22	22	
		QUIET		24	25	20	20	
	Heating	HIGH		32	33	28	28	
		MED		27	28	25	25	
		LOW		26	27	22	22	
		QUIET		24	25	20	20	
Heat exchanger type	Dimensions (H × W × D)		mm	420 × 458 × 39.9		420 × 758 × 39.9		
	Fin pitch			1.4				
	Rows × Stages		3 × 20					
	Pipe type		Copper tube					
	Fin type		Aluminum					
Enclosure	Material		Steel sheet					
	Color		—					
Dimensions (H × W × D)	Net		mm	300 × 700 × 700		300 × 1,000 × 700		
	Gross			400 × 938 × 875		400 × 1,238 × 875		
Weight	Net		kg	27		35		
	Gross			34		44		
Connection pipe	Size	Liquid	mm (in)	Ø 6.35 (Ø 1/4)				
		Gas		Ø 9.52 (Ø 3/8)		Ø 12.7 (Ø 1/2)		
Drain port	Method			Flare				
	Material			PVC				
Drain hose	Size		mm	Ø 26 (I.D.), Ø 32 (O.D.)				
	Material			PVC				
Operation range	Cooling		°C	18 to 32				
			%RH	80 or less				
Remote control (Option)	Heating		°C	16 to 30				
			Wired remote controller, Wireless remote controller, Mobile app*3 (FGLair™)					

NOTES:

- Specifications are based on the following conditions:
 - Cooling: Indoor temperature of 27 °CDB/19 °CWB, and outdoor temperature of 35 °CDB/24 °CWB.
 - Heating: Indoor temperature of 20 °CDB/15 °CWB, and outdoor temperature of 7 °CDB/6 °CWB.
 - Standard static pressure; 35 Pa
 - Pipe length: 5 m, Height difference: 0 m. (Between outdoor unit and indoor unit.)
- Protective function might work when using it outside the operation range.
- *1: Maximum 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.

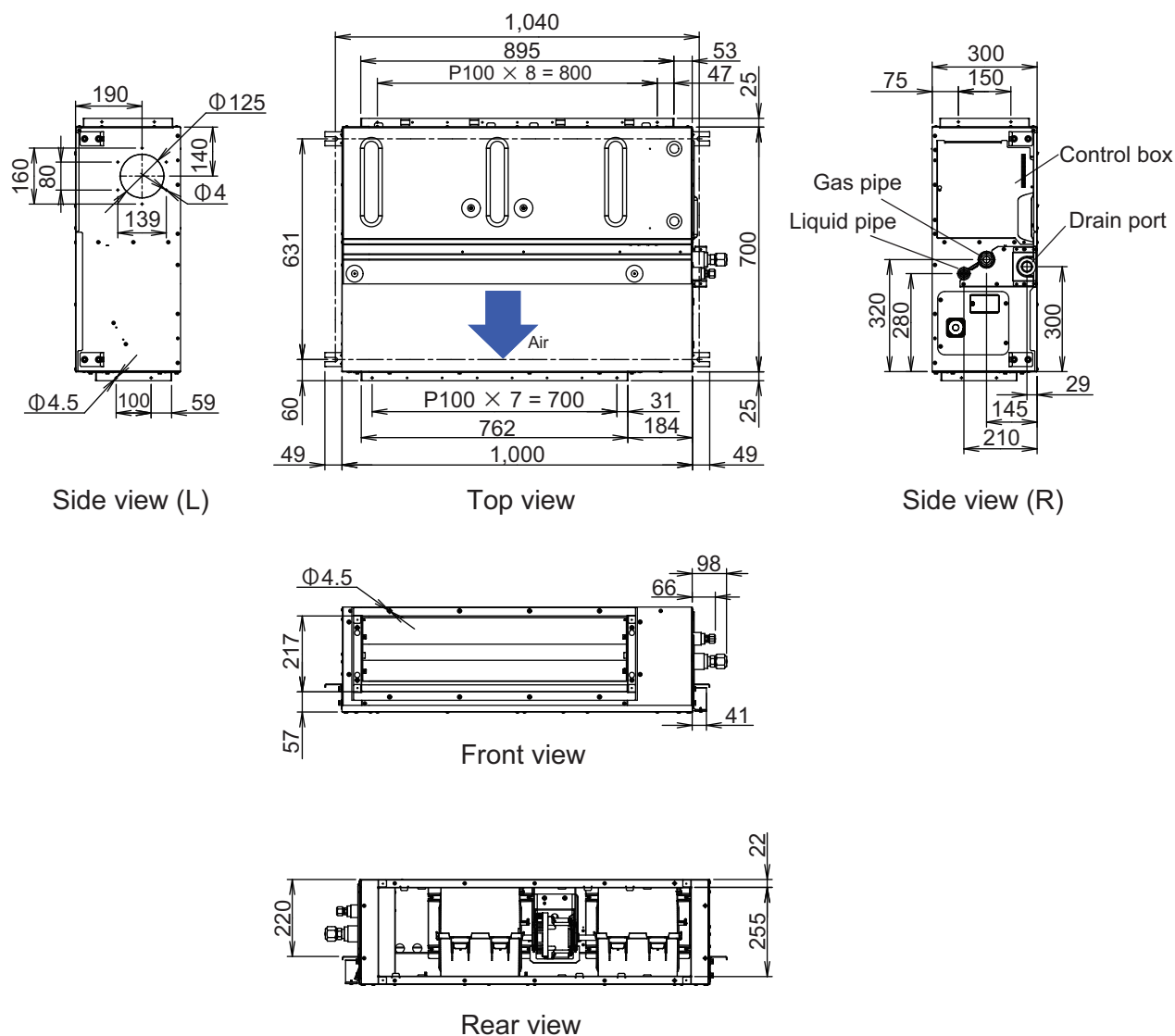
Specifications for ErP Lot10						
Model name			ARXG12KHTAP	ARXG14KHTAP	ARXG18KHTAP	ARXG22KHTAP
Energy efficiency class	Cooling		A ⁺⁺	A ⁺⁺	A ⁺⁺	A ⁺⁺
	Heating (Average)		A ⁺	A ⁺	A ⁺	A ⁺
Pdesign	Cooling	kW	3.5 (35°C)	4.3 (35°C)	5.2 (35°C)	6.0 (35°C)
	Heating (Average)		3.4 (-10°C)	3.8 (-10°C)	4.4 (-10°C)	4.8 (-10°C)
SEER	Cooling	kWh/kWh	6.30	6.20	6.50	6.50
SCOP	Heating (Average)		4.10	4.00	4.10	4.20
Annual energy consumption	QCE	kWh/a	194	243	280	323
	QHE (Average)		1,159	1,328	1,501	1,597
Sound power level	Cooling	HIGH	dB (A)	57	59	54
	Heating			58	60	54

2-1. Models: ARXG12KHTAP and ARXG14KHTAP

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2-2. Models: ARXG18KHTAP and ARXG22KHTAP

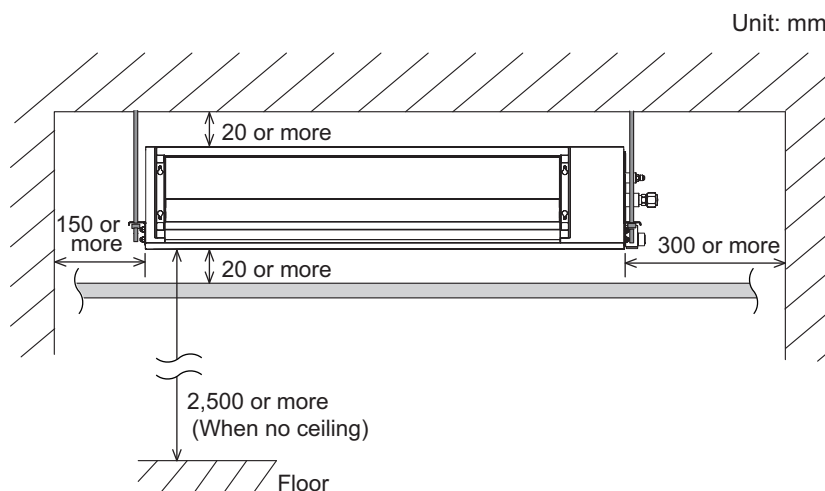
Unit: mm



2-3. Installation space requirement

Provide sufficient installation space for product safety.

■ Models: ARXG12KHTAP, ARXG14KHTAP, ARXG18KHTAP, and ARXG22KHTAP



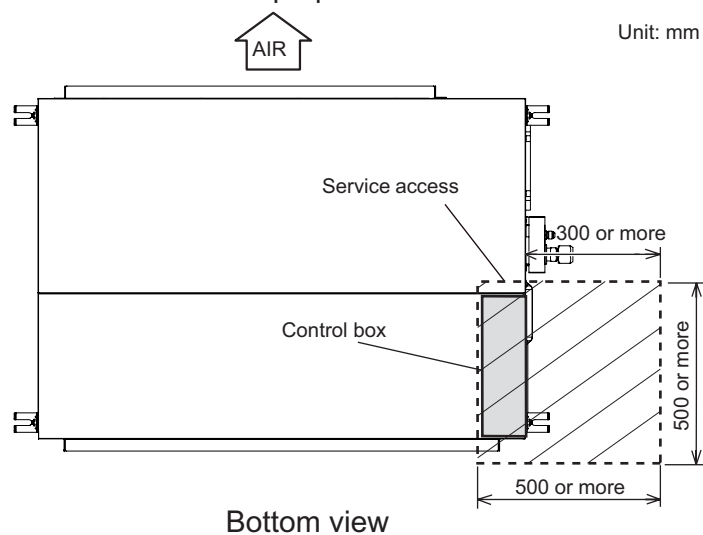
2-4. Maintenance space requirement

For future maintenance and service access, provide sufficient maintenance space.

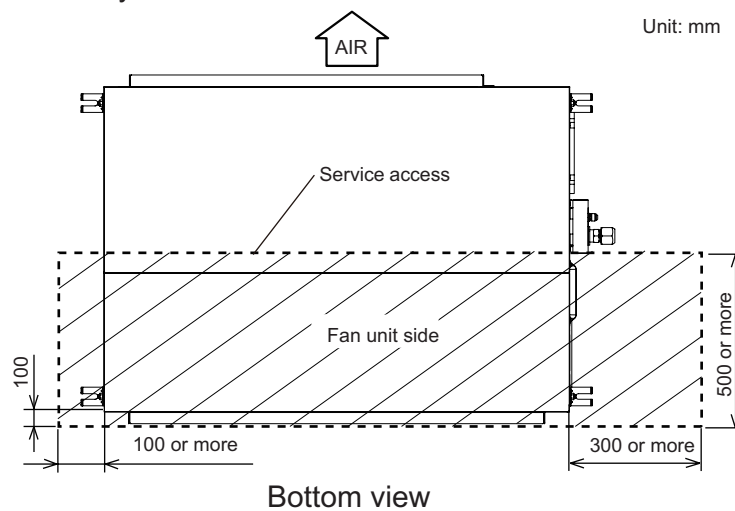
NOTE: Do not place any wiring or illumination in the maintenance space, as they will impede service.

■ Models: ARXG12KHTAP, ARXG14KHTAP, ARXG18KHTAP, and ARXG22KHTAP

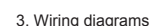
- Provide a service access for maintenance purposes.



- The service access necessary for fan units and filter maintenance.



3-1. Models: ARXG12KHTAP, ARXG14KHTAP, ARXG18KHTAP, and ARXG22KHTAP



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: ARXG12KHTAP

AFR				m³/h				850														
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		
	-15	2.92	2.80	0.66	3.25	2.82	0.67	3.36	3.06	0.67	3.58	3.07	0.68	3.69	3.32	0.68	3.91	3.31	0.69	4.13	3.52	0.69
	-10	3.11	2.90	0.55	3.47	2.92	0.56	3.59	3.18	0.56	3.82	3.19	0.57	3.94	3.44	0.57	4.18	3.43	0.58	4.41	3.65	0.58
	0	3.45	3.08	0.37	3.85	3.10	0.37	3.98	3.37	0.37	4.24	3.38	0.38	4.37	3.65	0.38	4.63	3.64	0.38	4.89	3.87	0.39
	5	3.31	3.00	0.43	3.69	3.01	0.44	3.81	3.28	0.44	4.06	3.29	0.45	4.19	3.55	0.45	4.44	3.54	0.45	4.69	3.77	0.46
	10	3.39	3.02	0.44	3.78	3.04	0.45	3.90	3.30	0.45	4.16	3.32	0.46	4.29	3.58	0.46	4.55	3.57	0.46	4.80	3.80	0.47
	15	3.29	2.97	0.52	3.67	2.99	0.53	3.79	3.25	0.53	4.04	3.26	0.54	4.17	3.52	0.54	4.42	3.51	0.55	4.67	3.73	0.55
	20	3.29	2.99	0.58	3.67	3.01	0.59	3.79	3.27	0.59	4.04	3.28	0.60	4.17	3.54	0.60	4.42	3.53	0.61	4.67	3.76	0.61
25	3.11	2.85	0.67	3.47	2.87	0.68	3.59	3.12	0.68	3.82	3.13	0.69	3.94	3.38	0.69	4.18	3.37	0.70	4.41	3.59	0.70	
30	2.94	2.71	0.76	3.27	2.73	0.77	3.39	2.96	0.78	3.61	2.97	0.79	3.72	3.21	0.79	3.94	3.20	0.80	4.17	3.41	0.81	
35	2.77	2.57	0.84	3.08	2.59	0.85	3.19	2.82	0.86	3.40	2.82	0.87	3.50	3.05	0.87	3.71	3.04	0.88	3.92	3.24	0.89	
40	2.68	2.53	0.94	2.98	2.55	0.95	3.08	2.77	0.96	3.29	2.78	0.97	3.39	3.00	0.97	3.59	2.99	0.98	3.80	3.18	0.99	
46	2.36	2.36	0.93	2.63	2.51	0.94	2.72	2.72	0.95	2.90	2.74	0.96	2.99	2.96	0.96	3.17	2.95	0.97	3.35	3.14	0.98	

Model: ARXG22KHTAP

AFR	m ³ /h	1,050
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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		
-15	4.99	4.27	0.55	5.56	4.30	0.56	5.75	4.67	0.56	6.13	4.69	0.57	6.32	5.06	0.57	6.70	5.04	0.58	7.08	5.37	0.58	
-10	5.03	4.28	0.46	5.61	4.30	0.47	5.80	4.68	0.47	6.18	4.69	0.48	6.37	5.07	0.48	6.75	5.05	0.48	7.13	5.38	0.49	
0	4.91	4.21	0.47	5.46	4.24	0.48	5.65	4.61	0.48	6.02	4.62	0.49	6.21	4.99	0.49	6.58	4.97	0.49	6.96	5.29	0.50	
5	4.77	4.16	0.60	5.32	4.19	0.61	5.50	4.55	0.61	5.86	4.57	0.62	6.04	4.93	0.62	6.40	4.91	0.63	6.76	5.23	0.63	
10	4.74	4.14	0.59	5.28	4.17	0.60	5.46	4.53	0.60	5.82	4.55	0.61	6.00	4.91	0.61	6.36	4.89	0.62	6.72	5.21	0.62	
15	4.59	4.08	0.70	5.11	4.10	0.72	5.29	4.46	0.72	5.64	4.47	0.73	5.81	4.83	0.73	6.16	4.81	0.74	6.51	5.12	0.74	
20	5.77	4.65	1.25	6.43	4.68	1.27	6.65	5.09	1.28	7.09	5.10	1.29	7.31	5.51	1.30	7.75	5.49	1.31	8.19	5.85	1.33	
25	5.43	4.51	1.39	6.05	4.53	1.41	6.25	4.93	1.42	6.66	4.94	1.43	6.87	5.34	1.44	7.28	5.32	1.45	7.69	5.67	1.47	
30	5.08	4.35	1.52	5.66	4.37	1.55	5.85	4.75	1.56	6.24	4.77	1.57	6.43	5.15	1.58	6.82	5.13	1.60	7.20	5.46	1.61	
35	4.74	4.20	1.65	5.28	4.23	1.68	5.46	4.60	1.68	5.82	4.61	1.70	6.00	4.98	1.71	6.36	4.96	1.73	6.72	5.28	1.74	
40	4.50	4.08	1.79	5.01	4.10	1.82	5.18	4.46	1.83	5.52	4.47	1.84	5.69	4.83	1.85	6.03	4.81	1.87	6.37	5.12	1.89	
46	3.69	3.60	1.54	4.11	3.63	1.56	4.25	3.94	1.57	4.53	3.95	1.59	4.67	4.27	1.59	4.95	4.25	1.61	5.23	4.53	1.63	

4-2. Heating capacity

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

Model: ARXG12KHTAP

AFR			m³/h				850					
		Indoor temperature										
		°CDB	16		18		20		22		27	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
			kW		kW		kW		kW		kW	
	-15	-16	3.87	1.43	3.78	1.46	3.69	1.49	3.60	1.52	3.51	1.55
	-10	-11	4.35	1.50	4.24	1.53	4.14	1.56	4.04	1.59	3.93	1.62
	-5	-7	4.83	1.56	4.72	1.60	4.60	1.63	4.49	1.66	4.37	1.70
	0	-2	5.31	1.62	5.19	1.66	5.06	1.69	4.93	1.72	4.81	1.76
	5	3	5.79	1.69	5.65	1.72	5.51	1.76	5.37	1.80	5.23	1.83
	7	6	5.99	1.71	5.84	1.74	5.70	1.78	5.56	1.82	5.42	1.85
	10	8	6.13	1.67	5.99	1.71	5.84	1.74	5.69	1.77	5.55	1.81
	15	10	6.37	1.61	6.22	1.65	6.07	1.68	5.92	1.71	5.77	1.74
20	15	6.15	1.32	6.01	1.35	5.86	1.38	5.71	1.41	5.57	1.43	
24	18	6.09	1.17	5.95	1.20	5.80	1.22	5.66	1.24	5.51	1.26	

Model: ARXG14KHTAP

AFR			m³/h				950					
		Indoor temperature										
		°CDB	16		18		20		22		27	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
			kW		kW		kW		kW		kW	
	-15	-16	4.54	1.72	4.43	1.75	4.32	1.79	4.21	1.83	4.10	1.86
	-10	-11	5.05	1.77	4.93	1.80	4.81	1.84	4.69	1.88	4.57	1.91
	-5	-7	5.58	1.80	5.44	1.84	5.31	1.88	5.18	1.92	5.04	1.96
	0	-2	6.09	1.84	5.95	1.88	5.80	1.92	5.66	1.96	5.51	2.00
	5	3	6.62	1.89	6.46	1.93	6.30	1.97	6.14	2.01	5.99	2.05
	7	6	6.83	1.90	6.66	1.94	6.50	1.98	6.34	2.02	6.18	2.06
	10	8	6.96	1.83	6.80	1.87	6.63	1.91	6.46	1.95	6.30	1.99
	15	10	7.21	1.74	7.04	1.77	6.87	1.81	6.70	1.85	6.53	1.87
20	15	7.09	1.48	6.92	1.51	6.75	1.54	6.58	1.57	6.41	1.59	
24	18	7.47	1.48	7.29	1.51	7.11	1.54	6.93	1.57	6.75	1.59	

Model: ARXG18KHTAP

AFR			m³/h				1,050					
			Indoor temperature									
		°CDB	16		18		20		22		27	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
			kW		kW		kW		kW		kW	
	-15	-16	5.05	1.63	4.93	1.67	4.81	1.70	4.69	1.73	4.57	1.77
	-10	-11	5.69	1.75	5.56	1.78	5.42	1.82	5.28	1.86	5.15	1.89
	-5	-7	6.33	1.85	6.18	1.89	6.03	1.93	5.88	1.97	5.73	2.01
	0	-2	6.97	1.96	6.81	2.00	6.64	2.04	6.47	2.08	6.31	2.12
	5	3	7.61	2.06	7.43	2.11	7.25	2.15	7.07	2.19	6.89	2.24
	7	6	7.88	2.10	7.69	2.15	7.50	2.19	7.31	2.23	7.13	2.28
	10	8	8.51	2.18	8.30	2.22	8.10	2.27	7.90	2.32	7.70	2.36
	15	10	8.46	1.92	8.26	1.96	8.06	2.00	7.86	2.04	7.66	2.07
20	15	7.96	1.52	7.77	1.55	7.58	1.58	7.39	1.61	7.20	1.64	
24	18	8.40	1.51	8.20	1.54	8.00	1.57	7.80	1.60	7.60	1.63	

