

AIRSTAGE

AIR CONDITIONER

Multi-split Outdoor unit

FUJITSU

REFRIGERANT **R32**
INVERTER

SERVICE MANUAL



AOUH18KWA S2
AOUH24KWA S3



AOUH36KWA S4



AOUH45KWA S5

FUJITSU GENERAL LIMITED

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Notices:

- Product specifications and design are subject to change without notice for future improvement.
- For further details, please check with our authorized dealer.

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1. GENERAL INFORMATION

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1. GENERAL INFORMATION











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1. Model lineup











Refer to the following tables for the multi-split outdoor unit and the connectable indoor units.

For the indoor unit's technical information and parts list, refer to the *Service Manual* for the multi-split indoor units.

●: Connectable, —: Not connectable

Standard climate region						
Indoor unit			Outdoor unit			
			2-unit	3-unit	4-unit	5-unit
						
Type		Model	AOUH18KWAS2	AOUH24KWAS3	AOUH36KWAS4	AOUH45KWAS5
Compact cassette		ACUH07KUAS	●	●	●	●
		ACUH09KUAS	●	●	●	●
		ACUH12KUAS	●	●	●	●
		ACUH18KUAS	—	●	●	●
Slim duct		ADUH07KUAS	●	●	●	●
		ADUH09KUAS	●	●	●	●
		ADUH12KUAS	●	●	●	●
		ADUH18KUAS	—	●	●	●
		ADUH24KUAS	—	—	●	●
Middle duct		ARUH12KUAS	●	●	●	●
		ARUH18KUAS	—	●	●	●
		ARUH24KUAS	—	—	●	●
Wall mounted		ASUH07KPAS	●	●	●	●
		ASUH09KPAS	●	●	●	●
		ASUH12KPAS	●	●	●	●
		ASUH15KPAS	●	●	●	●
		ASUH18KPAS	—	●	●	●
		ASUH24KPAS	—	—	●	●

●: Connectable, —: Not connectable

Cold climate region					
Indoor unit		Outdoor unit			
		2-unit	3-unit	4-unit	
					
Type		Model	AOUH18KWAH2	AOUH24KWAH3	AOUH36KWAH4
Compact cassette		ACUH07KUAS	●	●	●
		ACUH09KUAS	●	●	●
		ACUH12KUAS	●	●	●
		ACUH18KUAS	—	●	●
Slim duct		ADUH07KUAS	●	●	●
		ADUH09KUAS	●	●	●
		ADUH12KUAS	●	●	●
		ADUH18KUAS	—	●	●
		ADUH24KUAS	—	—	●
Middle duct		ARUH12KUAS	●	●	●
		ARUH18KUAS	—	●	●
		ARUH24KUAS	—	—	●
Wall mounted		ASUH07KPAS	●	●	●
		ASUH09KPAS	●	●	●
		ASUH12KPAS	●	●	●
		ASUH15KPAS	●	●	●
		ASUH18KPAS	—	●	●
		ASUH24KPAS	—	—	●

2. Specifications

2-1. Outdoor unit

Type				Inverter, Heat pump			
Model name				AOUH18KWAS2			
Power supply				1Ø, 208/230 V~ 60 Hz			
Power supply intake				Outdoor unit			
Available voltage range				187—253 V			
Connectable indoor unit		Number	Min.	2			
			Max.	2			
		Total capacity range	Min.	Btu/h	14,000		
			Max.		24,000		
Standard combination of indoor unit				Wall mounted ASUH09KPAS × 2		Duct ADUH09KUAS × 2	Mixed
Capacity	Cooling	Rated	kW	5.28			
			Btu/h	18,000			
		Min.—Max.	kW	1.79—6.15			
			Btu/h	6,100—21,000			
	Heating	Rated	kW	6.42			
			Btu/h	22,000			
		Min.—Max.	kW	1.99—7.33			
			Btu/h	6,800—25,000			
	Heating (17°F)*1	Rated	kW	4.19	4.43	4.31	
			Btu/h	14,300	15,100	14,700	
		Min.—Max.	kW	1.38—5.66			
			Btu/h	4,700—19,300			
	Heating (5°F)*2	Rated	kW	4.98			
			Btu/h	17,000			
		Min.—Max.	kW	1.14—4.98			
			Btu/h	3,900—17,000			
Input power	Cooling	Rated	kW	1.36	1.42	—	
		Max.		1.84	1.91	—	
	Heating	Rated		1.46	1.79	—	
		Max.		1.71	2.12	—	
	Heating (17°F)*1	Rated		1.35	1.59	—	
		Max.		2.05	2.17	—	
	Heating (5°F)*2	Rated		2.19		—	
		Max.		2.19		—	
Current	Cooling	Rated	A	6.1	6.4	6.2	
	Heating	Rated		6.5	8.0	7.2	
EER2	Cooling	Rated	Btu/hW	13.2	12.7	12.9	
SEER2	Cooling		Btu/hW	22.0	19.0	20.5	
COP2	Heating	Rated	kW/kW	4.4	3.6	4.0	
HSPF2	Heating		Btu/hW	10.5	9.5	10.0	
Power factor	Cooling	Rated	%	96.9	96.5	—	
	Heating	Rated		97.7	97.3	—	
Starting current			A	8.0			
Maximum operating current *3			A	12.0			
Fan	Airflow rate	Cooling	CFM (m³/h)	1,336 (2,270)			
		Heating		1,271 (2,160)			
	Type × Qty			Propeller × 1			
Motor output		W		49			
Sound pressure level *4		Cooling	dB (A)	48			
		Heating		49			
Heat exchanger type		Dimensions (H × W × D)		in (mm)	Main 1: 26-7/16 × 34-11/16 × 11/16 (672 × 881 × 18.19) Main 2: 26-7/16 × 33-1/2 × 11/16 (672 × 851 × 18.19)		
		Fin pitch		FPI	Main 1: 20 Main 2: 20		
		Rows × Stages		Main 1: 1 × 32 Main 2: 1 × 32			
		Pipe type		Copper tube			
		Fin type	Type (Material)		Aluminum		
Surface treatment			Blue fin				
Compressor		Type		DC twin rotary			
		Motor output		W	1,200		
Refrigerant		Type		R32			
		Charge		lb (g)	1,400		
Refrigerant oil		Type		RmM68AF			
		Amount		in³ (cm³)	33.6 (550)		
Enclosure		Material		Steel sheet			
		Color		Beige Approximate color of Munsell 10YR 7.5/1.0			
Dimensions (H × W × D)		Net	in (mm)	28-3/16 × 32-5/16 × 12-3/8 (716 × 820 × 315)			
		Gross		35-1/16 × 40-7/16 × 17-1/2 (890 × 1,027 × 445)			
Weight		Net	lb (kg)	99 (45)			
		Gross		119 (54)			
Connection pipe	Size × Qty	Liquid	in (mm)	Ø1/4 (Ø6.35) × 2			
		Gas		Ø3/8 (Ø9.52) × 2			
	Method		ft (m)	Flare			
	Pre-charge length (Total)			98 (30)			
	Min. length	Total		33 (10)			
		Each		16 (5)			
	Max. length	Total		164 (50)			
		Each		82 (25)			
	Max. height difference	Between outdoor unit and each indoor units		49 (15)			
Between indoor units		33 (10)					
Additional charge		oz/ft (g/m)		0.22 (20)			

Type			Inverter, Heat pump
Model name			AOUH18KWAS2
Operation range	Cooling	°F (°C)	14 to 122 (-10 to 50)
	Heating		5 to 75 (-15 to 24)
Drain hose	Material		Low-density polyethylene
	Tip diameter	in (mm)	I.D.: Ø1/2 (Ø13.0), O.D.: Ø5/8 to Ø11/16 (Ø16.0 to Ø16.7)
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 (26.7°CDB)/67°FWB (19.4°CWB), and outdoor temperature of 95 °FDB (35°CDB)/75°FWB (23.9°CWB).Heating: Indoor temperature of 70°FDB (21.1°CDB)/60°FWB (15.6°CWB), and outdoor temperature of 47 °FDB (8.3°CDB)/43°FWB (6.1°CWB).*1: Heating (17°F): Indoor temperature of 70°FDB (21.1°CDB) /60°FWB (15.56°CWB), and outdoor temperature of 17°FDB (-8.33°CDB) /15°FWB (-9.44°CWB).*2: Heating (5°F): Indoor temperature of 70°FDB (21.11°CDB)/60°FWB (15.56°CWB), and outdoor temperature of 5°FDB (-15.0°CDB)/4°FWB (-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:<ul style="list-style-type: none">The maximum value when operated within the operation range.The total current of indoor unit and outdoor unit.*4: Sound pressure level:<ul style="list-style-type: none">Measured values in manufacturer's semi-anechoic chamber.Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.			

Type				Inverter, Heat pump				
Model name				AOUH24KWAS3				
Power supply				1Ø, 208/230 V~ 60 Hz				
Power supply intake				Outdoor unit				
Available voltage range				187—253 V				
Connectable indoor unit	Number	Min.		2				
		Max.		3				
	Total capacity range	Min.	Btu/h	14,000				
		Max.		31,000				
Standard combination of indoor unit				Wall mounted ASUH07KPAS × 2 + ASUH09KPAS × 1		Duct ADUH07KUAS × 2 + ADUH09KUAS × 1		Mixed
Capacity	Cooling	Rated	kW	6.45				
			Btu/h	22,000				
		Min.—Max.	kW	1.79—7.91				
			Btu/h	6,100—27,000				
	Heating	Rated	kW	7.04				
			Btu/h	24,000				
		Min.—Max.	kW	1.99—9.09				
			Btu/h	6,800—31,000				
	Heating (17°F)*1	Rated	kW	4.57				
			Btu/h	15,600				
		Min.—Max.	kW	1.38—6.62				
			Btu/h	4,700—22,600				
	Heating (5°F)*2	Rated	kW	5.63				
			Btu/h	19,200				
		Min.—Max.	kW	1.14—5.63				
			Btu/h	3,900—19,200				
Input power	Cooling	Rated	kW	1.69	1.83	—		
		Max.		2.70	2.90	—		
	Heating	Rated		1.53	1.76	—		
		Max.		2.18	2.60	—		
	Heating (17°F)*1	Rated		1.37	1.54	—		
		Max.		2.59	2.71	—		
	Heating (5°F)*2	Rated		2.76	2.76	—		
		Max.		2.76	2.76	—		
Current	Cooling	Rated	A	7.5	8.2	7.8		
	Heating	Rated		6.8	7.8	7.3		
EER2	Cooling	Rated	Btu/hW	13.0	12.0	12.5		
SEER2	Cooling		Btu/hW	23.0	19.5	21.0		
COP2	Heating	Rated	kW/kW	4.6	4.0	4.3		
HSPF2	Heating		Btu/hW	10.5	9.5	10.0		
Power factor	Cooling	Rated	%	98.0	97.0	—		
	Heating	Rated		97.8	98.1	—		
Starting current			A	8.2				
Maximum operating current *3			A	14.7				
Fan	Airflow rate	Cooling	CFM (m³/h)	1,507 (2,560)				
		Heating		1,607 (2,730)				
	Type × Qty			Propeller × 1				
Motor output			W	49				
Sound pressure level *4	Cooling		dB (A)	50				
	Heating			52				
Heat exchanger type	Dimensions (H × W × D)		in (mm)	Main 1: 26-7/16 × 34-11/16 × 11/16 (672 × 881 × 18.19) Main 2: 26-7/16 × 33-1/2 × 11/16 (672 × 851 × 18.19)				
	Fin pitch		FPI	Main 1: 20 Main 2: 20				
	Rows × Stages			Main 1: 1 × 32 Main 2: 1 × 32				
	Pipe type			Copper tube				
	Fin type	Type (Material)		Aluminum				
		Surface treatment		Blue fin				
Compressor	Type			DC twin rotary				
	Motor output		W	1,200				
Refrigerant	Type			R32				
	Charge		lb (g)	1,800				
Refrigerant oil	Type			RmM68AF				
	Amount		in³ (cm³)	550				
Enclosure	Material			Steel sheet				
	Color			Beige Approximate color of Munsell 10YR 7.5/1.0				
Dimensions (H × W × D)	Net		in (mm)	28-3/16 × 32-5/16 × 12-3/8 (716 × 820 × 315)				
	Gross			35-1/16 × 40-7/16 × 17-1/2 (890 × 1,027 × 445)				
Weight	Net		lb (kg)	101 (46)				
	Gross			121 (55)				
Connection pipe	Size × Qty	Liquid	in (mm)	Ø1/4 (Ø6.35) × 2 + Ø1/4 (Ø6.35) × 1				
		Gas		Ø3/8 (Ø9.52) × 2 + Ø1/2 (Ø12.70) × 1				
	Method			ft (m)	Flare			
	Pre-charge length (Total)				98 (30)			
	Min. length	Total	33 (10)					
		Each	16 (5)					
	Max. length	Total	164 (50)					
		Each	82 (25)					
	Max. height difference	Between outdoor unit and each indoor units	49 (15)					
		Between indoor units	33 (10)					
	Additional charge		oz/ft (g/m)	0.22 (20)				
Operation range	Cooling		°F (°C)	14 to 122 (-10 to 50)				
	Heating			5 to 75 (-15 to 24)				

Type			Inverter, Heat pump
Model name			AOUH24KWAS3
Drain hose	Material		Low-density polyethylene
	Tip diameter	in (mm)	I.D.: Ø1/2 (Ø13.0), O.D.: Ø5/8 to Ø11/16 (Ø16.0 to Ø16.7)
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 (26.7°CDB)/67°FWB (19.4°CWB), and outdoor temperature of 95 °FDB (35°CDB)/75°FWB (23.9°CWB). Heating: Indoor temperature of 70°FDB (21.1°CDB)/60°FWB (15.6°CWB), and outdoor temperature of 47 °FDB (8.3°CDB)/43°FWB (6.1°CWB). *1: Heating (17°F): Indoor temperature of 70°FDB (21.1°CDB) /60°FWB (15.56°CWB), and outdoor temperature of 17°FDB (-8.33°CDB) /15°FWB (-9.44°CWB). *2: Heating (5°F): Indoor temperature of 70°FDB (21.1°CDB)/60°FWB (15.56°CWB), and outdoor temperature of 5°FDB (-15.0°CDB)/4°FWB (-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: <ul style="list-style-type: none"> The maximum value when operated within the operation range. The total current of indoor unit and outdoor unit. *4: Sound pressure level: <ul style="list-style-type: none"> Measured values in manufacturer's semi-anechoic chamber. Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here. 			

Type				Inverter, Heat pump				
Model name				AOUH36KWAS4				
Power supply				1Ø, 208/230 V~ 60 Hz				
Power supply intake				Outdoor unit				
Available voltage range				187—253 V				
Connectable indoor unit	Number	Min.	Btu/h	2				
		Max.		4				
	Total capacity range	Min.	Btu/h	25,000				
		Max.		46,000				
Standard combination of indoor unit				Wall mounted ASUH09KPAS × 4	Duct ADUH09KUAS × 4	Mixed		
Capacity	Cooling	Rated	kW	10.08				
			Btu/h	34,400				
		Min.—Max.	kW	3.22—11.14				
			Btu/h	11,000—38,000				
	Heating	Rated	kW	10.67				
			Btu/h	36,400				
		Min.—Max.	kW	3.22—12.31				
			Btu/h	11,000—42,000				
	Heating (17°F)*1	Rated	kW	6.92	7.15	7.03		
			Btu/h	23,600	24,400	24,000		
		Min.—Max.	kW	2.20—8.50	2.20—8.32	2.20—8.38		
			Btu/h	7,500—29,000	7,500—28,400	7,500—28,600		
	Heating (5°F)*2	Rated	kW	7.03	6.74	6.86		
			Btu/h	24,000	23,000	23,400		
		Min.—Max.	kW	1.79—7.03	1.79—6.74	1.79—6.86		
			Btu/h	6,100—24,000	6,100—23,000	6,100—23,400		
Input power	Cooling	Rated	kW	2.87	2.94	—		
		Max.		4.00	4.27	—		
	Heating	Rated		2.67	3.05	—		
		Max.		3.46	3.73	—		
	Heating (17°F)*1	Rated		2.23	2.71	—		
		Max.		3.27	3.38	—		
	Heating (5°F)*2	Rated		3.20	3.24	—		
		Max.		3.20	3.24	—		
Current	Cooling	Rated	A	12.8	13.2	13.0		
	Heating	Rated		11.8	13.7	12.7		
EER2	Cooling	Rated	Btu/hW	12.0	11.7	11.8		
SEER2	Cooling		Btu/hW	22.0	19.0	20.5		
COP2	Heating	Rated	kW/kW	4.00	3.50	3.74		
HSPF2	Heating		Btu/hW	10.0	9.0	9.5		
Power factor	Cooling	Rated	%	97.5	96.8	—		
	Heating	Rated		98.4	96.8	—		
Starting current			A	13.7				
Maximum operating current *3			A	20				
Fan	Airflow rate	Cooling	CFM (m³/h)	1,772 (3,010)				
		Heating		1,707 (2,900)				
	Type × Qty	Propeller × 1						
	Motor output		W	49				
Sound pressure level *4		Cooling	dB (A)	54				
		Heating		56				
Heat exchanger type		Dimensions (H × W × D)		in (mm)	Main 1: 33-1/16 × 34-3/8 × 11/16 (840 × 873 × 18.19) Main 2: 33-1/16 × 33-3/16 × 11/16 (840 × 843 × 18.19) Main 3: 33-1/16 × 30-7/8 × 11/16 (840 × 784 × 18.19)			
		Fin pitch		FPI	Main 1: 18 Main 2: 18 Main 3: 18			
		Rows × Stages			Main 1: 1 × 40 Main 2: 1 × 40 Main 3: 1 × 40			
		Pipe type			Copper tube			
		Fin type	Type (Material)			Aluminum		
			Surface treatment			Blue fin		
Compressor		Type		DC twin rotary				
		Motor output	W	1,450				
Refrigerant		Type		R32				
		Charge	lb (g)	2,500				
Refrigerant oil		Type		RmM68AF				
		Amount	in³ (cm³)	800				
Enclosure		Material		Steel sheet				
		Color		Beige				
Dimensions (H × W × D)		Net	in (mm)	Approximate color of Munsell 10YR 7.5/1.0				
		Gross		34-13/16 × 32-5/16 × 12-3/8 (884 × 820 × 315)				
Weight		Net	lb (kg)	41-5/8 × 40-7/16 × 17-1/2 (1,058 × 1,027 × 445)				
		Gross		128 (58) 148 (67)				
Connection pipe	Size × Qty	Liquid	in (mm)	Ø1/4 (Ø6.35) × 2 +				
		Gas		Ø1/4 (Ø6.35) × 2 Ø3/8 (Ø9.52) × 2 +				
				Ø1/2 (Ø12.70) × 2				
	Method			Flare				
	Pre-charge length (Total)		ft (m)	164 (50)				
	Min. length	Total		49 (15)				
		Each		16 (5)				
	Max. length	Total		230 (70)				
		Each		82 (25)				
	Max. height differ- ence			Between outdoor unit and each in- door units	49 (15)			
		Between indoor units	33 (10)					
Additional charge			oz/ft (g/m)	0.22 (20)				
Operation range		Cooling	°F (°C)	14 to 122 (-10 to 50)				
		Heating		5 to 75 (-15 to 24)				

Type			Inverter, Heat pump
Model name			AOUH36KWAS4
Drain hose	Material		Low-density polyethylene
	Tip diameter	in (mm)	I.D.: Ø1/2 (Ø13.0), O.D.: Ø5/8 to Ø11/16 (Ø16.0 to Ø16.7)
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 (26.7°CDB)/67°FWB (19.4°CWB), and outdoor temperature of 95 °FDB (35°CDB)/75°FWB (23.9°CWB). Heating: Indoor temperature of 70°FDB (21.1°CDB)/60°FWB (15.6°CWB), and outdoor temperature of 47 °FDB (8.3°CDB)/43°FWB (6.1°CWB). *1: Heating (17°F): Indoor temperature of 70°FDB (21.1°CDB) /60°FWB (15.56°CWB), and outdoor temperature of 17°FDB (-8.33°CDB) /15°FWB (-9.44°CWB). *2: Heating (5°F): Indoor temperature of 70°FDB (21.1°CDB)/60°FWB (15.56°CWB), and outdoor temperature of 5°FDB (-15.0°CDB)/4°FWB (-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: <ul style="list-style-type: none"> The maximum value when operated within the operation range. The total current of indoor unit and outdoor unit. *4: Sound pressure level: <ul style="list-style-type: none"> Measured values in manufacturer's semi-anechoic chamber. Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here. 			

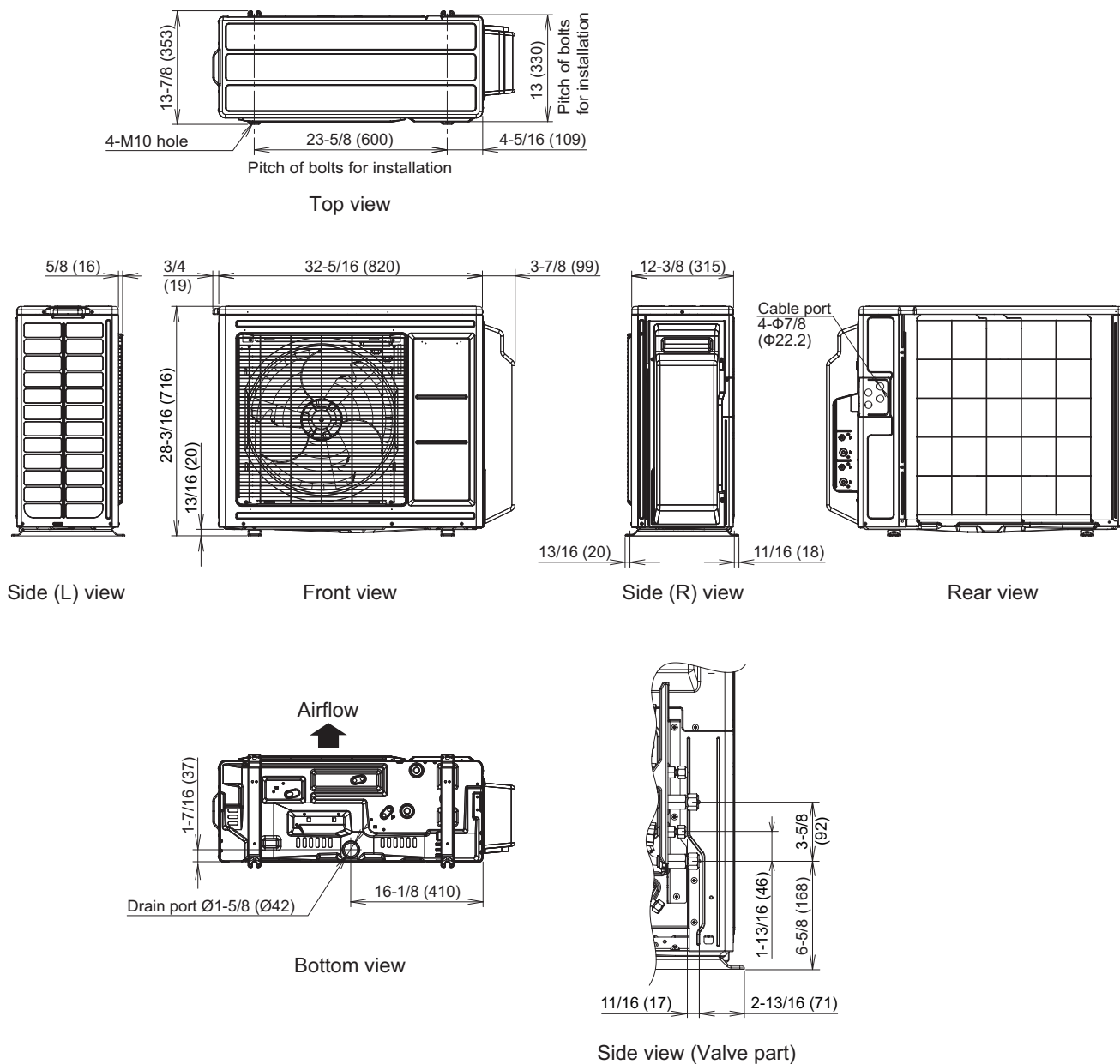
Type				Inverter, Heat pump				
Model name				AOUH45KWAS5				
Power supply				1Ø, 208/230 V~ 60 Hz				
Power supply intake				Outdoor unit				
Available voltage range				187—253 V				
Connectable indoor unit	Number	Min.	Btu/h	2				
		Max.		5				
	Total capacity range	Min.		34,000				
		Max.		58,000				
Standard combination of indoor unit				Wall mounted ASUH09KPAS × 5		Duct ADUH09KUAS × 5		Mixed
Capacity	Cooling	Rated	kW	12.60				
			Btu/h	43,000				
		Min.—Max.	kW	3.52—14.07				
			Btu/h	12,000—48,000				
	Heating	Rated	kW	14.07	13.48	13.77		
			Btu/h	48,000	46,000	47,000		
		Min.—Max.	kW	3.52—15.83	3.52—15.83	3.52—15.83		
			Btu/h	12,000—54,000	12,000—54,000	12,000—54,000		
	Heating (17°F)*1	Rated	kW	9.09	8.97	9.03		
			Btu/h	31,000	30,600	30,800		
		Min.—Max.	kW	2.43—12.02	2.43—11.87	2.43—11.87		
			Btu/h	8,300—41,000	8,300—40,500	8,300—40,500		
	Heating (5°F)*2	Rated	kW	10.55	10.43	10.49		
			Btu/h	36,000	35,600	35,800		
		Min.—Max.	kW	1.99— 10.55	1.99—10.43	1.99—10.49		
			Btu/h	6,800— 36,000	6,800—35,600	6,800—35,800		
Input power	Cooling	Rated	kW	3.58	3.68	—		
		Max.		4.57	4.95	—		
	Heating	Rated		3.52	3.74	—		
		Max.		4.12	4.63	—		
	Heating (17°F)*1	Rated		3.07	3.14	—		
		Max.		4.70	4.81	—		
	Heating (5°F)*2	Rated		4.93	4.88	—		
		Max.		4.93	4.88	—		
Current	Cooling	Rated	A	15.9	16.4	16.1		
	Heating	Rated		15.5	16.6	16.0		
EER2	Cooling	Rated	Btu/hW	12.0	11.7	11.8		
SEER2	Cooling		Btu/hW	22.0	19.0	20.5		
COP2	Heating	Rated	kW/kW	4.0	3.6	3.8		
HSPF2	Heating		Btu/hW	10.0	9.0	9.5		
Power factor	Cooling	Rated	%	97.9	97.6	—		
	Heating	Rated		98.7	98.0	—		
Starting current			A	16.6				
Maximum operating current *3			A	25				
Fan	Airflow rate	Cooling	CFM (m³/h)	2,378 (4,040)				
		Heating		2,490 (4,230)				
	Type × Qty	Propeller fan × 1						
	Motor output		W	120				
Sound pressure level *4		Cooling	dB (A)	54				
		Heating		56				
Heat exchanger type		Dimensions (H × W × D)		in (mm)	Main 1: 38-1/16 × 35-5/8 × 11/16 (966 × 905 × 18.19) Main 2: 38-1/16 × 35-5/8 × 11/16 (966 × 905 × 18.19) Main 3: 38-1/16 × 21-3/8 × 11/16 (966 × 543 × 18.19)			
		Fin pitch		FPI	Main 1: 18 Main 2: 18 Main 3: 18			
		Rows × Stages			Main 1: 1 × 46 Main 2: 1 × 46 Main 3: 1 × 46			
		Pipe type			Copper tube			
		Fin type	Type (Material)		Aluminum			
			Surface treatment		Blue fin			
Compressor		Type	DC twin rotary					
		Motor output	W	2,550				
Refrigerant		Type	R32					
		Charge	lb (g)	3,000				
Refrigerant oil		Type	RmM68AF					
		Amount	in³ (cm³)	70.2 (1,150)				
Enclosure		Material	Steel sheet					
		Color	Beige Approximate color of Munsell 10YR 7.5/1.0					
Dimensions (H × W × D)		Net	in (mm)	39-5/16 × 37 × 12-5/8 (998 × 940 × 320)				
		Gross		46-5/16 × 43-3/16 × 17-1/2 (1,176 × 1,097 × 445)				
Weight		Net	lb (kg)	163 (74)				
		Gross		185 (84)				
Connection pipe	Size × Qty	Liquid	in (mm)	Ø1/4 (Ø6.35) × 3 + Ø1/4 (Ø6.35) × 2 Ø3/8 (Ø9.52) × 3 + Ø1/2 (Ø12.70) × 2				
		Gas						
	Method		ft (m)	Flare				
	Pre-charge length (Total)			164 (50)				
	Min. length	Total		49 (15)				
		Each		16 (5)				
	Max. length	Total		262 (80)				
		Each		82 (25)				
	Max. height differ- ence	Between outdoor unit and each in- door units		49 (15)				
		Between indoor units		33 (10)				
Additional charge			oz/ft (g/m)	0.22 (20)				
Operation range		Cooling	°F (°C)	14 to 122 (-10 to 50)				
		Heating		5 to 75 (-15 to 24)				

Type			Inverter, Heat pump
Model name			AOUH45KWAS5
Drain hose	Material		Low-density polyethylene
	Tip diameter	in (mm)	I.D.: Ø1/2 (Ø13.0), O.D.: Ø5/8 to Ø11/16 (Ø16.0 to Ø16.7)
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 (26.7°CDB)/67°FWB (19.4°CWB), and outdoor temperature of 95 °FDB (35°CDB)/75°FWB (23.9°CWB). Heating: Indoor temperature of 70°FDB (21.1°CDB)/60°FWB (15.6°CWB), and outdoor temperature of 47 °FDB (8.3°CDB)/43°FWB (6.1°CWB). *1: Heating (17°F): Indoor temperature of 70°FDB (21.1°CDB) /60°FWB (15.56°CWB), and outdoor temperature of 17°FDB (-8.33°CDB) /15°FWB (-9.44°CWB). *2: Heating (5°F): Indoor temperature of 70°FDB (21.1°CDB)/60°FWB (15.56°CWB), and outdoor temperature of 5°FDB (-15.0°CDB)/4°FWB (-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: <ul style="list-style-type: none"> The maximum value when operated within the operation range. The total current of indoor unit and outdoor unit. *4: Sound pressure level: <ul style="list-style-type: none"> Measured values in manufacturer's semi-anechoic chamber. Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here. 			

3. Dimensions

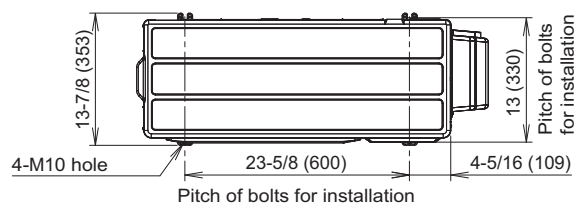
3-1. Model: AOUH18KVAS2

Unit: in (mm)

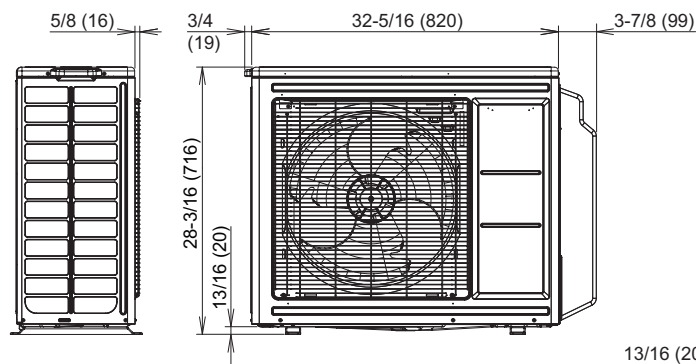


3-2. Model: AOUEH24KWS3

Unit: in (mm)

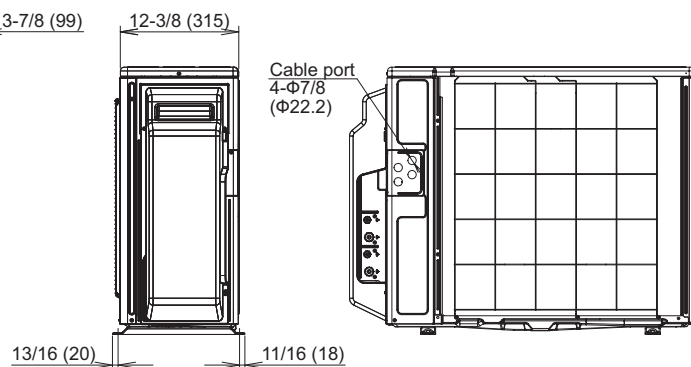


Top view



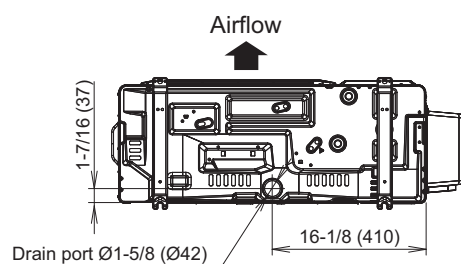
Side (L) view

Front view

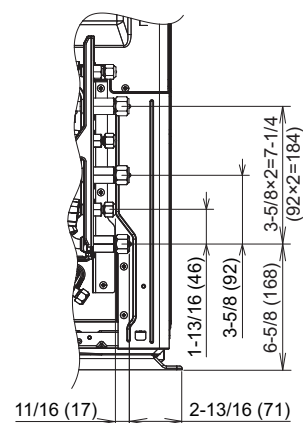


Side (R) view

Rear view



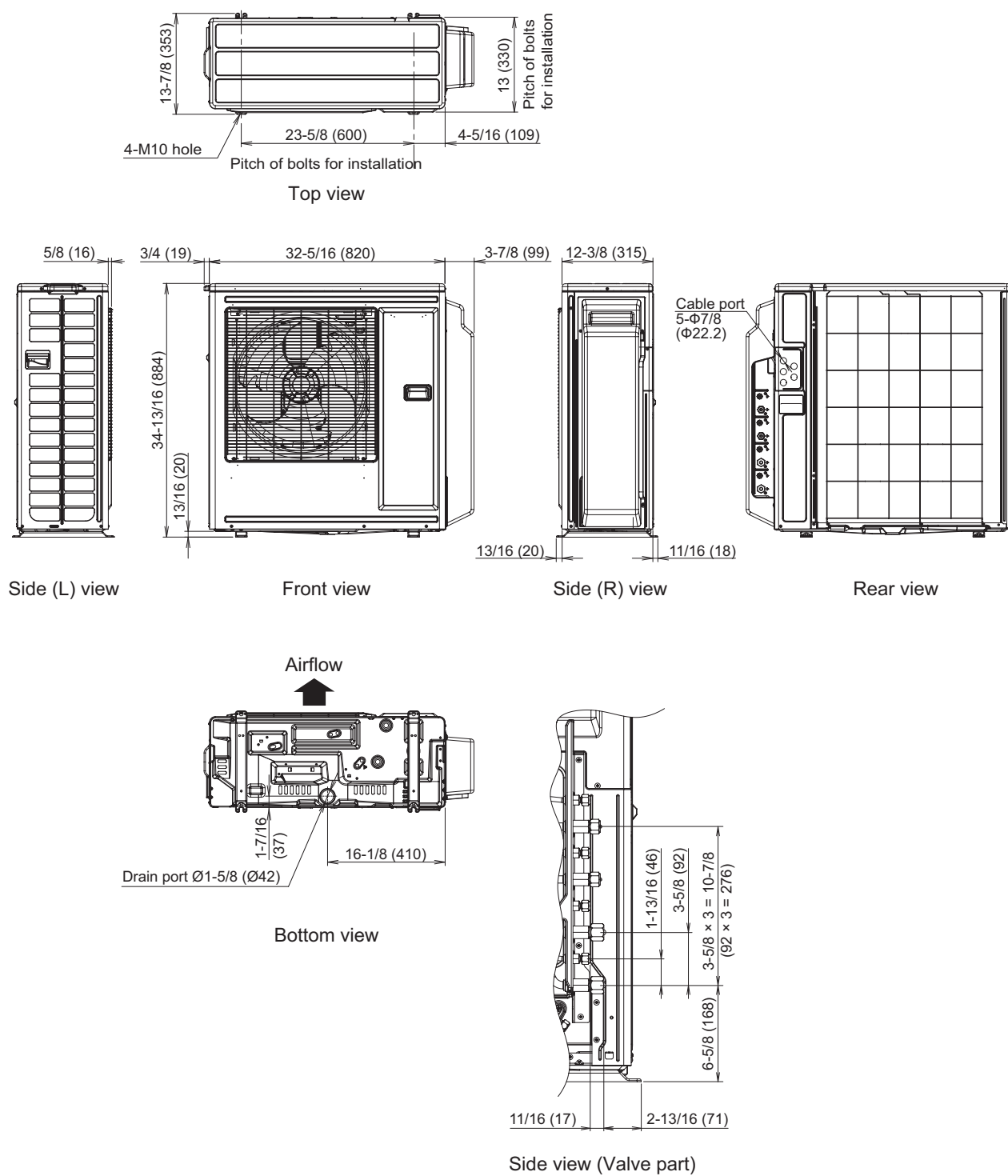
Bottom view



Side view (Valve part)

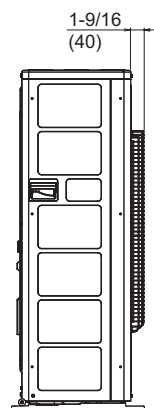
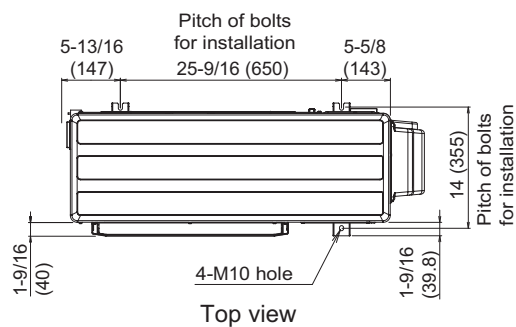
3-3. Model: AOUEH36KAS4

Unit: in (mm)

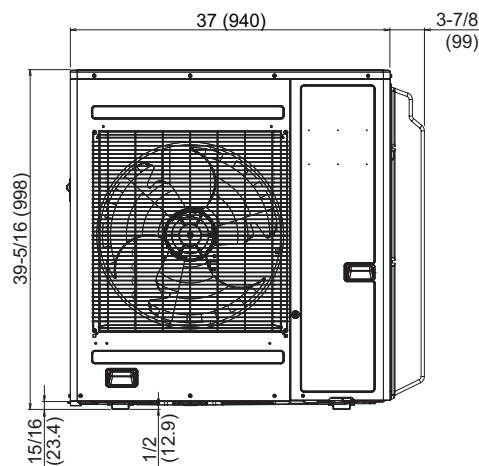


3-4. Model: AOUE45KWA5

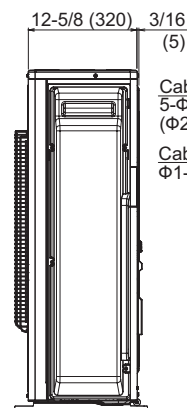
Unit: in (mm)



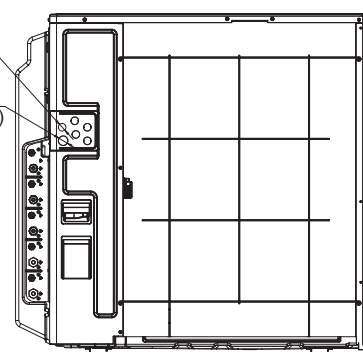
Side (L) view



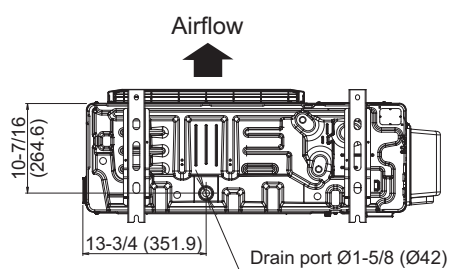
Front view



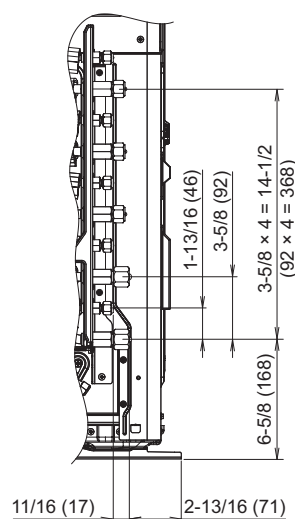
Side (R) view



Rear view



Bottom view



Side view (Valve part)

2. TECHNICAL DATA AND PARTS LIST

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2. TECHNICAL DATA AND PARTS LIST

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1. Precautions

When you start servicing, pay attention to the following points. For detailed precautions, refer to the installation manual of the products.

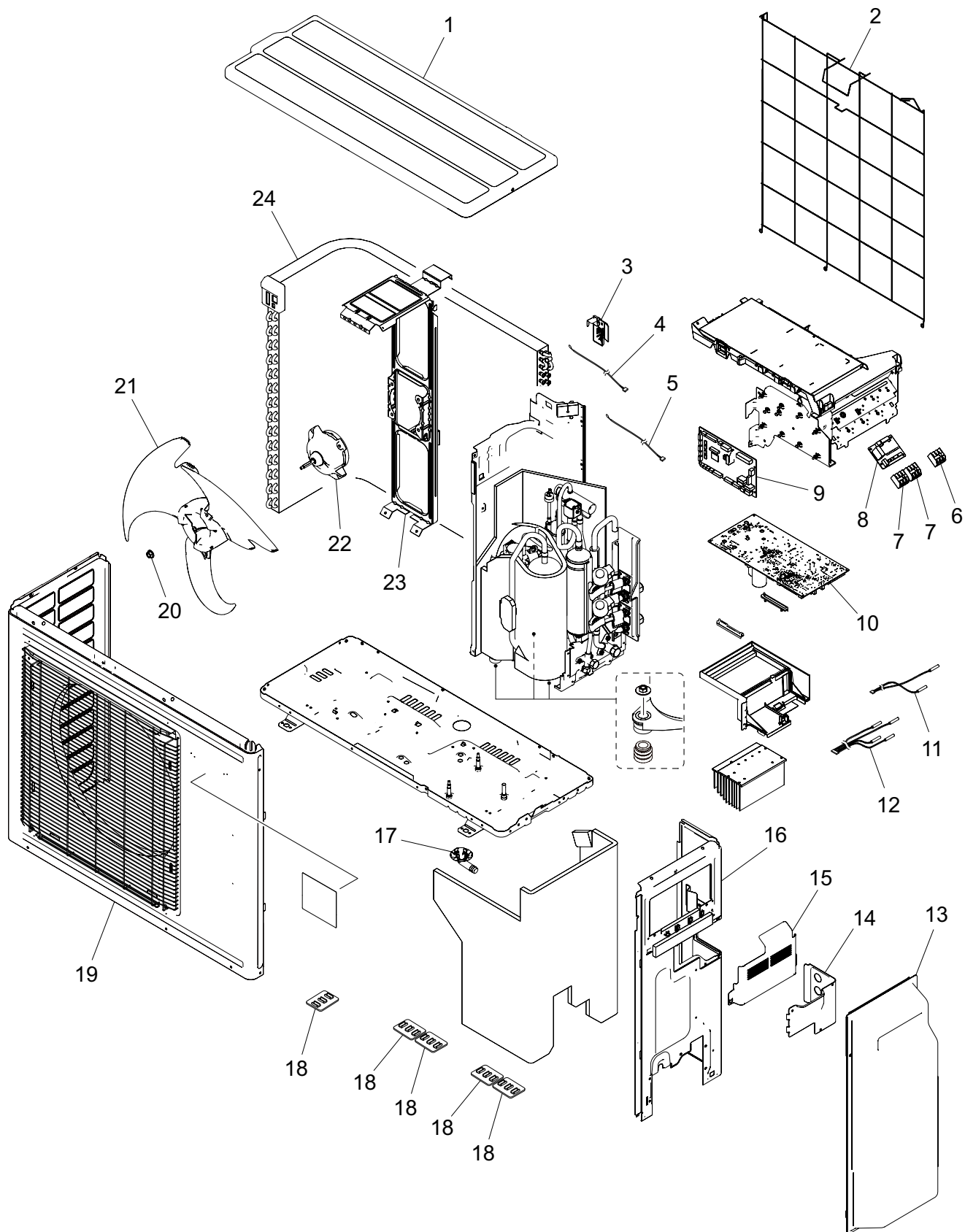
CAUTION

-
- Service personnel
 - Any person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorizes their competence to handle refrigerants safely in accordance with an industry recognized assessment specification.
 - Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants.
 - Servicing shall be performed only as recommended by the manufacturer.
 - Work
 - Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimized. When repairing the refrigerant system, refer to the precautions written in the installation manual of the products before you start servicing.
 - Work shall be undertaken under a controlled procedure so as to minimize the risk of a flammable gas or vapor being present while the work is being performed.
 - All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out.
 - Work in confined spaces shall be avoided.
 - The area around the workspace shall be sectioned off.
 - Ensure that the conditions within the area have been made safe by control of flammable material.
 - Electric shock may occur. After turning off the power, always wait 5 minutes before touching electrical components.
 - Do not touch the fins of the heat exchanger. Touching the heat exchanger fins could result in damage to the fins or personal injury such as skin rupture.
 - Do not place any other electrical products or household belongings under the product.
 - Condensation dripping from the product might get them wet, and may cause damage or malfunction to the property.
 - Checking for presence of refrigerant
 - The area shall be checked with an appropriate refrigerant leak detector prior to and during work, to ensure the technician is aware of potentially flammable atmospheres.
 - Ensure that the leak detector being used is suitable for use with flammable refrigerants, i.e. non-sparking, adequately sealed or intrinsically safe.
-
- Service parts information and design are subject to change without notice for product improvement.
 - For the latest information of the service parts, refer to our Service Portal.
<https://fujitsu-general.force.com/portal/>
 - Precise figure of the service parts listed in this manual may differ from the actual service parts.

2. Outdoor unit parts list

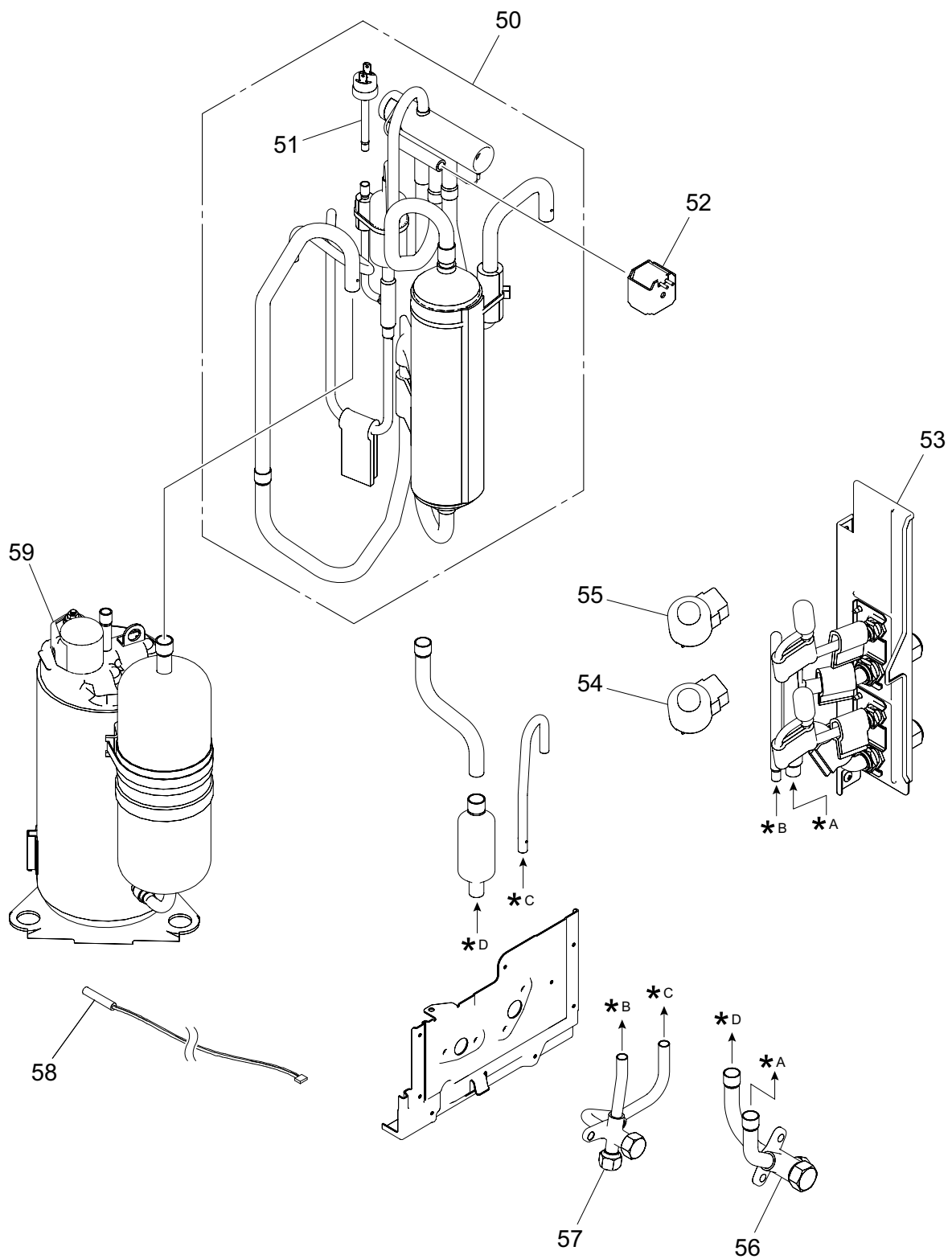
2-1. Model: AOUH18KWAS2

■ Exterior parts and Chassis



Item no.	Part no.	Part name
1	9322556073	Top panel assy
2	9334053027	Protective net assy
3	9322327000	Thermistor holder
4	9900565169	Thermistor (Outdoor temp.)
5	9900984045	Thermistor (Heat exchanger temp.)
6	9900369095	Terminal block 3P (Power supply)
7	9900369071	Terminal block 3P (Unit A and Unit B)
8	9711609045	Indicator PCB
9	9711434821	Main PCB
10	9712996151	Inverter PCB
11	9900727048	Thermistor assy
12	9901025020	Thermistor assy AB
13	9322570109	Switch cover assy
14	9362144001	Conduit plate
15	9322554062	Terminal cover assy
16	9322552372	Cabinet right assy
17	9322144003	Drain pipe
18	9383720000	Drain cap assy
19	9322555588	Front panel assy
20	0700103070	Nut
21	9322150004	Propeller fan
22	9603601003	DC fan motor
23	9322553034	Motor bracket assy
24	9323834590	Heat exchanger unit
—	9712817005	Wire with connector (P70 on Main PCB—Terminal block 3P [Unit A and Unit B])
—	9711841001	Wire with connector (P100 on Main PCB—P101 on Inverter PCB)
—	9711840004	Wire with connector (P130 on Main PCB—P132 on Indicator PCB)
—	9711839008	Wire with connector (P131 on Main PCB—P133 on Indicator PCB)
—	9711203083	Wire with connector (P660 on Main PCB—P662 on Inverter PCB)
—	9710542015	Wire assy (P20 on Inverter PCB—Pressure switch)
—	9704758026	Wire with terminal (W100 on Inverter PCB—L1 on Terminal block 3P [Power supply])
—	9704758033	Wire with terminal (W101 on Inverter PCB—L2 on Terminal block 3P [Power supply])

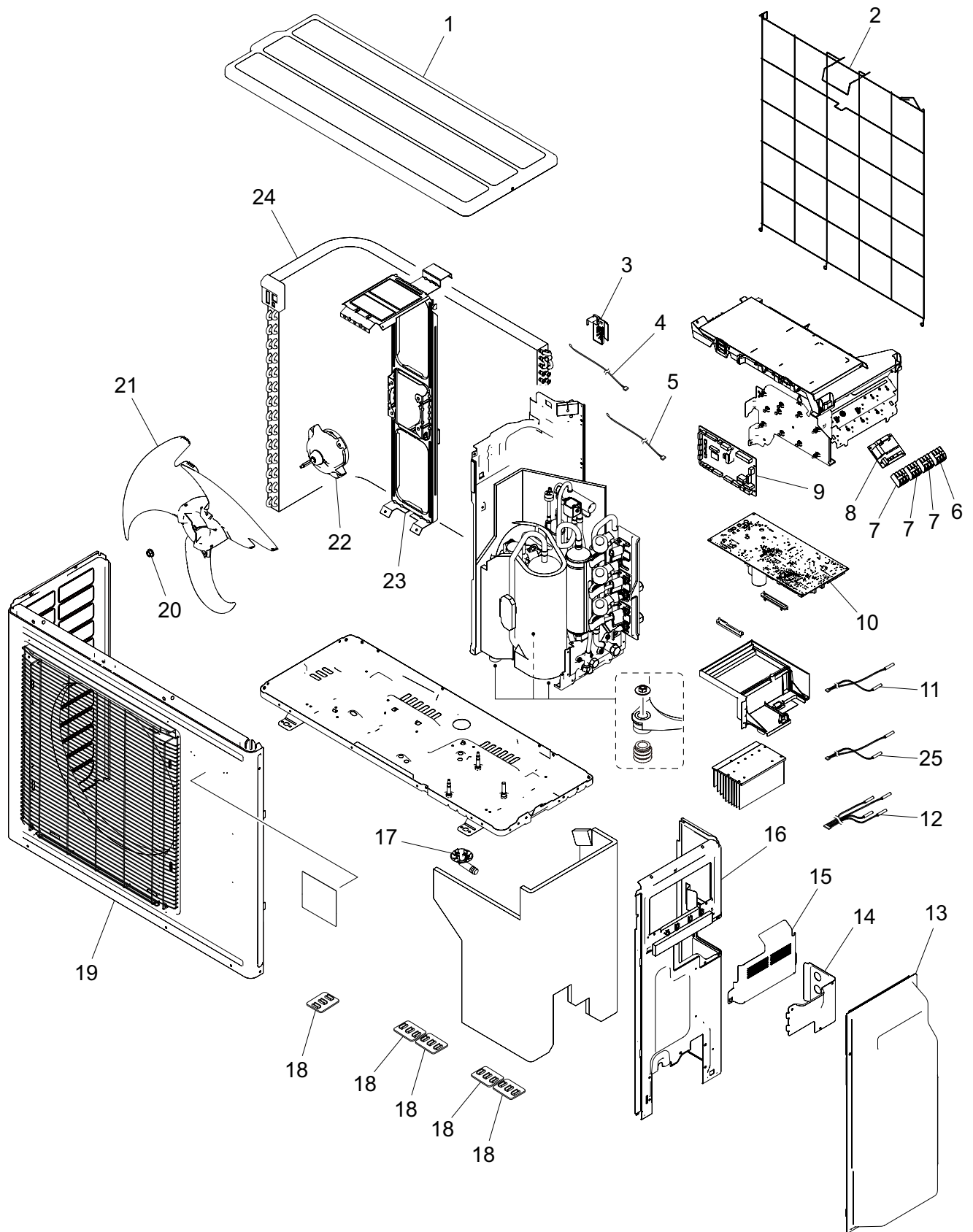
■ Compressor and pipe unit



Item no.	Part no.	Part name
50	9384894014	4-way valve assy
51	9900186029	Pressure switch
52	9970194016	Solenoid
53	9384866080	Valve unit sub assy
54	9970186066	Expansion valve coil (A)
55	9970187049	Expansion valve coil (B)
56	9322477040	3-way valve assy
57	9381055029	3-way valve assy
58	9900985066	Thermistor (Compressor temp.)
59	9810520005	Compressor

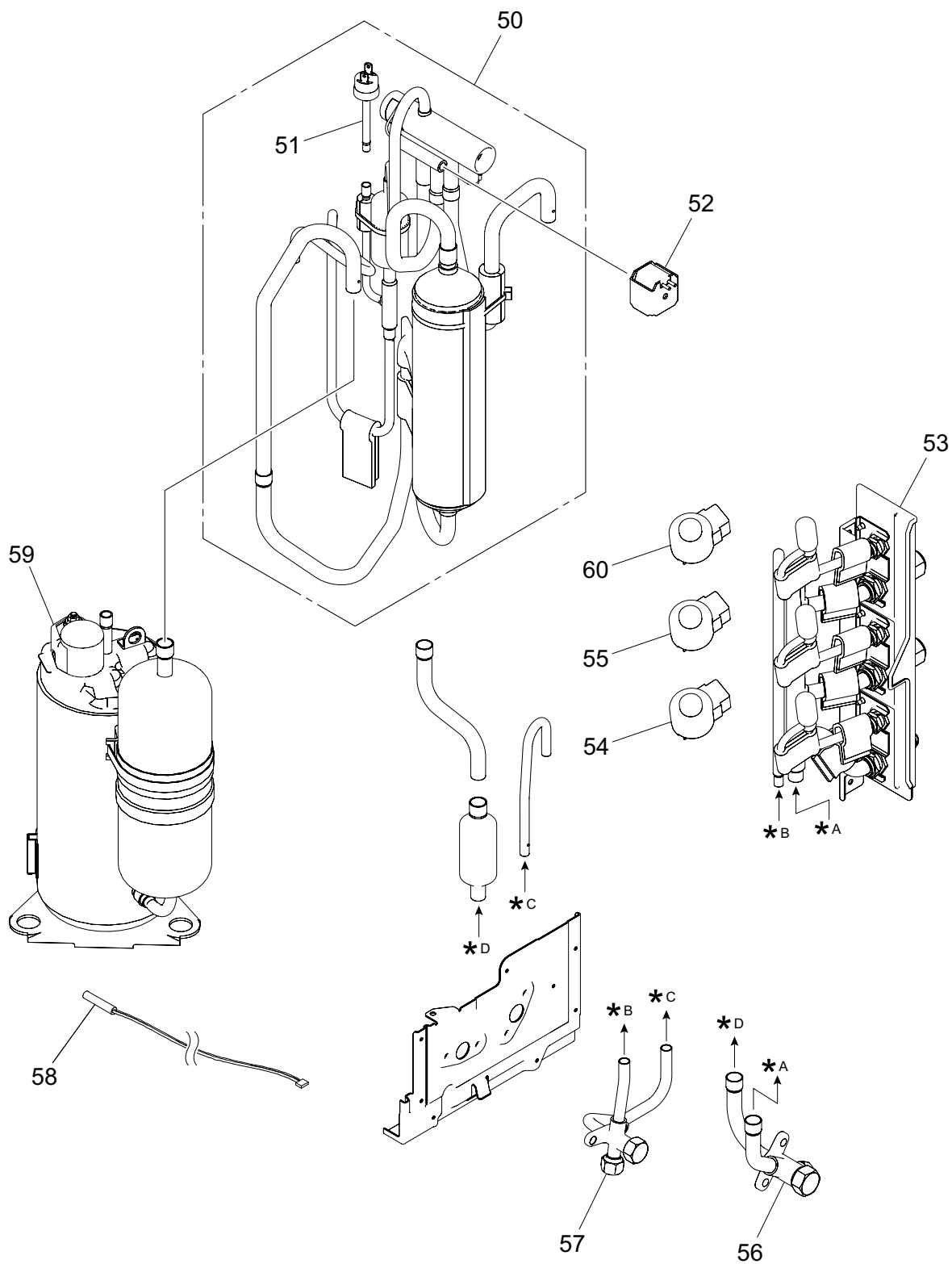
2-2. Model: AOUEH24KWS3

■ Exterior parts and Chassis



Item no.	Part no.	Part name
1	9322556073	Top panel assy
2	9334053027	Protective net assy
3	9322327000	Thermistor holder
4	9900565169	Thermistor (Outdoor temp.)
5	9900984045	Thermistor (Heat exchanger temp.)
6	9900369095	Terminal block 3P (Power supply)
7	9900369071	Terminal block 3P (Unit A, Unit B, and Unit C)
8	9711609045	Indicator PCB
9	9711434814	Main PCB
10	9712996151	Inverter PCB
11	9900727048	Thermistor assy
12	9901025020	Thermistor assy AB
13	9322570109	Switch cover assy
14	9362144001	Conduit plate
15	9322554062	Terminal cover assy
16	9322552372	Cabinet right assy
17	9322144003	Drain pipe
18	9383720000	Drain cap assy
19	9322555588	Front panel assy
20	0700103070	Nut
21	9322150004	Propeller fan
22	9603601003	DC fan motor
23	9322553034	Motor bracket assy
24	9323834590	Heat exchanger unit
25	9901093012	Thermistor assy C
—	9711747006	Wire with connector (P70 on Main PCB—Terminal block 3P [Unit A to C])
—	9711841001	Wire with connector (P100 on Main PCB—P101 on Inverter PCB)
—	9711840004	Wire with connector (P130 on Main PCB—P132 on Indicator PCB)
—	9711839008	Wire with connector (P131 on Main PCB—P133 on Indicator PCB)
—	9711203083	Wire with connector (P660 on Main PCB—P662 on Inverter PCB)
—	9710542015	Wire assy (P20 on Inverter PCB—Pressure switch)
—	9707310016	Wire with terminal (W100 on Inverter PCB—L1 on Terminal block 3P [Power supply])
—	9707310023	Wire with terminal (W101 on Inverter PCB—L2 on Terminal block 3P [Power supply])

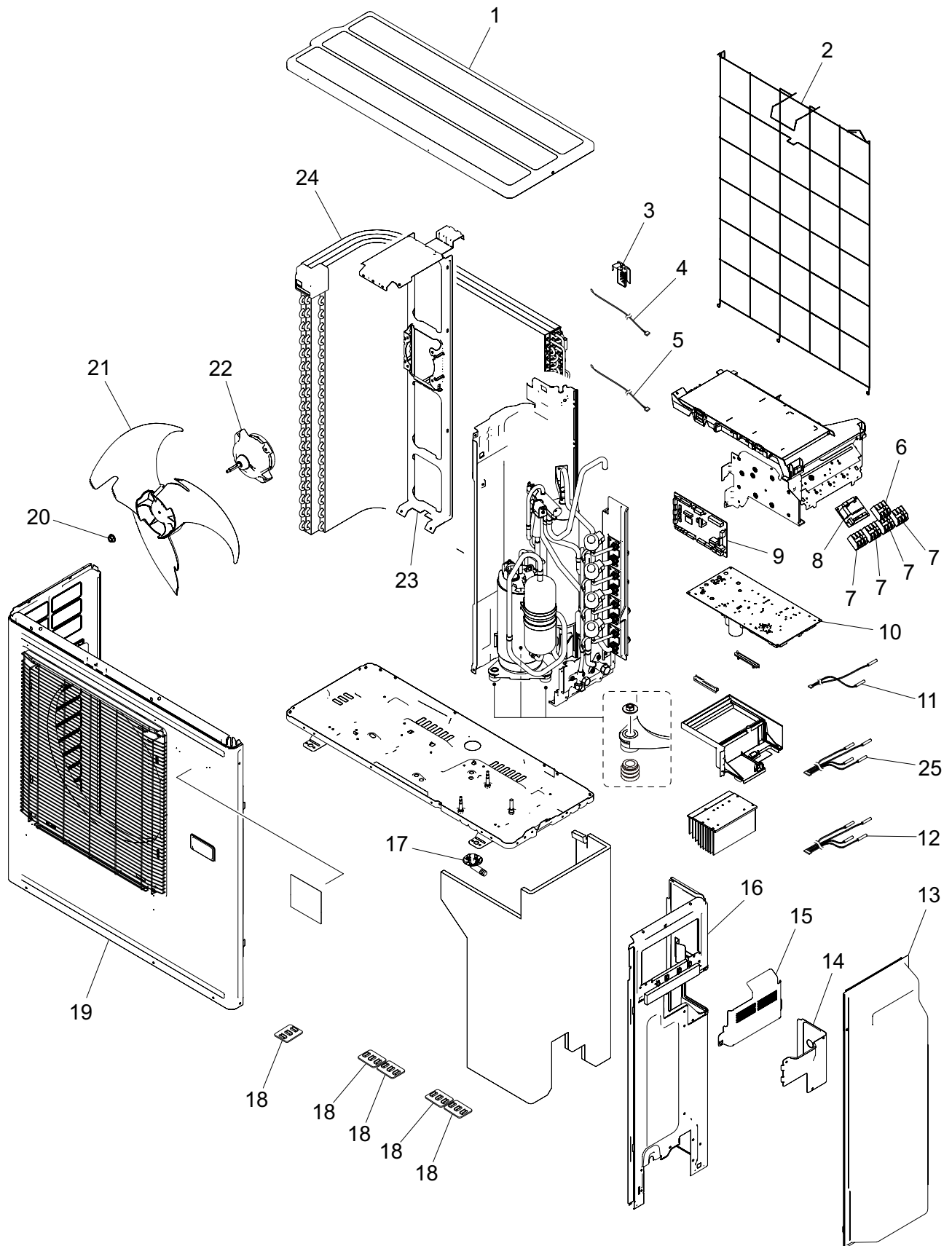
Compressor and pipe unit



Item no.	Part no.	Part name
50	9384894014	4-way valve assy
51	9900186029	Pressure switch
52	9970194016	Solenoid
53	9384866004	Valve unit sub assy
54	9970186066	Expansion valve coil (A)
55	9970187049	Expansion valve coil (B)
56	9322477040	3-way valve assy
57	9381055029	3-way valve assy
58	9900985066	Thermistor (Compressor temp.)
59	9810520005	Compressor
60	9970186073	Expansion valve coil (C)

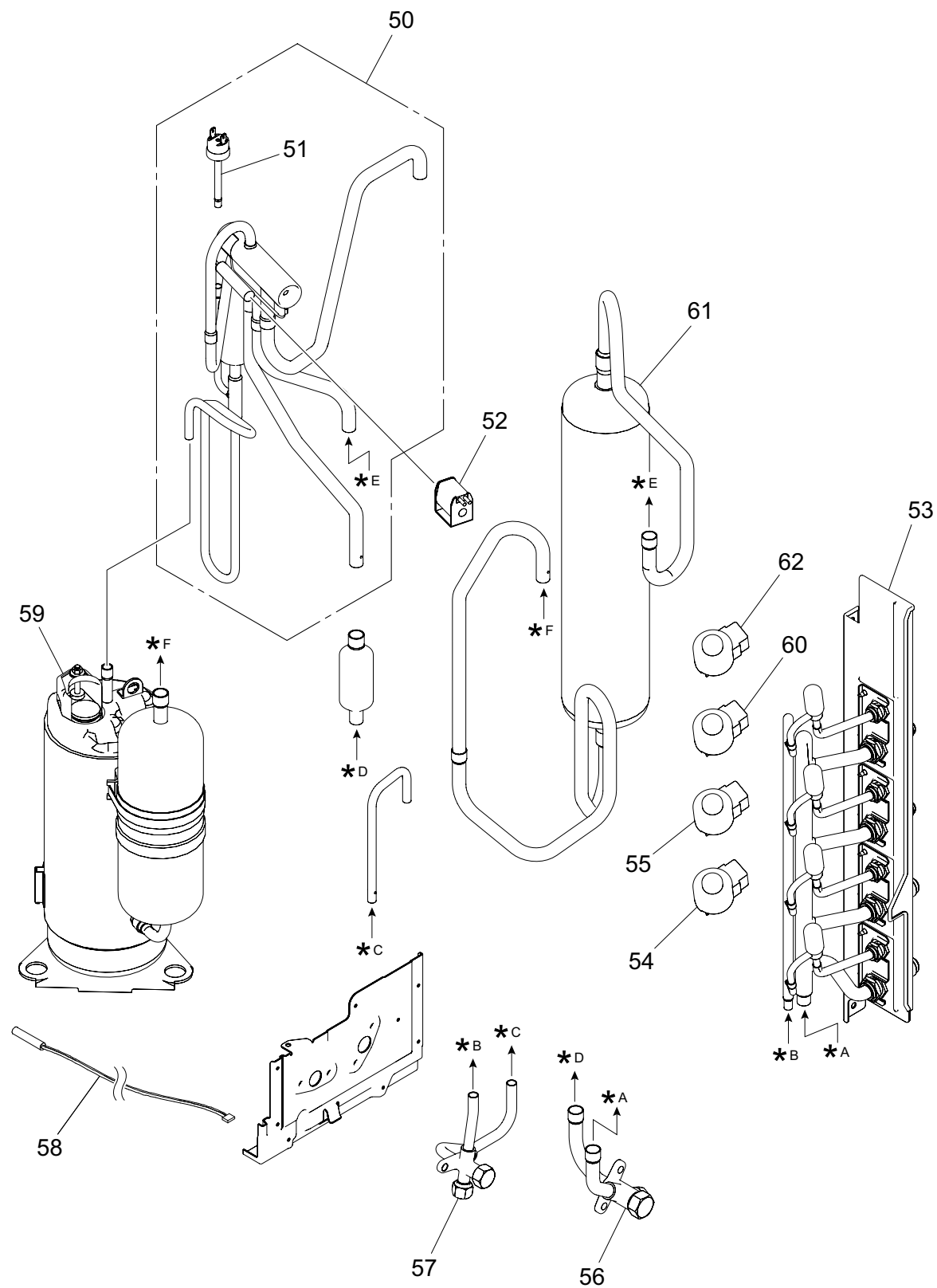
2-3. Model: AOUEH36KAS4

■ Exterior parts and Chassis



Item no.	Part no.	Part name
1	9322556073	Top panel assy
2	9322811080	Protective net assy
3	9322327000	Thermistor holder
4	9900565169	Thermistor (Outdoor temp.)
5	9901054051	Thermistor (Heat exchanger temp.)
6	9900369095	Terminal block 3P (Power supply)
7	9900369071	Terminal block 3P (Unit A, Unit B, Unit C, and Unit D)
8	9711609045	Indicator PCB
9	9711434791	Main PCB
10	9712996144	Inverter PCB
11	9900935108	Thermistor assy
12	9901025020	Thermistor assy AB
13	9322570116	Switch cover assy
14	9362144018	Conduit plate
15	9322554062	Terminal cover assy
16	9322552389	Cabinet right assy
17	9322144003	Drain pipe
18	9383720000	Drain cap assy
19	9322555595	Front panel assy
20	0700103070	Nut
21	9322150004	Propeller fan
22	9603601003	DC fan motor
23	9322553188	Motor bracket assy
24	9362146005	Heat exchanger unit
25	9901093029	Thermistor assy CD
—	9711746009	Wire with connector (P70 on Main PCB—Terminal block 3P [Unit A to D])
—	9711841001	Wire with connector (P100 on Main PCB—P101 on Inverter PCB)
—	9711840004	Wire with connector (P130 on Main PCB—P132 on Indicator PCB)
—	9711839008	Wire with connector (P131 on Main PCB—P133 on Indicator PCB)
—	9711203083	Wire with connector (P660 on Main PCB—P662 on Inverter PCB)
—	9710542022	Wire assy (P20 on Inverter PCB—Pressure switch)
—	9710458002	Wire with terminal (W100 on Inverter PCB—L1 on Terminal block 3P [Power supply])
—	9710458019	Wire with terminal (W101 on Inverter PCB—L2 on Terminal block 3P [Power supply])

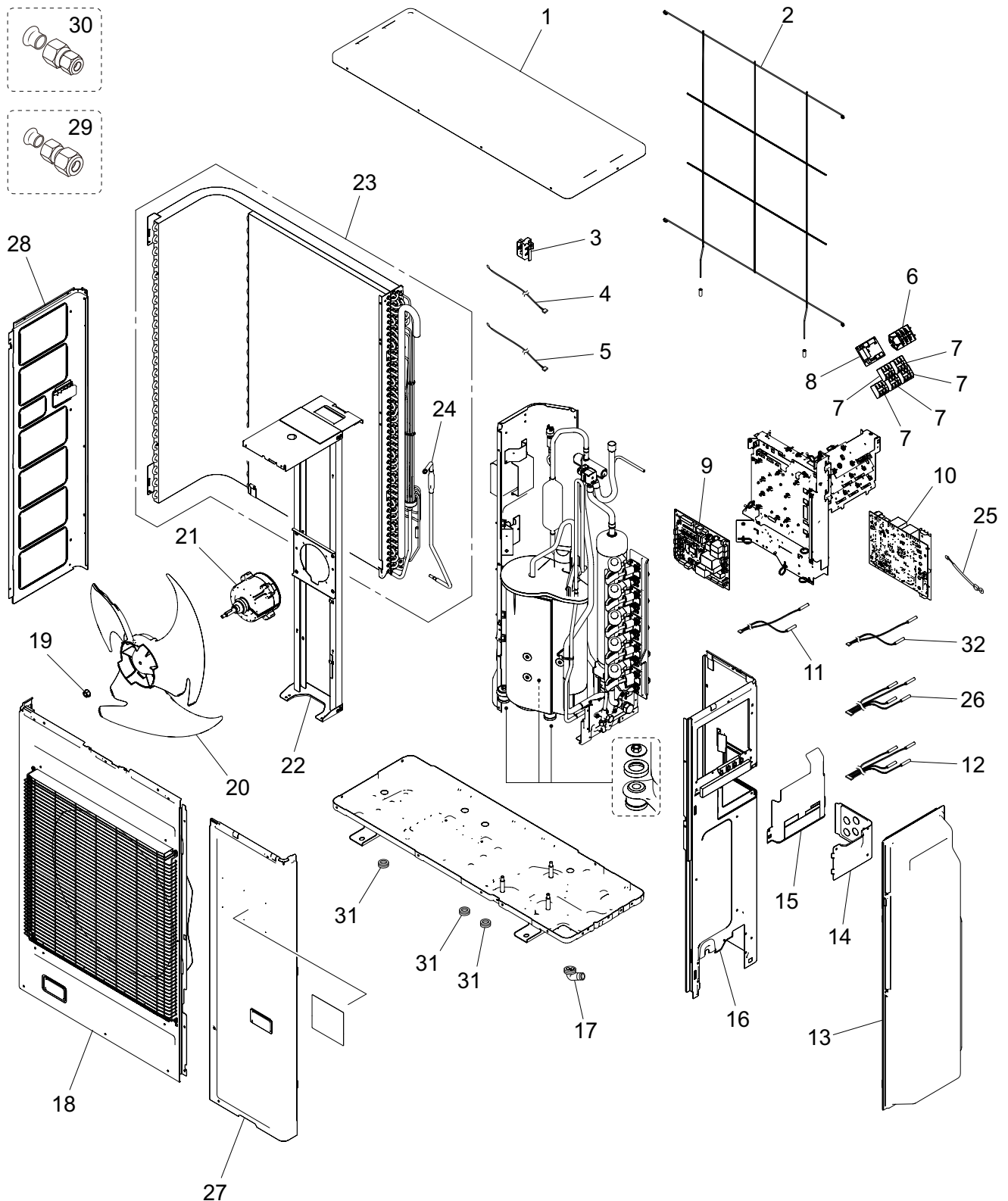
Compressor and pipe unit



Item no.	Part no.	Part name
50	9384970008	4-way valve assy
51	9900186029	Pressure switch
52	9970194016	Solenoid
53	9384866028	Valve unit sub assy
54	9970186066	Expansion valve coil (A)
55	9970187049	Expansion valve coil (B)
56	9322477040	3-way valve assy
57	9381055029	3-way valve assy
58	9900985035	Thermistor (Compressor temp.)
59	9810679000	Compressor
60	9970186073	Expansion valve coil (C)
61	9379551014	Accumulator sub assy
62	9970187056	Expansion valve coil (D)

