



REFRIGERANT **R410A**
INVERTER

AIR CONDITIONER
Wall Mounted type

DESIGN & TECHNICAL MANUAL

INDOOR



RIWH09AHWJ
RIWH12AHWJ
RIWH15AHWJ

OUTDOOR



ROSH09AHWJ
ROSH12AHWJ
ROSH15AHWJ

1. INDOOR UNIT

WALL MOUNTED TYPE :

RIWH09AHWJ

RIWH12AHWJ

RIWH15AHWJ

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1. INDOOR UNIT

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1. SPECIFICATIONS

Type				WALL MOUNTED			
				INVERTER HEAT PUMP			
Model name				RIWH09AHWJ	RIWH12AHWJ	RIWH15AHWJ	
Power source				208 / 230V ~ 60Hz			
Available voltage range				188 - 253V			
Capacity	Cooling	Rated	kW	2.64	3.52	4.25	
			Btu/h	9,000	12,000	14,500	
		Min - Max	kW	0.90 - 3.60	0.90 - 4.00	0.90 - 5.40	
			Btu/h	3,100 - 12,000	3,100 - 13,600	3,100 - 18,400	
	Heating	Rated	kW	3.52	4.69	5.28	
			Btu/h	12,000	16,000	18,000	
		Min - Max	kW	0.90 - 6.45	0.90 - 6.48	0.90 - 7.00	
			Btu/h	3,100 - 22,000	3,100 - 22,100	31,00 - 23,900	
Input power	Cooling	Rated	kW	0.50	0.79	1.04	
		Max		0.85	0.99	1.56	
	Heating	Rated		0.66	1.01	1.15	
		Max		1.93	1.94	2.19	
Current	Cooling	Rated	A	2.5	3.8	4.8	
	Heating			3.3	4.7	5.2	
EER		Cooling	kW/kW	5.28	4.46	4.09	
			Btu/hW	18.0	15.2	13.9	
COP		Heating	kW/kW	5.33	4.64	4.59	
			Btu/hW	18.2	15.8	15.7	
SEER		Cooling	Btu/hW	33.0	29.3	25.3	
HSPF		Heating	Btu/hW	14.2	14.0	13.4	
POWER FACTOR		Cooling	%	87	90	94	
		Heating		87	93	96	
Moisture removal			pints/h (l/h)	2.6 (1.2)	2.7 (1.3)	4.0 (1.9)	
Maximum operating current *1		Cooling	A	9.4	9.4	9.9	
		Heating		10.9	10.9	13.9	
Fan	Airflow rate	Cooling	High	CFM (m³/h)	489(830)		547(930)
			Med		400(680)		459(780)
			Low		341(580)		371(630)
			Quiet		224(380)		259(440)
		Heating	High		489(830)		547(930)
			Med		400(680)		459(780)
			Low		341(580)		371(630)
			Quiet		224(380)		294(500)
	Type × Q'ty			Cross flow fan × 1			
	Motor output			W			
Sound pressure level *2		Cooling	High	dB (A)	42	45	
			Med		37	40	
			Low		32	34	
			Quiet		23	26	
		Heating	High		41	45	
			Med		35	39	
			Low		31	33	
			Quiet		23	27	
Heat exchanger type		Dimensions (H × W × D)		in. (mm)	Main : 15-1/8 × 28-3/8 × 1-3/16 (384 × 720 × 30) Sub : 3-5/16 × 28-3/8 × 1/2 (84 × 720 × 13.3) 4-15/16 × 28-3/8 × 1/2 (126 × 720 × 13.3)		
		Fin pitch		FPI	Main : 21 Sub : 18		
		Rows × Stages		Main : 3 × 24 Sub : 1 × 10			
		Pipe type		Copper			
		Fin type		Aluminum			
		Material		Polystyrene			
Enclosure		Color		White			
				Approximate color of MUNSELL 5PB 9.25/0.5			
Dimensions (H × W × D)		Net		inch	11 - 5/8 × 37 × 10 - 5/8		
				mm	295 × 940 × 270		
Gross				inch	14 - 3/8 × 40 - 15/16 × 14		
				mm	365 × 1040 × 355		
Weight		Net		lbs. (kg)	31 (14.0)		
					Gross		37 (17.0)
Connection pipe		Size	Liquid	in. (mm)	Ø1/4 (Ø6.35)		
			Gas		Ø3/8 (Ø9.52) Ø1/2 (Ø12.7)		
		Method				Flare	
Operation range		Cooling	°F (°C)	64 to 90 (18 to 32)			
			%RH	80 or less			
		Heating	°F (°C)	60 to 88 (16 to 30)			
Remote controller type				Wireless			
Drain hose		Material		PP+LLDPF			
		Size		in.(mm)	Ø9/16 (Ø13.8) (I.D.) Ø5/8 to Ø11/16 (Ø15.8 to Ø16.7) (O.D.)		

NOTE :

- Specifications are based on the following conditions.

Cooling : Indoor temperature of 80°F (26.67°C) DB / 67°F (19.44°C) WB, and outdoor temperature of 95°F (35°C) DB / 75°F (23.9°C) WB.

Heating : Indoor temperature of 70°F (21.11°C) DB / 59°F (15°C) WB, and outdoor temperature of 47°F (8.33°C) DB / 43°F (6.11°C) WB.

Pipe length : 24ft.7in (7.5m), Height difference:0 m. (Outdoor unit-Indoor unit)

- The protective function might work when using it outside the operation range.

*1: The maximum current is the maximum value when operated within the operation range.

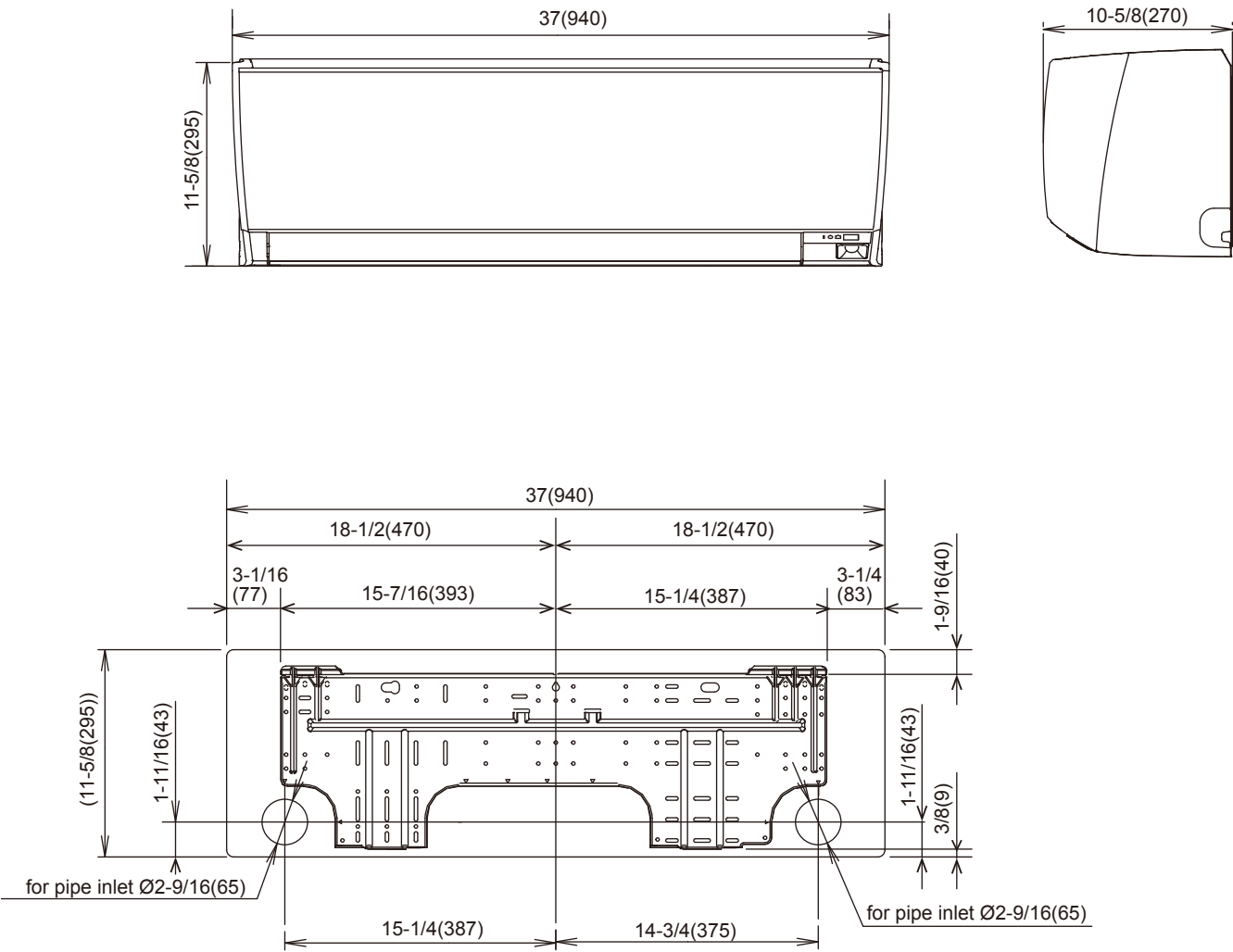
*2: These are the measured values in the manufacturer's anechoic chamber.

Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

2. DIMENSIONS

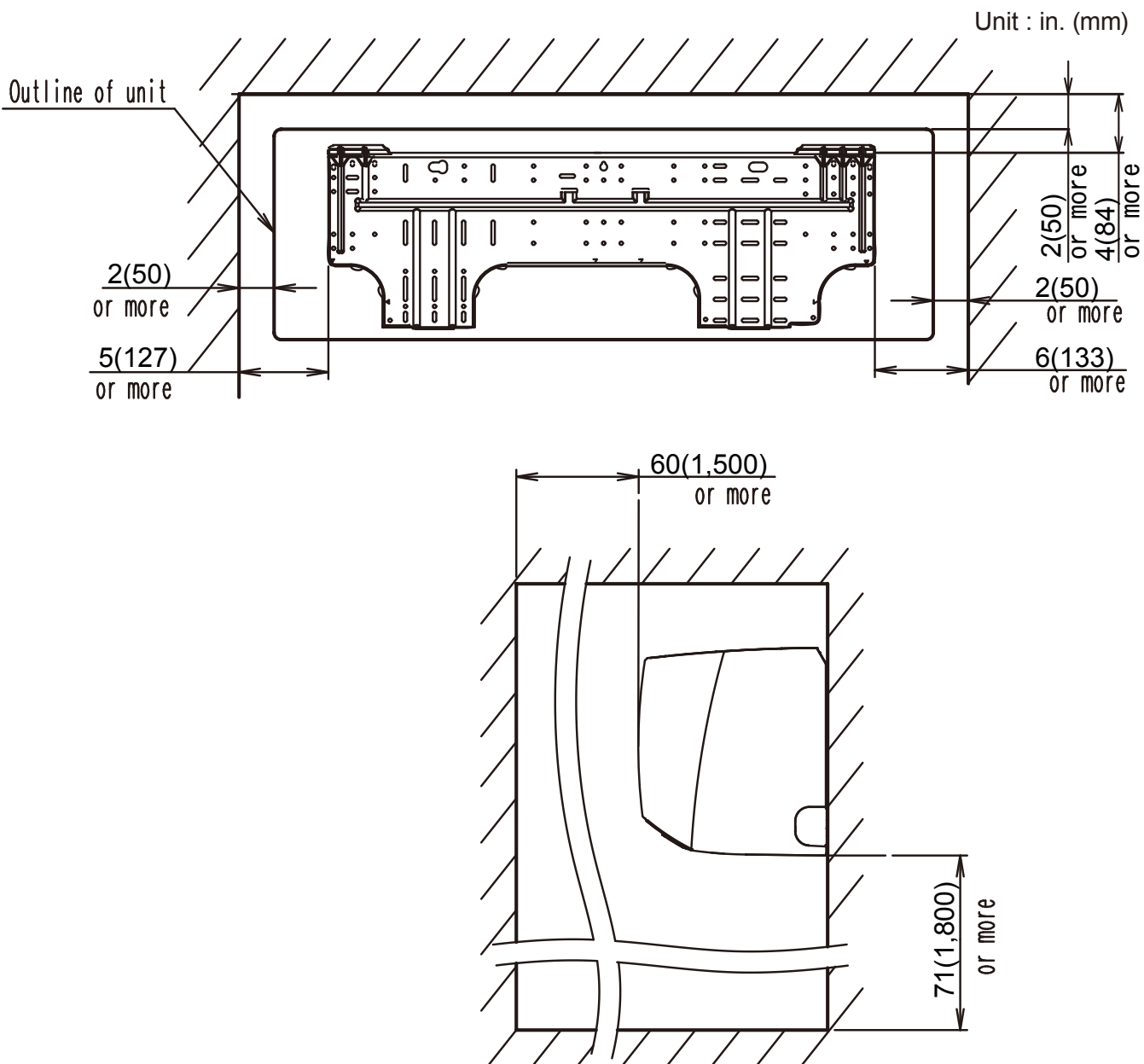
■ MODEL : RIWH09AHWJ, RIWH12AHWJ, RIWH15AHWJ

Unit : in. (mm)



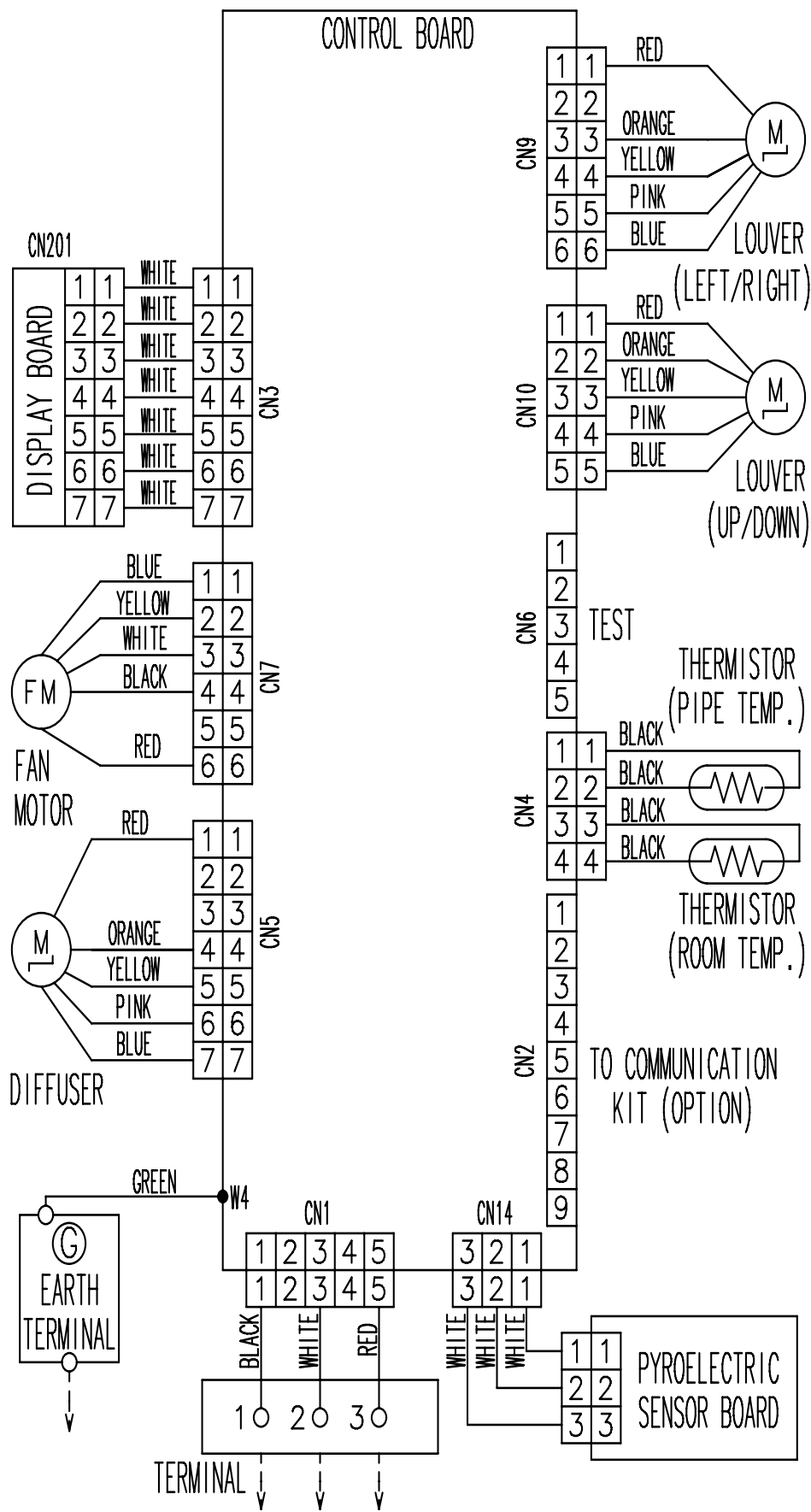
		RIWH09AHWJ	RIWH12AHWJ	RIWH15AHWJ
Refrigerant pipe flare connection	Liquid	Ø 1/4 in. (Ø 6.35 mm)		
	Gas	Ø 3/8 in. (Ø 9.52 mm)		Ø 1/2 in. (Ø 12.7 mm)
Drain hose connection	Drain hose	(Ø 9/16 in. (I.D.), Ø 5/8 to Ø 11/16 in. (O.D.) [Ø 13.8 mm (I.D.), Ø 15.8 to 16.7 mm (O.D.)]		