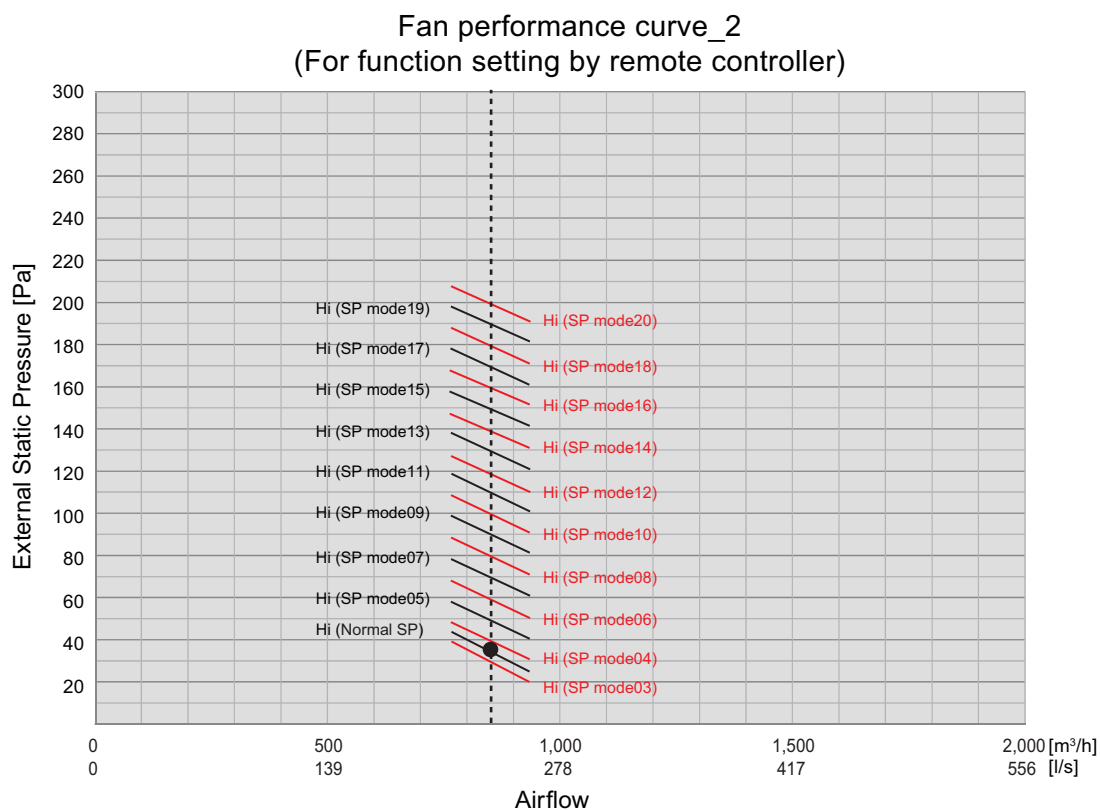
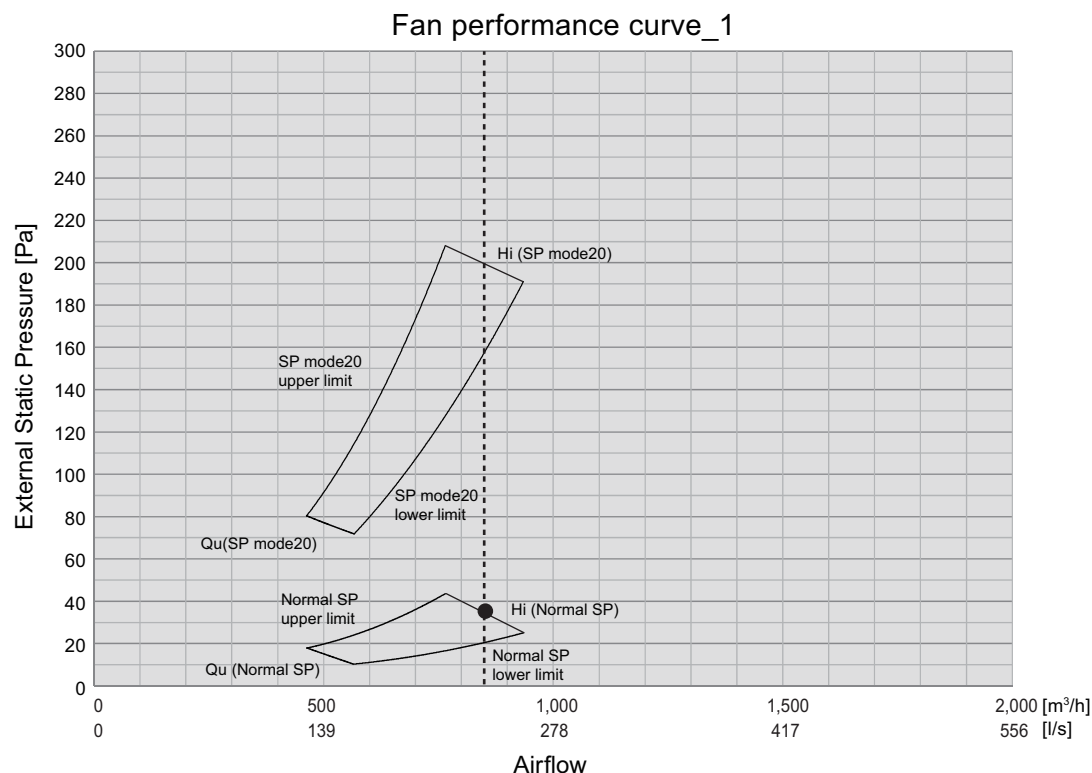
Model: ARXG22KHTAP

AFR			m³/h				1,050					
		Indoor temperature										
		°CDB	16		18		20		22		27	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP	TC	IP
			kW		kW		kW		kW		kW	
	-15	-16	5.60	2.09	5.46	2.14	5.33	2.18	5.20	2.22	5.06	2.27
	-10	-11	6.14	2.17	6.00	2.21	5.85	2.26	5.70	2.31	5.56	2.35
	-5	-7	6.70	2.25	6.54	2.29	6.38	2.34	6.22	2.39	6.06	2.43
	0	-2	7.26	2.32	7.08	2.37	6.91	2.42	6.74	2.47	6.56	2.52
	5	3	7.81	2.40	7.63	2.45	7.44	2.50	7.25	2.55	7.07	2.60
	7	6	8.40	2.40	8.20	2.45	8.00	2.50	7.80	2.55	7.60	2.60
	10	8	8.05	2.27	7.86	2.31	7.67	2.36	7.48	2.41	7.29	2.45
	15	10	7.49	2.04	7.31	2.09	7.13	2.13	6.95	2.17	6.77	2.20
20	15	7.04	1.74	6.87	1.77	6.70	1.81	6.53	1.85	6.37	1.87	
24	18	7.32	1.72	7.14	1.75	6.97	1.79	6.80	1.83	6.62	1.85	

5. Fan performance

5-1. Fan performance curve

■ Model: ARXG12KHTAP

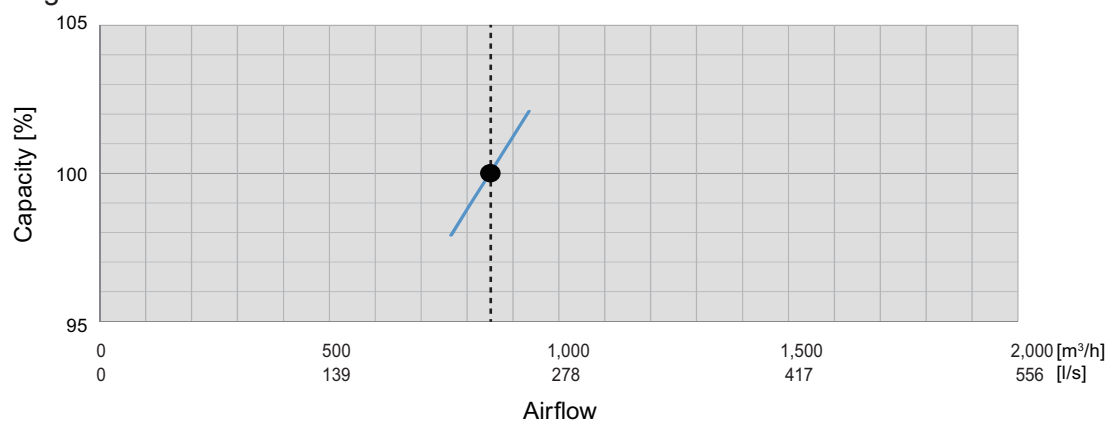


NOTES:

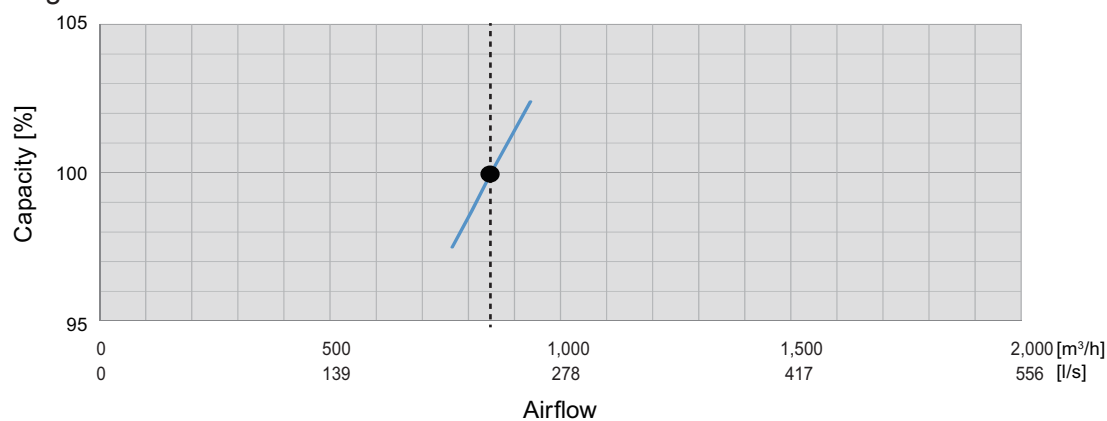
- Setting of the external static pressure is switchable into modes by using the remote controller.
- According to the resistance of the connecting duct, perform the setting of the external static pressure with referring "Fan performance curve_2" above.
- The default setting is set at "Normal SP".

● Characteristics of air volume and capacity

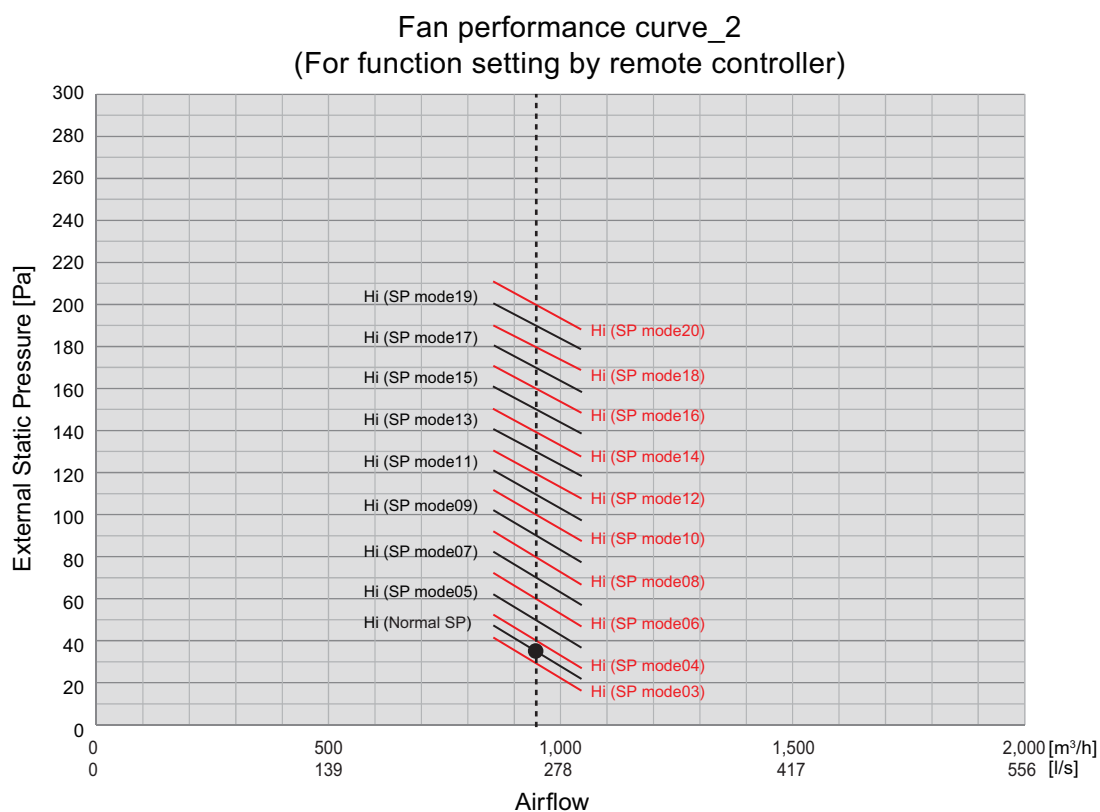
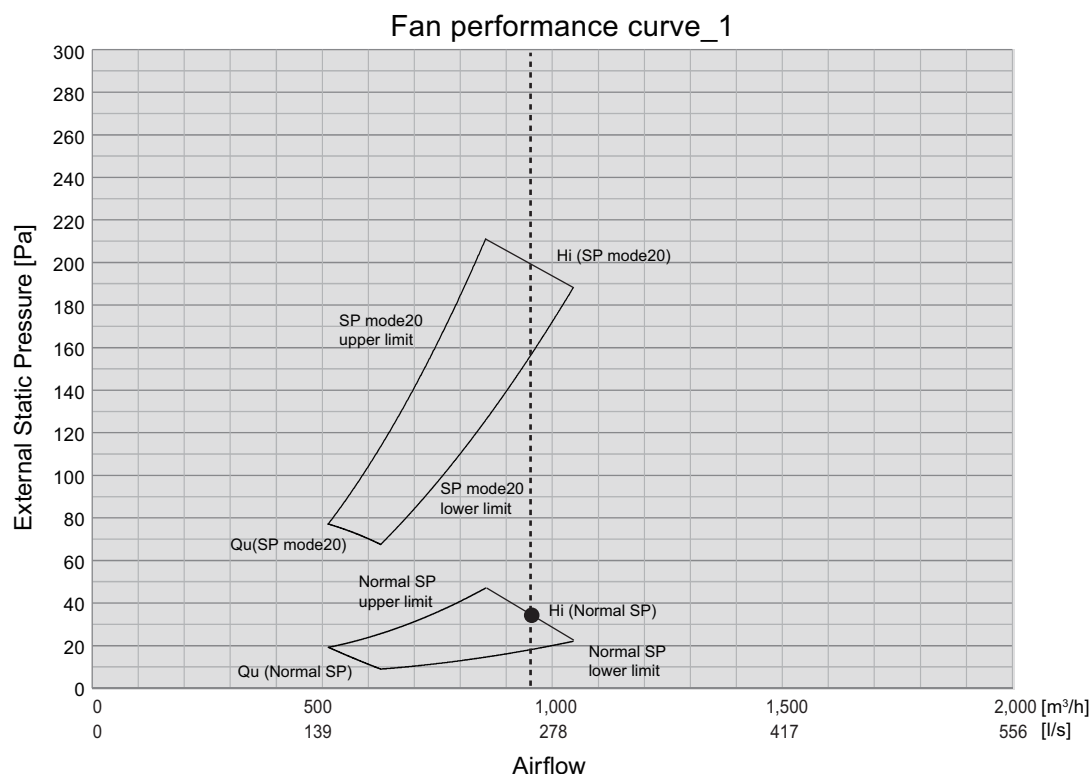
• Cooling



• Heating



Model: ARXG14KHTAP

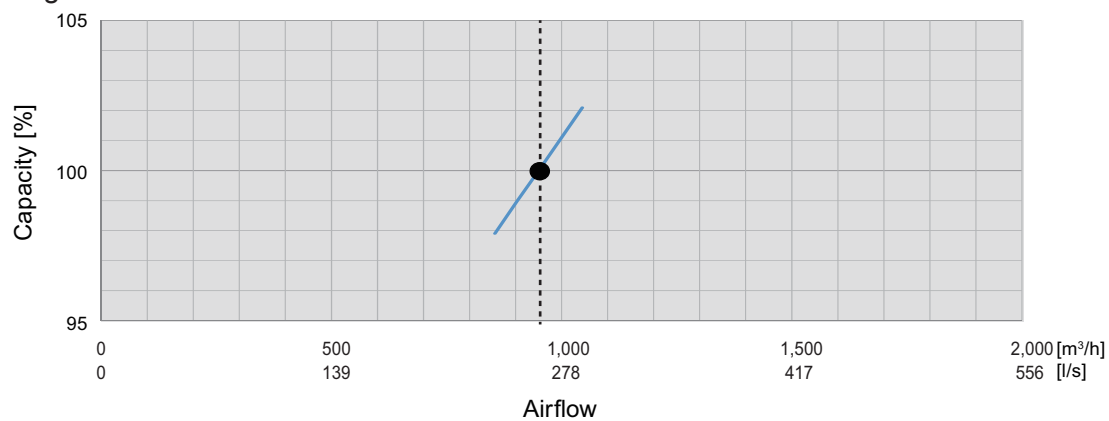


NOTES:

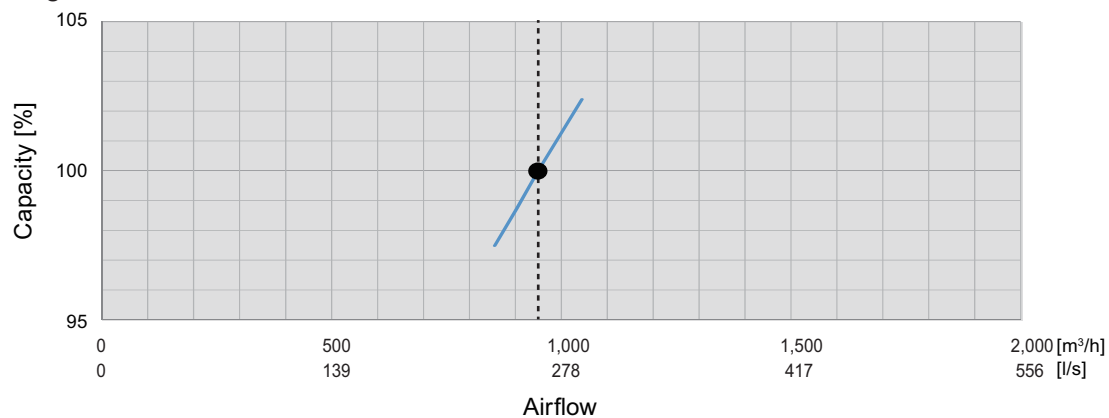
- Setting of the external static pressure is switchable into modes by using the remote controller.
- According to the resistance of the connecting duct, perform the setting of the external static pressure with referring "Fan performance curve_2" above.
- The default setting is set at "Normal SP".