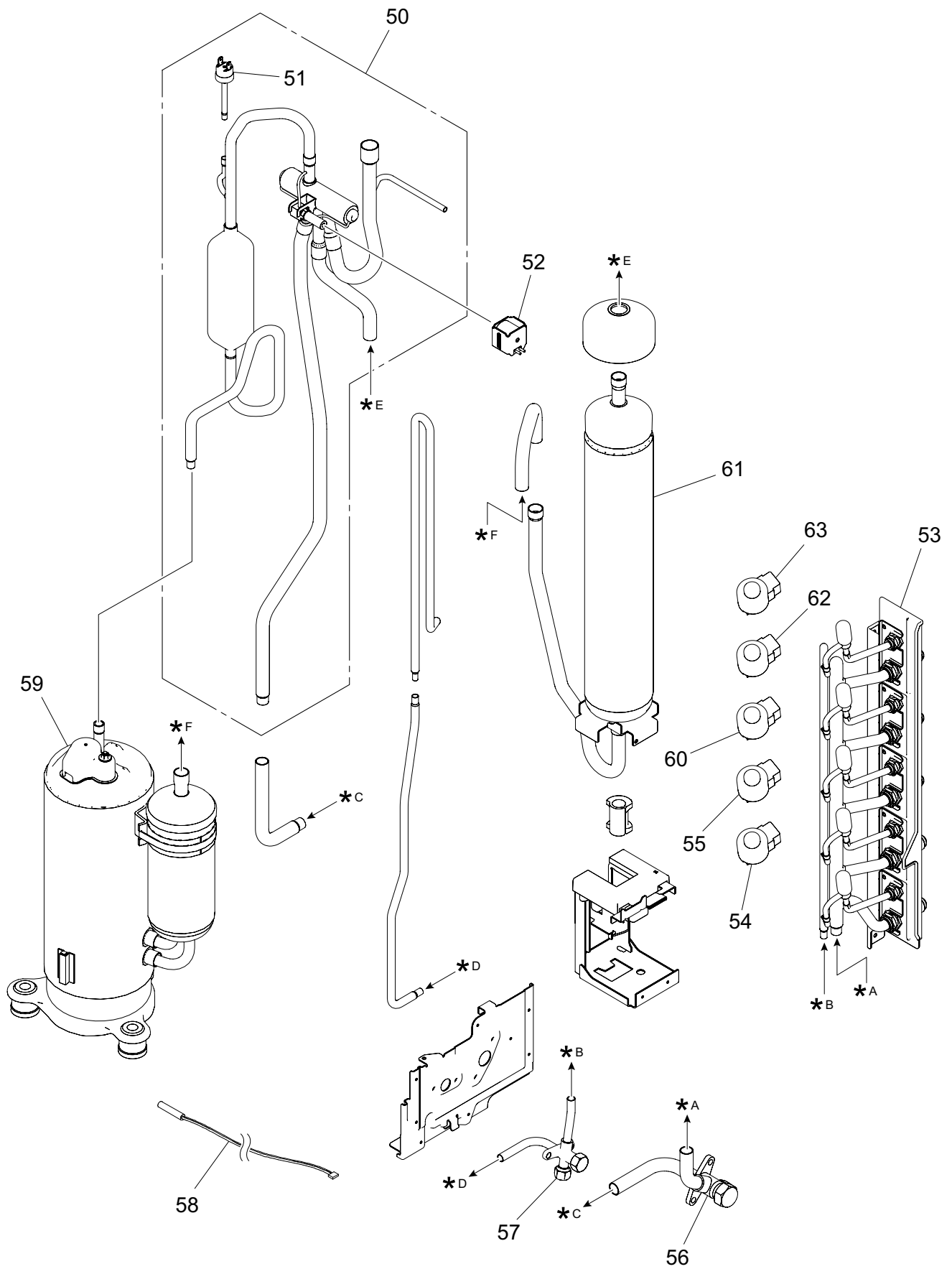
2-4. Model: AOUE45KWA5

■ Exterior parts and Chassis



Item no.	Part no.	Part name
1	9383880001	Top panel sub assy
2	9381013005	Protective net (Rear)
3	9383607004	Thermistor holder
4	9900565152	Thermistor (Outdoor temp.)
5	9901054044	Thermistor (Heat exchanger temp.)
6	9901053023	Terminal block 3P (Power supply)
7	9900369071	Terminal block 3P (Unit A, Unit B, Unit C, Unit D, and Unit E)
8	9711609045	Indicator PCB
9	9711434753	Main PCB
10	9712996137	Inverter PCB
11	9900935092	Thermistor assy
12	9901025020	Thermistor assy AB
13	9322570093	Switch cover assy
14	9362144025	Conduit plate
15	9322554055	Terminal cover assy
16	9383874062	Right panel sub assy
17	9303029015	Drain assy
18	9383863073	Front panel assy
19	0700103063	Nut
20	9383336003	Propeller fan
21	9603733018	DC fan motor
22	9383862014	Motor bracket assy
23	9374420605	Condenser sub assy
24	9374421220	Strainer sub assy
25	9901031014	Thermistor (Heat sink temp.)
26	9901093029	Thermistor assy CD
27	9383876097	Service panel sub assy
28	9383882012	Left panel sub assy
29	9379963022	Adapter K assy
30	9379681001	Adapter H
31	313166024302	Drain cap
32	9901094019	Thermistor assy E
—	9711745019	Wire with connector (P70 on Main PCB—Terminal block 3P [Unit A to E])
—	9712708006	Wire with terminal (P102 on Main PCB—L on Terminal block 3P [Power supply])
—	9712708013	Wire with terminal (P103 on Main PCB—N on Terminal block 3P [Power supply])
—	9712709003	Wire with terminal (P106 on Main PCB—W200 on Inverter PCB)
—	9712709010	Wire with terminal (P107 on Main PCB—W201 on Inverter PCB)
—	9711199003	Wire with terminal (P109 on Main PCB—GND)
—	9711840011	Wire with connector (P130 on Main PCB—P132 on Indicator PCB)
—	9711839015	Wire with connector (P131 on Main PCB—P133 on Indicator PCB)
—	9712265011	Wire with connector (P350 on Main PCB—P351 on Inverter PCB)
—	9711203038	Wire with connector (P660 on Main PCB—P662 on Inverter PCB)
—	9711212009	Wire with connector (P650 on Inverter PCB—DC fan motor)
—	9712120037	Wire with terminal (GND on Terminal block 3P [Power supply]—GND)





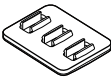
Compressor and pipe unit

TECHNICAL DATA
AND PARTS LISTTECHNICAL DATA
AND PARTS LIST





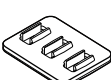
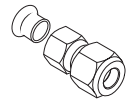
Item no.	Part no.	Part name
50	9374425808	4-way valve assy
51	9900186029	Pressure switch
52	9970194016	Solenoid
53	9384866127	Valve unit sub assy
54	9970186066	Expansion valve coil (A)
55	9970187049	Expansion valve coil (B)
56	9315414083	3-way valve assy
57	9381055043	3-way valve assy
58	9900985028	Thermistor (Compressor temp.)
59	9810622006	Compressor
60	9970186073	Expansion valve coil (C)
61	9375250287	Accumulator assy
62	9970187056	Expansion valve coil (D)
63	9970186080	Expansion valve coil (E)
—	9711206053	Wire with terminal (P400, P401, P402 on Inverter PCB—Compressor)
—	9712264014	Wire with connector (P770 on Inverter PCB—Pressure switch)
—	9711214003	Wire with connector (Wire with connector—Pressure switch)
—	9712711006	Wire with terminal (1 on each Terminal block 3P [Unit A to E])
—	9712711013	Wire with terminal (2 on each Terminal block 3P [Unit A to E])

3. Accessories





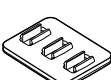
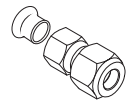
3-1. Model: AOUH18KWAS2

Part name	Exterior	Qty	Part name	Exterior	Qty
Installation manual		1	Cable tie		4
Drain pipe		1	Protection label		1
Drain cap		5			




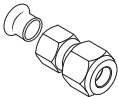

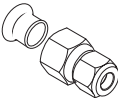

3-2. Model: AOUH24KWAS3

Part name	Exterior	Qty	Part name	Exterior	Qty
Installation manual		1	Cable tie		4
Drain pipe		1	Protection label		1
Drain cap		5	Adapter K 1/2 in (12.70 mm) to 3/8 in (9.52 mm)		1

3-3. Model: AOUH36KWAS4

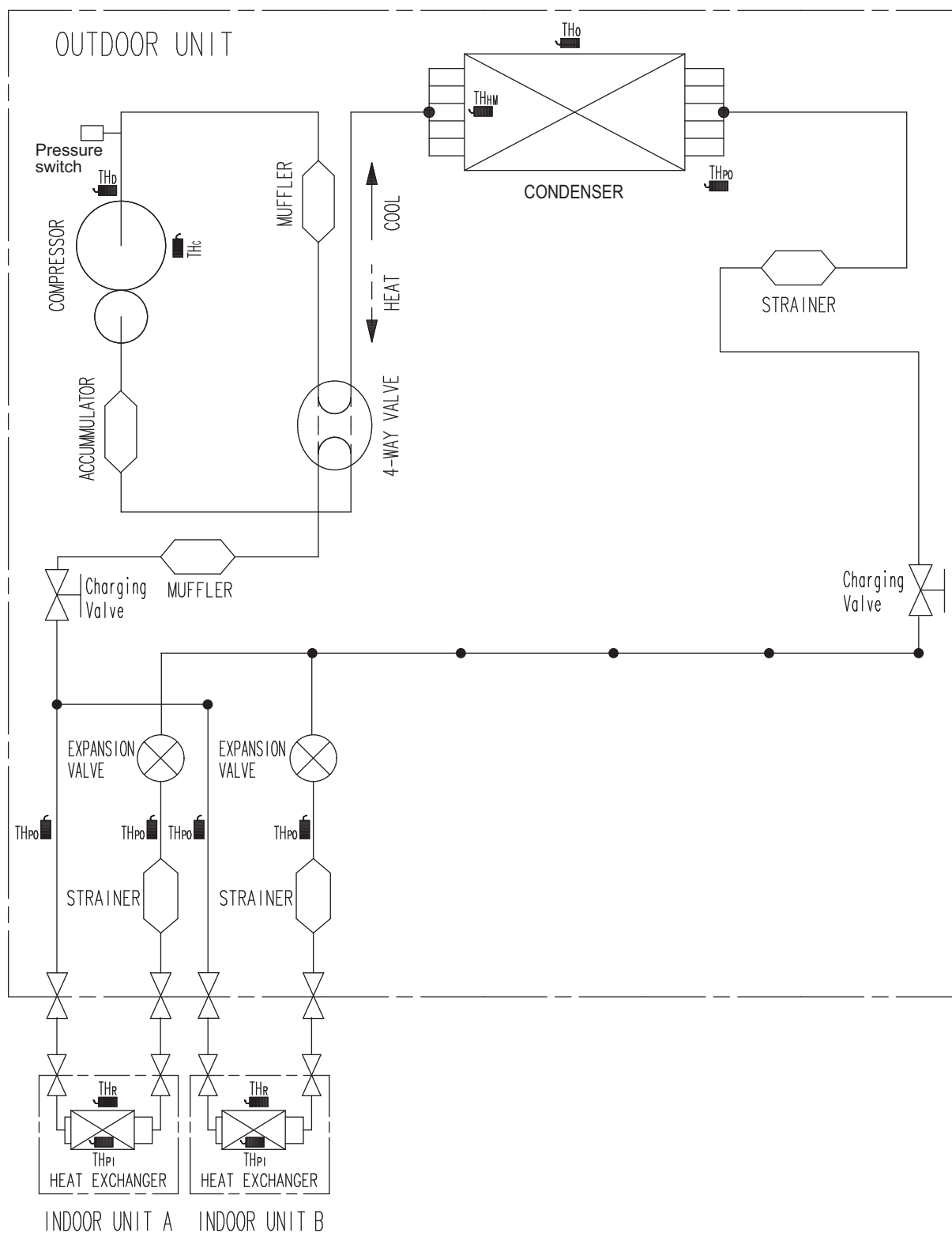
Part name	Exterior	Qty	Part name	Exterior	Qty
Installation manual		1	Cable tie		4
Drain pipe		1	Protection label		1
Drain cap		5	Adapter K 1/2 in (12.70 mm) to 3/8 in (9.52 mm)		2

3-4. Model: AOUH45KWAS5

Part name	Exterior	Qty	Part name	Exterior	Qty
Installation manual		1	Protection label		1
Drain pipe		1	Adapter K 1/2 in (12.70 mm) to 3/8 in (9.52 mm)		2
Drain cap		3	Adapter H 3/8 in (9.52 mm) to 1/2 in (12.70 mm)		1
Cable tie		4			

4. Refrigerant system diagrams

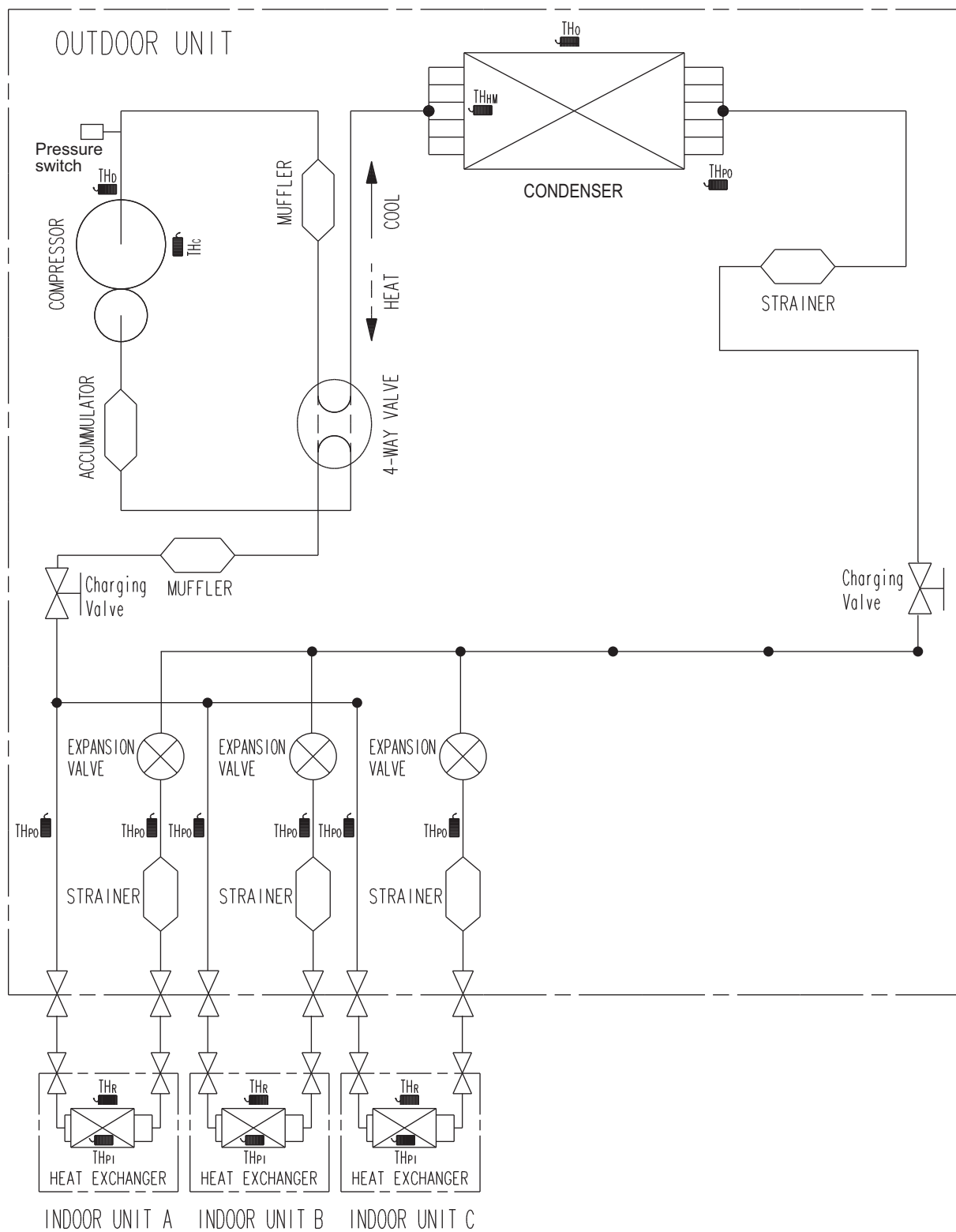
4-1. Model: AOUE18KAS2



THo: THERMISTOR(DISCHARGE TEMP.)
 THo: THERMISTOR(OUTDOOR TEMP.)
 THp1: THERMISTOR(PIPE TEMP.)
 THc: THERMISTOR(COMPRESSOR TEMP.)

THr: THERMISTOR(ROOM TEMP.)
 THp1: THERMISTOR(PIPE TEMP.)
 THm: THERMISTOR(HEAT EXCHANGER MIDDLE TEMP.)

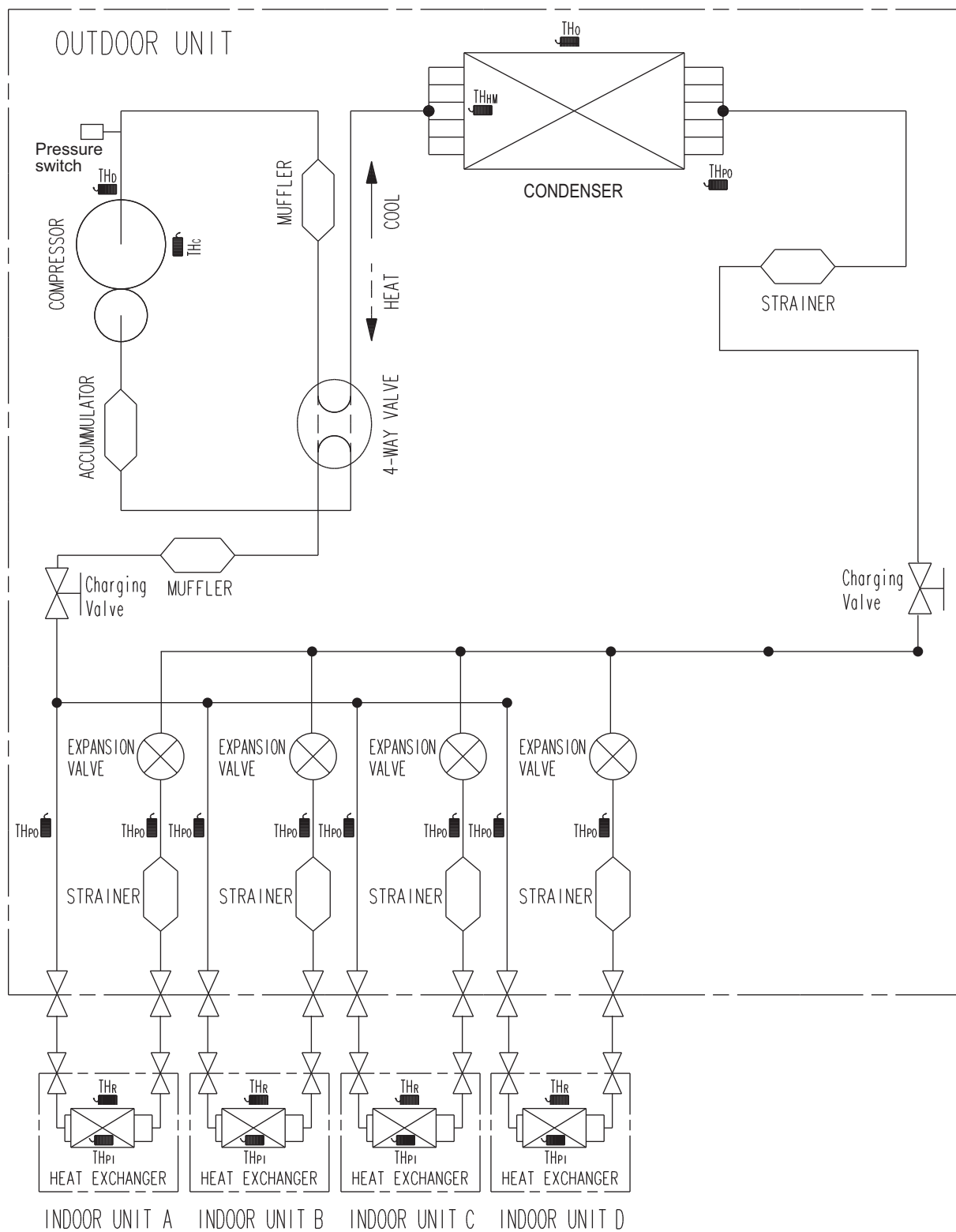
4-2. Model: AOUH24KWS3



TH_d : THERMISTOR(DISCHARGE TEMP.)
 TH_o : THERMISTOR(OUTDOOR TEMP.)
 TH_p : THERMISTOR(PIPE TEMP.)
 TH_c : THERMISTOR(COMPRESSOR TEMP.)

TH_r : THERMISTOR(ROOM TEMP.)
 TH_p : THERMISTOR(PIPE TEMP.)
 TH_m : THERMISTOR(HEAT EXCHANGER MIDDLE TEMP.)

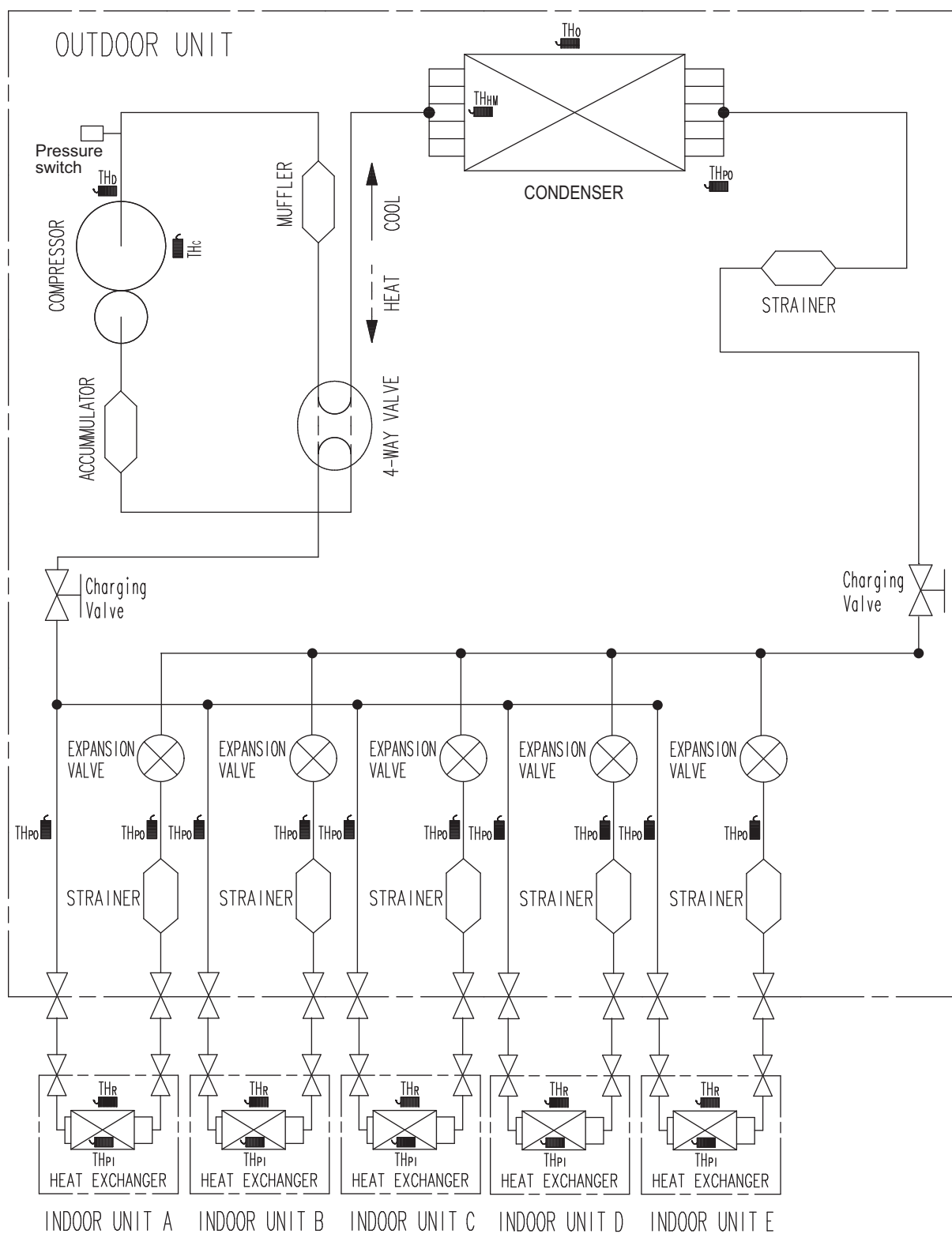
4-3. Model: AOUH36KWS4







TH_d : THERMISTOR(DISCHARGE TEMP.)
 TH_o : THERMISTOR(OUTDOOR TEMP.)
 TH_{po} : THERMISTOR(PIPE TEMP.)
 TH_c : THERMISTOR(COMPRESSOR TEMP.)

TH_r : THERMISTOR(ROOM TEMP.)
 TH_{p1} : THERMISTOR(PIPE TEMP.)
 TH_m : THERMISTOR(HEAT EXCHANGER MIDDLE TEMP.)

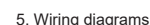
TECHNICAL DATA AND PARTS LIST



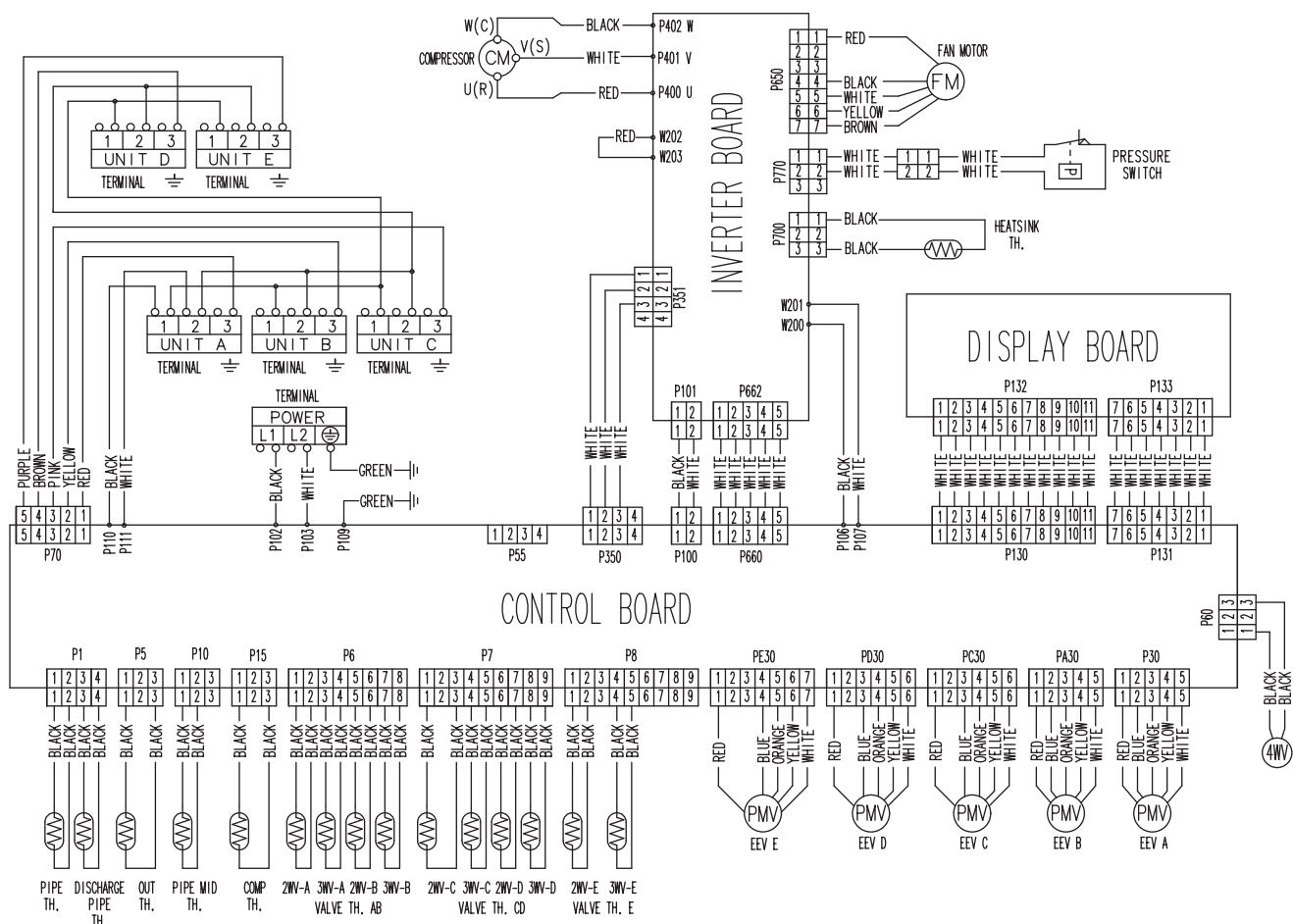
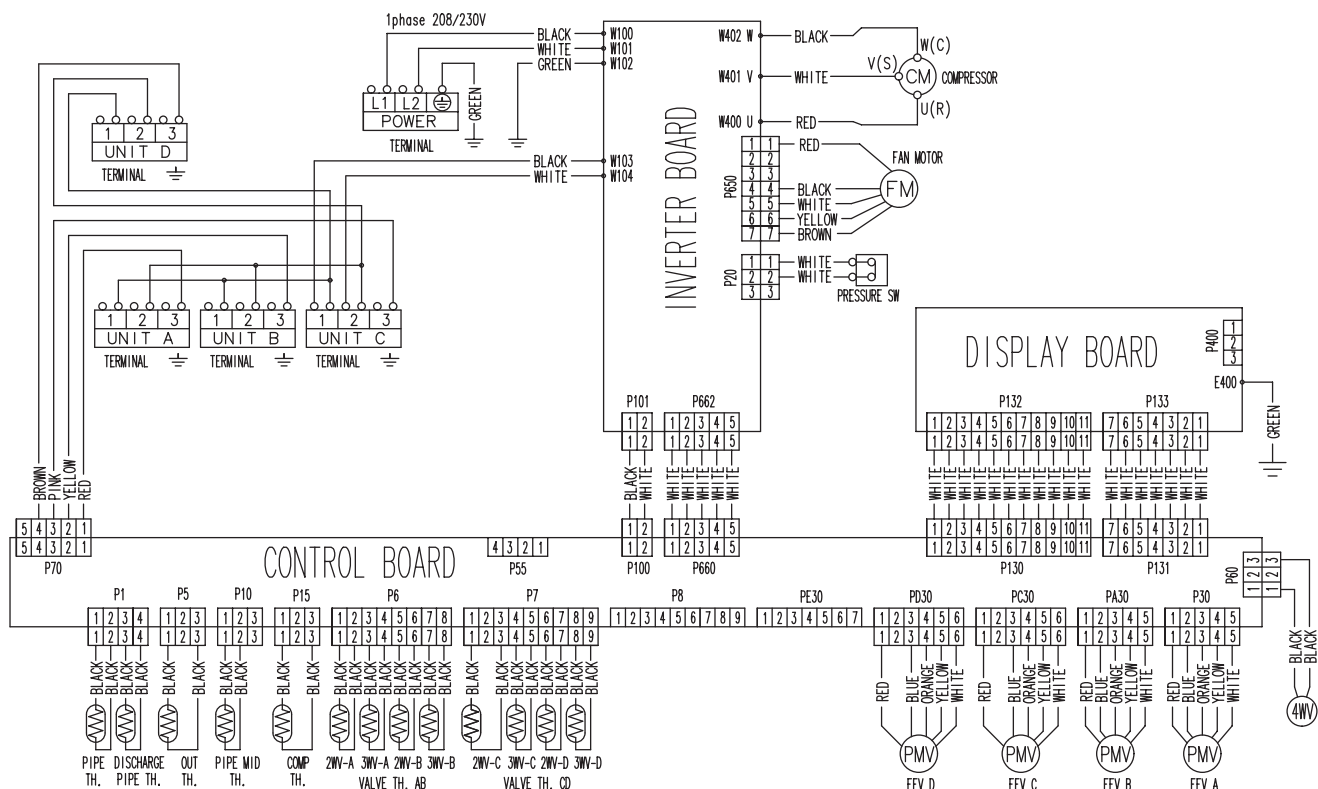
THD : THERMISTOR(DISCHARGE TEMP.)
 THO : THERMISTOR(OUTDOOR TEMP.)
 THPO : THERMISTOR(PIPE TEMP.)
 THC : THERMISTOR(COMPRESSOR TEMP.)

THR: THERMISTOR(ROOM TEMP.)
THPI: THERMISTOR(PIPE TEMP.)
THHM: THERMISTOR(HEAT EXCHANGER MIDDLE TEMP.)

TECHNICAL DATA AND PARTS LIST



TECHNICAL DATA AND PARTS LIST

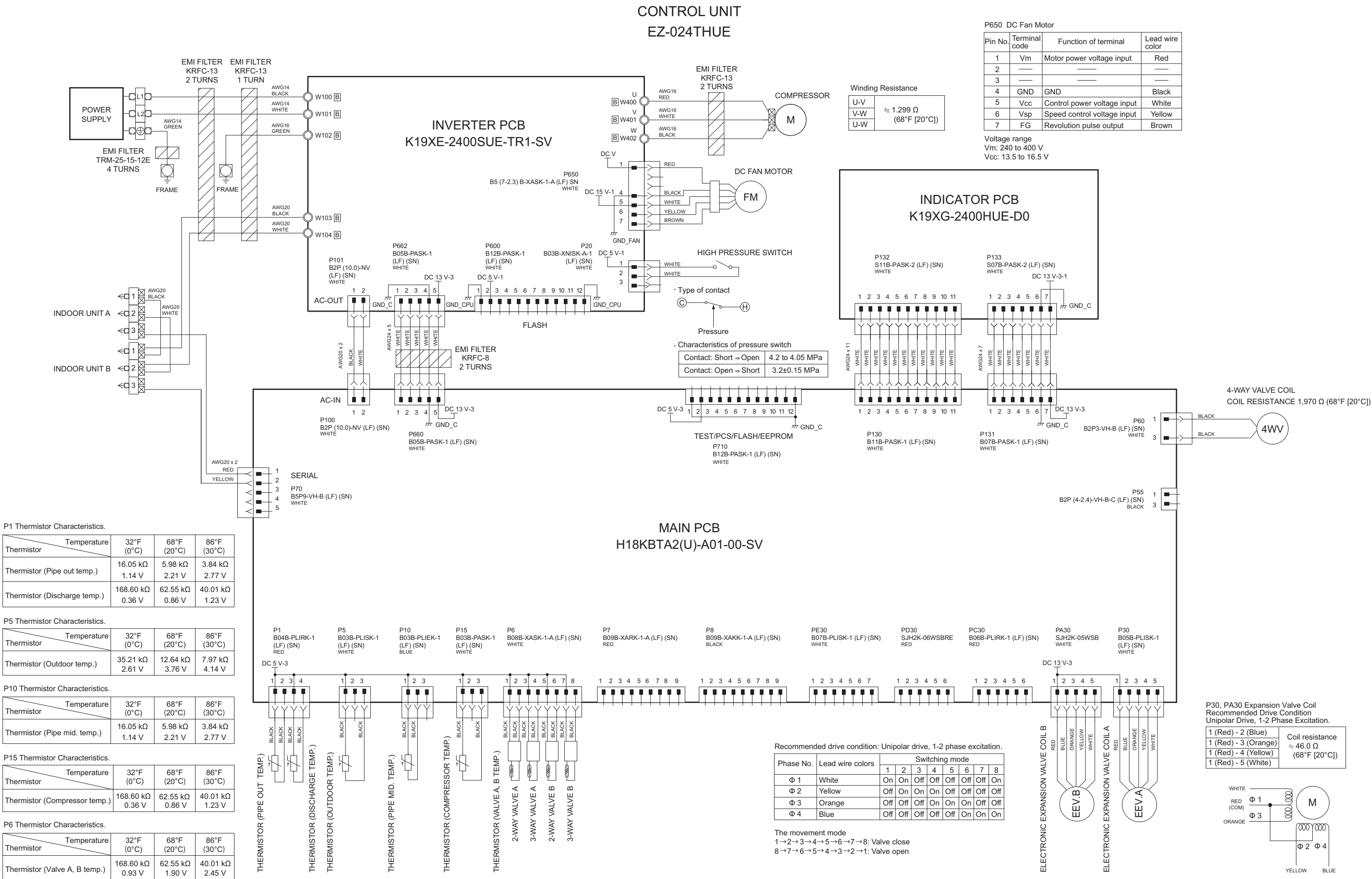


6. PC board diagrams

6-1. Model: AOUH18KWAS2

TECHNICAL DATA
AND PARTS LIST

TECHNICAL DATA
AND PARTS LIST

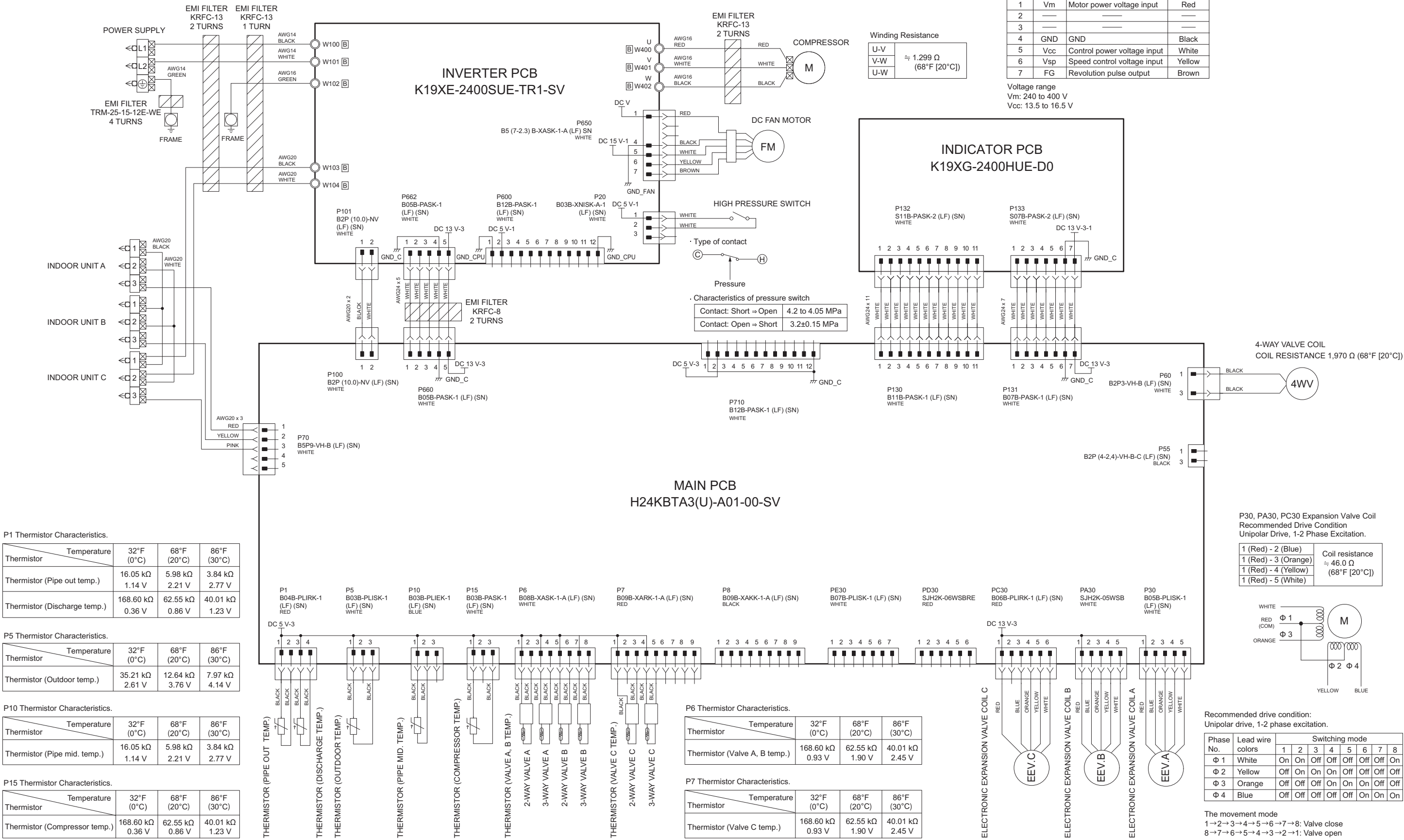


6-2. Model: AOUH24KWAS3

TECHNICAL DATA
AND PARTS LIST

TECHNICAL DATA
AND PARTS LIST

CONTROL UNIT
EZ-024WHUE





Temperature	32°F (0°C)	68°F (20°C)	86°F (30°C)
Thermistor			
Thermistor (Heat sink temp.)	15.83 kΩ 0.43 V	5.90 kΩ 1.01 V	3.78 kΩ 1.42 V



3. TROUBLESHOOTING

CONTENTS

3. TROUBLESHOOTING

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1. Error code

When a problem occurs in the system or the connected device, the error content is notified by displaying the code.

NOTE: This function is only available in a system with indoor or IR receiver units equipped with indicator lamps to show the error content.

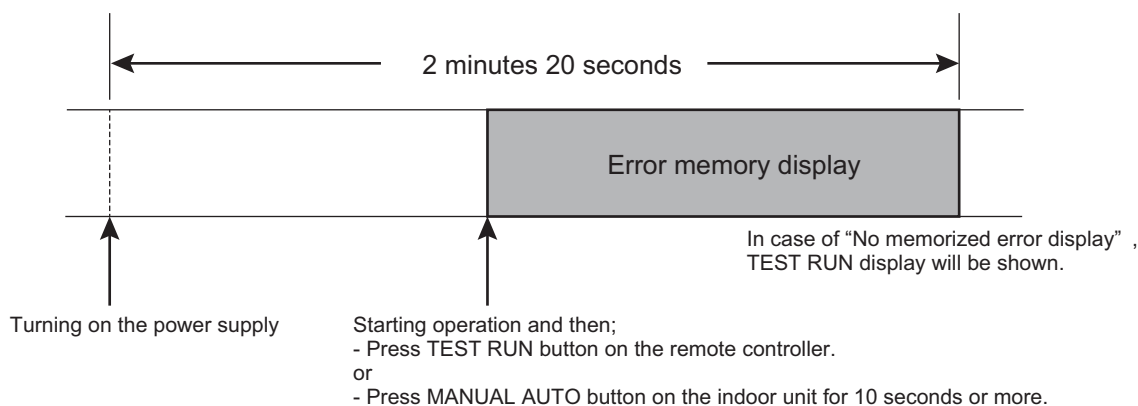
Errors, once displayed, will be automatically stored in the PC board of the indoor unit. Even if the power is disconnected, the memory containing the error history will not be erased.

If another error occurs later, the stored error memory will be updated automatically and replaced with the new one. (Previous error will be erased.)

1-1. How to check the error memory

When an error occurs, the operation lamp (Green) and the timer lamp (Orange) indicate the error content by blinking. To check the error memory, follow the procedures below.

1. Stop the operation of the air conditioner, and then disconnect the power supply.
2. Reconnect the power supply.
3. In one of the following two methods, the memorized error is only displayed during the “3 minutes ST”^{*} state period.
 - Start the operation and then press the TEST RUN button on the remote controller.
 - Press the MANUAL AUTO button on the indoor unit for 10 seconds or more.



^{*}: The “3 minutes ST” period lasts 2 minutes and 20 seconds after turning on the power supply.

1-2. How to erase the error memory

The error memory can be erased in one of the following two methods.

- Manual erase: Pressing the MANUAL AUTO button on the indoor unit while the “Error memory display” is being shown. (Short beep emits for about 3 seconds.)
- Automatic erase: After continuing the normal operation of the air conditioner without error for 2 hours or longer after displaying the error memory as described in [How to check the error memory](#). (Except FAN operation mode.)

1-3. Error code table (Indoor unit and wired remote controller)

The operation, timer, and economy indicators operate according to the error contents.

For confirmation of the error contents, refer the flashing pattern as follows.

Error contents	Indoor unit display			Wired remote controller display
	Operation [I] (Green)	Timer [⌚] (Orange)	Economy [E] (Green)	
E: 11.X. Serial communication error (Serial reverse transfer error) (Outdoor unit)	1 times	1 times	Continuous	11
E: 11.X. Serial communication error (Serial forward transfer error) (Indoor unit)	1 times	1 times	Continuous	11
E: 12.X. Wired remote controller communication error (Indoor unit)	1 times	2 times	Continuous	12
E: 15.X. Automatic air flow adjustment error (Indoor unit)	1 times	5 times	Continuous	15
E: 18.X. External communication error (Indoor unit)	1 times	8 times	Continuous	18
E: 22.X. Indoor unit capacity error (Indoor unit)	2 times	2 times	Continuous	22
E: 23.X. Combination error (Outdoor unit)	2 times	3 times	Continuous	23
E: 26.X. Address setting error in wired remote controller (Indoor unit)	2 times	6 times	Continuous	26
E: 29.X. Connected unit number error (Indoor unit)	2 times	9 times	Continuous	29
E: 32.X. Indoor unit main PCB error (Indoor unit)	3 times	2 times	Continuous	32
E: 33.X. Indoor unit motor electricity consumption detection error (Indoor unit)	3 times	3 times	Continuous	33
E: 35.X. MANUAL AUTO button error (Indoor unit)	3 times	5 times	Continuous	35
E: 39.X. Indoor unit power supply error for fan motor (Indoor unit)	3 times	9 times	Continuous	39
E: 3A.X. Indoor unit communication circuit (wired remote controller) error	3 times	10 times	Continuous	3A
E: 41.X. Room temperature sensor error (Indoor unit)	4 times	1 times	Continuous	41
E: 42.X. Indoor unit heat exchanger sensor error (Indoor unit)	4 times	2 times	Continuous	42
E: 45.X. Refrigerant leakage sensor error (Indoor unit)	4 times	5 times	Continuous	45
E: 45.X. Refrigerant leakage sensor deterioration (Indoor unit)	4 times	5 times	Continuous	45
E: 51.X. Indoor unit fan motor error (Indoor unit)	5 times	1 times	Continuous	51
E: 53.X. Drain pump error (Indoor unit)	5 times	3 times	Continuous	53
E: 62.X. Outdoor unit model information error (Outdoor unit)	6 times	2 times	Continuous	62
E: 63.X. Inverter error (Outdoor unit)	6 times	3 times	Continuous	63
E: 64.X. Active filter voltage error (Outdoor unit)	6 times	4 times	Continuous	64
E: 65.X. IPM error (Outdoor unit)	6 times	5 times	Continuous	65
E: 71.X. Discharge thermistor error (Outdoor unit)	7 times	1 times	Continuous	71
E: 72.X. Compressor thermistor error (Outdoor unit)	7 times	2 times	Continuous	72
E: 73.X. Outdoor unit heat exchanger thermistor error (Outdoor unit)	7 times	3 times	Continuous	73

Error contents	Indoor unit display			Wired remote controller display
	Operation [I] (Green)	Timer [⌚] (Orange)	Economy [E] (Green)	
E: 74.X. Outdoor temperature thermistor error (Outdoor unit)	7 times	4 times	Continuous	74
E: 76.X. 2-way valve thermistor error (Outdoor unit)	7 times	6 times	Continuous	76
E: 76.X. 3-way valve thermistor error (Outdoor unit)	7 times	6 times	Continuous	76
E: 77.X. Heat sink thermistor error (Outdoor unit)	7 times	7 times	Continuous	77
E: 84.X. Current sensor error (Outdoor unit)	8 times	4 times	Continuous	84
E: 86.X. High pressure switch error (Outdoor unit)	8 times	6 times	Continuous	86
E: 94.X. Over current error (Outdoor unit)	9 times	4 times	Continuous	94
E: 95.X. Compressor motor control error (Outdoor unit)	9 times	5 times	Continuous	95
E: 97.X. Outdoor unit fan motor error (Outdoor unit)	9 times	7 times	Continuous	97
E: 99.X. 4-way valve error (Outdoor unit)	9 times	9 times	Continuous	99
E: 9A.X. Coil 1 (expansion valve 1) error	9 times	10 times	Continuous	9A
E: A1.X. Discharge temperature error (Outdoor unit)	10 times	1 times	Continuous	A1
E: A3.X. Compressor temperature error (Outdoor unit)	10 times	3 times	Continuous	A3
E: A8.X. Refrigerant leakage sensor error (Indoor unit)	10 times	8 times	Continuous	A8
E: AC.X. Heat sink temperature error (Outdoor unit)	10 times	11 times	Continuous	AC

1-4. Error code table (Outdoor unit)

The operation status is determined by the lighting up and blinking of the LED lamp.
After check that ERROR LED lamp blinks, press the ENTER button once.

NOTE: For the positions of LED lamp and buttons, refer to "Function settings (for outdoor unit)" in Chapter 5. FIELD WORKING on page 05-37.

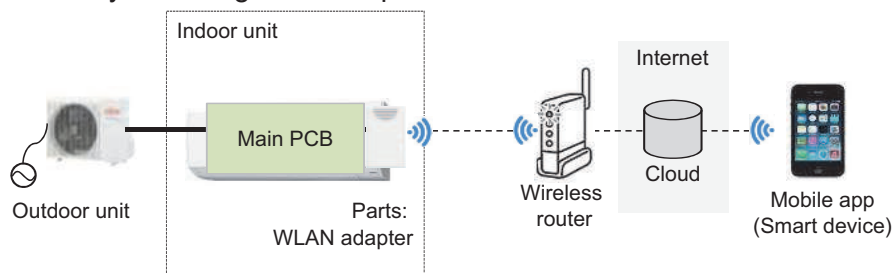
Error contents	POWER/ MODE	ERROR	MONITOR					
			A	B	C	D	E	F
E: 11.X. Serial communication error (Serial forward transfer error) (Indoor unit) (Occurs immediately after starting operation)	●	■	■ 1	■ 1	○	○	●	●
E: 11.X. Serial communication error (Serial forward transfer error) (Indoor unit) (Occurs during operation)	●	■	■ 1	■ 1	○	●	○	○
E: 12.X. Wired remote controller communication error (Indoor unit)	●	■	■ 5	■ 15	○	○	○	●
E: 15.X. Automatic air flow adjustment error (Indoor unit)	●	■	■ 5	■ 15	○	○	○	●
E: 18.X. External communication error (Indoor unit)	●	■	■ 5	■ 15	○	○	○	●
E: 22.X. Indoor unit capacity error (Indoor unit)	●	■	■ 5	■ 15	○	○	○	●
E: 23.X. Combination error (Outdoor unit)	●	■	■ 5	■ 15	○	○	○	●
E: 26.X. Address setting error in wired remote controller (Indoor unit)	●	■	■ 5	■ 15	○	○	○	●
E: 29.X. Connected unit number error (Indoor unit)	●	■	■ 5	■ 15	○	○	○	●
E: 32.X. Indoor unit main PCB error (Indoor unit)	●	■	■ 5	■ 15	○	○	○	●
E: 33.X. Indoor unit motor electricity consumption detection error (Indoor unit)	●	■	■ 5	■ 15	○	○	○	●
E: 35.X. MANUAL AUTO button error (Indoor unit)	●	■	■ 5	■ 15	○	○	○	●
E: 3A.X. Indoor unit communication circuit (wired remote controller) error	●	■	■ 5	■ 15	○	○	○	●
E: 41.X. Room temperature sensor error (Indoor unit)	●	■	■ 5	■ 15	○	○	○	●
E: 42.X. Indoor unit heat exchanger sensor error (Indoor unit)	●	■	■ 5	■ 15	○	○	○	●
E: 51.X. Indoor unit fan motor error (Indoor unit)	●	■	■ 5	■ 15	○	○	○	●
E: 62.X. Outdoor unit model information error (Outdoor unit)	●	■	■ 6	■ 2	○	○	●	●
E: 63.X. Inverter error (Outdoor unit)	●	■	■ 6	■ 3	○	○	○	●
E: 64.X. Active filter voltage error (Outdoor unit)	●	■	■ 6	■ 4	○	○	○	●
E: 65.X. IPM error (Outdoor unit)	●	■	■ 6	■ 5	○	○	●	●
E: 71.X. Discharge thermistor error (Outdoor unit)	●	■	■ 7	■ 1	○	○	○	●
E: 72.X. Compressor thermistor error (Outdoor unit)	●	■	■ 7	■ 2	○	○	○	●
E: 73.X. Outdoor unit heat exchanger thermistor error (Outdoor unit)	●	■	■ 7	■ 3	○	○	●	○
E: 74.X. Outdoor temperature thermistor error (Outdoor unit)	●	■	■ 7	■ 4	○	○	○	●

Error contents	POWER/ MODE	ERROR	MONITOR					
			A	B	C	D	E	F
E: 76.X. 2-way valve thermistor error (Outdoor unit)	●	■	■ 7	■ 6	○	○	○	●
E: 76.X. 3-way valve thermistor error (Outdoor unit)	●	■	■ 7	■ 6	○	○	●	○
E: 77.X. Heat sink thermistor error (Outdoor unit)	●	■	■ 7	■ 7	○	○	○	●
E: 84.X. Current sensor error (Outdoor unit)	●	■	■ 8	■ 4	○	○	○	●
E: 86.X. High pressure switch error (Outdoor unit)	●	■	■ 8	■ 6	○	○	○	●
E: 86.X. High pressure switch error (Outdoor unit)	●	■	■ 8	■ 6	○	●	○	○
E: 94.X. Over current error (Outdoor unit)	●	■	■ 9	■ 4	○	○	○	●
E: 95.X. Compressor motor control error (Outdoor unit)	●	■	■ 9	■ 5	○	○	○	●
E: 97.X. Outdoor unit fan motor error (Outdoor unit)	●	■	■ 9	■ 7	○	○	●	●
E: 99.X. 4-way valve error (Outdoor unit)	●	■	■ 9	■ 9	○	○	○	●
E: 9A.X. Coil 1 (expansion valve 1) error	●	■	■ 9	■ 10	○	○	○	●
E: A1.X. Discharge temperature error (Outdoor unit)	●	■	■ 10	■ 1	○	○	○	●
E: A3.X. Compressor temperature error (Outdoor unit)	●	■	■ 10	■ 3	○	○	○	●
E: AC.X. Heat sink temperature error (Outdoor unit)	●	■	■ 10	■ 11	○	○	○	●

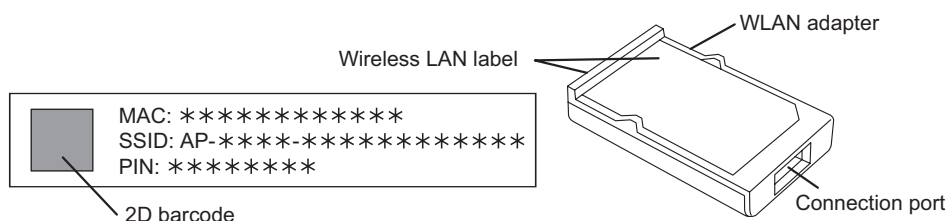
● : Light on ○ : Light off ■ (n) : n Times blinking

1-5. Error code table (Wireless LAN indicator)

- Wireless LAN control system diagram example



- Name of parts



- Wireless LAN indicator lamps


For confirmation of the error contents, refer to the following flashing patterns.


Wireless LAN indicator lamp (orange) on the indoor unit operate according to the error contents.

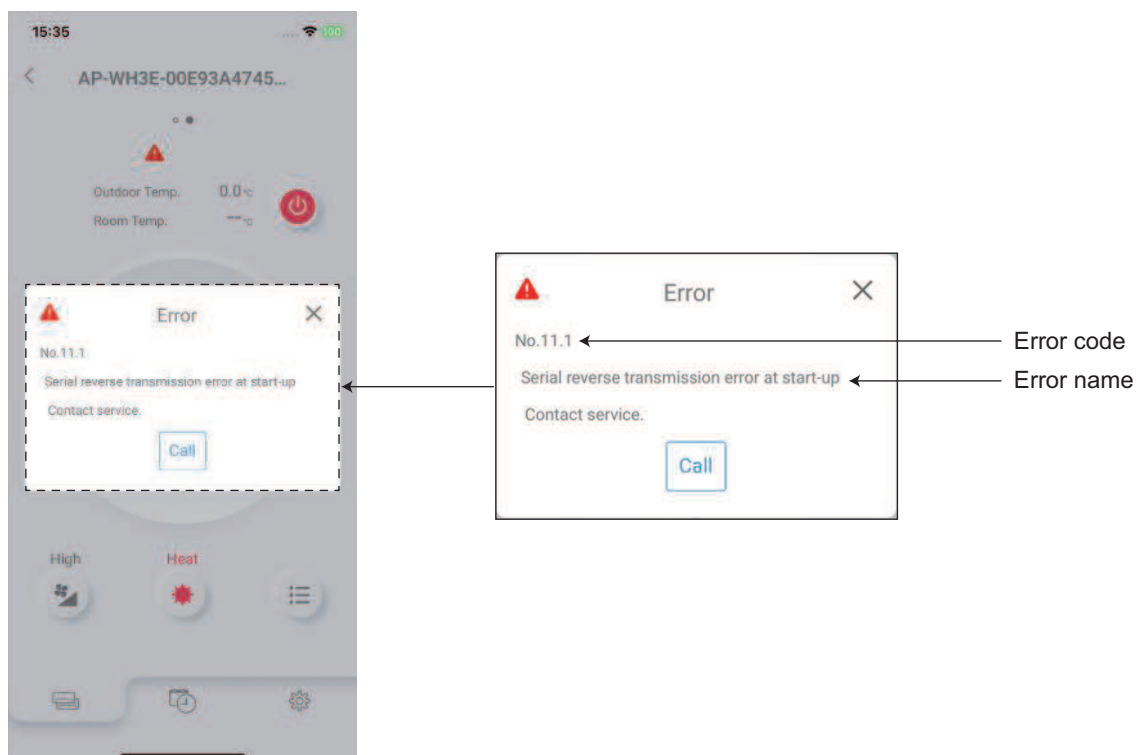
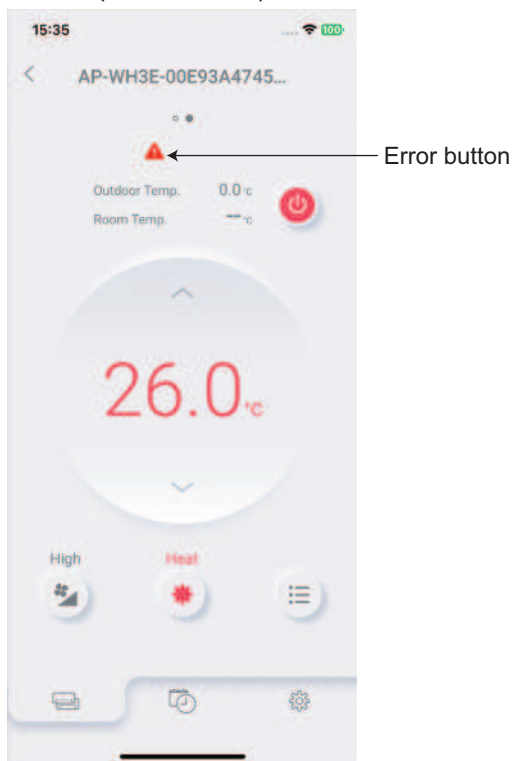
Error contents	Wireless LAN indicator lamp (orange)	Error code
E: 18.X. External communication error between indoor unit and wireless LAN adapter	Flashing slowly	18
Network communication error between wireless LAN router and wireless LAN adapter	Flashing slowly	No error
E: 18.X. Communication error	Flashing slowly	18
E: 18.X. Wireless LAN adapter non-energized	Off	18

Flashing slowly: Repeating 7 seconds on/2 seconds off

1-6. How to check the error code on Mobile app

If there is an abnormality on the air conditioning, refer to  as follows.

When the  (error button) on the home screen is tapped, error code and error name is displayed.



1-7. Error code table (Mobile app)

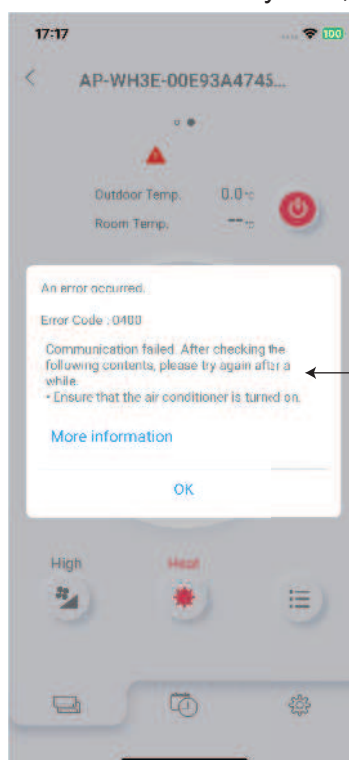
Error message	Error contents	Error code
Serial reverse transmission error at start-up	E: 11.X. Serial communication error (Serial reverse transfer error) (Outdoor unit)	11.1
Serial reverse transmission error during operation		11.2
Serial forward transmission error at start-up	E: 11.X. Serial communication error (Serial forward transfer error) (Indoor unit)	11.3
Serial forward transmission error during operation		11.4
Wired remote controller communication error	E: 12.X. Wired remote controller communication error (Indoor unit)	12.1
Wired remote controller signal error		12.2
Excess number of devices in wired remote controller system		12.3
Wired remote controller system start-up error		12.4
Configuration data acquisition error during scan	E: 15.X. Automatic air flow adjustment error (Indoor unit)	15.4
Check run unfinished		15.6
External communication 1 error	E: 18.X. External communication error (Indoor unit)	18.1
Indoor unit capacity error	E: 22.X. Indoor unit capacity error (Indoor unit)	22.1
Connection forbidden (series error)	E: 23.X. Combination error (Outdoor unit)	23.1
Unit combination error		23.2
Address duplication in wired remote controller system	E: 26.X. Address setting error in wired remote controller (Indoor unit)	26.4
Address setting error in wired remote controller system		26.5
Connection unit number error (indoor unit in wired remote controller system)	E: 29.X. Connected unit number error (Indoor unit)	29.1
Indoor unit PCB model information error	E: 32.X. Indoor unit main PCB error (Indoor unit)	32.1
Indoor unit motor electricity consumption detection microcomputers error	E: 33.X. Indoor unit motor electricity consumption detection error (Indoor unit)	33.2
Indoor unit manual auto switch error	E: 35.X. MANUAL AUTO button error (Indoor unit)	35.1
Indoor unit power supply error for fan motor 1	E: 39.X. Indoor unit power supply error for fan motor (Indoor unit)	39.1
Indoor unit communication circuit (wired remote controller) microcomputers communication error	E: 3A.X. Indoor unit communication circuit (wired remote controller) error	3A.1
Indoor unit suction air temp. thermistor error	E: 41.X. Room temperature sensor error (Indoor unit)	41.1
Indoor unit heat ex. middle temp. thermistor error	E: 42.X. Indoor unit heat exchanger sensor error (Indoor unit)	42.2
Refrigerant sensor error (Malfunction)	E: 45.X. Refrigerant leakage sensor error (Indoor unit)	45.2
Refrigerant sensor error (End of life)	E: 45.X. Refrigerant leakage sensor deterioration (Indoor unit)	45.3
Indoor unit fan motor 1 lock error	E: 51.X. Indoor unit fan motor error (Indoor unit)	51.1
Indoor unit fan motor 1 rotation speed error		51.2
Drain pump error	E: 53.X. Drain pump error (Indoor unit)	53.1
Indoor unit miscellaneous error	E: 5U.X. Indoor unit error	5U.1
Outdoor unit PCB model information error	E: 62.X. Outdoor unit model information error (Outdoor unit)	62.1
Outdoor unit PCB microcomputer communication error		62.2
Outdoor unit inverter error	E: 63.X. Inverter error (Outdoor unit)	63.1

Error message	Error contents	Error code
Outdoor unit abnormal voltage error (permanent stop)	E: 64.X. Active filter voltage error (Outdoor unit)	64.1
Outdoor unit abnormal voltage error (automatic restore)		64.3
Outdoor unit over current error (permanent stop)		64.4
Outdoor unit PFC hardware error		64.8
Outdoor unit trip terminal L error	E: 65.X. IPM error (Outdoor unit)	65.3
Outdoor unit discharge temp. thermistor 1 error	E: 71.X. Discharge thermistor error (Outdoor unit)	71.1
Outdoor unit discharge temp. thermistor 1 error	E: 72.X. Compressor thermistor error (Outdoor unit)	72.1
Outdoor unit heat ex. liquid temp. thermistor error	E: 73.X. Outdoor unit heat exchanger thermistor error (Outdoor unit)	73.3
Outside air temp. thermistor error	E: 74.X. Outdoor temperature thermistor error (Outdoor unit)	74.1
Outdoor unit 2-way valve temp. thermistor error	E: 76.X. 2-way valve thermistor error (Outdoor unit)	76.1
Outdoor unit 3-way valve temp. thermistor error	E: 76.X. 3-way valve thermistor error (Outdoor unit)	76.2
Outdoor unit heat sink temp. thermistor error	E: 77.X. Heat sink thermistor error (Outdoor unit)	77.1
Outdoor unit current sensor 1 error (permanent stop)	E: 84.X. Current sensor error (Outdoor unit)	84.1
Outdoor unit discharge pressure sensor error	E: 86.X. High pressure switch error (Outdoor unit)	86.1
Outdoor unit trip detection	E: 94.X. Over current error (Outdoor unit)	94.1
Outdoor unit compressor rotor position detection error (permanent stop)	E: 95.X. Compressor motor control error (Outdoor unit)	95.1
Outdoor unit fan motor 1 power source duty error	E: 97.X. Outdoor unit fan motor error (Outdoor unit)	97.3
Outdoor unit 4-way valve error	E: 99.X. 4-way valve error (Outdoor unit)	99.1
Outdoor unit discharge temperature 1 error (permanent stop)	E: A1.X. Discharge temperature error (Outdoor unit)	A1.1
Outdoor unit compressor 1 temperature error	E: A3.X. Compressor temperature error (Outdoor unit)	A3.1
Operation over upper range limit error	E: AC.X. Heat sink temperature error (Outdoor unit)	AC.1
Operation under lower range limit error		AC.2

1-8. Error message for wireless LAN control (Mobile app)

■ Error display

If there is an abnormality on the wireless control system, refer to error messages as follows.



← Error message

■ Error message list

• Registration error

Error code	Error message	Cause
		Solution
2400	<p>Communication failed. After checking the following contents, please try again after a while.</p> <ul style="list-style-type: none"> Ensure that the air conditioner is turned on. 	<p>Communication with the air conditioner failed.</p> <p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ul style="list-style-type: none"> Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in. When lighting <p>Use a smartphone to check that the wireless router to which the air conditioner is connected is connected to the Internet. If the smartphone cannot connect to the Internet, reboot the wireless router. When rebooting the wireless router does not solve the problem, contact the manufacturer of the wireless router.</p> When blinking <p>Wait for a while until the indicator lamp lights and then operate again. If the indicator lamp is still blinking after waiting for a while, check that the wireless router is turned on.</p>
		<p>Failed because the smartphone could not connect to the air conditioner.</p> <p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ol style="list-style-type: none"> Check that the 2D barcode is for the air conditioner to be registered. Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in. Retry the connection step procedure for the air conditioner registration displayed in the application to set the lamp to the blinking state. When lighting or blinking <ol style="list-style-type: none"> Check that the 2D barcode is for the air conditioner to be registered. Check that the wireless LAN setting of smartphone is set to ON.
2930	<p>Cannot connect to your air conditioner. Check if the WiFi setting of the mobile device is turned on.</p> <p>When problems are not resolved, there may be other causes. Tap the link below to check other solutions.</p>	<p>Failed because the smartphone could not connect to the air conditioner.</p> <p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ol style="list-style-type: none"> Check that the 2D barcode is for the air conditioner to be registered. Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in. Retry the connection step procedure for the air conditioner registration displayed in the application to set the lamp to the blinking state. When lighting or blinking <ol style="list-style-type: none"> Check that the 2D barcode is for the air conditioner to be registered. Check that the wireless LAN setting of smartphone is set to ON.
		<p>Failed because the smartphone could not connect to the air conditioner.</p> <p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ol style="list-style-type: none"> Check that the 2D barcode is for the air conditioner to be registered. Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in. Retry the connection step procedure for the air conditioner registration displayed in the application to set the lamp to the blinking state. When lighting or blinking <ol style="list-style-type: none"> Check that the 2D barcode is for the air conditioner to be registered. Check that the wireless LAN setting of smartphone is set to ON.

Error code	Error message	Cause
		Solution
2931	WLAN adapter password is wrong. Enter it again. When problems are not resolved, there may be other causes. Tap the link below to check other solutions.	Failed because the smartphone could not connect to the air conditioner. Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.
		<ul style="list-style-type: none"> • When not lighting <ol style="list-style-type: none"> 1. Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. 2. Check that the power plug of the air conditioner main unit is plugged in. 3. Retry the connection step procedure for the air conditioner registration displayed in the application to set the lamp to the blinking state. • When lighting or blinking <ol style="list-style-type: none"> 1. Check that the entered SSID and PIN numbers of WLAN Adapter are correct. 2. Check that the wireless LAN setting of smartphone is set to ON.
2932 2933	Failed to connect to wireless router. Check if the WiFi setting of the mobile device is turned on. When problems are not resolved, there may be other causes. Tap the link below to check other solutions.	<ul style="list-style-type: none"> • Registration failed because the smartphone cannot connect to the network. • Connection to the WLAN Adapter was disconnected during processing.
		<ol style="list-style-type: none"> 1. Check that the wireless LAN setting of smartphone is set to ON. 2. Check that the smartphone is connected to the Internet.
2934	Wi-Fi router password is wrong. Tap "From the beginning" to enter it again. When problems are not resolved, there may be other causes. Tap the link below to check other solutions.	<ul style="list-style-type: none"> • The wireless router password is not correct. • The air conditioner is not connected to the same wireless router as the smartphone.
		Check the following contents and operate again. <ol style="list-style-type: none"> 1. Check that the wireless router password is correct. 2. Check that the smartphone and the air conditioner are connected to the same wireless router. 3. The wireless router encryption method WPA3 is not supported. Check if SSID other than WPA3 is selected. 4. Check that the local network setting of the smartphone is "Enabled". (Only for smartphones with iOS14 or later)
2935 2937 2939 2941	Failed to register the air conditioner. Make sure the wireless router is connected to the Internet, and then tap "Re-register" to perform the registration process again. When problems are not resolved, there may be other causes. Tap the link below to check other solutions.	Registration failed because the air conditioner cannot connect to the Internet.
		Check the following contents and operate again. <ol style="list-style-type: none"> 1. Use a smartphone to check that the wireless router to which the air conditioner is connected is connected to the Internet. 2. If the smartphone cannot connect to the Internet, reboot the wireless router. When rebooting the wireless router does not solve the problem, contact the manufacturer of the wireless router. 3. Check that the MAC address filter and privacy separator settings are not "enabled" on the wireless router.

Error code	Error message	Cause
		Solution
2936 2940	Air conditioner registration failed. Tap "Re-register" and conduct the registration processing again. If not successful after multiple attempts, tap "From the beginning" and then initialize the WLAN and start over from the beginning.	<ul style="list-style-type: none"> The air conditioner you are trying to register is already registered to another account. Registration failed because the air conditioner cannot connect to the Internet. Immediately after turning on the power of the air conditioner, wait for about 5 minutes before registering it.
		<p>Check the following contents and operate again.</p> <ol style="list-style-type: none"> Tap "Re-register" and conduct the registration processing again. Delete from another account or initialize the WLAN Adapter. Check that the wireless router is turned on. Check that wireless router is connected to the Internet. If not connected, reboot the wireless router. When rebooting does not solve the problem, contact the manufacturer of the wireless router. Check that the MAC address filter and privacy separator settings are not "enabled" on the wireless router.
2938	Registration failed because the air conditioner could not connect to the Internet. Perform the WPS connection procedure again and confirm that the WLAN lamp on the indoor unit or LED2 on the WLAN adapter is lit before registering. When problems are not resolved, there may be other causes. Tap the link below to check other solutions.	<ul style="list-style-type: none"> Registration failed because the air conditioner cannot connect to the Internet. Registration failed because the air conditioner is not connected to the same wireless router as the smartphone.
		<p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ol style="list-style-type: none"> Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in. Check that the wireless router is turned on. Retry the connection step procedure for the air conditioner registration displayed in the application and complete WPS connection with wireless router to set the lamp to the blinking state. When lighting <ol style="list-style-type: none"> Check that the air conditioner and the smartphone are connected to the same wireless router. Check that the local network setting of the smartphone is "Enabled". (Only for smartphones with iOS14 or later)
2942	Your mobile device is not connected to WiFi. Connect to the target wireless router through the OS WiFi setting and restart the procedure. 1. Open the Wi-Fi setting screen of your device. 2. Connect your mobile device to the {ssid}. 3. Return to the application screen and tap "Re-register". When problems are not resolved, there may be other causes. Tap the link below to check other solutions.	Registration failed because the air conditioner cannot connect to the Internet.
		<p>Check the following contents and operate again.</p> <ol style="list-style-type: none"> Check that the wireless LAN setting of smartphone is set to ON. Check that the smartphone is connected to the Internet. Set the connection setting with the wireless router to Auto Connection in the smartphone settings. Check that the wireless router is turned on.

Error code	Error message	Cause
		Solution
2944	Communication failed.	Registration may have failed because a problem occurred in communication with the server (cloud). Wait for a while and then operate again.
2946	The connected air conditioner cannot use the Direct control.	Your air conditioner does not support Direct Control. Operate the air conditioner with Cloud Control.
2947	Already reached the max number of air conditioners per user.	The number of air conditioners that can be registered on AIRSTAGE Mobile has reached the maximum limit. Check the number of air conditioners registered on AIRSTAGE Mobile. (Maximum number of registered units: 50 units for Cloud Control, 50 units for Direct Control) Delete the unused air conditioners on the "Air conditioner editing" screen before registration.
2949	The number of air conditioners registered by the entered user has reached the upper limit, so registration is not possible.	The number of sub users that can be registered has reached the maximum limit. Check the number of registered sub users. (Maximum number of registered sub users: 4 sub users) Delete the unused sub users on the "Sub User Registration" screen.
2953	The specified air conditioner is already registered. To Reregister, delete the air conditioner information on the air conditioner edit screen and initialize the wireless LAN adapter with the remote control.	The specified air conditioner was already registered. Check that the specified air conditioner is displayed on the air conditioner list screen. To register again, delete the air conditioner on the air conditioner editing screen.
2954	The wireless router to which the mobile device and the wireless LAN adapter are connected must be the same. Follow the steps below. 1. Please open the Wi-Fi setting screen of the mobile device. 2. Connect your mobile device to the wireless router that you pressed the automatic connection button. 3. Return to the app screen and tap "OK".	The air conditioner and the smartphone are not connected to the same wireless router network. Check the following contents and operate again. 1. Check that the wireless LAN setting of smartphone is set to ON. 2. Check that the smartphone is connected to the Internet. 3. Check that the wireless router is turned on. 4. Check that the air conditioner and the smartphone are connected to the same wireless router.

• Sign in error

Error code	Error message	Cause
		Solution
4010 4410 4610 4810 4910	Communication failed. After checking the following contents, please try again after a while. <ul style="list-style-type: none"> Ensure that your mobile device is connected to the internet. 	Various settings could not be completed because communication with the server (cloud) failed. Check the following contents and operate again. 1. Check that the wireless LAN setting of smartphone is set to ON. 2. Check that the smartphone is connected to the Internet. 3. Check that the wireless router is turned on.
4100	The account you are currently signed in to may have been deleted. If necessary, please create the account again.	Token has been disabled because the signed-in account has been deleted or certain amount of time has elapsed. Restart the application and check that you can sign in. If you cannot sign in, create the account again.
4101	The session has expired. Please sign in again to continue.	Token has been disabled because the signed-in account has been deleted or certain amount of time has elapsed. Restart the application and check that you can sign in. If you cannot sign in, create the account again.
4102	Your session has expired. Please sign in again. *If you cannot sign in, your account may have been deleted. If necessary, please create an account again.	Token has been disabled because the signed-in account has been deleted or certain amount of time has elapsed. Restart the application and check that you can sign in. If you cannot sign in, create the account again.
4110	Failed to connect to the server. Some functions can be used with Direct Control. Do you want to switch to direct control?	<ul style="list-style-type: none"> Communication with the server (cloud) failed at sign in. Registration process of Account registration procedure verification email has not been completed. Check the following contents and sign in again. 1. Check that the wireless LAN setting of smartphone is set to ON. 2. Check that the smartphone is connected to the Internet. 3. Check that the wireless router is turned on. 4. Tap the link of Account registration procedure verification email and check that registration process has completed.
4111	Failed to read the device. Since some functions are available in Direct control, switch to Direct control.	Air conditioner information could not be obtained because communication with the server (cloud) failed after sign in. Check the following contents and sign in again. 1. Check that the wireless LAN setting of smartphone is set to ON. 2. Check that the smartphone is connected to the Internet. 3. Check that the wireless router is turned on.
4112	Failed to connect to the server. Some functions are limited.	<ul style="list-style-type: none"> Communication with the server (cloud) failed at sign in. Registration process of Account registration procedure verification email has not been completed. Check the following contents and sign in again. 1. Check that the wireless LAN setting of smartphone is set to ON. 2. Check that the smartphone is connected to the Internet. 3. Check that the wireless router is turned on. 4. Tap the link of Account registration procedure verification email and check that registration process has completed.
4113	Failed to connect to the server. Would you like to sign in again? Yes: Sign in again No: Return to the sign-in screen	Air conditioner information could not be obtained because communication with the server (cloud) failed after sign in. Check the following contents and sign in again. 1. Check that the wireless LAN setting of smartphone is set to ON. 2. Check that the smartphone is connected to the Internet. 3. Check that the wireless router is turned on.

Error code	Error message	Cause
		Solution
4420	Loading of user information failed. Check the following contents. • Check that your mobile device is connected to the internet.	User information or temperature unit information could not be obtained because communication with the server (cloud) failed.
		Check the following contents and operate again. 1. Check that the wireless LAN setting of smartphone is set to ON. 2. Check that the smartphone is connected to the Internet. 3. Check that the wireless router is turned on.
4530	Password update failed. Please check if the entered current password is correct.	Password update failed because the entered password was not correct.
		Check that the entered "Current password" is correct and operate again.
4920	Loading of time zone failed. Check the following contents. • Check that your mobile device is connected to the internet.	Time zone information could not be obtained because communication with server (cloud) failed.
		Check the following contents and operate again. 1. Check that the wireless LAN setting of smartphone is set to ON. 2. Check that the smartphone is connected to the Internet. 3. Check that the wireless router is turned on.

