SAMSUNG

SYSTEM AIR CONDITIONER

OUTDOOR UNIT

AM080/100/120/140/160/180/200/220/240/260✳XV✳✳✳
AM080/100/120/200FXWA✳✳✳
AM080/100/120/140/160/180/200/220JXVA✳✳
AM140/160/180/200/220/240/260/280/300KXV✳✳✳

SERVICE Manual

AIR CONDITIONER



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1. Precautions

1-1 Precautions for the Service

- **Use the correct parts when changing the electric parts.**
  – Please check the labels and notices for the model name, proper voltage, and proper current for the electric parts.
- **Fully repair the connection for the types of harness when repairing the product after breakdown.**
  – A faulty connection can cause irregular noise and problems.
- **When disassembling or assembling, make sure that the product is laid down on a work cloth.**
  – Doing so will prevent scratching to the exterior of the rear side of the product.
- **Completely remove dust or foreign substances on the housing, connection, and inspection parts when performing repairs.**
  – This can prevent fire hazards for tracking, short, etc.
- **Please tighten the service valve of the outdoor unit and the valve cap of the charging valve as securely as possible by using a monkey spanner.**
- **Check whether the parts are properly and securely assembled after performing repairs.**
  – These parts should be in the same condition as before the repair.

1-2 Precautions for the Static Electricity and PL

- **Please carefully handle the PCB power terminal during repair and measurement when it is turned on since it is vulnerable to static electricity.**
  – Please wear insulation gloves before performing PCB repair and measurement.
- **Check if the place of installation is at least 2m away from electronic appliances such as TV, video players, and stereos.**
  – This can cause irregular noise or degrade the picture quality.
- **Please make sure the customer does not directly repair the product.**
  – Arbitrary dismantling may result in electric shock or fire.

1-3 Precautions for the Safety

- **Do not pull or touch the power plug or the subsidiary power switch with wet hands.**
  – This may result in electric shock or fire.
- **If the power line or the power plug is damaged, then it must be changed since this is a hazard.**
- **Do not bend the wire too much or position it so that it can be damaged by a heavy object on top.**
  – This may result in electric shock or fire.
- **The use of multiple electric outlets should be prohibited.**
  – This may result in electric shock or fire.
- **Ground the connection if it is necessary.**
  – The connection must be grounded if there is any risk of electrical short due to water or moisture.
- **Unplug the power or turn off the subsidiary power switch when changing or repairing electrical parts.**
  – Doing so will prevent electric shock.
- **Explain to workers that the battery for the remote control needs to be separated for storage purposes when the product will not be used for a long time.**
  – This can cause a problem for the remote control since battery fluid may trickle out.

1-4 Precautions for Handling Refrigerant for Air Conditioner

Environmental Cautions: Air pollution due to gas release

- **Safety Cautions**
  If liquid gas is released, then body parts that come into contact with it may experience frostbite/blister/numbness.
  If a large amount of gas is released, then suffocation may occur due to lack of oxygen. If the released gas is heated, then noxious gas may be produced by combustion.
- **Container Handling Cautions**
  Do not subject container to physical shock or overheating. (Flowage is possible while moving within the regulated pressure.)

1-5 Precautions for Welding the Air Conditioner Pipe

- **Dangerous or flammable objects around the pipe must be removed before the welding.**
- **If the refrigerant is kept inside the product or the pipe, then remove the refrigerant prior to welding.**
  If the welding is carried out while the refrigerant is kept inside, the welding cannot be properly performed. This will also produce noxious gas that is a health hazard. This leakage will also explode with the refrigerant and oil due to an increase in the refrigerant pressure, posing a danger to workers.
- **Please remove the oxide produced inside the pipe during the welding with nitrogen gas.**
  Using another gas may cause harm to the product or others.

1-6 Precautions for Additional Supplement of Air Conditioner Refrigerant

- **Precisely calculate the refrigerant by using a scale and S-net, and proceed with the test operation.**
  Excessive supplement can cause harm to the product since it can cause an inflow of the liquid refrigerant into the compressor.
- **Do not heat the refrigerant container for a forced injection.**
  This may cause harm to the product or others since the refrigerant container may burst.
- **Do not operate the product after removing the product safety pressure switch and sensor.**
  If the product is blocked inside, then this may cause harm to the product or others due to the excess pressure increase of the refrigerant gas.

1-7 Other Precautions

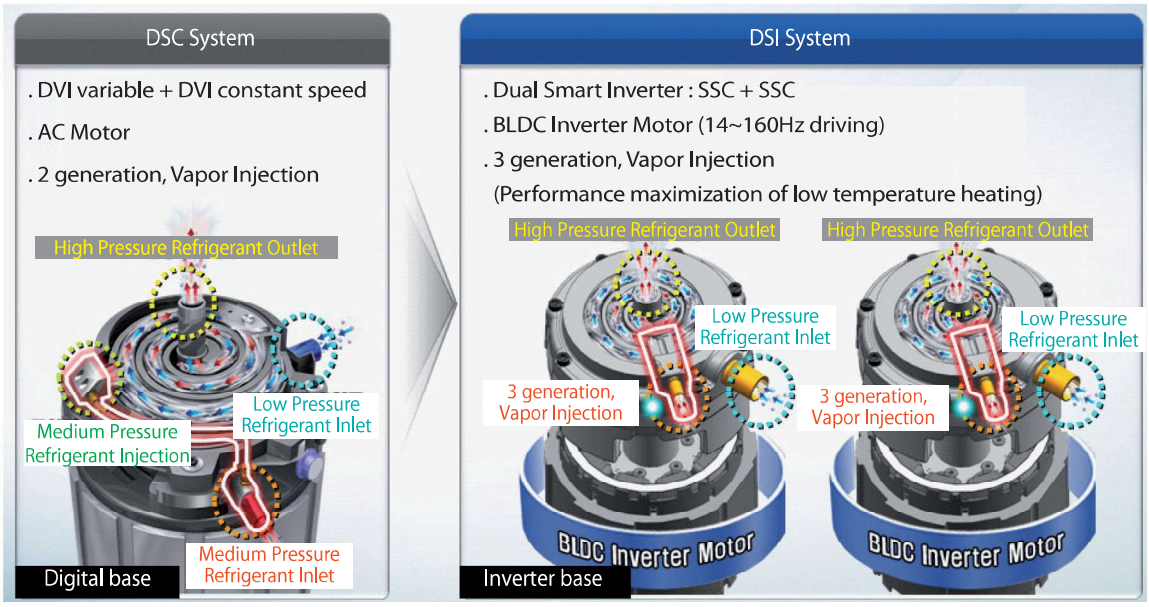
- **There should be no leakage of the pipes after installation. When withdrawing the refrigerant, the compressor should be stopped before removing the connecting pipe.**
  If the compressor is operating while the refrigerant pipe is not correctly connected and the service valve is opened, then air and other substances can enter the pipe. The interior of the refrigerant cycle may then build up excessive high pressure resulting in explosion and damage.

2. Product Specifications

2-1 The Feature of Product

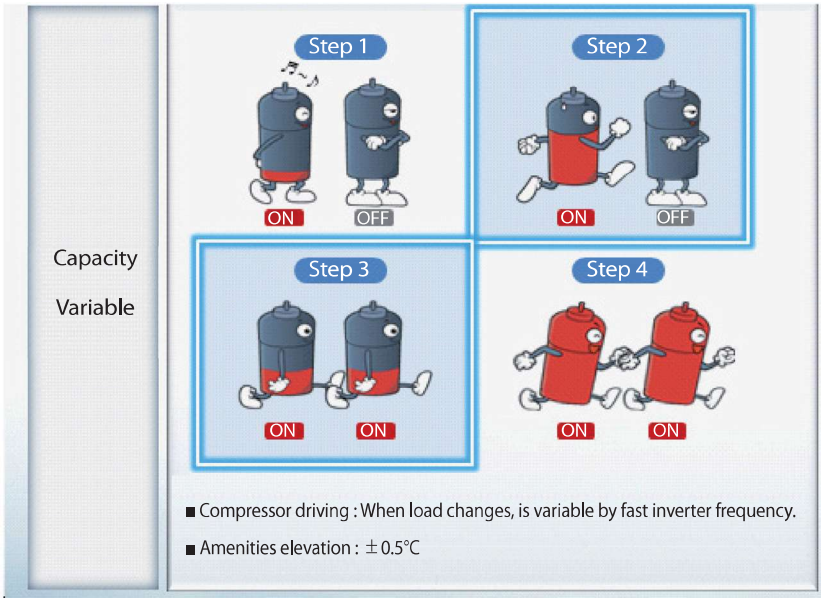
2-1-1 Feature

■ Dual Smart Inverter System



■ Dual SSC System Technology

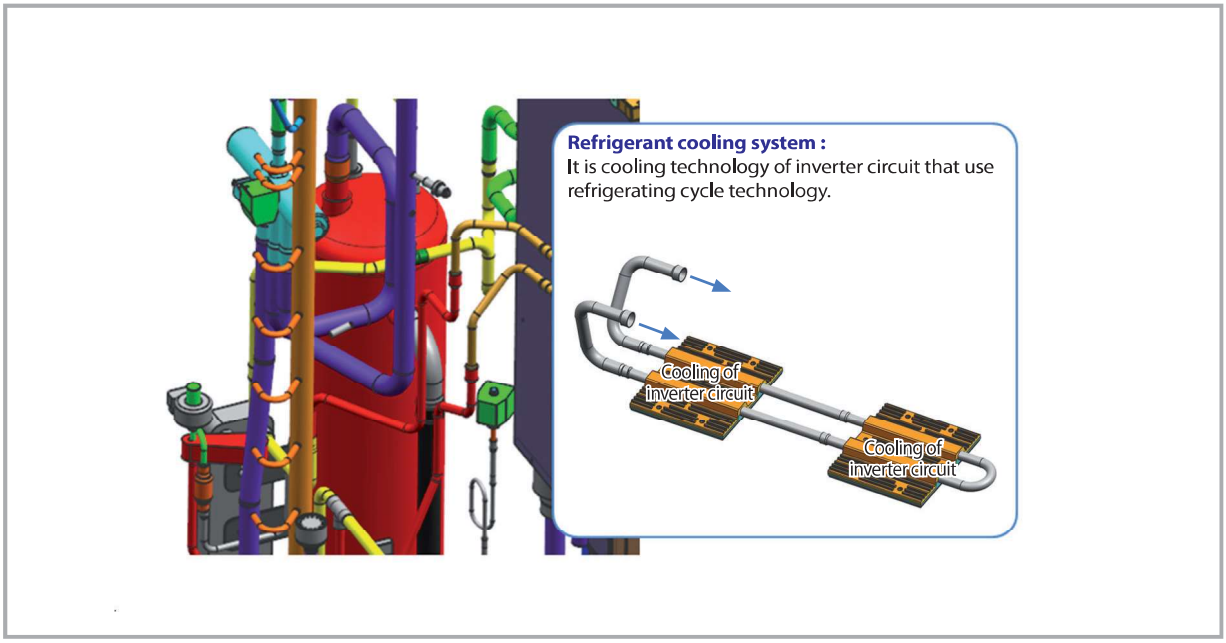
When load changes, capacity amendment that is soft by continuous operation of Dual Inverter is available.



Feature (cont.)

■ Inverter circuit refrigerant cooling technology

- Applied high efficiency refrigerant cooling circuit. Secured stable Inverter PCB cooling performance.
- Air cooling method : When natural convection / electric heat performance is low and is high load, efficiency is fallen.
- Refrigerant cooling system : Forced circulation / electric heat performance is high and control of (thermal conductivity is 10 times higher than air) load is available.



2-1-2 Changes in comparison to basic mode

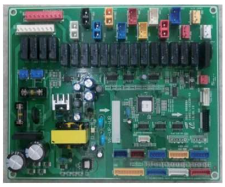
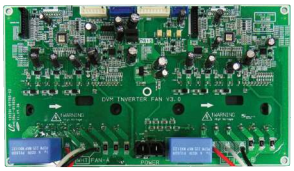
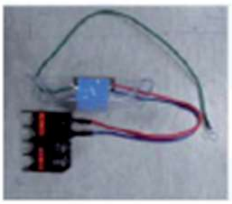
Changed part	Changed item and feature	Basic	After changed
CABINET	Change the color : TOUCH GRAY → EARTH BROWN Wire Harness installation part change LOGO change		

■ Control Box & PCB

Changed part	Changed item and feature	Basic	After changed
Control Box structure	Monolayer structure → Double Layer Structure - Inverter technology integration (Inverter control circuit composition) - C/Box volume maximum use Built-in type Controller embodiment - Integrated power supply + control unit - Piping service easiness	 	

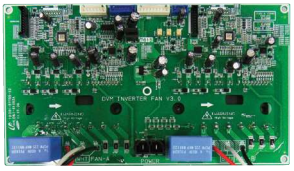
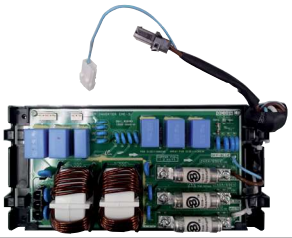
Changes in comparison to basic mode (cont.)

■ AM080/100/120/140/160/180/200/220JXV✳✳✳

Changed part	Changed item and feature	Basic	After changed
Main PCB	Change Main PCB - Separation for load / control. - Option resistance delete by model. (standardization) - When do PCB replace, need option download.		
Hub PCB	Hub PCB newly application - Separation for load / control. - Enhanced fixing of load / sensor wire.		
FAN PCB	Use controller of 3 phase power - Prevented phase unbalance. - Temperature protection of IPM.		
Inverter PCB (Compressor Control PCB)	Applied inverter Compressor - Refrigerant cooling method - Mount power relay on PCB		
EMI PCB	3 phase power EMI PCB - Fuse mount		
Communication Terminal block	- Mount communication terminal block on PCB		

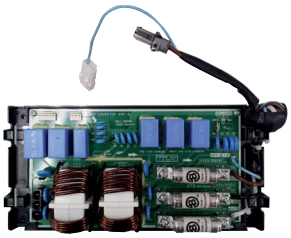
Changes in comparison to basic mode (cont.)

■ AM080/100/120/200FXWA✳✳

Changed part	Changed item and feature	Basic	After changed
Main PCB	Change Main PCB - Separation for load / control. - Option resistance delete by model. (standardization) - When do PCB replace, need option download.		←
Hub PCB	Hub PCB newly application - Separation for load / control. - Enhanced fixing of load / sensor wire.		←
FAN PCB	Use controller of 3 phase power - Prevented phase unbalance. - Temperature protection of IPM.		-
Inverter PCB (Compressor Control PCB)	Applied inverter Compressor - Refrigerant cooling method - Magnet S/W → Did Power Relay mount to PCB.		←
EMI PCB	3 phase power EMI PCB - Fuse mount		←
Communication Terminal block	Did Communication Terminal block mount to PCB.		←
Water Hub PCB	Water Hub PCB - External contact for DVM S WATER	-	

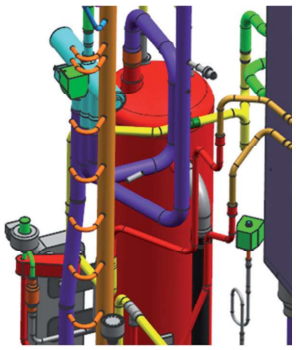
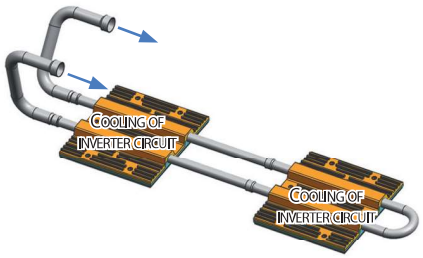
Changes in comparison to basic mode (cont.)

■ AM140/160/180/200/220/240/260/280/300KXV✳✳✳

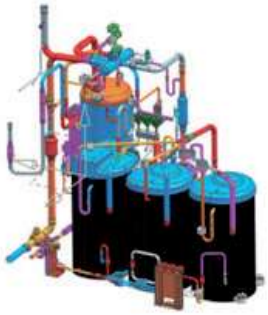
Changed part	Changed item and feature	Basic	After changed
Main PCB	Change Main PCB - Increase MICOM capability		
FAN PCB	Applies 600V IPM by LC resonance buck-converter		
Inverter PCB (Compressor Control PCB)	- Increases current due to high capacity compressor - Increases capacitor's capacity - Applies EMI coil on board (Deletes core in wire)		
EMI PCB	- Develops 50A EMI PBA → Increases coil size and fuse capacity - Improves EMI characteristic.		
REACTOR	- Increases current due to high capacity compressor - Improved wire connection terminal		
Refrigerant cooling	- Increases heat cooling capacity - Increases pipe size and heat exchange area		

Changes in comparison to basic mode (cont.)

■ PIPE COOLING

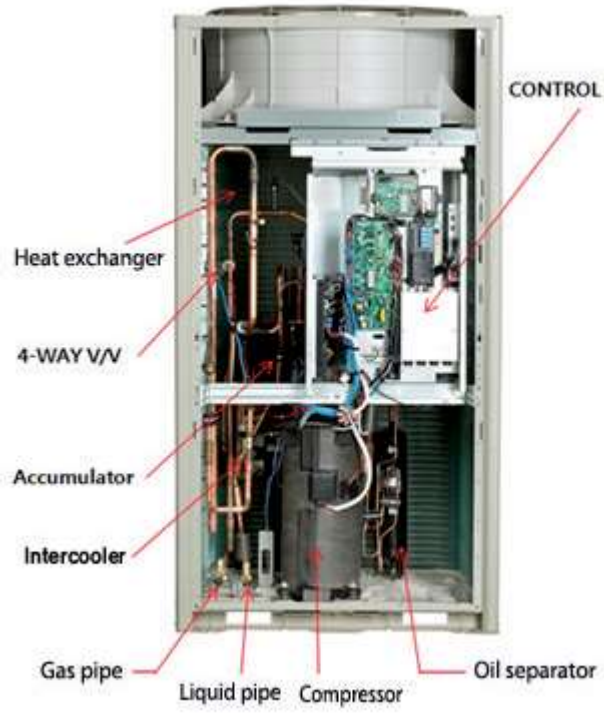
Changed part	Changed item and feature	Basic	After changed
Pipe Cooling	New Pipe Cooling for cooling of inverter PCB.	Unapplied	 **REFRIGERANT COOLING SYSTEM :** IT IS COOLING TECHNOLOGY OF INVERTER CIRCUIT THAT USE REFRIGERATING CYCLE TECHNOLOGY. 

■ TUBE

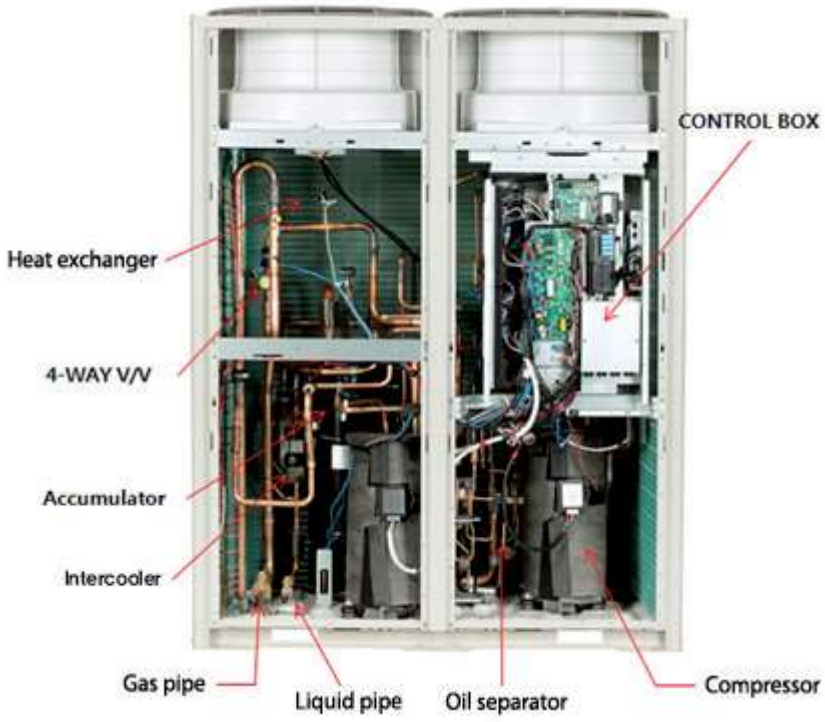
Changed part	Changed item and feature	Basic	After changed [HP]	After changed [HR]
Tube structure	New inverter cycle technology application New piping			

2-1-3 Structure of product (Heat Pump: AM✳✳✳✳XV✳✳H Series)

Small size

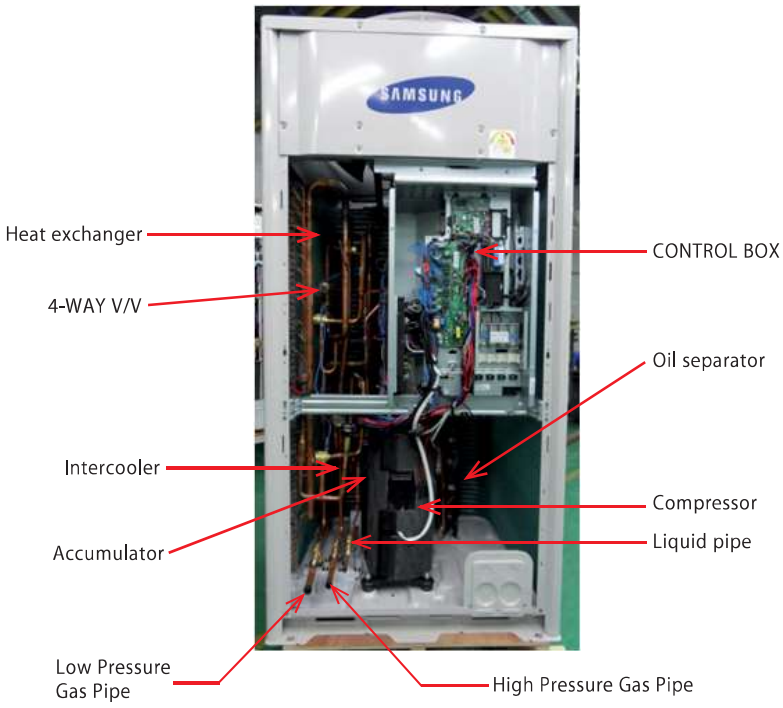


Large size

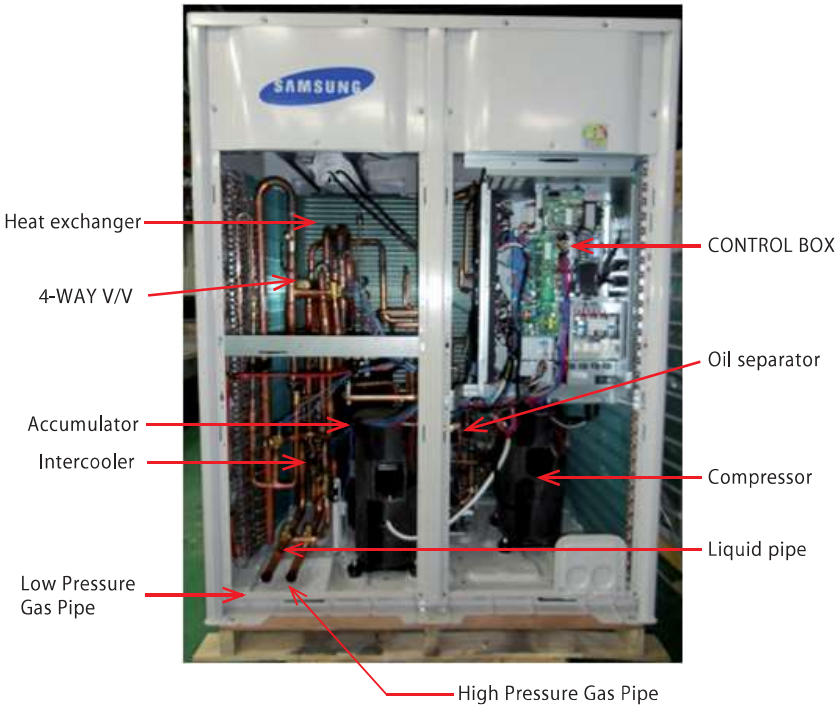


2-1-4 Structure of product (Heat Recovery: AM✳✳✳✳XV✳✳R Series)

Small size

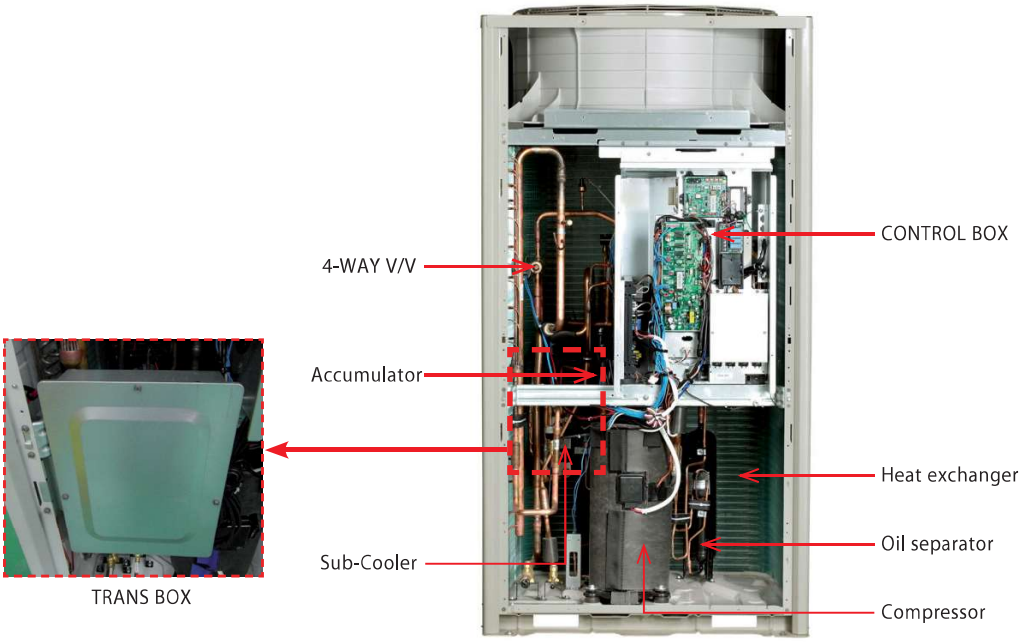


Large size

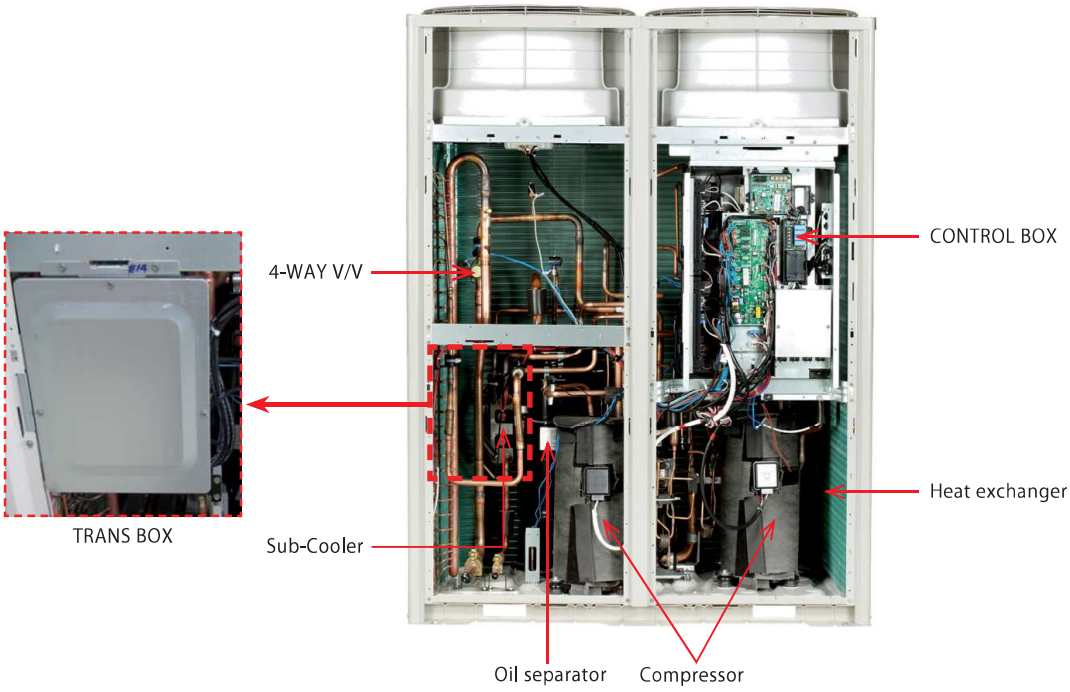


2-1-5 Structure of product (Power supply for 460V, 60Hz, 3Φ : AM✳✳✳✳XV✳✳J✳ Series)

Small size

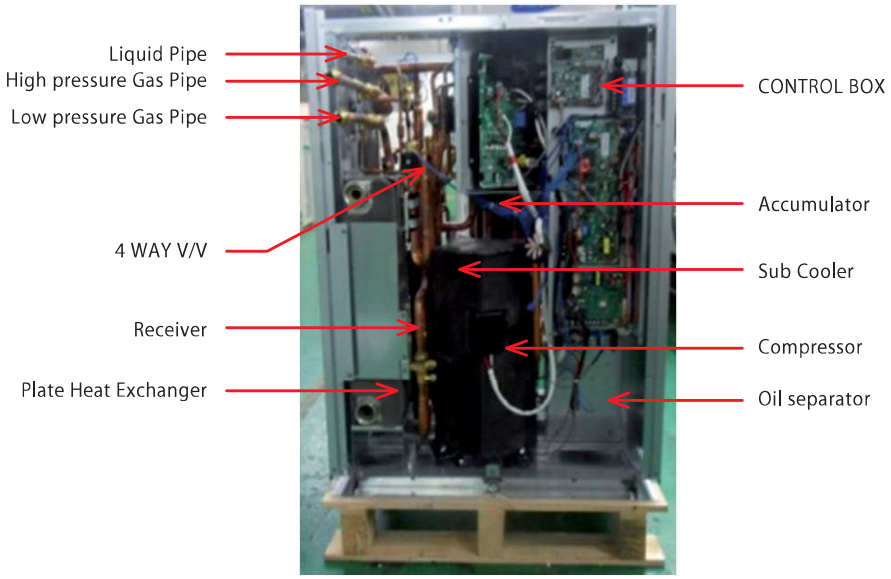


Large size

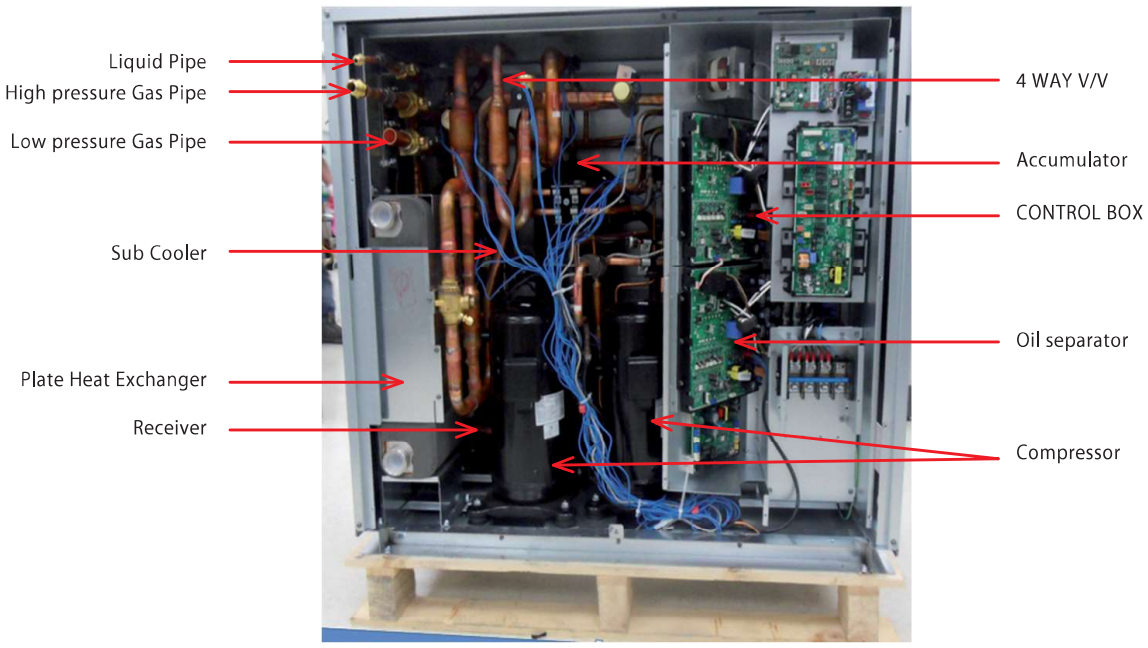


2-1-6 Structure of product (DVM S WATER)

Small size

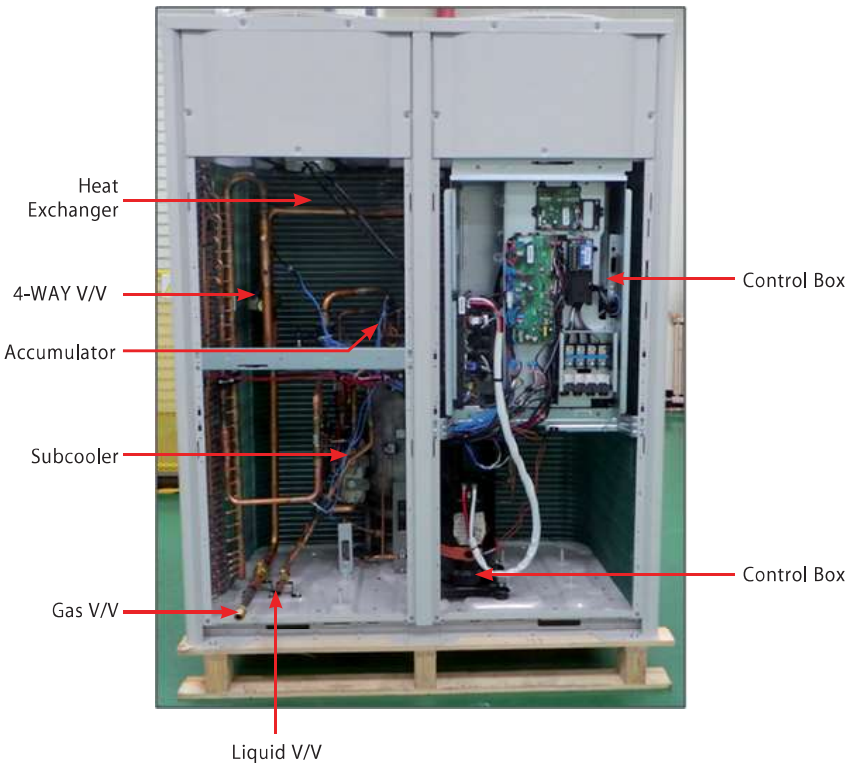


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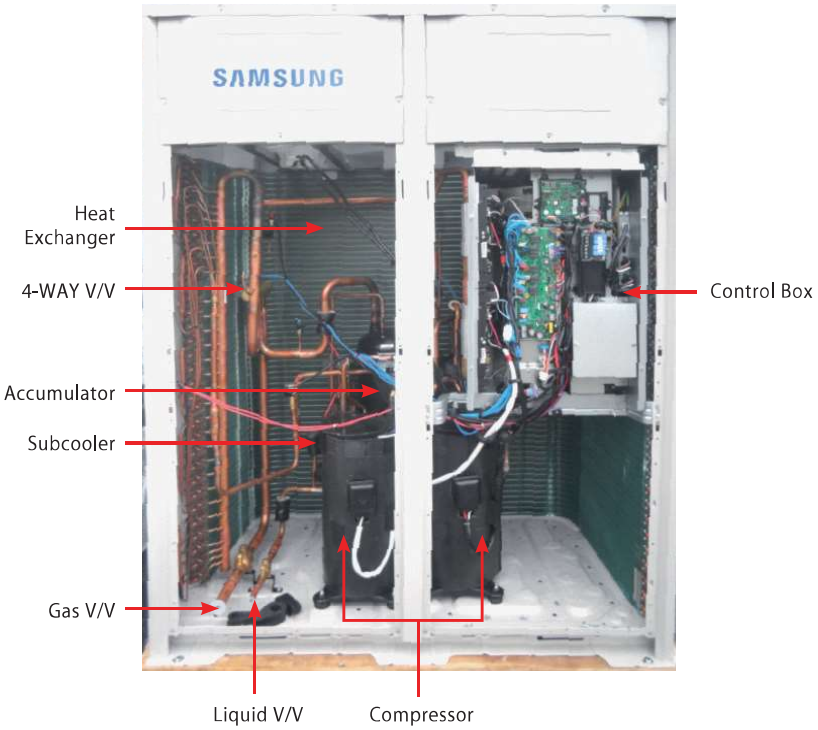


2-1-7 Structure of product (Heat Pump AM✳✳✳KX✳ Series)

AM140/160KXVG✳✳, AM140/160/180KXVA✳✳

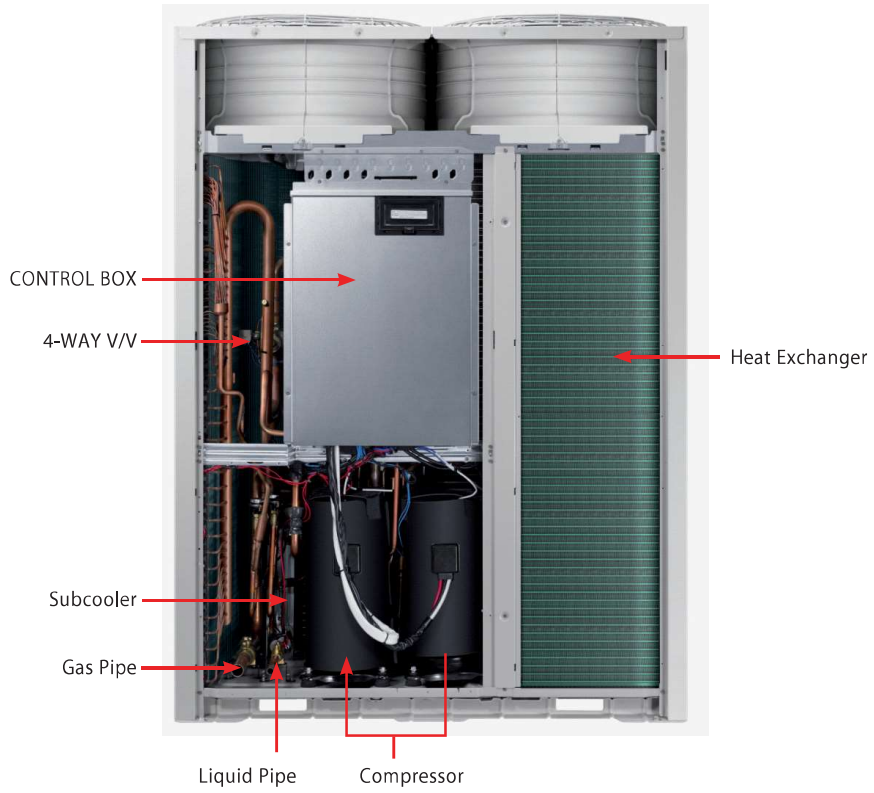


AM180/200/220KXVG✳✳, AM200/220KXVA✳✳



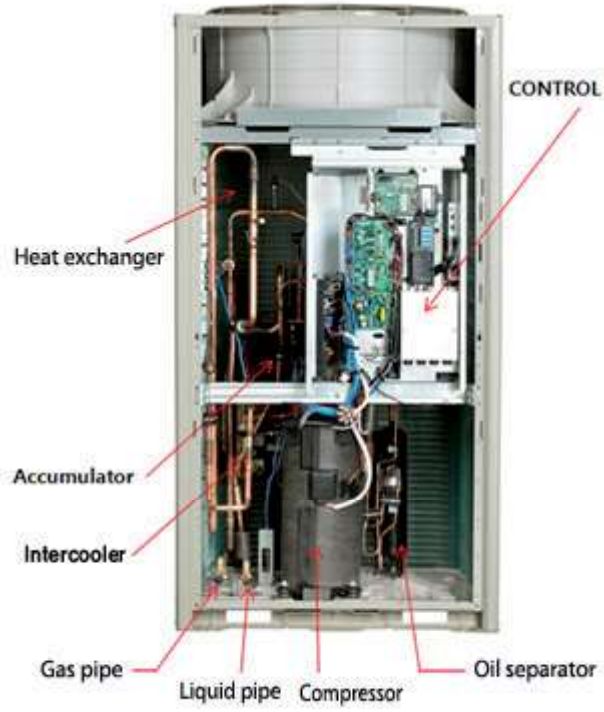
Structure of product (Heat Pump AM✳✳✳KX✳ Series)

AM240/260/280KXVG✳✳, AM240/260/280/300KXVA✳✳, AM080KXVS✳✳

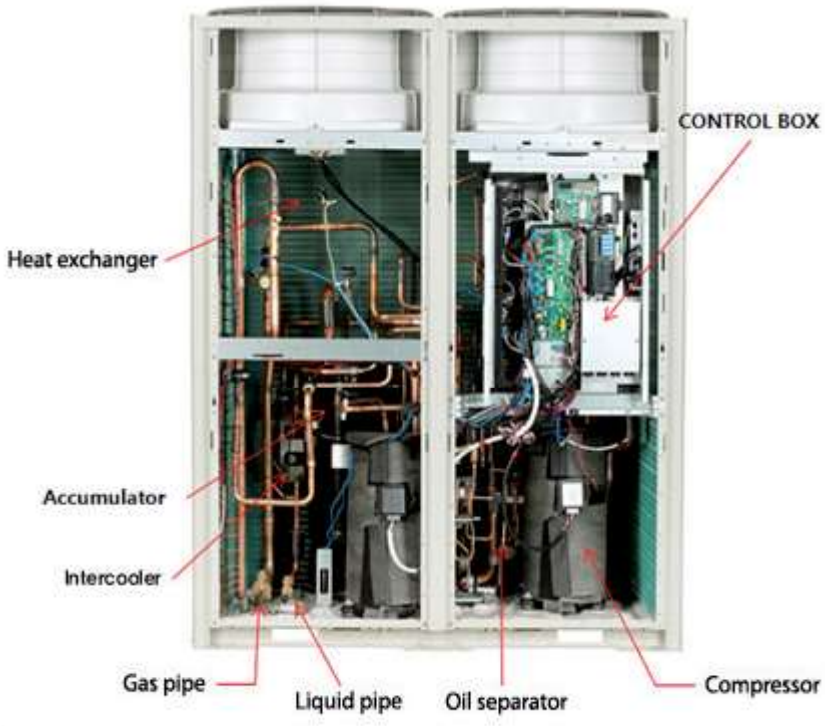


2-1-8 Structure of product (Cooling only AM✳✳✳MXVAFC Series)

Small size

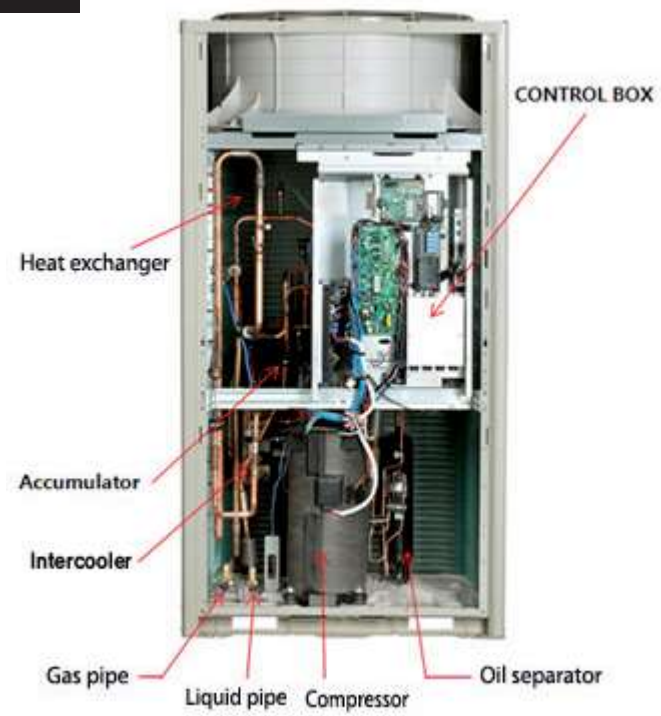


Large size

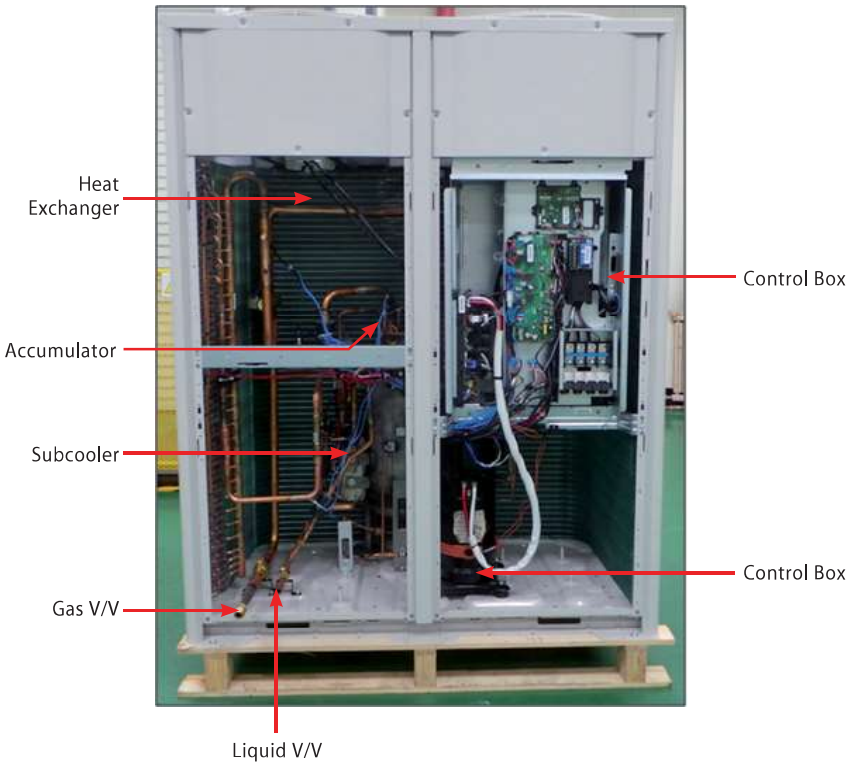


2-1-9 Structure of product (Cooling only AM✳✳✳MXVAGC Series)

AM080/100/120MXVAGC

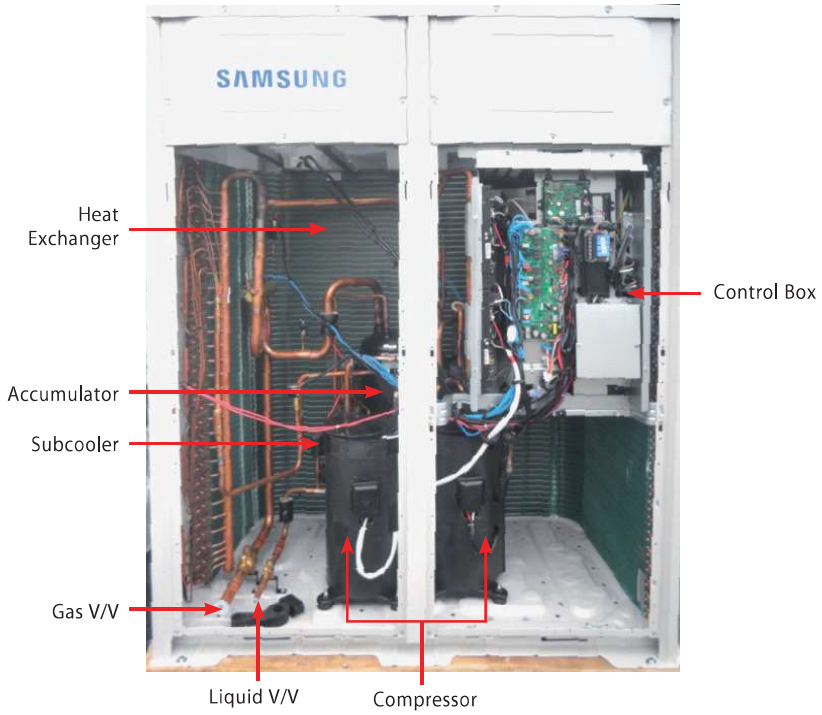


AM140/160MXVAGC

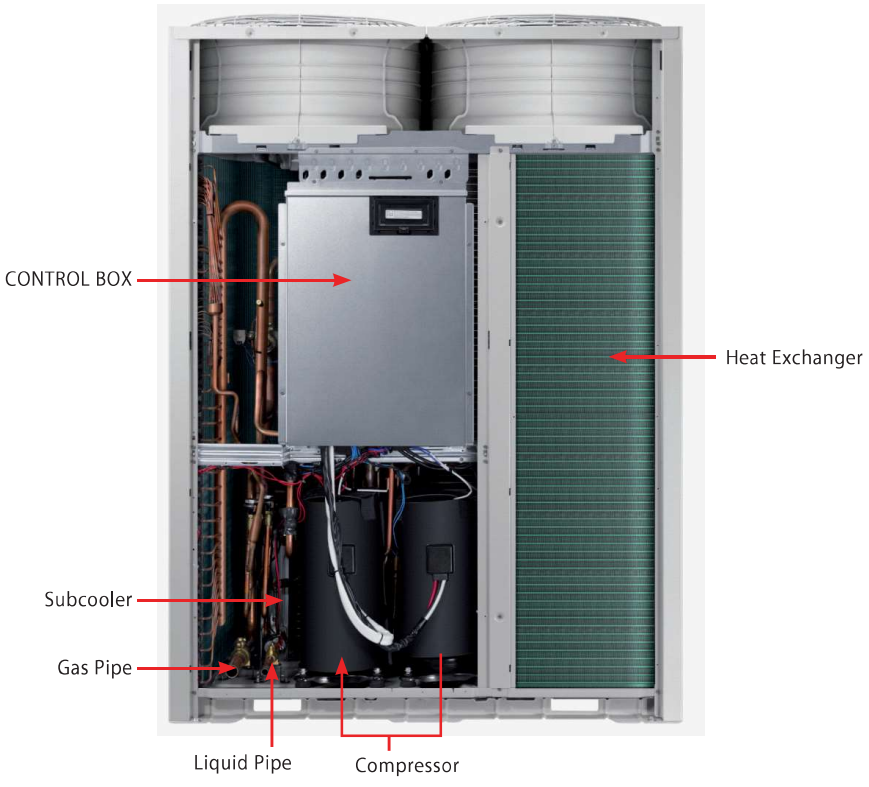


Structure of product (Cooling only AM✳✳✳MXVAGC Series) (cont.)

AM180/200/220MXVAGC



AM240/260/280/300MXVAGC



2-2 Product Specifications

2-2-1 Outdoor Unit

TYPE				New Model			Comparative Model		
									
Model				AM080FXVAGH	AM100FXVAGH	AM120FXVAGH	RD080HHXG✳	RD100HHXG✳	RD120HHXG✳
Mode				HP	HP	HP	HP	HP	HP
Power			Ø,V,Hz	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50
Capacity	Horse Power		HP	8	10	12	8	10	12
	Cooling		kW	22.4	28.0	33.6	22.4	28.0	33.6
			btu/h	76,400	95,500	114,600	76,400	95,500	114,600
	Heating		kW	25.2	31.5	37.8	25.2	31.5	37.8
			btu/h	86,000	107,500	129,000	86,000	107,500	129,000
Power	Power Input (Nominal)	Cooling 1)	kW	5.00	6.80	8.40	-	-	-
		Heating 2)		5.10	6.70	8.70	-	-	-
	Current Input (Nominal)	Cooling 1)	A	8.00	10.90	13.50	-	-	-
		Heating 2)		8.20	10.70	14.00	-	-	-
	Running Current	Cooling	A	8.00	10.90	13.50	8.80	13.00	20.00
		Heating	A	8.20	10.70	14.00	11.40	12.70	18.40
		Max.	A	18.00	21.10	25.00	18.40	21.50	28.40
	Power Consumption	Cooling	kW	5.00	6.80	8.40	5.20	7.04	9.20
		Heating	kW	5.10	6.70	8.70	5.46	6.89	8.50
	MCA / MFA		A	22.5 / 30	29.9 / 40	31.3 / 40	-	-	-
COP	Nominal Cooling		-	4.48	4.12	4.00	-	-	-
	Nominal Heating		-	4.94	4.70	4.34	-	-	-
	ESEER (HP)			7.85	7.25	7.03	-	-	-
Compressor	Model		-	DS-GB052FA****	DS-GB066FA****	DS-GB066FA****	ZPJ61KCE-TFD ZPI61KCE-TFD	ZPJ61KCE-TFD ZPI61KCE-TFD	ZPJ83KCE-TFD ZPI83KCE-TFD
	Type			INV x1	INV x1	INV x1	DVI x1 + FVI x1	DVI x1 + FVI x1	DVI x1 + FVI x1
	Output		kW	4.70	5.80	5.80	4.36 + 4.36	4.36 + 4.36	5.87 + 5.87
	Lubricant	Type	-	FVC68D	FVC68D	FVC68D	3MAF POE	3MAF POE	3MAF POE
		Charging	cc	3,900	3,900	3,900	4,370	4,370	4,370
Refrigerant	Type		-	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	5.5	5.2	5.5	5.0	5.0	5.0
FAN	Type		-	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC
	Motor Output		W	400	400	400	630	630	630
	Airflow rate		m³/min	173	173	210	173	173	210
Pipe	Piping Connections	Liquid	Ø,mm	9.52	9.52	12.70	9.52	9.52	12.70
			Ø,inch	3/8"	3/8"	1/2"			
		Gas	Ø,mm	19.05	22.22	28.58	19.05	22.22	25.40
			Ø,inch	3/4"	7/8"	1 1/8"			
		Dis. Gas	Ø,mm	15.88	19.05	19.05	-	-	-
			Ø,inch	5/8"	3/4"	3.4"			
	Installation Limitation	Max. Length	m	200(220)	200(220)	200(220)	200	200	200
		Max.Height	m	110(40)	110(40)	110(40)	50(40)	50(40)	50(40)
Cable	Main Power(Below/ about20m)		mm2	4.0	4.0	4.0	1.5	2.5	4.0
	Communication		mm2	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)
Set Dimension	Net Weight	DVM S HP	kg	190.0	190.0	190.0	237	237	240
		DVM S HR		195.0	195.0	195.0			
	Shipping Weight	DVM S HP	kg	206.0	206.0	206.0	253	253	256
		DVM S HR		211.0	211.0	211.0			
	Net Dimension(WxHxD)		mm	880x1,695x765	880x1,695x765	880x1,695x765	880x1695x765	880x1695x765	880x1695x765
	Gross Dimension(WxHxD)		mm	948x1,657x832	948x1,657x832	948x1,657x832	948x1912x832	948x1912x832	948x1912x832
Operating Temp Range	Cooling	DVM S HP	℃	-5.0~48.0	-5.0~48.0	-5.0~48.0	-5.0 ~ 48	-5.0 ~ 48.0	-5.0 ~ 48.0
		DVM S HR		-15.0~48.0	-15.0~48.0	-15.0~48.0			
	Heating			-20.0~24.0	-20.0~24.0	-20.0~24.0	-20.0 ~ 24.0	-20.0 ~ 24.0	-20.0 ~ 24.0

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27˚C DB/19˚C WB, outdoor 35˚C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20˚C DB, outdoor 7˚C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7˚C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Outdoor Unit (cont.)

TYPE				New Model		Comparative Model	
							
Model				AM140FXVAGH	AM160FXVAGH	RD140HHXG✳	RD160HHXG✳
Mode				HP	HP	HP	HP
Power			Ø,V,Hz	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50
Capacity	Horse Power		HP	14	16	14	16
	Capacity		kW	40.0	45.0	39.2	44.8
			btu/h	136,000	153,000	133,800	152,900
	Heating		kW	45.0	50.0	44.1	50.0
			btu/h	153,000	170,000	150,500	172,000
Power	Power Input (Nominal)	Cooling 1)	kW	8.90	11.00	-	-
		Heating 2)		9.50	11.50	-	-
	Current Input (Nominal)	Cooling 1)	A	14.30	17.60	-	-
		Heating 2)		15.20	18.40	-	-
	Running Current	Cooling	A	14.30	17.60	20.90	22.00
		Heating	A	15.20	18.40	19.40	27.20
		Max.	A	25.00	32.00	29.40	38.30
	Power Consumption	Cooling	kW	8.90	11.00	10.10	12.00
		Heating	kW	9.50	11.50	9.65	11.30
	MCA / MFA		A	31.3 / 40	40 / 40	-	-
COP	Nominal Cooling		-	4.49	4.09	-	-
	Nominal Heating		-	4.74	4.35	-	-
	ESEER (HP)			7.02	6.78	-	-
Compres-sor	Model		-	DS-GB066FA****	DS-GB052FA****	ZPJ83KCE-TFD ZPI83KCE-TFD	ZPJ72KCE-TFD ZPI72KCE-TFD
	Type			INV x1	INV x2	DVI x1 + FVI x1	DVI x1 + FVI x2
	Output		kW	5.80	4.7 x2	5.87 + 5.87	5.16 + 5.16 x2
	Lubricant	Type	-	FVC68D	FVC68D	3MAF POE	3MAF POE
		Charging	cc	3,900	6,200	4,370	6,540
Refrigerant	Type		-	R410A	R410A	R410A	R410A
	Factory Charging		kg	7.7	7.4	7.0	7.0
FAN	Type		-	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC
	Motor Output		W	630 x 2	630 x 2	630 x 2	630 x 2
	Airflow rate		m^3 / min	226	250	226	250
Pipe	Piping Connections	Liquid	Ø,mm	12.70	12.70	12.70	12.70
			Ø,inch	1/2"	1/2"		
		Gas	Ø,mm	28.58	28.58	25.40	28.58
			Ø,inch	1 1/8"	1 1/8"		
		Dis. Gas	Ø,mm	19.05	22.22	-	-
			Ø,inch	3/4"	7/8"		
	Installation Limitation	Max. Length	m	200(220)	200(220)	200	200
		Max. Height	m	110(40)	110(40)	50(40)	50(40)
Cable	Main Power(Below/ about20m)		mm2	4.0	6.0	4.0	6.0
	Communication		mm2	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)
Set Dimension	Net Weight	DVM S HP	kg	235.0	278.0	280	329
		DVM S HR		214.0	184.0		
	Shipping Weight	DVM S HP	kg	254.0	297.0	301	350
		DVM S HR		260.0	303.0		
	Net Dimension(WxHxD)		mm	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765
	Gross Dimension(WxHxD)		mm	1363x1857x832	1363x1857x832	1363x1912x832	1363x1912x832
Operating Temp Range	Cooling	DVM S HP	℃	-5.0~48.0	-5.0~48.0	-5.0 ~ 48.0	-5.0 ~ 48.0
		DVM S HR		-15.0~48.0	-15.0~48.0		
	Heating			-20.0~24.0	-20.0~24.0	-20.0 ~ 24.0	-20.0 ~ 24.0

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27˚C DB/19˚C WB, outdoor 35˚C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20˚C DB, outdoor 7˚C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7˚C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Outdoor Unit (cont.)

TYPE				New Model			Comparative Model	
								
Model				AM180FXVAGH	AM200FXVAGH	AM220FXVAGH	RD180HHXG*	RD200HHXG*
Mode				HP	HP	HP	HP	HP
Power			Ø,V,Hz	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50
Capacity	Horse Power		HP	18	20	22	18	20
	Cooling		kW	50.4	56.0	61.6	50.4	56.0
			btu/h	171,900	191,000	210,000	171,900	191,000
	Heating		kW	56.7	63.0	69.3	56.7	63.0
			btu/h	193,500	215,000	236,000	193,500	215,000
Power	Power Input (Nominal)	Cooling 1)	kW	12.80	15.19	17.35	-	-
		Heating 2)		11.90	13.90	16.70	-	-
	Current Input (Nominal)	Cooling 1)	A	20.70	24.40	27.80	-	-
		Heating 2)		19.10	22.30	26.80	-	-
	Running Current	Cooling	A	20.70	24.40	27.80	31.30	32.80
		Heating	A	19.10	22.30	26.80	26.70	29.10
		Max.	A	39.10	42.50	44.50	42.50	44.10
	Power Consump-tion	Cooling	kW	12.88	15.19	17.35	15.70	17.00
		Heating	kW	11.90	13.90	16.70	12.90	14.50
	MCA / MFA		A	48.9 / 50	52.5 / 75	52.5 / 75	-	-
COP	Nominal Cooling		-	3.91	3.69	3.55	-	-
	Nominal Heating		-	4.76	4.53	4.15	-	-
	ESEER (HP)			6.59	6.56	6.25	-	-
Compres-sor	Model		-	DS-GB066FA****	DS-GB066FA****	DS-GB066FA****	ZPJ83KCE-TFD ZPI83KCE-TFD	ZPJ83KCE-TFD ZPI83KCE-TFD
	Type			INV x2	INV x2	INV x2	DVI x1 + FVI x2	DVI x1 + FVI x2
	Output		kW	5.8 x2	5.8 x2	5.8 x2	5.87 + 5.87 x2	5.87 + 5.87 x2
	Lubricant	Type	-	FVC68D		FVC68D	3MAF POE	3MAF POE
		Charging	cc	6,200	6,200	6,200	6,540	6,540
Refriger-ant	Type		-	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	8.7	8.4	8.4	8.5	8.5
FAN	Type		-	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC
	Motor Output		W	630 x2	630 x2	630 x2	630 x2	630 x2
	Airflow rate		m³ / min	270	275	280	270	275
Pipe	Piping Connec-tions	Liquid	Ø,mm	15.88	15.88	15.88	15.88	15.88
			Ø,inch	5/8"	5/8"	5/8"		
		Gas	Ø,mm	28.58	28.58	28.58	28.58	28.58
			Ø,inch	1 1/8"	1 1/8"	1 1/8"		
		Dis. Gas	Ø,mm	22.22	28.58	28.58	-	-
			Ø,inch	7/8"	1 1/8"	1 1/8"		
	Installation Limitation	Max. Length	m	200(220)	200(220)	200(220)	200	200
		Max. Height	m	110(40)	110(40)	110(40)	50(40)	50(40)
Cable	Main Power(Below/ about20m)		mm2	10.0	10.0	10.0	6.0	10.0
	Communication		mm2	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)
Set Dimen-sion	Net Weight	DVM S HP	kg	300.0	300.0	300.0	340.0	349.0
		DVM S HR		306.0	306.0	306.0		
	Shipping Weight	DVM S HP	kg	319.0	319.0	319.0	361.0	370.0
		DVM S HR		325.0	325.0	325.0		
	Net Dimension(WxHxD)		mm	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765
	Gross Dimension(WxHxD)		mm	1363x1857x832	1363x1857x832	1363x1857x832	1363x1912x832	1363x1912x832
Operating Temp Range	Cooling	DVM S HP	℃	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0~ 48.0	-5.0 ~ 48.0
		DVM S HR		-15.0~48.0	-15.0~48.0	-15.0~48.0		
	Heating			-20.0 ~ 24.0	-20.0 ~ 24.0	-20.0 ~ 24.0	-20.0 ~ 24.0	-20.0 ~ 24.0

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27°C DB/19°C WB, outdoor 35°C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20°C DB, outdoor 7°C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7°C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Outdoor Unit (cont.)

TYPE				New Model			Comparative Model		
									
Model				AM080FXVAGR	AM100FXVAGR	AM120FXVAGR	RD080HRXG✳	RD100HRXG✳	RD120HRXG✳
Mode				HR	HR	HR	HR	HR	HR
Power			Ø,V,Hz	3/ AC380~415/50	3/ AC380~415/50	3/ AC380~415/50	3/ AC380~415/50	3/ AC380~415/50	3/ AC380~415/50
Capacity	Horse Power		HP	8	10	12	8	10	12
	Capacity		kW	22.4	28.0	33.6	22.4	28.0	33.6
			btu/h	76,400	95,500	114,600	76,400	95,500	114,600
	Heating		kW	25.2	31.5	37.8	25.2	31.5	37.8
			btu/h	86,000	107,500	129,000	86,000	107,500	129,000
Power	Power Input (Nominal)	Cooling 1)	kW	5.00	6.80	8.40	-	-	-
		Heating 2)		5.10	6.70	8.70	-	-	-
	Current Input (Nominal)	Cooling 1)	A	8.00	10.90	13.50	-	-	-
		Heating 2)		8.20	10.70	14.00	-	-	-
	Running Current	Cooling	A	8.00	10.90	13.50	8.80	13.00	20.00
		Heating	A	8.20	10.70	14.00	11.40	12.70	18.40
		Max.	A	18.00	21.10	25.00	18.40	21.50	28.40
	Power Consump-tion	Cooling	kW	5.00	6.80	8.40	5.20	7.04	9.20
		Heating	kW	5.10	6.70	8.70	5.46	6.89	8.50
	MCA / MFA		A	22.5 / 30	29.9 / 40	31.3 / 40	-	-	-
COP	Nominal Cooling		-	4.48	4.12	4.00	-	-	-
	Nominal Heating		-	4.94	4.70	4.34	-	-	-
	ESEER (HP)			7.85	7.25	7.03	-	-	-
Compres-sor	Model		-	DS-GB052FA****	DS-GB066FA****	DS-GB066FA****	ZPJ61KCE-TFD ZPI61KCE-TFD	ZPJ61KCE-TFD ZPI61KCE-TFD	ZPJ83KCE-TFD ZPI83KCE-TFD
	Type			INV x1	INV x1	INV x1	DVI x1 + FVI x1	DVI x1 + FVI x1	DVI x1 + FVI x1
	Output		kW	4.70	5.80	5.80	4.36 + 4.36	4.36 + 4.36	5.87 + 5.87
	Lubricant	Type	-	FVC68D	FVC68D	FVC68D	3MAF POE	3MAF POE	3MAF POE
		Charging	cc	3,900	3,900	3,900	4,370	4,370	4,370
Refrigerant	Type		-	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	5.5	5.2	5.5	5.0	5.0	5.0
FAN	Type		-	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC
	Motor Output		W	400	400	400	630	630	630
	Airflow rate		m^3 / min	173	173	210	173	173	210
Pipe	Piping Connections	Liquid	Ø,mm	9.52	9.52	12.70	9.52	9.52	12.70
			Ø,inch	3/8"	3/8"	1/2"			
		Gas	Ø,mm	19.05	22.22	28.58	19.05	22.22	25.40
			Ø,inch	3/4"	7/8"	1 1/8"			
		Dis. Gas	Ø,mm	15.88	19.05	19.05	15.88	19.05	22.22
			Ø,inch	5/8"	3/4"	3.4"			
	Installation Limitation	Max. Length	m	200(220)	200(220)	200(220)	200	200	200
		Max. Height	m	110(40)	110(40)	110(40)	50(40)	50(40)	50(40)
Cable	Main Power(Below/ about20m)		mm2	4.0	4.0	4.0	1.5	2.5	4.0
	Communication		mm2	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)
Set Dimension	Net Weight	DVM S HP	kg	190.0	190.0	190.0	243	243	243
		DVM S HR		195.0	195.0	195.0			
	Shipping Weight	DVM S HP	kg	206.0	206.0	206.0	259	259	259
		DVM S HR		211.0	211.0	211.0			
	Net Dimension(WxHxD)		mm	880x1,695x765	880x1,695x765	880x1,695x765	880x1695x765	880x1695x765	880x1695x765
	Gross Dimension(WxHxD)		mm	948x1,657x832	948x1,657x832	948x1,657x832	948x1912x832	948x1912x832	948x1912x832
Operating Temp Range	Cooling	DVM S HP	℃	-5.0~48.0	-5.0~48.0	-5.0~48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0
		DVM S HR		-15.0~48.0	-15.0~48.0	-15.0~48.0			
	Heating			-20.0~24.0	-20.0~24.0	-20.0~24.0	-20.0 ~ 24.0	-20.0 ~ 24.0	-20 .0~ 24.0

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27°C DB/19°C WB, outdoor 35°C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20°C DB, outdoor 7°C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7°C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Outdoor Unit (cont.)

TYPE				New Model		Comparative Model	
							
Model				AM140FXVAGR	AM160FXVAGR	RD140HRXG*	RD160HRXG*
Mode				HR	HR	HR	HR
Power			Ø,V,Hz	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50
Capacity	Horse Power		HP	14	16	14	16
	Capacity		kW	40.0	45.0	39.2	44.8
			btu/h	136,000	153,000	133,800	152,900
	Heating		kW	45.0	50.0	44.1	50.0
			btu/h	153,000	170,000	150,500	172,000
Power	Power Input (Nominal)	Cooling 1)	kW	8.90	11.00	-	-
		Heating 2)		9.50	11.50	-	-
	Current Input (Nominal)	Cooling 1)	A	14.30	17.60	-	-
		Heating 2)		15.20	18.40	-	-
	Running Current	Cooling	A	14.30	17.60	20.90	22.00
		Heating	A	15.20	18.40	19.40	27.20
		Max.	A	25.00	32.00	29.40	38.30
	Power Consump-tion	Cooling	kW	8.90	11.00	10.10	12.00
		Heating	kW	9.50	11.50	9.65	11.30
	MCA / MFA		A	31.3 / 40	40 / 40	-	-
COP	Nominal Cooling		-	4.49	4.09	-	-
	Nominal Heating		-	4.74	4.35	-	-
	ESEER (HP)			7.02	6.78	-	-
Compres-sor	Model		-	DS-GB066FA****	DS-GB052FA****	ZPJ83KCE-TFD ZPI83KCE-TFD	ZPJ72KCE-TFD ZPI72KCE-TFD
	Type			INV x1	INV x2	DVI x1 + FVI x1	DVI x1 + FVI x2
	Output		kW	5.80	4.7 x2	5.87 + 5.87	5.16 + 5.16 x2
	Lubricant	Type	-	FVC68D	FVC68D	3MAF POE	3MAF POE
		Charging	cc	3,900	6,200	4,370	6,540
Refrigerant	Type		-	R410A	R410A	R410A	R410A
	Factory Charging		kg	7.7	7.4	7.0	7.0
FAN	Type		-	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC
	Motor Output		W	630 x 2	630 x 2	630 x 2	630 x 2
	Airflow rate		m^3 / min	226	250	226	250
Pipe	Piping Connections	Liquid	Ø,mm	12.70	12.70	12.70	12.70
			Ø,inch	1/2"	1/2"		
		Gas	Ø,mm	28.58	28.58	25.40	28.58
			Ø,inch	1 1/8"	1 1/8"		
		Dis. Gas	Ø,mm	19.05	22.22	22.22	25.40
			Ø,inch	3/4"	7/8"		
	Installation Limitation	Max. Length	m	200(220)	200(220)	200	200
		Max. Height	m	110(40)	110(40)	50(40)	50(40)
Cable	Main Power(Below/ about20m)		mm2	4.0	6.0	4.0	6.0
	Communication		mm2	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)
Set Dimension	Net Weight	DVM S HP	kg	235.0	278.0	293	338
		DVM S HR		214.0	184.0		
	Shipping Weight	DVM S HP	kg	254.0	297.0	314	359
		DVM S HR		260.0	303.0		
	Net Dimension(WxHxD)		mm	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765
	Gross Dimension(WxHxD)		mm	1363x1857x832	1363x1857x832	1363x1912x832	1363x1912x832
Operating Temp Range	Cooling	DVM S HP	℃	-5.0~48.0	-5.0~48.0	-5 .0~ 48.0	-5.0~ 48.0
		DVM S HR		-15.0~48.0	-15.0~48.0		
	Heating			-20.0~24.0	-20.0~24.0	-20.0~ 24.0	-20.0~ 24.0

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2. If proper form heating capacity is outdoor temperature 7°C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Outdoor Unit (cont.)

TYPE				New Model			Comparative Model	
								
Model				AM180FXVAGR	AM200FXVAGR	AM220FXVAGR	RD180HRXG✳	RD200HRXG✳
Mode				HR	HR	HR	HR	HR
Power			Ø,V,Hz	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50
Capacity	Horse Power		HP	18	20	22	18	20
	Capacity		kW	50.4	56.0	61.6	50.4	56.0
			btu/h	171,900	191,000	210,000	171,900	191,000
	Heating		kW	56.7	63.0	69.3	56.7	63.0
			btu/h	193,500	215,000	236,000	193,500	215,000
Power	Power Input (Nominal)	Cooling 1)	kW	12.80	15.19	17.35	-	-
		Heating 2)		11.90	13.90	16.70	-	-
	Current Input (Nominal)	Cooling 1)	A	20.70	24.40	27.80	-	-
		Heating 2)		19.10	22.30	26.80	-	-
	Running Current	Cooling	A	20.70	24.40	27.80	31.30	32.80
		Heating	A	19.10	22.30	26.80	26.70	29.10
		Max.	A	39.10	42.50	44.50	42.50	44.10
	Power Consumption	Cooling	kW	12.88	15.19	17.35	15.70	17.00
		Heating	kW	11.90	13.90	16.70	12.90	14.50
	MCA / MFA		A	48.9 / 50	52.5 / 75	52.5 / 75	-	-
COP	Nominal Cooling		-	3.91	3.69	3.55	-	-
	Nominal Heating		-	4.76	4.53	4.15	-	-
	ESEER (HP)			6.59	6.56	6.25	-	-
Compressor	Model		-	DS-GB066FA****	DS-GB066FA****	DS-GB066FA****	ZPJ83KCE-TFD ZPI83KCE-TFD	ZPJ83KCE-TFD ZPI83KCE-TFD
	Type			INV x2	INV x2	INV x2	DVI x1 + FVI x2	DVI x1 + FVI x2
	Output		kW	5.8 x2	5.8 x2	5.8 x2	5.87 + 5.87 x2	5.87 + 5.87 x2
	Lubricant	Type	-	FVC68D		FVC68D	3MAF POE	3MAF POE
		Charging	cc	6,200	6,200	6,200	6,540	6,540
Refrigerant	Type		-	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	8.7	8.4	8.4	8.5	8.5
FAN	Type		-	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC
	Motor Output		W	630 x2	630 x2	630 x2	630 x2	630 x2
	Airflow rate		m^3 / min	270	275	280	270	275
Pipe	Piping Connections	Liquid	Ø,mm	15.88	15.88	15.88	15.88	15.88
			Ø,inch	5/8"	5/8"	5/8"		
		Gas	Ø,mm	28.58	28.58	28.58	28.58	28.58
			Ø,inch	1 1/8"	1 1/8"	1 1/8"		
		Dis. Gas	Ø,mm	22.22	28.58	28.58	28.58	28.58
			Ø,inch	7/8"	1 1/8"	1 1/8"		
	Installation Limitation	Max. Length	m	200(220)	200(220)	200(220)	200	200
		Max. Height	m	110(40)	110(40)	110(40)	50(40)	50(40)
Cable	Main Power(Below/ about20m)		mm2	10.0	10.0	10.0	6.0	10.0
	Communication		mm2	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)	VCTF 0.75~1.5(2P)
Set Dimension	Net Weight	DVM S HP	kg	300.0	300.0	300.0	349	355
		DVM S HR		306.0	306.0	306.0		
	Shipping Weight	DVM S HP	kg	319.0	319.0	319.0	369	376
		DVM S HR		325.0	325.0	325.0		
	Net Dimension(WxHxD)		mm	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765
	Gross Dimension(WxHxD)		mm	1363x1857x832	1363x1857x832	1363x1857x832	1363x1912x832	1363x1912x832
Operating Temp Range	Cooling	DVM S HP	℃	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0
		DVM S HR		-15.0~48.0	-15.0~48.0	-15.0~48.0		
	Heating			-20.0 ~ 24.0	-20.0 ~ 24.0	-20.0 ~ 24.0	-20.0 ~ 24.0	-20.0~ 24.0

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- Heating capacity : It is figures that appear in indoor 20°C DB, outdoor 7°C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7°C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Product Specifications

Outdoor Unit (cont.)

TYPE				New Model				Comparative Model		
										
Model Name				AM080FXWANR/EU	AM100FXWANR/EU	AM120FXWANR/EU	AM200FXWANR/EU	RD100DRXH1	RD200DRXH1	RD300DRXH1
Power Supply			Φ, #, V, Hz	3/AC380~415/50				3/AC380~415/50		
Performance	HP		HP	8	10	12	20	10	20	30
	Capacity (Nominal)	Cooling	kW	23	29	34.8	58	29	58	87
			kcal/h	19780	24940	29928	49880	24940	49880	74820
		Heating	kW	26	32.6	39.2	65.2	32.6	65.2	97.9
			kcal/h	22360	28036	33712	56072	28036	56072	84194
Power	Power Input (Nominal)	Cooling	kW	4.18	5.58	6.69	11.15	5.8	11.6	17.4
		Heating		4.33	5.62	6.76	11.24	5.69	11.8	17.8
	Current Input (Nominal)	Cooling	A	7.0	9.4	11.3	18.8	10.5	21.4	31.9
		Heating		7.3	9.5	11.4	19.0	9.5	20.9	31.1
	MFA		-	20	20	30	40	20	40	60
COP	Nominal Cooling 1)		-	5.50	5.20	5.20	5.20	-	-	-
	Nominal Heating 2)		-	6.00	5.80	5.80	5.80	-	-	-
Compressor	Type			SSC Scroll x 1	SSC Scroll x 1	SSC Scroll x 1	SSC Scroll x 2	DVI Scrollx1	DVI Scrollx1 + FVI Scrollx1	DVI Scroll + FVI Scrollx2
	Output		kW	4.96	4.96	6.13	4.96 x 2	7.04	7.48 + 7.43	7.48 + (7.43 x 2)
	Oil	Type	-	PVE	PVE	PVE	PVE	3MAF POE	3MAF POE	3MAF POE
		Initial Charge	Liter	3.9	3.9	3.9	6.2	2.185	4.37	6.555
Condenser	Type		-	Stainless steel plate	Stainless steel plate	Stainless steel plate	Stainless steel plate	Stainless steel plate	Stainless steel plate	Stainless steel plate
	Pipe Size		Φ, inch(A)	PT1-1/4 (32)	PT1-1/4 (32)	PT1-1/4 (32)	PT1-1/4 (32)	1 1/4" (32A)	1 1/4" (32A)	2 (50A)
	Lost Head		kPa	22	30	43	54	30	54	54
	Water Flow Rate		LPM	80	96	114	190	96	190	285
	Max. Pressure		MPa	1.96	1.96	1.96	1.96	1.96	1.96	1.96
Piping Connections	Liquid Pipe		Φ, mm	9.52	9.52	12.7	15.88	9.52	15.88	19.05
	Gas Pipe		Φ, mm	19.05	22.23	25.4	28.58	22.23	28.58	31.75
	Discharge Gas Pipe		Φ, mm	15.88	19.05	22.23	25.4	19.05	25.4	28.58
	Oil Equalizing Pipe		Φ, mm	-	-	-	-	-	6.35	6.35
	Installation Limitation Airflow rate	Max. Length	m	170	170	170	170	150	150	150
		Max. Height	m	50	50	50	50	50(40)	50(40)	50(40)
Field Wiring	Power Source Wire		mm2	2.50	2.50	4.00	6.00	1.5	4.0	10.0
	Transmission Cable		mm2	0.75~1.25	0.75~1.25	0.75~1.25	0.75~1.25	0.75~1.5	0.75~1.5	0.75~1.5
Refrigerant	Type		-	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	5.5	5.8	6.0	9.8	5.8	9.4	12.0
External Dimension	Net Weight		kg	160	160	160	240	160	235	320
	Shipping Weight			167	167	167	250	167	242	330
	Net Dimensions (WxHxD)		kg	770x1000x545	770x1000x545	770x1000x545	1100x1000x545	770 x 1,117 x 545	770 x 1,117 x 545	1,100 x 1,117 x 550
	Shipping Dimensions (WxHxD)			840x1200x620	840x1200x620	840x1200x620	1170x1200x620	840 x 1,287 x 620	840 x 1,287 x 620	1,170 x 1,170 x 620
Operating Temp. Range(Water)	Cooling		℃	10~45	10~45	10~45	10~45	10~45	10~45	10~45
	Heating		℃	10~45	10~45	10~45	10~45	10~45	10~45	10~45

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- Heating capacity : It is figures that appear in indoor 20˚C DB, outdoor 7˚C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7˚C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Outdoor Unit (cont.)

TYPE				New Model	
					
Model				AM240HXVAGH	AM260HXVAGH
Mode				HP	HP
Power			Φ, V, Hz	3/AC380~415/50	
Capacity	Horse Power		HP	24	26
	Cooling		kW	67.2	72.8
			btu/h	-	-
	Heating		kW	75.6	81.9
			btu/h	-	-
Power	Power input (Nominal)	Cooling 1)	kW	17.10	19.30
		Heating 2)		19.80	21.80
	Current Input (Nominal)	Cooling 1)	A	26.83	30.28
		Heating 2)		31.06	34.20
	Running Current"	Cooling	A	26.83	30.28
		Heating	A	31.06	34.20
		Max	A	55	58
	Power Consump-tion	Cooling	kW	26.83	30.28
		Heating	kW	31.06	34.20
	MCA/MFA		A	60.5/75	63.8/75
COP	Nominal Cooling		-	3.930	3.772
	Nominal Heating		-	3.818	3.757
	ESEER (HP)		-	-	-
Compressor	Model		-	DS-GB066FA*	DS-GB070FA*
	Type			INV x 2EA	INV x 2EA
	Output		kW	-	-
	Lubricant	Type	-	FVC68D	FVC68D
		Charging	cc	6,200	6,200
Refrigerant	Type		-	R410A	R410A
	Factory Charging		kg	14.3	14.3
Fan	Type		-	Propeller + BLDC	Propeller + BLDC
	Motor Output		W	620 x 2	620 x 2
	Airflow rate		m^3 / min	310	310
Piping Connections	Liquid pipe		Φ, mm	15.88	19.05
			Φ, inch	5/8"	3/4"
	Gas pipe		Φ, mm	34.92	34.92
			Φ, inch	1 3/8"	1 3/8"
	High pressure gas pipe		Φ, mm	-	-
			Φ, inch		
	Installation Limitation	Max. Length	m	200(220)	200(220)
		Max. Height	m	110.0(40.0)	110.0(40.0)
Cable	Main Power(Below 20m)		mm2	16	16
	Communication		mm2	VCTF 0.75 ~ 1.5(2P)	VCTF 0.75 ~ 1.5(2P)
Set Dimension	Net weight		kg	360	360
	Gross weight		kg	370	370
	Net dimension (WxHxD)		mm	1,295 x 1,695 x 765	1,295 x 1,695 x 765
	Gross dimension (WxHxD)		mm	1,363 x 1,887 x 832	1,363 x 1,887 x 832
Operating Temp. Range	Cooling		℃	-5.0 ~ 48.0	-5.0 ~ 48.0
	Heating		℃	-25.0 ~ 24.0	-25.0 ~ 24.0

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27˚C DB/19°C WB, outdoor 35˚C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20˚C DB, outdoor 7˚C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7˚C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Product Specifications

Outdoor Unit (cont.)

