CONTENTS

Part 1 General Information

1. Nomenclature

code	A	B		18		2		A	
	1	2		3, 4		5		6	
	air conditioner	product type		product specification		voltage		combination type	
code and meaning	A	cassette type	B	cooling capacity	the valid number more than thousand digital	110-115V/50-60Hz	1	single split unit or packaged unit	A
		convertible type	C	dehumidifier	(litre or pint)the first two number	220-240V/50Hz	2	two by one	B
		duct type	D	air refresh capacity	the first two number	115-220V/50-60Hz	3	three by one	C
		ceiling concealed type	E			220-240V/60Hz	4	four by one	D
		window type	F			110V/50-60Hz	6	free combination (MRV series)	F
		cabinet type	P			220V/50Hz	8	multi series	X
		wall type	S			380-400V/50Hz	N	gas heat pump	G
						380-400V/60Hz	I		
						415V/50Hz	M		
		Outdoor Unit	U						

C	E			R		A	
7	8			9		10	
appearance	refrigerant			design series number		climate type	
	heating and cooling	R22	A	fixed frequency and little appliance	A-G	T1	A
		R407C	B	AC inverter type	H-Q	T3	B
		R123	C	DC inverter type	R-Z		
		R134a	D			T1,suitable for at -15 cooling (cooling, heat pump) or at -20 heating(heat pump)	C
		R410a	E				
	cooling only and dehumifier	R22	M				
		R407C	N				
		R123	O				
		R134a	P				
		R410a	Q				
	3-pipe	R410A	U				

2. Capacity range

2.1 Outdoor unit

Series		12	18	24	28	36	42	48	60	72
R410A ON-OFF	AU*****EAA	○	○	○	○	○	○	○	○	○
R410A DC INVERTER	AU*****ERA	○	○	○	○	○	○	○	○	

2.2 Indoor unit

Capacity range			12	18	24	28	36	42	48	60	72
Cassette			○	○	○	○	○	○	○	○	
Convertible			○	○	○	○	○		○	○	
Duct	ceiling concealed type		○	○	○						
	midium static pressure type	AD***AM***		○	○	○	○	○	○		
		AD***AN***					○	○	○		
	high static pressure type					○	○	○	○	○	○
Cabinet								○	○		
Wall mounted				○							

3. External appearance

3.1 Outdoor unit

					
AU122AEEAA AU182AEEAA	AU242AGEAA	AU282AHEAA AU28NAHEAA	AU362ALEAA AU42NALEAA	AU362AIEAA AU36NAIEAA AU48NAIEAA AU60NAIEAA	AU72NATEAA
AU122AEERA AU182AFERA	AU242AGERA	AU282AHERA AU362AHERA		AU48NAIERA AU60NAIERA	

3.2 Cassette indoor unit

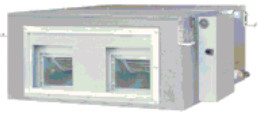
			
AB122ACEAA AB182ACEAA	AB242ACEAA AB282ACEAA	AB482ACEAA AB602ACEAA	AB242AEEAA AB282AEEAA AB362ACEAA AB422AEEAA AB482AEEAA
AB122ACERA AB182ACERA	AB242ACERA	AB362ACERA AB602ACERA	AB242AEERA AB282AEERA AB362AEERA AB482AEERA

3.3 Convertible indoor unit

	
AC122ACEAA AC182ACEAA AC242ACEAA	AC282AFEAA AC362AFEAA AC482AFEAA AC602AFEAA
AC122ACERA AC182ACERA AC242ACERA	AC282AFERA AC362AFERA AC482AFERA AC602AFERA

3.4 Duct indoor unit

			
AD122ALEAA AD182ALEAA AD242ALEAA		AD182AMEAA AD242AMEAA AD282AMEAA AD362AMEAA	AD362ANEAA AD422ANEAA AD482ANEAA
AD122ALERA AD182ALERA AD242ALERA	AD182AMERA	AD242AMERA AD282AMERA AD362AMERA	AD482ANERA

			
AD482AMEAA	AD282AHEAA AD362AHEAA	AD482AHEAA AD602AHEAA	AD722AHEAA
		AD362AHERA AD482AHERA AD602AHERA	

3.5 Cabinet indoor unit

	
AP422ACEAA	AP482AKEAA

3.6 Wall mounted indoor unit


AS182AVERA

4 Operation temperature range

4.1 For R410A ON-OFF

			Rated	Maximum	Minimum
Cooling	Indoor	DB ℃	27	32	18
		WB ℃	19	23	14
	Outdoor	DB ℃	35	43	10
		WB ℃	24	26	6
Heating	Indoor	DB ℃	20	27	15
		WB ℃	14.5	--	--
	Outdoor	DB ℃	7	24	-7
		WB ℃	6	18	--

4.2 For R410A Inverter

			Rated	Maximum	Minimum
Cooling	Indoor	DB ℃	27	32	18
		WB ℃	19	23	14
	outdoor	DB ℃	35	43	-5
		WB ℃	24	26	--
Heating	Indoor	DB ℃	20	27	15
		WB ℃	14.5	--	--
	outdoor	DB ℃	7	24	-7
		WB ℃	6	18	--

Part 2 Indoor units

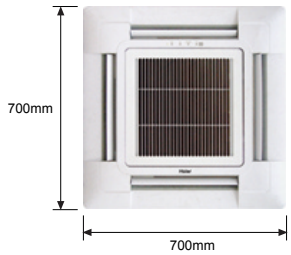
4-way Cassette indoor unit (AB12~AB60)

1. Features

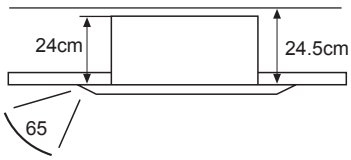
New particular design:

The new designed panel, smaller and universal. Harmony with the environment.

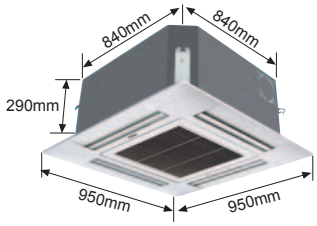
Both 700mm×700mm and 950mm×950mm panels have a uniform style and standard apperance.



For the unit with PB-700IA



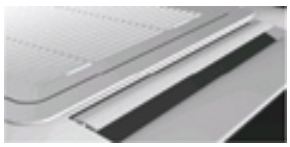
For the unit with PB-950IA



For the unit with PB-950JA

Quiet operation

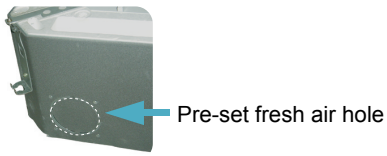
Airflow pass through the outlet smoothly and fluently owing to the streamline air outlet, bring you a much more quiet space.



New fan blade dimension is bigger ,and has bigger air flow(23% more). Adopts newly-designed space navigation 3-dimensional irregular helix fan, more steady operation, much silencer, the min. noise level is only 36dBA.

Fresh air outlet (for the unit with PB-700IA and PB-950JA panel)

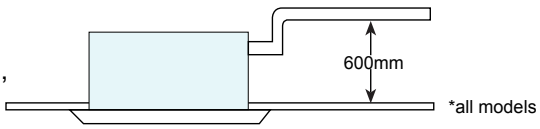
Pre-set fresh air outlet, can introduce the outside fresh air into the room, greatly improve the indoor air quality. Be away from "air conditioner symptom"



Built-in High Head Drain Pump

Built-in Drain Pump drains water automatically.

A standard drain-head height of up to 600 mm is possible, creating the ideal solution for perfect water drainage.



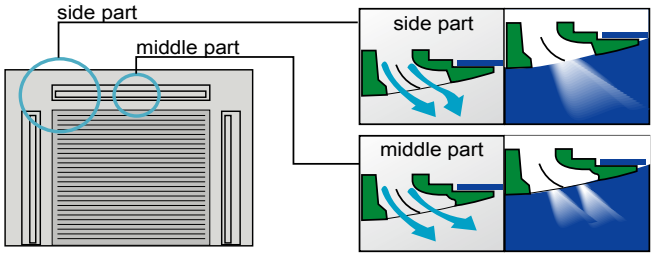
Comfortable temperature control system

3 types of swing operation for convenient in different space.

Pattern	Position	
Standard		
Direct blow prevention		When in beginning of heating mode to prevent the cool air blow onto people.
Automatical blow-angle setting		Memorize the latest setting to auto set the blow angle when starting the unit.

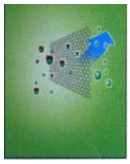
Antifouling and movable baffle

The movable baffle has antifouling design and can effectively control the airflow and air direction. It is clean to use without polluting the ceiling. It has standard long acting filter screen to make the cleaning time largely extended. When there are many units, the operation of cleaning and maintenance will be largely reduced.



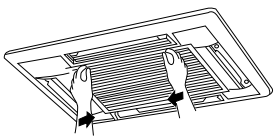
Efficient filter (option)

Efficient gray moire bactericidal filter,give you a healthy breath.

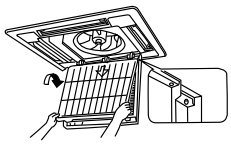


Advanced structure facilitating cleaning and installation

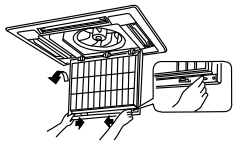
The suction grille can be rotated by 90 degree and its installation direction can be selected randomly.



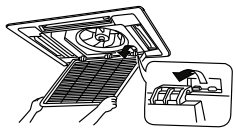
Press slightly, spring up automatically



Remove and install air filter screen



Remove and install air filter screen



Reinstall air filter screen after cleaning

2. Specifications

2.1 For DC inverter unit

item				Model	AB122ACERA	
Function					cooling	heating
Capacity				kW	3.52(0.9--4.4)	4.4(1.0---4.8)
Sensible heat ratio					0.71	
Total power input				W	1250(280---1650)	1210(280--1650)
Max. power input				W	1650	1650
EER or COP				W/W	2.81（C）	3.64（A）
ENERGY CLASS					1.6	
Dehumidifying capacity				10 - ³×m³/h	1.5	
Power cable					3×2.5	
Power source				N, V, Hz	1, 220--230, 50	
Running /Max.Running current				A / A	6.0(1.4--8.0)A/8A	6.0(1.4--8.0)A/8A
Start Current				A	3	3
Circuit breaker				A	13	13
Indoor unit	Unit model (color)				AB122ACERA(BLACK)	
	Fan	Type × Number			Centrifugal fan*1	
		Speed(H-M-L)		r/min	756/650/520±50	
		Fan motor output power		kW	0.065	
		Air-flow(H-M-L)		m³/h	700/620/520	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/ ϕ7	
		Total Area		m²	0.272	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	570×570×260mm	
		Package	（L×W×H）	mm×mm×mm	718×680×380mm	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 26/32	
	Control type (Remote /wired)				Remote	
	Fresh air hole dimension			mm	95	
	Noise level (H-M-L)			dB(A)	45/40/32	
	Weight (Net / Shipping)			kg / kg	18.5/23	
Panel	Dimension	External	（L×W×H）	mm×mm×mm	700×700×60mm	
		Package	（L×W×H）	mm×mm×mm	740×750×115mm	
	Weight (Net / Shipping)			kg / kg	3.5/4.5	

Item				Model	AB182ACERA	
Function					cooling	heating
Capacity				kW	5.0(1.8--5.8)	5.2(2.0---6.2)
Sensible heat ratio					0.71	
Total power input				W	1660(550---2400)	1730(600--2300)
Max. power input				W	2650	2650
EER or COP				W/W	3.01	3.01
Dehumidifying capacity				10 - ³×m³/h	2.1	
Running /Max.Running current				A / A	7.8(3.0--10.5)A/12.0A	8.0(3.2--10)A/12.0A
Indoor unit	Unit model (color)				Black	
	Fan	Type × Number			centrifugal*1	
		Speed(H-M-L)		r/min	760/650/520	
		Fan motor output power		kW	0.065	
		Air-flow(H-M-L)		m³/h	700/620/520	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/φ7	
		Total Area		m²	0.272	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	570×570×260	
		Package	（L×W×H）	mm×mm×mm	718×680×380	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 26/32	
	Control type (Remote /wired)				Remote	
	Fresh air hole dimension			mm	95	
	Noise level (H-M-L)			dB(A)	45/40/32	
	Weight (Net / Shipping)			kg / kg	18.5/23	
Panel	Dimension	External	（L×W×H）	mm×mm×mm	700×700×60	
		Package	（L×W×H）	mm×mm×mm	740×750×115	
	Weight (Net / Shipping)			kg / kg	3.5/4.5	

item					Model	AB242ACERA	
Function						cooling	heating
Capacity					kW	7.0（2.0---8.0）	7.8（2.5--8.5）
Sensible heat ratio						0.72	
Total power input					W	2300(500---3250)W	2.25(500---2750)W
Max. power input					W	3300W	3300W
EER or COP					W/W	3.04	3.46
Dehumidifying capacity					10 - ³×m³/h	1.8	
Running /Max.Running current					A / A	11.0(2.5--14.5)A/15.0A	10.0(2.5--12.0)A/15.0A
Indoor unit	Unit model (color)					AB242ACERA(black)	
	Fan	Type × Number				Centrifugal × 1	
		Speed(H-M-L)			r/min	670±40/550±50/460±50	
		Fan motor output power			kW	0.16	
		Air-flow(H-M-L)			m³/h	1300/1100/870	
	Heat exchanger	Type / Diameter			mm	Inner grooved type / ϕ7	
		Total Area			m²	0.49	
		Temp. scope			℃	2-7	
	Dimension	External	（L×W×H）		mm×mm×mm	840*840*240	
		Package	（L×W×H）		mm×mm×mm	930*930*330	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 26/32	
	Control type (Remote /wired)					Remote or wired	
	Fresh air hole dimension				mm	/	
	Noise level (H-M-L)				dB(A)	48/44/39	
	Weight (Net / Shipping)				kg / kg	26.8/32.6	
Panel	Dimension	External	（L×W×H）		mm×mm×mm	950*950*80	
		Package	（L×W×H）		mm×mm×mm	980*980*100	
	Weight (Net / Shipping)				kg / kg	6/9	

item					Model	AB242AEERA	
Function						cooling	heating
Capacity					kW	7.0（2.0---8.0）	7.8（2.5--8.5）
Sensible heat ratio						0.72	
Total power input					W	2300(500---3250)W	2.25(500---2750)W
Max. power input					W	3300W	3300W
EER or COP					W/W	3.04(B)	3.46(B)
Dehumidifying capacity					10 - ³×m³/h	1.8	
Running /Max.Running current					A / A	11.0(2.5--14.5)A/15.0A	10.0(2.5--12.0)A/15.0A
Indoor unit	Unit model (color)					AB242AEERA(black)	
	Fan	Type × Number				Centrifugal × 1	
		Speed(H-M-L)			r/min	670±40/550±50/460±50	
		Fan motor output power			kW	0.16	
		Air-flow(H-M-L)			m³/h	1300/1100/870	
	Heat exchanger	Type / Diameter			mm	Inner grooved type / ϕ7	
		Total Area			m²	0.49	
		Temp. scope			℃	2-7	
	Dimension	External	（L×W×H）		mm×mm×mm	840*840*240	
		Package	（L×W×H）		mm×mm×mm	930*930*330	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 26/32	
	Control type (Remote /wired)					Remote or wired	
	Fresh air hole dimension				mm	/	
	Noise level (H-M-L)				dB(A)	46/43/39	
	Weight (Net / Shipping)				kg / kg	26.8/32.6	
Panel	Dimension	External	（L×W×H）		mm×mm×mm	950/950/60	
		Package	（L×W×H）		mm×mm×mm	985/985/115	
	Weight (Net / Shipping)				kg / kg	6.0/9.0	

item					Model	AB282AEERA	
Function						cooling	heating
Capacity					BTU/h	27600	31400
Capacity					kW	8.1(2.2~9.5)	9.2(2.5~10.5)
Sensible heat ratio						0.73	
Total power input					W	2750(500---3800)	2600(500---3800)
Max. power input					W	3800	3800
EER or COP					W/W	2.95	3.27
Dehumidifying capacity					10 - ³×m³/h	B	B
Running /Max.Running current					A / A	11.2（2.3-17.0）/17.0	11.2（2.3-17.0）/17.0
Indoor unit	Unit model (color)					AB282AEERA(black)	
	Fan	Type × Number				Centrifugal × 1	
		Speed(H-M-L)			r/min	680/600/530	
		Fan motor output power			kW	0.15	
		Air-flow(H-M-L)			m³/h	1600/1450/1300	
	Heat exchanger	Type / Diameter			mm	Inner grooved type / ϕ7	
		Total Area			m²	0.5	
		Temp. scope			℃	2-7	
	Dimension	External	（L×W×H）		mm×mm×mm	840/840/290	
		Package	（L×W×H）		mm×mm×mm	935/925/390	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 26/32	
	Control type (Remote /wired)					Remote or wired	
	Fresh air hole dimension				mm	69	
	Noise level (H-M-L)				dB(A)	47/42/37	
	Weight (Net / Shipping)				kg / kg	38/45	
Panel	Dimension	External	（L×W×H）		mm×mm×mm	950/950/60	
		Package	（L×W×H）		mm×mm×mm	985/985/115	
	Weight (Net / Shipping)				kg / kg	6.0/9.0	

item					Model	AB362ACERA	
Function						cooling	heating
with AU362AHERA	Capacity				Btu/h	33800	38200
	Capacity				kW	9.9(2.2~11.6)	11.2(2.5~12.0)
	Sensible heat ratio					0.73	
	Total power input				W	3290(650---3800)	3280(650---3800)
	Max. power input				W	4300	4300
	EER or COP				W/W	3.01	3.41
	Energy efficiency stage					B	B
	Dehumidifying capacity				10 - ³×m³/h	3.8	
	Running /Max.Running current				A / A	14.3(2.9-17.0)/19.3	14.3(2.9-17.0)/19.3
Indoor unit	Unit model (color)					AB362ACERA（BLACK）	
	Fan	Type × Number				Centrifugal fan * 1	
		Speed(H-M-L)			r/min	620/450/390±40	
		Air-flow(H-M-L)			m³/h	1850/1600/1350	
	Heat exchanger	Type / Diameter			mm	inner grooved type/ ϕ7	
		Total Area			m²	0.583	
		Temp. scope			℃	2-7	
	Dimension	External	（L×W×H）		mm×mm×mm	1230/840/280	
		Package	（L×W×H）		mm×mm×mm	1325/920/370	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 26/32	
	Control type (Remote /wired)					remote/wired	
	Noise level (H-M-L)				dB(A)	50/46/42	
	Weight (Net / Shipping)				kg / kg	46/53	
Panel	Dimension	External	（L×W×H）		mm×mm×mm	1340/950/80	
		Package	（L×W×H）		mm×mm×mm	1400/995/115	
	Weight (Net / Shipping)				kg / kg	8.4/12	

item				Model	AB362AEERA	
Function					cooling	heating
with AU362AHERA	Capacity			Btu/h	33700	37500
	Capacity			kW	9.5(2.2~11.6)	11.0(2.5~12.0)
	Sensible heat ratio				0.73	
	Total power input			W	3350(650---3800)	3400(650---3800)
	Max. power input			W	4300	4300
	EER or COP			W/W	2.88	3.24
	Energy efficiency stage				C	C
	Dehumidifying capacity			10 - ³×m³/h	3.8	
	Running /Max.Running current			A / A	14.3（2.9-17.0）/19.3	15.0（2.9-17.0）/19.3
Indoor unit	Unit model (color)				AB362AEERA（BLACK)	
	Fan	Type × Number			Centrifugal fan * 1	
		Speed(H-M-L)		r/min	680/600/530	
		Fan motor output power		kW	0.15	
		Air-flow(H-M-L)		m³/h	1600/1450/1300	
	Heat exchanger	Type / Diameter		mm	inner grooved type/ Φ7	
		Total Area		m²	0.5	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	840/840/290	
		Package	（L×W×H）	mm×mm×mm	935/925/390	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 26/32	
	Control type (Remote /wired)				remote/wired	
	Fresh air hole dimension			mm	69	
	Noise level (H-M-L)			dB(A)	47/42/37	
	Weight (Net / Shipping)			kg / kg	38/45	
Panel	Dimension	External	（L×W×H）	mm×mm×mm	950/950/60	
		Package	（L×W×H）	mm×mm×mm	985/985/115	
	Weight (Net / Shipping)			kg / kg	6.0/9.0	

item				Model	AB482AEERA	
Function					cooling	heating
Capacity				Btu/h	45000	52000
Capacity				kW	12.0(6.0~14.0)	13.0(6.0~16.0)
Sensible heat ratio					0.73	
Total power input				W	4.6(2.0---6.0)	4.6(2.0----6.0)
Max. power input				W	6300	6000
EER or COP				W/W	2.61（D）	2.83（E)
Energy efficiency stage					C	C
Dehumidifying capacity				10 - ³×m³/h	3.8	
Running /Max.Running current				A / A	8.0（2.9-9.5）/10.5	8.0（2.9-9.5）/10.5
Indoor unit	Unit model (color)				AB482AEERA（BLACK)	
	Fan	Type × Number			Centrifugal fan * 1	
		Speed(H-M-L)		r/min	890/760/520	
		Fan motor output power		kW	0.15	
		Air-flow(H-M-L)		m³/h	1650/1400/1300	
	Heat exchanger	Type / Diameter		mm	inner grooved type/ Φ7	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	840/840/290	
		Package	（L×W×H）	mm×mm×mm	910/910/370	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 26/32	
	Control type (Remote /wired)				remote/wired	
	Fresh air hole dimension			mm	100	
	Noise level (H-M-L)			dB(A)	50/46/42	
	Weight (Net / Shipping)			kg / kg	38/45	
Panel	Dimension	External	（L×W×H）	mm×mm×mm	950/950/60	
		Package	（L×W×H）	mm×mm×mm	985/985/115	
	Weight (Net / Shipping)			kg / kg	6.0/9.0	

item				Model	AB602ACERA	
Function					cooling	heating
Capacity				Btu/h	54000	61400
Capacity				kW	15.8(6.0~16.5)	18.0(6.0~19.0)
Sensible heat ratio					0.73	
Total power input				W	5.6(2.0---6.0)	5.6(2.0----6.0)
Max. power input				W	6000	6000
EER or COP				W/W	2.82（C）	3.21（C）
Dehumidifying capacity				10 - ³×m³/h	5.0	
Running /Max.Running current				A / A	9.5（2.9-10.5）/10.5	9.5（2.9-10.5）/10.5
Indoor unit	Unit model (color)				AB602ACERA（BLACK）	
	Fan	Type × Number			Centrifugal fan * 1	
		Speed(H-M-L)		r/min	670/550/460±50	
		Fan motor output power		kW	0.15	
		Air-flow(H-M-L)		m³/h	1980/-/-	
	Heat exchanger	Type / Diameter		mm	inner grooved type/ Φ7	
		Total Area		m²	0.583	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1230/840/280	
		Package	（L×W×H）	mm×mm×mm	1325/920/370	
	Drainage pipe	(material , I.D./O.D.)		mm	PVC 32/26	
	Control type	(Remote /wired)			remote/wired	
	Noise level	(H-M-L)		dB(A)	51/47/43	
	Weight	(Net / Shipping)		kg / kg	46/53	
Panel	Dimension	External	（L×W×H）	mm×mm×mm	1340/950/80	
		Package	（L×W×H）	mm×mm×mm	1400/995/115	
	Weight	(Net / Shipping)		kg / kg	8.4/12.0	

2.2 For Fixed frequency unit

item				Model		AB122ACEAA	
Function						cooling	heating
Capacity					kW	3.5	3.8
Sensible heat ratio						0.71	
Total power input					W	1160	1110
Max. power input					W	1650	1650
EER or COP					W/W	3.01（A）	3.41（A）
ENERGY CLASS						1.6	
Dehumidifying capacity					10 - ³×m³/h	1.5	
Running /Max.Running current					A / A	4.9A/7.4A	4.9A/7.4A
Start Current					A	20	20
Indoor unit	Unit model (color)					AB122ACEAA(BLACK)	
	Fan	Type × Number				centrifugal fan*1	
		Speed(H-M-L)			r/min	760/690/550±50	
		Fan motor output power			kW	0.065	
		Air-flow(H-M-L)			m³/h	700/620/520	
	Heat exchanger	Type / Diameter			mm	inner grooved pipe/ φ7	
		Total Area			m²	0.272	
		Temp. scope			℃	2-7	
	Dimension	External	（L×W×H）		mm×mm×mm	570×570×260mm	
		Package	（L×W×H）		mm×mm×mm	718×680×380mm	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 26/32	
	Control type (Remote /wired /model)					Remote	
	Fresh air hole dimension				mm	95	
	Noise level (H-M-L)				dB(A)	45/40/32	
	Weight (Net / Shipping)				kg / kg	18.5/23	
Panel	Dimension	External	（L×W×H）		mm×mm×mm	700×700×60mm	
		Package	（L×W×H）		mm×mm×mm	740×750×115mm	
	Weight (Net / Shipping)				kg / kg	3.5/4.5	

item				Model		AB182ACEAA	
Function						cooling	heating
Capacity					BTU/h	15700	16700
Capacity					kW	4.6	4.9
Total power input					W	1650	1600
Max. power input					W	2050	1950
EER or COP					W/W	2.79	3.06
Running /Max.Running current					A / A	cooling: 7.5A /10.5A	heating: 7.0A /10.0A
Start Current					A	50	
Max. operating pressure of heat side					Mpa	4.5	
Max. operating pressure of cold side					Mpa	4.5	
Indoor unit	Unit model (color)					AB182ACEAA	Grey
	Fan	Type × Number				axial fan X 1	
		Speed(H-M-L)			r/min	750±20 / 650±30/ 520±30	
		Fan motor output power			kW	50	
		Air-flow(H-M-L)			m³/h	700/640/480	
	Heat exchanger	Type / Diameter			mm	TP2M/7X0.5	
		Total Area			m²	0.441	
		Temp. scope			℃	2-7	
	Dimension	External	（L×W×H）		mm×mm×mm	570x570x260	
		Package	（L×W×H）		mm×mm×mm	718x680x380	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 14/16	
	Control type (Remote /wired /model)					remote / 0010451255	
	Fresh air hole dimension				mm	φ100	
	Noise level (H-M-L)				dB(A)	45/42/40	
	Weight (Net / Shipping)				kg / kg	19/23.5	
Panel	Dimension	External	（L×W×H）		mm×mm×mm	700×700×60	
		Package	（L×W×H）		mm×mm×mm	740×750×115	
	Weight (Net / Shipping)				kg / kg	3.5/4.5	

item				Model		AB242ACEAA	
Function						cooling	heating
Capacity					kW	7.25	7.4
Sensible heat ratio						0.72	/
Total power input					W	2400	2300
Max. power input					W	3100W	3000W
EER or COP					W/W	3.02	3.22
Dehumidifying capacity					10 - ³×m³/h	2.5	
Running /Max.Running					A / A	11.0A/13.9A	10.5A/13.4A
Indoor unit	Unit model (color)					grey	
	Fan	Type × Number				centrifugal fan*1	
		Speed(H-M-L)			r/min	670±40/550±50/460±50	
		Fan motor output power			kW	0.16	
		Air-flow(H-M-L)			m³/h	1300/-/-	
	Heat exchanger	Type / Diameter			mm	inner grooved pipe/φ7	
		Total Area			m²	0.49	
		Temp. scope			℃	2-7	
	Dimension	External	(L×W×H)		mm×mm×mm	840*840*240	
		Package	(L×W×H)		mm×mm×mm	930*930*330	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 26/32	
	Control type (Remote /wired)					Remote /wired (optional)	
	Fresh air hole dimension				mm	/	
	Electricity Heater				kW	0	
	Noise level (H-M-L)				dB(A)	48/44/39	
	Weight (Net / Shipping)				kg / kg	26.8/32.6	
Panel	Dimension	External	(L×W×H)		mm×mm×mm	950*950*80	
		Package	(L×W×H)		mm×mm×mm	980*980*100	
	Weight (Net / Shipping)				kg / kg	6/9	

item				Model		AB242AEEAA	
Function						cooling	heating
Capacity					kW	7.25	7.4
Sensible heat ratio						0.72	/
Total power input					W	2400	2300
Max. power input					W	3100W	3000W
EER or COP					W/W	3.02	3.22
Dehumidifying capacity					10 - ³×m³/h	2.5	
Running /Max.Running					A / A	11.0A/13.9A	10.5A/13.4A
Indoor unit	Unit model (color)					AB242AEEAA(grey)	
	Fan	Type × Number				Centrifugal fan*1	
		Speed(H-M-L)			r/min	670±40/600±50/460±50	
		Fan motor output power			kW	0.16	
		Air-flow(H-M-L)			m³/h	1300/1100/870	
	Heat exchanger	Type / Diameter			mm	inner grooved type/ Φ7	
		Total Area			m²	0.49	
		Temp. scope			℃	2-7	
	Dimension	External	(L×W×H)		mm×mm×mm	840*840*240	
		Package	(L×W×H)		mm×mm×mm	930*930*330	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 26/32	
	Control type (Remote /wired)					Remote /wired (optional)	
	Fresh air hole dimension				mm	/	
	Electricity Heater				kW	0	
	Noise level (H-M-L)				dB(A)	48/44/39	
	Weight (Net / Shipping)				kg / kg	26.8/32.6	
Panel	Dimension	External	(L×W×H)		mm×mm×mm	950*950*60(PB-950JA)	
		Package	(L×W×H)		mm×mm×mm	985*985*115	
	Weight (Net / Shipping)				kg / kg	6.0/9.0	

item				Model		AB282ACEAA	
Function						cooling	heating
with AU282AHEAA	Capacity				BTU/h	28000	30000
	Capacity				kW	8.2	8.8
	Sensible heat ratio					0.72	/
	Total power input				W	2700	2740
	Max. power input				W	3400	3500
	EER or COP				W/W	3.04	3.21
	Dehumidifying capacity				10 - ³×m³/h	2.5	
	Running /Max.Running current				A / A	12.0A/15.0A	12.2A/15.5A
with AU28NAHEAA	Capacity				BTU/h	28000	29000
	Capacity				kW	8.2	8.4
	Sensible heat ratio					0.72	
	Total power input				W	2800	2600
	Max. power input				W	3500	3500
	EER or COP				W/W	2.93	3.23
	Dehumidifying capacity				10 - ³×m³/h	2.5	
	Running /Max.Running current				A / A	4.7A/5.6A	4.6A/5.5A
Indoor unit	Unit model (color)					AB282ACEAA(grey)	
	Fan	Type × Number				Centrifugal fan*1	
		Speed(H-M-L)			r/min	670±40/600±50/460±50	
		Fan motor output power			kW	0.16	
		Air-flow(H-M-L)			m³/h	1300/1100/870	
	Heat exchanger	Type / Diameter			mm	inner grooved type/φ7	
		Total Area			m²	0.49	
		Temp. scope			℃	2-7	
	Dimension	External	(L×W×H)		mm×mm×mm	840*840*240	
		Package	(L×W×H)		mm×mm×mm	930*930*330	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 26/32	
	Control type (Remote /wired)					remote/wired (optional)	
	Fresh air hole dimension				mm	/	
	Electricity Heater				kW	0	
	Noise level (H-M-L)				dB(A)	48/44/39	
	Weight (Net / Shipping)				kg / kg	26.8/32.6	
Panel	Dimension	External	(L×W×H)		mm×mm×mm	950*950*80	
		Package	(L×W×H)		mm×mm×mm	980*980*100	
	Weight (Net / Shipping)				kg / kg	6/9	

item				Model		AB282AEEAA	
Function						cooling	heating
with AU282AHEAA	Capacity				BTU/h	28000	30000
	Capacity				kW	8.2	8.8
	Sensible heat ratio					0.72	/
	Total power input				W	2700	2740
	Max. power input				W	3400W	3500W
	EER or COP				W/W	3.04	3.21
	Dehumidifying capacity				10 - ³×m³/h	2.5	
	Running /Max.Running current				A / A	12.0A/15.0A	12.2A/15.5A
Indoor unit	Unit model (color)					AB282AEEAA(grey)	
	Fan	Type × Number				Centrifugal fan*1	
		Speed(H-M-L)			r/min	670±40/600±50/460±50	
		Fan motor output power			kW	0.16	
		Air-flow(H-M-L)			m³/h	1300/1100/870	
	Heat exchanger	Type / Diameter			mm	inner grooved type/ Φ7	
		Total Area			m²	0.49	
		Temp. scope			℃	2-7	
	Dimension	External	(L×W×H)		mm×mm×mm	840*840*240	
		Package	(L×W×H)		mm×mm×mm	930*930*330	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 26/32	
	Control type (Remote /wired)					remote/wired (optional)	
	Fresh air hole dimension				mm	/	
	Noise level (H-M-L)				dB(A)	48/44/39	
	Weight (Net / Shipping)				kg / kg	26.8/32.6	
Panel	Dimension	External	(L×W×H)		mm×mm×mm	950*950*60(PB-950JA)	
		Package	(L×W×H)		mm×mm×mm	985*985*115	
	Weight (Net / Shipping)				kg / kg	6/9	

item					Model	AB362ACEAA	
Function						cooling	heating
with AU362AIEA	Capacity				kW	10	10.5
	Sensible heat ratio					0.72	
	Total power input				W	3300	3500
	Max. power input				W	3900	3950
	EER or COP				W/W	3.03（B）	3.00（C）
	Running /Max.Running current				A / A	15.8A/18.5A	16.5A/18.7A
with AU36NAIEA	Capacity				kW	11.5	12
	Sensible heat ratio					0.72	
	Total power input				W	3800	3900
	Max. power input				W	4700	4800
	EER or COP				W/W	3.03	3.08
	Running /Max.Running current				A / A	6.4A/8.0A	6.5A/8.0A
Indoor unit	Unit model (color)					AB362ACEAA	
	Fan	Type × Number				Centrifugal fan*1	
		Speed(H-M-L)			r/min	700/600/550	
		Fan motor output power			kW	0.1	
		Air-flow(H-M-L)			m³/h	1600/1450/1300	
	Heat exchanger	Type / Diameter			mm	inner grooved type/φ7	
		Total Area			m²	0.53	
		Temp. scope			℃	2-7	
	Dimension	External	（L×W×H）		mm×mm×mm	840/840/290	
		Package	（L×W×H）		mm×mm×mm	930/930/390	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 26/32	
	Control type (Remote /wired)					remote/wired (optional)	
	Electricity Heater				kW	0	
	Noise level (H-M-L)				dB(A)	51	
	Weight (Net / Shipping)				kg / kg	38/45	
Panel	Dimension	External	（L×W×H）		mm×mm×mm	950×950×60	
		Package	（L×W×H）		mm×mm×mm	985×985×115	
	Weight (Net / Shipping)				kg / kg	6/9	

item					Model	AB422AEEAA	
Function						cooling	heating
Capacity					BTU/h	42000	45000
Capacity					kW	12.3	13.2
Total power input					W	4710	5350
Max. power input					W	6200	6200
EER or COP					W/W	2.61	2.47
Dehumidifying capacity					10 - ³×m³/h	4.0	
Running /Max.Running					A / A	Cooling 8.5A/10.1A Heating 9.3/10.1A	
Start Current					A	50	
Class of anti electric shock						CLASS I	CLASS I
Circuit breaker					A	20	
Max. operating pressure of heat side					Mpa	4.15	4.15
Max. operating pressure of cold side					Mpa	4.15	4.15
Indoor unit	Unit model (color)					AB422AEEAA(Grey)	
	Fan	Type × Number				centrifugal	
		Speed(H-M-L)			r/min	680/600/530	
		Fan motor output power			kW	0.1	
		Air-flow(H-M-L)			m³/h	1600	
	Heat exchanger	Type / Diameter			mm	inner grooved/φ7	
		Temp. scope			℃	2－7	
	Dimension	External	（L×W×H）		mm×mm×mm	840×840×290mm	
		Package	（L×W×H）		mm×mm×mm	930×930×390mm	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 26/32	
	Control type (Remote /wired /model)					Remote	
	Noise level (H-M-L)				dB(A)	47/42/37	
	Weight (Net / Shipping)				kg / kg	38/45	
Panel	Dimension	External	（L×W×H）		mm×mm×mm	950×950×60	
		Package	（L×W×H）		mm×mm×mm	985×985×115	
	Weight (Net / Shipping)				kg / kg	6/9	

						AB482ACEAA	
Function						cooling	heating
Capacity					kW	13.6	16.5
Sensible heat ratio						0.72	
Total power input					W	4500	5000
Max. power input					W	5500	6000
EER or COP					W/W	3.02（B）	3.3（C）
Dehumidifying capacity					10 - ³×m³/h	5.0	
Running /Max.Running current					A / A	8.0A/9.5A	9.0A/10.5A
Start Current					A	65	65
Indoor unit	Unit model (color)					AB482ACEAA（BLACK）	
	Fan	Type × Number				centrifugal fan*1	
		Air-flow(H-M-L)			m³/h	1980/-/-	
	Heat exchanger	Type / Diameter			mm	inner grooved pipe/φ7	
		Temp. scope			℃	2-7	
	Dimension	External	（L×W×H）		mm×mm×mm	1230/840/280	
		Package	（L×W×H）		mm×mm×mm	1325/920/370	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 32/26	
	Control type (Remote /wired)					Remote /wired (optional)	
	Noise level (H-M-L)				dB(A)	51/47/43	
	Weight (Net / Shipping)				kg / kg	46/53	
Panel	Dimension	External	（L×W×H）		mm×mm×mm	1340/950/80	
		Package	（L×W×H）		mm×mm×mm	1400/995/115	
	Weight (Net / Shipping)				kg / kg	8.4/12.0	

item				Model		AB482AEEAA	
Function						cooling	heating
						46000	49000
Capacity					kW	13.5	14.5
Sensible heat ratio							
Total power input					W	5170	5170
Max. power input					W	6200	6200
EER or COP					W/W	2.61	2.80
Dehumidifying capacity					10 - ³×m³/h	4.0	
Running /Max.Running current					A / A	Cooling 8.5A/10.1A Heating 9.3/10.1A	
Start Current					A	50	
Class of anti electric shock						CLASS I	CLASS I
Circuit breaker					A	20	
Max. operating pressure of heat side					Mpa	4.15	4.15
Max. operating pressure of cold side					Mpa	4.15	4.15
Indoor unit	Unit model (color)					AB482AEEAA(Grey)	
	Fan	Type × Number				centrifugal	
		Speed(H-M-L)			r/min	780/680/600	
		Fan motor output power			kW	0.1	
		Air-flow(H-M-L)			m³/h	1800	
	Heat exchanger	Type / Diameter			mm	inner grooved/ φ7	
		Temp. scope			℃	2－7	
	Dimension	External	（L×W×H）		mm×mm×mm	840×840×290mm	
		Package	（L×W×H）		mm×mm×mm	935×925×390mm	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 26/32	
	Control type (Remote /wired)					Remote	
	Noise level (H-M-L)				dB(A)	51/47/45	
	Weight (Net / Shipping)				kg / kg	38/45	
Panel	Dimension	External	（L×W×H）		mm×mm×mm	950×950×60	
		Package	（L×W×H）		mm×mm×mm	985×985×115	
	Weight (Net / Shipping)				kg / kg	6/9	

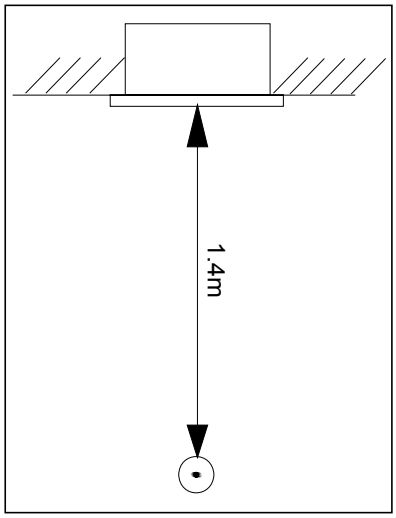
item				Model		AB602ACEAA	
Function						cooling	heating
Capacity					kW	15.5	18.5
Sensible heat ratio						0.72	
Total power input					W	5100W	5350W
Max. power input					W	6200W	6200W
EER or COP					W/W	3.02（B）	3.44（B）
Dehumidifying capacity				10 - ³×m³/h		5.0	
Running /Max.Running current					A / A	9.0A/10.5A	9.5A/10.5A
Start Current					A	65	65
Indoor unit	Unit model (color)					AB602ACEAA（black）	
	Fan	Type × Number				centrifugal fan*1	
		Air-flow(H-M-L)			m³/h	1980/-/-	
	Heat exchanger	Type / Diameter			mm	inner grooved pipe/φ7	
		Temp. scope			℃	2-7	
	Dimension	External	（L×W×H）		mm×mm×mm	1230/840/280	
		Package	（L×W×H）		mm×mm×mm	1325/920/370	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 32/26	
	Control type (Remote /wired)					Remote /wired (optional)	
	Noise level (H-M-L)				dB(A)	51/47/43	
	Weight (Net / Shipping)				kg / kg	46/53	
Panel	Dimension	External	（L×W×H）		mm×mm×mm	1340/950/80	
		Package	（L×W×H）		mm×mm×mm	1400/995/115	
	Weight (Net / Shipping)				kg / kg	8.4/12.0	

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level. The detailed method please refer to the following information:

Installation state: the unit should be placed on the flat floor or be mounted in horizontal direction.

Testing method:

built-in-ceiling unit:

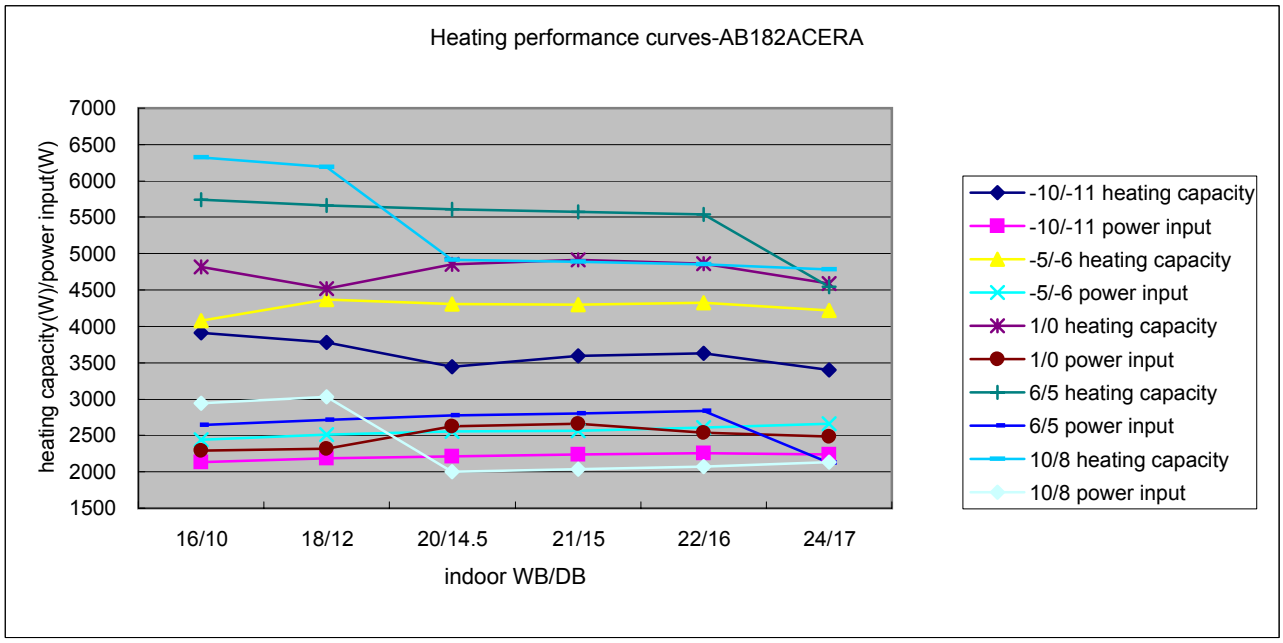


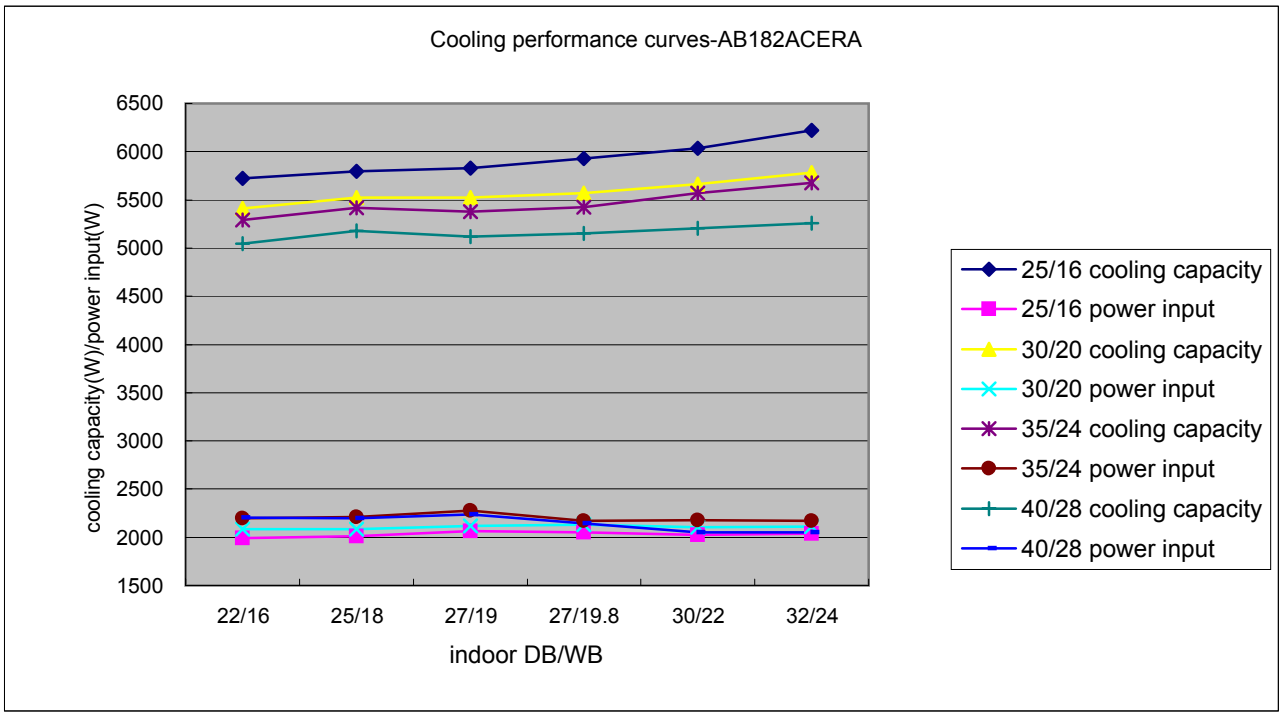
Note: ⊙ is the real time analyser position

3. Curves

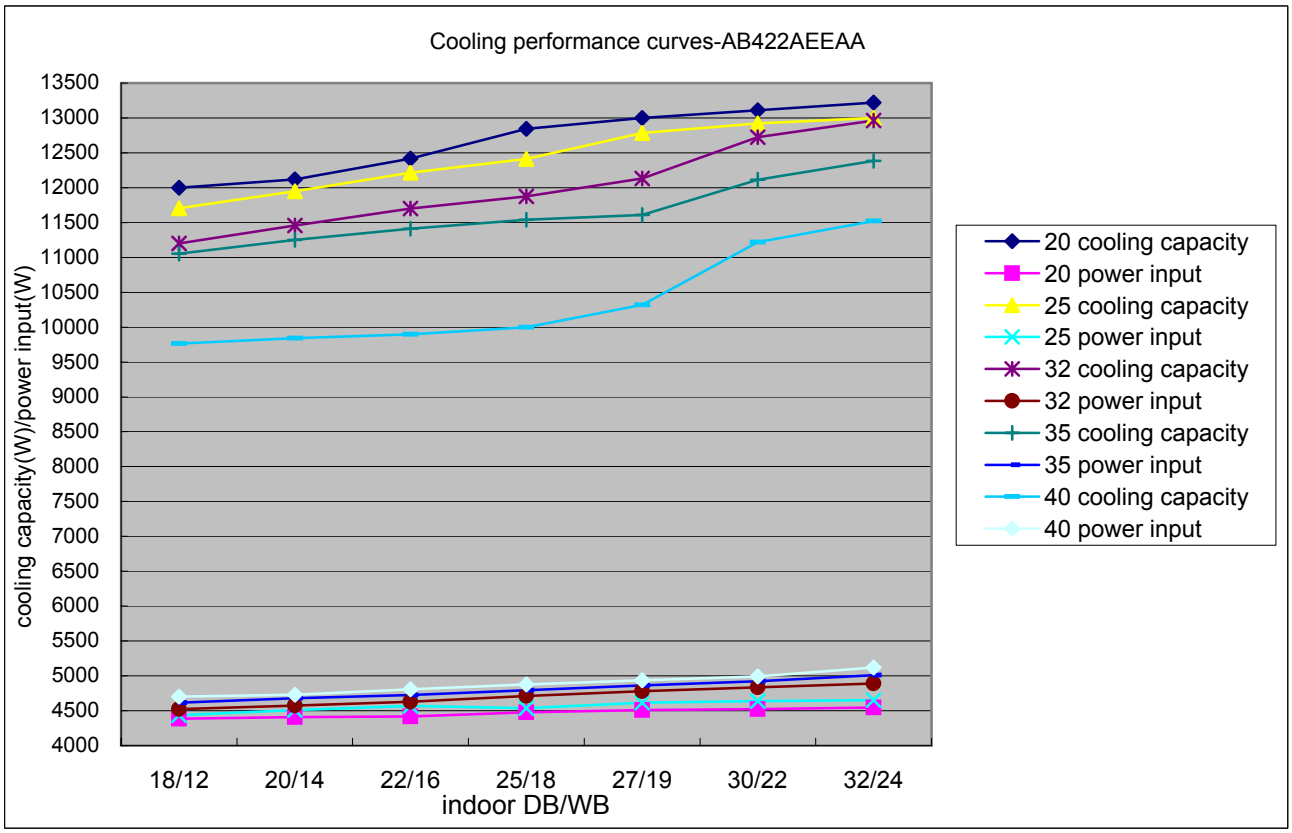
3.1 Performance curves

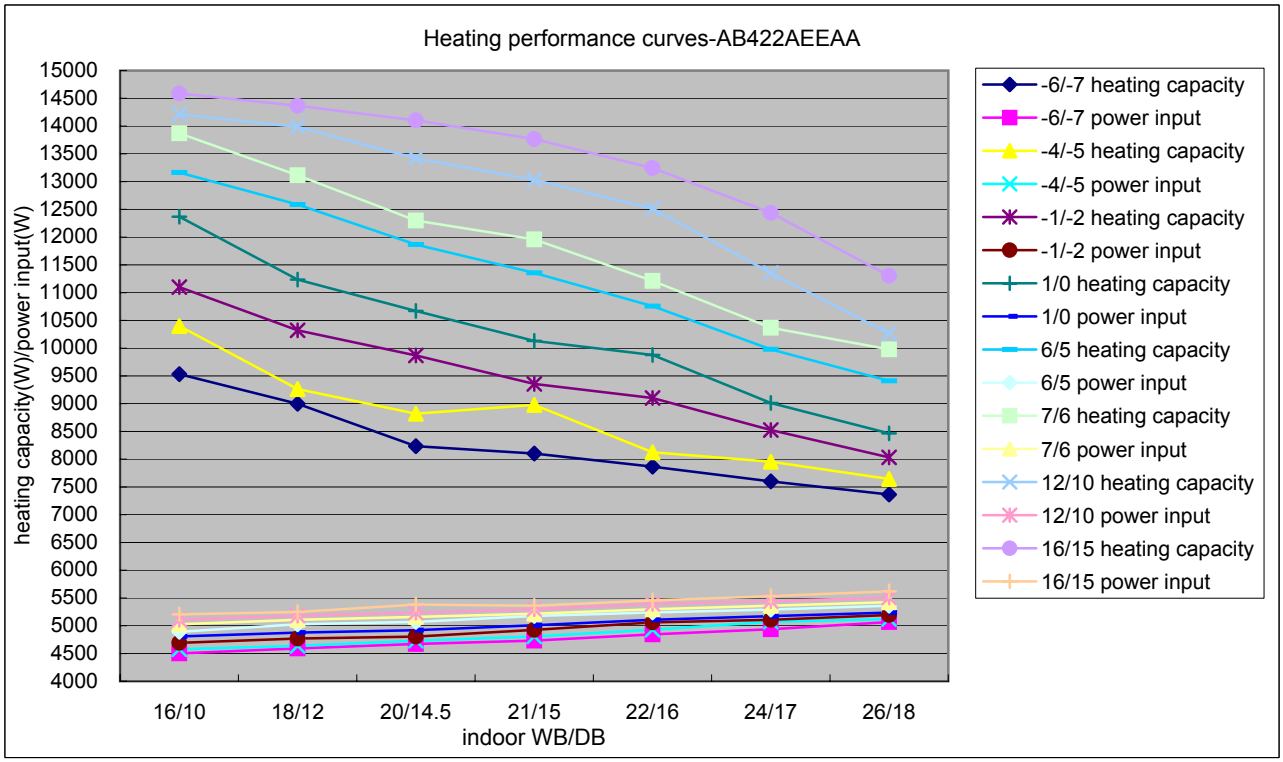
AB182ACERA





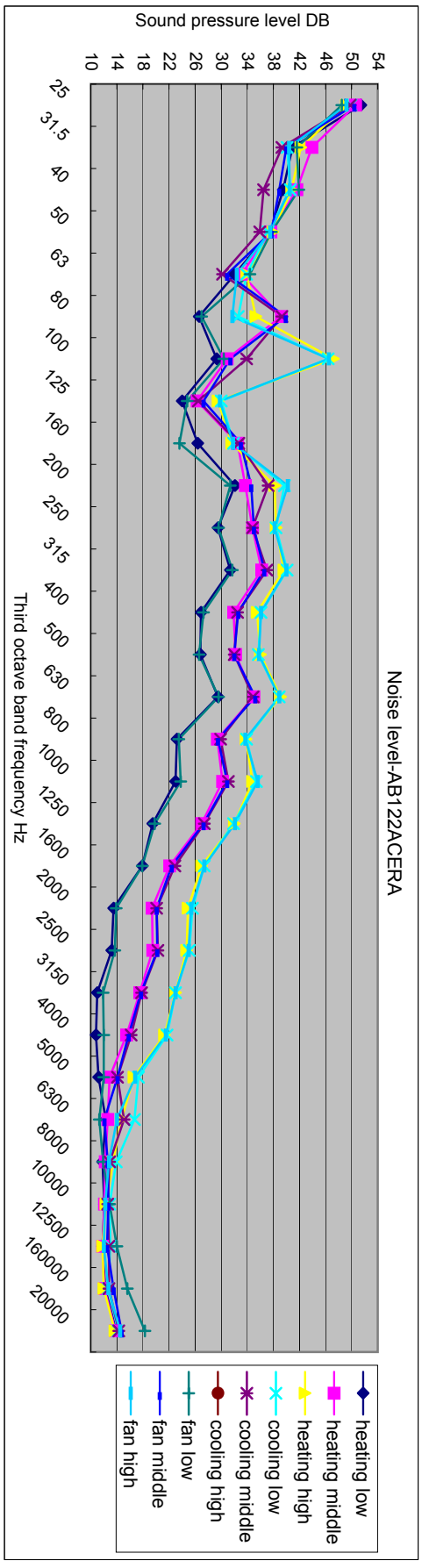
AB422AEEAA

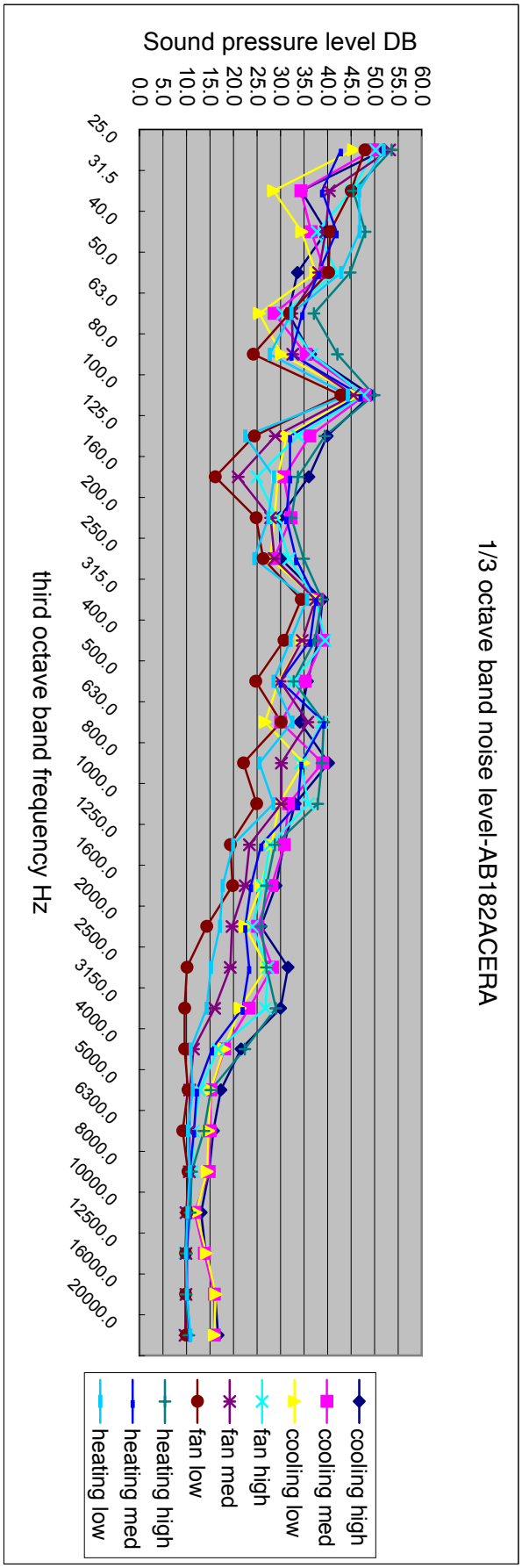

Cooling performance curves-AB422AEEAA
cooling capacity(W)/power input(W)
13500
13000
12500
12000
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
18/12
20/14
22/16
25/18
27/19
30/22
32/24
indoor DB/WB
20 cooling capacity
20 power input
25 cooling capacity
25 power input
32 cooling capacity
32 power input
35 cooling capacity
35 power input
40 cooling capacity
40 power input

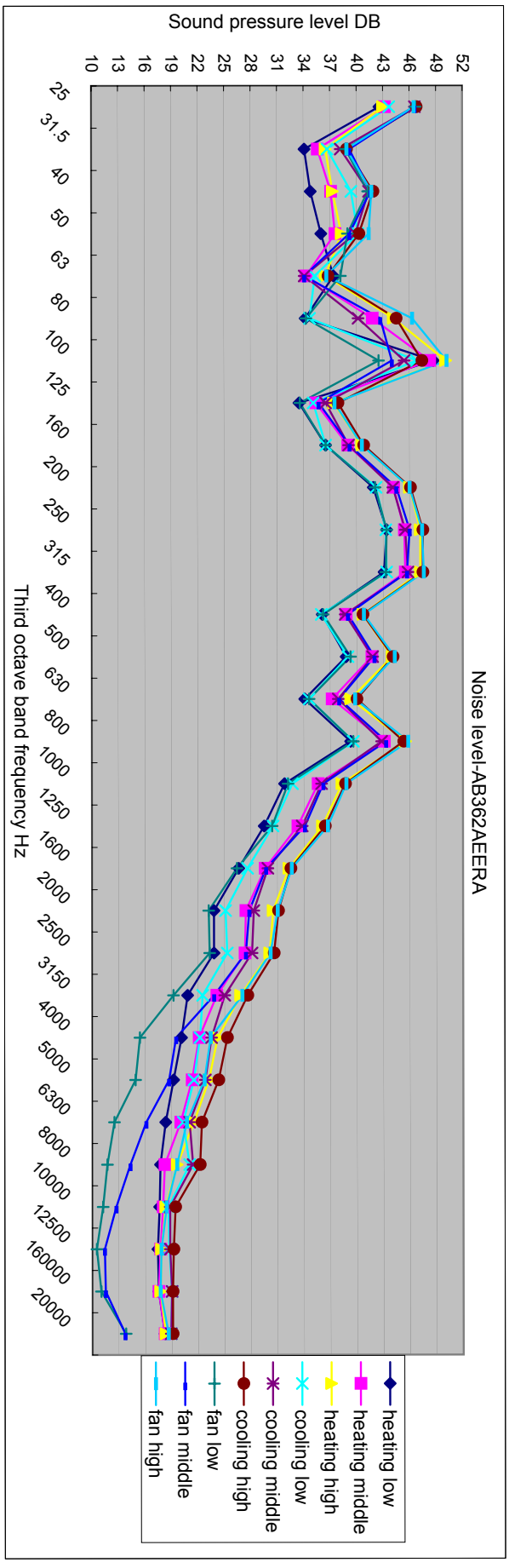

Heating performance curves-AB422AEEAA
heating capacity(W)/power input(W)
15000
14500
14000
13500
13000
12500
12000
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
16/10
18/12
20/14.5
21/15
22/16
24/17
26/18
indoor WB/DB
-6/-7 heating capacity
-6/-7 power input
-4/-5 heating capacity
-4/-5 power input
-1/-2 heating capacity
-1/-2 power input
1/0 heating capacity
1/0 power input
6/5 heating capacity
6/5 power input
7/6 heating capacity
7/6 power input
12/10 heating capacity
12/10 power input
16/15 heating capacity
16/15 power input

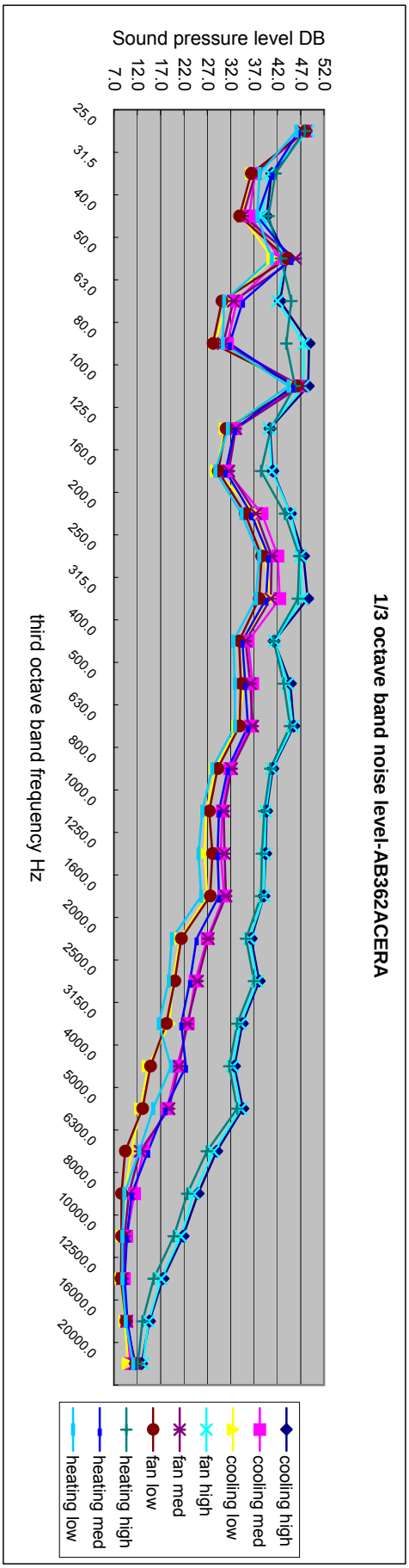
3.2 Noise level

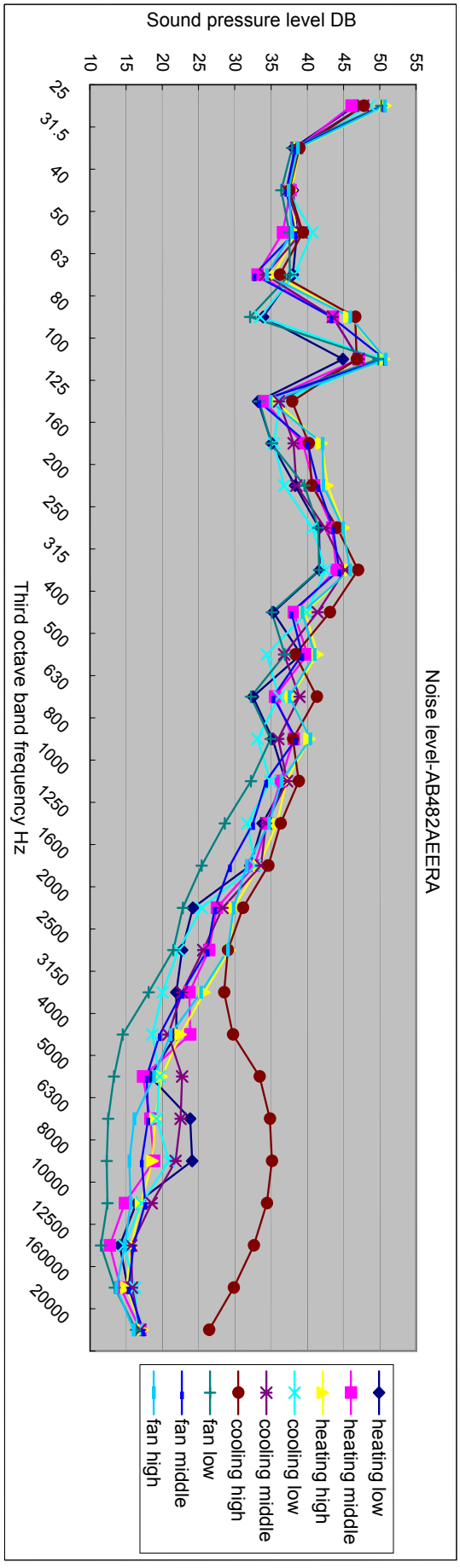
3.2.1 For inverter unit



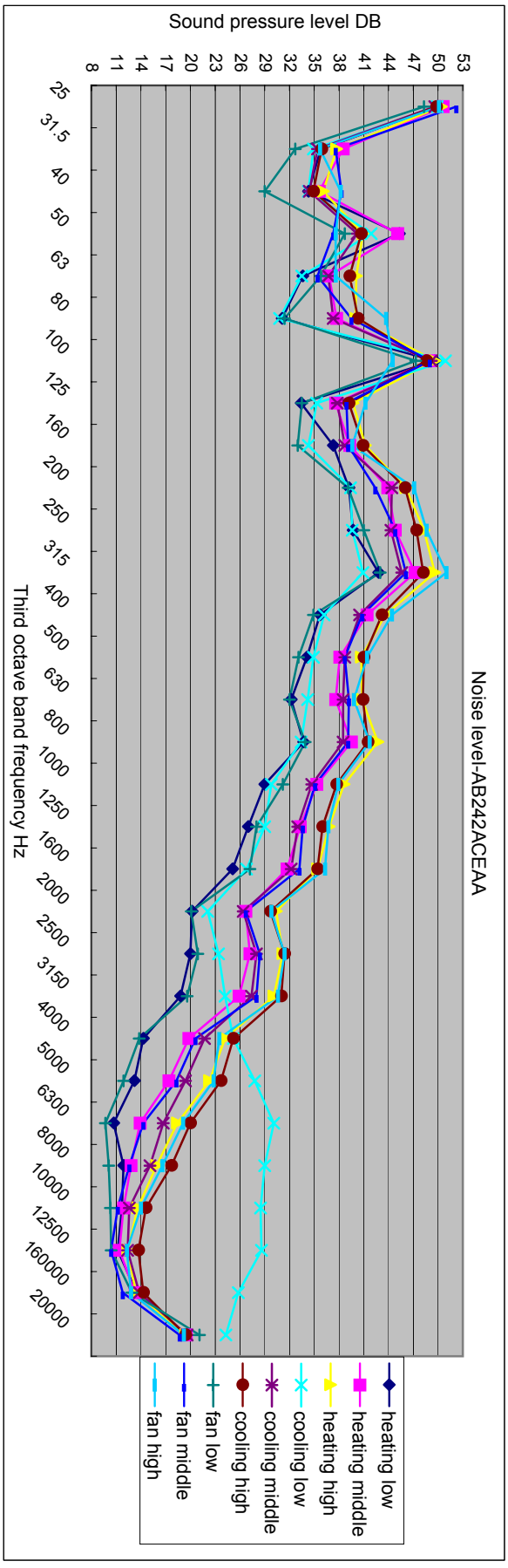


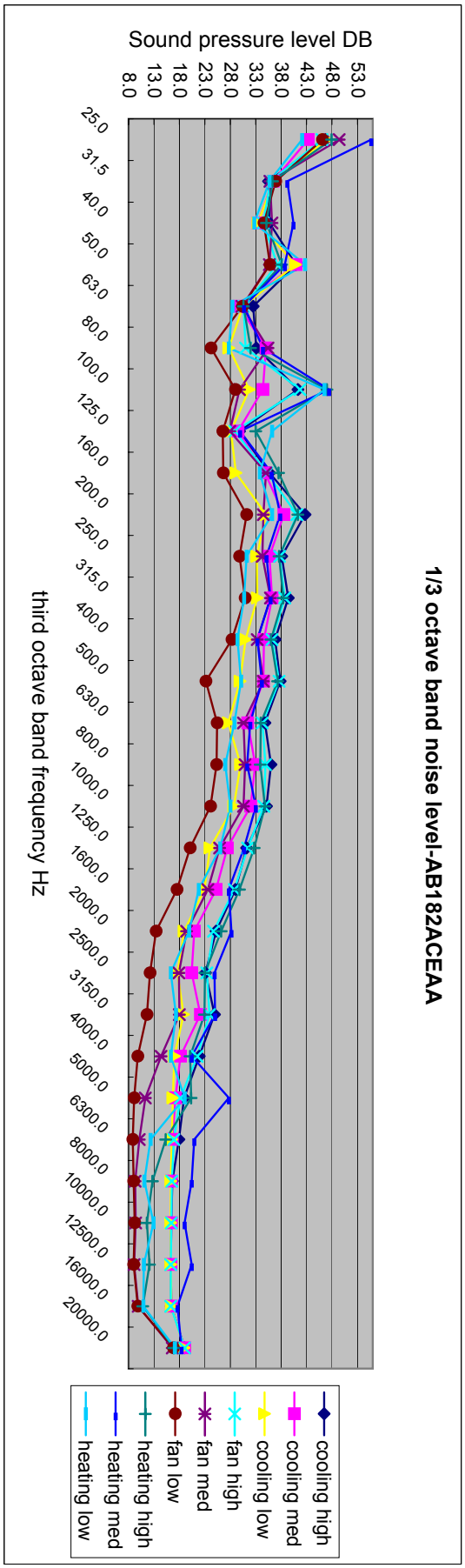

Noise level-AB362AEERA
Sound pressure level DB
10 13 16 19 22 25 28 31 34 37 40 43 46 49 52
Third octave band frequency Hz
25 31.5 40 50 63 80 100 125 160 200 250 315 400 500 630 800 1000 1250 1600 2000 2500 3150 4000 5000 6300 8000 10000 12500 16000 20000
heating low
heating middle
heating high
cooling low
cooling middle
cooling high
fan low
fan middle
fan high

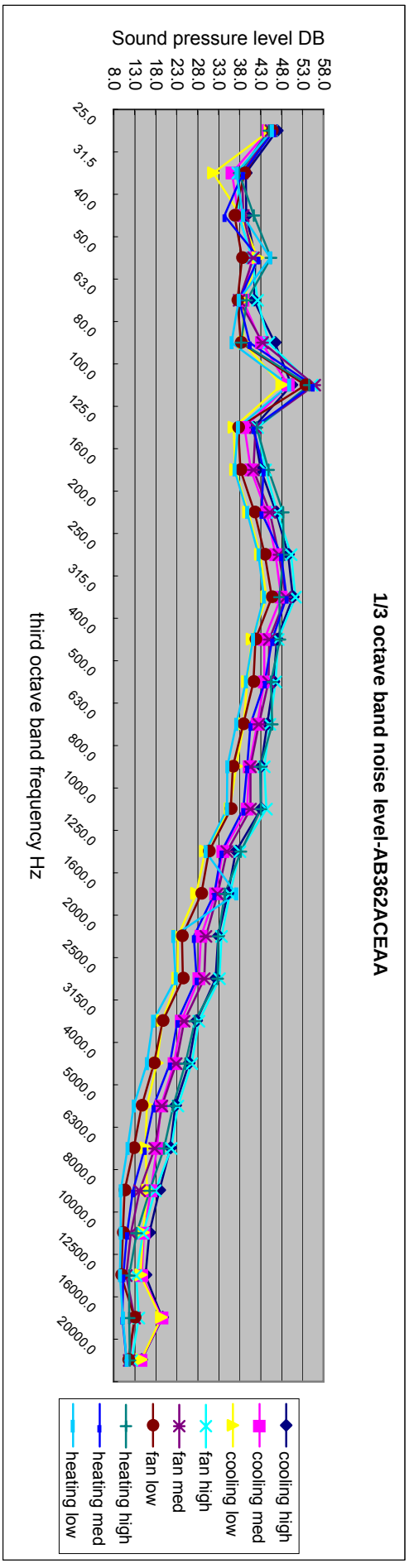

1/3 octave band noise level-AB362ACERA
Sound pressure level DB
7.0 12.0 17.0 22.0 27.0 32.0 37.0 42.0 47.0 52.0
third octave band frequency Hz
25.0 31.5 40.0 50.0 63.0 80.0 100.0 125.0 160.0 200.0 250.0 315.0 400.0 500.0 630.0 800.0 1000.0 1250.0 1600.0 2000.0 2500.0 3150.0 4000.0 5000.0 6300.0 8000.0 10000.0 12500.0 16000.0 20000.0
cooling high
cooling med
cooling low
fan high
fan med
fan low
heating high
heating med
heating low

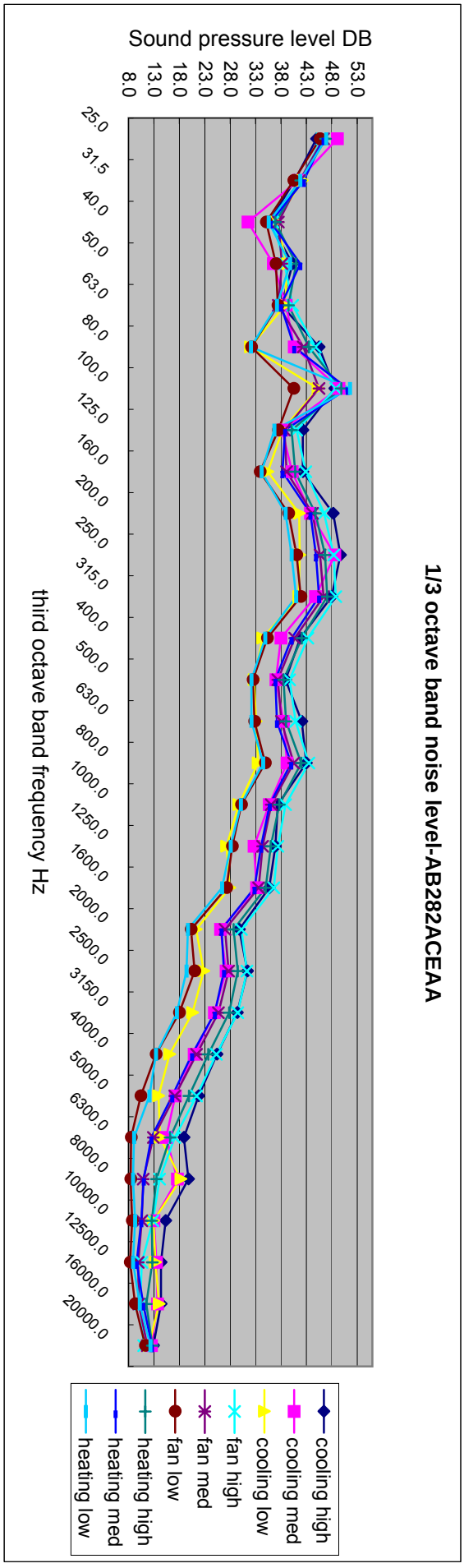

Sound pressure level DB
10
15
20
25
30
35
40
45
50
55
Third octave band frequency Hz
25
31.5
40
50
63
80
100
125
160
200
250
315
400
500
630
800
1000
1250
1600
2000
2500
3150
4000
5000
6300
8000
10000
12500
16000
20000
Noise level-AB482AEERA
heating low
heating middle
heating high
cooling low
cooling middle
cooling high
fan low
fan middle
fan high

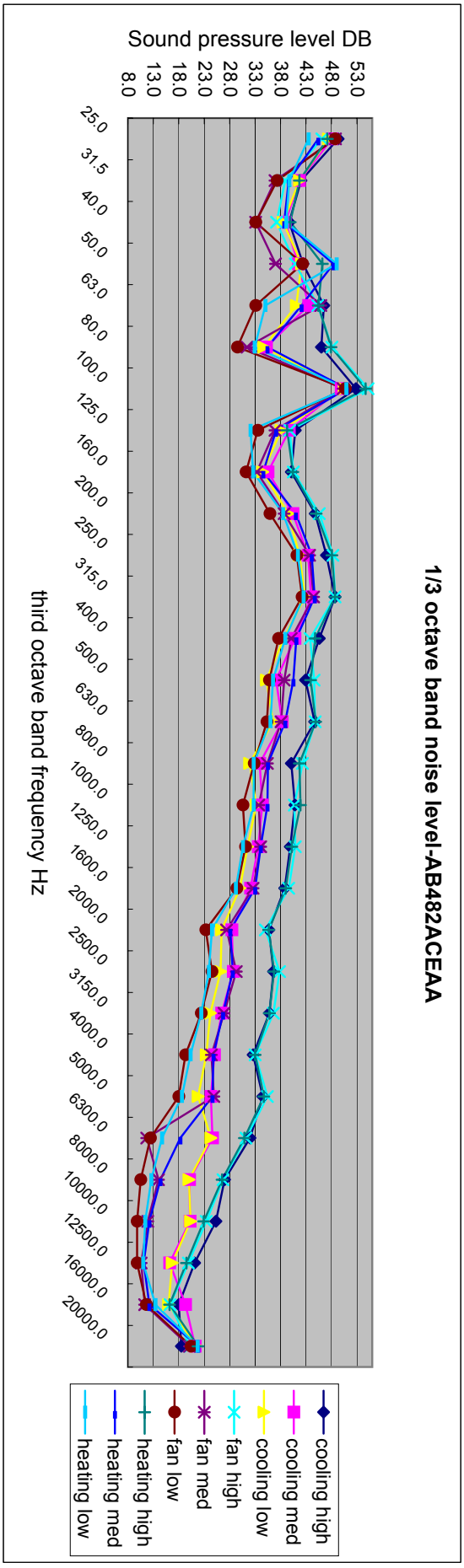
3.2.2 For fix frequency unit

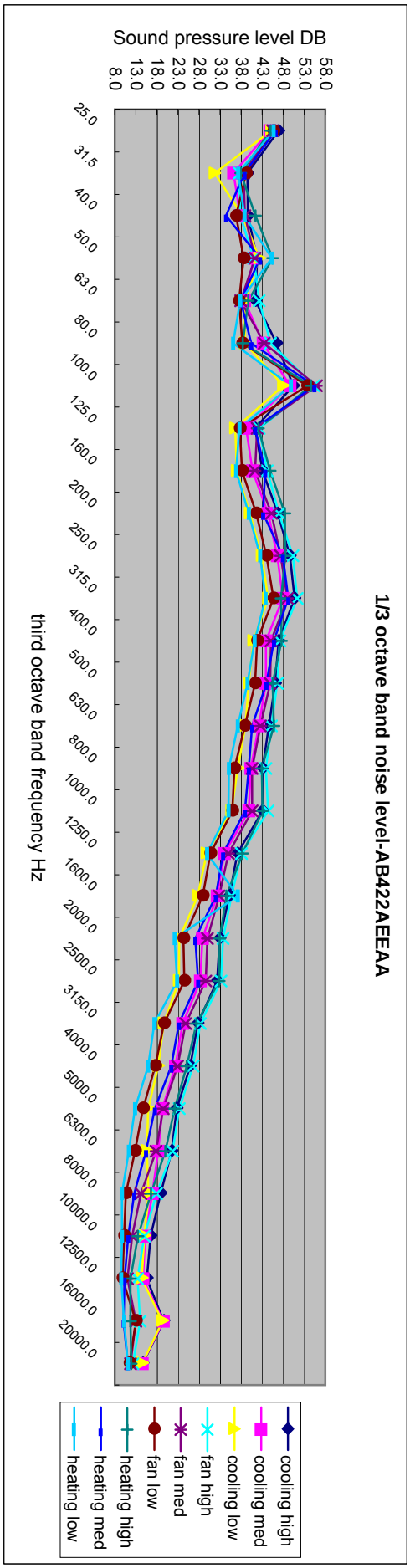


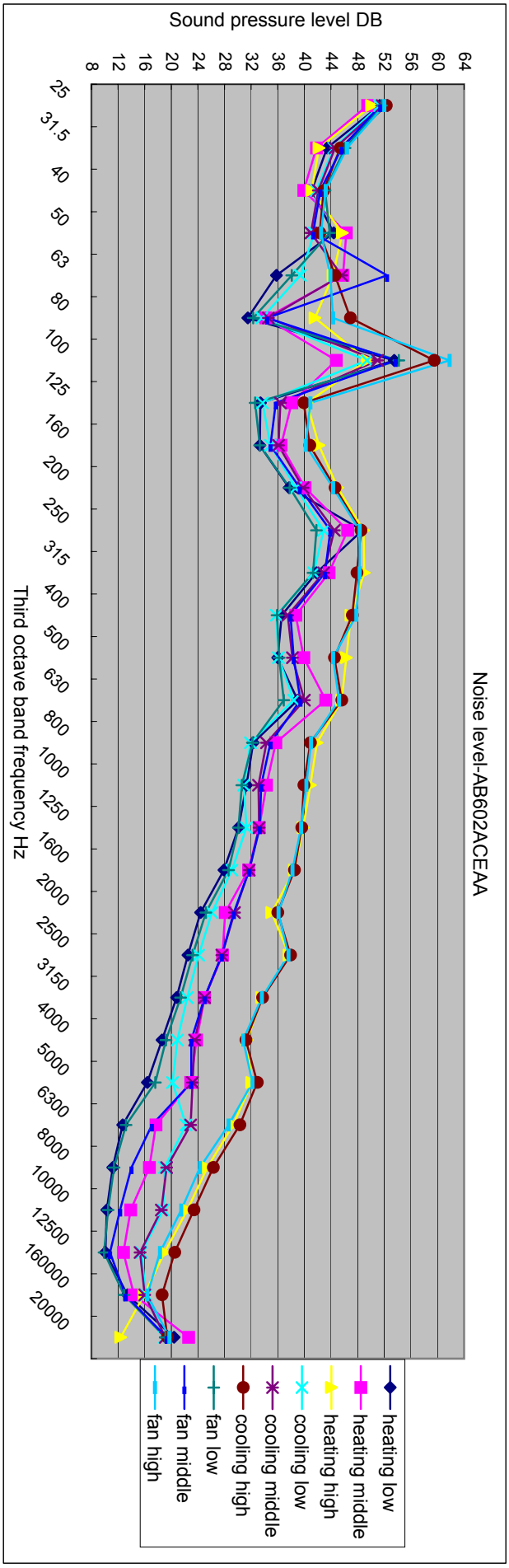



1/3 octave band noise level-AB362ACEAA
Sound pressure level DB
58.0
53.0
48.0
43.0
38.0
33.0
28.0
23.0
18.0
13.0
8.0
25.0
31.5
40.0
50.0
63.0
80.0
100.0
125.0
160.0
200.0
250.0
315.0
400.0
500.0
630.0
800.0
1000.0
1250.0
1600.0
2000.0
2500.0
3150.0
4000.0
5000.0
6300.0
8000.0
10000.0
12500.0
16000.0
20000.0
third octave band frequency Hz
cooling high
cooling med
cooling low
fan high
fan med
fan low
heating high
heating med
heating low


1/3 octave band noise level-AB282ACEAA
Sound pressure level DB
53.0
48.0
43.0
38.0
33.0
28.0
23.0
18.0
13.0
8.0
25.0
31.5
40.0
50.0
63.0
80.0
100.0
125.0
160.0
200.0
250.0
315.0
400.0
500.0
630.0
800.0
1000.0
1250.0
1600.0
2000.0
2500.0
3150.0
4000.0
5000.0
6300.0
8000.0
10000.0
12500.0
16000.0
20000.0
third octave band frequency Hz
cooling high
cooling med
cooling low
fan high
fan med
fan low
heating high
heating med
heating low


1/3 octave band noise level-AB482ACEAA
Sound pressure level DB
53.0
48.0
43.0
38.0
33.0
28.0
23.0
18.0
13.0
8.0
25.0
31.5
40.0
50.0
63.0
80.0
100.0
125.0
160.0
200.0
250.0
315.0
400.0
500.0
630.0
800.0
1000.0
1250.0
1600.0
2000.0
2500.0
3150.0
4000.0
5000.0
6300.0
8000.0
10000.0
12500.0
16000.0
20000.0
third octave band frequency Hz
cooling high
cooling med
cooling low
fan high
fan med
fan low
heating high
heating med
heating low


1/3 octave band noise level-AB422AEEAA
Sound pressure level DB
58.0
53.0
48.0
43.0
38.0
33.0
28.0
23.0
18.0
13.0
8.0
25.0
31.5
40.0
50.0
63.0
80.0
100.0
125.0
160.0
200.0
250.0
315.0
400.0
500.0
630.0
800.0
1000.0
1250.0
1600.0
2000.0
2500.0
3150.0
4000.0
5000.0
6300.0
8000.0
10000.0
12500.0
16000.0
20000.0
third octave band frequency Hz
cooling high
cooling med
cooling low
fan high
fan med
fan low
heating high
heating med
heating low

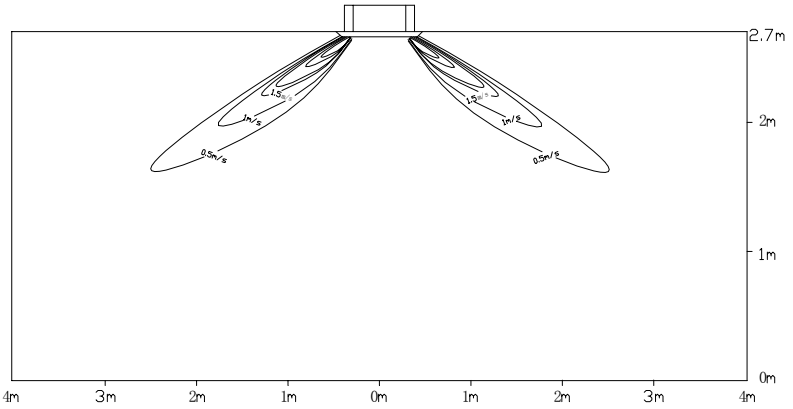

Sound pressure level DB
8
12
16
20
24
28
32
36
40
44
48
52
56
60
64
Third octave band frequency Hz
25
31.5
40
50
63
80
100
125
160
200
250
315
400
500
630
800
1000
1250
1600
2000
2500
3150
4000
5000
6300
8000
10000
12500
160000
20000
Noise level-AB602ACEAA
heating low
heating middle
heating high
cooling low
cooling middle
cooling high
fan low
fan middle
fan high

3.3 Air velocity distribution

For AB12*

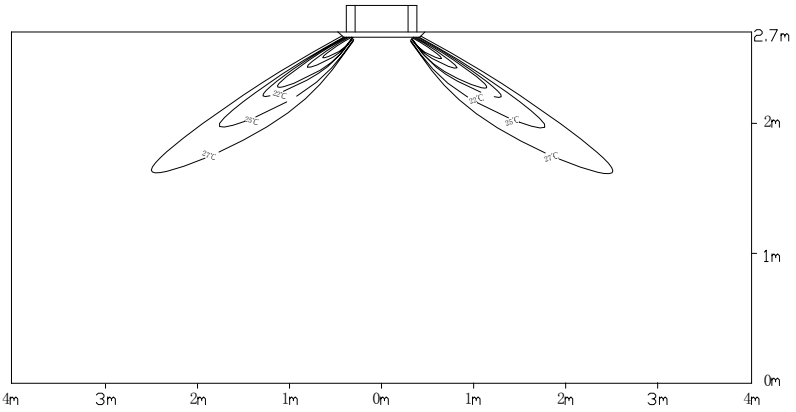
a. Cooling / Air Velocity Distribution

Cooling
Blowy angle:40
Air Velocity Distribution



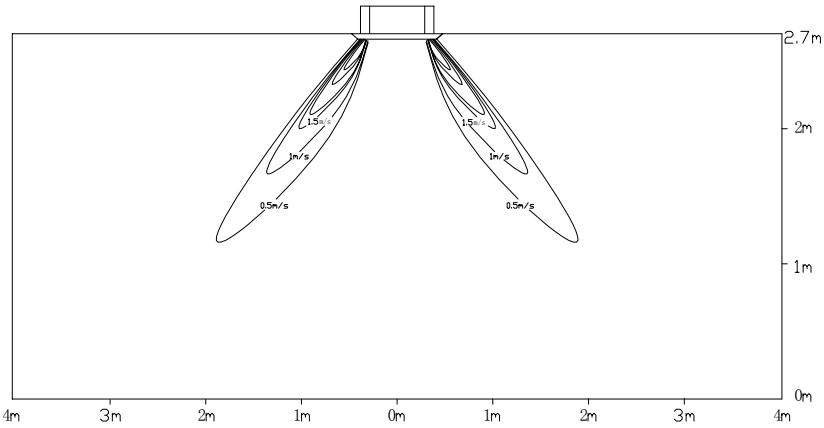
b. Cooling / Temperature Distribution

Cooling
Blowy angle:40
Temperature Distribution



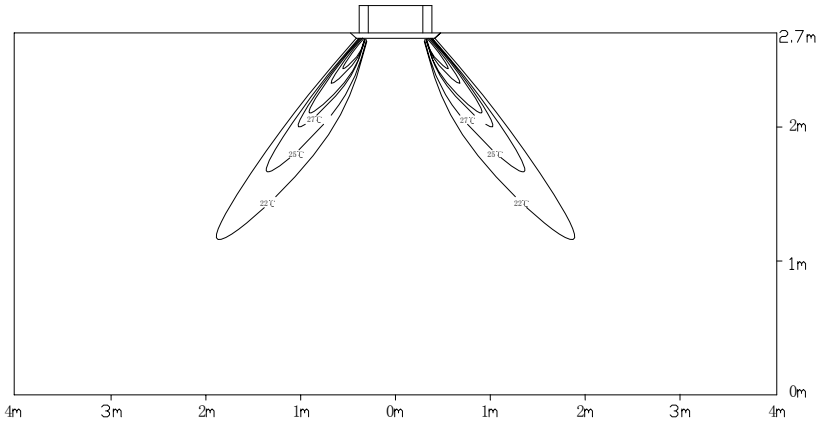
c. Heating / Air Velocity Distribution

Heating
Blowy angle:70
Air velocity Distribution



d. Heating / Temperature Distribution

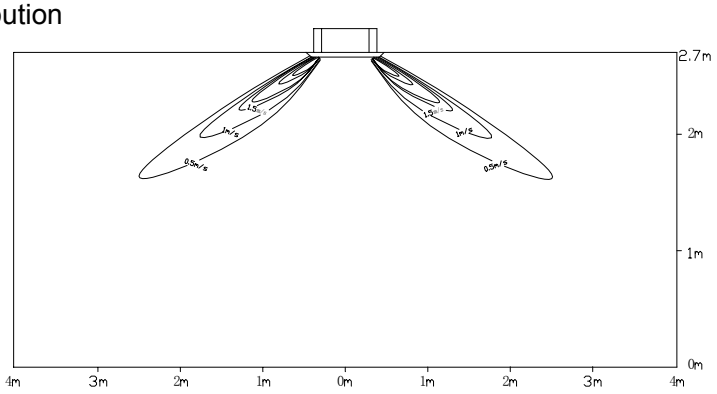
Heating
Blowy angle:70
Temperature Distribution



For AB18*

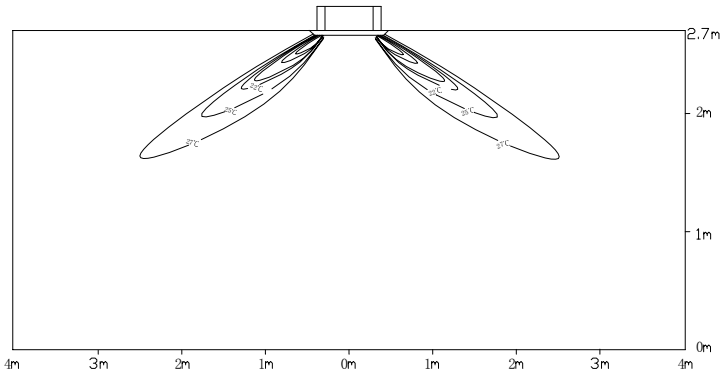
a. Cooling / Air Velocity Distribution

Cooling
Blowy angle:40
Air Velocity Distribution



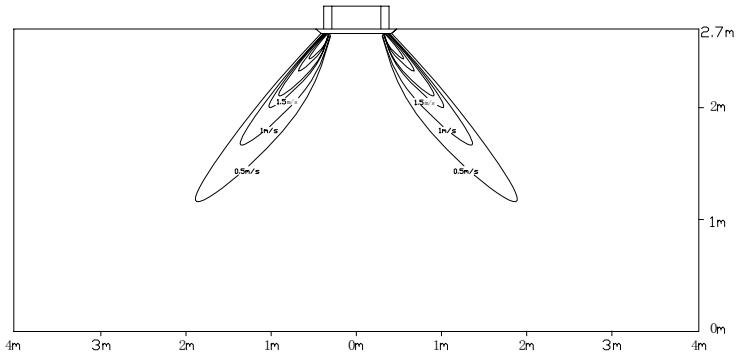
b. Cooling / Temperature Distribution

Cooling
Blowy angle:40
Temperature Distribution



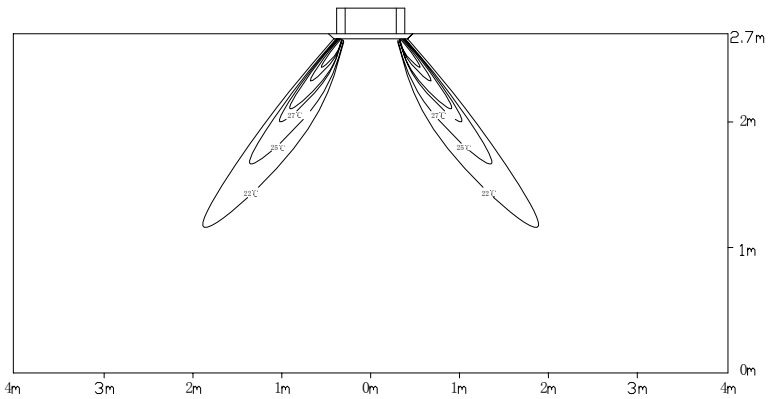
c. Heating / Air Velocity Distribution

Heating
Blowy angle:70
Air velocity Distribution



d. Heating / Temperature Distribution

Heating
Blowy angle:70
Temperature Distribution



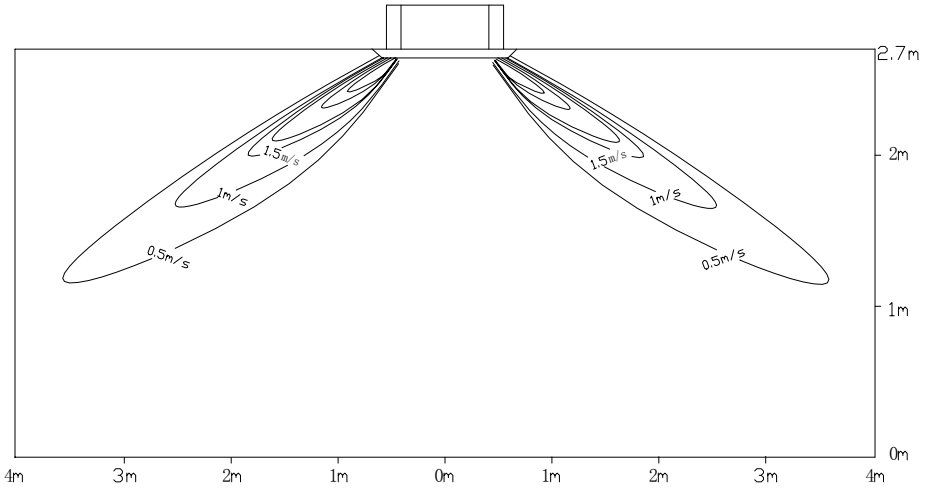
For AB24* and AB28*

a. Cooling / Air Velocity Distribution

Cooling

Blowy angle:40

Air Velocity Distribution

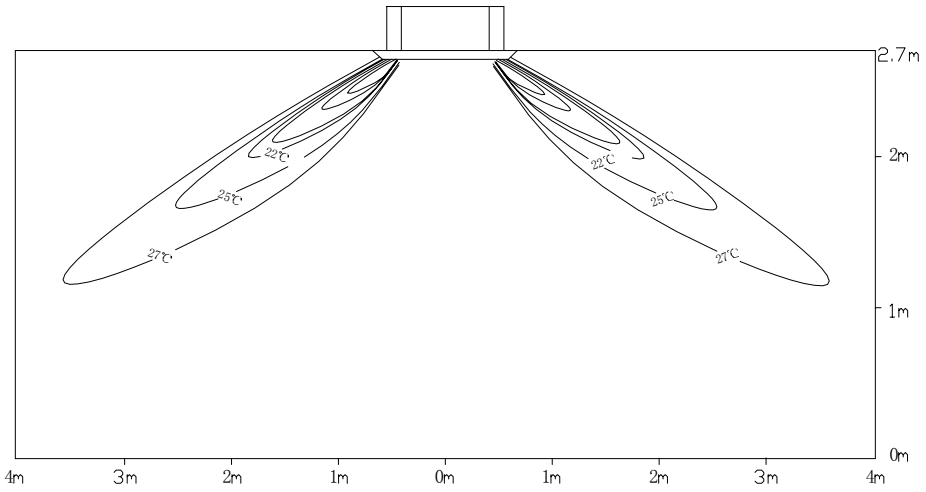


b. Cooling / Temperature Distribution

Cooling

Blowy angle:40

Temperature Distribution



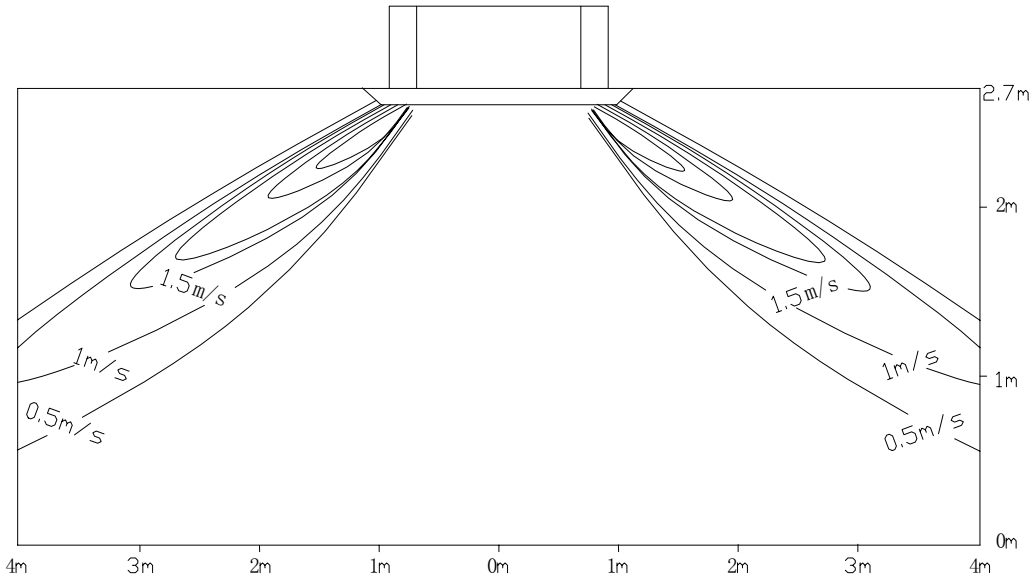
For AB36* and AB42*

a. Cooling / Air Velocity Distribution

Cooling

Blowy angle:40

Air Velocity Distribution

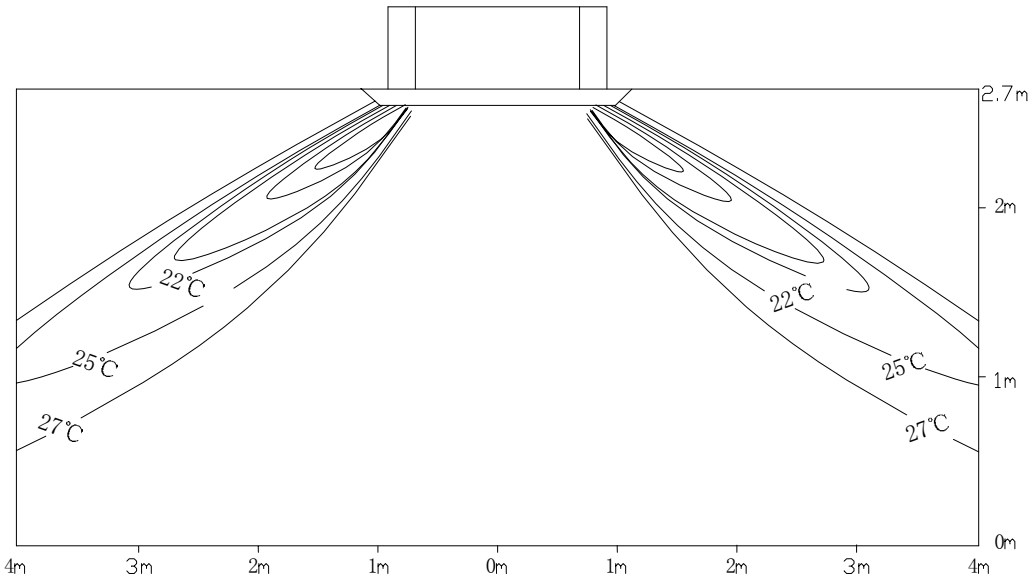


b. Cooling / Temperature Distribution

Cooling

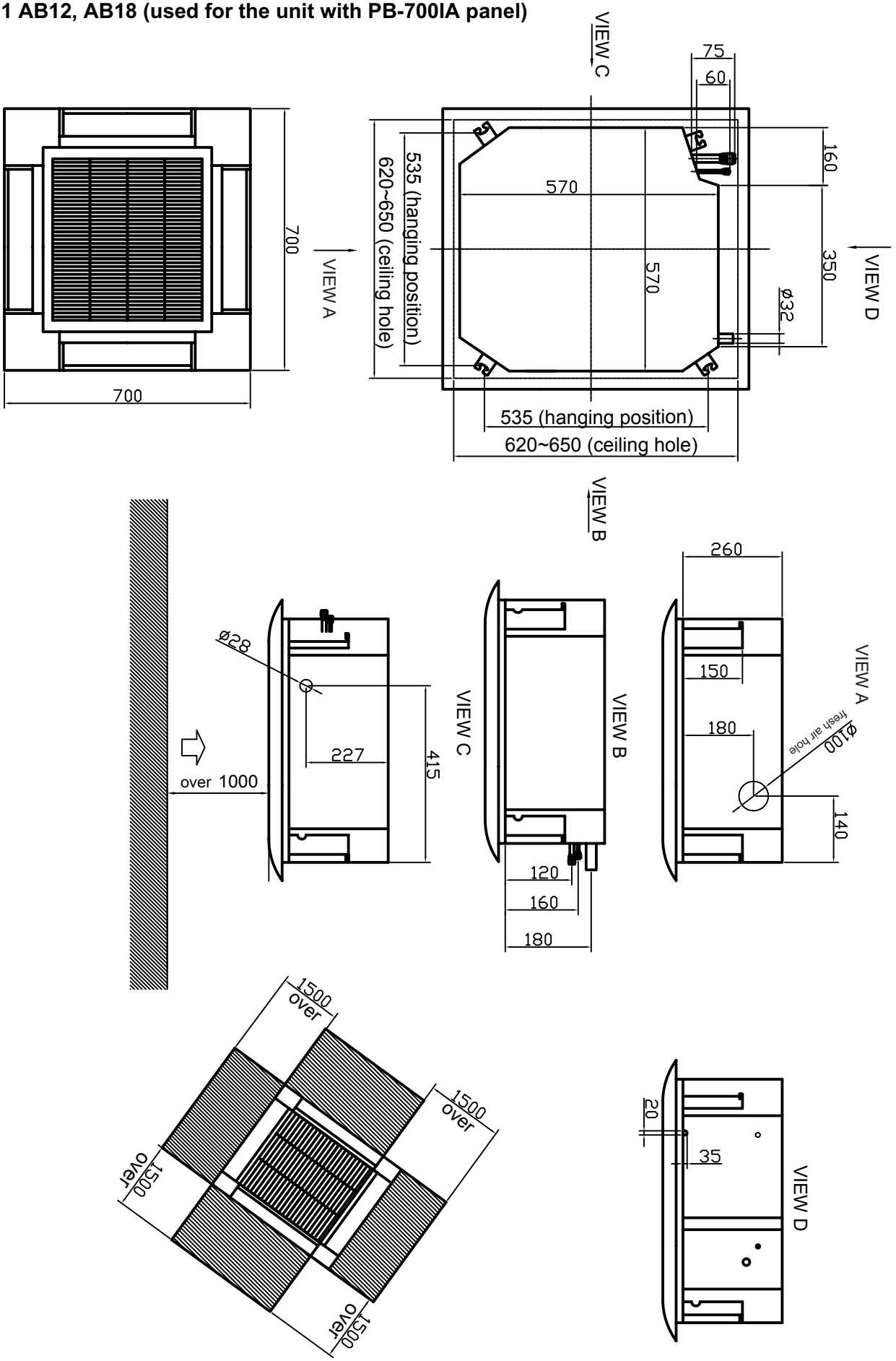
Blowy angle:40

Temperature Distribution

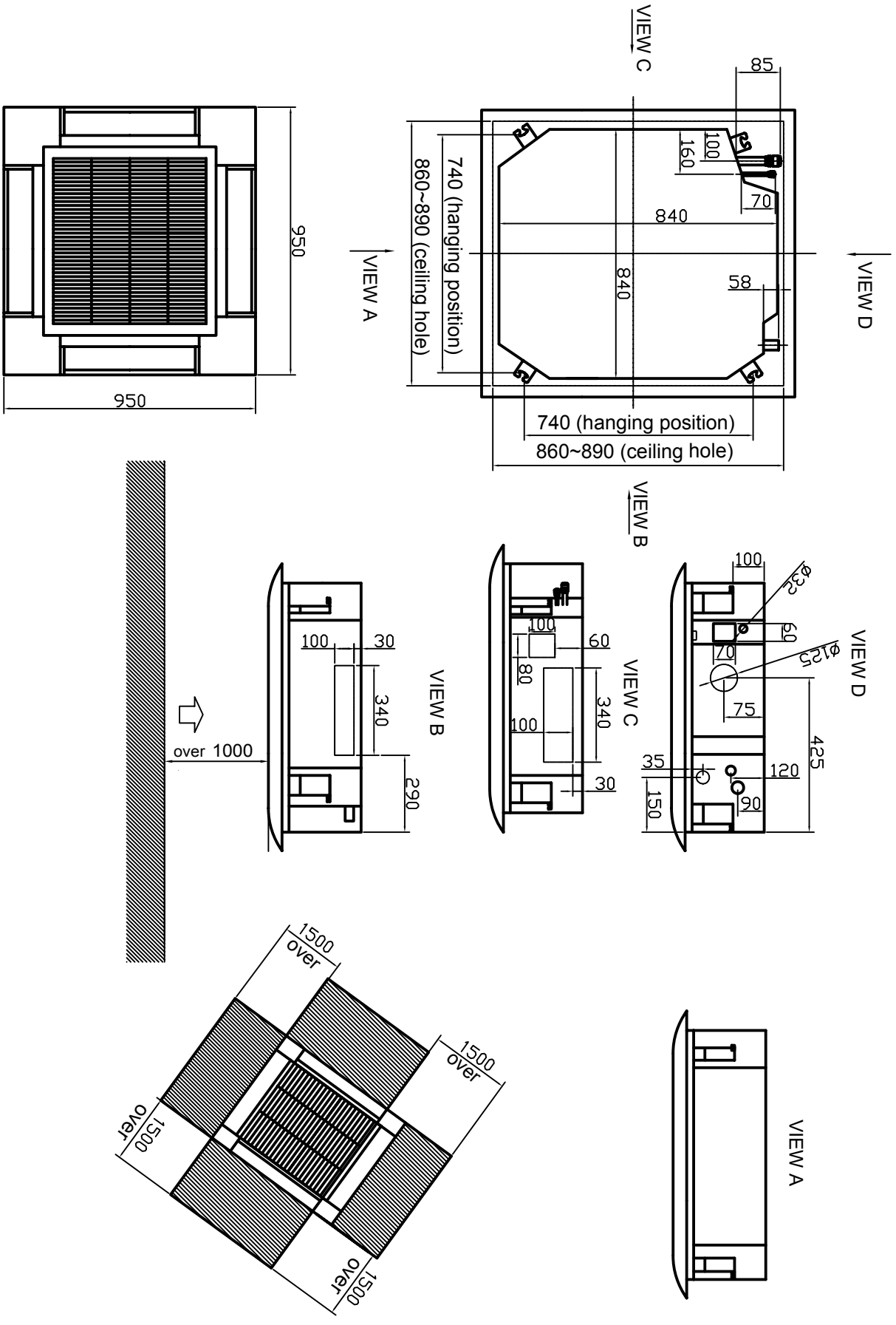


4. Dimension

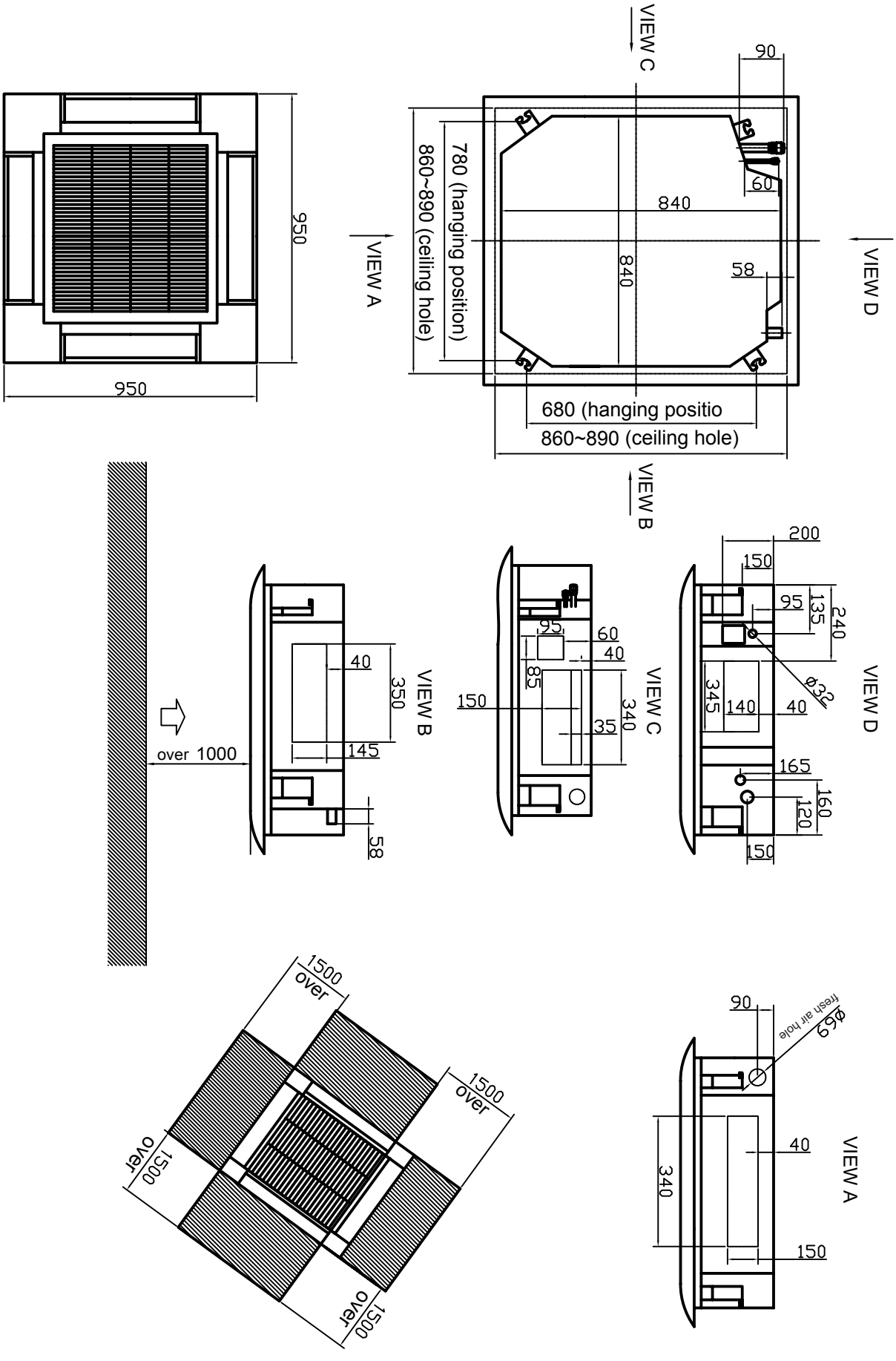
4.1 AB12, AB18 (used for the unit with PB-700IA panel)



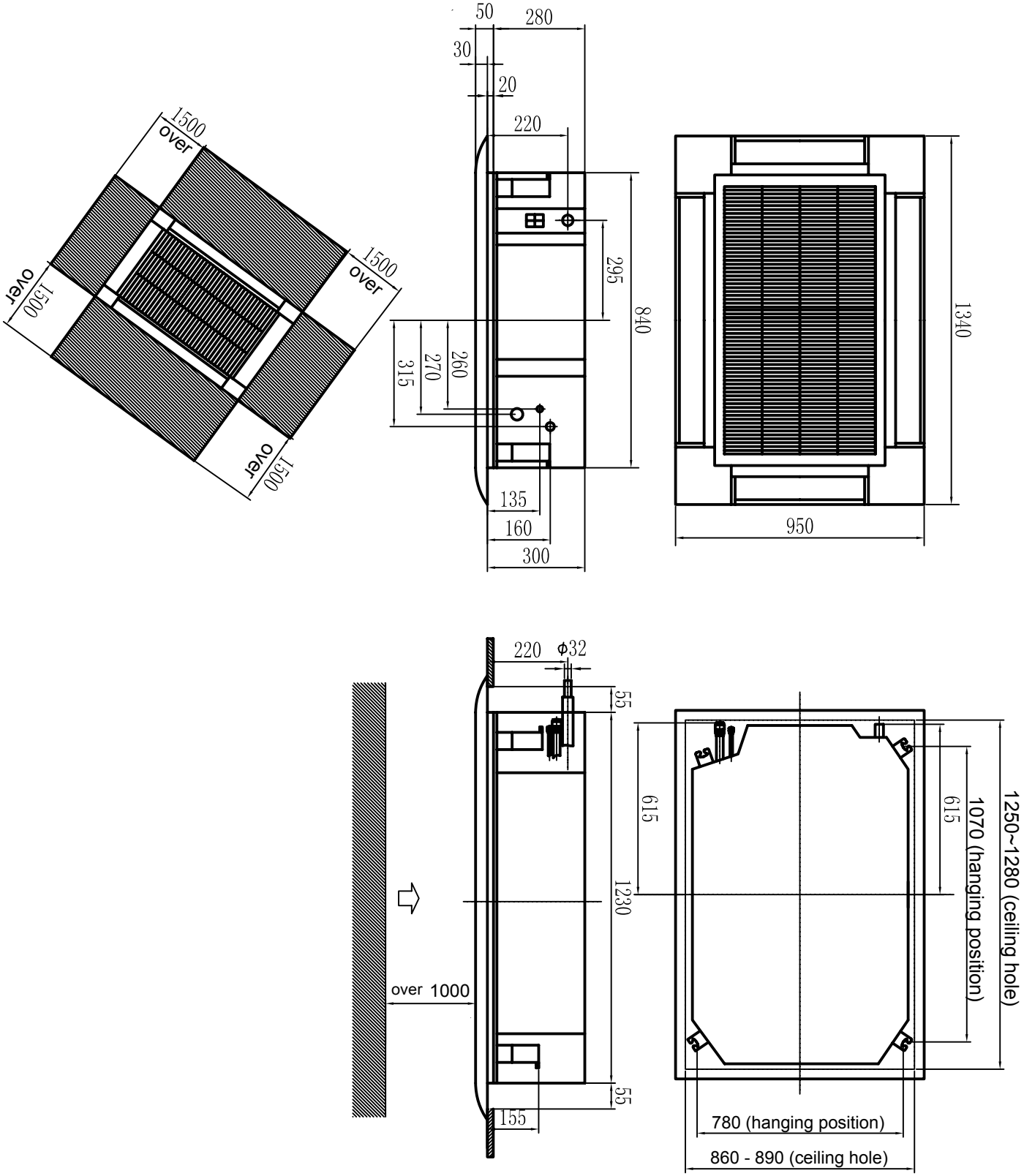
4.2 AB24, AB28 (used for the unit with old PB-950IA panel) and AB242AEERA, AB242AEEAA, AB282AEEAA (used for the unit with new PB-950JA panel)



4.3 AB28, AB36, AB42, AB48 (used for the unit with new PB-950JA panel)

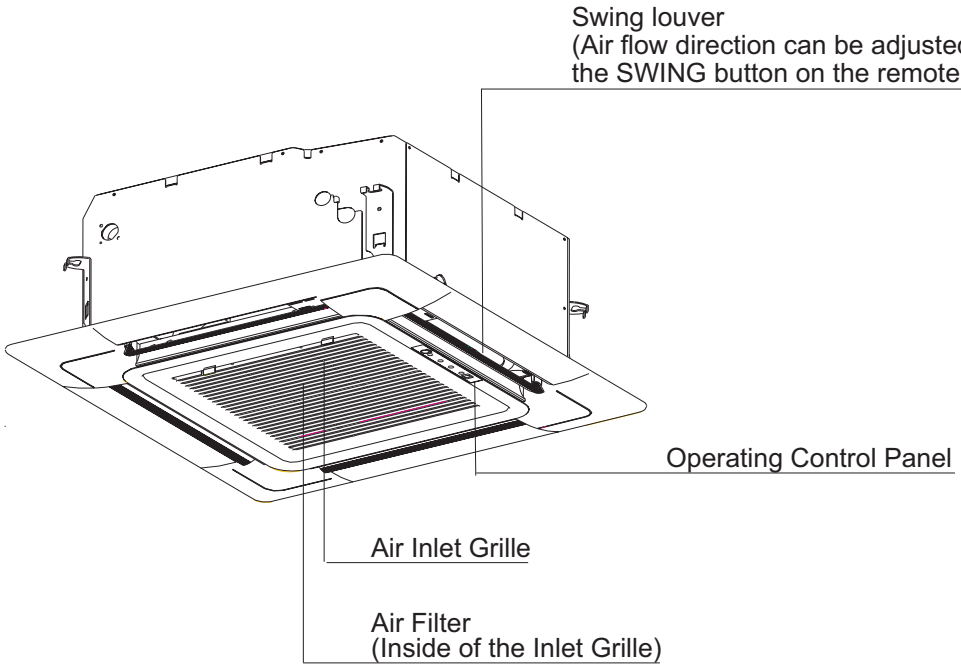


4.4 AB48, AB60 (used for the unit with PB-1340IA panel)

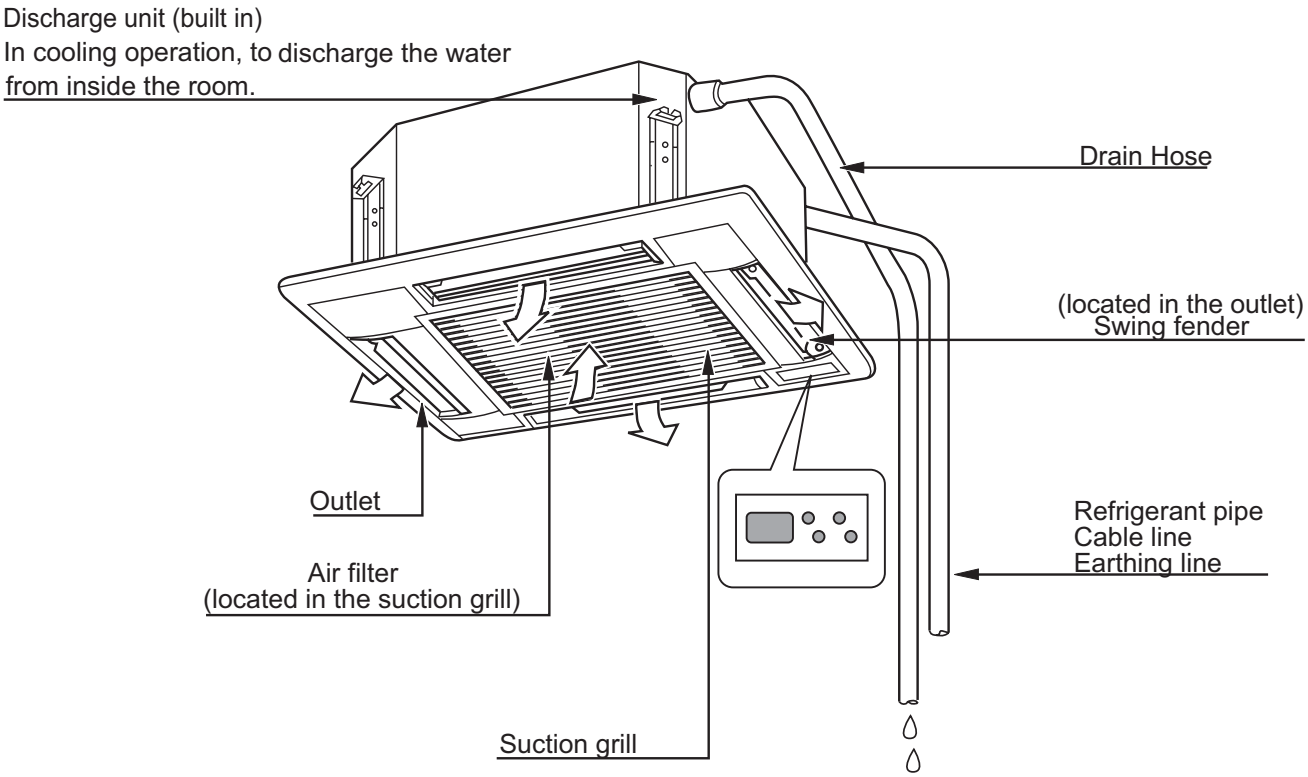


5. Part name

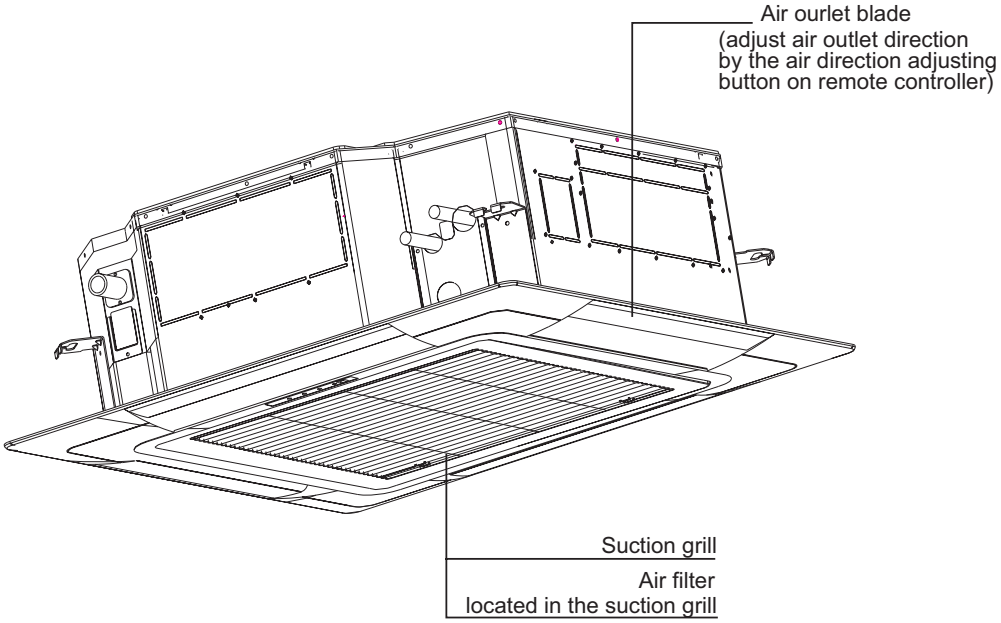
For AB122ACEAA, AB182ACEAA, AB122ACERA, AB182ACERA



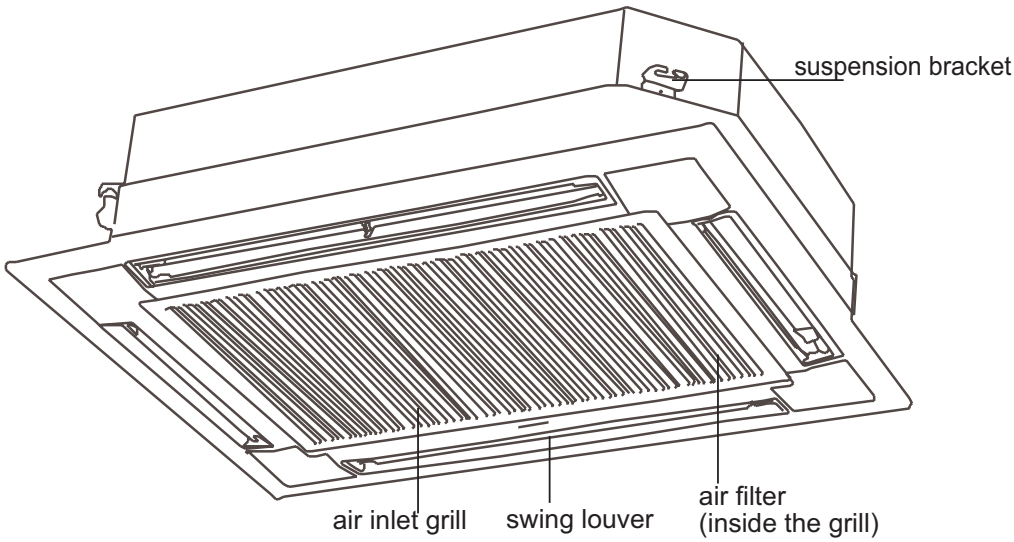
For AB242ACEAA, AB282ACEAA, AB242ACERA



For AB362ACEAA, AB242AEEAA, AB282AEEAA, AB422AEEAA, AB482AEEAA, AB242AEERA AB282AEERA, AB362AEERA, AB482AEERA



For AB482ACEAA, AB602ACEAA, AB362ACERA, AB602ACERA



Panel	Applicable unit	Panel function description
PB-700IA	AB122ACEAA, AB182ACEAA, AB122ACERA, AB182ACERA	for 700*700 panel
PB-950IA	AB242ACEAA, AB282ACEAA, AB242ACERA	for 950*950 panel, universal for wired control type and infrared control type
PB-950JA	AB362ACEAA, AB242AEEAA, AB282AEEAA, AB422AEEAA, AB482AEEAA, AB242AEERA, AB282AEERA, AB362AEERA, AB482AEERA	for 950*950 panel, new appearance
PB-1340IA	AB482ACEAA, AB602ACEAA, AB362ACERA, AB602ACERA	for 1340*1340 panel, universal for wired control type and infrared control type

6. Installation

CAUTIONS:

To ensure proper installation, read "Cautions" carefully before working. After installation, start the unit correctly and show customers how to operate and maintain the unit.

Meanings of Warning and Cautions:

Warning! Serious injury or even death might happen, if it is not observed.
Caution! Injury to people of damages to machine might happen, if it is not observed.

WARNING!

- Installation shall be done by professional people, don't install unit by yourself. Incorrect installation will cause water leakage, electric shock or fire.
- Install unit as per the Manual. Incorrect installation will cause water leakage, electric shock or fire accident.
- Be sure to use specified accessaries and parts. Otherwise, water leakage, electric shock, fire accident or unit falling down may happen.
- Unit should be placed on a place strong enough to hold the unit. Or, unit will fall down causing injuries.
- When install the unit, take in consideration of storms, typhoom, earthquake. Incorrect installation may cause unit to fall down.
- All electric work shall be done by experienced people as per eocal code, regulations and this Manual.
- Use exclusive wire for the unit. Incorrect installation or undersized electric wire may cause electric shock or fire accident.
- All the wires and circuit shall be safe. Use exclusive wire firmly fixed. Be sure that external force will not affect terminal bolck and electric wire. Poor contact and installation may cause fire accident.
- Arrange wire correctly when connectin indoor and outdoor power supply. Fix terminal cover firmly to avoid overheat, electric shock or even fire accident.
- In case retrigerant leakage occurred during unit installation, keep a good ventilation in the room.
- Poisonous gas will occur when meet with fire.
- Check the unit upon installation. Be sure there is no leakage. Refrigerant will induce poisonous gas when meet heat source as heater, oven, etc.
- Cut power supply before touching terminal bolck.

CAUTION!

- Unit shall be grounded. But grounding shall not be connected to gas pipe water pipe, telephone line. Poor grounding will cause electric shock.

Earthing

- Be sure to install a leakage breaker to avoid electric shock.
- Arrange water drainage according to this Manual. Cover pipe with insulation materials in case dew may occur. Unproper installation of water drainage will cause water leakage and wer your furniture.
- To maintain good picture or reduce noise, keep at least 1 m from T.V. radio, when install indoor and ou tdoor unit, connecting wire and power line. (If the radio wave is relatively strong, 1 m is not enough to reduce noise).
- Don't install unit in following places:
  (a) Oil mist or oil gas exists, such as kitchen, or, plastic parts may got aged, or water leakage.
  (b) Where there is corrosive gas. Copper tube and welded part may be damaged due to corrosion, causing leakage.
  (c) Where there is strong radiation. This will affect unit's control system, causing malfunction of the unit
  (d) Where flamable gas, dirt, and volatile matter (thinner, gasoline) exist, These matter might cause fire accident.

- Refer to paper pattern when installing unit.

Cautions for the installation personnel

- Don't fail to show customers how to operate unit.

Before installation <Don't discard any accessories until comp>

- Determine the way to carry unit to installation place.
- Don't remove packing until unit reaches installation place.
- If unpacking is unkavoidable, protect unit properly.

Selection of installation place

(1) Installation place shall meet the following and agreed by customers:

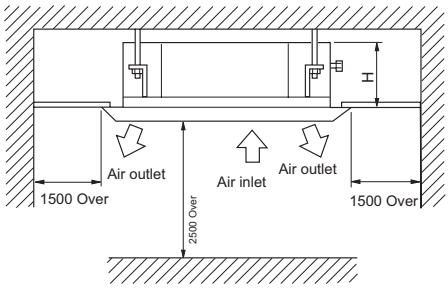
- Place where proper air flow can be ensured.
- No block to air flow.
- Water drainage is smpoth.
- Place strong enough to support unit weight.
- Place where inclination is not evident on ceiling.
- Enough space for mainenance.
- Indoor and outdoor unit piping length is within limit. (Refer to Installation Manual for outdoor unit.)
- Indoor and outdoor unit, power cable, inter unit cable are at least 1 m away fromT.V. radop. This is helpful to avoid picture disturbance and noise. (Even if 1 m iskept, noise can still appear if radio wave is strong)

(2) Ceiling height

Indoor unit can be installed on ceiling of 2.5-3m in height. (Refer to Foeld setting and Installation Manual of ornament panel.)

(3) Install suspending bolt. Check if the installation place is strong enough to hold weight. Take necessary measures in case it is not safe. (Distance between holes are marked on paper pattern. Refer to paper pattern for place need be reinforced)

Installation space



Model	H
For series 122,182 AB282AEERA, AB362ACEAA, AB362AEERA, AB362ACERA, AB422AEEAA, AB482ACEAA, AB482AEERA, AB482AEEAA, AB602ACERA	310
For series 242 AB282ACEAA, AB282AEEAA	280

Preparation for the installation

(1) Position of ceiling opening between unit and suspending bolt.

Please refer to the dimension part.

(2) Cut an opening in ceiling for installation if necessary. (when ceiling already exists.)

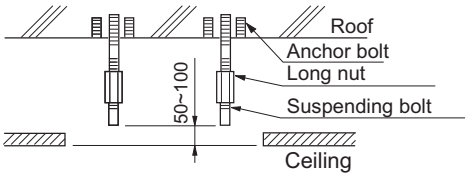
- Refer to paper pattern for dimension of ceiling hole.
- Connect all pipings (refrigerant, water drainage), wirings (inter unit cable) to indoor unit, before installation.
- Cut a hole in ceiling, may be a frame should be used to ensure a smooth surface and to prevent vibration. Contact your real estate dealer

(3) Install a suspending bolt.

(Use a M10 bolt)

To support the unit weight, anchor bolt shall be used in the case of already exists ceiling. For new ceiling, use built-in type bolt or parts prepared in the field.
Before going on installing adjust space between ceiling.

<Installation example>



Note: All the above mentioned parts shall be prepared in field.

Installation of indoor unit

In the case of new ceiling

(1) Install unit temporally

- Put suspending bracket on the suspending bolt. Be sure to use nut and washer at both ends of the bracket.

(2)
- As for the dimensions of ceiling hole, see paper pattern. Ask your real estate dealer for details.
- Center of the hole is marked on the paper pattern.
- Center of the unit is marked on the card in the unit and on the paper pattern.
- Mount paper pattern ⑤ onto unit using 3 screws ⑥. Fix the corner of the drain pan at piping outlet.

< After installation on the ceiling >

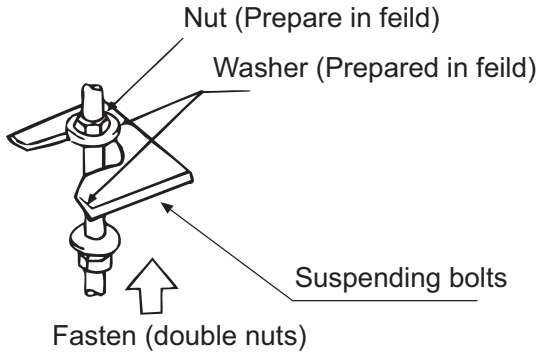
(3) Adjust unit to its right position. (Refer to preparation for the installation-(1))

(4) Check unit's horizontal level.

- Watert pump and flating switch is installed inside indoor unit, check four corners of the unit for its level using horizontal compartor or PVC tube with water. (If unit is tilting against the direction of water drainage, problem may occur on floating switch, causing water leakage.)

(5) Remove the washer mounlting ②, and tighten the nut above.

(6) Remove the paper pattern.



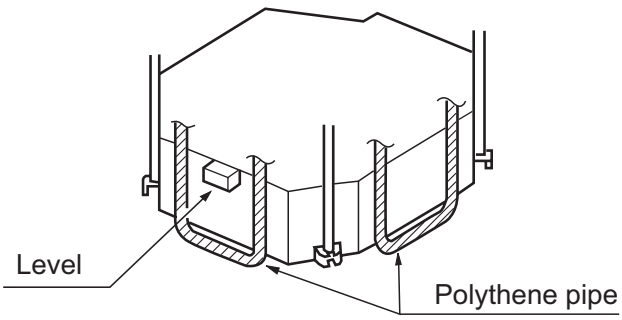
In the case of ceiling already exists

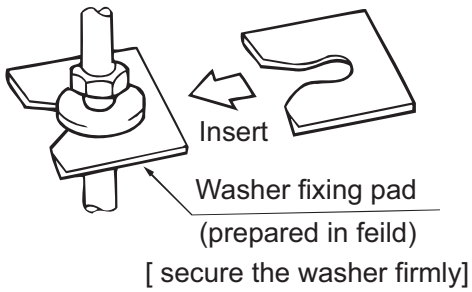
(1) Install unit temporally

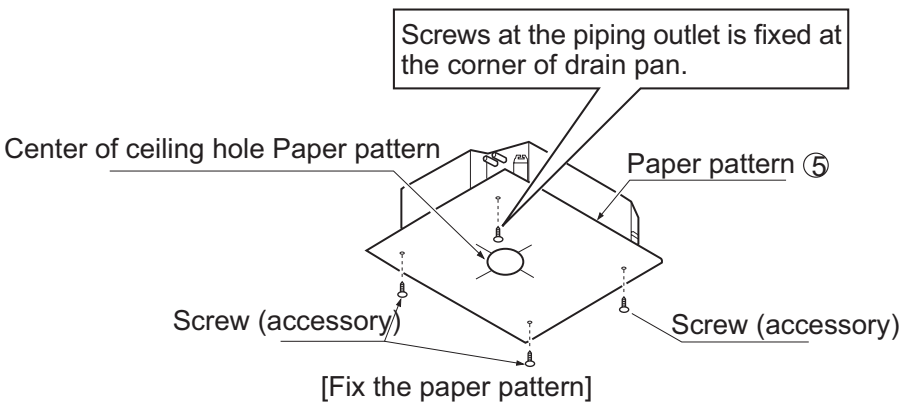
- Put suspending bracket on the suspending bolt. Be sure to use nut and washer at both ends of the bracket. Fix the bracket firmly.

(2) Adjust the height and position of the unit. (Refer to preparation for the installation (1)).

(3) Proceed with "In the case of new ceiling".







Refrigerant piping (As for outdoor piping, please refer to installation of outdoor unit)

- Outdoor is precharged with refrigerant.
- Be sure to see the Fig.1, when connecting and removing piping from unit.
- For the size of the flare nut, please refer to Table 1.
- Apply refrigerant oil at both inside and outsid of lflare nut. Tighten it band tight 3-4 turns then tighten it.
- Use torque specified in Table 1. (Too much force may damage flare nut, causing gas leakage).
- Check piping joints for gas leakage. Insulate piping as shown in Fig. below.
- Cover joint of gas piping and insulator ⑦ with seal.

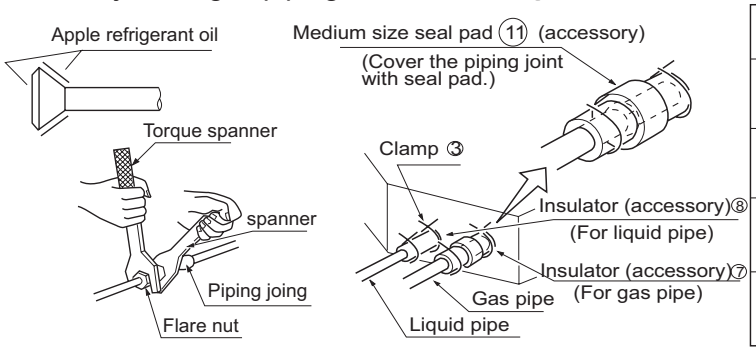
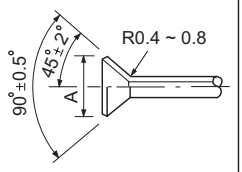


Table 1

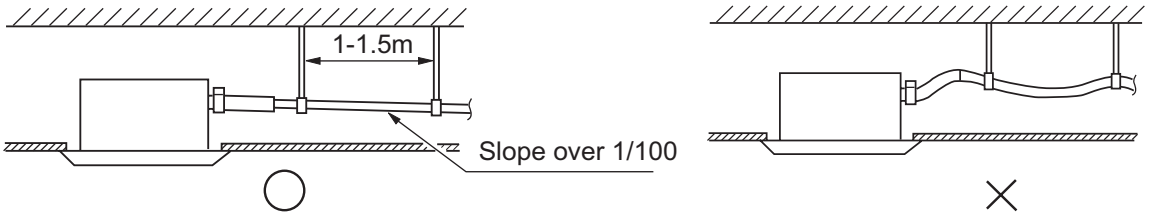
Pipe size	Tighten torque	A(mm)	Flare shape
Φ6.35	1420~1720N·cm (144~176kgf·cm)	8.3~8.7	
Φ9.52	3270~3990N·cm (333~407kgf·cm)	12.0~12.4	
Φ15.88	6180~7540N·cm (630~770kgf·cm)	18.6~19.0	
Φ19.05	9720~11860N·cm (990~1210kgf·cm)	22.9~23.3	



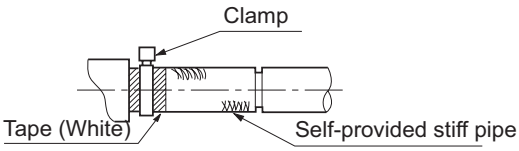
Installation of water drainage pipe

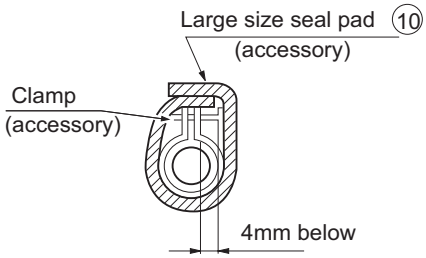
(1) Install water drainage pipe

- Pipe dia, shall be equal or larger than that of unit piping.(pipe of polyethylent; size: 25mm; O.D:32mm)
- Drain pipe should be short, with a downward slope at least 1/100 to prevent air bag from happening.
- If downward slope can't be made, take other measures to lift it up.
- Keep a distance of 1-1.5m between suspending brackets, to make water hose straight.



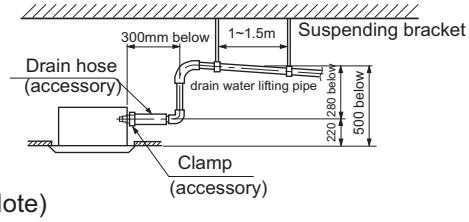
- Use the self-provided stiff pipe and clamp ① with unit. Insert water pipe into water plug until it reaches the white tape. Tighten the clip until head of the screw is less than 4mm from hose.
- Wind the drain hose to the clip using seal pad ⑨ . Insulate drain hose in the room.

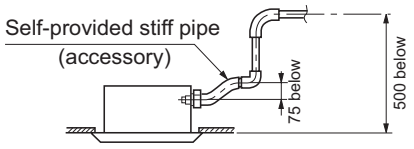




<Cautions for the drain water lifting pipe>

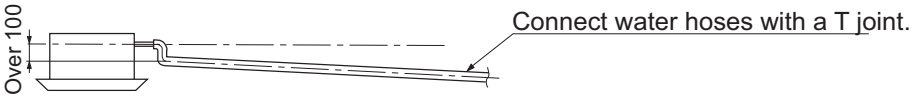
- Installation height shall be less than 280mm.
- There should be a right angle with unit, 300mm from unit.





(Note)

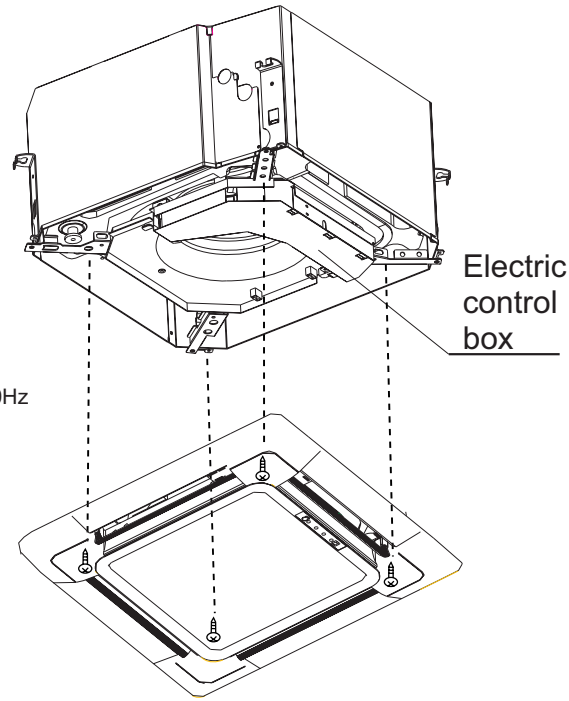
- The slope of water drain hose (1) shall be within 75mm, don't apply too much force on it.
- If several water hoses join together, do as per following proceedures.



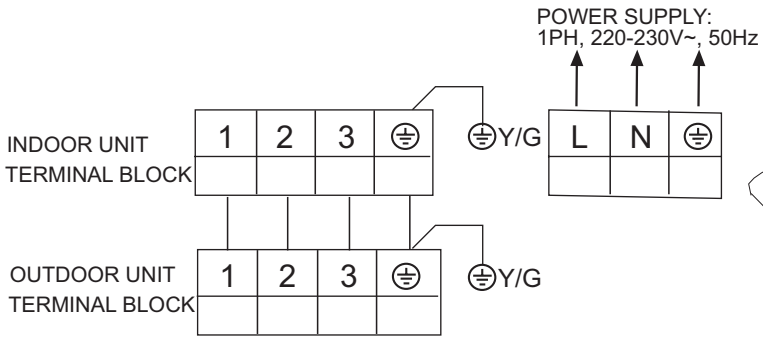
Specifieations of the water hoses shall meet the requirements for the unit running.

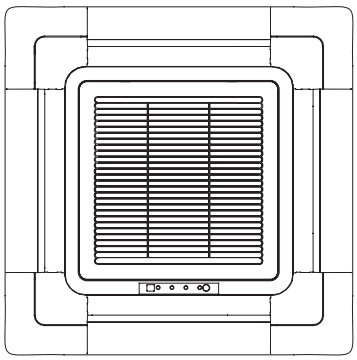
(For series 122,182)

- Check whether indoor unit is horizontal with leveler or polythene pipe filled with water , and check that the dimension of the ceiling opening is correct. Take off the lever gauge before install the ornament panel.
- Fasten the screws to make the height difference between the two sides of indoor unit less than 5mm.
- First fix it with screws temporally.
- Fasten the two temporally fixing screws and other two, and tighten the four screws.
- Connect the wires of synchro-motor.
- Connect the wire of signal.
- If no response of remote controller, check whether the wiring is correct, restart remote controller 10 seconds after shut off power supply.



For AB122ACEAA, AB122ACERA and AB182ACEAA





<Limits of panel board installation>

- Install the panel board in the direction shown in the
- figure. The incorrect direction will result in water leakage, meanwhile swing and signal receiving are displayed that cannot be connected.

(2) Check if water drainage is smooth after installation.

(For series 242, 282, 362, 422, 482, 602)

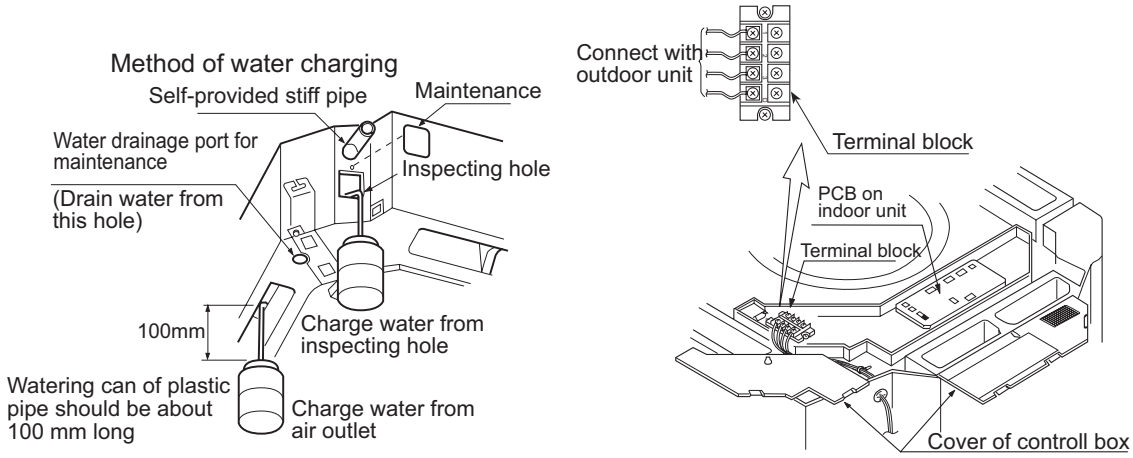
- Charge, through air outlet or inspecting hole, 1200ccd water to see water drainage.

After wiring

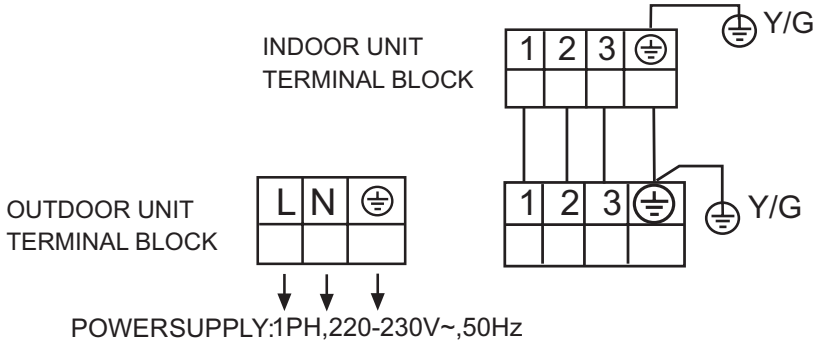
Check water drainage in cooling operation.

When wiring is not complete

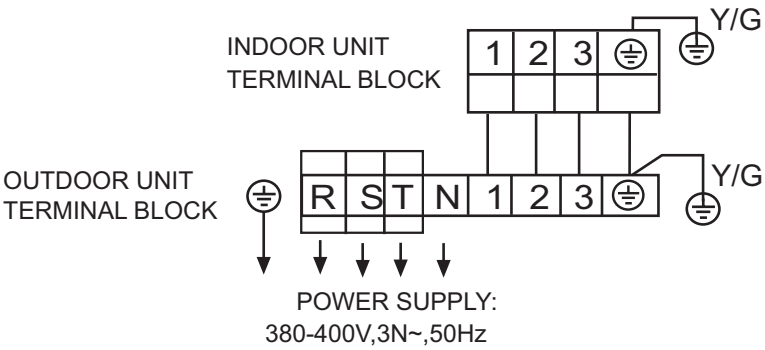
- Remove cover of control box, connect 1PH power to terminal 1 and 2 on terminal block, use remote controller to operate the unit.
- Note, in this operation, fan will be running.
- Upon confirmation of a smooth water drainage, be sure to cut off power supply.



(For series 242, 282, 362, AB182ACERA)

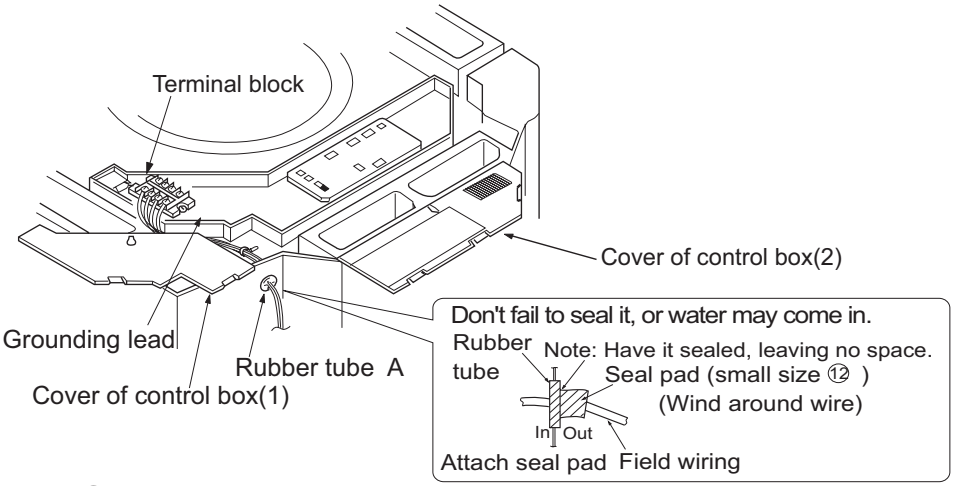


(For series 362, 422, 482, 602)



Wiring

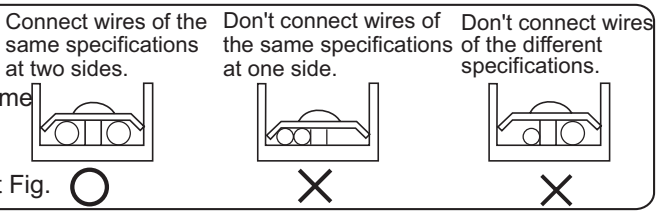
- All supplied parts. materials and wiring operation must in appliance with local code and regulations.
- Use copper wire only.
- When make wiring, please refer to wiring diagram also.
- All wiring work must be done by qualified electricians.
- A circuit breaker must be installed, which can cut power supply to all system.
- See Installation Manual of outdoor unit for specifications of wires, circuit breaker, switches and wiring etc.
- Connecting of unit
  Remove cover of switch box (1) , drag wires into rubber tube A, then, after proper wiring with other wires, tighten clamp A. Connect wires of correct pole to the terminal block inside.
- Wind seal ⑫ around wires. (Be sure to do that, or, dew may occur).
- Upon connecting, replace control box cover (1) and (2).



<<WARNING>>

Obscrve the following when connecting power supply terminal block:

Don't connect wires of different specifications to the same terminal block.
(Loose wire may cause overheating of circuit)
Connect wires of same specifications as shown in right Fig.



Wiring example

As for outdoor unit circuit, please see Installation Manual of outdoor unit.
Note: All electric wires have their own poles, poles must match that on terminal block.

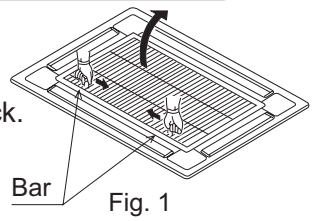


Fig. 1

Installation of ornament panel

Cautions for the installation

- Be sure to show customers Operation Manual and guide them how to operate unit correctly. Before installation. read also the Installation Manual of indoor unit.
- With this ornament , 2 or 3 air flow direction is not available. Suitable height is 3 m.

Accessory **Pad**  **Pad**

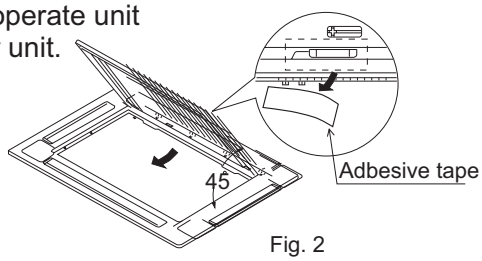


Fig. 2

1. Prepare ornament panel Handling of ornament panel

- Ornament panel shall not be placed face down or against wall, neither on an uneven object.
- Don' t bend carelessly the swing flap, or, problem may occur.

(1) **Remove air inlet grill from ornament panel:**

① Push in the bar on inlet grill and lift it up. (Refer to Fig. 1)

② Lift it up for about 45 degree and remove it from ornament. Tear off adhesive tape fixing air filter on the back of the air inlet grill. (Refer to Fig. 2)

(2) **Remove cover plate at corner**
Tear off the adhesive tape, and slide it off. (Refer to Fig. 3)

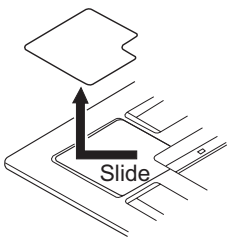


Fig. 3

2. Mounting on high ceiling

(1) Ornament panel can be mounted on ceiling as high as 3 m.

(2) Please install pad as accessary.

① Cut open the pad along cutting ling. Use part ⓐ only and discard part ⓑ. (Refer to Fig. 4)

② Install part a of the pad on the place shown in Fig. 5. Refer to Fig. 6.

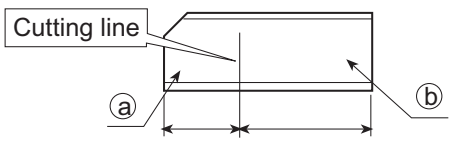


Fig. 4

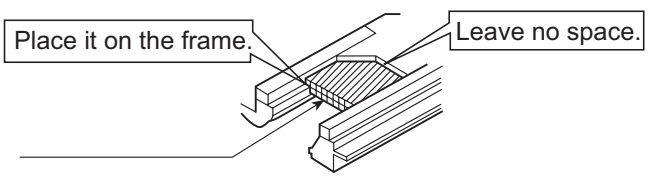


Fig. 6

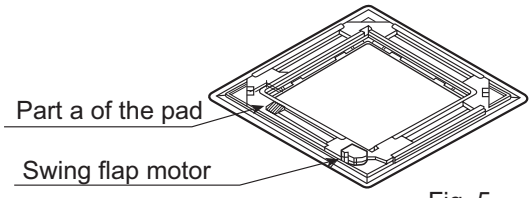


Fig. 5

(3)Wiring on ornament panel
Connecting of wiring of the swing flap motor on ornament panel. (2 places) (Refer to Fit . 10)

If connecting is not made, error code (A7) appears on remote controller. So, make proper connecting.

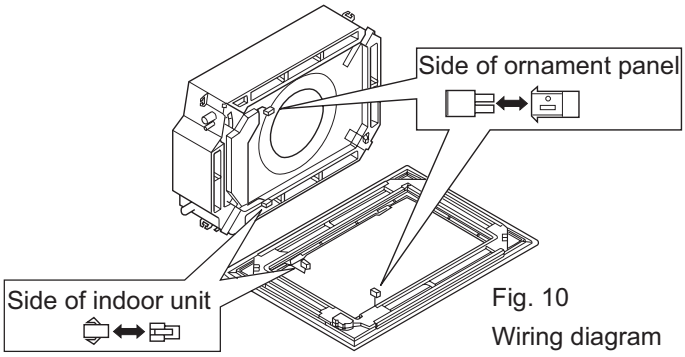


Fig. 10
Wiring diagram

3. Install ornament panel on indoor unit.

(1) As shown in Fig.7,match the position of swing flap motor with that of the indoor unit piping hole , so that ormament panel can be placed on to indoor unit.

(2) Installation of ornament panel

① Place the holding ring on swing flao motor side teporarily on hooks of the indoor unit. (2 pcs)

② Put the other two holding rings on the hooks at both side of the indoor unit. (Care should be taken not to push wiring of swing flap motor into seals).

③ Screw in all 4 screws under holding ring for about 15mm. (Pancl will rise).

④ Adjust the ornament panel as per Fig. 7 to cover opening on the ceiling.

⑤ Tighten screws to redrce the thickness of seals between ornament and indoor unit to 5-8mm.

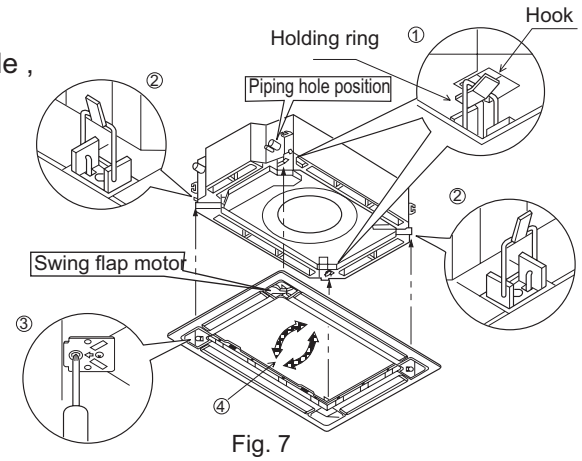
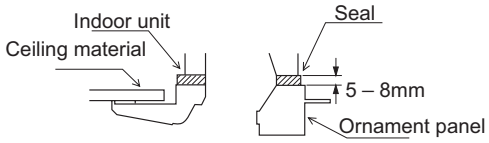


Fig. 7



Caution

If screws are not tighten tight, problems in Fig, 8 might occur. Tighten screws properly.

If there are still space after tightening of screws, please readjust the height of indoor unit. (Refer to Fig. 9)

If indoor unit is at horizontal level and water drainage is smooth, then, indoor unit height can be adjusted throrgh holes at corners of ornament panel.

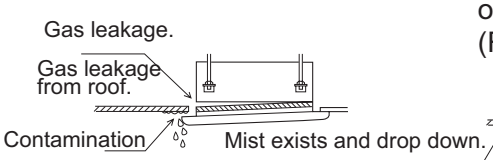


Fig. 8

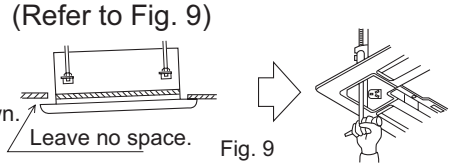


Fig. 9

4. Installation of inlet grill and cover plate

(1) Installation of inlet grill

Install in reversed order of "Prepare ornament pandl".

Inlet grill can be adjusted into four directions by turning inlet grill. Inlet grill position can be adjusted as per customers request.

When installing inlet grill, take care not to twist wiring of swing flap motor.

(2) Install cover plate on the corner
① As shown in Fig. 11 tie the cover plate onto the bolt on ornament plate.
② Install cover plate onto ornament plate. (Refer to Fig. 12)

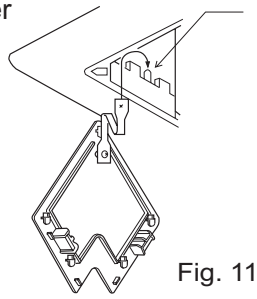
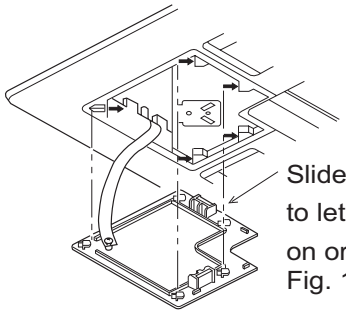


Fig. 11



Slide all five hold rings to let them drop in holes on ornament plate, Fig. 12

Pay special care to the following and check after installation

Item to the checked	Unproper installation may cause	Check
Is indoor unit firmly installed?	Unit might fall down, make vibration or noise.	
Is gas leakage check performed?	This may lead to gas shortage.	
Is unit properly insulated?	Dew or water drop may occur.	
Is water drainage smooth?	Dew or water drop may occur.	
Is power voltage meet that stipulated on the nameplate?	Problem may occur or parts got burned.	
Is wiring and piping correctly arranged?	Problem may occur or parts got burned.	
Is unit safely grounded?	There might be a danger of electric shock.	
Is wire size correct?	Problem may occur or parts got burned.	
Are there any obstacles on air inlet and outlet grill of indoor and outdoor unit?	This may cause poor cooling.	
Is record made for piping length and refrigerant charging amount?	It is hard to control refrigerant charging amount.	

ATTENTION: after finishing installation,confirm no refrigerant leakage.

Convertible indoor unit (AC12~AC60)

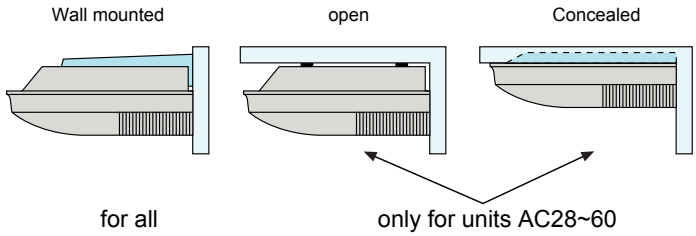
1. Features

Streamline appearance

The unit adopts streamline design that makes it so compact and has a popular appearance. So it can add elegance to any style of interior.

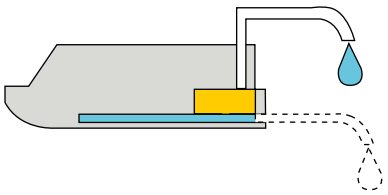
Optional installation mode

The indoor unit can be installed on the floor or to the ceiling. It always greatly decreases the space needed and also it can provide the same comfort to us. At the same time make service and Installation more convenient and easy.



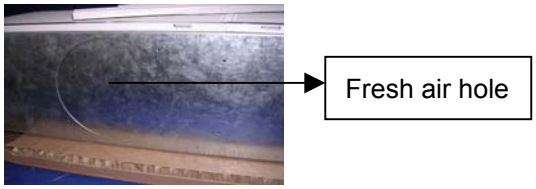
Optional Drain water modes

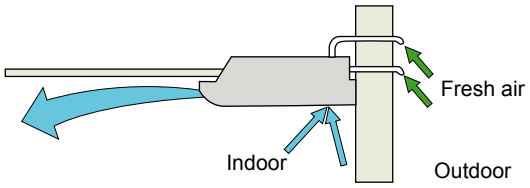
Optional drain water lift-up mechanism offers more flexible installation. more choices for water pipe installation.



Fresh-air intake

There is pre-set 200mm-diameter large fresh air intake holes in the unit, which can make the air more comfortable. The fresh function can be set at any time according to the request of you



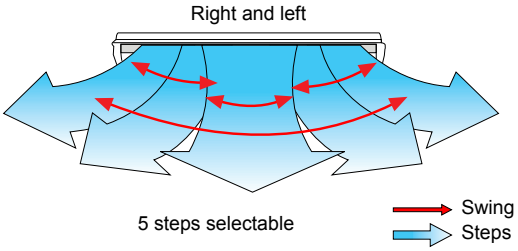


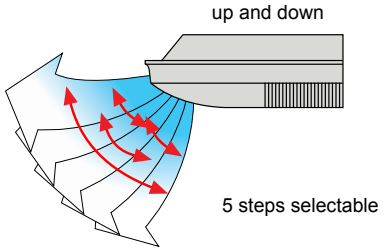
Automatically control of airflow direction

In order to realize the comfortable space with uniform temperature, the air conditioner adopts two stepping motors to adjust the airflow automatically for sending the air to every corner of the room.

When heating, it will send download large quantity of hot air in order to quickly and effectively warm up the floor, and it will send the airflow from top to bottom from the very beginning when cooling to send the cool air to every corner of the room.

For AC28~60, the airflow direction can be controlled in 5 steps from up to down and from left to right. More selectable, more flexible.





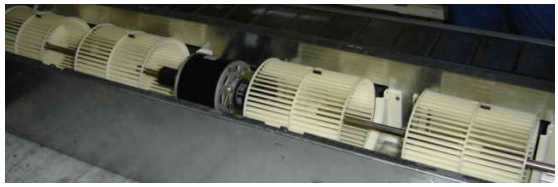
Ultra-thin unit body, only thick 199 mm

The convertible indoor unit adopts a double drain pan design, the unit body is very thin, only 199 mm. It is beautiful and elegant and the most important-space saving (for model 12, 18, 24).

Long-life and high efficiency air purify filter

The units adopts high efficiency air purify filter, greatly improve the room air quality; at the same time, the filter is with the pulling hole, can be easily taken down and cleaned.

Particular drive device With single fan motor, the fans connect with motoraxis by the flexible gimbal so that the ratio of damageable parts can be reduced, and the noise level down to 47dB.



Variable control mode

Standard control method: Infrared controller YR-H71 for AC12~24 and YR-H50 for AC28~60.

Optional control method:

a. Wired&Group controller: YR-E12 which can control at most 16 indoor units and operate them synchronously, all the indoor units work in the same state(working mode, set temperature, fan speed and etc.), thus it makes a easy management.

b. Central Controller:YCZ-A001 which can control at most 128 indoor units, all the indoor units work in the different modes.

