

AIR CONDITIONER

Wall mounted type

SERVICE MANUAL

INDOOR



WHS09WMA21S
WHS09WMA11S



WHS12WMA21S
WHS12WMA11S



WHS18WMA21S



WHS24WMA21S



WHS30WMA21S
WHS36WMA21S

OUTDOOR



WHS09SZA21S
WHS09SZA11S
WHS12SZA21S
WHS12SZA11S



WHS18SZA21S



WHS24SZA21S



WHS30SZA21S
WHS36SZA21S

Notices:

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

Please Read Before Starting

This air conditioning system meets strict safety and operating standards. As the installer or service person, it is an important part of your job to install or service the system, so it operates safely and efficiently.

For safe installation and trouble-free operation, you must:

- Carefully read this instruction booklet before beginning.
- Follow each installation or repair step exactly as shown.
- Observe all local, state, and national electrical codes.
- Pay close attention to all warning and caution notices given in this manual.

**WARNING**

This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.

**CAUTION**

This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

If Necessary, Get Help

These instructions are all you need for most installation sites and maintenance conditions. If you require help for a special problem, contact our sales/service outlet or your certified dealer for additional instructions.

In Case of Improper Installation

The manufacturer shall in no way be responsible for improper installation or maintenance service, including failure to follow the instructions in this document.

SPECIAL PRECAUTIONS**When Wiring****WARNING**

ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. ONLY A QUALIFIED, EXPERIENCED ELECTRICIAN SHOULD ATTEMPT TO WIRE THIS SYSTEM.

- Do not supply power to the unit until all wiring and tubing are completed or reconnected and checked.
- Highly dangerous electrical voltages are used in this system. Carefully refer to the wiring diagram and these instructions when wiring. Improper connections and inadequate grounding can cause accidental injury or death.
- Ground the unit following local electrical codes.
- Connect all wiring tightly. Loose wiring may cause overheating at connection points and a possible fire hazard.

When Transporting

Be careful when picking up and moving the indoor and outdoor units. Get a partner to help, and bend

your knees when lifting to reduce strain on your back. Sharp edges or thin aluminum fins on the air conditioner can cut your fingers.

When Installing

● **In a Ceiling or Wall**

Make sure the ceiling/wall is strong enough to hold the unit's weight. It may be necessary to construct a strong wood or metal frame to provide added support.

● **In a Room**

Properly insulate any tubing run inside a room to prevent "sweating" that can cause dripping and water damage to walls and floors.

● **In Moist or Uneven Locations**

Use a raised concrete pad or concrete blocks to provide a solid, level foundation for the outdoor unit. This prevents water damage and abnormal vibration.

● **In an Area with High Winds**

Securely anchor the outdoor unit down with bolts and a metal frame. Provide a suitable air baffle.

● **In a Snowy Area (for Heat Pump-type Systems)**

Install the outdoor unit on a raised platform that is higher than drifting snow. Provide snow vents.

When Connecting Refrigerant Tubing

△ Use the flare method for connecting tubing.

△ Apply refrigerant lubricant to the matching surfaces of the flare and union tubes before connecting them, then tighten the nut with a torque wrench for a leak free connection.

△ Check carefully for leaks before starting the test run.

When Servicing

△ Turn the power OFF at the main power box (mains) before opening the unit to check or repair electrical parts and wiring.

△ Keep your fingers and clothing away from any moving parts.

△ Clean up the site after you finish, remembering to check that no metal scraps or bits of wiring have been left inside the unit being serviced.

Others



△ Ventilate any enclosed areas when installing or testing the refrigeration system. Escaped refrigerant gas, on contact with fire or heat, can produce dangerously toxic gas.

△ Confirm upon completing installation that no refrigerant gas is leaking. If escaped gas comes in contact with a stove, gas water heater, electric room heater or other heat source, it can produce dangerously toxic gas.

NOTE:

The figure, size and parameter of the product may not be identical with the service manual, please take the actual product as the standard.

1. Specifications

Type				Wall mounted							
				Inverter, Heat pump							
Model name				WHS09WMA21S	WHS12WMA21S	WHS18WMA21S					
Power supply				208/230 V ~ 60 Hz							
Power supply intake				Outdoor unit							
Available voltage range				198—253 V							
Capacity	Cooling	Rated	Btu/h	9,000	12,000	18,000					
		Min.—Max.		4,500—10,000	5,500—13,500	6,500—19,500					
	Heating	Rated		10,000	12,500	20,000					
		Min.—Max.		4,500—10,000	5,500—13,500	6,000—21,500					
	Heating (17°F)* ¹	Rated		4,500	7,500	11,600					
Heating (5°F)* ²	Max.	5,019	7,633	10,761							
Input power	Cooling	Rated	kW	0.825	1.121	1.70					
	Heating			0.88	1.11	2.00					
Current	Cooling	Rated	A	3.8	5.0	7.4					
	Heating			4.0	5.0	9.0					
EER2	Cooling	Btu/hW		10.91	10.70	10.59					
COP2	Heating			11.36	11.60	10.00					
SEER2				16.0	16.0	17.0					
HSPF2				8.0							
Power factor	Cooling		%	98	97						
	Heating			98	97						
Moisture removal			pints/h (L/h)	1.9 (0.9)	2.5 (1.2)	4.2 (2.0)					
Maximum operating current* ³	Cooling		A	7.0	7.5	12.0					
	Heating			7.0	7.5	12.0					
Fan	Cooling	Airflow rate	CFM (m ³ /h)	HIGHER	400 (680)	412 (700)	592 (1,005)				
				HIGH	341 (580)	380 (645)	530 (901)				
				MED	283 (480)	351 (596)	441 (750)				
				LOW	224 (380)	276 (469)	388 (660)				
				LOWER	207 (352)	250 (424)	341 (580)				
				HIGHER	400 (680)	412 (700)	592 (1,005)				
	Heating				HIGH	341 (580)	380 (645)	530 (901)			
					MED	283 (480)	351 (596)	441 (750)			
					LOW	224 (380)	276 (469)	388 (660)			
					LOWER	207 (352)	250 (424)	341 (580)			
					Type × Qty			Crossflow fan × 1			
					Motor output			W	14	35	
Sound pressure level* ⁴	Cooling		dB (A)	HIGHER	39	40	45				
				HIGH	36		43				
				MED	33		40				
				LOW	29	30	38				
				LOWER	26		35				
				HIGHER	39	40	45				
	Heating				HIGH	36		43			
					MED	33		40			
					LOW	29	30	38			
					LOWER	26		35			
					Dimensions (H × W × D)			in (mm)	11-9/16 × 21-5/8 × 1-1/16 (294 × 550 × 27.2)	11-9/16 × 24-7/16 × 1-1/16 (294 × 620 × 27.2)	14-7/8 × 27-3/4 × 1-1/16 (378 × 705 × 27.2)
					Fin pitch			FPI	18		
Rows × Stages				2 × 14		2 × 18					
Pipe type				Copper							
Fin type				Aluminum							
Dimensions (H × W × D)	Net		in (mm)	10-5/8 × 29-5/16 × 8-7/16 (270 × 745 × 214)	10-5/8 × 32-1/16 × 8-7/16 (270 × 815 × 214)	12-3/8 × 36 × 9-5/16 (315 × 915 × 236)					
	Gross			13-3/16 × 31-1/2 × 10-7/16 (335 × 800 × 265)	13-3/16 × 34-1/4 × 10-7/16 (335 × 870 × 265)	15-3/8 × 39-3/8 × 12-3/8 (390 × 1,000 × 315)					
Weight	Net		lb (kg)	19 (8.5)	20 (9)	28 (12.5)					
	Gross			22 (10)	24 (11)	32 (14.5)					
Connection pipe	Size	Liquid	in (mm)	Ø 1/4 (Ø 6.35)							
		Gas		Ø 3/8 (Ø 9.52)	Ø 1/2 (Ø 12.7)						
Method				Flare							
Remote controller type				Wireless (Wired [option])							

NOTES:

- Specifications are based on the following conditions:
 - Cooling: Indoor temperature of 80°FDB (26.67°CDB) /67°FWB (19.44°CWB), and outdoor temperature of 95°FDB (35°CDB) / 75°FWB (23.9°CWB).
 - Heating: Indoor temperature of 70°FDB (21.11°CDB) /59°FWB (15.56°CWB), and outdoor temperature of 47°FDB (8.33°CDB) /43°FWB (6.11°CWB).
 - *1: Heating (17°F): Indoor temperature of 70°FDB (21.11°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 is maximum value when operated within the operation range.
- *4: Sound pressure level:
 - Measured values in manufacturer's anechoic chamber.
 - Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

M condition						
Model name				WHS09WMA21S	WHS12WMA21S	WHS18WMA21S
Capacity	Cooling	Rated	Btu/h	9,000	12,000	18,000
		Min.—Max.		4,500—10,000	5,500—13,500	6,500—19,500
	Heating	Rated		10,000	12,500	20,000
		Min.—Max.		4,500—10,000	5,500—13,500	6,000—21,500
	Heating (17°F)*	Rated		4,500	7,500	11,600
Input power	Cooling	Rated	kW	0.857	1.121	1.651
	Heating			0.86	1.121	2.00
Current	Cooling	Rated	A	3.8	5.0	7.4
	Heating			4.0	5.0	9.0
EER	Cooling		Btu/hW	10.50	10.70	10.90
COP	Heating			11.63	11.60	10.00
SEER				16.3	16.7	17.6
HSPF				9.1	9.0	10.1
NOTES: Specifications are based on the following conditions: <ul style="list-style-type: none"> • Cooling: Indoor temperature of 80°FDB (26.67°CDB)/67°FWB (19.44°CWB), and outdoor temperature of 95°FDB (35°CDB)/75°FWB (23.9°CWB). • Heating: Indoor temperature of 70°FDB (21.11°CDB)/59°FWB (15.56°CWB), and outdoor temperature of 47°FDB (8.33°CDB)/43°FWB (6.11°CWB). • *: Heating (17°F): Indoor temperature of 70°FDB (21.11°CDB)/60°FWB (15.56°CWB), and outdoor temperature of 17°FDB (-8.33°CDB)/15°FWB (-9.44°CWB). • Test conditions are based on AHRI 210/240 2017. • Pipe length: 25 ft (7.5 m), Height difference: 0 ft (0 m). (Between outdoor unit and indoor unit.) 						

Type				Wall mounted							
				Inverter, Heat pump							
Model name				WHS24WMA21S	WHS30WMA21S	WHS36WMA21S					
Power supply				208/230 V ~ 60 Hz							
Power supply intake				Outdoor unit							
Available voltage range				198—253 V							
Capacity	Cooling	Rated	Btu/h	24,000	30,000	35,000					
		Min.—Max.		8,000—26,500	11,500—33,500	12,000—36,000					
	Heating	Rated		24,400	31,000	35,000					
		Min.—Max.		8,000—26,500	11,500—33,500	12,000—36,000					
	Heating (17°F)*1	Rated		13,000	16,000	17,000					
Heating (5°F)*2	Max.	12,102	17,432	15,361							
Input power	Cooling	Rated	kW	2.353	3.00	4.20					
		Min.—Max.		0.46—2.99	—	—					
	Heating	Rated		2.29	2.839	3.50					
		Min.—Max.		0.46—2.99	—	—					
Current	Cooling	Rated	A	10.5	12.8	18.5					
	Heating			10.4	12.0	16.0					
EER2	Cooling	Btu/hW		10.20	10.00	8.33					
COP2	Heating			10.58	10.39	10.00					
SEER2				16.5	18.5	16.5					
HSPF2				8.0	9.0	7.5					
Power factor					%	95	98	98			
Moisture removal	Cooling		pints/h (L/h)	5.1 (2.4)	6.3 (3.0)	6.8 (3.2)					
	Heating			13.0	15.0	19.0					
Maximum operating current*3	Cooling		A	13.0	15.0	19.0					
	Heating			13.0	15.0	19.0					
Fan	Airflow rate	Cooling	HIGHER	CFM (m³/h)	636 (1,080)	1,107 (1,880)	1,089 (1,850)				
			HIGH		577 (980)	845 (1,435)	853 (1,450)				
			MED		483 (820)	706 (1,200)	706 (1,200)				
		LOW	447 (760)		589 (1,000)	589 (1,000)					
		LOWER	383 (650)		500 (850)	500 (850)					
		HIGHER	636 (1,080)		1,107 (1,880)	1,089 (1,850)					
	Heating	HIGH	577 (980)	845 (1,435)	853 (1,450)						
		MED	483 (820)	706 (1,200)	706 (1,200)						
		LOW	447 (760)	589 (1,000)	589 (1,000)						
		LOWER	383 (650)	500 (850)	500 (850)						
		Type × Qty			Crossflow fan × 1						
		Motor output			W	35	70	50			
Sound pressure level*4	Cooling		dB (A)	HIGHER	48	50					
				HIGH	45	45					
				MED	40	43					
				LOW	38	40					
				LOWER	36	38					
				HIGHER	48	50					
	Heating			dB (A)	HIGH	45	45				
					MED	40	43				
					LOW	38	40				
					LOWER	36	38				
					Dimensions (H × W × D)			in (mm)	14-7/8 × 33-1/8 × 1-1/16 (378 × 842 × 27.2)	16-9/16 × 38-3/4 × 1-1/16 (420 × 985 × 27.6)	Main: 16-9/16 × 38-3/4 × 1-1/16 (420 × 985 × 27.6) Sub1: 2-9/16 × 38-3/4 × 9/16 (65 × 985 × 13.6) Sub2: 2-9/16 × 38-3/4 × 9/16 (65 × 985 × 13.6)
					Fin pitch			FPI	18		
Rows × Stages				2 × 18	2 × 22	Main: 2 × 22 Sub1: 1 × 4 Sub2: 1 × 4					
Pipe type				Copper							
Fin type				Aluminum							
Dimensions (H × W × D)	Net		in (mm)	12-3/8 × 42-11/16 × 9-5/16 (315 × 1,085 × 236)	14-3/16 × 50-3/8 × 10-1/4 (360 × 1,280 × 260)						
	Gross			15-3/8 × 46-1/16 × 12-3/8 (390 × 1,170 × 315)	17-1/8 × 54-1/2 × 12-13/16 (435 × 1,385 × 325)						
Weight	Net		lb (kg)	31 (14)	40 (18)	41 (18.5)					
	Gross			37 (17)	47 (21.5)	49 (22)					
Connection pipe	Size	Liquid	in (mm)	Ø 3/8 (Ø 9.52)							
		Gas		Ø 5/8 (Ø 15.88)							
	Method			Flare							
Remote controller type				Wireless (Wired [option])							

NOTES:

- Specifications are based on the following conditions:
 - Cooling: Indoor temperature of 80°FDB (26.67°CDB) /67°FWB (19.44°CWB), and outdoor temperature of 95°FDB (35°CDB) / 75°FWB (23.9°CWB).
 - Heating: Indoor temperature of 70°FDB (21.11°CDB) /59°FWB (15.56°CWB), and outdoor temperature of 47°FDB (8.33°CDB) /43°FWB (6.11°CWB).
 - *1: Heating (17°F): Indoor temperature of 70°FDB (21.11°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 is maximum value when operated within the operation range.
- *4: Sound pressure level:
 - Measured values in manufacturer's anechoic chamber.
 - Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

M condition						
Model name				WHS24WMA21S	WHS30WMA21S	WHS36WMA21S
Capacity	Cooling	Rated	Btu/h	24,000	30,000	35,000
		Min.—Max.		8,000—26,500	11,500—33,500	12,000—36,000
	Heating	Rated		24,400	31,000	35,000
		Min.—Max.		8,000—26,500	11,500—33,500	12,000—36,000
	Heating (17 °F)*	Rated		13,000	16,000	17,000
Input power	Cooling	Rated	kW	2.286	2.90	4.20
		Min.—Max.		0.46—2.99	—	—
	Heating	Rated		2.271	2.70	3.50
		Min.—Max.		0.46—2.99	—	—
	Current	Cooling		Rated	A	10.5
Heating	10.4	12.0	16.0			
EER	Cooling		Btu/hW	10.50	10.34	8.33
COP	Heating			10.74	11.48	10.00
SEER				17.6	18.8	16.4
HSPF				9.8	12.3	8.8
NOTES:						
Specifications are based on the following conditions:						
<ul style="list-style-type: none"> • Cooling: Indoor temperature of 80°FDB (26.67°CDB)/67°FWB (19.44°CWB), and outdoor temperature of 95°FDB (35°CDB)/75°FWB (23.9°CWB). • Heating: Indoor temperature of 70°FDB (21.11°CDB)/59°FWB (15.56°CWB), and outdoor temperature of 47°FDB (8.33°CDB)/43°FWB (6.11°CWB). • *: Heating (17°F): Indoor temperature of 70°FDB (21.11°CDB)/60°FWB (15.56°CWB), and outdoor temperature of 17°FDB (-8.33°CDB)/15°FWB (-9.44°CWB). • Test conditions are based on AHRI 210/240 2017. • Pipe length: 25 ft (7.5 m), Height difference: 0 ft (0 m). (Between outdoor unit and indoor unit.) 						

Type				Wall mounted			
				Inverter heat pump			
Model name				WHS09WMA11S	WHS12WMA11S		
Power supply				115 V ~ 60 Hz			
Power supply intake				Outdoor unit			
Available voltage range				103.5—126.5 V			
Capacity	Cooling	Rated	Btu/h	9,000	12,000		
		Min.—Max.		1,200—10,000	2,500—13,500		
	Heating	Rated		9,500	13,000		
		Min.—Max.		1,200—10,000	2,500—14,500		
	Heating (17°F)*1	Rated		5,000	7,200		
Heating (5°F)*2	Max.	6,299	7,622				
Input power	Cooling	Rated	kW	0.818	1.20		
		Min.—Max.		0.230—1.380	0.287—1.725		
	Heating	Rated		0.837	1.179		
		Min.—Max.		0.230—1.380	0.287—1.725		
Current	Cooling	Rated	A	7.4	10.8		
	Heating			7.4	10.6		
EER2	Cooling			11.00	10.00		
COP2	Heating			12.28	11.20		
SEER2				18.5	17.5		
HSPF2				8.0			
Power factor	Cooling			96	97		
	Heating			98	97		
Moisture removal			pints/h (L/h)	1.9 (0.9)	2.5 (1.2)		
Maximum operating current*3	Cooling			12.0	15.0		
	Heating			12.0	15.0		
Fan	Airflow rate	Cooling	HIGHER	400 (680)	412 (700)		
			HIGH	341 (580)	380 (645)		
			MED	283 (480)	351 (596)		
		LOW	224 (380)	276 (469)			
		LOWER	207 (352)	250 (424)			
		Heating	HIGHER	400 (680)	412 (700)		
	HIGH		341 (580)	380 (645)			
	MED		283 (480)	351 (596)			
	LOW		224 (380)	276 (469)			
	LOWER		207 (352)	250 (424)			
	Type × Qty				Crossflow fan × 1		
	Motor output			W	39		
Sound pressure level*4	Cooling		HIGHER	39	40		
			HIGH		36		
			MED		33		
			LOW		30		
			LOWER		26		
			HIGHER	39	40		
	Heating		HIGH		36		
			MED		33		
			LOW		30		
			LOWER		26		
			Dimensions (H × W × D)		in (mm)	11-9/16 × 21-5/8 × 1-1/16 (294 × 550 × 27.2)	11-9/16 × 24-7/16 × 1-1/16 (294 × 620 × 27.2)
			Fin pitch		FPI	18	
Rows × Stages		2 × 14					
Pipe type		Copper					
Fin type		Aluminum					
Dimensions (H × W × D)	Net	in (mm)	10-5/8 × 29-5/16 × 8-7/16 (270 × 745 × 214)	10-5/8 × 32-1/16 × 8-7/16 (270 × 815 × 214)			
	Gross		13-3/16 × 31-1/2 × 10-7/16 (335 × 800 × 265)	13-3/16 × 34-1/4 × 10-7/16 (335 × 870 × 265)			
Weight	Net	lb (kg)	19 (8.5)	20 (9)			
	Gross		22 (10)	24 (11)			
Connection pipe	Size	Liquid Gas	in (mm)	Ø 1/4 (Ø 6.35)			
	Method			Ø 3/8 (Ø 9.52)			
Remote controller type				Flare			
				Wireless (Wired [option])			

NOTES:

- Specifications are based on the following conditions:
 - Cooling: Indoor temperature of 80°FDB (26.67°CDB) /67°FWB (19.44°CWB), and outdoor temperature of 95°FDB (35°CDB) / 75°FWB (23.9°CWB).
 - Heating: Indoor temperature of 70°FDB (21.11°CDB) /59°FWB (15.56°CWB), and outdoor temperature of 47°FDB (8.33°CDB) /43°FWB (6.11°CWB).
 - *1: Heating (17°F): Indoor temperature of 70°FDB (21.11°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 is maximum value when operated within the operation range.
- *4: Sound pressure level:
 - Measured values in manufacturer's anechoic chamber.
 - Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.

M condition							
Model name			WHS09WMA11S	WHS12WMA11S			
Capacity	Cooling	Rated	Btu/h	9,000	12,000		
		Min.—Max.		1,200—10,000	2,500—13,500		
	Heating	Rated		9,500	13,000		
		Min.—Max.		1,200—10,000	2,500—14,500		
	Heating (17 °F)*	Rated		5,000	7,200		
	Input power	Cooling		Rated	kW	0.818	1.20
Min.—Max.			0.230—1.380	0.287—1.725			
Heating		Rated	0.837	1.179			
		Min.—Max.	0.230—1.380	0.287—1.725			
Current		Cooling	Rated	A		7.4	10.8
		Heating				7.4	10.6
EER	Cooling	Btu/hW	11.00	10.00			
COP	Heating		11.95	11.20			
SEER			19.3	17.9			
HSPF			10.5	9.35			

NOTES:
Specifications are based on the following conditions:

- Cooling: Indoor temperature of 80°FDB (26.67°CDB)/67°FWB (19.44°CWB), and outdoor temperature of 95°FDB (35°CDB)/75°FWB (23.9°CWB).
- Heating: Indoor temperature of 70°FDB (21.11°CDB)/59°FWB (15.56°CWB), and outdoor temperature of 47°FDB (8.33°CDB)/43°FWB (6.11°CWB).
- *: Heating (17°F): Indoor temperature of 70°FDB (21.11°CDB)/60°FWB (15.56°CWB), and outdoor temperature of 17°FDB (-8.33°CDB)/15°FWB (-9.44°CWB).
- Test conditions are based on AHRI 210/240 2017.
- Pipe length: 25 ft (7.5 m), Height difference: 0 ft (0 m). (Between outdoor unit and indoor unit.)