• General error

Error code	Error message	Cause
		Solution
0100 0200 0300 0400 0500 0501 0600 0601 0800 0900 1000 1200 1400 1500 3200 5500 5700 5900 6200	Communication failed. After checking the following contents, please try again after a while. <ul style="list-style-type: none"> Ensure that the air conditioner is turned on. 	<p>Communication with the air conditioner failed.</p> <p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ul style="list-style-type: none"> Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in. When lighting <p>Use a smartphone to check that the wireless router to which the air conditioner is connected is connected to the Internet. If the smartphone cannot connect to the Internet, reboot the wireless router. When rebooting the wireless router does not solve the problem, contact the manufacturer of the wireless router.</p>
0810 0811 0812 1510 1511 1512 3010 5510 5520 5530 6001 6002 6003 6010 6011 6012 6013 6310	Communication failed. After checking the following contents, please try again after a while. <ul style="list-style-type: none"> Ensure that your mobile device is connected to the internet. 	<ul style="list-style-type: none"> Various settings could not be completed because communication with the server (cloud) failed. Air conditioner information could not be obtained because communication with server (cloud) failed. <p>Check the following contents and operate again.</p> <ol style="list-style-type: none"> Check that the wireless LAN setting of smartphone is set to ON. Check that the smartphone is connected to the Internet. Check that the wireless router is turned on.

Error code	Error message	Cause
		Solution
0820	Loading of outdoor low noise timer failed. Check the following contents. <ul style="list-style-type: none"> Ensure that your mobile device is connected to the internet. 	<p>The outdoor unit low noise timer information could not be obtained because communication with the server (cloud) failed.</p> <p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ul style="list-style-type: none"> Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in. When lighting <p>Use a smartphone to check that the wireless router to which the air conditioner is connected is connected to the Internet. If the smartphone cannot connect to the Internet, reboot the wireless router. When rebooting the wireless router does not solve the problem, contact the manufacturer of the wireless router.</p> When blinking <p>Wait for a while until the indicator lamp lights and then operate again. If the indicator lamp is still blinking after waiting for a while, check that the wireless router is turned on.</p>
1520	Loading of weekly timer failed. Check the following contents. <ul style="list-style-type: none"> Ensure that your mobile device is connected to the internet. 	<p>The weekly timer setting information could not be obtained because communication with the server (cloud) failed.</p> <p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ul style="list-style-type: none"> Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in. When lighting <p>Use a smartphone to check that the wireless router to which the air conditioner is connected is connected to the Internet. If the smartphone cannot connect to the Internet, reboot the wireless router. When rebooting the wireless router does not solve the problem, contact the manufacturer of the wireless router.</p> When blinking <p>Wait for a while until the lamp lights and then operate again. If the lamp is still blinking after waiting for a while, check that the wireless router is turned on.</p>

Error code	Error message	Cause
		Solution
1720	Loading of error history failed. Check the following contents. <ul style="list-style-type: none"> Ensure that your mobile device is connected to the internet. 	<p>The error history information could not be obtained because communication with the server (cloud) failed.</p> <p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ul style="list-style-type: none"> Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Or check that the power plug of the air conditioner main unit is plugged in. When lighting <p>Use a smartphone to check that the wireless router to which the air conditioner is connected is connected to the Internet. If the smartphone cannot connect to the Internet, reboot the wireless router. When rebooting the wireless router does not solve the problem, contact the manufacturer of the wireless router.</p> When blinking <p>Wait for a while until the indicator lamp lights and then operate again. If the indicator lamp is still blinking after waiting for a while, check that the wireless router is turned on.</p>
		<p>Air conditioner group setting has not been completed because communication with air conditioner failed.</p> <p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ul style="list-style-type: none"> Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in. When lighting <p>Use a smartphone to check that the wireless router to which the air conditioner is connected is connected to the Internet. If the smartphone cannot connect to the Internet, reboot the wireless router. When rebooting the wireless router does not solve the problem, contact the manufacturer of the wireless router.</p> When blinking <p>Wait for a while until the indicator lamp lights and then operate again. If the indicator lamp is still blinking after waiting for a while, check that the wireless router is turned on.</p>
3110	Communication failure prevented the group movement processing from being conducted. After checking the following contents, please try again after a while. <ul style="list-style-type: none"> Ensure that your mobile device is connected to the internet. 	<p>Air conditioner group setting has not been completed because communication with air conditioner failed.</p> <p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ul style="list-style-type: none"> Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in. When lighting <p>Use a smartphone to check that the wireless router to which the air conditioner is connected is connected to the Internet. If the smartphone cannot connect to the Internet, reboot the wireless router. When rebooting the wireless router does not solve the problem, contact the manufacturer of the wireless router.</p> When blinking <p>Wait for a while until the indicator lamp lights and then operate again. If the indicator lamp is still blinking after waiting for a while, check that the wireless router is turned on.</p>

Error code	Error message	Cause
		Solution
3111	<p>Communication failure prevented the group creation processing from being conducted. After checking the following contents, please try again after a while.</p> <ul style="list-style-type: none"> Ensure that your mobile device is connected to the internet. 	<p>Air conditioner group setting has not been completed because communication with air conditioner failed.</p> <p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ul style="list-style-type: none"> Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in. When lighting <p>Use a smartphone to check that the wireless router to which the air conditioner is connected is connected to the Internet. If the smartphone cannot connect to the Internet, reboot the wireless router. When rebooting the wireless router does not solve the problem, contact the manufacturer of the wireless router.</p> When blinking <p>Wait for a while until the indicator lamp lights and then operate again. If the indicator lamp is still blinking after waiting for a while, check that the wireless router is turned on.</p>
		<p>Air conditioner group setting has not been completed because communication with air conditioner failed.</p> <p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ul style="list-style-type: none"> Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in. When lighting <p>Use a smartphone to check that the wireless router to which the air conditioner is connected is connected to the Internet. If the smartphone cannot connect to the Internet, reboot the wireless router. When rebooting the wireless router does not solve the problem, contact the manufacturer of the wireless router.</p> When blinking <p>Wait for a while until the indicator lamp lights and then operate again. If the indicator lamp is still blinking after waiting for a while, check that the wireless router is turned on.</p>
3112	<p>Communication failure prevented the group name change processing from being conducted. After checking the following contents, please try again after a while.</p> <ul style="list-style-type: none"> Ensure that your mobile device is connected to the internet. 	<p>Air conditioner group setting has not been completed because communication with air conditioner failed.</p> <p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ul style="list-style-type: none"> Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in. When lighting <p>Use a smartphone to check that the wireless router to which the air conditioner is connected is connected to the Internet. If the smartphone cannot connect to the Internet, reboot the wireless router. When rebooting the wireless router does not solve the problem, contact the manufacturer of the wireless router.</p> When blinking <p>Wait for a while until the indicator lamp lights and then operate again. If the indicator lamp is still blinking after waiting for a while, check that the wireless router is turned on.</p>
		<p>Air conditioner group setting has not been completed because communication with air conditioner failed.</p> <p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ul style="list-style-type: none"> Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in. When lighting <p>Use a smartphone to check that the wireless router to which the air conditioner is connected is connected to the Internet. If the smartphone cannot connect to the Internet, reboot the wireless router. When rebooting the wireless router does not solve the problem, contact the manufacturer of the wireless router.</p> When blinking <p>Wait for a while until the indicator lamp lights and then operate again. If the indicator lamp is still blinking after waiting for a while, check that the wireless router is turned on.</p>

Error code	Error message	Cause
		Solution
3113	<p>Communication failure prevented the group deletion processing from being conducted. After checking the following contents, please try again after a while.</p> <ul style="list-style-type: none"> Ensure that your mobile device is connected to the internet. 	<p>Air conditioner group setting has not been completed because communication with air conditioner failed.</p> <p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ul style="list-style-type: none"> Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in. When lighting <p>Use a smartphone to check that the wireless router to which the air conditioner is connected is connected to the Internet. If the smartphone cannot connect to the Internet, reboot the wireless router. When rebooting the wireless router does not solve the problem, contact the manufacturer of the wireless router.</p> When blinking <p>Wait for a while until the indicator lamp lights and then operate again. If the indicator lamp is still blinking after waiting for a while, check that the wireless router is turned on.</p>
		<p>Air conditioner group setting has not been completed because communication with air conditioner failed.</p> <p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ul style="list-style-type: none"> Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in. When lighting <p>Use a smartphone to check that the wireless router to which the air conditioner is connected is connected to the Internet. If the smartphone cannot connect to the Internet, reboot the wireless router. When rebooting the wireless router does not solve the problem, contact the manufacturer of the wireless router.</p> When blinking <p>Wait for a while until the indicator lamp lights and then operate again. If the indicator lamp is still blinking after waiting for a while, check that the wireless router is turned on.</p>
3114	<p>The room temperature display indoor unit setting could not be made due to a communication failure. After checking the following contents, please try again after a while.</p> <ul style="list-style-type: none"> Ensure that your mobile device is connected to the internet. 	<p>Air conditioner group setting has not been completed because communication with air conditioner failed.</p> <p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ul style="list-style-type: none"> Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in. When lighting <p>Use a smartphone to check that the wireless router to which the air conditioner is connected is connected to the Internet. If the smartphone cannot connect to the Internet, reboot the wireless router. When rebooting the wireless router does not solve the problem, contact the manufacturer of the wireless router.</p> When blinking <p>Wait for a while until the indicator lamp lights and then operate again. If the indicator lamp is still blinking after waiting for a while, check that the wireless router is turned on.</p>
		<p>Air conditioner group setting has not been completed because communication with air conditioner failed.</p> <p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ul style="list-style-type: none"> Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in. When lighting <p>Use a smartphone to check that the wireless router to which the air conditioner is connected is connected to the Internet. If the smartphone cannot connect to the Internet, reboot the wireless router. When rebooting the wireless router does not solve the problem, contact the manufacturer of the wireless router.</p> When blinking <p>Wait for a while until the indicator lamp lights and then operate again. If the indicator lamp is still blinking after waiting for a while, check that the wireless router is turned on.</p>

Error code	Error message	Cause
		Solution
3115	Some device group move processing could not be conducted due to communication failure. After checking the following contents, please try again after a while. <ul style="list-style-type: none"> Ensure that your mobile device is connected to the internet. 	<p>Air conditioner group setting has not been completed because communication with air conditioner failed.</p> <p>Check the following contents depending on the status of indoor unit wireless LAN indicator lamp or WLAN Adapter LED 2 and operate again.</p> <ul style="list-style-type: none"> When not lighting <ul style="list-style-type: none"> Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in. When lighting <p>Use a smartphone to check that the wireless router to which the air conditioner is connected is connected to the Internet. If the smartphone cannot connect to the Internet, reboot the wireless router. When rebooting the wireless router does not solve the problem, contact the manufacturer of the wireless router.</p> When blinking <p>Wait for a while until the indicator lamp lights and then operate again. If the indicator lamp is still blinking after waiting for a while, check that the wireless router is turned on.</p>
5320	Loading of air conditioner information failed. Check the following contents. <ul style="list-style-type: none"> Ensure that your mobile device is connected to the internet. 	<p>Air conditioner information could not be obtained because communication with server (cloud) failed.</p> <ol style="list-style-type: none"> Check that the wireless LAN setting of smartphone is set to ON. Check that the smartphone is connected to the Internet. Check that the wireless router is turned on.
5531 5540	New firmware update failed.	<p>Firmware update failed.</p> <p>Check the following contents and operate again.</p> <ol style="list-style-type: none"> Check that the wireless LAN setting of smartphone is set to ON. Check that the smartphone is connected to the Internet. Check that the wireless router is turned on. Refer to the operation manual of air conditioner and check the indicator lamp state of air conditioner indoor unit.
5601	Failed to get the air conditioner information.	<p>Failed to obtain air conditioner information by Direct Control.</p> <p>Sign in again.</p>
5602	Failed to add the air conditioner.	<p>Failed to add air conditioner by Direct Control.</p> <p>Check the following contents and operate again.</p> <ol style="list-style-type: none"> When 2D barcode label is used, scan 2D barcode label again. When 2D barcode label is not used, check that the entered SSID or PIN code is correct.
5630	Device disconnection failed. After checking the following contents, please try again after a while. <ul style="list-style-type: none"> Ensure that your mobile device is connected to the internet. 	<p>Failed to disconnect the connection with air conditioner by Direct Control.</p> <p>Check the following contents and operate again.</p> <ol style="list-style-type: none"> Check that the smartphone is connected with the air conditioner. Check that the Electrical panel (Switch breaker) to the air conditioner is turned on. Check that the power plug of the air conditioner main unit is plugged in.

Error code	Error message	Cause
		Solution
6201	<p>Failed to update the screen. After checking the following contents, please try again after a while.</p> <ul style="list-style-type: none"> Ensure that your mobile device is connected to the internet. 	<p>Various settings could not be completed because communication with the server (cloud) failed.</p> <p>Check the following contents and operate again.</p> <ol style="list-style-type: none"> 1. Check that the wireless LAN setting of smartphone is set to ON. 2. Check that the smartphone is connected to the Internet. 3. Check that the wireless router is turned on.
7610	<p>Communication failed. Check the following contents.</p> <ul style="list-style-type: none"> Ensure that your mobile device is connected to the internet. 	<p>Various settings could not be completed because communication with the server (cloud) failed.</p> <p>Check the following contents and operate again.</p> <ol style="list-style-type: none"> 1. Check that the wireless LAN setting of smartphone is set to ON. 2. Check that the smartphone is connected to the Internet. 3. Check that the wireless router is turned on.

2. Troubleshooting with error code

2-1. E: 11.X. Serial communication error (Serial reverse transfer error) (Outdoor unit)

Indicator	Indoor unit	Operation indicator	1 time flash
		Timer indicator	1 time flash
		Economy indicator	Continuous flash
		Error code	E: 11
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Outdoor unit	Main PCB	When the indoor unit cannot receive the serial signal from outdoor unit more than 2 minutes after power on, or the indoor unit cannot receive the serial signal more than 15 seconds during normal operation.
		Fan motor	
Forecast of cause			Connection failure
			External cause
			Main PCB failure
			Active filter module failure
			Filter PCB failure
			Outdoor unit fan motor failure

Check point 1. Reset the power and operate

Does error indication show again?

→ If no, go to "[Check point 1-2](#)".



Check point 2. Check connection

Check any loose or removed connection line of indoor unit and outdoor unit.

Check connection condition is control unit. (If there is loose connector, open cable or mis-wiring.)

→ If there is an abnormal condition, correct it by referring to the installation manual or the "DESIGN & TECHNICAL MANUAL".



Check point 3. Check the voltage of power supply

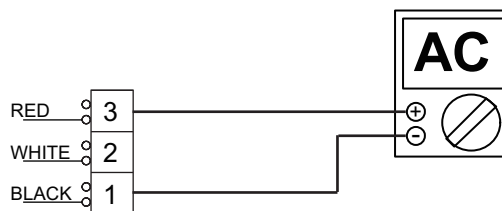
Check the voltage of power supply

Check if AC 187 V (AC 208 V -10%) to AC 253 V (AC 230 V +10%) appears at outdoor unit terminal 1—3.



Check point 4. Check serial signal (Reverse transfer signal)

Check serial signal (Reverse transfer signal)



- Check if indicated value swings between AC 90 V and AC 270 V at the outdoor unit terminal 1—3.
- If it is abnormal, check the parts below.
 - Outdoor unit fan motor
 - Active filter module
- If outdoor fan motor is abnormal, replace outdoor unit fan motor and main PCB.
- If active filter module is abnormal, replace it.
- If the checked parts are normal, replace the main PCB.



End

Check point 1-2. Check external cause such as noise

- Check the complete insulation of the grounding.
- Check if there is any equipment that causes harmonic wave near the power cable (Neon light bulb or any electronic equipment which causes harmonic wave).



End

2-2. E: 11.X. Serial communication error (Serial forward transfer error) (Indoor unit)

Indicator	Indoor unit	Operation indicator	1 time flash
		Timer indicator	1 time flash
		Economy indicator	Continuous flash
		Error code	E: 11
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Indoor unit	Main PCB	When the outdoor unit cannot properly receive the serial signal from indoor unit for 10 seconds or more.
		Fan motor	
	Outdoor unit	Main PCB	
Forecast of cause			Connection failure
			External cause
			Main PCB failure

Check point 1. Reset the power and operate

Does error indication show again?

→ If no, go to "[Check point 1-2](#)".



Check point 2. Check connection

Check any loose or removed connection line of indoor unit and outdoor unit.

→ If there is an abnormal condition, correct it by referring to the installation manual or the "DESIGN & TECHNICAL MANUAL".

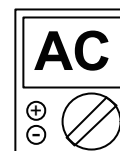
Check connection condition is control unit. (If there is loose connector, open cable or mis-wiring.)



Check point 3. Check the voltage of power supply

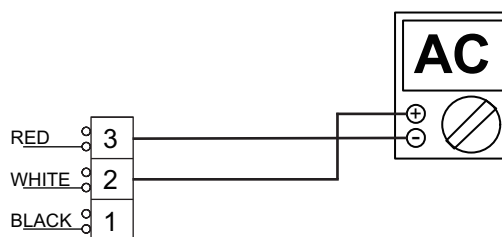
Check the voltage of power supply

Check if AC 187 V (AC 208 V -10%) to AC 253 V (AC 230 V +10%) appears at outdoor unit terminal 1—3.



Check point 4. Check serial signal (Forward transfer signal)

Check serial signal (Forward transfer signal)



- Check if indicated value swings between AC 30 V and AC 130 V at outdoor unit terminal 2—3.
- If it is abnormal, replace main PCB.



End

Check point 1-2. Check external cause such as noise

- Check if the ground connection is proper.
- Check if there is any equipment that causes harmonic wave near the power cable (Neon light bulb or any electronic equipment which causes harmonic wave).



End

2-3. E: 12.X. Wired remote controller communication error (Indoor unit)

Indicator	Indoor unit	Operation indicator	1 time flash
		Timer indicator	2 time flash
		Economy indicator	Continuous flash
		Error code	E: 12
	outdoor unit		Refer to " Error code table (Outdoor unit) " on page 03-4
Detective actuator	Indoor unit	Main PCB	When the indoor unit cannot receive the signal from wired remote controller more than 1 minute during normal operation.
	Wired remote control		
Forecast of cause			Terminal connection abnormal
			Wired remote control failure
			Main PCB failure

Check point 1. Check the connection of terminal

After turning off the power, check & correct the followings.

- Check the connection of terminal between wired remote controller and indoor unit, and check if there is a disconnection of the cable.



Check Point 1-2. Check the wired remote controller and main PCB

[Compact cassette type]

Check voltage at CN14 (terminal Y1—2) of main PCB or communication PCB. (Power supply to the remote controller)

- If it is DC 12 V, the remote controller is failure. (Main PCB is normal)
 - Replace the remote control
- If it is DC 0 V, the main PCB is failure. (Check remote controller once again)
 - Replace the main PCB

[Slim duct, Middle duct, and Wall mounted types]

Check voltage at CN300 (terminal 1—2) of main PCB or communication PCB. (Power supply to the remote controller)

- If it is DC 12 V, the remote controller is failure. (Main PCB is normal)
 - Replace the remote control
- If it is DC 0 V, the main PCB is failure. (Check remote controller once again)
 - Replace the main PCB



End

Check Point 2. Wire installation wrong remote controller group setting

- Wrong wire connection in remote controller group (Please refer to the installation manual)
- The number of connecting indoor unit and remote controller in one remote controller group were less than 16 units.



Check Point 2-1. Check Indoor unit main PCB

- Check if main PCB damage
- Change main PCB and check the error after setting remote controller address



End

2-4. E: 15.X. Automatic air flow adjustment error (Indoor unit)

Indicator	Indoor unit	Operation indicator	1 time flash
		Timer indicator	5 time flash
		Economy indicator	Continuous flash
		Error code	E: 15
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Indoor unit	Main PCB	<ul style="list-style-type: none"> On automatic airflow adjustment operation, when the fan speed other than 0rpm is detected at the 0rpm operation. On automatic airflow adjustment operation, when the fan speed is not reach the target speed, after 2 minutes from the fan started. On automatic airflow adjustment operation operation, when the 750 W of input power is detected.
Forecast of cause			Fan rotation failure
			Fan motor winding open
			Indoor unit main PCB

Check point 1. Check the rotation of fan

Rotate the fan by hand when the operation is off. (Check if fan is caught, drop off or locked motor)
→ If fan or bearing is abnormal, replace it.



Check point 2. Check ambient temperature around the motor

Check excessively high temperature around the motor. (If there is any surrounding equipment that causes heat.)
→ Upon the temperature coming down, restart operation.



Check point 3. Check indoor unit fan motor

Check indoor unit fan motor. (Refer to indoor unit fan motor in "[Service parts information](#)" on page 03-92.)
→ If indoor unit fan motor is abnormal, replace it.



Check point 4. Replace main PCB

If check point 1-3 does not improve the symptom, change main PCB.



End

2-5. E: 18.X. External communication error (Indoor unit)

Indicator	Indoor unit	Operation indicator	1 time flash
		Timer indicator	8 time flash
		Economy indicator	Continuous flash
		Error code	E: 18
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Indoor unit	External communication error	After receiving a signal from the external input and output PCB, the same signal has not been received for 15 seconds.
Forecast of cause			Connection failure
			WLAN Adapter failure
			Main PCB

Check point 1. Check the connection

- Check any loose or removed connection between the main PCB to the WLAN Adapter.
-> If there is an abnormal condition, correct it by refer to the installation manual or the "DESIGN & TECHNICAL MANUAL".
- Check the connection condition on the WLAN Adapter and the main PCB (If there is loose connector, open cable or mis-wiring.)



Check point 2. Replace the WLAN Adapter

If check point 1 do not improve the symptom, change WLAN Adapter.



Check point 3. Replace the main PCB

If check point 2 do not improve the symptom, replace the main PCB.



End

2-6. E: 22.X. Indoor unit capacity error (Indoor unit)

Indicator	Indoor unit	Operation indicator	2 time flash
		Timer indicator	2 time flash
		Economy indicator	Continuous flash
		Error code	E: 22
	outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Indoor unit main PCB		When the total capacity of the indoor units does not match outdoor unit capacity while 3 minutes after power on.
Forecast of cause		Indoor unit selection is incorrect.	
		Main PCB failure	

Check point 1. Check the total capacity of indoor units

Check the total capacity of the indoor units.

→ If abnormal condition is found, correct it referring to the installation manual or DESIGN & TECHNICAL MANUAL.



Check point 2. Replace the main PCB

If check point 1 does not improve the symptom, replace the main PCB.



End

2-7. E: 23.X. Combination error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	2 time flash
		Timer indicator	3 time flash
		Economy indicator	Continuous flash
		Error code	E: 23
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Indoor unit	The outdoor unit receives the serial signal of applied refrigerant information from indoor unit.	
Forecast of cause		Incorrect indoor unit is selected.	

Check point 1. Check the type of indoor unit

- Check the type of the connected indoor unit.
-> If there is an abnormal condition, correct it by refer to the installation manual or the "DESIGN & TECHNICAL MANAL".



Check point 2. Replace the main PCB

If check point 1 do not improve the symptom, replace the main PCB of the outdoor unit.



End

2-8. E: 26.X. Address setting error in wired remote controller (Indoor unit)

Indicator	Indoor unit	Operation indicator	2 time flash
		Timer indicator	6 time flash
		Economy indicator	Continuous flash
		Error code	E: 26
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Wired remote controller (2-wire)	<ul style="list-style-type: none"> When the address number set by auto setting and manual setting are mixed in one remote controller group When the duplicated address number exists in one remote controller group 	
	Indoor unit controller PCB		
Forecast of cause		Wrong wiring of remote controller group	
		Wrong remote controller address setting	
		Indoor unit main PCB failure	
		Remote controller failure	

Check point 1. Wire installation

- Check the wire connection in the remote controller group (For installation method, refer to installation manual)
-> If there is an abnormal condition, correct it by refer to the installation manual or the "DESIGN & TECHNICAL MANUAL".



Check point 2. Wrong remote controller group setting

- The given address number by auto setting (00) and the manual set number (except 00) are not existing in one remote controller group.
- The remote controller address setting by UI is not existing same address.
- The duplicate address number is not existing in one remote controller group.



Check point 3. Check indoor unit main PCB

- Check if main PCB is damaged.
- Change main PCB and check the error after setting remote controller address.



End

2-9. E: 29.X. Connected unit number error (Indoor unit)

Indicator	Indoor unit	Operation indicator	2 time flash
		Timer indicator	9 time flash
		Economy indicator	Continuous flash
		Error code	E: 29
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Wired remote controller (2-wire)	When the number of the connected indoor unit exceeds the limitation.	
	Indoor unit main PCB		
Forecast of cause		Wrong wiring of indoor unit or remote controller	
		Number of indoor unit or remote controller in remote controller group	
		Indoor unit main PCB failure	

Check point 1. Wire installation

- Wrong number of connected indoor unit
-> If there is an abnormal condition, correct it by refer to the installation manual or the "DESIGN & TECHNICAL MANUAL".



Check point 2. Check indoor unit main PCB

- Check if main PCB is damaged.
- Change main PCB and check the error after setting remote controller address.



End

2-10. E: 32.X. Indoor unit main PCB error (Indoor unit)

Indicator	Indoor unit	Operation indicator	3 time flash
		Timer indicator	2 time flash
		Economy indicator	Continuous flash
		Error code	E: 32
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Indoor unit	Main PCB	When power is on and there is some below case. 1. When model information of EEPROM is incorrect. 2. When the access to EEPROM failed.
Forecast of cause			External cause
			Defective connection of electrical components
			Main PCB failure

Check point 1. Reset power supply and operate

Does error indication show again?

→ If no, go to "[Check point 1-2](#)".



Check point 2. Check Indoor unit electrical components

- Check all connectors. (loose connector or incorrect wiring)
- Check any shortage or corrosion on PCB.



Check point 3. Replace the main PCB

Replace the main PCB.



End

Check point 1-2. Check external cause such as noise

- Check if the ground connection is proper.
- Check if there is any equipment that causes harmonic wave near the power cable (Neon light bulb or any electronic equipment which causes harmonic wave).



End

NOTE: EEPROM

EEPROM (Electrically Erasable and Programmable Read Only Memory) is a non-volatile memory which keeps memorized information even if the power is turned off. It can change the contents electronically. To change the contents, it uses higher voltage than normal, and it cannot change a partial contents. (Rewriting shall be done upon erasing the all contents.) There is a limit in a number of rewriting.

2-11. E: 33.X. Indoor unit motor electricity consumption detection error (Indoor unit)

Indicator	Indoor unit	Operation indicator	3 time flash
		Timer indicator	3 time flash
		Economy indicator	Continuous flash
		Error code	E: 33
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Indoor unit motor electricity consumption detection		When the voltage value or the current value of the motor go beyond the limits
Forecast of cause		Fan motor failure	
		Main PCB failure	

Check point 1. Check the rotation of fan

Rotate the fan by hand when the operation is off. (Check if fan is caught, drop off or locked motor)
→ If fan or bearing is abnormal, replace it.



Check point 2. Check ambient temperature around the motor

Check excessively high temperature around the motor. (If there is any surrounding equipment that causes heat.)
→ Upon the temperature coming down, restart operation.



Check point 3. Check indoor unit fan motor

Check indoor unit fan motor. (Refer to indoor unit fan motor in "[Service parts information](#)" on page 03-92.)
→ If indoor unit fan motor is abnormal, replace it.



Check point 4. Replace the main PCB

If check point 1-3 does not improve the symptom, replace the main PCB.



End

2-12. E: 35.X. MANUAL AUTO button error (Indoor unit)

Indicator	Indoor unit	Operation indicator	3 time flash
		Timer indicator	5 time flash
		Economy indicator	Continuous flash
		Error code	E: 35
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Indoor unit controller PCB	When the MANUAL AUTO button becomes on for consecutive 60 or more seconds.	
	Indicator PCB		
	Manual auto switch		
Forecast of cause		MANUAL AUTO button failure	
		Controller PCB and indicator PCB failure	

Check point 1. Check the MANUAL AUTO button

- Check if MANUAL AUTO button is kept pressed.
- Check ON/OFF switching operation by using a meter.



If MANUAL AUTO button is disabled (ON/OFF switching), replace it.



Check point 2. Replace the main PCB and indicator PCB

If Check Point 1 does not improve the symptom, replace the main PCB and indicator PCB.



End

2-13. E: 39.X. Indoor unit power supply error for fan motor (Indoor unit)

Indicator	Indoor unit	Operation indicator	3 time flash
		Timer indicator	9 time flash
		Economy indicator	Continuous flash
		Error code	E: 39
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Indoor unit main PCB		<ul style="list-style-type: none"> When a momentary power cut off When do not start fan motor
Forecast of cause		External cause	
		Connector connection failure	
		Main PCB failure	

Check point 1. Check external cause at indoor and outdoor (Voltage drop or Noise)

- Instant drop: Check if there is a large load electric apparatus in the same circuit.
- Momentary power failure: Check if there is a defective contact or leak current in the power supply circuit.
- Noise: Check if there is any equipment causing harmonic wave near electric line. (Neon bulb or electric equipment that may cause harmonic wave)
Check the complete insulation of grounding.



Check point 2. Check connection of Connector

- Check if connector is removed.
- Check erroneous connection.
- Check if cable is open.

→ Upon correcting the removed connector or mis-wiring, reset the power.



Check point 3. Replace the main PCB

If check point 1 to 2 do not improve the symptom, replace the main PCB.



End

2-14. E: 3A.X. Indoor unit communication circuit (wired remote controller) error

Indicator	Indoor unit	Operation indicator	3 time flash
		Timer indicator	10 time flash
		Economy indicator	Continuous flash
		Error code	E: 3A
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Wired remote controller (2-wire)	Detect the communication error of microcomputer and communication PCB.	
	Indoor unit controller PCB circuit		
Forecast of cause		Communication PCB defective	
		Indoor unit main PCB defective	

Check point 1. Check the connection of terminal

- After turning off the power supply, check and correct the followings
Indoor unit - Check the connection the communication PCB and the main PCB



Check Point 2 : Replace the communication PCB

If the Check point 1 is ok, replace the communication PCB



Check Point 3 : Replace the main PCB

If condition is doesn't change, replace the main PCB



End

2-15. E: 41.X. Room temperature sensor error (Indoor unit)

Indicator	Indoor unit	Operation indicator	4 time flash
		Timer indicator	1 time flash
		Economy indicator	Continuous flash
		Error code	E: 41
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Indoor unit main PCB	Room temperature thermistor is open or short is detected always.	
	Room temperature thermistor		
Forecast of cause		Connector failure	
		Thermistor failure	
		Main PCB failure	

Check point 1. Check connection of connector

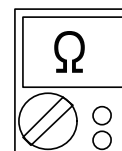
- Check if connector is loose or removed.
- Check erroneous connection.
- Check if thermistor cable is open

-> Reset power when reinstalling due to removed connector or incorrect wiring.



Check point 2. Remove connector and check thermistor resistance value

- For the room thermistor resistance value, refer to "[Thermistor resistance values](#)" on page 03-104.
- If thermistor is either open or shorted, replace it and reset the power.



Check point 3. Check voltage of main PCB

Make sure circuit diagram of each indoor unit and check terminal voltage at thermistor (DC 5.0 V).

NOTE: For details of thermistor connector, refer to "[Wiring diagrams](#)" in Chapter 2. TECHNICAL DATA AND PARTS LIST on page 02-24.



If the voltage does not appear, replace main PCB.



End

2-16. E: 42.X. Indoor unit heat exchanger sensor error (Indoor unit)

Indicator	Indoor unit	Operation indicator	4 time flash
		Timer indicator	2 time flash
		Economy indicator	Continuous flash
		Error code	E: 42
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Indoor unit main PCB	When heat exchanger temperature thermistor open or short circuit is detected.	
	Heat exchanger temperature thermistor		
Forecast of cause		Connector connection failure	
		Thermistor failure	
		Main PCB failure	

Check point 1. Check connection of connector

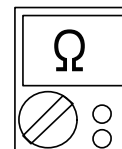
- Check if connector is loose or removed.
- Check erroneous connection.
- Check if thermistor cable is open

-> Reset power when reinstalling due to removed connector or incorrect wiring.



Check point 2. Remove connector and check thermistor resistance value

- For the heat exchanger thermistor resistance value, refer to "[Thermistor resistance values](#)" on page 03-104.
- If thermistor is either open or shorted, replace it and reset the power.



Check point 3. Check voltage of main PCB

Make sure circuit diagram of each indoor unit and check terminal voltage at thermistor (DC 5.0 V).

NOTE: For details of thermistor connector, refer to "[Wiring diagrams](#)" in Chapter 2. TECHNICAL DATA AND PARTS LIST on page 02-24.



If the voltage does not appear, replace main PCB.



End

2-17. E: 45.X. Refrigerant leakage sensor error (Indoor unit)

Detective actuator	Refrigerant leakage sensor	When refrigerant leakage sensor open, short circuit, or abnormal voltage of drive circuits detected.
Forecast of cause		Connector connection failure
		Harness disconnection
		Refrigerant leakage sensor deterioration

System is down.

Check point 1. Check connection of connector

- Check if connector is loose or removed.
- Check erroneous connection.
- Check if refrigerant leakage sensor cable is open.

-> Reset power when reinstalling due to removed connector or incorrect wiring.



Check point 2. Replace refrigerant leakage sensor

- If an abnormality (failure) occurs, the refrigerant leakage sensor needs to be replaced.



End

2-18. E: 45.X. Refrigerant leakage sensor deterioration (Indoor unit)

Detective actuator	Refrigerant leakage sensor	When refrigerant leakage sensor open, short circuit, or abnormal voltage of drive circuits detected.
Forecast of cause		Connector connection failure
		Harness disconnection
		Refrigerant leakage sensor deterioration

Continuous operation for a certain period is possible.

Check point 1. Replace refrigerant leakage sensor

- Replace due to expiration of refrigerant leakage sensor.
- Refrigerant leakage sensor needs to be replaced regularly.



End

2-19. E: 51.X. Indoor unit fan motor error (Indoor unit)

Indicator	Indoor unit	Operation indicator	5 time flash
		Timer indicator	1 time flash
		Economy indicator	Continuous flash
		Error code	E: 51
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Indoor unit	Main PCB	When the actual rotation number of the indoor unit fan motor is below 1/3 of the target rotation number continuously for more than 56 seconds.
		Fan motor	
Forecast of cause			Fan rotation failure
			Fan motor winding open
			Motor protection by surrounding temperature rise
			Control PCB failure
			Indoor unit fan motor failure

Check point 1. Check rotation of fan

Rotate the fan by hand when operation is off. (Check if fan is caught, dropped off or locked motor)
→ If fan or bearing is abnormal, replace it.



Check point 2. Check ambient temperature around motor

Check excessively high temperature around the motor. (If there is any surrounding equipment that causes heat)
→ Upon the temperature coming down, restart operation.



Check point 3. Check indoor unit fan motor

Check Indoor unit fan motor. (Refer to indoor unit fan motor in "[Service parts information](#)" on page 03-92.)
→ If Indoor unit fan motor is abnormal, replace Indoor unit fan motor.



Check point 4. Replace the main PCB

If Check Point 1 to 3 do not improve the symptom, replace the main PCB.



End

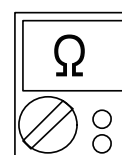
2-20. E: 53.X. Drain pump error (Indoor unit)

Indicator	Indoor unit	Operation indicator	5 time flash
		Timer indicator	3 time flash
		Economy indicator	Continuous flash
		Error code	E: 53
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Indoor unit main PCB	When Float switch is ON for more than 3 minutes.	
	Float switch		
Forecast of cause		Float switch failure	
		Shorted connector/wire failure	
		Main PCB failure	
		Drain pump failure	
		Hose clogging	

Check point 1. Check float switch

- Check operation of float switch. (any blocking by dust, etc.)
- Remove float switch and check ON/OFF switching operation by using a meter.

-> If float switch is abnormal, replace it.



Check point 2. Check connector and wire

Check loose contact of CN9 and shorted wire (pinched wire).
-> Replace float switch if the wire is abnormal



Check point 3. Check drain hose

Check drain hose.
-> If there is hose clogging. Please clear the clog.



Check point 4. Replace the main PCB

If check point 1 to 3 do not improve the symptom, replace the main PCB and execute the check operation again.



End

Attention

Wall mount type does not have a float switch. In this case, replace main PCB and set up the original address.

2-21. E: 5U.X. Indoor unit error

Indicator	Indoor unit	Operation indicator	5 time flash
		Timer indicator	15 time flash
		Economy indicator	Continuous flash
		Error code	E: 5U
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	

Check point. Check following error code.

[E: 11.X. Serial communication error \(Serial reverse transfer error\) \(Outdoor unit\)](#)

[E: 11.X. Serial communication error \(Serial forward transfer error\) \(Indoor unit\)](#)

[E: 12.X. Wired remote controller communication error \(Indoor unit\)](#)

[E: 18.X. External communication error \(Indoor unit\)](#)

[E: 18.X. External communication error between indoor unit and wireless LAN adapter](#)

[E: 18.X. Communication error](#)

[E: 18.X. Wireless LAN adapter non-energized](#)

[E: 22.X. Indoor unit capacity error \(Indoor unit\)](#)

[E: 23.X. Combination error \(Outdoor unit\)](#)

[E: 26.X. Address setting error in wired remote controller \(Indoor unit\)](#)

[E: 29.X. Connected unit number error \(Indoor unit\)](#)

[E: 32.X. Indoor unit main PCB error \(Indoor unit\)](#)

[E: 33.X. Indoor unit motor electricity consumption detection error \(Indoor unit\)](#)

[E: 35.X. MANUAL AUTO button error \(Indoor unit\)](#)

[E: 3A.X. Indoor unit communication circuit \(wired remote controller\) error](#)

[E: 41.X. Room temperature sensor error \(Indoor unit\)](#)

[E: 42.X. Indoor unit heat exchanger sensor error \(Indoor unit\)](#)

[E: 51.X. Indoor unit fan motor error \(Indoor unit\)](#)



End

2-22. E: 62.X. Outdoor unit model information error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	6 time flash
		Timer indicator	2 time flash
		Economy indicator	Continuous flash
		Error code	E: 62
	outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Outdoor unit	main PCB	When power is on and there is some below case. 1. When model information of EEPROM is incorrect. 2. When the access to EEPROM failed.
Forecast of cause			External cause
			Defective connection of electrical components
			Main PCB failure

Check point 1. Reset power supply and operate

Does error indication show again?

→ If no, go to "[Check point 1-2](#)".



Check point 2. Check Indoor unit electrical components

- Check all connectors. (loose connector or incorrect wiring)
- Check any shortage or corrosion on PCB.



Check point 3. Replace the main PCB

If Check Point 1,2 do not improve the symptom, replace the main PCB.



End

Check point 1-2. Check external cause such as noise

- Check if the ground connection is proper.
- Check if there is any equipment that causes harmonic wave near the power cable (Neon light bulb or any electronic equipment which causes harmonic wave).



End

NOTE: EEPROM

EEPROM (Electrically Erasable and Programmable Read Only Memory) is a non-volatile memory which keeps memorized information even if the power is turned off. It can change the contents electronically. To change the contents, it uses higher voltage than normal, and it cannot change a partial contents. (Rewriting shall be done upon erasing the all contents.) There is a limit in a number of rewriting.

2-23. E: 63.X. Inverter error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	6 time flash
		Timer indicator	3 time flash
		Economy indicator	Continuous flash
		Error code	E: 63
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Outdoor unit	Inverter PCB	Error information received from inverter PCB
Forecast of cause			External cause
			Power supply to inverter PCB and filter PCB wiring disconnection or open
			Filter PCB failure
			Inverter PCB failure

Check point 1. Turn the power on again?

Error displayed again?

If no, go to "[Check point 1-2](#)".



Check point 2. Check the wiring (power supply to inverter PCB and filter PCB)

- Connector and wiring connection state check
- Cable open check



Check point 3. Replace inverter PCB and filter PCB

Replace inverter PCB and filter PCB



End

Check point 1-2. Check external cause

- Check if temporary voltage drop was not generated.
- Check if momentary open was not generated.
- Check if ground is connection correctly or there are no related cables near the power line.



End

2-24. E: 64.X. Active filter voltage error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	6 time flash
		Timer indicator	4 time flash
		Economy indicator	Continuous flash
		Error code	E: 64
	outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Outdoor unit	Main PCB	<ul style="list-style-type: none">When inverter input DC voltage is higher than 425 V or lower than 80 V.When a momentary power cut off occurred on low voltage
		Air filter module	
Forecast of cause			External cause
			Connector connection failure
			Main PCB failure
			Active filter module failure

Check point 1. Check external cause at indoor and outdoor (Voltage drop or Noise)

- Instant drop: Check if there is a large load electric apparatus in the same circuit.
- Momentary power failure: Check if there is a defective contact or leak current in the power supply circuit.
- Noise: Check if there is any equipment causing harmonic wave near electric line. (Neon bulb or electric equipment that may cause harmonic wave)
Check the complete insulation of grounding.



Check point 2. Check connection of Connector

- Check if connector is removed.
- Check erroneous connection.
- Check if cable is open.

Upon correcting the removed connector or miswiring, reset the power.



Check point 3. Check active filter module

Check active filter module. (Refer to active filter module in "[Service parts information](#)" on page 03-92.)

→ If active filter module is abnormal, replace it



Check point 4. Replace the main PCB

If check point 1 to 3 do not improve the symptom, replace the main PCB.



End

2-25. E: 65.X. IPM error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	6 time flash
		Timer indicator	5 time flash
		Economy indicator	Continuous flash
		Error code	E: 65
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Outdoor unit	Main PCB	When the signal from FO terminal terminal of IPM is "L" (0 V) during the compressor stopping.
Forecast of cause			Main PCB failure

Check point 1. Replace the main PCB

Replace the main PCB.



End

2-26. E: 71.X. Discharge thermistor error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	7 time flash
		Timer indicator	1 time flash
		Economy indicator	Continuous flash
		Error code	E: 71
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Outdoor unit main PCB	When discharge pipe temperature thermistor open or short circuit is detected at power on or while running the compressor	
	Discharge pipe temperature thermistor		
Forecast of cause		Connector failure	
		Thermistor failure	
		Main PCB failure	

Check point 1. Check connection of connector

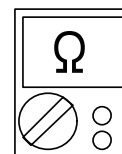
- Check if connector is loose or removed.
- Check erroneous connection.
- Check if thermistor cable is open

→ Reset power when reinstalling due to removed connector or incorrect wiring.



Check point 2. Remove connector and check thermistor resistance value

- For the discharge temperature thermistor resistance value, refer to "[Thermistor resistance values](#)" on page 03-104.
- If thermistor is either open or shorted, replace it and reset the power.



Check point 3. Check voltage of main PCB

Make sure circuit diagram of outdoor unit and check terminal voltage at thermistor (DC 5.0 V).

NOTE: For details of thermistor connector, refer to "[Wiring diagrams](#)" in Chapter 2. TECHNICAL DATA AND PARTS LIST on page 02-24.



If the voltage does not appear, replace main PCB.



End

2-27. E: 72.X. Compressor thermistor error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	7 time flash
		Timer indicator	2 time flash
		Economy indicator	Continuous flash
		Error code	E: 72
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Outdoor unit main PCB	When compressor temperature thermistor open or short circuit is detected at power on or while running the compressor	
	Compressor temperature thermistor		
Forecast of cause		Connector failure	
		Thermistor failure	
		Main PCB failure	

Check point 1. Check connection of connector

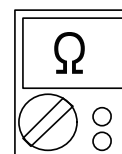
- Check if connector is loose or removed.
- Check erroneous connection.
- Check if thermistor cable is open

→ Reset power when reinstalling due to removed connector or incorrect wiring.



Check point 2. Remove connector and check thermistor resistance value

- For the compressor thermistor resistance value, refer to "[Thermistor resistance values](#)" on page 03-104.
- If thermistor is either open or shorted, replace it and reset the power.



Check point 3. Check voltage of main PCB

Make sure circuit diagram of outdoor unit and check terminal voltage at thermistor (DC 5.0 V).

NOTE: For details of thermistor connector, refer to "[Wiring diagrams](#)" in Chapter 2. TECHNICAL DATA AND PARTS LIST on page 02-24.



If the voltage does not appear, replace main PCB.



End

2-28. E: 73.X. Outdoor unit heat exchanger thermistor error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	7 time flash
		Timer indicator	3 time flash
		Economy indicator	Continuous flash
		Error code	E: 73
	outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Outdoor unit main PCB	When heat exchanger temperature thermistor open or short circuit is detected at power on or while running the compressor	
	Heat exchanger temperature thermistor		
Forecast of cause		Connector failure	
		Thermistor failure	
		Main PCB failure	

Check point 1. Check connection of connector

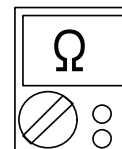
- Check if connector is loose or removed.
- Check erroneous connection.
- Check if thermistor cable is open

→ Reset power when reinstalling due to removed connector or incorrect wiring.



Check point 2. Remove connector and check thermistor resistance value

- For the outdoor unit heat exchanger thermistor resistance value, refer to "[Thermistor resistance values](#)" on page 03-104.
- If thermistor is either open or shorted, replace it and reset the power.



Check point 3. Check voltage of main PCB

Make sure circuit diagram of outdoor unit and check terminal voltage at thermistor (DC 5.0 V).

NOTE: For details of thermistor connector, refer to "[Wiring diagrams](#)" in Chapter 2. TECHNICAL DATA AND PARTS LIST on page 02-24.

If the voltage does not appear, replace main PCB.



End

2-29. E: 74.X. Outdoor temperature thermistor error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	7 time flash
		Timer indicator	4 time flash
		Economy indicator	Continuous flash
		Error code	E: 74
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Outdoor unit main PCB	When outdoor temperature thermistor open or short circuit is detected at power on or while running the compressor	
	Outdoor temperature thermistor		
Forecast of cause		Connector failure	
		Thermistor failure	
		Main PCB failure	

Check point 1. Check connection of connector

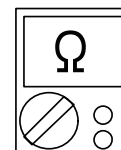
- Check if connector is loose or removed.
- Check erroneous connection.
- Check if thermistor cable is open

-> Reset power when reinstalling due to removed connector or incorrect wiring.



Check point 2. Remove connector and check thermistor resistance value

- For the outdoor temperature thermistor resistance value, refer to "[Thermistor resistance values](#)" on page 03-104.
- If thermistor is either open or shorted, replace it and reset the power.



Check point 3. Check voltage of main PCB

Make sure circuit diagram of outdoor unit and check terminal voltage at thermistor (DC 5.0 V).

NOTE: For details of thermistor connector, refer to "[Wiring diagrams](#)" in Chapter 2. TECHNICAL DATA AND PARTS LIST on page 02-24.



If the voltage does not appear, replace main PCB.



End

2-30. E: 76.X. 2-way valve thermistor error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	7 time flash
		Timer indicator	6 time flash
		Economy indicator	Continuous flash
		Error code	E: 76
	outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Outdoor unit main PCB	When 2-way valve temperature thermistor open or short circuit is detected at power on or while running the compressor.	
	2-way valve temperature thermistor		
Forecast of cause		Connector failure	
		Thermistor failure	
		Main PCB failure	

Check point 1. Check connection of connector

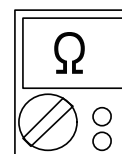
- Check if connector is loose or removed.
- Check erroneous connection.
- Check if thermistor cable is open

-> Reset power when reinstalling due to removed connector or incorrect wiring.



Check point 2. Remove connector and check thermistor resistance value

- For the outdoor temperature thermistor resistance value, refer to "[Thermistor resistance values](#)" on page 03-104.
- If thermistor is either open or shorted, replace it and reset the power.



Check point 3. Check voltage of main PCB

Make sure circuit diagram of outdoor unit and check terminal voltage at thermistor (DC 5.0 V).

NOTE: For details of thermistor connector, refer to "[Wiring diagrams](#)" in Chapter 2. TECHNICAL DATA AND PARTS LIST on page 02-24.

If the voltage does not appear, replace main PCB.



End

2-31. E: 76.X. 3-way valve thermistor error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	7 time flash
		Timer indicator	6 time flash
		Economy indicator	Continuous flash
		Error code	E: 76
	outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Outdoor unit main PCB	When 3-way valve temperature thermistor open or short circuit is detected at power on or while running the compressor.	
	3-way valve temperature thermistor		
Forecast of cause		Connector failure	
		Thermistor failure	
		Main PCB failure	

Check point 1. Check connection of connector

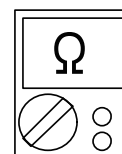
- Check if connector is loose or removed.
- Check erroneous connection.
- Check if thermistor cable is open

-> Reset power when reinstalling due to removed connector or incorrect wiring.



Check point 2. Remove connector and check thermistor resistance value

- For the outdoor temperature thermistor resistance value, refer to "[Thermistor resistance values](#)" on page 03-104.
- If thermistor is either open or shorted, replace it and reset the power.



Check point 3. Check voltage of main PCB

Make sure circuit diagram of outdoor unit and check terminal voltage at thermistor (DC 5.0 V).

NOTE: For details of thermistor connector, refer to "[Wiring diagrams](#)" in Chapter 2. TECHNICAL DATA AND PARTS LIST on page 02-24.

If the voltage does not appear, replace main PCB.



End

2-32. E: 77.X. Heat sink thermistor error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	7 time flash
		Timer indicator	7 time flash
		Economy indicator	Continuous flash
		Error code	E: 77
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Heat sink temperature thermistor	Heat sink temperature thermistor short or open detected	
Forecast of cause		Connector failure	
		Thermistor failure	
		Inverter PCB failure	

Check point 1. Check connection of connector

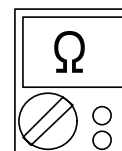
- Check if connector is loose or removed.
- Check erroneous connection.
- Check if thermistor cable is open

-> Reset power when reinstalling due to removed connector or incorrect wiring.



Check point 2. Remove connector and check thermistor resistance value

- For the Heat sink thermistor resistance value, refer to "[Thermistor resistance values](#)" on page 03-104.
- If thermistor is either open or shorted, replace it and reset the power.



Check point 3. Check voltage of inverter PCB

Make sure circuit diagram of outdoor unit and check terminal voltage at thermistor (DC 5.0 V).

NOTE: For details of thermistor connector, refer to "[Wiring diagrams](#)" in Chapter 2. TECHNICAL DATA AND PARTS LIST on page 02-24.



If the voltage does not appear, replace inverter PCB.



End

2-33. E: 84.X. Current sensor error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	8 time flash
		Timer indicator	4 time flash
		Economy indicator	Continuous flash
		Error code	E: 84
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Outdoor unit	Main PCB	When input current sensor has detected 0 A, while inverter compressor is operating at higher than 56 rps, after 1 minute upon starting the compressor. (Except during the defrost operation)
		Inverter PCB	
Forecast of cause			Defective connection of electrical components
			External cause
			Inverter PCB failure
			Main PCB failure

Check point 1. Reset power supply and operate

Does error indication show again?

If no, go to "[Check point 1-2](#)".



Check point 2. Check connections of outdoor unit electrical components

- Check if the terminal connection is loose.
- Check if connector is removed.
- Check erroneous connection.
- Check if cable is open.

Upon correcting the removed connector or miswiring, reset the power.



Check point 3. Replace the Inverter PCB

If Check point 1, 2 do not improve the symptom, replace the Inverter PCB.

If the model does not have an Inverter PCB, go to "[Check point 4](#)".



Check point 4. Replace the Main PCB

If Check point 3 do not improve the symptom, replace the Main PCB.



End

Check point 1-2. Check external cause at Indoor and Outdoor (Voltage drop or Noise)

- Instant drop: Check if there is a large load electric apparatus in the same circuit.
- Momentary power failure: Check if there is a defective contact or leak current in the power supply circuit.
- Noise: Check if there is any equipment causing harmonic wave near electric line. (Neon bulb or electric equipment that may cause harmonic wave)
Check the complete insulation of grounding.

**End**

2-34. E: 86.X. High pressure switch error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	8 time flash
		Timer indicator	6 time flash
		Economy indicator	Continuous flash
		Error code	E: 86
	outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Outdoor unit main PCB	When pressure switch open is detected in 10 seconds after the power is turned on.	
	High pressure switch		
Forecast of cause		Connector connection failure	
		Pressure sensor failure	
		Main PCB failure	

Check point 1. Reset power supply and operate

Does abnormal LED indication show again?

If no, go to "[Check point 3](#)".



Check point 2. Check output voltage of main PCB

Make sure circuit diagram of outdoor unit and check terminal voltage at thermistor (DC 5.0 V \pm 5%).

NOTE: For details of thermistor connector, refer to "[Wiring diagrams](#)" in Chapter 2.
TECHNICAL DATA AND PARTS LIST on page 02-24.

If the voltage is not correct, replace main PCB.



Check point 3. Check pressure switch

Check if connector is loose or cable is open.
-> If no abnormal connection is found, replace pressure switch.

After replacing pressure switch, check operating condition and pressure in operation.



End

- Characteristics of pressure switch

Pressure switch 1	
Contact: Short → Open	4.2 \pm 0.1 MPa
Contact: Open → Short	3.2 \pm 0.15 MPa

18, 24, and 36 models: P20, 45 model: P770

2-35. E: 94.X. Over current error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	9 time flash
		Timer indicator	4 time flash
		Economy indicator	Continuous flash
		Error code	E: 94
	outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Outdoor unit	Main PCB	<div>1. When more than normal operating current to IPM in main PCB flows, the compressor stops.</div> <div>2. After the compressor restarts, if the same operation is repeated within 40 seconds, the compressor stops again.</div> <div>3. If 1. and 2. repeats 5 times, the compressor stops permanently.</div>
		Compressor	
Forecast of cause			Defective connection of electrical components
			Outdoor fan operation failure
			Outdoor heat exchanger clogged
			Compressor failure
			Main PCB failure

Check point 1. Check connections of outdoor unit electrical components

- Check if the terminal connection is loose.
- Check if connector is removed.
- Check erroneous connection.
- Check if cable is open.

→ Upon correcting the removed connector or mis-wiring, reset the power.



Check point 2. Check outdoor fan and heat exchanger

- Is there anything obstructing the air distribution circuit?
- Is there any clogging of outdoor heat exchanger?
- Is the fan rotating by hand when operation is off?

→ If the fan motor is locked, replace it.



Check point 3. Check outdoor fan

Check outdoor fan motor.

Refer to "[E: 97.X. Outdoor unit fan motor error \(Outdoor unit\)](#)" on page 03-65.

→ If the fan motor is failure, replace it.



Check point 4. Check compressor

Check compressor. (Refer to inverter compressor in ["Service parts information"](#).)



Check point 5. Replace the main PCB

If Check point 1 to 4 do not improve the symptom, replace the main PCB.



End

2-36. E: 95.X. Compressor motor control error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	9 time flash
		Timer indicator	5 time flash
		Economy indicator	Continuous flash
		Error code	E: 95
	outdoor unit	Refer to "Error code table (Outdoor unit)" on page 03-4	
Detective actuator	Outdoor unit	Main PCB	<div>1. When running the compressor, if the detected rotor location is out of phase with actual rotor location more than 90°, the compressor stops.</div> <div>2. After the compressor restarts, if the same operation is repeated within 40 seconds, the compressor stops again.</div> <div>3. If 1. and 2. repeats 5 times, the compressor stops permanently.</div>
		Compressor	
Forecast of cause			Defective connection of electrical components
			Main PCB failure
			Compressor failure

Check point 1. Check Noise from Compressor

Turn on Power and check operation noise.
→ If an abnormal noise show, replace compressor.



Check point 2. Check connection of around the compressor components

For compressor terminal, main PCB

- Check if connector is removed.
- Check erroneous connection.
- Check if cable is open. (Refer to inverter compressor in "[Service parts information](#)" on page 03-92.)

→ Upon correcting the removed connector or mis-wiring, reset the power.



Check point 3. Replace the main PCB

If Check point 1, 2 do not improve the symptom, replace the main PCB.



Check point 4. Replace compressor

If Check point 3 do not improve the symptom, change compressor.



End

2-37. E: 97.X. Outdoor unit fan motor error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	9 time flash
		Timer indicator	7 time flash
		Economy indicator	Continuous flash
		Error code	E: 97
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Outdoor unit	Main PCB	<div>1. When outdoor fan rotation speed is less than 100 rpm in 20 seconds after fan motor starts, fan motor stops.</div> <div>2. After fan motor restarts, if the same operation within 60 seconds is repeated 3 times in a row, compressor and fan motor stops.</div> <div>3. If 1. and 2. repeats 5 times in a row, compressor and fan motor stops permanently.</div>
		Fan motor	
Forecast of cause			Fan rotation failure
			Motor protection by surrounding temperature rise
			Main PCB failure
			Outdoor unit fan motor

Check point 1. Check rotation of fan

Rotate the fan by hand when operation is off. (Check if fan is caught, dropped off or locked motor)
→ If fan or bearing is abnormal, replace it.



Check point 2. Check ambient temperature around motor

Check excessively high temperature around the motor. (If there is any surrounding equipment that causes heat)
→ Upon the temperature coming down, restart operation.



Check point 3. Check outdoor unit fan motor

Check outdoor unit fan motor. (Refer to outdoor unit fan motor in "[Service parts information](#)" on page 03-92.)
→ If outdoor unit fan motor is abnormal, replace outdoor unit fan motor and main PCB.



Check point 4. Check output voltage of main PCB

Check outdoor unit circuit diagram and the voltage. (Measure at main PCB side connector)

NOTE: For details of wiring diagram, refer to "[Wiring diagrams](#)" in Chapter 2. TECHNICAL DATA AND PARTS LIST on page 02-24.



Read wire	DC voltage
Red—Black	18, 24, and 36 models: 240 V—400 V, 45 model: 262 V—390 V
White—Black	15 ±1.5 V

-> If the voltage is not correct, replace Main PCB.



End

2-38. E: 99.X. 4-way valve error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	9 time flash
		Timer indicator	9 time flash
		Economy indicator	Continuous flash
		Error code	E: 99
	outdoor unit		Refer to " Error code table (Outdoor unit) " on page 03-4
Detective actuator	Indoor unit	main PCB	When the indoor heat exchanger temperature is compared with the room temperature, and either following condition is detected continuously two times, the compressor stops. Indoor heat exchanger temp. - Room temp. > 20°F (10°C) (Cooling or Dry operation) Indoor heat exchanger temp. - Room temp. < -20°F (-10°C) (Heating operation) If the same operation is repeated 5 times, the compressor stops permanently.
	Heat exchanger temperature thermistor		
	Room temperature thermistor		
	4-way valve		
Forecast of cause			Connector connection failure
			Thermistor failure
			Coil failure
			4-way valve failure
			Main PCB failure
			Controller PCB failure

Check point 1. Check connection of connector

- Check if connector is removed.
- Check erroneous connection.
- Check if thermistor cable is open.

→ Upon correcting the removed connector or mis-wiring, reset the power.



Check point 2. Check thermistor of Indoor unit

- Isn't it fallen off the holder?
- Is there a cable pinched?

Check characteristics of thermistor, refer to "[E: 41.X. Room temperature sensor error \(Indoor unit\)](#)" on page 03-41 and "[E: 42.X. Indoor unit heat exchanger sensor error \(Indoor unit\)](#)" on page 03-42.

→ If defective, replace the thermistor.



Check point 3. Check the solenoid coil and 4-way valve

- **Solenoid coil**
Remove P60 from PCB and check the resistance value of coil. Resistance value is about 1.970 kΩ.
→ If it is open or abnormal resistance value, replace solenoid coil.
- **4-way valve**
Check each piping temperature, and the location of the valve by the temperature difference.
If the value location is not proper, replace 4-way valve.



Check point 4. Check the voltage of 4-way valve

Check the voltage P60 of Main PCB.

→ Check if AC 187 V (AC 208 V -10%) to AC 253 V (AC 230 V +10%) appears at P60 of Main PCB.

- **Heating operation**
→ If it is not voltage, replace the main PCB.
- **Cooling operation**
→ If it is voltage, replace the main PCB.



Check point 5. Replace the main PCB

If Check Point 1 to 4 do not improve the symptom, replace the main PCB.



End

2-39. E: 9A.X. Coil 1 (expansion valve 1) error

Indicator	Indoor unit	Operation indicator	9 time flash
		Timer indicator	10 time flash
		Economy indicator	Continuous flash
		Error code	E: 9A
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	EEV coil	Coil (Expansion valve) driver circuit open detected.	
	Main PCB		
Forecast of cause		EEV coil loose connection	
		EEV wires cut or pinched	
		Defective EEV coil	
		Main PCB (DC 13 V) output abnormal	

Check point 1. Check the connection of EEV connector

Check if the connector is loose connection or not.



Check point 2. Check the EEV wire

Check if the wire of EEV has damage or not. (Slash, Braking of wire, Pinching, etc.)

→ If it is abnormal, replace EEV coil.



Check point 3. Check the EEV coil

Check if the circuit of EEV coil winding is good or not. (Refer to "[Service parts information](#)" on page 03-92.)

→ If it is abnormal, replace EEV coil.



Check point 4. Check the output of EEV on the main PCB

Check if the DC 13 V is on between the Pin No.1 of P30, PA30, PC30, PD30 and PE30 and GND Pin. (Disconnect the wire of EEV when you check the output of EEV.)

→ If it is abnormal, replace the main PCB.



Check point 5. Noise, momentary open, voltage drop

- Check if temporary voltage drop was not generated.
- Check if momentary open was not generated.
- Check if ground is connection correctly or there are no related cables near the power line.



End

2-40. E: A1.X. Discharge temperature error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	10 time flash
		Timer indicator	1 time flash
		Economy indicator	Continuous flash
		Error code	E: A1
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Outdoor unit main PCB	Protection stop by discharge temperature $\geq 230^{\circ}\text{F}$ (110°C) during compressor operation generated 2 times within 24 hours.	
	Discharge temperature thermistor		
Forecast of cause		3-way valve not opened	
		EEV or capillary tube defective, strainer clogged	
		Outdoor unit operation failure, foreign matter on heat exchanger	
		Discharge temperature thermistor failure	
		Insufficient refrigerant	
		Main PCB failure	

Check point 1. Check if 3-way valve is open

If the 3-way valve is closed, open the 3-way valve and check operation.

NOTE: For cooling operation, check gas side of the 3-way valve.
For heating operation, check liquid side of the 3-way valve.



Check point 2. Check any of the electronic expansion valve (EEV), capillary tube, or strainer, or all

- Check if EEV open or there is a capillary tube defect.
Refer to outdoor unit Electronic Expansion Valve (EEV) or Capillary tube in "[Service parts information](#)" on page 03-92.
- Check the strainer clogging.



Check point 3. Check the outdoor unit fan and heat exchanger

- Check for foreign object at heat exchanger
- Check if fan can be rotated by hand.
- Check the motor. (Refer to outdoor unit fan motor in "[Service parts information](#)" on page 03-92.)



Check point 4. Check the discharge thermistor

The discharge temperature thermistor characteristics check. (Check by disconnecting thermistor from PCB.)

NOTE: For the characteristics of the thermistor, refer to "[Thermistor resistance values](#)" on page 03-104.



Check point 5. Check the refrigerant amount

Check the refrigerant leakage.



Check point 6. Replace the main PCB

If check point 1 to 5 do not improve the symptom, replace the main PCB.



End

2-41. E: A3.X. Compressor temperature error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	10 time flash
		Timer indicator	3 time flash
		Economy indicator	Continuous flash
		Error code	E: A3
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Outdoor unit main PCB	Protection stop by compressor temperature $\geq 230^{\circ}\text{F}$ (110°C) during compressor operation generated 2 times within 24 hours.	
	Compressor temperature thermistor		
Forecast of cause		3-way valve not opened	
		EEV defective, strainer clogged	
		Outdoor unit operation failure, foreign matter on heat exchanger	
		Compressor temperature thermistor failure	
		Insufficient refrigerant	
		Main PCB failure	

Check point 1. Check if 3-way valve is open

If the 3-way valve is closed, open the 3-way valve and check operation.

NOTE: For cooling operation, check gas side of the 3-way valve.
For heating operation, check liquid side of the 3-way valve.



Check point 2. Check the electronic expansion valve (EEV) and strainer

- Check if EEV open.
Refer to outdoor unit Electronic Expansion Valve (EEV) in "[Service parts information](#)" on page 03-92.
- Check the strainer clogging.



Check point 3. Check the outdoor unit fan and heat exchanger

- Check for foreign object at heat exchanger
- Check if fan can be rotated by hand.
- Check the motor. (Refer to outdoor unit fan motor in "[Service parts information](#)" on page 03-92.)



Check point 4. Check the compressor thermistor

The compressor temperature thermistor characteristics check. (Check by disconnecting thermistor from PCB.)

NOTE: For the characteristics of the thermistor, refer to "[Thermistor resistance values](#)" on page 03-104.



Check point 5. Check the refrigerant amount

Check the refrigerant leakage.



Check point 6. Replace the main PCB

If check point 1 to 5 do not improve the symptom, replace the main PCB.



End

2-42. E: A8.X. Refrigerant leakage sensor error (Indoor unit)

Detective actuator	Refrigerant leakage sensor
Forecast of cause	Refrigerant leakage

Check point 1. Refrigerant Leak Detection conditions

- When the refrigerant leakage sensor detects refrigerant.
- System stop -> Cooling/heating cannot be operated.
- Stir operation by fan -> Safety is important, and fan operation cannot be stopped.

-> Check for refrigerant leaks and take corrective action.



Check point 2. Error release condition

Power on again.

- If the power is not turned on again, the error will not be cleared even if the gas concentration drops.
- If the refrigerant leakage is detected again after the power is turned on again, an error will occur again.
- Replace the refrigerant leakage sensor as it will not recover if exposed to a high concentration of gas or if exposed multiple times even if the concentration is not high.



End

2-43. E: AC.X. Heat sink temperature error (Outdoor unit)

Indicator	Indoor unit	Operation indicator	10 time flash
		Timer indicator	11 time flash
		Economy indicator	Continuous flash
		Error code	E: AC
	Outdoor unit	Refer to " Error code table (Outdoor unit) " on page 03-4	
Detective actuator	Outdoor unit inverter PCB	Protection stop by heat sink temperature $\geq 176.0^{\circ}\text{F}$ (80°C) during heat sink operation generated 2 times within 24 hours.	
	Heat sink temperature thermistor		
Forecast of cause		Foreign matter on heat sink, heat sink dirty	
		Foreign matter on heat exchanger, excessive ambient temperature rise	
		Heat sink temp. thermistor defective	

Check point 1. Check the heat sink state

Heat sink foreign matter, soiling check



Check point 2. Check the foreign matter and ambient temperature of heat exchanger

- Heat exchange foreign matter check
- Ambient temperature not raised by effect of other heat sources?
- Discharged air not sucked in?



Check point 3. Check the heat sink temperature thermistor

The heat sink temperature thermistor characteristics check. (Check by disconnecting thermistor from PCB.)

NOTE: For the characteristics of the thermistor, refer to "[Thermistor resistance values](#)" on page 03-104.



Check point 4. Replace inverter PCB

Replace inverter PCB



End

3. Troubleshooting without error code

3-1. Indoor unit—No power

Forecast of cause	Power supply failure
	External cause
	Electrical components defective

Check point 1. Check installation condition

- Isn't the breaker down?
- Check loose or removed connection cable.

-> If abnormal condition is found, correct it by referring to the installation manual or the *DESIGN & TECHNICAL MANUAL*.



Check point 2. Check external cause at indoor and outdoor (voltage drop or noise)

- Instant drop: Check if there is a large load electric apparatus in the same circuit.
- Momentary power failure: Check if there is a defective contact or leak current in the power supply circuit.
- Noise: Check if there is any equipment causing harmonic wave near electric line. (Neon bulb or electric equipment that may cause harmonic wave)
Check the complete insulation of grounding.

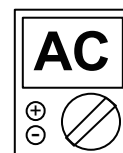


Check point 3. Check electrical components

Check the voltage of power supply.

Check if AC 187 to 253 V appears at outdoor unit terminal L—N.

-> If no, go to "[Check point 1](#)" and "[Check point 2](#)".



- Check fuse in the Filter PCB.
If fuse is open, check if the wiring between terminal and filter PCB is loose, and replace the Filter PCB.
- Check varistor in the Filter PCB.
If varistor is defective, there is a possibility of an abnormal power supply.
Check the correct power supply and replace the Filter PCB.
Upon checking the normal power supply, replace the Filter PCB.



End

3-2. Outdoor unit—No power

Forecast of cause	Power supply failure
	External cause
	Electrical components defective

Check point 1. Check installation condition

- Is the circuit breaker on or off?
- Check loose or removed connection cable.

→ If abnormal condition is found, correct it by referring to the installation manual or the *DESIGN & TECHNICAL MANUAL*.



Check point 2. Check external cause at indoor and outdoor (voltage drop or noise)

- Instant drop: Check if there is a large load electric apparatus in the same circuit.
- Momentary power failure: Check if there is a defective contact or leak current in the power supply circuit.
- Noise: Check if there is any equipment causing harmonic wave near electric line. (Neon bulb or electric equipment that may cause harmonic wave)
Check the complete insulation of grounding.

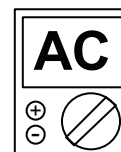


Check point 3. Check electrical components

Check the voltage of power supply.

Check if AC 187 to 253 V appears at outdoor unit terminal 1—3

→ If no, go to "[Check point 1](#)" and "[Check point 2](#)".



- Check fuse in main PCB.
If fuse is open, check if the wiring between terminal and main PCB is loose, and replace the Main PCB.
- Check active filter module and in IPM.
If active filter module or IPM is abnormal, replace it. (Refer to transistor PCB in "[Service parts information](#)" on page 03-92.)



Check point 4. Replace the main PCB

If check point 1 to 3 do not improve the symptom, replace the main PCB.



End

3-3. No operation (Power is on)

Forecast of cause	Setting/Connection failure
	External cause
	Electrical components defective

Check point 1. Check the indoor and outdoor installation condition

- Indoor unit:
 - Check incorrect wiring between the indoor unit and remote controller.
 - Check if there is an open cable connection.
- Are these indoor unit, outdoor unit, and remote controller suitable model names to connect?

-> If there is some abnormal condition, correct it by referring to the installation manual and "DESIGN & TECHNICAL MANUAL".



Turn off the power and check correct followings.

- Is there loose or removed communication line of indoor unit and outdoor unit?



Check point 2. Check external cause at indoor and outdoor (Voltage drop or Noise)

- Instant drop: Check if there is a large load electric apparatus in the same circuit.
- Momentary power failure: Check if there is a defective contact or leak current in the power supply circuit.
- Noise: Check if there is any equipment causing harmonic wave near electric line. (Neon bulb or electric equipment that may cause harmonic wave)
Check the complete insulation of grounding.



Check point 3. Check the wired remote controller and controller PCB

[Compact cassette type]

Check voltage at CN14 (terminal Y1—2) of main PCB or communication PCB.

(Power supply to remote controller)



- If it is DC 12 V, the remote controller is failure. (The controller PCB is normal)
-> Replace the remote controller.
- If it is DC 0 V, the controller PCB is failure. (Check the remote controller once again)
-> Replace the controller PCB.

[Slim duct, Middle duct, and Wall mounted types]

Check voltage at CN300 (terminal 1—2) of main PCB or communication PCB.

(Power supply to remote controller)

- If it is DC 12 V, the remote controller is failure. (The controller PCB is normal)
-> Replace the remote controller.
- If it is DC 0 V, the controller PCB is failure. (Check the remote controller once again)
-> Replace the controller PCB.



Check point 4. Replace the main PCB

If check point 1 to 3 do not improve the symptom, replace the main PCB.

**End**

3-4. No cooling/No heating

Forecast of cause	Indoor unit error
	Outdoor unit error
	Effect by surrounding environment
	Connection pipe/Connection wire failure
	Refrigeration cycle failure

Check point 1. Check Indoor unit

- Does Indoor unit fan run in the HIGH mode?
- Is air filter dirty?
- Is heat exchanger clogged?
- Check if energy save function is operated.



Check point 2. Check outdoor unit operation

- Check if outdoor unit is operating.
- Check any objects that obstruct the air flow route.
- Check if heat exchanger is clogged.
- Is the valve open?



Check point 3. Check site condition

- Is capacity of Indoor unit fitted to the room size?
- Any windows open or direct sunlight?



Check point 4. Check indoor/outdoor installation condition

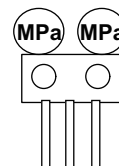
- Check connection pipe (specified pipe length and pipe diameter?)
- Check any loose or removed communication line.

→ If there is an abnormal condition, correct it by referring to the installation manual or the "DESIGN & TECHNICAL MANUAL".



Check point 5. Check Refrigeration cycle

- Check if strainer is clogged (Refer to the figure below).
- Measure gas pressure, and if there is a leakage, correct it.
- Check if EEV open or there is a capillary tube defect.
Refer to outdoor unit Electronic Expansion Valve (EEV) or Capillary tube in ["Service parts information"](#) on page 03-92.
- Check compressor.
Refer to compressor in ["Service parts information"](#) on page 03-92.
Refer to inverter compressor in ["Service parts information"](#) on page 03-92.



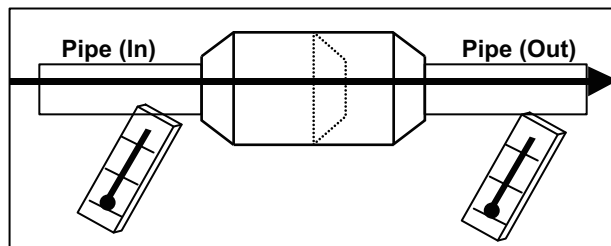
NOTE: When recharging the refrigerant, make sure to perform vacuuming, and recharge the specified amount.



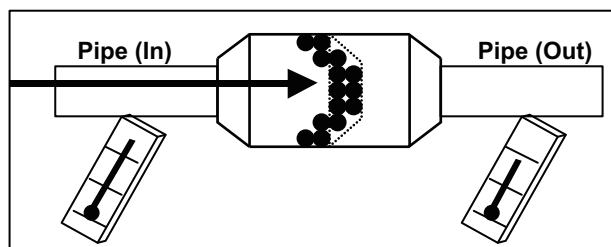
End

NOTES:

- Strainer normally does not have temperature difference between inlet and outlet as shown below.



- If there is a difference like shown below, there is a possibility of inside clogged. In this case, replace the strainer.



3-5. Abnormal noise

Forecast of cause	Abnormal installation (indoor unit/outdoor unit)
	Fan failure (indoor unit/outdoor unit)
	Compressor failure (outdoor)

Diagnosis method when abnormal noise is occurred

Abnormal noise is coming from Indoor unit.
(Check and correct followings)



- Is main unit installed in stable condition?
- Is the installation of air suction grille and front panel normal?



- Is fan broken or deformed?
- Is the screw of fan loose?
- Is there any object which obstruct the fan rotation?



End

Abnormal noise is coming from Outdoor unit.
(Check and correct followings)



- Is main unit installed in stable condition?
- Is fan guard installed normally?



- Is fan broken or deformed?
- Is the screw of fan loose?
- Is there any object which obstruct the fan rotation?



Check if vibration noise by loose bolt or contact noise of piping is happening.



Is compressor locked?

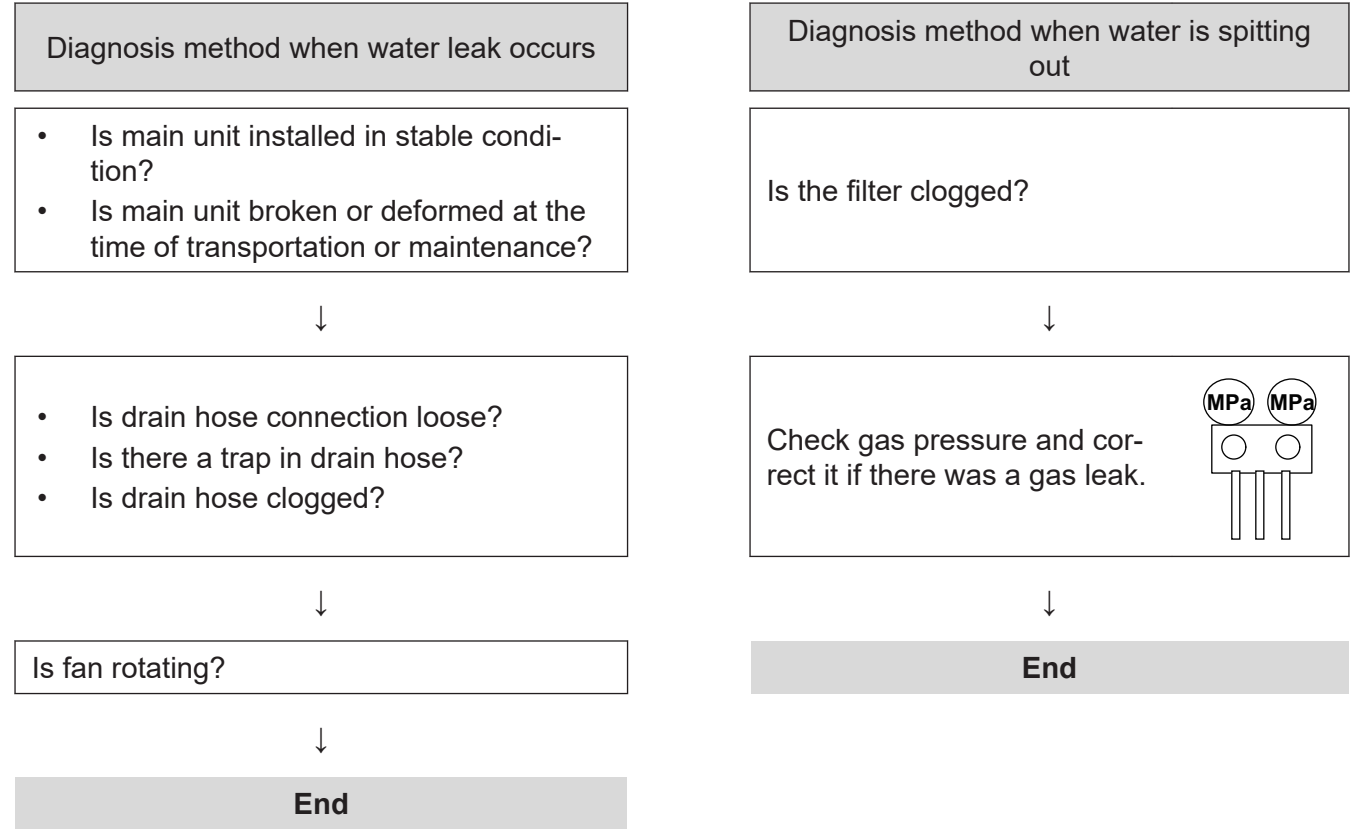
- Check Compressor
Refer to compressor and inverter compressor in "[Service parts information](#)" on page 03-92.



