

AIR CONDITIONER

Wall mounted type

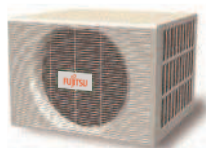
DESIGN & TECHNICAL MANUAL

INDOOR



ASUH09LMAS
ASUH12LMAS

OUTDOOR



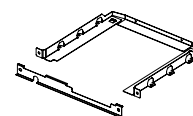
AOUH09LEAS1
AOUH12LEAS1

WALL SLEEVE
(Optional part)



UTZ-WUZA-C
UTZ-WUZB-C

BASE BRACKET KIT
(Optional part)



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Part 1. INDOOR UNIT

WALL MOUNTED TYPE:

ASUH09LMAS

ASUH12LMAS

1. Specifications

Type				Wall mounted		
				Inverter heat pump		
Model name				ASUH09LMAS	ASUH12LMAS	
Power supply				208/230 V~ 60 Hz		
Power supply intake				Outdoor unit		
Available voltage range				187—253 V		
Capacity	Cooling	Rated	kW	2.64	3.52	
			Btu/h	9,000	12,000	
		Min.—Max.	kW	0.90—2.90	0.90—3.60	
			Btu/h	3,070—9,900	3,070—12,300	
	Heating	Rated	kW	3.19	3.52	
			Btu/h	10,900	12,000	
		Min.—Max.	kW	0.90—3.81	0.90—4.31	
			Btu/h	3,070—13,000	3,070—14,700	
	Heating (17°F) *1	Rated	kW	1.96	2.20	
			Btu/h	6,700	7,500	
		Max.	kW	2.89	2.89	
			Btu/h	9,850	9,850	
	Heating (5°F) *2	Rated	kW	2.37	2.37	
			Btu/h	8,100	8,100	
Max.		kW	2.64	2.64		
		Btu/h	9,000	9,000		
Input power	Cooling	Rated	kW	0.720	1.410	
				Min.—Max.	0.14—1.58	
	Heating	Rated	kW	0.790	0.920	
				Min.—Max.	0.20—1.63	
	Heating (17°F) *1	Rated	kW	0.74	0.76	
				Max.	1.41	
	Heating (5°F) *2	Rated	kW	1.205		
				Max.	1.320	
Current	Cooling	Rated	A	3.4	6.4	
				Heating	3.7	4.3
EER2	Cooling		kW/kW	3.66	2.49	
			Btu/hW	12.5	8.5	
COP2	Heating		kW/kW	4.04	3.82	
			Btu/hW	13.8	13.0	
SEER2	Cooling		Btu/hW	21.3	18.0	
HSPF2	Heating		Btu/hW	10.0	9.0	
Power factor	Cooling		%	92.1	95.9	
				Heating	92.8	92.6
Moisture removal			pints/h (L/h)	2.7 (1.3)	3.8 (1.8)	
Maximum operating current*3		Cooling	A	8.4		
				Heating	9.4	
Fan	Airflow rate	Cooling	CFM (m ³ /h)	HIGH	453 (770)	
				MED	353 (600)	
				LOW	265 (450)	
				QUIET	147 (250)	
		Heating	HIGH	453 (770)		
			MED	377 (640)		
			LOW	306 (520)		
			QUIET	182 (310)		
	Type × Qty		Crossflow fan × 1			
	Motor output		W			
Sound pressure level*4	Cooling	dB (A)	HIGH	43		
			MED	36		
			LOW	30		
			QUIET	19		
	Heating	dB (A)	HIGH	43		
			MED	38		
			LOW	33		
			QUIET	21		
			Main1: 8-1/4 × 26-3/8 × 1-1/16 (210 × 670 × 26.6)			
			Main2: 4-7/16 × 26-3/8 × 13/16 (112 × 670 × 20)			
Sub: 3-5/16 × 26-3/8 × 1/2 (84 × 670 × 13.3)						
Heat exchanger type	Dimensions (H × W × D)	in (mm)	Main1: 21 Main2: 23 Sub: 18			
	Fin pitch	FPI	Main1: 2 × 10 Main2: 2 × 7 Sub: 1 × 4			
	Rows × Stages		Copper			
	Pipe type		Aluminum			
	Fin type		Polystyrene			
Enclosure	Material		White			
	Color		Approximate color of Munsell N 9.25/			
Dimensions (H × W × D)	Net	in (mm)	10-5/8 × 32-13/16 × 8-3/4 (270 × 834 × 222)			
	Gross		10-7/8 × 36 × 13-1/16 (277 × 914 × 332)			
Weight	Net	lb (kg)	22 (10)			
	Gross		29 (13)			
Connection pipe	Size	Liquid	in (mm)	Ø 1/4 (Ø 6.35)		
				Gas	Ø 3/8 (Ø 9.52)	
	Method	Flare				
Drain hose	Material	PP+HDPE				
	Tip diameter	in (mm)	Ø 17/32 (Ø 13.8) (I.D.), Ø 19/32 to 21/32 (Ø 15.0 to 16.8) (O.D.)			
Operation range	Cooling	°F (°C)	64 to 90 (18 to 32)			
			%RH	80 or less		
	Heating	°F (°C)	60 to 86 (16 to 30)			
Remote controller type				Wireless (Wired, Mobile app*5 [FGLair™] [option])		

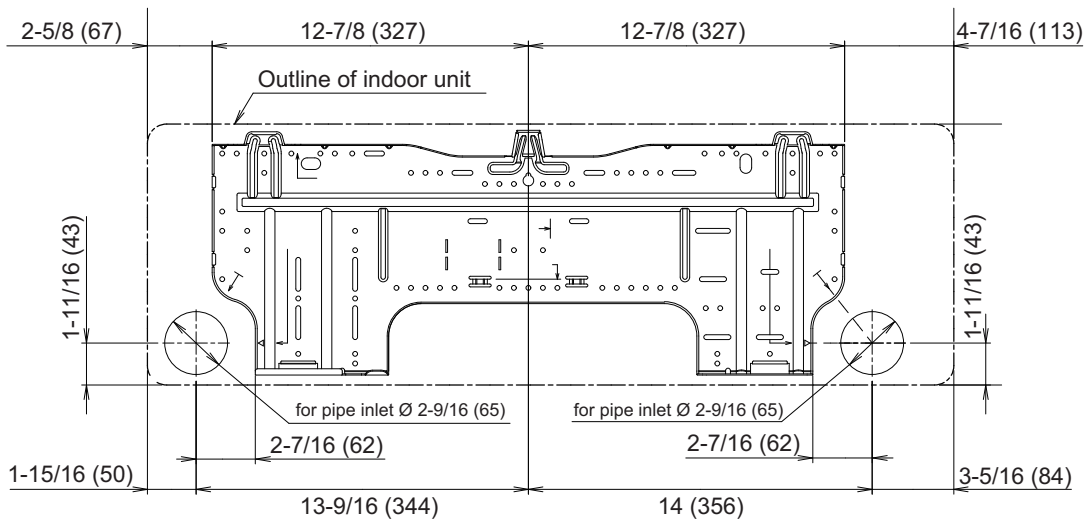
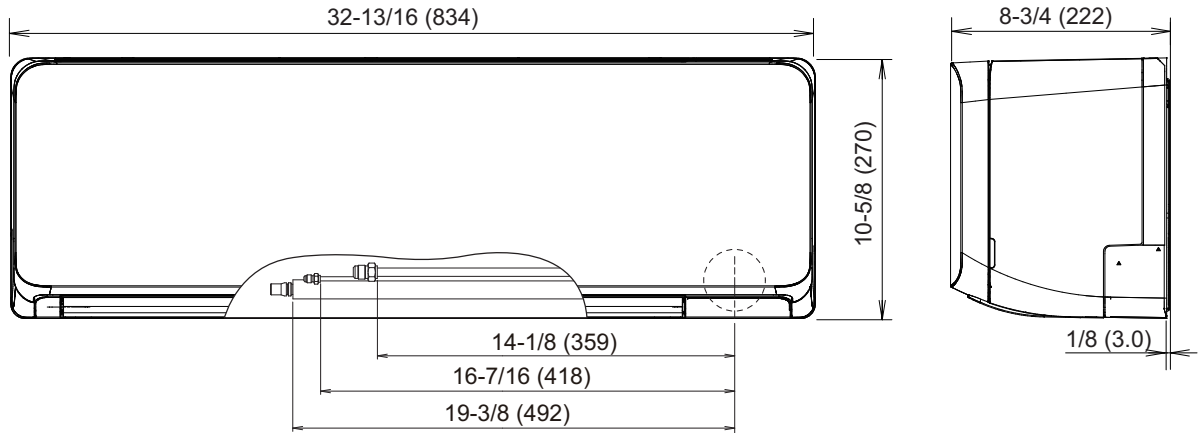
Type	Wall mounted	
	Inverter heat pump	
Model name	ASUH09LMAS	ASUH12LMAS
NOTES:		
<ul style="list-style-type: none"> Specifications are based on the following conditions: <ul style="list-style-type: none"> Cooling: Indoor temperature of 80°F (26.67°CDB)/67°F (19.44°CWB), and outdoor temperature of 95°F (35°CDB)/75°F (23.9°CWB). Heating: Indoor temperature of 70°F (21.11°CDB)/60°F (15.56°CWB), and outdoor temperature of 47°F (8.33°CDB)/43°F (6.11°CWB). *1: Heating (17°F): Indoor temperature of 70°F (21.11°CDB)/60°F (15.56°CWB), and outdoor temperature of 17°F (-8.33°CDB)/15°F (-9.44°CWB). *2: Heating (5°F): Indoor temperature of 70°F (21.11°CDB)/60°F (15.56°CWB), and outdoor temperature of 5°F (-15.0°CDB)/4°F (-15.56°CWB). Test conditions are based on AHRI 210/240 2023. Pipe length: 25 ft (7.5 m), Height difference: 0 ft (0 m). (Between outdoor unit and indoor unit.) Protective function might work when using it outside the operation range. *3: Maximum current is maximum value when operated within the operation range. *4: 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. *5: Available on Google Play™ store or on App Store®. Optional WLAN Adapter is also required. For details, refer to the setting manual. 		

M condition						
Model name	ASUH09LMAS		ASUH12LMAS			
Capacity	Cooling	Rated	kW	2.64	3.52	
			Btu/h	9,000	12,000	
		Min.—Max.	kW	0.90—2.90	0.90—3.60	
			Btu/h	3,070—9,900	3,070—12,300	
		Heating	Rated	kW	3.19	3.52
				Btu/h	10,900	12,000
	Min.—Max.		kW	0.90—3.81	0.90—4.31	
			Btu/h	3,070—13,000	3,070—14,700	
	Heating (17°F) *	Rated	kW	2.10	2.33	
			Btu/h	7,160	7,950	
		Max.	kW		2.88	
			Btu/h		9,850	
Input power	Cooling	Rated	kW	0.720	1.410	
				Min.—Max.	0.14—1.58	
	Heating	Rated		0.790	0.920	
				Min.—Max.	0.20—1.63	
	Heating (17°F) *	Rated		0.74	0.83	
				Max.	1.41	
Current	Cooling	Rated	A	3.4	6.4	
			Heating	3.7	4.3	
EER	Cooling		kW/kW	3.66	2.49	
			Btu/hW	12.5	8.5	
COP	Heating		kW/kW	4.04	3.84	
			Btu/hW	13.8	13.1	
SEER	Cooling		Btu/hW	21.3	18.0	
HSPF	Heating		Btu/hW	11.1	11.0	
Power factor	Cooling		%	92.1	95.9	
	Heating			92.8	92.6	
NOTES:						
Specifications are based on the following conditions:						
<ul style="list-style-type: none"> Cooling: Indoor temperature of 80°F (26.67°CDB)/67°F (19.44°CWB), and outdoor temperature of 95°F (35°CDB)/75°F (23.9°CWB). Heating: Indoor temperature of 70°F (21.11°CDB)/60°F (15.56°CWB), and outdoor temperature of 47°F (8.33°CDB)/43°F (6.11°CWB). *: Heating (17°F): Indoor temperature of 70°F (21.11°CDB)/60°F (15.56°CWB), and outdoor temperature of 17°F (-8.33°CDB)/15°F (-9.44°CWB). Test conditions are based on AHRI 210/240 2017. Pipe length: 25 ft (7.5 m), Height difference: 0 ft (0 m). (Between outdoor unit and indoor unit.) 						

2. Dimensions

2-1. Models: ASUH09LMAS and ASUH12LMAS

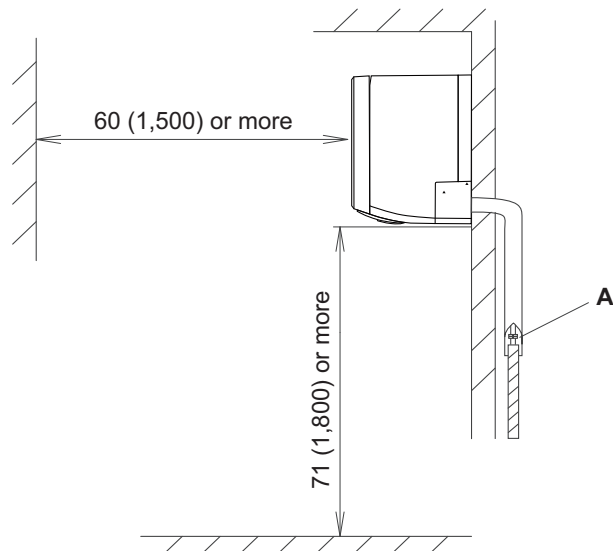
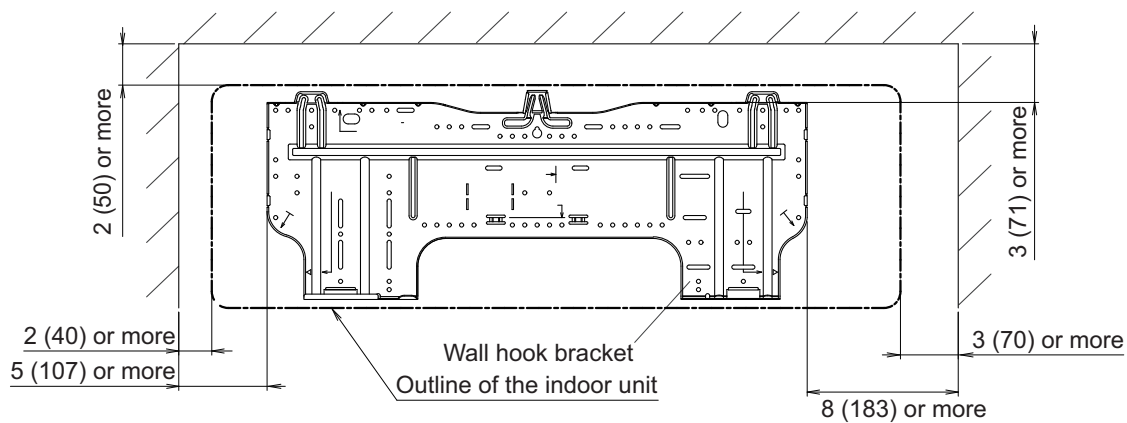
Unit: in (mm)



2-2. Installation space requirement

Provide sufficient installation space for product safety.

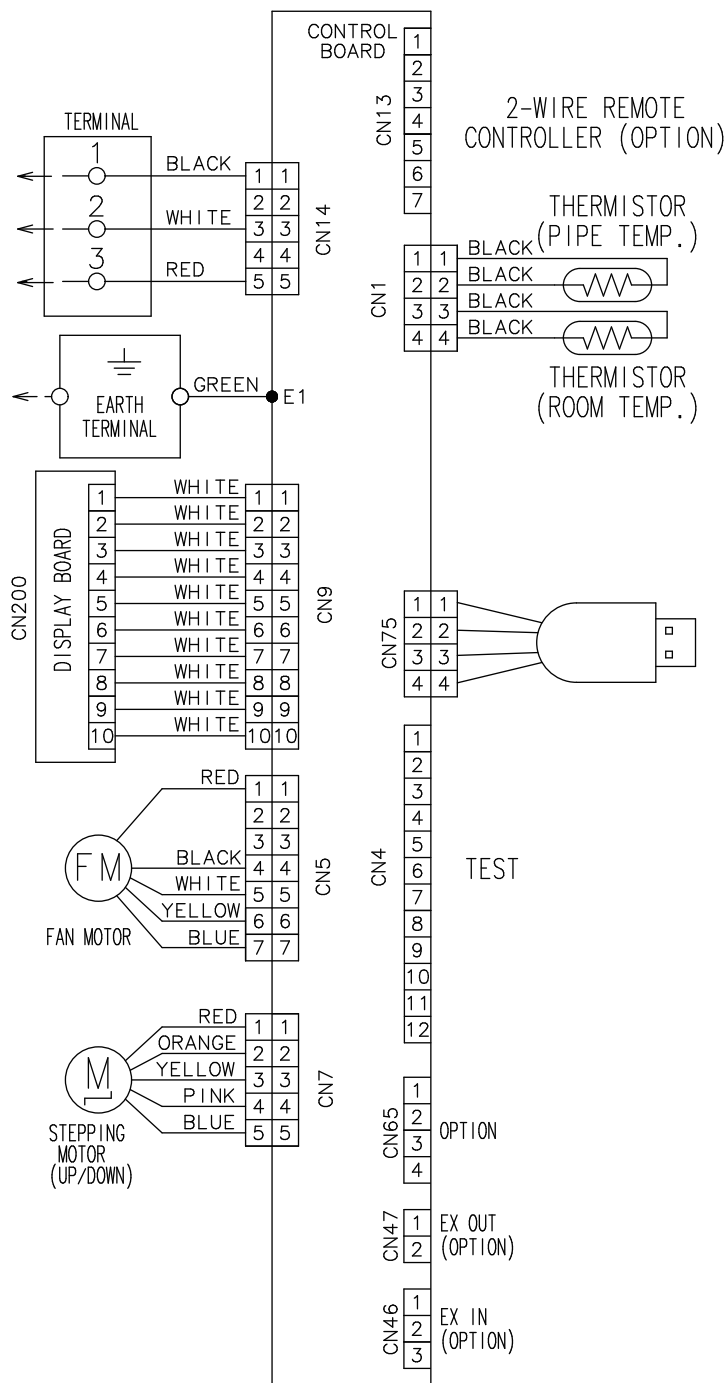
Unit: in (mm)



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

3. Wiring diagrams

3-1. Models: ASUH09LMAS and ASUH12LMAS



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: ASUH09LMAS

AFR	CFM	453
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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
	°FWB	kBTu		kW	kBTu		kW	kBTu		kW	kBTu		kW	kBTu		kW	kBTu		kW
	14	9.69	5.77	0.39	10.65	6.35	0.40	11.43	6.86	0.41	11.94	7.23	0.42	12.35	7.88	0.46	12.49	8.19	0.48
	23	9.42	5.66	0.40	10.48	6.28	0.41	11.26	6.76	0.42	11.74	7.13	0.43	12.15	7.71	0.47	12.28	8.02	0.49
	32	9.25	5.56	0.41	10.27	6.18	0.42	11.06	6.65	0.43	11.53	7.03	0.44	11.94	7.51	0.48	12.08	7.85	0.50
	41	9.08	5.49	0.43	10.10	6.07	0.44	10.85	6.59	0.45	11.33	6.93	0.45	11.74	7.37	0.50	11.87	7.68	0.52
	50	8.91	5.46	0.44	9.90	6.04	0.45	10.65	6.52	0.46	11.12	6.86	0.46	11.50	7.20	0.51	11.64	7.51	0.53
	59	8.73	5.43	0.46	9.72	5.97	0.47	10.44	6.45	0.48	10.92	6.82	0.48	11.29	7.06	0.54	11.43	7.37	0.55
	67	8.56	5.36	0.53	9.52	5.94	0.54	10.24	6.41	0.55	10.71	6.76	0.58	11.09	6.93	0.62	11.19	7.23	0.64
	77	8.36	5.22	0.61	9.31	5.77	0.63	10.00	6.24	0.64	10.44	6.55	0.68	10.82	6.76	0.72	10.92	7.03	0.74
	87	7.85	5.05	0.66	8.73	5.56	0.68	9.38	6.04	0.69	9.79	6.35	0.71	10.13	6.52	0.78	10.24	6.79	0.80
	95	7.20	4.91	0.68	8.02	5.43	0.70	8.63	5.80	0.71	9.00	5.90	0.72	9.31	6.35	0.80	9.42	6.65	0.83
104	6.65	4.54	0.73	7.40	5.02	0.75	7.95	5.43	0.77	8.12	5.73	0.77	8.60	5.87	0.86	8.67	6.14	0.89	
115	5.66	3.89	0.79	6.31	4.30	0.81	6.79	4.64	0.83	7.10	4.88	0.84	7.34	5.02	0.93	7.40	5.22	0.96	

AFR	m ³ /h	770
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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
	°CWB	kW			kW			kW			kW			kW			kW		
	-10.0	2.84	1.69	0.39	3.12	1.86	0.40	3.35	2.01	0.41	3.50	2.12	0.42	3.62	2.31	0.46	3.66	2.40	0.48
	-5.0	2.76	1.66	0.40	3.07	1.84	0.41	3.30	1.98	0.42	3.44	2.09	0.43	3.56	2.26	0.47	3.60	2.35	0.49
	0.0	2.71	1.63	0.41	3.01	1.81	0.42	3.24	1.95	0.43	3.38	2.06	0.44	3.50	2.20	0.48	3.54	2.30	0.50
	5.0	2.66	1.61	0.43	2.96	1.78	0.44	3.18	1.93	0.45	3.32	2.03	0.45	3.44	2.16	0.50	3.48	2.25	0.52
	10.0	2.61	1.60	0.44	2.90	1.77	0.45	3.12	1.91	0.46	3.26	2.01	0.46	3.37	2.11	0.51	3.41	2.20	0.53
	15.0	2.56	1.59	0.46	2.85	1.75	0.47	3.06	1.89	0.48	3.20	2.00	0.48	3.31	2.07	0.54	3.35	2.16	0.55
	19.4	2.51	1.57	0.53	2.79	1.74	0.54	3.00	1.88	0.55	3.14	1.98	0.58	3.25	2.03	0.62	3.28	2.12	0.64
	25.0	2.45	1.53	0.61	2.73	1.69	0.63	2.93	1.83	0.64	3.06	1.92	0.68	3.17	1.98	0.72	3.20	2.06	0.74
	30.6	2.30	1.48	0.66	2.56	1.63	0.68	2.75	1.77	0.69	2.87	1.86	0.71	2.97	1.91	0.78	3.00	1.99	0.80
	35.0	2.11	1.44	0.68	2.35	1.59	0.70	2.53	1.70	0.71	2.64	1.73	0.72	2.73	1.86	0.80	2.76	1.95	0.83
40.0	1.95	1.33	0.73	2.17	1.47	0.75	2.33	1.59	0.77	2.38	1.68	0.77	2.52	1.72	0.86	2.54	1.80	0.89	
46.1	1.66	1.14	0.79	1.85	1.26	0.81	1.99	1.36	0.83	2.08	1.43	0.84	2.15	1.47	0.93	2.17	1.53	0.96	