2. Specifications

2.1 For DC inverter unit

Item				Model	AC122ACERA	
Function					cooling	heating
Capacity				kW	4.1(0.9--4.6)	4.4(1.0---5.1)
Sensible heat ratio					0.71	
Total power input				W	1270(280---1650)	1210(280--1650)
Max. power input				W	1650	1650
EER or COP				W/W	3.23（A）	3.64（A）
Dehumidifying capacity				10 - ³×m³/h	1.6	
Power cable					3×2.5	
Running /Max.Running current				A / A	6.0(1.4--8.0)A/8A	6.0(1.4--8.0)A/8A
Start Current				A	3	3
Circuit breaker				A	13	13
Indoor unit	Unit model (color)				AC122ACERA(WHITE)	
	Fan	Type × Number			Centrifugal fan*2	
		Speed(H-M-L)		r/min	1200/1080/880	
		Fan motor output power		kW	0.09	
		Air-flow(H-M-L)		m³/h	750/650/550	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/φ7	
		Total Area		m²	0.20	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	990×655×199	
		Package	（L×W×H）	mm×mm×mm	1150×750×300	
	Drainage pipe	(material , I.D./O.D.)		mm	PVC 18/20	
	Control type	(Remote /wired)			Remote	
	Noise level	(H-M-L)		dB(A)	46/44/42	
	Weight	(Net / Shipping)		kg / kg	28.3/34.3	

Item				Model	AC182ACERA	
Function					cooling	heating
Capacity				kW	5.1(1.8--5.8)	6.0(2.0---7.1)
Sensible heat ratio					0.71	
Total power input				W	1690(550---2650)	1650(600--2650)
Max. power input				W	2650	2650
EER or COP				W/W	3.01	3.63
Dehumidifying capacity				10 - ³×m³/h	1.8	
Running /Max.Running current				A / A	8.0(3.0--12.0)A/12A	7.8(3.2--12.0)A/12A
Indoor unit	Unit model (color)				White	
	Fan	Type × Number			CENTRIFUGALX2	
		Speed(H-M-L)		r/min	1150/1050/850	
		Fan motor output power		kW	0.05	
		Air-flow(H-M-L)		m³/h	750/650/550	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/φ7	
		Total Area		m²	0.45	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	990×655×199	
		Package	（L×W×H）	mm×mm×mm	1150×750×300	
	Drainage pipe	(material , I.D./O.D.)		mm	PVC 18/20	
	Control type	(Remote /wired)			Remote	
	Noise level	(H-M-L)		dB(A)	48/46/44	
	Weight	(Net / Shipping)		kg / kg	30/39	

item				Model	AC242ACERA	
Function					cooling	heating
Capacity				kW	6.1(2.0-7.1)	7.5(2.5-8.5)
Sensible heat ratio					0.72	
Total power input				W	2170(500-3250)	2550(500-3250)
Max. power input				W	3300W	3300W
EER or COP				W/W	2.81（C）	2.94（E）
Dehumidifying capacity				10 - ³×m³/h	2.0	
Running /Max.Running current				A / A	10(2.5-14.5)A/15A	11.5(2.5-14.5)A/15A
Indoor unit	Unit model (color)				AC242ACERA(WHITE)	
	Fan	Type × Number			Centrifugal × 2	
		Speed(H-M-L)		r/min	1220±40/1190±50/1050±50/980±50r/min	
		Fan motor output power		kW	0.10	
		Air-flow(H-M-L)		m³/h	800/-/-	
	Heat exchanger	Type / Diameter		mm	Inner grooved type / ϕ7	
		Total Area		m²	0.49	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	990*665*199	
		Package	（L×W×H）	mm×mm×mm	1150*750*300	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 18/20	
	Control type (Remote /wired)				Remote or wired	
	Noise level (H-M-L)			dB(A)	48/46/44	
	Weight (Net / Shipping)			kg / kg	28.3/34.3	

item				Model	AC282AFERA	
Function					cooling	heating
Capacity				Btu/h	28000	35800
Capacity				kW	8.2(2.2~11.3)	10.5(2.5~11.4)
Sensible heat ratio					0.73	
Total power input				W	2550(500---3900)	2750(500---3900)
Max. power input				W	3900	3900
EER or COP				W/W	3.21	3.81
Energy efficiency stage					A	A
Dehumidifying capacity				10 - ³×m³/h	3.0	
Running /Max.Running current				A / A	11(2.3-17.5)/17.5	12.0(2.3-17.5)/17.5
Indoor unit	Unit model (color)				AC282AFERA（WHITE）	
	Fan	Type × Number			Centrifugal × 4	
		Speed(H-M-L)		r/min	1150/1100/950	
		Fan motor output power		kW	0.18	
		Air-flow(H-M-L)		m³/h	1800/1600/1400	
	Heat exchanger	Type / Diameter		mm	Inner grooved type / ϕ7	
		Total Area		m²	0.340	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1580/700/240	
		Package	（L×W×H）	mm×mm×mm	1710/790/315	
	Drainage pipe (material , I.D./O.D.)			mm	PP20/25	
	Control type (Remote /wired)				Remote or wired	
	Noise level (H-M-L)			dB(A)	51/49/47	
	Weight (Net / Shipping)			kg / kg	50/57	

item				Model	AC362AFERA	
Function					cooling	heating
with AU362AHERA	Capacity			Btu/h	35000	39000
	Capacity			kW	10.3(2.2~11.5)	11.4(2.5~12.0)
	Sensible heat ratio				0.73	
	Total power input			W	3200(500---3900)	3250(500---3900)
	Max. power input			W	4300	4300
	EER or COP			W/W	3.22	3.51
	Energy efficiency stage				A	B
	Dehumidifying capacity			10 - ³×m³/h	4.0	
	Running /Max.Running current			A / A	14.3(2.3-17.5)/19.3	14.3(2.3-17.5)/19.3
Indoor unit	Unit model (color)				AC362AFERA（WHITE)	
	Fan	Type × Number			Centrifugal fan * 4	
		Speed(H-M-L)		r/min	1150/1100/950	
		Air-flow(H-M-L)		m³/h	1800/1600/1400	
	Heat exchanger	Type / Diameter		mm	inner grooved type/ Φ7	
		Total Area		m²	0.340	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1580/700/240	
		Package	（L×W×H）	mm×mm×mm	1710/790/315	
	Drainage pipe	(material , I.D./O.D.)		mm	PP20/25	
	Control type	(Remote /wired)			remote	
	Noise level	(H-M-L)		dB(A)	51/49/47	
	Weight	(Net / Shipping)		kg / kg	54/61	

item				Model	AC482AFERA	
Function					cooling	heating
Capacity				kW	13.0(6.0~14.5)	15.0(6.0~17.5)
Sensible heat ratio					0.73	
Total power input				W	4.6(2.0---6.0)	4.65(2.0----6.0)
Max. power input				W	6300	6300
EER or COP				W/W	2.83（C）	3.23 （C）
Dehumidifying capacity				10 - ³×m³/h	5.3	
Running /Max.Running current				A / A	8.0(2.9-9.5)/10.5	8.0(2.9-9.5)/10.5
Indoor unit	Unit model (color)				AC482AFERA（WHITE)	
	Fan	Type × Number			Centrifugal fan * 4	
		Speed(H-M-L)		r/min	1250/1150/1100	
		Fan motor output power		kW	0.18	
		Air-flow(H-M-L)		m³/h	2000/1800/1400	
	Heat exchanger	Type / Diameter		mm	inner grooved type/ Φ7	
		Total Area		m²	0.312	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1580/700/240	
		Package	（L×W×H）	mm×mm×mm	1710/790/315	
	Drainage pipe	(material , I.D./O.D.)		mm	PP 20/25	
	Control type	(Remote /wired)			remote	
	Noise level	(H-M-L)		dB(A)	53/51/49	
	Weight	(Net / Shipping)		kg / kg	54/61	

item				Model	AC602AFERA	
Function					cooling	heating
Capacity				BTU/H	54000	61400
Capacity				kW	16.1(6.0~16.5)	18.0(6.0~19.0)
Sensible heat ratio					0.73	
Total power input				W	5.3(2.0---6.0)	5.6(2.0----6.0)
Max. power input				W	6000	6000
EER or COP				W/W	3.04（B）	3.21（C）
Dehumidifying capacity				10 - ³×m³/h	5.3	
Running /Max.Running current				A / A	9.3（2.9-10.5）/10.5	9.5（2.9-10.5）/10.5
Indoor unit	Unit model (color)				AC602AFERA（WHITE）	
	Fan	Type × Number			Centrifugal fan * 4	
		Speed(H-M-L)		r/min	1250/1150/1100	
		Fan motor output power		kW	0.09	
		Air-flow(H-M-L)		m³/h	2000/1800/1400	
	Heat exchanger	Type / Diameter		mm	inner grooved type/ Φ7	
		Total Area		m²	0.312	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1580/700/240	
		Package	（L×W×H）	mm×mm×mm	1710/790/315	
	Drainage pipe (material , I.D./O.D.)			mm	PP 20/25	
	Control type (Remote /wired)				remote	
	Outlet distribution hole dimension			mm	1500×180	
	Noise level (H-M-L)			dB(A)	53/51/49	
	Weight (Net / Shipping)			kg / kg	54/61	

2.2 For fixed frequency unit

Item				Model	AC122ACEAA	
Function					cooling	heating
Capacity				kW	3.5	3.8
Sensible heat ratio					0.71	
Total power input				W	1090	1050
Max. power input				W	1650	1650
EER or COP				W/W	3.21（A）	3.61（A）
Dehumidifying capacity				10 - ³×m³/h	1.6	
Running /Max.Running current				A / A	4.8A/7.4A	4.8A/7.4A
Start Current				A	20	20
Indoor unit	Unit model (color)				AC122ACEAA(WHITE)	
	Fan	Type × Number			CENTRIFUGALX2	
		Speed(H-M-L)		r/min	1200/1080/880	
		Fan motor output power		kW	0.09	
		Air-flow(H-M-L)		m³/h	750/650/550	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/ Φ7	
		Total Area		m²	0.20	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	990×655×199	
		Package	（L×W×H）	mm×mm×mm	1150×750×300	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 18/20	
	Control type (Remote /wired)				Remote	
	Noise level (H-M-L)			dB(A)	46/44/42	
	Weight (Net / Shipping)			kg / kg	28.3/34.3	

item				Model	AC182ACEAA	
Function					cooling	heating
Capacity				BTU/h	17500	18600
Capacity				kW	5.1	5.45
Total power input				W	1690	1650
Max. power input				W	2000	1950
EER or COP				W/W	3.02	3.3
Running /Max.Running current				A / A	cooling: 7.6A /10.5A	heating: 7.5A /10.0A
Start Current				A	50	
Max. operating pressure of heat side				Mpa	4.5	
Max. operating pressure of cold side				Mpa	4.5	
Indoor unit	Unit model (color)				WHITE	
	Fan	Type × Number			centrifugal fan X 2	
		Speed(H-M-L)		r/min	1190±50 / 1050±50/980±50	
		Fan motor output power		kW	100	
		Air-flow(H-M-L)		m³/h	800	
	Heat exchanger	Type / Diameter		mm	TP2M/7X0.5	
		Total Area		m²	0.49	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	990x655x199	
		Package	（L×W×H）	mm×mm×mm	1150x750x300	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 18/20	
	Control type (Remote /wired /model)				Remote /wired	
	Noise level (H-M-L)			dB(A)	48/46/44	
	Weight (Net / Shipping)			kg / kg	28.3/34.3	

item				Model	AC242ACEAA	
Function					cooling	heating
Capacity				kW	6.8	7.4
Sensible heat ratio					0.72	/
Total power input				W	2400	2450
Max. power input				W	3100W	3000W
EER or COP				W/W	2.83	3.02
Dehumidifying capacity				10 - ³×m³/h	2.5	
Running /Max.Running current				A / A	10.5A/13.9A	11.2A/13.4A
Indoor unit	Unit model (color)				WHITE	
	Fan	Type × Number			centrifugal fan*2	
		Speed(H-M-L)		r/min	1220±40/1190±50/1050±50/980±50r/min	
		Fan motor output power		kW	0.10	
		Air-flow(H-M-L)		m³/h	800/-/-	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/φ7	
		Total Area		m²	0.49	
		Temp. scope		℃	2-7	
	Dimension	External	(L×W×H)	mm×mm×mm	990*655*199	
		Package	(L×W×H)	mm×mm×mm	1150*750*300	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 18/20	
	Control type (Remote /wired)				Remote /wired (optional)	
	Fresh air hole dimension			mm	/	
	Noise level (H-M-L)			dB(A)	48/46/44	
	Weight (Net / Shipping)			kg / kg	28.3/34.3	

item				Model	AC282AFEAA	
Function					cooling	heating
with AU282AHEAA	Capacity			BTU/h	28000	32500
	Capacity			kW	8.6	9.5
	Sensible heat ratio				0.72	/
	Total power input			W	2680	2630
	Max. power input			W	3400	3500
	EER or COP			W/W	3.21	3.61
	Dehumidifying capacity			10 - ³×m³/h	2.5	
	Running /Max.Running current			A / A	12.0A/15.0A	11.7A/15.0A
with AU28NAHEAA	Capacity			BTU/h	28000.00	28600.00
	Capacity			kW	8.2	8.4
	Sensible heat ratio				0.72	
	Total power input			W	2800	2600
	Max. power input			W	3500	3500
	EER or COP			W/W	2.93	3.23
	Dehumidifying capacity			10 - ³×m³/h	2.5	
	Running /Max.Running current			A / A	4.7A/5.6A	4.6A/5.5A
Indoor unit	Unit model (color)				AC282AFEAA(WHITE)	
	Fan	Type × Number			Centrifugal fan*4	
		Speed(H-M-L)		r/min	950±40/850±40/750±40r/min	
		Fan motor output power		kW	0.10	
		Air-flow(H-M-L)		m³/h	1550/1300/1000	
	Heat exchanger	Type / Diameter		mm	inner grooved type/ ϕ 7	
		Total Area		m²	0.53	
		Temp. scope		℃	2-7	
	Dimension	External	(L×W×H)	mm×mm×mm	1580*700*240	
		Package	(L×W×H)	mm×mm×mm	1710*790*315	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 18/20	
	Control type (Remote /wired)				remote/wired (optional)	
	Electricity Heater			kW	0	
	Noise level (H-M-L)			dB(A)	50/48/46	
	Weight (Net / Shipping)			kg / kg	50/57	

item				Model	AC362AFEAA	
Function					cooling	heating
with AU362AIEA	Capacity			kW	11	12
	Sensible heat ratio				0.72	/
	Total power input			W	3400	3500
	Max. power input			W	3950	3950
	EER or COP			W/W	3.24	3.43
	Running /Max.Running current			A / A	16.0A/18.7A	16.5A/18.7A
with AU36NAIEA	Capacity			kW	11.5	13
	Sensible heat ratio				0.72	
	Total power input			W	3900	3900
	Max. power input			W	4700	4500
	EER or COP			W/W	2.95	3.33
	Running /Max.Running current			A / A	6.6A/8.0A	6.5A/7.8A
Indoor unit	Unit model (color)				AC362AFEAA	
	Fan	Type × Number			Centrifugal fan*4	
		Speed(H-M-L)		r/min	1150/-/-	
		Air-flow(H-M-L)		m³/h	1800/-/-	
	Heat exchanger	Type / Diameter		mm	inner grooved type/ ϕ 7	
		Total Area		m²	0.53	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1580/700/240	
		Package	（L×W×H）	mm×mm×mm	1710/790/315	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 18/20	
	Control type (Remote /wired)				remote/wired (optional)	
	Electricity Heater			kW	0	
	Noise level (H-M-L)			dB(A)	51	
	Weight (Net / Shipping)			kg / kg	54/61	

item			Model	AC482AFEAA	
Function				cooling	heating
Capacity			kW	14.06	17.0
Sensible heat ratio				0.72	
Total power input			W	4600	4950
Max. power input			W	5500	6000
EER or COP			W/W	3.06（B）	3.43（B）
Dehumidifying capacity			10 - ³×m³/h	5.3	
Running /Max.Running current			A / A	8.0A/9.5A	9.0A/10.5A
Start Current			A	65	65
Indoor unit	Unit model (color)			AC482AFEAA（WHITE）	
	Fan	Type × Number		centrifugal fan*4	
		Speed(H-M-L)	r/min	1250/1150/1100	
		Fan motor output power	kW	0.09	
		Air-flow(H-M-L)	m³/h	2000/1800/1400	
	Heat exchanger	Type / Diameter	mm	inner grooved pipe/φ7	
		Total Area	m²	0.10	
		Temp. scope	℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1580/700/240
		Package	（L×W×H）	mm×mm×mm	1710/790/315
	Drainage pipe (material , I.D./O.D.)		mm	PVC	
	Control type (Remote /wired)			Remote	
	Noise level (H-M-L)		dB(A)	53/51/49	
	Weight (Net / Shipping)		kg / kg	54/61	

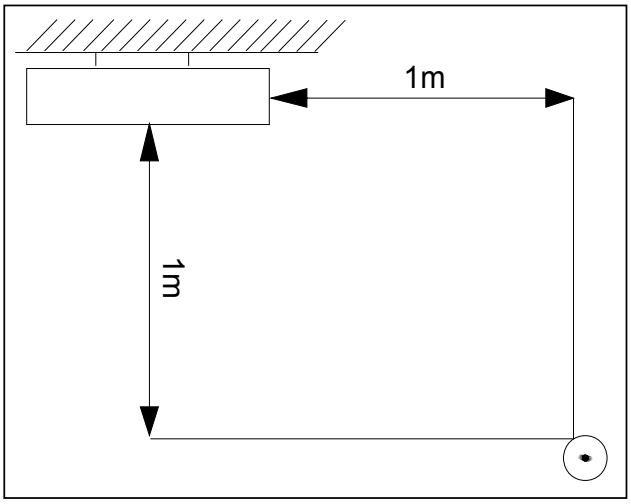
item				Model	AC602AFEAA	
Function					cooling	heating
Capacity				kW	16.1	18.5
Sensible heat ratio					0.72	
Total power input				W	5100W	5350W
Max. power input				W	6200W	6200W
EER or COP				W/W	3.16(B)	3.46(B)
Dehumidifying capacity				10 - ³×m³/h	5.5	
Running /Max.Running current				A / A	9.0A/10.5A	9.5A/10.5A
Start Current				A	65	65
Indoor unit	Unit model (color)				AC602AFEAA（WHITE）	
	Fan	Type × Number			centrifugal fan*4	
		Speed(H-M-L)		r/min	1250/1150/1100	
		Fan motor output power		kW	0.09	
		Air-flow(H-M-L)		m³/h	2000/1800/1400	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/φ7	
		Total Area		m²	0.10	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1580/700/240	
		Package	（L×W×H）	mm×mm×mm	1710/790/315	
	Drainage pipe (material , I.D./O.D.)			mm	PVC	
	Control type (Remote /wired)				Remote /wired (optional)	
	Noise level (H-M-L)			dB(A)	53/51/49	
	Weight (Net / Shipping)			kg / kg	54/61	

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level. The detailed method please refer to the following information:

Installation state: the unit should be placed on the flat floor or be mounted in horizontal direction.

Testing method:

mounting-on-ceiling unit:

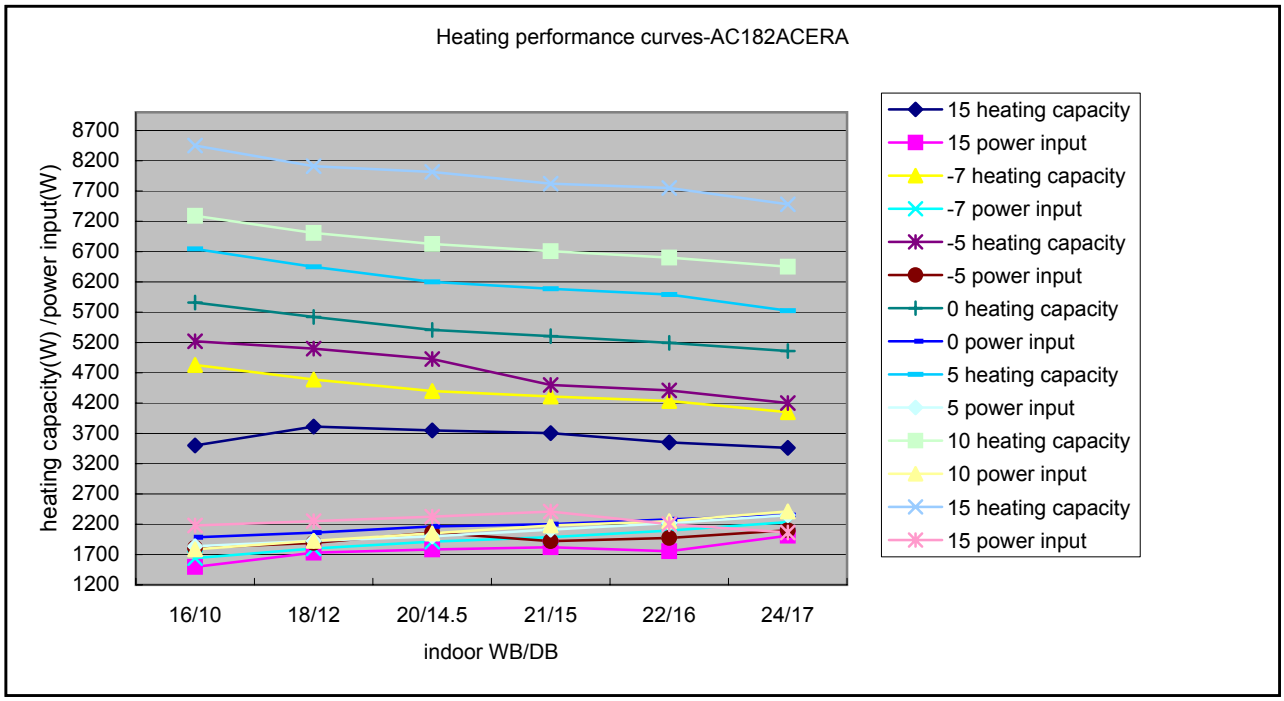


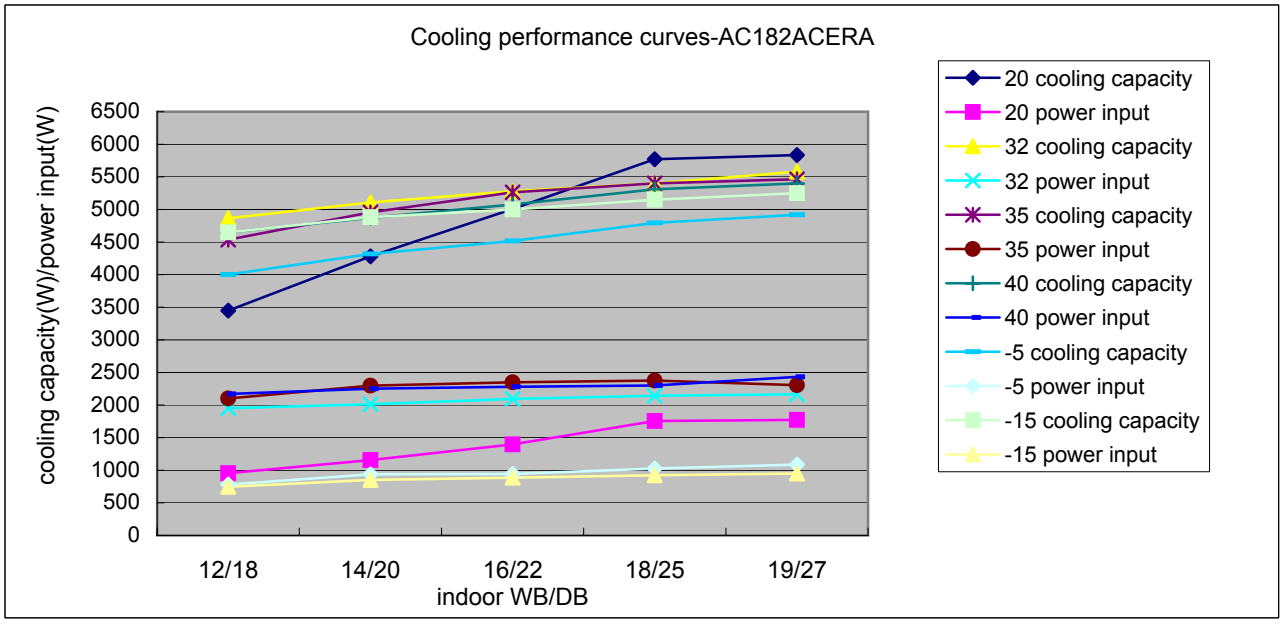
Note: ⊙ is the real time analyser position

3. Curves

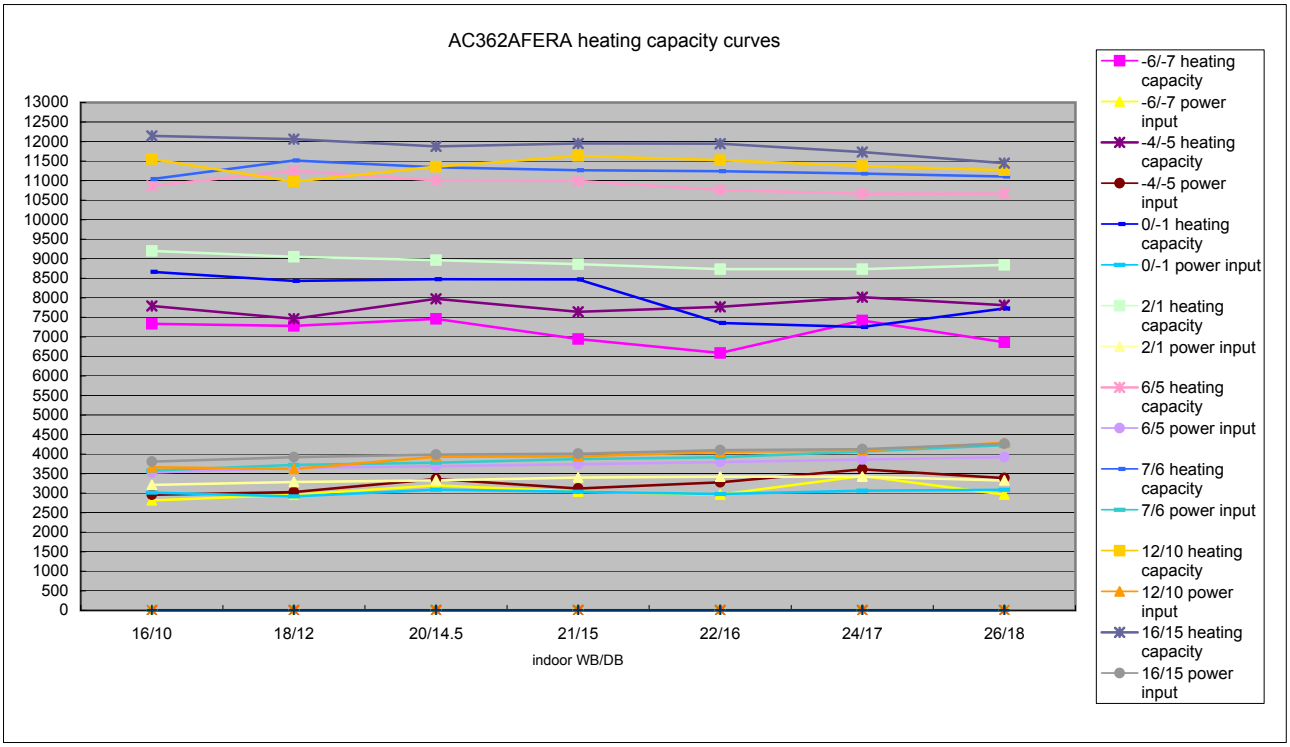
3.1 Performance curves

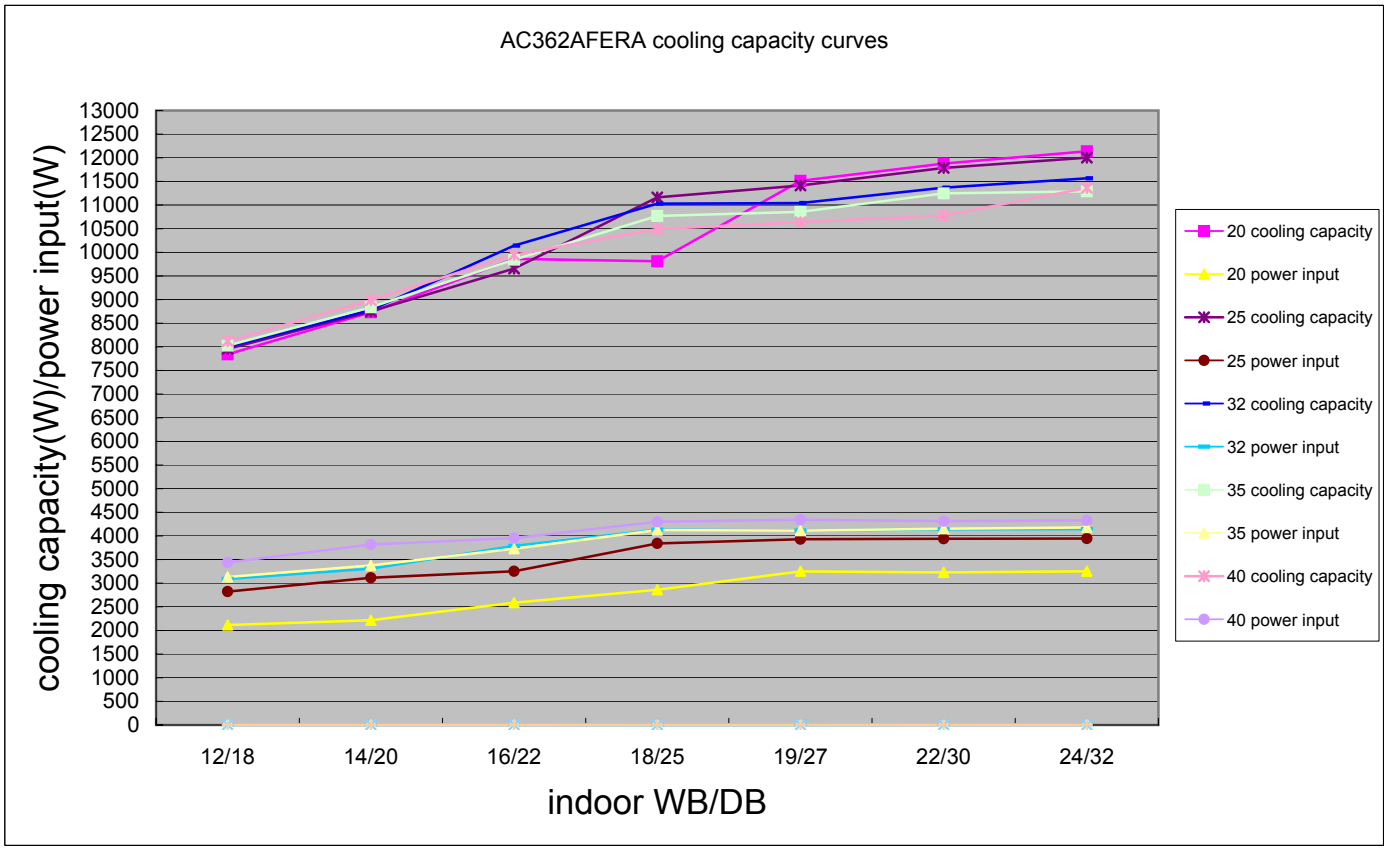
AC182ACERA





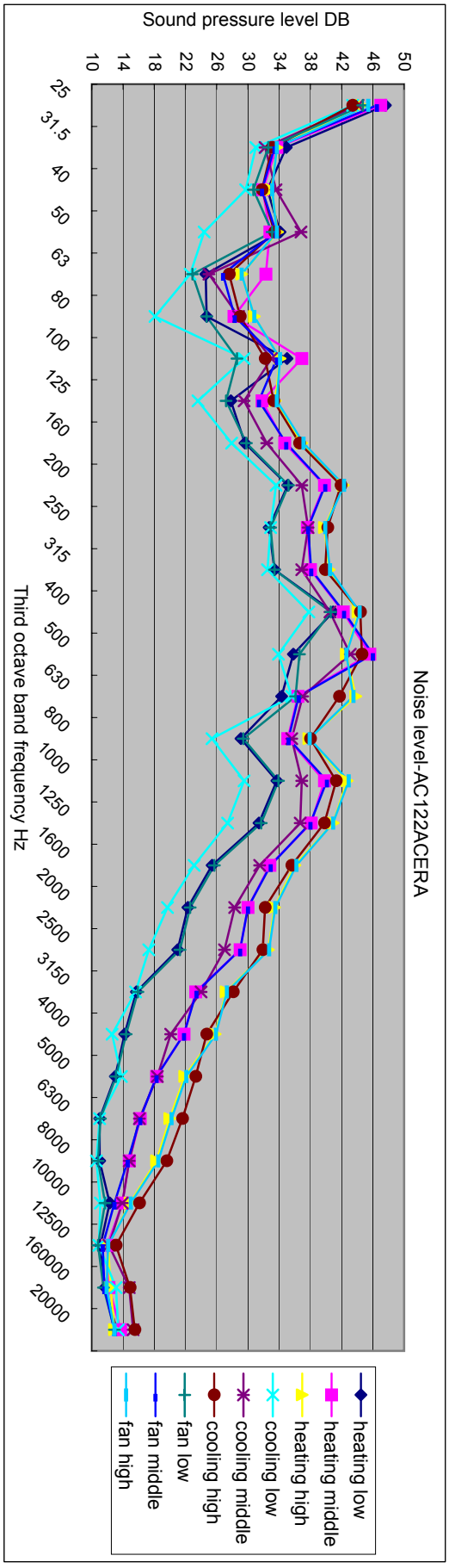
AC362AFERA

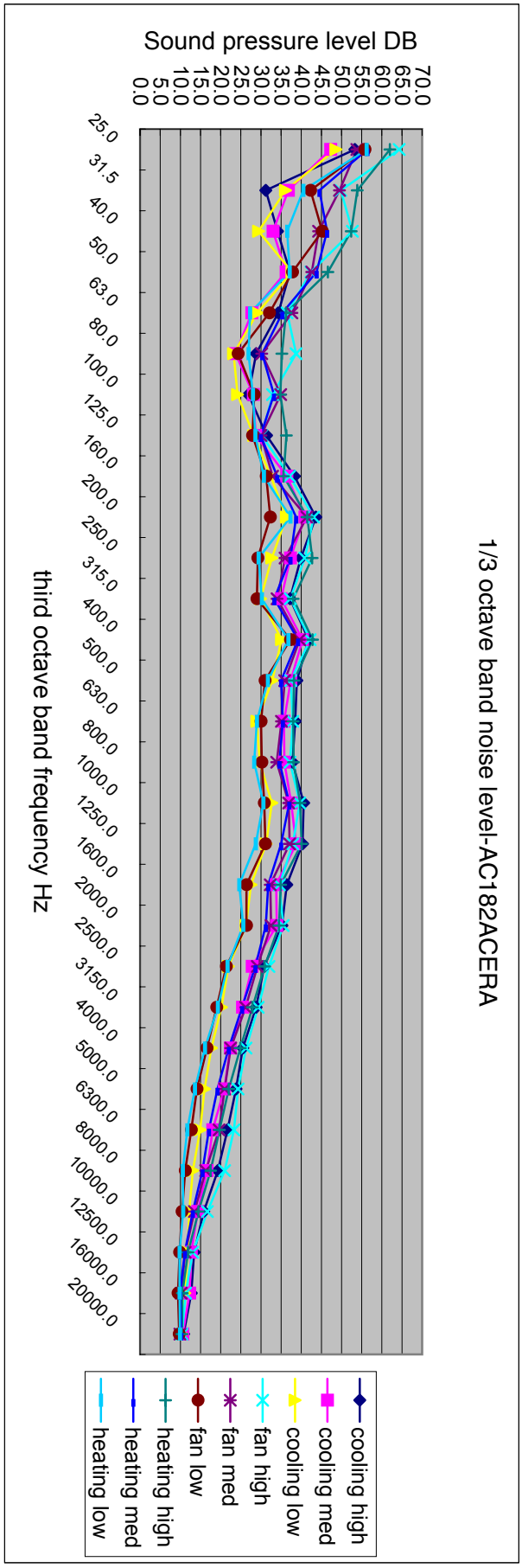

AC362AFERA heating capacity curves
13000
12500
12000
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
16/10
18/12
20/14.5
21/15
22/16
24/17
26/18
indoor WB/DB
-6/-7 heating capacity
-6/-7 power input
-4/-5 heating capacity
-4/-5 power input
0/-1 heating capacity
0/-1 power input
2/1 heating capacity
2/1 power input
6/5 heating capacity
6/5 power input
7/6 heating capacity
7/6 power input
12/10 heating capacity
12/10 power input
16/15 heating capacity
16/15 power input

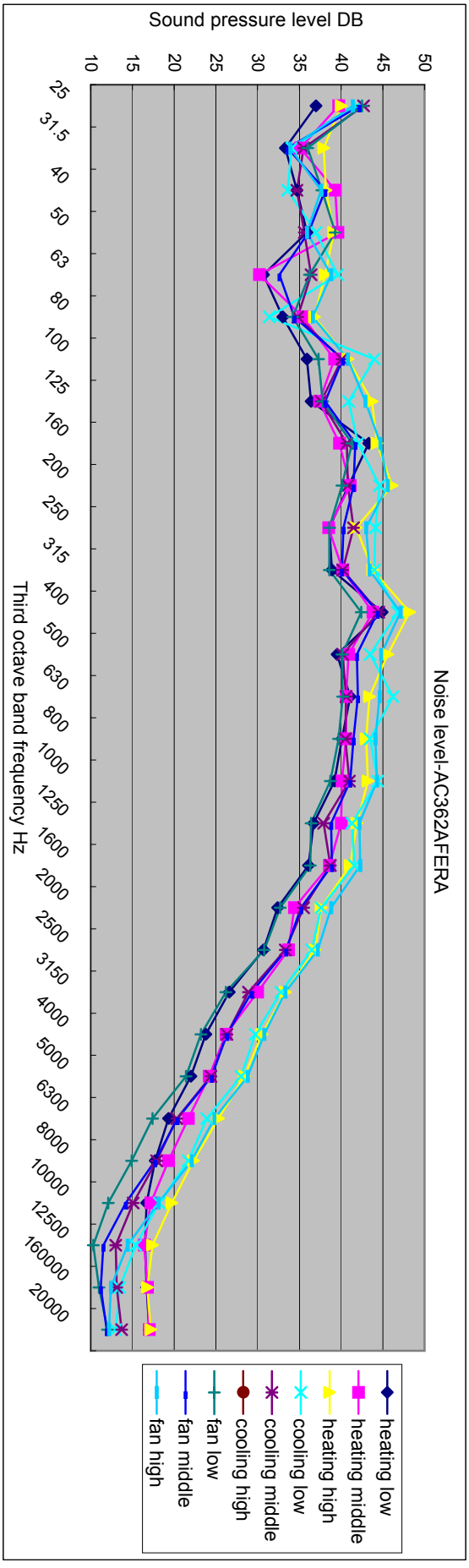

AC362AFERA cooling capacity curves
cooling capacity(W)/power input(W)
13000
12500
12000
11500
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
12/18
14/20
16/22
18/25
19/27
22/30
24/32
indoor WB/DB
20 cooling capacity
20 power input
25 cooling capacity
25 power input
32 cooling capacity
32 power input
35 cooling capacity
35 power input
40 cooling capacity
40 power input

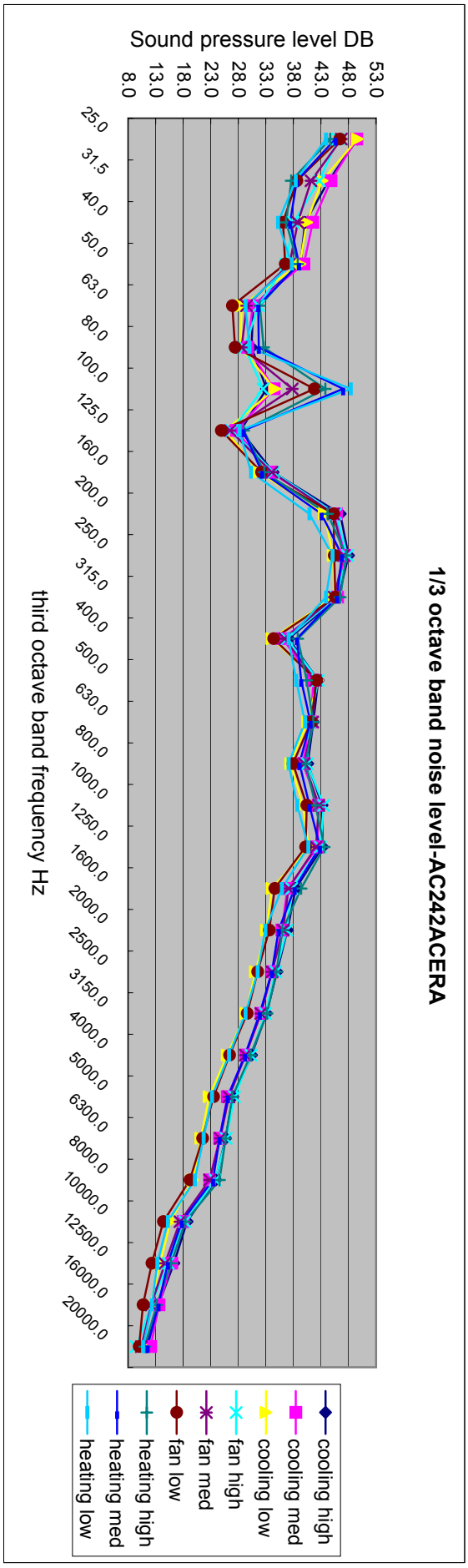
3.2 Noise level

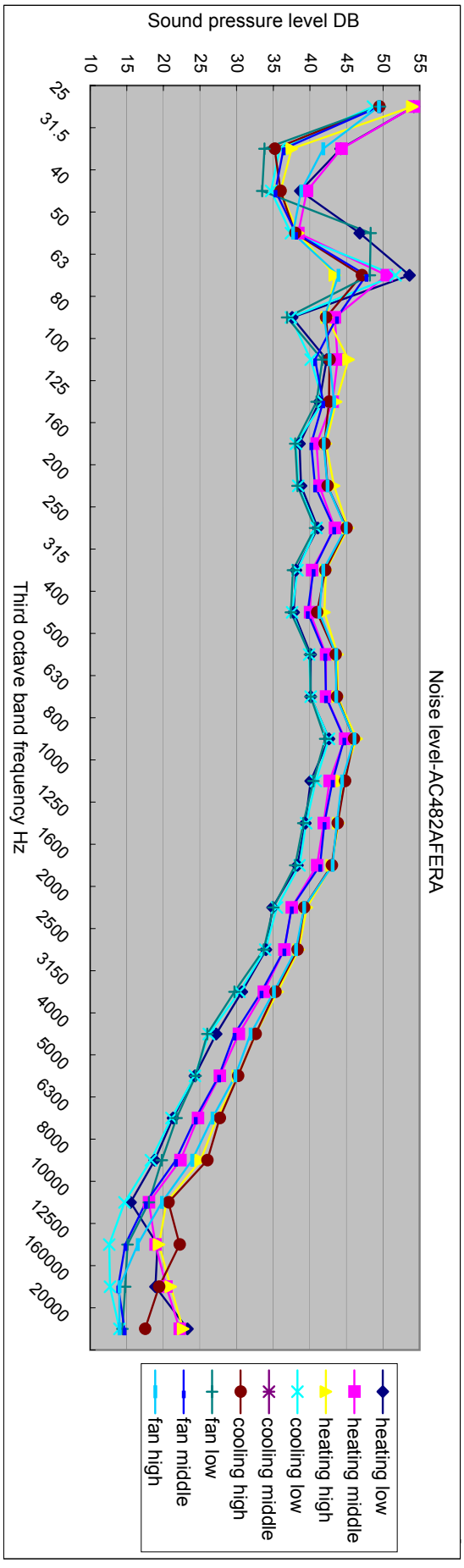
3.2.1 For inverter unit



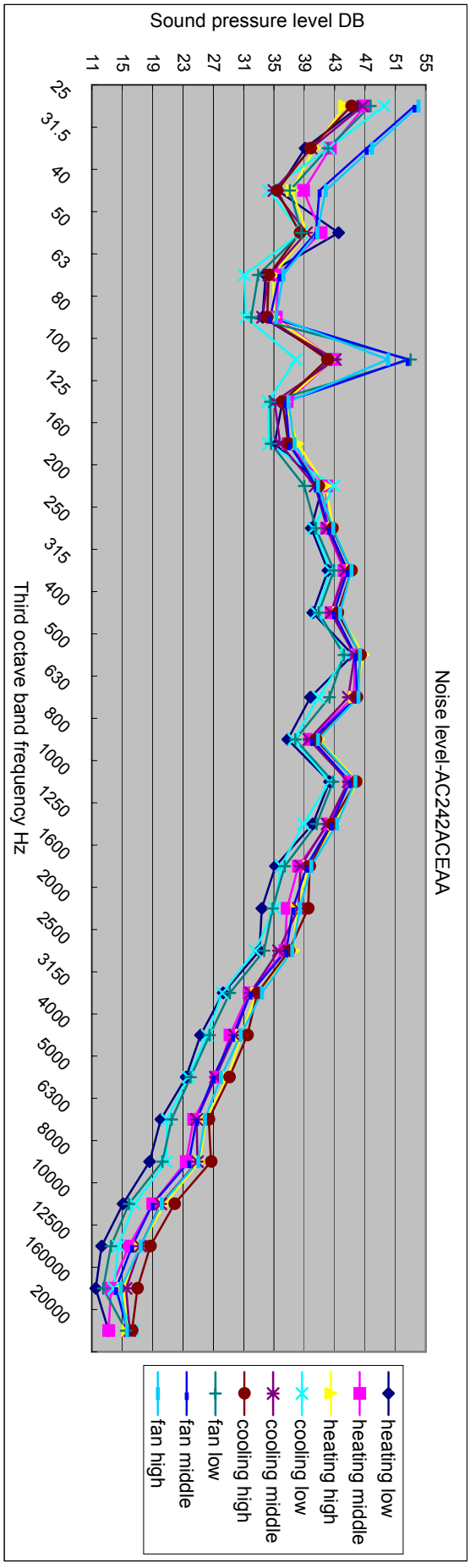


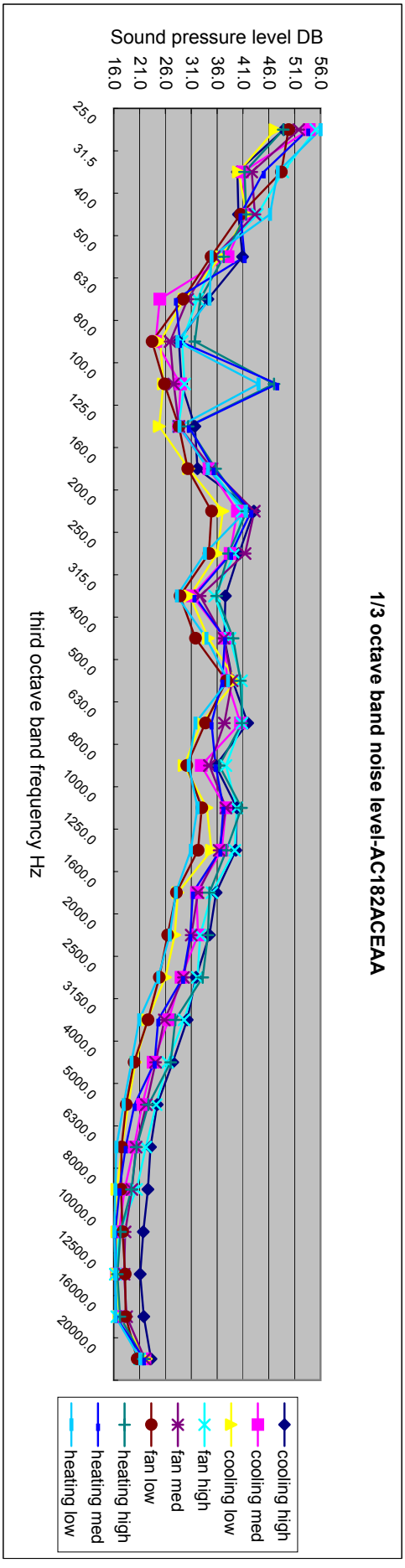

Noise level-AC362AFERA
Sound pressure level DB
10
15
20
25
30
35
40
45
50
Third octave band frequency Hz
25
31.5
40
50
63
80
100
125
160
200
250
315
400
500
630
800
1000
1250
1600
2000
2500
3150
4000
5000
6300
8000
10000
12500
16000
20000
heating low
heating middle
heating high
cooling low
cooling middle
cooling high
fan low
fan middle
fan high

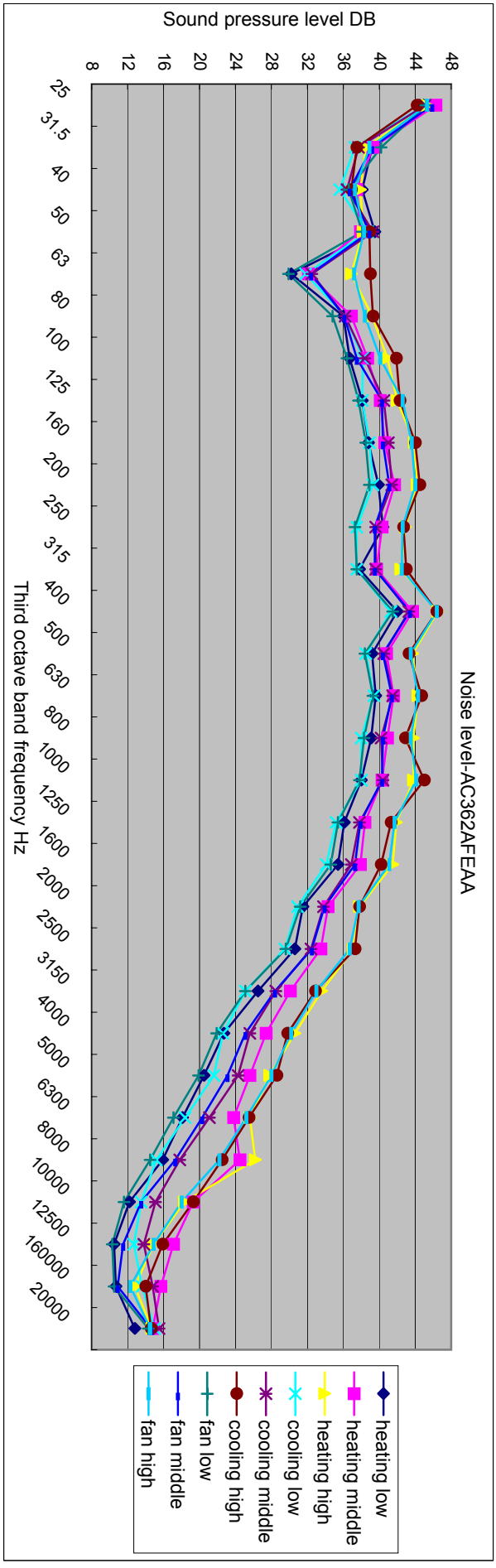

1/3 octave band noise level-AC242ACERA
Sound pressure level DB
8.0
13.0
18.0
23.0
28.0
33.0
38.0
43.0
48.0
53.0
third octave band frequency Hz
25.0
31.5
40.0
50.0
63.0
80.0
100.0
125.0
160.0
200.0
250.0
315.0
400.0
500.0
630.0
800.0
1000.0
1250.0
1600.0
2000.0
2500.0
3150.0
4000.0
5000.0
6300.0
8000.0
10000.0
12500.0
16000.0
20000.0
cooling high
cooling med
cooling low
fan high
fan med
fan low
heating high
heating med
heating low

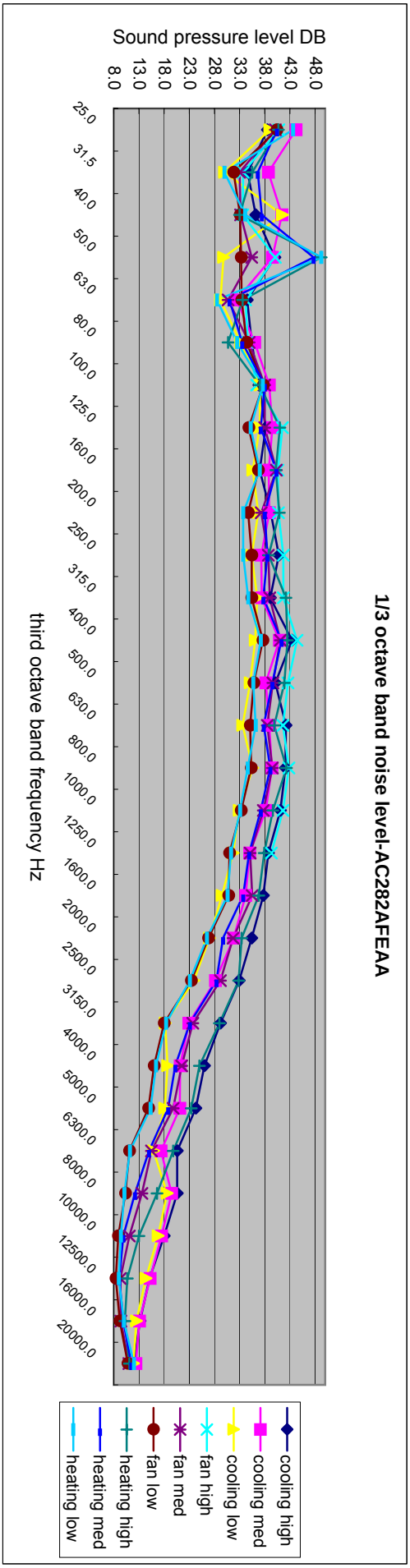

Sound pressure level DB
10
15
20
25
30
35
40
45
50
55
Third octave band frequency Hz
25
31.5
40
50
63
80
100
125
160
200
250
315
400
500
630
800
1000
1250
1600
2000
2500
3150
4000
5000
6300
8000
10000
12500
16000
20000
Noise level-AC482AFERA
heating low
heating middle
heating high
cooling low
cooling middle
cooling high
fan low
fan middle
fan high

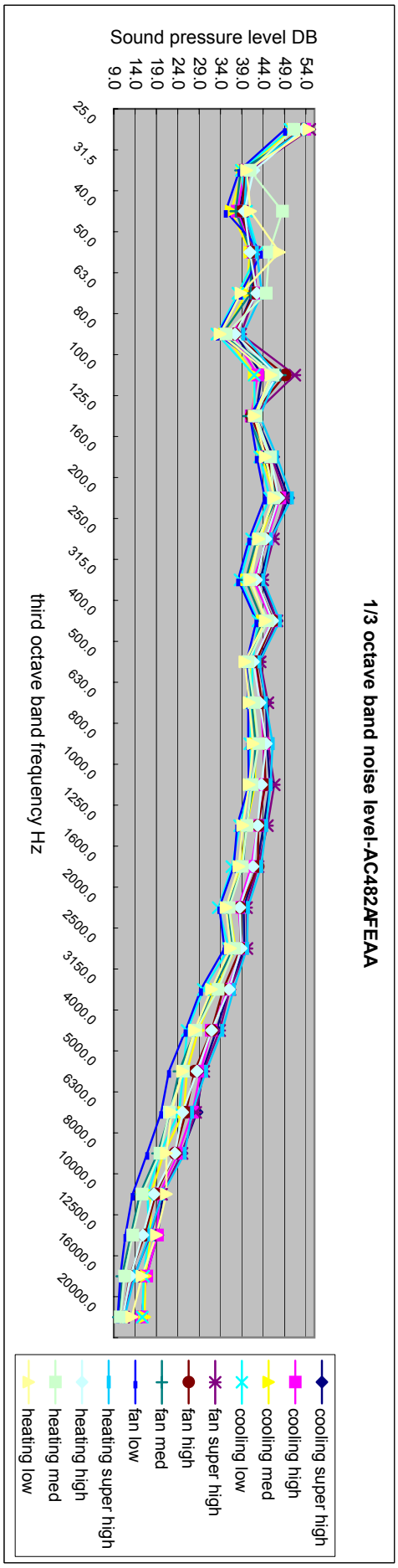
3.2.2 For fix frequency unit






Noise level-AC362AFEAA
Sound pressure level DB
8
12
16
20
24
28
32
36
40
44
48
Third octave band frequency Hz
25
31.5
40
50
63
80
100
125
160
200
250
315
400
500
630
800
1000
1250
1600
2000
2500
3150
4000
5000
6300
8000
10000
12500
160000
20000
heating low
heating middle
heating high
cooling low
cooling middle
cooling high
fan low
fan middle
fan high


1/3 octave band noise level-AC282AFEAA
Sound pressure level DB
8.0
13.0
18.0
23.0
28.0
33.0
38.0
43.0
48.0
third octave band frequency Hz
25.0
31.5
40.0
50.0
63.0
80.0
100.0
125.0
160.0
200.0
250.0
315.0
400.0
500.0
630.0
800.0
1000.0
1250.0
1600.0
2000.0
2500.0
3150.0
4000.0
5000.0
6300.0
8000.0
10000.0
12500.0
16000.0
20000.0
cooling high
cooling med
cooling low
fan high
fan med
fan low
heating high
heating med
heating low


1/3 octave band noise level-AC482AFEAA
Sound pressure level DB
54.0
49.0
44.0
39.0
34.0
29.0
24.0
19.0
14.0
9.0
third octave band frequency Hz
25.0
31.5
40.0
50.0
63.0
80.0
100.0
125.0
160.0
200.0
250.0
315.0
400.0
500.0
630.0
800.0
1000.0
1250.0
1600.0
2000.0
2500.0
3150.0
4000.0
5000.0
6300.0
8000.0
10000.0
12500.0
16000.0
20000.0
cooling super high
cooling high
cooling med
cooling low
fan super high
fan high
fan med
fan low
heating super high
heating high
heating med
heating low

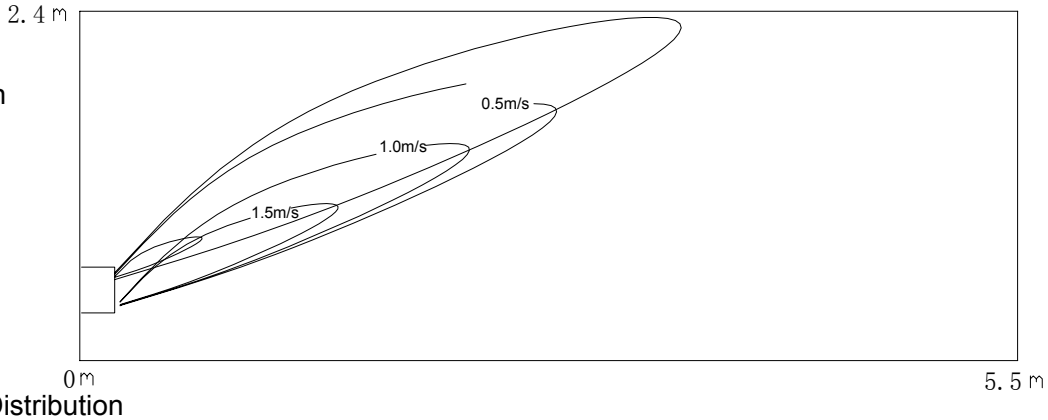
3.3 Air velocity distribution

For AC12*

1) Grounding

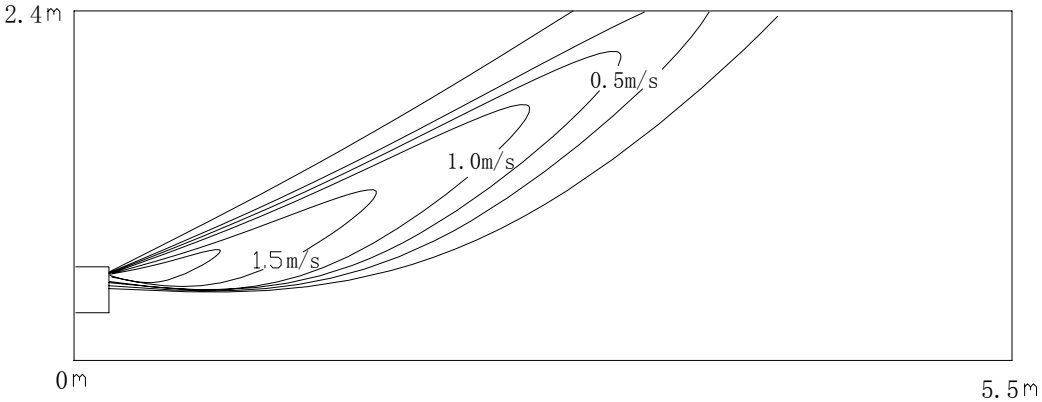
a. Cooling / Air Velocity Distribution

Cooling
Blowy angle:25
Air Velocity Distribution



b. Heating / Air Velocity Distribution

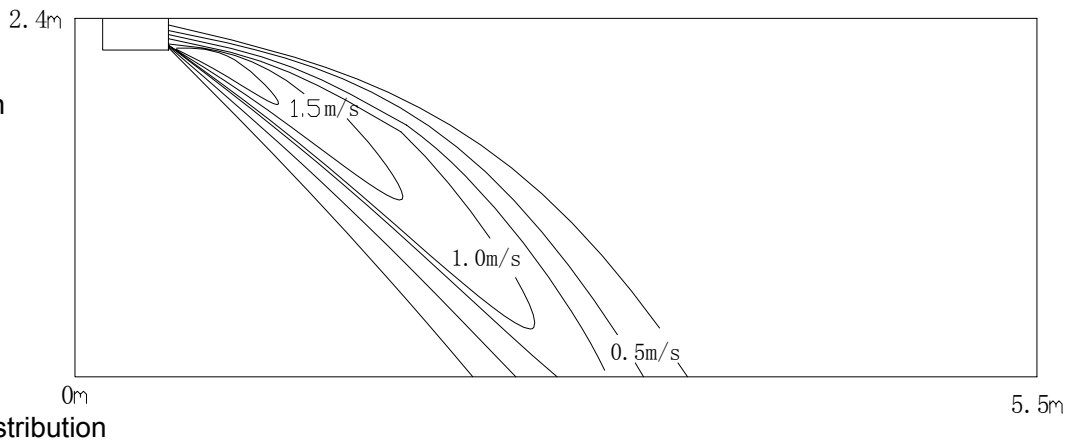
Heating
Blowy angle:5
Air velocity Distribution



2) Ceiling

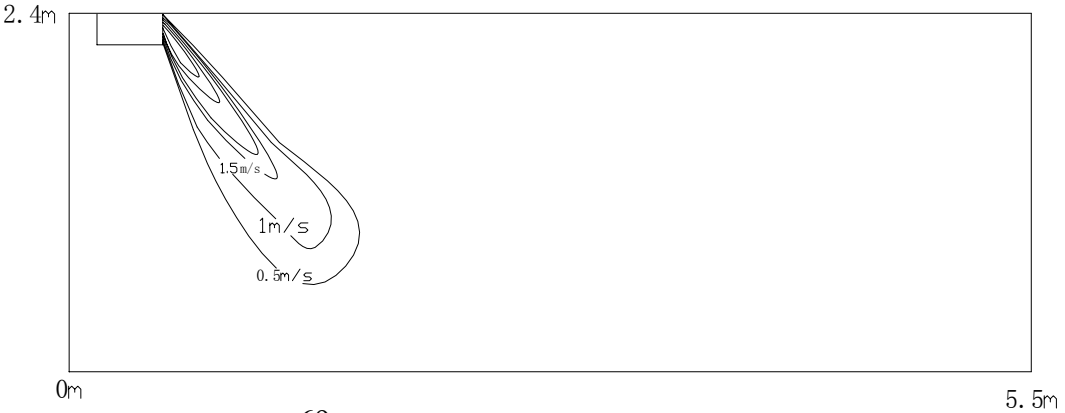
a. Cooling / Air Velocity Distribution

Cooling
Blowy angle:25
Air Velocity Distribution



b. Heating / Air Velocity Distribution

Heating
Blowy angle:65
Air velocity Distribution

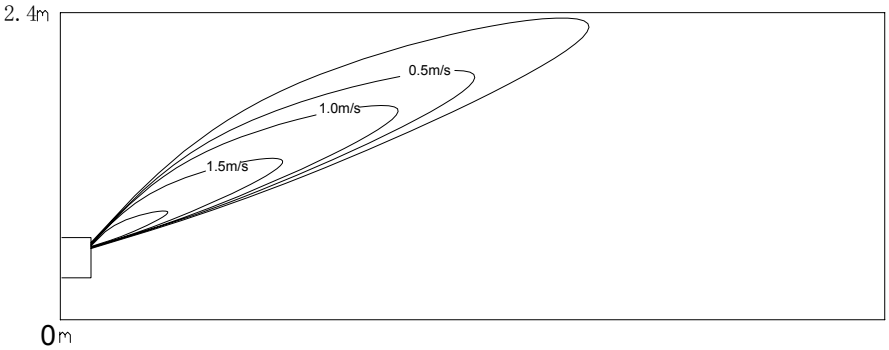


For AC18*

1) Grounding

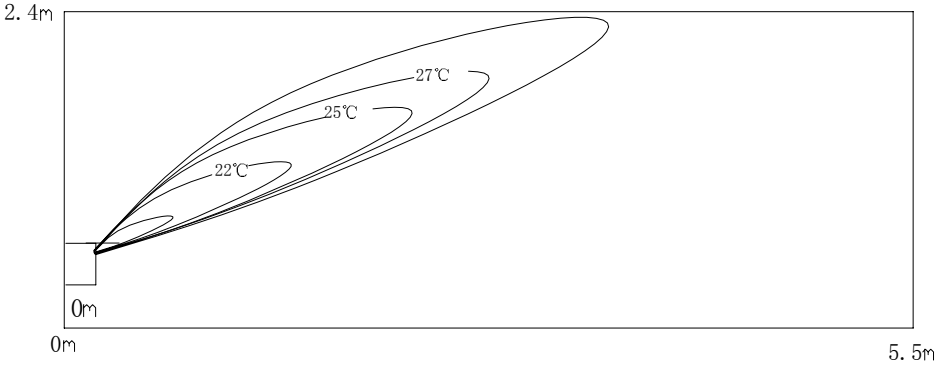
a. Cooling / Air Velocity Distribution

Cooling
Blowy angle:25
Air Velocity Distribution



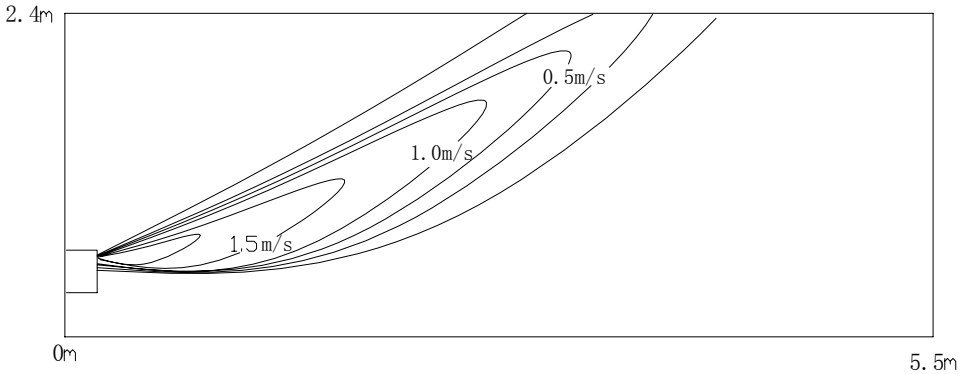
b. Cooling / Temperature Distribution

Cooling
Blowy angle:25
Temperature Distribution



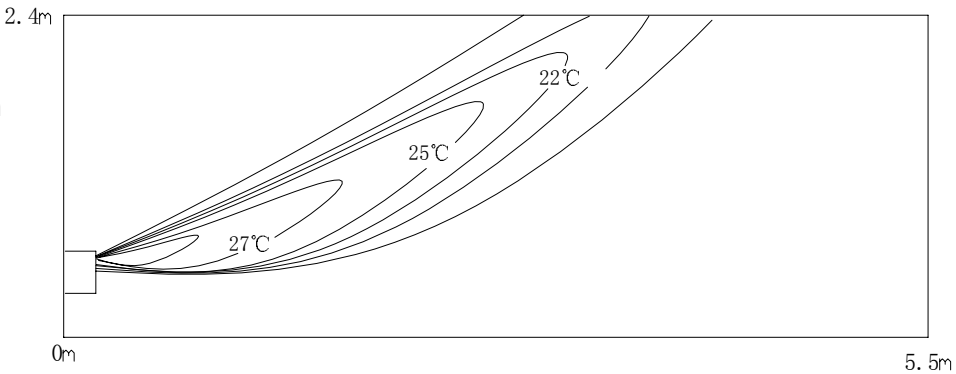
c. Heating / Air Velocity Distribution

Heating
Blowy angle:5
Air velocity Distribution



d. Heating / Temperature Distribution

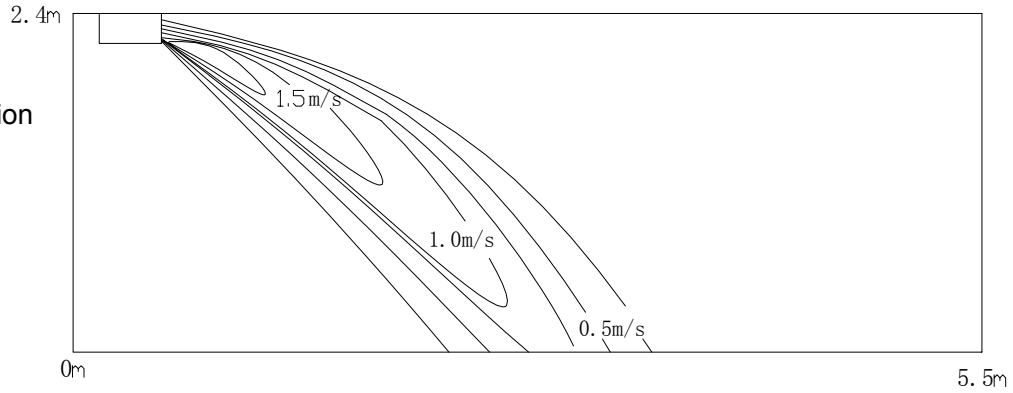
Heating
Blowy angle:5
Temperature Distribution



2) Ceiling

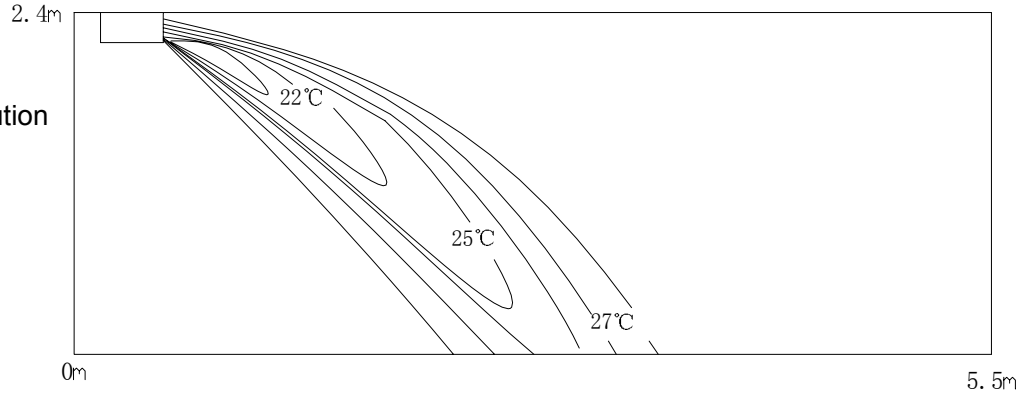
a. Cooling / Air Velocity Distribution

Cooling
Blowy angle:25
Air Velocity Distribution



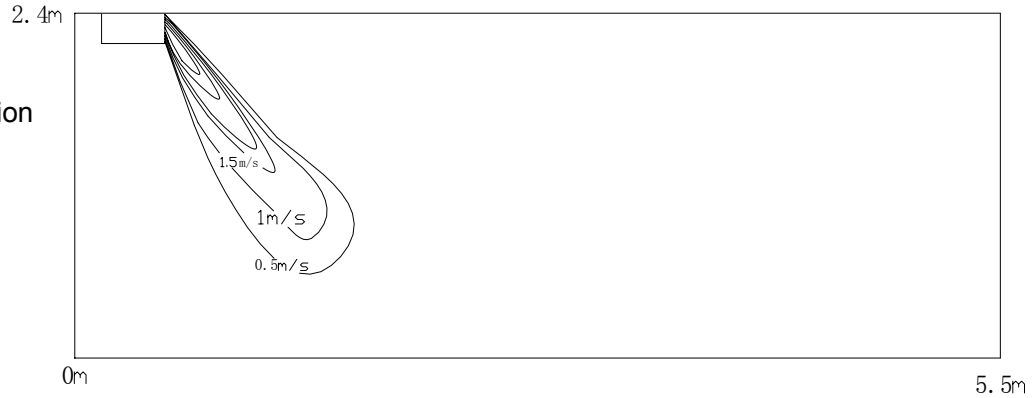
b. Cooling / Temperature Distribution

Cooling
Blowy angle:25
Temperature Distribution



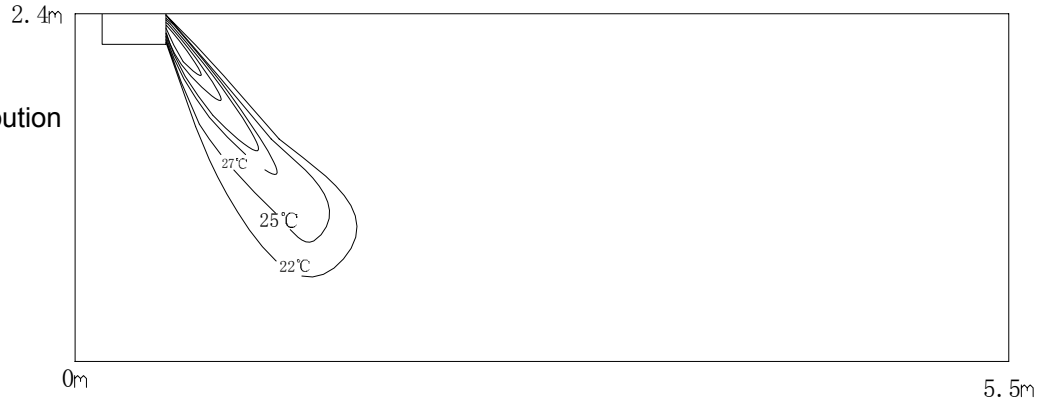
c. Heating / Air Velocity Distribution

Heating
Blowy angle:65
Air velocity Distribution



d. Heating / Temperature Distribution

Heating
Blowy angle:65
Temperature Distribution



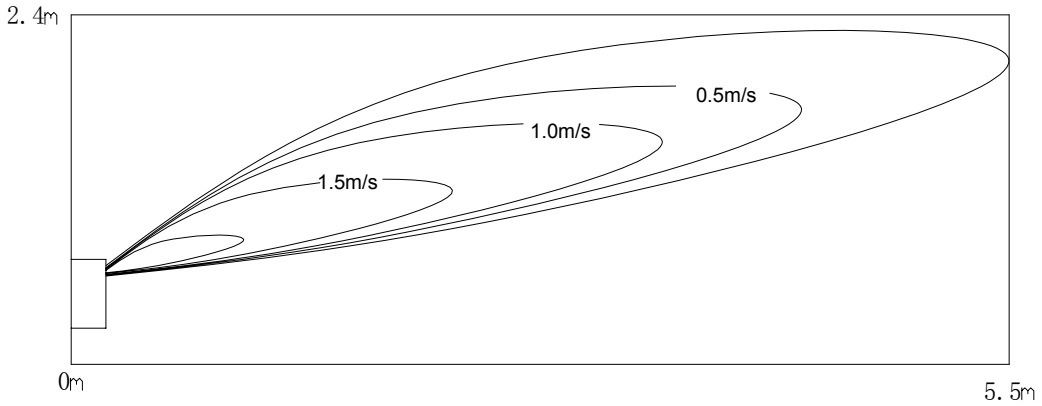
For AC28*

a. Cooling / Air Velocity Distribution

Cooling

Blowy angle:25

Air Velocity Distribution

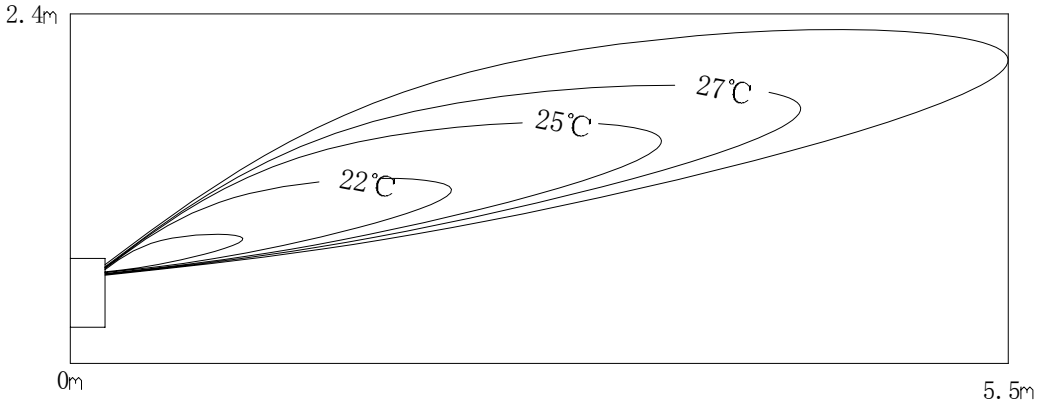


b. Cooling / Temperature Distribution

Cooling

Blowy angle:25

Temperature Distribution



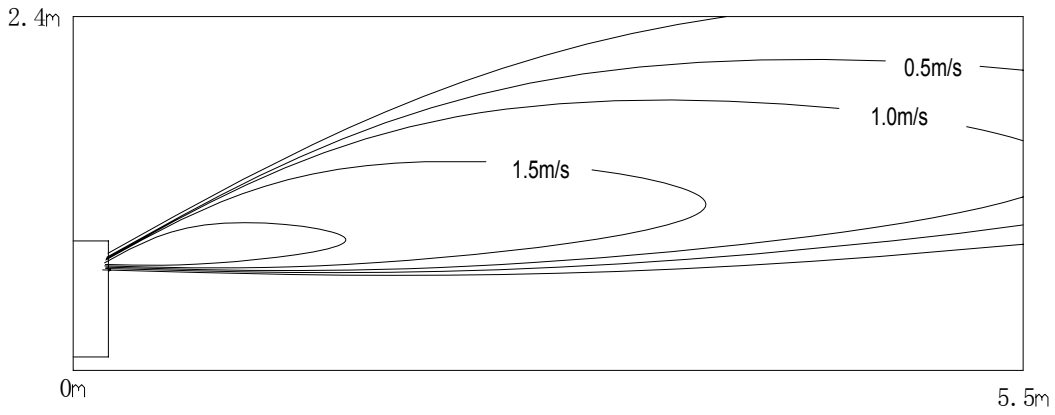
For AC36*

a. Cooling / Air Velocity Distribution

Cooling

Blowy angle:25

Air Velocity Distribution

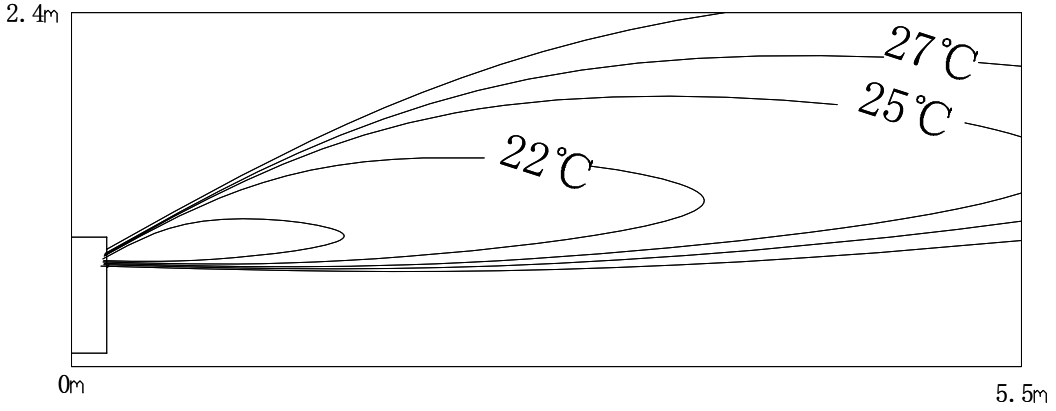


b. Cooling / Temperature Distribution

Cooling

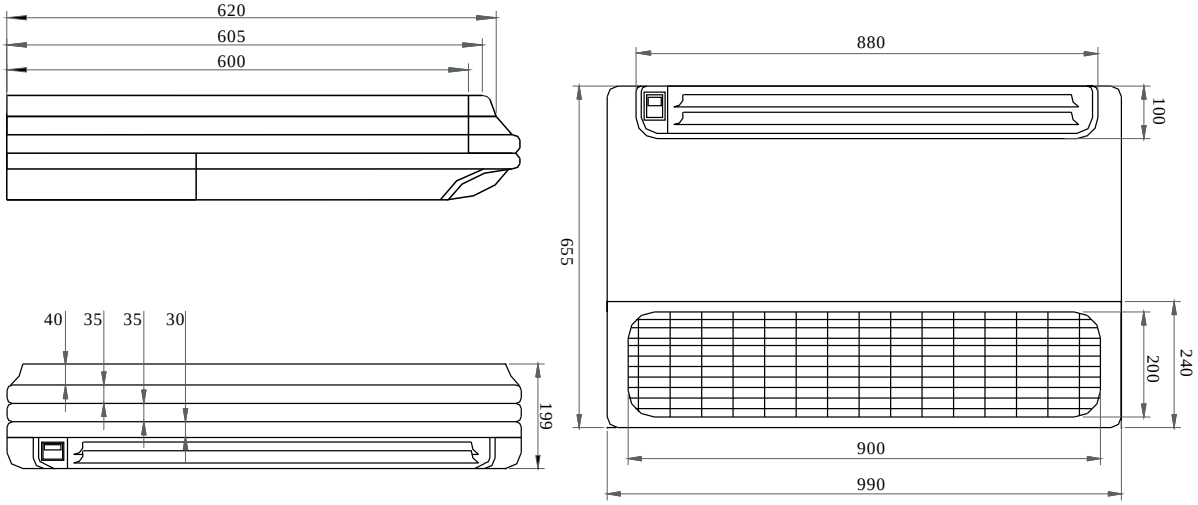
Blowy angle:25

Temperature Distribution



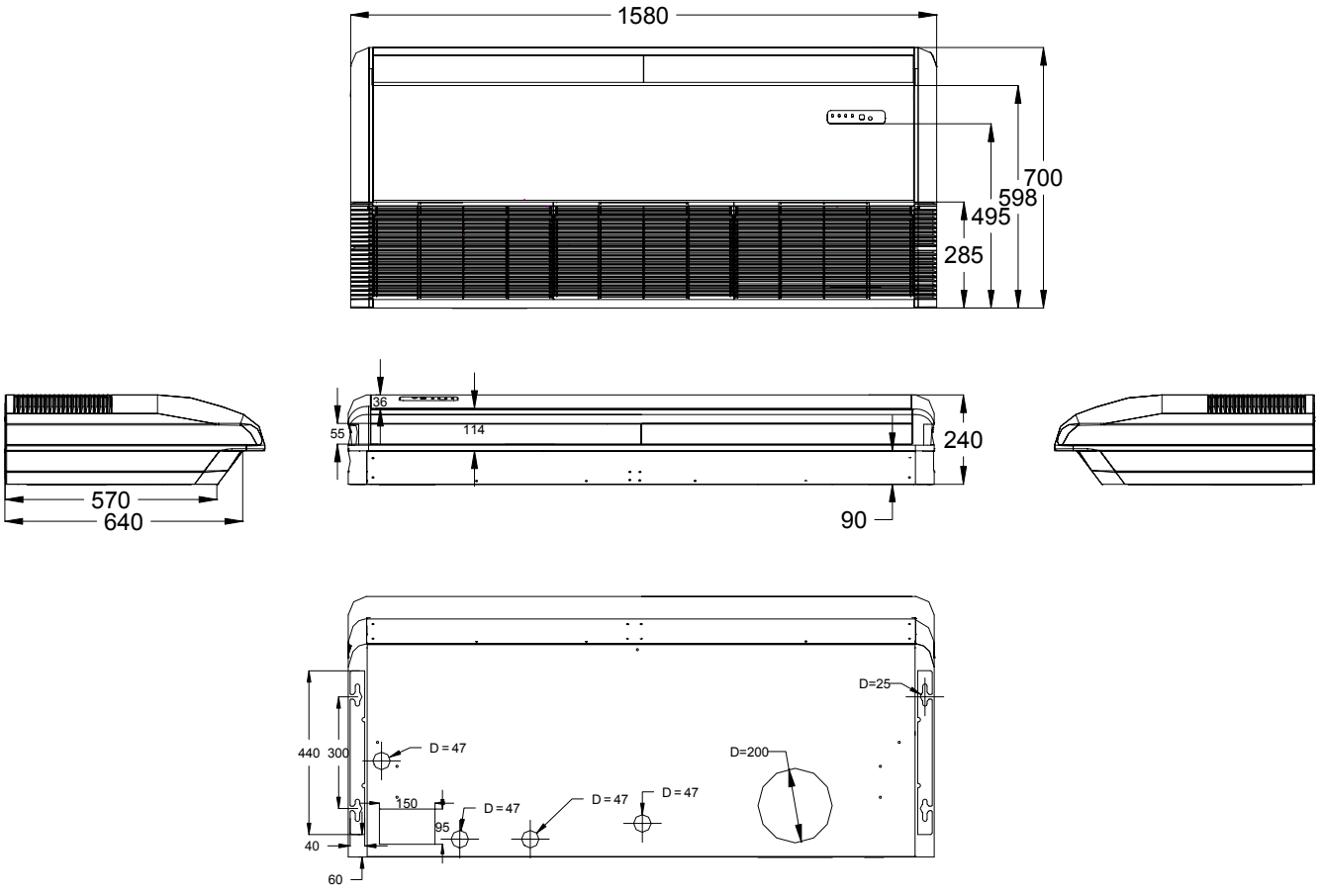
4. Dimension

4.1 AC12, AC18, AC24



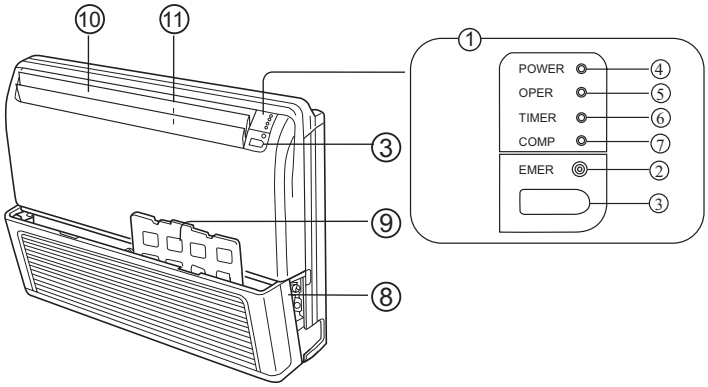
(mm)

4.2 AC28, AC36, AC48, AC60



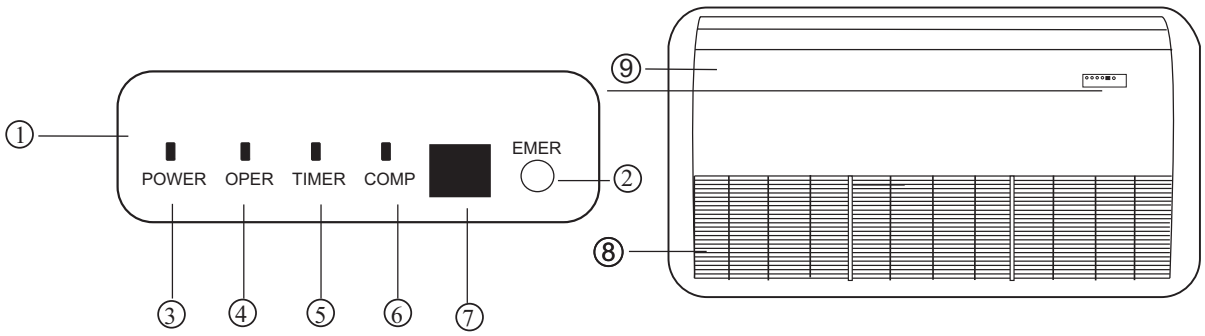
5. Part name

AC122ACEAA, AC182ACEAA, AC242ACEAA, AC122ACERA, AC182ACERA, AC242ACERA



1 Operating Control Panel
2 Emergency switch
3 Remote Control Signal Receiver
4 Power Indicator Lamp
5 OPERATION Indicator Lamp
6 TIMER Indicator Lamp
7 Compressor Run Lamp
8 Intake Grill
9 Air Filter
10 Up/Down Air Direction Flaps
11 Right/Left Air Direction Louvers
(behind Up/Down Air Direction Flaps)

AC282AFEAA, AC362AFEAA, AC482AFEAA, AC602AFEAA, AC282AFERA, AC362AFERA
AC482AFERA, AC602AFERA



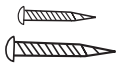
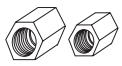
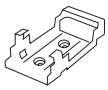
① Operating Control Panel
② Emergency switch
③ Power Indicator Lamp
④ OPERATION Indicator Lamp
⑤ TIMER Indicator Lamp
⑥ Compressor Lamp
⑦ Remote receiver
⑧ Inlet Grill (Filter inside)
⑨ Front panel

6. Installation

6.1 For AC12, AC18, AC24

Standard accessories:

The following installation parts are furnished.
Use them as required.

No.	Accessory parts	Qty.
①	 Remote controller	1
②	 Battery	2
③	 Wire clamp	4
④	 Heat insulation sheathing	1+1
⑤	 Screw	2+2
⑥	 Screw cap	1+1
⑦	 Remote controller bracket	1

Pipe connection requirement

Please refer to the specification to confirm the stop valve diameter and the permitted pipe drop and pipe length.

INSTALLATION PROCEDURE

Install the room air conditioner as follows:

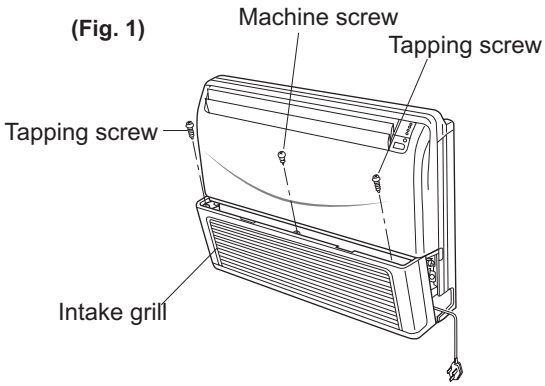
PREPARING INDOOR UNIT INSTALLATION

1. REMOVE THE INTAKE GRILL

Open the intake grill and remove the three or four or six screws.(Fig. 1)

Remark: The main unit can be wired before the indoor unit is installed. Select the most appropriate installation order.

(Fig. 1)

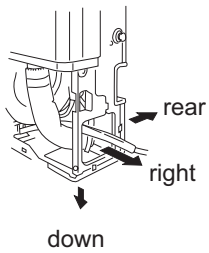


A. FLOOR CONSOLE TYPE

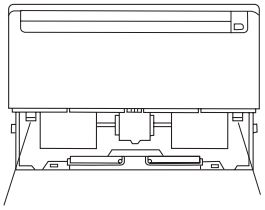
1. DRILLING FOR PIPING

Select piping and drain directions.(Fig.2) (Series14,18,24)
The piping and drain can be made in three directions as shown below.

(Fig. 2)



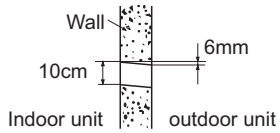
(Fig.3)



When the directions are selected, drill a 7 cm dia. hole on the wall so that the hole is tilted downward toward the outdoor for smooth water flow. When the pipe is led out from the rear, make a hole in Fig.6, at the position shown.

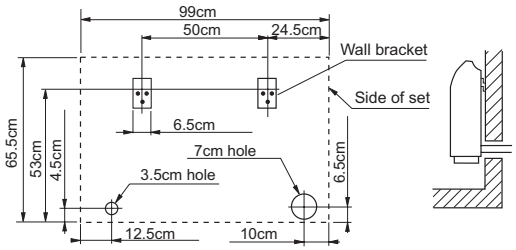
Drain hose (Left side) Drain hose (Right side)

(Fig. 4)



For series 14,18,24 when installing set to wall, install the accessory wall bracket at the position shown in Fig.5,and mount the set to it.

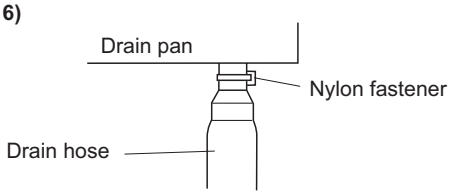
(Fig. 5)



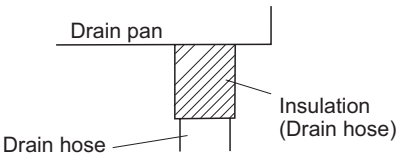
2. INSTALLING DRAIN HOSE

drain hose with a nylon fastener. (Fig.6)

(Fig. 6)



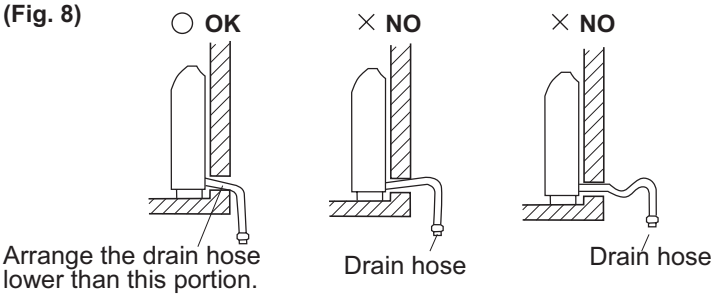
(Fig. 7)



Wrap the insulation (drain hose) around the drain hose connection.(Fig.7)

Be sure to arrange the drain hose correctly so that it is leveled lower than the drain hose connecting port of the indoor unit.

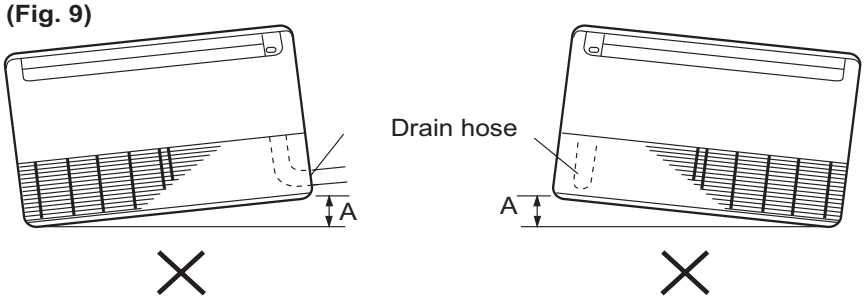
(Fig. 8)



⚠ CAUTION

Do not install the unit drain hose side is too high. Height A should be less than 5 mm.(Fig.9)

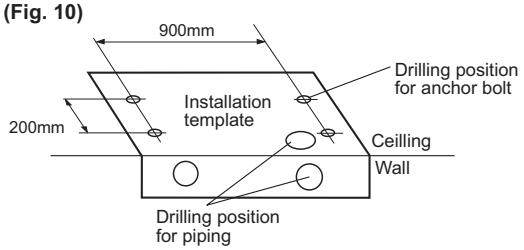
(Fig. 9)



B. UNDER CEILING TYPE

Using the installation template, drill holes for piping and anchor bolts(for holes).(Fig.10)

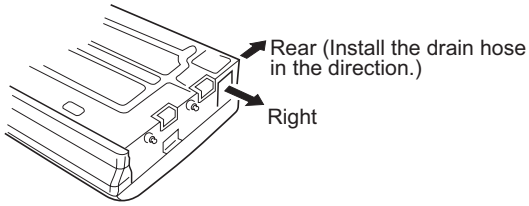
(Fig. 10)



1. DRILLING FOR PIPING

Select piping and drain directions. (Fig.11)

(Fig. 11)



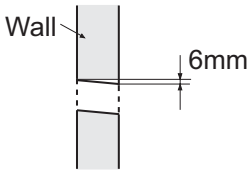
⚠ CAUTION

Install the drain hose at the rear; it should not be installed on the top or right side.

2. DRILLING HOLES FOR ANCHOR BOLTS AND INSTALLING THE ANCHOR BOLTS

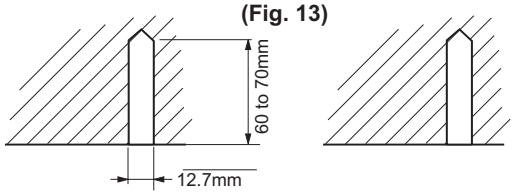
When the directions are selected, drill 80mm and 50mm or 150mm dia. hole on the wall so that the hole is tilted downward toward the outdoor for smooth water flow.

(Fig. 12)

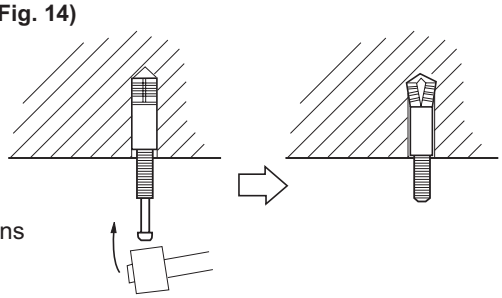


With a concrete drill, drill four 12.7 mm dia. Holes. (Fig. 13)

(Fig. 13)



(Fig. 14)

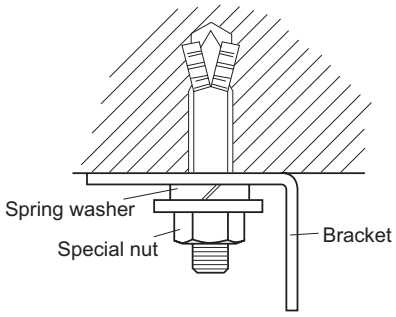


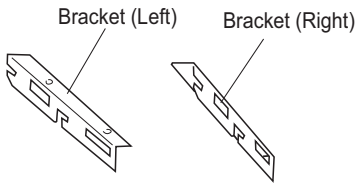
Insert the anchor bolts into the drilled holes, and drive the pins completely into the anchor bolts with a hammer. (Fig. 14)

3. INSTALLING BRACKETS

Install the brackets with nuts, washers and spring washers. **(Fig. 15)**

(Fig. 15)

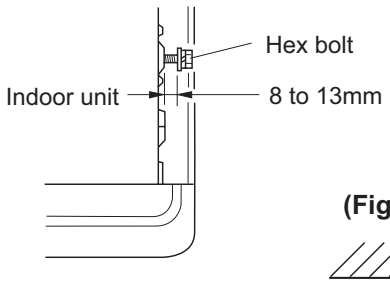




4. INSTALLING INDOOR UNIT

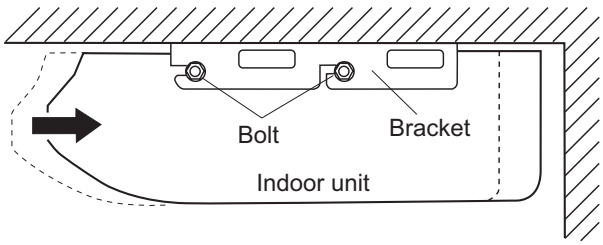
Reset the hex bolts as shown in Fig.16.

(Fig. 16)



Apply the indoor unit to the brackets. **(Fig. 17)**

(Fig. 17)



Now, securely tighten the hex bolts in both sides.

5. INSTALL THE DRAIN HOSE

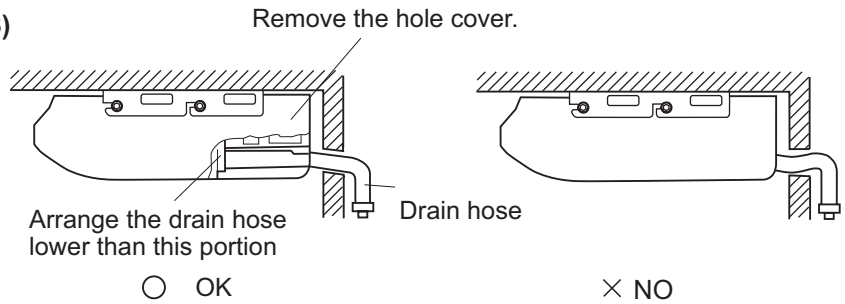
Select whether the drain hose will be connected to the left or right side.(Fig.3)

Insert the drain hose into the drain pan, then secure the drain hose with a nylon fastener.(Fig.6)

Wrap the insulation (drain hose)around the drain hose connection.(Fig.7)

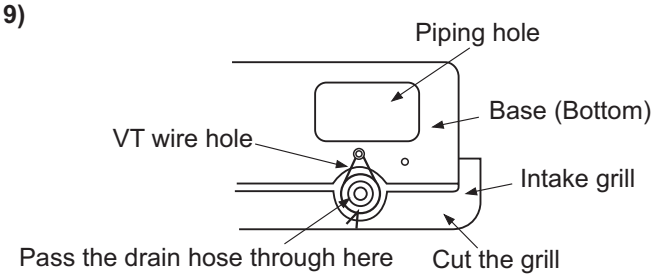
Be sure to arrange the drain hose correctly so that it is leveled lower than the drain hose connecting port of the indoor unit. **(Fig. 18)**

(Fig. 18)



When drain hose is arranged backward. Secure the drain hose with the VT wire. **(Fig. 19)**

(Fig. 19)



GAS LEAKAGE INSPECTION

⚠ CAUTION

After connecting the piping, check the joints for gas leakage with leakage detector.

HOW TO CONNECT WIRING TO THE TERMINALS

A. For solid core wiring (or F-cable) (Fig. 20A)

(1) Cut the wire with a wire cutter or wire-cutting pliers, then strip the insulation to about 25mm of the exposed solid wire.
(2) Using a screwdriver, remove the terminal screw(s) on the terminal board.
(3) Using pliers, bend the solid wire to form a loop suitable for the terminal screw.
(4) Shape the loop wire properly, place it on the terminal board and tighten securely with the terminal screw using a screw driver.

B. For strand wiring (Fig. 20B)

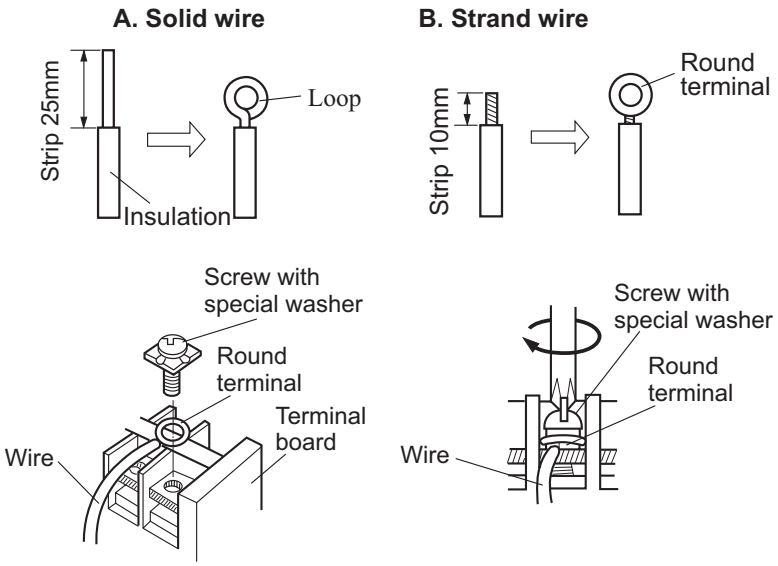
(1) Cut the wire with a wire cutter or wire-cutting pliers, then strip the insulation to about 10mm of the exposed strand wirin

(2) Using a screwdriver, remove the terminal screw(s)on the terminal board.

(3) Using a round terminal fastener or pliers, securely clamp a round terminal to each stripped wire end.

(4) Position the round terminal wire, and replace and tighten the terminal screw using a screw driver.

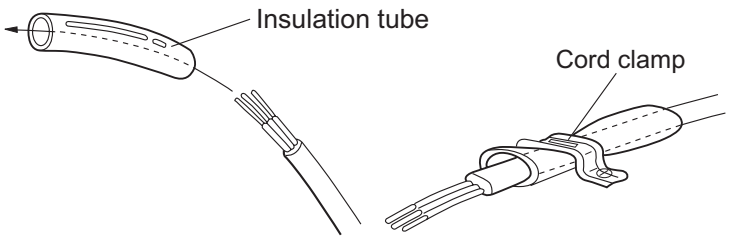
(Fig. 20)



HOW TO FIXED CONNECTION CORD AND POWER CABLE AT THE CORD CLAMP

After passing the connection cord and power cable through the insulation tube, fasten it with the cord clamp, as shown in Fig. 21

Fig. 21



Use VW-1, 0.5 to 1.0 mm thick, PVC tube as the insulation tube.

ELECTRICAL WIRING

⚠ CAUTION
(1) Match the terminal block numbers and connection cord colors with those of the outdoor unit. Erroneous wiring may cause burning of the electric parts.
(2) Connect the connection cords firmly to the terminal block. Imperfect installation may cause a fire.
(3) Always fasten the outside covering of the connection cord with the cord clamp. (If the insulator is chafed, electric leakage may occur.)
(4) Always connect the ground wire.

ELECTRICAL REQUIREMENT

- Electric wire size and fuse capacity:

Type	122, 182	242
Connection cord (mm^2)	0.75	0.75
Power supply cord (mm^2)	2.5	4.0
Fuse capacity(A)	30	40

1. INDOOR UNIT SIDE

(1) Remove the electric component box.

Fig. 21

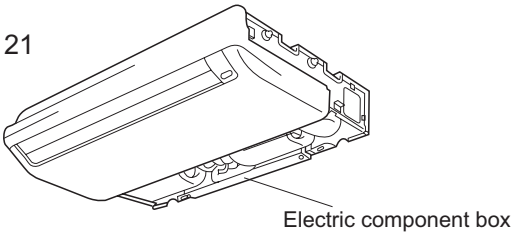
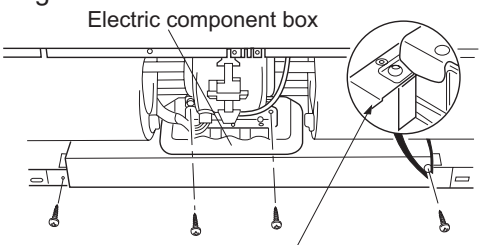


Fig. 22

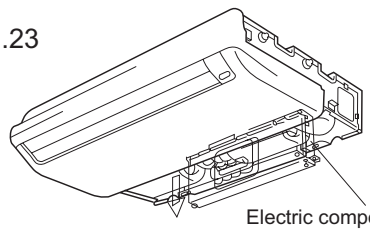


⚠ CAUTION

Do not remove the screws. If the screws are removed, the electric component box will fall.

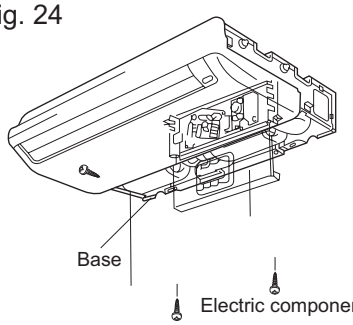
(2) Pull out the electric component box.

Fig.23



(3) Remove the electric component box cover.

Fig. 24



Remove the three tapping screws.

⚠ CAUTION

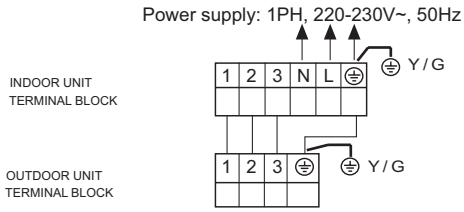
Be careful not to pinch the lead wires between the electric component box and base.

(4) Wiring

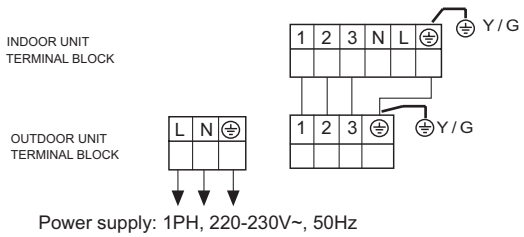
(1) Remove the cord clamp.
(2) Process the end of the connection cords to the dimensions shown in Fig.25
(3) Connect the end of the connection cord fully into the terminal block.
(4) Fasten the connection cord with a cord clamp.
(5) Fasten the end of the connection cord with the screw.

Fig. 25

AC122ACEAA, AC122ACERA, AC182ACEAA



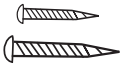
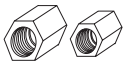
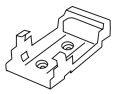
AC182ACERA, AC242ACEAA, AC242ACERA



6.2 For AC28, AC36, AC48, AC60

ACCESSORIES

Standard accessories:

No.	Accessory parts	Qty.	Remarks
1	 Remote controller	1	———
2	 Battery	2	———
3	 Wire clamp	4	———
4	 Heat insulation sheathing	1+1	———
5	 Screw	2+2	———
6	 Drain hose	1	———
7	 Screw cap	1+1	———
8	 Flat washer	8	———
9	 Remote controller bracket	1	———

Optional parts

Mark	Parts name
Ⓐ	Adhesive tape
Ⓑ	Saddle (L.S) with screws
Ⓒ	Drain hose
Ⓓ	Heat insulation material
Ⓔ	Piping hole cover
Ⓕ	Putty
Ⓖ	Plastic clamp

Please ask the dealer or specialist to install, never try by the users themselves. After the installation please be sure of the following conditions.

WARNING !

- **Please call dealer to install the air-conditioner.**
  Incorrect installation may cause water leaking, shock and fire hazard.

CAUTION !

- **Air-conditioner can't be installed in the envi-ronment with inflammable gases because the inflammable gases near to air-conditioner may cause fire hazard.**

- **Installed electrical-leaking circuit breaker.**
  It easily cause electrical shock without circuit breaker.

- **Connect earthing wire.**
  Earthing wire should not be connected to the gas pipe, water pipe, lightning rod or phone line, incorrect earthing may cause


Earthing

- **Use discharge pipe correctly to ensure efficient discharge.**
  Incorrect pipe use may cause water leaking.

[Location]

- Air-conditioner should be located in well-vented and easily-accessible place.
- Air-conditioner should not be located in the following places:
  (a) Places with machine oils or other oil vapours.
  (b) Seaside with high salt content in the air.
  (c) Near to hot spring with high content of sulfide gases.
  (d) Area with frequent fluctuation of voltage e.g. factory, etc.
  (e) In vehicles or ships.
  (f) Kitchen with heavy oil vapour or humidity.
  (g) Near to the machine emitting electric-magnetic waves.
  (h) Places with acid, alkali vapuor.
- TV, radio, acoustic appliances etc are at least supply wire, connecting wire, pipes, otherwise images may be disturbed or noises be created.
- As required, take measures against heavy snow.

[Wiring]

- Air-conditioner should be equipped with special power supply wire.

[Operating noise]

- Choose the following locations:
  (a) Capable of supporting air-conditioner weight,don't increase operating noise and vibration.
  (b) Hot vapour from outdoor unit outlet and operating noise don't disturb neighbour.
- No obstacles around the outdoor unit outlet.

For authorized service personnel only

⚠ WARNING

(1) For the room air conditioner to operate satisfactorily, install it as outlined in this installation manual.

(2) Connect the indoor unit and outdoor unit with the room air conditioner piping and cords available from our standard parts. This in stallation manual describes for the correct connections so that the installation set available from our standard parts should be used.

(3) Installation work must be performed in accordance with national wiring standardsby authorized personnel only.

(4) Never cut the power cord, lengthen or shorten the cord, or change the plug.

(5) Also, do not use an extension cord.

(6) Plug in the power cord plug firmly. If the receptacle is loose, repair it before using the air conditioner.

(7) Do not turn on the power until all installation work is done.

- Be careful not to scratch the room air conditioner when handing it.
- After installation, explain correct operation to the customer, according to the operating manual.
- Let the customer keep this installation manual because it will be used when the room air conditioner is serviced or moved.

SELECTING THE MOUNTING POSITION

⚠ WARNING

- Install at a place that can withstand the weight of the indoor units and install positively so that the units will not topple or fall.

⚠ CAUTION

- Do not install where there is the danger of combustible gas leakage.
- Do not install near heat sources.
- If children under 10 years old may approach the unit, take preventive measures so that they cannot reach the unit.

(1) Install the indoor unit level on a strong wall which is not subject to vibration.

(2) The inlet and outlet ports should not be obstructed : the air should be able to blow all over the room.

(3) Do not install the unit where it will be exposed to direct sunlight ,

(4) Install the unit where connection to the outdoor unit is easy.

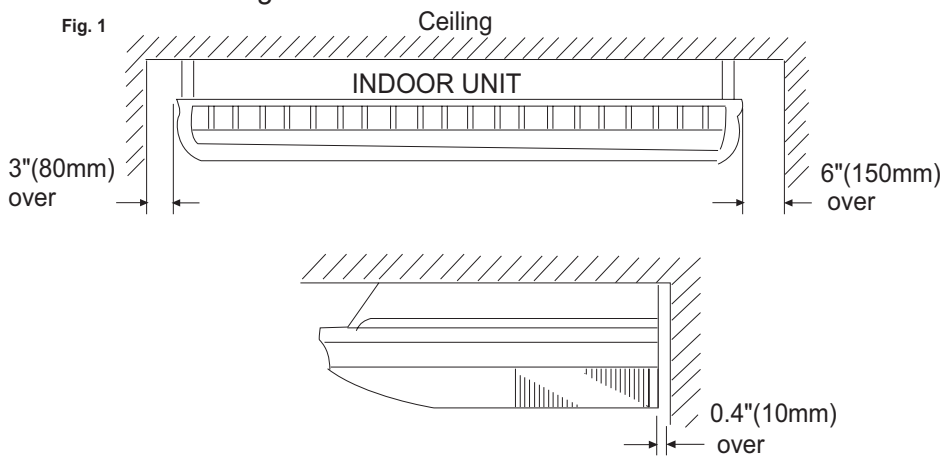
(5) Install the unit where the drain pipe can be easily installed.

(6) Take servicing , etc.into consideration and leave the spaces shown in (Fig.1 or 2) .

Also install the unit where the filter can be removed .

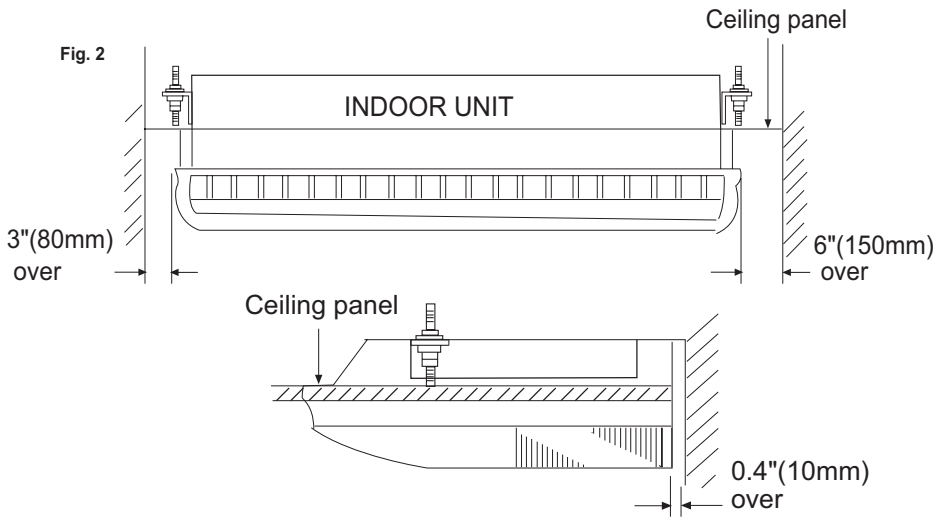
For mounted on the ceiling:

Fig. 1



For half concealed installation:

Fig. 2



CONNECTION PIPE REQUIREMENT

Model	Diameter		Maximum length	Maximum height (between indoor and outdoor)
	Liquid side	Gas side		
For series AC482, AC602 and AC362AFEAA	9.52 mm	19.05mm	50 m	30 m
For series 282 and AC362AFERA	9.52 mm	15.88mm	30 m	20 m

INSTALLATION PROCEDURE

Install the room air conditioner as follows:

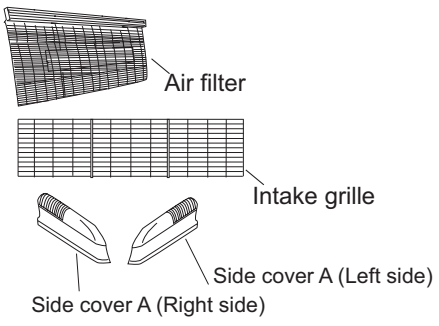
1) REMOVE THE INTAKE GRILL AND SIDE COVER

(1) Remove the two Air filters

(2) Remove the two intake grilles

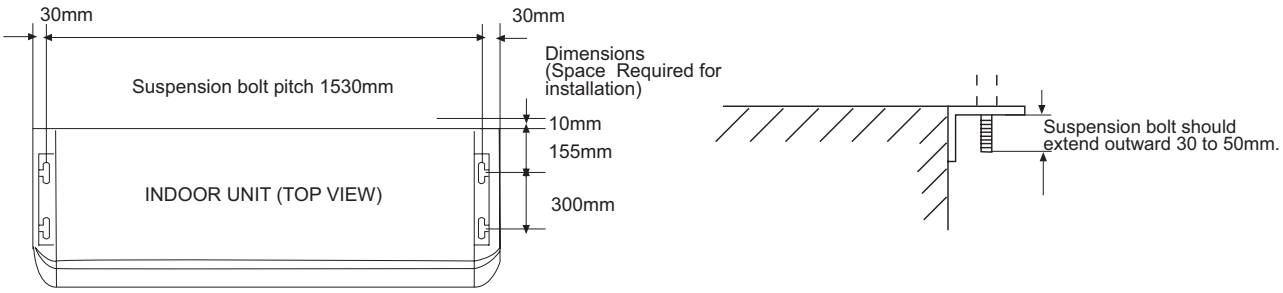
(3) Remove the Side cover A (Right and left side)

(4)This air conditioner can be set up to intake fresh air .



2) LOCATION OF CEILING SUSPENSION BOLTS

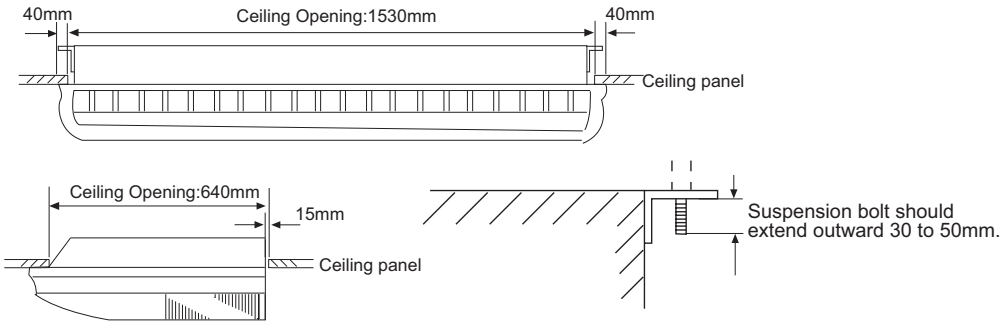
Fig. 3



For half-concealed installation

Supension-bolt pitch should be as shown in Fig.4.

Fig. 4



DRILLING THE HOLES AND ATTACHING THE SUAPENSION BOLTS

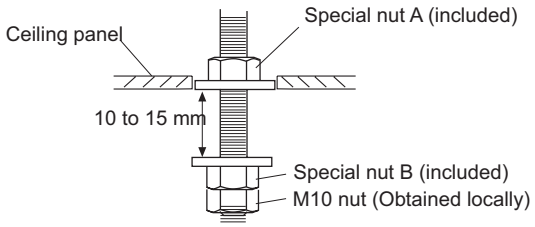
(1) Drill 25mm-diameter holes at the suspension-bolt locations.

(The two special nuts are provided with the unit. The M10 nut must be obtained locally.) Refer to Fig.5.

(2) Install the bolts, then temporarily attach Special nuts A and B and a normal M10 nut to each bolt.

Fig. 5

Bolt Strength	980 to 1470 N (100 TO 150 kgf)



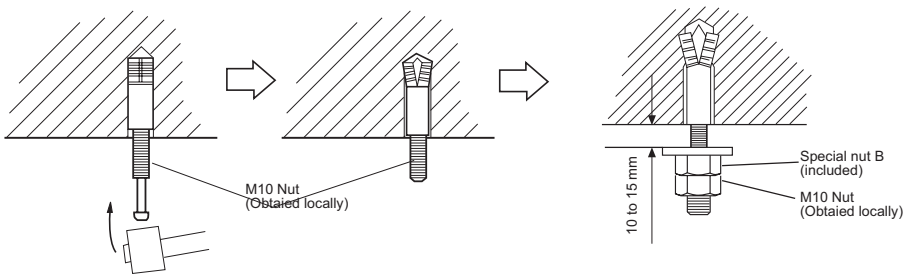
IF USING ANCHOR BOLTS

(1) Drill holes for anchor bolts at the locations at which you will set the suspension bolts.Note that anchor bolts (to be obtained locally).

(2) Install the anchor bolts ,then temporarily attach special nut "B" (included) and a locally-procurde M10 nut to each of the bolts. (See Fig.6.)

Anchor-Bolt Strength	980 to 1470 N (100 TO 150 kgf)

Fig. 6



INSTALLING THE INDOOR UNIT

(1) Lift unit so that suspension bolts pass through suspension fittings at the sides (four places),and slide the unit back.(See Fig.8.)

Fig. 7

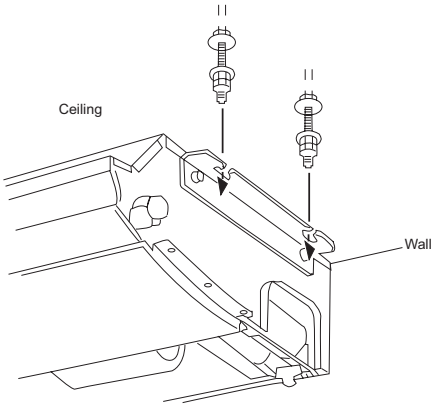
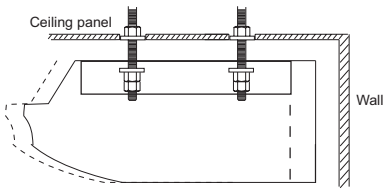


Fig. 8

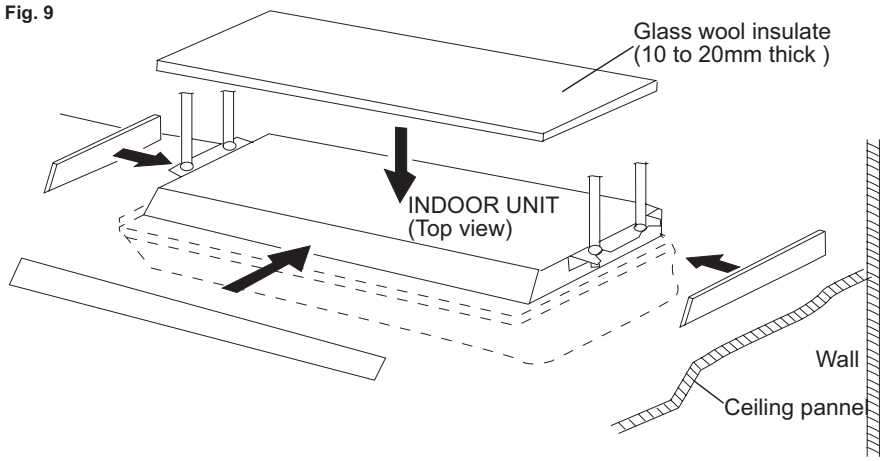


(2) Fasten the indoor unit into place by tightening-up the special "B",blots and the M10 nuts. Make sure that unit is secure and willl not shift back and forth.

FOR HALF-CONCESLED INSTALLATION

When installing the indoor unit in a semi-concesled orientation, make sure to reinforce the insulation of the unit on all sides. Drops of water may fall from the unit if it is not thoroughly insulated.

Fig. 9



⚠ CAUTION

In order to check the drainage, be sure to use a level during installation of the indoor unit. If the installation site of the indoor unit is not level, water leskage may occur

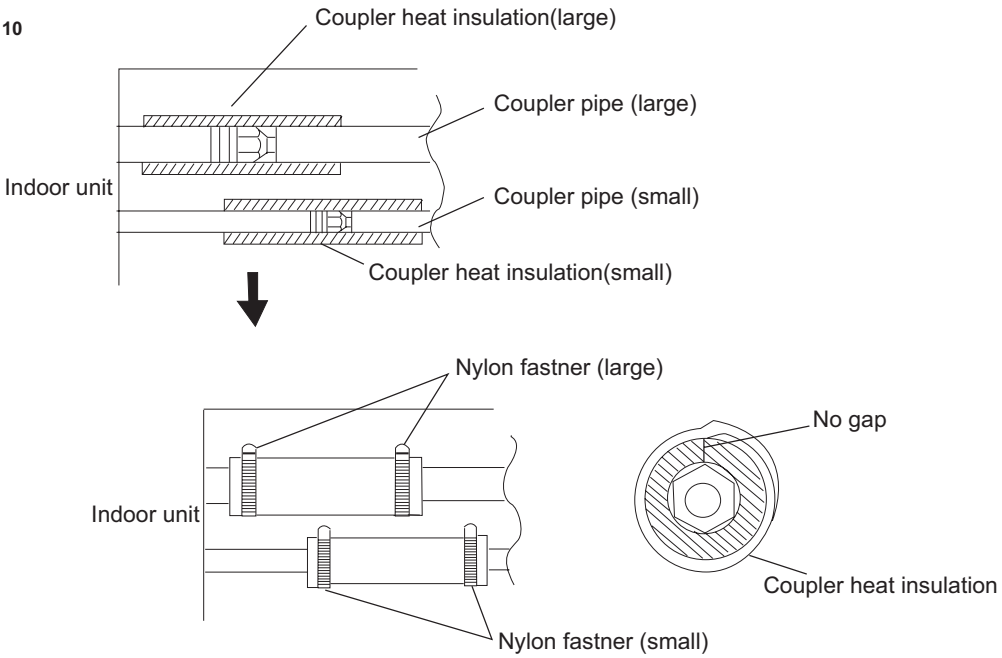
INSTALLING THE COUPLER HEAT INSULATION

After checking for gas leaks, insulate by wrapping insulation around the two parts (large and small) of the indoor unit coupling, using the coupler hest insulation.

After installling the coupler heat insulation, wrap both ends with vinyl tape so that there is no gap.

Secure both ends of the heat insulation material using nylon fasteners.

Fig. 10

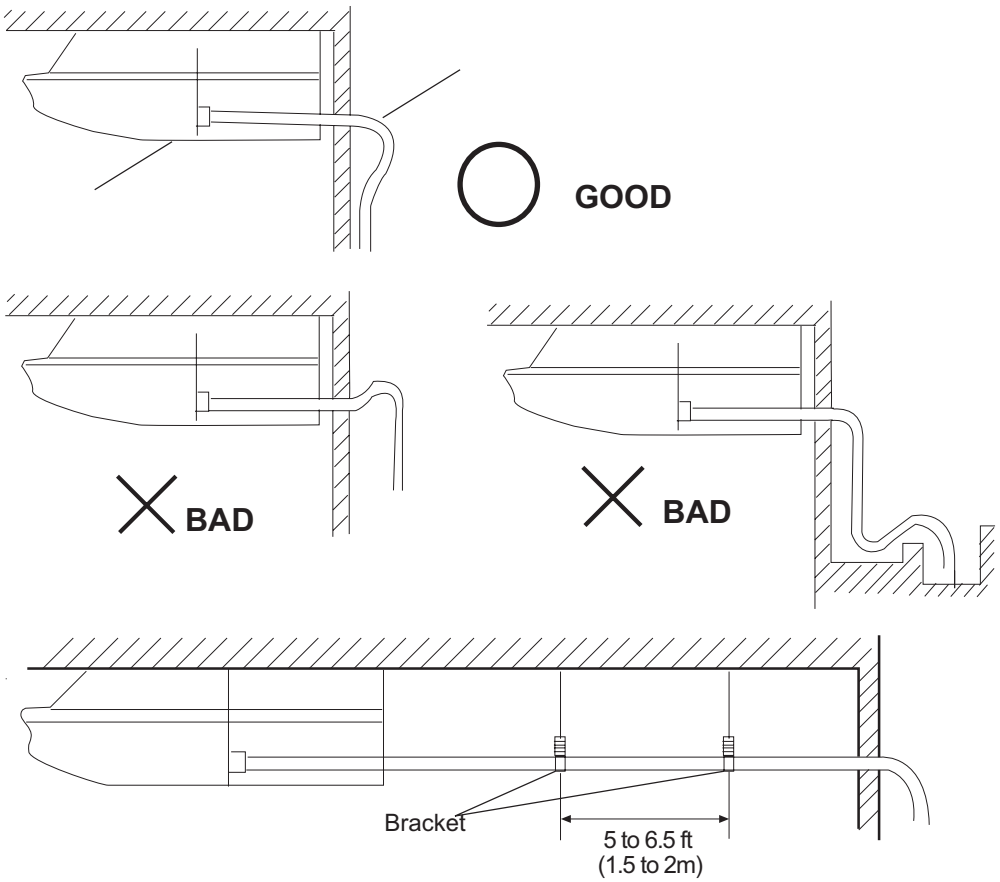


When using an auxiliary pipe, make sure that the fastener used is insulated in the sane way.

DRAIN PIPING

Install the drain pipe with downward gradient (1/50 to 1/100) and so there are no rises or traps in the pipe.
Use general hard polyvinyl chloride pipe (VP25)[outside diameter 38 mm.]
During installation of the drain pipe,be careful to avoid applying pressure to the drain point of the unit.
When the pipe is long,install supporters(Fig 11).
Do not perform air bleeding.
Always heat insulate (8mm or over thick) the indoor side of the drain pipe.

Fig. 11



(1) Install insulation for the drain pipe.(See Fig.12 and 13)

Cut the included insulation material to an appropriate size and adhere it to the pipe.

Fig. 12

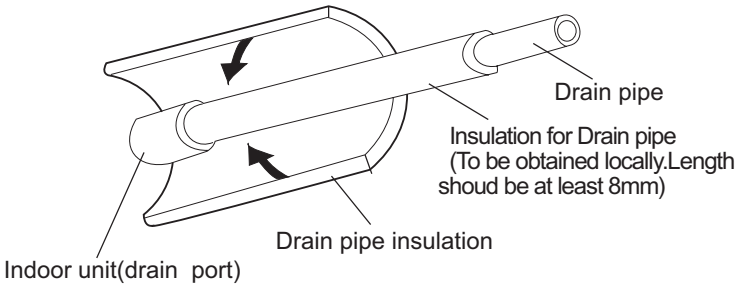
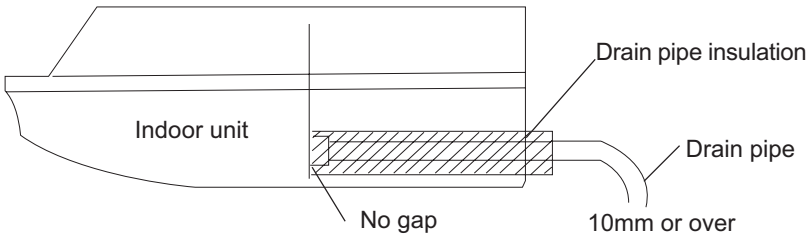
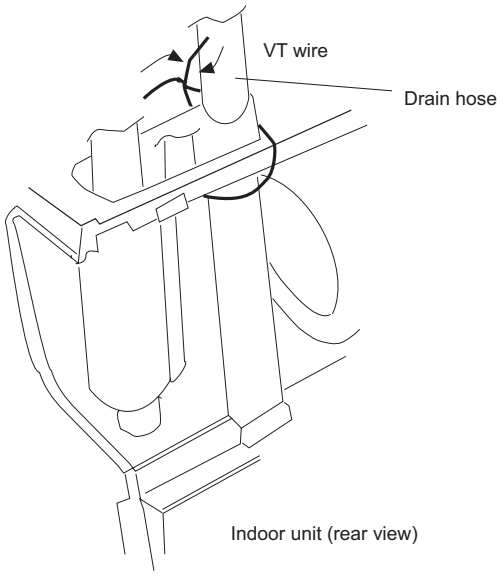


Fig. 13



(2) If "Right rear piping ":fasten the drain pipe with VT wires so that the pipe slopes correctly within the indoor unit.

Fig. 14



ELECTRICAL WIRING

HOW TO CONNECT WIRING TO THE TERMINALS

A.For solid core wiring (or F-cable)

(1)Cut the wire and with a wire cutter or wire-cutting pliers,then strip the insulation to about 15/16"(25mm) of expose the solid wire.

(2)Using a screwdriver ,remove the terminal screw(s) on the terminal board.

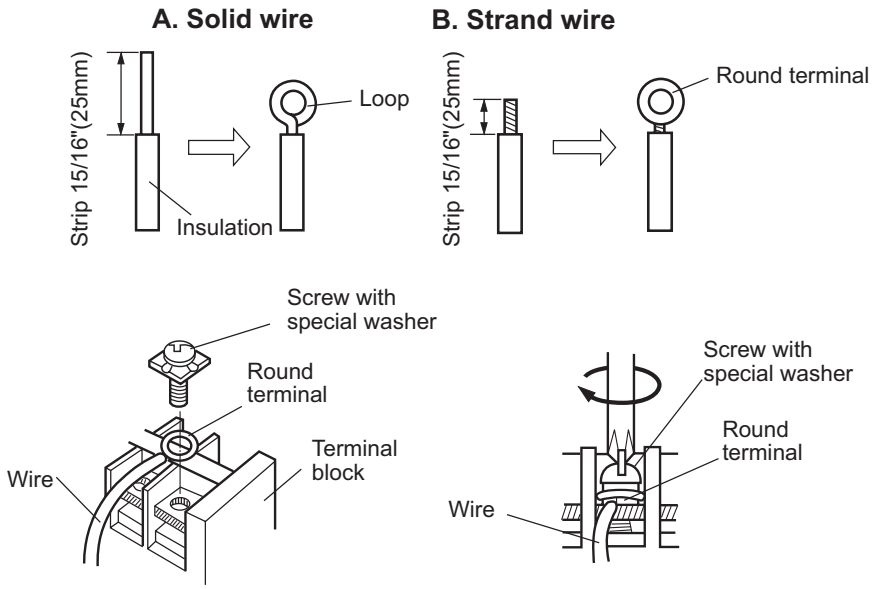
(3)Using pliers,bend the solid wire to form a loop suitable for the terminal screw.

B.For strand wiring

(1)Cut the wire and with a wire cutter or wire-cutting pliers,then strip the insulation to about 3/8"(10mm) of expose the solid wire.

(2)Using a screwdriver ,remove the terminal screw(s) on the terminal board.

Fig. 15



HOW TO FIX CONNECTION CORD AND POWER CABLE AT THE CORD CLAMP

After passing the connection cord and power cable through the insulation tube, fasten it with the cord clamp, as shown in Fig.16

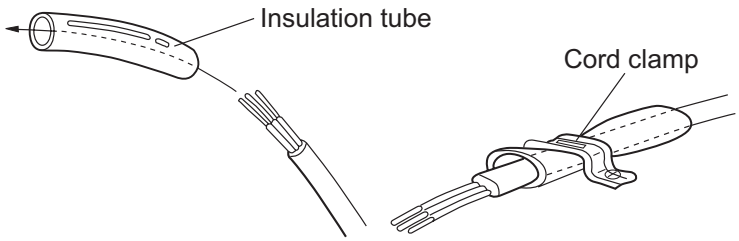
ELECTRICAL REQUIREMENT

- Electric wire size and fuse capacity:

Select wire sizes and circuit protection from table below. (This table shows 20m length wires with less than 2% voltage drop.)

Item / Model	Phase	Circuit breaker		Power source wire size (mm^2)	Earth leakage breaker	
		Switch breaker (A)	Overcurrent protector		Switch breaker	Leak current(mA)
For series 282, 362	1	40	26	6.0	40	30
For series 362 and AC282AFEAA	3	30	20	2.5	30	30
For series 482, 602	3	30	20	4.0	30	20

Fig. 16



Use VW-1, 0.5 to 1.0 mm thick, PVC tube as the insulation tube.

⚠ CAUTION

(1) Match the terminal block numbers and connection cord colors with those of the outdoor unit. Erroneous wiring may cause burning of the electric parts.

(2) Connect the connection cords firmly to the terminal block. Imperfect installation may cause a fire.

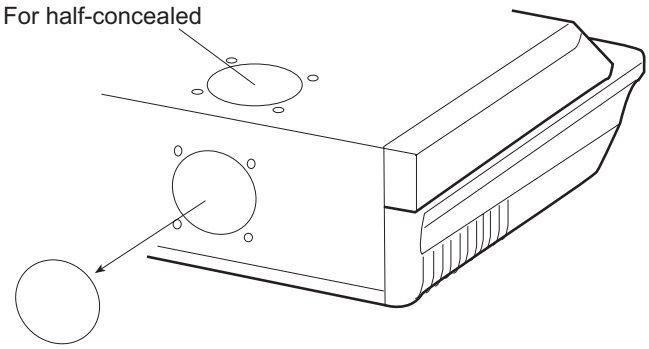
(3) Always fasten the outside covering of the connection cord with the cord clamp. (If the insulator is chafed, electric leakage may occur.)

(4) Always connect the ground wire.

FRESH-AIR INTAKE

(1)Take away the knockout hole for the fresh-air intake,as shown in Fig.17.(If using half-concealed installation ,take down the top knockout hole instead)

Fig. 17



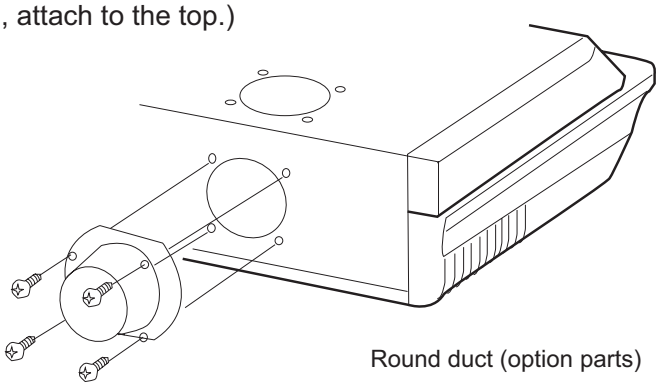
⚠ CAUTION

(1)When removing the cabinet(iron plate),be careful not to damage the indoor unit internal parts and surrounding area(outer case).

(2)When processing the cabinet(iron plate),be careful not to injury yourself with burrs,etc.

(2)Fasten the round flange (optional) to the fresh air intake,as shown in Fig.18.(If using half-concealed installation, attach to the top.)

Fig. 18

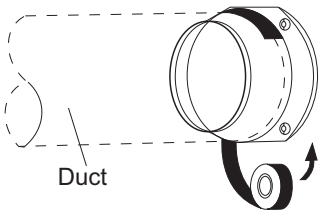


[After completing "INDOOR UNIT INSTALLATION"....]

(3)Connect the duct to the round flange.

(4)Seal with a band and vinyl tape,etc.so that air does not leak from the connection.

Fig. 19



CONNECTION CORDS

(1) Remove the cord clamp.

(2) Put the end of the connection cords to the positions shown in Fig.20.

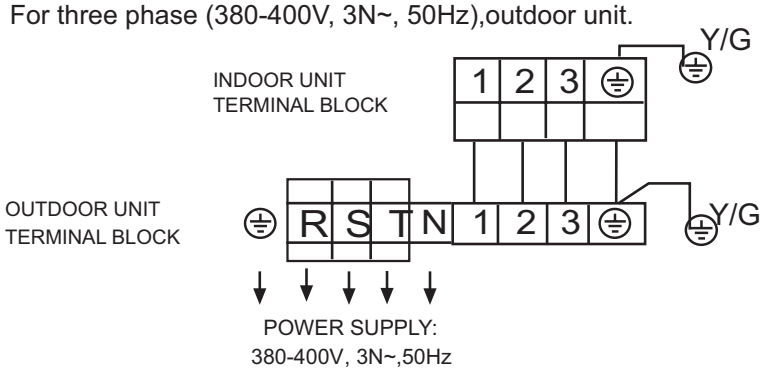
(3) Connect the end of the connection cord fully into the terminal block.

(4) Fasten the connection cord with a cord clamp.

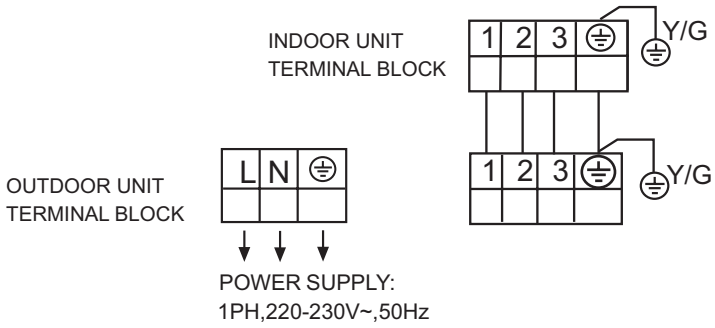
(5) Fasten the end of the connection cord with the screw.

(6)The power cable and connecting cable are self-provided.

Fig. 20 For three phase (380-400V, 3N~, 50Hz),outdoor unit.



For single phase (1PH, 220-230V~, 50Hz),outdoor unit.



⚠ WARNING

(1) Always use a special branch circuit and install a special receptacle to supply power to the room air conditioner.

(2) Use a circuit breaker and receptacle matched to the capacity of the room air conditioner.

(3) The circuit breaker is installed in the permanent wiring. Always use a circuit that can trip all the poles of the wiring and has an isolation distance of at least 3mm between the contacts of each pole.

(4) Perform wiring work in accordance with standards so that the room air conditioner can be operated safely and positively.

(5) Install a leakage circuit breaker in accordance with the related laws and regulations and electric company standards.

⚠ CAUTION

(1) The power source capacity must be the sum of the room air conditioner current and the current of other electrical appliances. When the current contracted capacity is insufficient, change the contracted capacity.

(2) When the voltage is low and the air conditioner is difficult to start, contact the power company the voltage raised.

TEST RUNNING

1. CHECK ITEMS

1) INDOOR UNIT

(1) Is operation of each button on the remote control unit normal?

(2) Does each lamp light normally?

(3) Do not air flow direction louvers operate normally?

(4) Is the drain normal?

2) OUTDOOR UNIT

(1) Is there any abnormal noise and vibration during operation?

(2) Will noise, wind, or drain water from the unit disturb the neighbors?

(3) Is there any gas leakage?

Duct indoor unit (AD12~AD72)

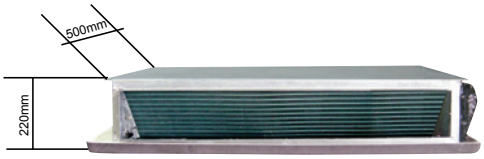
1. Features

High efficiency filter & Static pressure optional

The unit adopts G3 grade filter, can efficiently filter the dirt etc, and improve the room air quality, at the same time, the filter can pull out from downside, convenient for maintenance and cleaning.

Ultra-thin design and two-side drainage pipe

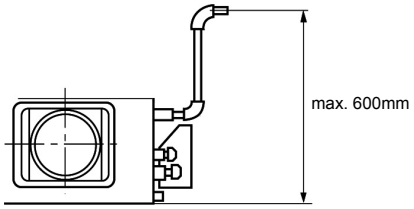
For the ceiling concealed duct type indoor units, the unit thickness is only 220mm, ultra-thin design; the depth is 500mm, and space saving, completely matching with the indoor decoration.



There are two drainage pipes designed on the ceiling concealed indoor units, it is convenient for the drainage piping design for installation.

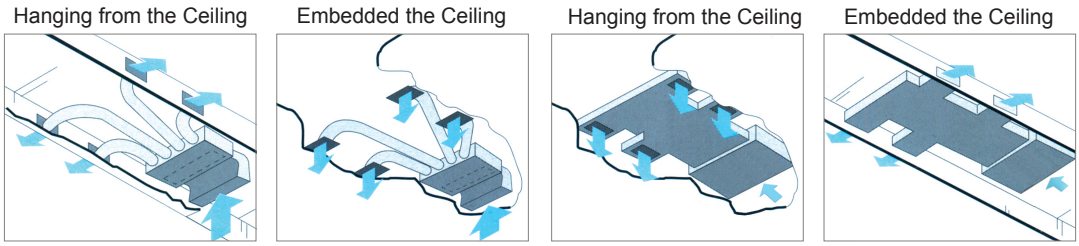
Special Up-drainage water pump(optional)

The unit has a water pump which the max. drainage height can be up to 600mm(more than 24000BTU/h duct unit.), that is convenient for you to install.



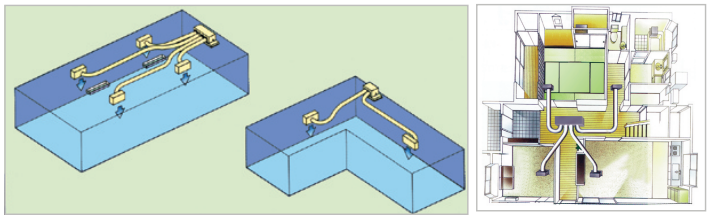
Multi-mode for installation

The indoor unit can be installed with an air return duct or without an air return duct according to the installation need.



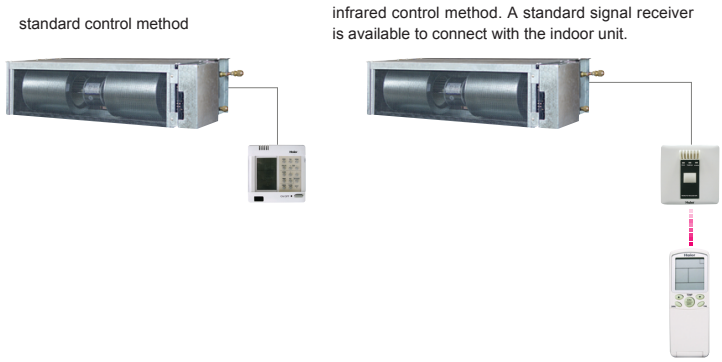
Free setting of air discharge duct

The number of the airflow outlet and its installation position can be freely selected according to the environment of the room, sufficiently considering the load of the room and the uniform temperature of the room to realize more perfect comfort.



Variable control mode

The indoor unit can use one wired remote controller, also, it can use a remote controller (with new remote reciever) and central controller(optional) .



Auto–restart function (optional)

All indoor units have auto-restart function. When the power supply cut off suddenly, the unit will automatically recover the previous running mode once the power supply is on.

Auto checking malfunction

Failure codes displayed by LED or controllers are so detailed for us to find the fail place more quickly,and can judge the failure content easily

High ESP design

Max. external static pressure of 196 Pa brings the quick temperature adjustment to the room. Adopts high pressure fan to provide quick speed of air blowing while keeping a low sound level and ensuring a good air circulation of the whole indoor space. The static pressure from 0 to 196 Pa can be adjusted steplessly according to the environment.

2. Specifications

2.1 For DC inverter unit

Item				Model	AD122ALERA	
Function					cooling	heating
Capacity				kW	3.8(0.9--4.4)	4.1(1.0---4.8)
Sensible heat ratio					0.71	
Total power input				W	1260(280--1650)	1260(280--1650)
Max. power input				W	1650	1650
EER or COP				W/W	3.02（B）	3.25（C）
Dehumidifying capacity				10 - ³×m³/h	1.6	
Power cable					3×2.5	
Power source				N, V, Hz	1, 220--230, 50	
Running /Max.Running current				A / A	6.0(1.4--8.0)A/8A	6.0(1.4--8.0)A/8A
Start Current				A	3	3
Circuit breaker				A	13	13
Indoor unit	Unit model (color)				AD122ALERA(GREY)	
	Fan	Type × Number			Centrifugal fan*1	
		Speed(H-M-L)		r/min	1000/900/800±50	
		Fan motor output power		kW	0.05	
		Air-flow(H-M-L)		m³/h	550/450/400	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/ Φ7	
		Total Area		m²	0.11	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	610×483×220	
		Package	（L×W×H）	mm×mm×mm	695×536×265	
	Drainage pipe (material , I.D./O.D.)			mm	20/18	
	Control type (Remote /wired)				wired	
	Noise level (H-M-L)			dB(A)	35/32/30	
	Weight (Net / Shipping)			kg / kg	14/16	

item				Model	AD182ALERA	
Function					cooling	heating
Capacity				BTU/h	17500	19500
Capacity				kW	4.8(1.8---5.8)	5.5(2.0---6.8)
Total power input				KW	1.65(0.55---2.65)	1.70(0.60---2.65)
Max. power input				W	2650	2650
EER or COP				W/W	2.91(C)	3.24(C)
Dehumidifying capacity				10 - ³×m³/h	1.8	
Running /Max.Running current				A / A	7.5(3.0---12.0)/12A	7.5(3.0---12.0)/12A
Start Current				A	50	
Class of anti electric shock					Class 1	
Max. operating pressure of heat side				Mpa	4.15	
Max. operating pressure of cold side				Mpa	4.15	
Indoor unit	Unit model (color)				AD182ALERA	Grey
	Fan	Type × Number			centrifugal fan X 2	
		Speed(H-M-L)		r/min	700±30 / 540±30 / 400±30	
		Fan motor output power		kW	50	
		Air-flow(H-M-L)		m³/h	780	
	Heat exchanger	Type / Diameter		mm	TP2M/7X0.5	
		Total Area		m²	0.34	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1090×500×220	
		Package	（L×W×H）	mm×mm×mm	1174×545×280	
	Air sending angle					
	Drainage pipe (material , I.D./O.D.)			mm	PVC 16/12	
	Control type (Remote /wired /model)				wired control	
	Noise level (H-M-L)			dB(A)	45/41/37	
	Weight (Net / Shipping)			kg / kg	23/26.5	

item				Model	AD182AMERA	
Function					cooling	heating
Capacity				kW	5.1（1.8---6.0）	6.0（2.0---7.1）
Sensible heat ratio					0.75	
Total power input				W	1580（550---2650）	1650（600---2650）
Max. power input				W	2650	2650
EER or COP				W/W	3.23	3.64
Indoor unit	Unit model (color)				AD182AMERA(WHITE)	
	Fan	Type × Number			cross flow*1	
		Speed(H-M-L)		r/min	1150/1050/860/680R/MIN	
		Fan motor output power		kW	0.05	
		Air-flow(H-M-L)		m³/h	850/770/680/600(30PA)	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/φ9.52	
		Total Area		m²	0.59	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1190*450*220	
		Package	（L×W×H）	mm×mm×mm	1281*526*305	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 16/12	
	Control type (Remote /wired)				wired	
	Electricity Heater			kW	0	
	Noise level (H-M-L)			dB(A)	50/48/45	
	Weight (Net / Shipping)			kg / kg	24/27	

item				Model	AD242ALERA	
Function					cooling	heating
Capacity				kW	7.35（2.0---8.2）	8.15（3.0---9.0）
Sensible heat ratio					0.72	/
Total power input				W	2280(600---3250)W	2250(600---3250)W
Max. power input				W	3300W	3300W
EER or COP				W/W	2.0	
Running /Max.Running current				A / A	10.0(2.5--14.5)A /	10.0(2.5--14.5)A /
Indoor unit	Unit model (color)				AD242ALERA(grey)	
	Fan	Type × Number			Centrifugal × 2	
		Speed(H-M-L)		r/min	1250±40/1130±40/1000±50/850±50	
		Fan motor output power		kW	0.05	
		Air-flow(H-M-L)		m³/h	1200/1050/850（white port, 0Pa static	
	Heat exchanger	Type / Diameter		mm	Inner grooved type / Φ7	
		Total Area		m²	0.51	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1090*500*220	
		Package	（L×W×H）	mm×mm×mm	1174*545*280	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 16/12	
	Control type (Remote /wired)				Remote or wired	
	Noise level (H-M-L)			dB(A)	49/45/41/37	
	Weight (Net / Shipping)			kg / kg	25.2/28.4	

item				Model	AD242AMERA	
Function					cooling	heating
Capacity				kW	7.35（2.0---8.2）	8.15（2.5-9.0）
Sensible heat ratio					0.72	
Total power input				W	2280(600---3250)W	2250(600---3250)W
Max. power input				W	3300W	3300W
EER or COP				W/W	3.22	3.62
Dehumidifying capacity				10 - ³×m³/h	2.1	
Running /Max.Running current				A / A	10.5(2.5--14.5)A / 15A	10.0(2.5--14.5)A /1 5A
Indoor unit	Unit model (color)				AD242AMERA(grey)	
	Fan	Type × Number			Centrifugal × 2	
		Speed(H-M-L)		r/min	1000±40/940±40/860±40/780±50	
		Fan motor output power		kW	0.18	
		Air-flow(H-M-L)		m³/h	1200/1050/850	
	Heat exchanger	Type / Diameter		mm	Inner grooved type / Φ7	
		Total Area		m²	0.49	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	990*650*300	
		Package	（L×W×H）	mm×mm×mm	1170*860*340	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 32/26	
	Control type (Remote /wired)				wired	
	Fresh air hole dimension			mm	150	
	Noise level (H-M-L)			dB(A)	47/43/39	
	Weight (Net / Shipping)			kg / kg	39/40.4	

item				Model	AD282AMERA	
Function					cooling	heating
Capacity				BTU/h	27300	32400
Capacity				kW	8.0(2.2~10.0)	9.5(2.5~11.4)
Sensible heat ratio					0.73	
Total power input				KW	2.65(0.5---3.8)	2.6(0.5---3.8)
Max. power input				W	3800	3800
EER or COP				W/W	3.02	3.65
Energy efficiency stage					B	A
Dehumidifying capacity				10 - ³×m³/h	3.0	
Running /Max.Running current				A / A	11.0（2.3-17）/17	12.0（2.3-17）/17
Indoor unit	Unit model (color)				AD282AMERA(grey)	
	Fan	Type × Number			Centrifugal × 2	
		Speed(H-M-L)		r/min	1110±50/ 1060±40 / 950±40 / 790±50r/min	
		Fan motor output power		kW	0.23	
		Air-flow(H-M-L)		m³/h	1470/1300/1100/950	
	Heat exchanger	Type / Diameter		mm	Inner grooved type / Φ7	
		Total Area		m²	0.328	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	990*650*300	
		Package	（L×W×H）	mm×mm×mm	1152*860*325	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 26/32	
	Control type (Remote /wired)				wired	
	Fresh air hole dimension			mm	150	
	Noise level (H-M-L)			dB(A)	50/47/43/41	
	Weight (Net / Shipping)			kg / kg	40/46.4	

item					Model	AD362AMERA	
Function						cooling	heating
with AU362AHERA	Capacity				Btu/h	32400	38000
	Capacity				kW	9.5(2.2~10.8)	11.0(2.5~12.0)
	Sensible heat ratio					0.73	
	Total power input				W	3280(500---3900)	3430(500---3900)
	Max. power input				W	4300	4300
	EER or COP				W/W	2.9	3.21
	Energy efficiency stage					C	C
	Dehumidifying capacity				10 - ³×m³/h	3.6	
	Running /Max.Running current				A / A	14.3(2.3-17.5)/19.3	15.0(2.3-17.5)/19.3
Indoor unit	Unit model (color)					AD362AMERA(grey)	
	Fan	Type × Number				Centrifugal fan * 2	
		Speed(H-M-L)			r/min	1110±50/ 1060±40 / 950±40 / 790±50r/min	
		Air-flow(H-M-L)			m³/h	1470/1300/1100/950	
	Heat exchanger	Type / Diameter			mm	inner grooved type/ Φ7	
		Total Area			m²	0.328	
		Temp. scope			℃	2-7	
	Dimension	External	（L×W×H）		mm×mm×mm	990*650*300	
		Package	（L×W×H）		mm×mm×mm	1152*860*325	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 15/20	
	Control type (Remote /wired)					wired	
	Fresh air hole dimension				mm	150	
	Noise level (H-M-L)				dB(A)	50/47/43/41	
	Weight (Net / Shipping)				kg / kg	40/5746.4	

item					Model	AD362AHERA	
Function						cooling	heating
Capacity					BTU/h	32400	38900
Capacity					kW	9.5(2.2~10.5)	11.4(2.5~12.0)
Sensible heat ratio						0.73	
Total power input					kW	3.38(0.5---3.9)	3.15(0.5--3.9)
Max. power input					W	4300	4300
EER or COP					W/W	2.81	3.62
Energy efficiency stage						C	A
Dehumidifying capacity					10 - ³×m³/h	3.4	
Running /Max.Running current					A / A	15.3（2.3-17.5）/19.3	15.0（2.3-17.5）/19.3
Indoor unit	Unit model (color)					AD362AHERA(grey)	
	Fan	Type × Number				centrifugal X2	
		Speed(H-M-L)			r/min	1090±30/ - / 930±50 min	
		Fan motor output power			kW	0.40	
		Air-flow(H-M-L)			m³/h	2400/2070/1760	
	Heat exchanger	Type / Diameter			mm	inner grooved type/ Φ7	
		Total Area			m²	0.479	
		Temp. scope			℃	2-7	
	Dimension	External	（L×W×H）		mm×mm×mm	1197×830×350	
		Package	（L×W×H）		mm×mm×mm	1430×940×420	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 26/32	
	Control type (Remote /wired)					wired	
	Outlet distribution hole dimension				mm	853*254	
	Noise level (H-M-L)				dB(A)	50/46/42	
	Weight (Net / Shipping)				kg / kg	62/70	

item				Model	AD482ANERA	
Function					cooling	heating
Capacity				kW	12.0(6.0~14.5)	14.5(6.0~16.5)
Sensible heat ratio					0.73	
Total power input				W	4.6(2.0---6.0)	4.7(2.0----6.0)
Max. power input				W	6300	6300
EER or COP				W/W	2.61(D)	3.23（C）
Dehumidifying capacity				10 - ³×m³/h	C	C
Running /Max.Running current				A / A	8.0(2.9-9.5)/10.5	8.0(2.9-9.5)/10.5
Indoor unit	Unit model (color)				AD482ANERA（grey）	
	Fan	Type × Number			centrifugal X2	
		Speed(H-M-L)		r/min	1330/1230/1130/1030	
		Fan motor output power		kW	0.25	
		Air-flow(H-M-L)		m³/h	1700m³/h（80pa）	
	Heat exchanger	Type / Diameter		mm	TP2M/7.0	
		Total Area		m²	0.371	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1135×742×270	
		Package	（L×W×H）	mm×mm×mm	1300×850×380	
	Drainage pipe (material , I.D./O.D.)			mm	/	
	Control type (Remote /wired)				wired	
	Fresh air hole dimension			mm	150	
	Noise level (H-M-L)			dB(A)	51/49/47/43	
	Weight (Net / Shipping)			kg / kg	52/55	

item				Model	AD482AHERA	
Function					cooling	heating
Capacity				kW	12.3(6.0~14.5)	15.5(6.0~17.5)
Sensible heat ratio					0.73	
Total power input				W	4.7(2.0---6.0)	4.5(2.0----6.0)
Max. power input				W	6300	6300
EER or COP				W/W	2.62（D）	3.44（B）
Dehumidifying capacity				10 - ³×m³/h	5.0	
Running /Max.Running current				A / A	8.0(2.9-9.5)/10.5	8.0(2.9-9.5)/10.5
Indoor unit	Unit model (color)				AD482AHEAA（grey）	
	Fan	Type × Number			centrifugal X2	
		Speed(H-M-L)		r/min	1090+30/-/930+50	
		Fan motor output power		kW	0.4	
		Air-flow(H-M-L)		m³/h	2580/2070/1560	
	Heat exchanger	Type / Diameter		mm	TP2M/9.52	
		Total Area		m²	0.479	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1197×830×350	
		Package	（L×W×H）	mm×mm×mm	1430×940×420	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 26/32	
	Control type (Remote /wired)				wired	
	Outlet distribution hole dimension			mm	853×254	
	Noise level (H-M-L)			dB(A)	50/46/42	
	Weight (Net / Shipping)			kg / kg	62/70	

item				Model	AD602AHERA	
Function					cooling	heating
Capacity				BTU/h	54000	63100
Capacity				kW	16.1(6.0~16.5)	18.5(6.0~19.0)
Sensible heat ratio					0.73	
Total power input				W	5.7(2.0---6.0)	5.4(2.0----6.0)
Max. power input				W	6000	6000
EER or COP				W/W	2.82（C）	3.43（B）
Dehumidifying capacity				10 - ³×m³/h	5.0	
Running /Max.Running current				A / A	9.5（2.9-10.5）/10.5	9.5（2.9-10.5）/10.5
Indoor unit	Unit model (color)				AD602AHEAA（grey)	
	Fan	Type × Number			centrifugal X2	
		Speed(H-M-L)		r/min	1090+30/-/930+50	
		Fan motor output power		kW	0.4	
		Air-flow(H-M-L)		m³/h	2580/2070/1560	
	Heat exchanger	Type / Diameter		mm	TP2M/9.52	
		Total Area		m²	0.10	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1197×830×350	
		Package	（L×W×H）	mm×mm×mm	1430×940×420	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 26/32	
	Control type (Remote /wired)				wired	
	Outlet distribution hole dimension			mm	853×254	
	Noise level (H-M-L)			dB(A)	50/46/42	
	Weight (Net / Shipping)			kg / kg	62/70	

2.2 For fixed frequency unit

Item				Model	AD122ALEAA	
Function					cooling	heating
Capacity				kW	3.5	3.8
Sensible heat ratio					0.71	
Total power input				W	1160	1110
Max. power input				W	1650	1650
EER or COP				W/W	3.01（A）	3.41（A）
Dehumidifying capacity				10 - ³×m³/h	1.6	
Running /Max.Running current				A / A	4.9A/7.4A	4.9A/7.4A
Start Current				A	20	20
Indoor unit	Unit model (color)				AD122ALEAA(grey)	
	Fan	Type × Number			CENTRIFUGALX1	
		Speed(H-M-L)		r/min	1000/900/800±50	
		Fan motor output power		kW	0.05	
		Air-flow(H-M-L)		m³/h	550/450/400	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/ Φ7	
		Total Area		m²	0.11	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	610×500×200	
		Package	（L×W×H）	mm×mm×mm	695×536×265	
	Drainage pipe (material , I.D./O.D.)			mm	20/18	
	Control type (Remote /wired)				wired	
	Noise level (H-M-L)			dB(A)	42/40/36	
	Weight (Net / Shipping)			kg / kg	14/16	

item				Model	AD182ALEAA	
Function					cooling	heating
Capacity				BTU/h	16400	17000
Capacity				kW	4.8	5.0
Total power input				W	1700	1600
Max. power input				W	2000	1950
EER or COP				W/W	2.82	3.12
Running /Max.Running current				A / A	cooling: 7.8A /9.5A	heating 7.3A /9.3A
Start Current				A	50	
Class of anti electric shock					Class 1	
Indoor unit	Unit model (color)				AD182ALEAA	Grey
	Fan	Type × Number			centrifugal fan X 2	
		Speed(H-M-L)		r/min	700±30 / 540±30 / 400±30	
		Fan motor output power		kW	50	
		Air-flow(H-M-L)		m³/h	780	
	Heat exchanger	Type / Diameter		mm	TP2M/7X0.5	
		Total Area		m²	0.34	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1090×500×220	
		Package	（L×W×H）	mm×mm×mm	1174×545×280	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 16/12	
	Control type (Remote /wired /model)				wired control	
	Noise level (H-M-L)			dB(A)	45/41/37	
	Weight (Net / Shipping)			kg / kg	23/26.5	

item					Model	AD182AMEAA	
Function						cooling	heating
Capacity					BTU/h	18000	18770
Capacity					kW	5.3	5.5
Total power input					W	1890	1700
Max. power input					W	2150	2050
EER or COP					W/W	2.81	3.32
Running /Max.Running current					A / A	cooling: 8.5A /11.5A	heating: 7.5A /10.5A
Start Current					A	50	
Indoor unit	Unit model (color)					AD182AMEAA	Grey
	Fan	Type × Number				centrifugal fan X 2	
		Speed(H-M-L)			r/min	1000±40 / 840±40 / 730±40/ 670±50	
		Fan motor output power			kW	180	
		Air-flow(H-M-L)			m³/h	1200/1050/850	
	Heat exchanger	Type / Diameter			mm	TP2M/9.52X0.7	
		Total Area			m²	0.52	
		Temp. scope			℃	2-7	
	Dimension	External	(L×W×H)		mm×mm×mm	990x650x300	
		Package	(L×W×H)		mm×mm×mm	1167x860x345	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 14/16	
	Control type (Remote /wired /model)					wired control	
	Fresh air hole dimension				mm	ф100	
	Noise level (H-M-L)				dB(A)	45/42/40	
	Weight (Net / Shipping)				kg / kg	39/45	

item					Model	AD242ALEAA	
Function						cooling	heating
Capacity					kW	7.25	7.6
Sensible heat ratio						0.72	/
Total power input					W	2400	2300
Max. power input					W	3100W	3000W
EER or COP					W/W	3.02	3.30
Dehumidifying capacity					10 - ³×m³/h	1.8	
Running /Max.Running					A / A	11.0A/13.9A	10.5A/13.4A
Indoor unit	Unit model (color)					grey	
	Fan	Type × Number				centrifugal fan*2	
		Speed(H-M-L)			r/min	1250±40/1130±40/1000±50/850±50	
		Fan motor output power			kW	0.05	
		Air-flow(H-M-L)			m³/h	1200/1050/850 (white port: 0Pa ESP)	
	Heat exchanger	Type / Diameter			mm	inner grooved pipe/φ7	
		Total Area			m²	0.51	
		Temp. scope			℃	2-7	
	Dimension	External	(L×W×H)		mm×mm×mm	1090*500*220	
		Package	(L×W×H)		mm×mm×mm	1174*545*280	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 16/12	
	Control type (Remote /wired)					wired control	
	Noise level (H-M-L)				dB(A)	49/45/41/37	
	Weight (Net / Shipping)				kg / kg	25.2/28.4	

item					Model	AD242AMEAA	
Function						cooling	heating
Capacity					kW	7.25	7.6
Sensible heat ratio						0.72	/
Total power input					W	2400	2300
Max. power input					W	3100W	3000W
EER or COP					W/W	3.02	3.30
Dehumidifying capacity					10 - ³×m³/h	2.5	
Running /Max.Running current					A / A	11.0A/13.9A	10.5A/13.4A
Start Current					A	62	62
Indoor unit	Unit model (color)					AD242AMEAA(grey)	
	Fan	Type × Number				centrifugal fan*2	
		Speed(H-M-L)			r/min	1000±40/940±40/860±40/780±50	
		Fan motor output power			kW	0.18	
		Air-flow(H-M-L)			m³/h	1470/1300/1100	
	Heat exchanger	Type / Diameter			mm	inner grooved pipe/φ7	
		Total Area			m²	0.49	
		Temp. scope			℃	2-7	
	Dimension	External	（L×W×H）		mm×mm×mm	990*650*300	
		Package	（L×W×H）		mm×mm×mm	1167*860*345	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 32/26	
	Control type (Remote /wired)					wired control	
	Fresh air hole dimension				mm	150	
	Noise level (H-M-L)				dB(A)	47/43/39	
	Weight (Net / Shipping)				kg / kg	39/40.4	

item					Model	AD282AMEAA	
Function						cooling	heating
with AU282AHEAA	Capacity				BTU/h	28000	31000
	Capacity				kW	8.5	9.1
	Sensible heat ratio					0.72	/
	Total power input				W	2820	2800
	Max. power input				W	3500W	3500W
	EER or COP				W/W	3.01	3.25
	Dehumidifying capacity				10 - ³×m³/h	2.5	
	Running /Max.Running current				A / A	12.0A/15.5A	12.0A/15.5A
with AU28NAHEAA	Capacity				BTU/h	28000	31000
	Capacity				kW	8.5	9
	Sensible heat ratio					0.72	
	Total power input				W	2800	2650
	Max. power input				W	3500	3500
	EER or COP				W/W	3.04	3.40
	Dehumidifying capacity				10 - ³×m³/h	2.5	
	Running /Max.Running current				A / A	4.7A/5.6A	4.6A/5.5A
Indoor unit	Unit model (color)					AD282AMEAA(grey)	
	Fan	Type × Number				Centrifugal fan*2	
		Speed(H-M-L)			r/min	(1070±40/)970±40/900±40/820±50r/min	
		Fan motor output power			kW	0.18	
		Air-flow(H-M-L)			m³/h	1470/1300/1100	
	Heat exchanger	Type / Diameter			mm	inner grooved type/φ7	
		Total Area			m²	0.49	
		Temp. scope			℃	2-7	
	Dimension	External	（L×W×H）		mm×mm×mm	990*650*300	
		Package	（L×W×H）		mm×mm×mm	1167*860*345	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 32/26	
	Control type (Remote /wired)					wired	
	Fresh air hole dimension				mm	150	
	Electricity Heater				kW	0	
	Noise level (H-M-L)				dB(A)	(47)43/40/38	
	Static pressure				Pa	50	
	Weight (Net / Shipping)				kg / kg	39/40.4	

item				Model	AD282AHEAA	
Function					cooling	heating
with AU282AHEAA	Capacity			BTU/h	28000	31000
	Capacity			kW	8.5	9.1
	Sensible heat ratio				0.72	/
	Total power input			W	2950	2830
	Max. power input			W	3500W	3500W
	EER or COP			W/W	2.88	3.22
	Dehumidifying capacity			10 - ³×m³/h	1.8	
	Running /Max.Running current			A / A	12.7A/15.5A	12.3A/15.5A
with AU28NAHEAA	Capacity			BTU/h	27500	29000
	Capacity			kW	8	8.5
	Sensible heat ratio				0.72	
	Total power input			W	2950	2820
	Max. power input			W	3500	3500
	EER or COP			W/W	2.71	3.01
	Dehumidifying capacity			10 - ³×m³/h	1.8	
	Running /Max.Running current			A / A	4.8A/5.6A	4.8A/5.6A
Indoor unit	Unit model (color)				AD282AHEAA(grey)	
	Fan	Type × Number			Centrifugal fan*2	
		Speed(H-M-L)		r/min	1270+30/1130+40/970+50	
		Fan motor output power		kW	0.15	
		Air-flow(H-M-L)		m³/h	1470/1300/1100(100 Pa Static pressure)	
	Heat exchanger	Type / Diameter		mm	inner grooved type/φ9.52	
		Total Area		m²	0.45	
		Temp. scope		℃	2-7	
	Dimension	External	(L×W×H)	mm×mm×mm	820*830*350	
		Package	(L×W×H)	mm×mm×mm	940*1050*420	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 32/26	
	Control type (Remote /wired)				wired	
	Electricity Heater			kW	0	
	Noise level (H-M-L)			dB(A)	53/51/49	
	Static pressure			Pa	100	
	Weight (Net / Shipping)			kg / kg	48/58	

item					Model	AD362AMEAA	
Function						cooling	heating
with AU362AIEAA	Capacity				kW	10.5	11
	Sensible heat ratio					0.72	
	Total power input				W	3400	3500
	Max. power input				W	3900	3950
	EER or COP				W/W	3.09	3.15
	Running /Max.Running current				A / A	16.0A/18.5A	16.5A/18.7A
with AU36NAIEAA	Capacity				kW	11	12.5
	Sensible heat ratio					0.72	
	Total power input				W	3650	4300
	Max. power input				W	4700	4800
	EER or COP				W/W	3.01	2.91
	Running /Max.Running current				A / A	6.4A/8.0A	7.3A/8.0A
Indoor unit	Unit model (color)					AD362AMEAA	
	Fan	Type × Number				Centrifugal fan*2	
		Speed(H-M-L)			r/min	1200/1100/1000	
		Fan motor output power			kW	0.16	
		Air-flow(H-M-L)			m³/h	1500/1350/1200	
	Heat exchanger	Type / Diameter			mm	inner grooved type/φ7	
		Total Area			m²	0.53	
		Temp. scope			℃	2-7	
	Dimension	External	（L×W×H）		mm×mm×mm	990/650/300	
		Package	（L×W×H）		mm×mm×mm	1167/860/345	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 26/32	
	Control type (Remote /wired)					wired	
	Electricity Heater				kW	0	
	Noise level (H-M-L)				dB(A)	47/45/43	
	Weight (Net / Shipping)				kg / kg	40/57	

item					Model	AD362ANEAA	
Function						cooling	heating
with AU362ALEAA	Capacity				BTU/h	36000	40000
	Capacity				kW	10.5	11.7
	Sensible heat ratio					70%	
	Total power input				W	3370	3240
	Max. power input				W	4100	4100
	EER or COP				W/W	3.12	3.61
	Running /Max.Running current				A / A	Cooling 15.3A/18.6A	Heating 14.6/18.6A
	Start Current				A	50	
	Class of anti electric shock					CLASS I	CLASS I
	Circuit breaker				A	20	
	Max. operating pressure of heat side				Mpa	4.15	4.15
	Max. operating pressure of cold side				Mpa	4.15	4.15
Indoor unit	Unit model (color)					AD362ANEAA(WHITE)	
	Fan	Type × Number				centrifugal	
		Speed(H-M-L)			r/min	1330/1230/1130/1030	
		Fan motor output power			kW	0.1	
		Air-flow(H-M-L)			m³/h	1700(80pa）	
	Heat exchanger	Type / Diameter			mm	inner grooved/ϕ7	
		Temp. scope			℃	2－7	
	Dimension	External	（L×W×H）		mm×mm×mm	1135×742×270	
		Package	（L×W×H）		mm×mm×mm	1370×820×325	
	Control type (Remote /wired)					wired	
	Noise level (H-M-L)				dB(A)	51/49/47/43	
	Weight (Net / Shipping)				kg / kg	52/55	

item				Model	AD362AHEAA	
Function					cooling	heating
with AU362AIEAA	Capacity			kW	10	11
	Sensible heat ratio				0.72	
	Total power input			W	3550	3650
	Max. power input			W	3900	3950
	EER or COP			W/W	2.8	3.01
	Running /Max.Running current			A / A	16.8A/18.5A	17.5A/18.7A
with AU36NAIEAA	Capacity			kW	10.5	12
	Sensible heat ratio				0.72	
	Total power input			W	3880	4200
	Max. power input			W	4700	4800
	EER or COP			W/W	2.71	2.86
	Running /Max.Running current			A / A	6.7A/8.0A	6.8A/8.0A
Indoor unit	Unit model (color)				AD362AHEAA	
	Fan	Type × Number			Centrifugal fan*2	
		Speed(H-M-L)		r/min	1350/1250/1050	
		Fan motor output power		kW	0.2	
		Air-flow(H-M-L)		m³/h	1500/1350/1200	
	Heat exchanger	Type / Diameter		mm	inner grooved type/φ7	
		Total Area		m²	0.53	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	820/830/350	
		Package	（L×W×H）	mm×mm×mm	940/1050/420	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 32/26	
	Control type (Remote /wired)				wired	
	Electricity Heater			kW	0	
	Noise level (H-M-L)			dB(A)	53	
	Weight (Net / Shipping)			kg / kg	48/58	

item				Model	AD422ANEAA	
Function					cooling	heating
Capacity				BTU/h	42000	45000
Capacity				kW	12.3	13.2
Sensible heat ratio					70%	
Total power input				W	4850	4800
Max. power input				W	6200	6200
EER or COP				W/W	2.54	2.75
Dehumidifying capacity				10 - ³×m³/h	4.0	
Running /Max.Running current				A / A	Cooling 8.7A/10.1A Heating 8.7/10.1A	
Start Current				A	50	
Class of anti electric shock					CLASS I	CLASS I
Circuit breaker				A	20	
Max. operating pressure of heat side				Mpa	4.15	4.15
Max. operating pressure of cold side				Mpa	4.15	4.15
Indoor unit	Unit model (color)				AD422ANEAA(WHITE)	
	Fan	Type × Number			centrifugal	
		Speed(H-M-L)		r/min	1330/1230/1130/1030	
		Fan motor output power		kW	0.1	
		Air-flow(H-M-L)		m³/h	1700(80pa）	
	Heat exchanger	Type / Diameter		mm	inner grooved/φ7	
		Temp. scope		℃	2－7	
	Dimension	External	（L×W×H）	mm×mm×mm	1135×742×270	
		Package	（L×W×H）	mm×mm×mm	1370×820×325	
	Control type (Remote /wired /model)				wired	
	Noise level (H-M-L)			dB(A)	51/49/47/43	
	Weight (Net / Shipping)			kg / kg	52/55	

item				Model	AD482AMEAA	
Function					cooling	heating
Capacity				kW	14.06	17.5
Sensible heat ratio					0.72	
Total power input				W	4600	4800
Max. power input				W	5500	6000
EER or COP				W/W	3.06（B）	3.65（A）
Dehumidifying capacity				10 - ³×m³/h	4.8	
Running /Max.Running current				A / A	8.0A/9.5A	8.5A/10.5A
Start Current				A	65	65
Indoor unit	Unit model (color)				grey	
	Fan	Type × Number			centrifugal fanX3	
		Fan motor output power		kW	0.06	
		Air-flow(H-M-L)		m³/h	2040/1800/1600m³/h	
	Heat exchanger	Type / Diameter		mm	TP2M/9.52	
		Total Area		m²	0.10	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1410/635/350	
		Package	（L×W×H）	mm×mm×mm	1580/815/400	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 26/32	
	Control type (Remote /wired)				wired	
	Noise level (H-M-L)			dB(A)	48/-/44	
	Weight (Net / Shipping)			kg / kg	55/60	

item				Model	AD482ANEAA	
Function					cooling	heating
Capacity				kW	13.5	14.5
Total power input				W	4600	4800
Max. power input				W	5500	6000
EER or COP				W/W	2.93（C）	3.02（D）
Dehumidifying capacity				10 - ³×m³/h	4.8	
Power cable					H05RN-F 4G 4.0mm2	
Running /Max.Running current				A / A	7.5A/9A	7.6A/10A
Start Current				A	65	65
Indoor unit	Unit model (color)				AD482ANEAA（grey）	
	Fan	Type × Number			centrifugal X2	
		Speed(H-M-L)		r/min	1330* 1230*1130*1030	
		Air-flow(H-M-L)		m³/h	1700m3/h	
	Heat exchanger	Type / Diameter		mm	TP2M/7	
		Total Area		m²	0.30	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1135×742×270	
		Package	（L×W×H）	mm×mm×mm	1356/870/380	
	Drainage pipe (material , I.D./O.D.)			mm	35/39	
	Control type (Remote /wired)				wired	
	Electricity Heater			kW	optional	
	Noise level (H-M-L)			dB(A)	51/49/47/43	
	Weight (Net / Shipping)			kg / kg	52/55	

item				Model	AD482AHEAA	
Function					cooling	heating
Capacity				kW	13.5	17.5
Sensible heat ratio					0.72	
Total power input				W	4600	4700
Max. power input				W	5500	6000
EER or COP				W/W	2.96（C）	3.72（A）
Dehumidifying capacity				10 - ³×m³/h	4.2	
Running /Max.Running current				A / A	8.0A/9.5A	8.5A/10.5A
Start Current				A	65	65
Indoor unit	Unit model (color)				AD482AHEAA（grey）	
	Fan	Type × Number			centrifugal fan X2	
		Speed(H-M-L)		r/min	1090±30/-/930±50	
		Fan motor output power		kW	0.06	
		Air-flow(H-M-L)		m³/h	2580/-/1560	
	Heat exchanger	Type / Diameter		mm	TP2M/9.52	
		Total Area		m²	0.10	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1197×830×350	
		Package	（L×W×H）	mm×mm×mm	1430×940×420	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 26/32	
	Control type (Remote /wired)				wired	
	Noise level (H-M-L)			dB(A)	50/46/42	
	Weight (Net / Shipping)			kg / kg	62/70	