■ INSTALLATION PLACE



3. WIRING DIAGRAMS

■ MODEL: RIWH09AHWJ, RIWH12AHWJ, RIWH15AHWJ



4. CAPACITY TABLE

4-1. COOLING CAPACITY

■ MODEL: RIWH09AHWJ

AFR	489
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		Indoor temperature																	
		64			70			75			80			85			90		
		54			60			63			67			71			73		
Outdoor temperature	°FDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	15	8.33	8.06	0.19	9.29	8.11	0.19	10.25	8.87	0.20	10.57	9.53	0.20	11.17	9.50	0.20	11.81	10.07	0.21
	23	8.16	7.88	0.22	9.09	7.91	0.22	10.03	8.65	0.23	10.35	9.31	0.22	10.94	9.28	0.22	11.56	9.91	0.23
	32	7.99	7.69	0.22	8.90	7.75	0.23	9.81	8.45	0.24	10.13	9.16	0.23	10.70	9.09	0.23	11.32	9.68	0.24
	41	7.81	7.58	0.24	8.71	7.61	0.24	9.60	8.28	0.25	9.90	8.97	0.24	10.47	8.90	0.24	11.07	9.50	0.25
	50	7.64	7.36	0.22	8.51	7.41	0.22	9.38	8.07	0.24	9.68	8.76	0.23	10.24	8.70	0.23	10.83	9.26	0.24
	59	7.47	7.24	0.27	8.32	7.27	0.27	9.16	7.91	0.28	9.46	8.57	0.28	10.01	8.51	0.28	10.58	9.08	0.28
	67	8.42	8.15	0.34	9.38	8.18	0.35	10.33	8.94	0.36	10.67	9.63	0.36	11.28	9.59	0.36	11.93	10.18	0.37
	77	8.01	7.74	0.39	8.93	7.77	0.39	9.85	8.49	0.40	10.16	9.15	0.40	10.74	9.11	0.41	11.35	9.73	0.41
	87	7.57	7.29	0.44	8.45	7.36	0.44	9.31	8.01	0.45	9.58	8.67	0.45	10.16	8.63	0.46	10.74	9.18	0.46
	95	7.09	6.88	0.48	7.91	6.91	0.49	8.73	7.53	0.50	9.00	8.15	0.50	9.55	8.12	0.51	10.06	8.63	0.51
	104	6.00	5.67	0.45	6.68	6.16	0.46	7.36	6.71	0.46	7.60	7.26	0.46	8.05	7.22	0.47	8.52	7.70	0.47
	115	5.52	5.33	0.45	6.17	5.71	0.46	6.78	6.22	0.46	6.99	6.74	0.46	7.43	6.71	0.47	7.84	7.15	0.47

AFR : Air Flow Rate (CFM)
TC : Total Capacity (kBtu/h)
SHC : Sensible Heat Capacity (kBtu/h)
IP : Input Power (kW)

AFR	830
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		Indoor temperature																	
		17.8			21.1			23.9			26.7			29.4			32.2		
		12.2			15.6			17.2			19.4			21.7			22.8		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-10.0	2.44	2.36	0.19	2.72	2.38	0.19	3.00	2.60	0.20	3.10	2.79	0.20	3.27	2.78	0.20	3.46	2.95	0.21
	-5.0	2.39	2.31	0.22	2.67	2.32	0.22	2.94	2.53	0.23	3.03	2.73	0.22	3.21	2.72	0.22	3.39	2.90	0.23
	0.0	2.34	2.25	0.22	2.61	2.27	0.23	2.88	2.48	0.24	2.97	2.68	0.23	3.14	2.67	0.23	3.32	2.84	0.24
	5.0	2.29	2.22	0.24	2.55	2.23	0.24	2.81	2.43	0.25	2.90	2.63	0.24	3.07	2.61	0.24	3.25	2.79	0.25
	10.0	2.24	2.16	0.22	2.49	2.17	0.22	2.75	2.37	0.24	2.84	2.57	0.23	3.00	2.55	0.23	3.17	2.71	0.24
	15.0	2.19	2.12	0.27	2.44	2.13	0.27	2.69	2.32	0.28	2.77	2.51	0.28	2.93	2.49	0.28	3.10	2.66	0.28
	19.4	2.47	2.39	0.34	2.75	2.40	0.35	3.03	2.62	0.36	3.13	2.82	0.36	3.31	2.81	0.36	3.50	2.98	0.37
	25.0	2.35	2.27	0.39	2.62	2.28	0.39	2.89	2.49	0.40	2.98	2.68	0.40	3.15	2.67	0.41	3.33	2.85	0.41
	30.6	2.22	2.14	0.44	2.48	2.16	0.44	2.73	2.35	0.45	2.81	2.54	0.45	2.98	2.53	0.46	3.15	2.69	0.46
	35.0	2.08	2.02	0.48	2.32	2.03	0.49	2.56	2.21	0.50	2.64	2.39	0.50	2.80	2.38	0.51	2.95	2.53	0.51
	40.0	1.76	1.66	0.45	1.96	1.80	0.46	2.16	1.97	0.46	2.23	2.13	0.46	2.36	2.12	0.47	2.50	2.26	0.47
	46.0	1.62	1.56	0.45	1.81	1.67	0.46	1.99	1.82	0.46	2.05	1.98	0.46	2.18	1.97	0.47	2.30	2.10	0.47

AFR : Air Flow Rate (m³/h)
TC : Total Capacity (kW)
SHC : Sensible Heat Capacity (kW)
IP : Input Power (kW)

■ **MODEL: RIWH12AHWJ**

AFR	489
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		Indoor temperature																			
		°FDB	64				70			75			80			85			90		
		°FWB	54				60			63			67			71			73		
Outdoor temperature	°FDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP		
	15	10.34	9.52	0.28	11.53	9.58	0.28	12.72	10.47	0.29	13.11	11.30	0.29	13.87	11.21	0.29	14.67	11.96	0.30		
	23	10.26	9.44	0.33	11.44	9.47	0.33	12.62	10.34	0.35	13.01	11.19	0.34	13.77	11.12	0.34	14.56	11.85	0.35		
	32	10.18	9.35	0.36	11.36	9.39	0.36	12.52	10.27	0.38	12.91	11.09	0.37	13.67	11.03	0.38	14.45	11.78	0.39		
	41	10.10	9.30	0.39	11.27	9.37	0.39	12.42	10.21	0.41	12.81	11.02	0.40	13.57	10.98	0.40	14.34	11.68	0.41		
	50	10.03	9.21	0.40	11.18	9.25	0.40	12.32	10.10	0.42	12.71	10.92	0.41	13.47	10.86	0.41	14.23	11.60	0.42		
	59	9.95	9.16	0.41	11.10	9.23	0.41	12.22	10.05	0.44	12.61	10.85	0.42	13.37	10.81	0.43	14.12	11.50	0.44		
	67	11.22	10.32	0.54	12.51	10.40	0.55	13.77	11.34	0.55	14.22	12.25	0.56	15.07	12.18	0.56	15.92	12.98	0.57		
	77	10.67	9.82	0.62	11.90	9.85	0.63	13.13	10.76	0.64	13.53	11.63	0.64	14.32	11.56	0.64	15.14	12.32	0.65		
	87	10.09	9.27	0.69	11.25	9.31	0.70	12.41	10.18	0.71	12.78	10.98	0.71	13.57	10.94	0.72	14.32	11.67	0.73		
	95	9.48	8.72	0.76	10.53	8.76	0.77	11.63	9.56	0.79	12.00	10.32	0.79	12.72	10.29	0.80	13.43	10.94	0.81		
104	8.01	7.78	0.71	8.93	7.82	0.72	9.82	8.51	0.73	10.13	9.20	0.74	10.74	9.16	0.74	11.35	9.78	0.75			
115	7.36	7.20	0.71	8.22	7.23	0.72	9.07	7.89	0.74	9.34	8.54	0.74	9.89	8.51	0.74	10.47	9.05	0.75			

AFR : Air Flow Rate (CFM)
TC : Total Capacity (kBtu/h)
SHC : Sensible Heat Capacity (kBtu/h)
IP : Input Power (kW)

AFR	830
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		Indoor temperature																			
		°CDB		17.8			21.1			23.9			26.7			29.4			32.2		
		°CWB		12.2			15.6			17.2			19.4			21.7			22.8		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP		
	-10.0	3.03	2.79	0.28	3.38	2.81	0.28	3.73	3.07	0.29	3.84	3.31	0.29	4.07	3.29	0.29	4.30	3.50	0.30		
	-5.0	3.01	2.77	0.33	3.35	2.78	0.33	3.70	3.03	0.35	3.81	3.28	0.34	4.04	3.26	0.34	4.27	3.47	0.35		
	0.0	2.98	2.74	0.36	3.33	2.75	0.36	3.67	3.01	0.38	3.78	3.25	0.37	4.01	3.23	0.38	4.23	3.45	0.39		
	5.0	2.96	2.73	0.39	3.30	2.75	0.39	3.64	2.99	0.41	3.75	3.23	0.40	3.98	3.22	0.40	4.20	3.42	0.41		
	10.0	2.94	2.70	0.40	3.28	2.71	0.40	3.61	2.96	0.42	3.73	3.20	0.41	3.95	3.18	0.41	4.17	3.40	0.42		
	15.0	2.92	2.68	0.41	3.25	2.71	0.41	3.58	2.94	0.44	3.70	3.18	0.42	3.92	3.17	0.43	4.14	3.37	0.44		
	19.4	3.29	3.03	0.54	3.67	3.05	0.55	4.04	3.32	0.55	4.17	3.59	0.56	4.42	3.57	0.56	4.67	3.80	0.57		
	25.0	3.13	2.88	0.62	3.49	2.89	0.63	3.85	3.15	0.64	3.97	3.41	0.64	4.20	3.39	0.64	4.44	3.61	0.65		
	30.6	2.96	2.72	0.69	3.30	2.73	0.70	3.64	2.98	0.71	3.75	3.22	0.71	3.98	3.21	0.72	4.20	3.42	0.73		
	35.0	2.78	2.56	0.76	3.09	2.57	0.77	3.41	2.80	0.79	3.52	3.03	0.79	3.73	3.02	0.80	3.94	3.21	0.81		
	40.0	2.35	2.28	0.71	2.62	2.29	0.72	2.88	2.49	0.73	2.97	2.70	0.74	3.15	2.68	0.74	3.33	2.87	0.75		
	46.0	2.16	2.11	0.71	2.41	2.12	0.72	2.66	2.31	0.74	2.74	2.50	0.74	2.90	2.49	0.74	3.07	2.65	0.75		

AFR : Air Flow Rate (m³/h)
TC : Total Capacity (kW)
SHC : Sensible Heat Capacity (kW)
IP : Input Power (kW)

■ MODEL: RIWH15AHWJ

AFR	547
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		Indoor temperature																	
		64			70			75			80			85			90		
		°FDB			°FWB			54			60			63			67		
Outdoor temperature	°FDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	15	12.72	9.80	0.36	14.18	10.92	0.36	15.63	12.04	0.38	16.10	12.40	0.37	17.04	13.13	0.37	18.02	13.88	0.38
	23	12.53	9.62	0.39	13.95	10.72	0.39	15.38	11.82	0.41	15.85	12.18	0.40	16.78	12.90	0.40	17.75	13.63	0.42
	32	12.33	9.49	0.40	13.73	10.57	0.41	15.14	11.65	0.43	15.60	12.01	0.42	16.52	12.72	0.42	17.47	13.45	0.43
	41	12.13	9.34	0.41	13.51	10.41	0.41	14.89	11.47	0.43	15.35	11.82	0.42	16.26	12.52	0.42	17.19	13.24	0.44
	50	11.93	9.18	0.42	13.29	10.23	0.42	14.65	11.27	0.45	15.10	11.62	0.43	16.00	12.31	0.44	16.91	13.01	0.45
	59	11.73	9.01	0.45	13.07	10.04	0.45	14.41	11.07	0.48	14.85	11.41	0.46	15.74	12.10	0.46	16.64	12.78	0.48
	67	13.48	11.10	0.72	15.01	11.17	0.74	16.55	12.15	0.75	17.06	13.14	0.75	18.08	13.07	0.76	19.11	13.95	0.76
	77	12.86	10.57	0.82	14.33	10.64	0.83	15.80	11.59	0.84	16.27	12.50	0.84	17.23	12.47	0.85	18.22	13.28	0.86
	87	12.18	10.00	0.91	13.58	10.07	0.92	14.98	10.99	0.94	15.42	11.87	0.95	16.34	11.84	0.95	17.30	12.61	0.96
	95	11.46	9.40	1.01	12.76	9.48	1.02	14.06	10.32	1.03	14.50	11.17	1.04	15.35	11.10	1.05	16.24	11.84	1.06
	104	10.06	8.28	0.99	11.22	8.31	1.01	12.35	9.09	1.02	12.73	9.79	1.02	13.51	9.76	1.03	14.26	10.39	1.05
	115	9.18	7.54	0.97	10.20	7.57	0.99	11.26	8.28	1.01	11.60	8.91	1.01	12.32	8.88	1.02	13.00	9.48	1.03

AFR : Air Flow Rate (CFM)
TC : Total Capacity (kBtu/h)
SHC : Sensible Heat Capacity (kBtu/h)
IP : Input Power (kW)

AFR	930
-----	-----

		Indoor temperature																	
		°CDB			°CWB			17.8			21.1			23.9			26.7		
		12.2			15.6			17.2			19.4			21.7			22.8		
Outdoor temperature	°CDB	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
	-10.0	3.73	2.87	0.36	4.15	3.20	0.36	4.58	3.53	0.38	4.72	3.63	0.37	5.00	3.85	0.37	5.28	4.07	0.38
	-5.0	3.67	2.82	0.39	4.09	3.14	0.39	4.51	3.46	0.41	4.65	3.57	0.40	4.92	3.78	0.40	5.20	4.00	0.42
	0.0	3.61	2.78	0.40	4.02	3.10	0.41	4.44	3.42	0.43	4.57	3.52	0.42	4.84	3.73	0.42	5.12	3.94	0.43
	5.0	3.56	2.74	0.41	3.96	3.05	0.41	4.37	3.36	0.43	4.50	3.46	0.42	4.77	3.67	0.42	5.04	3.88	0.44
	10.0	3.50	2.69	0.42	3.90	3.00	0.42	4.29	3.30	0.45	4.43	3.41	0.43	4.69	3.61	0.44	4.96	3.81	0.45
	15.0	3.44	2.64	0.45	3.83	2.94	0.45	4.22	3.24	0.48	4.35	3.34	0.46	4.61	3.54	0.46	4.88	3.75	0.48
	19.4	3.95	3.25	0.72	4.40	3.27	0.74	4.85	3.56	0.75	5.00	3.85	0.75	5.30	3.83	0.76	5.60	4.09	0.76
	25.0	3.77	3.10	0.82	4.20	3.12	0.83	4.63	3.40	0.84	4.77	3.66	0.84	5.05	3.65	0.85	5.34	3.89	0.86
	30.6	3.57	2.93	0.91	3.98	2.95	0.92	4.39	3.22	0.94	4.52	3.48	0.95	4.79	3.47	0.95	5.07	3.70	0.96
	35.0	3.36	2.76	1.01	3.74	2.78	1.02	4.12	3.02	1.03	4.25	3.27	1.04	4.50	3.25	1.05	4.76	3.47	1.06
	40.0	2.95	2.43	0.99	3.29	2.44	1.01	3.62	2.66	1.02	3.73	2.87	1.02	3.96	2.86	1.03	4.18	3.05	1.05
	46.0	2.69	2.21	0.97	2.99	2.22	0.99	3.30	2.43	1.01	3.40	2.61	1.01	3.61	2.60	1.02	3.81	2.78	1.03

AFR : Air Flow Rate (m³/h)
TC : Total Capacity (kW)
SHC : Sensible Heat Capacity (kW)
IP : Input Power (kW)

4-2. HEATING CAPACITY

■ MODEL : RIWH09AHWJ

AFR	489
-----	-----

			Indoor temperature							
		°FDB	60		65		70		75	
Outdoor temperature	°FDB	°FWB	TC	IP	TC	IP	TC	IP	TC	IP
	-5	-7	14.7	2.01	14.3	2.05	14.0	2.09	13.3	2.17
	5	3	16.1	2.02	15.7	2.06	15.4	2.10	14.6	2.19
	14	12	16.8	1.98	16.4	2.02	16.0	2.07	15.2	2.15
	23	19	18.3	1.95	17.9	1.99	17.5	2.03	16.6	2.11
	32	28	18.8	1.91	18.4	1.95	17.9	1.99	17.0	2.07
	41	37	21.3	1.88	20.8	1.92	20.3	1.95	19.3	2.03
	47	43	23.1	1.85	22.6	1.89	22.0	1.93	20.9	2.01
	50	47	25.5	1.84	24.9	1.88	24.3	1.91	23.1	1.99
	59	50	26.5	1.63	25.8	1.67	25.2	1.70	23.9	1.77

AFR : Air Flow Rate (CFM)
TC : Total Capacity (kBtu/h)
IP : Input Power (kW)