Model: ASUH12LMAS

AFR	CFM	453
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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
	°FWB	kBTu			kBTu			kBTu			kBTu			kBTu			kBTu		
		kW			kW			kW			kW			kW			kW		
	14	13.03	8.87	0.84	14.50	9.21	0.86	15.59	9.59	0.88	16.28	10.58	0.89	16.86	10.85	0.99	17.03	11.33	1.02
	23	12.80	8.63	0.86	14.26	8.97	0.88	15.32	9.25	0.90	16.00	10.13	0.91	16.58	10.41	1.01	16.75	10.88	1.04
	32	12.59	8.39	0.88	14.02	8.70	0.90	15.08	9.04	0.92	15.73	9.72	0.93	16.28	10.00	1.03	16.45	10.44	1.07
	41	12.35	8.19	0.91	13.78	8.53	0.93	14.81	8.80	0.95	15.46	9.35	0.96	16.00	9.62	1.06	16.17	10.03	1.10
	50	12.11	8.02	0.93	13.51	8.29	0.96	14.50	8.60	0.98	15.15	9.01	0.99	15.70	9.25	1.10	15.83	9.66	1.13
	59	11.91	7.85	0.97	13.24	8.12	1.00	14.26	8.36	1.02	14.88	8.70	1.03	15.39	8.91	1.14	15.56	9.31	1.18
	67	11.43	7.71	1.03	12.69	7.95	1.05	13.65	8.22	1.08	14.26	8.53	1.09	14.77	8.73	1.21	14.91	9.14	1.25
	77	11.16	7.51	1.20	12.42	7.75	1.22	13.34	7.98	1.25	13.92	8.29	1.27	14.43	8.53	1.40	14.57	8.91	1.45
	87	10.48	7.23	1.29	11.64	7.47	1.32	12.52	7.71	1.35	13.07	8.02	1.37	13.55	8.22	1.51	13.68	8.56	1.57
95	9.62	7.06	1.33	10.71	7.30	1.36	11.50	7.54	1.39	12.00	7.92	1.41	12.45	8.02	1.56	12.56	8.39	1.62	
104	7.78	5.80	0.94	8.36	6.24	0.95	8.84	6.59	0.97	9.31	6.89	0.98	9.72	7.10	0.99	10.20	7.37	0.99	
115	6.65	4.88	1.01	7.13	5.25	1.03	7.54	5.56	1.05	7.95	5.83	1.06	8.29	6.01	1.07	8.70	6.21	1.07	

AFR	m³/h	770
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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
	°CWB	kW			kW			kW			kW			kW			kW		
	-10.0	3.82	2.60	0.84	4.25	2.70	0.86	4.57	2.81	0.88	4.77	3.10	0.89	4.94	3.18	0.99	4.99	3.32	1.02
	-5.0	3.75	2.53	0.86	4.18	2.63	0.88	4.49	2.71	0.90	4.69	2.97	0.91	4.86	3.05	1.01	4.91	3.19	1.04
	0.0	3.69	2.46	0.88	4.11	2.55	0.90	4.42	2.65	0.92	4.61	2.85	0.93	4.77	2.93	1.03	4.82	3.06	1.07
	5.0	3.62	2.40	0.91	4.04	2.50	0.93	4.34	2.58	0.95	4.53	2.74	0.96	4.69	2.82	1.06	4.74	2.94	1.10
	10.0	3.55	2.35	0.93	3.96	2.43	0.96	4.25	2.52	0.98	4.44	2.64	0.99	4.60	2.71	1.10	4.64	2.83	1.13
	15.0	3.49	2.30	0.97	3.88	2.38	1.00	4.18	2.45	1.02	4.36	2.55	1.03	4.51	2.61	1.14	4.56	2.73	1.18
	19.4	3.35	2.26	1.03	3.72	2.33	1.05	4.00	2.41	1.08	4.18	2.50	1.09	4.33	2.56	1.21	4.37	2.68	1.25
	25.0	3.27	2.20	1.20	3.64	2.27	1.22	3.91	2.34	1.25	4.08	2.43	1.27	4.23	2.50	1.40	4.27	2.61	1.45
	30.6	3.07	2.12	1.29	3.41	2.19	1.32	3.67	2.26	1.35	3.83	2.35	1.37	3.97	2.41	1.51	4.01	2.51	1.57
	35.0	2.82	2.07	1.33	3.14	2.14	1.36	3.37	2.21	1.39	3.52	2.32	1.41	3.65	2.35	1.56	3.68	2.46	1.62
40.0	2.28	1.70	0.94	2.45	1.83	0.95	2.59	1.93	0.97	2.73	2.02	0.98	2.85	2.08	0.99	2.99	2.16	0.99	
46.1	1.95	1.43	1.01	2.09	1.54	1.03	2.21	1.63	1.05	2.33	1.71	1.06	2.43	1.76	1.07	2.55	1.82	1.07	

4-2. Heating capacity

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

Model: ASUH09LMAS

AFR	CFM	453
-----	-----	-----

Outdoor temperature		Indoor temperature											
		°FDB	°FWB	60		65		70		72		75	
				TC kBtu	IP kW	TC kBtu	IP kW	TC kBtu	IP kW	TC kBtu	IP kW	TC kBtu	IP kW
5	3	9.55	1.28	9.38	1.30	9.01	1.32	8.94	1.34	8.67	1.36		
14	12	10.30	1.35	10.07	1.37	9.69	1.39	9.59	1.41	9.35	1.43		
23	19	10.75	1.39	10.17	1.41	9.90	1.43	9.83	1.45	9.55	1.47		
32	28	11.29	1.46	10.78	1.48	10.44	1.50	10.27	1.52	9.93	1.54		
41	37	12.80	1.53	12.25	1.55	11.87	1.57	11.64	1.59	11.26	1.61		
47	43	13.99	1.57	13.38	1.59	13.00	1.61	12.73	1.63	12.32	1.65		
50	47	14.74	1.59	14.09	1.61	13.65	1.63	13.38	1.65	12.93	1.67		
59	50	15.52	1.36	14.64	1.36	13.99	1.35	13.82	1.35	13.44	1.35		
68	59	15.29	1.13	14.40	1.12	13.78	1.12	13.68	1.12	13.24	1.12		
75	64	15.66	1.11	14.77	1.10	14.13	1.10	14.02	1.10	13.58	1.10		

AFR	m ³ /h	770
-----	-------------------	-----

Outdoor temperature		Indoor temperature											
		°CDB	°CWB	15.6		18.3		21.1		22.2		23.9	
				TC kW	IP kW	TC kW	IP kW	TC kW	IP kW	TC kW	IP kW	TC kW	IP kW
-15.0	-16.1	2.80	1.28	2.75	1.30	2.64	1.32	2.62	1.34	2.54	1.36		
-10.0	-11.1	3.02	1.35	2.95	1.37	2.84	1.39	2.81	1.41	2.74	1.43		
-5.0	-7.2	3.15	1.39	2.98	1.41	2.90	1.43	2.88	1.45	2.80	1.47		
0.0	-2.2	3.31	1.46	3.16	1.48	3.06	1.50	3.01	1.52	2.91	1.54		
5.0	2.8	3.75	1.53	3.59	1.55	3.48	1.57	3.41	1.59	3.30	1.61		
8.3	6.1	4.10	1.57	3.92	1.59	3.81	1.61	3.73	1.63	3.61	1.65		
10.0	8.3	4.32	1.59	4.13	1.61	4.00	1.63	3.92	1.65	3.79	1.67		
15.0	10.0	4.55	1.36	4.29	1.36	4.10	1.35	4.05	1.35	3.94	1.35		
20.0	15.0	4.48	1.13	4.22	1.12	4.04	1.12	4.01	1.12	3.88	1.12		
24.0	18.0	4.59	1.11	4.33	1.10	4.14	1.10	4.11	1.10	3.98	1.10		

Model: ASUH12LMAS

AFR	CFM	453
-----	-----	-----

Outdoor temperature		Indoor temperature											
		°FDB	°FWB	60		65		70		72		75	
				TC kBtu	IP kW	TC kBtu	IP kW	TC kBtu	IP kW	TC kBtu	IP kW	TC kBtu	IP kW
5	3	9.55	1.28	9.38	1.30	9.01	1.32	8.94	1.34	8.67	1.36		
14	12	10.30	1.35	10.07	1.37	9.69	1.39	9.59	1.41	9.35	1.43		
23	19	11.33	1.41	11.09	1.43	10.68	1.45	10.58	1.47	10.27	1.47		
32	28	12.76	1.48	12.52	1.50	12.04	1.52	11.91	1.54	11.60	1.56		
41	37	14.33	1.55	14.06	1.57	13.51	1.59	13.38	1.61	13.00	1.63		
47	43	15.59	1.59	15.25	1.61	14.70	1.63	14.54	1.65	14.13	1.67		
50	47	16.34	1.61	16.00	1.63	15.39	1.65	15.25	1.67	14.81	1.69		
59	50	17.81	1.36	16.82	1.35	16.07	1.35	15.73	1.35	15.46	1.35		
68	59	17.54	1.13	16.55	1.12	15.83	1.12	15.49	1.12	15.22	1.12		
75	64	17.98	1.11	16.96	1.10	16.21	1.10	15.87	1.10	15.59	1.10		

AFR	m ³ /h	770
-----	-------------------	-----

Outdoor temperature		Indoor temperature											
		°CDB	°CWB	15.6		18.3		21.1		22.2		23.9	
				TC kW	IP kW	TC kW	IP kW	TC kW	IP kW	TC kW	IP kW	TC kW	IP kW
-15.0	-16.1	2.80	1.28	2.75	1.30	2.64	1.32	2.62	1.34	2.54	1.36		
-10.0	-11.1	3.02	1.35	2.95	1.37	2.84	1.39	2.81	1.41	2.74	1.43		
-5.0	-7.2	3.32	1.41	3.25	1.43	3.13	1.45	3.10	1.47	3.01	1.47		
0.0	-2.2	3.74	1.48	3.67	1.50	3.53	1.52	3.49	1.54	3.40	1.56		
5.0	2.8	4.20	1.55	4.12	1.57	3.96	1.59	3.92	1.61	3.81	1.63		
8.3	6.1	4.57	1.59	4.47	1.61	4.31	1.63	4.26	1.65	4.14	1.67		
10.0	8.3	4.79	1.61	4.69	1.63	4.51	1.65	4.47	1.67	4.34	1.69		
15.0	10.0	5.22	1.36	4.93	1.35	4.71	1.35	4.61	1.35	4.53	1.35		
20.0	15.0	5.14	1.13	4.85	1.12	4.64	1.12	4.54	1.12	4.46	1.12		
24.0	18.0	5.27	1.11	4.97	1.10	4.75	1.10	4.65	1.10	4.57	1.10		

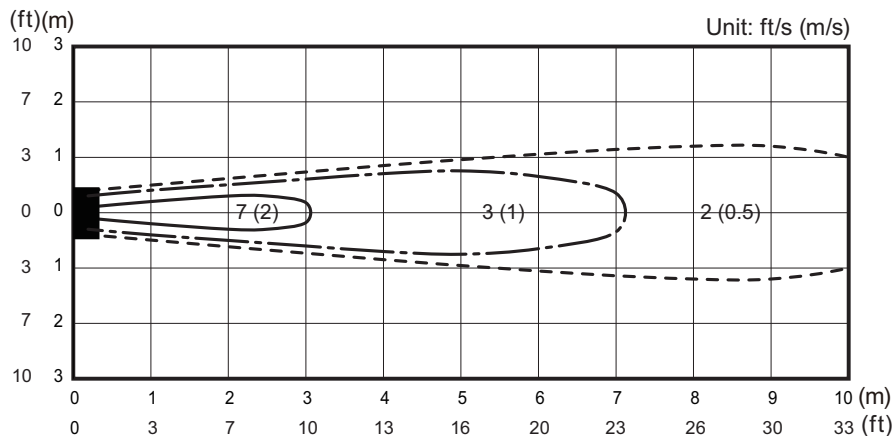
5. Fan performance

5-1. Air velocity distributions

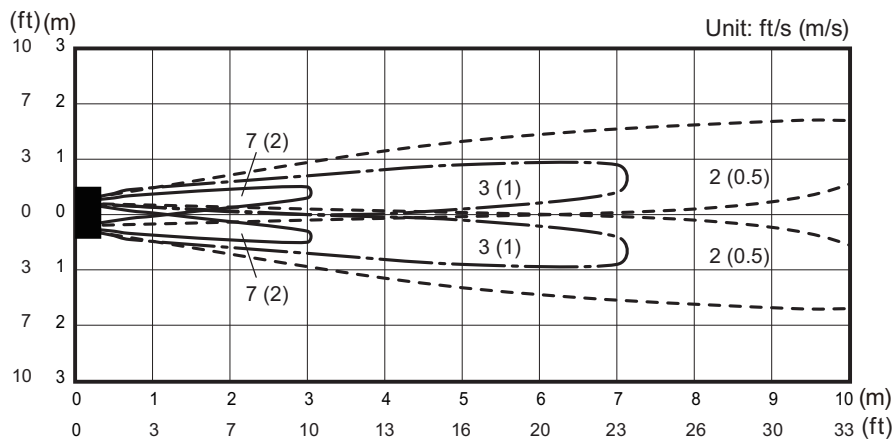
■ Models: ASUH09LMAS and ASUH12LMAS

Measuring conditions	Fan speed	Operation mode
	HIGH	FAN

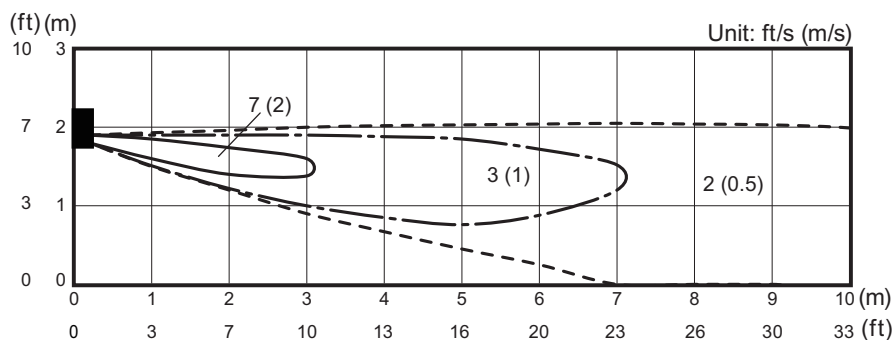
Top view
Horizontal louver: Up
Vertical louver: Center



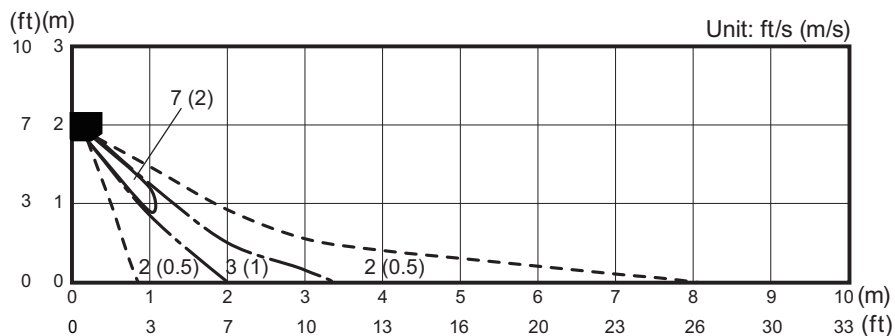
Top view
Horizontal louver: Up
Vertical louver: Left & Right



Side view
Horizontal louver: Up
Vertical louver: Center



Side view
Horizontal louver: Down
Vertical louver: Center



5-2. Airflow

■ Model: ASUH09LMAS

● Cooling

Fan speed	Airflow	
HIGH	m ³ /h	770
	l/s	214
	CFM	453
MED	m ³ /h	600
	l/s	167
	CFM	353
LOW	m ³ /h	450
	l/s	125
	CFM	265
QUIET	m ³ /h	250
	l/s	69
	CFM	147

● Heating

Fan speed	Airflow	
HIGH	m ³ /h	770
	l/s	214
	CFM	453
MED	m ³ /h	640
	l/s	178
	CFM	377
LOW	m ³ /h	520
	l/s	144
	CFM	306
QUIET	m ³ /h	310
	l/s	86
	CFM	182

■ Model: ASUH12LMAS

● Cooling

Fan speed	Airflow	
HIGH	m ³ /h	770
	l/s	214
	CFM	453
MED	m ³ /h	600
	l/s	167
	CFM	353
LOW	m ³ /h	450
	l/s	125
	CFM	265
QUIET	m ³ /h	250
	l/s	69
	CFM	147

● Heating

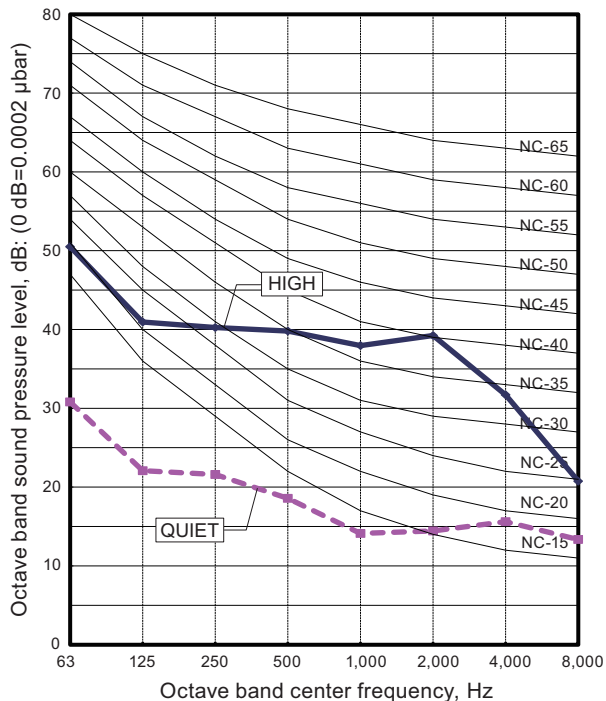
Fan speed	Airflow	
HIGH	m ³ /h	770
	l/s	214
	CFM	453
MED	m ³ /h	640
	l/s	178
	CFM	377
LOW	m ³ /h	520
	l/s	144
	CFM	306
QUIET	m ³ /h	310
	l/s	86
	CFM	182

6. Operation noise (sound pressure)

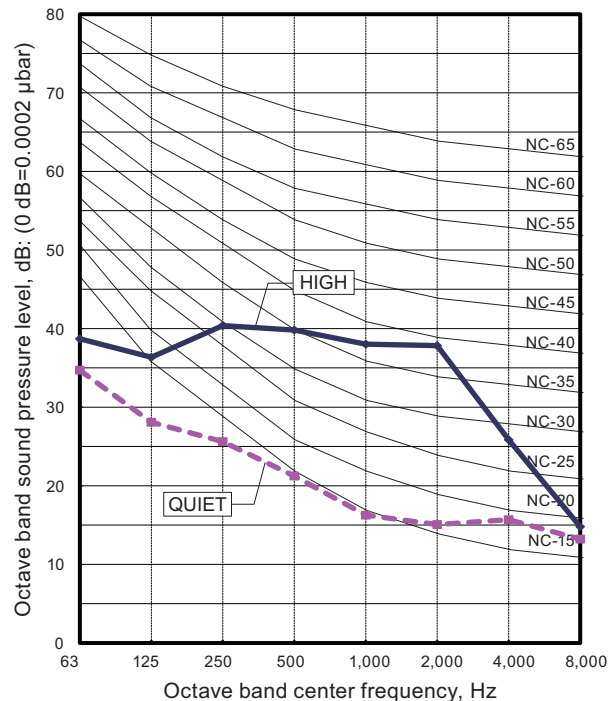
6-1. Noise level curve

Models: ASUH09LMAS and ASUH12LMAS

● Cooling



● Heating



6-2. Sound level check point



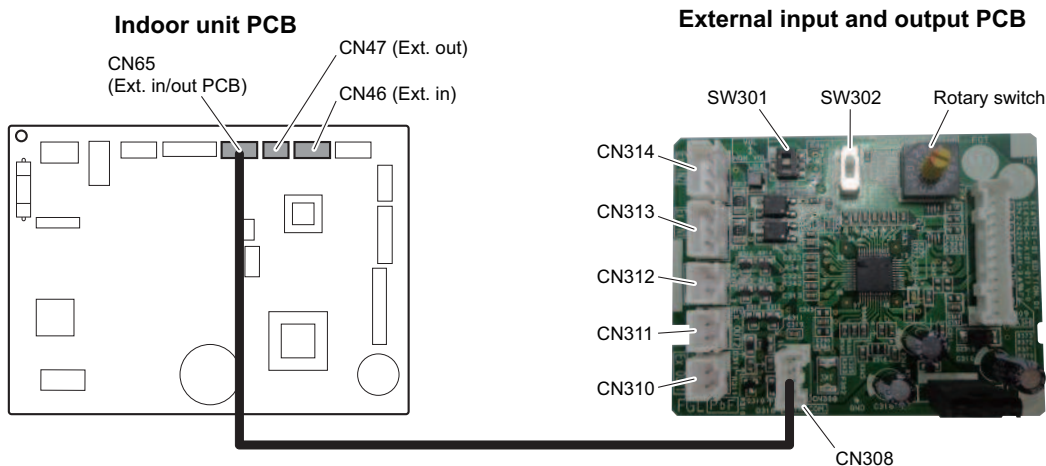
NOTE: Detailed shape of the actual indoor unit might be slightly different from the one illustrated above.

7. Safety devices

Type of protection	Protection form		Model
			ASUH09LMAS and ASUH12LMAS
Circuit protection	Current fuse (PCB*)		250 V, 3.15 A
Fan motor protection	Power IC thermal shutdown protection	Activate	257 ±18°F (125 ±10°C) Fan motor stop
		Reset	212 ±18°F (100 ±10°C) Fan motor restart

*PCB: Printed Circuit Board

8. External input and output



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

NOTE: For details of the switching function, refer to "[Setting of external input and output](#)" on page 21.

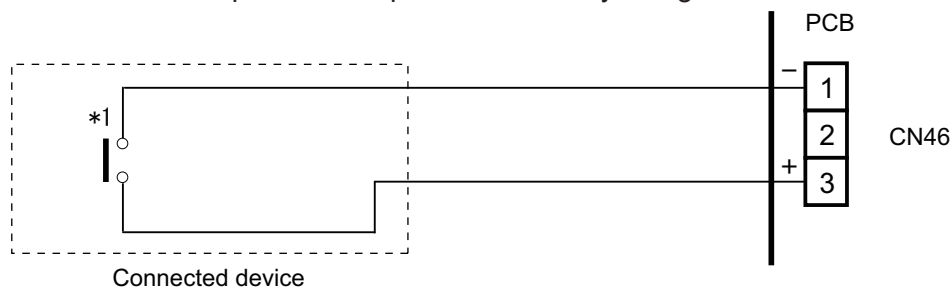
8-1. External input

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

- "Operation/Stop" mode or "Forced stop" mode can be selected with function setting of indoor unit.
- A twisted pair cable (22 AWG) should be used. Maximum length of cable is 492 ft (150 m).
- Use an external input and output cable with appropriate external dimension, depending on the number of cables to be installed.
- The wire connection should be separate from the power cable line.

■ Indoor unit

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



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

External Input and Output PCB

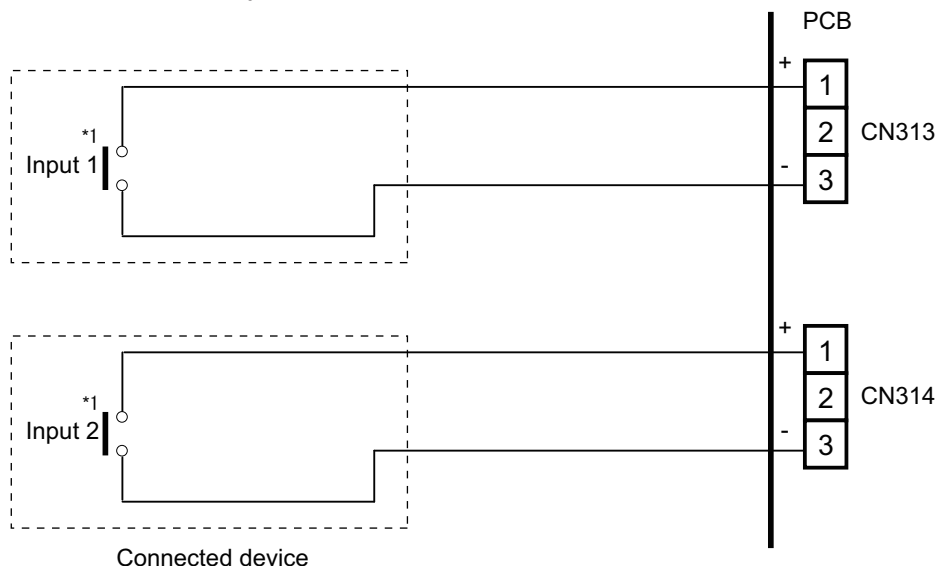
The indoor unit Operation/Stop can be set by using the input connector on the PCB.