End

3-6. Water leaking

Forecast of cause	Erroneous installation
	Drain hose failure



4. Troubleshooting with error code (For wireless LAN adapter)

4-1. E: 18.X. External communication error between indoor unit and wireless LAN adapter

Indicator	Indoor unit	Operation indicator	1 time flash
		Timer indicator	8 time flash
		Economy indicator	Continuous flash
		Wireless LAN indicator	Flashing slowly
		Error code	E: 18
	Mobile app		E: 18.1
Detective actuator	Wireless LAN adapter PCB		After receiving a signal from the wireless LAN adapter, the same signal has not been received for 15 seconds.
	Controller PCB		
Forecast of cause			Connection between indoor unit and wireless LAN adapter failure
			Wireless LAN adapter PCB failure
			Controller PCB failure

Check point 1. Check the connection

- Check any loose or removed connection of between the wireless LAN adapter PCB and controller PCB.
-> If there is abnormal condition, correct it.
- Check the connection condition on the controller PCB.
-> If there is loose connector, open cable or mis-wiring, correct it.



Check point 2. Replace wireless LAN adapter.

If check point 1 do not improve the symptom, replace the wireless LAN adapter and cancel the registration of air conditioner on the Mobile app.
After replacing the adapter, perform the pairing on the Mobile app.

For the method of the Mobile app, refer to ["Mobile app setting method"](#) on page 03-90.



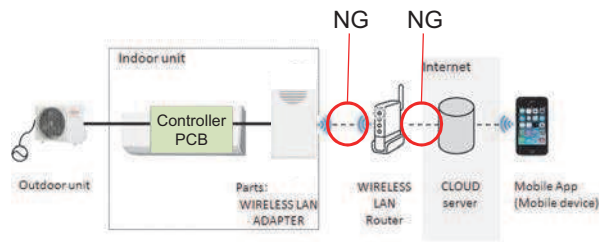
Check point 3. Replace controller PCB

If check point 1 to 2 do not improve the symptom, replace the controller PCB.



End

4-2. Network communication error between wireless LAN router and wireless LAN adapter

Indicator	Indoor unit	Operation indicator	No indication
		Timer indicator	No indication
		Economy indicator	No indication
		Wireless LAN indicator	Flashing slowly
		Error code	—
	Mobile app	No indication	
Detective actuator	Wireless LAN router	When the not connection between wireless LAN adapter and wireless LAN router.	
	Wireless LAN adapter PCB		
Forecast of cause	Connection cable failure of wireless LAN router		
	Connection between wireless LAN adapter and wireless LAN router failure		
	Wireless LAN router failure		
	Wireless LAN adapter PCB failure		

Check point 1. Check the connection cable

Check the connection cable on the wireless LAN router.

-> If there is loose connector, open cable or mis-wiring, correct it.



Check point 2. Check the connection status.

Check the connection status to the Internet and wireless LAN router.

-> If the wireless LAN router is not connected to the Internet, check the transmission between wireless LAN products (ex. PC or game console, etc.) other than air conditioner and wireless LAN router.

If no, go to ["Check point 2-2"](#).



Check point 3. Turn on the power again of air conditioner.

If check point 1 to 2 do not improve the symptom, turn on the power of the air conditioner again and wait for 60 seconds.



Check point 4. Replace wireless LAN adapter.

If check point 3 do not improve the symptom, replace the wireless LAN adapter and cancel the registration of air conditioner on the Mobile app.

After replacing the adapter, perform the pairing on the Mobile app.

For the method of the Mobile app, refer to "[Mobile app setting method](#)" on page 03-90.

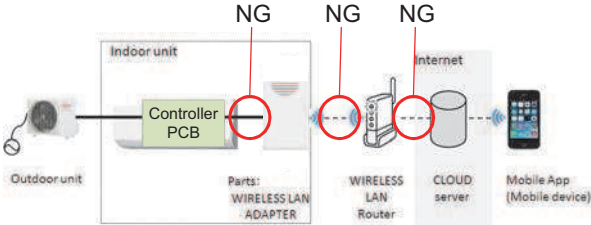
**End****Check point 2-2. Check the transmission state**

Check the wireless transmission state of the wireless LAN router (indicator lamp status).

-> If the wireless transmission from the wireless LAN router has not been outgoing, inquire to the wireless LAN router maker.

**End**

4-3. E: 18.X. Communication error

Indicator	Indoor unit	Operation indicator	1 time flash
		Timer indicator	8 time flash
		Economy indicator	Continuous flash
		Wireless LAN indicator	Flashing slowly
		Error code	E: 18
	Mobile app		E: 18.1
Detective actuator	Wireless LAN router	When the external communication error between indoor unit and wireless LAN adapter and network communication error between wireless LAN router and wireless LAN adapter has occurred simultaneously.	
	Wireless LAN adapter PCB		
	Indoor unit controller PCB		
			
Forecast of cause	Connection cable failure of wireless LAN router		
	Wireless LAN router failure		
	Connection between indoor unit and wireless LAN adapter failure		
	Connection between wireless LAN adapter and wireless LAN router failure		
	Wireless LAN adapter PCB failure		
	Controller PCB failure		

Check point 1. Check the connection

- Check any loose or removed connection of between the wireless LAN adapter PCB and controller PCB.
-> If there is abnormal condition, correct it.
- Check the connection condition on the controller PCB.
-> If there is loose connector, open cable or mis-wiring, correct it.



Check point 2. Replace wireless LAN adapter.

If check point 1 do not improve the symptom, replace the wireless LAN adapter and cancel the registration of air conditioner on the Mobile app.
After replacing the adapter, perform the pairing on the Mobile app.

For the method of the Mobile app, refer to ["Mobile app setting method"](#) on page 03-90.



Check point 3. Replace controller PCB

If check point 1 to 2 do not improve the symptom, replace the controller PCB.



Check point 4. Check the connection cable

Check the connection cable on the wireless LAN router.

-> If there is loose connector, open cable or mis-wiring, correct it.

**Check point 5. Check the connection status.**

Check the connection status to the Internet and wireless LAN router.

-> If the wireless LAN router is not connected to the Internet, check the transmission between wireless LAN products (ex. PC or game console, etc.) other than air conditioner and wireless LAN router.

If no, go to ["Check point 5-2"](#).

**Check point 6. Turn on the power again of air conditioner.**

If check point 1 to 2 do not improve the symptom, turn on the power of the air conditioner again and wait for 60 seconds.

**Check point 7. Replace wireless LAN adapter.**

If check point 3 do not improve the symptom, replace the wireless LAN adapter and cancel the registration of air conditioner on the Mobile app.

After replacing the adapter, perform the pairing on the Mobile app.

For the method of the Mobile app, refer to ["Mobile app setting method"](#) on page 03-90.



End

Check point 5-2. Check the transmission state

Check the wireless transmission state of the wireless LAN router (indicator lamp status).

-> If the wireless transmission from the wireless LAN router has not been outgoing, inquire to the wireless LAN router maker.



End

4-4. E: 18.X. Wireless LAN adapter non-energized

Indicator	Indoor unit	Operation indicator	1 time flash
		Timer indicator	8 time flash
		Economy indicator	Continuous flash
		Wireless LAN indicator	No indication
		Error code	E: 18
		Mobile app	
Detective actuator	Indoor unit controller PCB		When the voltage (DC 12 V) does not output from the controller PCB.
	Wireless LAN adapter PCB		
Forecast of cause			Indoor unit controller PCB failure
			Wireless LAN adapter PCB failure
			Wiring connection failure

Check point 1. Check the connection.

- Check any loose or removed connection of between the wireless LAN adapter PCB and controller PCB.
-> If there is abnormal condition, correct it.
- Check the connection condition on the controller PCB.
-> If there is loose connector, open cable or mis-wiring, correct it.



Check point 2. Check the wireless LAN adapter PCB and the controller PCB

Check voltage at CN13 (terminal 1—3) of main PCB.

(Power supply to remote controller)

- If it is DC 0 V, controller PCB is failure.
-> Replace controller PCB.
- If it is DC 12 V, wireless LAN adapter PCB is failure.
-> Replace the wireless LAN adapter and cancel the registration of air conditioner on the Mobile app.

After replacing the adapter, perform the pairing on the Mobile app.

For the method of the Mobile app, refer to ["Mobile app setting method"](#) on page 03-90.



End


4-5. Mobile app setting method

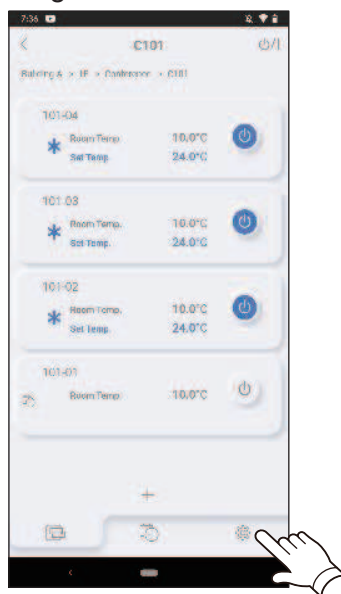
■ Air conditioner delete method

When the wireless LAN adapter is replaced, delete of all air conditioner is necessary on the mobile app.

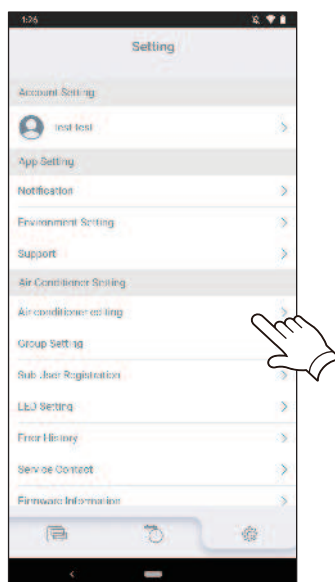
1. Launch the mobile app.



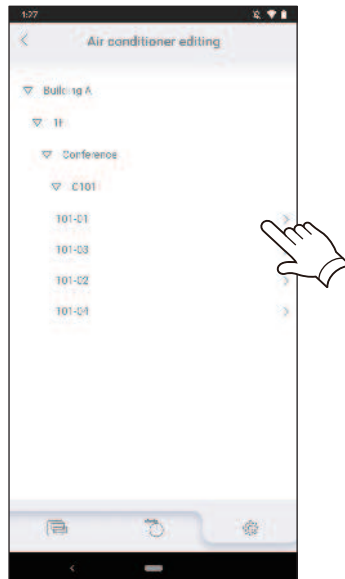
2. Tap the  icon to display the Setting screen.



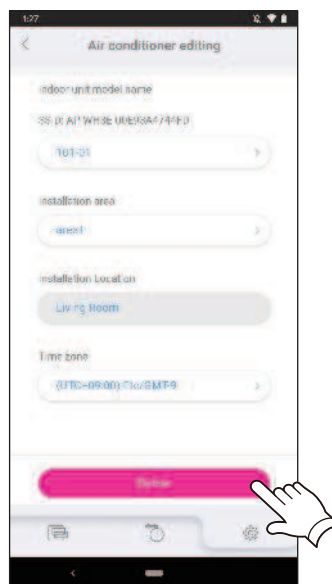
3. Tap the "Air conditioner editing".



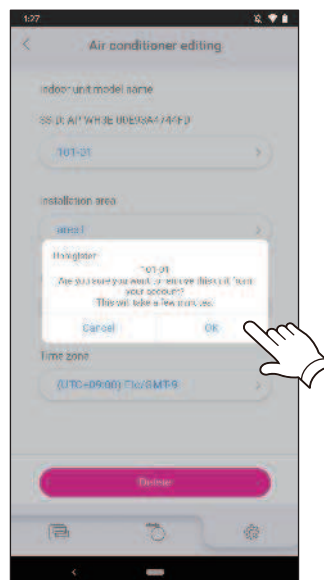
4. Tap the air conditioner to be deleted.



5. Tap the Delete button.



6. Tap the OK button.

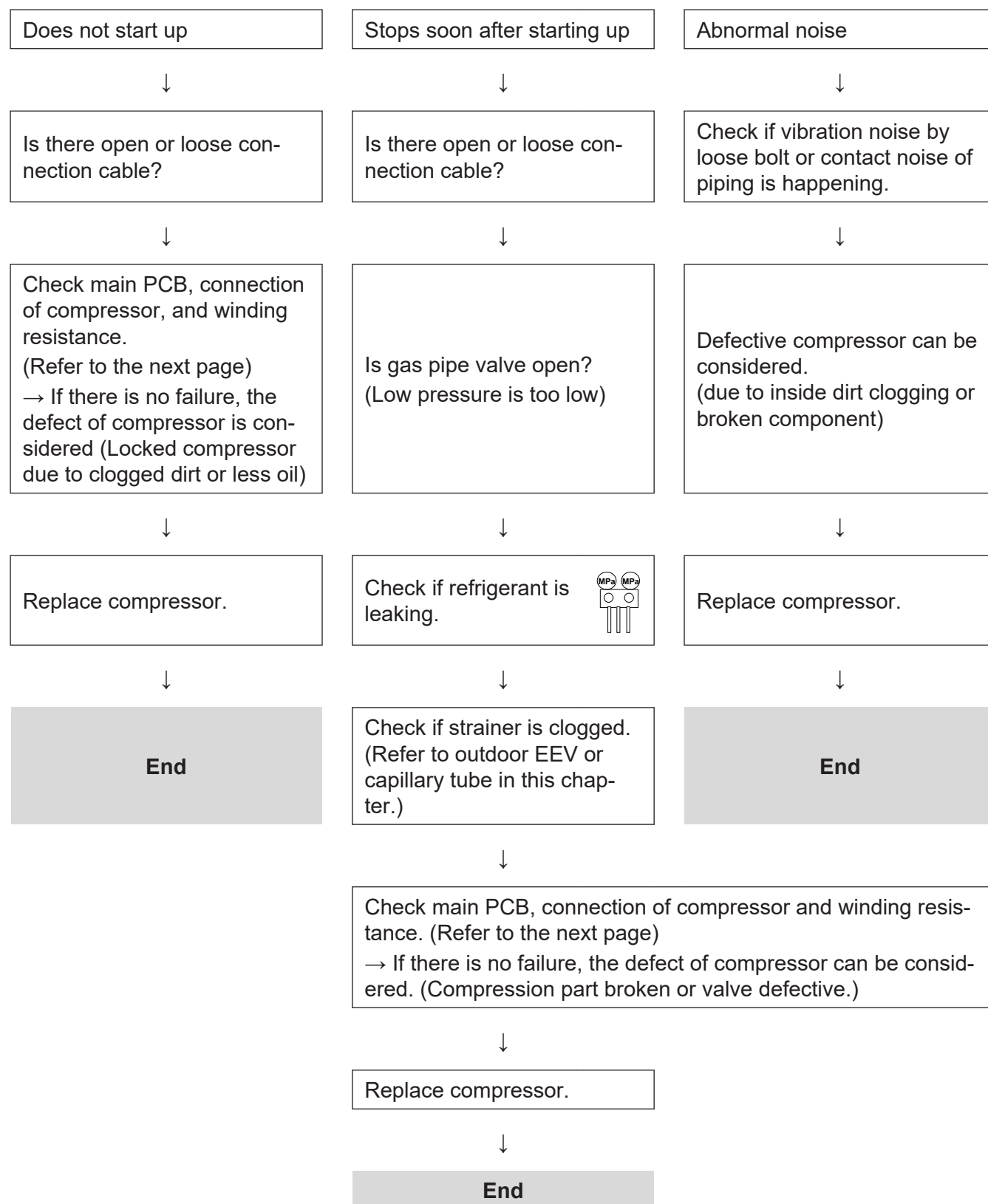


7. Deletion of the air conditioner registered in the mobile app is completed.

5. Service parts information

5-1. Compressor

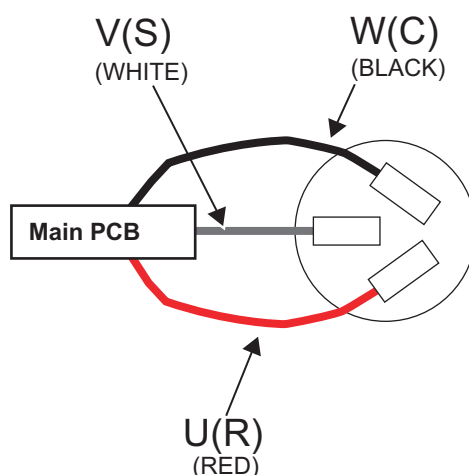
Diagnosis method of compressor (If outdoor unit LED displays error, refer to troubleshooting)



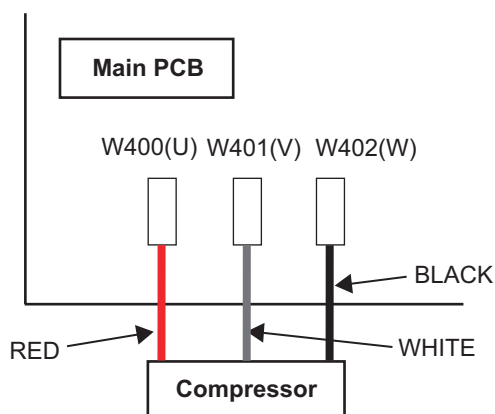
5-2. Inverter compressor

Check point 1. Check connection

- Check terminal connection of compressor (loose or incorrect wiring)



- Check terminal connection of main PCB (loose or incorrect wiring)



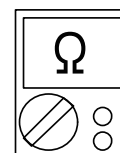
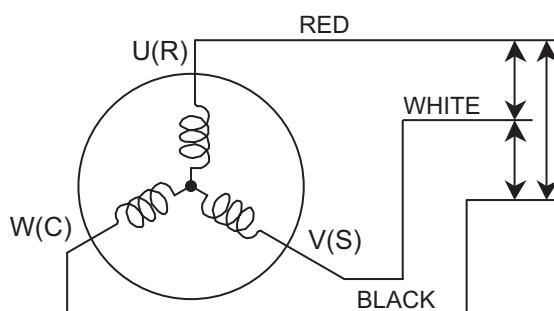
↓

Check point 2. Check winding resistance

Check winding resistance of each terminal.

Resistance value

- 18, 24 models: $1.299 \Omega \pm 8\%$ at 68°F (20°C)
- 36 model: $1.160 \Omega \pm 8\%$ at 68°F (20°C)
- 45 model: $0.676 \Omega \pm 8\%$ at 68°F (20°C)



→ If the resistance value is 0Ω or infinite, replace compressor.

↓

Check point 3. Replace inverter PCB
If check point 1 to 2 do not improve the symptom, replace main PCB.

5-3. Outdoor unit Electronic Expansion Valve (EEV)

Check point 1. Check connections

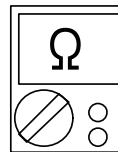
Check connection of connector. (Loose connector or open cable)

NOTE: For details of wiring diagram, refer to "Wiring diagrams" in Chapter 2. TECHNICAL DATA AND PARTS LIST on page 02-24.

Check point 2. Check coil of EEV

Remove connector, check each winding resistance of coil.

Read wire	Resistance value
White - Red	$46 \Omega \pm 4 \Omega$ at 68°F (20°C)
Yellow - Red	
Orange - Red	
Blue - Red	

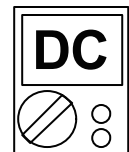


→ If Resistance value is abnormal, replace EEV.

Check point 3. Check voltage from main PCB

Remove connector and check voltage (DC 12 V)

→ If it does not appear, replace main PCB.



Check point 4. Check noise at start up

Turn on the power and check the operation noise.

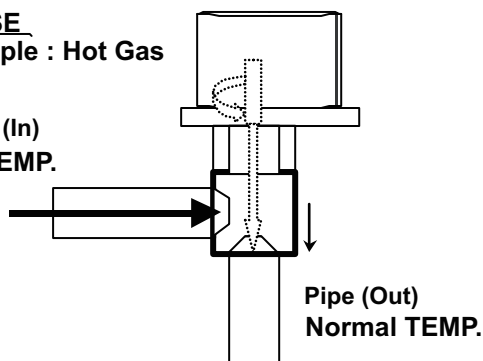
→ If an abnormal noise does not show, replace main PCB.

Check point 5. Check opening and closing operation of valve

When valve is closed, it has a temp. difference between inlet and outlet

CLOSE
Example : Hot Gas

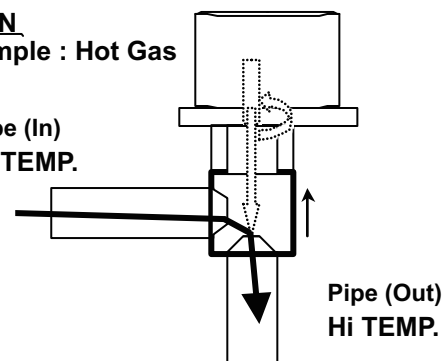
Pipe (In)
Hi TEMP.



If it is open, it has no temp. difference between inlet and outlet

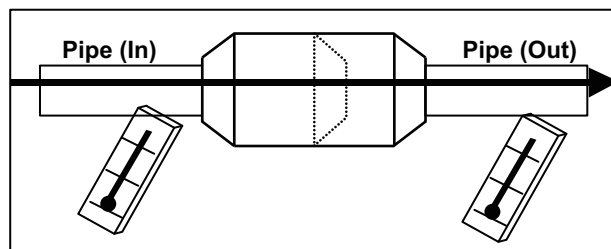
OPEN
Example : Hot Gas

Pipe (In)
Hi TEMP.

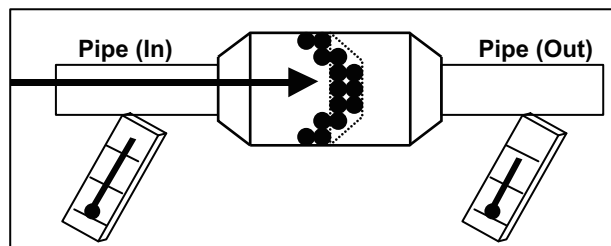


Check point 6. Check strainer

- Strainer normally does not have temperature difference between inlet and outlet as shown below.



- If there is a difference like shown below, there is a possibility of inside clogged. In this case, replace the strainer.



5-4. Indoor unit fan motor

■ Models: ACUH07-18KUAS

Check point 1. Check rotation of fan

Rotate the fan by hand when operation is off.
(Check if fan is caught, dropped off or locked motor)
→ If fan or bearing is abnormal, replace it.

Check point 2. Check resistance of indoor fan motor

Refer to below. Circuit-test "Vm" and "GND" terminal

NOTE: Vm: DC voltage, GND: Earth terminal

→ If they are short-circuited (below 300 kΩ), replace indoor fan motor and controller PCB.

Pin number (wire color)	Terminal function (symbol)
1 (Red)	DC voltage (Vm)
2	No function
3 (Black)	Ground terminal (GND)
4 (White)	Control voltage (Vcc)
5	No function
6	No function
7 (Yellow)	Speed command (Vsp)
8 (Brown)	Feed back (FG)

■ Models: ASUH15–24KPAS

Check point 1. Check rotation of fan

Rotate the fan by hand when operation is off.
 (Check if fan is caught, dropped off or locked motor)
 → If fan or bearing is abnormal, replace it.

Check point 2. Check resistance of indoor fan motor

Refer to below. Circuit-test “Vm” and “GND” terminal

NOTE: Vm: DC voltage, GND: Earth terminal

→ If they are short-circuited (below 300 kΩ), replace indoor fan motor and controller PCB.

Pin number (wire color)	Terminal function (symbol)
1 (Red)	DC voltage (Vm)
2	No function
3	No function
4 (Black)	Ground terminal (GND)
5 (White)	Control voltage (Vcc)
6 (Yellow)	Speed command (Vsp)
7 (Blue)	Feed back (FG)

■ Models: ARUH12–24KUAS and ADUH07–24KUAS

Check point 1. Check rotation of fan

Rotate the fan by hand when operation is off.

(Check if fan is caught, dropped off or locked motor)

→ If fan or bearing is abnormal, replace it.

Check point 2. Check resistance of indoor fan motor

Refer to below. Circuit-test “Vm” and “GND” terminal

NOTE: Vm: DC voltage, GND: Earth terminal

→ If they are short-circuited (below 300 kΩ), replace indoor fan motor and controller PCB.

Pin number (wire color)	Terminal function (symbol)
1 (Red)	DC voltage (Vm)
2	No function
3	No function
4 (Black)	Ground terminal (GND)
5 (White)	Control voltage (Vcc)
6 (Yellow)	Speed command (Vsp)
7 (Brown)	Feed back (FG)

■ Models: ASUH07-12KPAS

Check point 1. Check rotation of fan

Rotate the fan by hand when operation is off.
 (Check if fan is caught, dropped off or locked motor)
 → If fan or bearing is abnormal, replace it.

Check point 2. Check resistance of indoor fan motor

Refer to below. Circuit-test “Vm” and “GND” terminal

NOTE: Vm: DC voltage, GND: Earth terminal

→ If they are short-circuited (below 300 kΩ), replace indoor fan motor and controller PCB.

Pin number (wire color)	Terminal function (symbol)
1 (Red)	DC voltage (Vm)
2	No function
3	No function
4 (Black)	Ground terminal (GND)
5 (White)	Control voltage (Vcc)
6 (Yellow)	Speed command (Vsp)
7 (Blue)	Revolution pulse (PG)

5-5. Outdoor unit fan motor

Check point 1. Check rotation of fan

Rotate the fan by hand when operation is off.
(Check if fan is caught, dropped off or locked motor)
→ If fan or bearing is abnormal, replace it.

Check point 2. Check resistance of outdoor fan motor

Refer to below. Circuit-test “Vm” and “GND” terminal

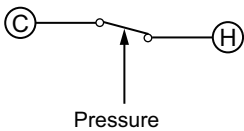
NOTE: Vm: DC voltage, GND: Ground terminal

→ If they are short-circuited (below 300 kΩ), replace outdoor fan motor and controller PCB.

Pin number (wire color)	Terminal function (symbol)
1 (Red)	DC voltage (Vm)
2	No function
3	No function
4 (Black)	Ground terminal (GND)
5 (White)	Control voltage (Vcc)
6 (Yellow)	Speed command (Vsp)
7 (Blue)	Feed back (FG)

5-6. Pressure switch

- Type of contact



- Characteristics of pressure switch

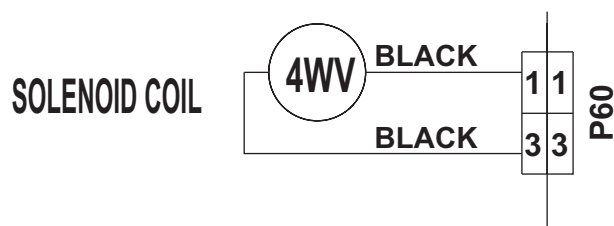
Pressure switch 1	
Contact: Short → Open	4.2 — 4.05 MPa
Contact: Open → Short	3.2 ± 0.15 MPa

P20

5-7. 4-way valve coil (solenoid coil)/4-way valve

Check point 1. Check connection

- Check the connection of connector P60.



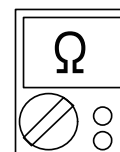
Check Point 2 : Check solenoid coil

Remove P60 from PCB and check the resistance value of coil.

Resistance value $\approx 1.970 \text{ k}\Omega$

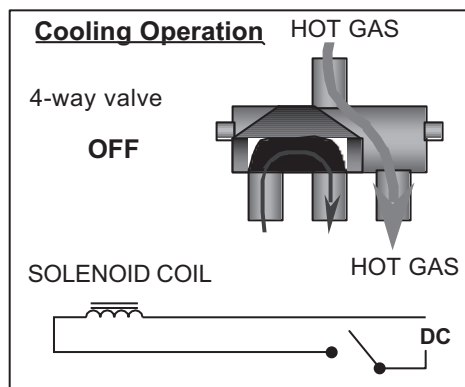
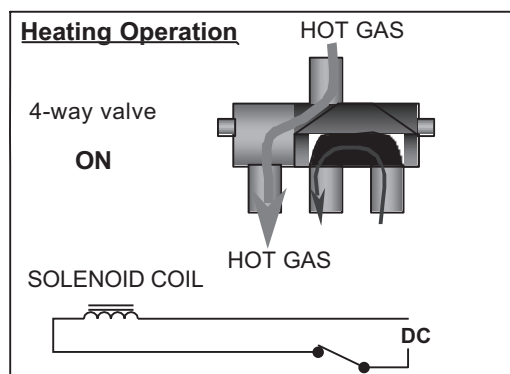


→ If it is Open or abnormal resistance value, replace solenoid coil.



Check Point 3: Check the 4-way valve operation

Check each piping temperature, and confirm the location of the valve by the temperature difference



→ If the valve location is not proper, replace the 4-way valve.



Check Point 4: Replace Main PCB

If none of Checks 1 to 3 apply, replace the Main PCB.

6. Thermistor resistance values

6-1. Indoor unit

■ Room temperature thermistor

Temperature °F (°C)	Resistance (kΩ)	Voltage (V)
14.0 (-10.0)	58.25	0.73
23.0 (-5.0)	44.03	0.93
32.0 (0.0)	33.62	1.15
41.0 (5.0)	25.93	1.39
50.0 (10.0)	20.18	1.66
59.0 (15.0)	15.84	1.94
68.0 (20.0)	12.54	2.22
77.0 (25.0)	10.00	2.50
86.0 (30.0)	8.04	2.77
95.0 (35.0)	6.51	3.03
104.0 (40.0)	5.30	3.27
113.0 (45.0)	4.35	3.49

■ Heat exchanger temperature thermistor

Temperature °F (°C)	Resistance (kΩ)	Voltage (V)
-22.0 (-30.0)	1,131.91	0.21
-13.0 (-25.0)	804.52	0.29
-4.0 (-20.0)	579.59	0.40
5.0 (-15.0)	422.89	0.53
14.0 (-10.0)	312.27	0.69
23.0 (-5.0)	233.21	0.88
32.0 (0.0)	176.03	1.10
41.0 (5.0)	134.23	1.36
50.0 (10.0)	103.34	1.63
59.0 (15.0)	80.28	1.92
68.0 (20.0)	62.91	2.21
77.0 (25.0)	49.70	2.51
86.0 (30.0)	39.57	2.79
95.0 (35.0)	31.74	3.06
104.0 (40.0)	25.64	3.30
113.0 (45.0)	20.85	3.53
122.0 (50.0)	17.06	3.73
131.0 (55.0)	14.05	3.90
140.0 (60.0)	11.64	4.05
149.0 (65.0)	9.69	4.19

6-2. Outdoor unit

■ Discharge temperature thermistor

Temperature °F (°C)	Resistance (kΩ)	Voltage (V)
-22.0 (-30.0)	1,013.11	0.06
-12.0 (-25.0)	729.09	0.09
-4.0 (-20.0)	531.56	0.12
5.0 (-15.0)	392.31	0.16
14.0 (-10.0)	292.91	0.21
23.0 (-5.0)	221.09	0.28
32.0 (0.0)	168.60	0.36
41.0 (5.0)	129.84	0.46
50.0 (10.0)	100.91	0.57
59.0 (15.0)	79.12	0.71
68.0 (20.0)	62.55	0.86
77.0 (25.0)	49.84	1.03
86.0 (30.0)	40.01	1.23
95.0 (35.0)	32.35	1.43
104.0 (40.0)	26.34	1.65
113.0 (45.0)	21.58	1.88
122.0 (50.0)	17.79	2.11
131.0 (55.0)	14.75	2.34
140.0 (60.0)	12.30	2.57
149.0 (65.0)	10.32	2.79
158.0 (70.0)	8.69	3.00
167.0 (75.0)	7.36	3.19
176.0 (80.0)	6.27	3.37
185.0 (85.0)	5.36	3.54
194.0 (90.0)	4.60	3.69
203.0 (95.0)	3.96	3.83
212.0 (100.0)	3.43	3.96
221.0 (105.0)	2.98	4.07
230.0 (110.0)	2.60	4.17
239.0 (115.0)	2.27	4.26
248.0 (120.0)	2.00	4.33

■ Compressor temperature thermistor

Temperature °F (°C)	Resistance (kΩ)	Voltage (V)
-22.0 (-30.0)	1,013.11	0.06
-12.0 (-25.0)	729.09	0.09
-4.0 (-20.0)	531.56	0.12
5.0 (-15.0)	392.31	0.16
14.0 (-10.0)	292.91	0.21
23.0 (-5.0)	221.09	0.28
32.0 (0.0)	168.60	0.36
41.0 (5.0)	129.84	0.46
50.0 (10.0)	100.91	0.57
59.0 (15.0)	79.12	0.71
68.0 (20.0)	62.55	0.86
77.0 (25.0)	49.84	1.03
86.0 (30.0)	40.01	1.23
95.0 (35.0)	32.35	1.43
104.0 (40.0)	26.34	1.65
113.0 (45.0)	21.58	1.88
122.0 (50.0)	17.79	2.11
131.0 (55.0)	14.75	2.34
140.0 (60.0)	12.30	2.57
149.0 (65.0)	10.32	2.79
158.0 (70.0)	8.69	3.00
167.0 (75.0)	7.36	3.19
176.0 (80.0)	6.27	3.37
185.0 (85.0)	5.36	3.54
194.0 (90.0)	4.60	3.69
203.0 (95.0)	3.96	3.83
212.0 (100.0)	3.43	3.96
221.0 (105.0)	2.98	4.07
230.0 (110.0)	2.60	4.17
239.0 (115.0)	2.27	4.26
248.0 (120.0)	2.00	4.33

TROUBLESHOOTING

TROUBLESHOOTING

■ Heat exchanger temperature thermistor

Temperature °F (°C)	Resistance (kΩ)	Voltage (V)
-22.0 (-30.0)	95.57	0.24
-12.0 (-25.0)	68.89	0.32
-4.0 (-20.0)	50.31	0.43
5.0 (-15.0)	37.19	0.57
14.0 (-10.0)	27.81	0.73
23.0 (-5.0)	21.02	0.92
32.0 (0.0)	16.05	1.14
41.0 (5.0)	12.38	1.39
50.0 (10.0)	9.63	1.65
59.0 (15.0)	7.56	1.93
68.0 (20.0)	5.98	2.21
77.0 (25.0)	4.77	2.49
86.0 (30.0)	3.84	2.77
95.0 (35.0)	3.11	3.02
104.0 (40.0)	2.53	3.26
113.0 (45.0)	2.08	3.48
122.0 (50.0)	1.71	3.67
131.0 (55.0)	1.42	3.85
140.0 (60.0)	1.19	4.00
149.0 (65.0)	1.00	4.13
158.0 (70.0)	0.84	4.25
167.0 (75.0)	0.71	4.35
176.0 (80.0)	0.61	4.43

■ Heat exchanger (Middle) temperature thermistor

Temperature °F (°C)	Resistance (kΩ)	Voltage (V)
-22.0 (-30.0)	95.57	0.24
-12.0 (-25.0)	68.89	0.32
-4.0 (-20.0)	50.31	0.43
5.0 (-15.0)	37.19	0.57
14.0 (-10.0)	27.81	0.73
23.0 (-5.0)	21.02	0.92
32.0 (0.0)	16.05	1.14
41.0 (5.0)	12.38	1.39
50.0 (10.0)	9.63	1.65
59.0 (15.0)	7.56	1.93
68.0 (20.0)	5.98	2.21
77.0 (25.0)	4.77	2.49
86.0 (30.0)	3.84	2.77
95.0 (35.0)	3.11	3.02
104.0 (40.0)	2.53	3.26
113.0 (45.0)	2.08	3.48
122.0 (50.0)	1.71	3.67
131.0 (55.0)	1.42	3.85
140.0 (60.0)	1.19	4.00
149.0 (65.0)	1.00	4.13
158.0 (70.0)	0.84	4.25
167.0 (75.0)	0.71	4.35
176.0 (80.0)	0.61	4.43

■ Outdoor temperature thermistor

Temperature °F (°C)	Resistance (kΩ)	Voltage (V)
-22.0 (-30.0)	224.33	0.73
-12.0 (-25.0)	159.71	0.97
-4.0 (-20.0)	115.24	1.25
5.0 (-15.0)	84.21	1.56
14.0 (-10.0)	62.28	1.90
23.0 (-5.0)	46.58	2.26
32.0 (0.0)	35.21	2.61
41.0 (5.0)	26.88	2.94
50.0 (10.0)	20.72	3.25
59.0 (15.0)	16.12	3.52
68.0 (20.0)	12.64	3.76
77.0 (25.0)	10.00	3.97
86.0 (30.0)	7.97	4.14
95.0 (35.0)	6.40	4.28
104.0 (40.0)	5.18	4.41
113.0 (45.0)	4.21	4.51
122.0 (50.0)	3.45	4.59
131.0 (55.0)	2.85	4.65

■ Heat sink thermistor

Temperature °F (°C)	Resistance (kΩ)	Voltage (V)
-22.0 (-30.0)	94.26	0.08
-12.0 (-25.0)	67.95	0.11
-4.0 (-20.0)	49.62	0.15
5.0 (-15.0)	36.68	0.20
14.0 (-10.0)	27.42	0.26
23.0 (-5.0)	20.73	0.34
32.0 (0.0)	15.83	0.43
41.0 (5.0)	12.21	0.55
50.0 (10.0)	9.50	0.68
59.0 (15.0)	7.46	0.84
68.0 (20.0)	5.90	1.01
77.0 (25.0)	4.71	1.21
86.0 (30.0)	3.78	1.42
95.0 (35.0)	3.06	1.64
104.0 (40.0)	2.50	1.88
113.0 (45.0)	2.05	2.11
122.0 (50.0)	1.69	2.35
131.0 (55.0)	1.40	2.58
140.0 (60.0)	1.17	2.81
149.0 (65.0)	0.99	3.02
158.0 (70.0)	0.83	3.22
167.0 (75.0)	0.70	3.41
176.0 (80.0)	0.60	3.58

■ 2-way valve thermistor, 3-way valve thermistor

Temperature °F (°C)	Resistance (kΩ)	Voltage (V)
-22.0 (-30.0)	1,013.11	0.18
-12.0 (-25.0)	729.09	0.25
-4.0 (-20.0)	531.56	0.34
5.0 (-15.0)	392.31	0.44
14.0 (-10.0)	292.91	0.58
23.0 (-5.0)	221.09	0.74
32.0 (0.0)	168.60	0.93
41.0 (5.0)	129.84	1.14
50.0 (10.0)	100.91	1.38
59.0 (15.0)	79.12	1.63
68.0 (20.0)	62.55	1.90
77.0 (25.0)	49.84	2.17
86.0 (30.0)	40.01	2.45
95.0 (35.0)	32.35	2.71
104.0 (40.0)	26.34	2.96
113.0 (45.0)	21.58	3.20
122.0 (50.0)	17.79	3.41
131.0 (55.0)	14.75	3.61
140.0 (60.0)	12.30	3.78
149.0 (65.0)	10.32	3.94
158.0 (70.0)	8.69	4.07
167.0 (75.0)	7.36	4.19
176.0 (80.0)	6.27	4.30
185.0 (85.0)	5.36	4.39
194.0 (90.0)	4.60	4.46
203.0 (95.0)	3.96	4.53
212.0 (100.0)	3.43	4.59
221.0 (105.0)	2.98	4.64
230.0 (110.0)	2.60	4.68
239.0 (115.0)	2.27	4.72
248.0 (120.0)	2.00	4.75

4. CONTROL AND FUNCTIONS

CONTENTS

4. CONTROL AND FUNCTIONS

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1. Rotation number control of compressor

1-1. Cooling operation

A sensor (room temperature thermistor) built in the indoor unit body will usually perceive difference or variation between a set temperature and present room temperature, and controls the operation rotation number of the compressor.

- If the room temperature is 11°F (6.0°C) higher than a set temperature, the operation rotation number of the compressor will attain to maximum performance.
- If the room temperature is 2°F (1.0°C) lower than a set temperature, the compressor will be stopped.
- When the room temperature is within the range of +11°F (6.0°C) to -2°F (1.0°C) of the setting temperature, the rotation number of the compressor is controlled within the range shown in the table below. However, the maximum rotation number is limited in the range shown in the figure below based on the indoor fan mode and the outdoor temperature.

■ Compact cassette type

- Rotation number range of compressor

Unit: rps

Connected model name	Minimum frequency	Maximum frequency
AOUH18KWAS2 AOUH24KWAS3 AOUH36KWAS4	10	130
AOUH45KWAS5	10	120

- Limit of maximum speed based on outdoor temperature

78.8°F (26°C)	A zone
73.4°F (23°C)	B zone
68.0°F (20°C)	C zone
	D zone

Unit: rps

– Model: AOUH18KWAS2

Model name	Outdoor temperature zone	Indoor unit fan mode			
		HIGH	MED	LOW	QUIET
ACUH07KUAS ACUH09KUAS ACUH12KUAS	A zone	111	74	63	54
	B zone	120	87	74	63
	C zone	130	111	94	80
	D zone	130	130	130	130

– Models: AOUH24KWAS3 and AOUH36KWAS4

Model name	Outdoor temperature zone	Indoor unit fan mode			
		HIGH	MED	LOW	QUIET
ACUH07KUAS ACUH09KUAS ACUH12KUAS	A zone	111	74	63	54
	B zone	120	87	74	63
	C zone	130	111	94	80
	D zone	130	130	130	130
ACUH18KUAS	A zone	111	74	63	46
	B zone	120	87	74	54
	C zone	130	111	94	68
	D zone	130	130	130	130

– Model: AOUH45KWAS5

Model name	Outdoor temperature zone	Indoor unit fan mode			
		HIGH	MED	LOW	QUIET
ACUH07KUAS ACUH09KUAS ACUH12KUAS	A zone	103	85	82	76
	B zone	111	91	85	82
	C zone	120	103	92	87
	D zone	120	120	120	120
ACUH18KUAS	A zone	103	85	82	66
	B zone	111	91	85	76
	C zone	120	103	92	84
	D zone	120	120	120	120

■ Slim duct type

- Rotation number range of compressor

Unit: rps

Connected model name	Minimum frequency	Maximum frequency
AOUH18KWAS2 AOUH24KWAS3 AOUH36KWAS4	10	130
AOUH45KWAS5	10	120

- Limit of maximum speed based on outdoor temperature

78.8°F (26°C)	A zone
73.4°F (23°C)	B zone
68.0°F (20°C)	C zone
	D zone

Unit: rps

- Model: AOUH18KWAS2

Model name	Outdoor temperature zone	Indoor unit fan mode			
		HIGH	MED	LOW	QUIET
ADUH07KUAS ADUH09KUAS ADUH12KUAS ADUH18KUAS	A zone	111	74	63	54
	B zone	120	87	74	63
	C zone	130	111	94	80
	D zone	130	130	130	130

- Model: AOUH24KWAS3

Model name	Outdoor temperature zone	Indoor unit fan mode			
		HIGH	MED	LOW	QUIET
ADUH07KUAS ADUH09KUAS ADUH12KUAS ADUH18KUAS	A zone	111	74	63	54
	B zone	120	87	74	63
	C zone	130	111	94	80
	D zone	130	130	130	130

- Model: AOUH36KWAS4

Model name	Outdoor temperature zone	Indoor unit fan mode			
		HIGH	MED	LOW	QUIET
ADUH07KUAS ADUH09KUAS ADUH12KUAS ADUH18KUAS ADUH24KUAS	A zone	111	74	63	54
	B zone	120	87	74	63
	C zone	130	111	94	80
	D zone	130	130	130	130

– Model: AOUH45KWAS5

Model name	Outdoor temperature zone	Indoor unit fan mode			
		HIGH	MED	LOW	QUIET
ADUH07KUAS	A zone	103	85	82	76
ADUH09KUAS	B zone	111	91	85	82
ADUH12KUAS	C zone	120	103	92	87
ADUH18KUAS ADUH24KUAS	D zone	120	120	120	120

■ Medium duct type

- Rotation number range of compressor

Unit: rps

Connected model name	Minimum frequency	Maximum frequency
AOUH18KWAS2 AOUH24KWAS3 AOUH36KWAS4	10	130
AOUH45KWAS5	10	120

- Limit of maximum speed based on outdoor temperature

78.8°F (26°C)	A zone
73.4°F (23°C)	B zone
68.0°F (20°C)	C zone
	D zone

Unit: rps

- Model: AOUH18KWAS2

Model name	Outdoor temperature zone	Indoor unit fan mode			
		HIGH	MED	LOW	QUIET
ARUH12KUAS	A zone	111	74	63	54
	B zone	120	87	74	63
	C zone	130	111	94	80
	D zone	130	130	130	130

- Model: AOUH24KWAS3

Model name	Outdoor temperature zone	Indoor unit fan mode			
		HIGH	MED	LOW	QUIET
ARUH12KUAS ARUH18KUAS	A zone	111	74	63	54
	B zone	120	87	74	63
	C zone	130	111	94	80
	D zone	130	130	130	130

- Model: AOUH36KWAS4

Model name	Outdoor temperature zone	Indoor unit fan mode			
		HIGH	MED	LOW	QUIET
ARUH12KUAS ARUH18KUAS ARUH24KUAS	A zone	111	74	63	54
	B zone	120	87	74	63
	C zone	130	111	94	80
	D zone	130	130	130	130

– Model: AOUH45KWAS5

Model name	Outdoor temperature zone	Indoor unit fan mode			
		HIGH	MED	LOW	QUIET
ARUH12KUAS	A zone	103	85	82	76
	B zone	111	91	85	82
ARUH18KUAS	C zone	120	103	92	87
ARUH24KUAS	D zone	120	120	120	120

■ Wall mounted type

- Rotation number range of compressor

Unit: rps

Connected model name	Minimum frequency	Maximum frequency
AOUH18KWAS2 AOUH24KWAS3 AOUH36KWAS4	10	130
AOUH45KWAS5	10	120

- Limit of maximum speed based on outdoor temperature

78.8°F (26°C)	A zone
73.4°F (23°C)	B zone
68.0°F (20°C)	C zone
	D zone

Unit: rps

- Model: AOUH18KWAS2

Model name	Outdoor temperature zone	Indoor unit fan mode			
		HIGH	MED	LOW	QUIET
ASUH07KPAS	A zone	102	74	63	54
ASUH09KPAS	B zone	102	87	74	63
ASUH12KPAS	C zone	130	111	94	80
ASUH15KPAS	D zone	130	130	130	130

- Model: AOUH24KWAS3

Model name	Outdoor temperature zone	Indoor unit fan mode			
		HIGH	MED	LOW	QUIET
ASUH07KPAS	A zone	102	74	63	54
ASUH09KPAS	B zone	102	87	74	63
ASUH12KPAS	C zone	130	111	94	80
ASUH15KPAS ASUH18KPAS	D zone	130	130	130	130

- Model: AOUH36KWAS4

Model name	Outdoor temperature zone	Indoor unit fan mode			
		HIGH	MED	LOW	QUIET
ASUH07KPAS	A zone	102	74	63	54
ASUH09KPAS	B zone	102	87	74	63
ASUH12KPAS	C zone	130	111	94	80
ASUH15KPAS ASUH18KPAS ASUH24KPAS	D zone	130	130	130	130

– Model: AOUH45KWAS5

Model name	Outdoor temperature zone	Indoor unit fan mode			
		HIGH	MED	LOW	QUIET
ASUH07KPAS	A zone	95	85	82	76
ASUH09KPAS	B zone	95	91	85	82
ASUH12KPAS	C zone	120	103	92	87
ASUH15KPAS	D zone	120	120	120	120
ASUH18KPAS					
ASUH24KPAS					

1-2. Heating operation

A sensor (room temperature thermistor) built in indoor unit body will usually perceive difference or variation between setting temperature and present room temperature, and controls operation rotation number of compressor.

- If the room temperature is 11°F (6.0°C) lower than a set temperature, the operation rotation number of compressor will attain to maximum performance.
- If the room temperature is 2°F (1.0°C) higher than a set temperature, the compressor will be stopped.
- When the room temperature is within the range of +2°F (1.0°C) to -11°F (6.0°C) of the setting temperature, the rotation number of compressor is controlled within the range shown below.

- **Rotation number range of compressor**

Unit: rps

Connected model name	Minimum frequency	Maximum frequency
AOUH18KWAS2 AOUH24KWAS3 AOUH36KWAS4	10	130
AOUH45KWAS5	10	120

1-3. Dry operation

The rotation number of the compressor shall change according to the temperature, set temperature, and room temperature variation which the room temperature sensor of the indoor unit has detected as shown in the table below.

Zone is defined by set temperature and room temperature.

■ Compact cassette type

- Rotation number range of compressor

Unit: rps

- Model: AOUH18KWAS2

Model name	Outdoor temperature zone	Operating frequency
ACUH07KUAS	X zone	54
ACUH09KUAS	J zone	54
ACUH12KUAS	Y zone	0

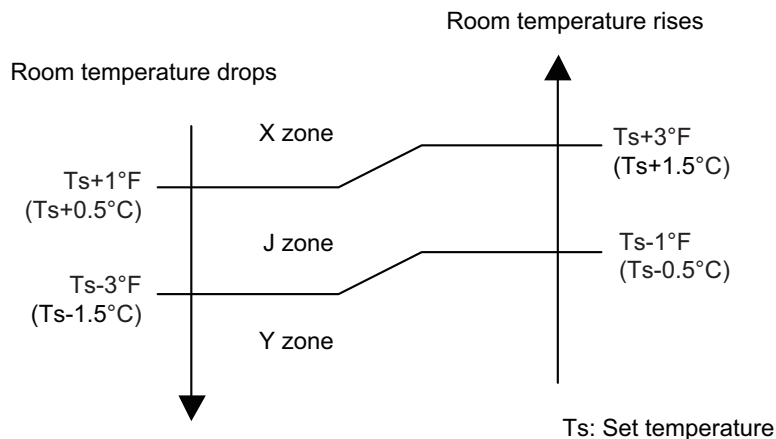
- Models: AOUH24KWAS3 and AOUH36KWAS4

Model name	Outdoor temperature zone	Operating frequency
ACUH07KUAS	X zone	54
ACUH09KUAS	J zone	54
ACUH12KUAS	Y zone	0
ACUH18KUAS	X zone	46
	J zone	46
	Y zone	0

- Model: AOUH45KWAS5

Model name	Outdoor temperature zone	Operating frequency
ACUH07KUAS	X zone	76
ACUH09KUAS	J zone	76
ACUH12KUAS	Y zone	0
ACUH18KUAS	X zone	66
	J zone	66
	Y zone	0

- Compressor control based on room temperature



■ Slim duct type

- Rotation number range of compressor

Unit: rps

- Model: AOUE18KAS2

Model name	Outdoor temperature zone	Operating frequency
ADUH07KUAS	X zone	54
ADUH09KUAS	J zone	54
ADUH12KUAS	Y zone	0

- Model: AOUE24KAS3

Model name	Outdoor temperature zone	Operating frequency
ADUH07KUAS	X zone	54
ADUH09KUAS	J zone	54
ADUH12KUAS	Y zone	0
ADUH18KUAS		

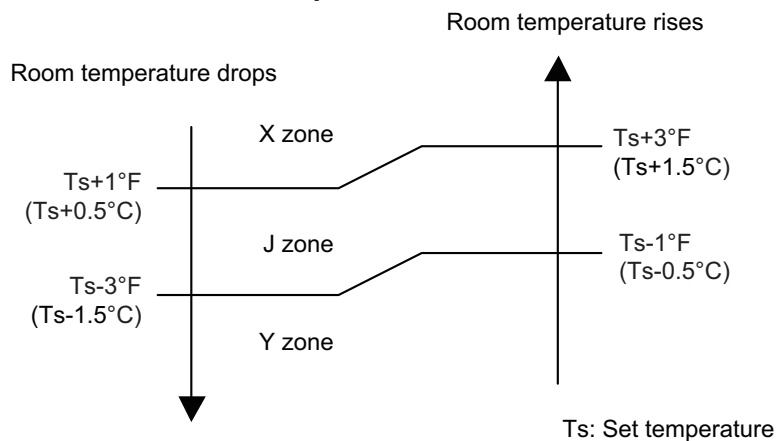
- Model: AOUE36KAS4

Model name	Outdoor temperature zone	Operating frequency
ADUH07KUAS	X zone	74
ADUH09KUAS	J zone	74
ADUH12KUAS	Y zone	0
ADUH18KUAS		
ADUH24KUAS		

- Model: AOUE45KAS5

Model name	Outdoor temperature zone	Operating frequency
ADUH07KUAS	X zone	74
ADUH09KUAS	J zone	74
ADUH12KUAS	Y zone	0
ADUH18KUAS		
ADUH24KUAS		

- Compressor control based on room temperature



■ Medium duct type

- Rotation number range of compressor

Unit: rps

– Model: AOUH18KWAS2

Model name	Outdoor temperature zone	Operating frequency
ARUH12KUAS	X zone	54
	J zone	54
	Y zone	0

– Model: AOUH24KWAS3

Model name	Outdoor temperature zone	Operating frequency
ARUH12KUAS ARUH18KUAS	X zone	54
	J zone	54
	Y zone	0

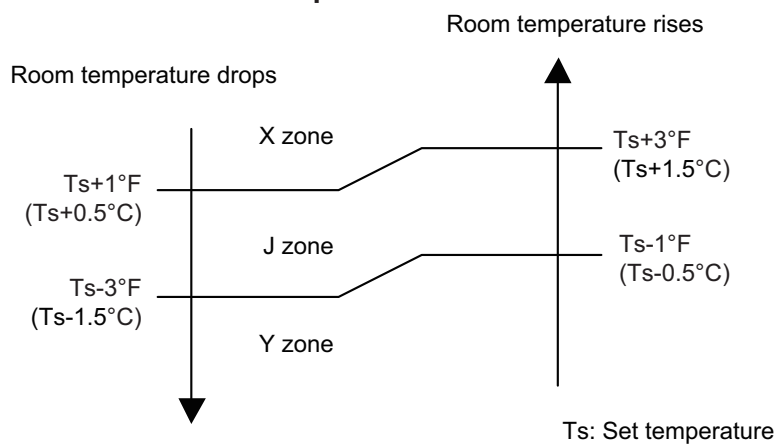
– Model: AOUH36KWAS4

Model name	Outdoor temperature zone	Operating frequency
ARUH12KUAS ARUH18KUAS ARUH24KUAS	X zone	54
	J zone	54
	Y zone	0

– Model: AOUH45KWAS5

Model name	Outdoor temperature zone	Operating frequency
ARUH12KUAS ARUH18KUAS ARUH24KUAS	X zone	76
	J zone	76
	Y zone	0

- Compressor control based on room temperature



■ Wall mounted type

- Rotation number range of compressor

Unit: rps

- Model: AOUE18KAS2

Model name	Outdoor temperature zone	Operating frequency
ASUH07KPAS	X zone	54
ASUH09KPAS	J zone	54
ASUH12KPAS ASUH15KPAS	Y zone	0

- Model: AOUE24KAS3

Model name	Outdoor temperature zone	Operating frequency
ASUH07KPAS	X zone	54
ASUH09KPAS	J zone	54
ASUH12KPAS ASUH15KPAS ASUH18KPAS	Y zone	0

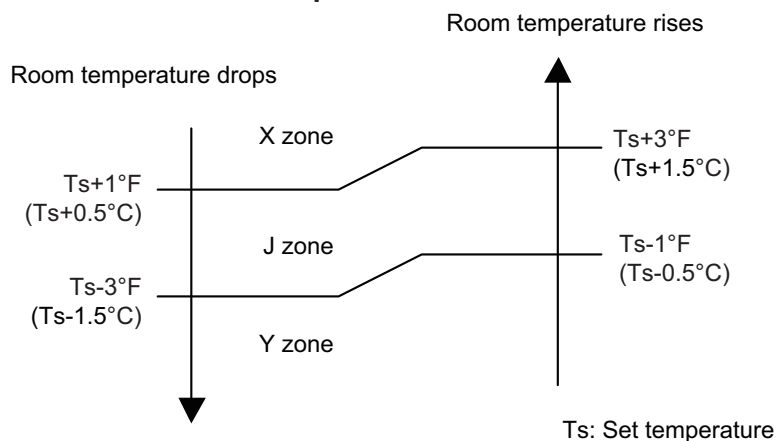
- Model: AOUE36KAS4

Model name	Outdoor temperature zone	Operating frequency
ASUH07KPAS	X zone	54
ASUH09KPAS	J zone	54
ASUH12KPAS ASUH15KPAS ASUH18KPAS ASUH24KPAS	Y zone	0

- Model: AOUE45KAS5

Model name	Outdoor temperature zone	Operating frequency
ASUH07KPAS	X zone	76
ASUH09KPAS	J zone	76
ASUH12KPAS ASUH15KPAS ASUH18KPAS ASUH24KPAS	Y zone	0

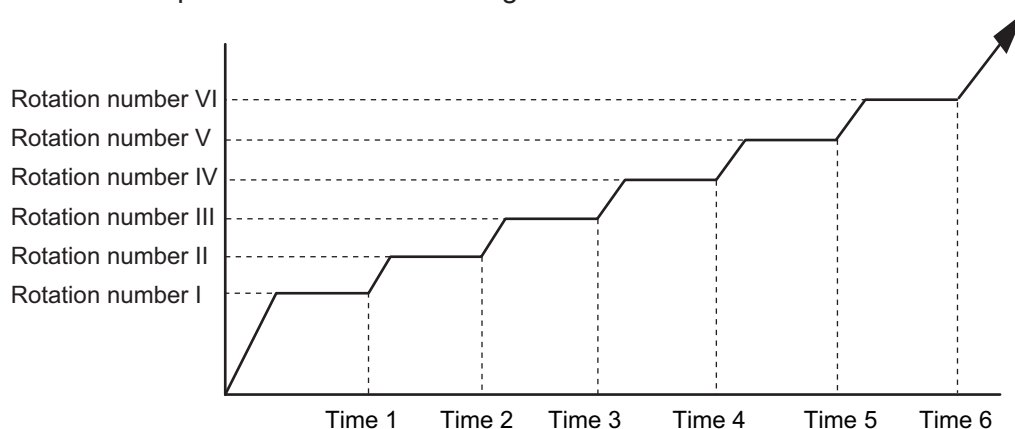
- Compressor control based on room temperature



1-4. Rotation number of compressor at normal start-up

■ Models: AOUH18KWAS2, AOUH24KWAS3, and AOUH36KWAS4

Rotation number of compressor soon after starting is controlled as below.



- Normal operation

Rotation number (rps)	I	II	III	IV	V	VI
	35	52	64	71	89	97
Time (sec)	1	2	3	4	5	6
	60	140	170	200	350	410

- Special operation

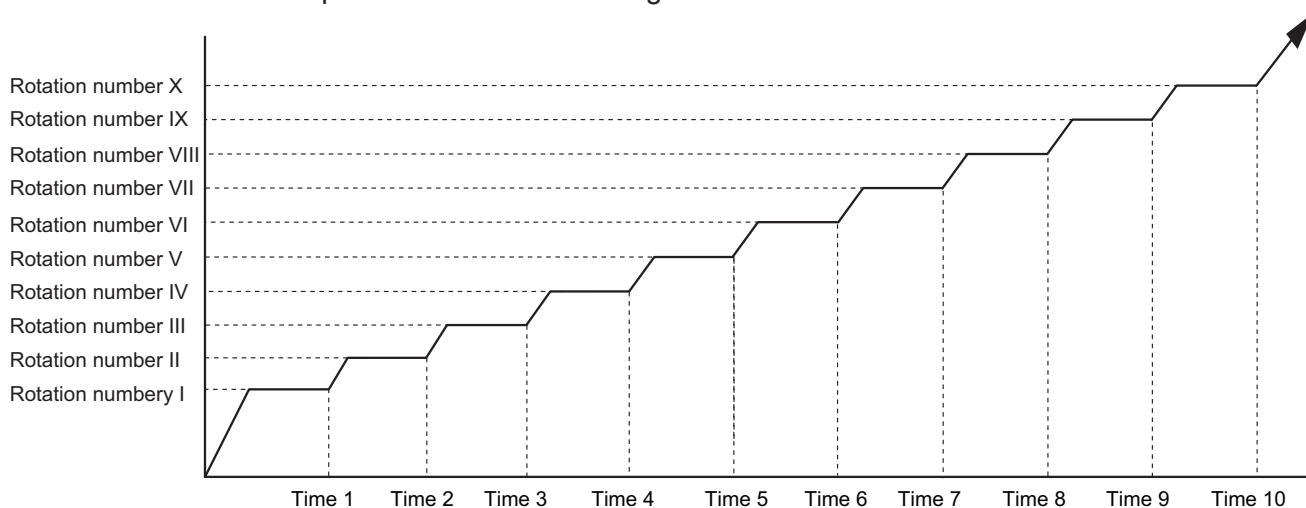
Rotation number (rps)	I	II	III	IV	V	VI
	35	52	64	71	89	97
Time (sec)	1	2	3	4	5	6
	60	140	170	200	350	410

NOTES:

- Normal operation:
 - Cooling and dry mode
 - Below 3 hours from the compressor stop and the compressor thermistor $\geq 59^{\circ}\text{F}$ (15°C)
 - After defrost operation
 - Other than when the compressor starts for the first time since the breaker turns on
- Special operation:
 - Other than the normal operation condition
 - When the compressor starts for the first time since the breaker turns on

■ Model: AOUH45KWAS5

Rotation number of compressor soon after starting is controlled as below.



• Normal operation

Rotation number (rps)	I	II	III	IV	V	VI	VII	VIII	IX	X
	41	46	51	57	60	72	81	91	100	110
Time (sec)	1	2	3	4	5	6	7	8	9	10
	60	120	180	300	420	480	540	600	660	720

• Special operation

Rotation number (rps)	I	II	III	IV	V	VI	VII	VIII	IX	X
	41	46	51	57	60	72	81	91	100	110
Time (sec)	1	2	3	4	5	6	7	8	9	10
	120	185	245	365	665	725	785	845	905	1,060

NOTES:

- Normal operation:
 - Cooling and dry mode
 - Below 3 hours from the compressor stop and the compressor thermistor $\geq 59^{\circ}\text{F}$ (15°C)
 - After defrost operation
 - Other than when the compressor starts for the first time since the breaker turns on
- Special operation:
 - Other than the normal operation condition
 - When the compressor starts for the first time since the breaker turns on

1-5. Limitation of compressor rotation number by outdoor temperature

The minimum rotation number of compressor is limited by outdoor temperature as below.

- **Cooling/Dry mode**

100.4°F (38.0°C)	E zone
64.4°F (18°C)	D zone
53.6°F (12°C)	C zone
44.6°F (7°C)	B zone
	A zone

Unit: rps

Model name	Outdoor temperature zone	Limitation of compressor frequency
AOUH18KWAS2 AOUH24KWAS3	A zone	20
	B zone	19
	C zone	19
	D zone	14
	E zone	20
AOUH36KWAS4	A zone	20
	B zone	18
	C zone	13
	D zone	10
	E zone	20
AOUH45KWAS5	A zone	12
	B zone	12
	C zone	12
	D zone	10
	E zone	10

- Heating mode

53.6°F (12°C)	E zone
41.0°F (5°C)	D zone
30.2°F (-1°C)	C zone
21.2°F (-6°C)	B zone
	A zone

Unit: rps

Model name	Outdoor temperature zone	Limitation of compressor frequency
AOUH18KWAS2 AOUH24KWAS3	A zone	40
	B zone	35
	C zone	26
	D zone	14
	E zone	10
AOUH36KWAS4 AOUH45KWAS5	A zone	30
	B zone	25
	C zone	15
	D zone	10
	E zone	10

2. Auto changeover operation

When the air conditioner is set to AUTO mode by remote controller, operation starts in the optimum mode from among heating, cooling, dry and monitoring modes. During operation, the optimum mode is automatically switched in accordance with temperature changes. The temperature can be set between 64.4°F (18°C) and 86.0°F (30°C) in 1.8°F (1.0°C) steps.

- When operation starts, indoor fan and outdoor fan are operated for around 1 minute. Room temperature and outdoor temperature are sensed, and the operation mode is selected in accordance with the table below.

Room temperature	Operation mode
$T_r > T_s + 3.6^{\circ}\text{F}$ (2°C)	Cooling
$T_s + 3.6^{\circ}\text{F}$ (2°C) $\geq T_r \geq T_s - 3.6^{\circ}\text{F}$ (2°C)	Middle zone
$T_r < T_s - 3.6^{\circ}\text{F}$ (2°C)	Heating

Tr: Room temperature

Ts: Setting temperature

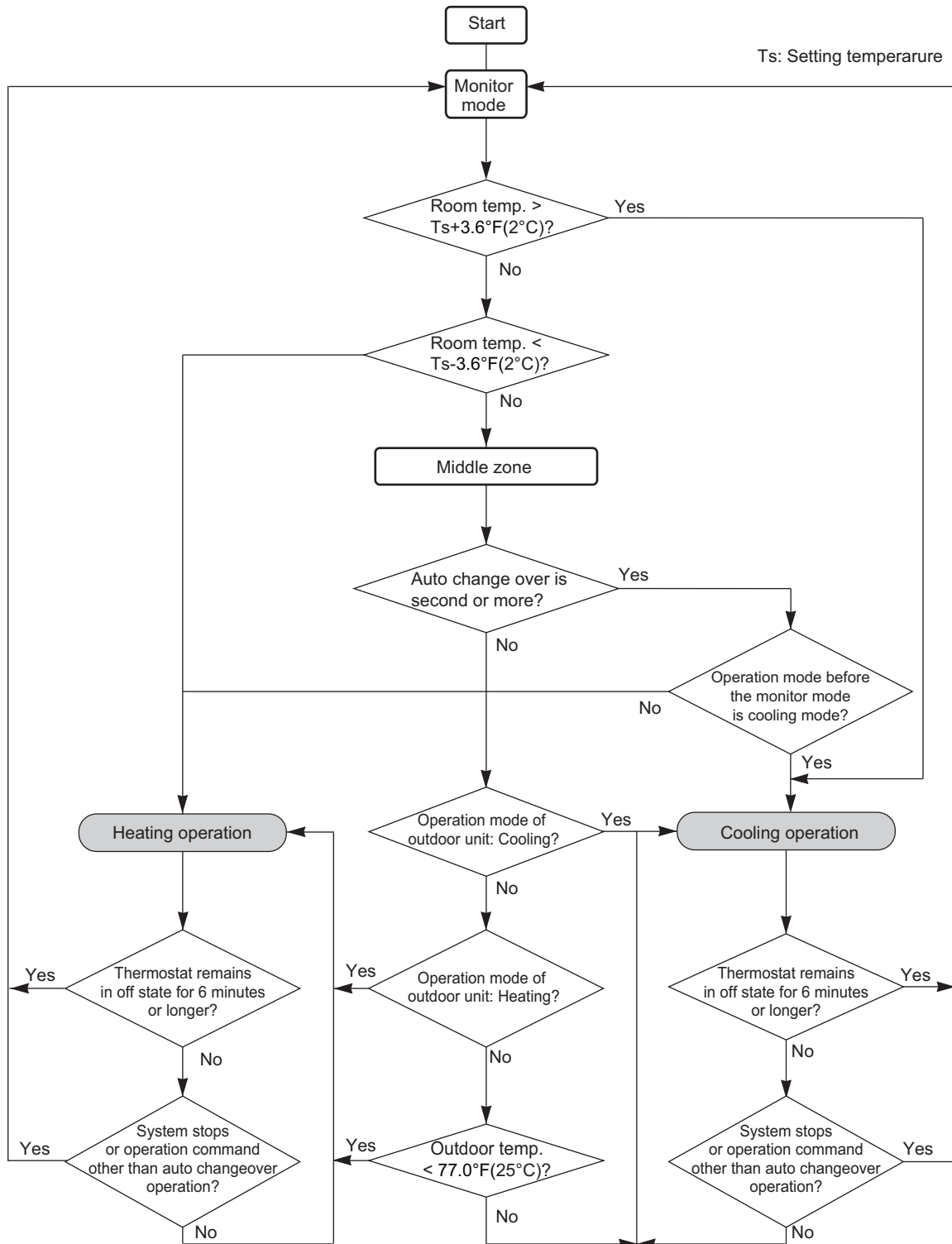
NOTE: When the operation mode is middle zone, indoor unit operation mode is selected as below.

- Same operation mode is selected as outdoor unit.
If outdoor unit is operating in cooling and heating mode, indoor unit will be operated by the same operation mode.
- Selected by outdoor temperature.
If outdoor unit is operating in other than cooling and heating mode, indoor unit will be operated according to the outdoor temperature as below.

Outdoor temp.	Operation mode
77.0°F (25°C) or more	Cooling
Less than 77.0°F (25°C)	Heating

- When the compressor was stopped for 6 consecutive minutes by temperature control function after the cooling or heating mode was selected as above, operation is switched to monitoring mode and the operation mode selection is done again.
- When the middle zone is selected on the predetermining of the operation mode, the operation mode before the changing to the monitoring mode is selected.

Operation flow chart

CONTROL AND
FUNCTIONSCONTROL AND
FUNCTIONS

3. Fan control

Tr: Room temperature

Ts: Setting temperature

3-1. Indoor fan control

■ Compact cassette type

● Fan speed

Indoor fan speed is defined as below.

Operation mode	Fan mode	Speed (rpm)			
		ACUH07KUAS	ACUH09KUAS	ACUH12KUAS	ACUH18KUAS
Heating	HIGH	590	590	650	840
	MED+	570	570	620	800
	MED	540	540	580	750
	LOW	490	490	520	650
	QUIET	440	440	460	500
	Cool air prevention	400	400	400	400
	S-LOW	300	300	300	300
Cooling/Fan	HIGH	590	590	650	790
	MED	540	540	580	660
	LOW	490	490	520	570
	QUIET	440	440	460	460
	Soft quiet	400*1	400*1	400*1	400*1
	S-LOW	300*2	300*2	300*2	300*2
Dry		X zone: 440 J zone: 440	X zone: 440 J zone: 440	X zone: 460 J zone: 460	X zone: 460 J zone: 460

*1: Fan mode only

*2: Cooling mode only

● Fan operation

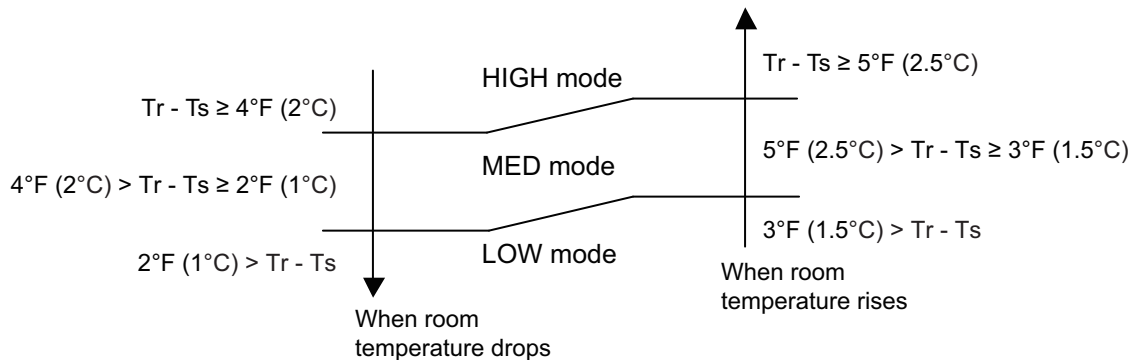
Airflow can be switched in 6 steps such as AUTO, QUIET, LOW, MED, MED—HIGH, HIGH while indoor unit fan only runs.

When fan mode is set at AUTO, it operates on MED fan speed.

● Cooling operation

Switch the airflow AUTO, and indoor fan motor will run according to room temperature, as below.
On the other hand, if switched in HIGH—QUIET, indoor motor will run at a constant airflow of COOL operation modes QUIET, LOW, MED, HIGH as shown in “Fan speed” above.

Airflow change over (Cooling: Auto)



● Dry operation

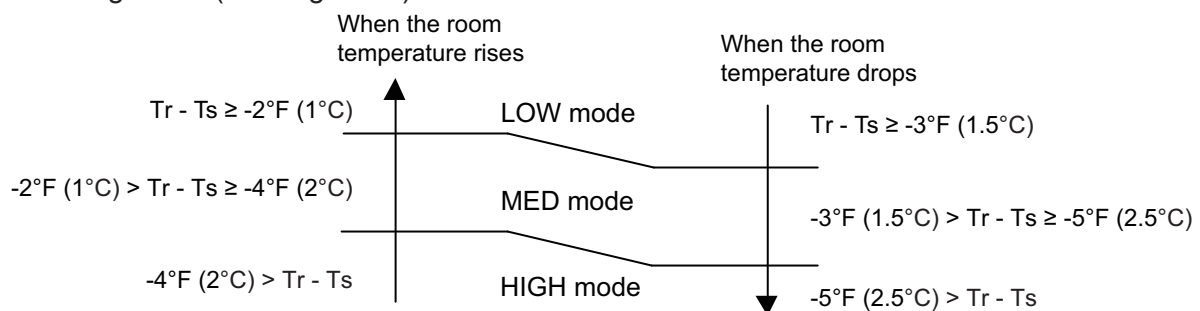
During dry operation, fan speed setting can not be changed as shown in “Fan speed” above.

● Heating operation

Switch the airflow AUTO, and the indoor fan motor will run according to a room temperature, as below.

On the other hand, if switched in HIGH—QUIET, the indoor motor will run at a constant airflow of HEAT operation modes QUIET, LOW, MED, HIGH as shown in “Fan speed” above.

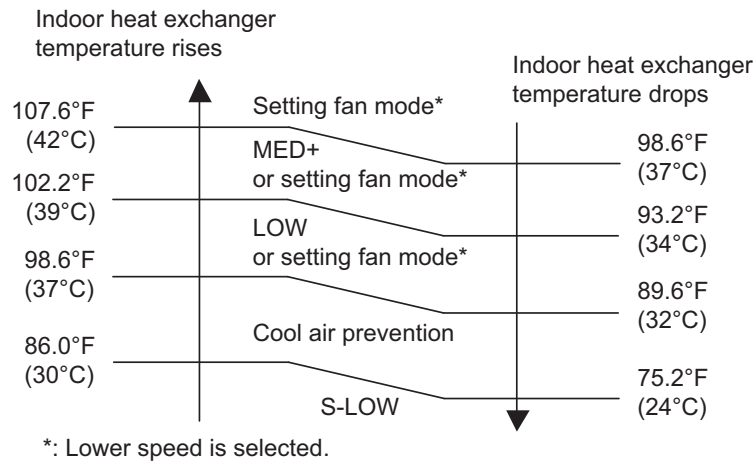
Airflow change over (Heating: Auto)



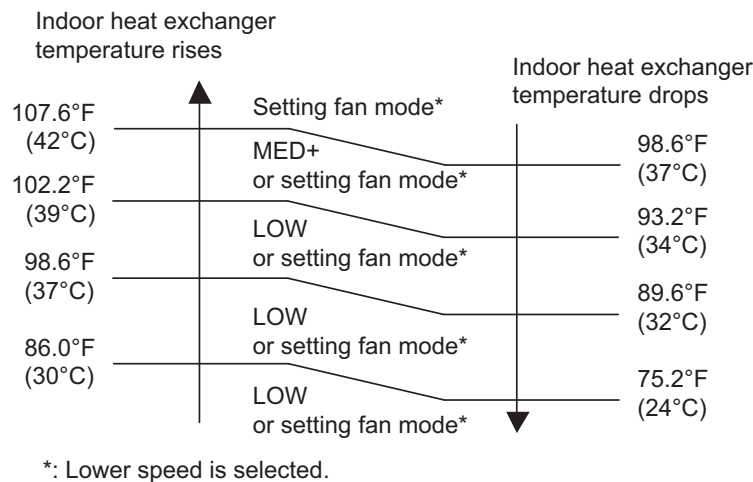
● Cool air prevention control (heating mode)

The maximum value of the indoor fan speed is set as shown below, based on the detected temperature by the indoor heat exchanger sensor on heating mode.