1. Specifications

Type		Inverter heat pump			
Model name		WHS09SZA21S	WHS12SZA21S	WHS18SZA21S	
Power supply		208/230 V ~ 60 Hz			
Available voltage range		198—253 V			
Fan	Airflow rate	CFM (m ³ /h)	942 (1,600)	942 (1,600)	1,177 (2,000)
	Type × Qty	Propeller fan × 1			
Motor output		W	28		41
Sound pressure level*		dB (A)	54		56
Heat exchanger type	Dimensions (H × W × D)	in (mm)	18-3/16 × 27-3/8 × 1-7/16 (462 × 695 × 36.4)	18-3/16 × 26-15/16 × 11/16 (462 × 684 × 18.2) 18-3/16 × 25-13/16 × 11/16 (462 × 655 × 18.2)	21-1/2 × 33-1/8 × 11/16 (546 × 842 × 18.2) 21-1/2 × 32 × 11/16 (546 × 813 × 18.2)
	Fin pitch	FPI	18		
	Rows × Stages	2 × 22		2 × 26	
	Pipe type	Copper			
Compressor		Type	DC rotary		
Refrigerant		Type	R410A		
Charge		lb oz	1 lb 13 oz	2 lb 3 oz	3 lb 1 oz
		g	830	1,000	1,400
Dimensions (H × W × D)	Net	in (mm)	19 × 28-1/8 × 9-7/16 (482 × 715 × 240)		23-1/16 × 31-7/8 × 11 (585 × 810 × 280)
	Gross	20-7/8 × 32-11/16 × 13-3/8 (530 × 830 × 340)		25-3/16 × 37 × 15-3/16 (640 × 940 × 385)	
Weight	Net	lb (kg)	55 (25)	60 (27)	86 (39)
	Gross	60 (27)		66 (30)	93 (42)
Connection pipe	Size	Liquid	Ø 1/4 (Ø 6.35)		
		Gas	Ø 3/8 (Ø 9.52)		Ø 1/2 (Ø 12.7)
	Method	Flare			
	Pre-charge length	ft (m)		25 (7.5)	
Max. length	66 (20)				
Operation range	Cooling	°F (°C)	32 to 115 (0 to 46)		
	Heating	-4 to 75 (-20 to 24)			
NOTES:					
<ul style="list-style-type: none"> Specifications are based on the following conditions: <ul style="list-style-type: none"> Cooling: Indoor temperature of 80°FDB (26.67°CDB) / 67°FWB (19.44°CWB), and outdoor temperature of 95°FDB (35°CDB) / 75°FWB (23.9°CWB). Heating: Indoor temperature of 70°FDB (21.11°CDB) / 59°FWB (15°CWB), and outdoor temperature of 47°FDB (8.33°CDB) / 43°FWB (6.11°CWB). Pipe length: 24 ft 6 in (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. *: Sound pressure level <ul style="list-style-type: none"> Measured values in manufacturer's anechoic chamber. Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here. 					

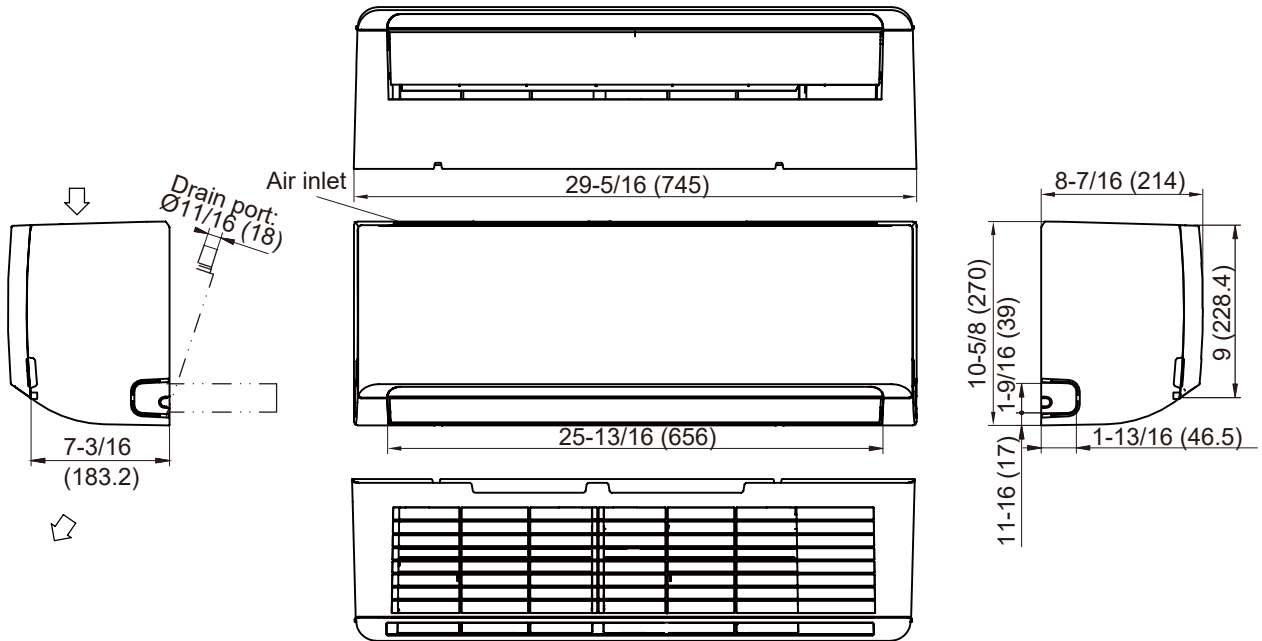
Type			Inverter heat pump		
Model name			WHS24SZA21S	WHS30SZA21S	WHS36SZA21S
Power supply			208/230 V ~ 60 Hz		
Available voltage range			198—253 V		
Fan	Airflow rate	CFM (m ³ /h)	1,648 (2,800)	2,354 (4,000)	
	Type × Qty		Propeller fan × 1		
	Motor output	W	61	70	102
Sound pressure level*		dB (A)	58	60	
Heat exchanger type	Dimensions (H × W × D)	in (mm)	24-13/16 × 35-1/4 × 11/16 (630 × 895 × 18.19)	29-3/4 × 38-3/16 × 11/16 (756 × 970 × 18.19)	29-3/4 × 38-3/16 × 11/16 (756 × 970 × 18.19)
			24-13/16 × 34-1/8 × 11/16 (630 × 867 × 18.19)	29-3/4 × 37-1/16 × 11/16 (756 × 942 × 18.19)	29-3/4 × 37-1/16 × 11/16 (756 × 942 × 18.19)
	Fin pitch	FPI	18	16	
	Rows × Stages		2 × 30	2 × 36	3 × 36
	Pipe type		Copper		
Fin type	Type (Material)	Aluminum			
Compressor	Type	DC rotary			
Refrigerant	Type	R410A			
	Charge	lb oz	3 lb 9 oz	4 lb 9 oz	5 lb 1 oz
		g	1,630	2,070	2,300
Dimensions (H × W × D)	Net	in (mm)	25-9/16 × 33-7/8 × 12-3/16 (650 × 860 × 310)	31-5/16 × 34-13/16 × 14-7/16 (795 × 885 × 366)	
	Gross		28-3/4 × 39-3/16 × 17-1/2 (730 × 995 × 445)	35-1/16 × 41-5/16 × 19-11/16 (890 × 1,050 × 500)	
Weight	Net	lb (kg)	110 (50)	128 (58)	141 (64)
	Gross		119 (54)	139 (63)	152 (69)
Connection pipe	Size	Liquid	Ø 3/8 (Ø 9.52)		
		Gas	Ø 5/8 (Ø 15.88)		
	Method	Flare			
	Pre-charge length	ft (m)	25 (7.5)		
Max. length	66 (20)				
Operation range	Cooling	°F (°C)	32 to 115 (0 to 46)	5 to 115 (-15 to 46)	
	Heating		-4 to 75 (-20 to 24)		
NOTES:					
<ul style="list-style-type: none"> • Specifications are based on the following conditions: <ul style="list-style-type: none"> – Cooling: Indoor temperature of 80°FDB (26.67°CDB) / 67°FWB (19.44°CWB), and outdoor temperature of 95°FDB (35°CDB) / 75°FWB (23.9°CWB). – Heating: Indoor temperature of 70°FDB (21.11°CDB) / 59°FWB (15°CWB), and outdoor temperature of 47°FDB (8.33°CDB) / 43°FWB (6.11°CWB). – Pipe length: 24 ft 6 in (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. • *: Sound pressure level <ul style="list-style-type: none"> – Measured values in manufacturer's anechoic chamber. – Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here. 					

Type			Inverter heat pump	
Model name			WHS09SZA11S	WHS12SZA11S
Power supply			115 V ~ 60 Hz	
Available voltage range			103.5—126.5 V	
Fan	Airflow rate	CFM (m ³ /h)	942 (1,600)	
	Type × Qty		Propeller fan × 1	
	Motor output	W	30	
Sound pressure level*			dB (A)	
Heat exchanger type	Dimensions (H × W × D)	in (mm)	18-3/16 × 27-3/8 × 11/16 (462 × 695 × 18.2) 18-3/16 × 15-3/4 × 11/16 (462 × 400 × 18.2)	18-3/16 × 27-3/8 × 1-7/16 (462 × 695 × 36.4)
		Fin pitch	FPI	18
	Rows × Stages		1.5 × 22	2 × 22
	Pipe type		Copper	
	Fin type	Type (Material)	Aluminum	
Compressor	Type		DC rotary	
Refrigerant	Type		R410A	
	Charge	lb oz	1 lb 14 oz	2 lb 3 oz
		g	840	1,000
Dimensions (H × W × D)	Net	in (mm)	19 × 28-1/8 × 9-7/16 (482 × 715 × 240)	
	Gross		20-7/8 × 32-11/16 × 13-3/8 (530 × 830 × 340)	
Weight	Gross	lb (kg)	66 (30)	71 (32)
Connection pipe	Size	Liquid	Ø 1/4 (Ø 6.35)	
		Gas	Ø 3/8 (Ø 9.52)	
	Method		Flare	
	Pre-charge length	ft (m)	25 (7.5)	
Max. length		66 (20)		
Operation range	Cooling	°F (°C)	5 to 115 (-15 to 46)	
	Heating		-4 to 75 (-20 to 24)	
NOTES:				
<ul style="list-style-type: none"> • Specifications are based on the following conditions: <ul style="list-style-type: none"> – Cooling: Indoor temperature of 80°FDB (26.67°CDB) / 67°FWB (19.44°CWB), and outdoor temperature of 95°FDB (35°CDB) / 75°FWB (23.9°CWB). – Heating: Indoor temperature of 70°FDB (21.11°CDB) / 59°FWB (15°CWB), and outdoor temperature of 47°FDB (8.33°CDB) / 43°FWB (6.11°CWB). – Pipe length: 24 ft 6 in (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. • *: Sound pressure level <ul style="list-style-type: none"> – Measured values in manufacturer's anechoic chamber. – Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here. 				

Dimensions

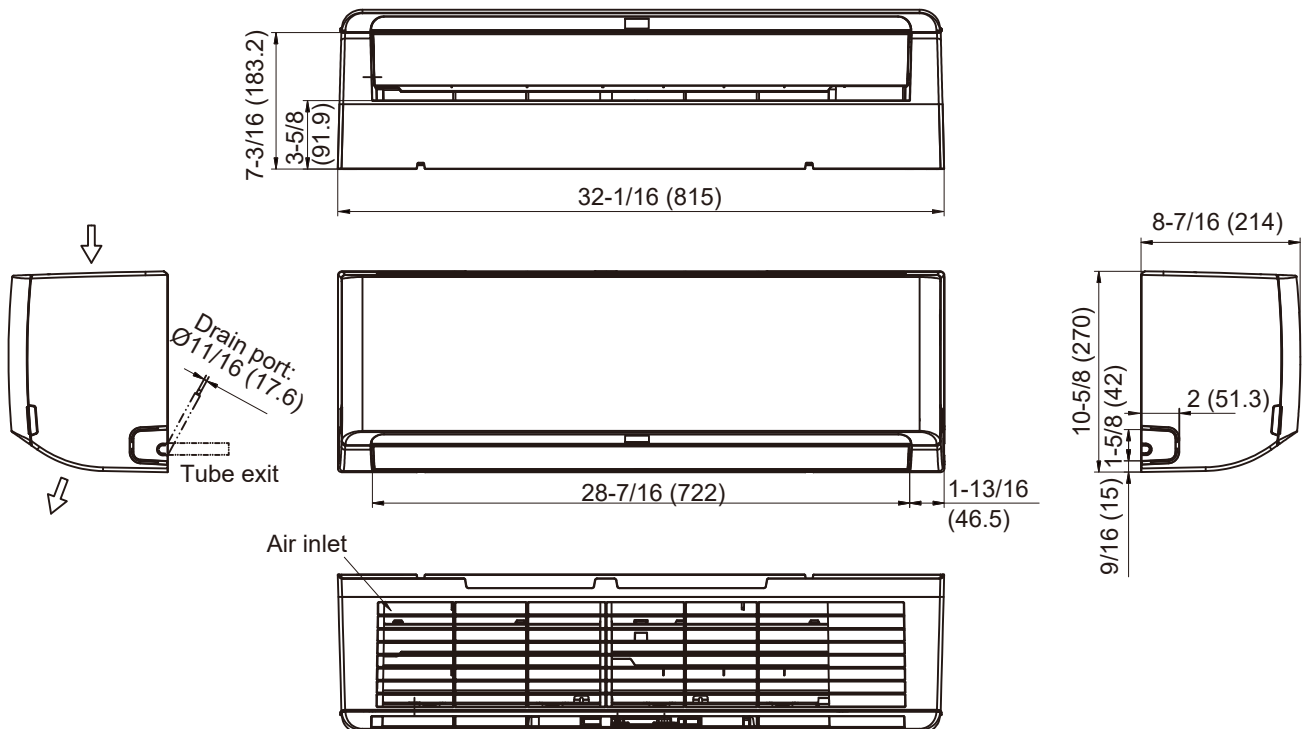
Models: WHS09WMA21S and WHS09WMA11S

Unit: in (mm)



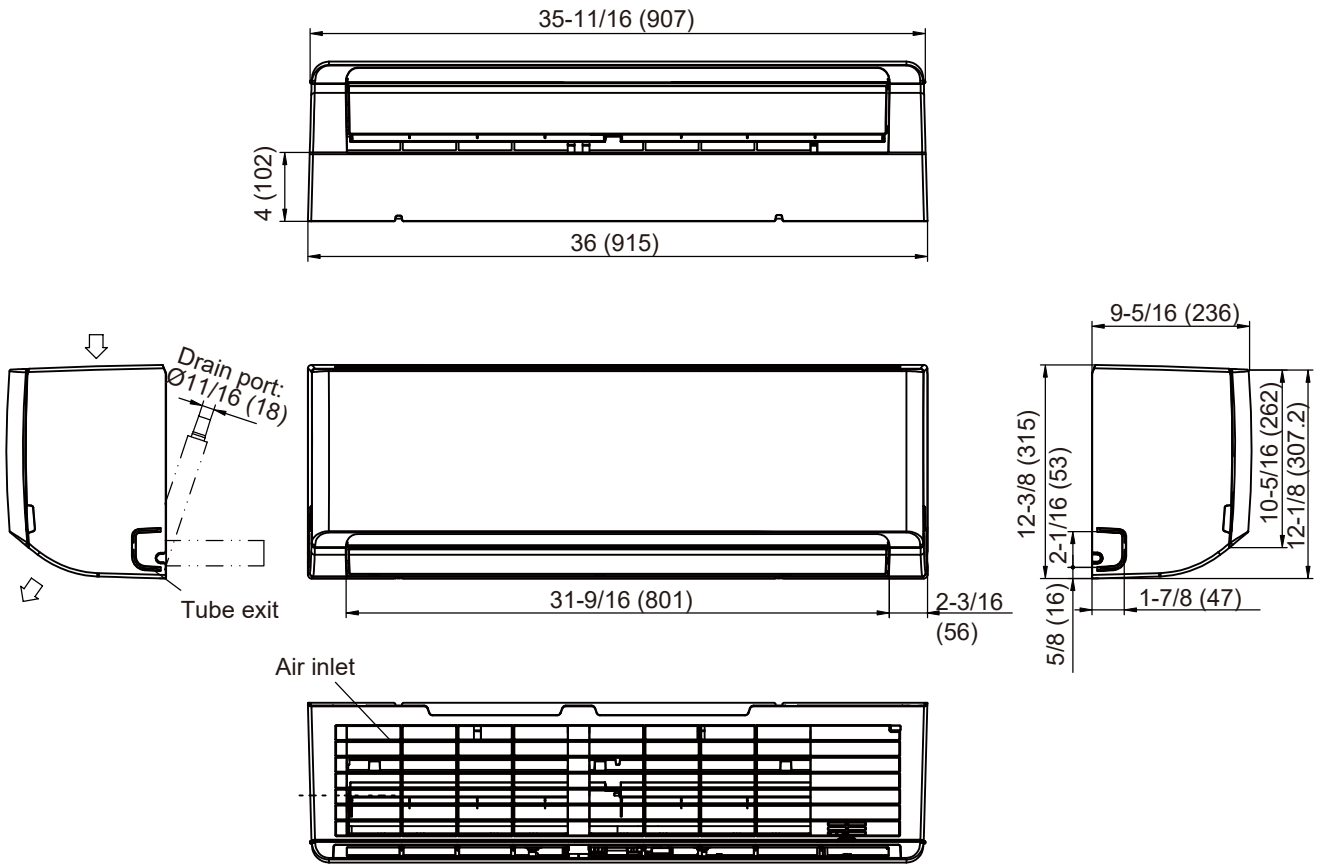
Models: WHS12WMA21S and WHS12WMA11S

Unit: in (mm)



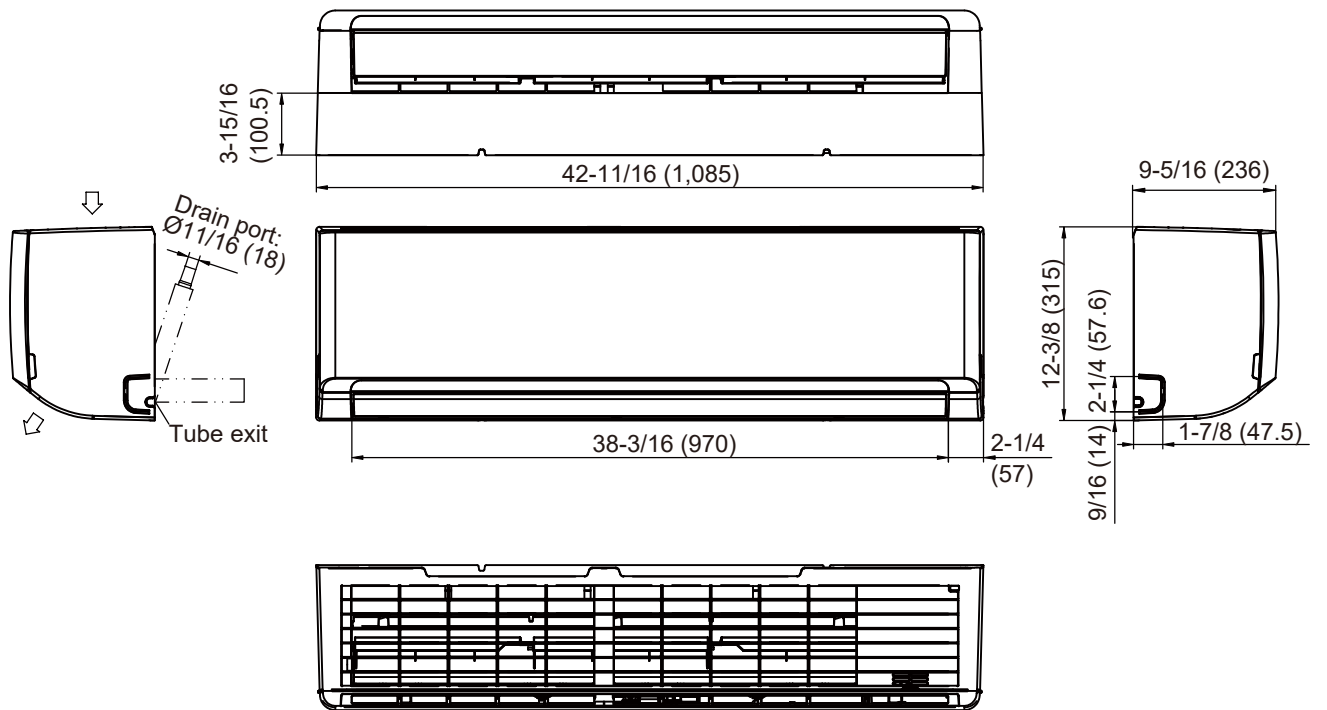
Model: WHS18WMA21S

Unit: in (mm)



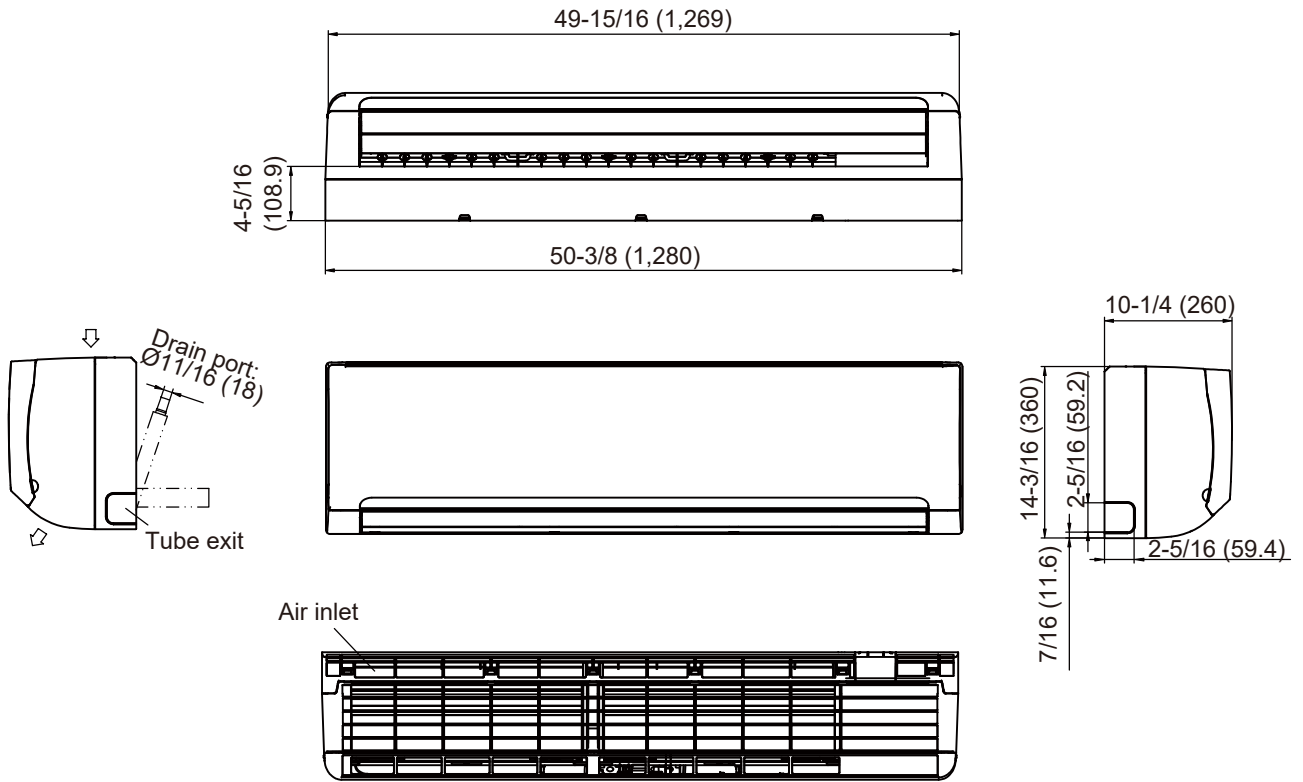
Model: WHS24WMA21S

Unit: in (mm)