Input select

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

– Dry contact

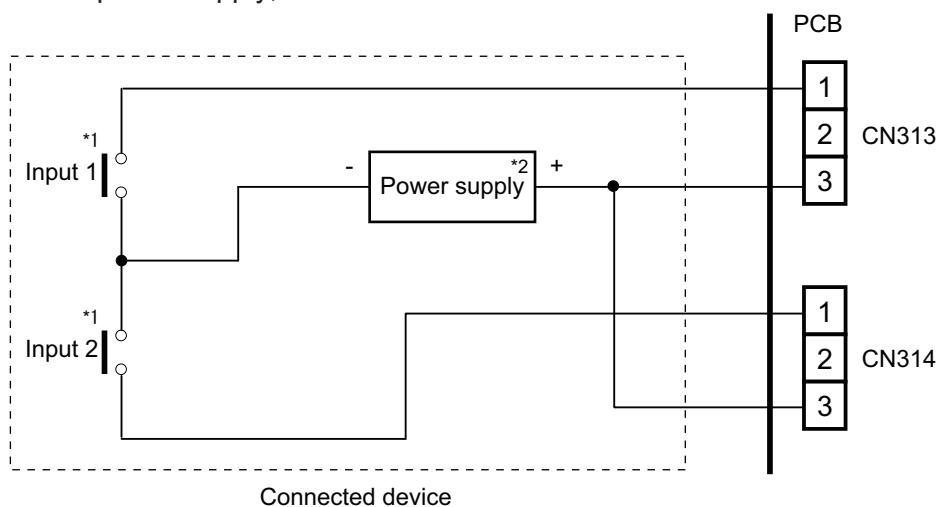
In case of internal power supply, set the slide switch of SW301 to "NON VOL" side.



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

– Apply voltage

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



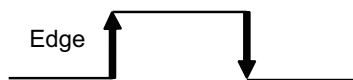
*1: The switches can be used on the following condition: DC 12 V to 24 V, 1 mA to 15 mA.

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

■ Input signal type

- **Indoor unit**

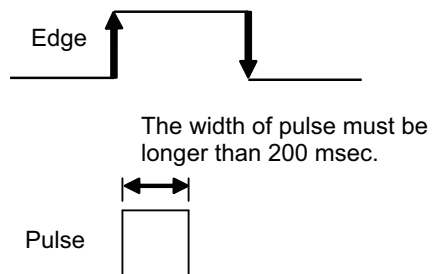
Input signal type is only "Edge".



- **External Input and Output PCB**

The input signal type can be selected.

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



NOTE: The input signal supports the following switch type:

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

8-2. External output

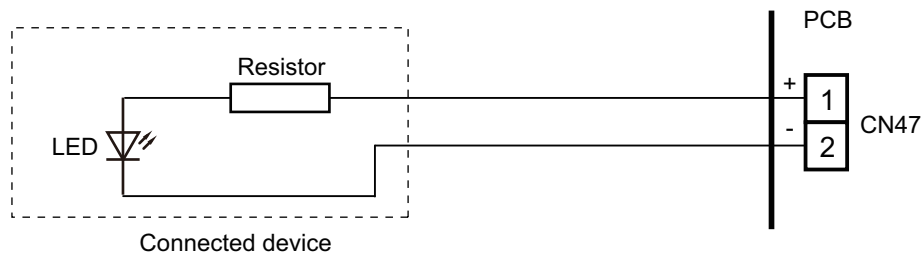
Use an external output cable with appropriate external dimension, depending on the number of cables to be installed.

Indoor unit

- A twisted pair cable (22 AWG) should be used. Maximum length of cable is 82 ft (25 m).
- Output voltage: High DC 12 V \pm 2 V, Low 0 V.
- Permissible current: 50 mA
- For details, refer to ["Setting of external input and output"](#) on page 21.

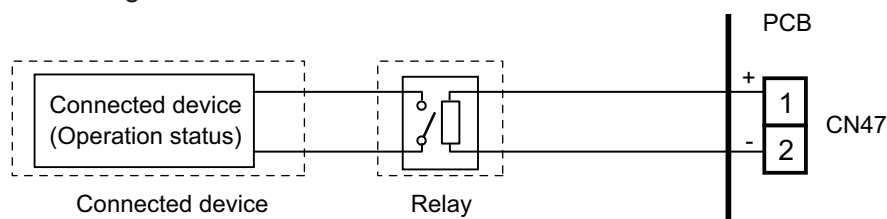
- **When indicator, etc. are connected directly**

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



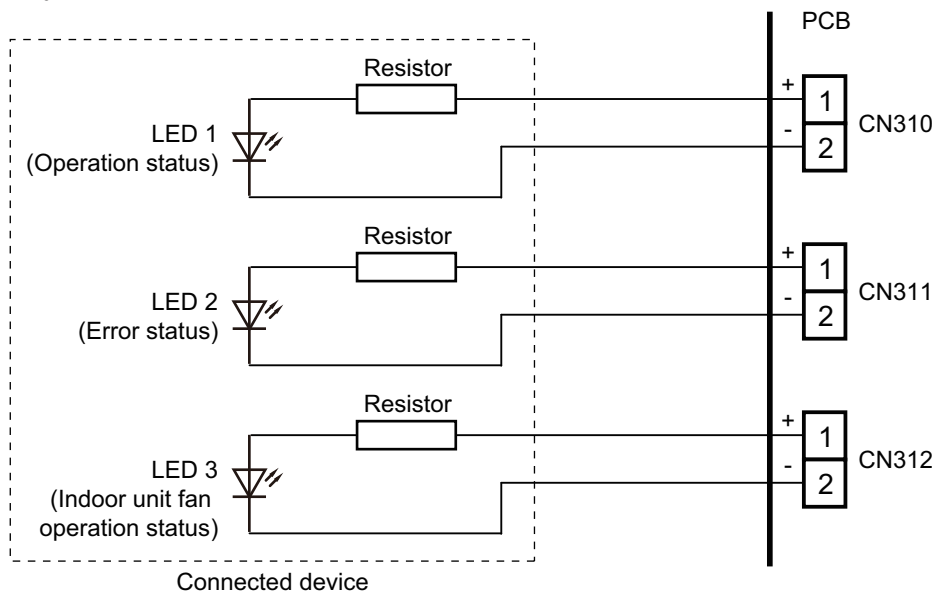
- **When connecting with a device equipped with a power supply**

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

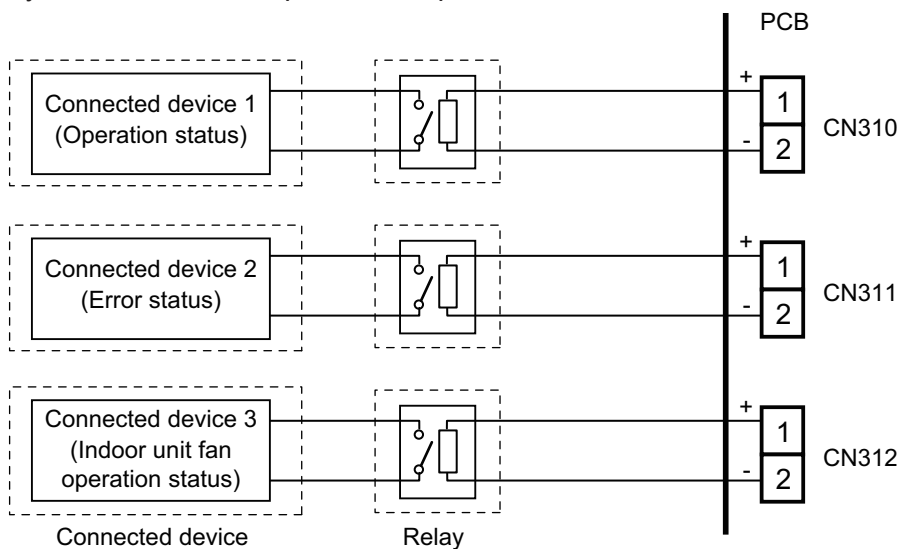


External Input and Output PCB

- A twisted pair cable (22AWG) should be used. Maximum length of cable is 82 ft (25 m).
 - Output voltage: High DC 12 V \pm 2 V, Low 0 V.
 - Permissible current: 50 mA
 - For details, refer to "[Setting of external input and output](#)" on page 21.
- **When indicator or other components are connected directly:**
Example: Rotary SW on External Input and Output PCB is set to "1".



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



8-3. Setting of external input and output

- Indoor unit

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

Output		
Connection point	Function setting number 60	Function
CN47	00	Operation status
	01 to 04	Cooling thermostat On
	05	Heating operation
	06	Operation/Stop
	07 to 08	Cooling thermostat On
	09	Error status
	10	Indoor unit fan operation status
	11	External heater output

- External Input and Output PCB

Switch setting		Ex IN		Ex OUT		
Rotary switch	SW302	CN313	CN314	CN310	CN311	CN312
1	Edge	Operation/Stop	Not available	Operation status	Error status	Indoor unit fan status
	Pulse	Operation	Stop			
2	Edge*1	Forced thermostat off	Not available	Error status	Indoor unit fan operation status	External heater output
3		Mechanical cooling off	Not available	Error status	Indoor unit fan operation status	External heater output
4		Forced thermostat off	Not available	Error status	Remote controller output	External heater output
5		Mechanical cooling on*2	Not available	Cooling high/low output	Remote controller output	External heater output
6		Mechanical cooling on*2	Not available	Error status	Remote controller output	Cooling high/low output
7		Forced thermostat off	Not available	Error status	Indoor unit fan operation status	External heater output
8		Forced thermostat off	Not available	Error status	Indoor unit fan operation status	Heating thermostat on
9		Mechanical cooling off	Not available	Error status	Heating thermostat on	External heater output
A		Forced thermostat off	Not available	Heating thermostat on	Remote controller output	External heater output
B		Forced thermostat off	Not available	Operation status	Indoor unit fan operation status	External heater output
C		Forced thermostat off	Not available	Operation status	Error status	External heater output
D		Forced thermostat off	Not available	Operation status	Indoor unit fan operation status	Error status

NOTES:

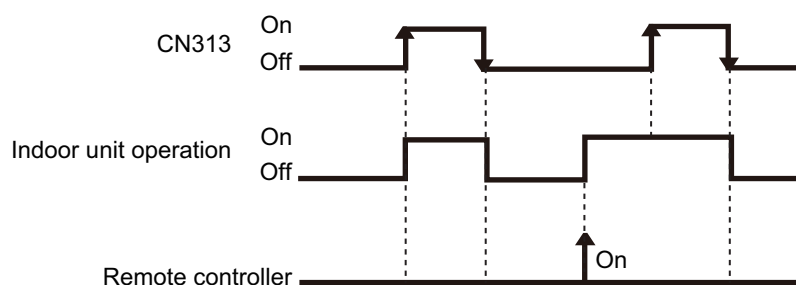
- When the rotary switch is selected to "1", the operation of the connector input of the indoor unit and the External Input and Output PCB input are the same. The operation content depends on the setting of function setting number 46.
- *1: The external input other than "Operation/Stop" is available only when the SW302 is set to "Edge".
- *2: The external input of "Mechanical cooling on" is available only when the function setting number 60 is set to "03" or "04".

8-4. Details of control input function

■ Operation/Stop mode 1

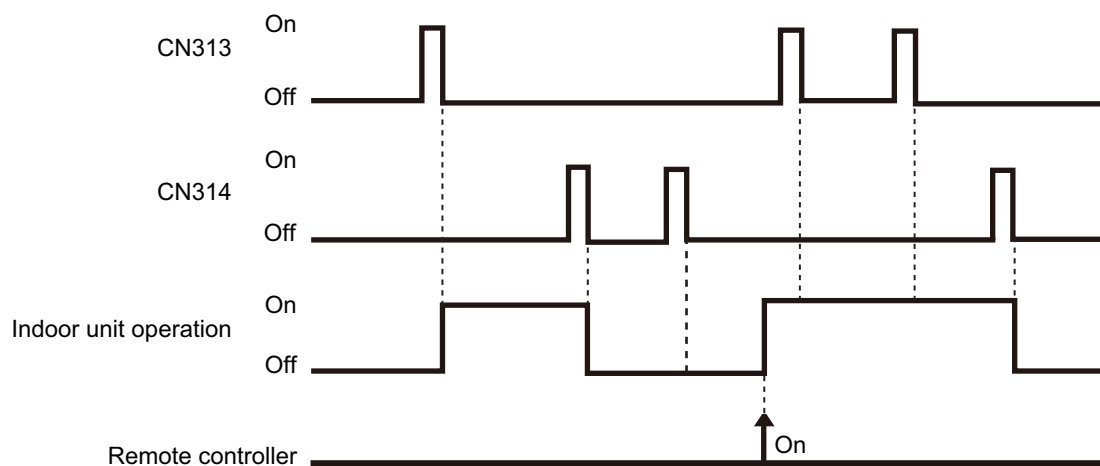
- In the case of "Edge" input

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



- In the case of "Pulse" input

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



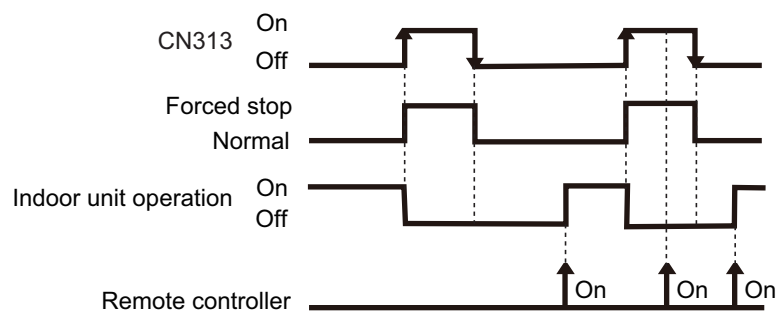
NOTES:

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

■ Forced stop

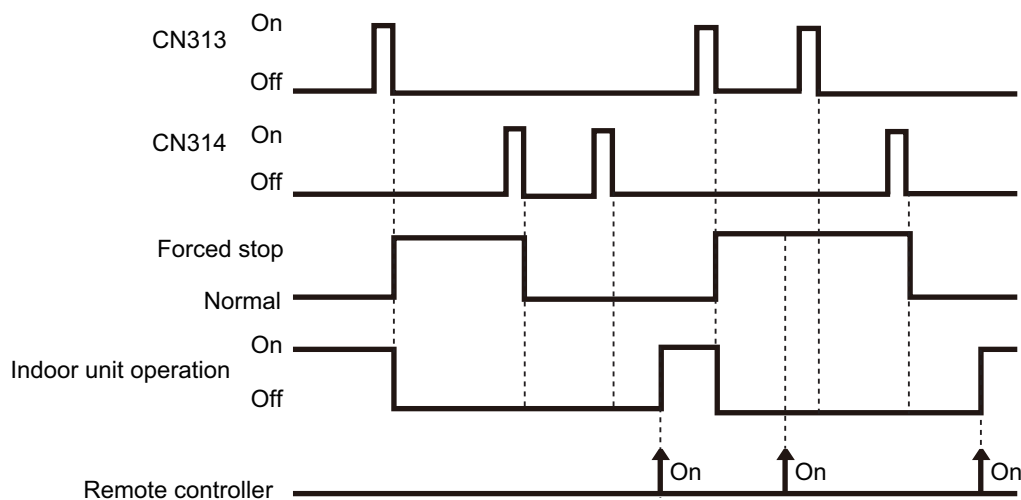
- In the case of "Edge" input

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



- In the case of "Pulse" input

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



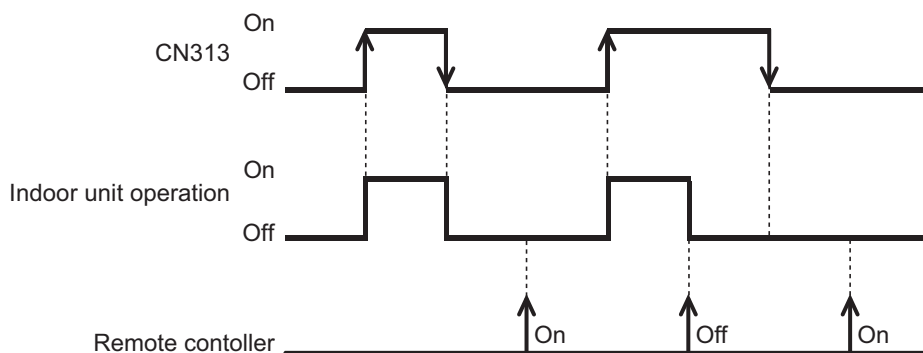
NOTES:

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

■ Operation/Stop mode 2

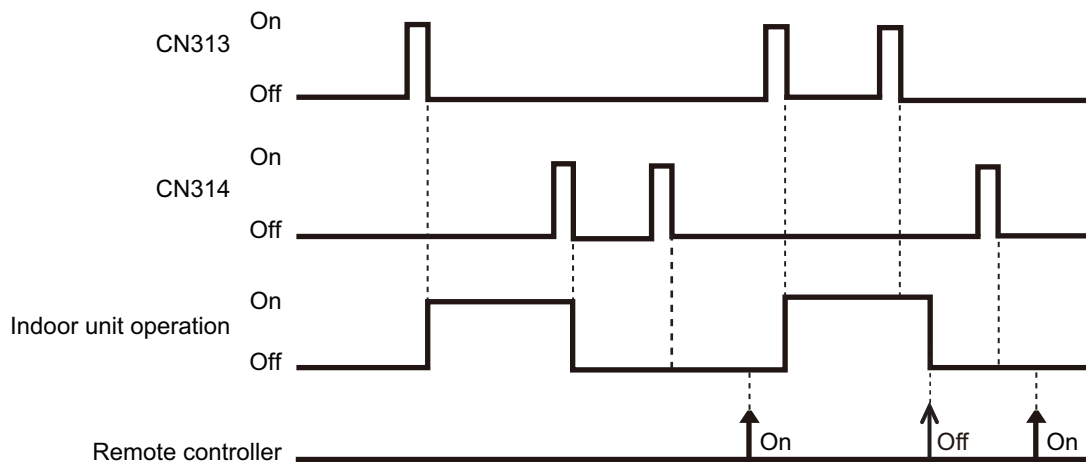
- In the case of “Edge” input

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



- In the case of “Pulse” input

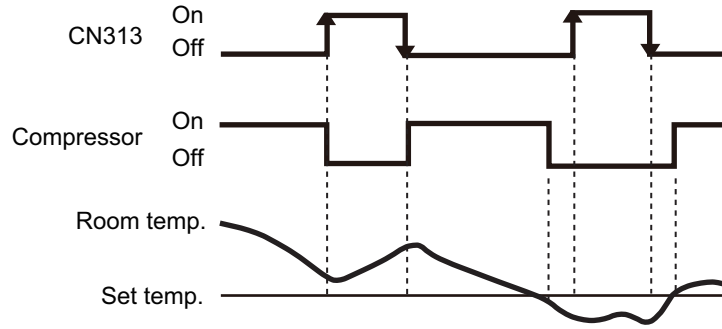
Function setting	External Input and Output PCB		External input		Input signal	Command
	Rotary switch	SW302				
46-03	1	Pulse	External Input and Output PCB	CN313	Pulse	Operation (R.C. enabled)
				CN314		Stop (R.C. disabled)



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

■ Forced thermostat off

External Input and Output PCB	External input		Input signal	Command
Rotary switch				
2, B, C, D	External Input and Output PCB	CN313	Off → On	Thermostat off
			On → Off	Normal operation
4, 7, 8, A	External Input and Output PCB	CN313	Off → On	Thermostat off
			On → Off	Normal operation

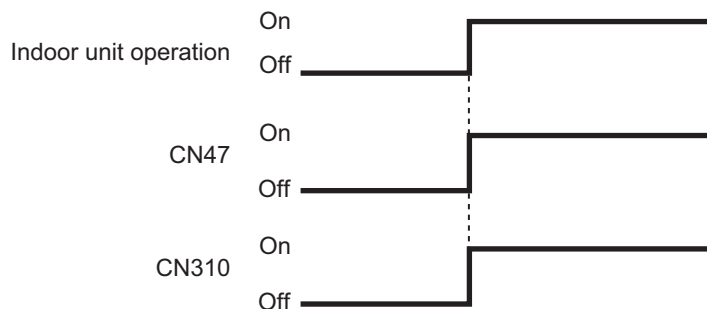


8-5. Details of control output function

■ Operation status

Function setting	External Input and Output PCB	External output		Output signal	Status
	Rotary switch				
60-00 60-06	1, 2, 8	Output of indoor unit	CN47	Off → On	Operation
				On → Off	Stop
—	1, B, C, D	External Input and Output PCB	CN310	Off → On	Operation
				On → Off	Stop

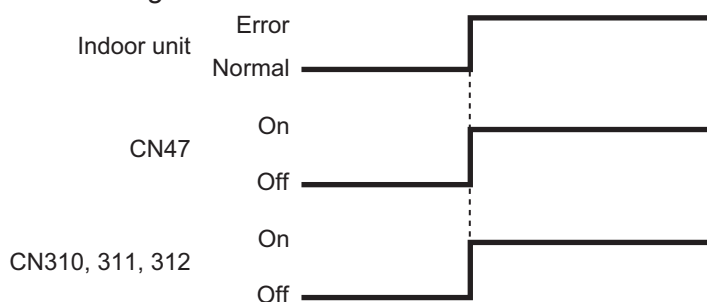
The output is low when the unit is stopped.



■ Error status

Function setting	External Input and Output PCB	External output		Output signal	Status
	Rotary switch				
60-09	—	Output of indoor unit	CN47	Off → On	Error
				On → Off	Normal
—	2, 3, 4, 6, 7, 8, 9	External Input and Output PCB	CN310	Off → On	Error
				On → Off	Normal
—	1, C	External Input and Output PCB	CN311	Off → On	Error
				On → Off	Normal
—	D	External Input and Output PCB	CN312	Off → On	Error
				On → Off	Normal

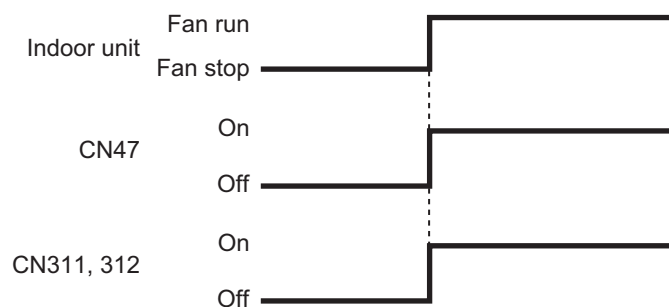
The output is on when an error is generated for the indoor unit.