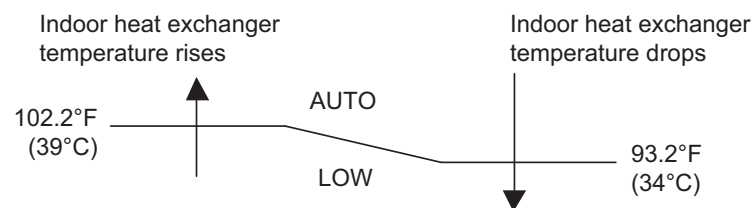
• Normal operation



13 minutes later:

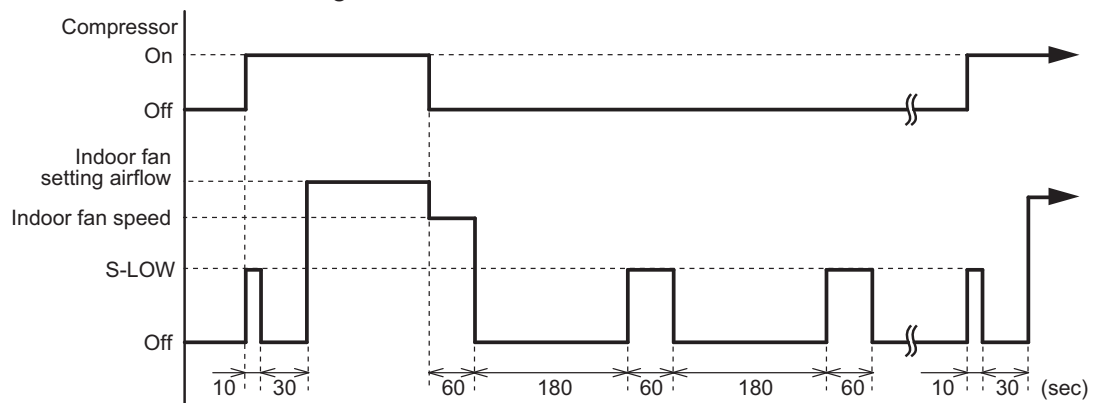


• MIN. HEAT operation



● Moisture return prevention control (cooling and dry mode)

Switch the airflow AUTO at cooling mode, and the indoor fan motor will run as shown below.



■ Slim duct type

● Fan speed

Indoor fan speed is defined as below.

Operation mode	Fan mode	Speed (rpm)				
		07	09	12	18	24
Heating	HIGH	1,160	1,260	1,340	1,380	1,460
	MED	1,000	1,160	1,240	1,300	1,360
	LOW	940	1,060	1,140	1,220	1,260
	QUIET	880	960	1,030	1,140	1,180
	S-LOW	500	500	500	600	600
Cooling/Fan	HIGH	1,160	1,260	1,340	1,380	1,460
	MED	1,000	1,160	1,240	1,300	1,360
	LOW	940	1,060	1,140	1,220	1,260
	QUIET	880	960	1,030	1,140	1,180
	Soft quiet	500* ¹	500* ¹	500* ¹	600* ¹	600* ¹
	S-LOW	500* ²	500* ²	500* ²	600* ²	600* ²
Dry		X zone: 880 J zone: 880	X zone: 960 J zone: 960	X zone: 1,030 J zone: 1,030	X zone: 1,140 J zone: 1,140	X zone: 1,180 J zone: 1,180

*1: Fan mode only

*2: Cooling mode only

● Fan operation

Airflow can be switched in 5 steps such as AUTO, QUIET, LOW, MED, HIGH while indoor unit fan only runs.

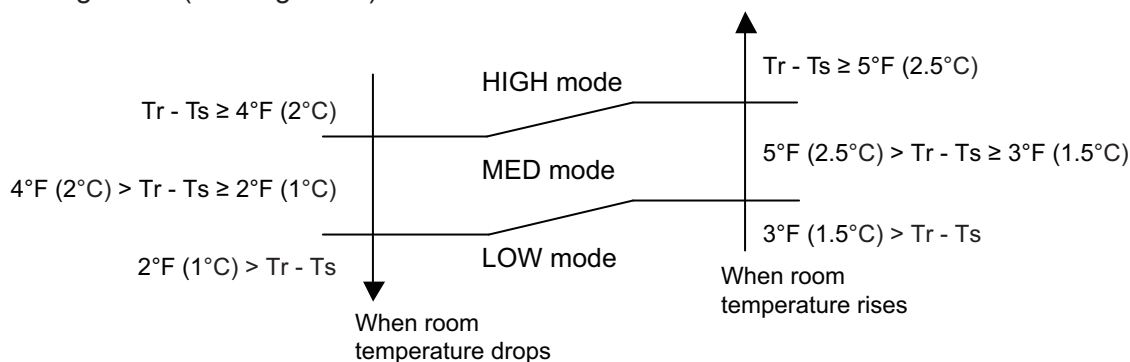
When fan mode is set at AUTO, it operates on MED fan speed.

● Cooling operation

Switch the airflow AUTO, and indoor fan motor will run according to room temperature, as below.

On the other hand, if switched in HIGH—QUIET, indoor motor will run at a constant airflow of COOL operation modes QUIET, LOW, MED, HIGH as shown in “Fan speed” above.

Airflow change over (Cooling: Auto)



● Dry operation

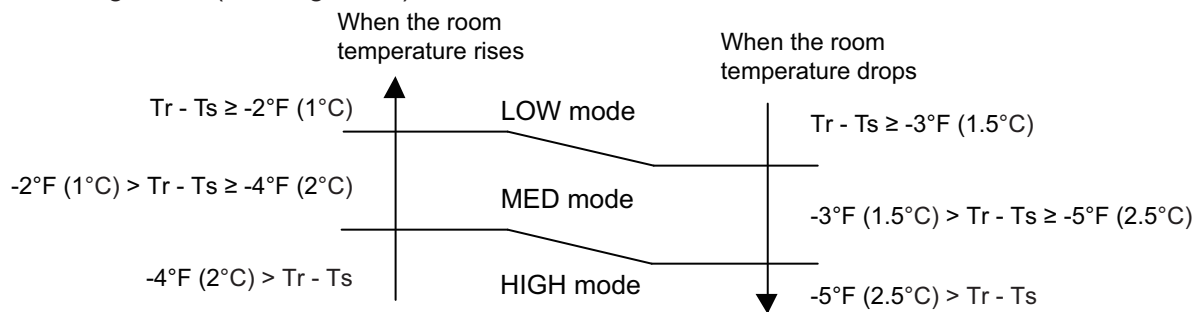
During dry operation, fan speed setting can not be changed as shown in “Fan speed” above.

● Heating operation

Switch the airflow AUTO, and the indoor fan motor will run according to a room temperature, as below.

On the other hand, if switched in HIGH—QUIET, the indoor motor will run at a constant airflow of HEAT operation modes QUIET, LOW, MED, HIGH as shown in “Fan speed” above.

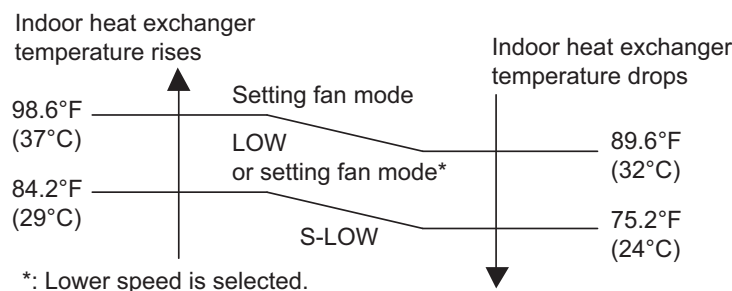
Airflow change over (Heating: Auto)



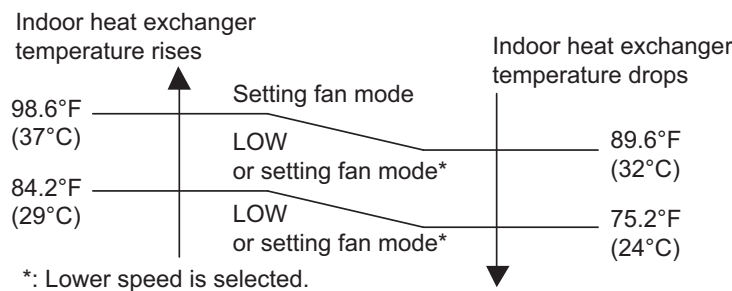
● Cool air prevention control (heating mode)

The maximum value of the indoor fan speed is set as shown below, based on the detected temperature by the indoor heat exchanger sensor on heating mode.

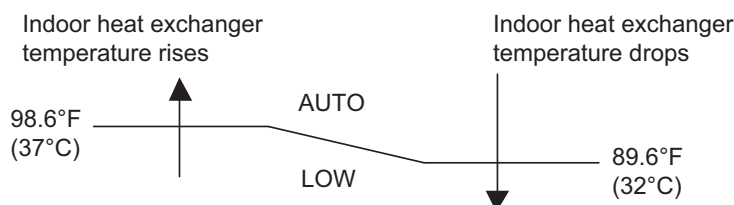
• Normal operation



13 minutes later:

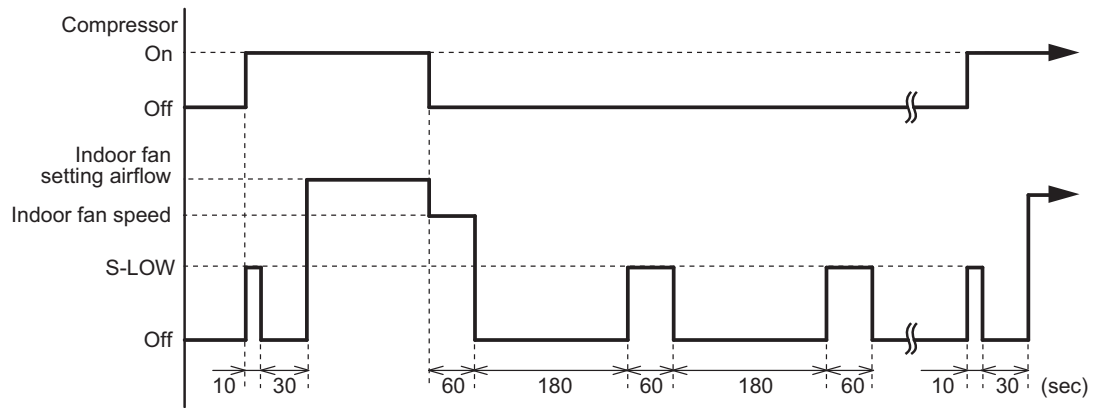


• MIN. HEAT operation



● Moisture return prevention control (cooling and dry mode)

Switch the airflow AUTO at cooling mode, and the indoor fan motor will run as shown below.



■ Middle duct type

● Fan speed

Indoor fan speed is defined as below.

Operation mode	Fan mode	Speed (rpm)		
		ARUH12KUAS	ARUH18KUAS	ARUH24KUAS
Heating	HIGH	920	860	990
	MED+	760	690	790
	MED	760	690	790
	LOW	670	610	650
	QUIET	590	530	520
	Cool air prevention	370	360	380
	S-LOW	370	360	380
Cooling/Fan	HIGH	920	860	990
	MED	760	690	790
	LOW	670	610	650
	QUIET	590	530	520
	Soft quiet	480 ^{*1}	470 ^{*1}	430 ^{*1}
	S-LOW	370 ^{*2}	360 ^{*2}	380 ^{*2}
Dry		X zone: 590 J zone: 590	X zone: 530 J zone: 530	X zone: 520 J zone: 520

*1: Fan mode only

*2: Cooling mode only

● Fan operation

Airflow can be switched in 6 steps such as AUTO, QUIET, LOW, MED, MED—HIGH, HIGH while indoor unit fan only runs.

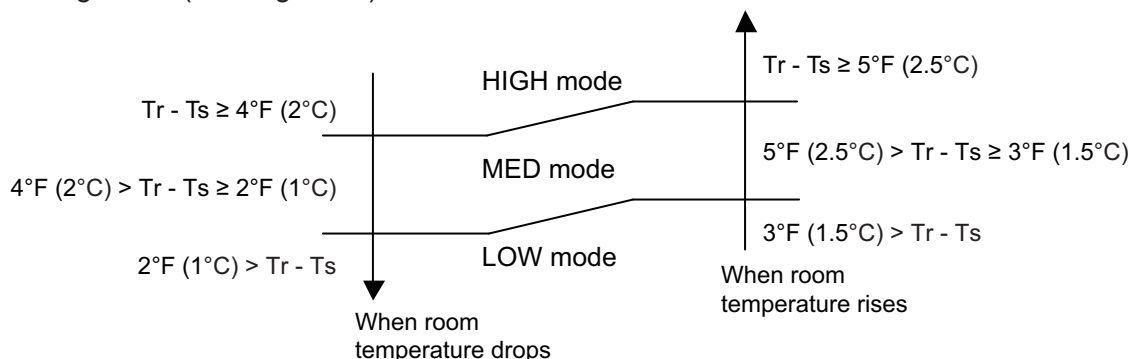
When fan mode is set at AUTO, it operates on MED fan speed.

● Cooling operation

Switch the airflow AUTO, and indoor fan motor will run according to room temperature, as below.

On the other hand, if switched in HIGH—QUIET, indoor motor will run at a constant airflow of COOL operation modes QUIET, LOW, MED, HIGH as shown in “Fan speed” above.

Airflow change over (Cooling: Auto)



● Dry operation

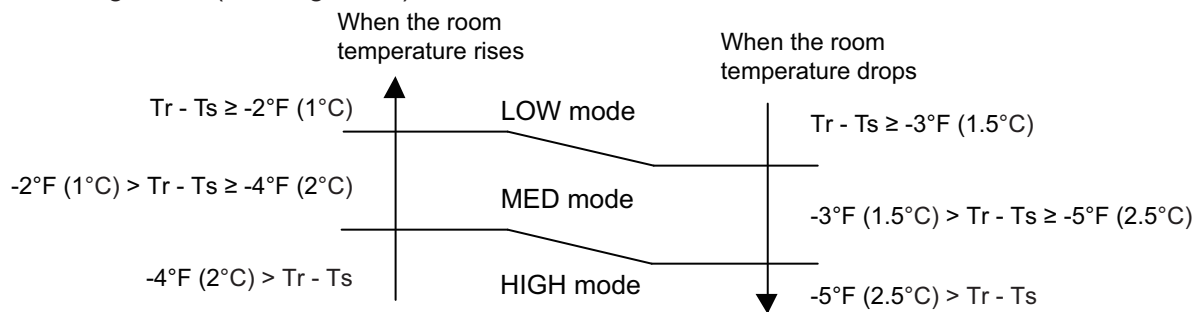
During dry operation, fan speed setting can not be changed as shown in “Fan speed” above.

● Heating operation

Switch the airflow AUTO, and the indoor fan motor will run according to a room temperature, as below.

On the other hand, if switched in HIGH—QUIET, the indoor motor will run at a constant airflow of HEAT operation modes QUIET, LOW, MED, HIGH as shown in “Fan speed” above.

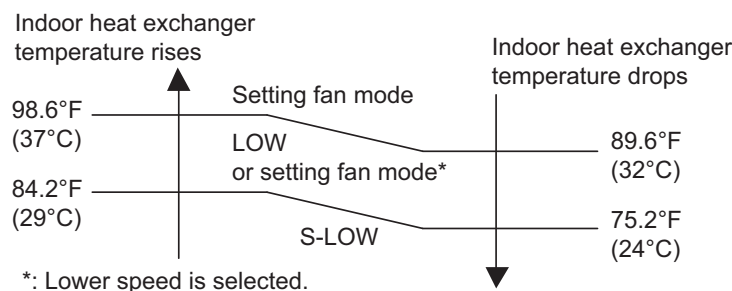
Airflow change over (Heating: Auto)



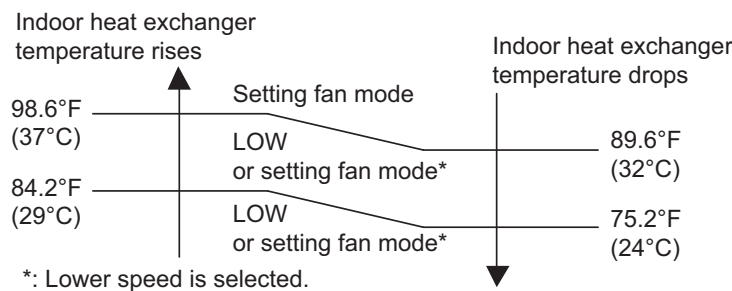
● Cool air prevention control (heating mode)

The maximum value of the indoor fan speed is set as shown below, based on the detected temperature by the indoor heat exchanger sensor on heating mode.

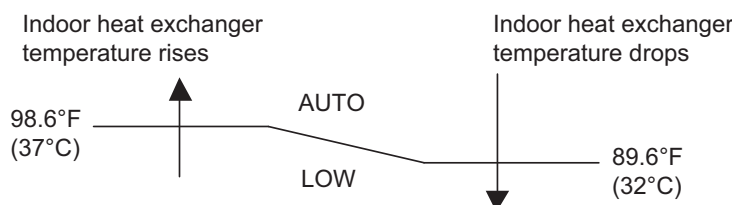
• Normal operation



13 minutes later:

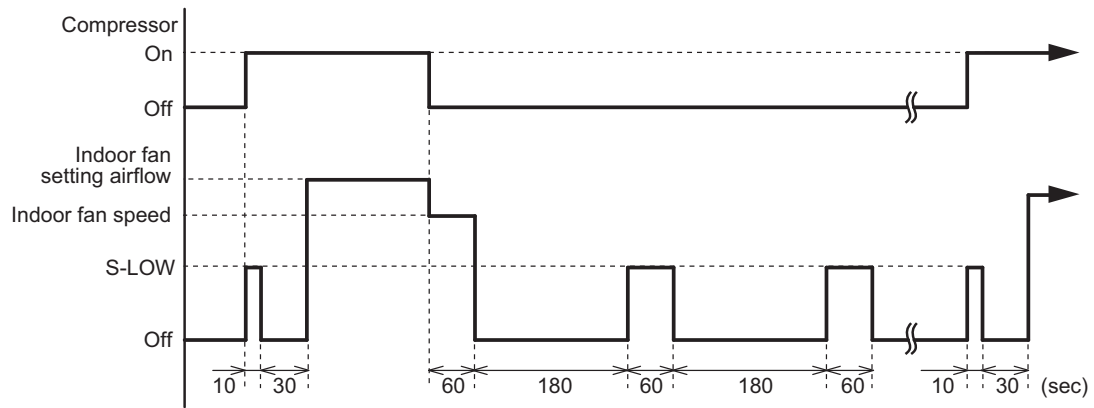


• MIN. HEAT operation



● Moisture return prevention control (cooling and dry mode)

Switch the airflow AUTO at cooling mode, and the indoor fan motor will run as shown below.



■ Wall mounted type

● Fan speed

Indoor fan speed is defined as below.

Operation mode	Fan mode	Speed (rpm)			
		ASUH07KPAS	ASUH09KPAS	ASUH12KPAS	ASUH15KPAS
Heating	POWERFUL	1,210	1,250	1,270	1,360
	HIGH	1,140	1,180	1,200	1,290
	MED—HIGH	1,040	1,040	1,100	1,160
	MED	950	970	1,030	1,100
	MED—LOW	870	890	950	1,000
	LOW	800	810	880	910
	QUIET	630	630	630	670
	Cool air prevention	550	550	550	580
	S-LOW	400	400	400	470
Cooling/ Fan	POWERFUL	1,120	1,180	1,180	1,320
	HIGH	1,050	1,110	1,110	1,250
	MED—HIGH	980	1,010	1,010	1,140
	MED	900	920	920	1,020
	MED—LOW	830	840	840	910
	LOW	760	760	760	810
	QUIET	550	550	550	580
	Soft quiet	470* ¹	470* ¹	470* ¹	510* ¹
	S-LOW	400* ²	400* ²	400* ²	470* ²
Dry		X zone: 550 J zone: 550	X zone: 550 J zone: 550	X zone: 550 J zone: 550	X zone: 580 J zone: 580

Operation mode	Fan mode	Speed (rpm)	
		ASUH18KPAS	ASUH24KPAS
Heating	POWERFUL	1,400	1,570
	HIGH	1,300	1,470
	MED—HIGH	1,230	1,230
	MED	1,130	1,130
	MED—LOW	1,010	1,010
	LOW	900	900
	QUIET	760	760
	Cool air prevention	650	650
	S-LOW	520	520
Cooling/ Fan	POWERFUL	1,400	1,570
	HIGH	1,260	1,470
	MED—HIGH	1,170	1,300
	MED	1,080	1,130
	MED—LOW	990	1,010
	LOW	900	900
	QUIET	760	760
	Soft quiet	650* ¹	650* ¹
	S-LOW	520* ²	520* ²
Dry		X zone: 760 J zone: 670	X zone: 760 J zone: 670

*1: Fan mode only

*2: Cooling mode only

● Fan operation

Airflow can be switched in 7 steps such as AUTO, QUIET, LOW, MED, MED—HIGH, HIGH, POWERFUL while indoor unit fan only runs.

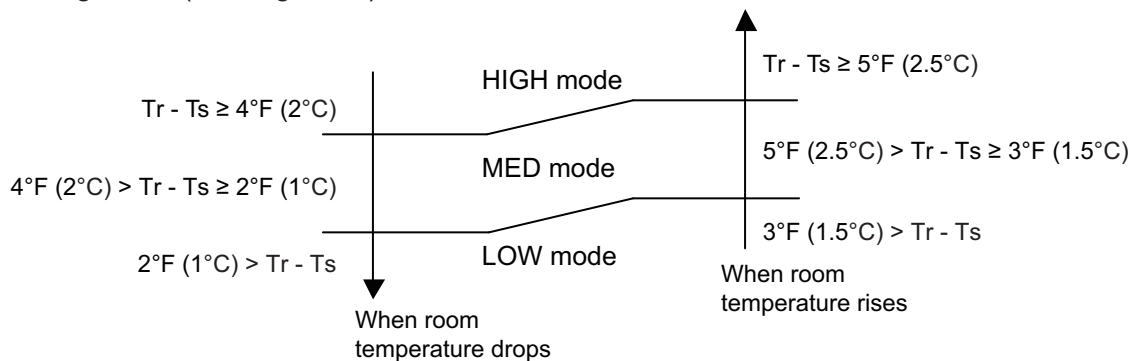
When fan mode is set at AUTO, it operates on MED fan speed.

● Cooling operation

Switch the airflow AUTO, and indoor fan motor will run according to room temperature, as below.

On the other hand, if switched in HIGH—QUIET, indoor motor will run at a constant airflow of COOL operation modes QUIET, LOW, MED, HIGH as shown in “Fan speed” above.

Airflow change over (Cooling: Auto)



● Dry operation

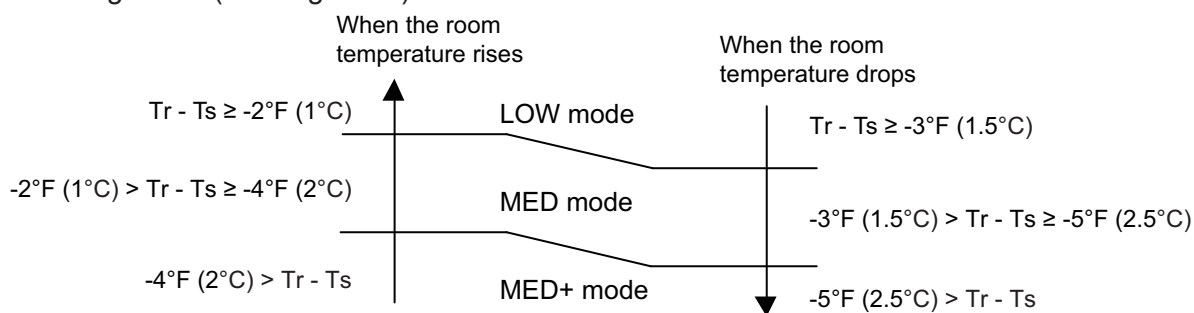
During dry operation, fan speed setting can not be changed as shown in “Fan speed” above.

● Heating operation

Switch the airflow AUTO, and the indoor fan motor will run according to a room temperature, as below.

On the other hand, if switched in HIGH—QUIET, the indoor motor will run at a constant airflow of HEAT operation modes QUIET, LOW, MED, HIGH as shown in “Fan speed” above.

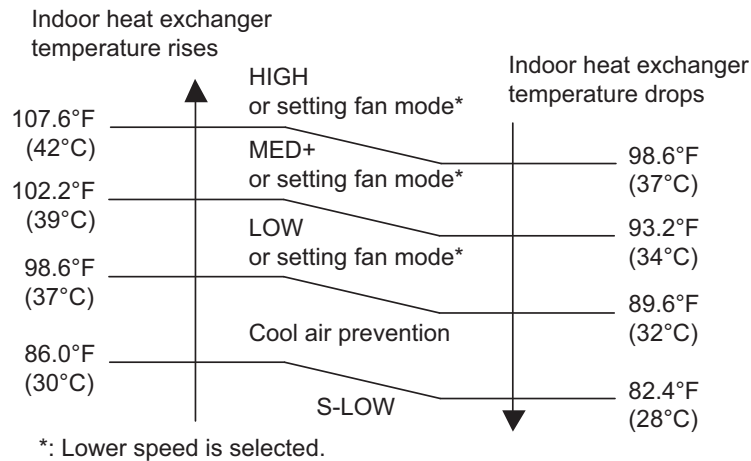
Airflow change over (Heating: Auto)



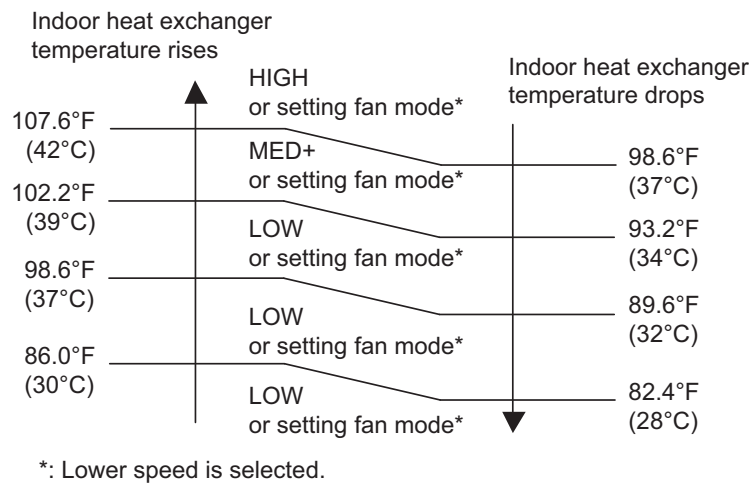
● Cool air prevention control (heating mode)

The maximum value of the indoor fan speed is set as shown below, based on the detected temperature by the indoor heat exchanger sensor on heating mode.

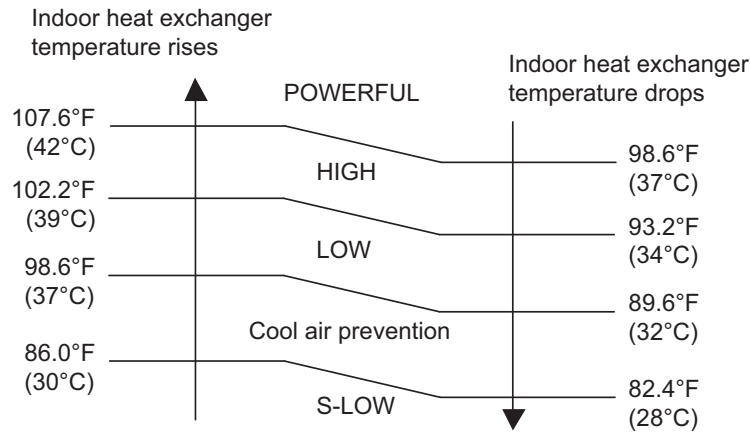
• Normal operation



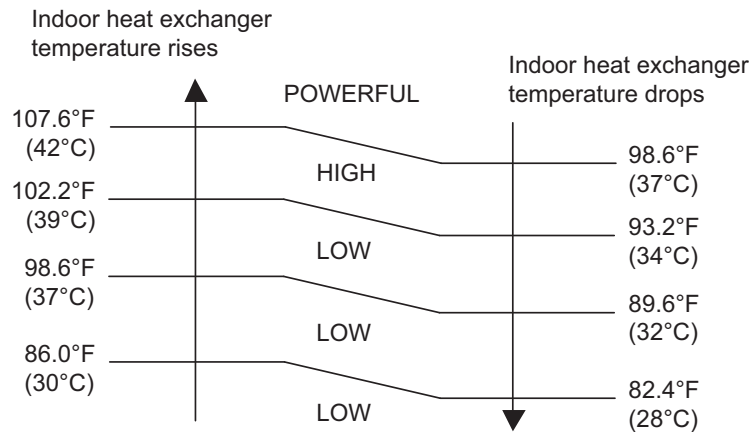
10 minutes later:



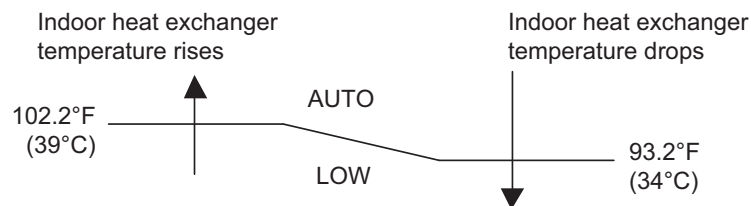
• Powerful operation



10 minutes later:

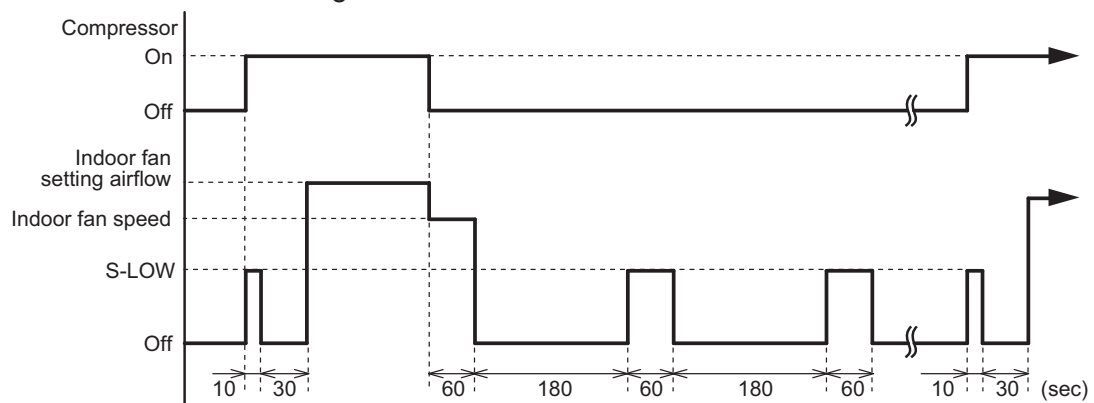


• MIN. HEAT operation



● Moisture return prevention control (cooling and dry mode)

Switch the airflow AUTO at cooling mode, and the indoor fan motor will run as shown below.



3-2. Outdoor fan control

■ Outdoor fan motor

This outdoor unit has a DC fan motor. (Control method is different between AC and DC motors.)

■ Fan speed

● Model: AOUH18KWAS2

Fan speed is defined by outdoor temperature and compressor frequency.

Unit: rpm

Fan step	Cooling or dry	Heating
S-HIGH	—	1,200
13	1,000	—
12	1,000	—
11	940	—
10	840	1,200
9	820	1,100
8	770	940
7	630	800
6	550	700
5	470	550
4	390	470
3	320	440
2	270	320
1	190	270

- When the compressor frequency increases, the outdoor fan speed also changes to the higher speed.
- When the compressor frequency decreases, the outdoor fan speed also changes to the lower speed.

NOTE: After defrost control on the heating mode, the fan speed is kept higher regardless of the compressor frequency.

Fan speed after defrost control: 1,200 rpm

● Model: AOUH24KWAS3

Fan speed is defined by outdoor temperature and compressor frequency.

Unit: rpm

Fan step	Cooling or dry	Heating
S-HIGH	—	1,200
13	1,000	—
12	1,000	—
11	940	—
10	840	1,200
9	820	1,100
8	770	1,000
7	630	800
6	550	700
5	470	550
4	390	470
3	320	440
2	270	320
1	190	270

- When the compressor frequency increases, the outdoor fan speed also changes to the higher speed.
- When the compressor frequency decreases, the outdoor fan speed also changes to the lower speed.

NOTE: After defrost control on the heating mode, the fan speed is kept higher regardless of the compressor frequency.

Fan speed after defrost control: 1,200 rpm

● Model: AOUH36KWAS4

Fan speed is defined by outdoor temperature and compressor frequency.

Unit: rpm

Fan step	Cooling or dry	Heating
S-HIGH	—	1,200
13	1,150	—
12	1,150	—
11	1,120	—
10	1,080	1,200
9	920	1,150
8	860	1,080
7	770	990
6	680	860
5	630	800
4	560	700
3	490	640
2	390	600
1	270	570

- When the compressor frequency increases, the outdoor fan speed also changes to the higher speed.
- When the compressor frequency decreases, the outdoor fan speed also changes to the lower speed.

NOTE: After defrost control on the heating mode, the fan speed is kept higher regardless of the compressor frequency.

Fan speed after defrost control: 1,200 rpm

● Model: AOUH45KWAS5

Fan speed is defined by outdoor temperature and compressor frequency.

Unit: rpm

Fan step	Cooling or dry	Heating
S-HIGH	—	990
13	990	—
12	900	—
11	860	—
10	800	990
9	740	940
8	650	820
7	600	740
6	530	650
5	490	540
4	400	460
3	330	380
2	270	290
1	200	200

- When the compressor frequency increases, the outdoor fan speed also changes to the higher speed.
- When the compressor frequency decreases, the outdoor fan speed also changes to the lower speed.

NOTE: After defrost control on the heating mode, the fan speed is kept higher regardless of the compressor frequency.

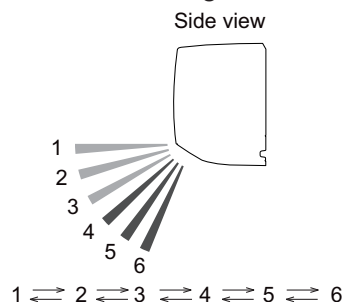
Fan speed after defrost control: 990 rpm

4. Louver control

4-1. Horizontal louver control

■ Wall mounted type

Each time the button is pressed, the air direction range will change as below:



- Remote controller display is not changed.
- Vertical airflow direction is set automatically as shown, in accordance with the type of operation selected.

Cooling / Dry mode : Horizontal flow 1

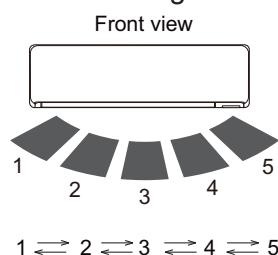
Heating mode : Downward flow 6

- During AUTO operation, for the first a few minutes after beginning operation, airflow will be horizontal 1; the air direction cannot be adjusted during this period. The airflow direction setting will temporarily become 1 when the temperature of the airflow is low at the start of the Heating mode.
- After beginning of AUTO/HEAT mode operated and automatic defrosting operation, the airflow will be horizontal 1. However, the airflow direction cannot be adjusted at beginning AUTO operation mode.

4-2. Vertical louver control

■ Wall mounted type (18/24 model)

Each time the button is pressed, the air direction range will change as below:

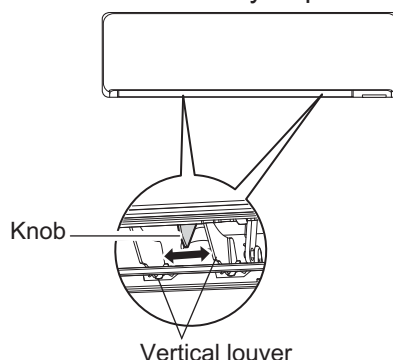


Remote controller display is not changed.

4-3. Adjust the horizontal louver

■ Wall mounted type (07/09/12/15 model)

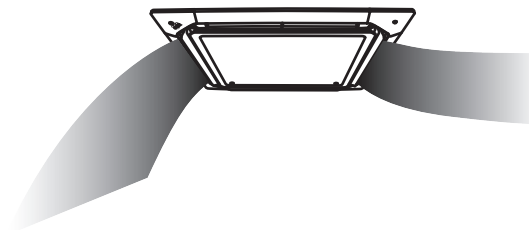
Move the horizontal louvers to adjust airflow direction you prefer.



4-4. Individual louver control

■ Compact cassette type

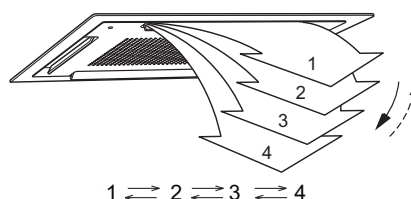
To independently can be set the airflow pattern of each louver as follows:



This function is given priority to overall louver control. But this function is release during the following operation.

- Cold air prevention control
- Monitor mode on the auto change over operation
- Defrost operation

The air direction range will change as follows:



Use the wired remote controller to set this function. This function is only available by 2-wire remote controller.

NOTE: When the 2-wire remote controller is disconnected, clear the individual setting. Otherwise, this setting can't change.

4-5. All louver control

■ Compact cassette type

- **All louver operation**

When the mode is selected, the standard louver position of the each mode is set.

Operation mode	Standard Position
Cooling	1
Dry	1
Heating	4
Monitor	1

NOTES:

- Setting of the wireless remote controller is not displayed on the wired remote controller.
- The setting louver of the individual control function cannot be controlled.

4-6. Swing operation

■ Compact cassette type

- To select vertical airflow swing operation

When the swing signal is received, the vertical airflow direction louver starts to swing.

- Swinging range

- Cooling mode/dry mode/fan mode: 1 ↔ 4
- Heating mode: 1 ↔ 4

- When the indoor fan is S-LOW or stop mode, the swing operation is interrupted and it stops at either upper end or bottom end.

■ Wall mounted type

- To select vertical airflow swing operation

When the swing signal is received, the vertical airflow direction louver starts to swing.

- Swinging range

- Cooling mode/dry mode/fan mode (1 to 3): 1 ↔ 4
- Heating mode/fan mode (4 to 6): 3 ↔ 6

- When the indoor fan is S-LOW or stop mode, the swing operation is interrupted and it stops at either upper end or bottom end.

- To select horizontal airflow swing operation

When the swing signal is received, the horizontal airflow direction louver starts to swing.

- Swinging range

- All mode: 1 ↔ 5

- When the indoor fan is S-LOW or stop mode, the swing operation is interrupted and it stops at either upper end or bottom end.

- To select vertical and horizontal airflow swing operation

When the swing signal is received, both of the vertical and the horizontal airflow direction louver start to swing.

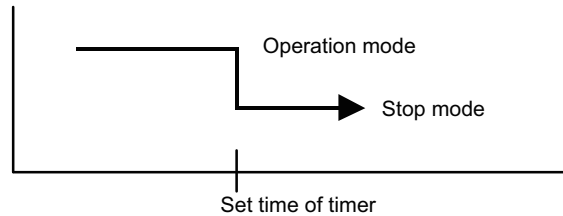
5. Timer operation control

5-1. Wireless remote control

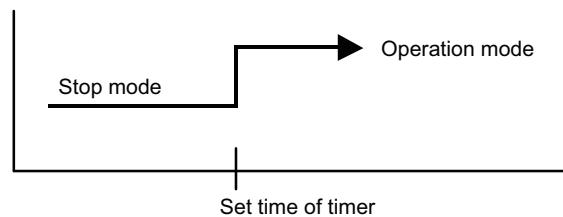
On/Off timer	Program timer	Sleep timer	Weekly timer
○	○	○	—

■ On/Off timer

- Off timer: When the clock reaches the set timer, the air conditioner will be turned off.

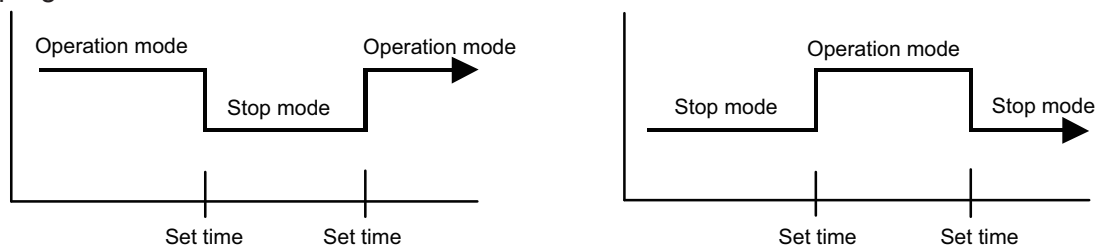


- On timer: When the clock reaches the set timer, the air conditioner will be turned on.



■ Program timer

- The program timer allows the off timer and the on timer to be used in combination one time.



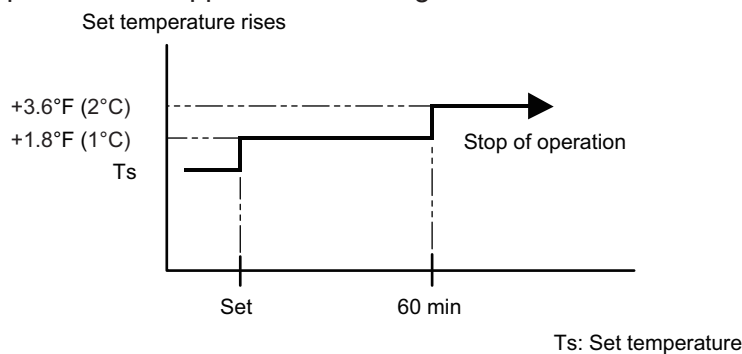
- Operation will start from the timer setting (either off timer and on timer) whichever is closest to the clock current timer setting. The order of operations is indicated by the allow in the remote controller screen.
- Sleep timer operation cannot be combined with on timer operation.

■ Sleep timer

If the sleep timer is set, the room temperature is monitored and the operation is stopped automatically. If the operation mode or the set temperature is change after the sleep timer is set, the operation is continued according to the changed setting of the sleep timer from that time on.

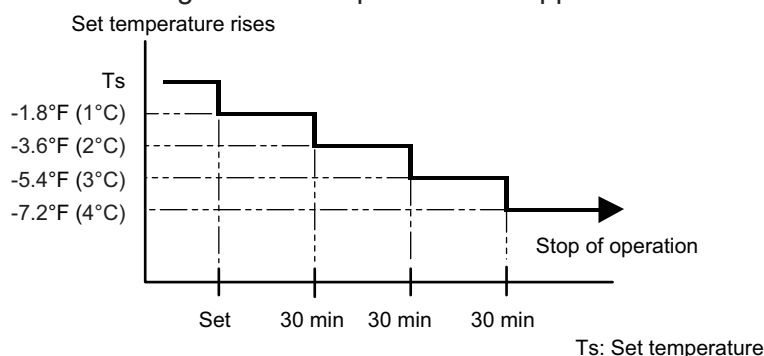
- In the cooling operation mode

When the sleep timer is set, the setting temperature is increased 1.8°F (1°C). It increases the setting temperature another 1.8°F (1°C) after 1 hour. After that, the setting temperature is not changed and the operation is stopped at the setting time.



- In the heating operation mode

When the sleep timer is set, the setting temperature is decreased 1.8°F (1°C). It decreases the setting temperature another 1.8°F (1°C) every 30 minutes. Upon lowering 7.2°F (4°C), the setting temperature is not changed and the operation is stopped at the setting time.

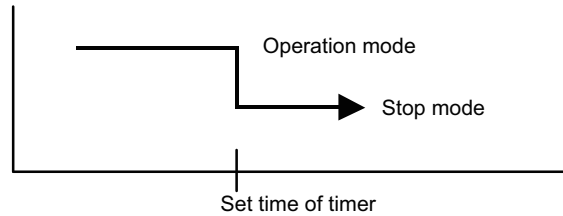


5-2. Wired remote control

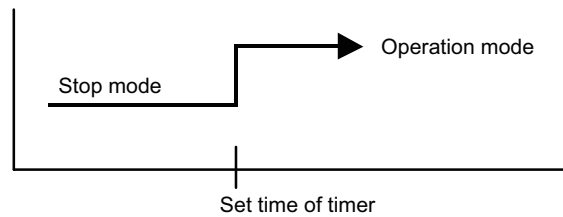
On/Off timer	Program timer	Sleep timer	Weekly timer	Temperature Setback Timer
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

■ On/Off timer

- Off timer: When the clock reaches the set timer, the air conditioner will be turned off.

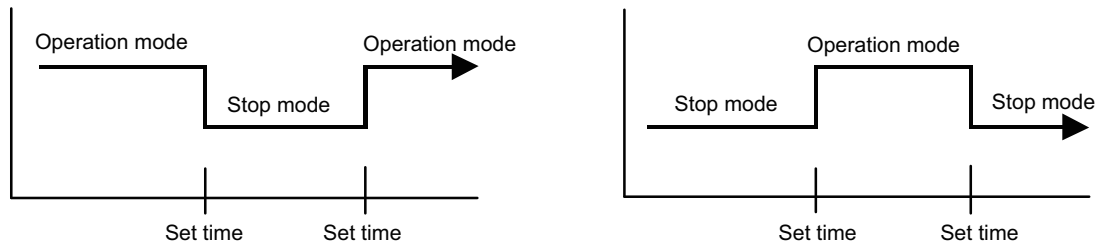


- On timer: When the clock reaches the set timer, the air conditioner will be turned on.



■ Program timer

- The program timer allows the off timer and the on timer to be used in combination one time.



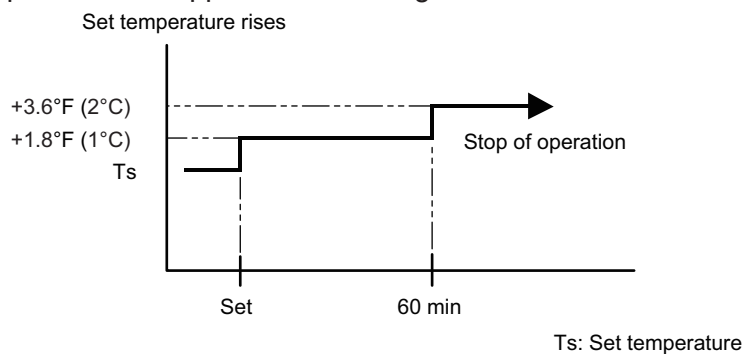
- Operation will start from the timer setting (either off timer and on timer) whichever is closest to the clock current timer setting. The order of operations is indicated by the allow in the remote controller screen.
- Sleep timer operation cannot be combined with on timer operation.

■ Sleep timer

If the sleep timer is set, the room temperature is monitored and the operation is stopped automatically. If the operation mode or the set temperature is change after the sleep timer is set, the operation is continued according to the changed setting of the sleep timer from that time on.

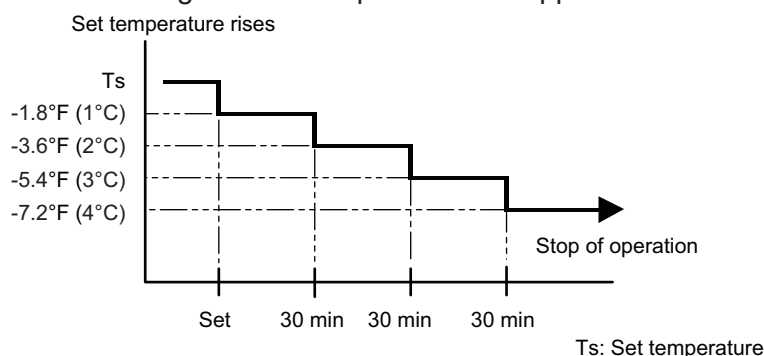
- In the cooling operation mode

When the sleep timer is set, the setting temperature is increased 1.8°F (1°C). It increases the setting temperature another 1.8°F (1°C) after 1 hour. After that, the setting temperature is not changed and the operation is stopped at the setting time.



- In the heating operation mode

When the sleep timer is set, the setting temperature is decreased 1.8°F (1°C). It decreases the setting temperature another 1.8°F (1°C) every 30 minutes. Upon lowering 7.2°F (4°C), the setting temperature is not changed and the operation is stopped at the setting time.



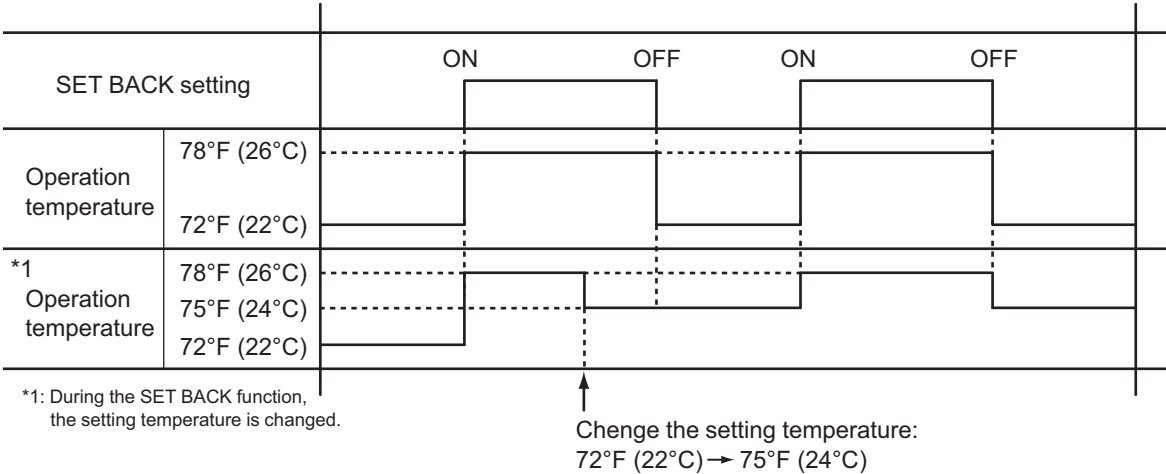
■ Weekly timer

On and off timer can be combined, and up to 4 reservations per day and 28 reservations per week. Before setting the program, set the week and time of the air conditioner at first. If the week and time are not set, the weekly timer will not operate correctly at the setting time.

■ Temperature Setback Timer

- The temperature setback timer only changes the set temperature for 7 days, it cannot be used to start or stop air conditioner operation.
- The temperature setback timer can be set to operate up to two times per day but only one temperature setting can be used.
- During COOLING/DRY mode, the air conditioner will operate at a minimum of 64°F (18°C) even if the SET BACK temperature is set to 63°F (17°C) or lower.

Case of Temperature Setback Timer on the Cooling operation. (Setting temperature :72°F [22°C], SET BACK temperature :78°F [26°C])



CONTROL AND
FUNCTIONS

CONTROL AND
FUNCTIONS

6. Defrost operation control

Tn: Outdoor unit heat exchanger temperature

Ta: Outdoor temperature

Tn10: Temperature at 10 minutes after compressor start

Tnb: Temperature before 5 minutes

• Triggering condition

The defrost operation starts when outdoor unit heat exchanger temperature sensor detects the temperature lower than the values shown below.

– 1st time defrosting after starting operation

Compressor integrating operation time	Less than 17 min.	17 to 57 min.	More than 57 min.
Condition	Does not operate	$T_n \leq 15.8^{\circ}\text{F} (-9^{\circ}\text{C})$ and $T_n - T_a \geq 9.0^{\circ}\text{F} (5^{\circ}\text{C})$	$T_n \leq 23.0^{\circ}\text{F} (-5^{\circ}\text{C})$

– 2nd time and after

Compressor integrating operation time	Less than 40 min.	More than 40 min.
Condition	Does not operate	$T_n - T_{n10} < -9.0^{\circ}\text{F} (-5^{\circ}\text{C})$ ($T_n \leq 21.2^{\circ}\text{F} [-6^{\circ}\text{C}]$) $T_n - T_{nb} < -3.6^{\circ}\text{F} (-2^{\circ}\text{C})$ ($T_n \leq 21.2^{\circ}\text{F} [-6^{\circ}\text{C}]$) $T_n \leq -4.0^{\circ}\text{F} (-20^{\circ}\text{C})$ ($T_a \geq 14.0^{\circ}\text{F} [-10^{\circ}\text{C}]$) $T_n \leq 19.4^{\circ}\text{F} (-7^{\circ}\text{C})$ or $T_n \leq -13.0^{\circ}\text{F} (-25^{\circ}\text{C})$ ($T_a < 14.0^{\circ}\text{F} [-10^{\circ}\text{C}]$)

– Integrating defrost (Constant monitoring)

Compressor integrating operation time	More than 240 min. (For long continuous operation)	More than 215 min. (For long continuous operation)	Less than 10 min.* (For intermittent operation)
Condition	$T_n \leq 26.6^{\circ}\text{F} (-3^{\circ}\text{C})$	$T_n \leq 23.0^{\circ}\text{F} (-5^{\circ}\text{C})$	Count of the compressor off: 40 times

*: If the compressor continuous operation time is less than 10 minutes, the number of the compressor off is counted. If any defrost operated, the compressor off count is cleared.

• Release condition

The defrost operation is released when either one of the conditions below is satisfied.

Outdoor unit heat exchanger temperature (after 1 minute or later since compressor start)	55.4°F (13°C) or more
Compressor operation time	15 minutes

6-1. Defrost operation in heating operation stopped

If the outdoor unit is frosted when stopping the heating operation, it stops after performing the automatic defrosting operation.

In this time, if the indoor unit operation lamp flashes slowly (6 sec on/2 sec off), the outdoor unit allow the heat exchanger to defrost, and then stop.

• Triggering condition

When all of the following conditions are satisfied in heating operation

- Compressor operation integrating time: 30 minutes or more
- Compressor continuous operation time: 10 minutes or more
- Outdoor unit heat exchanger temperature: 24.8°F (-4°C) or less

• Release condition

The defrost operation is released when either one of the conditions below is satisfied.

Outdoor unit heat exchanger temperature (after 1 minute or later since compressor start)	55.4°F (13°C) or more
Compressor operation time	15 minutes

7. Various control

7-1. Auto restart

When the power was interrupted by a power failure etc. during operation, the operation contents at that time are memorized and when the power is recovered, operation is automatically started with the memorized operation contents.

Operation contents memorized when the power is interrupted	Wall mounted	Compact cassette, Slim duct	Middle duct
Operation mode	○	○	○
Setting temperature	○	○	○
Fan mode setting	○	○	○
Timer mode and set time (set by wireless remote controller)	○	○	○
Airflow direction setting	○	○	○
Swing	○	○	○
ECONOMY operation	○	○	○
MIN. HEAT operation	○	○	○
Outdoor low noise operation	○	○	—
Remote control setting	○	—	—
WLAN indicator lamp setting	○	—	—

7-2. MANUAL AUTO operation

When the wireless remote controller is lost or battery power dissipated, this function will work without the remote controller.

When MANUAL AUTO button is pressed more than 3 seconds and less than 10 seconds, MANUAL AUTO operation starts as shown in the table below. To stop operation, press the MANUAL AUTO button for 3 seconds.

	Wall mounted	Compact cassette, Slim duct, Middle duct
Operation mode	Auto changeover	
Fan mode	AUTO	
Timer mode	Continuous (no timer setting available)	
Setting temperature	75.2°F (24°C)	
Horizontal louver setting	Standard	According to memory position
Vertical louver setting	According to memory position	
SWING	Off	
ECONOMY	Off	

7-3. Forced cooling operation

The outdoor unit may not operate depending on the room temperature.

When FORCED COOLING OPERATION button is pressed more than 10 seconds, forced cooling operation starts as shown in the table below.

Operation contents memorized when the power is interrupted	Wall mounted	Compact cassette, Slim duct, Middle duct
Operation mode	Cooling	
Fan mode	HIGH	
Timer mode	Continuous (no timer setting available)	
Setting temperature	75.2°F (24°C)	
Horizontal louver setting	Standard	
Vertical louver setting	According to memory position	—
SWING	Off	
ECONOMY	Off	

- During the forced cooling operation, it operates regardless of room temperature sensor.
- The operation indicator lamp and the timer indicator lamp blink simultaneously during the forced cooling operation.
They blink for 1 second ON and 1 second OFF on both the operation indicator lamp and the timer indicator lamp (same as test operation).

By performing one of the following action, test operation will be canceled:

- Pressing the remote controller START/STOP button
- Pressing FORCED COOLING OPERATION button for 3 seconds
- 60 minutes passed after starting forced cooling operation

NOTE: When HEAT operation is selected on the remote controller during forced cooling operation, heating test run will begin in about 3 minutes.

7-4. MIN. HEAT operation

MIN. HEAT operation performs as below setting when pressing MIN. HEAT button.

Operation mode	Heating
Setting temperature	50°F (10°C)
Fan mode	AUTO
LED display	Economy
Defrost operation	Operate as normal

7-5. ECONOMY operation

The ECONOMY operation starts by pressing ECONOMY button on the remote controller.

The ECONOMY operation is almost the same operation as below settings.

Mode	Cooling/Dry	Heating
Target temperature	Setting temperature +2°F (1°C)	Setting temperature -2°F (1°C)

7-6. POWERFUL operation

The POWERFUL operation starts by pressing POWERFUL button on the remote controller.

The indoor unit and outdoor unit operate at maximum power as shown in the table below.

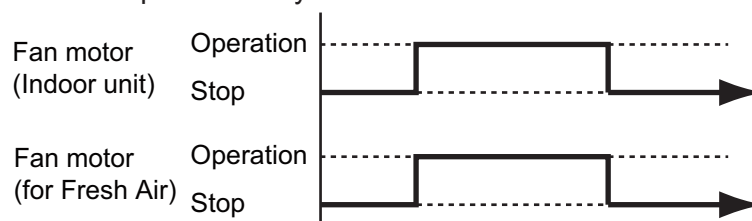
		Wall mounted	Compact cassette, Slim duct, Middle duct
Compressor frequency		Maximum	
Fan mode		POWERFUL	
Horizontal louver setting	Cooling	3	
	Dry		
	Heating	6	5

Release condition:

- Cooling/Dry
Room temperature \leq Setting temperature -1°F (-0.5°C) or Operation time has passed 20 minutes.
- Heating
Room temperature \geq Setting temperature +1°F (+0.5°C) or Operation time has passed 20 minutes.

7-7. Fresh air control

The fan motor for Fresh Air is operated in synchronization with the indoor fan operation as below.



7-8. Compressor preheating operation

⚠ CAUTION

To perform the preheat operation, turn on the power for the outdoor unit at least 12 hours before the operation. Especially in cold climate regions, the compressor may fail if the outdoor unit is on for less than 12 hours.

Compressor preheating operation prevents the damage caused by the refrigerant in the compressor from soaking into the oil. By preheating the compressor, warm airflow is quickly discharged when the operation is started.

• Triggering condition 1

- Outdoor temperature $\leq 68.0^{\circ}\text{F}$ (20°C)

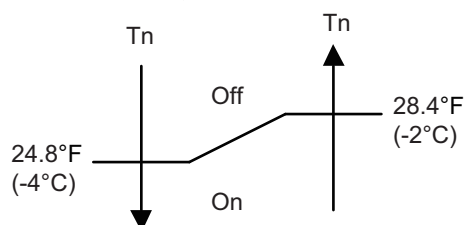
When outdoor temperature reaches following degrees, compressor preheating stops.

Stop	78.8°F (26°C)
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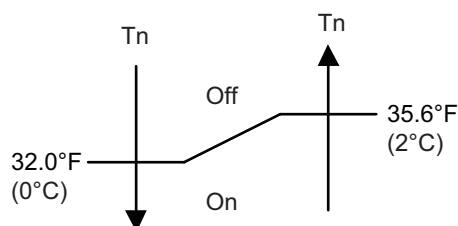
- 30 minutes after compressor stopped

• Triggering condition 2

- Models: AOUH18KWAS2, AOUH24KWAS3, and AOUH36KWAS4



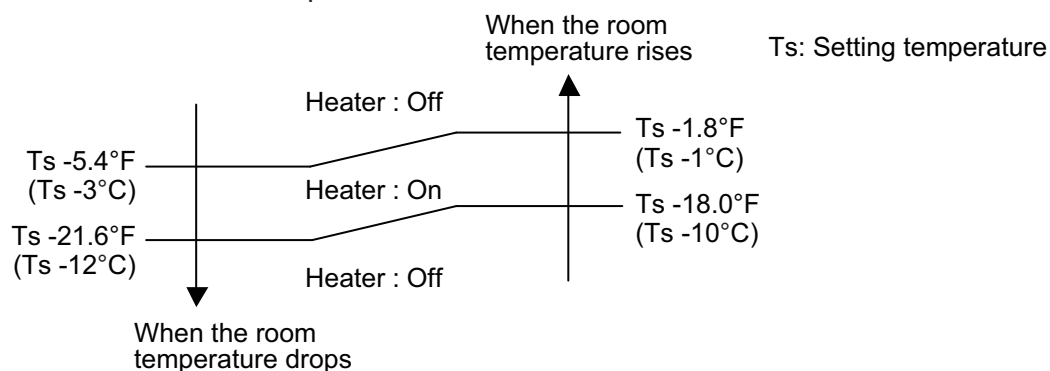
- Model: AOUH45KWAS5



Tn: Outdoor unit heat exchanger temp.

7-9. External electrical heater control

The external electrical heater is operated as below.



NOTES:

- When the compressor stop, external electric heater is off.
- It operates only in heating mode and when the indoor fan operates. (However, S-LOW is excluded.)

7-10. Electronic expansion valve control

The most proper opening of the electronic expansion valve is calculated and controlled under the present operating condition based on the table below.

Operation mode	Pulse range
Cooling/dry mode	Between 30 and 480 pulses
Heating mode	

NOTE: At the time of supplying the power to the outdoor unit, the initialization of the electronic expansion valve is operated (700 pulses are input to the closing direction).

7-11. Drain pump control

■ Drain control for cooling operation(For Middle duct type)

● During the compressor in operation

- **Triggering condition**

The thermostat is turned on during cooling or dry mode.

- **Operation details**

The drain pump is turned on.

- **Release condition**

- The thermostat is turned off.

Refer to "When the compressor is not in operation" for the operation after release.

- The compressor is stopped.

Refer to "When the compressor is not in operation" for the operation after release.

- The operation is switched to heating mode.

Refer to "When the compressor is not in operation" for the operation after release.

- The float switch is turned on.

Refer to "Overflow control" for the operation after release.

- The compressor is stopped by Anti-freezing control.

Refer to "The compressor is stopped by Anti-freezing control" for the operation after release.

● When the compressor is not in operation

- **Triggering condition**

- The thermostat is turned off.

- The compressor is stopped.

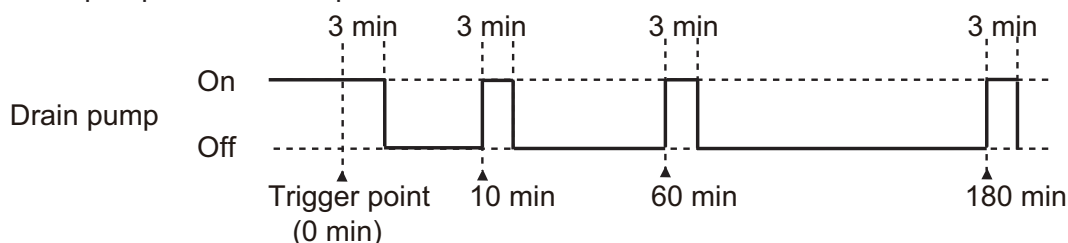
- The operation is switched to heating mode.

- The float switch is turned off.

- **Operation details**

- Count 180 minutes.

- Start drain pump intermittent operation.



- **Release condition**

- 3 minutes drain pump operation is finished after 180 minutes count.

- The operation is switched to cooling or dry mode.

Refer to "During the compressor in operation" for the operation after release.

- The float switch is turned on.

Refer to "Overflow control" for the operation after release.

- **Operation after release**

The drain pump is turned off and the air conditioner operate according the settings.

● Overflow control

• Triggering condition

The float switch is turned on.

• Operation details

- The drain pump is turned on.
- When the operation mode is cooling or dry, operate the followings.
 - The compressor is stopped.
 - Then indoor fan control is turned off.

• Release condition

- The float switch is turned off.
 - In the case that on the cooling or dry mode the thermostat is on, refer to "[During the compressor in operation](#)" for the operation after release.
 - In other case, refer to "[When the compressor is not in operation](#)" for the operation after release.
- 3 minutes passed

• Operation after release

The compressor stopps permanently.

● The compressor is stopped by Anti-freezing control

• Triggering condition

During the compressor in operation, the compressor is stopped by Anti-freezing control.

• Operation details

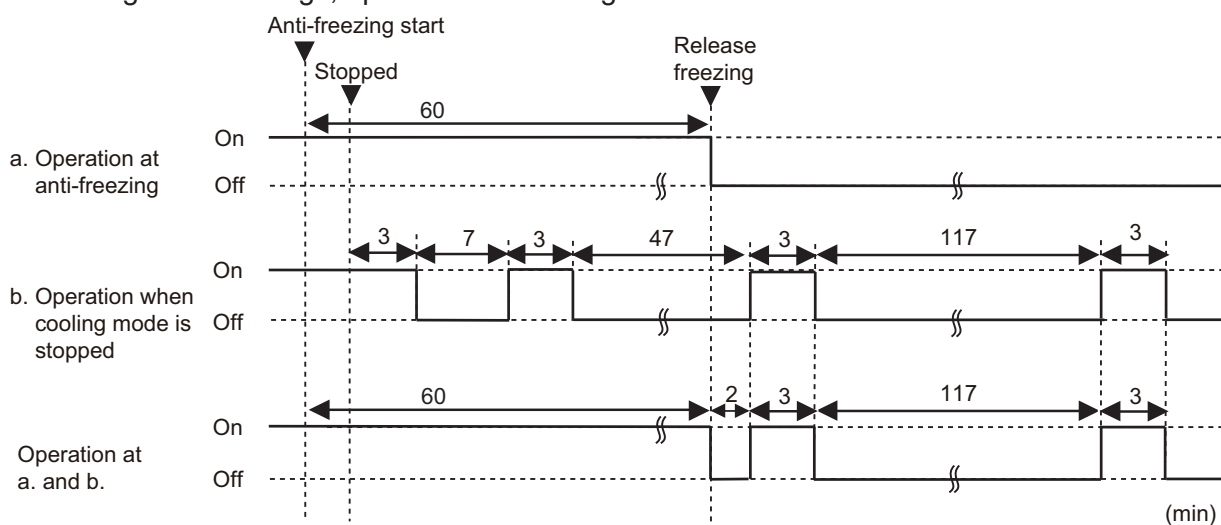
The drain pump is kept on in 60 minutes after Anti-freezing control released.

• Release condition

60 minutes passed

• Operation after release

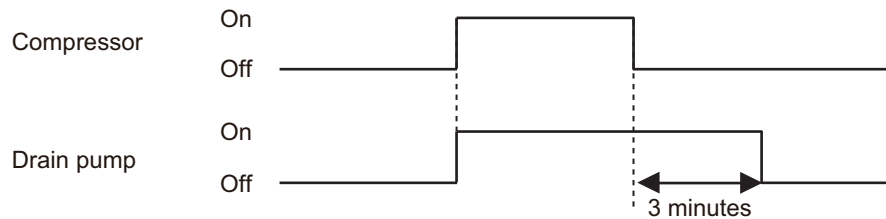
According to the settings, operate the followings.



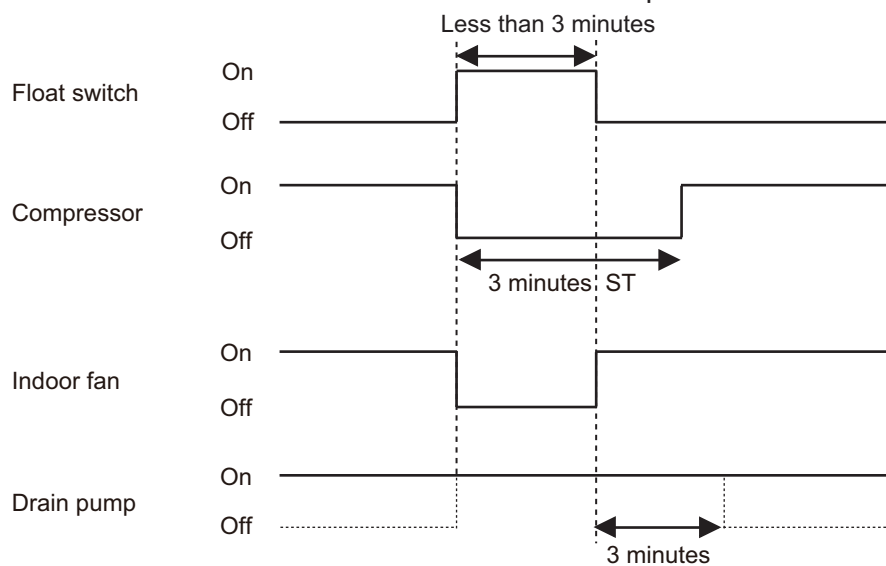
■ Drain control for defrosting operation(For Compact cassette and Slim duct types)

● During cooling or dry mode

- When the compressor starts, the drain pump starts simultaneously.
- The drain pump operates continuously for 3 minutes after the compressor is turned off.



- When the compressor stops by the "Anti-freezing control (cooling and dry mode)" on page 04-60, the drain pump is turned off in 1 hour after the compressor stops.
- When the float switch is on, the compressor, indoor and outdoor fan motor operation are stopped.
- Drain pump operates continuously for 3 minutes after the float switch is turned off and then drain pump is turned off.
- When the float switch turns on continuously for 3 minutes, "failure indication" operates. (It is necessary to turn off power for release it.)
- When the float switch turns off less than 3 minutes, the unit starts cooling operation. Indoor fan motor starts after the float switch is turned off and the compressor starts after 3 minutes st.



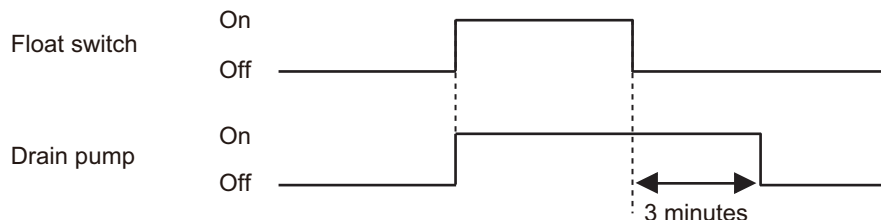
● During heating mode or fan mode and when operation is stopped

- **Triggering condition**

Drain pump is turned on at the same time that the float switch is turned on.

- **Operation details**

When the float switch turns on continuously for 3 minutes, "failure indication" operates. Thereafter, even if the float switch turns off, the "failure indication" is not released. (It is necessary to turn off power for release it.)



- **Release condition**

Drain pump operates continuously for 3 minutes after the float switch is turned off and then drain pump is turned off.

7-12. Prevention to restart for 3 minutes (3 minutes st)

When the compressor fails to start for the number of times below, it does not enter operation status for 3 minutes.

TCFG	16.5cc	20.0cc/34.8cc
Retry number	50	10
Retry set number	3	

When the compressor fails to start in the retry set number above, the compressor is stopped.

7-13. Outdoor unit low noise operation

The compressor frequency and outdoor unit fan speed are limited to reduce the operation noise by external input.

model name	Low noise mode		Outdoor fan speed	Compressor frequency
			rpm	rps
AOUH18KWAS2	Cooling/Dry	Level 1	550	50
		Level 2	550	42
	Heating	Level 1	700	63
		Level 2	550	54
AOUH24KWAS3	Cooling/Dry	Level 1	770	58
		Level 2	630	50
	Heating	Level 1	800	68
		Level 2	700	58
AOUH36KWAS4	Cooling/Dry	Level 1	860	74
		Level 2	770	68
	Heating	Level 1	860	94
		Level 2	800	87
AOUH45KWAS5	Cooling/Dry	Level 1	800	39
		Level 2	740	36
	Heating	Level 1	820	50
		Level 2	740	42

NOTES:

- During the defrost operation, the compressor operates by the speed for defrost operation.
- Even during the low noise operation, the operations of current overload, economy, and peak cut are effective and the outdoor unit operates by lowest current of them.

Capacity priority mode

- Operation condition
The function setting is set to 1.
- Capacity check condition
 - Shortage: Compressor frequency > limited compressor frequency for low noise mode
 - Enough: Compressor frequency ≤ limited compressor frequency for low noise mode

7-14. Unit status monitoring and the detected value indication

The wired remote controller can monitor the indoor and outdoor units' status and display the detected result as a relevant ID.

For details of the display method, refer to the Chapter of "Display Sensor Values" in the *Installation Manual* of Wired Remote Controller (Touch Panel).

The status can be monitored and displayed on the wired remote controller by assigning an arbitrary ID. For available ID list, refer to the table below.

NOTE: Operating time for each part cannot be reset when the part is replaced. Take notes of the operating time before replacing to count the operating time of the replaced part.

Available Sensor ID				
Sensor ID		Item	Unit	Remarks
00: Indoor unit				
00	000	Suction temp.	01: °F or °C	
00	001	Room temp.	01: °F or °C	When the wired remote controller thermistor is enabled, temperature of the wired remote controller thermistor is displayed.
00	002	Wired remote controller detected temp.	01: °F or °C	
00	006	Heat exchanger middle temp.	01: °F or °C	
00	020	Fan rotation number	03: rpm	
00	021	Fan 2 rotation number	03: rpm	
00	051	Float switch On/Off	08: On/Off	0: Off, 1: On (When the water level rises)
00	052	Drain pump On/Off	08: On/Off	0: Off, 1: On
00	080	Indoor unit total energized hours	11: h	
00	081	Total filtering hours	11: h	
00	082	Indoor unit fan total operation hours	11: h	
00	083	Indoor unit fan 2 total operation hours	11: h	
00	095	Presence or absence detected by human sensor	00: —	0: Absence, 1: Presence —: Human sensor error or No human sensor
00	140	Operation or Stop (External input)	00: —	0: Off, 1: On —: When the function setting 46 is not set NOTE: Available only for external input port of the indoor unit
00	141	Emergency stop (External input)	00: —	0: Off, 1: On —: When the function setting 46 is not set NOTE: Available only for external input port of the indoor unit
00	142	Forced stop (External input)	00: —	0: Off, 1: On —: When the function setting 46 is not set NOTE: Available only for external input port of the indoor unit
00	143	Operation or Stop 2 (External input)	00: —	0: Off, 1: On —: When the function setting 46 is not set NOTE: Available only for external input port of the indoor unit
00	155	Operation or Stop On/Off (External output)	00: —	0: Off, 1: On NOTE: The value is output even if the function setting or rotary switch is not set.

Available Sensor ID				
Sensor ID		Item	Unit	Remarks
00	156	Error On/Off (External output)	00: —	0: Off, 1: On NOTE: The value is output even if the function setting or rotary switch is not set.
00	157	Indoor unit fan interlocking On/Off (External output)	00: —	0: Off, 1: On NOTE: The value is output even if the function setting or rotary switch is not set.
00	158	Cooling thermostat On/Off (External output)	00: —	0: Off, 1: On NOTE: The value is output even if the function setting or rotary switch is not set.
00	159	Requested cooling strength On/Off (External output)	00: —	0: Off, 1: On NOTE: The value is output even if the function setting or rotary switch is not set.
00	160	External heater On/Off (External output)	00: —	0: Off, 1: On NOTE: The value is output even if the function setting or rotary switch is not set.
00	161	Heating operation status (External output)	00: —	0: Off, 1: On NOTE: The value is output even if the function setting or rotary switch is not set.
00	162	External output command by remote controller (External output)	00: —	0: Off, 1: On NOTE: The value is output even if the function setting or rotary switch is not set.
01: Outdoor unit				
01	000	Outdoor temp.	01: °F or °C	
01	001	Discharge temp.	01: °F or °C	
01	003	Heat exchanger middle temp.	01: °F or °C	
01	004	Heat exchanger outlet temp.	01: °F or °C	
01	007	Compressor temp.	01: °F or °C	
01	008	Heat sink temp.	01: °F or °C	
01	042	Gas pipe pressure for outdoor unit	02: MPa	
01	050	Fan 1 rotation number	03: rpm	
01	051	Fan 2 rotation number	03: rpm	
01	055	Compressor rotation number	04: rps	
01	060	Expansion valve (Upstream during heating)	05: pls	
01	080	4-way valve output status	07: Cooling/ Heating	0: Cooling, 1: Heating
01	085	Pressure switch (High pressure)	08: On/Off	0: Off (Close), 1: On (Open)
01	088	Crankcase heater output On/Off	08: On/Off	0: Off, 1: On
01	089	Base pan heater output On/Off	08: On/Off	0: Off, 1: On
01	090	Belt heater output On/Off	08: On/Off	0: Off, 1: On
01	100	Operating current	09: A	
01	110	Outdoor unit total power-on hours	11: h	
01	111	Compressor total heating operation hours	11: h	
01	112	Compressor total cooling operation hours	11: h	
01	113	Compressor total operation hours	11: h	
01	114	Outdoor unit fan 1 total operation hours	11: h	

Available Sensor ID				
Sensor ID		Item	Unit	Remarks
01	115	Outdoor unit fan 2 total operating hours	11: h	
01	145	Outdoor low noise input (External input)	00: —	0: Off, 1: On
01	146	Outdoor peak cut (External input)	00: —	0: Off 1: Mode 4 (100%) 2: Mode 3 (75%) 3: Mode 2 (50%) 4: Mode 1 (Forced thermostat off)
01	147	Demand response (External input)	00: —	0: Normal, 1: DRM1, 2: DRM2, 3: DRM3
01	155	Compressor status (External output)	00: —	0: Off, 1: On
01	156	Error status (External output)	00: —	0: Off, 1: On

8. Various protections

8-1. Discharge gas temperature over-rise prevention control

The discharge gas temperature sensor (discharge thermistor: outdoor unit side) detects the discharge gas temperature.