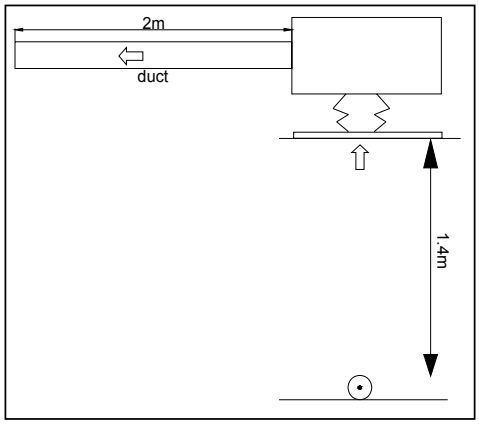
item				Model	AD602AHEAA	
Function					cooling	heating
Capacity				kW	16.1	18.7
Sensible heat ratio					0.72	
Total power input				W	5350W	5100W
Max. power input				W	6200W	6000W
EER or COP				W/W	3.01(B)	3.67(A)
Dehumidifying capacity				10 - ³×m³/h	4.8	
Running /Max.Running current				A / A	9.5A/10.5A	9.0A/10
Start Current				A	65	65
Indoor unit	Unit model (color)				AD602AHEAA（grey）	
	Fan	Type × Number			centrifugal X2	
		Speed(H-M-L)		r/min	1090±30/-/930±50	
		Fan motor output power		kW	0.06	
		Air-flow(H-M-L)		m³/h	2580/2070/1560	
	Heat exchanger	Type / Diameter		mm	TP2M/9.52	
		Total Area		m²	0.10	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1197×830×350	
		Package	（L×W×H）	mm×mm×mm	1430×940×420	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 26/32	
	Control type (Remote /wired)				wired control	
	Noise level (H-M-L)			dB(A)	50/46/42	
	Weight (Net / Shipping)			kg / kg	62/70	

item				Model	AD722AHEAA	
Function					cooling	heating
Capacity				kW	24000	26000
Total power input				W	7060	7000
Max. power input				W	8800	8800
EER or COP				W/W	3.41（A）	3.71（A）
Dehumidifying capacity				10 - ³×m³/h	7.5	
Power cable					H05RN-F 4G 4.0mm2	
Running /Max.Running current				A / A	12A/15A	12A/15A
Start Current				A	65	65
Indoor unit	Unit model (color)				AD722AHEAA（grey）	
	Fan	Type × Number			centrifugal X4	
		Speed(H-M-L)		r/min	1300±50/1150±50 /930±50	
		Fan motor output power		kW	0.08	
		Air-flow(H-M-L)		m³/h	4000	
	Heat exchanger	Type / Diameter		mm	TP2M/9.52	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1570×840×360	
		Package	（L×W×H）	mm×mm×mm	1800×1051×510	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 26/32	
	Control type (Remote /wired)				wired	
	Electricity Heater			kW	optional	
	Noise level (H-M-L)			dB(A)	60/-	
	Weight (Net / Shipping)			kg / kg	92/100	

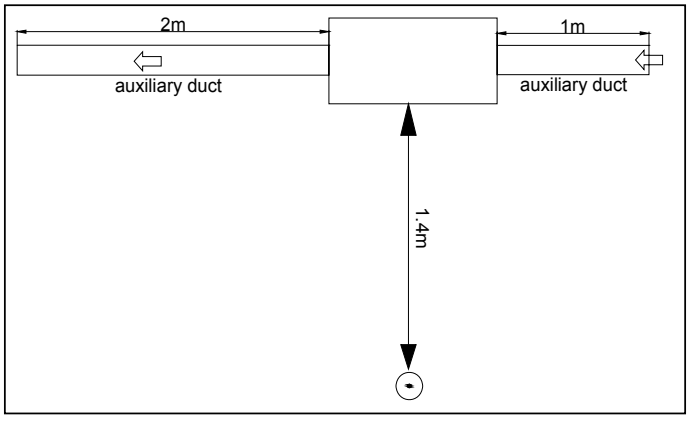
Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level. The detailed method please refer to the following information:

Installation state: the unit should be placed on the flat floor or be mounted in horizontal direction.
Testing method:

duct unit without auxiliary duct:



duct unit with auxiliary duct:

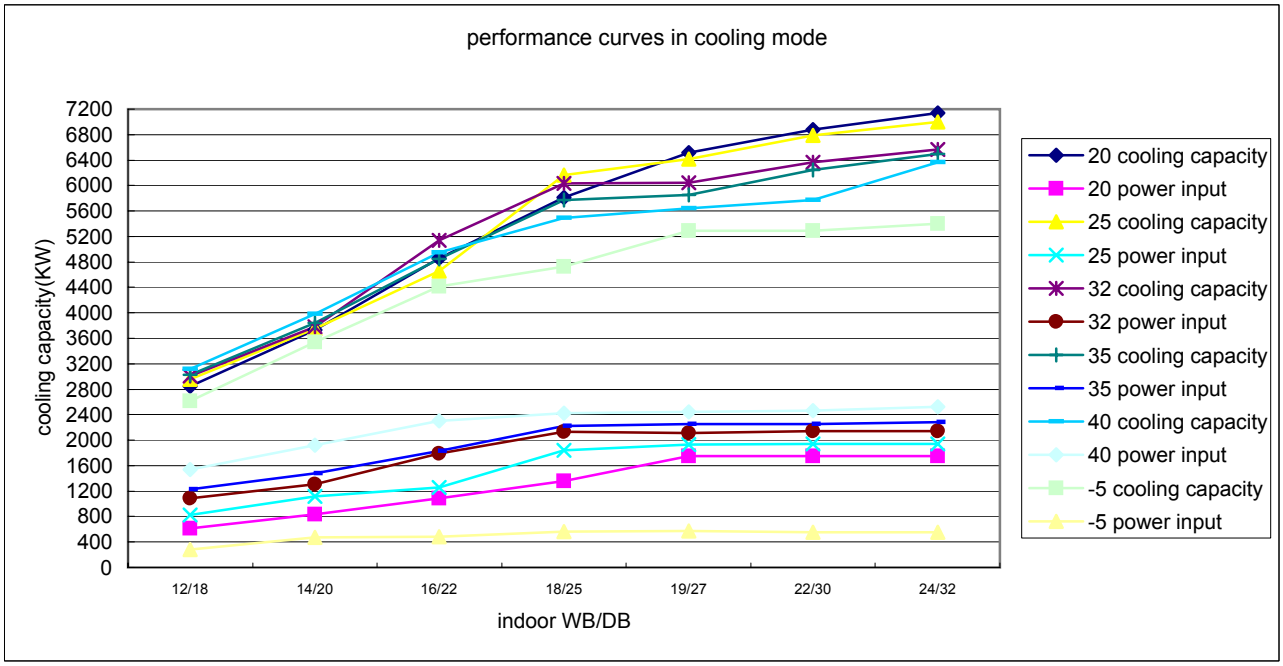


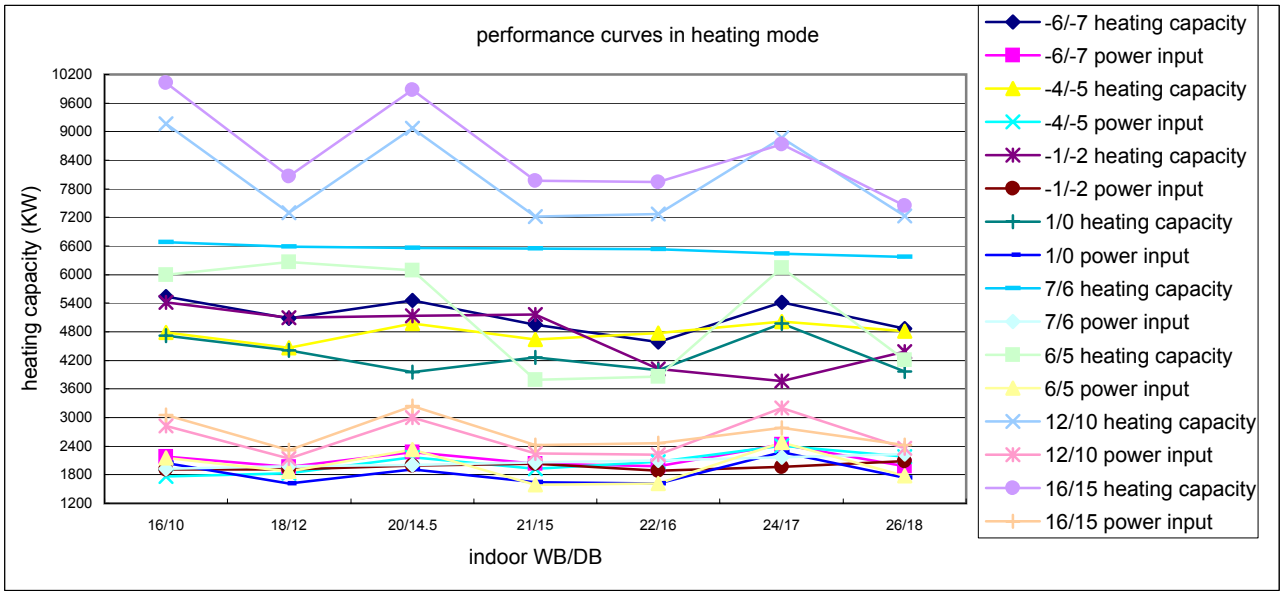
Note: ⊙ is the real time analyser position

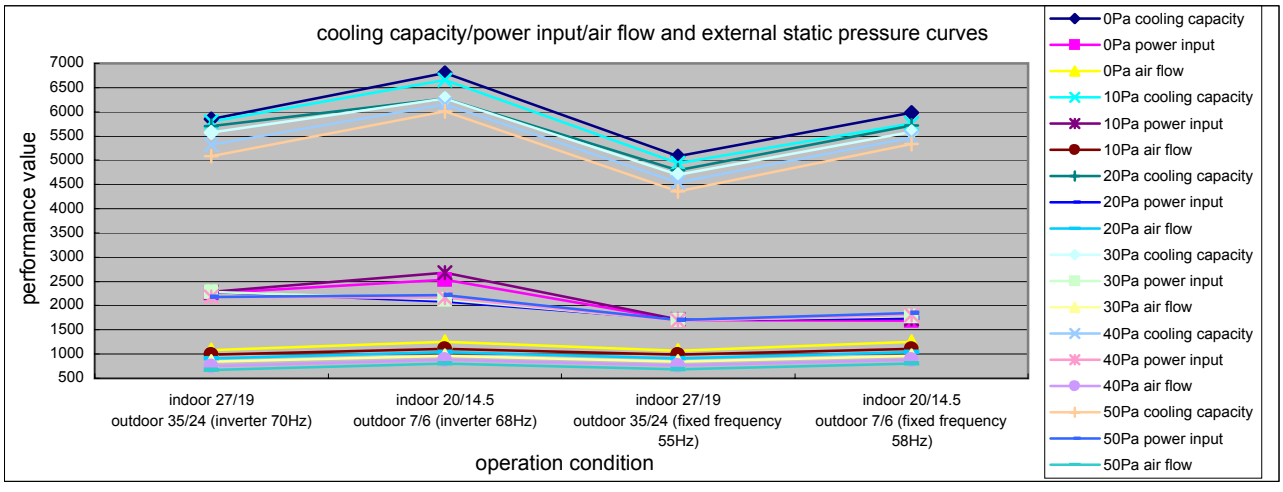
3. Curves

3.1 Performance curves

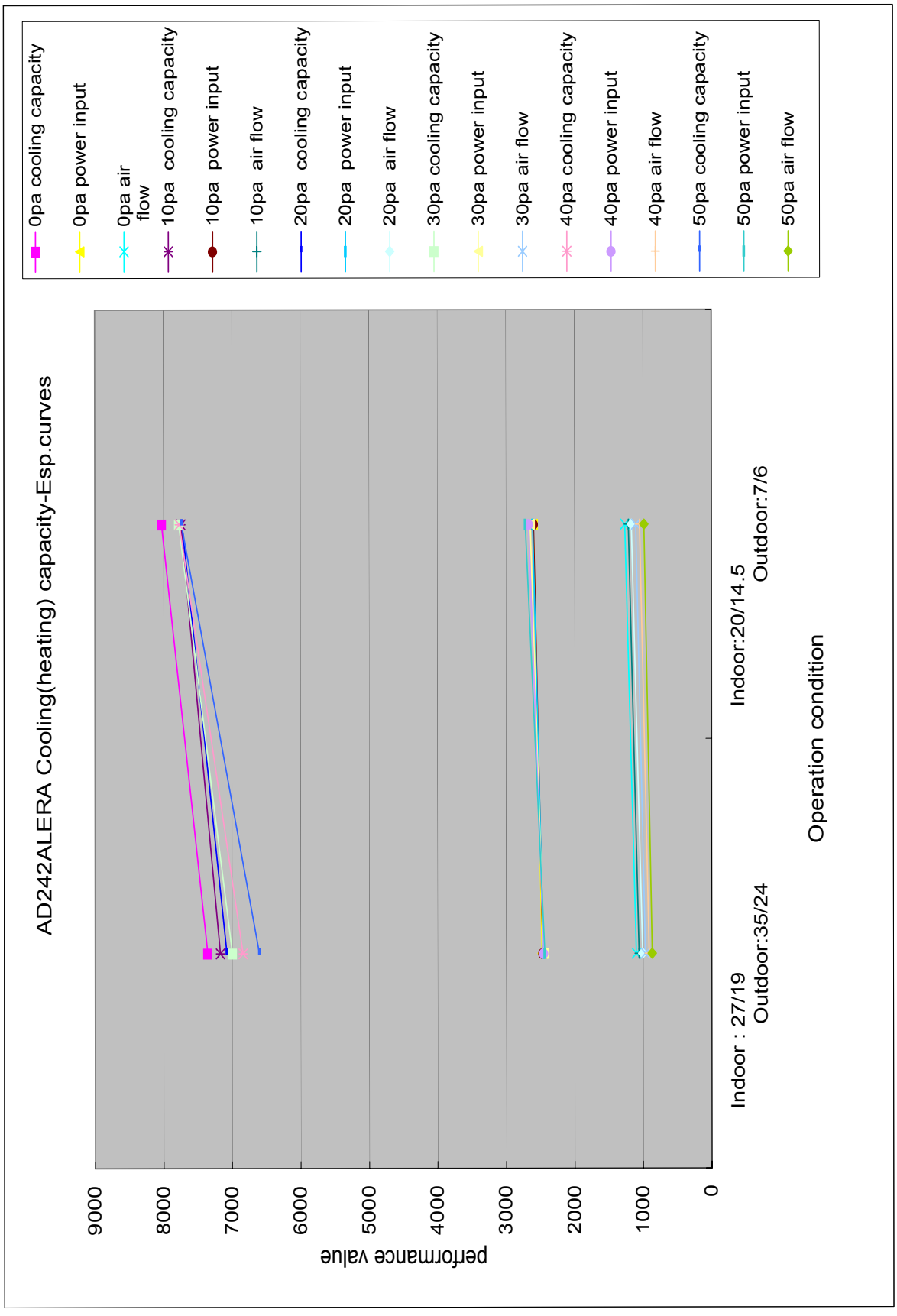
AD182AMERA

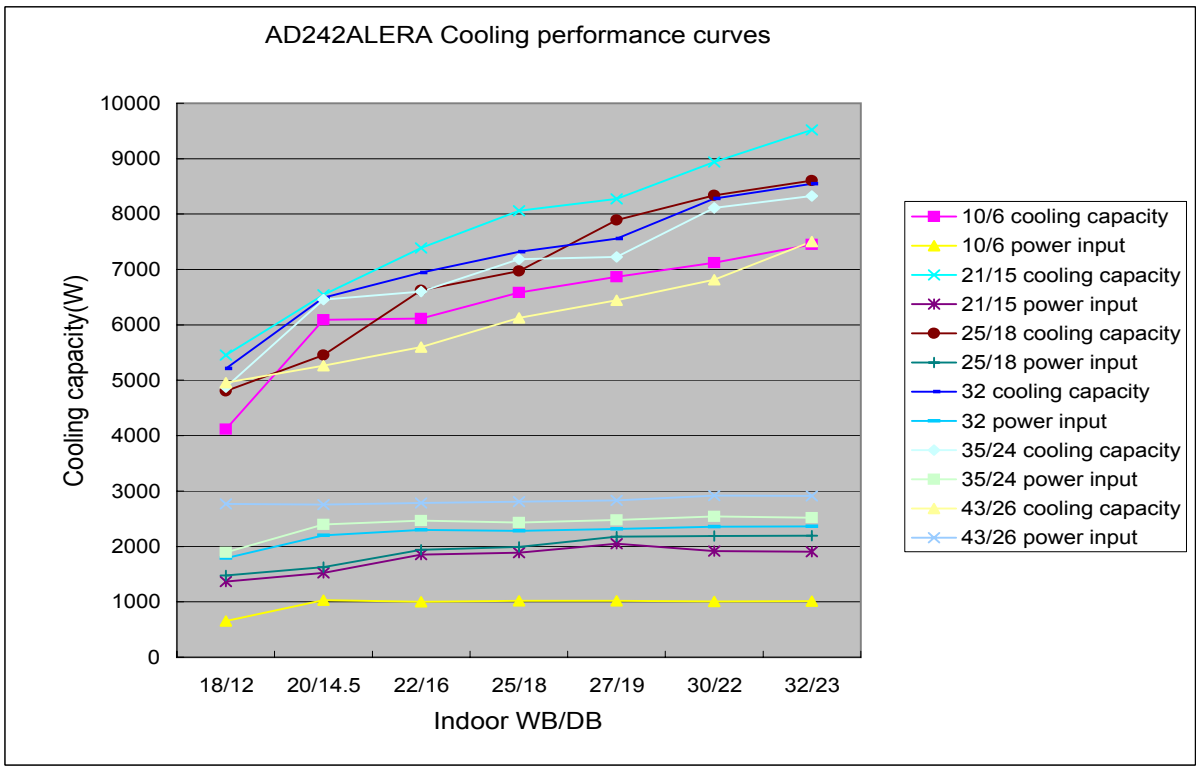


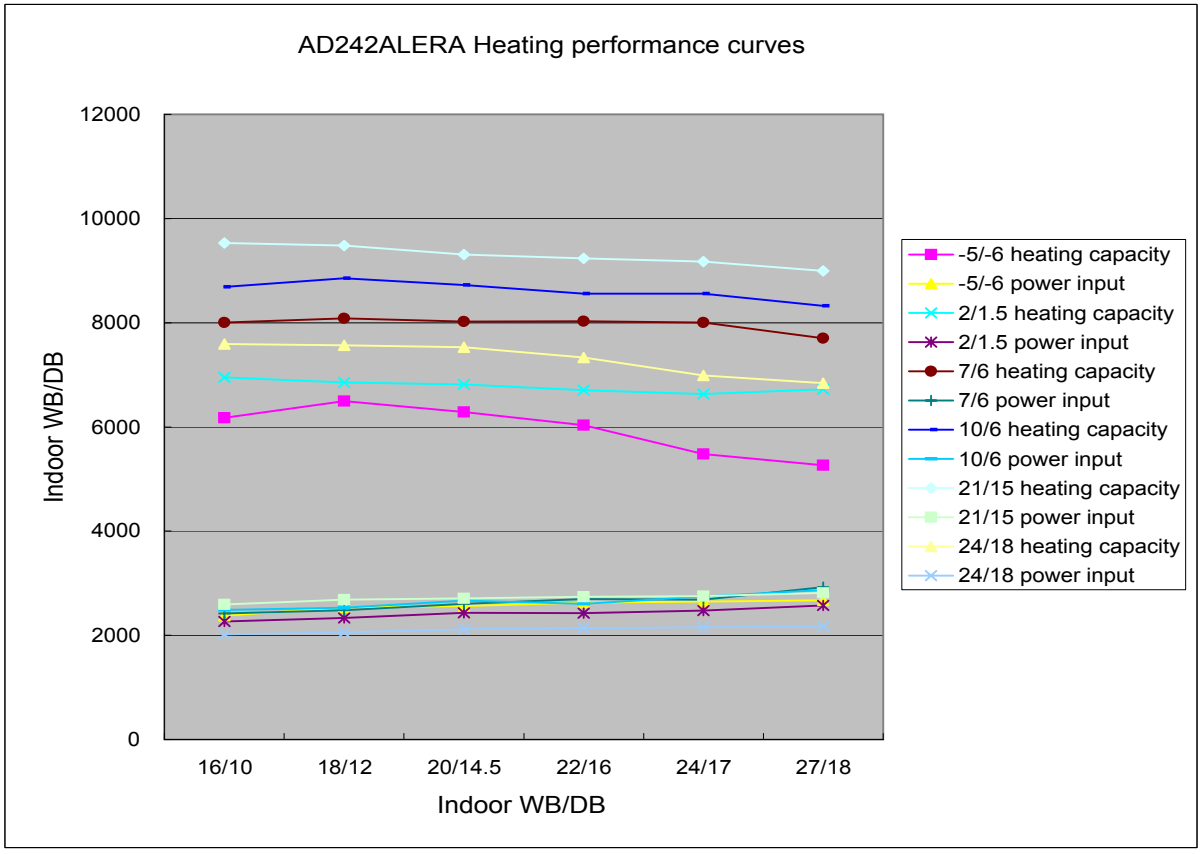




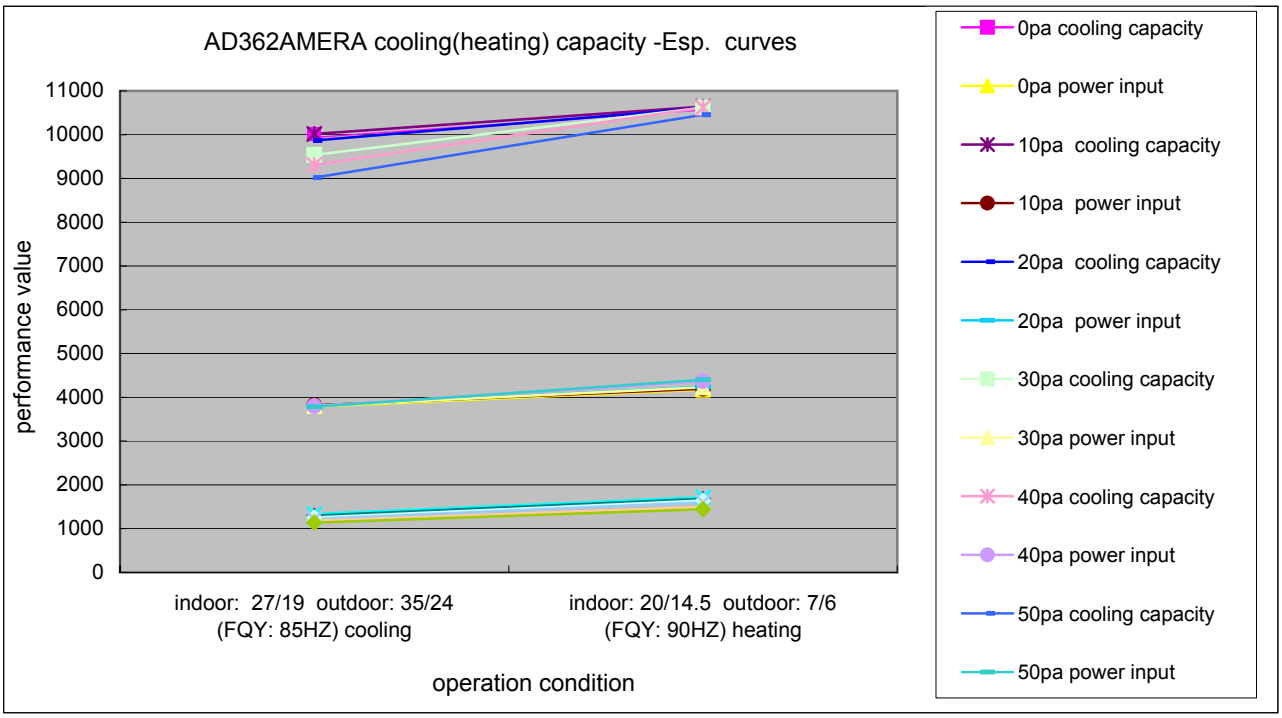
AD242ALERA


0pa cooling capacity
0pa power input
0pa air flow
10pa cooling capacity
10pa power input
10pa air flow
20pa cooling capacity
20pa power input
20pa air flow
30pa cooling capacity
30pa power input
30pa air flow
40pa cooling capacity
40pa power input
40pa air flow
50pa cooling capacity
50pa power input
50pa air flow
AD242ALERA Cooling(heating) capacity-Esp.curves
performance value
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Operation condition
Indoor:20/14.5
Outdoor:7/6
Indoor : 27/19
Outdoor:35/24

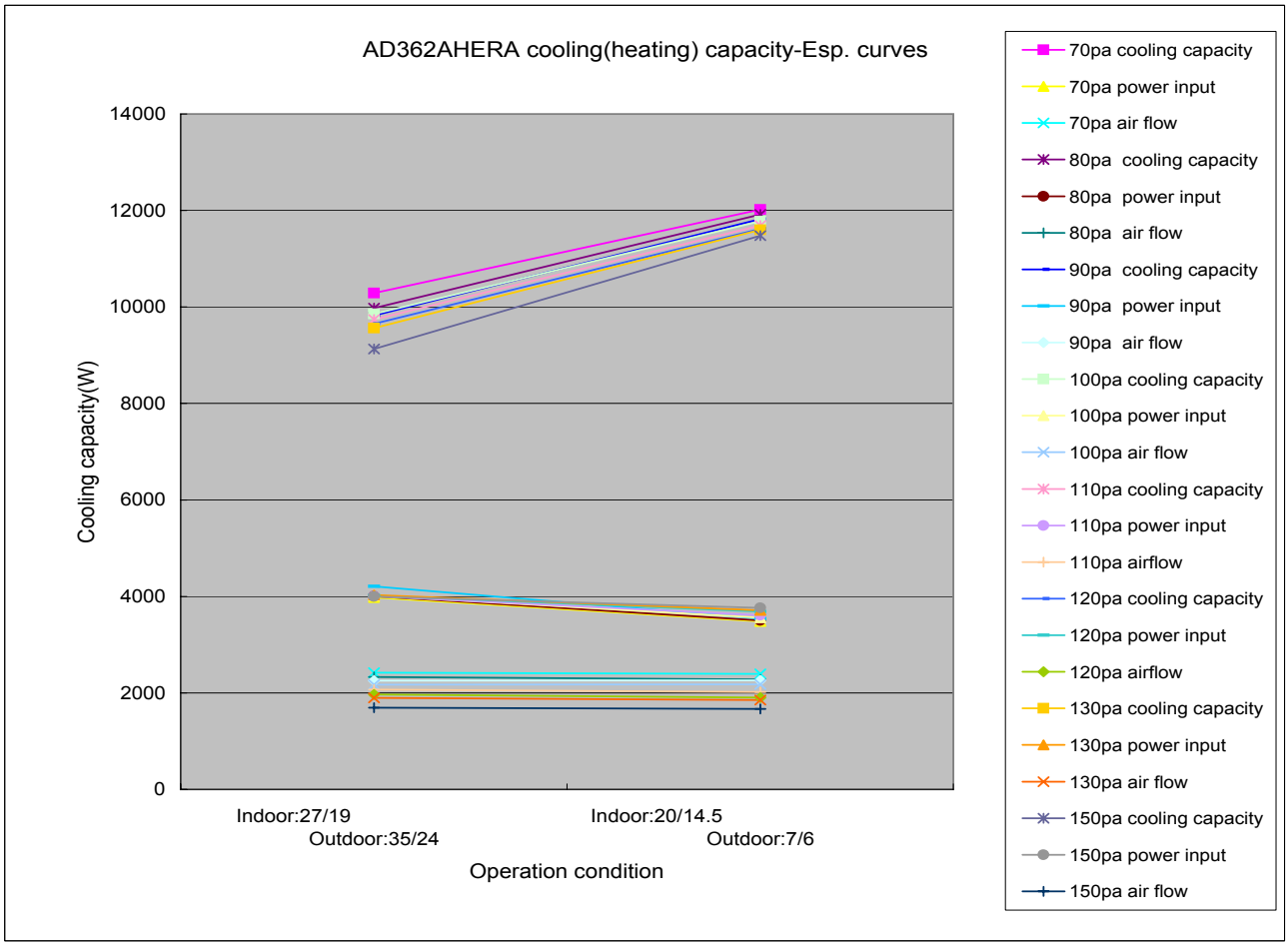

AD242ALERA Cooling performance curves
Cooling capacity(W)
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
18/12
20/14.5
22/16
25/18
27/19
30/22
32/23
Indoor WB/DB
10/6 cooling capacity
10/6 power input
21/15 cooling capacity
21/15 power input
25/18 cooling capacity
25/18 power input
32 cooling capacity
32 power input
35/24 cooling capacity
35/24 power input
43/26 cooling capacity
43/26 power input

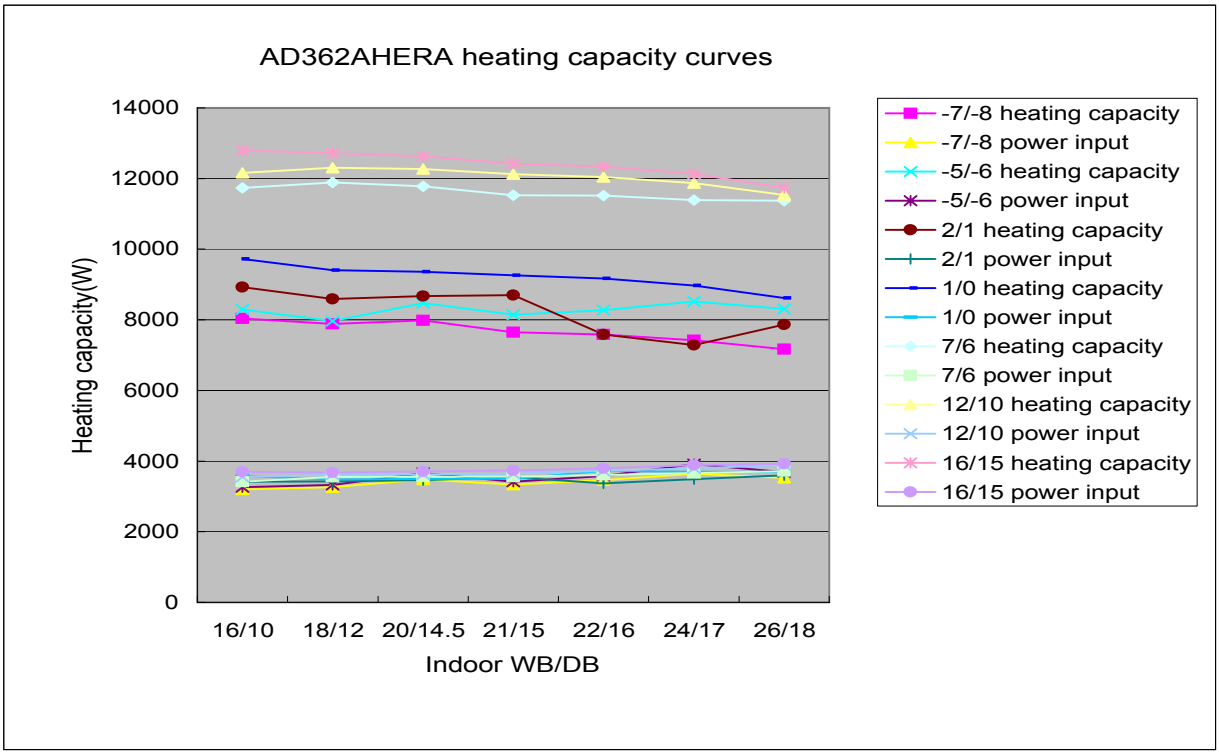

AD242ALERA Heating performance curves
Indoor WB/DB
12000
10000
8000
6000
4000
2000
0
16/10
18/12
20/14.5
22/16
24/17
27/18
Indoor WB/DB
-5/-6 heating capacity
-5/-6 power input
2/1.5 heating capacity
2/1.5 power input
7/6 heating capacity
7/6 power input
10/6 heating capacity
10/6 power input
21/15 heating capacity
21/15 power input
24/18 heating capacity
24/18 power input

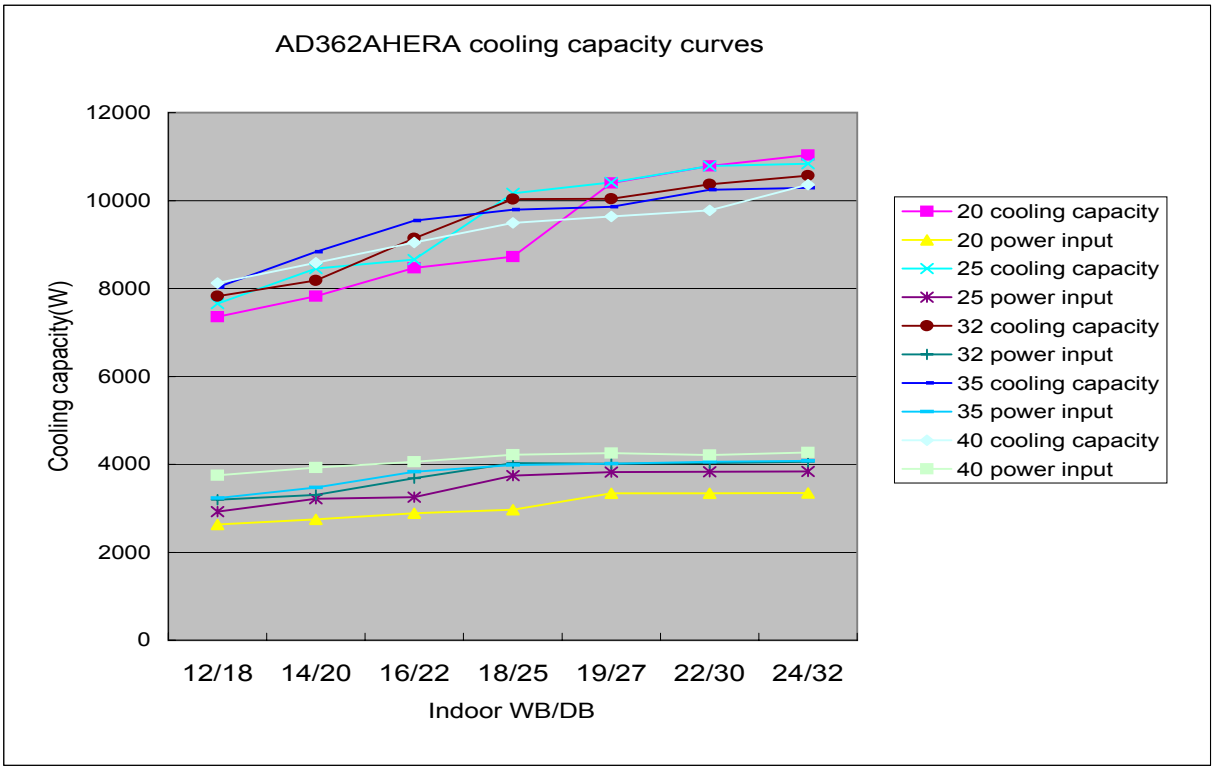
AD362AMERA

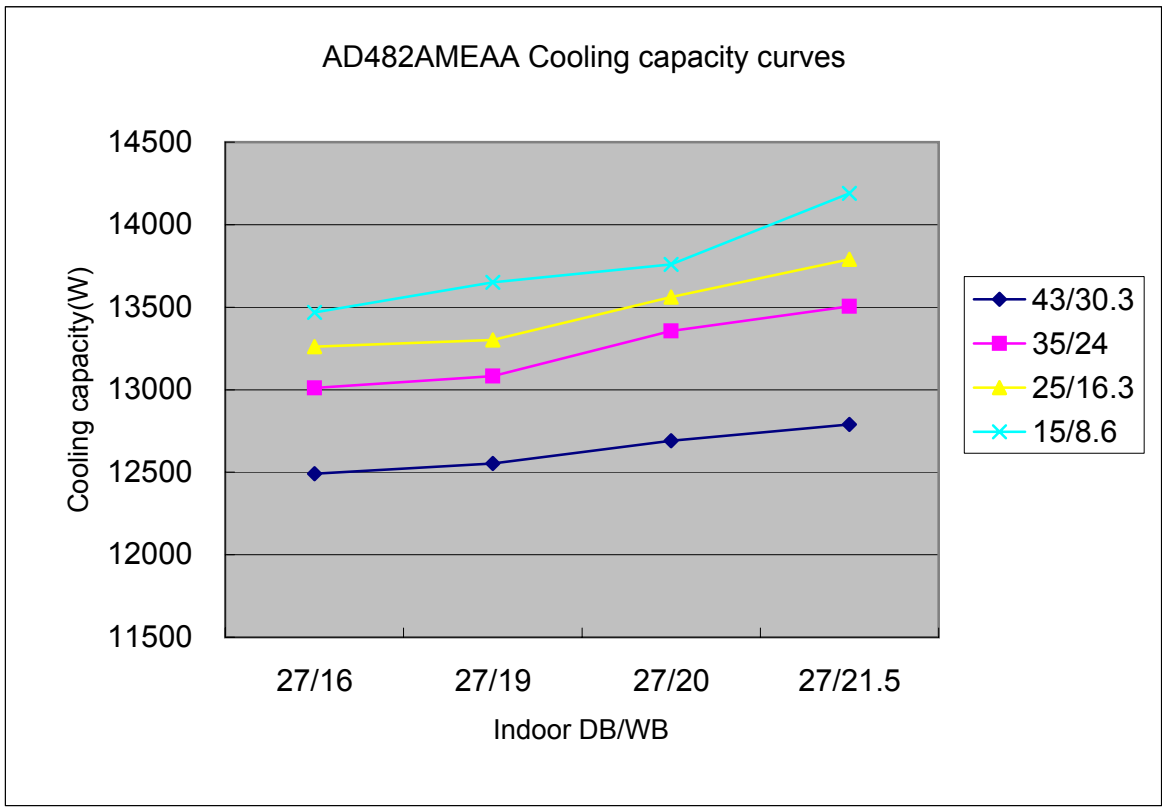


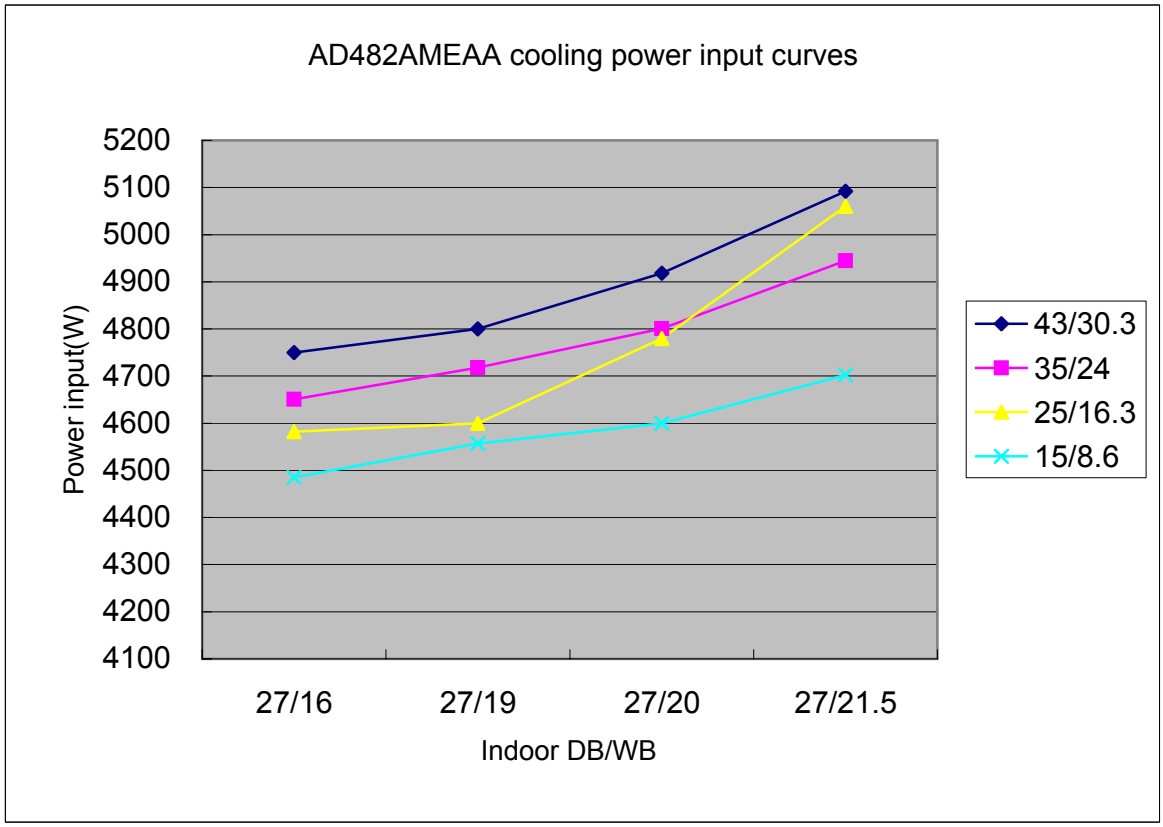
AD362AHERA

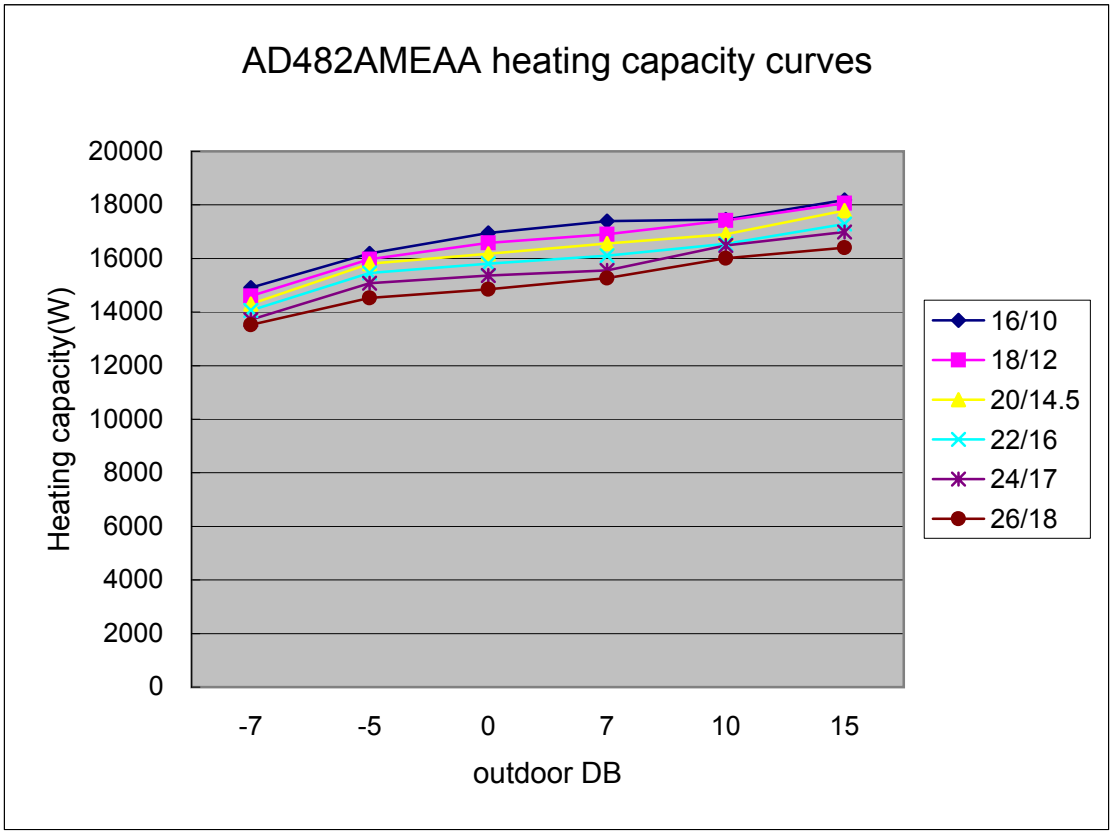


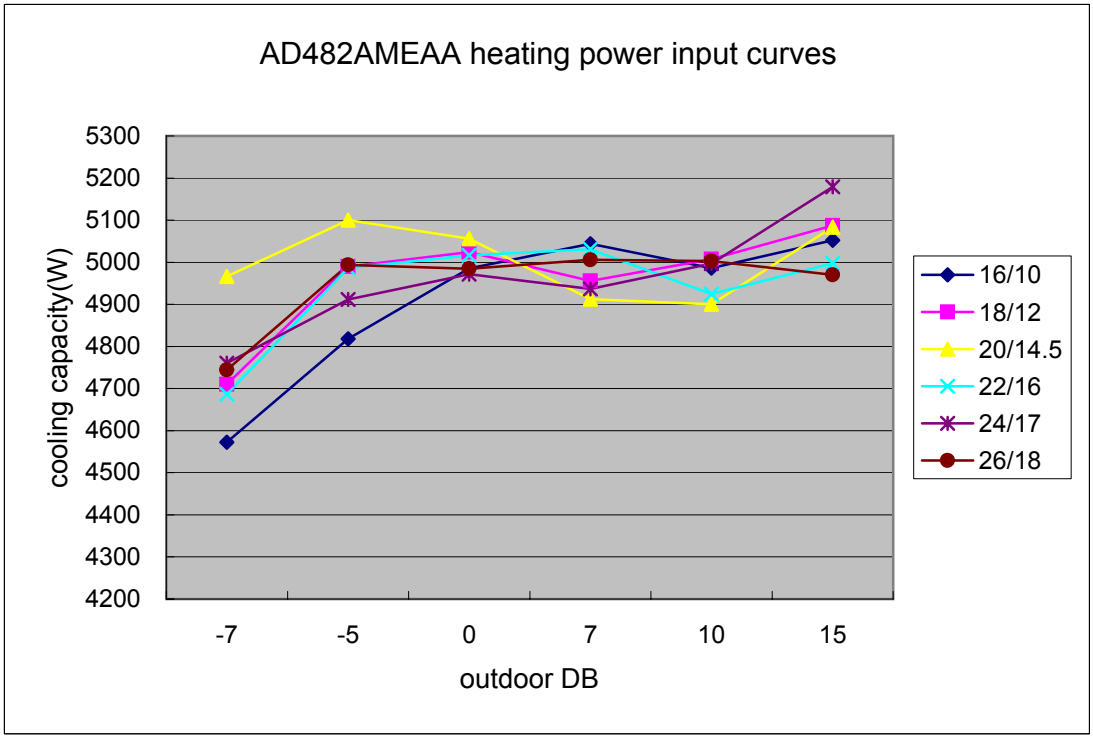

AD362AHERA heating capacity curves
Heating capacity(W)
14000
12000
10000
8000
6000
4000
2000
0
16/10
18/12
20/14.5
21/15
22/16
24/17
26/18
Indoor WB/DB
-7/-8 heating capacity
-7/-8 power input
-5/-6 heating capacity
-5/-6 power input
2/1 heating capacity
2/1 power input
1/0 heating capacity
1/0 power input
7/6 heating capacity
7/6 power input
12/10 heating capacity
12/10 power input
16/15 heating capacity
16/15 power input

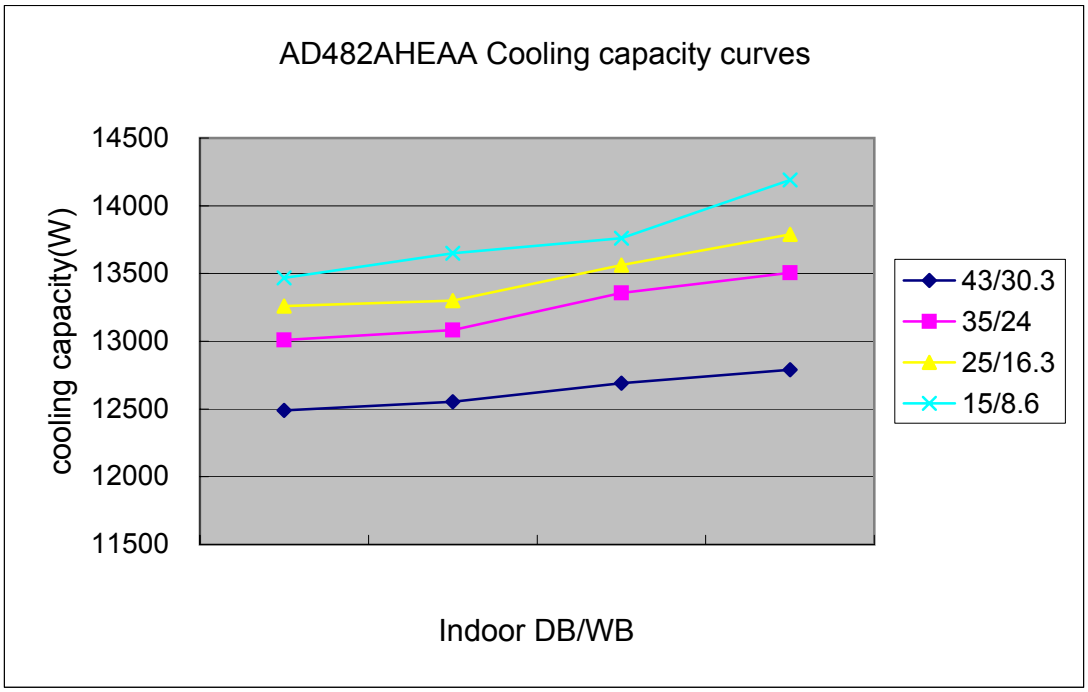

AD362AHERA cooling capacity curves
Cooling capacity(W)
12000
10000
8000
6000
4000
2000
0
12/18
14/20
16/22
18/25
19/27
22/30
24/32
Indoor WB/DB
20 cooling capacity
20 power input
25 cooling capacity
25 power input
32 cooling capacity
32 power input
35 cooling capacity
35 power input
40 cooling capacity
40 power input

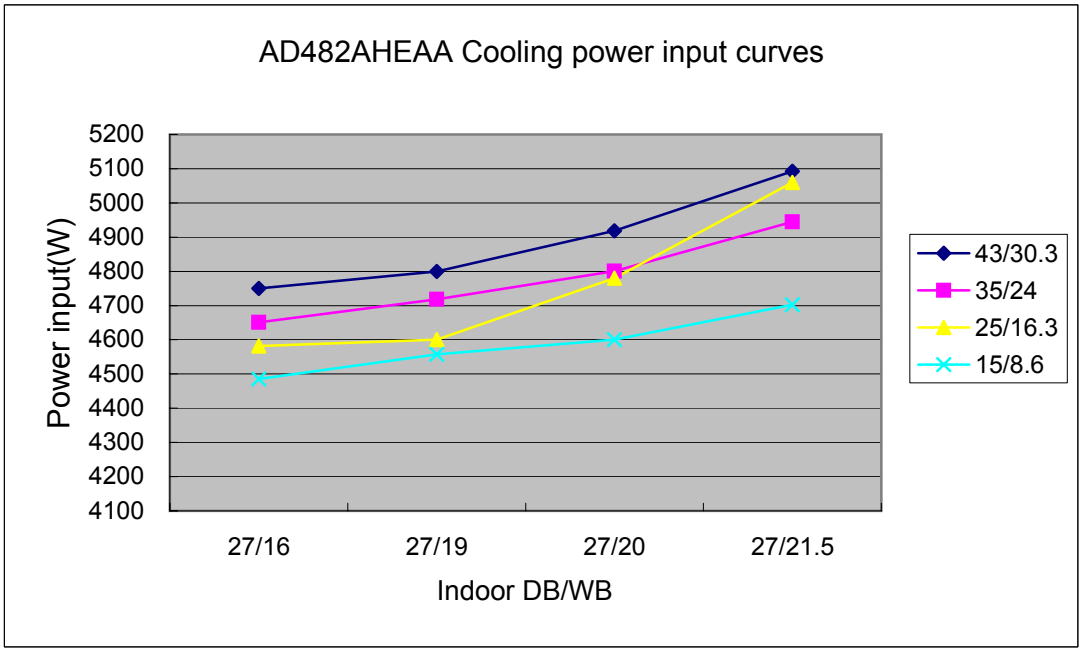

AD482AMEAA Cooling capacity curves
Cooling capacity(W)
14500
14000
13500
13000
12500
12000
11500
27/16
27/19
27/20
27/21.5
Indoor DB/WB
43/30.3
35/24
25/16.3
15/8.6

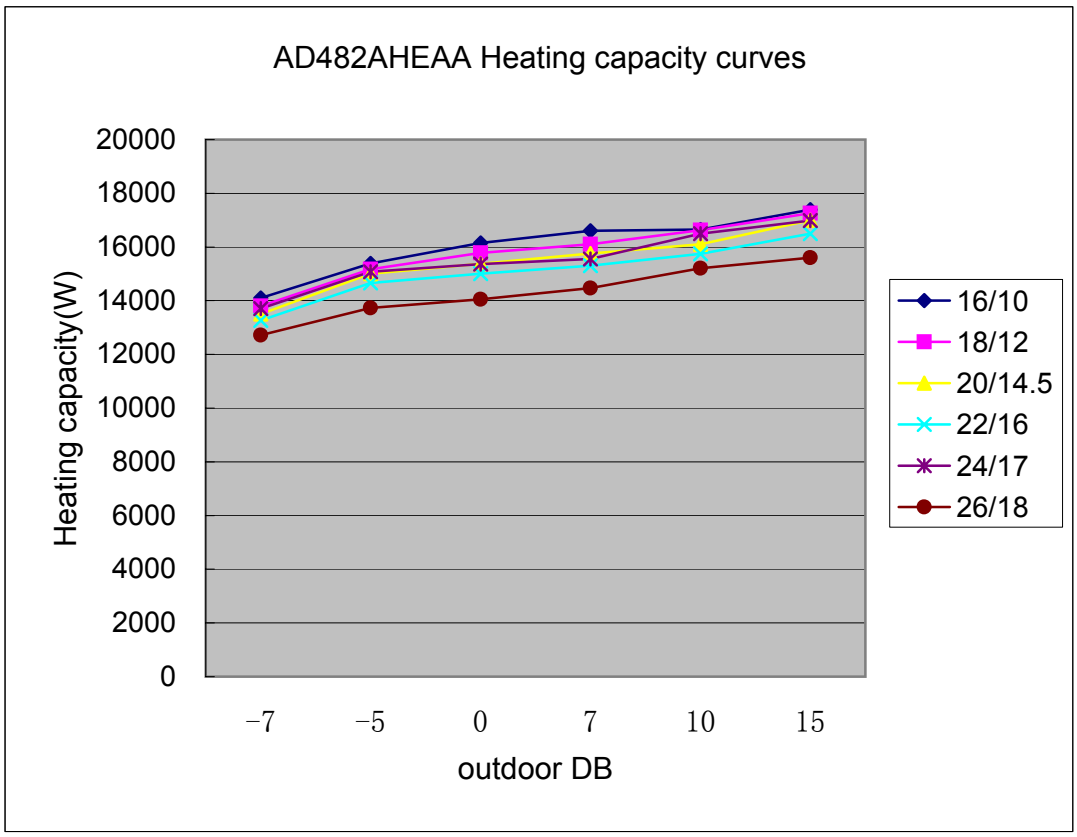

AD482AMEAA cooling power input curves
Power input(W)
5200
5100
5000
4900
4800
4700
4600
4500
4400
4300
4200
4100
27/16
27/19
27/20
27/21.5
Indoor DB/WB
43/30.3
35/24
25/16.3
15/8.6

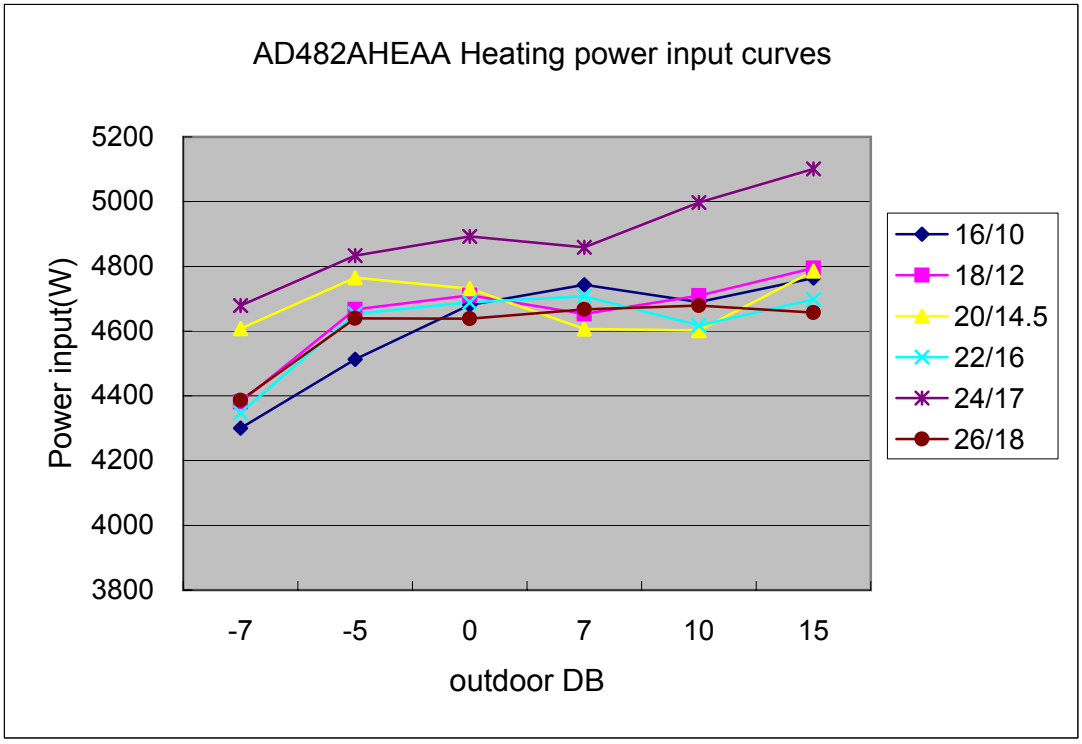

AD482AMEAA heating capacity curves
Heating capacity(W)
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
-7
-5
0
7
10
15
outdoor DB
16/10
18/12
20/14.5
22/16
24/17
26/18

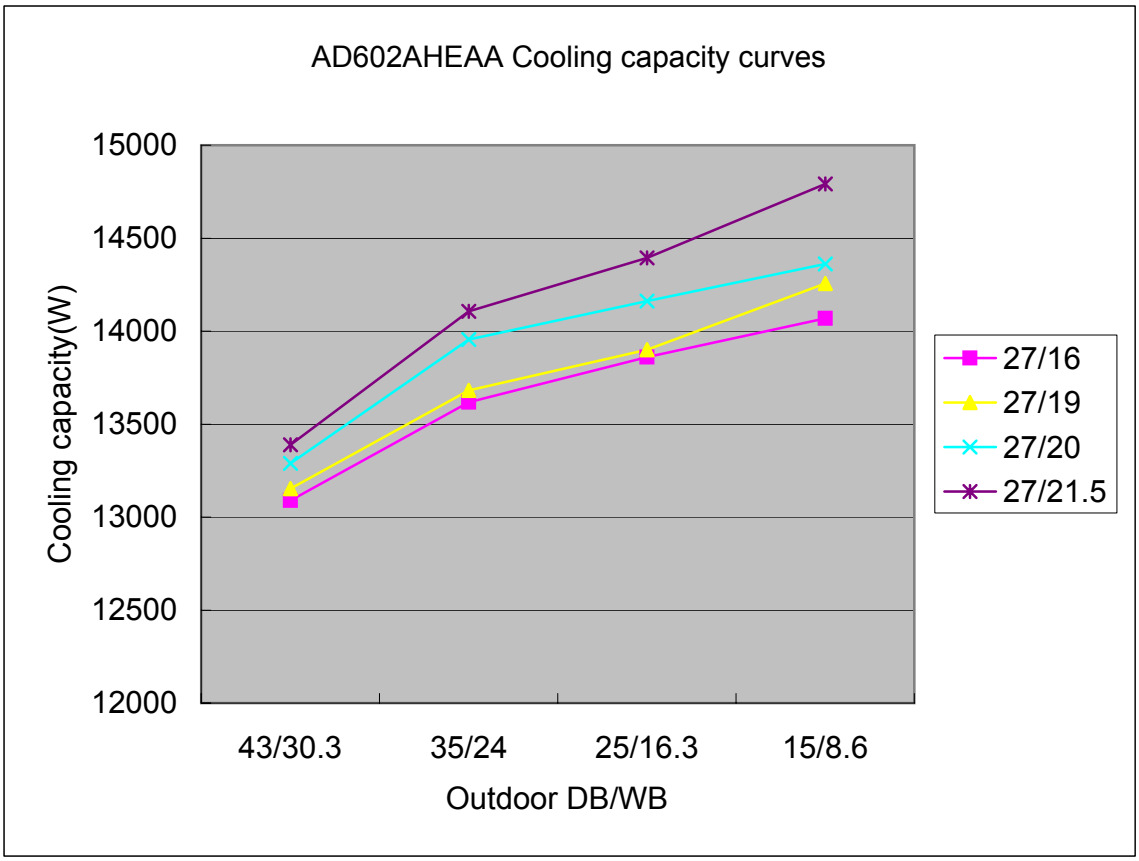

AD482AMEAA heating power input curves
cooling capacity(W)
5300
5200
5100
5000
4900
4800
4700
4600
4500
4400
4300
4200
-7
-5
0
7
10
15
outdoor DB
16/10
18/12
20/14.5
22/16
24/17
26/18

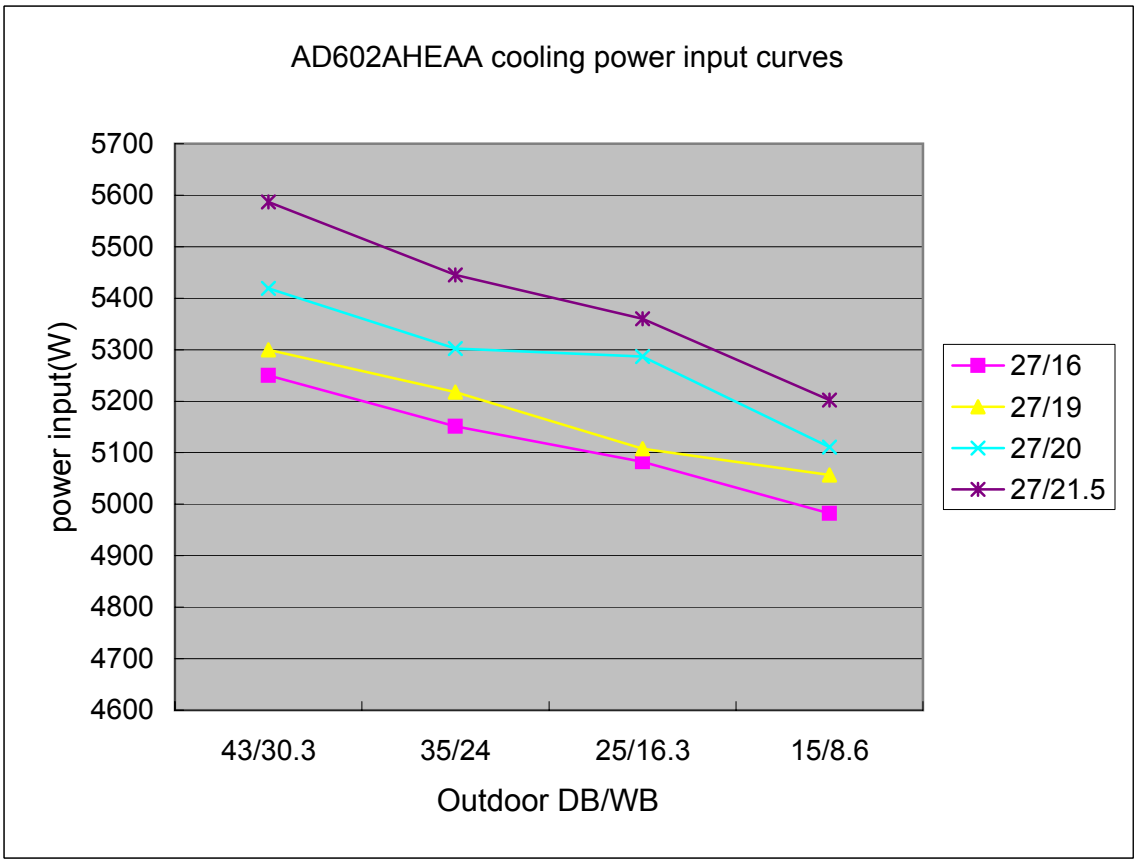

AD482AHEAA Cooling capacity curves
cooling capacity(W)
14500
14000
13500
13000
12500
12000
11500
Indoor DB/WB
43/30.3
35/24
25/16.3
15/8.6

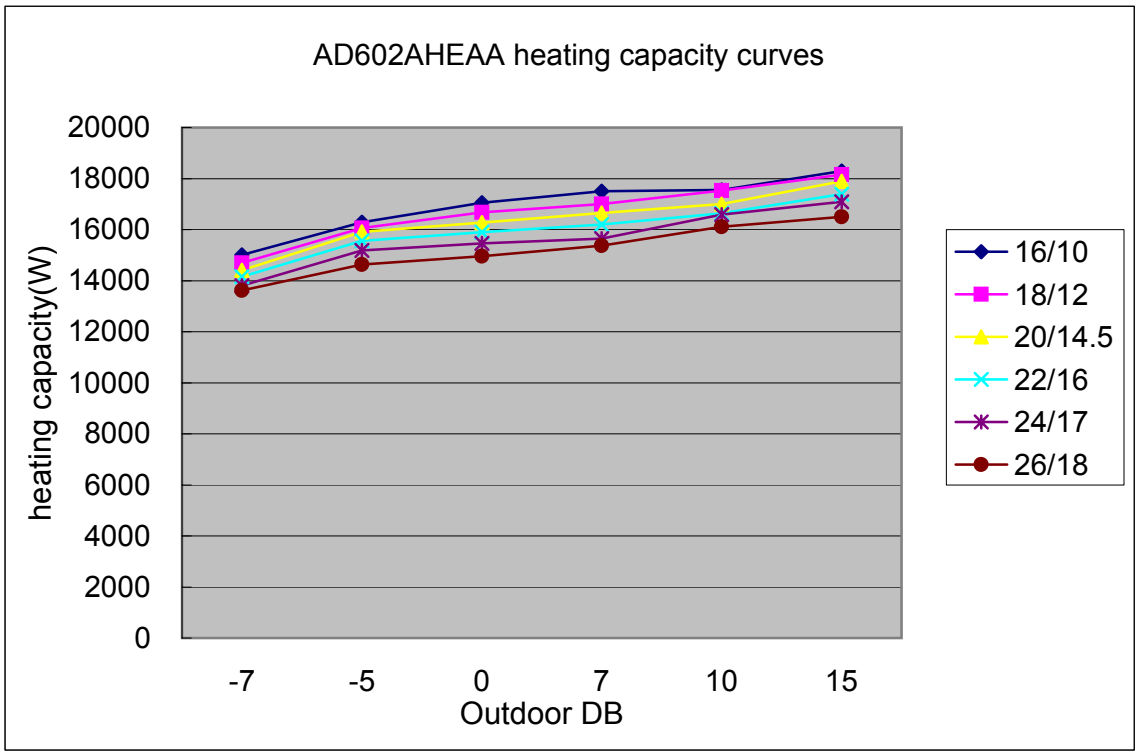

AD482AHEAA Cooling power input curves
Power input(W)
5200
5100
5000
4900
4800
4700
4600
4500
4400
4300
4200
4100
27/16
27/19
27/20
27/21.5
Indoor DB/WB
43/30.3
35/24
25/16.3
15/8.6

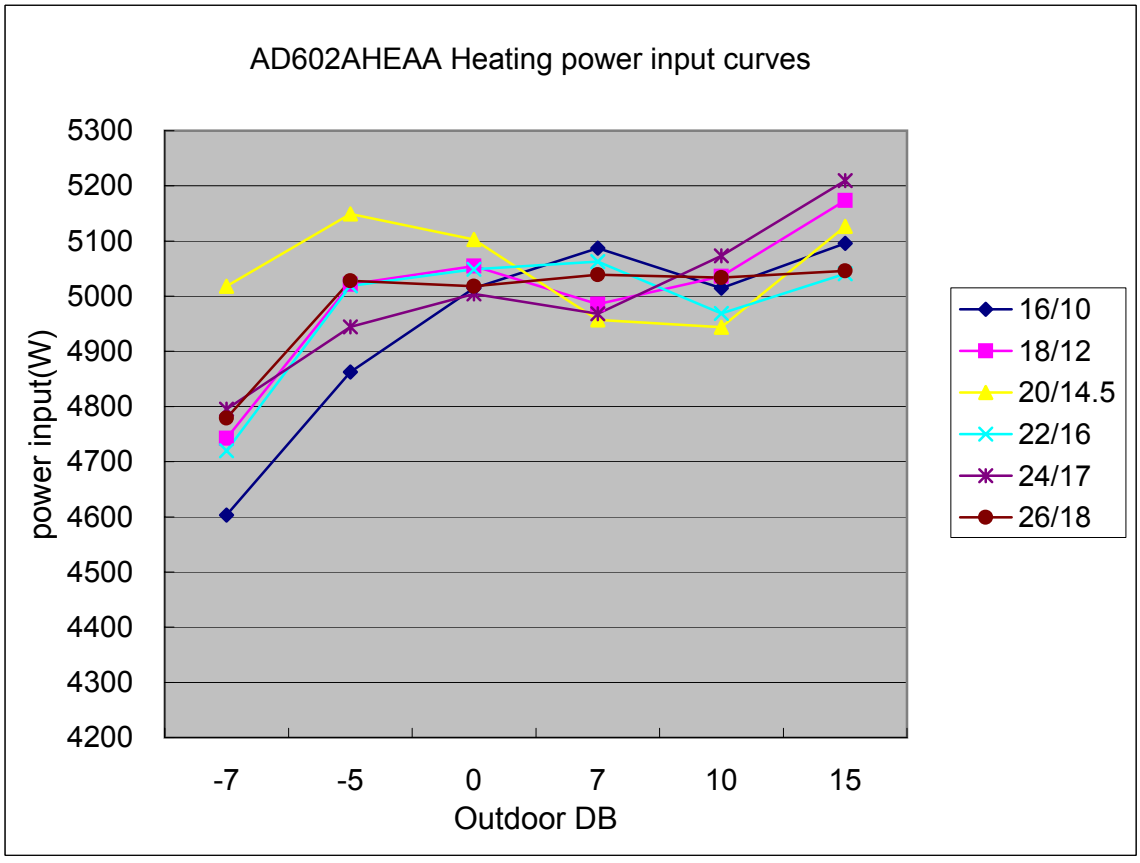

AD482AHEAA Heating capacity curves
Heating capacity(W)
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
-7
-5
0
7
10
15
outdoor DB
16/10
18/12
20/14.5
22/16
24/17
26/18


AD482AHEAA Heating power input curves
Power input(W)
5200
5000
4800
4600
4400
4200
4000
3800
-7
-5
0
7
10
15
outdoor DB
16/10
18/12
20/14.5
22/16
24/17
26/18

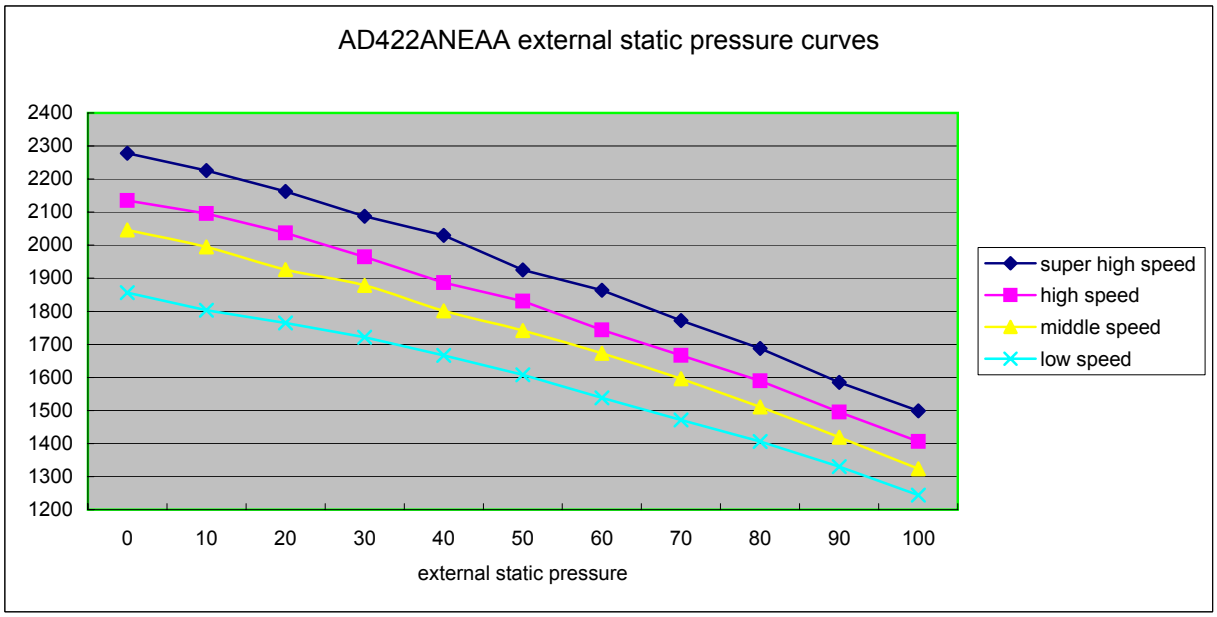

AD602AHEAA Cooling capacity curves
15000
14500
14000
13500
13000
12500
12000
Cooling capacity(W)
43/30.3
35/24
25/16.3
15/8.6
Outdoor DB/WB
27/16
27/19
27/20
27/21.5


AD602AHEAA cooling power input curves
5700
5600
5500
5400
5300
5200
5100
5000
4900
4800
4700
4600
power input(W)
43/30.3
35/24
25/16.3
15/8.6
Outdoor DB/WB
27/16
27/19
27/20
27/21.5


AD602AHEAA heating capacity curves
heating capacity(W)
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
-7
-5
0
7
10
15
Outdoor DB
16/10
18/12
20/14.5
22/16
24/17
26/18

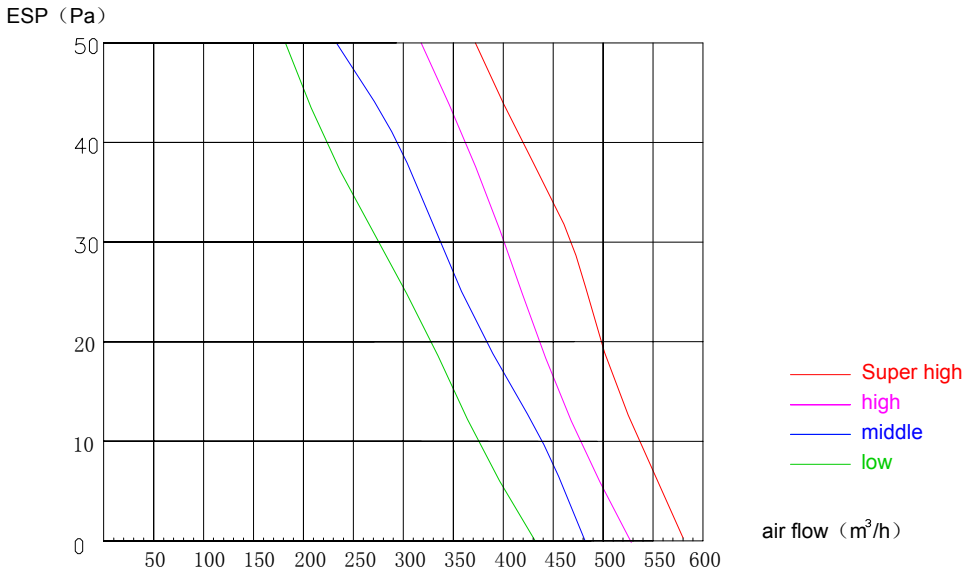

AD602AHEAA Heating power input curves
power input(W)
5300
5200
5100
5000
4900
4800
4700
4600
4500
4400
4300
4200
-7
-5
0
7
10
15
Outdoor DB
16/10
18/12
20/14.5
22/16
24/17
26/18

AD422ANEAA

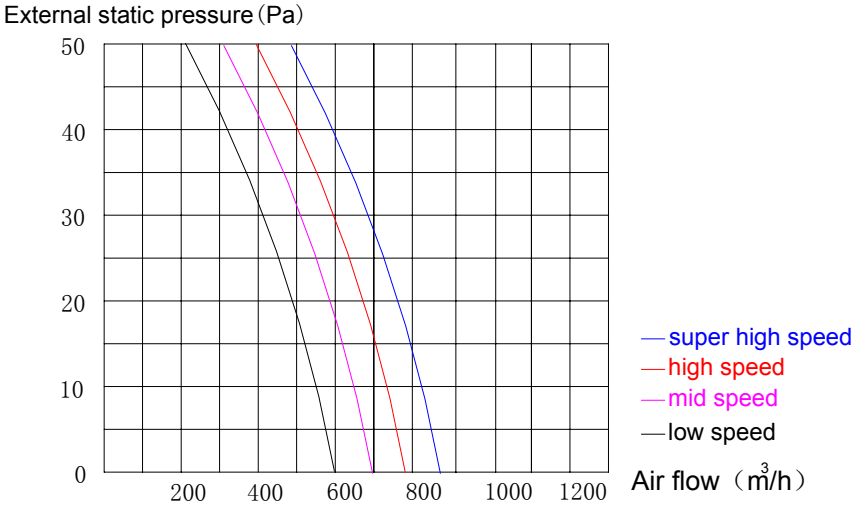


3.2 External static pressure

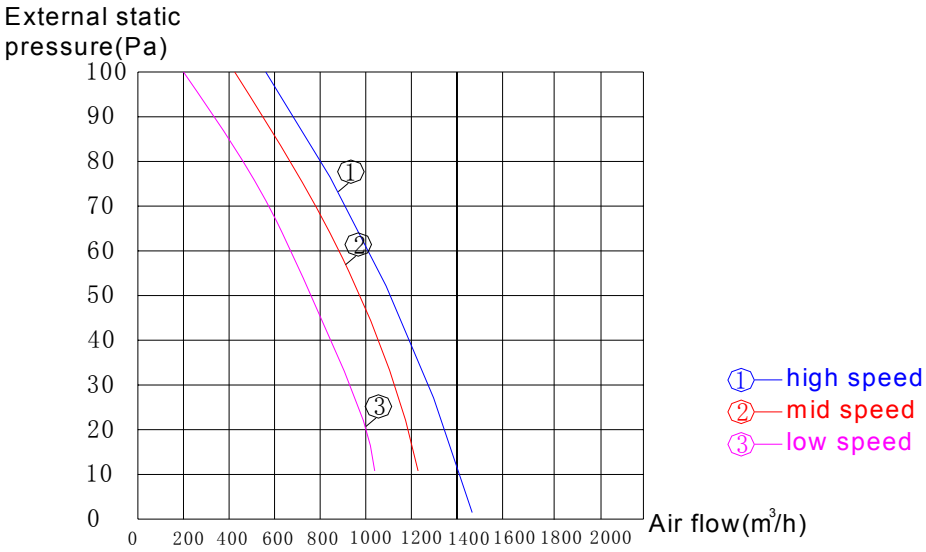
AD122ALEAA，AD122ALERA



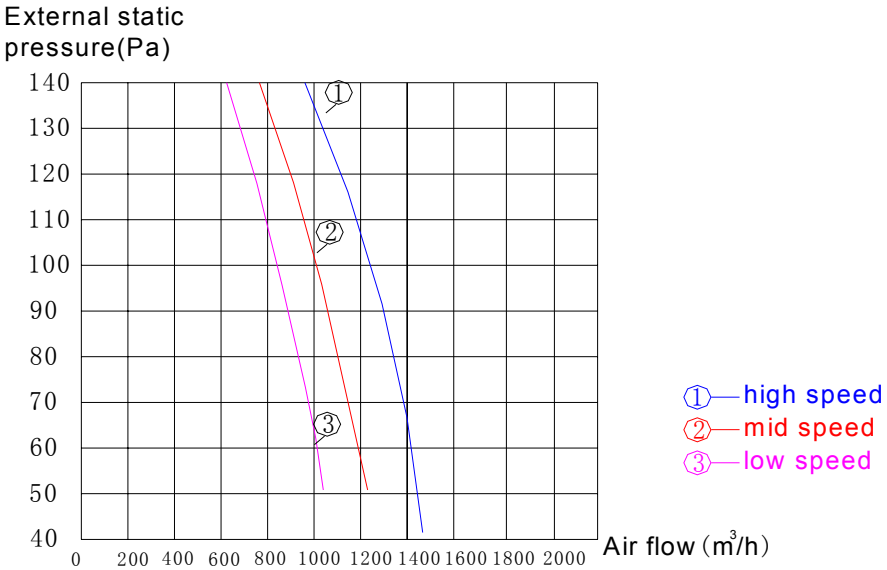
AD182ALEAA，AD182ALERA



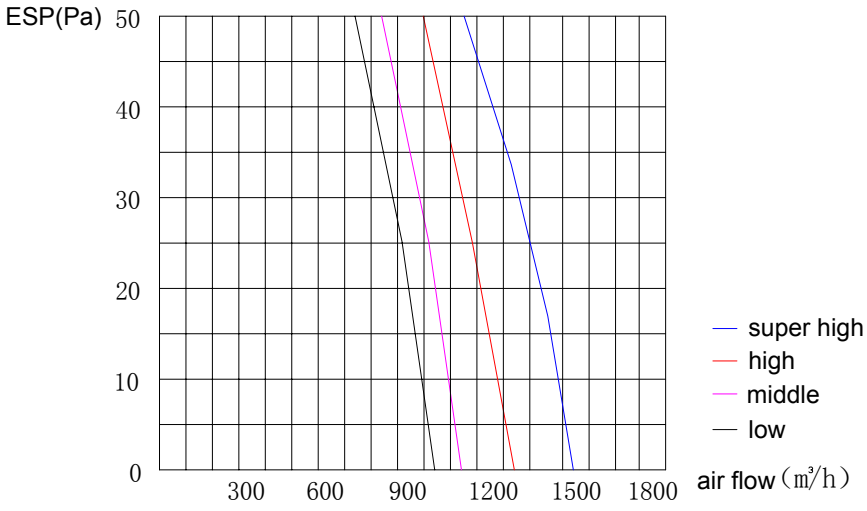
AD282AMEAA，AD282AMERA；AD242AMERA，AD242AMEAA



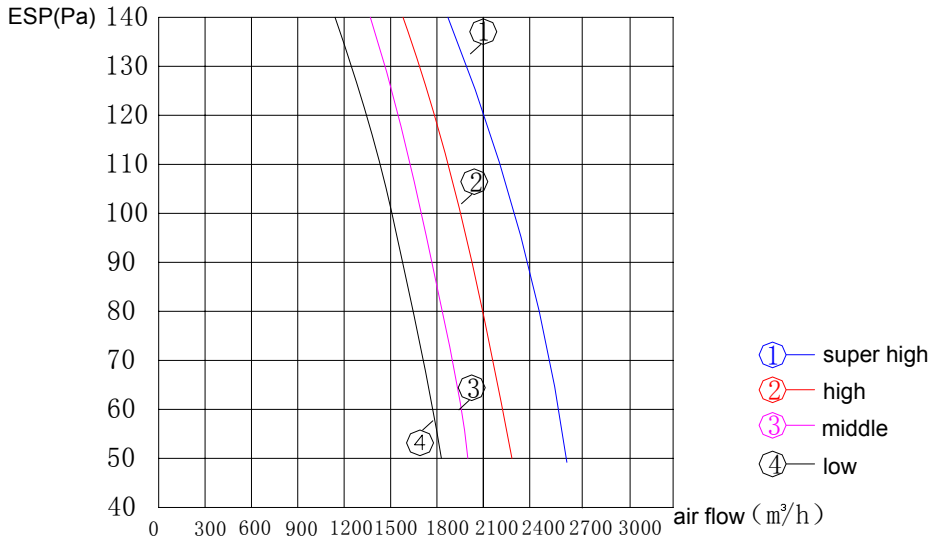
AD282AHEAA High external static pressure unit:



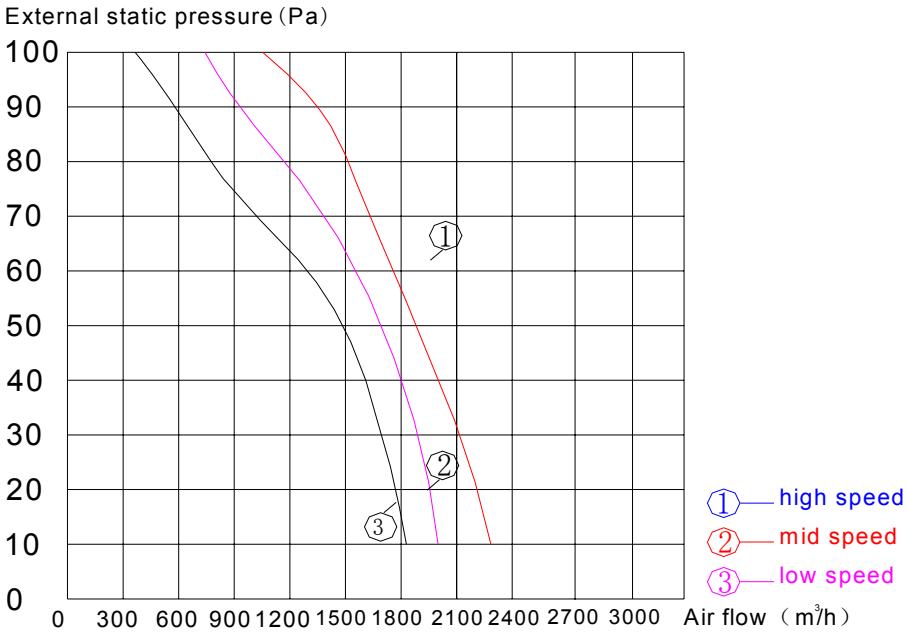
AD362AMEAA,AD362AMERA



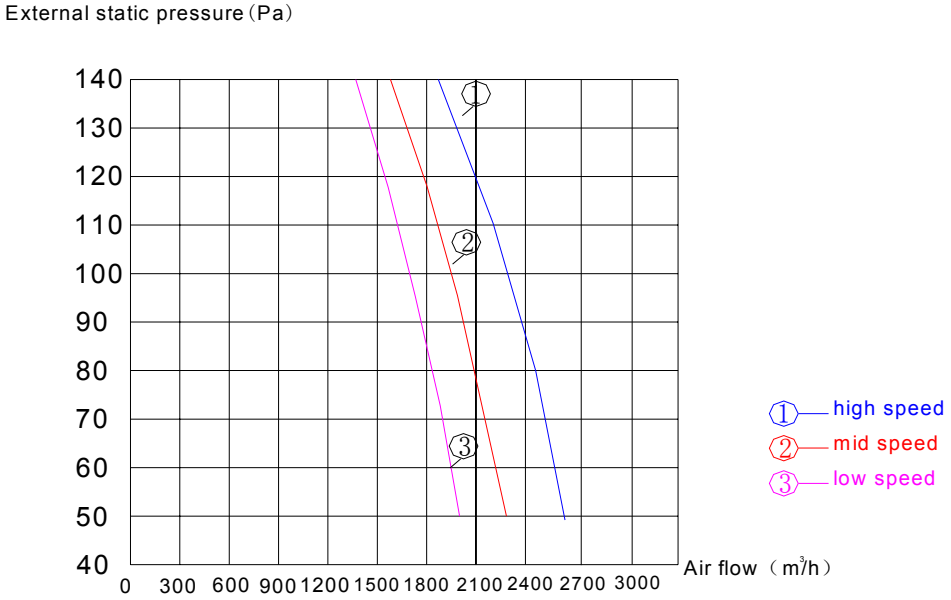
AD362AHEAA



AD48-602AMEAA Med external static pressure unit:

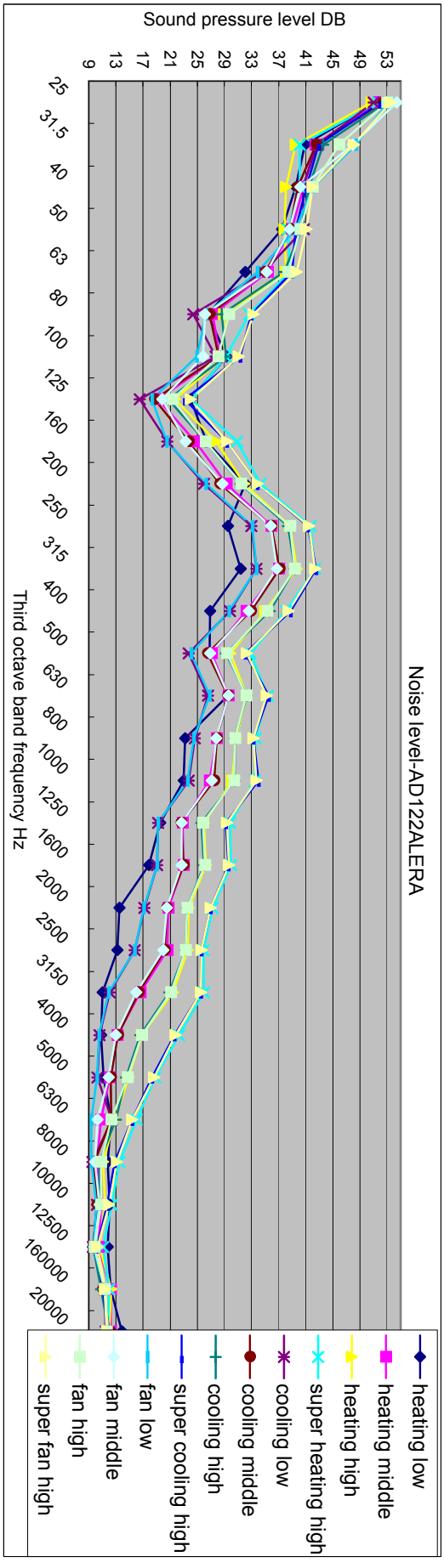


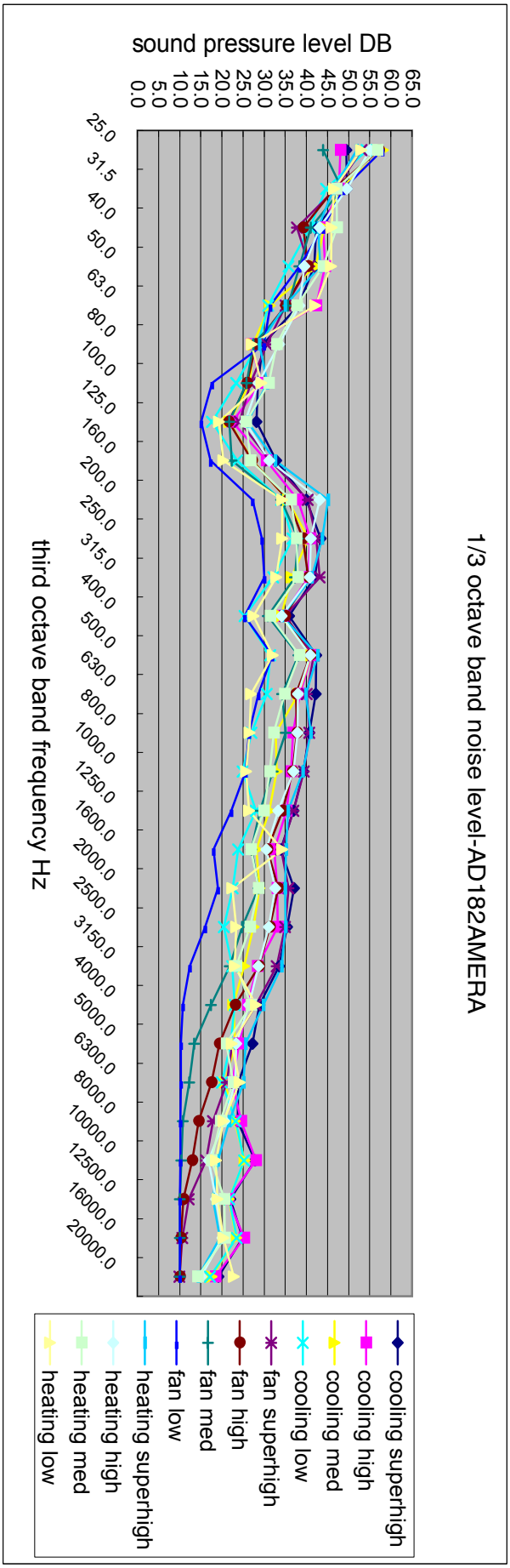
AD48-602AHEAA，AD482AHERA，AD602AHERA

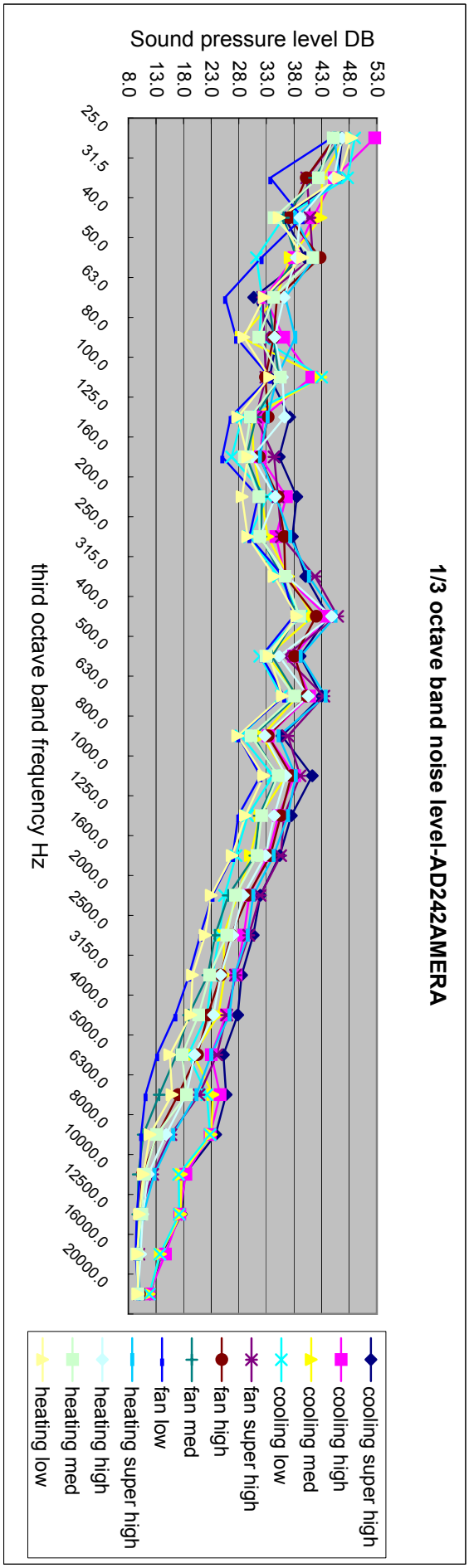


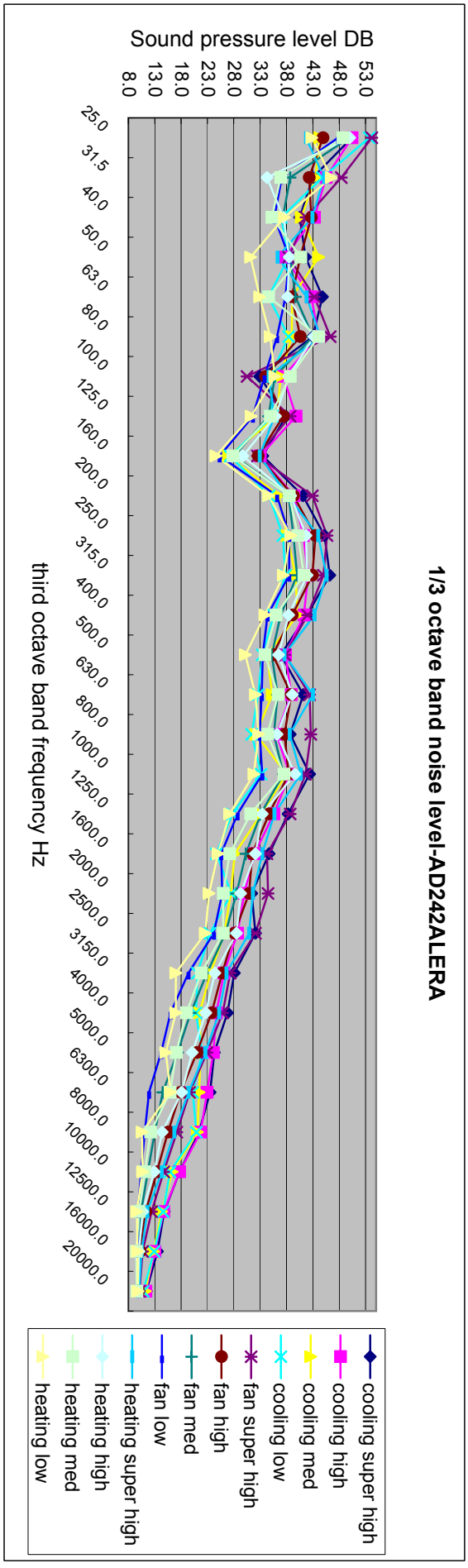
3.2 Noise level

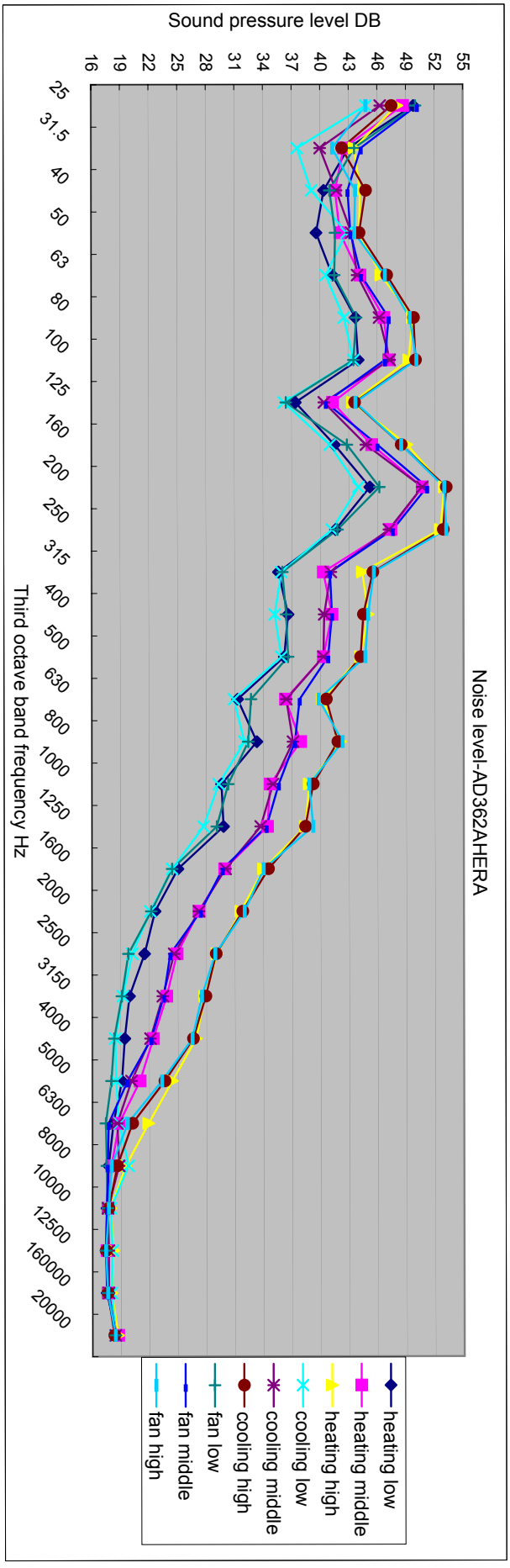
3.2.1 For inverter unit

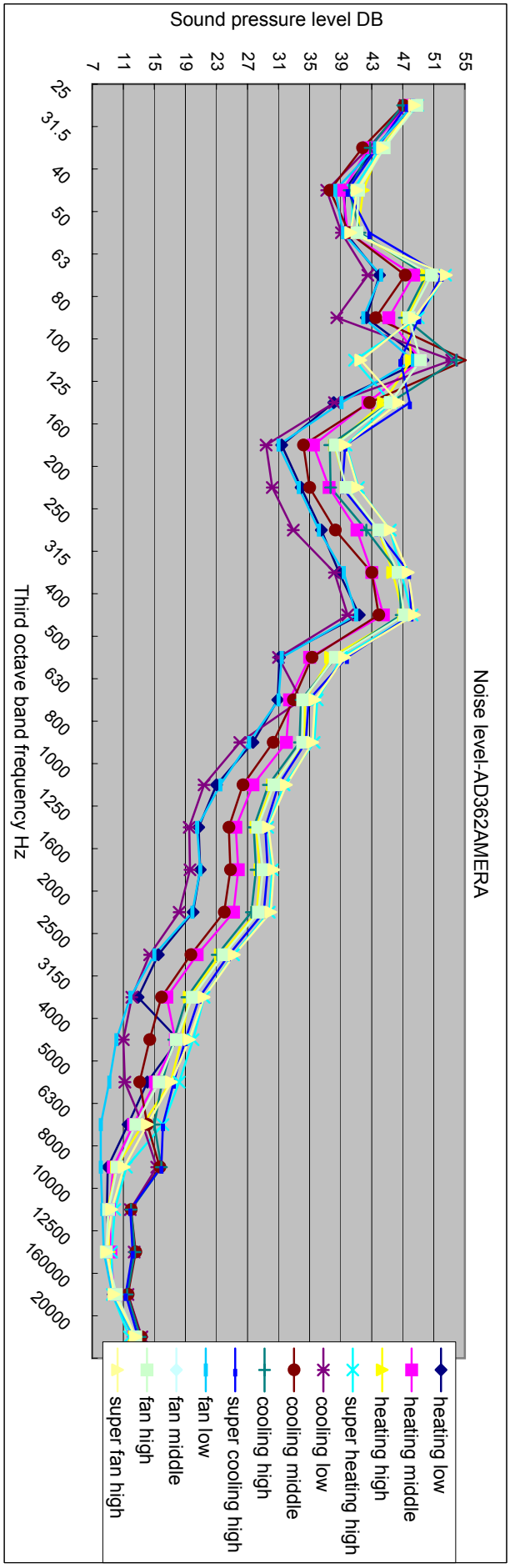


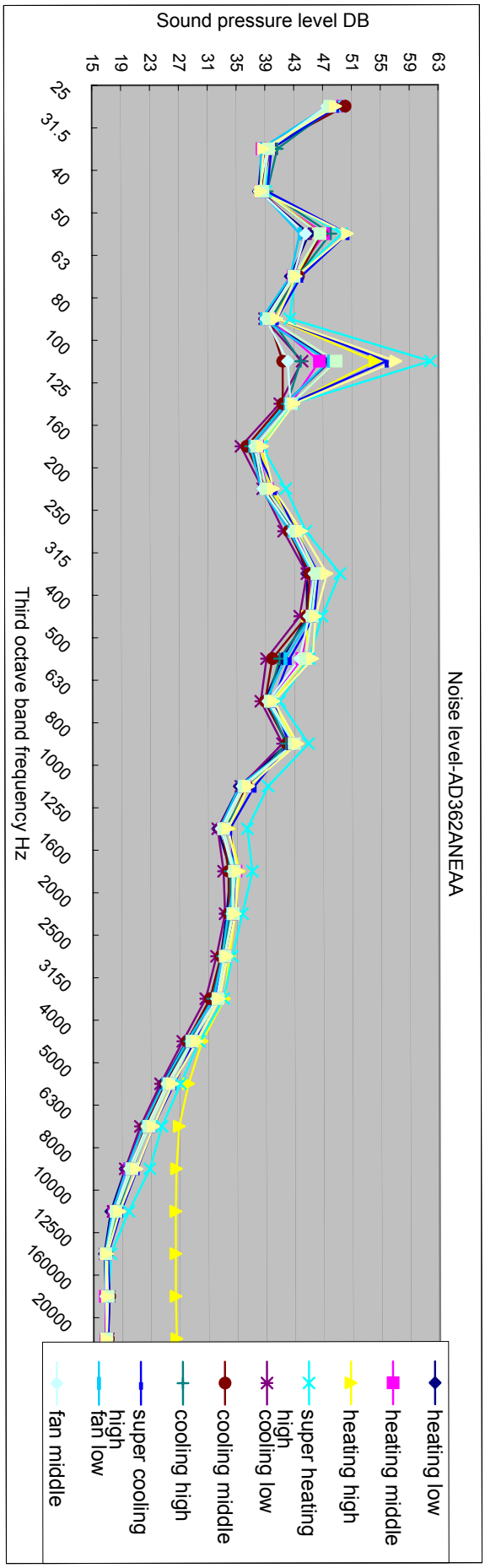



1/3 octave band noise level-AD242AMERA
Sound pressure level DB
53.0
48.0
43.0
38.0
33.0
28.0
23.0
18.0
13.0
8.0
25.0
31.5
40.0
50.0
63.0
80.0
100.0
125.0
160.0
200.0
250.0
315.0
400.0
500.0
630.0
800.0
1000.0
1250.0
1600.0
2000.0
2500.0
3150.0
4000.0
5000.0
6300.0
8000.0
10000.0
12500.0
16000.0
20000.0
third octave band frequency Hz
cooling super high
cooling high
cooling med
cooling low
fan super high
fan high
fan med
fan low
heating super high
heating high
heating med
heating low

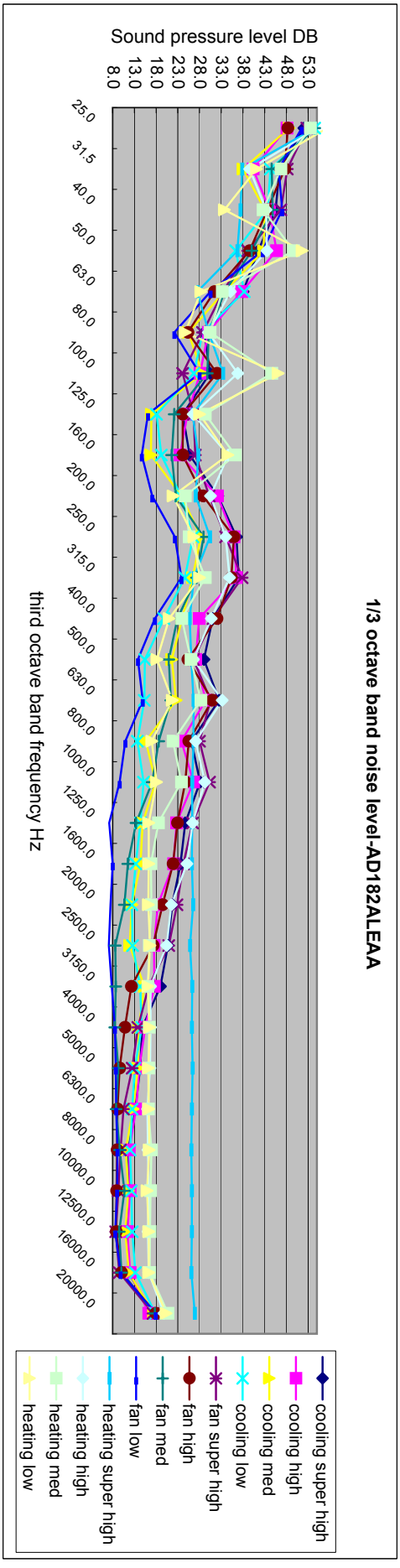

1/3 octave band noise level-AD242ALERA
Sound pressure level DB
53.0
48.0
43.0
38.0
33.0
28.0
23.0
18.0
13.0
8.0
25.0
31.5
40.0
50.0
63.0
80.0
100.0
125.0
160.0
200.0
250.0
315.0
400.0
500.0
630.0
800.0
1000.0
1250.0
1600.0
2000.0
2500.0
3150.0
4000.0
5000.0
6300.0
8000.0
10000.0
12500.0
16000.0
20000.0
third octave band frequency Hz
cooling super high
cooling high
cooling med
cooling low
fan super high
fan high
fan med
fan low
heating super high
heating high
heating med
heating low

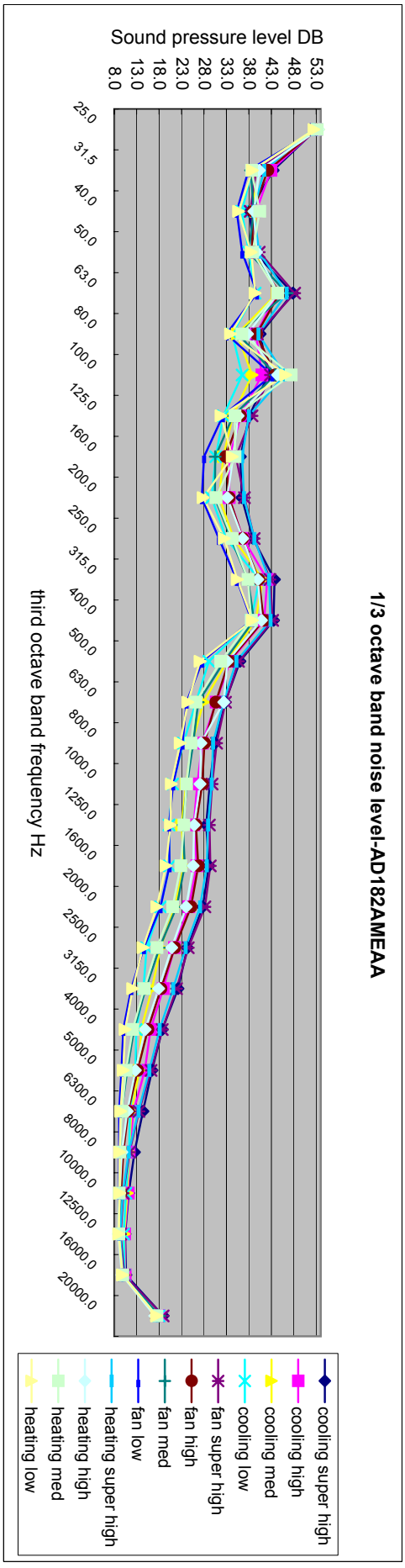

Noise level-AD362AHERA
Sound pressure level DB
Third octave band frequency Hz
heating low
heating middle
heating high
cooling low
cooling middle
cooling high
fan low
fan middle
fan high

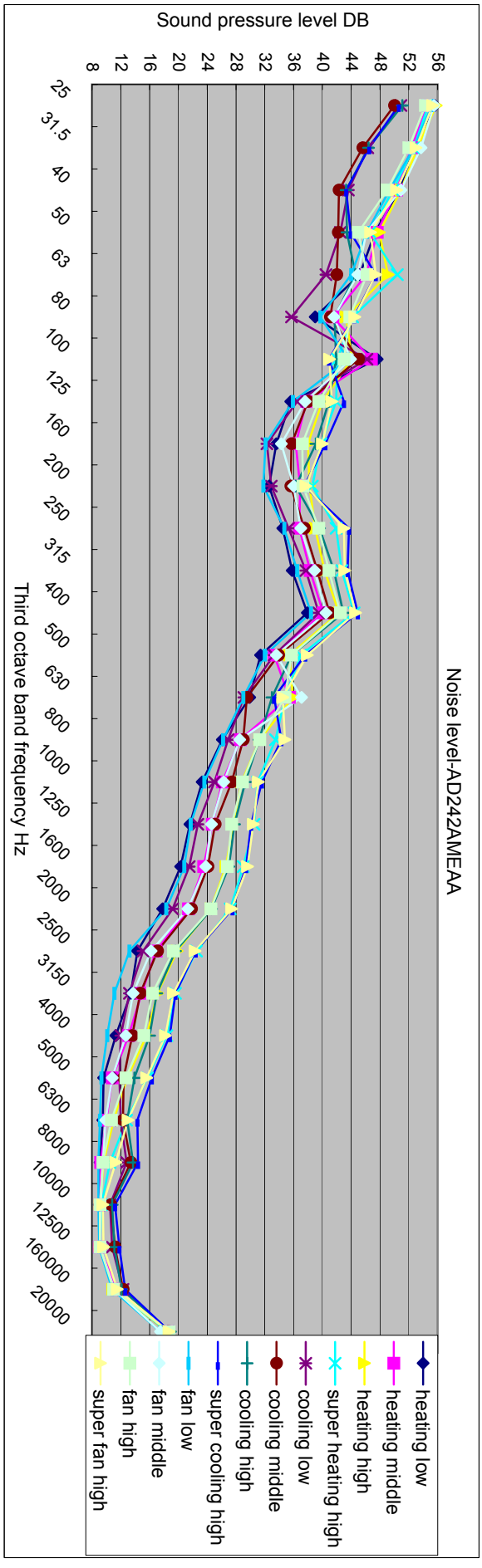

Noise level-AD362AMERA
Sound pressure level DB
Third octave band frequency Hz
heating low
heating middle
heating high
super heating high
cooling low
cooling middle
cooling high
super cooling high
fan low
fan middle
fan high
super fan high

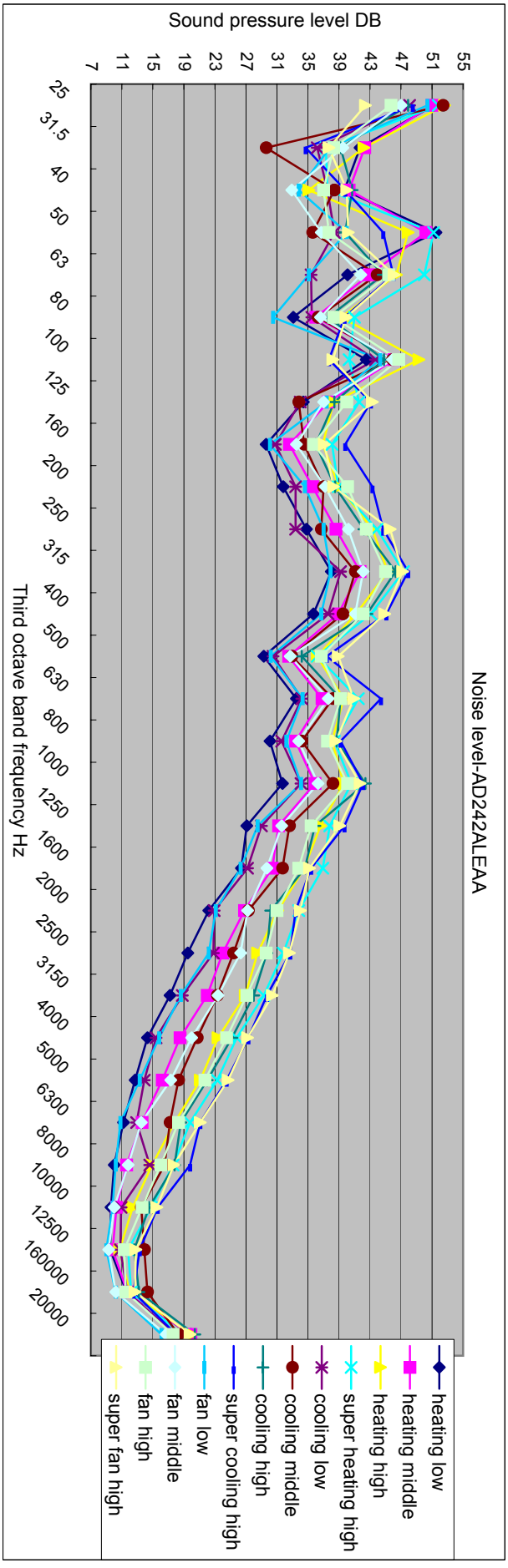

Sound pressure level DB
63
59
55
51
47
43
39
35
31
27
23
19
15
Third octave band frequency Hz
25
31.5
40
50
63
80
100
125
160
200
250
315
400
500
630
800
1000
1250
1600
2000
2500
3150
4000
5000
6300
8000
10000
12500
160000
20000
Noise level-AD362ANEAA
heating low
heating middle
heating high
super heating
high cooling low
cooling middle
cooling high
super cooling
high fan low
fan middle

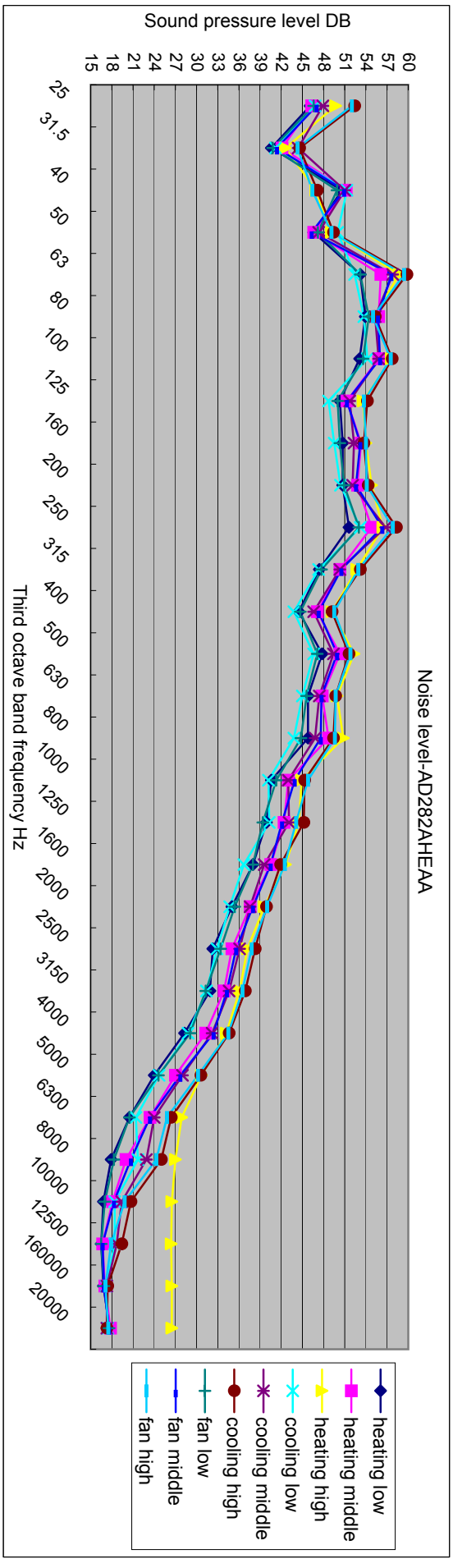
3.2.2 For fix frequency unit

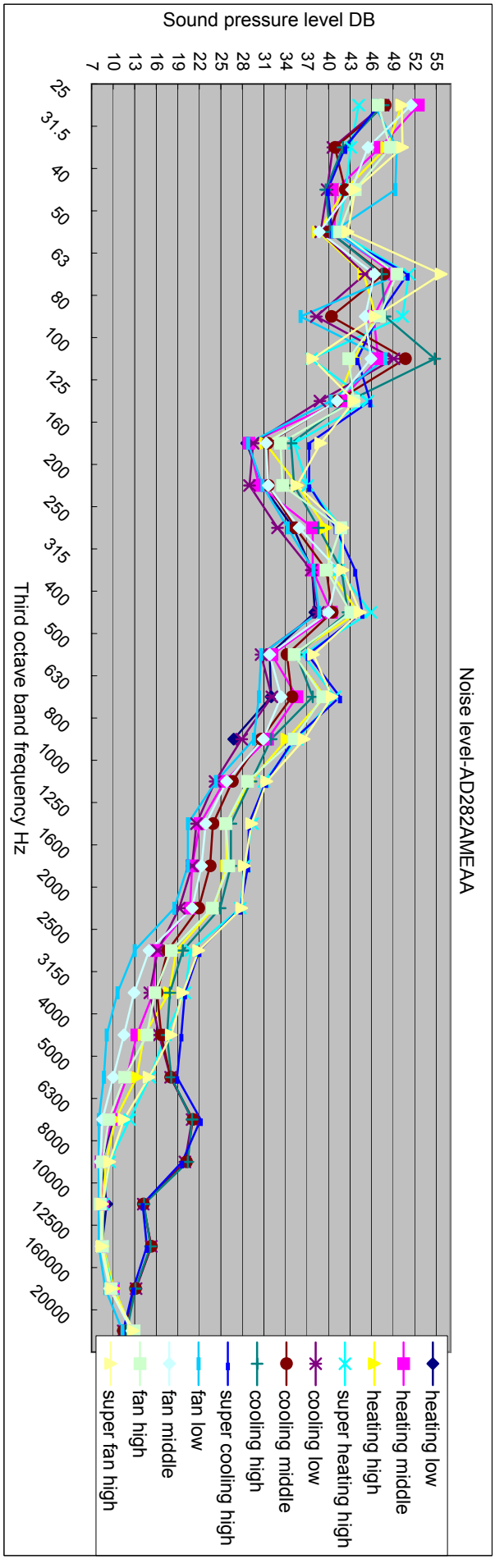


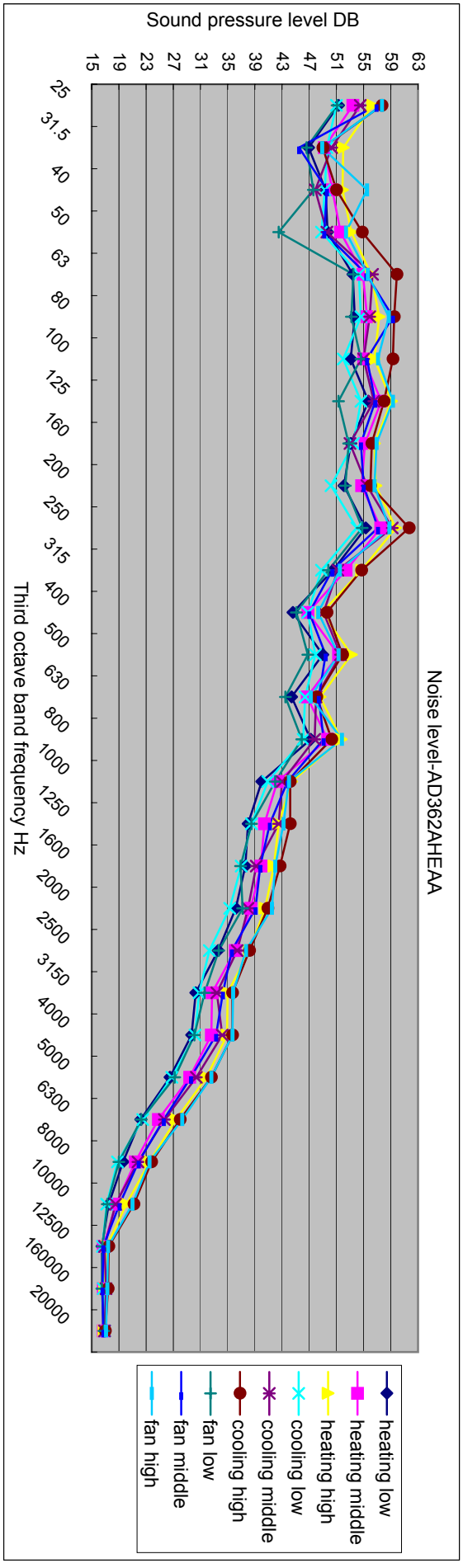


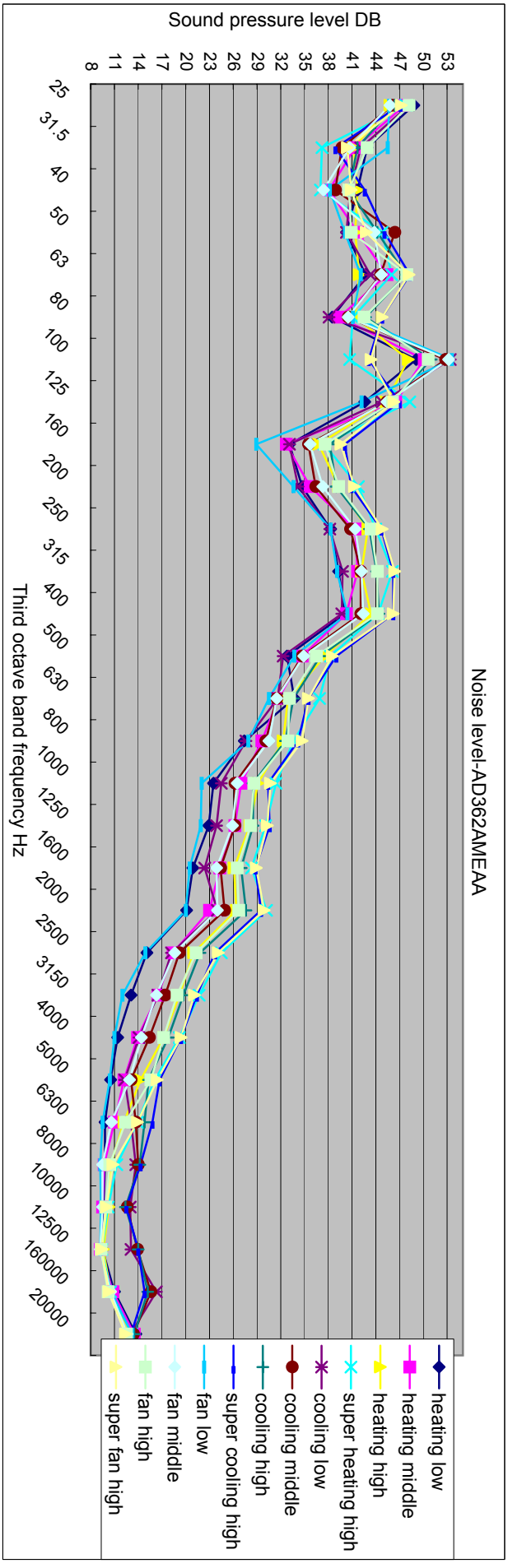

Noise level-AD242AMEAA
Sound pressure level DB
Third octave band frequency Hz
heating low
heating middle
heating high
super heating high
cooling low
cooling middle
cooling high
super cooling high
fan low
fan middle
fan high
super fan high

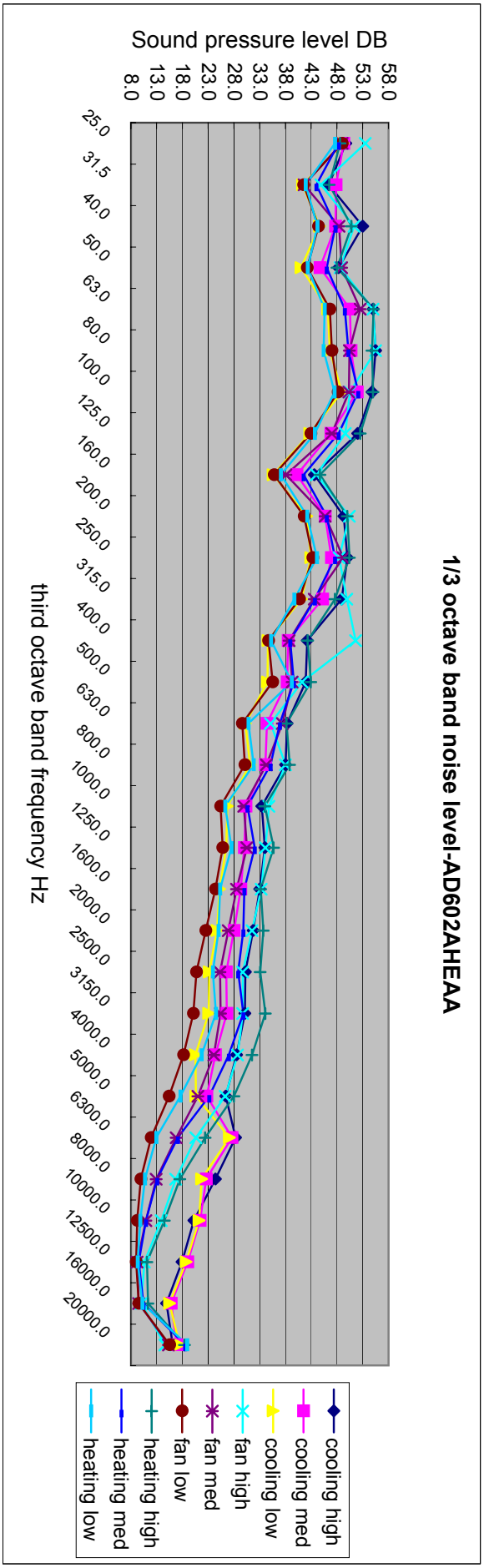

Noise level-AD242ALEAA
Sound pressure level DB
Third octave band frequency Hz
heating low
heating middle
heating high
super heating high
cooling low
cooling middle
cooling high
super cooling high
fan low
fan middle
fan high
super fan high

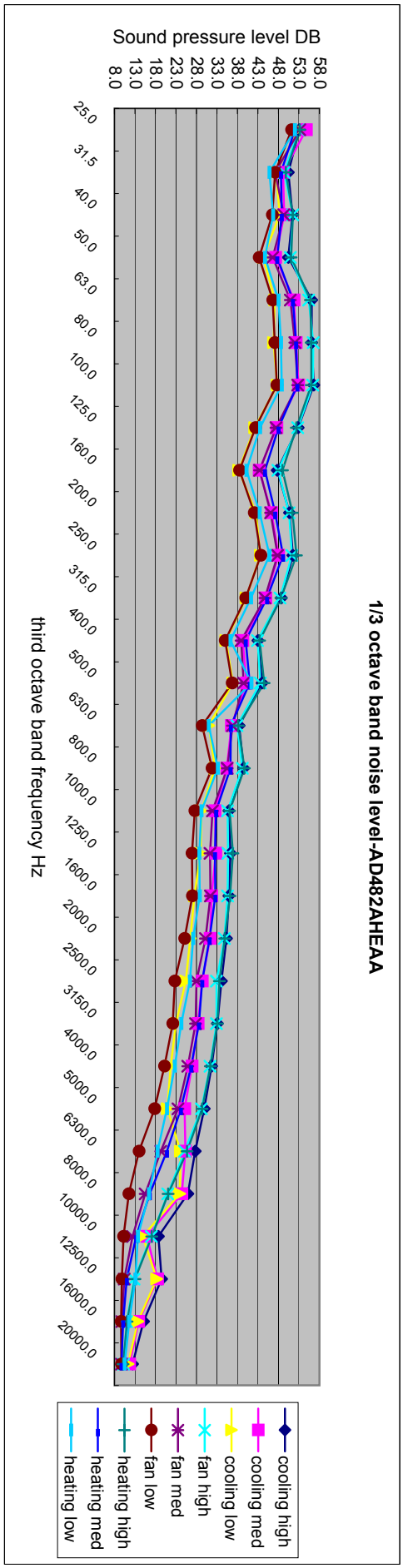

Noise level-AD282AHEAA
Sound pressure level DB
Third octave band frequency Hz
heating low
heating middle
heating high
cooling low
cooling middle
cooling high
fan low
fan middle
fan high


Noise level-AD282AMEAA
Sound pressure level DB
Third octave band frequency Hz
heating low
heating middle
heating high
super heating high
cooling low
cooling middle
cooling high
super cooling high
fan low
fan middle
fan high
super fan high


Noise level-AD362AHEAA
Sound pressure level DB
15 19 23 27 31 35 39 43 47 51 55 59 63
Third octave band frequency Hz
25 31.5 40 50 63 80 100 125 160 200 250 315 400 500 630 800 1000 1250 1600 2000 2500 3150 4000 5000 6300 8000 10000 12500 16000 20000
heating low
heating middle
heating high
cooling low
cooling middle
cooling high
fan low
fan middle
fan high


Noise level-AD362AMEAA
Sound pressure level DB
8 11 14 17 20 23 26 29 32 35 38 41 44 47 50 53
Third octave band frequency Hz
25 31.5 40 50 63 80 100 125 160 200 250 315 400 500 630 800 1000 1250 1600 2000 2500 3150 4000 5000 6300 8000 10000 12500 16000 20000
heating low
heating middle
heating high
super heating high
cooling low
cooling middle
cooling high
super cooling high
fan low
fan middle
fan high
super fan high

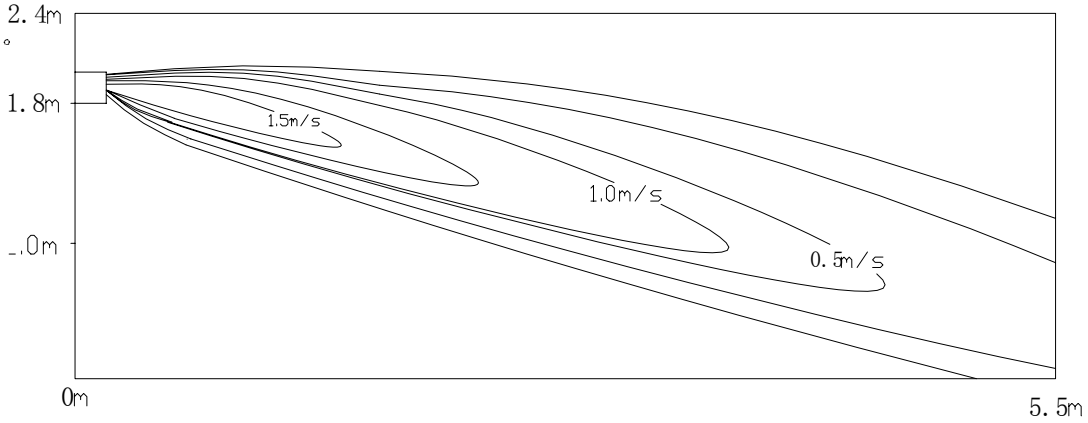

1/3 octave band noise level-AD602AHEAA
Sound pressure level DB
58.0
53.0
48.0
43.0
38.0
33.0
28.0
23.0
18.0
13.0
8.0
25.0
31.5
40.0
50.0
63.0
80.0
100.0
125.0
160.0
200.0
250.0
315.0
400.0
500.0
630.0
800.0
1000.0
1250.0
1600.0
2000.0
2500.0
3150.0
4000.0
5000.0
6300.0
8000.0
10000.0
12500.0
16000.0
20000.0
third octave band frequency Hz
cooling high
cooling med
cooling low
fan high
fan med
fan low
heating high
heating med
heating low


1/3 octave band noise level-AD482AHEAA
Sound pressure level DB
58.0
53.0
48.0
43.0
38.0
33.0
28.0
23.0
18.0
13.0
8.0
25.0
31.5
40.0
50.0
63.0
80.0
100.0
125.0
160.0
200.0
250.0
315.0
400.0
500.0
630.0
800.0
1000.0
1250.0
1600.0
2000.0
2500.0
3150.0
4000.0
5000.0
6300.0
8000.0
10000.0
12500.0
16000.0
20000.0
third octave band frequency Hz
cooling high
cooling med
cooling low
fan high
fan med
fan low
heating high
heating med
heating low

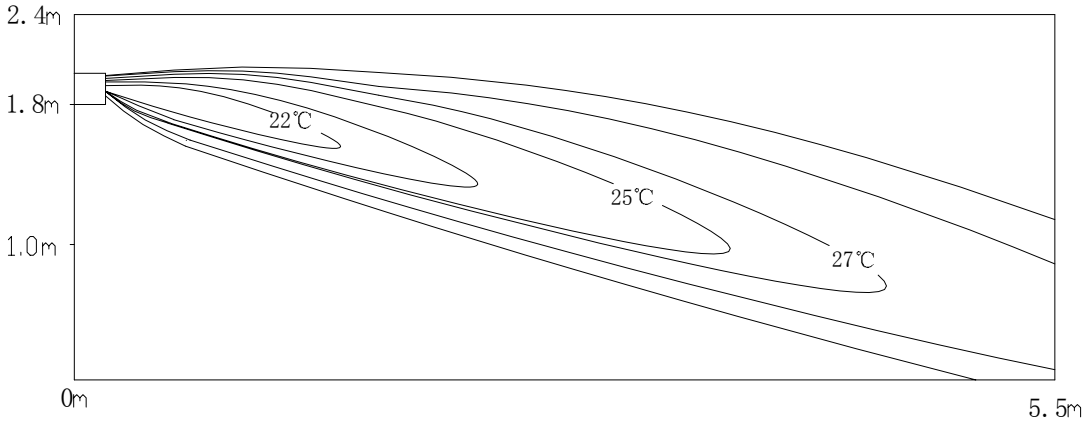
3.3 Air velocity distribution

For AD12*

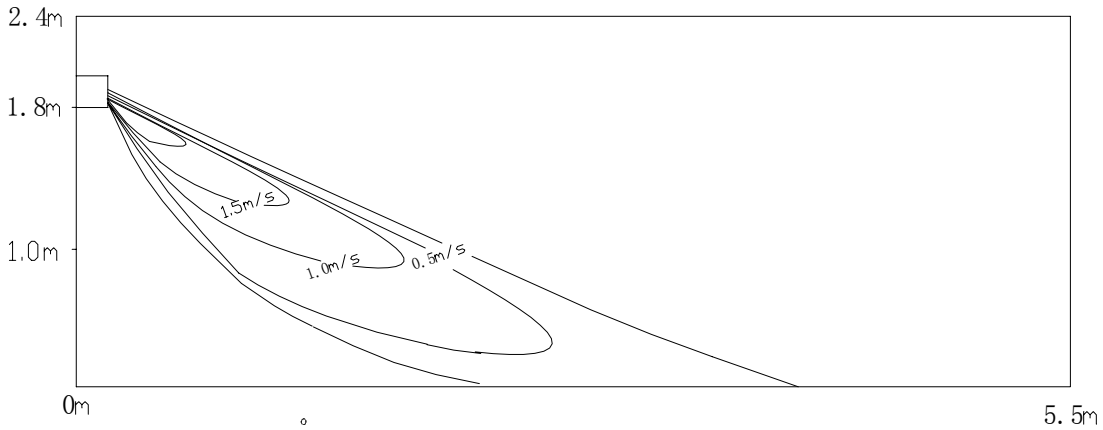
cooling
air discharge angle 5
Air Velocity distribution



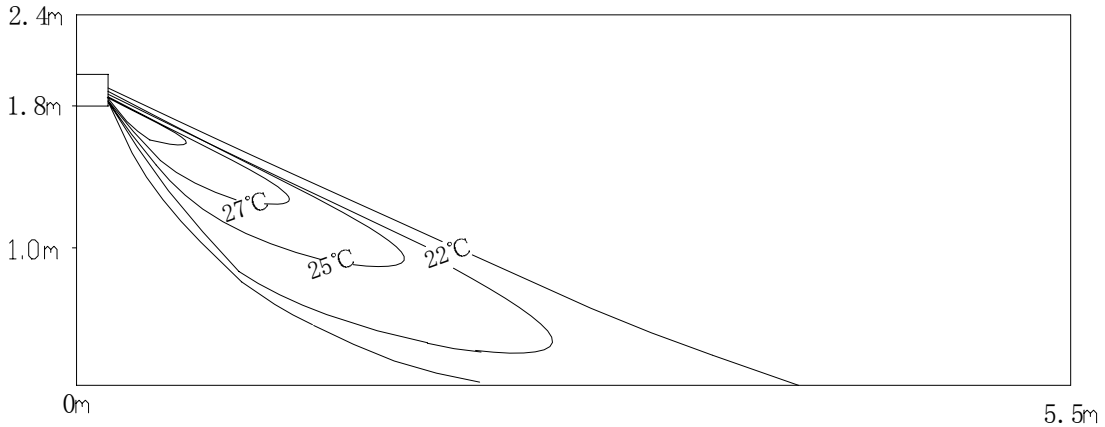
cooling
air discharge angle 5°
Temperature distribution



heating
air discharge angle 45°
Air Velocity distribution

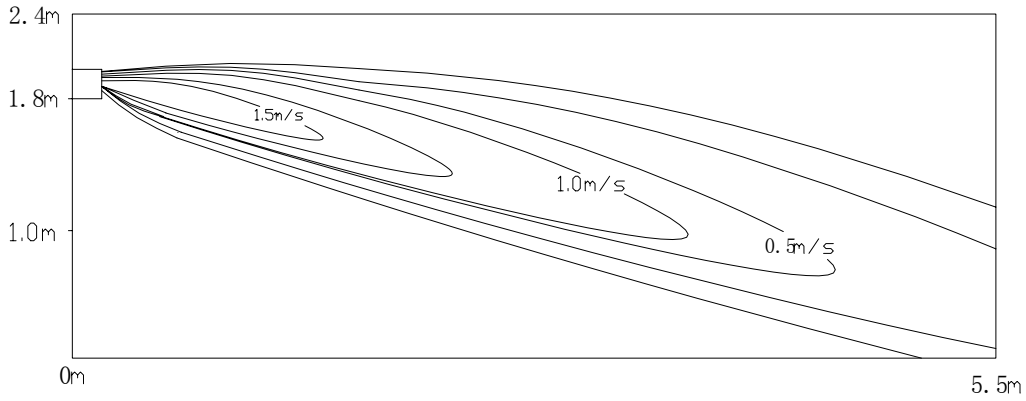


heating
air discharge angle 45
Temperature distribution

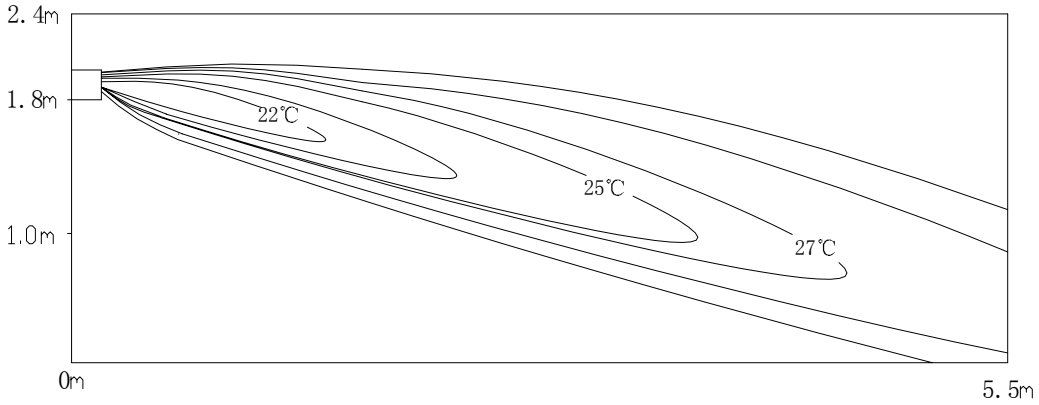


For AD18*

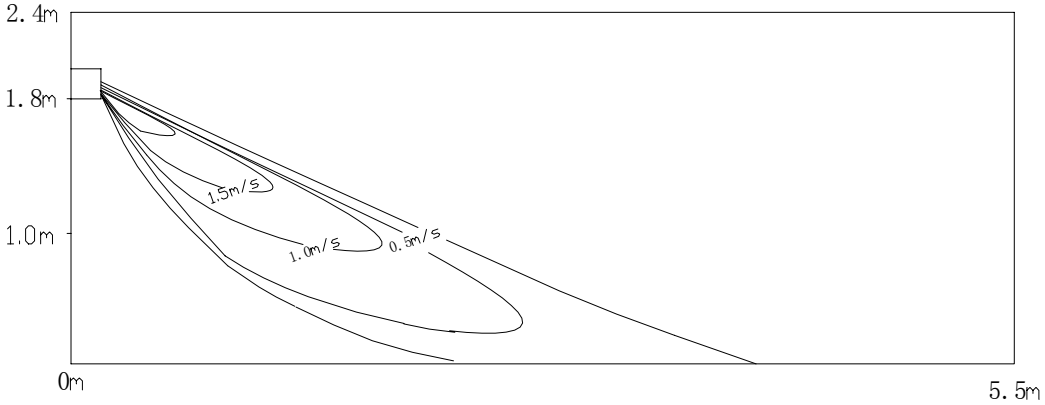
cooling
air discharge angle 5°
Air Velocity distribution



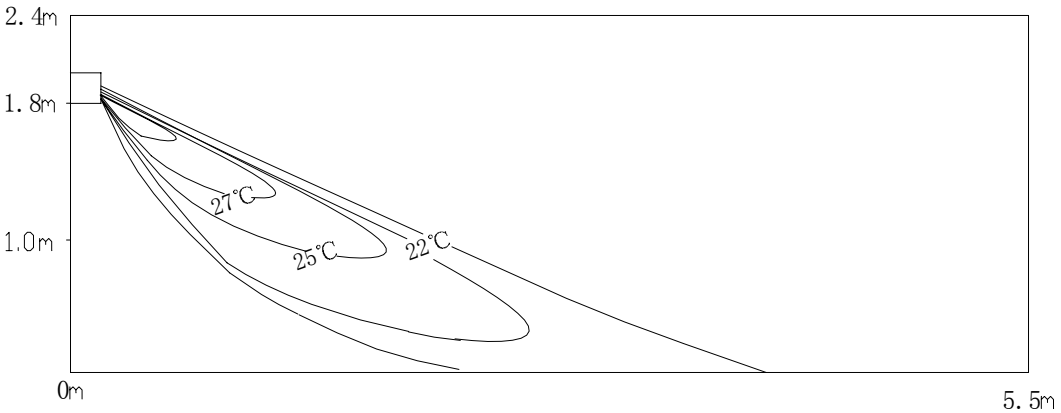
cooling
air discharge angle 5°
Temperature distribution



heating
air discharge angle 45°
Air Velocity distribution



heating
air discharge angle 45°
Temperature distribution

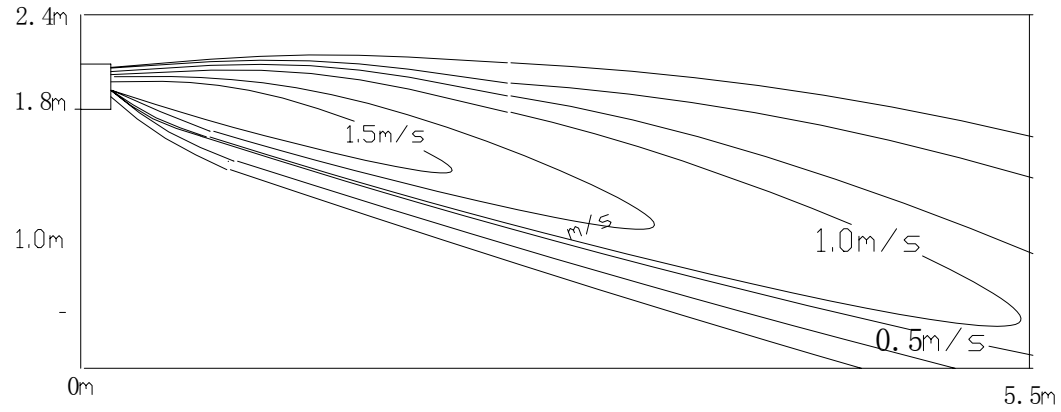


For AD28* midium static pressure duct

cooling

air discharge angle 5°

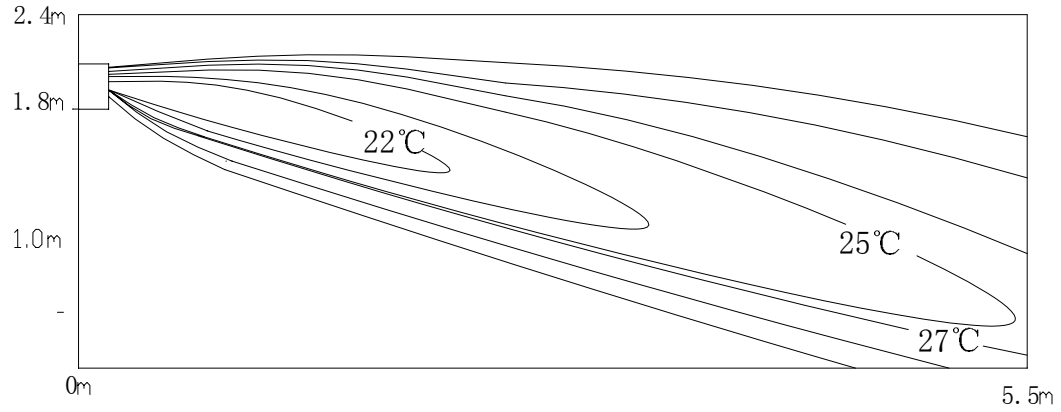
Air Velocity distribution



cooling

air discharge angle 5°

Temperature distribution

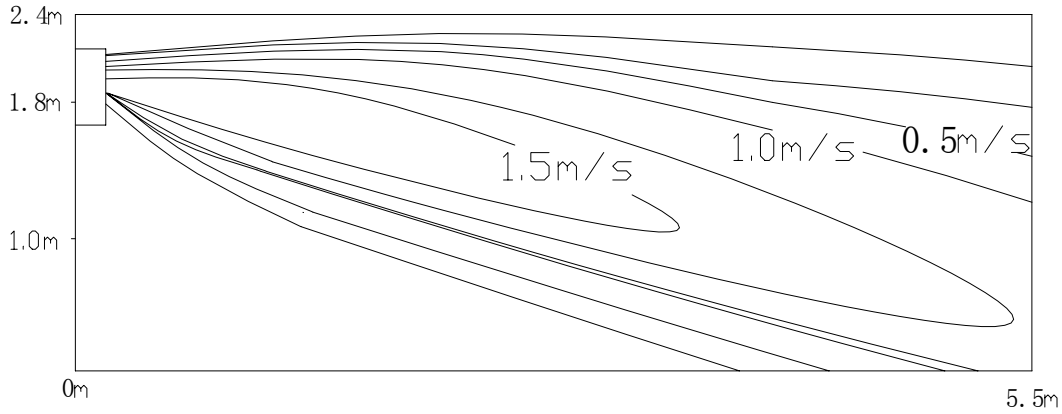


For AD36* and AD42* midium static pressure duct

cooling

air discharge angle 5°

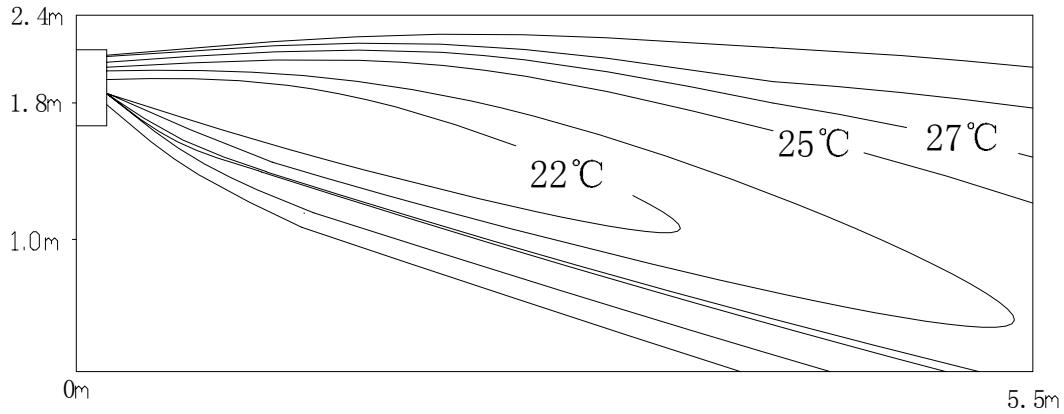
Air Velocity distribution



cooling

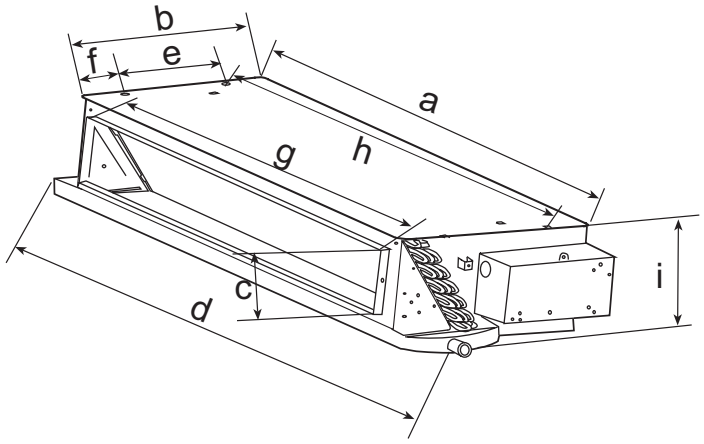
air discharge angle 5°

Temperature distribution



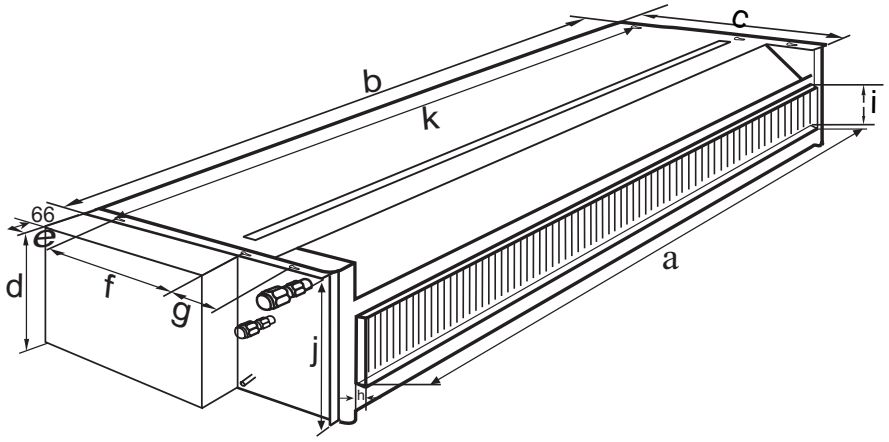
4. Dimension

4.1 For Ceiling concealed duct type (ESP 30Pa)



(Unit: mm)

Unit model	a	b	c	d	e	f	g	h	i
AD122ALEAA AD122ALERA	538	483.5	131	610	255	105	418	508	220
AD182ALEAA AD242ALEAA AD182ALERA AD242ALERA	1002	483.5	131	1105	255	105	880	970	220

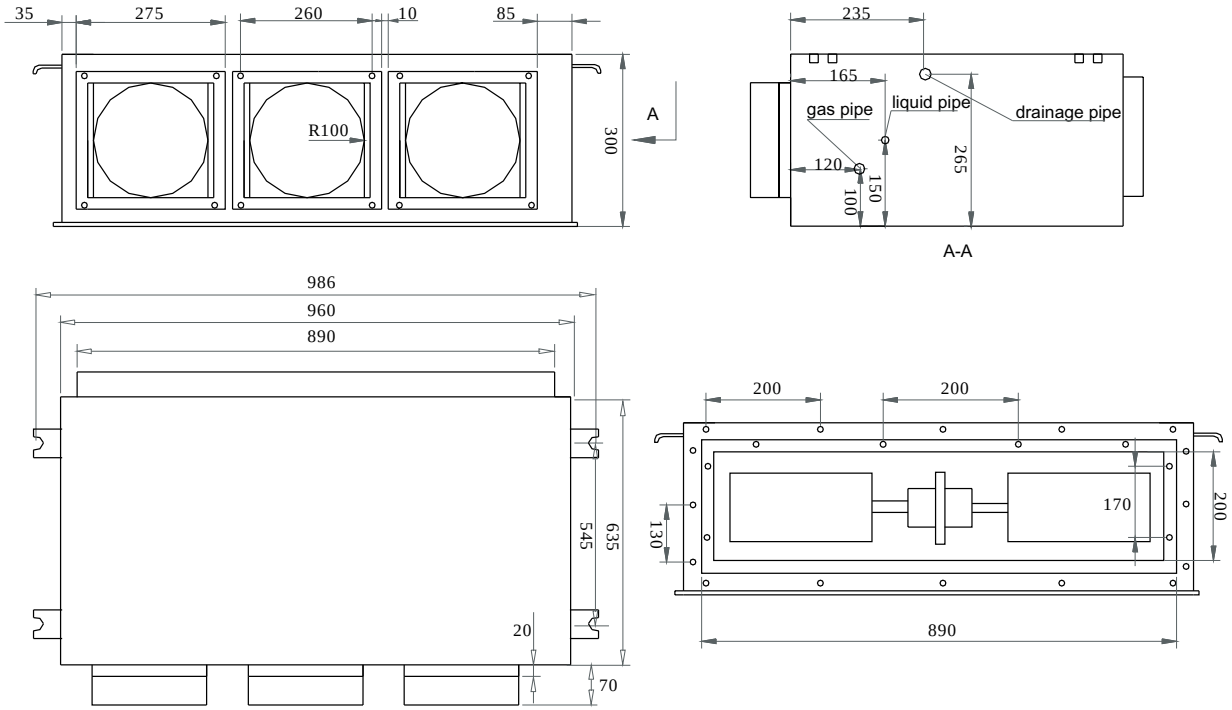


Installation dimension: (Unit: mm)

TYPE	a	b	c	d	e	f	g	h	i	j	k
AD182AMERA	1062	1124	450	218	48	227	123	22	97	220	1097

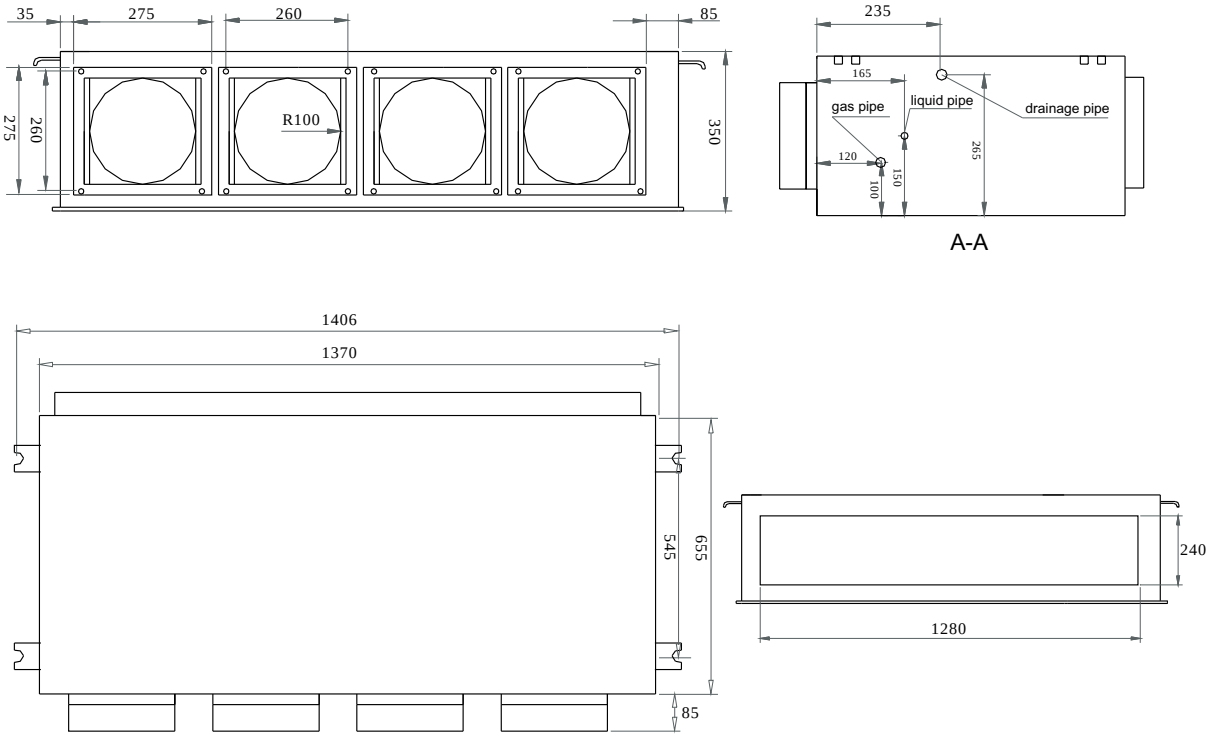
4.2 For Medium static pressure duct type (ESP 50Pa)

Model: AD182AMEAA, AD242AMEAA, AD282AMEAA, AD362AMEAA, AD242AMERA, AD282AMERA, AD362AMERA



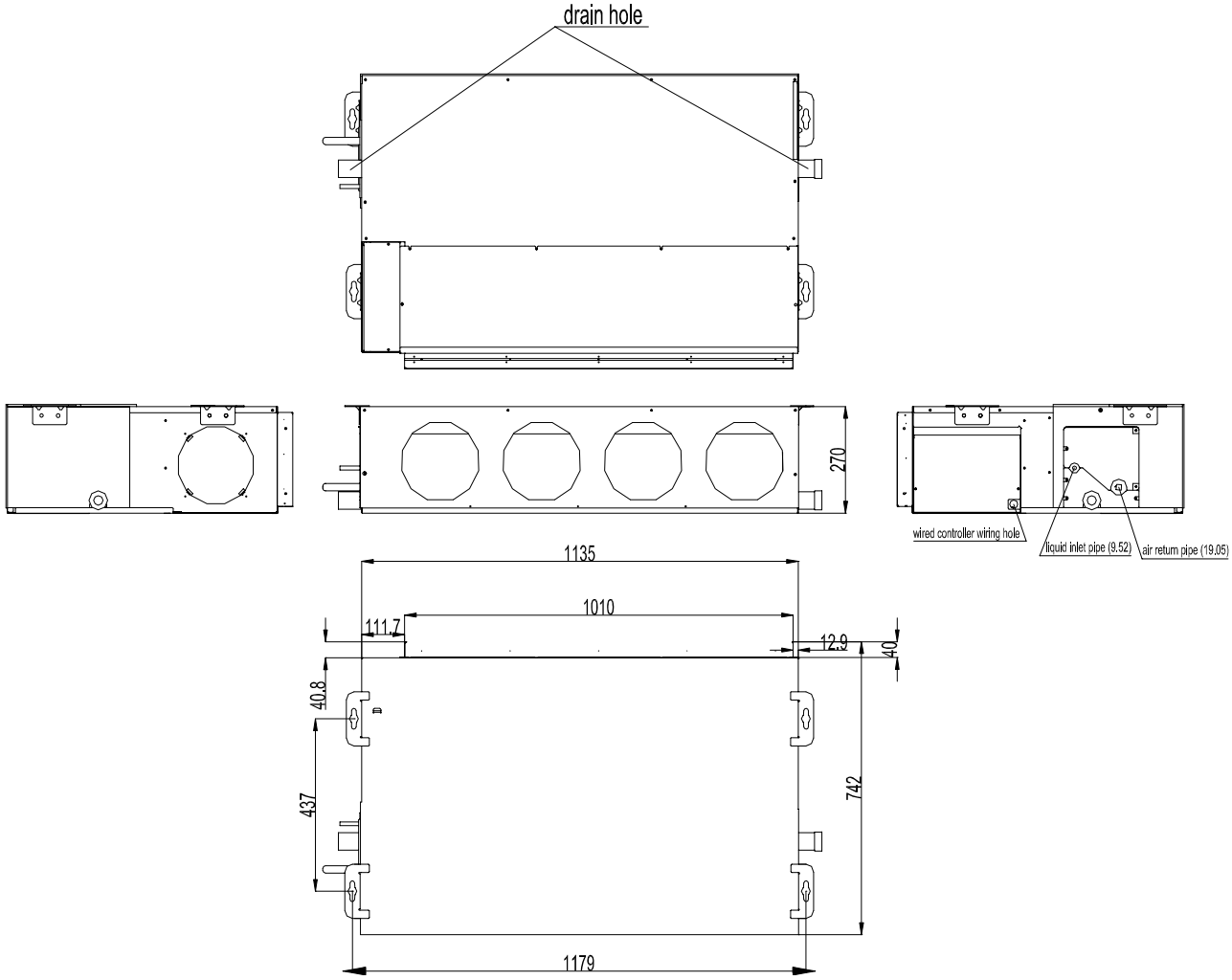
(mm)

Model: AD482AMEAA



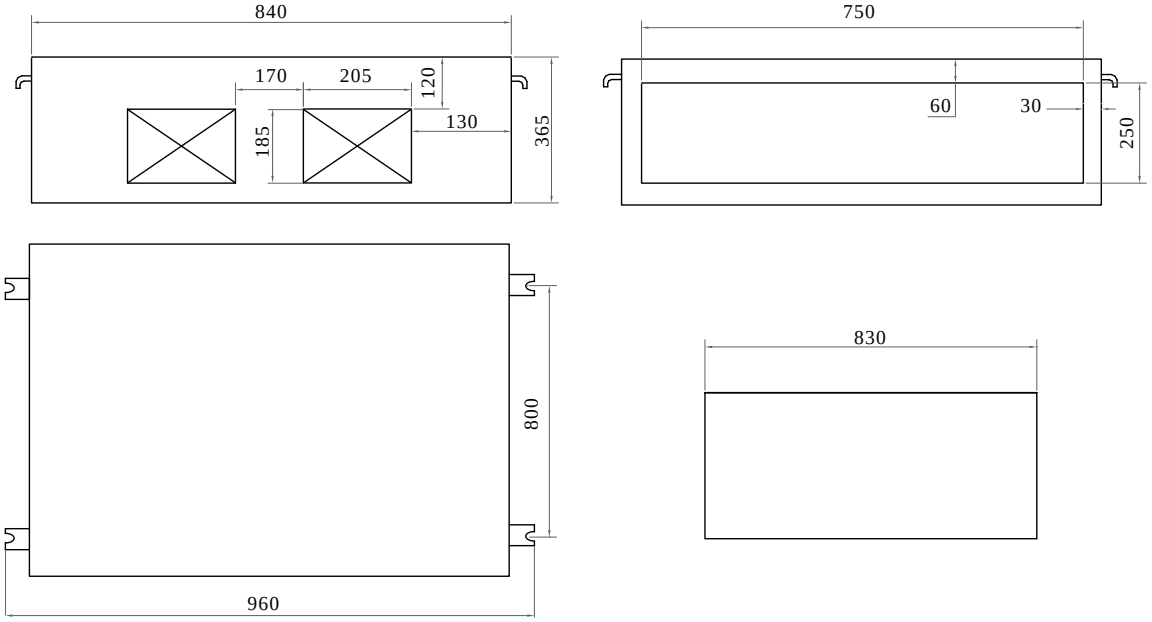
(mm)

Model: AD362ANEAA, AD422ANEAA, AD482ANEAA, AD482ANERA

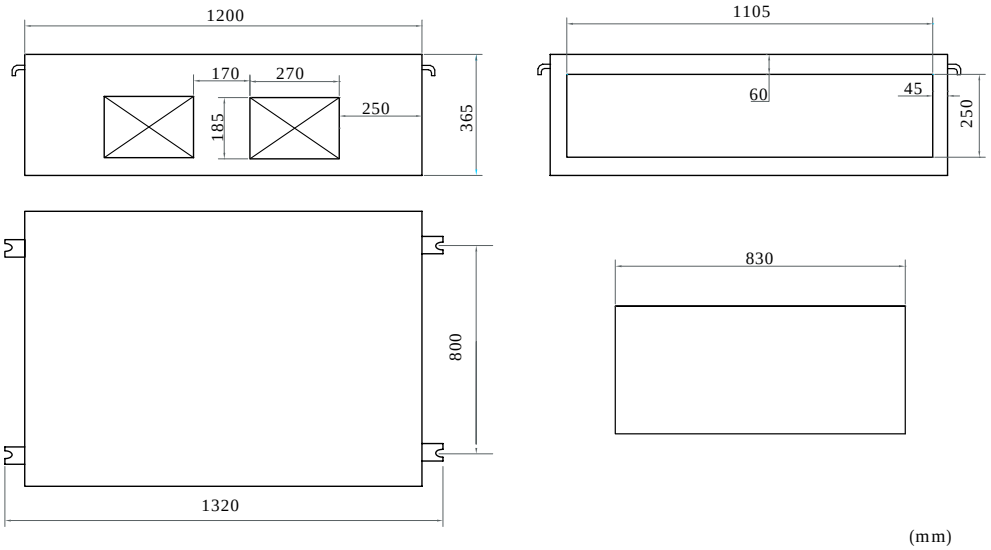


4.3 For High static pressure duct type (ESP 100Pa)

Model: AD282AHEAA, AD362AHEAA

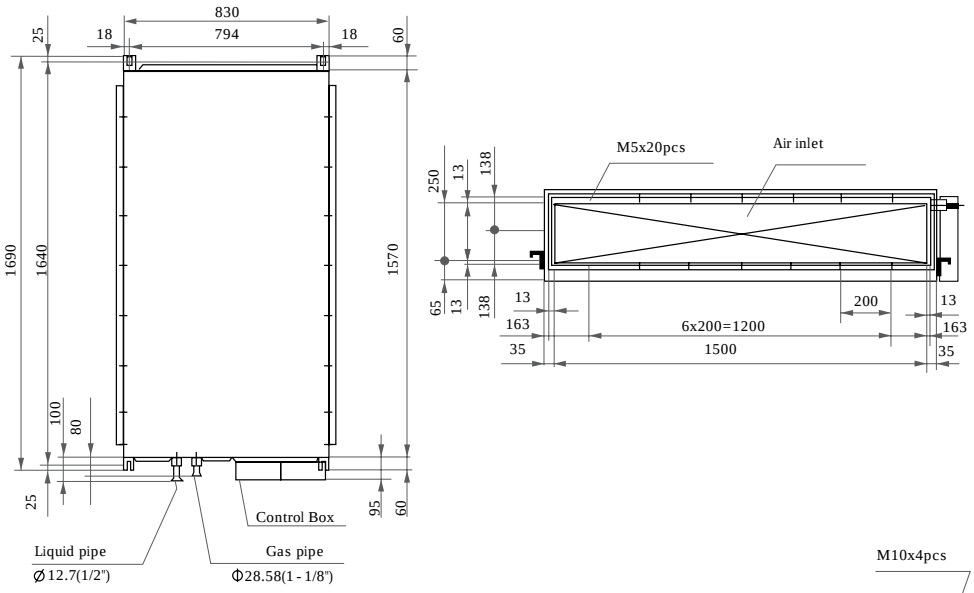


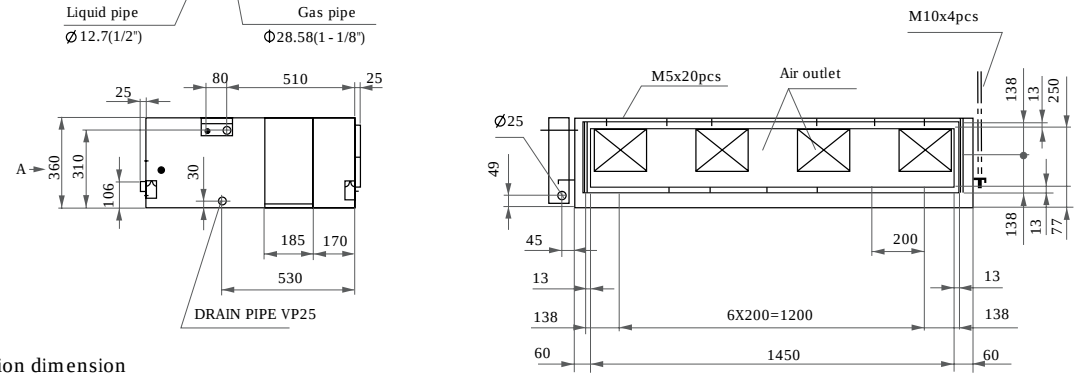
Model: AD482AHEAA, AD602AHEAA, AD362AHERA, AD482AHERA, AD602AHERA



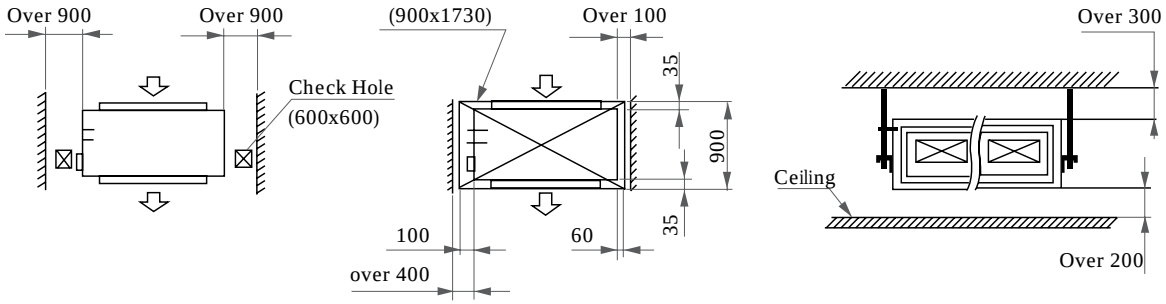
(mm)

Model: AD722AHEAA





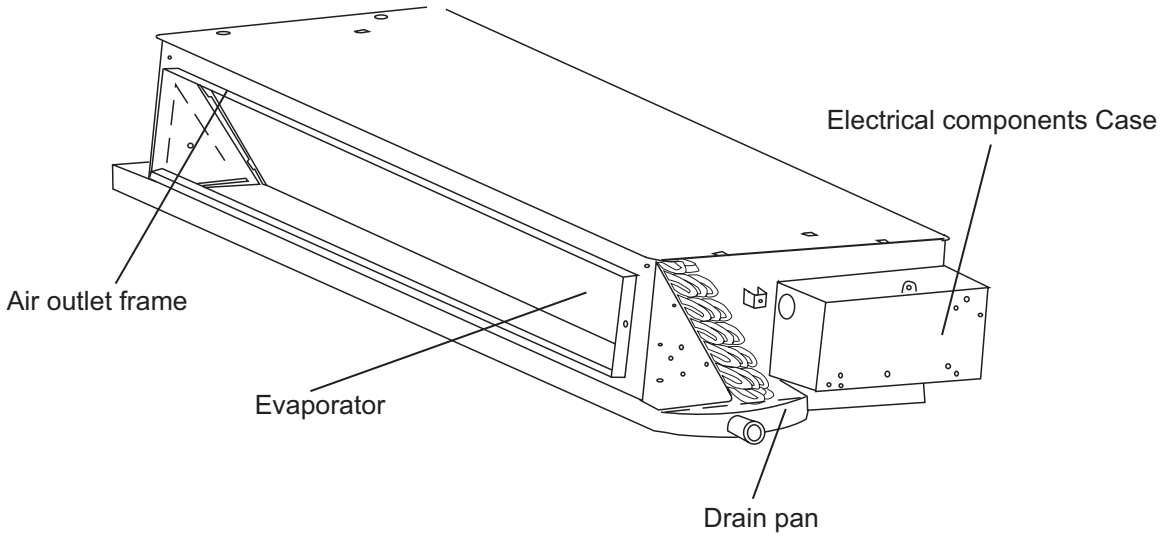
Installation dimension



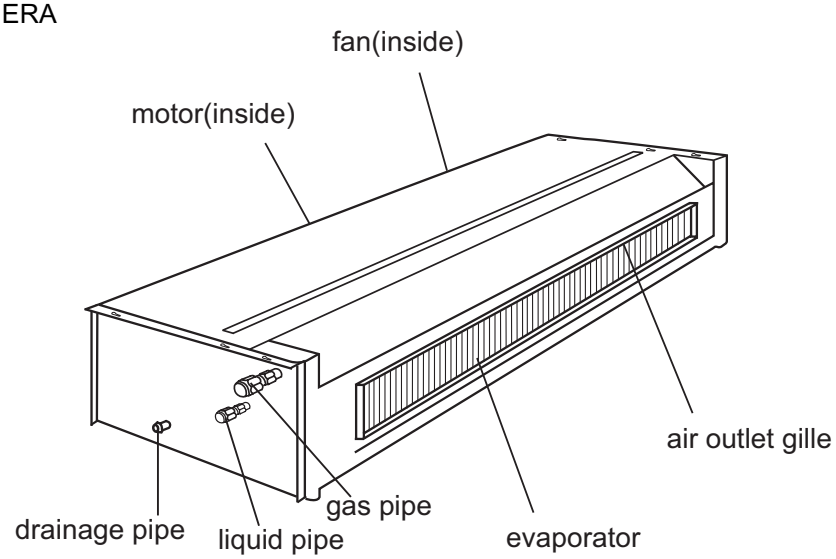
(mm)

5. Part name

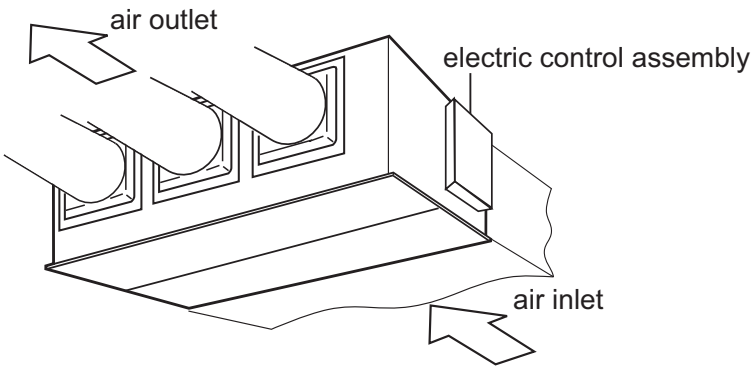
AD122ALEAA, AD182ALEAA, AD242ALEAA, AD122ALERA, AD182ALERA, AD242ALERA



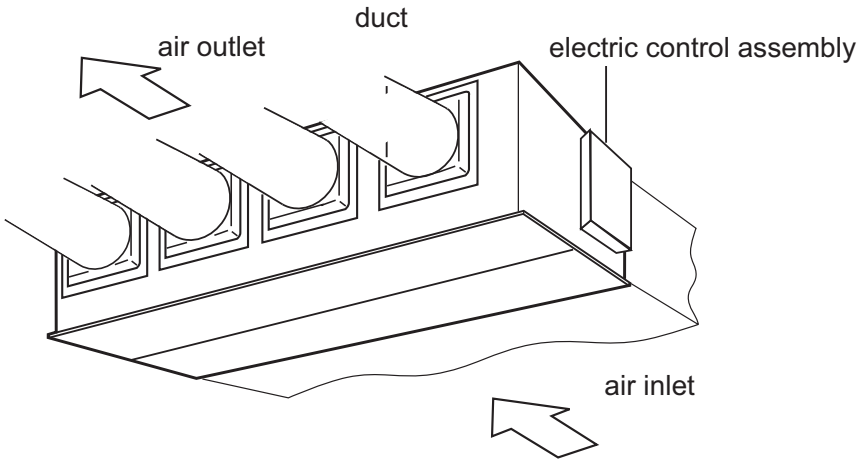
AD182AMERA



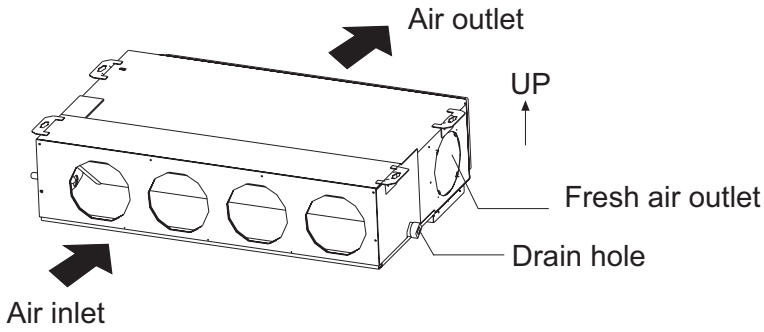
AD182AMEAA, AD242AMEAA, AD282AMEAA, AD362AMEAA, AD242AMERA, AD282AMERA, AD362AMERA



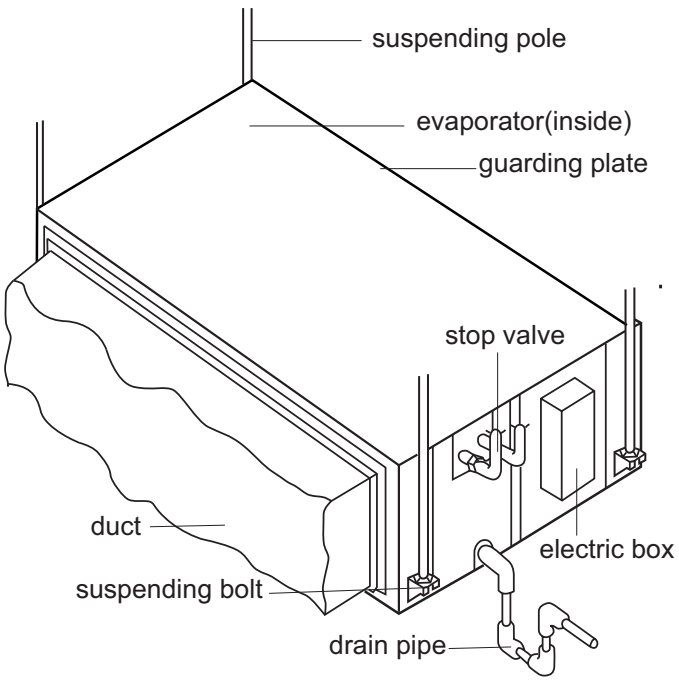
AD482AMEAA



AD362ANEAA, AD422ANEAA, AD482ANEAA, AD482ANERA



AD282AHEAA, AD482AHEAA, AD602AHEAA, AD722AHEAA, AD362AHERA, AD482AHERA, AD602AHERA



6. Installation

6.1 For Ceiling concealed duct type (ESP 30Pa)

Installation space

The indoor unit shall be installed at locations where cold and hot air could evenly circulated.
The following locations should be avoided:

Places with rich salt (seaside area).
Places with plenty of gas sulfides (mainly in warm spring areas where the copper tube and braze weld is easy to corrosion).
Locations with much oil (including mechanical oil) and steam.
Locations using organic solvents.
Places where there are machines generating HF electromagnetic waves.
Positions adjacent to door or window in contact with high-humidity external air. (Easy to generate dew).
Locations frequently using special aerosols.