■ Indoor unit fan operation status

Function setting	External Input and Output PCB	External output		Output signal	Status
	Rotary switch				
60-10	C	Output of indoor unit	CN47	Off → On	Fan run
				On → Off	Fan stop
—	2, 3, 7, 8, B, D	External Input and Output PCB	CN311	Off → On	Fan run
				On → Off	Fan stop
—	1	External Input and Output PCB	CN312	Off → On	Fan run
				On → Off	Fan stop

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



External heater output

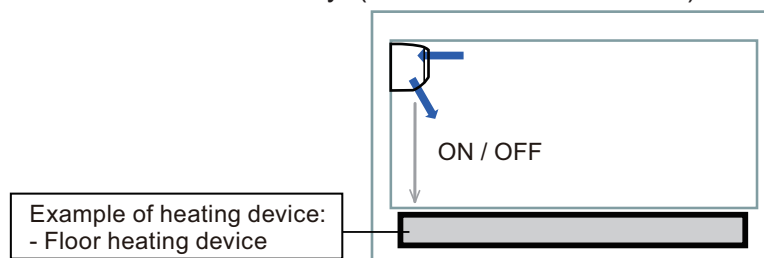
Control	Primary heater	Auxiliary heater	Function setting	
			Indoor unit	Wired R. C.
			Control switching external heaters No. 61	Sensor activation*2
Auxiliary heater control 1	Heat pump	External device*1	61-00	—
Auxiliary heater control 2	Heat pump	External device	61-01	—
Heat pump prohibition control	External device	None	61-02	On (Enabled)
Auxiliary heater control by outdoor temperature 1	Heat pump	External device	61-03	On (Enabled)
Auxiliary heater control by outdoor temperature 2	Heat Pump	External device	61-04	On (Enabled)
Auxiliary heater control by outdoor temperature 3	Heat Pump	External device	61-05	On (Enabled)
Auxiliary heat pump control	External device	Heat pump	61-06	On (Enabled)
Auxiliary heat pump control by outdoor temperature 1	External device	Heat pump	61-07	On (Enabled)
Auxiliary heat pump control by outdoor temperature 2	External device	Heat pump	61-08	On (Enabled)
Auxiliary heat pump control by outdoor temperature 3	External device	Heat pump	61-09	On (Enabled)

NOTES:

- After turning off the heater, 3 minutes of standby time is required by next power-on of the heater.
- For items marked “—” in the table, any of validate or invalidate of the setting are acceptable.
- *1: External device means Hot water, Electrical heater, etc.
- *2: Sensor activation:
 - Setting change from the factory setting is required.
 - Indoor unit fan setting will be on for safety reason without sensor activation of wired remote controller.

● Installation configuration of individual connection

External heating device is installed individually. (No use of indoor unit fan)

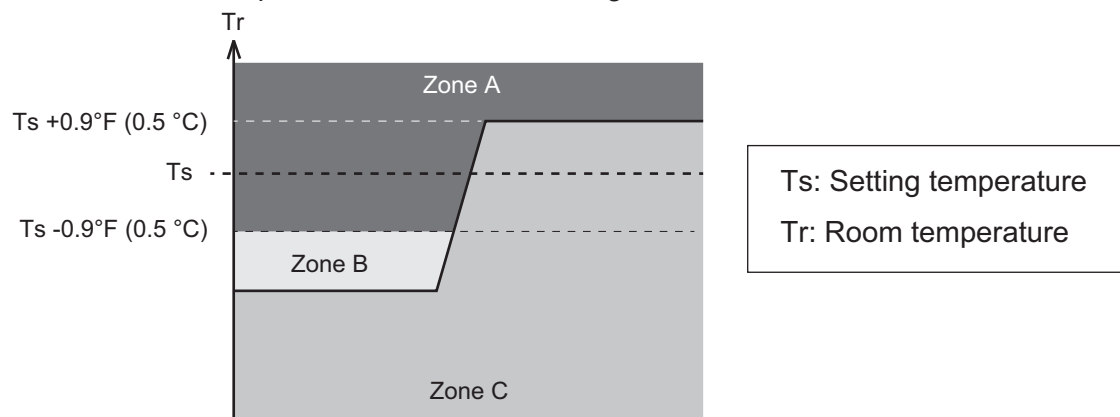


⚠ WARNING

- Design and install external heater appropriately with considering its protection.
- Inappropriate designing and installation of external heater may cause a fire by emitted heat from the external heater.
- Fujitsu General Ltd. is not responsible for inappropriate designing or installation of external heating device.

● Auxiliary equipment control by room temperature

Auxiliary equipment control is switchable by room temperature. Auxiliary equipment switching is performed for each room temperature divided to following 3 zones.



Zone	Application	When temperature dropping		When temperature rising	
		Primary	Auxiliary	Primary	Auxiliary
A	Both of primary and auxiliary equipment is unnecessary.	Off	Off	Off	Off
B	Primary heater only. When room temperature stays in zone B for a long time, auxiliary equipment also operates.	On	Off*1	—	—
C	Auxiliary equipment also operates.	On	On*2	On	On*2

*1: For standby time for auxiliary equipment operation, refer to indoor unit function number 71 "[Contents of function setting](#)" on page 53.

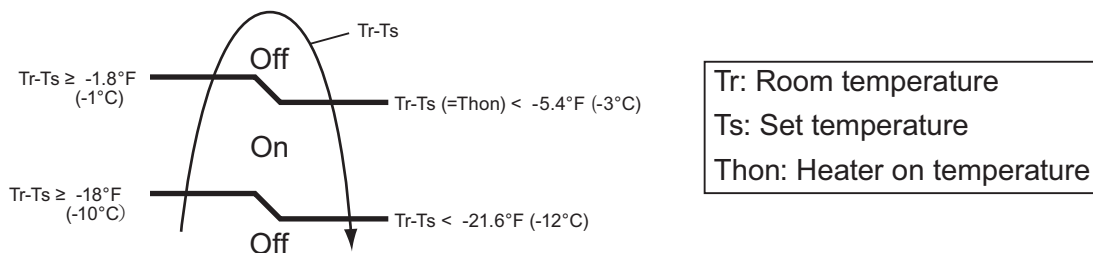
*2: When indoor unit function number 61 is set to "00", auxiliary equipment operates according to the following conditions.

- $T_s - T_r > 21.6 \text{ }^\circ\text{F}$ ($-12.0 \text{ }^\circ\text{C}$): Auxiliary equipment turn off.
- $T_s - T_r > 18.0 \text{ }^\circ\text{F}$ ($-10.0 \text{ }^\circ\text{C}$): Auxiliary equipment turn on.

● Auxiliary heater control 1

Operation	Condition
Heater on	Heater is on as shown in following diagram of heating temperature.
Heater off	<ul style="list-style-type: none"> • Heater is off as shown in following diagram of heating temperature. • Other than heating mode • Error occurred • Forced thermostat off • Fan stop protection

- Temperature of heater on (Thon): Adjustable by function number 62 (Operating temperature switching of external heaters).
- All control temperatures will shift by adjusting “Thon”.



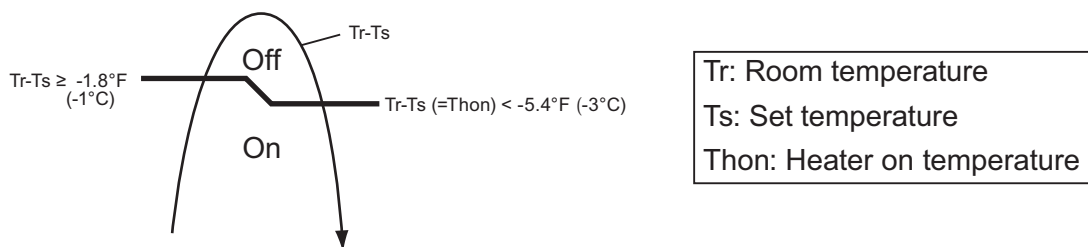
Example: When set temperature (Ts) is 72°F (22°C) (Factory setting),

- and room temperature (Tr) increases above 53.6°F (12°C), signal output is on.
- and room temperature (Tr) increases above 69.8°F (21°C), signal output is off.
- and room temperature (Tr) decreases below 66.2°F (19°C), signal output is on.
- and room temperature (Tr) decreases below 50°F (10°C), signal output is off.

● Auxiliary heater control 2

Operation	Condition
Heater on	Heater is on as shown in following diagram of heating temperature.
Heater off	<ul style="list-style-type: none"> • Heater is off as shown in following diagram of heating temperature. • Other than heating mode • Error occurred • Forced thermostat off • Fan stop protection

- Temperature of heater on (Thon): Adjustable by function number 62 (Operating temperature switching of external heaters).
- All control temperatures will shift by adjusting “Thon”.

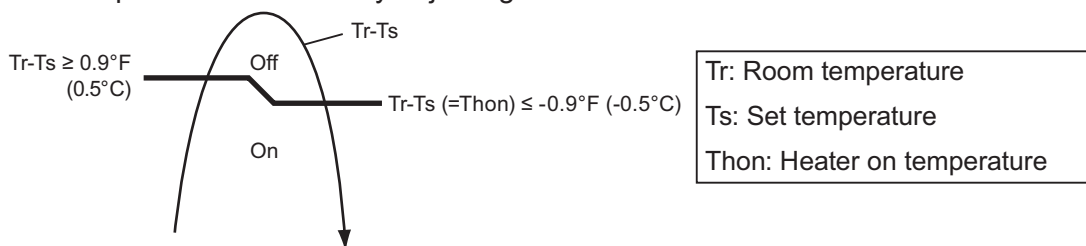


● Heat pump prohibition control

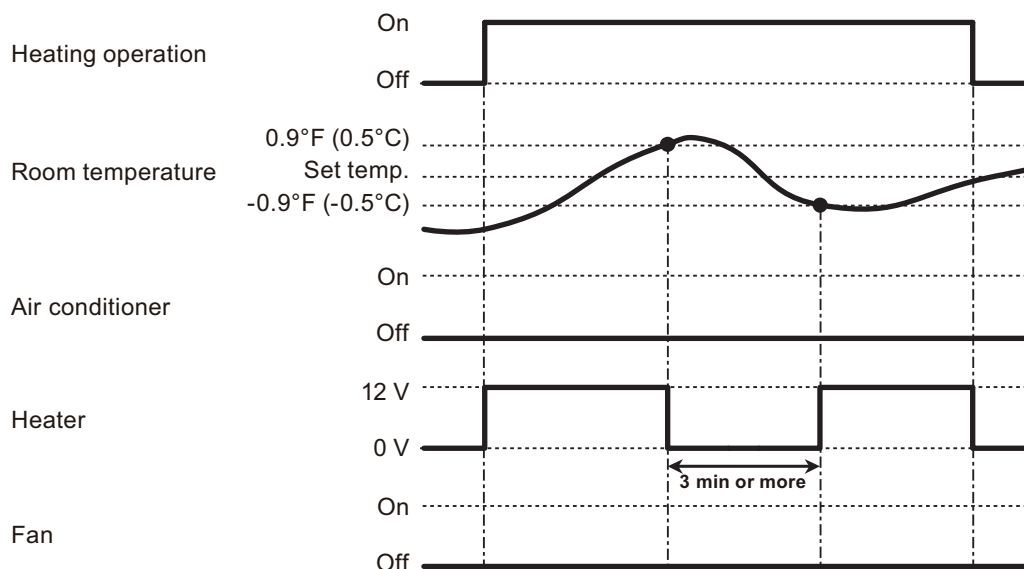
Perform heating by external heater only. Indoor unit is continuous thermostat off.

Operation	Condition
Heater on	Heater is on as shown in following diagram of heating temperature.
Heater off	<ul style="list-style-type: none"> • Heater is off as shown in following diagram of heating temperature. • Other than heating mode • Error occurred • Forced thermostat off

- Temperature of heater on (Thon): Adjustable by function number 62 (Operating temperature switching of external heaters).
- All control temperatures will shift by adjusting “Thon”.



• Operation status



NOTE: In following operations, compressor will be on.

- Other than heating
- Test run

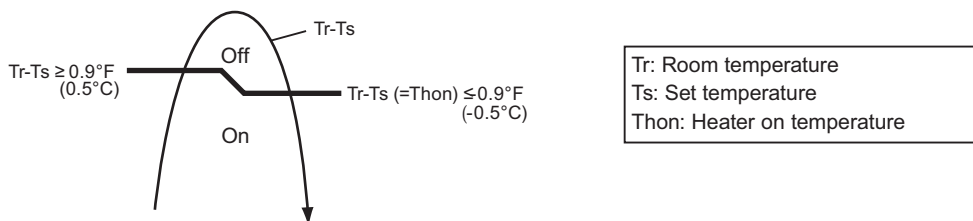
● Auxiliary heater control by outdoor temperature 1

This control selects heat pump or external heater according to the outdoor temperature. When outdoor temperature is high, the heating is performed by using heat pump only.

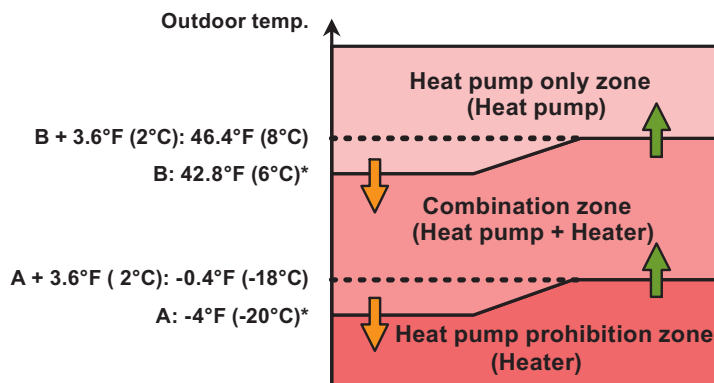
Operation	Condition
Heater on	Heater is on as shown in following diagram of heating temperature.
Heater off	<ul style="list-style-type: none"> • Heater is off as shown in following diagram of heating temperature. • Other than heating mode • Error occurred • Forced thermostat off • Heat pump only zone

- Temperature of heater on (Thon): Adjustable by function number 62 (Operating temperature switching of external heaters).
- All control temperatures will shift by adjusting "Thon".
- Outdoor temperature zone boundary A and B: Adjustable individually by function setting number 66 and 67.

• External heater output

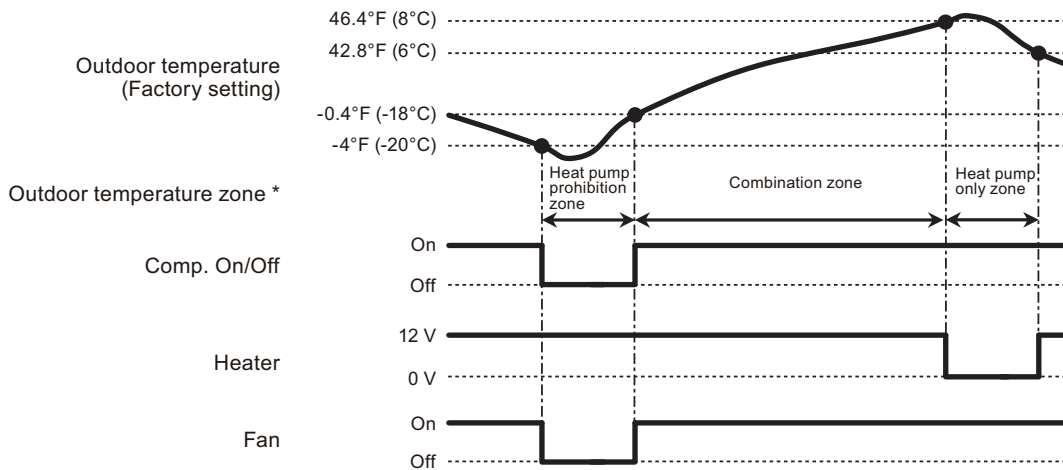


• Outdoor temperature zone



*: Adjustable by function setting 66 and 67

• Operation status



* The outdoor temperature zone transition from one to another will stay in that zone for minimum of 30 min.

NOTE: In following operations, compressor will be on in heat pump prohibition zone.

- Other than heating
- Test run

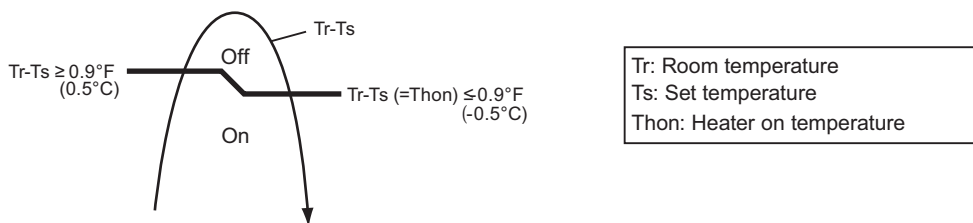
● Auxiliary heater control by outdoor temperature 2

This control selects heat pump or external heater according to the outdoor temperature. Even when outdoor temperature is high, the heating is performed by using both of heat pump and external heater.

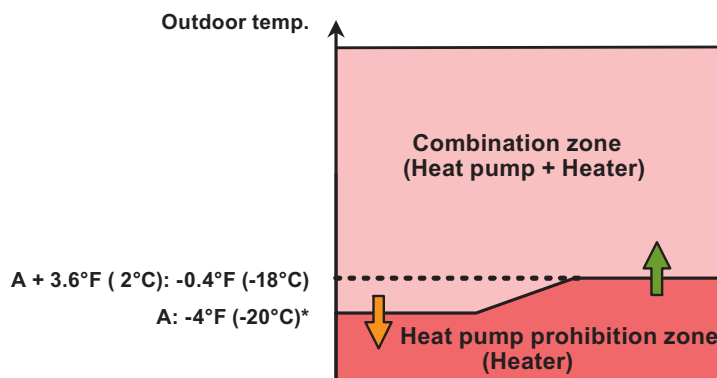
Operation	Condition
Heater on	Heater is on as shown in following diagram of heating temperature.
Heater off	<ul style="list-style-type: none"> • Heater is off as shown in following diagram of heating temperature. • Other than heating mode • Error occurred • Forced thermostat off

- Temperature of heater on (Thon): Adjustable by function number 62 (Operating temperature switching of external heaters).
- All control temperatures will shift by adjusting "Thon".
- Outdoor temperature zone boundary A: Adjustable by function setting number 66.

• External heater output

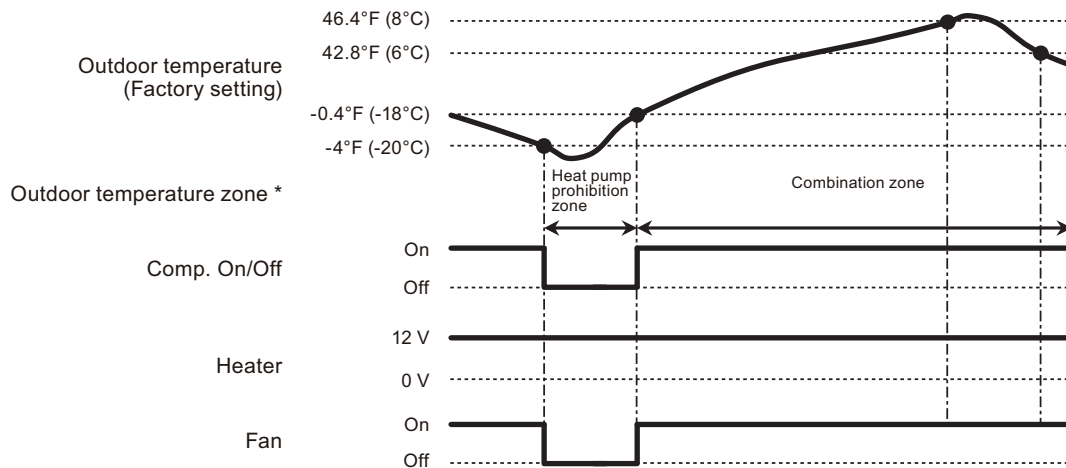


• Outdoor temperature zone



*: Adjustable by function setting 66

• Operation status



* The outdoor temperature zone transition from one to another will stay in that zone for minimum of 30 min.

NOTE: In following operations, compressor will be on in heat pump prohibition zone.

- Other than heating
- Test run

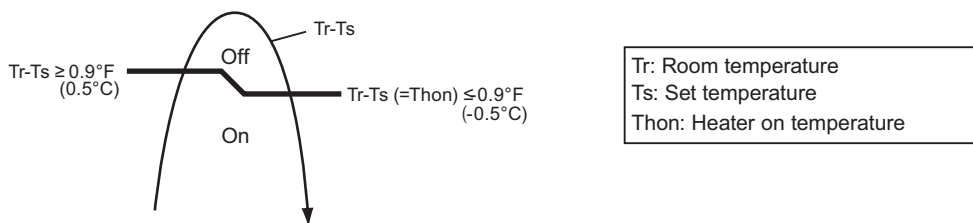
● Auxiliary heater control by outdoor temperature 3

This control selects heat pump or external heater according to the outdoor temperature. Even when outdoor temperature is high, the heating is performed by using both of heat pump and external heater.

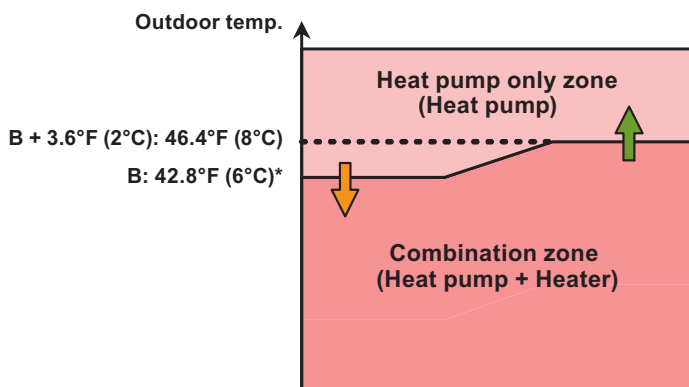
Operation	Condition
Heater on	Heater is on as shown in following diagram of heating temperature.
Heater off	<ul style="list-style-type: none"> • Heater is off as shown in following diagram of heating temperature. • Other than heating mode • Error occurred • Forced thermostat off

- Temperature of heater on (Thon): Adjustable by function number 62 (Operating temperature switching of external heaters).
- All control temperatures will shift by adjusting “Thon”.
- Outdoor temperature zone boundary B: Adjustable by function setting number 37.

• External heater output

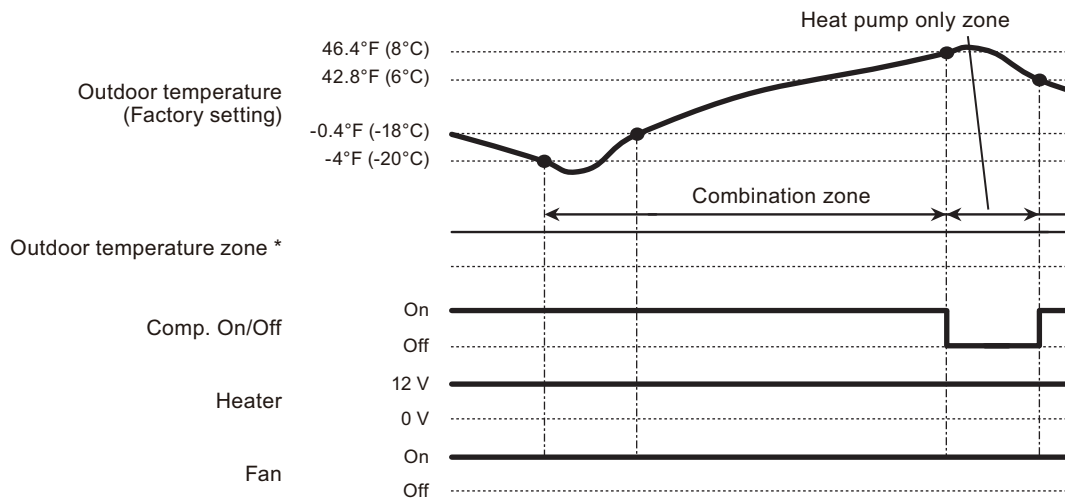


• Outdoor temperature zone



*: Adjustable by function setting 67

• Operation status



* The outdoor temperature zone transition from one to another will stay in that zone for minimum of 30 min.

NOTE: In following operations, compressor will be on in heat pump prohibition zone.