- When the discharge temperature becomes higher than the trigger condition, the compressor frequency is decreased as the table below, and it continues to decrease until the discharge temperature becomes lower than the trigger condition.
- When the discharge temperature becomes lower than the release condition, control of compressor frequency is released.
- When the discharge temperature becomes higher than the compressor protection temperature, the compressor is stopped and the indoor unit indicator lamp starts blinking.

Trigger condition	219.2°F (104°C)
Compressor frequency	-30 rps/120 seconds
Release condition	213.8°F (101°C)
Compressor protection temperature	230.0°F (110°C)

8-2. Anti-freezing control (cooling and dry mode)

The rotation number of compressor is decrease in cooling and dry mode when the indoor unit heat exchanger temperature sensor detects the temperature lower than the trigger condition.

When the indoor unit heat exchanger temperature reaches release condition, the anti-freezing control is stopped.

		Wall mounted	Compact cassette, Slim duct, Middle duct
Trigger condition		37.4°F (3°C)	
Release condition	Outdoor temp. ≥ 50°F (10°C)*1	44.6°F (7°C)	
	Outdoor temp. ≥ 53.6°F (12°C)*2		
	Outdoor temp. < 50°F (10°C)*1	55.4°F (13°C)	44.6°F (7°C)
	Outdoor temp. < 53.6°F (12°C)*2		

*1: During the outdoor temperature dropping

*2: During the outdoor temperature rising

8-3. Current release control

The rotation number of compressor is controlled so that the outdoor unit input current does not exceeds current limit value set according to the outdoor temperature.

The rotation number of compressor returns according to the operation mode, when the current becomes lower than the release value.

■ Model: AOUH18KWAS2

Operation mode	Outdoor temp. (Ta)	Trigger condition	Release condition
Cooling	122.0°F (50°C) ≤ Ta	8.0 A	7.5 A
	114.8°F (46°C) ≤ Ta < 122.0°F (50°C)	9.5 A	9.0 A
	104.0°F (40°C) ≤ Ta < 114.8°F (46°C)	9.5 A	9.0 A
	53.6°F (12°C) ≤ Ta < 104.0°F (40°C)	9.5 A	9.0 A
	35.6°F (2°C) ≤ Ta < 53.6°F (12°C)	9.5 A	9.0 A
	Ta < 35.6°F (2°C)	9.5 A	9.0 A
Heating	62.6°F (17°C) ≤ Ta	9.5 A	9.0 A
	53.6°F (12°C) ≤ Ta < 62.6°F (17°C)	9.5 A	9.0 A
	41.0°F (5°C) ≤ Ta < 53.6°F (12°C)	9.5 A	9.0 A
	Ta < 41.0°F (5°C)	9.5 A	9.0 A

■ Model: AOUH24KWAS3

Operation mode	Outdoor temp. (Ta)	Trigger condition	Release condition
Cooling	122.0°F (50°C) ≤ Ta	8.0 A	7.5 A
	114.8°F (46°C) ≤ Ta < 122.0°F (50°C)	9.5 A	9.0 A
	104.0°F (40°C) ≤ Ta < 114.8°F (46°C)	11.0 A	10.5 A
	53.6°F (12°C) ≤ Ta < 104.0°F (40°C)	12.0 A	11.5 A
	35.6°F (2°C) ≤ Ta < 53.6°F (12°C)	12.0 A	11.5 A
	Ta < 35.6°F (2°C)	12.0 A	11.5 A
Heating	62.6°F (17°C) ≤ Ta	10.5 A	10.0 A
	53.6°F (12°C) ≤ Ta < 62.6°F (17°C)	12.0 A	11.5 A
	41.0°F (5°C) ≤ Ta < 53.6°F (12°C)	12.0 A	11.5 A
	Ta < 41.0°F (5°C)	12.0 A	11.5 A

■ Model: AOUH36KWAS4

Operation mode	Outdoor temp. (Ta)	Trigger condition	Release condition
Cooling	122.0°F (50°C) ≤ Ta	8.0 A	7.5 A
	114.8°F (46°C) ≤ Ta < 122.0°F (50°C)	9.5 A	9.0 A
	104.0°F (40°C) ≤ Ta < 114.8°F (46°C)	11.0 A	10.5 A
	53.6°F (12°C) ≤ Ta < 104.0°F (40°C)	16.0 A	15.5 A
	35.6°F (2°C) ≤ Ta < 53.6°F (12°C)	16.0 A	15.5 A
	Ta < 35.6°F (2°C)	16.0 A	15.5 A
Heating	62.6°F (17°C) ≤ Ta	10.5 A	10.0 A
	53.6°F (12°C) ≤ Ta < 62.6°F (17°C)	13.0 A	12.5 A
	41.0°F (5°C) ≤ Ta < 53.6°F (12°C)	15.0 A	14.5 A
	Ta < 41.0°F (5°C)	16.0 A	15.5 A

■ Model: AOUH45KWA55

Operation mode	Outdoor temp. (Ta)	Trigger condition	Release condition
Cooling	$122.0^{\circ}\text{F} (50^{\circ}\text{C}) \leq \text{Ta}$	10.0 A	9.5 A
	$114.8^{\circ}\text{F} (46^{\circ}\text{C}) \leq \text{Ta} < 122.0^{\circ}\text{F} (50^{\circ}\text{C})$	15.0 A	14.5 A
	$104.0^{\circ}\text{F} (40^{\circ}\text{C}) \leq \text{Ta} < 114.8^{\circ}\text{F} (46^{\circ}\text{C})$	18.0 A	17.5 A
	$53.6^{\circ}\text{F} (12^{\circ}\text{C}) \leq \text{Ta} < 104.0^{\circ}\text{F} (40^{\circ}\text{C})$	19.0 A	18.5 A
	$35.6^{\circ}\text{F} (2^{\circ}\text{C}) \leq \text{Ta} < 53.6^{\circ}\text{F} (12^{\circ}\text{C})$	19.0 A	18.5 A
	$\text{Ta} < 35.6^{\circ}\text{F} (2^{\circ}\text{C})$	19.0 A	18.5 A
Heating	$62.6^{\circ}\text{F} (17^{\circ}\text{C}) \leq \text{Ta}$	20.0 A	19.5 A
	$53.6^{\circ}\text{F} (12^{\circ}\text{C}) \leq \text{Ta} < 62.6^{\circ}\text{F} (17^{\circ}\text{C})$	20.0 A	19.5 A
	$41.0^{\circ}\text{F} (5^{\circ}\text{C}) \leq \text{Ta} < 53.6^{\circ}\text{F} (12^{\circ}\text{C})$	20.0 A	19.5 A
	$\text{Ta} < 41.0^{\circ}\text{F} (5^{\circ}\text{C})$	20.0 A	19.5 A

8-4. Compressor temperature protection

When the compressor temperature sensor detects higher than the trigger condition below, the compressor is stopped. When the compressor temperature sensor detects the release condition, the protection is released.

Trigger condition	$226.4^{\circ}\text{F} (108^{\circ}\text{C})$
Release condition	$176.0^{\circ}\text{F} (80^{\circ}\text{C})$ (3 minutes after compressor stop)

8-5. High pressure protection

Trigger condition	Pressure switch: Off (Open: Higher than 4.2 MPa) Compressor stop
Release condition	Pressure switch: On (Close: Lower than 3.2 MPa) (3 minutes after compressor stop) Compressor restart

8-6. Low outdoor temperature protection

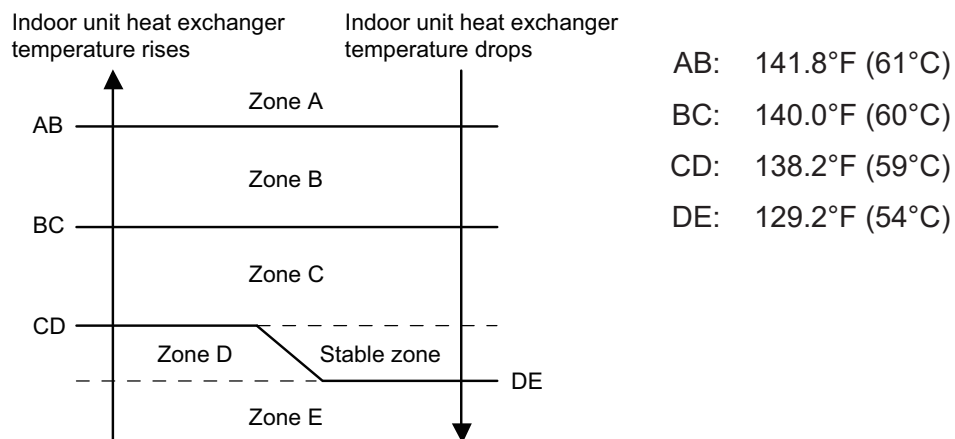
When the outdoor temperature sensor detects lower than the trigger condition below, the compressor is stopped.

Operation mode	Cooling/Dry
Trigger condition	$-4.0^{\circ}\text{F} (-20^{\circ}\text{C})$
Release condition	$5.0^{\circ}\text{F} (-15^{\circ}\text{C})$

8-7. High temperature and high pressure release control

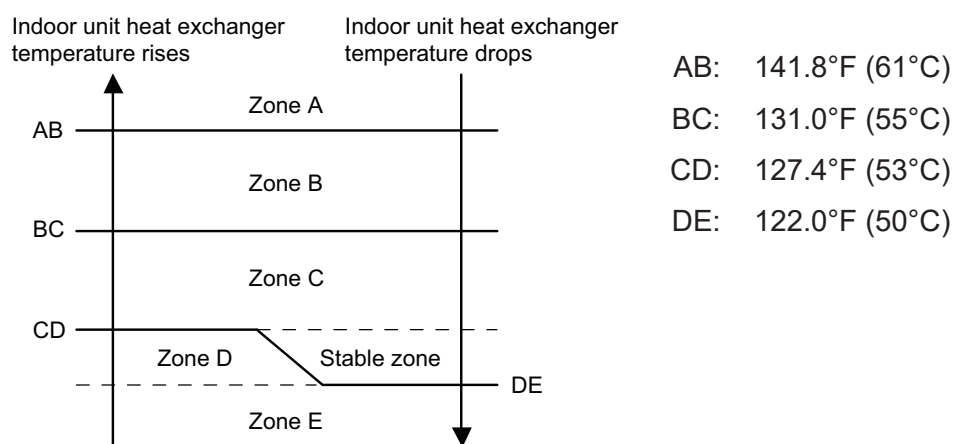
The compressor is controlled as follows.

• Cooling mode



Zone	Operation	
Zone A	Compressor is stopped.	
Zone B	The compressor frequency is decreased.	-30 rps/30 sec.
Zone C		-5 rps/60 sec.
Zone D	The protection is released and the operation is returned to normal mode.	
Zone E		

• Heating mode



Zone	Operation	
Zone A	Compressor is stopped.	
Zone B	The compressor frequency is decreased.	-25 rps/120 sec.
Zone C		-3 rps/60 sec.
Zone D	The protection is released and the operation is returned to normal mode.	
Zone E		

5. FIELD WORKING

CONTENTS

5. FIELD WORKING

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1. Function settings (for indoor unit)

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.

1-1. Slim duct type indoor unit (setting by DIP switch)

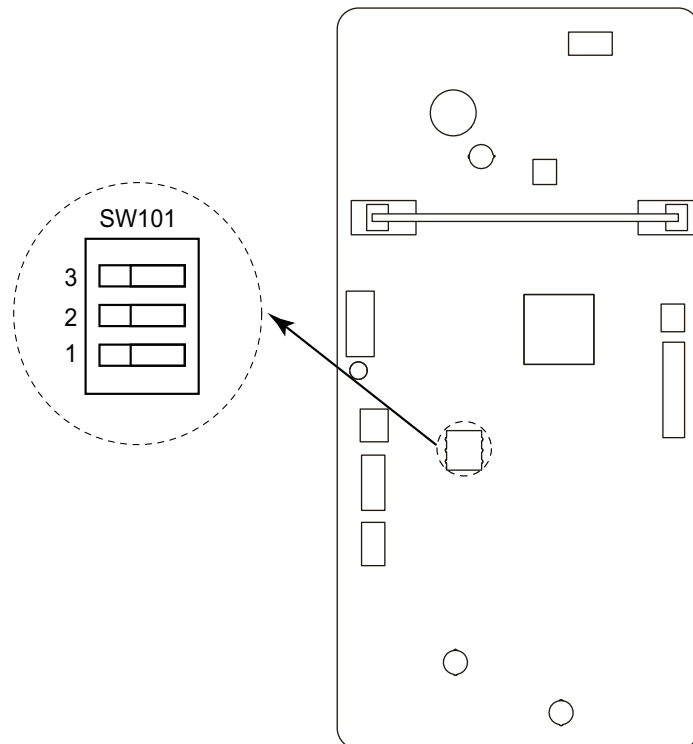
By using some components on the PCB, you can change the function settings.

Related components on the PCB and the applicable settings:

Component			Setting content
DIP switch	SW101	1	Drainage function setting
		2	Auto louver grille setting
		3	Fan delay setting

■ Component location

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



■ DIP switch setting

- **SW101-Switch 1: Drainage function setting**

Switch 1	Drainage function	Factory setting
ON	Disabled	
OFF	Enabled	◆

- **SW101-Switch 2: Auto louver grille setting**

When Auto louver grille kit (optional parts) is attached, set to “Enabled”.

Switch 2	Auto louver grille setting	Factory setting
ON	Enabled	
OFF	Disabled	◆

- **SW101-Switch 3: Fan delay setting**

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

Switch 3	Fan delay	Factory setting
ON	Enabled	
OFF	Disabled	◆

1-2. Middle duct type indoor unit (setting by DIP switch)

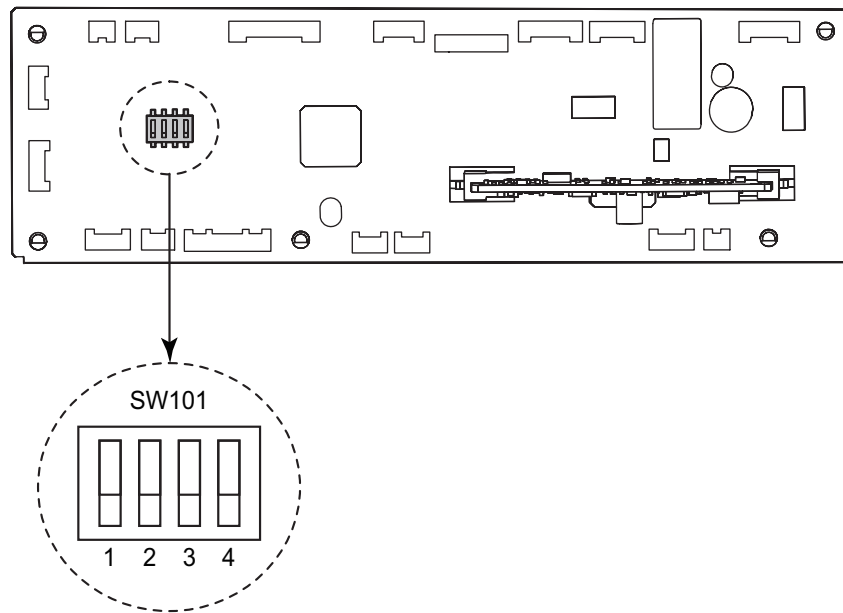
By using some components on the PCB, you can change the function settings.

Related components on the PCB and the applicable settings

Component		Setting content
DIP switch101	1	Setting change prohibited
	2	Setting change prohibited
	3	Fan delay setting
	4	Setting change prohibited

● Component location

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



● DIP switch setting

- **Switch 1: Setting change prohibited (SW101)**
- **Switch 2: Setting change prohibited (SW101)**
- **Switch 3: Fan delay setting (SW101)**

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

Switch 3	Fan delay	Factory setting
ON	Enabled	
OFF	Disabled	◆

- **Switch 4: Setting change prohibited (SW101)**

1-3. Indoor unit (setting by wireless remote controller)

CAUTION

This setting changes the function settings used to control the indoor unit according to the installation conditions. Incorrect settings can cause a product malfunction.

- After the power is turned on, perform the “Function setting” according to the installation conditions using the remote controller.
- The settings may be selected between the following two: Function number or Setting number.
- Settings will not be changed if invalid numbers or setting numbers are selected.

■ Preparation

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

- Piping air tightness test and vacuuming have been performed firmly.
- There is no wiring mistake. Then, connect the power supply of the indoor unit.

■ AR-RRH1U (for Wall mounted type 07-15KPAS)

● Function setting procedure

The function number and the associated setting value are displayed on the LCD of the remote controller. Follow the instructions written in the installation manual, 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 outdoor unit.

NOTES:

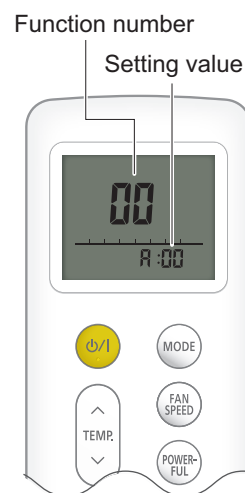
- Settings will not be changed if invalid numbers or setting values are selected.
- When optional wired remote controller is used, refer to the installation manual enclosed with the remote controller.

Entering function setting mode:

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

Selecting the function number and setting value:

1. Press MODE button.
2. Press the TEMP. (^) (v) buttons to select the function number. (Press MODE button to switch between the left and right digits.)
3. Press the FAN SPEED button to proceed to value setting. (Press FAN SPEED button again to return to the function number selection.)
4. Press the TEMP. (^) (v) buttons to select the setting value. (Press MODE button to switch between the left and right digits.)
5. Press the POWERFUL button once. Confirm that you hear the beep.
6. Press the START/STOP button once to fix the Function setting. Confirm that you hear the beep.
For the function details, refer to "[Function details](#)" on page 05-25.
7. Press the RESET button to cancel the function setting mode.
8. After completing the function setting, be sure to disconnect the power supply and then reconnect it.

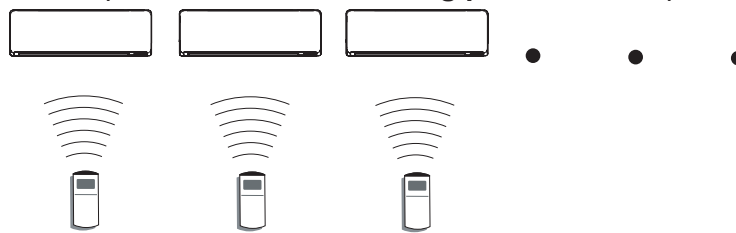


⚠ CAUTION

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.

● Setting up each indoor unit

To set up each indoor unit, repeat the “**Function setting procedure**” steps.



NOTE: If the custom code is other than “ H ,” the power supply connection of the outdoor unit and the function setting mode entering/canceling is necessary.

● Resetting the power after setting up all indoor units

Important:

- If the reset is not performed, function cannot be read correctly.
- After all the functions have been set, the circuit breaker needs to be switched off for at least 2 minutes.
 - After the 2 minutes has passed, power can be restored.
 - The set function is stored in the PCB and will remain in memory even when the power of indoor unit is turned off. However setting function is effective after disconnecting the power supply and then reconnecting it.
- Record the latest configuration of the indoor unit function setting on a label, and put the label on the unit so it can be used for after-sales service operations.

Once the RESET button is pressed on the remote controller, the operation mode will be set to the AUTO MODE.

Adjust the operation mode to either cooling or heating before starting the operation of the air conditioner.

NOTE: If custom code other than “ H ” is set, the remote control must be set accordingly to the indoor unit setting.

● Remote controller custom code setting

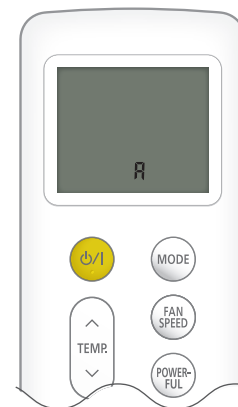
To interconnect the air conditioner and the wireless remote controller, assignment of the custom code for the wireless remote controller is required.

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



NOTES:

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

■ AR-RRH2U (for Wall mounted type 18-24KPAS)

● Function setting procedure

The function number and the associated setting value are displayed on the LCD of the remote controller. Follow the instructions written in the installation manual, 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 outdoor unit.

NOTES:

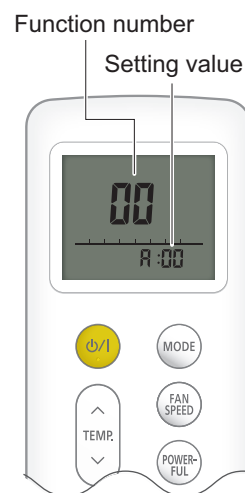
- Settings will not be changed if invalid numbers or setting values are selected.
- When optional wired remote controller is used, refer to the installation manual enclosed with the remote controller.

Entering function setting mode:

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

Selecting the function number and setting value:

1. Press MODE button.
2. Press the TEMP. (△) (▽) buttons to select the function number. (Press MODE button to switch between the left and right digits.)
3. Press the FAN SPEED button to proceed to value setting. (Press FAN SPEED button again to return to the function number selection.)
4. Press the TEMP. (△) (▽) buttons to select the setting value. (Press MODE button to switch between the left and right digits.)
5. Press the POWERFUL button once. Confirm that you hear the beep.
6. Press the START/STOP button once to fix the Function setting. Confirm that you hear the beep.
For the function details, refer to "[Function details](#)" on page 05-25.
7. Press the RESET button to cancel the function setting mode.
8. After completing the function setting, be sure to disconnect the power supply and then reconnect it.

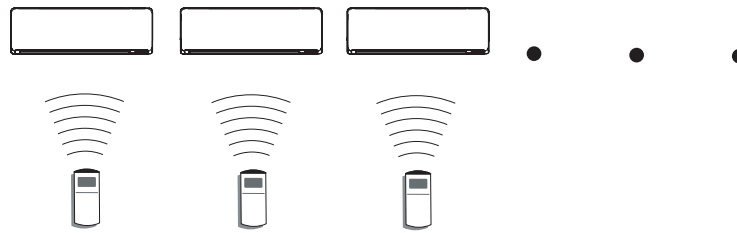


⚠ CAUTION

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.

● Setting up each indoor unit

To set up each indoor unit, repeat the “**Function setting procedure**” steps.



NOTE: If the custom code is other than “ H ,” the power supply connection of the outdoor unit and the function setting mode entering/canceling is necessary.

● Resetting the power after setting up all indoor units

Important:

- If the reset is not performed, function cannot be read correctly.
- After all the functions have been set, the circuit breaker needs to be switched off for at least 2 minutes.
 - After the 2 minutes has passed, power can be restored.
 - The set function is stored in the PCB and will remain in memory even when the power of indoor unit is turned off. However setting function is effective after disconnecting the power supply and then reconnecting it.
- Record the latest configuration of the indoor unit function setting on a label, and put the label on the unit so it can be used for after-sales service operations.

Once the RESET button is pressed on the remote controller, the operation mode will be set to the AUTO MODE.

Adjust the operation mode to either cooling or heating before starting the operation of the air conditioner.

NOTE: If custom code other than “ H ” is set, the remote control must be set accordingly to the indoor unit setting.

● Remote controller custom code setting

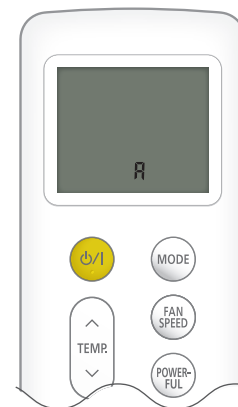
To interconnect the air conditioner and the wireless remote controller, assignment of the custom code for the wireless remote controller is required.

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

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

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

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



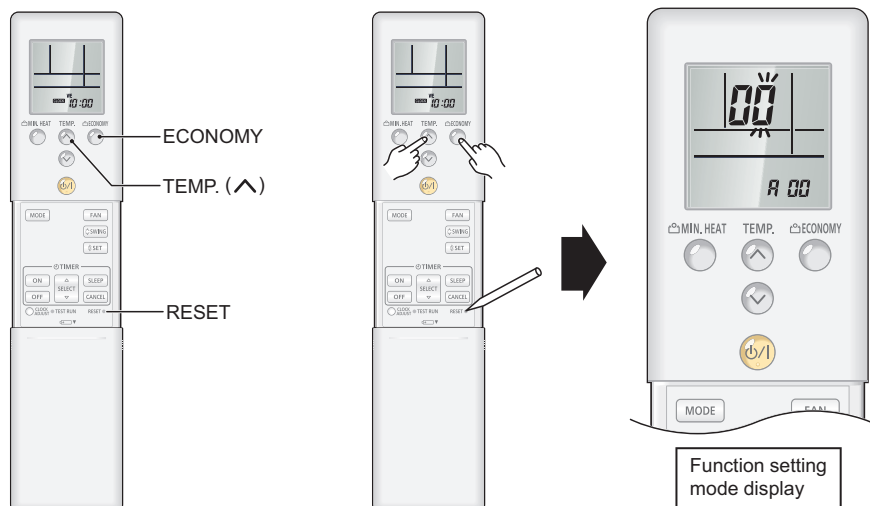
NOTES:

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

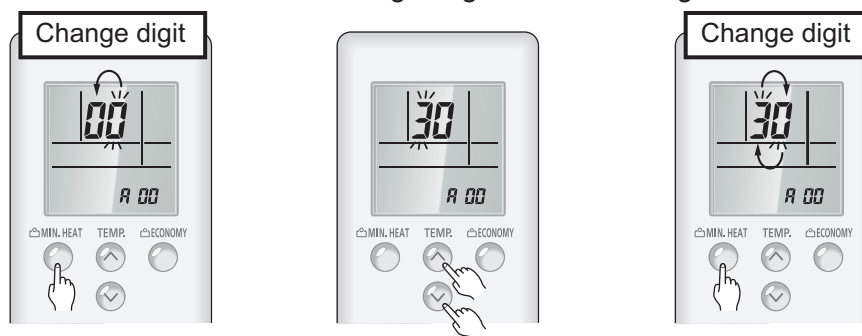
■ UTY-LNTU for Compact cassette type and UTY-LBTUM for Duct type (Optional parts)

● Function setting procedure

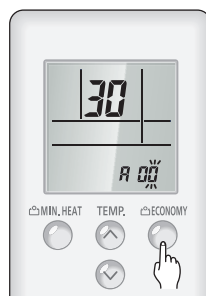
1. Connect the power supply of the outdoor unit.
2. To enter the function setting mode, while holding down the ECONOMY and TEMP. \wedge buttons, press the RESET button.



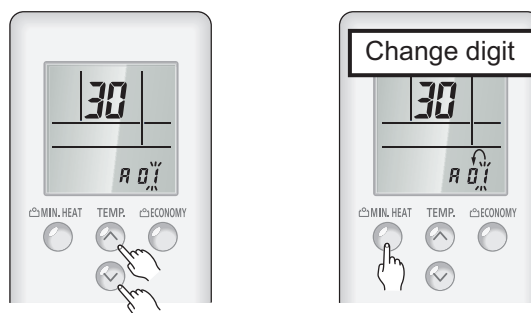
3. Select the function number by pressing the \wedge or the \vee buttons. Each time the MIN. HEAT button is pressed, it switches between the right digit and the left digit.



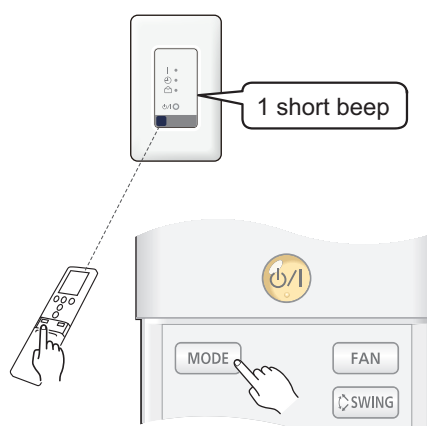
4. Proceed to the setting number by pressing the ECONOMY button. (To return to the function number selection, press the ECONOMY button again.)



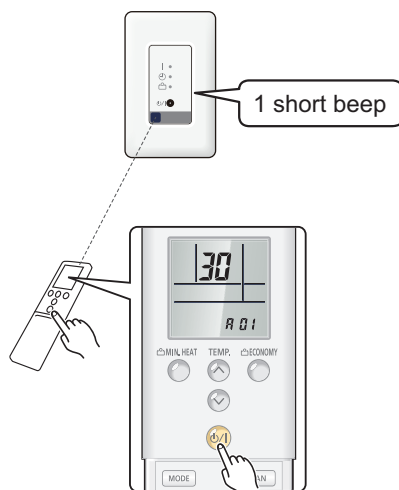
5. Select the function number by pressing the \wedge or the \vee button. Each time the MIN. HEAT button is pressed, it switches between the right digit and the left digit.



6. Press the MODE button once to transmit the function mode information.



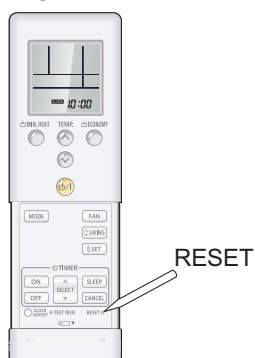
7. Press the ϕ/I button once to transmit the function setting information. 1 short beep will be emitted from the indoor unit or the IR receiver when the signal is received correctly. If wrong code is set, no beep sound will be emitted.



NOTE: Press ϕ/I button within 30 seconds after pressing MODE button.

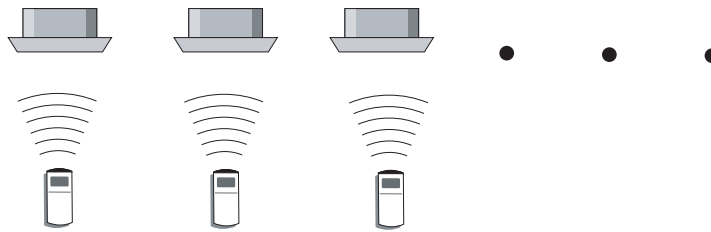
For the function details, refer to [Chapter 1-6. "Function details"](#) on page 05-25.

8. Exit the function setting mode by pressing the RESET button.



● Setting up each indoor unit

To set up each indoor unit, repeat the “**Function setting procedure**” steps.



NOTE: If the custom code is other than “ \overline{H} ,” the power supply connection of the outdoor unit and the function setting mode entering/canceling is necessary.

● Resetting the power after setting up all indoor units

Important:

- If the reset is not performed, function cannot be read correctly.
- After all the functions have been set, the circuit breaker needs to be switched off for at least 2 minutes.
 - After the 2 minutes has passed, power can be restored.
 - The set function is stored in the PCB and will remain in memory even when the power of indoor unit is turned off.
However setting function is effective after disconnecting the power supply and then reconnecting it.
- Record the latest configuration of the indoor unit function setting on a label, and put the label on the unit so it can be used for after-sales service operations.

Once the RESET button is pressed on the remote controller, the operation mode will be set to the AUTO MODE.

Adjust the operation mode to either cooling or heating before starting the operation of the air conditioner.

NOTE: If custom code other than “ \overline{H} ” is set, the remote control must be set accordingly to the indoor unit setting.

● Remote controller custom code setting

Custom code setting of wireless remote controller needs to be same as the setting of the indoor unit. When you change the custom code setting of the wireless remote controller, do as follows:

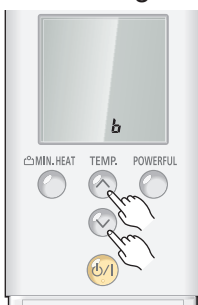
1. Press the START/STOP button until only the clock is displayed on the display.



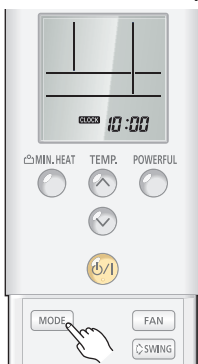
2. Press the MODE button for at least 5 seconds to display the current custom code (initially set to A).



3. Press the TEMP. “^” or the “v” button to change the custom code between A → b → c → d.



4. Press the MODE button again to return to the clock display. The custom code will be changed.



- If no buttons are pressed within 30 seconds after the custom code is displayed, the system returns to the original clock display. In this case, start again from step 1.
- The air conditioner custom code is set to A prior to shipment.
- If you do not know the air conditioner custom code setting, try each of the custom codes (A → b → c → d) until you find the code which operates the air conditioner.

1-4. Indoor unit (setting by wired remote controller)

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

■ Preparation

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

- Piping air tightness test and vacuuming have been performed firmly.
- There is no wiring mistake. Then, connect the power supply of the indoor unit.

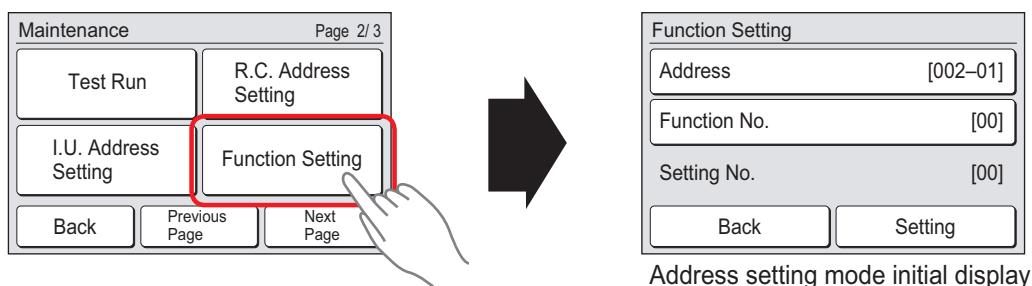
■ UTY-RNRUZ* (Optional part)

● Setting procedure by using wired remote controller

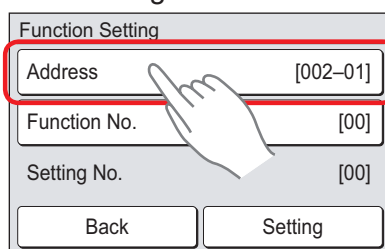
The function number and the associated setting value are displayed on the LCD of the remote controller. Follow the instructions written in the local setup procedure supplied with the remote controller, and select appropriate setting according to the installation environment.

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

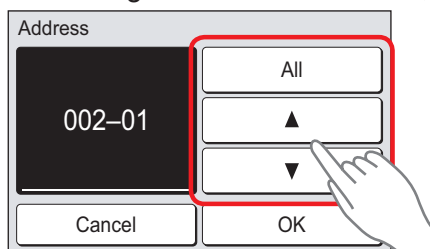
- Piping air tightness test and vacuuming have been performed firmly.
 - There is no wiring mistake.
1. Connect the power supply.
 2. When the “Function Setting” on the “Maintenance” screen is touched, the “Installer Password Verification” screen is displayed. After enter the installer password, and touch the “OK”, “Function Setting” screen is displayed.



3. Touch the “Address” on the “Function Setting” screen.

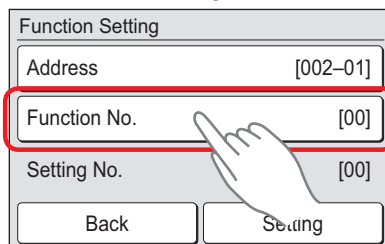


4. “Address” screen is displayed. Select the address of the indoor unit whose function number is be set by touching ▲ or ▼. When setting at all the indoor units, touch “All”.

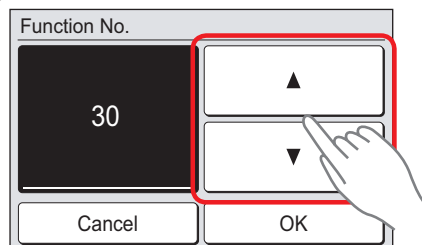


When the “OK” is touched, the display returns to the “Function Setting” screen.

5. Touch the “Function No.” on the “Function Setting” screen.

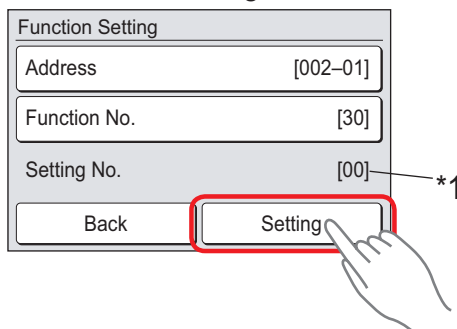


6. "Function No." screen is displayed. Set the "Function No." with ▲ or ▼.



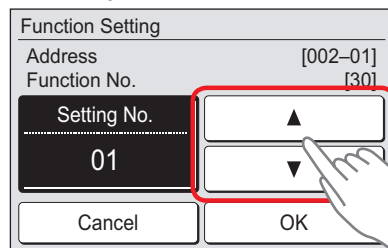
When the "OK" is touched, the display returns to the "Function Setting" screen.

7. Touch the "Function No." on the "Function Setting" screen.



NOTE: *1: When "All" is chosen by "5", and different set up "Setting No." from two or more indoor units, "-" is displayed on "Setting No.".

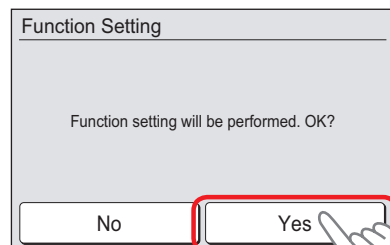
8. Setting screen of "Setting No." is displayed. Set the "Function No." with ▲ or ▼.



Example: Function number: 30, Setting Number: 01

When the "OK" is touched, the "Function Setting" verification screen is displayed.

9. Touch the “Yes” of the verification screen.



In case of “OK”

In case of “ERROR”

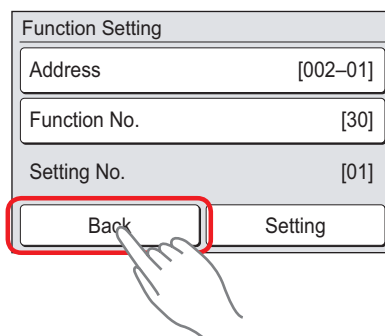
Function Setting	
Address	[002-01]
Function No.	[30]
Setting No.	[01]
<div>Back</div> <div>Setting</div>	

When the data was normally set up on the indoor unit

Function Setting	
Address	[002-01]
Function No.	[30]
Setting No.	[-]
<div>Back</div> <div>Setting</div>	

When the data was not set up on the indoor unit ([-] is displayed.), set up the data again according to the procedure in step 4 to 7 above

10. When the “Back” on the “Function Setting” screen is touched, the display returns to the “Maintenance” screen.



● Setting up each indoor unit

Repeat the procedure from step 1 to 6, and set up the indoor units requiring function setting.

● Resetting the power after setting up function of all indoor units

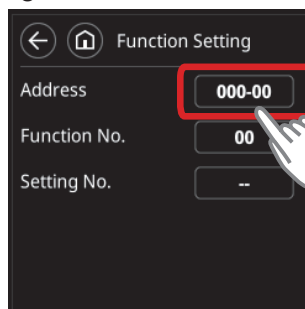
NOTES:

- If the reset is not performed, function cannot be read correctly.
- After all the functions have been set, the circuit breaker needs to be switched off for at least 2 minutes.
 - After the 2 minutes has passed, power can be restored.
 - The set function is stored in the PCB and will remain in memory even when the power of indoor unit is turned off. However setting function is effective after disconnecting the power supply and then reconnecting it.
- Record the latest configuration of the indoor unit function setting on a label, and put the label on the unit so it can be used for after-sales service operations.

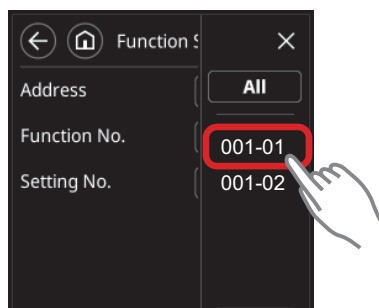
■ UTY-RVRU (Optional part)

● Function setting procedure

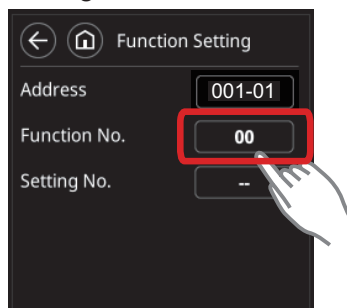
1. Tap the menu as shown below.
2. Tap “Address” on the Function Setting screen.



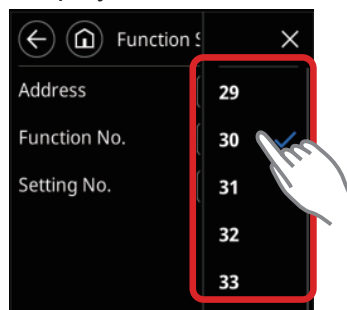
3. Pull-down window of indoor unit address is displayed. Select the address of the indoor unit whose function number is to be set.



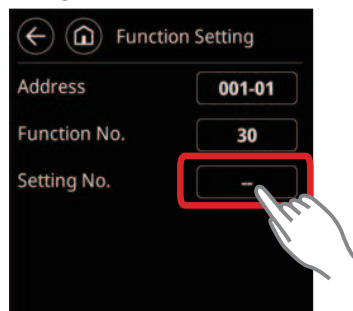
4. Tap “Function No.” on the Function Setting screen.



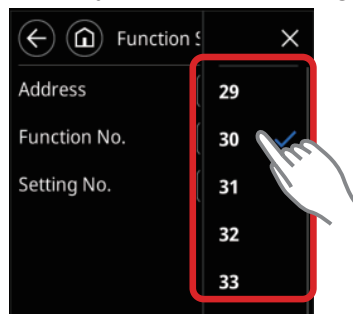
5. Pull-down window of Function No. is displayed. Set the Function No to be set.



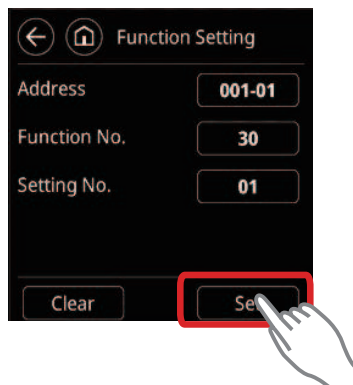
6. Tap "Setting No." on the Function Setting screen.




7. Pull-down window of "Setting No." is displayed. Set the Setting No.



8. Tap "Set" on the verification screen.



Tap  to return to the Initial Setting screen.

1-5. Indoor unit (setting by simple remote controller)

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

■ Preparation

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

- Piping air tightness test and vacuuming have been performed firmly.
- There is no wiring mistake. Then, connect the power supply of the indoor unit.

■ UTY-RSRY and UTY-RHRY (Optional parts)

● Setting procedure by using wired remote controller

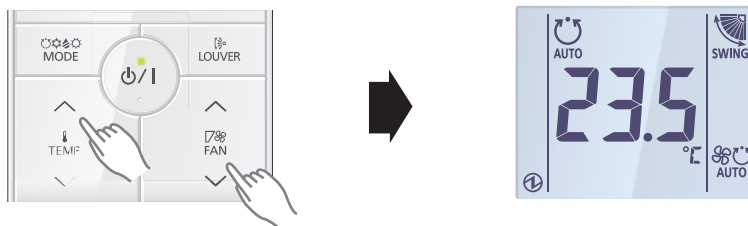
The function number and the associated setting value are displayed on the LCD of the remote controller. Follow the instructions written in the local setup procedure supplied with the remote controller, and select appropriate setting according to the installation environment.

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

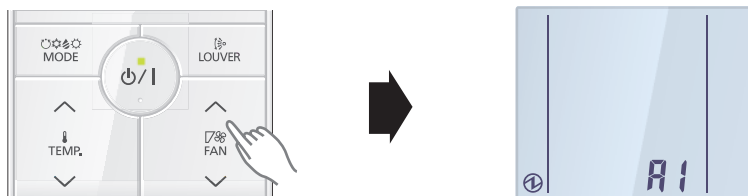
- Piping air tightness test and vacuuming have been performed firmly.
- There is no wiring mistake.

NOTE: Set only one Master remote controller.

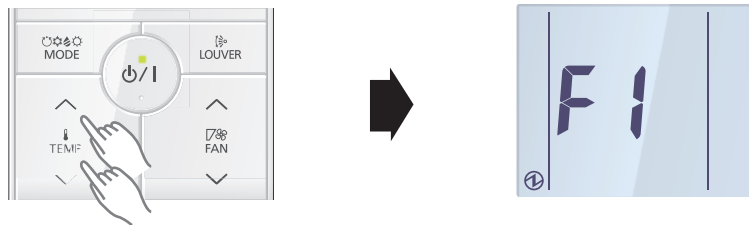
1. Connect the power supply.
2. With “Monitor mode” screen displayed, press and hold the SET TEMP. \wedge button and FAN \vee button simultaneously for at least 2 seconds.



3. The Menu 1 screen is displayed. Press and hold the SET TEMP. \wedge button at least 2 seconds. Setting mode selection screen is displayed.



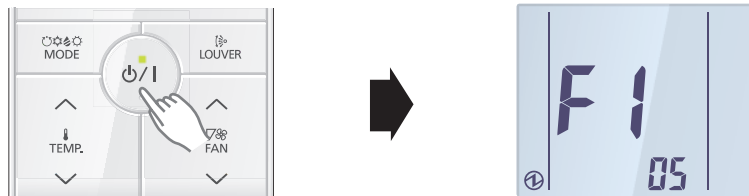
4. Press the SET TEMP. \wedge or SET TEMP. \vee button to select F1 (Menu 2-F1) setting mode or F2 (Menu 2-F2) setting mode.



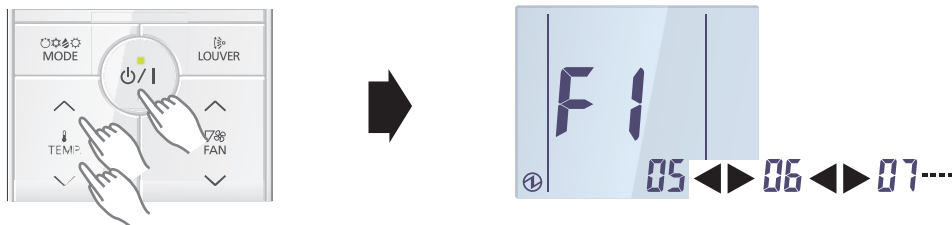
F1: Initial settings mode

F2: Maintenance settings mode

5. Press the ϕ/I button. Setting item selection screen is displayed. (Item No. is displayed.)



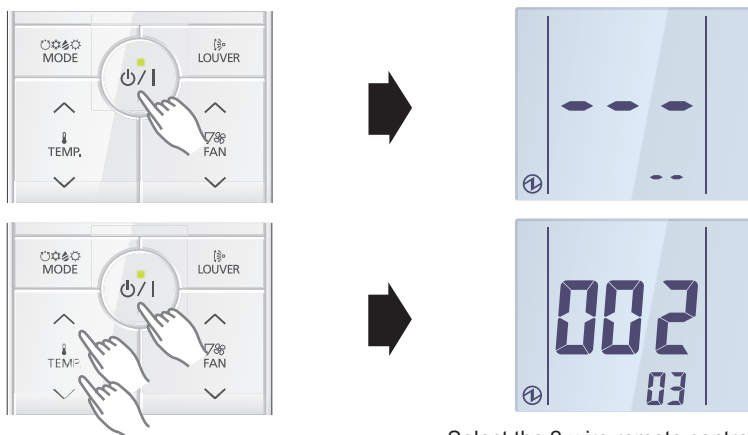
6. Select the item number to be set with the SET TEMP. \wedge or SET TEMP. \vee button, and press the ϕ/I button to switch to the setting screen.



7. Select the "13" in Menu 2-F1 settings. Then, press the ϕ/I button.

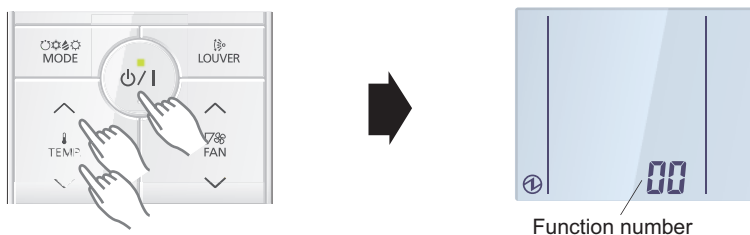


8. Select the 2-wire remote controller address with the SET TEMP. \wedge or SET TEMP. \vee button. Then press the ϕ/I button.

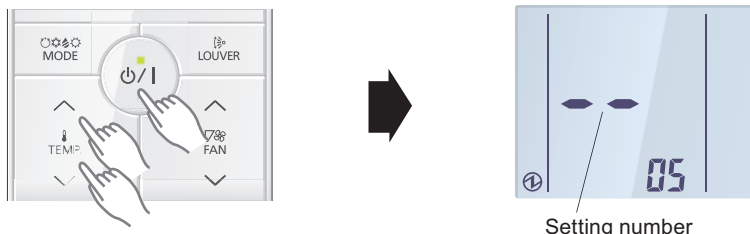


Select the 2-wire remote controller address (Ex. Select the 002-03)

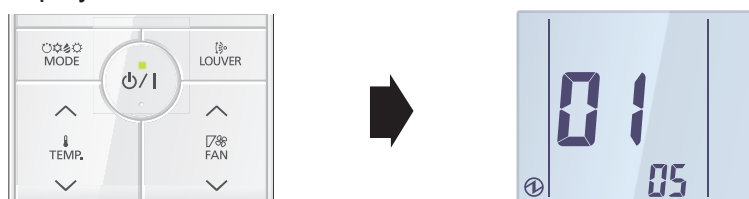
9. Set the function number with the SET TEMP. \wedge or SET TEMP. \vee button. Then press the ϕ/I button.



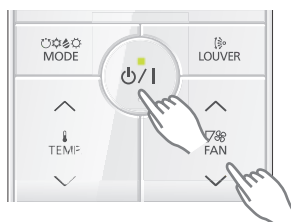
10. Set the setting number with the SET TEMP. \wedge or SET TEMP. \vee button. Then press the ϕ/I button.



11. Setting results are displayed after data transmission.



12. Press the ϕ/I button to return to the 2-wire remote controller address selection screen of step 9. If setting has been completed, press the FAN \vee button to return to the Menu 2-F1 item selection screen.



● Setting up each indoor unit

Repeat the procedure from step 1 to 6, and set up the indoor units requiring function setting.

● Resetting the power after setting up function of all indoor units

NOTES:

- If the reset is not performed, function cannot be read correctly.
- After all the functions have been set, the circuit breaker needs to be switched off for at least 2 minutes.
 - After the 2 minutes has passed, power can be restored.
 - The set function is stored in the PCB and will remain in memory even when the power of indoor unit is turned off.

However setting function is effective after disconnecting the power supply and then reconnecting it.
- Record the latest configuration of the indoor unit function setting on a label, and put the label on the unit so it can be used for after-sales service operations.

1-6. Function details

■ 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	Compact cassette	Slim duct	Middle duct	Wall mounted
1)	11	Filter sign	●	●	●	●
2)	20	Ceiling height	●	—	—	—
3)	22	Outlet directions	●	—	—	—
4)	26	Static pressure	—	●	●	—
5)	30/31	Room temperature control for indoor unit sensor	●	●	●	●
6)	35/36	Room temperature control for wired remote controller sensor	●	●	●	●
7)	40	Auto restart	●	●	●	●
8)	42	Room temperature sensor switching	●	●	●	●
9)	43	Cold air prevention	—	—	●	—
10)	44	Remote controller custom code	●	●	—	●
11)	46	External input control	●	●	●	●
12)	48	Room temperature sensor switching (Aux.)	●	●	●	●
13)	49	Indoor unit fan control for energy saving for cooling	●	●	●	●
14)	60	Switching functions for external output terminal	●	●	●	●
15)	61	Control switching of external heaters	●	●	●	●
16)	62	Operating temperature switching of external heaters	●	●	●	●
17)	66	Outdoor temperature zone boundary temperature A	●	●	●	●
18)	67	Outdoor temperature zone boundary temperature B	●	●	●	●
19)	68	Auto mode type	●	●	●	—
20)	69	Deadband value	●	●	●	—
21)	71	Standby time for auxiliary equipment operation	●	●	●	●
22)	72	Heat pump backup setting	●	●	●	●
23)	73	Emergency heat for external output terminal	●	●	●	●
24)	74	Fan delay time	—	●	●	—
25)	75	External heater use in defrosting	●	●	●	—
26)	81	Safety measures setting for refrigerant leakage	—	●	●	—
27)	94	Fixed operation mode switching	●	—	●	●
28)	95	Heat insulation condition (building insulation)	—	—	—	●
29)	96	Special cooling operation (For 18 and 24 model only)	—	—	—	●

1) Filter sign

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

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

Function number	Setting value	Setting description	Factory setting
11	00	Standard	
	01	Long interval	
	02	Short interval	
	03	No indication	◆

Intervals will differ depending on the indoor unit type as follows.

Setting description	Compact cassette	Middle duct	Slim duct	Wall mounted
Standard	2,500 hours		400 hours	
Long interval	4,400 hours		1,000 hours	
Short interval	1,250 hours		200 hours	

2) Ceiling height (for Compact cassette type only)

Select the appropriate ceiling height according to the place of installation.

Function number	Setting value	Setting description	Factory setting
20	00	Standard	◆
	01	High ceiling	

NOTE: The ceiling height values are for the 4-way outlet. Do not change this setting in the 3-way outlet mode.

7,000 Btu/h and 9,000 Btu/h models cannot be installed in high ceilings. Do not change this setting.

3) Outlet directions (for Compact cassette type only)

Select the appropriate number of outlet directions according to the installation conditions.

Function number	Setting value	Setting description	Factory setting
22	00	4-way	◆
	01	3-way	

4) Static pressure (for Slim duct type and Middle duct type only)

Select the appropriate static pressure according to the installation conditions.

• Slim duct type

Function number	Setting value	Setting description	Factory setting
26	00	0 Pa	
	01	10 Pa	
	02	20 Pa	
	03	30 Pa	
	04	40 Pa	
	05	50 Pa	
	31	Standard (09, 12 models: 10 Pa, 18 model: 15 Pa)	◆

NOTES:

- Range of static pressure is different by model.

Model name	Range of static pressure
09 model	0 to 30 Pa
12 model	
18 model	0 to 50 Pa

- Setting number in 09 or 12 models is "04 to 30": Operation is same as that "03".
- Setting number in 18 model is "06 to 30": Operation is same as that "05".
- Setting number value cannot be set to 32 or more.

• Middle duct type

Function number	Setting value	Setting description	Factory setting
26	03	0.12 inWG (30 Pa)	
	04	0.16 inWG (40 Pa)	
	05	0.20 inWG (50 Pa)	
	06	0.24 inWG (60 Pa)	
	07	0.28 inWG (70 Pa)	
	08	0.32 inWG (80 Pa)	
	09	0.36 inWG (90 Pa)	
	10	0.40 inWG (100 Pa)	
	11	0.44 inWG (110 Pa)	
	12	0.48 inWG (120 Pa)	
	13	0.52 inWG (130 Pa)	
	14	0.56 inWG (140 Pa)	
	15	0.60 inWG (150 Pa)	
	16	0.64 inWG (160 Pa)	
	17	0.68 inWG (170 Pa)	
	18	0.72 inWG (180 Pa)	
	19	0.76 inWG (190 Pa)	
	20	0.80 inWG (200 Pa)	
	31	Standard 0.18 inWG (45 Pa)	◆
	32	Automatic airflow adjustment	

NOTE: If the static pressure is set above maximum range, the setting will be the same as the maximum.

5) 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)		

6) 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)	

7) 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.

8) 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.

NOTES:

- Remote controller sensor must be turned on by using the remote controller.
- When using the remote sensor unit, set to "00" or set to "01" and then select "indoor unit sensor" from wired remote controller.

9) Cold air prevention (for Middle duct type only)

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

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

10) Remote controller custom code (for other than Middle duct type)

(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	

11) 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)	

NOTE: If this function is necessary, the rotary switch on the External input and output PCB should be set to 1.

12) 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	◆*

*: For Slim duct only.

13) 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.

14) 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	Set point attainment status	

15) Control switching of external heaters

Sets the control method for external heater to be used.

For details, refer to “External heater output” in “External input and output” for each product type.

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	

16) Operating temperature switching of external heaters

Sets the temperature conditions when the external heater is ON.

For details, refer to “External heater output” in “External input and output” for each product type.

Function number	Setting value	Setting description				Factory setting
		Setting value of function 61:				
		00		01 to 09		
		Heater: On	Heater: Off	Heater: On	Heater: Off	
62	00	-5.4 °F (-3 °C)	-1.8 °F (-1 °C)	-0.9 °F (-0.5 °C)	0.9 °F (0.5 °C)	◆
	01	-3.6 °F (-2 °C)	-1.8 °F (-1 °C)	-1.8 °F (-1 °C)	0.9 °F (0.5 °C)	
	02	-3.6 °F (-2 °C)	-1.8 °F (-1 °C)	-3.6 °F (-2 °C)	0.9 °F (0.5 °C)	
	03	-5.4 °F (-3 °C)	-1.8 °F (-1 °C)	-5.4 °F (-3 °C)	0.9 °F (0.5 °C)	
	04	-7.2 °F (-4 °C)	-1.8 °F (-1 °C)	-7.2 °F (-4 °C)	0.9 °F (0.5 °C)	
	05	-9.0 °F (-5 °C)	-1.8 °F (-1 °C)	-9.0 °F (-5 °C)	0.9 °F (0.5 °C)	
	06	-5.4 °F (-3 °C)	-0.9 °F (-0.5 °C)	-0.9 °F (-0.5 °C)	0 °F (0 °C)	
	07	-3.6 °F (-2 °C)	-0.9 °F (-0.5 °C)	-1.8 °F (-1 °C)	0 °F (0 °C)	
	08	-3.6 °F (-2 °C)	-0.9 °F (-0.5 °C)	-3.6 °F (-2 °C)	0 °F (0 °C)	
	09	-5.4 °F (-3 °C)	-0.9 °F (-0.5 °C)	-5.4 °F (-3 °C)	0 °F (0 °C)	
	10	-7.2 °F (-4 °C)	-0.9 °F (-0.5 °C)	-7.2 °F (-4 °C)	0 °F (0 °C)	
	11	-9.0 °F (-5 °C)	-0.9 °F (-0.5 °C)	-9.0 °F (-5 °C)	0 °F (0 °C)	
	12	-5.4 °F (-3 °C)	0 °F (0 °C)	-0.9 °F (-0.5 °C)	-0.9 °F (-0.5 °C)	
	13	-3.6 °F (-2 °C)	0 °F (0 °C)	-1.8 °F (-1 °C)	-0.9 °F (-0.5 °C)	
	14	-3.6 °F (-2 °C)	0 °F (0 °C)	-3.6 °F (-2 °C)	-0.9 °F (-0.5 °C)	
	15	-5.4 °F (-3 °C)	0 °F (0 °C)	-5.4 °F (-3 °C)	-0.9 °F (-0.5 °C)	
	16	-7.2 °F (-4 °C)	0 °F (0 °C)	-7.2 °F (-4 °C)	-0.9 °F (-0.5 °C)	
	17	-9.0 °F (-5 °C)	0 °F (0 °C)	-9.0 °F (-5 °C)	-0.9 °F (-0.5 °C)	

17) 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 “External input and output” for each product type.

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)	

18) 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 "External input and output" for each product type.

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)	

19) Auto mode type (for other than Wall mounted type)

Switches the setting method of the auto mode between single or dual (cooling and heating.)

Set the primary indoor unit using a wired remote controller for heat pump systems.

Function number	Setting value	Setting description	Factory setting
68	00	Single setpoint auto mode	◆
	01	Dual setpoint auto mode	

NOTE: The auto mode type setting is available only if a compatible operating device is connected.

20) Deadband value (for other than Wall mounted type)

Sets the minimum temperature of the deadband in the dual setpoint auto mode (the setting value 01 of the function setting number 68: Auto mode type.)

Function number	Setting value	Setting description	Factory setting
69	00	0°F (0°C)	◆
	01	0.9°F (0.5°C)	
	02	1.8°F (1.0°C)	
	03	2.7°F (1.5°C)	
	04	3.6°F (2.0°C)	
	05	4.5°F (2.5°C)	
	06	5.4°F (3.0°C)	
	07	6.3°F (3.5°C)	
	08	7.2°F (4.0°C)	
	09	8.1°F (4.5°C)	

NOTE: The deadband setting is available only if a compatible operating device is connected.

21) Standby time for auxiliary equipment operation

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

For details, refer to "External input and output" for each product type.

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

22) Heat pump backup setting

Enables or disables the heat pump backup operation.

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

23) 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 or Wired Remote Controller is necessary.

24) Fan delay time (for Slim duct type and Middle duct type only)

Sets the fan delay time when the heater is turned off.

Function number	Setting value	Setting description	Factory setting
74	00	1 minute	◆
	01	50 seconds	
	02	40 seconds	
	03	30 seconds	

25) External heater use in defrosting (for other than Wall mounted type)

Enables or disables external heater use in defrosting.

NOTE: Inappropriate heater selection may cause cold air in defrosting.

Function number	Setting value	Setting description	Factory setting
75	00	Disable	◆
	01	Enable	

26) Safety measures setting for refrigerant leakage (for Slim duct type and Middle duct type only)

Sets the safety measures operation in case of refrigerant leakage.

Function number	Setting value	Setting description	Factory setting
81	00	No safety measures	◆
	01	Air circulation	

To activate the safety measures operation for the indoor unit in case of refrigerant leakage, set the setting value to "01" (Air circulation). When the indoor unit detects refrigerant leakage or the refrigerant leakage sensor failure, the indoor unit operates as follows.

- The indoor unit operates the fan at high speed to diffuse the refrigerant, according to *UL60335-2-40*.

NOTE: Remote controller cannot stop this fan operation for safety reasons.

- The indoor unit stops cooling or heating operation. Also, Forced cooling operation is not allowed.
- The indoor unit or remote controller indicates error code 45 or A8.

27) 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	

NOTE: Do not use "Heating only" mode (01) of Function 94 and "Enabled" (01) of Function 96 simultaneously.

28) Heat insulation condition (building insulation) (for Wall mounted type only)

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.

29) Special cooling operation (for 18 and 24 models of Wall mounted type only)

Stabilizes the cooling operation when the outdoor temperature is low.

- Operation mode: Fixed at COOL
- Airflow: Fixed at HIGH
- Set temperature: 76°F (24°C) to 88°F (30°C)
- Outdoor unit operation range: -4°F (-20°C) to *122°F (50°C)
* Suction temperature

Function number	Setting value	Setting description	Factory setting
96	00	Disable	◆
	01	Enable	

NOTES:

- Do not enable this function when the Function 94 setting is “Heating only” (01).
- Connect the optional wired remote controller to change the setting value to “Enable” (01).
- Do not use the wireless remote controller after changing the setting value to “Enable” (01).
- If the wired remote controller becomes noncommunicable after setting “Enable” (01), the cooling operation starts automatically.
- If dew condenses on the indoor unit surface after setting “Enable” (01), set the setting value back to “Disable” (00).

2. Function settings (for outdoor unit)

Perform appropriate function setting locally according to the installation environment.

NOTE: Incorrect settings can cause a product malfunction.

⚠ CAUTION

- Before setting up the switch buttons, discharge the static electricity from your body.
- Never touch the terminals or the patterns on the parts that are mounted on the PCB.

2-1. Setting methods

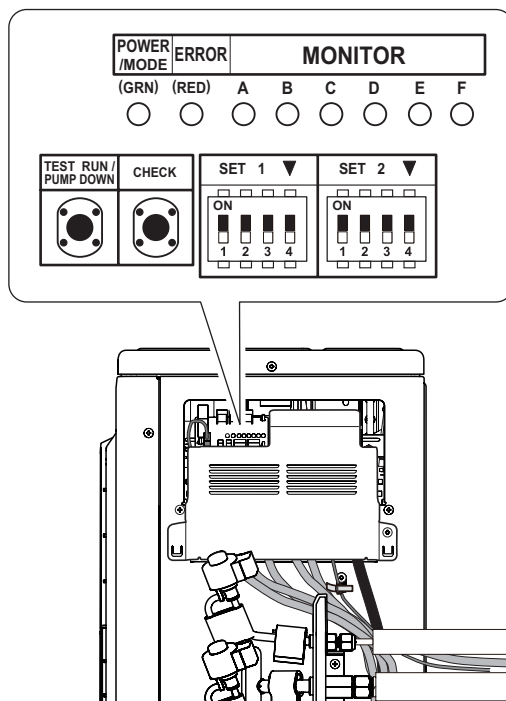
⚠ WARNING

Never touch electrical components such as the terminal blocks or reactor except the switch on the display board. It may cause a serious accident such as electric shock.

⚠ CAUTION

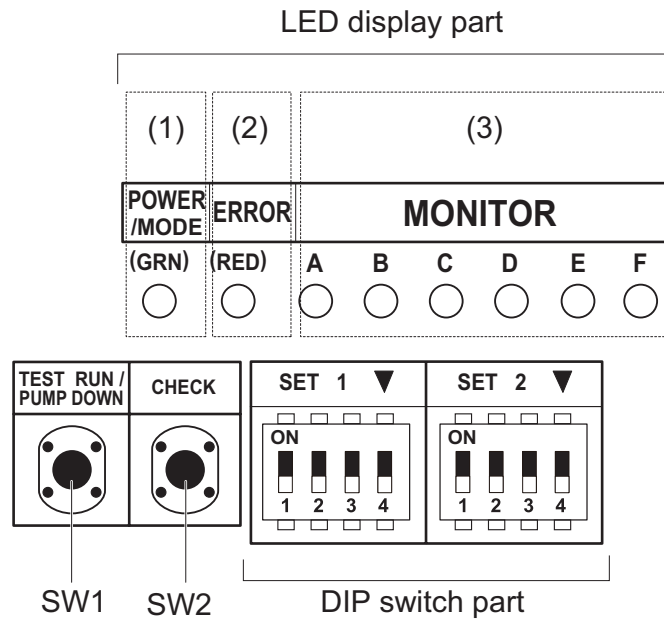
- Once refrigerant charging is completed, be sure to open the valve prior to performing the local settings. Otherwise, the compressor may fail.
- Discharge any static electricity from your body before touching the push switches. Never touch any terminal or pattern of any parts on the control board.

The positions of the switches on the outdoor unit control board are shown in the figure below.



■ Setting method

Various settings can be adjusted by changing DIP switches and push switches on the PCB of the outdoor unit.



1. Be sure to disconnect the power supply or turn off the breaker.
2. Change the DIP switch setting according to the required setting.

■ Description of display

LED lamp				Function or operation method
(1)	POWER/MODE		Green	<ul style="list-style-type: none"> Turns on when the power supply is ON (Including when error occurs). Indicate the MODE by the number of flashes when the installation function is active.
(2)	ERROR		Red	Flashes at high-speed when there is an error.
(3)	MONITOR	A	Orange	<ul style="list-style-type: none"> Displays the location and contents of errors when there is an error. (Refer to "Error code" on page 05-114 for details.) Displays when check run is activated. (Refer to "Check run" on page 05-107 for details.)
		B	Orange	
		C	Orange	
		D	Orange	
		E	Orange	
		F	Orange	

Switch		Function or operation method	Factory setting
SW1	Push	<ul style="list-style-type: none"> For the test run start and stop. For the pump down start and stop. 	—
SW2	Push	<ul style="list-style-type: none"> For when check run function is activated. For displaying the check run. For resetting the Automatic wiring correction memory. 	—
SET1-1	DIP	For selecting cooling or heating during test operation.	OFF
SET1-2	DIP	For switching SW1 operation.	OFF
SET1-3	DIP	(Prohibited)	OFF (Do not change)
SET1-4	DIP	For outdoor unit low noise operation function.	OFF
SET2-1	DIP	For selecting outdoor unit low noise operation function.	OFF
SET2-2	DIP	(Prohibited)	OFF (Do not change)
SET2-3	DIP	Changing the current limit	OFF
SET2-4	DIP		

Be sure to disconnect the power supply or turn off the breaker before changing the DIP switch setting.

2-2. Outdoor unit low noise operation function

Change the outdoor unit low noise operation by using this setting.

⚠ CAUTION

- When the low noise operation function is working, cooling and heating capacity will decrease.
- When changing the settings, explain to the customer beforehand that the capacity decreases.

SET1-4	Setting	Factory setting
ON	Function works	
OFF	Function not working	◆

SET2-1	Setting	Factory setting
ON	Lower	
OFF	Low	◆

2-3. Current limit function

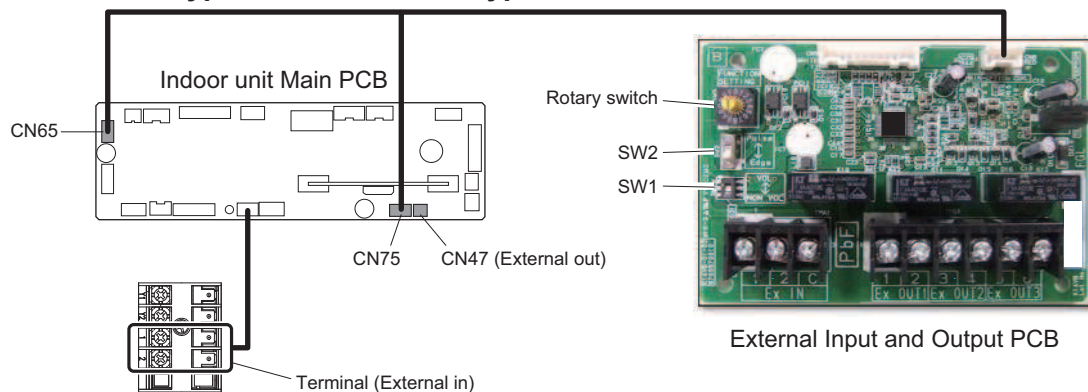
Current value can be limited to meet specific current requirements.

NOTE: When changing this setting, explain to the customer beforehand that the capacity decreases.

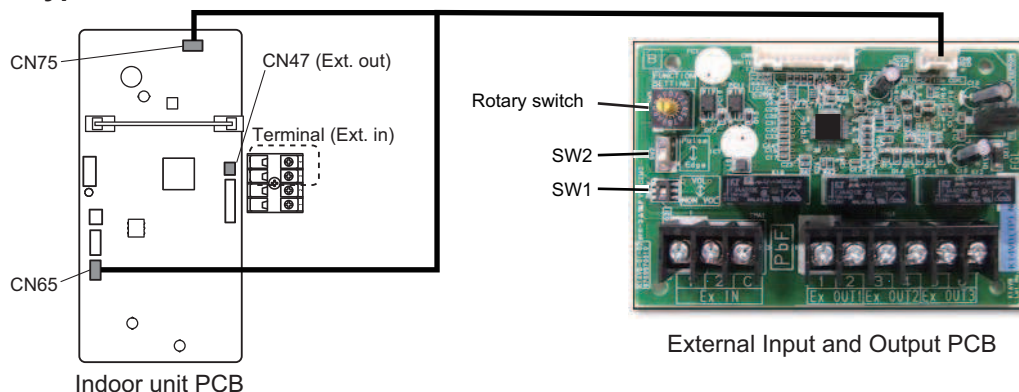
SET2-3	SET2-4	Current				Factory setting
		AOUH18KWAS2	AOUH24KWAS3	AOUH36KWAS4	AOUH45KWAS5	
OFF	OFF	Full				◆
ON	OFF	8.0 A	9.5 A	13.5 A	18.0 A	
OFF	ON	6.5 A	8.0 A	12.0 A	16.0 A	

3. External input and output (for other than wall mounted type)

- Compact cassette type and Middle duct type



- Slim duct type



Connecting point		Input/Output	Function	Input select	Input signal
Indoor unit	Terminal	Input	Operation/Stop	Dry contact	Edge
			Forced stop		
	CN47	Output	Operation/Stop	—	—
			Error status		
			Indoor unit fan operation status		
			Cooling thermostat On		
			Heating thermostat On		
			External heater output		
External Input and Output PCB (UTY-XCSX)	Ex IN 1/2	Input	Operation/Stop	Dry contact/Apply voltage	Edge/Pulse
	Ex IN 1		Forced thermostat off		Edge
	Ex OUT 1 Ex OUT 2 Ex OUT 3	Output	Operation/Stop	—	—
			Error status		
			Indoor unit fan operation status		
			External heater 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 05-45.

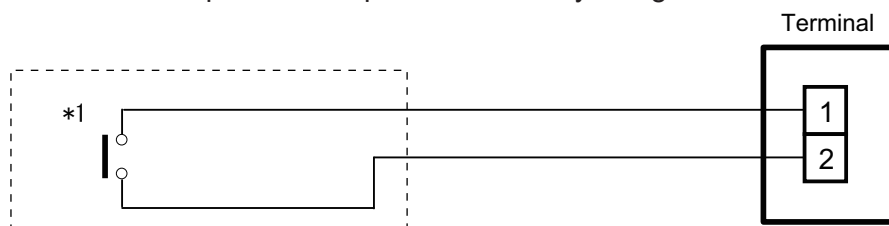
3-1. External input

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 terminal.



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

External Input and Output PCB

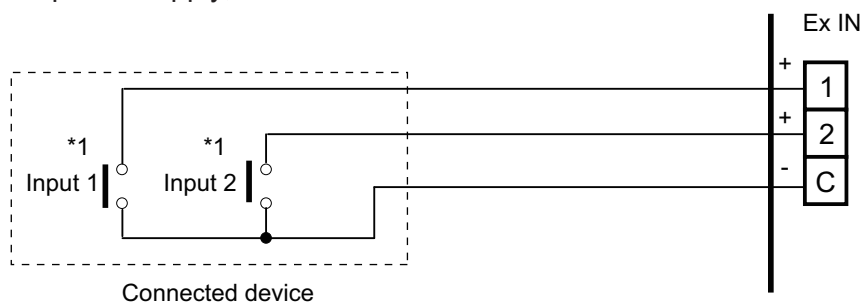
The indoor unit Operation/Stop can be set by using the input terminal on the PCB.

Input select

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

– Dry contact

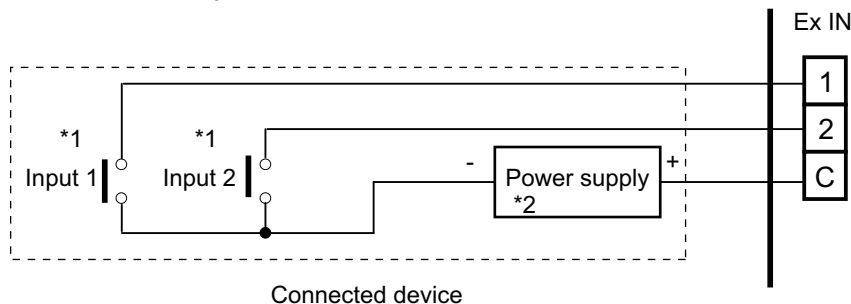
In case of internal power supply, set the slide switch of SW1 to “NON VOL” side.



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

– Apply voltage

In case of external power supply, set the slide switch of SW1 to “VOL” side.



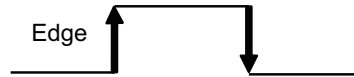
*1: The switches can be used on the following condition: DC 12 V to 24 V, 1 mA to 15 mA.

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

■ Input signal type

- **Indoor unit**

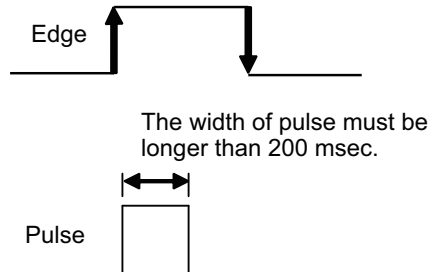
Input signal type is only "Edge".



- **External Input and Output PCB**

The input signal type can be selected.

Signal type (edge or pulse) can be switched by the DIP switch 2 (SW2) on the External Input and Output PCB.



NOTE: The input signal supports the following switch type:

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

3-2. External output

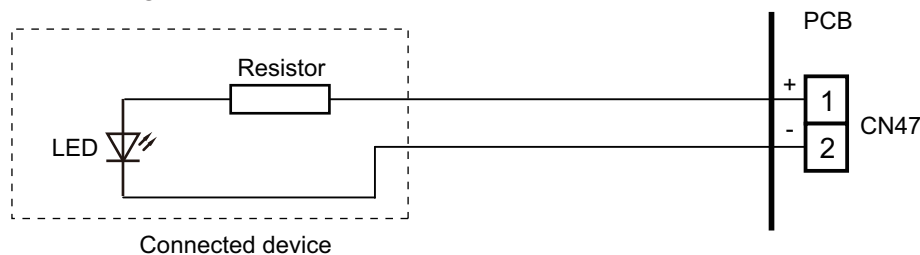
Use an external output cable with appropriate external dimension, depending on the number of cables to be installed.

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 05-45.