AFR	830
-----	-----

			Indoor temperature							
		°CDB	15.6		18.3		21.1		23.9	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP
	-20.6	-21.7	4.31	2.01	4.20	2.05	4.10	2.09	3.90	2.17
	-15.0	-16.1	4.73	2.02	4.61	2.06	4.50	2.10	4.28	2.19
	-10.0	-11.1	4.91	1.98	4.80	2.02	4.68	2.07	4.45	2.15
	-5.0	-7.2	5.38	1.95	5.25	1.99	5.12	2.03	4.86	2.11
	0.0	-2.2	5.52	1.91	5.39	1.95	5.26	1.99	5.00	2.07
	5.0	2.8	6.25	1.88	6.10	1.92	5.95	1.95	5.65	2.03
	8.3	6.1	6.77	1.85	6.61	1.89	6.45	1.93	6.13	2.01
	10.0	8.3	7.48	1.84	7.30	1.88	7.13	1.91	6.77	1.99
	15.0	10.0	7.75	1.63	7.57	1.67	7.38	1.70	7.02	1.77

AFR : Air Flow Rate (m³/h)
TC : Total Capacity (kW)
IP : Input Power (kW)

■ MODEL : RIWH12AHWJ

AFR	489
-----	-----

			Indoor temperature							
		°FDB	60		65		70		75	
Outdoor temperature	°FDB	°FWB	TC	IP	TC	IP	TC	IP	TC	IP
	-5	-7	15.8	2.01	15.4	2.05	15.0	2.09	14.3	2.17
	5	3	17.4	2.02	17.0	2.06	16.6	2.10	15.8	2.19
	14	12	18.3	1.98	17.8	2.03	17.4	2.07	16.5	2.15
	23	19	20.0	1.95	19.5	1.99	19.0	2.03	18.1	2.11
	32	28	20.6	1.92	20.1	1.96	19.6	2.00	18.6	2.08
	41	37	22.5	1.88	21.9	1.92	21.4	1.96	20.3	2.04
	47	43	23.2	1.86	22.7	1.90	22.1	1.94	21.0	2.02
	50	47	25.6	1.85	25.0	1.89	24.4	1.93	23.2	2.00
59	50	26.6	1.64	25.9	1.68	25.3	1.71	24.0	1.78	

AFR : Air Flow Rate (CFM)
TC : Total Capacity (kBtu/h)
IP : Input Power (kW)

AFR	830
-----	-----

			Indoor temperature									
			°CDB		15.6		18.3		21.1		23.9	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP		
	-20.6	-21.7	4.63	2.01	4.52	2.05	4.41	2.09	4.19	2.17		
	-15.0	-16.1	5.11	2.02	4.99	2.06	4.86	2.10	4.62	2.19		
	-10.0	-11.1	5.36	1.98	5.23	2.03	5.10	2.07	4.85	2.15		
	-5.0	-7.2	5.86	1.95	5.72	1.99	5.58	2.03	5.30	2.11		
	0.0	-2.2	6.03	1.92	5.88	1.96	5.74	2.00	5.45	2.08		
	5.0	2.8	6.58	1.88	6.43	1.92	6.27	1.96	5.96	2.04		
	8.3	6.1	6.80	1.86	6.64	1.90	6.48	1.94	6.15	2.02		
	10.0	8.3	7.52	1.85	7.34	1.89	7.16	1.93	6.80	2.00		
	15.0	10.0	7.79	1.64	7.60	1.68	7.42	1.71	7.05	1.78		

AFR : Air Flow Rate (m³/h)
TC : Total Capacity (kW)
IP : Input Power (kW)

■ **MODEL: RIWH15AHWJ**

AFR	547
-----	-----

			Indoor temperature							
		°FDB	60		65		70		75	
Outdoor temperature	°FDB	°FWB	TC	IP	TC	IP	TC	IP	TC	IP
	-5	-7	19.6	2.63	19.1	2.69	18.6	2.74	17.7	2.85
	5	3	22.0	2.64	21.5	2.70	21.0	2.75	19.9	2.86
	14	12	22.7	2.53	22.2	2.58	21.6	2.63	20.5	2.74
	23	19	23.3	2.41	22.8	2.46	22.2	2.51	21.1	2.61
	32	28	24.0	2.30	23.4	2.34	22.9	2.39	21.7	2.49
	41	37	24.7	2.18	24.1	2.22	23.5	2.27	22.3	2.36
	47	43	25.1	2.10	24.5	2.15	23.9	2.19	22.7	2.28
	50	47	26.1	1.97	25.5	2.01	24.9	2.05	23.6	2.13
	59	50	27.2	1.75	26.5	1.79	25.9	1.82	24.6	1.89

AFR : Air Flow Rate (CFM)
TC : Total Capacity (kBtu/h)
IP : Input Power (kW)

AFR	930
-----	-----

			Indoor temperature							
		°CDB	15.6		18.3		21.1		23.9	
Outdoor temperature	°CDB	°CWB	TC	IP	TC	IP	TC	IP	TC	IP
	-20.6	-21.7	5.73	2.63	5.60	2.69	5.46	2.74	5.19	2.85
	-15.0	-16.1	6.46	2.64	6.31	2.70	6.15	2.75	5.84	2.86
	-10.0	-11.1	6.65	2.53	6.49	2.58	6.33	2.63	6.02	2.74
	-5.0	-7.2	6.84	2.41	6.68	2.46	6.52	2.51	6.19	2.61
	0.0	-2.2	7.04	2.30	6.87	2.34	6.70	2.39	6.37	2.49
	5.0	2.8	7.23	2.18	7.06	2.22	6.88	2.27	6.54	2.36
	8.3	6.1	7.35	2.10	7.18	2.15	7.00	2.19	6.65	2.28
	10.0	8.3	7.66	1.97	7.47	2.01	7.29	2.05	6.93	2.13
	15.0	10.0	7.97	1.75	7.78	1.79	7.59	1.82	7.21	1.89

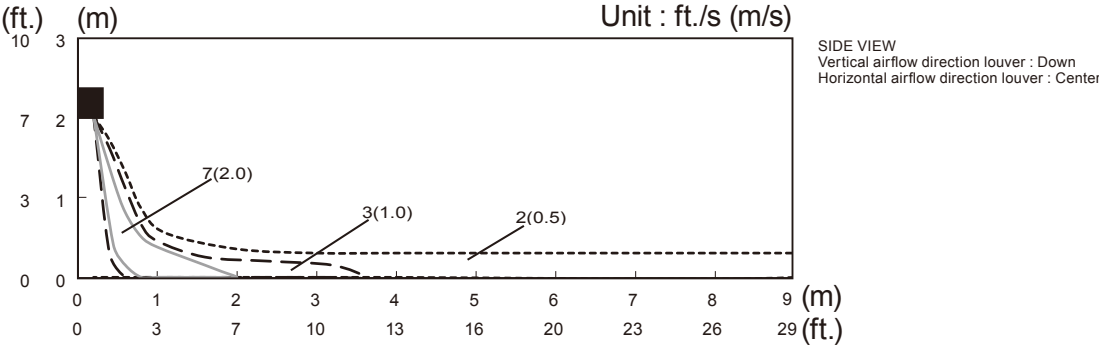
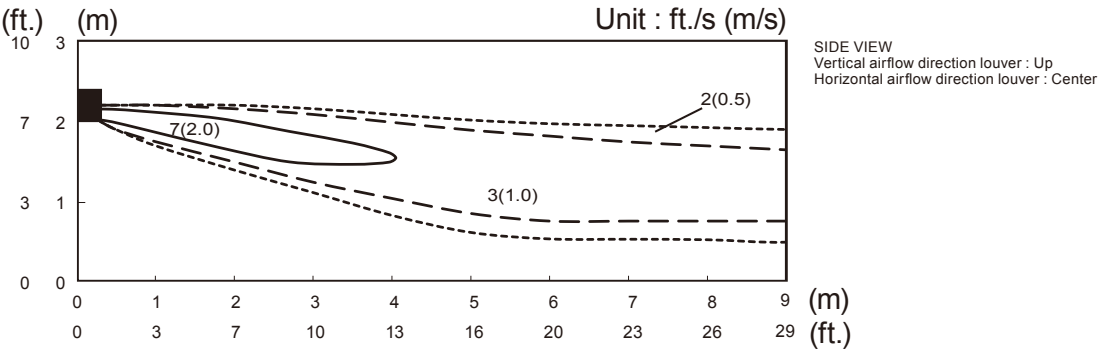
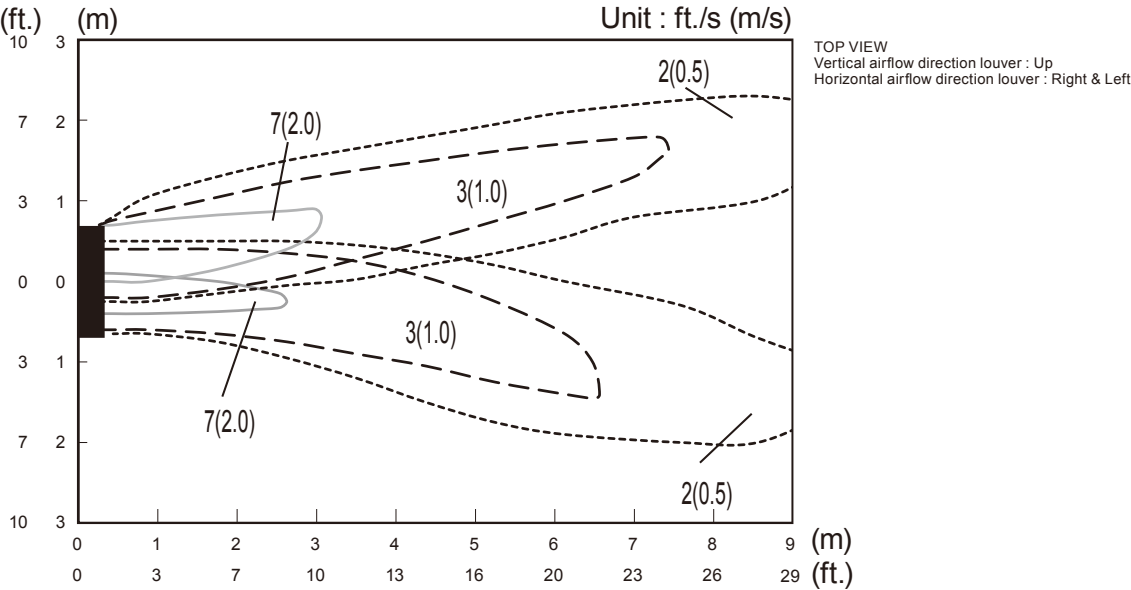
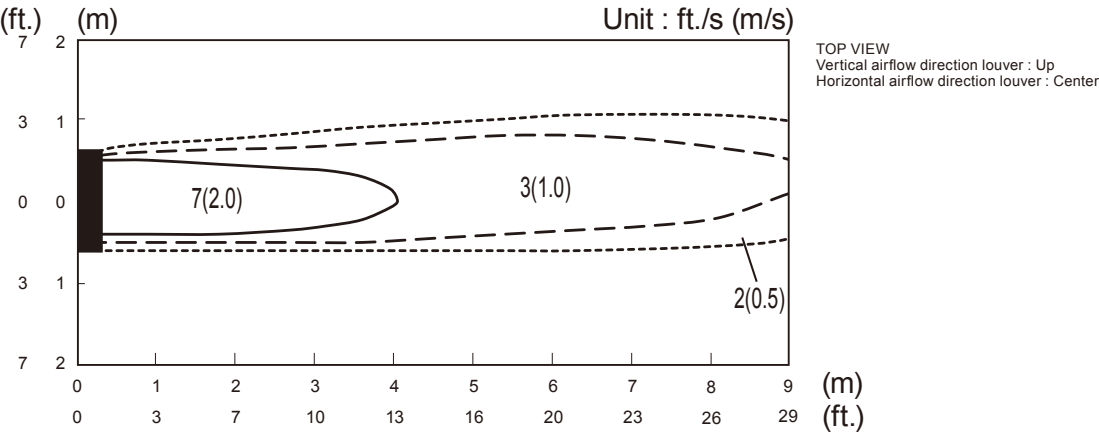
AFR : Air Flow Rate (m³/h)
TC : Total Capacity (kW)
IP : Input Power (kW)

5. FAN PERFORMANCE

5-1. AIR VELOCITY DISTRIBUTION

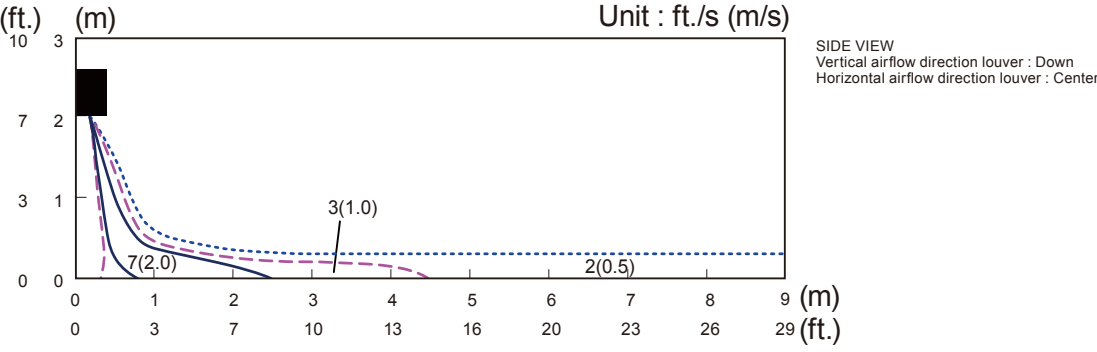
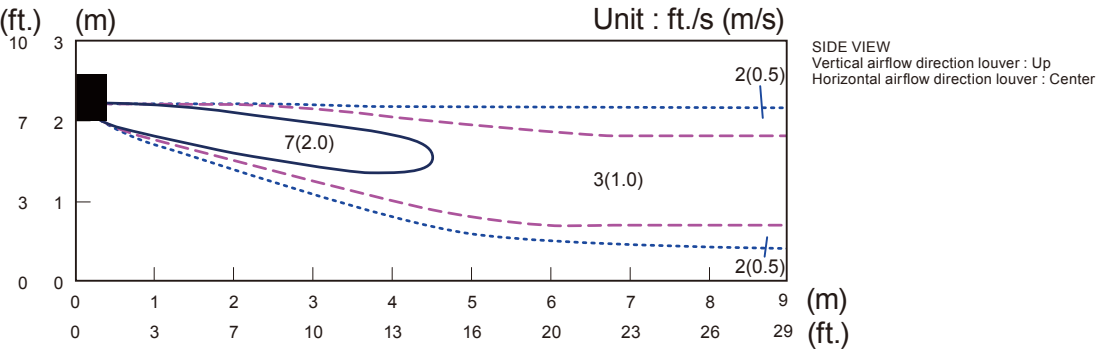
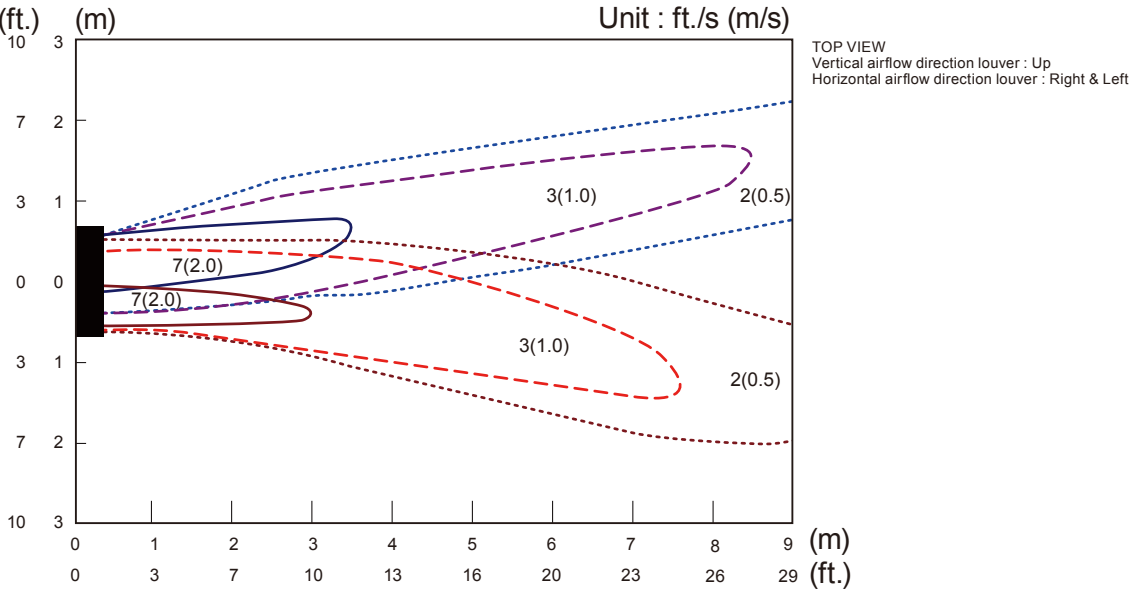
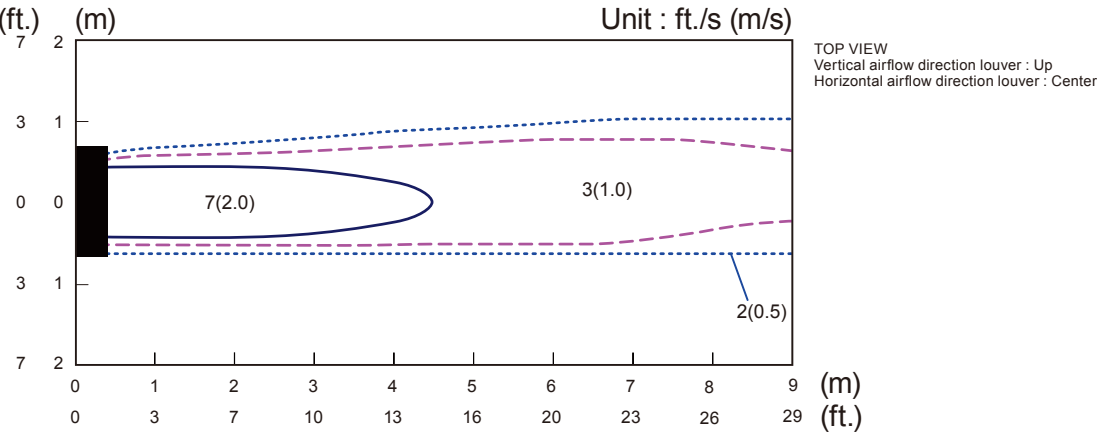
■ MODEL: RIWH09AHWJ, RIWH12AHWJ