- Other than heating
- Test run

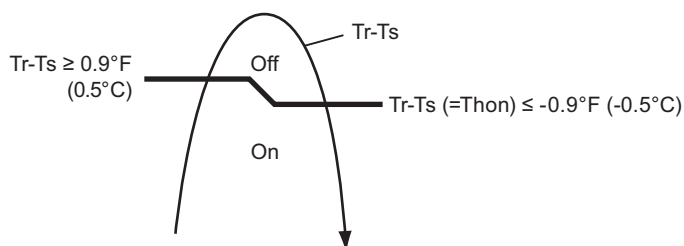
● Auxiliary heat pump control

• External heater output

Operation	Condition
Heater on	Heater is on as shown in following diagram of heating temperature.
Heater off	<ul style="list-style-type: none"> • Heater is off as shown in following diagram of heating temperature. • Other than heating mode • Error occurred • Forced thermostat off

– Temperature of heater on (Thon): Set temperature (Ts) - 0.9 °F (- 0.5 °C)

– Temperature of heater off: Set temperature (Ts) + 0.9 °F (+ 0.5 °C)

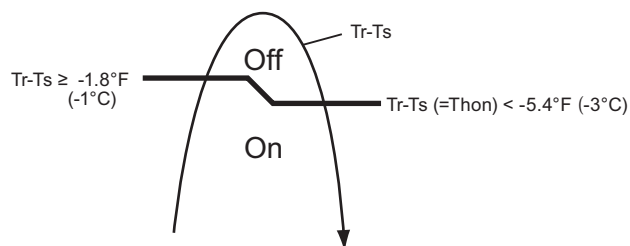


Tr: Room temperature
Ts: Set temperature
Thon: Heater on temperature

• Auxiliary heat pump On/Off

– Temperature of heater on (Thon): Adjustable by function number 62 (Operating temperature switching of heat pump).

– All control temperatures will shift by adjusting “Thon”.



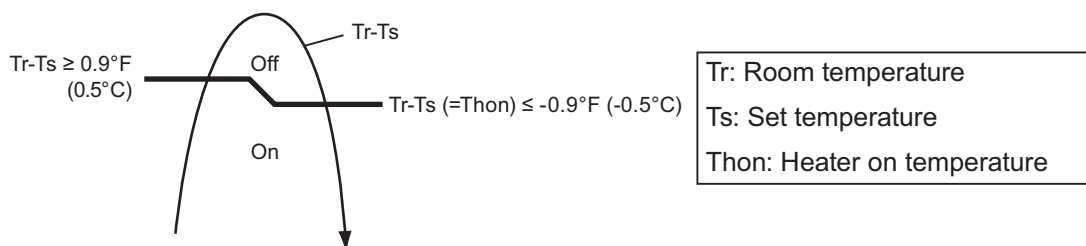
Tr: Room temperature
Ts: Set temperature
Thon: Heater on temperature

● Auxiliary heat pump control by outdoor temperature 1

• External heater output

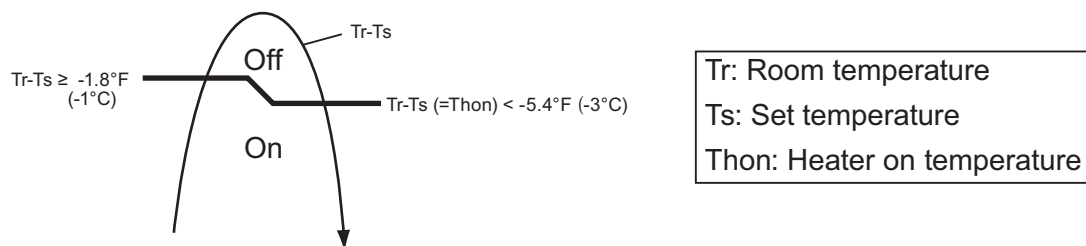
Operation	Condition
Heater on	Heater is on as shown in following diagram of heating temperature.
Heater off	<ul style="list-style-type: none"> • Heater is off as shown in following diagram of heating temperature. • Other than heating mode • Error occurred • Forced thermostat off

- Temperature of heater on (Thon): Set temperature (Ts) - 0.9 °F (- 0.5 °C)
- Temperature of heater off: Set temperature (Ts) + 0.9 °F (+ 0.5 °C)

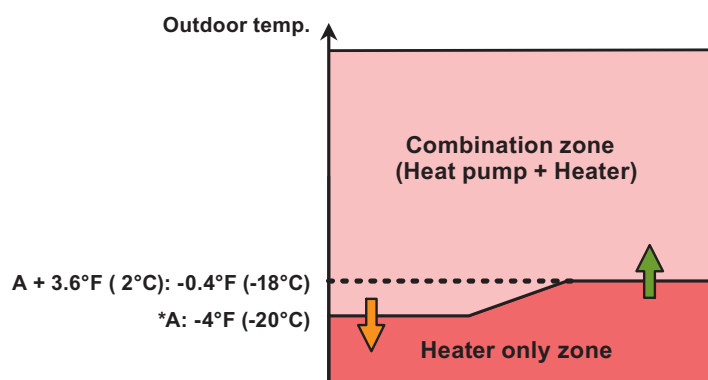


• Auxiliary heat pump On/Off

- Temperature of heater on (Thon): Adjustable by function number 62 (Operating temperature switching of heat pump).
- All control temperatures will shift by adjusting “Thon”.

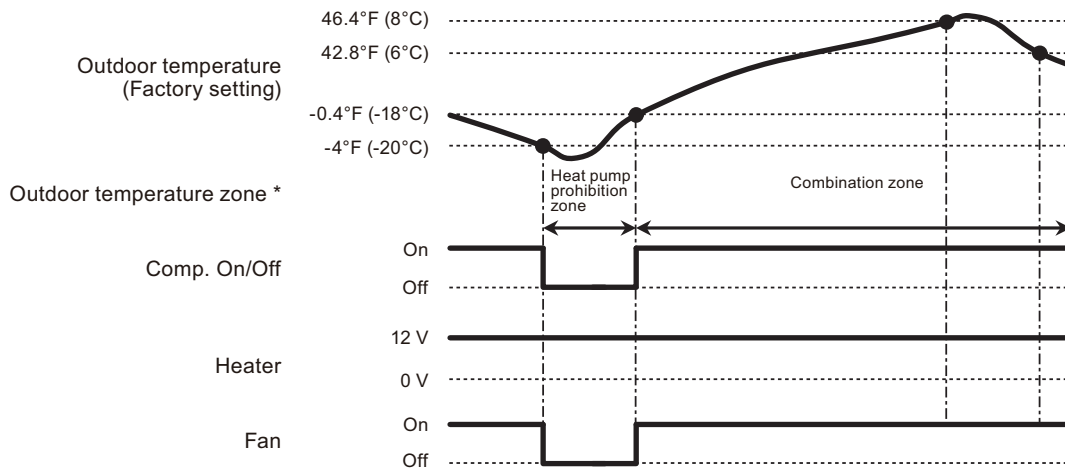


• Outdoor temperature zone



*: Adjustable by function setting 67

• **Operation status**



* The outdoor temperature zone transition from one to another will stay in that zone for minimum of 30 min.

NOTE: In following operations, compressor will be on in heat pump prohibition zone.

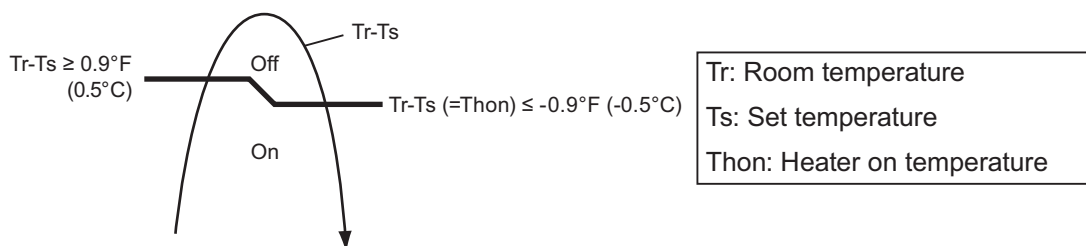
- Other than heating
- Test run

● Auxiliary heat pump control by outdoor temperature 2

• External heater output

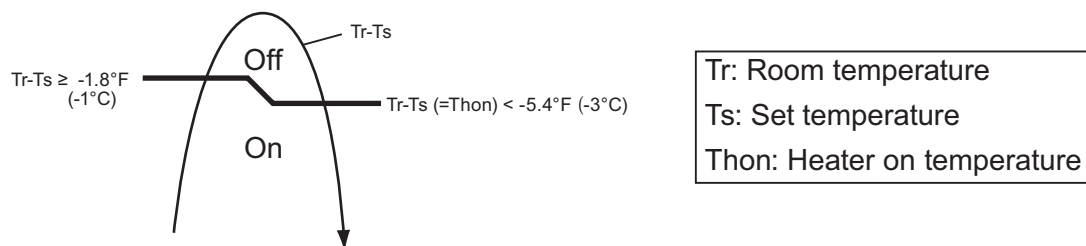
Operation	Condition
Heater on	Heater is on as shown in following diagram of heating temperature.
Heater off	<ul style="list-style-type: none"> • Heater is off as shown in following diagram of heating temperature. • Other than heating mode • Error occurred • Forced thermostat off

- Temperature of heater on (Thon): Set temperature (Ts) - 0.9 °F (- 0.5 °C)
- Temperature of heater off: Set temperature (Ts) + 0.9 °F (+ 0.5 °C)

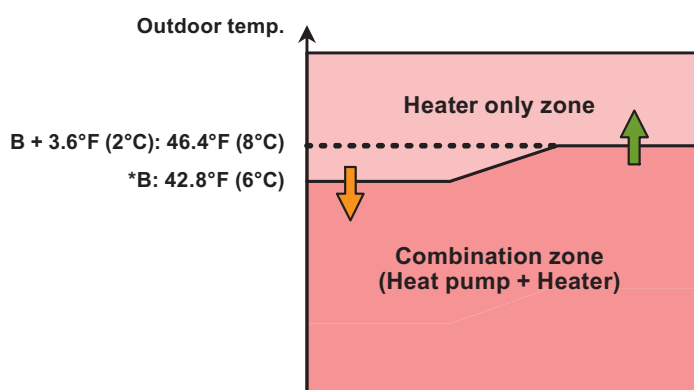


• Auxiliary heat pump On/Off

- Temperature of heater on (Thon): Adjustable by function number 62 (Operating temperature switching of heat pump).
- All control temperatures will shift by adjusting “Thon”.

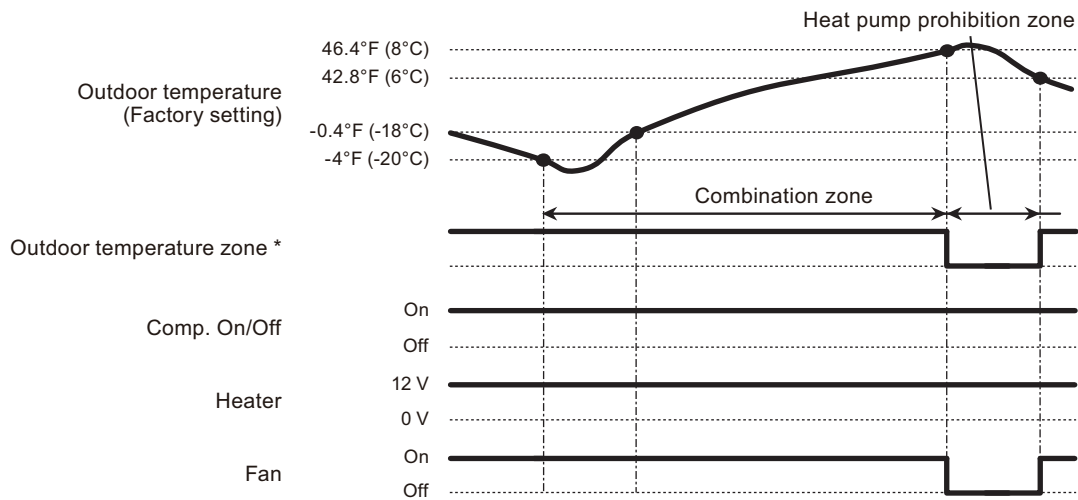


• Outdoor temperature zone



*: Adjustable by function setting 67

• Operation status



* The outdoor temperature zone transition from one to another will stay in that zone for minimum of 30 min.

NOTE: In following operations, compressor will be on in heat pump prohibition zone.

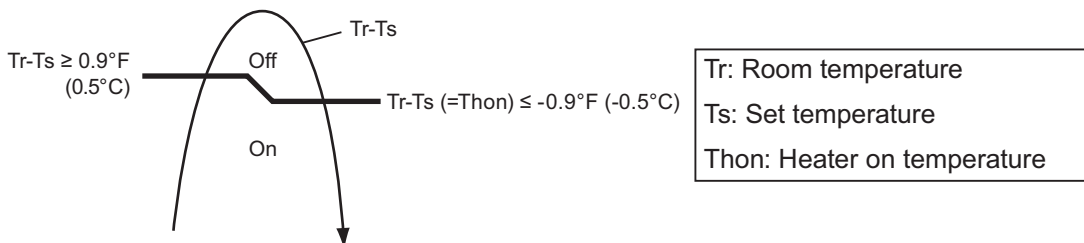
- Other than heating
- Test run

● Auxiliary heat pump control by outdoor temperature 3

• External heater output

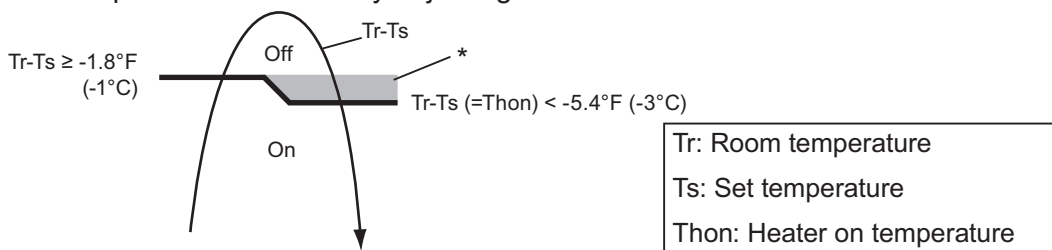
Operation	Condition
Heater on	Heater is on as shown in following diagram of heating temperature.
Heater off	<ul style="list-style-type: none"> • Heater is off as shown in following diagram of heating temperature. • Other than heating mode • Error occurred • Forced thermostat off

- Temperature of heater on (Thon): Set temperature (Ts) - 0.9 °F (- 0.5 °C)
- Temperature of heater off: Set temperature (Ts) + 0.9 °F (+ 0.5 °C)



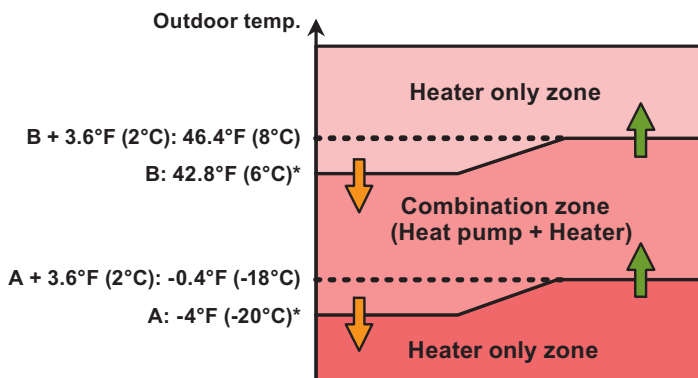
• Auxiliary heat pump On/Off

- Temperature of heater on (Thon): Adjustable by function number 62 (Operating temperature switching of heat pump).
- All control temperatures will shift by adjusting “Thon”.



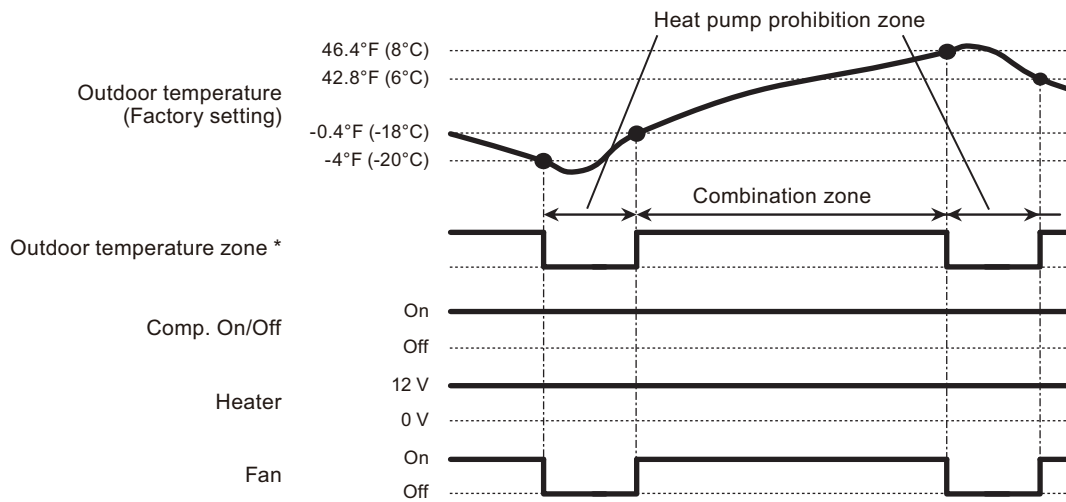
*: When room temperature stays in this zone for a specific time, auxiliary heater is turned on. For details, refer to function number 71.

• Outdoor temperature zone



*: Adjustable by function setting 66 and 67

• Operation status



* The outdoor temperature zone transition from one to another will stay in that zone for minimum of 30 min.

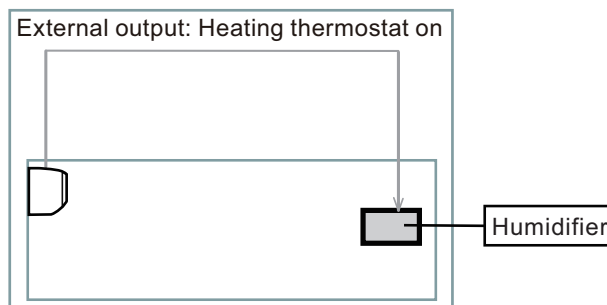
NOTE: In following operations, compressor will be on in heat pump prohibition zone.

- Other than heating
- Test run

■ Heating thermostat on for humidifier

Situation	Indoor unit				
	Mode	Function setting	Rotary SW	External output	
		Heating thermostat on no. 60		Heating thermostat on	Indoor unit fan operation status
Example of individual connection	5	60-05	7	CN47	Not used
	6	60-06	8	CN312	
	7	60-07	9	CN311	
	8	60-08	A	CN310	

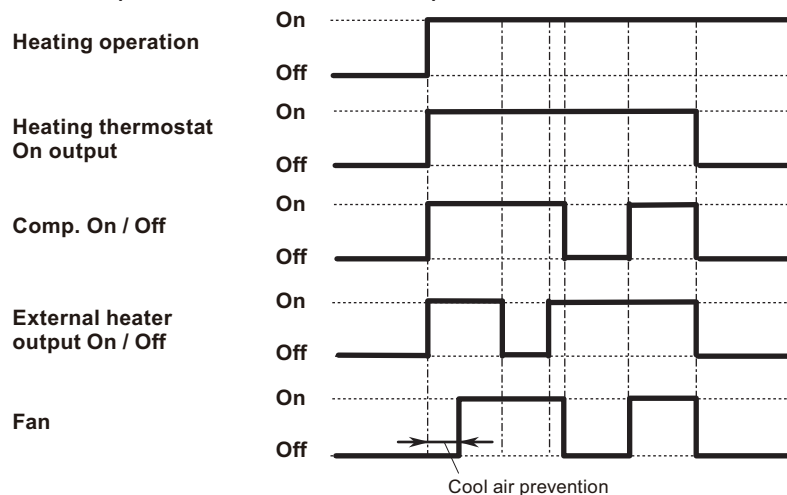
- Example of individual connection



- Operation status

The heating thermostat output for CNB01 (1-2 or 1-3 or 1- or 1-5) will be on when comp on or external heater on.

The heating thermostat output will be off when comp off and external heater off.



9. Group connection

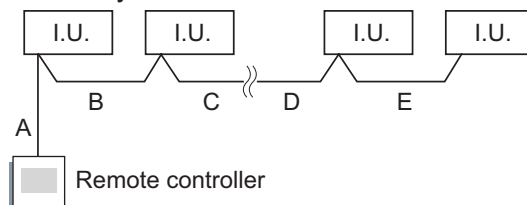
NOTE: Group control cannot be used together with Wireless LAN adapter.

Installation procedure for group control system:

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

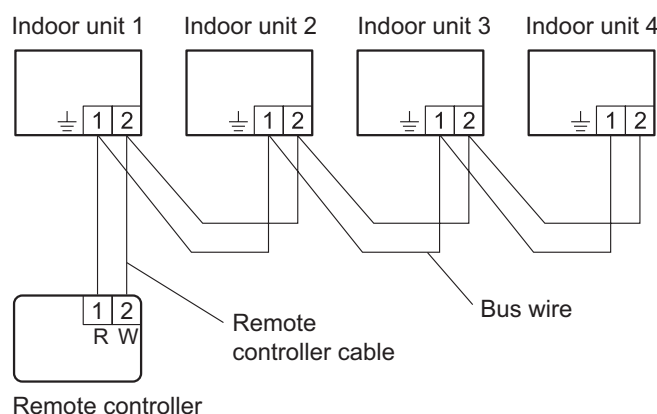
NOTE: When different type of indoor units (such as wall mounted type and cassette type, cassette type and duct type, or other combinations) are connected using group control system, some functions may no longer be available.

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



A, B, C, D, E: Remote controller cable	
Wiring length limitation	$A + B + C + D + E \leq 546.8 \text{ yd (500 m)}$

Example of wiring method



2. Set the remote controller address. (Function setting)

- Addresses will be automatically set when initially starting up this unit. In such a case, do not change the remote controller address for the indoor unit, and keep it at the initial setting of "00".
- Only set addresses manually when using different numbers for addresses. Set the remote controller address of each indoor unit using the function setting. (Refer to "Remote controller address setting" in ["Contents of function setting"](#) on page 53.)

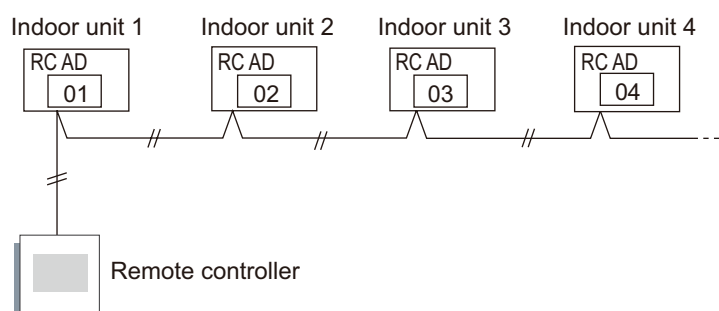
NOTES:

- Do not use the same setting value.
- Setting is reflected after the power is turned on again.

Also set the remote controller address for the remote controller. For details, refer to the remote controller installation manual.

NOTE: In manual setting, connect up to 15 indoor units in a system.