TYPE				New Model			New Model				
											
Model				AM080JXVAGH	AM100JXVAGH	AM120JXVAGH	AM140JXVAGH	AM160JXVAGH	AM180JXVAGH	AM200JXVAGH	AM220JXVAGH
Mode				HP	HP	HP	HP	HP	HP	HP	HP
Power			Φ,V, Hz	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50
Capacity	Horse Power		HP	8	10	12	14	16	18	20	22
	Cooling		kW	22.4	28.0	33.6	40.0	45.0	50.4	56.0	61.6
	Heating		kW	25.2	31.5	37.8	45.0	50.4	56.7	63.0	69.3
Power	Power input (Nominal)	Cooling 1)	kW	5.00	6.85	8.16	10.93	11.98	12.45	14.59	17.35
		Heating 2)		5.10	6.65	8.03	10.15	11.60	11.90	13.90	16.70
	Current Input (Nominal)	Cooling 1)	A	8.00	11.00	13.10	17.50	19.20	20.00	13.90	27.80
		Heating 2)		8.20	10.70	12.90	16.30	18.60	19.10	23.40	26.80
	Running Current"	Cooling	A	8.00	11.00	13.10	17.50	19.20	20.00	13.90	27.80
		Heating	A	8.20	10.70	12.90	16.30	18.60	19.10	23.40	26.80
		Max	A	18.0	21.1	25.0	25.0	32.0	39.1	22.30	44.5
	Power Consumption	Cooling	kW	5.00	6.85	8.16	10.93	11.98	12.45	14.59	17.35
		Heating	kW	5.10	6.65	8.03	10.15	11.60	11.90	13.90	16.70
	MCA/MFA		A	22.5/30	29.9/40	31.3/40	31.3/40	40.0/40	48.9/50	52.5/75	55.6/75
COP	Nominal Cooling		-	4.480	4.090	4.120	3.660	3.760	4.050	3.840	3.550
	Nominal Heating		-	4.940	4.740	4.710	4.430	4.340	4.760	4.530	4.150
	ESEER (HP)		-	-	-	-	-	-	-	-	-
Compressor	Model		-	DS-GA046FA*	DS-GB066FA*	DS-GB066FA*	DS-GB066FA*	DS-GA046FA*	DS-GB066FA*	DS-GB066FA*	DS-GB066FA*
	Type			INV x 1EA	INV x 1EA	INV x 1EA	INV x 1EA	INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA
	Output		kW	-	-	-	-	-	-	-	-
	Lubricant	Type	-	FVC68D	FVC68D	FVC68D	FVC68D	FVC68D	FVC68D	FVC68D	FVC68D
		Charging	cc	3700	3900	3900	3900	5800	6200	6200	6200
Refrigerant	Type		-	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	5.5	5.5	6.5	7.7	7.7	8.4	8.4	8.4
Fan	Type		-	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC
	Motor Output		W	830	830	830	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2
	Airflow rate		㎥ /min	170	170	220	255	255	290	290	290
Piping Connections	Liquid pipe		Φ, mm	9.52	9.52	12.7	12.7	12.7	15.88	15.88	15.88
			Φ, inch	3/8"	3/8"	1/2"	1/2"	1/2"	5/8"	5/8"	5/8"
	Gas pipe		Φ, mm	19.05	22.22	28.58	28.58	28.58	28.58	28.58	28.58
			Φ, inch	3/4"	7/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"
	High pressure gas pipe		Φ, mm	-	-	-	-	-	-	-	-
			Φ, inch	-	-	-	-	-	-	-	-
	Installation Limitation	Max. Length	m	220	220	220	220	220	220	220	220
		Max. Height	m	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40
Cable	Main Power(Below 20m)		mm2	-	-	-	-	-	-	-	-
	Communication		mm2	-	-	-	-	-	-	-	-
Set Dimension	Net weight		kg	186	197	210	239	269	307	307	307
	Gross weight		kg	193	204	217	249	279	317	317	317
	Net dimension (WxHxD)		mm	880x1695x765	880x1695x765	880x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765
	Gross dimension (WxHxD)		mm	948x1887x832	948x1887x832	948x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	1363x1887x832
Operating Temp. Range	Cooling		℃	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48
	Heating		℃	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27˚C DB/19˚C WB, outdoor 35˚C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20˚C DB, outdoor 7˚C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7˚C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Product Specifications

Outdoor Unit (cont.)

TYPE				New Model			New Model				
											
Model				AM080JXVHGH	AM100JXVHGH	AM120JXVHGH	AM140JXVHGH	AM160JXVHGH	AM180JXVHGH	AM200JXVHGH	AM220JXVHGH
Mode				HP	HP	HP	HP	HP	HP	HP	HP
Power			Φ, V, Hz	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50	3/AC380~415/50
Capacity	Horse Power		HP	8	10	12	14	16	18	20	22
	Cooling		kW	22.4	28.0	33.6	40.0	45.0	50.4	56.0	61.6
	Heating		kW	25.2	31.5	37.8	45.0	50.4	56.7	63.0	69.3
Power	Power input (Nominal)	Cooling 1)	kW	4.59	6.22	7.57	10.55	10.92	11.51	13.05	15.75
		Heating 2)		4.59	5.89	7.56	9.72	10.75	11.62	13.10	15.86
	Current Input (Nominal)	Cooling 1)	A	7.40	10.00	12.10	16.90	17.50	18.50	20.90	25.30
		Heating 2)		7.40	9.40	12.10	15.60	17.20	18.60	21.00	25.40
	Running Current[1]	Cooling	A	7.40	10.00	12.10	16.90	17.50	18.50	20.90	25.30
		Heating	A	7.40	9.40	12.10	15.60	17.20	18.60	21.00	25.40
		Max	A	18.0	21.1	25.0	25.0	32.0	39.1	42.5	44.5
	Power Consumption	Cooling	kW	4.59	6.22	7.57	10.55	10.92	11.51	13.05	15.75
		Heating	kW	4.59	5.89	7.56	9.72	10.75	11.62	13.10	15.86
	MCA/MFA		A	22.5/30	29.9/40	31.3/40	31.3/40	40.0/40	48.9/50	52.5/75	55.6/75
COP	Nominal Cooling		-	4.880	4.500	4.440	3.790	4.120	4.380	4.290	3.910
	Nominal Heating		-	5.490	5.350	5.000	4.630	4.690	4.880	4.810	4.370
	ESEER (HP)		-	-	-	-	-	-	-	-	-
Compressor	Model		-	DS-GB052FA*	DS-GB066FA*	DS-GB066FA*	DS-GB066FA*	DS-GA046FA*	DS-GB066FA*	DS-GB066FA*	DS-GB066FA*
	Type			INV x 1EA	INV x 1EA	INV x 1EA	INV x 1EA	INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA
	Output		kW	-	-	-	-	-	-	-	-
	Lubricant	Type	-	FVC68D	FVC68D	FVC68D	FVC68D	FVC68D	FVC68D	FVC68D	FVC68D
		Charging	cc	3900	3900	3900	3900	5800	6200	6200	6200
Refrigerant	Type		-	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	6.5	6.5	6.5	7.7	7.7	8.4	8.4	8.4
Fan	Type		-	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC
	Motor Output		W	830	830	830	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2
	Airflow rate		m^3/min	170	170	200	255	255	290	290	290
Piping Connections	Liquid pipe		Φ, mm	9.52	9.52	12.7	12.7	12.7	15.88	15.88	15.88
			Φ, inch	3/8"	3/8"	1/2"	1/2"	1/2"	5/8"	5/8"	5/8"
	Gas pipe		Φ, mm	19.05	22.22	28.58	28.58	28.58	28.58	28.58	28.58
			Φ, inch	3/4"	7/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"
	High pressure gas pipe		Φ, mm	-	-	-	-	-	-	-	-
			Φ, inch	-	-	-	-	-	-	-	-
	Installation Limitation	Max. Length	m	220	220	220	220	220	220	220	220
		Max. Height	m	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40
Cable	Main Power(Below 20m)		mm2	-	-	-	-	-	-	-	-
	Communication		mm2	-	-	-	-	-	-	-	-
Set Dimension	Net weight		kg	201	201	201	235	266	300	300	300
	Gross weight		kg	217	217	217	254	285	319	319	319
	Net dimension (WxHxD)		mm	880x1695x765	880x1695x765	880x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765
	Gross dimension (WxHxD)		mm	948x1887x832	948x1887x832	948x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	1363x1887x832
Operating Temp. Range	Cooling		℃	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48
	Heating		℃	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27˚C DB/19˚C WB, outdoor 35˚C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20˚C DB, outdoor 7˚C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7˚C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Product Specifications

Outdoor Unit (cont.)

TYPE				New Model			New Model				
											
Model				AM080JXVHGR	AM100JXVHGR	AM120JXVHGR	AM140JXVHGR	AM160JXVHGR	AM180JXVHGR	AM200JXVHGR	AM220JXVHGR
Mode				HR	HR	HR	HR	HR	HR	HR	HR
Power			Φ,V, Hz	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50
Capacity	Horse Power		HP	8	10	12	14	16	18	20	22
	Cooling		kW	22.4	28.0	33.6	40.0	45.0	50.4	56.0	61.6
	Heating		kW	25.2	31.5	37.8	45.0	50.4	56.7	63.0	69.3
Power	Power input (Nominal)	Cooling 1)	kW	4.59	6.22	7.57	10.55	10.92	11.51	13.05	15.75
		Heating 2)		4.59	5.89	7.56	9.72	10.75	11.62	13.10	15.86
	Current Input (Nominal)	Cooling 1)	A	7.40	10.00	12.10	16.90	17.50	18.50	20.90	25.30
		Heating 2)		7.40	9.40	12.10	15.60	17.20	18.60	21.00	25.40
	Running Current[1]	Cooling	A	7.40	10.00	12.10	16.90	17.50	18.50	20.90	25.30
		Heating	A	7.40	9.40	12.10	15.60	17.20	18.60	21.00	25.40
		Max	A	18.0	21.1	25.0	25.0	32.0	39.1	42.5	44.5
	Power Consumption	Cooling	kW	4.59	6.22	7.57	10.55	10.92	11.51	13.05	15.75
		Heating	kW	4.59	5.89	7.56	9.72	10.75	11.62	13.10	15.86
	MCA/MFA		A	22.5/30	29.9/40	31.3/40	31.3/40	40.0/40	48.9/50	52.5/75	55.6/75
COP	Nominal Cooling		-	4.880	4.500	4.440	3.790	4.120	4.380	4.290	3.910
	Nominal Heating		-	5.490	5.350	5.000	4.630	4.690	4.880	4.810	4.370
	ESEER (HP)		-	-	-	-	-	-	-	-	-
Compressor	Model		-	DS-GB052FA*	DS-GB066FA*	DS-GB066FA*	DS-GB066FA*	DS-GA046FA*	DS-GB066FA*	DS-GB066FA*	DS-GB066FA*
	Type			INV x 1EA	INV x 1EA	INV x 1EA	INV x 1EA	INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA
	Output		kW	-	-	-	-	-	-	-	-
	Lubricant	Type	-	FVC68D	FVC68D	FVC68D	FVC68D	FVC68D	FVC68D	FVC68D	FVC68D
		Charging	cc	3900	3900	3900	3900	5800	6200	6200	6200
Refrigerant	Type		-	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	6.5	6.5	6.5	7.7	7.7	8.4	8.4	8.4
Fan	Type		-	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC
	Motor Output		W	830	830	830	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2
	Airflow rate		㎥ /min	170	170	200	255	255	290	290	290
Piping Connections	Liquid pipe		Φ, mm	9.52	9.52	12.7	12.7	12.7	15.88	15.88	15.88
			Φ, inch	3/8"	3/8"	1/2"	1/2"	1/2"	5/8"	5/8"	5/8"
	Gas pipe		Φ, mm	19.05	22.22	28.58	28.58	28.58	28.58	28.58	28.58
			Φ, inch	3/4"	7/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"
	High pressure gas pipe		Φ, mm	15.88	19.05	19.05	22.22	22.22	28.58	28.58	28.58
			Φ, inch	5/8"	3/4"	3/4"	7/8"	7/8"	1+1/8"	1+1/8"	1+1/8"
	Installation Limitation	Max. Length	m	220	220	220	220	220	220	220	220
		Max. Height	m	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40
Cable	Main Power(Below 20m)		mm2	-	-	-	-	-	-	-	-
	Communication		mm2	-	-	-	-	-	-	-	-
Set Dimension	Net weight		kg	206	206	206	241	272	306	306	306
	Gross weight		kg	222	222	222	260	291	325	325	325
	Net dimension (WxHxD)		mm	880x1695x765	880x1695x765	880x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765
	Gross dimension (WxHxD)		mm	948x1887x832	948x1887x832	948x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	1363x1887x832
Operating Temp. Range	Cooling		℃	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48
	Heating		℃	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27˚C DB/19˚C WB, outdoor 35˚C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20˚C DB, outdoor 7˚C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7˚C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Product Specifications

Outdoor Unit (cont.)

TYPE				New Model													
																	
Model				AM080JXVAFH/AZ	AM100JXVAFH/AZ	AM120JXVAFH/AZ	AM140JXVAFH/AZ	AM160JXVAFH/AZ	AM180JXVAFH/AZ	AM200JXVAFH/AZ	AM080JXVAJH/AZ	AM100JXVAJH/AZ	AM120JXVAJH/AZ	AM140JXVAJH/AZ	AM160JXVAJH/AZ	AM180JXVAJH/AZ	AM200JXVAJH/AZ	AM220JXVAJH/AZ
Mode				HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP
Power			Φ, #, V, Hz	3,3,208-230,60	3,3,208-230,60	3,3,208-230,60	3,3,208-230,60	3,3,208-230,60	3,3,208-230,60	3,3,208-230,60	3,3,460,60	3,3,460,60	3,3,460,60	3,3,460,60	3,3,460,60	3,3,460,60	3,3,460,60	3,3,460,60
Performance	HP		HP	8	10	12	14	16	18	20	8	10	12	14	16	18	20	22
	Capacity (Nominal)	Cooling	kW	22.4	28.0	33.6	40.0	45.0	50.4	56.0	22.4	28.0	33.6	40.0	45.0	50.4	56.0	61.6
			Btu/h	76,400	95,500	114,600	136,500	153,500	172,000	191,100	76,400	95,500	114,600	136,500	153,500	172,000	191,100	210,200
		Heating	kW	25.2	31.5	37.8	45.0	50.4	56.7	63.0	25.2	31.5	37.8	45.0	50.4	56.7	63.0	69.3
			Btu/h	86,000	107,500	129,000	153,500	172,000	193,500	215,000	86,000	107,500	129,000	153,500	172,000	193,500	215,000	236,500
Power	Power Input	Cooling 1)	kW	4.35	5.50	7.22	8.47	10.64	10.66	11.45	4.35	5.50	7.22	8.47	10.64	10.66	11.45	15.35
		Heating 2)		4.44	5.33	7.40	9.18	10.30	10.40	12.70	4.44	5.33	7.40	9.18	10.30	10.40	12.70	15.80
	Current Input	Cooling 1)	A	12.70	16.00	21.10	24.70	31.00	31.10	33.40	6.10	7.70	10.10	11.80	14.80	14.90	16.00	21.40
		Heating 2)		12.90	15.50	21.60	26.80	30.00	30.30	37.00	6.20	7.40	10.30	12.80	14.40	14.50	17.70	22.00
		Max. current		28.0	34.0	35.0	50.0	56.1	66.5	73.0	17.4	18.9	20.6	25.0	28.1	33.8	41.8	46.0
	MCA		A	35	43	44	55	62	73	80	22	24	26	31	35	42	52	58
	MFA (MOP)		A	40	50	50	75	75	75	90	30	30	30	40	40	50	75	75
COP	Nominal Cooling		W/W	5.15	5.09	4.65	4.72	4.23	4.73	4.89	5.15	5.09	4.65	4.72	4.23	4.73	4.89	4.01
	Nominal Heating		W/W	5.68	5.91	5.11	4.90	4.89	5.45	4.96	5.68	5.91	5.11	4.90	4.89	5.45	4.96	4.39
Compressor	Type		-	Scroll Inverter	Scroll Inverter	Scroll Inverter	Scroll Inverter	Scroll Inverter	Scroll Inverter	Scroll Inverter	Scroll Inverter	Scroll Inverter	Scroll Inverter	Scroll Inverter	Scroll Inverter	Scroll Inverter	Scroll Inverter	Scroll Inverter
	Output		kW × n	5.18 x 1	6.45 x 1	6.45 x 1	5.18 x 2	5.18 x 2	6.45 x 2	6.45 x 2	4.39 x 1	6.39 x 1	6.39 x 1	4.39 x 2	4.39 x 2	6.39 x 2	6.39 x 2	6.39 x 2
	Model Name		-	DS-GB052FB-VASG x 1	DS-4GJ5066EVASG x 1	DS-4GJ5066EVASG x 1	DS-GB052FB-VASG x 2	DS-GB052FB-VASG x 2	DS-4GJ5066EVASG x 2	DS-4GJ5066EVASG x 2	DS-GA046FA-VASG x 1	DS-GB066FAVB-SG x 1	DS-GB066FAVB-SG x 1	DS-GA046FA-VASG x 2	DS-GA046FA-VASG x 2	DS-GB066FAVB-SG x 2	DS-GB066FAVB-SG x 2	DS-GB066FAVB-SG x 2
	Oil	Type	-	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE
Refrigerant	Type		-	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	5.5	5.5	6.5	7.7	7.7	8.4	8.4	5.5	5.5	6.5	7.7	7.7	8.4	8.4	8.4
Fan	Type		-	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller
	Output x n		W	830 x 1	830 x 1	830 x 1	620 x 2	620 x 2	620 x 2	620 x 2	830 x 1	830 x 1	830 x 1	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2
	Air Flow Rate		CMM	170	170	220	255	255	260	265	170	170	220	255	255	260	265	290
	External Static Pressure	Max.	mmAq	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Piping Connections	Liquid Pipe		Φ, mm	9.52	9.52	12.7	12.7	12.7	15.88	15.88	9.52	9.52	12.7	12.7	12.7	15.88	15.88	15.88
			Φ, inch	3/8"	3/8"	1/2"	1/2"	1/2"	5/8"	5/8"	3/8"	3/8"	1/2"	1/2"	1/2"	5/8"	5/8"	5/8"
	Gas Pipe		Φ, mm	19.05	22.22	28.58	28.58	28.58	28.58	28.58	19.05	22.22	28.58	28.58	28.58	28.58	28.58	28.58
			Φ, inch	3/4"	7/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"	3/4"	7/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"
	Installation Limitation	Max. Length	m	220	220	220	220	220	220	220	220	220	220	220	220	220	220	220
		Max. Height	m	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40
Field Wiring	Power Source Wire		mm2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Transmission Cable		mm2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sound	Sound Pressure		dB(A)	57	61	61	61	63	64	65	57	58	62	61	63	64	65	65
	Sound Power			77	81	81	81	83	86	87	77	79	81	81	83	86	87	87
External Dimension	Net Weight		kg	190	193	204	292	292	300	300	188	195	206	283	283	305	305	305
	Shipping Weight		kg	206	209	220	311	311	319	319	204	211	222	302	302	324	324	324
	Net Dimensions (WxHxD)		mm	880x1695x765	880x1695x765	880x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	880x1695x765	880x1695x765	880x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765
	Shipping Dimensions (WxHxD)		mm	948x1887x832	948x1887x832	948x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	948x1887x832	948x1887x832	948x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	1363x1887x832
Operating Temp. Range	Cooling		℃	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48
	Heating		℃	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27˚C DB/19˚C WB, outdoor 35˚C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20˚C DB, outdoor 7˚C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7˚C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Product Specifications

Outdoor Unit (cont.)

TYPE				New Model			New Model				
											
Model				AM080JXVANH	AM100JXVANH	AM120JXVANH	AM140JXVANH	AM160JXVANH	AM180JXVANH	AM200JXVANH	AM220JXVANH
Mode				HP	HP	HP	HP	HP	HP	HP	HP
Power			Φ, V, Hz	3/AC380~415/50~60	3/AC380~415/50~60	3/AC380~415/50~60	3/AC380~415/50~60	3/AC380~415/50~60	3/AC380~415/50~60	3/AC380~415/50~60	3/AC380~415/50~60
Capacity	Horse Power		HP	8	10	12	14	16	18	20	22
	Cooling		kW	22.4	28.0	33.6	40.0	45.0	50.4	56.0	61.6
	Heating		kW	25.2	31.5	37.8	45.0	50.4	56.7	63.0	69.3
Power	Power input (Nominal)	Cooling 1)	kW	5.00	6.85	8.77	10.93	11.98	12.45	14.59	17.35
		Heating 2)		5.10	6.65	9.3	10.15	11.60	11.90	13.90	16.70
	Current Input (Nominal)	Cooling 1)	A	8.00	11.00	14.1	17.50	19.20	20.00	13.90	27.80
		Heating 2)		8.20	10.70	14.9	16.30	18.60	19.10	23.40	26.80
	Running Current"	Cooling	A	8.00	11.00	14.1	17.50	19.20	20.00	13.90	27.80
		Heating	A	8.20	10.70	14.9	16.30	18.60	19.10	23.40	26.80
		Max	A	18.0	21.1	25	25.0	32.0	39.1	22.30	44.5
	Power Consump-tion	Cooling	kW	5.00	6.85	8.77	10.93	11.98	12.45	14.59	17.35
		Heating	kW	5.10	6.65	9.3	10.15	11.60	11.90	13.90	16.70
	MCA/MFA		A	22.5/30	29.9/40	31.3/40	31.3/40	40.0/40	48.9/50	52.5/75	55.6/75
COP	Nominal Cooling		-	4.480	4.090	3.83	3.660	3.760	4.050	3.840	3.550
	Nominal Heating		-	4.940	4.740	4.06	4.430	4.340	4.760	4.530	4.150
	ESEER (HP)		-	-	-	-	-	-	-	-	-
Compressor	Model		-	DS-GA046FA*	DS-GB066FA*	DS-GB066FA*	DS-GB066FA*	DS-GA046FA*	DS-GB066FA*	DS-GB066FA*	DS-GB066FA*
	Type			INV x 1EA	INV x 1EA	INV x 1EA	INV x 1EA	INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA
	Output		kW	-	-	-	-	-	-	-	-
	Lubricant	Type	-	FVC68D	FVC68D	FVC68D	FVC68D	FVC68D	FVC68D	FVC68D	FVC68D
		Charging	cc	3700	3900	3900	3900	5800	6200	6200	6200
Refrigerant	Type		-	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	5.5	5.5	5.5	7.7	7.7	8.4	8.4	8.4
Fan	Type		-	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC
	Motor Output		W	830	830	830	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2
	Airflow rate		m³ / min	170	170	220	255	255	290	290	290
Piping Connections	Liquid pipe		Φ, mm	9.52	9.52	12.7	12.7	12.7	15.88	15.88	15.88
			Φ, inch	3/8"	3/8"	1/2"	1/2"	1/2"	5/8"	5/8"	5/8"
	Gas pipe		Φ, mm	19.05	22.22	28.58	28.58	28.58	28.58	28.58	28.58
			Φ, inch	3/4"	7/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"
	High pressure gas pipe		Φ, mm	-	-	-	-	-	-	-	-
			Φ, inch	-	-	-	-	-	-	-	-
	Installation Limitation	Max. Length	m	220	220	220	220	220	220	220	220
		Max. Height	m	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40
Cable	Main Power(Below 20m)		mm2	-	-	-	-	-	-	-	-
	Communication		mm2	-	-	-	-	-	-	-	-
Set Dimension	Net weight		kg	186	197	210	239	269	307	307	307
	Gross weight		kg	193	204	217	249	279	317	317	317
	Net dimension (WxHxD)		mm	880x1695x765	880x1695x765	880x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765
	Gross dimension (WxHxD)		mm	948x1887x832	948x1887x832	948x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	1363x1887x832
Operating Temp. Range	Cooling		℃	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48
	Heating		℃	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27˚C DB/19˚C WB, outdoor 35˚C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20˚C DB, outdoor 7˚C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7˚C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Product Specifications

Outdoor Unit (cont.)

TYPE				New Model					New Model			
												
Model				AM140KXVGGH/EU	AM160KXVGGH/EU	AM180KXVGGH/EU	AM200KXVGGH/EU	AM220KXVGGH/EU	AM240KXVGGH/EU	AM260KXVGGH/EU	AM280KXVGGH/EU	AM080KXVSGH/EU
Mode				HP	HP	HP	HP	HP	HP	HP	HP	HP
Power			Φ, V, Hz	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50
Capacity	Horse Power		HP	14	16	18	20	22	24	26	28	8
	Cooling		kW	40.0	45.0	50.4	56.0	61.6	67.2	72.8	78.6	22.4
	Heating		kW	45.0	50.4	56.7	63.0	69.3	75.6	81.9	88.2	25.2
Power	Power input (Nominal)	Cooling 1)	kW	8.89	10.92	10.68	12.50	15.75	16.00	17.33	19.65	4.26
		Heating 2)		9.62	10.75	10.52	12.75	15.86	15.43	17.06	18.77	4.38
	Current Input (Nominal)	Cooling 1)	A	14.30	17.50	17.10	20.00	25.30	25.70	27.80	31.50	6.83
		Heating 2)		15.40	17.20	16.90	20.50	25.40	24.70	27.40	30.10	7.02
	Running Current	Cooling	A	14.30	17.50	17.10	20.00	25.30	25.70	27.80	31.50	6.83
		Heating	A	15.40	17.20	16.90	20.50	25.40	24.70	27.40	30.10	7.02
		Max	A	25.0	32.0	39.2	42.0	44.6	55.0	60.0	67.0	29.0
	Power Consumption	Cooling	kW	8.89	10.92	10.68	12.50	15.75	16.00	17.33	19.65	4.26
		Heating	kW	9.62	10.75	10.52	12.75	15.86	15.43	17.06	18.77	4.38
	MCA/MFA		A	25.0 / 40	32.0 / 40	39.2 / 50	42.0 / 75	44.6 / 75	55.0 / 75	60.0 / 75	67.0 / 75	29.0 / 40
COP	Nominal Cooling		-	4.500	4.120	4.720	4.480	3.910	4.200	4.200	4.000	5.260
	Nominal Heating		-	4.680	4.690	5.390	4.940	4.370	4.900	4.800	4.700	5.750
	ESEER (HP)		-	-	-	-	-	-	-	-	-	-
Compressor	Model		-	DS-GB066FA*	DS4G*5080F*	DS-GB066FA*	DS-GB066FA*	DS-GB066FA*	DS-GB070FA*	DS4G*5080F*	DS4G*5080F*	DS4G*5080F*
	Type			INV x 1EA	INV x 1EA	INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA
	Output		kW	6.39 x 1	7.81 x 1	6.39 x 2	6.39 x 2	6.39 x 2	6.76 x 2	7.81 x 2	7.81 x 2	7.81 x 2
	Lubricant	Type	-	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE
		Charging	cc	1100	1400	1100 x 2	1100 x 2	1100 x 2	1100 x 2	1400 x 2	1400 x 2	1400 x 2
Refrigerant	Type		-	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	9.4	8.4	8.4	8.4	8.4	14.0	14.0	14.0	14.0
Fan	Type		-	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC
	Motor Output		W	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2
	Airflow rate		m^3 / min	255	255	290	290	290	340	340	340	340
Piping Connections	Liquid pipe		Φ, mm	12.7	12.7	15.88	15.88	15.88	15.88	19.05	19.05	19.05
			Φ, inch	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	3/4"	3/4"	3/4"
	Gas pipe		Φ, mm	28.58	28.58	28.58	28.58	28.58	34.92	34.92	34.92	34.92
			Φ, inch	1+1/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"	1+3/8"	1+3/8"	1+3/8"	1+3/8"
	High pressure gas pipe		Φ, mm	-	-	-	-	-	-	-	-	-
			Φ, inch	-	-	-	-	-	-	-	-	-
	Installation Limitation	Max. Length	m	220	220	220	220	220	220	220	220	220
		Max. Height	m	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40
Cable	Main Power(Below 20m)		mm2	-	-	-	-	-	-	-	-	-
	Communication		mm2	-	-	-	-	-	-	-	-	-
Set Dimension	Net weight		kg	241	255	285	285	285	342	350	350	350
	Gross weight		kg	261	275	305	305	305	364	372	372	372
	Net dimension (WxHxD)		mm	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1795x765	1295x1795x765	1295x1795x765	1295x1795x765
	Gross dimension (WxHxD)		mm	1363x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	1363x1987x832	1363x1987x832	1363x1987x832	1363x1987x832
Operating Temp. Range	Cooling		℃	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48
	Heating		℃	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27°C DB/19°C WB, outdoor 35°C DB, length 7.5m of piping, fall 0m standard.
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Product Specifications

Outdoor Unit (cont.)

TYPE				New Model					New Model			
												
Model				AM140KXVAGH/EU	AM160KXVAGH/EU	AM180KXVAGH/EU	AM200KXVAGH/EU	AM220KXVAGH/EU	AM240KXVAGH/EU	AM260KXVAGH/EU	AM280KXVAGH/EU	AM300KXVAGH/EU
Mode				HP	HP	HP	HP	HP	HP	HP	HP	HP
Power			Φ, V, Hz	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50
Capacity	Horse Power		HP	14	16	18	20	22	24	26	28	30
	Cooling		kW	40.0	45.0	50.4	56.0	61.6	67.2	72.8	78.6	84.0
	Heating		kW	45.0	50.4	56.7	63.0	69.3	75.6	81.9	88.2	94.5
Power	Power input (Nominal)	Cooling 1)	kW	10.93	12.10	12.60	14.18	17.35	17.10	18.91	20.68	22.70
		Heating 2)		10.16	11.61	11.91	13.91	16.70	17.42	18.00	20.18	20.59
	Current Input (Nominal)	Cooling 1)	A	17.50	19.40	20.20	22.70	27.80	27.40	30.30	33.20	36.40
		Heating 2)		16.30	18.60	19.10	22.30	26.80	27.90	28.90	32.40	33.00
	Running Current	Cooling	A	17.50	19.40	20.20	22.70	27.80	27.40	30.30	33.20	36.40
		Heating	A	16.30	18.60	19.10	22.30	26.80	27.90	28.90	32.40	33.00
		Max	A	25.0	32.0	39.2	42.0	44.6	55.0	60.0	67.0	73.0
	Power Consump-tion	Cooling	kW	10.93	12.10	12.60	14.18	17.35	17.10	18.91	20.68	22.70
		Heating	kW	10.16	11.61	11.91	13.91	16.70	17.42	18.00	20.18	20.59
	MCA/MFA		A	25.0 / 40	32.0 / 40	39.2 / 50	42.0 / 75	44.6 / 75	55.0 / 75	60.0 / 75	67.0 / 75	73.0 / 90
COP	Nominal Cooling		-	3.660	3.720	4.000	3.950	3.550	3.930	3.850	3.800	3.700
	Nominal Heating		-	4.430	4.340	4.760	4.530	4.150	4.340	4.550	4.370	4.590
	ESEER (HP)		-	-	-	-	-	-	-	-	-	-
Compressor	Model		-	DS-GB066FA*	DS4G*5080F*	DS4G*5080F*	DS-GB052FA*	DS-GB066FA*	DS-GB066FA*	DS-GB066FA*	DS-GB070FA*	DS4G*5080F*
	Type			INV x 1EA	INV x 1EA	INV x 1EA	INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA
	Output		kW	6.39 x 1	7.81 x 1	7.81 x 1	5.18 x 2	6.39 x 2	6.39 x 2	6.39 x 2	6.76 x 2	7.81 x 2
	Lubricant	Type	-	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE
		Charging	cc	1100	1400	1400	1100 x 2	1100 x 2	1100 x 2	1100 x 2	1100 x 2	1400 x 2
Refrigerant	Type		-	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	7.7	8.4	8.4	8.4	8.4	12.5	12.5	14.0	14.0
Fan	Type		-	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC
	Motor Output		W	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2
	Airflow rate		m^3 / min	255	255	290	290	290	340	340	340	340
Piping Connections	Liquid pipe		Φ, mm	12.7	12.7	15.88	15.88	15.88	15.88	19.05	19.05	19.05
			Φ, inch	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	3/4"	3/4"	3/4"
	Gas pipe		Φ, mm	28.58	28.58	28.58	28.58	28.58	34.92	34.92	34.92	34.92
			Φ, inch	1+1/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"	1+3/8"	1+3/8"	1+3/8"	1+3/8"
	High pressure gas pipe		Φ, mm	-	-	-	-	-	-	-	-	-
			Φ, inch	-	-	-	-	-	-	-	-	-
	Installation Limitation	Max. Length	m	220	220	220	220	220	220	220	220	220
		Max. Height	m	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40
Cable	Main Power(Below 20m)		mm2	-	-	-	-	-	-	-	-	-
	Communication		mm2	-	-	-	-	-	-	-	-	-
Set Dimension	Net weight		kg	226	253	255	277	285	333	333	342	350
	Gross weight		kg	246	273	275	297	305	355	355	364	372
	Net dimension (WxHxD)		mm	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1795x765	1295x1795x765	1295x1795x765	1295x1795x765
	Gross dimension (WxHxD)		mm	1363x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	1363x1987x832	1363x1987x832	1363x1987x832	1363x1987x832
Operating Temp. Range	Cooling		℃	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48
	Heating		℃	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27°C DB/19°C WB, outdoor 35°C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20°C DB, outdoor 7°C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7°C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Product Specifications

Outdoor Unit (cont.)

TYPE				New Model					New Model		
											
Model				AM140KXVGGH/TK	AM160KXVGGH/TK	AM180KXVGGH/TK	AM200KXVGGH/TK	AM220KXVGGH/TK	AM240KXVGGH/TK	AM260KXVGGH/TK	AM280KXVGGH/TK
Mode				HP	HP	HP	HP	HP	HP	HP	HP
Power			Φ, V, Hz	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50
Capacity	Horse Power		HP	14	16	18	20	22	24	26	28
	Cooling		kW	40.0	45.0	50.4	56.0	61.6	67.2	72.8	78.6
	Heating		kW	45.0	50.4	56.7	63.0	69.3	75.6	81.9	88.2
Power	Power input (Nominal)	Cooling 1)	kW	8.89	10.92	10.68	12.50	15.75	16.00	17.33	19.65
		Heating 2)		9.62	10.75	10.52	12.75	15.86	15.43	17.06	18.77
	Current Input (Nominal)	Cooling 1)	A	14.30	17.50	17.10	20.00	25.30	25.70	27.80	31.50
		Heating 2)		15.40	17.20	16.90	20.50	25.40	24.70	27.40	30.10
	Running Current	Cooling	A	14.30	17.50	17.10	20.00	25.30	25.70	27.80	31.50
		Heating	A	15.40	17.20	16.90	20.50	25.40	24.70	27.40	30.10
		Max	A	25.0	32.0	39.2	42.0	44.6	55.0	60.0	67.0
	Power Consumption	Cooling	kW	8.89	10.92	10.68	12.50	15.75	16.00	17.33	19.65
		Heating	kW	9.62	10.75	10.52	12.75	15.86	15.43	17.06	18.77
	MCA/MFA		A	25.0 / 40	32.0 / 40	39.2 / 50	42.0 / 60	44.6 / 60	55.0 / 75	60.0 / 75	67.0 / 75
COP	Nominal Cooling		-	4.500	4.120	4.720	4.480	3.910	4.200	4.200	4.000
	Nominal Heating		-	4.680	4.690	5.390	4.940	4.370	4.900	4.800	4.700
	ESEER (HP)		-	-	-	-	-	-	-	-	-
Compressor	Model		-	DS-GB066FA*	DS4G*5080F*	DS-GB066FA*	DS-GB066FA*	DS-GB066FA*	DS-GB070FA*	DS4G*5080F*	DS4G*5080F*
	Type			INV x 1EA	INV x 1EA	INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA
	Output		kW	6.39 x 1	7.81 x 1	6.39 x 2	6.39 x 2	6.39 x 2	6.76 x 2	7.81 x 2	7.81 x 2
	Lubricant	Type	-	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE
		Charging	cc	1100	1400	1100 x 2	1100 x 2	1100 x 2	1100 x 2	1400 x 2	1400 x 2
Refrigerant	Type		-	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	9.4	8.4	8.4	8.4	8.4	14.0	14.0	14.0
Fan	Type		-	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC
	Motor Output		W	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2
	Airflow rate		m^3 / min	255	255	290	290	290	340	340	340
Piping Connections	Liquid pipe		Φ, mm	12.7	12.7	15.88	15.88	15.88	15.88	19.05	19.05
			Φ, inch	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	3/4"	3/4"
	Gas pipe		Φ, mm	28.58	28.58	28.58	28.58	28.58	34.92	34.92	34.92
			Φ, inch	1+1/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"	1+3/8"	1+3/8"	1+3/8"
	High pressure gas pipe		Φ, mm	-	-	-	-	-	-	-	-
			Φ, inch	-	-	-	-	-	-	-	-
	Installation Limitation	Max. Length	m	220	220	220	220	220	220	220	220
		Max. Height	m	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40
Cable	Main Power(Below 20m)		mm2	-	-	-	-	-	-	-	-
	Communication		mm2	-	-	-	-	-	-	-	-
Set Dimension	Net weight		kg	241	255	285	285	285	342	350	350
	Gross weight		kg	261	275	305	305	305	364	372	372
	Net dimension (WxHxD)		mm	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1795x765	1295x1795x765	1295x1795x765
	Gross dimension (WxHxD)		mm	1363x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	1363x1987x832	1363x1987x832	1363x1987x832
Operating Temp. Range	Cooling		℃	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48
	Heating		℃	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27°C DB/19°C WB, outdoor 35°C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20°C DB, outdoor 7°C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7°C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m .If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Product Specifications

Outdoor Unit (cont.)

TYPE				New Model					New Model			
												
Model				AM140KXVAGH/TK	AM160KXVAGH/TK	AM180KXVAGH/TK	AM200KXVAGH/TK	AM220KXVAGH/TK	AM240KXVAGH/TK	AM260KXVAGH/TK	AM280KXVAGH/TK	AM300KXVAGH/TK
Mode				HP	HP	HP	HP	HP	HP	HP	HP	HP
Power			Φ, V, Hz	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50	3/AC380-415/50
Capacity	Horse Power		HP	14	16	18	20	22	24	26	28	30
	Cooling		kW	40.0	45.0	50.4	56.0	61.6	67.2	72.8	78.6	84.0
	Heating		kW	45.0	50.4	56.7	63.0	69.3	75.6	81.9	88.2	94.5
Power	Power input (Nominal)	Cooling 1)	kW	10.93	12.10	12.60	14.18	17.35	17.10	18.91	20.68	22.70
		Heating 2)		10.16	11.61	11.91	13.91	16.70	17.42	18.00	20.18	20.59
	Current Input (Nominal)	Cooling 1)	A	17.50	19.40	20.20	22.70	27.80	27.40	30.30	33.20	36.40
		Heating 2)		16.30	18.60	19.10	22.30	26.80	27.90	28.90	32.40	33.00
	Running Current	Cooling	A	17.50	19.40	20.20	22.70	27.80	27.40	30.30	33.20	36.40
		Heating	A	16.30	18.60	19.10	22.30	26.80	27.90	28.90	32.40	33.00
		Max	A	25.0	32.0	39.2	42.0	44.6	55.0	60.0	67.0	73.0
	Power Consumption	Cooling	kW	10.93	12.10	12.60	14.18	17.35	17.10	18.91	20.68	22.70
		Heating	kW	10.16	11.61	11.91	13.91	16.70	17.42	18.00	20.18	20.59
	MCA/MFA		A	25.0 / 40	32.0 / 40	39.2 / 50	42.0 / 60	44.6 / 60	55.0 / 60	60.0 / 75	67.0 / 75	73.0 / 90
COP	Nominal Cooling		-	3.660	3.720	4.000	3.950	3.550	3.930	3.850	3.800	3.700
	Nominal Heating		-	4.430	4.340	4.760	4.530	4.150	4.340	4.550	4.370	4.590
	ESEER (HP)		-	-	-	-	-	-	-	-	-	-
Compressor	Model		-	DS-GB066FA*	DS4G*5080F*	DS4G*5080F*	DS-GB052FA*	DS-GB066FA*	DS-GB066FA*	DS-GB066FA*	DS-GB070FA*	DS4G*5080F*
	Type			INV x 1EA	INV x 1EA	INV x 1EA	INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA
	Output		kW	6.39 x 1	7.81 x 1	7.81 x 1	5.18 x 2	6.39 x 2	6.39 x 2	6.39 x 2	6.76 x 2	7.81 x 2
	Lubricant	Type	-	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE
		Charging	cc	1100	1400	1400	1100 x 2	1100 x 2	1100 x 2	1100 x 2	1100 x 2	1400 x 2
Refrigerant	Type		-	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	7.7	8.4	8.4	8.4	8.4	12.5	12.5	14.0	14.0
Fan	Type		-	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC
	Motor Output		W	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2
	Airflow rate		m^3 / min	255	255	290	290	290	340	340	340	340
Piping Connections	Liquid pipe		Φ, mm	12.7	12.7	15.88	15.88	15.88	15.88	19.05	19.05	19.05
			Φ, inch	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	3/4"	3/4"	3/4"
	Gas pipe		Φ, mm	28.58	28.58	28.58	28.58	28.58	34.92	34.92	34.92	34.92
			Φ, inch	1+1/8"	1+1/8"	1+1/8"	1+1/8"	1+1/8"	1+3/8"	1+3/8"	1+3/8"	1+3/8"
	High pressure gas pipe		Φ, mm	-	-	-	-	-	-	-	-	-
			Φ, inch	-	-	-	-	-	-	-	-	-
	Installation Limitation	Max. Length	m	220	220	220	220	220	220	220	220	220
		Max. Height	m	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40
Cable	Main Power(Below 20m)		mm2	-	-	-	-	-	-	-	-	-
	Communication		mm2	-	-	-	-	-	-	-	-	-
Set Dimension	Net weight		kg	226	253	255	277	285	333	333	342	350
	Gross weight		kg	246	273	275	297	305	355	355	364	372
	Net dimension (WxHxD)		mm	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1695x765	1295x1795x765	1295x1795x765	1295x1795x765	1295x1795x765
	Gross dimension (WxHxD)		mm	1363x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	1363x1887x832	1363x1987x832	1363x1987x832	1363x1987x832	1363x1987x832
Operating Temp. Range	Cooling		℃	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48
	Heating		℃	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27°C DB/19°C WB, outdoor 35°C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20°C DB, outdoor 7°C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7°C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m .If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Outdoor Unit (cont.)

TYPE				New Model					
									
Model				AM240KXVANH/TL	AM260KXVANH/TL	AM280KXVANH/TL	AM300KXVANH/TL	AM220KXVJNH/ID	AM240KXVJNH/ID
Mode				HP	HP	HP	HP	HP	HP
Power			Φ, V, Hz	3/AC380-415/50-60	3/AC380-415/50-60	3/AC380-415/50-60	3/AC380-415/50-60	3/AC380-415/50-60	3/AC380-415/50-60
Capacity	Horse Power		HP	24	26	28	30	22	24
	Cooling		kW	67.2	72.8	78.6	84.0	61.6	67.2
	Heating		kW	75.6	81.9	88.2	94.5	69.3	75.6
Power	Power input (Nominal)	Cooling 1)	kW	17.10	18.91	20.68	22.70	15.50	17.10
		Heating 2)		17.42	18.00	20.18	20.59	15.80	17.42
	Current Input (Nominal)	Cooling 1)	A	27.40	30.30	33.20	36.40	24.80	27.40
		Heating 2)		27.90	28.90	32.40	33.00	25.30	27.90
	Running Current	Cooling	A	27.40	30.30	33.20	36.40	24.80	27.40
		Heating	A	27.90	28.90	32.40	33.00	25.30	27.90
		Max	A	55.0	60.0	67.0	73.0	57.1	63.3
	Power Consump-tion	Cooling	kW	17.10	18.91	20.68	22.70	15.50	17.10
		Heating	kW	17.42	18.00	20.18	20.59	15.80	17.42
	MCA/MFA		A	55.0 / 75	60.0 / 75	67.0 / 75	73.0 / 90	57.1 / 75	63.3 / 75
COP	Nominal Cooling		-	3.930	3.850	3.800	3.700	3.970	3.930
	Nominal Heating		-	4.340	4.550	4.370	4.590	4.390	4.340
	ESEER (HP)		-	-	-	-	-	-	-
Compressor	Model		-	DS-GB066FA*	DS-GB066FA*	DS-GB070FA*	DS4G*5080F*	DS-GB066FA*	DS-GB066FA*
	Type			INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA	INV x 2EA
	Output		kW	6.39 x 2	6.39 x 2	6.76 x 2	7.81 x 2	6.39 x 2	6.39 x 2
	Lubricant	Type	-	PVE	PVE	PVE	PVE	PVE	PVE
		Charging	cc	1100 x 2	1100 x 2	1100 x 2	1400 x 2	1100 x 2	1100 x 2
Refrigerant	Type		-	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	12.5	12.5	14.0	14.0	10.0	10.0
Fan	Type		-	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC	Propeller + BLDC
	Motor Output		W	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2
	Airflow rate		m^3 / min	340	340	340	340	340	340
Piping Connections	Liquid pipe		Φ, mm	15.88	19.05	19.05	19.05	15.88	15.88
			Φ, inch	5/8"	3/4"	3/4"	3/4"	5/8"	5/8"
	Gas pipe		Φ, mm	34.92	34.92	34.92	34.92	28.58	34.92
			Φ, inch	1+3/8"	1+3/8"	1+3/8"	1+3/8"	1+1/8"	1+3/8"
	High pressure gas pipe		Φ, mm	-	-	-	-	-	-
			Φ, inch	-	-	-	-	-	-
	Installation Limitation	Max. Length	m	220	220	220	220	220	220
		Max. Height	m	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40	50(110)/40
Cable	Main Power(Below 20m)		mm2	-	-	-	-	-	-
	Communication		mm2	-	-	-	-	-	-
Set Dimension	Net weight		kg	333	333	342	350	330.5	330.5
	Gross weight		kg	355	355	364	372	352.5	352.5
	Net dimension (WxHxD)		mm	1295x1795x765	1295x1795x765	1295x1795x765	1295x1795x765	1295x1795x765	1295x1795x765
	Gross dimension (WxHxD)		mm	1363x1987x832	1363x1987x832	1363x1987x832	1363x1987x832	1363x1987x832	1363x1987x832
Operating Temp. Range	Cooling		℃	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 54	-5 ~ 54
	Heating		℃	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27°C DB/19°C WB, outdoor 35°C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20°C DB, outdoor 7°C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7°C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Product Specifications

Outdoor Unit (cont.)

TYPE				New Model					New Model			
												
Model				AM140JXVHGR/ET	AM160JXVHGR/ET	AM180JXVHGR/ET	AM200JXVHGR/ET	AM220JXVHGR/ET	AM240MXVGNR/ET	AM260MXVGNR/ET	AM280MXVGNR/ET	AM300MXVANR/ET
Power			Ø, #, V, Hz	3, 4, 380-415, 50	3, 4, 380-415, 50	3, 4, 380-415, 50	3, 4, 380-415, 50	3, 4, 380-415, 50	3, 4, 380-415, 50/60	3, 4, 380-415, 50/60	3, 4, 380-415, 50/60	3, 4, 380-415, 50/60
Mode			-	HEAT RECOVERY	HEAT RECOVERY	HEAT RECOVERY	HEAT RECOVERY	HEAT RECOVERY	HEAT RECOVERY	HEAT RECOVERY	HEAT RECOVERY	HEAT RECOVERY
Capacity	HP		HP	14	16	18	20	22	24	26	28	30
	Cooling		kW	40.0 / 40.0*	45.0 / 45.0*	50.4 / 50.4*	56.0 / 56.0*	61.6 / 61.6*	67.2 / 67.2*	72.8 / 72.8*	78.6 / 78.6*	84.0 / 84.0*
	Heating		kW	45.0 / 40.0*	50.4 / 45.0*	56.7 / 50.4*	63.0 / 56.0*	69.3 / 61.6*	75.6 / 67.2*	81.9 / 72.8*	88.2 / 73.0*	94.5 / 73.0*
Power	Power Input (Nominal)	Cooling	kW	8.89 / 8.89*	10.92 / 10.92*	10.68 / 12.32*	12.50 / 13.83*	15.75 / 15.88*	16.00 / 18.61*	17.33 / 20.92*	19.65 / 24.49*	22.70 / 28.00*
		Heating	kW	9.62 / 8.55*	10.75 / 8.95*	10.52 / 10.02*	12.75 / 11.22*	15.86 / 12.91*	15.43 / 13.20*	17.06 / 15.17*	18.77 / 15.53*	20.59 / 15.53*
	Current Input (Nominal)	Cooling	A	14.30	17.50	17.10	20.00	25.30	25.70	27.80	31.50	36.40
		Heating	A	15.40	17.20	16.90	20.50	25.40	24.70	27.40	30.10	33.00
		Minimum Ssc	MVA	5.3	6.6	7.6	8.0	8.6	12.5	12.2	13.6	14.8
		MCA	A	25.0	32.0	39.2	42.0	44.6	55.0	60.0	67.0	73.0
		MFA	A	32	40	50	63	63	63	75	75	80
Efficiency	EER	Cooling	W/W	4.50 / 4.50*	4.12 / 4.12*	4.72 / 4.09*	4.48 / 4.05*	3.91 / 3.88*	4.20 / 3.61*	4.20 / 3.48*	4.00 / 3.21*	3.70 / 3.00*
	COP	Heating	W/W	4.68 / 4.68*	4.69 / 5.03*	5.39 / 5.03*	4.94 / 4.99*	4.37 / 4.77*	4.90 / 5.09*	4.80 / 4.80*	4.70 / 4.70*	4.59 / 4.70*
	ESEER		W/W	7.78	7.38	7.25	6.82	6.43	7.18	7.17	6.86	6.65
Compressor	Output		kW x n	6.39 x 1	4.39 x 2	6.39 x 2	6.39 x 2	6.39 x 2	6.76 x 2	7.81 x 2	7.81 x 2	7.81 x 2
	Model Name		-	DS-GB066FAV* x 1	DS-GA046FAV* x 2	DS-GB066FAV* x 2	DS-GB066FAV* x 2	DS-GB066FAV* x 2	DS-GB070FAV* x 2	DS4GJ5080FV* x 2	DS4GJ5080FV* x 2	DS4GJ5080FV* x 2
	Oil	Type	-	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE
		Initial charge	cc x n	1,100 x 1	900 x 2	1,100 x 2	1,100 x 2	1,100 x 2	1,100 x 2	1,400 x 2	1,400 x 2	1,400 x 2
Fan	Type		-	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller
	Discharge direction		-	Top	Top	Top	Top	Top	Top	Top	Top	Top
	Quantity		EA	2	2	2	2	2	2	2	2	2
	Air Flow Rate		㎥ /min	255	255	290	290	290	340	340	340	340
			l/s	4,250	4,250	4,833	4,833	4,833	5,667	5,667	5,667	5,667
	External Static Pressure	Max.	㎜ Aq	8	8	8	8	8	8	8	8	8
		Max.	Pa	78.45	78.45	78.45	78.45	78.45	78.45	78.45	78.45	78.45
Fan Motor	Type		-	BLDC Motor	BLDC Motor	BLDC Motor	BLDC Motor	BLDC Motor	BLDC Motor	BLDC Motor	BLDC Motor	BLDC Motor
	Output		W x n	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2
Piping Connections	Liquid Pipe		Type	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection
			Φ, ㎜ (inch)	12.70 (1/2)	12.70 (1/2)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	19.05 (3/4)	19.05 (3/4)	19.05 (3/4)
	Gas Pipe		Type	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection
			Φ, ㎜ (inch)	28.58 (1-1/8)	28.58 (1-1/8)	28.58 (1-1/8)	28.58 (1-1/8)	28.58 (1-1/8)	34.92 (1-3/8)	34.92 (1-3/8)	34.92 (1-3/8)	34.92 (1-3/8)
	High pressure Gas Pipe(HR Only)		Type	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection
			Φ, ㎜ (inch)	19.05 (3/4)	22.22 (7/8)	22.22 (7/8)	28.58 (1-1/8)	28.58 (1-1/8)	28.58 (1-1/8)	28.58 (1-1/8)	28.58 (1-1/8)	28.58 (1-1/8)
	Heat Insulation		-	All liquid and gas pipes	All liquid and gas pipes	All liquid and gas pipes	All liquid and gas pipes	All liquid and gas pipes	All liquid and gas pipes	All liquid and gas pipes	All liquid and gas pipes	All liquid and gas pipes
	Piping length (ODU-IDU)	Max. [Equiv.]	m	200[220]	200[220]	200[220]	200[220]	200[220]	200[220]	200[220]	200[220]	200[220]
	Piping length (1st Branch-IDU)	Max.	m	90	90	90	90	90	90	90	90	90
	Total piping length (System)	Max.	m	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
	Level difference (ODU in highest position)	Max.	m	110	110	110	110	110	110	110	110	110
	Level difference (IDU in highest position)	Max.	m	110	110	110	110	110	110	110	110	110
	Level difference (IDU-IDU)	Max.	m	50	50	50	50	50	50	50	50	50
Wiring connections	Transmission Cable		㎟	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
	Remark		–	F1, F2	F1, F2	F1, F2	F1, F2	F1, F2	F1, F2	F1, F2	F1, F2	F1, F2
	Power supply intake		–	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit
Refrigerant	Type		–	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	9.4	9.4	8.4	11.0	11.0	14.0	14.0	14.0	14.0
			tCO2e	19.63	19.63	17.54	22.97	22.97	29.23	29.23	29.23	29.23
External Dimension	Net Weight		kg	254.0	285.0	302.0	314.0	314.0	350.0	358.0	358.0	358.0
	Shipping Weight		kg	273.0	304.0	321.0	333.0	333.0	372.0	380.0	380.0	380.0
	Net Dimensions (WxHxD)		㎜	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,795 x 765	1,295 x 1,795 x 765	1,295 x 1,795 x 765	1,295 x 1,795 x 765
	Shipping Dimensions (WxHxD)		㎜	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,987 x 832	1,363 x 1,987 x 832	1,363 x 1,987 x 832	1,363 x 1,987 x 832
Operating Temp. Range	Cooling		℃	-15 ~ 48	-15 ~ 48	-15 ~ 48	-15 ~ 48	-15 ~ 48	-15 ~ 48	-15 ~ 48	-15 ~ 48	-15 ~ 48
	Heating		℃	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24

Product Specifications

Outdoor Unit (cont.)

TYPE				New Model					New Model		
											
Model				AM140JXVHGH/ET	AM160JXVHGH/ET	AM180JXVHGH/ET	AM200JXVHGH/ET	AM220JXVHGH/ET	AM240KXVGGH/ET	AM260KXVGGH/ET	AM280KXVGGH/ET
Power			Ø, #, V, Hz	3, 4, 380~415, 50	3, 4, 380~415, 50	3, 4, 380~415, 50	3, 4, 380~415, 50	3, 4, 380~415, 50	3, 4, 380~415, 50	3, 4, 380~415, 50	3, 4, 380~415, 50
Mode			-	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP
Capacity	HP		HP	14	16	18	20	22	24	26	28
	Cooling		kW	40.0 / 40.0*	45.0 / 45.0*	50.4 / 50.4*	56.0 / 56.0*	61.6 / 61.6*	67.2 / 67.2*	72.8 / 72.8*	78.6 / 78.6*
	Heating		kW	45.0 / 40.0*	50.4 / 45.0*	56.7 / 50.4*	63.0 / 56.0*	69.3 / 61.6*	75.6 / 67.2*	81.9 / 72.8*	88.2 / 73.0*
Power	Power Input (Nominal)	Cooling	kW	8.89 / 8.89*	10.92 / 10.92*	10.68 / 12.32*	12.50 / 13.83*	15.75 / 15.88*	16.00 / 18.61*	17.33 / 20.92*	19.65 / 24.49*
		Heating	kW	9.62 / 8.55*	10.75 / 8.95*	10.52 / 10.02*	12.75 / 11.22*	15.86 / 12.91*	15.43 / 13.20*	17.06 / 15.17*	18.77 / 15.53*
	Current Input (Nominal)	Cooling	A	14.30	17.50	17.10	20.00	25.30	25.70	27.80	31.50
		Heating	A	15.40	17.20	16.90	20.50	25.40	24.70	27.40	30.10
		Minimum Ssc	MVA	5.3	6.6	7.6	8.0	8.6	12.5	12.2	13.6
		MCA	A	25.0	32.0	39.2	42.0	44.6	55.0	60.0	67.0
		MFA	A	32	40	50	63	63	63	75	75
Efficiency	EER	Cooling	W/W	4.50 / 4.50*	4.12 / 4.12*	4.72 / 4.09*	4.48 / 4.05*	3.91 / 3.88*	4.20 / 3.61*	4.20 / 3.48*	4.00 / 3.21*
	COP	Heating	W/W	4.68 / 4.68*	4.69 / 5.03*	5.39 / 5.03*	4.94 / 4.99*	4.37 / 4.77*	4.90 / 5.09*	4.80 / 4.80*	4.70 / 4.70*
	ESEER		W/W	7.78	7.38	7.25	6.82	6.43	7.18	7.17	6.86
Compressor	Output		kW x n	6.39 x 1	4.39 x 2	6.39 x 2	6.39 x 2	6.39 x 2	6.76 x 2	7.81 x 2	7.81 x 2
	Model Name		-	DS-GB066FAV* x 1	DS-GA046FAV* x 2	DS-GB066FAV* x 2	DS-GB066FAV* x 2	DS-GB066FAV* x 2	DS-GB070FAV* x 2	DS4GJ5080FV* x 2	DS4GJ5080FV* x 2
	Oil	Type	-	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE
		Initial charge	cc x n	1,100 x 1	900 x 2	1,100 x 2	1,100 x 2	1,100 x 2	1,100 x 2	1,400 x 2	1,400 x 2
Fan	Type		-	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller
	Discharge direction		-	Top	Top	Top	Top	Top	Top	Top	Top
	Quantity		EA	2	2	2	2	2	2	2	2
	Air Flow Rate		㎥ /min	255	255	290	290	290	340	340	340
			l/s	4,250	4,250	4,833	4,833	4,833	5,667	5,667	5,667
	External Static Pressure	Max.	㎜ Aq	8	8	8	8	8	8	8	8
		Max.	Pa	78.45	78.45	78.45	78.45	78.45	78.45	78.45	78.45
Fan Motor	Type		-	BLDC Motor	BLDC Motor	BLDC Motor	BLDC Motor	BLDC Motor	BLDC Motor	BLDC Motor	BLDC Motor
	Output		W x n	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2
Piping Connections	Liquid Pipe		Type	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection
			Φ, ㎜ (inch)	12.70 (1/2)	12.70 (1/2)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	19.05 (3/4)	19.05 (3/4)
	Gas Pipe		Type	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection
			Φ, ㎜ (inch)	28.58 (1-1/8)	28.58 (1-1/8)	28.58 (1-1/8)	28.58 (1-1/8)	28.58 (1-1/8)	34.92 (1-3/8)	34.92 (1-3/8)	34.92 (1-3/8)
	High pressure Gas Pipe(HR Only)		Type	-	-	-	-	-	-	-	-
			Φ, ㎜ (inch)	-	-	-	-	-	-	-	-
	Heat Insulation		-	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes
	Piping length (ODU-IDU)	Max. [Equiv.]	m	200[220]	200[220]	200[220]	200[220]	200[220]	200[220]	200[220]	200[220]
	Piping length (1st Branch-IDU)	Max.	m	90	90	90	90	90	90	90	90
	Total piping length (System)	Max.	m	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
	Level difference (ODU in highest position)	Max.	m	110	110	110	110	110	110	110	110
	Level difference (IDU in highest position)	Max.	m	110	110	110	110	110	110	110	110
	Level difference (IDU-IDU)	Max.	m	50	50	50	50	50	50	50	50
Wiring connections	Transmission Cable		㎟	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
	Remark		–	F1, F2	F1, F2	F1, F2	F1, F2	F1, F2	F1, F2	F1, F2	F1, F2
	Power supply intake		–	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit
Refrigerant	Type		–	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	9.4	9.4	8.4	11.0	11.0	14.0	14.0	14.0
			tCO2e	19.63	19.63	17.54	22.97	22.97	29.23	29.23	29.23
External Dimension	Net Weight		kg	248.0	279.0	296.0	308.0	308.0	342.0	350.0	350.0
	Shipping Weight		kg	267.0	298.0	315.0	327.0	327.0	364.0	372.0	372.0
	Net Dimensions (WxHxD)		㎜	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,795 x 765	1,295 x 1,795 x 765	1,295 x 1,795 x 765
	Shipping Dimensions (WxHxD)		㎜	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,987 x 832	1,363 x 1,987 x 832	1,363 x 1,987 x 832
Operating Temp. Range	Cooling		℃	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48
	Heating		℃	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27°C DB/19°C WB, outdoor 35°C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20°C DB, outdoor 7°C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7°C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Product Specifications

Outdoor Unit (cont.)

TYPE				New Model					New Model			
Model				AM140KXVAGH/ET	AM160KXVAGH/ET	AM180KXVAGH/ET	AM200KXVAGH/ET	AM220KXVAGH/ET	AM240KXVAGH/ET	AM260KXVAGH/ET	AM280KXVAGH/ET	AM300KXVAGH/ET
Power			Ø, #, V, Hz	3, 4, 380-415, 50	3, 4, 380-415, 50	3, 4, 380-415, 50	3, 4, 380-415, 50	3, 4, 380-415, 50	3, 4, 380-415, 50	3, 4, 380-415, 50	3, 4, 380-415, 50	3, 4, 380-415, 50
Mode			-	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP
Capacity	HP		HP	14	16	18	20	22	24	26	28	30
	Cooling		kW	40.0 / 40.0*	45.0 / 45.0*	50.4 / 50.4*	56.0 / 56.0*	61.6 / 61.6*	67.2 / 67.2*	72.8 / 72.8*	78.6 / 78.6*	84.0 / 84.0*
	Heating		kW	45.0 / 40.0*	50.4 / 45.0*	56.7 / 50.4*	63.0 / 56.0*	69.3 / 58.0*	75.6 / 67.2*	81.9 / 72.8*	88.2 / 73.0*	94.5 / 73.0*
Power	Power Input (Nominal)	Cooling	kW	10.93 / 10.93*	12.10 / 11.63*	12.60 / 13.64*	14.18 / 16.23*	17.35 / 18.53*	17.10 / 20.99*	18.91 / 22.47*	20.68 / 26.11*	22.70 / 28.00*
		Heating	kW	10.16 / 9.03*	11.61 / 10.08*	11.91 / 10.78*	13.91 / 12.17*	16.70 / 12.89*	17.42 / 14.91*	18.00 / 16.51*	20.18 / 16.81*	20.59 / 15.53*
	Current Input (Nominal)	Cooling	A	17.50	19.40	20.20	22.70	27.80	27.40	30.30	33.20	36.40
		Heating	A	16.30	18.60	19.10	22.30	26.80	27.90	28.90	32.40	33.00
		Minimum Ssc	MVA	5.4	7.2	8.8	8.1	8.6	12.5	12.2	13.6	14.8
		MCA	A	25.0	32.0	39.2	42.0	44.6	55.0	60.0	67.0	73.0
		MFA	A	32	40	50	63	63	63	75	75	80
Efficiency	EER	Cooling	W/W	3.66 / 3.66*	3.72 / 3.87*	4.00 / 3.70*	3.95 / 3.45*	3.55 / 3.32*	3.93 / 3.20*	3.85 / 3.24*	3.80 / 3.01*	3.70 / 3.00*
	COP	Heating	W/W	4.43 / 4.43*	4.34 / 4.46*	4.76 / 4.68*	4.53 / 4.60*	4.15 / 4.50*	4.34 / 4.51*	4.55 / 4.41*	4.37 / 4.34*	4.59 / 4.70*
	ESEER		W/W	7.02	6.81	6.61	6.56	6.25	7.06	6.92	6.83	6.65
Compressor	Output		kW x n	6.39 x 1	7.81 x 1	7.81 x 1	6.39 x 2	6.39 x 2	6.39 x 2	6.39 x 2	6.76 x 2	7.81 x 2
	Model Name		-	DS-GB066FAV* x 1	DS4GJ5080FV* x 1	DS4GJ5080FV* x 1	DS-GB066FAV* x 2	DS-GB066FAV* x 2	DS-GB066FAV* x 2	DS-GB066FAV* x 2	DS-GB070FAV* x 2	DS4GJ5080FV* x 2
	Oil	Type	-	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE
		Initial charge	cc x n	1,100 x 1	1,400 x 1	1,400 x 1	1,100 x 2	1,100 x 2	1,100 x 2	1,100 x 2	1,100 x 2	1,400 x 2
Fan	Type		-	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller
	Discharge direction		-	Top	Top	Top	Top	Top	Top	Top	Top	Top
	Quantity		EA	2	2	2	2	2	2	2	2	2
	Air Flow Rate		㎥ /min	255	255	290	290	290	340	340	340	340
			l/s	4,250	4,250	4,833	4,833	4,833	5,667	5,667	5,667	5,667
	External Static Pressure	Max.	㎜ Aq	8	8	8	8	8	8	8	8	8
		Max.	Pa	78.45	78.45	78.45	78.45	78.45	78.45	78.45	78.45	78.45
Fan Motor	Type		-	BLDC Motor	BLDC Motor	BLDC Motor	BLDC Motor	BLDC Motor	BLDC Motor	BLDC Motor	BLDC Motor	BLDC Motor
	Output		W x n	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2	620 x 2
Piping Connections	Liquid Pipe		Type	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection
			Φ, ㎜ (inch)	12.70 (1/2)	12.70 (1/2)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)	19.05 (3/4)	19.05 (3/4)	19.05 (3/4)
	Gas Pipe		Type	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection
			Φ, ㎜ (inch)	28.58 (1-1/8)	28.58 (1-1/8)	28.58 (1-1/8)	28.58 (1-1/8)	28.58 (1-1/8)	34.92 (1-3/8)	34.92 (1-3/8)	34.92 (1-3/8)	34.92 (1-3/8)
	High pressure Gas Pipe(HR Only)		Type	-	-	-	-	-	-	-	-	-
			Φ, ㎜ (inch)	-	-	-	-	-	-	-	-	-
	Heat Insulation		-	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes
	Piping length (ODU-IDU)	Max. [Equiv.]	m	200[220]	200[220]	200[220]	200[220]	200[220]	200[220]	200[220]	200[220]	200[220]
	Piping length (1st Branch-IDU)	Max.	m	90	90	90	90	90	90	90	90	90
	Total piping length (System)	Max.	m	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
	Level difference (ODU in highest position)	Max.	m	110	110	110	110	110	110	110	110	110
	Level difference (IDU in highest position)	Max.	m	110	110	110	110	110	110	110	110	110
	Level difference (IDU-IDU)	Max.	m	50	50	50	50	50	50	50	50	50
Wiring connections	Transmission Cable		㎟	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
	Remark		–	F1, F2	F1, F2	F1, F2	F1, F2	F1, F2	F1, F2	F1, F2	F1, F2	F1, F2
	Power supply intake		–	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit
Refrigerant	Type		–	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	7.7	8.4	8.4	8.4	8.4	14.0	14.0	14.0	14.0
			tCO2e	16.08	17.54	17.54	17.54	17.54	29.23	29.23	29.23	29.23
External Dimension	Net Weight		kg	226.0	253.0	255.0	282.0	290.0	342.0	350.0	350.0	350.0
	Shipping Weight		kg	246.0	273.0	275.0	302.0	310.0	364.0	372.0	372.0	372.0
	Net Dimensions (WxHxD)		㎜	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,795 x 765	1,295 x 1,795 x 765	1,295 x 1,795 x 765	1,295 x 1,795 x 765
	Shipping Dimensions (WxHxD)		㎜	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,987 x 832	1,363 x 1,987 x 832	1,363 x 1,987 x 832	1,363 x 1,987 x 832
Operating Temp. Range	Cooling		℃	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48
	Heating		℃	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27°C DB/19°C WB, outdoor 35°C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20°C DB, outdoor 7°C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7°C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Product Specifications

Outdoor Unit (cont.)

TYPE				New Model		New Model		
								
Model				AM100MXVDGH/ET	AM120MXVDGH/ET	AM140MXVDGH/ET	AM160MXVDGH/ET	AM180MXVDGH/ET
Power			Ø, #, V, Hz	3, 4, 380~415, 50	3, 4, 380~415, 50	3, 4, 380~415, 50	3, 4, 380~415, 50	3, 4, 380~415, 50
Mode			-	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP	HEAT PUMP
Capacity	HP		HP	10	12	14	16	18
	Cooling		kW	28.0 / 28.0*	33.6 / 33.6*	40.0 / 40.0*	45.0 / 45.0*	50.4 / 50.4*
	Heating		kW	31.5 / 28.0*	37.8 / 33.6*	45.0 / 40.0*	50.4 / 45.0*	56.7 / 50.4*
Power	Power Input (Nominal)	Cooling	kW	7.18 / 7.18*	9.36 / 9.36*	12.42 / 12.42*	13.80 / 13.80*	16.00 / 16.00*
		Heating	kW	7.50 / 6.67*	9.22 / 8.20*	11.14 / 9.90*	12.63 / 11.28*	14.80 / 13.16*
	Current Input (Nominal)	Cooling	A	11.50	15.00	19.90	22.10	25.70
		Heating	A	12.00	14.80	17.90	20.30	23.70
		Minimum Ssc	MVA	4.5	5.3	5.4	7.2	8.8
		MCA	A	21.1	25.0	25.0	32.0	39.2
		MFA	A	32	32	32	40	50
Efficiency	EER	Cooling	W/W	3.90 / 3.90*	3.59 / 3.59*	3.22 / 3.22*	3.26 / 3.26*	3.15 / 3.15*
	COP	Heating	W/W	4.20 / 4.20*	4.10 / 4.10*	4.04 / 4.04*	3.99 / 3.99*	3.83 / 3.83*
	ESEER		W/W	7.08	6.58	6.60	6.39	5.91
Compressor	Output		kW x n	6.39 x 1	6.39 x 1	6.39 x 1	7.81 x 1	7.81 x 1
	Model Name		-	DS-GB066FAV* x 1	DS-GB066FAV* x 1	DS-GB066FAV* x 1	DS4GJ5080FV* x 1	DS4GJ5080FV* x 1
	Oil	Type	-	PVE	PVE	PVE	PVE	PVE
		Initial charge	cc x n	1,100 x 1	1,100 x 1	1,100 x 1	1,400 x 1	1,400 x 1
Fan	Type		-	Propeller	Propeller	Propeller	Propeller	Propeller
	Discharge direction		-	Top	Top	Top	Top	Top
	Quantity		EA	1	1	2	2	2
	Air Flow Rate		㎥ /min	170	220	255	255	290
			l/s	2,833	3,667	4,250	4,250	4,833
	External Static Pressure	Max.	㎜ Aq	8	8	8	8	8
		Max.	Pa	78.45	78.45	78.45	78.45	78.45
Fan Motor	Type		-	BLDC Motor	BLDC Motor	BLDC Motor	BLDC Motor	BLDC Motor
	Output		W x n	830 x 1	830 x 1	620 x 2	620 x 2	620 x 2
Piping Connections	Liquid Pipe		Type	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection
			Φ, ㎜ (inch)	9.52 (3/8)	12.70 (1/2)	12.70 (1/2)	12.70 (1/2)	15.88 (5/8)
	Gas Pipe		Type	Braze connection	Braze connection	Braze connection	Braze connection	Braze connection
			Φ, ㎜ (inch)	22.22 (7/8)	28.58 (1-1/8)	28.58 (1-1/8)	28.58 (1-1/8)	28.58 (1-1/8)
	High pressure Gas Pipe(HR Only)		Type	-	-	-	-	-
			Φ, ㎜ (inch)	-	-	-	-	-
	Heat Insulation		-	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes
	Piping length (ODU-IDU)	Max. [Equiv.]	m	200[220]	200[220]	200[220]	200[220]	200[220]
	Piping length (1st Branch-IDU)	Max.	m	90	90	90	90	90
	Total piping length (System)	Max.	m	1,000	1,000	1,000	1,000	1,000
	Level difference (ODU in highest position)	Max.	m	110	110	110	110	110
	Level difference (IDU in highest position)	Max.	m	110	110	110	110	110
	Level difference (IDU-IDU)	Max.	m	50	50	50	50	50
Wiring connections	Transmission Cable		㎟	0.75	0.75	0.75	0.75	0.75
	Remark		–	F1, F2	F1, F2	F1, F2	F1, F2	F1, F2
	Power supply intake		–	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit	Both indoor and outdoor unit
Refrigerant	Type		–	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	5.5	6.5	7.7	8.4	8.4
			tCO2e	11.48	13.57	16.08	17.54	17.54
External Dimension	Net Weight		kg	197.0	210.0	226.0	253.0	255.0
	Shipping Weight		kg	204.0	217.0	246.0	273.0	275.0
	Net Dimensions (WxHxD)		㎜	880 x 1,695 x 765	880 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765
	Shipping Dimensions (WxHxD)		㎜	948 x 1,887 x 832	948 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832
Operating Temp. Range	Cooling		℃	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48	-5 ~ 48
	Heating		℃	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24	-25 ~ 24

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27°C DB/19°C WB, outdoor 35°C DB, length 7.5m of piping, fall 0m standard.
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2. If proper form heating capacity is outdoor temperature 7°C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
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4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m).If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Product Specifications

Outdoor Unit (cont.)

Type				NEW MODEL										
Model				AM080MXVAGC/TL	AM100MXVAGC/TL	AM120MXVAGC/TL	AM140MXVAGC/TL	AM160MXVAGC/TL	AM180MXVAGC/TL	AM200MXVAGC/TL	AM220MXVAGC/TL	AM240MXVAGC/TL	AM260MXVAGC/TL	AM280MXVAGC/TL	AM300MXVAGC/TL
Mode			-	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only
Power Supply			Φ, #, V, Hz	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50
Performance	HP		HP	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00	24.00	26.00	28.00	30.00
	Capacity (Nominal)	Cooling	kW	22.40	28.00	33.60	40.00	45.00	50.40	56.00	61.60	67.20	72.80	78.60	84.00
			Btu/h	76,400	95,500	114,600	136,500	153,500	172,000	191,100	210,200	229,300	248,400	268,200	286,600
		Heating	kW	-	-	-	-	-	-	-	-	-	-	-	-
			Btu/h	-	-	-	-	-	-	-	-	-	-	-	-
Power	Power Input (Nominal)	Cooling 1)	kW	4.98	6.36	8.62	10.08	12.10	14.20	16.62	19.68	17.87	21.41	23.39	26.33
		Heating 2)		-	-	-	-	-	-	-	-	-	-	-	-
	Current Input (Nominal)	Cooling 1)	A	8.00	10.20	13.80	16.20	19.40	22.80	26.60	31.60	28.70	34.30	37.50	42.20
		Heating 2)		-	-	-	-	-	-	-	-	-	-	-	-
	Max Current			18.0	22.8	25.0	25.0	32.0	39.1	42.0	44.5	44.5	60.0	65.0	65.0
	MCA			18.00 (MCA)	22.80 (MCA)	25.00 (MCA)	25.00 (MCA)	32.00 (MCA)	39.10 (MCA)	42.00 (MCA)	44.50 (MCA)	44.50 (MCA)	60.00 (MCA)	65.00 (MCA)	65.00 (MCA)
	MFA		A	25.00	32.00	32.00	32.00	40.00	50.00	63.00	63.00	63.00	75.00	75.00	75.00
COP	Nominal Cooling 1)		-	4.50	4.40	3.90	3.97	3.72	3.55	3.37	3.13	3.76	3.40	3.36	3.19
	Nominal Heating 2)		-	-	-	-	-	-	-	-	-	-	-	-	-
Compressor	Type		-	SSC Scroll x 1	SSC Scroll x 1	SSC Scroll x 1	SSC Scroll x 1	SSC Scroll x 1	SSC Scroll x 1	SSC Scroll x 2	SSC Scroll x 2	SSC Scroll x 2	SSC Scroll x 2	SSC Scroll x 2	SSC Scroll x 2
	Output		kW x n	(5.18)	(5.18)	(6.39)	(6.39)	(7.81)	(7.81)	(5.18 x2)	(5.18 x2)	(6.39x2)	(6.39x2)	(6.76x2)	(7.81x2)
	Model Name		-	DS-GB052FAVB x 1	DS-GB052FAVB x 1	DS-GB066FAVB x 1	DS-GB066FAVB x 1	DS4GJ5080FVA	DS4GJ5080FVA	DS-GB052FAVB x 2	DS-GB052FAVB x 2	DS-GB066FAVB x 2	DS-GB066FAVB x 2	DS-GB070FAVA x 2	DS4GJ5080FVA x 2
	Oil	Type	-	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE
		Initial Charge	cc	1100	1100	1100	1100	1400	1400	2200	2200	2200	2200	2200	2800
Fan	Type		-	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller
	Output x n		W	830.0 x 1	830.0 x 1	830.0 x 1	620.0 x 2	620.0 x 2	620.0 x 2	620.0 x 2	620.0 x 2	620.0 x 2	620.0 x 2	620.0 x 2	620.0 x 2
	Air Flow Rate		CMM	170	170	220	255	255	290	290	290	320	320	340	340
			l/s	2,833	2,833	3,667	4,250	4,250	4,833	4,833	4,833	5,333	5,333	5,667	5,667
	External Static Pressure	Max.	mmAq	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
			Pa	78.45	78.45	78.45	78.45	78.45	78.45	78.45	78.45	78.45	78.45	78.45	78.45
Piping Connections	Liquid Pipe		Φ, mm	9.52	9.52	12.70	12.70	12.70	15.88	15.88	15.88	15.88	19.05	19.05	19.05
			Φ, inch	3/8"	3/8"	1/2"	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	3/4"	3/4"	3/4"
	Gas Pipe		Φ, mm	19.05	22.22	28.58	28.58	28.58	28.58	28.58	28.58	34.92	34.92	34.92	34.92
			Φ, inch	3/4"	7/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"
	Discharge Gas Pipe		Φ, mm	-	-	-	-	-	-	-	-	-	-	-	-
			Φ, inch	-	-	-	-	-	-	-	-	-	-	-	-
	Oil Equalizing Pipe		Φ, mm	-	-	-	-	-	-	-	-	-	-	-	-
			Φ, inch	-	-	-	-	-	-	-	-	-	-	-	-
	Installation Limitation	Max. Length	m	200	200	200	200	200	200	200	200	200	200	200	200
		Max. Height	m	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0
Field Wiring	Power Source Wire		mm2	-	-	-	-	-	-	-	-	-	-	-	-
	Transmission Cable		mm2	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5
Refrigerant	Type		-	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	5.5	5.5	5.5	7.7	8.4	8.4	8.4	8.4	12.5	12.5	12.5	12.5
Sound 5)	Sound Pressure(Dev.)		dB(A)	68	69	71	72	73	73	73	75	75	75	76	76
	Sound Pressure(TDB)			57	61	62	61	63	64	65	65	67	67	69	69
	Sound Power(TDB)			77	80	81	81	83	84	87	89	89	89	90	90
External Dimension	Net Weight		kg	185	185	190	225	252	252	280	280	322	330	335	342
	Shipping Weight		kg	197	197	202	244	271	271	299	299	344	352	357	364
	Net Dimensions (WxHxD)		mm	880 x 1,695 x 765	880 x 1,695 x 765	880 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,795 x 765	1,295 x 1,795 x 765	1,295 x 1,795 x 765	1,295 x 1,795 x 765
	Shipping Dimensions (WxHxD)		mm	948 x 1,887 x 832	948 x 1,887 x 832	948 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,987 x 832	1,363 x 1,987 x 832	1,363 x 1,987 x 832	1,363 x 1,987 x 832
Operating Temp. Range	Cooling		℃	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0
	Heating		℃	-	-	-	-	-	-	-	-	-	-	-	-

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27°C DB/19°C WB, outdoor 35°C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20°C DB, outdoor 7°C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7°C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Product Specifications

Outdoor Unit (cont.)

Type				NEW MODEL									
Model				AM080MXVAGC/TS	AM100MXVAGC/TS	AM120MXVAGC/TS	AM140MXVAGC/TS	AM160MXVAGC/TS	AM180MXVAGC/TS	AM200MXVAGC/TS	AM220MXVAGC/TS	AM240MXVAGC/TS	AM260MXVAGC/TS	AM280MXVAGC/TS	AM300MXVAGC/TS
Mode			-	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only
Power Supply			Φ, #, V, Hz	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50	3,4,380-415,50
Performance	HP		HP	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00	24.00	26.00	28.00	30.00
	Capacity (Nominal)	Cooling	kW	22.40	28.00	33.60	40.00	45.00	50.40	56.00	61.60	67.20	72.80	78.60	84.00
			Btu/h	76,400	95,500	114,600	136,500	153,500	172,000	191,100	210,200	229,300	248,400	268,200	286,600
		Heating	kW	-	-	-	-	-	-	-	-	-	-	-	-
			Btu/h	-	-	-	-	-	-	-	-	-	-	-	-
Power	Power Input (Nominal)	Cooling 1)	kW	4.98	6.36	8.62	10.08	12.10	14.20	16.62	19.68	17.87	21.41	23.39	26.33
		Heating 2)		-	-	-	-	-	-	-	-	-	-	-	-
	Current Input (Nominal)	Cooling 1)	A	8.00	10.20	13.80	16.20	19.40	22.80	26.60	31.60	28.70	34.30	37.50	42.20
		Heating 2)		-	-	-	-	-	-	-	-	-	-	-	-
	Max Current			18.0	22.8	25.0	25.0	32.0	39.1	42.0	44.5	44.5	60.0	65.0	65.0
	MCA			18.00 (MCA)	22.80 (MCA)	25.00 (MCA)	25.00 (MCA)	32.00 (MCA)	39.10 (MCA)	42.00 (MCA)	44.50 (MCA)	44.50 (MCA)	60.00 (MCA)	65.00 (MCA)	65.00 (MCA)
	MFA		A	25.00	32.00	32.00	32.00	40.00	50.00	63.00	63.00	63.00	75.00	75.00	75.00
COP	Nominal Cooling 1)		-	4.50	4.40	3.90	3.97	3.72	3.55	3.37	3.13	3.76	3.40	3.36	3.19
	Nominal Heating 2)		-	-	-	-	-	-	-	-	-	-	-	-	-
Compressor	Type		-	SSC Scroll x 1	SSC Scroll x 1	SSC Scroll x 1	SSC Scroll x 1	SSC Scroll x 1	SSC Scroll x 1	SSC Scroll x 2	SSC Scroll x 2	SSC Scroll x 2	SSC Scroll x 2	SSC Scroll x 2	SSC Scroll x 2
	Output		kW × n	(5.18)	(5.18)	(6.39)	(6.39)	(7.81)	(7.81)	(5.18 x2)	(5.18 x2)	(6.39x2)	(6.39x2)	(6.76x2)	(7.81x2)
	Model Name		-	DS-GB052FAVB x 1	DS-GB052FAVB x 1	DS-GB066FAVB x 1	DS-GB066FAVB x 1	DS4GJ5080FVA	DS4GJ5080FVA	DS-GB052FAVB x 2	DS-GB052FAVB x 2	DS-GB066FAVB x 2	DS-GB066FAVB x 2	DS-GB070FAVA x 2	DS4GJ5080FVA x 2
	Oil	Type	-	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE	PVE
		Initial Charge	cc	1100	1100	1100	1100	1400	1400	2200	2200	2200	2200	2200	2800
Fan	Type		-	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller
	Output x n		W	830.0 x 1	830.0 x 1	830.0 x 1	620.0 x 2	620.0 x 2	620.0 x 2	620.0 x 2	620.0 x 2	620.0 x 2	620.0 x 2	620.0 x 2	620.0 x 2
	Air Flow Rate		CMM	170	170	220	255	255	290	290	290	320	320	340	340
			l/s	2,833	2,833	3,667	4,250	4,250	4,833	4,833	4,833	5,333	5,333	5,667	5,667
	External Static Pressure	Max.	mmAq	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
			Pa	78.45	78.45	78.45	78.45	78.45	78.45	78.45	78.45	78.45	78.45	78.45	78.45
Piping Connections	Liquid Pipe		Φ, mm	9.52	9.52	12.70	12.70	12.70	15.88	15.88	15.88	15.88	19.05	19.05	19.05
			Φ, inch	3/8"	3/8"	1/2"	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	3/4"	3/4"	3/4"
	Gas Pipe		Φ, mm	19.05	22.22	28.58	28.58	28.58	28.58	28.58	28.58	34.92	34.92	34.92	34.92
			Φ, inch	3/4"	7/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 3/8"	1 3/8"	1 3/8"	1 3/8"
	Discharge Gas Pipe		Φ, mm	-	-	-	-	-	-	-	-	-	-	-	-
			Φ, inch	-	-	-	-	-	-	-	-	-	-	-	-
	Oil Equalizing Pipe		Φ, mm	-	-	-	-	-	-	-	-	-	-	-	-
			Φ, inch	-	-	-	-	-	-	-	-	-	-	-	-
	Installation Limitation	Max. Length	m	200	200	200	200	200	200	200	200	200	200	200	200
		Max. Height	m	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0	110.0
Field Wiring	Power Source Wire		mm2	-	-	-	-	-	-	-	-	-	-	-	-
	Transmission Cable		mm2	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5	0.75 ~ 1.5
Refrigerant	Type		-	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	5.5	5.5	5.5	7.7	8.4	8.4	8.4	8.4	12.5	12.5	12.5	12.5
Sound 5)	Sound Pressure(Dev.)		dB(A)	68	69	71	72	73	73	73	75	75	75	76	76
	Sound Pressure(TDB)			57	61	62	61	63	64	65	65	67	67	69	69
	Sound Power(TDB)			77	80	81	81	83	84	87	89	89	89	90	90
External Dimension	Net Weight		kg	185	185	190	225	252	252	280	280	322	330	335	342
	Shipping Weight		kg	197	197	202	244	271	271	299	299	344	352	357	364
	Net Dimensions (WxHxD)		mm	880 x 1,695 x 765	880 x 1,695 x 765	880 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,795 x 765	1,295 x 1,795 x 765	1,295 x 1,795 x 765	1,295 x 1,795 x 765
	Shipping Dimensions (WxHxD)		mm	948 x 1,887 x 832	948 x 1,887 x 832	948 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,987 x 832	1,363 x 1,987 x 832	1,363 x 1,987 x 832	1,363 x 1,987 x 832
Operating Temp. Range	Cooling		℃	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0
	Heating		℃	-	-	-	-	-	-	-	-	-	-	-	-

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27°C DB/19°C WB, outdoor 35°C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20°C DB, outdoor 7°C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7°C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Product Specifications

Outdoor Unit (cont.)