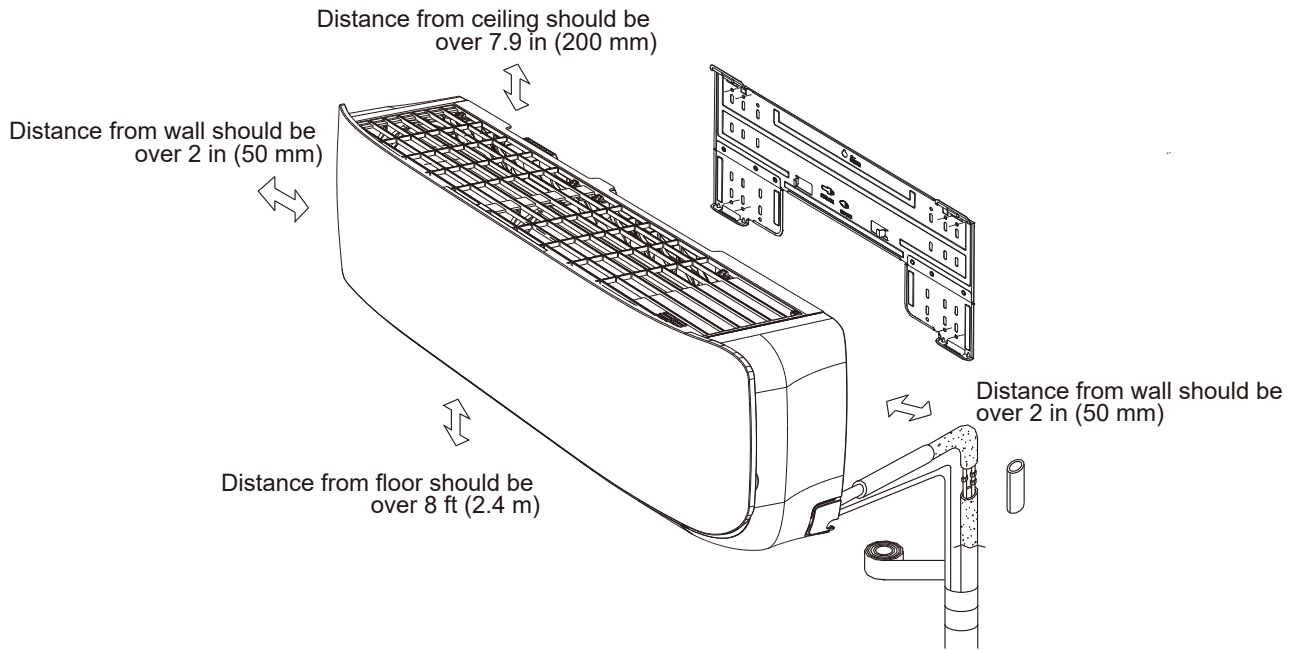
Model: WHS30WMA21S and WHS36WMA21S

Unit: in (mm)



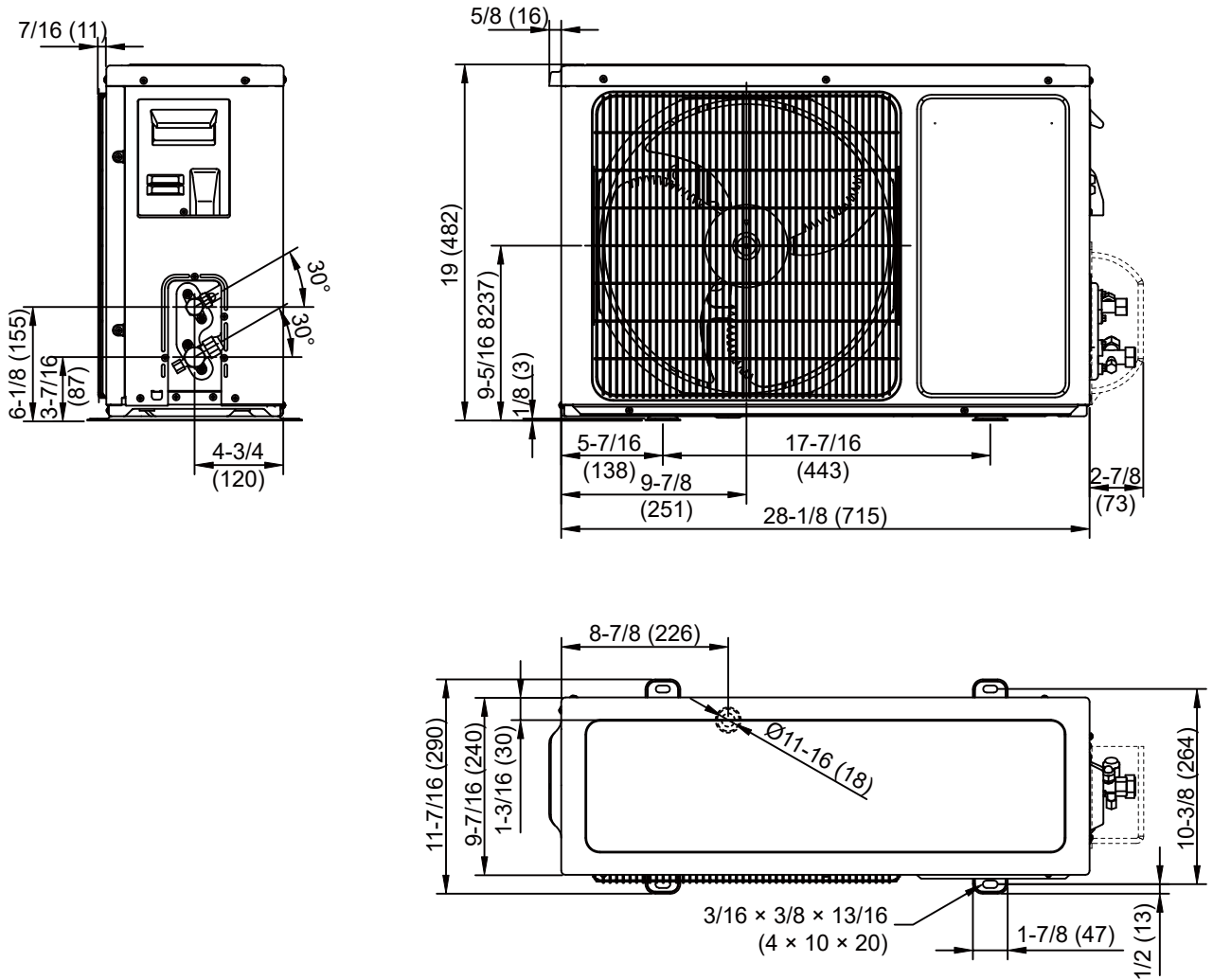
Installation space requirement

Provide sufficient installation space for product safety.



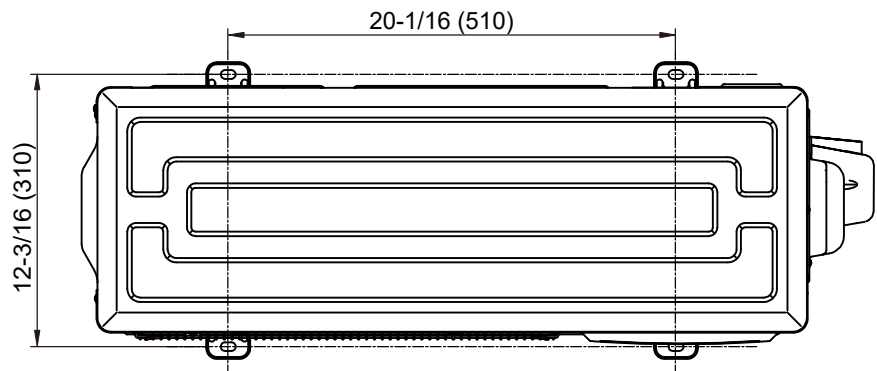
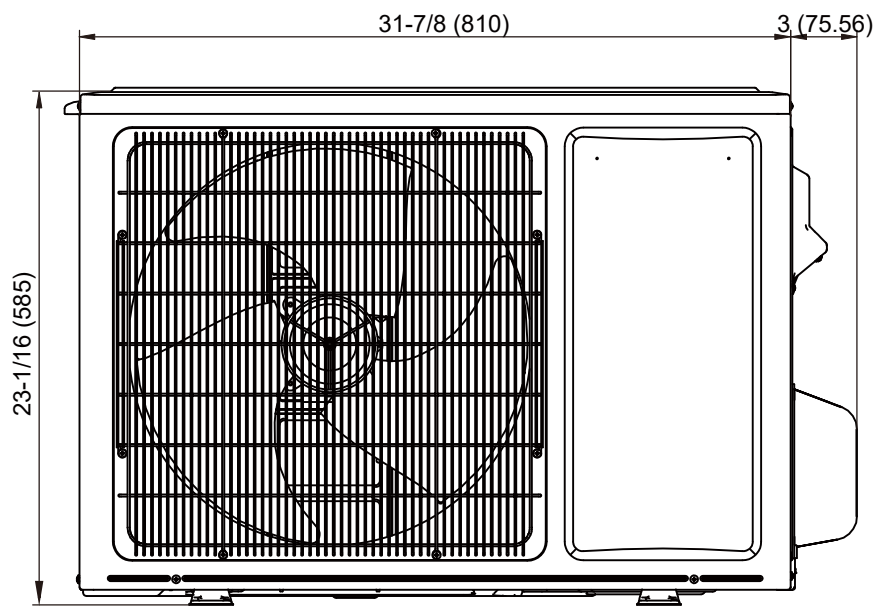
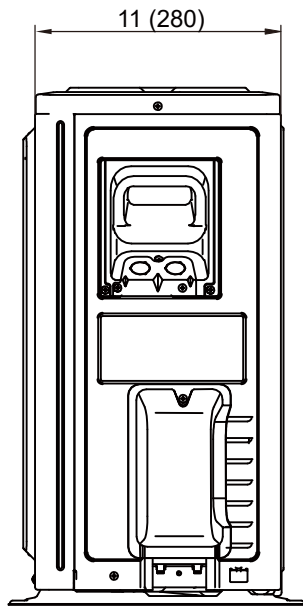
**Models: WHS09SZA21S, WHS12SZA21S, WHS09SZA11S,
and WHS12SZA11S**

Unit: in (mm)



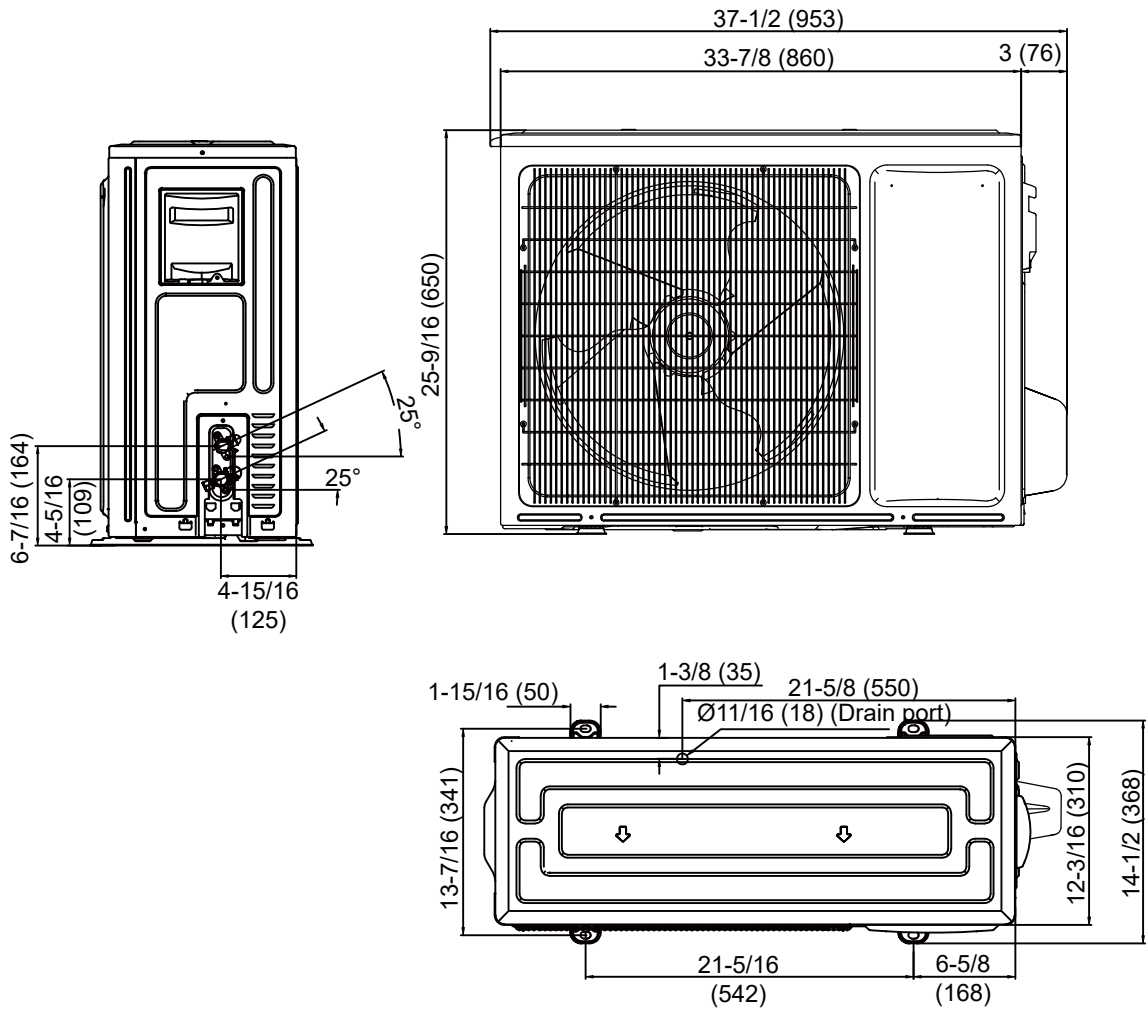
Model: WHS18SZA21S

Unit: in (mm)



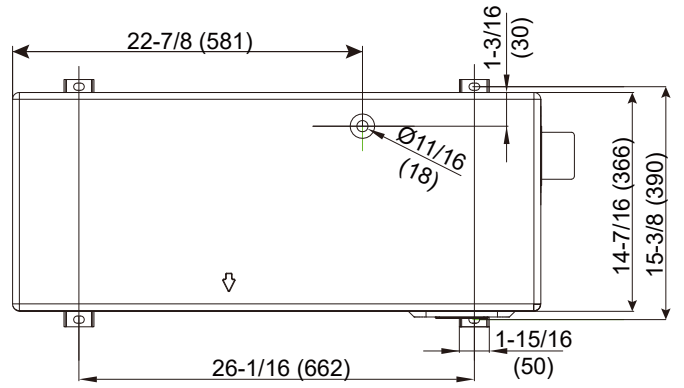
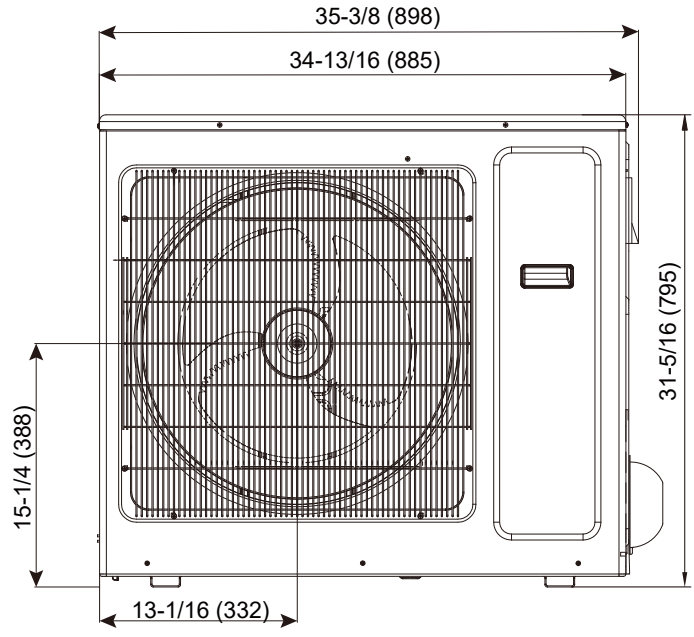
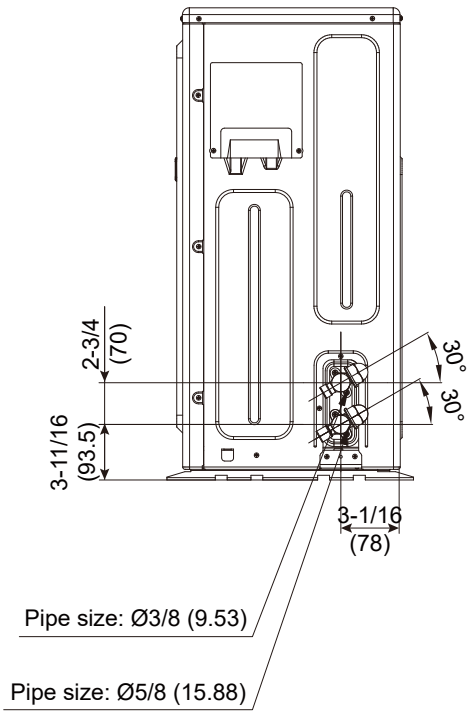
Model: WHS24SZA21S

Unit: in (mm)



Model: WHS30SZA21S and WHS36SZA21S

Unit: in (mm)



Installation space

Models: WHS09SZA21S, WHS12SZA21S, WHS18SZA21S, WHS24SZA21S, WHS30SZA21S, WHS36SZA21S, WHS09SZA11S, and WHS12SZA11S

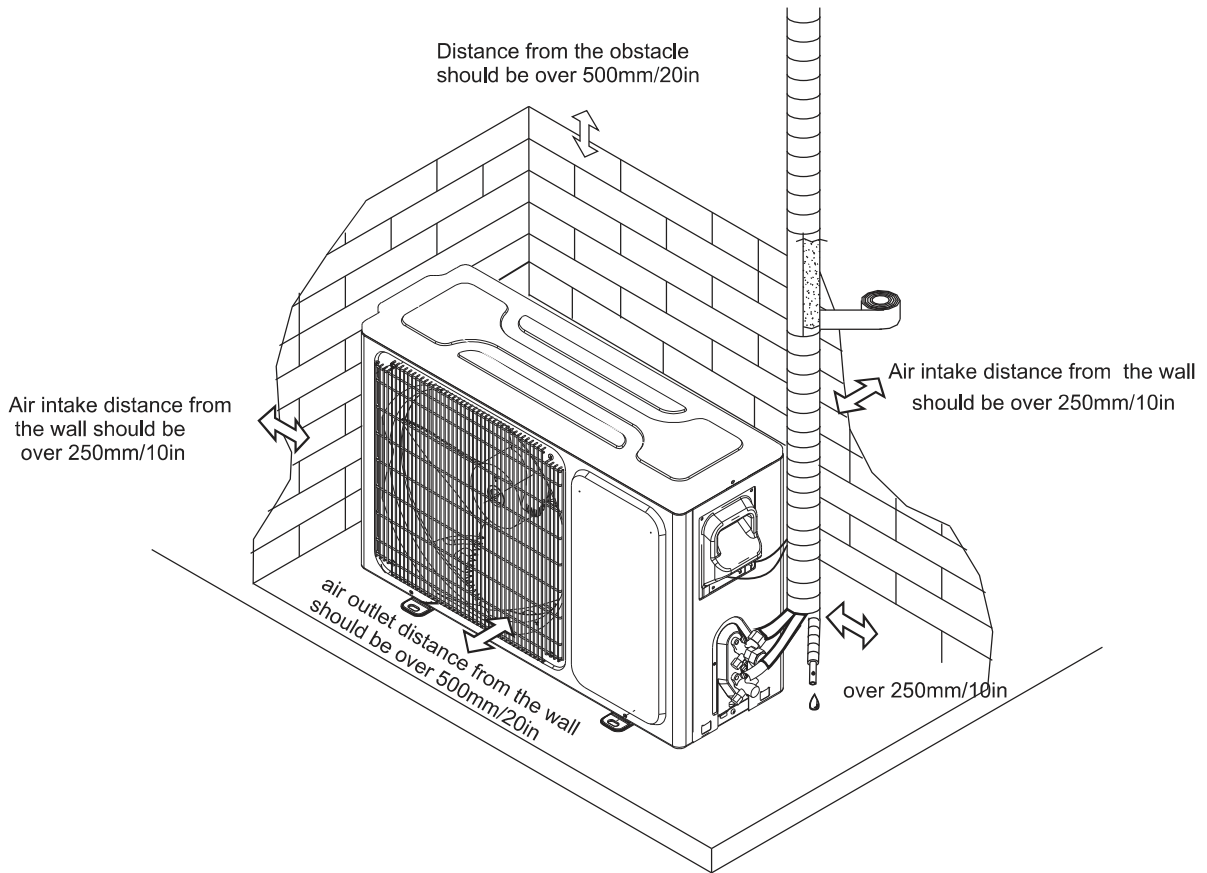
■ Space requirement

Provide sufficient installation space for product safety.

⚠ CAUTION

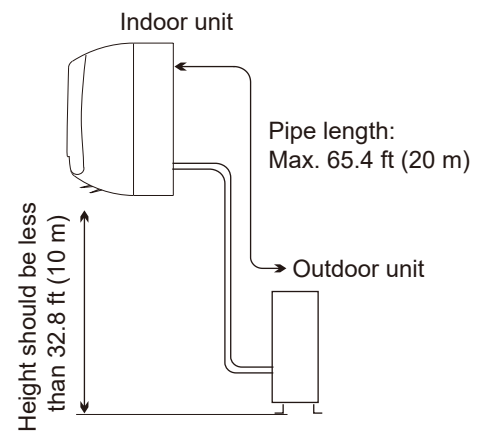
Keep the space shown in the installation examples.

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



Site for installing the indoor unit

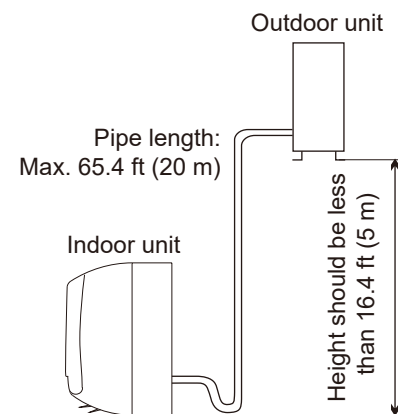
- Where there is no obstruction near the air outlet and air can be easily blown to every corner.
- Where piping and wall hole can be easily arranged.
- Keep the required space from the unit to the ceiling and wall according to the diagram on previous page.
- Where the air filter can be easily removed.
- Keep the unit and remote controller 3.28 ft (1 m) or more apart from television, radio etc.
- Keep as far as possible from fluorescent lamps.
- Do not put anything near the air inlet to obstruct it from air absorption.
- Install on a wall that is strong enough to bear the weight of the unit.
- Install in a place that will not increase operation noise and vibration.
- Keep away from direct sunlight and heating sources. Do not place flammable materials or combustion apparatuses on the top of the unit.



Indoor unit is higher than outdoor unit

Site for installing the outdoor unit

- Where it is convenient to install and well ventilated.
- Avoid installing it where flammable gas could leak.
- Keep the required distance apart from the wall.
- Keep the outdoor unit away from greasy dirt, vulcanization gas exit.
- Avoid installing it by the roadside where there is a risk of muddy water.
- A fixed base where it is not subject to increased operation noise.
- Where there is not any blockage of the air outlet.
- Avoid installing under direct sunlight, in an aisle or side-way, or near heat sources and ventilation fans. Keep away from flammable materials, thick oil fog, and wet or uneven places.
- In case the pipe length is more than 24.6 ft (7.5 m), the refrigerant should be charged additionally, according to the table below.