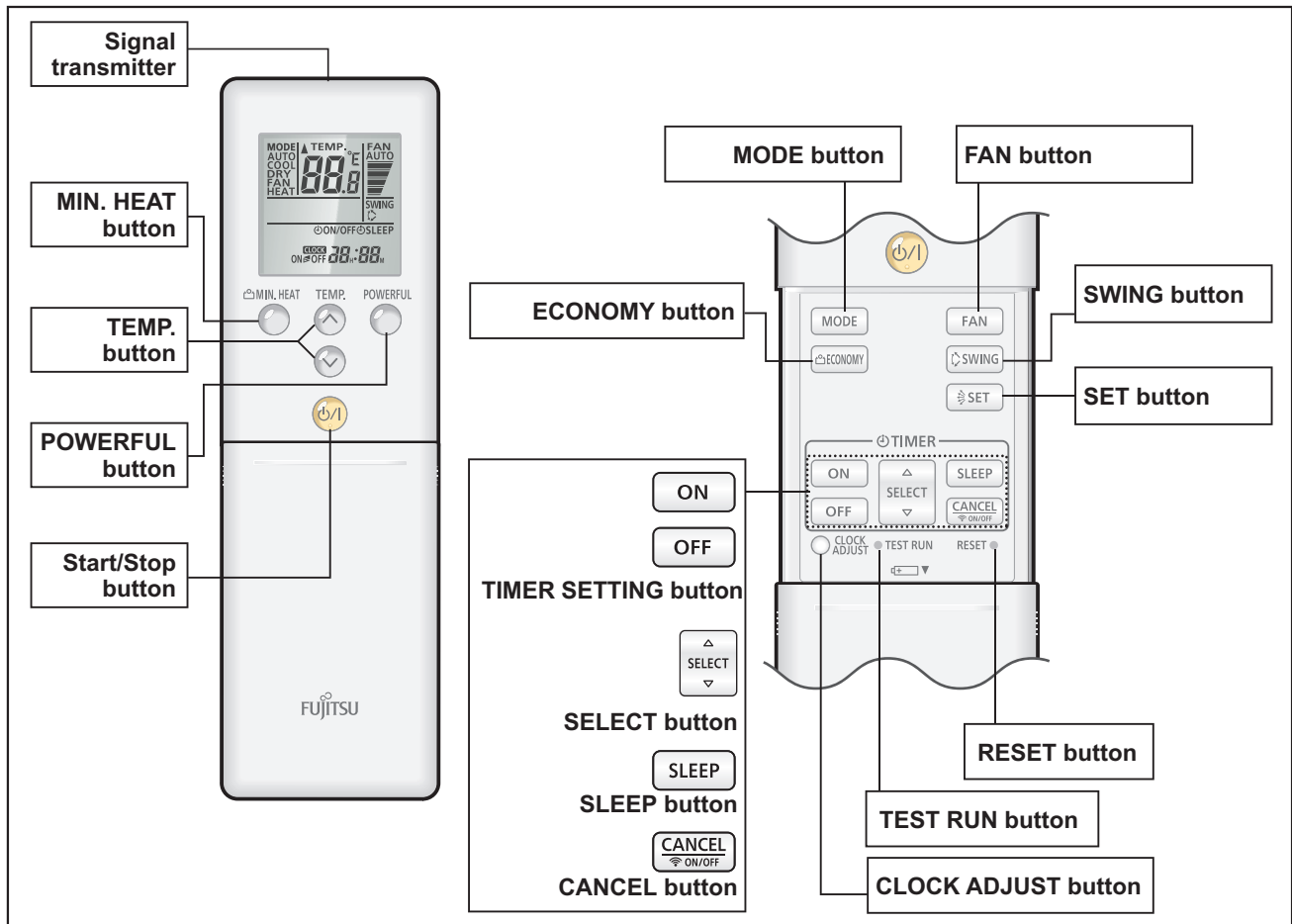
Example of wiring method



10. Remote controller

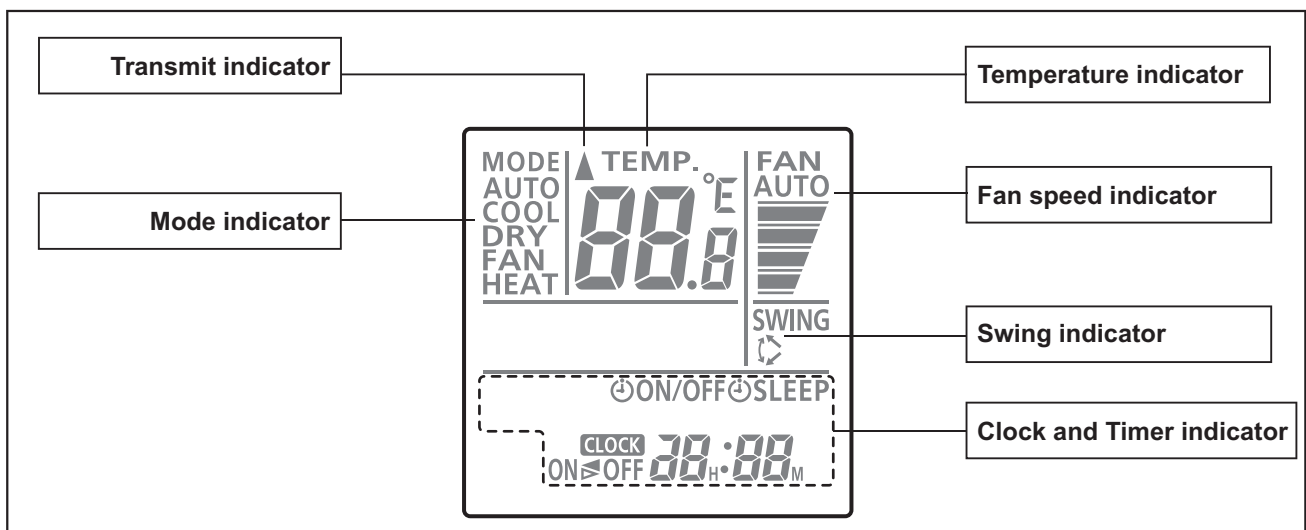
10-1. Wireless remote controller

Overview



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

Display panel

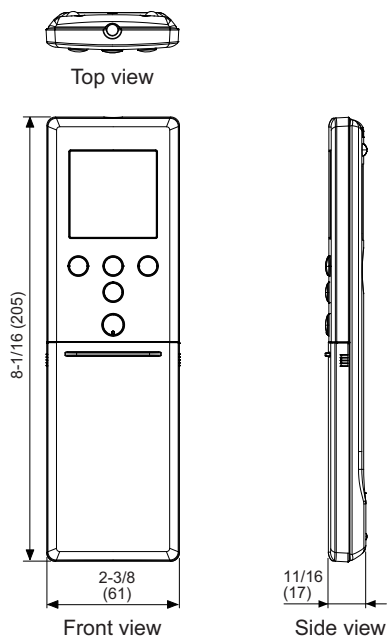


To facilitate explanation, the accompanying illustration has been drawn to show all possible indicators; in actual operation, however, the display will only show those indicators appropriate to the current operation.

Specifications

Controller

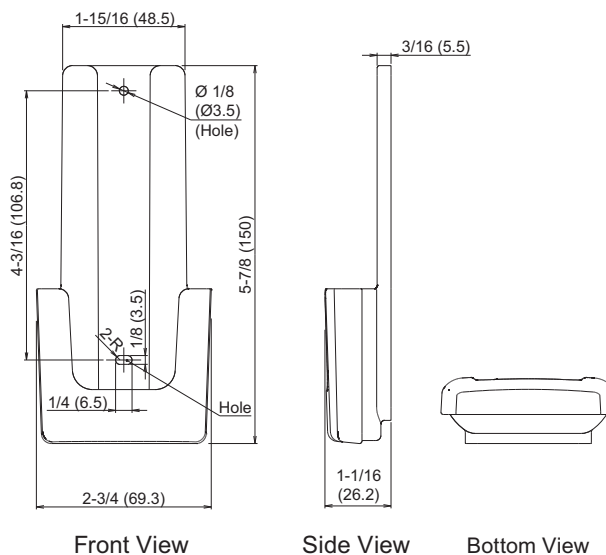
Unit: in (mm)



Size (H × W × D)	in (mm)	8-1/16 × 2-3/8 × 11/16 (205 × 61 × 17)
Weight	oz (g)	4.4 (124) (without batteries)

Holder

Unit: in (mm)



Size (H × W × D)	in (mm)	5-7/8 × 2-3/4 × 1-1/16 (150 × 69.3 × 26.2)
Weight	oz (g)	1 (27)

11. Function settings

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

NOTE: Incorrect settings can cause a product malfunction.

11-1. Function settings by using remote controller

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

■ Setting procedure by using wireless remote controller

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

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

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

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

NOTES:

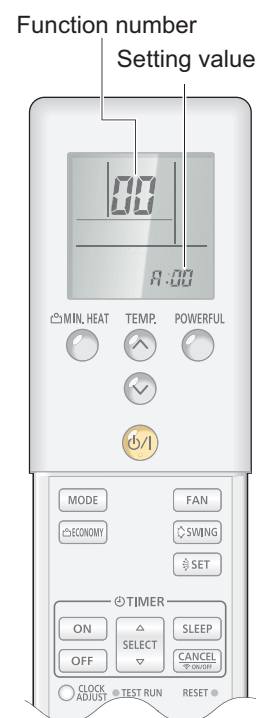
- Settings will not be changed if invalid numbers or setting values are selected.
- When optional wired remote controller is used, refer to the installation manual enclosed with the remote controller.

Entering function setting mode:

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

Selecting the function number and setting value:

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



⚠ CAUTION

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

NOTES:

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

■ Contents of function setting

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

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

● Function setting list

	Function no.	Functions
1)	00	Remote controller address setting
2)	11	Filter sign
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)	44	Remote controller custom code
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
12)	61	Control switching of external heaters
13)	62	Operating temperature switching of external heaters
14)	66	Outdoor temperature zone boundary temperature A
15)	67	Outdoor temperature zone boundary temperature B
16)	71	Standby time for auxiliary equipment operation
17)	72	Heat pump backup setting
18)	73	Emergency heat for external output terminal
19)	94	Fixed operation mode switching
20)	95	Heat insulation condition (building insulation)

1) Remote controller address setting

NOTE: Because this setting is normally done automatically when 2-wire-type wired remote controller is installed, setting is unnecessary.

Multiple indoor units can be operated by using one wired remote controller.

Set the unit number of each indoor unit.

Function number	Setting value	Setting description	Factory setting
00	00	Unit no. 0	◆
	01	Unit no. 1	
	02	Unit no. 2	
	03	Unit no. 3	
	04	Unit no. 4	
	05	Unit no. 5	
	06	Unit no. 6	
	07	Unit no. 7	
	08	Unit no. 8	
	09	Unit no. 9	
	10	Unit no. 10	
	11	Unit no. 11	
	12	Unit no. 12	
	13	Unit no. 13	
	14	Unit no. 14	
15	Unit no. 15		

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

2) Filter sign

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

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

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

3) Room temperature control for indoor unit sensor

NOTE: Before performing this setting, refer to Function 95.

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

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

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

Example of correction:

When the temperature of the room temp. sensor is 78°F and the setting value is "03" (-2°F), the corrected temp. will be 80°F (78°F - [-2°F]).

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 0.0 °F (0.0 °C)" (01).

Function number		Setting value	Setting description	Factory setting	
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)		
		09	-8 °F (-4.0 °C)		
		10	+1 °F (+0.5 °C)	Less cooling More heating	
		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)				

4) Room temperature control for wired remote controller sensor

NOTE: Before performing this setting, refer to Function 95.

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.

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

Function number		Setting value	Setting description	Factory setting	
35 (For cooling)	36 (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)		
		09	-8 °F (-4.0 °C)		
		10	+1 °F (+0.5 °C)	Less cooling More heating	
		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)				

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) Remote controller custom code

(Only for wireless remote controller)

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

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

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 (Remote controller enabled)	◆
	01	(Setting prohibited)	
	02	Forced stop mode	
	03	Operation/Stop mode 2 (Remote controller disabled)	

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.

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

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—04	Cooling thermostat On	
	05	Heating operation	
	06	Operation/Stop	
	07—08	Cooling thermostat On	
	09	Error status	
	10	Indoor unit fan operation status	
	11	External heater	

12) Control switching of external heaters

Sets the control method for external heater to be used.

For details, refer to “External heater output” in ["Details of control output function"](#) on page 27.

Function number	Setting value	Setting description	Factory setting
61	00	Auxiliary heater control 1	◆
	01	Auxiliary heater control 2	
	02	Heat pump prohibition control	
	03	Auxiliary heater control by outdoor temperature 1	
	04	Auxiliary heater control by outdoor temperature 2	
	05	Auxiliary heater control by outdoor temperature 3	
	06	Auxiliary heat pump control	
	07	Auxiliary heat pump control by outdoor temperature 1	
	08	Auxiliary heat pump control by outdoor temperature 2	
	09	Auxiliary heat pump control by outdoor temperature 3	

13) Operating temperature switching of external heaters

Sets the temperature conditions when the external heater is ON.

For details, refer to “External heater output” in ["Details of control output function"](#) on page 27.

Function number	Setting value	Setting description		Factory setting
		Heater: On	Heater: Off	
62	00	-5.4 °F (-3 °C)	-1.8 °F (-1 °C)	◆
	01	-3.6 °F (-2 °C)	-1.8 °F (-1 °C)	
	02	-3.6 °F (-2 °C)	-1.8 °F (-1 °C)	
	03	-5.4 °F (-3 °C)	-1.8 °F (-1 °C)	
	04	-7.2 °F (-4 °C)	-1.8 °F (-1 °C)	
	05	-9.0 °F (-5 °C)	-1.8 °F (-1 °C)	

14) Outdoor temperature zone boundary temperature A

Setting required if changing of the outdoor temperature setting for heat pump prohibition zone is required when auxiliary heater control by outdoor temperature 1 and 2 are performed on the indoor unit.

For details, refer to "External heater output" in ["Details of control output function"](#) on page 27.

Function number	Setting value	Setting description	Factory setting
66	00	-4.0 °F (-20 °C)	◆
	01	-0.4 °F (-18 °C)	
	02	3.2 °F (-16 °C)	
	03	6.8 °F (-14 °C)	
	04	10.4 °F (-12 °C)	
	05	14.0 °F (-10 °C)	
	06	17.6 °F (-8 °C)	
	07	21.2 °F (-6 °C)	
	08	24.8 °F (-4 °C)	

15) Outdoor temperature zone boundary temperature B

Setting required if changing of the outdoor temperature setting for heat pump only zone is required when auxiliary heater control by outdoor temperature 1 and 3 is performed on the indoor unit.

For details, refer to "External heater output" in ["Details of control output function"](#) on page 27.

Function number	Setting value	Setting description	Factory setting
67	00	42.8 °F (6 °C)	◆
	01	14.0 °F (-10 °C)	
	02	17.6 °F (-8 °C)	
	03	21.2 °F (-6 °C)	
	04	24.8 °F (-4 °C)	
	05	28.4 °F (-2 °C)	
	06	32.0 °F (0 °C)	
	07	35.6 °F (2 °C)	
	08	39.2 °F (4 °C)	
	09	42.8 °F (6 °C)	
	10	46.4 °F (8 °C)	
	11	50.0 °F (10 °C)	
	12	53.6 °F (12 °C)	
	13	57.2 °F (14 °C)	
	14	60.8 °F (16 °C)	
	15	64.4 °F (18 °C)	

16) Standby time for auxiliary equipment operation

Sets the standby time until the auxiliary equipment operation starts during primary equipment operation.

For details, refer to ["Details of control output function"](#) on page 27.

Function number	Setting value	Setting description	Factory setting
71	00	Disable	◆
	01	1 minute	
	02	2 minutes	
	•	•	
	•	•	
	•	•	
	98	98 minutes	
	99	99 minutes	

17) Heat pump backup setting

Enables or disables the heat pump backup instruction from the outdoor unit.

This function will be usable provided that the corresponding outdoor unit is connected.

Function number	Setting value	Setting description	Factory setting
72	00	Disable	◆
	01	Enable	

18) Emergency heat for external output terminal

Enables or disables emergency heat input.

Function number	Setting value	Setting description	Factory setting
73	00	Disable	◆
	01	Enable	

NOTE: When this function is used, IR Receiver Unit is necessary.

19) Fixed operation mode switching

Sets the operation mode to heat pump, heating only, or cooling only.

Function number	Setting value	Setting description	Factory setting
94	00	Heat pump	◆
	01	Heating only	
	02	Cooling only	

20) 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-temperature control settings (Function 30, 31, 35, and 36) will reset to "No correction 0.0 °F (0.0 °C)".

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

NOTE: When changing Function 95, perform this setting before other room-temperature control settings (Function 30, 31, 35, and 36). If Function 95 is not set first, room-temperature control settings (Function 30, 31, 35, and 36) will be reset and you must re-do them again.

11-2. Custom code setting for wireless remote controller

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

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

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

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

1. Press the START/STOP button until only the clock is displayed on the remote controller display.
2. Press the MODE button for at least 5 seconds to display the current custom code. (Initially set to H .)
3. Press the TEMP. (\wedge) (\vee) buttons to change the custom code between $\text{H} \rightarrow \text{b} \rightarrow \text{c} \rightarrow \text{d}$. Match the code on the display to the air conditioner custom code. (Initially set to H .)
4. Press the MODE button again to return to the clock display. The custom code will be changed.


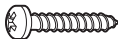


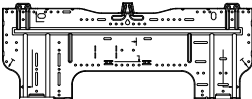




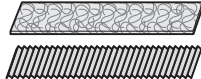
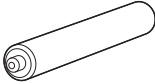


NOTES:

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


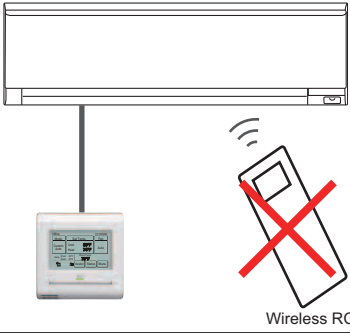

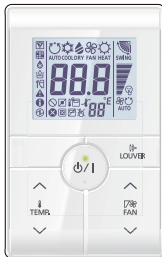
12. Accessories

12-1. Models: ASUH09LMAS and ASUH12LMAS

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

13. Optional parts

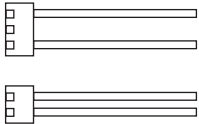
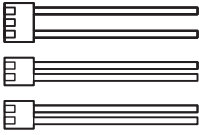

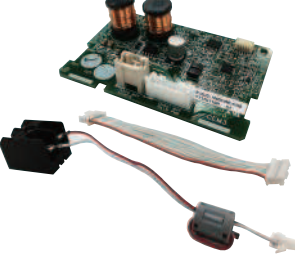

13-1. Controllers

Exterior	Part name	Model name	Summary
	Wired Remote Controller	UTY-RNRUZ*	<p>Easy finger touch operation with LCD panel. Backlit LCD enables easy operation in a dark room. Wire type: Non-polar 2-wire Optional Communication Kit is necessary for installation.</p> <p>NOTE: When this remote controller is connected, wireless remote controller cannot be used.</p>  <p style="text-align: center;">Wireless RC</p>
	Simple Remote Controller	UTY-RSRY	<p>Compact remote controller concentrates on the basic functions such as Start/Stop, fan control, temperature setting, and operation mode. Wire type: Non-polar 2-wire Optional Communication Kit is necessary for installation.</p>
	Simple Remote Controller	UTY-RHRY	<p>Compact remote controller concentrates on the basic functions such as Start/Stop, fan control, and temperature setting. Wire type: Non-polar 2-wire Optional Communication Kit is necessary for installation.</p>

NOTES:

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

13-2. Others

Exterior	Part name	Model name	Summary
	External Connect Kit	UTY-XWZX	Use to connect with various peripheral devices and air conditioner PCB.
	External Connect Kit	UTY-XWZXZ5	Required when external device is connected.
	External Input and Output PCB	UTY-XCSXZ2	Use to connect with external devices and air conditioner PCB. Optional External Connect Kit is necessary for installation.
	Communication Kit	UTY-TWRXZ2	Use to connect Non-polar 2-core wired remote controller.
	Wireless LAN adapter	UTY-TFSXF1	Remotely manage an air conditioning system using mobile devices such as smartphones and tablets. Appropriate application for each region is required to use this option. For details, contact FGL sales company.

Part 2. OUTDOOR UNIT

SINGLE TYPE:

AOUH09LEAS1

AOUH12LEAS1

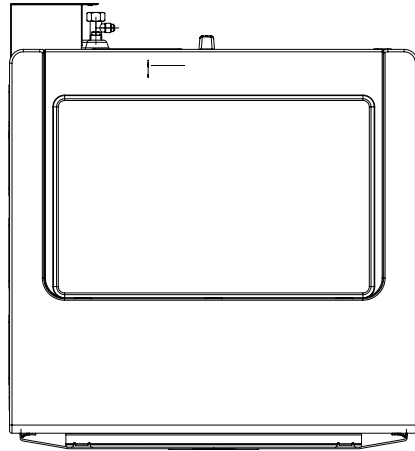
1. Specifications

Type			Inverter heat pump	
Model name			AOUH09LEAS1	AOUH12LEAS1
Power supply			208/230 V ~ 60 Hz	
Power supply intake			Outdoor unit	
Available voltage range			187—253 V	
Starting current			3.7	6.4
Fan	Airflow rate	Cooling Heating	CFM (m ³ /h)	789 (1,340)
	Type × Qty			789 (1,340)
	Motor output		W	Propeller fan × 1 49
Sound pressure level*		Cooling	dB (A)	55
		Heating		54
Heat exchanger type	Dimensions (H × W × D)		in (mm)	Main1: 13-1/4 × 24-9/16 × 11/16 (336 × 624 × 18.2) Main2: 13-1/4 × 23-3/8 × 11/16 (336 × 594 × 18.2)
	Fin pitch		FPI	Main1: 18 Main2: 18
	Rows × Stages			Main1: 1 × 16 Main2: 1 × 16
	Pipe type			Copper
	Fin type	Type (Material) Surface treatment		Aluminum Blue fin
Compressor	Type			DC rotary
	Motor output		W	900
Refrigerant	Type			R410A
	Charge		lb oz	1 lb 13 oz
			g	
Refrigerant oil	Type			POE (RB68A)
	Amount		in ³ (cm ³)	20.7 (340)
Enclosure	Material			Steel sheet
	Color			Beige Approximate color of Munsell 10YR 7.5/1.0
Dimensions (H × W × D)	Net		in (mm)	14-5/16 × 19-11/16 × 19-5/16 (363 × 500 × 490)
	Gross			19-1/8 × 23-15/16 × 26-3/16 (485 × 608 × 665)
Weight	Net		lb (kg)	62 (28)
	Gross			73 (33)
Connection pipe	Size	Liquid	in (mm)	Ø 1/4 (Ø 6.35)
		Gas		Ø 3/8 (Ø 9.52)
	Method			Flare
	Pre-charge length			25 (7.5)
	Max. length		ft (m)	25 (7.5)
Max. height difference			10 (3.0)	
Operation range		Cooling	°F (°C)	14 to 115 (-10 to 46)
		Heating		5 to 75 (-15 to 24)
NOTES:				
<ul style="list-style-type: none"> Specifications are based on the following conditions: <ul style="list-style-type: none"> Cooling: Indoor temperature of 80 °FDB (26.67 °CDB) / 67 °FWB (19.44 °CWB), and outdoor temperature of 95 °FDB (35 °CDB) / 75 °FWB (23.9 °CWB). Heating: Indoor temperature of 70 °FDB (21.11 °CDB) / 60 °FWB (15.56 °CWB), and outdoor temperature of 47 °FDB (8.33 °CDB) / 43 °FWB (6.11 °CWB). Pipe length: 25 ft (7.5 m), Height difference: 0 ft (0 m). (Between outdoor unit and indoor unit.) 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. 				

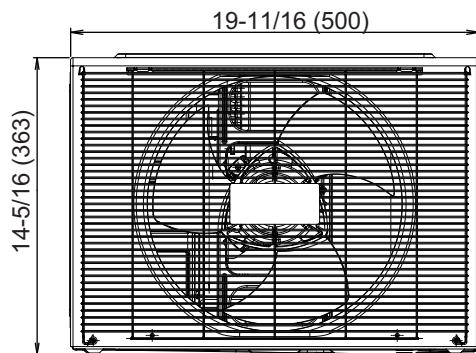
2. Dimensions

2-1. Models: AOUH09LEAS1 and AOUH12LEAS1

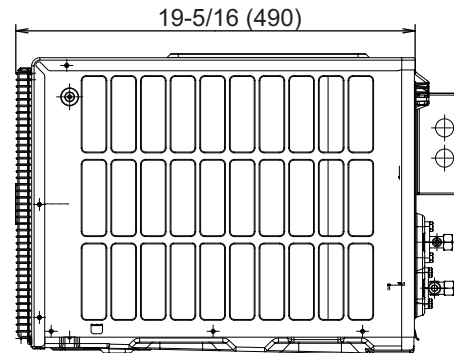
Unit: in (mm)



Top view



Front view



Side view

3. Installation space

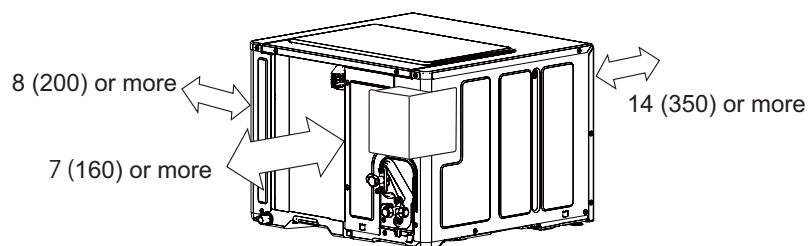
3-1. Models: AOUH09LEAS1 and AOUH12LEAS1

■ Space requirement

Provide sufficient installation space for product safety.