● Characteristics of air volume and capacity

• Cooling

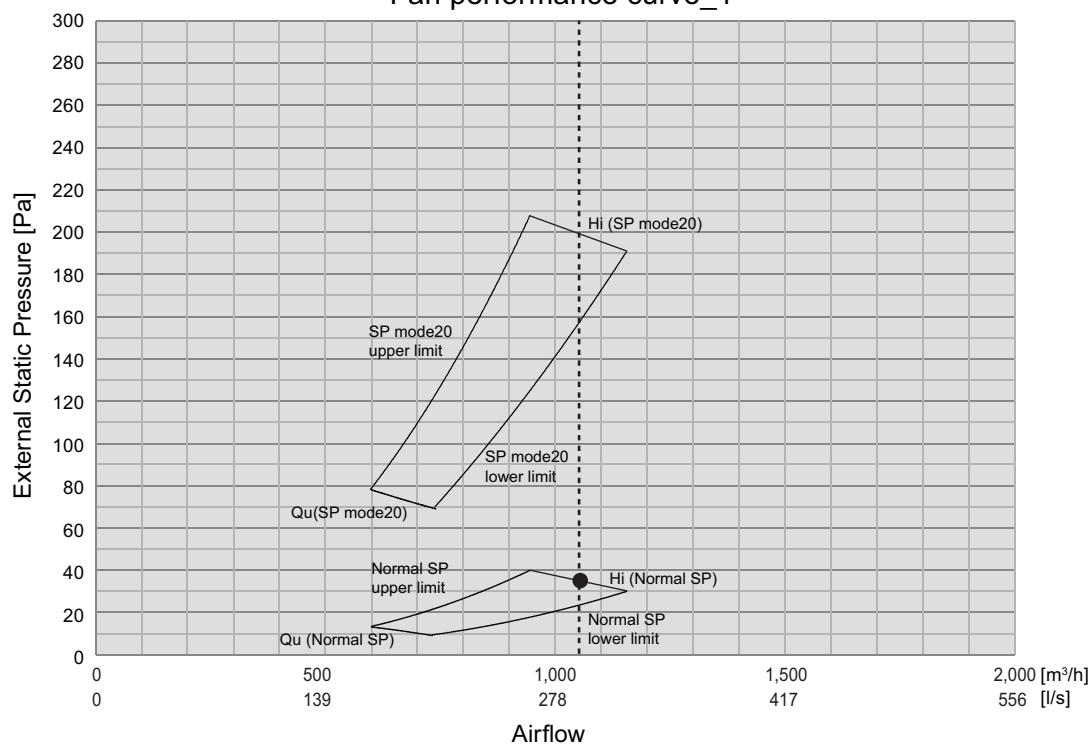


• Heating

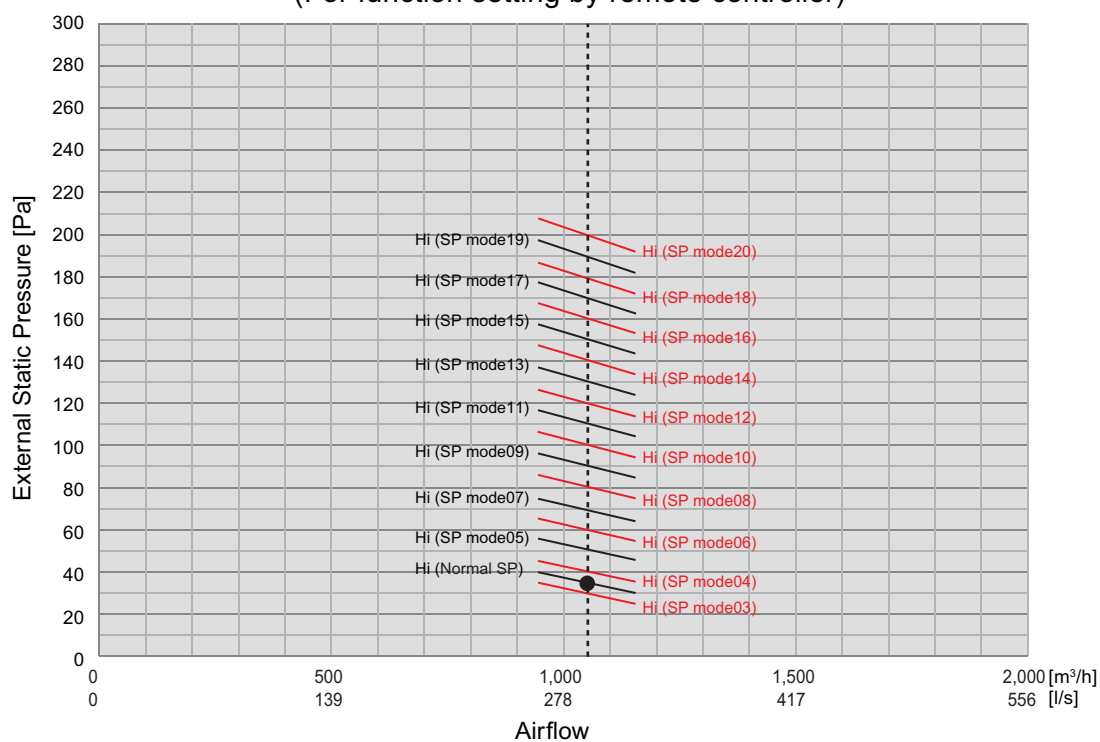


Models: ARXG18KHTAP and ARXG22KHTAP

Fan performance curve_1



Fan performance curve_2
(For function setting by remote controller)

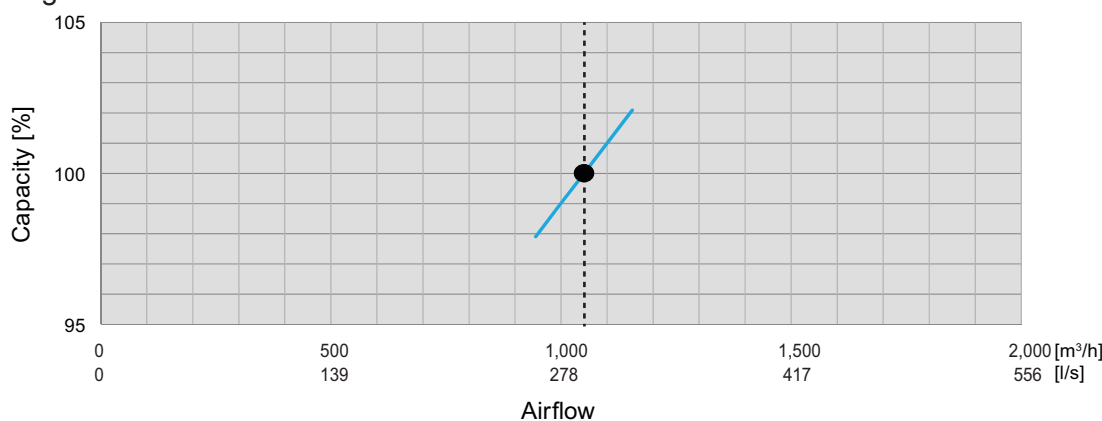


NOTES:

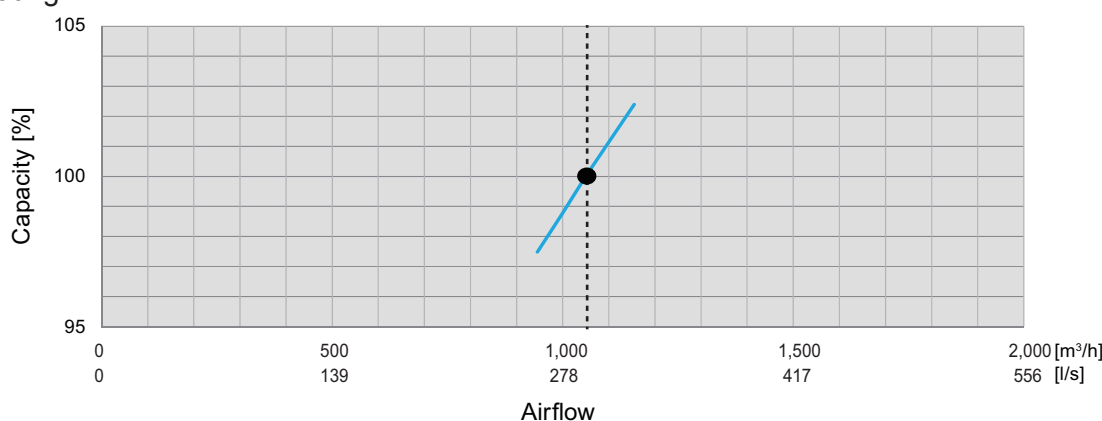
- Setting of the external static pressure is switchable into modes by using the remote controller.
- According to the resistance of the connecting duct, perform the setting of the external static pressure with referring "Fan performance curve_2" above.
- The default setting is set at "Normal SP".

● Characteristics of air volume and capacity

• Cooling



• Heating



■ Automatic airflow adjustment procedures

1. To start the auto setting, use setting value 32 in function number 26.
2. Run the air conditioner on fan mode (High).
 - * For instructions on how to operate the air conditioner, refer to the operation manual of the remote controller.

During automatic airflow adjustment, the mode will be fixed at fan (High).
When this function is active, do not operate the outdoor unit.
3. The air conditioner will run for about 1 to 8 min then stop automatically.
 - * Do not change the throttles of the inlet and outlet ports during operation.

When used in a group control system, the setting will take about 10 min.
4. Turn the air conditioner off and on again.
5. Check the setting value of function number 26.
 - * If the setting value has not changed, repeat the procedure from step 2.

⚠ CAUTION

When the duct or outlet installations are changed after the Automatic airflow adjustment is completed, repeat the procedure from step 1.

5-2. Airflow

■ Model: ARXG12KHTAP

● Cooling

Fan speed	Airflow	
HIGH	m ³ /h	850
	l/s	236
	CFM	500
MED	m ³ /h	680
	l/s	189
	CFM	400
LOW	m ³ /h	590
	l/s	164
	CFM	347
QUIET	m ³ /h	510
	l/s	142
	CFM	300

● Heating

Fan speed	Airflow	
HIGH	m ³ /h	850
	l/s	236
	CFM	500
MED	m ³ /h	680
	l/s	189
	CFM	400
LOW	m ³ /h	590
	l/s	164
	CFM	347
QUIET	m ³ /h	510
	l/s	142
	CFM	300

■ Model: ARXG14KHTAP

● Cooling

Fan speed	Airflow	
HIGH	m ³ /h	950
	l/s	264
	CFM	559
MED	m ³ /h	760
	l/s	211
	CFM	447
LOW	m ³ /h	670
	l/s	186
	CFM	394
QUIET	m ³ /h	570
	l/s	158
	CFM	336

● Heating

Fan speed	Airflow	
HIGH	m ³ /h	950
	l/s	264
	CFM	559
MED	m ³ /h	760
	l/s	211
	CFM	447
LOW	m ³ /h	670
	l/s	186
	CFM	394
QUIET	m ³ /h	570
	l/s	158
	CFM	336

■ Models: ARXG18KHTAP and ARXG22KHTAP

● Cooling

Fan speed	Airflow	
HIGH	m ³ /h	1,050
	l/s	292
	CFM	618
MED	m ³ /h	840
	l/s	233
	CFM	494
LOW	m ³ /h	740
	l/s	206
	CFM	436
QUIET	m ³ /h	630
	l/s	175
	CFM	371

● Heating

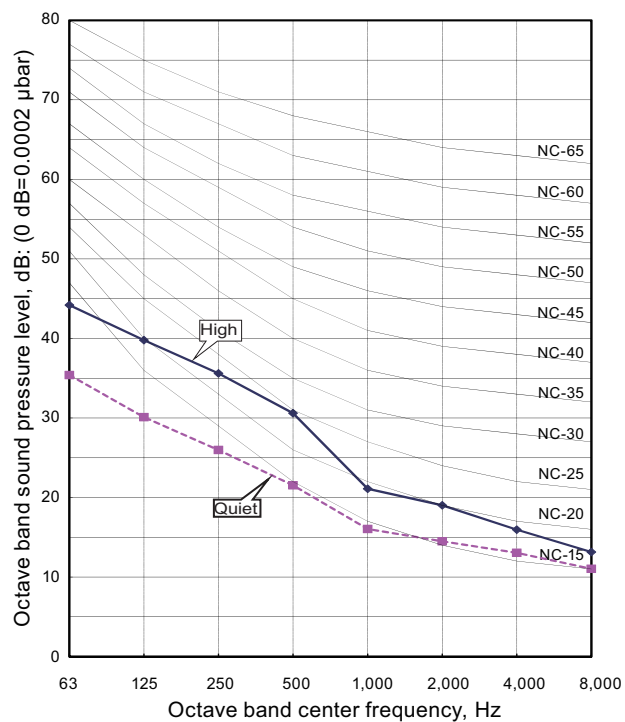
Fan speed	Airflow	
HIGH	m ³ /h	1,050
	l/s	292
	CFM	618
MED	m ³ /h	840
	l/s	233
	CFM	494
LOW	m ³ /h	740
	l/s	206
	CFM	436
QUIET	m ³ /h	630
	l/s	175
	CFM	371

6. Operation noise (sound pressure)

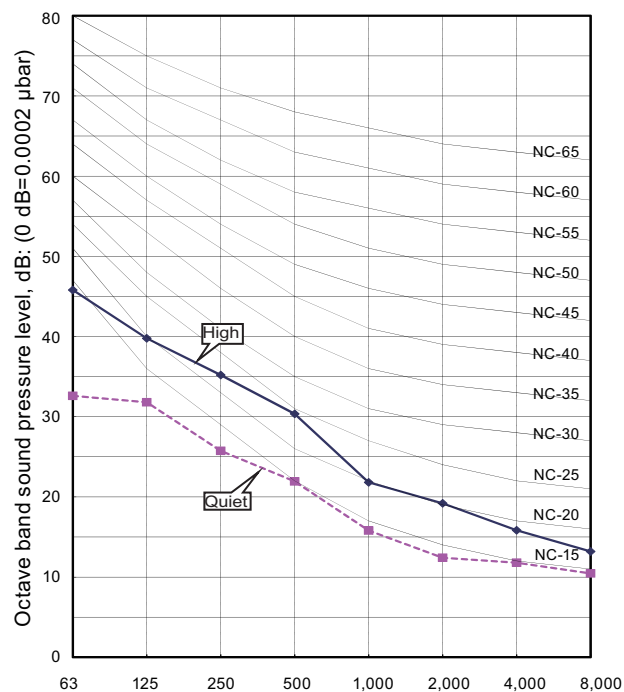
6-1. Noise level curve

■ Model: ARXG12KHTAP

● Cooling

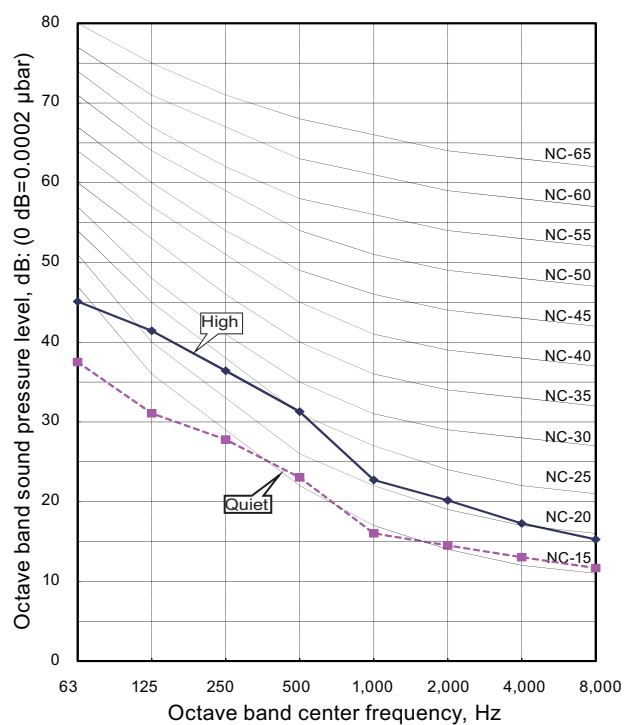


● Heating

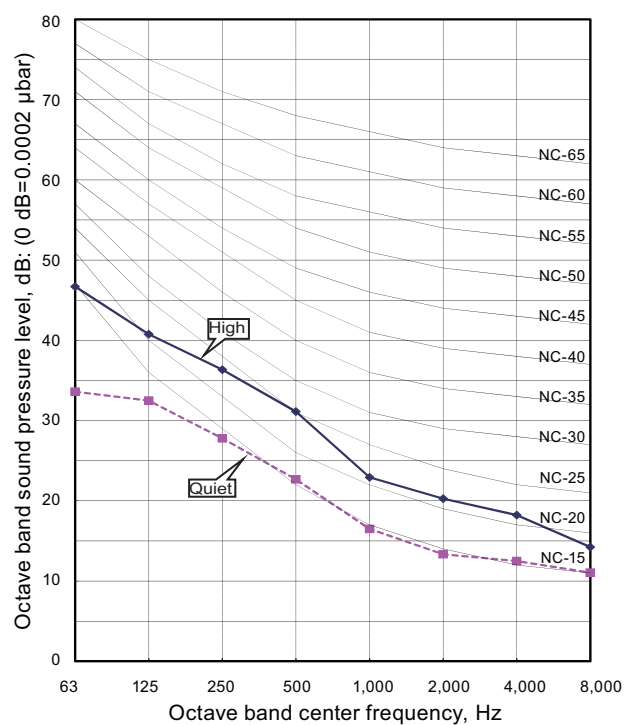


■ Model: ARXG14KHTAP

● Cooling

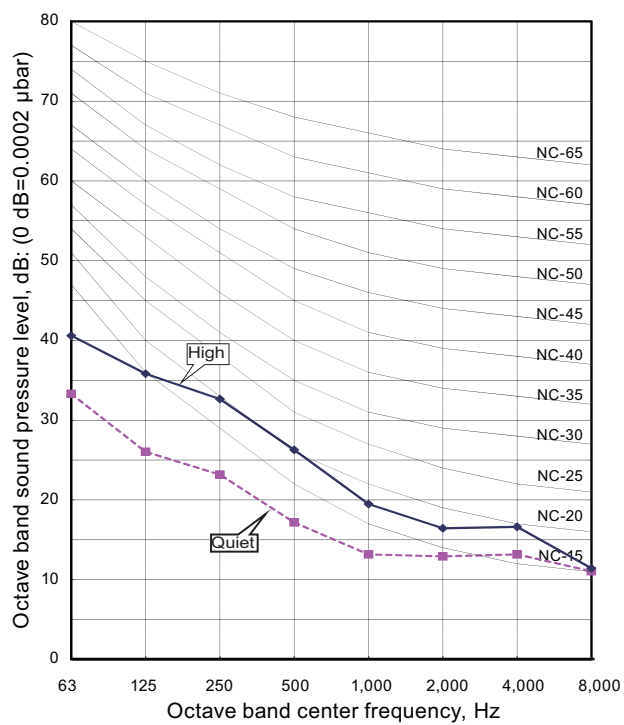


● Heating

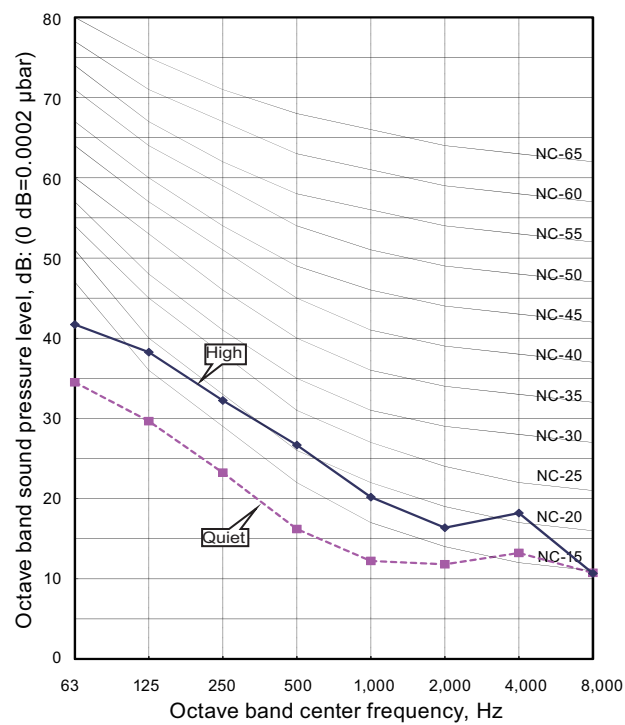


Models: ARXG18KHTAP and ARXG22KHTAP

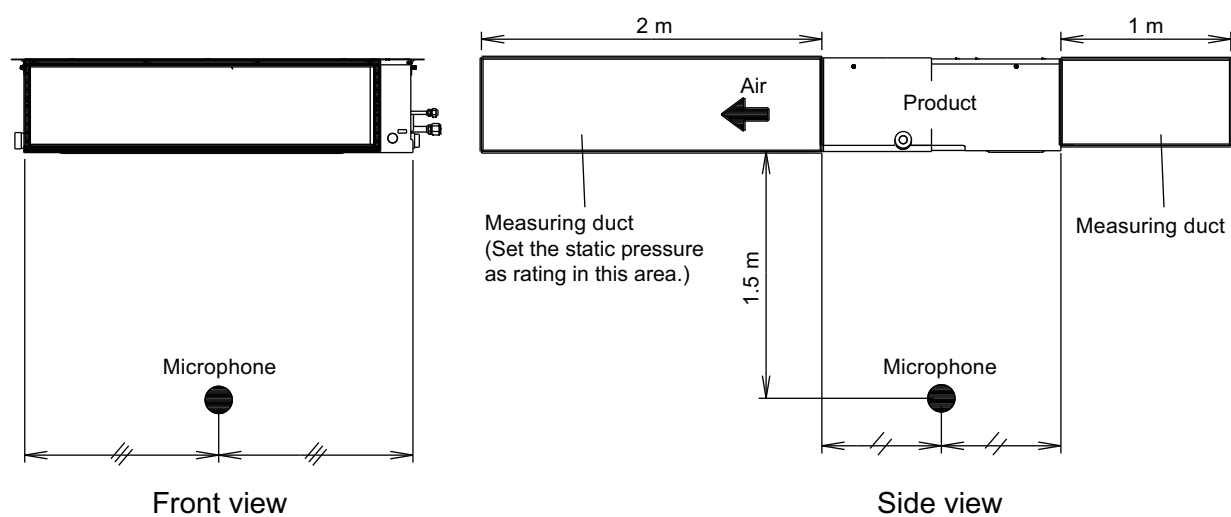
● Cooling



● Heating



6-2. Sound level check point



7. Safety devices

Type of protection	Protection form		Model	
			ARXG12KHTAP ARXG14KHTAP	ARXG18KHTAP ARXG22KHTAP
Circuit protection	Current fuse (PCB*)		250 V, 5A	
Fan motor protection	Thermal protection program	Activate	115 ± 15 °C Fan motor stop	
		Reset	70 °C Fan motor restart	
	Current protection	Activate	-	