The following points should be taken care of:

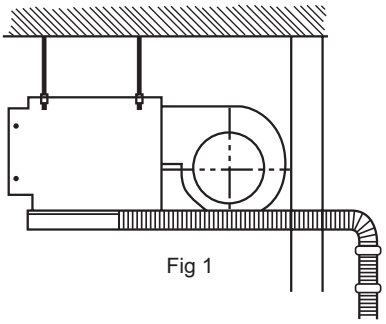


Fig 1

1. Select suitable places the outlet air can be sent to the entire room, and convenient to lay out the connection pipe, connection wire and the drainage pipe to outdoor.
2. The ceiling structure must be strong enough to support the unit weight.
3. The connecting pipe, drain pipe and connection wire shall be able to go though the building wall to connect between the indoor and outdoor units.
4. The connecting pipe between the indoor and outdoor units as well as the drain pipe shall be as short as possible. (See Figure 1)
5. If its necessary to adjust the filling amount of the refrigerant, please refer to the installation manual attached with the outdoor unit.
6. The connecting flange should be provided by the user himself.
7. The indoor unit has two water outlets one of which is obstructed at the factory (with a rubber cap). Only the outlet not obstructed (liquid inlet and outlet side) will be generally used during installation. If applicable, both the outlets should be used together.

Note: The access hole must be provided during installation of indoor unit for maintenance.

After selecting the installation space, proceed the following steps:

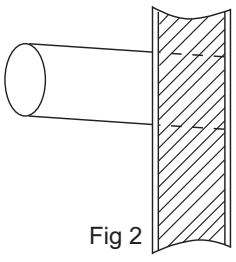
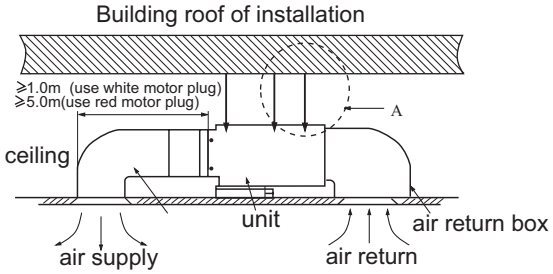
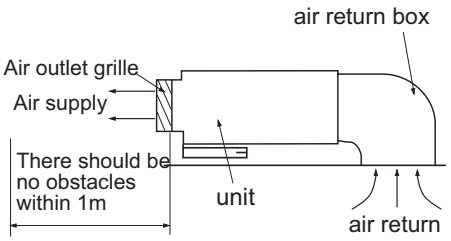


Fig 2

1. Drill a hole in the wall and insert the connecting pipe and wire through a PVC wall-through tube purchased locally. The wall hole shall be with a outward down slope of at least 1/100. (See Figure 2)
2. Before drilling check that there is no pipe or reinforcing bar just behind the drilling position. Drilling shall avoid at positions with electric wire or pipe.
3. Mount the unit on a strong and horizontal building roof. If the base is not firm, it will cause noise, vibration or leakage.
4. Support the unit firmly.
5. Change the form of the connection pipe, connection wire and drain pipe so that they can go through the wall hole easily.

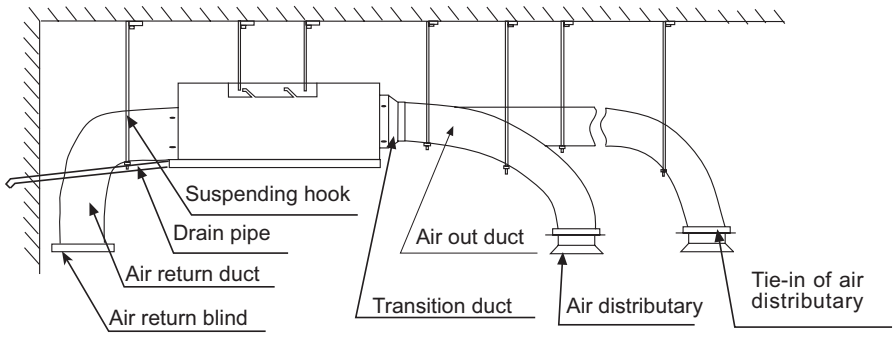
- Each of the air sending duct and air return duct shall be fixed on the prefabricated panel of the floor by the iron bracket.
- The recommended distance between the edge of the air return duct and the wall is over 150mm.
- The gradient of the condensate water pipe shall keep over 1%.
- The condensate water pipe shall be thermal insulated.
- When installing the ceiling Concealed type indoor unit, the air return duct must be designed and installed (as figure shown).





Note: When connecting the short ducts, use the low static terminals, which color is white.

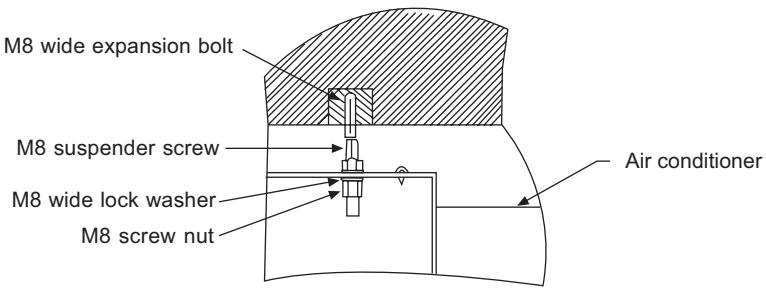
The distance L from the air outlet of the duct to the air outlet of the sir conditioner shall be no more than 1 m.



The sketch map of long duct

Note: When connecting the long ducts, use the middle static terminals, which color is red.

The distance L from the air outlet of the duct to the air outlet of the sir conditioner shal be no more than 5 m.



Installation of indoor unit duct

1. Installation of air sending duct

- This unit uses rounded duct, the diameter of the duct is 180mm.
- The round duct needs to add a transition duct to connect with the air-sending duct of indoor unit,then connect with respective separator. As Fig. 1 shown, all the fan speed of any of the separator's air outlet shall be adjusted approximately the same to meet the requirement for the room air conditioner.

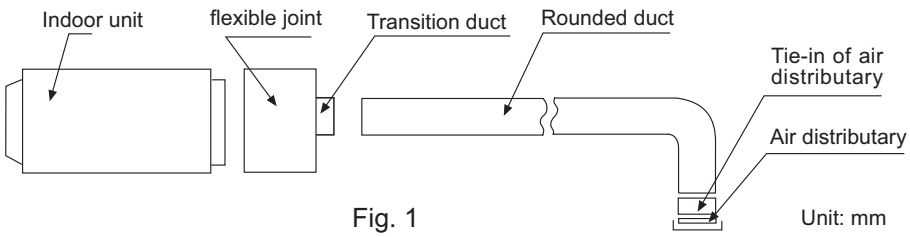


Fig. 1

2. Installation of air return duct

- Use rivet to connect the air return duct on the air return inlet of the indoor unit, then connect the other end with the air return blind. As Fig. 2 shown.

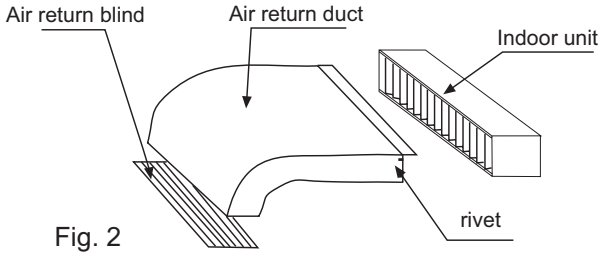


Fig. 2

3 Thermal insulation of duct

- Air-sending duct and air return duct shall be thermally insulated. First stick the gluey nail on the duct, then attach the heat preservation cotton with a layer of tinfoil paper and use the gluey nail cap to fix. Finally use the tinfoil adhesive tape to seal the connected part. As Fig. 3 shown.

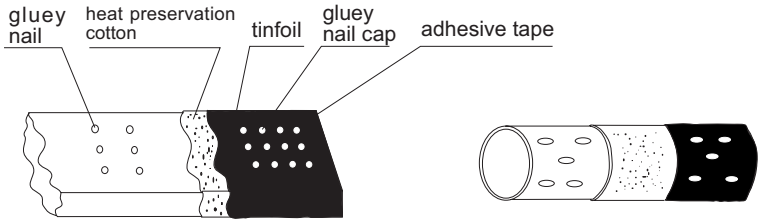


Fig. 3

Installing the suspension screw:

Use M8 or M10 suspension screws (4,prepared in the field)(when the suspension screwheight exceeds 0.9m, M10 size is the only choice).These screws shall be installed as follows with space adapting to air conditioner overall dimensions according to the original building structures.

Wooden structure

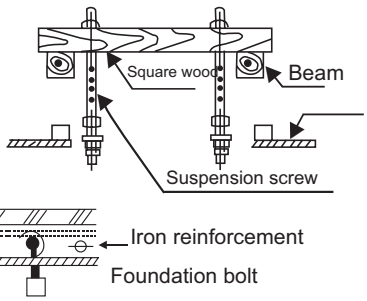
A square wood shall be supported by the beams and then set the suspension screws.

New concrete slab

To set with embedded parts,foundation bolts etc.

Knife embedded part

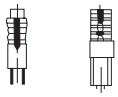
Guide plate embedded part



Pipe suspension foundation bolt

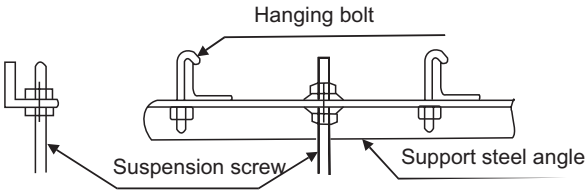
Original concrete slad

Use hole hinge,hole plunger or hole bolt.



Steel reinforcement structure

Use steel angle or new support steel angle directly.



Hanging of the indoor unit

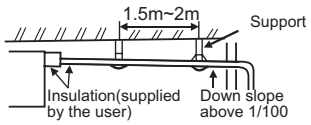
Fasten the nut on the suspension screw and then hang the suspension screw in the T slot of the suspension part of the unit. Aided with a level meter,adjust level of the unit within 5mm.

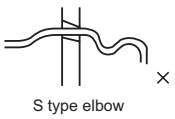
⚠ Caution

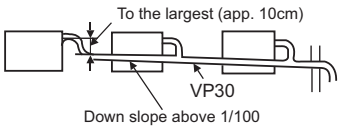
In order to drain water normally, the drain pipe shall be processed as specified in the installation manual and shall be heat insulated to avoid dew generation. Improper hose connection may cause indoor water leakage.

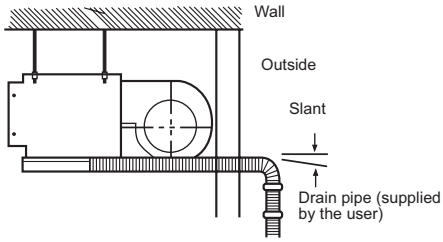
Requirements

- The indoor drain pipe shall be thermal insulated.
- The connection part between the drain pipe and the indoor unit shall be insulated so as to prevent dew generation.
- The drain pipe shall be slant downwards (greater than 1/100). The middle part shall not be of S type elbow, otherwise abnormal sound will be produced.
- The horizontal length of the drain pipe shall be less than 20 m. In case of long pipe, supports shall be provided every 1.5 – 2m to prevent wavy form.
- Central piping shall be laid out according to the following figure.
- Take care not to apply external force onto the drain pipe connection part.









Pipe and insulation material

Pipe	Rigid PVC pipe VP20 mm (internal diameter)
Insulation	Foamed PE with thickness above 7 mm

Hose

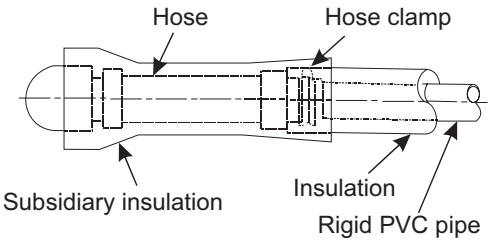
Drain pipe size: (3/4") PVC pipe

The hose is used for adjusting the off-center and angle of the rigid PVC pipe.

- Directly stretch the hose to install without making any deformation.
- The soft end of the hose must be fastened with a hose clamp.
- Please apply the hose on horizontal part

Insulation treatment:

- Wrap the hose and its clamp until to the indoor unit without any clearance with insulating material, as shown in the figure.



Drain confirmation

During trial run, check that there is no leakage at the pipe connection part during water draining even in winter.

⚠ Caution

- In installation, if there is refrigerant gas leakage, please take ventilation measures immediately. The refrigerant gas will generate poisonous gas upon contacting fire.
- After installation, please verify that there is no refrigerant leakage. The leaked refrigerant gas will produce poisonous gas when meeting fire source such as heater and furnace etc.

Allowable pipe length and drop

These parameters differ according to the outdoor unit. See the instruction manual attached with the outdoor unit for details.

Pipe material and size

Type	Pipe material	Phosphorus deoxidized copper seamless pipe (TP2M) for air conditioner	
For series 122 182	Pipe size (mm)	Gas side	Ø12.70
		Liquid side	Ø6.35
For series 242	Pipe size (mm)	Gas side	Ø15.88
		Liquid side	Ø9.52

Supplementary refrigerant

The refrigerant supplementation shall be as specified in the installation instructions attached with the outdoor unit.
The adding procedure shall be aided with a measuring meter for a specified amount of supplemented refrigerant.

Requirement

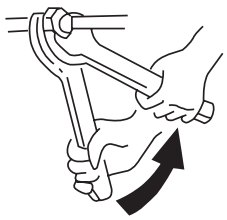
- Overfilling or underfilling of refrigerant will cause compressor fault. The amount of the added refrigerant shall be as specified in the instructions.

Connection of refrigerant pipe

Conduct flared connection work to connect all refrigerant pipes.

- The connection of indoor unit pipes must use double spanners.
- The installing torque shall be as given in the following table.
- Wall thicknessof connection pipe ⩾ 0.8mm

Connecting pipe O.D.(mm)	Installing torque(N-m)
Ø6.35	11.8 (1.2kgf-m)
Ø9.52	24.5 (2.5 kgf-m)
Ø12.70	49.0 (5.0 kgf-m)
Ø15.88	78.4 (8.0 kgf-m)



Double-spanner operation

Vacuum pumping

With a vacuum pump,create vacuum from the stop valve of the outdoor unit.
Emptying with refrigerant sealed in the outdoor unit is absolutely forbidden.

Open all valves

Open all the valves on the outdoor unit.

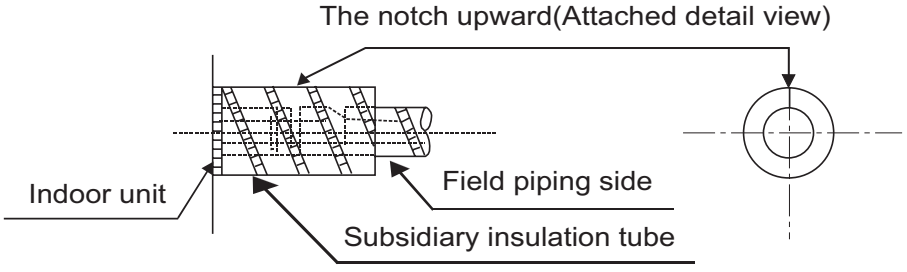
Gas leakage detection

Check with a leakage detector or soap water that if there is gas leakage at the pipe connections and bonnets.

Insulation treatment

Conduct insulation treatment on both the gas side and liquid side of pipes respectively.
During cooling operation,both the liquid and gas sides are cold and thus shall be insulated so as to avoid dew generation.

- The insulating material at gas side shall be resistant to a temperature above 120 C°
- The indoor unit pipe connection part shall be insulated.



Electric wiring

⚠WARNING

DANGER OF BODILY INJURY OR DEATH

TURN OFF ELECTRIC POWER AT CIRCUIT BREAKER OR POWER SOURCE BEFORE MAKING ANY ELECTRIC CONNECTIONS. GROUND CONNECTIONS MUST BE COMPLETED BEFORE MAKING LINE VOLTAGE CONNECTIONS.

(1) Selection of size of power supply and interconnecting wires.

Precautions for Electric wiring

- Electric wiring work should be conducted only by authorized personnel.
- Do not connect more than three wires to the terminal block. Always use round type crimped terminal lugs with insulated grip on the ends of the wires.
- Use copper conductor only.

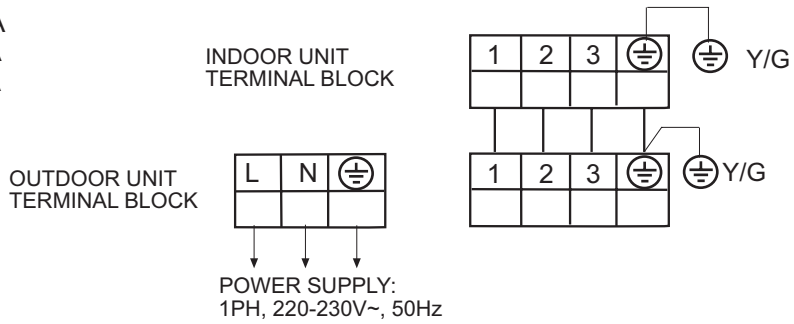
Select wire sizes and circuit protection from table below. (This table shows 20 m length wires with less than 2% voltage

Item	Phase	Circuit breaker		Power source wire size	Earth leakage breaker	
		Switch breaker (A)	Overcurrent protector		Switch break	Leak curren
For series 122 182	1	40	26	2.5mm^2	40A	30mA
For series 242	1	40	26	4.0mm^2	40A	30mA

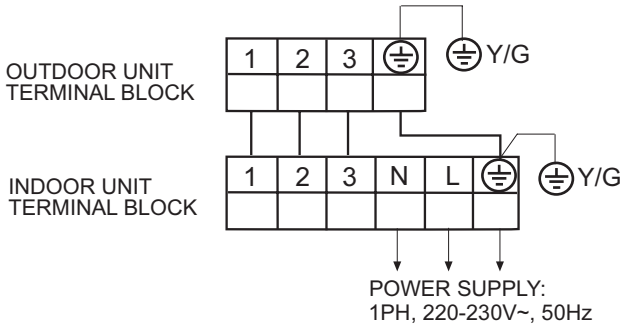
(2) Wiring connection

Make wiring to supply power to the outdoor unit, so that the power for the indoor unit is supplied by terminals.

AD182AMERA
AD242ALERA
AD242ALEAA



AD122ALEAA
AD122ALERA
AD182ALEAA



6.2 For Medium static pressure duct type (ESP 50Pa)

Safety precautions of indoor unit

- Please read these "Safety Precautions" firstly when performing the installation work.
- Though the precautionary points indicated herein are divided under two headings, those points which are related to the strong possibility of an installation done in error resulting in death or serious injury are listed in the ⚠ CAUTION section. However, there is also a possibility of serious consequences in relationship to the points listed in the ⚠ WARNING section as well.
  In either case, important safety related information is indicated, so by all means, properly observe all that is mentioned.
- After completing the installation, along with confirming that no abnormalities were seen from the operation tests, please explain operating methods as well as maintenance methods to the user (customer) of this equipment, based on the owner's manual.
  Moreover, ask the customer to keep this sheet together with the owner's manual.

⚠ WARNING

- This system should be applied to places as office, restaurant, residence and the like. Application to inferior environment such as engineering shop could cause equipment malfunction.
  Please entrust installation to either the company which sold you the equipment or to a professional contractor. Defects from improper installations can be the cause of water leakage, electric shocks and fires.
- Execute the installation accurately, based on following the installation manual. Again, improper installations can result in water leakage, electric shocks and fires.
- When a large air-conditioning system is installed to a small room, it is necessary to have a prior planned countermeasure for the rare case of a refrigerant leakage, to prevent the exceeding of threshold concentration. In regards to preparing this countermeasure, consult with the company from which you perchased the equipment, and make the installation accordingly. In the rare event that a refrigerant leakage and exceeding of threshold concentration does occur, there is the danger of a resultant oxygen deficiency accident.
- For installation, confirm that the installation site can sufficiently support heavy weight. When strength is insufficient, injury can result from a falling of the unit.
- Execute the prescribed installation construction to prepare for earthquakes and the strong winds of typhoons and hurricanes, etc. Improper installations can result in accidents due to a violent falling over of the unit.
- For electrical work, please see that a licensed electrician executes the work while following the safety standards related to electrical equipment, and local regulations as well as the installation instructions, and that only exclusive use circuits are used.
- Insufficient power source circuit capacity and defective installation execution can be the cause of electric shocks and fires.
- Accurately connect wiring using the proper cable, and insure that the external force of the cable is not conducted to the terminal connection part, through properly securing it. Improper connection or securing can result in heat generation or fire.
- Take care that wiring does not rise upward, and accurately install the lid/service panel. Its improper installation can also result in heat generation or fire.
- When setting up or moving the location of the air conditioner, do not mix air etc. or anything other than the designated refrigerant within the refrigeration cycle.
- Rupture and injury caused by abnormal high pressure can result from such mixing.
- Always use accessory parts and authorized parts for installation construction. Using parts not authorized by this company can result in water leakage, electric shock, fire and refrigerant leakage.

⚠ CAUTION

- Execute proper grounding. Do not connect the ground wire to a gas pipe, water pipe, lightning rod or a telephone ground wire. Improper placement of ground wires can result in electric shock.
- The installation of an earth leakage breaker is necessary depending on the established location of the unit. Not installing an earth leakage breaker may result in electric shock.
- Do not install the unit where there is a concern about leakage of combustible gas.
- The rare event of leaked gas collecting around the unit could result in an outbreak of fire.
- For the drain pipe, follow the installation manual to insure that it allows proper drainage and thermally insulate it to prevent condensation. Inadequate plumbing can result in water leakage and water damage to interior items.

⚠ NOTICE

All Wiring of this installation must comply with NATIONAL, STATE AND LOCAL REGULATIONS. These instructions do not cover all variations for every kind of installation circumstance. Should further

⚠ WARNING

BE SURE TO READ THESE INSTRUCTIONS CAREFULLY BEFORE BEGINNING INSTALLATION. FAI-LURE TO FOLLOW THESE INSTRUCTIONS COULD CAUSE SERIOUS INJURY OR DEATH, EQUIPMENT

6.2.1 Installtion instruction for AD182/242/282/362/482AMEAA and AD242/282/362AMERA

(1) Preparation of indoor

Before or during the installation of the unit, assemble necessary optional panel etc. depending on the specific type.

(2) Select places for installation satisfying following conditions and at the same time obtain the consent on the part of your client user.

(a) Places where chilled or heated air circulates freely.
When the installation height exceeds 3m warmed air stays close to the ceiling. In such cases, suggest your client users to install air circulators.

(b) Places where perfect drainage can be prepared and sufficient drainage.

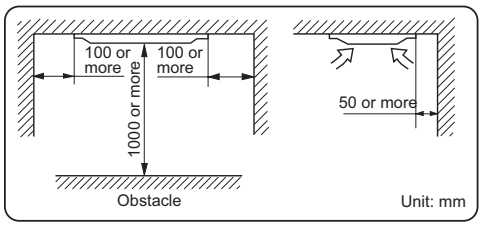
(c) Places free from air disturbances to the suction port and blowout hole of the indoor unit, places where the fire alarm may not malfunction or short-circuit.

(d) Places with the environmental dew-point temperature is lower than 28˚C and the relative humidity is less than 80 %. (When installing at a place under a high humidity environment, pay sufficient attention to the prevention of dewing such as thermal insulation of the unit.)

(e) Ceiling height shall have the following height.

	AD48**	AD18** AD36** AD24** AD28**
Combination with silent panel	416mm	366mm

● Installation space



(3) Avoid installation and use at those places

(a) Places exposed to oil splashes or steam (e.g. kitchens and machine plants).
Installation and use at such places incur deteriorations in the performance or corrosion with the heat exchanger or damage in molded synthetic resin parts.

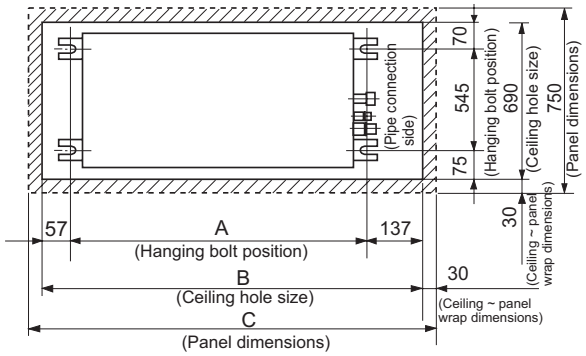
(b) Places where corrosive gas (such as sulfurous acid gas) or inflammable gas (thinner, gasoline,etc) in generated or remains. Installation and use at such places cause corrosion in the heat exchanger and damage in molded synthetic resin parts.

(c) Places adjacent to equipment generating electromagnetic waves or high-frequency waves such as in hospitals.
Generated noise may cause malfunctioning of the controller.

(4) Preparation for suspending the

(a) Size of hole at ceiling and position of

<Combination with silent panel>

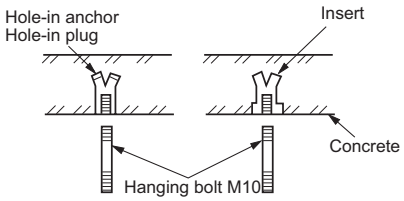


Unit: mm

Dimensions / Model	A	B	C
For series 182 242 282 362	1000	1180	1240
For series 482	1406	1600	1660

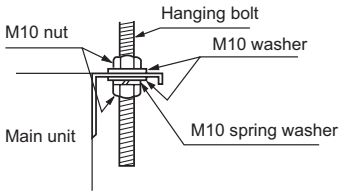
(b) Hanger bolts installation

- Use care of the piping direction when the unit is installed.



(5) Installation of indoor unit

- Fix the indoor unit to the hanger bolts.



Note

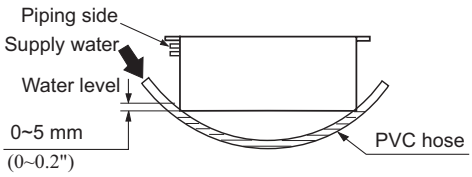
When the dimensions of main unit and ceiling holes does not match, it can be adjusted with the slot holes of hanging bracket.

Adjusting to the levelness

(a) Adjust the out-of levelness using a level or by the following method.

- Make adjustment so that the relation between the lower surface of the unit proper and water level in the hose becomes as given below.

(b) Unless the adjustment to the levelness is made properly, malfunctioning or failure of the float switch may occur.



Bring the piping side slightly lower.

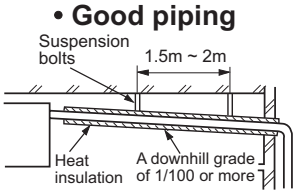
Tap selection on blower **(When the high performance filter is used.)**

Taps of blower unit are set at the standard selection at the shipping from factory. Where the static pressure is raised by employing such option as the high performance filter, etc., change the connection of connectors provided at the flank of control box as shown below.

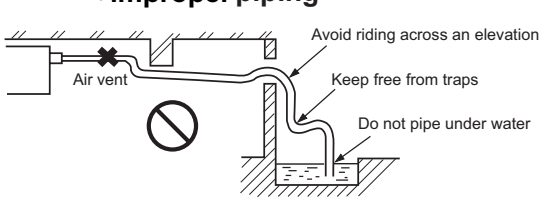
(6) Drain

(a) Drain piping should always be in a downhill grade (1/50~1/100) and avoid riding across an elevation

• Good piping

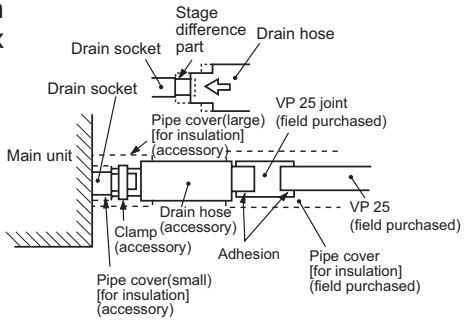


• improper piping



(b) When connecting the drain pipe to unit, pay suffcient attention not to apply excess force to the piping on the unit side. Also, fix the piping at a point as close as possible to the unit.

(c) For drain pipe, use hard PVC general purpose pipe VP-25(I.D.1") which can be purchased locally. When connecting, insert a PVC pipe end securely into the drain socket before tightening securely using the attached drain hose and clamp. Adhesive must not be used connection of the drain socket and drain hose (accessory).

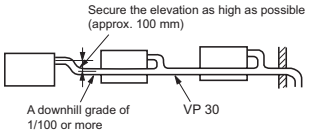


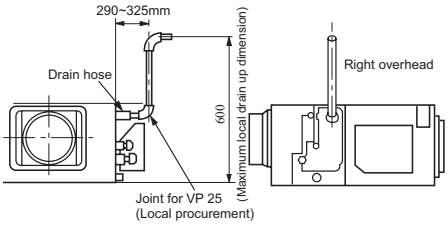
(d) When constructing drain piping for several units, position the common pipe about 100 mm below the drain outlet of each unit as shown in the sketch. Use VP-30(11/4") or thicker pipe for this purpose.

(e) Be sure to provide heat insulation to hard PVC pipes of indoor placement.

(f) Do not ever provide an air vent.

(g) The height of the drain head can be elevated up to a point 500 mm above the ceiling, and when an obstacle exists in the ceiling space, elevate the piping to avoid the obstacle using an elbow or corresponding gadget. When doing this, if the stretch for the needed height is higher than 500 mm, the back-flow quantity of drain at the event of interruption of the operation gets too much and it may cause overflow at the drain pan. Therefore, make the height of the drain pipe within the distance given in the sketch below.





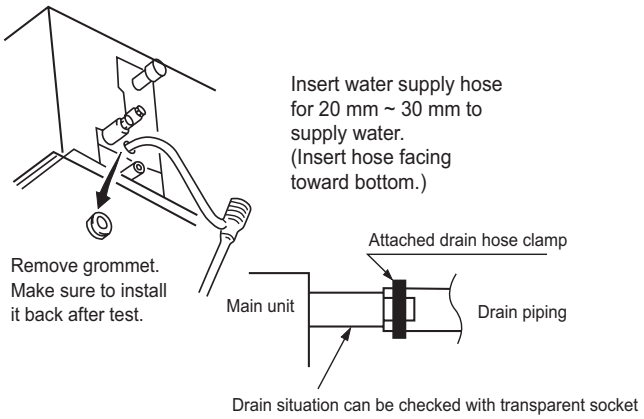
(h) Avoid positioning the drain piping outlet at a place where generation of odor may be stimulated. Do not lead the drain piping direct into a sewer from where sulfur gas may generate.

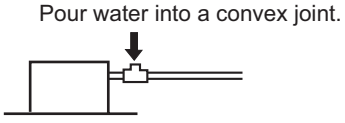
Drainage

① Conduct a drainage test after completion of the electrical work.
② During the trial, make sure that drain flows properly through the piping and that no water leaks from connections.
③ In case of a new building, conduct the test before it is furnished with the ceiling.
④ Be sure to conduct this test even when the unit is installed in the heating season.

Procedures

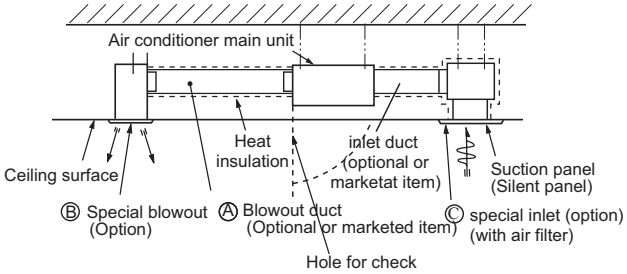
① Supply about 1000 cc of water to the unit through the air outlet using a feed water pump.
② Check the drain while cooling operation.





(In the electrical work has not been completed, connect a convex joint in the drain pipe connection to provide a water inlet. Then, check if water leaks from the piping system and that drain flows through the drain pipe normally.)

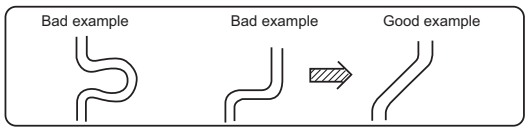
(7) Installation work for air outlet ducts



Calculate the draft and external static pressure and select the length, shape and blowout.

Ⓐ Blowout duct

- 2-spot, 3-spot and 4-spot with Φ 200 type duct are the standard specifications. Determine the number of spots based on following table.
  Note (1) Shield the central blowout hole for 2-spot.
  (2) Shield the blowout hole around the center for 3-spot.
- Limit the difference in length between spots at less than 2:1.
- Reduce the length of duct as much as possible.
- Reduce the number of bends as much as possible. (Corner R should be as larger as possible.)



- Use a band. etc. to connect the main unit and the blowout duct flange.
- Conduct the duct installation work before finishing the ceiling.

(8) Connection of suction, exhaust ducts

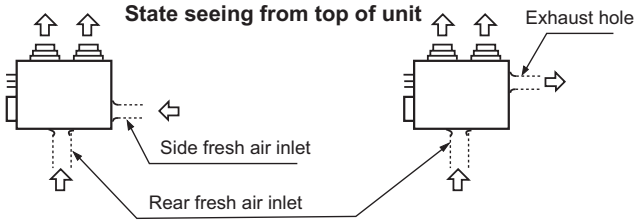


Fig.1 Fig.2

(a) Duct connection position

i) Fresh air inlet

- Inlet can be selected from the side or rear faces depending on the working conditions.
- Use the rear fresh air inlet when the simultaneous intake and exhaust is conducted. (Side inlet cannot be used.)

ii) Exhaust (Make sure to use also the suction.)

Use the side exhaust port.

Electric wiring

⚠WARNING

DANGER OF BODILY INJURY OR DEATH

TURN OFF ELECTRIC POWER AT CIRCUIT BREAKER OR POWER SOURCE BEFORE MAKING ANY ELECTRIC CONNECTIONS. GROUND CONNECTIONS MUST BE COMPLETED BEFORE MAKING LINE VOLTAGE CONNECTIONS.

(1) Selection of size of power supply and interconnecting

Precautions for Electric wiring

- Electric wiring work should be conducted only by authorized personnel.
- Do not connect more than three wires to the terminal block. Always use round type crimped terminal lugs with insulated grip on the ends of the wires.
- Use copper conductor only.

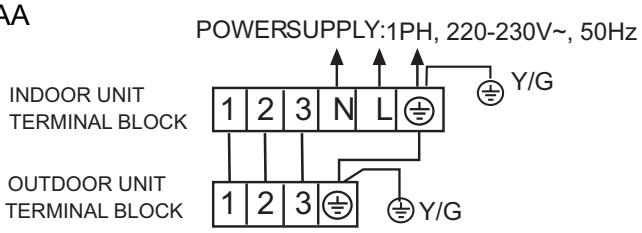
Select wire sizes and circuit protection from table below. (This table shows 20 m length wires with less than 2% voltage drop.)

Item / Model	Phase	Circuit breaker		Power source wire size (minimum)	Earth leakage breaker	
		Switch breaker (A)	Overcurrent protector		Switch breaker(A)	Leak current(mA)
For series 182	1	40	26	2.5	40	30
For series 242	1	40	26	4.0	40	30
For series 282 362	1	40	26	6.0	40	30
For series 282 362 482	3	30	20	2.5	30	30

(2) Wiring connection

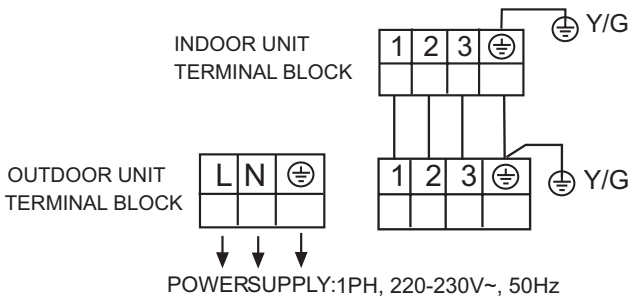
Make wiring to supply power to the indoor unit, so that the power for the outdoor unit is supplied by terminals.

For AD182AMEAA

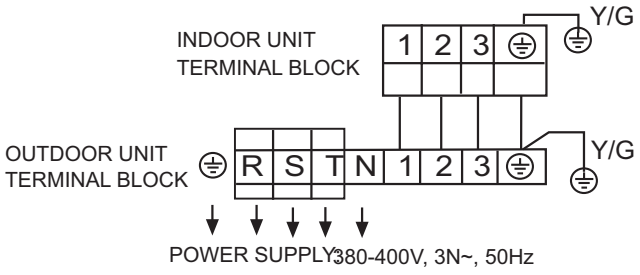


Make wiring to supply power to the outdoor unit, so that the power for the indoor unit is supplied by terminals.

For series 242 282 362



For series 282 362 422 482



6.2.2 Installtion instruction for AD362/422/482ANEAA and AD482ANERA

1. Before installation (Before finishing installation, do not throw the attached parts installation needs)

- Confirm the way to move the unit to the installation place.
- Before moving the unit to the installation place, do not remove their packages.
  When have to remove the package, use a soft material or protection board with rope to lift the unit assembly to avoid unit damage or bumping a scrape.

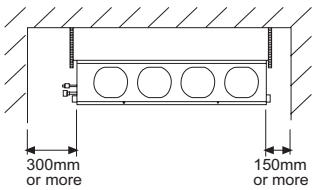
2. Choose installation place

(1) The chosen installation place should meet the following requirements and get the user's consent.

- Place ensures ideal airflow distribution.
- The passage of airflow has no obstacles.
- When importing outside air, it should be imported directly from outdoors. (if the pipe can not be extended, it also can not be imported from top)
- Place ensures enough space for maintenance.
- The pipe length between indoor and outdoor unit is in the permitted limit (referring to outdoor unit installation part).
- The indoor unit, outdoor unit, electric wire and connection wire is at least 1m away from television and radio. This is to avoid the image disturbance and noise caused by the above-mentioned home appliance. (Even if 1m away, if the electromagnetic wave is too strong, it can also cause noise.)

(2) The height of ceiling

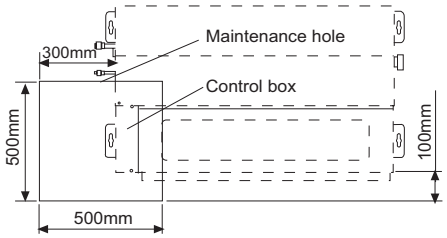
- The indoor unit can install on the ceiling, which height is no more than 3m.



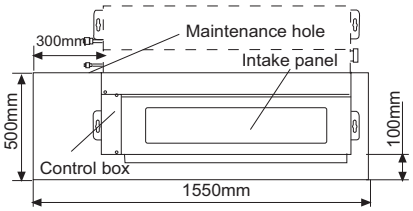
(3) Install and use the hoisting screw. Check if the installation place can bear the weight of unit assembly.If not certain, strengthen it before install the unit

(4) Maintenance hole dimension

- It shall be possible to install and remove the control box



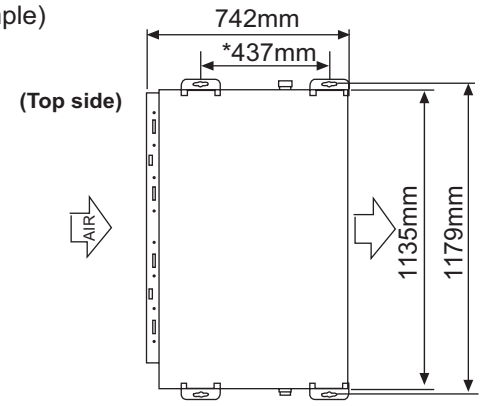
- It shall be possible to install and remove the control box, fan units and filter

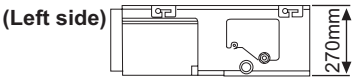


3. Preparation before installation

(1) The position relation among hoisting screw (unit: mm)

(Example)





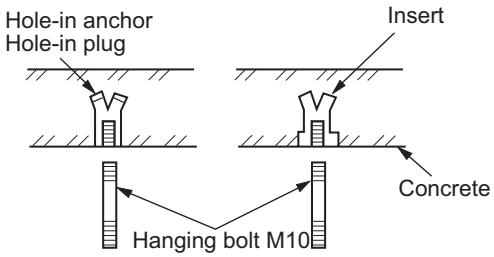
Note:
The distance of * is adjustable according to the place of the hanging bolt.
(MAX: 510 mm, MIN: 370 mm)

(2) If necessary, cut the opening installation and checking needed on the ceiling. (If has ceiling)

- Before installation, finish the preparation work of all the pipes (refrigerant, drainage) and wire (wire controller connection wire, indoor and outdoor unit connection wire) of indoor unit, so that after installation, they can be immediately connected with outdoor unit.
- Cut the opening on the ceiling. Maybe it needs to strengthen the ceiling to keep the ceiling even and flat and prevent the ceiling from vibration. For details, please consult to the builder.

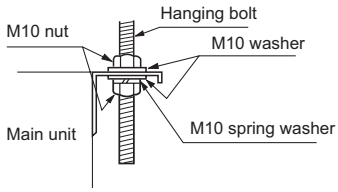
(3) Hanger bolts installation

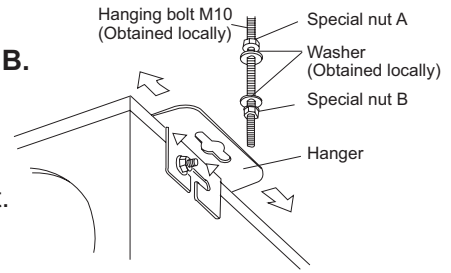
- Be care of the piping direction when the unit is installed. (Use M10 screw bolt)
- In order to bear the weight of the unit, for existed ceiling, using foundation screw bolt, for new ceiling, using burying embedded screw bolt, burying screw bolt or spot supplied other parts. Before going on installation, adjust the gaps with ceiling.



4. Installation of indoor unit

- Fix the indoor unit to the hanger bolts.
  If required, it is possible to suspend the unit to the beam, etc.
  Directly by use of the bolts without using the hanger bolts.
- Slide the unit in the arrow direction and fasten it
  Bolt strength : 9.81 to 14.71 N·m (100 to 150 kgf.cm)
  Warning: Fasten the unit securely with special nut A and B.





Note

When the dimensions of main unit and ceiling holes does not match, it can be adjusted with the slot holes of hanging bracket.

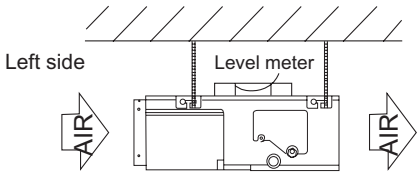
Adjusting to the levelness

(a) Adjust the out-of levelness using a level or by the following method.

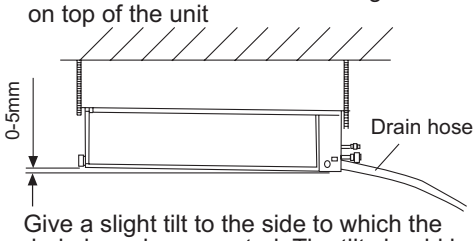
- Make adjustment so that the relation between the lower surface of the unit proper and water level in the hose becomes as given below.

(b) Unless the adjustment to the levelness is made properly, malfunctioning or failure of the float switch may occur.

Base vertical direction leveling on the unit (right and left)



Base horizontal direction leveling on top of the unit

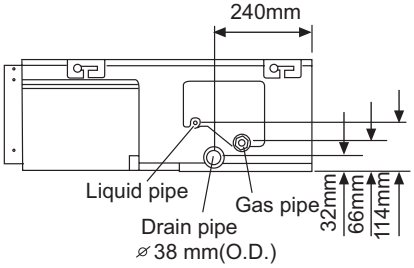


Give a slight tilt to the side to which the drain hose is connected. The tilt should be in the range of 0 mm to 5 mm

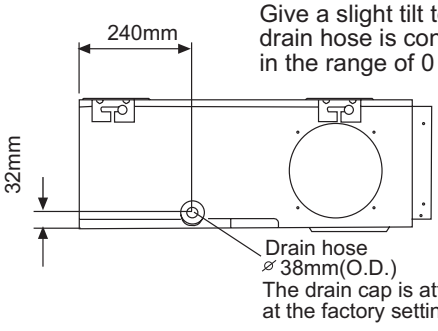
5. Drain Piping

Install the drain hose according to the measurements given in the following figure

(Left side)



(Right side)



(a), (b), (c) and (d) items are same with the former models, such as AD282AMEAA

(e) The stiff PVC pipe put indoor side should be heat insulated.

(f) Avoid putting the outlet of drain hose in the places with irritant gas generated. Do not insert the drain hose directly into drainage, where the gas with sulfur may be generated.

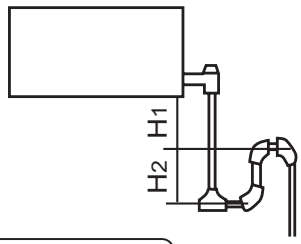
(g) Backwater bend

Because the drain spout is at the position, which negative pressure may occur, with the rise of water level in the drain pan, water leakage may occur. In order to prevent water leakage, we designed a backwater bend.

The structure of backwater bend should be able to be cleaned. As the below figure shown, use T type joint.

The backwater bend is set near the air conditioner.

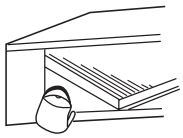
- As figure shown, set a backwater bend in the middle of drain hose.



H1=100mm or the static pressure of air sending motor
H2=1/2H1 (or between 50~100mm)

Drainage Test

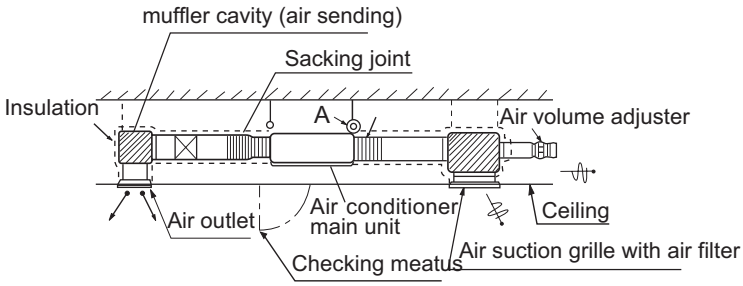
①Conduct a drainage test after completion of the electrical work.
②During the trial, make sure that drain flows properly through the piping and no water leaks from connections.
③In case of a new building, conduct the test before it is furnished with the ceiling.
④Be sure to conduct this test even when the unit is installed in the heating season.

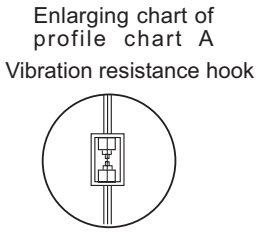


Procedures

① Supply about 1000 cc of water to the unit through the air outlet using a feed water pump.
② Check the drain while cooling operation.

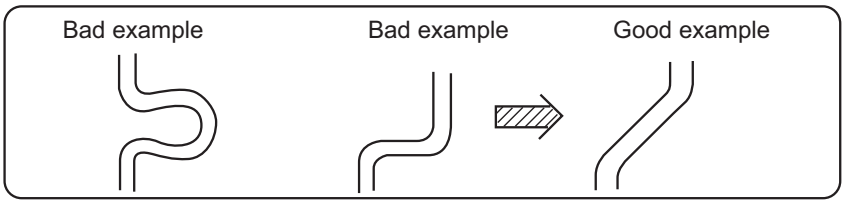
6. Installation of air suction and discharging duct





Please consult the after-sales service worker of Haier Air Conditioner for the choosing and installation of suction inlet, suction duct, discharging outlet and discharging duct. Calculating the design drawing and outer static pressure, and choose the discharging duct with proper length and shape.

- The length difference among every duct is limited below 2:1.
- Reduce the length of duct as possible as can.
- Reduce the amount of bend as possible as can.
- Use heat insulation material to bind and seal the part connecting main unit and the flare part of air discharging duct. Perform duct installation work, before the fitment of ceiling.

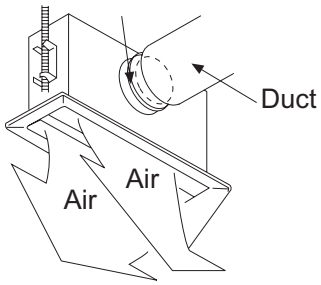


7. The attentive matters in installation of air suction and discharging duct

- Recommend to use anti-frost and sound-absorbing duct. (locally bought)
- The duct installation work should be finished before the fitment of ceiling.
- The duct must be heat insulated.
- The specific air-discharging outlet should be installed at the place where the airflow can be reasonably distributed.
- The surface should leave a checking meatus for checking and maintenance.

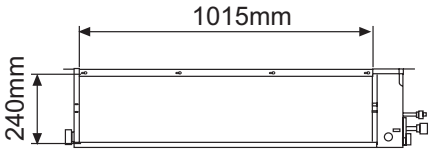
Special air discharging outlet

Use screw bolt to fix

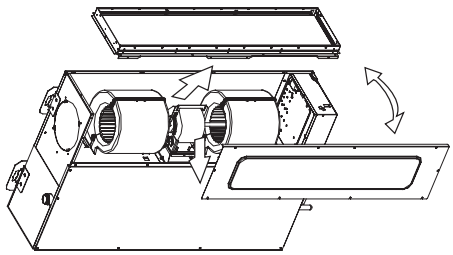


8.Intake duct connection

Follow the procedure in the following figure to the ducts

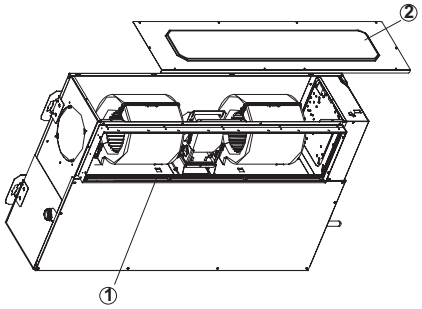


The air inlet duct can be changed by replacing the intake grille and flange



For the bottom air intake, follow the procedure of ①→② for installation.

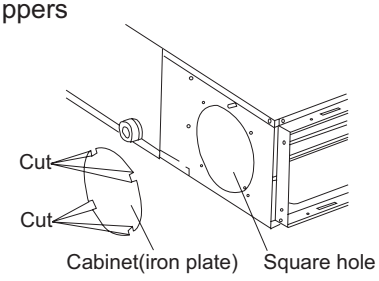
(The factory setting is back air intake)



9.Fresh air intake

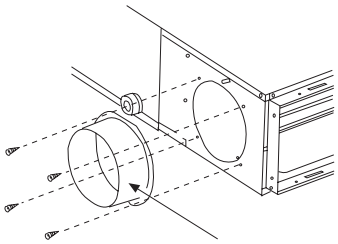
(Processing before use)

(1)When taking in fresh air ,cut a slit shaped cabinet in the left side of the outer case with nippers



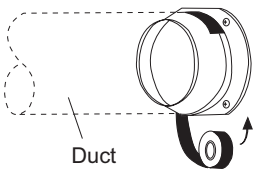
⚠ CAUTION
① When removing the cabinet (iron plate), be careful not to damage the indoor unit internal parts and surrounding area (outlet case)
② When processing the cabinet (iron plate),be careful not to injure yourself with burrs,etc.

(2)Install the round flange (option parts) to the fresh air intake



(3)Connect the duct to the round flange

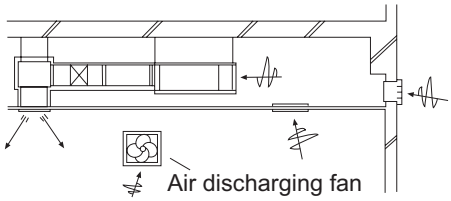
(4)Seal with a band and vinyl tape,etc. so that air does not leak from the connection



10. The examples of improper installation

- Do not use air in duct and take the ceiling inner side instead. The result is because of the irregular outer air mass, strong wind and sunshine, the humidity is increased.

- There may be water drop on the outside of duct. For cement and other new constructions, even if not taking ceiling inner side as duct, the humidity will also be so high. At this time, use glass fiber to perform heat preservation to the whole. (use iron net to bind the glass fiber)
- Maybe exceeding the unit operation limit (for example: when indoor dry bulb temperature is 35 C, wet bulb temperature 24℃), it may lead to overload of comperessor.
- Affected by the capacity of air discharging fan, the strong wind in the outer duct and wind direction, when unit air sending volume exceeds the limit, the discharged water of heat exchanger will overflow, leading to water leakage.

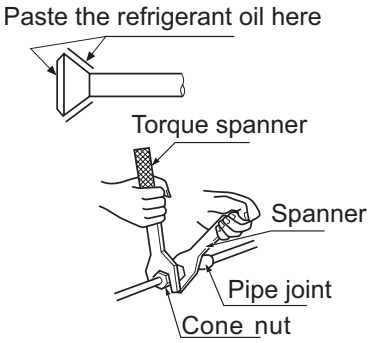


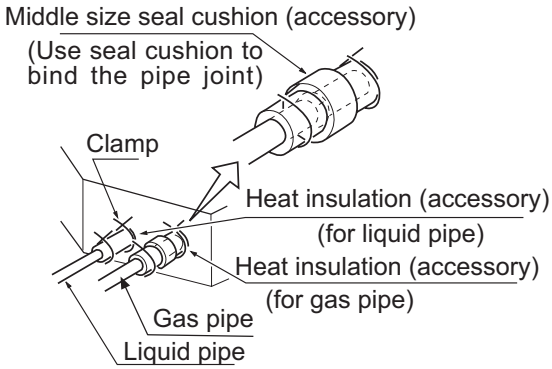
Improper example

11. Refrigerant pipe

(The air side pipe, liquid side pipe must be faithfully heat insulated, if no heat insulation, it may cause water leakage.)

- The outdoor unit has been charged with refrigerant.
- When connecting the pipe to the unit or dismantling the pipe from the unit, please follow the figure shown, use spanner and torque spanner together.
- When connect cone nut, the inner side and outside of cone nut should paste with refrigerant oil. Use hand to twist 3-4 rings, then fasten with spanner.
- Referring to Table I to confirm the fasten torque. (too tight may damage nut leading to leakage)
- Check if the connection pipe leaks, then do heat insulation treatment, as below figure shown.
- Only use seal cushion to bind the joint part of air pipe and heat insulation parts.





Electric wiring

⚠ WARNING

DANGER OF BODILY INJURY OR DEATH

TURN OFF ELECTRIC POWER AT CIRCUIT BREAKER OR POWER SOURCE BEFORE MAKING ANY ELECTRIC CONNECTIONS. GROUND CONNECTIONS MUST BE COMPLETED BEFORE MAKING LINE VOLTAGE CONNECTIONS.

(1) Selection of size of power supply and interconnecting

Precautions for Electric wiring

- Electric wiring work should be conducted only by authorized personnel.
- Do not connect more than three wires to the terminal block. Always use round type crimped terminal lugs with insulated grip on the ends of the wires.

- Use copper conductor only.

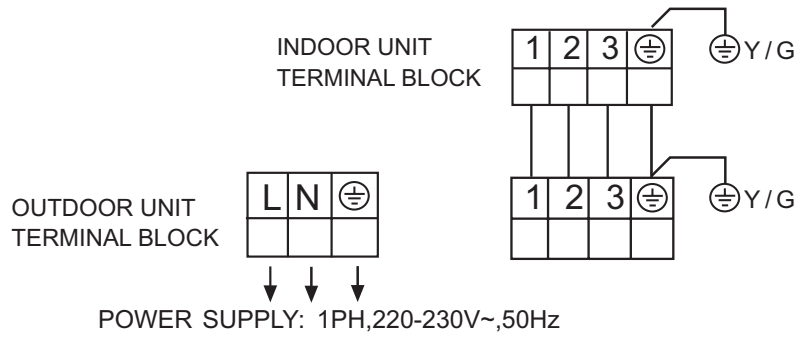
Select wire sizes and circuit protection from table below. (This table shows 20 m length wires with less than 2% voltage drop.)

Item / Model	Phase	Circuit breaker		Power source wire size (minimum) (mm^2)	Earth leakage breaker	
		Switch breaker (A)	Overcurrent protector		Switch breaker(A)	Leak current(mA)
AD362ANEAA	3	30	20	2.5	30	30
AD422ANEAA AD482ANEAA AD482ANERA	3	30	20	4.0	30	30
AD362ANEAA	1	40	30	6.0	40	30

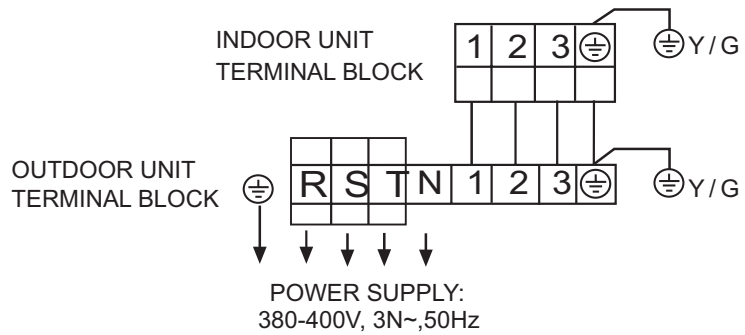
(2) Wiring connection

Make wiring to supply power to the outdoor unit, so that the power for the indoor unit is supplied by terminals.

AD362ANEAA



AD362ANEAA
AD422ANEAA
AD482ANEAA
AD482ANERA



6.3 For High static pressure duct type (ESP 100Pa)

1. Before installation [Before finishing installation, do not throw the attached parts installation needs]

- Confirm the way to move the unit to the installation place.
- Before moving the unit to the installation place, do not remove their packages.
  When have to remove the package, use a soft material or protection board with rope to lift the unit assembly to avoid unit damage or bumping a scrape.

2. Choose installation place

(1) The chosen installation place should meet the following requirements and get the user□s consent.

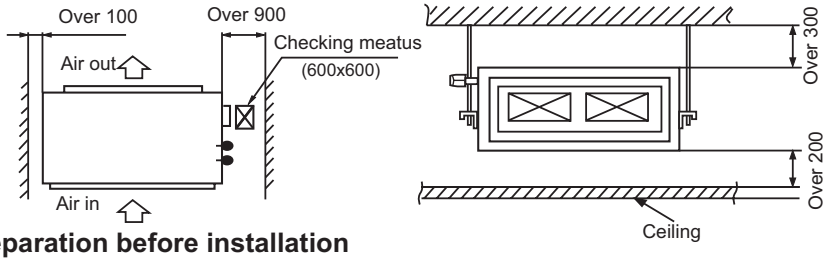
- Place ensures ideal airflow distribution.
- The passage of airflow has no obstacles.
- When importing outside air, it should be imported directly from outdoors. (if the pipe can not be extended, it also can not be imported from top)
- Place ensures enough space for maintenance.
- The pipe length between indoor and outdoor unit is in the permitted limit (referring to outdoor unit installation part).
- The indoor unit, outdoor unit, electric wire and connection wire is at least 1m away from television and radio. This is to avoid the image disturbance and noise caused by the above-mentioned home appliance. (Even if 1m away, if the electromagnetic wave is too strong, it can also cause noise.)

(2) The height of ceiling

- The indoor unit can install on the ceiling, which height is no more than 3m.

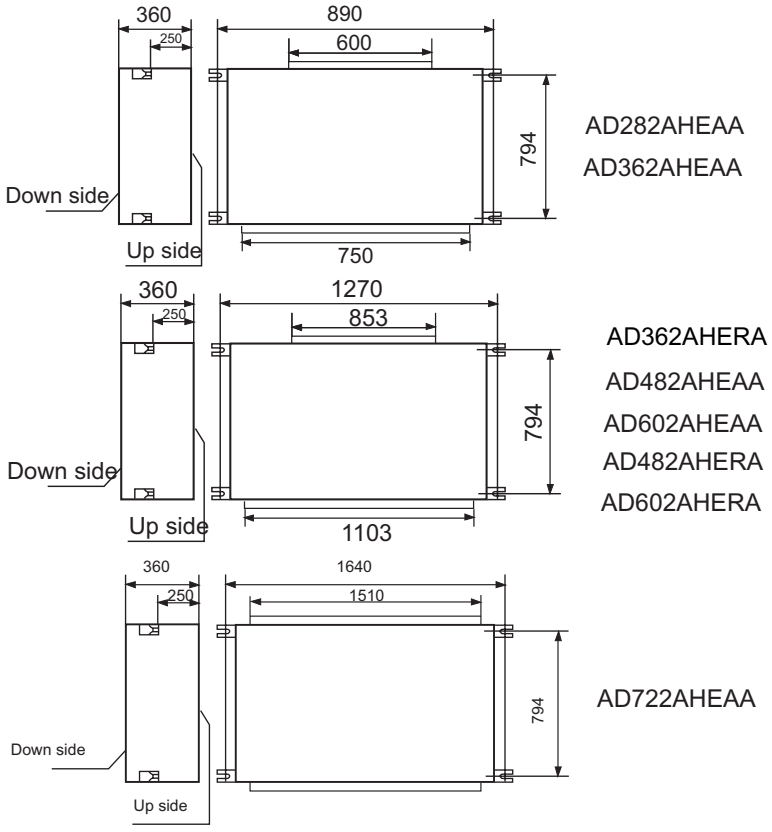
(3) Install and use the hoisting screw. Check if the installation place can bear the weight of unit assembly.

- If not certain, strengthen it before install the unit.



3. Preparation before installation

(1) The position relation among hoisting screw (unit: mm)



(2) If necessary, cut the opening installation and checking needed on the ceiling. (If has ceiling)

- Before installation, finish the preparation work of all the pipes (refrigerant, drainage) and wire (wire controller connection wire, indoor and outdoor unit connection wire) of indoor unit, so that after installation, they can be immediately connected with outdoor unit.
- Cut the opening on the ceiling. Maybe it needs to strengthen the ceiling to keep the ceiling even and flat and prevent the ceiling from vibration. For details, please consult to the builder.

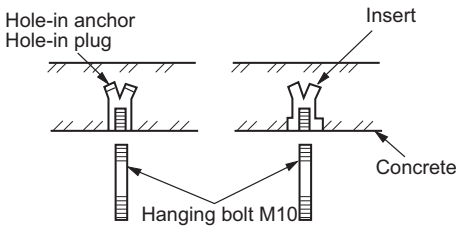
(3) Hanger bolts installation

- Use care of the piping direction when the unit is installed.

(Use M10 screw bolt)

In order to bear the weight of the unit, for existed ceiling, using foundation screw bolt, for new ceiling, using burying embedded screw bolt, burying screw bolt or spot supplied other parts.

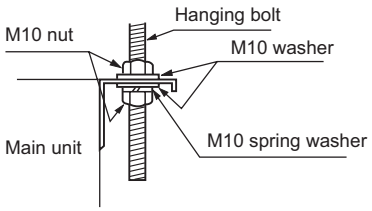
Before going on installation, adjust the gaps with ceiling.



4. Installation of indoor unit

- Fix the indoor unit to the hanger bolts.

If required, it is possible to suspend the unit to the beam, etc. Directly by use of the bolts without using the hanger bolts.



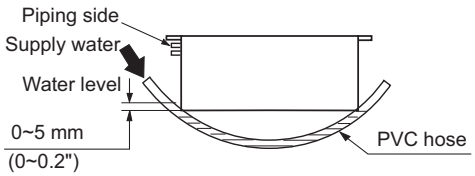
Note

When the dimensions of main unit and ceiling holes does not match, it can be adjusted with the slot holes of hanging bracket.

Adjusting to the levelness

(a) Adjust the out-of levelness using a level or by the following method.

- Make adjustment so that the relation between the lower surface of the unit proper and water level in the hose becomes as given below.



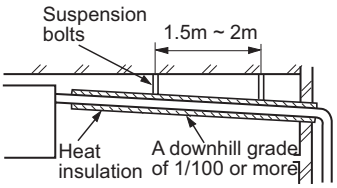
Bring the piping side slightly lower.

(b) Unless the adjustment to the levelness is made properly, malfunctioning or failure of the float switch may occur.

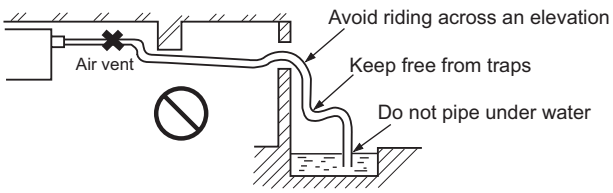
5. Drain Piping

(a) Drain piping should always be in a downhill grade (1/50~1/100) and avoid riding across an elevation or making traps.

• Good piping

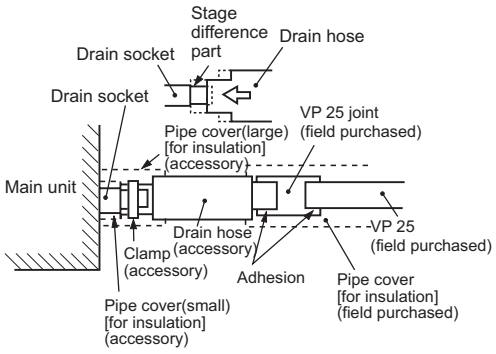


• Improper piping

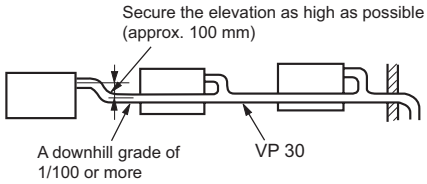


(b) When connecting the drain pipe to unit, pay suffcient attention not to apply excess force to the piping on the unit side. Also, fix the piping at a point as close as possible to the unit.

(c) For drain pipe, use hard PVC general purpose pipe VP-25(I.D.1") which can be purchased locally. When connecting, insert a PVC pipe end securely into the drain socket before tightening securely using the attached drain hose and clamp. Adhesive must not be used connection of the drain socket and drain hose (accessory).



(d) When constructing drain piping for several units, position the common pipe about 100 mm below the drain outlet of each unit as shown in the sketch. Use VP-30(11/4") or thicker pipe for this purpose.



(e) The stiff PVC pipe put indoor side should be heat insulated.

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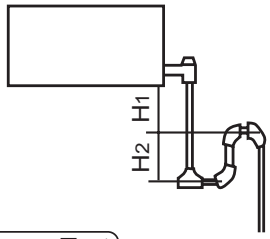
(g) Backwater bend

Because the drain spout is at the position, which negative pressure may occur. So with the rise of water level in the drain pan, water leakage may occur. In order to prevent water leakage, we designed a backwater bend.

The structure of backwater bend should be able to be cleaned. As the below figure shown, use T type joint. The backwater bend is set near the air conditioner.

- As figure shown, set a backwater bend in the middle of drain hose.



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Drainage Test

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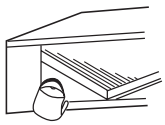
④ Be sure to conduct this test even when the unit is installed in the heating season.



Procedures

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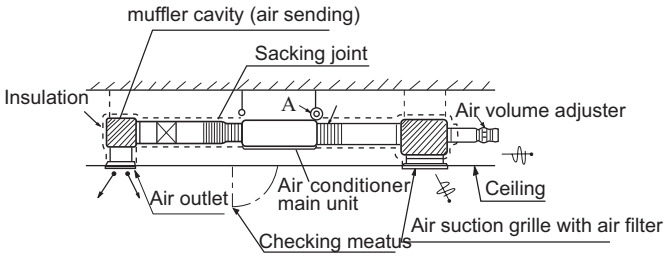
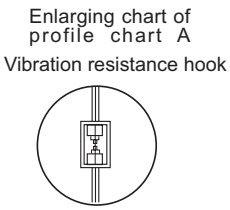
② Check the drain while cooling operation.

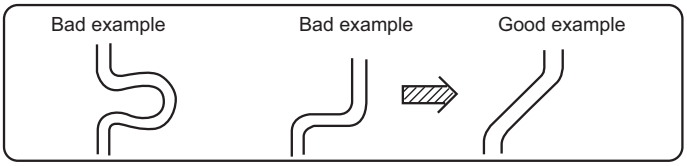
6. Installation of air suction and discharging duct





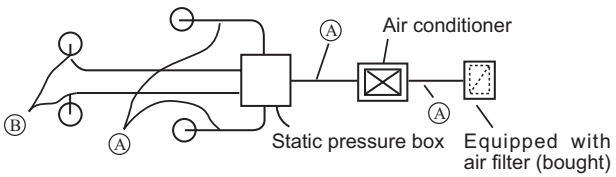
Please consult the after-sales service worker of Haier Air Conditioner for the choosing and installation of suction inlet, suction duct, discharging outlet and discharging duct. Calculating the design drawing and outer static pressure, and choose the discharging duct with proper length and shape.

- The length difference among every duct is limited below 2:1.
- Reduce the length of duct as possible as can.
- Reduce the amount of bend as possible as can.
- Use heat insulation material to bind and seal the part connecting main unit and the flare part of air discharging duct. Perform duct installation work, before the ceiling fit.



7. Calculation method of the dimension of the simple quadrate air duct

Presuming the unit length friction impedance of the duct is 1Pa/m, when the dimension of one side of the air duct is fixed as 250mm, as shown below:



	AD482AHEAA AD602AHEAA AD722AHEAA AD482AHERA AD602AHERA		AD362AHEAA AD362AHERA		AD282AHEAA	
	Air volume	Duct(mmxmm)	Air volume	Duct(mmxmm)	Air volume	Duct(mmxmm)
Ⓐ	2400m³/h (40m³/min)	250x560	2400m³/h (40m³/min)	250x310	1200m³/h (20m³/min)	250x310
Ⓑ	600m³/h (10m³/min)	250x190	600m³/h (10m³/min)	250x120	300m³/h (5m³/min)	250x120

- **The calculation of duct resistance (the simple calculation is as follow table)**

Straight part	Calculate as per 1m length 1Pa, 1Pa/m
Bend part	Each bend takes as a3~4m long straight duct
Air out part	Calculate as 25Pa
Static pressure box	Calculate as 50Pa/each
Air inlet grille (with air filter)	Calculate as 40Pa/each

- **The chosen chart of simple duct**

Note:1Pa/m=0.1mmAg/m

Shape / Item / Air volume	Square duct Dimension
$m^3/h(m^3/n)$	(mmxmm)
100	250 x 60
200	250 x 90
300	250 x 120
400	250 x 140
500	250 x 170
600(10)	250 x 190
800	250 x 230
1,000	250 x 270
1,200(20)	250 x 310
1,400	250 x 350
1,600	250 x 390

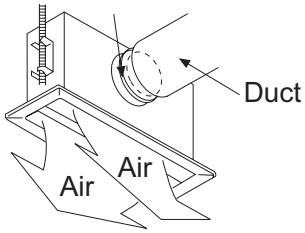
Shape / Item / Air volume	Square duct Dimension
$m^3/h(m^3/n)$	(mmxmm)
1,800(30)	250 x 430
2000	250 x 470
2400	250 x 560
3,000(50)	250 x 650
3,500	250 x 740
4,000	250 x 830
4,500	250 x 920
5,000	250 x 1000
5,500	250 x 1090
6,000(100)	250 x 1180

8. The attentive matters in installation of air suction and discharging duct

- Recommend to use anti-frost and sound-absorbing duct. (locally bought)
- The duct installation work should be finished before the fitment of ceiling.
- The duct must be heat insulated.
- The specific air-discharging outlet should be installed at the place where the airflow can be reasonably distributed.
- The surface should leave a checking meatus for checking and maintenance.

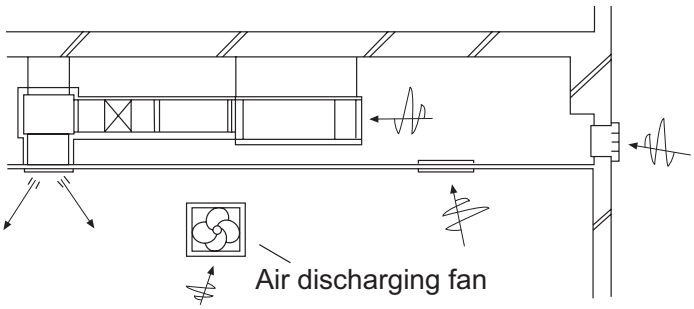
Special air discharging outlet

Use screw bolt to fix



9. The examples of improper installation

- Do not use air in duct and take the ceiling inner side instead. The result is because of the irregular outer air mass, strong wind and sunshine, the humidity is increased.
- There may be water drop on the outside of duct. For cement and other new constructions, even if not taking ceiling inner side as duct, the humidity will also be so high. At this time, use glass fiber to perform heat preservation to the whole. (use iron net to bind the glass fiber)
- Maybe exceeding the unit operation limit (for example: when indoor dry bulb temperature is 35degree, web bulb temperature is 24degree), it may lead to overload of compressor.
- Affected by the capacity of air discharging fan, the strong wind in the outer duct and wind direction, when unit air sending volume exceeds the limit, the discharged water of heat exchanger will overflow, leading to water leakage.



Improper example

10. The operation method of fan controller

Through the fan controller switch in the electric box, the air volume of this unit can be continuously adjusted.
It is unnecessary to adjust air volume through the duct side wind level (unit outside static adjustment).
The air volume set should be in the operation air volume range.
Figure I shows the position of fan controller in the electric box and operation method.
After finishing the electric work, perform test run. According to the main points in Figure II making the chosen switch No. accordant. And confirm if it reaches the needed air volume.

Note:

1) When operating the fan controller, it is possible to touch the electric charging part, so do cut off the power supply.
2) Do not set the dial at the position less than 1.
3) The figure circled in Figure II indicate the capacity number of fan controller. The non-listed capacity number may exceed the permitted operation capacity range, so it is impossible to operate.
4) When delivering from factory, the capacity number of fan controller is set at □No.5□.

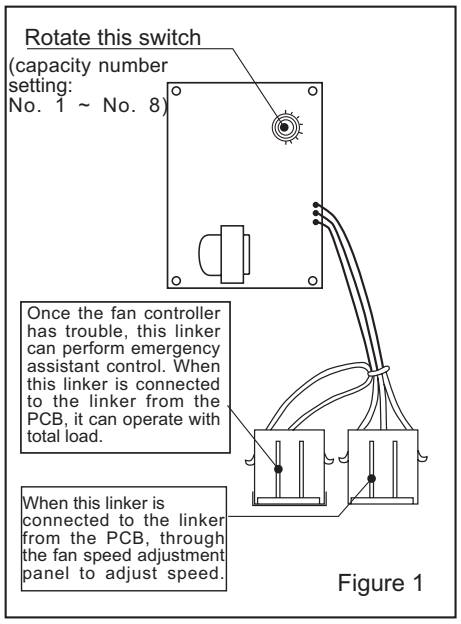


Figure 1

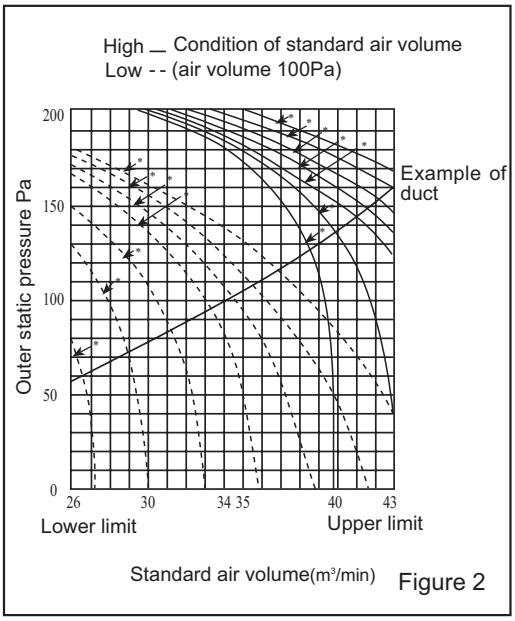


Figure 2

● The example of the method of choosing capacity number:

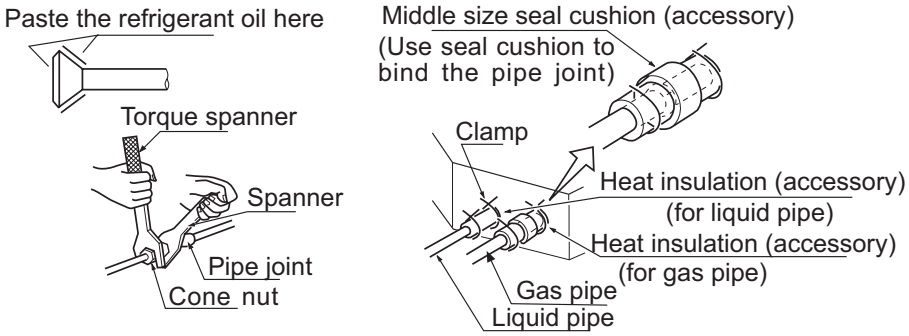
1) If the unit is in high-speed operation, needing take outer static pressure is 180Pa in capacity air volume 34m^3/min as working condition point, according to Figure II □The characteristic chart of air volume□, the capacity number of fan controller is No. 2.
2) If the unit is in low speed operation, needing take outer static pressure is 60Pa in capacity air volume 32m^3/min as working condition point, according to Figure II □The characteristic chart of air volume□, the capacity number of fan controller is No. 4.

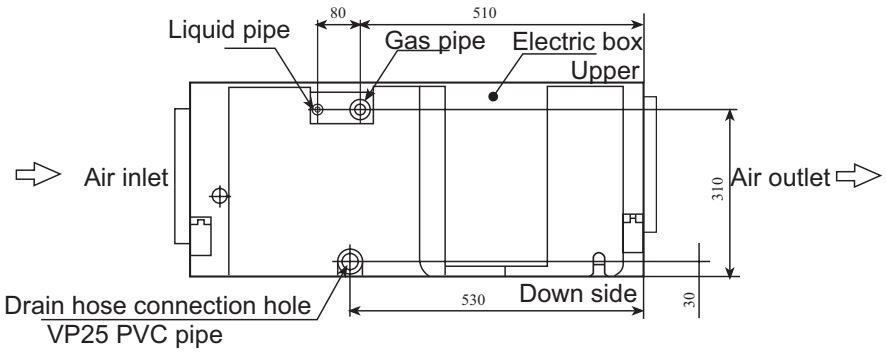
11. Refrigerant pipe

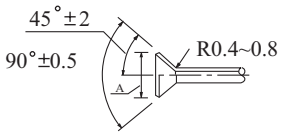
[The air side pipe, liquid side pipe must be faithfully heat insulated, if no heat insulation, it may cause water leakage.]

● The outdoor unit has been charged with refrigerant.

- When connect the pipe to the unit or dismantling the pipe from the unit, please follow the figure shown, use spanner and torque spanner together.
- When connect cone nut, the inner side and outside of cone nut should paste with refrigerant oil. Use hand to twist 3-4 rings, then fasten with spanner.
- Referring to Table I to confirm the fasten torque. (too tight may damage nut leading to leakage)
- Check if the connection pipe leaks, then do heat insulation treatment, as below figure shown.
- Only use seal cushion to bind the joint part of air pipe and heat insulation parts.





Specification of pipe (mm)	Tighten torque	Cone dimension A (mm)	Cone
Φ 9.52	3270~3990 N·cm (333~407 kgf·cm)	12.0~12.4	
Φ 15.88	6180~7540 N·cm (630~770 kgf·cm)	18.6~19.0	
Φ 19.05	9720~11860 N·cm (990~1210 kgf·cm)	22.9~23.3	

5. Electric wiring

⚠WARNING

DANGER OF BODILY INJURY OR DEATH

TURN OFF ELECTRIC POWER AT CIRCUIT BREAKER OR POWER SOURCE BEFORE MAKING ANY ELECTRIC CONNECTIONS. GROUND CONNECTIONS MUST BE COMPLETED BEFORE MAKING LINE VOLTAGE CONNECTIONS.

(1) Selection of size of power supply and interconnecting wires.

Precautions for Electric wiring

- Electric wiring work should be conducted only by authorized personnel.
- Do not connect more than three wires to the terminal block. Always use round type crimped terminal lugs with insulated grip on the ends of the wires.
- Use copper conductor only.

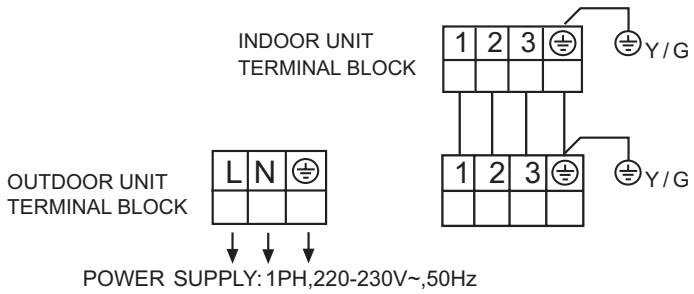
Select wire sizes and circuit protection from table below. (This table shows 20 m length wires with less than 2% voltage drop.)

Item / Model	Phase	Circuit breaker		Power source wire size (minimum) (mm^2)	Earth leakage breaker	
		Switch breaker (A)	Overcurrent protector		Switch breaker(A)	Leak current(mA)
AD282AHEAA AD362AHEAA AD362AHERA	3	30	20	2.5	30	30
AD482AHEAA AD602AHEAA AD482AHERA AD602AHERA	3	30	20	4.0	30	30
AD282AHEAA AD362AHEAA AD362AHERA	1	40	30	6.0	40	30

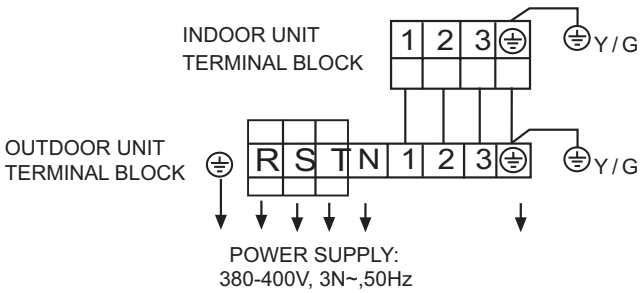
(2) Wiring connection

Make wiring to supply power to the outdoor unit, so that the power for the indoor unit is supplied by terminals.

AD282AHEAA
AD362AHEAA
AD362AHERA



AD282AHEAA
AD362AHEAA
AD482AHEAA
AD602AHEAA
AD362AHERA
AD482AHERA
AD602AHERA

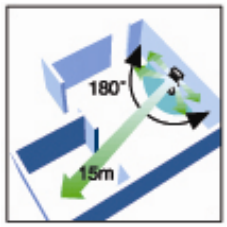


Cabinet indoor unit (AP42~AP48)

1. Features

Long Distance Air Sending

Wide angle 180 kinds of air sending modes, and the distance of air sending can reach to 15m

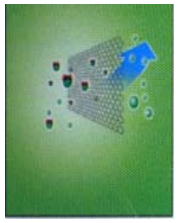


Auxiliary Electric Heating Function

The unit has a optional auxiliary electric heating function, so if the outdoor temperature is too low, it can be used normally, and heating rapidly

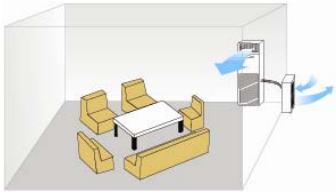
Optional Healthy Module

Healthy Nanometer silver ion filter,Ionizer to bring The refreshing air to your room.Enjoy the feeling of a forest at home.



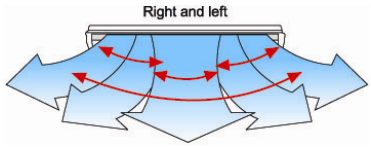
Photic bacteria-killing medium function,it can absorb deleterious gas generated by fitment.

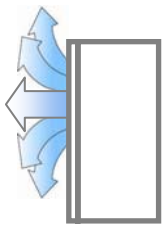
Fresh air function can realize air convection between inside and outside, not only ensure indoor air fresh, but also make interior air keep plus pressure, avoid dirty air enter the room.(need to handtailor)



3-D airflow (for AP482AKEAA)

The air conditioner adopts two stepping motors to combines vertical and horizontal auto-swing to circulate cool/warm air to the every corner of the room





New Structure Design

Patent “H” shape appearance design and entire closed type air outlet grille, add elegance to any style of interior

Bigger LCD Screen

The cabinet type with the model of AP482AKEAA has a very big LCD screen, so operation state of the unit will be clear at a glance, it is very convenient to use

2. Specifications

item				Model	AP422ACEAA	
Function					cooling	heating
Capacity				BTU/h	42000	47800
Capacity				kW	12.3	14.0
Sensible heat ratio					70%	
Total power input				W	4800	5050
Max. power input				W	5650	6550
EER or COP				W/W	2.55	2.7
Dehumidifying capacity				10 - ³×m³/h	5.0	
Running /Max.Running current				A / A	Cooling 8.4A/9.9A Heating 8.8/11.5A	
Start Current				A	50	
Class of anti electric shock					CLASS I	CLASS I
Circuit breaker				A	20	
Max. operating pressure of heat side				Mpa	4.15	4.15
Max. operating pressure of cold side				Mpa	4.15	4.15
Indoor unit	Unit model (color)				AP422ACEAA(WHITE)	
	Fan	Type × Number			centrifugal	
		Speed(H-M-L)		r/min	540/380/320	
		Fan motor output power		kW	0.1	
		Air-flow(H-M-L)		m³/h	1560	
	Heat exchanger	Type / Diameter		mm	inner grooved/φ7	
		Temp. scope		℃	2－7	
	Dimension	External	（L×W×H）	mm×mm×mm	1820× 530× 310	
		Package	（L×W×H）	mm×mm×mm	1910×625×415	
	Air sending angle				160	160
	Control type (Remote /wired /model)				Remote	
	Outlet distribution hole dimension			mm	70	
	Noise level (H-M-L)			dB(A)	56/46/40	
	Weight (Net / Shipping)			kg / kg	52/61	

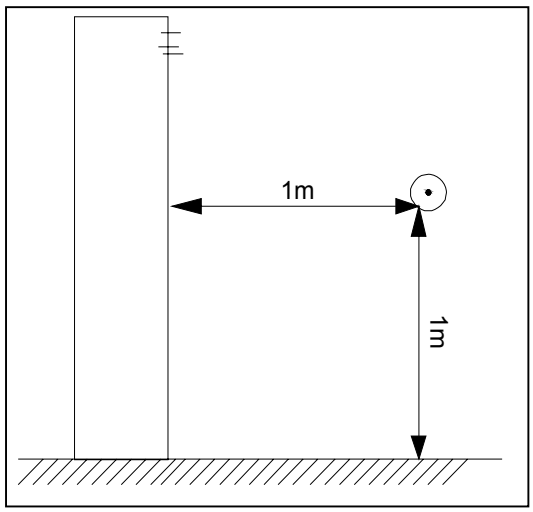
item				Model	AP482AKEAA	
Function					cooling	heating
Capacity				kW	13.6	16.0
Sensible heat ratio					0.72	
Total power input				W	4500	5250
Max. power input				W	5500	6000
EER or COP				W/W	3.02（B）	3.05（D）
Dehumidifying capacity				10 - ³×m³/h	5.5	
Running /Max.Running current				A / A	8.0A/9.5A	9.0A/10.5A
Start Current				A	65	65
Indoor unit	Unit model (color)				AP482AKEAA（white)	
	Fan	Type × Number			centrifugal fan X1	
		Speed(H-M-L)		r/min	460/430/400±40	
		Fan motor output power		kW	0.06	
		Air-flow(H-M-L)		m³/h	1750/-/-m³/h	
	Heat exchanger	Type / Diameter		mm	TP2M/7.0	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1850×600×350	
		Package	（L×W×H）	mm×mm×mm	1980×660×420	
	Control type (Remote /wired)				Remote	
	Noise level (H-M-L)			dB(A)	51/48/44	
	Weight (Net / Shipping)			kg / kg	59/70	

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level. The detailed method please refer to the following information:

Installation state: the unit should be placed on the flat floor or be mounted in horizontal direction.

Testing method:

standing-on-floor unit: If the unit cooling capacity is over 28000W, the noise level should be measured at the front, left, right directions respectively.

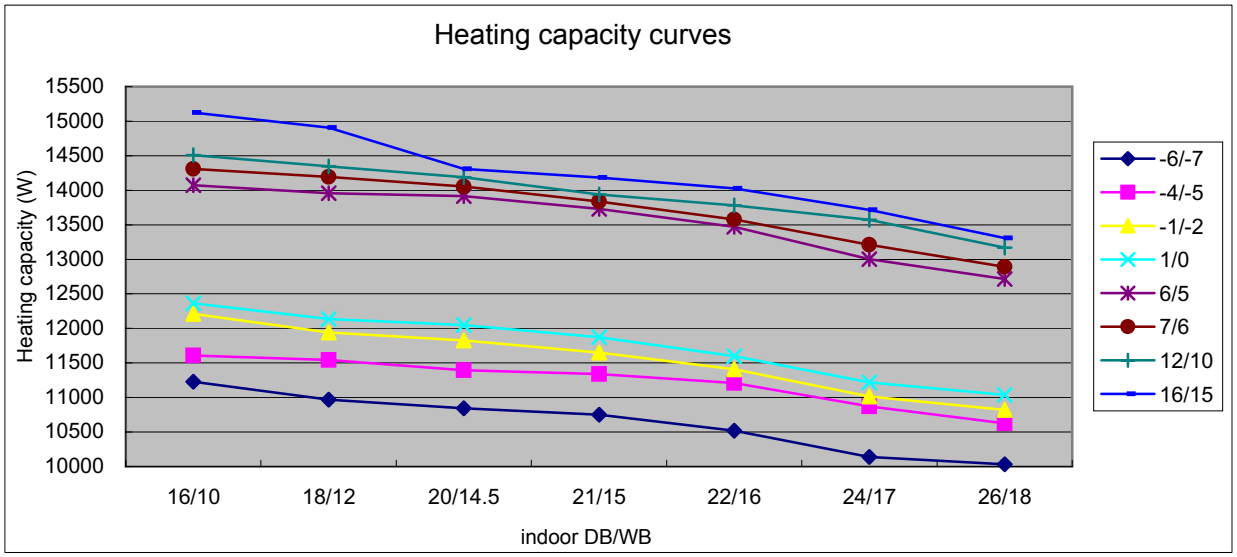


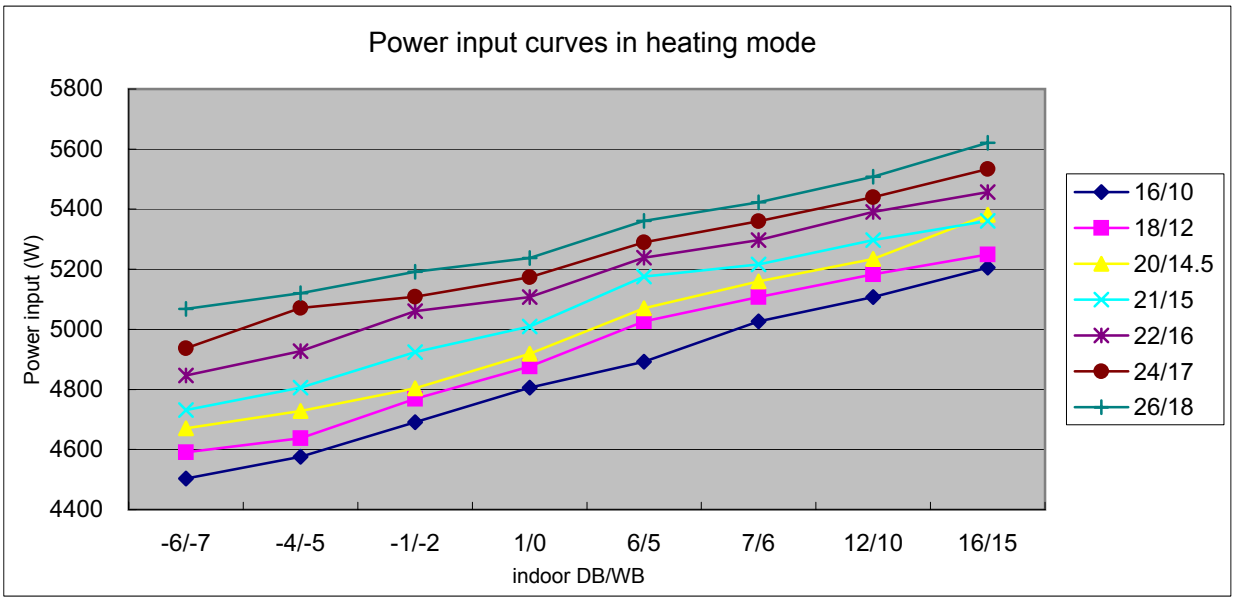
3. Curves

3.1 Performance curves

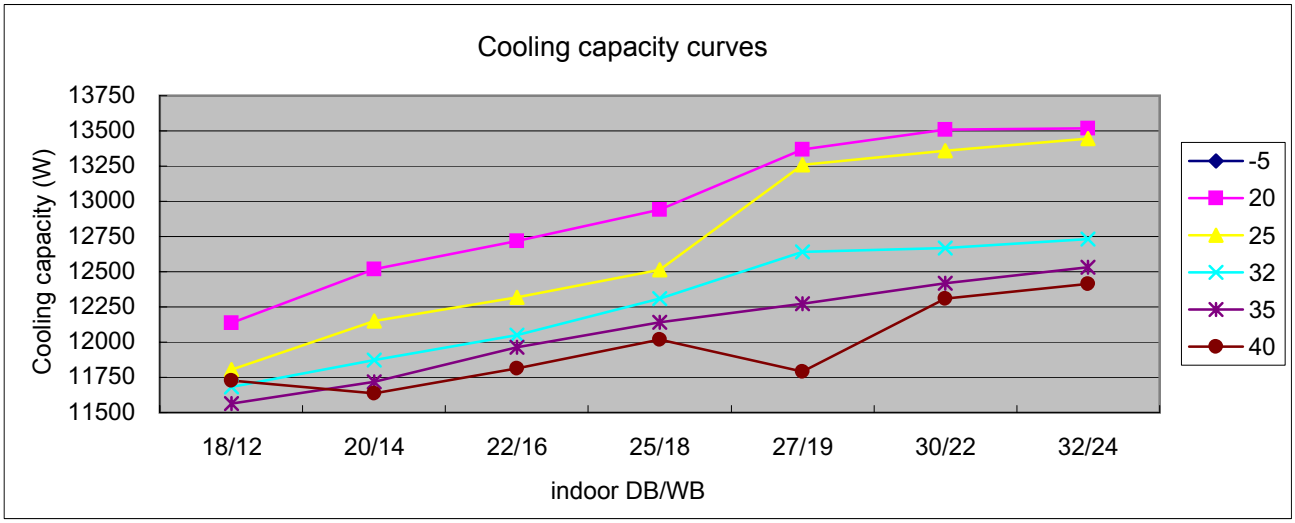
3.1.1 AP422ACEAA

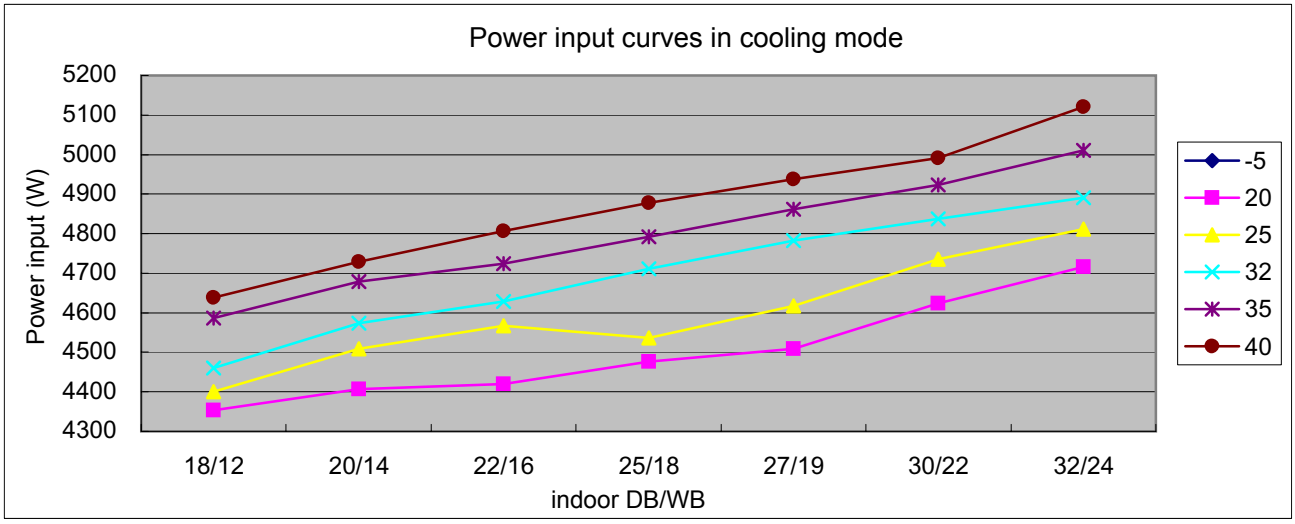
Heating capacity curves



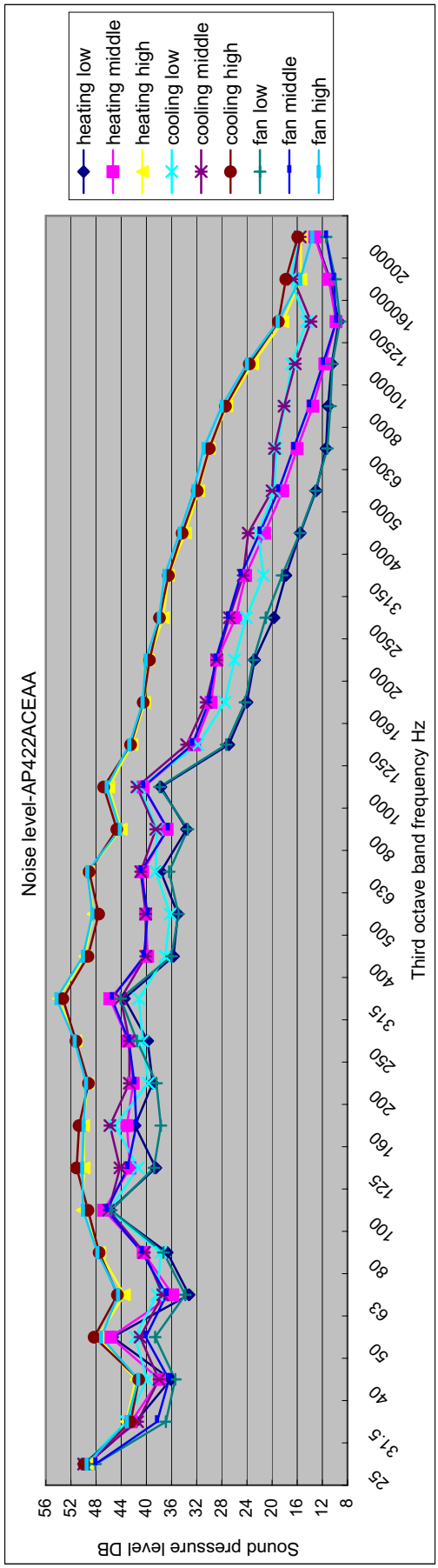


Cooling capacity curves



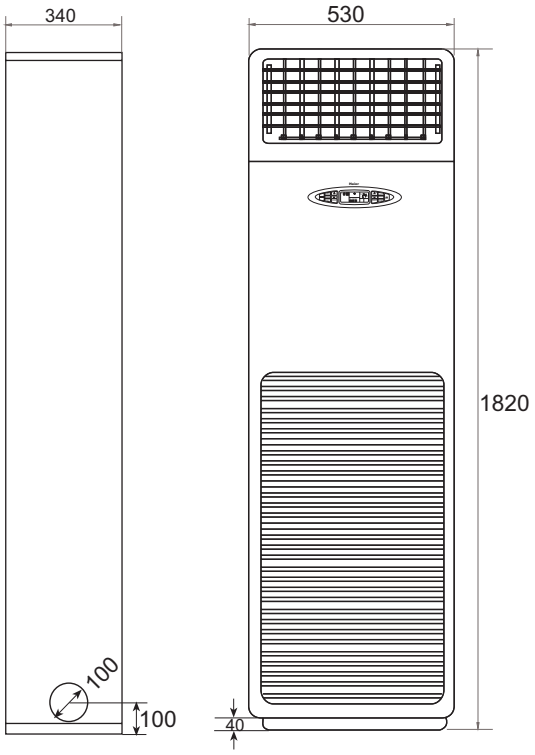


3.2 Noise level

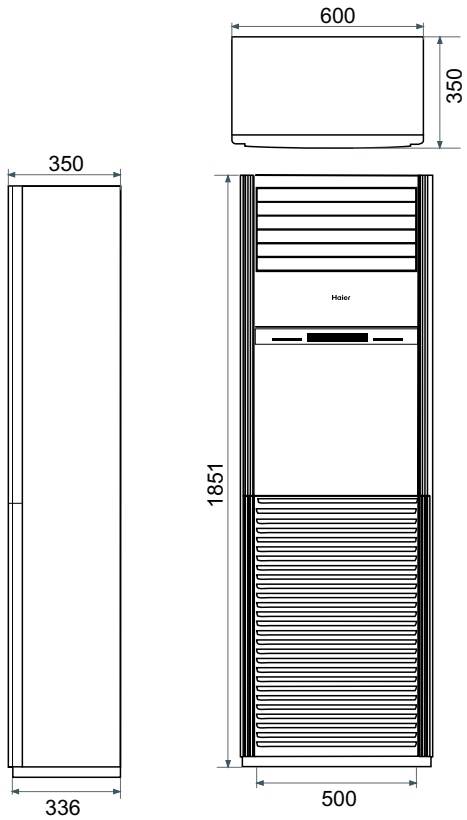


4. Dimension

AP422ACEAA

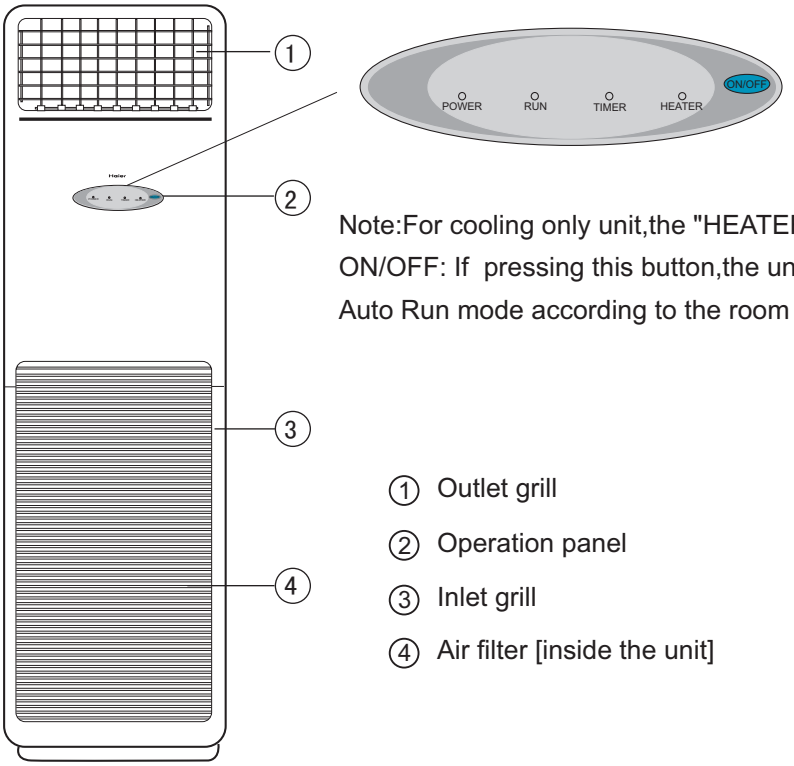


AP482AKEAA



5. Part name

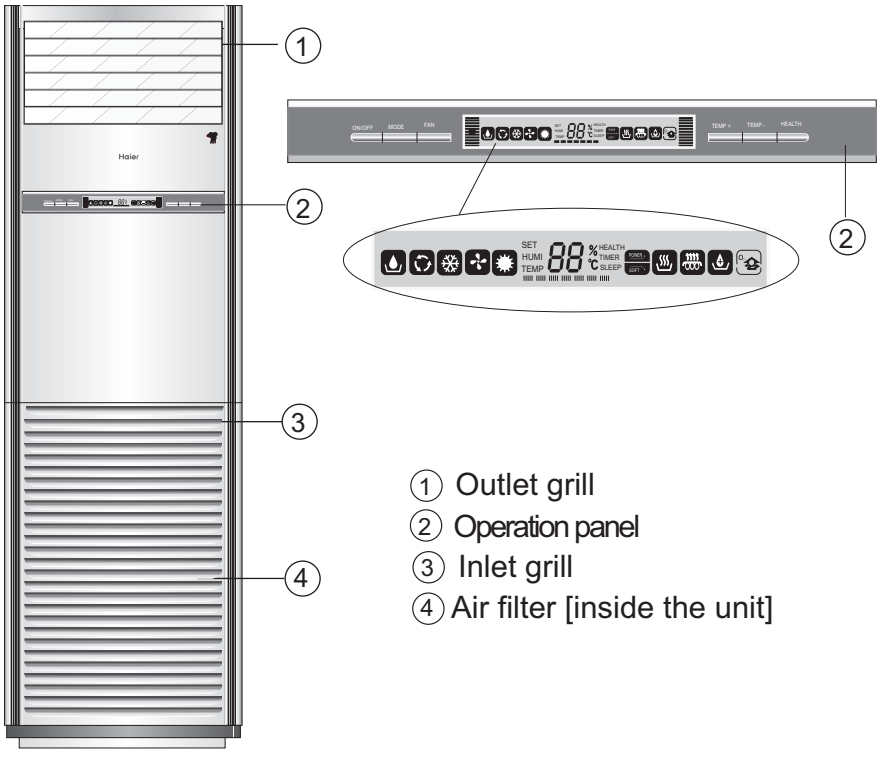
AP422ACEAA



Note:For cooling only unit,the "HEATER" light is invalid;
ON/OFF: If pressing this button,the unit will enter
Auto Run mode according to the room temperature.

① Outlet grill
② Operation panel
③ Inlet grill
④ Air filter [inside the unit]

AP482AKEAA



① Outlet grill
② Operation panel
③ Inlet grill
④ Air filter [inside the unit]

6. Installation

Tools necessary

1. Screw driver
2. Hacksaw
3. 70mm dia. hole core drill
4. Spanner (dia. 17, 27mm)
5. Spanner (14, 17, 27mm)
6. Pipe cutter
7. Flaring tool
8. Knife
9. Nipper
10. Gas leakage detector or soap water
11. Measuring tape
12. Reamer
13. Refrigerant oil

Standard accessories

Following parts shall be field supplied

Mark	Parts name
Ⓐ	Adhesive tape
Ⓑ	Pipe clip
Ⓒ	Connecting hose
Ⓓ	Insulation material
Ⓔ	Putty
Ⓕ	Drain hose

Selection of installation place

Place where it is easy to route drainage pipe and outdoor piping.

Place away from heat source and with less direct sunlight.

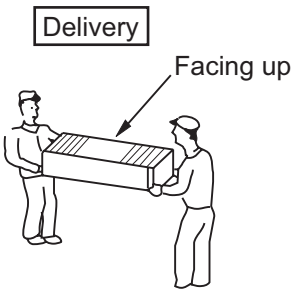
Place where cool and warm air could be delivered evenly to every corner of the room.

Place near power supply socket. Leave enough space around the unit (refer to installation drawings).

Display of whole unit

- Try to bring the packed unit to the installation place.
- When it is necessary to unpack the unit, be careful not to damage the unit. Wrap it with nylon etc.
- After unpacking, be sure to place the unit with the front side to be up.

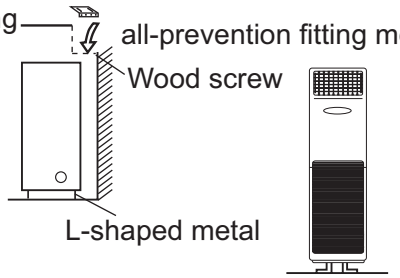
Note: When delivering, don't hold plastic parts such as inlet or outlet grill etc.



Fixing of the unit

For AP422ACEAA

To prevent it from fall off, please fix the unit with fall-prevention fitting at wall. and L-shaped metal at floor



Please install the whole unit horizontally,with a slop of 1 degree at front and rear,left and right.

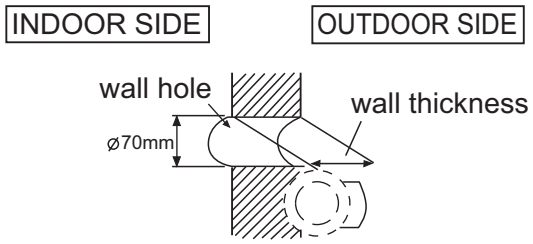
For AP482AKEAA

Position of the wall hole

- Wall hole should be decided according to installtion place and piping direction. (refer to installation drawings)

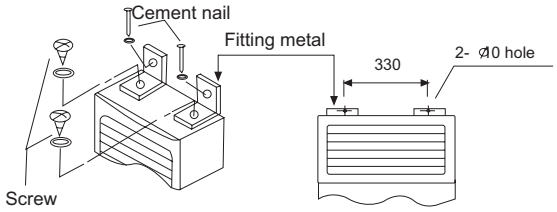
Making a hole

- Drill a hole of 70mm dia. with a little slope towards outside.
- Install piping hole cover and seal it with putty after installation.

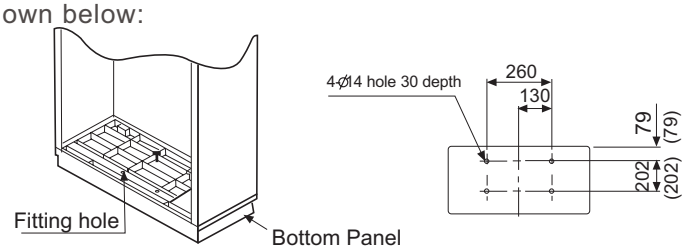


(Cross section of wall hole)

With the unit set up vertically,fix the fitting metal to the unit with screws, then fix the fitting metal to the wall with cement nail and washer, as shown below:



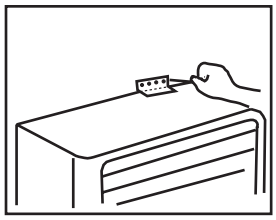
Moreover, if want to fix the unit more firmly, you should fix the bottom panel to the ground with concrete bolts,as shown below:

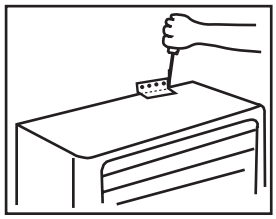


Installation of anti-fall plate:

Fix the anti-fall plate to the wall with screws so that there is no clearance between them.

With the unit set up vertically, fix the anti-fall plate to the unit with screws while making an adjustment at the long portion of the hole so that there is no clearance between the upper surface and the anti-fall plate.

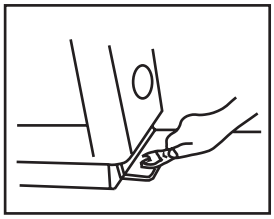


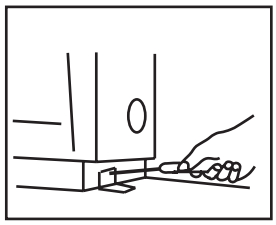


Installation of L-shaped metal

Fix to the unit with screws so that there is no clearance between the anti-fall plate and the unit.

After confirming that the unit has been set up vertically to the floor, fix it to the floor with bolt.





Piping connection

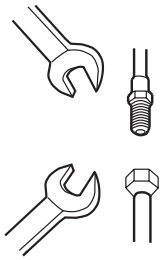
1. Connecting method

Apply refrigerant oil at half union and flare nut.

To bend a pipe, give the roundness as large as possible not to crash the pipe.

When connecting pipe, hold the pipe centre to centre then screw nut on by hand,refer to Fig.

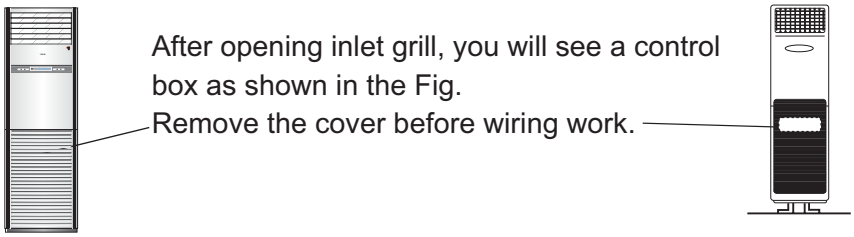
Be careful not to let sundries, such as sands enter the pipe.



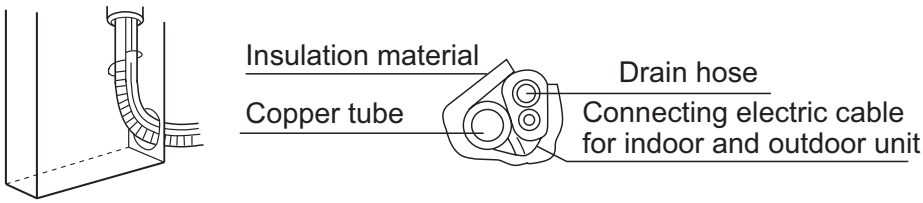
Forced fastening without centering may damage the threads and cause a gas leakage.	
Pipe dia	Fastening torque
Liquid pipe 9.52mm(3/8")	29.4N·m
Gas pipe 15.88mm(5/8")	98.0N·m
Gas pipe 19.05mm(3/4")	117.7N·m

2. Piping connection of indoor unit

Arrangement of piping and drainage pipe



Cut away, with a hammer or a saw, the lid for piping according to piping direction.



According to the piping method, connect the piping on indoor unit with union of connecting pipe.

Arrange the piping as per the wall hole and bind drain hose connecting electric cable and piping together with polyethylene tape.

Insert the bound piping connecting electric cable and drain hose through wall hole to connect with outdoor unit.

Arrangement of drain hose

- Drain hose shall be placed in under place.
- There should be a slope when arrange drain hose. Avoid up and down waves in drain hose.

If humidity is high, drain pipe(especially in room and indoor unit) must be covered with insulation material.

3. Piping connection of outdoor unit

Connect the connecting pipe and inlet and outlet liquid pipe according to the piping method.

4.Purging method

Discharge the air out of the indoor unit and the refrigerant pipe by vacuumizing

(1) Fasten all the nuts of the indoor and outdoor pipes to make these parts out of leakage.

(2) Under the condition of the complete close of the indoor and outdoor valve center (both liquid and gas side),dismount the repair valve cap.Vacuumizing through the charge mouth of the repair valve.

(3) After vacuumizing fasten the repair valve,and dismount the cap of the big and small stop valve,then loosen the stop valve center completely and fasten the big and small stop valve.

5.Extra charging amount of the refrigerant

When piping is longer than 5 m, charge additional refrigerant specified in this list.

Pipe length	5m	10m	15m	20m	25m	30m
Refrigerant charge (g)	——	325	650	975	1300	1625

Electric wiring

Note:

Electric wiring must be done by qualified person.

The power cable is self-provided.

The power supply connects from the outdoor unit.

Wiring of indoor unit

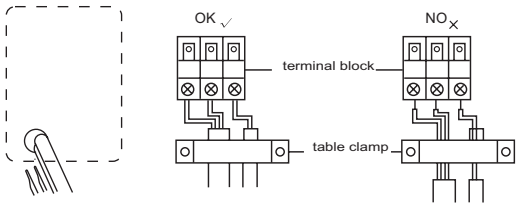
Insert the cable from outside the wall hole where piping already exist.

Pull it out from front.

Loosen terminal screws and insert cable end fully into terminal block, then tighten it.

Pull the cable gently to make sure it is tight.

Replace cover after wiring.



Wiring of outdoor unit

Insert the cable from inside the wall hole where piping already exists.

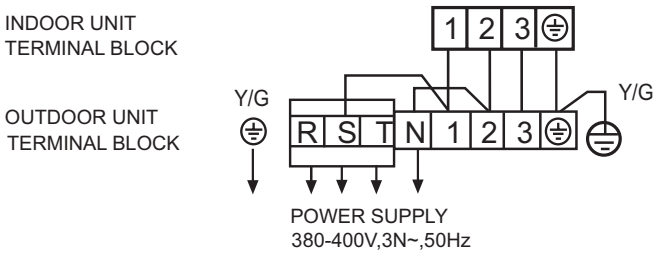
Pull it out from front.

Loose terminal screw and insert cable end fully into terminal block, then tighten it.

Pull the cable gently to make sure it is tight.

Replace cover after wiring.

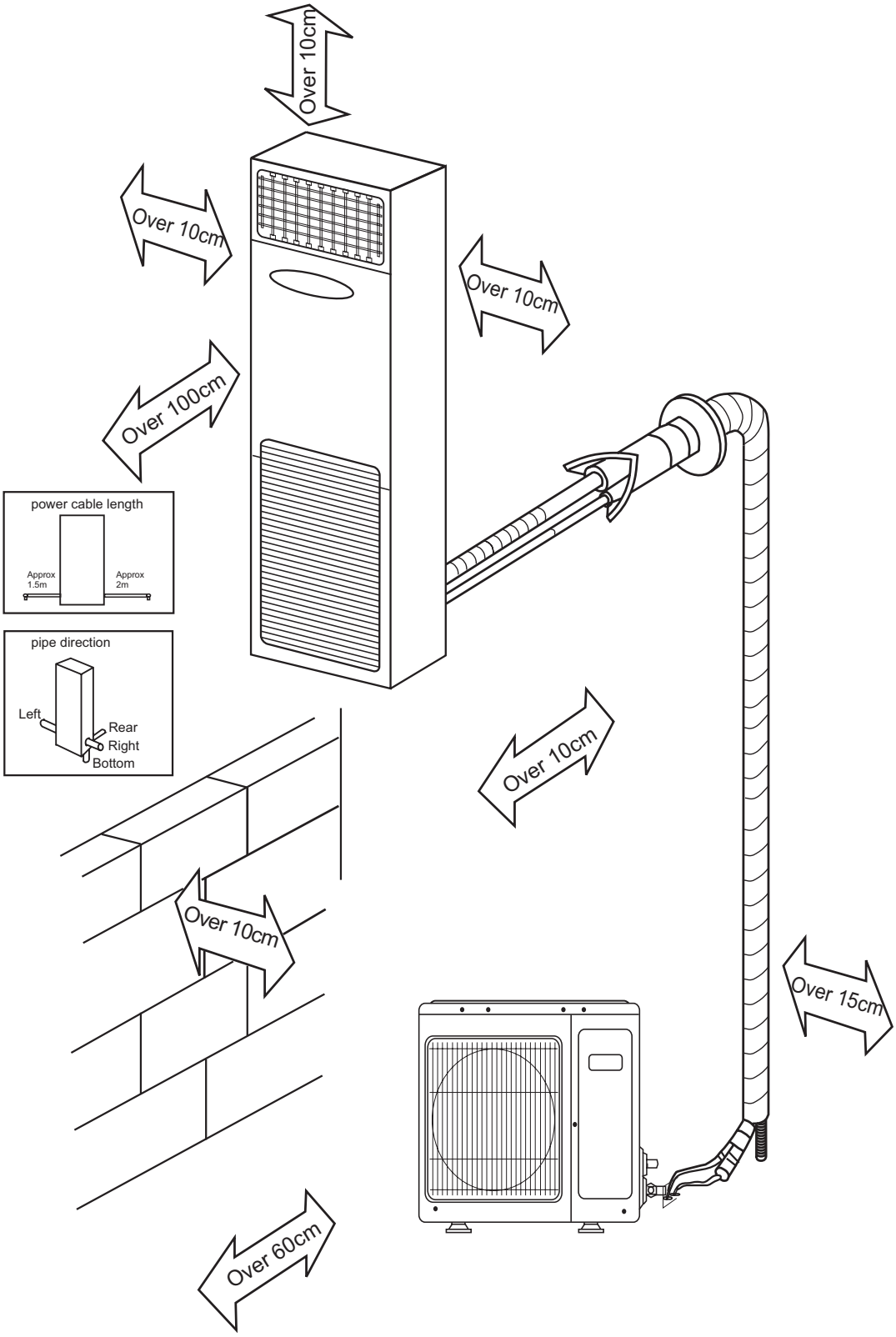
AP422ACEAA AP482AKEAA



Note:

- When connecting indoor and outdoor wire, check the number on indoor and outdoor terminal blocks. Terminals of same number and same color shall be connected by the same wire.
- Incorrect wiring may damage air conditioner's controller or cause operation failure.

Indoor & outdoor unit connection



Wall mounted indoor unit
(AS18)

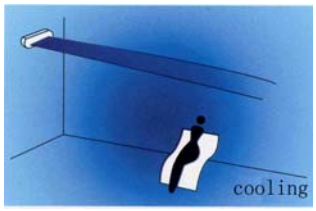
1. Features

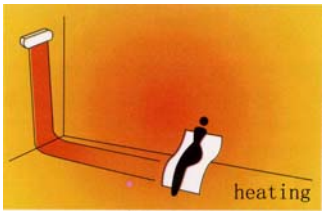
Newly designed V- appearance indoor unit

The wall mounted type indoor unit adopts the newly designed V appearance, more fashion, more beautiful.

Intelligent control

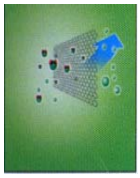
The new flap changes the delivery angle to horizontal for cooling and vertical for heating operation (Heating: It directs warm air to the floor; Cooling:It directs cool air across the room), to prevent cold or warm air from blowing directly onto your body.





Optional healthy module

Healthy negative ions, Ionizer to bring the refreshing air to your room. Enjoy the feeling of a forest at home.



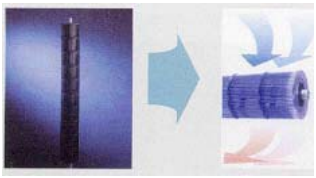
Photic bacteria-killing medium function, it can absorb deleterious gas generated by fitment.

UV ray generator. It can eliminate and prevent bacteria in air effectively. Breathe fresh air to assure health.It is harmless to human body.

New designed fan and panel

The unit adopts inisometry cross flow fan, 3D airflow, low noise, feel more comfortable, more healthy.

Attractive new appearance design with blue LCD display.It makes stylish air conditioner more beautiful and distinguished



Smart newly designed infrared remote controller

The unit can be controlled by the newly designed infrared remote controller YR-H49, which can realize many functions such as heating, cooling, fan, swing, fresh, health, etc. Furthermore, the remote controller can be fixed on the necessary places with a remote controller holder.

2. Specifications

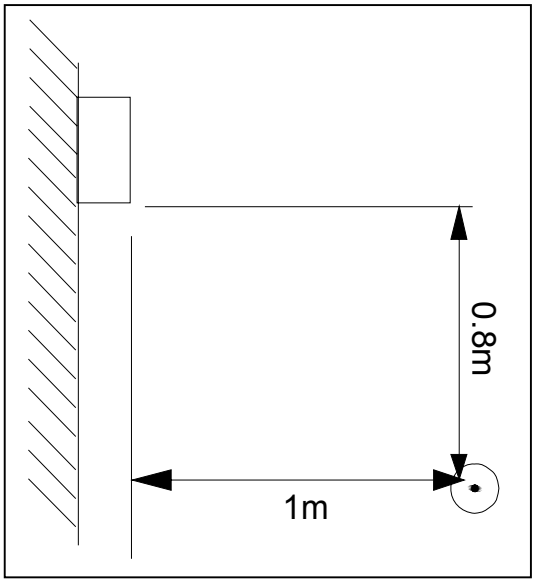
item					Model	AS182AVERA	
Function						cooling	heating
Capacity					kW	5.1（1.8---6.0）	6.0（2.0---7.1）
Sensible heat ratio						0.75	
Total power input					W	1580(550---2650)	1650(600---2650)
Max. power input					W	2650	2650
EER or COP					W/W	3.23	3.64
Running /Max.Running current					A / A	7.5（3.0---12.0）/12.0	7.8（3.2---12.0）/12
Indoor unit	Unit model (color)					AS182AVERA(WHITE)	
	Fan	Type × Number				cross flow*1	
		Speed(H-M-L)			r/min	1250/1150/1050	
		Fan motor output power			kW	0.05	
		Air-flow(H-M-L)			m³/h	760/-----	
	Heat exchanger	Type / Diameter			mm	inner grooved pipe/φ7	
		Total Area			m²	0.868	
		Temp. scope			℃	2-7	
	Dimension	External	（L×W×H）		mm×mm×mm	870*305*225	
		Package	（L×W×H）		mm×mm×mm	962*312*365	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 16/12	
	Control type (Remote /wired)					Remote	
	Noise level (H-M-L)				dB(A)	44/----	
	Weight (Net / Shipping)				kg / kg	12/15	

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level. The detailed method please refer to the following information:

Installation state: the unit should be placed on the flat floor or be mounted in horizontal direction.

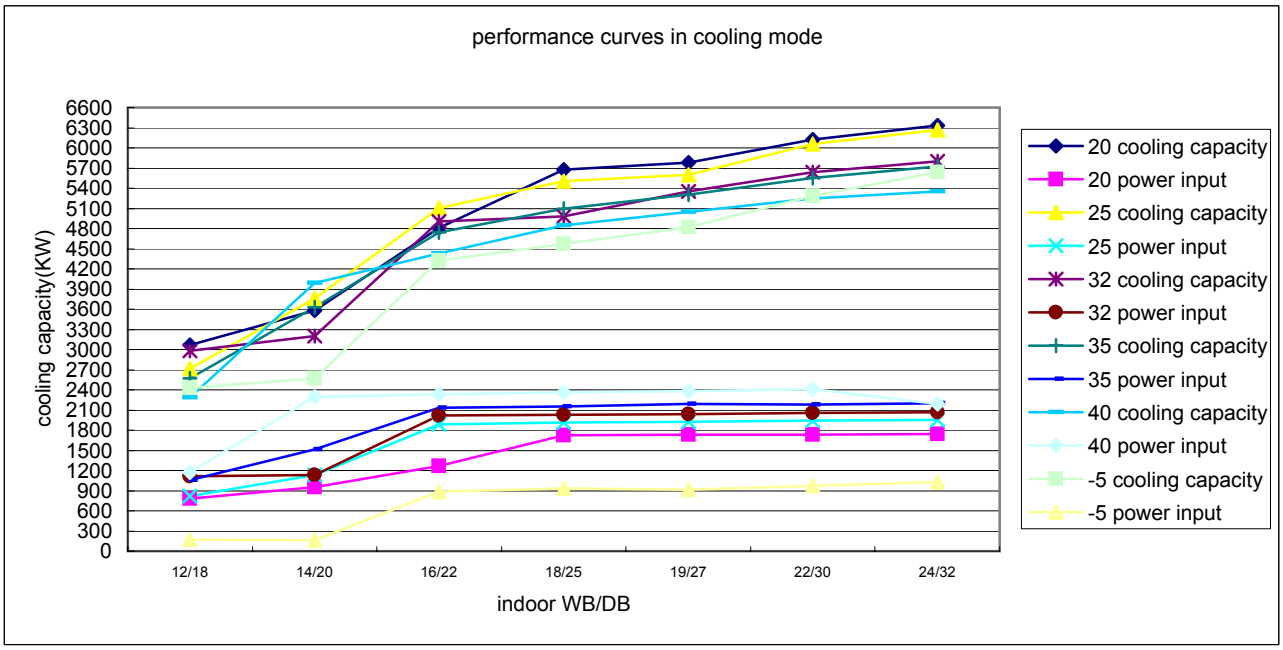
Testing method:

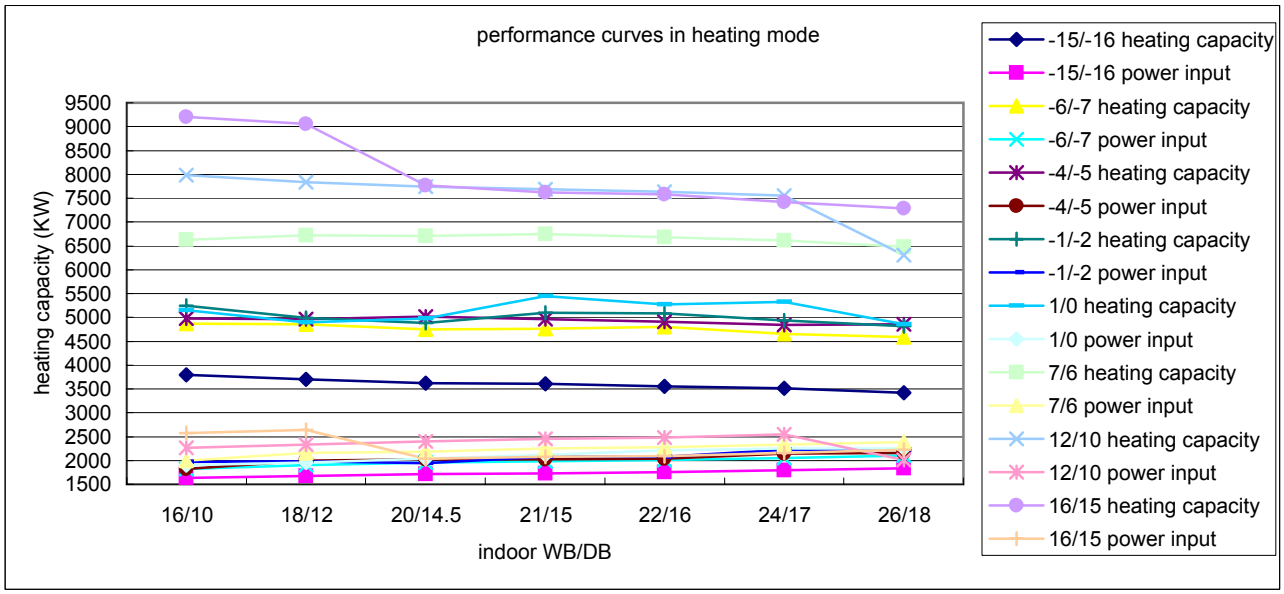
mounting-on-wall unit:



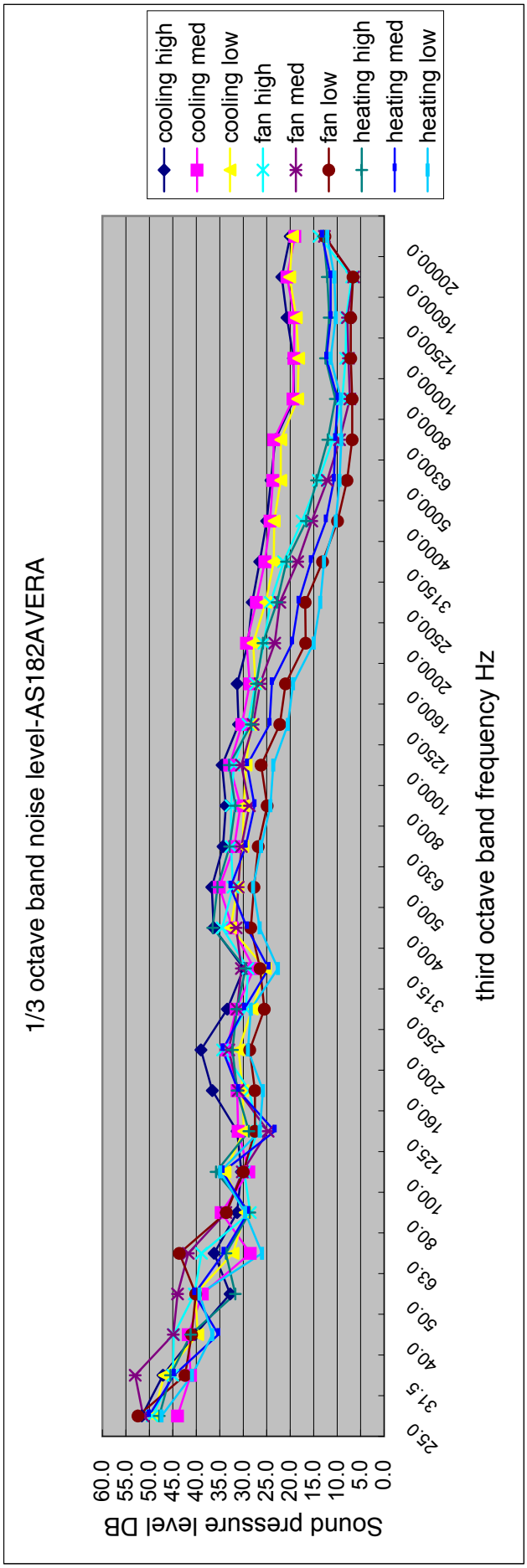
3. Curves

3.1 Performance curves

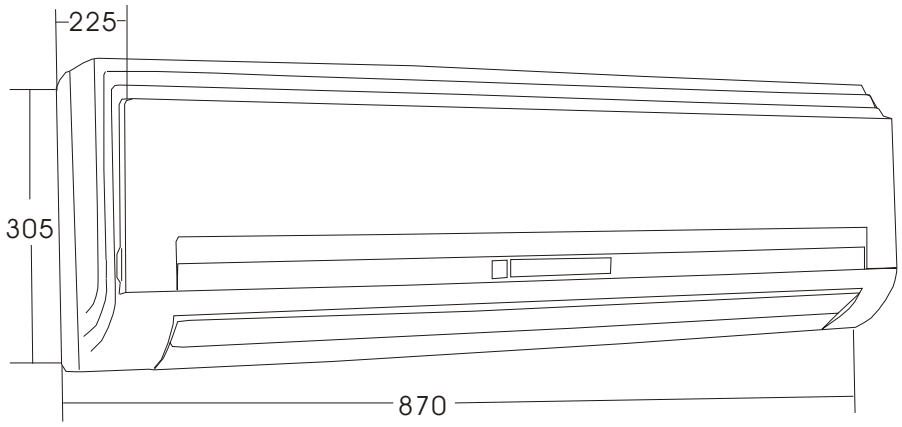




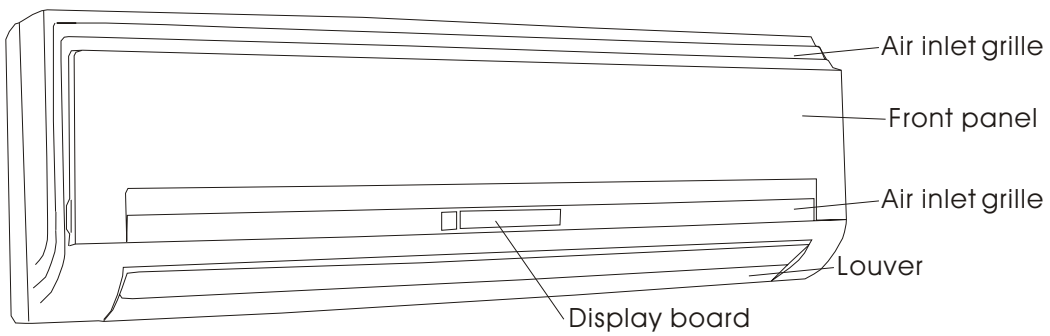
3.2 Noise level



4. Dimension



5. Part name



6 Installation

INSTRUCTIONS TO INSTALLATION

- Please read these "Safety Precautions" first then accurately execute the installation work.
- The precautionary points indicated herein are divided under two headings: △WARNING and △CAUTION those points which are related to the strong possibility of an installation done in error resulting in death or serious injury are listed in the △WARNING section. However, there is also a possibility of serious consequences in relationship to the points listed in the △CAUTION section as well.
  In either case, important safety related information is indicated, so by all means, properly observe all that is mentioned.
- After completing the installation, along with confirming that no abnormalities were seen from the operation tests, please explain operating methods as well as maintenance methods to the user of this equipment, based on the owner's manual.
  Moreover, ask the customer to keep this sheet together with the owner's manual.

WARNING

- Please entrust installation to either the company which sold you the equipment or to a professional contractor. Defects from improper installations can be the cause of water leakage electric shocks and fires.
- Execute the installation accurately, based on following the installation manual. Again improper installations can result in water leakage, electric shocks and fires.
- Please install your air conditioner on a wall or any place which can holder the weight of the air conditioner. And it cannot be installed on a non-professional metal structure (such as a burglary-resisting net). Otherwise injury would occur due to a falling of the unit.
- Execute the prescribed installation construction to prepare for earthquakes and the strong airs of typhoons and hurricanes, etc. Improper installations can result in accidents due to a violent falling over of the unit.
- Wiring shall be done with the specified cable and the connection shall be firm and reliable. And the terminal connector shall be fixed firmly and reliably not to let external force exercise on the cables. Any improper connection or fixing would cause heat, fire, and other accidents.
- Wiring shall be done in a correct shape not to make any section rise upward, and accurately install the air conditioner. The cable shall not be clamped by the lid or outer plate. Any improper installation would lead to fire, heat, or other accidents.
- When setting up or moving the location of the air conditioner, do not mix air etc, or anything other than the designated refrigerant (R407C) within the refrigeration cycle, for such mixing would result in rupture and injury caused by abnormal high pressure.
- Always use accessory parts and authorized parts for installation construction. Using parts not authorized by this company can result in water leakage, electric shock, fire and refrigerant leakage.
- The drain pipe must not be placed or connected into the sewage tank where harmful gas such as sulphurous gas and etc would exist, otherwise the harmful gas would enter the room.
- During installation, if the refrigerant is leaked, please immediately take measures of ventilation, otherwise a harmful gas would be generated whenever the refrigerant meets fire.
- After installation, please ensure that the refrigerant is not leaked, because the leakage of refrigerant would produce a harmful gas if it meets fire or heating stoves.
- Don't install the air conditioner where a flammable gas would be probably produced, otherwise in case the flammable gas is leaked and exists around the unit, fire would be caused.
- For the drain pipe, follow the installation manual to insure that it allows proper drainage and thermally insulate it to prevent condensation. Inadequate plumbing can result in water leakage and water damage to interior items.
- The refrigerant gas pipe and liquid pipe shall all be thermally insulated to preserve the temperature. Any improper insulation would make the unit moist and the water would drop onto the floor or wet the indoor items.

INSTRUCTIONS TO INSTALLATION

PRECAUTION

- Execute proper grounding. Do not connect the earth wire to a gas pipe, water pipe, lightening rod, or a telephone ground wire.
  Improper placement of earth wires can result in electric shock.
- An electric leakage breaker must be installed, otherwise electric shock or other accidents would occur.
- After completion of the installation, the air conditioner shall be electrified to check for electric leakage.

Preparation for installation

Installation Tools

1. Screw Driver (slotted head, cross head, triangle)
2. Steel Saw
3. 60mm Drill
4. Inner Hexagon Spanner
5. Shifting Spanner
6. Spanner
7. Pipe Cutter
8. Pipe Expander
9. Knives
10. Clippers
11. Leakage Checker or Soap Liquid
12. Measuring Tape
13. Scraper or File
14. Refrigeration Oil

Self-contained Accessories

No.	A	B	C	D	E	F
Name of Parts	Non-adhesive Tape	Adhesive tape	Connecting Hose	Heat insulation material	Gypsum powder	Drain hose

Electrical Requirements

- Power supply voltage: Single Phase 1PH, 220-230V~, 50Hz.
- A specialized power supply wire, which shall be installed by a competent person as per the rules of the national standard.
- Power supply must be grounded effectively.
- An electric leakage breaker shall be installed.
- Layout of power supply wiring shall be Y connection. If the power supply wire is damaged, it must be replaced by the manufacturer or its service center or professional person (the power supply wire shall be self-contained).
- For connection of the power supply plug, L shall be connected with the live wire, N shall be connected with neutral line, ⏚ shall be connected with earth wire.
- Power supply wire parameters:H05RN-F,3 G(1.0-1.5)mm^2;
  Signal wire parameters:H05RN-F,2X(0.75-1.5)mm^2. (User shall self-provide signal wire)

Note:The signal wire and connection wire should be provided by oneself.
The signal wire must be shielded wire

INSTRUCTIONS TO INSTALLATION

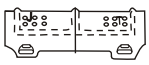
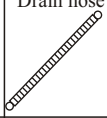
⚠ WARNING
BE SURE TO READ THESE INSTRUCTIONS CAREFULLY BEFORE BEGINNING INSTALLATION. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD CAUSE SERIOUS INJURY OR DEATH, EQUIPMENT MALFUNCTION AND/OR PROPERTY DAMAGE. BE SURE TO READ INSTALLATION MANUAL FOR INDOOR UNIT WITH THIS MANUAL.

1.Accessories

Confirm accessories shown below are attached in the bag with this Installation manual.

Accessories Delivered with Your Air Conditioner

Please check if your unit is delivered with the following accessories.

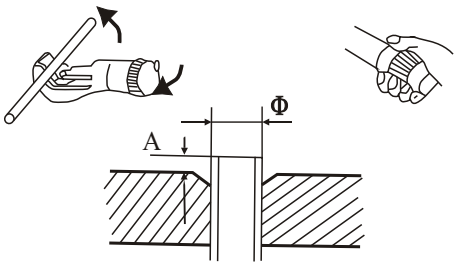
No.	1	2	3	4	5	6	7	8	9	10
Name and shape	Remote controller 	Batteries 	Mounting plate 	Drain hose 	4x25 screw 	Expansion bushing 	Cement steel nail	Piping hole cover 	Screw 	Plastic supporting plate 
Qty	1	2	1	1	6	6	8	1	2	1

Indoor Unit

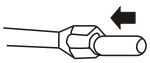
- Install the indoor unit where the weight of the unit can be supported.
- Install the indoor unit where the heat source and steam source are not close and the unit inlet and outlet are not blocked.
- Install the indoor unit where the drainage is easy and the outdoor unit can be easily connected.
- Install the indoor unit where its cold air and hot air can be easily sent to all the comers of the room.
- Install the indoor unit where the power socket is near and there is sufficient space around the indoor unit.
- Install the indoor unit where there is no T.V set, radio set, and wireless appliance underneath, and the sunlight lamp is over one meter away.
- If the remote controller is installed on the wall, the indoor unit shall be ensured to receive the signal while the sunlight lamp is on.

Method for Cutting and Expanding Pipes.
When the pipe is too long or the mouth is damaged, the pipe needs to cut or expanded.

1.cutting hose 2.Removing burr 3.Put on nut 4.Expand Hose



Hose Expander



Expansion Size

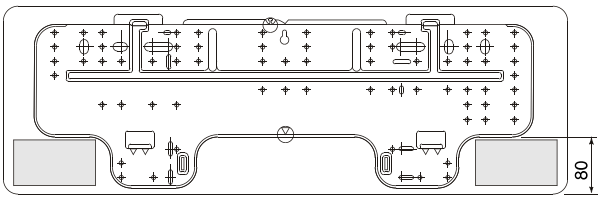
Hose dia∅	Size (mm)A
6.35 mm(1/4)	0.8-1.5
12.7 mm(1/2)	1.0-2.0

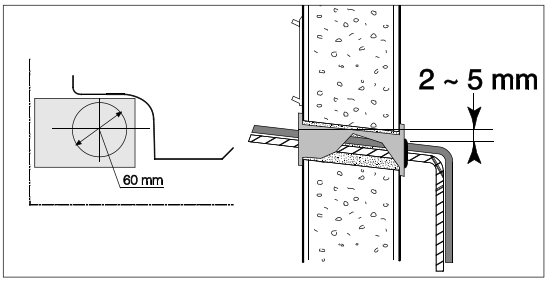
Correct	Not Correct
	 Tilting  cracks on expanded  mouth burr  incomplete  too long

INSTALLATION PROCEDURE

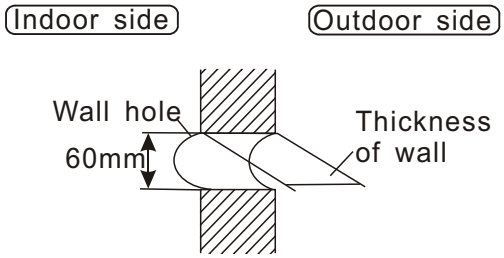
When the mounting plate is first fixed

1. Carry out, based on the neighboring pillars or lintels, a proper leveling for the plate to be fixed against the wall, then temporarily fasten the plate with one steel nail.
2. Make sure once more the proper level of the plate, by hanging a thread with a weight from the central top of the plate, then fasten securely the plate with the attachment steel nail.





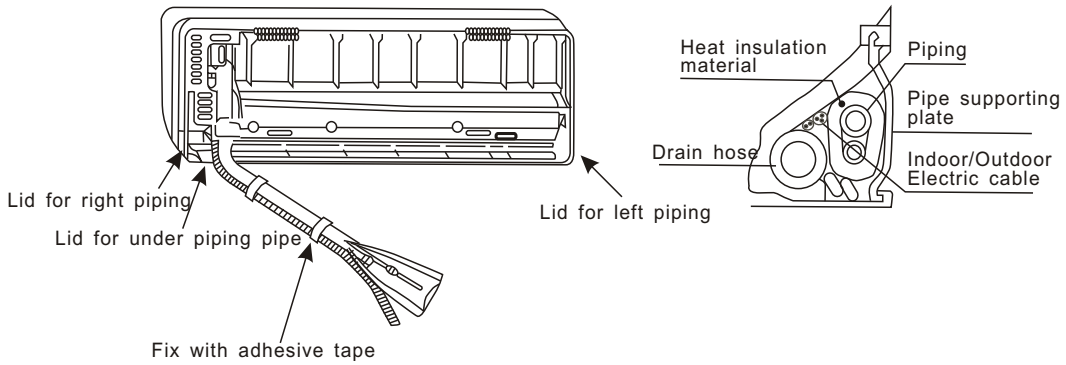
3. Making a Hole on the wall and Fitting the piping Hole cover
- Make a hole of 60mm in diameter, slightly descending to outside the wall.
- Install piping hole cover and seal it off with putty after installation.



(Section of wall hole) Piping hole pipe

4. Drawing of pipe
   Rear piping
   Draw pipes and the drain hose, then fasten them with the adhesive tape.
   Left Left-rear, piping
- In case of left side piping, cut away, with a nipper, the lid for left piping.
- In case of left-rear piping, bend the pipes according to the piping direction to the mark of hole for left-rear piping which is marked on heat insulation materials.

a. Insert the drain hose into the dent of heat insulation materials of indoor unit.
b. Insert the indoor/outdoor electric cord from backside of indoor unit, and pull it out on the front side, then connect them.
c. Coat the flaring seal face with refrigerant oil and connect pipes.
   Cover the connection part with heat insulation materials closely, and make sure fixing with adhesive tape.



- Indoor/outdoor electric cord and drain hose must be bound with refrigerant piping by protecting tape.

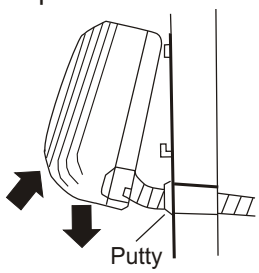
INSTALLATION PROCEDURE

Other direction piping

- Cut away, with a nipper, the lid for piping according to the piping direction and then bend the pipe according to the position of wall hole. When bending, be careful not to crash pipes.
- Connect beforehand the indoor/outdoor electric cable, and then pull out the connected to the heat insulation of connecting part specially.

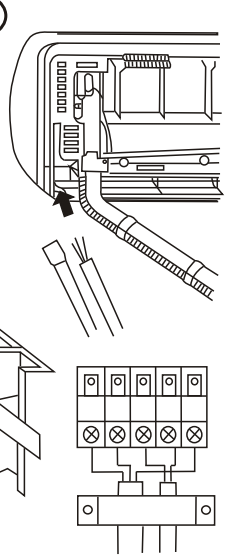
5.Fixing the indoor unit body

- Hang surely the unit body onto the upper notches of the mounting plate. Move the body from side to verify its secure fixing.
- In order to fix the body onto the mounting plate, hold up the body aslant from the underside and then put it down perpendicularly.



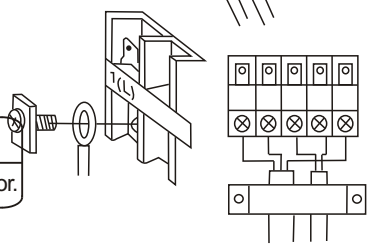
ELECTRICAL WIRING

When connecting the cord before installing the indoor unit



- Insert the cord from the back side of the unit, then pull it out on the front side.
- Loosen the screws and insert the cord ends fully into terminal block, then tighten the screws.
- Pull the cord slightly to make sure the cords have been properly inserted and tightened.
- After the cord connection, never fail to fasten the connected cord with the wiring cover.

Note: when connecting the cord, confirm the terminal number of indoor and outdoor units carefully. If wiring is not correct, proper operation can not be carried out and will cause defect.



⚠ CAUTION

After connecting the piping, check the joints for gas leakage with gas leakage detector.

HOW TO CONNECT WIRING TO THE TERMINALS

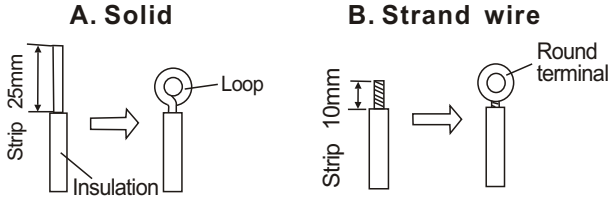
A. For solid core wiring (or F-cable)(Fig.17A)

(1) Cut the wire with a wire cutter or wire-cutting pliers, then strip the insulation to about 25mm of the exposed solid wire.
(2) Using a screwdriver, remove the terminal screw (s) on the terminal board.
(3) Using pliers, bend the solid wire to form a loop suitable for the terminal screw.
(4) Shape the loop wire properly, place it on the terminal board and tighten securely with the terminal screw using a screw driver.

B. For strand wiring (Fig.17B)

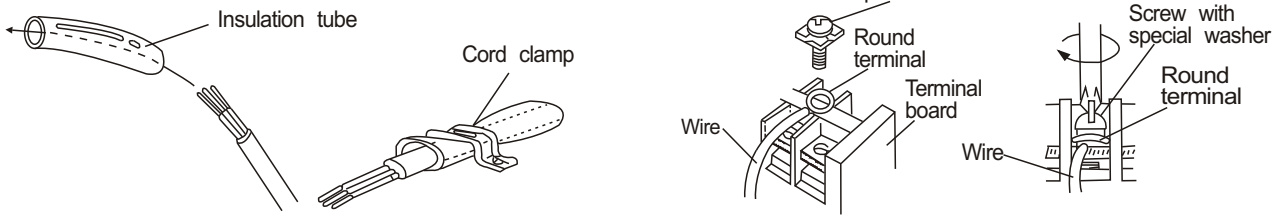
(1) Cut the wire with a wire cutter or wire-cutting pliers, then strip the insulation to about 10mm of the exposed strand wiring.
(2) Using a screwdriver, remove the terminal screw (s) on the terminal board.
(3) Using a round terminal fastener or pliers, securely clamp a round terminal to each stripped wire end.
(4) Position the round terminal wire, and replace and tighten the terminal screw using a screw driver.

Fig. 17



After passing the connection cord and power cable through the insulation tube, fasten it with the cord clamp, as shown in Fig.18

Fig. 18



Use VW-1, 0.5 to 1.0 mm thick, PVC tube as the insulation tube.

INSTALLATION CHECK AND TRIAL OPERATION

Check the Layout of the Drain Pipe and Connection Wires

The drain pipe should be placed underneath, and the connection wires should be placed upside; and the drain pipe especially the section inside the machine and indoors must be wound up with insulating material to preserve heat. The drain pipe shall be sloped and no concave and convex shall occur along the whole pipe. And the cases as the right figure indicates shall not occur.

Installation check

- Is power supply voltage required?
- Is water completely drained to outdoors?
- Are power wire and connection wires between indoor and outdoor units correctly connected?
- Is any gas leaked from the pipe connectors?
- Are series numbers of the terminals on the indoor and outdoor units corresponding to each other? Is the connection section of the auxiliary pipe insulated? Is the indoor unit fixed firmly?
- Is noise big?

Trial Operation

The person who has completed this installation shall be requested to conduct a test operation for check:

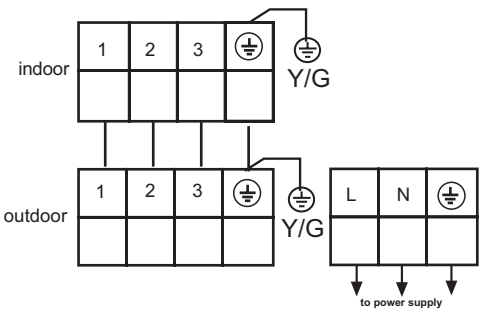
- Is the temperature adjuster working normally?
- Does the location for installation conform to requirements?

Winding up with Protective Plastic Tape

The connection pipes, drain pipe, and the connection wires shall be wound up with PVC tape. Notes: The connection pipes shall also be wound up with insulating material to preserve the temperature. The airing direction shall be from bottom to top.

Wiring diagram between I.U.&O.U.

AU182AFERA/AS182AVERA



Part 3 Outdoor Units

1. Features

Adopt the much friendlier refrigerant R410a

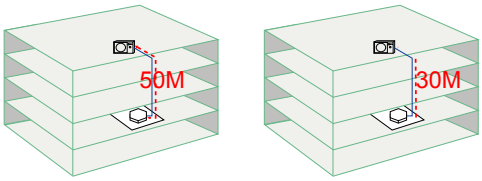
The air conditioner system adopts the greatly friendly refrigerant R410a, which is protective for the ozone layer and is good to avoid the earth getting warmer. Benefit for the environment.

Universal outdoor unit

The outdoor unit has been uniformed which can be connected with different type indoor units with identical capacity such as cassette type, duct type, convertible type etc.. convenient to design and not affect the indoor décor.

Long distribution pipe and high drop

The unit can realize long distribution pipe and high drop, the detailed information please refer to the specification, consequently, the installation can be more free, and can meet various need of the customer.



Quiet operation

Adopting optimum designed blower and new designed insulation material amoug the pipe or out of the compresspr, outdoor unit with well-known brand compressor, reducing the operation noise. For some unit, the electric control systerm can adjust the noise by fixing the frequency.

Optional safety devices and much more precision control device

a. Ambient **temperature sensor**, coil temperature sensor and compressor temperature make the temperature control and defrosting control more precise.

b. **High/low pressure switch** can feel the discharging pipe pressure and suction pipe pressure on time and precisely. If the pressure is too high or too low, it will stop the compressor to prevent it being damaged for the sake of pressure.

c. **Low ambient cooling kit**: It is an optional part for the system.
If you want to realize cooling mode when the exterior ambient temperature is too low, you can choose it.


FSF-42S
with EMC filter

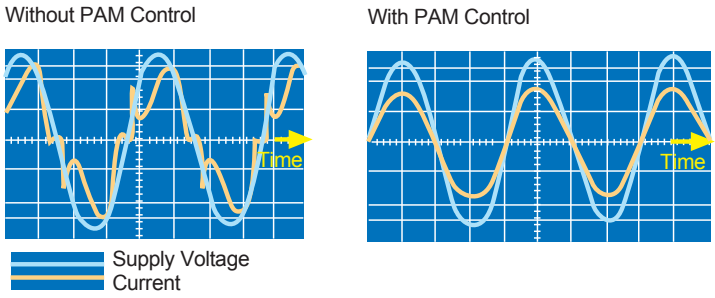
d. **CT protection**: for the inverter unit, there is CT protection. If the system current is too high, the electric system will reduce the frequency or stop the unit automatically.

e. **3 minutes delay protection** for the compressor. The device can protect the compressor from some damages and make the compressor have a long life.