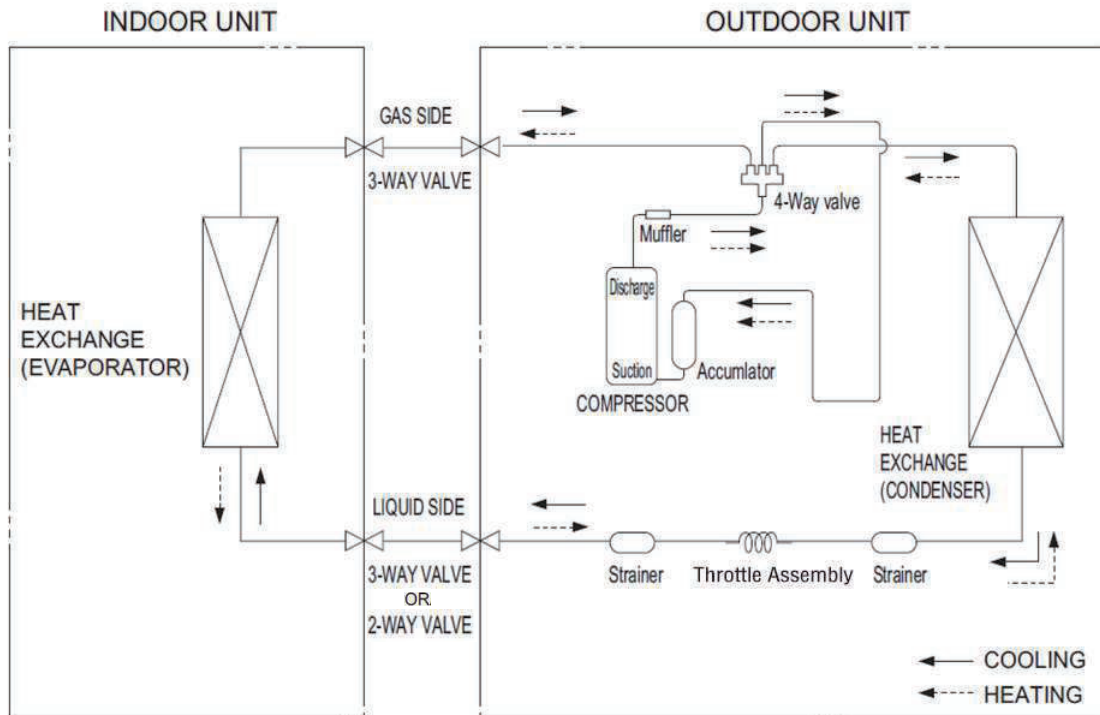


Outdoor unit is higher than indoor unit

Model	Required amount of additional refrigerant (oz/ft)
WHS09SZA21S	0.215
WHS12SZA21S	
WHS18SZA21S	
WHS24SZA21S	0.323
WHS30SZA21S	0.430
WHS36SZA21S	

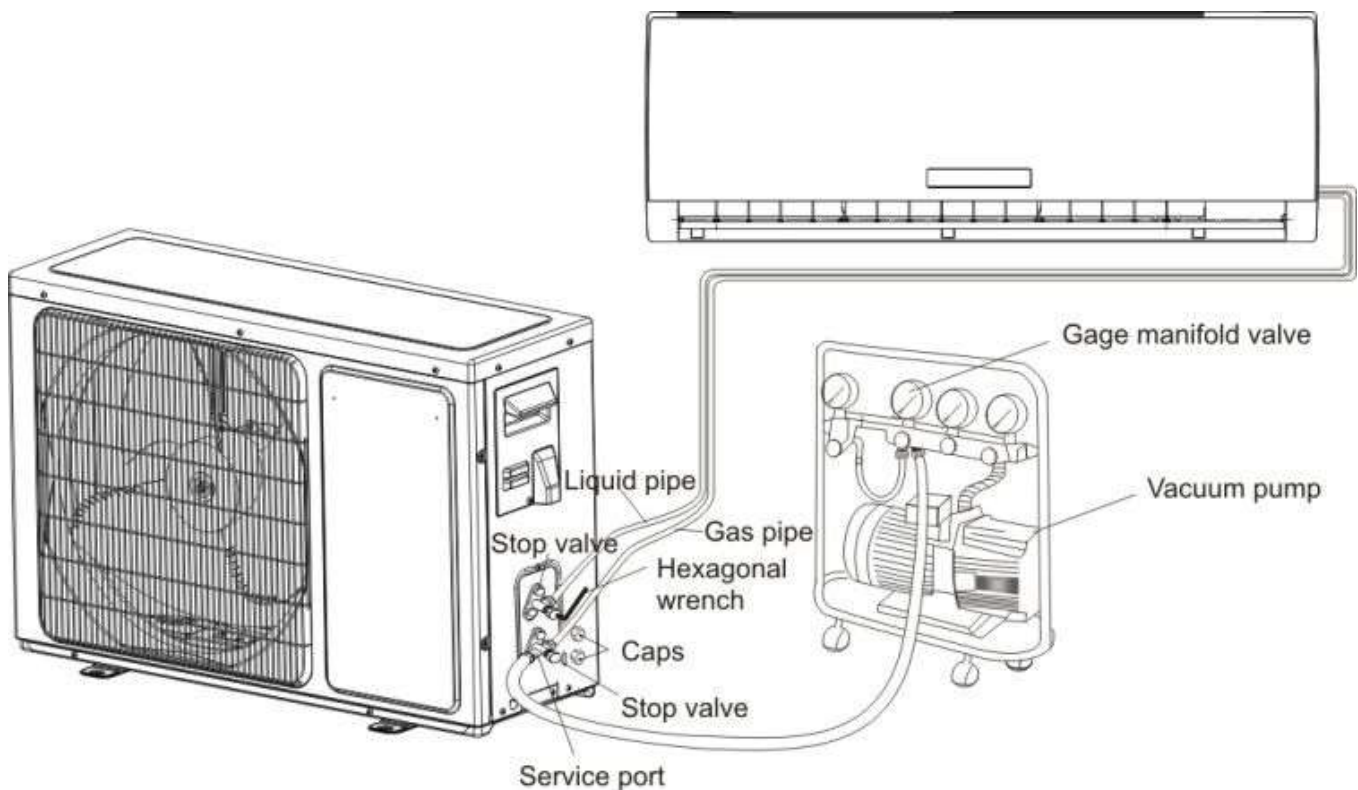
Refrigerant circuit

Models: WHS09SZA21S, WHS12SZA21S, WHS18SZA21S, WHS24SZA21S, WHS30SZA21S, WHS36SZA21S, WHS09SZA11S, and WHS12SZA11S



Air Purging and Leakage Test

1. Connect charging hose of manifold valve to charge end of low pressure valve (both high/low pressure valves must be tightly shut).
 2. Connect joint of charging hose to vacuum pump.
 3. Fully open the handle of Lo manifold valve.
 4. Open the vacuum pump to evacuate. At the beginning, slightly loosen joint nut of low pressure valve to check if there is air coming inside. (If noise of vacuum pump has been changed, the reading of multimeter is 0) Then tighten the nut.
 5. Keep evacuating for more than 15mins and make sure the reading of multi-meter is -1.0×10^5 pa (-76cmHg).
 6. Check the vacuum with the gage manifold valve, then close the gage manifold valve, and stop the vacuum pump.
 7. Leave it for one or two minutes. Make sure the pointer of the gage manifold valve remains in the same position.
 8. Remove the gage manifold valve quickly from the service port of the stop valve.
- After refrigerant pipes are connected and evacuated, fully open all stop valves on gas and liquid pipe sides.
9. Opening without fully opening lowers the performance and cause dangerous.
 10. Tighten the cap to the service port to obtain the initial status.
 11. Retighten the cap
 12. Leak test



Test Running

△ Check after Installation

Items to be checked	Possible malfunction
Has it been fixed firmly?	The unit may drop, shake or emit noise.
Have you done the refrigerant leakage test?	It may cause insufficient cooling(heating)capacity
Is heat insulation sufficient?	It may cause condensation and dripping.
Is water drainage satisfactory?	It may cause condensation and dripping.
Is the voltage in accordance with the rated voltage marked on the nameplate?	It may cause electric malfunction or damage the product.
Is the electric wiring and piping connection installed correctly and securely?	It may cause electric malfunction or damage the part.
Has the unit been connected to a secure earth connection?	It may cause electrical leakage.
Is the power cord specified?	It may cause electric malfunction or damage the part.
Are the inlet and outlet openings blocked?	It may cause insufficient cooling(heating)capacity.
Is the length of connection pipes and refrigerant capacity been recorded?	The refrigerant capacity is not accurate.

△ Operation Test

1. Before Operation Test

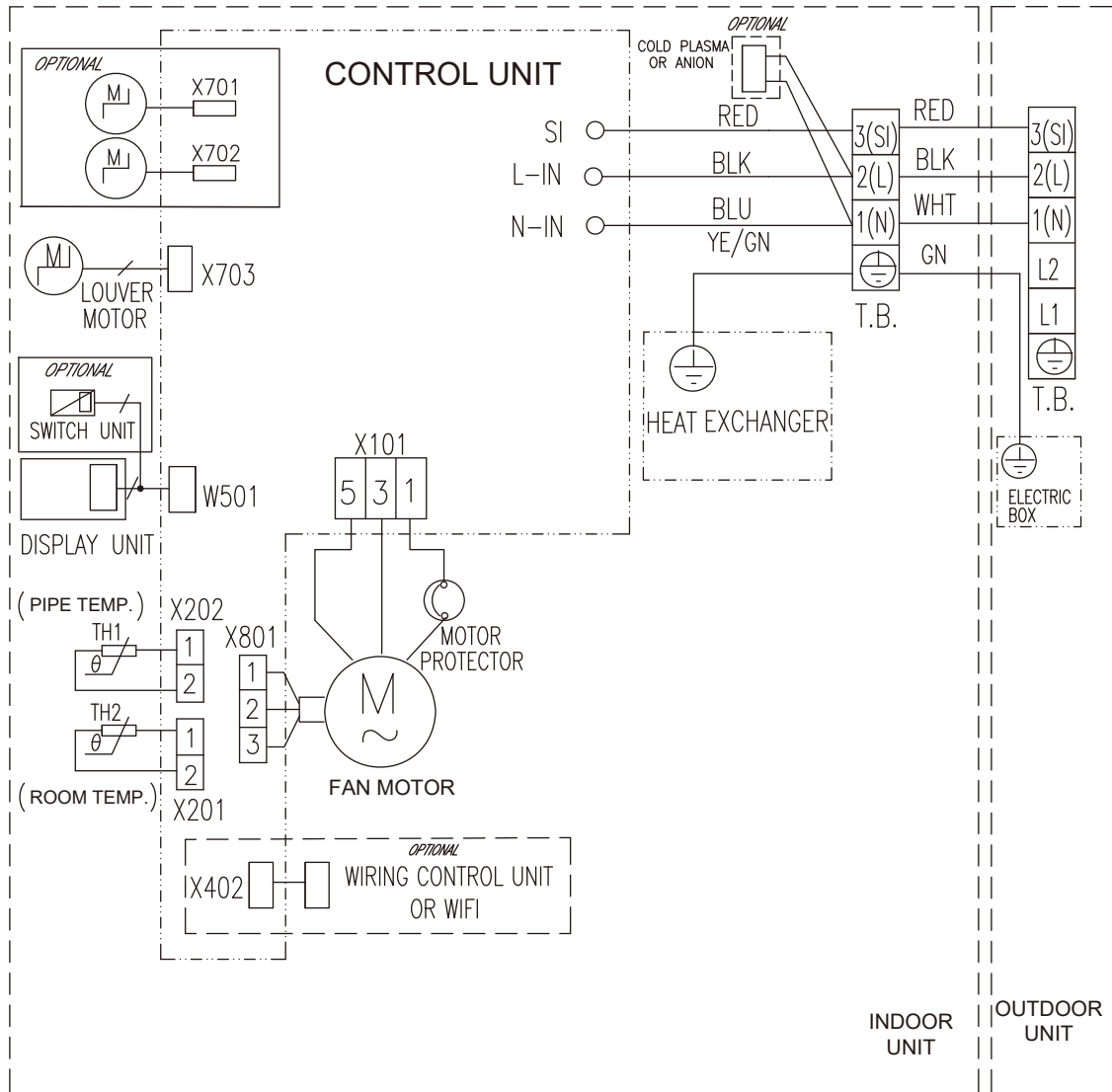
- (1)Do not switch on power before installation is finished completely.
- (2)Electric wiring must be connected correctly and securely.
- (3)Cut-off valves of the connection pipes should be opened.
- (4)All the impurities such as scraps and thrums must be cleared from the unit.

2. Operation Test Method

- (1)Switch on power and press "ON/OFF" button on the remote controller to start the operation.
- (2)Press MODE button to select the COOL, HEAT (Cooling only unit is not available), FAN to check whether the operation is normal or not.

Wiring diagrams

Models: WHS09WMA21S, WHS12WMA21S, and WHS18WMA21S

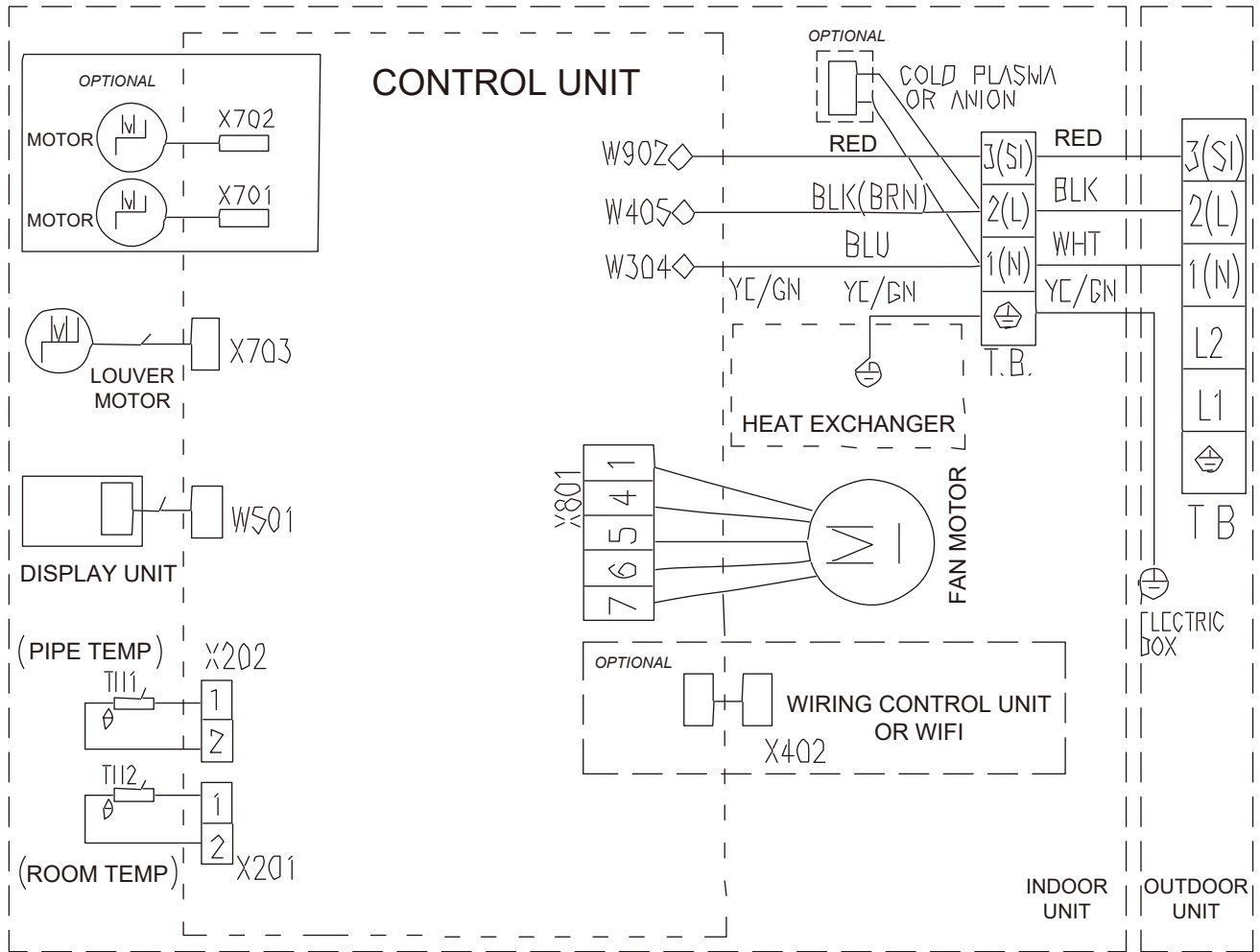


Temperature	0°C 32°F	20°C 68°F	30°C 86°F
Thermistor (Pipe temp.)	15 k Ω 1.3 V	6.5 k Ω 2.2 V	4.5 k Ω 2.7 V
Thermistor (Room temp.)	15 k Ω 1.3 V	6.5 k Ω 2.2 V	4.5 k Ω 2.7 V

Fan motor

Pin No.	Terminal code	Function of terminal	Lead wire color
1	R	Running coil	Black
2	—	—	—
3	S	Starting coil	Red
4	—	—	—
5	C	COM	White

Model: WHS24WMA21S

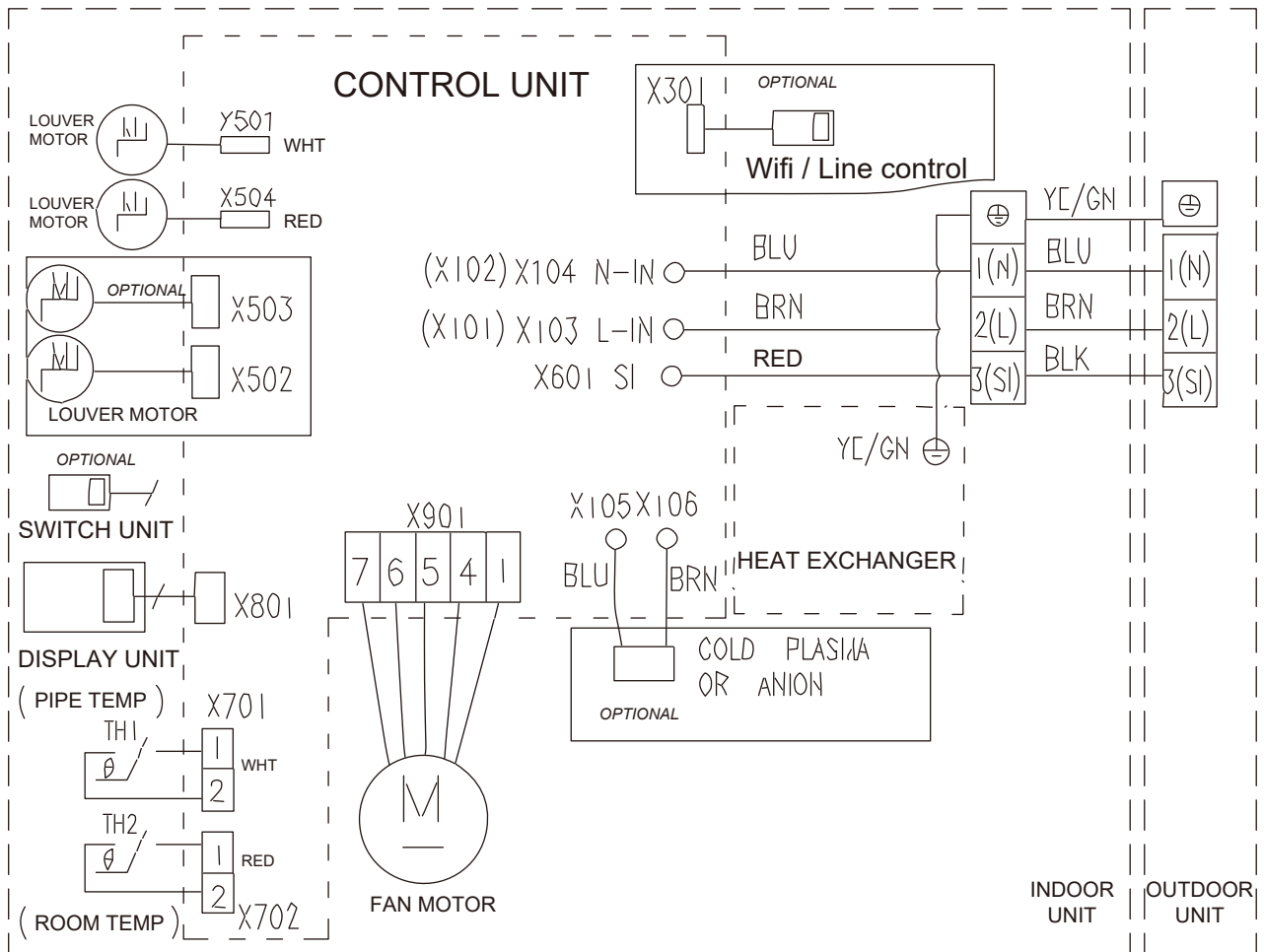


Temperature	0°C 32°F	20°C 68°F	30°C 86°F
Thermistor (Pipe temp.)	15 k Ω 1.3 V	6.5 k Ω 2.2 V	4.5 k Ω 2.7 V
Thermistor (Room temp.)	15 k Ω 1.3 V	6.5 k Ω 2.2 V	4.5 k Ω 2.7 V

Fan motor

Pin No.	Terminal code	Function of terminal	Lead wire color
1	Vm	Motor power voltage input	Red
2	—	—	—
3	—	—	—
4	GND	GND	Black
5	Vcc	Control power voltage input	White
6	FG	Revolution pulse output	Blue
7	Vsp	Speed control voltage input	Yellow

Model: WHS30WMA21S

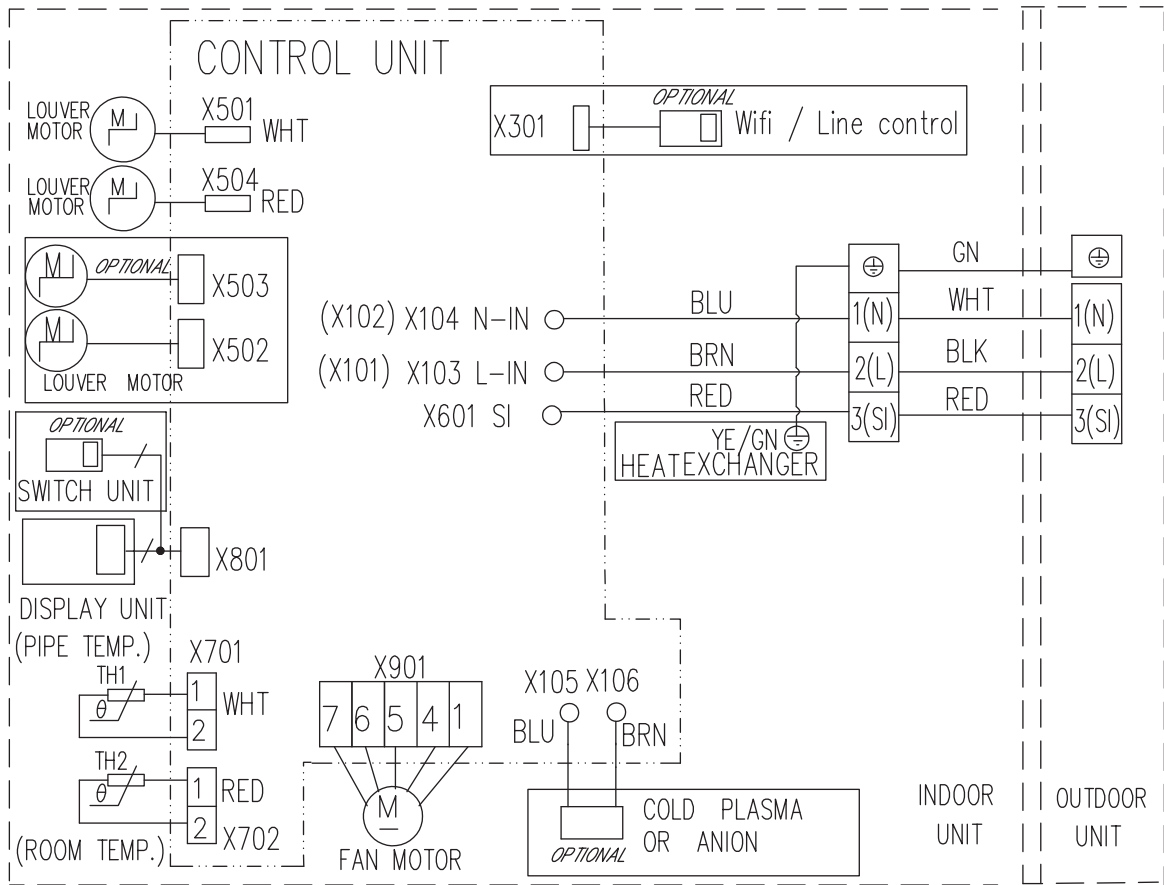


Temperature	0°C 32°F	20°C 68°F	30°C 86°F
Thermistor (Pipe temp.)	15 k Ω 1.3 V	6.5 k Ω 2.2 V	4.5 k Ω 2.7 V
Thermistor (Room temp.)	15 k Ω 1.3 V	6.5 k Ω 2.2 V	4.5 k Ω 2.7 V