Conditions:
Fan speed : High
Operation mode : FAN



■ **MODEL: RIWH15AHWJ**

Conditions:
Fan speed : High
Operation mode : FAN



5-2. AIR FLOW

■ MODEL: RIWH09AHWJ, RIWH12AHWJ

● Cooling

Fan speed	Air flow	
HIGH	830	m ³ /h
	231	l/s
	489	CFM
MED	680	m ³ /h
	189	l/s
	400	CFM
LOW	580	m ³ /h
	161	l/s
	341	CFM
QUIET	380	m ³ /h
	106	l/s
	224	CFM

● Heating

Fan speed	Air flow	
HIGH	830	m ³ /h
	231	l/s
	489	CFM
MED	680	m ³ /h
	189	l/s
	400	CFM
LOW	580	m ³ /h
	161	l/s
	341	CFM
QUIET	380	m ³ /h
	106	l/s
	224	CFM

■ MODEL: RIWH15AHWJ

● Cooling

Fan speed	Air flow	
HIGH	930	m ³ /h
	258	l/s
	547	CFM
MED	780	m ³ /h
	217	l/s
	459	CFM
LOW	630	m ³ /h
	175	l/s
	371	CFM
QUIET	440	m ³ /h
	122	l/s
	259	CFM

● Heating

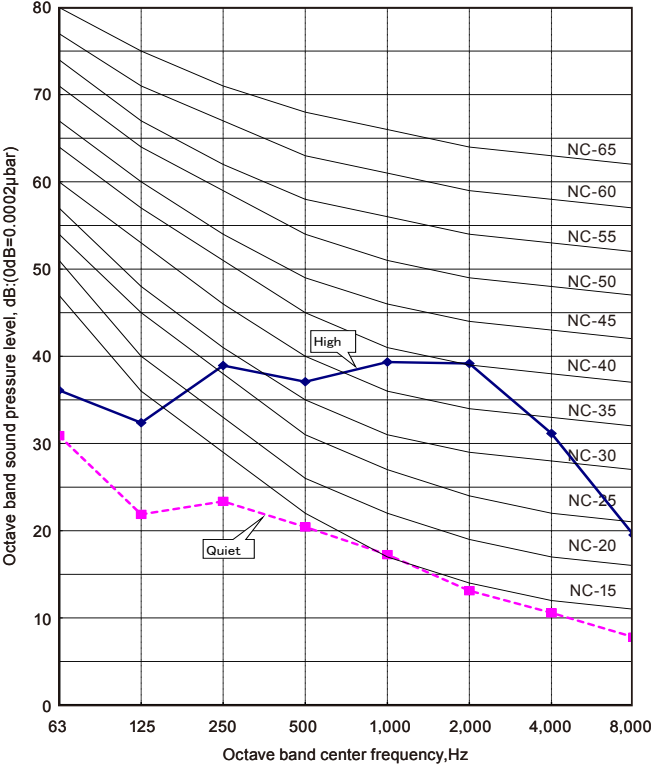
Fan speed	Air flow	
HIGH	930	m ³ /h
	258	l/s
	547	CFM
MED	780	m ³ /h
	217	l/s
	459	CFM
LOW	630	m ³ /h
	175	l/s
	371	CFM
QUIET	500	m ³ /h
	139	l/s
	294	CFM

6. OPERATION NOISE

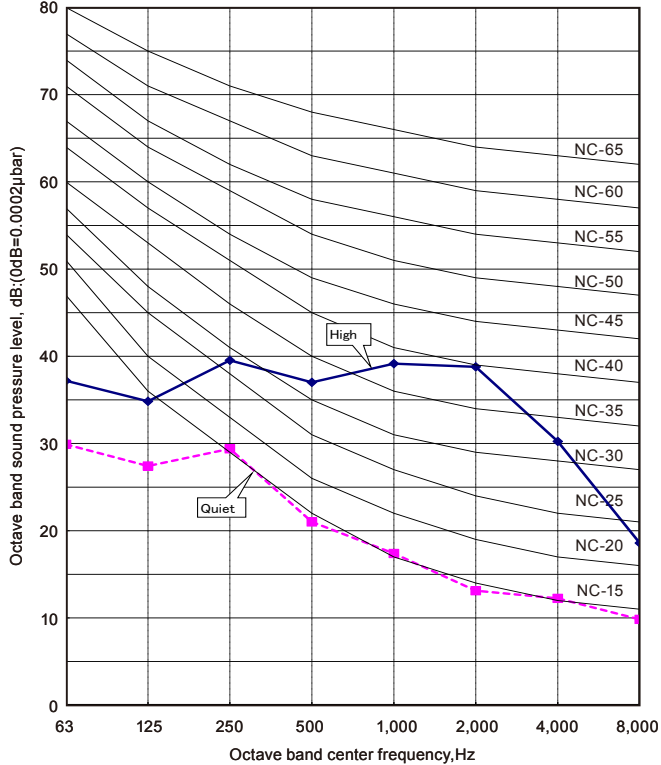
6-1. NOISE LEVEL CURVE

MODEL: RIWH09AHWJ

Cooling

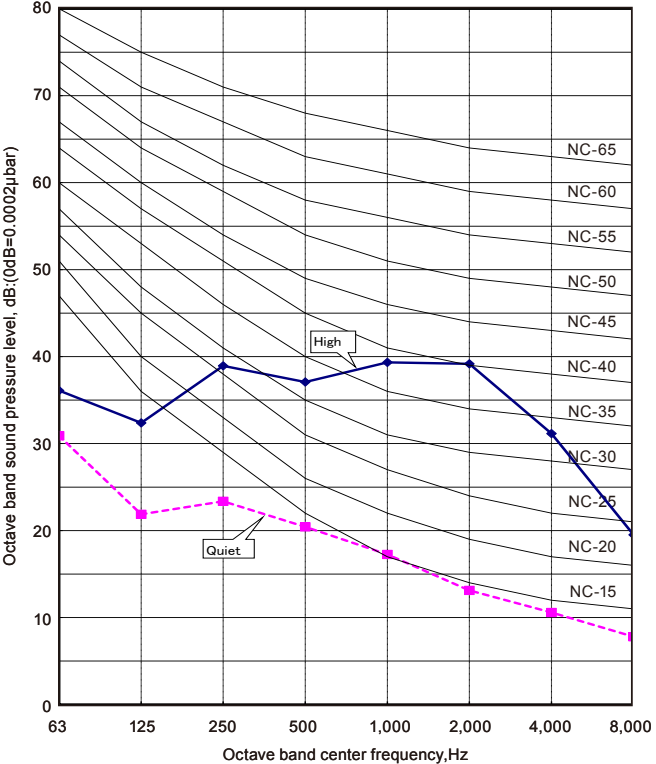


Heating

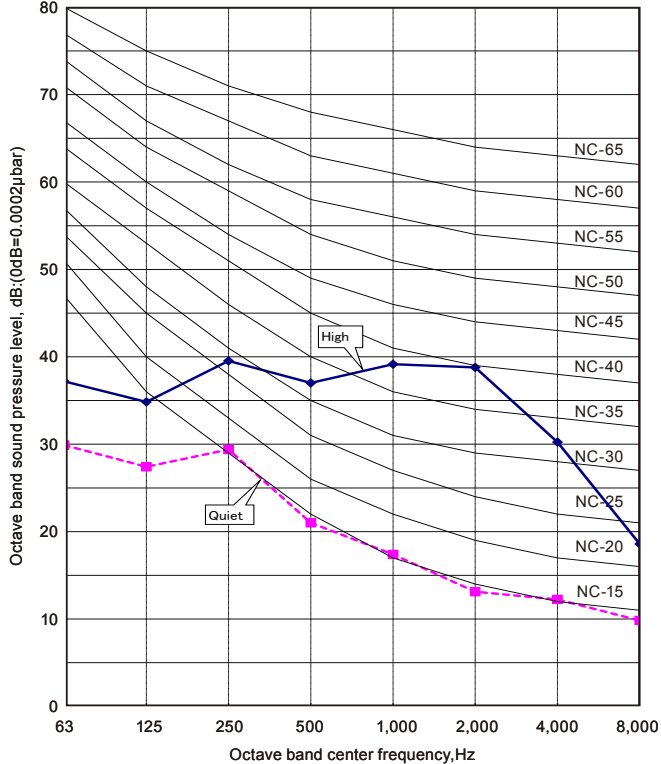


MODEL: RIWH12AHWJ

Cooling

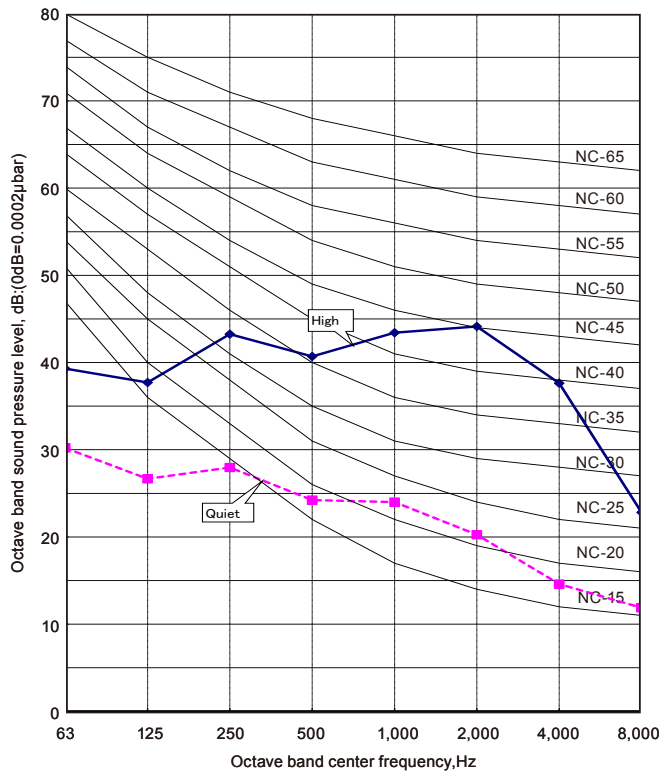


Heating

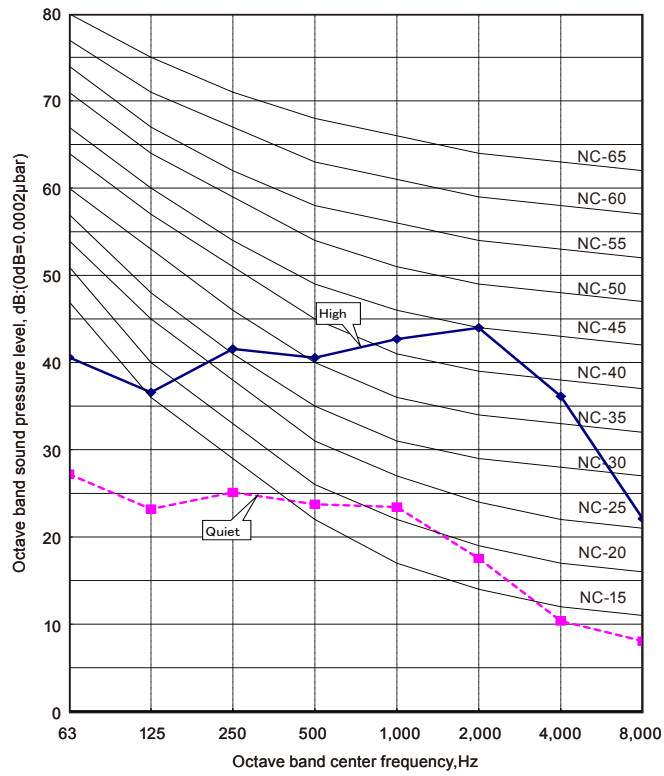


■ MODEL: RIWH15AHWJ

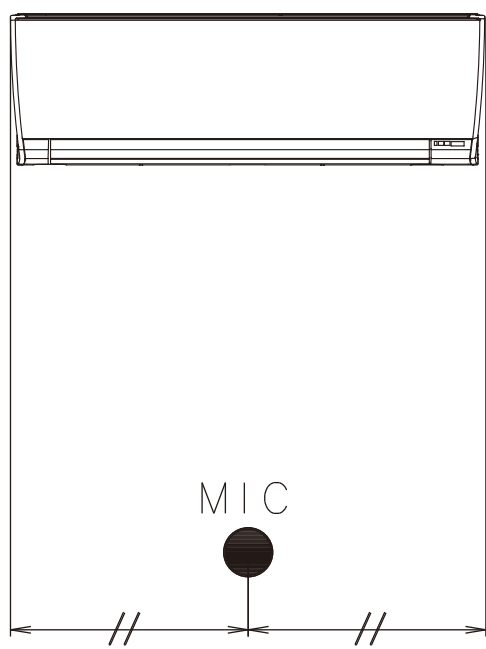
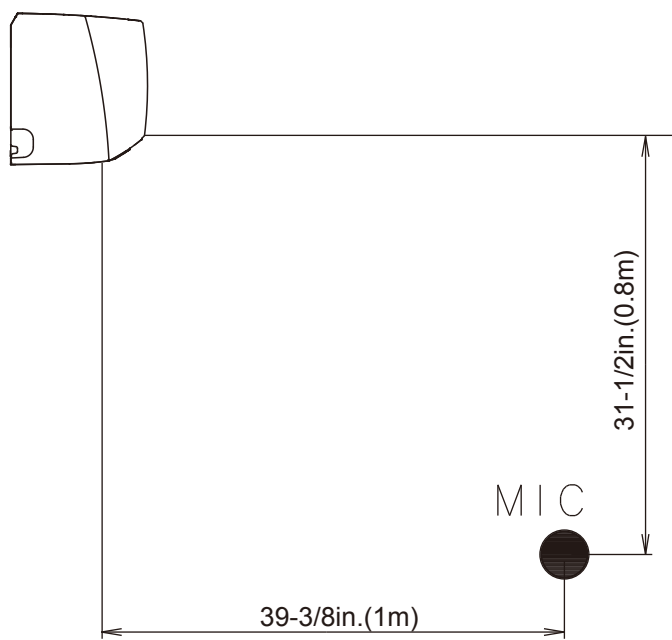
● Cooling



● Heating



6-2. SOUND LEVEL CHECK POINT



7. SAFETY DEVICES

	Protection form	Model
		RIWH09AHWJ RIWH12AHWJ RIWH15AHWJ
Circuit protection	Current fuse (PCB)	3.15A 250V
Fan motor protection	Thermal protector program	302±27 °F (150±15 °C) OFF 248±27 °F (120±15 °C) ON

8. EXTERNAL INPUT & OUTPUT

Connector	INPUT	OUTPUT	REMARKS
CNA01	Control input	-	See external input/output settings for details.
CNB01	-	Operation status output	
CNB02	-	Error status output	

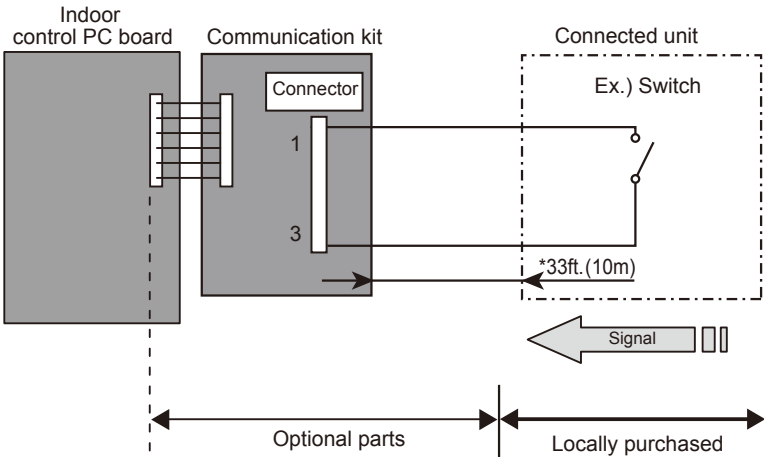
8-1. EXTERNAL INPUT

■ CONTROL INPUT (Operation/Stop or Forced stop)

The air conditioner can be remotely operated by means of the following on-site work.
"Operation/Stop" mode or "Forced stop" mode can be selected with function setting of indoor unit.
Unit operation is started at the following contents by adding the contact input of a commercial ON/OFF switch to a connector on the external control PC board and turning it ON.