3
min

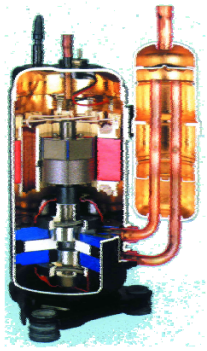
Advanced PWM Control

PWM adjust the form of the current wave so that it becomes close to that of the supply voltage wave. High harmonice are reduced and 99% of the electricity is utilized



New compressor (for inverter unit)

The Reluctance DC motor of compressor utilise powerful neodymium magnets that are 10 times more powerful than conventional magnets. Twin mechanism and DC inverter control have achieved low vibration and low noise drastically



Auto checking malfunction

Failure codes displayed by LED or controllers are so detailed for us to find the fail place more quickly, and can judge the failure content easily

2. Specifications

2.1 For DC inverter unit

Item					Model	AU122AEERA
Power cable						3×2.5
Power source					N, V, Hz	1, 220-230, 50
Start Current					A	3
Outdoor unit	Unit model (color)					AU122AEERA（WHITE）
	Compressor	Model / Manufacture				C-6RZ092H1A
		Type				twin rotary
	Fan	Type × Number				axial*1
		Speed			r/min	840r/min±50
		Fan motor output power			kW	0.06
		Air-flow(H-M-L)			m³/h	2500/-/-
	Heat exchanger	Type / Diameter			mm	TP2M/Φ9.52
		Total area			m²	0.374
		Temp. scope			℃	43-60
	Dimension	External	（L×W×H）		mm×mm×mm	775x640x245
		Package	（L×W×H）		mm×mm×mm	901x341x712
	Refrigerant control method				mm/mm	Capillary tube: main Φ3× Φ1.8×920, assistant Φ3× Φ1.8×780
	Defrosting					auto
	Noise level				dB(A)	55
	Type of Four way valve					SHF-4-10A
	material of reduce noise					XPE
	crankcase heater power				W	37
	Weight(Net / Shipping)				kg / kg	39/43
PIPING	Refrigerant	Type / Charge			g	R410A 1300
		Recharge quantity			g/m	30
	Pipe	Liquid			mm	6.35
		Gas			mm	12.7
	Connecting Method					flared
	Between I.D &O.D	MAX.Drop			m	10
		MAX.Piping length			m	20

item					Mod	AU182AFERA	
Power cable						3G 4.0mm2	
Power source					N, V, Hz	1, 220--230, 50	
Start Current					A	3A	3A
Circuit breaker					A	25A	25A
Outdoor unit	Unit model (color)					WHITE	
	Compressor	Model / Manufacture				TNB175FLBM1/MITSUBISHI ELECTRIC	
		Oil model				MEL56	
		Oil charging				670ML	
		Type				scroll type	
	Fan	Type × Number				axial×1	
		Speed			r/min	860±30	
		Fan motor output power			kW	0.08	
		Air-flow(H-M-L)			m³/h	2500	
	Heat exchanger	Type / Diameter			mm	hydrophilic finned Aluminum foil /φ7	
		Row / Fin pitch				3/1.55	
		Temp. scope			℃	43-60	
	Dimension	External	（L×W×H）		mm×mm×mm	810*288*680	
		Package	（L×W×H）		mm×mm×mm	960*405*760	
	Refrigerant control method				mm/mm	main capillary φ1.6*400mm, sub capillary φ1.6*200mm	
	Defrosting					AUTO	
	Volume of Accumulator				L	2.5	
	Noise level				dB(A)	56	
	Type of Four way valve					STF-0218G	
	crankcase heater power				W	30	
	Weight (Net / Shipping)				kg / kg	52/55	
PIPING	Refrigerant	Type / Charge			g	R410A/1850	
		Recharge quantity			g/m	35	
	Pipe	Liquid			mm	6.35	
		Gas			mm	12.7	
	Connecting Method					flared	
	Between I.D &O.D	MAX.Drop			m	15	
		MAX.Piping length			m	30	

item					Mod	AU242AGERA	
Power cable						H05RN-F 3G 4.0mm2	
Power source					N, V, Hz	1PH,220-230VAC,50HZ	
Start Current					A	3	3
Outdoor unit	Unit model (color)					WHITE	
	Compressor	Model / Manufacture				TNB175FLBM1（MITSUBISHI）	
		Oil model				MEL56	
		Oil charging				670ML	
		Type				Rotary	
	Fan	Type × Number				axial×1	
		Speed			r/min	910±30	
		Fan motor output power			kW	0.06	
		Air-flow(H-M-L)			m³/h	3000	
	Heat exchanger	Type / Diameter			mm	hlydrophilic Al foil slit fin / ϕ7	
		Row / Fin pitch				3/1.46	
		Temp. scope			℃	43-60	
	Dimension	External	（L×W×H）		mm×mm×mm	865*335*732	
		Package	（L×W×H）		mm×mm×mm	995*420*815	
	Refrigerant control method				mm/mm	2.4mm EEV	
	Defrosting					AUTO	
	Volume of Accumulator				L	3	
	Noise level				dB(A)	56	
	Type of Four way valve					SHF-4-10A	
	crankcase heater power				W	37	
	Weight (Net / Shipping)				kg / kg	57/60.5	
PIPING	Refrigerant	Type / Charge			g	R410A/2300	
		Recharge quantity			g/m	50	
	Pipe	Liquid			mm	9.52	
		Gas			mm	15.88	
	Connecting Method					Flare cnnection	
	Between I.D &O.D	MAX.Drop			m	15	
		MAX.Piping length			m	30	

Item					Mode	AU282AHERA
Power cable						3*4.0
Power source					N, V, Hz	1, 220-230, 50
Start Current					A	3
Outdoor unit	Unit model (color)					AU282AHERA（WHITE）
	Compressor	Model / Manufacture				TNB220FLBM/（MITSUBISHI）
		Type				Rotary
	Fan	Type × Number				axial*1
		Speed			r/min	950r/min±50
		Fan motor output power			kW	0.06
		Air-flow(H-M-L)			m³/h	4000/-/-
	Heat exchanger	Type / Diameter			mm	TP2M/Φ7
		Total area			m²	0.776
		Temp. scope			℃	43-60
	Dimension	External	（L×W×H）		mm×mm×mm	948*340*840
		Package	（L×W×H）		mm×mm×mm	1050*410*990
	Refrigerant control method				mm/mm	2.2mm EEV
	Defrosting					auto
	Volume of Accumulator				L	3.5
	Noise level				dB(A)	60
	crankcase heater power				W	37
	Weight(Net / Shipping)				kg / kg	74/80
PIPING	Refrigerant	Type / Charge			g	R410A 2650
		Recharge quantity			g/m	65
	Pipe	Liquid			mm	9.52
		Gas			mm	15.88
	Connecting Method					flared
	Between I.D &O.D	MAX.Drop			m	20
		MAX.Piping length			m	30

Item				Model	AU362AHERA
Power cable					3*4.0
Power source				N, V, Hz	1, 220-230, 50
Start Current				A	3
Outdoor unit	Unit model (color)				AU362AHERA（WHITE）
	Compressor	Model / Manufacture			TNB220FLBM1/MITSUBISHI
		Type			Rotary
	Fan	Type × Number			axial*1
		Speed		r/min	950r/min±50
		Fan motor output power		kW	0.06
		Air-flow(H-M-L)		m³/h	4000/-/-
	Heat exchanger	Type / Diameter		mm	TP2M/Φ7
		Total area		m²	0.776
		Temp. scope		℃	43-60
	Dimension	External	（L×W×H）	mm×mm×mm	948*340*830
		Package	（L×W×H）	mm×mm×mm	1095*410*990
	Refrigerant control method			mm/mm	electrical expansion valve 2.2mm
	Defrosting				auto
	Volume of Accumulator			L	3.5
	Noise level			dB(A)	60
	crankcase heater power			W	37
	Weight(Net / Shipping)			kg / kg	74/80
PIPING	Refrigerant	Type / Charge		g	R410A 2650
		Recharge quantity		g/m	65
	Pipe	Liquid		mm	9.52
		Gas		mm	15.88
	Connecting Method				flared
	Between I.D &O.D	MAX.Drop		m	30
		MAX.Piping length		m	50

Item				Model	AU48NAIERA
Power cable					H05RN-F 4G 4.0mm2
Power source				N, V, Hz	OU: 3PH,380-400AC,50HZ; IU: 1PH,220-230AC,50HZ
Start Current				A	10
Outdoor unit	Unit model (color)				AU48NAIERA(WHITE)
	Compressor	Model / Manufacture			ANB33FCHMT（MITSUBISHI）
		Oil model			MITSUBISHI
		Oil charging			1700CM3
		Type			Scroll
	Fan	Type × Number			axial×2
		Speed		r/min	860±40
		Fan motor output power		kW	0.08
		Air-flow(H-M-L)		m³/h	8000
	Heat exchanger	Type / Diameter		mm	hlydrophilic Al slit fin/9.52
		Total area		m²	3/1.5
		Temp. scope		℃	43-60
	Dimension	External	（L×W×H）	mm×mm×mm	948*340*1250
		Package	（L×W×H）	mm×mm×mm	1095*410*1400
	Refrigerant control method			mm/mm	electrical expansion valve 2.4mm+Φ4*Φ3*530mm capillary
	Defrosting				AUTO
	Volume of Accumulator			L	3
	Noise level			dB(A)	60
	Type of Four way valve				SHF-4-10A
	crankcase heater power			W	38
	Weight(Net / Shipping)			kg / kg	106/111
PIPING	Refrigerant	Type / Charge		g	R410A/4200
		Recharge quantity		g/m	65
	Pipe	Liquid		mm	9.52
		Gas		mm	19.05
	Connecting Method				flared
	Between I.D &O.D	MAX.Drop		m	30
		MAX.Piping length		m	50

Item				Model	AU60NAIERA
Power cable					H05RN-F 4G 4.0mm2
Power source				N, V, Hz	OU: 3PH,380-400AC,50HZ; IU: 1PH,220-230AC,50HZ
Start Current				A	10
Outdoor unit	Unit model (color)				AU60NAIERA(WHITE)
	Compressor	Model / Manufacture			ANB42FCHMT（MITSUBISHI）
		Oil model			MEL56
		Oil charging			1700CM3
		Type			Scroll
	Fan	Type × Number			axial×2
		Speed		r/min	950±40
		Fan motor output power		kW	0.08
		Air-flow(H-M-L)		m³/h	8000
	Heat exchanger	Type / Diameter		mm	hlydrophilic Al slit fin/9.52
		Total area		m²	3/1.5
		Temp. scope		℃	43-60
	Dimension	External	（L×W×H）	mm×mm×mm	948*340*1250
		Package	（L×W×H）	mm×mm×mm	1095*410*1400
	Refrigerant control method			mm/mm	electrical expansion valve 2.4mm
	Defrosting				AUTO
	Volume of Accumulator			L	3
	Noise level			dB(A)	62
	Type of Four way valve				SHF-4-10A
	crankcase heater power			W	55
	Weight(Net / Shipping)			kg / kg	106/111
PIPING	Refrigerant	Type / Charge		g	R410A/4050
		Recharge quantity		g/m	65
	Pipe	Liquid		mm	9.52
		Gas		mm	19.05
	Connecting Method				flared
	Between I.D &O.D	MAX.Drop		m	30
		MAX.Piping length		m	50

2.2 For fixed frequency unit

item					Model	AU122AEEAA	
Function						cooling	heating
Power cable						3×2.5	
Power source					N, V, Hz	1, 220-230, 50	
Start Current					A	20	
Outdoor unit	Unit model (color)					AU122AEEAA（WHITE）	
	Compressor	Model / Manufacture				/	
		Type				Rotary	
	Fan	Type × Number				axial*1	
		Speed			r/min	840r/min±50	
		Fan motor output power			kW	0.06	
		Air-flow(H-M-L)			m³/h	2500/-/-	
	Heat exchanger	Type / Diameter			mm	TP2M/Φ9.52	
		Total area			m²	0.374	
		Temp. scope			℃	43-60	
	Dimension	External	（L×W×H）		mm×mm×mm	780x640x245	
		Package	（L×W×H）		mm×mm×mm	901x341x712	
	Refrigerant control method				mm/mm	Capillary tube	
	Defrosting					auto	
	Noise level				dB(A)	55	
	Type of Four way valve					SHF-4-10A	
	material of reduce noise					XPE	
	crankcase heater power				W	37	
	Weight(Net / Shipping)				kg / kg	39/43	
PIPING	Refrigerant	Type / Charge			g	R410A 1300	
		Recharge quantity			g/m	20	
	Pipe	Liquid			mm	6.35	
		Gas			mm	9.52	
	Connecting Method					flared	
	Between I.D &O.D	MAX.Drop			m	5	
		MAX.Piping length			m	15	

item					Model	AU182AEEAA	
Function						cooling	heating
Dehumidifying capacity					10 - ³×m³/h	1.8	
Signal cable					section	3	2.5
Connecting cable					section	4	0.75
Power source					N, V, Hz	1 PH 220-230 V 50 Hz	
Outdoor unit	Unit model (color)					AU182AEEAA (WHITE)	
	Compressor	Model / Manufacture				PA200X2CS-4KU1/Toshiba	
		Type				Rotary	
	Fan	Type × Number				Axial X 1	
		Speed			r/min	860±40	
		Fan motor output power			kW	35	
		Air-flow(H-M-L)			m³/h	2300	
	Heat exchanger	Type / Diameter			mm	TP2M/7X0.5	
		Temp. scope			℃	43-60	
	Dimension	External	（L×W×H）		mm×mm×mm	780x640x245	
		Package	（L×W×H）		mm×mm×mm	901x341x712	
	Refrigerant control method				mm/mm	Capillary tube	
	Defrosting					controlled by coil temp.	
	Noise level				dB(A)	56	
	material of reduce noise					XPE	
	Weight (Net / Shipping)				kg / kg	42/45	
PIPING	Refrigerant	Type / Charge			g	R410A/1500	
		Recharge quantity			g/m	20	
	Pipe	Liquid			mm	6.35	
		Gas			mm	12.7	
	Connecting Method					flared	
	Between I.D &O.D	MAX.Drop			m	10	
		MAX.Piping length			m	20	

item				Model	AU242AGEAA
Power cable					H05RN-F 3G 4.0mm2
Power source				N, V, Hz	1PH,220-230VAC,50HZ
Outdoor unit	Unit model (color)				WHITE
	Compressor	Model / Manufacture			PA290X3CS-4MU1（TOSHIBA）
		Oil model			VG74
		Oil charging			950ML
		Type			Rotary
	Fan	Type × Number			axial×1
		Speed		r/min	1000±50
		Fan motor output power		kW	0.06
		Air-flow(H-M-L)		m³/h	3000
	Heat exchanger	Type / Diameter		mm	hlydrophilic foil slit fin/φ7
		Row / Fin pitch			3/1.46
		Temp. scope		℃	43-60
	Dimension	External	（L×W×H）	mm×mm×mm	865*335*732
		Package	（L×W×H）	mm×mm×mm	995*420*815
	RefrigEAAnt control method			mm/mm	Φ1.8*300 capillary
	Defrosting				AUTO
	Volume of Accumulator			L	3
	Noise level			dB(A)	57
	Type of Four way valve				SHF-4-10A
	crankcase heater power			W	37
	Weight (Net / Shipping)			kg / kg	57/60.5
PIPING	RefrigEAAnt	Type / Charge		g	R410A/2100
		Recharge quantity		g/m	50
	Pipe	Liquid		mm	9.52
		Gas		mm	15.88
	Connecting Method				flare
	Between I.D &O.D	MAX.Drop		m	15/10
		MAX.Piping length		m	30

item				Model	AU282AHEAA
color					WHITE
Power cable					H05RN-F 3G 4.0mm2
Power source				N, V, Hz	1PH,220-230VAC,50HZ
Outdoor unit	Compressor	Model / Manufacture			NN33VAAMT(MITSUBISHI）
		Oil model			FV50S
		Oil charging			1300CC.
		Type			Rotary
	Fan	Type × Number			axial×1
		Speed		r/min	920±50
		Fan motor output power		kW	0.06
		Air-flow(H-M-L)		m³/h	4000
	Heat exchanger	Type / Diameter		mm	hlydrophilic foil slit fin/φ7.94
		Row / Fin pitch			2/1.7
		Temp. scope		℃	43-60
	Dimension	External	（L×W×H）	mm×mm×mm	948*340*840
		Package	（L×W×H）	mm×mm×mm	1095*410*990
	RefrigEAAnt control method			mm/mm	Capillary
	Defrosting				Automatic
	Volume of Accumulator			L	3.5
	Noise level			dB(A)	58
	Type of Four way valve				SHF-4-10A
	crankcase heater power			W	40
	Weight (Net / Shipping)			kg / kg	74/89
PIPING	RefrigEAAnt	Type / Charge		g	R410A/2450
		Recharge quantity		g/m	50
	Pipe	Liquid		mm	9.52
		Gas		mm	15.88
	Connecting Method				Flare cnnection
	Between I.D &O.D	MAX.Drop		m	15/10
		MAX.Piping length		m	30

item					Model	AU28NAHEAA	
Power cable						H05RN-F 3G 4.0mm2	
Power source					N, V, Hz	3PH,380-400VAC,50HZ	
Start Current					A	33A/36A	33A/36A
Outdoor unit	Unit model (color)					AU28NAHEAA(WHITE)	
	Compressor	Model / Manufacture				NN33YCAMT（MITSUBISHI）	
		Oil model				FV50S	
		Oil charging				1300CC.	
		Type				Rotary	
	Fan	Type × Number				axial×1	
		Speed			r/min	920±50	
		Fan motor output power			kW	0.06	
		Air-flow(H-M-L)			m³/h	4000	
	Heat exchanger	Type / Diameter			mm	hlydrophilic foil slit fin/φ7.94	
		Row / Fin pitch				2/1.7	
		Temp. scope			℃	43-60	
	Dimension	External	（L×W×H）		mm×mm×mm	948*340*840	
		Package	（L×W×H）		mm×mm×mm	1095*410*990	
	Refrigerant control method				mm/mm	Capillary	
	Defrosting					Automatic	
	Volume of Accumulator				L	3.5	
	Noise level				dB(A)	58	
	Type of Four way valve					SHF-4-10A	
	crankcase heater power				W	40	
	Weight (Net / Shipping)				kg / kg	74/89	
PIPING	Refrigerant	Type / Charge			g	R410A/2450	
		Recharge quantity			g/m	50	
	Pipe	Liquid			mm	9.52	
		Gas			mm	15.88	
	Connecting Method					Flare connection	
	Between I.D &O.D	MAX.Drop			m	15/10	
		MAX.Piping length			m	30	

item					Model	AU362ALEAA
Power cable					section	5G×2.5mm^2
Signal cable					section	4G×0.75mm^2
Connecting cable					section	
Power source					N, V, Hz	OUTDOOR UNIT:1PH,220-230AC,50HZ，
Unit model (color)						AU362ALEAA(WHITE)
		Oil model				DAPHNE
		Oil type				FVC68D
		Oil charging				1500L
		Type				SCROLL
		Protection type				Inner thermal protection
		Starting method				hard startup
	Fan	Type × Number				Axial*1
		Speed			r/min	740
		Fan motor output power			kW	0.15*1
		Air-flow(H-M-L)			m³/h	5500
	Heat exchanger	Type / Diameter			mm	inner grooved/φ9.52
		Row / Fin pitch				2/1.6
		Temp. scope			℃	43－60
	Dimension	External	（L×W×H）		mm×mm×mm	1008×447×830
		Package	（L×W×H）		mm×mm×mm	1130×490×930
	Refrigerant control method				mm/mm	Capillary tube
	Defrosting					Automatic
	Noise level				dB(A)	59
	crankcase heater power				W	37
	Weight (Net / Shipping)				kg / kg	90/101
PIPING	Refrigerant	Type / Charge			g	R410A/3000
		Recharge quantity			g/m	54
	Pipe	Liquid			mm	φ9.52
		Gas			mm	φ19.05
	Connecting Method					Flared
	Between I.D &O.D	MAX.Drop			m	30
		MAX.Piping length			m	50

item				Model	AU362AIEAA	
Dehumidifying capacity				10 - ³×m³/h	2.5	
Power cable					H05RN-F 3G 4.0mm2	
Power source				N, V, Hz	1PH,220-230AC,50HZ	
Start Current				A	88/96	88/96
	Compressor	Model / Manufacture			NN40VAAMT	
		Oil model			FV50S	
		Oil charging			1300cc	
		Type			Rotary	
	Fan	Type × Number			axial×2	
		Speed		r/min	860±40	
		Fan motor output power		kW	0.08	
		Air-flow(H-M-L)		m³/h	7000	
	Heat exchanger	Type / Diameter		mm	hlydrophilic foil slit fin /φ7.94	
		Row / Fin pitch			2/1.7	
		Temp. scope		℃	43-60	
	Dimension	External	（L×W×H）	mm×mm×mm	948*340*1250	
		Package	（L×W×H）	mm×mm×mm	1095*410*1400	
	Refrigerant control method			mm/mm	Capillary	
	Defrosting				Automatic	
	Volume of Accumulator			L	3.5	
	Noise level			dB(A)	60	
	Type of Four way valve				SHF-4-10A	
	crankcase heater power			W	40	
	Weight (Net / Shipping)			kg / kg	96/101	
PIPING	Refrigerant	Type / Charge		g	R410A/3300	
		Recharge quantity		g/m	65	
	Pipe	Liquid		mm	9.52	
		Gas		mm	19.05	
	Connecting Method				Flare connection	
	Between I.D &O.D	MAX.Drop		m	30	
		MAX.Piping length		m	50	

item				Model	AU36NAIEAA	
Dehumidifying capacity				10 - ³×m³/h	2.5	
Power cable					H05RN-F 3G 4.0mm2	
Power source				N, V, Hz	3PH,380-400AC,50HZ	
Start Current				A	46.3/48.2/50.0	46.3/48.2/50.0
Outdoor unit	Unit model (color)				AU36NAIEAA	
	Compressor	Model / Manufacture			JT125G-P8Y1	
		Oil model			DAPHNE FVC68D	
		Oil charging			1500cm³	
		Type			Scroll	
	Fan	Type × Number			axial×2	
		Speed		r/min	860±40	
		Fan motor output power		kW	0.08	
		Air-flow(H-M-L)		m³/h	7000	
	Heat exchanger	Type / Diameter		mm	hydrophilic foil slit fin/φ7.94	
		Row / Fin pitch			2/1.7	
		Temp. scope		℃	43-60	
	Dimension	External	（L×W×H）	mm×mm×mm	948*340*1250	
		Package	（L×W×H）	mm×mm×mm	1095*410*1400	
	Refrigerant control method			mm/mm	Capillary	
	Defrosting				Automatic	
	Volume of Accumulator			L	3.5	
	Noise level			dB(A)	60	
	Type of Four way valve				SHF-4-10A	
	crankcase heater power			W	40	
	Weight (Net / Shipping)			kg / kg	103/108	
PIPING	Refrigerant	Type / Charge		g	R410A/3300	
		Recharge quantity		g/m	65	
	Pipe	Liquid		mm	9.52	
		Gas		mm	19.05	
	Connecting Method				Flare connection	
	Between I.D &O.D	MAX.Drop		m	30	
		MAX.Piping length		m	50	

item					Model	AU42NALEAA	
Function						cooling	heating
Power cable					section	5G×2.5mm^2	
Signal cable					section	4G×0.75mm^2	
Connecting cable					section		
Power source					N, V, Hz	OUTDOOR UNIT:3N, 380-400V, 50HZ INDOOR	
Outdoor unit	Unit model (color)					AU42NALEAA(WHITE)	
	Compressor	Model / Manufacture				JT160G-P8Y1(R410A) /DAKIN	
		Oil model				DAPHNE	
		Oil type				FVC68D	
		Oil charging				1500L	
		Type				SCROLL	
		Protection type				Inner thermal protection	
		Starting method				hard startup	
	Fan	Type × Number				Axial*1	
		Speed			r/min	740	
		Fan motor output power			kW	0.15*1	
		Air-flow(H-M-L)			m³/h	5500	
	Heat exchanger	Type / Diameter			mm	inner grooved/φ9.52	
		Row / Fin pitch				2/1.6	
		Temp. scope			℃	43－60	
	Dimension	External	（L×W×H）		mm×mm×mm	1008×447×830	
		Package	（L×W×H）		mm×mm×mm	1140×500×955	
	Refrigerant control method				mm/mm	Capillary tube	
	Defrosting					Automatic	
	Noise level				dB(A)	59	
	crankcase heater power				W	37	
	Weight (Net / Shipping)				kg / kg	91/102	
PIPING	Refrigerant	Type / Charge			g	R410A/3100	
		Recharge quantity			g/m	65	
	Pipe	Liquid			mm	φ9.52	
		Gas			mm	φ19.05	
	Connecting Method					Flared	
	Between I.D &O.D	MAX.Drop			m	30	
		MAX.Piping length			m	50	

item					Model	AU48NAIEAA
Power cable						H07RN-F 5G 4.0mm2
Power source					N, V, Hz	OU:380-400V,3N,50HZ IU:1PH,220-230V,50HZ
Outdoor unit	Unit model (color)					WHITE
	Compressor	Model / Manufacture				JT160G-P8Y1(R410A) /DAKIN
		Oil model				DAPHNE
		Oil type				FVC68D
		Oil charging				1500L
		Type				SCROLL
		Protection type				Inner thermal protection
		Starting method				hard startup
	Fan	Type × Number				axial×2
		Speed			r/min	860±40
		Fan motor output power			kW	0.08
		Air-flow(H-M-L)			m³/h	7000
	Heat exchanger	Type / Diameter			mm	hlydrophilic foil slit fin/9.52
		Row / Fin pitch				3/1.55
		Temp. scope			℃	43-60
	Dimension	External	（L×W×H）		mm×mm×mm	948*340*1250
		Package	（L×W×H）		mm×mm×mm	1095*410*1400
	Refrigerant control method				mm/mm	capillary 2.4*150
	Defrosting					AUTO
	Volume of Accumulator				L	3
	Noise level				dB(A)	60
	Type of Four way valve					SHF-4-10A
	crankcase heater power				W	55
	Weight (Net / Shipping)				kg / kg	106/111
PIPING	Refrigerant	Type / Charge			g	R410A/3700
		Recharge quantity			g/m	65
	Pipe	Liquid			mm	9.52
		Gas			mm	19.05
	Connecting Method					flare
	Between I.D &O.D	MAX.Drop			m	30
		MAX.Piping length			m	50

item				Model	AU60NAIEAA
Power cable					H07RN-F 5G 4.0mm2
connectting cable					H05RN-F 4G 0.75mm2
Power source				N, V, Hz	OU: 380-400V, 3N, 50HZ IU:1PH, 220-230V, 50HZ
Outdoor unit	Unit model (color)				WHITE
	Compressor	Model / Manufacture			JT170G-P8Y1（DAIKIN）
		Oil model			DAPHNE
		Oil type			FVC68D
		Oil charging			1500CM3
		Type			Scroll
	Fan	Type × Number			axial×2
		Speed		r/min	860±40
		Fan motor output power		kW	0.08
		Air-flow(H-M-L)		m³/h	7000
	Heat exchanger	Type / Diameter		mm	hlydrophilic foil slit fin/9.52
		Row / Fin pitch			3/1.5
		Temp. scope		℃	43-60
	Dimension	External	（L×W×H）	mm×mm×mm	948*340*1250
		Package	（L×W×H）	mm×mm×mm	1095*410*1400
	Refrigerant control method			mm/mm	capillary Φ2.4*150
	Defrosting				AUTO
	Volume of Accumulator			L	3
	Noise level			dB(A)	60
	Type of Four way valve				SHF-4-10A
	crankcase heater power			W	55
	Weight (Net / Shipping)			kg / kg	106/111
PIPING	Refrigerant	Type / Charge		g	R410A/4050
		Recharge quantity		g/m	65
	Pipe	Liquid		mm	9.52
		Gas		mm	19.05
	Connecting Method				flare
	Between I.D &O.D	MAX.Drop		m	30
		MAX.Piping length		m	50

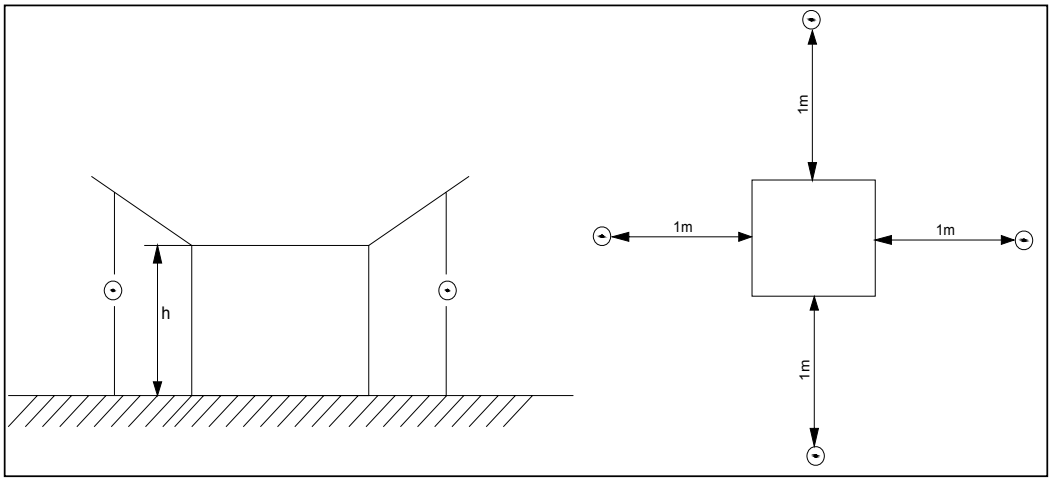
item				Model	AU72NATEAA
Power source				N, V, Hz	OU: 3PH,380-400AC,50HZ; IU: 1PH,220-230AC,50HZ
Outdoor unit	Unit model (color)				AU72NATEAA(WHITE)
	Compressor	Model / Manufacture			JT125G-P8Y1 / DAIKIN
		Oil model			DAPHNE
		Oil type			FVC68D
		Oil charging			1500CM3
		Type			Scroll
	Fan	Type × Number			axial×1
		Speed		r/min	850±50/720±50
		Fan motor output power		kW	0.6
		Air-flow(H-M-L)		m³/h	10000/-/6000
	Heat exchanger	Type / Diameter		mm	TP2M/9.52
		Row / Fin pitch			1.8
		Temp. scope		℃	43-60
	Dimension	External	（L×W×H）	mm×mm×mm	990*760*1700
		Package	（L×W×H）	mm×mm×mm	1155*925*1870
	Refrigerant control method			mm/mm	capillary
	Defrosting				AUTO
	Volume of Accumulator			L	8
	Noise level			dB(A)	60
	crankcase heater power			W	34*2
	Weight (Net / Shipping)			kg / kg	161
PIPING	Refrigerant	Type / Charge		g	R410A/3700*2
		Recharge quantity		g/m	65
	Pipe	Liquid		mm	9.52
		Gas		mm	19.05
	Connecting Method				flared
	Between I.D &O.D	MAX.Drop		m	30
		MAX.Piping length		m	50

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level. The detailed method please refer to the following information:

Installation state: the unit should be placed on the flat floor or be mounted in horizontal direction.

Testing method:

outdoor unit:
1.air outlet from side: the noise level is the average sound pressure level measured from front, left, right directions.
2.air outlet from top: the noise level is the average sound pressure level measured from front, back, left, right directions.
measured point:
H (height to the ground) = (h (unit height) + 1m) /2
and, it is 1m to each side.

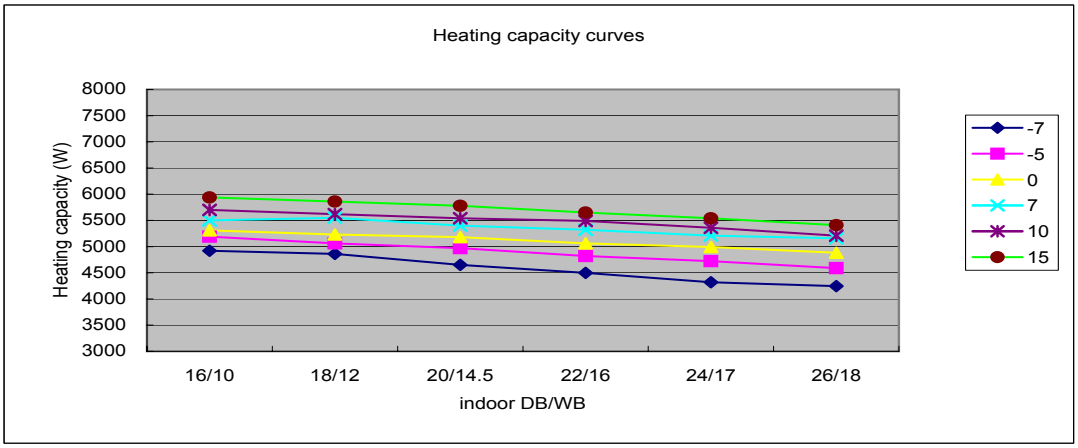


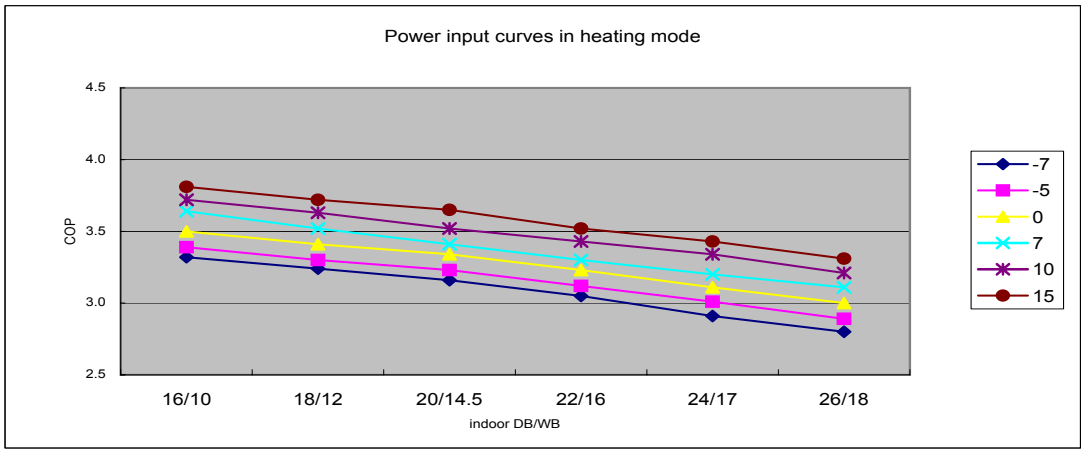
Note: ⊙ is the real time analyser position

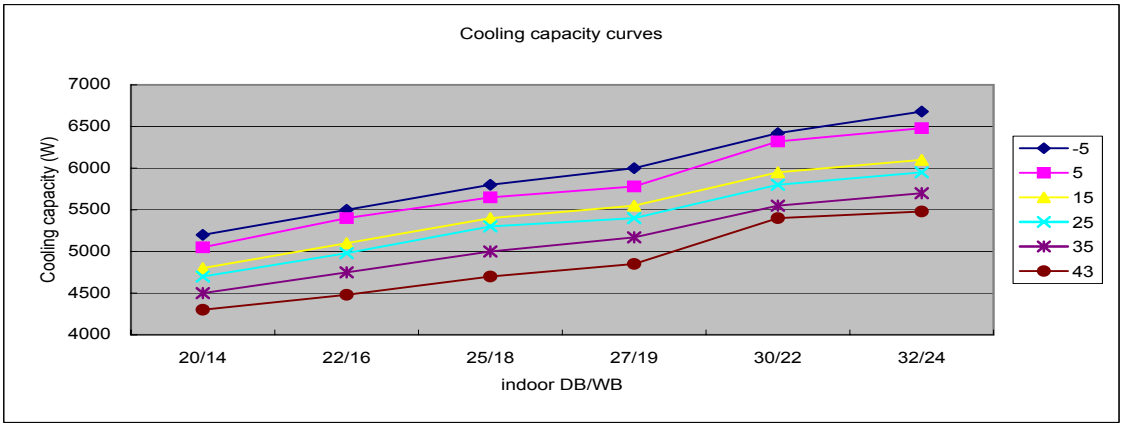
3. Curves

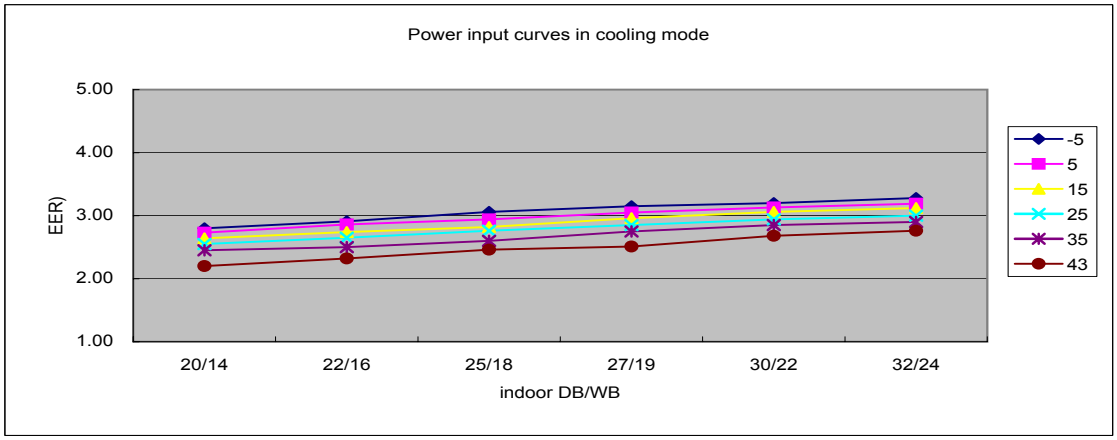
3.1 Performance curves

AU182AEEAA

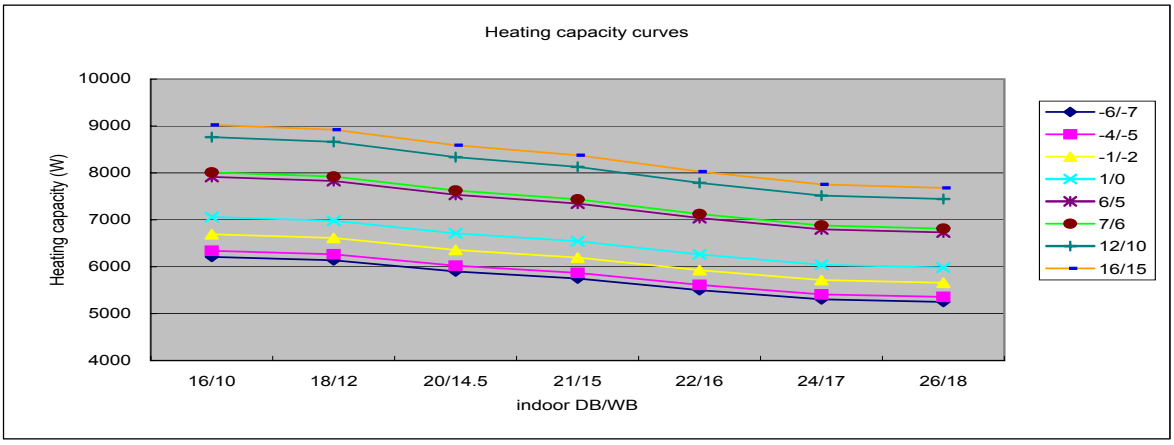


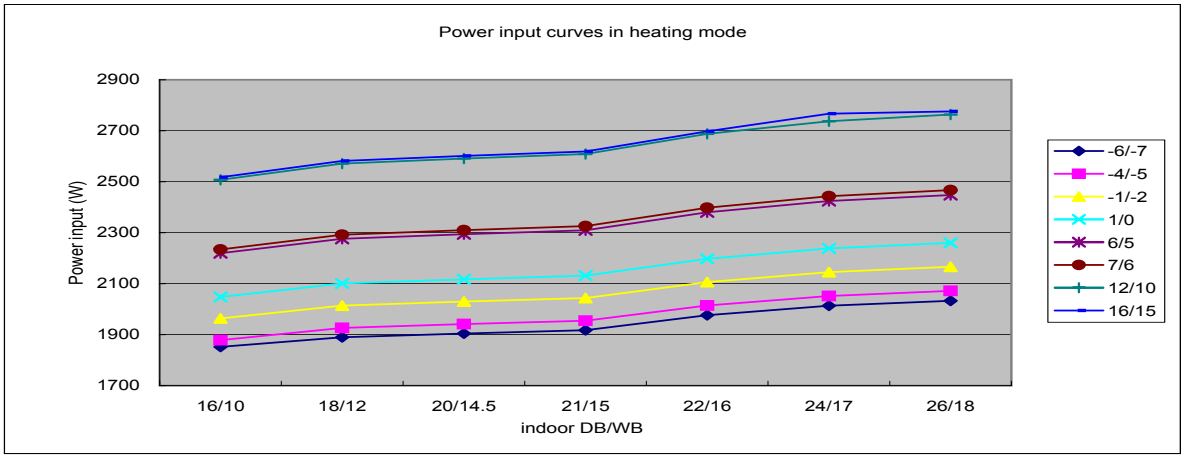


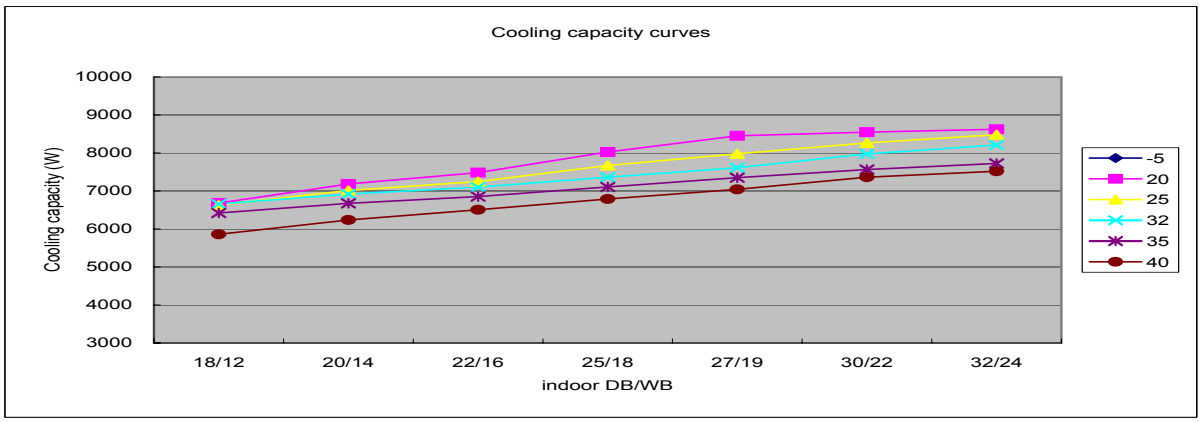


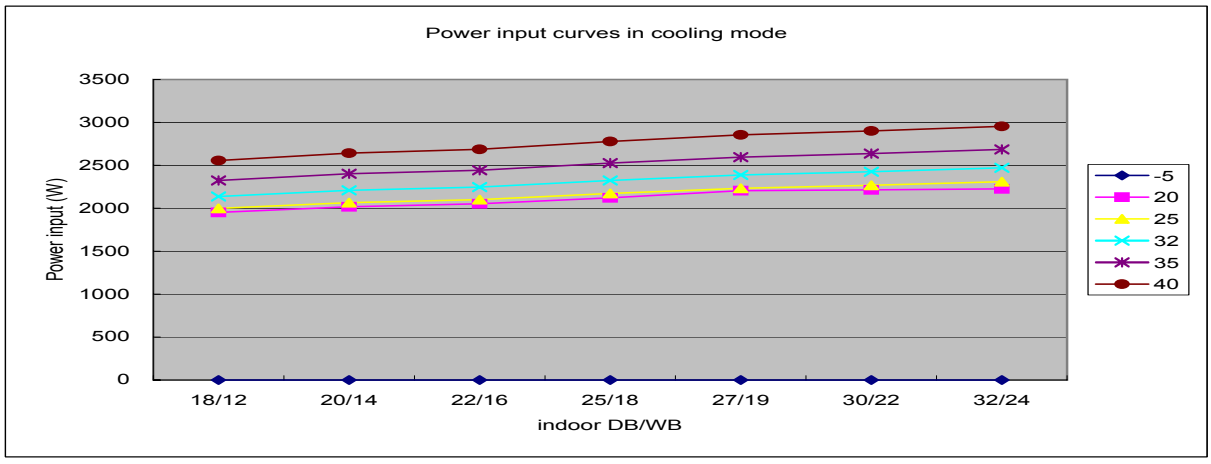


AU242AGEAA

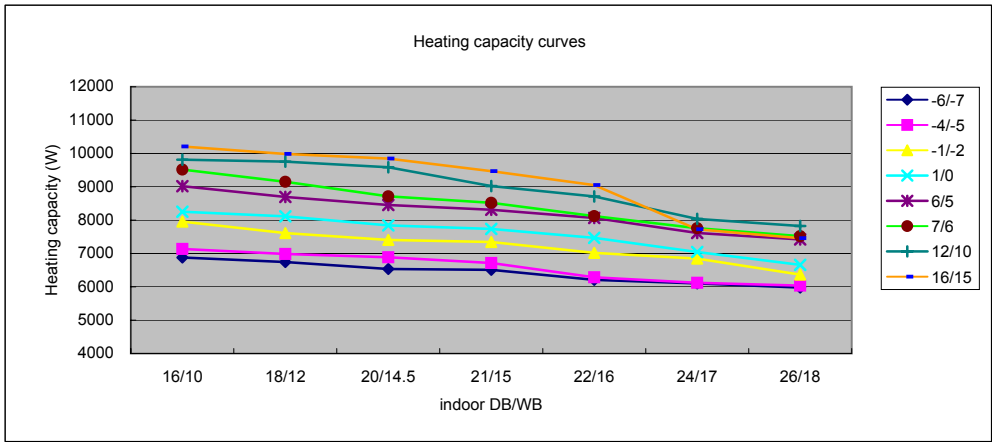

Heating capacity curves
Heating capacity (W)
10000
9000
8000
7000
6000
5000
4000
16/10
18/12
20/14.5
21/15
22/16
24/17
26/18
indoor DB/WB
-6/-7
-4/-5
-1/-2
1/0
6/5
7/6
12/10
16/15

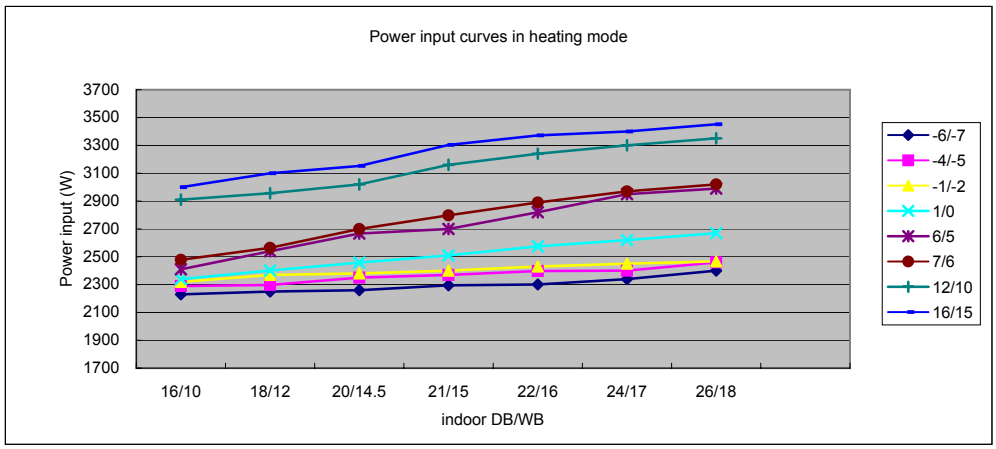

Power input curves in heating mode
Power input (W)
2900
2700
2500
2300
2100
1900
1700
16/10
18/12
20/14.5
21/15
22/16
24/17
26/18
indoor DB/WB
-6/-7
-4/-5
-1/-2
1/0
6/5
7/6
12/10
16/15

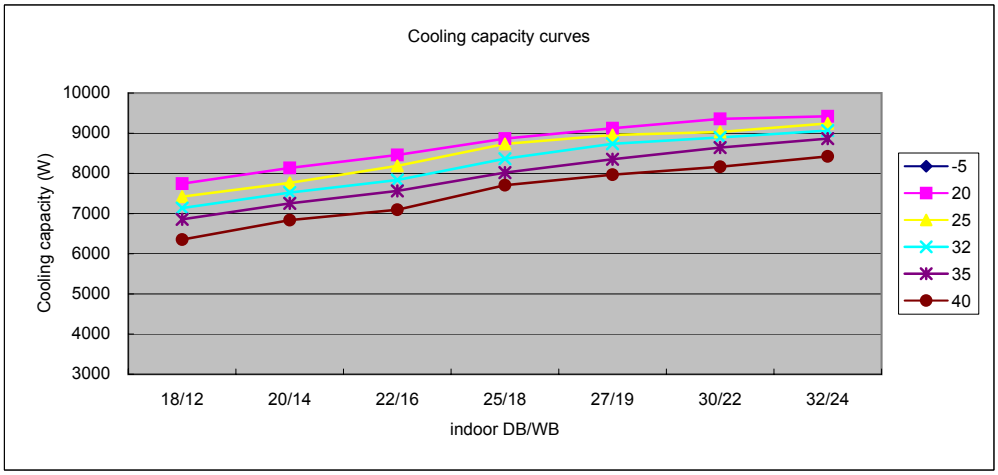

Cooling capacity curves
Cooling capacity (W)
10000
9000
8000
7000
6000
5000
4000
3000
18/12
20/14
22/16
25/18
27/19
30/22
32/24
indoor DB/WB
-5
20
25
32
35
40

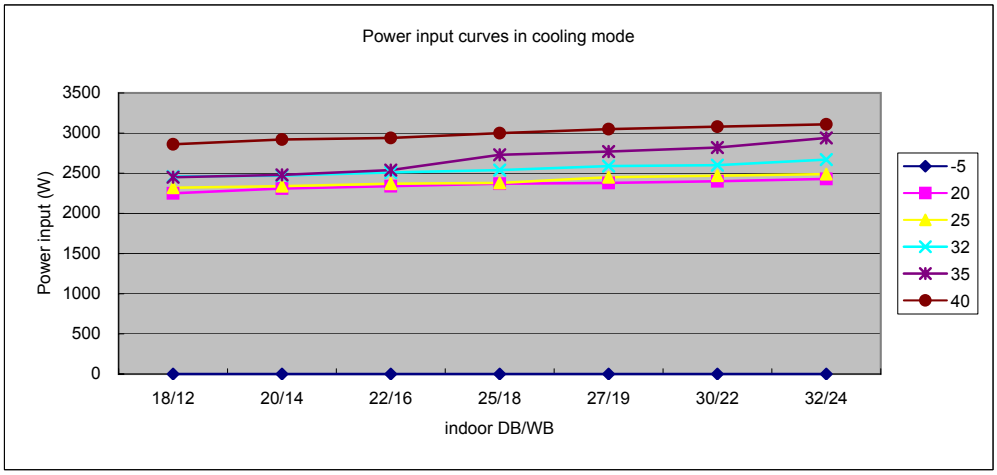

Power input curves in cooling mode
Power input (W)
3500
3000
2500
2000
1500
1000
500
0
18/12
20/14
22/16
25/18
27/19
30/22
32/24
indoor DB/WB
-5
20
25
32
35
40

AU282AHEAA

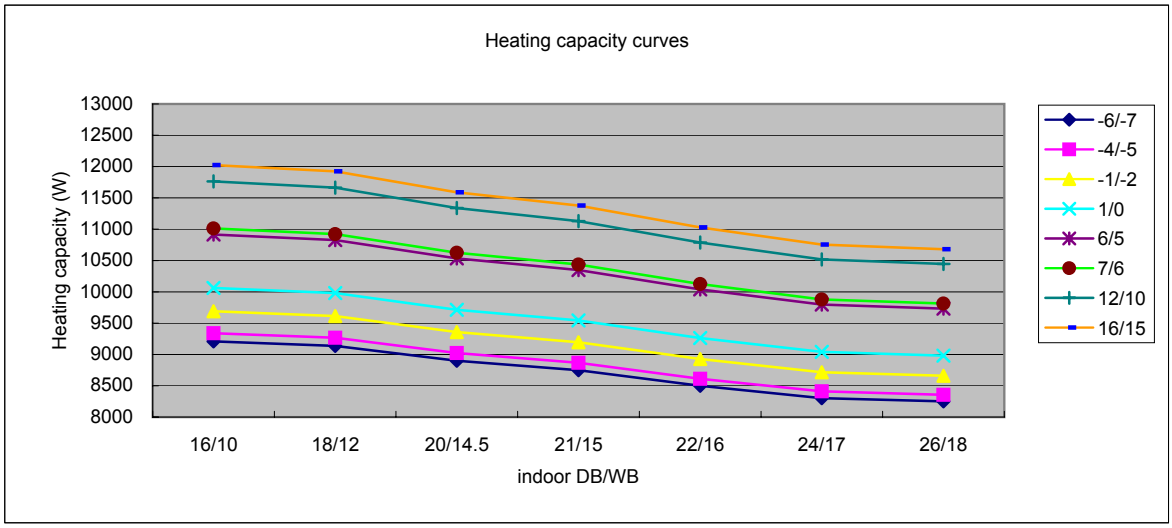

Heating capacity curves
Heating capacity (W)
12000
11000
10000
9000
8000
7000
6000
5000
4000
16/10
18/12
20/14.5
21/15
22/16
24/17
26/18
indoor DB/WB
-6/-7
-4/-5
-1/-2
1/0
6/5
7/6
12/10
16/15

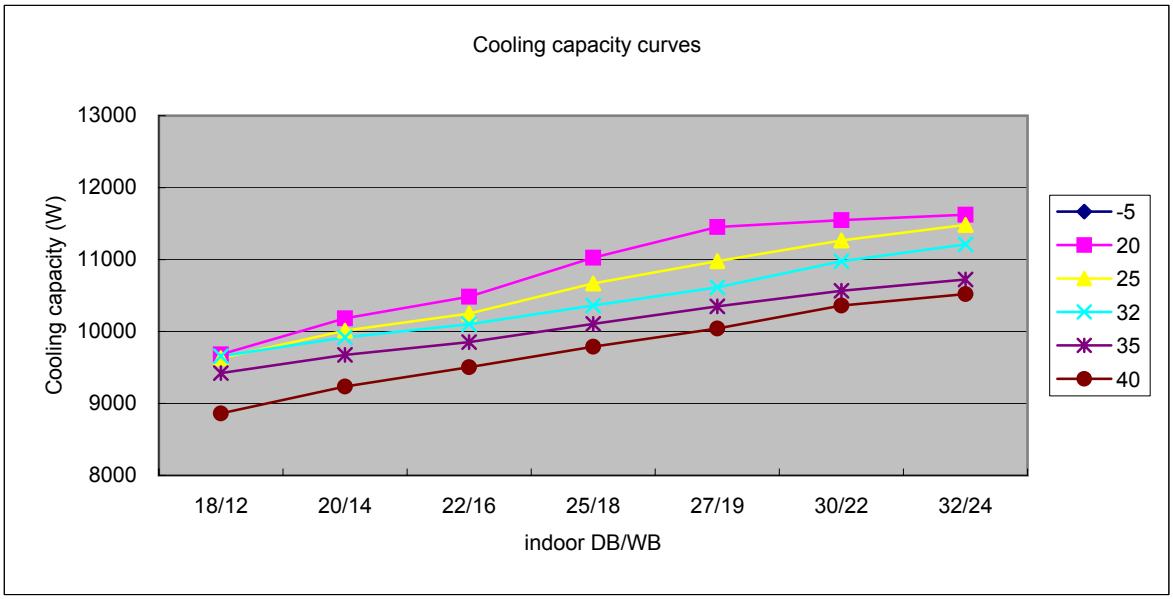

Power input curves in heating mode
Power input (W)
3700
3500
3300
3100
2900
2700
2500
2300
2100
1900
1700
16/10
18/12
20/14.5
21/15
22/16
24/17
26/18
indoor DB/WB
-6/-7
-4/-5
-1/-2
1/0
6/5
7/6
12/10
16/15


Cooling capacity curves
Cooling capacity (W)
10000
9000
8000
7000
6000
5000
4000
3000
18/12
20/14
22/16
25/18
27/19
30/22
32/24
indoor DB/WB
-5
20
25
32
35
40


Power input curves in cooling mode
Power input (W)
3500
3000
2500
2000
1500
1000
500
0
18/12
20/14
22/16
25/18
27/19
30/22
32/24
indoor DB/WB
-5
20
25
32
35
40

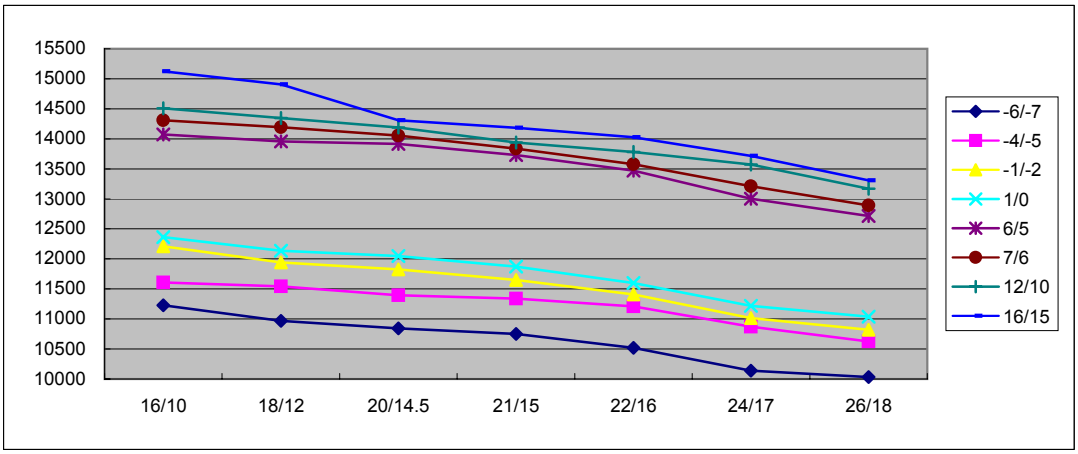
AU362AIEAA

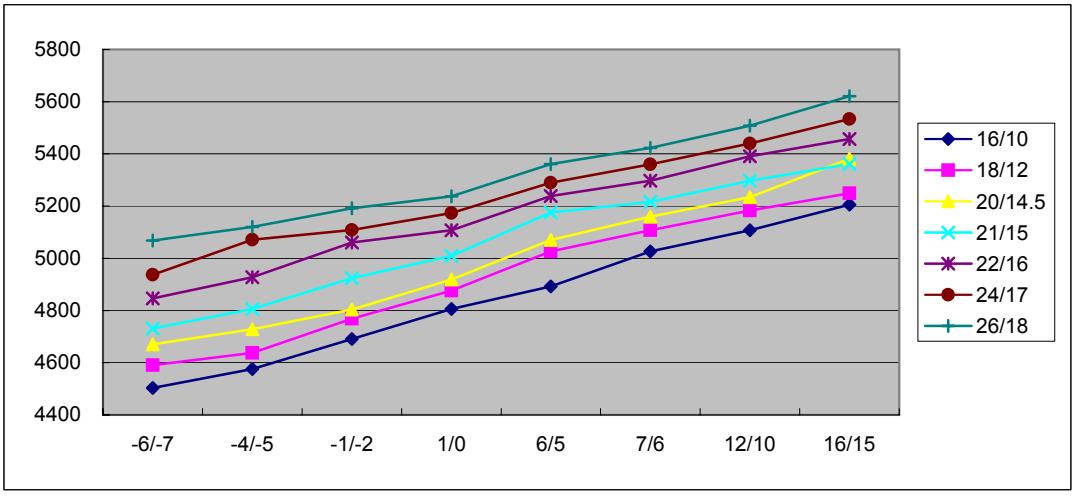

Heating capacity curves
Heating capacity (W)
13000
12500
12000
11500
11000
10500
10000
9500
9000
8500
8000
16/10
18/12
20/14.5
21/15
22/16
24/17
26/18
indoor DB/WB
-6/-7
-4/-5
-1/-2
1/0
6/5
7/6
12/10
16/15


Cooling capacity curves
Cooling capacity (W)
13000
12000
11000
10000
9000
8000
18/12
20/14
22/16
25/18
27/19
30/22
32/24
indoor DB/WB
-5
20
25
32
35
40

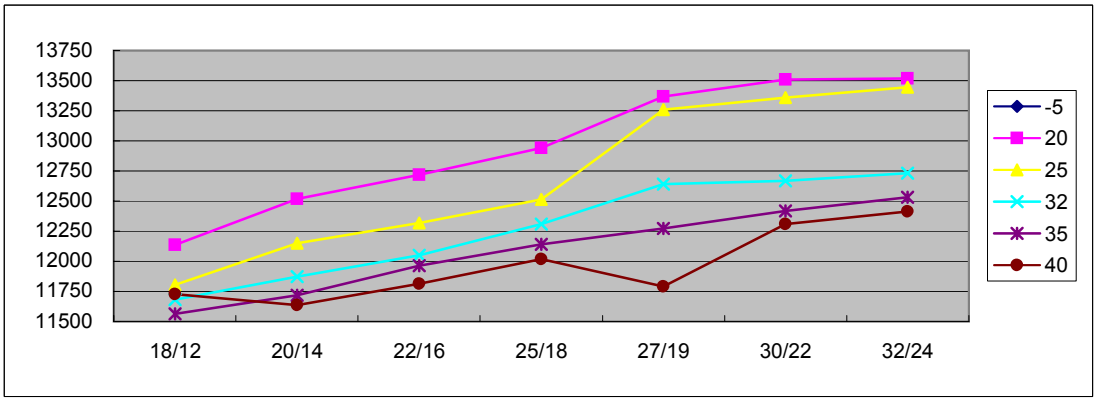
AU42NALEAA

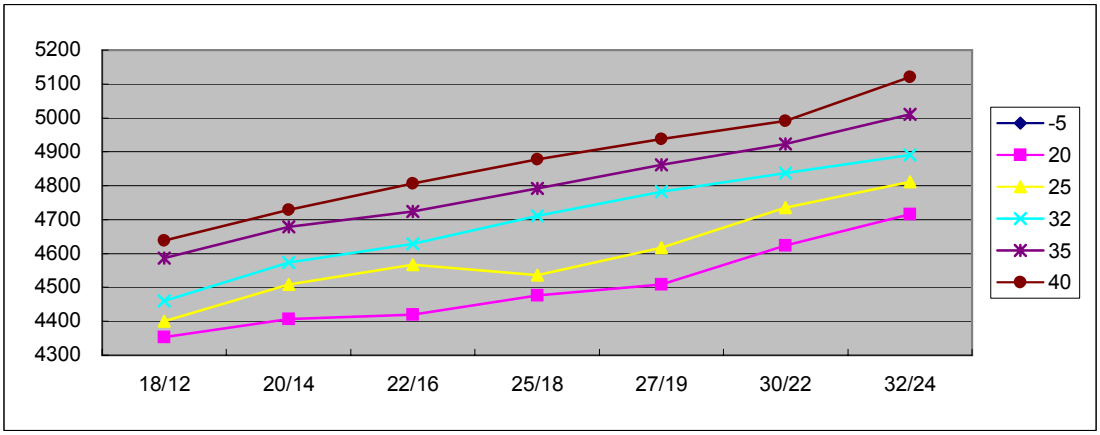
Heating capacity curves





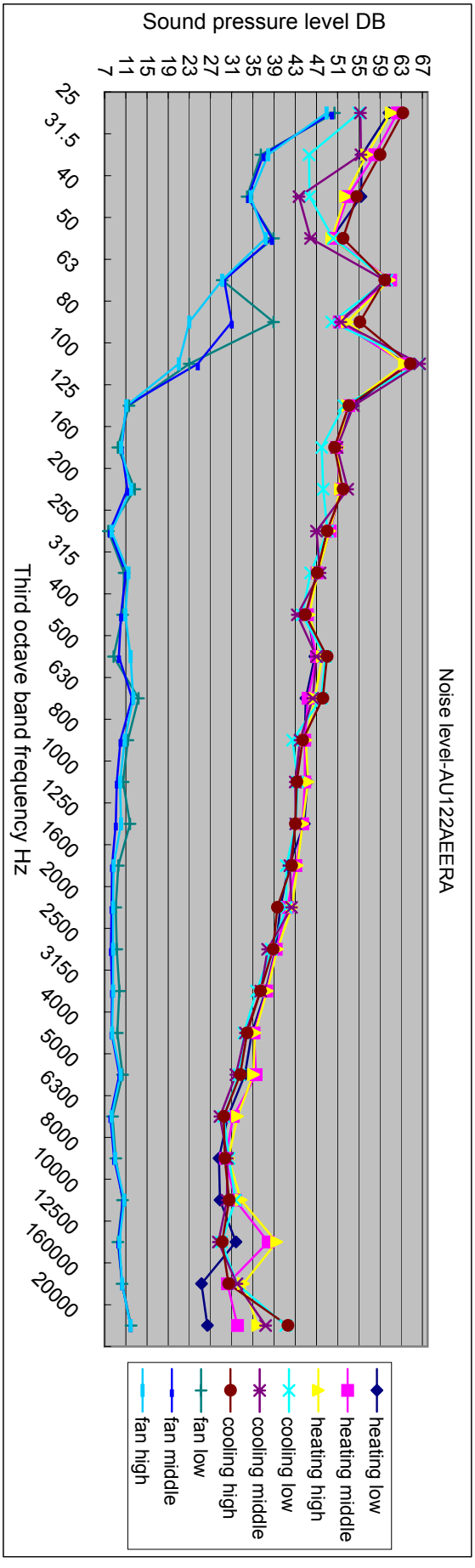
Cooling capacity curves

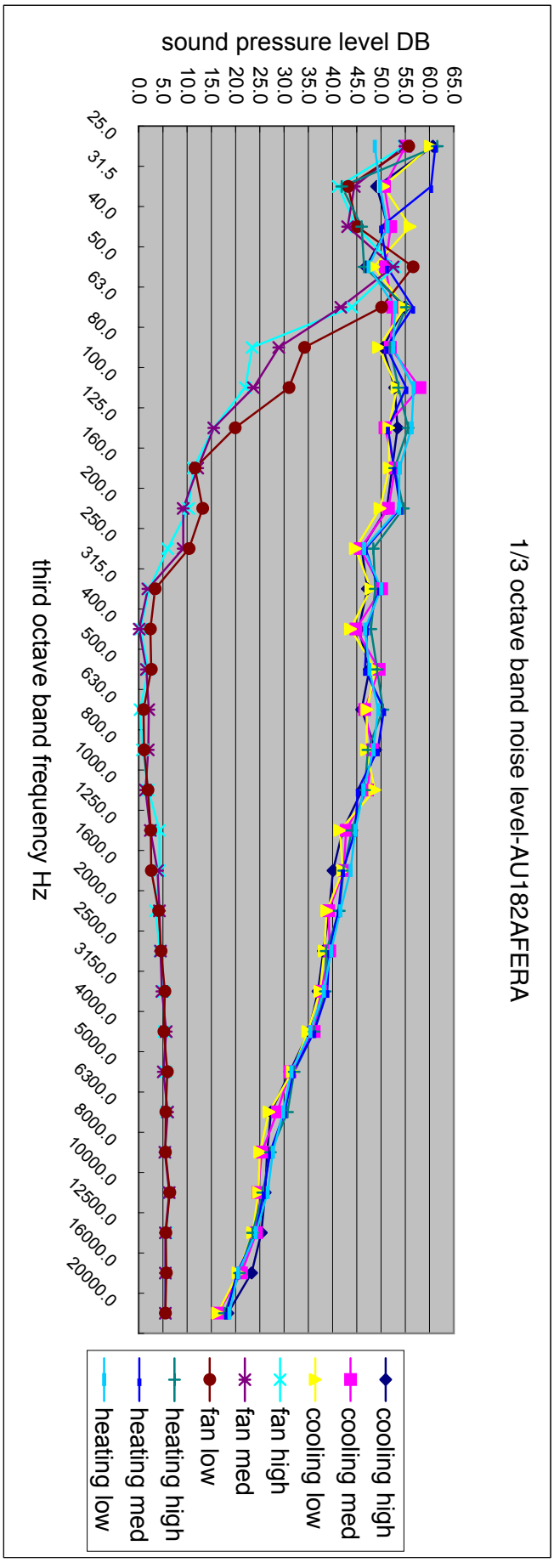


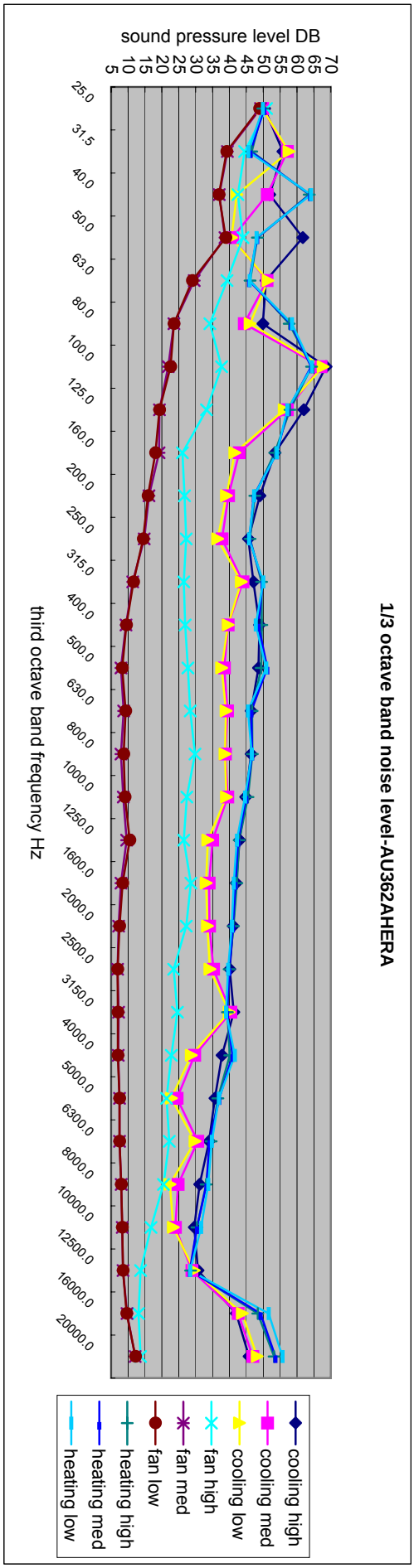


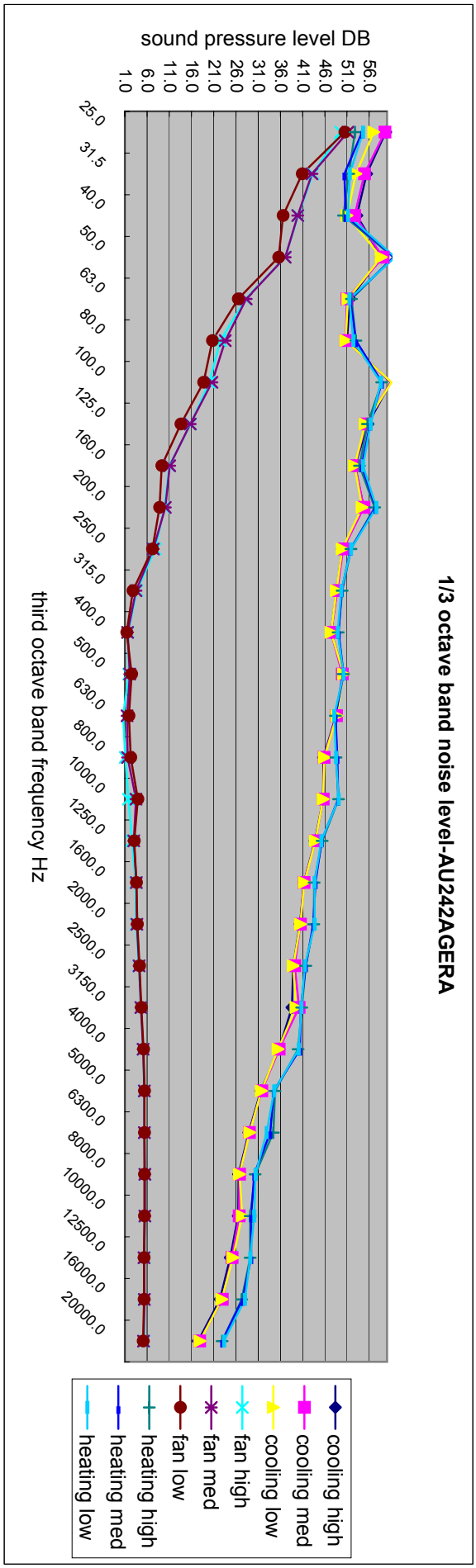
3.2 Noise level

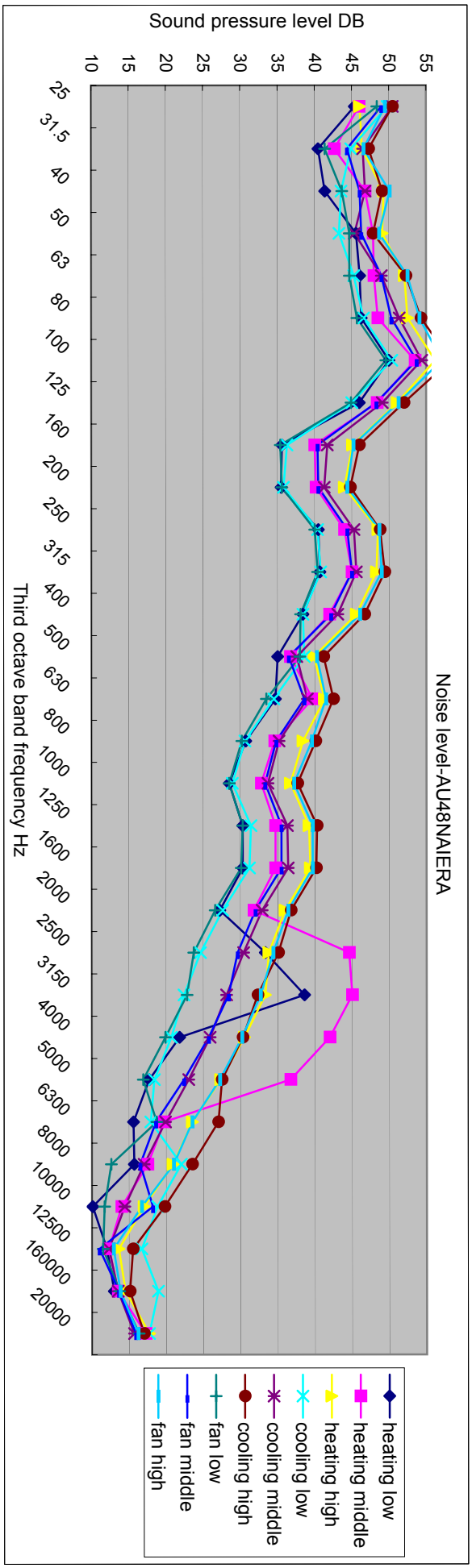
3.2.1 For inverter unit



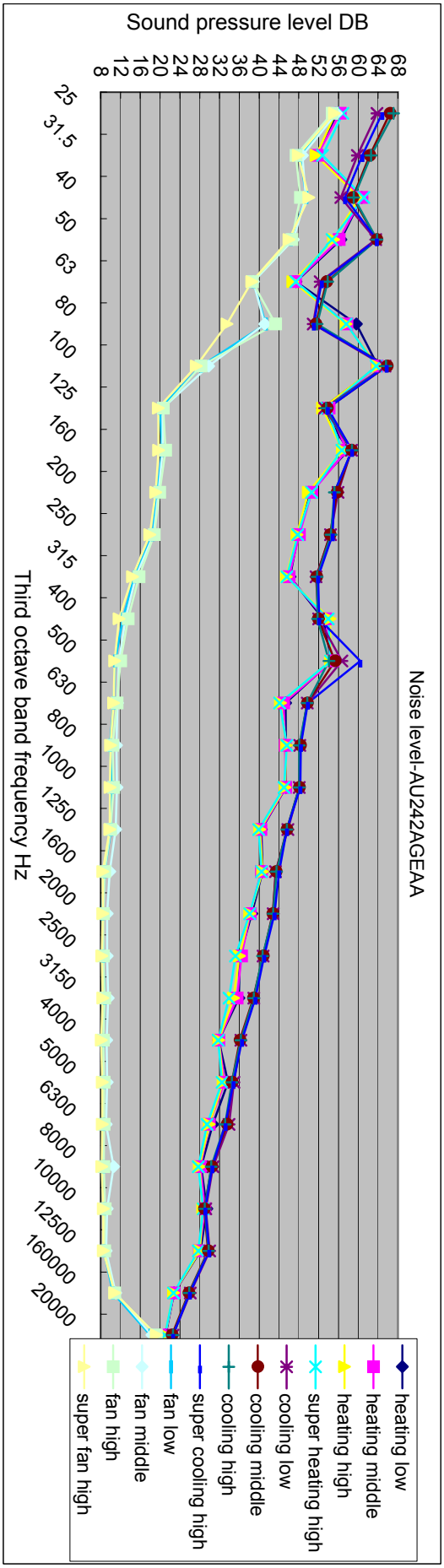


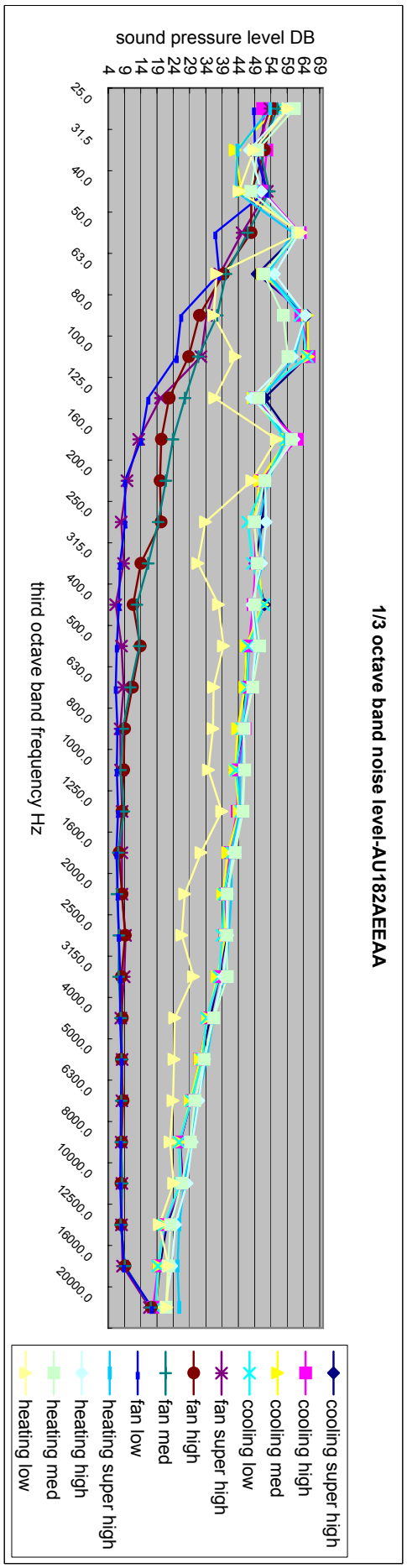

1/3 octave band noise level-AU362AHERA
sound pressure level DB
70 65 60 55 50 45 40 35 30 25 20 15 10 5
third octave band frequency Hz
25.0 31.5 40.0 50.0 63.0 80.0 100.0 125.0 160.0 200.0 250.0 315.0 400.0 500.0 630.0 800.0 1000.0 1250.0 1600.0 2000.0 2500.0 3150.0 4000.0 5000.0 6300.0 8000.0 10000.0 12500.0 16000.0 20000.0
cooling high
cooling med
cooling low
fan high
fan med
fan low
heating high
heating med
heating low

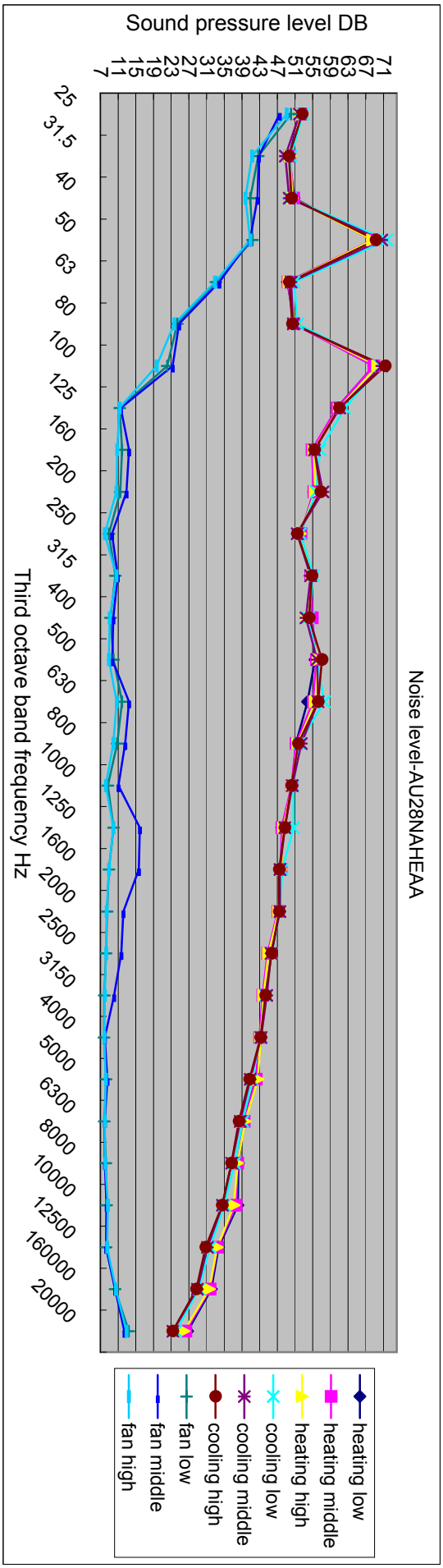

1/3 octave band noise level-AU242AGERA
sound pressure level DB
56.0 51.0 46.0 41.0 36.0 31.0 26.0 21.0 16.0 11.0 6.0 1.0
third octave band frequency Hz
25.0 31.5 40.0 50.0 63.0 80.0 100.0 125.0 160.0 200.0 250.0 315.0 400.0 500.0 630.0 800.0 1000.0 1250.0 1600.0 2000.0 2500.0 3150.0 4000.0 5000.0 6300.0 8000.0 10000.0 12500.0 16000.0 20000.0
cooling high
cooling med
cooling low
fan high
fan med
fan low
heating high
heating med
heating low

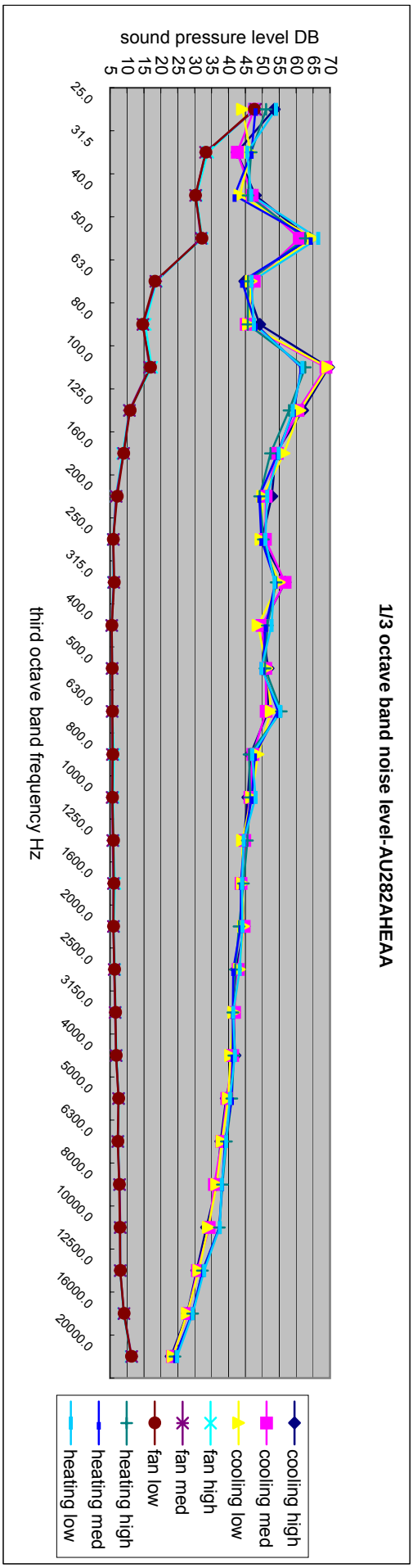

Sound pressure level DB
10
15
20
25
30
35
40
45
50
55
Third octave band frequency Hz
25
31.5
40
50
63
80
100
125
160
200
250
315
400
500
630
800
1000
1250
1600
2000
2500
3150
4000
5000
6300
8000
10000
12500
16000
20000
Noise level-AU48NAIERA
heating low
heating middle
heating high
cooling low
cooling middle
cooling high
fan low
fan middle
fan high

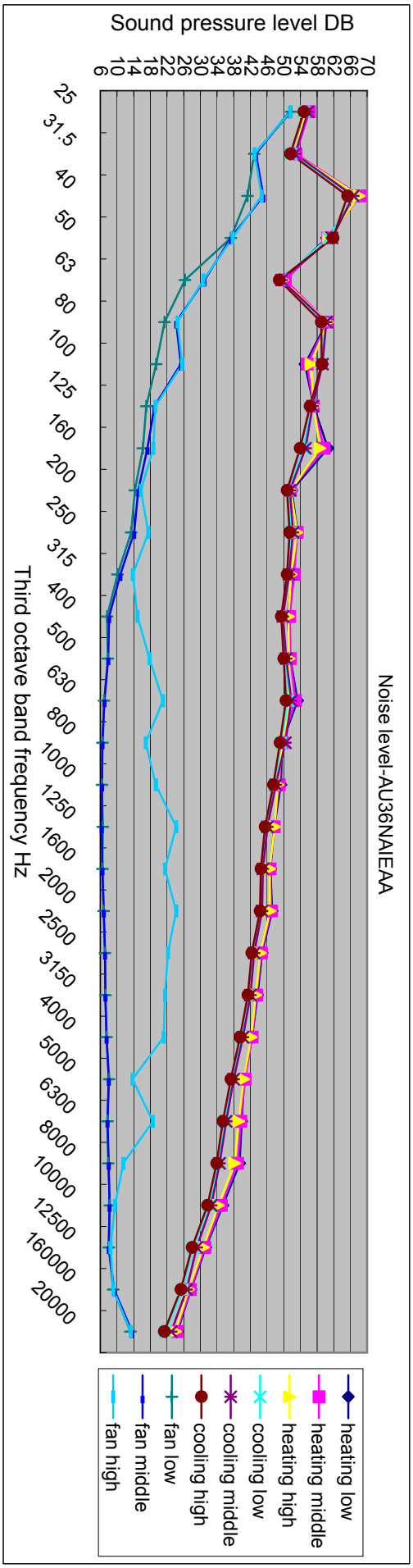
3.2.2 For fix frequency unit

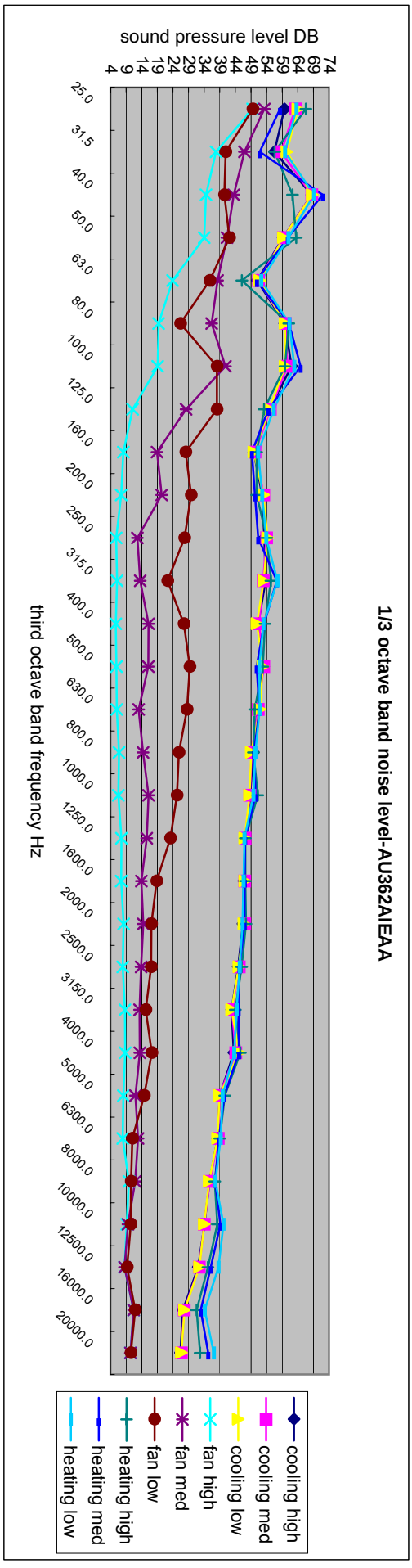


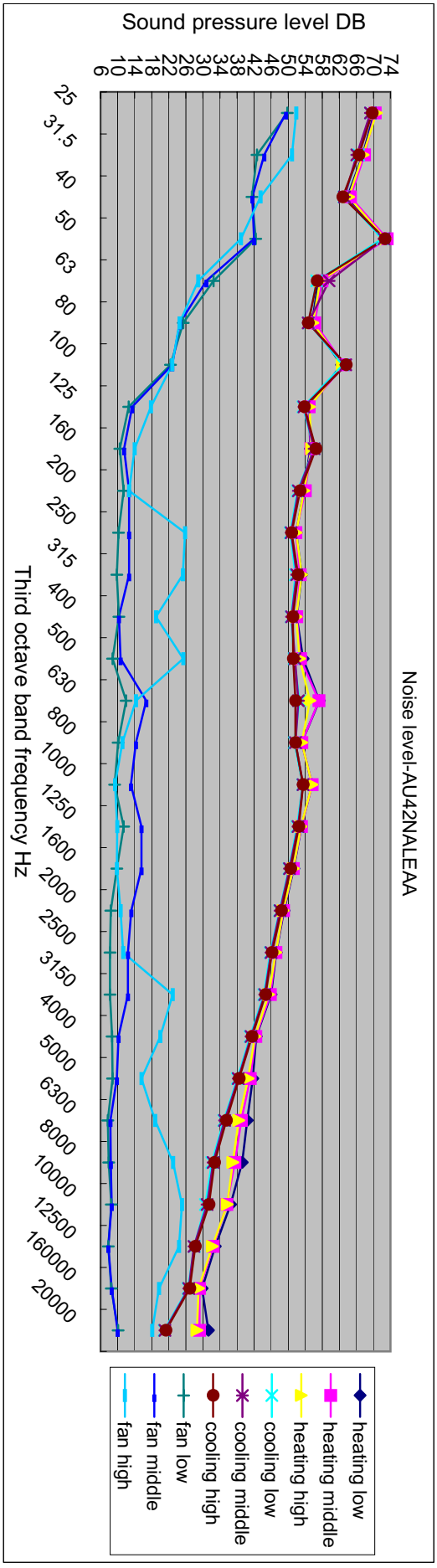


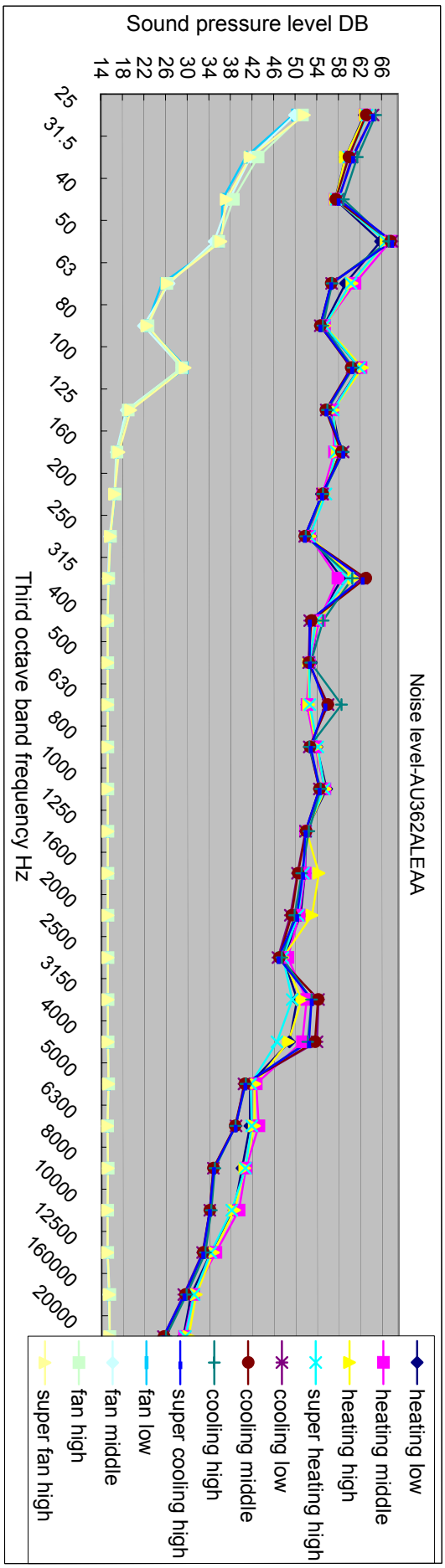

Noise level-AU28NAHEAA
Sound pressure level DB
71 67 63 59 55 51 47 43 39 35 31 27 23 19 15 11 7
Third octave band frequency Hz
25 31.5 40 50 63 80 100 125 160 200 250 315 400 500 630 800 1000 1250 1600 2000 2500 3150 4000 5000 6300 8000 10000 12500 160000 20000
heating low
heating middle
heating high
cooling low
cooling middle
cooling high
fan low
fan middle
fan high

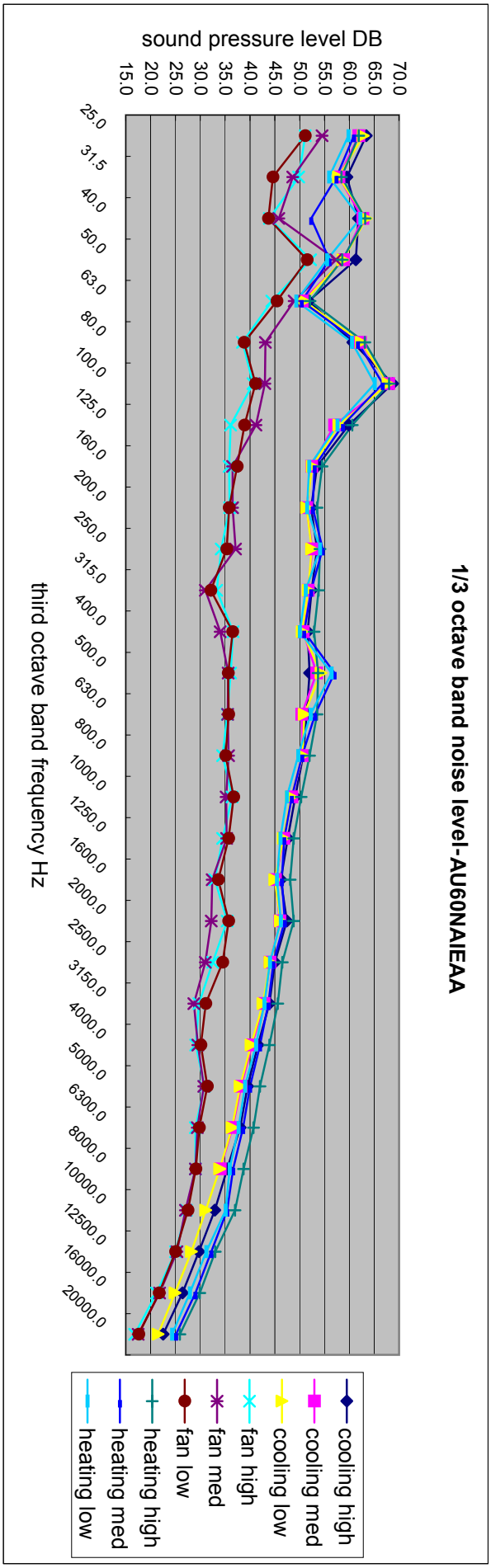

1/3 octave band noise level-AU282AHEAA
sound pressure level DB
70 65 60 55 50 45 40 35 30 25 20 15 10 5
third octave band frequency Hz
25.0 31.5 40.0 50.0 63.0 80.0 100.0 125.0 160.0 200.0 250.0 315.0 400.0 500.0 630.0 800.0 1000.0 1250.0 1600.0 2000.0 2500.0 3150.0 4000.0 5000.0 6300.0 8000.0 10000.0 12500.0 16000.0 20000.0
cooling high
cooling med
cooling low
fan high
fan med
fan low
heating high
heating med
heating low

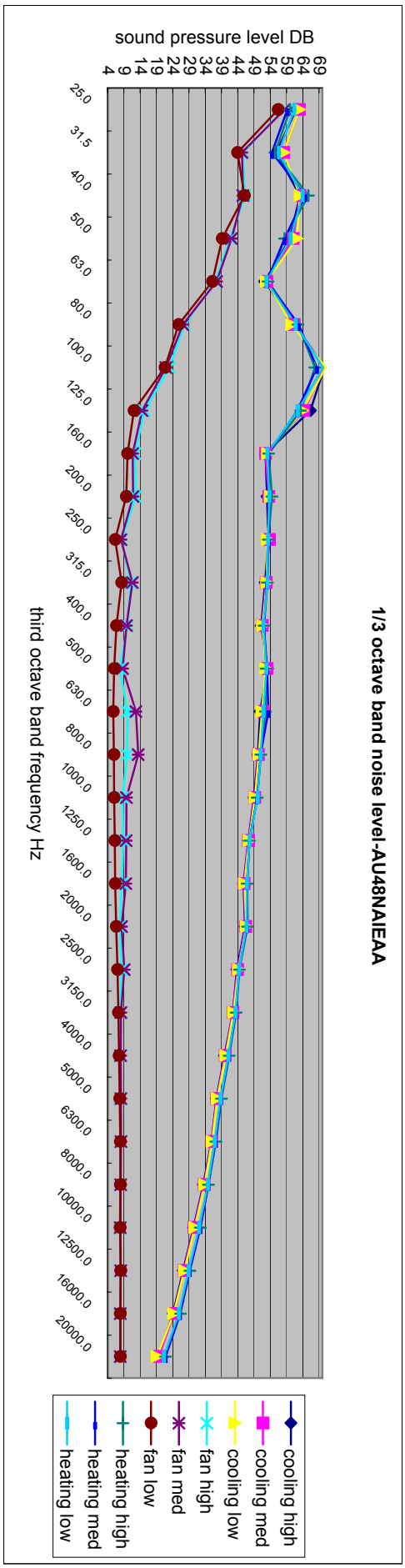

Noise level-AU36NAIEAA
Sound pressure level DB
70 66 62 58 54 50 46 42 38 34 30 26 22 18 14 10 6
Third octave band frequency Hz
25 31.5 40 50 63 80 100 125 160 200 250 315 400 500 630 800 1000 1250 1600 2000 2500 3150 4000 5000 6300 8000 10000 12500 160000 20000
heating low
heating middle
heating high
cooling low
cooling middle
cooling high
fan low
fan middle
fan high


1/3 octave band noise level-AU362AIEAA
sound pressure level DB
74 69 64 59 54 49 44 39 34 29 24 19 14 9 4
third octave band frequency Hz
25.0 31.5 40.0 50.0 63.0 80.0 100.0 125.0 160.0 200.0 250.0 315.0 400.0 500.0 630.0 800.0 1000.0 1250.0 1600.0 2000.0 2500.0 3150.0 4000.0 5000.0 6300.0 8000.0 10000.0 12500.0 16000.0 20000.0
cooling high
cooling med
cooling low
fan high
fan med
fan low
heating high
heating med
heating low


Noise level-AU42NALEAA
Sound pressure level DB
Third octave band frequency Hz
heating low
heating middle
heating high
cooling low
cooling middle
cooling high
fan low
fan middle
fan high

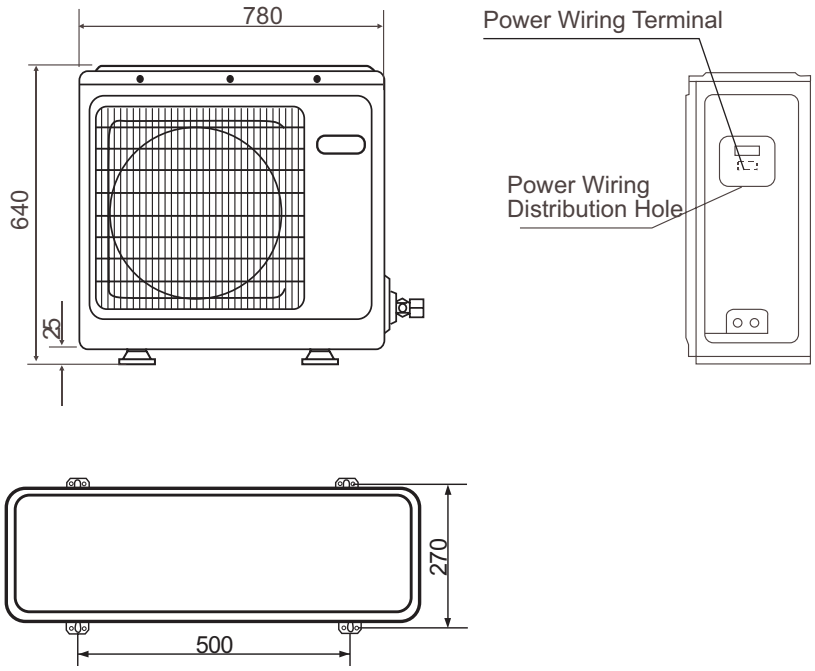

Noise level-AU362ALEAA
Sound pressure level DB
Third octave band frequency Hz
heating low
heating middle
heating high
super heating high
cooling low
cooling middle
cooling high
super cooling high
fan low
fan middle
fan high
super fan high


1/3 octave band noise level-AU60NAIEAA
sound pressure level DB
70.0
65.0
60.0
55.0
50.0
45.0
40.0
35.0
30.0
25.0
20.0
15.0
25.0
31.5
40.0
50.0
63.0
80.0
100.0
125.0
160.0
200.0
250.0
315.0
400.0
500.0
630.0
800.0
1000.0
1250.0
1600.0
2000.0
2500.0
3150.0
4000.0
5000.0
6300.0
8000.0
10000.0
12500.0
16000.0
20000.0
third octave band frequency Hz
cooling high
cooling med
cooling low
fan high
fan med
fan low
heating high
heating med
heating low

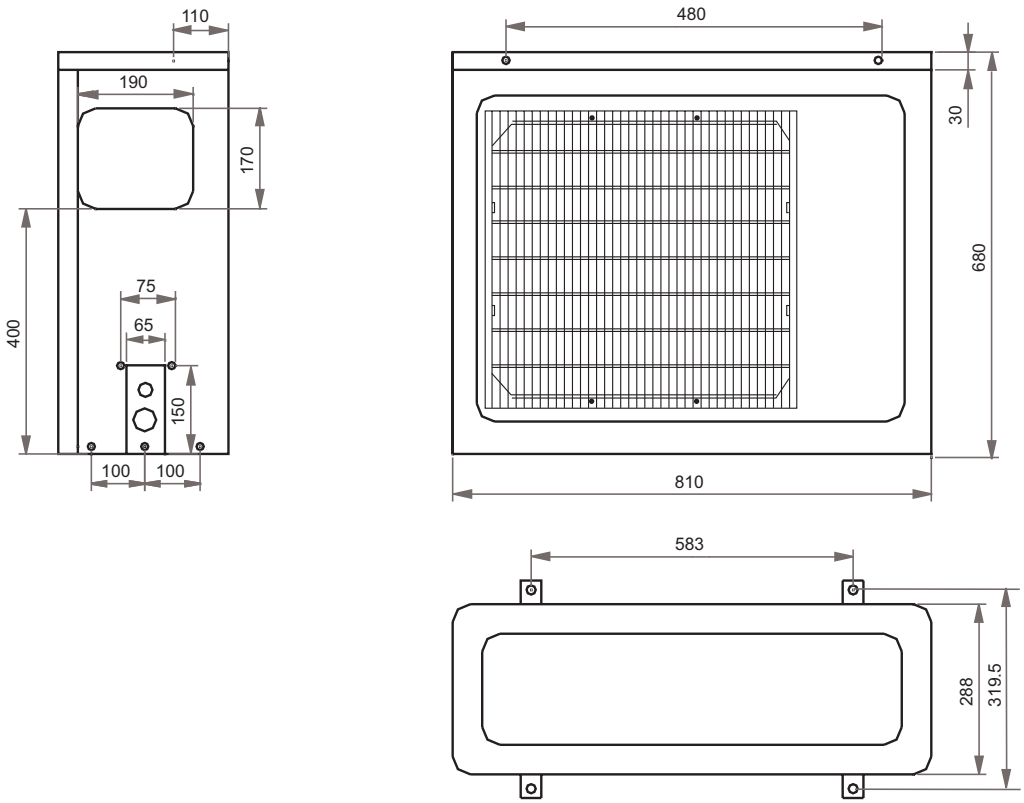

1/3 octave band noise level-AU48NAIEAA
sound pressure level DB
69
64
59
54
49
44
39
34
29
24
19
14
9
4
25.0
31.5
40.0
50.0
63.0
80.0
100.0
125.0
160.0
200.0
250.0
315.0
400.0
500.0
630.0
800.0
1000.0
1250.0
1600.0
2000.0
2500.0
3150.0
4000.0
5000.0
6300.0
8000.0
10000.0
12500.0
16000.0
20000.0
third octave band frequency Hz
cooling high
cooling med
cooling low
fan high
fan med
fan low
heating high
heating med
heating low

4. Dimension

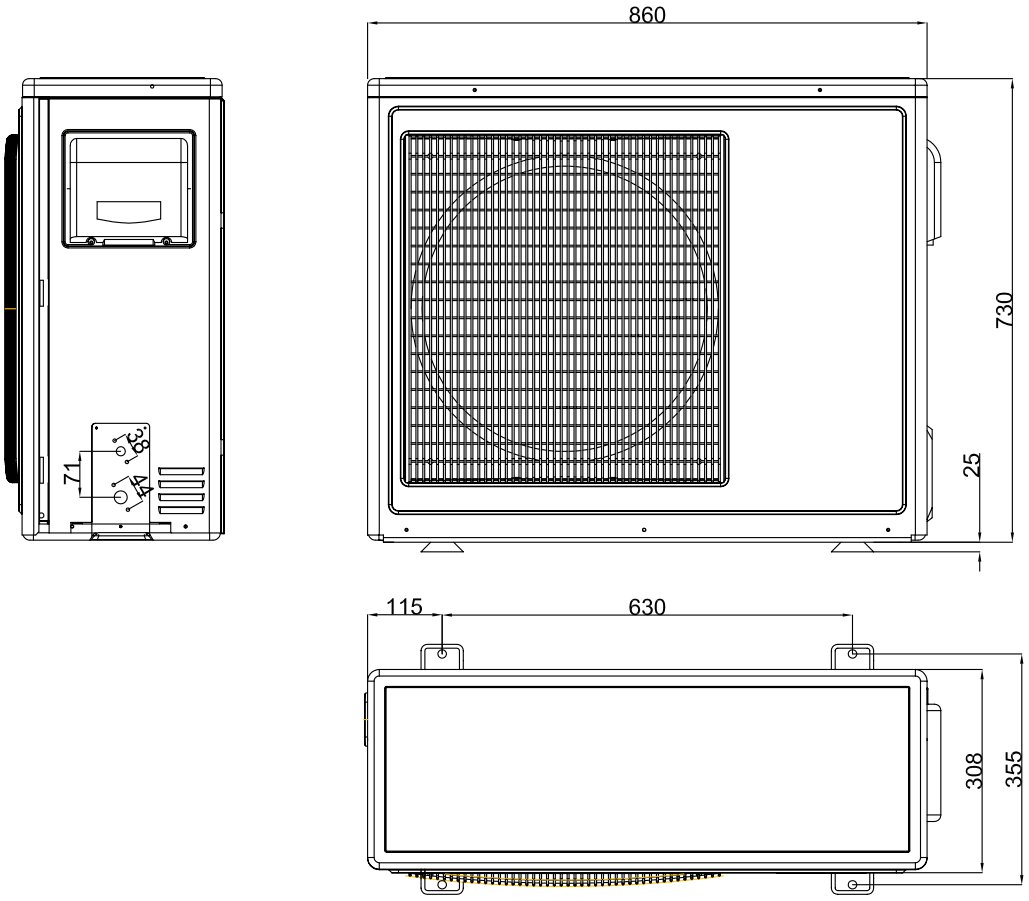
AU122AEEAA, AU182AEEAA, AU122AEERA



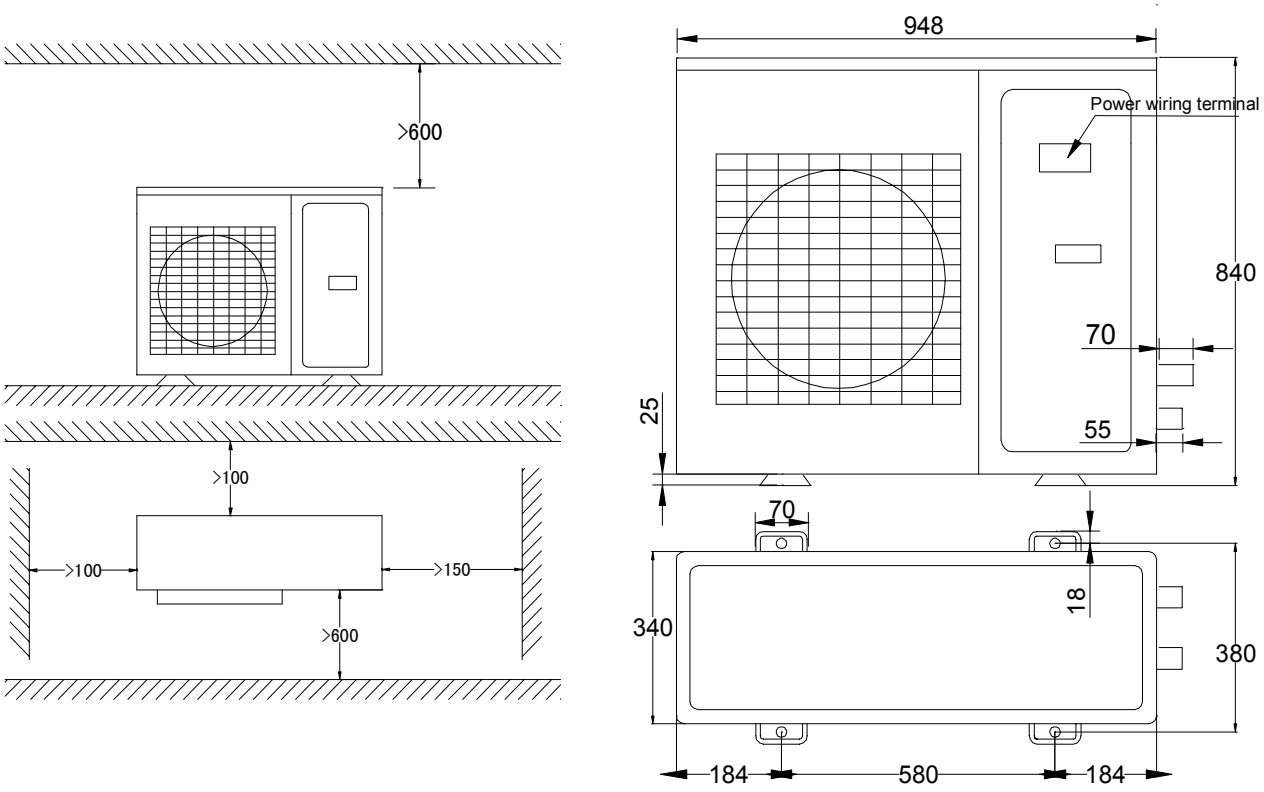
AU182AFERA



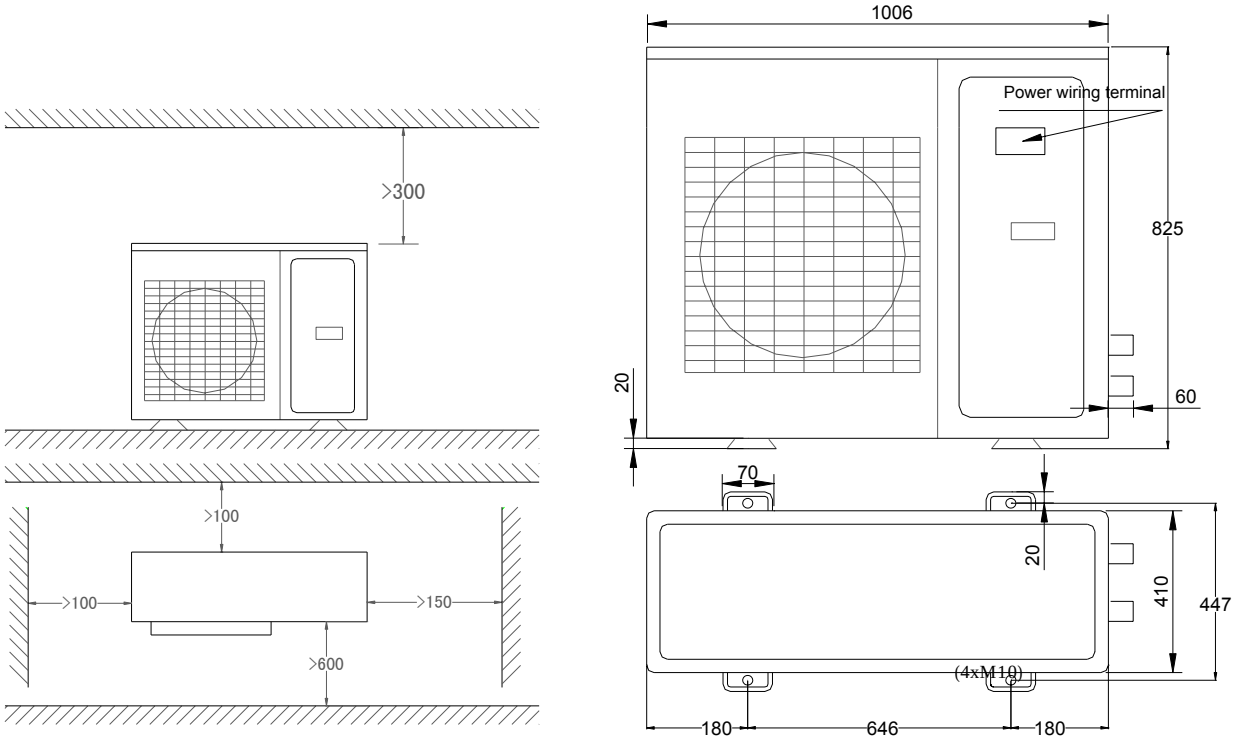
AU242AGEAA, AU242AGERA



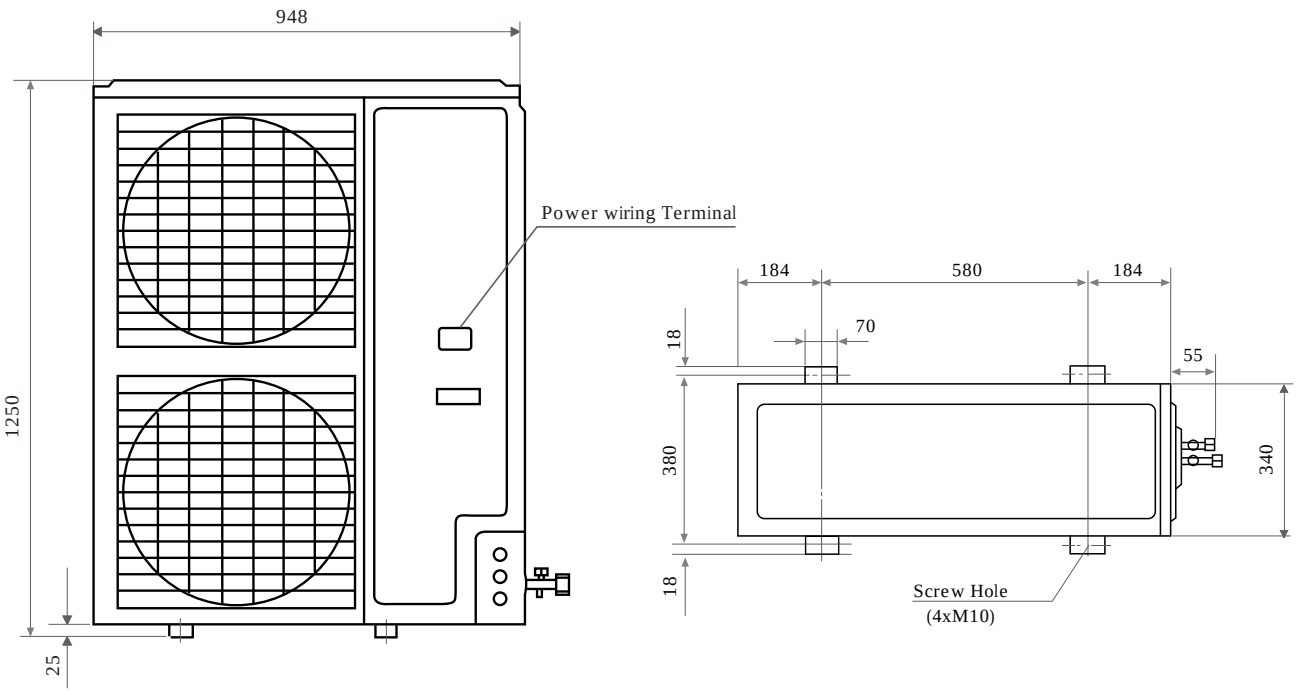
AU282AHEAA, AU28NAHEAA, AU282AHERA, AU362AHERA, AU36NAHERA



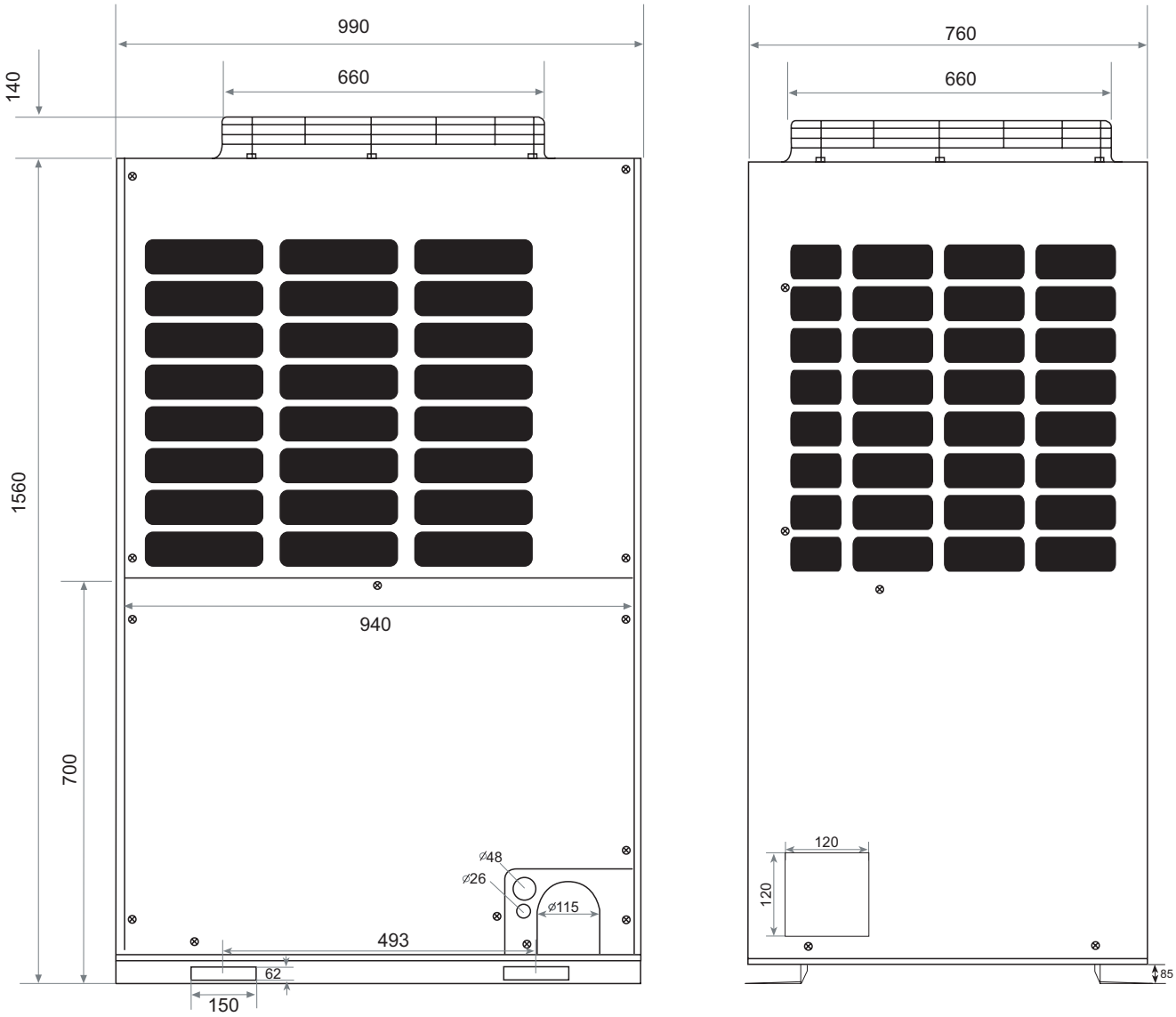
AU362ALEAA, AU42NALEAA



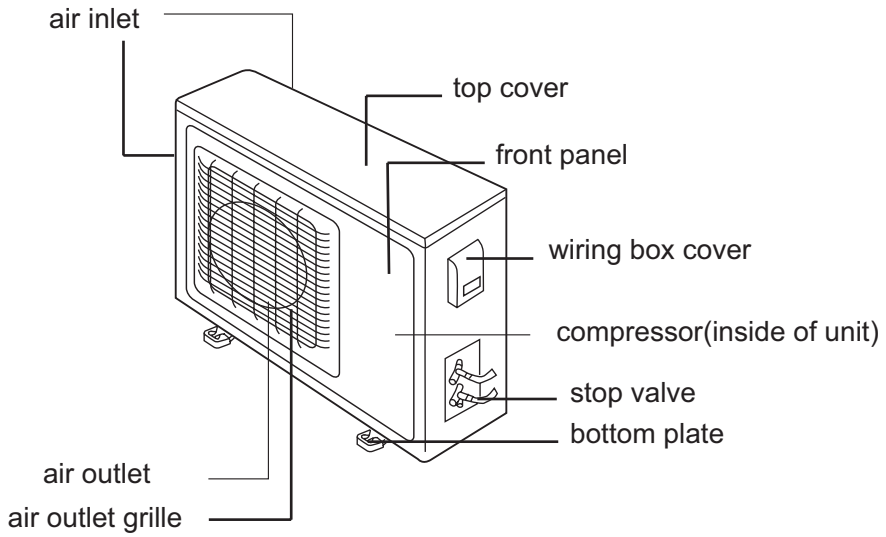
AU362AIEAA, AU36NAIEAA, AU48NAIEAA, AU60NAIEAA, AU362AIERA, AU48NAIERA, AU60NAIERA

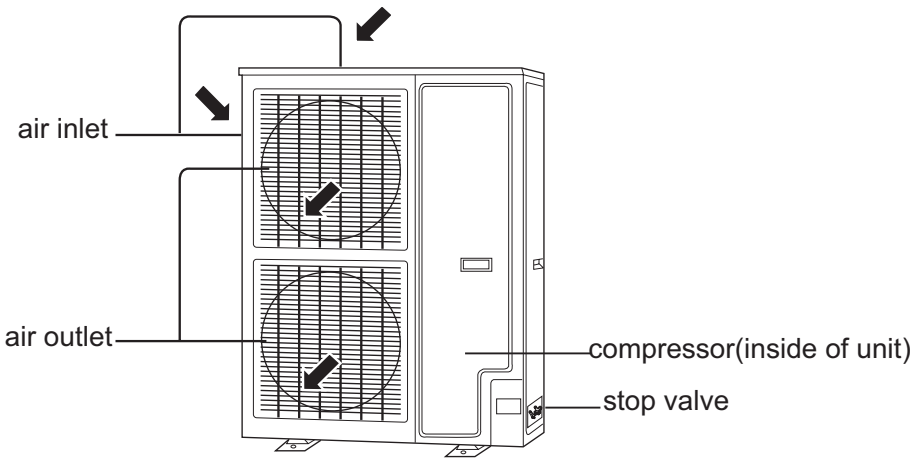


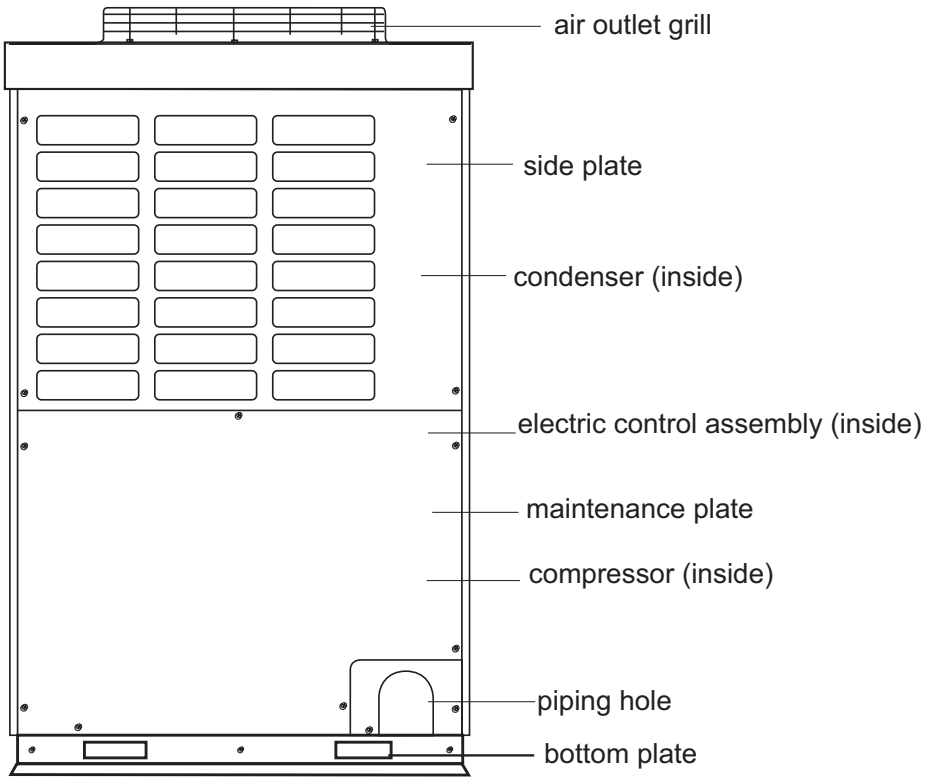
AU72NATEAA


990
660
140
1560
700
940
493
62
150
Ø48
Ø26
Ø115
760
660
120
120
85

5. Part name


air inlet
top cover
front panel
wiring box cover
compressor(inside of unit)
stop valve
bottom plate
air outlet
air outlet grille

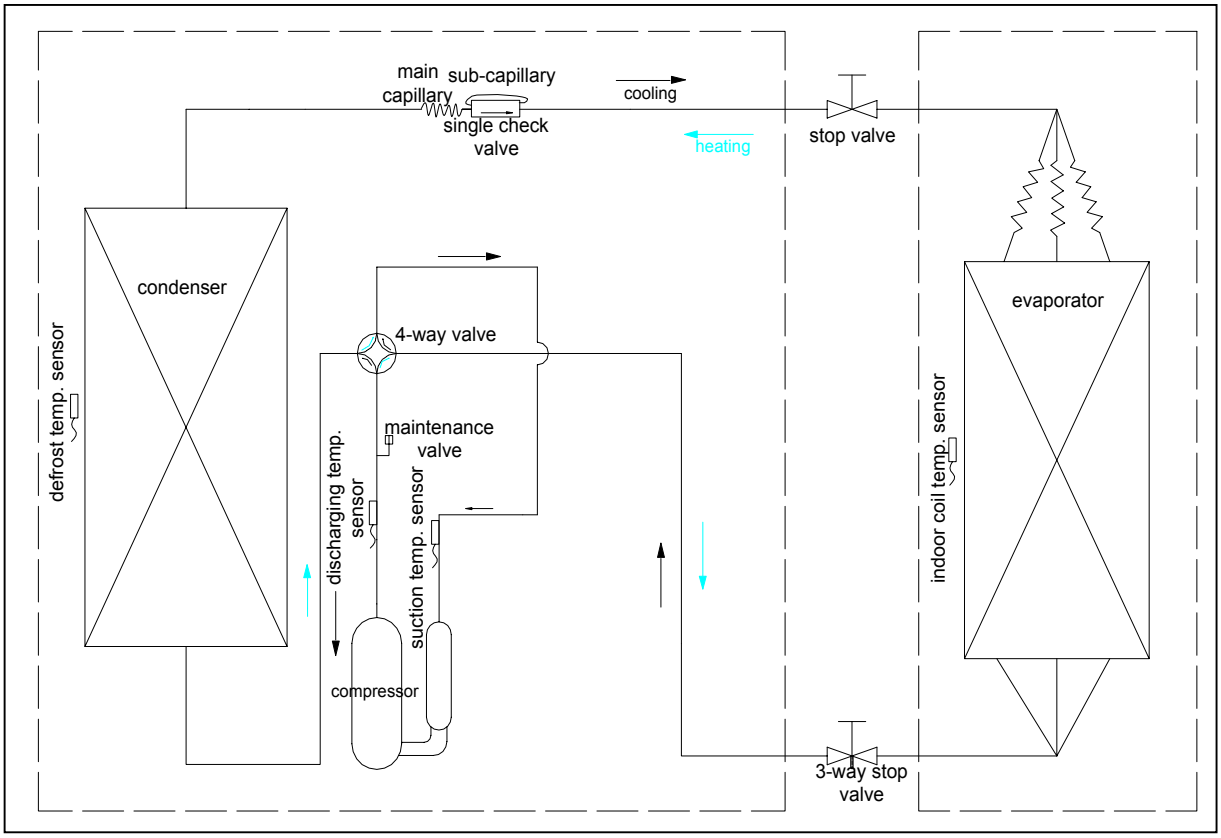

air inlet
air outlet
compressor(inside of unit)
stop valve


air outlet grill
side plate
condenser (inside)
electric control assembly (inside)
maintenance plate
compressor (inside)
piping hole
bottom plate

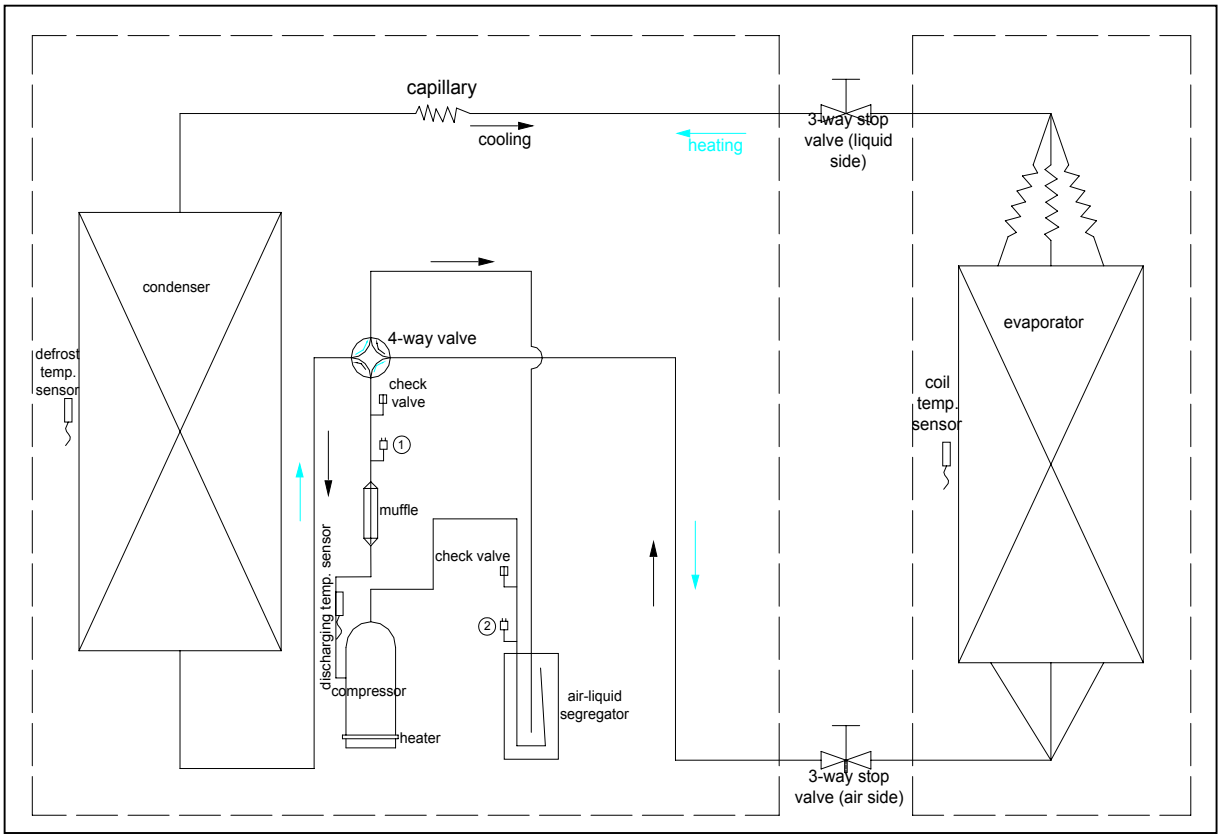
6. Refrigerant diagram

6.1 For Fixed frequency units

For AU182AEEAA



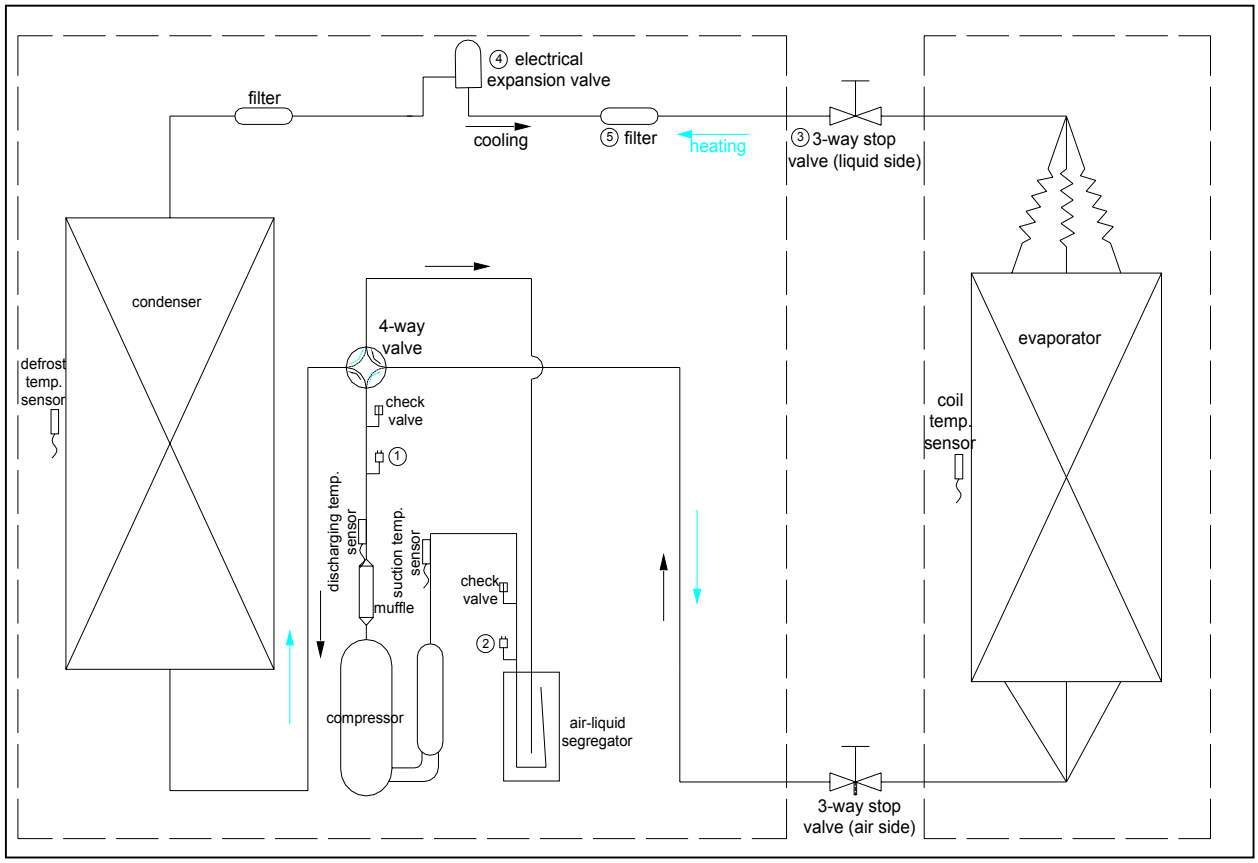
For AU242AGEAA, AU282/28NAHEAA, AU362/36NAIEAA, AU42NALEAA, AU48N/60NAIEAA



1. high pressure switch 2. low pressure switch

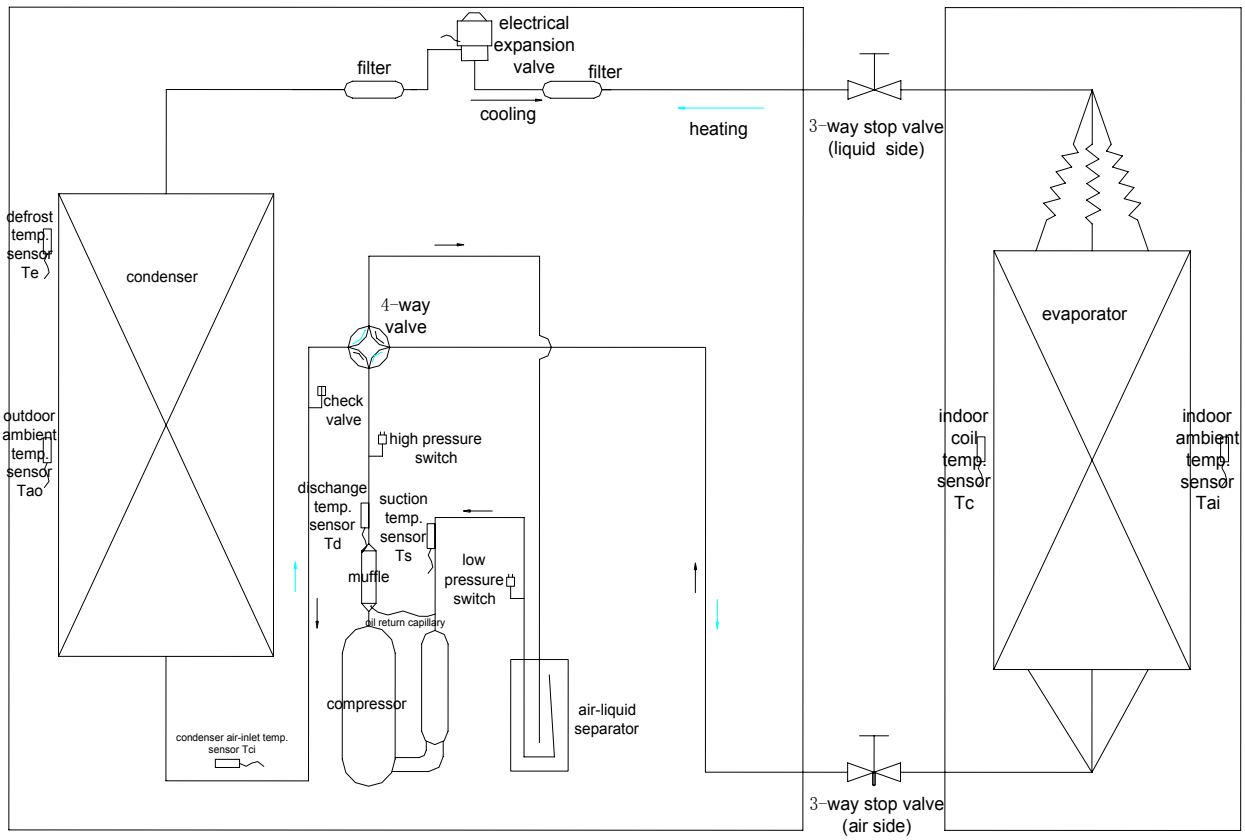
:

6.2 For inverter units

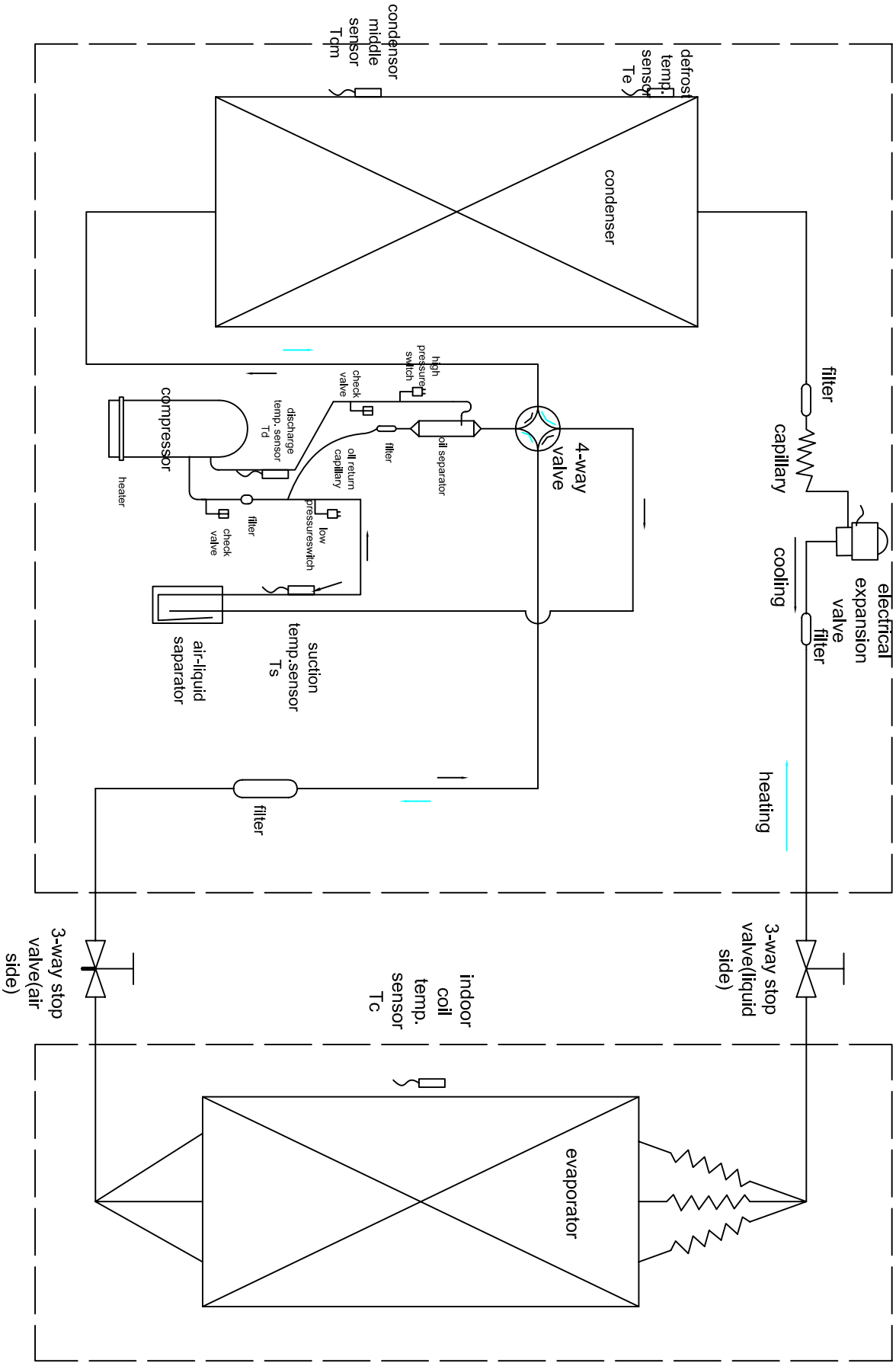


1. high pressure switch 2. low pressure switch 3. for AU182AFERA, is 2-way stop valve 4. for AU182AFERA, is main capillary 5. for AU182AFERA, is sub-capillary and single check valve for AU182AFERA, No. 1 and 2 are avaliable

For AU362AHERA



For AU48NAIERA



7. Installation

Carefully read the following information in order to operate the airconditioner correctly.

Below are listed three kinds of Safety Cautions and Suggestions.

WARNING! Incorrect operations may result in severe consequences of death or serious injuries.

CAUTION! Incorrect operations may result in injuries or machine damages; in some cases may cause serious consequences.

INSTRUCTIONS: These information can ensure the correct operation of the machine.

Be sure to conform with the following important Safety Cautions.

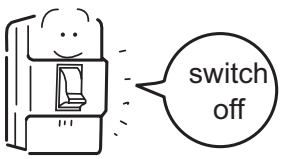
The Safety Cautions should be at hand so that they can be checked at any time when needed.

If the conditioner is transferred to the new user, this manual should be as well transferred to the new user.

WARNING!

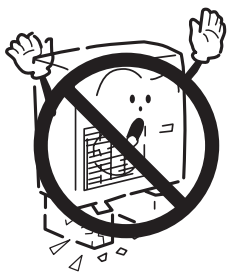
- **If any abnormal phenomena is found (e. g.smell of firing), please cut off the power supply immediately, and contact the dealer to find out the handling method.**

  In such case, to continue using the conditioner will damage the conditioner, and may cause electrical shock or fire hazard.



- **After the unit being used for a long time, the base should be checked for any damages.**

  If the damaged base is not repaired, the unit may fall down and cause accidents.

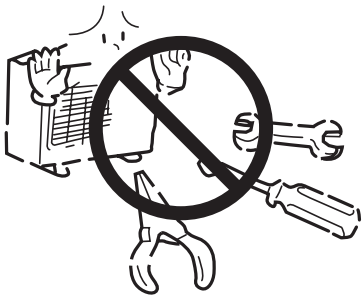


- **Don't dismantle the outlet of the outdoor unit.**

  The exposed fan is very dangerous which may harm human beings.

- **When the unit needs maintenance and repairment, please call dealer to handle it.**

  Incorrect maintenance and repairment may cause water leak, electrical shock and fire hazard.



WARNING!

- **Installed electrical-leaking circuit breaker.**

  It easily cause electrical shock without circuit breaker.

- **Air-conditioner can't be installed in the environment with inflammable gases because the inflammable gases near to air-conditioner may cause fire hazard.**

- **Please let the dealer be responsible for installing the conditioner.**

  Incorrect installation may cause water leak, electrical shock and fire hazard.

- **Call the dealer to take measures to prevent the refrigerant from leaking.**

  If conditioner is installed in a small room be sure to take every measure in order to prevent suffocation accident even in case of refrigerant leakage.

- **When conditioner is deinstalled or reinstalleddealer should be responsible for them.**

  Incorrect installation may cause water leaking, electrical shock and fire hazard.

- **Connect earthing wire.**

  Earthing wire should not be connected to the gas pipe, water pipe, lightning rod or phone line, in-correct earthing may cause shock.

Earthing

- **No goods or nobody is permitted to placed on or stand on outdoor unit.**

  The falling of goods and people may cause accidents.

- **Don't operate the air-conditioner with damp hands.**

  Otherwise will be shocked.

- **Only use correctly-typed fuse.**

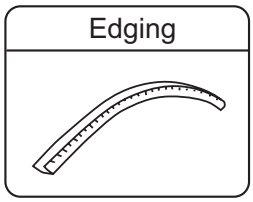
  May not use wire or any other materials replacing fuse, other-wise may cause faults or fire accidents.

- **Use discharge pipe correctly to ensure efficient discharge.**

  Incorrect pipe use may cause water leaking.

1. Accessories

"Edging" for protection of electric wires from an opening edge.

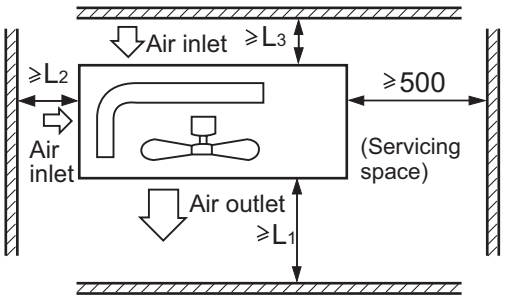


2. Selection of the place of installation

Select the place of installation satisfying the following conditions and, at the same time, obtain a consent from the client or user.

- Place where air circulates.
- Place free from heat radiation from other heat sources.
- Place where drain water may be discharged.
- Place where noise and hot air may not disturb the neighborhood.
- Place where there is not heavy snowfall in the winter time.
- Place where obstacles do not exist near the air inlet and air outlet .
- Place where the air outlet may not be exposed to a strong wind.
- Place surrounded at four sides are not suitable for installation. A 1m or more of overhead space is needed for the unit.
- Mount guide-louvers to place where short-circuit is a possibility.
- When installing several units, secure sufficient suction space to avoid short circuiting.

(1) Open space requirement around the unit



Note :

(1) Fix the parts with screws

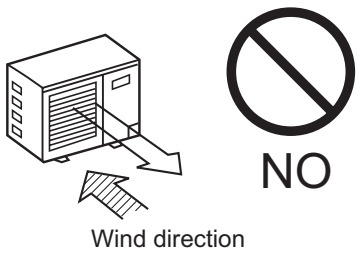
(2) Don't intake the strong wind directly to the outlet air-flow hole.

(3) A one meter distance should be kept from the unit top

(4) Don't block the surroundings of the unit with sundries

Unit: mm

Case / Distance	I	II	III
L_1	open	open	500
L_2	300	300	open
L_3	150	300	150



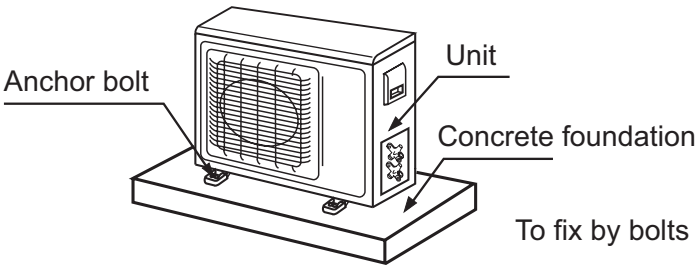
(2) Installation where the area with strong winds.

Install the unit so that the air outlet section of the unit must NOT be faced toward wind direction.

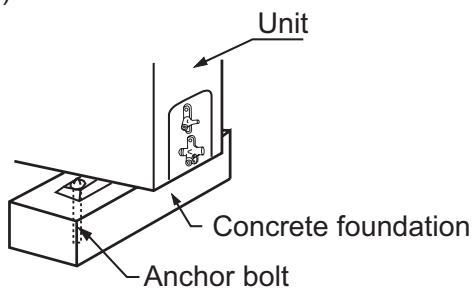
3. Installation of outdoor unit

Fix the unit in a proper way according to the condition of a place where it is installed by referring to the following. For example AU242AGERA.

(a) Concrete foundation



(b) Foundation anchor

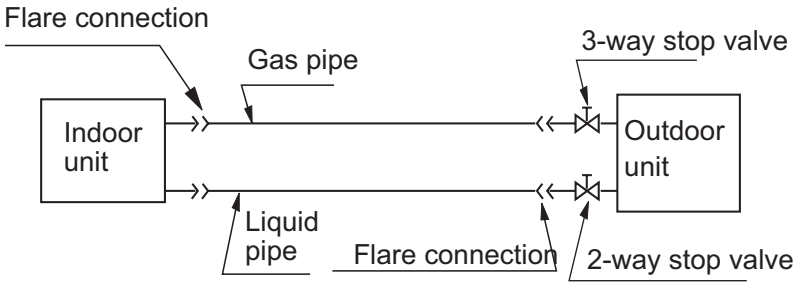


- Install the unit so that the angle of inclination must be less than 3 degrees.

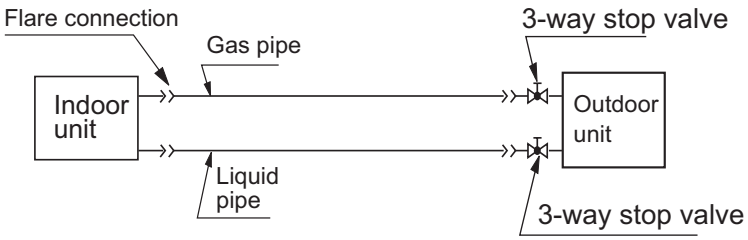
4. Refrigerant piping

(1) Outline piping

AU182AEEAA AU122AEERA AU182AFERA

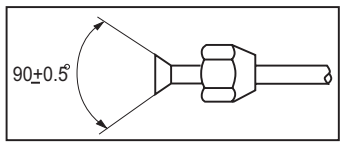


AU242AGEAA AU282AHEAA AU28NAHEAA AU362AIEAA AU36NAIEAA AU362ALEAA AU42NALEAA AU48NAIEAA AU60NAIEAA AU72NAIEAA AU242AGERA AU282AHERA AU362AHERA AU36NAHERA AU362AIERA AU48NAIERA AU60NAIERA



(2) Piping size

AU182AEEAA AU122AEERA AU182AFERA	Liquid pipe	Φ 6.35x0.8mm
	Gas pipe	Φ 12.7x1.0mm
AU242AGEAA AU282AHEAA AU28NAHEAA AU242AGERA AU282AHERA AU362AHERA AU36NAHERA AU362AIERA	Liquid pipe	Φ 9.52x0.8mm
	Gas pipe	Φ 15.88x1.0mm
AU362AIEAA AU36NAIEAA AU362ALEAA AU42NALEAA AU48NAIEAA AU60NAIEAA AU72NAIEAA AU48NAIERA AU60NAIERA	Liquid pipe	Φ 9.52x0.8mm
	Gas pipe	Φ 19.05x1.0mm



- Install the removed flare nuts to the pipes to be connected, then flare the pipes.

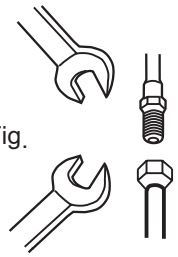
(3) Limitations for one way piping length and vertical height difference.

Model	One way piping length	Vertical height difference (between indoor and outdoor)
AU182AEEAA AU122AEERA	less than 20 m	less than 15 m
AU242AGEAA AU282AHEAA AU28NAHEAA AU182AFERA AU242AGERA AU282AHERA	less than 30 m	less than 15 m
AU362AIEAA AU36NAIEAA AU42NALEAA AU48NAIEAA AU60NAIEAA AU72NAIEAA AU362AHERA AU36NAHERA AU362AIERA AU48NAIERA AU60NAIERA	less than 50 m	less than 30 m

Precautions for refrigerant piping

- Do not twist or crush piping.
- Be sure that no dust is mixed in piping.
- Bend piping with as wide angle as possible.
- Keep insulating both gas and liquid piping.
- Check flare-connected area for gas leakage.

(4) Piping connection



- Connecting method (indoor unit)
  Apply refrigerant oil at half union as large and flare nut.
  To bend a pipe, give the roundness as possible not to crush the pipe.
  When connecting pipe, hold the pipe centre to centre then screw nut on by hand, refer to Fig.
  Be careful not to let foreign matters, such as sands enter the pipe.

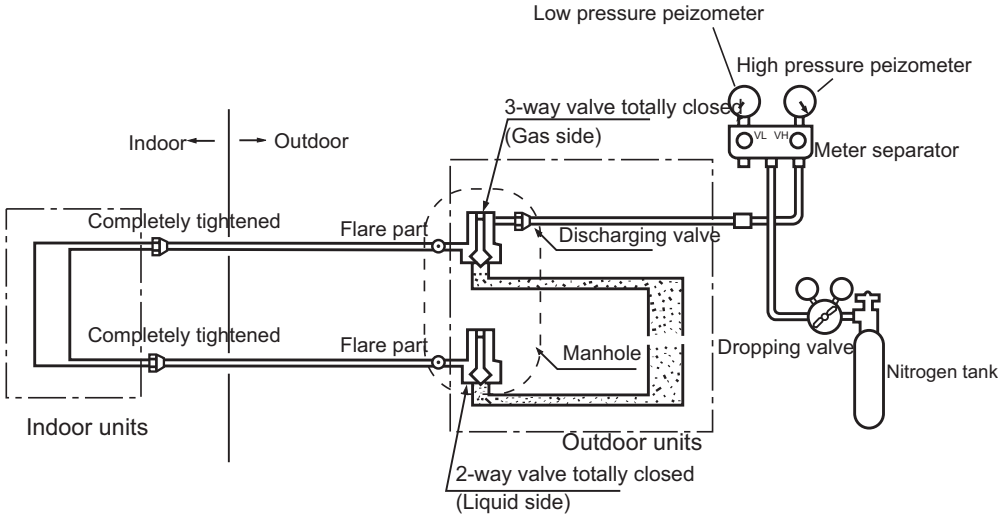
Forced fastening without centering may damage the threads and cause a gas leakage.

Pipe diameter	Fastening torque
Liquid pipe 6.35mm	14.2-17.2N·m
Liquid pipe 9.52mm	32.7-39.9N·m
Gas pipe 12.7mm	49.5-60.3N·m
Gas pipe 15.88mm	61.8-75.4N·m
Gas pipe 19.05mm	97.2-118.6N·m

5. Air discharging method

After finishing connection of refrigerant pipe, it shall perform air tightness test.

- The air tightness test adopts nitrogen tank to give pressure according to the pipe connection mode as the following figure shown.
  The gas and liquid valve are all in close state. In order to prevent the nitrogen entering the circulation system of outdoor unit, tighten the valve rod before giving pressure (both gas and liquid valve rods).



First step: 0.3MPa (3.0kg/cm^{2}g) pressurize over 3 minutes.
Second step: 1.5Mpa (15kg/cm^{2}g) pressurize over 3 minutes. Large leakage will be found.
Third step: 3.0 MPa (30kg/cm^{2}g) pressurize about 24 hours. Little leakage will be found.

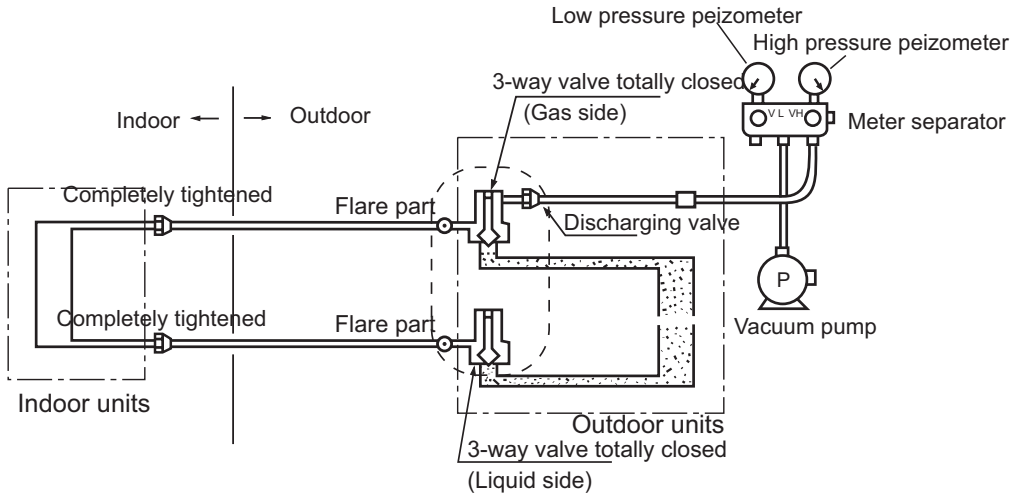
Check if the pressure drops
The pressure does not drop-passed
The pressure drops-check the leaking point.
From pressurizing to 24 hours later, each 1 degree difference of ambient temperature will make 0.01MPa (0.1kg/cm^{2}g) pressure change. It shall be corrected during test.

Checking the leaking point

In the first to third test steps, if the pressure drops, check the leakage in each joint use sense of hearing, feeling and soap water, etc. methods to find the leaking point.
After confirming the leaking point, welding it again or tighten the nut tightly again.

6. Piping and indoor unit vacuumizing

- Use vacuum pump to perform vacuumizing. It is strictly forbidden to use the refrigerant to remove the air inside the system.
- After air tightness test and discharging all the nitrogen, connect the vacuum pump as the following figure shown.



- It shall use the vacuum pump of (lower than -755mmHg)high vacuum degree and large air discharging (over 40l/min).
- The vacuumizing time depends on the length of the connecting pipe, generally is 1~2 hours. When vacuumizing, it shall be confirmed both gas and liquid side valves are closed.
- If after 2 hours vacuumizing, it cannot reach the vacuum degree below -755mmHg, it can be vacuumized for other 1 hour.
  If after 3 hours vacuumizing, it still cannot reach the vacuum degree below -755mmHg, check if there is any leaking point and repair the them.
- If after over 2 hours vacuumizing, the vacuum degree is below -755mmHg, close the V_L and V_H on the meter separator and stop vacuumizing. 1 hour later to confirm if the vacuum degree changes. If changes, it indicates there is leaking point in the system. Check the leaking point and repair.
- After finishing the above vacuumizing, change the vacuum pump into refrigerant pump to charge the refrigerant.

7. Charging amount of refrigerant

When the total length (L) of the two indoor units' connecting pipe is less than 5m, it is unnecessary to charge additional refrigerant.

If the connecting pipe (L) exceeds 5m, it shall charge Mg additional refrigerant per meter.

That is: Refrigerant charging amount = (L-5) x M (g)

For the unit with liquid pipe 6.35mm, M=30

For the unit with liquid pipe 9.52mm, M=65

- Only in COOLING operation can charge the additional refrigerant.
- When charging, the refrigerant shall be charged from the charging nozzle of low pressure vavle.
- Be carefull when charging refrigerant, do not let the air mix into the system,and must charge the additional refrigerant in liquid condition.

8. Electric wiring

WARNING!

DANGER OF BODILY INJURY OR DEATH
TURN OFF ELECTRIC POWER AT CIRCUIT BREAKER OR POWER SOURCE BEFORE MAKING ANY ELECTRIC CONNECTIONS.
GROUND CONNECTIONS MUST BE COMPLETED BEFORE MAKING LINE VOLTAGE CONNECTIONS.

(1) Selection of size of power supply and interconnecting wires.

Precautions for Electric wiring

- Electric wiring work should be conducted only by authorized personnel.
- Do not connect more than three wires to the terminal block. Always use round type crimped terminal lugs with insulated grip on the ends of the wires.
- Use copper conductor only.
  Select wire sizes and circuit protection from table below. (This table shows 20 m length wires with less than 2% voltage drop.)

Item / Model	Phase	Circuit breaker		Power source wire size (minimum)	Earth leakage breaker	
		Switch breaker (A)	Overcurrent protector		Switch break	Leak curren
AU182AEEAA AU122AEERA AU182AFERA	1	40	26	2.5mm²	40A	30mA
AU242AGEAA	1	40	26	4.0mm²	40A	30mA
AU282AHEAA AU362AIEAA	1	40	26	6.0mm²	40A	30mA
AU242AGERA AU362AHERA AU282AHERA	1	60	40	4.0mm²	60A	30mA
AU362AIERA	1	60	40	6.0mm²	60A	30mA
AU28NAHEAA AU36NAIEAA AU36NAHERA AU48NAIERA	3	30	20	2.5mm²	30A	30mA
AU48NAIEAA AU60NAIEAA AU60NAIERA	3	30	20	4.0mm²	30A	30mA

(2) Wiring connection

For the detailed wiring connection with the indoor units, see the corresponding indoor operation and instruction manual.

For: AU182AEEAA AU122AEERA

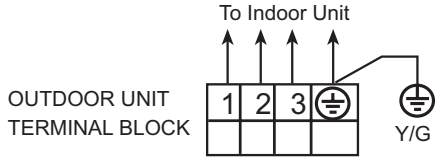


FIG.1

For: AU242AGEAA AU282AHEAA AU362AIEAA AU182AFERA AU242AGERA AU282AHERA AU362AHERA AU362AIERA

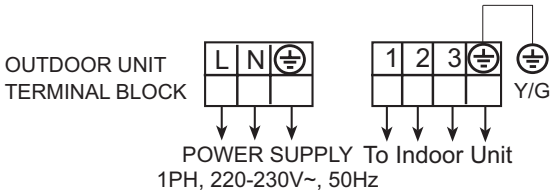


FIG.2

For: AU28NAHEAA AU36NAIEAA AU48NAIEAA AU60NAIEAA AU36NAHERA AU48NAIERA AU60NAIERA

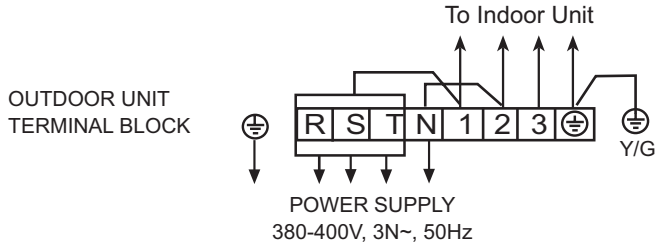


FIG.3

WARNING! INTERCONNECTING WIRES MUST BE WIRED ACCORDING TO FIG.1,FIG.2, FIG.3 INCORRECT WIRING MAY CAUSE EQUIPMENT DAMAGE.

(3) Wiring procedure

1) Remove set screws on the side before taking off the front panel toward the direction shown in figure.

2) Connect wires to the terminal block correctly and fix the wires with a wire clamp equipped nearby the terminal block.

3) Route the wires in a proper way and penetrate the wires through the opening for electric wiring on the side panel.

9. Test run

CAUTION! THIS UNIT WILL BE STARTED INSTANTLY WITHOUT "ON" OPERATION WHEN ELECTRIC POWER IS SUPPLIED.BE SURE TO EXECUTE "OFF" OPERATION BEFORE ELECTRIC POWER IS DISCONNECTED FOR SERVICING.

- This unit has a function of automatic restart system after recovering power stoppage.

(1) Before starting test run (for all Heat pump models)

Confirm whether the power source breaker (main switch) of the unit has been turned on for over 12 hours to energize the crankcase heater in advance of operation.

(2) Test run

Run the unit continuously for about 30 minutes, and check the following.

- Suction pressure at check joint of service valve for gas pipe.
- Discharge pressure at check joint on the compressor discharge pipe.
- Temperature difference between return air and supply air for indoor unit.

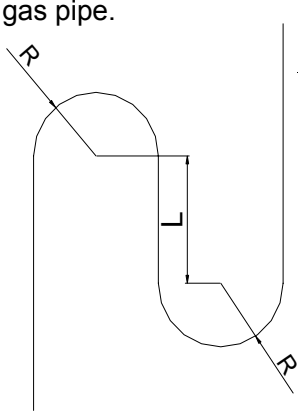
Oil trap setting requirement:

Oil trap is required no mater the outdoor unit is upper or lower than indoor unit, only when the piping drop is more than 10m.

Setting method: install one oil trap for every 10 meters at the gas pipe.

Trap dimensions:

Gas pipe diameter	Min. R (mm)	L (mm)
Φ15.88	40	80
Φ19.05	40	80
Φ25.4	40	80
Φ31.8	60	90
Φ38.1	60	100



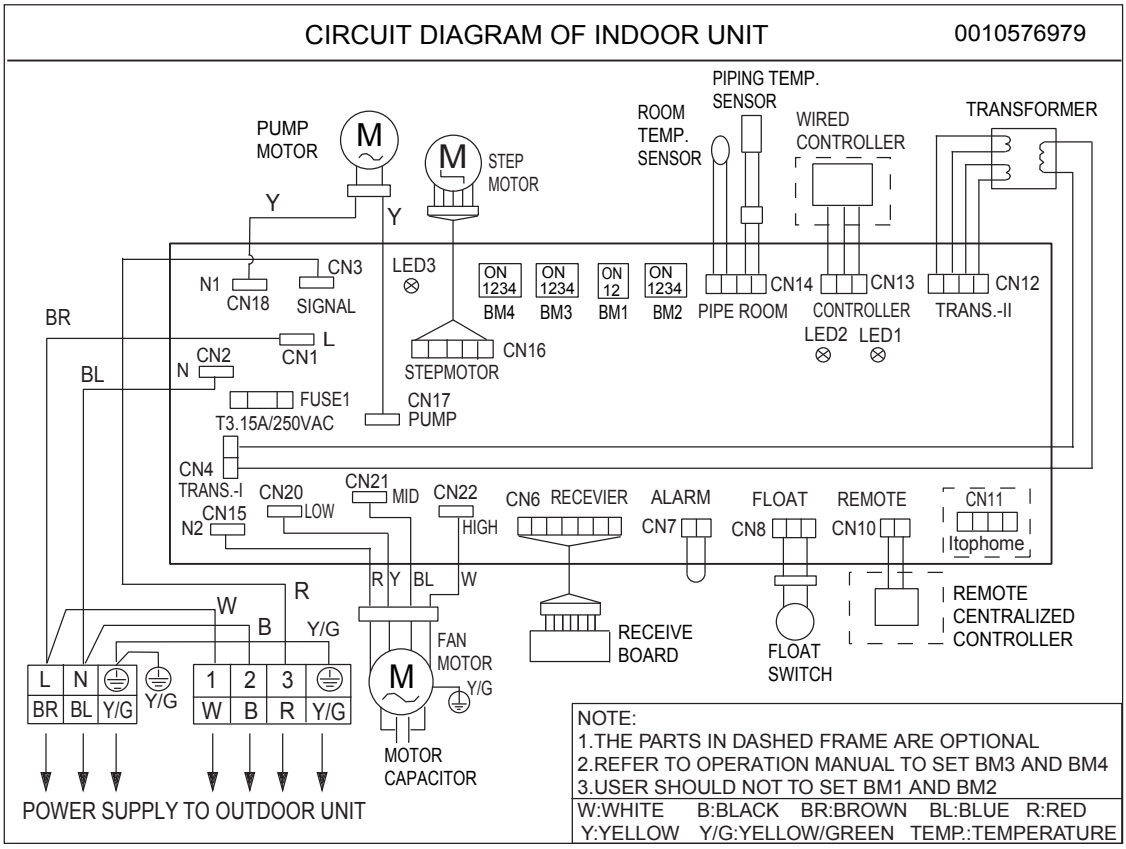
Note: the drop between the oil trops should be 10m.