Fan motor

Pin No.	Terminal code	Function of terminal	Lead wire color
1	Vm	Motor power voltage input	Red
2	—	—	—
3	—	—	—
4	GND	GND	Black
5	Vcc	Control power voltage input	White
6	FG	Revolution pulse output	Blue
7	Vsp	Speed control voltage input	Yellow

Model: WHS36WMA21S

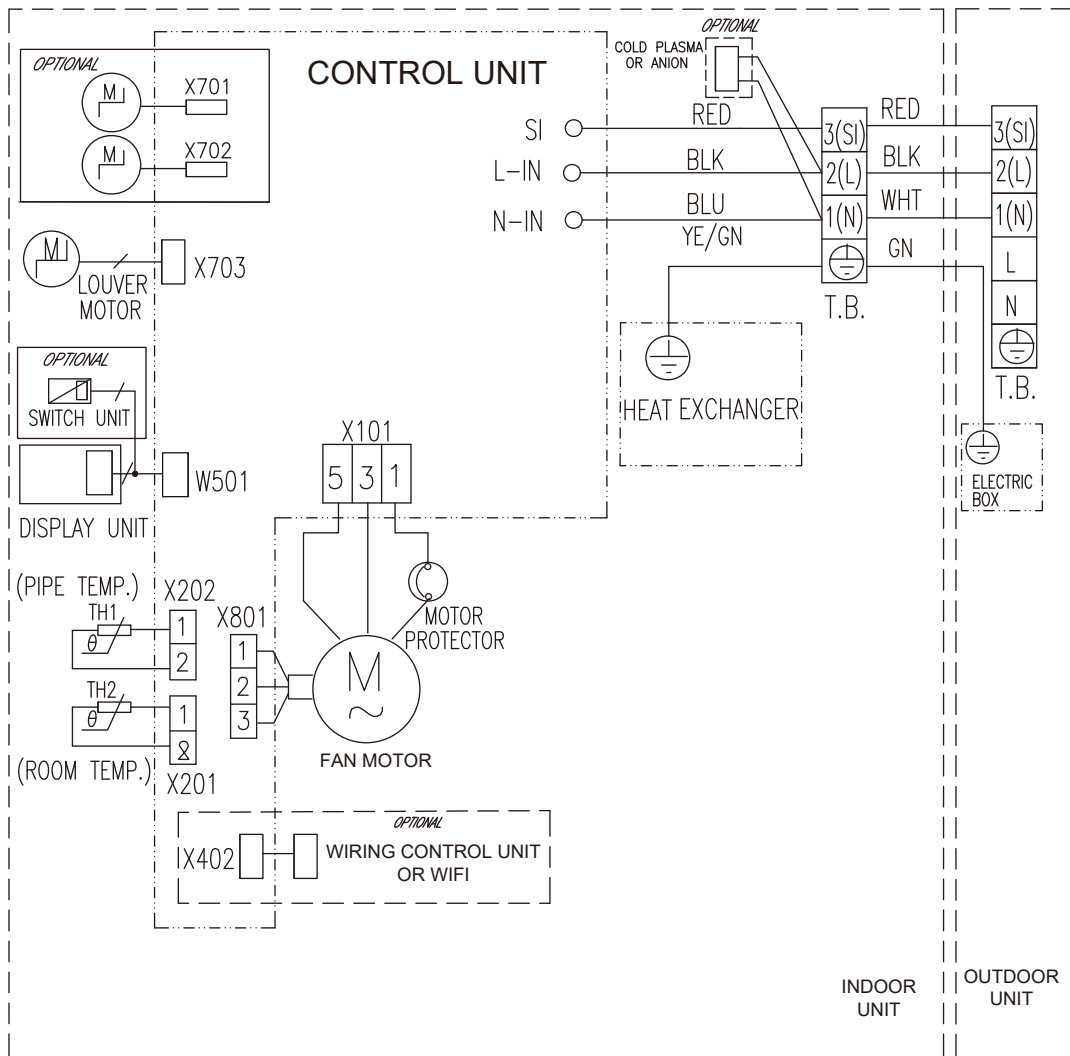


Temperature	0°C 32°F	20°C 68°F	30°C 86°F
Thermistor (Pipe temp.)	15 k Ω 1.3 V	6.5 k Ω 2.2 V	4.5 k Ω 2.7 V
Thermistor (Room temp.)	15 k Ω 1.3 V	6.5 k Ω 2.2 V	4.5 k Ω 2.7 V

Fan motor

Pin No.	Terminal code	Function of terminal	Lead wire color
1	Vm	Motor power voltage input	Red
2	—	—	—
3	—	—	—
4	GND	GND	Black
5	Vcc	Control power voltage input	White
6	FG	Revolution pulse output	Blue
7	Vsp	Speed control voltage input	Yellow

Models: WHS09WMA11S and WHS12WMA11S

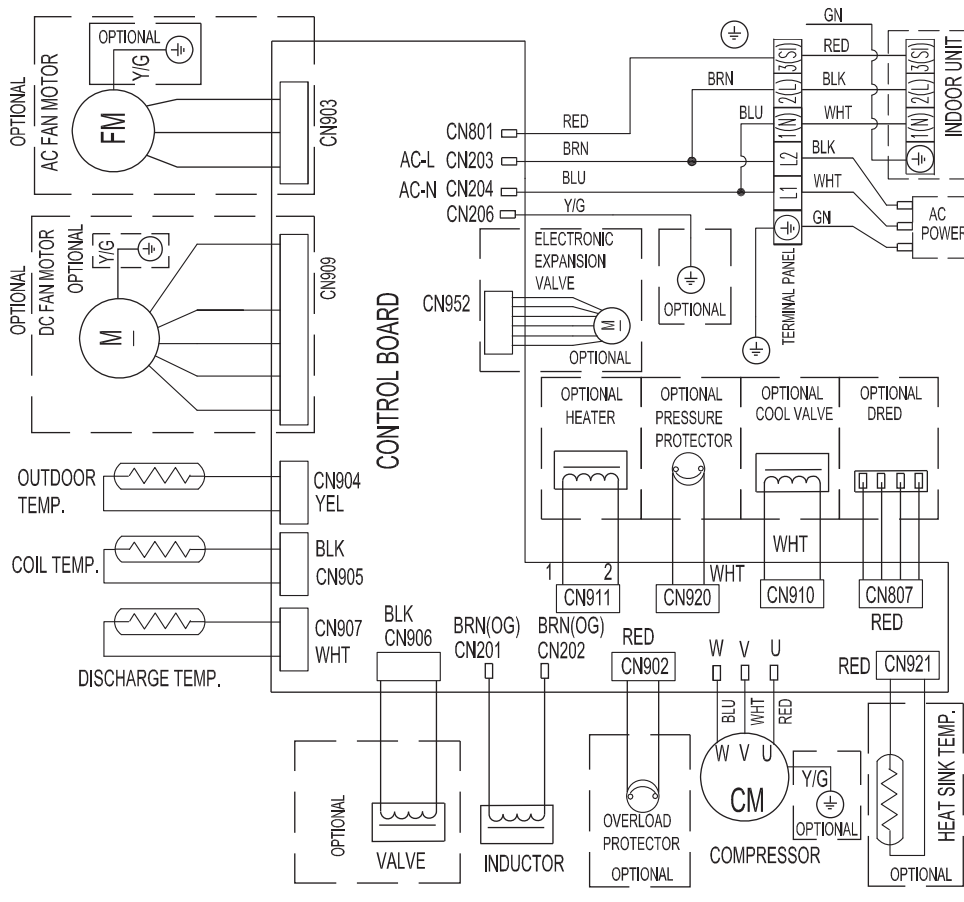


Temperature	0°C 32°F	20°C 68°F	30°C 86°F
Thermistor (Pipe temp.)	15 k Ω 1.3 V	6.5 k Ω 2.2 V	4.5 k Ω 2.7 V
Thermistor (Room temp.)	15 k Ω 1.3 V	6.5 k Ω 2.2 V	4.5 k Ω 2.7 V

Fan motor

Pin No.	Terminal code	Function of terminal	Lead wire color
1	R	Running coil	Black
2	—	—	—
3	S	Starting coil	Red
4	—	—	—
5	C	COM	White

Models: WHS09SZA21S, WHS12SZA21S, WHS18SZA21S, WHS24SZA21S, WHS30SZA21S, and WHS36SZA21S



Compressor
 09 model: 2.35 Ω
 12 model: 1.7 Ω
 18 model: 1.87 Ω
 24 model: 0.75 Ω
 30 model: 0.932 Ω
 36 model: 0.65 Ω
 (20°C 68°F)

Fan motor (09-24 model)

Pin No.	Terminal code	Function of terminal	Lead wire color
1	S	Starting coil	Blue
2	—	—	—
3	R	Running coil	Black
4	—	—	—
5	C	COM	Red

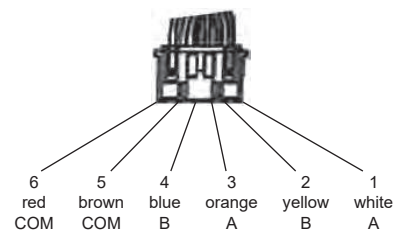
Temperature	0°C 32°F	20°C 68°F	30°C 86°F
Thermistor (ODU temp.)	15 k Ω 1.3 V	6.5 k Ω 2.2 V	4.4 k Ω 2.7 V
Thermistor (Pipe temp.)	15 k Ω 1.3 V	6.5 k Ω 2.2 V	4.4 k Ω 2.7 V
Thermistor (Discharge temp.)	186 k Ω 0.18 V	71.7 k Ω 0.43 V	46.3 k Ω 0.64 V

Fan motor (30-36 model)

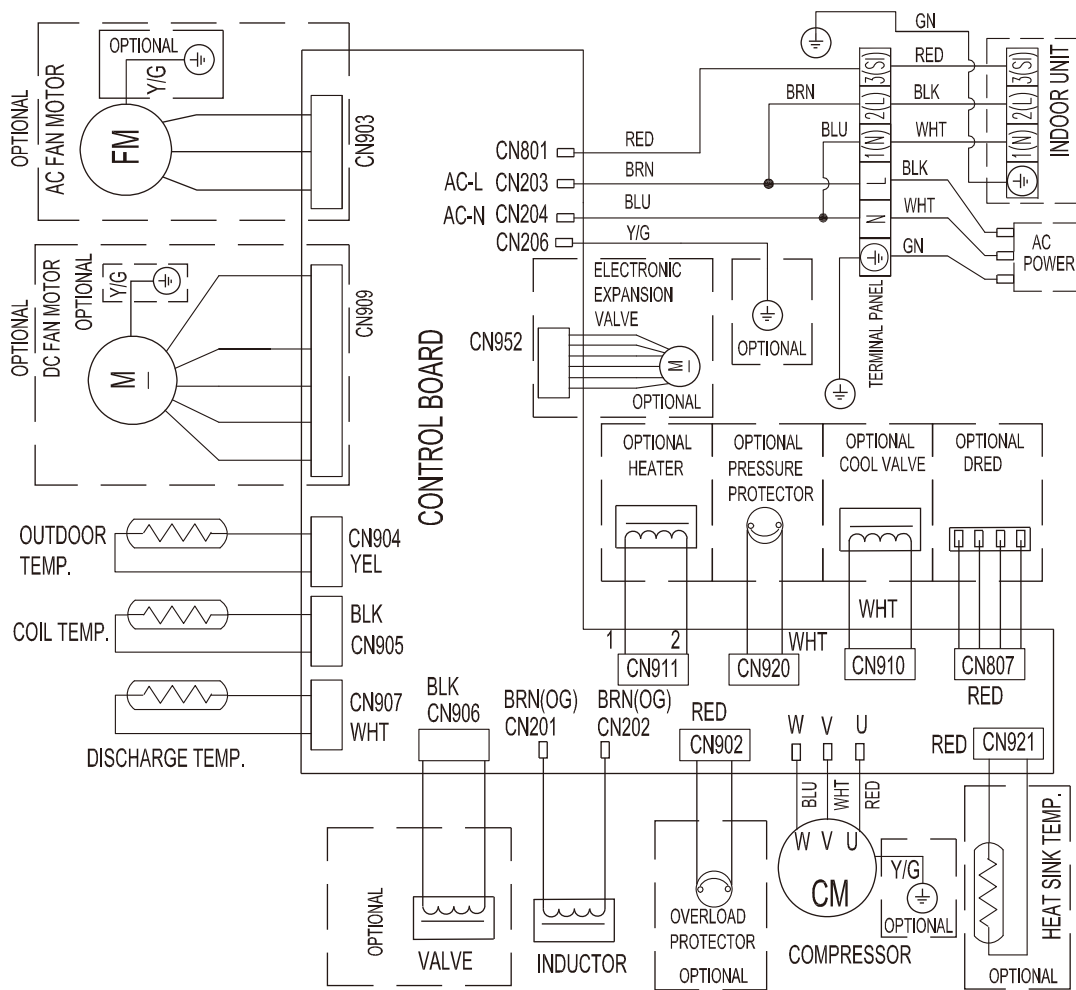
Pin No.	Terminal code	Function of terminal	Lead wire color
1	FG	Revolution pulse output	Blue
2	Vsp	Speed control voltage input	Yellow
3	Vcc	Control power voltage input	White
4	GND	GND	Black
5	—	—	—
6	Vm	Motor power voltage input	Red

EEV (36 model)

Coil resistance : 46 Ω (20°C 68°F)



Models: WHS09SZA11S and WHS12SZA11S



Temperature	0°C 32°F	20°C 68°F	30°C 86°F
Thermistor (ODU temp.)	15 k Ω 1.3 V	6.5 k Ω 2.2 V	4.4 k Ω 2.7 V
Thermistor (Pipe temp.)	15 k Ω 1.3 V	6.5 k Ω 2.2 V	4.4 k Ω 2.7 V
Thermistor (Discharge temp.)	186 k Ω 0.18 V	71.7 k Ω 0.43 V	46.3 k Ω 0.64 V

Compressor
 09 model: 2.35 Ω
 12 model: 1.7 Ω
 (20°C 68°F)

Fan motor

Pin No.	Terminal code	Function of terminal	Lead wire color
1	FG	Revolution pulse output	Blue
2	Vsp	Speed control voltage input	Yellow
3	Vcc	Control power voltage input	White
4	GND	GND	Black
5	—	—	—
6	Vm	Motor power voltage input	Red

Troubleshooting

Error Code Table

1. Indication on the outdoor unit:

When the unit has the following trouble and the compressor stops running, The LED of outdoor control board will show the error sequence automatically:

NOTE: ★ : LIGHT ○ : FLASH × : OFF

Error code	Outdoor Failure Description	LED1	LED2	LED3	the root cause may be one of the following
Mark description: the lights flash every second for the following faults					
	Normal	×	×	×	
	Outdoor coil temperature sensor in trouble	★	×	★	<ul style="list-style-type: none"> a. The outdoor coil sensor connect loose; b. The outdoor coil temperature sensor is failure; c. The outdoor control board is failure
	Compressor exhaust temperature sensor in trouble	★	×	×	<ul style="list-style-type: none"> a. The compressor exhaust temperature sensor connect loose; b. The compressor exhaust temperature sensor is failure; c. The outdoor control board is failure
	Communication failure between the indoor unit and outdoor unit	×	×	○	<ul style="list-style-type: none"> a. The communication cable connect loose; b. The communication cable is failure; c. The connection between the filter board and the outdoor control board is incorrect or loose; d. The connection between the filter board and the terminal is incorrect or loose; e. The indoor control board is failure; f. The PFC board is failure; g. The power board is failure; h. the outdoor control board is failure.
	Current overload protection	★	○	×	<ul style="list-style-type: none"> a. The fan motor run abnormally; b. The condenser or and evaporator is dirty; c. The air inlet and outlet is abnormally
	Maximum current protection	★	○	★	<ul style="list-style-type: none"> a. The outdoor control board is short circuit; b. The drive board is short circuit; c. The other components is short circuit
	Communication trouble between outdoor unit and driver	×	★	★	<ul style="list-style-type: none"> a. The connection wires connect loose b. The outdoor board or drive board is failure;

	Outdoor EEPROM in trouble	★	★	★	<p>a. The EEPROM chip is loose;</p> <p>b. The EEPROM chip inserted with opposite direction;</p> <p>c. The EEPROM chip is failure</p>
	Compressor exhaust temperature too high protection	×	○	★	<p>a. The compressor exhaust temperature sensor is failure;</p> <p>b. The refrigerant of the unit is not enough</p>
	Outdoor ambient temperature sensor in trouble	★	★	×	<p>a. The outdoor ambient temperature sensor connect loose;</p> <p>b. The outdoor ambient temperature sensor is failure;</p> <p>c. The outdoor control board is failure</p>
	Compressor shell temperature too high protection	×	★	○	<p>a. The compressor exhaust temperature sensor connect loose</p> <p>b. The refrigerant of the unit is not enough</p>
	Anti-freeze protection with cooling or overload protection with heating in indoor unit	×	○	○	<p>a. The indoor coil temperature sensor connect loose;</p> <p>b. The indoor coil temperature sensor is failure;</p> <p>c. The indoor control board is failure</p> <p>d. The refrigerant system is abnormal.</p>
	Compressor drive in trouble	○	×	○	<p>a. The outdoor drive board is failure;</p> <p>b. The compressor is failure</p> <p>c. The outdoor control board is failure</p>
	Outdoor fan motor locked rotor protection	○	○	★	<p>a. The connection of the outdoor fan motor is loose;</p> <p>b. There are something block the outdoor fan;</p> <p>c. The fan motor is failure;</p> <p>d. The outdoor control board is failure</p>
	Outdoor coil anti-overload protection with cooling	×	★	×	<p>a. The refrigerant is too much;</p> <p>b. The outdoor fan motor is failure;</p> <p>c. The outdoor fan is broken;</p> <p>d. The condenser is dirty;</p> <p>e. The air inlet and air outlet of the indoor unit and the outdoor unit is not normally</p>

	IPM module protection	×	○	×	<p>a. The IPM board is failure;</p> <p>b. The outdoor fan is broken;</p> <p>c. The outdoor fan motor is failure;</p> <p>d. The outdoor fan has been blocked ;</p> <p>e. The condenser is dirty;</p> <p>f. The outdoor unit has been installed without standard.</p>
	PFC protection	○	×	×	<p>a. The PFC is failure;</p> <p>b. The outdoor drive board is failure</p>
	Compressor pre heating process	○	★	○	It is normal mode in cold weather
	Chip in outdoor board in trouble	★	×	○	<p>a. Using the wrong drive board;</p> <p>b. Using the wrong compressor.</p>
	AC voltage higher or lower protection	★	★	○	<p>a. The supply voltage is higher or lower than normal;</p> <p>b. The inner supply voltage of the unit is higher or lower than normal</p>
	DC compressor start failure	○	○	×	<p>a. The outdoor drive board is failure;</p> <p>b. The compressor is failure</p>
	Outdoor ambient temperature too low protection	★	○	○	a. Outdoor ambient temperature too low
Mark description: the lights flash every two seconds for the following faults					
	Protection against overheated outdoor radiator	○	×	×	<p>a. Radiator sensors fail</p> <p>b. Detection circuit of the sensor on the control panel fails</p>
	Protection of the system against too high pressure	○	○	×	<p>a. The pressure switch fails</p> <p>b. The pressure detection switch on the control panel fails</p> <p>c. The measured value of the system pressure exceeds the limit</p>

When the compressor is in operation:

Mark description: ★ : Light ○ : Flash × : Off; the flash cycle is 1S				
No.	LED1	LED2	LED3	Reasons for the current operating frequency of the compressor is limited
1	○	○	○	Normal frequency rising and decreasing, no limitation
2	×	×	★	Frequency decreasing or prohibition of frequency rising caused by over-current
3	×	★	★	Frequency decreasing or prohibition of frequency rising caused by anti-freezing of refrigeration or anti-oveload in heating

4	★	×	★	Frequency decreasing or prohibition of frequency rising caused by too high compressor discharge temperature
5				Limit to the max operating frequency caused by too low power voltage
6	★	★	★	Operation at fixed frequency (in the case of capability measuring or compulsory operation at fixed frequency)
7	○	×	×	Protective frequency decreasing against outdoor overload (overpower, over frequency conversion rate, over torque, detection of DC under-voltage)
8	★	×	×	Frequency decreasing caused by indoor and outdoor communication fault
9	×	★	○	Frequency decreasing or prohibition of frequency rising protection against overload of outdoor coiled pipe
10	×	★	×	Frequency decreasing or prohibition of frequency rising for power-saving when it is being used simultaneously with other appliances

2. Indication by the indoor unit:

2.1. The 7-segment tube of the indoor display board will show the error code automatically when the unit has the following trouble:

Error code	Power	Timer	Running	Sleep	Remark : ★Light ○ Flash × OFF		
	1	2	3	4	Content	Remark	The root cause is may be one of the following
EA					The error code will display when the communication between display board and control board have in trouble		a. The connection between the display board and control board is loose; b. The indoor control board is failure. c. The wiring of the display board is failure.

2.2. When the unit has the following trouble and the compressor stops running, press the sleep button on the remote controller for 4 times in ten seconds and the 7-segment tube of the display board will show the error code as the following, if two malfunction happened at the same time, it need press the sleep button for 4 times again, the LED will show the other error code.

Refer to the remote controller which the sleep key can set into 4 different combination ways (Hisense's new design remote controller), when using to check the error codes only takes effect for pressing the sleep key 10 times in ten seconds instead of 4 times.

NOTE: If the troubleshooting inquiry display by 7-segment tube, then the error code will be displayed, otherwise only the LED of the display board can show.

Error code	Running	Timer	Sleep	Power	Remark : ★Light ○ Flash × OFF		
	1	2	3	4	Content	Remark	The root cause is may be one of the following

0					Normal		
1	x	O	x	x	The failure for temperature sensor of outdoor coil		<ul style="list-style-type: none"> a. The outdoor temperature sensor loose; b. The outdoor temperature sensor is failure; c. The indoor control board is failure
2	×	O	★	×	Compressor exhaust temperature sensor in trouble		<ul style="list-style-type: none"> a. The compressor exhaust temperature sensor connect loose; b. The compressor exhaust temperature sensor is failure; c. The outdoor control board is failure
5	★	O	×	×	IPM module protection		<ul style="list-style-type: none"> a. The IPM board is failure; b. The outdoor fan is broken; c. The outdoor fan motor is failure; d. The outdoor fan has been blocked ; e. The condenser is dirty; f. The outdoor unit has been installed without standard.
6	★	O	×	★	AC voltage higher or lower protection		<ul style="list-style-type: none"> a. The supply voltage is higher or lower than normal; b. The inner supply voltage of the unit is higher or lower than normal
7	★	O	★	×	Communication failure between the indoor unit and outdoor unit		<ul style="list-style-type: none"> a. The communication cable connect loose; b. The communication cable is failure; c. The connection between the filter board and the outdoor control board is incorrect or loose; d. The connection between the filter board and the terminal is incorrect or loose; e. The indoor control board is failure; f. The PFC board is failure; g. The power board is failure; h. The outdoor control board is failure.