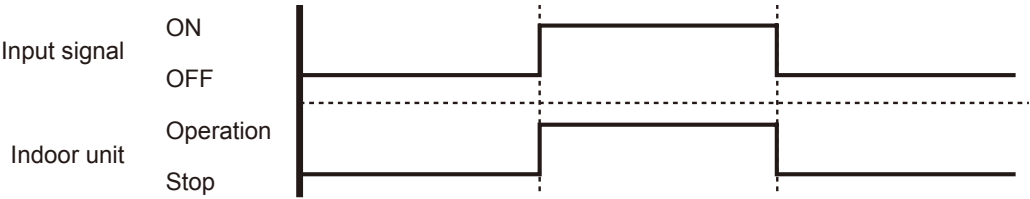
Unit operation	Initial starting after turned power on	Other than initial starting
Operation mode	Auto changeover	Mode at previous operation
Set temperature	75°F (24°C)	Temperature at previous operation
Air flow mode	AUTO	Mode at previous operation
Air direction (swing)	Standard air direction (swing OFF)	Air direction at previous operation

● Circuit diagram example

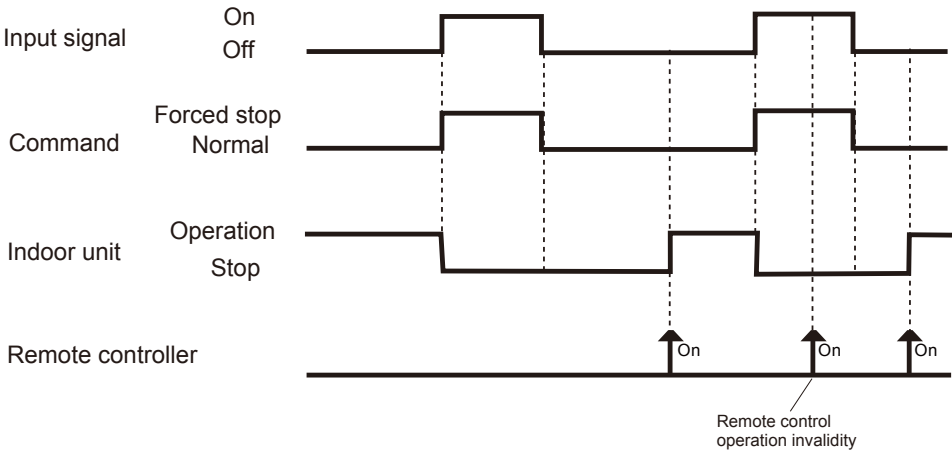


* Make the distance from the PC board to the connected unit within 10m.
Contact capacity : 24VDC or more, 10mA or more.
Please use the non-polar relays and switches.

● When function setting is "Operation/Stop" mode



● When function setting is "Forced stop" mode



● Parts (Optional)

Parts name	Model name
External connect kit	RXXWZXZ5
Communication kit	RXTWBXF1

*For operating the EXTERNAL function, the Compact wall mounted type requires the communication kit in addition to the wire (RXXWZXZ5).

Wire (External input) : RXXWZXZ5

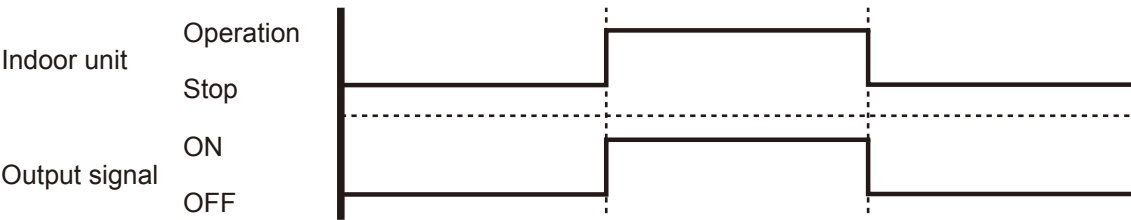
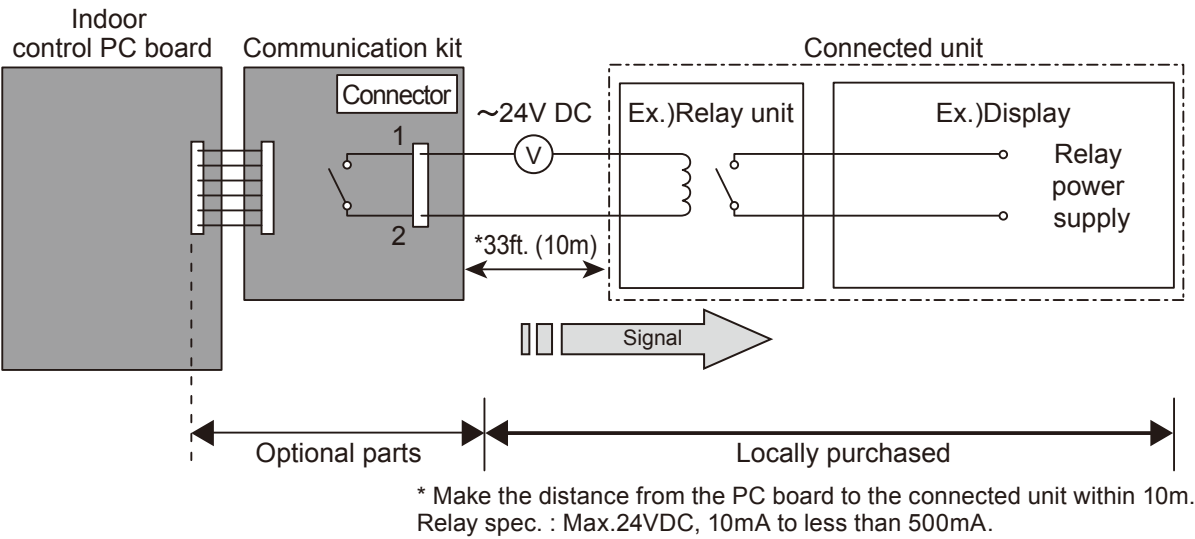


8-2. EXTERNAL OUTPUT

■ OPERATION STATUS OUTPUT

An air conditioner operation status signal can be output.

● Circuit diagram example



● Parts (Optional)

Parts name	Model name
External connect kit	RXXWZXZ5
Communication kit	RXTWBXF1

*For operating the EXTERNAL function, the wall mounted type requires the communication kit in addition to the wire (RXXWZXZ5).

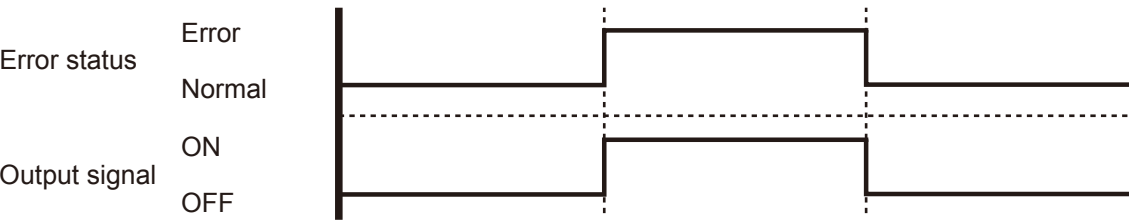
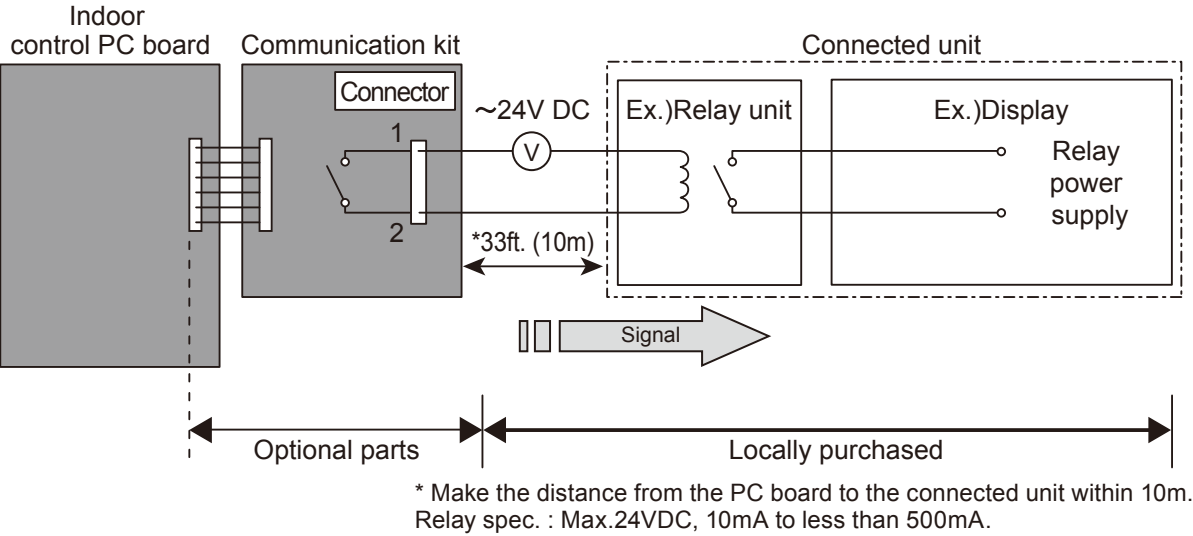
Wire (External output) : RXXWZXZ5



■ ERROR STATUS OUTPUT

An air conditioner error status signal can be output.

● Circuit diagram example



● Parts (Optional)

Parts name	Model name
External connect kit	RXXWZXZ5
Communication kit	RXTWBXF1

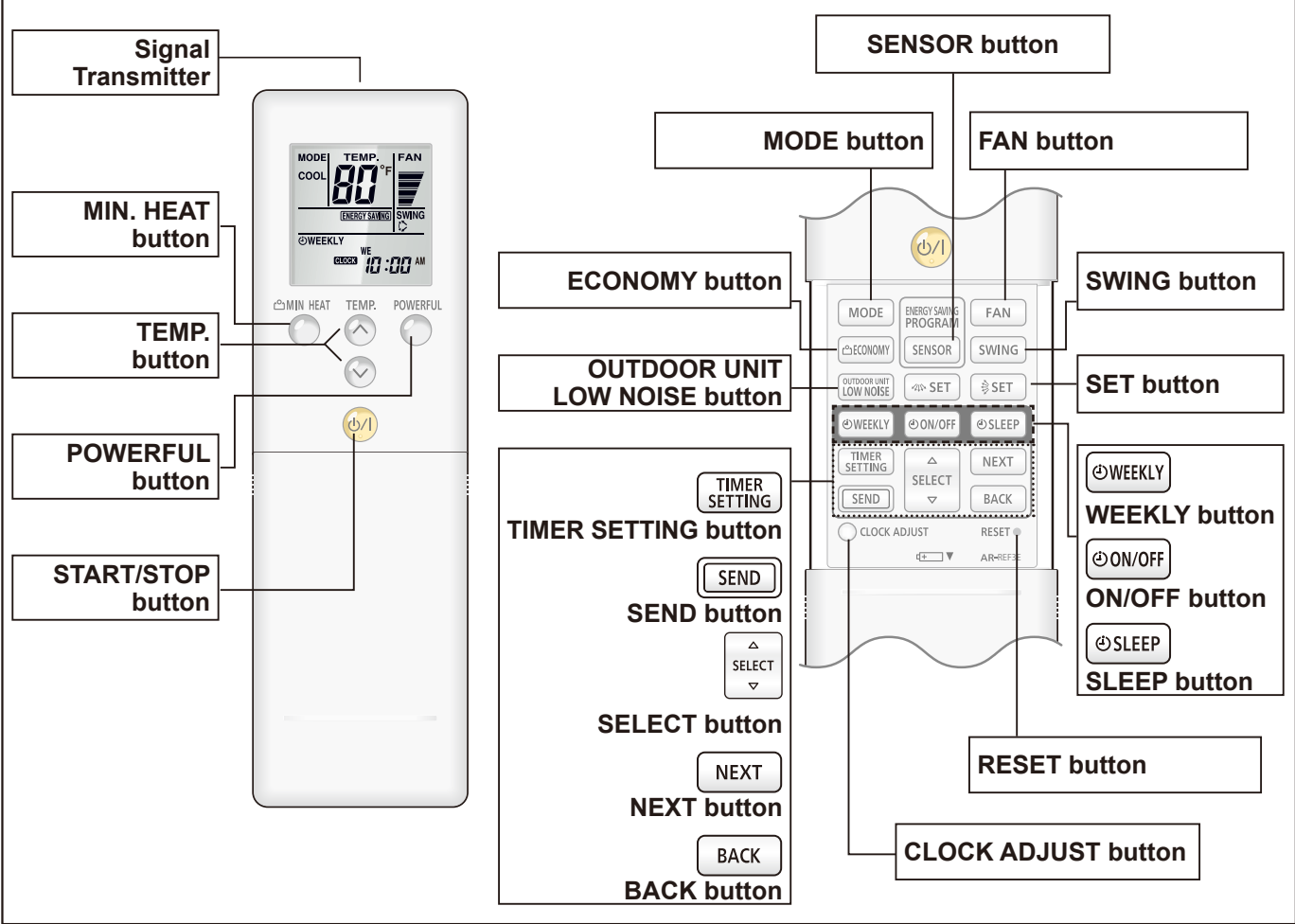
*For operating the EXTERNAL function, the wall mounted type requires the communication kit in addition to the wire (RXXWZXZ5).

Wire (External output) : RXXWZXZ5

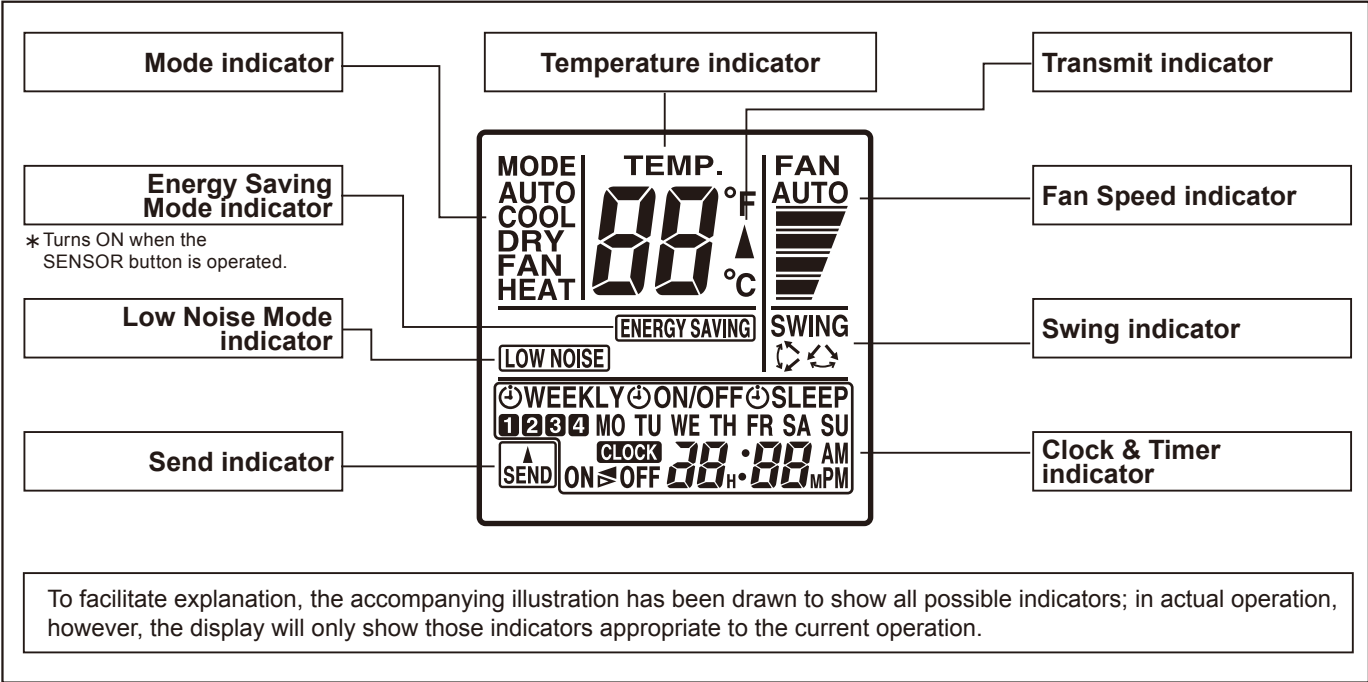


9. WIRELESS REMOTE CONTROLLER

FUNCTIONS



Display panel



SPECIFICATION

DIMENSIONS [H × W × D]: in. (mm)	8-1/16 (205) × 2-3/8 (61) × 11/16 (17)
WEIGHT oz. (g)	4.3 (122)
ACCESSORY	Holder

10. FUNCTION SETTING

10-1. INDOOR UNIT (Setting by remote controller)

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

■ PREPARATION

- Turn on the power
 - * By turning on the power indoor units, so make sure the piping air-tight test and vacuuming have been conducted before turning on the power.
 - * Also check again to make sure no wiring mistakes were made before turning on the power.

■ FUNCTION SETTING METHOD (for Wireless remote controller)

Perform the “FUNCTION SETTING” according to the installation conditions using the remote controller.

⚠CAUTION
Confirm whether the wiring work for outdoor unit has been finished.
Confirm that the cover for the electrical enclosure on the outdoor unit is in place.