*: Printed Circuit Board

8. External input and output

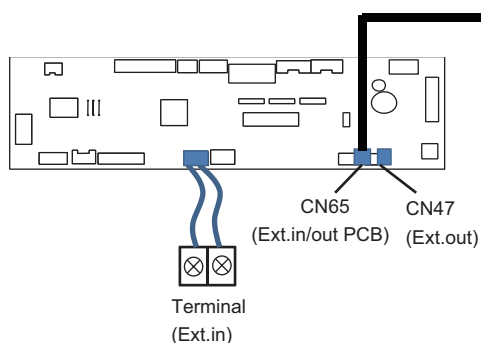


Fig. Indoor unit PCB

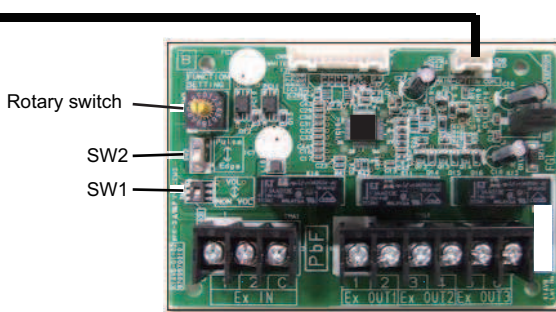


Fig. External input and output PCB

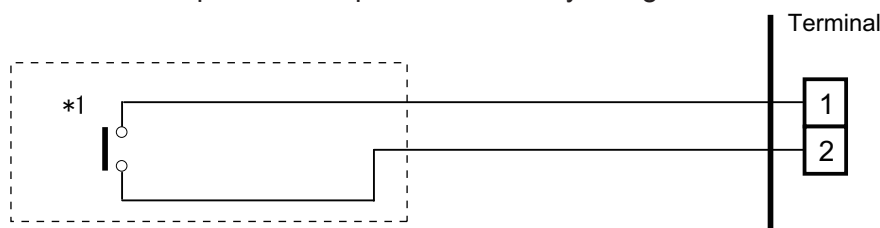
PCB	External input	External output	Connector	Input select	Input signal	External connect kit (Optional parts)
Indoor unit	Operation/Stop Forced stop	—	Terminal	Dry contact	Edge	—
	—	Operation status	CN47	—	—	UTY-XWZXZG
		Error status				
		Indoor unit fan operation status				
		External heater output				
External input and output (UTY-XCSX)	Operation/Stop	—	Input 1/ Input 2	Dry contact/ Apply voltage	Edge/ Pulse	—
	Forced thermostat off		Input 1		Edge	
	—	Operation status	Output 1 Output 2 Output 3	—	—	—
		Error status				
		Indoor unit status				
		External heater output				

8-1. External input

- “Operation/Stop” mode or “Forced stop” mode can be selected with function setting of indoor unit.
- A twisted pair cable (22AWG) should be used. Maximum length of cable is 150 m.
- 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 terminals.



*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

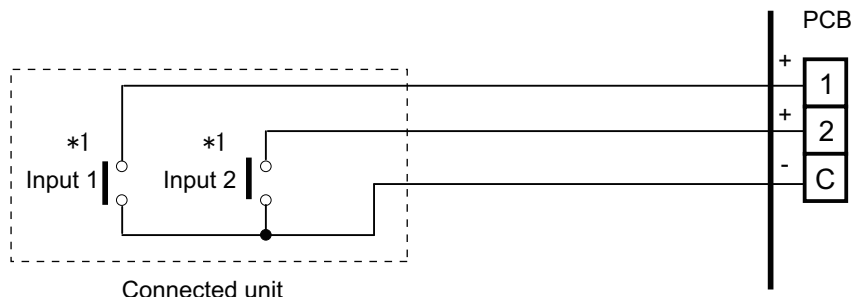
The indoor unit Operation/Stop can be set by using the input terminal on the PCB.

● Input select

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

- Dry contact

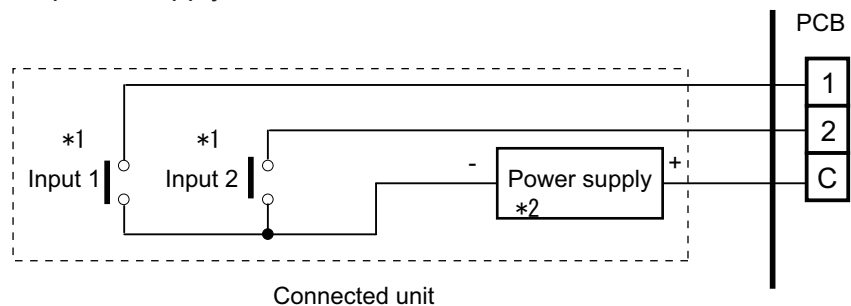
In case of internal power supply, set the slide switch of SW1 to "NON VOL" side.



*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 SW1 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.

8-2. External output

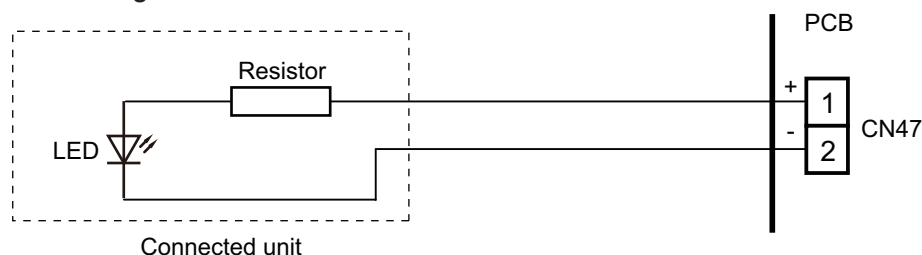
Use an external output cable with appropriate external dimension, depending on the number of cables to be installed.

Indoor unit

- A twisted pair cable (22AWG) 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 Chapter 8-3. ["Combination of external input and output"](#) on page 28.

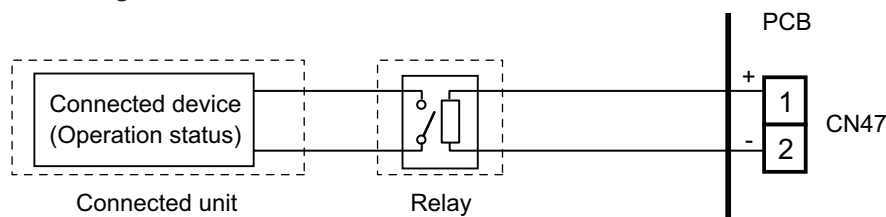
When indicator, etc. are connected directly

Example: Function setting 60 is set to "00"



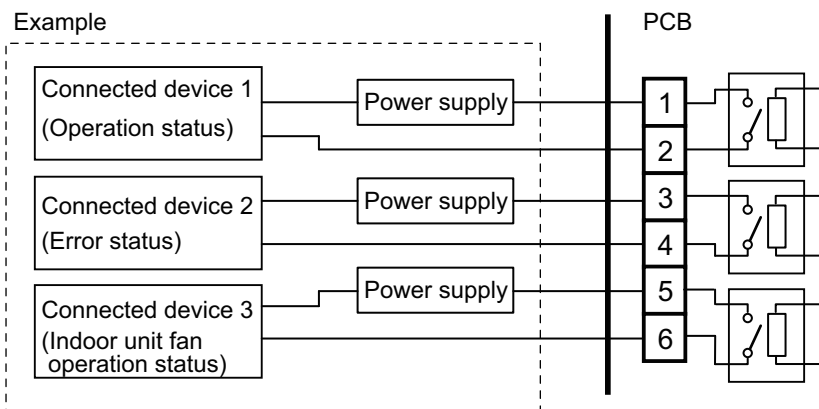
When connecting with a device equipped with a power supply

Example: Function setting 60 is set to "00"



External input and output PCB

- A twisted pair cable (22AWG) should be used.
- Permissible voltage and current: DC 5 V to 30 V / 3 A, AC 30 V to 250 V / 3 A
- For details, refer to Chapter 8-3. ["Combination of external input and output"](#) on page 28.



8-3. Combination of external input and output

By combining the function setting of the indoor unit and rotary switch setting of the External input and output PCB, you can select various combinations of functions.

Combination examples of external input and output are as follows:

Mode	Function setting	External input and output PCB (Rotary SW)	External input			
			Indoor unit Input	External input and output PCB		
				Input 1	Input 2	Signal type
0-1	60-00	1	Operation/Stop	Operation/Stop	Not available	Edge
				Operation	Stop	Pulse
0-2	60-00	2	Operation/Stop	Forced Thermostat OFF	Not available	Edge
1—8	60-01 to 60-08	3 - 9, A	(Setting prohibited)			
9	60-09	B	Operation/Stop	Forced Thermostat OFF	Not available	Edge
10	60-10	C	Operation/Stop	Forced Thermostat OFF	Not available	Edge
11	60-11	D	Operation/Stop	Forced Thermostat OFF	Not available	Edge

Mode	Function setting	External input and output PCB (Rotary SW)	External output			
			Indoor unit Output	External input and output PCB		
				Output 1	Output 2	Output 3
0-1	60-00	1	Operation/Stop	Operation/Stop	Error status	Indoor unit fan operation status
0-2	60-00	2	Operation/Stop	Error status	Indoor unit fan operation status	External heater output
1—8	60-01 to 60-08	3 - 9, A	(Setting prohibited)			
9	60-09	B	Error status	Operation/Stop	Indoor unit fan operation status	External heater output
10	60-10	C	Indoor unit fan operation status	Operation/Stop	Error status	External heater output
11	60-11	D	External heater output	Operation/Stop	Indoor unit fan operation status	Error status

NOTE: Input of Operation/Stop depends on the setting of function setting 46.

00: Operation/Stop mode 1 (R.C. enabled)

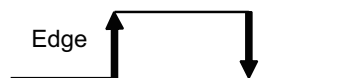
01: (Setting prohibited)

02: Forced stop

03: Operation/Stop mode 2 (R.C. disabled)

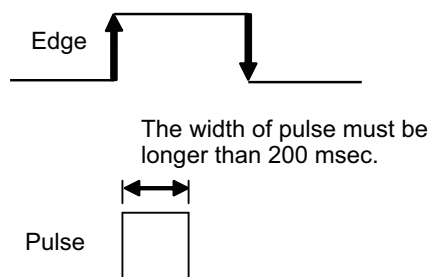
■ Input signal type

- 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 (SW2) on the External input and output PCB.



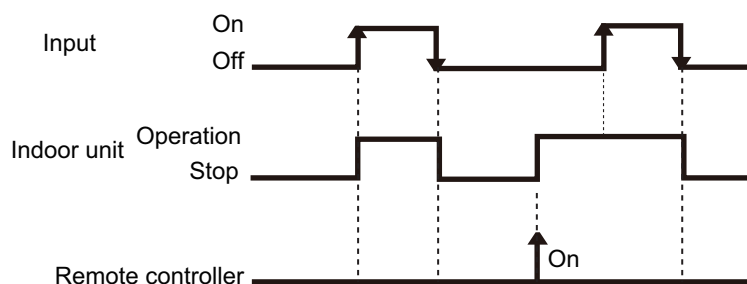
8-4. Details of function

■ Control input function

● When function setting is "Operation/Stop" mode 1

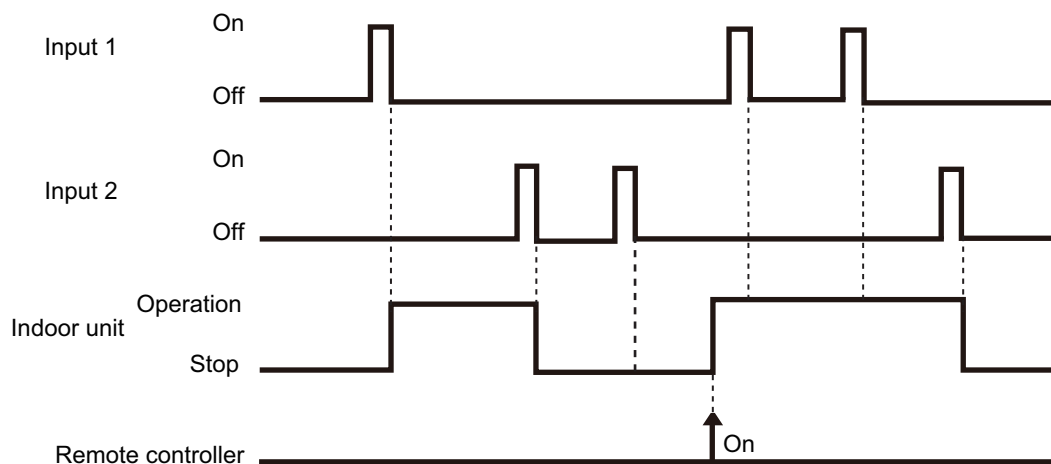
- In the case of "Edge" input

Function setting /	Rotary SW of External input and output PCB	External input		Input signal	Command
46-00	-	Input of indoor unit	Terminal	Off → On	Operation
				On → Off	Stop
	60-00 / 1	External input and output PCB	Input 1	Off → On	Operation
				On → Off	Stop



- In the case of "Pulse" input

Function setting /	Rotary SW of External input and output PCB	External input		Input signal	Command
46-00	60-00 / 1	External input and output PCB	Input 1	Pulse	Operation
			Input 2	Pulse	Stop



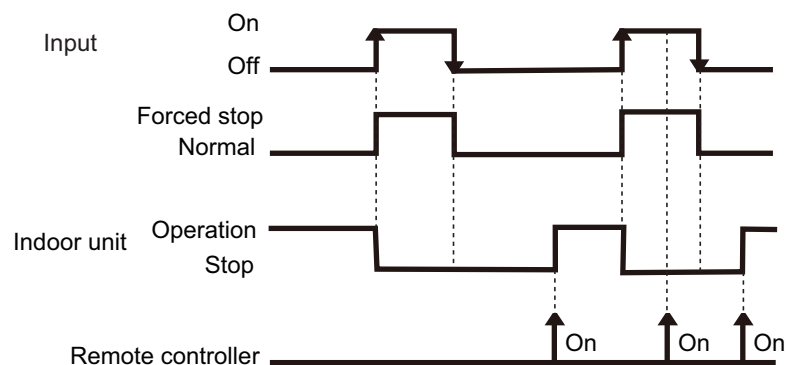
NOTES:

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

● When function setting is "Forced stop" mode

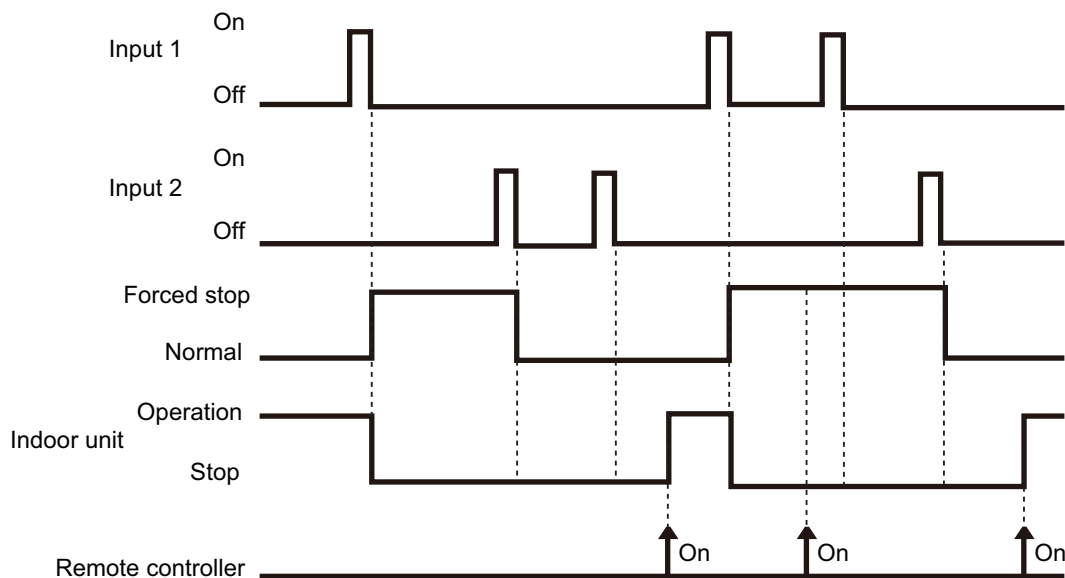
- In the case of "Edge" input

Function setting /	Rotary SW of External input and output PCB	External input		Input signal	Command
46-02	-	Input of indoor unit	Terminal	Off → On	Forced stop
				On → Off	Normal
	60-00 / 1	External input and output PCB	Input 1	Off → On	Forced stop
				On → Off	Normal



- In the case of "Pulse" input

Function setting /	Rotary SW of External input and output PCB	External input		Input signal	Command
46-02	60-00 / 1	External input and output PCB	Input 1	Pulse	Forced stop
			Input 2	Pulse	Normal



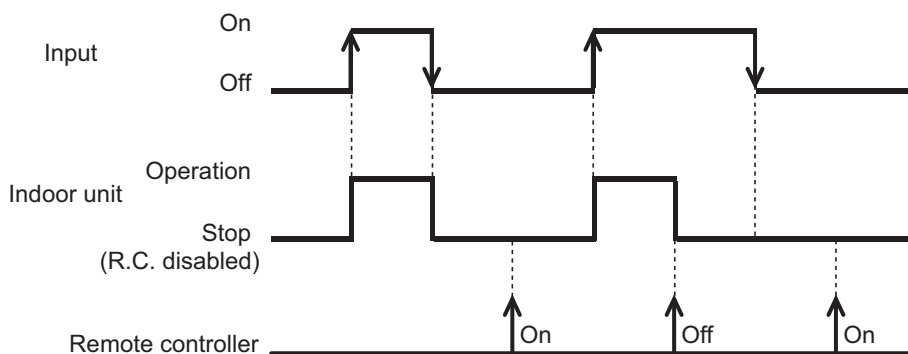
NOTES:

- 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.