Type				NEW MODEL						
Model				AM080MXVAFC/AZ	AM100MXVAFC/AZ	AM120MXVAFC/AZ	AM140MXVAFC/AZ	AM160MXVAFC/AZ	AM180MXVAFC/AZ	AM200MXVAFC/AZ
Mode			-	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only
Power Supply			Φ, #, V, Hz	3,3,208~230,60	3,3,208~230,60	3,3,208~230,60	3,3,208~230,60	3,3,208~230,60	3,3,208~230,60	3,3,208~230,60
Performance	HP		HP	8.00	10.00	12.00	14.00	16.00	18.00	20.00
	Capacity (Nominal)	Cooling	kW	22.40	28.00	33.60	40.00	45.00	50.40	56.00
			Btu/h	76,400	95,500	114,600	136,500	153,500	172,000	191,100
		Heating	kW	-	-	-	-	-	-	-
			Btu/h	-	-	-	-	-	-	-
Power	Power Input (Nominal)	Cooling 1)	kW	4.35	5.50	7.22	8.47	10.64	10.66	11.45
		Heating 2)		-	-	-	-	-	-	-
	Current Input (Nominal)	Cooling 1)	A	12.70	16.00	21.10	24.70	31.00	31.10	33.40
		Heating 2)		-	-	-	-	-	-	-
	Max Current			26.0	32.2	35.0	45.4	51.2	56.2	65.0
	MCA			26.00 (MCA)	32.20 (MCA)	35.00 (MCA)	45.4 (MCA)	51.2(MCA)	56.20 (MCA)	65.00 (MCA)
	MFA		A	40.00	50.00	50.00	63.00	63.00	63.00	75.00
COP	Nominal Cooling 1)		-	5.15	5.09	4.65	4.72	4.23	4.73	4.89
	Nominal Heating 2)		-	-	-	-	-	-	-	-
Compressor	Type		-	SSC Scroll x 1	SSC Scroll x 1	SSC Scroll x 1	SSC Scroll x 2	SSC Scroll x 2	SSC Scroll x 2	SSC Scroll x 2
	Output		kW x n	(5.09)	(6.45)	(6.45)	(5.09x2)	(5.09x2)	(6.45x2)	(6.45x2)
	Model Name		-	DS-GB052FBVASG x 1	DS4GJ066EVASG x 1	DS4GJ066EVASG x 1	DS-GB052FBVASG x 2	DS-GB052FBVASG x 2	DS4GJ066EVASG x 2	DS4GJ066EVASG x 2
	Oil	Type	-	PVE	PVE	PVE	PVE	PVE	PVE	PVE
		Initial Charge	cc	1100	1100	1100	2200	2200	2200	2200
Fan	Type		-	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller
	Output x n		W	830.0 x 1	830.0 x 1	830.0 x 1	620.0 x 2	620.0 x 2	620.0 x 2	620.0 x 2
	Air Flow Rate		CMM	170	170	220	255	255	260	265
			l/s	2,833	2,833	3,667	4,250	4,250	4,333	4,417
	External Static Pressure	Max.	mmAq	8.00	8.00	8.00	8.00	8.00	8.00	8.00
			Pa	78.45	78.45	78.45	78.45	78.45	78.45	78.45
Piping Connections	Liquid Pipe		Φ, mm	9.52	9.52	12.70	12.70	12.70	15.88	15.88
			Φ, inch	3/8"	3/8"	1/2"	1/2"	1/2"	5/8"	5/8"
	Gas Pipe		Φ, mm	19.05	22.22	28.58	28.58	28.58	28.58	28.58
			Φ, inch	3/4"	7/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"
	Discharge Gas Pipe		Φ, mm	-	-	-	-	-	-	-
			Φ, inch	-	-	-	-	-	-	-
	Oil Equalizing Pipe		Φ, mm	-	-	-	-	-	-	-
			Φ, inch	-	-	-	-	-	-	-
	Installation Limitation	Max. Length	m	200	200	200	200	200	200	200
		Max. Height	m	110.0	110.0	110.0	110.0	110.0	110.0	110.0
Field Wiring	Power Source Wire		mm2	-	-	-	-	-	-	-
	Transmission Cable		mm2	-	-	-	-	-	-	-
Refrigerant	Type		-	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	5.5	5.5	6.5	7.7	7.7	8.4	8.4
Sound 5)	Sound Pressure(Dev.)		dB(A)	68	68	71	72	73	73	73
	Sound Pressure(TDB)			57	58	62	61.0	63.0	64.0	65.0
	Sound Power(TDB)			77	79	81	81.0	83.0	86.0	87.0
External Dimension	Net Weight		kg	178	185.5	196.5	282	282	305	305
	Shipping Weight		kg	190	197.5	208.5	301	301	324	324
	Net Dimensions (WxHxD)		mm	880 x 1,695 x 765	880 x 1,695 x 765	880 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765
	Shipping Dimensions (WxHxD)		mm	948 x 1,887 x 832	948 x 1,887 x 832	948 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832
Operating Temp. Range	Cooling		℃	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0
	Heating		℃	-	-	-	-	-	-	-

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27°C DB/19°C WB, outdoor 35°C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20°C DB, outdoor 7°C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7°C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

Product Specifications

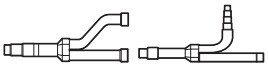
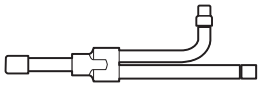
Outdoor Unit (cont.)

Type				NEW MODEL						
Model				AM080MXVAFCAAZ	AM100MXVAFCAAZ	AM120MXVAFCAAZ	AM140MXVAFCAAZ	AM160MXVAFCAAZ	AM180MXVAFCAAZ	AM200MXVAFCAAZ
Mode			-	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only	Cooling Only
Power Supply			Φ, #, V, Hz	3,3,208-230,60	3,3,208-230,60	3,3,208-230,60	3,3,208-230,60	3,3,208-230,60	3,3,208-230,60	3,3,208-230,60
Performance	HP		HP	8.00	10.00	12.00	14.00	16.00	18.00	20.00
	Capacity (Nominal)	Cooling	kW	22.40	28.00	33.60	40.00	45.00	50.40	56.00
			Btu/h	76,400	95,500	114,600	136,500	153,500	172,000	191,100
		Heating	kW	-	-	-	-	-	-	-
			Btu/h	-	-	-	-	-	-	-
Power	Power Input (Nominal)	Cooling 1)	kW	4.35	5.50	7.22	8.47	10.64	10.66	11.45
		Heating 2)								
	Current Input (Nominal)	Cooling 1)	A	12.70	16.00	21.10	24.70	31.00	31.10	33.40
		Heating 2)								
	Max Current			26.0	32.2	35.0	45.4	51.2	56.2	65.0
	MCA			26.00 (MCA)	32.20 (MCA)	35.00 (MCA)	45.4 (MCA)	51.2(MCA)	56.20 (MCA)	65.00 (MCA)
	MFA		A	40.00	50.00	50.00	63.00	63.00	63.00	75.00
COP	Nominal Cooling 1)		-	5.15	5.09	4.65	4.72	4.23	4.73	4.89
	Nominal Heating 2)		-	-	-	-	-	-	-	-
Compressor	Type		-	SSC Scroll x 1	SSC Scroll x 1	SSC Scroll x 1	SSC Scroll x 2	SSC Scroll x 2	SSC Scroll x 2	SSC Scroll x 2
	Output		kW x n	(5.09)	(6.45)	(6.45)	(5.09x2)	(5.09x2)	(6.45x2)	(6.45x2)
	Model Name		-	DS-GB052FBVASG x 1	DS4GJ066EVASG x 1	DS4GJ066EVASG x 1	DS-GB052FBVASG x 2	DS-GB052FBVASG x 2	DS4GJ066EVASG x 2	DS4GJ066EVASG x 2
	Oil	Type	-	PVE	PVE	PVE	PVE	PVE	PVE	PVE
		Initial Charge	cc	1100	1100	1100	2200	2200	2200	2200
Fan	Type		-	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller	Propeller
	Output x n		W	830.0 x 1	830.0 x 1	830.0 x 1	620.0 x 2	620.0 x 2	620.0 x 2	620.0 x 2
	Air Flow Rate		CMM	170	170	220	255	255	260	265
			l/s	2,833	2,833	3,667	4,250	4,250	4,333	4,417
	External Static Pressure	Max.	mmAq	8.00	8.00	8.00	8.00	8.00	8.00	8.00
			Pa	78.45	78.45	78.45	78.45	78.45	78.45	78.45
Piping Connections	Liquid Pipe		Φ, mm	9.52	9.52	12.70	12.70	12.70	15.88	15.88
			Φ, inch	3/8"	3/8"	1/2"	1/2"	1/2"	5/8"	5/8"
	Gas Pipe		Φ, mm	19.05	22.22	28.58	28.58	28.58	28.58	28.58
			Φ, inch	3/4"	7/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"	1 1/8"
	Discharge Gas Pipe		Φ, mm	-	-	-	-	-	-	-
			Φ, inch	-	-	-	-	-	-	-
	Oil Equalizing Pipe		Φ, mm	-	-	-	-	-	-	-
			Φ, inch	-	-	-	-	-	-	-
	Installation Limitation	Max. Length	m	200	200	200	200	200	200	200
		Max. Height	m	110.0	110.0	110.0	110.0	110.0	110.0	110.0
Field Wiring	Power Source Wire		mm2	-	-	-	-	-	-	-
	Transmission Cable		mm2	-	-	-	-	-	-	-
Refrigerant	Type		-	R410A	R410A	R410A	R410A	R410A	R410A	R410A
	Factory Charging		kg	5.5	5.5	6.5	7.7	7.7	8.4	8.4
Sound 5)	Sound Pressure(Dev.)		dB(A)	68	68	71	72	73	73	73
	Sound Pressure(TDB)			57	58	62	61.0	63.0	64.0	65.0
	Sound Power(TDB)			77	79	81	81.0	83.0	86.0	87.0
External Dimension	Net Weight		kg	178	185.5	196.5	282	282	305	305
	Shipping Weight		kg	190	197.5	208.5	301	301	324	324
	Net Dimensions (WxHxD)		mm	880 x 1,695 x 765	880 x 1,695 x 765	880 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765	1,295 x 1,695 x 765
	Shipping Dimensions (WxHxD)		mm	948 x 1,887 x 832	948 x 1,887 x 832	948 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832	1,363 x 1,887 x 832
Operating Temp. Range	Cooling		℃	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0	-5.0 ~ 48.0
	Heating		℃	-	-	-	-	-	-	-

1. Proper form capacity standard of air conditioning
- Cooling capacity : It is figures that appear in indoor 27°C DB/19°C WB, outdoor 35°C DB, length 7.5m of piping, fall 0m standard.
- Heating capacity : It is figures that appear in indoor 20°C DB, outdoor 7°C DB, length 7.5m of piping, fall 0m standard.
2. If proper form heating capacity is outdoor temperature 7°C standard and outdoor temperature goes down by below zero, heating capacity can drop according to temperature condition.
3. Need special load calculation in case of use by main heating in the winter, and please buy product for low temperature that heating effect excels at low temperature.
4. Maximum length between outdoor and indoor units allows up to 200m (Equivalent length 220m).
5. If the indoor unit is below, height length allows up to 110m (If over 50m, decide whether to install the PDM kit). If the outdoor unit is below, allowable height length is 40m.

2-3 Accessory and Option Specifications

2-3-1 Accessories

Picture	Classification	Model Name	Remark
	Y-Joint	MXJ-YA1509M	15.0 kW and below
		MXJ-YA2512M	Over 15.0 kW~40.0 kW and below
		MXJ-YA2812M	Over 40.0 kW~45.0 kW and below
		MXJ-YA2815M	Over 45.0 kW~70.3 kW and below
		MXJ-YA3419M	Over 70.3 kW~98.4 kW and below
		MXJ-YA4119M	Over 98.4 kW~135.2 kW and below
		MXJ-YA4422M	Over 135.2 kW
	Y-Joint (Only H/R)	MXJ-YA1500M	22.4 kW and below
		MXJ-YA2500M	Over 22.4 kW~70.3 kW and below
		MXJ-YA3100M	Over 70.3 kW~135.2 kW and below
		MXJ-YA3800M	Over 135.2 kW
	Distribution header	MXJ-HA2512M	45.0 kW and below (for 4 rooms)
		MXJ-HA3115M	70.3 kW and below (for 8 rooms)
		MXJ-HA3819M	Over 70.3 kW ~ 135.2 kW and below (for 8 rooms)
	Y-Joint -Outdoor Unit	MXJ-TA3419M	135.2 kW and below
		MXJ-TA4122M	Over 140.2 kW
	Y-Joint (Only H/R)-Outdoor Unit	MXJ-TA3100M	135.2 kW and below
		MXJ-TA3800M	Over 140.2 kW
	MCU (Mode Control Unit)	MCU-S6NEE1N	6 ROOM
		MCU-S4NEE1N	4 ROOM
		MCU-S4NEE2N	4 ROOM
	EEV KIT (1 Room)	MEV-E24SA	Applty to products without EEV (Wall mount & Ceiling)
		MEV-E32SA	
	EEV KIT (2 Room)	MXD-E24K132A	
		MXD-E24K200A	
		MXD-E32K200A	
		MXD-E24K232A	
	EEV KIT (3 Room)	MXD-E24K132A	
		MXD-E24K300A	
		MXD-E32K224A	
		MXD-E32K300A	

3. Disassembly and Reassembly

3-1 Necessary Tools

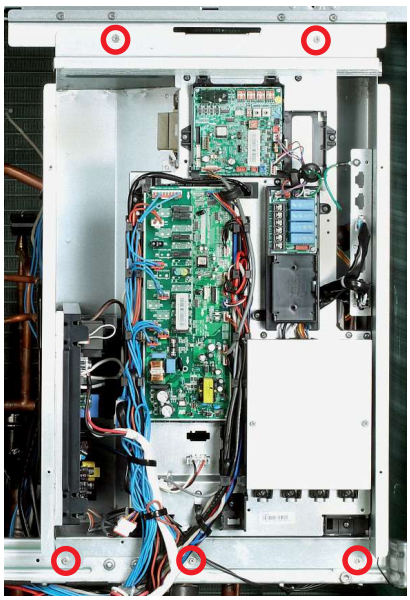
Item	Remark
+SCREW DRIVER	
MONKEY SPANNER	
-SCREW DRIVER	
NIPPER	
ELECTRIC MOTION DRIVER	
L-WRENCH	

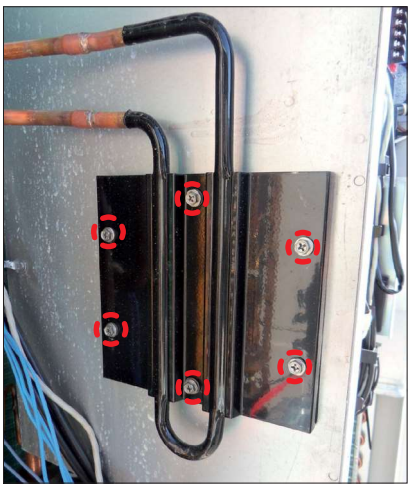
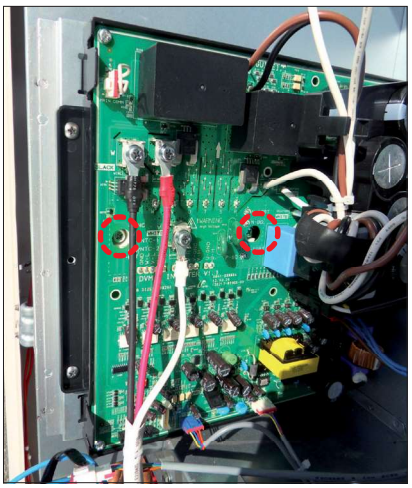
● For "disassembly and assembly" DVM PLUS IV indoor unit, please refer to the products with the same structures.
Only those products that are not specified elsewhere are described here.

3-2 Disassembly and Reassembly

3-2-1 AM080/100/120JXV✳✳✳

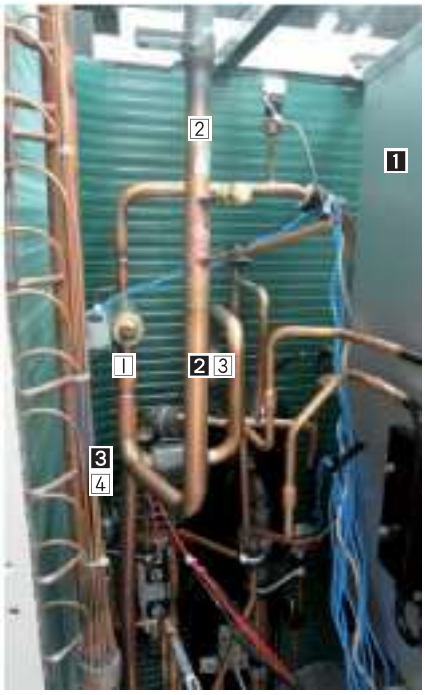
No.	Parts	Procedure	Remark
1	Electrical equipment Part	1) Remove 14 screws from the cabinet (Use + screw driver)	
		2) Remove 4 screws and separate cover control box (Use + screw driver)	
		3) Power, Compressor, Valve, Motor, Sensor connector connected to ASSY PCB remove.	

No.	Parts	Procedure	Remark
		4) 2 screws had fixed in terminal block cover when change power terminal block then, communication terminal block remove	
		5) 2 screws had fixed in terminal block after remove 4 screws had fixed to Cabinet for terminal block protection remove.	
		6) 5 screws had fixed to Front part remove.	

No.	Parts	Procedure	Remark
		7) 6 screws had fixed on side refrigerant cooling part outside remove . ⚠ Do not separate Heat Sink pulling Assy Piping Cooling piping compulsorily. (It can be a cause of parts damage)	
		8) 2 screws had fixed on side refrigerant cooling part inside remove.	

Binding Wire 1

■ AM080/100/120JXV✳✳H

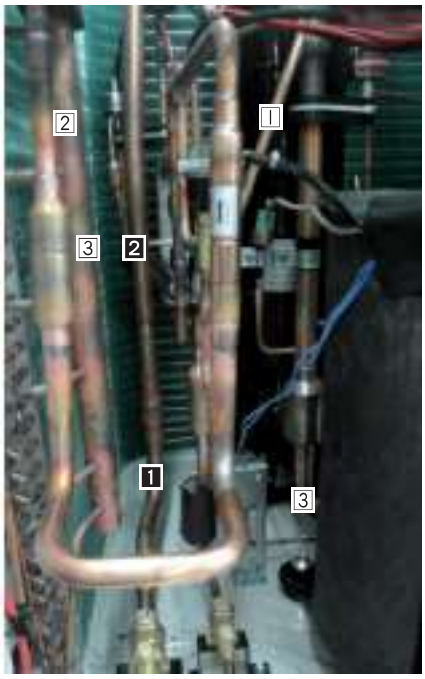


VALVE & SENSOR

No	Valve & Sensor
1	4WAY Valve
2	High Pressure Sensor
3	Suction Sensor
4	EVI Out Sensor

INSULATION

No	Model	Insu Code	Binding Wire
1	AM080/100/120JXV✳✳H	DB62-04154C	
2	AM080/100/120JXV✳✳H	DB62-03808B	
3	AM080/100/120JXV✳✳H	DB62-03808C	



VALVE & SENSOR

No	Valve & Sensor
1	Expansion Valve
2	EVI EEV Valve
3	Accum Oil Return Valve
4	EVI In Sensor

INSULATION

No	Model	Insu Code	Binding Wire
1	AM080/100/120JXV✳✳H	DB62-03808C	
2	AM080/100/120JXV✳✳H	DB62-03808E	

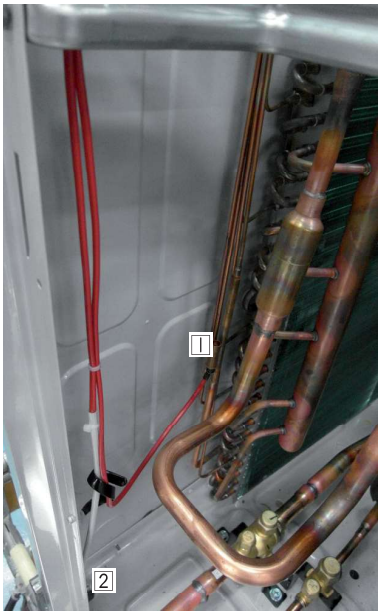
Binding Wire 2

■ AM080/100/120JXV✳✳H



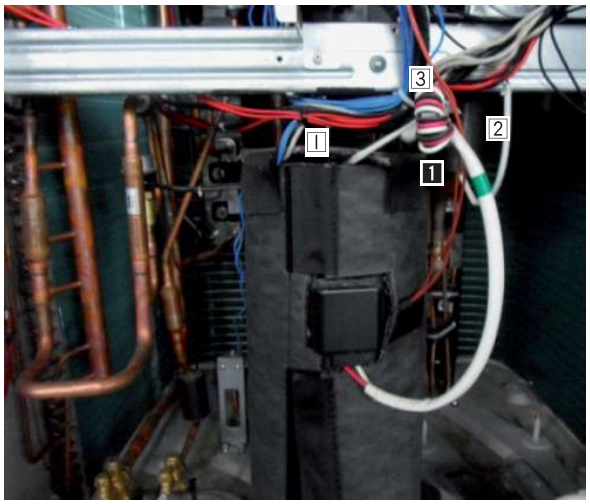
VALVE & SENSOR

No	Valve & Sensor
1	Low Pressure Sensor



VALVE & SENSOR

No	Valve & Sensor
1	Cond Out Sensor
2	Outdoor Temperature Sensor



VALVE & SENSOR

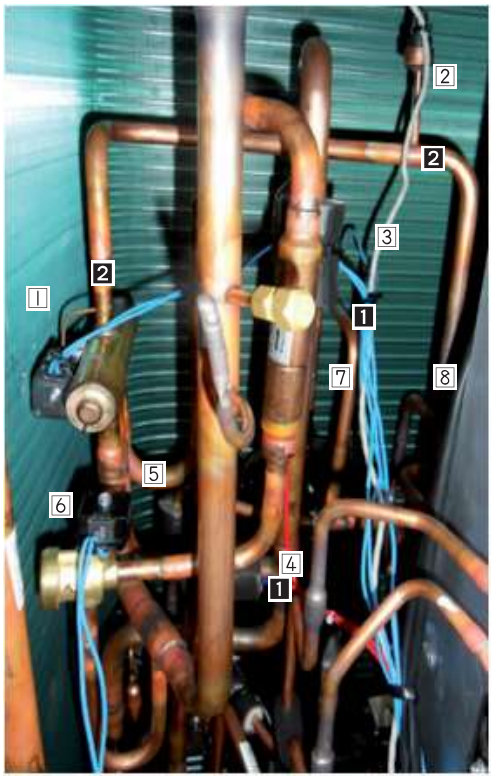
No	Valve & Sensor
1	Comp Top Sensor
2	Discharge Sensor
3	High Pressure Switch

INSULATION

No	Model	Insu Code	Binding Wire
1	AM080/100/120JXV✳✳H	DB62-03808D	

Binding Wire 1

■ AM080/100/120JXVHGR

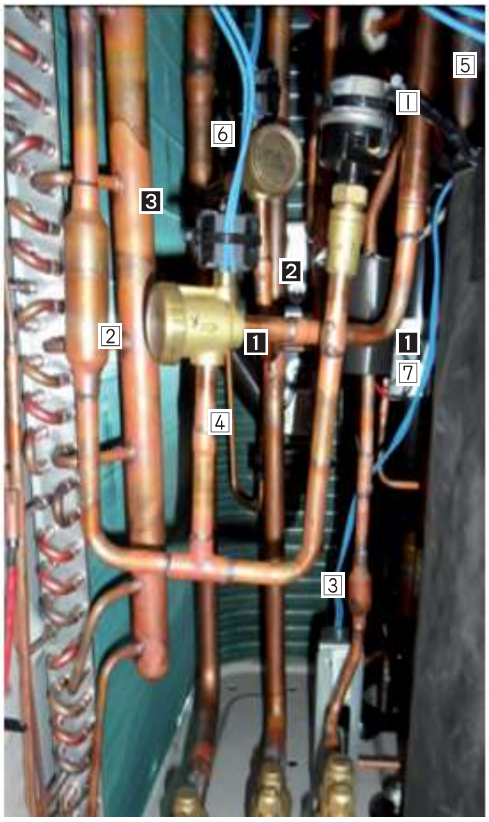


VALVE & SENSOR

No	Valve & Sensor
1	4WAY Valve
2	High Pressure Sensor
3	Suciton 1 Sensor
4	Suciton 2 Sensor
5	EVI Out Sensor
6	Main Cooling Valve
7	EVI Bypass Valve
8	EVI SOL Valve

INSULATION

No	Model	Insu Code	Binding Wire
1	AM080/100FXVAGR AM080/100JXVHGR	DB62-03808B	
	AM120FXVAGR AM120JXVHGR	DB62-03808G	
2	AM080/100/120FXVAGR AM080/100/120JXVHGR	DB62-04154B	



VALVE & SENSOR

No	Valve & Sensor
1	Main EEV Valve
2	OD EEV Valve
3	Accum Return Valve
4	EVI In Sensor
5	Hot Gas 1 Valve
6	Hot Gas 2 Valve
7	Liquid Sensor

INSULATION

No	Model	Insu Code	Binding Wire
1	AM080/100/120JXVHGR	DB62-03808E	
2	AM080/100/120JXVHGR	DB62-04154B	
3	AM080/100/120JXVHGR	DB62-03808C	

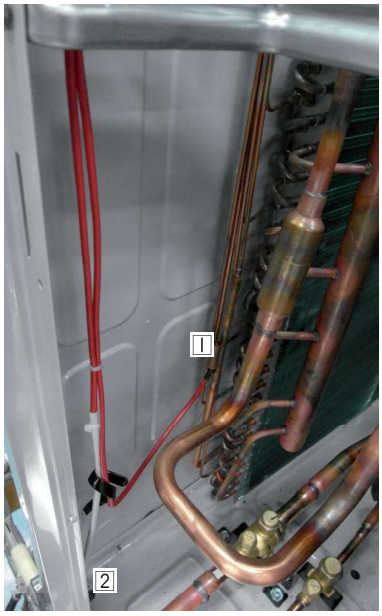
Binding Wire 2

■ AM080/100/120JXVHGR



VALVE & SENSOR

No	Valve & Sensor
1	Low Pressure Sensor
2	EVI EEV Valve



VALVE & SENSOR

No	Valve & Sensor
1	Cond Out Sensor
2	Outdoor Temperature Sensor



VALVE & SENSOR

No	Valve & Sensor
1	Comp Top Sensor
2	Discharge Sensor
3	High Pressure Switch

INSULATION

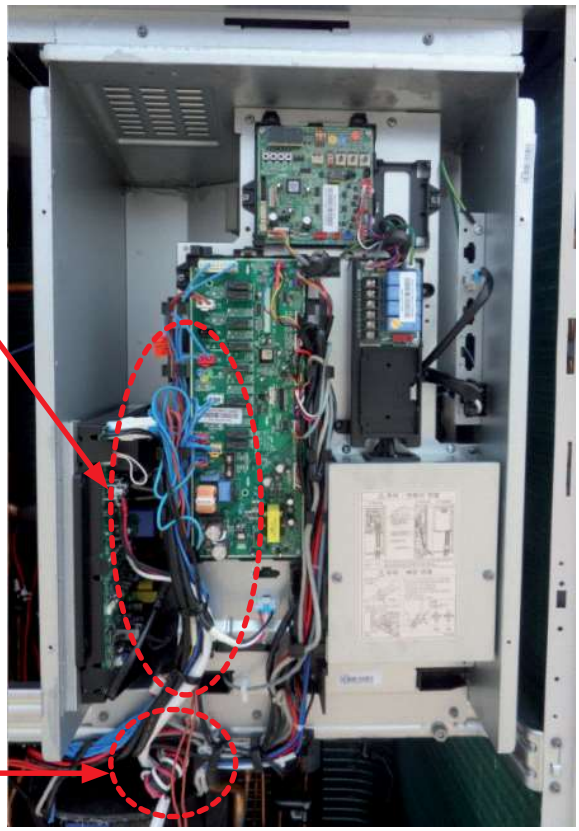
No	Model	Insu Code	Binding Wire
1	AM080/100/120JXVHGR	DB62-03808D	

Binding Wire 3

■ AM080/100/120JXV✳✳✳

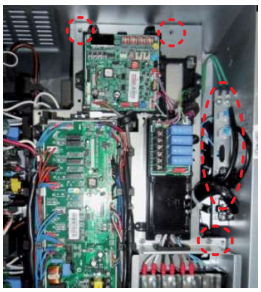


► Comp Wire fix by Holder Wire.





► Fix Comp Wire-Core to Bracket Beam Control Box using large size Cable Tie(350mm).



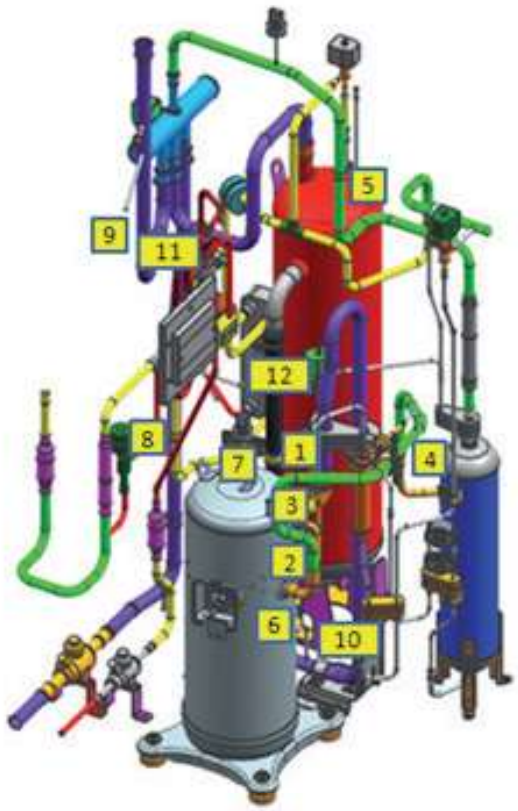
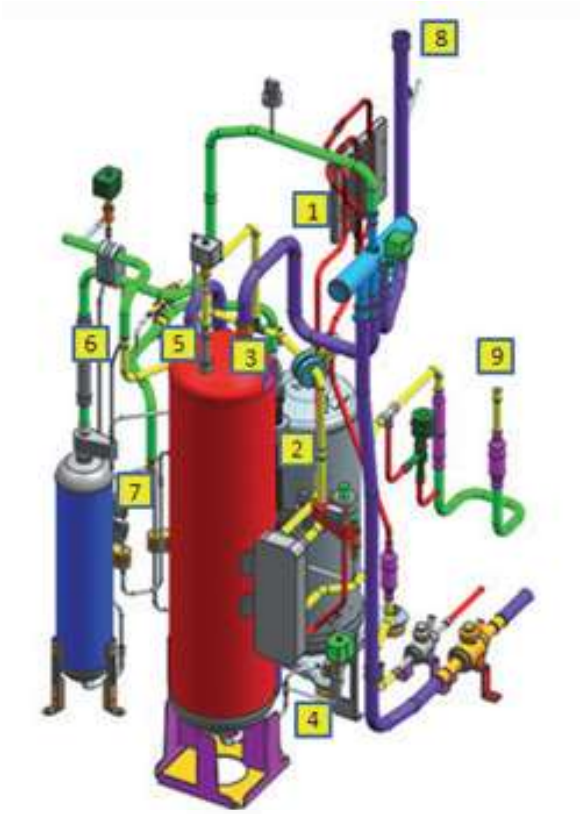


► Separate double layer structure of C/Box after remove 3 screws and connector.

[Reference Sheet]

Pipe Welding Position

■ AM080/100/120FXVAGH, AM080/100/120JXV✳✳H

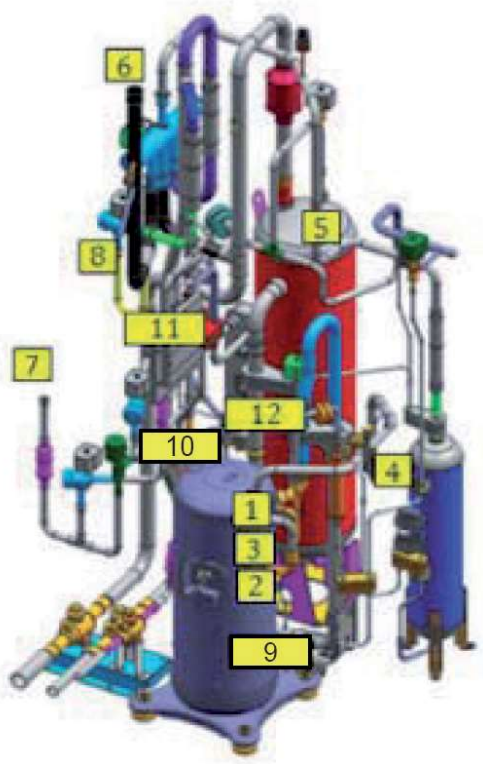
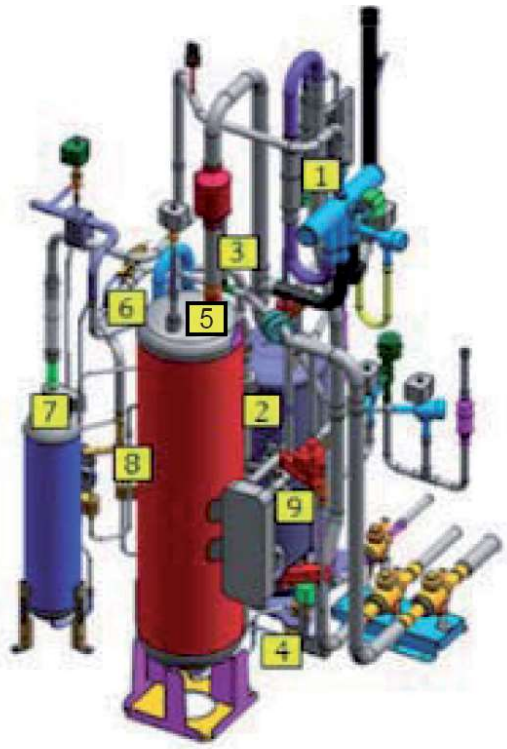
Front Welding Parts	Rear Welding Parts
	

No.	Welding Position	Q'ty	No.	Welding Position	Q'ty
1	Comp+Suction	1	1	Cooling+Subcooler	1
2	Comp+Discharge	1	2	Subcooler+EVI Bypass	1
3	Comp+Vapor Injection	1	3	Accum+4Way	1
4	Discharge+Oil Sepa	1	4	Accum+Accum Oil Vavle	1
5	4Way+Oil Sepa Out	1	5	Accum+EVI Bypass	1
6	Oil Return+Suction	1	6	Vapor Injection+EVI Bypass	1
7	Hot Gas Vavle +Suction	1	7	Hot Gas Vavle +Oil Sepa Out	1
8	Expansion+Subcooler	1	8	4Way+Cond In	
9	Pinch Pipe	1	9	Expansion+Cond Out	
10	Accum Oil Return Valve + Suction	1			
11	Liquid Ball Vavle +Colling	1			
12	Accum+Suction	1			

[Reference Sheet]

Pipe Welding Position

■ AM080/100/120FXVAGR, AM080/100/120JXVHGR

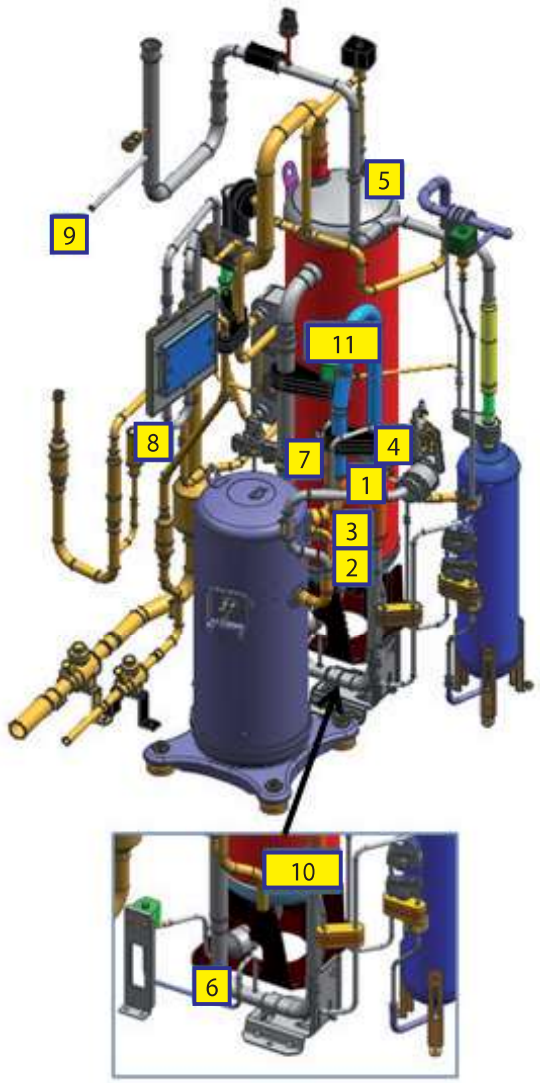
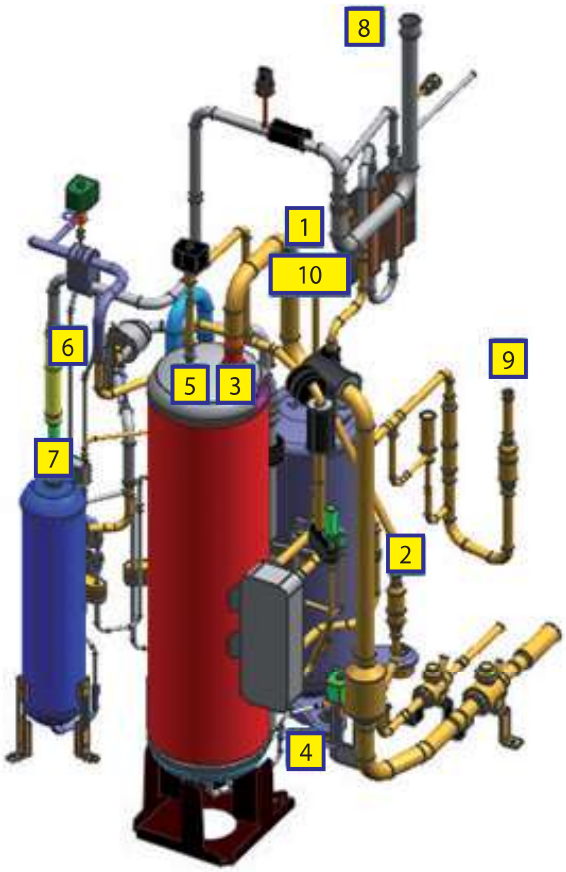
Front Welding Parts	Rear Welding Parts
	

No.	Welding Position	Q'ty	No.	Welding Position	Q'ty
1	Comp+Suction	1	1	Cooling+Subcooler	1
2	Comp+Discharge	1	2	Subcooler+EVI Bypass	1
3	Comp+Vapor Injection	1	3	Accum+4Way	1
4	Discharge+Oil Sepa	1	4	Accum+Accum Oil Vavle	1
5	4Way+Oil Sepa Out	1	5	Accum+EVI Bypass	1
6	4Way+Cond In	1	6	Vapor Injection+EVI Bypass	1
7	Expansion+Cond Out	1	7	Hot Gas Vavle +Oil Sepa Out	1
8	Pinch Pipe	1	8	Oil Return+Suction	
9	Accum Oil Return Valve+Suction	1	9	LQD Ball Valve+Subcooler	
10	Subcooler+Expansion	1			
11	LQD Ball Valve+Cooling	1			
12	Accum+Suction	1			

[Reference Sheet]

Pipe Welding Position

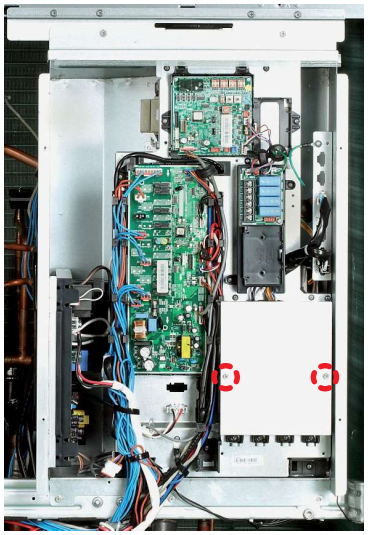
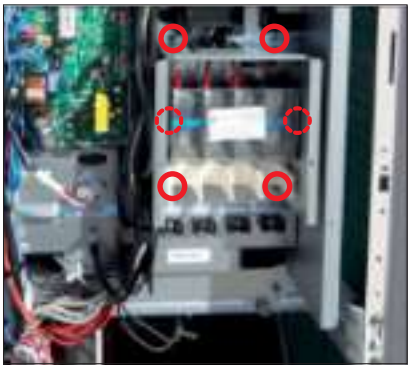
■ AM080/100/120MXVA*C

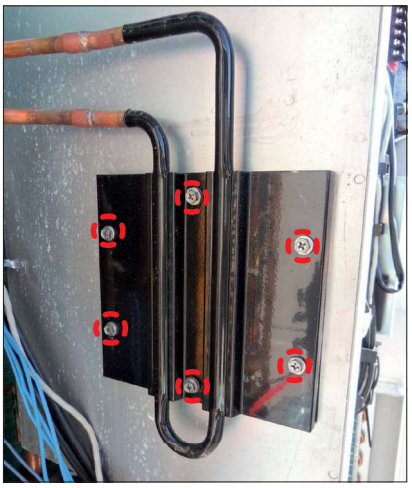
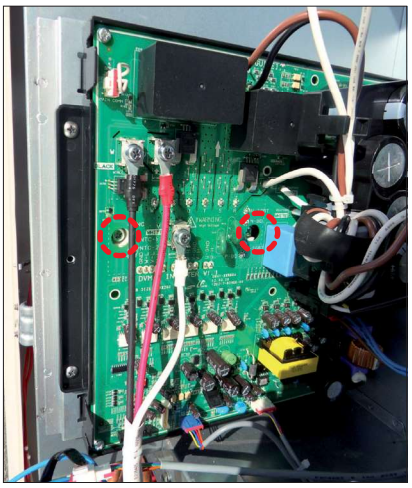
Front Welding Parts	Rear Welding Parts
	

No.	Welding Position	Q'ty	No.	Welding Position	Q'ty
1	Comp+Suction	1	1	Cooling+Subcooler	1
2	Comp+Discharge	1	2	Subcooler+EVI Bypass	1
3	Comp+Vapor Injection	1	3	Accum+Service Valve	1
4	Discharge+Oil Sepa	1	4	Accum+Accum Oil Vavle	1
5	Cond Connector+Oil Sepa Out	1	5	Accum+EVI Bypass	1
6	Oil Return+Suction	1	6	Vapor Injection+EVI Bypass	1
7	Hot Gas Vavle +Suction	1	7	Hot Gas Vavle +Oil Sepa Out	1
8	Expansion+Subcooler	1	8	Cond Connector+Cond In	1
9	Pinch Pipe	1	9	Expansion+Cond Out	1
10	Accum Oil Return Valve + Suction	1	10	Liquid Ball Vavle +Cooling	1
11	Accum+Suction	1			

3-2-2 AM140FXVAGH, AM140JXV✳GH

No.	Parts	Procedure	Remark
1	Electrical equipment Part	1) Remove 11 screws from the cabinet (Use + screw driver)	
		2) Remove 4 screws and separate cover control box (Use + screw driver)	
		3) Power, Compressor, Valve, Motor, Sensor connector connected to ASSY PCB remove.	

No.	Parts	Procedure	Remark
		4) 2 screws had fixed in terminal block cover when change power terminal block, communication terminal block remove.	
		5) 2 screws had fixed in terminal block after remove 4 screws had fixed to Cabinet for terminal block protection remove.	
		6) 5 screws had fixed to Front part remove.	

No.	Parts	Procedure	Remark
		7) 6 screws had fixed on side refrigerant cooling part outside remove . ⚠ Do not separate Heat Sink pulling Assy Piping Cooling piping compulsorily. (It can be a cause of parts damage)	
		8) 2 screws had fixed on side refrigerant cooling part inside remove.	

Binding Wire 1

■ AM140JXV✳✳H

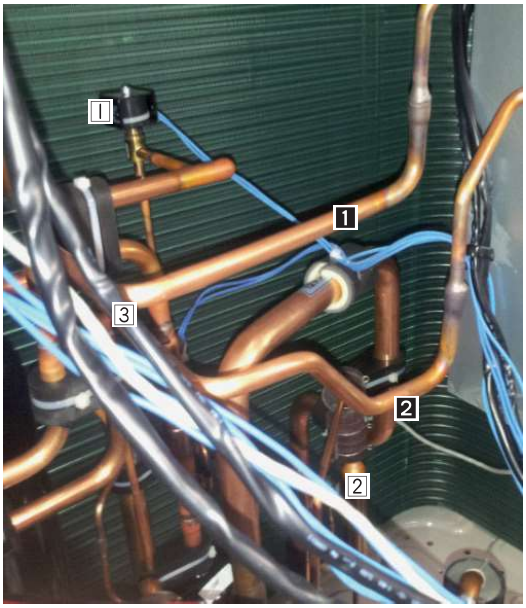


VALVE & SENSOR

No	Valve & Sensor
1	4WAY Valve
2	High Pressure Sensor
3	EVI Bypass Valve

INSULATION

No	Model	Insu Code	Binding Wire
1	AM140JXV✳✳H	DB62-03808G	



VALVE & SENSOR

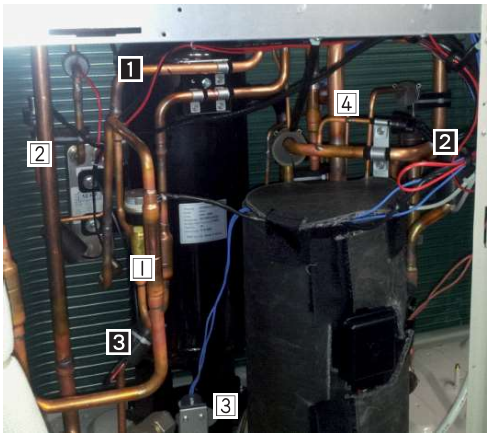
No	Valve & Sensor
1	EVI SOL Valve
2	Low Pressure Sensor
3	Hot Gas Valve

INSULATION

No	Model	Insu Code	Binding Wire
1	AM140JXV✳✳H	DB62-04154D	
2	AM140JXV✳✳H	DB62-04154D	

Binding Wire 2

■ AM140JXV✳✳H

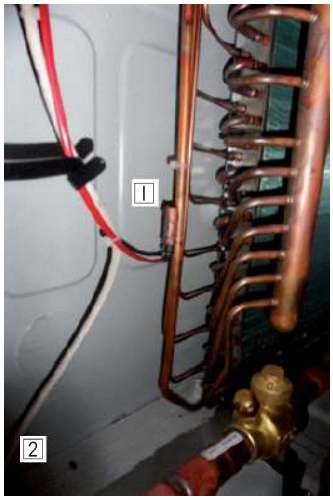


VALVE & SENSOR

No	Valve & Sensor
1	Expansion Valve
2	EVI EEV Valve
3	Accum Oil Return Valve
4	High Pressure Switch

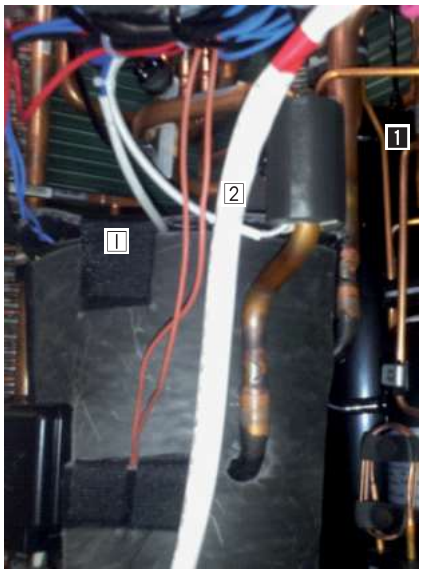
INSULATION

No	Model	Insu Code	Binding Wire
1	AM140JXV✳✳H	DB62-03808C	
2	AM140JXV✳✳H	DB62-03808D	
3	AM140JXV✳✳H	DB62-03808E	



VALVE & SENSOR

No	Valve & Sensor
1	Cond Out Sensor
2	Outdoor Temperature Sensor



VALVE & SENSOR

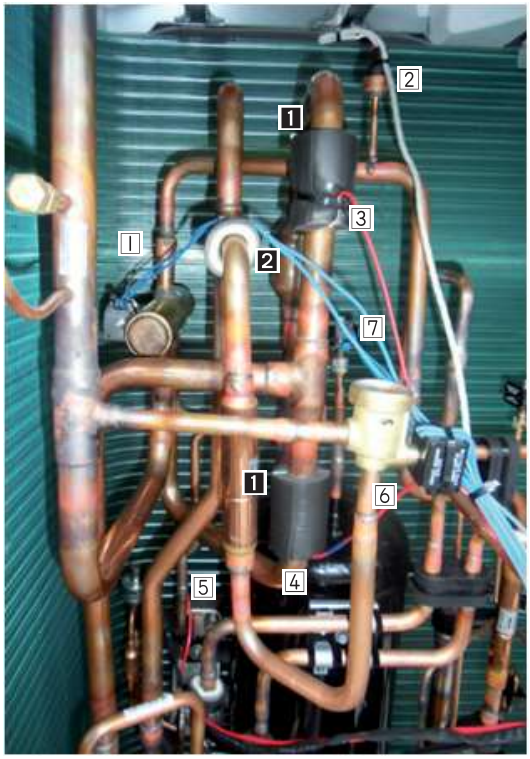
No	Valve & Sensor
1	Comp Top Sensor
2	Discharge Sensor

INSULATION

No	Model	Insu Code	Binding Wire
1	AM140JXV✳✳H	DB62-03808C	

Binding Wire 1

■ AM140JXVHGR

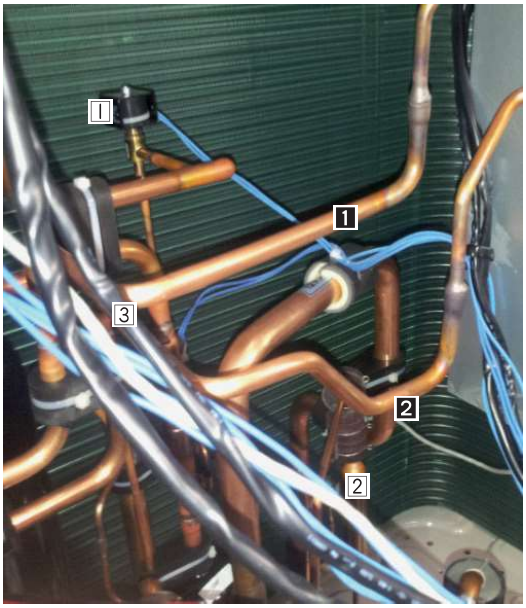


VALVE & SENSOR

No	Valve & Sensor
1	4WAY Valve
2	High Pressure Sensor
3	Suciton 1 Sensor
4	Suciton 2 Sensor
5	EVI Out Sensor
6	Main Cooling Valve
7	EVI Bypass Valve

INSULATION

No	Model	Insu Code	Binding Wire
1	AM140JXVHGR	DB62-03808G	
2	AM140JXVHGR	DB62-04154C	



VALVE & SENSOR

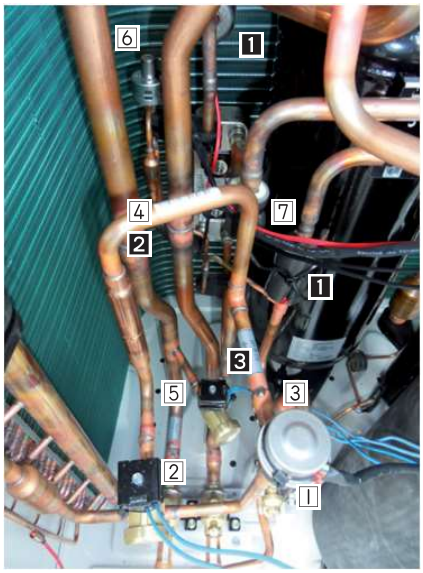
No	Valve & Sensor
1	EVI SOL Valve
2	Low Pressure Sensor
3	Hot Gas Valve

INSULATION

No	Model	Insu Code	Binding Wire
1	AM140JXVHGR	DB62-04154D	
2	AM140JXVHGR	DB62-04154D	

Binding Wire 2

■ AM140JXVHGR



VALVE & SENSOR

No	Valve & Sensor
1	Main EEV Valve
2	OD EEV Valve
3	Accum Return Valve
4	EVI In Sensor
5	Hot Gas 2 Valve
6	EVI EEV Valve
7	Liquid Sensor

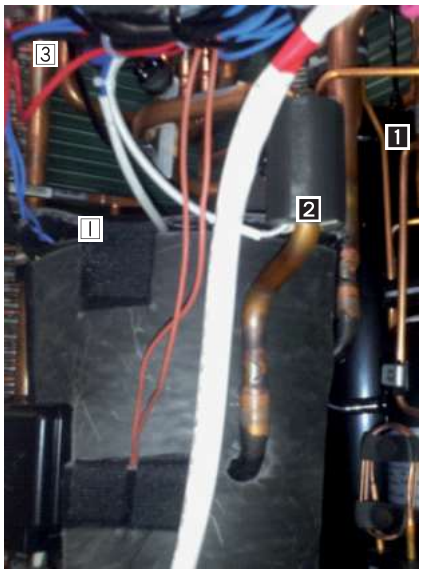
INSULATION

No	Model	Insu Code	Binding Wire
1	AM140JXVHGR	DB62-03808C	
2	AM140JXVHGR	DB62-03808E	
3	AM140JXVHGR	DB62-04154B	



VALVE & SENSOR

No	Valve & Sensor
1	Cond Out Sensor
2	Outdoor Temperature Sensor



VALVE & SENSOR

No	Valve & Sensor
1	Comp Top Sensor
2	Discharge Sensor
3	High Pressure Switch

INSULATION

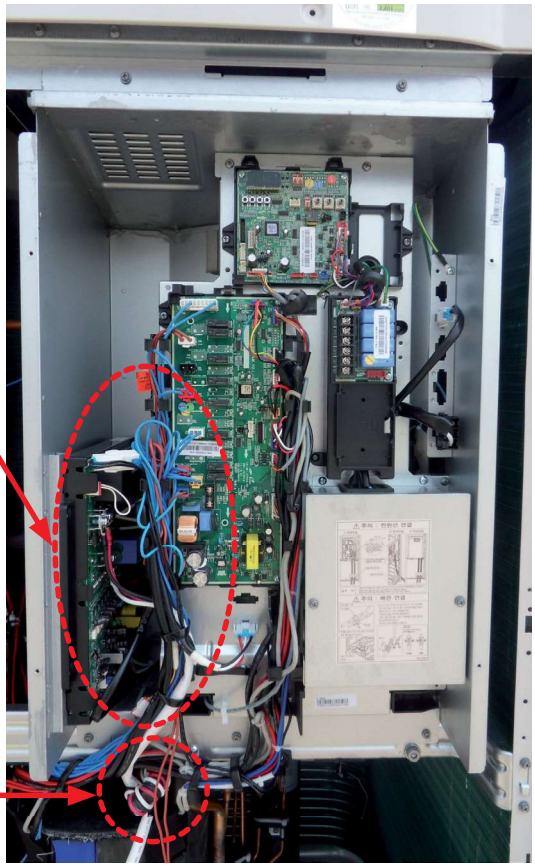
No	Model	Insu Code	Binding Wire
1	AM140JXVHGR	DB62-03808C	
2	AM140JXVHGR	DB62-03808D	

Binding Wire 3

■ AM140JXV✳✳✳

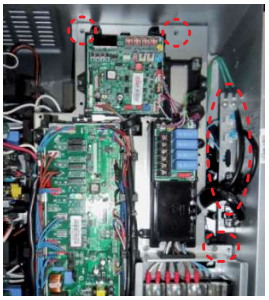


► Comp Wire fix by Holder Wire.





► Fix Comp Wire-Core to Bracket Beam Control Box using large size Cable Tie(350mm).



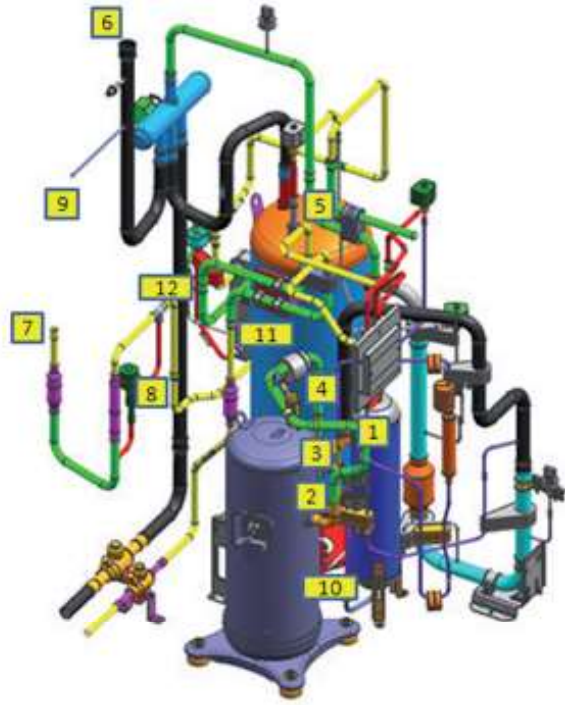
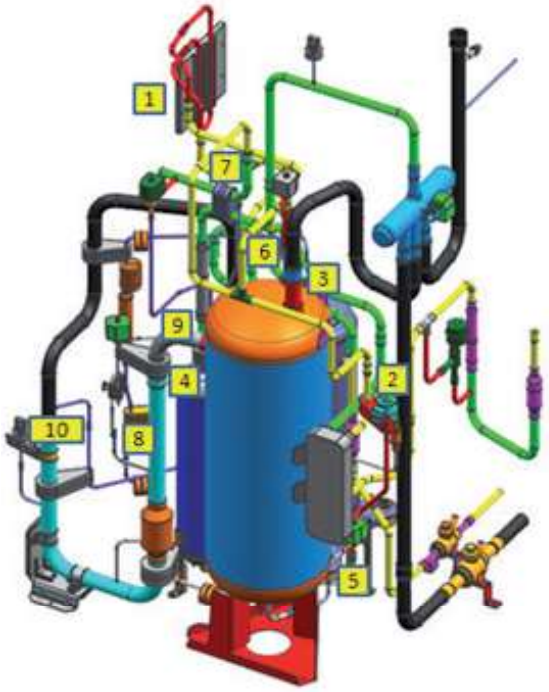


► Separate double layer structure of C/Box after remove 3 screws and connector.

[Reference Sheet]

Pipe Welding Position

■ AM140FXVAGH, AM140JXV✳✳H

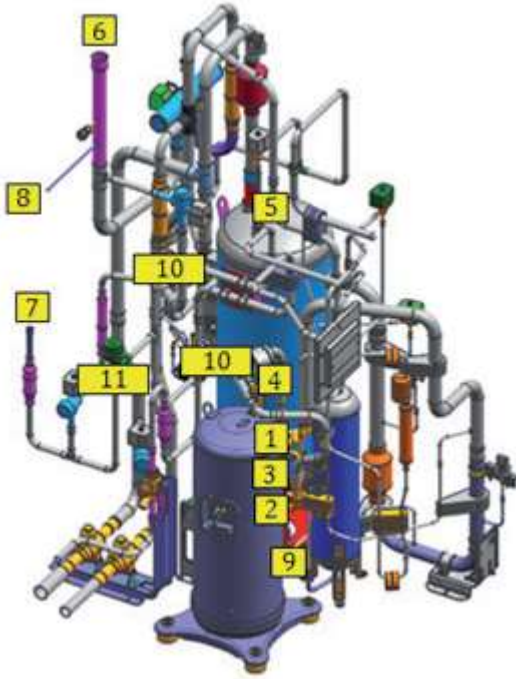
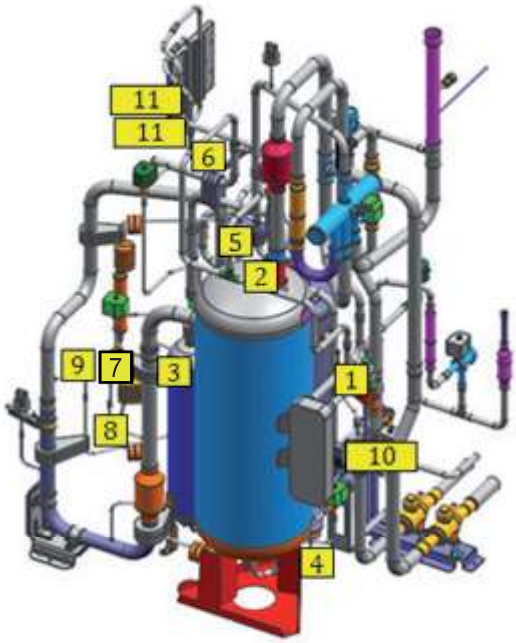
Front Welding Parts	Rear Welding Parts
	

No.	Welding Position	Q'ty	No.	Welding Position	Q'ty
1	Comp+Suction	1	1	Cooling+Subcooler In	2
2	Comp+Discharge	1	2	Subcooler+EVI Bypass	1
3	Comp+Vapor Injection	1	3	Accum+4Way	1
4	Discharge+Oil Sepa	1	4	Accum+Suction	1
5	4Way+Oil Sepa Out	1	5	Accum+Accum Oil Valve	1
6	4Way+Cond In	1	6	Accum+EVI Bypass	1
7	Expansion+Cond Out	1	7	Vapor Injection+EVI Bypass	1
8	Expansion+Subcooler	1	8	Hot Gas Valve+Suction	1
9	Pinch Pipe	1	9	Hot Gas Valve+Oil Sepa Out	1
10	Accum Oil Return Valve + Suction	1	10	Oil Return+Suction	1
11	Liquid Ball Valve+Subcooler In	1			
12	Subcooler+Subcooler In	1			

[Reference Sheet]

Pipe Welding Position

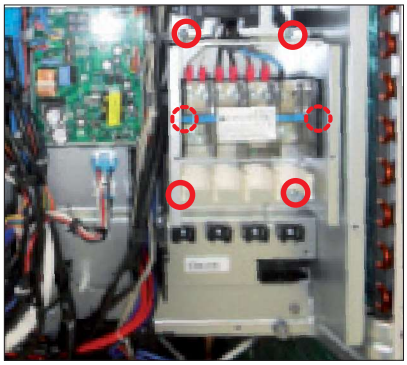
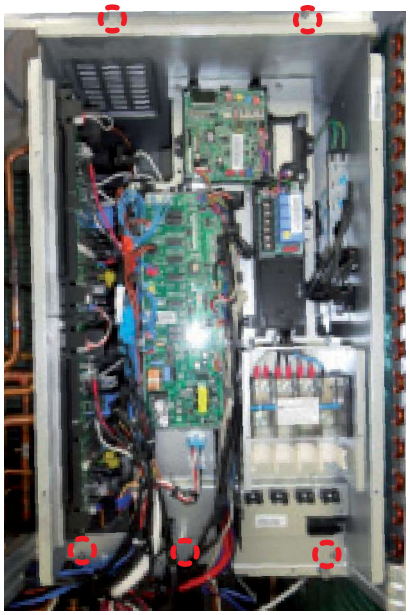
■ AM140FXVAGR,AM140JXV✳GR

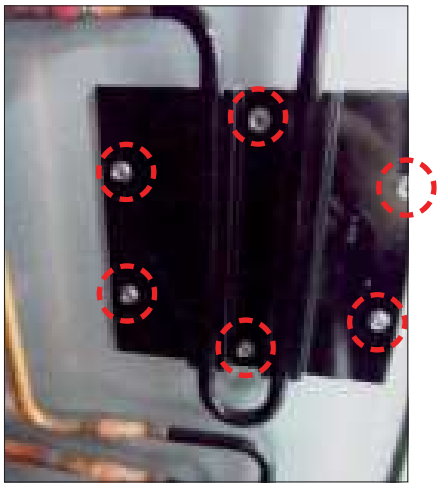
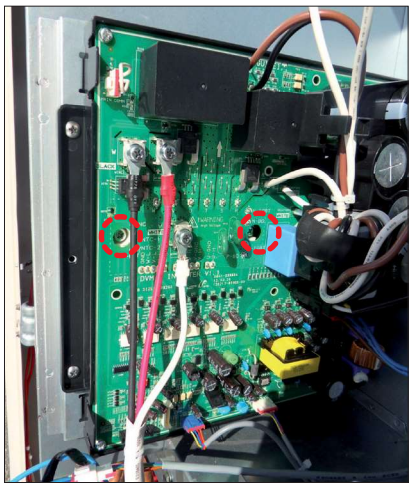
Front Welding Parts	Rear Welding Parts
	

No.	Welding Position	Q'ty	No.	Welding Position	Q'ty
1	Comp+Suction	1	1	Subcooler+EVI Bypass	1
2	Comp+Discharge	1	2	Accum+4Way	1
3	Comp+Vapor Injection	1	3	Accum+Suction	1
4	Discharge+Oil Sepa	1	4	Accum+Accum Oil Valve	1
5	4Way+Oil Sepa Out	1	5	Accum+EVI Bypass	1
6	4Way+Cond In	1	6	Vapor Injection+EVI Bypass	1
7	Expansion+Cond Out	1	7	Hot Gas Valve+Suction	1
8	Pinch Pipe	1	8	Hot Gas Valve+Oil Sepa Out	1
9	Accum Oil Return Valve+Suction	1	9	Oil Return+Suction	1
10	Subcooler+Subcooler In	1	10	LQD Valve+Subcooler In	1
11	Expansion+Subcooler	1	11	Cooling+Subcooler In	2
12	LQD Ball Valve+Subcooler In	1			

3-2-3 AM160/180/200/220/240/260✳XV✳✳✳
AM140JXVA✳H

No.	Parts	Procedure	Remark
1	Electrical equipment Part	1) 11 screws that is fixing CABINET remove. (Use + Screw driver)	
		2) Remove 4 screws that is fixing and separate Cover Control Box. (Use + Screw driver)	
		3) Power, Compressor, Valve, Motor, Sensor connector connected to ASSY PCB remove.	

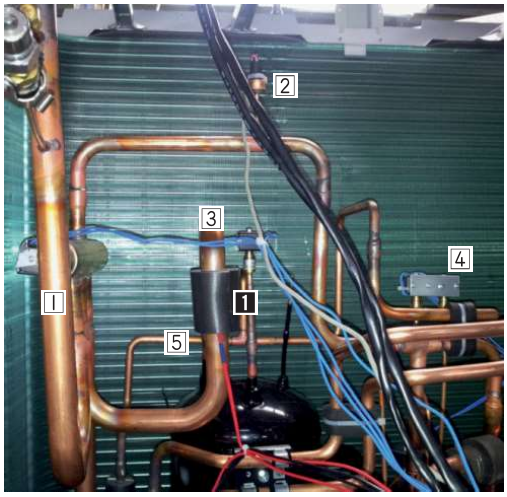
No.	Parts	Procedure	Remark
		4) 2 screws had fixed in terminal block cover when change power terminal block, communication terminal block remove.	
		5) 2 screws had fixed in terminal block after remove 4 screws had fixed to Cabinet for terminal block protection remove.	
		6) 5 screws had fixed to Front part remove.	

No.	Parts	Procedure	Remark
		7) 6 screws had fixed on side refrigerant cooling part outside remove . ⚠ Do not separate Heat Sink pulling Assy Piping Cooling piping compulsorily. (It can be a cause of parts damage)	
		8) 2 screws had fixed on side refrigerant cooling part inside remove.	

No.	Parts	Procedure	Remark
	< Reference > Heat Sink	Spread therminal grease on heat sink - Spread enough Thermal Grease evenly on Plate Heat Sink back whole using roller or brush. - Reassemble Plate Heat Sink in reverse order of disassembly.	

Binding Wire 1

■ AM160/180/200/220/240/260✳XV✳✳H
AM140JXVA✳H

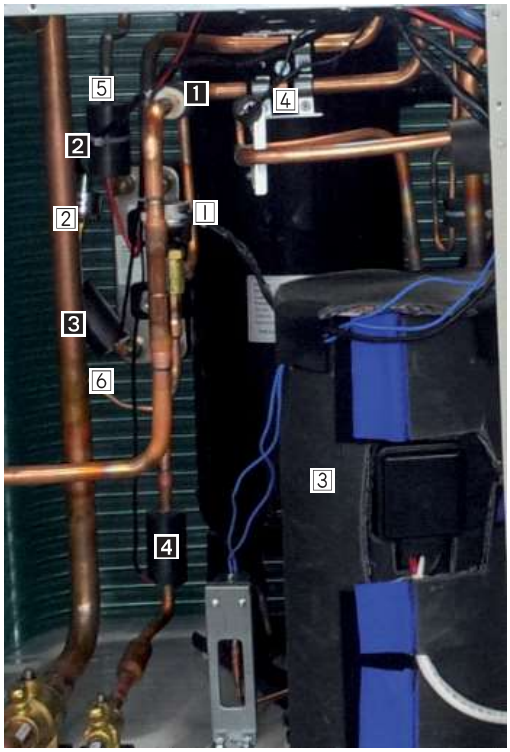


VALVE & SENSOR

No	Valve & Sensor
1	4WAY Valve
2	High Pressure Sensor
3	EVI Bypass Valve
4	EVI SOL Valve
5	Suction Sensor

INSULATION

No	Model	Insu Code	Binding Wire
1	AM160/180/200/220/240/260✳XV✳✳H AM140JXVA✳H	DB62-03808A	



VALVE & SENSOR

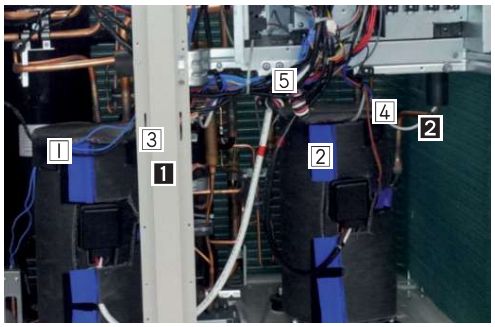
No	Valve & Sensor
1	Expansion Valve
2	EVI EEV Valve
3	Accum Oil Return Valve
4	High Pressure Switch #1
5	EVI Out Sensor
6	EVI In Sensor

INSULATION

No	Model	Insu Code	Binding Wire
1	AM160/180/200/220✳XV✳✳H AM140JXVA✳H	DB62-04154B	
2	AM160/180/200/220/240/260✳XV✳✳H AM140JXVA✳H	DB62-03808D	
3	AM160/180/200/220✳XV✳✳H	DB62-03808E	
	AM240/260✳XV✳✳H AM140JXVA✳H	DB62-03808C	
4	AM160/180/200/220✳XV✳✳H	DB62-03808C	
	AM240/260✳XV✳✳H AM140JXVA✳H	DB62-03808F	

Binding Wire 2

■ AM160/180/200/220/240/260✳XV✳✳H
AM140JXVA✳H

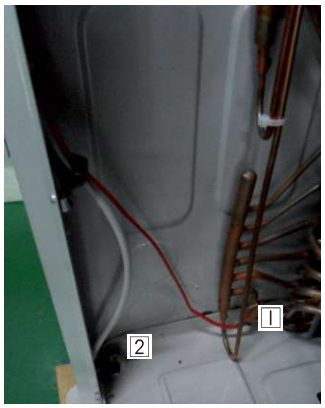


VALVE & SENSOR

No	Valve & Sensor
1	Comp Top #1 Sensor
2	Comp Top #1 Sensor
3	Discharge #1 Sensor
4	Discharge #2 Sensor
5	High Pressure Switch #2

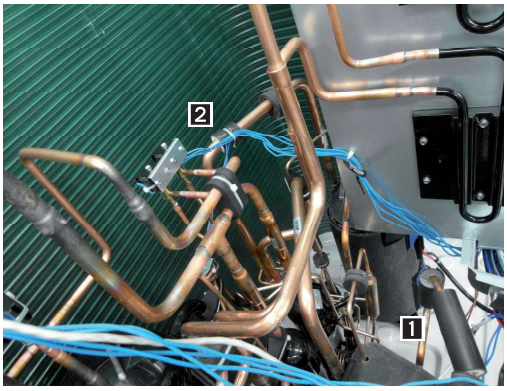
INSULATION

No	Model	Insu Code	Binding Wire
1	AM160/180/200/220/240/260✳XV✳✳H	DB62-03808D	
	AM260/240✳XV✳✳H AM140JXVA✳H	DB62-03808B	
2	AM160/180/200/220/240/260✳XV✳✳H	DB62-03808D	
	AM260/240✳XV✳✳H AM140JXVA✳H	DB62-03808B	



VALVE & SENSOR

No	Valve & Sensor
1	Cond Out Sensor
2	Outdoor Temperature Sensor

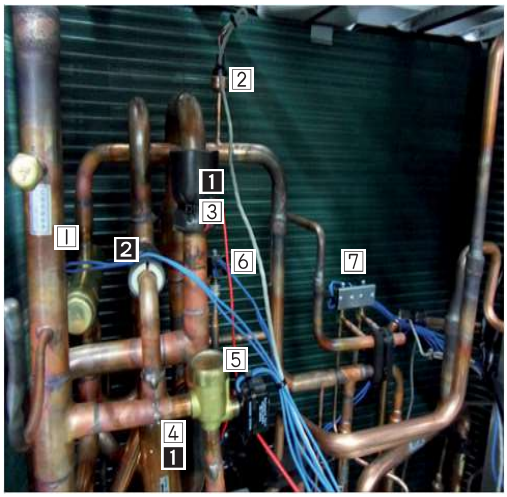


INSULATION

No	Model	Insu Code	Binding Wire
1	AM160/180/200/220/240/260✳XV✳✳H AM140JXVA✳H	DB62-04154C	
2	AM240/260✳XV✳H AM140JXVA✳H	DB62-04154C	

Binding Wire 1

■ AM160/180/200/220✳XV✳GR

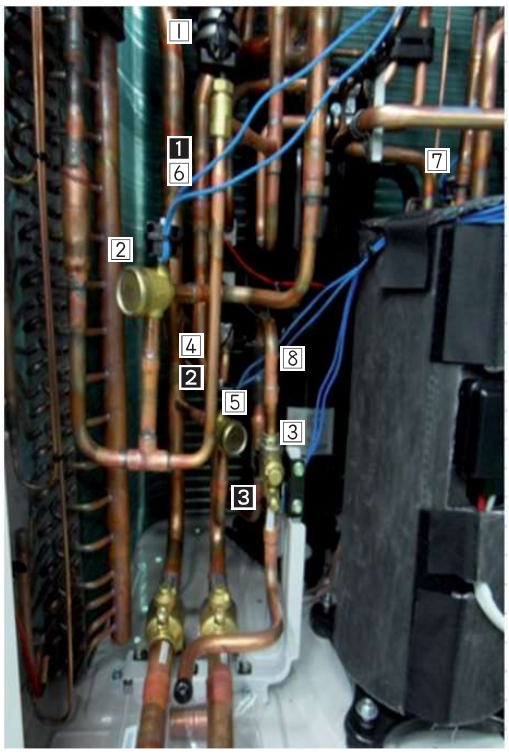


VALVE & SENSOR

No	Valve & Sensor
1	4WAY Valve
2	High Pressure Sensor
3	Suciton 1 Sensor
4	Suciton 2 Sensor
5	Main Cooling Valve
6	EVI Bypass Valve
7	EVI SOL Valve

INSULATION

No	Model	Insu Code	Binding Wire
1	AM160/180/200/220✳XV✳GR	DB62-03808A	
2	AM160/180/200/220✳XV✳GR	DB62-04154C	



VALVE & SENSOR

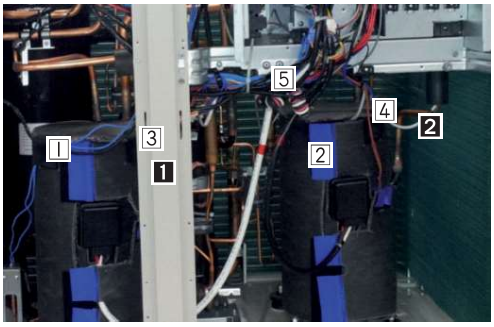
No	Valve & Sensor
1	Main EEV Valve
2	OD EEV Valve
3	ARV Valve
4	EVI In Sensor
5	Hot Gas 2 Valve
6	EVI Out Sensor
7	Hot Gas 1 Valve
8	Liquid Sensor

INSULATION

No	Model	Insu Code	Binding Wire
1	AM160/180/200/220✳XV✳GR	DB62-03808C	
2	AM160/180/200/220✳XV✳GR	DB62-03808E	
3	AM180/200/220✳XV✳GR	DB62-03808D	
	AM160✳XV✳GR	DB62-03808C	

Binding Wire 2

■ AM160/180/200/220F✳XV✳GR

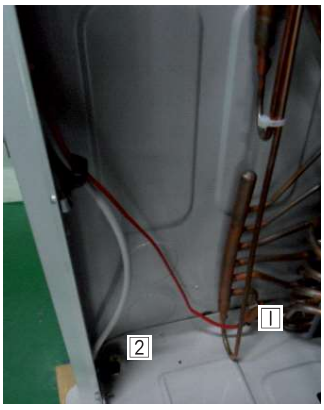


VALVE & SENSOR

No	Valve & Sensor
1	Comp Top #1 Sensor
2	Comp Top #1 Sensor
3	Discharge #1 Sensor
4	Discharge #2 Sensor
5	High Pressure Switch #2

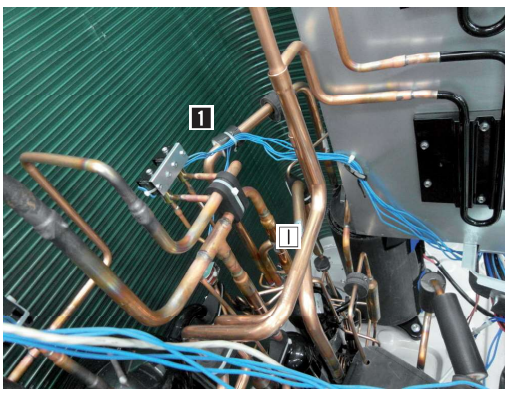
INSULATION

No	Model	Insu Code	Binding Wire
1	AM200/220✳XV✳GR	DB62-03808D	
	AM160/180✳XV✳GR	DB62-03808C	
2	AM180/200/220✳XV✳GR	DB62-03808D	
	AM160✳XV✳GR	DB62-03808C	



VALVE & SENSOR

No	Valve & Sensor
1	Cond Out Sensor
2	Outdoor Temperature Sensor



VALVE & SENSOR

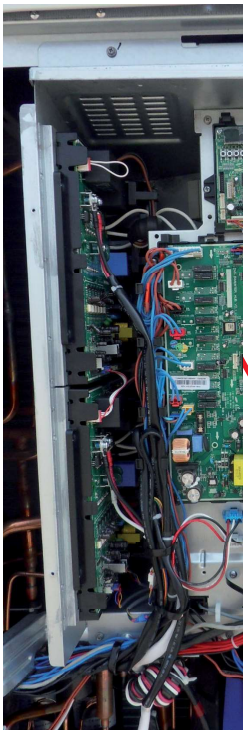
No	Valve & Sensor
1	Low Pressure Sensor

INSULATION

No	Model	Insu Code	Binding Wire
1	AM160/180/200/220✳XV✳GR	DB62-04154C	

Binding Wire 3

■ AM160/180/200/220✳✳XV✳✳✳
AM140JXVA✳H

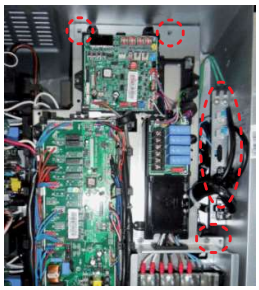




► Comp Wire fix by Holder Wire.



► Fix Comp Wire-Core to Bracket Beam Control Box using large size Cable Tie(350mm).