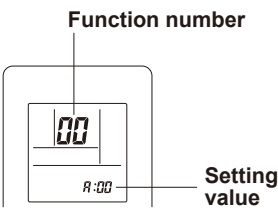
- This procedure changes to the function settings used to control the indoor unit according to the installation conditions. Incorrect settings can cause the indoor unit to malfunction.
- After the power is turned on, perform the “FUNCTION SETTING” according to the installation conditions using the remote controller.
- The settings may be selected between the following two: Function Number or Setting Value.
- Settings will not be changed if invalid numbers or setting values are selected.
- Refer to the installation manual enclosed with the remote control unit when the wired remote control unit (option) is used.
- Adjust the custom code of the indoor unit and the custom code of the remote controller.

Entering the Function Setting Mode

While pressing the POWERFUL button and SET TEMP. (Λ / V) simultaneously, press the RESET button to enter the function setting mode.

Selecting the Function Number and Setting Value

- (1) Press the SET TEMP. (Λ / V) buttons to select the function number.
(Press the MIN. HEAT button to switch between the left and right digits.)
- (2) Press the POWERFUL button to proceed to setting the value.
(Press the POWERFUL button again to return to the function number selection.)
- (3) Press the SET TEMP. (Λ / V) buttons to select the setting value.
(Press the MIN. HEAT button to switch between the left and right digits.)
- (4) Press the MODE button, in the order listed to confirm the settings.
Please confirm that the beep sounds.
- (5) Next, please press START/STOP (⏻ / I) button. Please confirm that the beep sounds.
- (6) Press the RESET button to cancel the function setting mode.
- (7) After completing the FUNCTION SETTING, be sure to turn off the power and turn it on again.



⚠CAUTION
After turning off the power, wait 30 seconds or more before turning it on again. The Function Setting does not become active unless the power is turned off then on again.

■ FUNCTION DETAILS

	Functions
1)	Filter sign
2)	Room temperature control for indoor unit sensor
3)	Auto restart
4)	Room temperature sensor switching
5)	Remote controller custom code
6)	External input control
7)	Room temperature sensor switching (Aux.)
8)	Indoor unit fan control for energy saving for cooling
9)	Room temperature control for wired remote controller sensor
10)	Heat Insulation condition (building insulation)

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).

(◆... Factory setting)

Function number	Setting value	Setting description
11	00	Standard (400 hour)
	01	Long interval (1000 hour)
	02	Short interval (200 hour)
	03	No indication

◆

2) Room temperature control for indoor unit sensor

Refer to Function 95, before performing this setting.

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).

*When Function 95-01(High insulation) is set, the Standard setting "00" will be the same as No correction "01" [0.0°F (0.0°C)].

(◆... Factory setting)

Function number		Setting value	Setting description	
30 (For cooling)	31 (For heating)	00	Standard setting*	◆
		01	No correction 0.0°F (0.0°C)	
		02	-1°F (-0.5°C)	More Cooling Less Heating
		03	-2°F (-1.0°C)	
		04	-3°F (-1.5°C)	
		05	-4°F (-2.0°C)	
		06	-5°F (-2.5°C)	
		07	-6°F (-3.0°C)	
		08	-7°F (-3.5°C)	Less Cooling More Heating
		09	-8°F (-4.0°C)	
		10	+1°F (+0.5°C)	
		11	+2°F (+1.0°C)	
		12	+3°F (+1.5°C)	
		13	+4°F (+2.0°C)	
		14	+5°F (+2.5°C)	
		15	+6°F (+3.0°C)	
		16	+7°F (+3.5°C)	
		17	+8°F (+4.0°C)	

3) Auto restart

Enable or disable automatic restart after a power interruption.

(◆... Factory setting)

Function number	Setting value	Setting description
40	00	Enable
	01	Disable

*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.

4) Room temperature sensor switching

(Only for Wired remote controller)

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

(◆... Factory setting)

Function number	Setting value	Setting description
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.

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

5) Remote controller custom code

(Only for wireless remote controller)

The indoor unit custom code can be changed.

Select the appropriate custom code.

(◆... Factory setting)

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

6) External input control

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

(◆... Factory setting)

Function number	Setting value	Setting description
46	00	Operation/Stop mode
	01	(Setting prohibited)
	02	Forced stop mode

7) 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)

(◆... Factory setting)

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

8) Indoor unit fan control for energy saving for cooling

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

(◆... Factory setting)

Function number	Setting value	Setting description
49	00	Disable
	01	Enable

◆

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.

9) Room temperature control for wired remote controller sensor

Refer to Function 95, before performing this setting.

Depending on the installed environment, correction of the wired remote controller 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.

(◆... Factory setting)

Function number		Setting value	Setting description
92 (For cooling)	93 (For heating)	00	No correction 0.0°F(0.0°C)
		01	No correction 0.0°F (0.0°C)
		02	-1°F (-0.5°C)
		03	-2°F (-1.0°C)
		04	-3°F (-1.5°C)
		05	-4°F (-2.0°C)
		06	-5°F (-2.5°C)
		07	-6°F (-3.0°C)
		08	-7°F (-3.5°C)
		09	-8°F (-4.0°C)
		10	+1°F (+0.5°C)
		11	+2°F (+1.0°C)
		12	+3°F (+1.5°C)
		13	+4°F (+2.0°C)
		14	+5°F (+2.5°C)
		15	+6°F (+3.0°C)
		16	+7°F (+3.5°C)
		17	+8°F (+4.0°C)

◆

More Cooling
Less Heating

Less Cooling
More Heating

10) Heat Insulation condition (building insulation)

Heat insulation conditions differ according to the installed environment.

Standard insulation "00" allows system to rapidly respond to the cooling or heating load changes. High insulation "01" is when the heat insulation structure of the building is high and does not require system to rapidly respond to cooling or heating load changes.

When High insulation "01" is selected;

- Overheating (overcooling) is prevented at the start-up.
- All room temp. control settings (Function 30, 31, 92, 93) will reset to No correction [0.0°F (0.0°C)].

(◆... Factory setting)

Function number	Setting value	Setting description
95	00	Standard insulation ◆
	01	High insulation

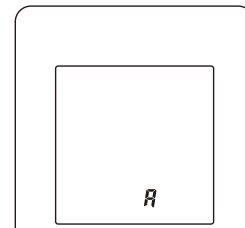
NOTE:

When changing Function 95, perform this setting before other Room temp. control settings (Function 30, 31, 92, 93). If Function 95 is not set first, Room temperature control settings (Function 30, 31, 92, 93) will be reset and you must re-do them again.

■ REMOTE CONTROLLER CUSTOM CODE SETTING

Use the following steps to select the custom code of the remote controller. (Note that the air conditioner cannot receive a signal if the air conditioner has not been set for the matching custom code.)

- (1) Press the START/STOP (⏻ / I) 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 **A**).
- (3) Press the SET TEMP. (Λ / V) buttons to change the custom code between **A** → **b** → **c** → **d**.
Match the code on the display to the air conditioner custom code.
- (4) Press the MODE button again to return to the clock display. The custom code will be changed.

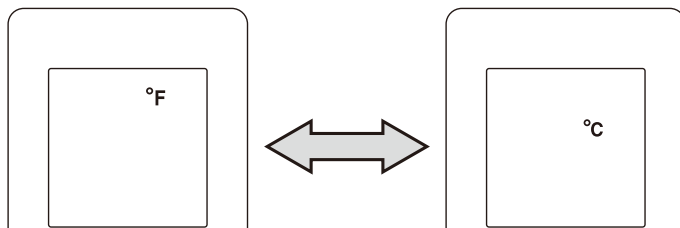


- If no buttons are pressed within 30 seconds after the custom code is displayed, the system returns to the original clock display. In this case, start again from step 1.
- The air conditioner custom code is set to A prior to shipment.

■ REMOTE CONTROLLER TEMPERATURE UNIT

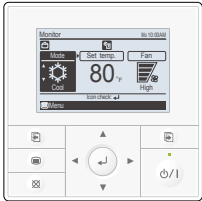
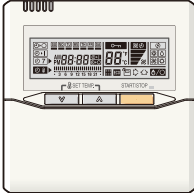
To change the temperature unit:

- (1) Press the TEMP. (Up) button (Λ) for at least 5 seconds to display the current temperature unit. (Factory setting: °F)
- (2) Press the TEMP. buttons (Λ / V) to switch the temperature unit. (°F ↔ °C)
- (3) With either of pressing the START/STOP button or no additional button operation for 30 seconds in step 2., the temperature unit currently selected will be set.

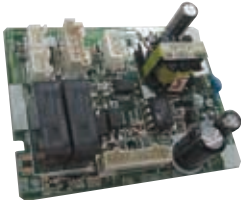
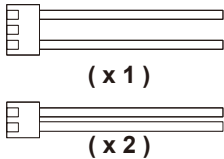


11. OPTIONAL PARTS

11-1. CONTROLLER

Exterior	Parts name	Model No.	Summary
	Wired remote controller	RXRVNUM	Large and full-dot liquid crystal screen, wide and large keys easy to press, user-intuitive arrow key. *Optional communication kit is necessary for installation
	Wired remote controller	RXRNNUM	Unit control is performed by wired remote controller. *Optional communication kit is necessary for the installation.
	Simple remote controller	RXRSNUM	Unit control is performed by simple remote controller. *Optional communication kit is necessary for the installation.

11-2. OTHERS

Exterior	Parts name	Model No.	Summary
	Communication kit	RXTWBXF1	Use to connect with optional devices and air conditioner PC board.
	External connect kit	RXXWZXZ5	Required when external device is connected. *Optional communication kit is necessary for the installation.

2. OUTDOOR UNIT

SINGLE TYPE :

ROSH09AHWJ

ROSH12AHWJ

ROSH15AHWJ

CONTENTS

2. OUTDOOR UNIT

1. SPECIFICATIONS.....	02 - 01
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1. SPECIFICATIONS

Type				INVERTER HEAT PUMP		
Model name				ROSH09AHWJ	ROSH12AHWJ	ROSH15AHWJ
Power source				208 / 230V ~ 60Hz		
Available voltage range				188 - 253V		
Starting current			A	3.3	4.7	5.2
Fan	Airflow rate	Cooling	CFM	989 (1,680)		1,206 (2,050)
		Heating	(m³/h)	1,082 (1,840)		
	Type × Q'ty		Propeller fan × 1			
	Motor output		W	49		
Sound pressure level		Cooling	dB (A)	42	43	49
		Heating		47		50
Heat exchanger type		Dimensions (H × W × D)	in.	23-1/8 × 34-11/16 × 1-7/16		
			mm	588 × 881 × 36.4		
		Fin pitch	FPI	20		
		Rows × Stages		2 × 28		
		Pipe type		Copper		
		Fin Type		Aluminum		
Compressor	Type × Q'ty		Rotary × 1			
	Motor output		W	850	1,000	
Refrigerant		Type		R410A		
		Charge	lbs.oz.	2lbs.14oz.		3lbs.1oz.
			kg	1.30		1.40
Refrigerant oil		Type		FREOL α68SZ		
Enclosure		Material		Steel		
		Color		Beige		
				Approximate color of MUNSSELL 10YR7.5/1.0		
Dimensions (H × W × D)	Net	in.		24 - 1/2 × 31 - 1/8 × 11 - 7/16		
		mm		620 × 790 × 290		
	Gross	in.		28 - 1/16 × 37-3/16 × 15 - 9/16		
		mm		713 × 945 × 395		
Weight	Net		lbs.(kg)	84 (38)		86 (39)
	Gross			93 (42)		
Connenction pipe	Size	Liquid	in. (mm)	Ø 1/4 (Ø 6.35)		
		Gas		Ø 3/8 (Ø 9.52)		Ø 1/2 (Ø 12.7)
	Method			Flare		
	Pre - charge length		ft. (m)	49 (15)		
	Max. length			66 (20)		
	Max. height difference			49 (15)		
Operation range		Cooling	°F (°C)	14 to 115 (-10 to 46)		
		Heating		-5 to 75 (-21 to 24)		

Note :

Specifications are based on the following conditions.

Cooling : Indoor temperature of 80°F (26.67°C) DB / 67°F (19.44°C) WB, and outdoor temperature of 95°F (35°C) DB / 75°F (23.9°C) WB.

Heating : Indoor temperature of 70°F (21.11°C) DB / 59°F (15°C) WB, and outdoor temperature of 47°F (8.33°C) DB / 43°F (6.11°C) WB.

Pipe length : 24ft.7in (7.5m), Height difference:0 m. (Outdoor unit - Indoor unit)

The protective function might work when using it outside the operation range.

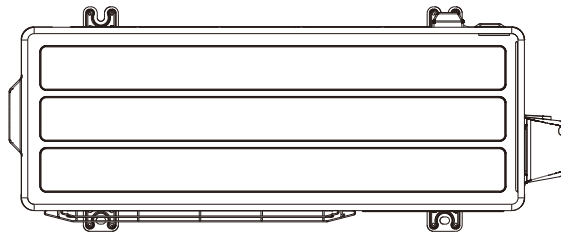
2. DIMENSIONS

■ MODEL: ROSH09AHWJ, ROSH12AHWJ, ROSH15AHWJ

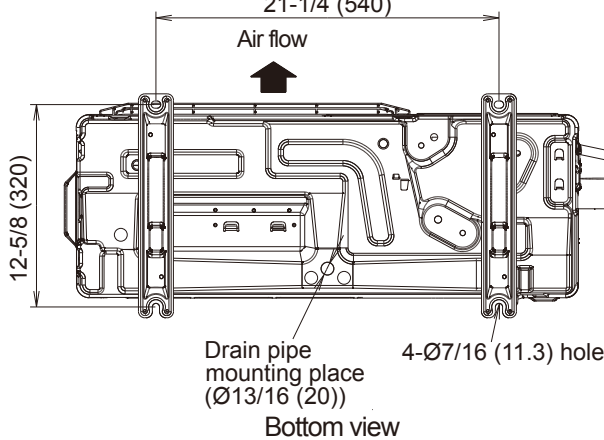
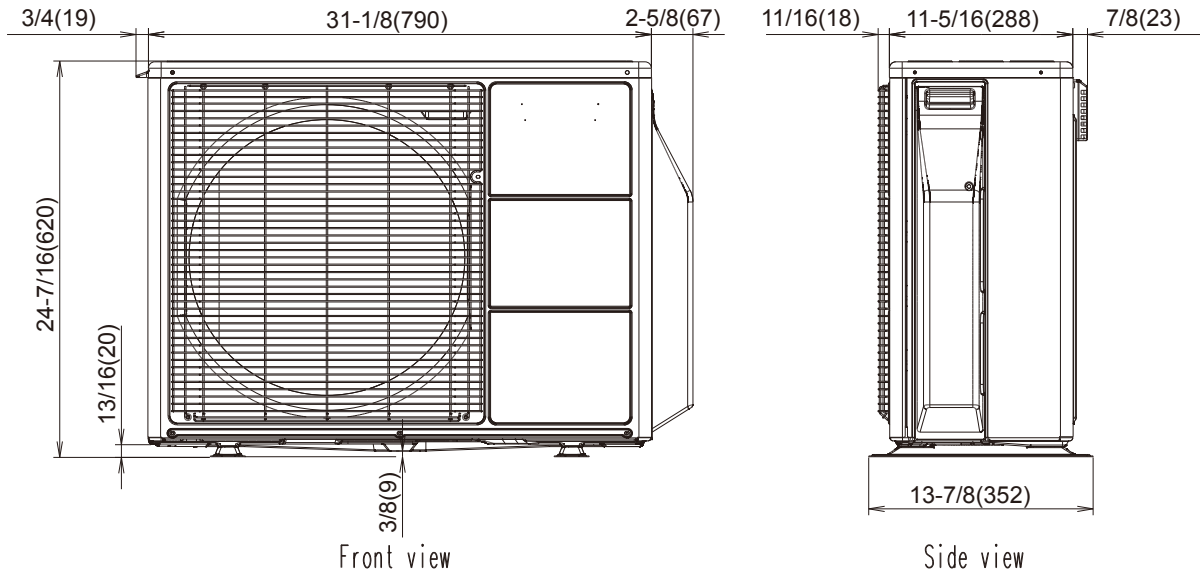
Unit : in. (mm)

OUTDOOR UNIT
ROSH09-15AHWJ

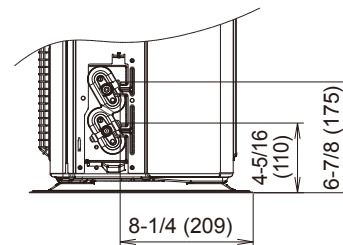
OUTDOOR UNIT
ROSH09-15AHWJ



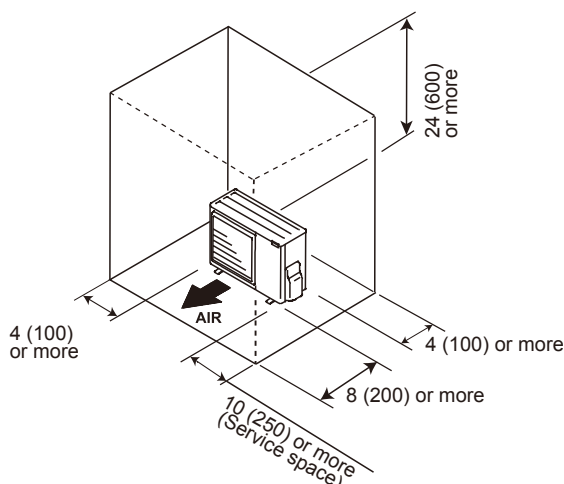
Top view



Bottom view

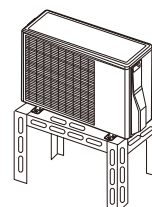


■ INSTALLATION PLACE



⚠ CAUTION

- 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 weather. (Reverse cycle model only)
- In areas with heavy snowfall, if the intake and outlet of outdoor unit is blocked with snow, it might become difficult to get warm and it is likely to cause breakdown. Please construct a canopy and a pedestal or place the unit on a high stand (local configured).