- Provide the space shown in the following figure so that the airflow is not blocked.
- For efficient operation, leave open three of the four directions front, rear, and both sides.
- For service work, provide the surrounding space as much as possible.

Unit: in (mm)

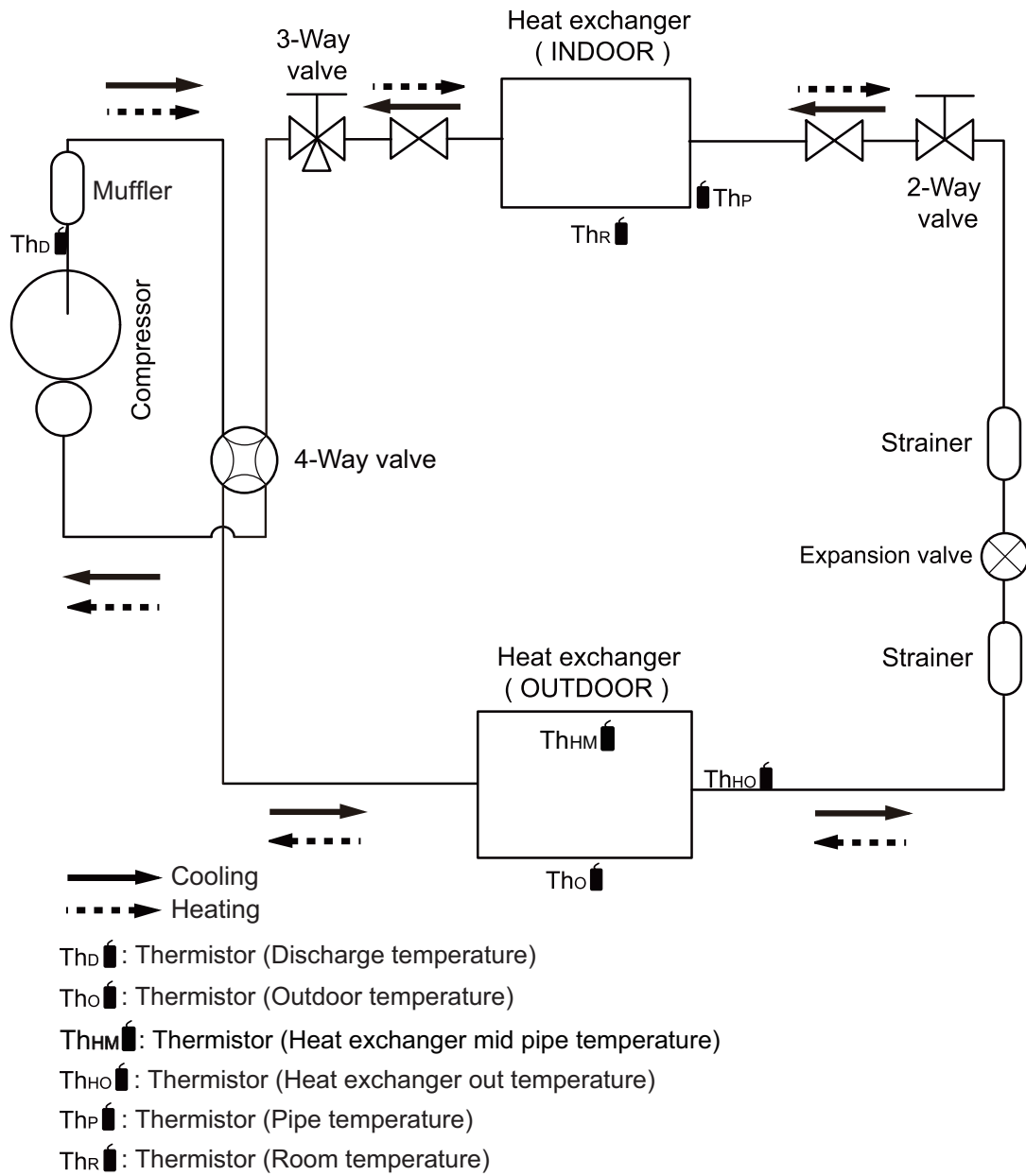


4. Refrigerant circuit

4-1. Models: AOUH09LEAS1 and AOUH12LEAS1

OUTDOOR UNIT
AOUH09-12LEAS1

OUTDOOR UNIT
AOUH09-12LEAS1

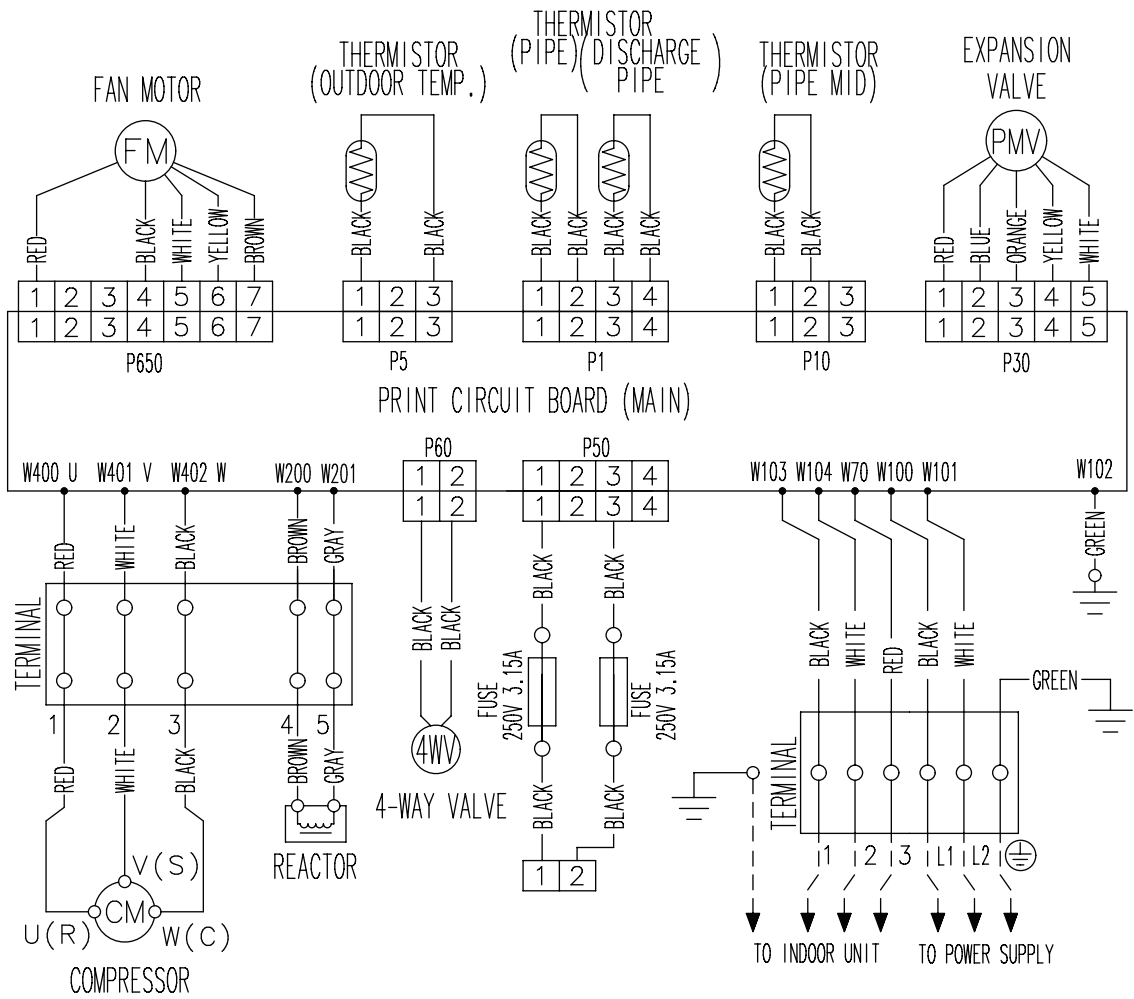


5. Wiring diagrams

5-1. Models: AOUH09LEAS1 and AOUH12LEAS1

OUTDOOR UNIT
AOUH09-12LEAS1

OUTDOOR UNIT
AOUH09-12LEAS1



6. Additional charge calculation

6-1. Models: AOUH09LEAS1 and AOUH12LEAS1

Refrigerant type		R410A
Refrigerant amount	lb oz	1 lb 13 oz
	g	835

■ Refrigerant charge

Total pipe length	ft	25 (Max.)	0.0 oz/ft (0 g/m)
	m	7.5 (Max.)	
Additional charge	oz	0	
	g	0	

7. Airflow

7-1. Model: AOUH09LEAS1

● Cooling

m ³ /h	1,340
l/s	372
CFM	789

● Heating

m ³ /h	1,340
l/s	372
CFM	789

7-2. Model: AOUH12LEAS1

● Cooling

m ³ /h	1,340
l/s	372
CFM	789

● Heating

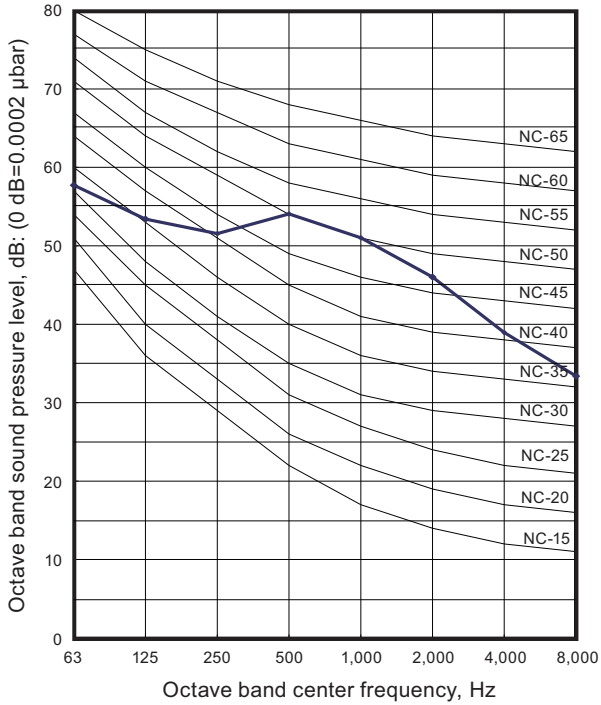
m ³ /h	1,430
l/s	397
CFM	842

8. Operation noise (sound pressure)

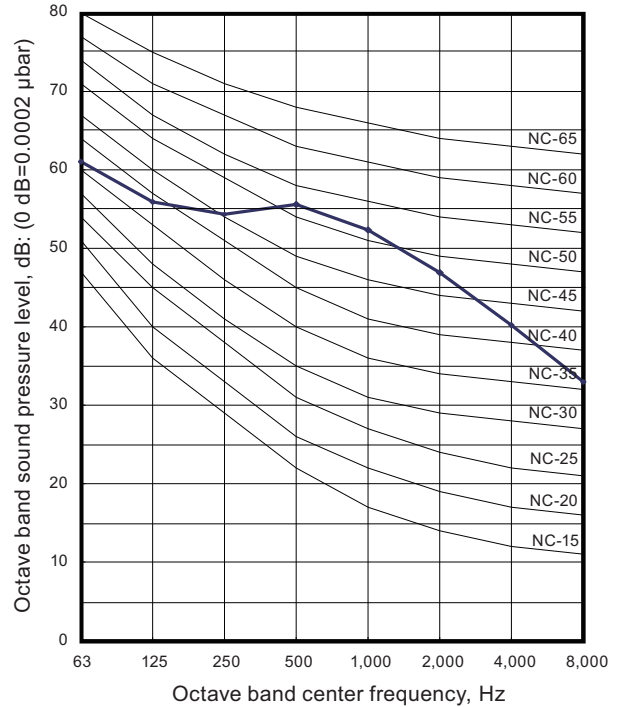
8-1. Noise level curve

Model: AOUH09LEAS1

Cooling

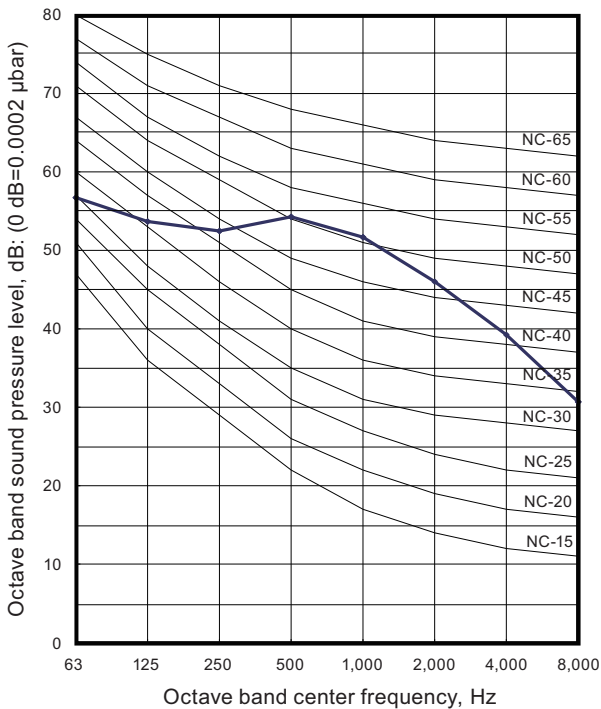


Heating

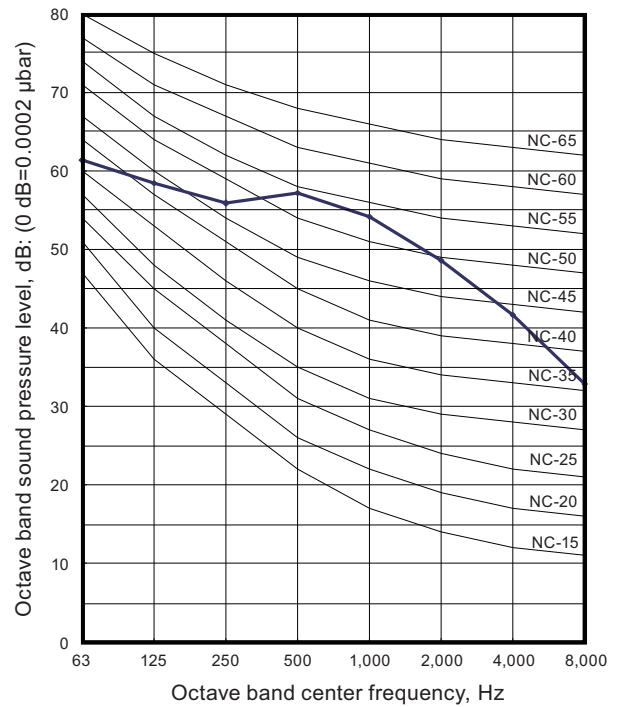


Model: AOUH12LEAS1

Cooling



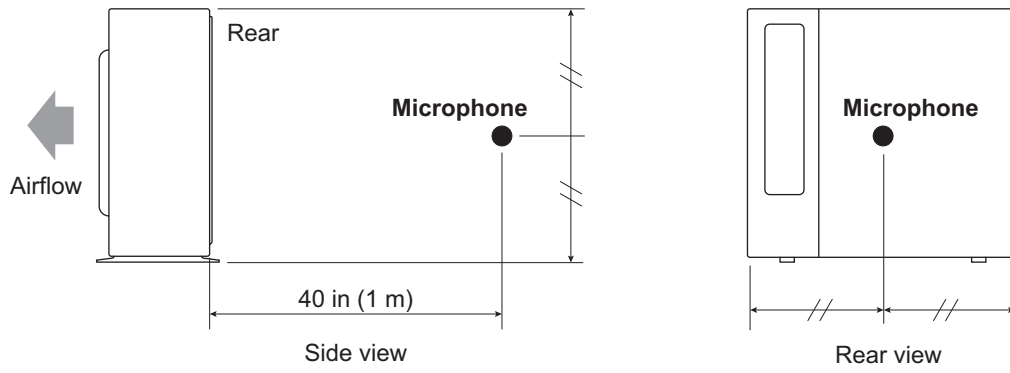
Heating



OUTDOOR UNIT
AOUH09-12LEAS1

OUTDOOR UNIT
AOUH09-12LEAS1

8-2. Sound level check point



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

9. Electrical characteristics

Model name			AOUH09LEAS1	AOUH12LEAS1	
Power supply	Voltage		V	208/230~	
	Frequency		Hz	60	
MCA *1			A	11.2	
Starting current			A	3.7	6.4
Wiring spec. *2	MAX. CKT. BKR *3		A	15	
	Power cable		AWG	14	
	Connection cable *4	Size	AWG	14	
		Limited wiring length	ft (m)	26 (8)	

*1: Minimum Circuit Ampacity (Calculation based on UL60335-2-40)

*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: Maximum Circuit Breaker

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

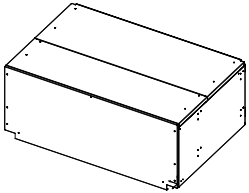
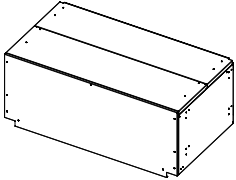
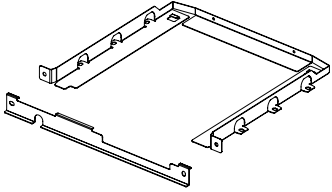
10. Safety devices

Type of protection	Protection form		Model	
			AOUH09LEAS1	AOUH12LEAS1
Circuit protection	Current fuse (Main PCB)		250 V, 15 A	
Fan motor protection	Thermistor protection program	Activate	257±18 °F (125±10 °C) Fan motor stop	
		Reset	248±18 °F (120±10 °C) Fan motor restart	
Compressor protection	Thermal protection program (Discharge temp.)	Activate	230 °F (110 °C) Compressor stop	
		Reset	After 7 minutes Compressor restart	

11. Accessories

Part name	Exterior	Qty	Part name	Exterior	Qty
Installation manual		1	Cable tie with clip		2
Cable tie	 Use with the optional sleeve	1			

12. Optional parts

Exterior	Part name	Model name	Summary
	Wall Sleeve	UTZ-WUZA-C	Applicable up to 15 in (381 mm) thick walls.
	Wall Sleeve	UTZ-WUZB-C	Applicable up to 10-9/32 in (261 mm) thick walls.
	Base Bracket Kit	—	Bracket for installing the outdoor unit independently. (Service part No.: 9357623009)

Part 3. OPTIONAL PARTS

1. Wall sleeve

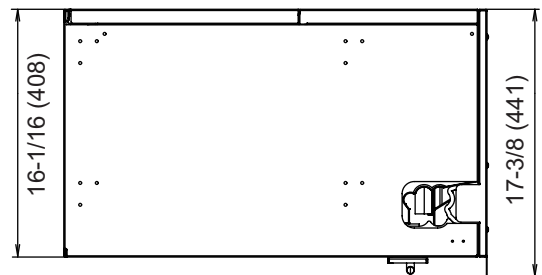
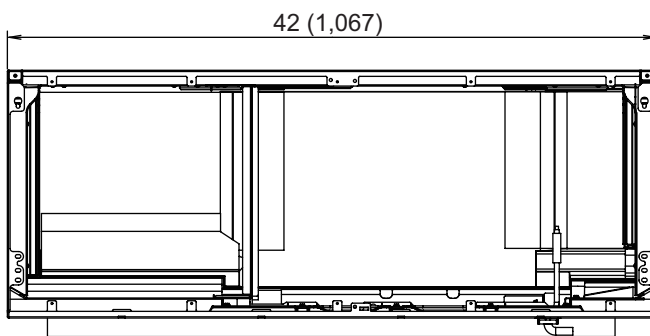
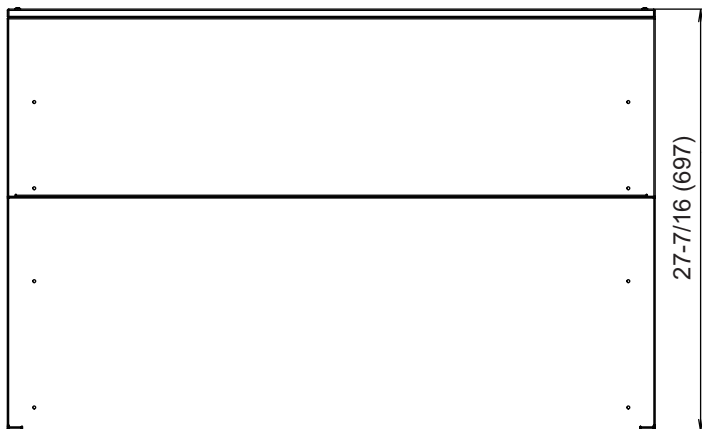
1-1. Specifications

Model name			UTZ-WUZA-C	UTZ-WUZB-C
Dimensions (H × W × D)	Net	in (mm)	16-1/16 × 42 × 27-7/16 (408 × 1,067 × 697)	16-1/16 × 42 × 22-23/32 (408 × 1,067 × 577)
	Gross		32-3/8 × 47-1/16 × 22-5/8 (822 × 1,195 × 575)	27-19/32 × 47-1/16 × 22-5/8 (702 × 1,195 × 575)
Weight	Net	lb (kg)	84 (38)	73 (33)
	Gross		101 (46)	90 (41)
Sheathed heater	Heater output	W	150	
Drain pipe	Material		Copper	
	Tip diameter	in (mm)	Ø 1/2 (Ø 12.7) (O.D.)	
Drain hose	Tip diameter	in (mm)	Ø 1/2 (Ø 12.7) (I.D.)	

1-2. Dimensions

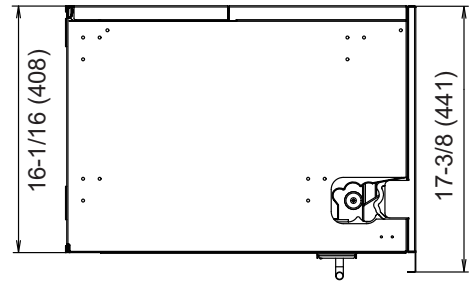
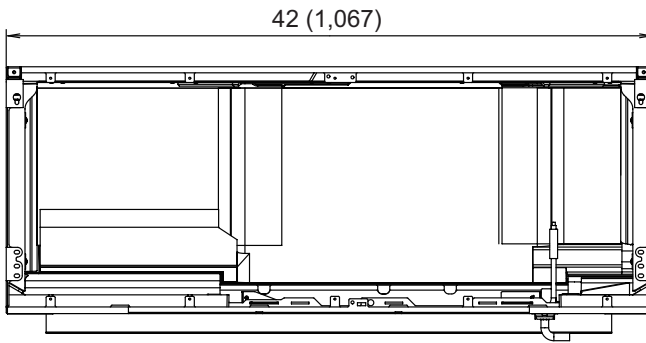
■ Model: UTZ-WUZA-C

Unit: in (mm)



■ Model: UTZ-WUZB-C

Unit: in (mm)



OPTIONAL PARTS

OPTIONAL PARTS

1-3. Installation space

■ Models: UTZ-WUZA-C and UTZ-WUZB-C

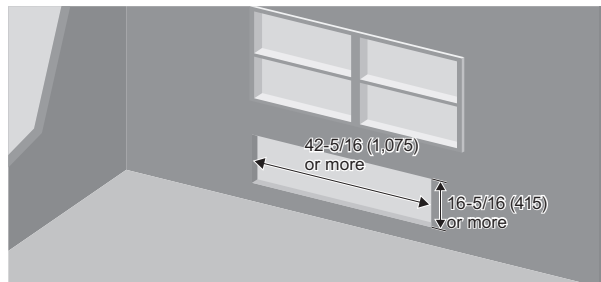
● Space requirement

Provide sufficient installation space for product safety.