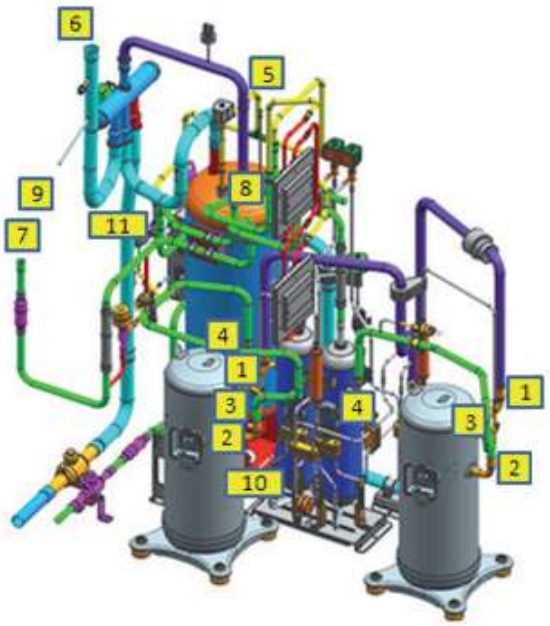
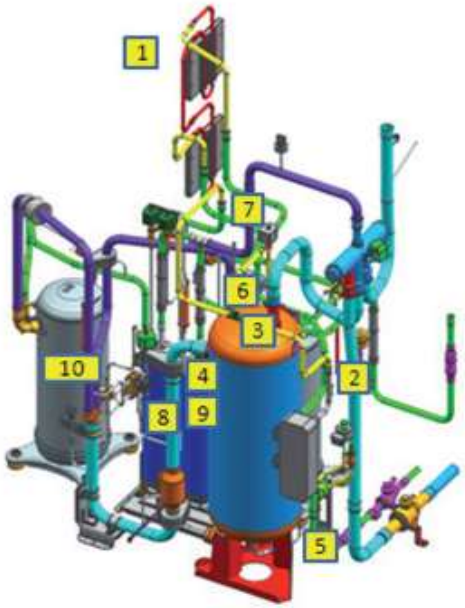


► Separate double layer structure of C/Box after remove 3 screws and connector.

[Reference Sheet]

Pipe Welding Position 4

■ AM160/180/200/220✳✳XV✳✳H
AM140JXVA✳H

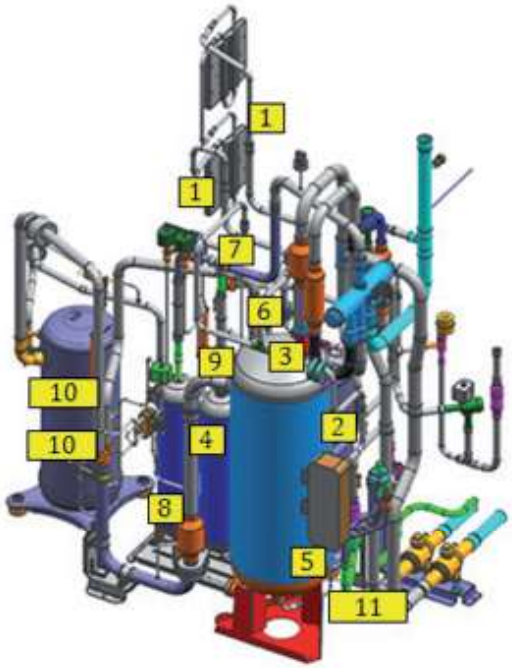
Front Welding Parts	Rear Welding Parts
	

No.	Welding Position	Q'ty	No.	Welding Position	Q'ty
1	Comp+Suction	2	1	Cooling+Subcooler In	1
2	Comp+Discharge	2	2	Subcooler+EVI Bypass	1
3	Comp+Vapor Injection	2	3	Accum+4Way	1
4	Discharge+Oil Sepa	2	4	Accum+Suction	1
5	4Way+Oil Sepa Out	1	5	Accum+Accum Oil Vavle	1
6	4Way+Cond In	1	6	Accum+EVI Bypass	1
7	Expansion+Cond Out	1	7	Vapor Injection+EVI Bypass	1
8	Expansion+Cooling	1	8	Hot Gas Vavle +Suction	1
9	Pinch Pipe	1	9	Hot Gas Vavle +Oil Sepa Out	1
10	Accum Oil Return Valve + Suction	1	10	Oil Return+Suction	2
11	Subcooler+Subcooler In	1			

[Reference Sheet]

Pipe Welding Position 4

■ AM160/180/200/220F✳XV✳GR

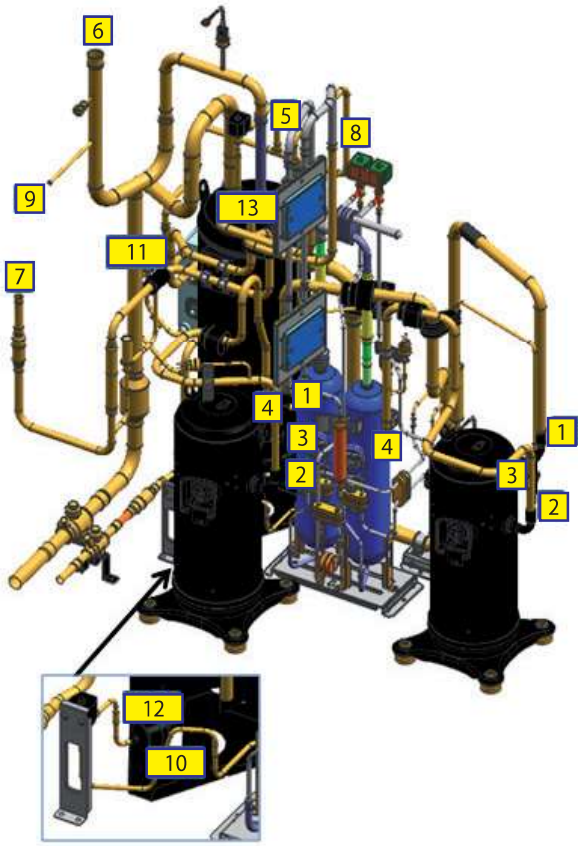
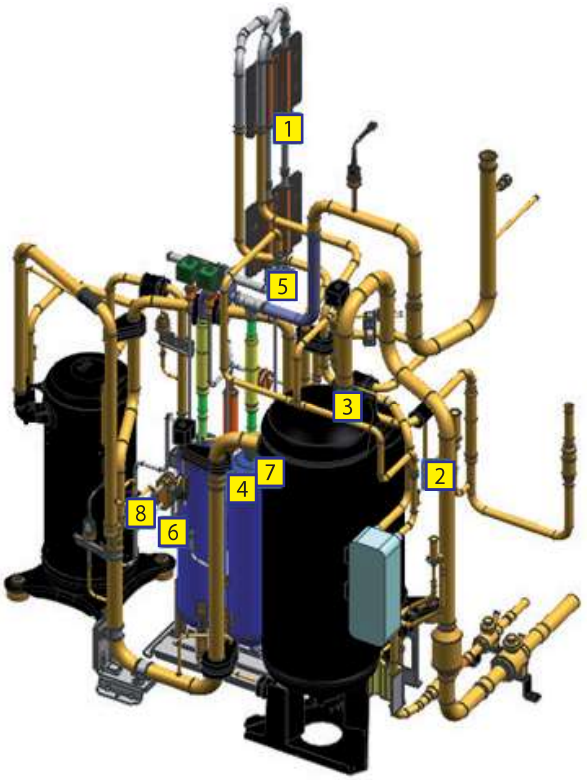
Front Welding Parts	Rear Welding Parts
	

No.	Welding Position	Q'ty	No.	Welding Position	Q'ty
1	Comp+Suction	2	1	Cooling+Subcooler In	2
2	Comp+Discharge	2	2	Subcooler+EVI Bypass	1
3	Comp+Vapor Injection	2	3	Accum+4Way	1
4	Discharge+Oil Sepa	2	4	Accum+Suction	1
5	4Way+Oil Sepa Out	1	5	Accum+Accum Oil Vavle	1
6	4Way+Cond In	1	6	Accum+EVI Bypass	1
7	Expansion+Cond Out	1	7	Vapor Injection+EVI Bypass	1
8	Pinch Pipe	1	8	Hot Gas Vavle +Suction	1
9	Accum Oil Return Valve+Suction	1	9	Hot Gas Vavle +Oil Sepa Out	1
10	Subcooler+Expansion	1	10	Oil Return+Suction	2
			11	LQD Ball Valve+Subcooler	1

[Reference Sheet]

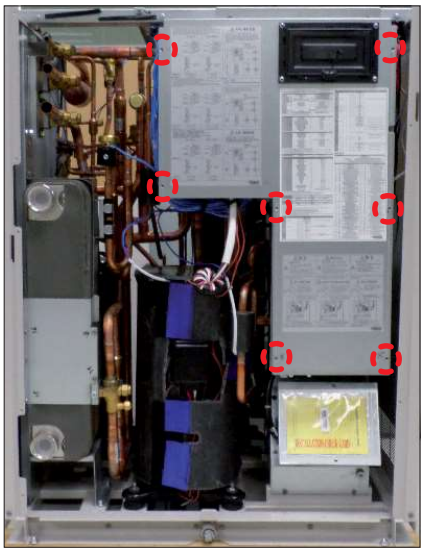
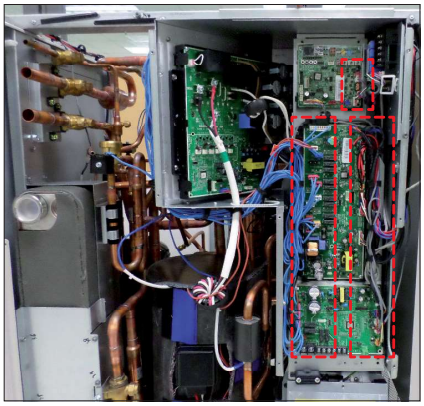
Pipe Welding Position 4

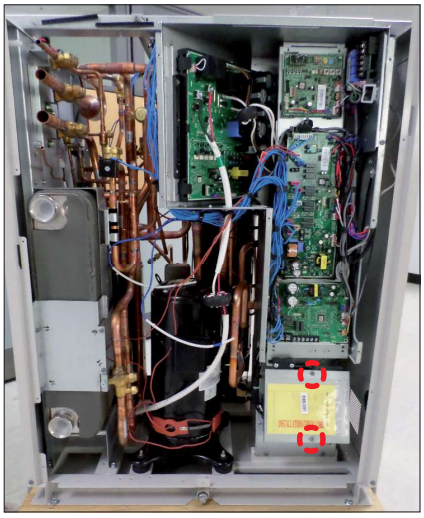
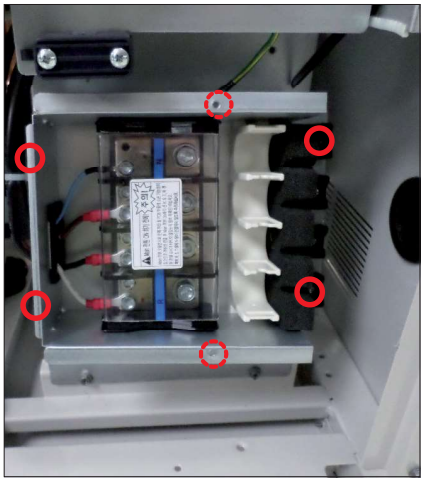
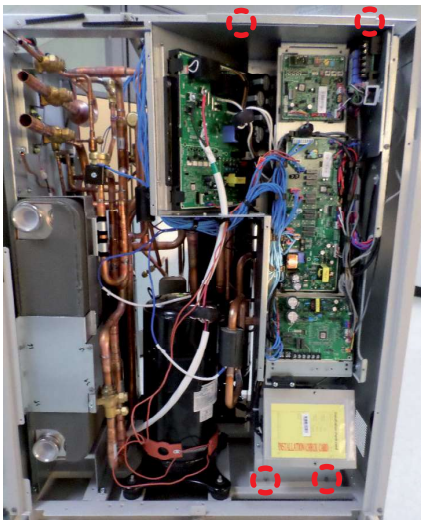
■ AM140/160/180/200MXVAFC

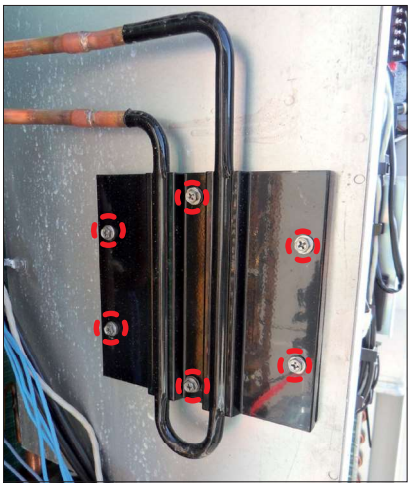
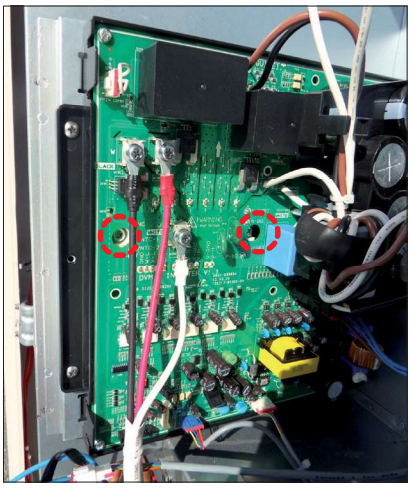
Front Welding Parts	Rear Welding Parts
	

No.	Welding Position	Q'ty	No.	Welding Position	Q'ty
1	Comp+Suction	2	1	Cooling+Subcooler	1
2	Comp+Discharge	2	2	Subcooler+EVI Bypass	1
3	Comp+Vapor Injection	2	3	Accum+Service Valve	1
4	Discharge+Oil Sepa	2	4	Accum+Suction	1
5	Cond Connector+Oil Sepa Out	1	5	Vapor Injection+EVI Bypass	1
6	Cond Connector+Cond In	1	6	Hot Gas Vavle+Suction	1
7	Expansion+Cond Out	1	7	Hot Gas Vavle+Oil Sepa Out	1
8	Expansion+Cooling	1	8	Oil Return+Suction	2
9	Pinch Pipe	1			
10	Accum Oil Return Valve+Suction	1			
11	Subcooler+Expansion	1			
12	Accum+Accum Oil Vavle	1			
13	Accum+EVI Bypass	1			

3-2-4 AM080/100/120FXWA✳✳

No.	Parts	Procedure	Remark
1	Electrical equipment Part	1) 9 screws that is fixing CABINET remove. (Use + Screw driver)	
		2) Remove 7 screws that is fixing and separate Cover Control Box. (Use + Screw driver)	
		3) Power, Compressor, Valve, Motor, Sensor connector connected to ASSY PCB remove.	

No.	Parts	Procedure	Remark
		4) 2 screws had fixed in terminal block cover when change power terminal block, communication terminal block remove.	
		5) 2 screws had fixed in terminal block after remove 4 screws had fixed to Cabinet for terminal block protection remove.	
		6) 4 screws had fixed to Front part remove.	

No.	Parts	Procedure	Remark
		7) 6 screws had fixed on side refrigerant cooling part outside remove . ⚠ Do not separate Heat Sink pulling Assy Piping Cooling piping compulsorily. (Is responsible for parts damage.)	
		8) 2 screws had fixed on side refrigerant cooling part inside remove.	

No.	Parts	Procedure	Remark
	< Reference > Heat Sink	To Heat Sink Thermal Grease Spread service work - Spread enough Thermal Grease evenly on Plate Heat Sink back whole using roller or brush. - Reassemble Plate Heat Sink in reverse order of disassembly.	

Binding Wire 1

■ AM080/100/120FXWA✳✳



VALVE & SENSOR

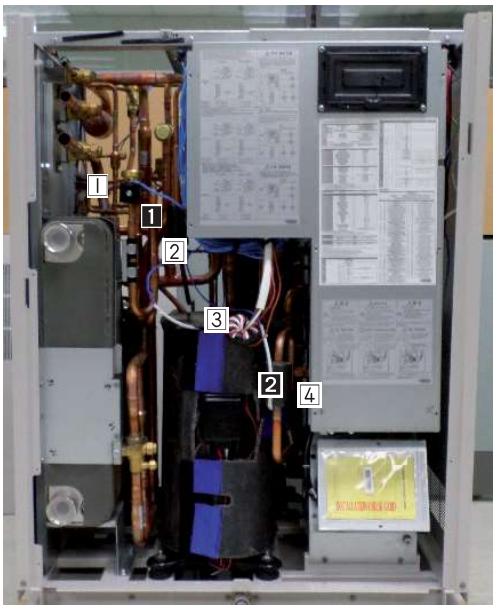
No	Valve & Sensor
1	4WAY Valve
2	High Pressure Sensor
3	Suciton 1 Sensor
4	Suciton 2 Sensor
5	Main Cooling Valve
6	EVI Bypass Valve
7	EVI SOL Valve
8	4WAY Valve
9	High Pressure Sensor
10	Suciton 1 Sensor
11	Suciton 2 Sensor
12	Main Cooling Valve
13	EVI Bypass Valve
14	EVI SOL Valve
15	Main Cooling Valve
16	EVI Bypass Valve

INSULATION

No	Model	Insu Code	Binding Wire
1	AM080/100/120FXWA✳✳	DB62-03808A	
2	AM080/100/120FXWA✳✳	DB62-04154C	
3	AM080/100/120FXWA✳✳	DB62-03808A	
4	AM080/100/120FXWA✳✳	DB62-04154C	
5	AM080/100/120FXWA✳✳	DB62-03808A	
6	AM080/100/120FXWA✳✳	DB62-04154C	

Binding Wire 2

■ AM080/100/120FXWA✳✳

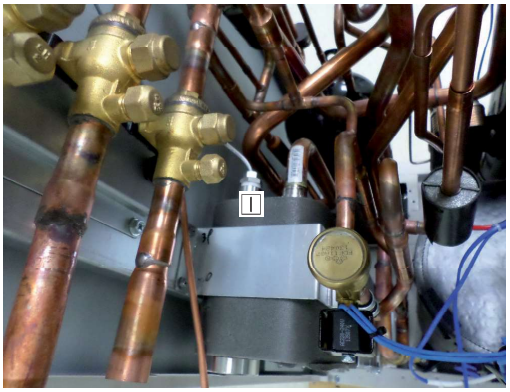


VALVE & SENSOR

No	Valve & Sensor
1	Liquid valve
2	Liquid temp. sensor
3	COMP TOP sensor
4	Discharge temp. sensor

INSULATION

No	Model	Insu Code	Binding Wire
1	AM080/100/120FXWA✳✳	DB62-04154A	
2	AM080/100/120FXWA✳✳	DB62-03808D	



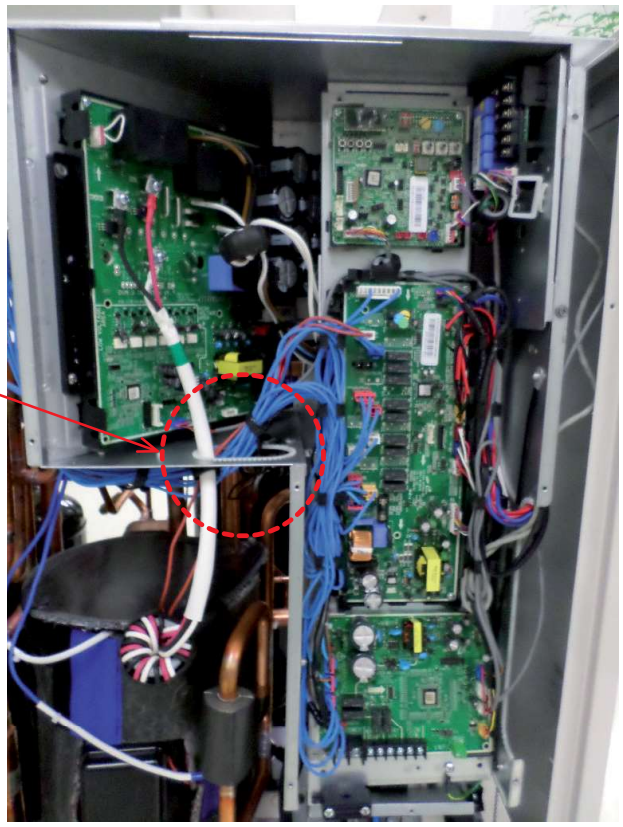
VALVE & SENSOR

No	Valve & Sensor
1	Water temp. sensor

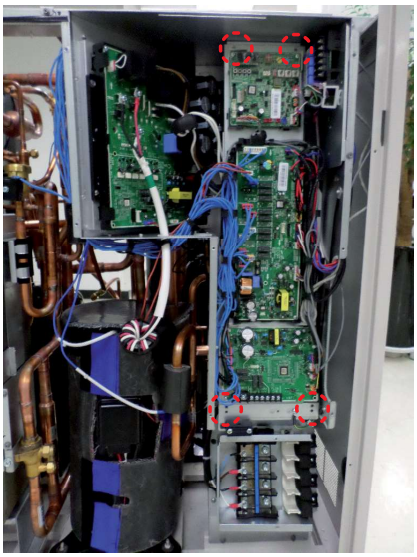
Binding Wire 3

■ AM080/100/120FXWA✳✳





► Comp wire & valve,sensor wires fix by Holder wire with cover bushing hole.



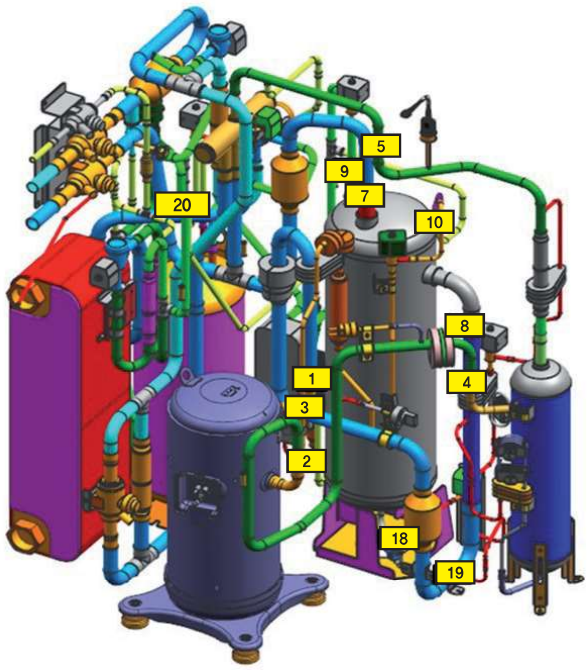
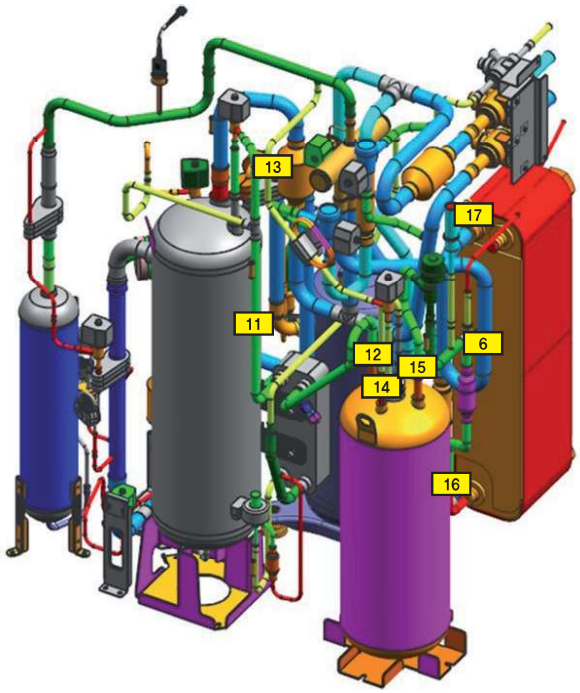


► Separate double layer structure of C/Box after remove 3 screws and connector.

[Reference Sheet]

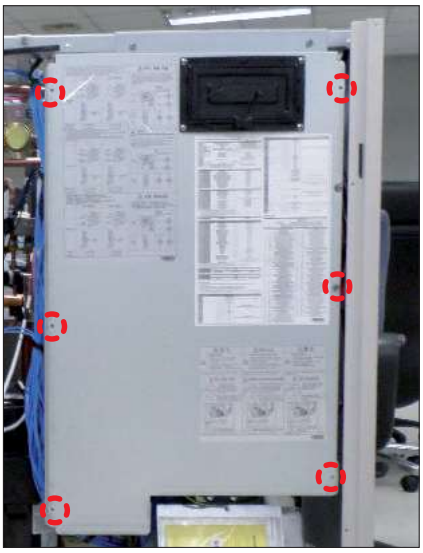
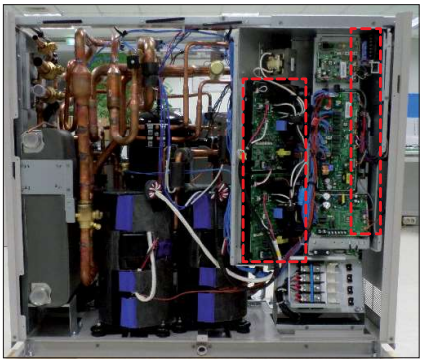
Pipe Welding Position 4

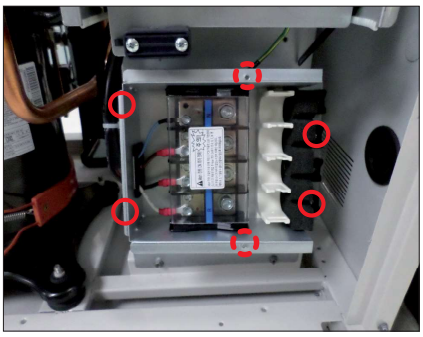
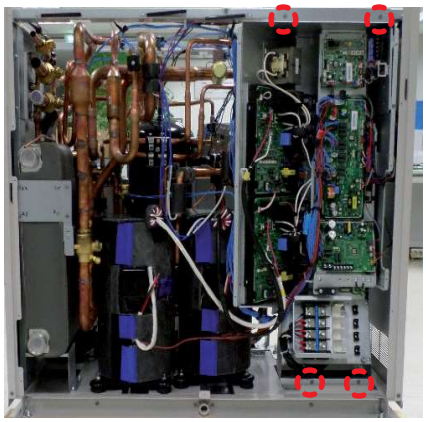
■ AM080/100/120FXWA✳✳

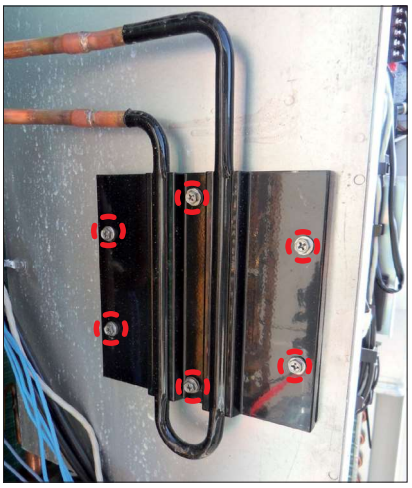
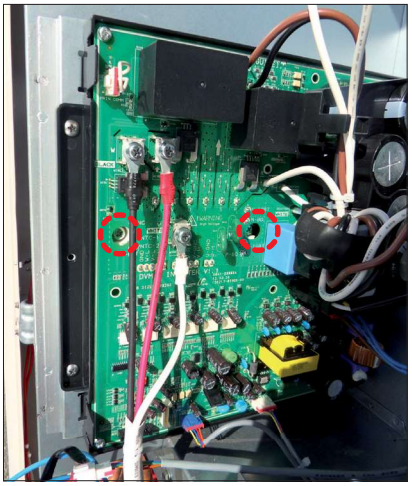
Front Welding Parts	Rear Welding Parts
	

No.	Welding Position	Q'ty	No.	Welding Position	Q'ty
1	Comp+Suction	1	11	Subcooler+EVI Bypass	1
2	Comp+Discharge	1	12	Subcooler+Receiver	1
3	Comp+Vapor Injection	1	13	Hot Gas Vavle+4way	1
4	Discharge+Oil Sepa	1	14	Hot Gas Vavle+Receiver	1
5	4Way+Oil Sepa Out	1	15	Receiver+Expansion	1
6	4Way+Cond In	1	16	Cond+Expansion	1
7	4Way+Accum	1	17	Expansion+Tube Liquid	1
8	Accum+Suction	1	18	Accum+Accum Oil Vavle	1
9	Accum+EVI Bypass	1	19	Accum Oil Vavle+Suction	1
10	Vapor Injection+EVI Bypass	1	20	Subcooler+Tube Liquid	2

3-2-5 AM200FXWA✳✳

No.	Parts	Procedure	Remark
1	Electrical equipment Part	1) 9 screws that is fixing CABINET remove. (Use + Screw driver)	
		2) Remove 6 screws that is fixing and separate Cover Control Box. (Use + Screw driver)	
		3) Power, Compressor, Valve, Motor, Sensor connector connected to ASSY PCB remove.	

No.	Parts	Procedure	Remark
		4) 2 screws had fixed in terminal block cover when change power terminal block, communication terminal block remove.	
		5) 2 screws had fixed in terminal block after remove 4 screws had fixed to Cabinet for terminal block protection remove.	
		6) 4 screws had fixed to Front part remove.	

No.	Parts	Procedure	Remark
		7) 6 screws had fixed on side refrigerant cooling part outside remove . ⚠ Do not separate Heat Sink pulling Assy Piping Cooling piping compulsorily. (Is responsible for parts damage.)	
		8) 2 screws had fixed on side refrigerant cooling part inside remove.	

Binding Wire 1

■ AM200FXWA✳✳



VALVE & SENSOR

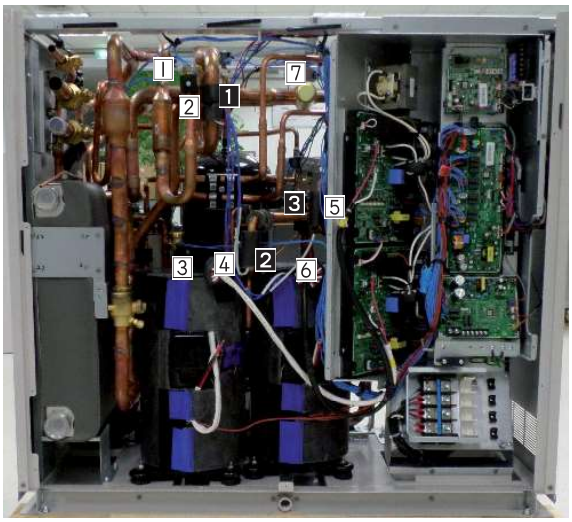
No	Valve & Sensor
1	Low pressure sensor
2	ACCUM. Return valve
3	HOT GAS #1 valve
4	High pressure sensor
5	EVI valve
6	SUCTION #2 temp. sensor
7	Subcooler inlet temp. sensor
8	Liquid temp. sensor
9	HOT GAS #2 valve
10	Main EEV
11	COND OUT temp. sensor
12	Bypass valve
13	High pressure sensor

INSULATION

No	Model	Insu Code	Binding Wire
1	AM200FXWA✳✳	DB62-04154A	
2	AM200FXWA✳✳	DB62-03808C	
3	AM200FXWA✳✳	DB62-03808E	
4	AM200FXWA✳✳	DB62-03808D	
2	AM200FXWA✳✳	DB62-03808D	

Binding Wire 2

■ AM200FXWA✳✳



VALVE & SENSOR

No	Valve & Sensor
1	HOT GAS #2 valve
2	Main cooling valve
3	COMP TOP sensor
4	Discharge temp. sensor
5	Discharge temp. sensor
6	COMP TOP sensor
7	4WAY VALVE

INSULATION

No	Model	Insu Code	Binding Wire
1	AM200FXWA✳✳	DB62-03808A	
2	AM200FXWA✳✳	DB62-03808D	
3	AM200FXWA✳✳	DB62-03808D	

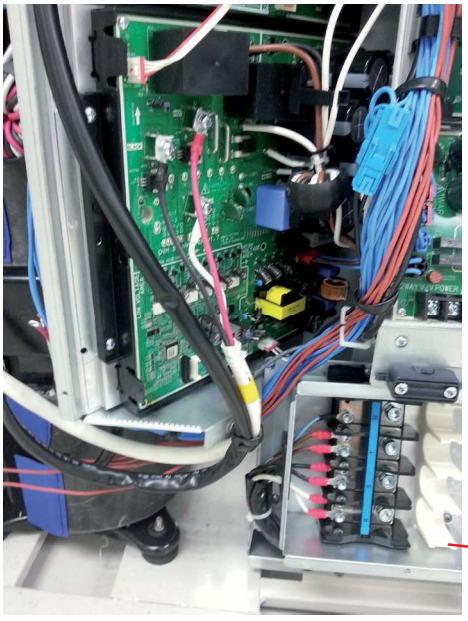


VALVE & SENSOR

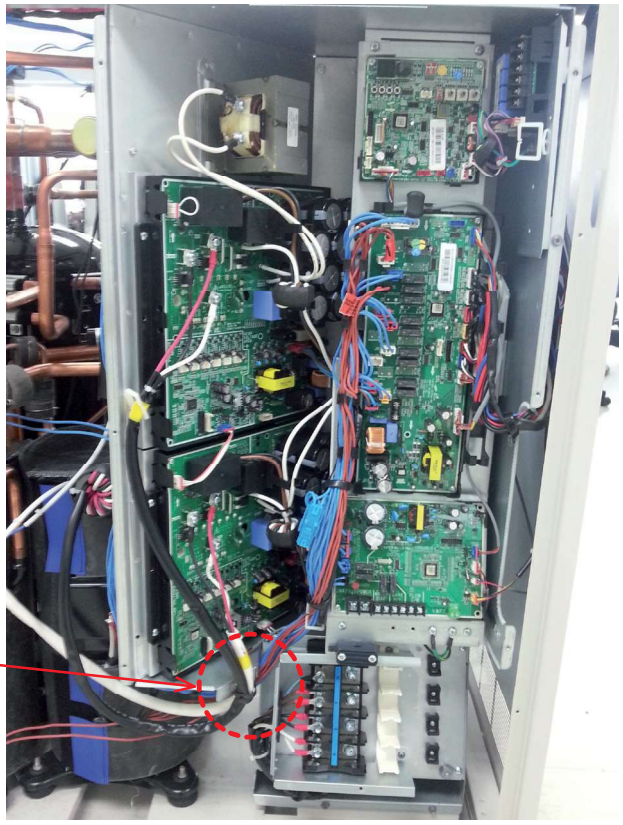
No	Valve & Sensor
1	Water temp. sensor

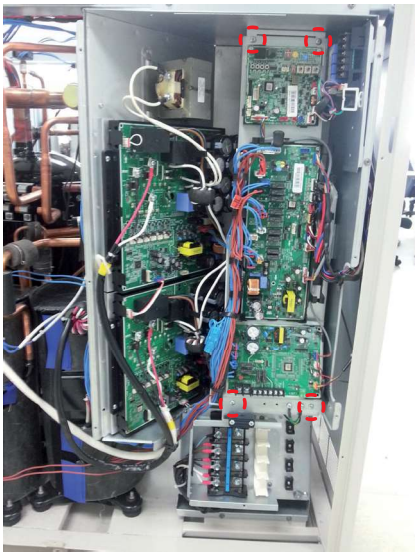
Binding Wire 3

■ AM200FXWA✳✳



► Comp wire & valve,sensor wires fix by Holder wire.



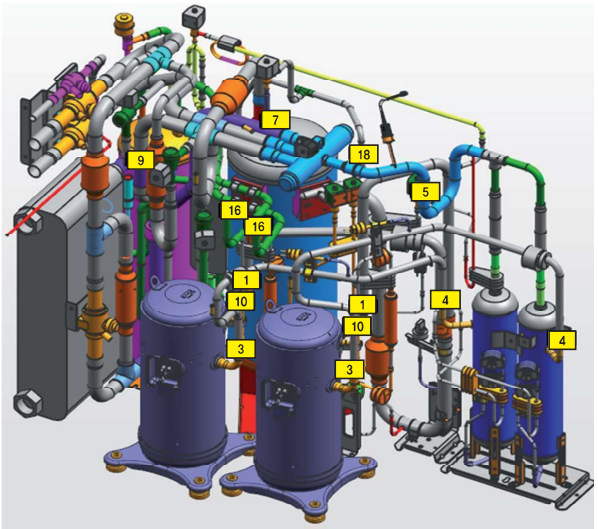
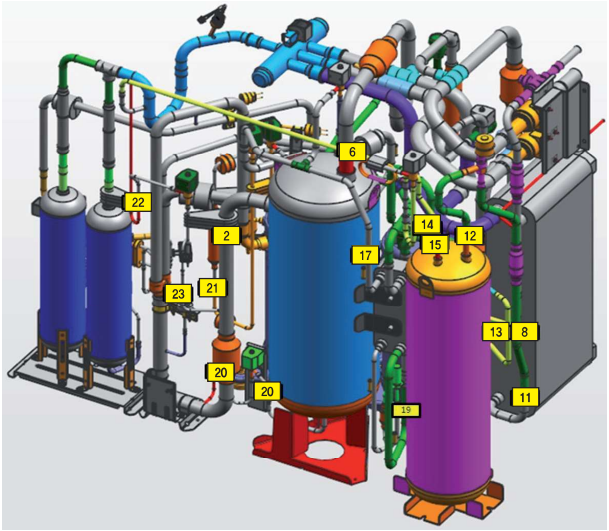


► Separate double layer structure of C/Box after remove 3 screws and connector.

[Reference Sheet]

Pipe Welding Position

■ AM200FXWA✳✳

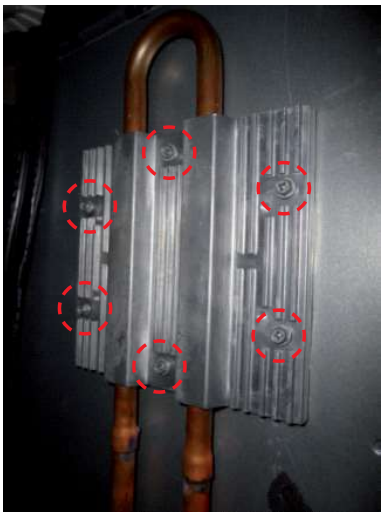
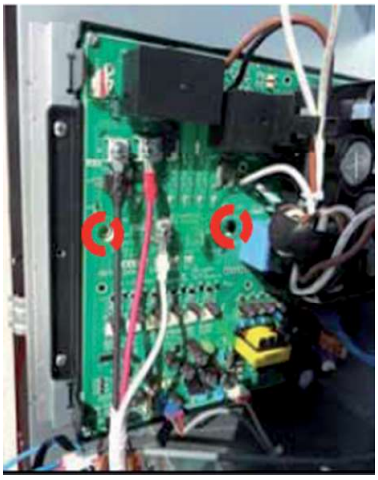
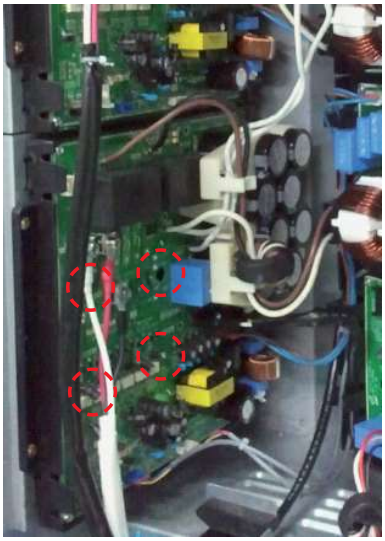
Front Welding Parts	Rear Welding Parts
	

No.	Welding Position	Q'ty	No.	Welding Position	Q'ty
1	Comp+Suction	2	13	Expansion+Tube Liquid	1
2	Accum+Suction	1	14	Receiver+Subcooler	1
3	Comp+Discharge	2	15	Receiver+Bypass hot gas	1
4	Discharge+Oil Sepa	2	16	Subcooler+Tube Liquid	2
5	4Way+Oil Sepa	1	17	Subcooler+EVI Bypass	1
6	4Way+Accum	1	18	EVI Bypass+Vapor Injection	1
7	Accum+EVI Bypass	1	19	Subcooler+Tube Liquid	1
8	4WAY+Tube Liquid	1	20	Accum+Accum oil	1
9	4WAY+Cond	1	21	Vapor Injection+Vapor Injection	1
10	Comp+Vapor Injection	2	22	Bypass hot gas+Oil Sepa	1
11	Expansion+Cond	1	23	Bypass hot gas+Suction	1
12	Receiver+Expansion	1			

3-2-6 AM140/160KXVG✳✳, AM140/160/180KXVA✳✳

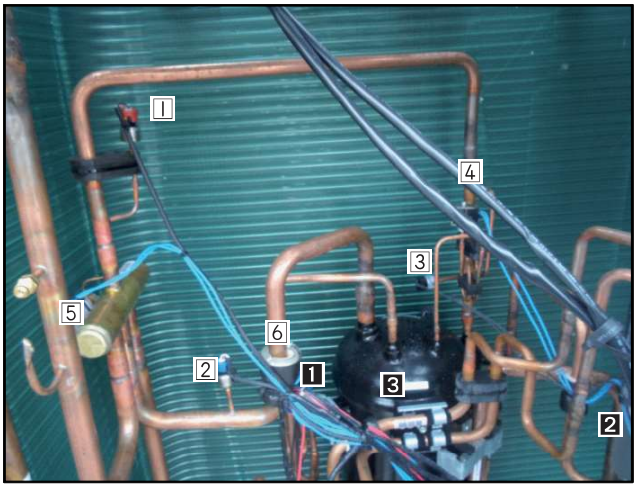
No.	Parts	Procedure	Remark
1	Electrical equipment Part	1) Remove 10 screws from the cabinet (Use + screw driver)	
		2) Remove 4 screws and separate cover control box (Use + screw driver)	
		3) Power, Compressor, Valve, Motor, Sensor connector connected to ASSY PCB remove.	

No.	Parts	Procedure	Remark
		4) 2 screws had fixed in terminal block cover when change power terminal block, communication terminal block remove.	
		5) 2 screws had fixed in terminal block after remove 4 screws had fixed to Cabinet for terminal block protection remove.	
		6) 5 screws had fixed to Front part remove.	

No.	Parts	Procedure	Remark
		7) 6 screws had fixed on side refrigerant cooling part outside remove . ⚠ Do not separate Heat Sink pulling Assy Piping Cooling piping compulsorily. (It can be a cause of parts damage)	
		8) 2 screws had fixed on side refrigerant cooling part inside remove. ⚠ Use the driver with magnetic.	AM140KXV✳✳✳  AM160/180KXVA✳✳✳ AM160KXVG✳✳ 

Binding Wire 1

■ AM140/160KXVG✳✳, AM140/160/180KXVA✳✳



VALVE & SENSOR

No	Valve & Sensor
1	High Pressure Sensor
2	Low Pressure Sensor
3	High Pressure Switch
4	Hot Gas Valve
5	4WAY Valve
6	Suction Sensor

INSULATION

No	Model	Insu Code	Binding Wire
1	AM140/160/180✳XV✳✳	DB62-03808G	
2	AM140/160/180✳XV✳✳	DB62-08752B	
3	AM140/160/180✳XV✳✳	DB62-08752B	

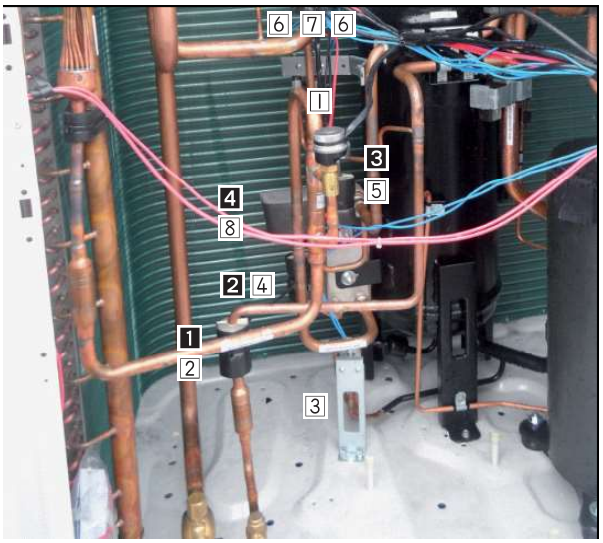


VALVE & SENSOR

No	Valve & Sensor
1	Cond Out Sensor
2	Outdoor Temperature Sensor

Binding Wire 2

■ AM140/160KXVG✳✳, AM140/160/180KXVA✳✳



VALVE & SENSOR

No	Valve & Sensor
1	Expansion Valve
2	Liquid Sensor
3	Accum Oil Return Valve
4	EVI In Sensor
5	EVI Out Sensor
6	EVI SOL Valve
7	EVI Bypass Valve
8	EVI EEV

INSULATION

No	Model	Insu Code	Binding Wire
1	AM140/160/180✳XV✳✳	DB62-08751D	
2	AM140/160/180✳XV✳✳	DB62-08751E	
3	AM140/160/180✳XV✳✳	DB62-08751C	
4	AM140/160/180✳XV✳✳	DB62-11717A	



VALVE & SENSOR

No	Valve & Sensor
1	Comp Top #1 Sensor
2	Discharge #1 Sensor

INSULATION

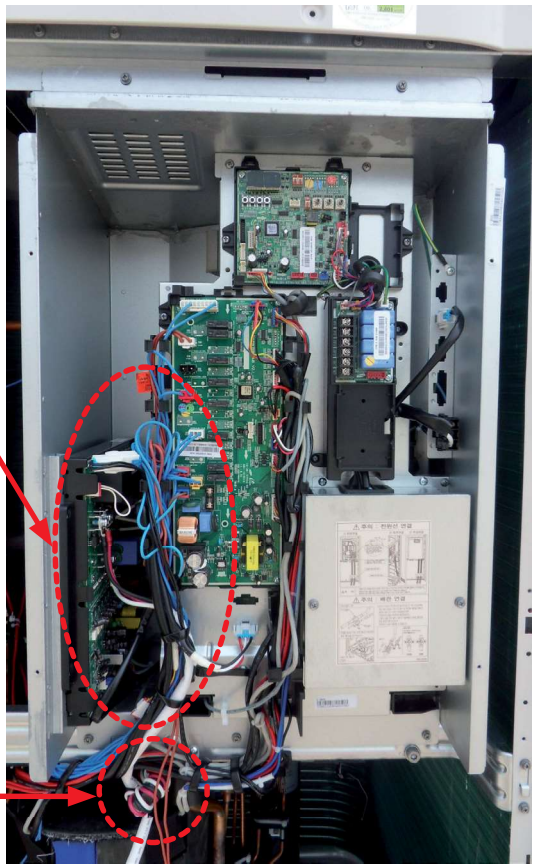
No	Model	Insu Code	Binding Wire
1	AM140/160/180✳XV✳✳	DB62-08751D	

Binding Wire 3

■ AM140/160KXVG✳✳, AM140/160/180KXVA✳✳

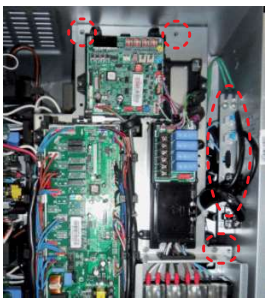


► Comp Wire fix by Holder Wire.





► Fix Comp Wire-Core to Bracket Beam Control Box using large size Cable Tie(350mm).



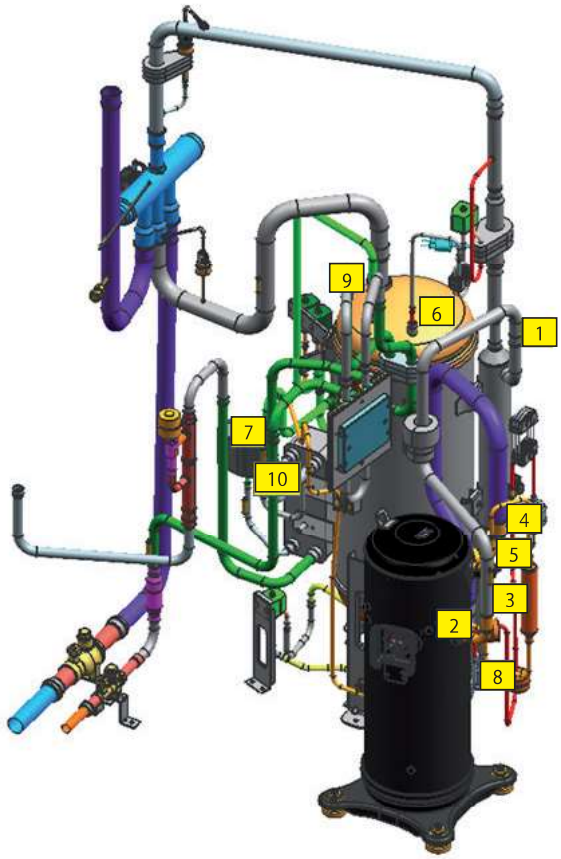
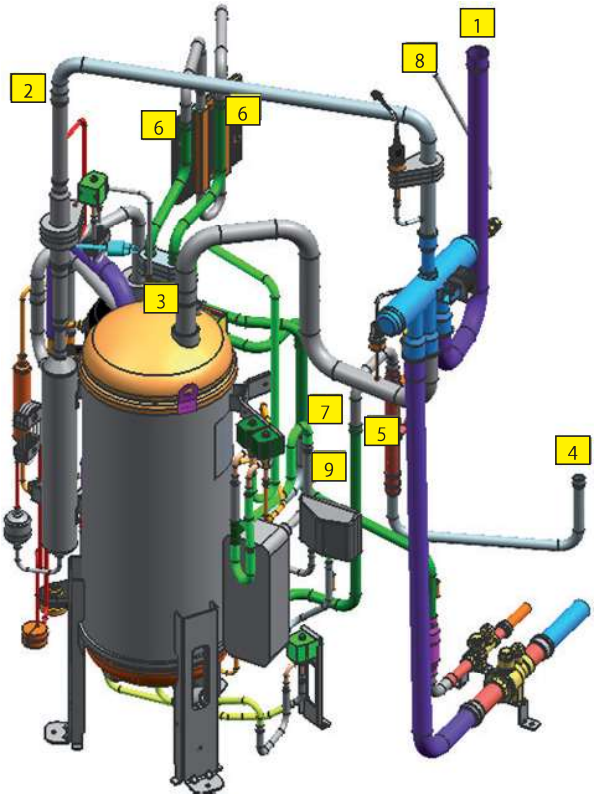


► Separate double layer structure of C/Box after remove 3 screws and connector.

[Reference Sheet]

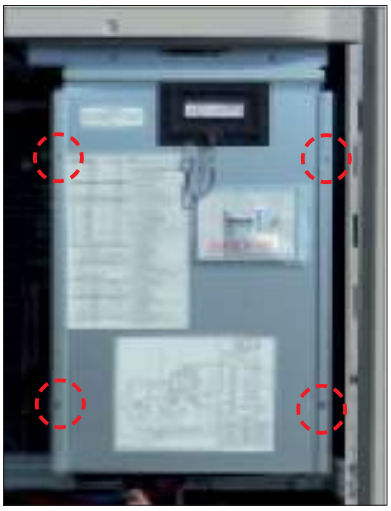
Pipe Welding Position

■ AM140/160KXVG✳✳, AM140/160/180KXVA✳✳

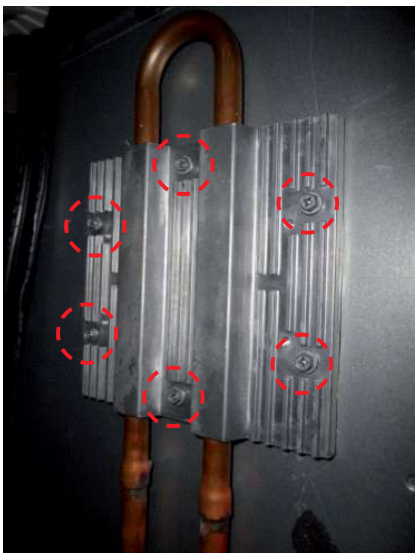
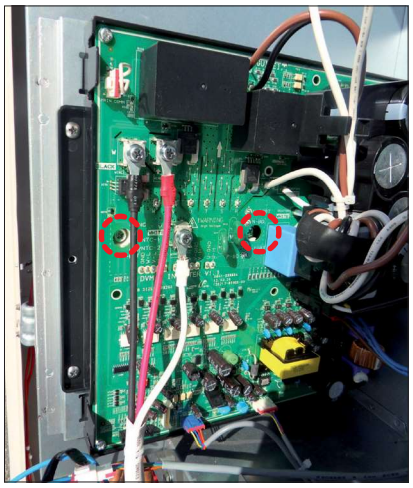
Front Welding Parts	Rear Welding Parts
	

No.	Welding Position	Q'ty	No.	Welding Position	Q'ty
1	Discharge+Oil-sepa	1	1	4way+Cond in	1
2	Discharge+Comp	1	2	4way+Oil-sepa out	1
3	Suction+Accum	1	3	4way+Accum	1
4	Suction+Comp	1	4	Expansion+Cond out	1
5	VI+Connector	1	5	Expansion+Subcooler	1
6	Hot-gas+Accum	1	6	Cooling+Connector	2
7	Connector+LQD	1	7	Connector+Subcooler	1
8	Suction+Oil-Return	1	8	Pinch Pipe	1
9	EVI-Bypass+Accum	1	9	EVI-Bypass+Subcooler	1
10	VI VALVE+Connector	1			

3-2-7 AM180/200/220KXVG✳✳, AM200/220KXVA✳✳

No.	Parts	Procedure	Remark
1	Electrical equipment Part	1) 10 screws that is fixing CABINET remove. (Use + Screw driver)	
		2) Remove 4 screws that is fixing and separate Cover Control Box. (Use + Screw driver)	
		3) Power, Compressor, Valve, Motor, Sensor connector connected to ASSY PCB remove.	

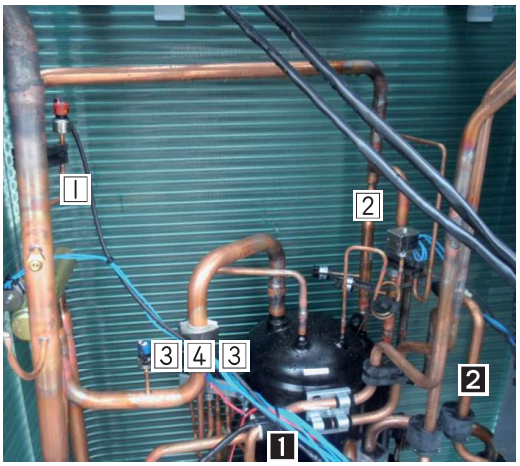
No.	Parts	Procedure	Remark
		4) 2 screws had fixed in terminal block cover when change power terminal block, communication terminal block remove.	
		5) 2 screws had fixed in terminal block after remove 4 screws had fixed to Cabinet for terminal block protection remove.	
		6) 6 screws had fixed to Front part remove.	

No.	Parts	Procedure	Remark
		7) 6 screws had fixed on side refrigerant cooling part outside remove . ⚠ Do not separate Heat Sink pulling Assy Piping Cooling piping compulsorily. (It can be a cause of parts damage)	
		8) 2 screws had fixed on side refrigerant cooling part inside remove. ⚠ Use the driver with magnetic.	

No.	Parts	Procedure	Remark
	< Reference > Heat Sink	Spread therminal grease on heat sink - Spread enough Thermal Grease evenly on Plate Heat Sink back whole using roller or brush. - Reassemble Plate Heat Sink in reverse order of disassembly.	

Binding Wire 1

■ AM180/200/220KXVG✳✳, AM200/220KXVA✳✳

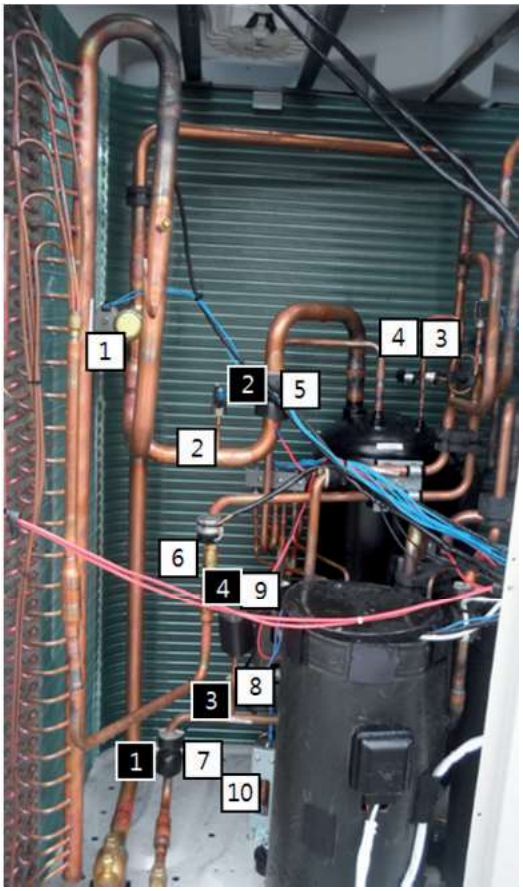


VALVE & SENSOR

No	Valve & Sensor
1	High Pressure Sensor
2	Hot Gas Valve
3	EVI SOL Valve
4	EVI Bypass Valve

INSULATION

No	Model	Insu Code	Binding Wire
1	AM200/220✳XV✳✳✳	DB62-08752B	
2	AM200/220✳XV✳✳✳	DB62-08752B	



VALVE & SENSOR

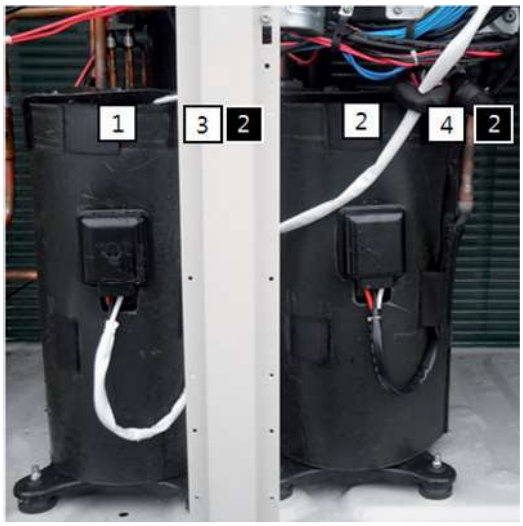
No	Valve & Sensor
1	4WAY Valve
2	Low Pressure Sensor
3	High Pressure Switch #1
4	High Pressure Switch #2
5	Suction Sensor
6	Expansion Valve
7	Liquid Sensor
8	EVI In Sensor
9	EVI Out Sensor
10	Accum Oil Return Valve

INSULATION

No	Model	Insu Code	Binding Wire
1	AM200/220✳XV✳✳✳	DB62-08751D	
2	AM200/220✳XV✳✳✳	DB62-08751A	
3	AM200/220✳XV✳✳✳	DB62-08751E	
4	AM200/220✳XV✳✳✳	DB62-08751C	

Binding Wire 2

■ AM180/200/220KXVG✳✳, AM200/220KXVA✳✳

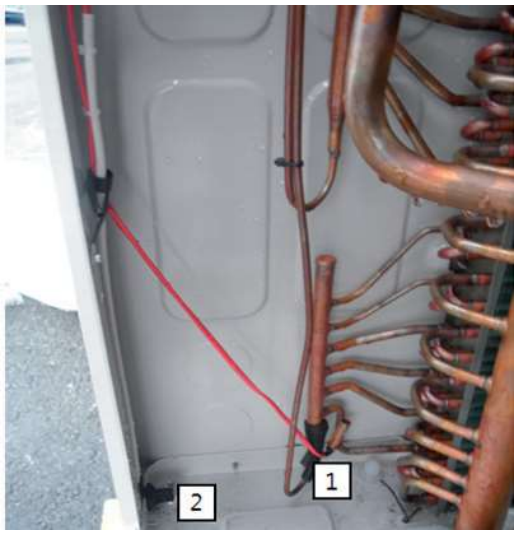


VALVE & SENSOR

No	Valve & Sensor
1	Comp Top #1 Sensor
2	Comp Top #2 Sensor
3	Discharge #1 Sensor
4	Discharge #2 Sensor

INSULATION

No	Model	Insu Code	Binding Wire
1	AM200/220✳XV✳✳✳	DB62-08751D	
2	AM200/220✳XV✳✳✳	DB62-08751D	

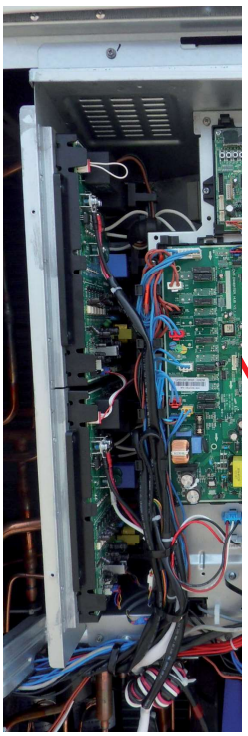


VALVE & SENSOR

No	Valve & Sensor
1	Cond Out Sensor
2	Outdoor Temperature Sensor

Binding Wire 3

■ AM180/200/220KXVG✳✳, AM200/220KXVA✳✳





► Comp Wire fix by Holder Wire.



► Fix Comp Wire-Core to Bracket Beam Control Box using large size Cable Tie(350mm).



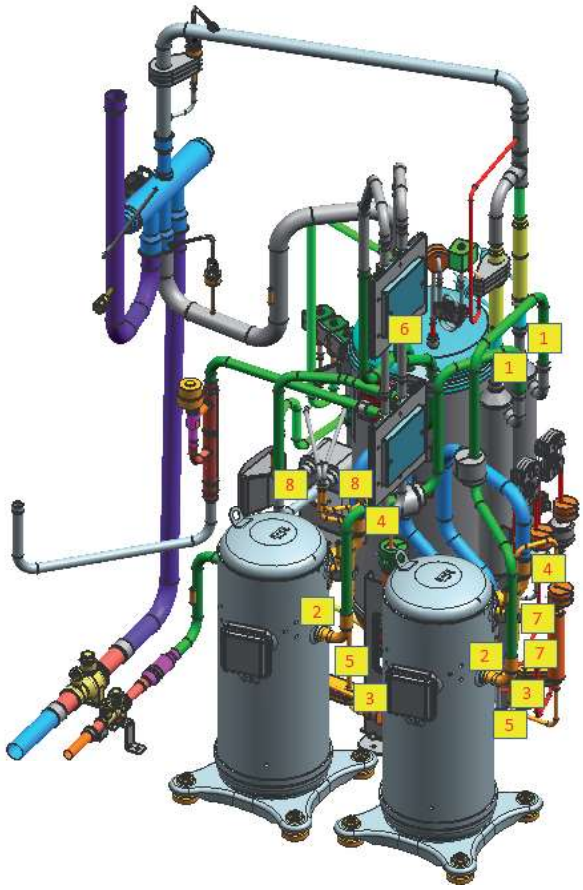
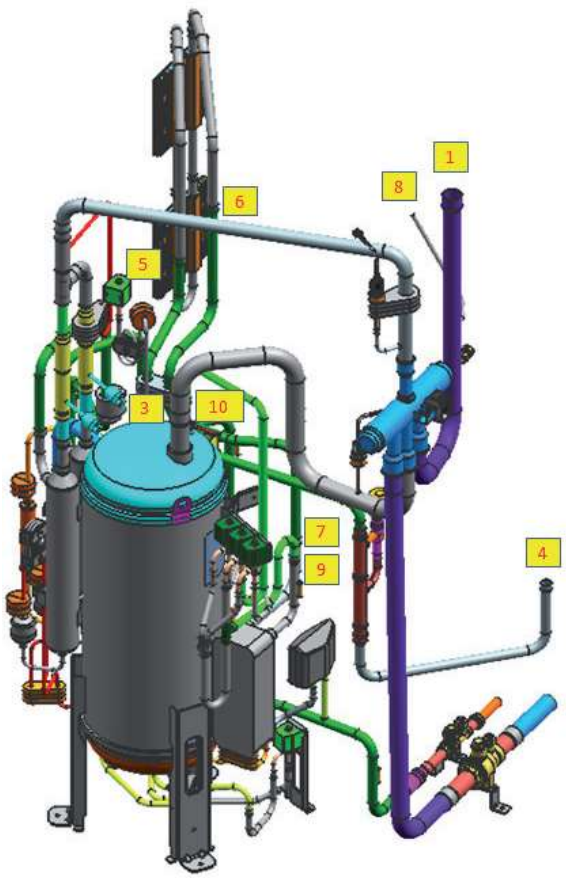


► Separate double layer structure of C/Box after remove 3 screws and connector.

[Reference Sheet]

Pipe Welding Position 4

■ AM180/200/220KXVG✳✳, AM200/220KXVA✳✳

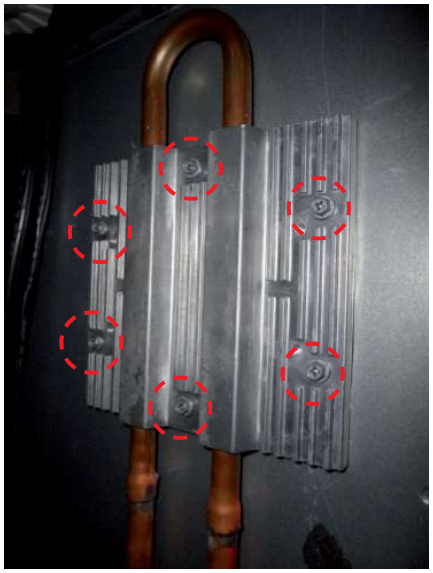
Front Welding Parts	Rear Welding Parts
	

No.	Welding Position	Q'ty	No.	Welding Position	Q'ty
1	Discharge+Oil-sepa	2	1	4way+Cond in	1
2	Discharge+Comp	1	2	4way+Oil-sepa out	1
3	Suction+Accum	1	3	4way+Accum	1
4	Suction+Comp	1	4	Expansion+Cond out	1
5	VI+Connector	1	5	Expansion+Cooling	1
6	Hot-gas+Accum	1	6	Cooling+Connector	2
7	Suction+Oil-Return	2	7	Cooling+Subcooler in	1
8	VI VALVE+Connector	2	8	Pinch Pipe	1
			9	EVI-Bypass+Subcooler	1
			10	EVI-Bypass+Accum	1

3-2-8 AM240/260/280/300KXV✳✳✳, AM080KXVS✳✳

No.	Parts	Procedure	Remark
1	Electrical equipment Part	1) 11 screws that is fixing CABINET remove. (Use Screw driver) 1. 9 screw remove of CABINET 2.Press the position with both hands and push down ('A' direction) 3.Carefully remove the CABINET ('B' direction)	
		2) Remove 4 screws that is fixing and separate Cover Control Box. (Use + Screw driver)	
		3) Power, Compressor, Valve, Motor, Sensor connector connected to ASSY PCB remove.	

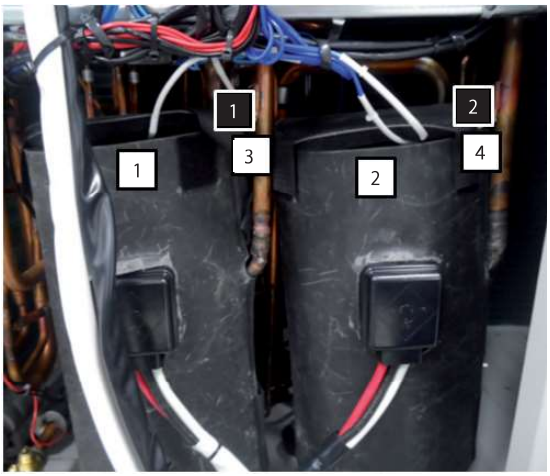
No.	Parts	Procedure	Remark
		4) 2 screws had fixed in terminal block cover when change power terminal block, communication terminal block remove.	
		5) 2 screws had fixed in terminal block after remove 4 screws had fixed to Cabinet for terminal block protection remove.	
		6) 5 screws had fixed to Front part remove.	

No.	Parts	Procedure	Remark
		7) 6 screws had fixed on side refrigerant cooling part outside remove . ⚠ Do not separate Heat Sink pulling Assy Piping Cooling piping compulsorily. (It can be a cause of parts damage)	
		8) 2 screws had fixed on side refrigerant cooling part inside remove. ⚠ Use the driver with magnetic.	

No.	Parts	Procedure	Remark
	< Reference > Heat Sink	Spread therminal grease on heat sink - Spread enough Thermal Grease evenly on Plate Heat Sink back whole using roller or brush. - Reassemble Plate Heat Sink in reverse order of disassembly.	

Binding Wire 1

■ AM240/260/280/300KXV✳✳✳, AM080KXVS✳✳

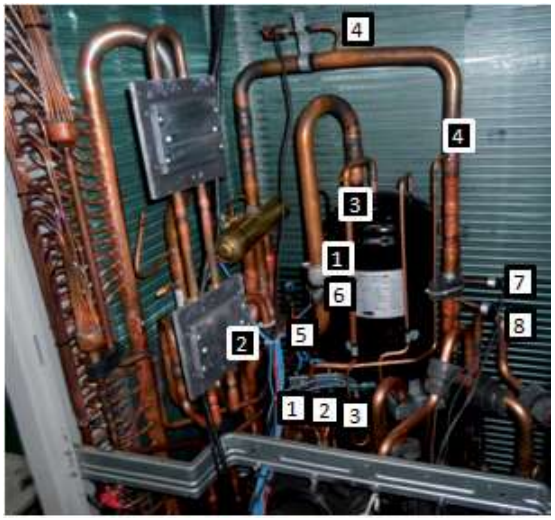


VALVE & SENSOR

No	Valve & Sensor
1	Comp Top #1 Sensor
2	Comp Top #2 Sensor
3	Discharge #1 Sensor
4	Discharge #2 Sensor

INSULATION

No	Model	Insu Code	Binding Wire
1	AM240/260/280/300✳XV✳✳✳	DB62-03808F	
2	AM240/260/280/300✳XV✳✳✳	DB62-03808F	



VALVE & SENSOR

No	Valve & Sensor
1	EVI SOL Valve
2	EVI Bypass Valve
3	Hot Gas Valve
4	High Pressure Sensor
5	Low Pressure Sensor
6	Suction Sensor
7	High Pressure Switch #1
8	High Pressure Switch #2

INSULATION

No	Model	Insu Code	Binding Wire
1	AM240/260/280/300✳XV✳✳✳	DB62-08751F	
2	AM240/260/280/300✳XV✳✳✳	DB62-04154C	
3	AM240/260/280/300✳XV✳✳✳	DB62-08752D	
4	AM240/260/280/300✳XV✳✳✳	DB62-04154D	

Binding Wire 2

■ AM240/260/280/300KXV✳✳✳, AM080KXVS✳✳

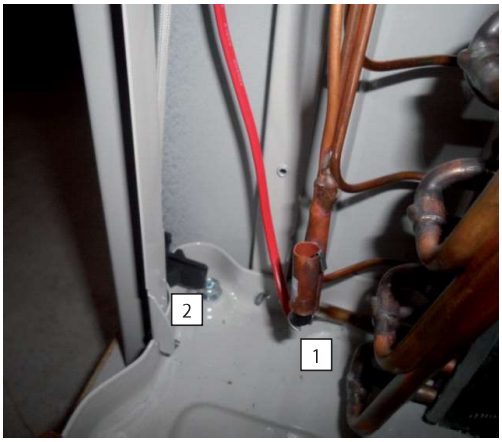


VALVE & SENSOR

No	Valve & Sensor
1	Accum Oil Return Valve

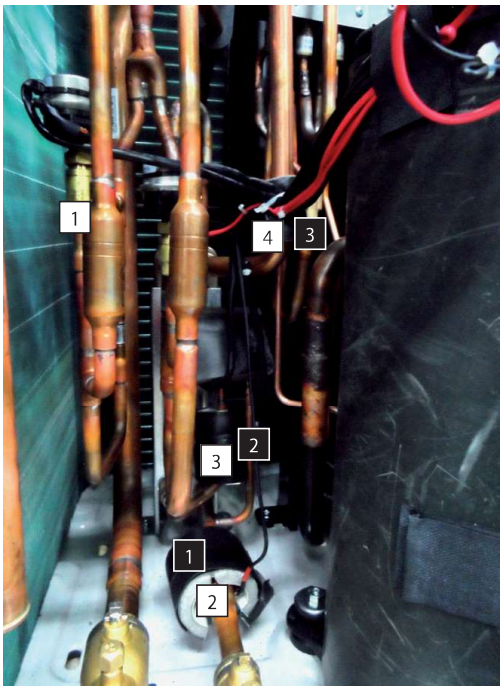
INSULATION

No	Model	Insu Code	Binding Wire
1	AM240/260/280/300✳XV✳✳✳	DB62-08752F	



VALVE & SENSOR

No	Valve & Sensor
1	Cond Out Sensor
2	Outdoor Temperature Sensor



VALVE & SENSOR

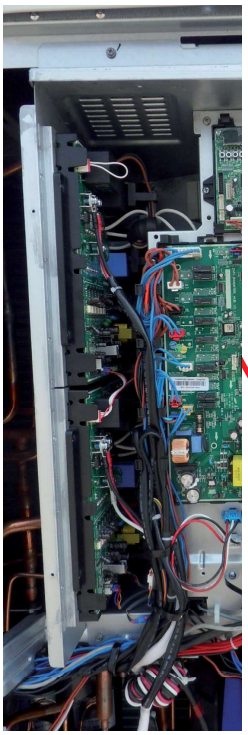
No	Valve & Sensor
1	Expansion Valve
2	Liquid Sensor
3	EVI In Sensor
4	EVI Out Sensor

INSULATION

No	Model	Insu Code	Binding Wire
1	AM240/260/280/300✳XV✳✳✳	DB62-08751G	
2	AM240/260/280/300✳XV✳✳✳	DB62-08751C	
3	AM240/260/280/300✳XV✳✳✳	DB62-04154C	

Binding Wire 3

■ AM240/260/280/300KXV✳✳✳, AM080KXVS✳✳





► Comp Wire fix by Holder Wire.



► Fix Comp Wire-Core to Bracket Beam Control Box using large size Cable Tie(350mm).



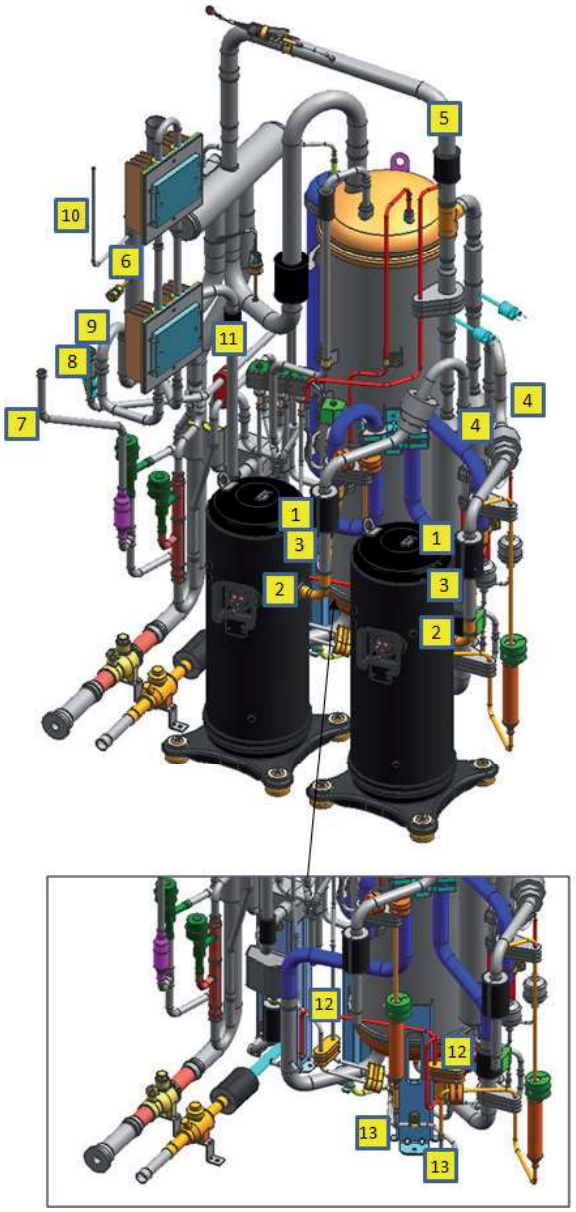
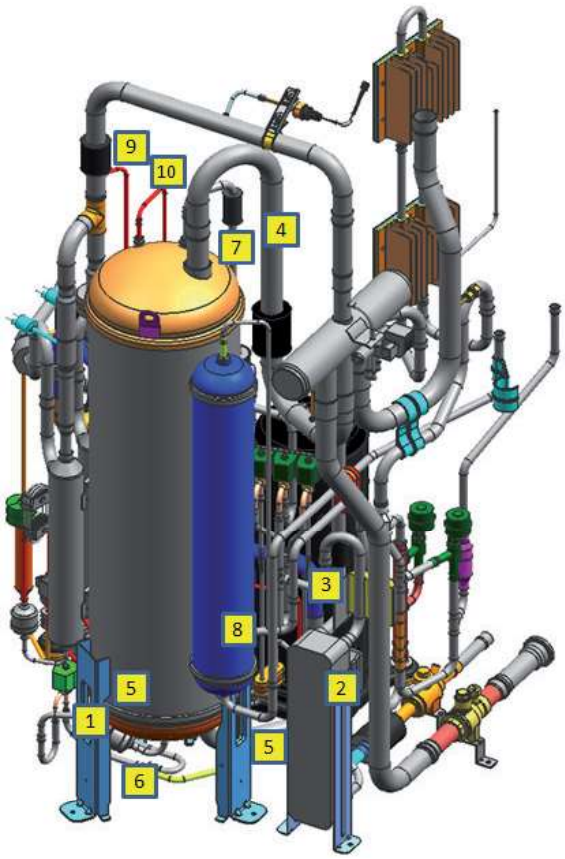


► Separate double layer structure of C/Box after remove 3 screws and connector.