8	★	○	★	★	Current overload protection	<p>a. The fan motor run abnormally;</p> <p>b. The condenser and evaporator is dirty;</p> <p>c. The air inlet and outlet is abnormally</p>
9	×	×	○	×	Maximum current protection	<p>a. The outdoor control board is short circuit;</p> <p>b. The drive board is short circuit;</p> <p>c. The other components is short circuit</p>
10	×	×	○	★	Communication trouble between outdoor unit and driver	<p>a. the connection wires connect loose</p> <p>b. The outdoor board or drive board is failure;</p>
11	×	★	○	×	Outdoor EEPROM in trouble	<p>a. The EEPROM chip is loose;</p> <p>b. The EEPROM chip inserted with opposite direction;</p> <p>c. The EEPROM chip is failure</p>
12	×	★	○	★	Outdoor ambient temperature too low protection	Outdoor ambient temperature too low
13	★	×	○	×	Compressor exhaust temperature too high protection	<p>a. The compressor exhaust temperature sensor is failure;</p> <p>b. The refrigerant of the unit is not enough</p>
14	★	×	○	★	Outdoor ambient temperature sensor in trouble	<p>a. The outdoor ambient temperature sensor connect loose;</p> <p>b. The outdoor ambient temperature sensor is failure;</p> <p>c. The outdoor control board is failure</p>
15	★	★	○	×	Compressor shell temperature too high protection	<p>a. The compressor exhaust temperature sensor connect loose</p> <p>b. The refrigerant of the unit is not enough</p>
16					Anti-freeze protection with cooling or overload protection with heating in	<p>a. The indoor coil temperature sensor connect loose;</p> <p>b. The indoor coil temperature sensor is failure;</p> <p>c. The indoor control board is failure</p>

							d. the refrigerant system is abnormal.
17					PFC protection		a. the PFC is failure; b. the outdoor drive board is failure
18					DC compressor start failure		a. the outdoor drive board is failure; b. the compressor is failure
19	×	×	×	O	Compressor drive in trouble		a. the outdoor drive board is failure; b. the compressor is failure c. the outdoor control board is failure
20	★	×	×	O	Outdoor fan motor locked rotor protection		a. the connection of the outdoor fan motor is loose; b. there are something block the outdoor fan; c. the fan motor is failure; d. the outdoor control board is failure
21					Outdoor coil anti-overload protection with cooling		a. the refrigerant is too much; b. the outdoor fan motor is failure; c. the outdoor fan is broken; d. the condenser is dirty; e. the air inlet and air outlet of the indoor unit and the outdoor unit is not normally
22					Compressor pre heating process		it is normal mode in cold weather
24					Chip in outdoor board in trouble		a. Using the wrong drive board; b. Using the wrong compressor.
26					Overheated outdoor radiator		a. Radiator sensor fails b. Detection circuit of the sensor on the control panel fails
27					Protection against too high system pressure		a. The pressure switch fails b. The pressure detection switch on the control panel fails c. The measured value of system pressure exceeds the limit

33	O	x	x	★	The failure for temperature sensor of indoor room		<p>a. The indoor room temperature sensor loose;</p> <p>b. The indoor room temperature sensor is failure;</p> <p>c. The indoor control board is failure.</p>
34	O	x	★	x	The failure for temperature sensor of indoor coil temperature		<p>a. The indoor coil temperature sensor loose;</p> <p>b. The indoor coil temperature sensor is failure;</p> <p>c. The indoor control board is failure.</p>
36	O	★	×	★	Communication failure between the indoor unit and outdoor unit		<p>a. the communication cable connect loose;</p> <p>b. the communication cable is failure;</p> <p>c. the connection between the filter board and the outdoor control board is incorrect or loose;</p> <p>d. the connection between the filter board and the terminal is incorrect or loose;</p> <p>e. the indoor control board is failure;</p> <p>f. the PFC board is failure;</p> <p>g. the power board is failure;</p> <p>h. the outdoor control board is failure.</p>
38	O	★	★	★	Indoor EEPROM failure		<p>a. The EEPROM chip loose;</p> <p>b. The indoor control board is failure</p>
39	O	x	★	★	Indoor fan motor run abnormally		<p>a. There are something block the indoor fan motor;</p> <p>b. The fan motor cord connect loose;</p> <p>c. The fan motor is failure;</p> <p>d. The indoor control board is failure</p>
41	★	★	O	★	The failure for Indoor grounding protective		The indoor control board is failure

2.2 LED display

Error code	Sleep	Timer	Running	Remark : ★Light ○ Flash x OFF		
	1	2	3	Content	Remark	The root cause is may be one of the following

0					Normal	
1	O	★	★		The failure for temperature sensor of outdoor coil	<ul style="list-style-type: none"> a. The outdoor temperature sensor loose; b. The outdoor temperature sensor is failure; c. The indoor control board is failure
2	O	★	x		Compressor exhaust temperature sensor in trouble	<ul style="list-style-type: none"> a. The compressor exhaust temperature sensor connect loose; b. The compressor exhaust temperature sensor is failure; c. The outdoor control board is failure
5	★	O	x		IPM module protection	<ul style="list-style-type: none"> a. The IPM board is failure; b. The outdoor fan is broken; c. The outdoor fan motor is failure; d. The outdoor fan has been blocked ; e. The condenser is dirty; f. The outdoor unit has been installed without standard.
6	x	O	x		AC voltage higher or lower protection	<ul style="list-style-type: none"> a. The supply voltage is higher or lower than normal; b. The inner supply voltage of the unit is higher or lower than normal
7	★	★	x		Communication failure between the indoor unit and outdoor unit	<ul style="list-style-type: none"> a. The communication cable connect loose; b. The communication cable is failure; c. The connection between the filter board and the outdoor control board is incorrect or loose; d. The connection between the filter board and the terminal is incorrect or loose; e. The indoor control board is failure; f. The PFC board is failure; g. The power board is failure; h. The outdoor control board is failure.
8					Current overload protection	<ul style="list-style-type: none"> a. The fan motor run abnormally; b. The condenser and evaporator is dirty; c. The air inlet and outlet is abnormally

9				Maximum current protection	<p>a. The outdoor control board is short circuit;</p> <p>b. The drive board is short circuit;</p> <p>c. The other components is short circuit</p>
10	★	x	x	Communication trouble between outdoor unit and driver	<p>a. The connection wires connect loose</p> <p>b. The outdoor board or drive board is failure;</p>
11	O	x	x	Outdoor EEPROM in trouble	<p>a. The EEPROM chip is loose;</p> <p>b. The EEPROM chip inserted with opposite direction;</p> <p>c. The EEPROM chip is failure</p>
12				Outdoor ambient temperature too low protection	Outdoor ambient temperature too low
13	O	x	★	Compressor exhaust temperature too high protection	<p>a. The compressor exhaust temperature sensor is failure;</p> <p>b. The refrigerant of the unit is not enough</p>
14	★	★	O	Outdoor ambient temperature sensor in trouble	<p>a. The outdoor ambient temperature sensor connect loose;</p> <p>b. The outdoor ambient temperature sensor is failure;</p> <p>c. The outdoor control board is failure</p>
15	x	O	★	Compressor shell temperature too high protection	<p>a. The compressor exhaust temperature sensor connect loose</p> <p>b. The refrigerant of the unit is not enough</p>
16	★	x	★	Anti-freeze protection with cooling or overload protection with heating in	<p>a. The indoor coil temperature sensor connect loose;</p> <p>b. The indoor coil temperature sensor is failure;</p> <p>c. The indoor control board is failure</p> <p>d. The refrigerant system is abnormal.</p>
17	x	★	x	PFC protection	<p>a. The PFC is failure;</p> <p>b. The outdoor drive board is failure</p>
18	x	★	★	DC compressor start failure	<p>a. The outdoor drive board is failure;</p> <p>b. The compressor is failure</p>

19	x	★	O		Compressor drive in trouble		<p>a. The outdoor drive board is failure;</p> <p>b. The compressor is failure</p> <p>c. The outdoor control board is failure</p>
20	★	x	O		Outdoor fan motor locked rotor protection		<p>a. The connection of the outdoor fan motor is loose;</p> <p>b. There are something block the outdoor fan;</p> <p>c. The fan motor is failure;</p> <p>d. The outdoor control board is failure</p>
21	x	x	O		Outdoor coil anti-overload protection with cooling		<p>a. The refrigerant is too much;</p> <p>b. The outdoor fan motor is failure;</p> <p>c. The outdoor fan is broken;</p> <p>d. The condenser is dirty;</p> <p>e. The air inlet and air outlet of the indoor unit and the outdoor unit is not normally</p>
22					Compressor pre heating process		It is normal mode in cold weather
24					Chip in outdoor board in trouble		<p>a. Using the wrong drive board;</p> <p>b. Using the wrong compressor.</p>
26					Overheated outdoor radiator		<p>a. Radiator sensor fails</p> <p>b. Detection circuit of the sensor on the control panel fails</p>
27					Protection against too high system pressure		<p>a. The pressure switch fails</p> <p>b. The pressure detection switch on the control panel fails</p> <p>c. The measured value of system pressure exceeds the limit</p>
33	★	O	O		The failure for temperature sensor of indoor room		<p>d. The indoor room temperature sensor loose;</p> <p>e. The indoor room temperature sensor is failure;</p> <p>f. The indoor control board is failure.</p>
34	x	O	O		The failure for temperature sensor of indoor coil temperature		<p>d. The indoor coil temperature sensor loose;</p> <p>e. The indoor coil temperature sensor is failure;</p> <p>f. The indoor control board is failure.</p>

36	O	★	O		Communication failure between the indoor unit and outdoor unit		<p>a. The communication cable connect loose;</p> <p>b. The communication cable is failure;</p> <p>c. The connection between the filter board and the outdoor control board is incorrect or loose;</p> <p>d. The connection between the filter board and the terminal is incorrect or loose;</p> <p>e. The indoor control board is failure;</p> <p>f. The PFC board is failure;</p> <p>g. The power board is failure;</p> <p>h. The outdoor control board is failure.</p>
38	O	O	x		Indoor EEPROM failure		<p>c. The EEPROM chip loose;</p> <p>d. The indoor control board is failure</p>
39	O	O	★		Indoor fan motor run abnormally		<p>a. There are something block the indoor fan motor;</p> <p>b. The fan motor cord connect loose;</p> <p>c. The fan motor is failure;</p> <p>d. The indoor control board is failure</p>
41	x	x	★		The failure for Indoor grounding protective		The indoor control board is failure

The failure is detected when the room temperature sensor broken or shorted over 5 sec.

The failure is detected when the temperature sensor of heater exchange broken or shorted over 5 sec.

The failure is detected when each setting data is not match after the EEPROM self-check two times.

The failure is occur when the grounding signal is not detected after the appliance power ON.

Test the jumper terminals

Note:

When the whole machine is powered up, if the external unit does not work, to rule out the communications failures, adopt screening method such as short circuit on the jumper terminals to see if the external unit can be started normally or similar method.



There are two blue terminals on the outdoor control panel, as shown above.

Application: Short out the terminals, and power up the outdoor unit, then the outdoor unit may run independently. It can be determined that there is no internal and external communication faults.

When the environment temperature is lower than 18°C, you can't run the unit under the cool mode, but if you need run the unit at this moment, such as add the gas or do more test, at this moment you can use this function,

Under this function, the outdoor motor and compressor will be forced to run until reaching a fixed frequency (general is 50~55Hz).

Trouble Diagnosis of Protection

Protection diagnosis of the complete machine (all types of protection during operation, i.e. under-voltage, over-voltage and overcurrent protection)

Note: List all types of protection that may occur to the complete machine and describe the conditions and signs of the start, course and end of such protection.

Voltage protection

Protection against AC input over-voltage/under-voltage

1. Conditions for protection against AC input over-voltage/under-voltage:

If the input AC voltage is greater than “protective over-voltage value” or less than “protective under-voltage value” for five seconds, over-voltage/under-voltage protection starts.

2. Protection actions against AC input over-voltage/under-voltage

The system stops operation.

3. Conditions for ending AC input over-voltage/under-voltage:

If the input AC voltage is lower than “the protective over-voltage value” -10V, or higher than “the protective under-voltage value” +10V, the over-voltage/under-voltage protection will be released.

Current protection:

1. Protection against over-current

Conditions for over-current protection: if the current is equal to or greater than “current value for starting the refrigeration current protection (E2 value)” for six seconds, over-current protection starts.

Protection actions against over-current: indoor display screen and outdoor indicator give indications, the

compressor and outdoor fan stop, but indoor fan runs normally.

Condition for ending over-current protection: when the current drops below “current value for releasing the refrigeration current protection (E2 value)”, over-current protection will be released.

2. Frequency decreasing for over-current

Conditions for over-current frequency decreasing : if the current is equal to or greater than “current value for starting the refrigeration current protective frequency decreasing (E2 value)”, over-current frequency decreasing starts.

Over-current frequency decreasing actions: the compressor will decrease frequency at rate of (E2 value)Hz/S. The indoor and outdoor fans run.

Conditions for ending over-current frequency decreasing : when the current drops below “current value for starting the refrigeration current protective prohibition of frequency rising (E2 value)”, over-current under-clocking will be released.

3. Prohibition of frequency increasing of compressor exhausting

Conditions for prohibition of frequency rising of compressor discharge

Condition 1: in the case of frequency decreasing of compressor discharge, the discharge temperature of the compressor drops below X4°C.

Condition 2: in normal operation, the discharge temperature of compressor reaches X5°C.

Either of the above two conditions is met, prohibition of frequency rising of compressor discharge begins.

Actions relates to prohibition of frequency rising of compressor discharge: the frequency of compressor maintains at the current level, which may decrease as the case requires while cannot rise. The indoor and outdoor fans run.

Condition for ending prohibition of frequency rising of compressor discharge: if the temperature of compressor discharge drops below X6°C, prohibition of frequency rising of compressor discharge will be released.

4. Prohibition of frequency for anti-overload of outdoor coiled pipe

Condition for anti-overload prohibition of frequency of outdoor coiled pipe: in the case of anti-overload frequency decreasing of outdoor coiled pipe, anti-overload prohibition of frequency of the unit begins when the temperature of outdoor coiled pipe drops below “the anti-overload frequency decreasing temperature of outdoor coiled pipe”.

Actions relates to anti-overload prohibition of frequency of outdoor coiled pipe: the frequency of compressor maintains at the current level, which may decrease as the case requires while cannot rise. The indoor and outdoor fans run.

Condition for ending anti-overload prohibition of frequency of outdoor coiled pipe: if the temperature of outdoor coiled pipe drops below “temperature to release the anti-overload state of outdoor coiled pipe”, anti-overload prohibition of frequency of outdoor coiled pipe will be released.

Trouble Diagnosis of Compressor

Judging the connecting terminals of inverter compressor:

It is impossible to identify terminals U, V and W of inverter compressor with multi-meter. Just connect the terminals in the same way as the original unit when replacing the compressor. A wrong connection will lead to reverse and loud noise of the compressor.

Resistance of compressor coil:

Measure the resistance between any two terminals, which are about a few Ohms, three phases having the same resistance.

Trouble Diagnosis of Electric Filter Board

Visual examination: as the circuit is simple, the connection may be checked visually to see whether any loose or poor connection.

Voltage test: the voltage at the input end shall be the same as the voltage at the output end.

Trouble Diagnosis of Electric Communication

Step one: to determine whether the connecting cables and tether cables of indoor/outdoor units are correctly wired. If not, change wiring order and test connection.

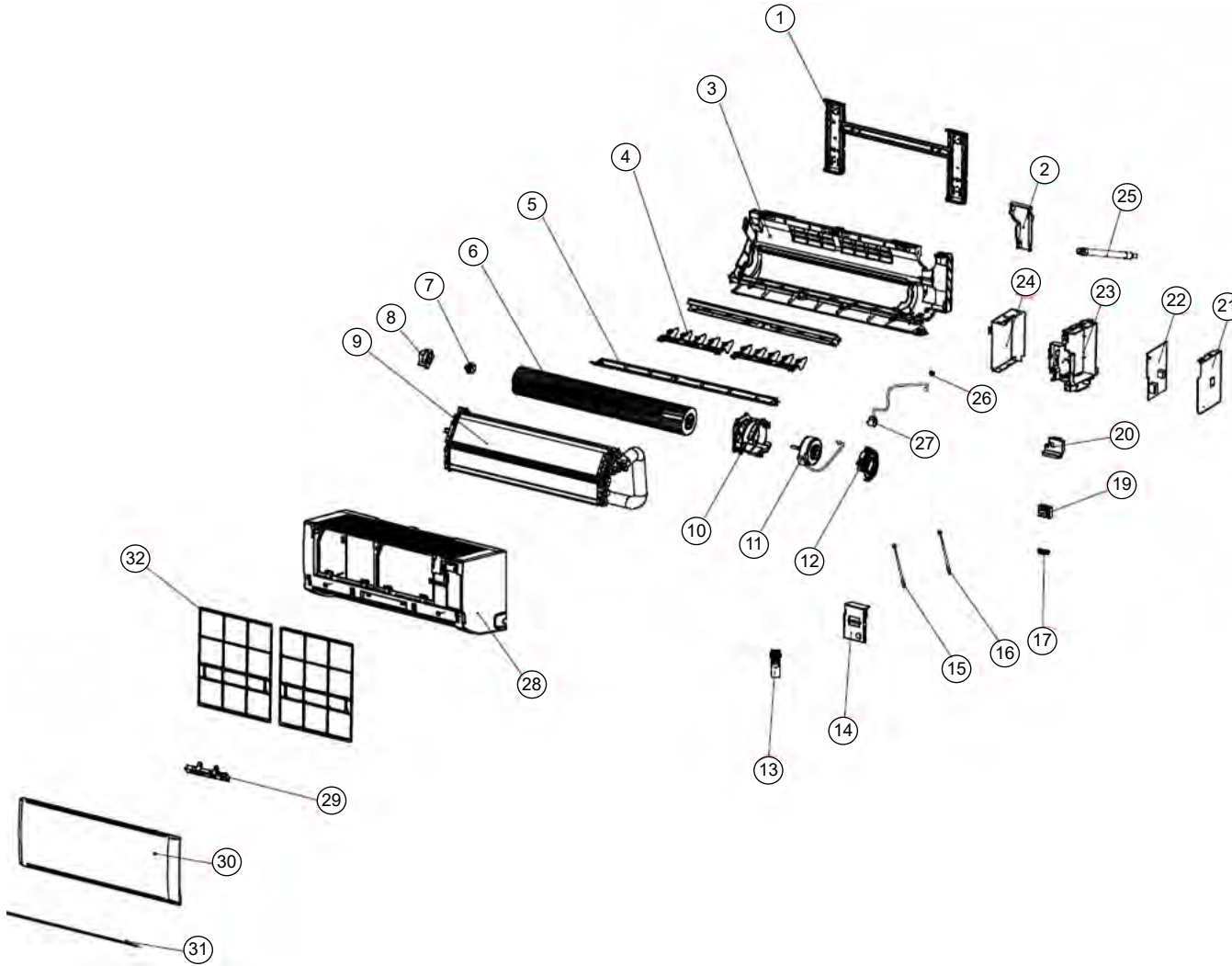
Step two: to determine whether there is loose connection.

Fasten the connection in the case of loose connection and then conduct verification.

Step three: measure the voltage between SI and N with multi-meter and see whether the voltage fluctuates between 0V and 24V. Please directly replace indoor and outdoor control boards if there are not voltage fluctuations.