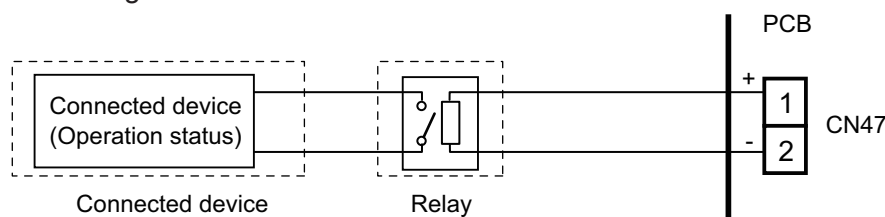
When indicator, etc. are connected directly

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



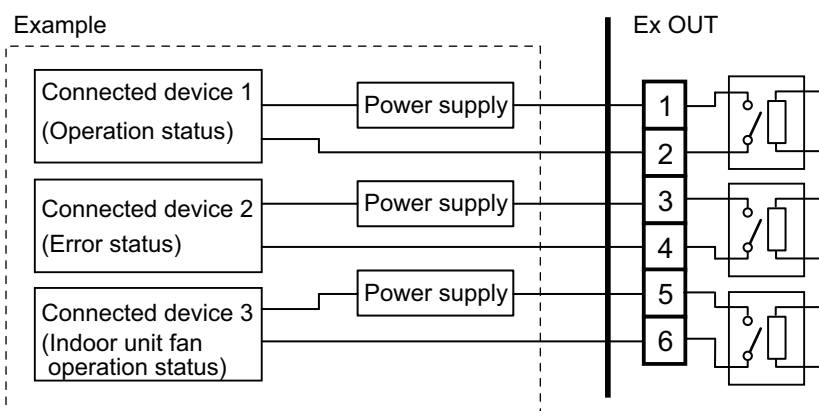
When connecting with a device equipped with a power supply

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



External Input and Output PCB

- A twisted pair cable (22 AWG) should be used.
- Permissible voltage and current: DC 5 V to 30 V/3 A, AC 30 V to 250 V/3 A
- For details, refer to ["Setting of external input and output"](#) on page 05-45.



3-3. Setting of external input and output

- Indoor unit

Input		
Connecting point	Function setting number 46	Function
Terminal	00	Operation/Stop mode 1
	01	(Setting prohibited)
	02	Forced stop mode
	03	Operation/Stop mode 2

Output		
Connecting point	Function setting number 60	Function
CN47	00	Operation/Stop
	01—04	Cooling thermostat On
	05	Heating thermostat On
	06	Operation/Stop
	07—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	SW2	1	2	1	2	3
1	Edge	Operation/Stop	Not available	Operation/Stop	Error status	Indoor unit fan operation 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	Operation/Stop	External heater output
5		Mechanical cooling on*2	Not available	Cooling high/low output	Operation/Stop	External heater output
6		Mechanical cooling on*2	Not available	Error status	Operation/Stop	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	Operation/Stop	External heater output
B		Forced thermostat off	Not available	Operation/Stop	Indoor unit fan operation status	External heater output
C		Forced thermostat off	Not available	Operation/Stop	Error status	External heater output
D		Forced thermostat off	Not available	Operation/Stop	Indoor unit fan operation status	Error status

NOTES:

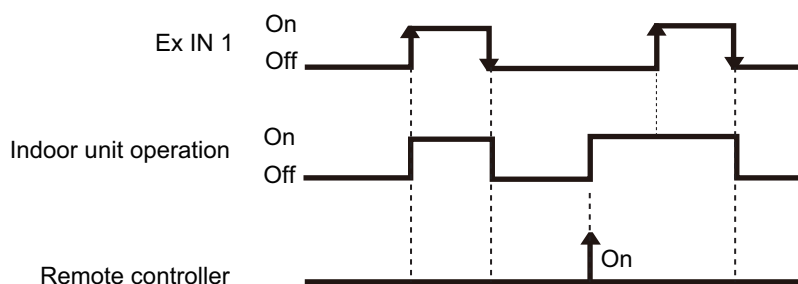
- When the rotary switch is selected to "1", the operation of the terminal input of the indoor unit and the External Input and Output PCB input are the same. The operation content depends on the setting of function setting number 46.
- *1: The external input other than "Operation/Stop" is available only when the SW2 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".

3-4. Details of control input function

■ Operation/Stop mode 1

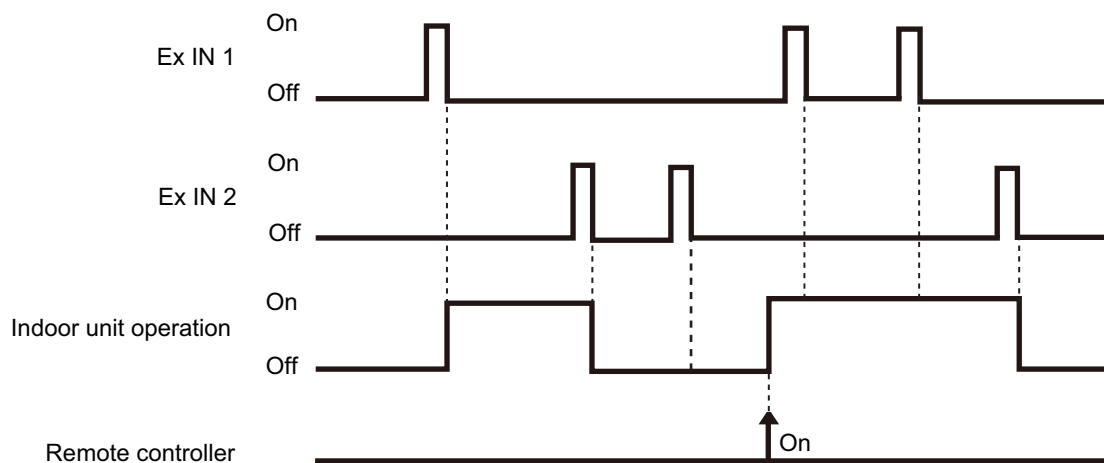
- In the case of "Edge" input

Function setting	External Input and Output PCB		External input		Input signal	Command
	Rotary switch	SW2				
46-00	—		Input of indoor unit	Terminal	Off → On	Operation
	—		Input of indoor unit	Terminal	On → Off	Stop
	1	Edge	External Input and Output PCB	Ex IN 1	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	SW2				
46-00	1	Pulse	External Input and Output PCB	Ex IN 1	Pulse	Operation
				Ex IN 2		Stop



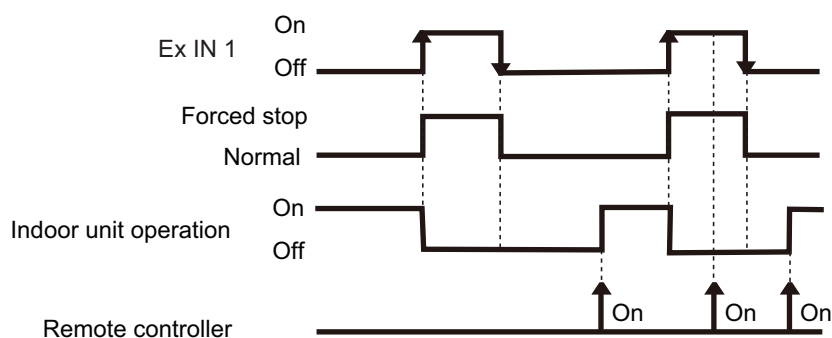
NOTES:

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

■ Forced stop

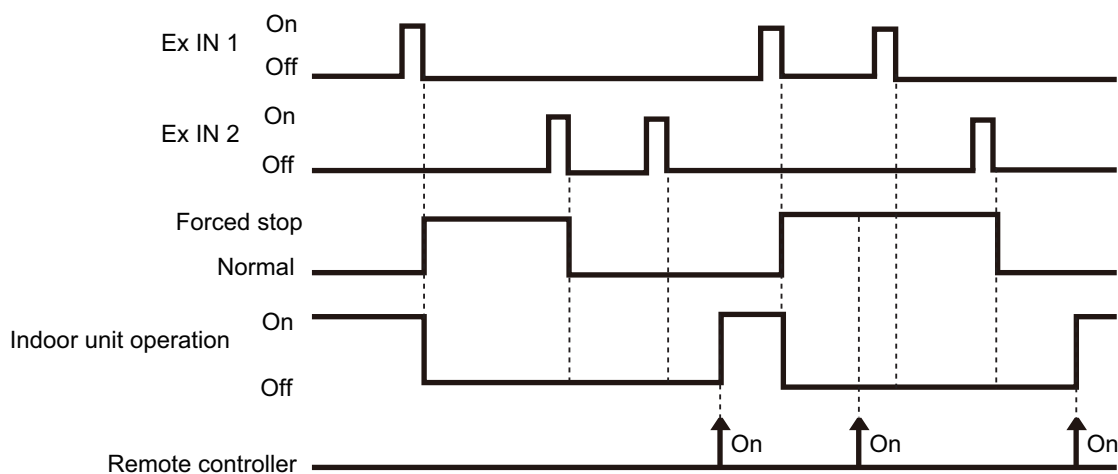
- In the case of "Edge" input

Function setting	External Input and Output PCB		External input		Input signal	Command
	Rotary switch	SW2				
46-02	—		Input of indoor unit	Terminal	Off → On	Forced stop (R.C. disabled)
					On → Off	Normal (R.C. enabled)
	1	Edge	External Input and Output PCB	Ex IN 1	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	SW2				
46-02	1	Pulse	External Input and Output PCB	Ex IN 1	Pulse	Forced stop (R.C. disabled)
				Ex IN 2		Normal (R.C. enabled)



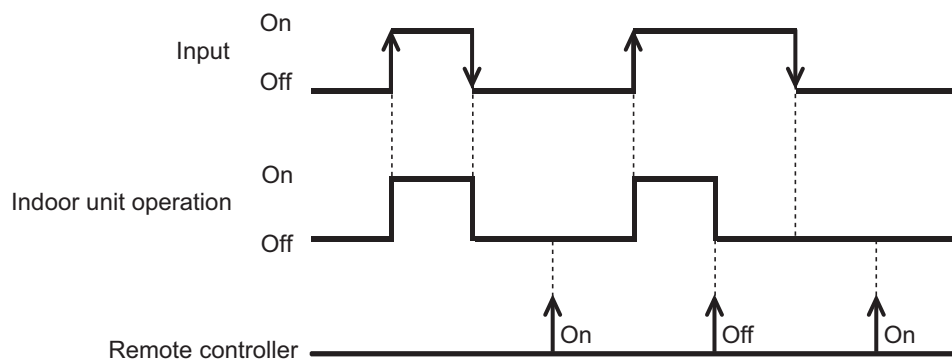
NOTES:

- 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

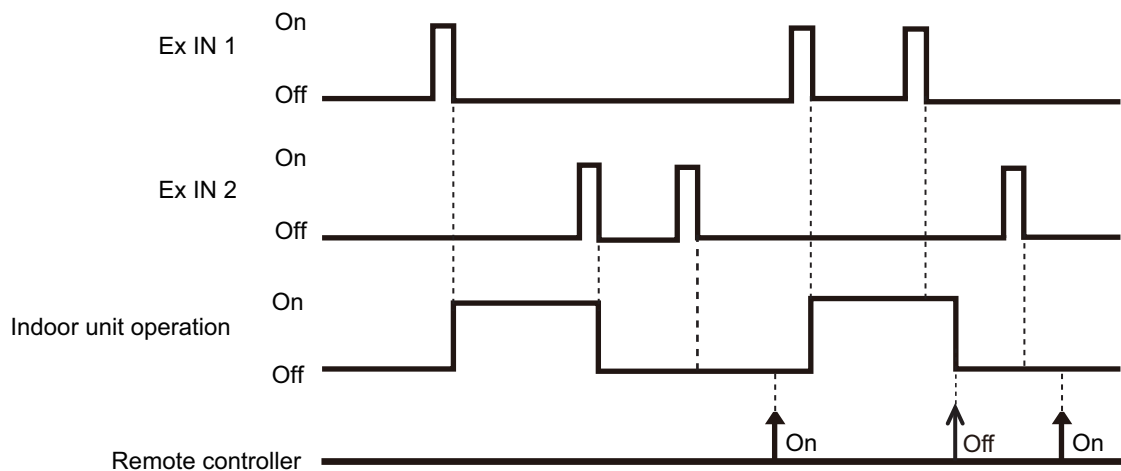
- In the case of "Edge" input

Function setting	External Input and Output PCB		External input		Input signal	Command
	Rotary switch	SW2				
46-03	—		Input of indoor unit	Terminal	Off → On	Operation (R.C. enabled)
					On → Off	Stop (R.C. disabled)
	1	Edge	External Input and Output PCB	Ex IN 1	Off → On	Operation (R.C. enabled)
					On → Off	Stop (R.C. disabled)



- In the case of "Pulse" input

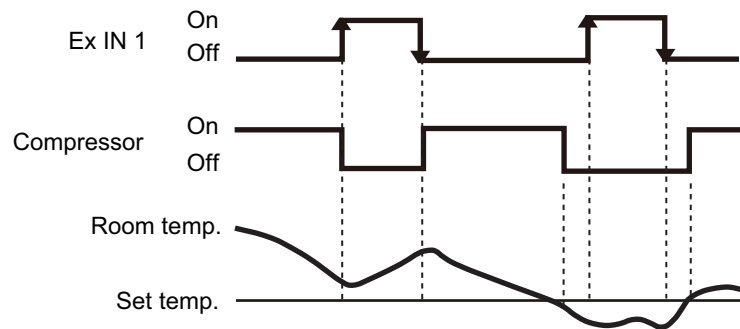
Function setting	External Input and Output PCB		External input		Input signal	Command
	Rotary switch	SW2				
46-03	1	Pulse	External Input and Output PCB	Ex IN 1	Pulse	Operation (R.C. enabled)
				Ex IN 2		Stop (R.C. disabled)



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	Ex IN 1	Off → On	Thermostat off
			On → Off	Normal operation
4, 7, 8, A	External Input and Output PCB	Ex IN 1	Off → On	Thermostat off
			On → Off	Normal operation

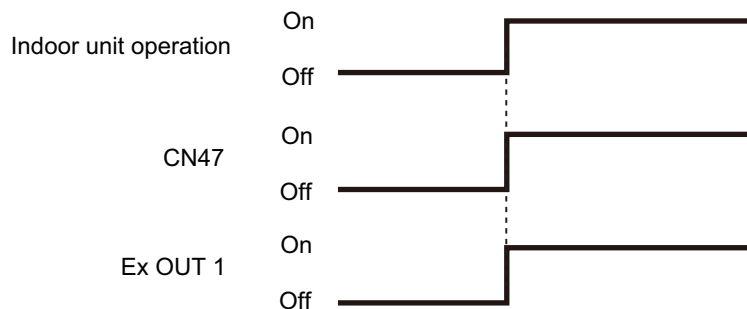


3-5. Details of control output function

■ Operation status

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

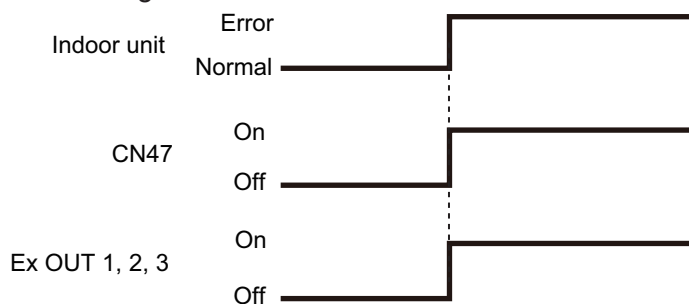
The output is low when the unit is stopped.



■ 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	Ex OUT 1	Off → On	Error
				On → Off	Normal
—	1, C	External Input and Output PCB	Ex OUT 2	Off → On	Error
				On → Off	Normal
—	D	External Input and Output PCB	Ex OUT 3	Off → On	Error
				On → Off	Normal

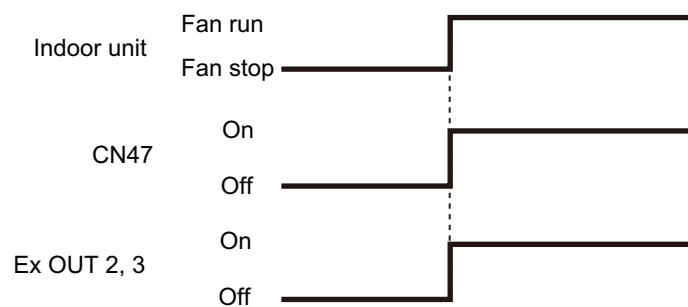
The output is on when an error is generated for the indoor unit.



Indoor unit fan operation status

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

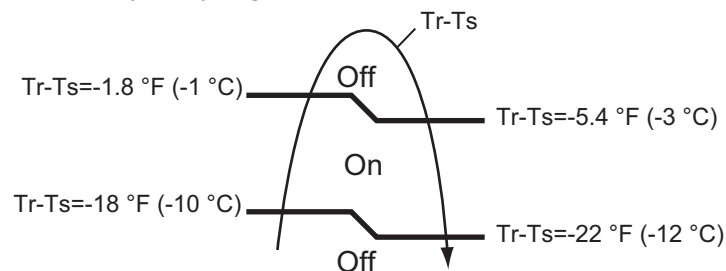
Function setting	External Input and Output PCB	External output		Output signal	Control
	Rotary switch				
60-11	—	Output of indoor unit	CN47	Off → On	Heater on
				On → Off	Heater off
—	2, 3, 4, 5, 7, 9, A, B, C	External Input and Output PCB	Ex OUT 3	Off → On	Heater on
				On → Off	Heater off

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

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

Example: When set temperature (T_s) is set at 72°F (22°C);

- And room temperature (T_r) increase above 53.6°F (12°C), signal output is on.
- And T_r increase above 69.8°F (21°C), signal output is off.
- And T_r decrease below 66.2°F (19°C), signal output is on.
- And T_r decrease below 50°F (10°C), signal output is off.

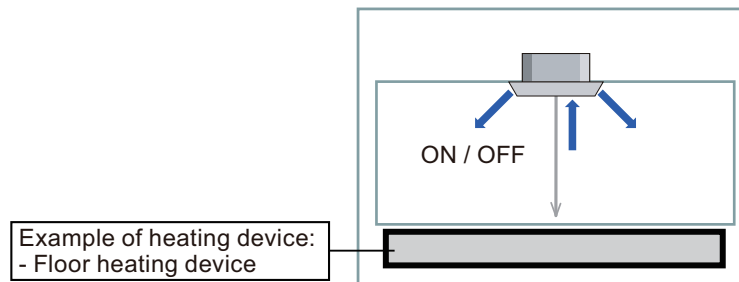


The output also turns off in defrost operation.

● Installation configuration of individual connection

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

• Cassette type:

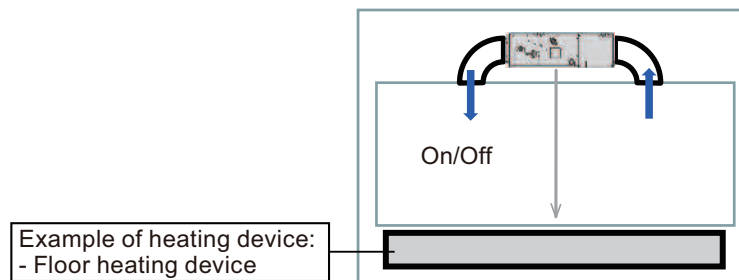


⚠ WARNING

Operation	Condition
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

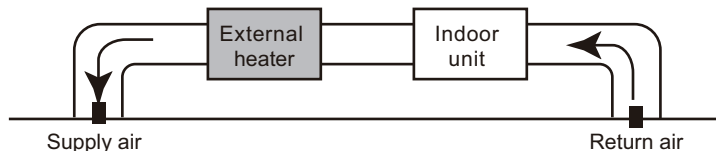
- Design and install an external heater appropriately, with consideration for its protection and local codes.
- Inappropriate designing and installation of external heater may cause a fire by emitted heat from the external heater.
- Fujitsu General Ltd. is not responsible for inappropriate designing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

• Duct type:

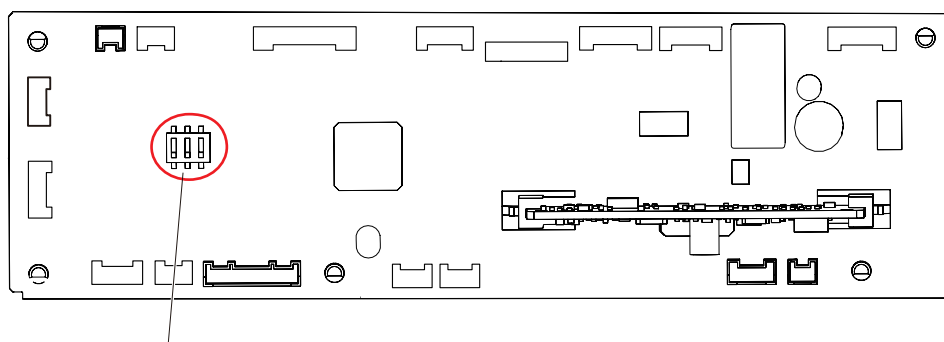


⚠ WARNING

- **DIP Switch 101-3 must be in the ON position when ducted electric heat application is being used.** DIP switch 101-3 is set in the ON position by default from the factory. When DIP switch 101-3 is in the ON position and ducted electric heat application is not being used, cold draft occurs due to fan delay off operation.



Operation			Condition
Heater off	DIP-SW101-3	On	<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
	Indoor unit fan setting for external heater	Enabled	
	DIP-SW101-3	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
	Indoor unit fan setting for external heater	Disabled	

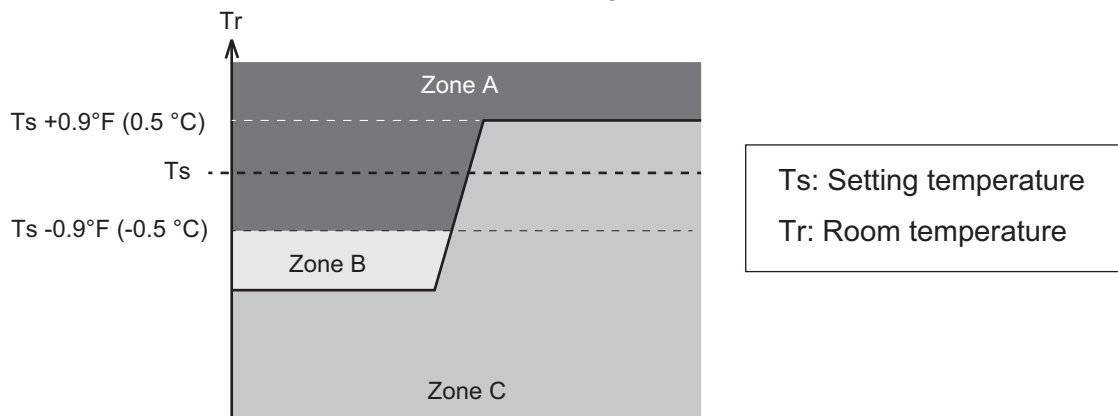


DIP switch 101

- Design and install an external heater appropriately, with consideration for its protection and local codes.
- 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 05-25.

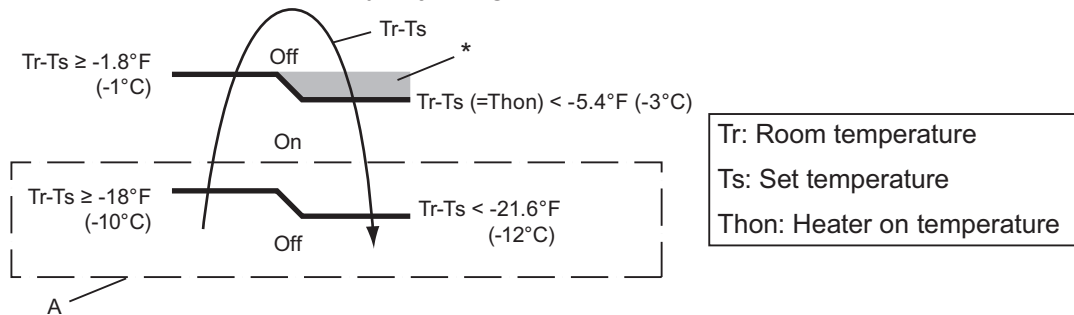
*2: When indoor unit function number 61 is set to "00", auxiliary equipment operates according to the following conditions.

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



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

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

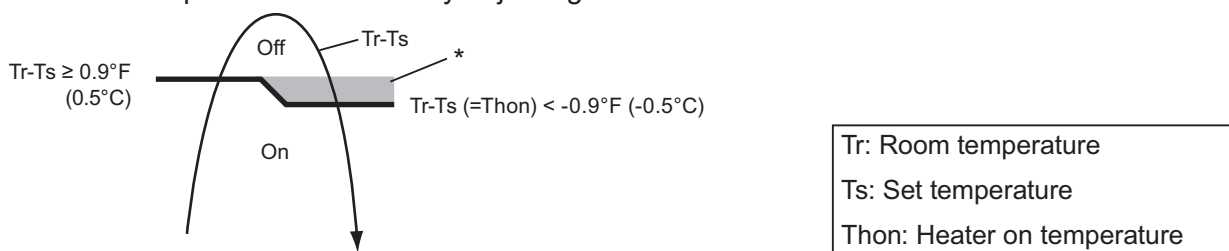
- and room temperature (Tr) increases above 53.6°F (12°C), signal output is on.
- and room temperature (Tr) increases above 69.8°F (21°C), signal output is off.
- and room temperature (Tr) decreases below 66.2°F (19°C), signal output is on.
- and room temperature (Tr) decreases below 50°F (10°C), signal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

● Auxiliary heater control 2

Control that excludes "A" from "Auxiliary heater control 1" on page 05-57.

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".



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

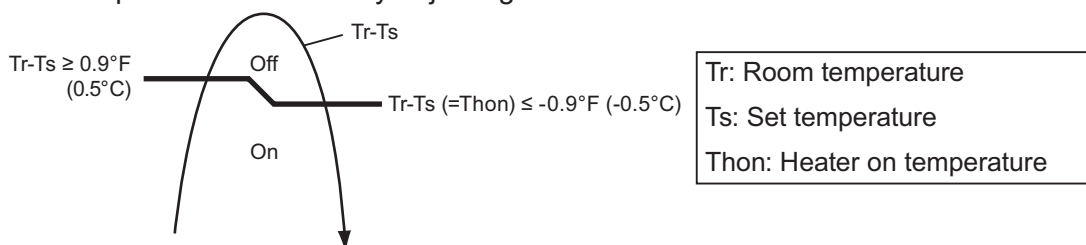
● Heat pump prohibition control

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

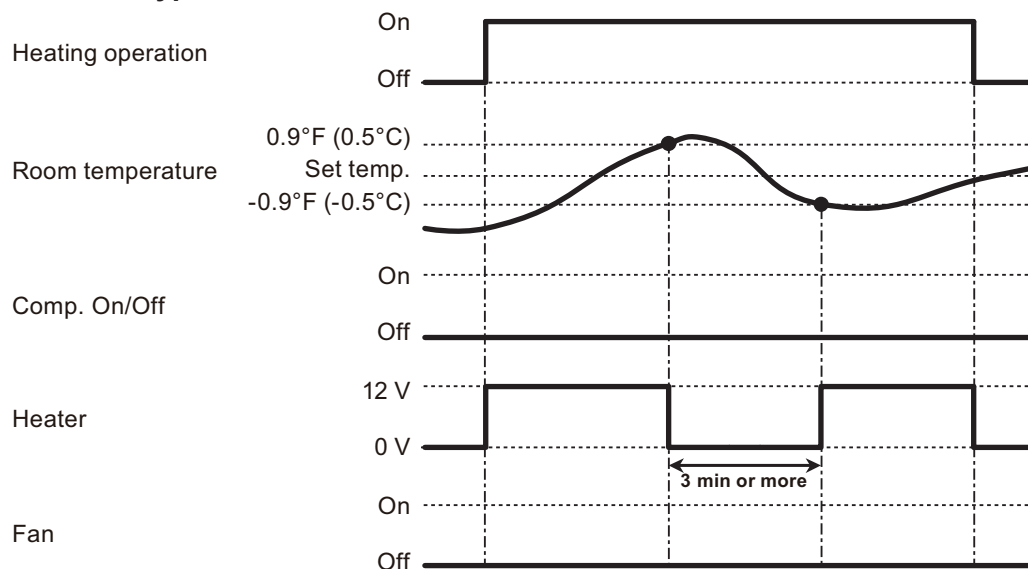
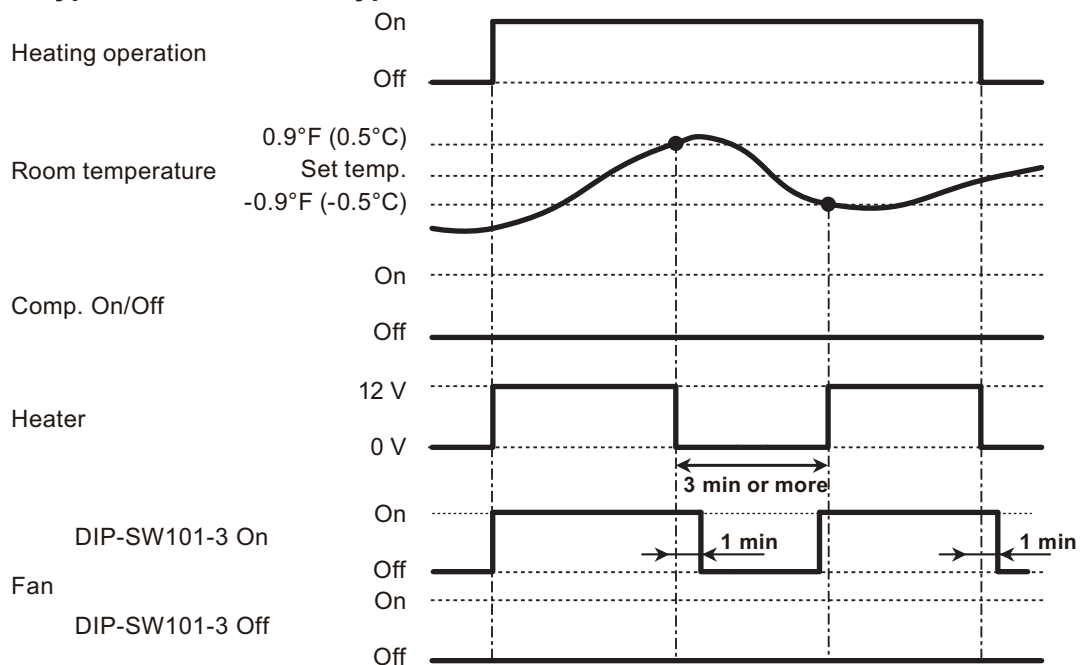
Compact cassette type	
Operation	Condition
Heater on	Heater is on as shown in following diagram of heating temperature.
Heater off	<ul style="list-style-type: none"> • Heater is off as shown in following diagram of heating temperature. • Other than heating mode • Error occurred • Forced thermostat off

Slim duct type and Middle duct type			
Operation			Condition
Heater on			Heater is on as shown in following diagram of heating temperature.
Heater off	DIP-SW101-3	On	<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
	Indoor unit fan setting for external heater	Enabled	
	DIP-SW101-3	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
	Indoor unit fan setting for external heater	Disabled	

- 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**
Compact cassette type


Slim duct type and Middle duct type


NOTE: In following operations, compressor will be on.

- Other than heating
- Test run

● Auxiliary heater control by outdoor temperature 1

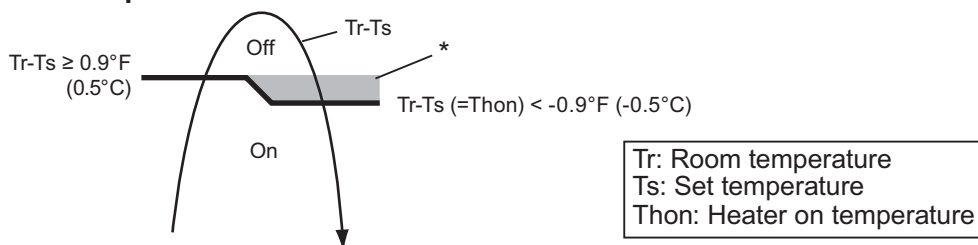
This control selects heat pump or external heater according to the outdoor temperature. When outdoor temperature is high, the heating is performed by using heat pump only.

Compact cassette type	
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

Slim duct type and Middle duct type			
Operation			Condition
Heater on			Heater is on as shown in following diagram of heating temperature.
Heater off	DIP-SW101-3	On	<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 • Fan stop protection
	Indoor unit fan setting for external heater	Enabled	
	DIP-SW101-3	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
	Indoor unit fan setting for external heater	Disabled	

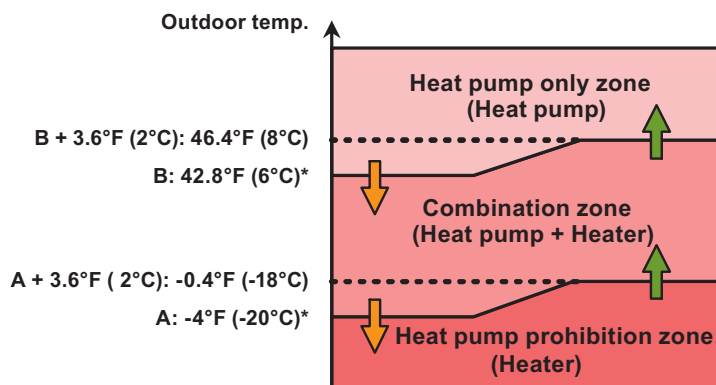
- Temperature of heater on (Thon): Adjustable by function number 62 (Operating temperature switching of external heaters).
- All control temperatures will shift by adjusting "Thon".
- Outdoor temperature zone boundary A and B: Adjustable individually by function setting number 66 and 67.

• External heater output



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

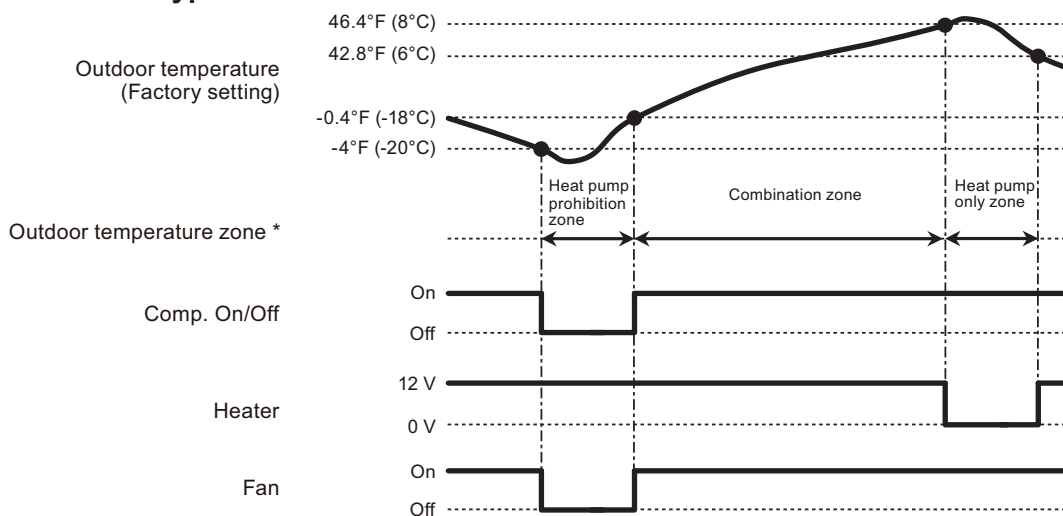
- Outdoor temperature zone



*: Adjustable by function setting 66 and 67

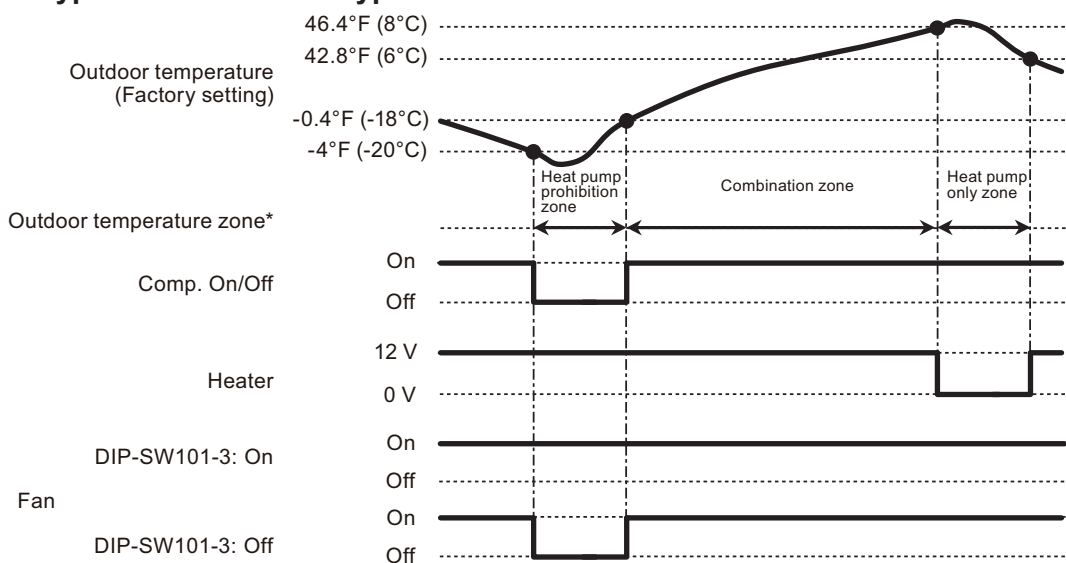
- Operation status

Compact cassette type



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

Slim duct type and Middle duct type



*: 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

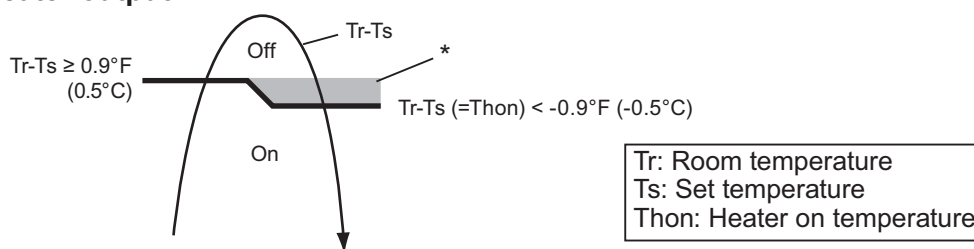
This control selects heat pump or external heater according to the outdoor temperature. Even when outdoor temperature is high, the heating is performed by using both of heat pump and external heater.

Compact cassette type	
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

Slim duct type and Middle duct type			
Operation			Condition
Heater on			Heater is on as shown in following diagram of heating temperature.
Heater off	DIP-SW101-3	On	<ul style="list-style-type: none"> • Heater is off as shown in following diagram of heating temperature.
	Indoor unit fan setting for external heater	Enabled	<ul style="list-style-type: none"> • Other than heating mode • Error occurred • Forced thermostat off • Fan stop protection
	DIP-SW101-3	Off	<ul style="list-style-type: none"> • Heater is off as shown in following diagram of heating temperature.
	Indoor unit fan setting for external heater	Disabled	<ul style="list-style-type: none"> • Other than heating mode • Error occurred • Forced thermostat off

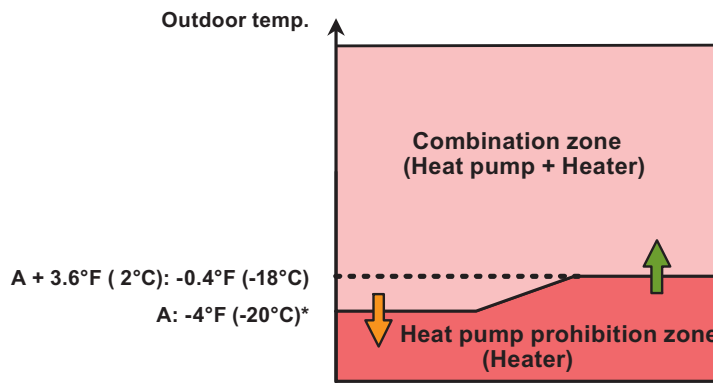
- Temperature of heater on (Thon): Adjustable by function number 62 (Operating temperature switching of external heaters).
- All control temperatures will shift by adjusting "Thon".
- Outdoor temperature zone boundary A: Adjustable by function setting number 66.

• External heater output



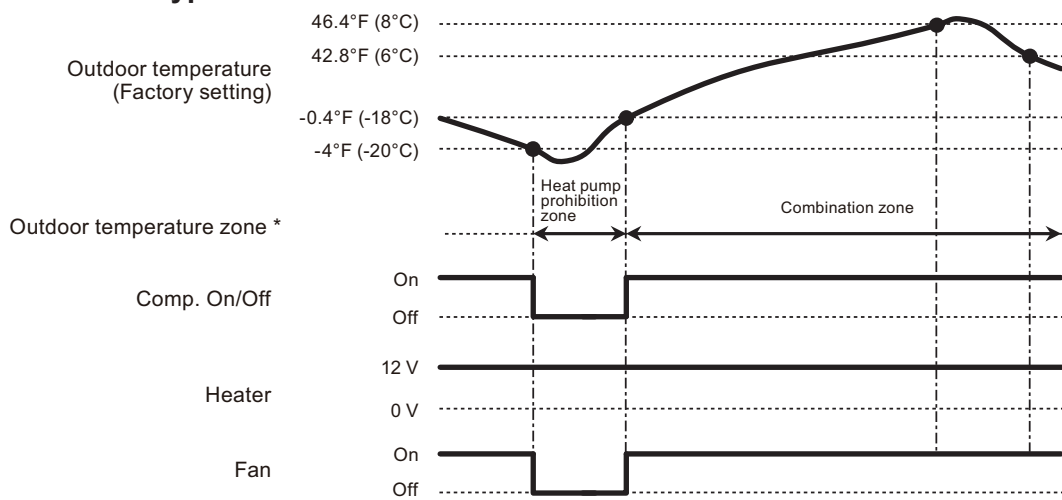
*: When room temperature stays in this zone for a specific time, auxiliary heater is turned on. For details, refer to function number 71.

- Outdoor temperature zone



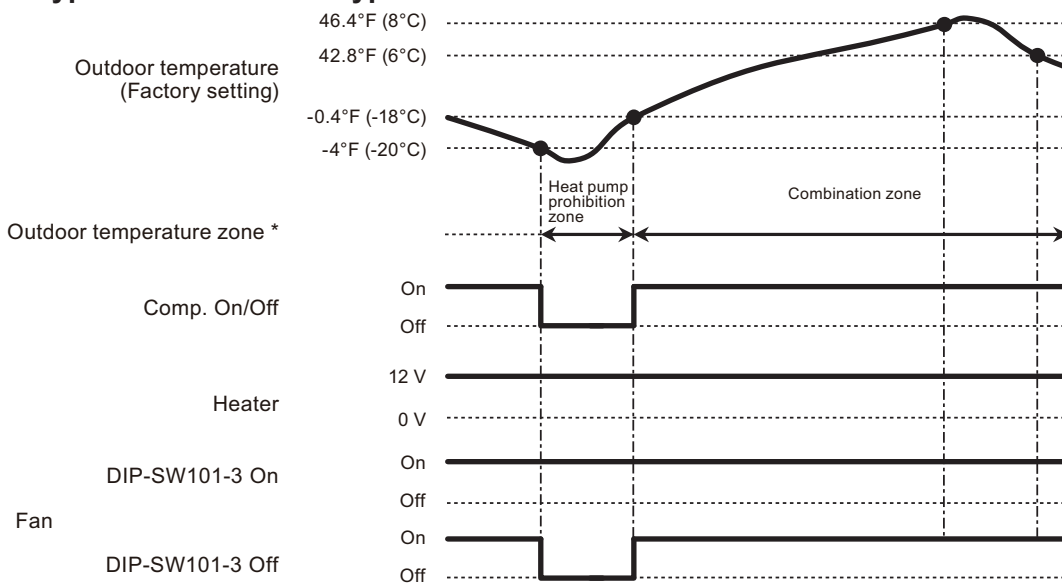
*: Adjustable by function setting 66

- Operation status
Compact cassette type



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

Slim duct type and Middle duct type



* 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

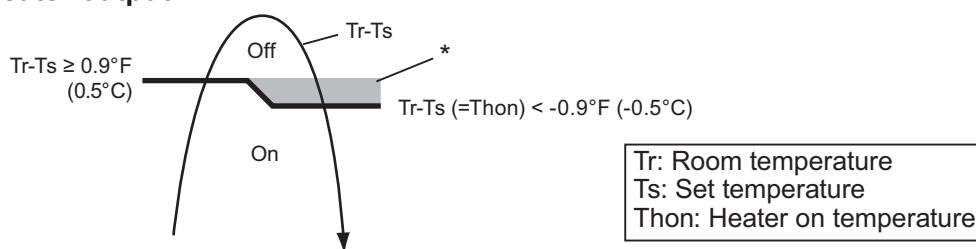
This control selects heat pump or external heater according to the outdoor temperature. Even when outdoor temperature is high, the heating is performed by using both of heat pump and external heater.

Compact cassette type	
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

Slim duct type and Middle duct type			
Operation			Condition
Heater on			Heater is on as shown in following diagram of heating temperature.
Heater off	DIP-SW101-3	On	<ul style="list-style-type: none"> • Heater is off as shown in following diagram of heating temperature.
	Indoor unit fan setting for external heater	Enabled	<ul style="list-style-type: none"> • Other than heating mode • Error occurred • Forced thermostat off • Fan stop protection
	DIP-SW101-3	Off	<ul style="list-style-type: none"> • Heater is off as shown in following diagram of heating temperature.
	Indoor unit fan setting for external heater	Disabled	<ul style="list-style-type: none"> • Other than heating mode • Error occurred • Forced thermostat off

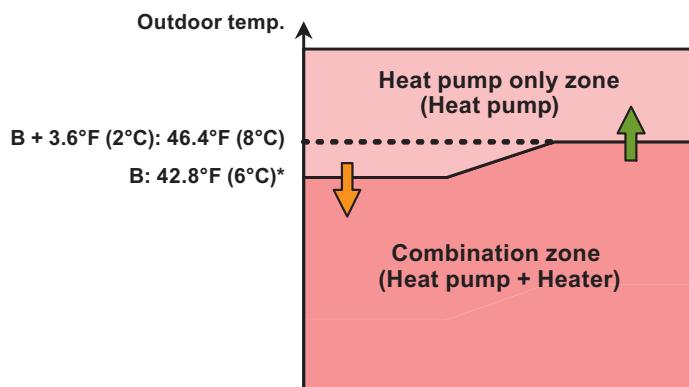
- Temperature of heater on (Thon): Adjustable by function number 62 (Operating temperature switching of external heaters).
- All control temperatures will shift by adjusting "Thon".
- Outdoor temperature zone boundary B: Adjustable by function setting number 67.

• External heater output



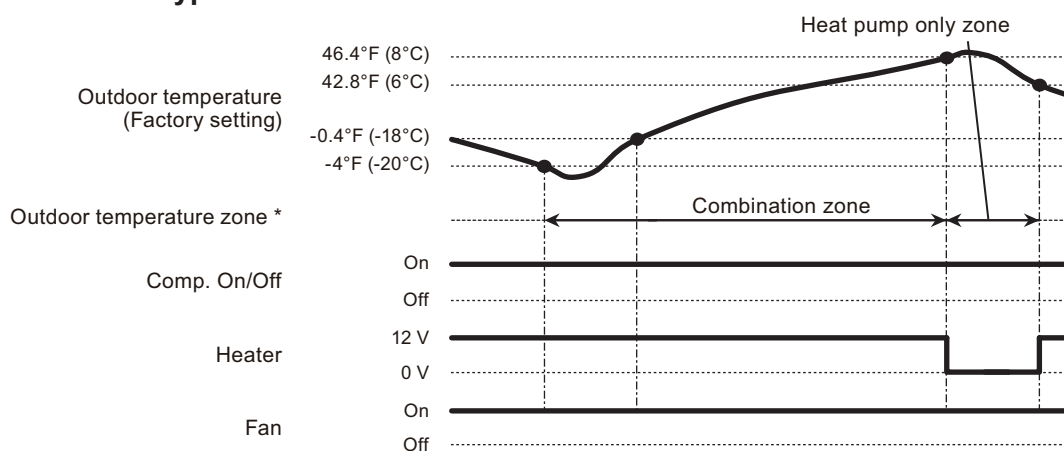
*: When room temperature stays in this zone for a specific time, auxiliary heater is turned on. For details, refer to function number 71.

- Outdoor temperature zone



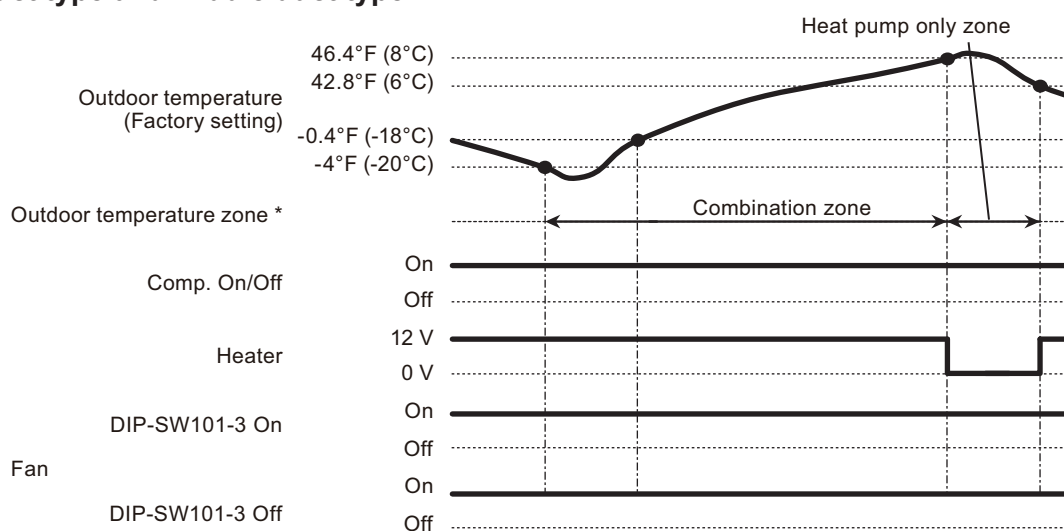
*: Adjustable by function setting 67

- Operation status
Compact cassette type



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

Slim duct type and Middle duct type



*: 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

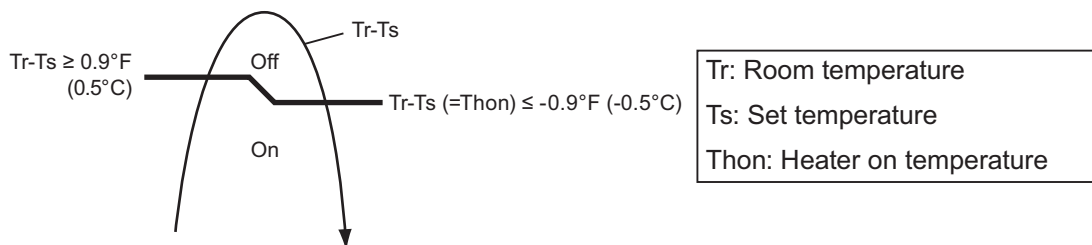
● Auxiliary heat pump control

• External heater output

Compact cassette type	
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

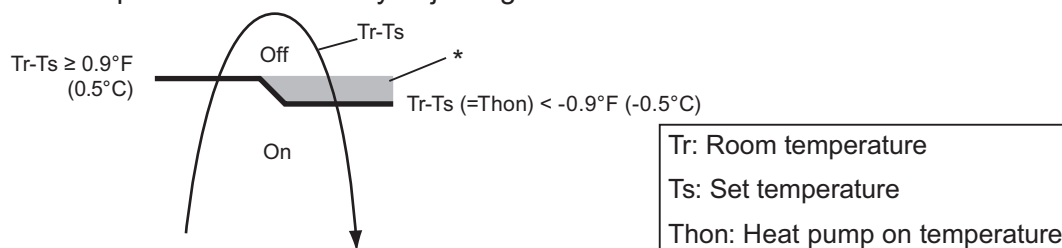
Slim duct type and Middle duct type			
Operation			Condition
Heater on			Heater is on as shown in following diagram of heating temperature.
Heater off	DIP-SW101-3	On	<ul style="list-style-type: none"> • Heater is off as shown in following diagram of heating temperature. • Other than heating mode • Error occurred • Forced thermostat off • Fan stop protection
	Indoor unit fan setting for external heater	Enabled	
	DIP-SW101-3	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
	Indoor unit fan setting for external heater	Disabled	

- 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 heat pump 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.

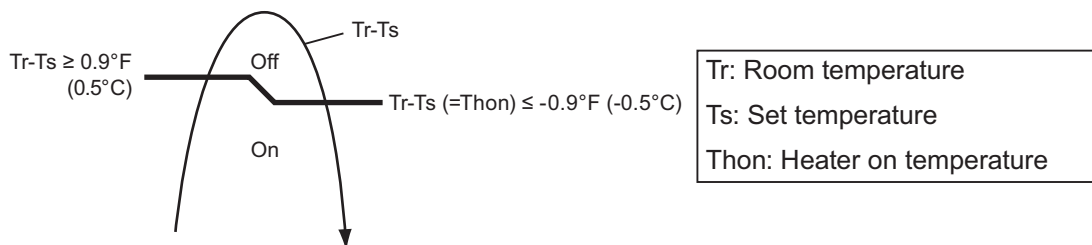
● Auxiliary heat pump control by outdoor temperature 1

• External heater output

Compact cassette type	
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

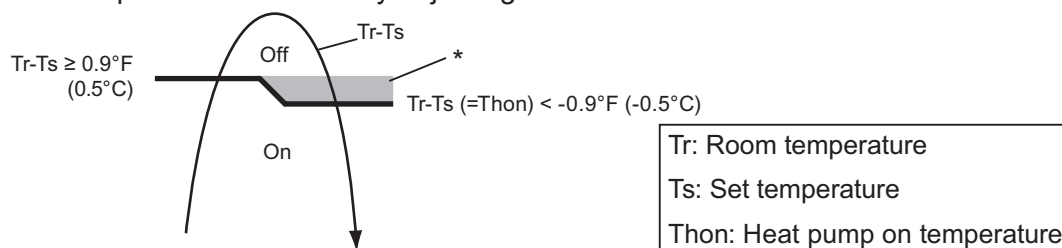
Slim duct type and Middle duct type			
Operation			Condition
Heater on			Heater is on as shown in following diagram of heating temperature.
Heater off	DIP-SW101-3	On	<ul style="list-style-type: none"> Heater is off as shown in following diagram of heating temperature. Other than heating mode Error occurred Forced thermostat off Fan stop protection
	Indoor unit fan setting for external heater	Enabled	
	DIP-SW101-3	Off	
	Indoor unit fan setting for external heater	Disabled	<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)



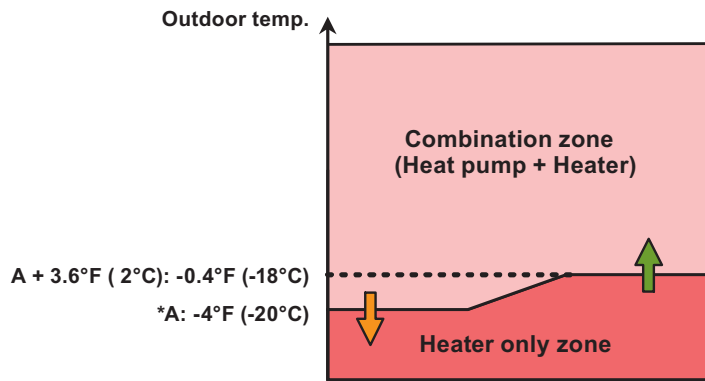
• Auxiliary heat pump On/Off

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



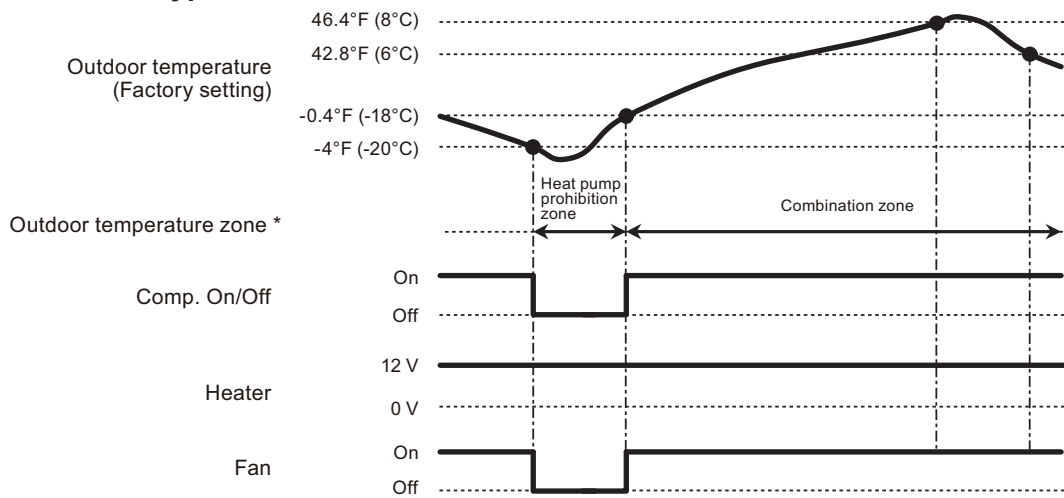
*: When room temperature stays in this zone for a specific time, auxiliary heater is turned on. For details, refer to function number 71.

- Outdoor temperature zone



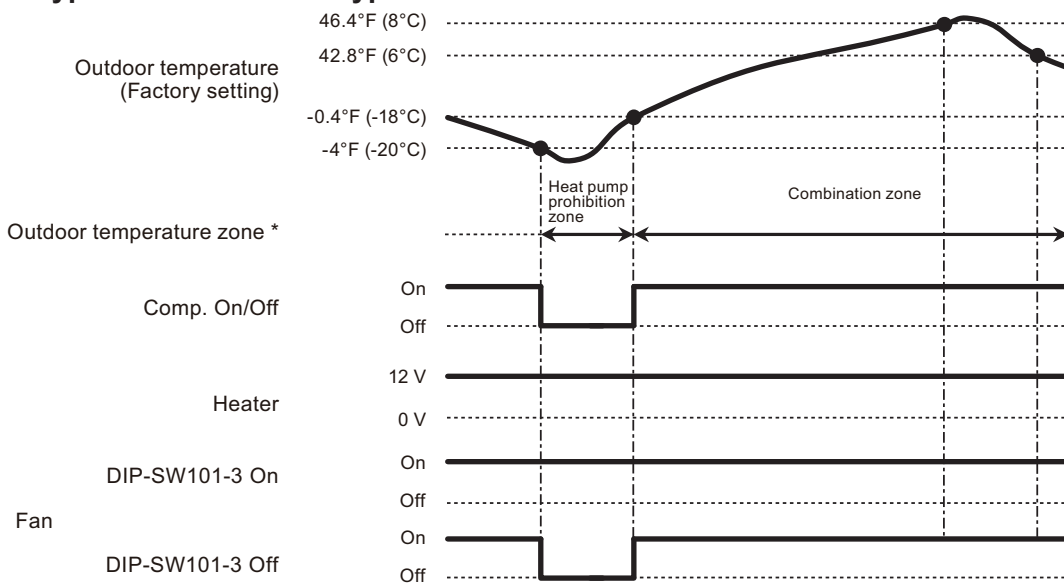
*: Adjustable by function setting 66

- Operation status
Compact cassette type



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

Slim duct type and Middle duct type



* 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

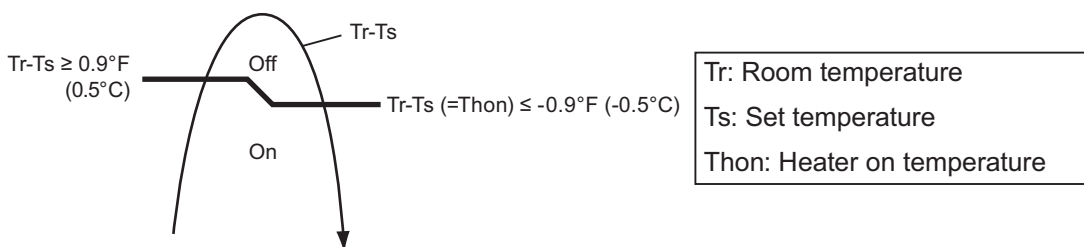
● Auxiliary heat pump control by outdoor temperature 2

• External heater output

Compact cassette type	
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

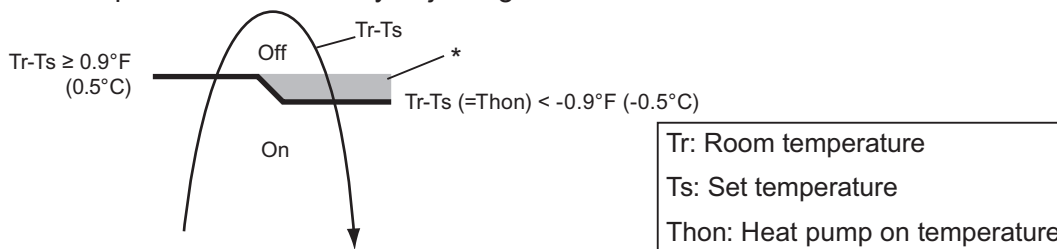
Slim duct type and Middle duct type			
Operation			Condition
Heater on			Heater is on as shown in following diagram of heating temperature.
Heater off	DIP-SW101-3	On	<ul style="list-style-type: none"> • Heater is off as shown in following diagram of heating temperature. • Other than heating mode • Error occurred • Forced thermostat off • Fan stop protection
	Indoor unit fan setting for external heater	Enabled	
	DIP-SW101-3	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
	Indoor unit fan setting for external heater	Disabled	

- 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)



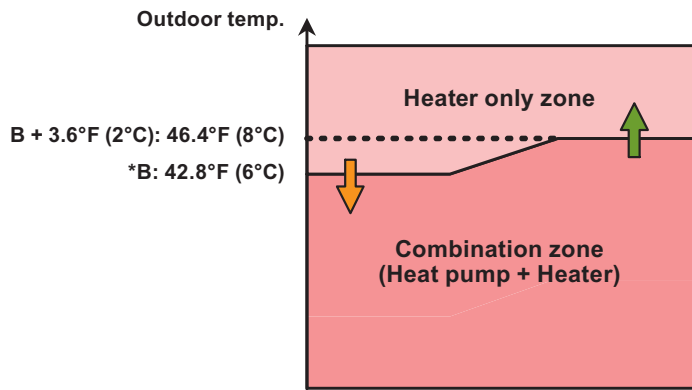
• Auxiliary heat pump On/Off

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



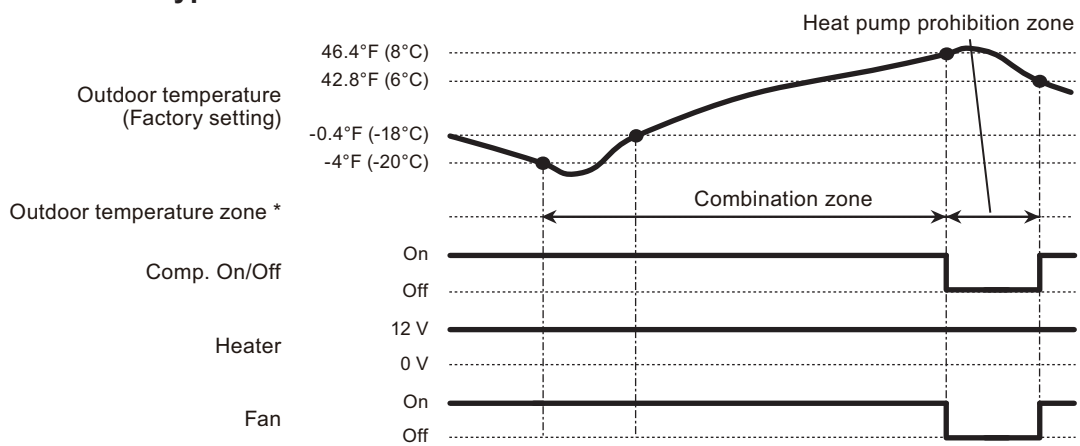
*: When room temperature stays in this zone for a specific time, auxiliary heater is turned on. For details, refer to function number 71.

- Outdoor temperature zone



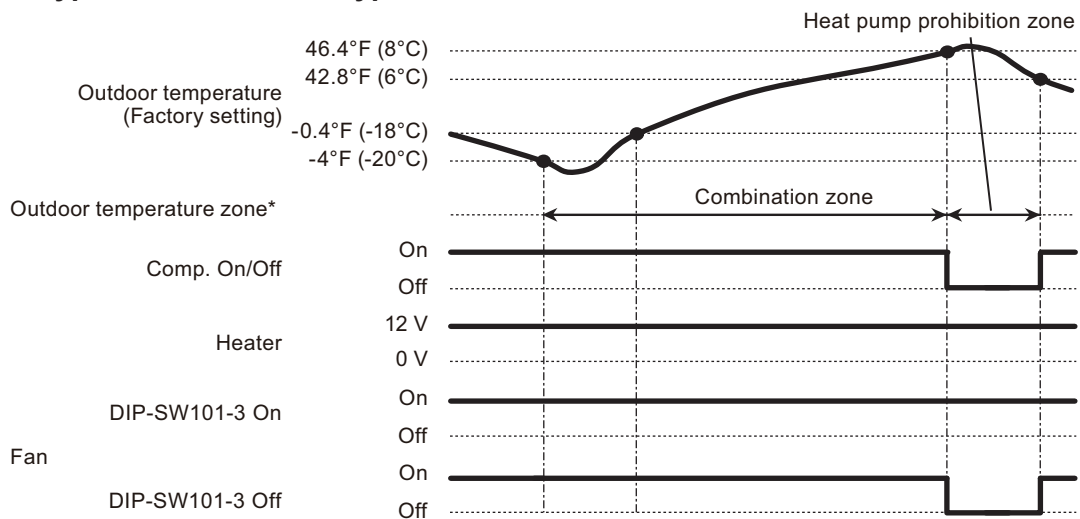
*: Adjustable by function setting 67

- Operation status
Compact cassette type



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

Slim duct type and Middle duct type



*: 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

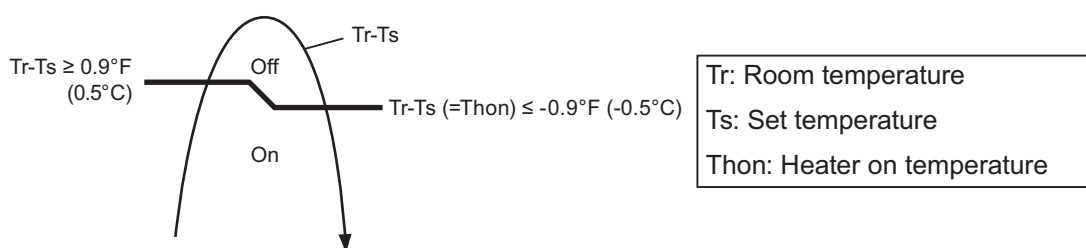
● Auxiliary heat pump control by outdoor temperature 3

• External heater output

Compact cassette type	
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

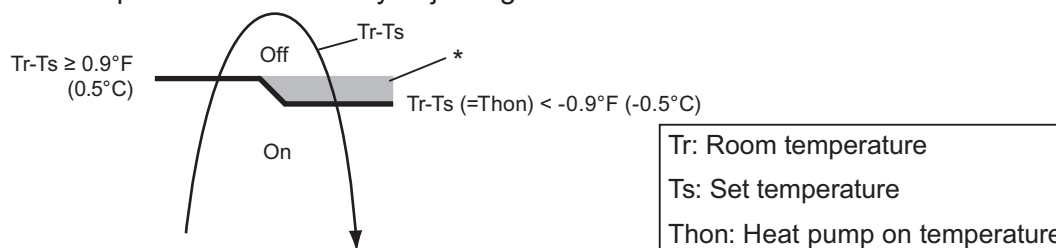
Slim duct type and Middle duct type			
Operation			Condition
Heater on			Heater is on as shown in following diagram of heating temperature.
Heater off	DIP-SW101-3	On	<ul style="list-style-type: none"> • Heater is off as shown in following diagram of heating temperature. • Other than heating mode • Error occurred • Forced thermostat off • Fan stop protection
	Indoor unit fan setting for external heater	Enabled	
	DIP-SW101-3	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
	Indoor unit fan setting for external heater	Disabled	

- 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)



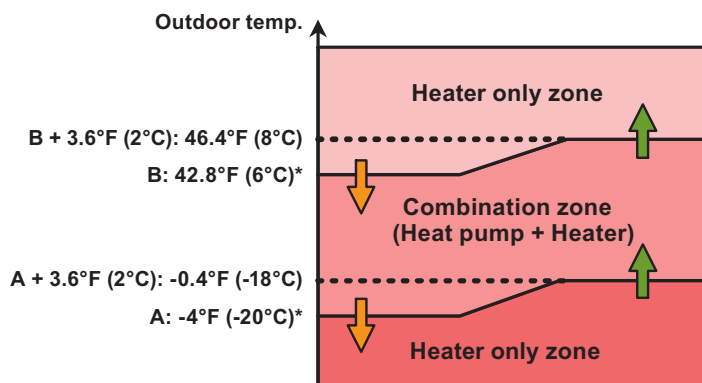
• Auxiliary heat pump On/Off

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



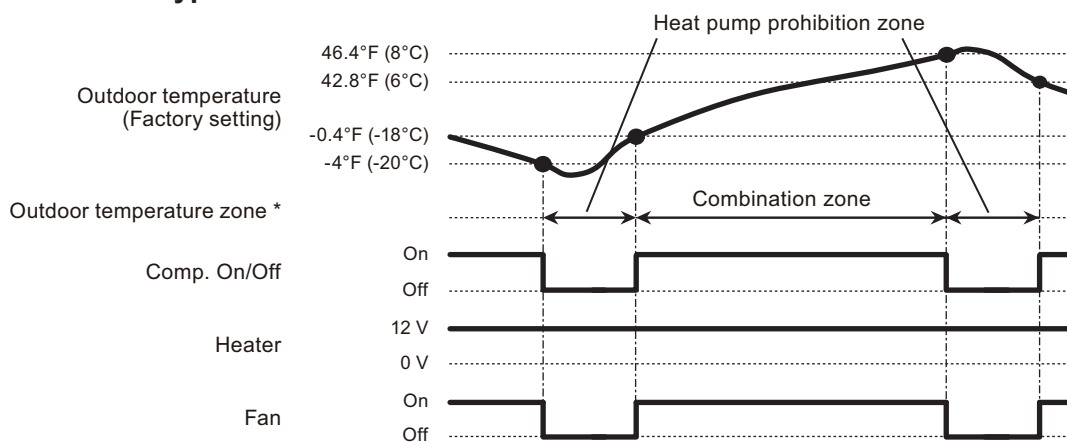
*: When room temperature stays in this zone for a specific time, auxiliary heater is turned on. For details, refer to function number 71.

- Outdoor temperature zone



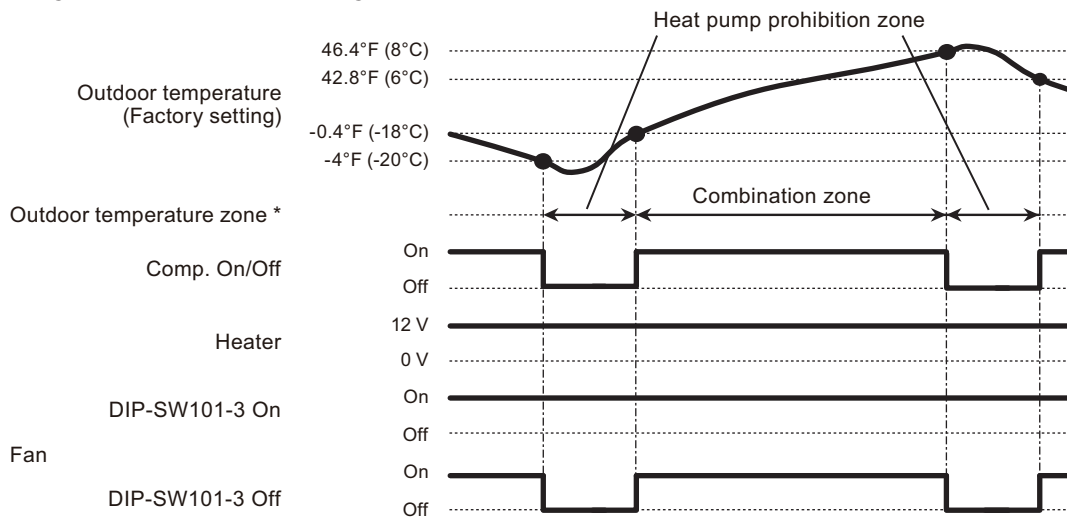
*: Adjustable by function setting 66 and 67

- Operation status
- Compact cassette type



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

Slim duct type and Middle duct type



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

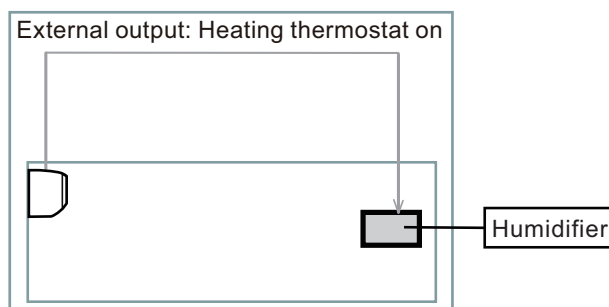
NOTE: In following operations, compressor will be on in heat pump prohibition zone.

- 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	Output 3	
	7	60-07	9	Output 2	
	8	60-08	A	Output 1	

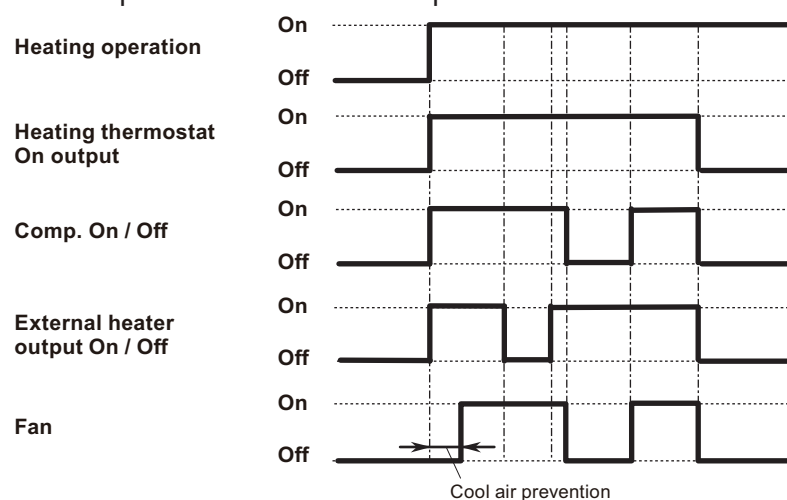
• Example of individual connection



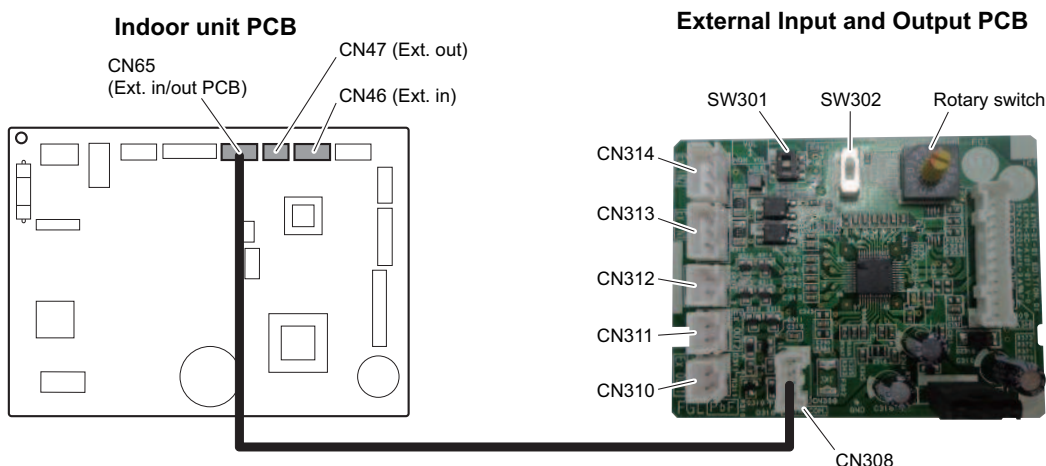
• Operation status

The heating thermostat output for CN47, Output 1, Output 2, or Output 3 will be on when comp on or external heater on.

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



4. External input and output (for wall mounted type)



Connecting point		Input/Output	Function	Input select	Input signal
Indoor unit	CN46	Input	Operation/Stop	Dry contact	Edge
			Forced stop		
	CN47	Output	Operation/Stop	—	—
			Error status		
			Indoor unit fan operation status		
			Cooling thermostat On		
			Heating thermostat On		
			External heater output		
			Set point attainment status (For 18 and 24 models)		
External Input and Output PCB (UTY-XCSXZ2)	CN313/CN314	Input	Operation/Stop	Dry contact/Apply voltage	Edge/Pulse
			Forced stop		
	CN313	Input	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 05-80.