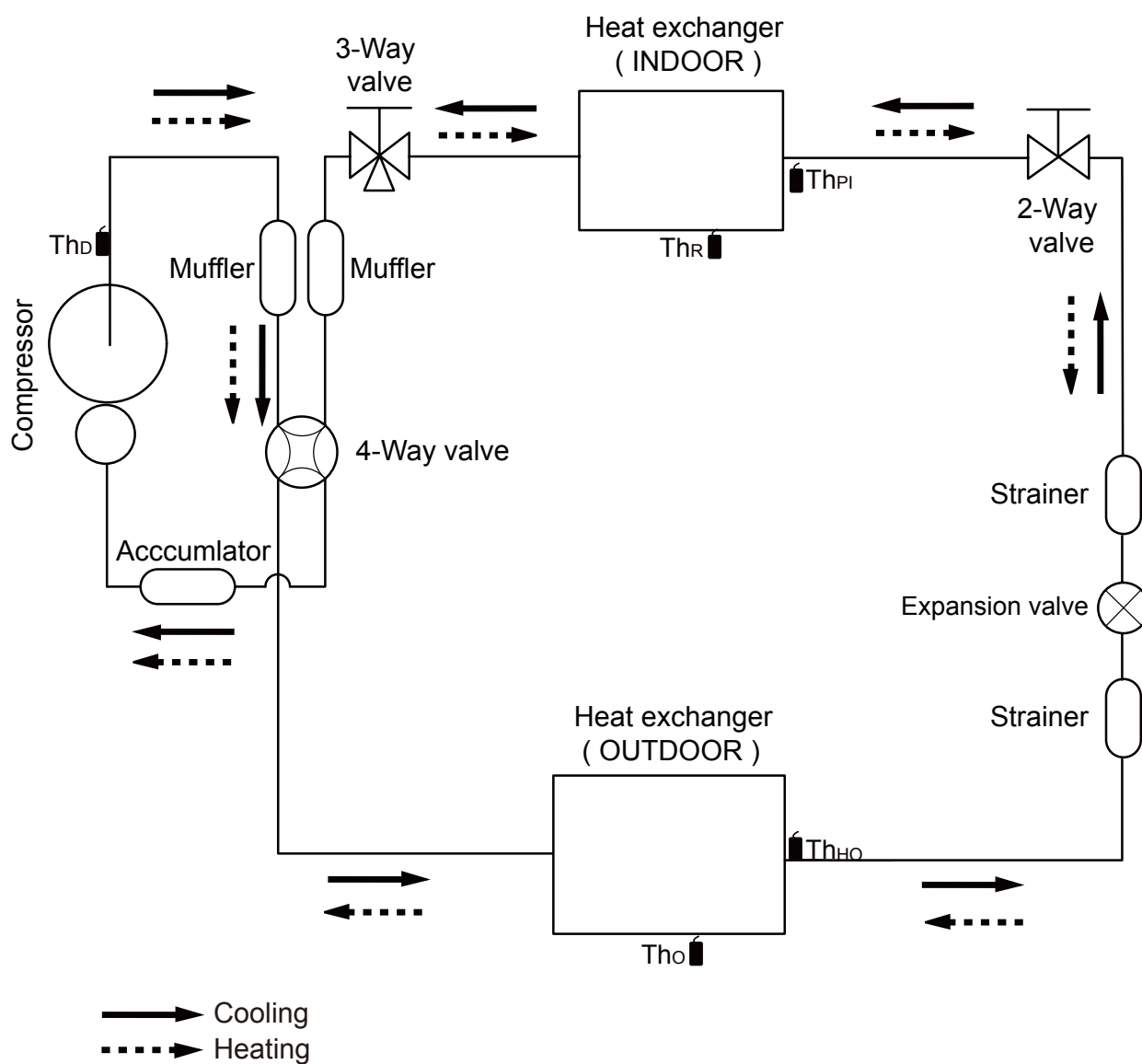


•Height above the floor level should be 50 mm or more.

•To obtain better operation efficiency, when the outdoor unit is installed, be sure to open the front and left side.

3. REFRIGERANT CIRCUIT

■ MODEL: ROSH09AHWJ, ROSH12AHWJ



Th_D Thermistor (Discharge Temp.)

Th_O Thermistor (Outdoor Temp.)

Th_{HO} Thermistor (Heat Exchanger Out Temp.)

Th_R Thermistor (Room Temp.)

Th_{PI} Thermistor (Pipe Temp.)

Refrigerant pipe diameter

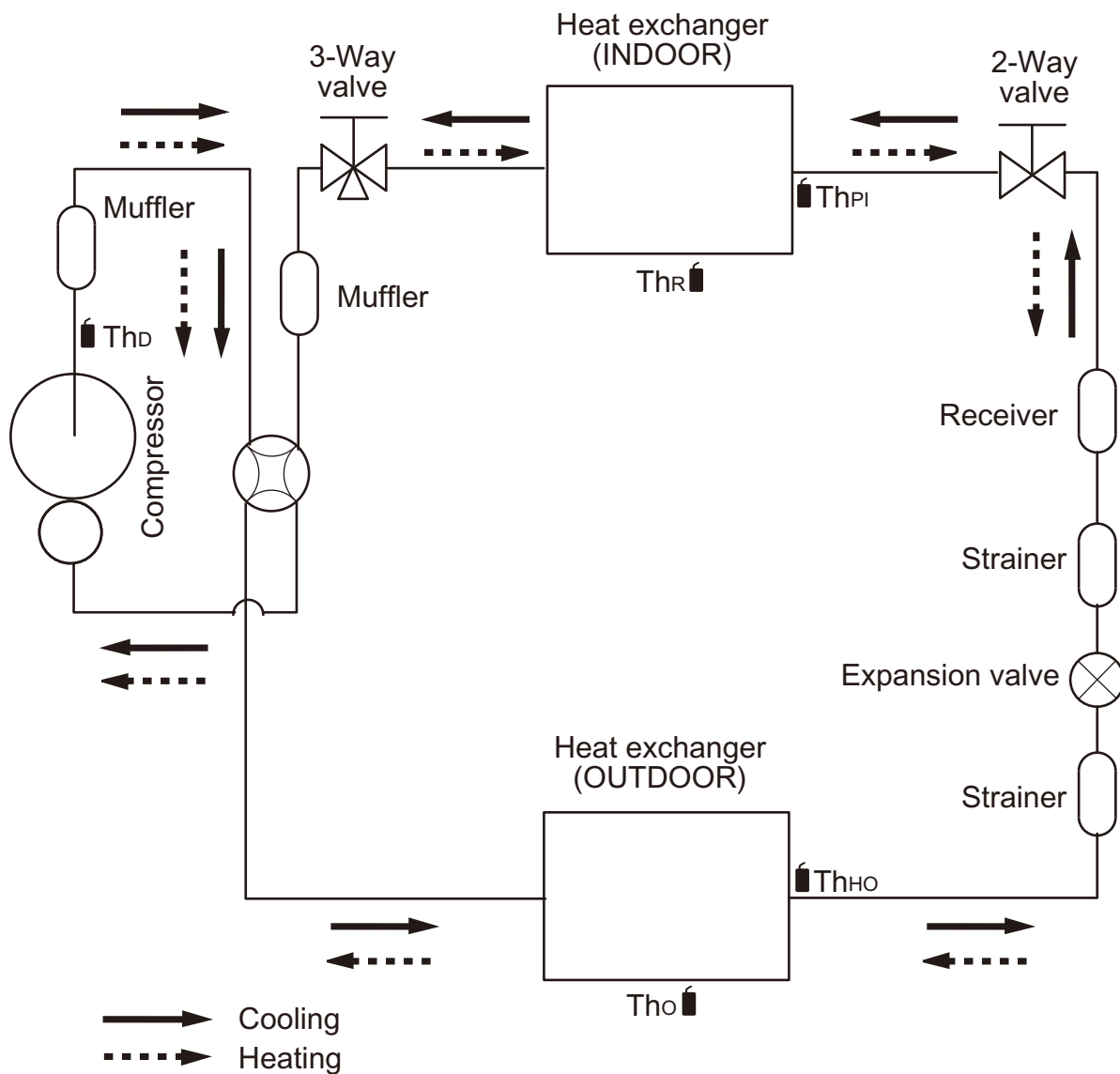
Liquid: 1/4" (6.35 mm)

Gas: 3/8" (9.52 mm)

■ MODEL: ROSH15AHWJ

OUTDOOR UNIT
ROSH09-15AHWJ

OUTDOOR UNIT
ROSH09-15AHWJ



Th_D Thermistor (Discharge Temp.)

Th_O Thermistor (Outdoor Temp.)

Th_{HO} Thermistor (Heat Exchanger Out Temp.)

Th_R Thermistor (Room Temp.)

Th_{PI} Thermistor (Pipe Temp.)

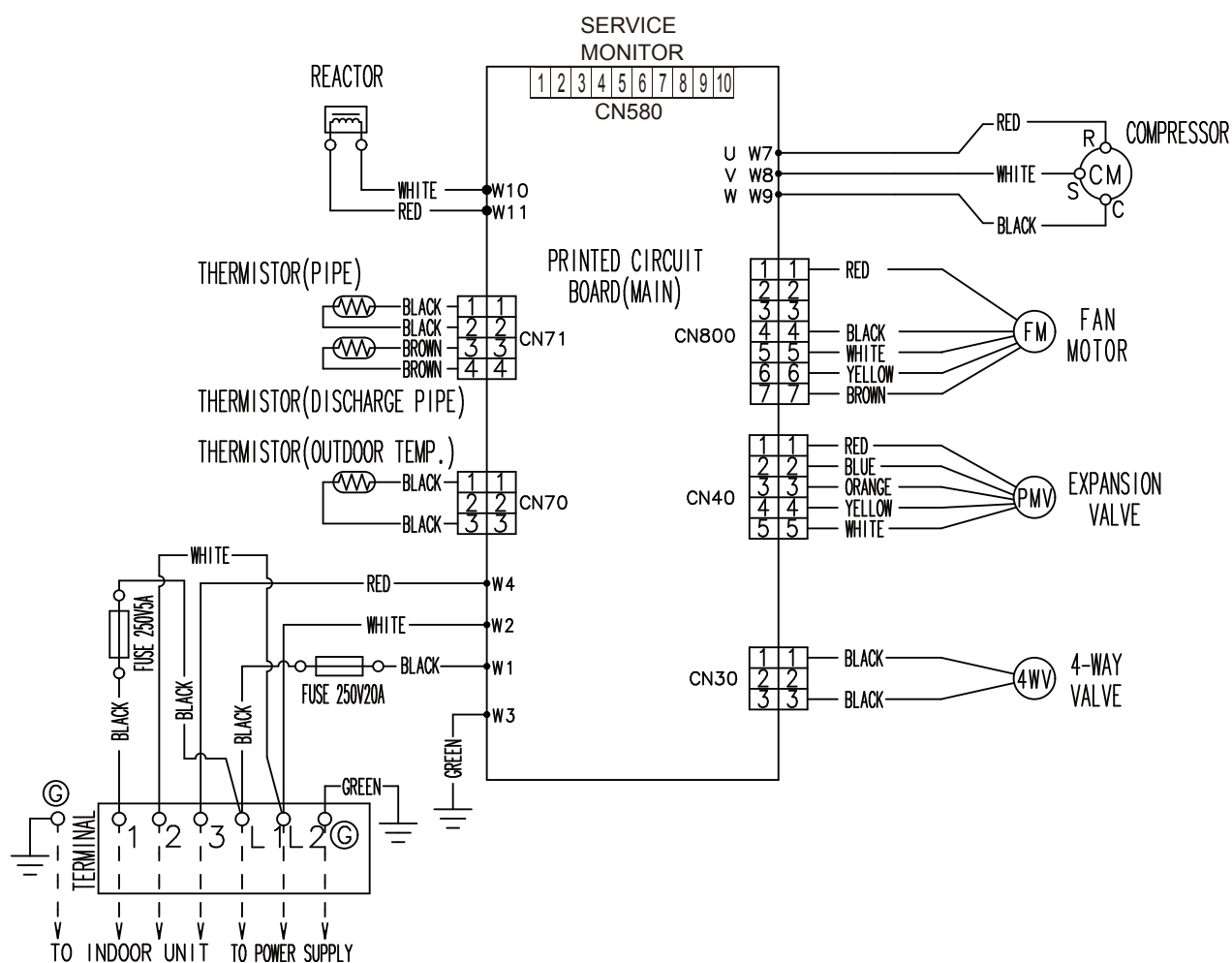
Refrigerant pipe diameter

Liquid: 1/4" (6.35 mm)

Gas: 1/2" (12.70 mm)

4. WIRING DIAGRAMS

■ MODEL: ROSH09AHWJ, ROSH12AHWJ



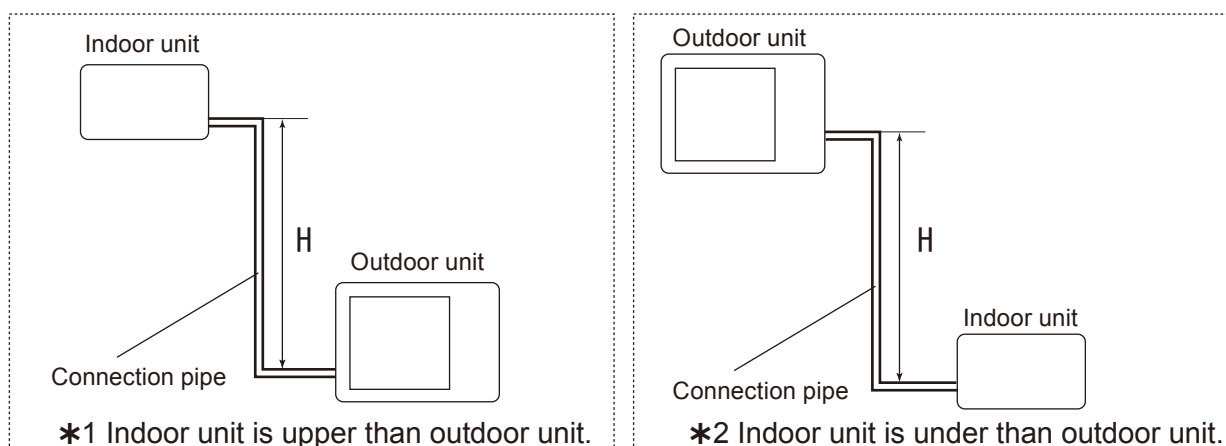
5. CAPACITY COMPENSATION RATE FOR PIPE LENGTH AND HEIGHT DIFFERENCE

■ MODEL: ROSH09AHWJ, ROSH12AHWJ

COOLING				Pipe length (m)				
				5m	7.5m	10m	15m	20m
				17ft.	25ft.	33ft.	50ft.	67ft.
Height difference H	*1 Indoor unit is upper than outdoor unit.	15m	50ft.	-	-	-	0.877	0.874
		10m	33ft.	-	-	0.956	0.891	0.888
		7.5m	25ft.	-	0.988	0.960	0.895	0.892
		5m	17ft.	1.017	0.992	0.964	0.899	0.895
	*2 Indoor unit is under than outdoor unit	0m	0ft.	1.025	1.000	0.971	0.906	0.902
		-5m	-17ft.	1.025	1.000	0.971	0.906	0.902
		-7.5m	-25ft.	-	1.000	0.971	0.906	0.902
		-10m	-33ft.	-	-	0.971	0.906	0.902
		-15m	-50ft.	-	-	-	0.906	0.902

HEATING				Pipe length (m)				
				5m	7.5m	10m	15m	20m
				17ft.	25ft.	33ft.	50ft.	67ft.
Height difference H	*1 Indoor unit is upper than outdoor unit.	15m	50ft.	-	-	-	0.933	0.925
		10m	33ft.	-	-	0.981	0.933	0.925
		7.5m	25ft.	-	1.000	0.981	0.933	0.925
		5m	17ft.	1.017	1.000	0.981	0.933	0.925
	*2 Indoor unit is under than outdoor unit	0m	0ft.	1.017	1.000	0.981	0.933	0.925
		-5m	-17ft.	1.012	0.995	0.976	0.928	0.920
		-7.5m	-25ft.	-	0.993	0.974	0.926	0.918
		-10m	-33ft.	-	-	0.971	0.923	0.916
		-15m	-50ft.	-	-	-	0.914	0.906