Part 4 Electrical Control

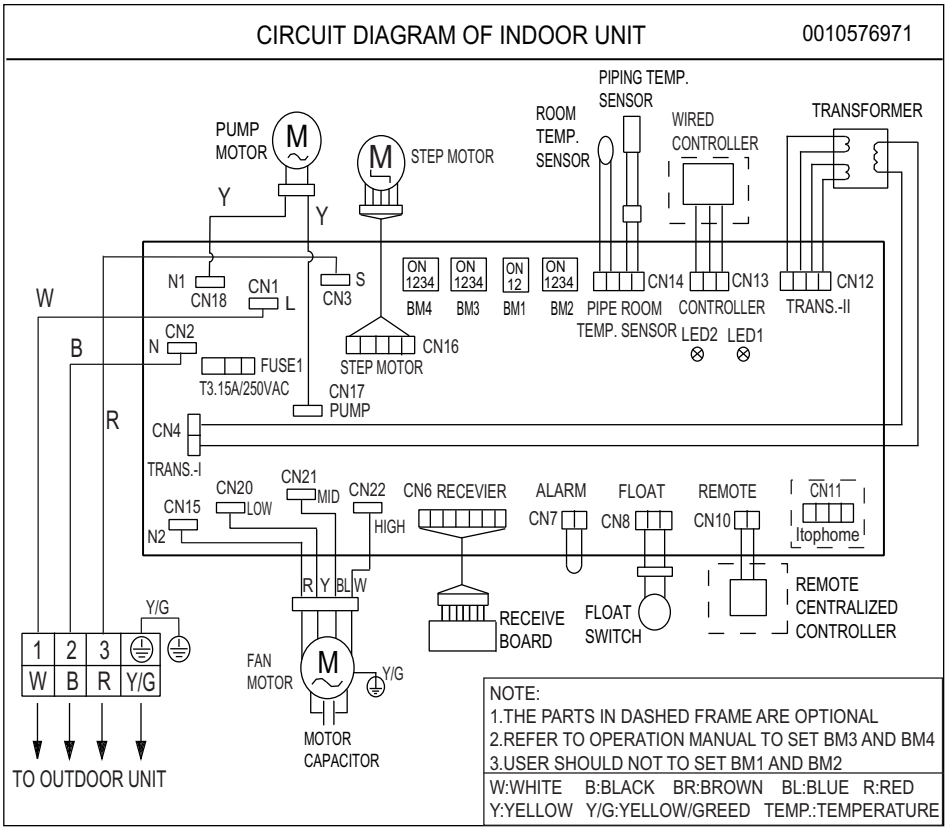
1. Electrical wiring diagram and PCB photo

1.1 For indoor units

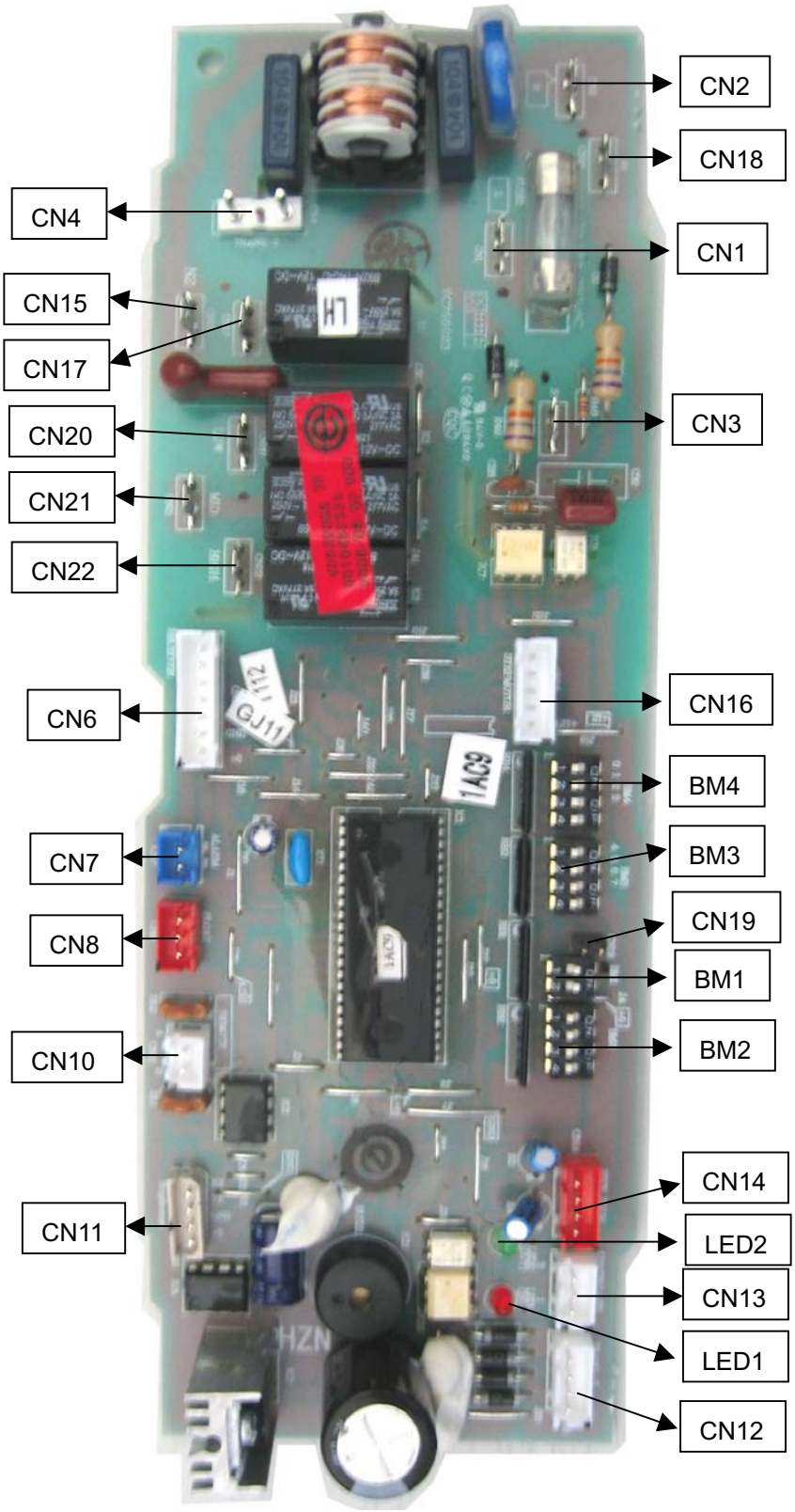
AB122ACERA



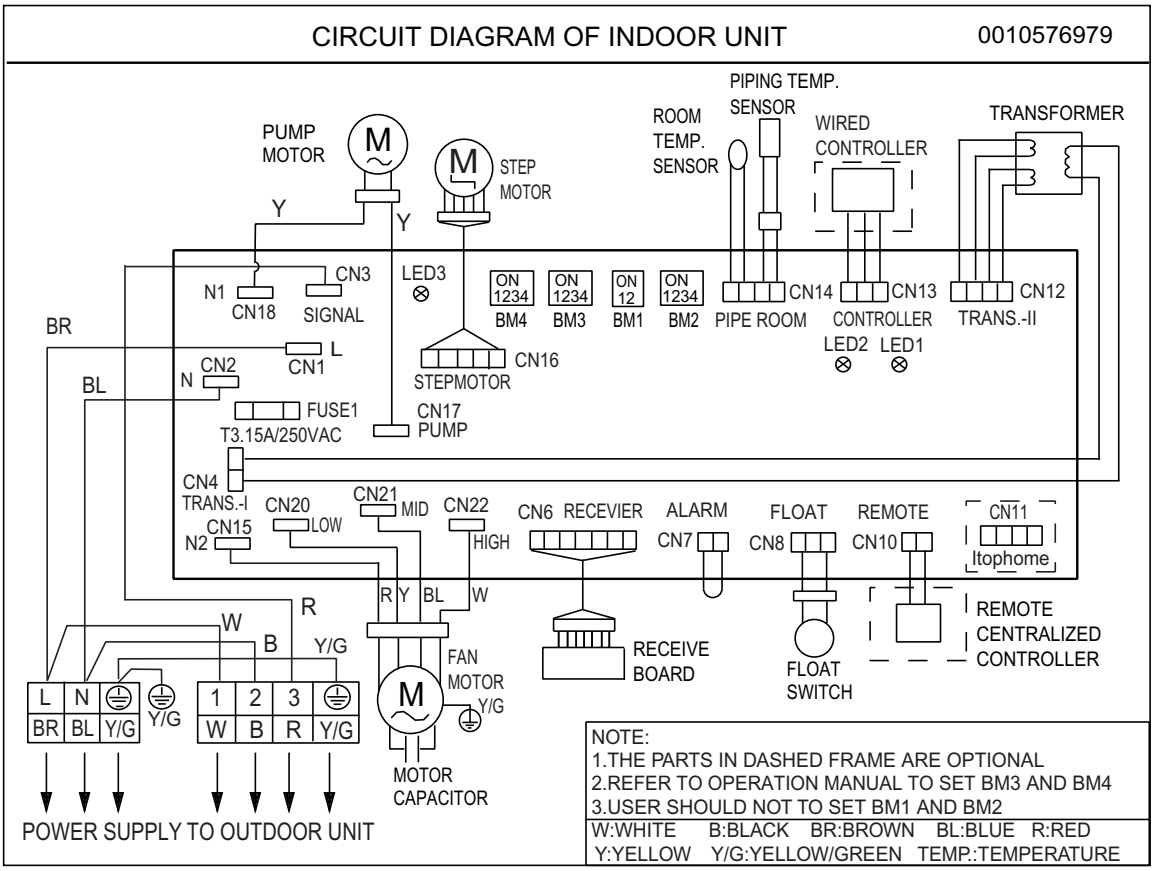
AB182ACERA



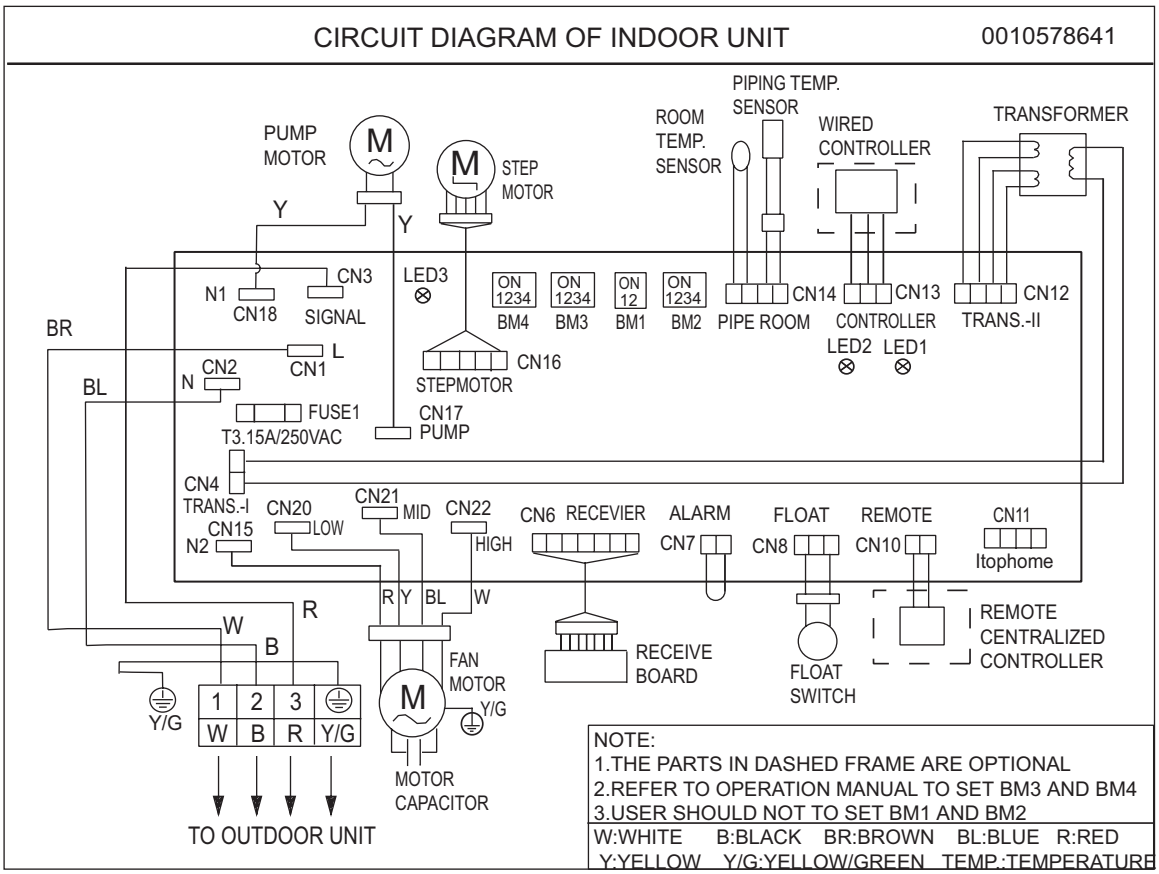
0010452325E for AB122ACERA and AB182ACERA



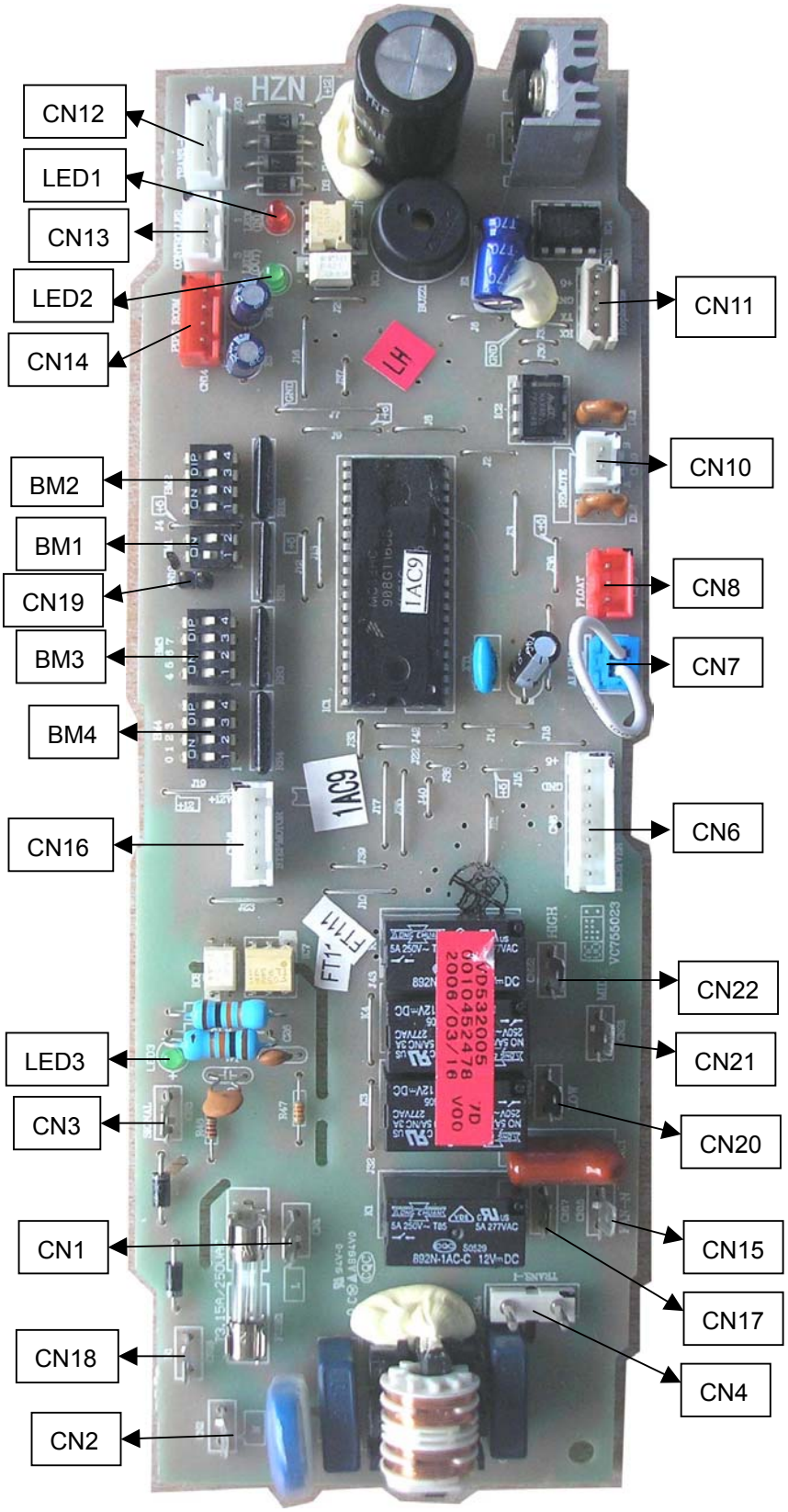
AB122ACEAA, AB182ACEAA



AB362ACEAA, AB422AEEAA, AB482AEEAA



0010452478E



0010452325E / 0010452478E information - function selection

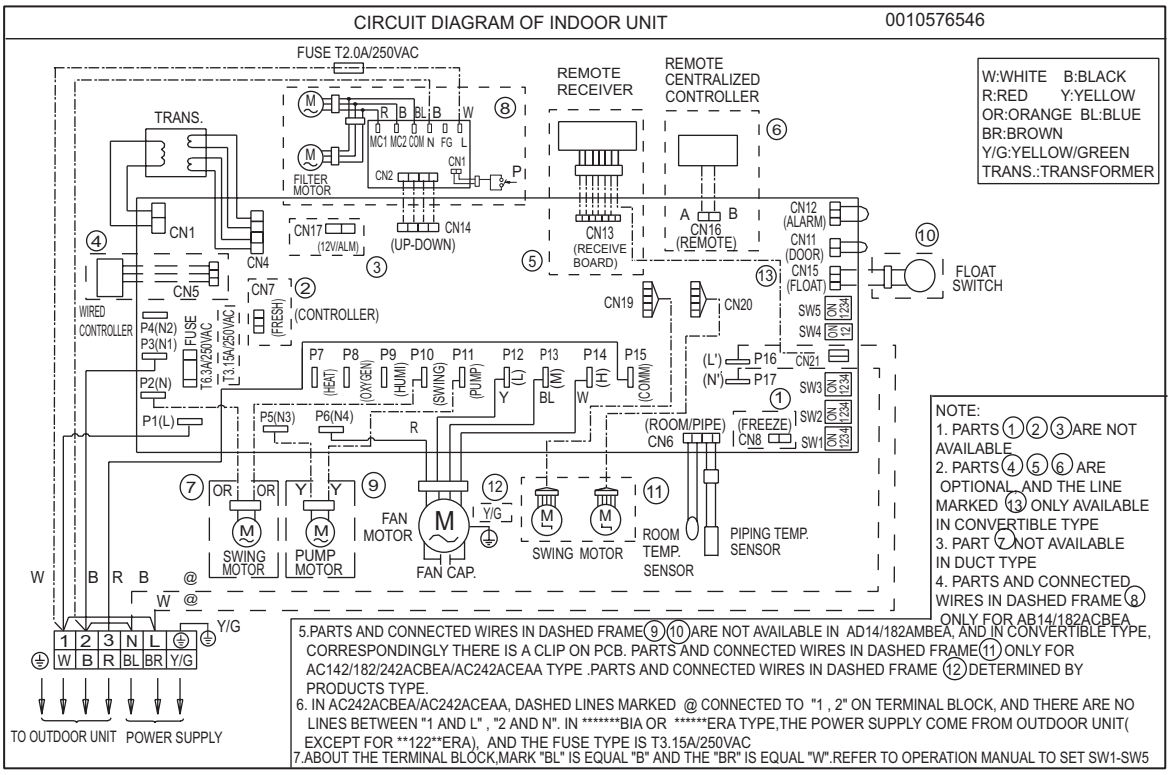
Jumper selection (√shows jumper connected, ON; ×shows jumper disconnected, OFF; * shows no limitation)

	Time shorting switch CN7	Emergency switch SW1(receiver)	BM1(1)	BM1(2)
Time shorting switch	Time shorting	*	*	*
Emergency switch	*	Emergency	*	*
No outdoor PCB	*	*	×	×
With outdoor PCB, fixed speed single split unit	*	*	√	×
With outdoor PCB, fixed speed multi split unit	*	*	×	√
With outdoor PCB, inverter single split unit	*	*	√	√
Inverter unit selection	BM2(1)	BM2(2)	BM2(3)	BM2(4)
Temp. compensation 4℃ available/not available	√/×	*	*	*
Wired control/ infrared control	*	√/×	*	*
Cooling only/heatpump	*	*	√/×	*
Master/slave wired controller	*	*	*	√/×

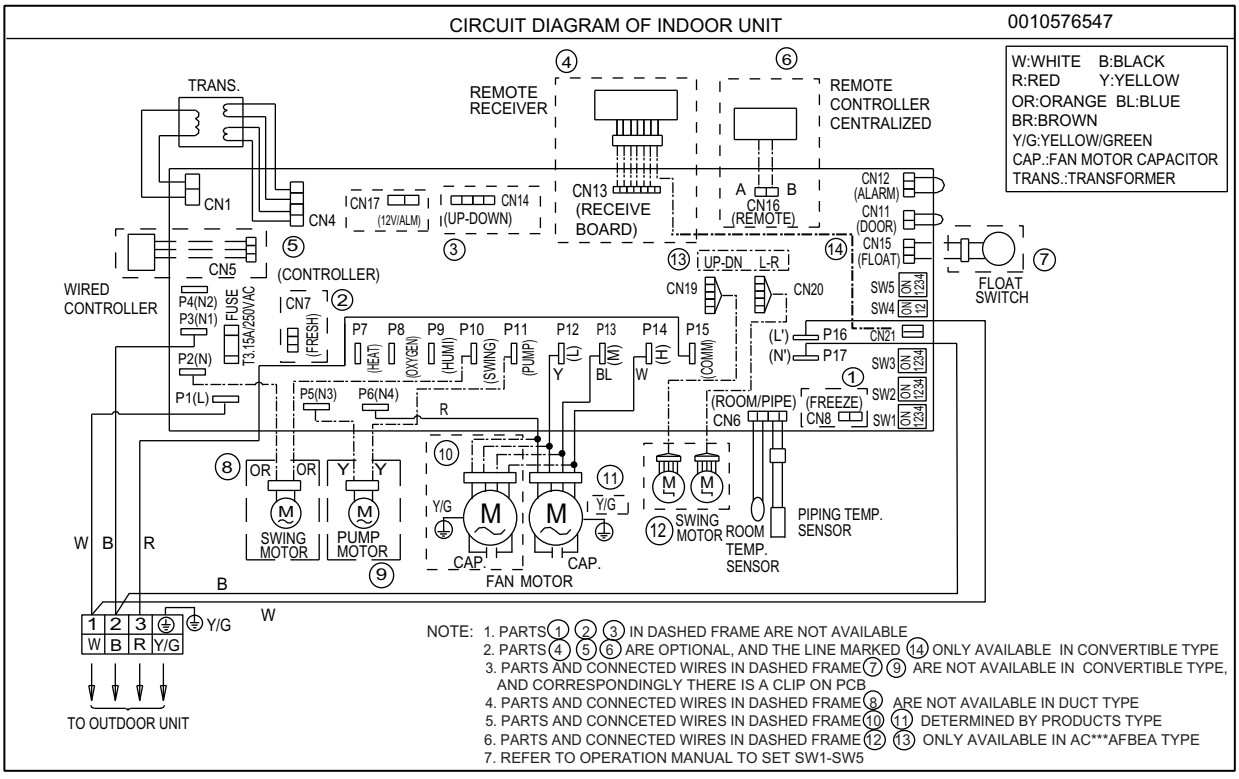
Network address selection (√shows jumper connected, ON; ×shows jumper disconnected, OFF)

	BM4				BM3			
address	1	2	3	4	1	2	3	4
1	×	×	×	×	×	×	×	×shows
2	√	×	×	×	×	×	×	no
3	×	√	×	×	×	×	×	network
4	√	√	×	×	×	×	×	home appliance
5	×	×	√	×	×	×	×	
6	√	×	√	×	×	×	×	√with
……		……	……	……	……	……	……	network
126	√	×	√	√	√	√	√	home
127	×	√	√	√	√	√	√	appliance
128	√	√	√	√	√	√	√	

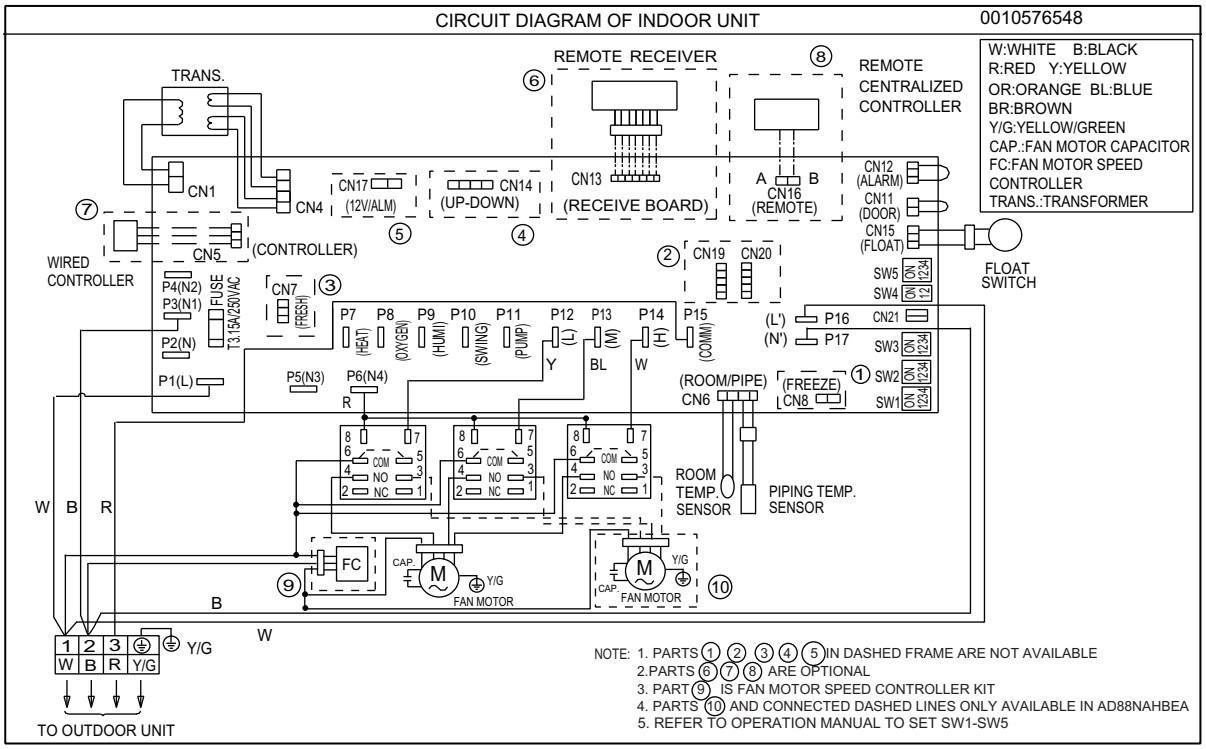
AC122/182/242ACERA, AC122/182/242ACEAA, AD122ALERA, AD182AMERA, AD122/182ALEAA



AB242/362ACERA, AB242/282/482/602ACEAA, AC282/362/482/602AFEAA, AD242ALERA, AD242ALEAA, AD242/282/362/482AMEAA, AD242/282/362AMERA

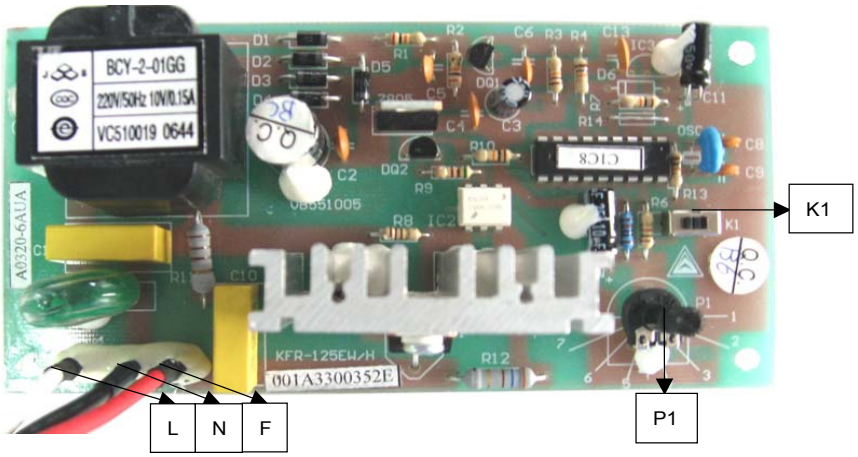


AD282/362/482/602AHEAA



Note: for the above indoor units, the PCB code is 0010451690E / 0010451167E, the detail information please refers to the Appendix.

Fan speed control board 001A3300352E



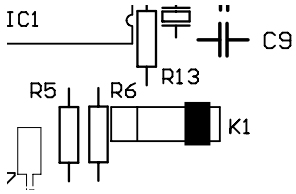
Fan speed adjusting board test method

Connect the test device with fan speed adjusting board, dial power switch ON, then revolve P1 slowly to place 1, place 2, place 3… until place 8, the indicate lamp of port F(voltage output contolled by fan motor) will change from dark to light, revolve P1 slowly from place 8 to place 1, the indicate lamp of port F will change from light to dark.

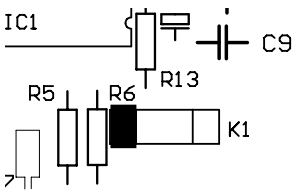
Place	Port F voltage output（VAC）
1	132-139
2	151-158
3	168-175
4	184-190
5	196-203
6	205-211
7	212-218
8	220

Note: the voltage in each place is tested in the condition of power voltage is 220V and frequence is 50Hz. When power characteristics (voltage, frequence) change and load characteristic is different, the port F voltage output will change.

Test K1 according to the following method:

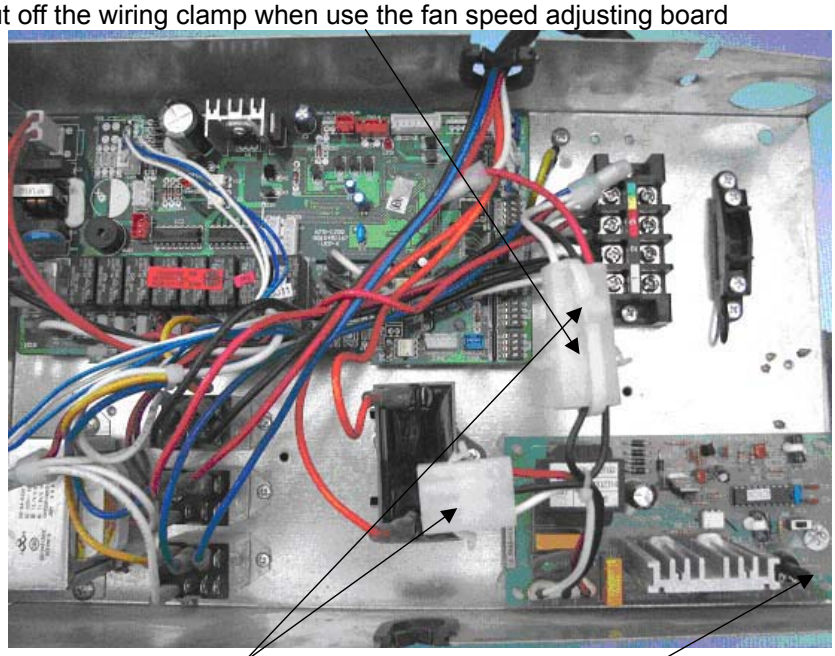


50Hz is selected if dial K1 to the right



60Hz is selected if dial K1 to the left

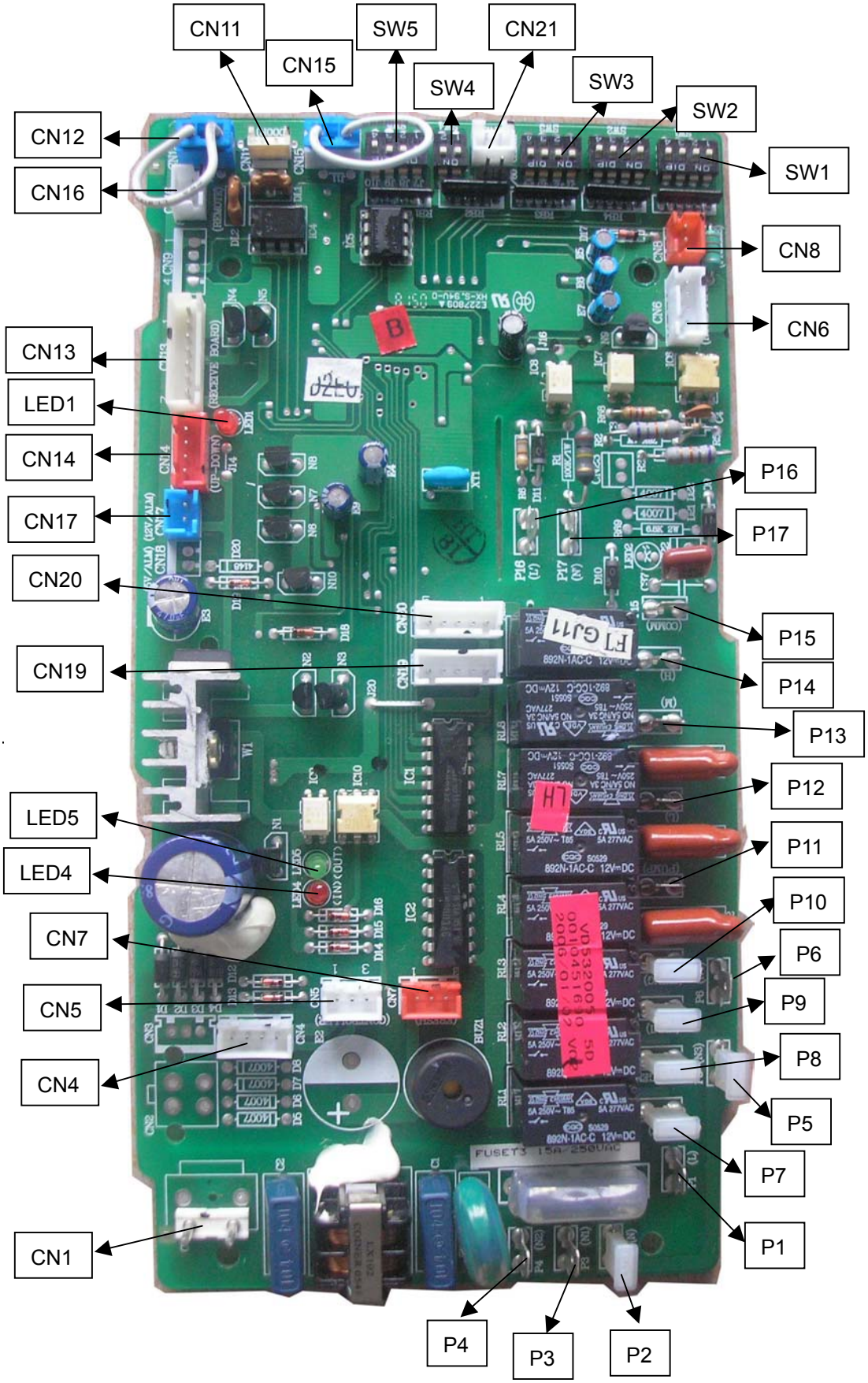
cut off the wiring clamp when use the fan speed adjusting board



Connect the two port

Dial P1 to realize fan speed adjusting

0010451690E



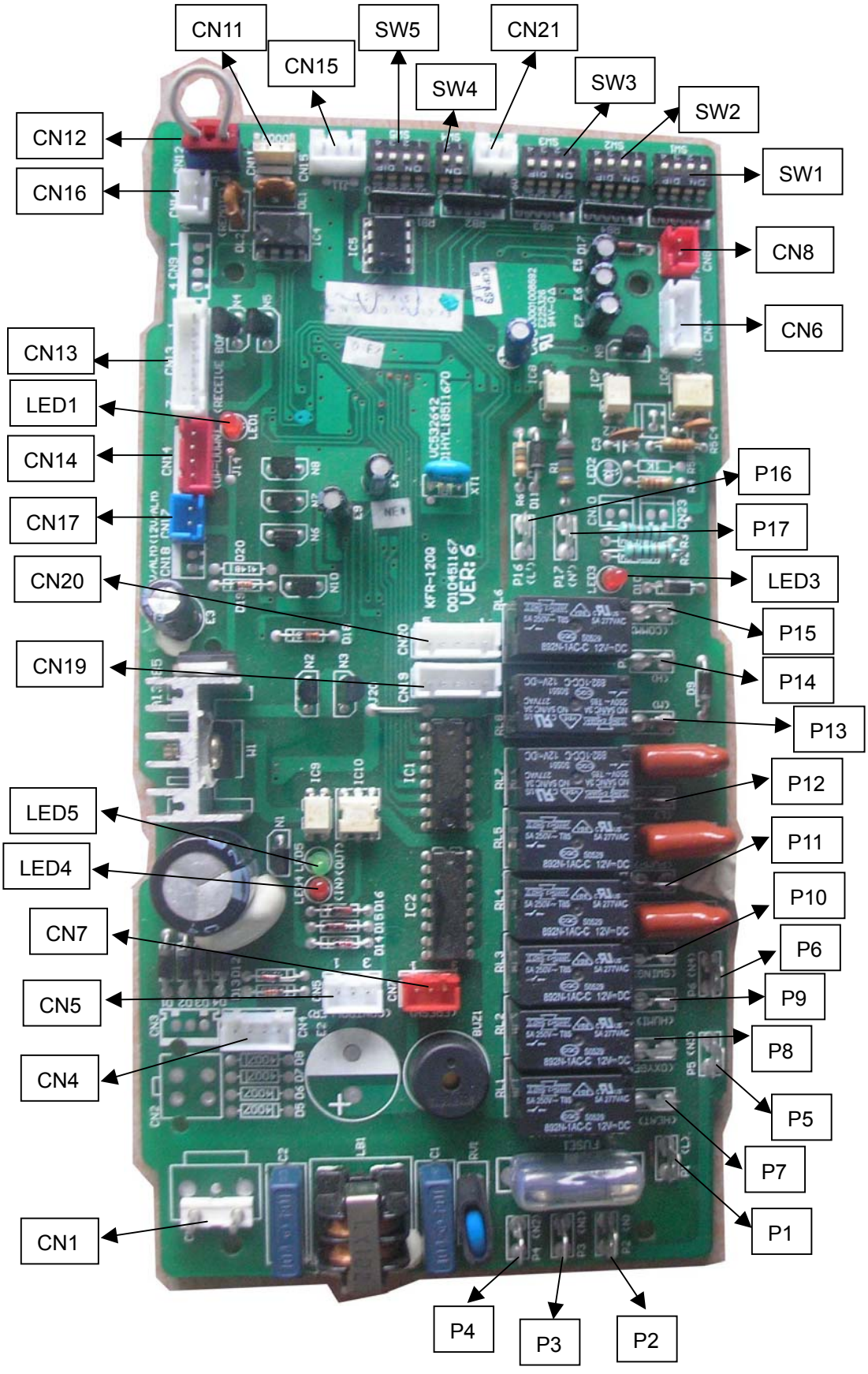
0010451690E information - function selection

		Short-circuit -ON-√	Open-circuit -OFF-×	Function description	Note
SW1-1 2 3 4	Bit0	Address code “1”	Address code “0”	Central control indoor address Bit0/wired control indoor address Bit0	
	Bit1	Address code “1”	Address code “0”	Central control indoor address Bit1/wired control indoor address Bit1	
	Bit2	Address code “1”	Address code “0”	Central control indoor address Bit2/wired control indoor address Bit2	
	Bit3	Address code “1”	Address code “0”	Central control indoor address Bit3/wired control indoor address Bit3	
SW2-1 2 3 4	Bit4	Address code “1”	Address code “0”	Central control indoor address Bit4	
	Bit5	Address code “1”	Address code “0”	Central control indoor address Bit5	
	Bit6	Address code “1”	Address code “0”	Central control indoor address Bit6	
	SLCT	Control combination: AND	Control combination: the later entering in priority	Control mode: remotr or wired control and passive port control	
SW3-1 2 3 4	J1	Control type: remote control	Control type: wired control	Select control type, communication port and protocol selection	
	J2	Heating temp. compensation 4℃	Heating temp. compensation 0℃	Select temp. compensation	
	J3	Control type: with outdoor PCB	Control type: without outdoor PCB	Select control type, control board	
	J4	Heat pump type	Colling only type		
1/60	1/60	In time shorting state	Normal state		
CHECK	CHECK	Use compulsory switch	Normal state		
SW4-1 2	J5		Ornarment or not	×/√	
	J6		Oxygen or not	×/√	
SW5-1 2 3 4	J7		Other/2P convertible type	√/×	
	J8		Single split/multi split	√/×	
	J9	Indoor address 0	Setting indoor address by SW1	Select the address of wired control type multi indoor unit	
	J10	Fixed frequency	Inverter		

Central control indoor address: the indoor unit should be connected by the different uniquely address when select central control type, or will influence the control. For example, if the address repeat, the control information will conflict or communication system will breakdowm. Central control address = dip switch value+1.

Wired control indoor address: the indoor unit should be connected by the different uniquely address when select wired control type, or will influence the control. For example, if J9=ON, the wired controller can only indicate 1 indoor unit no matter how many indoor units its connected. Wired control address = dip switch value.

0010451167E



0010451167E information - function selection

Jumper selection (√ shows jumper connected, ON; × shows jumper disconnected, OFF; * shows no limitation)

	J1	J2	J3	J4
Wired control/ infrared control	√/×	*	*	*
Temp. compensation available/not available	*	√/×	*	*
With/no outdoor PCB	*	*	√/×	*
Cooling only/heat pump	*	*	*	√/×
			J5	J6
Time shorting switch	√/×	*	*	*
Forced or not	*	√/×	*	*
Ornarment or not	*	*	×/√	*
Oxygen or not	*	*	*	×/√
	J7	J8	J9	J10
Other/2P convertible	√/×	*	*	*
single split/ multi split	*	√/×	*	*
Indoor unit address 0/other	*	*	√/×	*
2P convertible /single blade	*	*	*	√/×

Network address selection (√ shows jumper connected, ON; × shows jumper disconnected, OFF)

	SW1				SW2			
address	1	2	3	4	1	2	3	4
1	×	×	×	×	×	×	×	× shows passive port control AND
2	√	×	×	×	×	×	×	
3	×	√	×	×	×	×	×	
4	√	√	×	×	×	×	×	
5	×	×	√	×	×	×	×	√ showes passive port control – the later entering in priority
6	√	×	√	×	×	×	×	
……		……	……	……	……	……	……	
126	√	×	√	√	√	√	√	
127	×	√	√	√	√	√	√	
128	√	√	√	√	√	√	√	

Condition for the PCB data:

1.Working ambient temperature:－10℃～70℃, relative humidity:30%～95%

2.Preserved ambient temperature:－20℃～80℃，relative humidity：30%～95%

3.Power supply:220VAC、50/60Hz，voltage range:160V～250V

4.Precise of temperature control:±1℃

0010451167E PCB information – port and definition

P1——connect to external power supply, live line: L (220VAC)

P2——connect to external power supply, neutral line: N (0VAC)

P3、4、5、6——control external load, neutral line: N1、N2、N3、N4(0VAC)

P7——control external load, electrical heat: HEAT (control output 220VAC)

P8——control external load, health function: OXYGEN (control output 220VAC)

P9——control external load, humidification: HUMI (control output 220VAC)

P10——control external load, SWING(control output 220VAC)

P11——control external load, WATER PUMP(control output 220VAC)

P12——control external load, indoor fan motor low speed: L(control output 220VAC)

P13——control external load, indoor fan motor mid speed: M(control output 220VAC)

P14——control external load, indoor fan motor high speed: H(control output 220VAC)

P15——communication with fixed frequency single outdoor unit: COMM(0~220VAC)

P16——input control, signal live line: L'(220VAC)

P17——input control, signal neutral line: N'(0VAC)

CN1——input port of transformer (220VAC)

CN2——input port 1 of transformer (no use)

CN3——input port 2 of transformer (no use)

CN4——input port 3 of transformer (1-2、14VAC，3-4、12VAC)

CN5——input control, connecting port to wired controller: CONTROLLER（three bits: 1. power supply: 12VAC, 2. power supply: 0VAC, 3. communication: COMM.）.

CN6——input control, ambient temp.-coil temp. sensor connecting port: ROOM/PIPE（1-2、ROOM，3-4、PIPE。）

Indoor ambient temp. sensor: R25=23KΩ+-2.5%，B25/50=4200K+-3%，range:（-40，80）

Indoor coil temp. sensor: R25=10KΩ+-3%，B25/50=3700K+-3%，range:（-20，90）

CN7——control external load, fresh air control: FRESH（1. blank, 2. power supply 0VDC, 3. control output: 12VDC.）

CN8——input signal: FREEZE（no use）

CN9——input control（no use）

CN10——communication with fixed frequency single outdoor unit: (0~12VDC)

CN11——input signal, door switch: DOOR（1-2 short circuit is normal, cut off　P8 output）

CN12——input signal, external alarm input: ALARM（1-3 short circuit is normal, if cut off, air conditioner stops work.）

Note: For convertible type, cassette type, duct type units, CN11 and CN12 must be in short circuit, or PCB will display failure information.

CN13——input signal, wiring port of remote receiver board: RECEIVE BOARD（1. power supply 5VDC, 2. power supply 0VDC, 3. remote signal, 4. signal output of running lamp 0VDC, 5. signal output of timer lamp 0VDC,6. signal output of power lamp 0VDC, 7. signal output of water pump running lamp 0VDC）

CN14——control external load, auto elevating function （1. signal of door switch　close, 2. output of elevating direction control 0VDC, 3. output of elevating power control 0VDC, 4. power supply 12VDC）

CN15——input signal, detecting water level of float switch （1-3 short circuit is normal, cut off shows that level exceeds the limitation）.If float switch cuts off or occurs other failure, LED1 will flash 10 times.

CN16——input control, wiring port of central controller: REMOTE（1、RS485-B，2、RS485-A。）

CN17——output signal, output signal of failure alarm, control external load, 12V/ALM（1. control output 0VDC, 2. power supply 12VDC）

CN18——output signal (no use)

CN19——control external load, swing 1（1、16VDC，2、0VDC，3、0VDC，4、0VDC，5、0VDC.）.

CN20——control external load, swing 2（1、16VDC，2、0VDC，3、0VDC，4、0VDC，5、0VDC.）.

CN21——input signal, spring switch, CHECK（1、input signal of earthing, 2. power supply 0VDC）

CN22——short circuit means selecting single split communication type.(no use)

CN23——short circuit means selecting multi split communication type.(no use)

0010451167E PCB information – function selection（ON is 1, OFF is 0）

The standard condition for PCB in factory

SW1：4 bits are OFF

SW2：4 bits are OFF

SW3：4 bits are ON

SW4：2 bits are ON

SW5：4 bits are ON

SW1-SW2: used for indoor unit to set unit address from 1 to 128’

SW3-SW5: used for indoor unit to select different functions.(every dip switches are corresponding to J1-J10.

SW2-4——logistic relationship of control function（door card control and remote/ wired control）0 means logistic relationship is “and”, 1 means the later coming is preferential.

J1，SW3-1——function selection-control type: 1 means remote control, 0 means wired control.

J2，SW3-2——function selection-temperature compensation in heating mode: 1means “yes”, 0means “no”.

J3，SW3-3——function selection-outdoor communication: 1means “yes”, 0means “no”. This PCB must be 1.

J4，SW3-4——function selection-heat pump unit: 1means “heat pump”, 0means “cooling only”.

1/60——test in short circuit, but in operation short circuit mustn’t be permitted.

CHECK——short spring switch control, it also can be used as switch of convertible type except for testing.

J5，SW4-1——function selection-elevating function: 1means “yes”, 0 means “no”.

J6，SW4-2——function selection –health function: 1means common (indoor fan motor running); 0 means special (indoor, outdoor running).

J7，SW5-1——function selection –swing mode: 1 means common（simultaneous motor）, 0 means special (swing motor).

J8，SW5-2——function selection – system combination: 1means fixed frequency single unit, 0 means fixed frequency multi split.

J9，SW5-3——function selection –group control: 1 stands for the master unit (its address in wired controller is 0), 0 stands for the slave units (the address should be set by the dip switch, their addresses only can be in the range: 1~15)

J10，SW5-4——function selection –preset.

0010451167E PCB information- control type

Control type selection between remote and wired: select by dip switch J1, SW3-1（1 means remote control；0 means wired control.)

For remote control type, please use remote controller YR-H71, and a remote receiver is equipped with indoor unit. For wired control type, wired controller YR-E12 will be used, 3-core shied wire is equipped with

indoor unit.

Door card control: controls ON/OFF, the start up setting will comply with last time request memorized according to condition memorize function. Its difference with emergency switch of convertible type unit lies: the emergency switch control will perform in the condition: 24degrees, auto fan speed in auto mode.

The function combination between door card and remote/wired control type: select by dip switch: SW2-4（0 means “and”, 1 means later coming is preferential.）

Dip switch position in wired control type: Only one indoor unit of all indoor units connected with wired controller is the master unit, whose address is 0, function selection switch（J9，SW5-3）is 1. The others are slave units, and the quantity can be 0~15, whose addresses are（SW1:1~4）from 1 ~15, and cannot repeat.

Wiring request in wired control type: the wired controller ports A-B-C are connected with indoor port CN5（1-2-3） through 3-core shield wire. Requirements:

1. Port A only connects with either of indoor port CN5（1）
2. Port B connects with port CN5 (2) of all indoor units.
3. Port C connects with port CN5 (3) of all indoor units.

Dip switch position in central control type: the addresses （SW1:1~4；SW2:1~4）of indoor units connected with central controller can not repeat. In principle, they should be in the order from small to big.

Wiring request in central control type: port A-B is connected with indoor port CN16（A-B）through 2-core shield wire. Requirements:

1. Port A connects with port CN16（A）of all indoor units.
2. Port B connects with port CN16（B）of all indoor units.

When only use remote control type, please select remote control unit, and install according to installation manual, there is no other special request.

When only use wired control type, please select wired control unit, and install according to installation manual. When control multi indoor units, take care the requirements of dip switch and wiring, there is no other special request.

When only use central control type, please firstly install according to air conditioner requests and set the dipswitch, there is no other special request.

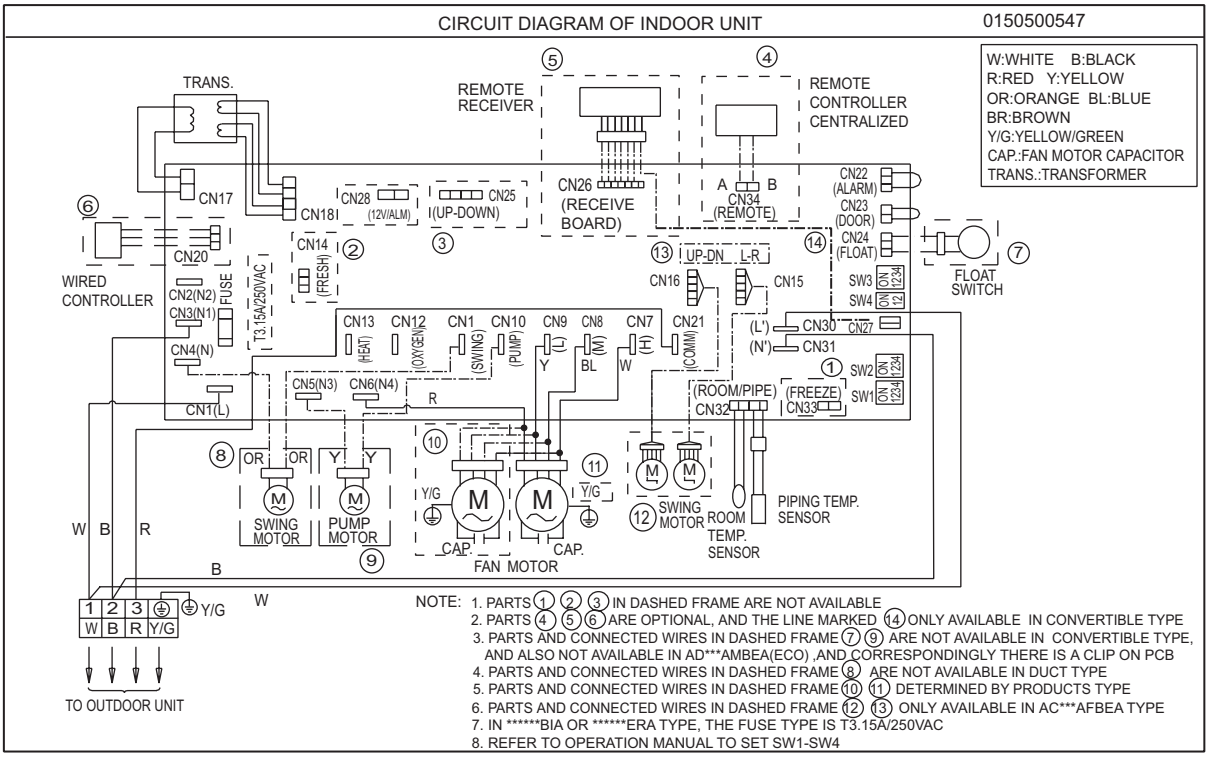
When central control type（128×）and remote control type are used simultaneously, set the dip switch according to central control type, there is no other special request.

When central control type（128×）and wired control type （16×）are used simultaneously, max. indoor units sets: 128×16 can be controller. Address setting of central controller can be met firstly, and then modulate the address setting of slave unit wired controlled.

LED in indoor PCB:

1. LED1：is the state lamp for remote receiver as well as failure lamp. If indoor unit is normal, LED1 is on, or if failure occurs, LED1 flashes regularly, and you can adjust failure type according to the flash times.
2. LED2：is used for multi split units as communication lamp. If communication between indoor and outdoor is normal, LED2 will be on.
3. LED3：is used for single split units as communication lamp. If communication between indoor and outdoor is normal, LED3 will be on.
4. LED4、LED5：is the lamp that shows the data receiving or sending between wired controller and PCB, If LED4、LED5 be on in turn, communication between wired controller and PCB is normal.

AC282/362AFERA



0010452984 dip-swich functions:

	J60(SW4(2))	J61(SW4(1))		
Wired /remote control	√/×	*	*	*
Temp. compensation available / inavailable	*	√/×	*	*
	J62(SW3(4))	J63(SW3(3))	J64(SW3(2))	J65(SW3(1))
	*	*	*	*
Wire control indoor slave / master unit	*	√/×	*	*
2HP convertible/other	*	*	√/×	*
Interligent wind/single blade	*	*	*	√/×

SW1 and SW2 are used to set net address:

	SW1				SW2			
Address	1	2	3	4	1	2	3	4
1	×	×	×	×	×	×	×	× shows passive port switch control AND
2	√	×	×	×	×	×	×	
3	×	√	×	×	×	×	×	
4	√	√	×	×	×	×	×	
5	×	×	√	×	×	×	×	√ showes passive port switch control – the later entering in priority
6	√	×	√	×	×	×	×	
……		……	……	……	……	……	……	
126	√	×	√	√	√	√	√	
127	×	√	√	√	√	√	√	
128	√	√	√	√	√	√	√	

LED2/LED3: communication indicate lamp for wired controller
LED1: failure incate lamp, flash when failure occurs.

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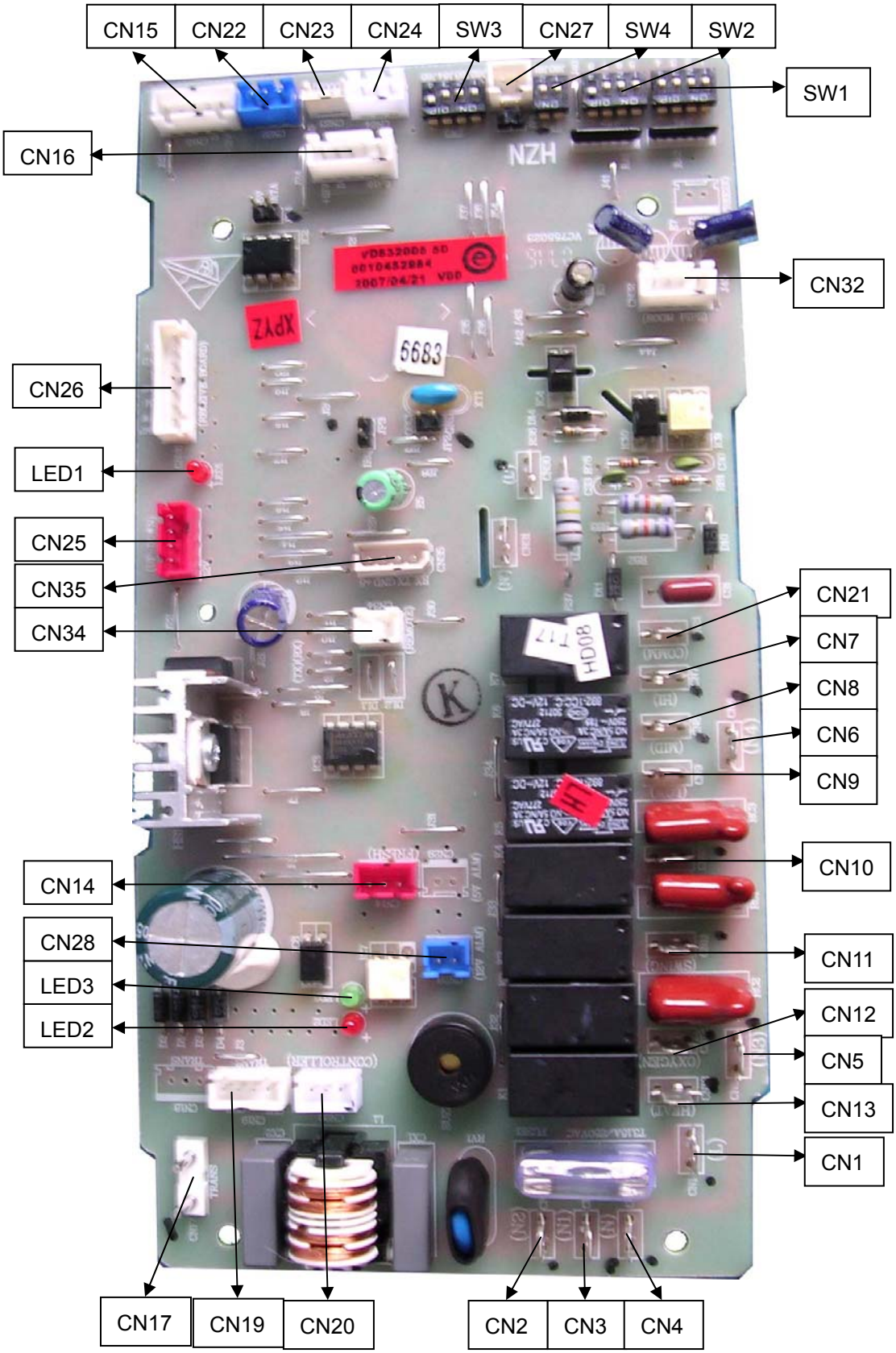
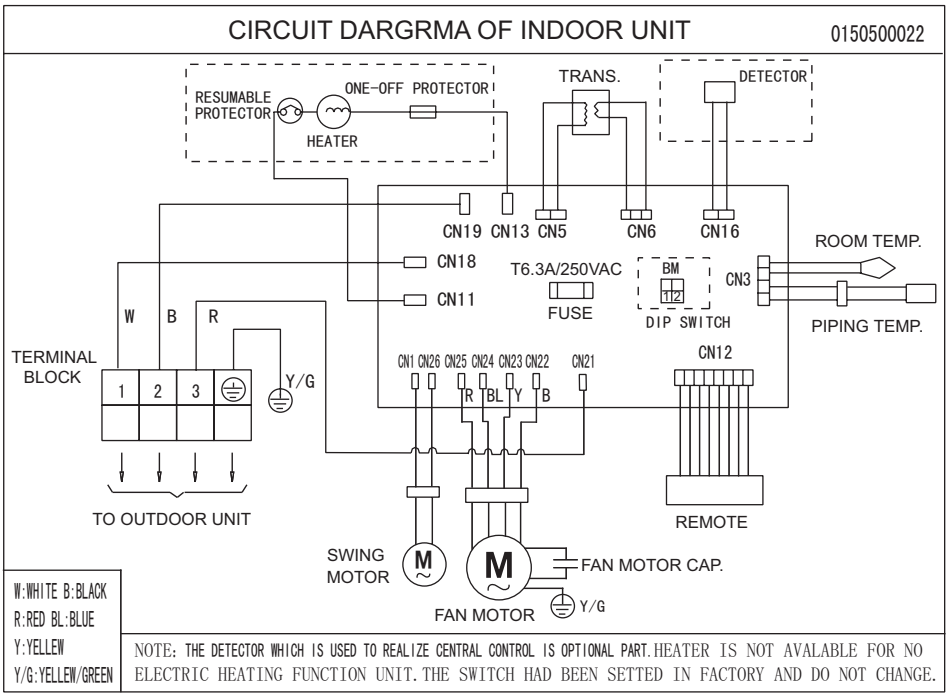
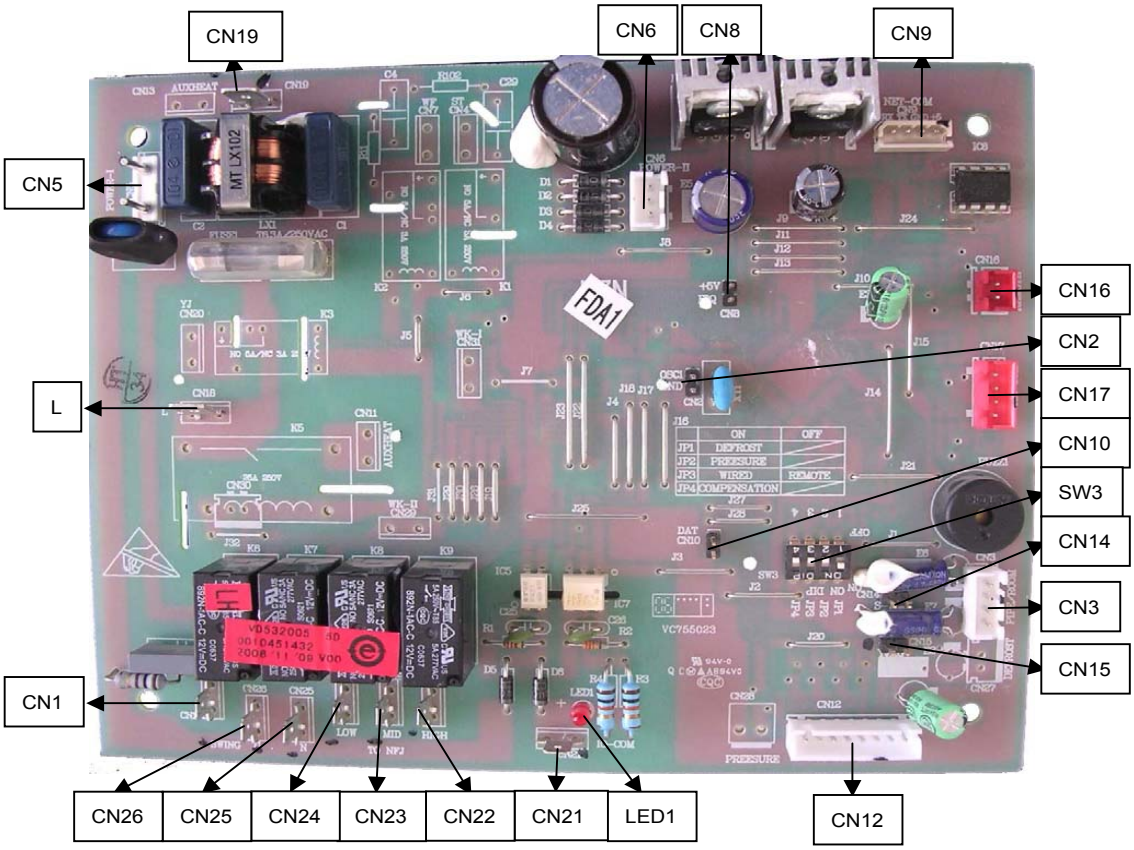

CN15
CN22
CN23
CN24
SW3
CN27
SW4
SW2
SW1
CN16
CN32
CN26
LED1
CN25
CN35
CN34
CN21
CN7
CN8
CN6
CN9
CN14
CN10
CN28
LED3
LED2
CN11
CN12
CN5
CN13
CN1
CN17
CN19
CN20
CN2
CN3
CN4

AP422ACEAA

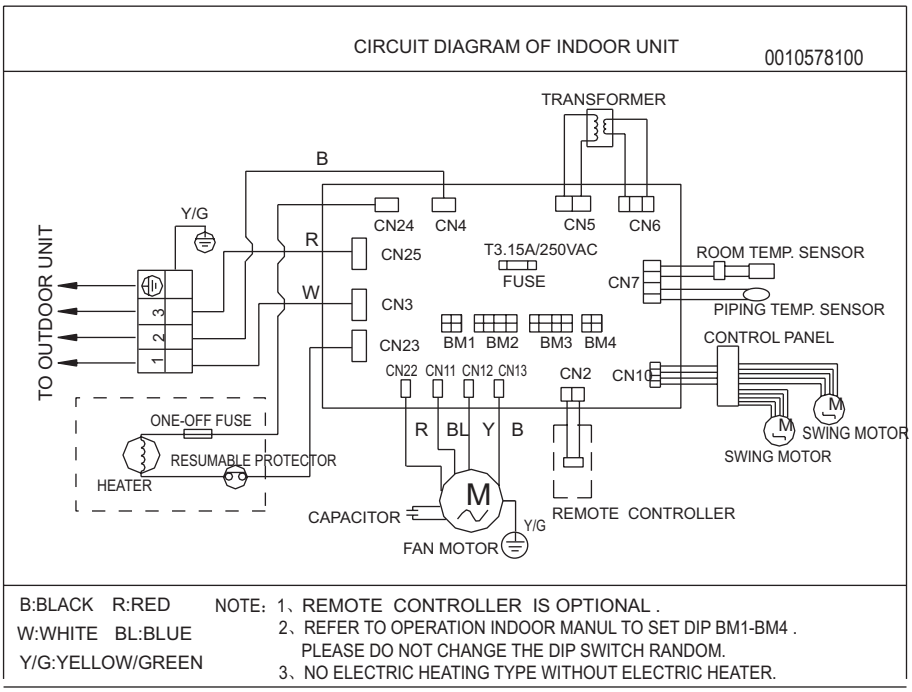


0010451432

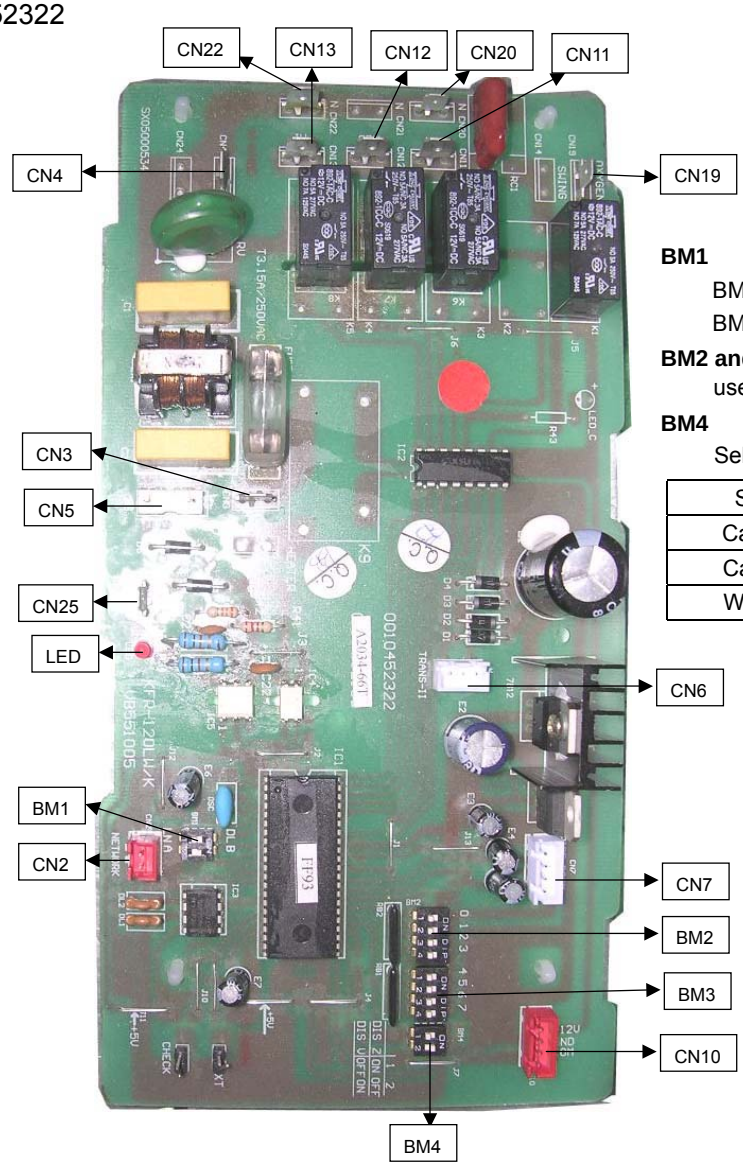


SW3-1 ON/OFF cooling only / heat pump
SW3-2 ON/OFF wired control / remote control
SW3-3 P re-set
SW3-4 with/without temperature compensation

AP482AKEAA



0010452322



BM1 Funcion selection

BM1-1 ON/OFF cooling only / heat pump

BM1-2 ON/OFF Automatic run B / A mode

BM2 and BM3

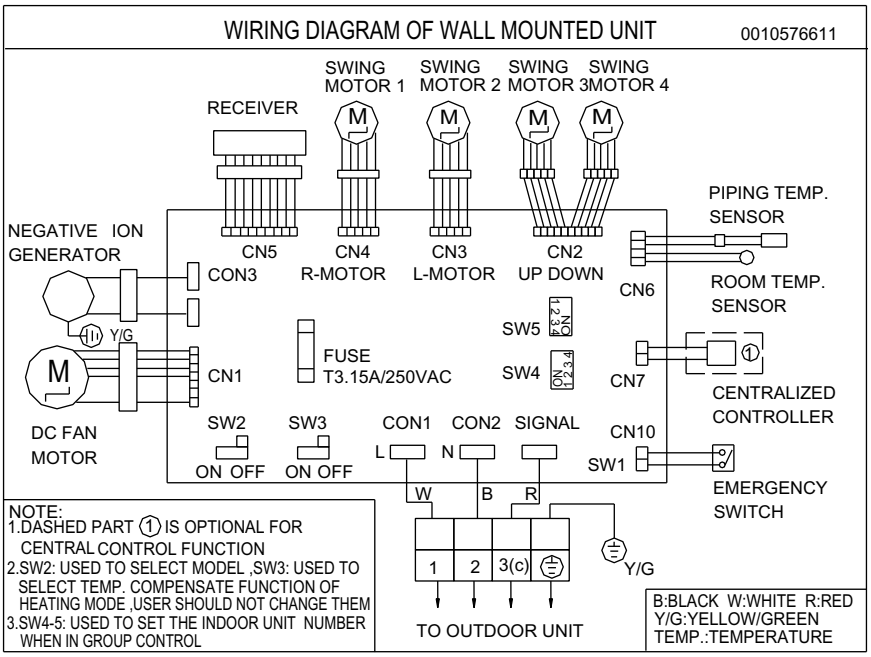
used for indoor unit to set unit address from 1 to 128'

BM4 Panel selection

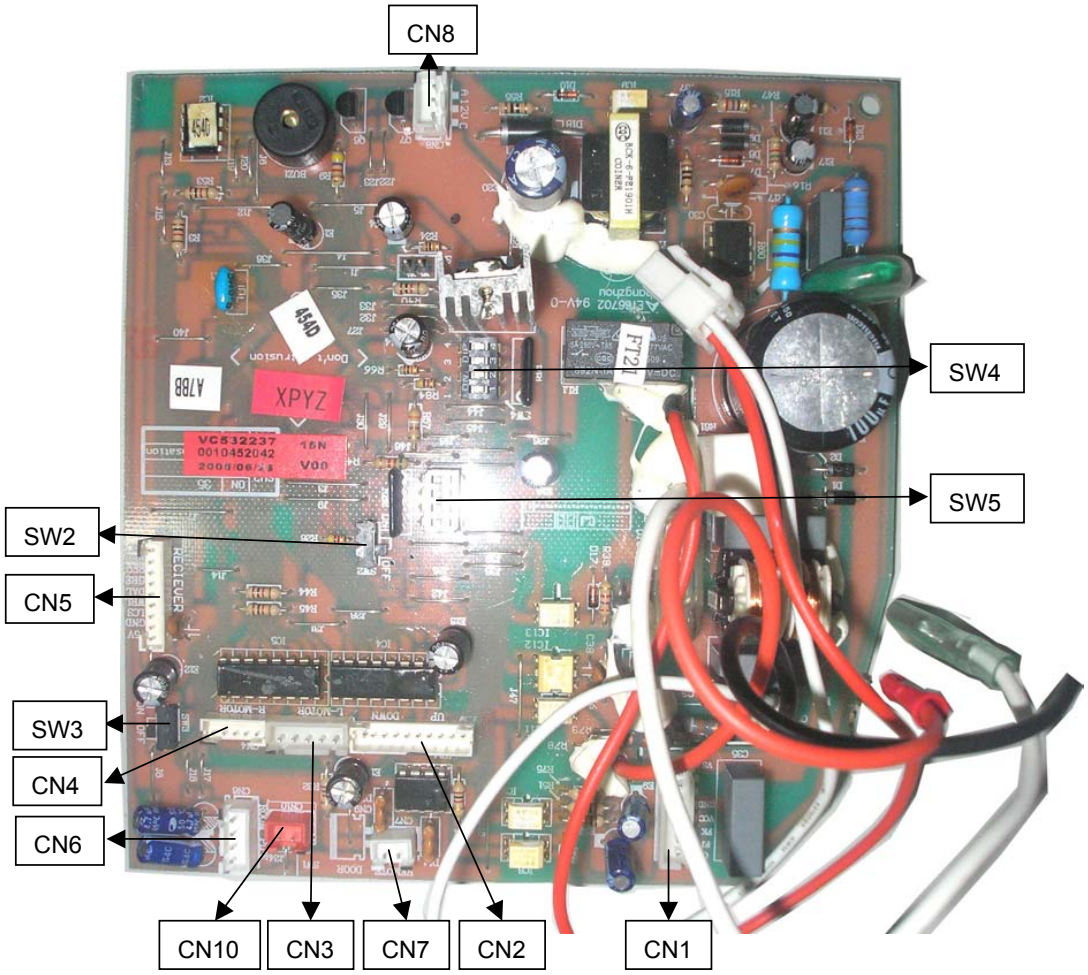
Select the panel according to the 2 dip switch

Style of panel	1	2
Cabinet V panel	OFF	ON
Cabinet Z panel	ON	OFF
Wired controller	ON	ON

AS182AVERA



0010452042

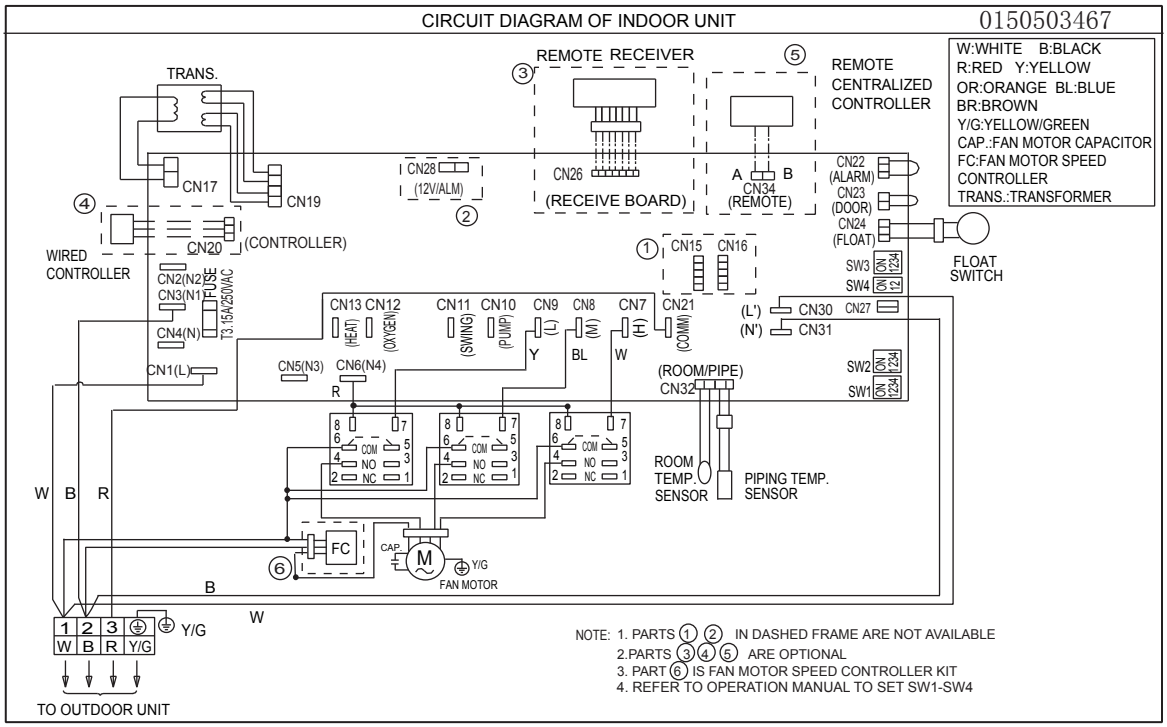


SW2 select capacity: ON/OFF --- 2HP/1.5HP unit

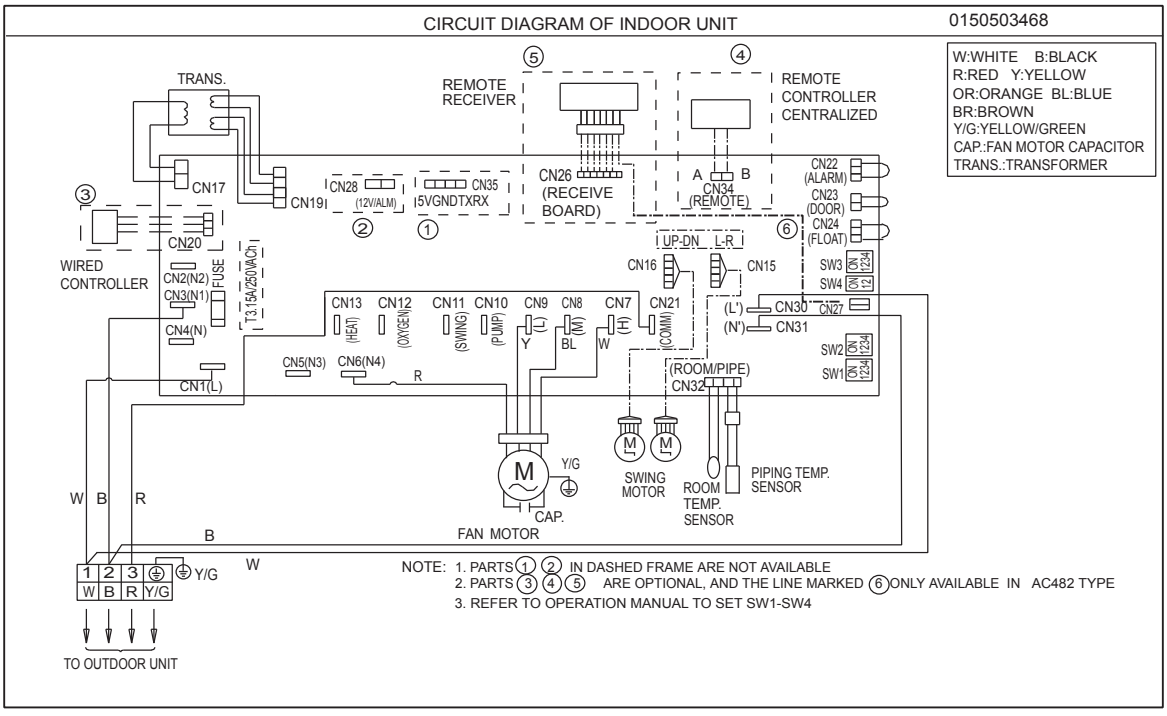
SW3 select temp. compensation: ON/OFF --- with/without temp. compensation

SW4 and SW5 are used to select central control address

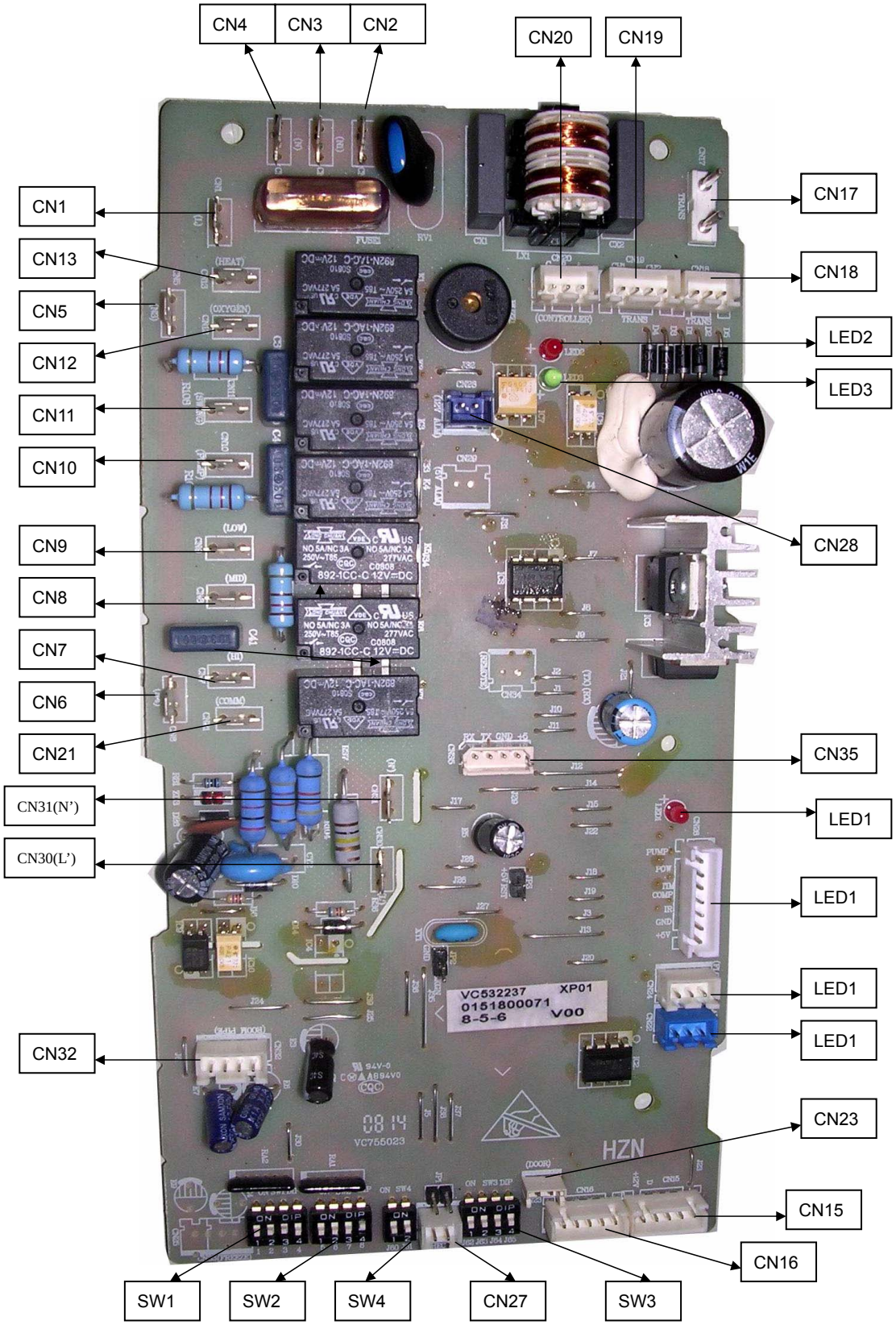
AD482AHERA,AD482ANERA



AC482AFERA



0151800071



LED1:Running and failure indicator lamp.when the unit starts up,LED1 is on,when the unit is OFF,LED1 is OFF,and will blink when failure occurs.

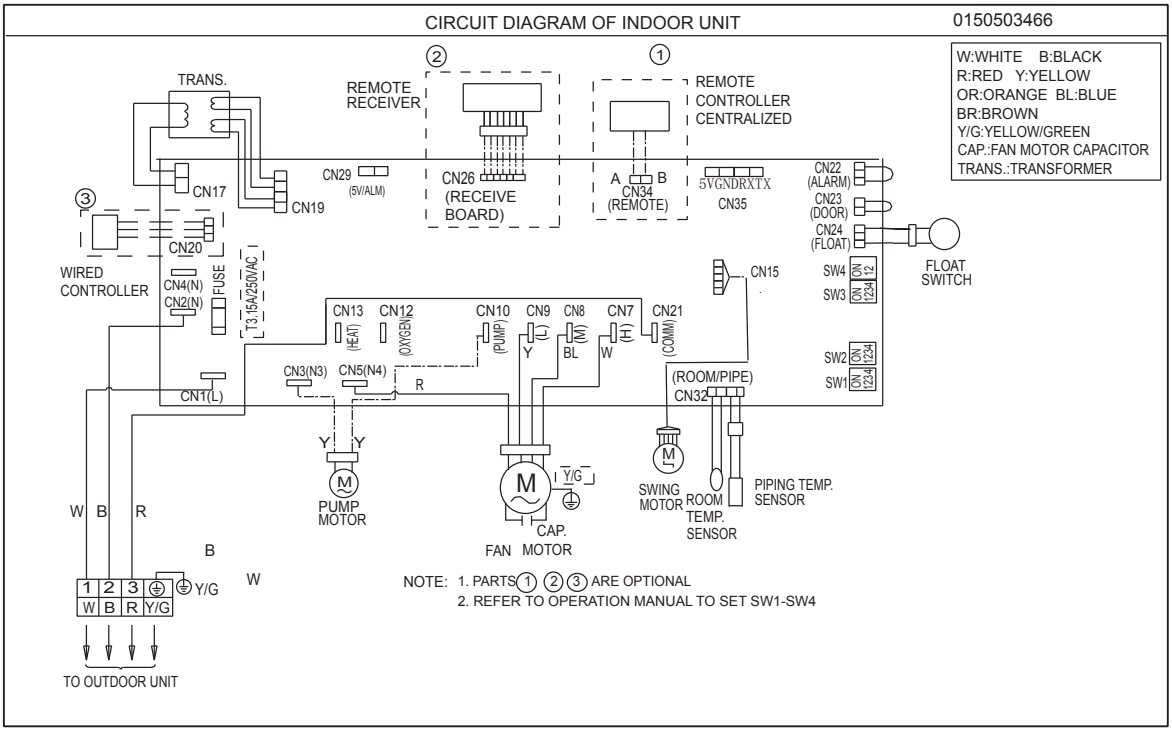
LED2、LED3：Wired controller's communication indicator lamp,when communication with wired controller is normal,LED2,LED3 will blink.

0151800071 and 0151800077 dip switch function defination: SW1,SW2 used for centralized network control address selection and roomcard switch OR,AND function selection

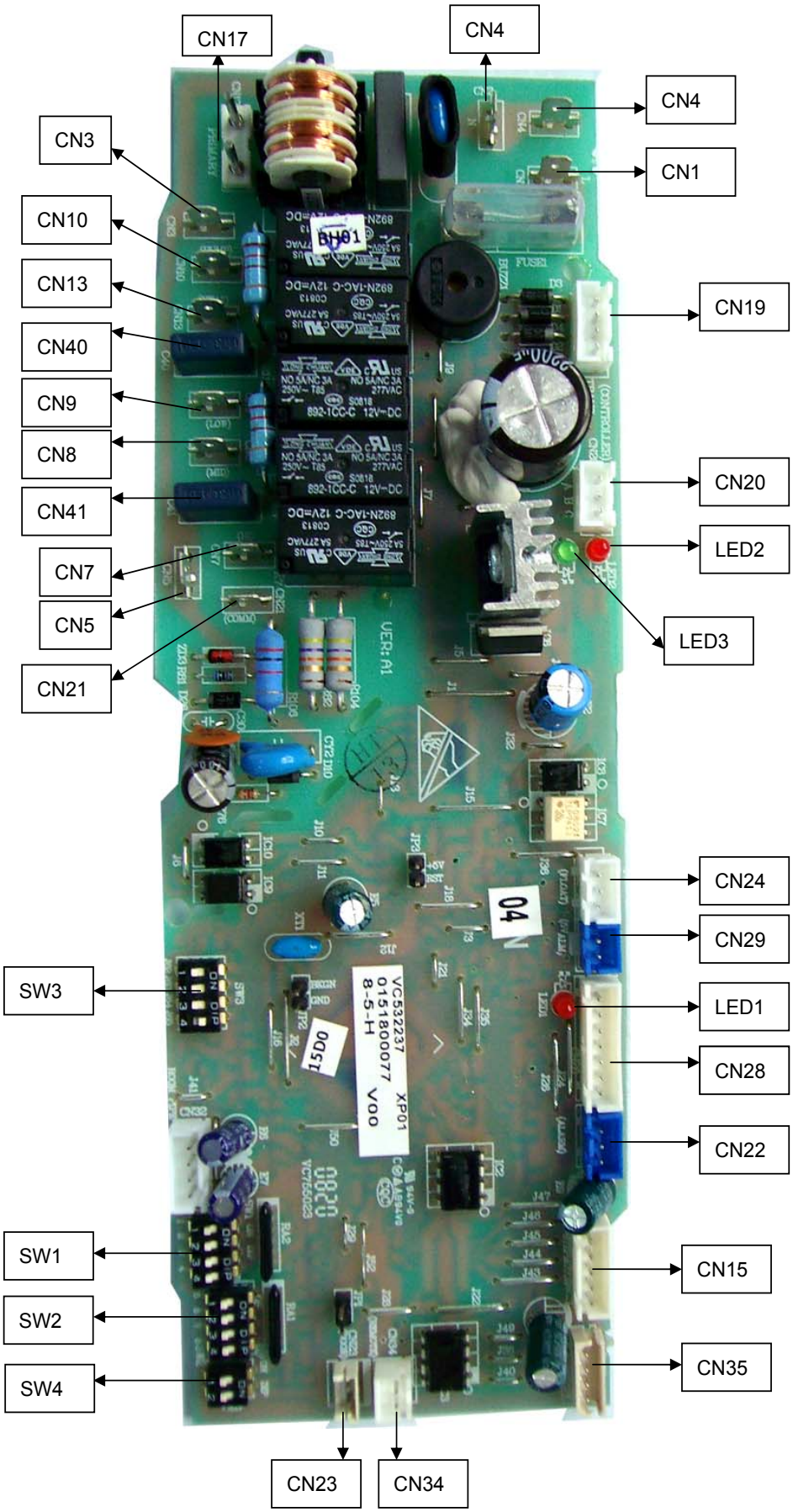
	SW1				SW2			
Address	1	2	3	4	5	6	7	8
1	×	×	×	×	×	×	×	×shows passive port switch control AND
2	√	×	×	×	×	×	×	√shows passive port switch control-later entering in priority
3	×	√	×	×	×	×	×	
4	√	√	×	×	×	×	×	
5	×	×	√	×	×	×	×	
6	√	×	√	×	×	×	×	
…								
…								
126	√	×	√	√	√	√	√	
127	×	√	√	√	√	√	√	
128	√	√	√	√	√	√	√	

	SW4-1（J60）	SW4-2（J61）
Wired/remote control	√/×	*
Temp.compensation available/inavailable	*	√/×
	SW3-1（J62）	SW3-2（J63）
Wireless network/concentrated control	√/×	*
Wired control slave/master indoor unit	*	√/×
Blade control	SW3-3（J64）	SW3-4（J65）
High- voltage	OFF	OFF
2Pconvertible	ON	OFF
5Pconvertible dual blade	ON	ON
Cassette	OFF	ON

AB482AEERA



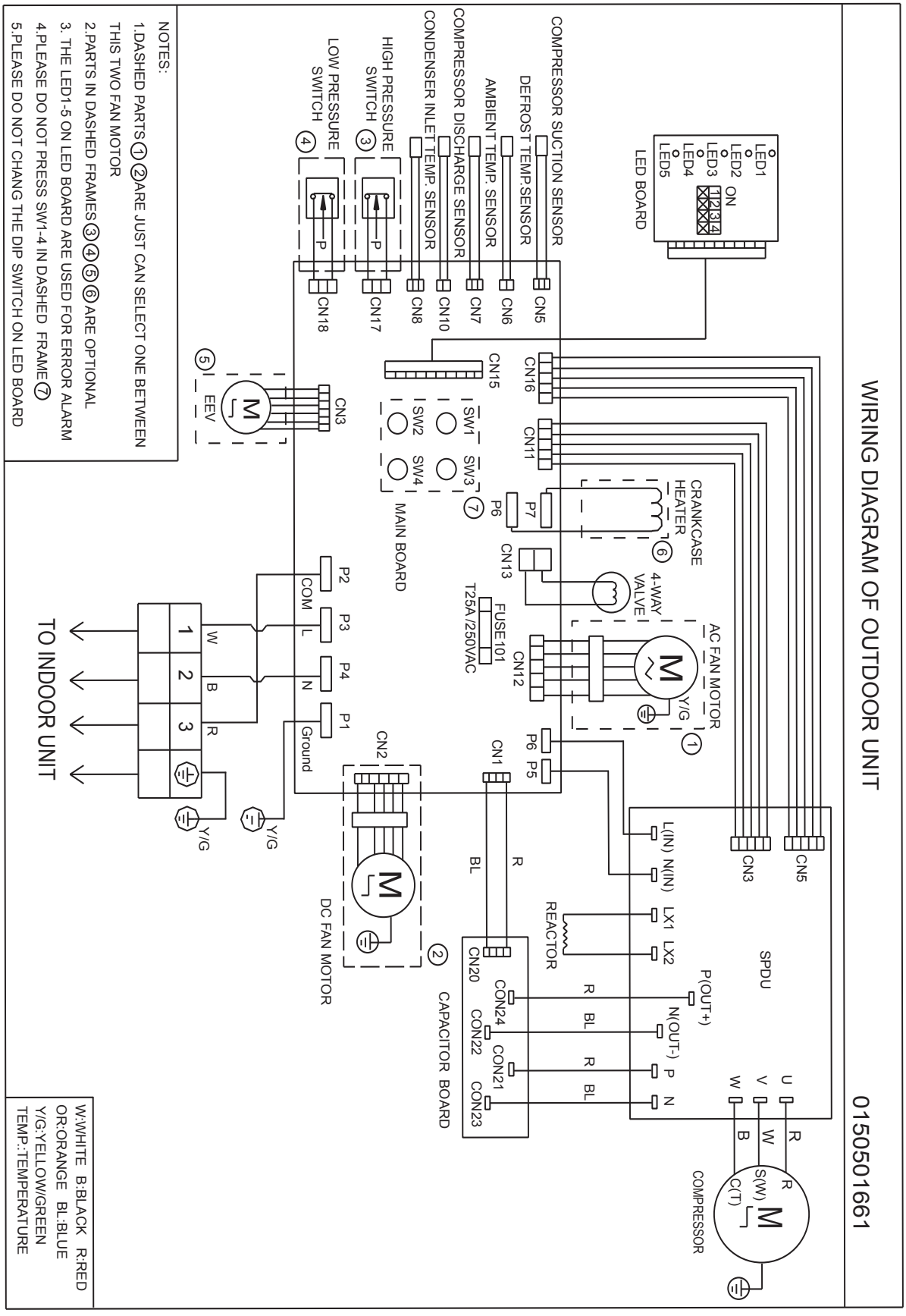
0151800077


CN17
CN4
CN4
CN3
CN1
CN10
CN13
CN19
CN40
CN9
CN20
CN8
LED2
CN41
CN7
LED3
CN5
CN21
CN24
CN29
SW3
LED1
CN28
CN22
SW1
CN15
SW2
SW4
CN35
CN23
CN34

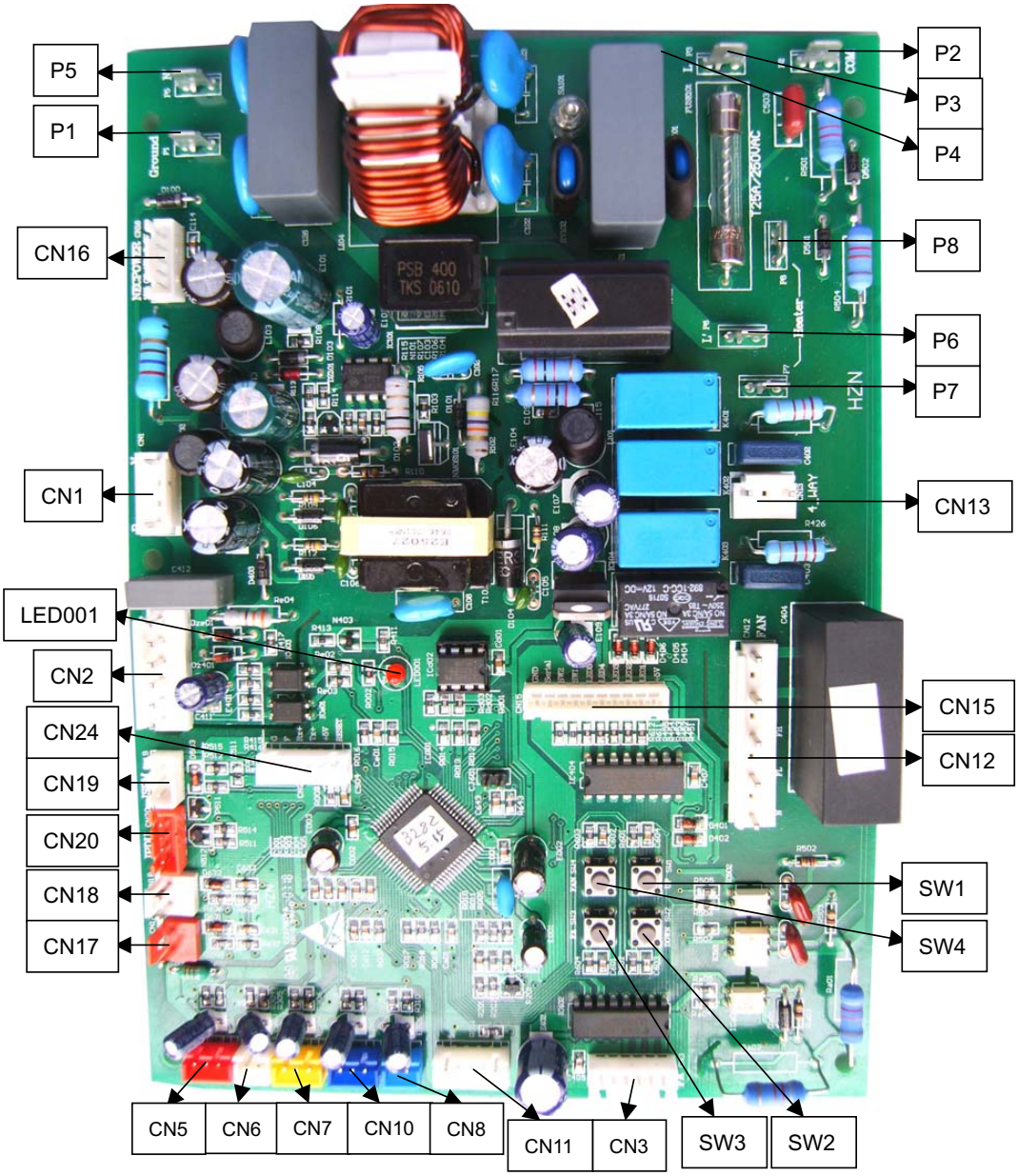
1.2 For outdoor units

1.2.1 For DC inverter outdoor units

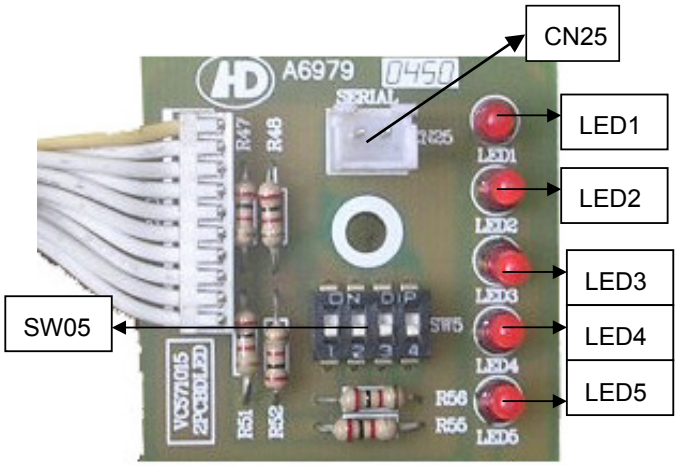
AU122AEERA



Outdoor PCB 0151800037 for AU122AEERA

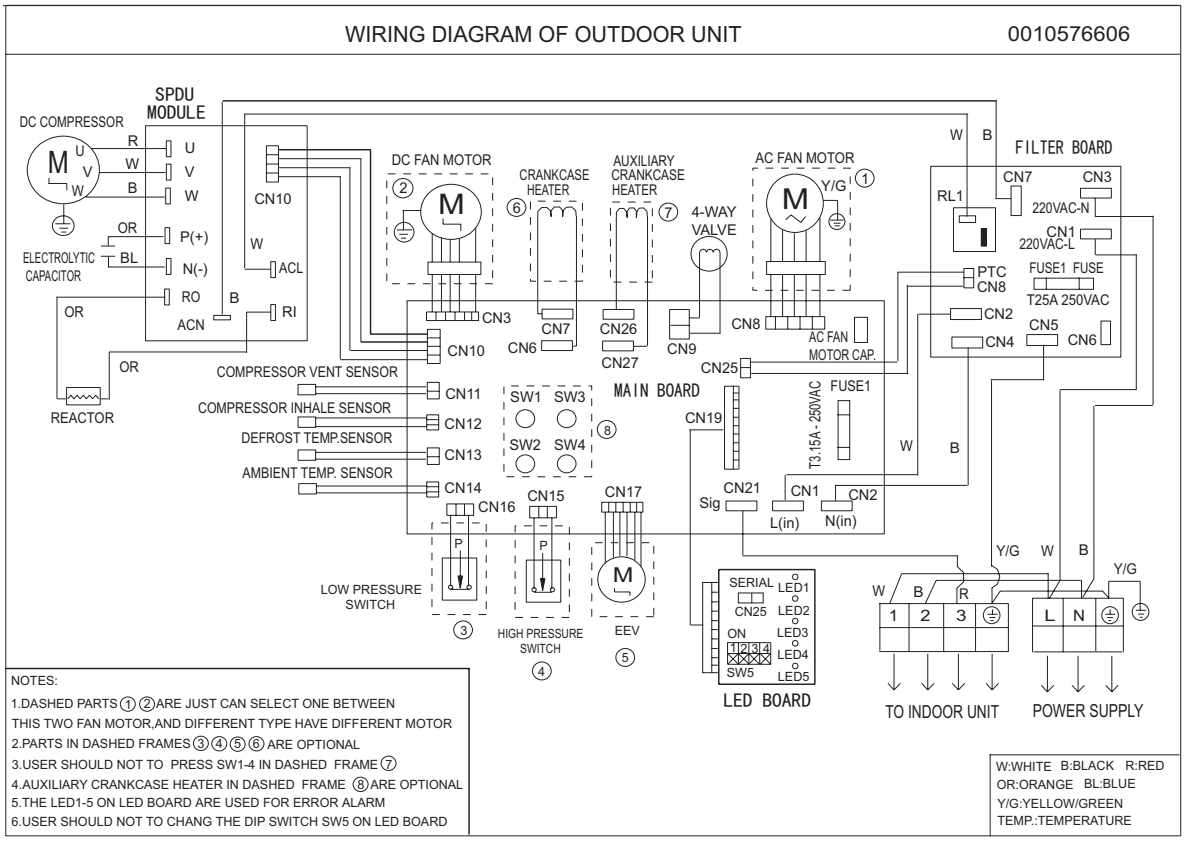


Outdoor indicator board 0010452047E

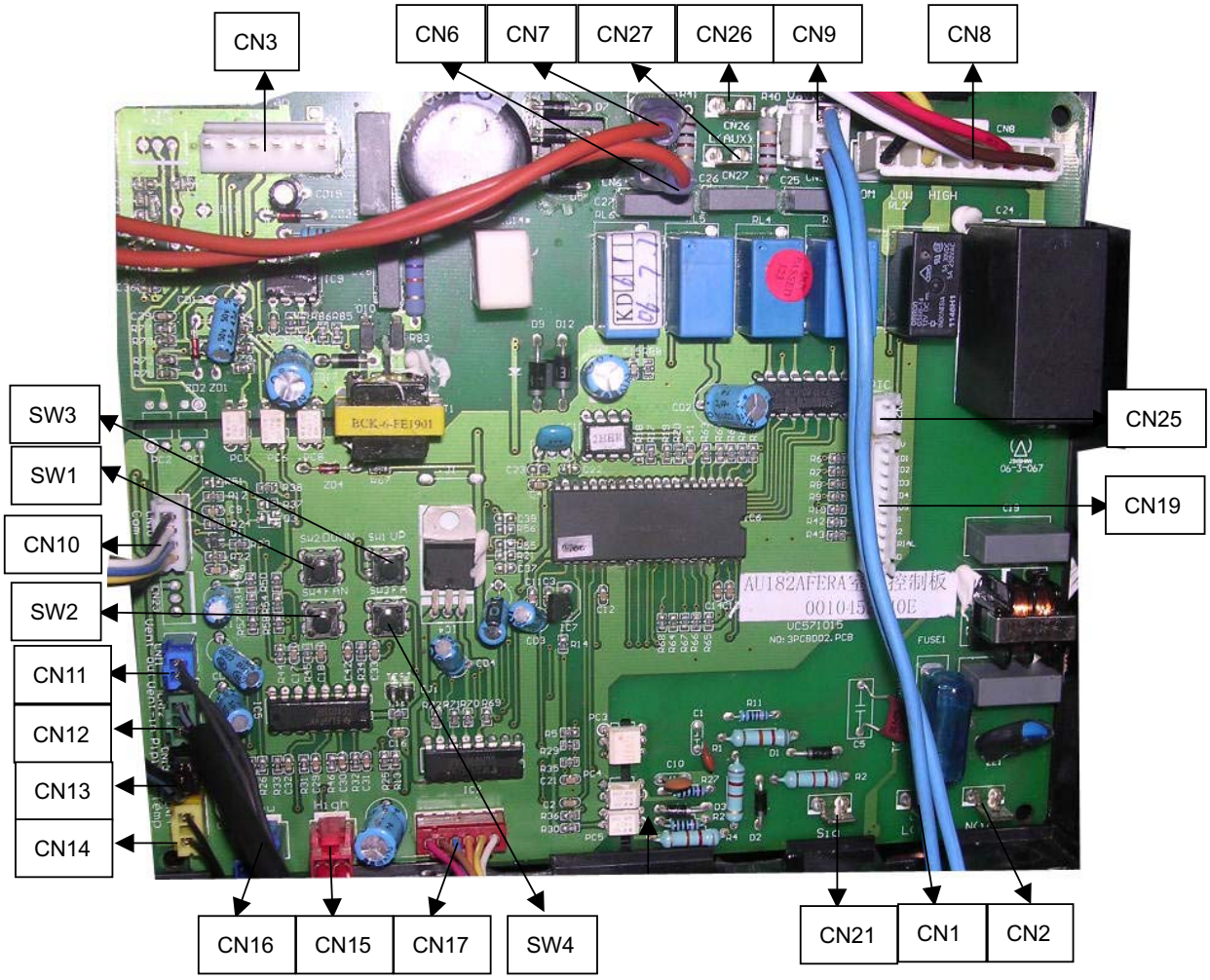


SW05 on 0010452047E is used for factory quality control engineers, the default position is: OFF OFF OFF OFF for AU122AEERA, and there are also module board 0010404120 and capacity board 0010403697.

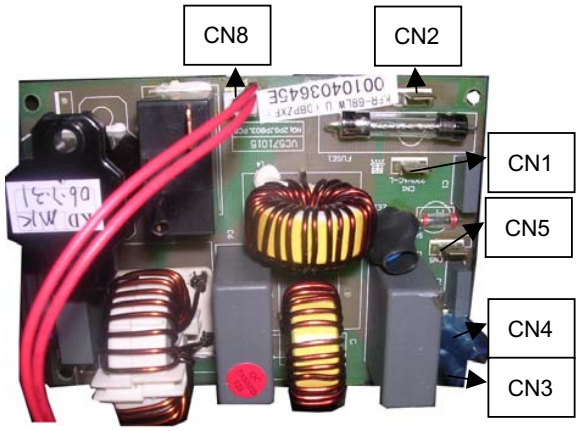
AU182AFERA, AU242AGERA



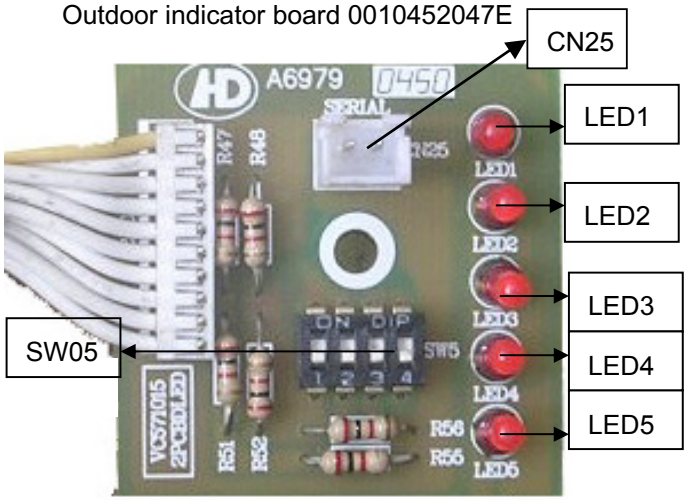
Outdoor main control board 0010452040



Outdoor filter board 0010403645



Outdoor indicator board 0010452047E

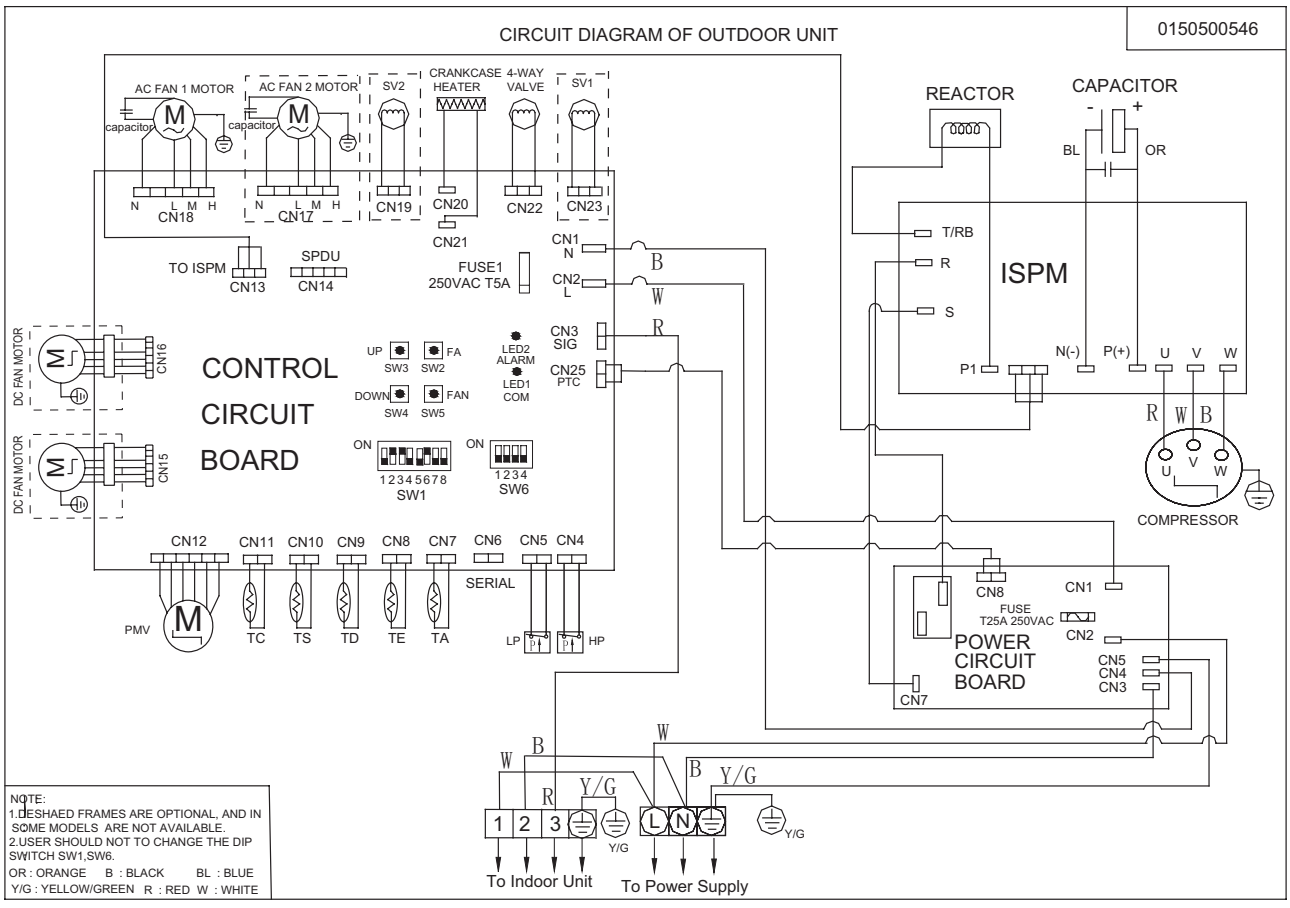


SW05 is used for factory quality control engineers, the default position is: OFF OFF OFF ON for AU182AFERA, as for AU242AGERA, the default position is: OFF OFF OFF OFF, for the above models, there are also module board 0010403555.

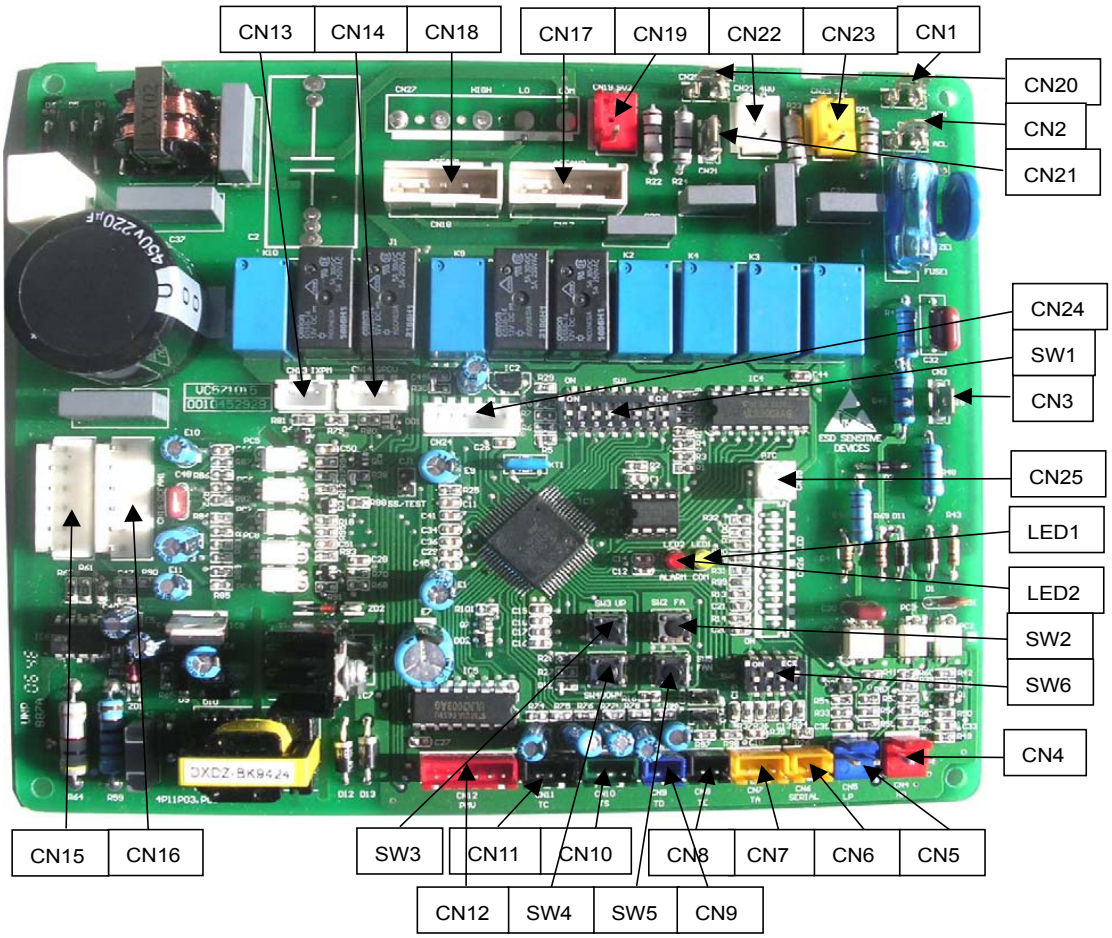
Five-indicator combination shows the failure code.

	SW5(1)	SW5(2)	SW5(3)	SW5(4)
compulsory heating/normal operation	√/×	*	*	*
compulsory cooling/normal operation	*	√/×	*	*
AU182AFERA/AU242AGERA	*	*	√/×	*
AC / DC motor	*	*	*	√/×

AU282AHERA, AU362AHERA



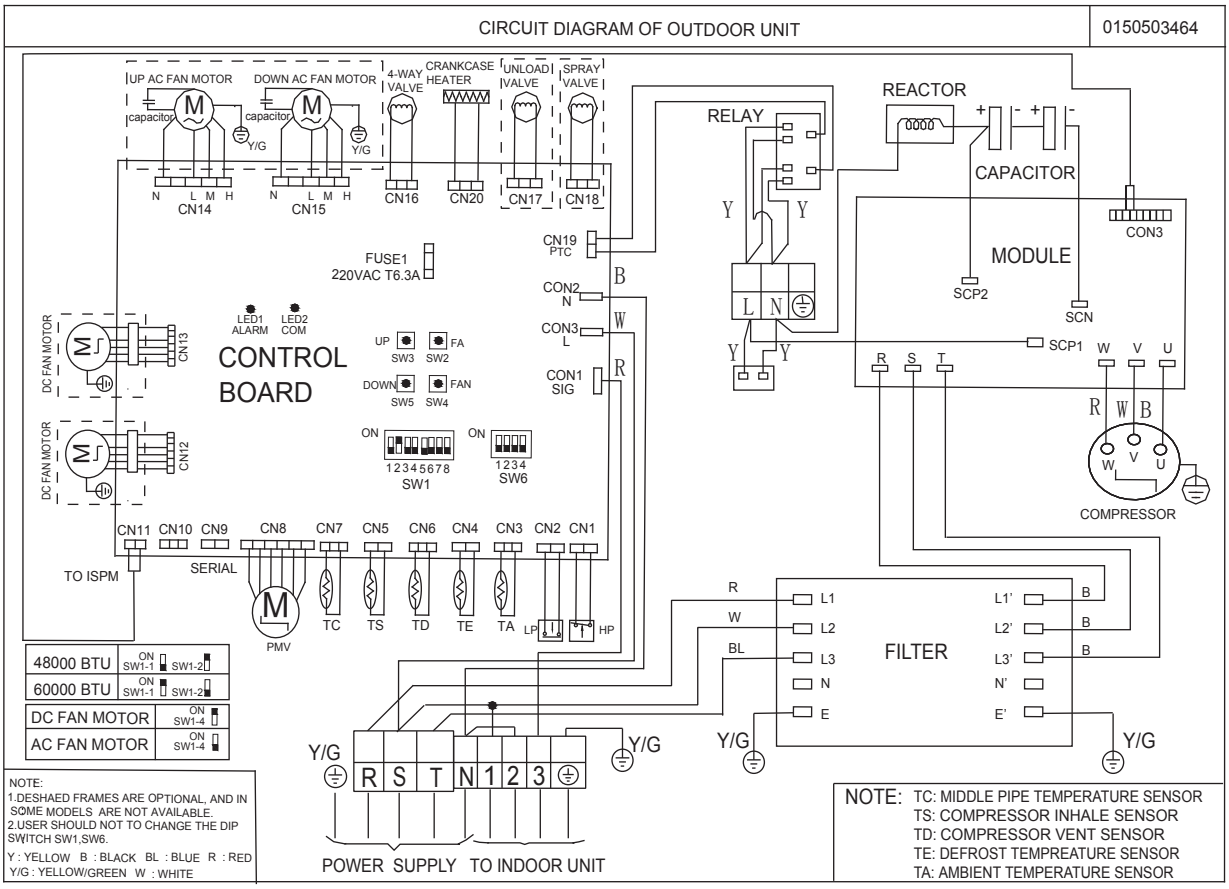
Outdoor PCB 0010452929



number"1"	***number"2"***	***Outdoor horse power***
OFF	**OFF**	**3P**
OFF	**ON**	**4P**
ON	**OFF**	**5P**
ON	**ON**	**6P**
SW1	***number"3"***	***Module selection***
	OFF	Gangda module
	ON	Hitachi module
	number"4"	***Motor selection***
	OFF	AC 3-speed
	ON	DC fan motor
number"5"	***number"6"***	***Defrost parameter***
OFF	**OFF**	**6**
OFF	**ON**	**7**
ON	**OFF**	**10**
ON	**ON**	**7**
	number"7"	***Standby***
	OFF	Pre-set
	ON	Pre-set
	number"8"	***Quiet operation selection***
	OFF	Without
	ON	With

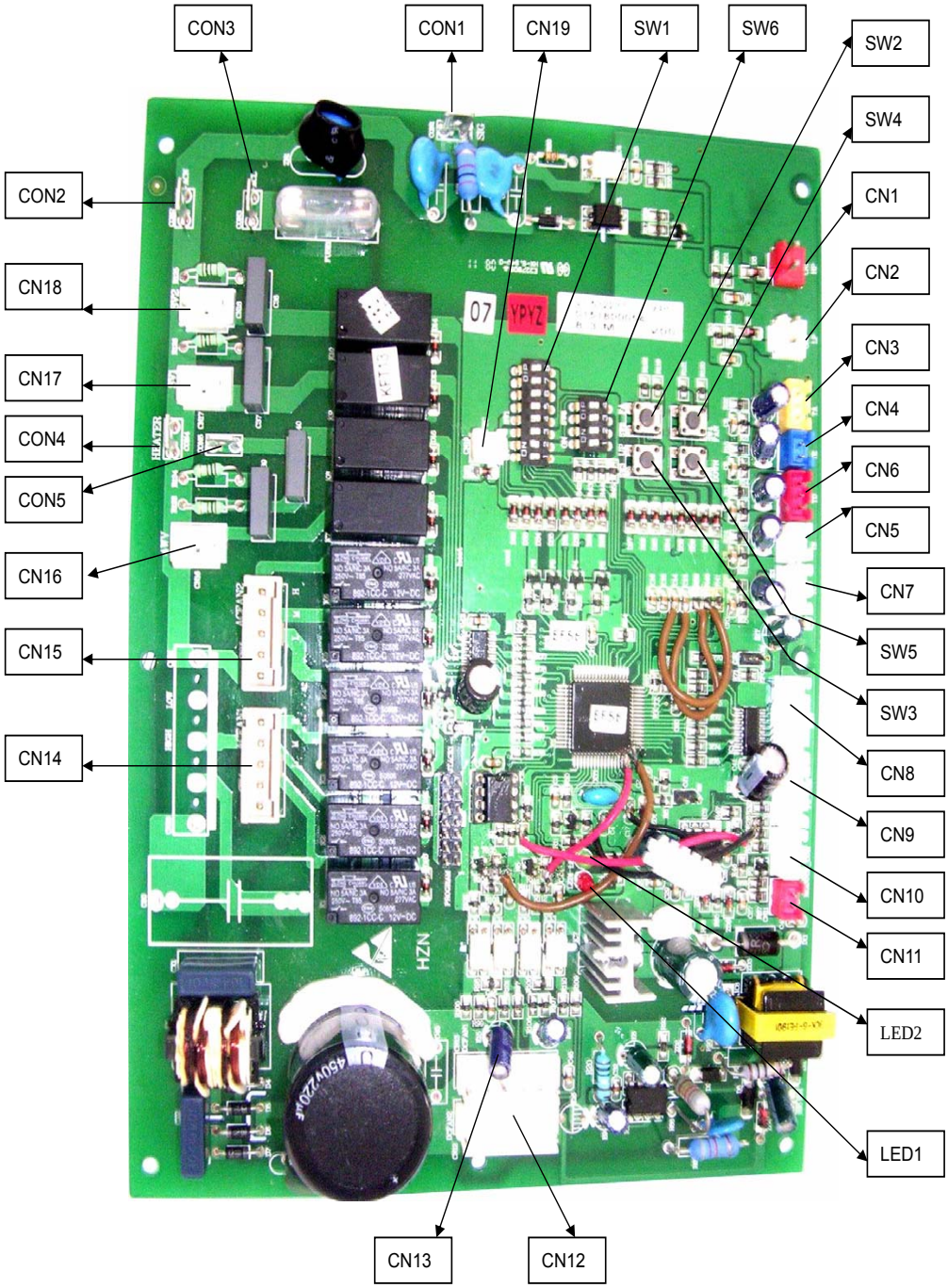
	number "1"	***Rating***
	OFF	Without
	ON	With
	number "2"	***Defrost selection***
SW6	**OFF**	Normal defrost
	ON	Defrost without stopping unit
	number"3"	***Standby***
	OFF	Pre-set
	ON	Pre-set
	number"4"	***Standby***
	OFF	Pre-set
	ON	Pre-set

AU48NAIERA



UNITARY SMART INVERTER 4P,5P.6P,7P dip-switch defination					
number "1"	***number "2"***	***Outdoor horse power***		***number "1"***	***Rating***
OFF	OFF	4P		OFF	without
OFF	ON	5P		ON	with
ON	OFF	6P		***number "2"***	***Defrost selection***
ON	ON	7P	SW6	OFF	Normal defrost
SW1	***number "3"***	***Module selection***		ON	Compelling defrost
	OFF	APY module		***number "3"***	Compelling selection
	ON	Homemade moudule		OFF	Normal
	number"4"	***Moter selection***		ON	Compelling cooling
	OFF	AC 3-speed		***number "4"***	Compelling heating
	ON	DC fan motor		OFF	Normal
number "5"	***number"6"***	***Defrost parameter***		ON	Compelling heating
OFF	OFF	8			
OFF	ON	6			
ON	OFF	10			
ON	ON	8			
	number"7"	***Power source selection***			
	OFF	Triplicate-phase			
	ON	Single-phase			
	number"8"	***Quiet operation selection***			
	OFF	without			
	ON	with			

Outdoor PCB 0151800054

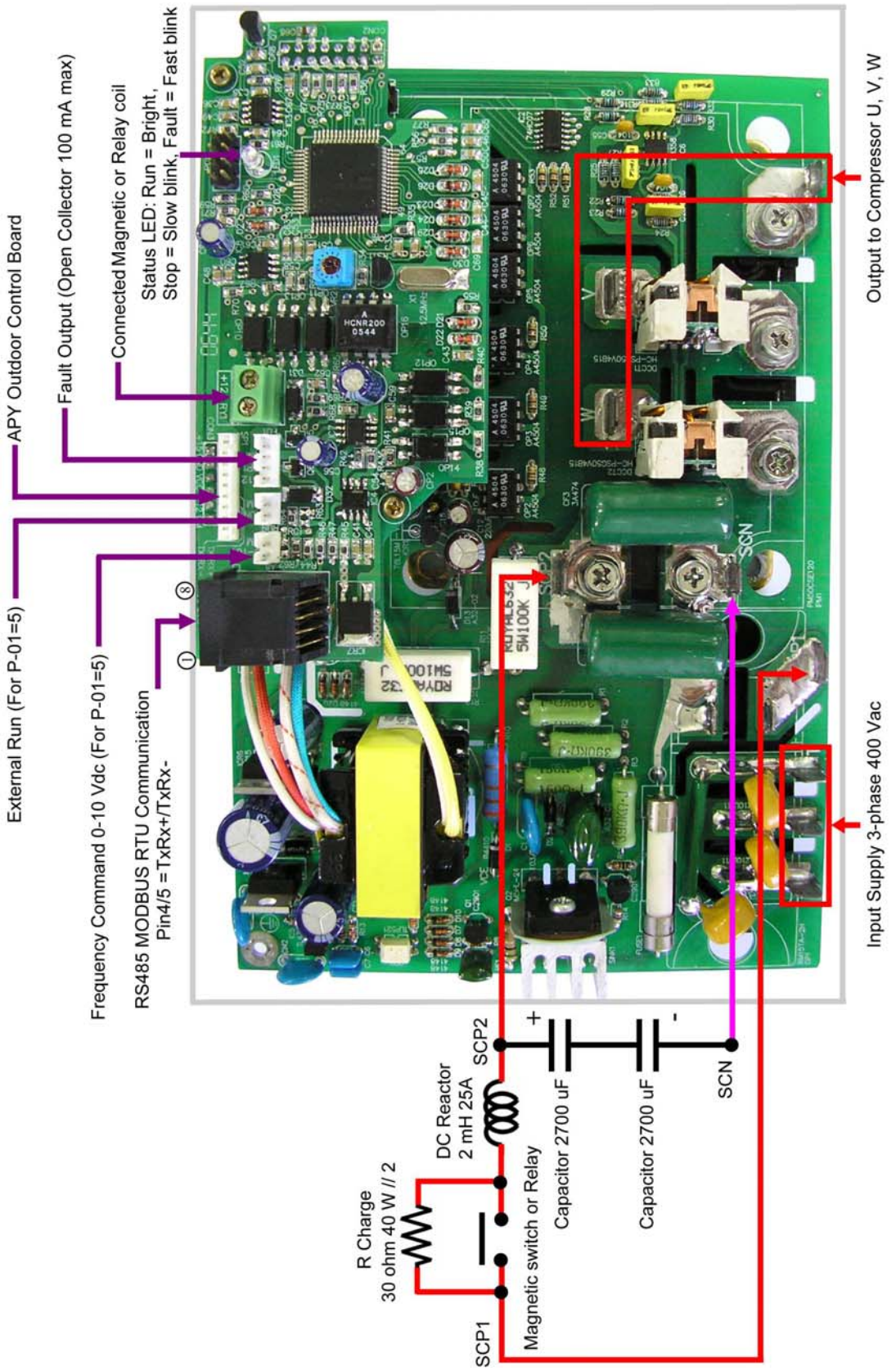


LED1 red light:power indicator and failure alarm lamp.when outdoor is normal,LED1 is on,or falsh when failure occurs.

LED2 green light:communication indocator lamp.when communication between indoor and outdoor is normal,LED2 will be on,or will be off.

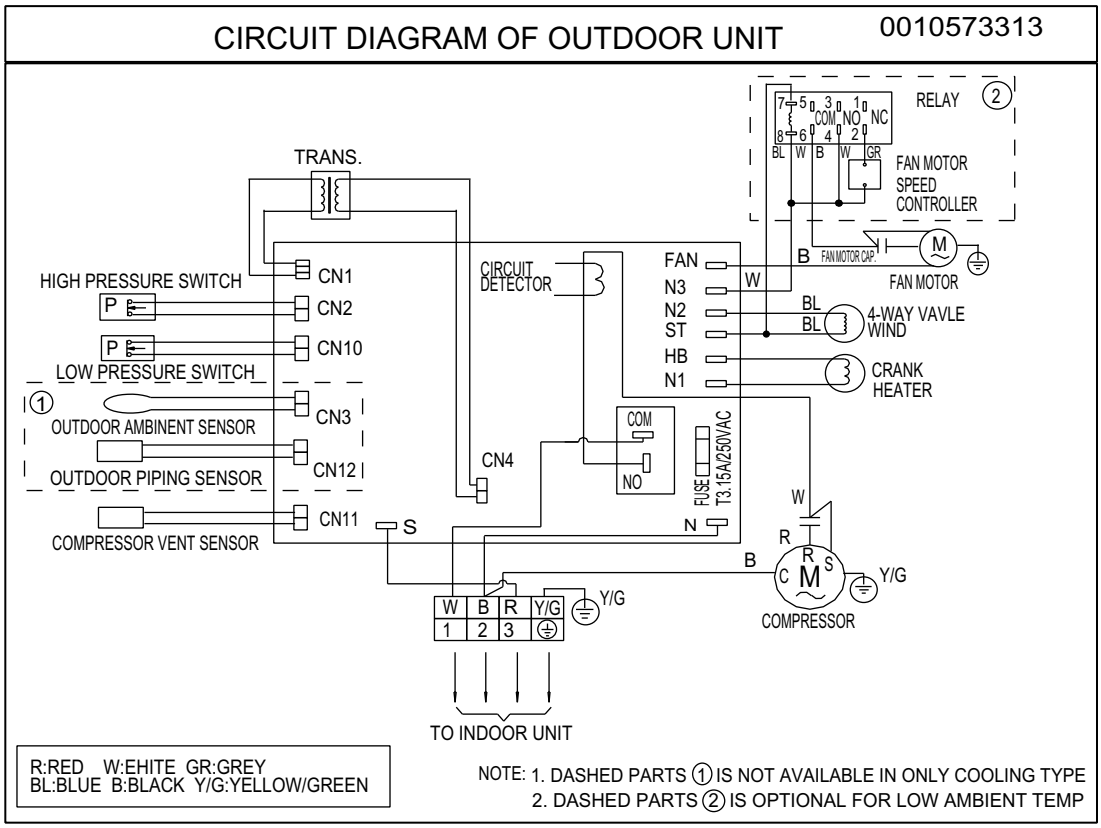
Wiring Diagram (B25-4T)

Power Module

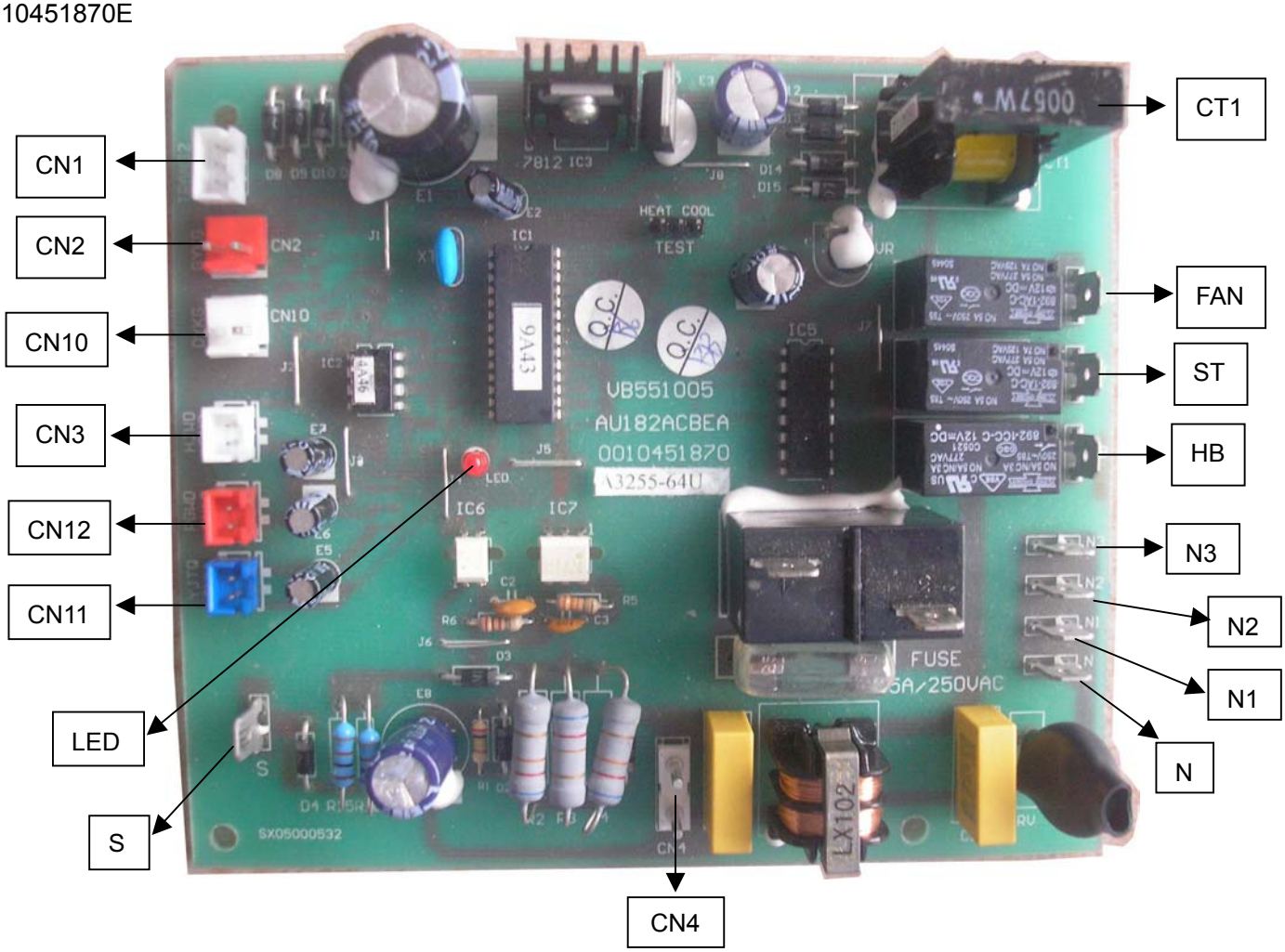


1.2.2 For fixed frequency outdoor units

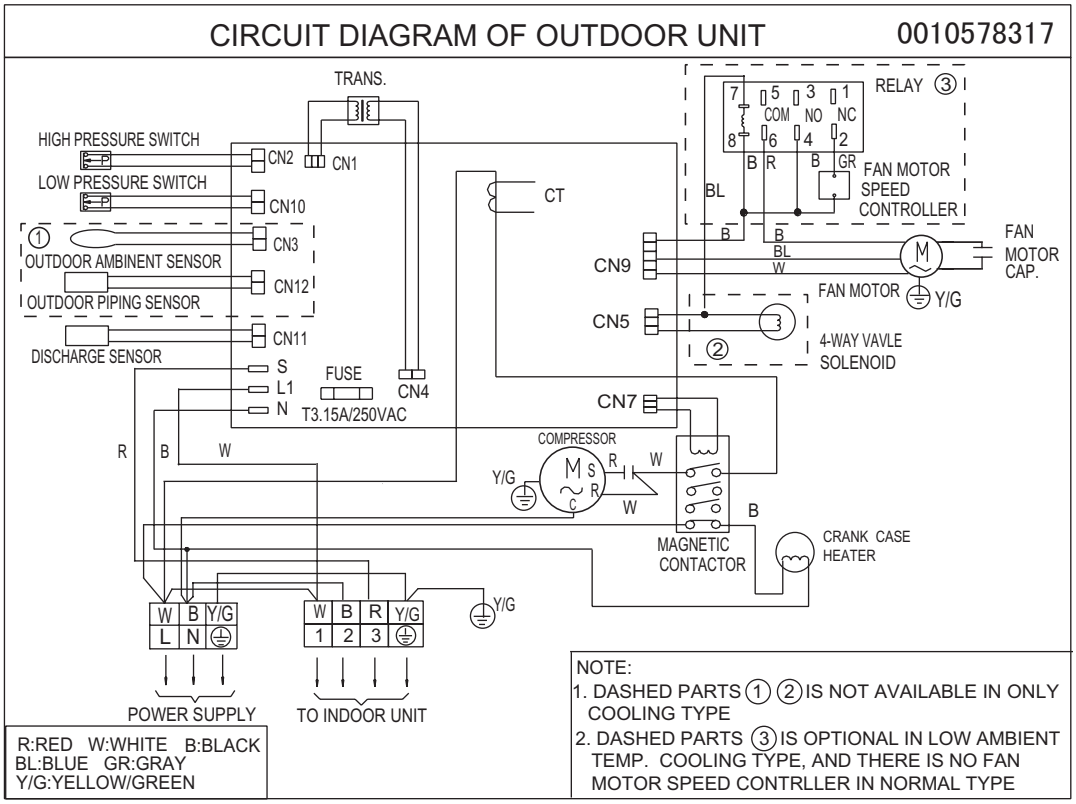
AU122AEEAA, AU182AEEAA



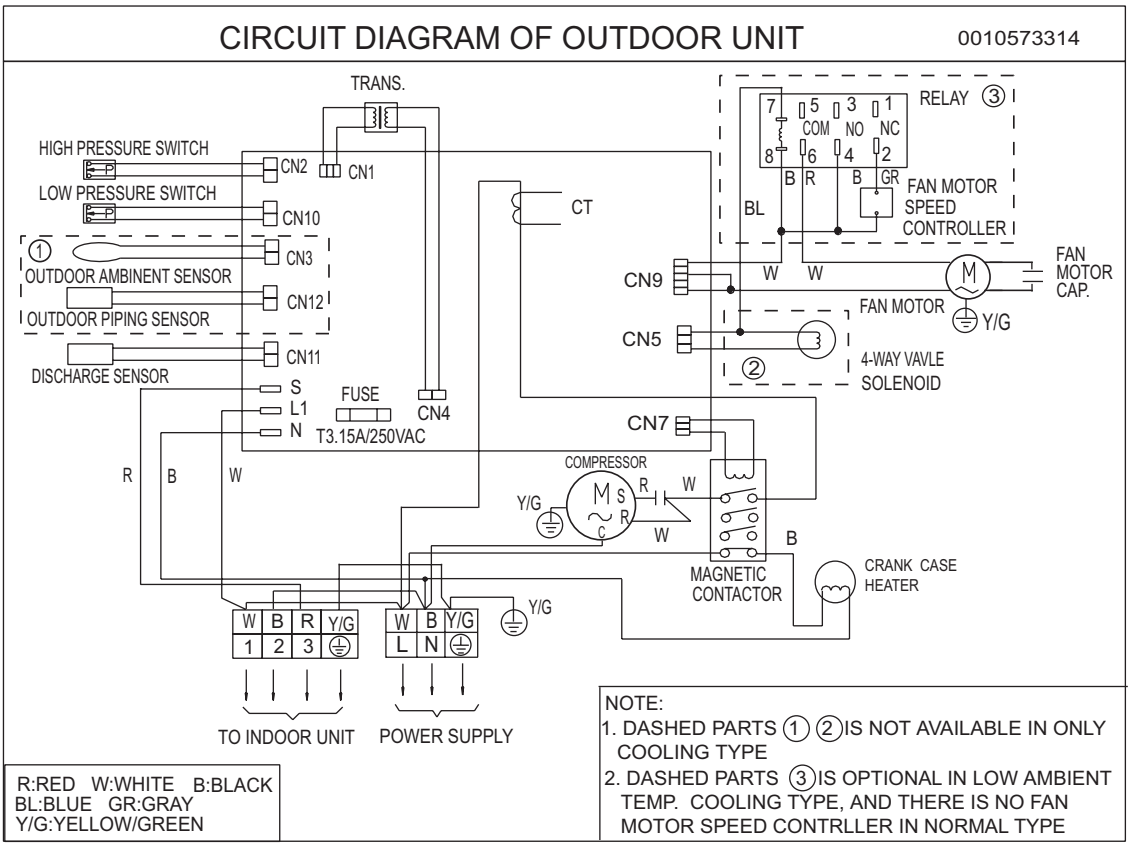
0010451870E



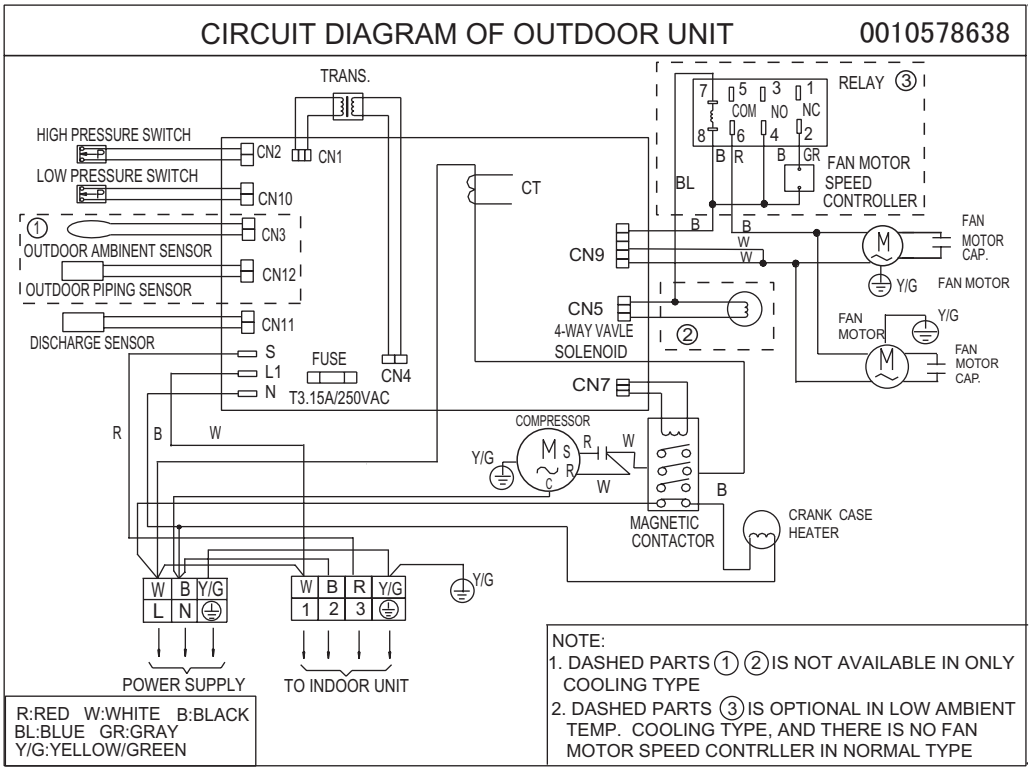
AU242AGEAA



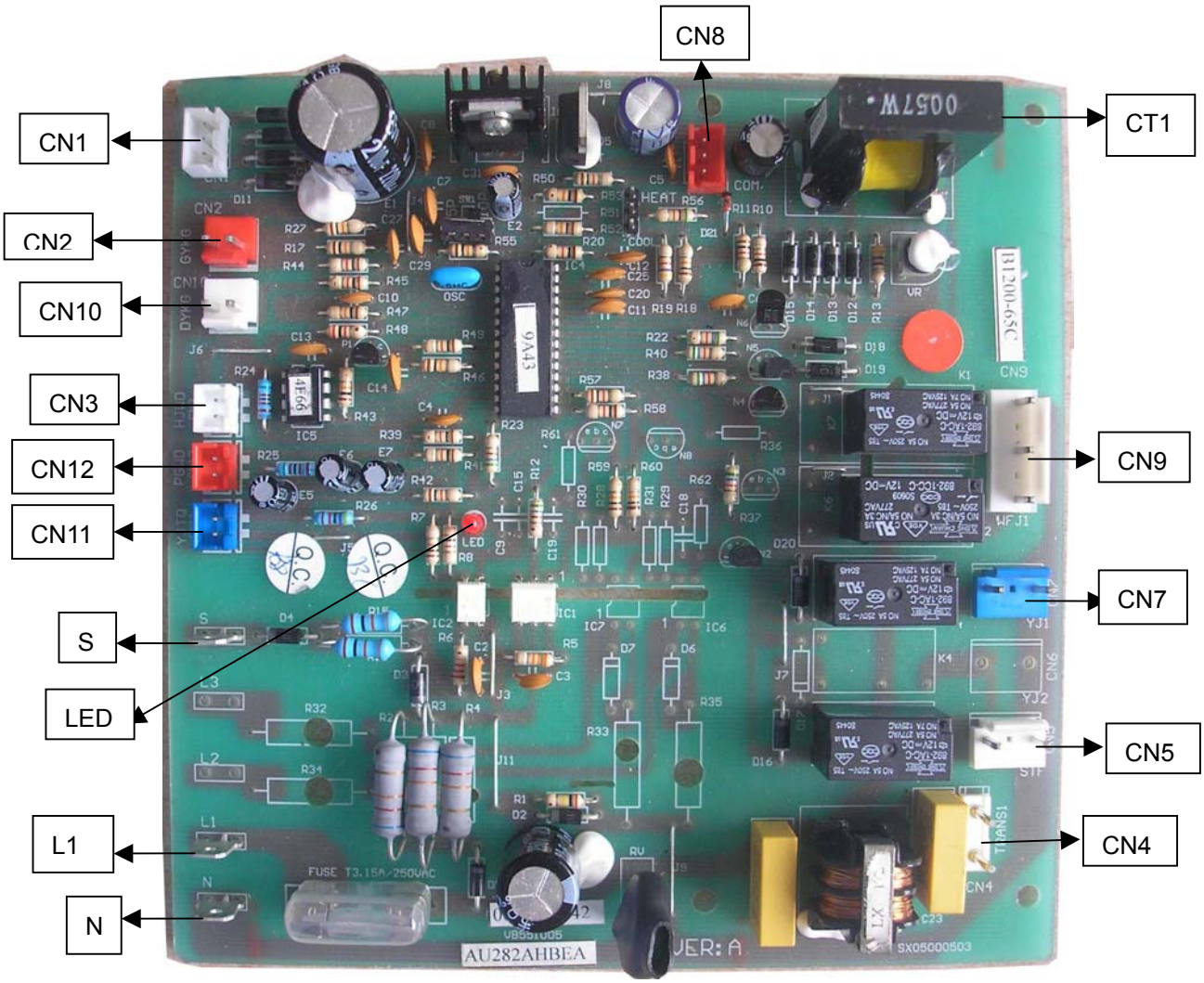
AU282AHEAA



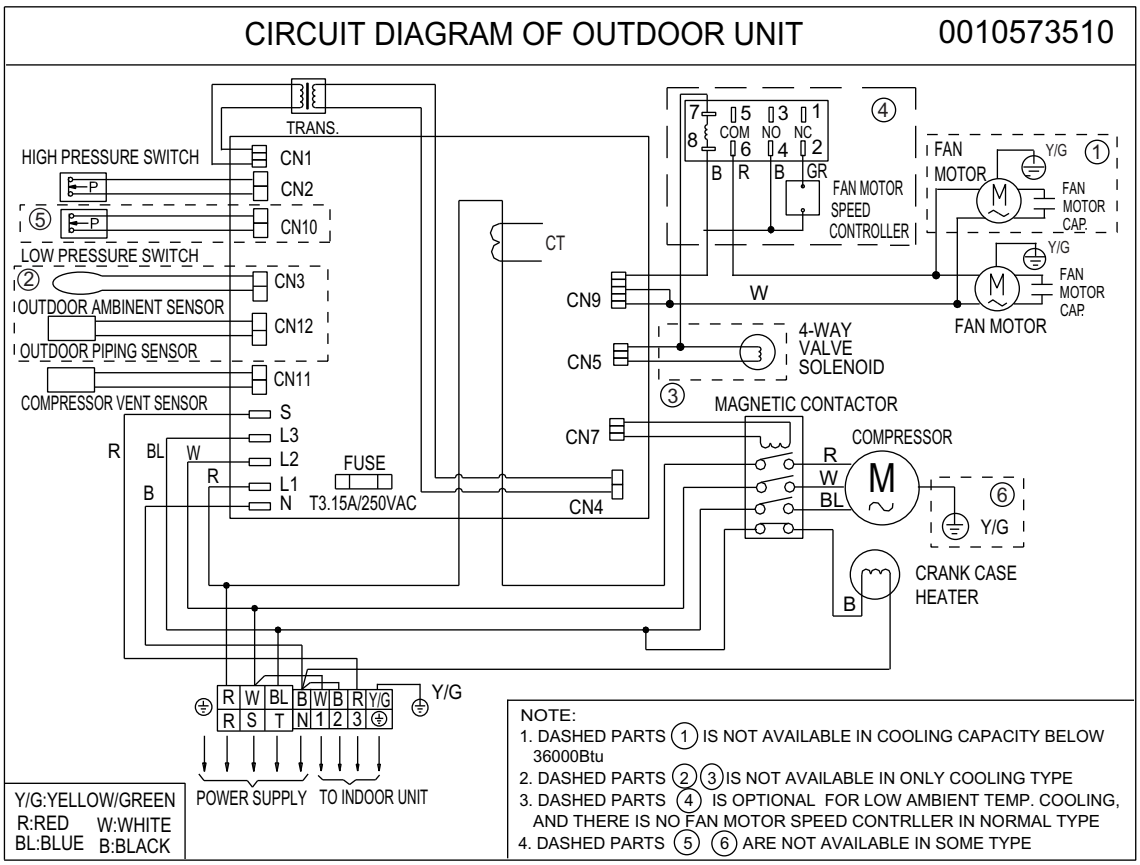
AU362AIEAA



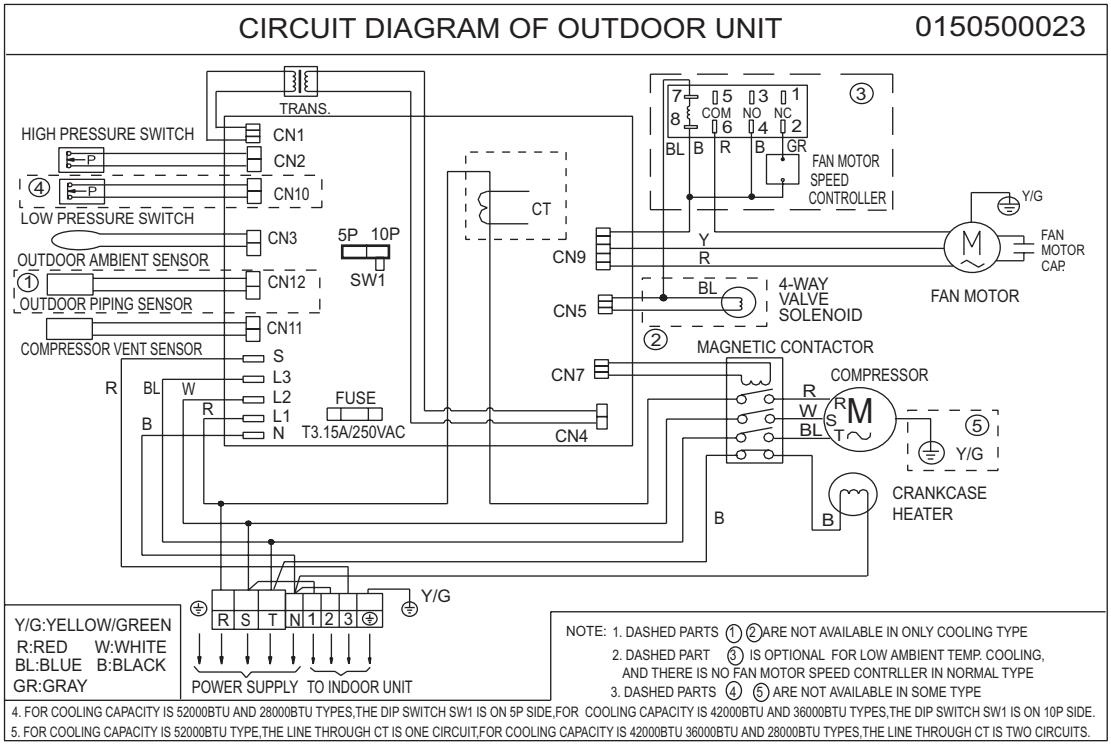
0010452442E



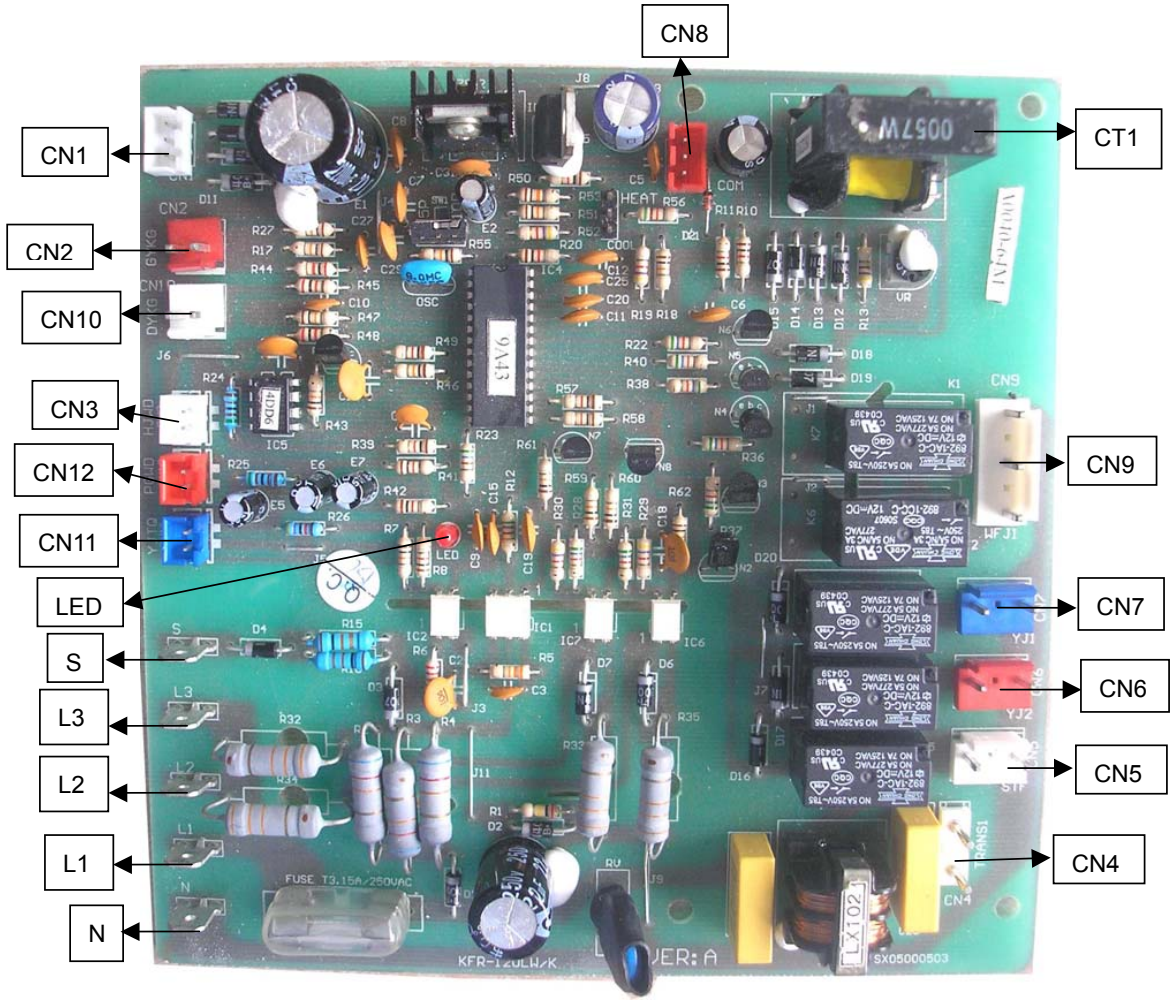
AU28NAHEAA, AU36NAIEAA, AU48NAIEAA, AU60NAIEAA



AU42NALEAA



0010452378E



2. Sensor characteristic

model	name	code	sub-part code	characteristic
AU242AGERA	outdoor ambient temperature sensor	0010450192	001A3800082	R25=10KΩ±3% B25/50=3700K±3%
	mid-condenser temperature sensor	0010450195	001A3800093	R25=10KΩ±3% B25/50=3700K±3%
	oil temperature sensor	0010451305	001A3800093	R25=10KΩ±3% B25/50=3700K±3%
	discharging temperature sensor	0010451313	001A3800096	R80=50KΩ±3% B25/80=4450K±3%
AB242ACERA AB282ACEAA AB282AEERA AB362ACERA AB482ACEAA AB602ACEAA	ambient temperature sensor	001A3900159	001A3900003	R25=23KΩ±2.5% B25/50=4200K±3%
	coil temperature sensor	001A3900006	001A3900004	R25=10KΩ±3% B25/50=3700K±3%
AD122ALERA AD242ALERA AD182ALEAA AC242ACEAA	ambient temperature sensor	0010451323	001A3900003	R25=23KΩ±2.5% B25/50=4200K±3%
	coil temperature sensor	001A3900006	001A3900004	R25=10KΩ±3% B25/50=3700K±3%
AD242AMERA AD282AMERA AD362AMERA	ambient temperature sensor	0010451323	001A3900003	R25=23KΩ±2.5% B25/50=4200K±3%
	coil temperature sensor	001A3800128	001A3900004	R25=10KΩ±3% B25/50=3700K±3%
AB122ACERA AC122ACERA AB182ACERA AC242ACERA AB482AEERA AC482AFERA AB182ACEAA AC182ACEAA AB242ACEAA AD242ALEAA AD242AMEAA AC282AFEAA AC282AFERA AD282AMEAA AD282AHEAA AB362ACEAA AC362AFEAA AC362AFERA AD362AMEAA AD362AHEAA AB422AEEAA AD482AHEAA AD602AHEAA	ambient temperature sensor	001A3900005	001A3900003	R25=23KΩ±2.5% B25/50=4200K±3%
	coil temperature sensor	001A3900006	001A3900004	R25=10KΩ±3% B25/50=3700K±3%

AU182AEEAA	outdoor ambient temperature sensor	001A3900110	001A3800090	R25=5KΩ±3%，B25/50=3450K±3%
	coil temperature sensor	0010451312	001A3800091	R25=5KΩ±3%，B25/50=3450K±3%
	discharging temperature sensor	0010451313	001A3800096	R80=50KΩ±3% B25/80=4450K±3%
AU242AGEAA AU282AHEAA AU362ALEAA AU36NALEAA AU42NALEAA AU48NAIEAA AU60NAIEAA	outdoor ambient temperature sensor	001A3900110	001A3800090	R25=5KΩ±3% B25/50=3450K±3%
	coil temperature sensor	0010451314	001A3800091	R25=5KΩ±3%，B25/50=3450K±3%
	discharging temperature sensor	0010450398	001A3800096	R80=50KΩ±3% B25/80=4450K±3%
AC482AFEAA AC602AFEAA	ambient temperature sensor	001A3900005	001A3900003	R25=23KΩ±2.5% B25/50=4200K±3%
	coil temperature sensor	001A3800128	001A3900004	R25=10KΩ±3% B25/50=3700K±3%
AD482AMEAA	ambient temperature sensor	001A3900159	001A3900003	R25=23KΩ±2.5% B25/50=4200K±3%
	coil temperature sensor	001A3800128	001A3900004	R25=10KΩ±3% B25/50=3700K±3%
AP482AKEAA AP602AKEAA	coil temperature sensor	0010401922	001A3900004	R25=10KΩ±3% B25/50=3700K±3%
	temperature sensor	001A3900159	001A3900003	R25=23KΩ±2.5% B25/50=4200K±3%
AU122AEERA	Outdoor ambient temp. sensor	0010450192	001A3800082	R25=10KΩ±2.5% B25/50=4200K±3%
	Compressor sunction sensor	001A3900062	/	R25=10KΩ±3% B25/50=3700K±3%
	Outdoor defrost sensor	0010450194	001A3800093	R25=10KΩ±3% B25/50=3700K±3%
	Compressor discharge sensor	0010450196	001A3800096	R80=50KΩ±3% B25/80=4450K±3%
	Condenser inlet temp. sensor	0010451307	001A3800093	R25=10KΩ±3% B25/50=3700K±3%
AU182AFERA	outdoor ambient temperature sensor	0010450192	001A3800082	R25=10KΩ±3% B25/50=3700K±3%
	mid-condenser temperature sensor	0010450195	001A3800082	R25=10KΩ±3% B25/50=3700K±3%
	oil temperature sensor	0010451305	001A3800093	R25=10KΩ±3% B25/50=3700K±3%
	discharging temperature sensor	0010451313	001A3800096	R80=50KΩ±3% B25/80=4450K±3%

AU282AHERA AU362AHERA	outdoor ambient temperature sensor	0010450192	001A3800082	R25=10KΩ±3% B25/50=3700K±3%
	mid-condenser temperature sensor	0010450195	001A3800082	R25=10KΩ±3% B25/50=3700K±3%
	oil temperature sensor	0010451305	001A3800093	R25=10KΩ±3% B25/50=3700K±3%
	discharging temperature sensor	0010451313	001A3800096	R80=50KΩ±3% B25/80=4450K±3%
	Condenser inlet temp. sensor	0010451329	001A3800093	R25=10KΩ±3% B25/50=3700K±3%
AC182ACERA AD182AMERA	temperature sensor	001A3900005	001A3900003	R25=23KΩ±2.5% B25/50=4200K±3%
	coil temperature sensor	001A3900006	001A3900004	R25=10KΩ±3% B25/50=3700K±3%
AS182AVERA	coil temperature sensor	001A3900059	/	1.R25=10KΩ±3% B25/50=3700K±3% 2.R25=23KΩ±2.5% B25/50=4200K±3%
AP422ACEAA	ambient temperature sensor	001A3800127	001A3900003	R25=23KΩ±2.5% B25/50=4200K±3%
	coil temperature sensor	0010401922	001A3900004	R25=10KΩ±3% B25/50=3700K±3%
AD282AHEAA AD362AHEAA	ambient temperature sensor	001A3900005	001A3900003	R25=23KΩ±2.5% B25/50=4200K±3%
	coil temperature sensor	001A3800128	001A3900004	R25=10KΩ±3% B25/50=3700K±3%
AU48NAIERA	Outdoor ambient temp. sensor	0010450192	001A3800082	R25=10KΩ±2.5% B25/50=4200K±3%
	Compressor sunction sensor	0010450194	001A3900004	R25=10KΩ±3% B25/50=3700K±3%
	Outdoor defrost sensor	0010451307	001A3900004	R25=10KΩ±3% B25/50=3700K±3%
	Compressor discharge sensor	0010451303	001A3800096	R80=50KΩ±3% B25/80=4450K±3%
	mid-condenser temperature sensor	0010451329	001A3900004	R25=10KΩ±3% B25/50=3700K±3%
AD482ANERA	Indoor ambient temp. sensor	001A3900159	001A3900003	R25=23KΩ±2.5% B25/50=4200K±3%
	Indoor coil temp. sensor	0010401922	001A3900004	R25=10KΩ±3% B25/50=3700K±3%
AD482AHERA	Indoor ambient temp. sensor	001A3900005	001A3900003	R25=23KΩ±2.5% B25/50=4200K±3%
	Indoor coil temp. sensor	0010401922	001A3900004	R25=10KΩ±3% B25/50=3700K±3%

R25=5KΩ±1% B25/50=3450K±1%							
T(℃)	Rnom(KΩ)	T(℃)	Rnom(KΩ)	T(℃)	Rnom(KΩ)	T(℃)	Rnom(KΩ)
-20℃	47.12	1℃	16.55	22℃	5.744	43℃	2.339
-19℃	45.17	2℃	15.7	23℃	5.482	44℃	2.25
-18℃	43.24	3℃	14.89	24℃	5.235	45℃	2.165
-17℃	41.35	4℃	14.13	25℃	5	46℃	2.084
-16℃	39.49	5℃	13.41	26℃	4.778	47℃	2.006
-15℃	37.68	6℃	12.73	27℃	4.567	48℃	1.932
-14℃	35.92	7℃	12.08	28℃	4.36	49℃	1.862
-13℃	34.21	8℃	11.47	29℃	4.179	50℃	1.793
-12℃	32.56	9℃	10.9	30℃	3.993	51℃	1.729
-11℃	30.37	10℃	10.35	31℃	3.819	52℃	1.667
-10℃	29.44	11℃	9.837	32℃	3.657	53℃	1.608
-9℃	27.57	12℃	9.351	33℃	3.514	54℃	1.551
-8℃	26.57	13℃	8.892	34℃	3.368	55℃	1.457
-7℃	25.22	14℃	8.458	35℃	3.23	56℃	1.445
-6℃	23.94	15℃	8.048	36℃	3.098	57℃	1.395
-5℃	22.72	16℃	7.661	37℃	2.973	58℃	1.347
-4℃	21.55	17℃	7.295	38℃	2.845	59℃	1.301
-3℃	20.45	18℃	6.949	39℃	2.741	60℃	1.257
-2℃	19.39	19℃	6.622	40℃	2.633		
-1℃	18.39	20℃	6.313	41℃	2.536		
0℃	17.45	21℃	6.021	42℃	2.432		

R25=23KΩ±2.5% B25/50=4200K±3%			
T(℃)	Rnom(KΩ)	T(℃)	Rnom(KΩ)
-20℃	281.34	32℃	16.65
-19℃	263.56	33℃	15.92
-18℃	247.04	34℃	15.22
-17℃	231.66	35℃	14.56
-16℃	217.35	36℃	13.93
-15℃	204.02	37℃	13.34
-14℃	191.61	38℃	12.77
-13℃	180.04	39℃	12.23
-12℃	169.24	40℃	11.71
-11℃	159.17	41℃	11.22
-10℃	149.77	42℃	10.76
-9℃	140.99	43℃	10.31
-8℃	132.78	44℃	9.89
-7℃	125.11	45℃	9.49
-6℃	117.93	46℃	9.1
-5℃	111.22	47℃	8.74
-4℃	104.93	48℃	8.39
-3℃	99.04	49℃	8.05
-2℃	93.52	50℃	7.73
-1℃	88.35	51℃	7.43
0℃	83.5	52℃	7.14
1℃	78.94	53℃	6.86
2℃	74.67	54℃	6.6
3℃	70.65	55℃	6.34
4℃	66.88	56℃	6.1
5℃	63.33	57℃	5.87
6℃	60	58℃	5.65
7℃	56.86	59℃	5.44
8℃	53.91	60℃	5.24
9℃	51.13		
10℃	48.51		
11℃	46.04		
12℃	43.72		
13℃	41.52		
14℃	39.45		
15℃	37.5		
16℃	35.66		
17℃	33.92		
18℃	32.27		
19℃	30.72		
20℃	29.25		
21℃	27.86		
22℃	26.54		
23℃	25.3		
24℃	24.12		
25℃	23		
26℃	21.94		
27℃	20.94		
28℃	19.99		
29℃	19.09		
30℃	18.23		
31℃	17.42		

R80=50KΩ±3% B25/80=4450K±3%			
T(℃)	Rnom(KΩ)	T(℃)	Rnom(KΩ)
-30	11600	22	592
-29	10860	23	553.6
-28	10170	24	536.6
-27	9529	25	511.1
-26	8932	26	486.9
-25	8375	27	464
-24	7856	28	442.3
-23	7372	29	421.7
-22	6920	30	402.1
-21	6498	31	383.6
-20	6104	32	366
-19	5736	33	349.3
-18	5392	34	333.5
-17	5071	35	318.4
-16	4770	36	304.1
-15	4488	37	290.5
-14	4225	38	277.6
-13	3978	39	265.3
-12	3747	40	253.6
-11	3531	41	242.5
-10	3328	42	232
-9	3138	43	221.9
-8	2960	44	212.3
-7	2793	45	203.2
-6	2636	46	194.5
-5	2489	47	186.3
-4	2351	48	178.4
-3	2221	49	170.9
-2	2099	50	163.7
-1	1984	51	155.9
0	1877	52	150.4
1	1775	53	144.2
2	1680	54	138.3
3	1590	55	132.7
4	1506	56	127.3
5	1426	57	122.1
6	1351	58	117.2
7	1280	59	112.5
8	1214	60	108
9	1151	61	103.8
10	1092	62	99.68
11	1036		
12	983.2		
13	933.4		
14	886.4		
15	841.9		
16	800		
17	760.8		
18	722.8		
19	687.3		
20	653.8		
21	622		

R25=10KΩ±3% B25/50=3700K±3%			
T(℃)	Rnom(KΩ)	T(℃)	Rnom(KΩ)
-20	90.79	32	7.52
-19	85.72	33	7.23
-18	80.96	34	6.95
-17	76.51	35	6.68
-16	72.33	36	5.43
-15	68.41	37	5.6
-14	64.73	38	5.59
-13	61.27	39	5.73
-12	58.02	40	5.52
-11	54.97	41	5.32
-10	52.1	42	5.12
-9	49.4	43	4.93
-8	46.86	44	4.9
-7	44.46	45	4.58
-6	42.21	46	4.42
-5	40.08	47	4.26
-4	38.08	48	4.11
-3	36.19	49	3.97
-2	34.41	50	3.83
-1	32.73	51	3.7
0	31.14	52	3.57
1	29.64	53	3.45
2	28.22	54	3.33
3	26.4	55	3.22
4	25.61	56	3.11
5	24.41	57	3.11
6	23.27	58	2.9
7	22.2	59	2.81
8	21.18	60	2.72
9	20.21	61	2.63
10	19.3	62	2.54
11	18.43	63	2.49
12	17.61	64	2.38
13	16.83	65	2.3
14	16.09	66	2.23
15	15.38	67	2.16
16	14.71	68	2.09
17	14.08	69	2.03
18	13.48	70	1.96
19	12.9	71	1.9
20	12.36	72	1.85
21	11.84	73	1.79
22	11.34	74	1.73
23	10.87	75	1.68
24	10.43	76	1.63
25	10	77	1.58
26	9.59	78	1.54
27	9.21	79	1.49
28	8.84	80	1.45
29	8.48		
30	8.15		
31	7.83		

3. Electric control functions

3.1 Electric control function for the unit with 0010452478E and 0010452325E unit

1.General features

1.1 The running mode includes AUTO, COOL, DRY, FAN and HEAT; can set the compulsory cooling function; AUTO/HIGH/LOW 3-speed for indoor motor; can set the TIMER ON,TIMER OFF, TIMER ON/OFF and SLEEP function; auto-check water level and control the water drainage of water pump; the swing is controlled by stepping motor; 3-minute protection for compressor; anti-overload protection, anti-freezed protection and bad-sendor protection; check indoor ambient temperature, indoor coil temperature and outdoor coil temperature; can be controlled by central controller.

1.2 LED indication: when the unit is switched on by the controller, the POWER LED will be ON, when being switched off, the POWER LED will be OFF. If the controller is in TIMER and SLEEP mode, the TIMER LED will be on; if it is not in TIMER and SLEEP mode, the TIMER LED will be off. When the compressor is running, the compressor LED will be on; when it stops, this LED will be off.

1.3 Temperature compensation control: select the 4 degree compensation or no compensation by the dip switch on indoor PCB.

1.4 There is set temperature in AUTO mode as default.

1.5 Tr stands for room temperature; Ts stands for set temperature; Tc stands for defrosting temperature; t stands for compensation temperature; ΔT stands for temperature difference.

1.6 $\Delta T=Tr-Ts+t$ (t=0 in cooling mode)

1.7 $\Delta T=Ts-Tr+t$ (t=compensation value, with compensation in heating mode; t=0, without compensation in heating mode)

2. Indoor AUTO FAN control

2.1 If the unit enters AUTO FAN for the first time, when $\Delta T>2$, select high speed; when $\Delta T\leqslant 0$, select low speed; or it will select med speed; when thermostat is OFF, fan will be low speed. (the conversion temperature difference is 1 degree).

2.2 If the present fan speed is AUTO HIGH, when $\Delta T<2$, fan speed will change to AUTO MED.

2.3 If the present fan speed is AUTO MED, when $\Delta T<0$, fan speed will change to AUTO LOW; when $\Delta T>3$, fan speed will change to AUTO HIGH.

2.4 If the present fan speed is AUTO LOW, when $\Delta T>1$, fan speed will chenge to AUTO MED.

2.5 Fan speed conversion in AUTO FAN mode: the conversion will delay for 3 minutes from HIGH to LOW, and no delay from LOW to HIGH.

2.6 When the fan speed is HIGH/LOW/MED, on the condition that the protection does not act, the unit will run at the set fan speed; when the protection acts, for the sake of the normal operation, the fan speed will be forced to conversion; in Dry mode, fan motor will be changed as request.

3. AUTO mode control

3.1 When entering AUTO for the first time, the unit will select the running mode due to the below conditions, then perform the selected mode.

$Tr\geqslant Ts-3℃$ select COOL mode (includes FAN mode)

$Tr<Ts-3℃$ select HEAT or FAN mode

3.2 After entering the AUTO mode, the mode can change over among COOL, HEAT or FAN modes according to the indoor ambient temperature (conversion temperature difference is $\pm 3℃$).

3.3 If the unit is in COOL mode, when it arrives compressor-stop temperature, the compressor will stop; after compressor stops for 15 minutes, the unit will check the room temperature, if $Tr<Ts-3℃$, the unit will enter HEAT or FAN mode, or the unit will still be in COOL mode;

3.4 For the heat pump unit, if the unit is in HEAT mode at present, when it arrives compressor-stop the unit will enter HEAT or FAN mode, or the unit will still be in COOL mode;

3.4 For the heat pump unit, if the unit is in HEAT mode at present, when it arrives compressor-stop temperature, the compressor will stop; after the compressor stops for 15 minutes, the unit will check the room temperature, if Tr＞Ts+3℃, the unit will enter COOL mode, or it will still be in HEAT mode.

3.5 For cooling only unit, if the unit is at FAN mode, if Tr＞Ts+3℃, the unit will enter COOL mode.

3.6 When the unit is in HEAT mode, if indoor heat exchanger temperature rises up to over 63℃, the unit will change into COOL mode. And within 1 hour, the heat exchanger temperature will not be limited, the heating operation will stop temporarily. 1 hour later, the unit will select the proper mode due to the above condition.

4. COOL mode control

4.1 4-way valve being powered off, compressor run/stop will depends on the temperature difference between the room temperature and the set temperature.

4.2 In cooling mode, every time the compressor starts up, within 6 minutes, the compressor will not be limited by the temperature sensor, but the set temperature change, shutoff signal and protection action will not be limited by 6-minute protection, and the compressor can stop immediately.

4.3 △T≥1 compressor will run;

△T≤-1 compressor will stop;

-1<△T<1 compressor will stay in original state

4.4 Anti-freezed protection (invalid in compulsory operation, trial running, heating mode)

When the unit has run for over 6 minutes after compressor starts up, if indoor coil temperature Tg<1℃, the compressor and the outdoor motor will stop, and the unit will change to FAN mode; 9 minutes later after compressor stops and when indoor coil temperature rises to 10℃, the unit will resume to COOL mode, the compressor and the outdoor motor will run again.

4.5 Temperature cutoff protection

In cooling mode, the unit will check indoor coil temperature every time the compressor has run for 1 minutes, when indoor coil temperature Tg>Tr＋5, the unit will stop and 3 minutes later restart up; if the temperature cutoff occurs for 3 times continuously, the unit will stop and alarm.

5. DRY mode control

5.1 When the uint enters DRY mode for the first time, the compressor, outdoor motor and indoor motor will perform according to the below conditions:

△T＞2, the compressor and the outdoor motor will run continuously, indoor motor will run at the set speed, this area is defined as Area A;

0≤△T≤2, the compressor and the outdoor motor will always run for 10 minutes and then stop for 6 minutes, indoor motor will be LOW speed, this area is defined as Area B;

△T＜0, the compressor and the outdoor motor will stop, indoor motor will run at Low speed, this area is defined as Area C.

5.2 After the unit is running in DRY mode, the system will change over among Area A, Area B, and Area C (the conversion temperature difference ±1℃)

If the system is in Area A, when △T＜1, change to Area B;

If the system is in Area C, when △T>1, change to Area B;

If the system is in Area B, when △T>3, change to Area A;

When△T＜－1, change to Area C.

The inverter unit DRY operation:

Tr-Ts＞2℃, running in COOL mode;

Tr-Ts≤2℃, the compressor will run at 34Hz and 60Hz by turns, the duration time is 6 minutes at 34Hz, and the duration time is 10 minutes at 60Hz;

Tr-Ts＜15℃, (Ts=16℃), the compressor wil run intermittently, run for 10 minutes and stop for 6

minutes by turns at 60Hz.

6. FAN mode control

The compressor and the outdoor motor will stop running, indoor motor can be set at high/med/low speed, the fan blade can swing or stay at one position. In this mode, you can set the TIMER and SLEEP function.

7. HEAT mode control

7.1 4-way valve control: in heating mode, compressor startup----4-way valve being electrified 10 seconds ahead; compressor running----4-way valve retains original state; compressor shutoff----4-way valve being powered off 2 minutes and 50 seconds later (except for defrosting, 4-way valve being electrified 5 seconds ahead, and being powered off 55 seconds later).

7.2 In heating mode, for everytime the compressor startup (thermostat ON), within 6 minutes, the 4-way valve will not be limited by the temperature sensor, but for the set temperature change, shutoff signal and the protection, the compressor can stop immediately without 6-minute limitation.

7.3 $\Delta T \geq 1$ compressor running, indoor motor runs at anti-cold air mode;

$\Delta T \leq -1$ compressor stops, indoor motor runs at blowing remaining heat mode;

$-1 < \Delta T < 1$ compressor retains original state

7.4 Overheat protection (for the unit with outdoor PCB, the outdoor motor is controlled by outdoor unit, but the compressor is still controlled by indoor unit, and their temperature points will not be accordant completely)

In heating mode, compressor has started up and indoor motor has run for over 30 seconds, if indoor coil temperature Tg>60℃, outdoor motor will stop; if Tg<56℃, and outdoor motor has stop for 45s, outdoor motor will run again; if Tg>73℃, the compressor will stop and indoor motor will run according to the thermostat state. After the compressor stops for 3 minutes and Tg reduces to 48℃, the unit will resume to heating mode, and the compressor and the outdoor motor will run again.

7.5 Temperature cutoff protection

In heating mode (besides the defrosting), the unit will check indoor coil temperature every time the compressor has run for 1 minutes, when indoor coil temperature Tg＜Tr-5, the unit will stop and 3 minutes later restart up; if the temperature cutoff occurs for 3 times continuously, the unit will stop and alarm.

7.6 Anti-cold air function in heating mode

After entering heating mode, or last defrosting is over, the compressor will start up, if Tg＜28℃, indoor motor will stop; if 38℃>Tg≥28℃, indoor motor will run at low speed; if Tg≥38℃ or the compressor has run for over 4 minutes, indoor motor will run at the set speed; once the motor has started up, it will not stop because of Tg reduction.

7.7 Blowing remaining heat function

In heating mode, the thermostat is OFF, the compressor stops, indoor motor will run at low speed until Tg＜28℃ and has run for 50 seconds at least.

7.8 Note: in heating mode, “the compressor stops----indoor motor delays to stop” adjust if the pipe blows remaining heat; “the compressor startup----indoor motor delays to start up” adjust if the pipe is anti-cold air; in other conditions, the compressor and the indoor motor are allowable not to be in company. In cooling mode, the motor will run according to the control, not together with the compressor.

7.9 Defrosting function in heating mode

In defrosting and when the compressor resumes to run for 3 minutes after defrosting is over, the unit will not adjust the sensor failure.

Manual defrost: In heating mode, the set temperature 30℃ and in high speed, in 5 seconds, press

SLEEP button 6 times continuously, then the buzzer will sound 3 times, you can enter the manual defrosting. At this moment, the unit will not adjust the enter condition of defrost and begin to defrost function directly, whose procedure is as the same as the auto defrost; the quit condition is that the defrosting time is up to 5 minutes.

Auto defrost:

Project 1: with outdoor PCB

a. Enter condition

In heating mode, the compressor has run for 45 minutes continuously.

The compressor has run for 60 minutes in all and has run for over 5 minutes continuously.

If one of the above conditions can be met, and indoor unit receives the defrosting temp. arrival signal from outdoor, the unit begins to defrost and sends the defrosting beginning signal to outdoor.

b. Quit condition

The defrosting temp. arrival signal from outdoor is cancelled or the defrosting time is over 12 minutes (including each 1-minute conversion time for before and after defrosting), the defrosting is over and sends the defrosting cancelled signal to outdoor unit.

Project 2: For the unit without outdoor PCB and defrosting sensor

a. Enter condition

- Indoor occurs overload protection and outdoor motor stops, if outdoor motor can not enter overheat state in 10 minutes after it runs again, also the compressor runs for 45 minutes in all and has run for over 20 minutes continuously, Tg is below 43℃;
- The compressor runs for 20 minutes continuously, Tg will reduce 1℃ for every 6 minutes, and Tg is below 40℃, 5 minutes later after the compressor restarts up.
- The compressor runs for 3 hours in all and has run for over 20 minutes continuously, Tg is below 40℃;
- The temperature difference between Tg and Tr is below 16℃ and the compressor runs for 45 minutes in all and has run for over 20 minutes continuously, Tg is below 40℃

If one of the above conditions can be met, the unit will enter the defrost.

b. Quit condition

The defrosting time is over 10 minutes (excluding conversion time for before and after defrosting).

Project 3: For the unit without outdoor PCB but with defrosting sensor

a. Enter condition

In heating mode, after the compressor starts up, the compressor and the outdoor motor have run for at least 5 minutes;

The compressor total running time is over 30 minutes, Tp<-18℃, enter defrosting (signal time over 5 minutes);

The compressor total running time is over 30 minutes, Tp<-6℃, enter defrosting (signal time over 5 minutes);

b. Quit condition

The defrosting time is over 10 minutes (excluding conversion time for before and after defrosting). Or Tp>12℃, quit defrosting.