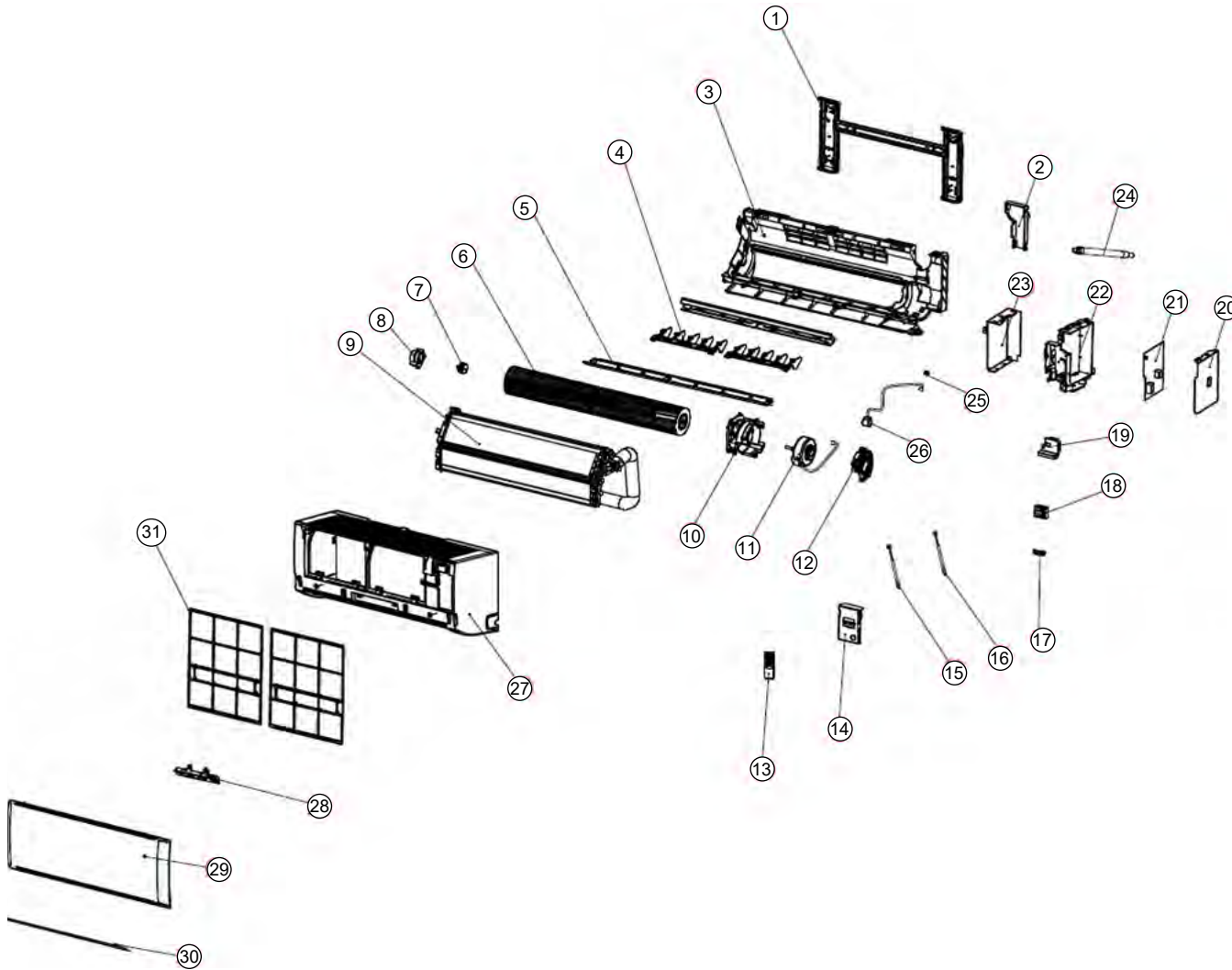
Parts

INDOOR UNIT
WHS09WMA21S
WHS09WMA11S



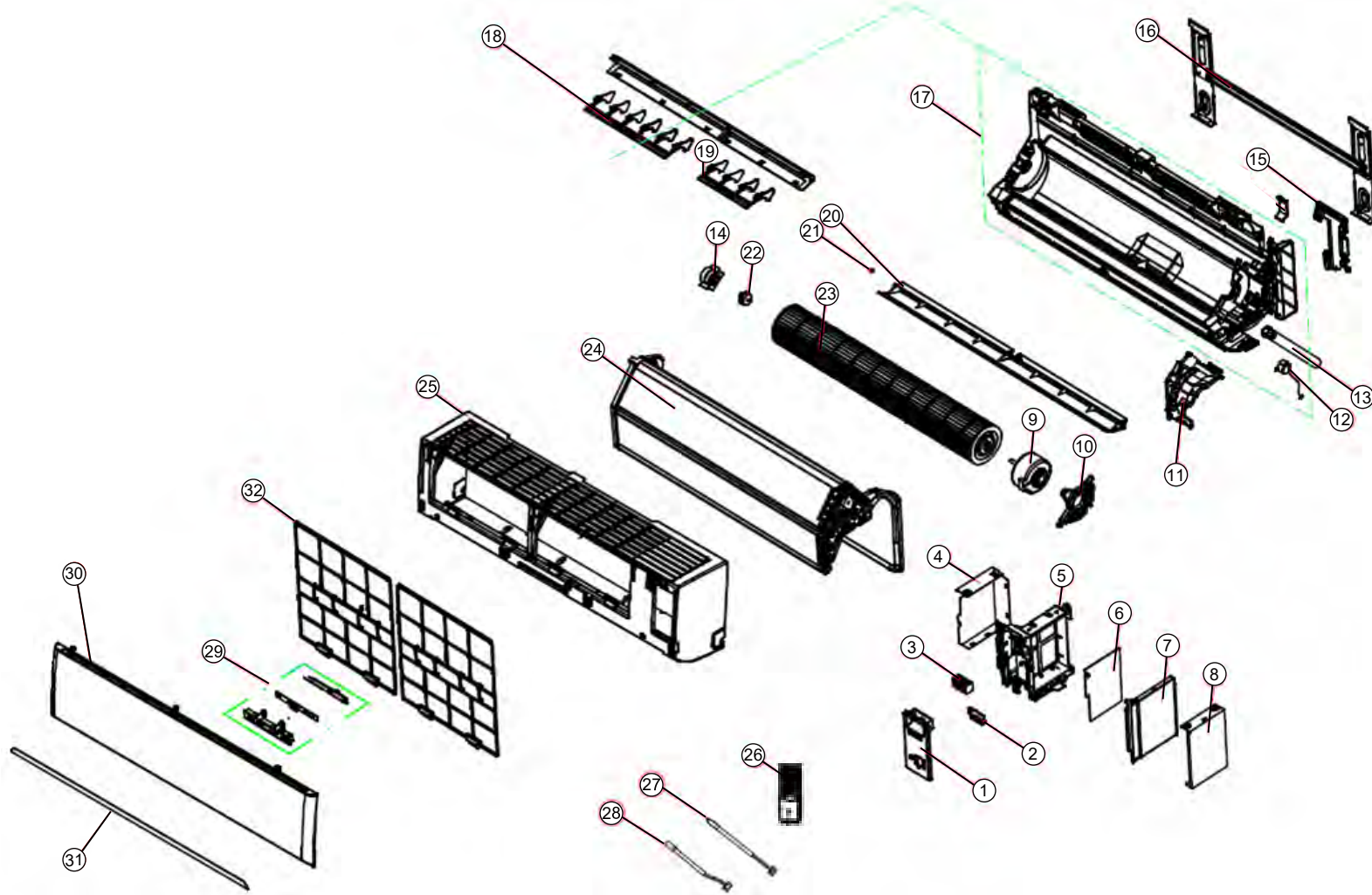
No.	Description	Part number	
		WHS09WMA21S	WHS09WMA11S
1	Bracket wall	1906605	←
2	Baffle	1984201	←
3	Casing assembly	1856104	←
4	Vertical louver	1465662	←
5	Louver	1555320	←
6	Cross flow fan assy	1466013	←
7	Bearing	1223739	←
8	Baffle	1465670	←
9	Evaporator	1513708	1826755
10	Guard motor	2026728	←
11	Motor fan	1857574	1487147
12	Cover motor	2091436	←
13	Remote control	4175260	←
14	Cover wire	1465763	←
15	Thermistor room	1387643	←
16	Thermistor pipe	1471151	←
17	Clamp cord	1839902	←
19	Terminal	1852126	←
20	Cover wire	1840039	←
21	Electric box cover	1465761	←
22	Controller PCB	2029020	2006535
23	Electric box	1868909	←
24	Electric box cover	1465762	←
25	Drain hose	1470426	←
26	Plug	1222824	←
27	Step motor	1260259	←
28	Front panel	2007188	←
29	Display assembly	1844148	←
30	Intake grille	4151691	←
31	Label	1817340	←
32	Air filter	1505714	←

INDOOR UNIT
WHS12WMA21S
WHS12WMA11S



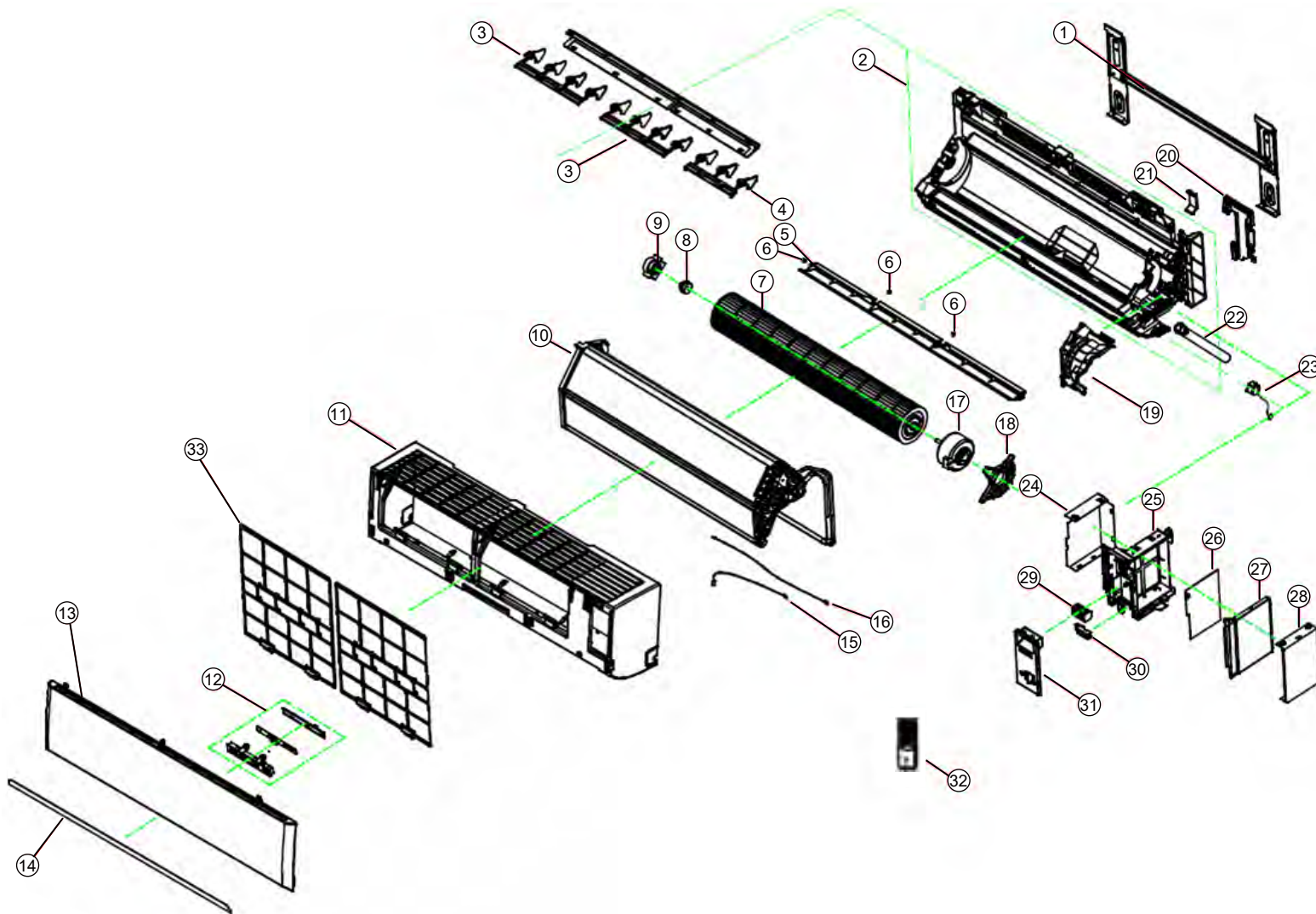
No.	Description	Part number	
		WHS12WMA21S	WHS12WMA11S
1	Bracket wall	1906600	←
2	Baffle	1984201	←
3	Casing assembly	1854463	←
4	Vertical louver	1465662	←
5	Louver	1555374	←
6	Cross flow fan assy	1466014	←
7	Bearing	1223739	←
8	Baffle	1465670	←
9	Evaporator	1512275	←
10	Guard motor	2026728	←
11	Motor fan	1857574	1487147
12	Cover motor	2091436	←
13	Remote control	4175260	←
14	Cover wire	1465763	←
15	Thermistor room	1387643	←
16	Thermistor pipe	1471151	←
17	Clamp cord	1839902	←
18	Terminal	1852126	←
19	Cover wire	1840039	←
20	Electric box cover	1465761	←
21	Controller PCB	2029020	2006535
22	Electric box	1868909	←
23	Electric box cover	1465762	←
24	Drain hose	1470426	←
25	Plug	1222824	←
26	Step motor	1260259	←
27	Front panel	2007195	←
28	Display assembly	1844148	←
29	Intake grille	4151693	←
30	Label	1829016	←
31	Air filter	1506312	←

INDOOR UNIT
WHS18WMA21S



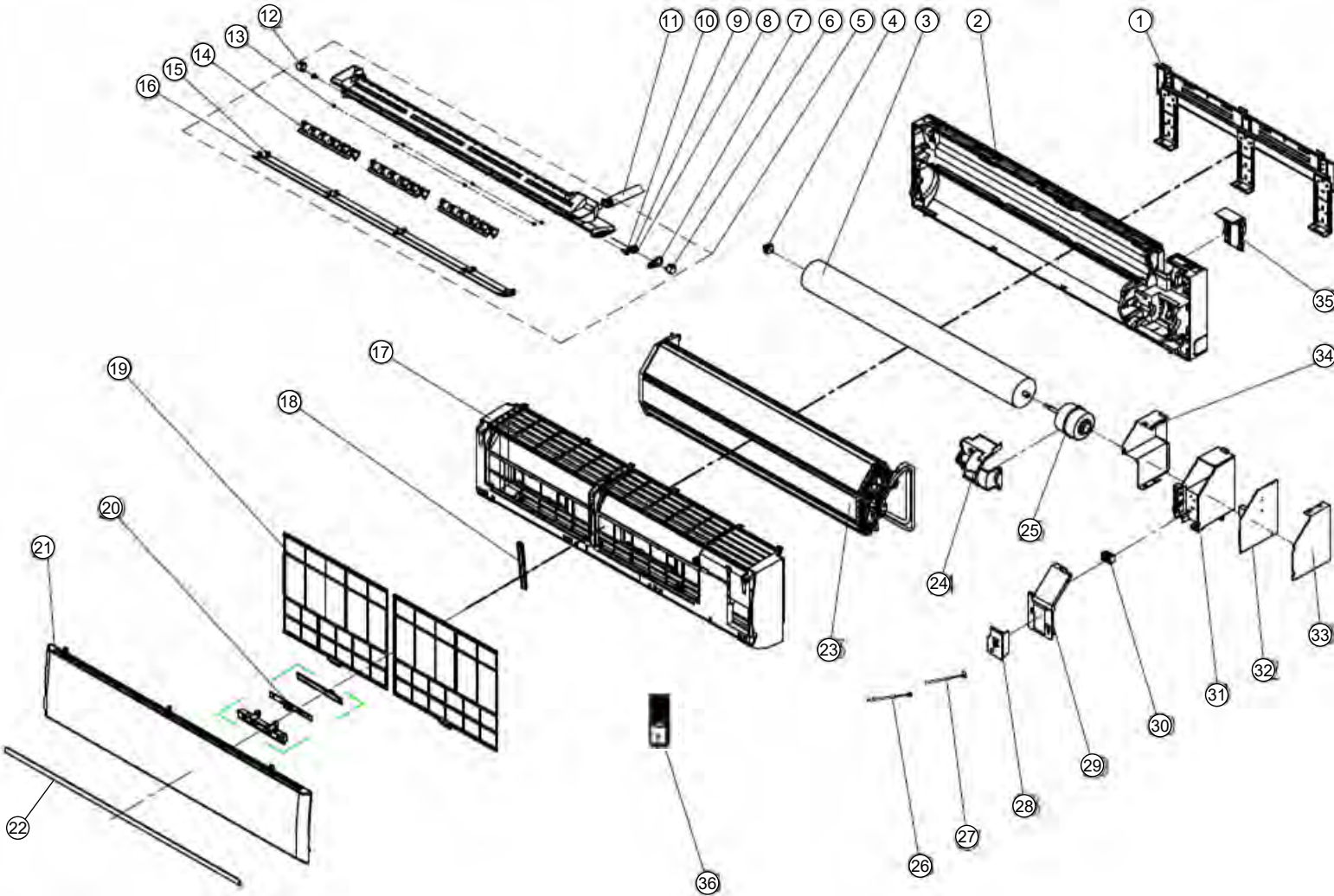
No.	Description	Part number
1	Cover display	1541379
2	Clamp cord	1840141
3	Terminal	1852126
4	Electric box cover	1541500
5	Electric box	1870720
6	Controller PCB	2032461
7	Cover wire	1541507
8	Cover wire	1837043
9	Motor fan	1858726
10	Cover motor	1541374
11	Guard motor	1541369
12	Step motor	1819726
13	Drain hose	1470426
14	Baffle	1465670
15	Baffle	1541361
16	Bracket wall	1907022
17	Casing assembly	1953451
18	Vertical louver	1541365
19	Vertical louver	1550294
20	Louver	1541362
21	Plug	1222824
22	Bearing	1223738
23	Cross flow fan assy	1541622
24	Evaporator	1552313
25	Front panel	1816260
26	Remote control	4175260
27	Thermistor room	1387643
28	Thermistor pipe	1383891
29	Display assembly	1564511
30	Intake grille	4151694
31	Label	1817532
32	Air filter	1541386

INDOOR UNIT
WHS24WMA21S



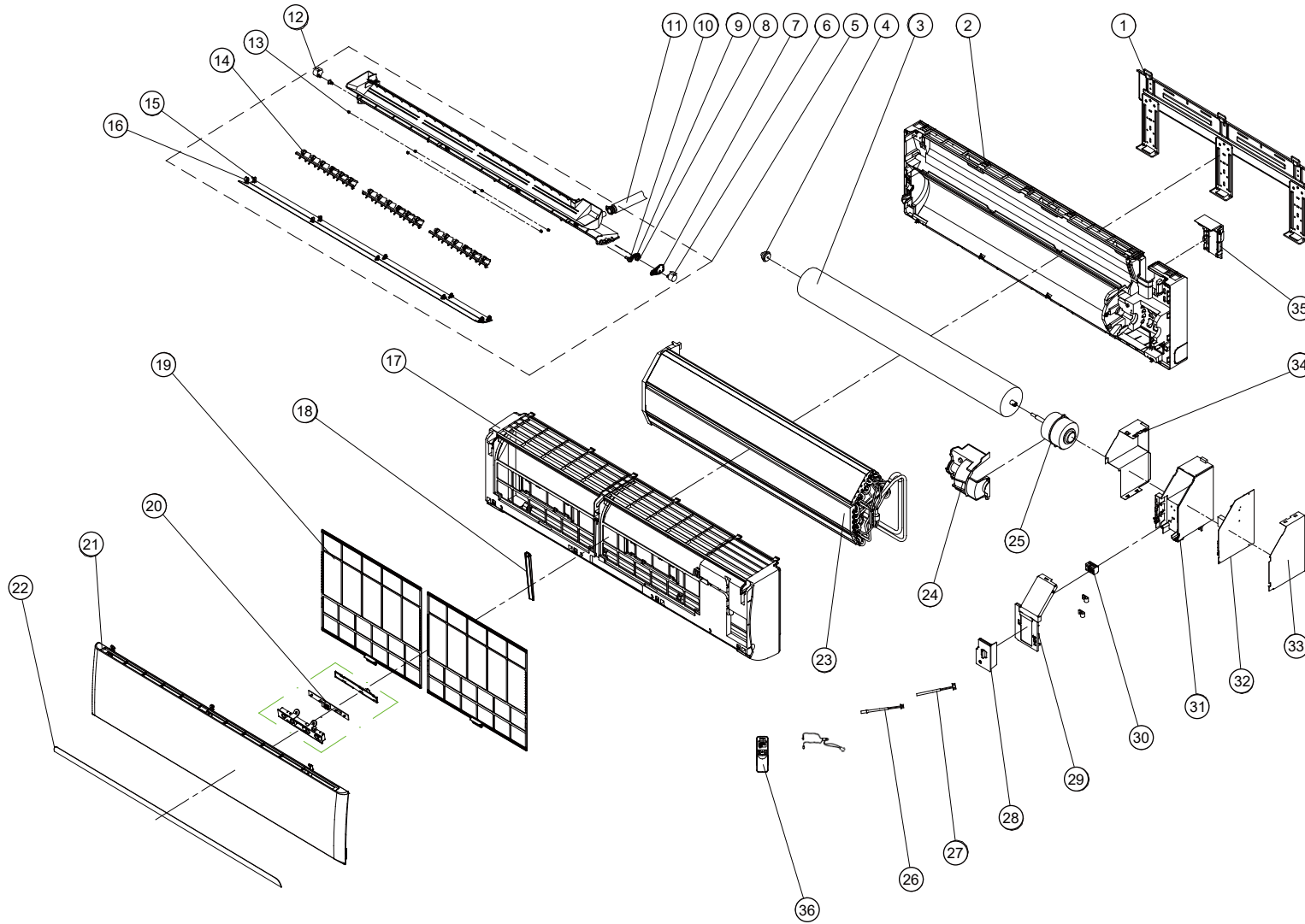
No.	Description	Part number
1	Bracket wall	1907022
2	Casing assembly	1954366
3	Louver	1541457
4	Vertical louver	1550294
5	Louver	1541363
6	Plug	1222824
7	Cross flow fan assy	1541633
8	Bearing	1223738
9	Baffle	1465670
10	Evaporator	1556041
11	Front panel	1816294
12	Display assembly	1564511
13	Intake grille	4151695
14	Label	1817417
15	Thermistor pipe	1383891
16	Thermistor room	1387643
17	Motor fan	1561456
18	Cover motor	1541374
19	Guard motor	1541373
20	Baffle	1541361
21	Baffle	1541370
22	Drain hose	1470426
23	Step motor	1819726
24	Electric box cover	1541500
25	Electric box	1870720
26	Controller PCB	1922321
27	Cover wire	1541507
28	Cover wire	1837043
29	Terminal	1852126
30	Clamp cord	1840141
31	Cover display	1541379
32	Remote control	4175260
33	Air filter	1541387

INDOOR UNIT
WHS30WMA21S



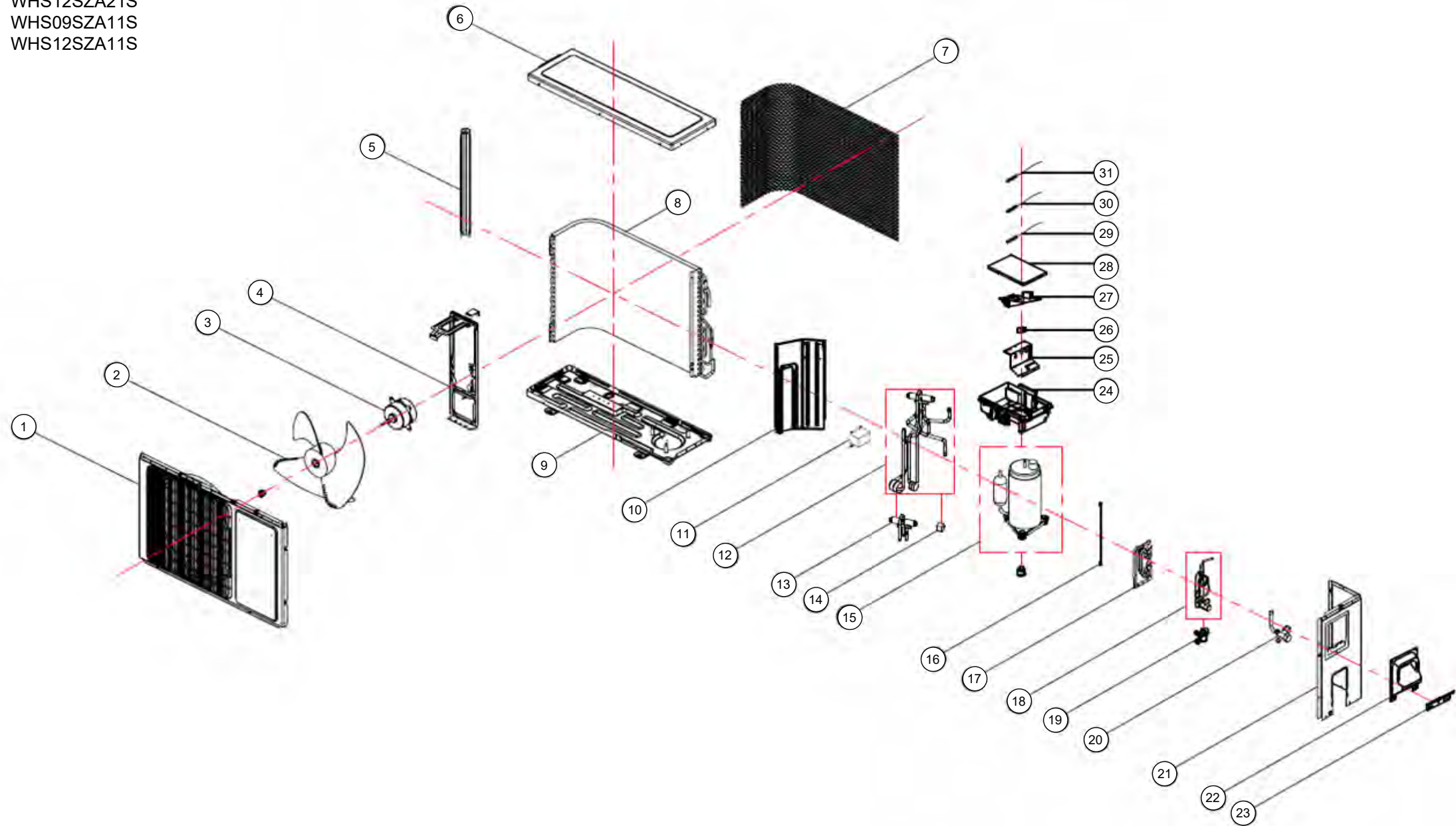
No.	Description	Part number
1	Bracket wall	1896952
2	Casing assembly	1868777
3	Cross flow fan assy	1511626
4	Bearing	1248742
5	Air outlet parts	1868554
6	Step motor	1225096
7	Mounting plate	1512013
8	Axes	1508998
9	Holder center	1509001
10	Axes	1509000
11	Drain hose	1470426
12	Step motor	1516166
13	Plug	1222824
14	Vertical louver	1508997
15	Louver	1508995
16	Louver	1508996
17	Front panel	2007253
18	Mounting plate	1510158
19	Air filter	1880986
20	Display assembly	1962530
21	Intake grille	4151697
22	Label	1962455
23	Evaporator	1810946
24	Guard motor	1510271
25	Motor fan	1837643
26	Thermistor pipe	1383891
27	Thermistor room	1473879
28	Cover display	1510281
29	Cover wire	1510280
30	Terminal	1852126
31	Electric box	1868943
32	Controller PCB	1918102
33	Electric box cover	1510284
34	Electric box cover	1510290
35	Baffle	1509002
36	Remote control	4175260