Height difference H

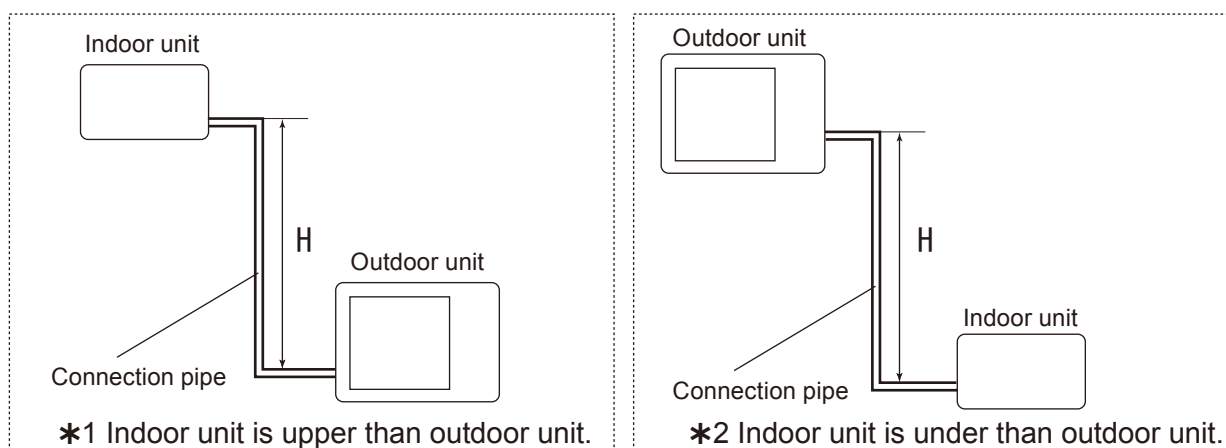


■ MODEL: ROSH15AHWJ

COOLING				Pipe length (m)				
				5m	7.5m	10m	15m	20m
				17ft.	25ft.	33ft.	50ft.	67ft.
Height difference H	*1 Indoor unit is upper than outdoor unit.	15m	50ft.	-	-	-	0.951	0.950
		10m	33ft.	-	-	0.979	0.967	0.966
		7.5m	25ft.	-	0.988	0.983	0.971	0.970
		5m	17ft.	0.994	0.992	0.987	0.975	0.974
	*2 Indoor unit is under than outdoor unit	0m	0ft.	1.002	1.000	0.995	0.983	0.982
		-5m	-17ft.	1.002	1.000	0.995	0.983	0.982
		-7.5m	-25ft.	-	1.000	0.995	0.983	0.982
		-10m	-33ft.	-	-	0.995	0.983	0.982
		-15m	-50ft.	-	-	-	0.983	0.982

HEATING				Pipe length (m)				
				5m	7.5m	10m	15m	20m
				17ft.	25ft.	33ft.	50ft.	67ft.
Height difference H	*1 Indoor unit is upper than outdoor unit.	15m	50ft.	-	-	-	0.994	0.979
		10m	33ft.	-	-	1.012	0.994	0.979
		7.5m	25ft.	-	1.000	1.012	0.994	0.979
		5m	17ft.	0.969	1.000	1.012	0.994	0.979
	*2 Indoor unit is under than outdoor unit	0m	0ft.	0.969	1.000	1.012	0.994	0.979
		-5m	-17ft.	0.964	0.995	1.007	0.989	0.974
		-7.5m	-25ft.	-	0.993	1.004	0.986	0.972
		-10m	-33ft.	-	-	1.002	0.984	0.969
		-15m	-50ft.	-	-	-	0.974	0.959

Height difference H



6. ADDITIONAL CHARGE CALCULATION

■ MODEL: ROSH09AHWJ, ROSH12AHWJ

Refrigerant type		R410A
Refrigerant amount	lbs. oz.	2lbs.14oz.
	g	1,300

● REFRIGERANT CHARGE

Pipe length	ft.	49 or less	66 (MAX)	0.22oz./ft. (20g/m)
	m	15 or less	20 (MAX)	
Additional charge	oz.	0	+3.5	
	g	0	+100	

■ MODEL: ROSH15AHWJ

Refrigerant type		R410A
Refrigerant amount	lbs. oz.	3lbs.1oz.
	g	1,400

● REFRIGERANT CHARGE

Pipe length	ft.	49 or less	66 (MAX)	0.22oz./ft. (20g/m)
	m	15 or less	20 (MAX)	
Additional charge	oz.	0	+3.5	
	g	0	+100	

7. AIR FLOW

■ MODEL: ROSH09AHWJ, ROSH12AHWJ

● Cooling

Air flow	
1,680	m ³ /h
467	l/s
989	CFM

● Heating

Air flow	
1,840	m ³ /h
510	l/s
1,082	CFM

■ MODEL: ROSH15AHWJ

● Cooling

Air flow	
2,050	m ³ /h
569	l/s
1,206	CFM

● Heating

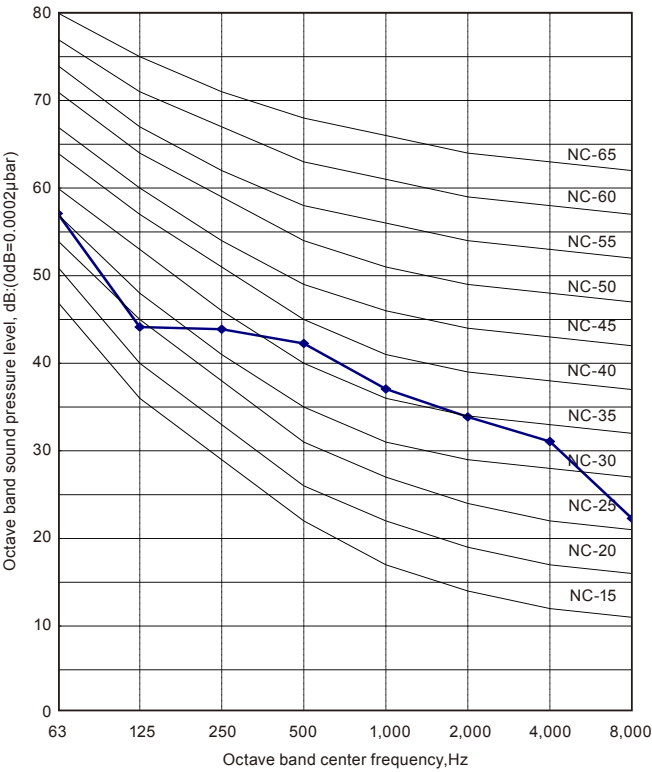
Air flow	
1,840	m ³ /h
510	l/s
1,082	CFM

8. OPERATION NOISE

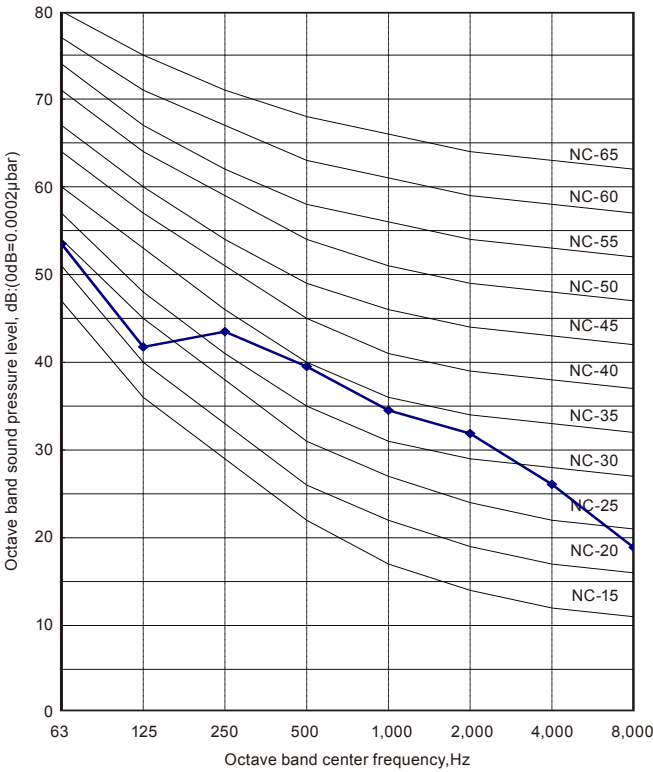
8-1. NOISE LEVEL CURVE

MODEL: ROSH09AHWJ

Cooling

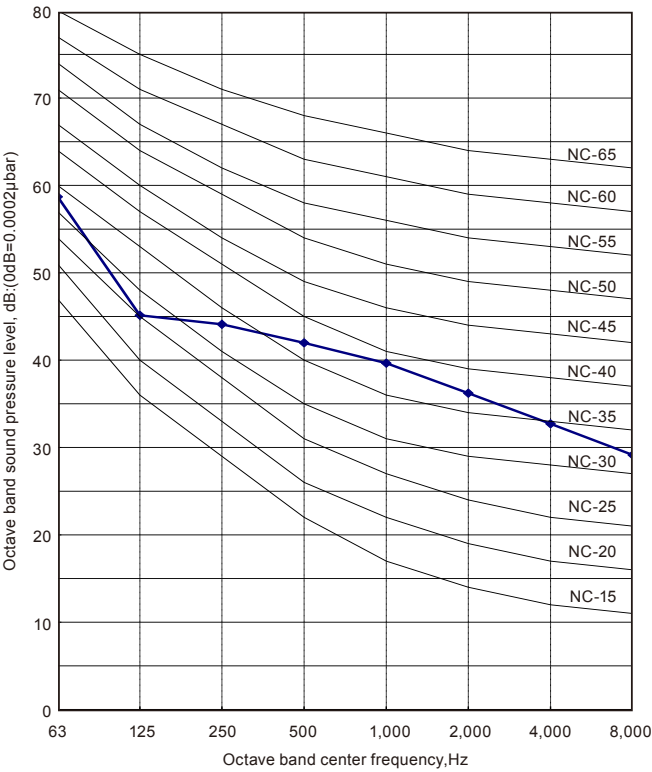


Heating

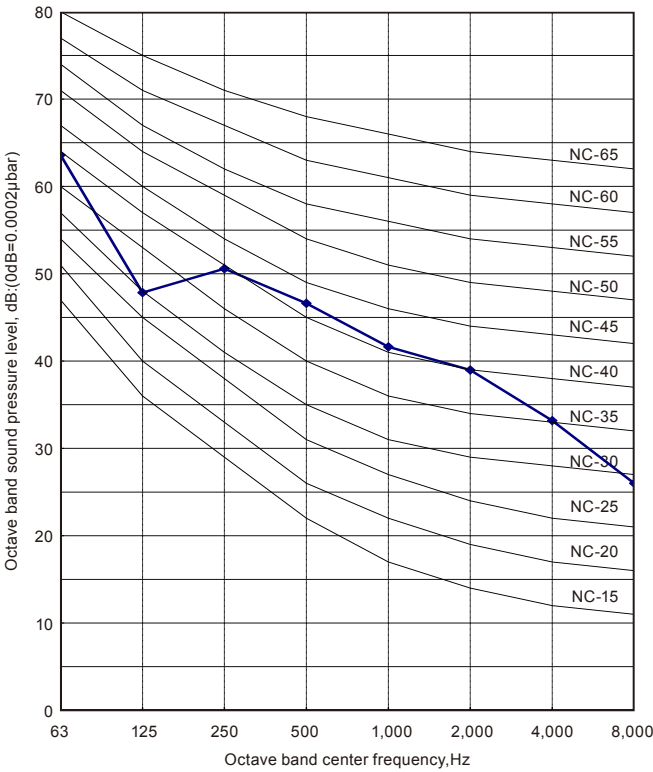


MODEL: ROSH12AHWJ

Cooling

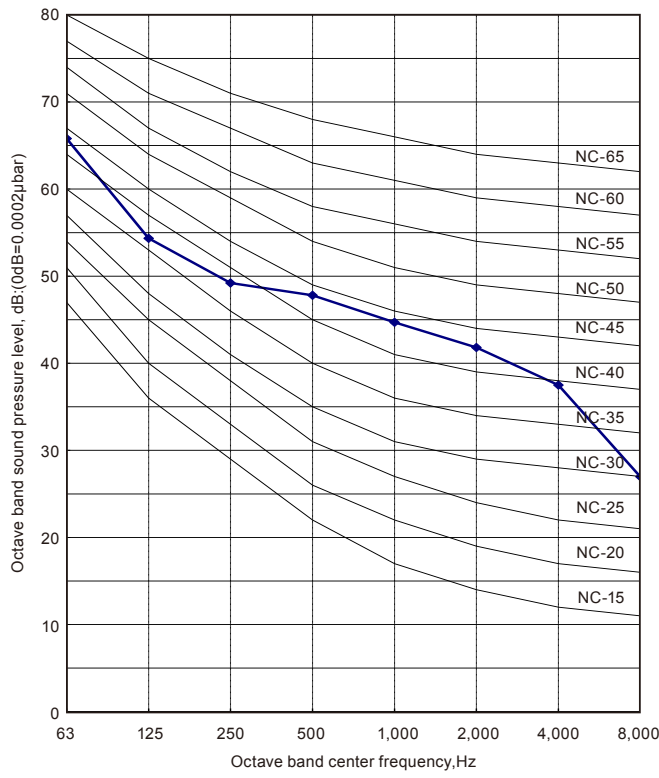


Heating

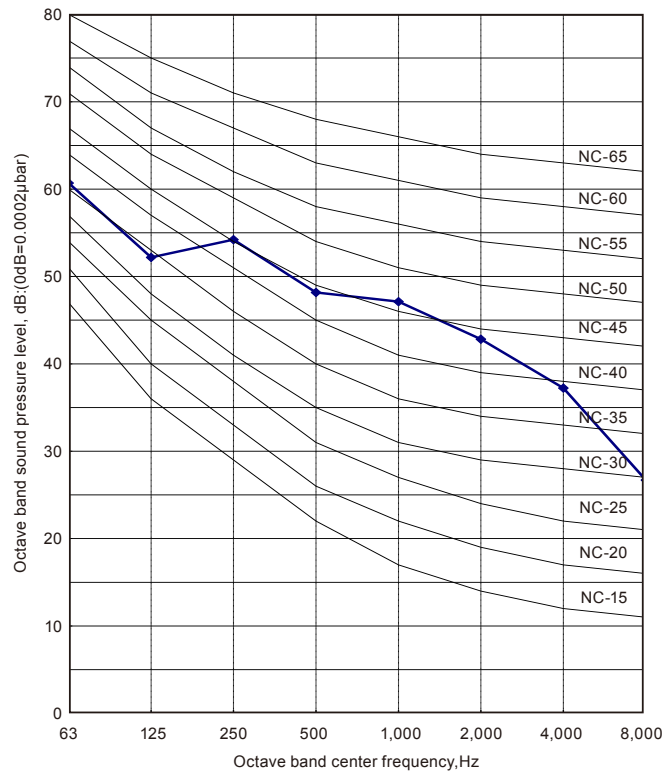


MODEL: ROSH15AHWJ

● Cooling

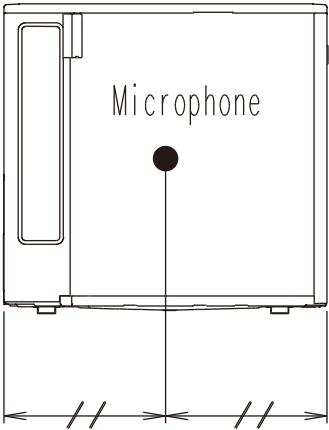
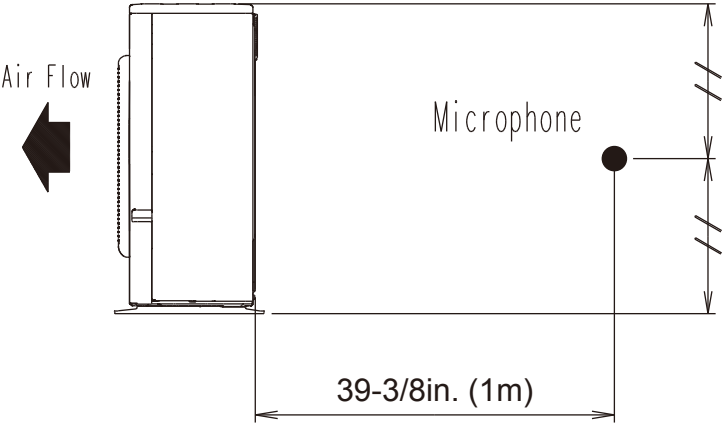


● Heating



8-2. SOUND LEVEL CHECK POINT

OUTDOOR UNIT
ROSH09-15AHWJ



OUTDOOR UNIT
ROSH09-15AHWJ

9. ELECTRIC CHARACTERISTICS

Model name			ROSH09AHWJ	ROSH12AHWJ	ROSH15AHWJ
Power supply	Voltage	V	208 / 230 ~		
	Frequency	Hz	60		
MCA		A	13.4		17.2
Starting Current		A	3.3	4.7	5.2
Wiring Spec. *1	MAX. CKT. BKR	A	15		20
	Power Cable	AWG	14		12
	Connection cable *2	AWG	14		
	Limited wiring length :	ft. (m)	68 (21)		

*1: Selected sample based on Japan Electrotechnical Standards and Codes Committee E0005.

*2: Limit voltage drop to less than 2%. Increase conductor size if voltage drop is 2% or more.

MCA : Min Circuit Amp (Calculation based on UL1995)

MAX. CKT. BKR : Maximum Circuit Breaker

10. SAFETY DEVICES

	Protection form	Model		
		ROSH09AHWJ	ROSH12AHWJ	ROSH15AHWJ
Circuit protection	Current fuse (NEAR THE TERMINAL)	250V 20A		250V 25A
		250V 5A		
	Current fuse (MAIN PRINTED CIRCUIT BOARD)	250V 15A		250V 3.15A
		250V 3.15A		
	Current fuse (FILTER PRINTED CIRCUIT BOARD)	-		250V 15A
Fan motor protection	Thermal protection program	OFF : 212±27 °F (100±15 °C) ON : 203±18 °F (95±10 °C)		
Compressor protection	Thermal protection program (DISCHARGE TEMP.)	OFF : 230 °F (110 °C) ON : After 7 minutes		

OUTDOOR UNIT
ROSH09-15AHWJ

OUTDOOR UNIT
ROSH09-15AHWJ