After defrosting begins, the loads will operate as below:

a. In defrosting:

For the unit with outdoor PCB: the operation of the compressor and the 4-way valve is controlled by indoor unit, the outdoor motor operation is controlled by outdoor unit.

For the uit without outdoor PCB: the compressor and the outdoor motor stop, meanwhile, indoor motor will stop too. 55 seconds later, 4-way valve will close. Another 5 seconds later, the

compressor starts up.

b. Quit defrosting:

The compressor will not stop, outdoor motor starts up and after it runs for 30 seconds, 4-way valve will open, indoor motor will run as anti-cold air state.

For the unit with auxiliary electric heating function:

a. If the auxiliary electric heating function is working when the defrosting condition is met, please stop electric heater firstly, 20 seconds later, defrosting can begin;
b. After defrosting, the unit will adjust the working state of electric heater according to the setting before defrosting.

8. Auxiliary electric heating function (valid in heating mode or heating state in AUTO mode)

Enter condition:

1) ΔT>1 2) Thermostat ON and running for 1 minute 3) Tr<26℃
4) Indoor motor running 5) Electric heating function start signal available (cancelled)
6) The system working in heating mode or in heating state of AUTO mode 7) Tg<48℃
If the above conditions can all be met, the electric heating function will work.

Quit condition:

1) ΔT≤1 2) Thermostat OFF 3) Tr>26℃ 4) Indoor motor stops
5) Electric heating function start signal not available (cancelled)
6) The system in non-heating operation 7) Tg>52℃
If one of the above conditions can be met, the electric heater will stop.

9. Special functions

9.1 CLOCK setting and TIMER function

The unit can set 24-hour TIMER ON/OFF, and the min. unit is 1 minute, after being set, the timer lamp of indoor will be on, and after the timer is over, the timer lamp will be off.

TIMER ON: RUN LED is off, compressor LED is off, and TIMER LED is on, the unit is in stop state. When timer is over, the unit begins to run, and the timer LED is off. The unit operation begins from receiving the timer signal for the last time. The SLEEP function only can be set before the TIMER ON begins.

TIMER OFF: the unit running, the timer LED on, while the timer is over, timer LED off, the unit will stop, the sleep can be set, the sleep time will replace the original time of TIMER ON/OFF.

TIMER ON/OFF set at the same time: when the timer on/off is set, the timer LED will be off; the sleep function can be set, the sleep time will replace the original time of TIMER ON/OFF.

9.2 SLEEP function (energy saving function at night)

9.2.1 Standard sleep function: in cooling or dry mode, after running at SLEEP mode for 1 hour, the set temperature will rise 1℃, another 1 hour later, the set temperature will rise another 1℃; the unit continues running for 6 hours, then the unit will stop.

9.2.2 Standard sleep function: in heating mode, after running at SLEEP mode for 1 hour, the set temperature reduces 2℃, another 1 hour later, the set temperature will reduce 2℃, and another 3 hours later, the set temperature rises 1℃; the unit continues running for 3 hours, then the unit will stop.

9.2.3 Non-standard SLEEP function: the sleep function can realize 1~8 hours sleep mode when being combined with the TIMER function.

1）When in Auto mode, the unit will make SLEEP operation due to the setting.
2）After setting SLEEP function, the clock can not be adjusted.
3）If sleep time is no more than 8 hours, when the time arrives, the unit wil shut off.
4）If sleep function is set after setting TIMER OFF function, the unit will execute as the SLEEP

function.

5） If SLEEP function is set, the TIMER function can not be set.

6） If sleep function is set after setting TIMER ON function, the sleep function only can be set befroe the TIMER ON time arrives.

After setting sleep function, press CLOCK button to check the clock; press TEMP button to display the set temperature, and press again to change the set temperature.

9.3 Emergency operation

Press emergency button for over 1 second continuously, when loosing it, the buzzer will sound once.

Emergency operation: AUTO cooling state, the set temperature 24℃, indoor motor at high speed, not adjusting the temperature sensor abnormal and the protection, the thermostat ON, 3 minutes later, the compressor starts up, and another 3 minutes later, quit the trial running and enter the normal operation as the setting;

Press again, enter the shutoff state.

9.4 Compulsory cooling operation

In OFF state, press compulsory button for over 10 seconds continuously, loose it and the buzzer will sound twice, then the unit enters the compulsory cooling operation, or after the panel receives the compulsory cooling signal, the unit enters the compulsory cooling state. For the first time, there is no compressor 3-minute protection, the unit will run for 5 minutes in cooling mode, and indoor/outdoor motors are in high speed; in the 5 minutes, the system will not adjust the protection and not be limited by the ambient temperature, but the compressor will be limited by 3-minute protection. 5 minutes later, the unit will enter the normal state. In the compulsory cooling state, you can press any button to quit the state. For the unit with outdoor PCB, the compressor and the outdoor motor will be controlled by outdoor PCB.

9.5 Water level inspection and water pump control

1) In COOL (including cooling state of AUTO mode and the compulsory cooling) and DRY mode, as long as the compressor runs, water pump will work; and once the compressor stops, water pump will stop 5 minutes later;

2) In standby state of cooling mode, heating mode and fan mode (including auto fan mode), after water tank is full, the float switch will disconnect, if the controller detects this signal for 2 seconds, the water pump will begin to work. After the float resets, water pump will continue working and stops 5 minutes later;

3) If the water-full signal is detected for over 5 minutes, the compressor will stop; water pump will work for 5 minutes and stop for 5 minutes, then repeat as a cycle, until the float resets, the water pump will stop 5 minutes later; if water pump has repeated for 4 cycles, the float can not reset, and the unit will alarm water drainage abnormal. And the water pump will continue the cycle.

9.6 High pressure switch control:

3 minutes later after compressor starts up, the system will check the pipe pressure. If the pipe pressure is over high and high pressure switch acts for over 30 seconds, the compressor and outdoor motor will stop, 3 minutes later, the unit will resume. If in 30 minutes the unit stops for 3 times because of overhigh pressure, the system will alarm, then compressor will not start up again; when being electrified after being powered off, the protection will be cancelled.

Low pressure switch control (without outdoor PCB):

When compressor is running, the unit will check pipe pressure, when pipe pressure is over low and low pressure switch acts for 30 seconds, compressor and outdoor motor stop, the unit will

alarm, and compressor will not start up; when being electrified after being powered off, the protection will be cancelled.

9.7 Exterior alarm input:

In normal state, it is off. When the exterior environment is abnormal, the system cannot ensure the normal signal input, so the air conditioning system will stop and alarm, until the normal signal resumes, the air conditioner will resume automatically.

9.8 Time shorting function

If the time shorting port is in short circuit, the unit will perform a 1/60 time shorting control.

9.9 Auto-restart

a. Entering condition: In 5 seconds press the SLEEP button for 10 times, the buzzer sounds 4 times. At the same time, the present state will be saved in EEPROM.

b. After entering the auto-restart state, the following information will be memorized: ON/OFF, running mode (AUTO, HEAT, COOL, DRY, FAN), fan speed (AUTO, HIGH, MED, LOW), the set temperature (16℃-30℃), the louver position and HEALTH; while the TIMER, SLEEP and CLOCK will not be memorized.

c. Quit condition: in 5 seconds press SLEEP button 10 times, the buzzer will sound 2 times.

9.10 Auto check function

Before being electrifed, it is in short circuit; after being electrified, 10 seconds later, it will enter auto-check circuit. Before auto-check, please ensure the input values (sensor, pressure switch) normal, or the buzzer will sound 5 times to show there is abnormal; all the ports will output as the following sequence: run lamp-timer lamp-electric heater-water pump-compressor/compressor lamp-outdoor motor-4-way valve; after the auto-check is finished, the buzzer sounds once.

9.11 Outdoor crankcase heater (only for the unit with low ambient cooling function)

For the unit without outdoor PCB, but with low ambient cooling function, outdoor crankcase heater will be controlled by indoor unit. Once being electrified, electric heater will begin to work until the compressor is running.

10. System protection

10.1 3-minute protection for compressor startup

After the compressor stops, at least 3 minutes later, the compressor can restart up; if the unit is powered off in running, after being electrified, 3 minutes later, the compressor can restart up. Being electrifed for the first time, there is 3-minute delay protection.

10.2 Anti-current rush

2 seconds later after compressor is running, outdoor motor can work.

3.2 Electric control function for the unit with 0010451167E and 0010451690E unit

1.General features

1.1 Control mode: remotr or wired control + connecting port of long-distance control + passive port control.

1.2 Temperature control: 16-30℃;

1.3 Precise of temperature control: ±1℃;

1.4 Indoor fan speed: AUTO, HIGH, MIDDLE, LOW (no AUTO when in FAN mode);

1.5 Swing control: the swing are controlled by the synchronous motor, main control board receive usable signal and set in swing mode or remain in other mode;

1.6 running mode: AUTO , COOL, DRY, FAN and HEAT;

1.7 Healthy function: 5VDC UV generator, 12VDC negrative ion generator - high voltage collecting-dirt, 220VAC negrative ion generator – oxygen pump;

1.8 Filter up-down control: adopt double-direction synchronous motor;

1.9 Auxiliary electric heating function: 12VDC control signal, 220VAC control signal or control switch;

1.10 Fresh air control: 12VDC DC motor,220VAC AC control port output;

1.11 CLOCK setting, TIMER ON, OFF, ON/OFF and SLEEP fuction (only TIMER function is viable and temperature variety is unviable when running the SLEEP function in FAN mode);

1.12 Drain system function: Water level inspection and water pump control

1.13 Compulsory cooling operation;

1.14 Safety and protection devices: 3-minute protection for compressor startup, freeze protection device, overheat protection device, temperature cutoff protection, sensor failure, drainage, pressure, communication etc. protection.

1.15 Indoor ambient temperature, indoor and outdoor coil temperature inspection.

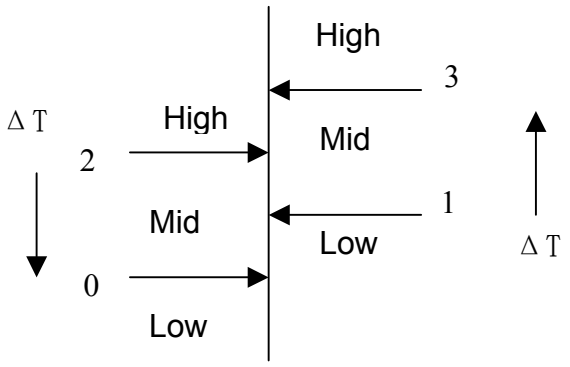
1.16 start current control: the outdoor fan start after compressor running 2s in normal situation.

2. LED function:

The LED for remote control type includes POWER, TIMER, COMPRESSOR, WATER PUMP; the POWER LED also indicate failure; when the unit is switched on by the controller, the POWER LED will be ON, when being switched off, the POWER LED will be OFF.; If the controller is in TIMER and SLEEP mode, the TIMER LED will be on; if it is not in TIMER and SLEEP mode, the TIMER LED will be off. When the compressor is running, the compressor LED will be on; when it stops, this LED will be off. POWER LED flashes when there are system failure, the flash times ti indicate the failure code.

3. Indoor AUTO FAN control

a) If the unit enters AUTO FAN for the first time, when △T＞2, select high speed; when △T≤0, select low speed; or it will select med speed; when thermostat is OFF, fan will be low speed. (the conversion temperature difference is 1 degree).



b) If the present fan speed is AUTO HIGH, when △T＜2, fan speed will change to AUTO MED.

c) If the present fan speed is AUTO MED, when △T＜0, fan speed will change to AUTO LOW; when △T＞3, fan speed will change to AUTO HIGH.

d) If the present fan speed is AUTO LOW, when △T＞1, fan speed will chenge to AUTO MED.

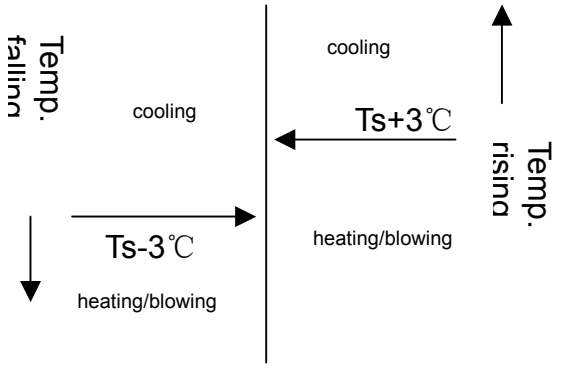
e) Fan speed conversion in AUTO FAN mode: the conversion will delay for 3 minutes from HIGH to LOW, and no delay from LOW to HIGH.

f) When the fan speed is HIGH/LOW/MED, on the condition that the protection does not act, the unit will run at the set fan speed; when the protection acts, for the sake of the normal operation, the fan speed will be forced to conversion; in Dry mode, fan motor will be changed as request.

4. AUTO mode control

4.1 When entering AUTO for the first time, the unit will select the running mode due to the below conditions, then perform the selected mode.

Tr≥Ts-3℃ select COOL mode (includes FAN mode)
Tr＜Ts-3℃ select HEAT or FAN mode



4.2 After entering the AUTO mode, the mode can change over among COOL, HEAT or FAN modes according to the indoor ambient temperature (conversion temperature difference is ±3℃).

4.3 If the unit is in COOL mode, when it arrives compressor-stop temperature, the compressor will stop; after compressor stops for 15 minutes, the unit will check the room temperature, if Tr＜Ts-3℃, the unit will enter HEAT or FAN mode, or the unit will still be in COOL mode;

4.4 For the heat pump unit, if the unit is in HEAT mode at present, when it arrives compressor-stop temperature, the compressor will stop; after the compressor stops for 15 minutes, the unit will check the room temperature, if Tr＞Ts+3℃, the unit will enter COOL mode, or it will still be in HEAT mode.

4.5 For cooling only unit, if the unit is at FAN mode, if Tr＞Ts+3℃, the unit will enter COOL mode.

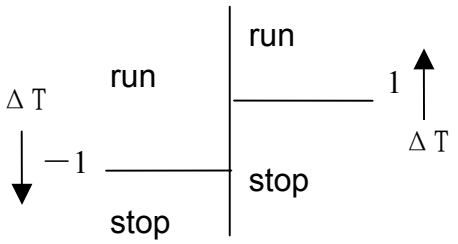
4.6 When the unit is in HEAT mode, if indoor heat exchanger temperature rises up to over 63℃, the unit will change into COOL mode. And within 1 hour, the heat exchanger temperature will not be limited, the heating operation will stop temporarily. 1 hour later, the unit will select the proper mode due to the above condition.

5. COOL mode control

5.1 4-way valve being powered off, compressor run/stop will depends on the temperature difference between the room temperature and the set temperature.

5.2 In cooling mode, every time the compressor starts up, within 6 minutes, the compressor will not be limited by the temperature sensor, but the set temperature change, shutoff signal and protection action will not be limited by 6-minute protection, and the compressor can stop immediately.

5.3 ΔT≥1 compressor will run;
ΔT≤-1 compressor will stop;
-1<ΔT<1 compressor will stay in original state



5.4 Anti-freezed protection (invalid in compulsory operation, trial running, heating mode)

When the unit has run for over 6 minutes after compressor starts up, if indoor coil temperature Tg<1℃, the compressor and the outdoor motor will stop, and the unit will change to FAN mode; 9 minutes later after compressor stops and when indoor coil temperature rises to 10℃, the unit will resume to COOL mode, the compressor and the outdoor motor will run again.

5.5 Outdoor fan control: (realized by outdoor when with outdoor conmmunication function)

if the temp. of indoor coil sensor Tg<6℃, control the outdoor fan by the temp. of outdoor coil sensor;

if the temp. of outdoor defrost sensor Tc<34℃, the outdoor fan will be OFF and lasted 45s at least;

if the temp. of outdoor defrost sensor Tc＞44℃, the outdoor fan will be ON;

if the temp. of outdoor defrost sensor 34℃≤Tc≤44℃, the outdoor fan will remain in the original state.

5.6 Temperature cutoff protection

In cooling mode, the unit will check indoor coil temperature every time the compressor has run for 1 minutes, when indoor coil temperature Tg>Tr＋5, the unit will stop and 3 minutes later restart up; if the temperature cutoff occurs for 3 times continuously, the unit will stop and alarm.

6. DRY mode control

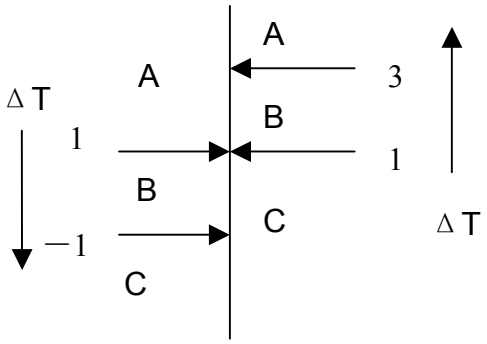
6.1 When the uint enters DRY mode for the first time, the compressor, outdoor motor and indoor motor will perform according to the below conditions:

ΔT＞2, the compressor and the outdoor motor will run continuously, indoor motor will run at the set speed, this area is defined as Area A;

0≤ΔT≤2, the compressor and the outdoor motor will always run for 10 minutes and then stop for 6 minutes, indoor motor will be LOW speed, this area is defined as Area B;

△T＜0, the compressor and the outdoor motor will stop, indoor motor will run at Low speed, this area is defined as Area C.

6.2 After the unit is running in DRY mode, the system will change over among Area A, Area B, and Area C (the conversion temperature difference ±1℃)



If the system is in Area A, when △T＜1, change to Area B;
If the system is in Area C, when △T>1, change to Area B;
If the system is in Area B, when △T>3, change to Area A;
When △T＜－1, change to Area C.

6.3 Anti-freezed protection (invalid in compulsory operation, trial running, heating mode)

When the unit has run for over 6 minutes after compressor starts up, if indoor coil temperature Tg<1℃, the compressor and the outdoor motor will stop, and the unit will change to FAN mode; 9 minutes later after compressor stops and when indoor coil temperature rises to 10℃, the unit will resume to COOL mode, the compressor and the outdoor motor will run again.

6.4 Outdoor fan control: (realized by outdoor when with outdoor conmmunication function)

if the temp. of indoor coil sensor Tg<6℃, control the outdoor fan by the temp. of outdoor coil sensor;

if the temp. of outdoor defrost sensor Tc<34℃, the outdoor fan will be OFF and lasted 45s at least;

if the temp. of outdoor defrost sensor Tc＞44℃, the outdoor fan will be ON;

if the temp. of outdoor defrost sensor 34℃≤Tc≤44℃, the outdoor fan will remain in the original state.

6.5 Temperature cutoff protection

In cooling mode, the unit will check indoor coil temperature every time the compressor has run for 1 minutes, when indoor coil temperature Tg>Tr＋5, the unit will stop and 3 minutes later restart up; if the temperature cutoff occurs for 3 times continuously, the unit will stop and alarm.

7. HEAT mode control

7.1 4-way valve control: in heating mode, compressor startup----4-way valve being electrified 10 seconds ahead; compressor running----4-way valve retains original state; compressor shutoff----4-way valve being powered off 2 minutes and 50 seconds later (except for defrosting, 4-way valve being electrified 5 seconds ahead, and being powered off 55 seconds later).

7.2 In heating mode, for everytime the compressor startup (thermostat ON), within 6 minutes, the 4-way valve will not be limited by the temperature sensor, but for the set temperature change, shutoff signal and the protection, the compressor can stop immediately without 6-minute limitation.

7.3 △T≥1 compressor running, indoor motor runs at anti-cold air mode;

△T≤-1 compressor stops, indoor motor runs at blowing remaining heat mode;

-1<△T<1 compressor retains original state

7.4 Overheat protection (for the unit with outdoor PCB, the outdoor motor is controlled by outdoor unit, but the compressor is still controlled by indoor unit, and their temperature points will not be accordant completely)

In heating mode, compressor has started up and indoor motor has run for over 30 seconds, if indoor coil temperature Tg>60℃, outdoor motor will stop; if Tg<56℃, and outdoor motor has stop for 45s, outdoor motor will run again; if Tg>73℃, the compressor will stop and indoor motor will run according to the thermostat state. After the compressor stops for 3 minutes and Tg reduces to 48℃, the unit will resume to heating mode, and the compressor and the outdoor motor will run again.

7.5 Temperature cutoff protection

In heating mode (besides the defrosting), the unit will check indoor coil temperature every time the compressor has run for 1 minutes, when indoor coil temperature Tg＜Tr-5, the unit will stop and 3 minutes later restart up; if the temperature cutoff occurs for 3 times continuously, the unit will stop and alarm.

7.6 Anti-cold air function in heating mode

After entering heating mode, or last defrosting is over, the compressor will start up, if Tg＜28℃, indoor motor will stop; if 38℃>Tg≥28℃, indoor motor will run at low speed; if Tg≥38℃ or the compressor has run for over 4 minutes, indoor motor will run at the set speed; once the motor has started up, it will not stop because of Tg reduction.

7.7 Blowing remaining heat function

In heating mode, the thermostat is OFF, the compressor stops, indoor motor will run at low speed until Tg＜28℃ and has run for 50 seconds at least.

Note: in heating mode, “the compressor stops----indoor motor delays to stop” adjust if the pipe blows remaining heat; “the compressor startup----indoor motor delays to start up” adjust if the pipe is anti-cold air; in other conditions, the compressor and the indoor motor are allowable not to be in company. In cooling mode, the motor will run according to the control, not together with the compressor.

7.8 Defrosting function in heating mode

In defrosting and when the compressor resumes to run for 3 minutes after defrosting is over, the unit will not adjust the sensor failure.

7.8.1 Manual defrost: In heating mode, the set temperature 30℃ and in high speed, in 5 seconds, press SLEEP button 6 times continuously, then the buzzer will sound 3 times, you can enter the manual defrosting. At this moment, the unit will not adjust the enter condition of defrost and begin to defrost function directly, whose procedure is as the same as the auto defrost; the quit condition is that the defrosting time is up to 5 minutes.

7.8.2 Auto defrost enter condition: a) the compressor has run for 45 minutes continuously or for 75 minutes in all and has run for over 10 minutes continuously. b) the compressor and outdoor fan running normally. c) the temp. of indoor coil sensor lower than 45℃, d) the defrosting temp. lower than –8℃ (use the defrosting start signal from outdoor in the condition of with outdoor communication).

7.8.3 Auto defrost quit condition: The defrosting temp. over 14℃ or the defrosting time is over 12 minutes (use the defrosting end signal from outdoor in the condition of with outdoor communication)

7.8.4 Defrost process : a) enter defrosting mode, the compressor, outdoor and indoor fan motor stops; b) 55 seconds later, 4-way valve will be reverse, after more 5 sensonds, compressor begins to run; c) defrosting is over, compressor stops, outdoor fan running at high speed; d) 55 seconds later, 4-way valve runs and compressor starts up. The indoor fan motor will run at anti-cold air condition.

7.8.5 For the unit with auxiliary electric heating function:

a. If the auxiliary electric heating function is working when the defrosting condition is met, please stop electric heater firstly, 20 seconds later, defrosting can begin;
b. After defrosting, the unit will adjust the working state of electric heater according to the setting before defrosting.

7.9 Auxiliary electric heating function (valid in heating mode or heating state in AUTO mode)

Enter condition: 1) ΔT>1; 2) Thermostat ON and running for 1 minute; 3) Tr<26℃; 4) Indoor motor running; 5) Electric heating function start signal available (cancelled); 6) The system working in heating mode or in heating state of AUTO mode; 7) Tg<48℃

If the above conditions can all be met, the electric heating function will work.

Quit condition: 1) ΔT≤1; 2) Thermostat OFF; 3) Tr>26℃; 4) Indoor motor stops; 5) Electric heating function start signal not available (cancelled); 6) The system in non-heating operation; 7) Tg>52℃

If one of the above conditions can be met, the electric heater will stop.

8. FAN mode control

The compressor and the outdoor motor will stop running, indoor motor can be set at high/med/low speed, the fan blade can swing or stay at one position. In this mode, you can set the TIMER and SLEEP function.

9. CLOCK setting and TIMER function

The unit can set 24-hour TIMER ON/OFF, and the min. unit is 1 minute, after being set, the timer lamp of indoor will be on, and after the timer is over, the timer lamp will be off.

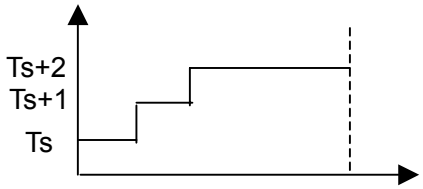
TIMER ON: RUN LED is off, compressor LED is off, and TIMER LED is on, the unit is in stop state. When timer is over, the unit begins to run, and the timer LED is off. The unit operation begins from receiving the timer signal for the last time. The SLEEP function only can be set before the TIMER ON begins.

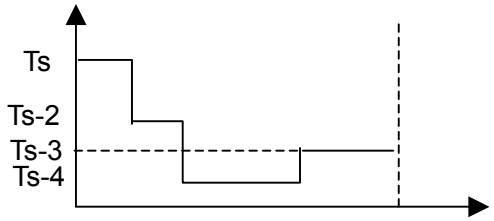
TIMER OFF: the unit running, the timer LED on, while the timer is over, timer LED off, the unit will stop, the sleep can be set, the sleep time will replace the original time of TIMER ON/OFF.

TIMER ON/OFF set at the same time: when the timer on/off is set, the timer LED will be off; the SLEEP function can be set, the sleep time will replace the original time of TIMER ON/OFF.

10 SLEEP function (energy saving function at night)

101 Standard sleep function: in cooling or dry mode, after running at SLEEP mode for 1 hour, the set temperature will rise 1℃, another 1 hour later, the set temperature will rise another 1℃; the unit continues running for 6 hours, then the unit will stop.





10.2 Standard sleep function: in heating mode, after running at SLEEP mode for 1 hour, the set temperature reduces 2℃, another 1 hour later, the set temperature will reduce 2 ℃ , and another 3 hours later, the set temperature rises 1℃; the unit continues running for 3 hours, then the unit will stop.

10.3 Non-standard SLEEP function: the sleep function can realize 1~8 hours sleep mode when being combined with the TIMER function.

1） When in Auto mode, the unit will make SLEEP operation due to the setting.
2） After setting SLEEP function, the clock can not be adjusted.
3） If sleep time is no more than 8 hours, when the time arrives, the unit wil shut off.
4） If sleep function is set after setting TIMER OFF function, the unit will execute as the SLEEP function.
5） If SLEEP function is set, the TIMER function can not be set.
6） If sleep function is set after setting TIMER ON function, the sleep function only can be set befroe the TIMER ON time arrives.
7） After setting sleep function, press CLOCK button to check the clock; press TEMP button to display the set temperature, and press again to change the set temperature.

11 Water level inspection and water pump control

1) In COOL (including cooling state of AUTO mode and the compulsory cooling) and DRY mode, as long as the compressor runs, water pump will work; and once the compressor stops, water pump will stop 5 minutes later;

2) In standby state of cooling mode, heating mode and fan mode (including auto fan mode), after water tank is full, the float switch will disconnect, if the controller detects this signal for 2 seconds, the water pump will begin to work. After the float resets, water pump will continue working and stops 5 minutes later;

3) If the water-full signal is detected for over 5 minutes, the compressor will stop; water pump will work for 5 minutes and stop for 5 minutes, then repeat as a cycle, until the float resets, the water pump will stop 5 minutes later; if water pump has repeated for 4 cycles, the float can not reset, and the unit will alarm water drainage abnormal. And the water pump will continue the cycle.

12. System protection

12.1 3-minute protection for compressor startup

After the compressor stops, at least 3 minutes later, the compressor can restart up; the compressor can restart up. Being electrifed for the first time, there is 3-minute delay protection.

12.2 Time shorting function

If the time shorting port is in short circuit, the unit will perform a 1/60 time shorting control.

12.3 High pressure protection

After compressor is running for 3 minutes, the unit will check the pipe pressure, when the pipe pressure is too high, 30 seconds later, compressor and outdoor fan motor will stop, and then 3 minutes later, the unit will be normal. Within 30 minutes, if the compressor stops and will send failure because of too high pressure for 3 times.

12.4 Low pressure protection

After compressor is running for 3 minutes, the unit will check the pipe pressure, when the pipe pressure is too low and low pressure switch is running for 30 senconds, compressor and outdoor fan motor will stop and will send failure

3.3 Electric control function For the unit with 0010400911E PCB(AP422ACEAA)

1. Communication control

1.1 Remote receive function, with remote controller YR-H71.

1.2 Long-distance communication, the long-distance control function is pre-setted.

1.3 Wired controller communication, the wired controller can be used for communication by dip-switch selection. The display board is not available when use wired controller.

Select one control type between wired and remote control, long-distance control can be used with wire/remote control.

2. Function description

2.1 The running mode includes AUTO, COOL, DRY, FAN and HEAT; can set the compulsory cooling function; AUTO/HIGH/LOW 3-speed for indoor motor; can set the TIMER ON,TIMER OFF, TIMER ON/OFF and SLEEP function; auto-check water level and control the water drainage of water pump; the swing is controlled by stepping motor; 3-minute protection for compressor; anti-overload protection, anti-freezed protection, temperature cutoff protection and bad-sensor protection; communication failure detect function; check indoor ambient temperature and indoor coil temperature; can be controlled by central controller.

2.2 LED indication: when the unit is switched on by the controller, the POWER LED will be ON, when being switched off, the POWER LED will be OFF. When the compressor is running, the compressor LED will be on; when it stops, this LED will be off. If the controller is in TIMER and SLEEP mode, the TIMER LED will be on; if it is not in TIMER and SLEEP mode, the TIMER LED will be off.

2.3 Temperature compensation 4℃ control: select by the dip switch on indoor PCB.

2.4 There is set temperature in AUTO mode as default.

2.5 Tr stands for room temperature; Ts stands for set temperature; Tg stands for indoor coil temperature; Tc stands for defrosting temperature; t stands for compensation temperature; ΔT stands for temperature difference.

2.6 ΔT=Tr-Ts+t (t=0 in cooling mode).

2.7 ΔT=Ts-Tr+t (t=compensation value, with compensation in heating mode; t=0, without compensation in heating mode).

3. Mode control

3.1 Indoor AUTO FAN control

3.1.1 If the unit enters AUTO FAN for the first time, when ΔT＞2, select high speed; when ΔT≤0, select low speed; or it will select med speed; when thermostat is OFF, fan will be low speed. (the conversion temperature difference is 1 degree).

3.1.2 If the present fan speed is AUTO HIGH, when ΔT＜2, fan speed will change to AUTO MED.

3.1.3 If the present fan speed is AUTO MED, when ΔT＜0, fan speed will change to AUTO LOW; when ΔT＞3, fan speed will change to AUTO HIGH.

3.1.4 If the present fan speed is AUTO LOW, when ΔT＞1, fan speed will chenge to AUTO MED.

3.1.5 Fan speed conversion in AUTO FAN mode: the conversion will delay for 3 minutes from HIGH to LOW, and no delay from LOW to HIGH.

3.1.6 When the fan speed is HIGH/LOW/MED, on the condition that the protection does not act, the unit will run at the set fan speed; when the protection acts, for the sake of the normal operation, the fan speed will be forced to conversion; in Dry mode, fan motor will be changed as request.

3.2 AUTO mode control

3.2.1 When entering AUTO for the first time, the unit will select the running mode due to the below conditions, then perform the selected mode.

Tr≥Ts-3℃ select COOL mode (includes FAN mode)

Tr＜Ts-3℃ select HEAT or FAN mode

3.2.2 After entering the AUTO mode, the mode can change over among COOL, HEAT or FAN modes according to the indoor ambient temperature (conversion temperature difference is ±3℃).

3.2.3 If the unit is in COOL mode, when it arrives compressor-stop temperature, the compressor will stop; after compressor stops for 15 minutes, the unit will check the room temperature, if Tr＜Ts-3℃, the unit will enter HEAT or FAN mode, or the unit will still be in COOL mode;

3.2.4 For the heat pump unit, if the unit is in HEAT mode at present, when it arrives compressor-stop temperature, the compressor will stop; after the compressor stops for 15 minutes, the unit will check the room temperature, if Tr＞Ts+3℃, the unit will enter COOL mode, or it will still be in HEAT mode.

3.2.5 For cooling only unit, if the unit is at FAN mode, if Tr＞Ts+3℃, the unit will enter COOL mode.

3.2.6 When the unit is in HEAT mode, if indoor heat exchanger temperature rises up to over 63℃, the unit will change into COOL mode. And within 1 hour, the heat exchanger temperature will not be limited, the heating operation will stop temporarily. 1 hour later, the unit will select the proper mode due to the above condition.

3.3 COOL mode control

3.3.1 4-way valve being powered off, compressor run/stop will depends on the temperature difference between the room temperature at present and the set temperature.

3.3.2 In cooling mode, every time the compressor starts up(thermostat ON), within 6 minutes, the compressor will not be limited by the temperature sensor, but the set temperature change, shutoff signal and protection action will not be limited by 6-minute protection, and the compressor can stop immediately.

3.3.3 ΔT≥1 compressor will run;

ΔT≤-1 compressor will stop;

-1<ΔT<1 compressor will stay in original state

3.3.4 Anti-freezed protection (invalid in compulsory operation, trial running, heating mode)

Indoor coil temperature Tg≥15℃, outdoor motor run in compulsory HIGH and resume to normal HIGH when Tg<13℃. Indoor coil temperature Tg＜5℃, outdoor motor run in compulsory LOW and resume to normal HIGH when Tg>7℃. Outdoor motor run in normal HIGH when 5℃≤Tg＜15℃.

When the unit has run for over 6 minutes after compressor starts up, if indoor coil temperature Tg<1℃ and lasts for 1 minute, the compressor and the outdoor motor will stop, and the unit will change to FAN mode; 9 minutes later after compressor stops and when indoor coil temperature rises to 10℃, the unit will resume to COOL mode, the compressor and the outdoor motor will run again.

3.3.5 Temperature cutoff protection

In cooling mode, the unit will check indoor coil temperature every time the compressor start and has run for 5 minutes, when indoor coil temperature Tg>Tr＋5, the unit will stop and 3 minutes later restart up; if the temperature cutoff occurs for 3 times continuously, the unit will stop and alarm.

3.4 DRY mode control

3.4.1 When the uint enters DRY mode for the first time, the compressor, outdoor motor and indoor motor will perform according to the below conditions:

ΔT＞2, the compressor and the outdoor motor will run continuously, indoor motor will run at the set speed, this area is defined as Area A;

0≤ΔT≤2, the compressor and the outdoor motor will always run for 10 minutes and then stop for 6 minutes, indoor motor will be LOW speed, this area is defined as Area B;

ΔT＜0, the compressor and the outdoor motor will stop, indoor motor will run at Low speed, this

area is defined as Area C.

3.4.2 After the unit is running in DRY mode, the system will change over among Area A, Area B, and Area C (the conversion temperature difference ±1℃)

If the system is in Area A, when △T＜1, change to Area B;

If the system is in Area C, when △T>1, change to Area B;

If the system is in Area B, when △T>3, change to Area A;

When △T＜－1, change to Area C.

3.5 FAN mode control

The compressor and the outdoor motor will stop running, indoor motor can be set at high/med/low speed, the fan blade can swing or stay at one position. In this mode, you can set the TIMER and SLEEP function.

3.6 HEAT mode control

3.6.1 4-way valve control

a. 4-way valve being electrified after compressor has started for 3 seconds when heating for the first time, then the 4-way valve will be electrified before compressor start;

b. Only in cooling(not heating) mode, 4-way valve and compressor will power off at the same time, the 4-way valve keeps being powered when shutoff, thermostat OFF and compressor stop .

Note: 4-way valve control is realized by outdoor unit for the unit with outdoor PCB, not concurrent completely.

3.6.2 In heating mode, for every time the compressor startup (thermostat ON), within 6 minutes, the 4-way valve will not be limited by the temperature sensor, but for the set temperature change, shutoff signal and the protection, the compressor can stop immediately without 6-minute limitation.

3.6.3 △T≥1 compressor running, indoor motor runs at anti-cold air mode;

△T≤-1 compressor stops, indoor motor runs at blowing remaining heat mode;

-1<△T<1 compressor retains original state

3.6.4 Overheat protection

Indoor coil temperature Tg>56℃, outdoor motor run in compulsory LOW and resume to normal HIGH when Tg<54℃. Indoor coil temperature Tg＜40℃, outdoor motor run in compulsory HIGH and resume to normal HIGH when Tg>42℃. Outdoor motor run in HIGH(normal state) when 40℃≤Tg＜56℃.

In heating mode, compressor has started up and indoor motor has run for over 30 seconds, if indoor coil temperature Tg>60℃, outdoor motor will stop; if Tg<56℃, and outdoor motor has stop for 45 seconds, outdoor motor will run again; if Tg>68℃, the compressor will stop and indoor motor will run in thermostat OFF. After the compressor stops for 3 minutes and Tg reduces to 48℃, the unit will resume to heating mode, and the compressor and the outdoor motor will run again.

3.6.5 Temperature cutoff protection

In heating mode (besides the defrosting), the unit will check indoor coil temperature every time the compressor has run for 5 minutes, when indoor coil temperature Tg＜Tr-5, the unit will stop and 3 minutes later restart up; if the temperature cutoff occurs for 3 times continuously, the unit will stop and alarm(not check in defrost and within 3 minutes after defrost).

3.6.6 Anti-cold air function in heating mode

After entering heating mode, or last defrosting is over, the compressor will start up, if Tg＜28℃ (HW_D2), indoor motor will stop; if 38℃(HW_D1)>Tg≥28℃(HW_D2), indoor motor will run at low speed; if Tg≥38℃(HW_D1) or the compressor has run for over 4 minutes, indoor motor will run at the set speed; once the motor has started up, it will not stop because of Tg reduction.

3.6.7 Blowing remaining heat function

In heating mode, the thermostat is OFF, the compressor stops, indoor motor will run at low speed until Tg＜28℃(HW_D3) and has run for 50 seconds at least. If Tg always over 28℃(HW_D3), compressor will stop after running for at max. 3 minutes.

3.6.8 Note: in heating mode, “the compressor stops----indoor motor delays to stop” adjust if the pipe blows remaining heat; “the compressor startup----indoor motor delays to start up” adjust if the pipe is anti-cold air; in other conditions, the compressor and the indoor motor are allowable not to be in company. In cooling mode, the motor will run according to the control, not together with the compressor.

3.6.9 Defrosting function in heating mode

In defrosting and when the compressor resumes to run for 3 minutes after defrosting is over, the unit will not adjust the sensor failure.

Manual defrost: In heating mode, the set temperature 30℃ and in high speed, in 5 seconds, press SLEEP button 6 times continuously, then the buzzer will sound 3 times, you can enter the manual defrosting. Send manual defrost to outdoor unit, the indoor unit will control accordingly after received the outdoor defrost signal, the procedure is as the same as the auto defrost; the quit is controlled by outdoor unit.

Auto defrost:

For the unit with outdoor PCB, please refer to the outdoor control functions.

For the unit with auxiliary electric heating function:

a. If the auxiliary electric heating function is working when the defrosting condition is met, please stop electric heater firstly, 20 seconds later, defrosting can begin;

b. After defrosting, the unit will adjust the working state of electric heater according to the setting before defrosting.

3.6.10 Auxiliary electric heating function (valid in heating mode or heating state in AUTO mode)

Enter condition: 1) ∆T>1 2) Thermostat ON and running for 1 minute 3) Tr<25℃

4) Indoor motor running 5) Electric heating function start signal available

6) The system working in heating mode or in heating state of AUTO mode

If the above conditions can all be met, the electric heating function will work.

Quit condition: 1) ∆T≤1 2) Thermostat OFF 3) Tr>26℃ 4) Indoor motor stops

5) Electric heating function start signal not available 6) The system in non-heating operation

If one of the above conditions can be met, the electric heater will stop.

3.8 Indoor motor compulsory speed control in heating mode: if indoor coil temperature Tg>56℃, indoor motor LOW speed invalid, change to MIDDLE speed automatically; when Tg>60℃, indoor motor MIDDLE speed invalid, change to HIGH speed automatically; when Tg below 52℃, resume the orIginal fan speed, outdoor MCU will work in overheat protection due to the temperature value.

3.7 Special functions

3.7.1 CLOCK setting and TIMER function

The unit can set 24-hour TIMER ON/OFF, and the min. unit is 1 minute(the min. unit of set time is concerned with remote controller), after being set, the TIMER lamp of indoor will be on, and after the timer is over, the TIMER lamp will be off.

TIMER ON: RUN LED is off, compressor LED is off, and TIMER LED is on, the unit is in stop state. When timer is over, the unit begins to run, and the timer LED is off. The unit operation begins from receiving the timer signal for the last time. The SLEEP function only can be set before the TIMER ON begins.

TIMER OFF: the unit running, the TIMER LED on, while the timer is over, TIMER LED off, the unit will stop, the sleep can be set, the sleep time will replace the original time of TIMER ON/OFF.

TIMER ON/OFF set at the same time: when the timer on/off is set, the timer LED will be off; the sleep function can be set, the sleep time will replace the original time of TIMER ON/OFF.

3.7.2 SLEEP function (energy saving function at night)

3.7.2.1 Standard sleep function in cooling or dry mode, after running at SLEEP mode for 1 hour, the set temperature will rise 1℃, another 1 hour later, the set temperature will rise another 1℃; the unit continues running for 6 hours, then the unit will stop.

3.7.2.2 Standard sleep function in heating mode, after running at SLEEP mode for 1 hour, the set temperature reduces 2℃, another 1 hour later, the set temperature will reduce 2℃, and another 3 hours later, the set temperature rises 1℃; the unit continues running for 3 hours, then the unit will stop.

3.7.2.3 Non-standard SLEEP function: the sleep function can realize 1~8 hours sleep mode when being combined with the TIMER function.

1) When in Auto mode, the unit will make SLEEP operation due to the setting.

2) After setting SLEEP function, the clock can not be adjusted.

3) If sleep time is no more than 8 hours, when the time arrives, the unit wil shut off.

4) If sleep function is set after setting TIMER OFF function, the unit will execute as the SLEEP function.

5) If SLEEP function is set, the TIMER function can not be set.

6) If sleep function is set after setting TIMER ON function, the sleep function only can be set before the TIMER ON time arrives.

7) After setting sleep function, press CLOCK button to check the clock; press TEMP button to display the set temperature, and press again to change the set temperature.

3.7.3 Emergency operation

Press emergency button for over 1 second continuously, when loosing it, the buzzer will sound once. Press and will enter emergency operation.

Emergency operation: AUTO cooling state, the set temperature 24℃, indoor motor at high speed, not adjusting the temperature sensor abnormal and the protection, the thermostat ON, 3 minutes later, the compressor starts up, and another 3 minutes later, quit the trial running and enter the normal operation as the setting(resume temperature sensor and protection); Press again, enter the shutoff state.

3.7.4 Compulsory cooling operation

In OFF state, press compulsory button for over 10 seconds continuously, loose it and the buzzer will sound twice, then the unit enters the compulsory cooling operation, or after the panel receives the compulsory cooling signal from wired controller, the unit enters the compulsory cooling state, there is no compressor 3-minute protection, the unit will run in cooling mode, and indoor/outdoor motors are in high speed for 5 minutes; in the 5 minutes, the system will not adjust the protection and not be limited by the ambient temperature, 5 minutes later, the unit will enter the normal state. In the compulsory cooling state, you can press any button to quit the state.

3.7.5 Water level inspection and water pump control

1) In COOL (including cooling state of AUTO mode and the compulsory cooling) and DRY mode, as long as the compressor runs, water pump will work; and once the compressor stops, water pump will stop 5 minutes later;

2）In standby state of cooling mode, heating mode and fan mode, after water tank is full, the float switch will disconnect, if the controller detects this signal for 2 seconds, the water pump will begin to work. After the float resets, water pump will continue working and stops 5 minutes later;

3) If the water-full signal is detected for over 5 minutes, the compressor will stop; water pump will

work for 5 minutes and stop for 5 minutes, then repeat as a cycle, until the float resets, the water pump will stop 5 minutes later; if water pump has repeated for 4 cycles and the float can not reset, and the unit will alarm water drainage abnormal, and the water pump will continue the cycle.

3.7.6 Time shorting function

If the time shorting port is in short circuit for 2 seconds after conditioner being electrified, the buzzer will sound once and enter time shorting operation, the unit will perform a 1/60 time shorting control.

3.7.7 Auto-restart function

In 5 seconds press the SLEEP button for 10 times, the buzzer sounds 4 times, that is setted as auto-restart mode, if shutoff and power again, the system will run in the original state before been shuttoff. The following information will be memorized: ON/OFF, running mode (AUTO, HEAT, COOL, DRY, FAN), fan speed (AUTO, MANUAL(HIGH, MED, LOW)), the set temperature (16℃-30℃) and HEALTH, while the louver position, TIMER, SLEEP and CLOCK will not be memorized. Press SLEEP button 10 times again, the buzzer will sound 2 times and auto-restart function is cancelled.

3.7.8 Auto check function

Short connect the emergency switch before being electrifed, after being electrified, 10 seconds later, it will enter auto-check circuit. Before auto-check, please ensure the input values (sensor, pressure switch) normal, or the buzzer will sound 5 times to show there is abnormal; all the ports will output as the following sequence: run lamp-timer lamp-electric heater-water pump/pump lamp-compressor/compressor lamp-(outdoor motor-4-way valve) –HIGH speed-MED speed-LOW speed-swing-HEALTH ; after the auto-check is finished, the buzzer sounds once.

3.8 System protection

3.8.1 3-minute protection for compressor startup

After the compressor stops, at least 3 minutes later, the compressor can restart up; if the unit is powered off in running, after being electrified, 3 minutes later, the compressor can restart up. Being electrifed for the first time, there is 3-minute delay protection.

3.8.2 Anti-current rush

2 seconds later after compressor is running, outdoor motor can work.

3.8.3 Sensor failure

Indoor ambient/coil/outdoor defrost temperature sensor: Mainboard checks that the sensor is in open circuit, short circuit or close to short circuit for 2 minutes continuously, the mainboard will confirm that sensor is failure, the system will stop running, alarm occurs; If the signal is resumed, the system will resume automatically.

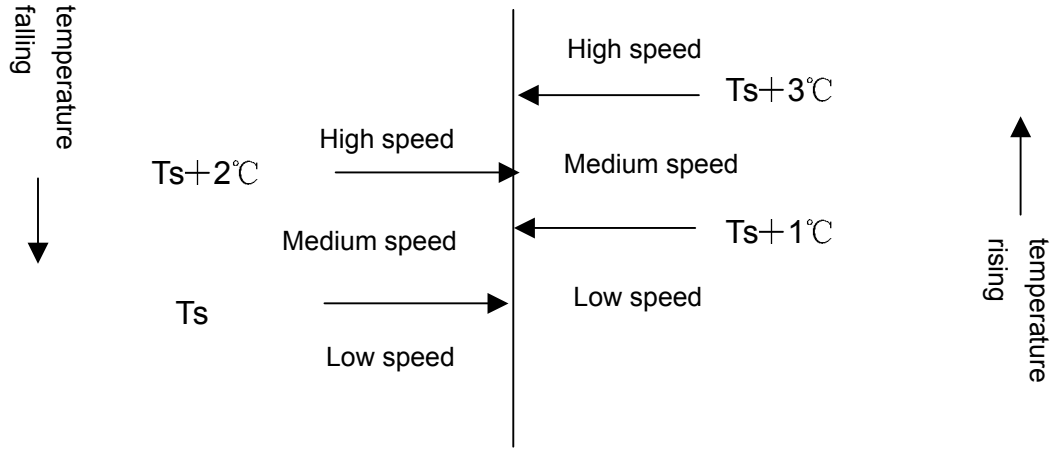
Shield indoor coil temperature sensor failure in 3 minutes before compressor start and dring defrost procedure(include defrost finish and quit).

3.4 Electric control function For the unit with 0010452322 PCB(AP482AKEAA)

1.Indoor AUTO FAN control

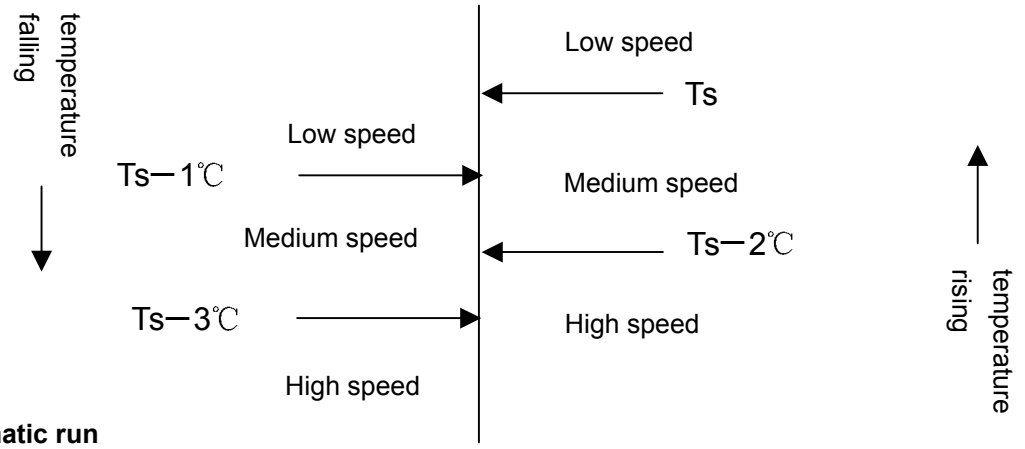
A. During cooling program.

If the unit enters AUTO FAN for the first time, when Tr＞Ts+2, select high speed; when Tr≤Ts, select low speed; or it will select med speed; If the present fan speed is AUTO HIGH, when Tr＜Ts+2, fan speed will change to AUTO MED. If the present fan speed is AUTO MED, when Tr＜Ts, fan speed will change to AUTO LOW; when Tr＞Ts+3, fan speed will change to AUTO HIGH. If the present fan speed is AUTO LOW, when Tr＞Ts+1, fan speed will chenge to AUTO MED. Fan speed conversion in AUTO FAN mode: the conversion will delay for 3 minutes from HIGH to LOW, and no delay from LOW to HIGH.



B. During heating program.

If the unit enters AUTO FAN for the first time, when Tr＞Ts-1, select low speed; when Tr≤Ts-3, select high speed; or it will select med speed; If the present fan speed is AUTO LOW, when Tr＜Ts-1, fan speed will change to AUTO MED. If the present fan speed is AUTO MED, when Tr＞Ts, fan speed will change to AUTO LOW; when Tr＜Ts-3, fan speed will change to AUTO HIGH. If the present fan speed is AUTO HIGH, when Tr>Ts-2, fan speed will chenge to AUTO MED (Ts means setting temperature on the wired controller). Fan speed conversion in AUTO FAN mode: the conversion will delay for 3 minutes from HIGH to LOW, and no delay from LOW to HIGH.



2. Automatic run

1). Cooling-heating type

After the machine being started and running mode changes to AUTO, the system will decide running mode according to difference between the present room temperature and setting temperature, then runs as the decided mode. In the following selections, Tr means room temperature and Ts means setting temperature.

Select running mode according to the following conditions at the first time to enter Auto mode:

temperature and Ts means setting temperature.

Select running mode according to the following conditions at the first time to enter Auto mode:

Tr≥Ts-3℃ to select cooling mode (with setting temperature being Ts +3)

Tr＜Ts-3℃ to select heating mode (with setting temperature being Ts)

After the system entering auto run mode, the running mode can convert automatically according to variation of room temperature between cooling and heating. If the unit is in cooling mode, when the temperature arrives stop value, the compressor stops; the system will measure the temperature after compressor stops for 3 minutes. At this time, if Tr＜Ts-3℃, the unit will enter heating mode, or it will still be cooling mode. If the unit is in heating mode, when the temperature arrives stop value, the compressor stops; the system will measure the temperature after compressor stops for 3 minutes. At this time, if Tr＜Ts+3℃, the unit will enter cooling mode, or it will still be heating mode.

If the unit is in heating mode, when indoor heat exchanger temperature is over 63℃, the unit will turn into cooling mode automatically, in 1 hour, the indoor heat exchanger temperature will not be limited, and heating operation will stop temporarily, 1 hour later, the system will adjust the working mode due to the above conditions.

If the unit is in heating mode for the first time, compressor motor will start up, within 8 minutes the system will not measure indoor ambient temperature, the remote controller will be off.

2). Single Cooling type

Select running mode according to the following conditions at the first time to enter Auto mode:

Tr≥Ts+3℃ to select cooling mode

Tr＜Ts-3℃ to select blowing mode

After entering Auto mode, the operation mode can be changed between cooling mode and fan mode according to indoor ambient temperature: if the unit now is in cooling mode, when Tr＜Ts-3, the mode will be changed to Fan; if the unit is in Fan mode, when Tr≥Ts+3, the mode will be changed to cooling mode.

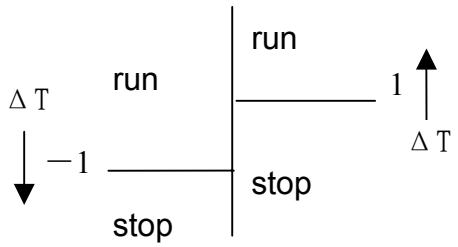
3. COOL mode control

4-way valve being powered off, compressor run/stop will depends on the temperature difference between the room temperature and the set temperature.

Tr≥Ts+1 compressor will run;

Tr≤Ts-1 compressor will stop;

Ts-1<Tr<Ts+1 compressor will stay in original state



Anti-freezed protection

When the unit has run for over 6 minutes after compressor starts up, if indoor coil temperature Tg<1℃ last 1 minute, the compressor and the outdoor motor will stop; 9 minutes later after compressor stops and when indoor coil temperature rises to 10℃, the compressor and the outdoor motor will run again.

Current peak value protection

Controlled by outdoor unit.

4. DRY mode control (in the following selections, Tr means room temperature and Ts means setting temperature.)

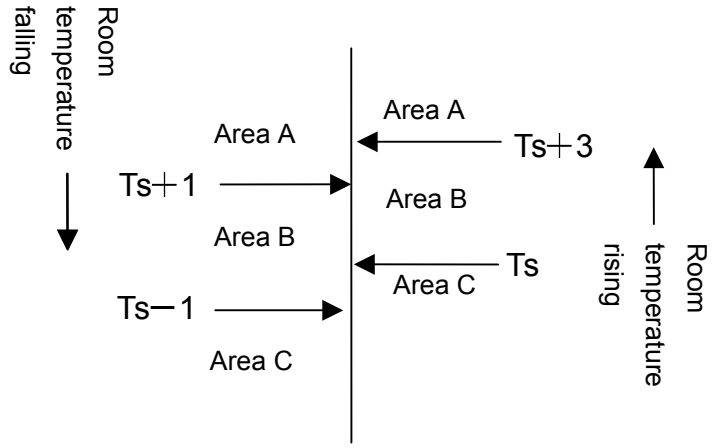
When the uint enters DRY mode for the first time, the compressor, outdoor motor and indoor motor will perform according to the below conditions:

Tr> Ts＋２℃ the compressor and the outdoor motor will run continuously, indoor motor will run at the set speed, this area is defined as Area A;

Ts≤Tr≤Ts＋２℃, the compressor and the outdoor motor will always run for 10 minutes and then stop for 6 minutes, indoor motor will be LOW speed, this area is defined as Area B;

Tr < Ts, the compressor and the outdoor motor will stop, indoor motor will run at Low speed, this area is defined as Area C.

After the unit is running in DRY mode, the system will change over among Area A, Area B, and Area C. If the system is in Area A, when Tr＜Ts+2, change to Area B; If the system is in Area C, when Tr > Ts, change to Area B; If the system is in Area B, when Tr> Ts＋３, change to Area A; When Tr＜Ts－１, change to Area C.



Anti-freezed protection: When the unit has run for over 6 minutes after compressor starts up, if indoor coil temperature Tg<1℃ last 1 minute, the compressor and the outdoor motor will stop; 9 minutes later after compressor stops and when indoor coil temperature rises to 10℃, the compressor and the outdoor motor will run again.

5. Fan mode control

Compressor and outdoor motor stop working, indoor motor can set High, Med and Low speed, the fan blade can swing or be fixed on a position. In this mode, you can set TIMER function, but there is no SLEEP function. Also, you can set high voltage dirt collecting or fresh air function.

6. HEAT mode control (in the following selections, Tr means room temperature and Ts means setting temperature.)

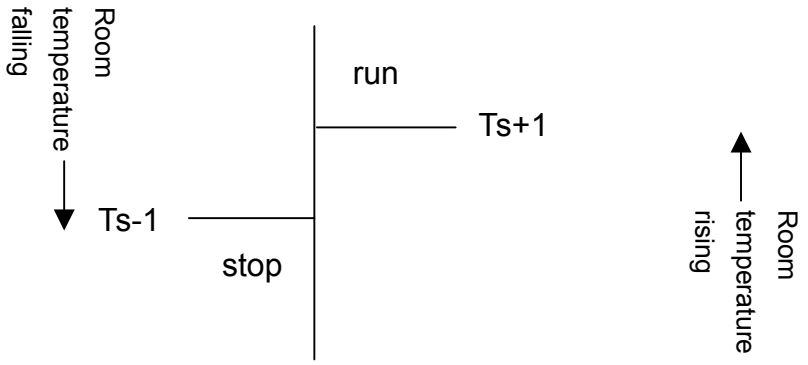
4-way valve control: When entering heating mode for the first time, compressor starts up, 4-way valve will be on 3 minutes later; in heating mode, 4-way valve will not be off. If the unit changes from heating to other modes, 4-way valve will be off immediately.

compressor control: the compressor and outdoor fan motor will depends on the temperature difference between the room temperature and the set temperature.

Tr≥Ts + 1　　compressor stops

Tr≤Ts- 1　　compressor running

Ts-1<Tr<Ts + 1　compressor retains original state



Outdoor motor and the compressor runs or stops simultaneously (except for overheat protection), indoor fan speed can be set at High, Med, Low or Auto speed, and the fan blade can swing or be fixed on one position. You can set TIMER or SLEEP mode.

Overheat protection

In heating mode, compressor has started up and indoor motor has run for over 30 seconds, if indoor coil temperature Tg>56℃, outdoor motor will chenge to LOW; if Tg<52℃, and outdoor motor has stop for 45s, outdoor motor will run again; if indoor coil temperature Tg>60℃, outdoor motor will stop; if Tg<56℃, and outdoor motor has stop for 45s, outdoor motor will run again; if Tg>68℃, the compressor will stop and indoor motor will run according to the thermostat OFF state. After the compressor stops for 9 minutes and Tg reduces to 48℃, the unit will resume to heating mode, and the compressor and the outdoor motor will run again.

Anti-cold air function in heating mode

When the uint enters heating mode for the first time, or last defrosting is over, if Tg＜28℃, indoor motor will stop; if 38℃>Tg≥28℃, indoor motor will run at low speed; if Tg≥38℃ or the compressor has run for over 4 minutes, indoor motor will run at the set speed.

Blowing remaining heat function

In heating mode, the thermostat is OFF, the compressor stops, indoor motor will run at low speed at least 50 seconds.

Auxiliary electric heating function

Enter condition:

1) Tr≤Ts-2℃

2) compressor ON and running for 1 minute

3) Tr≤23℃

4) Indoor motor running

5) Electric heating function start signal available (cancelled)

If the above conditions can all be met, the electric heating function will work.

If one of the below conditions can be met, the electric heater will stop:

1) Tr≥Ts-1℃

2) compressor OFF or indoor motor stops

3) Tr≥25℃

4) Electric heating function start signal not available (cancelled)

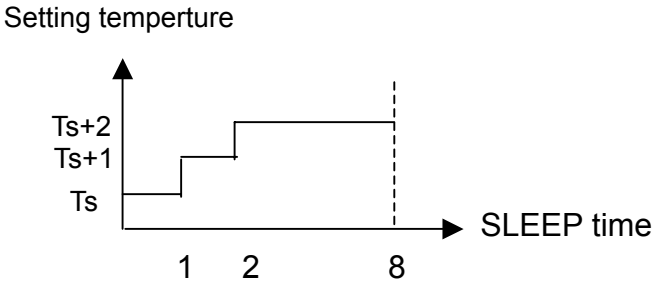
Manual defrost:

In heating mode, the set temperature 30℃ and in high speed, in 5 seconds, press SLEEP button 6 times continuously, then the buzzer will sound 3 times, you can enter the manual defrosting.

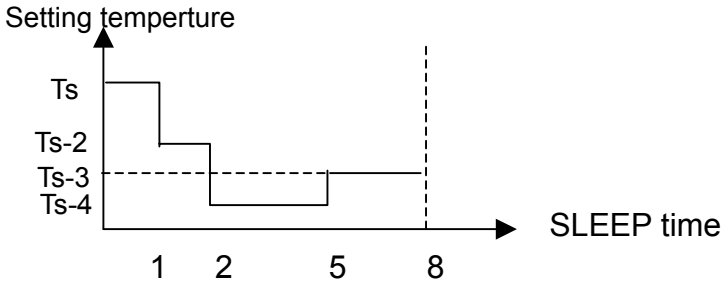
For the unit with auxiliary electric heating function, If the auxiliary electric heating function is working when the defrosting condition is met, please stop electric heater firstly, 3 seconds later,

7. SLEEP function

Sleep function can be setted in COOLING, DRY and HEATING mode. in cooling or dry mode, after running at SLEEP mode for 1 hour, the set temperature will rise 1℃, another 1 hour later, the set temperature will rise another 1℃; the unit continues running for 6 hours, then the unit will stop.



In heating mode, after running at SLEEP mode for 1 hour, the set temperature reduces 2℃, another 1 hour later, the set temperature will reduce 2℃, and another 3 hours later, the set temperature rises 1℃; the unit continues running for 3 hours, then the unit will stop.



8. Compulsory cooling operation

After the panel receives the compulsory cooling signal, the unit enters the compulsory cooling state. and indoor/outdoor motors are in high speed; in the 5 minutes, the system will not adjust the protection and not be limited by the ambient temperature, but the compressor will be limited by 3-minute protection. 5 minutes later, the unit will enter the normal cooling state.

9. System protection

9.1 3-minute protection for compressor startup

After the compressor stops, at least 3 minutes later, the compressor can restart up; if the unit is powered off in running less than 3 minutes, after being electrified, 3 minutes later, the compressor can restart up. Being electrifed for the first time, there is no 3-minute delay protection.

9.2 Sensor failure protection

9.3 Communication failure protection

3.5 Electric control function For the unit with 0010452042E PCB(AS182AVERA)

1. Temperature adjustment function

1.1 In this function, outdoor running frequency depends on the indoor temperature and the set temperature.

1.2 In auto mode, indoor fan speed will be changed according to the request of temperature adjustment.

1.3 In heating operation, indoor fan speed will be controlled according to the coil temperature.

1.4 Defrosting

In heating mode, outdoor transfers the defrosting signal to indoor unit, then indoor unit will enter defrosting mode until outdoor transfers defrost-cancelling signal, then indoor unit will enter heating mode. In defrosting, there is no over load protection.

1.5 Air flow limitation

When compressor is running, the air flow of indoor fan motor and the limited frequency are as follow:

	Frequency-limited variable	Limited frequency
Air flow (Med)	FQLIMMD	90Hz
Air flow (Low)	FQLIMLO	52Hz
Healthy mode	FUPHEAL	30Hz

2. Indoor fan motor control

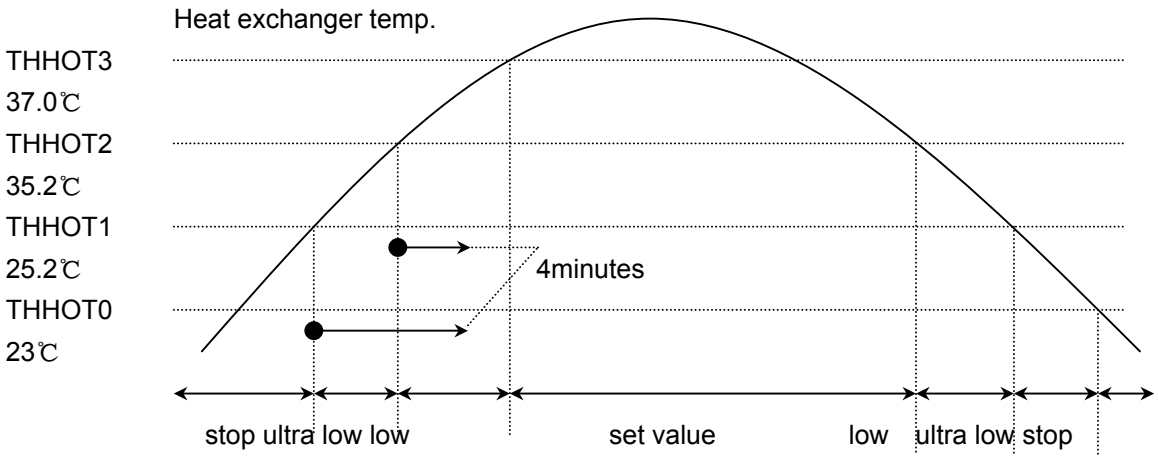
2.1 If air flow is adjusted by hand, the target rotation is (High+Low)/2.

If air flow is adjusted automatically, the target rotation is (Auto High+Auto Low)/2, it will not be counted if being below 10rpm.

2.2 Heat operation

2.2.1 Hot start up

In heating, anti-cold air control is as the following chart:



According to the heat exchanger temperature, fan motor will be controlled due to the above chart.

1) When heat exchanger temp. rises up, adjust the fan speed due to the heat exchanger temp.

If heat exchanger temp. is below 35.2℃, fan speed is ultra low (When being electrified for the first time, enter heating mode or defrosting is over, if heat exchanger temp. is below 25.2℃, fan motor stops; if higher than 25.2 ℃ and lower than 35.2℃, fan speed is ultra low);

If heat exchanger temp. is between 35.2℃ and 37℃, fan speed is low;

If heat exchanger temp. is higher than 37℃, fan motor will run at set speed.

2) When heat exchanger temp. reduces, adjust the fan speed due to the heat exchanger temp.

If heat exchanger is below 35.2℃ and over 25.2℃, fan speed is low;

If heat exchanger is below 25.2℃, fan speed is ultra low, and remain the state (When being electrified for the first time, enter heating mode or defrosting is over, if heat exchanger temp. is below 25.2℃ and over 16℃, fan speed is ultra low; if heat exchanger temp. reduces below 23℃, fan motor speeds.).

3) When heat exchanger temp. rises, fan speed will be ultra low and low state, if 4 minutes later, heat exchanger temp. can not enter the last period, fan speed will rise up to the last speed. When up to the set speed,

fan speed will stay at this state for 4 minutes and then adjust fan speed due to the heat exchanger temp.

4) When heat exchanger temp. reduces, if fan speed is low for over 4 minutes, the fan motor will go back to the set speed.

2.2.2 3-minute protection when compressor stops

1) After compressor stops (thermostat is OFF), if coil temperature is below 25.2℃, indoor motor stops; if coil temperature is over 25.2℃, fan motor will be in low speed, after the fan time is over 50 seconds, if coil temperature is over 28℃, fan motor will be in low speed; if coil temperature is below 23℃, indoor motor will stop.

2) If the unit is shutoff by remote controller, indoor motor will stop after running at ultra low speed for 10 seconds.

2.2.3 Compressor restart up

After hot startup, the fan speed is the state set by remote controller.

When in Auto Fan mode, the air flow depends on the temperature.

2.2.4 In defrosting, after running at low speed for 20 seconds, fan motor stops. After defrosting is over, if compressor stops, indoor motor will stop too. When compressor re-starts up, air flow can be set at High, Med, Low according to the heat exchanger temperature.

2.3 Cooling operation

When in Auto Fan mode, the air flow will be confirmed according to the temperature.

2.4 Dry operation

2.4.1 If compressor is OFF, and in 3-minute standby:

1)Compressor stops, fan motor will stop too.

2)If 3-minute protection is over, fan is in ultra low state.

3)After 3-minute standby state, compressor will run.

2.4.2 If compressor is ON:

Fan motor will run at the set speed.

When in auto fan mode, the air flow will be adjusted due to the temperature.

3. Power operation (depend on the remote controller, not available for this model)

1) Power operation will keep for 15 minutes.
2) The unit stops or 15 minutes later, the power operation will stop.
3) If changing the operation modes, the power operation will stop.
4) If at soft mode or TIMER ON function works, the power operation stops.
5) In Auto mode, the Power/Soft function can work. In cooling mode, the unit will run at Cooling Power/Soft mode. In heating mode, the unit will run at Heating Power/Soft mode. In Fan mode, there is no Power/Soft function.

3.1 Power heating operation

1) Adjust the set temperature, can modulate the temperature.
2) Air flow is Auto Med speed.
3) In defrosting, outdoor unit will not the communication signal of power operation.
4) After Power operation works for 15 minutes, within 10 minutes, compressor can not be OFF, excluding the failure condition.

3.2 Power cooling operation

1) Modulate the set temperature.
2) Air flow is Manual High speed.
3) After compressor is running, in 3 minutes, the unit will not make low load protection.

3.3 Not available for Fan, Dry mode.

4. Soft operation

The indoor unit will send the Soft operation signal to outdoor.

4.1 Soft heating

When compressor is running, air flow is SSLO.

When compressor stops, in 20 seconds, air flow is SSLO, and then turn into ultra low.

4.2 Soft cooling

Air flow is SSLO.

4.3 Not available for Fan, Dry mode.

5. Negative ion function

1) When receiving the command, if fan motor is running, the negative ion generator will work to realize the negative ion emission function.
2) If fan motor stops, the negative ion generator is OFF.
3) When negative ion generator is OFF, at this time, if you set the negative ion function, when fan motor begins to runs again, the negative ion generator will be ON automatically.

6. TIMER operation

1) Count the time according to the difference between TIMER CLOCK and the present CLOCK time.
2) When TIMER function works, the TIMER lamp on the indicator board is ON.
3) TIMER OFF

When TIMER OFF is set, the indication on the panel will not change (background lamp is OFF), the timer icon will display. When timer clock arrives, the operation will stop.

4) TIMER ON

When TIMER ON is set, the indication on the panel only displays the TIMER icon(background lamp is OFF), When timer clock arrives, the unit will run at the set state.

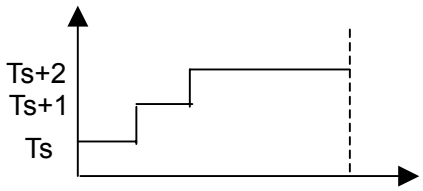
5) TIMER ON/OFF

The operation will be performed as the set state.

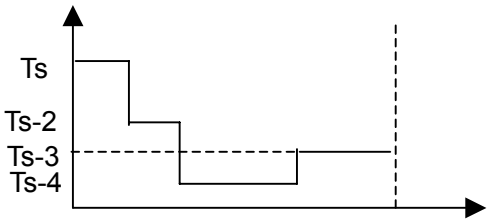
7. SLEEP operation

Sleep function: energy saving function at night, TIMER lamp will be ON.

7.1 Standard sleep function: in cooling or dry mode, after running at SLEEP mode for 1 hour, the set temperature will rise 1℃, another 1 hour later, the set temperature will rise another 1℃; the unit continues running for 6 hours, then the unit will stop.



7.2 Standard sleep function: in heating mode, after running at SLEEP mode for 1 hour, the set temperature reduces 2℃, another 1 hour later, the set temperature will reduce 2℃, and another 3 hours later, the set temperature rises 1℃; the unit continues running for 3 hours, then the unit will stop.



7.3 Non-standard SLEEP function: the sleep function can realize 1~8 hours sleep mode when being combined with the TIMER function.

1） When in Auto mode, the unit will make SLEEP operation due to the setting.

2） After setting SLEEP function, the clock can not be adjusted.
3） If sleep time is no more than 8 hours, when the time arrives, the unit wil shut off.
4） If sleep function is set after setting TIMER OFF function, the unit will execute as the SLEEP function.
5） If SLEEP function is set, the TIMER function can not be set.
6） If sleep function is set after setting TIMER ON function, the sleep function only can be set befroe the TIMER ON time arrives.
7） After setting sleep function, press CLOCK button to check the clock; press TEMP button to display the set temperature, and press again to change the set temperature.

8. Auto operation

Full auto operation

If the unit is at Auto mode, the system will adjust the operation mode according to the temperature difference between the set temperature and the room temperature. Below Tr stands for room temperature, Ts stands for room temperature.

If entering Auto mode for the first time, the unit will execute as follow:

Tr≥Ts-3℃ select cooling mode

Tr＜Ts-3℃ select heating mode

After entering Auto mode, the operation mode can be changed between cooling and heating: if the unit is in cooling mode at present, when the compressor arrives the stop temperature, the compressor stops; after compressor stops for 15 minutes, the unit will check the temperature again, at this time, if Tr＜Ts-3℃, the unit will enter heating mode, or it will still be in cooling mode; if the unit is in heating mode at present, when the compressor arrives the stop temperature, compressor will stop, afte compressor stops for 15 minutes, the unit will check the room temperature, if Tr＞Ts+3℃, the unit will enter cooling mode, or it will still be in heating mode.

In this mode, TIMER mode and SLEEP mode are available. In cooling mode, the unit will be in COOL SLEEP; in heating, the unit will be in HEAT SLEEP.

Fan blade can swing or be fixed on one position, and fan speed can be set at High, Med, Low or Auto.

9. Trial running

The frequency is 58Hz, and the unit is in cooling mode, fan speed is High.

After the trial running time is 30 minutes, the unit will shut off.

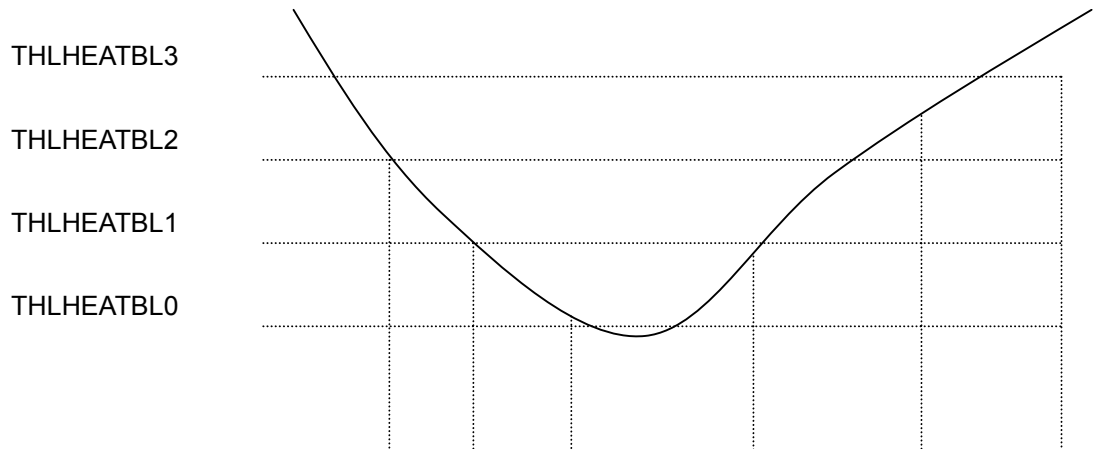
In trial running, the unit will quit this state if receiving the remote signal.

There is no low load protection.

10. Low load protection

In cooling/dry mode, make the low load protection due to the heat exchanger temperature.

heat exchanger temp.



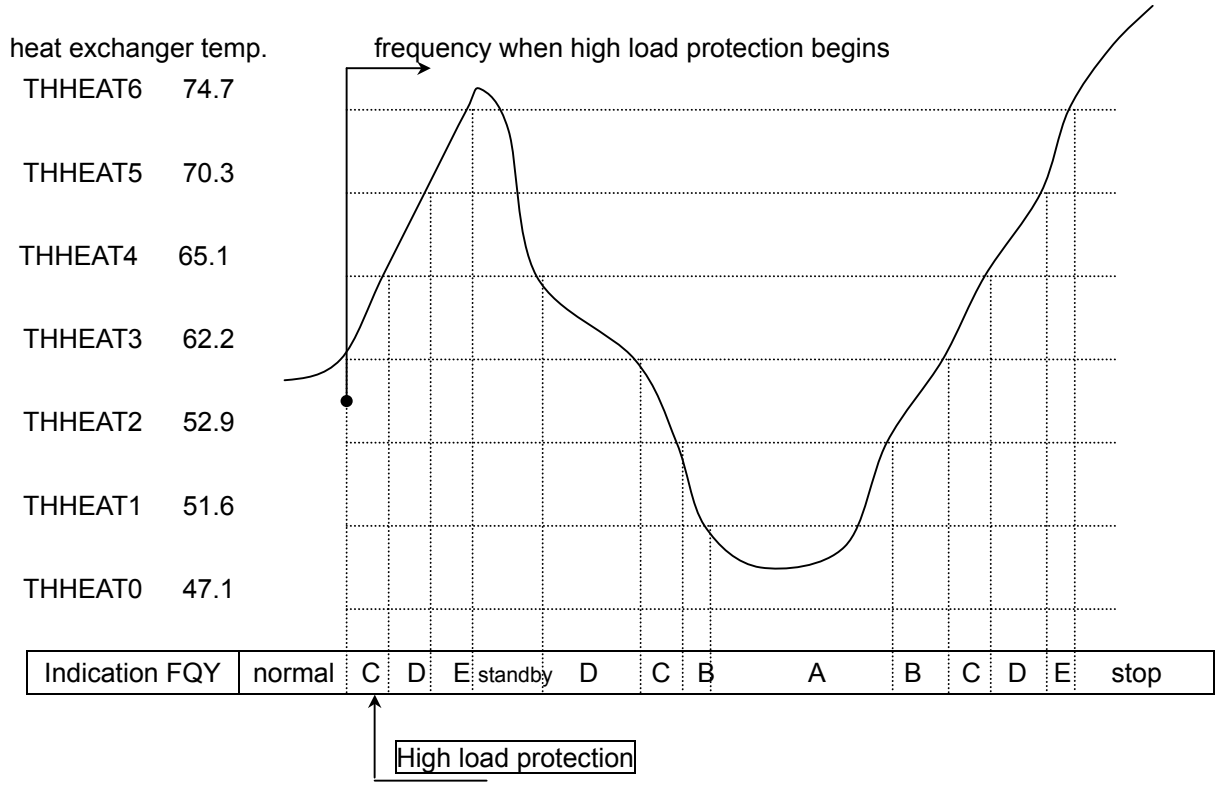
Indication area	normal	area 2	area 1	stop	area 1	area 2	normal

In trial running, the low load protection is ignored.

After compulsory cooling begins for 1 minute, for 3 minutes, the low load protection is cancelled temporarily. (THLH[3，2，1，0]= 7℃ ，4.6℃，2.2℃，-0.5℃)

11. High load protection

In heating mode, make high load protection due to the heat exchanger temperature.



When the heat exchanger temperature is not up to "THHEAT[2]", the temperature will resume the control of normal temperature area.

Temp. point	Temp.	FQY point	FQY
THHEAT3	62.6	FQHHEAT2	70
THHEAT4	65.1	FQHHEAT3	40
THHEAT5	70.3	FQHHEAT4	30
THHEAT6	74.4	Stop	

12. Temperature cutoff protection

In cooling mode, every time compressor runs for 1 minute after startup, the unit will check the indoor coil temperature, when Tg>Tr＋5, the unit will shut off for 3 minutes, and then re-start up; if it the temperature cutoff protection has occurred for 3 times contineously, the unit will stop and alarm.

In heating mode (except for defrosting), every time compressor runs for 1 minute after startup, the unit will check the indoor coil temperature, when Tg＜Tr－5, the unit will shut off for 3 minutes, and then re-start up; if it the temperature cutoff protection has occurred for 3 times contineously, the unit will stop and alarm (in defrosting and in 2 minutes after defrosting is over, the unit will not measure temperature).

13. EEPROM control

When outdoor being electrified, if parameter of EEPROM is different from the data of check sum, EEPROM will be abnormal.

Once indoor receives the EEPROM abnormal signal from outdoor, the unit will display EEPROM abnormal.

At this time, control and emergency operation will not be received. Only power off the unit, the failure can be resumed.

14. Failure record

If there is no failure code record, nothing displays.

Failure code will be over automatically 10 seconds later.

According to the switch or the stop signal of remote controller, the failure record will be over.

For the unit with EEPROM, the failure record will be saved after power supply is reset.

15. Special functions

15.1 Auto-restart

a. Entering condition: In 7 seconds press the SLEEP button for 10 times, the buzzer sounds 4 times. At the same time, the present state will be saved in EEPROM.

b. After entering the auto-restart state, the indoor will execute as follow:

The indoor unit will run at the state set by the remote controller and the emergency set state, and the present state will be saved in indoor EEPROM. The outdoor will run at the state set on the panel and this state will be saved in EEPROM.

After entering the auto-restart, if being electrified after being powered off, the outdoor unit will send the signal of the present operation and auto-restart signal to indoor panel. When panel receives the feedback information, it will remain the auto-restart state.

c. Quit condition: in 7 seconds press SLEEP button 10 times, the buzzer will sound 2 times.

d. If in auto-restart state, set TIMER, and SLEEP functions, when being electrified after being powered off, the unit memory will be OFF state.

15.2 Rated operation

15.2.1 Rated cooling

a. High speed at cooling, the set temperature is 16℃, press temp. "-" and SET button simultaneously, after the buzzer sounds 2 times, enter the condition.
b. In this condition, the unit will execute as follow: entering the rated frequency operation; on the panel there will be cooling mode; in communication, there is rated indication.
c. Quit condition: once receiving the remote signal, the unit will quit the rated operation and then turn into remote control state.

15.2.2 Rated heating

a. High speed at heating, the set temperature is 30℃, press temp. "+" and SET button simultaneously, after the buzzer sounds 2 times, enter the condition.
b. In this condition, the unit will execute as follow: entering the rated frequency operation; on the panel there will be heating mode; in communication, there is rated indication.
c. Quit condition: once receiving the remote signal, the unit will quit the rated operation and then turn into remote control state.

16. Emergency switch

16.1 In OFF state, press emergency switch for below 5 seconds contineously, the unit will begin emergency operation as Auto mode.

16.2 In OFF state, press emergency switch for over 5 seconds and below 10 seconds contineously, the unit will begin trial running in cooling mode (30 minutes later quit the trial running).

16.3 In OFF state, press emergency switch for over 10 seconds and below 15 seconds contineously, the unit will show the previous failure.

16.4 In OFF state, press emergency switch, there will be Auto operation on the panel.

16.5 In OFF state, press emergency switch for less than 15 seconds, the unit will not receive the remote signal. If over 15 seconds, the unit will in OFF state, and can receive the remote signal.

16.6 In running, press emergency switch, the unit will shut off.

16.7 If abnormal condition occurs, press emergency switch, the unit will shut off.

16.8 When failure code displays, press emergency switch, the failure code will not display.

16.9 In running, when the unit is normal or abnormal, or failure code occurs, press emergency switch contineously, at this case, the unit can receive the remote signal.

16.10 Failure code display

Press emergency switch for up to 10 seconds, and sounds 3 times, if releasing the switch, the unit will display failure record. If pressing the switch time is up to 15 seconds, no display on the panel, and the failure record is cancelled.

Remark: The latest record will not be cancelled when being powered off, and the data will be saved in EEPROM. The previous alarm will display on the indication board.

10 seconds later, the failure record will be cancelled.

3.6 Electric control function for fixed frequency outdoor unit(*EAA)

1. Outdoor motor control

When the system does not occur overcooling, overheating, and over current protections, the outdoor motor will occur the below changes according to the outdoor ambient temperature and indoor coil temperature.

1.1 General information

Outdoor motor is 2-speed type: high, low and stop.

The fan speed will change unless every step has been run for 45 seconds.

1.2 Cooling mode

1.2.1 Indoor coil temp.≥15℃, outdoor motor runs at high speed.

1.2.2 Indoor coil temp.＜5℃, outdoor motor runs at low speed.

1.2.3 5℃≤Indoor coil temp.＜15℃, outdoor motor will change due to the outdoor ambient temp.

Outdoor ambient temp. ＞28℃, enter high speed; outdoor ambient temp.＜26℃, enter high speed; 26≤outdoor ambient temp.≤28℃, keep the current speed.

In running, the system will be controlled as 2℃ temperature tolerance; if outdoor ambient temp. ＜ 26℃, enter low speed; if outdoor ambient temp.＞28℃, enter high speed.

1.3 Heating mode (heat pump model)

1.3.1 Indoor coil temp.≥50℃, outdoor motor will run at low speed.

1.3.2 Indoor coil temp. ＜40℃, outdoor motor will run at high speed.

1.3.3 40℃≤indoor coil temp.＜50℃, outdoor motor will change with outdoor ambient temp.

Outdoor ambient temp.＜13℃, enter high speed; Outdoor ambient temp.＞15℃, enter low speed; 13≤Outdoor ambient temp.≤15℃, keep the current speed;

In running, the system will be controlled as 2℃ temperature tolerance; if outdoor ambient temp. ＜ 13℃, enter high speed; if outdoor ambient temp.＞15℃, enter low speed.

Every step will run at least 45 seconds, and the motor will start up 2 seconds earlier than compressor.

2. Defrost control

2.1 Defrosting condition

In heating mode, the compressor will run for 30 minutes continuously or run for 45 minutes in all and for over 5 minutes contineously, outdoor motor at least runs for 2 minutes; If the outdoor ambient temperature and outdoor coil temperature can comply with the shadow area in the figure and keep for 1 minute, the defrost will work and send defrost signal to indoor unit, then indoor unit will control indoor motor accordingly.

2.2 Quit condition

Outdoor coil temp. arrives the defrost-end temp. 14℃ or the defrost time is over 12 minutes, the defrost will finish and send signal to indoor unit.

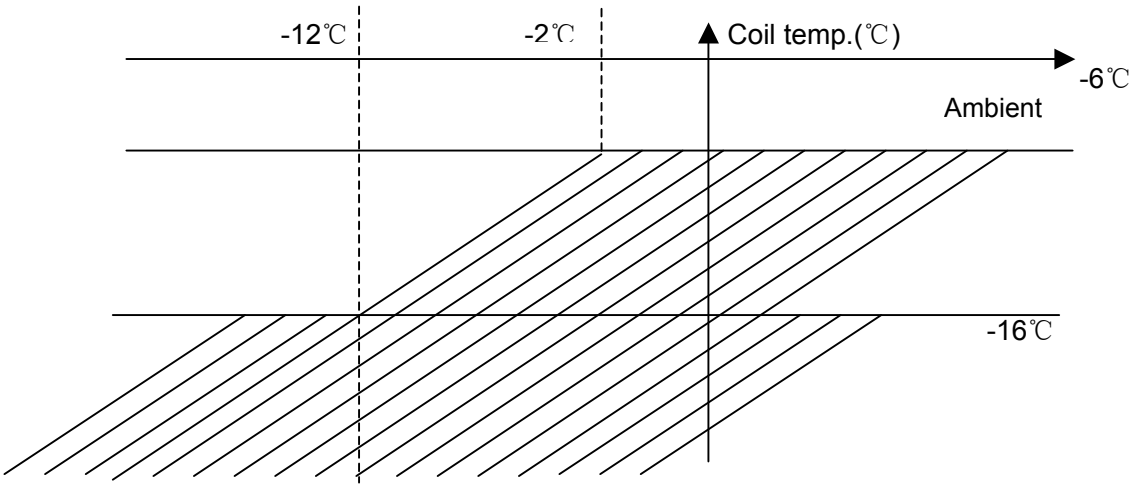
2.3 Defrost operation

Compressor and outdoor motor stop, indoor motor stops meanwhile; 55 seconds later, the reversing valve will close. Another 5 seconds later, compressor starts up.

After defrost is over, compressor stops, outdoor motor runs at high speed; 55 seconds later, the reversing valve will open. Another 5 seconds later, compressor starts up and indoor motor runs at anti-code mode.

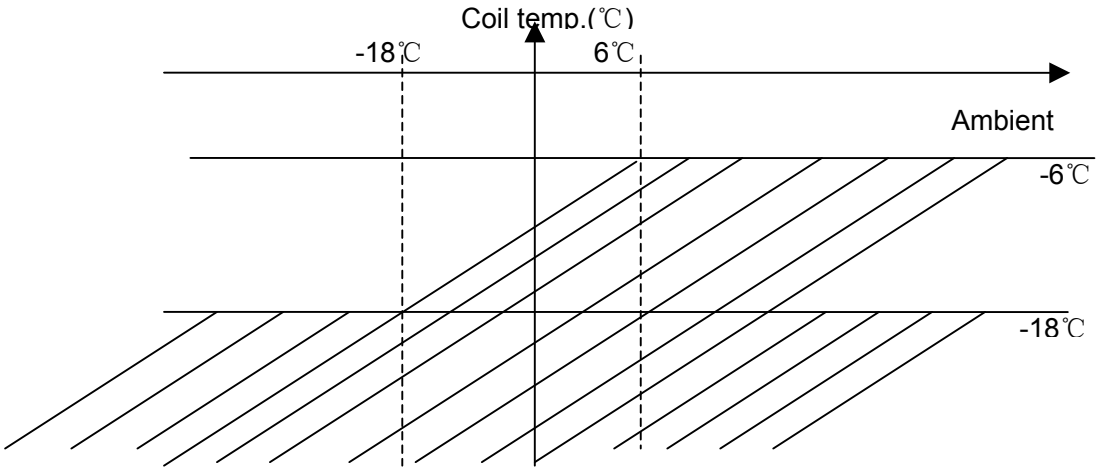
Type 1: Standard defrost

1) If Tr≥-2℃, when Tp≤-6℃, enter defrost.
2) If -12℃≤Tr＜-2℃, when Tp≤-6℃, please refer to the following chart.
3) No matter the ambient temperature, when Tp≤-16℃, enter defrost.



Type 2: Non-standard defrost (rectify defrost data by the device)

1) If Tr≥6℃, when Tp≤-6℃, enter defrost.
2) If -18℃≤Tr<-6℃, when Tp≤-6℃, please refer to the following chart.
3) No matter the ambient temperature, when Tp≤-18℃, enter defrost.



2.4 Manual defrost

Indoor sends defrost signal to outdoor, and the outdoor will receive the defrost signal when compressor is running in heating mode, then enter the defrost process. When outdoor coil temperature arrives the defrost-end point and the defrost time is over 5 minutes, outdoor will send the defrost-end signal to finish the defrost.

3. Compressor crankcase heater working condition

By the N.C. (normal close) auxiliary point of AC contactor to control, when compressor stops, the heater will work; when compressor works, the heater will stop.

4. System protection function

4.1 Anti-freezed protection

When compressor has run for over 6 minutes, to prevent indoor evaporator freezing (in cooling/dry mode), if indoor coil temp. is below -1 degree for over 1 minutes, compressor and outdoor motor will stop and enter Fan mode. After compressor stops for 9 minutes, and indoor coil temp. rises up to 10 ℃, the unit resumes to cooling mode, compressor and outdoor motor will work again.

4.2 Overheat protection

In heating mode, if indoor motor is running and the compressor has run for over 30 seconds, the

sensor will check the indoor coil temperature, and send the temp. to outdoor; if indoor coil temp. >T1（53℃）, the outdoor motor will enter low speed; if indoor coil temp.＜T2（50℃）, outdoor motor will enter high speed; if indoor coil temp. >T3（56℃）, outdoor motor will stop; if indoor coil temp. ＜T4（53℃）, outdoor motor will resume low speed; when indoor PCB receive the signal of outdoor motor stop from outdoor PCB over 2 minutes, if indoor coil temp. >T6（70℃）or 10 minutes later indoor coil temp. >T5（56℃）, send compressor stop signal to outdoor unit; if indoor coil temp.＜46℃ and the compressor has stopped over 3 minutes, send compressor run signal to outdoor unit, and compressor resume to normal.

The outdoor motor is control by oudoor unit.

4.3 Over current protection

4.3.1 In heating mode

After compressor running for 40 seconds, if the current thermostat has measured that system working current is more than 21A and keep it for 5 seconds, outdoor motor will convert into low speed; if working current is less than 18A, it will resume to high speed; if working current is more than 25A and keep it for 5 seconds, outdoor motor will stop; if working current is less than 22A, outdoor will resume to low speed (fan speed conversion frequency must be more than 45 seconds); after compressor running for 5 minutes, if working current is more than 34A and keep it for 5 seconds, compressor will stop and will resume 3 minutes later.

If within 30 minutes there are 3 times compressor over current protection, compressor will not start up, meanwhile, LCD will display E5. Only shut off and powered on again, the protection can be cancelled.

4.3.2 Not in heating mode

After compressor running for 5 minutes, if working current is more than 34A and keep it for 5 seconds, compressor will stop and will resume 3 minutes later.

If within 30 minutes there are 3 times compressor over current protection, compressor will not start up, meanwhile, LCD will display E5. Only shut off and powered on again, the protection can be cancelled.

4.4 Power protection

4.5 High/Low Pressure protection (cooling only unit without this function)

After compressor running for 8 minutes, the system will check the pipe pressure. If pipe pressure is over high, high pressure switch has acteivated more than 15 seconds, compressor, outdoor motor will stop and 3 minutes later it will resume. If within 30 minutes there are stop phenomenon 3 times because of pressure over high, the compressor will stop and LCD will display E6. only shut off and powered on again, the protection can be cancelled.

Low pressure protection

(1) After compressor running for 3 minutes, if low pressure switch has acteivated for 15 seconds continuously, compressor will stop and alarm.

(2) Check the low pressure switch when compressor is stop, the compressor will not run if low pressure switch act, low pressure switch has acteivated more than 30 seconds, LCD will display Low pressure abnormal

(3) In defrosting and in 6 minute after defrost is over , low pressure switch will not be checked.

(4) In heating, compressor run and outdoor motor stop, low pressure switch will be shielded.

(5) Low pressure protection can be resumable when power-off.

4.6 3-minutes protection for compressor

After compressor stops, it cannot be started until 3 minutes later. During the machine's running, if the time not more than 3 minutes after power is off, the compressor cannot be restarted until 3

minutes later after it is powered on again

4.7 Sensor broken down protection

a. Check if sensor breaks down

After compressor has run for 2 minutes, the unit will check the sensor, Outdoor board checks the sensor in short circuit or in open circuit or near to short/open circuit for 2 minutes continuously, then it will adjust the sensor broken down.

b. How to deal with it?

If the outdoor ambient temperature sensor and the outdoor coil temperature sensor have broken down, the unit will stop running, and alarm E3, E4, E4 simultaneously.

4.8 Starting current control

Outdoor unit load control: after the outdoor motor running for 2 seconds, main compressor start up, the secondary compressor will run 2 seconds later.

4.9 4-way valve control

5. Outdoor PCB test

(1) There are three pins marked with TEST, please make the two ones near to COOL in short circuit. Outdoor begin to run in cooling mode, that is, compressor run and outdoor motor works at high speed.

(2) There are three pins marked with TEST, please make the two ones near to HEAT in short circuit. Outdoor begin to run in heating mode, that is, compressor and 4-way valve run, outdoor motor works at low speed.

3.7 Electric control function for DC inverter outdoor unit(*ERA)

Note: Take the electric control function of AU362AHERA as an example, as for other models, there are many differences, please refer to the corresponding Service Manual to reach the detailed information.

Definition of sensor sign: Taoi=indoor ambient temp., Tao=outdoor ambient temp., Tc=indoor coil, Td=dischange, Te= outdoor coil, Ts=suction, Tci=condenser air inlet temp.

Control purpose: make condensate pressure and vaporing pressure normal, systerm running reposefully.

1.1 Outdoor running frequency and the control procedure

1.1.1 Outdoor running frequency control

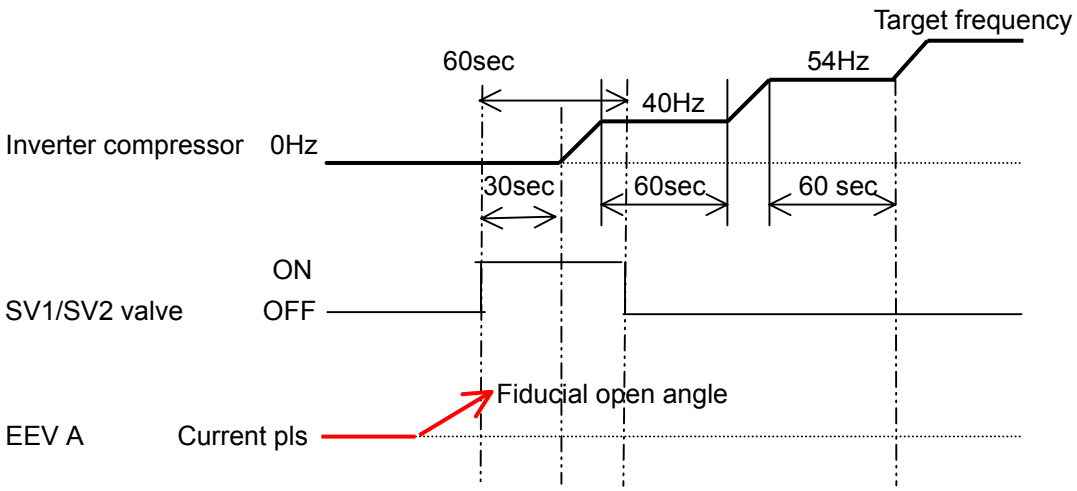
Outdoor running frequency range:

Outdoor temp.	~15℃		15℃~38℃		38℃~	
Cooling frequency range	20RPS	50RPS	35RPS	85RPS	20RPS	78RPS
Outdoor temp.	~0℃		0℃~15℃		15℃~	
Heating frequency range	35RPS	95RPS	20RPS	90RPS	20RPS	65RPS
Defrost frequency	85RPS					

1.1.2 Compressor startup

Every time compressor is from OFF to ON, no matter how is the indoor target frequency, compressor running frequency must be stay at 40Hz and 54Hz (E) for 1 minutes (At outdoor discharging temp. overhigh protection and compressor overcurrent protection, the frequency will be reduced), and then rise up to the target frequency. After the unit is in normal, the above procedure is not available.

General startup:



Special condition:

If the target frequency is less than 40Hz, the startup must run for 1 minute at both 40Hz and 54Hz, then run to the target frequency.

The jump frequency point(syntonic point) should be avoided during rise frequency process, so some jump frequency points(about 4～5) should be pre-setted.

The jump frequency points of compressor are: 50HZ (E), 60 HZ (E), 70 HZ (E), 80HZ (E) and 90HZ (E)

1.1.3 Heating mode, cooling mode and dehumidification

After performing the compressor startup procedure, the unit will run according to the indoor frequency.

2 minutes later, the unit will compensate the running frequency due to the relative condition.

1.1.4 Compressor frequency rising/reducing speed

Rapid rising/reducing frequency speed 1----1Hz/second

Slow rising/reducing frequency speed 2----1Hz/10 seconds

1.2 Outdoor motor control

Note: When the outdoor motor needs to change the class, there will be 20-second interval to avoid the fan

speed changing frequently.

1.2.1 Fan motor speed class has 7 steps, the rotation and class is as follow:

DC motor	Class-0	Class-1	Class-2	Class-3	Class-4	Class-5	Class-6	Class-7
	Stop	250（E）	350（E）	450（E）	550（E）	650（E）	850（E）	950（E）
AC 3-speed motor	Stop	Low speed			Middle speed		High speed	

1.2.2 Blowing remain heat after compressor shuts off

In cooling mode, when compressor shuts off, outdoor motor will enter speed Class-3 automatically, and will shut off after blowing remaining heat for 30 seconds.

Note: adopt this control when defrost is over, outdoor motor will enter speed Class-7 when compressor stops, and will shut off after blowing remaining water 30 seconds later, but do not blow to the air outlet grille, or ice will be appeared

1.2.3 Outdoor motor control in cooling/dry mode

- Speed range: class 1-7
- Fan motor locked rotor: When fan motor is requested to work, if fan speed is measured to be below 50RPM and keep for 15 seconds, the compressor will stop, but 3 minutes later, it will re-start up again. If within 10 minutes, the condition occurs 3 times, the unit will stop and alarm.
- When compressor starts up, the unit will adjust automatically in 3 minutes according to the outdoor ambient temperature, and 3 minutes later, the unit will adjust according to the outdoor ambient temperature and compressor running frequency.

Fan speed chart in 3 minutes after compressor starts up (control fan speed according to ambient temp. 3 minutes later):

Ambient temp.	~10	10~25	25~
Cool, dry	Class-3	Class-5	Class-7
heat	Class-7	Class-5	Class-3

Fan speed chart in 3 minutes after compressor starts up due to the ambient temp. and running frequency:

Compressor frequency in cooling		F<25Hz	25Hz≤F<45Hz	45≤F
Tao	Over 28℃	Class-3	Class-5	Class-7
	Below 28℃	Class-1	Class-3	Class-5
Compressor frequency in heating		F<25Hz	25Hz≤F<45Hz	45≤F
Tao	Over 15℃	Class-2	Class-4	Class-5
	Below 15℃	Class-3	Class-5	Class-7

1.3 Electronic expansion valve (EEV) control

1.3.1 Electronic characteristic

Max. open angle	500 pulse
Driving speed	PPS

1.3.2 Initialization of EEV

EEV driving speed:

open direction: 31.25 PPS (32MS)(E); close direction: 31.25 PPS (32MS)(E)

Movement of EEV full-open, full-close:

Full-open: 470 pulse open(E);

Full-close: after 540 pulse close for 3 times (60 pulse close, 5 pulse open, stop at 5 open range at last).

1.3.3 Open angle limitation of EEV

	Unit stop	Adjustable upper limitation	Thermostat ON	Thermostat OFF	Adjustable lower limitation
Cool / dry	5（E）	470（E）	standard open angle+tolerance	5（E）	90（E）

heat	52（E）	400（E）	standard open angle+tolerance	52（E）	80（E）

1.3.4 The movement of valve after compressor startup/shut off

Compressor startup: the compressor will startup after the open angle of valve has reached the fiducial open angle;

Compressor shut off: valve begin to full-close after the compressor has stopped.

1.3.5 Enter the fiducial open angle after compressor startup(no matter 2 minutes later or 2 minutes ago), 4 minutes later adjust automatically according to the target over-heat value, 10 minutes later begin to modify the over-heat value and open angle of valve.

Cool, dry

Outdoor temp.	~22℃			22℃~		
Compressor frquency	~50	50~80	80~	~50	50~80	80~
PMV open angle	180	200	220	180	200	240

Heat

Outdoor temp.	~6℃			6℃~		
Compressor frquency	~50	50~80	80~	~50	50~80	80~
PMV open angle	200	180	220	220	200	240

1.3.6: Min. open angle during compressor running(not the fixed open angle, but the min. limited open angle according to the different frequency)

Cool, dry

Outdoor temp.	~22℃			22℃~		
Compressor frquency	~50	50~80	80~	~50	50~80	80~
PMV open angle	80	100	145	70	145	170

Heat

Outdoor temp.	~6℃			6℃~		
Compressor frquency	~50	50~80	80~	~50	50~80	80~
PMV open angle	80	100	145	100	120	145

1.3.7 Confirmation of over-heat degree

Standarded over-heat degree (E)

Actual running Hz		~60	~70	~80	~90	90~
TSH0 （℃）	Cool, dry	3	6	6	4	2
	heat	2	2	1	1	1

When discharging temp. Td is too high or too low, modify the EEV angle.

Act after compressor has started up for 10 minutes

Mode	Modification angle	Max. modification
Cooling	Td＞95℃, standarded over-heat degree -1 degree / 2 minutes 50℃< Td<95℃, keep the angle TD<50℃, +1 degree / 2 minutes, and plus to 0 degree gradually	Max. -5
Cooling	Td<55℃, standarded over-heat degree +1 degree / 2 minutes 50℃< Td<95℃, keep the angle Td＞95℃, -1 degree / 2 minutes, and reduce to 0 degree gradually	Max. +5
Heating	Td＞95℃, standarded over-heat degree -1 degree / 2 minutes 50℃< Td<95℃, keep the angle TD<50℃, +1 degree / 2 minutes, and plus to 0 degree gradually	Max. -5
Heating	Td<55℃, standarded over-heat degree +1 degree / 2 minutes 50℃< Td<95℃, keep the angle Td＞95℃, -1 degree / 2 minutes, and reduce to 0 degree gradually	Max. +5

1.3.8 Modify the EEV angle according to the discharging temp. Td

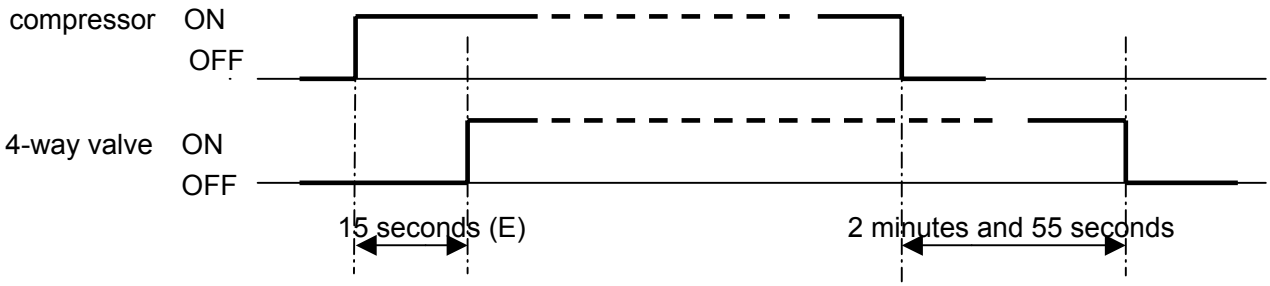
If the upper limitation of open range reachs 470, stop add the tolerance. Within 10 minutes after compressor starts up, it will not modify. The detecting period is 2 miunites.

Cooling mode	**Modification angle**
103℃< discharging temp.	+5 degree/2 miunites, it will stop until up to the max. permitted opening angle +50
90℃< discharging temp.<=103℃	Keep the angle
<=90℃	-1 degree/2 miunites, and reduce to 0 degree gradually
Heating mode	**Modification angle**
102℃< discharging temp.	+5 degree/2 miunites, it will stop until up to the max. permitted opening angle +50
88℃< discharging temp.<=102℃	Keep the angle
<=88℃	-1 degree/2 miunites, and reduce to 0 degree gradually

1.4 4-way valve control

- The 4-way valve control in defrosting: refer to the defrosting procedure.
- 4-way valve control in other modes:

In heating mode, 4-way valve will open in 15 seconds after compressor starts up. When compressor not startup or in non-heating mode, 4-way valve will close to ensure the compressor has stopped for at least 2 minutes and 55 seconds.



1.5 Outdoor defrosting control

There are two defrost methods according to the different system. The outdoor dip-switch is used to realize the defrost method change-over because of the same PCB for 3HP, 4HP, 5HP and 6HP unit. For the samll outdoor unit such as AU362AHERA adopt the ordinary defrost method, that is stop unit and change to cooling defrost, for the double fan system auch as AU48NAIERA, AU60NAIERA etc. adopt realtime bypass defrost, that is some refrigerant is bypassed to condenser for defrosting in heating mode without stop the unit, meanwhile ensure the heating progress of indoor unit. When there is a little frost on condenser, some refrigerant is bypassed to condenser for defrosting to ensure the outdoor fan motor works in the small wind resistance condition. The ordinary defrost method can also be used for the double fan system.

A. Ordinary defrost

In heating mode, defrosting temp. sensor Te will check the frosting condition of outdoor heat exchanger and make defrosting control.

1.5.1 Tao＞15℃(E), not enter defrost;

1.5.2 In heating mode, if the compressor has run for 10 minutes (E) and run for 45 minutes in all, the system will measure the defrosting temperature sensor Te(check the frosting condition of outdoor heat exchanger) and outdoor ambient temp. sensor Tao, if the below condition can be met for continous 5 minutes, the unit will enter defrosting operation:

a. 5℃(E)<Tao<15℃, Te<=-6℃(E);

b. -6℃(E)<Tao<5℃, Te≤C×Tao－α;

Set α as the following according to the selection of dip-switch:

Jumper selection	L	M	H
α(℃)	10(E)	7(E)	6(E)

In the place easy to frost, it is H; in the place difficult to frost, it is L; when out of factory, it is M.

Herein: C: Tao＜0℃, C=0.8　Tao≥0℃，C=0.6

c. Tao<-6℃, Te≤-12℃(E) and defrost compressor has run for 65 minutes (E) in all.

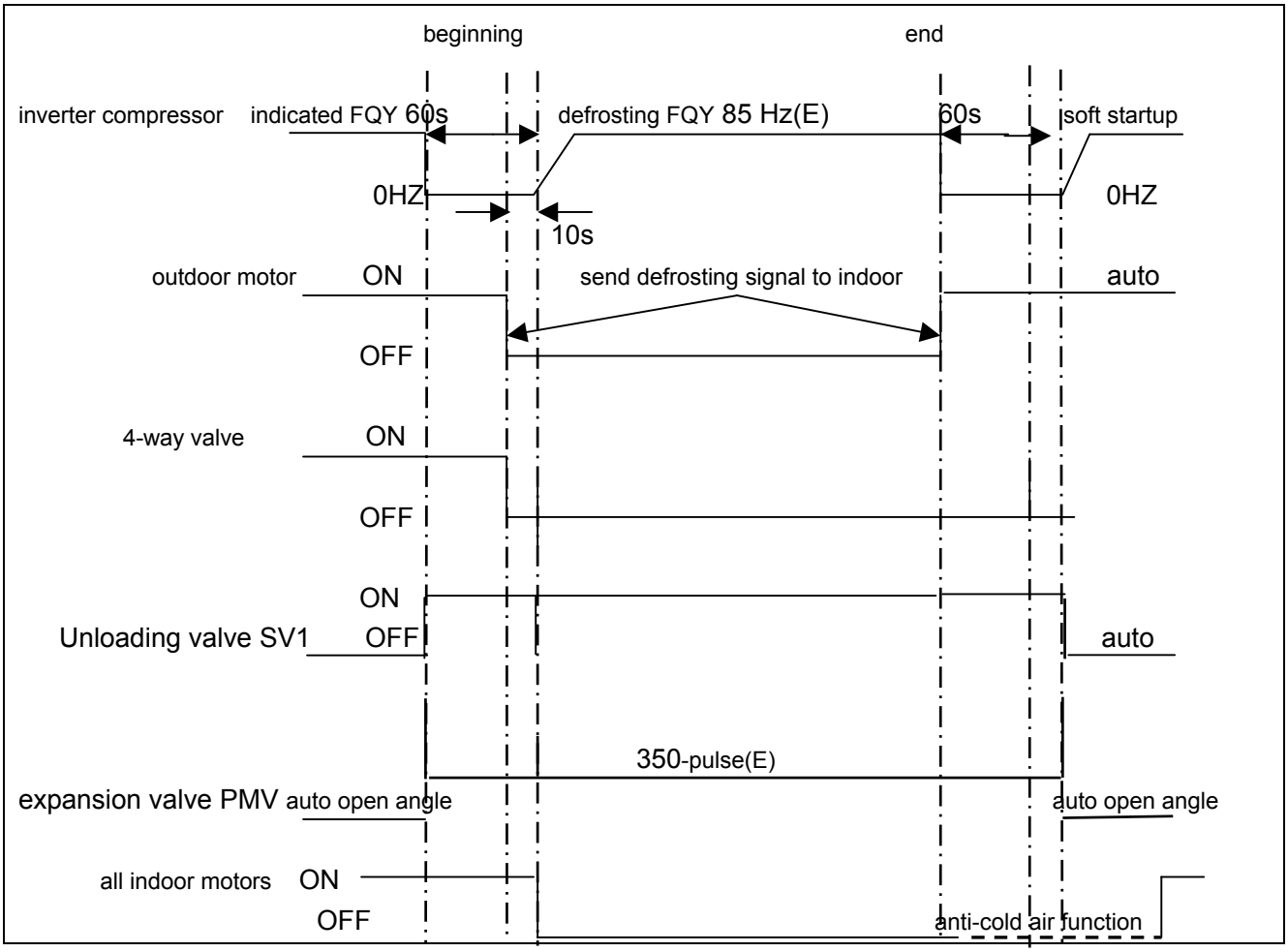
1.5.3 The control details refer to the following figure.

1.5.4 Cancel condition:

a. It will take 10 minutes(E) from beginning defrosting to quit it.

b. Te sensor will measure the condition of outdoor heat exchanger, if the temp. is over 10℃ for 60 seconds in all or is up to 14℃ for 30 seconds in all, the defrosting will be over.

Ordinary defrost operation flow char:



B. Realtime bypass defrost: when the second bit is ON, defrost can be finished in heating mode directly and not need to enter cooling mode by the open angle of SV1 and SV2 to bypass the refrigerant to condenser, meanwhile ensure the indoor unit is heating..

Enter condition

1. When Tao＞15℃(E), not enter defrost;

2. In heating mode, compressor is running for 10 minutes(E) contineously, or has run for 30 minutes(E) in all, by measuring the defrosting sensor Te(detect the outdoor heat exchanger frost condition) and outdoor ambient temp. sensor Tao, if for 5 minutes the below conditions can be met contineously, system will enter

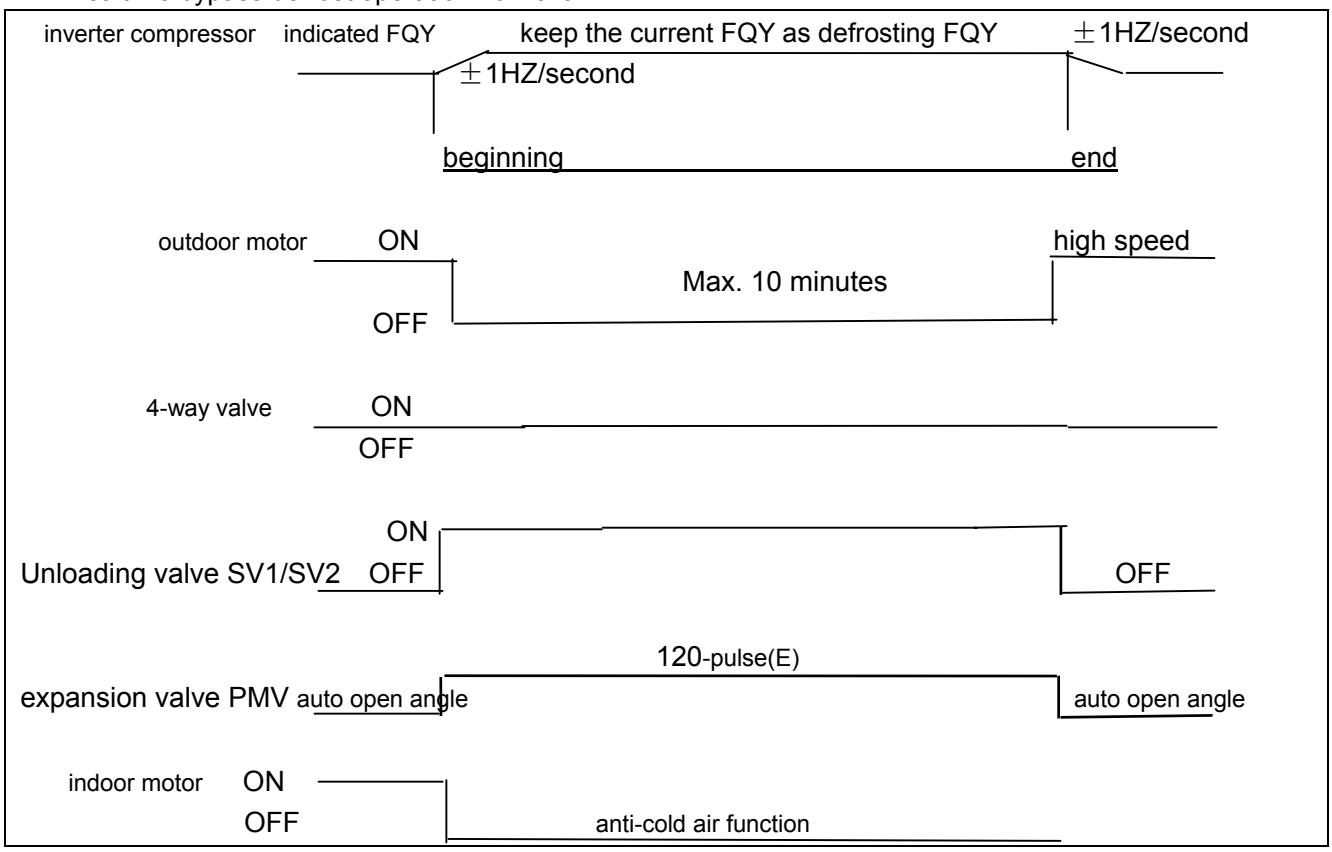
defrosting mode:

a. 5℃(E)<Tao<15℃, Te<=-4℃(E);

b. -6℃(E)<Tao<5℃, Te≤-9℃(E);

c. Tao<-6℃, Te≤-12℃(E) and defrost compressor has run for 50 minutes(E) in all.

Realtime bypass defrost operation flow char:



C. Compulsory defrost

Enter condition: when received the compulsory defrost single from indoor unit in heating mode (thermostat OFF), begin to compulsory defrost.

Quit condition: Te≥14℃(E) for 30 senconds contineously or Te≥10℃(E) for 60 senconds contineously or the defrost time over 10 minutes(E).

The manual defrost single of indoor unit will not cancel until the outdoor unit enter defrost.

Note: Manual defrost can also realize if the compressor is shut off, but follow the formula of compressor 3 minutes stop.

1.6 PTC output control

a. When outdoor unit is electrified, PTC output is 0, 20 seconds later, it is 1.

b. After compressor stops for 10 minutes contineously, PTC output is 0.

c. When getting the compressor-start signal, firstly PTC output is 1, 5 seconds later, compressor will start up.

1.7 Time shorting function, auto-checking function

Time shorting function: If the time shorting port is in short circuit, the unit will perform a 1/60 time shorting control.

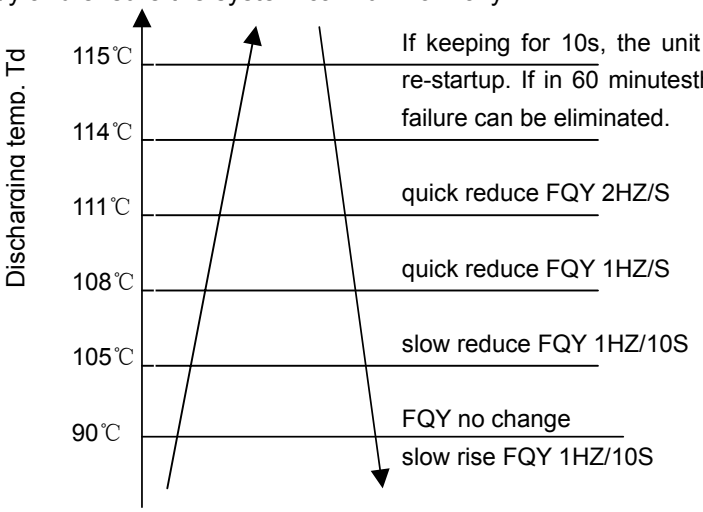
Auto-checking function: When first short-circuit then electrified, enter auto-checking.

1.8 Additional functions

1.8.1 The interval between compressor stop to startup again is 3 minutes, which can protection compressor. If being electrified for the first time, compressor will start up only when the valve opens to the normal operation angle.

1.8.2 Td high temperature protection

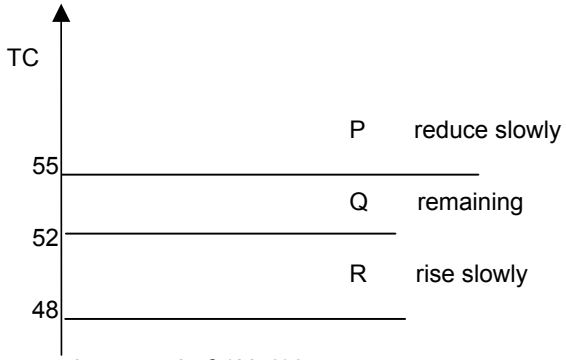
Purpose: make compressor frequency control if the discharging temp. is too high, to lower the discharging temp. efficiently and ensure the system can run normally.



Sensor detect method: 100 times(the cycle of procedure is about 5ms, detect method for every time: sample 8 times contineously, sort order and then adopt the average of the 2 middle values), adopt the average.

1.8.3 In heating indoor TC high temperature protection

Indoor heat exchanger temperature will check the indoor coil temperature, if it is over 55℃, the unit will reduce the compressor motor speed to perform the indoor heat exchanger temperature overhigh protection. If it is below 48℃, the unit will resume to be normal.



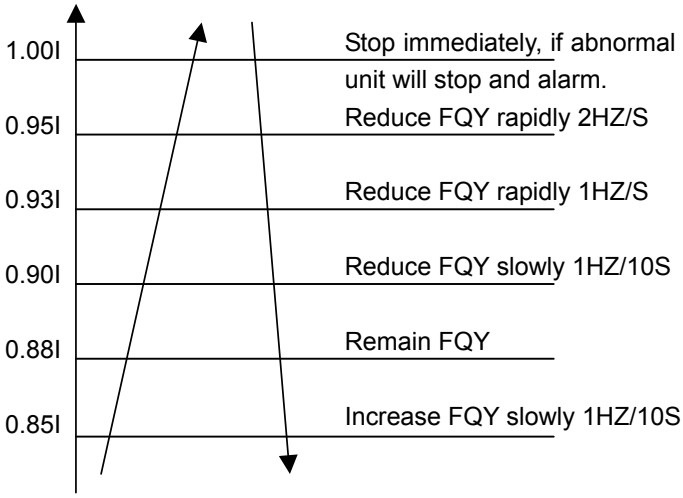
P: reduce at the speed of 1Hz/10s

Q: remain the previous value

R: rise at the speed of 1Hz/10s

1.8.4 Over current protection:

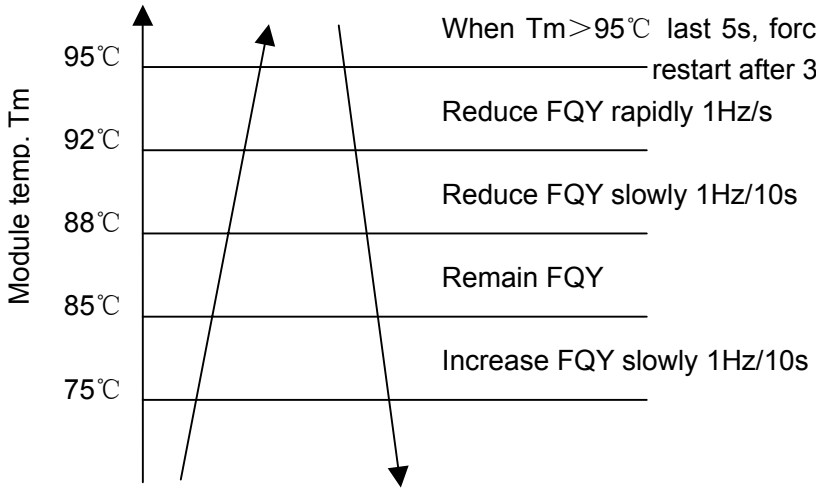
The compressor will stop and alarm if current exceed the 19.0A(E) for 5 seconds contineously during compressor startup.



The system can restart after 3 minutes standby when the compressor stop abnormally for the former 2 times. But the system will permanent stop and alarm if it stop abnormally 3 times in one hour, alarm will cancel after all the system is electrified again.

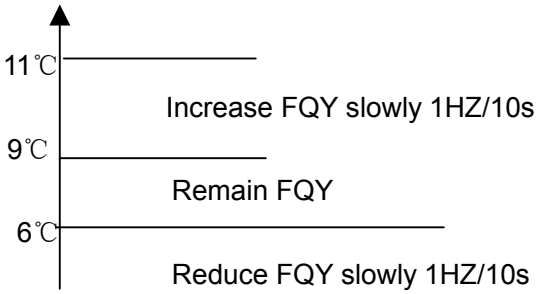
1.8.5 Module temp. over-high protection

Control the compressor FQY when module temp. is too high, ensure the system normal operation.



1.8.6 Indoor heat exchanger anti-freeze protection

- anti-freeze protection in cooling mode



Anti-freeze protection is shielded during defrost and auto oil return procedure.

1.8.7 Add high temp. protection in outdoor

When cool or dry and compressor is on.

Te>=62℃ Increase FQY rapidly 1Hz/s, min. 30Hz

Te>=59℃ Remain FQY

Te>=55℃ Increase FQY slowly 1Hz/10s

Te<55℃ normal control

1.8.8 Rated operation(the value can be setted by EEPROM)---compressor FQY is fixed, open angle of valve and fan speed can adjust automatically, realized by outdoor dip switch and fixed FQY remote signal from indoor unit.

- Rated cooling:

When receiving the indoor rated operation command, the unit will enter rated cooling operation.

In rated operation period, the frequency can be adjusted by manual. Once being adjusted by manual, the unit will not receive the indoor frequency. The expansion valve open angle can adjust automatically according to the over-heat degree. The FQY of compressor is not limited by ambient temp..

- Rated heating:

When receiving the indoor rated operation command, the unit will enter rated cooling operation.

In rated operation period, the frequency can be adjusted by manual. Once being adjusted by manual, the unit will not receive the indoor frequency. The FQY of compressor is not limited by ambient temp..

1.8.9 Outdoor compulsory operation(select by the outdoor dip switch)

1.8.9.1 Compulsory cooling operation

The unit enter compulsory cooling operation, as follow:

Compressor startup	Current, discharging protection and failure treatment	Operation before the base open angle	3 minutes later after compressor is running	Manual adjustment
normal	normal	normal	1: fixed base open angle 200- pace 2: fixed running frequency 60HZ(E) 3: fixed outdoor motor speed: class-7	1: angle adjusted by hand 2:frequency adjusted by hand 3: fan speed adjusted by hand

1.8.9.2 Compulsory heating operation

The unit enter compulsory heating operation, as follow:

Compressor startup	Current, discharging protection and failure treatment	Operation before the base open angle	3 minutes later after compressor is running	Manual adjustment
normal	normal	normal	1: fixed base open angle 200- pace 2: fixed running frequency 50HZ(E) 3: fixed outdoor motor speed: class-7 4. FQY is not limited by ambient temp.	1: angle adjusted by hand 2:frequency adjusted by hand 3: fan speed adjusted by hand

1.8.10 High pressure switch

3 minutes later after compressor starts up, the system will check the pipe pressure. If the pipe pressure is over high and high pressure switch acts for over 30 seconds, the compressor and outdoor motor will stop, 3 minutes later, the unit will resume. If in 60 minutes the unit stops for 3 times because of overhigh pressure, the system will alarm, then compressor will not start up again; when being electrified after being powered off, the protection will be cancelled.

1.8.11 Low pressure switch

When compressor works, if low pressure switch acts for 60 seconds contineously, the unti will alarm.

When compressor stops, if low pressure switch acts for 30 seconds contineously, the unti will alarm.

When compressor starts up, in 3 minutes, low pressure switch will be shielded.

In 6 minutes after defrosting is over, low pressure switch will be shielded.

1.8.12 Failure code and troubleshooting

- Alarm lamp is off when no failure, flash when failure occurs, the different flash time means different failure.

Ensure that alarm indicating time is over 2 minutes and 50 seconds.

1）Indoor pipe temp. is abnormal, outdoor default cooling temp. : 5℃, heating temp.: 40℃. The above temperatures are normal.

2）In defrosting, and in 3 minutes after defrosting is over, if sensor is abnormal, there will not alarm.

3）Outdoor defrosting temp. sensor: when ambient temp. is below -5℃, detect after having start for 3 minutes.

Part 5 Maintenance

1. Failure code

1.1 For indoor units

1.1.1 For indoor unit with new wired controller YR-E12 (0010451521E)

For the inverter unit

Number of flashes of remote control and indoor lights	Wire control readout	Centralized control readout	Fault description	Possible cause	Remedy	Purpose	Items to be checked
10	08	21	Fault in drain system	Float switch is disconnected 25min or longer.	Restorable when given corrective signal.	To prevent condensate spilling out of drain pan	Water line, water pump, float switch, I/O voltage
1	01	01	Fault in indoor ambient temperature sensor	Sensor is open-circuit or short-circuit for 2min or longer.	Restorable when given corrective signal.	To test input signal of system.	Hardware connection, I/O voltage division
2	02	02	Fault in indoor coil temperature sensor	Sensor is open-circuit or short-circuit for 2min or longer.	Restorable when given corrective signal.	To test input signal of system.	Hardware connection, I/O voltage division
3	4A	11	Fault in outdoor ambient temperature sensor	Sensor is open-circuit or short-circuit for 2min or longer.	Restorable when given corrective signal.	To test input signal of system.	Hardware connection, I/O voltage division
4	49	12	Fault in outdoor coil temperature sensor	Sensor is open-circuit or short-circuit for 2min or longer.	Restorable when given corrective signal.	To test input signal of system.	Hardware connection, I/O voltage division
5	48	10	Overcurrent	Detected CT current is above the limit three times within 30min.	Restorable after repair.	To prevent overload (electric parameter).	Power supply, wiring, compressor, pressure
6	53	14	Fault with high pressure	High pressure switch is activated three times within 30min.	Restorable after repair.	To prevent overload (pressure parameter).	Wiring, circuit, pressure switch, refrigeration system
7	47	22	Power failure	Wrong phase, phase failure or phase loss.	Restorable after repair.	To ensure power supply.	Wiring, control board, power supply
8	07	06	Communication error between wire control and indoor unit	Communication error lasts 4min or longer.	Restorable when given corrective signal.	To ensure transmission to and from control board.	Wiring, circuit, transmission voltage
9	06	05	Communication error between indoor and outdoor units	Communication error lasts 4min or longer.	Restorable when given corrective signal.	To ensure transmission to and from control board.	Wiring, circuit, transmission voltage
11	0B	30	External alarm signal input	External signal is cut out for 10s or longer.	Restorable when given corrective signal.	To control external connection provided for building.	External signal, wiring, control board
12	03	20	Fault in outdoor coil/suction line sensor	Sensor is open-circuit or short-circuit for 2min or longer.	Restorable when given corrective signal.	To test input signal of system.	Hardware connection, I/O voltage division
13	0D	31	Temperature shut-off	Directional valve malfunction repeats three times.	Restorable after repair.	To prevent malfunction of four-way valve.	Sensor, four-way valve, system, control board

14	4C	15	Fault in discharging temperature sensor	Sensor is open-circuit or short-circuit for 2min or longer.	Restorable when given corrective signal.	To test input signal of system.	Hardware connection, I/O voltage division
15	05	17	EEPROM error	EEPROM data loss	Default operation/reset restoration.	To set data/control parameter.	EEPROM, data match, control board
16	54	26	Fault with low pressure	Low pressure switch is activated.	Restorable after repair.	To prevent refrigerant leak.	Wiring, circuit, pressure switch, refrigeration system
17	50	15	Compressor overheat	Detected temperature of discharge line is higher than 120°C.	Restorable when lower than 100°C.	To prevent overload (temperature parameter).	Temperature, fan motor, pressure, system
18	0C	23	Fault in operation mode	Indoor units operate in different modes.	Restorable in same operation mode.	To ensure same operation mode.	User setting
19	4B	18	Outdoor coil B	Sensor is open-circuit or short-circuit for 2min or longer.	Restorable when given corrective signal.	To test input signal of system.	Hardware connection, I/O voltage division
20	4D	15	Outdoor discharging B	Sensor is open-circuit or short-circuit for 2min or longer.	Restorable when given corrective signal.	To test input signal of system.	Hardware connection, I/O voltage division
21	20	07	Module error	Module overheat, overcurrent, lack of current, short-circuit.	Restorable when given corrective signal.	To prevent overload (ultimate state).	Power supply, feedback, compressor, control board

Note: As for the fixed frequency units, remote control and indoor lights flash times 12 and 21(Module error) is not available. While 7 (Power failure) 14 (fault in discharging temperature sensor) and 16 (Fault with low pressure) is shown as following:

5	48	10	Overcurrent	Detected CT current is above the limit three times within 30min.	Restorable after repair.	To prevent overload (electric parameter).	Power supply, wiring, compressor, pressure
			Power failure	Wrong phase, phase failure or phase loss.	Restorable after repair.	To ensure power supply.	Wiring, control board, power supply
4	49	12	Fault in outdoor coil temperature sensor	Sensor is open-circuit or short-circuit for 2min or longer.	Restorable when given corrective signal.	To test input signal of system.	Hardware connection, I/O voltage division
			Fault in discharging temperature sensor	Sensor is open-circuit or short-circuit for 2min or longer.	Restorable when given corrective signal.	To test input signal of system.	Hardware connection, I/O voltage division
6	53	14	Fault with high pressure	High pressure switch is activated three times within 30min.	Restorable after repair.	To prevent overload (pressure parameter).	Wiring, circuit, pressure switch, refrigeration system
			Fault with low pressure	Low pressure switch is activated.	Restorable after repair.	To prevent refrigerant leak.	Wiring, circuit, pressure switch, refrigeration system

The others are the same as inverter unit.

1.1.2 For AP422ACEAA

Receive board flash times	U-home	Central controller display	Wired controller display	Fault description	Possible caused	Remedy
1	F36	01D	E1	Indoor ambient temp. sensor failure	Sensor is open-circuit or short-circuit for over 2min	Restorable when given corrective signal
2	F6	02D	E2	Indoor coil temp. sensor failure	Sensor is open-circuit or short-circuit for over 2min	Restorable when given corrective signal
3	F15	11D	E3	Outdoor ambient temp. sensor failure	Sensor is open-circuit or short-circuit for over 2min	Restorable when given corrective signal
4	F16	12D	E4	Outdoor coil temp. sensor failure	Sensor is open-circuit or short-circuit for over 2min	Restorable when given corrective signal
5	F14	10D	E5	Overcurrent / power failure	Detected CT is over the limit 3 times in 30min	Restorable after repair
6	F19	14D	E6	High pressure failure	High pressure switch is activated 3 times in 30min	Restorable after repair
9	F9	05D	E9	Communication error between indoor and outdoor unit	Communication error lasts for 4min or longer	Restorable when given corrective signal
10	F26	21D	E0	Fault in frain system	Float switch is disconnected for 25min or longer	Restorable when given corrective signal
13	F38	31D	E7	Temp. shut-off	4-way valve malfunction repeats 3 times	Restorable after repair
16	F19	26D	E6	Low pressure failure	Send outdoor pressure failure to indoor unit	Restorable after repair
--	--	05D	E8	Communication error between wired controller and indoor PCB	Communication error lasts for 4min or longer	Restorable when given corrective signal

1.1.3 For AP482AKEAA

No.	Fault description	Operation panel display
1	Indoor ambient temp. sensor failure	E1
2	Indoor coil temp. sensor failure	E2
3	Outdoor ambient temp. sensor failure	E3
4	Outdoor coil temp. sensor failure	E4
5	CT current failure	E5
6	Pressure protection	E6
7	Communication failure between indoor units and panel	E8
8	Communication failure between indoor and outdoor PCB	E9

1.1.4 For AS182AVERA

Failure code	description	Remark
E1	Indoor room temperature sensor failure	Indoor room temp. sensor in short circuit, or open circuit, it can resume due to the signal.
E2	Indoor coil temperature sensor failure	Indoor coil temp. sensor in short circuit, or open circuit, it can resume due to the signal.
E4	EEPROM wrong	Being electrified to test E2 check sum, or E2 is broken down.
E7	Communication failure between indoor and outdoor	Communication failure alarms for 4 minutes contineously, it can resume due to the signal.
E14	Indoor fan motor failure	Indoor fan motor wrong wiring or indoor fan motor abnormal.
E18	Temperature cutoff protection	Outdoor 4-way valve response abnormal.
F1	Module failure	Outdoor module abnormal
F2	Outdoor DC motor failure	Outdoor DC motor abnormal
F4	Compressor overheat / discharging temperature protection	Compressor discharging temperature over high protection
F5	Module over current / current transducer failure	
F6	Outdoor ambient temp. sensor abnormal	Outdoor ambient temp. sensor in short current or open circuit
F7	Outdoor suction/defrosting temp. sensor abnormal	Outdoor suction/defrosting temp. sensor in short circuit or open circuit
F8	High pressure abnormal	High pressure too high
F9	Low pressure abnormal	Low pressure abnormal
F10	No AC power supply	
F11	Outdoor PCB EEPROM abnormal	Being electrified to test if the E2 check sum is correct or failure
F13	Communication failure between outdoor PCB and module	
F14	Compressor discharging temp. sensor failure	Outdoor compressor discharging temp. sensor in short circuit or open circuit
F15	Compressor running faulty	Resumable
F16	Running state-detecting circuit failure	Outdoor DC compressor running state-detecting circuit failure, or compressor abnormal, resumable

1.2 For outdoor units

1.2.1 For fixed frequency outdoor unit(*EAA)

Failure description	Code on wired controller	Flash times of indoor receiver board
Room temp. sensor abnormal	01	Power LED flashes 1 time
Indoor coil temp. sensor abnormal	02	Power LED flashes 2 times
Outdoor temp. sensor abnormal	4A	Power LED flashes 3 times
Outdoor coil temp. sensor abnormal	49	Power LED flashes 4 times
Over-current malfunction/Power failure	48	Power LED flashes 5 times
High / Low pressure abnormal	53	Power LED flashes 6 times
Communication malfunction between indoor and wired controller	07	Power LED flashes 8 times
Communication malfunction between indoor and outdoor abnormal	06	Power LED flashes 9 times
Drainage system malfunction	08	Power LED flashes 10 times
Alarm of exterior annunciator	0B	Power LED flashes 11 times
Coil gas pipe temp. Sensor abnormal	03	Power LED flashes 12 times
Temperature protection malfunction	0D	Power LED flashes 13 times

1.2.2 For inverter outdoor unit(*ERA)

For AU12

Trouble description	Display of LED borad LED 5-4-3-2-1	Analyze and diagnose	Flash times of LED on mainborad
IPM failure	00001	IPM failure	1
Abnormal of DC moter	00010	Jam of DC motor or motor failure	2
Communication error between indoor and outdoor unit	00011	Communication fail over 4min	3
Compressor discharging temprerture protection	00100	Compressor discharging tempreature over 120 centigrade	4
Spdu / IPM module over current protection	00101	Current of spdu / ISPM module over limit	5
Abnormal of outdoor ambient sensor	00110	Outdoor ambient sensor short-circuit or open-circuit last 60 sec	6
Abnormal of piping sensor	00111	Piping sensor short-circuit or open-circuit last 60 sec	7
High pressure protection	01000	System high pressure over 4.5Mpa	8
Abnormal of compressor discharge sensor	01001	Compressor discharge sensor short-circuit or open-circuit last 60 sec	9
The power supply is not the 50Hz	01010	The power supply is not the 50Hz	10
Module PWM select circuit error	01011	Module PWM select wrong circuit	11
Detect PFC over-current	01100	The current of PFC circuit is too high	12
Module error	01101	Module error	13
Eeprom failure	01110	Outdoor main board eeprom fail	14
Compressor jam(only for spdu)	01111	Inner compressor is abnormal jamed	15
Compressor start-up abnormal	10001	Compressor start-up abnormal	17
Compressor parameter error	10010	Wrong compressor parameter is selected in the Eeprom	18
Circuit error detected by current	10011	Circuit damage detected by the current	19
Abnormal of Compressor suction sensor	10101	Compressor suction sensor short-circuit or open-circuit last 60 sec	21
SPDU Communication error	10110	Communication error send from SPDU	22
Communication error between main board and spdu module	10110	Communication fail over 4min	22
Low pressure protection	11000	System low pressure under 0.05Mpa	24
Condenser air inlet temp. sensor failure	11001	Condenser air inlet temp. sensor short-circuit or open-circuit last 60 sec	25
Module over-voltage protection (only for ISPM)	11010	Send from ISPM module	26
Module lack-voltage protection (only for ISPM)	11011	Send from ISPM module	27
Compressor phase loss	11110	U/V/W loss	30
PFC voltage abnormal	11111	Voltage of PFC circuit is abnormal	31
Compressor U-phase over-current	00101	The current of compressor U-phase is too high	32
Compressor V-phase over-current	00101	The current of compressor V-phase is too high	33
Compressor W-phase over-current	00101	The current of compressor W-phase is too high	34
4-way valve reverse failure	11100	Alarm and stop if detect Td-Tci<=25 last for 1min after compressor has started for 10min in heating mode, confirm the failure if it appears 3 times in one hour.	28
Lack off refrigerant or discharge side dirty	11101	Alarm and stop if detect Td-Tci>=25 last for 1min after compressor has started for 10min in cooling mode, confirm the failure if it appears 3 times in one hour	29

For AU18/24

Trouble description	Display of LED borad LED 5-4-3-2-1	Analyze and diagnose
Spdu module failure	00001	Spdu module failure
Abnormal of DC moter	00010	Jam of DC motor or motor failure
Communication error between indoor and outdoor unit	00011	Communication fail over 4min
Compressor discharging temprerture protection	00100	Compressor discharging tempreature over 120 centigrade
Spdu module over current protection	00101	Current of spdu module over 21A last 4sec
Abnormal of outdoor ambient sensor	00110	Outdoor ambient sensor short-circuit or open-circuit last 3sec
Abnormal of piping sensor or suction sensor	00111	Piping sensor or suction sensor short-circuit or open-circuit last 3sec
High pressure protection	01000	System high pressure over 4.5Mpa
Abnormal of compressor discharge sensor	01001	Compressor discharge sensor short-circuit or open-circuit
The power supply is not the 50Hz	01010	The power supply is not the 50Hz
Eeprom failure	01110	Outdoor main board eeprom fail
Compressor JAM	01111	Inner compressor is abnormal JAMED
Compressor vibration abnormal	10000	Compressor vibration abnormal when start-up
Compressor start-up abnormal	10001	Compressor start-up abnormal
Rotor of inner compressor is malposition	10010	Rotor of inner compressor is malposition when start-up
Position-inspect circuit failure	10011	Position-inspect circuit failure of spdu module
Compressor failure	10100	Compressor failure
Compressor suction sensor over high	10101	In operation the suction temperature over 40 centigrade
Communication error between main board and spdu module	10110	Communication error between main board and spdu module
Spdu module temperture protection	10111	Spdu module temperture is too high
Low pressure protection	11000	System low pressure under 0.05Mpa

Note:

For display of LED board, the number "1" mean the LED is light. the number "0" mean the LED is OFF.

User should not to change the dip switch of LED board.

Please consult the operation and instrucion to get detailed information about outdoor unit trouble.

For AU28/36

(1): Resumable alarm, and will be sent to indoor unit. Marked with ○

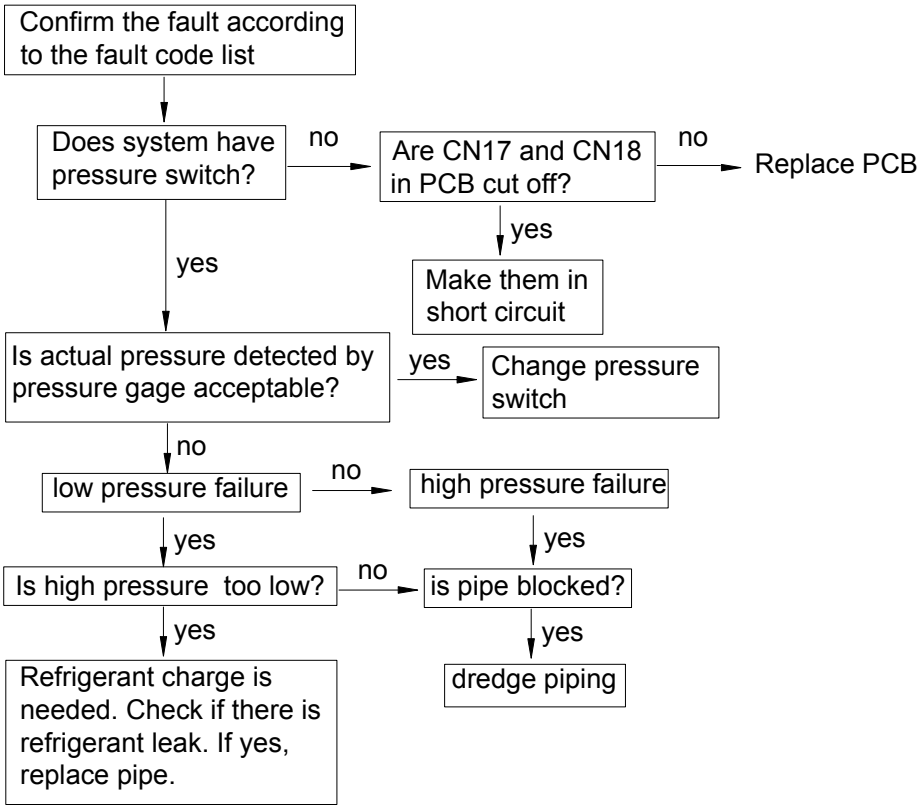
(2): Not resumable alarm, but if in 60 minutes unrestorable failure occurs 3 times, it can be resumed only when being electrified after being powered off. Marked with ※

Flash times of LED 2 on mainborad	Trouble description	Analyze and diagnose	Remarks
1	Spdu / ISPM module failure	Spdu / ISPM module failure	※
2	Abnormal of DC moter	Jam of DC motor or motor failure	※
3	Communication error between indoor and outdoor unit	Communication fail over 4min	○
4	Compressor discharging temprerture protection	Compressor discharging tempreature over 120 centigrade	※
5	Spdu / IPM module over current protection	Current of spdu / ISPM module over limit	※
6	Abnormal of outdoor ambient sensor	Outdoor ambient sensor short-circuit or open-circuit last 60 sec	○
7	Abnormal of piping sensor	Piping sensor short-circuit or open-circuit last 60 sec	○
8	High pressure protection	System high pressure over 4.5Mpa	※
9	Abnormal of compressor discharge sensor	Compressor discharge sensor short-circuit or open-circuit last 60 sec	○
10	No zero cross signal input	Detect no zero cross signal last for 2min	○
14	Eeprom failure	Outdoor main board eeprom fail	※
15	Compressor JAM(only for spdu)	Inner compressor is abnormal JAMED	○
16	Compressor vibration abnormal (only for spdu)	Compressor vibration abnormal when start-up	○
17	Compressor start-up abnormal	Compressor start-up abnormal	○
18	Rotor of inner compressor is malposition	Rotor of inner compressor is malposition when start-up	○
19	Position-inspect circuit failure	Position-inspect circuit failure of spdu /ISPM module	※
20	Compressor failure	Compressor failure	○
21	Abnormal of Compressor suction sensor	Compressor suction sensor short-circuit or open-circuit last 60 sec	○
22	Communication error between main board and spdu / ISPM module	Communication error between main board and spdu / ISPM module	○
23	Spdu / ISPM module temperture protection	Spdu / ISPM module temperture is too high	○
24	Low pressure protection	System low pressure under 0.05Mpa	※
25	Condenser air inlet temp. sensor failure	Condenser air inlet temp. sensor short-circuit or open-circuit last 60 sec	○
26	Module over-voltage protection (only for ISPM)	Send from ISPM module	○
27	Module lack-voltage protection(only for ISPM)	Send from ISPM module	○
28	4-way valve reverse failure	Alarm and stop if detect Td-Tci<=25 last for 1min after compressor has started for 10min in heating mode, confirm the failure if it appears 3 times in one hour.	※
29	Lack off refrigerant or discharge side dirty	Alarm and stop if detect Td-Tci>=25 last for 1min after compressor has started for 10min in cooling mode, confirm the failure if it appears 3 times in one hour	※

2. Troubleshooting

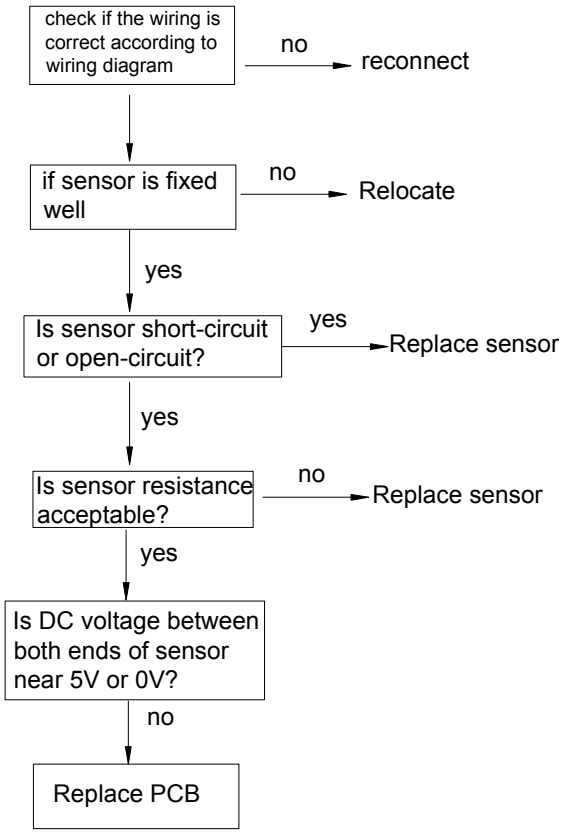
2.1 For fixed frequency units (*EAA)

1) Pressure protection

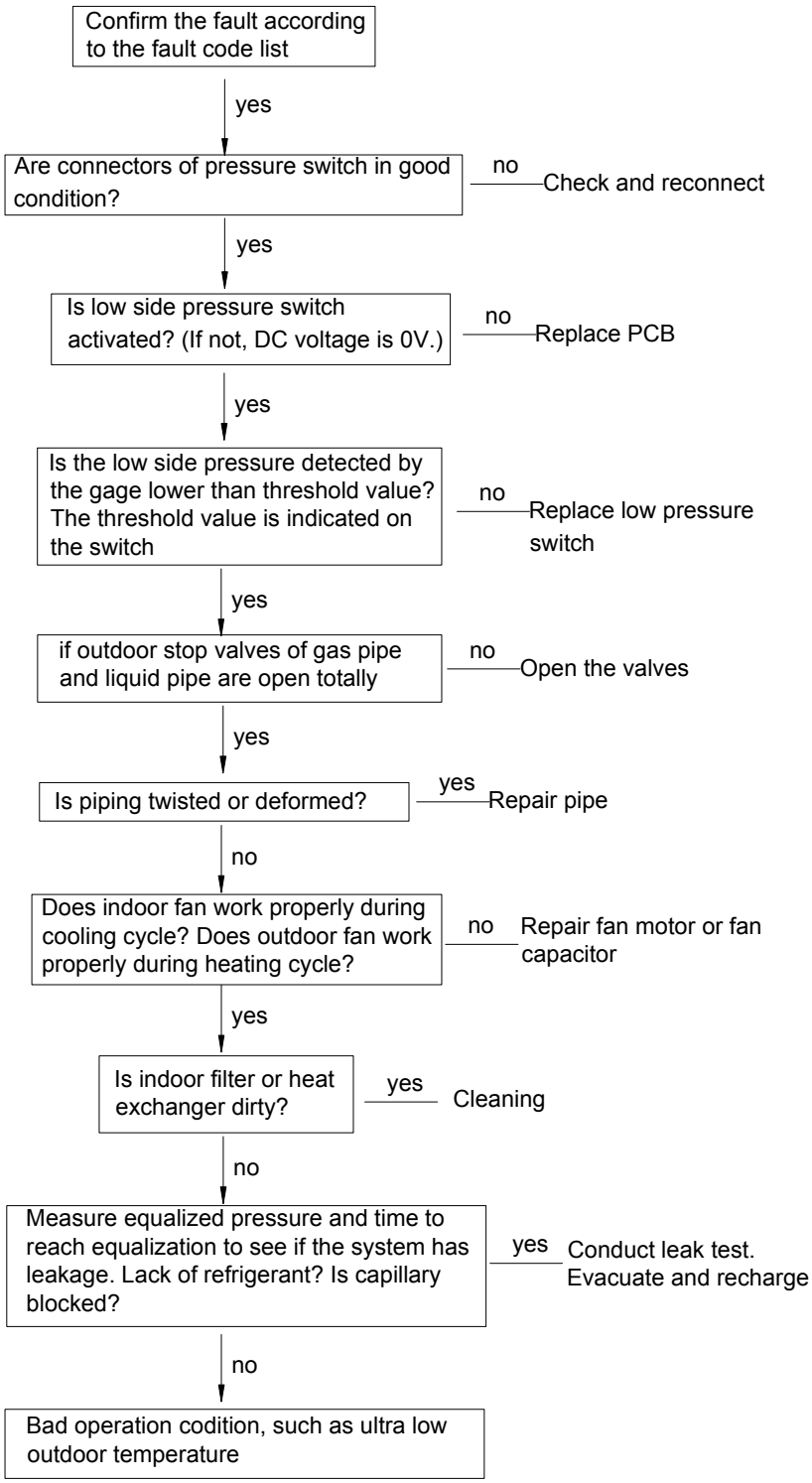


Note: The confirmation time of low pressure failure may be shorter, but high pressure failure confirmation time is at least 1 hour. Besides, take the ambient temperature into consideration.

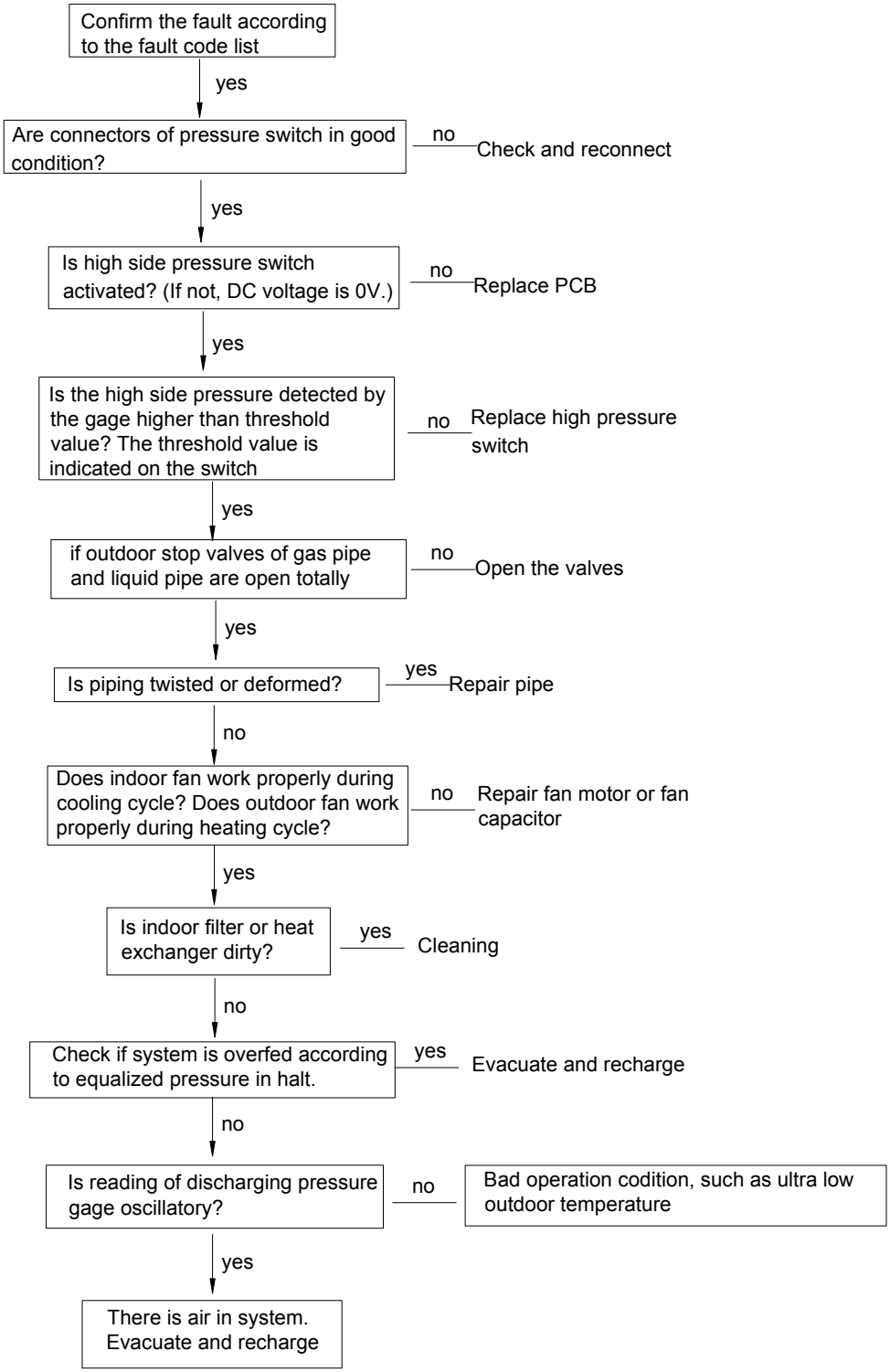
2) Sensor failure



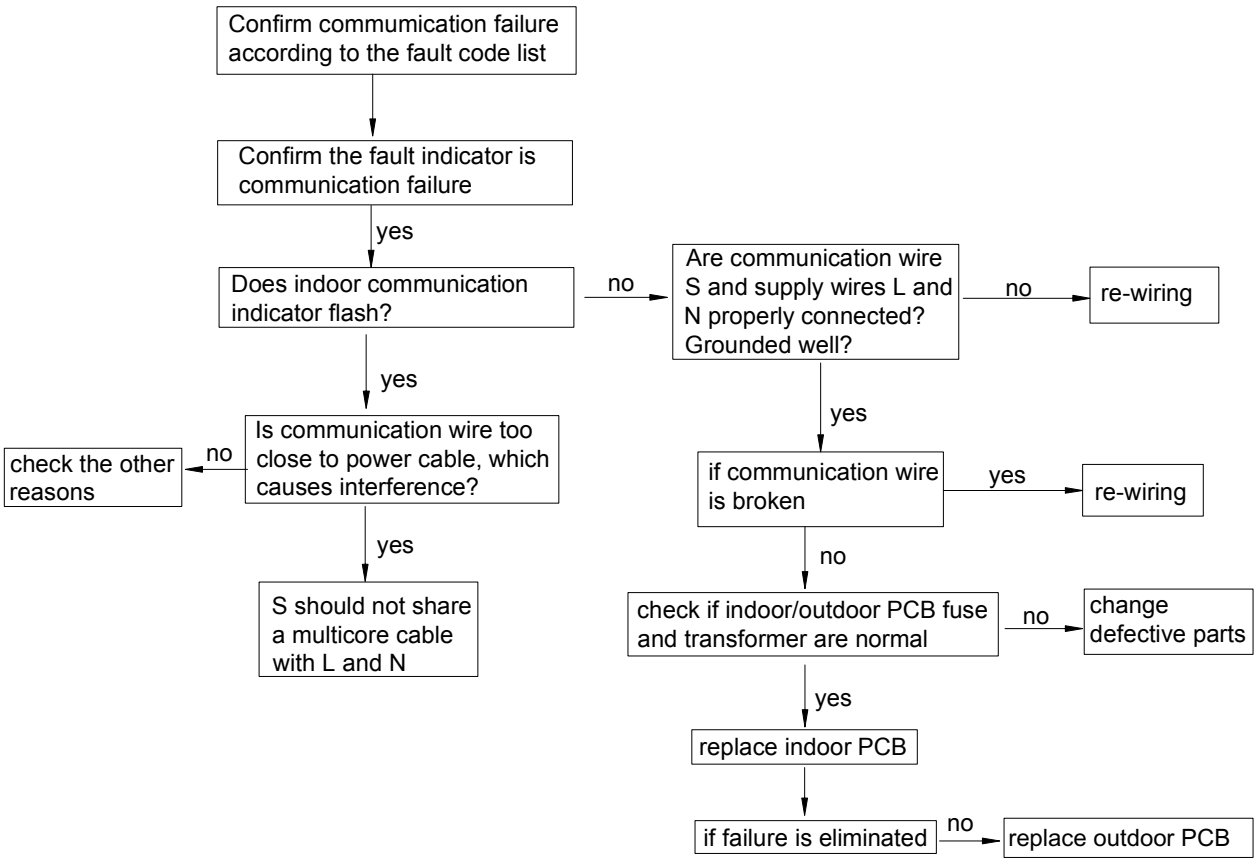
3) Low pressure protection - Wired controller shows 53



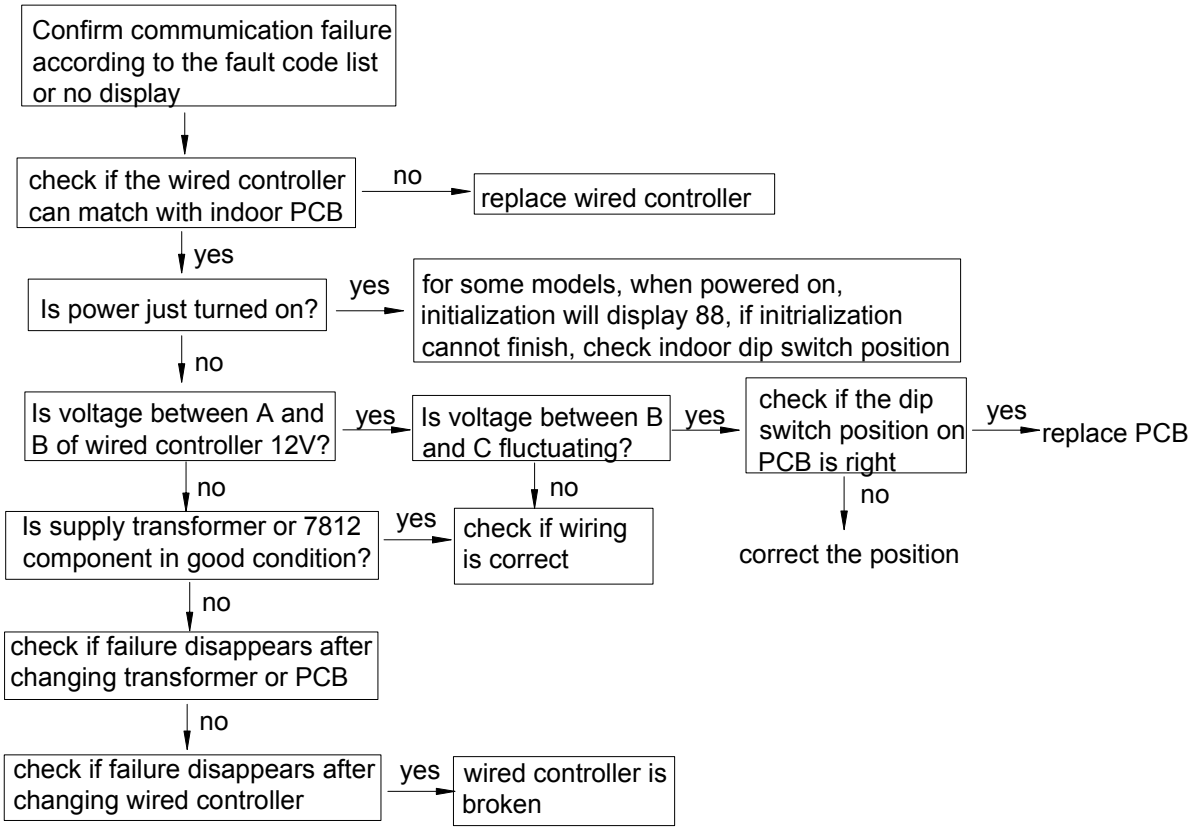
4) High pressure protection - Wired controller shows 53



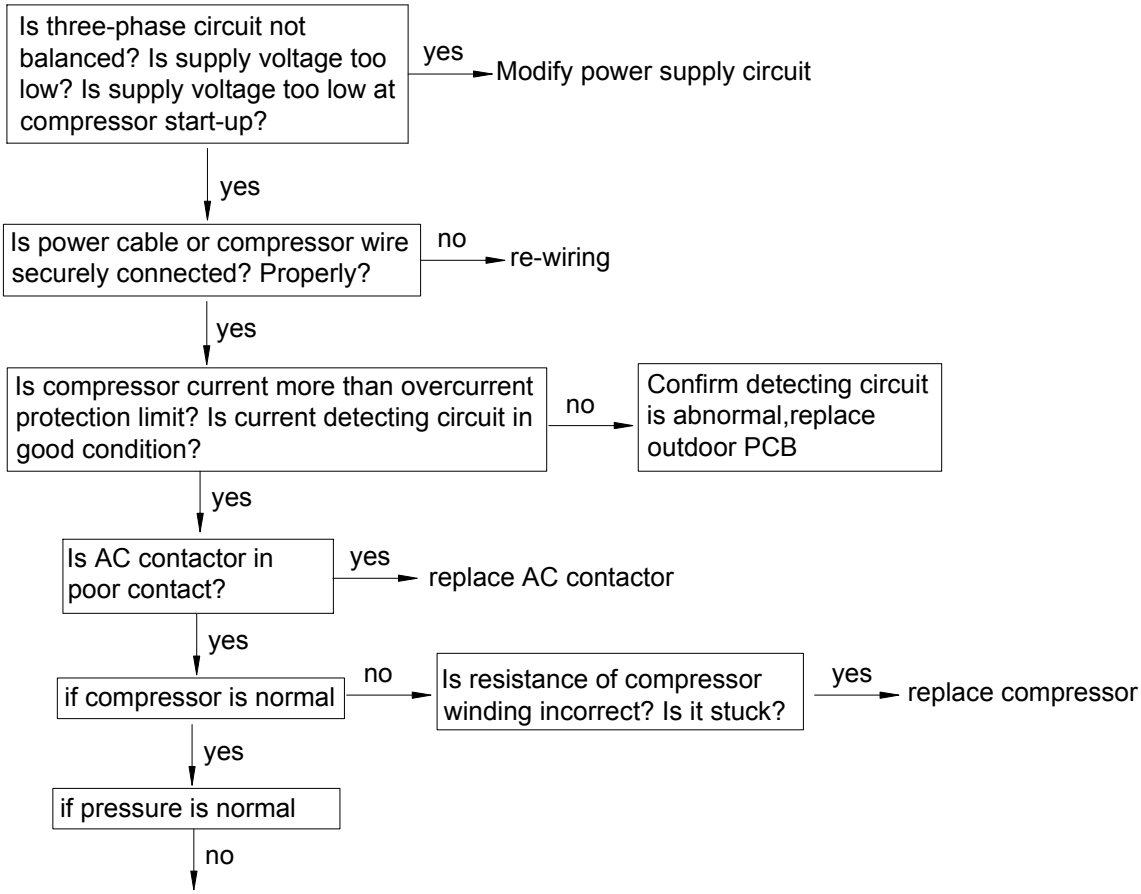
5) Communication error between indoor and outdoor units - Wired controller shows 06



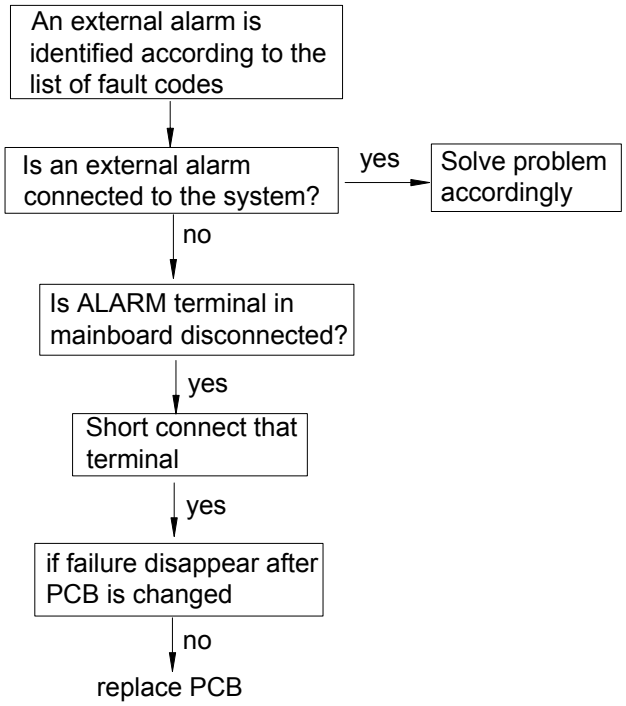
6) Communication failure between wired controller and indoor PCB - Wired controller shows 07 or no display on wired controller



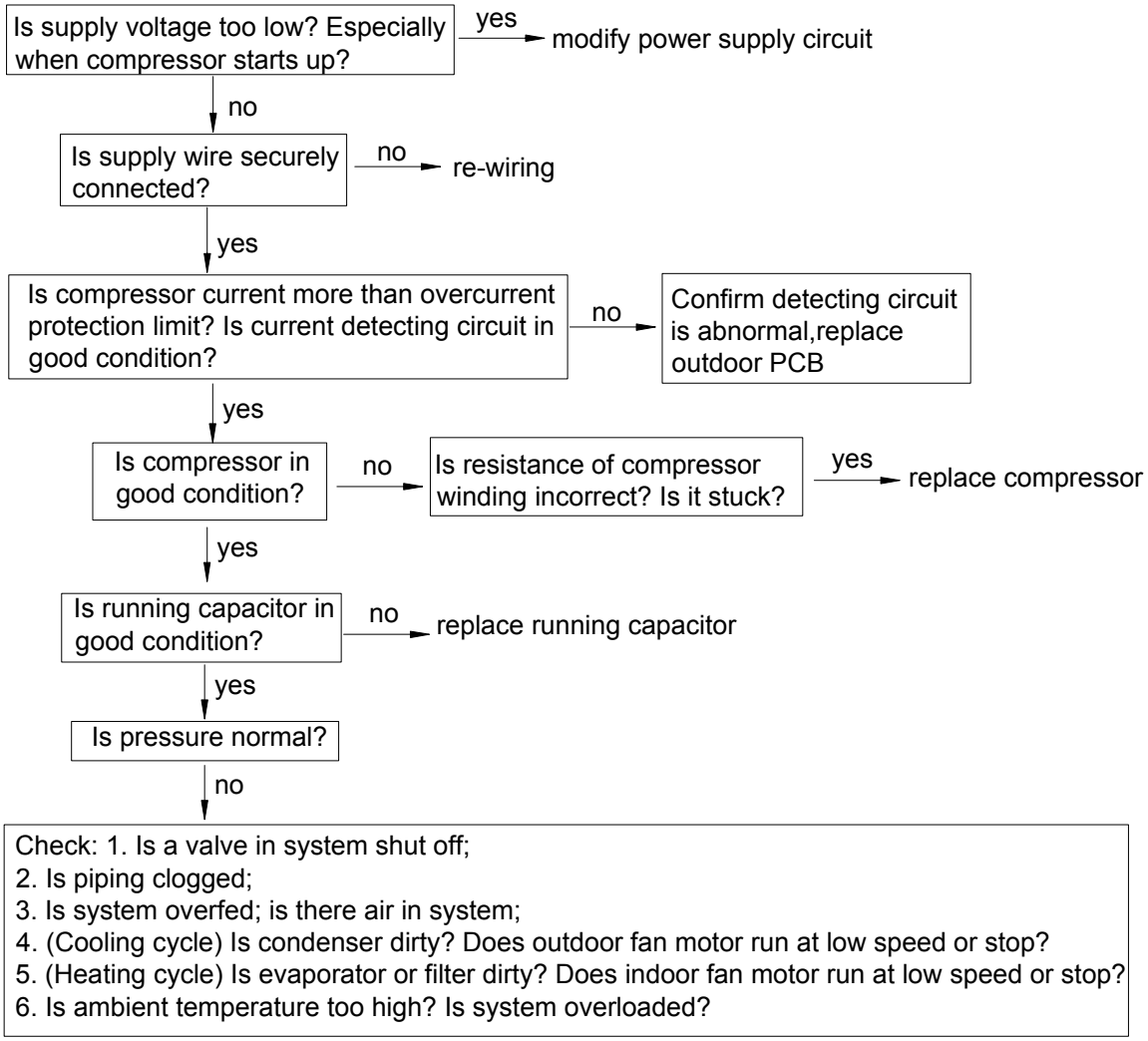
7) High current protection in 3-phase fixed frequency models - Wired controller shows 48



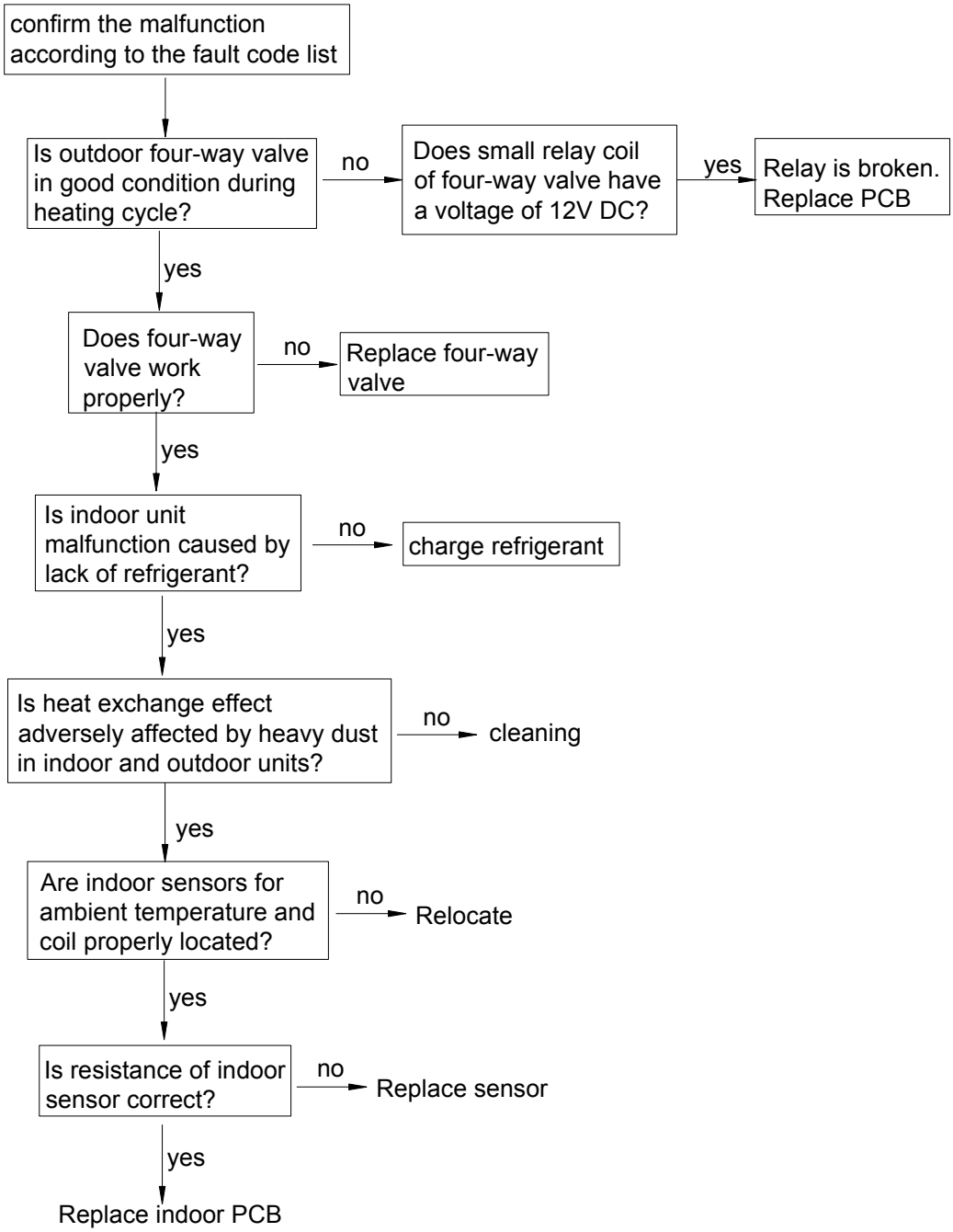
8) External alarm- Wired controller shows 0B



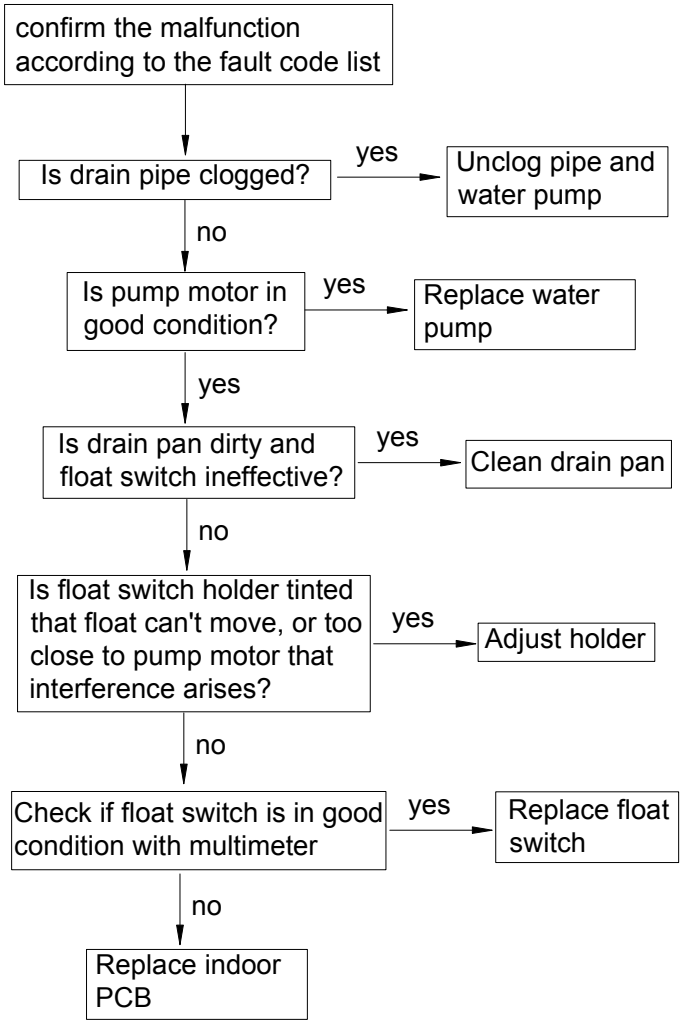
9) Overcurrent protection for single-phase fixed frequency models- Wired controller shows 48



10) Temperature cutoff protection- Wired controller shows 0D

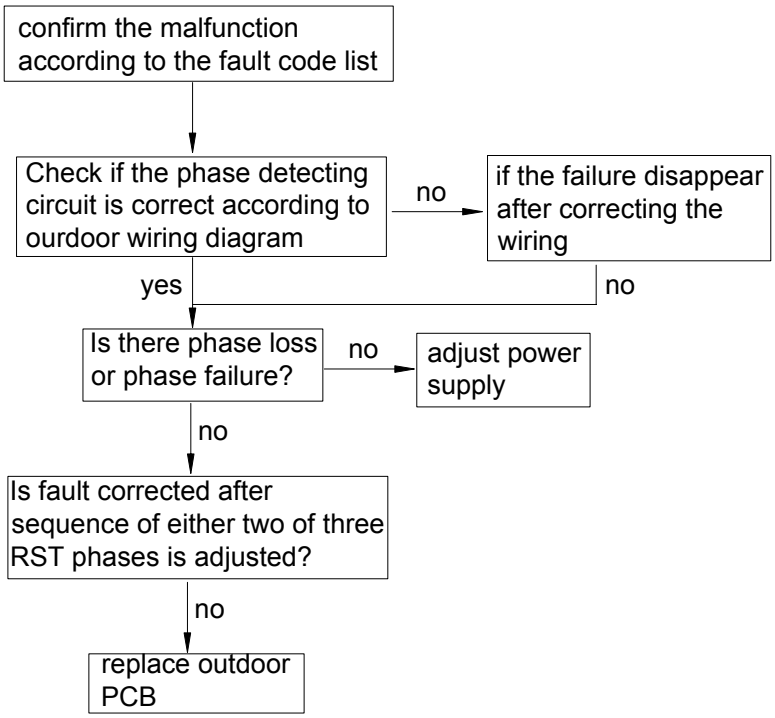


11) Fault in drain system- Wired controller shows 08

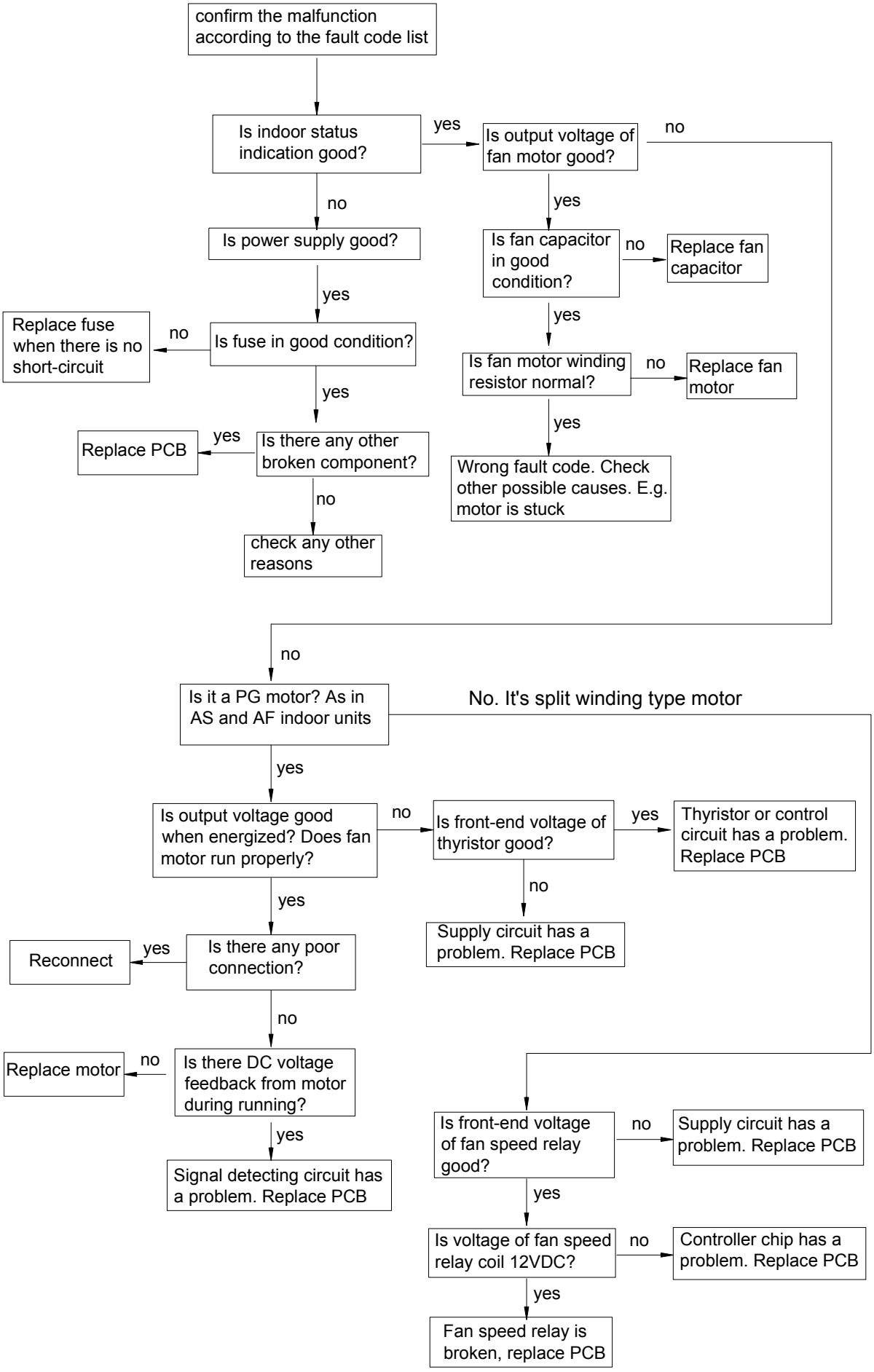


Note: Float switch is close in normal state, when being activated, it is open.
Voltage between both ends is 0V when close, approximately 5V when open.