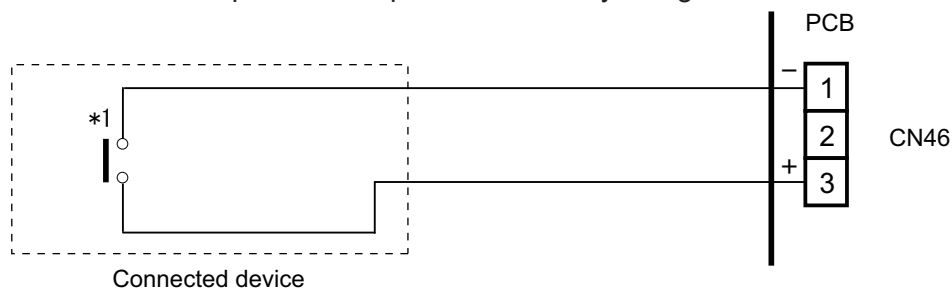
4-1. External input

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

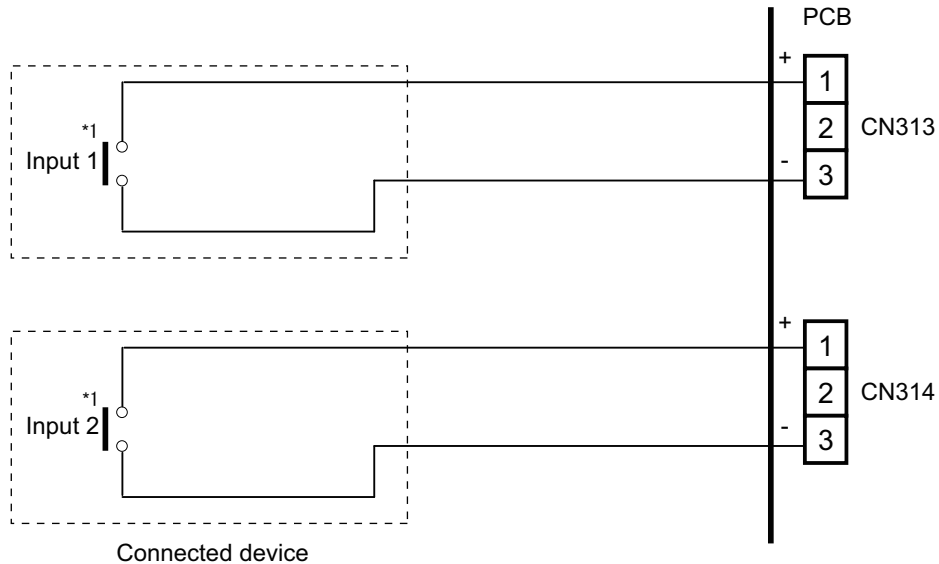
The indoor unit Operation/Stop can be set by using the input connector on the PCB.

• Input select

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

– Dry contact

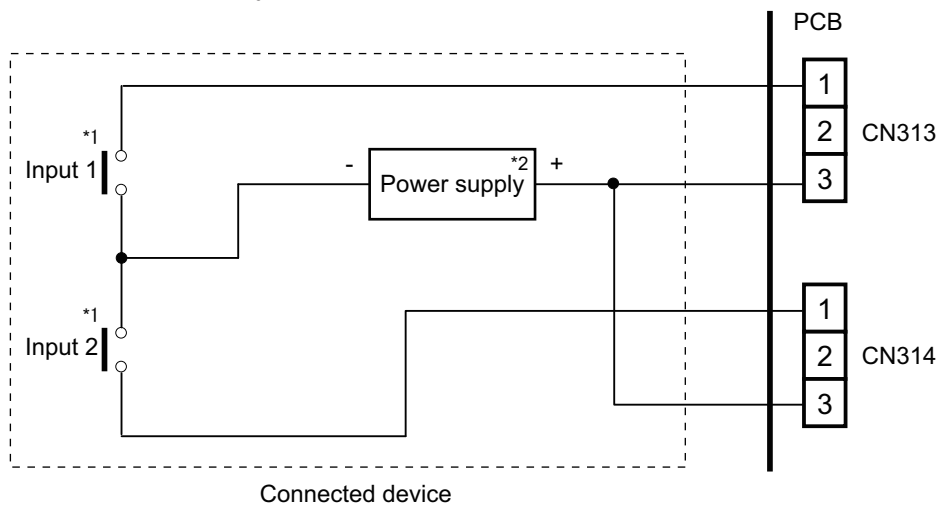
In case of internal power supply, set the slide switch of SW301 to "NON VOL" side.



*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.



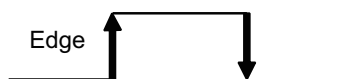
*1: The switches can be used on the following condition: DC 12 V to 24 V, 1 mA to 15 mA.

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

■ Input signal type

- **Indoor unit**

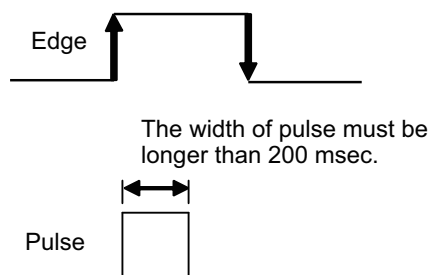
Input signal type is only "Edge".



- **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

4-2. External output

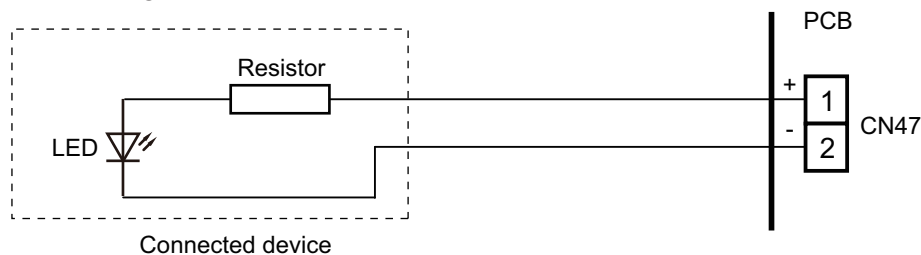
Use an external output cable with appropriate external dimension, depending on the number of cables to be installed.

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 05-80.

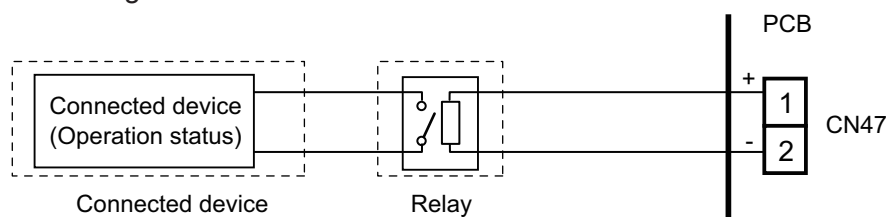
- **When indicator, etc. are connected directly**

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



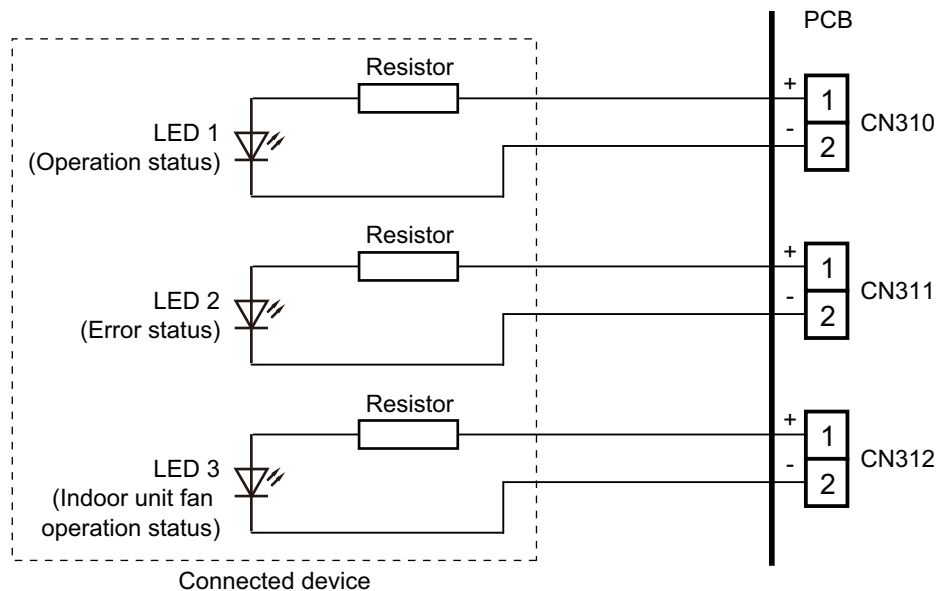
- **When connecting with a device equipped with a power supply**

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

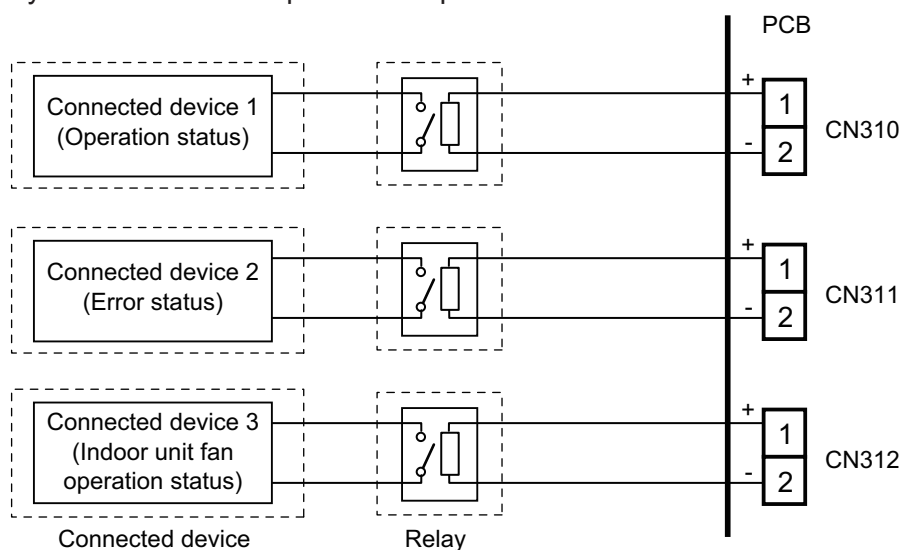


External Input and Output PCB

- 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 05-80.
- **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".



4-3. Setting of external input and output

- Indoor unit

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

Output		
Connection point	Function setting number 60	Function
CN47	00	Operation/Stop
	01 to 04	Cooling thermostat On
	05	Heating thermostat On
	06	Operation/Stop
	07 to 08	Cooling thermostat On
	09	Error status
	10	Indoor unit fan operation status
	11	External heater output
	12	Setpoint attainment status (For 18 and 24 models)

• 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/Stop	Error status	Indoor unit fan operation 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/Stop	Indoor unit fan operation status	External heater output
C		Forced thermostat off	Not available	Operation/Stop	Error status	External heater output
D		Forced thermostat off	Not available	Operation/Stop	Indoor unit fan operation status	Error status

NOTES:

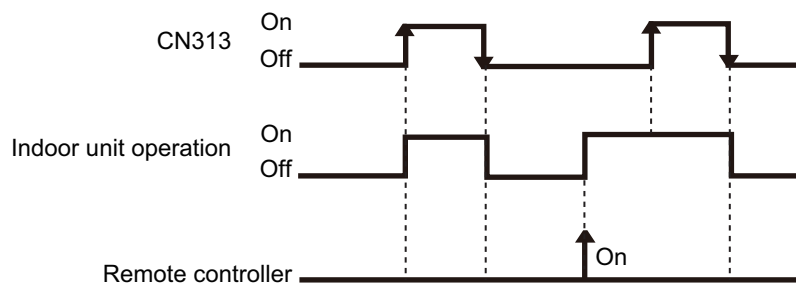
- When the rotary switch is selected to "1", the operation of the connector input of the indoor unit and the External Input and Output PCB input are the same. The operation content depends on the setting of function setting number 46.
- *1: The external input other than "Operation/Stop" is available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

4-4. Details of control input function

■ Operation/Stop mode 1

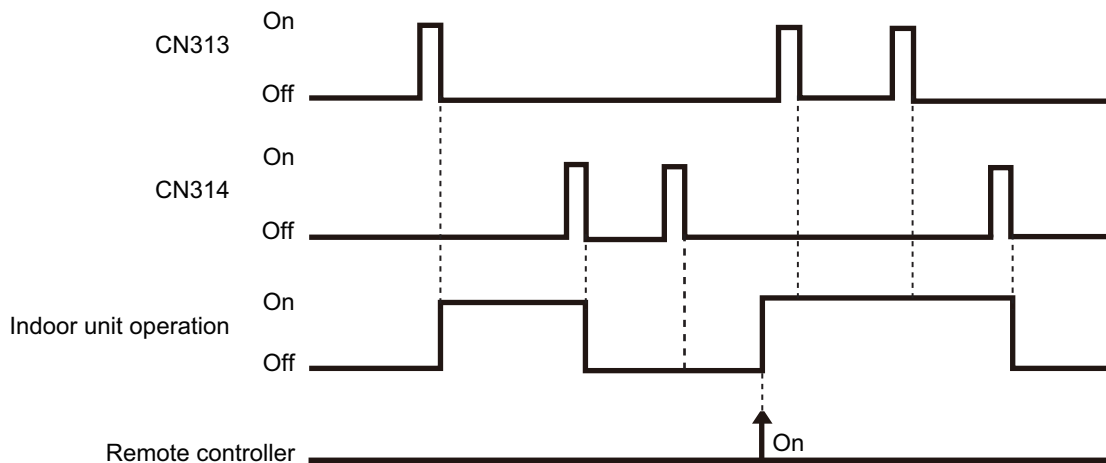
- In the case of "Edge" input

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



- In the case of "Pulse" input

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



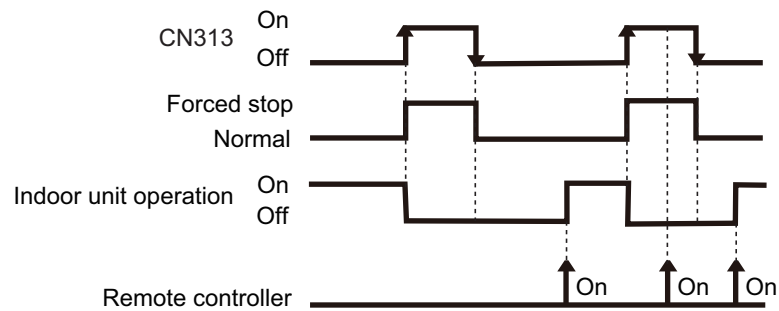
NOTES:

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

■ Forced stop

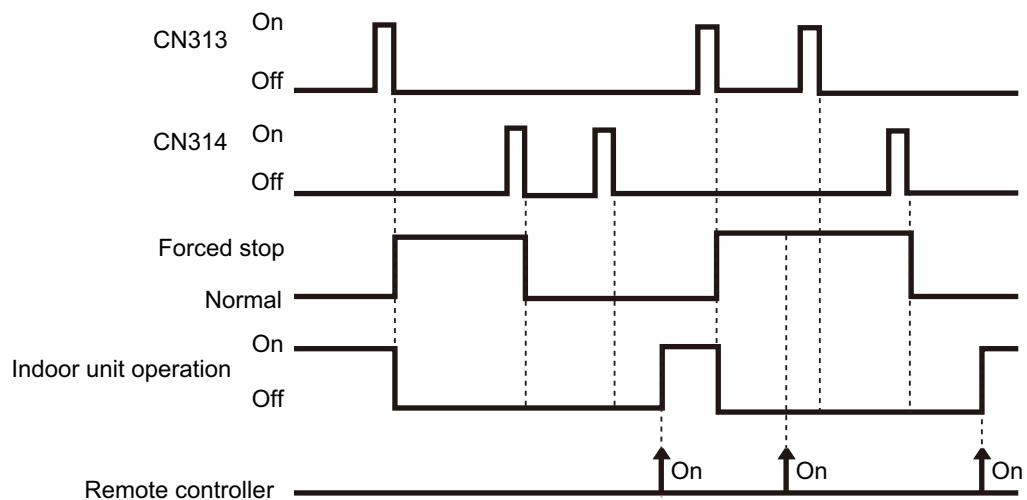
- In the case of "Edge" input

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



- In the case of "Pulse" input

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



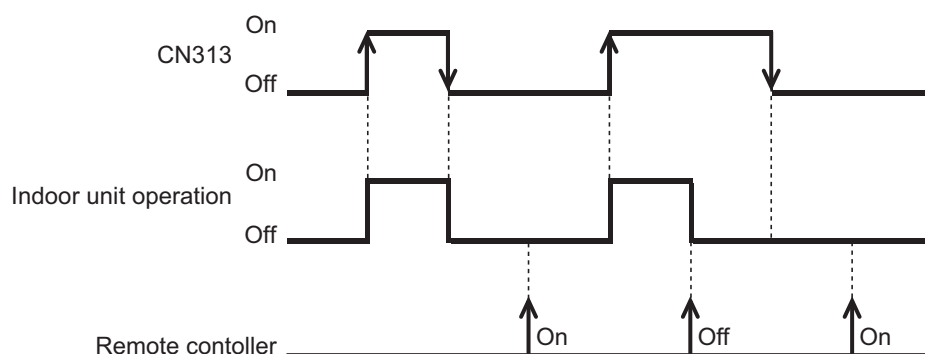
NOTES:

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

■ Operation/Stop mode 2

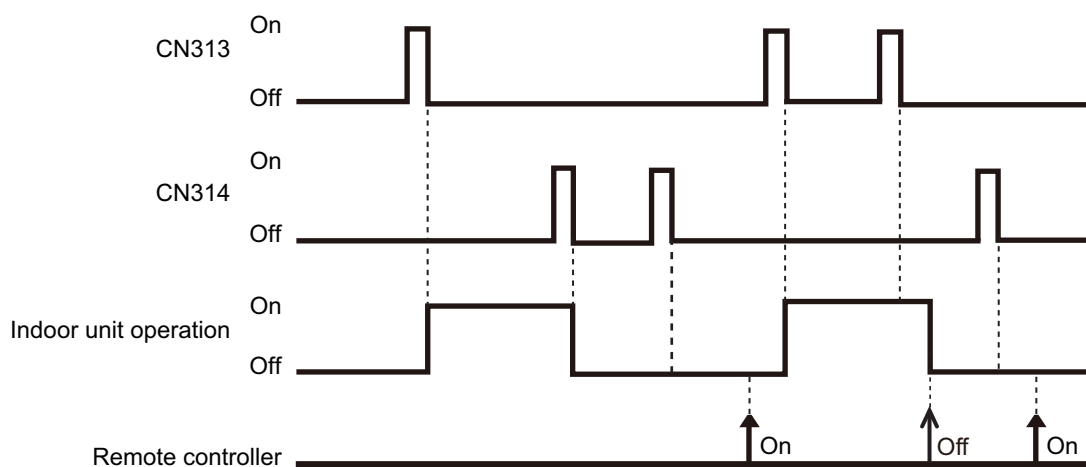
- In the case of “Edge” input

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



- In the case of “Pulse” input

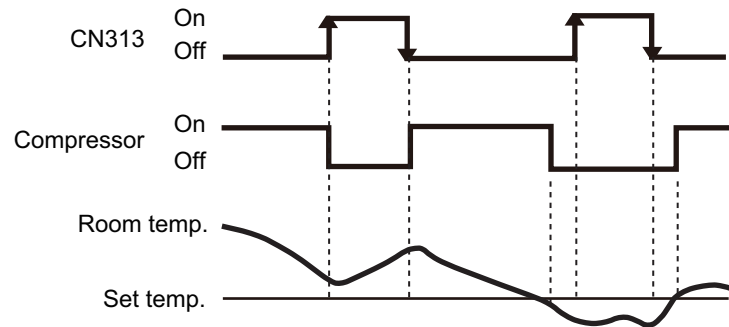
Function setting	External Input and Output PCB		External input		Input signal	Command
	Rotary switch	SW302				
46-03	1	Pulse	External Input and Output PCB	CN313	Pulse	Operation (R.C. enabled)
				CN314		Stop (R.C. disabled)



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

■ Forced thermostat off

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

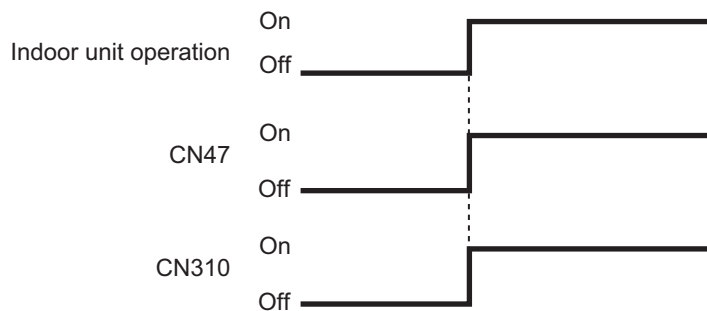


4-5. Details of control output function

■ 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

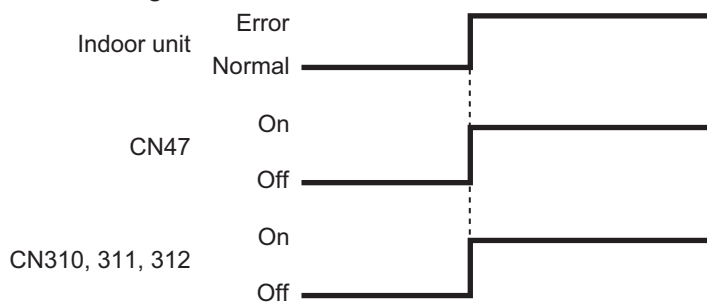
The output is low when the unit is stopped.



■ 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

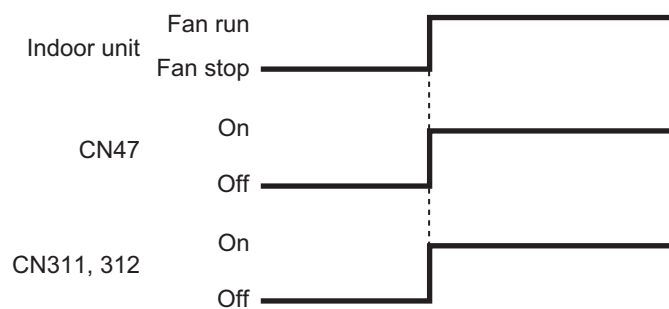
The output is on when an error is generated for the indoor unit.



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

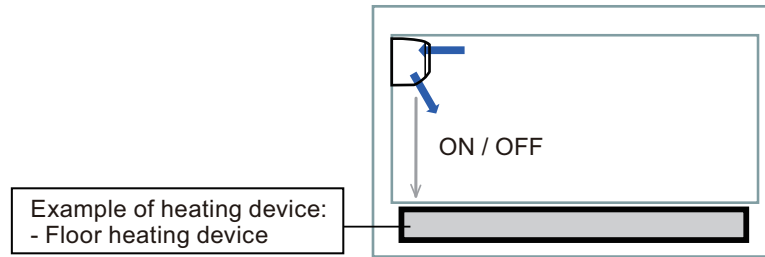
Control	Primary heater	Auxiliary heater	Function setting
			Indoor unit
			Control switching external heaters No. 61
Auxiliary heater control 1	Heat pump	External device*	61-00
Auxiliary heater control 2	Heat pump	External device	61-01
Heat pump prohibition control	External device	None	61-02
Auxiliary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

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.
- *: External device means Hot water, Electrical heater, etc.

● Installation configuration of individual connection

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

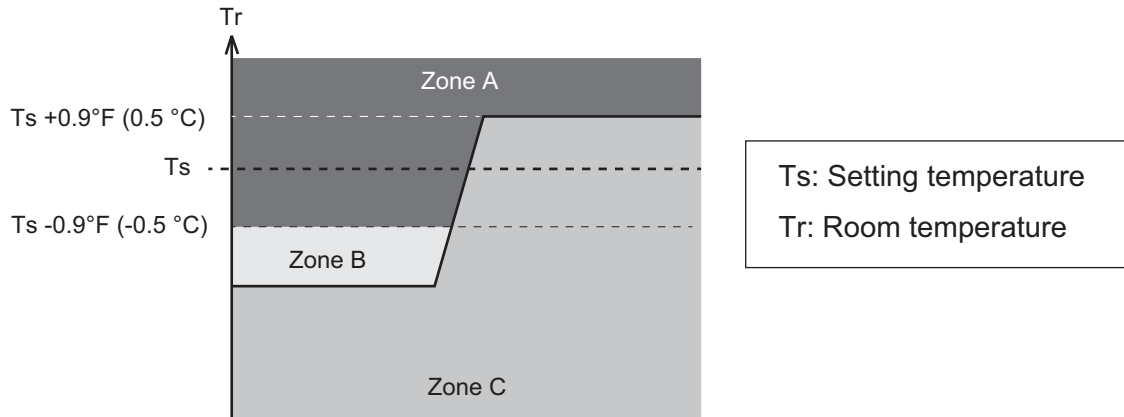


⚠ WARNING

- 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 05-25.

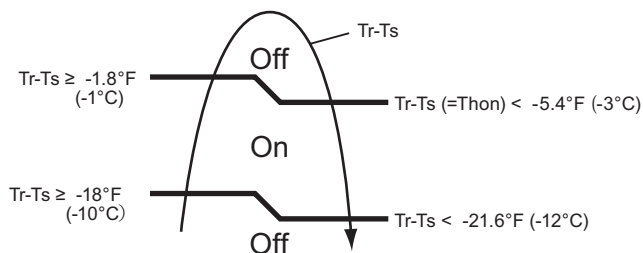
*2: When indoor unit function number 61 is set to "00", auxiliary equipment operates according to the following conditions.

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



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

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

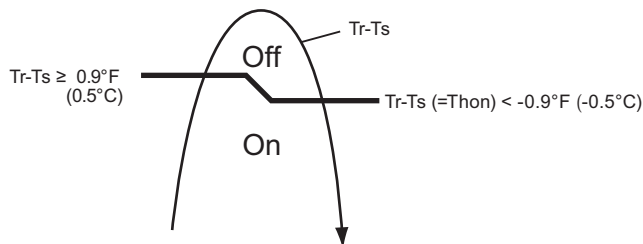
- and room temperature (Tr) increases above 53.6°F (12°C), signal output is on.
- and room temperature (Tr) increases above 69.8°F (21°C), signal output is off.
- and room temperature (Tr) decreases below 66.2°F (19°C), signal output is on.
- and room temperature (Tr) decreases below 50°F (10°C), signal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

● Auxiliary heater control 2

Control that excludes "A" from "Auxiliary heater control 1" on page 05-91.

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".



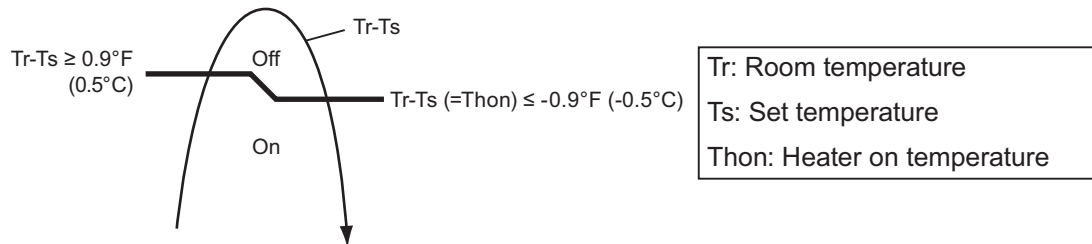
Tr: Room temperature
Ts: Set temperature
Thon: Heater on temperature

● Heat pump prohibition control

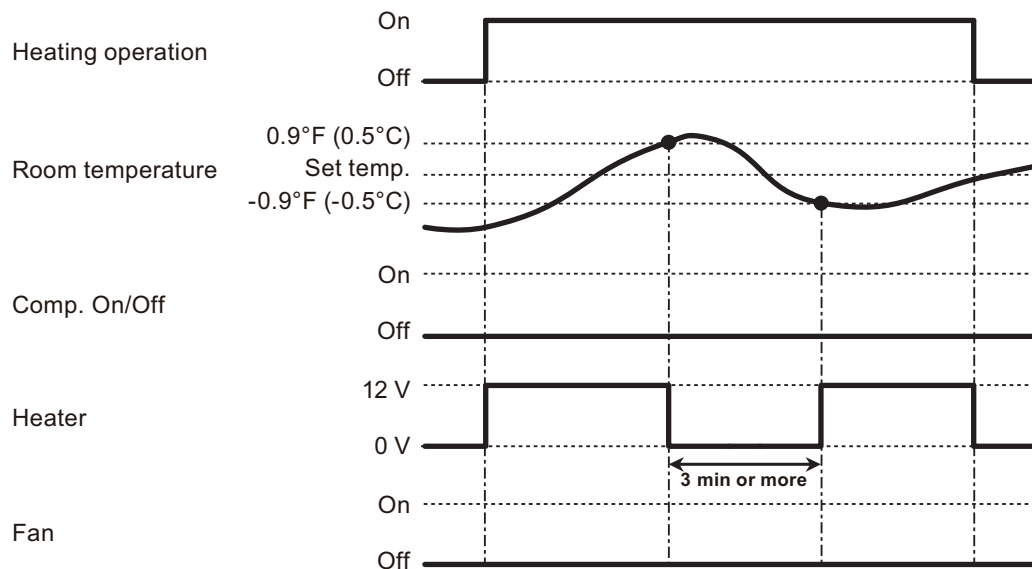
Perform heating by external heater only. Indoor unit is continuous thermostat off.

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

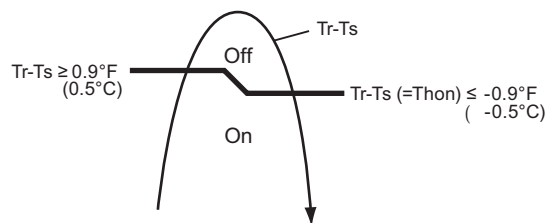
● Auxiliary heater control by outdoor temperature 1

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

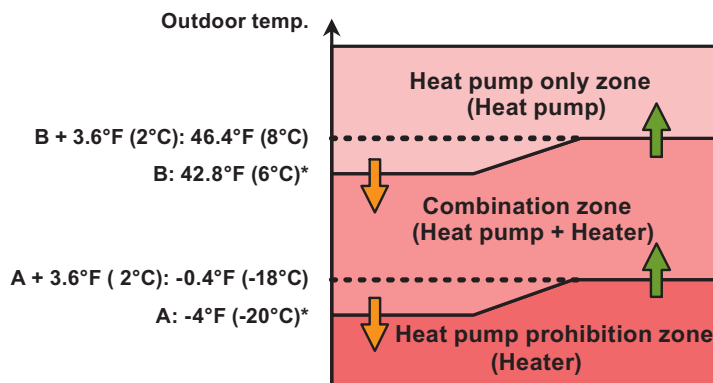
- Temperature of heater on (Thon): Adjustable by function number 62 (Operating temperature switching of external heaters).
- All control temperatures will shift by adjusting “Thon”.
- Outdoor temperature zone boundary A and B: Adjustable individually by function setting number 66 and 67.

• External heater output



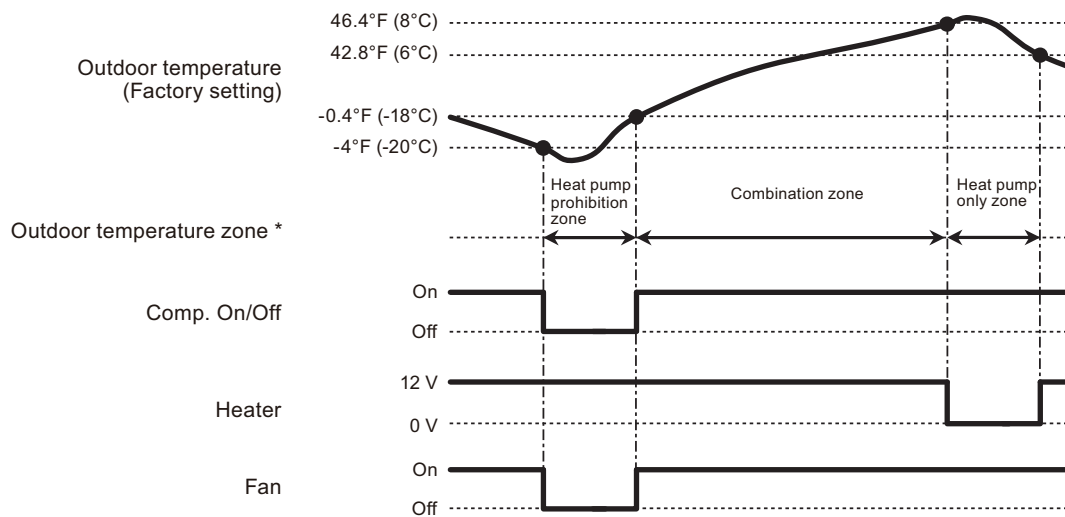
Tr: Room temperature
Ts: Set temperature
Thon: Heater on temperature

• 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

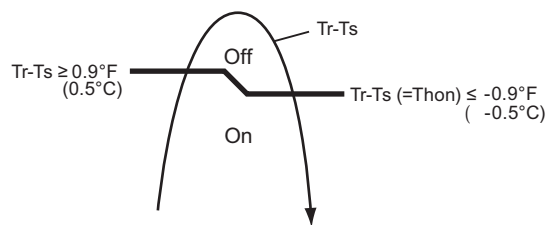
● Auxiliary heater control by outdoor temperature 2

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

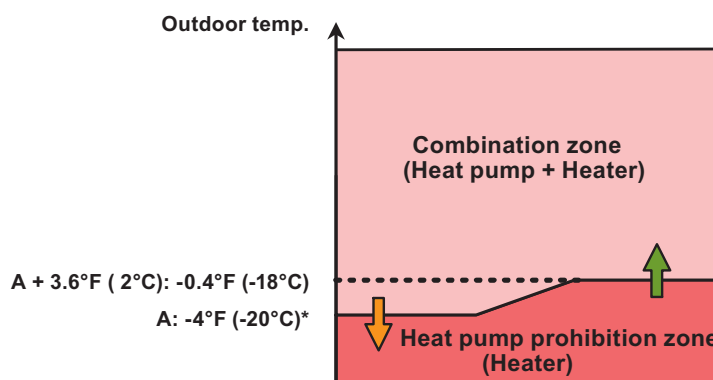
- Temperature of heater on (Thon): Adjustable by function number 62 (Operating temperature switching of external heaters).
- All control temperatures will shift by adjusting “Thon”.
- Outdoor temperature zone boundary A: Adjustable by function setting number 66.

• External heater output



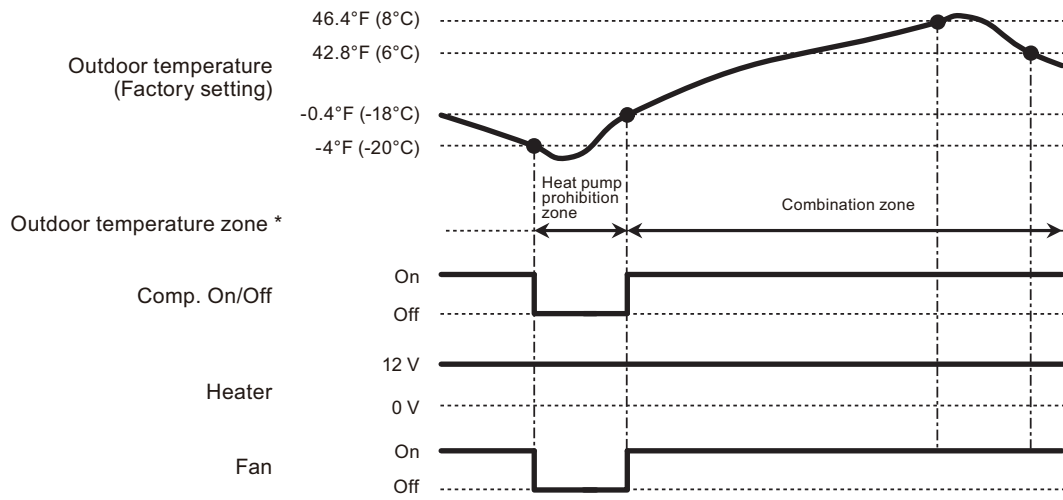
Tr: Room temperature
Ts: Set temperature
Thon: Heater on temperature

• 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

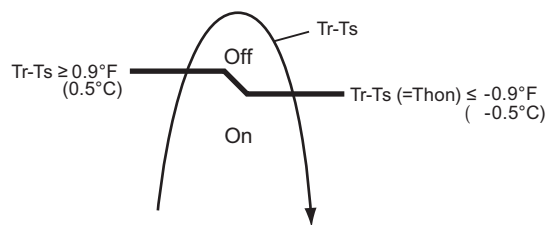
● Auxiliary heater control by outdoor temperature 3

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

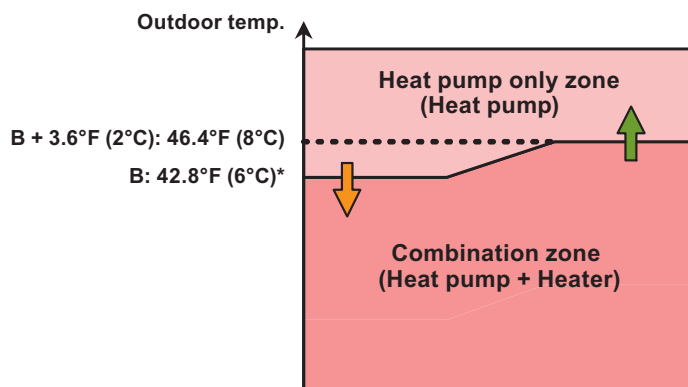
- Temperature of heater on (Thon): Adjustable by function number 62 (Operating temperature switching of external heaters).
- All control temperatures will shift by adjusting "Thon".
- Outdoor temperature zone boundary B: Adjustable by function setting number 37.

• External heater output



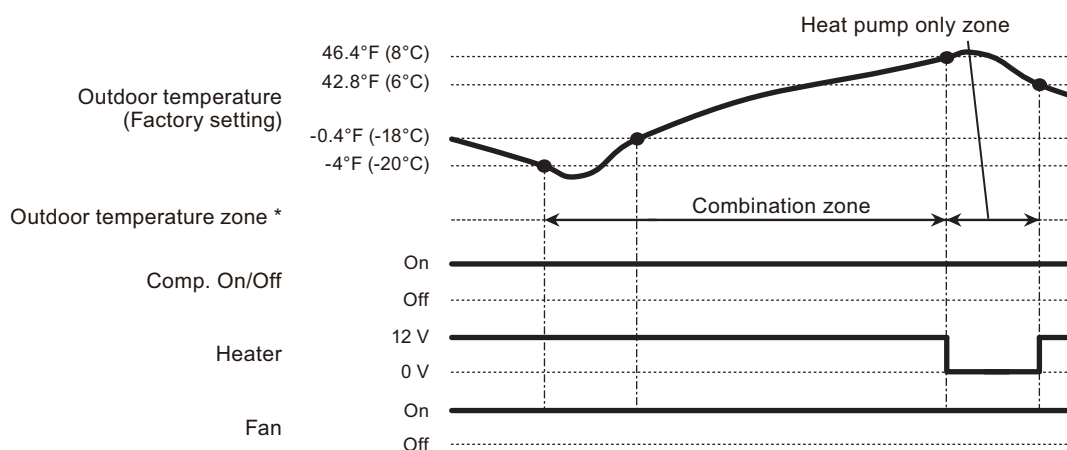
Tr: Room temperature
Ts: Set temperature
Thon: Heater on temperature

• 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.

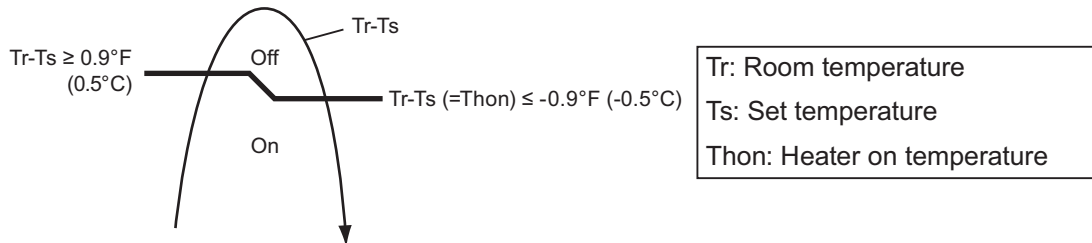
- Other than heating
- Test run

● Auxiliary heat pump control

• External heater output

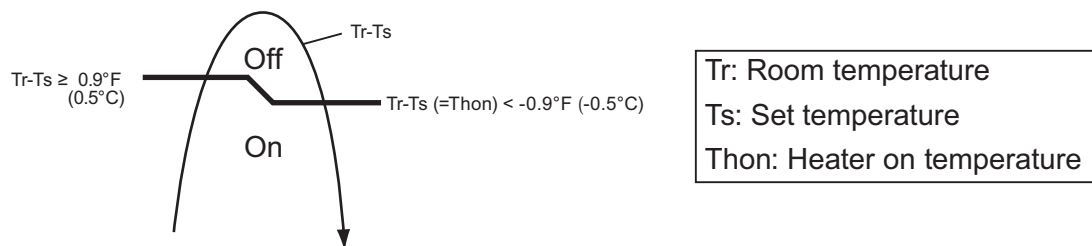
Operation	Condition
Heater on	Heater is on as shown in following diagram of heating temperature.
Heater off	<ul style="list-style-type: none"> Heater is off as shown in following diagram of heating temperature. Other than heating mode Error occurred Forced thermostat off

- 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)



• Auxiliary heat pump On/Off

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

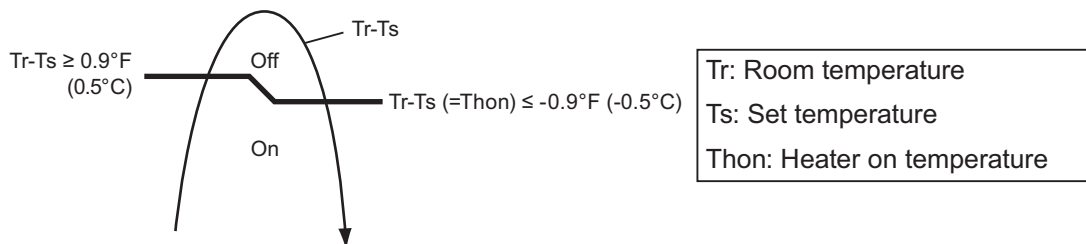


● Auxiliary heat pump control by outdoor temperature 1

• External heater output

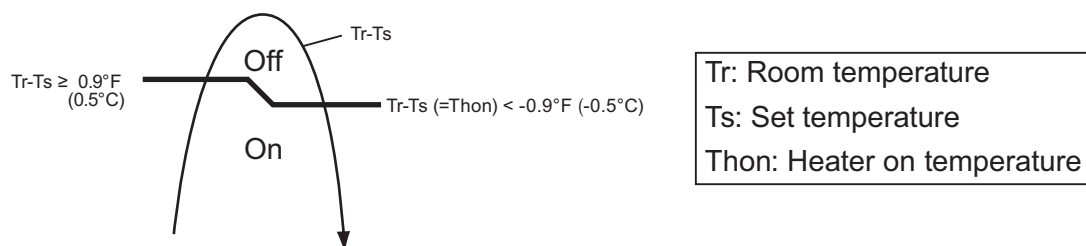
Operation	Condition
Heater on	Heater is on as shown in following diagram of heating temperature.
Heater off	<ul style="list-style-type: none"> Heater is off as shown in following diagram of heating temperature. Other than heating mode Error occurred Forced thermostat off

- 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)

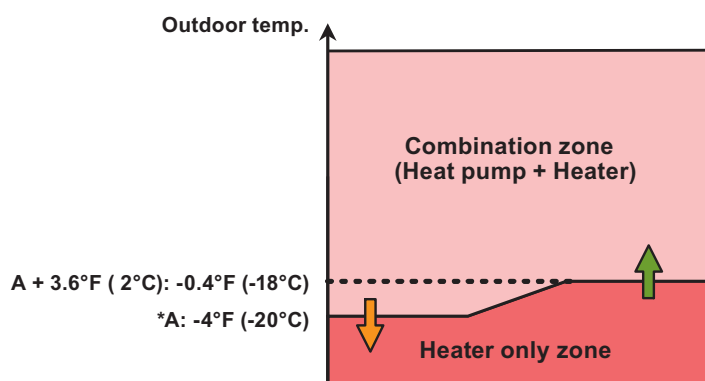


• Auxiliary heat pump On/Off

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

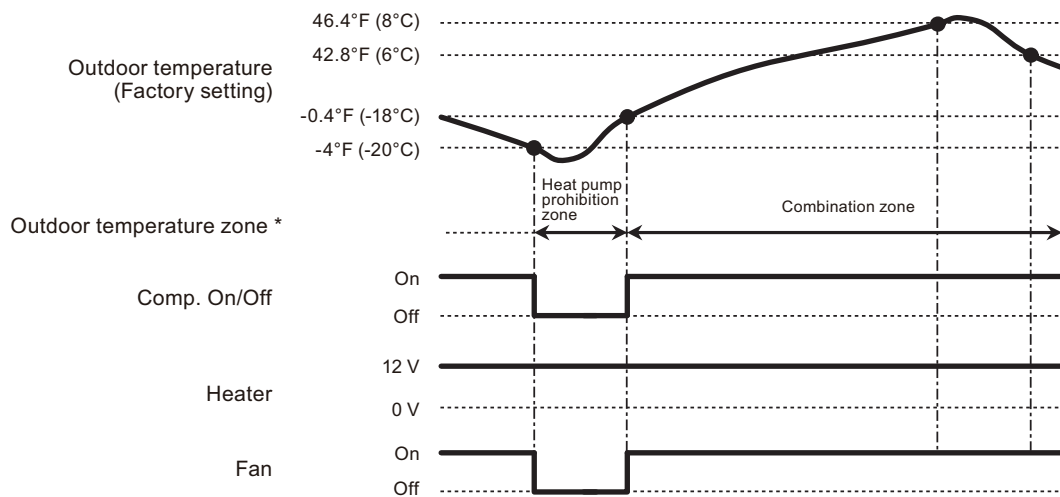


• Outdoor temperature zone



*: Adjustable by function setting 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.

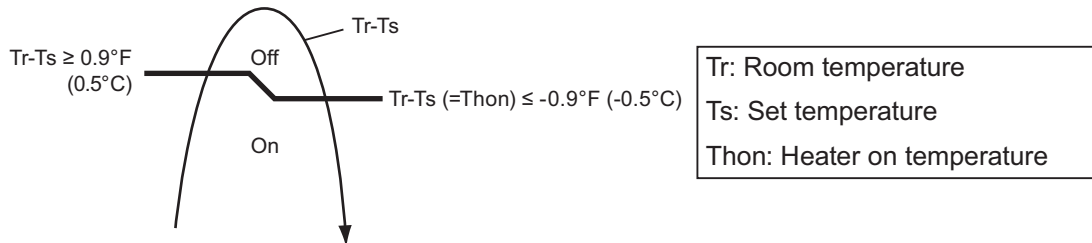
- Other than heating
- Test run

● Auxiliary heat pump control by outdoor temperature 2

• External heater output

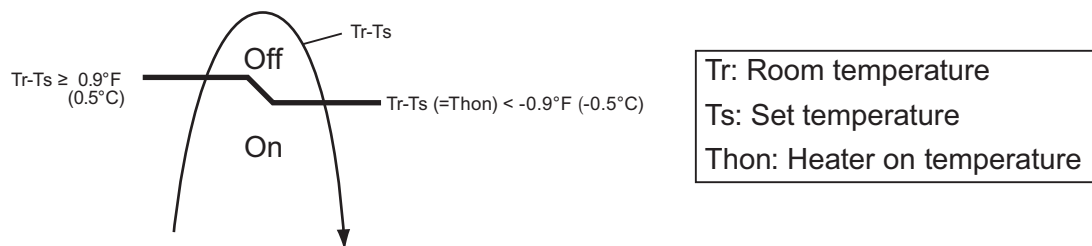
Operation	Condition
Heater on	Heater is on as shown in following diagram of heating temperature.
Heater off	<ul style="list-style-type: none"> Heater is off as shown in following diagram of heating temperature. Other than heating mode Error occurred Forced thermostat off

- 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)

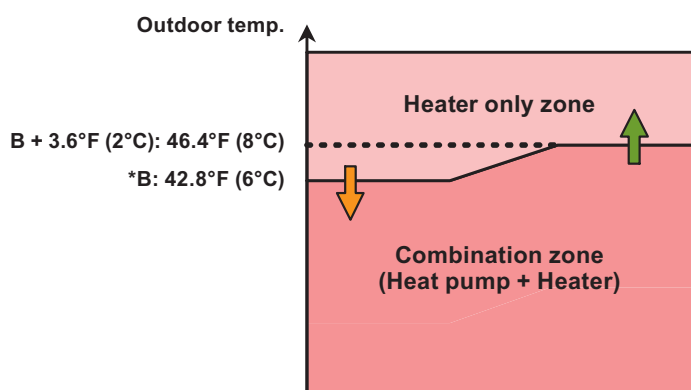


• Auxiliary heat pump On/Off

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

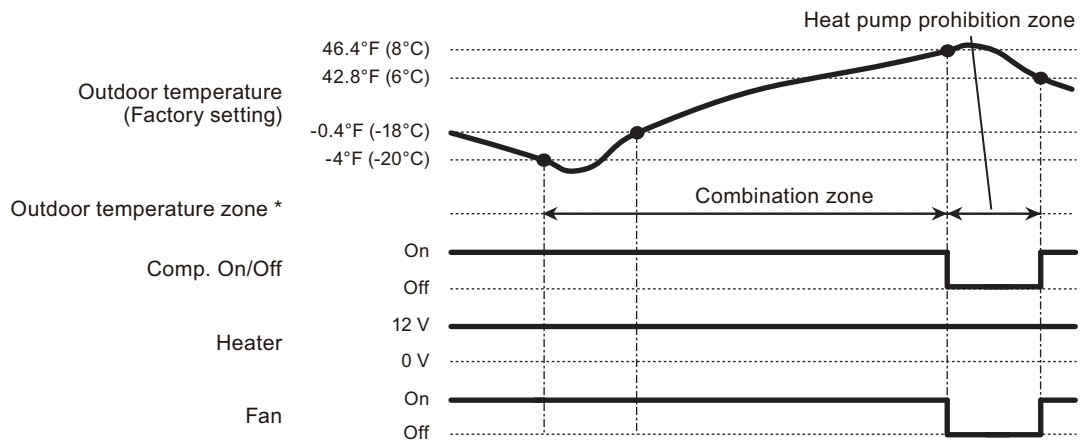


• Outdoor temperature zone



*: 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.

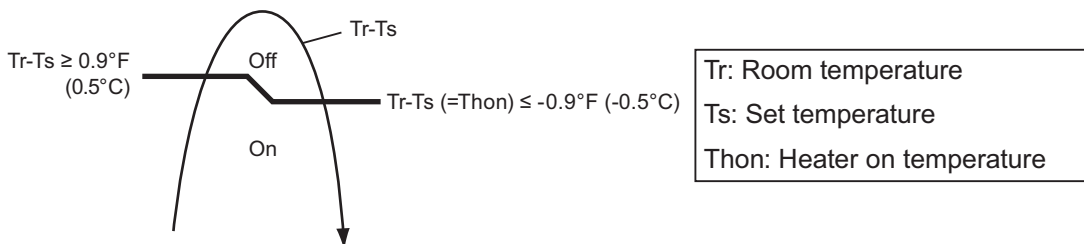
- Other than heating
- Test run

● Auxiliary heat pump control by outdoor temperature 3

• External heater output

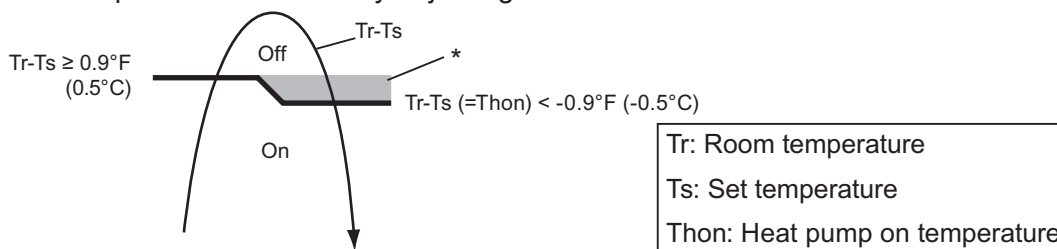
Operation	Condition
Heater on	Heater is on as shown in following diagram of heating temperature.
Heater off	<ul style="list-style-type: none"> Heater is off as shown in following diagram of heating temperature. Other than heating mode Error occurred Forced thermostat off

- 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)



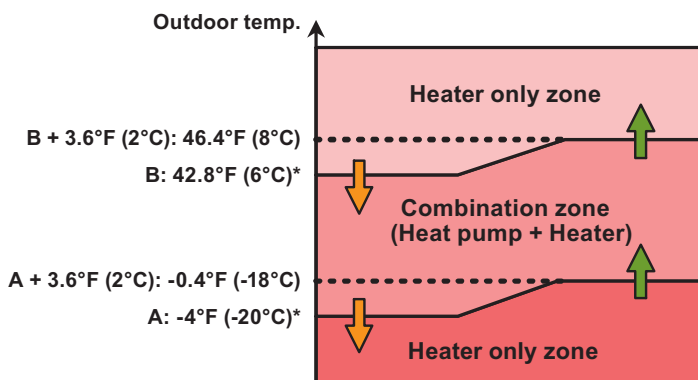
• Auxiliary heat pump On/Off

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



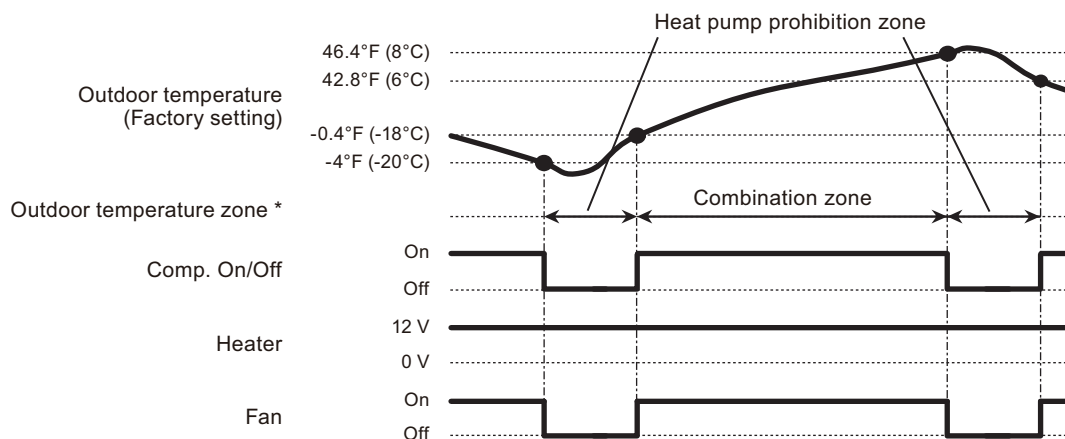
*: When room temperature stays in this zone for a specific time, auxiliary heater is turned on. For details, refer to function number 71.

• 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

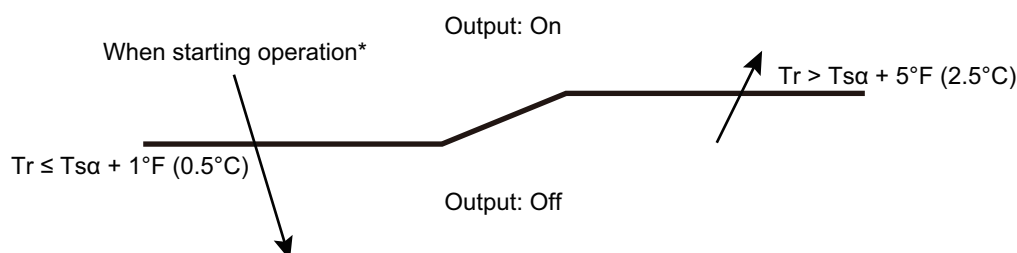
■ Setpoint attainment status (For 18 and 24 models)

NOTE: This function is valid only when function setting 96 is "Enable" (01).

When the room temperature does not reach the setpoint at a room due to the lower cooling performance caused by external factor such as the outdoor temperature change, signal is output to tell the attainment status of setpoint.

Function setting	External Input and Output PCB	External output		Output signal	Command
	Rotary switch				
60-12	D	Output of indoor unit	CN47	On → Off	Normal
				Off → On	Setpoint attainment

Output signal	Condition
Off	Reached the setpoint. ($T_r \leq T_{sa} + 1^\circ\text{F}$ [0.5°C])
On	Unreached the setpoint. ($T_r > T_{sa} + 5^\circ\text{F}$ [2.5°C]) However, even if the setpoint unreached, the signal will not be output for 7 minutes after power is turned on.

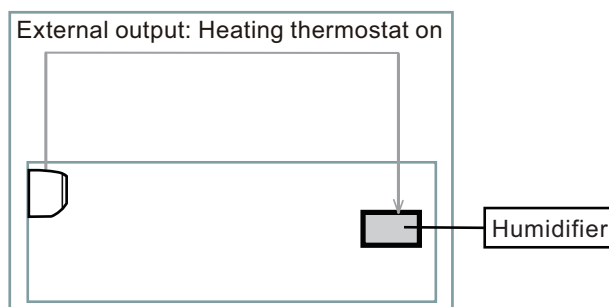


*: When starting operation or resetting, judges the zone to descending direction.

■ 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	

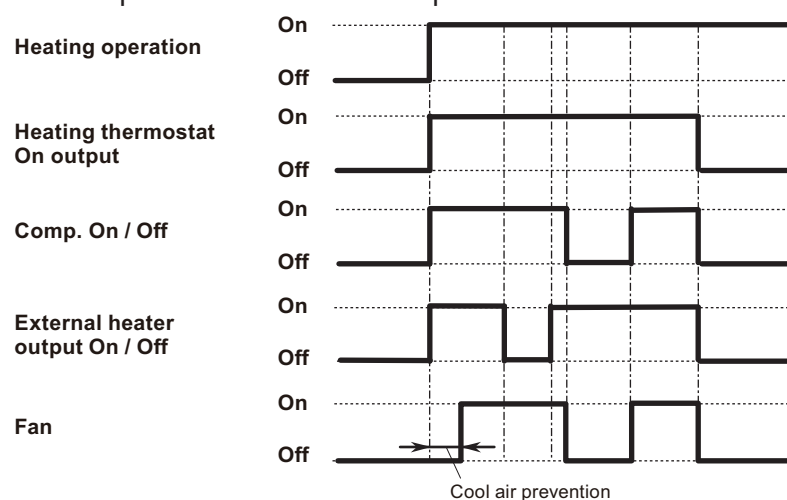
• Example of individual connection



• 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.



5. Check and test

5-1. Check run

- The check run is a function to screen and detect any wiring errors.
- After carrying out the check run, you can use the automatic wiring correction function to correct the wiring.
- Normal operation is possible without using the check run. In this case, use the test run or forced cooling function of the indoor unit to confirm any wiring errors.

■ Things to confirm before starting the check run

To ensure safety, check that the following work, inspections and operations have been completed.

Check item		Check column
1	Check that all work on the piping connecting the outdoor unit, indoor units has been completed.	
2	Check that all work on the wiring connecting the outdoor unit, indoor units has been completed.	
3	Is there a gas leakage? (At pipe connections [flange connections and brazed areas])	
4	Is the system charged with the specified volume of refrigerant?	
5	Is a breaker installed at the power supply cable of outdoor unit?	
6	Are the wires connected to the terminals without looseness, and in accordance with the specifications?	
7	Is the 3-way valve of the outdoor unit open? (Gas pipe and liquid pipe)	
8	Is the power supply connected for more than 12 hours?	

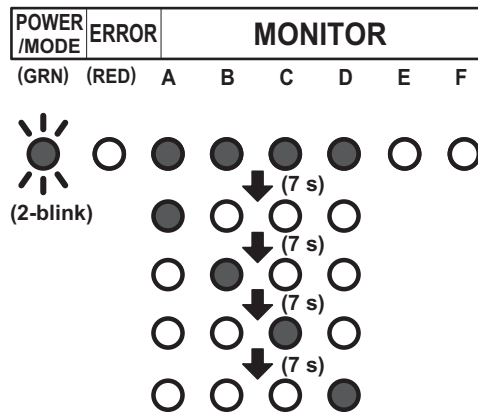
■ Restrictions applicable when performing the check run

- When the check run starts, all indoor units connected to the outdoor unit will start to run automatically. During the check run, you cannot check the operation of the indoor units separately. After the check run, check the operation of the indoor units separately in normal operation.
- The check run can be used when the temperature is within the operable temperature of the air conditioner.
- In the check run, the air conditioner will automatically switch between cooling and heating depending on the external temperature and internal temperature.
- The check run can be completed in about 30 minutes (cooling) or about 1 hour (heating), but may take more depending on the external and internal temperature conditions etc.
- Do not conduct the check run with all the windows in the room closed. Otherwise the room temperature could get too low or too high.
- Depending on the difference of the room temperature of each room, a judgment may be impossible.
- Check run is a special operation so there may be a noise louder than the normal refrigerant flow sound or a creaking noise.

4. After the check run is completed, results will be displayed. Fill the displayed results in the result table accordingly.

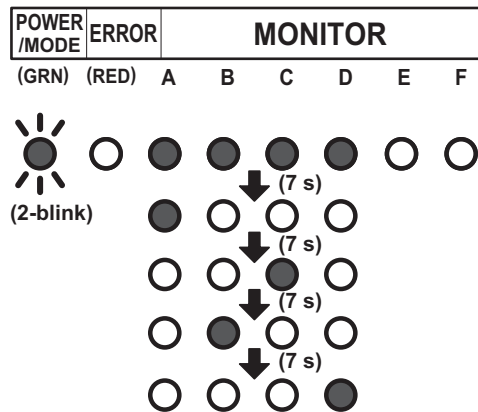
• **If the connection is correct (Example: When 4 indoor units are connected)**

After the number of connected units are displayed, the LED for each unit will light up in order from A to D.



• **If the connection is incorrect (Example: When connection of B and C of the 4 units are reversed)**

After the number of connected units are displayed, B and C will light up in reverse.



NOTES:

- Automatic wiring correction will not be completed if the power supply is disconnected while displaying the results. To confirm the automatic wiring correction, be sure to carry out step 5.
- If frost is formed on the outdoor unit while displaying the results, automatic defrost function will be operated. Proceed to step 5 after the defrost function is finished.

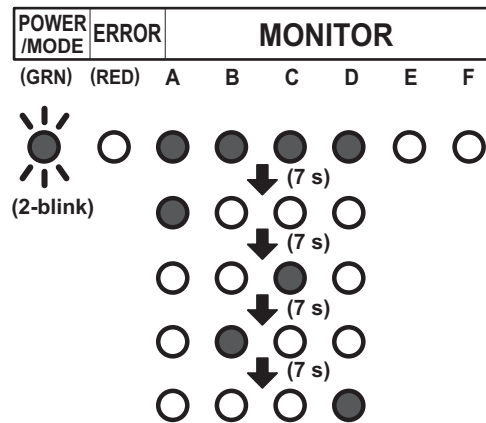
[How to record the contents]

- Fill the displayed results according to the following example.

Example: When piping A to D is connected but the wires for B and C are connected in reverse.

<Displayed results>

The LEDs will light up in 7 second intervals in the following order.



<Example of result table>

- a. Write a ● where the LEDs light up in the order that they light up.

	A	B	C	D	E	F
1	●	●	●	●	○	○
2	●	○	○	○	○	○
3	○	○	●	○	○	○
4	○	●	○	○	○	○
5	○	○	○	●	○	○
6	○	○	○	○	○	○
7	○	○	○	○	○	○

- b. Based on the results of step (a), record as follows.

- Trace the dotted circle with a pen if multiple places light up.

A	B	C	D	E	F
○	○	○	○	○	○

- Write the order from A to D in which the LEDs lit up inside the circle.

A	B	C	D	E	F
Ⓐ	Ⓒ	Ⓑ	Ⓓ	○	○

c. Select the correction method.



Correct the wiring manually.*2
Proceed to step 6.

Use the Automatic wiring correction function.*1
Proceed to step 5.

Write down the same results in the label on the reverse side of the service panel.

The results recorded are needed at the time of servicing.

<Result Table>

	A	B	C	D	E	F
1	○	○	○	○	○	○
2	○	○	○	○	○	○
3	○	○	○	○	○	○
4	○	○	○	○	○	○
5	○	○	○	○	○	○
6	○	○	○	○	○	○
7	○	○	○	○	○	○

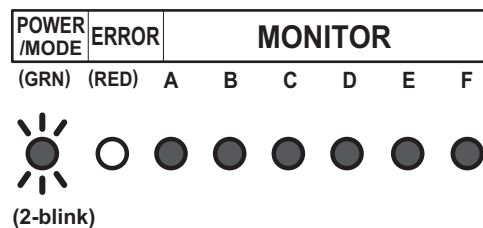
A	B	C	D	E	F
○	○	○	○	○	○

NOTES:

- *1: By using this function, the wiring is automatically corrected according to the piping.
- *2: When correcting the wiring manually, please disconnect the power supply or turn off the breaker during results display, and then change the wiring manually according to the obtained test results.

For example, in Example 1, the wirings connected to the terminals B and C is to be exchanged manually.

- During results display, press the CHECK switch for 3 seconds or more.
After LEDs A to F have lit in turn, all LEDs will light up indicating that the automatic wiring correction is completed.



- Disconnect the power supply or turn off the breaker and wait 10 minutes then turn the power back on and perform test run.

NOTE: If you do not disconnect the power supply or turn off the breaker, normal operation is not possible.

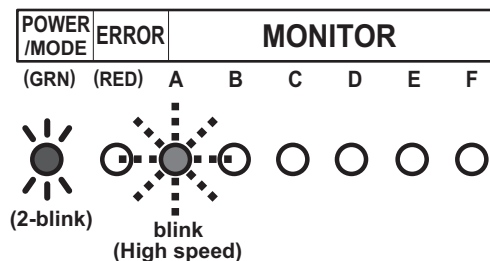
Notices:

- If an error occurs during check run it will be suspended. Correct the error and start check run again.
- After the check run, if automatic wiring correction is carried out, the indoor unit's position will be modified to match the piping. (Note that the display of the optional remote controller changes.)
- If you start check run again after the automatic wiring correction is finished, the modification will be reset.

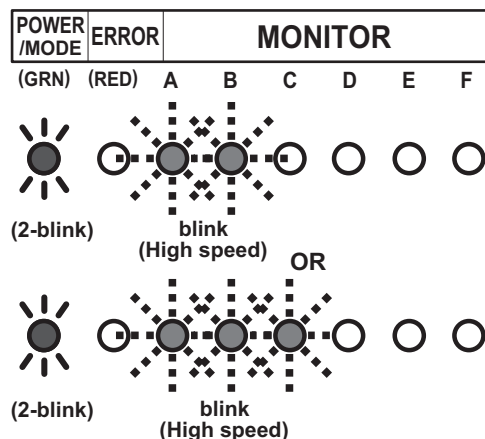
■ Failure indication of check-run judgment

The check run stops when there is an error, and the LED shows the relevant error indication. When you encounter the errors described here, perform checking by using the cooling test run of the indoor unit.

• Temperature out of range judgment



• Wiring/piping number difference



■ Redisplaying the results of check run

- When checking the content of automatic wiring correction, push the CHECK switch. The results of the check run is displayed. You can compare the result that is recorded in step (4) of Chapter 5-1-3. ["Operating procedure for check run"](#) on page 05-108.
- If the automatic wiring correction is not completed, the POWER/MODE LED blinks twice and the MONITOR LED turns off.

■ Memory resetting of automatic wiring correction

⚠ CAUTION

When relocating the unit, reset the memory beforehand, or the unit may not function normally.

- Push the CHECK switch.
The LED lights as shown in ["Redisplaying the results of check run"](#) on page 05-112.
- When the LED is on, press the CHECK switch for more than 3 seconds.
- The LEDs from A to F light in sequence, and then all LEDs light to indicate the completion of the memory resetting of automatic wiring correction.
- Disconnect the power supply or turn off the breaker.

5-2. Test run

⚠ CAUTION

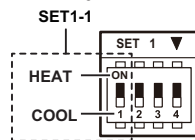
Always connect the power supply 12 hours prior to the start of the operation in order to protect the compressor.

1. Indoor unit
 - a. Is the drain normal?
 - b. Is there any abnormal noise and vibration during operation?
 2. Outdoor unit
 - a. Is there any abnormal noise and vibration during operation?
 - b. Will noise, wind, or drain water from the unit disturb the neighbors?
 - c. Is there any gas leakage?
- Do not operate the air conditioner in the test running state for a long time.

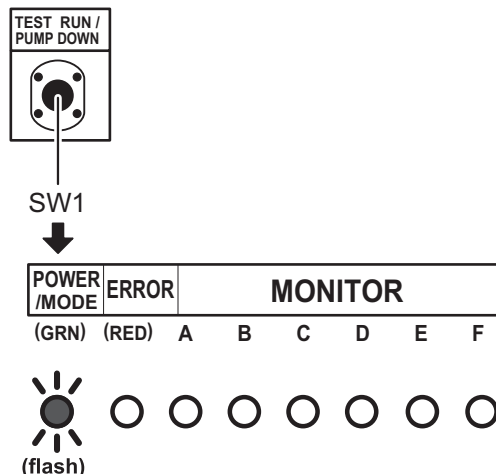
■ Test run method

Be sure to temporarily disconnect the power supply or turn off the breaker before changing the DIP switch settings.

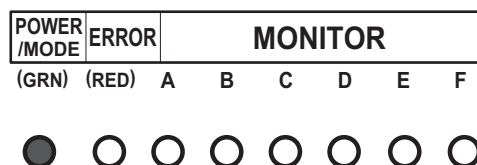
1. Check the 3-way valves (both at the liquid side and gas side) are opened. Confirm that the DIP switch SET1-2 is switched off.
2. Set the operation mode to COOL or HEAT. When switching the DIP switch SET1-1 between HEAT and COOL, disconnect the power supply or turn off the circuit breaker beforehand.



- In the first test run, be sure to set the operation mode to COOL.
 - The operation mode cannot be switched between COOL and HEAT during the test run. To switch the operation mode between COOL and HEAT, stop the test run, switch the operation mode, and then start the test run again.
3. Push TEST RUN switch for more than 3 seconds. The POWER / MODE LED flashes once.



4. Confirm operating status.
5. Push TEST RUN switch for more than 3 seconds.

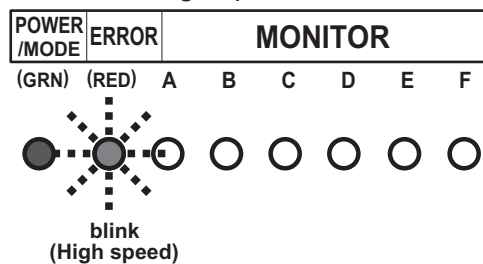


POWER/MODE LED will turn on, and test run stops.

5-3. Error code

If an error occurs, the LED lights to inform the relevant location and the code.

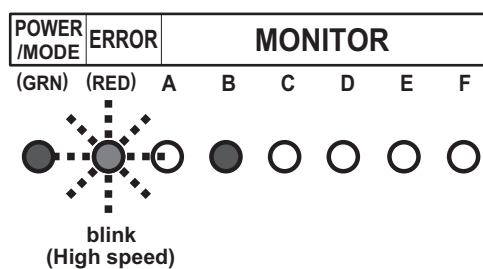
When error occurs, the error LED blinks at high speed.



■ Error location

LEDs A to F of MONITOR light and indicate the location of the error. In the case of an overall error, LEDs A to F of MONITOR do not light.

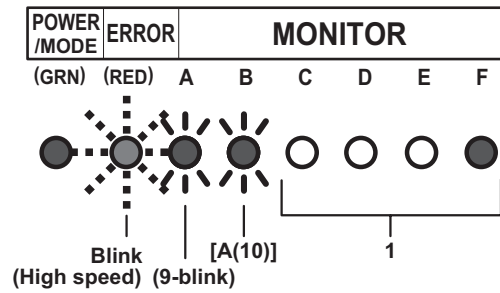
Example: Coil error on indoor unit B



■ Error code display

While the error is occurring, briefly push the SW1. The error code is displayed.

Example: Coil error (Error cord = 9A.1)



Display mode

LED on:

LED off:

Blink:
(0.5s Light on / 0.5s Light off)

Number of blinking: ()

For MONITOR (A and B)

A: 10-blink

C: 11-blink

F: 12-blink

J: 13-blink

P: 14-blink

U: 15-blink

C	D	E	F	
				1
				2
				3
				4
				5
				6
				7
				8
				9
				A
				C
				F
				J
				P
				U

Error code	Error type
11.3	Serial communication error
11.4	Serial communication error during operation
16.5	Communication error between controller and outdoor unit
22.1	Indoor unit capacity error
23.1	Connection prohibited (Series error)
5U.1	Indoor unit error
62.1	PCB model information error
62.3	EEPROM access error
62.8	EEPROM data corruption error
63.1	Inverter error
65.3	IPM error (Trip terminal L error)
71.1	Discharge temp. sensor error
72.1	Compressor temp. sensor error
73.2	Heat exchanger middle temp. sensor error
73.3	Heat exchanger liquid temp. sensor error
74.1	Outdoor temp. sensor error
75.1	Suction gas temp. sensor error
76.1	Valve sensor error
76.2	
77.1	Heat sink temp. sensor error
84.1	Current sensor 1 error (stoppage permanently)
86.1	Discharge pressure sensor error
86.4	High pressure switch 1 error
94.1	Trip detection
95.1	Compressor motor control error (stoppage permanently)
97.3	Fan motor 1 error (Duty error)
98.3	Fan motor 2 error (Duty error)
99.1	4-way valve error
9A.1	Coil 1 (expansion valve 1) error
A1.1	Discharge temperature 1 error (stoppage permanently)
A3.1	Compressor 1 temperature error

5-4. Pump down

⚠ WARNING

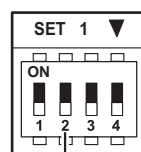
During the pump down operation, make sure that compressor is off before you remove the refrigerant pipe. Do not remove the connection pipe while the compressor is in operation with valve open. This may cause abnormal pressure in the refrigeration cycle that leads to breakage and even injury.

■ Pump down operation

When moving or discarding the air conditioner, in order to consider the environment and avoid the discharge of refrigerant to the atmosphere, pump down according to the following procedure.

1. Connect the pressure gauge to the charging port.
2. Change the DIP switch on the board (SET1-2) to ON.

NOTE: Disconnect the power supply firmly on the breaker before changing the DIP switch settings.



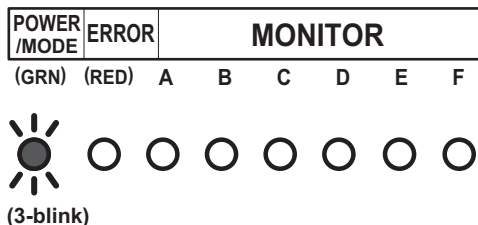
DIP switch
(SET1-2)

3. To start operation, push the PUMP DOWN switch (SW1) for 3 seconds or push the switch after the power has been on for 3 minutes.



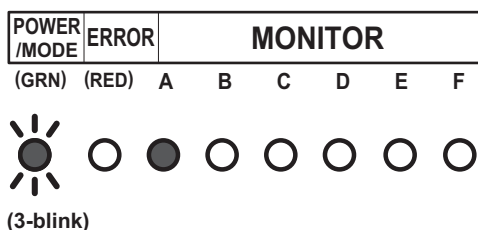
Push switch (SW1)

During pump down, the LED (POWER/MODE) blinks 3 times consecutively.



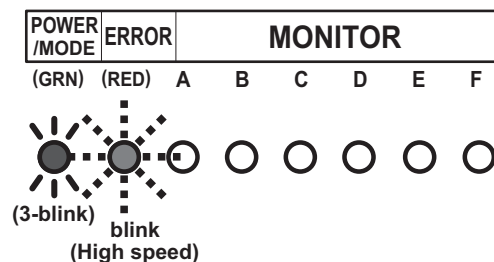
NOTE: If the PUMP DOWN switch (SW1) is pushed while the compressor is in operation, the compressor stops and the operation restart after about 3 minutes.

4. Close the liquid pipe valve.
5. When the value between 7.3 psi and 0 psi (0.05 MPa to 0 MPa) is shown, close the gas pipe valve.
6. Stop the pump down operation by pushing the PUMP DOWN switch (SW1) for 3 seconds. The LED light as follows.



7. Disconnect the power supply or turn off the breaker.

- NOTE:**
- Even if the pump down operation is not stopped by pushing the switch as in step 6, the operation stops automatically after 15 minutes, and the LED light as follows.



- After completing the pump down operation, disconnect the power supply or turn off the breaker.
- If the pump down operation still continues, open the liquid pipe valve. Then perform the procedure again starting from step 3.
- To cancel the pump down operation, push the PUMP DOWN switch (SW1) again. The indication of the LED returns to the original state which is before starting the pump down operation.
(POWER/MODE LED: On)
- The pump down may stop before completion due to an error. To complete the pump down operation, correct the error, open the liquid pipe valve and then start from step 1 again. Otherwise, the refrigerant can be recovered from the service port.