INDOOR UNIT
WHS36WMA21S



No.	Description	Part number
1	Bracket wall	1896952
2	Casing assembly	1868777
3	Cross flow fan assy	1511626
4	Bearing	1248742
5	Air outlet parts	1868554
6	Step motor	1225096
7	Mounting plate	1512013
8	Axes	1508998
9	Holder center	1509001
10	Axes	1509000
11	Drain hose	1470426
12	Step motor	1516166
13	Plug	1222824
14	Vertical louver	1508997
15	Louver	1508995
16	Louver	1508996
17	Front panel	2007253
18	Mounting plate	1510158
19	Air filter	1880986
20	Display assembly	1962530
21	Intake grille	4151697
22	Label	1962455
23	Evaporator	1904474
24	Guard motor	1510271
25	Motor fan	1837643
26	Thermistor pipe	1383891
27	Thermistor room	1473879
28	Cover display	1510281
29	Cover wire	1510280
30	Terminal	1852126
31	Electric box	1868943
32	Controller PCB	2127844
33	Electric box cover	1510290
34	Electric box cover	1510284
35	Baffle	1509002
36	Remote control	4175260

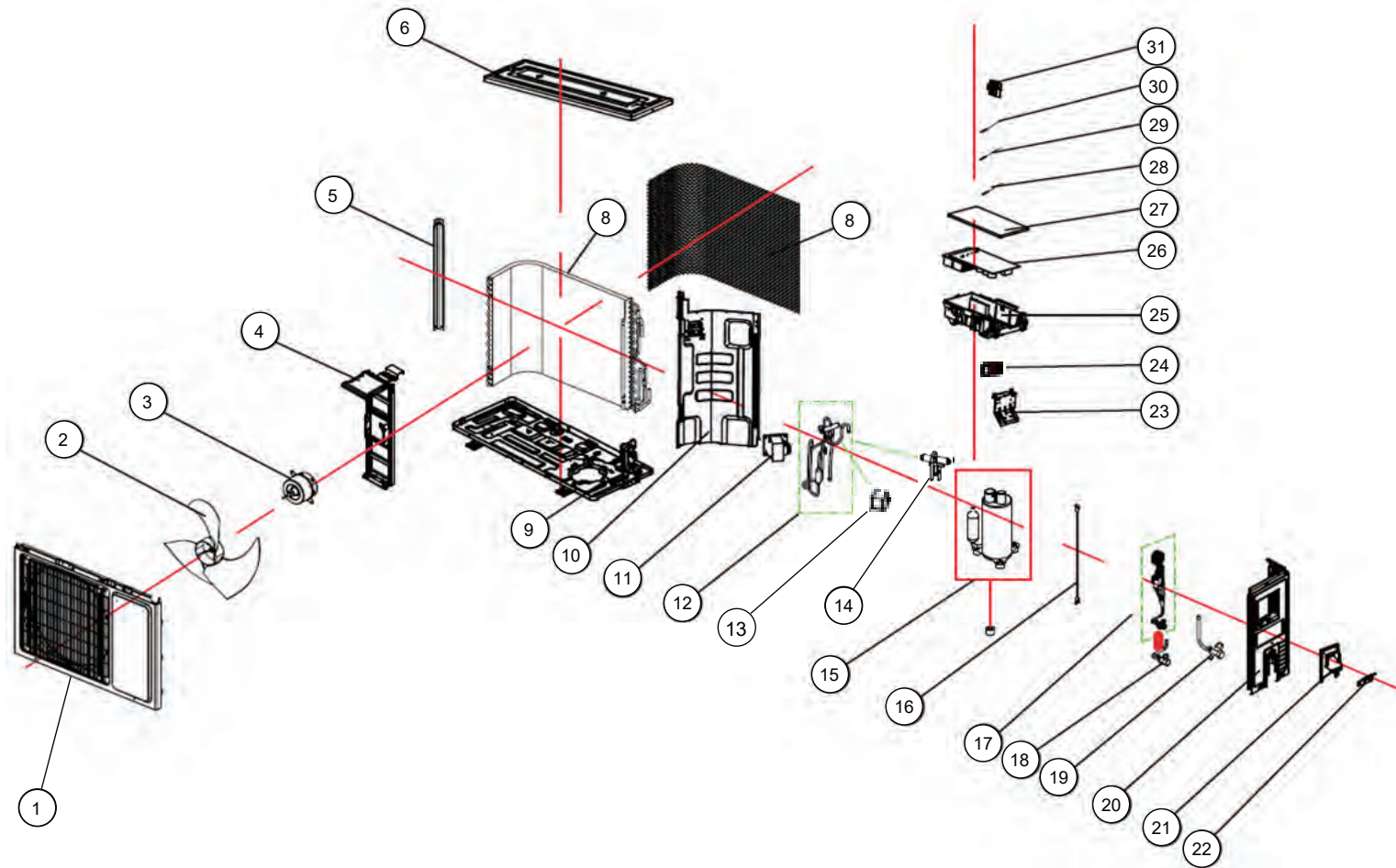
OUTDOOR UNIT
WHS09SZA21S
WHS12SZA21S
WHS09SZA11S
WHS12SZA11S



OUTDOOR UNIT
WHS09SZA21S
WHS12SZA21S
WHS09SZA11S
WHS12SZA11S

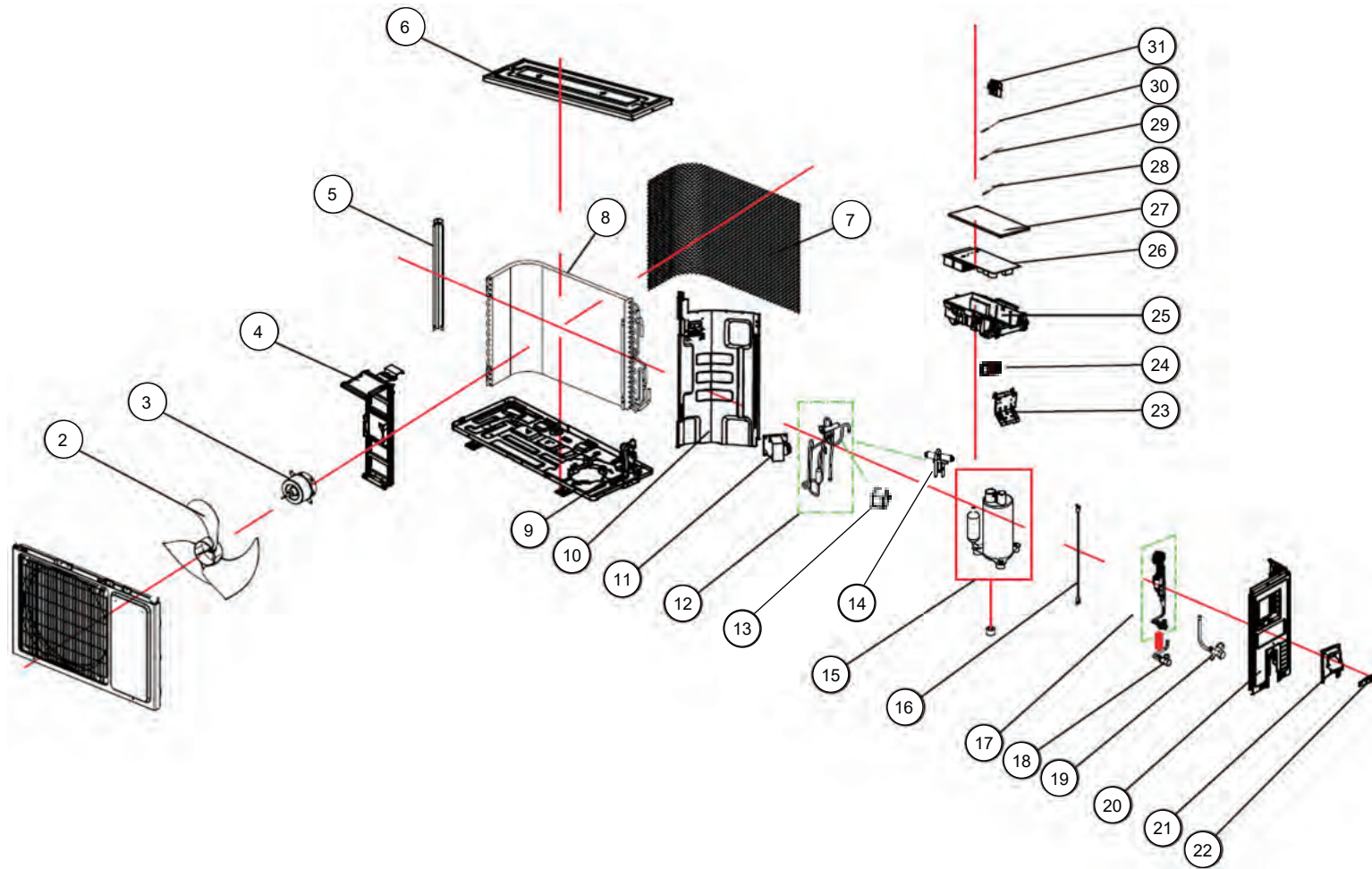
No.	Description	WHS09SZA21S	WHS12SZA21S	WHS09SZA11S	WHS12SZA11S
1	Front panel w/ grille	2135537	←	2135537	←
2	Propeller fan blade	1405123	←	1405123	←
3	Fan motor	1820938	←	1457759	←
4	Motor bracket	1824869	←	1824869	←
5	Mounting plate	1824871	←	1824871	←
6	Top panel	1824865	←	1824865	←
7	Protective net back	1824902	←	1824902	←
7'	Protective net left	1824903	←	1824903	←
8	Condenser assembly	1855257	1854202	1855257	1854202
9	Base assembly	1832900	←	1854218	1832900
10	Separate wall	1843005	←	1895382	←
11	Choke coil	1343046	←	1302261	←
12	Valve 4 way TA	1855252	1864878	1906761	1906478
13	Valve 4 way	1258654	←	1258654	←
14	Solenoid	1511783	←	1906608	←
15	Compressor	1823544	1821191	1838380	1821191
16	Compressor wire	1822371	←	1822371	←
17	Bracket valve	1824870	←	1824870	←
18	Capillary assembly	1855251	1821167	1838379	1821167
19	Valve 2 way 1/4	1258653	←	1258653	←
20	Valve 3 way 3/8	1407169	←	1407169	←
21	Cabinet right	1855206	←	1855206	←
22	Bracket conduit	1854033	←	1854033	←
23	Plate cover	1854034	←	1854034	←
24	Electric box	1918705	←	1916000	←
25	Connecting board	1843011	←	1843011	←
26	Wire terminal board	1854383	←	1912060	←
27	Inverter control PCB	1855063	1855422	1906357	1906358
28	Electric box cover	1823292	←	1916001	←
29	Thermistor discharge	1472663	←	1472663	←
30	Thermistor pipe	1472664	←	1472664	←
31	Thermistor outdoor	1831029	←	1831029	←
---	Tube electric heater	1854709	←	1901902	←

OUTDOOR UNIT
WHS18SZA21S



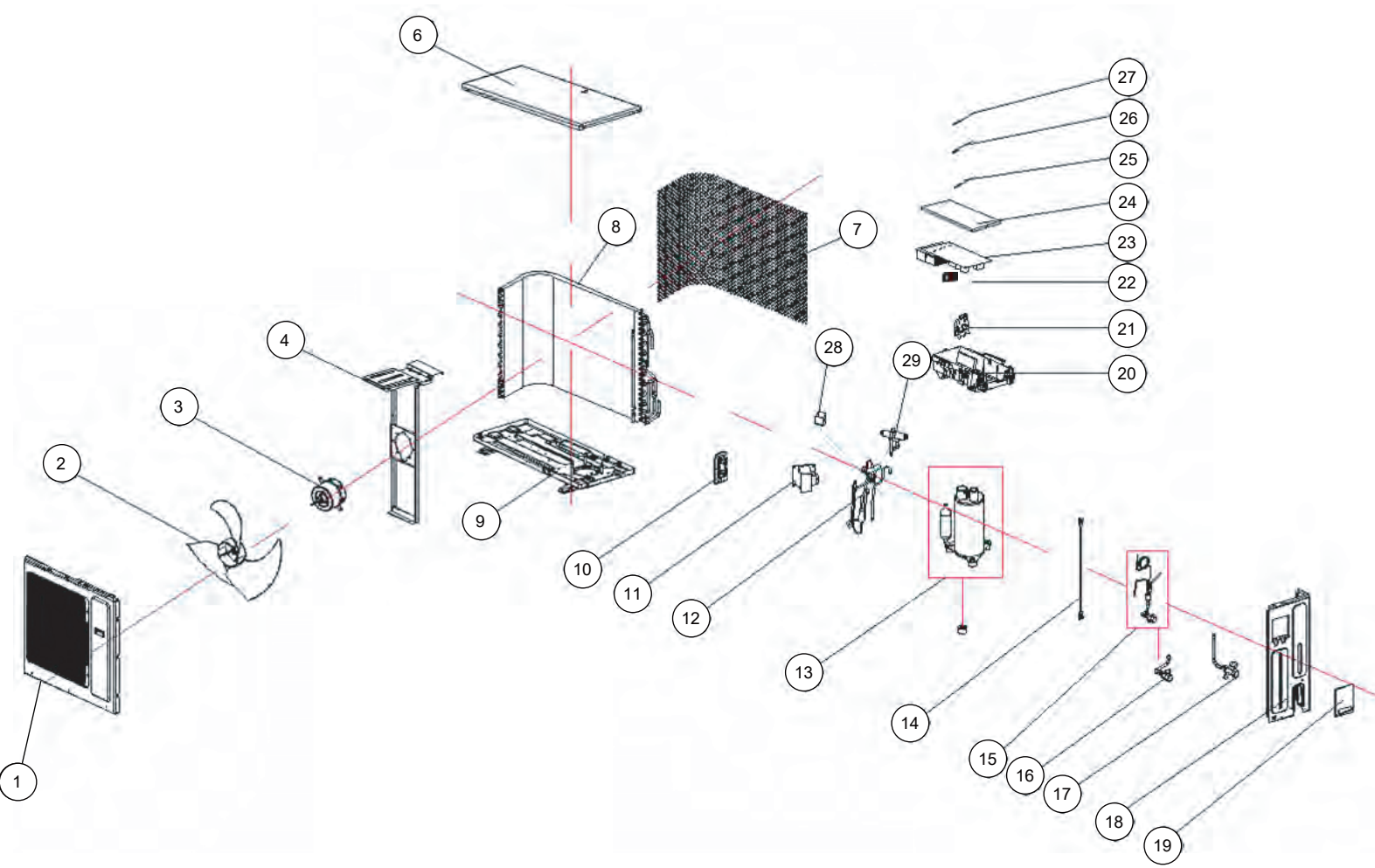
No.	Description	Part number
1	Front panel w/ grille	2138572
2	Propeller fan blade	1556766
3	Fan motor	1854829
4	Motor bracket	1849292
5	Mounting plate	1846086
6	Top panel	1846082
7	Protective net left	1854580
7'	Protective net back	1854579
8	Condenser assembly	1854847
9	Base assembly	1850352
10	Separate wall	1847982
11	Choke coil	1513622
12	Valve 4 way TA	1850547
13	Solenoid	1511783
14	Valve 4 way	1408045
15	Compressor	1850482
16	Wire compressor	1495238
17	Capillary assembly	1854848
18	Valve 2 way 1/4	1844583
19	Valve 3 way 1/2	1844499
20	Cabinet right	1846084
21	Bracket conduit	1854040
22	Plate cover	1854034
23	Connecting board	1842392
24	Wire terminal board	1852124
25	Electric box	1841985
26	Inverter control PCB	1854308
27	Electric box cover	1546706
28	Thermistor discharge	1472663
29	Thermistor pipe	1472664
30	Thermistor outdoor	1831029
31	Senser mount plate	1546721
---	Tube electric heater	1854766

OUTDOOR UNIT
WHS24SZA21S



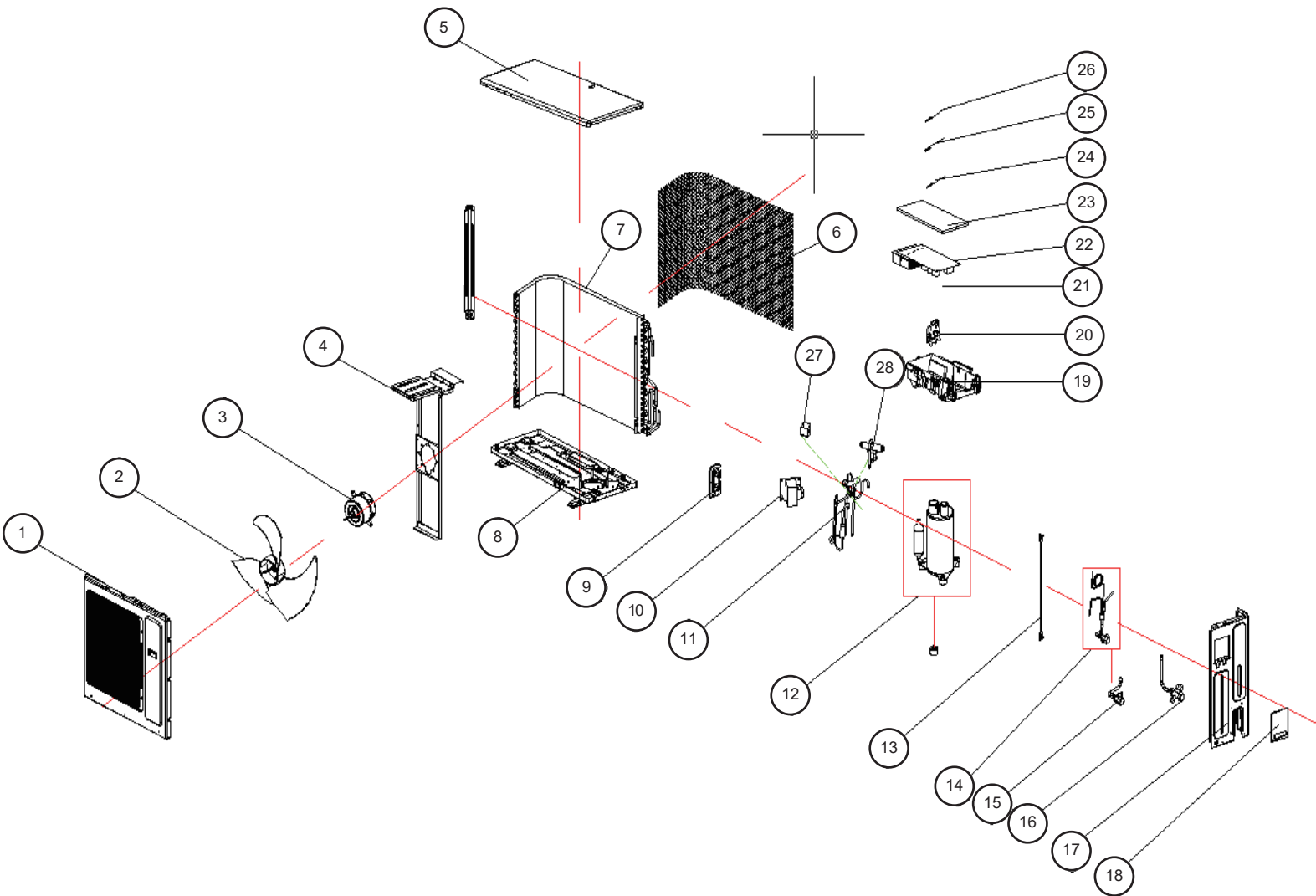
No.	Description	Part number
1	Front panel w/ grille	2138571
2	Propeller fan blade	1841783
3	Fan motor	1841930
4	Motor bracket	1841749
5	Mounting plate	1841772
6	Top panel	1841779
7	Protective net left	1854661
7'	Protective net back	1871792
8	Condenser assembly	1854467
9	Base assembly	1844016
10	Sparate wall	1841986
11	Choke coil	1205797
12	Valve 4 way TA	1851363
13	Solenoid	1511783
14	Valve 4 way	1408045
15	Compressor	1830018
16	Wire compressor	1495238
17	Capillary assembly	1854469
18	Valve 2 way 3/8	1849152
19	Valve 3 way 5/8	1849153
20	Cabinet right	1841776
21	Bracket conduit	1854040
22	Plate cover	1854034
23	Connecting board	1842392
24	Wire terminal board	1852124
25	Electric box	1841985
26	Inverter control PCB	1854506
27	Electric box cover	1546706
28	Thermistor discharge	1472663
29	Thermistor pipe	1511780
30	Thermistor outdoor	1831029
31	Senser mount plate	1546721
---	Tube electric heater	1854710

OUTDOOR UNIT
WHS30SZA21S



No.	Description	Part number
1	Front panel w/ grille	1542623
2	Propeller fan blade	1542217
3	Fan motor	1561964
4	Motor bracket	1561919
6	Top panel	1878885
7	Protective net back	1819106
8	Condenser assembly	1854949
9	Base assembly	1561897
10	Bracket valve	1534867
11	Choke coil	1302261
12	Valve 4 way TA	1877142
13	Compressor	1854539
14	Wire compressor	1847142
15	EEV assembly	1817803
16	Valve 2 way 3/8	1536052
17	Valve 3 way 5/8	1456114
18	Cabinet right	1866429
19	Cover wire dist	1865713
20	Electric box	1846885
21	Connecting board	1846891
22	Wire terminal board	1852124
23	Inverter control PCB	1855046
24	Electric box cover	1846887
25	Thermistor pipe	1822633
26	Thermistor discharge	1822634
27	Thermistor outdoor	1852304
28	Solenoid	1511783
29	Valve 4 way	1258444
---	Tube electric heater	1854767

OUTDOOR UNIT
WHS36SZA21S



No.	Description	Part number
1	Front panel w/ grille	1542623
2	Propeller fan blade	1542217
3	DC motor	1821300
4	Motor bracket	1561919
5	Top panel	1878885
6	Protective net back	1819106
7	Condenser assembly	1854549
8	Base assembly	1814292
9	Bracket valve	1534867
10	Choke coil	1302261
11	Valve 4 way TA	2002716
12	Compressor	1926428
13	Wire compressor	1847142
14	EEV assembly	2146483
15	Valve 2 way 3/8	1536052
16	Valve 3 way 5/8	1456114
17	Cabinet right	1866429
18	Cover wire dist	1865713
19	Electric box	1986886
20	Connecting board	1846888
21	Wire terminal board	1852124
22	Inverter control PCB	2127528
23	Electric box cover	1986887
24	Thermistor pipe	1822633
25	Thermistor discharge	1822634
26	Thermistor outdoor	1852304
27	Solenoid	1511783
28	Valve 4 way	1258444
---	Tube electric heater	1854767

Accessories

Indoor unit

Part name	Q'ty	Part name	Q'ty
Remote controller instructions	1	Drain connector for outdoor unit	1
Use and installation instructions	1	Flare nuts	4
Remote controller	1	Bag of wall anchors and screws	1
Remote controller holder	1	Screw for installations	5
AAA battery	2	Screw cover	09/12 model: 1 18/24 model: 3 30/36 model: 4
Foam insulation	1	Warranty Card	1

Outdoor unit

Part name	Q'ty	Part name	Q'ty
Bottom rubber for outdoor unit	4	Power wire	1