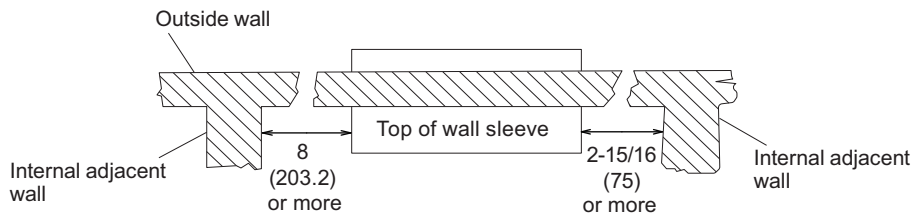
- Provide the space shown in the following figure so that the airflow is not blocked.
- For efficient operation, leave open three of the four directions front, rear, and both sides.
- For service work, provide the surrounding space as much as possible.

Unit: in (mm)

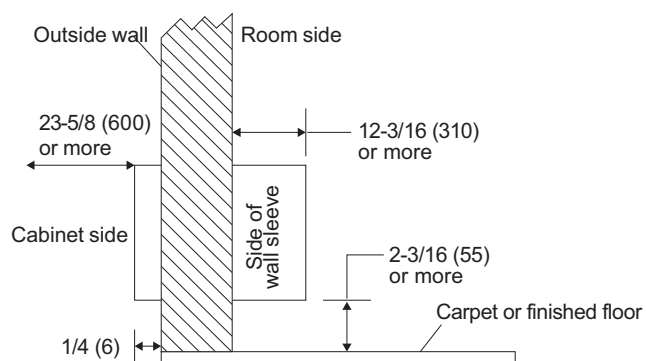
Minimum wall-opening dimensions



Minimum clearances



Minimum building structure required for installation



● Baffle (resistor) removal (Manufacturer recommended)

The rear grille should be attached to the sleeve in a manner that will prevent recirculation of condenser discharge air into the air inlet.

- If the rear grille is not attached directly to the sleeve, a locally purchased splitter or gasket installation is required between the chassis and the rear grille.
- When a separate component that is used as ventilation resistance is attached to the grille, remove it to use.

If there is a baffle (resistor) on the back of the grille, remove it before use.



NOTE: Use of a rear grille that is difficult to meet the above conditions or can be recirculated may cause the following problems and is not covered by the unit warranty.

- The increased power consumption due to the reduced capacity and efficiency of the unit causes intermittent operation and shutdown of the compressor by the compressor overload protector.
- Excessive intermittent operation of the compressor's overload protection device can degrade the performance of the protection device, causing compressor failure and shortening component life.

● Rear grille selection

Select an appropriate grille to ensure that the unit operates properly and that does not malfunction or lose capacity.

- For the rear grille, use a standard grille that meets the following conditions.
 - There is at least 65% free space
 - There is 85% or more free space recommended

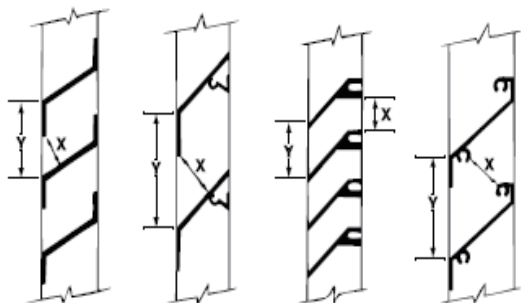
Free area is defined as the minimum area of the opening in an air inlet or outlet through which air can pass.

Free area (Percent [%]) equals the X dimension divided by the Y dimension.

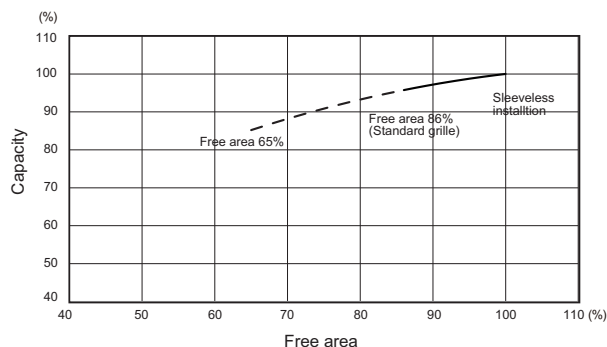
Sample Calculations

$$\text{Free Area (\%)} = \frac{X}{Y} \times 100 \quad x = 1" \quad y = 1.5"$$

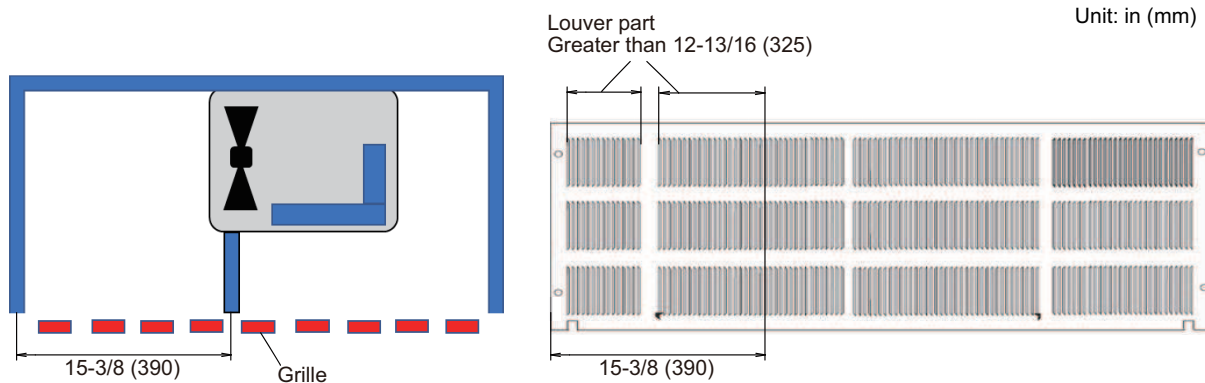
$$\text{F.A. \%} = \frac{1}{1.5} \times 100 = 66.7\%$$



Relationship between free area on the rear grille

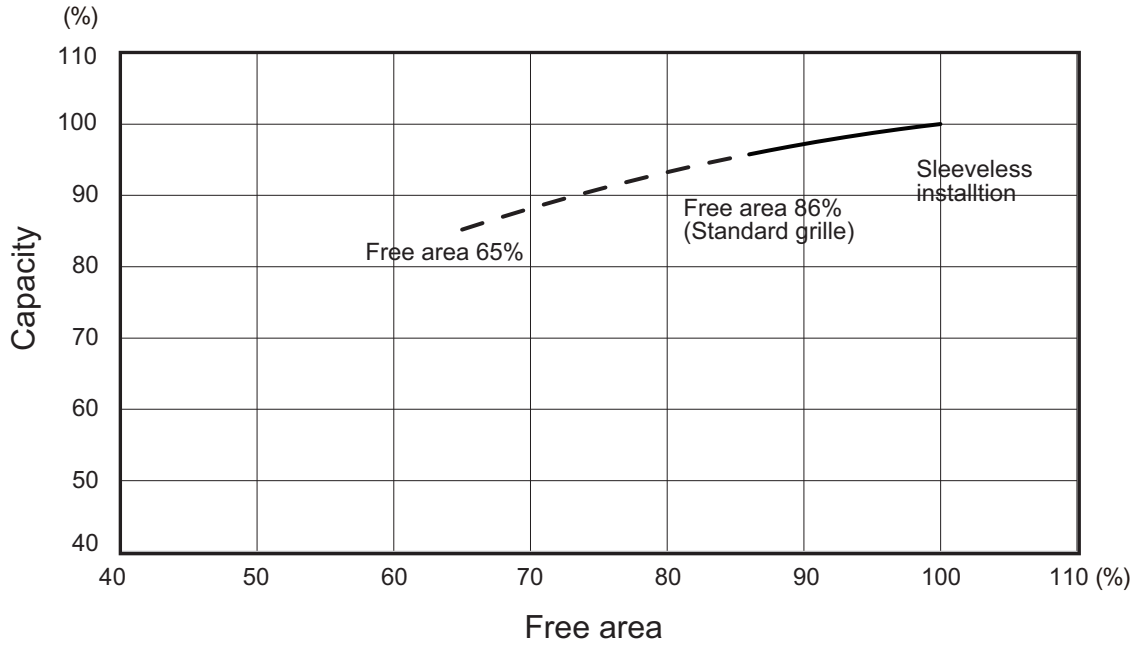


NOTE: Do not use a rear grille with a louver of 12-13/16 in (325 mm) or less within a range of 15-3/8 in (390 mm) from the left end, as resistance increases and the capacity drop significantly.



1-4. Capacity

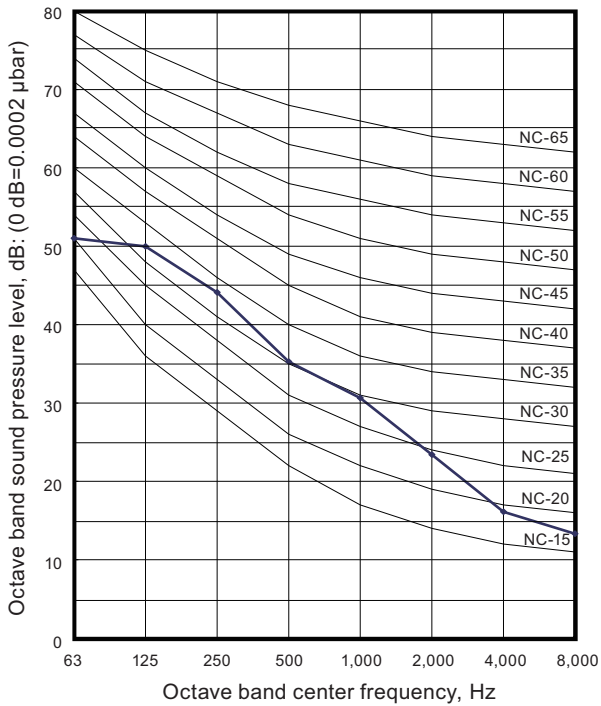
Models: UTZ-WUZA-C and UTZ-WUZB-C



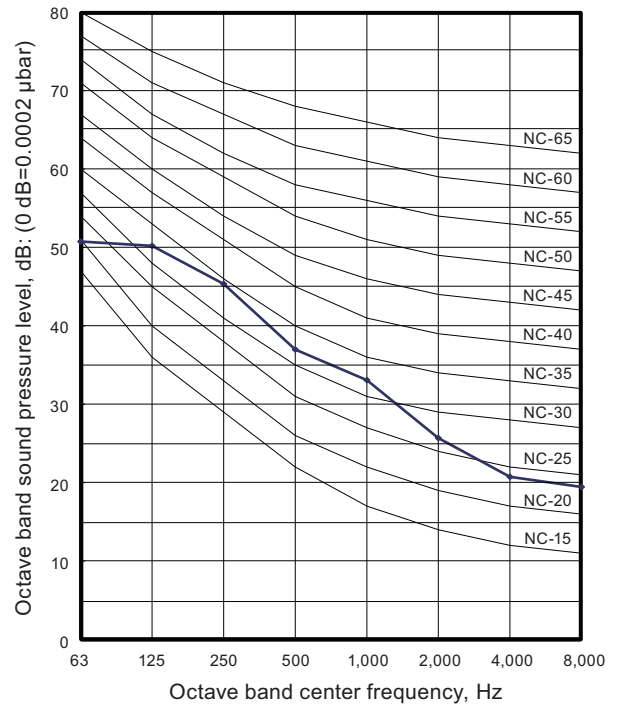
1-5. Noise level curve

Model: AOUH09LEAS1 with Wall sleeve

● Cooling

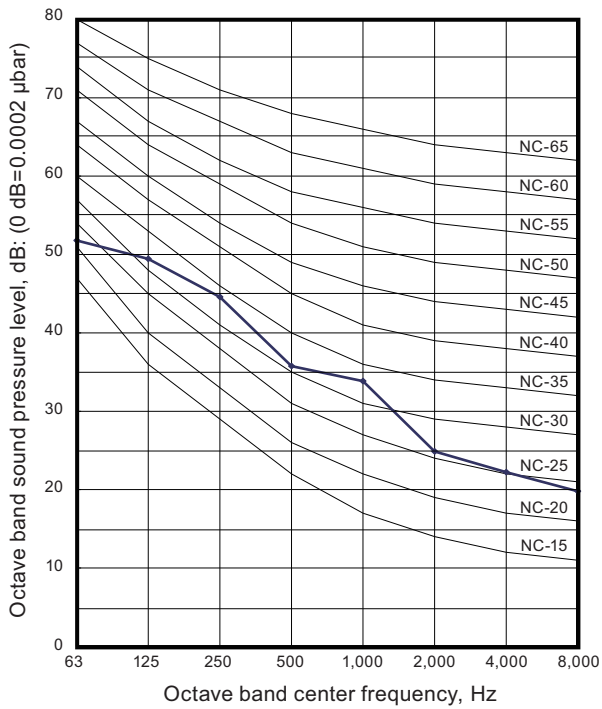


● Heating

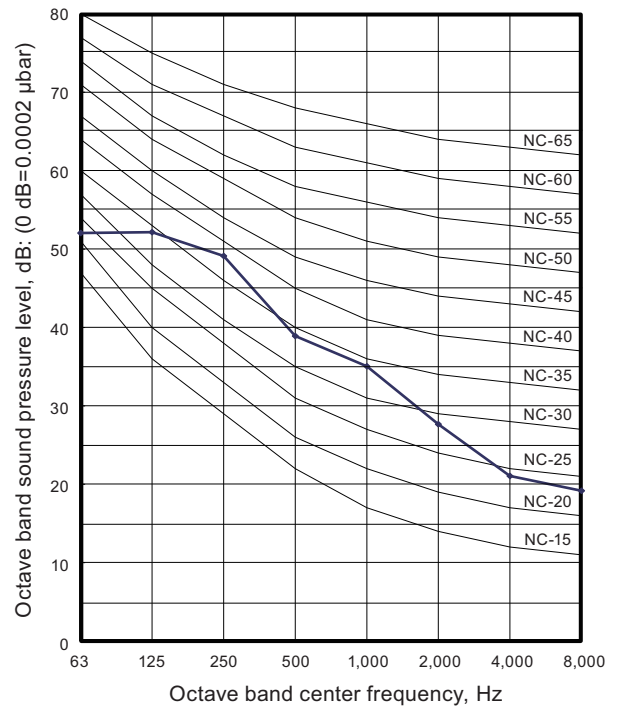


Model: AOUH12LEAS1 with Wall sleeve

● Cooling



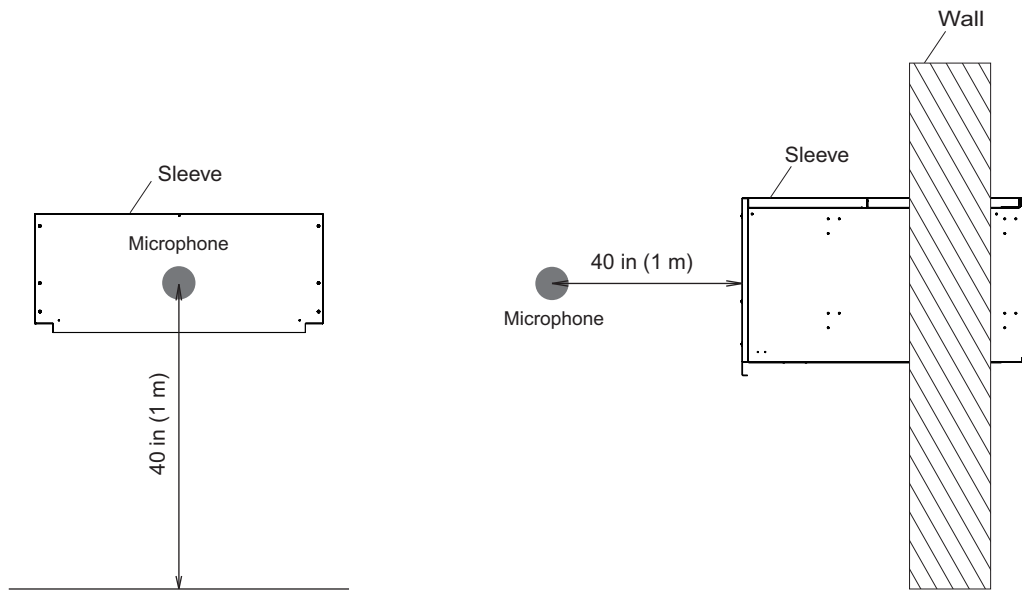
● Heating



OPTIONAL PARTS

OPTIONAL PARTS

■ Sound level check point



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

2. Base bracket kit

2-1. Specifications

Model name		— (Service part No.: 9357623009)
Install bracket A	Material	Steel
Install bracket B	Material	Steel
Rub sheet	Material	EDPM

2-2. Installation

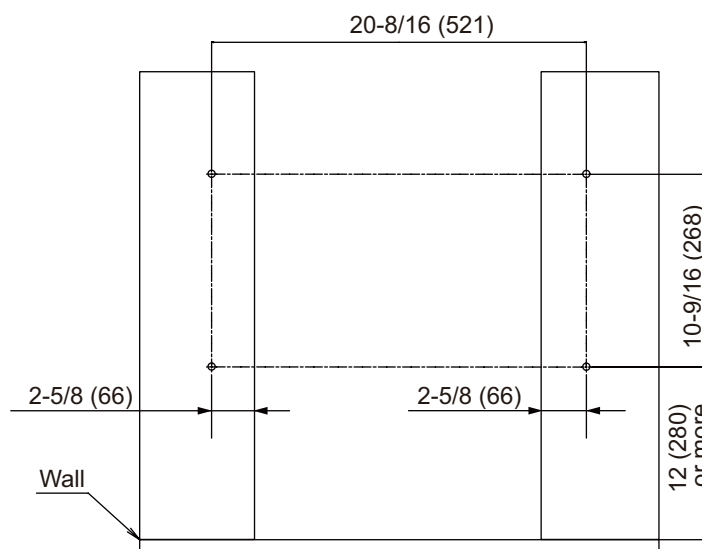
⚠ CAUTION

To prevent personal injury, property damage, or product malfunction, read the installation manual attached with the product carefully, and be sure to comply with the safety precautions.

■ Installation procedure

1. Drill mounting holes for the anchor bolts and anchor nuts at a flat place (If the unit is not installed at a flat place, drain will be difficult). Insert the anchor bolts and anchor nuts into the holes.

Unit: in (mm)

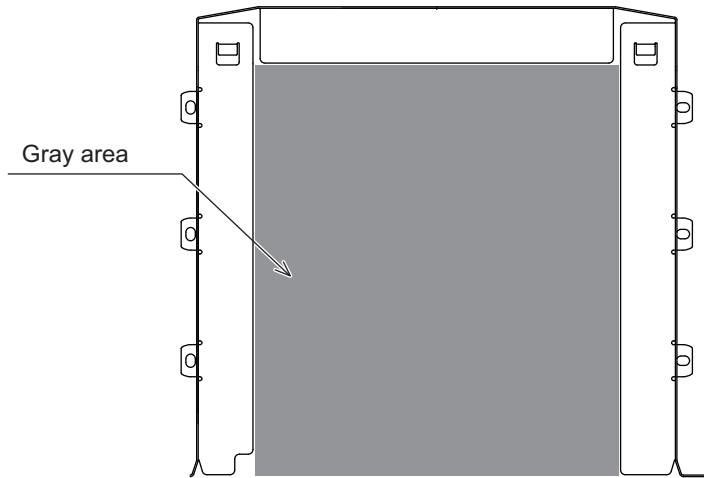
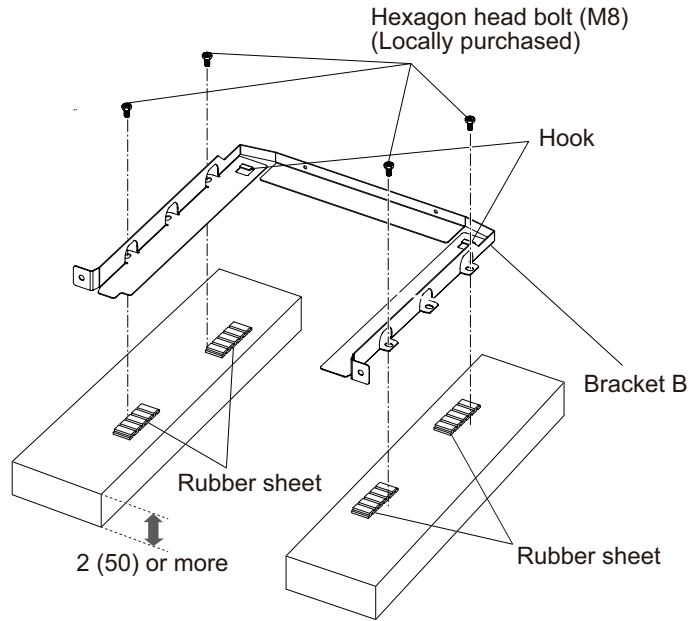


2. Fasten Bracket B with the anchor bolts.

For stable operation, install the outdoor unit on a raised stand or rack at or above the anticipated snow depth for the region (at least 2 in [50 mm] above the ground).

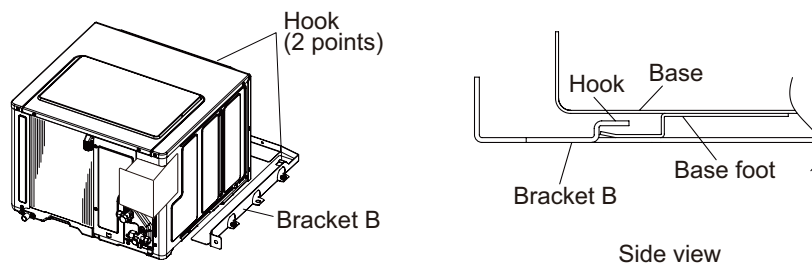
The inside of Bracket B (the gray area) should be an open area to prevent drain water from accumulating. Accumulated water will transform to ice at low ambient conditions and may damage the equipment.

Unit: in (mm)



Top view

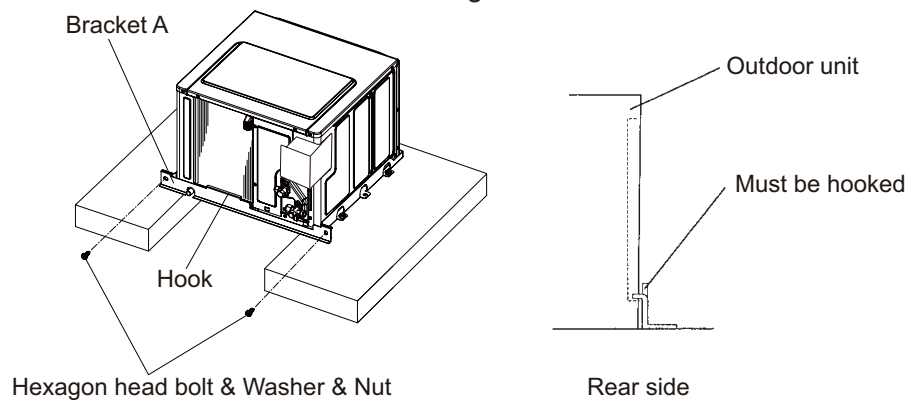
3. Install the outdoor unit. At this time, check that the outdoor unit is not floating at the Bracket B hook.



OPTIONAL PARTS

OPTIONAL PARTS

4. Fasten Bracket A and Bracket B with the hexagon head bolt and washer.



NOTE: If the unit is installed in a region exposed to high winds, freezing conditions, freezing rain, snowfall, or heavy snow accumulation, take appropriate measures to protect it from those elements. The installation of snow hoods and drift prevention fencing is recommended when blowing and drifting snow is expected in the region.