● When function setting is "Operation/Stop" mode 2

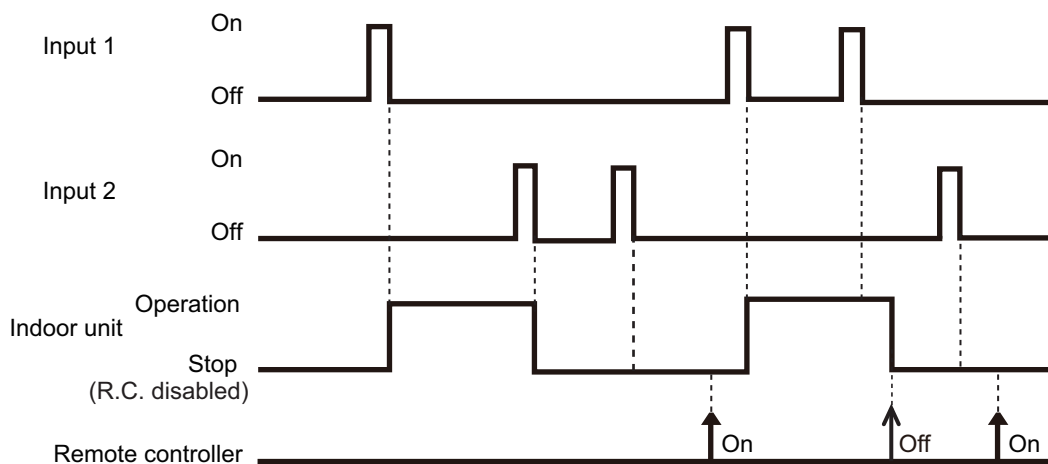
- In the case of "Edge" input

Function setting /	Rotary SW of External input and output PCB	External input		Input signal	Command
46-03	-	Input of indoor unit	Terminal	Off → On	Operation
				On → Off	Stop (R.C. disabled)
	60-00 / 1	External input and output PCB	Input 1	Off → On	Operation
				On → Off	Stop (R.C. disabled)



- In the case of "Pulse" input

Function setting /	Rotary SW of External input and output PCB	External input		Input signal	Command
46-03	60-00 / 1	External input and output PCB	Input 1	Pulse	Operation
			Input 2	Pulse	Stop (R.C. disabled)

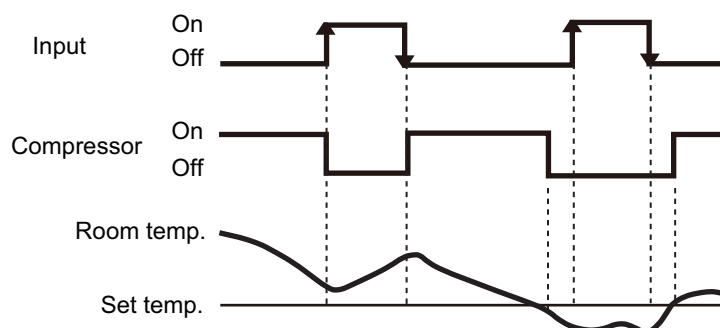


NOTES:

- 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 function

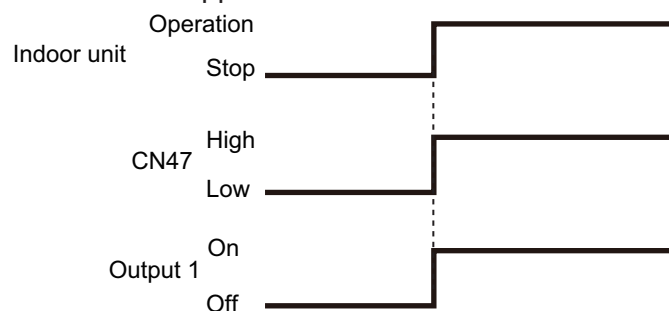
Function setting /	Rotary SW of External input and output PCB	External input		Input signal	Command
60-00 / 2	60-09 / B 60-10 / C 60-11 / D	External input and output PCB	Input 1	Off → On	Thermostat off
				On → Off	Normal operation



■ Control output function

Function setting /	Rotary SW of External input and output PCB	External output		Output signal	Command
60-00 / 1, 2	60-09 / B 60-10 / C 60-11 / D	Output of indoor unit	CN47	Low → High	Operation
				High → Low	Stop
60-00 / 1	60-09 / B 60-10 / C 60-11 / D	External input and output PCB	Output 1	Off → On	Operation
				On → Off	Stop

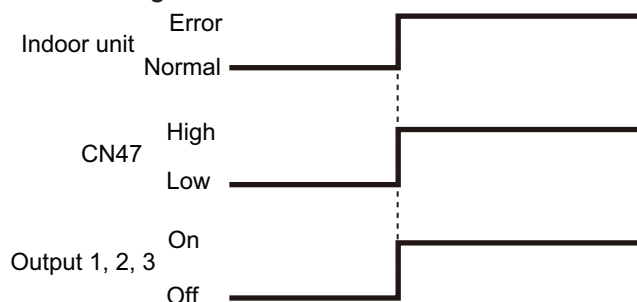
The output is low when the unit is stopped.



■ Error status

Function setting /	Rotary SW of External input and output PCB	External output		Output signal	Command
60-09 / B		Output of indoor unit	CN47	Low → High	Error
				High → Low	Normal
60-00 / 2	External input and output PCB	Output 1	Off → On	Error	
			On → Off	Normal	
Output 2		Off → On	Error		
		On → Off	Normal		
60-00 / 1 60-10 / C		Output 3	Off → On	Error	
			On → Off	Normal	

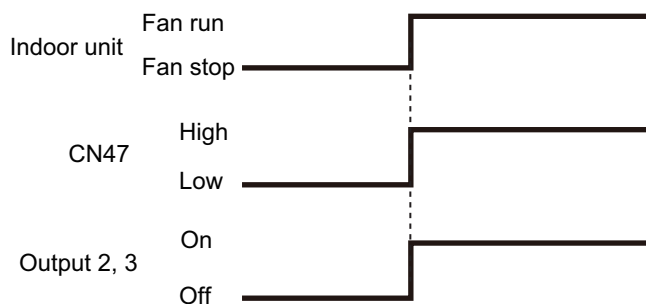
The output is ON when an error is generated for the indoor unit.



■ Indoor unit fan operation status

Function setting /	Rotary SW of External input and output PCB	External output		Output signal	Command	
60-10 / C		Output of indoor unit	CN47	Low → High	Fan run	
				High → Low	Fan stop	
60-00 / 2 60-09 / B 60-11 / D	External input and output PCB		Output 2	Off → On	Fan run	
				On → Off	Fan stop	
		Output 3	Off → On	Fan run		
			On → Off	Fan stop		
60-00 / 1						

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



■ External heater output

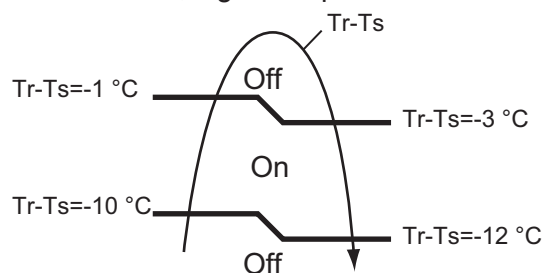
Function setting /	Rotary SW of External input and output PCB	External output		Output signal	Command
60-11 / D		Output of indoor unit	CN47	Low → High	Heater on
				High → Low	Heater off
60-00 / 2 60-09 / B 60-10 / C		External input and output PCB	Output 3	Off → On	Heater on
				On → Off	Heater off

Output signal	Condition
Low → High Off → On	Heater turns on as shown in diagram of heating temperature
High → Low On → Off	Heater turns off as shown in diagram of heating temperature <ul style="list-style-type: none"> • Other than Heating mode • Error occurred • Forced thermo off • Fan stop protection

Specifications of the signal output performance are as shown as follows:

Example: When set temperature (T_s) is set at 22 °C;

- And room temperature (T_r) increase above 12 °C, signal output is on.
- And T_r increase above 21 °C, signal output is off.
- And T_r decrease below 19 °C, signal output is on.
- And T_r decrease below 10 °C, signal output is off.



The output also turns off in defrost operation.

9. 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.

9-1. Function settings on indoor unit

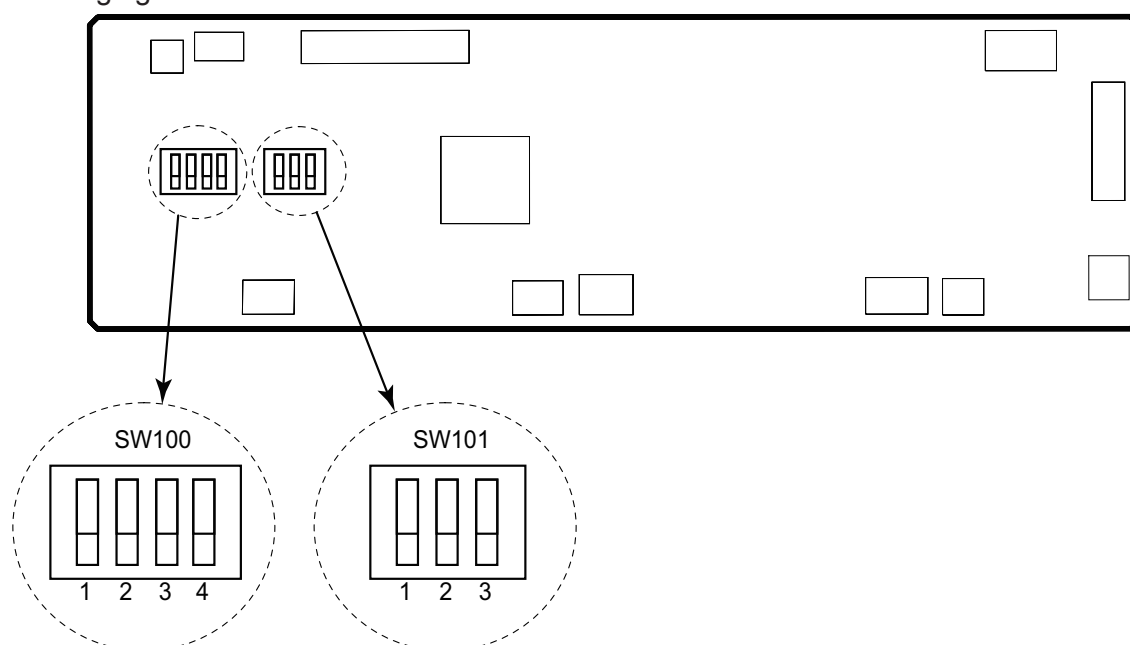
By using some components on the PCB, you can change the function settings.

Related components on the PCB and the applicable settings

Component			Setting content
DIP switch	SW100	1	Remote controller address setting
		2	
		3	
		4	
	SW101	1	Drainage function setting
		2	Setting change prohibited
		3	Fan delay setting

● Component location

Components on the indoor unit main PCB used for the function settings are located as shown in the following figure.



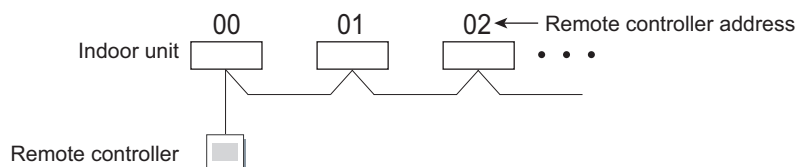
● DIP switch setting

• SW100: Remote controller address setting

When operating a number of indoor units by using a wired remote controller, DIP switch setting for assigning unit number to each indoor unit is required.

The slide switches are normally set to make the unit number 00.

Remote controller address	Switch number				Factory setting
	1	2	3	4	
00	OFF	OFF	OFF	OFF	◆
01	ON	OFF	OFF	OFF	
02	OFF	ON	OFF	OFF	
03	ON	ON	OFF	OFF	
04	OFF	OFF	ON	OFF	
05	ON	OFF	ON	OFF	
06	OFF	ON	ON	OFF	
07	ON	ON	ON	OFF	
08	OFF	OFF	OFF	ON	
09	ON	OFF	OFF	ON	
10	OFF	ON	OFF	ON	
11	ON	ON	OFF	ON	
12	OFF	OFF	ON	ON	
13	ON	OFF	ON	ON	
14	OFF	ON	ON	ON	
15	ON	ON	ON	ON	



• SW101-Switch 1: Drainage function setting

Switch 1	Drainage function	Factory setting
ON	Disabled	
OFF	Enabled	◆

• SW101-Switch 2: Setting change prohibited

• SW101- Switch 3: Fan delay setting

When the indoor unit is stopped while operating in conjunction with auxiliary heater, the indoor unit fan operation will continue for 1 minute.

Switch 3	Fan delay	Factory setting
ON	Enabled	
OFF	Disabled	◆

9-2. 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 remote controller

Remote controller is not attached for this product. For details of the installing remote controller, refer to following information.

- Overview information: Operating manual of the remote controller
- Setting procedure: Installation manual of the remote controller

■ 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)	26	Static pressure
3)	30/31	Room temperature control for indoor unit sensor
4)	35/36	Room temperature control for wired remote controller sensor
5)	40	Auto restart
6)	42	Room temperature sensor switching
7)	43	Cold air prevention
8)	46	External input control
9)	48	Room temperature sensor switching (Aux.)
10)	49	Indoor unit fan control for energy saving for cooling
11)	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 (2,500 hours)	
	01	Long interval (4,400 hours)	
	02	Short interval (1,250 hours)	
	03	No indication	◆

2) Static pressure

Select the appropriate static pressure according to the installation conditions.

Function number	Setting value	Setting description	Factory setting
26	03	30 Pa	
	04	40 Pa	
	05	50 Pa	
	06	60 Pa	
	07	70 Pa	
	08	80 Pa	
	09	90 Pa	
	10	100 Pa	
	11	110 Pa	
	12	120 Pa	
	13	130 Pa	
	14	140 Pa	
	15	150 Pa	
	16	160 Pa	
	17	170 Pa	
	18	180 Pa	
	19	190 Pa	
	20	200 Pa	
	31	Standard (35 Pa)	◆
	32	Automatic airflow adjustment	

3) 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 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
		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
		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) 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	

5) 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.

6) 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.

7) Cold air prevention

This setting is to disable the cold air prevention function during heating operation. When disabled, the fan setting will always follow the setting on the remote controller. (Excluding defrost mode)

Function number	Setting value	Setting description	Factory setting
43	00	Enable	◆
	01	Disable	

8) 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	◆
	01	(Setting prohibited)	
	02	Forced stop mode	
	03	Operation/Stop mode 2	

9) 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	

10) 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.

NOTES:

- As the factory setting, this setting is initially activated.
- 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.


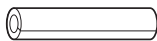
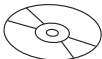






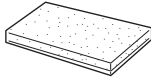

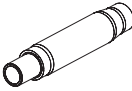
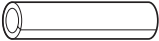

11) Switching functions for external output terminal

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	External heater	

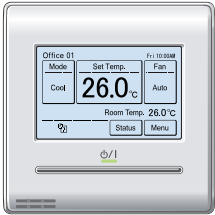
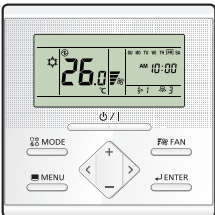
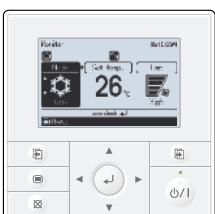
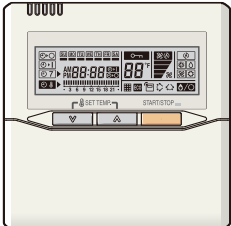
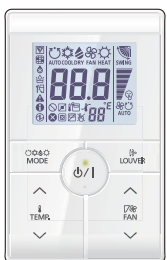


10. Accessories

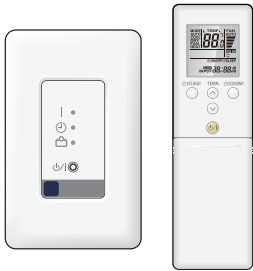
10-1. Models: ARXG12KHTAP, ARXG14KHTAP, ARXG18KHTAP, and ARXG22KHTAP

Part name	Exterior	Q'ty	Part name	Exterior	Q'ty
Operating manual		1	Coupler heat insulation (small)		1
Operating manual (CD-ROM)		1	Cable tie (large)		4
Installation manual		1	Cable tie (medium)		1
Special nut A (large flange)		4	Cable tie (small)		1
Special nut B (small flange)		4	Drain hose insulation		1
Washer		8	Drain hose		1
Coupler heat insulation (large)		1	Hose band		1

11. Optional parts


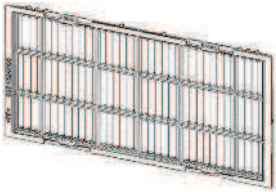
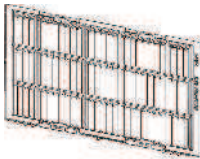
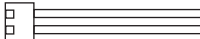
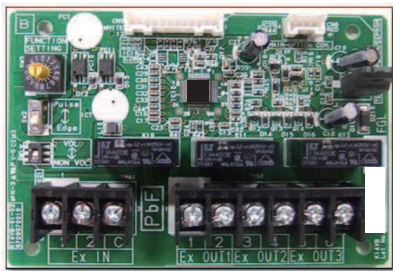
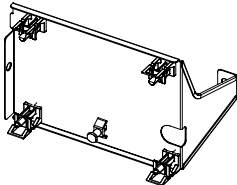
11-1. Controllers





Exterior	Part name	Model name	Summary
	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
	Wired remote controller	UTY-RLRG	High visibility and easy operation. Room temperature can be accurately controlled using the built-in thermo sensor. Wire type: Non-polar 2-wire
	Wired remote controller	UTY-RVNGM	Large and full-dot liquid crystal screen, wide and large keys easy to press, user-intuitive arrow key. Wire type: Polar 3-wire
	Wired remote controller	UTY-RNNGM	Room temperature can be controlled by detecting the temperature accurately with built-in thermo sensor. Wire type: Polar 3-wire
	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
	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
	Simple remote controller	UTY-RSNGM	Compact remote controller concentrates on the basic functions such as Start/Stop, fan control, temperature setting, and operation mode. Wire type: Polar 3-wire

Exterior	Part name	Model name	Summary
	IR receiver kit with wireless remote controller	UTY-LBTGM	Unit control is performed by wireless remote controller.

NOTE: Available functions may differ by the remote controller. For details, refer to the operation manual.

11-2. Others

Exterior	Part name	Model name	Summary
	Remote sensor unit	UTY-XSZX	Thermo-sensor for sensing the temperature of arbitrary place in the room.
	Long-life filter	UTD-LFNC	Long-life filter can be mounted to the indoor unit. (For 12 and 14 models)
	Long-life filter	UTD-LFNB	Long-life filter can be mounted to the indoor unit. (For 18 and 22 models)
	External connect kit	UTY-XWZXZG	Use to connect with various peripheral devices and air conditioner PCB. For control output port.
	External input and output PCB	UTY-XCSX	Use to connect with external devices and air conditioner PCB.
	External input and output PCB bracket	UTZ-GXNA	For installing the External input and output PCB.

Exterior	Part name	Model name	Summary
	Wireless LAN adapter	UTY-TFSXZ1	Remotely manage an air conditioning system using mobile devices such as smartphones and tablets. For connection indoor unit with UART interface.
	Modbus converter	UTY-VMSX	For connection between indoor unit with UART interface and a Modbus open network.
	KNX converter	UTY-VKSX	For connection between indoor unit with UART interface and a KNX open network.
	External switch controller	UTY-TERX	Air conditioner switching can be controlled by connecting other external sensor switches.