[Reference Sheet]

Pipe Welding Position 4

■ AM240/260/280KXVG✳✳, AM280/300KXVA✳✳, AM080KXVS✳✳

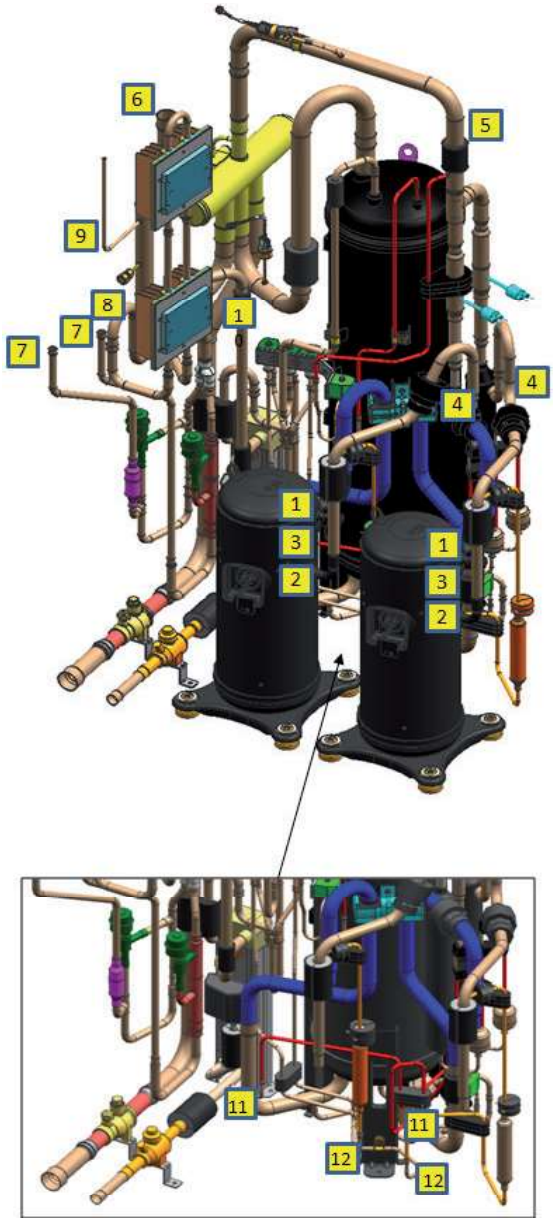
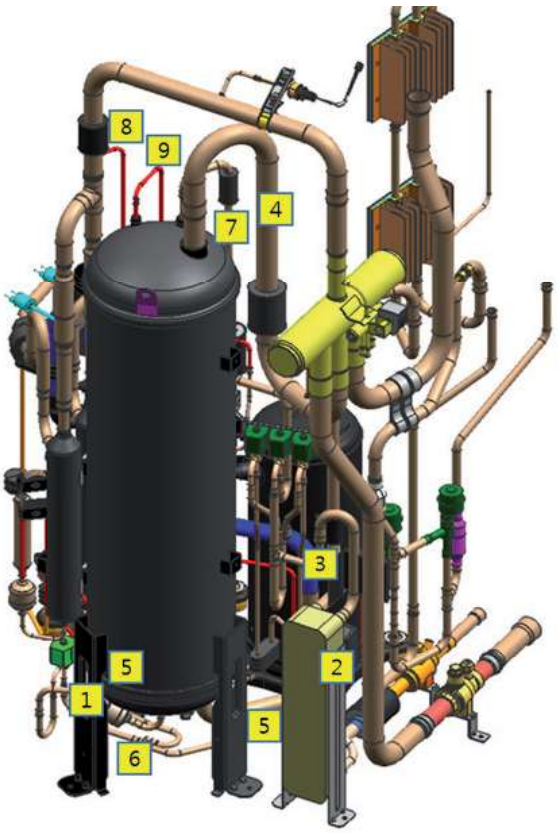
Front Welding Parts	Rear Welding Parts
	

No.	Welding Position	Q'ty	No.	Welding Position	Q'ty
1	Comp+Suction	2	1	Accum Oil Return Valve + Suction	1
2	Comp+Discharge	2	2	Subcooler + Subcooler In	1
3	Comp+Vapor Injection	2	3	Subcooler + EVI Bypass	1
4	Discharge + Oil Sepa	2	4	Acuum + 4Way	1
5	4Way + Oil Sepa Out	1	5	Acuum + Suction	2
6	4Way + Cond In	1	6	Accum + Accum Oil Valve	1
7	Expansion + Cond out	1	7	Accum + EVI Bypass	1
8	Receiver + Cond Out	1	8	Receiver + Expansion	1
9	Expansion +Cooling	1	9	Hot Gas Valve + Oil Sepa out	1
10	Pinch Pipe	1	10	Accum +Hot Gas Valve	1
11	Cooling + Subcooler In	1			
12	Oil Return + Suction	2			
13	Vapor Injection + EVI Bypass	2			

[Reference Sheet]

Pipe Welding Position 4

■ AM240/260KXVA✳✳

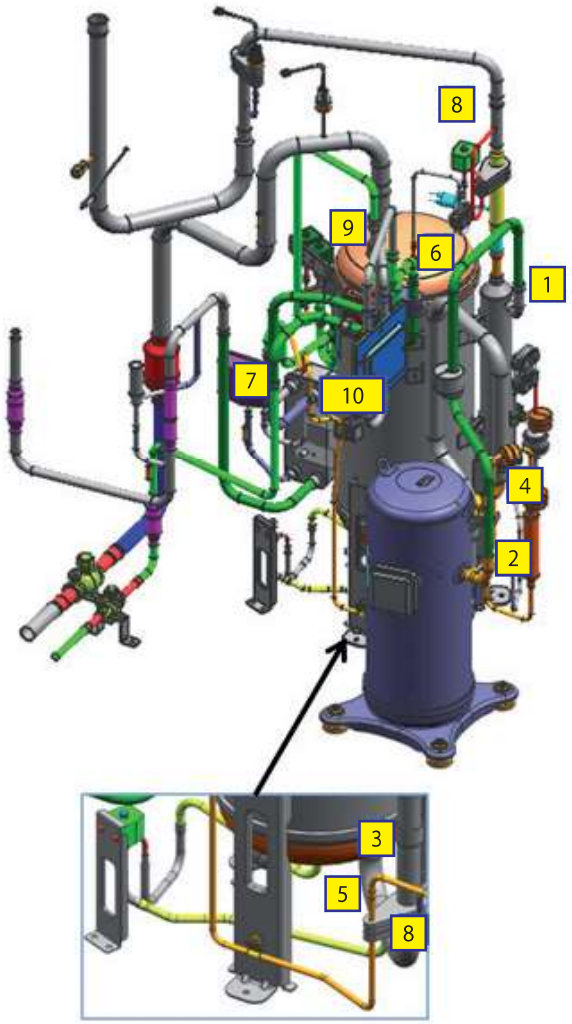
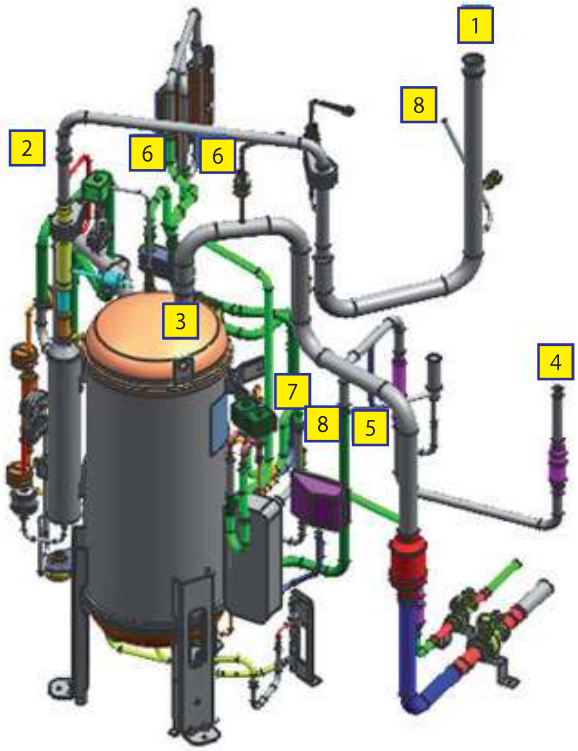
Front Welding Parts	Rear Welding Parts
	

No.	Welding Position	Q'ty	No.	Welding Position	Q'ty
1	Comp+Suction	2	1	Accum Oil Return Valve + Suction	1
2	Comp+Discharge	2	2	Subcooler + Subcooler In	1
3	Comp+Vapor Injection	2	3	Subcooler + EVI Bypass	1
4	Discharge + Oil Sepa	2	4	Acuum + 4Way	1
5	4Way + Oil Sepa Out	1	5	Acuum + Suction	2
6	4Way + Cond In	1	6	Accum + Accum Oil Valve	1
7	Expansion + Cond out	2	7	Accum + EVI Bypass	1
8	Expansion +Cooling	1	8	Hot Gas Valve + Oil Sepa out	1
9	Pinch Pipe	1	9	Accum +Hot Gas Valve	1
10	Cooling + Subcooler In	1			
11	Oil Return + Suction	2			
12	Vapor Injection + EVI Bypass	2			

[Reference Sheet]

Pipe Welding Position 4

■ AM140/160/180MXVAGC

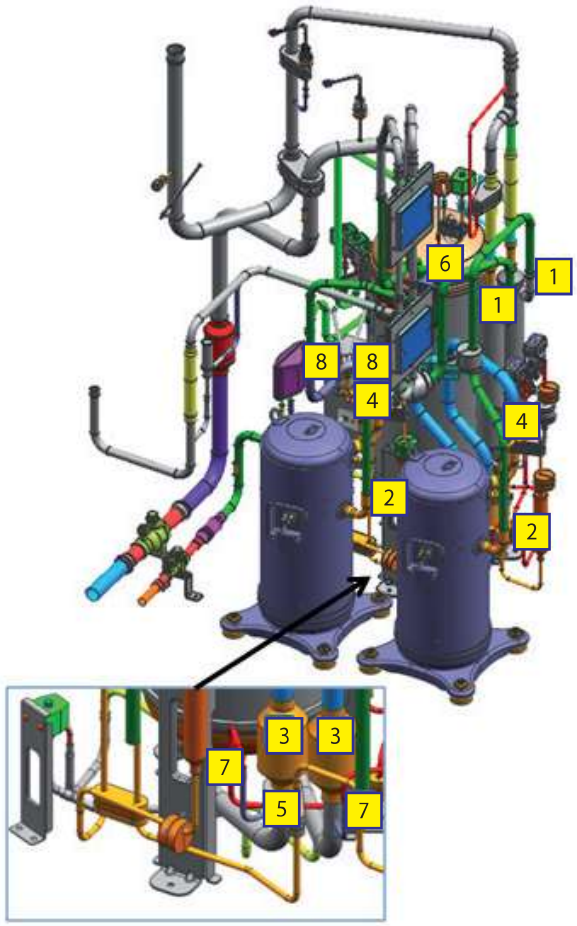
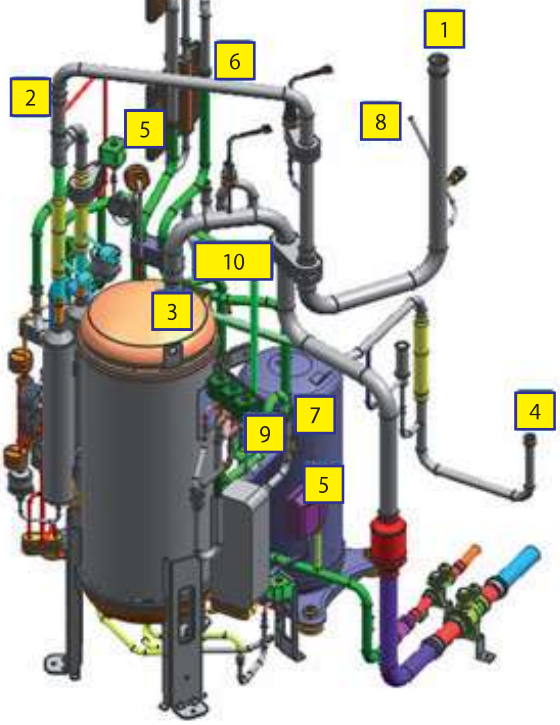
Front Welding Parts	Rear Welding Parts
	

No.	Welding Position	Q'ty	No.	Welding Position	Q'ty
1	Discharge+Oil-sepa	1	1	Cond Connector+Cond in	1
2	Discharge+Comp	1	2	Cond Connector+Oil-sepa out	1
3	Suction+Accum	1	3	Service Valve+Accum	1
4	Suction+Comp	1	4	Expansion+Cond out	1
5	VI+Connector	1	5	Expansion+Subcooler	1
6	Hot-gas+Accum	1	6	Cooling+Connector	2
7	Connector+LQD	1	7	Connector+Subcooler	1
8	Suction+Oil-Return	1	8	Pinch Pipe	2
9	EVI-Bypass+Accum	1	9	EVI-Bypass+Subcooler	1
10	VI VALVE+Connector	1			

[Reference Sheet]

Pipe Welding Position 4

■ AM200/220MXVAGC

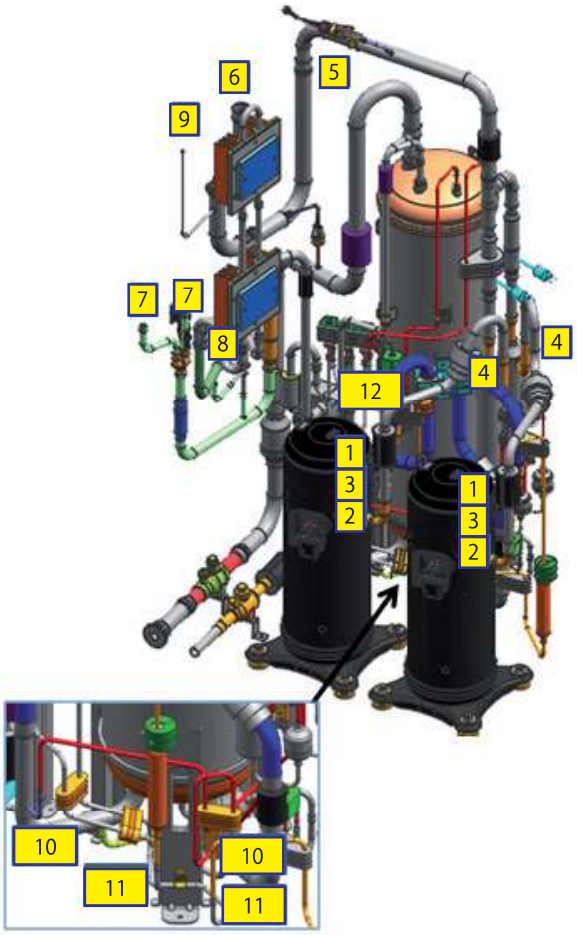
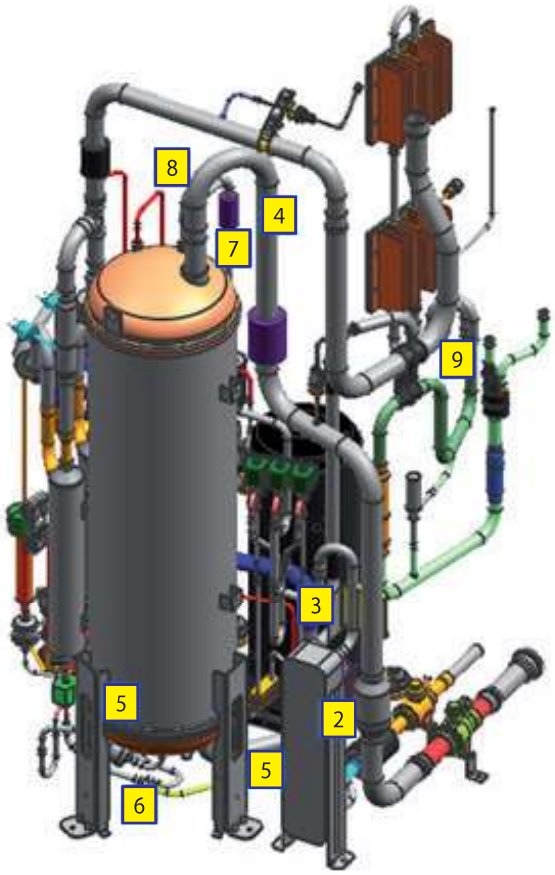
Front Welding Parts	Rear Welding Parts
	

No.	Welding Position	Q'ty	No.	Welding Position	Q'ty
1	Discharge+Oil-sepa	2	1	Cond Connector+Cond in	1
2	Discharge+Comp	2	2	Cond Connector+Oil-sepa out	1
3	Suction+Accum	2	3	Service Valve+Accum	1
4	Suction+Comp	2	4	Expansion+Cond out	1
5	VI+Connector	1	5	Expansion+Cooling	1
6	Hot-gas+Accum	1	6	Cooling+Connector	1
7	Suction+Oil-Return	2	7	Cooling+Subcooler in	1
8	VI VALVE+Connector	2	8	Pinch Pipe	1
			9	EVI-Bypass+Subcooler	1
			10	EVI-Bypass+Accum	1

[Reference Sheet]

Pipe Welding Position 4

■ AM240/260/280/300MXVAGC

Front Welding Parts	Rear Welding Parts
	

No.	Welding Position	Q'ty	No.	Welding Position	Q'ty
1	Comp+Suction	2	1	Accum Oil Return Valve + Suction	1
2	Comp+Discharge	2	2	Subcooler+Subcooler In	1
3	Comp+Vapor Injection	2	3	Subcooler+EVI Bypass	1
4	Discharge+Oil Sepa	2	4	Acuum+4Way	1
5	Cond Connector+Oil Sepa Out	1	5	Acuum+Suction	2
6	Cond Connector+Cond In	1	6	Accum+Accum Oil Valve	1
7	Expansion+Cond Out	2	7	Accum+EVI Bypass	1
8	Expansion+Cooling	1	8	Accum+Hot Gas Valve	1
9	Pinch Pipe	1	9	Subcooler in+Cooling	1
10	Oil Return+Suction	2			
11	Vapor Injection+EVI Bypass	2			
12	Hot Gas Vavle +Oil Sepa Out	1			

3-3 Caution at compressor exchange

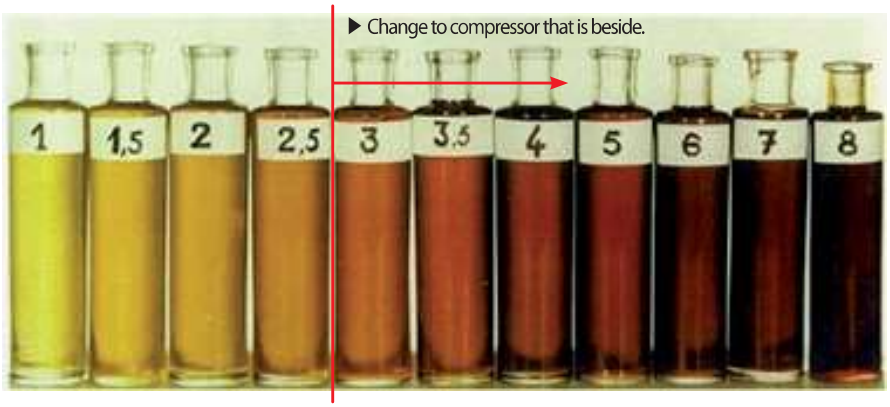
■ Compressor exchange order

STEP	Occasion that compressor is 1 inside outdoor unit	Occasion that compressor is 2 inside outdoor unit
1	-	Establish compressor to exchange by cutting.
2	-	Refrigerant release driving of applied outdoor unit ※ Refrigerant release driving enforces 1th necessarily. Release driving that enforce contiguously can be responsible for compressor breakdown.
3	Lock all SVC valve of liquid pipe and gas pipe.	
4	Enter in vacuum mode and establish as all EEV and Valve open.	
5	Reclaim refrigerant of outdoor unit using Recovery Unit. ※ When there is no Recovery Unit, refer to below contents. 1. If refrigerant release driving is enforced, refrigerant remaining amount of outdoor unit inside is about 1.5kg ordinarily. Temperature can remain more refrigerant because refrigerant fills to Accumulator in the winter day. 2. Refer to factory charging refrigerant had registered to Label of outdoor unit. 3. Can get help that decide an addition refrigerant quantity if use refrigerant quantity decision function that use S-Checker.	
6	Turn off the power linked by outdoor unit.	
7	Separate compressor that broke down from outdoor unit. ※ Confirm through manifold gauge whether refrigerant of outdoor unit was reclaimed all necessarily before use welding machine for replace of compressor.	
8	Measure quantity of broke down oil of compressor.	
9	Confirm state and color of compressor oil that broke down.	
10	-	When is judged that oil was polluted, compressor beside (ASTM : more than 3) measures quantity of replace and oil.
11	Decide quantity of oil to pour in addition according to sheep of changing oil of compressors.	
12	Change by new compressor. Add oil according to sheep of oil that pour decided addition before.	
13	Establish again by vacuum mode after connect power.	
14	Execute leakage examination using nitrogen → vacuum work	
15	Add a refrigerant quantity deciding from step 5.	
16	Execute Auto Trial Operation after open SVC Valve.	

■ Check point at compressor replacement

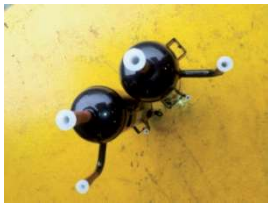
1) Check oil color of broken compressor.

- If one compressor is broken, you are not sure another compressor should be replaced together or not. At that time, check oil color of broken compressor comparing with below photo.



2) Weight of compressor and quantity of oil

- When compressor is shipped at factory, oil of (compressor unit standard) 1100cc was filled up.
- Weight of compressor including oil GB046FA* : 24.3 kg, GB052FA* : 31.6 kg, GB066FA* : 35.4 kg, GB070FA* : 36.7 kg, DS4GJ5080FVA* : 40.9 kg
- Add oil to outdoor unit as much as relevant weight if is heavy than weight of compressor that weight of compressor that is changed to locality is changed newly.
- Quantity(kg) of added oil = Weight(kg) of compressor that broke down - Weight(kg) of newly change compressor
- If quantity of calculated addition oil passes over 1kg, quantity of add oil does by 1kg.
- Problem of that is blocked in oil circulation of (remaining oil of compressor that broke down below 0.3kg) compressor if is light more than 0.8kg than weight of compressor that weight of compressor that is changed to locality is changed newly inspects oil circulating system because possibility occurred is high.

OIL SEPARATOR		
SVC CODE	**Weight information**	**Fig**
DB96-16927A	3.54kg	
DB96-17888A (DB96-17639A DB96-17640A)	7.86kg (7.14kg except for bracket base)	
DB96-20380A	16.21kg	
DB96-21902A	2.86kg	
DB96-21973A	2.71kg	

ACCUMULATOR		
SVC CODE	**Weight information**	**Fig**
DB96-17091A	16.64kg	
DB96-16928A	22.08kg	
DB96-20395A	30.37kg	
DB96-21957A	24.32kg	
DB96-21912A	32.33kg	

TANK-RECEIVER		
SVC CODE	**Weight information**	**Fig**
DB96-21951A	4.97kg	

3) Checking of oil circulating system

① Oil separator capillary tube or filter of block

- If filter or capillary tube of oil separator lower column is blocked by alien substance etc.., can become cause of compressor breakdown because oil is not collected.
- Can doubt that is blocked if oil separator capillary tube temperature is low after refrigerant outlet temperature of compressor, in driving, rises.

(※ Models with 2 compressors, oil separator capillary tubes are crossing each other.)

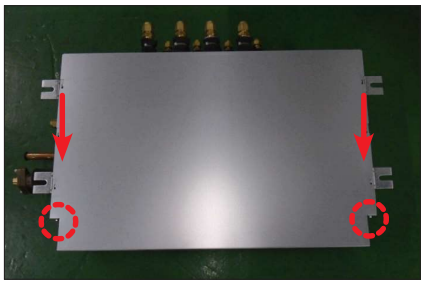
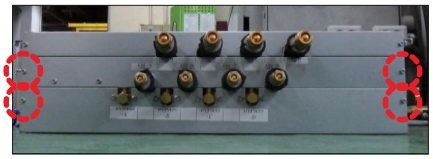
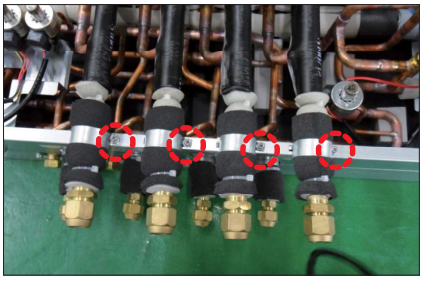
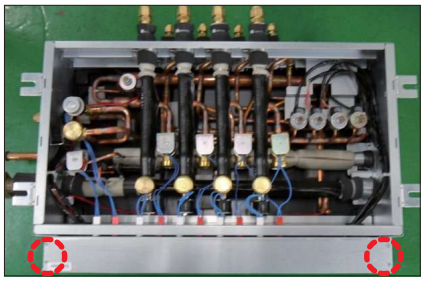
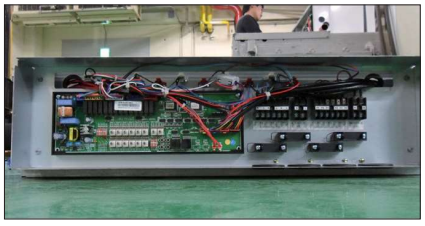
- Confirm that is blocked in stationary state through nitrogen pressurization availability.

② Breakdown of Accum Oil Return Valve (ARV)

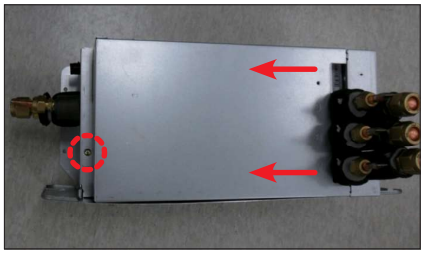
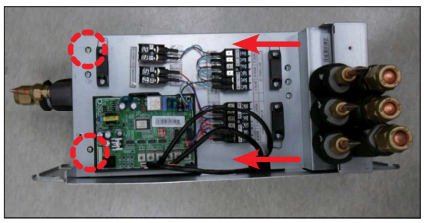
- Damage can become cause of compressor breakdown because oil is not collected if filter of valve front/piping etc.. is blocked with ARV is closed.
- Power connector of ARV confirms that was linked right.
- Extract connector in vacuum mode or confirm whether when insert, action sound of valve happens.

③ When CCH is badness, can become cause of compressor breakdown by oil foaming.

3-4 MCU

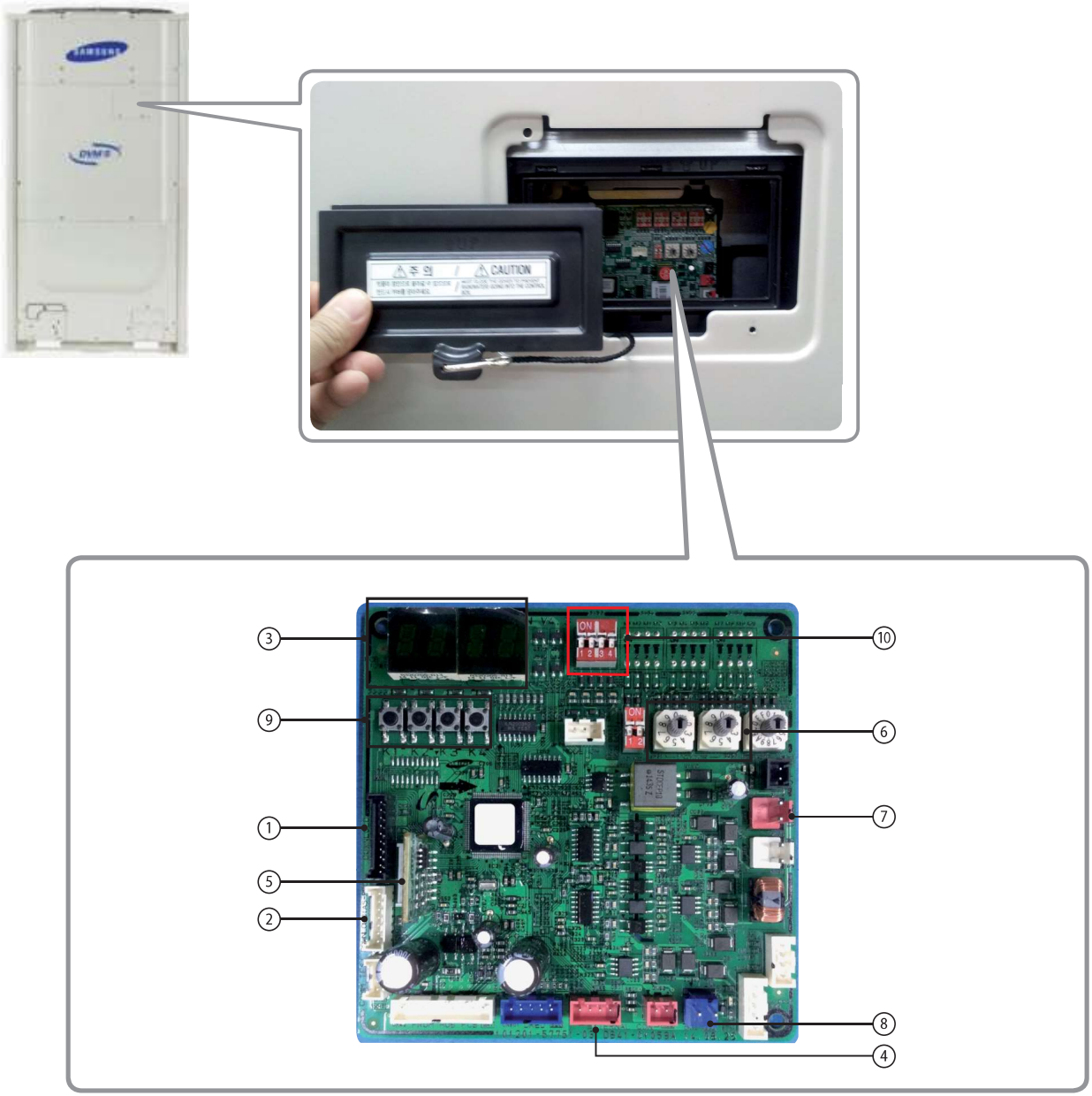
No	Parts	Procedure	Remark
1	Cabinet upper	1) Separate 2 fixing screws from the cabinet. (Use + Serew Driver) 2) Separate cabinet from MCU.	
2	Cabinet front	1) Separate 4 fixing screws from the cabinet. (Use + Serew Driver) 2) Separate 4 fixing screws from the brackets. (Use + Serew Driver)	 
3	Cabinet front	1) Separate front cabinet from MCU.	
4	Control box cover	1) Separate 2 fixing screws from the control box cover. (Use + Serew Driver) 2) Separate control box cover from MCU.	 

3-5 EEV KIT

No	Parts	Procedure	Remark
1	Cabinet front	1) Separate 1 fixing screw from EEV kit. (Use + Serew Driver)	
		2) Separate cabinet from EEV kit.	
2	Control parts	1) Separate 2 fixing screws from EEV kit. (Use + Serew Driver)	
		2) Separate control part from EEV kit.	

4. Troubleshooting

4-1 Check-up Window Description



No.	Function	No.	Function
1	CN22 download (PC) (SMW200-10 black)	6	Set up the number of connected Indoor units
2	MICOM. download (AS-PRO) (SMW200-07P white)	7	For checking indoor unit communication (YW396-02P red)
3	ERROR DISPLAY	8	Transmitter 12V (YW396-02P blue)
4	State Check (SMW250-04P red)	9	Outdoor Unit Tact Switch
5	EEPROM SOCKET	10	Outdoor Unit Dip Switch

4-2. Service Operation

4-2-1 Special Operation

■ **AM080/100/120/140/160/180/200/220F✳XV✳G✳**

► Key input of the outdoor unit when the service enters the operation mode.

K1 (Number of press)	Key operation	Display on segment
1 time	Refrigerant charging in Heating mode	K, 1, BLANK, BLANK
2 times	Trial operation in Heating mode	K, 2, BLANK, BLANK
3 times	Pump out in Heating mode (Outdoor unit address 1)	K, 3, BLANK, 1
4 times	Pump out in Heating mode (Outdoor unit address 2)	K, 3, BLANK, 2
5 times	Pump out in Heating mode (Outdoor unit address 3)	K, 3, BLANK, 3
6 times	Pump out in Heating mode (Outdoor unit address 4)	K, 3, BLANK, 4
7 times	Vacuumig (Outdoor unit address 1)	K, 4, BLANK, 1
8 times	Vacuumig (Outdoor unit address 2)	K, 4, BLANK, 2
9 times	Vacuumig (Outdoor unit address 3)	K, 4, BLANK, 3
10 times	Vacuumig (Outdoor unit address 4)	K, 4, BLANK, 4
11 times	Vacuuming (All outdoor units)	K, 4, BLANK, A
12 times	End Key operation	-
Press and hold 1 time	Auto Trial Operation	K, K, BLANK, BLANK

K2 (Number of press)	Key operation	Display on segment
1 time	Refrigerant charging in Cooling mode	K, 5, BLANK, BLANK
2 times	Trial operation in Cooling mode	K, 6, BLANK, BLANK
3 times	Pump down all units in Cooling mode	K, 7, BLANK, BLANK
4 times	H/R: Checking the pipe connection H/P: Automatic setting of operation mode (Cooling/ Heating) for trail operation	K, 8, BLANK, BLANK
5 times	Checking the amount of refrigerant	"K""9" X X (Display of last two digits may differ depending on the progress)
6 times	Discharge mode of DC link voltage	K, A, BLANK, BLANK
7 times	Forced defrost operation	K, B, BLANK, BLANK
8 times	Forced oil collection	K, C, BLANK, BLANK
9 times	Inverter compressor 1 check	K, D, BLANK, BLANK
10 times	Inverter compressor 2 check	K, E, BLANK, BLANK
11 times	Fan 1 check	K, F, BLANK, BLANK
12 times	Fan 2 check	K, G, BLANK, BLANK
13 times	End Key operation	-

※ When pcb will be replaced or repaired , please shut off the power after carrying out discharge mode without fail

※ When discharge mode is progressing, DC voltage of inverter PBA 1 & inventer PBA 2 indicate on display alternately.

If LED display of inverter PBA 1 & inventer PBA 2 will be turned off and "OK" is displayed, a discharge is completed.

※ If INV error is occurred(E464/364, E461/361, etc.), please wait more than 15 minutes until self-discharging after shutting off the power because it can not enter a discharge mode.

※ If normal completion discharge mode or self-discharge will be not completed, it is very dangerous to contact because a high DC voltage of inverter PBA is charged.

■ Auto Trial Operation

► After initial installation, stable operation for a certain period of time limited to operation conditions.

	Cooling	Heating
Method of Entry	K2 Tact Switch twice	K1 Tact Switch twice
Compressor	Normal operation, but the maximum frequency limit (differ by model)	
Indoor Unit	Whole operation (The set temperature=3˚C)	Whole operation (The set temperature=40˚C)
Outdoor fan and valves	Normally control conduct	
Operation time	Min : 60 minutes, Max : 10 hours	
Etc.	· Exceed the maximum operating time at stops and waits. · Protection and control, self-diagnosis is performed.	

■ Refrigerant filling operation

► Operation to filling the refrigerant compressor was fixed at a certain frequency.

	Cooling	Heating
Method of Entry	K2 Tact Switch one time	K1 Tact Switch one time
Compressor	Starting frequency (Mild Start frequency) operation	
Indoor Unit	Whole operation (The set temperature=3˚C)	Whole operation (The set temperature=40˚C)
Outdoor fan and valves	Normally control conduct	
Operation time	60 minutes	
Etc.	During the filling operation does not enter the special operation, such as oil recovery, defrost.	

■ Heating Pump Out

► Operation for the repair of the Individual outdoor unit, the outdoor unit refrigerant emissions to the indoor part.
► Liquid pipe service valve and the gas pipe service valve operation, the operator manually need to close.

► Observe low pressure using View Mode of K4 button if compressor operate.
If low pressure goes down below about 0.2 MPa.g : Immediately lock the gas side service valve, Pump Out operation is shut down.
(Pump out operation shut down : K1 button once more press or K3 button one time press)
► If operation of low pressure goes down below 0.1 MPa.g : Will be stopped automatically for the protection of the compressor.

How to Initiate	K1 Tact Switch 3 times~6 times
Compressor	60Hz
Indoor Unit	Whole Operation (The set temperature=40℃)
4Way Valve	ON (Heating Mode)
Outdoor Fan	Maximum air flow
Main EEV	Operation side : 700 Step (Stop side : 0 step)
Maximum Operation Time	10 minutes
Protection Control	Conduct the discharge temperature, high pressure control. (Low pressure protection control is not carried out) ※ Low pressure is outside normal limits : Operation is shut down after gas pipe manually closed.
Etc.	Entry after safety start. (Only the corresponding Outdoor Unit operation.) To pump out more than 2 : Except communication between Outdoor Unit of relevant set after working for one, remainder set makes Pump Out add.

■ Cooling Pump Down

► Recover the refrigerant of Indoor Unit and Piping to outdoor side.
► Liquid pipe service valve and the gas pipe service valve operation, the operator manually need to close.
► If the installation of the long pipe : Any refrigerant into the outdoor unit can not be recovered, therefore should use a separate container.
► Observe low pressure using View Mode of K4 button if compressor operate.
If low pressure goes down below about 0.2 MPa.g : Immediately lock the gas side service valve, Pump Out operation is shut down.
(Pump out operation shut down : K1 button once more press or K3 button one time press)
► If operation of low pressure goes down below 0.1 MPa.g : Will be stopped automatically for the protection of the compressor.

How to Initiate	K2 Tact Switch 3 times
Compressor	Address No.1 Outdoor Unit - 60Hz (Other Outdoor Unit COMP OFF)
Indoor Unit	Whole Operation (The set temperature=3℃)
4Way Valve	OFF (Cooling Mode)
Outdoor Fan	Maximum air flow
Main EEV	Operation side : 2000 Step , Stop side : 2000 step
Maximum Operation Time	30 minutes
Etc.	Does not conduct the operation of the special operation, and protection control. Pressure and temperature is outside normal limits : Operation is shut down after gas pipe manually closed.

■ Vacuum Operation

► Operation to facilitate vacuum to open the valve after the Outdoor Unit repair.

How to Initiate	K1 Tact Switch 7 times~10 times	K1 Tact Switch 11 times
Compressor	OFF	
Indoor Unit/Outdoor Fan	OFF	
4Way Valve	OFF	
Valves	Open all valves of the outdoor unit	Open all valves of the system (Including indoor unit and mcu)
Etc.	If not turn off the vacuum mode, the start of normal operation is prohibited.	

■ Piping Inspection Operation

► Operation mode to check the status of the piping between the MCU and the indoor unit.

► MCU pipe connection check
- How to start : Press K2 4time (Heat Recovery only)
※ In heat pump model : select trial opration mode in cooling or heating mode automatically
- Operation sequence

	OUD	IDU for checking	Other IDUs	Check point
Cooling	Normal operation	Fan on / EEV open	Fan on / EEV close	Evap in temp-lowest
Heating	Normal operation	Fan on / EEV close	Fan on / EEV open	Evap out temp-lowest

- Display

1. Starting [P i P E] ↔ [C o o L] or [P i P E] ↔ [H E A T]

2. Starting [A B C D] ↔ [E F G H]
A , B : Checking IDU address
C , D : IDU which evap in temp changed, "--" means none
E , F : no display
G , H : IDU which evap out temp changed, "--" means none

3. Finishing [H O L D]

4. Result - Normal communication or [E r r P]

※ When we have [E r r P] press K2 to see more information

Error code(E190) → MCU address & port (C00A) → IDU address chesked & IDU address temp changed(00--)
※E190 - No or wrong IDU's Evap in temp chaged
※E191 - No or wrong IDU's Evap out temp chaged

► Heat Pump Model : Outdoor temperature is more than 15°C / Cooling Auto Trial Operation start
Outdoor temperature is less than 15°C / Heating Auto Trial Operation start

■ Discharge Mode Operation

► Outdoor power is turned off, the Inverter PCB charging a high DC voltage, so dangerous to touch.
- To replace the PCB, first turn off the power and the begin if DC voltage is discharged.
- If not use the discharge mode, the discharge time of about 15 minutes takes.
- If an error occurs, the discharge mode may not properly run. (Wait until natural discharge.)
- In particular, E 464, E364, power devices may be damaged, therefore do not use the discharge mode.
(Natural discharge until Please wait for at least 15 minutes.)

► Block the Inverter PCB 3-phase relay after connected the power, and through compressor, DC voltage is discharging.
- INV1 and INV2 DC voltage during discharge mode are displayed alternately.
- Discharge mode Display (Rotate the three page display, as shown below.)
'K' 'A' ' ' ' ' → DC Link Volt1 (For example, 120[V] 0 1 2 0 display)
→ DCLinkVolt2 (For example, 120[V] 0 1 2 0 display) → 'K' 'A' ' ' ' ' → DC Link Volt1 …

► Discharge is complete, the power of the Inverter PCB is being blocked, communication function is blocked, E206 will occur.
► If want operation again after complete discharge mode : Restart after K3 key to Reset or Power Reset.

■ Forced defrost operation

► Forced defrost operation : Is operation when Frost Formation occurs in the outdoor. (When carried out the service)

Method of Entry	K2 Tact Switch 7 times
Start pattern	Heating Trial Operation pattern
Defrost start	Defrost start : It is after 10 minutes which Safety Start finishes.
Defrost off	General defrost operation conditions are the same as.
Etc.	Defrost shut down and stop the normal pattern of the outdoor unit stop.

■ Forced oil recovery operation

► Forced oil recovery operation : Oil recovery in the outdoor unit for the purpose of moving, installation if necessary.

Method of Entry	K2 Tact Switch 8 times
Start pattern	Outdoor temperature is more than 10°C : Cooling Auto Trial Operation Outdoor temperature is less than or equal to 10°C : Heating Auto Trial Operation
Oil recovery start	Oil recovery start : It is after 10 minutes which Safety Start finishes.
Etc.	Oil recovery shut down and stop the normal pattern of the outdoor unit stop.

■ AM080/100/120/200FXWA✳✳

► Key input of the outdoor unit when the service enters the operation mode.

K1 (Number of press)	Key operation	Display on segment
Press and hold 1 time	Auto trial operation	K, 1, BLANK, BLANK
1 time	Refrigerant charging in Heating mode	K, 1, BLANK, BLANK
2 times	Trial operation in Heating mode	K, 2, BLANK, BLANK
3 times	Pump out in Heating mode (Outdoor unit address 1)	K, 3, BLANK, 1
4 times	Pump out in Heating mode (Outdoor unit address 2)	K, 3, BLANK, 2
5 times	Pump out in Heating mode (Outdoor unit address 3)	K, 3, BLANK, 3
6 times	Pump out in Heating mode (Outdoor unit address 4)	K, 3, BLANK, 4
7 times	Vacuumig (Outdoor unit address 1)	K, 4, BLANK, 1
8 times	Vacuumig (Outdoor unit address 2)	K, 4, BLANK, 2
9 times	Vacuumig (Outdoor unit address 3)	K, 4, BLANK, 3
10 times	Vacuumig (Outdoor unit address 4)	K, 4, BLANK, 4
11 times	Vacuuming (All outdoor units)	K, 4, BLANK, A
12 times	End Key operation	-

K2 (Number of press)	Key operation	Display on segment
1 time	Refrigerant charging in Cooling mode	K, 5, BLANK, BLANK
2 times	Trial operation in Cooling mode	K, 6, BLANK, BLANK
3 times	Pump down all units in Cooling mode	K, 7, BLANK, BLANK
4 times	HR: Pipe connection inspection H/P: Auto trial operation	K, 8, BLANK, BLANK
5 times	Checking the amount of refrigerant	K, 9, X , X (Display of last two digits may differ depending on the status)
6 times	Discharge mode of DC link voltage	K, A, BLANK, BLANK
7 times	Forced oil collection	K, C, BLANK, BLANK
8 times	Inspect inverter compressor 1	K, D, BLANK, BLANK
9 times	Inspect inverter compressor 2	K, E, BLANK, BLANK
10 times	Water pipe valve/Pump check	K, F, BLANK, BLANK
11 times	Cooling fan/Flow control valve check	K, G, BLANK, BLANK
12 times	End key operation	-

※ During "Discharge mode of DC link voltage", voltage of INV1 and INV2 will be displayed alternately.

※ Even when the outdoor unit power is off, it is dangerous when you come in contact with inverter PCB and fan PCB since they are charged with high DC voltage.

※ When there were error, 'Dicharge mode of DC link voltage' may not have been effective. Especialy if error E464 and E364 have been occured, power element might be damaged by fire and therefore, do not use the 'Discharge mode of DC link

K3 (Number of press)	Key operation	Display on segment
1 time	Intialize (Reset) setting	Same as initial state

■ Auto Trial Operation

► After initial installation, stable operation for a certain period of time limited to operation conditions.

	Cooling	Heating
Method of Entry	K2 Tact Switch twice	K1 Tact Switch twice
Compressor	Normal operation, but the maximum frequency limit (differ by model)	
Indoor Unit	Whole operation (The set temperature=3˚C)	Whole operation (The set temperature=40˚C)
Other Actuators	Normally control conduct	
Operation time	Min : 60 minutes, Max : 10 hours	
Etc.	· Exceed the maximum operating time at stops and waits. · Protection and control, self-diagnosis is performed.	

■ Refrigerant filling operation

► Operation to filling the refrigerant compressor was fixed at a certain frequency.

	Cooling	Heating
Method of Entry	K2 Tact Switch one time	K1 Tact Switch one time
Compressor	Starting frequency (Mild Start frequency) operation	
Indoor Unit	Whole operation (The set temperature=3˚C)	Whole operation (The set temperature=40˚C)
Other Actuators	Normally control conduct	
Operation time	60 minutes	
Etc.	During the filling operation does not enter the special operation, such as oil recovery.	

■ Heating Pump Out

► Operation for the repair of the Individual outdoor unit, the outdoor unit refrigerant emissions to the indoor part.
► Liquid pipe service valve and the gas pipe service valve operation, the operator manually need to close.

► Observe low pressure using View Mode of K4 button if compressor operate.
If low pressure goes down below about 0.2 MPa.g : Immediately lock the gas side service valve, Pump Out operation is shut down.
(Pump out operation shut down : K1 button once more press or K3 button one time press)
► If operation of low pressure goes down below 0.1 MPa.g : Will be stopped automatically for the protection of the compressor.

How to Initiate	K1 Tact Switch 3 times~6 times
Compressor	60Hz
Indoor Unit	Whole Operation (The set temperature=40℃)
4Way Valve	ON (Heating Mode)
Main EEV	Operation side : 700 Step (Stop side : 0 step)
Maximum Operation Time	10 minutes
Protection Control	Conduct the discharge temperature, high pressure control. (Low pressure protection control is not carried out) ※ Low pressure is outside normal limits : Operation is shut down after gas pipe manually closed.
Etc.	Entry after safety start. (Only the corresponding Outdoor Unit operation.) To pump out more than 2 : Except communication between Outdoor Unit of relevant set after working for one, remainder set makes Pump Out add.

■ Cooling Pump Down

► Recover the refrigerant of Indoor Unit and Piping to outdoor side.
► Liquid pipe service valve and the gas pipe service valve operation, the operator manually need to close.
► If the installation of the long pipe : Any refrigerant into the outdoor unit can not be recovered, therefore should use a separate container.
► Observe low pressure using View Mode of K4 button if compressor operate.
If low pressure goes down below about 0.2 MPa.g : Immediately lock the gas side service valve, Pump Out operation is shut down.
(Pump out operation shut down : K1 button once more press or K3 button one time press)
► If operation of low pressure goes down below 0.1 MPa.g : Will be stopped automatically for the protection of the compressor.

How to Initiate	K2 Tact Switch 3 times
Compressor	Address No.1 Outdoor Unit - 60Hz (Other Outdoor Unit COMP OFF)
Indoor Unit	Whole Operation (The set temperature=3℃)
4Way Valve	OFF (Cooling Mode)
Main EEV	Operation side : 2000 Step , Stop side : 2000 step
Maximum Operation Time	30 minutes
Etc.	Does not conduct the operation of the special operation, and protection control. Pressure and temperature is outside normal limits : Operation is shut down after gas pipe manually closed. (However, all current limit control, and protection and control of IPM CompDown control is performed.)

■ Vacuum Operation

► Operation to facilitate vacuum to open the valve after the Outdoor Unit repair.

How to Initiate	K1 Tact Switch 7 times~11 times
Compressor	OFF
Indoor unit	OFF
4Way Valve	OFF
Valves	Open all valves maximum
Etc.	If not turn off the vacuum mode, the start of normal operation is prohibited.

■ Piping Inspection Operation

► Operation mode to check the status of the piping between the MCU and the indoor unit.

► Heat Pump Model : Water temperature is more than 25°C / Cooling Auto Trial Operation start
Water temperature is less than 25°C / Heating Auto Trial Operation start

■ Discharge Mode Operation

► Outdoor power is turned off, the Inverter PCB charging a high DC voltage, so dangerous to touch.
- To replace the PCB, first turn off the power and the begin if DC voltage is discharged.
- If not use the discharge mode, the discharge time of about 15 minutes takes.
- If an error occurs, the discharge mode may not properly run. (Wait until natural discharge.)
- In particular, E 464, E364, power devices may be damaged, therefore do not use the discharge mode. (Natural discharge until Please wait for at least 15 minutes.)

► Block the Inverter PCB 3-phase relay after connected the power, and through compressor, DC voltage is discharging.
- INV1 and INV2 DC voltage during discharge mode are displayed alternately.
- Discharge mode Display (Rotate the three page display, as shown below.)
'K' 'A' ' ' ' ' → DC Link Volt1 (For example, 120[V] 0 1 2 0 display)
→ DCLinkVolt2 (For example, 120[V] 0 1 2 0 display) → 'K' 'A' ' ' ' ' → DC Link Volt1 …

► Discharge is complete, the power of the Inverter PCB is being blocked, communication function is blocked, E206 will occur.
► If want operation again after complete discharge mode : Restart after K3 key to Reset or Power Reset.

■ Forced oil recovery operation

► Forced oil recovery operation : Oil recovery in the outdoor unit for the purpose of moving, installation if necessary.

Method of Entry	K2 Tact Switch 7 times
Start pattern	Water temperature is more than 10℃ : Cooling Auto Trial Operation Water temperature is less than or equal to 10℃ : Heating Auto Trial Operation
Oil recovery start	Oil recovery start : It is after 10 minutes which Safety Start finishes.
Etc.	Oil recovery shut down and stop the normal pattern of the outdoor unit stop.

4-2-2 DVM S Models EEPROM Code Table

No.	Model Name	Inverter PBA	EEP Code	No.	Model Name	Inverter PBA	EEP Code
1	AM080FXVAGH/EU	DB92-03526B	DB82-01358A	56	AM100JXVANH/TL	DB92-03526A	DB82-02501A
2	AM100FXVAGH/EU	DB92-03526A	DB82-01359A	57	AM120JXVANH/TL	DB92-03526A	DB82-02858A
3	AM120FXVAGH/EU	DB92-03526A	DB82-01360A	58	AM140JXVANH/TL	DB92-03339A	DB82-02503A
4	AM140FXVAGH/EU	DB92-03526A	DB82-01361A	59	AM160JXVANH/TL	DB92-03339A	DB82-02504A
5	AM160FXVAGH/EU	DB92-03526B	DB82-01362A	60	AM180JXVANH/TL	DB92-03339A	DB82-02505A
6	AM180FXVAGH/EU	DB92-03526A	DB82-01363A	61	AM200JXVANH/TL	DB92-03339A	DB82-02506A
7	AM200FXVAGH/EU	DB92-03526A	DB82-01364A	62	AM220JXVANH/TL	DB92-03339A	DB82-02507A
8	AM220FXVAGH/EU	DB92-03526A	DB82-01365A	63	AM080JXVAFH/AZ	DB92-03526C	DB82-02508A
9	AM080FXVAGR/EU	DB92-03526B	DB82-01330A	64	AM100JXVAFH/AZ	DB92-03337B	DB82-02509A
10	AM100FXVAGR/EU	DB92-03526A	DB82-01331A	65	AM120JXVAFH/AZ	DB92-03337B	DB82-02510A
11	AM120FXVAGR/EU	DB92-03526A	DB82-01332A	66	AM140JXVAFH/AZ	DB92-03526C	DB82-02511A
12	AM140FXVAGR/EU	DB92-03526A	DB82-01333A	67	AM160JXVAFH/AZ	DB92-03526C	DB82-02512A
13	AM160FXVAGR/EU	DB92-03526B	DB82-01334A	68	AM180JXVAFH/AZ	DB92-03337B	DB82-02513A
14	AM180FXVAGR/EU	DB92-03526A	DB82-01335A	69	AM200JXVAFH/AZ	DB92-03337B	DB82-02514A
15	AM200FXVAGR/EU	DB92-03526A	DB82-01336A	70	AM080JXVAJH/AZ	DB92-03526B	DB82-02515A
16	AM220FXVAGR/EU	DB92-03526A	DB82-01337A	71	AM100JXVAJH/AZ	DB92-03526A	DB82-02516A
17	AM080FXWANR/EU	DB92-03526A	DB82-01678A	72	AM120JXVAJH/AZ	DB92-03526A	DB82-02517A
18	AM100FXWANR/EU	DB92-03526A	DB82-01679A	73	AM140JXVAJH/AZ	DB92-03526B	DB82-02518A
19	AM120FXWANR/EU	DB92-03526A	DB82-01680A	74	AM160JXVAJH/AZ	DB92-03526B	DB82-02519A
20	AM200FXWANR/EU	DB92-03526A	DB82-01681A	75	AM180JXVAJH/AZ	DB92-03526A	DB82-02520A
21	AM080FXWAGR/SC	DB92-03526A	DB82-01682A	76	AM200JXVAJH/AZ	DB92-03526A	DB82-02521A
22	AM100FXWAGR/SC	DB92-03526A	DB82-01683A	77	AM220JXVAJH/AZ	DB92-03526A	DB82-02522A
23	AM120FXWAGR/SC	DB92-03526A	DB82-01684A	78	AM140KXVGGH	DB92-03339A	DB82-02981A
24	AM200FXWAGR/SC	DB92-03526A	DB82-01685A	79	AM160KXVGGH	DB92-03339A	DB82-02982A
25	AM240HXVAGH/EU	DB92-03337A	DB82-02333A	80	AM180KXVGGH	DB92-03339A	DB82-02983A
26	AM260HXVAGH/EU	DB92-03337A	DB82-02334A	81	AM200KXVGGH	DB92-03339A	DB82-02984A
27	AM080JXVHGH/EU	DB92-03526B	DB82-02484A	82	AM220KXVGGH	DB92-03339A	DB82-02985A
28	AM100JXVHGH/EU	DB92-03526A	DB82-02485A	83	AM240KXVGGH	DB92-03339A	DB82-02986A
29	AM120JXVHGH/EU	DB92-03526A	DB82-02486A	84	AM260KXVGGH	DB92-03339A	DB82-02987A
30	AM140JXVHGH/EU	DB92-03526A	DB82-02487A	85	AM280KXVGGH	DB92-03339A	DB82-02988A
31	AM160JXVHGH/EU	DB92-03526B	DB82-02488A	86	AM080KXVSGH	DB92-03339A	DB82-02989A
32	AM180JXVHGH/EU	DB92-03526A	DB82-02489A	87	AM140KXVAGH	DB92-03339A	DB82-02990A
33	AM200JXVHGH/EU	DB92-03526A	DB82-02490A	88	AM160KXVAGH	DB92-03339A	DB82-02991A
34	AM220JXVHGH/EU	DB92-03526A	DB82-02491A	89	AM180KXVAGH	DB92-03339A	DB82-02992A
35	AM080JXVHGR/EU	DB92-03526B	DB82-02492A	90	AM200KXVAGH	DB92-03339A	DB82-02993A
36	AM100JXVHGR/EU	DB92-03526A	DB82-02493A	91	AM220KXVAGH	DB92-03339A	DB82-02994A
37	AM200JXVHGH/EU	DB92-03526A	DB82-02490A	92	AM240KXVASH	DB92-03339A	DB82-02995A
38	AM220JXVHGH/EU	DB92-03526A	DB82-02491A	93	AM260KXVASH	DB92-03339A	DB82-02996A
39	AM080JXVHGR/EU	DB92-03526B	DB82-02492A	94	AM280KXVASH	DB92-03339A	DB82-02997A
40	AM100JXVHGR/EU	DB92-03526A	DB82-02493A	95	AM300KXVASH	DB92-03339A	DB82-02998A
41	AM120JXVHGR/EU	DB92-03526A	DB82-02494A	96	AM220KXVJNH/ID	DB92-03339A	DB82-03421A
42	AM140JXVHGR/EU	DB92-03526A	DB82-02495A	97	AM240KXVJNH/ID	DB92-03339A	DB82-03422A
43	AM160JXVHGR/EU	DB92-03526B	DB82-02496A	98	AM140JXVHGH/ET	DB92-03527A	DB82-03803A
44	AM180JXVHGR/EU	DB92-03526A	DB82-02497A	99	AM160JXVHGH/ET	DB92-03527B	DB82-03804A
45	AM200JXVHGR/EU	DB92-03526A	DB82-02498A	100	AM180JXVHGH/ET	DB92-03527A	DB82-03862A
46	AM220JXVHGR/EU	DB92-03526A	DB82-02499A	101	AM200JXVHGH/ET	DB92-03527A	DB82-03805A
47	AM080JXVAGH/EU	DB92-03526B	DB82-02500A	102	AM220JXVHGH/ET	DB92-03527A	DB82-03806A
48	AM100JXVAGH/EU	DB92-03526A	DB82-02501A	103	AM240KXVGGH/ET	DB92-03345A	DB82-02986A
49	AM120JXVAGH/EU	DB92-03526A	DB82-02502A	104	AM260KXVGGH/ET	DB92-03345A	DB82-02987A
50	AM140JXVAGH/EU	DB92-03339A	DB82-02503A	105	AM280KXVGGH/ET	DB92-03345A	DB82-02988A
51	AM160JXVAGH/EU	DB92-03339A	DB82-02504A	106	AM140JXVHGR/ET	DB92-03527A	DB82-03809A
52	AM180JXVAGH/EU	DB92-03339A	DB82-02505A	107	AM160JXVHGR/ET	DB92-03527B	DB82-03810A
53	AM200JXVAGH/EU	DB92-03339A	DB82-02506A	108	AM180JXVHGR/ET	DB92-03527A	DB82-03861A
54	AM220JXVAGH/EU	DB92-03339A	DB82-02507A	109	AM200JXVHGR/ET	DB92-03527A	DB82-03811A
55	AM080JXVANH/TL	DB92-03526B	DB82-02500A	110	AM220JXVHGR/ET	DB92-03527A	DB82-03812A

DVM S Models EEPROM Code Table (cont.)

No.	Model Name	Inverter PBA	EEP Code	No.	Model Name	Inverter PBA	EEP Code
111	AM080FXVAGH/EU	DB92-03526B	DB82-01358A	118	AM220JXVANH/TL	DB92-03339A	DB82-02507A
112	AM100FXVAGH/EU	DB92-03526A	DB82-01359A	119	AM080JXVAFH/AZ	DB92-03526C	DB82-02508A
113	AM120FXVAGH/EU	DB92-03526A	DB82-01360A	120	AM100JXVAFH/AZ	DB92-03337B	DB82-02509A
114	AM140FXVAGH/EU	DB92-03526A	DB82-01361A	121	AM120JXVAFH/AZ	DB92-03337B	DB82-02510A
115	AM160FXVAGH/EU	DB92-03526B	DB82-01362A	122	AM140JXVAFH/AZ	DB92-03526C	DB82-02511A
116	AM180FXVAGH/EU	DB92-03526A	DB82-01363A	123	AM160JXVAFH/AZ	DB92-03526C	DB82-02512A
117	AM200FXVAGH/EU	DB92-03526A	DB82-01364A	124	AM180JXVAFH/AZ	DB92-03337B	DB82-02513A

ASSY PCB INVERTER

No.	Model Name	Inverter PBA	EEP Code	No.	Model Name	Inverter PBA	EEP Code
127	AM080MXVAGC/TL	DB92-03526A	DB82-03923A	146	AM220MXVAGC/TC	DB92-03339A	DB82-03930A
128	AM100MXVAGC/TL	DB92-03526A	DB82-03924A	147	AM240MXVAGC/TC	DB92-03339A	DB82-03931A
129	AM120MXVAGC/TL	DB92-03526A	DB82-03925A	148	AM260MXVAGC/TC	DB92-03339A	DB82-03932A
130	AM140MXVAGC/TL	DB92-03526A	DB82-03926A	149	AM280MXVAGC/TC	DB92-03339A	DB82-03933A
131	AM160MXVAGC/TL	DB92-03339A	DB82-03927A	150	AM300MXVAGC/TC	DB92-03339A	DB82-03934A
132	AM180MXVAGC/TL	DB92-03339A	DB82-03928A	151	AM080MXVAFC/AZ	DB92-03526C	DB82-03935A
133	AM200MXVAGC/TL	DB92-03339A	DB82-03929A	152	AM100MXVAFC/AZ	DB92-03337B	DB82-03936A
134	AM220MXVAGC/TL	DB92-03339A	DB82-03930A	153	AM120MXVAFC/AZ	DB92-03337B	DB82-03937A
135	AM240MXVAGC/TL	DB92-03339A	DB82-03931A	154	AM140MXVAFC/AZ	DB92-03526C	DB82-03938A
136	AM260MXVAGC/TL	DB92-03339A	DB82-03932A	155	AM160MXVAFC/AZ	DB92-03526C	DB82-03939A
137	AM280MXVAGC/TL	DB92-03339A	DB82-03933A	156	AM180MXVAFC/AZ	DB92-03337B	DB82-03940A
138	AM300MXVAGC/TL	DB92-03339A	DB82-03934A	157	AM200MXVAFC/AZ	DB92-03337B	DB82-03941A
139	AM080MXVAGC/TC	DB92-03526A	DB82-03923A	158	AM080MXVAFC/AZ	DB92-03526C	DB82-03935A
140	AM100MXVAGC/TC	DB92-03526A	DB82-03924A	159	AM100MXVAFC/AZ	DB92-03337B	DB82-03936A
141	AM120MXVAGC/TC	DB92-03526A	DB82-03925A	160	AM120MXVAFC/AZ	DB92-03337B	DB82-03937A
142	AM140MXVAGC/TC	DB92-03526A	DB82-03926A	161	AM140MXVAFC/AZ	DB92-03526C	DB82-03938A
143	AM160MXVAGC/TC	DB92-03339A	DB82-03927A	162	AM160MXVAFC/AZ	DB92-03526C	DB82-03939A
144	AM180MXVAGC/TC	DB92-03339A	DB82-03928A	163	AM180MXVAFC/AZ	DB92-03337B	DB82-03940A
145	AM200MXVAGC/TC	DB92-03339A	DB82-03929A	164	AM200MXVAFC/AZ	DB92-03337B	DB82-03941A

■ How to Display Integrated Error Code

► Meanings of First Alphabetical Character / Number of Error Code

Displayed alphabet	Explanation	
E	When displaying Error 101~700	
P	When displaying Error 701~800	
C	When E206 occurs	Displays address of subordinate within the set C001 : HUB, C002: FAN, C003: INV1, C004: INV2
	When MCU error occurs	Displays address of MCU Ex) C100: MCU address 0, C101: MCU address 1, C102: MCU address 2
P	When displaying outdoor unit address Ex) U200~203 main, Sub 1, 2, 3	
U	When displaying indoor unit address Ex) A000: Indoor unit adress 0, A001: Indoor unit address 1, A002: Indoor unit address 2	

► Order of Error Display

Classification	Error display method	Display Example
Display method for error that occurred in indoor unit	Error Number → Indoor unit address → Error Number, repeat display	E471 → A002 → E471 → A002
Display method for error that occurred in outdoor unit and other methods of error display	Error Number → Outdoor unit address → Error Number, repeat display	E471 → U200 → E471 → U200 E206 → C001 → E206 → C002

■ Diagnosis and Adjustment (Error Code)

► Error code related indoor unit

CODE	Explanation
E-101	Indoor unit communication error. Indoor unit can not receive any data from outdoor unit.
E-102	Communication error between indoor unit and outdoor unit. Displayed in indoor unit.
E-108	Error due to repeated address setting (When 2 or more devices have same address within the network)
E-109	Incomplete communication error of indoor unit address
E-121	Error on indoor temperature sensor of indoor unit (Short or Open)
E-122	Error on EVA IN sensor of indoor unit (Short or Open)
E-123	Error on EVA OUT sensor of indoor unit (Short or Open)
E-128	EVA IN temperature sensor of indoor unit is detached from EVA IN pipe
E-129	EVA OUT temperature sensor of indoor unit is detached from EVA OUT pipe
E-130	Heat exchanger in/out sensors of indoor unit are detached
E-135	RPM feedback error of indoor unit's cleaning fan
E-149	Error due to AHU master indoor unit sensor setting.
E-151	Error due to opened EEV of indoor unit (2nd detection)
E-152	Error due to closed EEV of indoor unit (2nd detection)
E-153	Error on floating switch of indoor unit (2nd detection)
E-154	RPM feedback error of indoor unit
E-161	Mixed operation mode error of indoor unit; When outdoor unit is getting ready to operate in cooling (or heating) and some of the indoor unit is trying to operate in heating (or cooling) mode
E-162	EEPROM error of MICOM (Physical problem of parts/circuit)
E-163	Indoor unit's remote controller option input is Incorrect or missing. Outdo or unit EEPROM data error
E-180	Simultaneous opening of cooling/heating MCU SOL V/V (1st detection)
E-181	Simultaneous opening of cooling/heating MCU SOL V/V (2nd detection)
E-185	Cross wiring error between communication and power cable of indoor unit
E-186	Connection error or problem on SPi
E-190	No temperature changes in EVA IN during pipe inspection or changes in temperature is seen in indoor unit with wrong address
E-191	No temperature changes in EVA OUT during pipe inspection or changes in temperature is seen in indoor unit with wrong address
E-198	Error due to disconnected thermal fuse of indoor unit
E-201	Communication error between indoor and outdoor units (installation number setting error, repeated indoor unit address, indoor unit communication cable error)
E-202	Communication error between indoor and outdoor units (Communication error on all indoor unit, outdoor unit communication cable error)
E-203	Communication error between main and sub outdoor units
E-205	Communication error on all PBA within the outdoor unit C-Box, communication cable error
E-206	E206-C001: HUB PBA communication error / E206-C002: FAN PBA communication error E206-C003: INV1 PBA communication error / E206-C004: INV2 PBA communication error E206-C005 : Water Hub PBA communication error
E-211	When single indoor unit uses 2 MCU ports that are not in series.
E-212	If the rotary switch (on the MCU) for address setting of the indoor unit has 3 or more of the same address
E-213	When total number of indoor units assigned to MCU is same as actual number of installed indoor units but there is indoor unit that is not installed even though it is assigned on MCU

■ Diagnosis and Adjustment (Error Code)

► Error code related to the Communications / Settings / HW (cont.)

Error mode	Cause
E-214	When number of MCU is not set correctly on the outdoor unit or when two or more MCU was installed some of them have the same address
E-215	When two different MCU's have same address value on the rotary switch
E-216	When indoor unit is not installed to a MCU port but the switch on the port is set to On.
E-217	hen indoor unit is connected to a MCU port but indoor unit is assigned to a MCU and the switch on the port is set to Off
E-218	When there's at least one or more actual number of indoor unit connection compared to number of indoor units assigned to MCU
E-219	Error on temperature sensor located on MCU intercooler inlet (Short or Open)
E-220	Error on temperature sensor located on MCU intercooler outlet (Short or Open)
E-221	Error on outdoor temperature sensor of outdoor unit (Short or open)
E-224	Error on water temperature sensor of main outdoor unit (Short or Open)
E-225	Error on control box temperature sensor of main outdoor unit (Short or Open)
E-231	Error on COND OUT temperature sensor of main outdoor unit (Short or Open)
E-241	COND OUT sensor is detached
E-251	Error on discharge temperature sensor of compressor 1 (Short or Open)
E-257	Error on discharge temperature sensor of compressor 2 (Short or Open)
E-262	Discharge temperature sensor of compressor 1 is detached from the sensor holder on the pipe
E-263	Discharge temperature sensor of compressor 2 is detached from the sensor holder on the pipe
E-266	Top sensor of compressor 1 is detached
E-267	Top sensor of compressor 2 is detached
E-269	Suction temperature sensor is detached from the sensor holder on the pipe
E-276	Error on top sensor of compressor 1 (Short or Open)
E-277	Error on top sensor of compressor 2 (Short or Open)
E-291	Refrigerant leakage or error on high pressure sensor (Short or Open)
E-296	Refrigerant leakage or error on low pressure sensor (Short or Open)
E-308	Error on suction temperature sensor (Short or Open)
E-311	Error on temperature sensor of double layer pipe/liquid pipe(sub heat exchanger) (Short or Open)
E-321	Error on EVI (ESC) IN temperature sensor (Short or Open)
E-322	Error on EVI (ESC) OUT temperature sensor (Short or Open)
E-323	Error on suction sensor 2 (Short or Open)
E-346	Error due to operation failure of Fan2
E-347	Motor wire of Fan2 is not connected
E-348	Lock error on Fan2 of outdoor unit
E-353	Error due to overheated motor of outdoor unit's Fan2
E-355	Error due to overheated IPM of Fan2
E-361	Error due to operation failure of inverter compressor 2
E-364	Error due to over-current of inverter compressor 2
E-365	V-limit error of inverter compressor 2
E-366	Error due to over voltage /low voltage of inverter PBA2
E-367	Error due to unconnected wire of compressor 2
E-368	Output current sensor error of inverter PBA2
E-369	DC voltage sensor error of inverter PBA2
E-371	Error due to the INV2 Data Flash

■ Diagnosis and Adjustment (Error Code)

► Error code related to the Communications / Settings / HW (cont.)

Error mode	Cause
E-374	Heat sink temperature sensor error of inverter PBA2
E-378	Error due to overcurrent of Fan2
E-383	Error due to over current of Fan2
E-385	Error due to input current of inverter 2
E-386	Over-voltage/low-voltage error of Fan2
E-387	Hall IC connection error of Fan2
E-389	V-limit error on Fan2 of compressor
E-391	Error due to the Fan2 DataFlash
E-393	Output current sensor error of Fan2
E-396	DC voltage sensor error of Fan2
E-399	Heat sink temperature sensor error of Fan2
E-400	Error due to overheat caused by contact failure on IPM of Inverter PBA2
E-407	Compressor operation stop due to high pressure protection control
E-410	Compressor operation stop due to low pressure protection control or refrigerant leakage
E-416	Compressor operation stop due to discharge temperature protection control
E-425	Phase reversal or phase failure (3Ø outdoor unit wiring, R-S-T-N), connection error on 3 phase input
E-428	Compressor operation stop due abnormal compression ratio
E-435	Flow Switch Error
E-436	Error on the Heat exchanger frost protection
E-438	EVI (ESC) EEV leakage or internal leakage of intercooler or incorrect connector insertion of EVI (ESC) EEV
E-439	Error due to refrigerant leakage
E-440	Heating mode restriction due to high air temperature In case of DVM water, Heating mode restriction due to high water temperature
E-441	Cooling mode restriction due to low air temperature In case of DVM water, Heating mode restriction due to low water temperature
E-442	Refrigerant charing restriction in heating mode when air temperature is over 15 °C
E-443	Operation prohibited due to low pressure
E-445	CCH is deatched
E-446	Error due to operation failure of Fan1
E-447	Motor wire of Fan1 is not connected
E-448	Lock error on Fan1
E-452	Error due to ZPC detection circuit problem or power failure
E-453	Error due to overheated motor of outdoor unit's Fan1
E-454	Error due to the outdoor unit fan RPM
E-455	Error due to the over heat Fan1 IPM
E-457	Outdoor unit Reversed direction of the wind Error
E-461	Error due to operation failure of inverter compressor 1
E-462	Compressor stop due to full current control or error due to low current on CT2
E-464	Error due to over-current of inverter compressor 1
E-465	V-limit error of inverter compressor 1
E-466	Error due to over voltage /low voltage of inveter PBA1

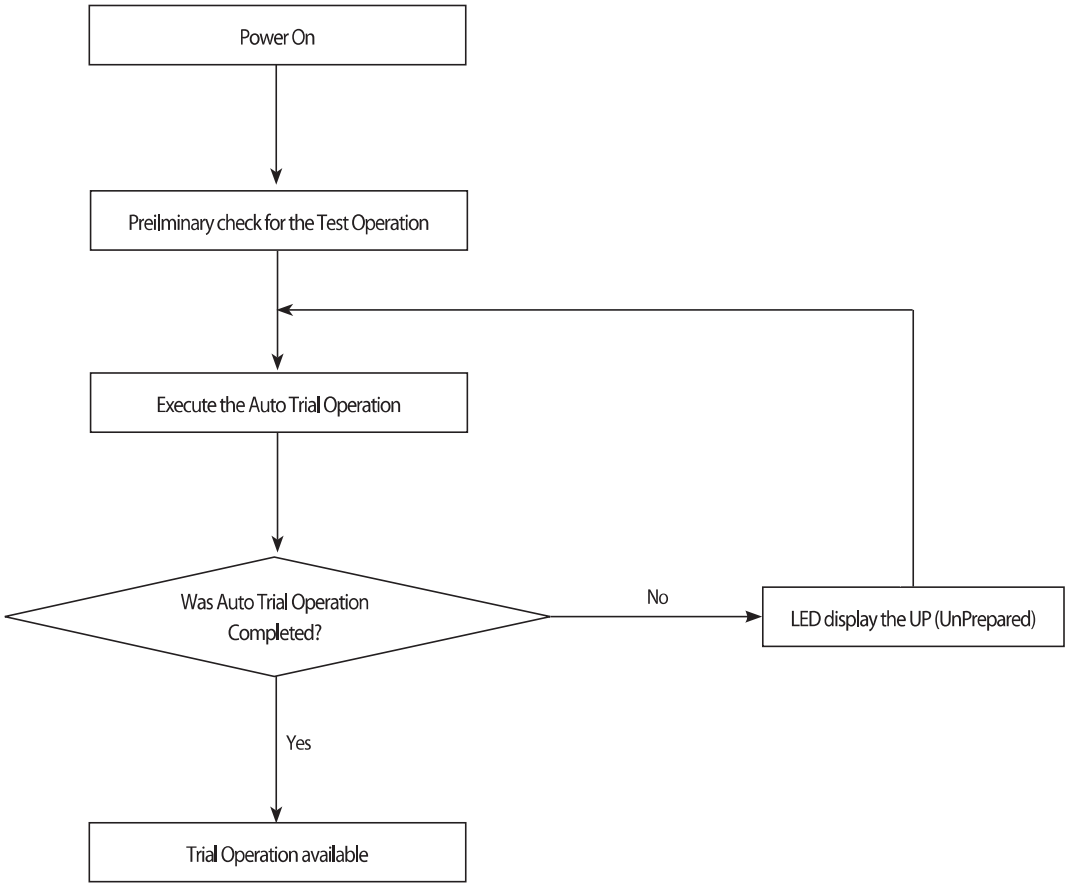
■ Diagnosis and Adjustment (Error Code)

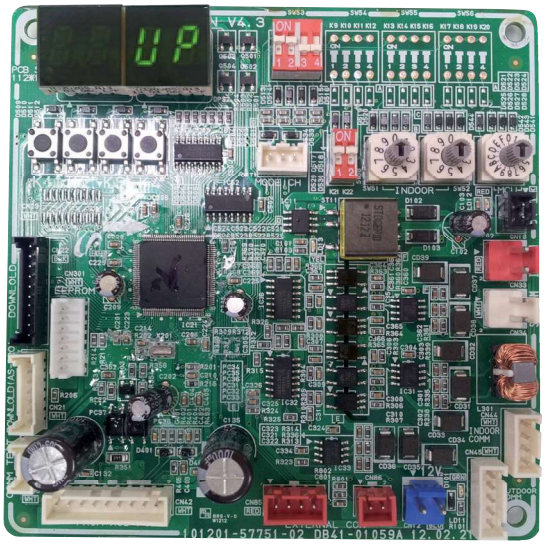
► Error code related to the Communications / Settings / HW (cont.)

Error mode	Cause
E-467	Error due to unconnected wire of compressor 1
E-468	Output current sensor error of inverter PBA1
E-469	DC voltage sensor error of inver PBA1
E-471	Error due to the INV1 Data Flash
E-474	Heat sink temperature sensor error of inverter PBA1
E-478	Error due to overcurrent of Fan1
E-483	Error due to over current of Fan1
E-485	Error due to input current of inverter 1
E-486	Error due to over voltage/low voltage of Fan
E-487	Hall IC error of Fan1
E-489	V-limit error on Fan1 of compressor
E-491	Error due to the Fan1 DataFlash
E-493	Output current sensor error of Fan1
E-496	DC voltage sensor error of Fan1
E-499	Heat sink temperature sensor error of Fan1
E-500	Error due to overheat caused by contact failure on IPM of Inverter PBA1
E-503	Error due to alert the user to check if the service valve is closed
E-504	Error due to self diagnosis of compressor operation
E-505	Error due to self diagnosis of high pressure sensor
E-506	Error due to self diagnosis of low pressure sensor
E-515	Error due to the over heat Control Box
E-516	Error due to the no feedback from the Fan of the control Box
E-552	Comp down due to the low discharge pressure
E-560	Outdoor unit's option switch setting error (when iinappropriate option switch is on)
E-563	Error due to module installation of indoor unit with old version (Micom version needs to be checked)
E-573	Error due to using single type outdoor unit in a module installation
E-702	Error due to closed EEV of indoor unit (1st detection)
E-703	Error due to opened EEV of indoor unit (1st detection)
UP	Auto Trial Operation incompleted (UnPrepared)

4-3 Appropriate Measures for Different Symptom

4-3-1 Outdoor Unit Test Operation Flow





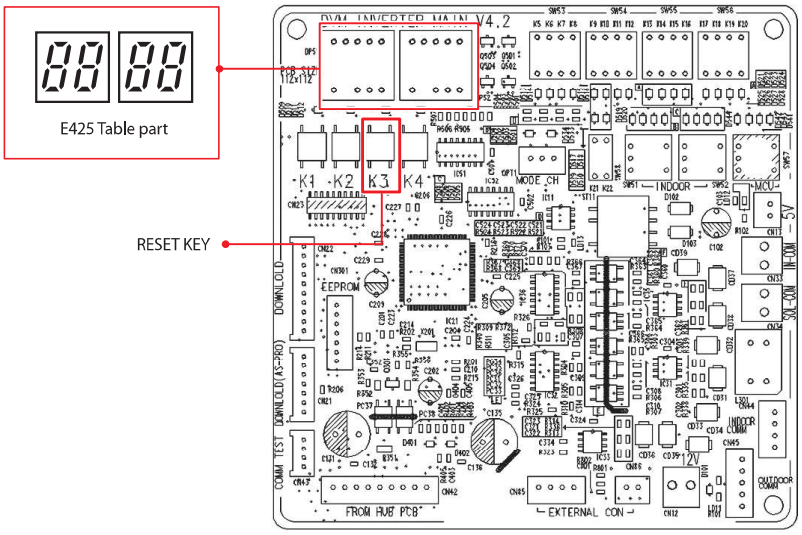
If the Auto Trial Operation is not completed
- UP is displyed(UnPrepared)

Prior to starting the air conditioning operation after the initial installation and Auto Trial Operation is carried out.
This process, the stable operation to protect the system and verify the defect of the product.

1. Tracking is complete and after the initial installation, if you do not have a history of Auto Trial Operation is completed, UP will be displayed.
2. Execute the Auto Trial Operation by Tact Switch.
3. UP display disappears after Auto Trial Operation is complete, normal operation is possible.
4. Auto Trial Operation is completed, if there is a history, normal operation execution.

■ Reversed Phase/No Phase Check (Outdoor Unit with 3 Phase power) – Display E425 for Problem

1. When the power is on, check the status of the power from the inverter.
   Three-phase L1(R)-L2(S)-L3(T) order, regardless of the power connection on the inverter does not phase power (no phase) can occur.
   In this case, E425 or E466 (E366) is displayed, and then air conditioner will then maintain normal conditions.
   However) N phase must be connected properly.



1) Check the voltage for L1 (R)-L2 (S) phase/L1 (R)-L3 (T) phase/L2 (S)-L3 (T) phase.
2) If there is any terminal without normal voltage, then check the power outside the air conditioner and take the appropriate measures.
3) If the 3-phase voltage is normal, then use the 3-phase tester to display the phase of the power cable.
   Change the power cable connection if reversed phase is displayed.
4) Take the above measures, press the reset key (K3), and then check the power once more.
5) Check the EMI PCB Fuse connection and wiring.
6) If the same problem occurs after another check, check the Inverter PCB.

CAUTION

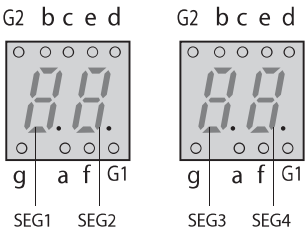
● In case of wiring error (N-phase is changed with one of R, S and T) with the N-phase, will operate the power protection function, display E425 or stop the power. This is not a PCB power defect in this case, before PCB replacement, please check the power on.

■ Initial Tracking (Communication Check-up) - Display E201 for Problem

1. For the display module of the outdoor unit, there are differences in the contents displayed depending on whether the relevant outdoor unit is a master unit or a sub unit.
   1) Master Unit
   - The outdoor unit Micom attempts communication with the indoor unit connected to the communication cable (F1/F2) when the power is turned on.
   - Basic segment display

Step	Display content	Display			
At initial power input	Checking segment display	SEG1	SEG2	SEG3	SEG4
		"8"	"8"	"8"	"8"
While setting communication between indoor and outdoor unit (Addressing)	Number of connected indoor units	SEG1	SEG2	SEG3, 4	SEG3, 4
		"A"	"d"	Number of communicated units ※ Refer to "View Mode" for communication address	
After communication setting (usual occasion)	Transmit/ Reception address	SEG1	SEG2	SEG3, 4	SEG3, 4
		I/U : "A" MCU : "C"	I/U : "0" MCU : "1"	Reception address (in decimal number)	

※ I/U : Indoor unit

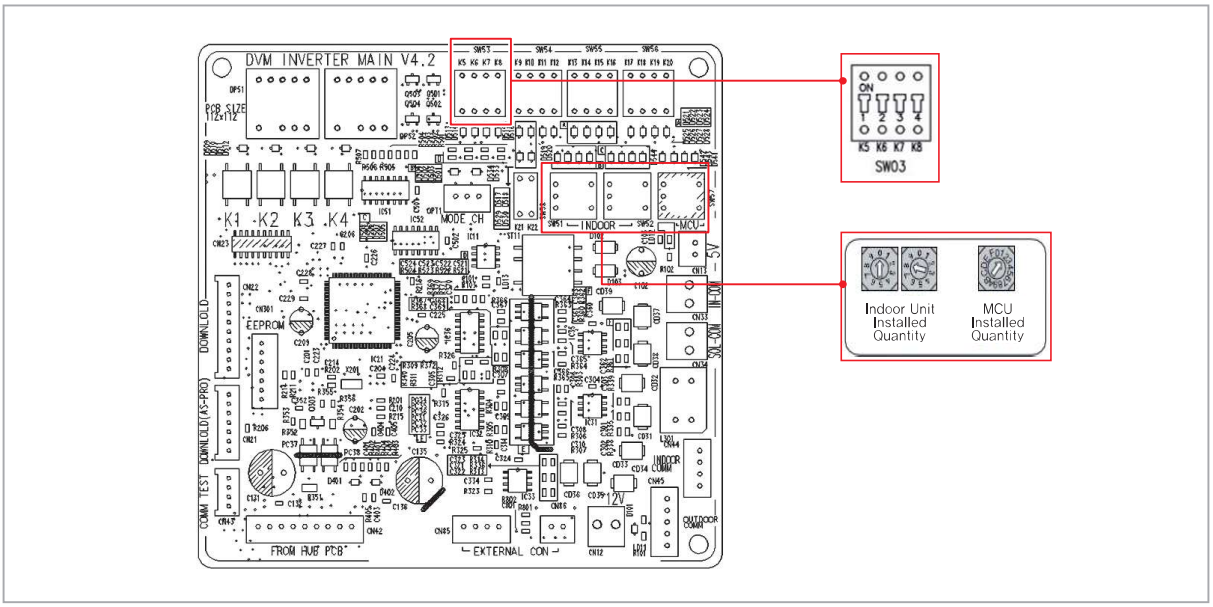


Outdoor Unit Display Parts

   - If the number of indoor units set by the outdoor unit is not in accordance with the number of indoor units that succeeded with communication, then the four displaying parts will display E201.

   2) Sub(Slave) Unit
   - The two left hand displays show its own address and the two right hand displays show the outdoor unit's address.
     Main address : C8, Sub1 address : C9, Sub2 address : CA, Sub3 address : CB

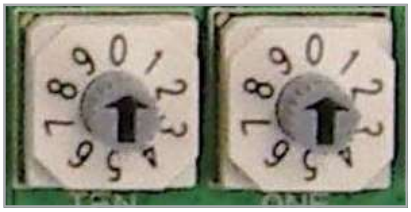
2. The number of the indoor Units Connected to the outdoor unit can be configured by using the indoor unit installation quantity setup switch.



■ Indoor Unit Installation Quantity Setup Switch

The following is an example of how to use the switch according to the number of indoor unit installations. The maximum number of possible indoor unit connections is 64.

3Units Connected		17Units Connected		31Units Connected		64Units Connected	
10's Digit	1's Digit	10's Digit	1's Digit	10's Digit	1's Digit	10's Digit	1's Digit
0	3	1	7	3	1	6	4

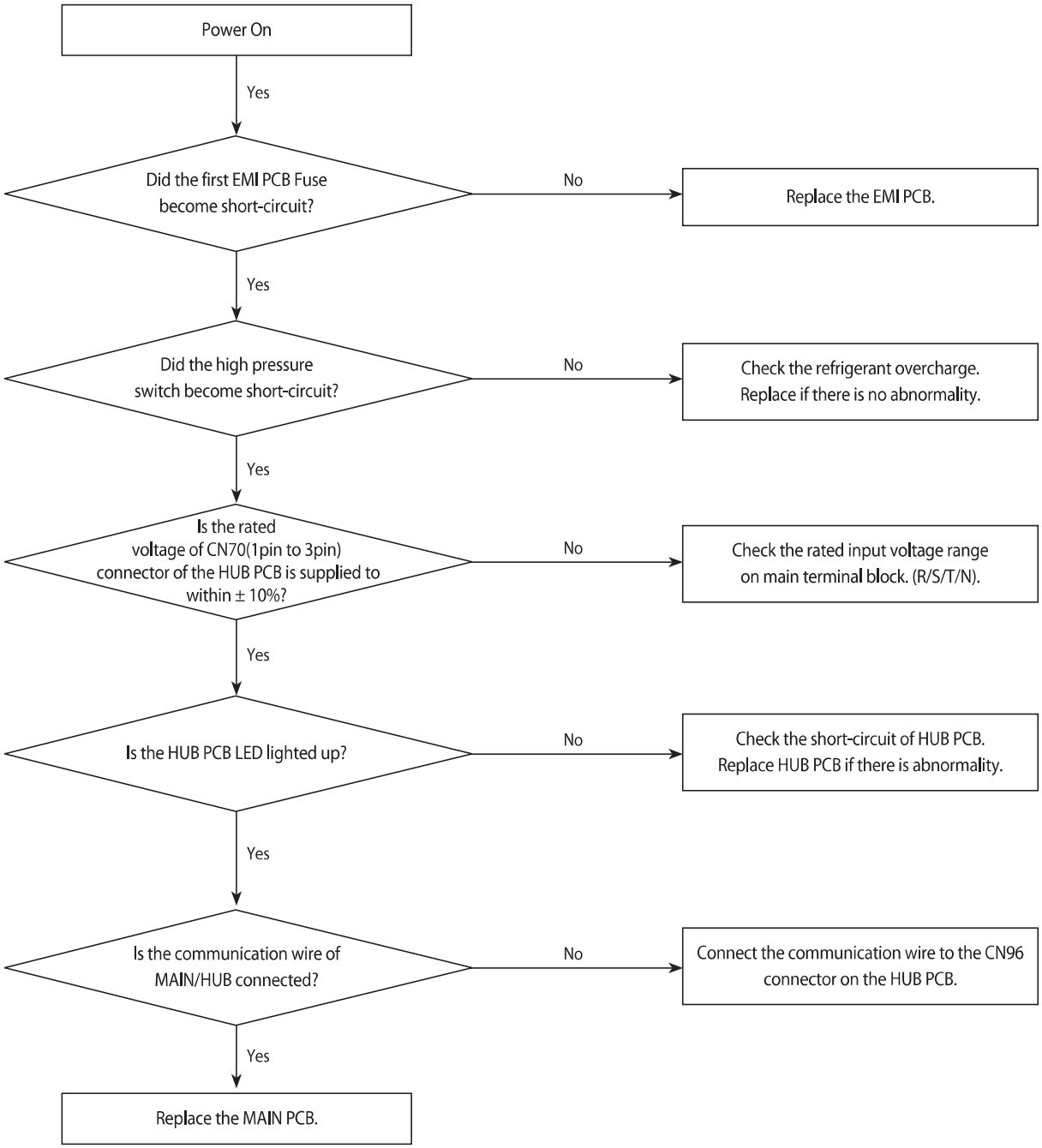

10's Digit (0~9) 1's Digit (0~9)

3. If the quantity of the indoor units configured with the indoor unit installation quantity setup switch does not match the quantity of the indoor units found during the tracking process, E201 and U200 will be displayed in order on the display module.
4. When you install more than one MCU, set the quantity of installed MCU.