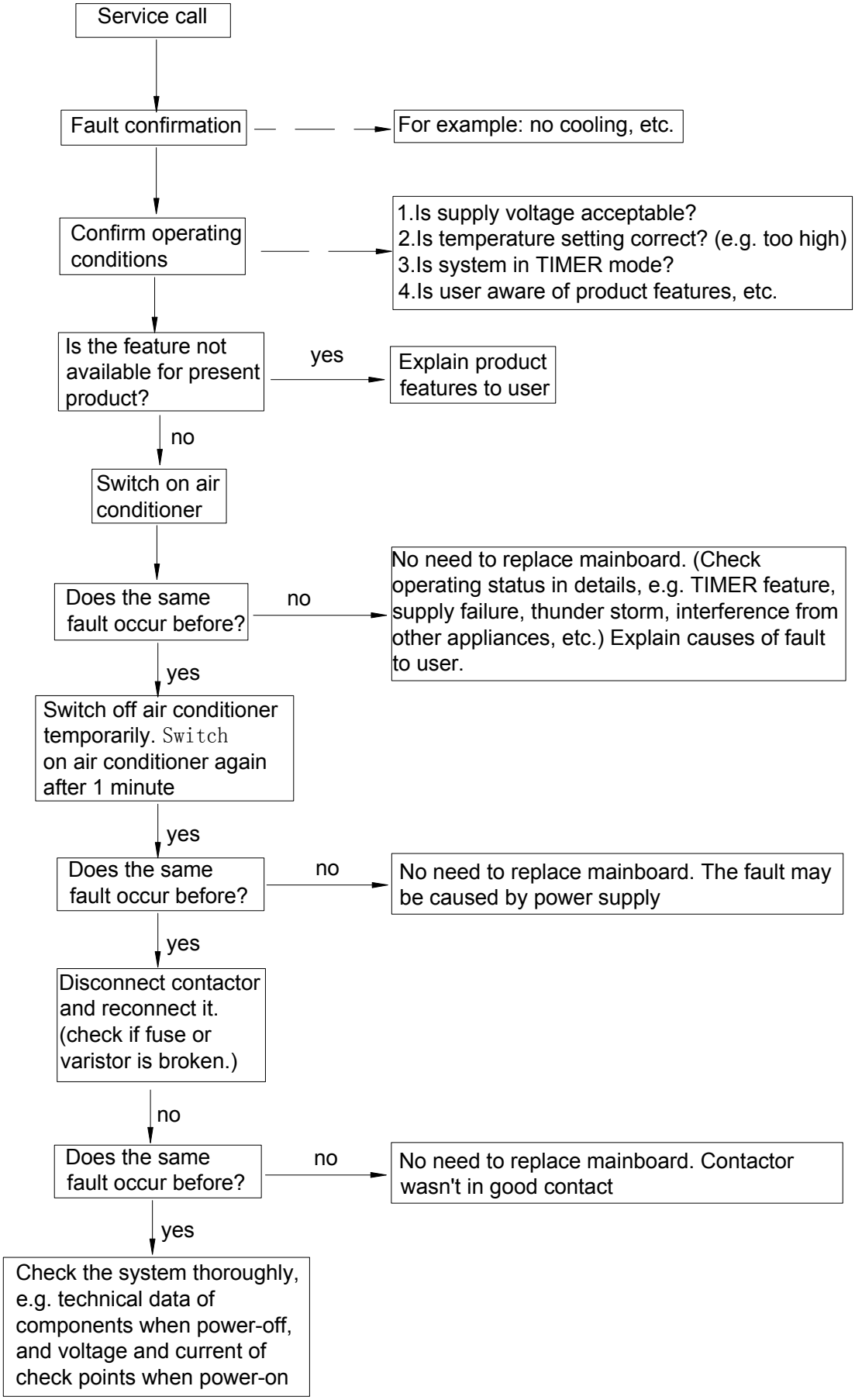
12) Phase loss or phase failure- Wired controller shows 48



13) Fault in indoor fan motor



14) Troubleshooting (before replacement of PCB)

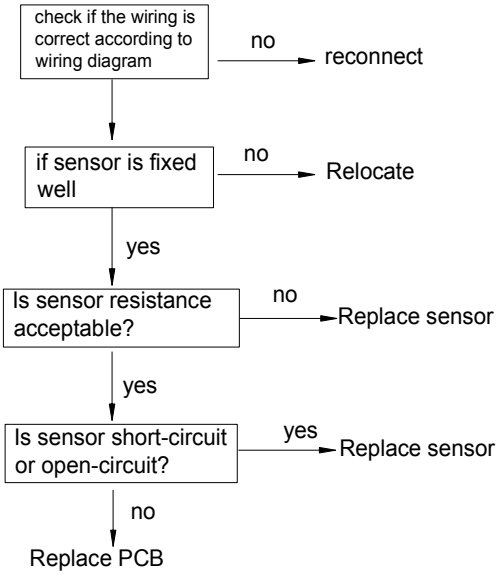


2.2 For DC inverter units (*ERA)

2.2.1 For AU122AEERA

1) Sensor failure

Alarm condition: ambient temperature sensor is in short circuit or open circuit



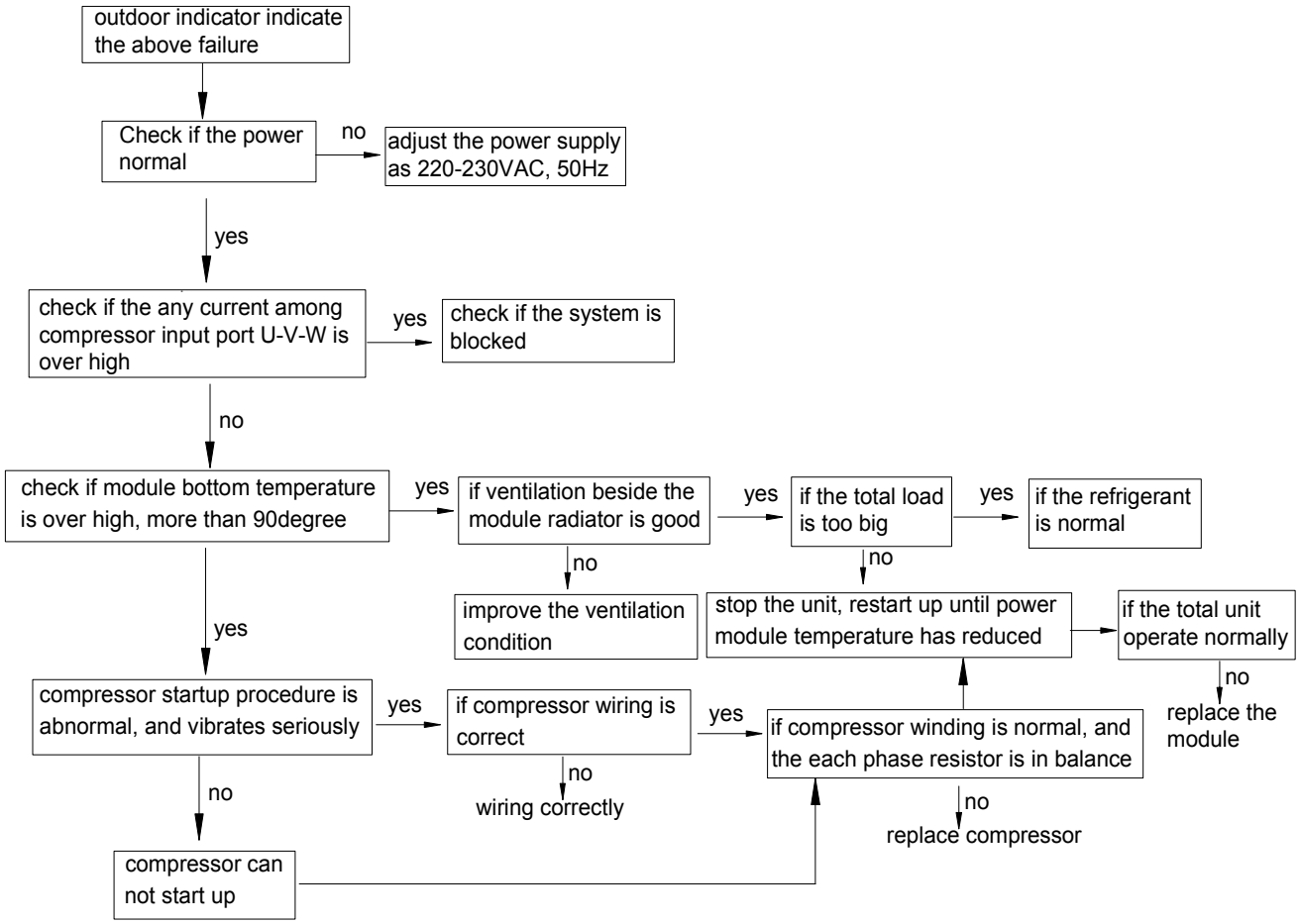
2) Outdoor power module failure

The following troubleshooting is available for:

a. IPM failure(00001)

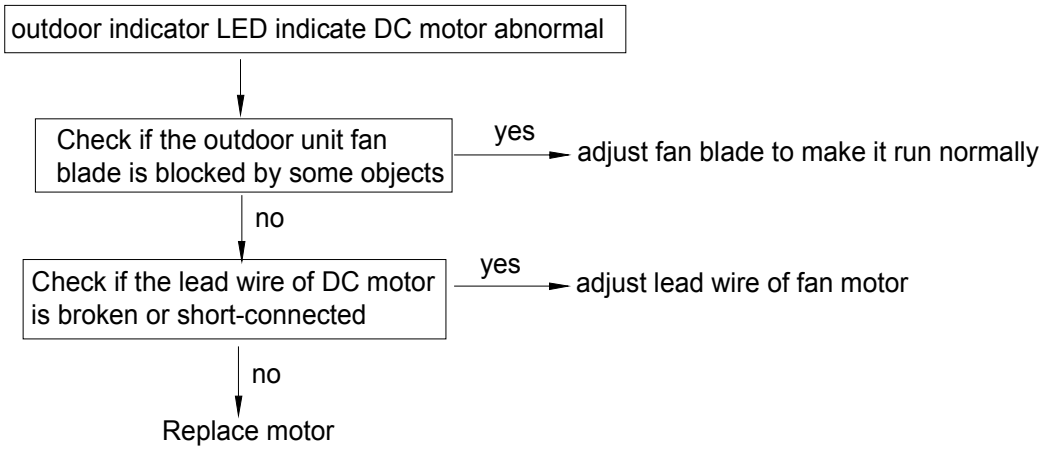
b. Compressor U-phase,V-phase and W-phase over-current(00101), total unit over-current(00101)

c. Compressor start-up abnormal(10001), Compressor jam(01111), Compressor phase loss(11110), Module lack-voltage protection(11011), Detect PFC over-current(01100), PFC voltage abnormal(11111)



3) Outdoor DC motor abnormal

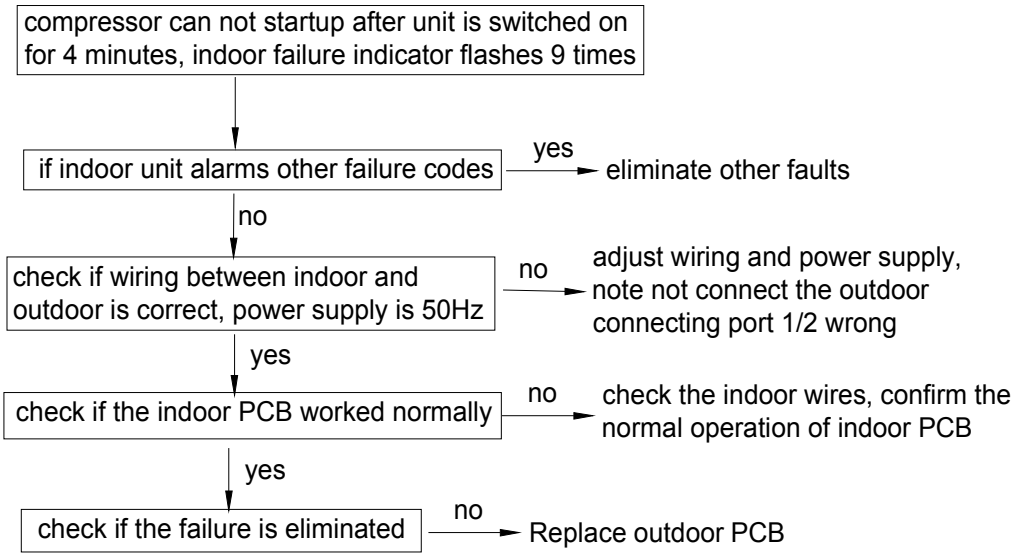
Alarm condition: outdoor DC motor is blocked rotor or broken, abnormal.



Warning: For outdoor DC fan motor, forbidden to pull off the plug when being electrified.

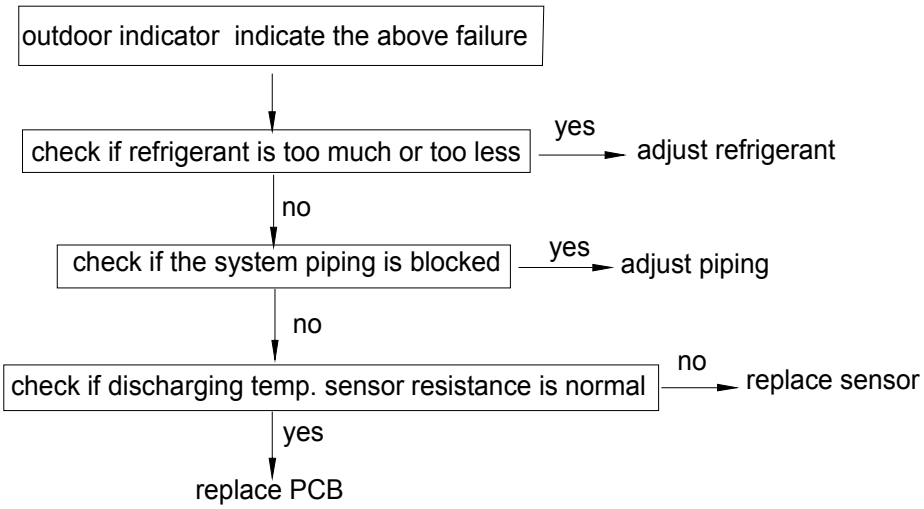
4) Communication error between indoor and outdoor units

indoor unit troubleshooting

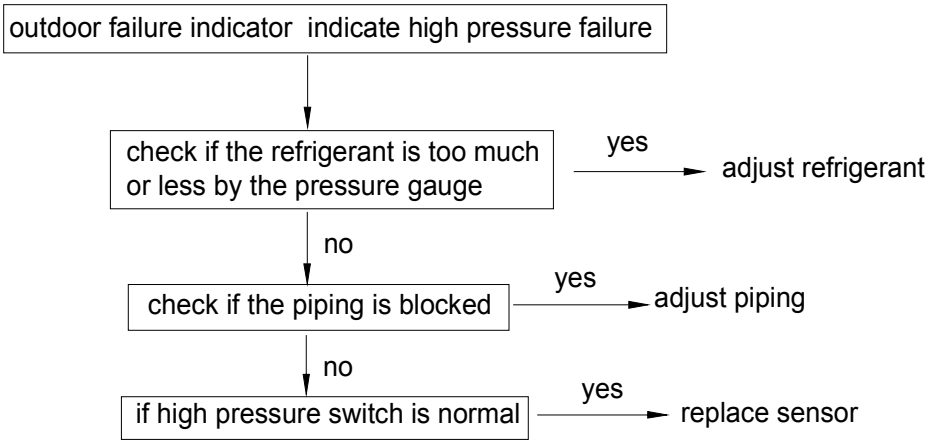


5) Compressor discharging temperature protection

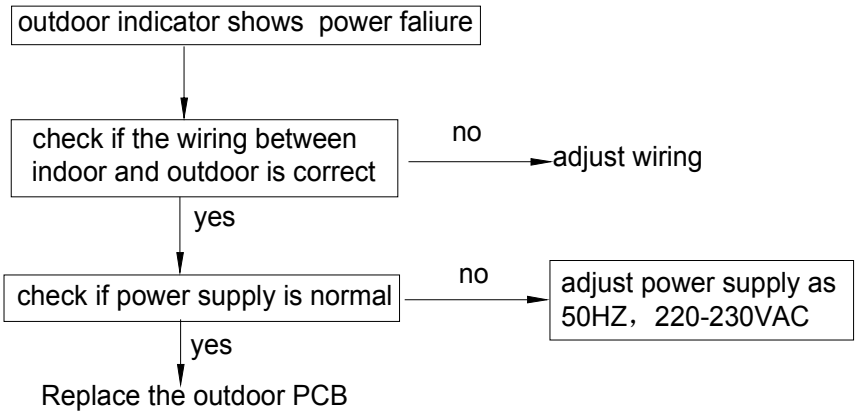
Alarm condition: Within one hour after compressor is running, compressor discharging temperature is over 115degree for 3 times continously.



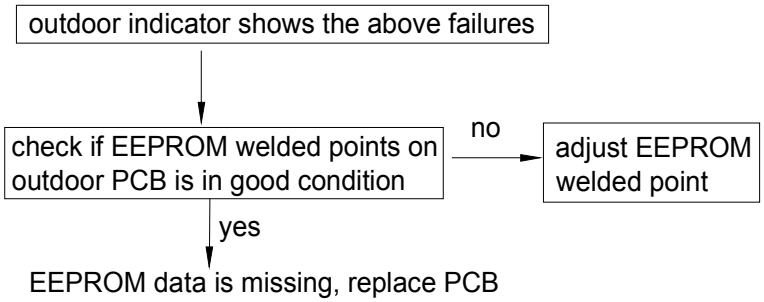
6) Outdoor high pressure protection
Alarm condition: When compressor running, high pressure is over 4.5 MPa for 30 seconds continously



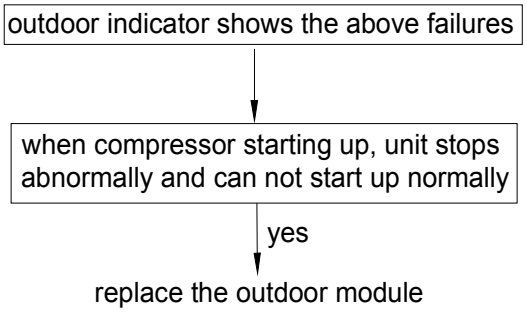
7) Outdoor power supply is abnormal
Alarm condition: if power supply is not 50Hz as standard, which will affect the normal communication and cause air conditioner bad operation.



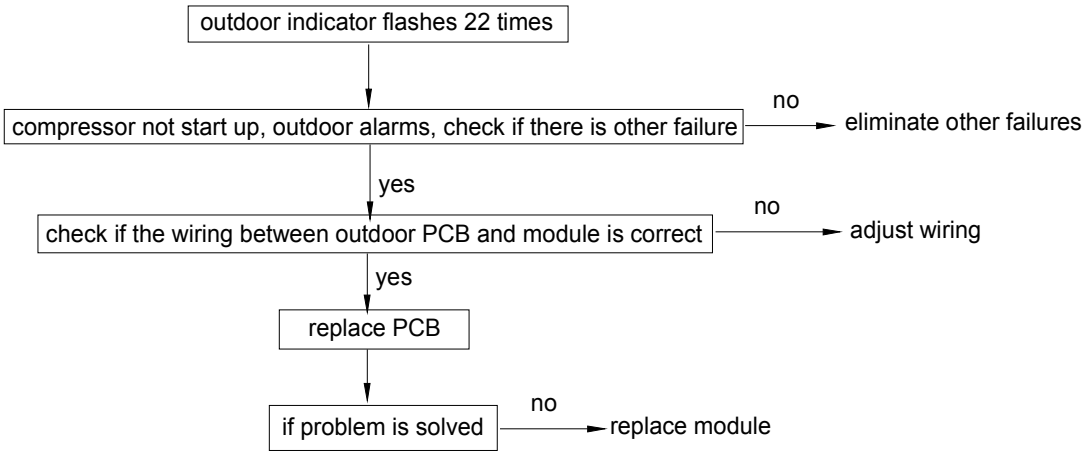
8) EEPROM failure(01110), Compressor parameter error(10010)
Alarm condition: EEPROM is fault or data is missing



9) Circuit error detected by current(10011), Module error(01101), Module PWM select circuit error(01011)
Alarm condition: when compressor is running, the unit will be abnormal or stop

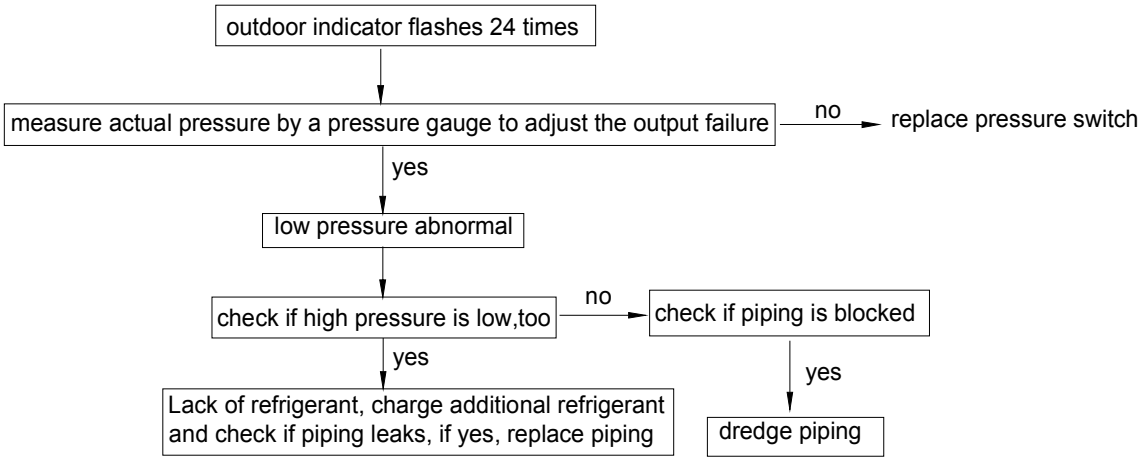


10) Communication failure between outdoor PCB and module



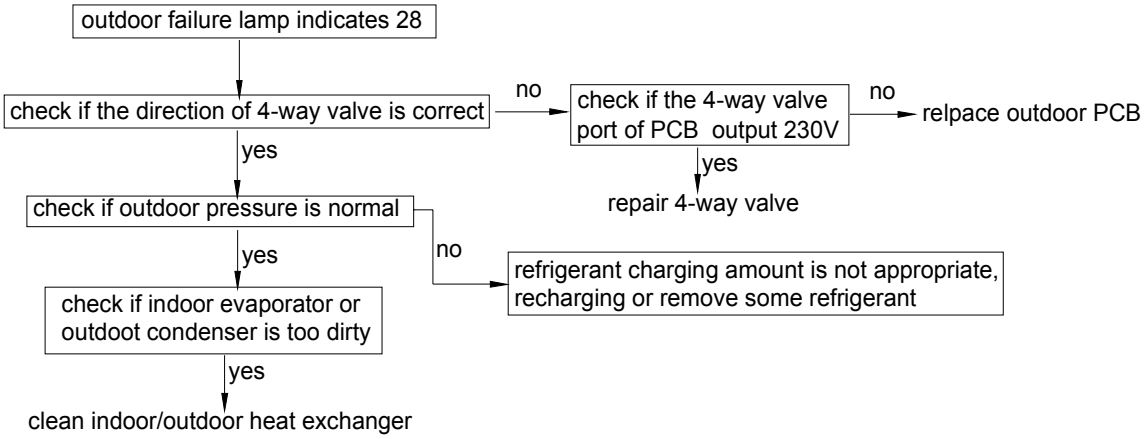
11) Outdoor low pressure abnormal

Alarm condition: outdoor system pressure is lower than 0.05MPa



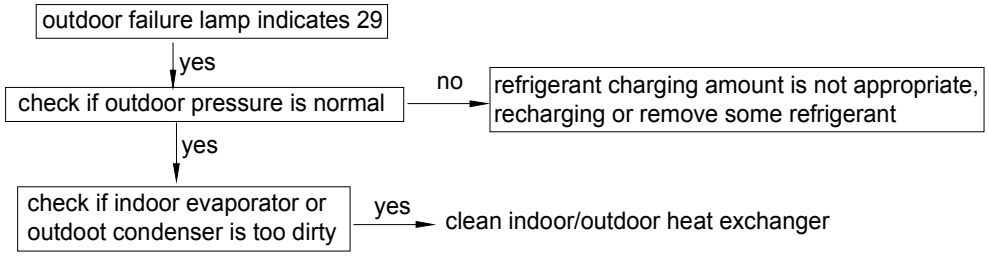
(12) 4-way valve reversing failure, systerm lack of refrigerant or discharging side dirty and blocked

Alarm condition: alarm and stop the unit when Td-Tci<=25 and lasts for 1 minute after the compressor has started for 10 minutes check in heating mode, confirm the failure if it occurs 3 times in 1 hour



(13) systerm lack of refrigerant or discharging side dirty and blocked

Alarm condition: alarm and stop the unit when Td-Tci>=25 and lasts for 1 minute after the compressor has started for 10 minutes in cooling mode, confirm the failure if it occurs 3 times in 1 hour



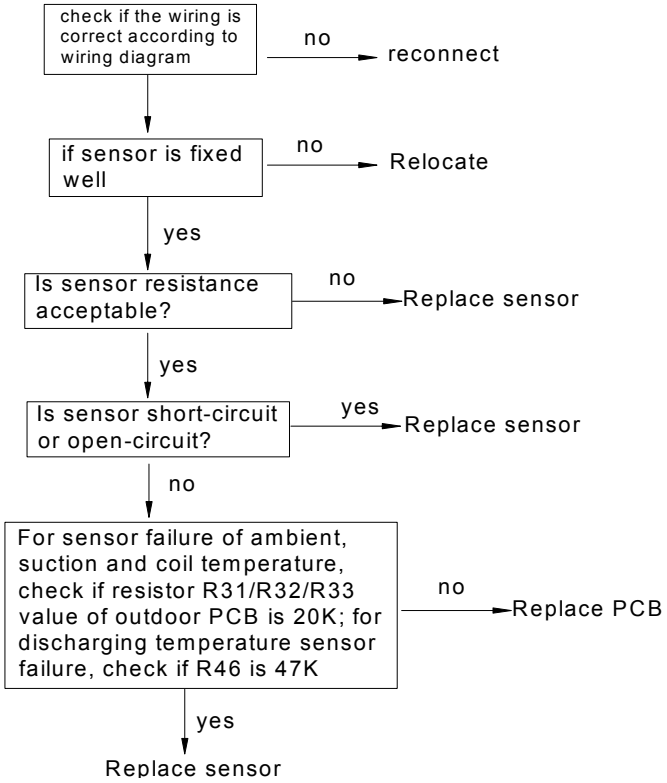
2.2.2 For AU182AFERA and AU242AGERA

Below the indication on indicator board sequence is LED5-LED4-LED3-LED2-LED1, 0: OFF; 1: ON

1) Sensor failure

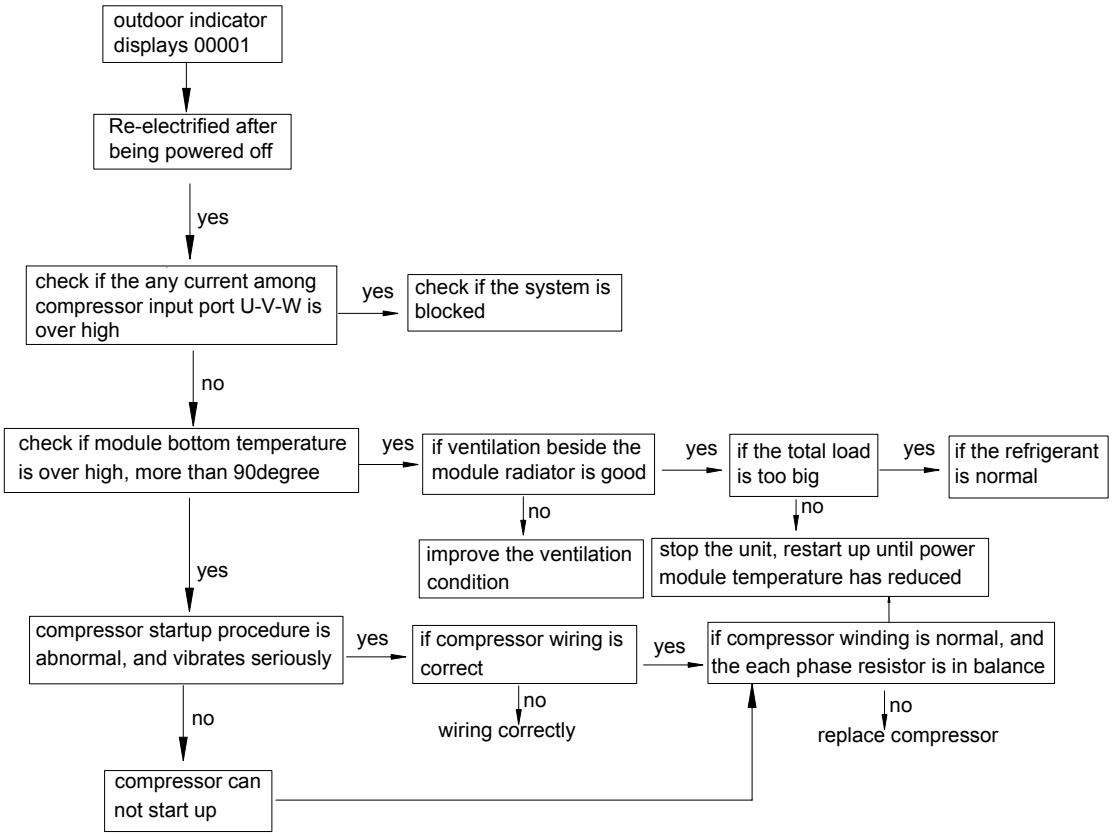
Alarm condition: ambient temperature sensor is in short circuit or open circuit for 3 seconds continously.

Outdoor indicator displays 00110 or 00111, or 01001



2) Outdoor power module failure

Alarm condition: outdoor indicator displays 10111, 00001, or 01111, 10000, 100001, or 10100

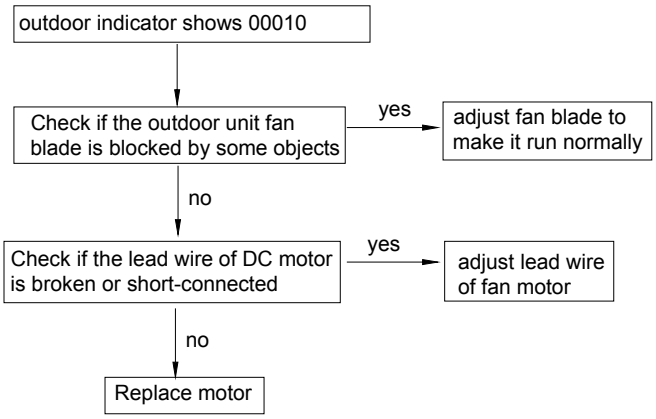


3) Outdoor DC motor abnormal

Outdoor indicator displays 00010.

Alarm condition:outdoor DC motor is blocked rotor or broken, abnormal.

This fault is only used when indoor unit is with DC fan motor.

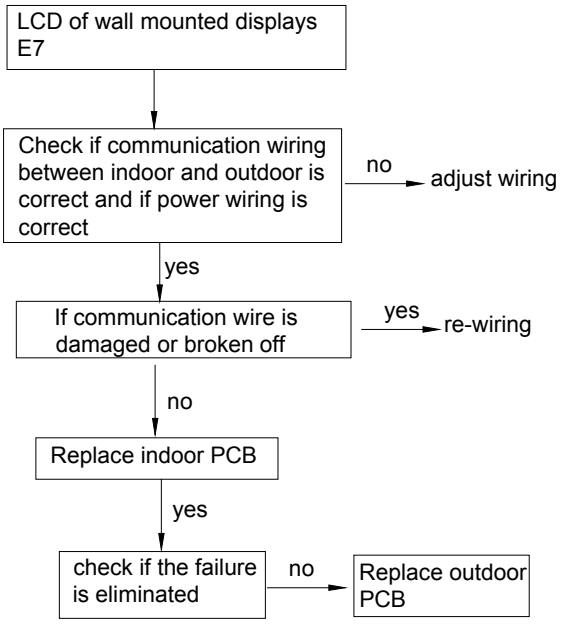


Warning: For outdoor DC fan motor, forbidden to pull off the plug when being electrified.

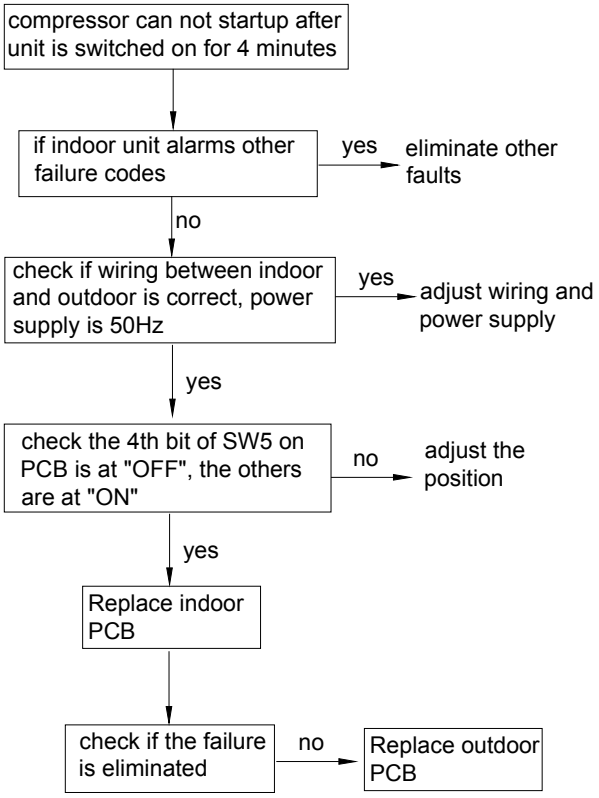
4) Communication error between indoor and outdoor units

Outdoor indicator shows 00011

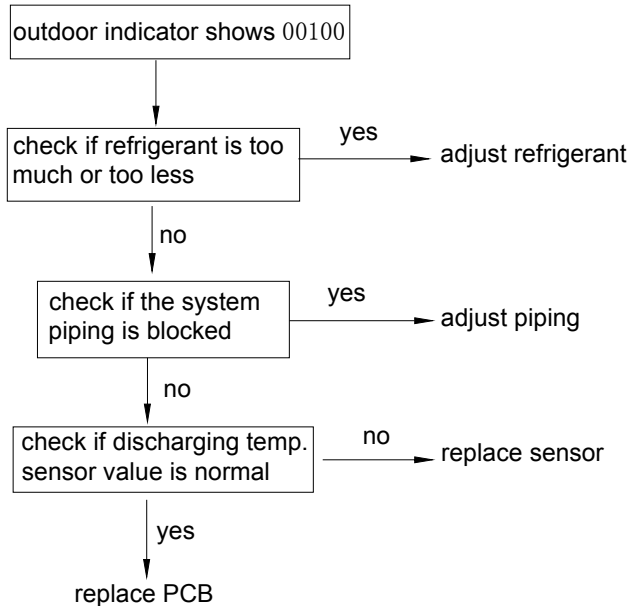
For wall mounted unit:



For convertible unit and ceiling concealed unit:

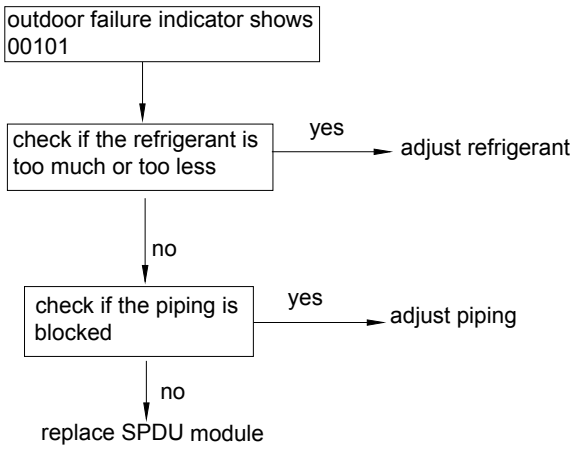


5) Compressor discharging temperature protection
Outdoor indicator shows 00100.
Alarm condition: Within half an hour after compressor is running, compressor discharging temp. is over 120degree for 3 times continously.



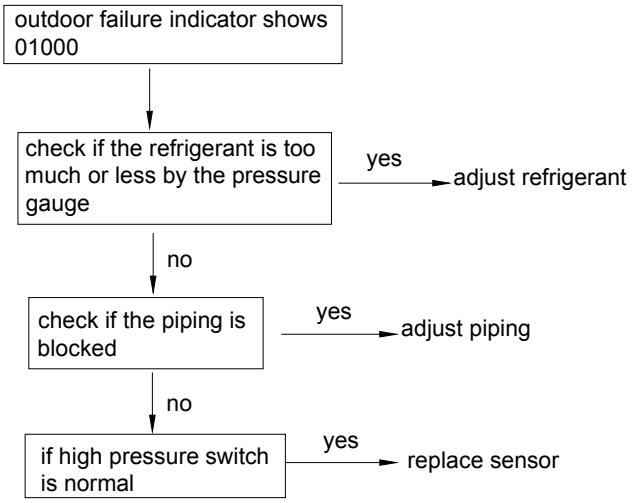
6) Outdoor SPDU module over current protection

Outdoor indicator shows 00101.
Alarm condition: When compressor running, the module current is over 21A.



7) Outdoor high pressure protection

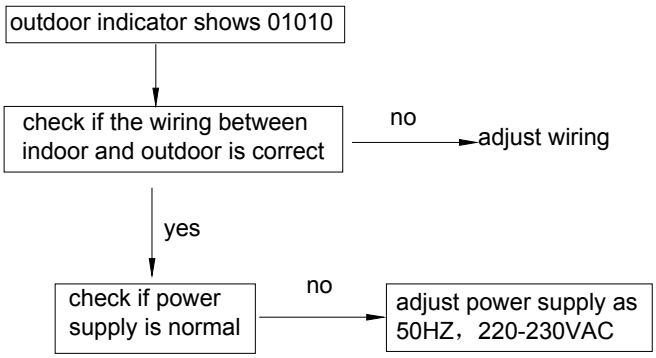
Outdoor indicator shows 01000
Alarm condition: When compressor running, high pressure is over 4.5 MPa for 30 seconds continously.



8) Outdoor power supply is abnormal

Outdoor indicator shows 01010

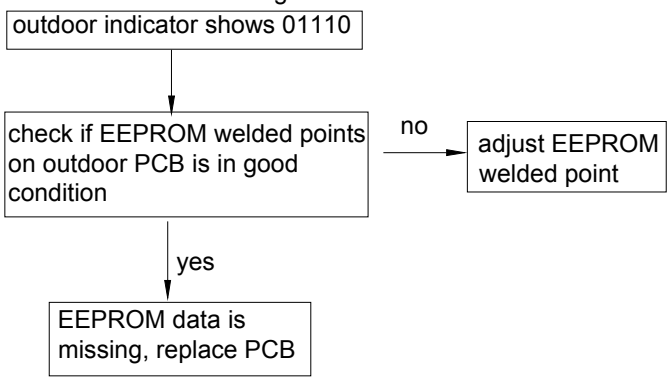
Alarm condition: if power supply is not 50Hz as standard, which will affect the normal communication and cause air conditioner bad operation.



9) EEPROM is abnormal

Outdoor indicator shows 01110.

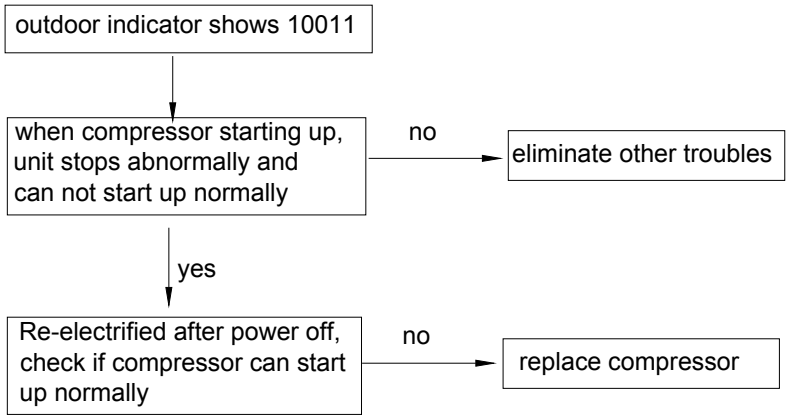
Alarm condition: EEPROM is fault or data is missing.



10) Running state detecting abnormal

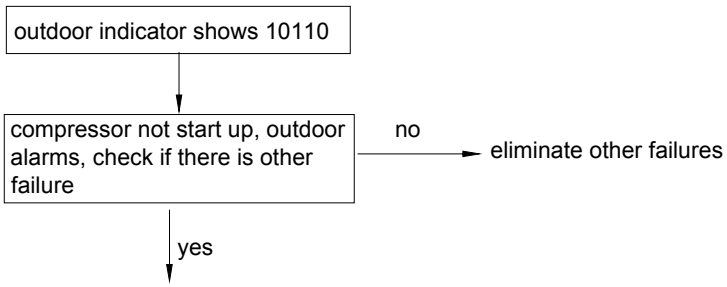
Outdoor indicator shows 10011.

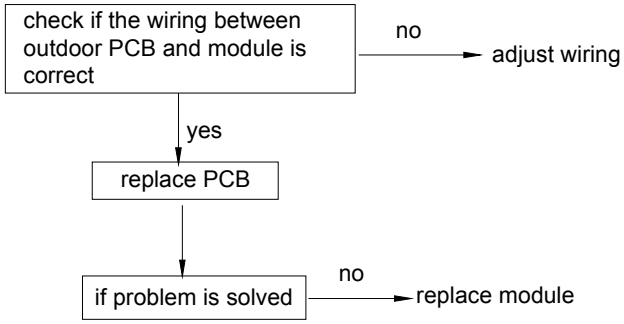
Alarm condition: when compressor is running, the unit will be abnormal or stop.



11) Communication failure between outdoor PCB and module

Outdoor indicator shows 10110

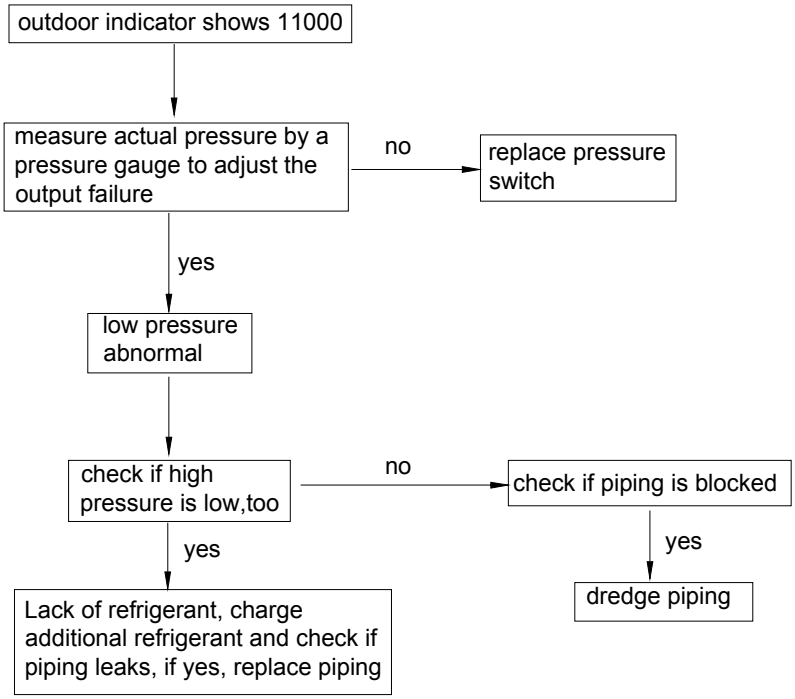




12) Outdoor low pressure abnormal

Outdoor indicator shows 11000.

Alarm condition: outdoor system pressure is lower than 0.05MPa.

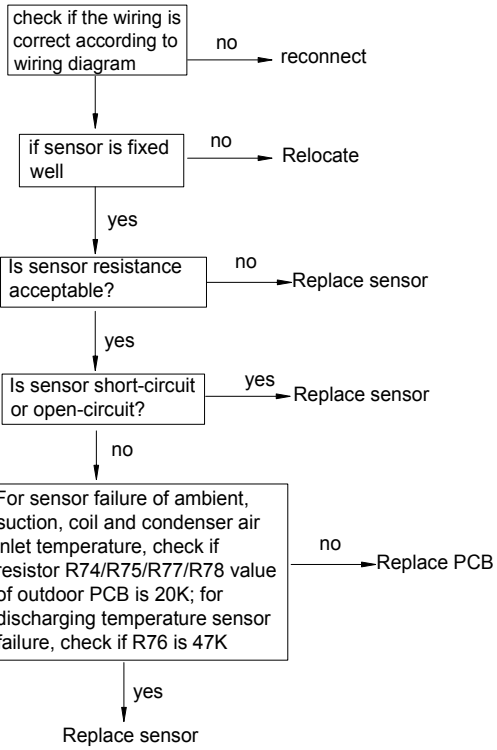


2.2.3 For AU362AHERA

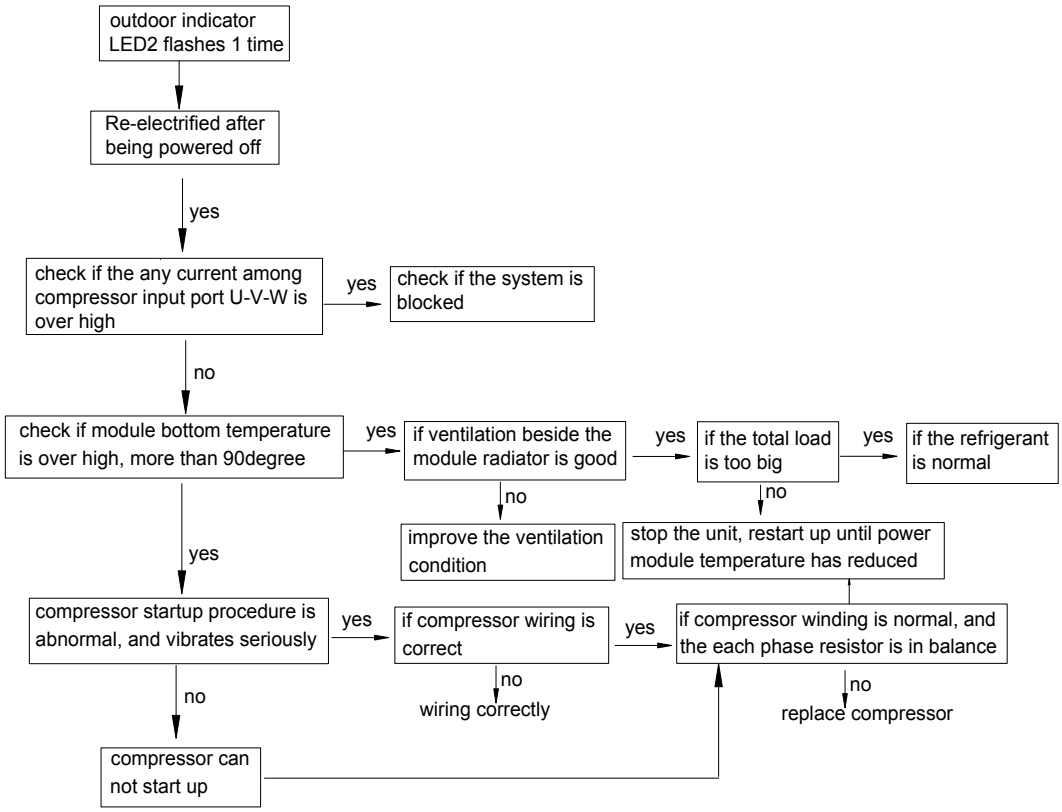
LED1 is the indicator for communication between indoor and outdoor unit LED2 is the failure indicator

1) Sensor failure

Alarm condition: ambient temperature sensor is in short circuit or open circuit for 60 seconds continously.

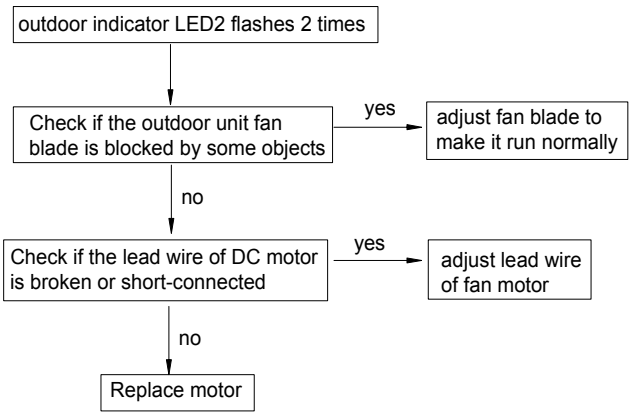


2) Outdoor power module failure



3) Outdoor DC motor abnormal

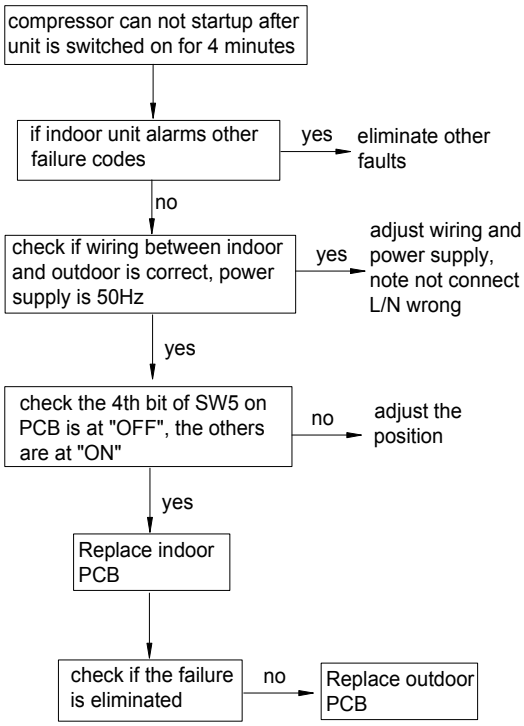
Alarm condition: outdoor DC motor is blocked rotor or broken, abnormal.



Warning: For outdoor DC fan motor, forbidden to pull off the plug when being electrified.

4) Communication error between indoor and outdoor units

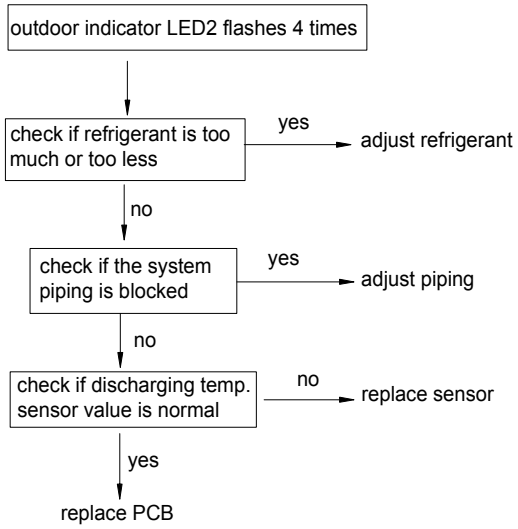
outdoor indicator LED2 flashes 3 times



5) Compressor discharging temperature protection

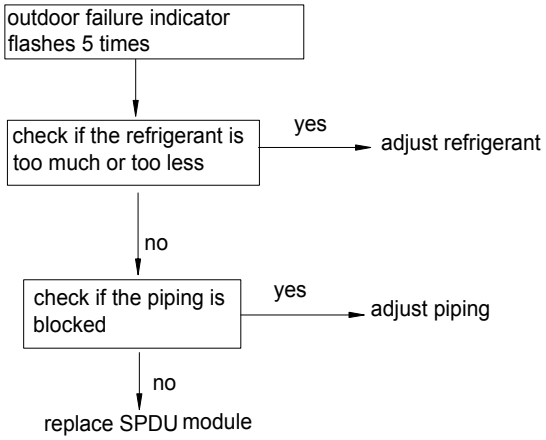
outdoor indicator LED2 flashes 4 times

Alarm condition: Within one hour after compressor is running, compressor discharging temperature is over 120degree for 3 times continously.



6) Outdoor SPDU/ISPM module over current protection

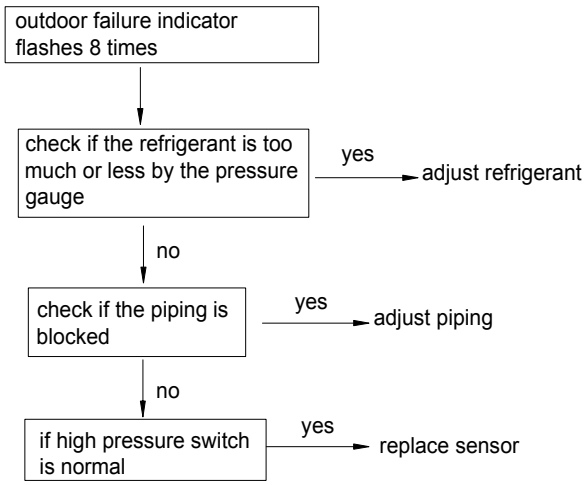
Alarm condition: When the module detect the current too high and over the limit value



7) Outdoor high pressure protection

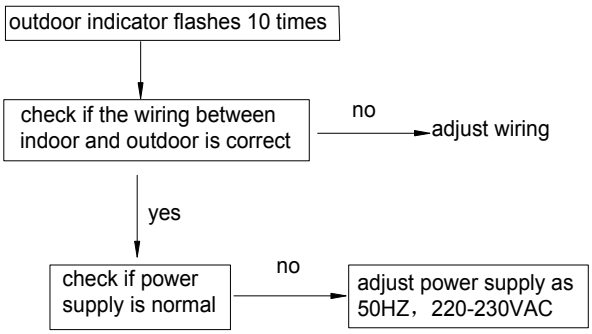
Outdoor indicator flashes 8 times

Alarm condition: When compressor running, high pressure is over 4.5 MPa for 30 seconds continously.



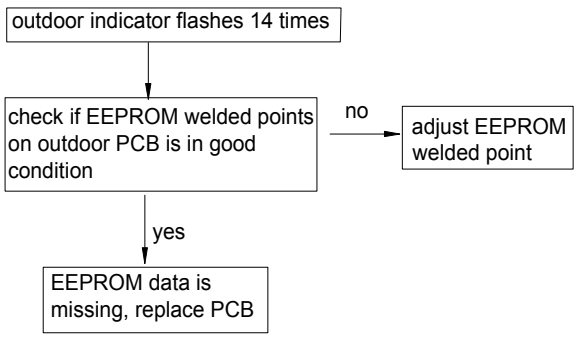
8) Outdoor power supply is abnormal

Alarm condition: if power supply is not 50Hz as standard, which will affect the normal communication and cause air conditioner bad operation.



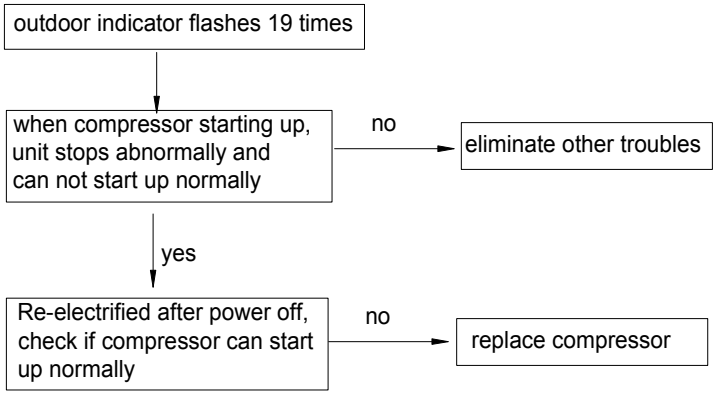
9) EEPROM is abnormal

Alarm condition: EEPROM is fault or data is missing.

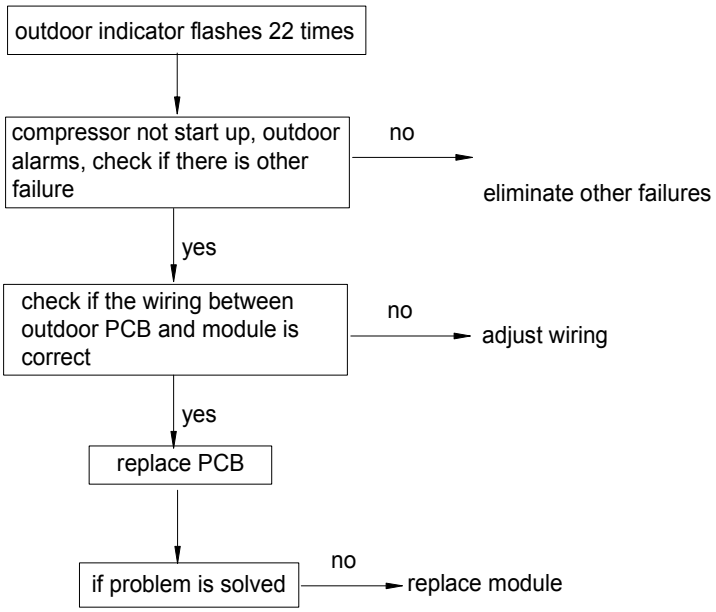


10) Running state detecting abnormal

Alarm condition: when compressor is running, the unit will be abnormal or stop.

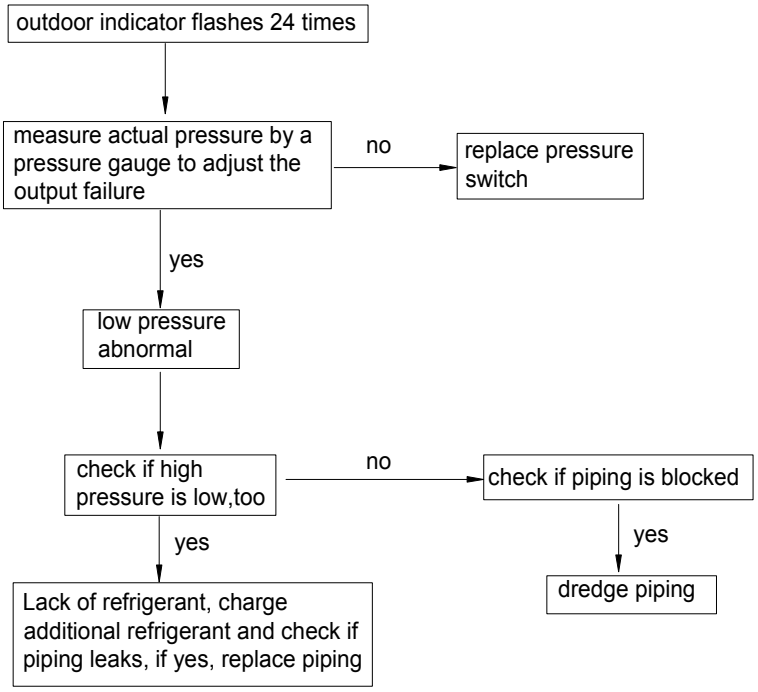


11) Communication failure between outdoor PCB and module



Alarm condition: outdoor system pressure is lower than 0.05MPa.

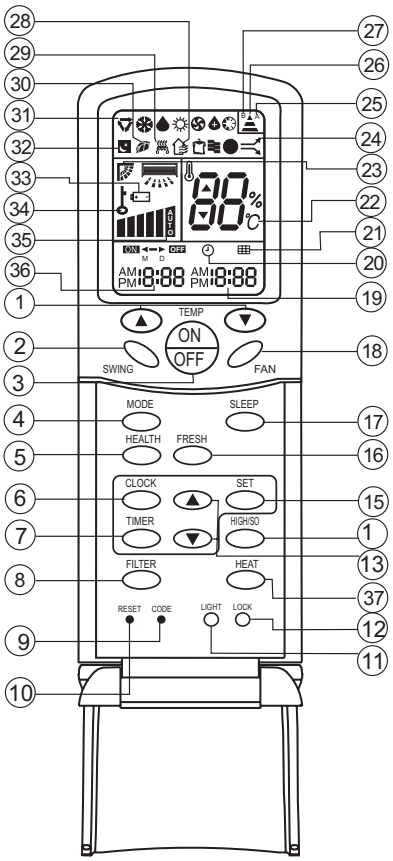
12) Outdoor low pressure abnormal



Part 6 Control Devices

1 Infrared controller

1.1 Infrared controller YR-H71



1.TEMP Setting Button

Used to set temperature. Setting ranges: 16℃ to 30℃)

In Up/Down function of filter, for controlling up and down filter.

2.SWING Button

If you press this button once, auto swing will be activated.

If you press this button again, the louver will fix in the present position.

3.Power ON/OFF Button

Used for unit start or stop

After power on, the LCD of remote controller will display the previous operation state (except for TIMER,SLEEP and SWING state).

4.Operation MODE

Used to select operation mode.

Every time you press MODE button, operation mode changes according to following sequence:

Code A: → AUTO → COOL → DRY → HEAT → FAN

5.HEALTH Button

6.CLOCK Button

Used to set correct time.

7.TIMER Button

Used to select TIMER mode:TIMER ON,TIMER OFF, TIMER ON/OFF.

(Note: if time of TIMER ON is the same as TIMER OFF,TIMER ON/OFF cannot be set)

8. FILTER Button

Used to set up/down function of filter.

9.CODE Button

Used to select Code A or B, Normally at Code A.

As you cann't controll the indoor unit, please change the Code to B.

10.RESET Button

Press this button by using a sharp article to resume the correct operation of the remote controller in case of need, i.e. for example in case of malfunctions due to electromagnetic disturbance.

11.LIGHT Button

Used to light the control panel

12.LOCK Button

Used to lock operation button and LCD display contents: by pressing this button, other buttons comes out of function and lock state display appears; if you press it again, lock state will be no more active and lock state display will disappear.

13.HOUR Adjustment

Used to set clock and timer setting

14.HIGH/SO Button

Used to select HIGH or SOFT operation.

15.SET Button

Used to confirm TIMER and CLOCK settings.

16.FRESH Button

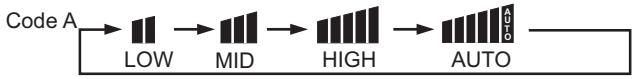
Used to set fresh mode, the unit will draw in fresh air.

NOTE: 1.Single cooling air conditioner does not have the displays and functions related to heating.
2.For some units, the function ⑤⑧⑪⑭⑯㊲ are optional.
3.HIGH/SO button
This button is active in Cooling/Heating mode, the fan speed is in AUTO mode after pressing it and " high functon " will be automatically cancelled after 15 minutes running.

17.SLEEP Button
(The clock must be corrected before setting sleep function)
Used to set sleep mode.
18.FAN Button
Used to select fan speed:LOW,MID,HIGH,AUTO.
19.TIME Display
20.TIMER Display
21.FILTER Display
When the filter need be cleaned, you can press the FILTER button for 3s, to up/down function.
22.TEMPERATURE Display
23.AUTO SWING Display
24.HIGN/SO Run Display
25.Code A of controller's state
Code A is used for this unit
26.SIGNAL SENDING Display
27.Code B of controller's state
28.Fresh Display
29.Auxiliary ELECTRICAL HEATING Display
30.HEALTH Display
Displays when healthy run function is set.
31.Operation MODE Display

AUTO RUN	COOL RUN	DRY RUN	HEAT RUN	FAN RUN

32.SLEEP State Display
33.BATTERY Energy Display
Notify the user when it is time to change the batteries.
34.LOCK State Display
35.FAN SPEED Display

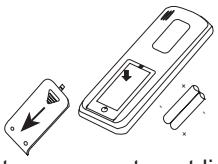


36.TIMER ON Display
37.HEAT Button
Used to select auxiliary heater.

Remote Controller Operation

- When in use, direct signal transmission head to the receiver placed on the indoor unit.
- The distance between the remote controller and the receiver should be max 7m and there should be no obstacle between them.
- Do not throw the remote controller; prevent it from being damaged.
- When operating the remote controller in an area where electronically controlled lights are installed or wireless handsets are used, please move closer to the indoor unit as the function of the remote controller might be affected by signals emitted by the above mentioned equipments.

Battery loading



Battery loading
Batteries are fitted as follows:
Remove the battery compartment lid
Slightly press and disengage the battery compartment lid marked with "▽" and then hold the remote controller by the upper section and then remove the battery compartment lid by pressing in the direction of the arrow as shown in the figure above.

Loading the battery
Ensure that batteries are correctly placed in the compartment as required for positive and negative terminals.
Replacing the battery compartment lid
The battery compartment lid is reinstalled in the reverse sequence.
Display review
Press the button to see if batteries are properly fitted. If no display appears, refit the batteries.

Confirmation indicator

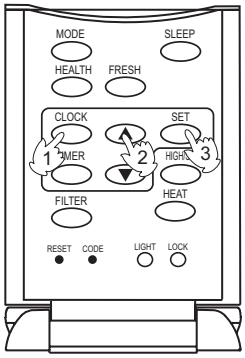
If no indication is displayed after press ON/OFF button, reload the batteries.
Caution:
If the remote controller does not operate as designed after fitting new batteries of the same
type, press the Reset button (marked⬇) with a pointed article.

Note:
It is recommended that the batteries be removed from the compartment if the remote controller is not used for an extended period.
The remote controller is programmed for automatic test of operation mode after the batteries are replaced. When the test is conducted, all icons will appear on the screen and then disappear if the batteries are properly fitted.
When throw away the waste batteries, please perform in accordance with the local regulation.

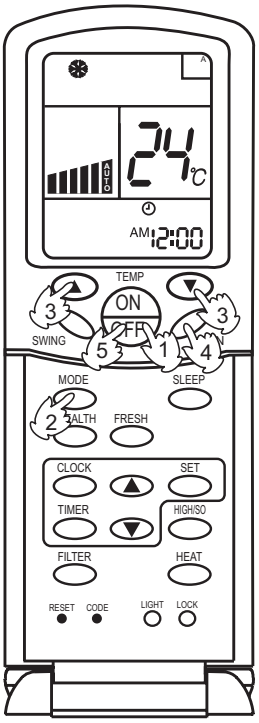
Clock Set

When unit is started for the first time and after replacing batteries in remote controller, clock should be adjusted as follows:
1.Press CLOCK button, clock indication of " AM " or " PM " flashes.
2.Press ▲ or ▼ to set correct time. Each press will increase or decrease 1 min. If the button is kept pressed, time will increase or decrease quickly.
3.After time setting is confirmed, press "SET" : AM or PM stop flashing, while clock starts working.

Note:AM means morning and PM means afternoon.



AUTO, COOL, HEAT and DRY Operation



1. Unit start

Press ON/OFF button,unit starts.

Previous operation status appears on LCD (except for TIMER, SLEEP and SWING setting)

2. Select operation mode

Press MODE button. At each press, operation mode changes as follows:

Code A: → AUTO → COOL → DRY → HEAT → FAN

Then select AUTO run or select COOL operation or select DRY operation or select HEAT operation

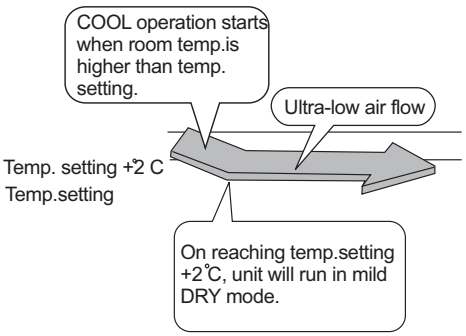
3. Temperature setting

Press TEMP button.

▲ Every time the button is pressed, temp. setting increases 1℃; if the button is kept pressed, temp. setting will increase quickly.

▼ Every time the button is pressed, temp. setting decreases 1℃, if the button is kept pressed, temp. setting will decrease quickly.

Set proper temperature



4.Adjust FAN button

Press FAN button. At each press, fan speed changes as follows:

Code A → AUTO → LOW → MID → HIGH

Air conditioner will run at the selected fan speed.

5. Unit stop

Press ON/OFF button,unit stops.

In FAN mode, the temperature setting is not displayed on LCD.
In DRY mode, when room temperature becomes 2 C higher than temperature setting, unit will run intermittently at LOW speed regardless of FAN setting. When room temperature is lower than temperature setting, unit will only run FAN operation.
In HEAT mode,warm air will blow out after a short period of time due to cold-draft prevention function.

Fan Operation (Only for Code A)

1. Unit start

Press ON/OFF button to start your air conditioner. Previous operation status appears on LCD (except for TIMER, SLEEP, and SWING setting).

2. Select operating mode

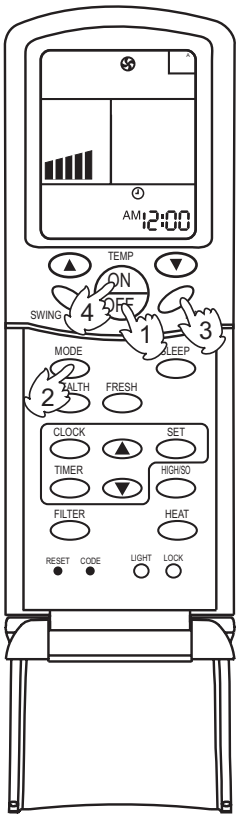
Press MODE button. At each press, operation mode changes as follows:

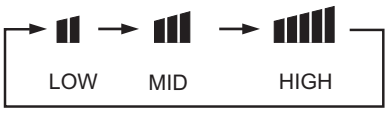
→ AUTO → COOL → DRY → HEAT → FAN

Then select FAN

3. Adjust fan speed

Press FAN button. At each press, fan speed changes as follows:





Air conditioner will run at the selected fan speed.

When in AUTO mode, unit will adjust fan speed according to room temperature automatically.

4. Unit stop

Press ON/OFF button to stop unit.

About FAN mode

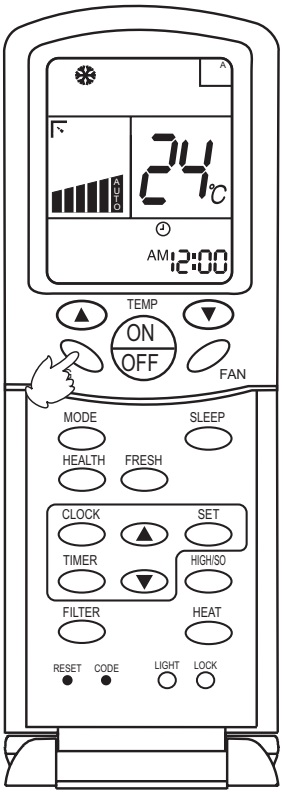
When the air conditioner runs in FAN mode, it is not possible to select AUTO FAN or to set temperature.

Adjusting air flow direction

AUTO SWING

Press SWING button. Up and down airflow varies upwards and downwards. Left and right airflow varies left and right sides

When the automatic swing louver moves to the proper angle, press SWING button can fix the airflow direction.



- Always use SWING button on the remote controller to adjust flaps. Adjusting them by hand may result in air conditioner s abnormally running.
- In COOL or DRY mode, do not leave the louver in downward position for a long time, as the water vapor close to the grille may condense and water may drop from the air conditioner.
- Please carefully set temperature when children, old or infirm people use the air conditioner.
- In case of great humidity, If the vertical flaps are completely turned towards left or right, the louver will drop water.
- Never adjust the louver directly by hand, as this could make it work abnormally.If the louver work abnormally, stop unit, restart and adjust the louver by remote controller.

After unit stops:

Displays on the LCD disappear.

All indicators on the indoor unit go out.

Swing louver automatically close the air outlet.

Hints:

As in COOL mode air flows downwards, adjusting airflow horizontally will be much more helpful for a better air circulation

As in HEAT mode air flows upwards, adjusting airflow downward will be much more helpful for a better air circulation.

Be careful not to catch a cold when cold air blows downward directly

Sleep Function

Before going to bed you can press down the SLEEP button and the air conditioner will run so as to make you sleep more comfortably.
Before using this function, the clock must be set.

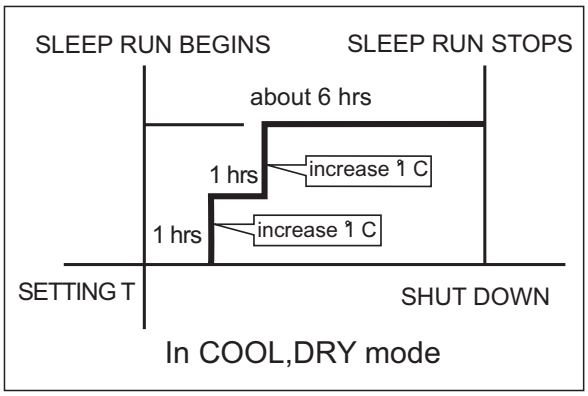
Use of SLEEP function

After the unit's start, set running mode and then press SLEEP button once to make the air conditioner have the previous-set sleep time (first power-on is "1h"). The sleep symbol will appear. Press time button ▲/▼ : you can choose the time in 1~8 hours. Each time the button is pressed, the time increases/decreases 1 hour: "xh" and "OFF" indications appear on the display.

Operation Mode

1.In COOL, DRY mode

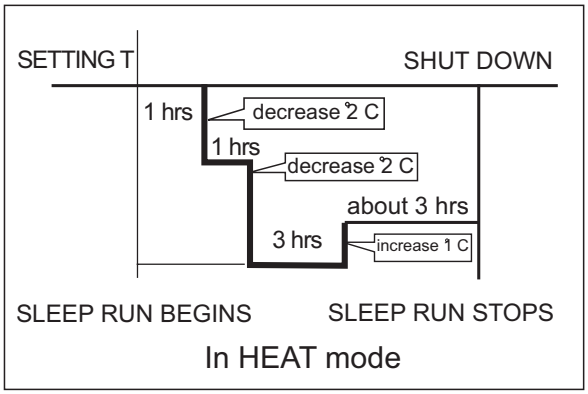
One hour after sleeping operation start, the temperature is 1˚C higher than the setting one. After another hour, temperature rises 1˚C: sleep run continuously for another 6 hours and then stops. The actual temperature is higher than the setting one which is to prevent from being too cold to your sleep.



In COOL,DRY mode

2.In HEAT mode

One hour after sleeping operation start, the temperature is 2˚C lower than the setting one. After another hour, temperature decreases by 2˚C more. Temperature will automatically rise by 1˚C after another 3 hours' continuous operation and keep running for another 3 hours. The actual temperature is lower than the setting one which is to prevent from being too hot to your sleep.



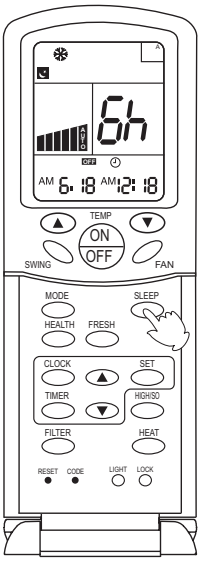
In HEAT mode

3.In AUTO mode

The air conditioner will run in corresponding sleep operation according to the automatically selected operation mode.

Notes:

- After setting SLEEP function, it is not possible to set clock.
- If set-sleep time does not reach 8 hours, unit will automatically stop 0operation after set time is reached.
- Set " TIMER ON " or " TIMER OFF "In COOL,DRY mode function first, then set SLEEP. After set SLEEP function, the TIMER function cannot be set.



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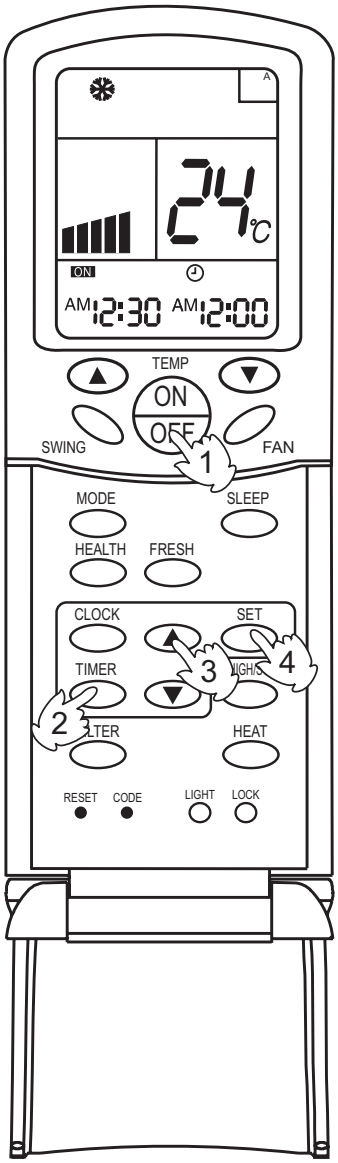
Timer ON/OFF Function

Set clock correctly before starting TIMER operation

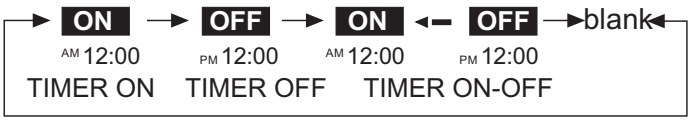


1.Unit start

After unit start, select your desired operation mode (operation mode will be displayed on LCD)

2.TIMER mode selection

Press TIMER button on the remote controller to change TIMER mode. Every time the button is pressed, display of TIMER mode changes as follows:



Then select TIMER mode as needed (TIMER ON or TIMER OFF). Now **ON** or **OFF** will flash.

3.TIMER setting (press time adjust buttons ▲▼)

▲ Every time the button is pressed, time increases 10 minutes. If the button is kept pressed, time will changes quickly.

▼ Every time the button is pressed, time decreases 10 minutes. If the button is kept pressed, time will changes quickly. It can be adjusted within 24 hours at will.

4.Confirm setting

After setting correct time, press SET button to confirm time. Now **ON** or **OFF** stop flashing.

Time displayed: unit starts or stops at X hour X min (TIMER ON or TIMER OFF)

5.Cancel TIMER mode

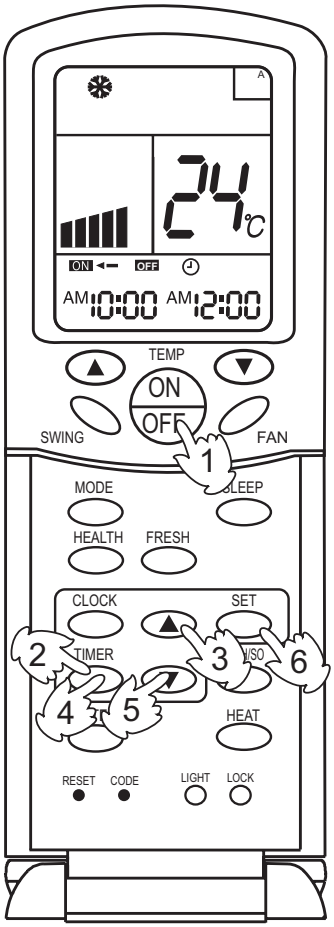
Just press TIMER button several times until TIMER mode disappears

Hints:

After replacing batteries or if a power failure occurs, TIMER setting must be reset.

Remote controller has memory function. When you use TIMER mode next time, just press SET button after mode selection if timer setting is the same as the previous one.

Timer ON-OFF Function



Set clock correctly before starting TIMER operation

1.Unit start

After unit start, select your desired operation mode (operation mode will be displayed on LCD)

2.TIMER mode selection

Press TIMER button on the remote controller to change TIMER mode. Every time the button is pressed, display of TIMER mode changes as follows:

Then select TIMER ON-OFF mode. **ON** will flash.

3.Time setting for TIMER ON

Press time button ▲▼

▲ Every time the button is pressed, time increases 10 minutes. If the button is kept pressed, time will changes quickly.

▼ Every time the button is pressed, time decreases 10 minutes. If the button is kept pressed ,time will changes quickly. It can be adjusted within 24 hours at will. AM refers to morning and PM refers to afternoon.

4.Timer confirming for TIMER ON

After setting correct time, press TIMER button to confirm time. Now **ON** stops to flash, while **OFF** starts flashing.

5.Timer setting for TIMER OFF

Press time buttons ▲▼ and follow the same procedures in " Time setting for TIMER ON"

6.Time confirming for TIMER OFF

After time setting, press SET button to confirm time. **OFF** stops to flash.

Time displayed: unit starts or stop at X hour X min.

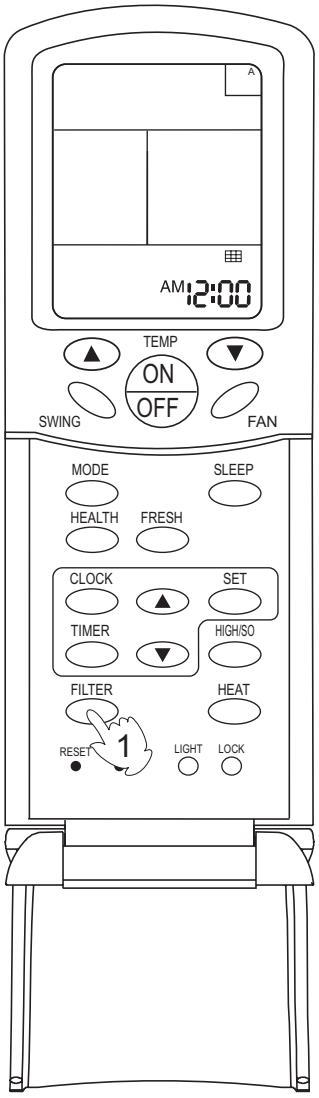
7.Canel TIMER mode

Just press TIMER button several times until TIMER mode disappears.

According to the time setting sequence of TIMER ON and TIMER OFF, either start-stops or stops-start can be realized.

If the time setting of TIMER ON is the same as TIMER OFF, TIMER ON-OFF function cannot be set.

Filter Up/Down



After the air conditioner has operated for a certain period, dust has accumulated on the filter, and the filter up/down function can be used to clean it. This function is convenient to pull out the filter for customer.

1.Whether unit starts or stops, continuously press FILTER button for 3 seconds, and enter the filter up/down waiting status (when unit stops, the TIMER indicator flashes, and filter and clock indication are displayed on the remote controller. Only the FILTER button, the temperature buttons "▲" "▼" and time buttons ▲▼ are active).

2.Press temperature "▼" button or time "▼" button in filter up/down waiting status: the up/down mechanism makes the filter moving downward and does not stop until it has reached the maximum limit.

3.Press temperature"▲" button or time"▲" button in filter up/down waiting status: the up/down mechanism makes the filter to moving upward till near the surface board and then automatically adjusts it to reset (when adjusting to reset, it will not be controlled by the remote controller till the adjustment is finished).

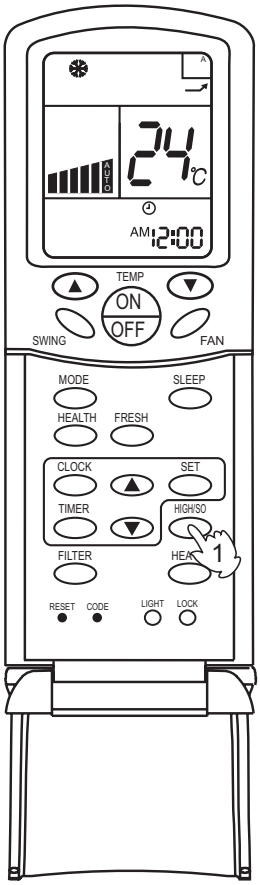
4.During moving downward, press temperature"▲" button or time "▲" button: moving stops.

5.During moving upward, press temperature"▼" button or time "▼" button: moving stops.

6.Continuously press FILTER button 3 seconds again tocancel the filter up/down waiting mode (unit stops, the yellow timer indicator stops flashing, the filter goes back tothe original position, the remote controller goes back to off status and only clock is displayed).

Note:
If the filter does not thoroughly go back to the original position, only needs to operate several times repeatedly.

" High mode " Operation



Outline of operation in "High Mode"

This function is suitable when the set temperature must be reached in the shortest delay.
The button "HIGH/SO", referred to this function, is effective in Cooling/Heating mode (not in Auto/Dry/Fan modes).

ON
Press the HIGH/SO button noce The indication appears on the display of the remote controller and in "High Mode" starts. The AUTO fan speed is automatically set and the corresponding indication is also displayed. In this mode, fan speed cann't be adjusted.

OFF
Press the HIGH/SO button twice If the button is pressed once, the indication is displayed on the remote controller. If you press the button once again, the indication disappears, regular operation is restored and fan speed goes back to the mode set before "High Mode" operation.

NOTICE:

- When the air conditioner is operating in " High Mode " , unevenness of room air temperature may occur due to the intensive operation in a short time.
- Anyway, operation in "High Mode", does not last for more than 15 minutes, then regular operation is automatically restored.

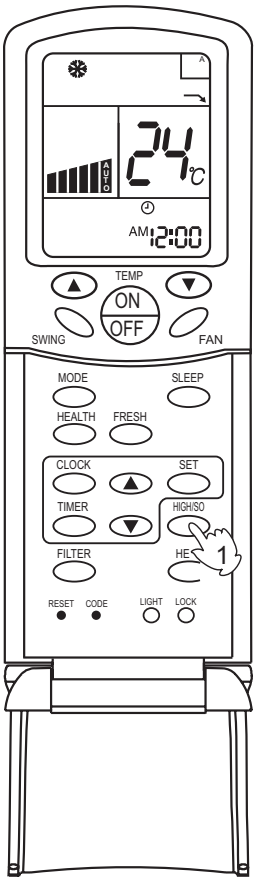
" Soft mode " Operation

Outline of operation in "Soft Mode"

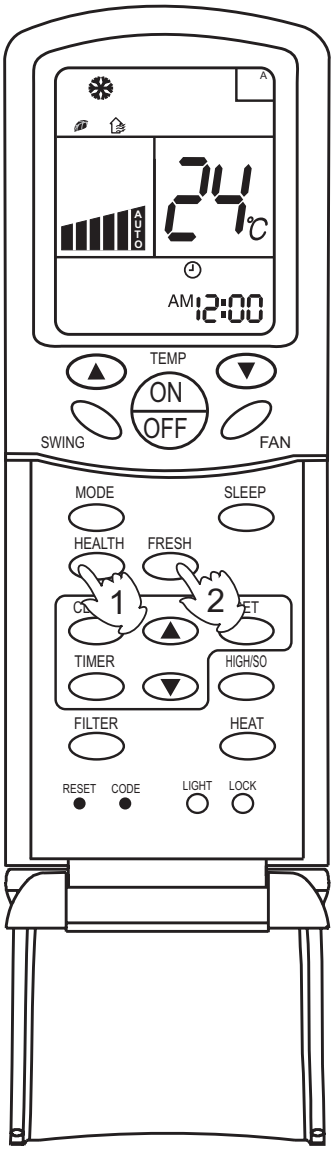
Operation in "Soft Mode", more silent, is suitable when noises should be reduced, e.g. for reading or sleeping.
The button "HIGH/SO", referred to this operation, is effective in Cooling /Heating mode (not in Auto/Dry/Fan modes).

ON
Press the HIGH/SO button twice The indication appears on the display of the remote controller and operation in "Soft Mode" starts. The AUTO fan speed is automatically set and the corresponding indication is also displayed.

OFF
Press the HIGH/SO button twice If the button is pressed once, the indication is disappears from the remote controller's display. If you press the button once again, regular operation is restored and fan speed goes back to the mode set before "Soft Mode" operation.



Health & Fresh Air operation



Health operation

After turning on the unit and set the desired working mode. Press the Health button, the LCD will display " ", the unit begins health operation (start the negative ion generation device). Press the Health button again, the " " displayed on the LCD disappears, health operation is cancelled (turn off the negative ion generation device).

Note: When indoor fan motor does not work, the unit will automatically turn off negative ion generation device.

About Health operation

After the start of Health operation, the negative ion generator will generate large amount of negative ion, which can effectively balance the amount of positive & negative ion in the air and has the bacteria-killing and accelerating the dust deposition of the room to make the room air fresh and healthy.

Fresh Air operation

After turning on the unit and set the desired working mode (the remote controller LCD and control panel LCD display the working mode).

Press the Fresh Air button of the remote controller, the LCD displays " ", and the unit begins continuous fresh air operation; press the button again, the " " in " " flashes and begin automatic fresh air operation. Press the the button for the third time to cancel fresh air function.

Continuous fresh air operation: That is to say, if there is no intervention, the fresh air operation will contiunously run and not stop.

Automatic fresh air operation: That is to say, the fresh air operation runs intermittently. After 20 minutes operation, the fresh air operation will stop for 20 minutes; runs for another 20 minutes, it will stop for another 20 minutes, repeatedly runs.

Note: Either in ON or OFF state, the fresh air operation can be independently set to run.

About Fresh air operation

The ventilation device of this air conditioner can discharge the indoor air to outdoors, while the outdoor fresh air supplement to indoors, so that fulfills the fresh air function

Infrared controller YR-H71 and remote receiver RE-01:

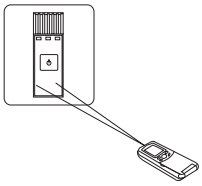
If the unit is wired type and it is without the remote receiver, you can use the remote receiver RE-01 and the remote controller YR-H71 to realize the remote function. The installation of remote receiver and usage function are as follows:

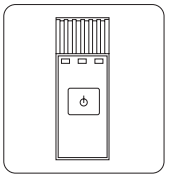
The right figure is a remote controller, which can be used on series remote control units and the matching remote control receiver

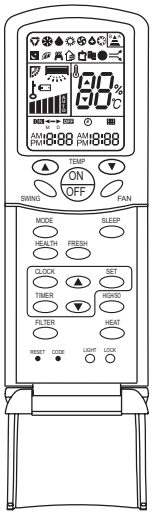
1.Remote control receiver using method :

Use remote controller control the remote control window of the remote control receiver.

2.For Unitary Free, Unitary Smart and Multi units, the controller CODE please select code "A"; for H-MRV and ASX ABAA unit, please select code "B".**







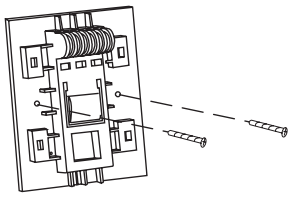
Remote receiver Remote controlller

Installation of receive display

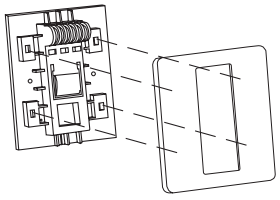
Because of the temperature sensitive device, do not install the receive display at straight sunlight place, either in front of air outlet grill, for it is effected greatly from cool air and heat air, the receive display is at least 20mm distance to the air outlet grill.

Since there is light sensitive device which receives wireless remote signal, so do not installed behind the window curtain or other obstacles, in order not to obstruct the signal.

Must fix the remote control wire far from strong electricity (such as the wiring of electric light, air conditioner, etc.) and weak electricity (such as the wiring of telephone, interphone, etc.).



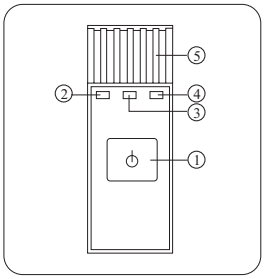
1.Fix the receive display with screws on the selected place



2.Place the panel onto the fixed frame, pay attention that the four claws must be placed into the corresponding four poles on the frame

Connecting wiring method of receiver :

- Refer the indoor unit wiring diagram .
- Safety cautions see the electrical wiring part .



①.Emergency switch

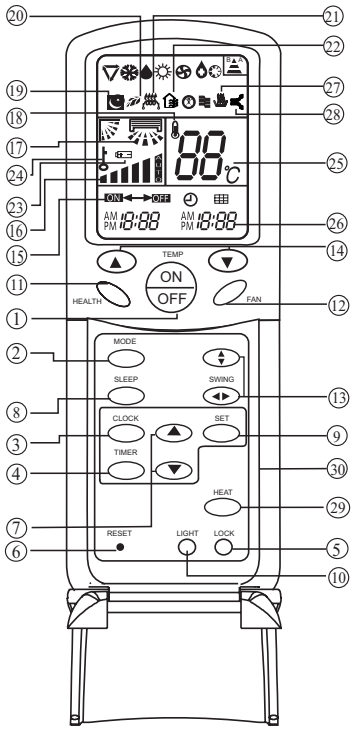
②.Running lamp: When the compressor working, this lamp bright.

③.Timing lamp: When the unit been setting Timing running, this lamp bright.

④.Power lamp: After open the unit, this lamp bright when the unite enter health running, the lamp change from orange to blue lamp.

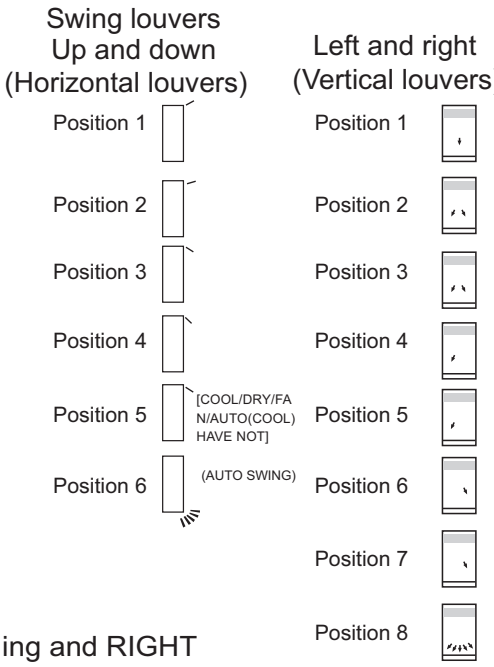
⑤.Indoor temp. sensor: Test the room temperature.

1.2 Infrared controller YR-H50



Except [SWING][POWER/SOFT][HEAT] function, the other basic functions are same with YR-H71, please reference YR-H71 manual.
[Swing] function description:

Air flow adjustment



Swing

- Press SWING the vertical ouvers move from left and right.

Fixed position

- Press the SWING again to fix the vertical louvers at your desired position.

Swing

- Press SWING the horizontal louvers move from up to down.

Fixed position

- Press the SWING again to fix the horizontal louvers at your desired position.

⑬SWING
Used to set UP/DOWN air sending and RIGHT /LEFT air sending direction.

㉙HEAT
Select Auxiliary electric heater

㉚POWER/SOFT
Select power/soft

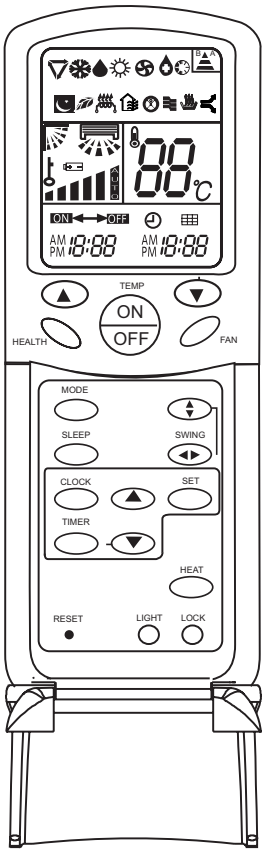
Note: Put louvers at up position in cooling and down position in heating mode. This will be helpful to keep an even room temp.

Note: In cooling or dry operation, don't put horizontal louvers at downward position for a long time, or outlet grill might get frosted. Don't expose your skin to cool or warm air for a long time.

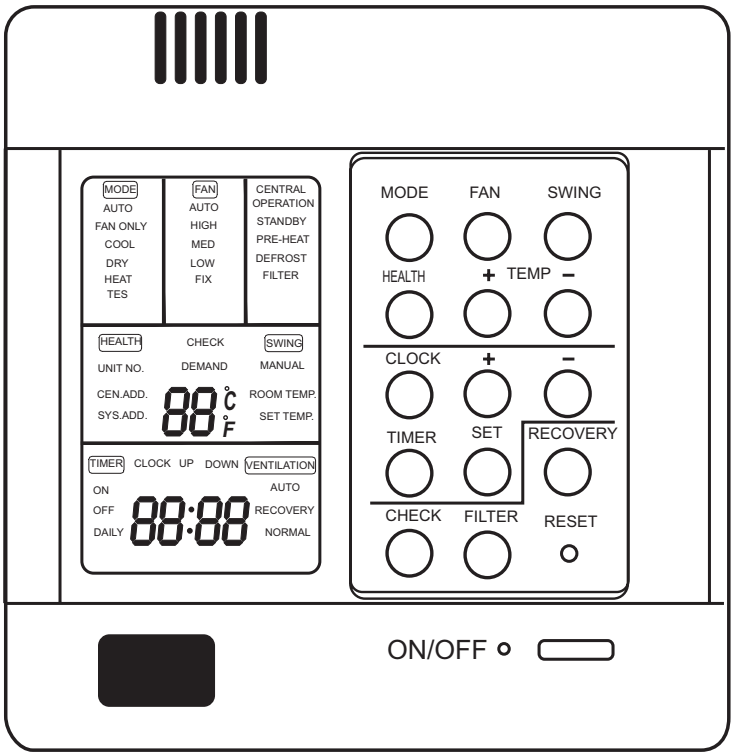
Note: For new apperance convertible unit, the position 3 and position 4 are "Auto Swing".

1.3 Infrared controller YR-H49

The main functions of YR-H49 are same with YR-H50, please reference YR-H71 and YR-H50 manuals.



2. Wired controller



Buttons function：

MODE：used for select indoor operation mode.

FAN：used for select indoor air flow.

SWING：used for setting indoor swing mode.

HEALTH：used for setting indoor health function.

TEMP + -：used for changing set temperature.

CLOCK：used to adjust time.

+、-：stands for time plus/minus, used to adjust time.

TIMER：used to set timer mode.

RECOVERY：used to switch over air-exchanging mode.

CHECK：auto-diagnostic button.

FILTER：filter-cleaned button.

RESET：reset correct mode button.

Display description：

[MODE] [AUTO]：auto operation mode

[MODE] [FAN ONLY]：air-throwing mode

[MODE] [COOL]：Cooling operation mode

[MODE] [DRY]：Dehumidification mode

[MODE] [HEAT]：Heating operation mode

[MODE] [HEAT] [TES]：In heating mode, auxiliary electric heater is running. Only when the unit with auxiliary electric heater is in auxiliary electric heating mode, it will display.

[FAN] [AUTO]：auto fan running

[FAN] [HIGH]：high fan speed
[FAN] [MED]： medium fan speed
[FAN] [LOW]： low fan speed
[FAN] [FIX]： fixed fan speed, it will display only when fixed fan speed is requested to main indoor unit.
[CENTRAL]： central control mode
[OPERATION] ：running mode
[STAND BY] ： waiting mode
[PRE-HEAT] ： pre-heating mode
[DEFROST]： defrosting mode
[FILTER] ： request of filter to be cleaned
[HEALTH]：health function
[UNIT NO.]
[CEN.ADD]：central control address, the address number will display on “88”
[SYS.ADD.]：system address, the address number will display on “88”
[CHECK]：auto-diagnostic, trouble shooting
[DEMAND]：compulsory operation function, when it works, [CENTRAL] will flash
[SWING]：swing mode
[ROOM TEMP.]：indoor ambient temperature
[SET TEMP.]：set admired temperature.
[TIMER][ON] ：timer function is on.
[TIMER][OFF] ：timer function is off
[TIMER][ON][OFF] ：timer function ON-OFF
[TIMER][ON][OFF][DAILY]：timer ON-OFF will switch over in turn daily
[CLOCK]：clock display, the displaying time is the current time of the clock.
[UP]、[DOWN]：indicator of filter elevating
[VENTILATION][AUTO]：auto ventilation mode
[VENTILATION][RECOVERY]：fully heat exchanging ventilation mode
[VENTILATION][NORMAL]：normal ventilation mode

FAN ONLY OPERATION：

1）Start up operation: press the button of ON/OFF, the system will start up, and will display [MODE][AUTO]；[FAN][AUTO]；[ROOM TEMP.]+ “24℃”；[CLOCK]+”12：00”.

2） Select MODE: press the MODE button, then you will see in the display section [MODE] switch over in below sequence:[FAN ONLY]→[COOL]→[DRY]→[HEAT]→[AUTO]→[FAN ONLY]. Select [FAN ONLY].

3）Select fan speed: press FAN button, then you see in the display section [FAN] switch over in below sequence: [HIGH]→[MED]→[LOW]→[HIGH]. Select proper fan speed.

4）Power off: press ON/OFF button, indoor unit will be powered off, there are only time and the ambient temperature in the screen.

AUTO operation, COOLING, HEATING and DEHUMIDIFICATION operation

1) Start up operation: press the button of ON/OFF, the system will start up, and will display [MODE][AUTO]；[FAN][AUTO]；[ROOM TEMP.]+ “24℃”；[CLOCK]+”12：00”.
2) Select MODE: press the MODE button, then you will see in the display section [MODE] switch over in below sequence:[FAN ONLY]→[COOL]→[DRY]→[HEAT]→[AUTO]→[FAN ONLY]. Select [COOL] .
3) Change set temperature: press TEMP + or – every time, [SET] will display, and set temperature will increase/reduce 1℃（F）.
4) Select fan speed: press FAN button, then you see in the display section [FAN] switch over in below sequence: [AUTO]→[HIGH]→[MED]→[LOW]→[AUTO]. Select proper fan speed.
5) Select [SWING]: press [SWING] button, swing function is valid. Press again, swing function is invalid.
6) Set [HEALTH]: used to set the indoor health function. Press it once, [HEALTH] will display in the display section, then indoor health function is valid. Press it again, [HEALTH] will disappear, then the health function is invalid.
This function is valid only for the unit with health function.
7) Power off: press ON/OFF button, indoor unit is powered off. There are only time and the ambient temperature in the screen.

Set TIMER operation:

Adjust clock: when powered on, for the first time to set timer function, the clock will be adjusted.
Press “CLOCK” button, and set the current clock. Now, “CLOCK” will flash at the frequency of 2Hz. Press the clock +/- button; the current clock can be adjusted. Until the proper time comes, press [SET].

TIMER ON operation:
Press TIMER button, and keep pressing it, in the display section [TIMER] will switch over in below sequence: [ON]→[OFF]→[ON][OFF] → [ON][OFF][DAILY] →[ ]. Select [TIMER] [ON], then [TIMER] [ON] flashes, press the clock +/- button to adjust the time of TIMER ON, press [SET] button.

TIMER OFF operation:
Press TIMER button, and keep pressing it, in the display section [TIMER] will switch over in below sequence: [ON]→[OFF]→[ON][OFF] → [ON][OFF][DAILY] →[ ]. Select [TIMER] [OFF], then [TIMER] [OFF] flashes, press the clock +/- button to adjust the time of TIMER OFF, press [SET] button.

TIMER ON-OFF operation:
Press TIMER button, and keep pressing it, in the display section [TIMER] will switch over in below sequence: [ON]→[OFF]→[ON][OFF] → [ON][OFF][DAILY] →[ ]. Select [TIMER] [ON] [OFF]. Firstly, [TIMER][ON] flashes, press the clock +/- button to adjust the time of

TIMER ON, press [TIMER]. [TIMER][ON] will be constant on. Then [TIMER] [OFF] flashes, press the clock +/- button to adjust the time of TIMER OFF, press [SET]. The time sequence of timer on and timer off will determine the mode is [TIMER] [ON] →[OFF] or [TIMER] [OFF] →[ON]. If you want the current time, press [CLOCK] once, current time will display; press again, [CLOCK] will flash, and press [+][-] to adjust the time.
Note: 1. If the two times are same, the timer state which is set later will flash, in this case, timer can not be set.
2. When entering TIMER setting state, if you do not input any button in continuous 10 seconds, the unit will quit from the TIMER mode.

Cancel TIMER operation:
In the timer operation state, press [TIMER] button, the unit will quit from the current timer operation state, and the set data will be memorized, then enter the next timer mode.

[FILTER] function
When the wired controller receives the filter-cleaned signal from indoor unit, [FILTER] will display. After finishing clean, press **[FILTER]**, the sign [FILTER] disappears, and the controller will send the filter reset signal to indoor unit.
When the sign [FILTER] not display, it is invalid to press **[FILTER]** in short time.

FILTER ELEVATING function: (only for the unit with elevating function)
When the filter needs to be cleaned, the panel can be lowered to the admired height by the [FILTER][UP][DOWN] function. Method is below: In power off state, press [HEALTH] for 10 seconds to enter filter elevating set state. In this state, the sign [FILTER] will flash and [UP] [DOWN] will display simultaneously, Press TEMP [+], in timer section [UP] will display, while press TEMP [-], in timer section [DOWN] will display. When it arrives the appropriate position, press [UP], [UP][DOWN] will display simultaneously, filter will stop going down. Press [UP] again, filter will go up. Press [FILTER] button to quit the mode.

DEMAND operation function:
By this function, all the indoor units can be made in nominal mode. Set the operation mode in cooling and then shut off the unit. In the stop state, press [ON/OFF] button for 5 seconds to enter cooling trial operation state. If it is in heating mode before shut off the unit, then press [ON/OFF] button for 5 minutes, it will enter heating trial operation state.

In cooling, there will be “LL” in the position where the set temperature displays. In heating, there will be “HH” in the position where the set temperature displays. The wired controller will send the [DEMAND] signal to indoor unit. In the [DEMAND] operation, “COOL” or “HEAT” will display at 1Hz frequency. Indoor fan motor will be fixed at “AUTO” mode. The indoor units in the same group will quit the [DEMAND] in turn.

At this time, only the buttons of [ON/OFF] and temperature [+] [-] are valid. Press [ON/OFF] to quit [DEMAND] mode.

CENTRAL control function

When the central controller selects [CENTRAL] mode, the buttons in the wired controller except for [CHECK] will be invalid.

VENTILATION mode (only for the unit with fresh air function or heat recovery function)

Press [RECOVERY] button, then the unit will switch over the ventilation mode:

[ ] → [VENTILATION][AUTO] → [VENTILATION][RECOVERY] → [VENTALATION][NORMAL] →[ ], please select appropriate ventilation mode.

Query indoor malfunction history:

In the state of power on or power off, press [CHECK] button, enter the malfunction-querying mode of all indoor units in the group. Then [CHECK] and [UNIT NO.] will display, and the actual indoor numbers will be displayed in some sequence (unit number is in decimals). At the same time, in the time region, there will be the current malfunction and the latest time malfunction, the displaying format is [XX：YY], in which XX stands for the current malfunction, if normal, it will display "——"; YY stands for the latest time malfunction. The failure code of every unit will display for 3 seconds. After the failure codes of all indoor units in the whole group are displayed, the mode will quit automatically.

Clear abnormal state and malfunction history:

In normal state, press [CHECK] button for 5 seconds to clear abnormal states, at the same time, wired controller will send the data of "clear abnormal state", but the malfunction history still retains.

In normal state, press [CHECK] button for 15 seconds, except for malfunction states, the malfunction history in wired controller will be cleared.

Query indoor performance state:

In normal state, press both buttons of [CHECK] and [FILTER] for 5 seconds, in the set temperature region in the screen, [XX] will display, XX is indoor number, which can be selected by pressing [TEMP] [+] [-]. In the timer region in the screen, [YZZZ] will display, in which Y stands for data type, ZZZ stands for the corresponding data. which can be selected by pressing [CLOCK] [+] [-].

Y	ZZZ	Type
A	Indoor capacity (W)	Nominal cooling capacity/10, decimal
B	Request of indoor capacity（Hz）	Actual value, decimal
C	Temperature of indoor ambient temp. sensor TA	Actual value, decimal
d	Temperature of indoor gas pipe sensor TC1	Actual value, decimal
E	Temperature of indoor liquid pipe sensor TC2	Actual value, decimal
F	Open degree of indoor PMV	Actual value, decimal

g	Preset	———
H	Outdoor total capacity	Actual value, decimal

In check mode, press [CHECK] to quit the check mode, and go into normal running mode.

How to change the function switches?

new type	old type	function	state of switch	function description
D9	J02	Changeover of type of wired controller	Connected	Set as simple controller
			Cut off	Set as standard controller
D12	J06	Selection of room temp. sensor	Connected	Use the sensor in the wired controller
			Cut off	Use the sensor in the indoor unit
D15	J07	Auto reset after power failure	Connected	Common control
			Cut off	Auto reset after power failure
D14	J03	Display of room temperature	Connected	Yes
			Cut off	No
SW①	SW20①	Changeover of master or slave controller	ON	Set as slave controller
			OFF	Set as master controller
SW②	SW20②	℃ or ℉	ON	℉
			OFF	℃
JP8	D1	Shorten time function	Connected	Indoor unit in shorted time function
			Cut off	Common control
JP7	D2	Compulsorily defrost	Connected	Send compulsorily defrost signal to indoor unit
			Cut off	Common control

Note:

The switches in grey can be operated after opening the cover of wired controller.

The old type: there are resistors of J03 and J06 beside the dip switch.

Setting address method:

The address setting can be realized by setting indoor PCB.

If you use the group control function, there should be a master unit and 15 sets of slave units. For the master unit, the SW5-3 should be at “ON”. For the slave units, the SW5-3 should be at “OFF”.

Please refer the below table,

Indoor unit address	SW1-4	SW1-3	SW1-2	SW1-1
1	OFF	OFF	OFF	ON
2	OFF	OFF	ON	OFF
3	OFF	OFF	ON	ON
4	OFF	ON	OFF	OFF
5	OFF	ON	OFF	ON
6	OFF	ON	ON	OFF
7	OFF	ON	ON	ON
8	ON	OFF	OFF	OFF
9	ON	OFF	OFF	ON
10	ON	OFF	ON	OFF
11	ON	OFF	ON	ON
12	ON	ON	OFF	OFF
13	ON	ON	OFF	ON
14	ON	ON	ON	OFF
15	ON	ON	ON	ON

If you use central control type, SW1, SW2 will be used simultaneously.

Wiring request in central control type: port A-B is connected with indoor port CN16（A-B） through 2-core shield wire. Requirements:

1. Port A connects with port CN16（A）of all indoor units.
2. Port B connects with port CN16（B）of all indoor units.

Address on central controller	Indoor unit address	SW2-3	SW2-2	SW2-1	SW1-4	SW1-3	SW1-2	SW1-1
1	1	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	2	OFF	OFF	OFF	OFF	OFF	OFF	ON
3	3	OFF	OFF	OFF	OFF	OFF	ON	OFF
4	4	OFF	OFF	OFF	OFF	OFF	ON	ON
5	5	OFF	OFF	OFF	OFF	ON	OFF	OFF
6	6	OFF	OFF	OFF	OFF	ON	OFF	ON

7	7	OFF	OFF	OFF	OFF	ON	ON	OFF
8	8	OFF	OFF	OFF	OFF	ON	ON	ON
9	9	OFF	OFF	OFF	ON	OFF	OFF	OFF
10	10	OFF	OFF	OFF	ON	OFF	OFF	ON
11	11	OFF	OFF	OFF	ON	OFF	ON	OFF
12	12	OFF	OFF	OFF	ON	OFF	ON	ON
13	13	OFF	OFF	OFF	ON	ON	OFF	OFF
14	14	OFF	OFF	OFF	ON	ON	OFF	ON
15	15	OFF	OFF	OFF	ON	ON	ON	OFF
16	16	OFF	OFF	OFF	ON	ON	ON	ON
17	17	OFF	OFF	ON	OFF	OFF	OFF	OFF
18	18	OFF	OFF	ON	OFF	OFF	OFF	ON
19	19	OFF	OFF	ON	OFF	OFF	ON	OFF
20	20	OFF	OFF	ON	OFF	OFF	ON	ON
21	21	OFF	OFF	ON	OFF	ON	OFF	OFF
22	22	OFF	OFF	ON	OFF	ON	OFF	ON
23	23	OFF	OFF	ON	OFF	ON	ON	OFF
24	24	OFF	OFF	ON	OFF	ON	ON	ON
25	25	OFF	OFF	ON	ON	OFF	OFF	OFF
26	26	OFF	OFF	ON	ON	OFF	OFF	ON
27	27	OFF	OFF	ON	ON	OFF	ON	OFF
28	28	OFF	OFF	ON	ON	OFF	ON	ON
29	29	OFF	OFF	ON	ON	ON	OFF	OFF
30	30	OFF	OFF	ON	ON	ON	OFF	ON
31	31	OFF	OFF	ON	ON	ON	ON	OFF
32	32	OFF	OFF	ON	ON	ON	ON	ON
33	33	OFF	ON	OFF	OFF	OFF	OFF	OFF
34	34	OFF	ON	OFF	OFF	OFF	OFF	ON
35	35	OFF	ON	OFF	OFF	OFF	ON	OFF
36	36	OFF	ON	OFF	OFF	OFF	ON	ON
37	37	OFF	ON	OFF	OFF	ON	OFF	OFF
38	38	OFF	ON	OFF	OFF	ON	OFF	ON
39	39	OFF	ON	OFF	OFF	ON	ON	OFF
40	40	OFF	ON	OFF	OFF	ON	ON	ON
41	41	OFF	ON	OFF	ON	OFF	OFF	OFF
42	42	OFF	ON	OFF	ON	OFF	OFF	ON
43	43	OFF	ON	OFF	ON	OFF	ON	OFF
44	44	OFF	ON	OFF	ON	OFF	ON	ON
45	45	OFF	ON	OFF	ON	ON	OFF	OFF
46	46	OFF	ON	OFF	ON	ON	OFF	ON
47	47	OFF	ON	OFF	ON	ON	ON	OFF
48	48	OFF	ON	OFF	ON	ON	ON	ON
49	49	OFF	ON	ON	OFF	OFF	OFF	OFF
50	50	OFF	ON	ON	OFF	OFF	OFF	ON

51	51	OFF	ON	ON	OFF	OFF	ON	OFF
52	52	OFF	ON	ON	OFF	OFF	ON	ON
53	53	OFF	ON	ON	OFF	ON	OFF	OFF
54	54	OFF	ON	ON	OFF	ON	OFF	ON
55	55	OFF	ON	ON	OFF	ON	ON	OFF
56	56	OFF	ON	ON	OFF	ON	ON	ON
57	57	OFF	ON	ON	ON	OFF	OFF	OFF
58	58	OFF	ON	ON	ON	OFF	OFF	ON
59	59	OFF	ON	ON	ON	OFF	ON	OFF
60	60	OFF	ON	ON	ON	OFF	ON	ON
61	61	OFF	ON	ON	ON	ON	OFF	OFF
62	62	OFF	ON	ON	ON	ON	OFF	ON
63	63	OFF	ON	ON	ON	ON	ON	OFF
64	64	OFF	ON	ON	ON	ON	ON	ON
65	65	ON	OFF	OFF	OFF	OFF	OFF	OFF
66	66	ON	OFF	OFF	OFF	OFF	OFF	ON
67	67	ON	OFF	OFF	OFF	OFF	ON	OFF
68	68	ON	OFF	OFF	OFF	OFF	ON	ON
69	69	ON	OFF	OFF	OFF	ON	OFF	OFF
70	70	ON	OFF	OFF	OFF	ON	OFF	ON
71	71	ON	OFF	OFF	OFF	ON	ON	OFF
72	72	ON	OFF	OFF	OFF	ON	ON	ON
73	73	ON	OFF	OFF	ON	OFF	OFF	OFF
74	74	ON	OFF	OFF	ON	OFF	OFF	ON
75	75	ON	OFF	OFF	ON	OFF	ON	OFF
76	76	ON	OFF	OFF	ON	OFF	ON	ON
77	77	ON	OFF	OFF	ON	ON	OFF	OFF
78	78	ON	OFF	OFF	ON	ON	OFF	ON
79	79	ON	OFF	OFF	ON	ON	ON	OFF
80	80	ON	OFF	OFF	ON	ON	ON	ON
81	81	ON	OFF	ON	OFF	OFF	OFF	OFF
82	82	ON	OFF	ON	OFF	OFF	OFF	ON
83	83	ON	OFF	ON	OFF	OFF	ON	OFF
84	84	ON	OFF	ON	OFF	OFF	ON	ON
85	85	ON	OFF	ON	OFF	ON	OFF	OFF
86	86	ON	OFF	ON	OFF	ON	OFF	ON
87	87	ON	OFF	ON	OFF	ON	ON	OFF
88	88	ON	OFF	ON	OFF	ON	ON	ON
89	89	ON	OFF	ON	ON	OFF	OFF	OFF
90	90	ON	OFF	ON	ON	OFF	OFF	ON
91	91	ON	OFF	ON	ON	OFF	ON	OFF
92	92	ON	OFF	ON	ON	OFF	ON	ON
93	93	ON	OFF	ON	ON	ON	OFF	OFF
94	94	ON	OFF	ON	ON	ON	OFF	ON

95	95	ON	OFF	ON	ON	ON	ON	OFF
96	96	ON	OFF	ON	ON	ON	ON	ON
97	97	ON	ON	OFF	OFF	OFF	OFF	OFF
98	98	ON	ON	OFF	OFF	OFF	OFF	ON
99	99	ON	ON	OFF	OFF	OFF	ON	OFF
100	100	ON	ON	OFF	OFF	OFF	ON	ON
101	101	ON	ON	OFF	OFF	ON	OFF	OFF
102	102	ON	ON	OFF	OFF	ON	OFF	ON
103	103	ON	ON	OFF	OFF	ON	ON	OFF
104	104	ON	ON	OFF	OFF	ON	ON	ON
105	105	ON	ON	OFF	ON	OFF	OFF	OFF
106	106	ON	ON	OFF	ON	OFF	OFF	ON
107	107	ON	ON	OFF	ON	OFF	ON	OFF
108	108	ON	ON	OFF	ON	OFF	ON	ON
109	109	ON	ON	OFF	ON	ON	OFF	OFF
110	110	ON	ON	OFF	ON	ON	OFF	ON
111	111	ON	ON	OFF	ON	ON	ON	OFF
112	112	ON	ON	OFF	ON	ON	ON	ON
113	113	ON	ON	ON	OFF	OFF	OFF	OFF
114	114	ON	ON	ON	OFF	OFF	OFF	ON
115	115	ON	ON	ON	OFF	OFF	ON	OFF
116	116	ON	ON	ON	OFF	OFF	ON	ON
117	117	ON	ON	ON	OFF	ON	OFF	OFF
118	118	ON	ON	ON	OFF	ON	OFF	ON
119	119	ON	ON	ON	OFF	ON	ON	OFF
120	120	ON	ON	ON	OFF	ON	ON	ON
121	121	ON	ON	ON	ON	OFF	OFF	OFF
122	122	ON	ON	ON	ON	OFF	OFF	ON
123	123	ON	ON	ON	ON	OFF	ON	OFF
124	124	ON	ON	ON	ON	OFF	ON	ON
125	125	ON	ON	ON	ON	ON	OFF	OFF
126	126	ON	ON	ON	ON	ON	OFF	ON
127	127	ON	ON	ON	ON	ON	ON	OFF
128	128	ON	ON	ON	ON	ON	ON	ON

Electrical functions of wired controller:

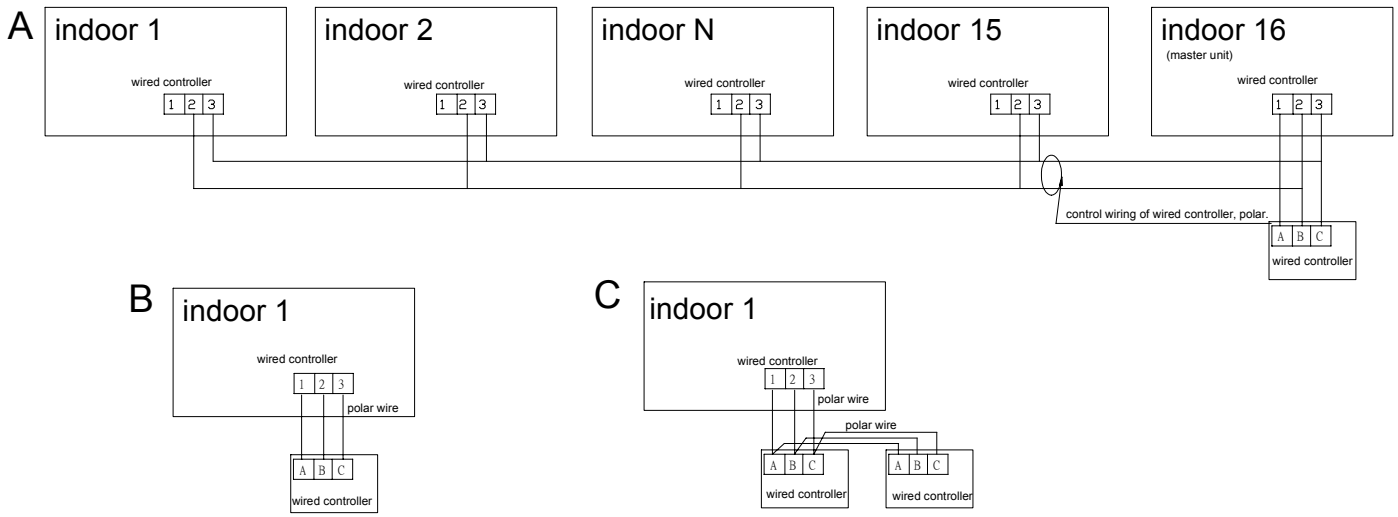
1.Function difference between master wired controller and slave one:

Contrastive items	Master wired controller	Slave wired controller
Function	All of functions	Only with below functions: ON/OFF, MODE, FAN SPEED, SET TEMP., SWING

2. Function difference between simple wired controller and the standard one:

Contrastive item	Standard wired controller	Simple wired controller
Function	With all functions	Only can control ON/OFF, MODE, FAN, TEMP.,SWING.
Master/Slave selection	Can be either of Master and Slave controller	Only can be Master controller

3. Wiring connections of wired controller:



There are three methods to connection wired controller and the indoor units:

A. One wired controller can control max. up to 16 sets of indoor units, and 3 pieces of polar wire must connect the wired controller and the master unit (the indoor unit connected with wired controller directly), the others connect with the master unit through 2 pieces of polar wire.

B. One wired controller controls one indoor unit, and the indoor unit connects with the wired controller through 3 pieces of polar wire.

C. Two wired controllers control one indoor unit. The wired controller

connected with indoor unit is called master one, the other is called slave one. Master wired controller and indoor unit; master and slave wired controllers are all connected through 3 pieces of polar wire.

3. Communication wiring:

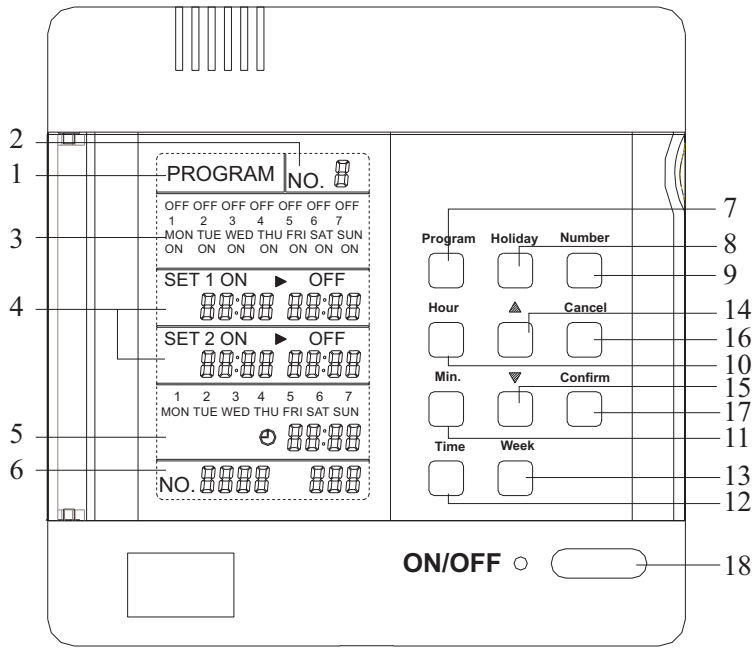
The wired controller is equipped with special communication wiring in the accessories. 3-core terminal (1-white 2-yellow 3-red) is connected with the terminal A、B、C of wired controller respectively.

The communication wiring is 4 meter long; if the actual length is more than it, please distribute wiring according to below table:

Communication wiring length（m）	Dimensions of wiring
<100	0.3mm^{2}X3-core shielded wire
≥100 and <200	0.5mm^{2}X3-core shielded wire
≥200 and <300	0.75mm^{2}X3-core shielded wire
≥300 and <400	1.25mm^{2}X3-core shielded wire
≥400 and <600	2mm^{2}X3-core shielded wire

※ One side of the shielded sheet of communication wire must be earthed.

3. Weekly timer YCS-A001



Instruction:

1 - PROGRAM-the display shows the weekly timer timing setting state, and in setting state, the timing information can be adjusted.

2 - No:8-timing group number: when it is not set timing, there is no timing group number; after setting timing, it will automatically form a group number according to each kind of setting combination, so that in the sequent timing setting, it can execute instant setting by using timing group number.

3 - Setting state and holiday functional area-1 (MON), 2 (TUE), 3 (WED), 4 (THU), 5 (FRI), 6 (SAT), 7 (SUN) are used to indicate the 7 days in a week; the symbol of this part will display after powered on; after set the corresponding weekday's timing function, the ON symbol under the corresponding symbol will display, if not set timing, there will be no display; if not set Holiday function, the OFF symbol on the upside of the indicating symbol will not display, after set Holiday function, the OFF will display and at the same time temporarily the previous timing setting and turn off the air conditioner.

4 - No. 1 group and No.2 group timing setting display area-when entering timing setting state, the contents of timing will flash; choose Date, Hour and Minute to perform increase and decrease adjustment by the adjusting key.

5 - Time display area-including display the weekday, hour and minute; before setting timing function, please calibrate the current clock.

6 - Unit number trouble code display area-when the air conditioner in the control network has trouble, the corresponding unit number and the trouble code will display in this area.

7 - Program
Enter or exit the timing setting in normal condition,

8 - Holiday
Close the units and invalid for timing in no affect on the timing setting condition.

9 - Number
Group setting and timing setting (take one day as a standard unit)

10 - Hour
Timing setting condition and time setting condition ,select the adjustment

11 - Min.
Timing setting condition and time setting condition ,select the adjustment

12 - Time
Enter and exit the at present date and time condition in normal condition

13 - Week
Timing setting condition and time setting condition ,select the adjustment

14 -Timing setting condition and time setting condition , increase the setting parameters

15 -Timing setting condition and time setting condition , decrease the setting parameters

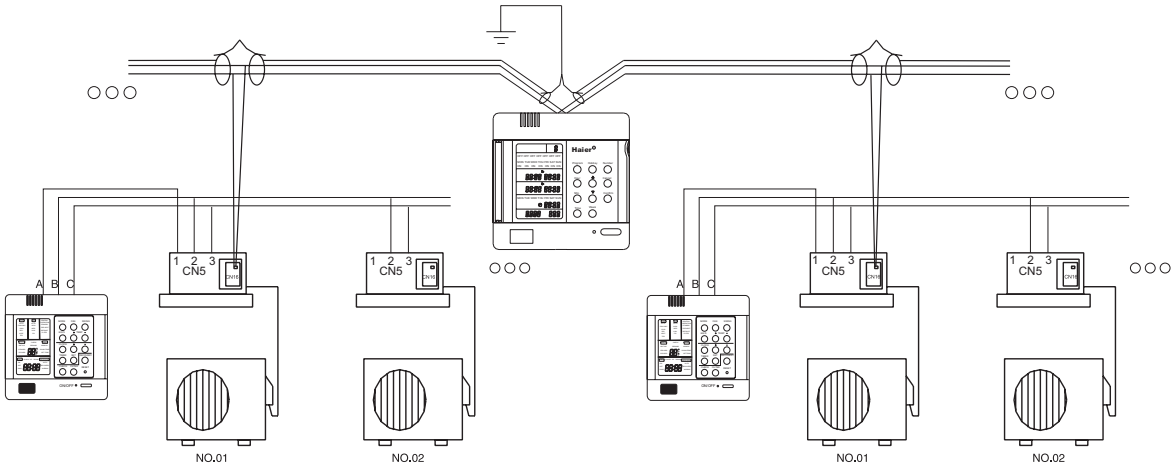
16 - Cancel
Cancel the present setting before confirm the parameter.

17 - Confirm Confirm the parameter.

18 - ON/OFF Open/close the unit.

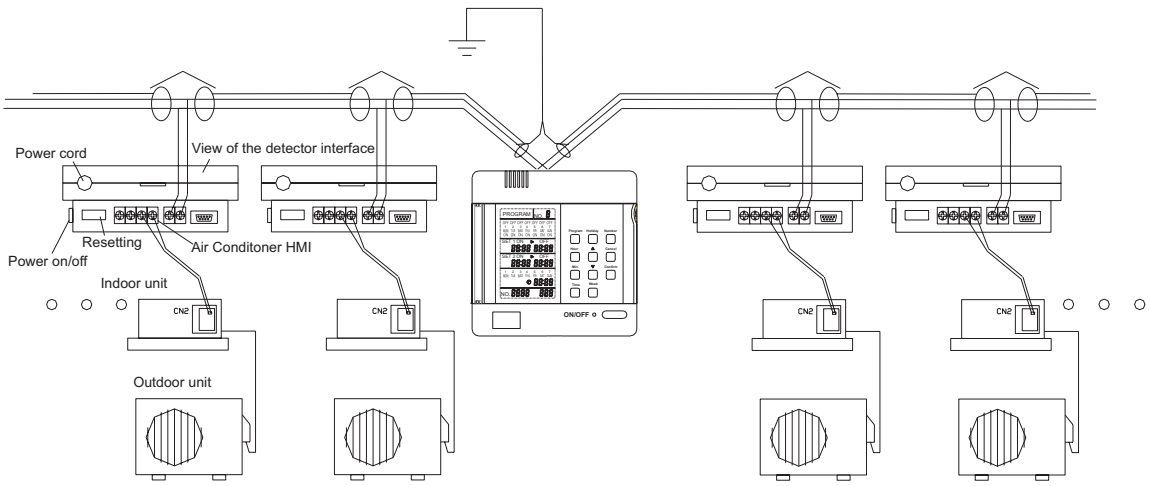
Connecting method

1. Use group controller and weekly timer to realize the group control function + weekly timing function, applicable for the units except for the unit which needs detector to realize the weekly timer function, such as cabinet type, console type.



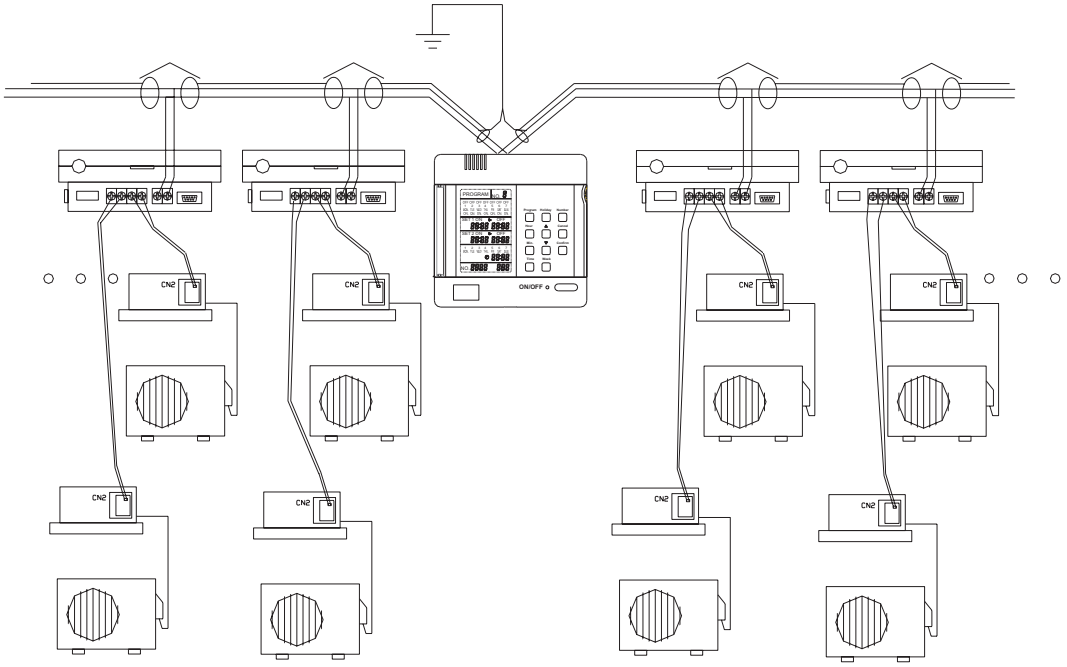
2. Use weekly timer to realize weekly timing function,applicable for the units which need detector to realize the weekly timer function, such as cabinet type, console type.

The detector is connected with one air conditioner by the 4-core screw fixed terminals A+ and A- of air conditioner interface, then accordingly set the dial-code switch of the detector in single unit working mode; the address number setting shall be performed according the planned program, for specific setting and corresponding address, please refer to the dial-code switch setting in detector's operation manual; use weekly timer to fulfill weekly timing function, the system needs to be connected with weekly timer; each detector and weekly timer is connected with shielded twisted pair communication bus by the 2-core screw fixed terminals (A and B) of its RS-485 interface; the communication bus must be shielded and grounded, and the resistors in its two ends shall be suited.

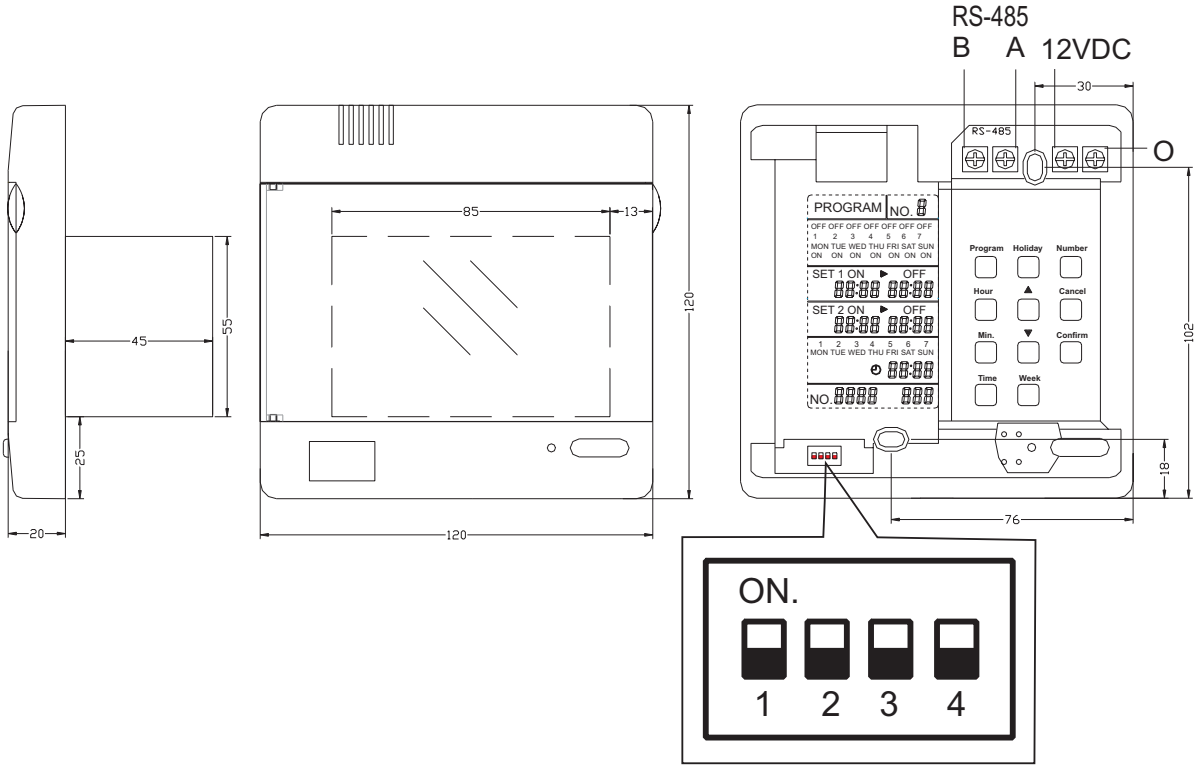


3. Use weekly timer to realize two units auto-changeover function,applicable for the units which need detector to realize the weekly timer function, such as cabinet type, console type.

The detector is connected with two same model air conditioners by the 4-core screw fixed terminals of air conditioner interface; then accordingly set the dial-code switch of the detector in double units working mode, and the double units switch time is default 24 hours; the address number setting shall be performed according the planned program, for specific setting and corresponding address, please refer to the dial-code switch setting in detector's operation manual; use weekly timer to fulfill double units switch weekly timing function, the system needs to be connected with weekly timer; each detector and weekly timer is connected with shielded twisted pair communication bus by the 2-core screw fixed terminals (A and B) of its RS-485 interface; the communication bus must be shielded and grounded, and the resistors in its two ends shall be suited.

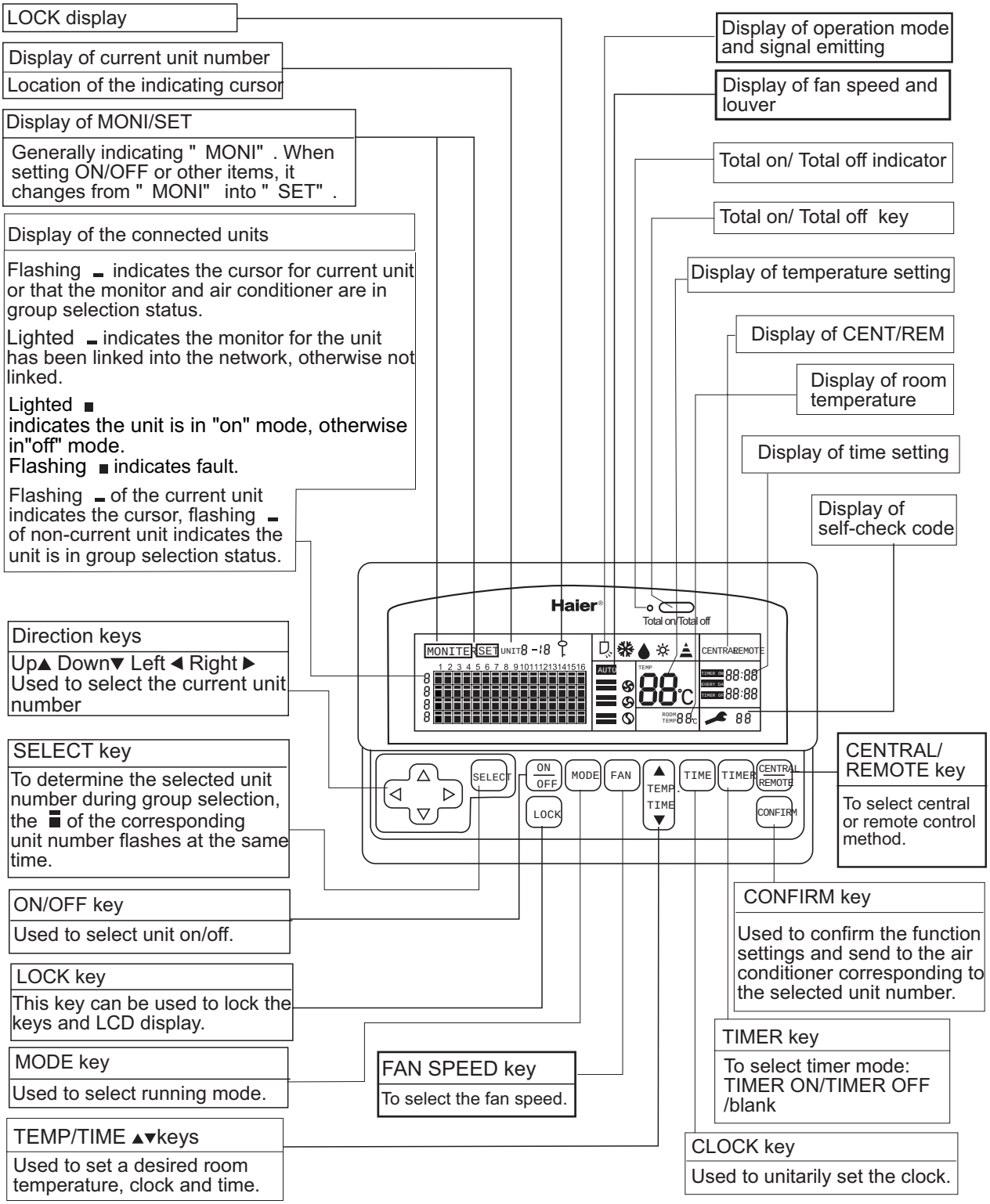


Installation dimensions



4. Central Controller YCZ-A001

Function description:



Note: In MONI mode, pressing SEL, MODE, FAN SPEED, TEMP TIME keys may change the MONI mode into SET mode. If SET key or other keys hasn' t been pressed within 10s, it will automatically return to MONI mode.

1. Communication function

Communicate with the indoor PCB in the group control network

To communicate with the indoor PCB through the R S-485 bus (A, B). The central controller sends commands to and receives response from indoor PCB; communication by address enables sending and receiving control information, work information and fault information between indoor PCB and the central controller.

2. LCD display function:

The LCD could display the fundamental status of air conditioning units (are the units existing? On/off? Fault? Are units group selected? Cursor and the current unit no.);

The LCD can display the working status of the air conditioning unit with the current number (mode, fan speed, temperature setting, room temperature,timer,error code, central/remote control status);

The working status of the central controller (monitor/set status, panel locking status, signaling status).

3. Key input function:

The keys for moving the current unit number cursor and for group selection: ▲,▼,▶,◀, SELECT;

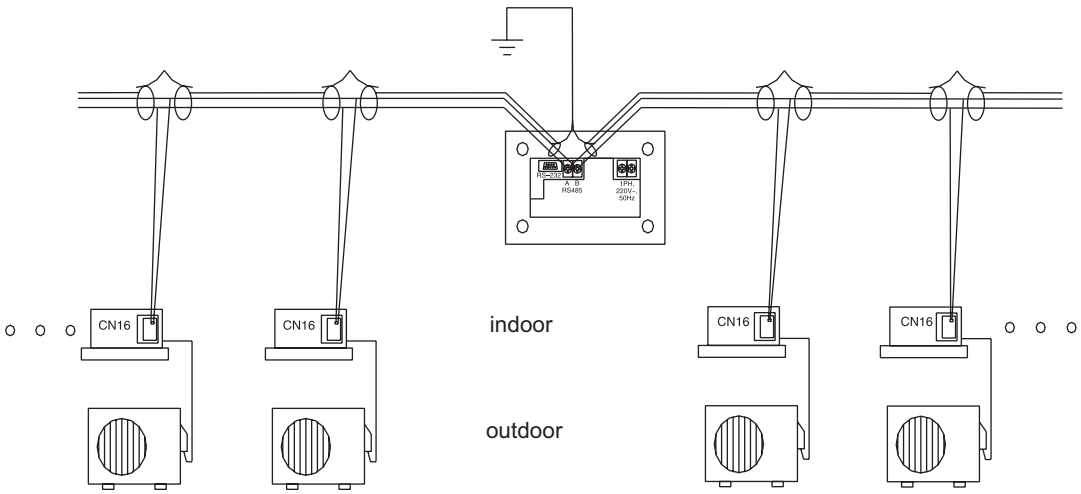
The keys for setting working status of the air conditioning unit and control conditions: ON/OFF, MODE, FAN SPEED, TEMP, TIME▲/▼, CLOCK,TIMER, CENT/REM, SET;

The key for locking key function of the central controller: LOCK.

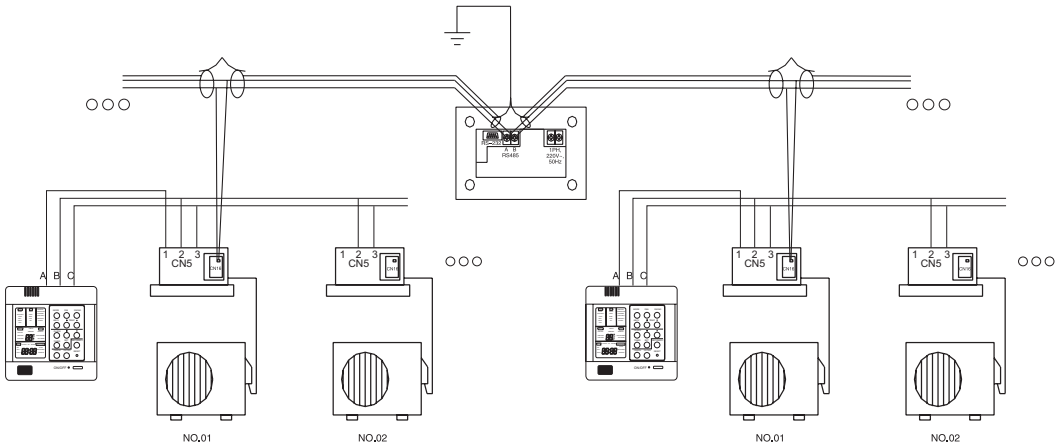
4. Unit number setting function:

To enrich the control functions of Haier commercial air conditioner remote monitoring system, multiple controllers could be set to work together for a combination of multiple functions. For this, the central controller is provided with a two-digital switch for setting controller address.

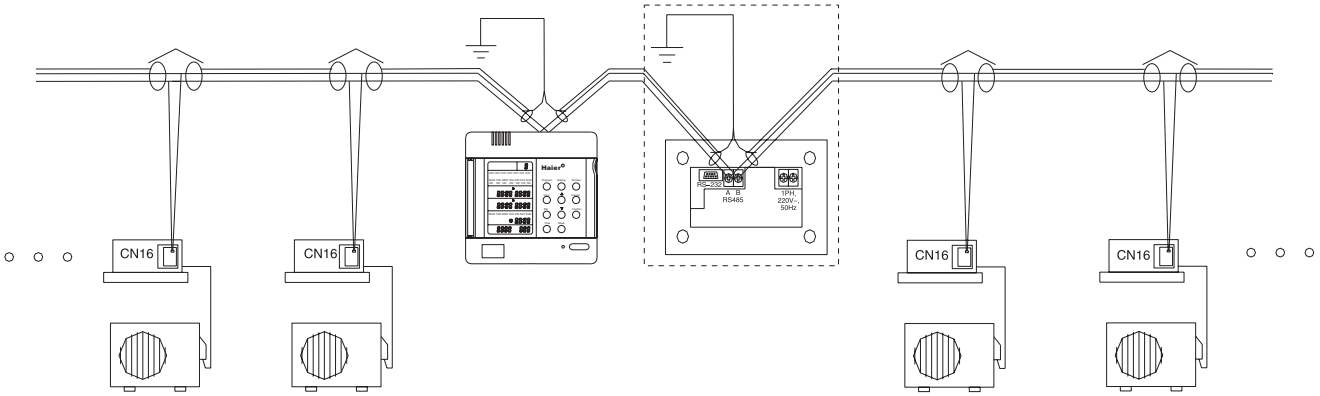
5. Realizing central control function with the central controller(max.128 indoor units can be connected) this type is applicable for the unitary free indoor units except for cabinet type.



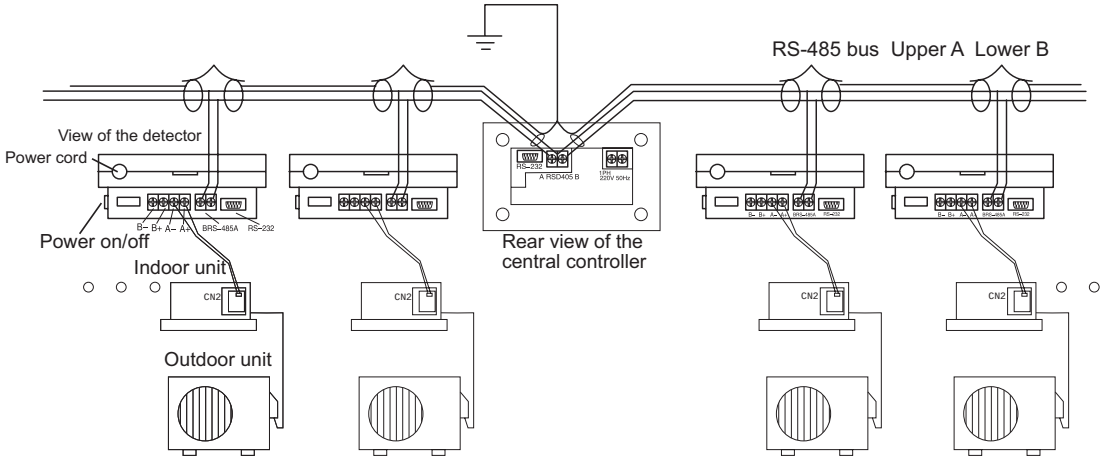
6. Central control system + Group control system(max.128 x16 indoor units can be connected),this type is applicable for the unitary free indoor units except for cabinet type.



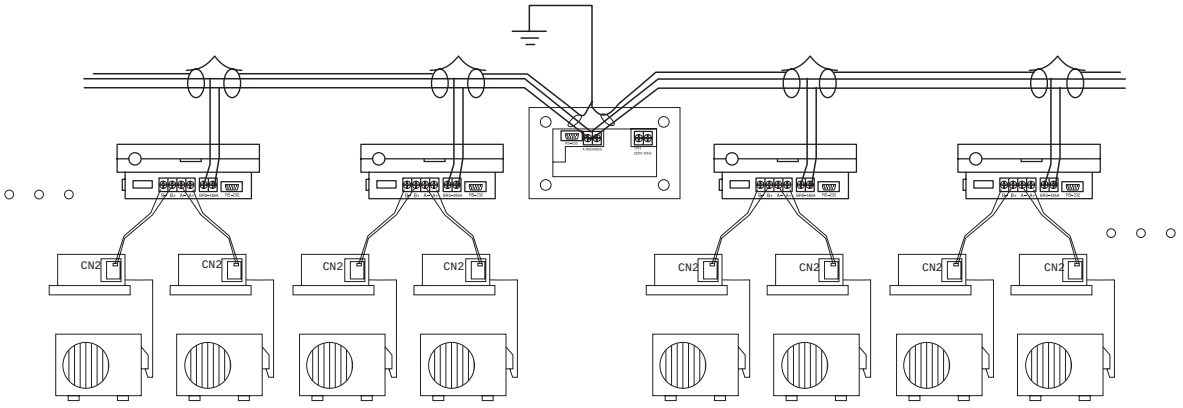
7. Use central controller + weekly timer to realize the group control function + weekly timing function, this type is applicable for the unitary free indoor units except for cabinet type.



8. Realizing group control function with the central controller, for the unit which needs the detector, such as cosole unit, cabinet units.

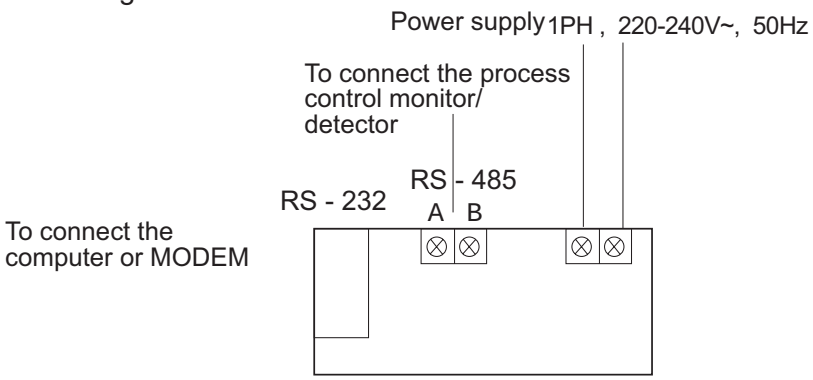


9.Realizing double unit switch-over group control function with the centralcontroller, for the unit which needs the detector, such as cosole unit, cabinet units.



Installation procedure

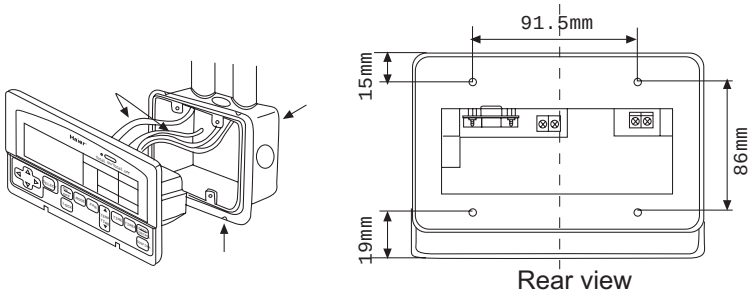
1. Wire connecting



2. Installation method

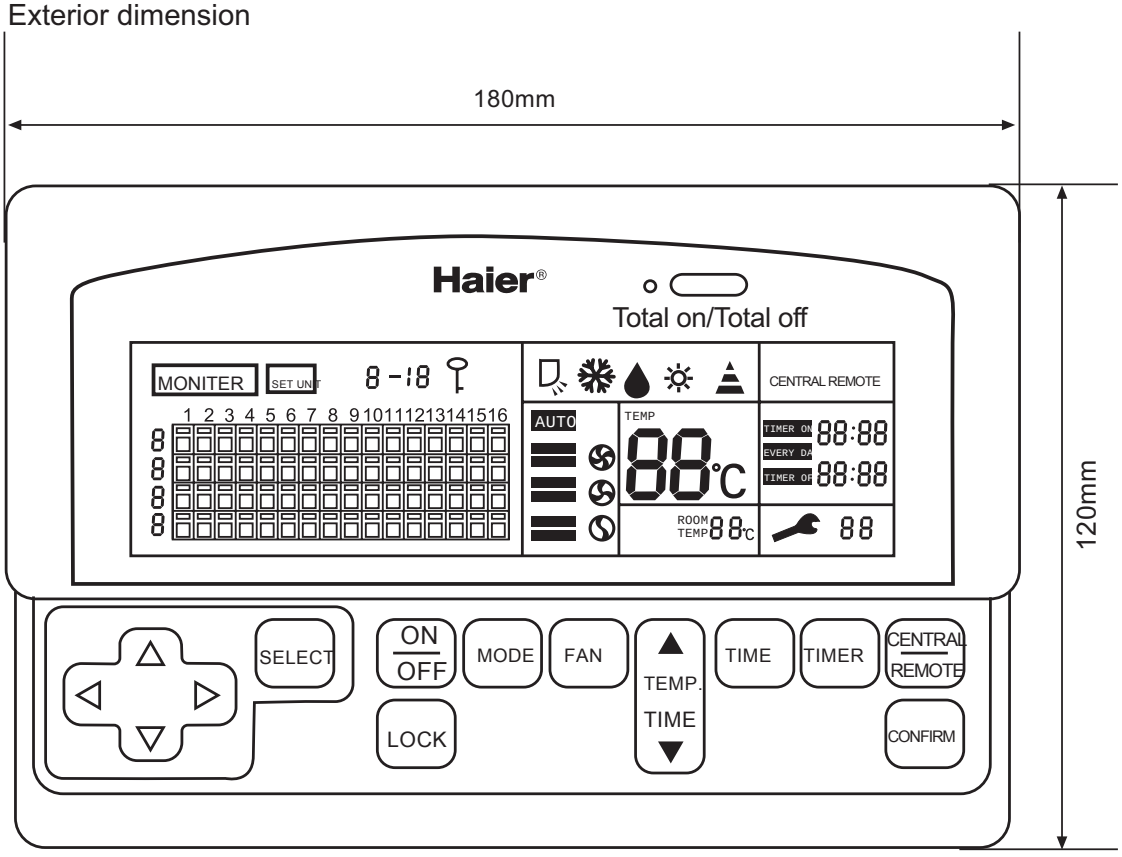
A wiring box cover must be used.

The central controller shall be installed into the installation box built in the wall fastening with 4 screws (as shown).

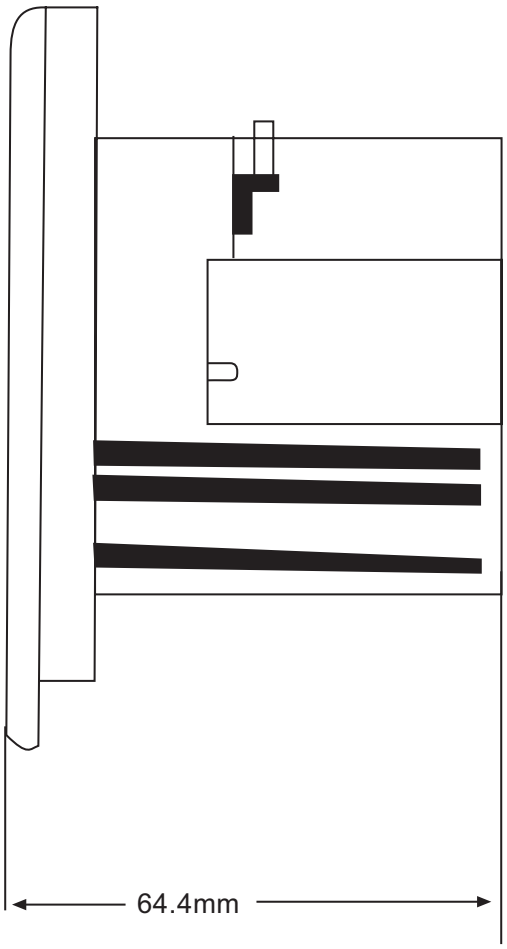


Note: Please confirm the supply voltage of AC220-240V and correct wiring. In application environment with intense electromagnetic interference, the central controller should be shielded, while the connecting wire between the monitor and the central controller should be shielded twin twisted wire.

Exterior dimension



(Fig.1)



As illustrated:
(Figure 1 is the front view and Figure 2 is the side view) The central controller is 180mm long, 120mm wide and 64.4 mm thick.

(Fig.2)

Appendix - Control data

No.	Series	Type	Model	PCB code	Controller code
1	UNITARY FREE R410A ON-OFF	4-Way Cassette	AB122ACEAA+PB-700IA	0010452478E	0010451255 YR-H71
2			AB182ACEAA+PB-700IA	0010452478E	0010451255 YR-H71
3			AB242ACEAA+PB-950IA	0010451167E	0010451255 YR-H71
4			AB282ACEAA+PB-950IA	0010451167E	0010451255 YR-H71
5			AB362ACEAA+PB-950JA	0010452478E	0010451255 YR-H71
6			AB482ACEAA+PB-1340IA	0010451167E	0010451255 YR-H71
7			AB602ACEAA+PB-1340IA	0010451167E	0010451255 YR-H71
8			AB242AEEAA+PB-950JA	0010451167E	0010451255 YR-H71
9			AB282AEEAA+PB-950JA	0010451167E	0010451255 YR-H71
10			AB422AEEAA+PB-950JA	0010452478E	0010451255 YR-H71
11			AB482AEEAA+PB-950JA	0010452478E	0010451255 YR-H71
12		Floor Ceiling	AC122ACEAA	0010451167E	0010451255 YR-H71
13			AC182ACEAA	0010451167E	0010451255 YR-H71
14			AC242ACEAA	0010451167E	0010451255 YR-H71
15			AC282AEEAA	0010451167E	0010452300 YR-H50
16			AC282AFEAA	0010451167E	0010452300 YR-H50
17			AC362AFEAA	0010451167E	0010452300 YR-H50
18			AC482AFEAA	0010451167E	0010452300 YR-H50
19			AC602AFEAA	0010451167E	0010452300 YR-H50
20		Low Static Duct	AD122ALEAA	0010451167E	0010451521E YR-E12
21			AD182ALEAA	0010451167E	0010451521E YR-E12
22			AD242ALEAA	0010451167E	0010451521E YR-E12
23		Media Static Duct	AD182AMEAA	0010451167E	0010451521E YR-E12
24			AD242AMEAA	0010451167E	0010451521E YR-E12
25			AD282AMEAA	0010451167E	0010451521E YR-E12
26			AD362AMEAA	0010451167E	0010451521E YR-E12
27			AD362ANEAA	0010451167E	0010451521E YR-E12
28			AD422ANEAA	0010451167E	0010451521E YR-E12
29			AD482AMEAA	0010451167E	0010451521E YR-E12
30			AD482ANEAA	0010451167E	0010451521E YR-E12
31		High Static Duct	AD282AHEAA	0010451167E	0010451521E YR-E12
32			AD362AHEAA	0010451167E	0010451521E YR-E12
33			AD482AHEAA	0010451167E	0010451521E YR-E12
34			AD602AHEAA	0010451167E	0010451521E YR-E12
35			AD722AHEAA	during design	0010451521E YR-E12
36		Cabinet	AP422ACEAA	0010451432	0010451255 YR-H71
37			AP482AKEAA	0010452322	0010451047 YR-H49
38		Outdoor Units	AU122AEEAA	0010451870E	/
39			AU182AEEAA	0010451870E	/
40			AU242AGEAA	0010452442E	/
41			AU282AHEAA	0010452442E	/
42			AU28NAHEAA	0010452378E	/
43			AU362AIEAA	0010452442E	/
44			AU36NAIEAA	0010452378E	/
45			AU362ALEAA	0010452442E	/
46			AU42NALEAA	0010452378E	/
47			AU48NAIEAA	0010452378E	/
48			AU60NAIEAA	0010452378E	/
49			AU72NAIEAA	during design	/

No.	Series	Type	Model	PCB code	Controller code
50	UNITARY SMART R410A DC INVERTER	4-Way Cassette	AB122ACERA+PB-700IA	0010452325E	0010451255 YR-H71
51			AB182ACERA+PB-700IA	0010452325E	0010451255 YR-H71
52			AB242ACERA+PB-950IA	0010451690E	0010451255 YR-H71
53			AB282AEERA+PB-950JA	0010452325E	0010451255 YR-H71
54			AB242AEERA+PB-950JA	0010451690E	0010451255 YR-H71
55			AB362AEERA+PB-950JA	0010452325E	0010451255 YR-H71
56			AB362ACERA+PB-1340IA	0010451690E	0010451255 YR-H71
57			AB482AEERA+PB-950JA	0010452325E	0010451255 YR-H71
58			AB602ACERA+PB-1340IA	0010451690E	0010451255 YR-H71
59		Floor Ceiling	AC122ACERA	0010451690E	0010451255 YR-H71
60			AC182ACERA	0010451690E	0010451255 YR-H71
61			AC242ACERA	0010451690E	0010451255 YR-H71
62			AC282AFERA	0010452984	0010452300 YR-H50
63			AC362AFERA	0010452984	0010452300 YR-H50
64			AC482AFERA	0010451690E	0010452300 YR-H50
65			AC602AFERA	0010451690E	0010452300 YR-H50
66		Low Static Duct	AD122ALERA	0010451690E	0010451521E YR-E12
67			AD182AMERA	0010451690E	0010451521E YR-E12
68			AD242ALERA	0010451690E	0010451521E YR-E12
69		Medium Static Duct	AD242AMERA	0010451690E	0010451521E YR-E12
70			AD282AMERA	0010451690E	0010451521E YR-E12
71			AD362AMERA	0010451690E	0010451521E YR-E12
72			AD482ANERA	0010451690E	0010451521E YR-E12
73		High Static Duct	AD362AHERA	0010451690E	0010451521E YR-E12
74			AD482AHERA	0010451690E	0010451521E YR-E12
75			AD602AHERA	0010451690E	0010451521E YR-E12
76		Wall mounted	AS182AVERA	0010452042E	0010451047 YR-H49
77		Outdoor Units	AU122AEERA	0151800037	/
78			AU182AFERA	0010452040	/
79			AU242AGERA	0010452040	/
80			AU282AHERA	0010452929	/
81			AU362AHERA	0010452929	/
84			AU48NAIERA	0151800054	/
85			AU60NAIERA	during design	/