NOTE: Combined use of following optional parts and Wireless LAN adapter (UTY-TFSXZ1) is not allowed.

- External input and output PCB (UTY-XCSX)
- Modbus converter
- KNX converter

Part 2. OUTDOOR UNIT

SINGLE TYPE:

AOHG12KBTB

AOHG14KBTB

AOHG18KBTB

AOHG22KBTB

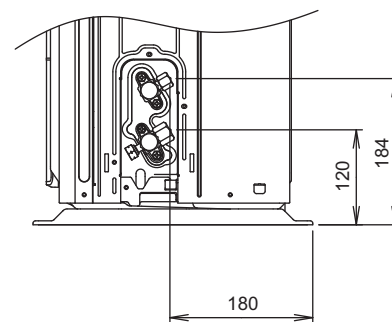
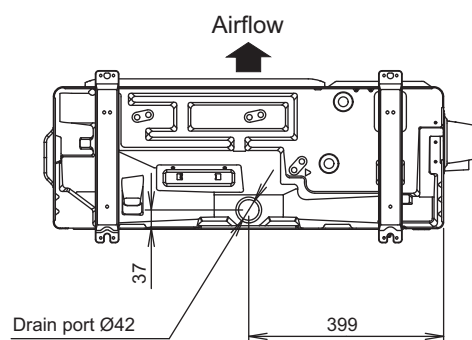
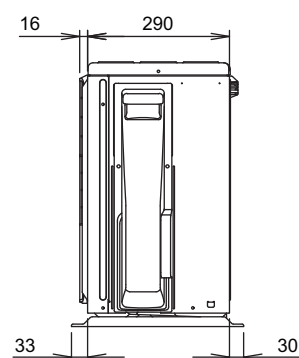
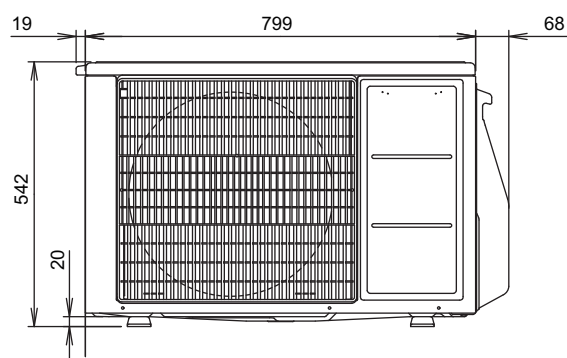
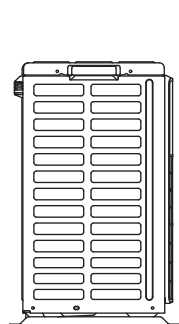
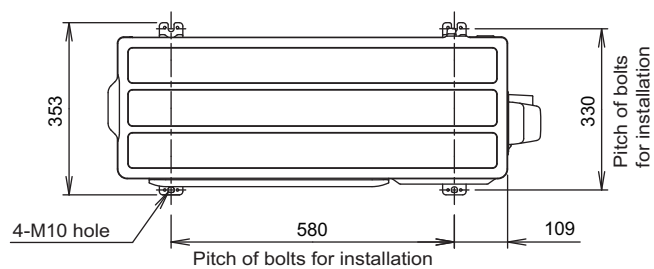
1. Specifications

Type				Inverter heat pump				
Model name				AOHG12KBTB	AOHG14KBTB	AOHG18KBTB	AOHG22KBTB	
Power supply				230 V ~ 50 Hz				
Available voltage range				198—264 V				
Starting current			A	4.8	5.8	7.1	8.2	
Fan	Airflow rate	Cooling	m³/h	1,580	1,670	2,160	2,240	
		Heating		1,520	1,580	1,830	1,960	
	Type × Q'ty			Propeller fan × 1				
Motor output			W	23		49		
Sound pressure level *1		Cooling	dB (A)	47	49	50	51	
		Heating		47	49	50	51	
Sound power level		Cooling	dB (A)	61	62	62	63	
		Heating		61	62	62	63	
Heat exchanger type		Dimensions (H × W × D)	mm	504 × 881 × 18.19		588 × 881 × 18.19		
		504 × 851 × 18.19		588 × 851 × 18.19				
		Fin pitch		1.3				
		Rows × Stages			2 × 24		2 × 28	
		Pipe type			Copper tube			
Fin type		Type (Material)		Aluminum				
		Surface treatment		PC fin				
Compressor	Type × Q'ty	DC Twin rotary × 1						
	Motor output		W	810	900		1,060	
Refrigerant		Type (Global warming potential)	R32 (675)					
		Charge	g	850		1,020		
Refrigerant oil		Type	FW68S				RmM68AF	
		Amount	cm³	350			400	
Enclosure		Material	Steel sheet					
		Color	Beige					
Dimensions (H × W × D)		Net	mm	542 × 799 × 290		632 × 799 × 290		
		Gross		602 × 940 × 375		692 × 940 × 375		
Weight		Net	kg	33		36	38	
		Gross		37		40	42	
Connection pipe	Size	Liquid	mm (in)	Ø 6.35 (Ø 1/4)				
		Gas		Ø 9.52 (Ø 3/8)		Ø 12.70 (Ø 1/2)		
	Method			Flare				
	Pre-charge length		m	15		20		
	Max. length			25		30		
	Max. height difference			20			25	
Operation range		Cooling	°C	-15 to 46				
		Heating		-15 to 24				
Drain hose		Material	PP					
		Size	mm	Ø 13.0 (I. D.), Ø 16.0 to Ø 16.8 (O. D.)				
NOTES:								
<ul style="list-style-type: none">Specifications are based on the following conditions:<ul style="list-style-type: none">Cooling: Indoor temperature of 27 °CDB/19 °CWB, and outdoor temperature of 35 °CDB/24 °CWB.Heating: Indoor temperature of 20 °CDB/15 °CWB, and outdoor temperature of 7 °CDB/6 °CWB.Pipe length: 5 m, Height difference: 0 m.Protective function might work when using it outside the operation range.*1: Sound pressure level<ul style="list-style-type: none">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.								

2. Dimensions

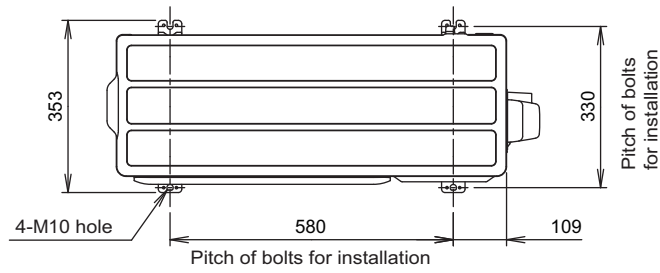
2-1. Models: AOHG12KBTB and AOHG14KBTB

Unit: mm

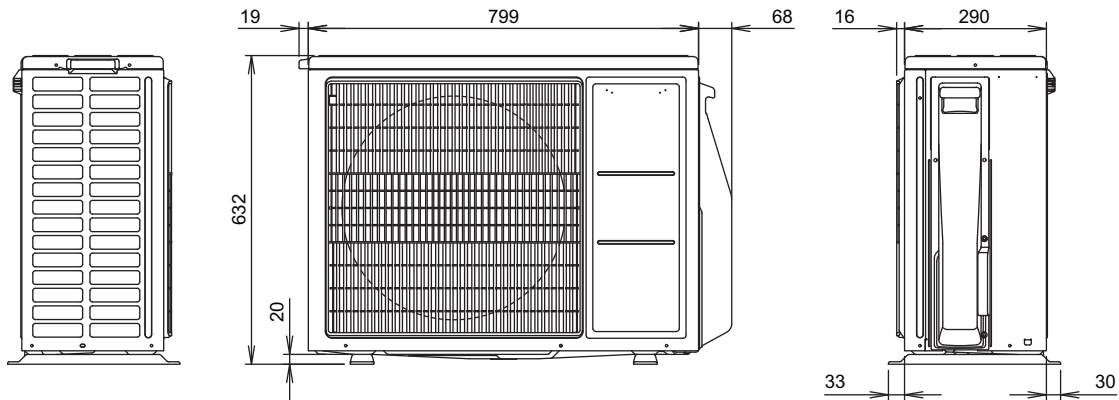


2-2. Models: AOHG18KBTB and AOHG22KBTB

Unit: mm

OUTDOOR UNIT
AOHG12-22KBTBOUTDOOR UNIT
AOHG12-22KBTB

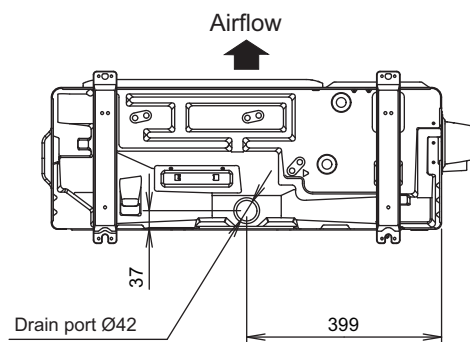
Top view



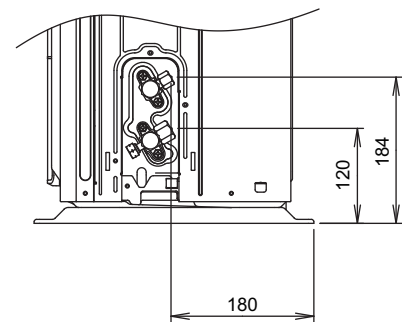
Side view

Front view

Side view



Bottom view



Side view (Valve part)

3. Installation space

3-1. Models: AOHG12KBTB, AOHG14KBTB, AOHG18KBTB, and AOHG22KBTB

■ Space requirement

Provide sufficient installation space for product safety.

⚠ CAUTION

Keep the space shown in the installation examples.

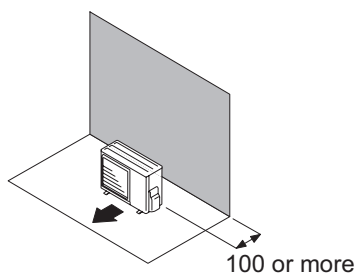
If the installation is not performed accordingly, it could cause a short circuit and result in a lack of operating performance.

● Single outdoor unit installation

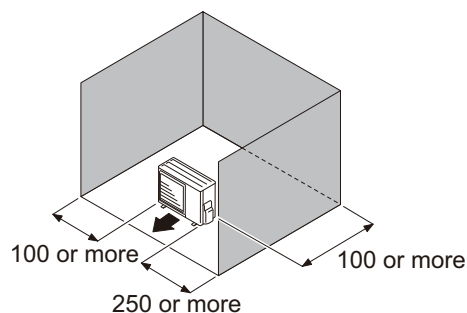
- When the upper space is open:

Unit: mm

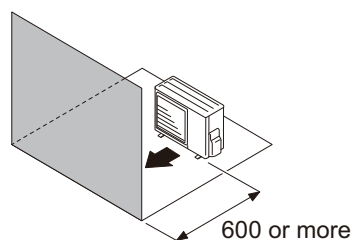
Obstacles at rear only



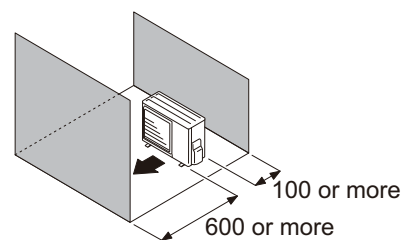
Obstacles at rear and sides



Obstacles at front



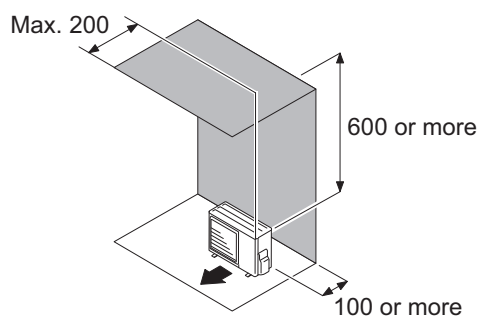
Obstacles at front and rear



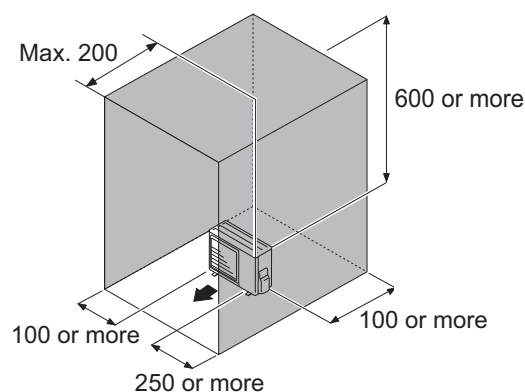
- When there is an obstruction in the upper space:

Unit: mm

Obstacles at rear and above



Obstacles at rear, sides, and above



OUTDOOR UNIT
AOHG12-22KBTB

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

Obstacles at rear only



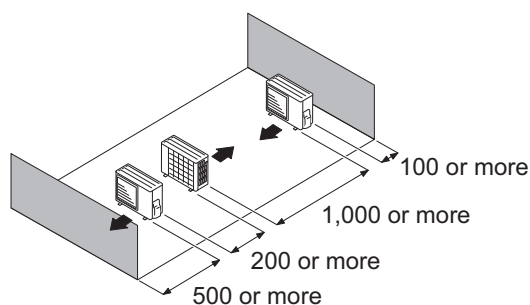
Obstacles at rear and above.



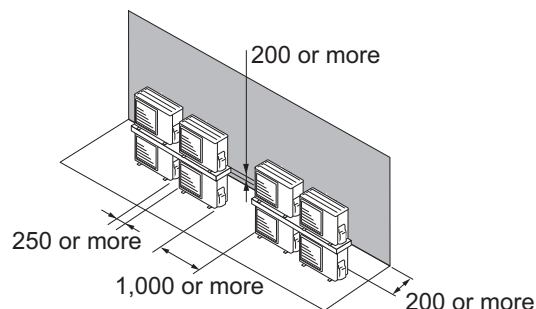
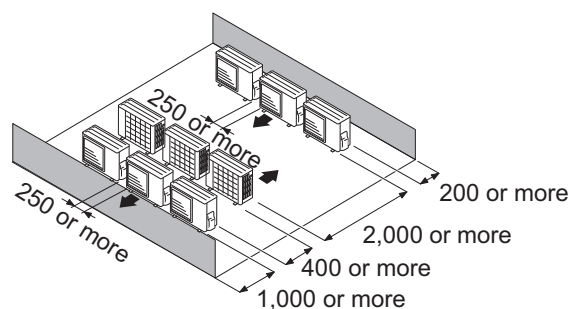
● Outdoor units installation in multi-row

Unit: mm

Single parallel unit arrangement



Multiple parallel unit arrangement

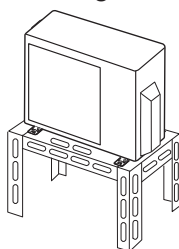


NOTES:

- 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.

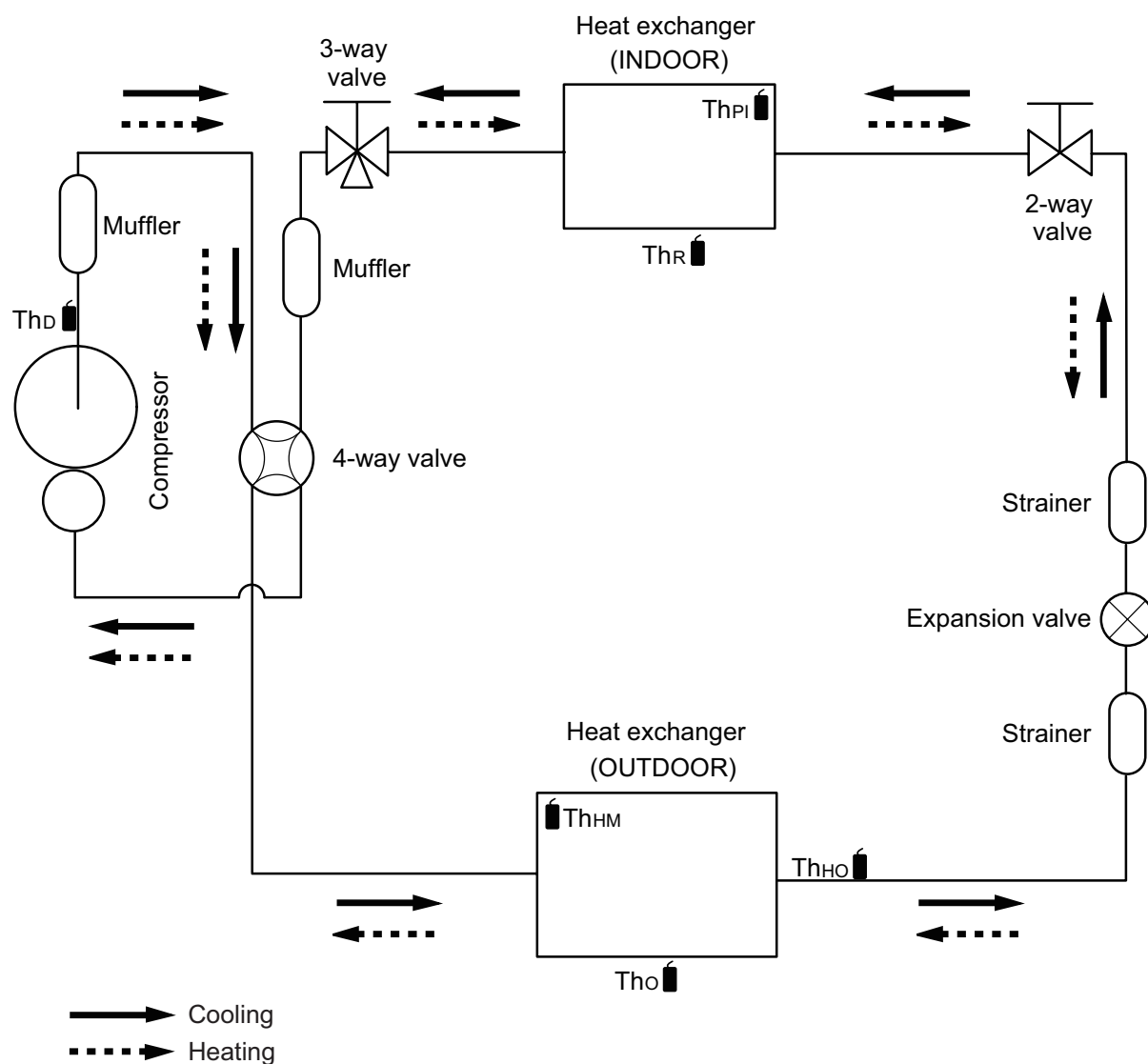
⚠ CAUTION

- 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: AOHG12KBTB and AOHG14KBTB



Th_D : Thermistor (Discharge temperature)

Th_O : Thermistor (Outdoor temperature)