4-3-2 Main PCB has no power phenomenon

Outdoor unit display	Main PCB has no power phenomenon (7-seg does not blink)
Judgment Method	Hub PCB power and connection wire to detect.
Connector check Method	CN96 on HUB PCB - 1pin to 4pin : DC 12V - 9pin to 4pin : DC 5V
Cause of problem	· HUB PCB connector wire defects and the connection is not. · Main PCB defective. · Hub PCB defective. · High pressure switch operation · Water hub PCB defective. CN96 on HUB PCB

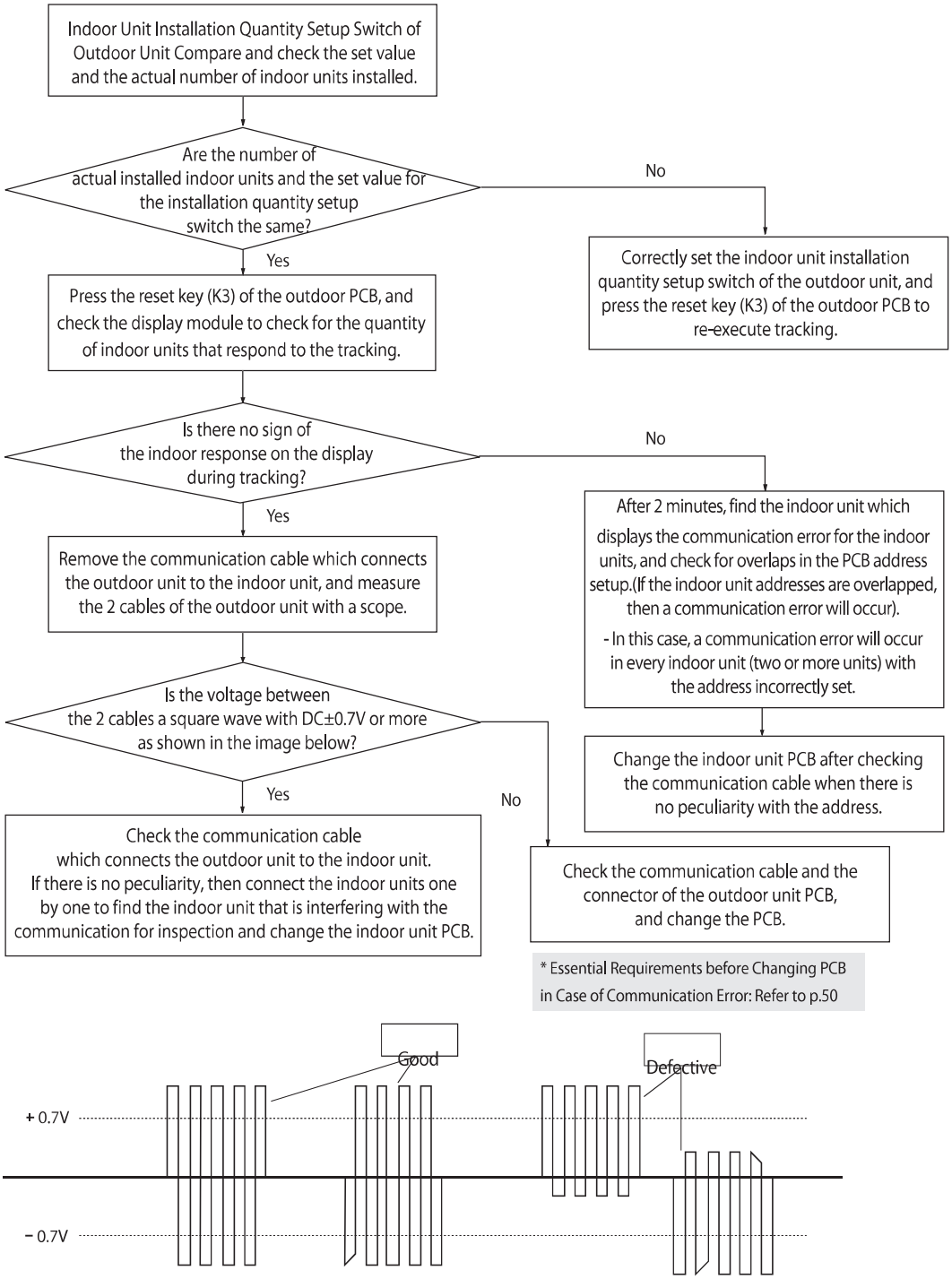
1. Cause of problem



4-3-3 Communication Error between Indoor and Outdoor Units during Tracking

<table>
<tr><td>Outdoor unit display</td><td>E201</td></tr>
<tr><td>Indoorunit display</td><td>
<table>
<tr><td colspan="6">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="5">Cassette (4/Mini4 Way)</td><td colspan="5">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td></td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td><td>24℃</td><td>27℃</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td><td></td><td>×</td><td>◑</td><td>◑</td><td>×</td><td>◑</td><td>◑</td><td>×</td><td>◑</td><td>×</td></tr>
</table>
※ ●: ON ◑: Flash ×: OFF
</td></tr>
<tr><td>Judgment Method</td><td>· Communication error between indoor and outdoor units.</td></tr>
<tr><td>Cause of problem</td><td>· Refer to the judgment method below.</td></tr>
</table>

1. Cause of problem



※ Essential Requirements before PCB Changes in Case of Communication Error Occurrence

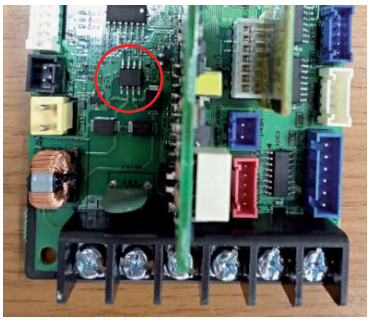
1. **Find the communication IC near the communication terminal.**

   ● Indoor Unit

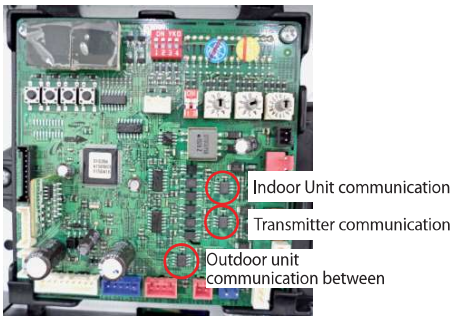
   - Coil side or PTC (SMD) side : Communication IC between indoor and outdoor units.

   ● Outdoor Unit

   - When there is module communication as in PLUS II and PLUS III –
     Above Red Connector of Main Unit : Communication IC between indoor and outdoor units.
   - When there is no module communication as in PLUS II and PLUS III –
     Above Yellow Connector of Each Unit : Communication IC between outdoor units.
   - Other Outdoor Unit- Above Communication Connector : Communication IC between indoor and outdoor unit.



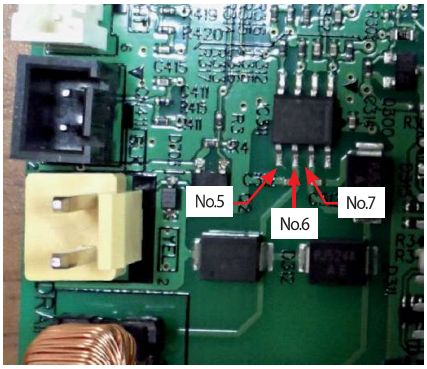
Indoor Unit



Outdoor Unit

2. **Measure the resistance of the communication IC.**

   ● Measurement Method : Measure the No.5 - No.6 Pin resistance
   Measure the No.5 - No.7 Pin resistance



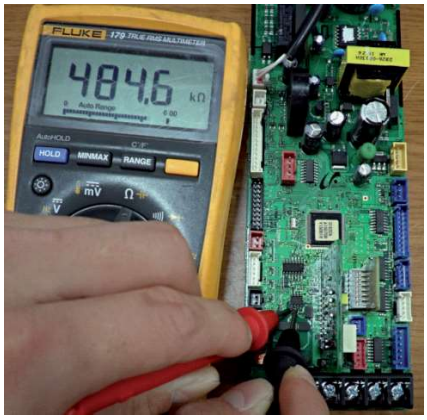
3. **Defectiveness decision of the communication IC which uses a measurement resistance value.**

   ● Judging as Normal

   - Each resistance value should be measured in tens of kΩ~to hundreds of kΩ.
   - Difference between the two resistance values should be of some number of kΩ.

   ● Judging as defective

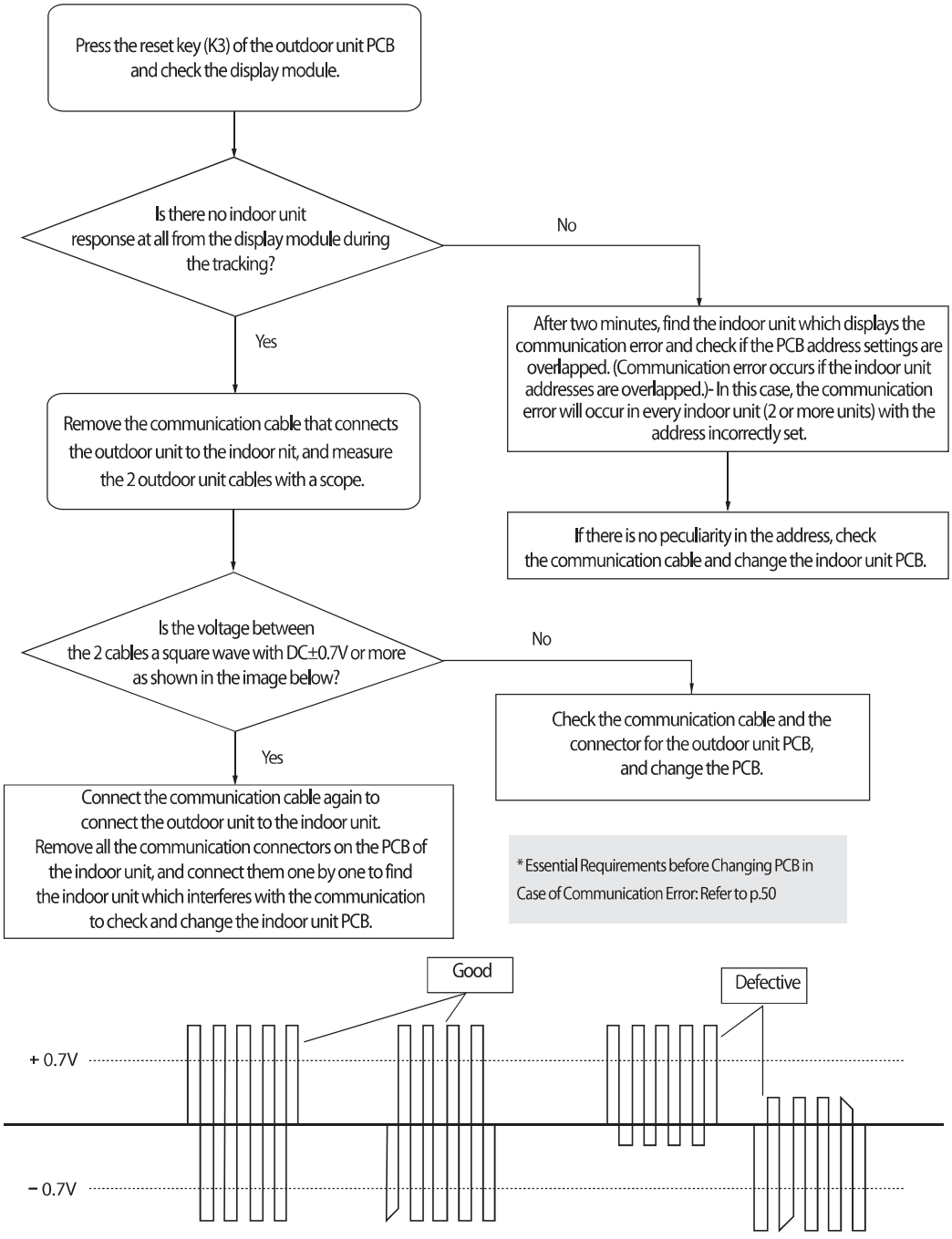
   - One or both are low with tens of Ω
   - One or both of them is open



4-3-4 Communication Error between Indoor and Outdoor Units after Tracking

<table>
<tr><td>Outdoor unit display</td><td colspan="14">E202</td></tr>
<tr><td rowspan="3">Indoorunit display</td><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="4">Cassette (4/Mini4 Way)</td><td colspan="5">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td><td>24℃</td><td>27℃</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td><td>◑</td><td>◑</td><td>×</td><td>◑</td><td>×</td></tr>
<tr><td colspan="15">※ ●: ON ◑: Flash ×: OFF</td></tr>
<tr><td>Judgment Method</td><td colspan="14">· Outdoor unit is unable to communicate for two minutes during operation. (no reception of relocation)</td></tr>
<tr><td>Cause of problem</td><td colspan="14">· Communication error between indoor and outdoor units and setup error of indoor unit installation quantity setup switch.</td></tr>
</table>

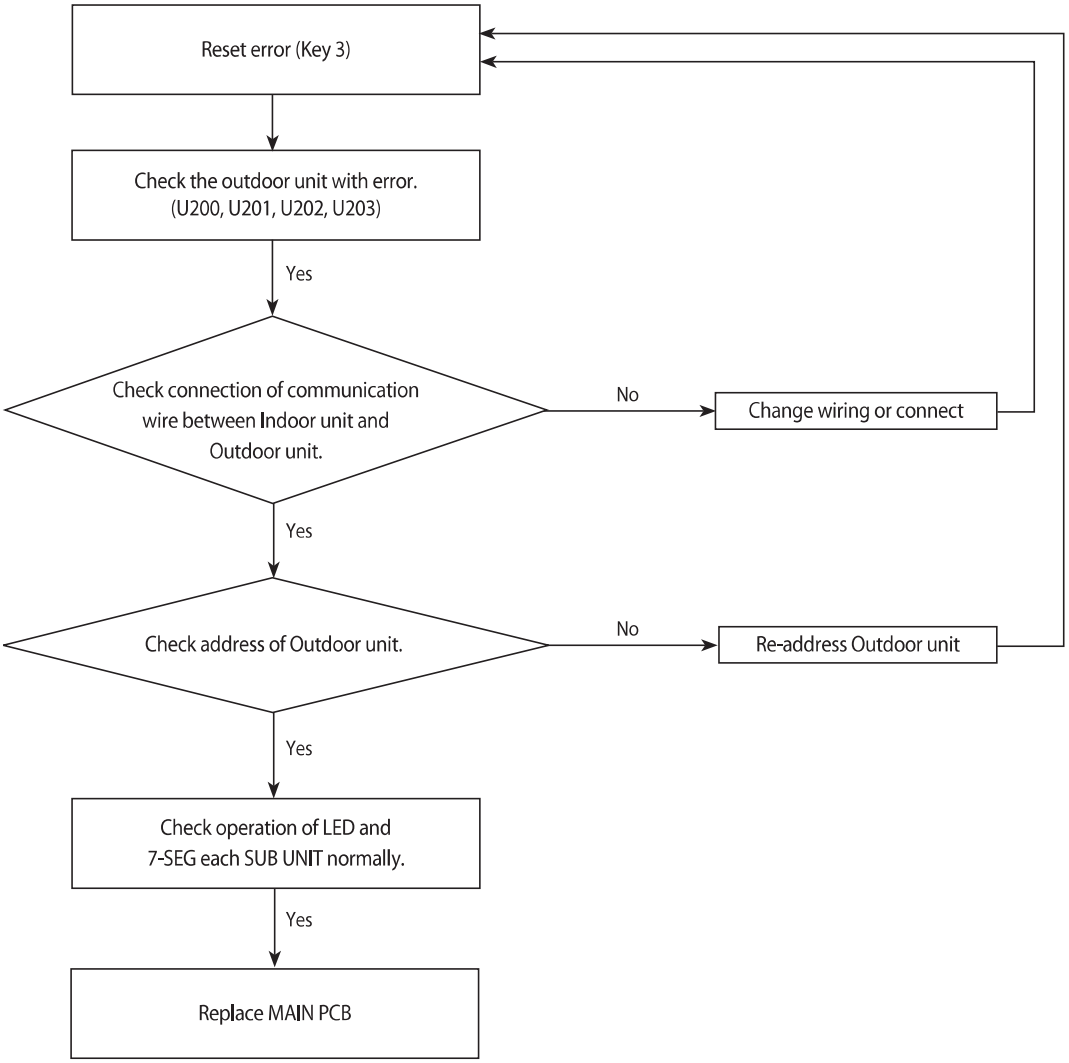
1. Cause of problem



4-3-5 Communication error between main and sub Unit of outdoor unit or between outdoor units

<table>
<tr><td>Outdoor unit display</td><td colspan="11">E203</td></tr>
<tr><td rowspan="3">Indoorunit display</td><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="5">Cassette (4/Mini4 Way)</td><td colspan="3">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td><td>×</td><td>◑</td><td>◑</td></tr>
<tr><td colspan="12">※ ●: ON ◑: Flash ×: OFF</td></tr>
<tr><td>Judgment Method</td><td colspan="11">· Refer to the judgment method below.</td></tr>
<tr><td>Cause of problem</td><td colspan="11">· Communication error between outdoor units.</td></tr>
</table>

1. Cause of problem

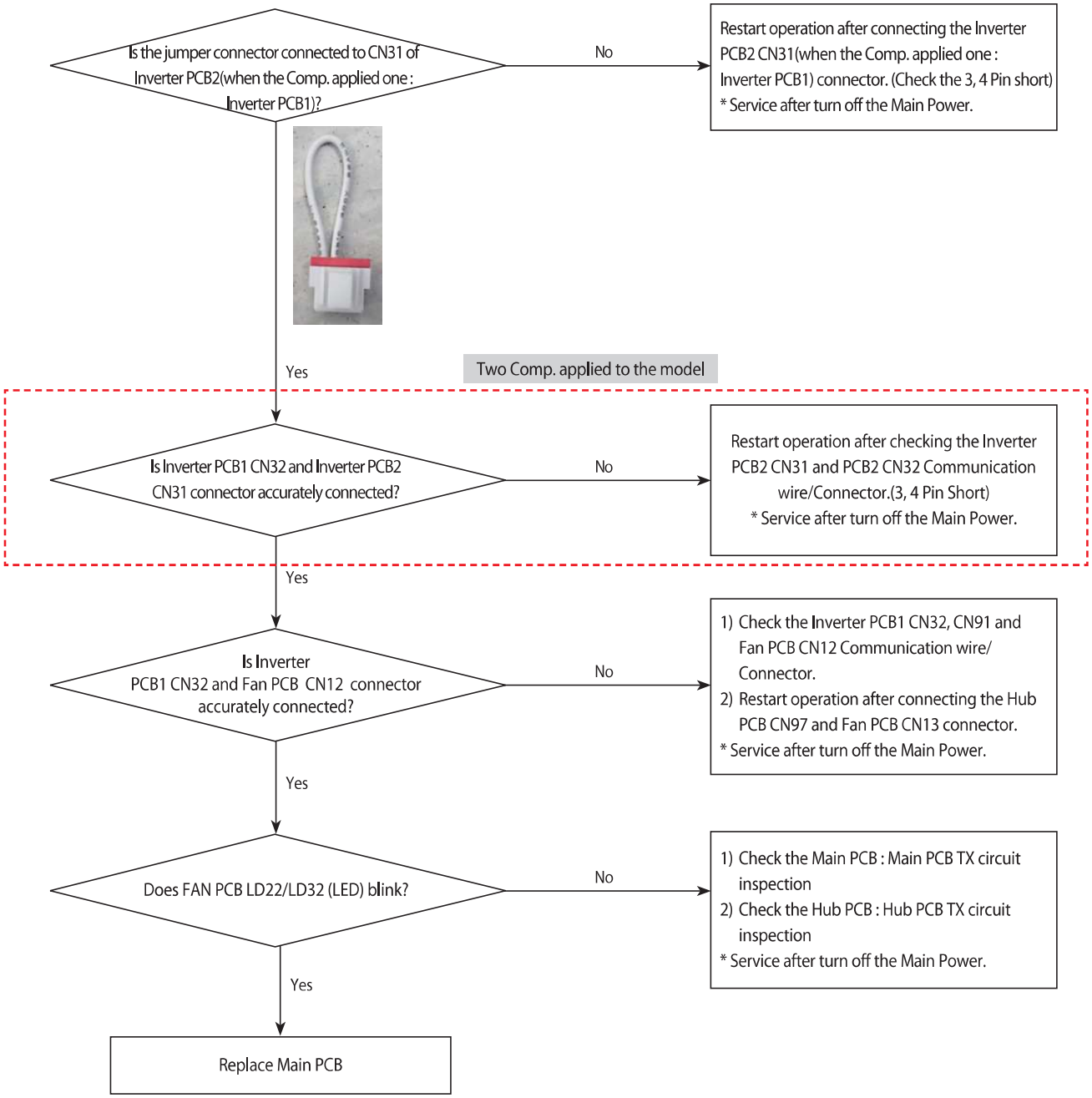


Essential Requirements before Changing PCB in Case of Communication Error: Refer to p.59

4-3-6 Internal Communication error of the Outdoor Unit C-Box

Outdoor unit display	E205 - All boards of outdoor unit are not communicating
Indoorunit display	Duct, Cassette (1/2 Way),Console, Celing: Operation / Defrost / Timer / Fan / Filter/MPI; Cassette (4/Mini4 Way): Operation / Defrost / Timer / Filter; Wall-mounted (NeoForte): Operation / Timer / Turbo × ◑ ◑ ◑ × × ◑ ◑ × × ◑ ◑ ※ ●: ON ◑: Flash ×: OFF
Judgment Method	· Communication error between the C-Box PCB
Cause of problem	· Communication wire inside the C-Box is unconnected · Main PCB defective

1. Cause of problem



4-3-7 Internal PCB Communication error of the Outdoor Unit C-Box

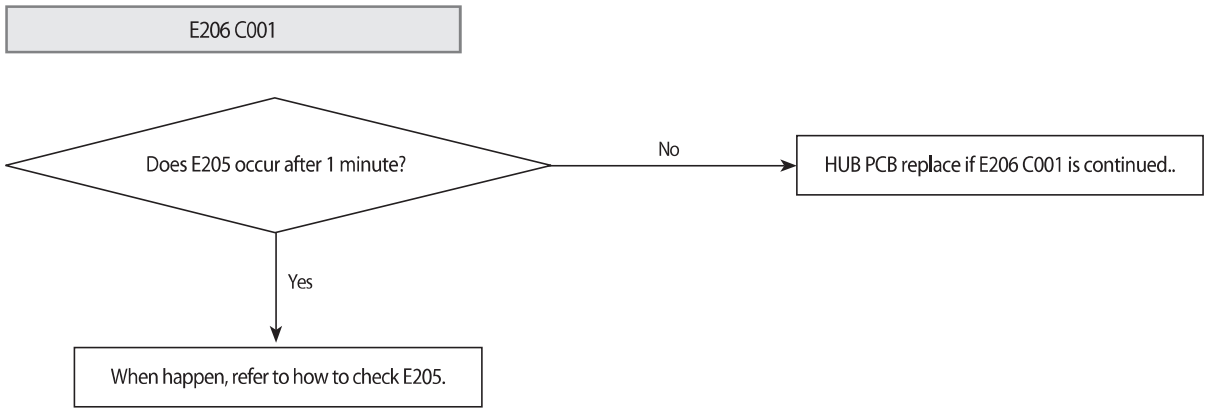
Outdoor unit display	E206 (C001 ~ C004) - some boards of outdoor unit are not communicating
Indoorunit display	Duct, Cassette (1/2 Way),Console, Celing / Cassette (4/Mini4 Way) / Wall-mounted (NeoForte)

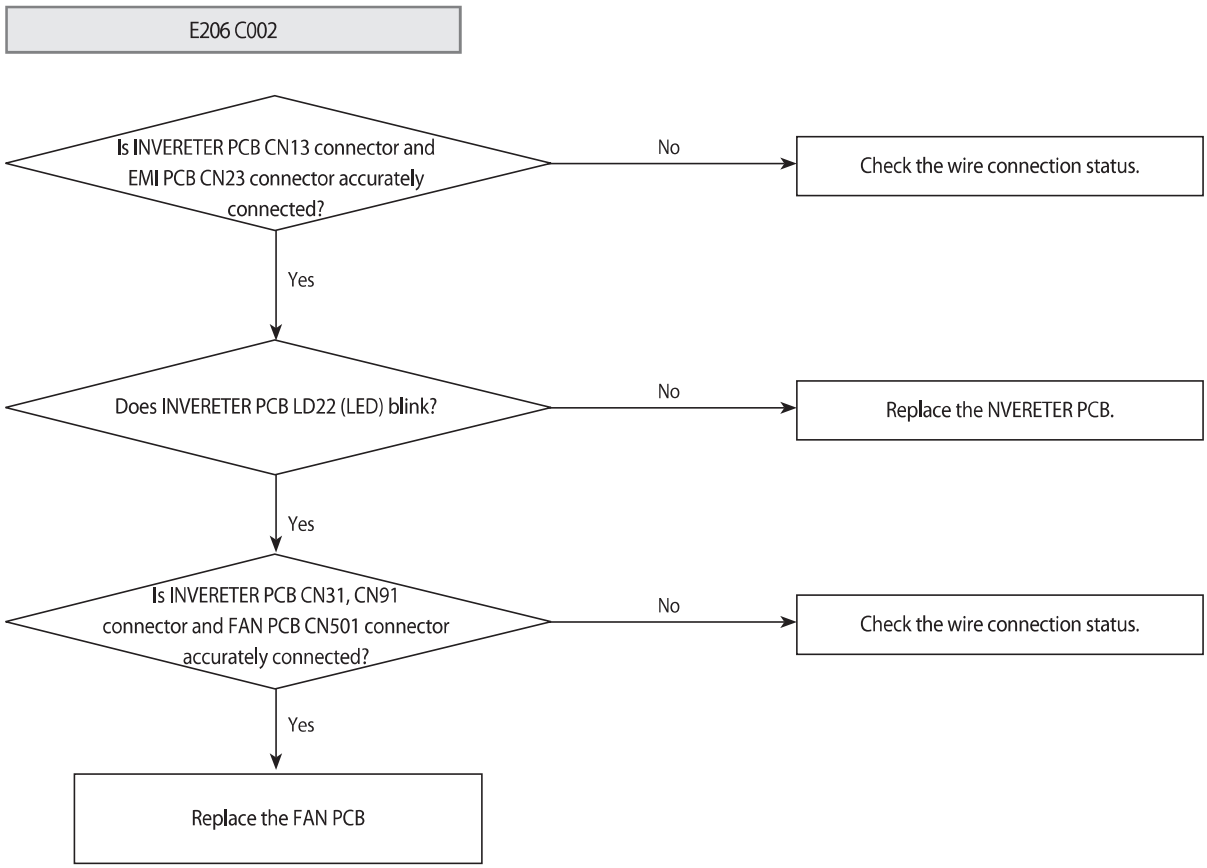
Duct, Cassette (1/2 Way),Console, Celing					Cassette (4/Mini4 Way)				Wall-mounted (NeoForte)		
Operation	Defrost	Timer	Fan	Filter/MPI	Operation	Defrost	Timer	Filter	Operation	Timer	Turbo
×	×	◑	◑	×	×	◑	◑	×	×	◑	◑

※ ●: ON ◑: Flash ×: OFF

Judgment Method	· PCB does not respond to the invoked Main PCB
Cause of problem	· C-Box internal Inverter PCB, Fan PCB, Hub PCB defective

1. Cause of problem





Internal PCB Communication error of the Outdoor Unit C-Box (cont.)

E206 C003/C004

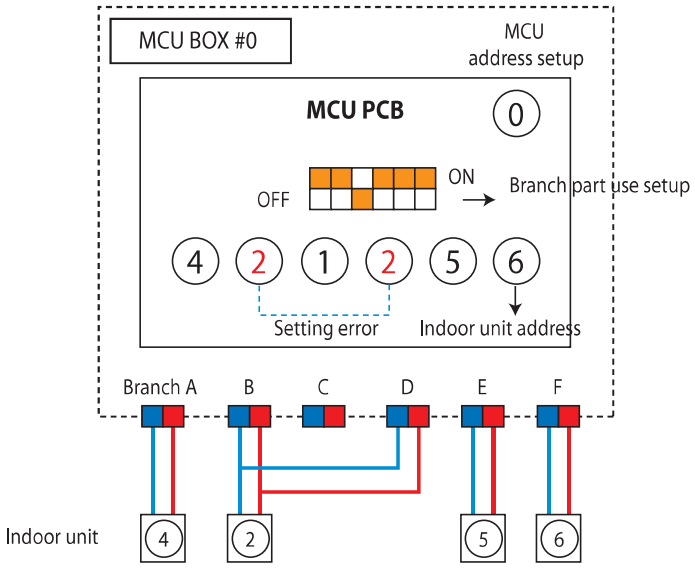
C003 : Replace the INVERTER PCB 1
C004 : Replace the INVERTER PCB 2

4-3-8 MCU branch part setup error – inconsecutive connection with the use of 2 branch parts

<table>
<tr><td>Outdoor unit display</td><td>E211</td></tr>
<tr><td>Indoorunit display</td><td>
<table>
<tr><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="4">Cassette (4/Mini4 Way)</td><td colspan="5">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td><td>24℃</td><td>27℃</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td></tr>
</table>
※ ●: ON ◑: Flash ×: OFF
</td></tr>
<tr><td>Criteria</td><td>• When 2 branch parts are used for one indoor unit without connecting them consecutively.</td></tr>
<tr><td>Cause of problem</td><td>• Branch part assembly error</td></tr>
</table>

1. How to check

   Find an MCU that is composed as the following picture to carry out assembly of branch part again. After completing the re-setting, press K3 button on the button to reset or turn it off to restart.

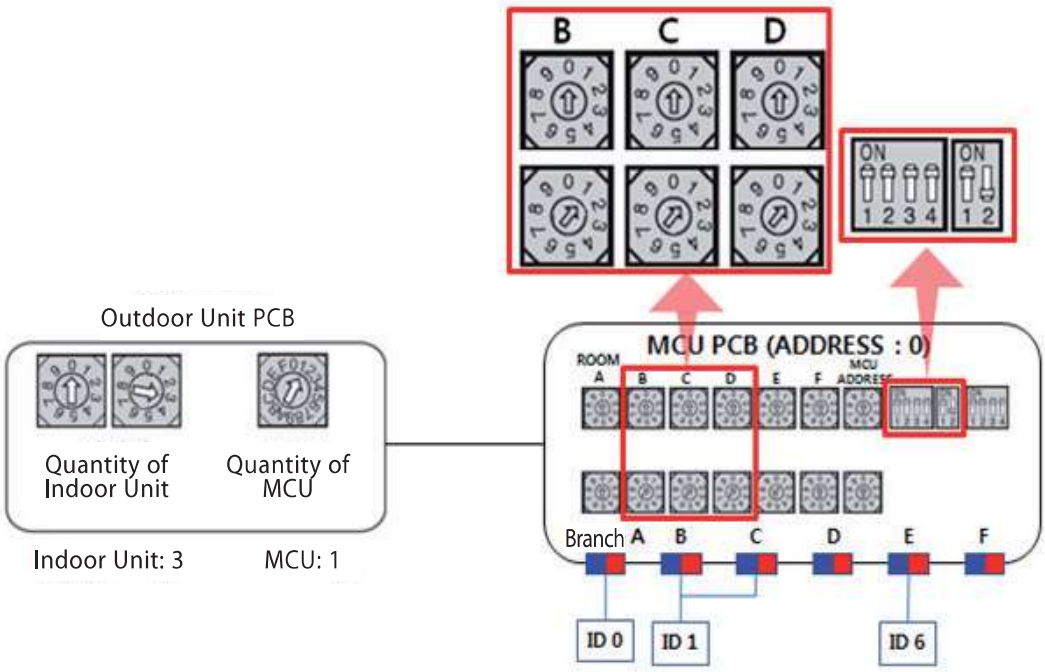


4-3-9 MCU branch part setup error – Repeated setup for the same address over 3 times

<table>
<tr><td>Outdoor unit display</td><td>E2 12</td></tr>
<tr><td>Indoorunit display</td><td>
<table>
<tr><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="4">Cassette (4/Mini4 Way)</td><td colspan="5">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td><td>24℃</td><td>27℃</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td></tr>
</table>
※ ●: ON ◑: Flash ×: OFF
</td></tr>
<tr><td>Criteria</td><td>• The same indoor unit address was setup more than 3 times in MCU</td></tr>
<tr><td>Cause of problem</td><td>• MCU indoor unit address setting error</td></tr>
</table>

1. How to check

   Find an MCU that is composed as the following picture to carry out assembly of branch part again. After completing the re-setting, press K3 button on the button to reset or turn it off to restart.

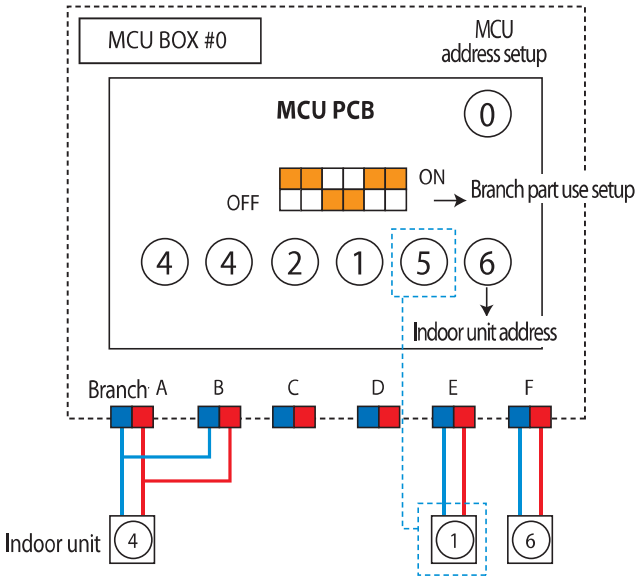


4-3-10 MCU branch part setup error – non-installed address setup

<table>
<tr><td>Outdoor unit display</td><td>E213</td></tr>
<tr><td>Indoorunit display</td><td>
<table>
<tr><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="4">Cassette (4/Mini4 Way)</td><td colspan="5">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td><td>24℃</td><td>27℃</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td></tr>
</table>
※ ●: ON ◑: Flash ×: OFF</td></tr>
<tr><td>Criteria</td><td>• If there is an indoor unit that is not installed among MCU registered indoor units</td></tr>
<tr><td>Cause of problem</td><td>• Indoor unit, with the assigned address on MCU, not installed.</td></tr>
</table>

1. How to check

   Find an MCU that is composed as the following picture to carry out assembly of branch part again. After completing the re-setting, press K3 button on the button to reset or turn it off to restart.

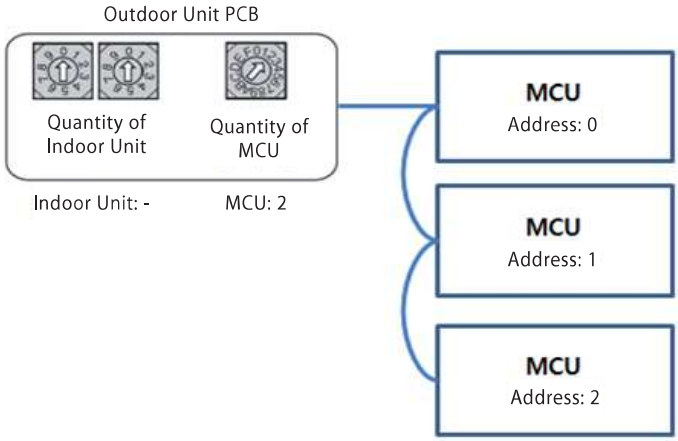


4-3-11 Setup Error for MCU Branch part – Setup Error for MCU Quantity Used

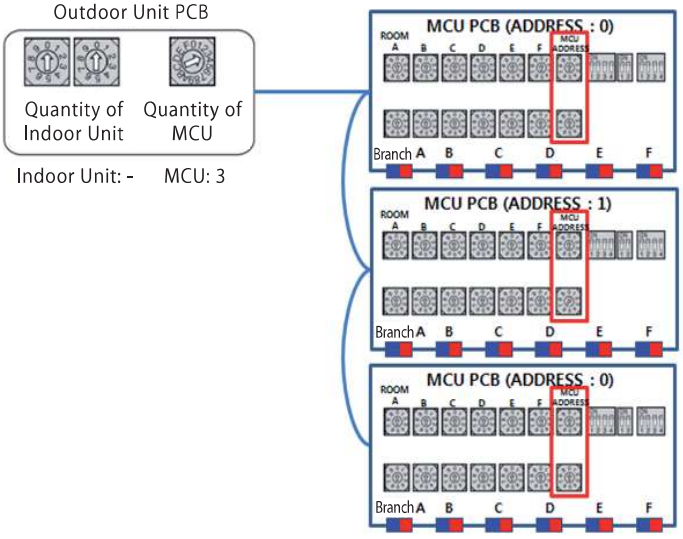
<table>
<tr><td>Outdoor unit display</td><td colspan="14">E2 14</td></tr>
<tr><td rowspan="3">Indoorunit display</td><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="4">Cassette (4/Mini4 Way)</td><td colspan="5">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td><td>24℃</td><td>27℃</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td></tr>
<tr><td colspan="15">※ ●: ON ◑: Flash ×: OFF</td></tr>
<tr><td>Judgment Method</td><td colspan="15">• Occurs when the quantity of MCU is incorrectly set by the outdoor unit.
• Occurs when same addresses are found when two or more MCU are connected.</td></tr>
<tr><td>Special Cause</td><td colspan="15">• Outdoor unit MCU setup and same address errors when connecting two or more MCUs .</td></tr>
</table>

1. Inspection Method : Check the Main PCB MCU quantity setting switch of the outdoor unit and check the installed MCU quantity matches.
   Check whether each MCU PCB address switch was duplicated.
   To use, reset by pressing the K3 button of the outdoor unit after the reset is completed, or reset after turning off the power and then turn it on again.

• Example of MCU quantity setting error
ex) PCB MCU setting quantity of outdoor unit = 2 / MCU installed Quantity = 3



• Example of MCU address setting error
ex) Two among three of MCU address was set to 0



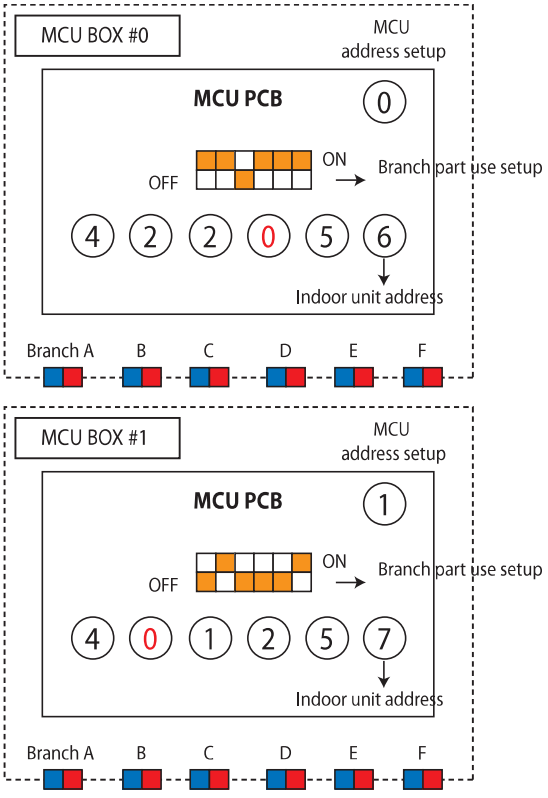
4-3-12 MCU branch part setup error – Overlapping Indoor unit Address setup

<table>
<tr><td>Outdoor unit display</td><td>E2 15</td></tr>
<tr><td>Indoorunit display</td><td>
<table>
<tr><th colspan="5">Duct, Cassette (1/2 Way),Console, Celing</th><th colspan="4">Cassette (4/Mini4 Way)</th><th colspan="5">Wall-mounted (NeoForte)</th></tr>
<tr><th>Operation</th><th>Defrost</th><th>Timer</th><th>Fan</th><th>Filter/MPI</th><th>Operation</th><th>Defrost</th><th>Timer</th><th>Filter</th><th>Operation</th><th>Timer</th><th>Turbo</th><th>24℃</th><th>27℃</th></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td></tr>
</table>
※ ●: ON ◑: Flash ×: OFF
</td></tr>
<tr><td>Criteria</td><td>• Occurs when an indoor unit address setup switch in MCU has been overlapped</td></tr>
<tr><td>Cause of problem</td><td>• Repeated indoor unit address</td></tr>
</table>

1. How to check

   Check the setup switch for the number of indoor units in MCU

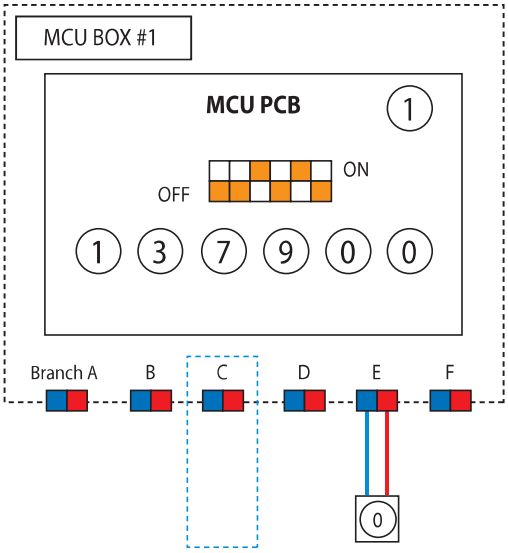
   After completing resetting, press the outdoor unit's K3 button to reset or turn off to restart.



4-3-13 MCU branch part setup error – Set as being used without connection to an Indoor unit

Outdoor unit display	E2 16
Indoorunit display	Duct, Cassette (1/2 Way),Console, Celing: Operation × / Defrost × / Timer ◑ / Fan ◑ / Filter/MPI × Cassette (4/Mini4 Way): Operation × / Defrost ◑ / Timer ◑ / Filter × Wall-mounted (NeoForte): Operation × / Timer × / Turbo ◑ / 24℃ ◑ / 27℃ × ※ ●: ON ◑: Flash ×: OFF
Criteria	• Occurs when MCU PIPE is set as being used, yet not connected to an indoor unit
Cause of problem	• Pipe is not installed to the indoor unit with assigned address on MCU

1. How to check
   Adjust the Dip switch that sets up the use of MCU branch part to 'Not-Used'. After completing resetting, press the outdoor unit's K3 button to reset or turn off to restart.

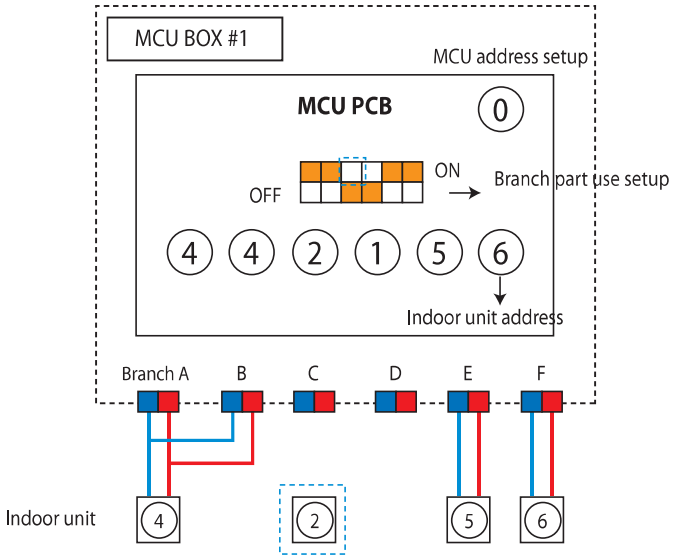


4-3-14 MCU branch part setup error – Connect an Indoor unit to a branch part not being used

Outdoor unit display	E2 17
Indoorunit display	Duct, Cassette (1/2 Way),Console, Celing: Operation / Defrost / Timer / Fan / Filter/MPI Cassette (4/Mini4 Way): Operation / Defrost / Timer / Filter Wall-mounted (NeoForte): Operation / Timer / Turbo / 24℃ / 27℃ × ◑ ◑ × × ◑ ◑ × × × ◑ ◑ × ※ ●: ON ◑: Flash ×: OFF
Criteria	• Occurs when MCU PIPE is turned off, yet an indoor unit is registered
Cause of problem	• Indoor unit connection to the unused branch part

1. How to check

   Check the actual use of the branch part. If it is used, turn on the Dip switch for branch part setup. After completing resetting, press the outdoor unit's K3 button to reset or turn off to restart.

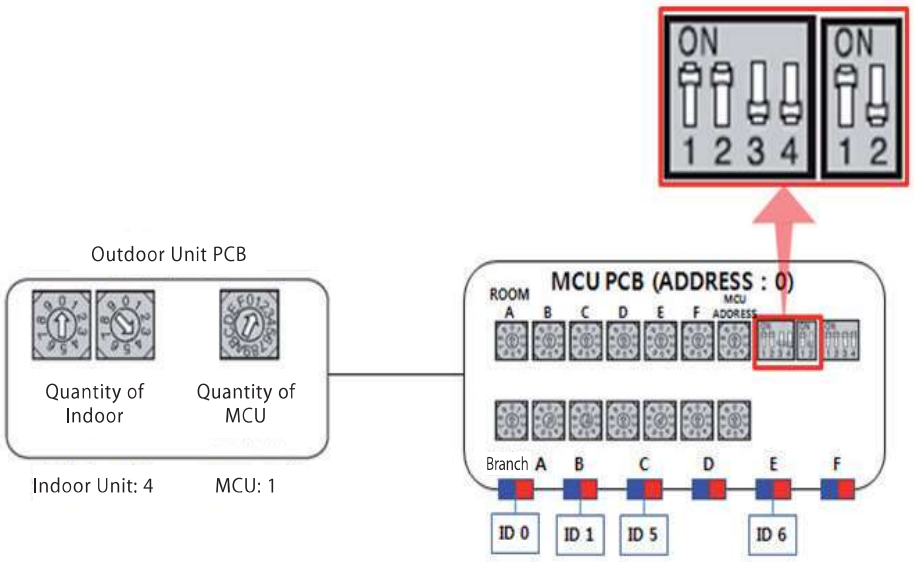


4-3-15 MCU branch part setup error – Connect more Indoor units than what is actually set up in MCU

<table>
<tr><td>Outdoor unit display</td><td colspan="14">E2 18</td></tr>
<tr><td rowspan="3">Indoorunit display</td><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="4">Cassette (4/Mini4 Way)</td><td colspan="5">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td><td>24℃</td><td>27℃</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td><td>×</td><td>×</td><td>◑</td><td>◑</td><td>×</td></tr>
<tr><td colspan="15">※ ●: ON ◑: Flash ×: OFF</td></tr>
<tr><td>Criteria</td><td colspan="14">• Occurs when the number of indoor unit installed exceeds that setting in MCU</td></tr>
<tr><td>Cause of problem</td><td colspan="14">• Number of indoor units exceeds number of indoor units entered on MCU setting</td></tr>
</table>

1. How to check
   Check the number of indoor units connected to MCU then readjust the switch for the number of units
   After completing resetting, press the outdoor unit's K3 button to reset or turn off to restart.

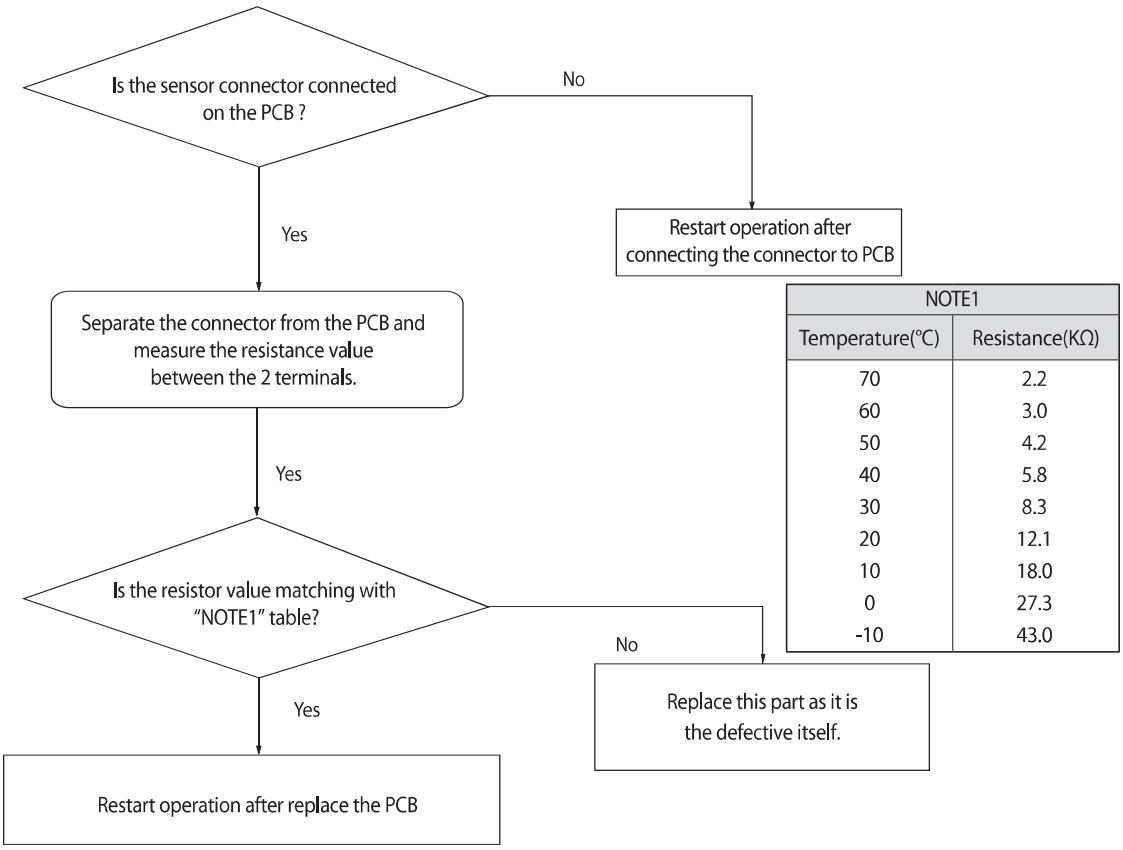
• Example of MCU indoor unit setting DIP switch error
ex) Indoor unit No.5 was connected to branch part C, but DIP switch No.3 (branch part C) is off.



4-3-16 MCU/MCU subcooler entrance/exit sensor error (Open/Short)

<table>
<tr><td>Outdoor unit display</td><td>E219 (MCU subcooler)
E220 (MCU)</td></tr>
<tr><td>Indoorunit display</td><td>
<table>
<tr><td colspan="6">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="5">Cassette (4/Mini4 Way)</td><td colspan="3">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>●</td><td>◑</td><td>◑</td></tr>
</table>
※ ●: ON ◑: Flash ×: OFF
</td></tr>
<tr><td>Judgment Method</td><td>· Refer to the judgment method below.</td></tr>
<tr><td>Cause of problem</td><td>· MCU/MCU subcooler entrance/exit sensor is open/short</td></tr>
</table>

1. Cause of problem



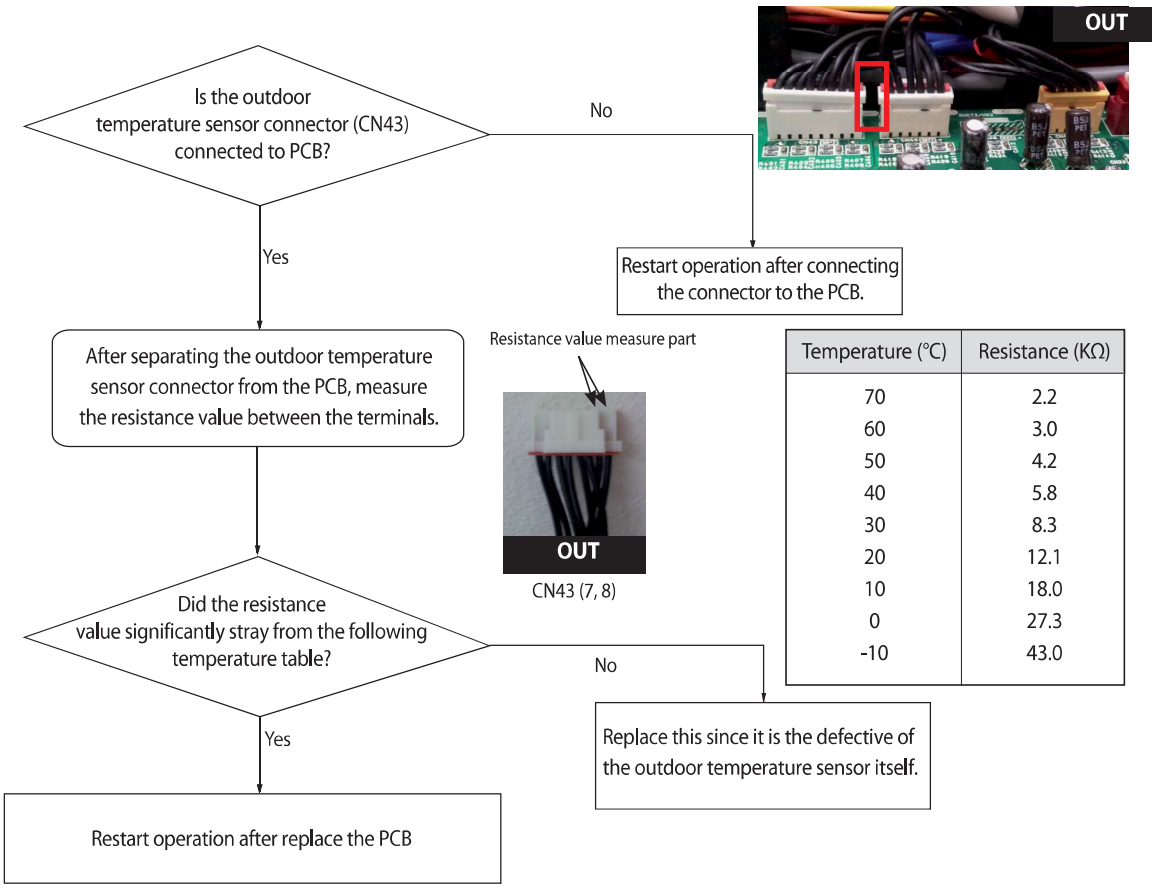
NOTE1

Temperature(℃)	Resistance(KΩ)
70	2.2
60	3.0
50	4.2
40	5.8
30	8.3
20	12.1
10	18.0
0	27.3
-10	43.0

4-3-17 Outdoor Temperature Sensor Error

Outdoor unit display	E221
Indoorunit display	Duct, Cassette (1/2 Way),Console, Celing: Operation ◑ / Defrost × / Timer × / Fan ◑ / Filter/MPI × — Cassette (4/Mini4 Way): Operation ◑ / Defrost × / Timer ◑ / Filter × — Wall-mounted (NeoForte): Operation ◑ / Timer × / Turbo × / 24℃ ◑ / 27℃ × ※ ●: ON ◑: Flash ×: OFF
Judgment Method	· Refer to the judgment method below.
Cause of problem	· Outdoor temperature sensor Open/Short is defective.

1. Cause of problem

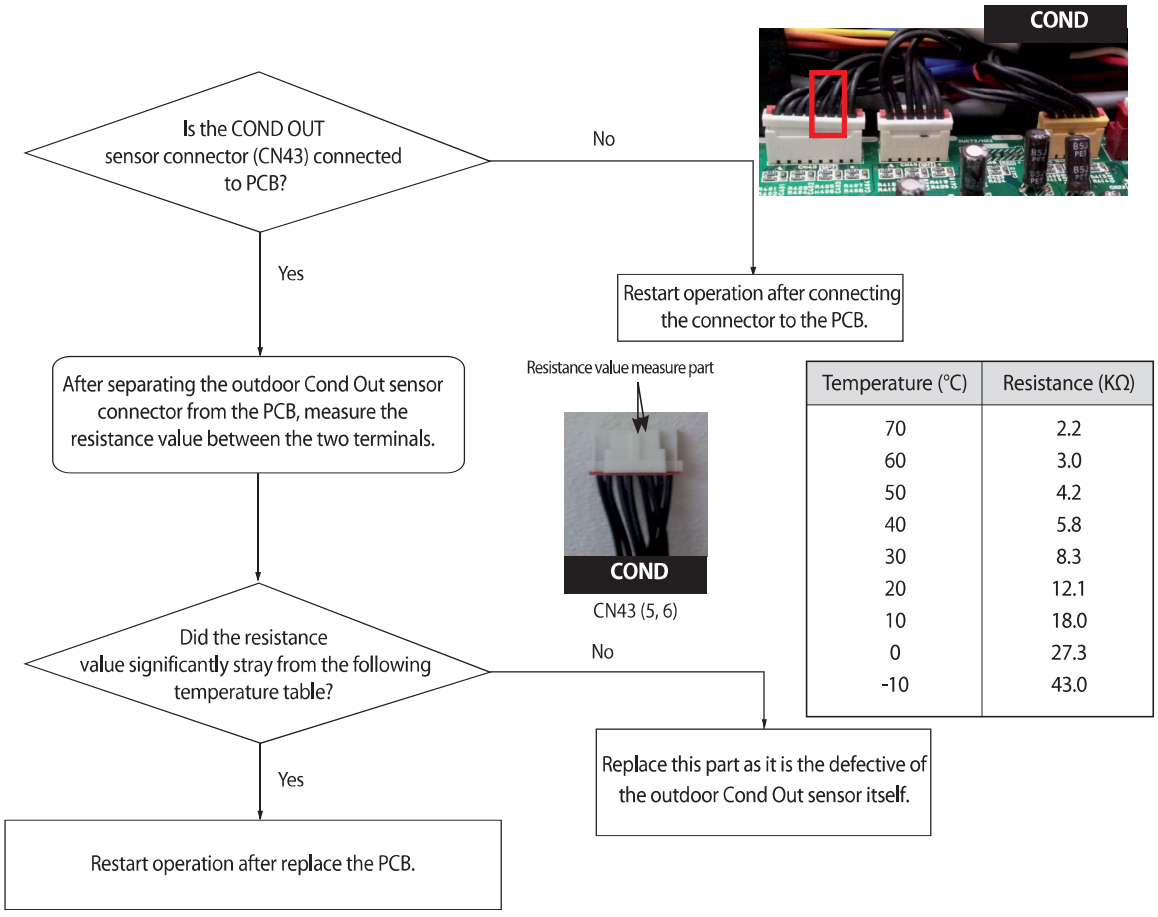


4-3-18 Cond Out Temperature Sensor Error (Open/Short)

Outdoor unit display	E231
Indoorunit display	※ ●: ON ◑: Flash ×: OFF
Judgment Method	· Refer to the judgment method below.
Cause of problem	· Disconnection or breakdown of relevant sensor.

Duct, Cassette (1/2 Way),Console, Celing					Cassette (4/Mini4 Way)				Wall-mounted (NeoForte)				
Operation	Defrost	Timer	Fan	Filter/MPI	Operation	Defrost	Timer	Filter	Operation	Timer	Turbo	24℃	27℃
◑	×	×	◑	×	◑	×	◑	×	◑	×	×	◑	×

1. Cause of problem



Temperature (°C)	Resistance (KΩ)
70	2.2
60	3.0
50	4.2
40	5.8
30	8.3
20	12.1
10	18.0
0	27.3
-10	43.0

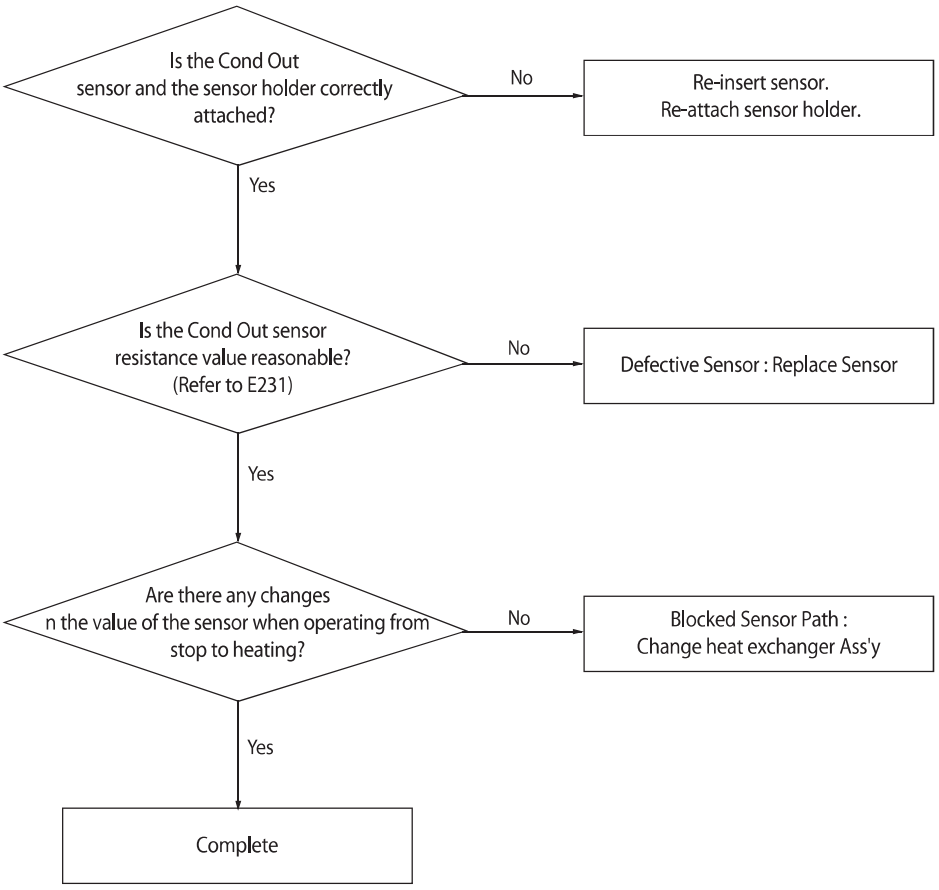
4-3-19 Outdoor Cond Out sensor breakaway error

<table>
<tr><td>Outdoor unit display</td><td colspan="11">E241 (Air Cooled)</td></tr>
<tr><td rowspan="3">Indoorunit display</td><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="5">Cassette (4/Mini4 Way)</td><td colspan="3">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>●</td><td>◑</td><td>◑</td></tr>
<tr><td colspan="12">※ ●: ON ◑: Flash ×: OFF</td></tr>
<tr><td>Judgment Method</td><td colspan="11">· Refer to the judgment method below.</td></tr>
<tr><td>Cause of problem</td><td colspan="11">· Outdoor Cond Out sensor breakaway/defective/ relevant path blocked.</td></tr>
</table>

1. Judgment Method
   1) No inspection for Cooling operation.
   2) For heating operation (Each of the conditions below needs to be satisfied for more than 20 minutes.)

Checking of condition	satisfy condition ?
High pressure average > 25kg/cm^2	Yes
Low pressure average < 8.5kg/cm^2	Yes
Teva, out - Tair, in ≥ 3°C	Yes
Teva, in - Tair, in ≥ 2°C	Yes
Tcond, out - Tair, out ≤ 0°C	No
Every compressor is in operation & indoor unit operation and Thermo On	Yes
Error Content	Outdoor Cond Out sensor breakaway error

2. Cause of problem



<table>
<tr><td>Outdoor unit display</td><td colspan="11">E241 (Water Cooled)</td></tr>
<tr><td rowspan="3">Indoorunit display</td><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="5">Cassette (4/Mini4 Way)</td><td colspan="3">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>●</td><td>◑</td><td>◑</td></tr>
<tr><td colspan="12">※ ●: ON ◑: Flash ×: OFF</td></tr>
<tr><td>Judgment Method</td><td colspan="11">· Refer to the judgment method below.</td></tr>
<tr><td>Cause of problem</td><td colspan="11">· Outdoor Cond Out sensor breakaway/defective/ relevant path blocked.</td></tr>
</table>

1. Judgment Method

1) No inspection for Cooling operation.

2) For heating operation (Each of the conditions below needs to be satisfied for more than 20 minutes.)

1. Point of enter.

① Detected only when heating operation.(Except main heating operation)

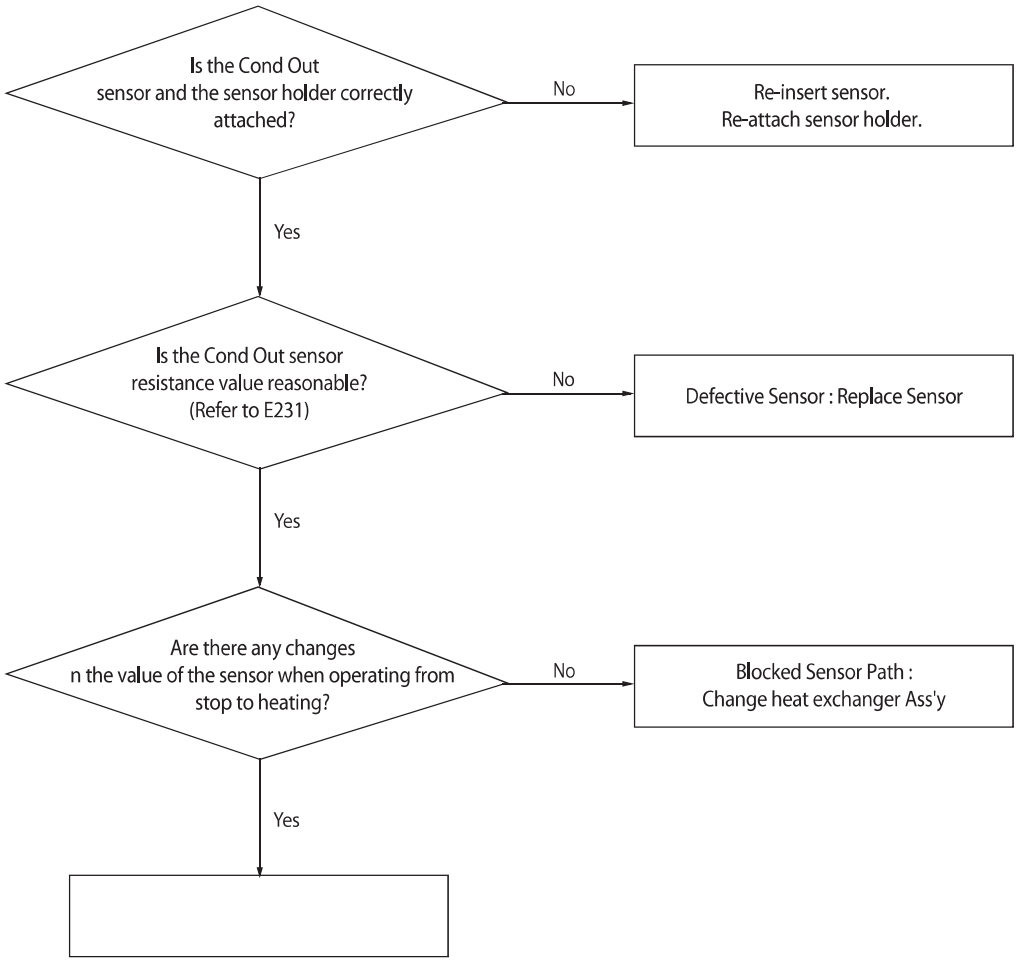
② Compressor operation maintained 40 minutes after start.

2. Point of enter

① | Tcondout_real-Tcondout_ini | < 2℃ maintain conditions during 40 minutes.

※ Tcondout_ini : Condout out temperature just before the compressor operating starts.
Tcondout_real : Condout temperature of the current compressor.

2. Cause of problem

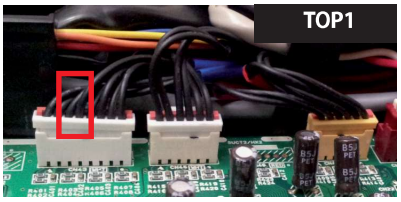


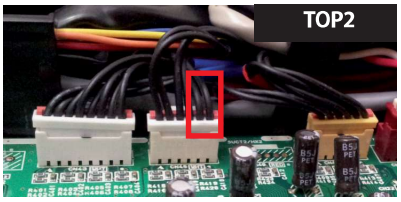
4-3-20 Compressor Discharge or Top 1/2 Temperature sensor error

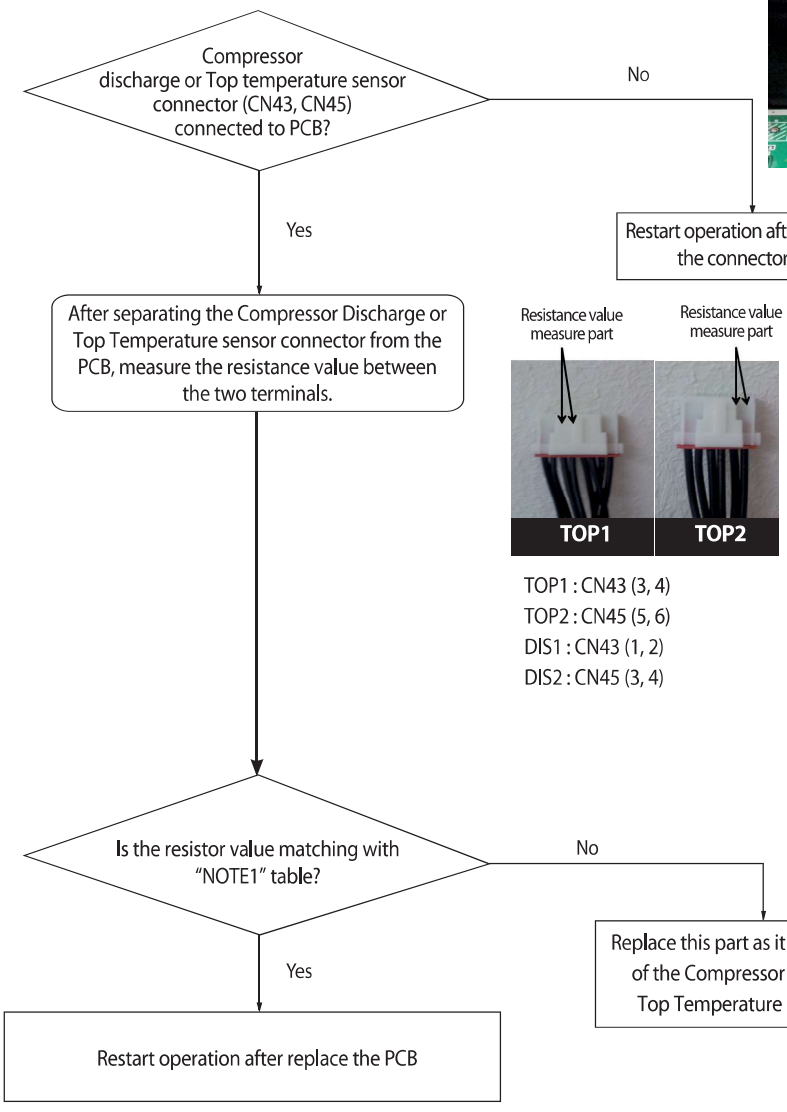
Outdoor unit display	E251 (Compressor 1 Discharge) E257 (Compressor 2 Discharge) E276 (Compressor 1 Top) E277 (Compressor 2 Top)
Indoorunit display	※ ●: ON ◑: Flash ×: OFF
Judgment Method	· Refer to the judgment method below.
Cause of problem	· Compressor Discharge or Top Temperature sensor defective. (Open/Short)

Duct, Cassette (1/2 Way),Console, Celing					Cassette (4/Mini4 Way)				Wall-mounted (NeoForte)		
Operation	Defrost	Timer	Fan	Filter/MPI	Operation	Defrost	Timer	Filter	Operation	Timer	Turbo
◑	×	×	◑	×	◑	×	◑	×	◑	×	◑

1. Cause of problem





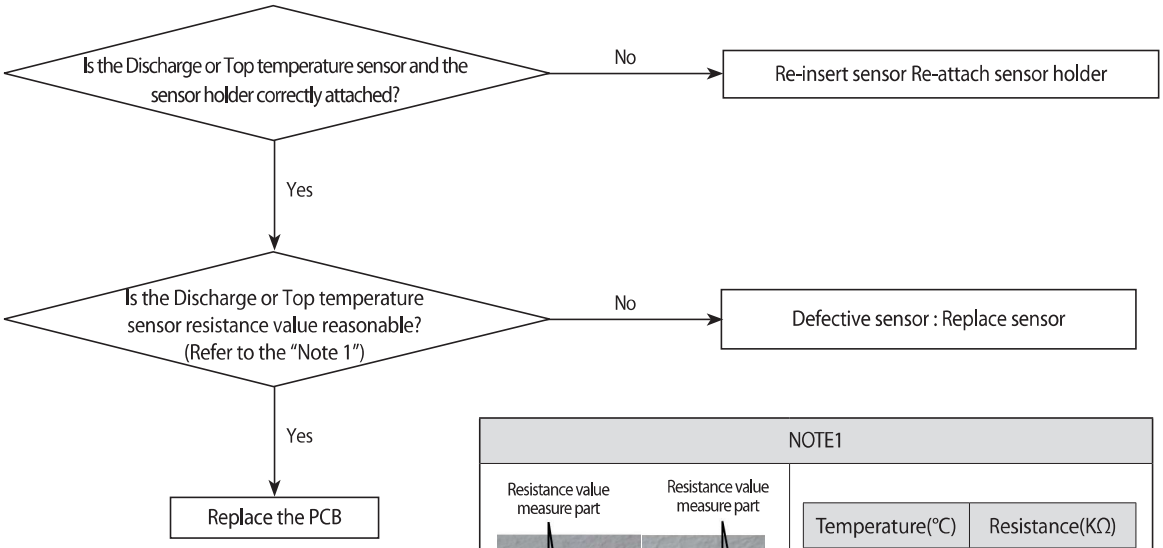


NOTE1	
Temperature(℃)	Resistance(KΩ)
130	8.9
120	11.2
100	18.5
80	32.0
60	59.0
25	200.0
20	242.0
10	362.0
0	553.0

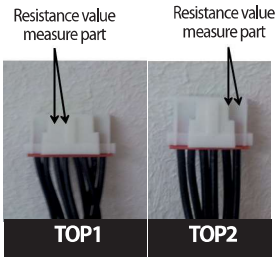
4-3-21 Compressor Discharge or Top temperature sensor breakaway error

<table>
<tr><td>Outdoor unit display</td><td colspan="14">E262 (Compressor 1 Discharge) E263 (Compressor 2 Discharge)
E266 (Compressor 1 Top) E267 (Compressor 2 Top)</td></tr>
<tr><td rowspan="3">Indoorunit display</td><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="4">Cassette (4/Mini4 Way)</td><td colspan="5">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td><td>24℃</td><td>27℃</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>×</td><td>×</td><td>◑</td><td>◑</td><td>◑</td></tr>
<tr><td colspan="14">※ ●: ON ◑: Flash ×: OFF</td></tr>
<tr><td>Judgment Method</td><td colspan="14">1) Faulty compressor frequency of 60Hz or higher.
2) Suction temperature > Low pressure saturation temperature +10 ℃
3) Relevant discharge or Top temperature < High pressure saturation temperature
4) In case of keep 30 minutes in state that satisfy all above conditions (1,2&3) for 30min.</td></tr>
<tr><td>Cause of problem</td><td colspan="14">· Compressor discharge or Top temperature sensor breakaway and defective / Ineffective start of compressor</td></tr>
</table>

1. Cause of problem



NOTE1



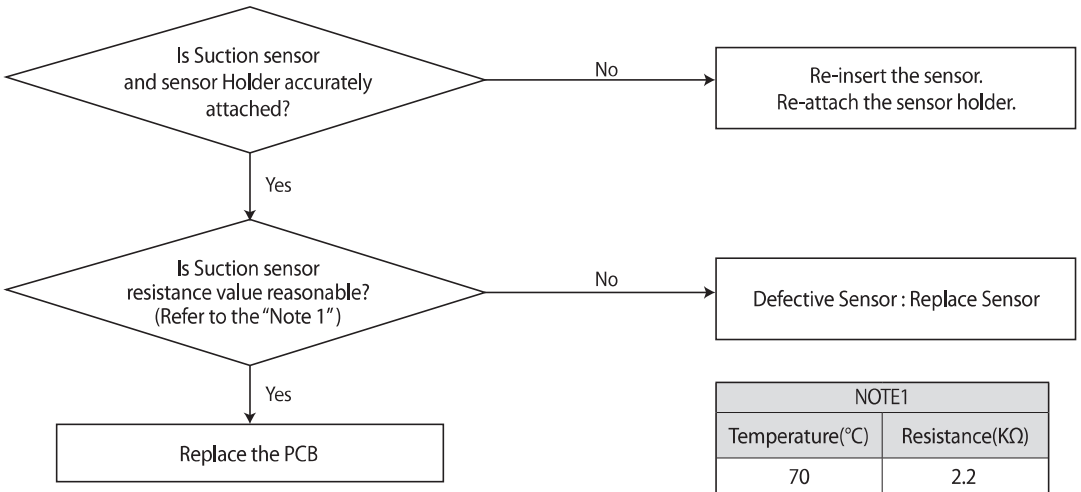
TOP1 : CN43 (3, 4)
TOP2 : CN45 (5, 6)
DIS1 : CN43 (1, 2)
DIS2 : CN45 (3, 4)

Temperature(℃)	Resistance(KΩ)
130	8.9
120	11.2
100	18.5
80	32.0
60	59.0
25	200.0
20	242.0
10	362.0
0	553.0

4-3-22 E269 : Suction Temperature sensor breakaway error

<table>
<tr><td>Outdoor unit display</td><td>E269</td></tr>
<tr><td>Indoorunit display</td><td>
<table>
<tr><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="5">Cassette (4/Mini4 Way)</td><td colspan="3">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>●</td><td>◑</td><td>◑</td></tr>
</table>
※ ●: ON ◑: Flash ×: OFF
</td></tr>
<tr><td>Judgment Method</td><td>· Judgment Method : Difference of suction temperature of compressor starting verge and suction temperature that is on present operation : If less than 2 ℃ for 30 minutes to keep.(Judgment at heating operation only)</td></tr>
<tr><td>Cause of problem</td><td>· Suction temperature sensor breakaway/defective.</td></tr>
</table>

1. Cause of problem



NOTE1	
Temperature(°C)	Resistance(KΩ)
70	2.2
60	3.0
50	4.2
40	5.8
30	8.3
20	12.1
10	18.0
0	27.3
-10	43.0

4-3-23 High Pressure sensor error (Open/Short)

Outdoor unit display	E291
Indoorunit display	Duct, Cassette (1/2 Way),Console, Celing / Cassette (4/Mini4 Way) / Wall-mounted (NeoForte)

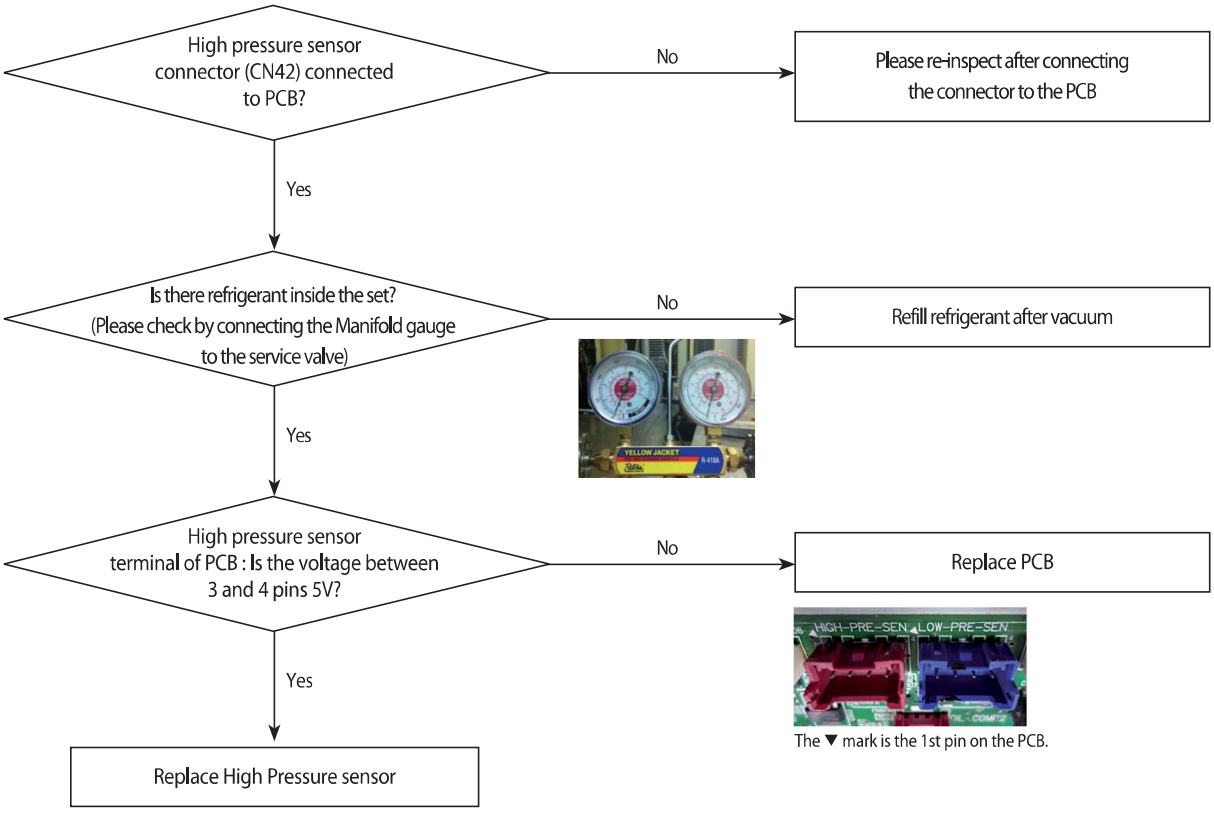
Duct, Cassette (1/2 Way),Console, Celing					Cassette (4/Mini4 Way)				Wall-mounted (NeoForte)		
Operation	Defrost	Timer	Fan	Filter/MPI	Operation	Defrost	Timer	Filter	Operation	Timer	Turbo
×	×	◑	◑	◑	×	◑	◑	◑	●	◑	◑

※ ●: ON ◑: Flash ×: OFF

Judgment Method	· Refer to the judgment method below.
Cause of problem	· Disconnection or breakdown of relevant sensor.

1. High Pressure sensor Open/Short error determination method
   1) Identifies from when power is supplied or 2 minutes after RESET, and only when set is stopped.
   2) An Open/Short error will occur if the input voltage standard range of 0.5V ~ 4.95V is exceeded.

2. Inspection Method



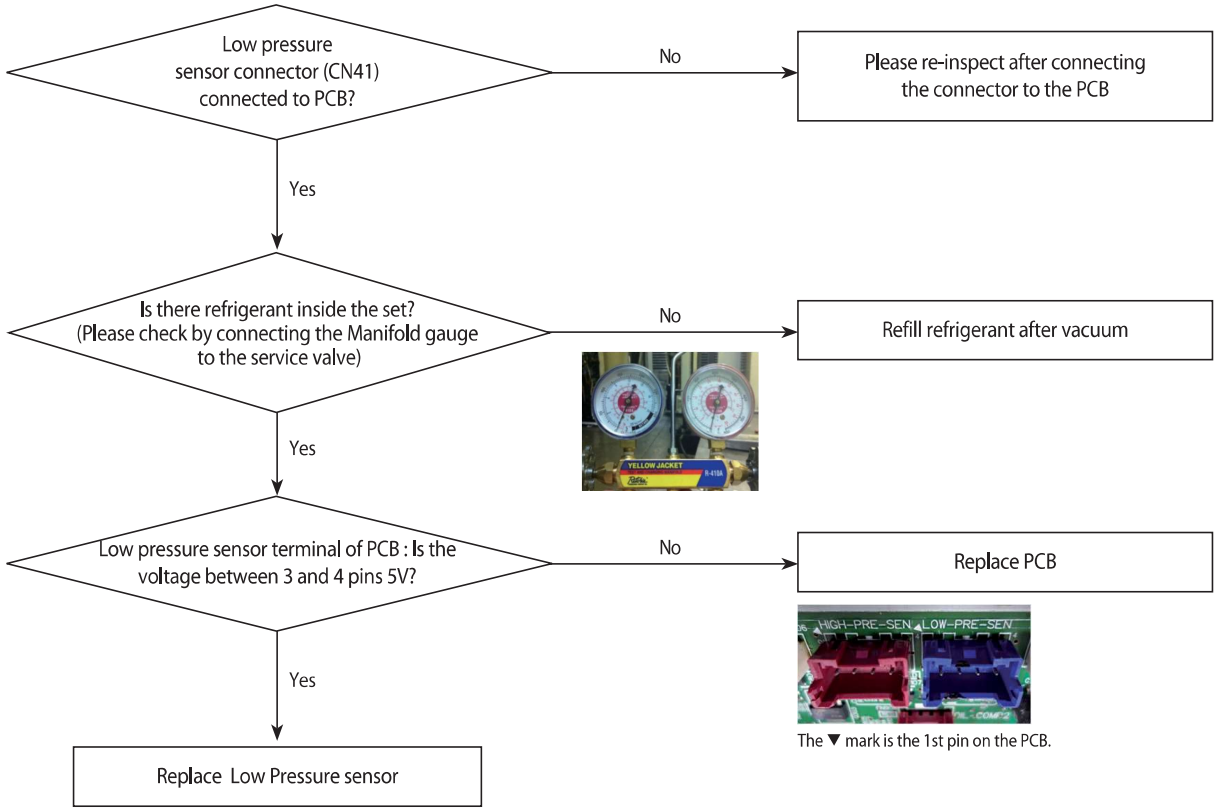
The ▼ mark is the 1st pin on the PCB.

4-3-24 Low Pressure sensor error (Open/Short)

<table>
<tr><td>Outdoor unit display</td><td>E296</td></tr>
<tr><td>Indoorunit display</td><td>
<table>
<tr><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="5">Cassette (4/Mini4 Way)</td><td colspan="3">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>●</td><td>◑</td><td>◑</td></tr>
</table>
※ ●: ON ◑: Flash ×: OFF
</td></tr>
<tr><td>Judgment Method</td><td>· Refer to the judgment method below.</td></tr>
<tr><td>Cause of problem</td><td>· Disconnection or breakdown of relevant sensor.</td></tr>
</table>

1. Low Pressure sensor Open/Short error determination method
   1) Identifies from when power is supplied or 2 minutes after RESET, and only when set is stopped.
   2) An Open/Short error will occur if the input voltage standard range of 0.5V ~ 4.95V is exceeded.

2. Inspection Method



The ▼ mark is the 1st pin on the PCB.

4-3-25 Suction Temperature sensor error (Open/Short)

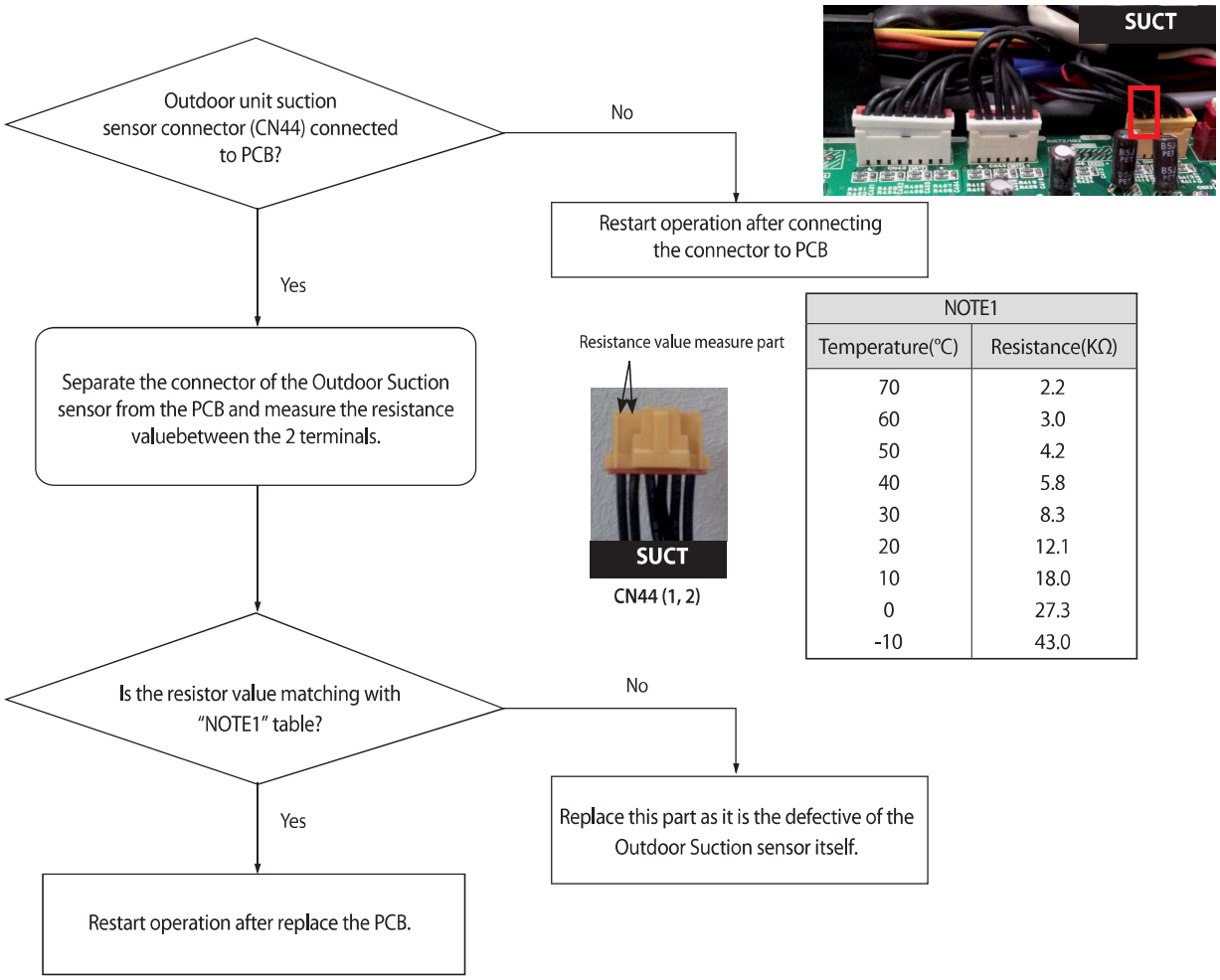
Outdoor unit display	E308
Indoorunit display	Duct, Cassette (1/2 Way),Console, Celing / Cassette (4/Mini4 Way) / Wall-mounted (NeoForte)

Duct, Cassette (1/2 Way),Console, Celing					Cassette (4/Mini4 Way)				Wall-mounted (NeoForte)		
Operation	Defrost	Timer	Fan	Filter/MPI	Operation	Defrost	Timer	Filter	Operation	Timer	Turbo
×	×	◑	◑	◑	×	◑	◑	◑	●	◑	◑

※ ●: ON ◑: Flash ×: OFF

Judgment Method	· Refer to the judgment method below.
Cause of problem	· Disconnection or breakdown of relevant sensor. (More than 4.5V or 0.5V less than)

1. Cause of problem



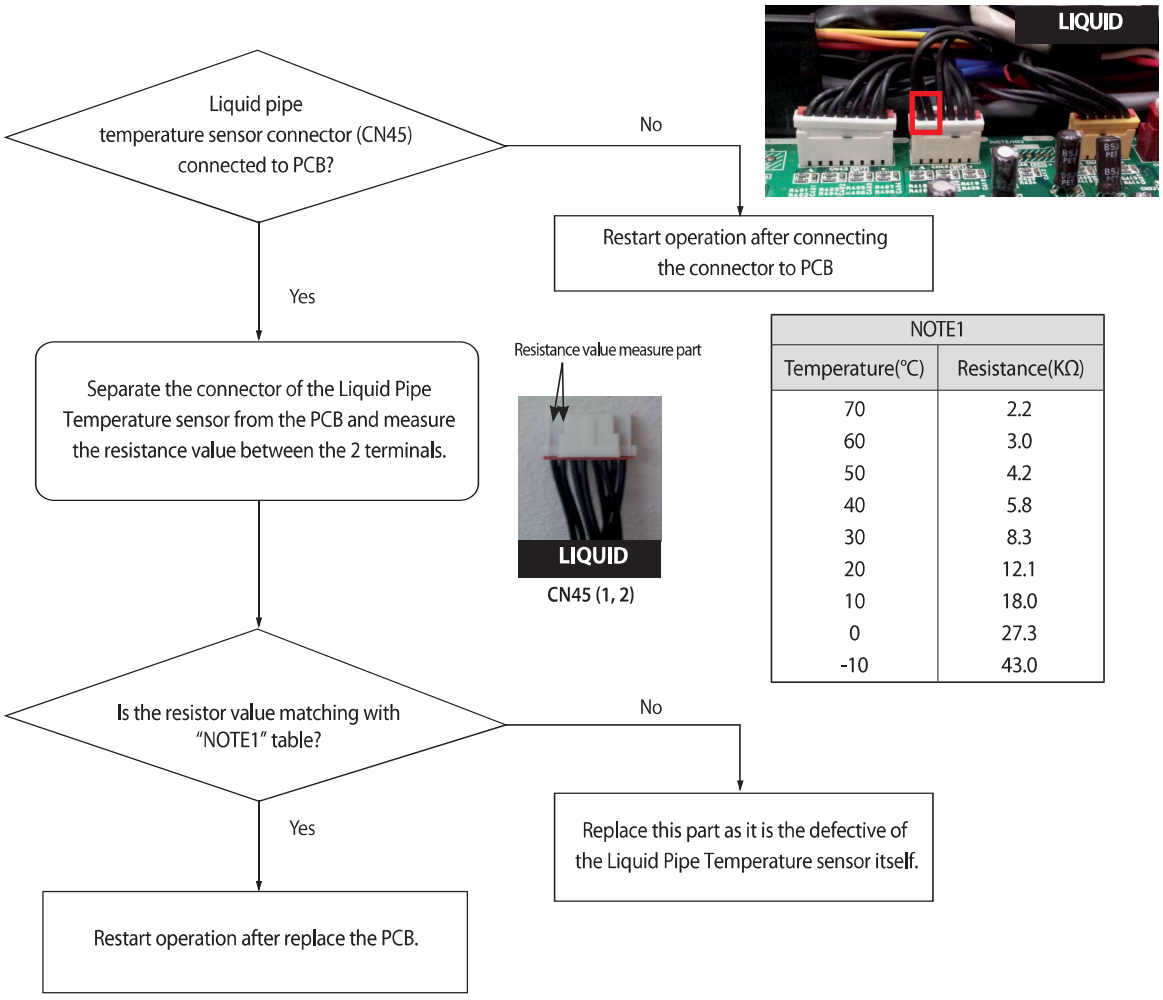
NOTE1

Temperature(℃)	Resistance(KΩ)
70	2.2
60	3.0
50	4.2
40	5.8
30	8.3
20	12.1
10	18.0
0	27.3
-10	43.0

4-3-26 Liquid Pipe Temperature sensor error (Open/Short)

<table>
<tr><td>Outdoor unit display</td><td colspan="11">E311</td></tr>
<tr><td rowspan="3">Indoorunit display</td><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="4">Cassette (4/Mini4 Way)</td><td colspan="3">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>●</td><td>◑</td><td>◑</td></tr>
<tr><td colspan="12">※ ●: ON ◑: Flash ×: OFF</td></tr>
<tr><td>Judgment Method</td><td colspan="11">· Refer to the judgment method below.</td></tr>
<tr><td>Cause of problem</td><td colspan="11">· Disconnection or breakdown of relevant sensor. (More than 4.5V or 0.5V less than)</td></tr>
</table>

1. Cause of problem



NOTE1

Temperature(℃)	Resistance(KΩ)
70	2.2
60	3.0
50	4.2
40	5.8
30	8.3
20	12.1
10	18.0
0	27.3
-10	43.0

4-3-27 EVI In Temperature sensor error (Open/Short)

Outdoor unit display	E321
Indoorunit display	Duct, Cassette (1/2 Way),Console, Celing / Cassette (4/Mini4 Way) / Wall-mounted (NeoForte)

Operation	Defrost	Timer	Fan	Filter/MPI	Operation	Defrost	Timer	Filter	Operation	Timer	Turbo
×	×	◑	◑	◑	×	◑	◑	◑	●	◑	◑

※ ●: ON ◑: Flash ×: OFF

Judgment Method	· Refer to the judgment method below.
Cause of problem	· Disconnection or breakdown of relevant sensor.

1. Cause of problem



Outdoor EVI IN sensor connector (CN44) connected to PCB?

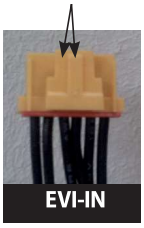
No

Restart operation after connecting the connector to PCB

Yes

Separate the connector of the Outdoor EVI In Temperature sensor from the PCB and measure the resistance value between the 2 terminals.

Resistance value measure part



CN44 (3, 4)

NOTE1	
Temperature(°C)	Resistance(KΩ)
70	2.2
60	3.0
50	4.2
40	5.8
30	8.3
20	12.1
10	18.0
0	27.3
-10	43.0

Is the resistor value matching with "NOTE1" table?

No

Replace this part as it is the defective of the Outdoor EVI In Temperature sensor itself.

Yes

Restart operation after replace the PCB

4-3-28 EVI Out Temperature sensor error (Open/Short)

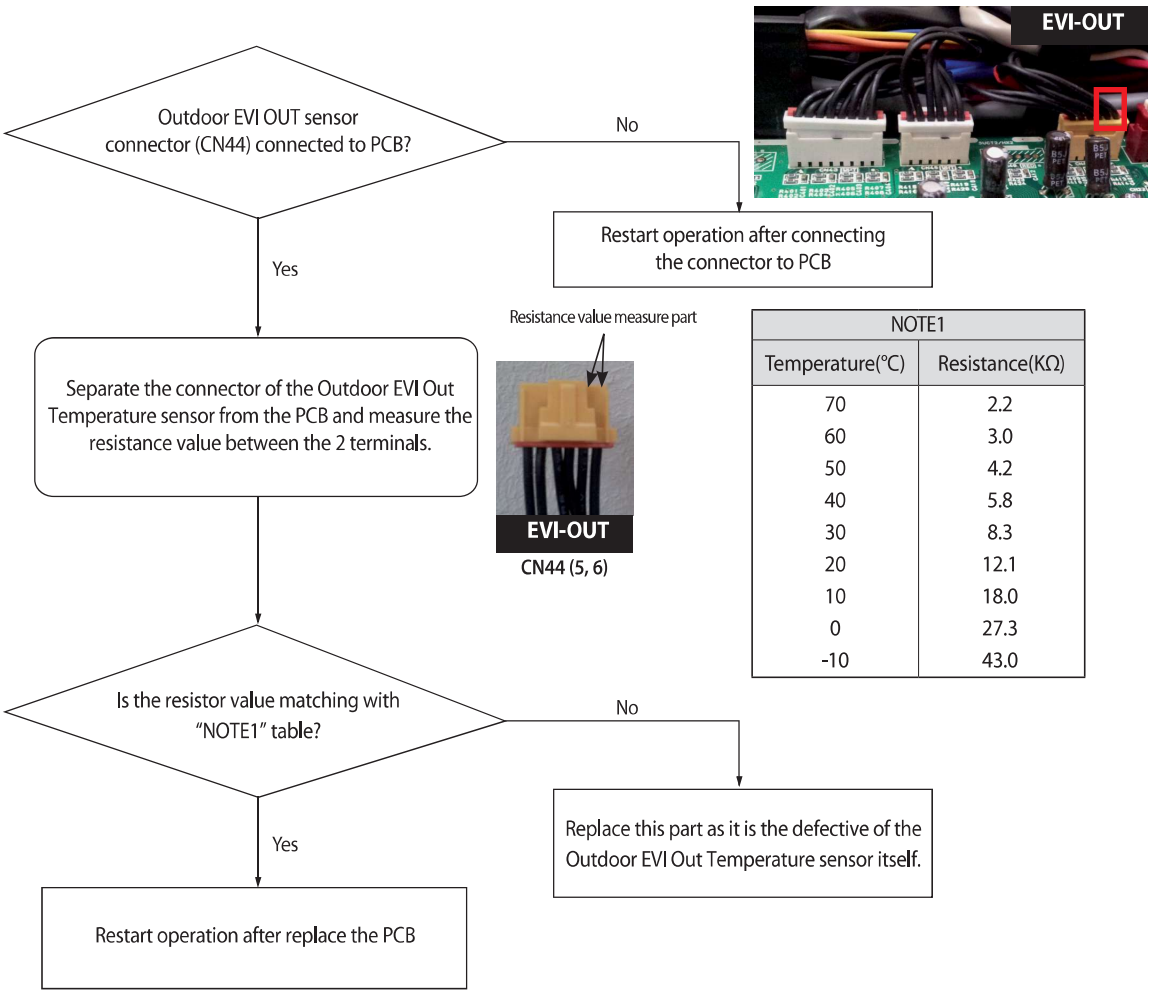
Outdoor unit display	E322
Indoorunit display	Duct, Cassette (1/2 Way),Console, Celing / Cassette (4/Mini4 Way) / Wall-mounted (NeoForte)

Duct, Cassette (1/2 Way),Console, Celing					Cassette (4/Mini4 Way)				Wall-mounted (NeoForte)		
Operation	Defrost	Timer	Fan	Filter/MPI	Operation	Defrost	Timer	Filter	Operation	Timer	Turbo
×	×	◑	◑	◑	×	◑	◑	◑	●	◑	◑

※ ●: ON ◑: Flash ×: OFF

Judgment Method	· Refer to the judgment method below.
Cause of problem	· Disconnection or breakdown of relevant sensor.

1. Cause of problem



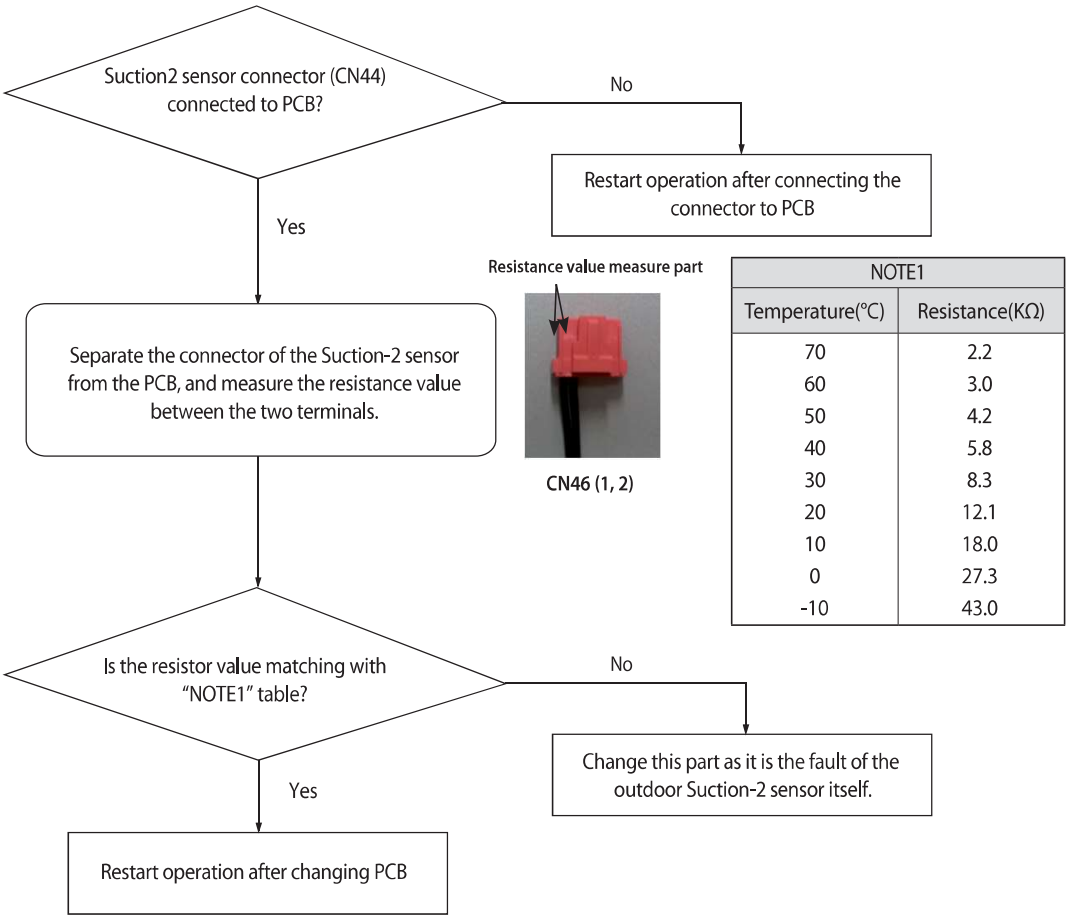
NOTE1

Temperature(℃)	Resistance(KΩ)
70	2.2
60	3.0
50	4.2
40	5.8
30	8.3
20	12.1
10	18.0
0	27.3
-10	43.0

4-3-29 Suction-2 Temperature Sensor Error (OPEN/SHORT)

Outdoor unit display	E323
Indoorunit display	Duct, Cassette (1/2 Way),Console, Celing: Operation × / Defrost × / Timer ◑ / Fan ◑ / Filter/MPI ◑ Cassette (4/Mini4 Way): Operation × / Defrost ◑ / Timer ◑ / Filter ◑ Wall-mounted (NeoForte): Operation ● / Timer ◑ / Turbo ◑ ※ ●: ON ◑: Flash ×: OFF
Judgment Method	• Refer to the judgment method below.
Special Cause	• Disconnection or breakdown of relevant sensor

1. Inspection Method



NOTE1

Temperature(℃)	Resistance(KΩ)
70	2.2
60	3.0
50	4.2
40	5.8
30	8.3
20	12.1
10	18.0
0	27.3
-10	43.0

4-3-30 Measures of other outdoor unit error

<table>
<tr><td>Outdoor unit display</td><td>E347 FAN2 wire unconnected error
E447 FAN1 wire unconnected error
E367 COMP.1 wire unconnected error
E467 COMP.1 wire unconnected error
E399 FAN2 PBA IPM temperature sensor error
E499 FAN1 PBA IPM temperature sensor error
E374 Inverter PBA1 IGBT temperature sensor error
E474 Inverter PBA1 IGBT temperature sensor error</td></tr>
<tr><td>Indoorunit display</td><td>
<table>
<tr><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="4">Cassette (4/Mini4 Way)</td><td colspan="3">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>●</td><td>◑</td><td>◑</td></tr>
</table>
※ ●: ON ◑: Flash ×: OFF
</td></tr>
<tr><td>Judgment Method</td><td>· Refer to the measures code below.</td></tr>
<tr><td>Cause of problem</td><td>· Refer to the measures code below.</td></tr>
</table>

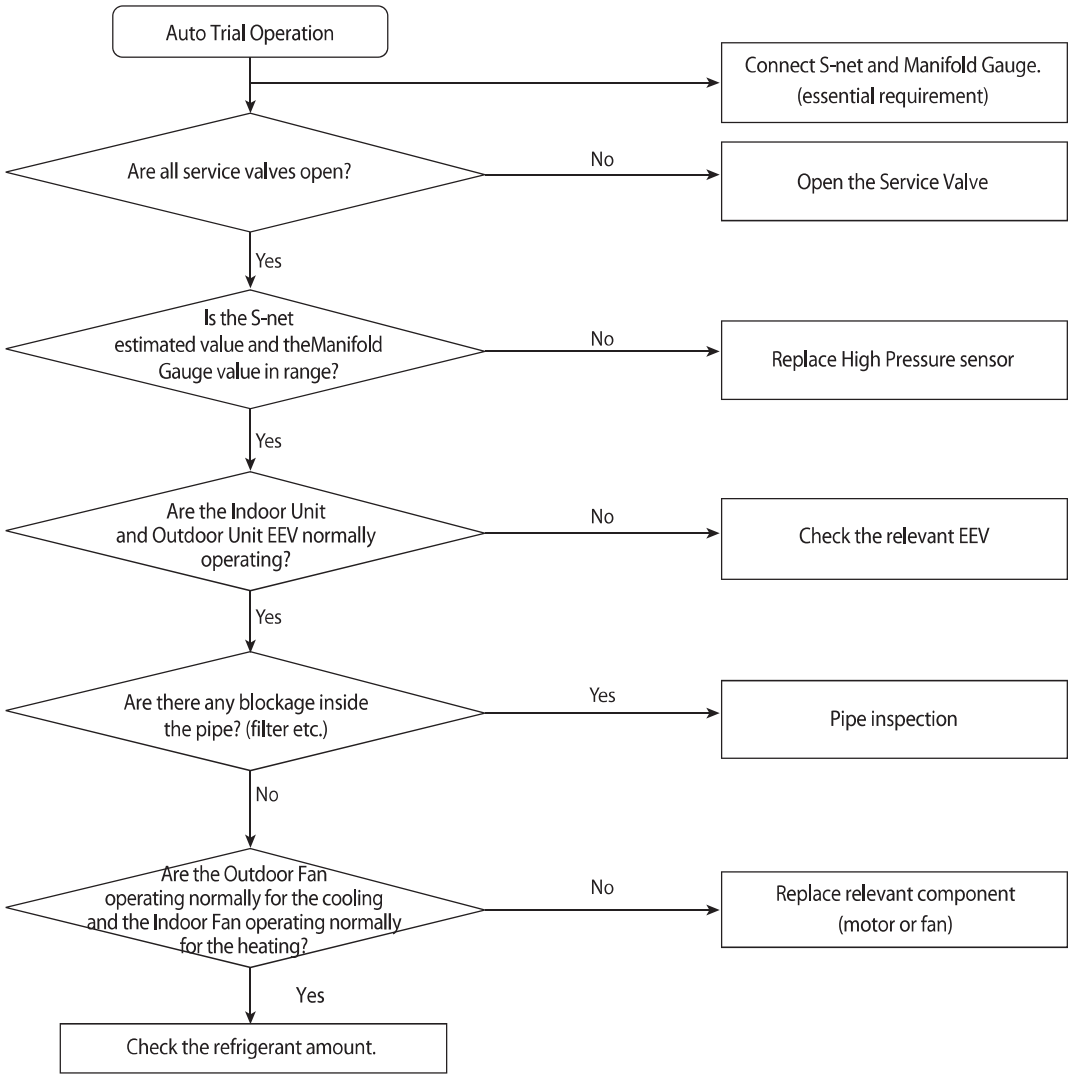
1. Judgement by code

Code	Error	Measures
E347	FAN2 wire unconnected error	1. Check the FAN motor and PBA connection. 2. When connected Inverterr checker, if LED operates in the normality : External factors or when LED operates by abnormality, replace the FAN PBA.
E447	FAN1 wire unconnected error	1. Check the FAN motor and PBA connection. 2. When connected Inverterr checker, if LED operates in the normality : External factors or when LED operates by abnormality, replace the FAN PBA.
E367	COMP.2 wire unconnected error	1. Check the Compressor and Inverter PBA connection. 2. When connected inverter checker, if LED operates in the normality : External factors or when LED operates by abnormality, replace the Inverter PBA.
E467	COMP.1 wire unconnected error	1. Check the Compressor and Inverter PBA connection. 2. When connected inverter checker, if LED operates in the normality : External factors or when LED operates by abnormality, replace the Inverter PBA.
E399	FAN2 PBA IPM temperature sensor error	Replace FAN PBA
E499	FAN1 PBA IPM temperature sensor error	Replace FAN PBA
E374	Inverter PBA2 IGBT temperature sensor error	Replace Inverter PBA
E474	Inverter PBA1 IGBT temperature sensor error	Replace Inverter PBA

4-3-31 E407 : Comp. Down due to High Pressure Protection Control

Outdoor unit display	E407 (Air Cooled)
Indoorunit display	Duct, Cassette (1/2 Way),Console, Celing: Operation × / Defrost × / Timer ◑ / Fan ◑ / Filter/MPI ◑ Cassette (4/Mini4 Way): Operation × / Defrost ◑ / Timer ◑ / Filter ◑ Wall-mounted (NeoForte): Operation ● / Timer ◑ / Turbo ◑ ※ ●: ON ◑: Flash ×: OFF
Judgment Method	• Value of the high pressure sensor is detected at 40kg/cm² or more
Cause of problem	**<Cooling Operation>** · Outdoor unit fan motor problem (constrained, defective) · Outdoor heat exchanger is contaminated. · Service valve locked/Fill refrigerant **<Heating Operation>** · Service valve locked/Excessive refrigerant

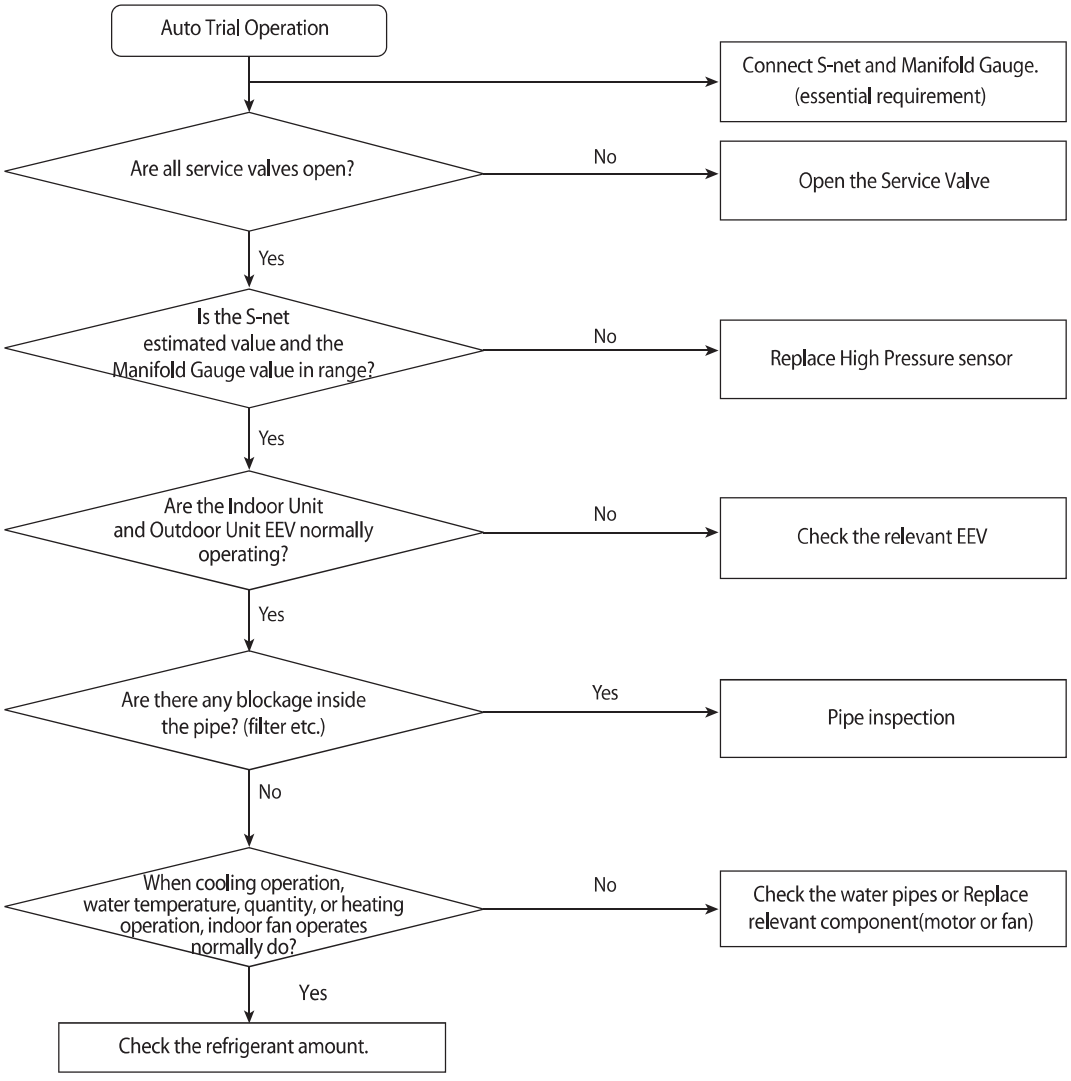
1. Cause of problem



<table>
<tr><td>Outdoor unit display</td><td>E407 (Water Cooled)</td></tr>
<tr><td>Indoorunit display</td><td>
<table>
<tr><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="4">Cassette (4/Mini4 Way)</td><td colspan="3">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>●</td><td>◑</td><td>◑</td></tr>
</table>
※ ●: ON ◑: Flash ×: OFF
</td></tr>
<tr><td>Judgment Method</td><td>• Value of the high pressure sensor is detected at 41kg/cm^2 or more</td></tr>
<tr><td>Cause of problem</td><td><Cooling operation>
· Overheat of supplying water
· Shortage of supplying water
· Outdoor heat exchanger is contaminated.
· Service valve locked/Fill refrigerant

<Heating operation>
· Indoor unit fan motor problem(constrained, defective)
· Service valve locked/Excessive refrigerant</td></tr>
</table>

1. Cause of problem



4-3-32 E410 : Comp. Down due to Low Pressure Protection Control

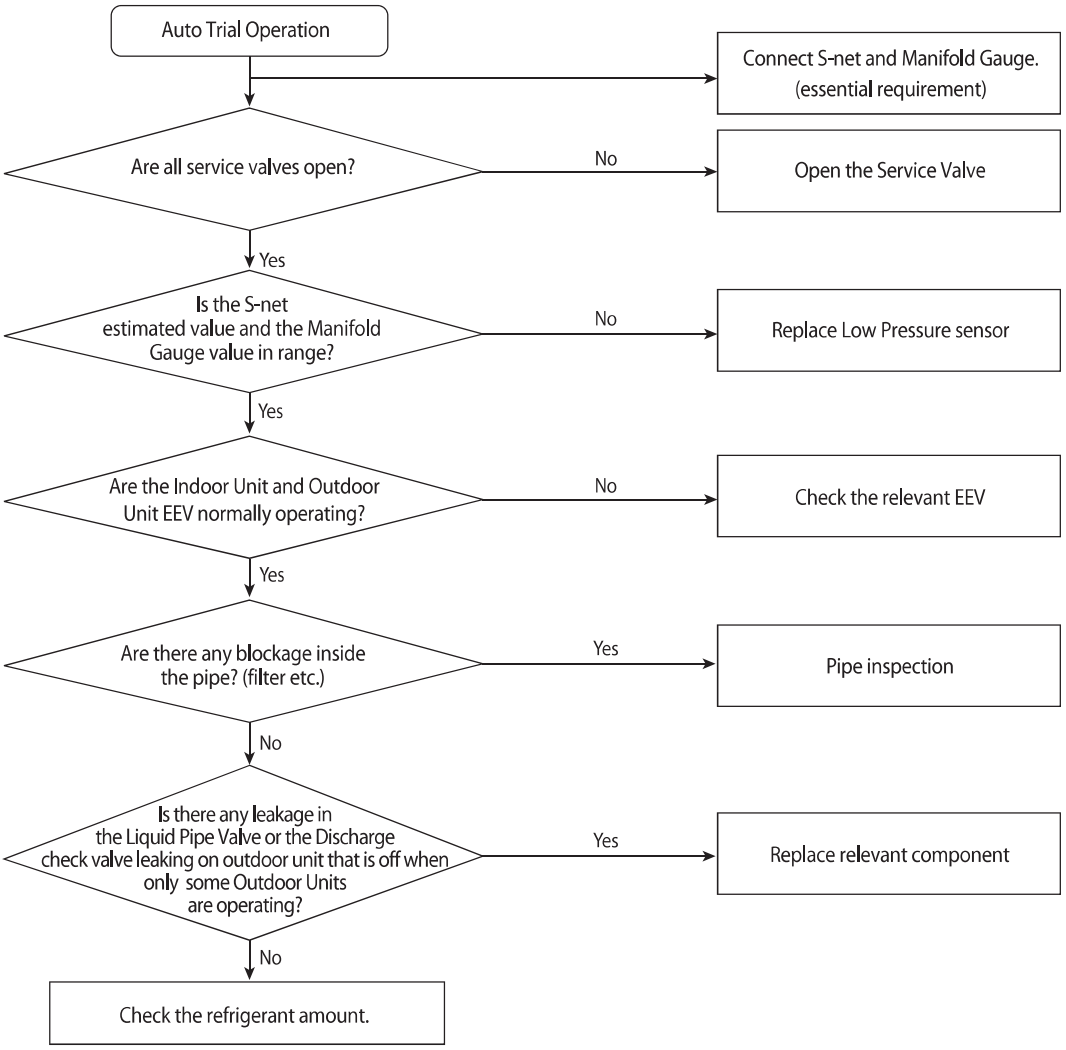
Outdoor unit display	E410 (Air Cooled)
Indoorunit display	Duct, Cassette (1/2 Way),Console, Celing / Cassette (4/Mini4 Way) / Wall-mounted (NeoForte)

Duct, Cassette (1/2 Way),Console, Celing					Cassette (4/Mini4 Way)				Wall-mounted (NeoForte)		
Operation	Defrost	Timer	Fan	Filter/MPI	Operation	Defrost	Timer	Filter	Operation	Timer	Turbo
×	×	◑	◑	◑	×	◑	◑	◑	●	◑	◑

※ ●: ON ◑: Flash ×: OFF

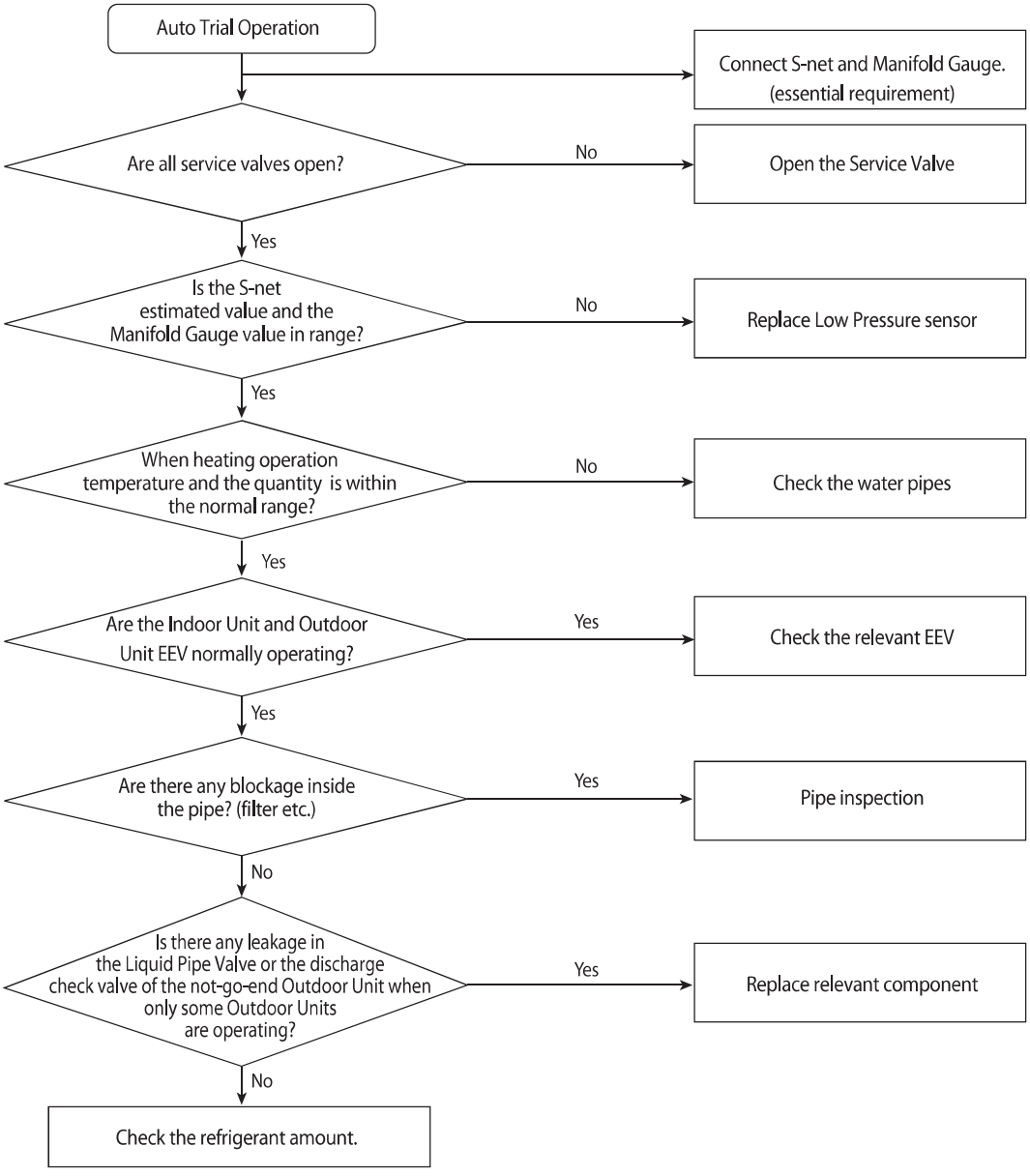
Judgment Method	· Judgment Method : Inspection when the value of low pressure sensor is 1.8kg//cm^2, or less for air conditioning and 0.8kg//cm^2 for heating
Cause of problem	· Refrigerant shortage · Electronic expansion valve blocked · Service valve blocked · Low pressure sensor defective · Discharge check valve leaking on outdoor unit that is off · Error may be found when used in temperature range outside the conditions of use (Operating outside temperature at -20°C or less for heating and operating outside temperature at -5°C or less for Cooling)

1. Cause of problem



<table>
<tr><td>Outdoor unit display</td><td>E410 (Water Cooled)</td></tr>
<tr><td>Indoorunit display</td><td>
<table>
<tr><th colspan="5">Duct, Cassette (1/2 Way),Console, Celing</th><th colspan="5">Cassette (4/Mini4 Way)</th><th colspan="3">Wall-mounted (NeoForte)</th></tr>
<tr><th>Operation</th><th>Defrost</th><th>Timer</th><th>Fan</th><th>Filter/MPI</th><th>Operation</th><th>Defrost</th><th>Timer</th><th>Filter</th><th>Operation</th><th>Timer</th><th>Turbo</th></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>●</td><td>◑</td><td>◑</td></tr>
</table>
※ ●: ON ◑: Flash ×: OFF
</td></tr>
<tr><td>Judgment Method</td><td>· Inspection when the value of low pressure sensor is 2.6kg/cm^2, or less for air conditioning and 1.4kg/cm^2 for heating.</td></tr>
<tr><td>Cause of problem</td><td>· Refrigerant shortage
· Electronic expansion valve blocked
· Service valve blocked
· Low pressure sensor defective
· Leakage of compressor discharge check valve of not-go-end outdoor unit
· Error may be found when used in temperature range outside the conditions of use (Operating outside temperature at -20°C or less for heating and operating outside temperature at -5°C or less for Cooling)
· When heating operation, if the water temperature and quantity are below the normal range.</td></tr>
</table>

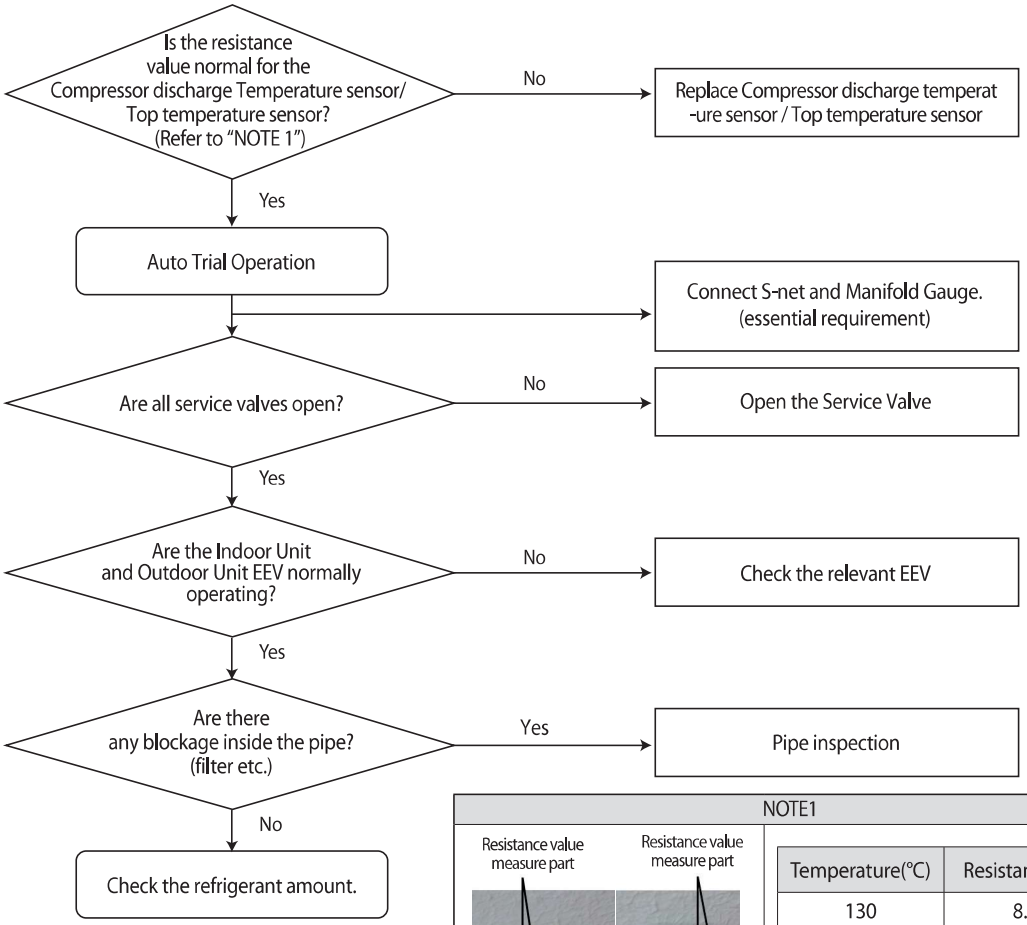
1. Cause of problem



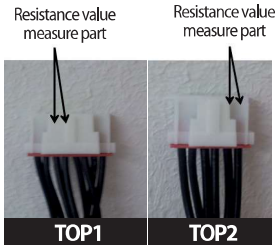
4-3-33 E416 : Suspension of starting due to Compressor discharge temperature sensor / Top temperature sensor

Outdoor unit display	E416
Indoorunit display	Duct, Cassette (1/2 Way),Console, Celing: Operation × / Defrost × / Timer ◑ / Fan ◑ / Filter/MPI ◑ Cassette (4/Mini4 Way): Operation × / Defrost ◑ / Timer ◑ / Filter ◑ Wall-mounted (NeoForte): Operation ● / Timer ◑ / Turbo ◑ ※ ●: ON ◑: Flash ×: OFF
Judgment Method	· When value of Compressor discharge temperature sensor / Top temperature sensor is checked at 120℃ or more
Cause of problem	· Refrigerant shortage · Electronic expansion valve is blocked. · Service valve blocked · Defective discharge temperature sensor · TOP temperature sensor defective · Blocked pipe and defective · Discharge check valve leaking on outdoor unit that is off

1. Cause of problem



NOTE1



TOP1 : CN43 (3, 4)
TOP2 : CN45 (5, 6)
DIS1 : CN43 (1, 2)
DIS2 : CN45 (3, 4)

Temperature(℃)	Resistance(KΩ)
130	8.9
120	11.2
100	18.5
80	32.0
60	59.0
25	200.0
20	242.0
10	362.0
0	553.0

4-3-34 3-phase Input Wiring error

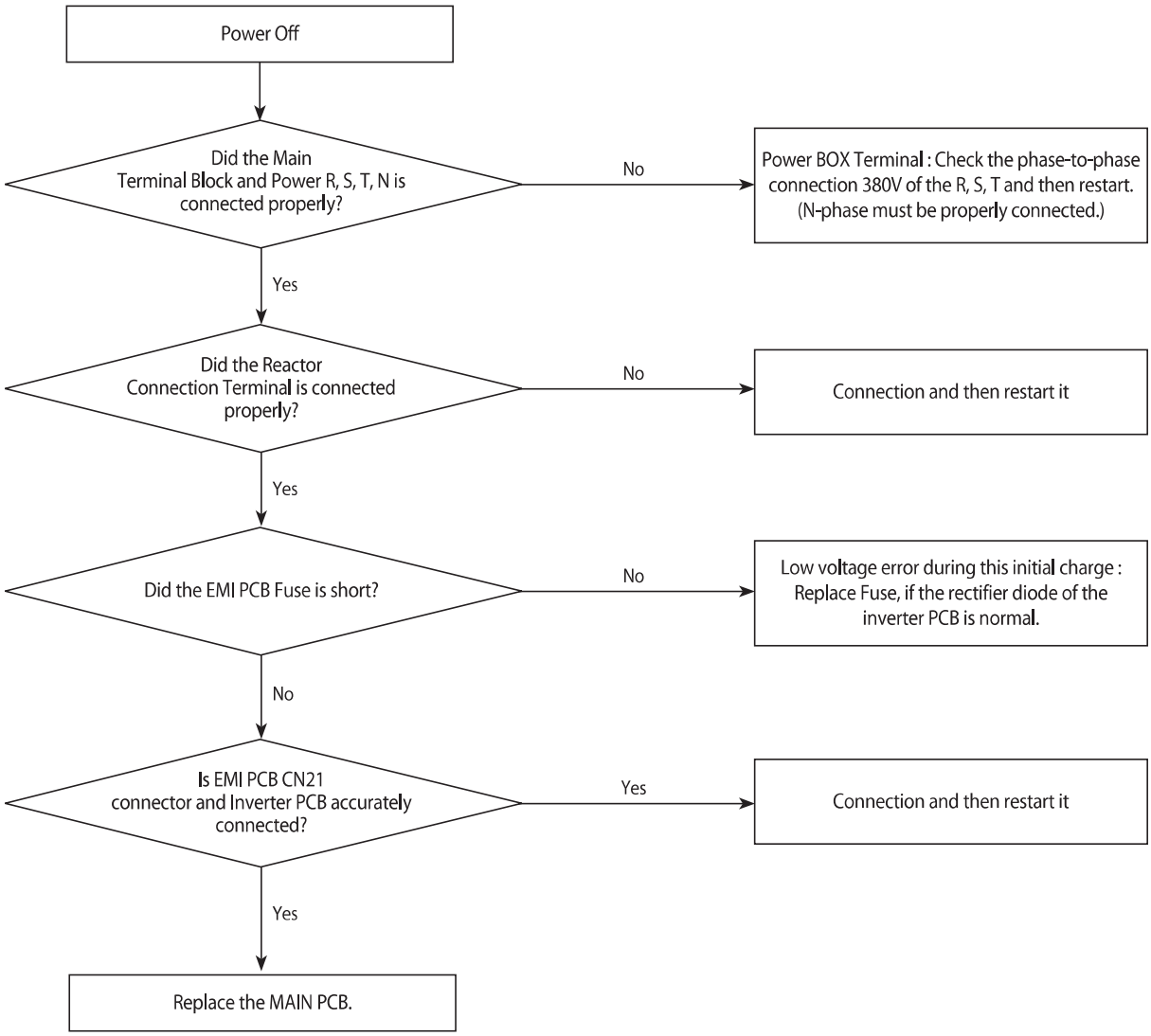
Outdoor unit display	E425
Indoorunit display	Duct, Cassette (1/2 Way),Console, Celing / Cassette (4/Mini4 Way) / Wall-mounted (NeoForte)

Duct, Cassette (1/2 Way),Console, Celing					Cassette (4/Mini4 Way)				Wall-mounted (NeoForte)		
Operation	Defrost	Timer	Fan	Filter/MPI	Operation	Defrost	Timer	Filter	Operation	Timer	Turbo
×	×	◑	◑	◑	×	◑	◑	◑	●	◑	◑

※ ●: ON ◑: Flash ×: OFF

Judgment Method	. When turn on the power and check the status of the power from the inverter. If the phase does not connect the power(no phase) : E425 or E466 (E366) is displayed (Air conditioner to maintain the normal state.) However) N-phase must be properly connected.
Cause of problem	· Check the input wiring · EMI Fuse short

1. Cause of problem



4-3-35 E428 : Suspension of starting by abnormal compression ratio

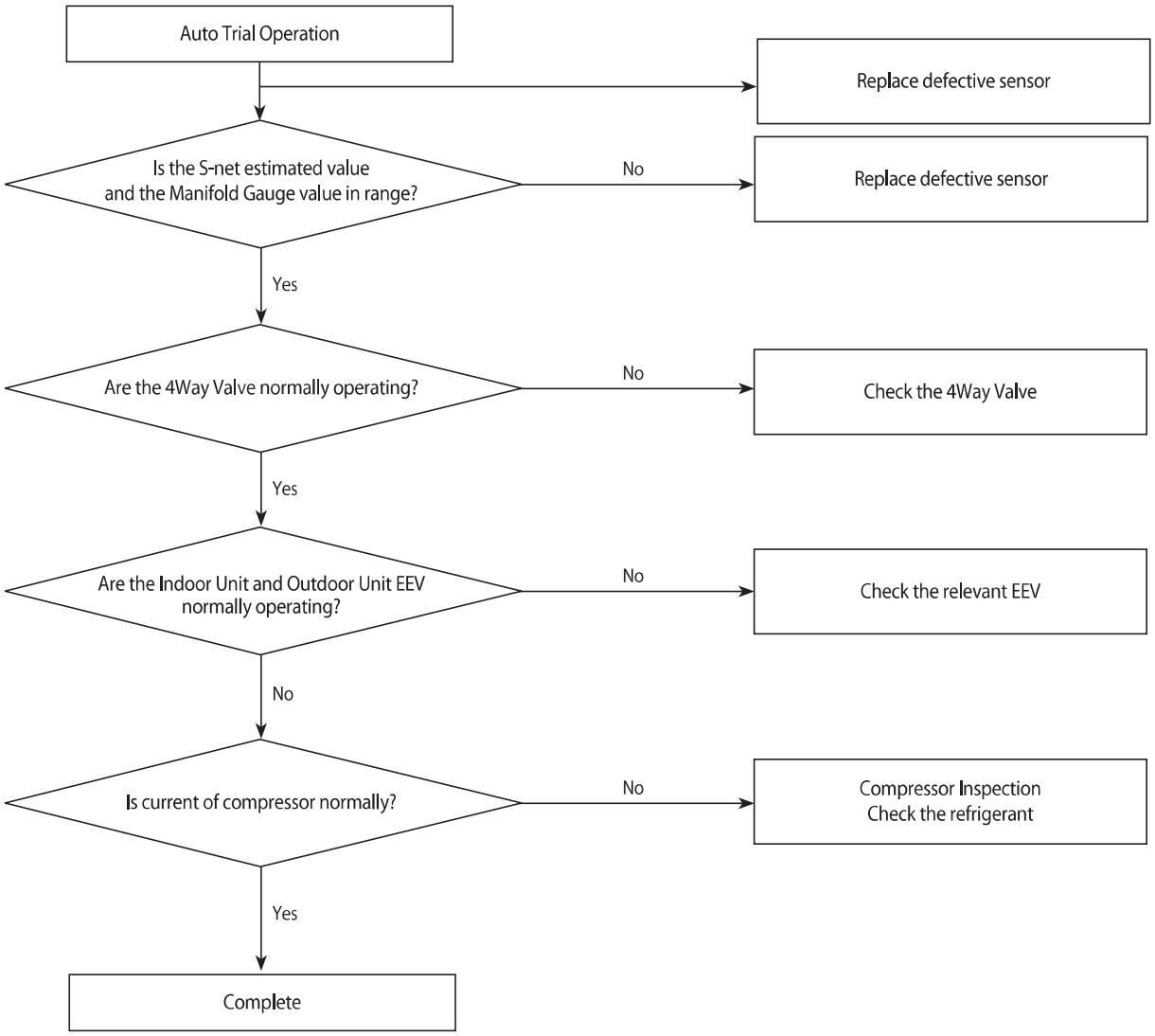
Outdoor unit display	E428
Indoorunit display	Duct, Cassette (1/2 Way),Console, Celing / Cassette (4/Mini4 Way) / Wall-mounted (NeoForte)

Duct, Cassette (1/2 Way),Console, Celing					Cassette (4/Mini4 Way)				Wall-mounted (NeoForte)		
Operation	Defrost	Timer	Fan	Filter/MPI	Operation	Defrost	Timer	Filter	Operation	Timer	Turbo
×	×	◑	◑	◑	×	◑	◑	◑	●	◑	◑

※ ●: ON ◑: Flash ×: OFF

Judgment Method	· Compression ratio [(High pressure+1.03)/(Low pressure+1.03)] less than 1.5 and lasts for 10 minutes or more · Differential pressure (high pressure - low pressure) less than 0.4 MPa.g and lasts for 10 minutes or more
Cause of problem	· Indoor and Outdoor EEV breakdown · 4Way Valve breakdown · High and Low pressure sensor defective · Refrigerant shortage

1. Cause of problem



4-3-36 EVI EEV Open error

Outdoor unit display	E438
Indoorunit display	Duct, Cassette (1/2 Way),Console, Celing: Operation × / Defrost × / Timer ◑ / Fan ◑ / Filter/MPI ◑ Cassette (4/Mini4 Way): Operation × / Defrost ◑ / Timer ◑ / Filter ◑ Wall-mounted (NeoForte): Operation ● / Timer ◑ / Turbo ◑ ※ ●: ON ◑: Flash ×: OFF
Judgment Method	· DSH<5℃ , EVI Out-EVI In<0℃ & frequency> 65Hz 40 minutes maintaining
Cause of problem	· EVI EEV and Intercooler leakage, excessive refrigerant amount, Outdoor Check Valve inserted opposite. · Indoor Unit EEV leakage, direct connection between Indoor Liquid Pipe and the Gas Pipe.

※ For the indoor EEV leakage check, operate one of the indoor units in cooling mode and the others in fan mode.

· In case of normal units in fan mode, EVA In/Out temperatures become close to the room temperature within 5minutes.

· Change the cooling unit to the fan mode and one of the fan unit to the cooling mode, and then check again.

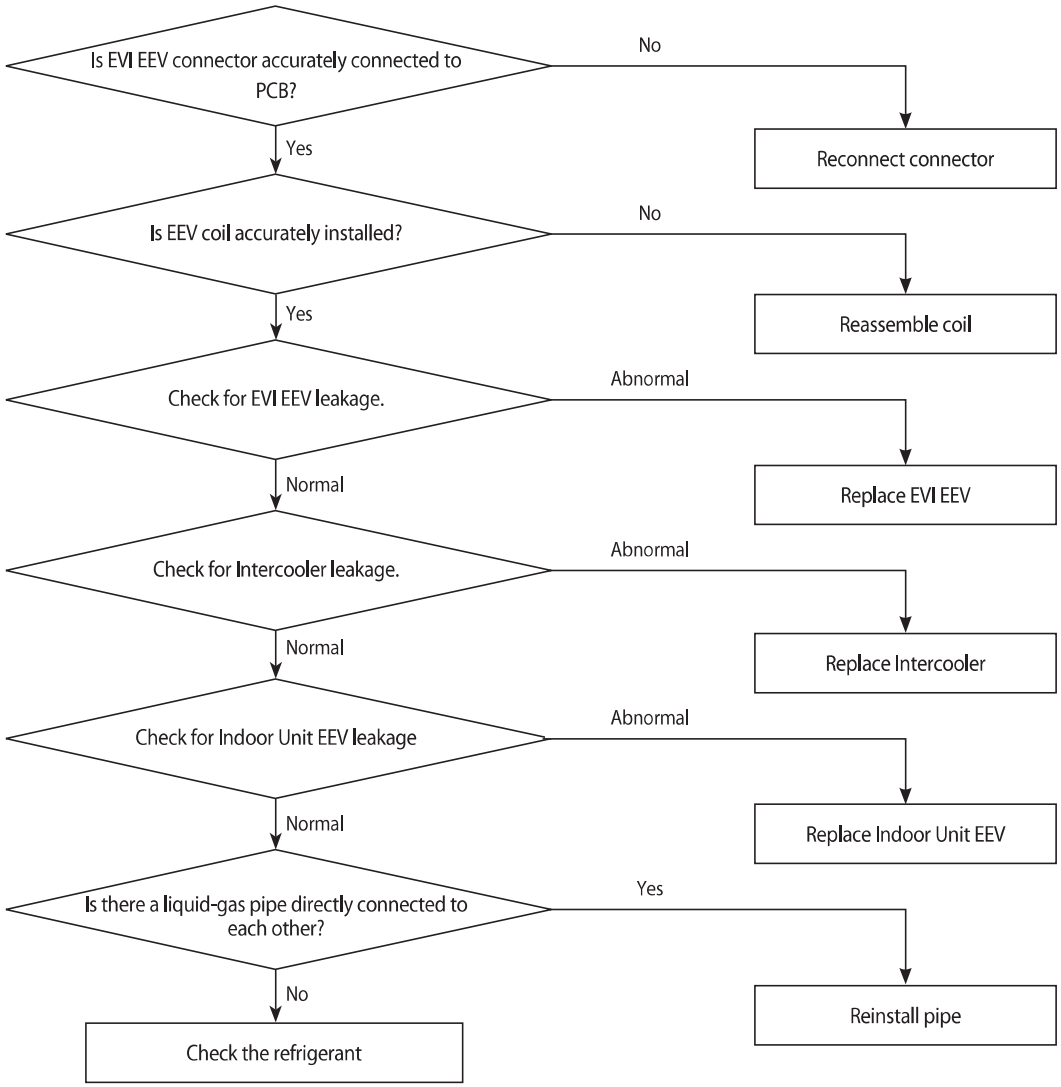
※ If the refrigerant amount was excessively charged, DSH may be decreased during the cooling operation at low temperature.

※ For the EVI EEV leakage check, check for the EVI in sensor temperature when the cooling operation with the EVI EEV 0step.

· Separate the EVI EEV connector from the HUB PBA, when the outdoor unit is off.

· In case of EVI EEV leakage in cooling mode, EVI In temperature at least 10℃ lower than the outside temperature.

1. Cause of problem

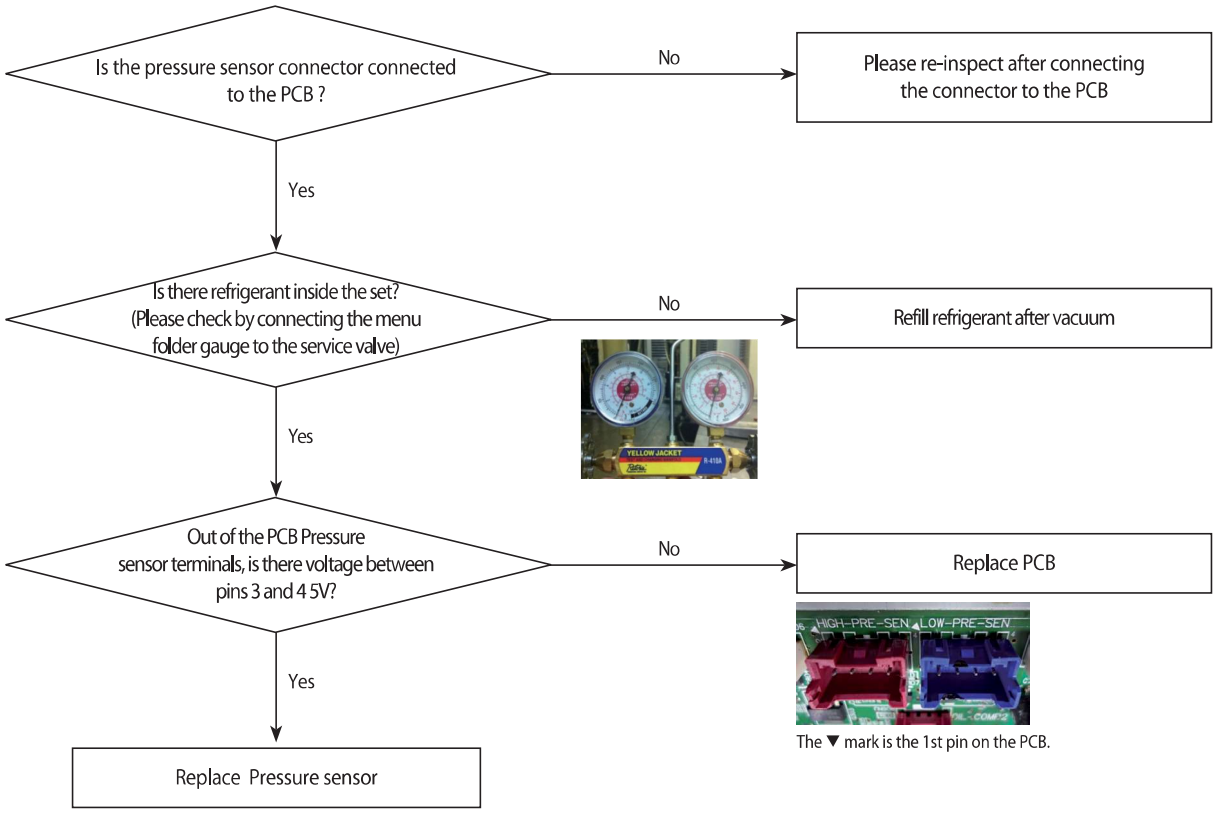


4-3-37 Refrigerant leakage error

Outdoor unit display	E439 (Refrigerant leakage judgment before starting) E443 (When start, refrigerant leakage judgment)
Judgment Method	· Before starting : Before compressor starting after system halt 2 minutes (High & low pressure sensor Open / Short error occurs and 1kg/cm2 or less) · When start : When the high pressure sensor value(cooling 3.1kg/ ㎠ , heating 2.2kg/ ㎠) is detection continuously for 3 seconds
Cause of problem	· Refrigerant leakage and shortage · Disconnection or breakdown of high & low pressure sensor

1. Pressure sensor Open/Short error determination method
   1) Identifies from when power is supplied or 2 minutes after RESET, and only when set is stopped.
   2) An Open/Short error will occur if the input voltage standard range of 0.5V ~ 4.95V is exceeded.

2. Inspection Method



The ▼ mark is the 1st pin on the PCB.

4-3-38 Prevention of heating / cooling operation due to outdoor temperature

<table>
<tr><td>Outdoor unit display</td><td>E440 (Prevention of heating operation due to high temperature of outdoor)
E441 (Prevention of cooling operation due to low temperature of outdoor)</td></tr>
<tr><td>Indoorunit display</td><td>
<table>
<tr><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="4">Cassette (4/Mini4 Way)</td><td colspan="3">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>●</td><td>◑</td><td>◑</td></tr>
</table>
※ ●: ON ◑: Flash ×: OFF
</td></tr>
<tr><td>Judgment Method</td><td>· Heating operation : When the outdoor temperature is more than 30℃
· Cooling operation : When the outdoor temperature is less than -25℃</td></tr>
<tr><td>Cause of problem</td><td>· System protection operation status (Is not breakdown)
· If the outdoor temperature is satisfied the operating range, it will clear the error and start the operation automatically.</td></tr>
</table>

4-3-39 Prevention of heating refrigerant charge due to outdoor temperature

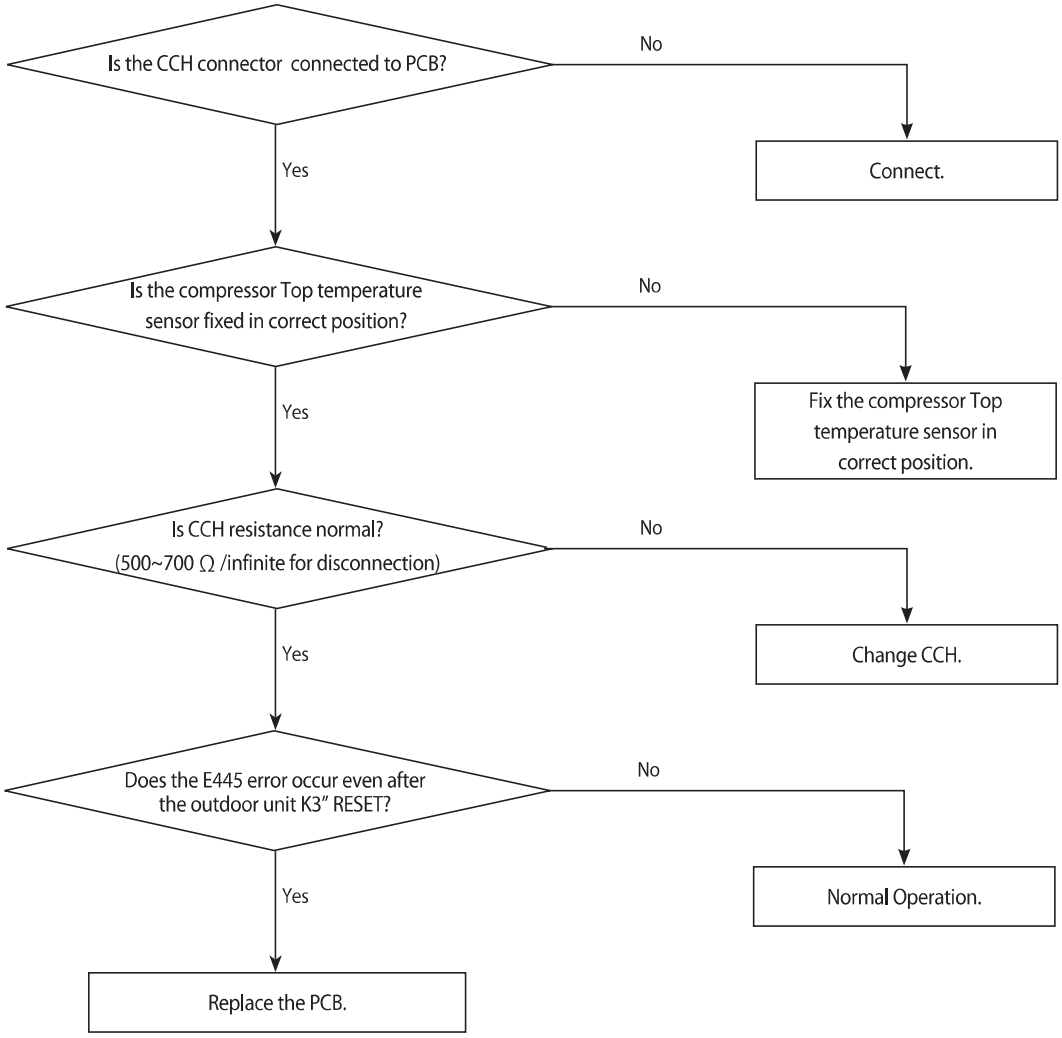
<table>
<tr><td>Outdoor unit display</td><td>E442</td></tr>
<tr><td>Indoorunit display</td><td>
<table>
<tr><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="4">Cassette (4/Mini4 Way)</td><td colspan="3">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>●</td><td>◑</td><td>◑</td></tr>
</table>
※ ●: ON ◑: Flash ×: OFF
</td></tr>
<tr><td>Judgment Method</td><td>• When the heating refrigerant charge : If the outdoor temperature is more than 15℃</td></tr>
<tr><td>Special Cause</td><td>• System protection operation status (Is not breakdown)</td></tr>
</table>

4-3-40 CH wire breaking error

<table>
<tr><td>Outdoor unit display</td><td colspan="11">E445 (Air Cooled)</td></tr>
<tr><td rowspan="3">Indoorunit display</td><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="5">Cassette (4/Mini4 Way)</td><td colspan="3">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>●</td><td>◑</td><td>◑</td></tr>
<tr><td colspan="12">※ ●: ON ◑: Flash ×: OFF</td></tr>
<tr><td>Judgment Method</td><td colspan="11">· Refer to the judgment method below.</td></tr>
<tr><td>Cause of problem</td><td colspan="11">· CCH Connector PCB is not connected / Compressor Top sensor breakaway / Own problem of CCH</td></tr>
</table>

1. Judgment Method (2hours after reset or power on, It will be judged once.)
   ① Compressor Top temperature at the time of judgment - Tini < 2℃ (※Tini : Power on or temperature of initial compressor Top after reset)
   ② Compressor Top temperature at the time of judgment - Outdoor temperature < 2℃
   ③ Outdoor temperature < 30℃
   ④ UP state

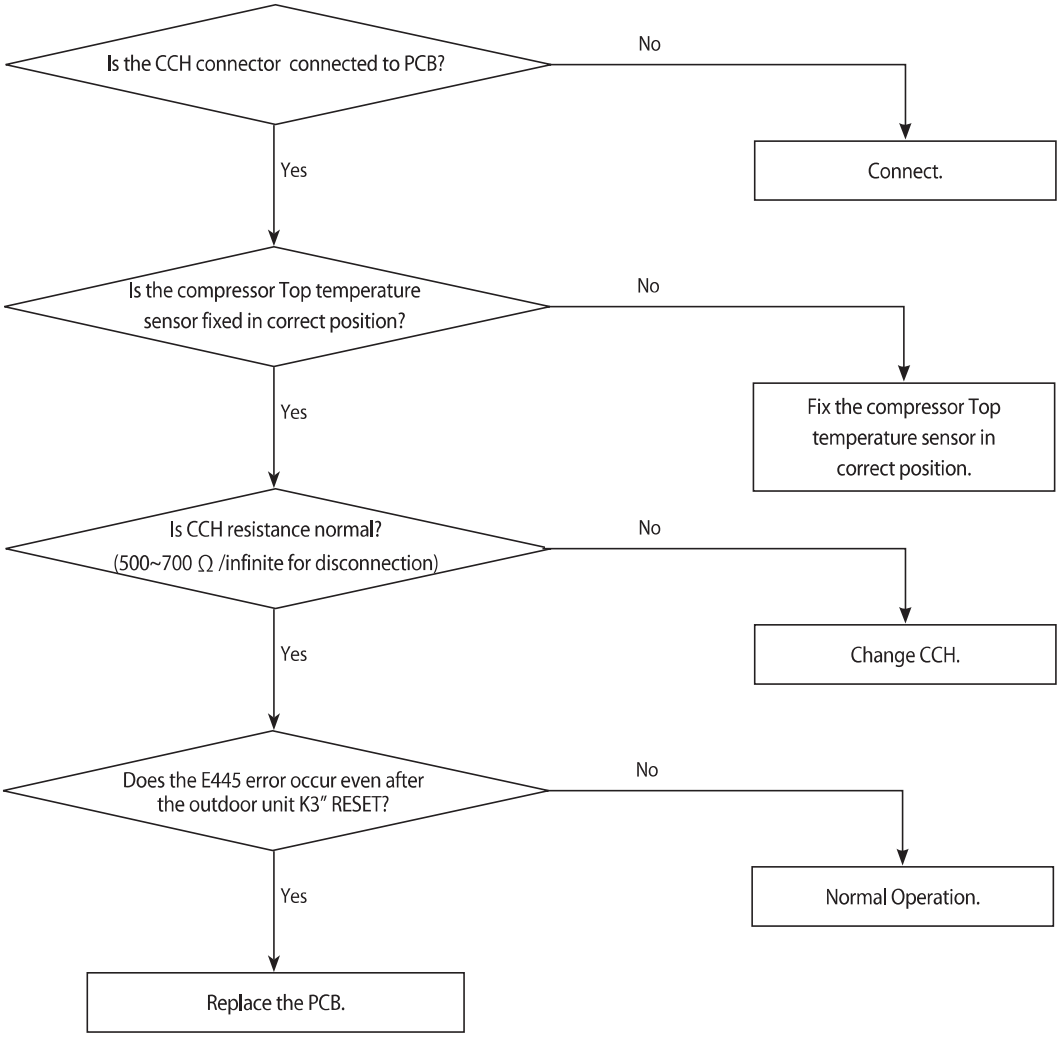
※ If all the conditions are satisfied at the same time : Mark the CCH wire breaking error (E445)



<table>
<tr><td>Outdoor unit display</td><td colspan="11">E445 (Water Cooled)</td></tr>
<tr><td rowspan="4">Indoorunit display</td><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="5">Cassette (4/Mini4 Way)</td><td colspan="3">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>●</td><td>◑</td><td>◑</td></tr>
<tr><td colspan="11">※ ●: ON ◑: Flash ×: OFF</td></tr>
<tr><td>Judgment Method</td><td colspan="11">· Refer to the judgment method below.</td></tr>
<tr><td>Cause of problem</td><td colspan="11">· CCH Connector PCB is not connected / Compressor Top sensor breakaway / Own problem of CCH</td></tr>
</table>

1. Judgment Method (2hours after reset or power on, It will be judged once.)
   ① Compressor Top temperature at the time of judgment - Tini < 2℃ (※Tini : Power on or temperature of initial compressor Top after reset)
   ② Compressor Top temperature at the time of judgment- suction1 temp. sensor < 30℃
   ③ Outdoor temperature < 30℃
   ④ UP state

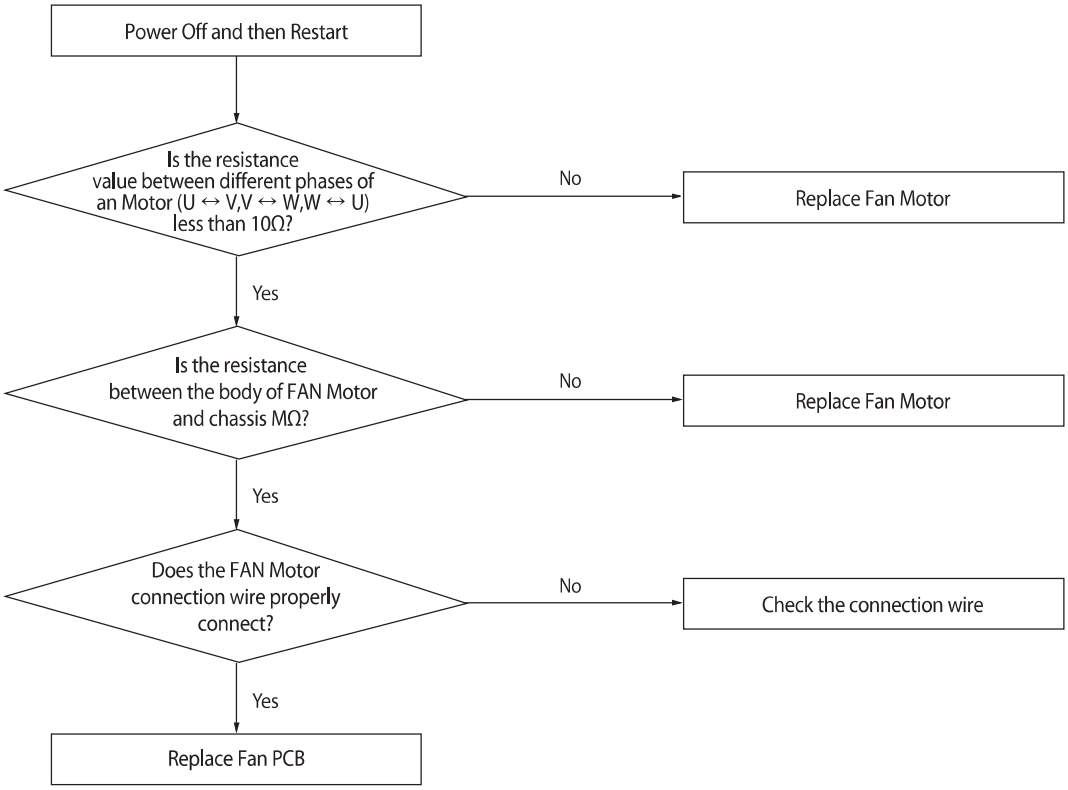
※ If all the conditions are satisfied at the same time : Mark the CCH wire breaking error (E445)



4-3-41 Fan starting error

Outdoor unit display	E446 (FAN PCB(FAN1)) E346 (FAN PCB(FAN2))
Judgment Method	· Startup, and then if the speed increase is not normally. · Detected by H/W or S/W
Cause of problem	· FAN motor connection error. · Defective FAN motor. · Defective PCB.

1. Cause of problem



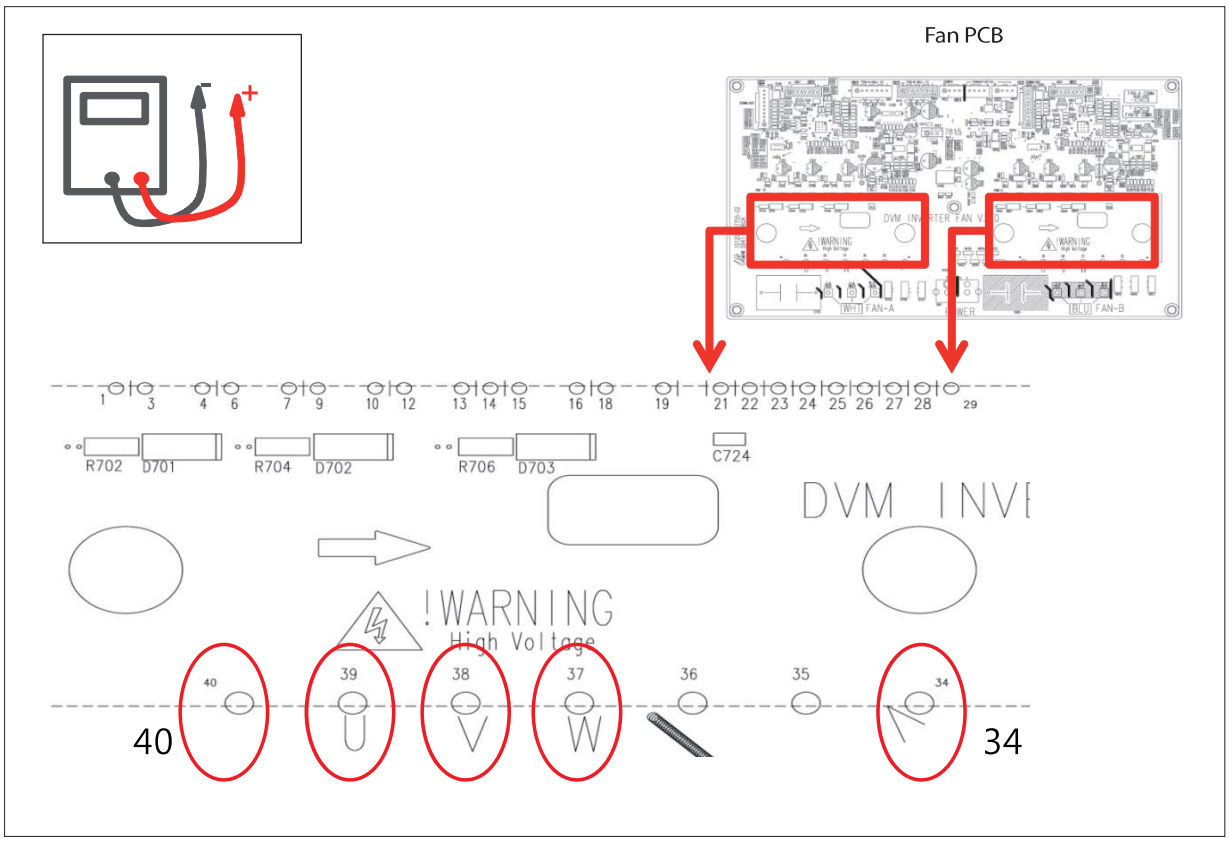
IPM breakdown diagnostics (FAN PCB)

1. Preparations before checking
   1) Power Off
   2) IPM failure, discharge mode may not work properly. Therefore, wait more than 15 minutes after the Power Off.
   3) Remove all of the Fan PCB connectors. ((FAN motor connector included.)
   4) Prepare the digital multi tester.

2. Inspection Method
   1) Refer to Figure1 and Table1, respectively the resistance value and diode voltage value measure.
   2) According to the criterion in Table 1 to determine whether the failure of IPM.