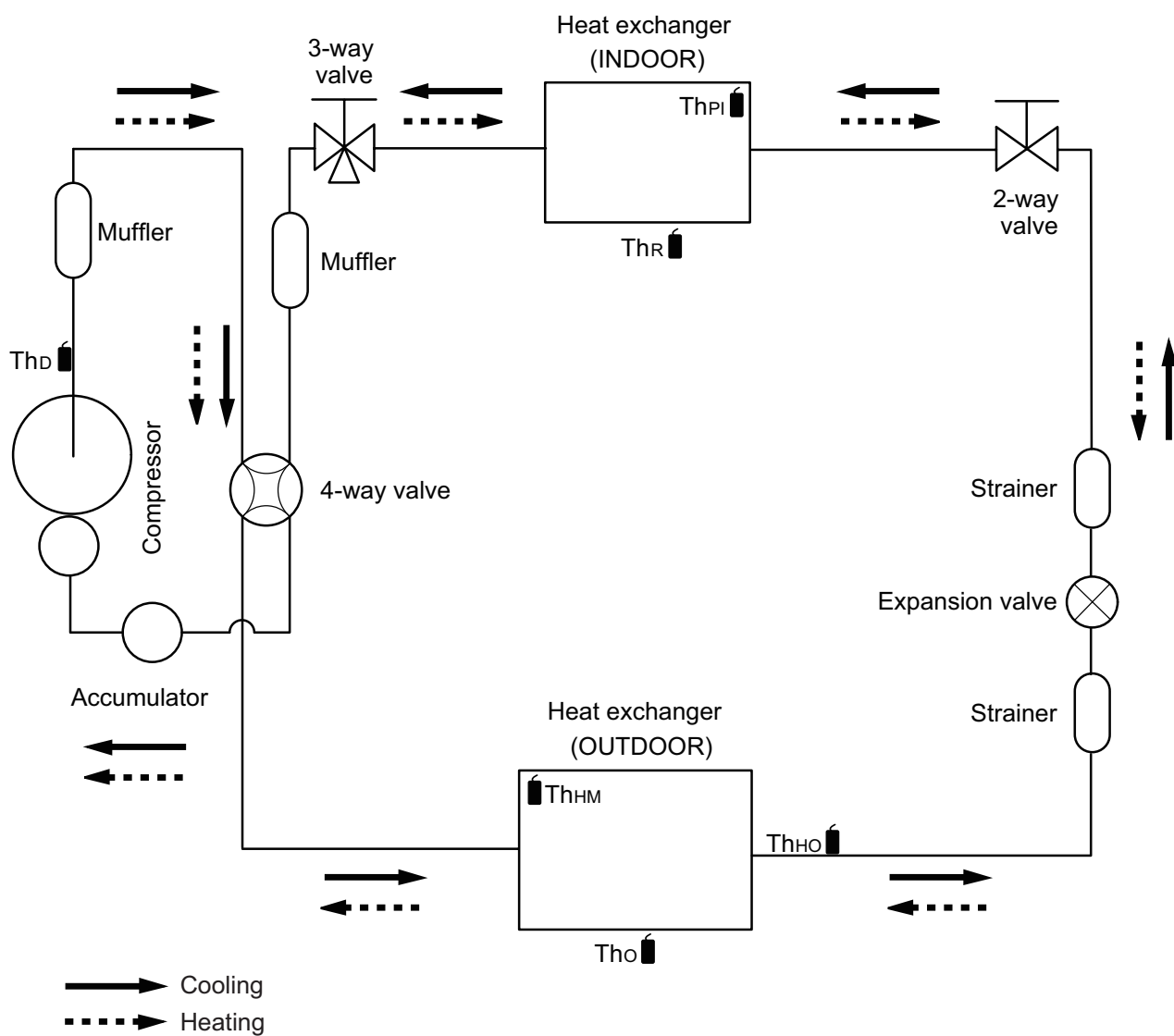
Th_{HO} : Thermistor (Heat exchanger out temperature)

Th_{HM} : Thermistor (Heat exchanger middle temperature)

Th_R : Thermistor (Room temperature)

Th_{PI} : Thermistor (Pipe temperature)

4-2. Model: AOHG18KBTB



Th_D : Thermistor (Discharge temperature)

Th_O : Thermistor (Outdoor temperature)

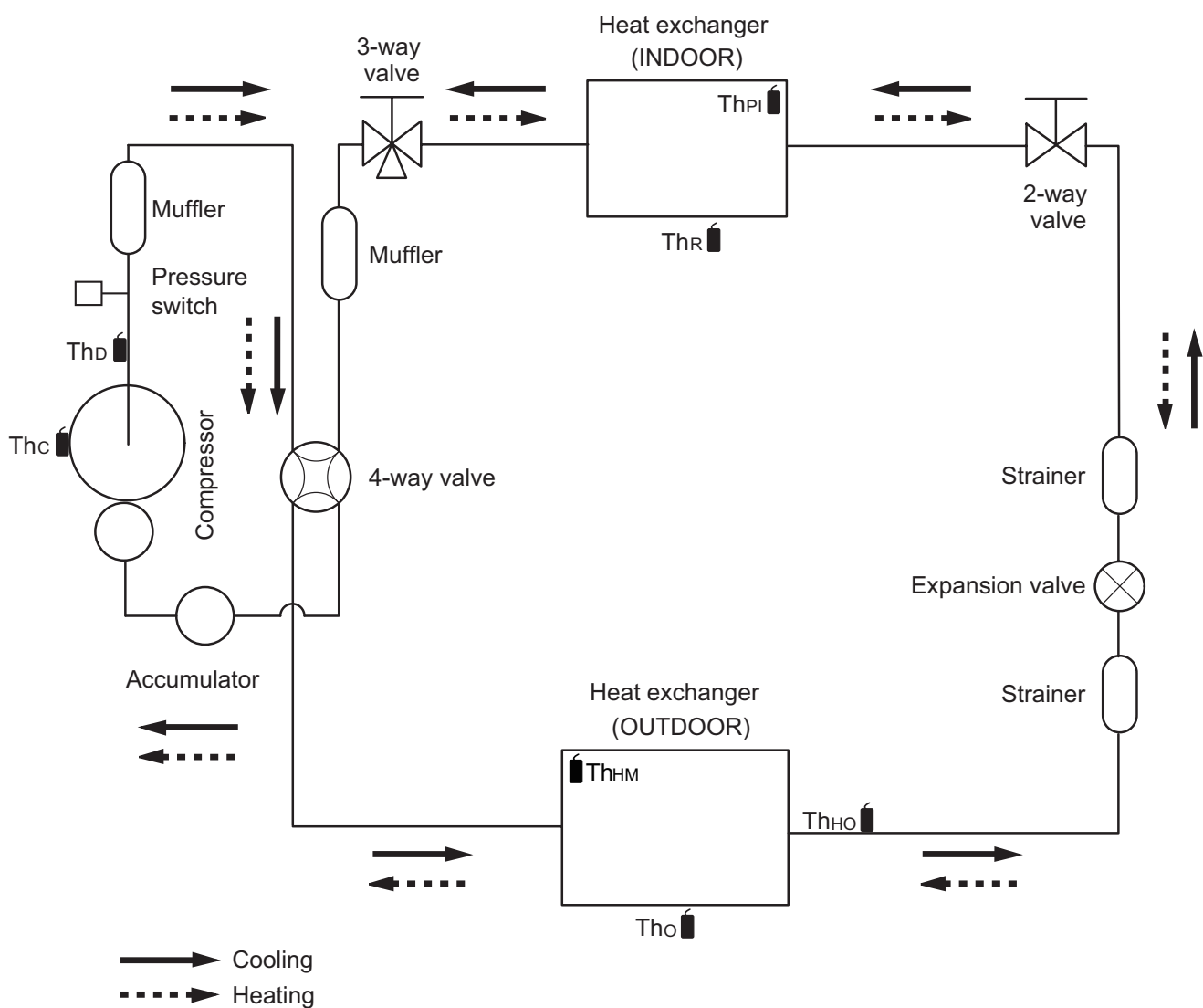
Th_{HO} : Thermistor (Heat exchanger out temperature)

Th_{HM} : Thermistor (Heat exchanger middle temperature)

Th_R : Thermistor (Room temperature)

Th_{PI} : Thermistor (Pipe temperature)

4-3. Model: AOHG22KBTB



Thc : Thermistor (Compressor temperature)

ThD : Thermistor (Discharge temperature)

Tho : Thermistor (Outdoor temperature)

ThHO : Thermistor (Heat exchanger out temperature)

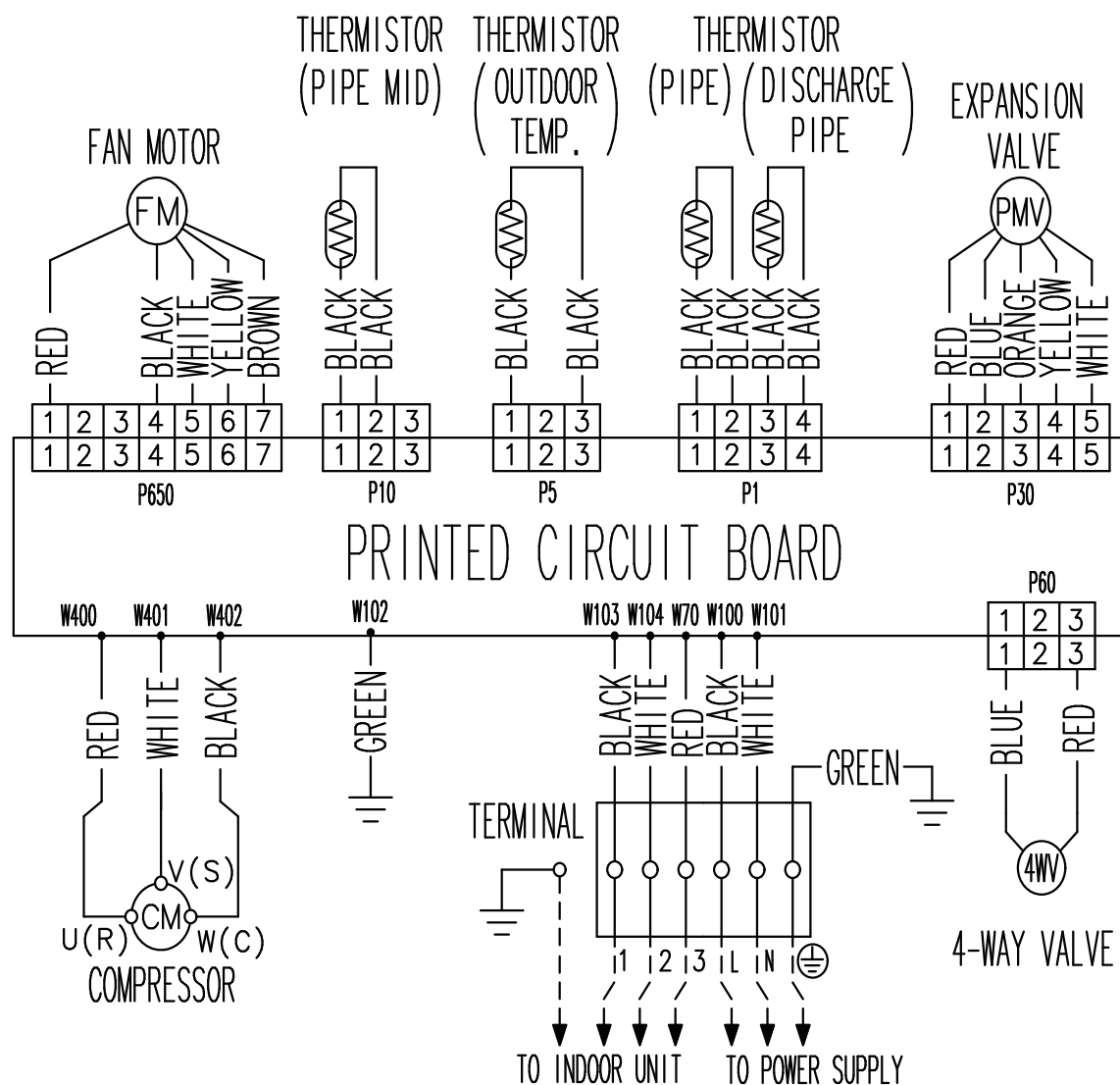
ThHM : Thermistor (Heat exchanger middle temperature)

ThR : Thermistor (Room temperature)

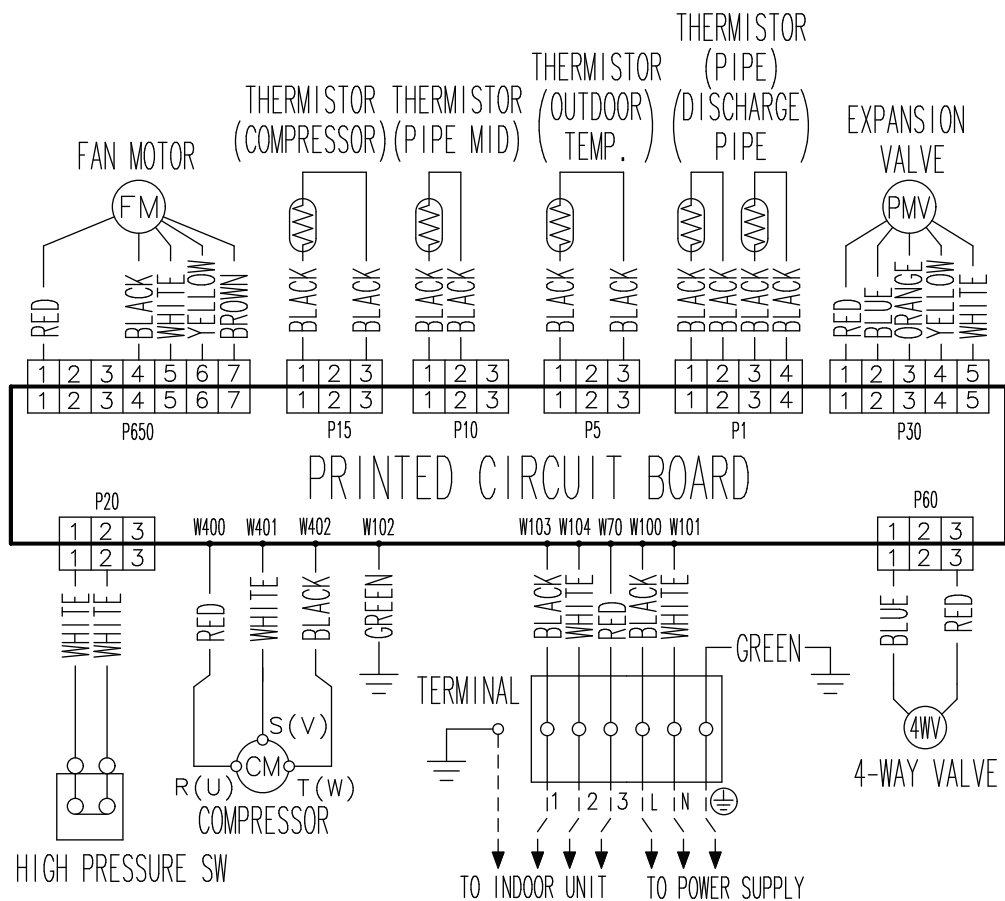
ThPI : Thermistor (Pipe temperature)

5. Wiring diagrams

5-1. Models: AOHG12KBTB, AOHG14KBTB, and AOHG18KBTB

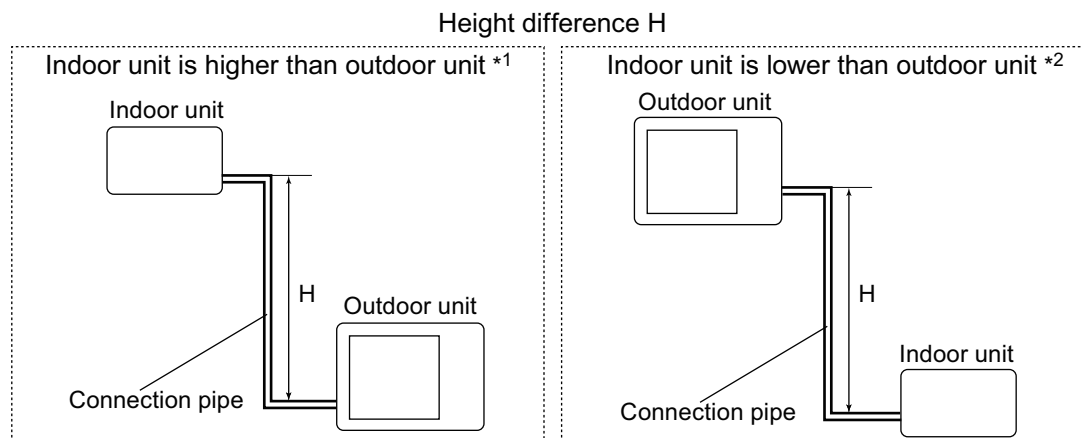


5-2. Model: AOHG22KBTB



**OUTDOOR UNIT
AOHG12-22KBTB**

6. Capacity compensation rate for pipe length and height difference



6-1. Model: AOHG12KBTB

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

COOLING			Pipe length (m)					
			5	7.5	10	15	20	25
Height difference H (m)	Indoor unit is higher than outdoor unit *1	20	—	—	—	—	0.879	0.851
		15	—	—	—	0.903	0.894	0.867
		10	—	—	0.964	0.918	0.909	0.881
		7.5	—	0.988	0.968	0.922	0.912	0.885
		5	0.992	0.992	0.972	0.925	0.916	0.888
	Indoor unit is lower than outdoor unit *2	0	1.000	1.000	0.980	0.933	0.923	0.895
		-5	1.000	1.000	0.980	0.933	0.923	0.895
		-7.5	—	1.000	0.980	0.933	0.923	0.895
		-10	—	—	0.980	0.933	0.923	0.895
		-15	—	—	—	0.933	0.923	0.895

HEATING			Pipe length (m)					
			5	7.5	10	15	20	25
Height difference H (m)	Indoor unit is higher than outdoor unit *1	20	—	—	—	—	0.916	0.896
		15	—	—	—	0.943	0.916	0.896
		10	—	—	1.010	0.943	0.916	0.896
		7.5	—	1.000	1.010	0.943	0.916	0.896
		5	1.000	1.000	1.010	0.943	0.916	0.896
	Indoor unit is lower than outdoor unit *2	0	1.000	1.000	1.010	0.943	0.916	0.896
		-5	0.995	0.995	1.005	0.939	0.912	0.892
		-7.5	—	0.993	1.002	0.936	0.909	0.890
		-10	—	—	0.999	0.934	0.907	0.887
		-15	—	—	—	0.925	0.898	0.878

6-2. Model: AOHG14KBTB

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

COOLING			Pipe length (m)					
			5	7.5	10	15	20	25
Height difference H (m)	Indoor unit is higher than outdoor unit *1	20	—	—	—	—	0.932	0.930
		15	—	—	—	0.953	0.950	0.947
		10	—	—	0.983	0.968	0.966	0.962
		7.5	—	0.988	0.987	0.972	0.970	0.966
		5	0.992	0.992	0.991	0.976	0.974	0.970
			0	1.000	1.000	0.999	0.984	0.982
	Indoor unit is lower than outdoor unit *2	-5	1.000	1.000	0.999	0.984	0.982	0.978
		-7.5	—	1.000	0.999	0.984	0.982	0.978
		-10	—	—	0.999	0.984	0.982	0.978
		-15	—	—	—	0.984	0.982	0.978
		-20	—	—	—	—	0.982	0.978

HEATING			Pipe length (m)					
			5	7.5	10	15	20	25
Height difference H (m)	Indoor unit is higher than outdoor unit *1	20	—	—	—	—	0.891	0.862
		15	—	—	—	0.918	0.891	0.862
		10	—	—	0.981	0.918	0.891	0.862
		7.5	—	1.000	0.981	0.918	0.891	0.862
		5	1.000	1.000	0.981	0.918	0.891	0.862
			0	1.000	1.000	0.981	0.918	0.891
	Indoor unit is lower than outdoor unit *2	-5	0.995	0.995	0.976	0.914	0.886	0.858
		-7.5	—	0.993	0.974	0.912	0.884	0.856
		-10	—	—	0.972	0.909	0.882	0.854
		-15	—	—	—	0.900	0.873	0.845
		-20	—	—	—	—	0.863	0.834

6-3. Model: AOHG18KBTB

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

COOLING			Pipe length (m)						
			5	7.5	10	15	20	25	30
Height difference H (m)	Indoor unit is higher than outdoor unit *1	20	—	—	—	—	0.932	0.930	0.924
		15	—	—	—	0.953	0.950	0.947	0.941
		10	—	—	0.983	0.968	0.966	0.962	0.956
		7.5	—	0.988	0.987	0.972	0.970	0.966	0.960
		5	0.992	0.992	0.991	0.976	0.974	0.970	0.964
	Indoor unit is lower than outdoor unit *2	0	1.000	1.000	0.999	0.984	0.982	0.978	0.972
		-5	1.000	1.000	0.999	0.984	0.982	0.978	0.972
		-7.5	—	1.000	0.999	0.984	0.982	0.978	0.972
		-10	—	—	0.999	0.984	0.982	0.978	0.972
		-15	—	—	—	0.984	0.982	0.978	0.972
		-20	—	—	—	—	0.982	0.978	0.972

HEATING			Pipe length (m)						
			5	7.5	10	15	20	25	30
Height difference H (m)	Indoor unit is higher than outdoor unit *1	20	—	—	—	—	0.894	0.867	0.839
		15	—	—	—	0.920	0.894	0.867	0.839
		10	—	—	0.982	0.920	0.894	0.867	0.839
		7.5	—	1.000	0.982	0.920	0.894	0.867	0.839
		5	1.000	1.000	0.982	0.920	0.894	0.867	0.839
	Indoor unit is lower than outdoor unit *2	0	1.000	1.000	0.982	0.920	0.894	0.867	0.839
		-5	0.995	0.995	0.977	0.916	0.889	0.862	0.836
		-7.5	—	0.993	0.975	0.913	0.887	0.860	0.832
		-10	—	—	0.972	0.911	0.885	0.858	0.830
		-15	—	—	—	0.902	0.876	0.849	0.821
		-20	—	—	—	—	0.863	0.834	0.809

6-4. Model: AOHG22KBTB

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

COOLING			Pipe length (m)						
			5	7.5	10	15	20	25	30
Height difference H (m)	Indoor unit is higher than outdoor unit *1	25	—	—	—	—	0.909	0.909	0.903
		15	—	—	—	0.953	0.950	0.947	0.941
		10	—	—	0.983	0.968	0.966	0.962	0.956
		7.5	—	0.988	0.987	0.972	0.970	0.966	0.960
		5	0.992	0.992	0.991	0.976	0.974	0.970	0.964
	Indoor unit is lower than outdoor unit *2	0	1.000	1.000	0.999	0.984	0.982	0.978	0.972
		-5	1.000	1.000	0.999	0.984	0.982	0.978	0.972
		-7.5	—	1.000	0.999	0.984	0.982	0.978	0.972
		-10	—	—	0.999	0.984	0.982	0.978	0.972
		-15	—	—	—	0.984	0.982	0.978	0.972
		-25	—	—	—	—	0.982	0.978	0.972

HEATING			Pipe length (m)						
			5	7.5	10	15	20	25	30
Height difference H (m)	Indoor unit is higher than outdoor unit *1	25	—	—	—	—	0.894	0.867	0.839
		15	—	—	—	0.920	0.894	0.867	0.839
		10	—	—	0.982	0.920	0.894	0.867	0.839
		7.5	—	1.000	0.982	0.920	0.894	0.867	0.839
		5	1.000	1.000	0.982	0.920	0.894	0.867	0.839
	Indoor unit is lower than outdoor unit *2	0	1.000	1.000	0.982	0.920	0.894	0.867	0.839
		-5	0.995	0.995	0.977	0.916	0.889	0.862	0.836
		-7.5	—	0.993	0.975	0.913	0.887	0.860	0.832
		-10	—	—	0.972	0.911	0.885	0.858	0.830
		-15	—	—	—	0.902	0.876	0.849	0.821
		-25	—	—	—	—	0.851	0.821	0.795

7. Additional charge calculation

7-1. Models: AOHG12KBTB and AOHG14KBTB

Refrigerant type			R32
Refrigerant amount	g	850	

■ Refrigerant charge

Total pipe length	m	15 or less	20	25 (Max.)	20 g/m
Additional charge	g	0	100	200	

7-2. Model: AOHG18KBTB

Refrigerant type			R32
Refrigerant amount	g	1,020	

■ Refrigerant charge

Total pipe length	m	20 or less	25	30 (Max.)	20 g/m
Additional charge	g	0	100	200	

7-3. Model: AOHG22KBTB

Refrigerant type			R32
Refrigerant amount	g	1,250	

■ Refrigerant charge

Total pipe length	m	20 or less	25	30 (Max.)	20 g/m
Additional charge	g	0	100	200	

8. Airflow

8-1. Model: AOHG12KBTB

● Cooling

m ³ /h	1,580
l/s	439
CFM	930

● Heating

m ³ /h	1,520
l/s	422
CFM	895

8-2. Model: AOHG14KBTB

● Cooling

m ³ /h	1,670
l/s	464
CFM	983

● Heating

m ³ /h	1,580
l/s	439
CFM	930

8-3. Model: AOHG18KBTB

● Cooling

m ³ /h	2,160
l/s	600
CFM	1,271

● Heating

m ³ /h	1,830
l/s	508
CFM	1,077

8-4. Model: AOHG22KBTB

● Cooling

m ³ /h	2,240
l/s	622
CFM	1,318

● Heating

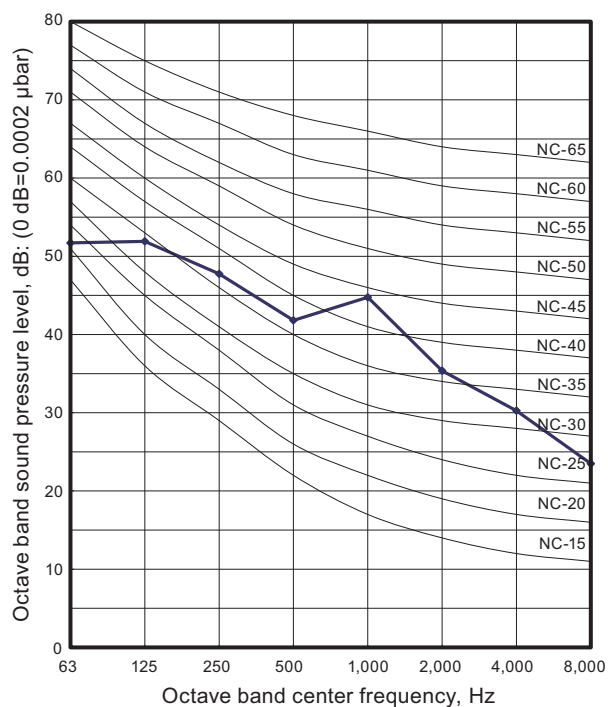
m ³ /h	1,960
l/s	544
CFM	1,154

9. Operation noise (sound pressure)

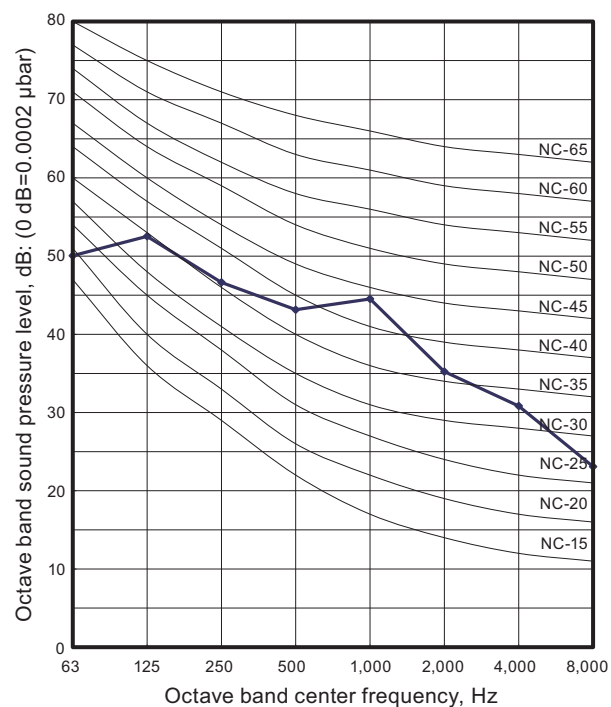
9-1. Noise level curve

Model: AOHG12KBTB

● Cooling

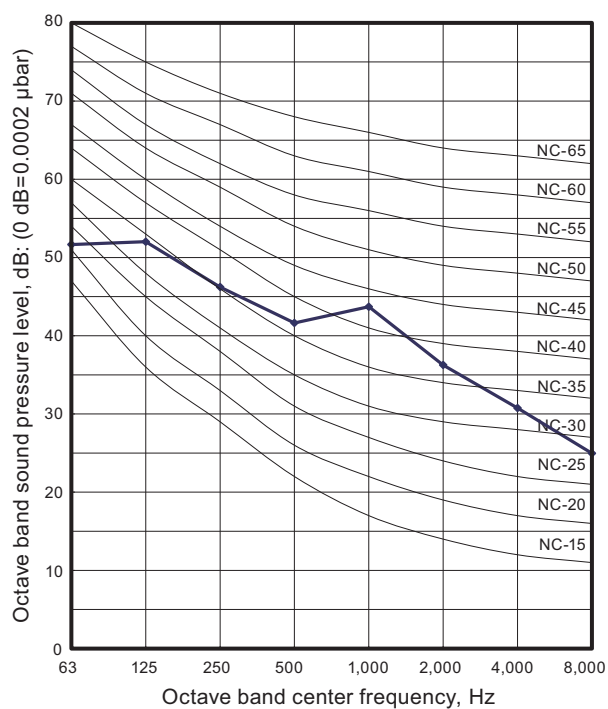


● Heating

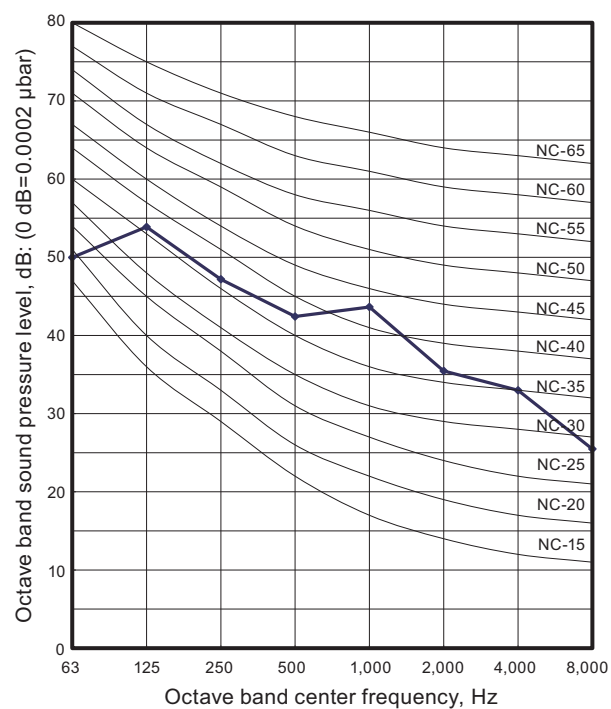


Model: AOHG14KBTB

● Cooling

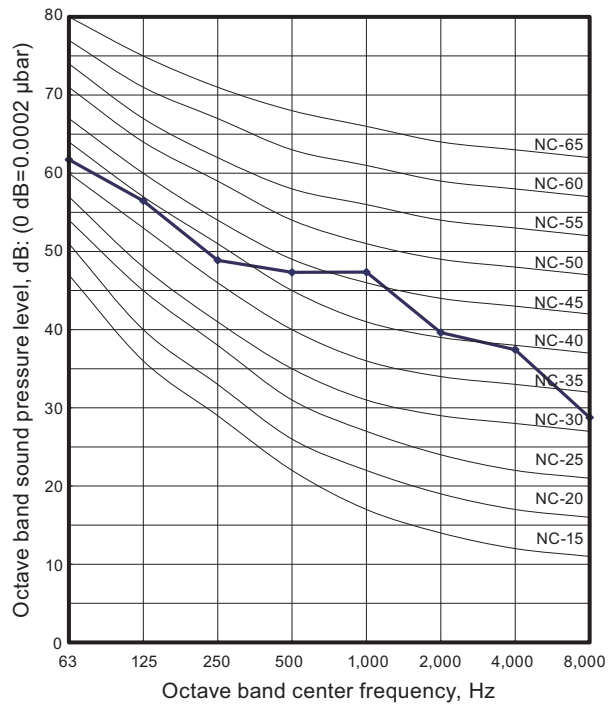


● Heating

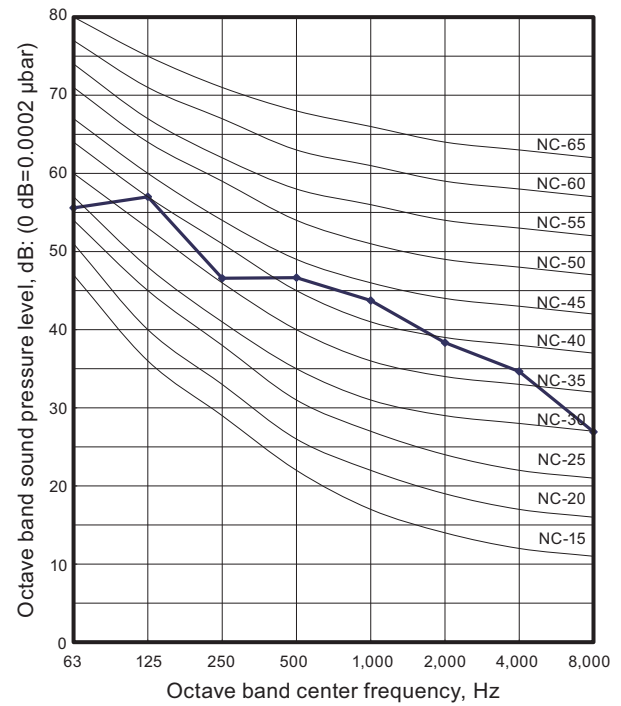


Model: AOHG18KBTB

Cooling

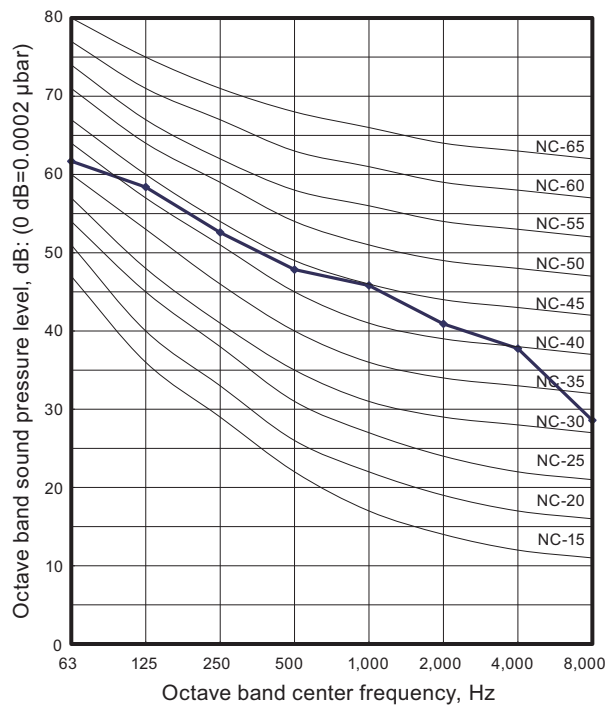


Heating

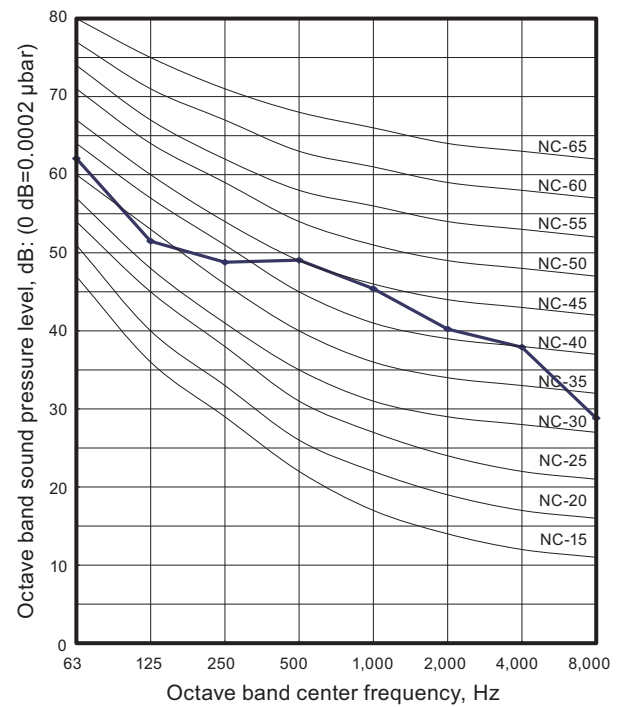


Model: AOHG22KBTB

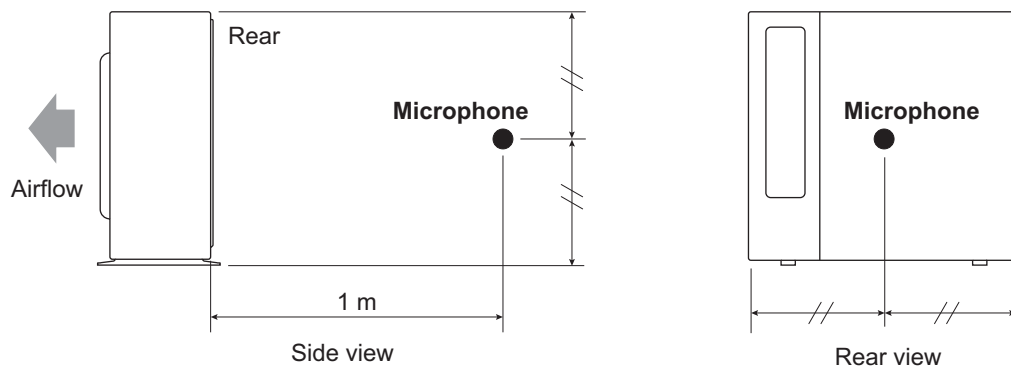
Cooling



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				AOHG12KBTB		AOHG14KBTB	
Power supply	Voltage		V	230 ~			
	Frequency		Hz	50			
Max operating current *1			A	9.7		10.2	
Starting current			A	4.8		5.8	
Wiring spec. *2	Circuit breaker current		A	13			
	Power cable		mm ²	1.5			
	Connection cable *3	Cross-sectional area	mm ²	1.5			
		Limited wiring length	m	26			

Model name				AOHG18KBTB		AOHG22KBTB	
Power supply	Voltage		V	230 ~			
	Frequency		Hz	50			
Max operating current *1			A	12.1		12.6	
Starting current			A	7.1		8.2	
Wiring spec. *2	Circuit breaker current		A	16			
	Power cable		mm ²	1.5			
	Connection cable *3	Cross-sectional area	mm ²	1.5			
		Limited wiring length		m	31		

*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.


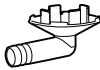
11. Safety devices

Type of protection	Protection form		Model	
			AOHG12KBTB	AOHG14KBTB
Circuit protection	Current fuse (Main PCB)		250 V, 25 A	
			250 V, 5 A	
			250 V, 3.15 A	
Fan motor protection	Terminal protection program	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	
	Thermal protection program (Outdoor temp.) (Only in COOL or DRY mode)	Activate	-20 °C Compressor stop	
		Reset	-15 °C Compressor restart	

Type of protection	Protection form		Model	
			AOHG18KBTB	AOHG22KBTB
Circuit protection	Current fuse (Main PCB)		250 V, 25 A	
			250 V, 5 A	
			250 V, 3.15 A	
Fan motor protection	Terminal protection program	Activate	125±10 °C Fan motor stop	
		Reset	120±10 °C Fan motor restart	
Compressor protection	Terminal protection program (Discharge temp.)	Activate	115 °C Compressor stop	
		Reset	After 7 minutes Compressor restart	
	Terminal protection program (Compressor temp.)	Activate	—	108 °C Compressor stop
		Reset	—	After 3 minutes, and 80 °C or less Compressor restart
	Thermal protection program (Outdoor temp.) (Only in COOL or DRY mode)	Activate	-20 °C Compressor stop	
		Reset	-15 °C Compressor restart	
High pressure protection	Pressure switch	Activate	—	4.2 ⁺⁰ _{-0.15} MPa Compressor stop
		Reset	—	3.2 ±0.15 MPa Compressor restart

12. Accessories

12-1. Models: AOHG12KBTB, AOHG14KBTB, AOHG18KBTB, and AOHG22KBTB

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

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