Division	Measured Point		Criterion	Remark
	+	-		
Measure the resistance values	40	U	More than 500 kΩ	Measurement error can occur for reasons such as the initial measurement condenser discharge. Measured over at least three times.
	40	V		
	40	W		
	U	34		
	V	34		
	W	34		
Measure the diode voltage values	U	40	0.3~0.7V	
	V	40		
	W	40		
	34	U		
	34	V		
	34	W		

< Table 1 >

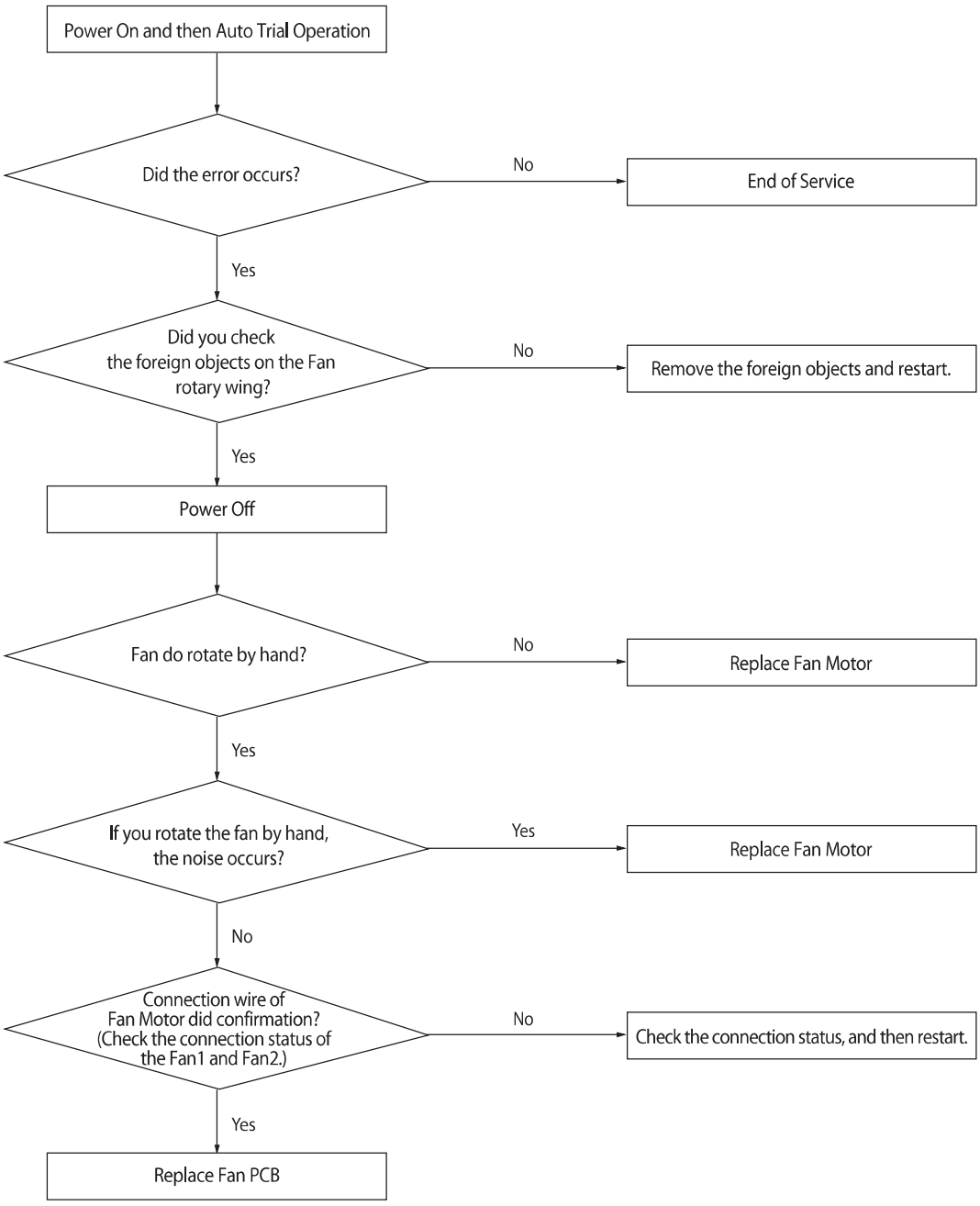


< Figure 1 >

4-3-42 Fan lock error

Outdoor unit display	E448 (FAN PCB(FAN1)) E348 (FAN PCB(FAN2))
Judgment Method	· Is checked symptoms by phase current of Fan Motor.
Cause of problem	· Fan Motor connection error. · Defective Fan · Defective PCB

1. Cause of problem



4-3-43 Momentary Blackout error

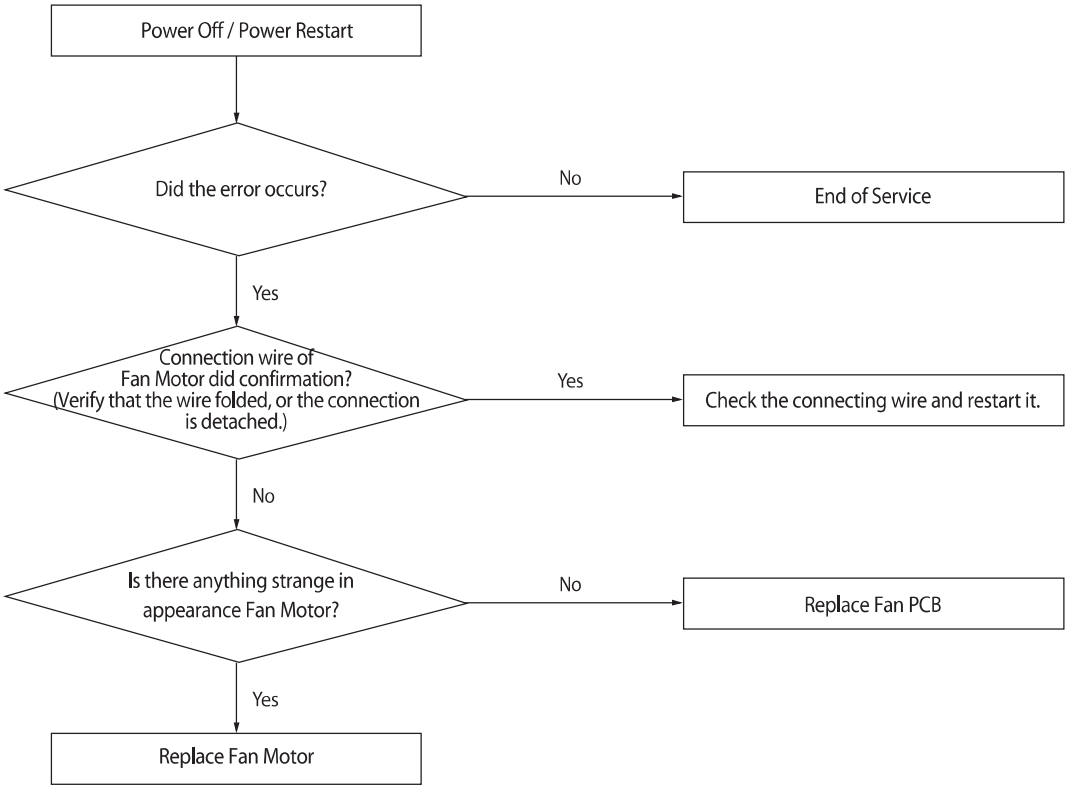
<table>
<tr><td>Outdoor unit display</td><td colspan="11">E452</td></tr>
<tr><td rowspan="3">Indoorunit display</td><td colspan="5">Duct, Cassette (1/2 Way),Console, Celing</td><td colspan="5">Cassette (4/Mini4 Way)</td><td colspan="3">Wall-mounted (NeoForte)</td></tr>
<tr><td>Operation</td><td>Defrost</td><td>Timer</td><td>Fan</td><td>Filter/MPI</td><td>Operation</td><td>Defrost</td><td>Timer</td><td>Filter</td><td>Operation</td><td>Timer</td><td>Turbo</td></tr>
<tr><td>×</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>×</td><td>◑</td><td>◑</td><td>◑</td><td>●</td><td>◑</td><td>◑</td></tr>
<tr><td colspan="11">※ ●: ON ◑: Flash ×: OFF</td></tr>
<tr><td>Judgment Method</td><td colspan="11">· Momentary stop of compressor due to momentary blackout.</td></tr>
<tr><td>Cause of problem</td><td colspan="11">· Momentary stop of compressor due to momentary blackout.</td></tr>
</table>

1. Precautions : Replace Hub PCB or Main PCB.

4-3-44 Outdoor Fan Motor overheating

Outdoor unit display	E453 (FAN PCB(FAN1)) E353 (FAN PCB(FAN2))
Judgment Method	· Overheating due to the internal sensor of the Fan Motor.
Cause of problem	· Defective connection wire · Defective Fan Motor · Defective PCB · Defective installation conditions

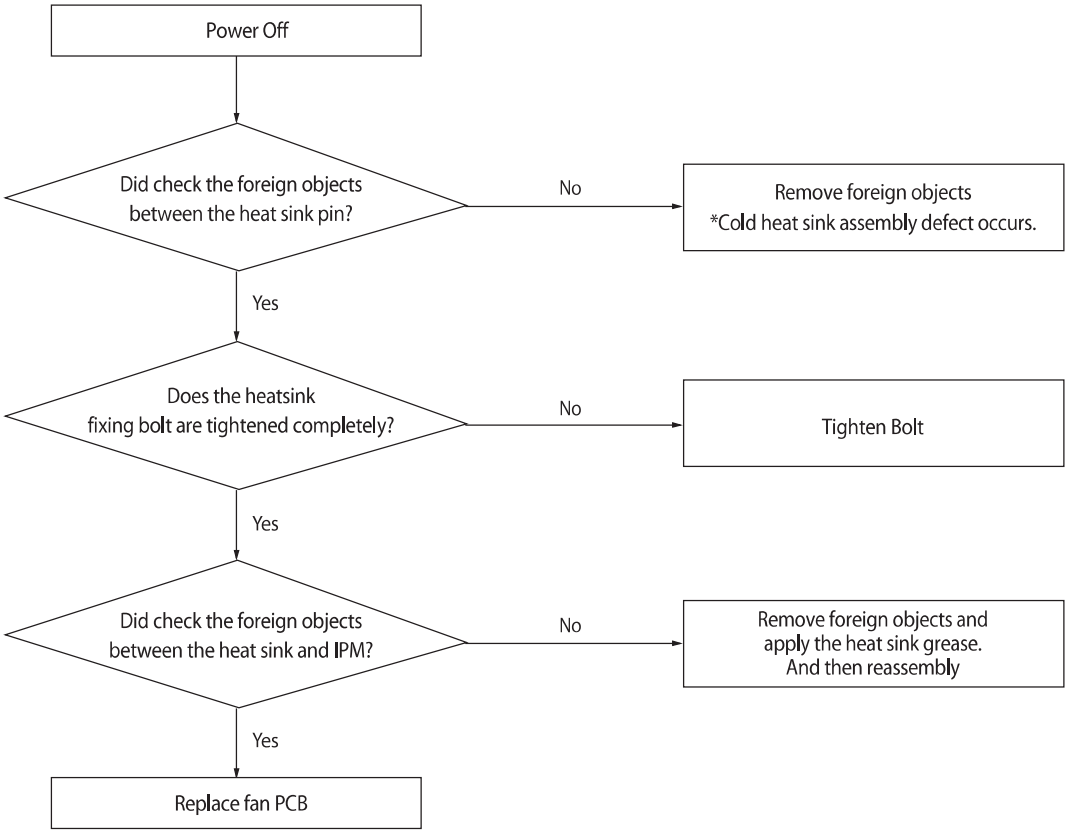
1. Cause of problem



4-3-45 Fan IPM Overheat error

Outdoor unit display	E455 (FAN1 PCB) E355 (FAN2 PCB)
Judgment Method	· IPM internal temperature more than 85°C (E455, E355)
Cause of problem	· Heat sink and IPM assembly defective. · Defective heat sink cooling

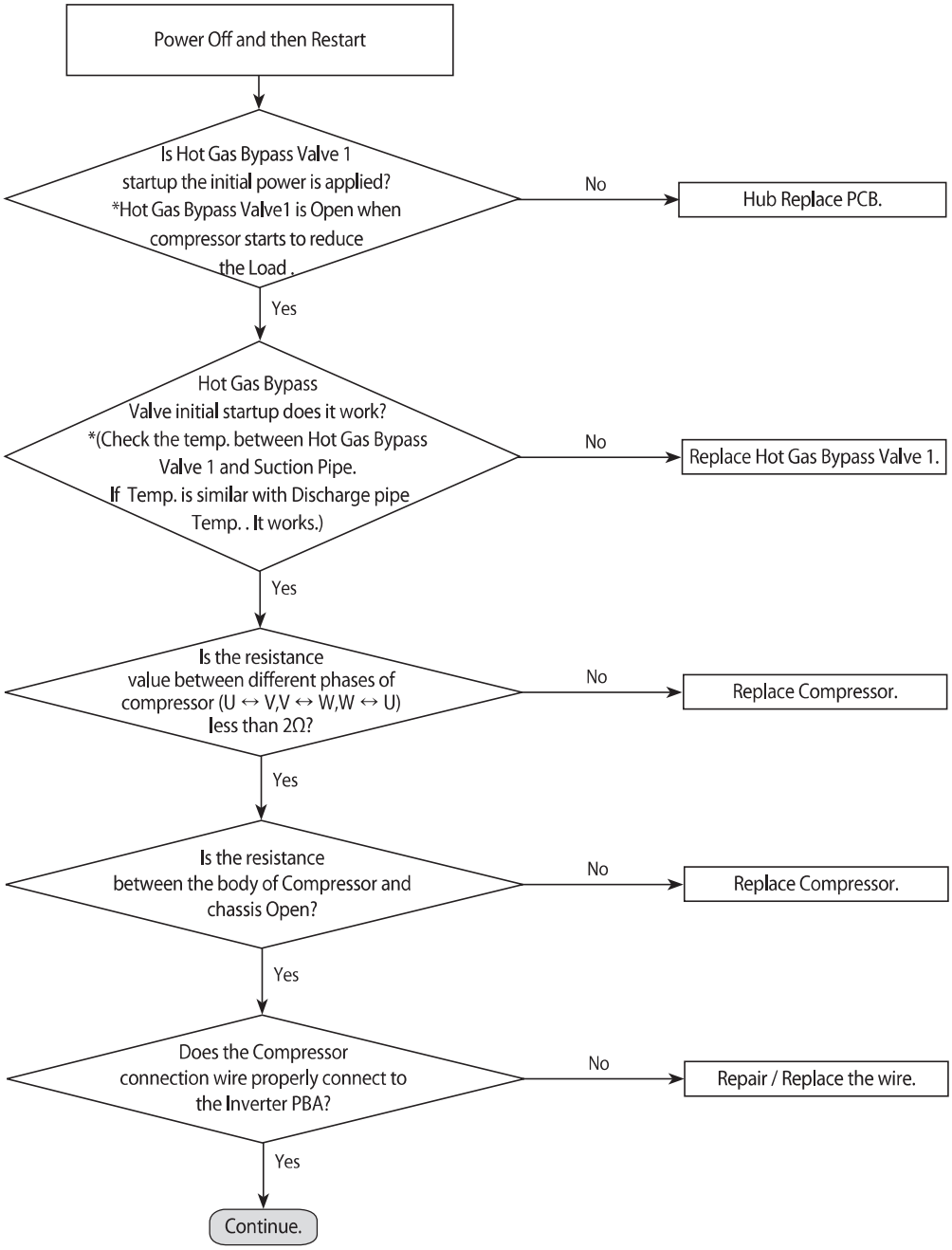
1. Cause of problem



4-3-46 Compressor starting error

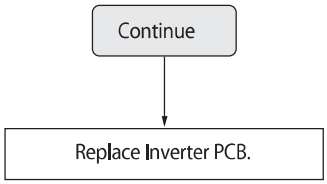
Outdoor unit display	E461 (INVERTER1 PCB) E361 (INVERTER2 PCB)
Judgment Method	· Startup, and then if the speed increase is not normally. · Detected by H/W or S/W.
Cause of problem	· Compressor connection error · Defective Compressor

1. Cause of problem

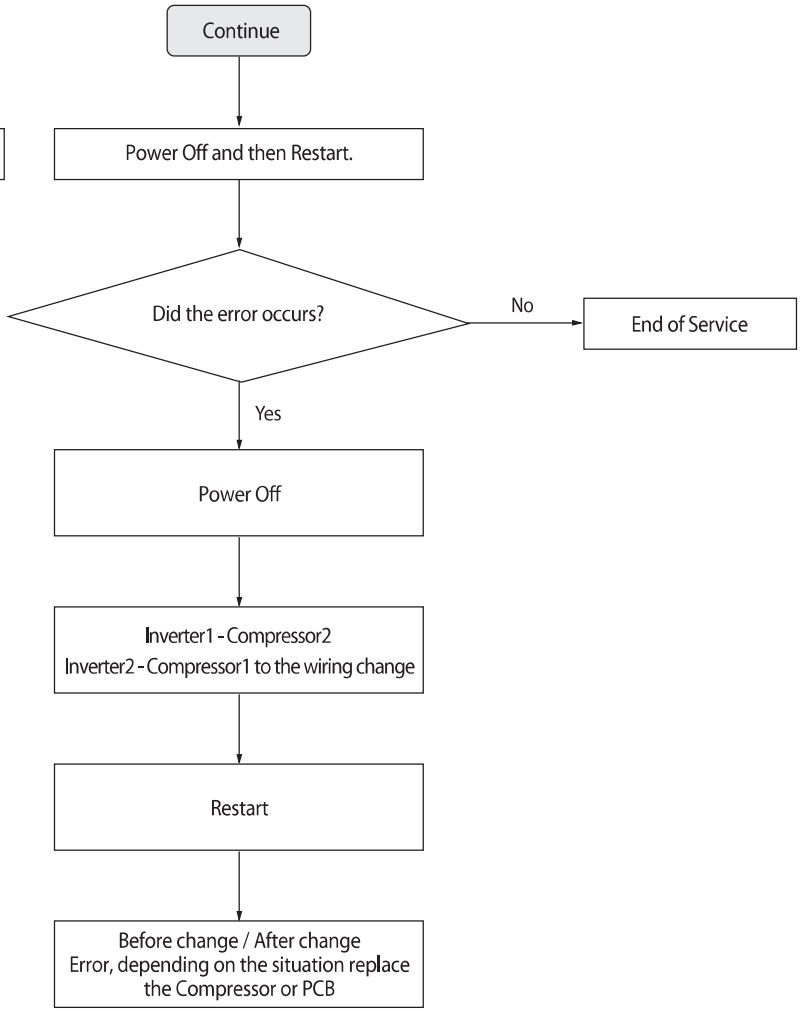


Compressor starting error (cont.)

■ **Compressor applied one**



■ **Compressor applied two**

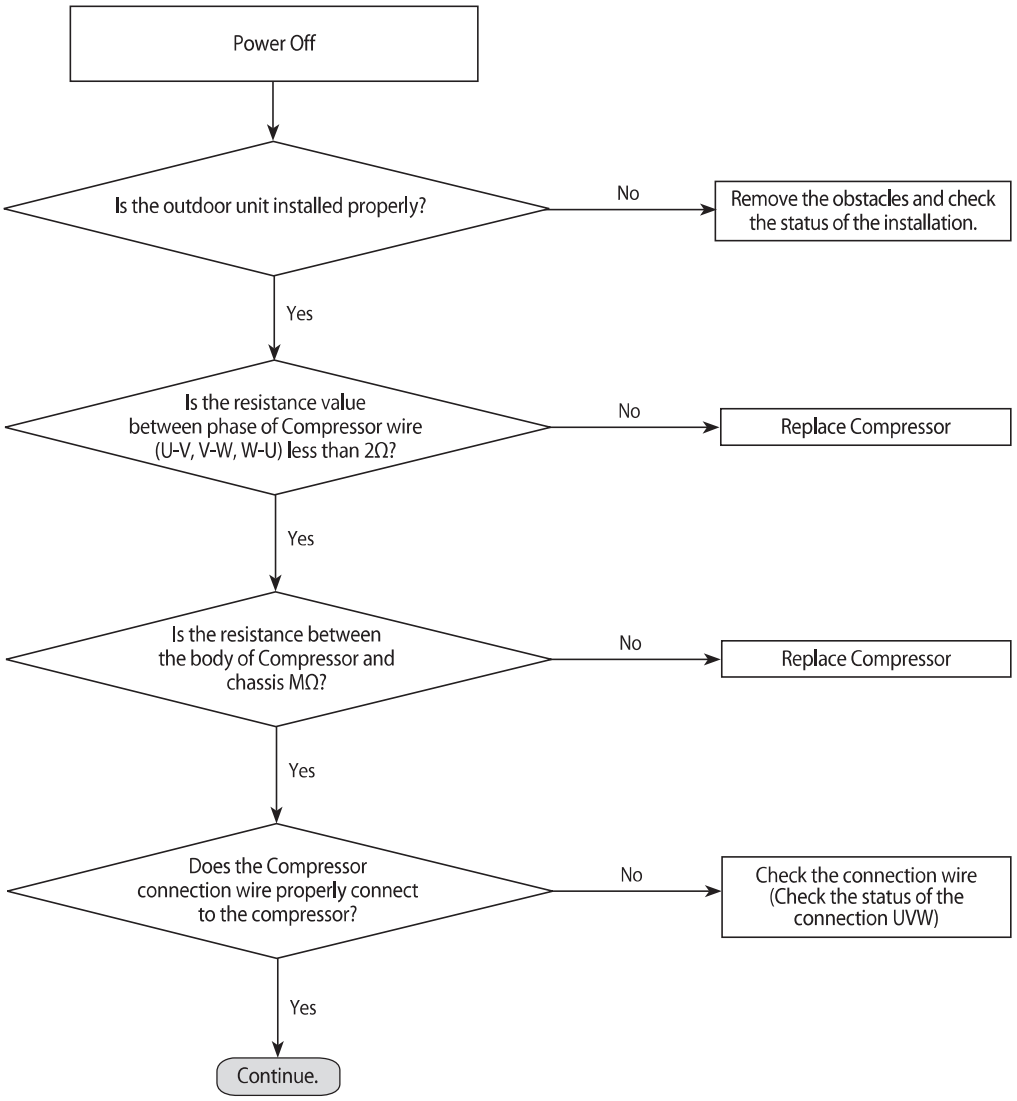


Before change	After change	Measure
E464	E464	Replace No.1Inverter PCB
E464	E364	Replace No.1 Compressor
E364	E364	Replace No.2 Inverter PCB
E364	E464	Replace No.2 Compressor

4-3-47 COMP Overcurrent error

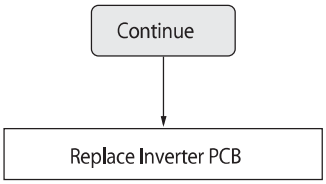
Outdoor unit display	E464/E465 (INVERTER1 PCB) E364/E365 (INVERTER2 PCB)
Judgment Method	· Will occur if the overcurrent flowing in the IPM. · Detected by H/W or S/W
Cause of problem	· COMP. defective. · Inverter PCB Defective.

1. Cause of problem

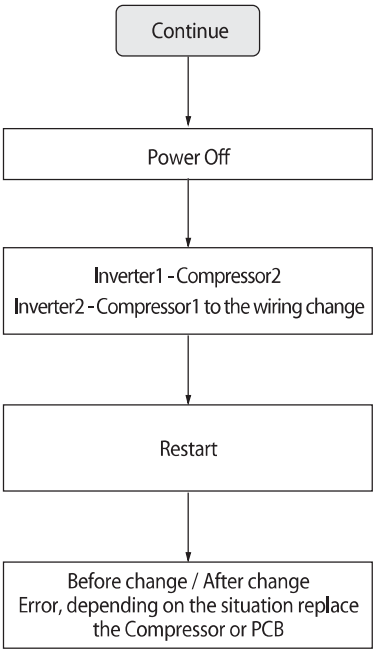


Inverter Overcurrent error (cont.)

■ **Compressor applied one**



■ **Compressor applied two**



Before change	After change	Measure
E464	E464	Replace No.1Inverter PCB
E464	E364	Replace No.1 Compressor
E364	E364	Replace No.2 Inverter PCB
E364	E464	Replace No.2 Compressor

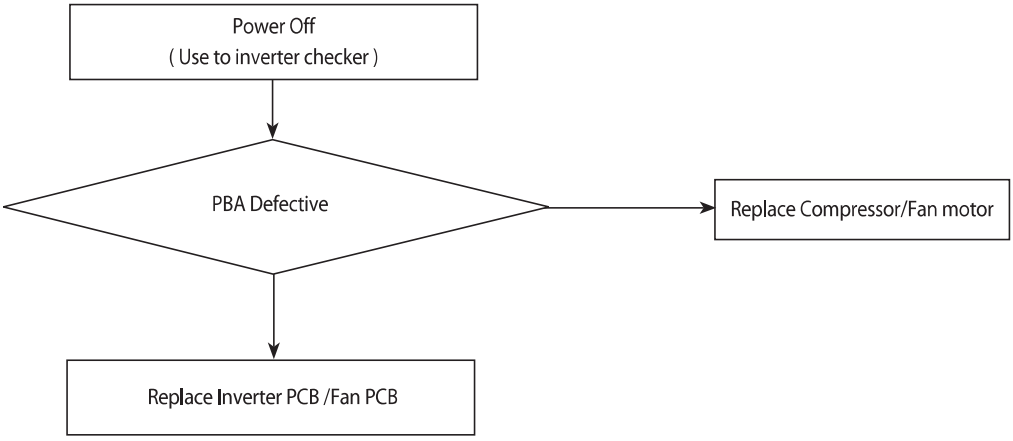
■ How to use inverter checker (Warning for high pressure)

► Check between MOTOR ↔ FAN PBA

1) After cut off, connect inverter checker with U,V,W of Motor
2) After turn on, enter Comp. check mode by pushing K2 in main PBA
3) Judgment
   - 6 LEDs of inverter checker are lightning successively (MOTOR PBA OK, MOTOR NG)
   - If one of 6 LEDs in inverter checker is not lightning (MOTOR PBA NG, MOTOR OK)

■ How to enter check mode/7Seg display

Type	DVM S	
Model	Air Cooled	Water Cooled
COMP 1	9times (KD__)	8times (KD__)
COMP 2	10times (KE__)	9times (KE__)
MOTOR 1	11times (KF__)	
MOTOR 2	12times (KG__)	



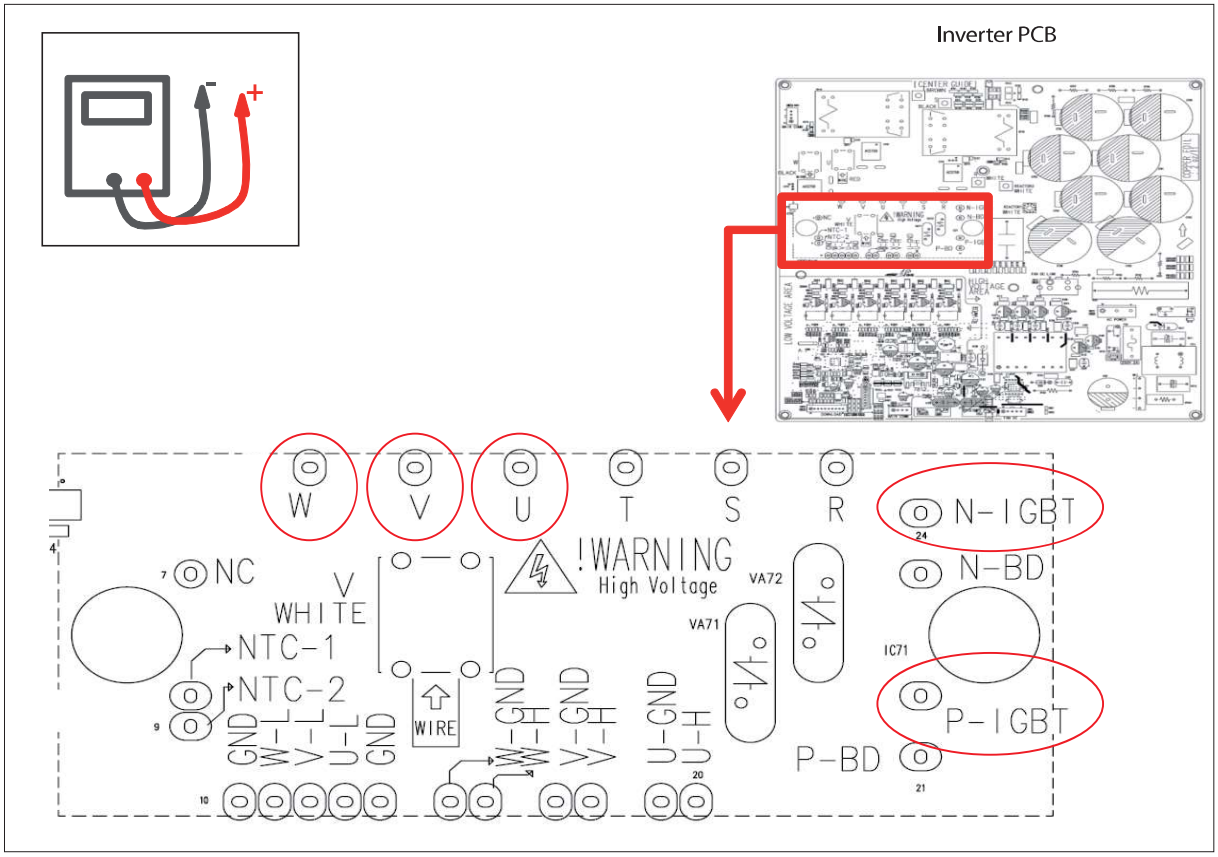
IPM [IGBT] breakdown diagnostics (Inverter PCB)

1. Preparations before checking
   1) Power Off.
   2) IPM failure, discharge mode may not work properly. Therefore, wait more than 15 minutes after the Power Off.
   3) Remove all of the Inverter PCB connectors and wire that is fixed as screw.
      (Include wire that is fixed to compressor and DC Reactor.)
   4) Prepare the digital multi tester.

2. Inspection Method
   1) Refer to Figure1 and Table1, respectively the resistance value and diode voltage value measure.
   2) According to the criterion in Table 1 to determine whether the failure of IPM.

Division	Measured Point		Criterion	Remark
	+	-		
Measure the resistance values	P-IGBT	U	More than 500 kΩ	Measurement error can occur for reasons s uch as the initial measurement condenser discharge. Measured over at least three times.
	P-IGBT	V		
	P-IGBT	W		
	U	N-IGBT		
	V	N-IGBT		
	W	N-IGBT		
Measure the diode voltage values	U	P-IGBT	0.3~0.7V	
	V	P-IGBT		
	W	P-IGBT		
	N-IGBT	U		
	N-IGBT	V		
	N-IGBT	W		

< Table 1 >

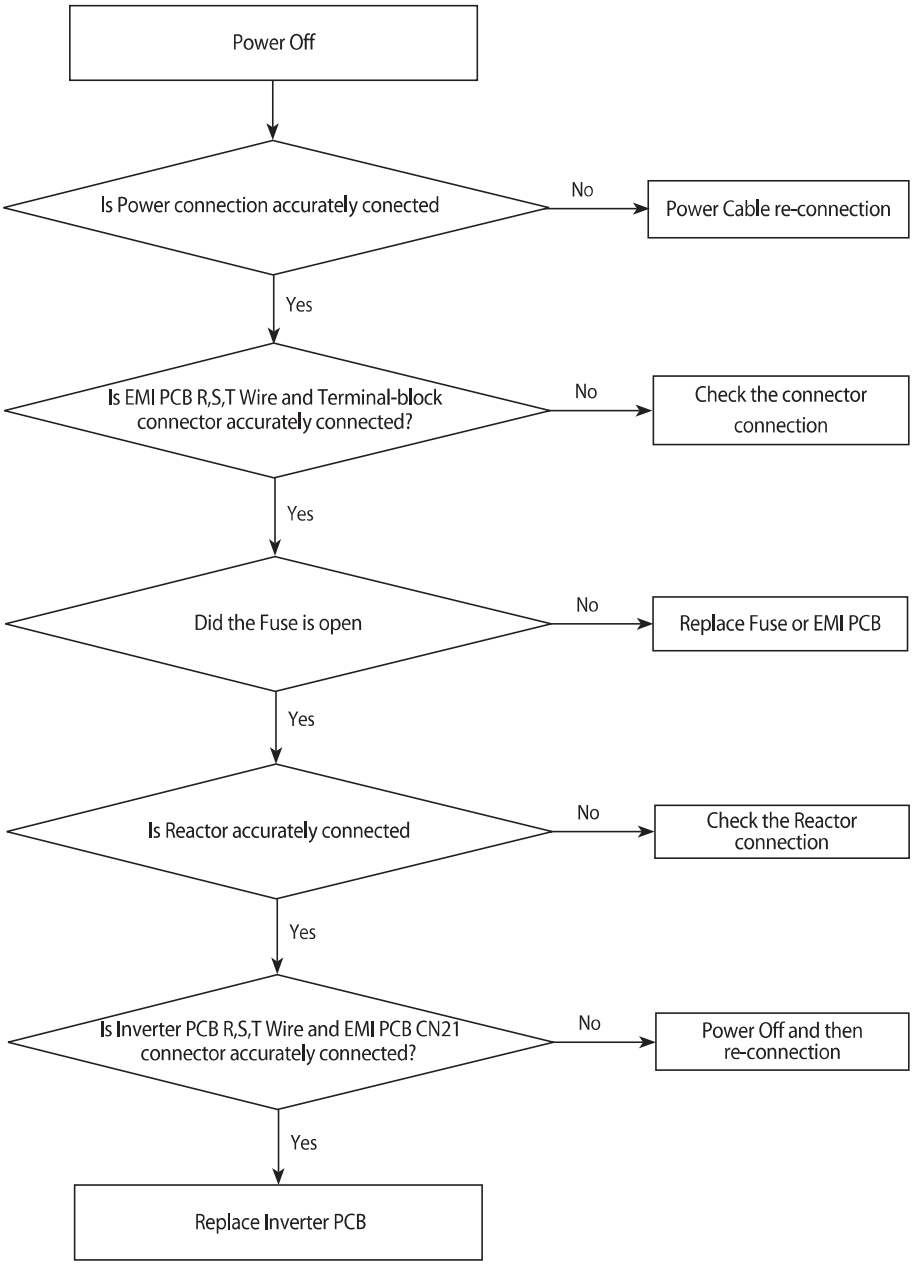


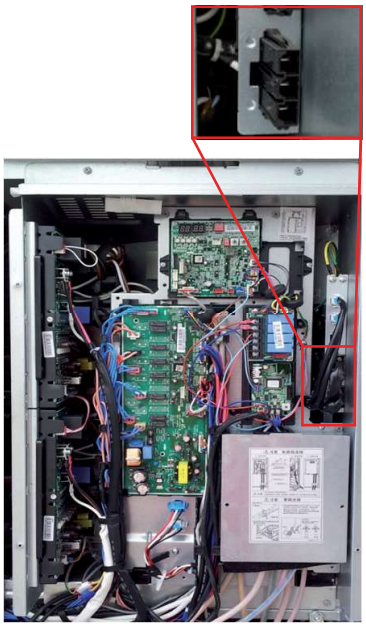
< Figure 1 >

4-3-48 Overvoltage / Low voltage error

Outdoor unit display	E466 (INVERTER1 PCB) E366 (INVERTER2 PCB)
Judgment Method	· Input wiring error EMI fuse open. · DC-Link Overvoltage / Low voltage occurs.
Cause of problem	· Check the input wiring · EMI Fuse OPEN

1. Cause of problem





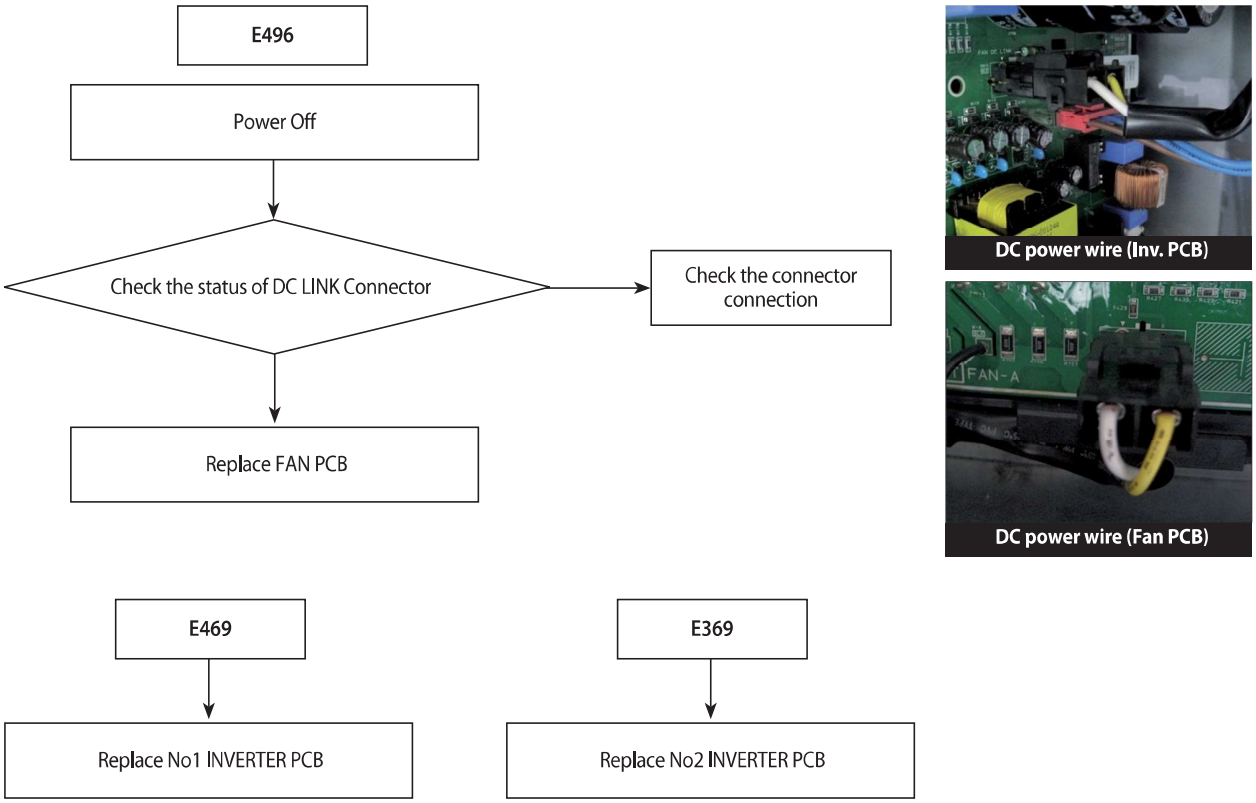
EMI PCB R,S,T Wire and Terminal-block connector

Type of Power Source	AC Input Voltage	Standard AC Voltage(Vac)		Standard DC Voltage(Vdc)	
		Min.	Max.	Min.	Max.
F	208~230V	177	265	250	374
J	460V	391	552	553	781

4-3-49 DC Link voltage sensor error

Outdoor unit display	E469 (INVERTER1 PCB) E369 (INVERTER2 PCB) E496 (OUTDOOR FAN 1 PCB)
Judgment Method	· DC voltage detection : Error judgment where the voltage value is more than 4.8V or less than 0.2V.
Cause of problem	· DC Link Connector disconnected · PCB voltage sensing circuit defective

1. Cause of problem



DC power wire (Inv. PCB)

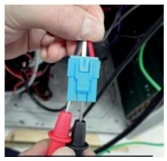
DC power wire (Fan PCB)

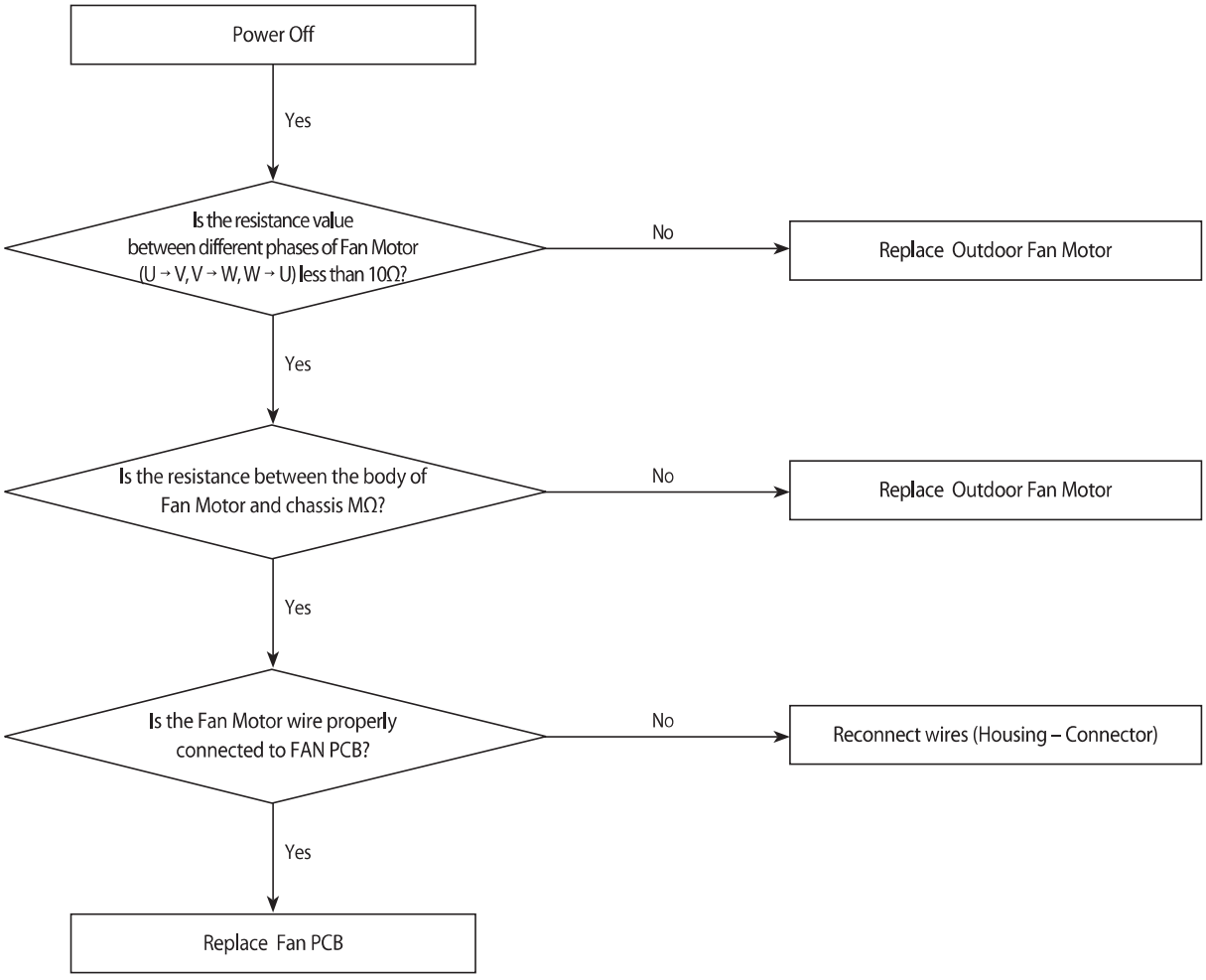
4-3-50 Fan Motor Overcurrent error

Outdoor unit display	E478/E489 (FAN PCB(FAN1)) E378/E389 (FAN PCB(FAN2))
Judgment Method	· Occurs when overcurrent flows in the IPM. · Detected by H/W or S/W
Cause of problem	· Defective FAN PCB · Connector error · Defective Motor

1. Cause of problem



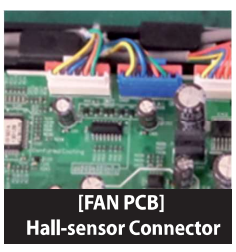




Fan PCB wire connection



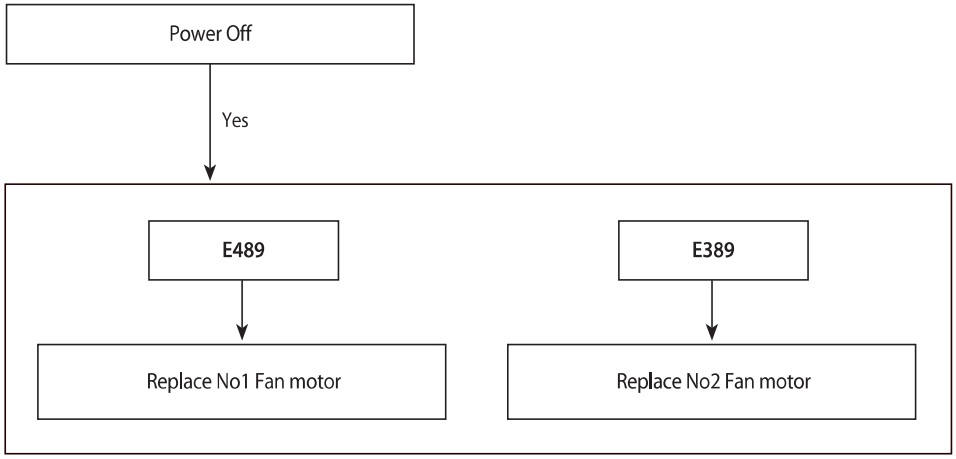




Fan Motor Overcurrent error (cont.)

Outdoor unit display	E489 (FAN PCB(FAN1)) E389 (FAN PCB(FAN2))
Judgment Method	· Occurs when overcurrent flows in the IPM. · Detected by H/W or S/W
Cause of problem	· Defective FAN Motor

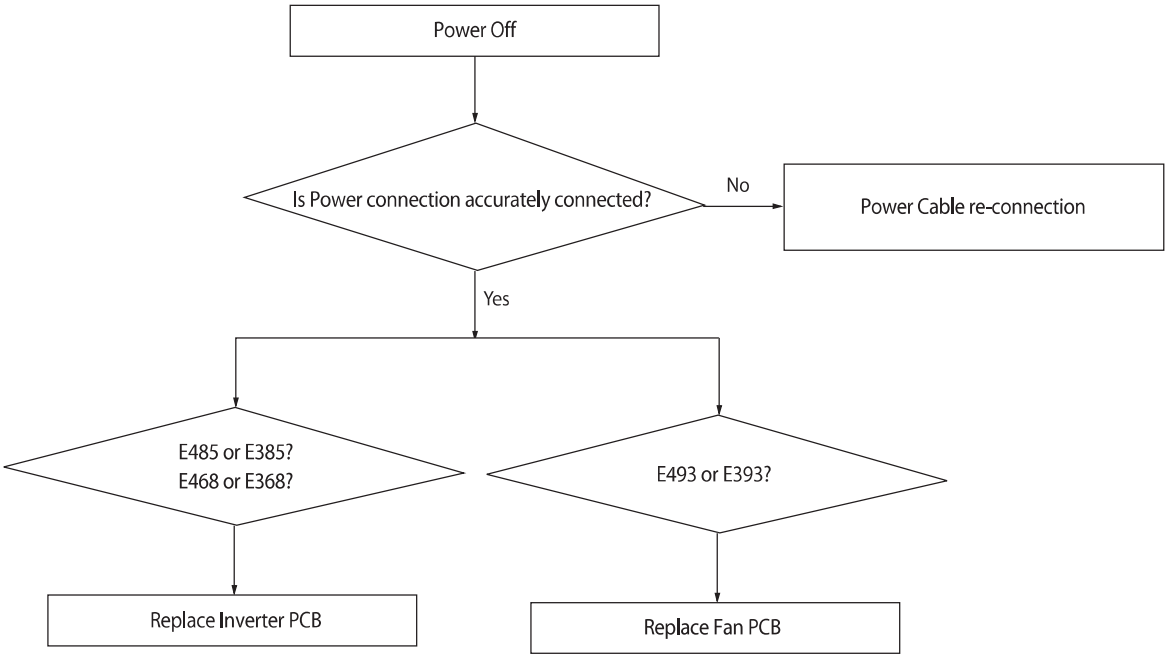
1. Cause of problem



4-3-51 Input / Output Current sensor error

Outdoor unit display	E485 INVERTER1 PCB(Input Current sensor) E385 INVERTER2 PCB(Input Current sensor) E468 INVERTER1 PCB(Output Current sensor) E368 INVERTER 2 PCB(Output Current sensor) E493 OUTDOOR FAN PCB (FAN1 Output Current sensor) E393 OUTDOOR FAN PCB (FAN2 Output Current sensor)
Judgment Method	· Sensor Output detection : Judged as an error if the detected value is More than 4.5V or less than 0.5V
Cause of problem	· Input voltage defective · PCB voltage sensing circuit defective

1. Cause of problem



4-3-52 Outdoor Fan PCB Overvoltage / Low voltage error

Outdoor unit display	E486
Judgment Method	· DC-Link Overvoltage / Low voltage occurs.
Cause of problem	· Check the status of DC LINK Connector

1. Cause of problem

• Be careful when you check DC voltage.(600Vdc ↑)

How to check voltage from DC LINK connector disconnect from FAN PCB

ⓐ Turn off the MAIN Power

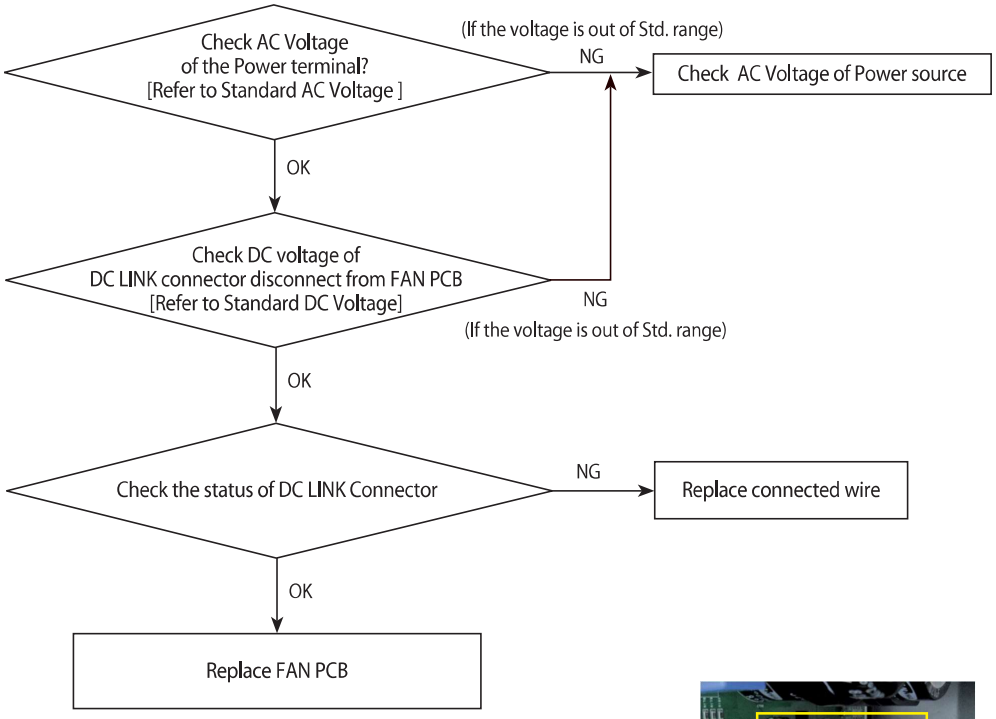
→ ⓑ Disconnect the DC LINK connector from FAN PCB

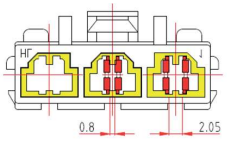
→ ⓒ Turn on the MAIN Power

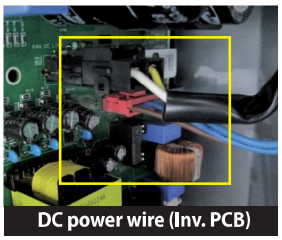
→ ⓓ Check voltage of connector

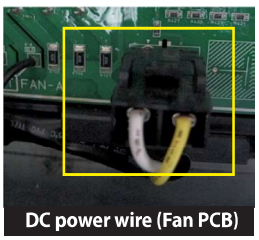
Standard voltage range of DC and AC

AC Input Voltage	Standard AC Voltage(Vac)		Standard DC Voltage(Vdc)	
	Min.	Max.	Min.	Max.
208~230V	187	253	265	358
460V	414	506	585	715
380~415V	342	457	484	646





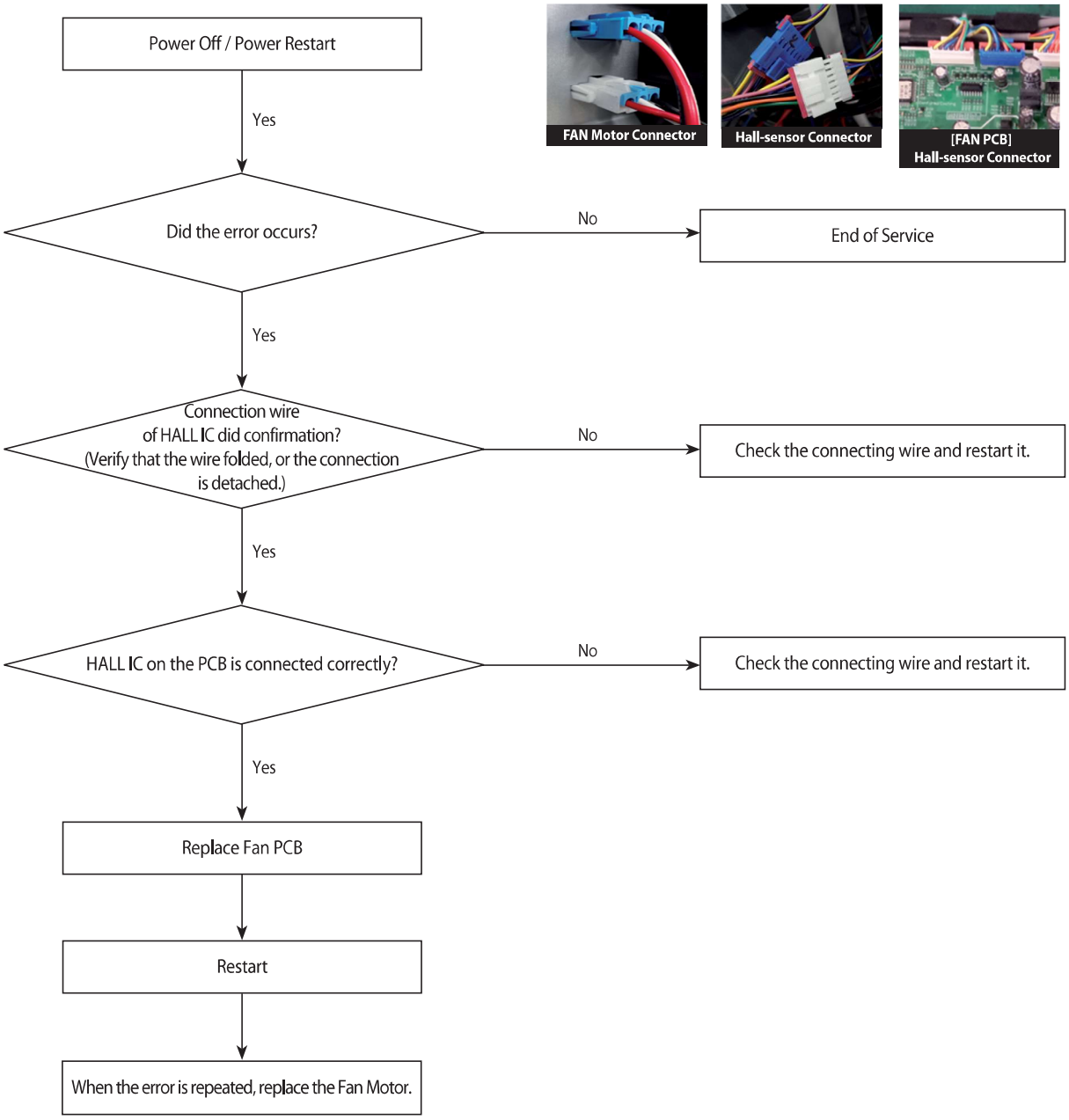

DC power wire (Inv. PCB)


DC power wire (Fan PCB)

4-3-53 Hall IC(Fan) error

Outdoor unit display	E487 (FAN PCB(FAN1)) E387 (FAN PCB(FAN2))
Judgment Method	· Fan rotation defective or vibration and noise of the defective operation. · Hall IC there is no signal input.
Cause of problem	· Connection status error. · Hall IC wire disconnection. · Defective circuit parts and defective manufacturing. · Fan Motor defective.

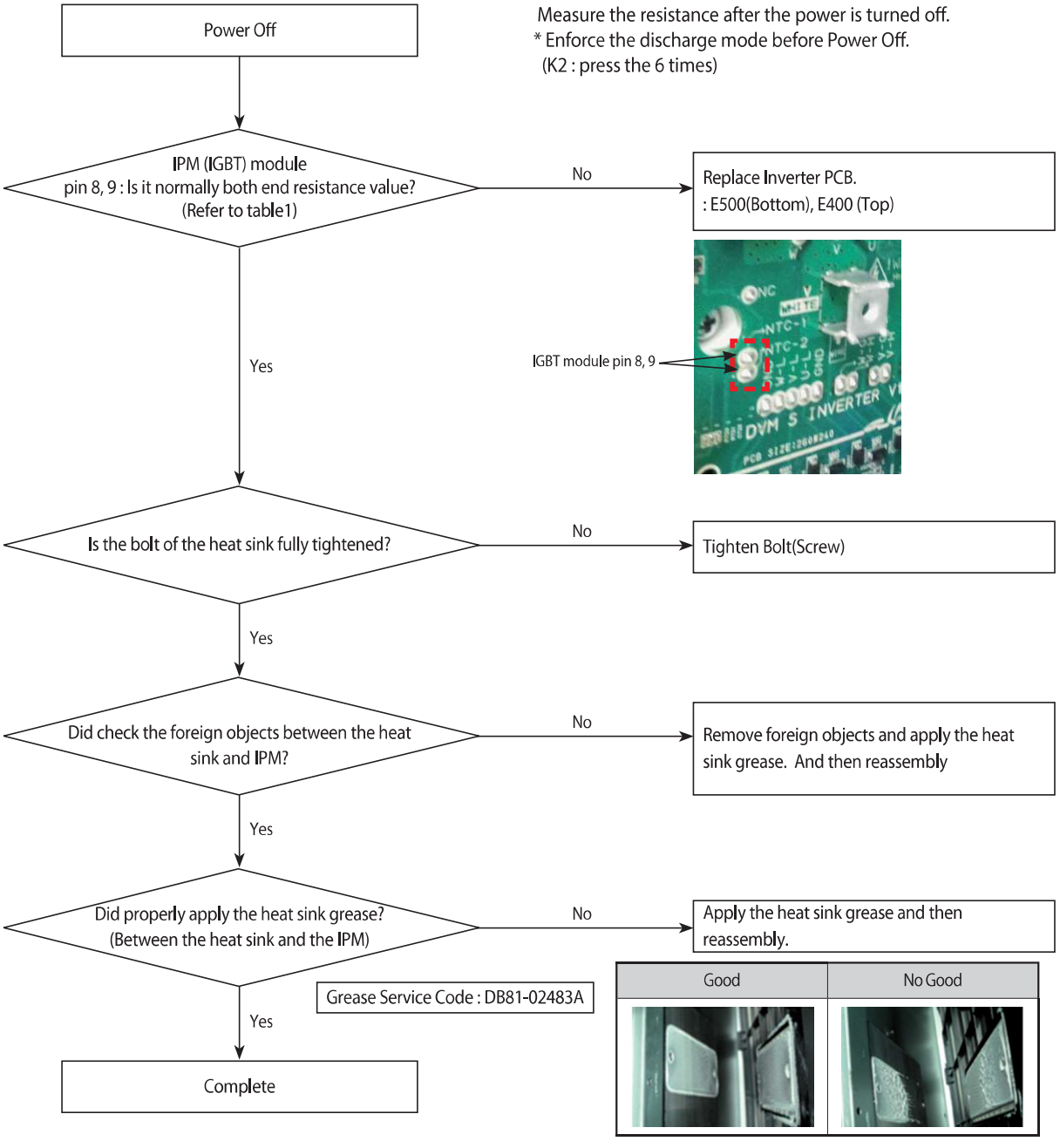
1. Cause of problem



4-3-54 Inverter Overheat error

Outdoor unit display	E500 (INVERTER1 PCB) E400 (INVERTER2 PCB)
Judgment Method	· IGBT module internal temperature : 105°C more than (E500, E400)
Cause of problem	· Cooling Pin and the IGBT junction part assembly defective. · Refrigerant cooling heat sink and refrigerant piping assembly defective. · Assembled bolt defective.

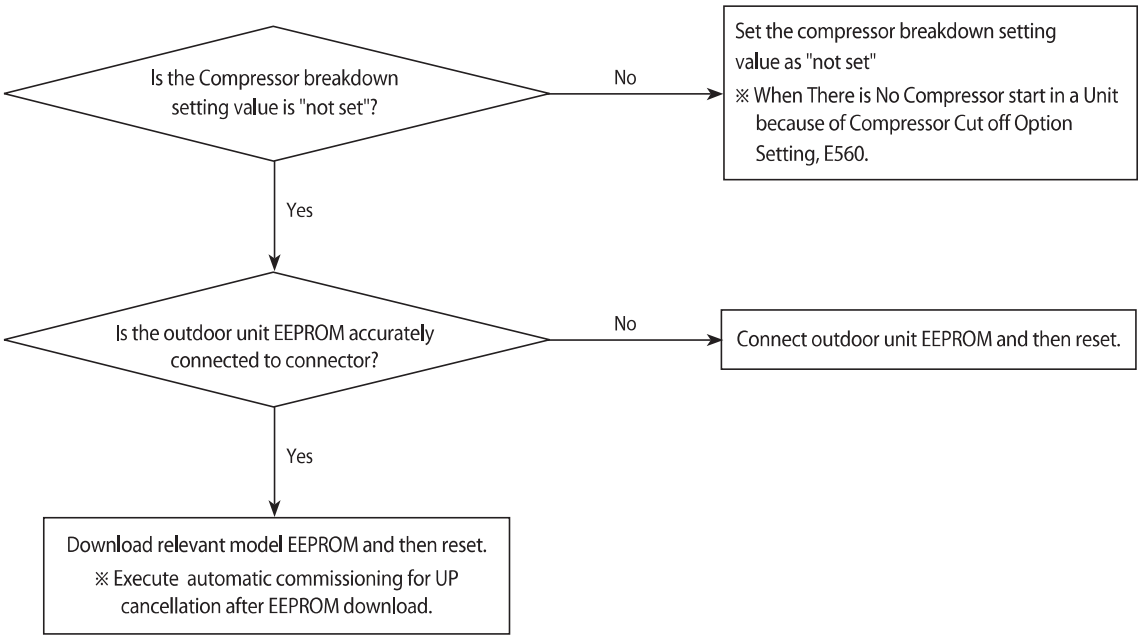
1. Cause of problem



4-3-55 Option setting error of outdoor unit

Outdoor unit display	E560
Indoorunit display	◑(Operation) ×(Reservation) ◑(Blast) ×(Filter) ×(Defrost)
Judgment Method	• Refer to the judgment method below.
Special Cause	• Option setting error of outdoor unit (There is No Compressor start in a Unit because of Compressor Cut off Option Setting.)

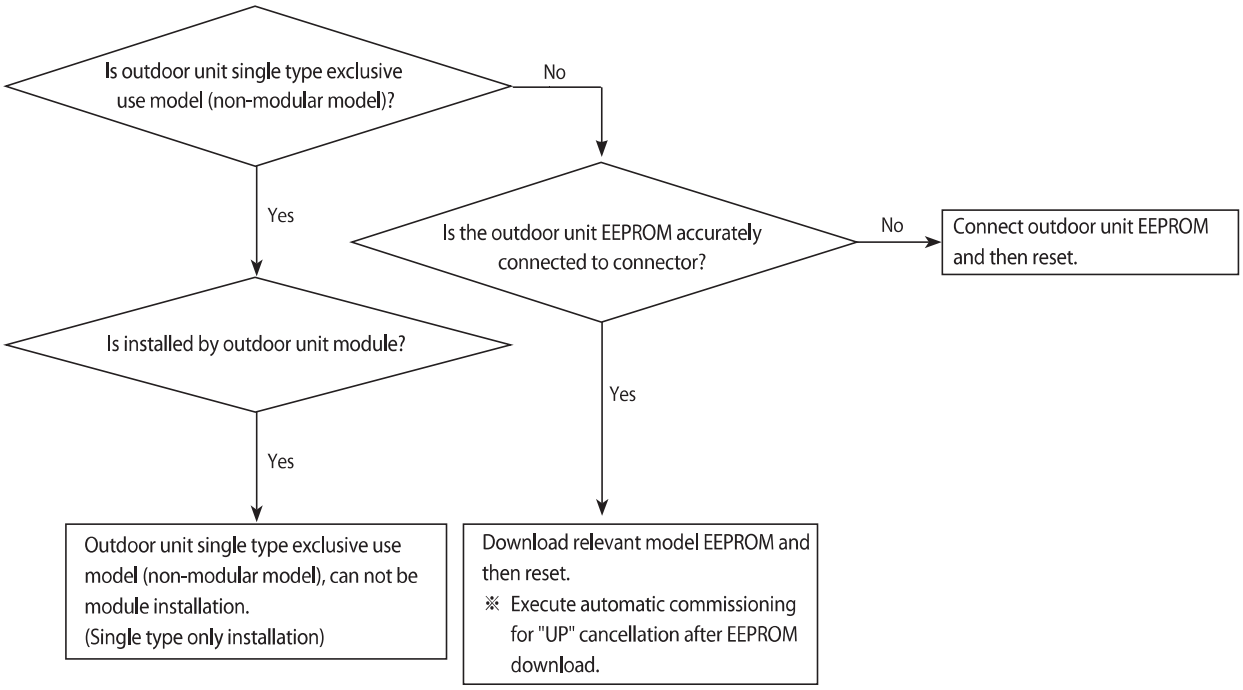
1. Cause of problem



4-3-56 Error due to using single type outdoor unit in a module installation

Outdoor Unit Display	E573
Indoor Unit Display	-
Judgment Method	• Refer to the judgment method below.

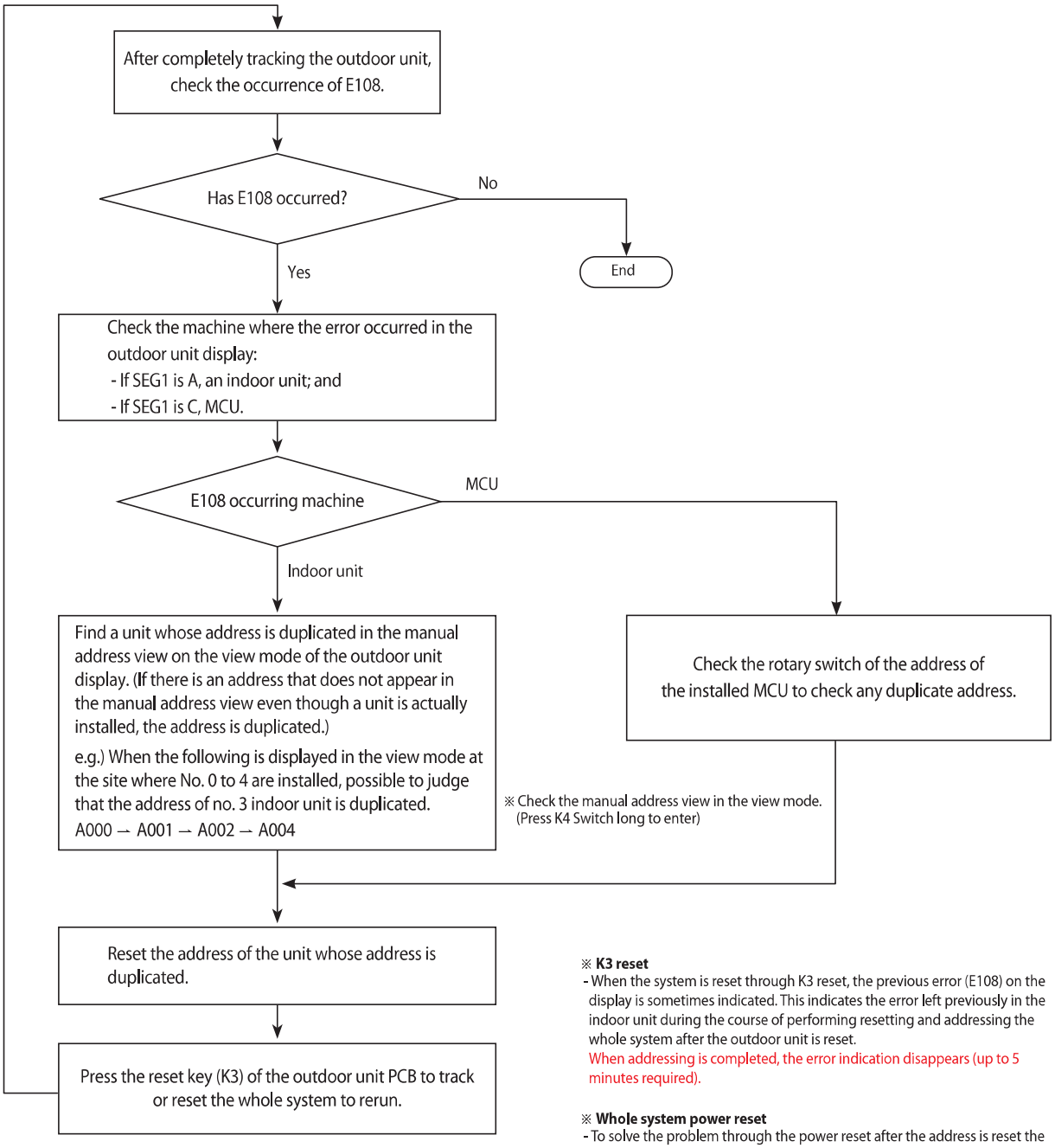
1. Cause of problem



4-3-57 Indoor unit and MCU address duplication error

Outdoor unit display	E 108 - A00X (X : Address of duplicate indoor unit)
Indoor unit display	Operation: × / Defrost: × / Timer: ◑ / Fan: ◑ / Filter/EMI: × ※ ● : ON ◑ : Flash ×: OFF
Judgment Method	Refer to the judgment method below.
Cause of problem	· Indoor unit and MCU address duplication.

1. Cause of problem

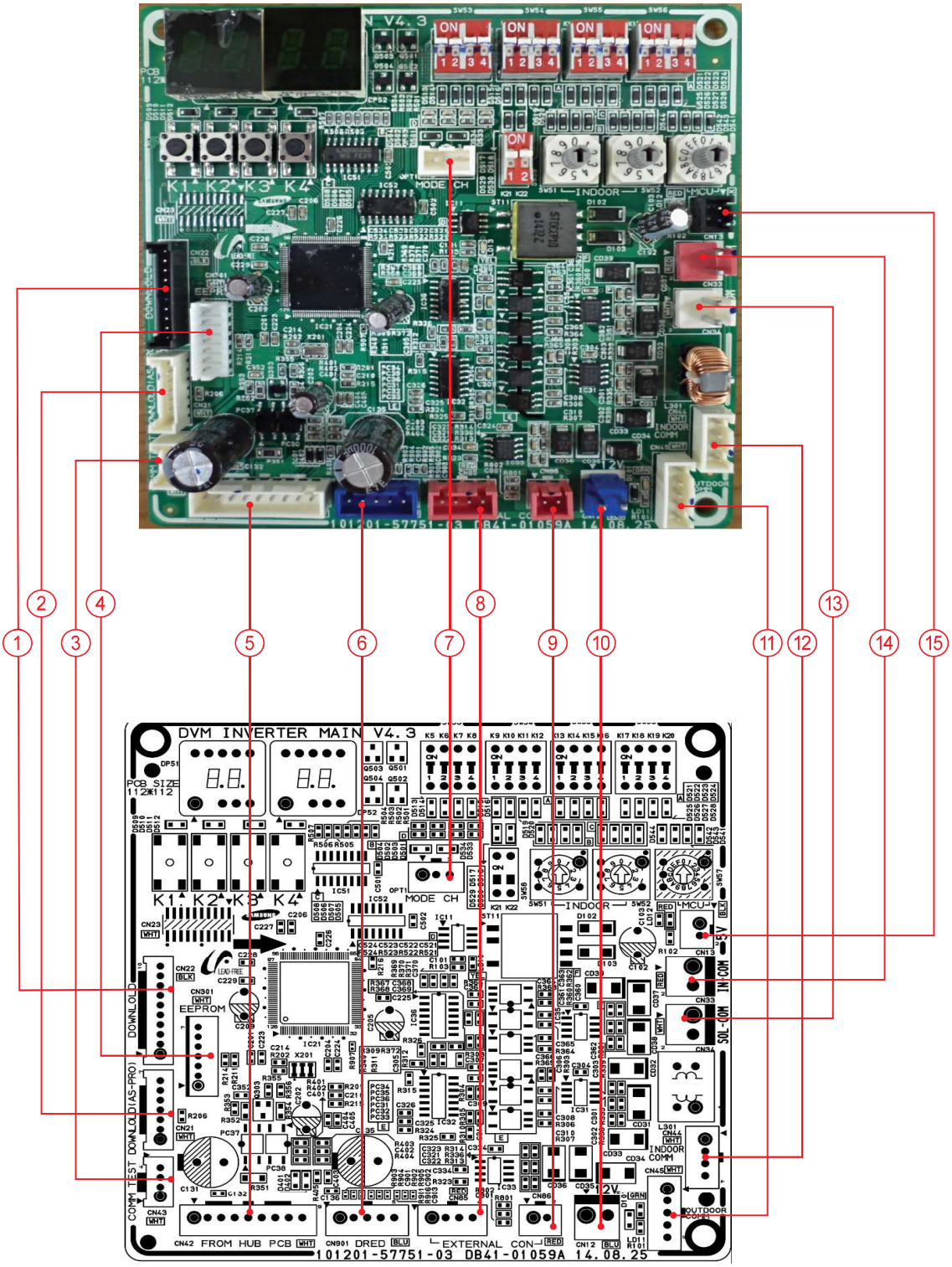


※ **K3 reset**
- When the system is reset through K3 reset, the previous error (E108) on the display is sometimes indicated. This indicates the error left previously in the indoor unit during the course of performing resetting and addressing the whole system after the outdoor unit is reset.
When addressing is completed, the error indication disappears (up to 5 minutes required).

※ **Whole system power reset**
- To solve the problem through the power reset after the address is reset the power reset of individual units is meaningless and the power of the whole system must be reset.

5. PCB Diagram and Parts List

5-1 ASS'Y PCB MAIN

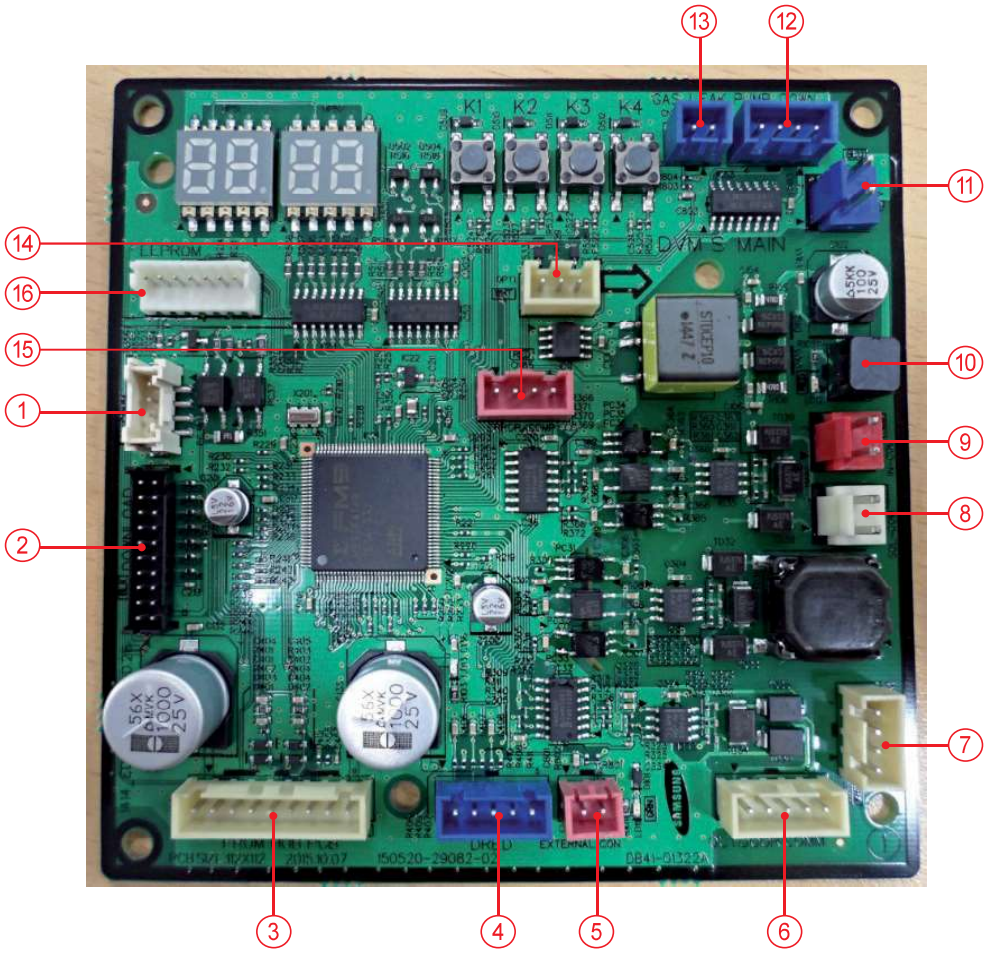


ASS'Y PCB MAIN (cont.)

① CN22-DOWNLOAD #1 : RX-DOWN #2 : TX-DOWN #3 : N-TRST #4 : TDO #5 : TCK #6 : TDI #7 : TMS #8 : #9 : GND #10 : VCC	② CN21-ASPRO DOWNLOAD #1 : VCC #2 : MODE0 #3 : RESET_MAIN #4 : #5 : F_SCLK #6 : F_SDAT #7 : GND	③ CN43-COMM TEST #1 : 12V #2 : INVERTER-INRUSH-OUT #3 : INVERTER-COMM #4 : GND	④ CN301-EEPROM #1 : GND #2 : #3 : VCC #4 : EEPROM-SELECT #5 : EEPROM-SO #6 : EEPROM-SI #7 : EEPROM-CLOCK
⑤ CN42 - HUB COMM #1 : 12V #2 : INVERTER-INRUSH-OUT #3 : INVERTER-COMM #4 : GND #5 : HIGH-PRESSURE-SENSOR #6 : LOW-PRESSURE-SENSOR #7 : ZERO-CROSSING #8 : GND #9 : VCC	⑥ CN901-DRED #1 : KEY3 #2 : GRID #3 : KEY4 #4 : GND #5 : VCC	⑦ OPT1 -MODE SELECTOR #1 : KEY3 #2 : GRID #3 : KEY4	⑧ CN85-CONDITION CHECK #1 : 12V #2 : ERROR-CHECK-OUT #3 : 12V #4 : COMP-CHECK-OUT
⑨ CN86-EXTERNAL CONTROL #1 : CONTROL #2 : GND	⑩ CN12 - 12V POWER #1 : 12V #2 : GND	⑪ CN45 -OUTDOOR COMM #1 : COM-C #2 : COM-D #3 : #4 : 12V #5 : GND	⑫ CN44 - INDOOR COMM #1 : COM-A #2 : COM-B #3 : 5V #4 : AGND
⑬ CN34- UNUSED COMM #1 : COM-E #2 : COM-F	⑭ CN33-INDOOR COMM (EXTRA) #1 : COM-A #2 : COM-B	⑮ CN13-5V POWER #1 : COM-A #2 : COM-B	

ASS'Y PCB MAIN (cont.)

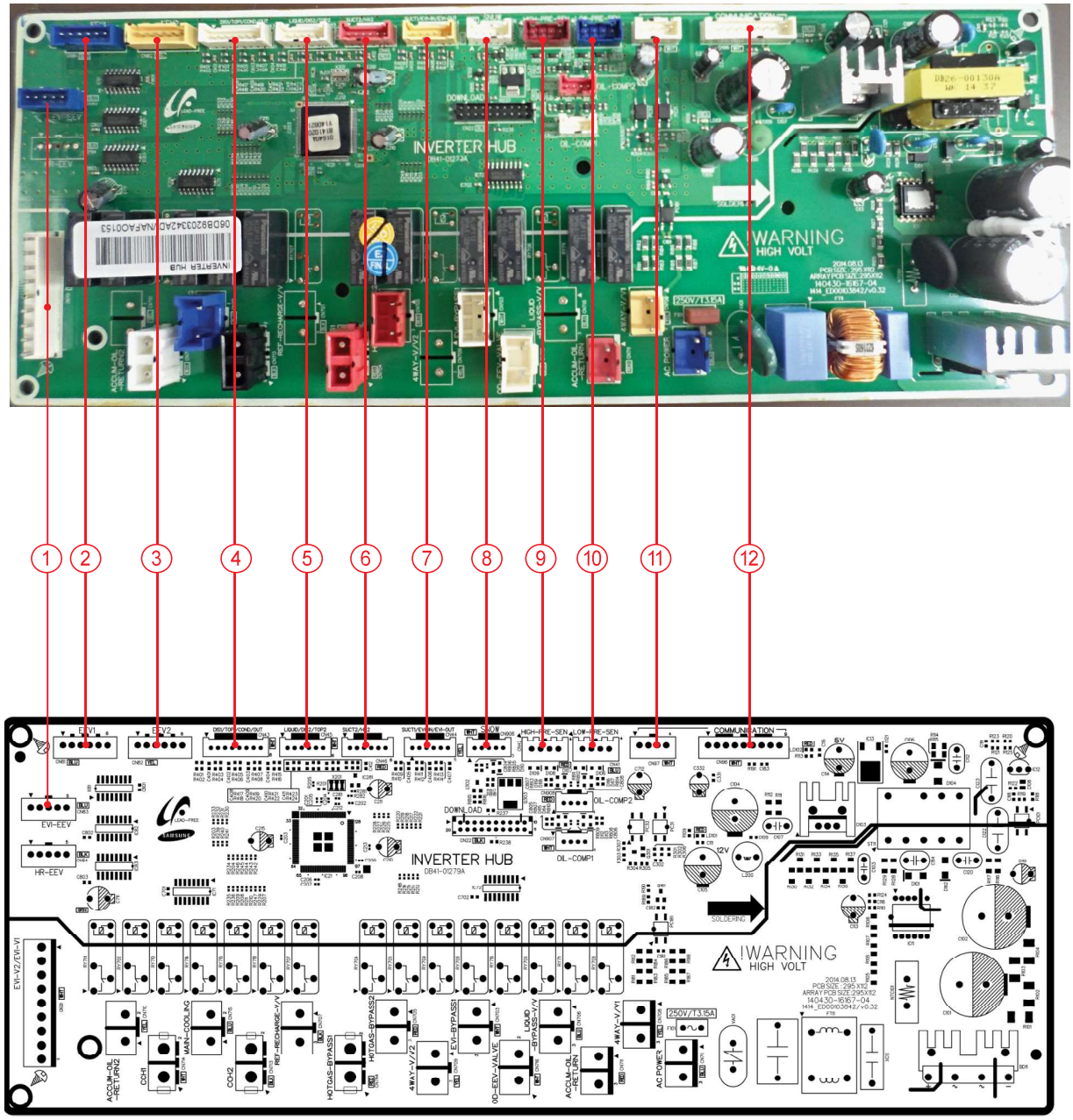
■ AM140/160/180/200/220/240/260/280/300KXV✳✳✳



1	INV COMM
2	Download
3	HUB PBA Comm.
4	DRED
5	External Con
6	COMM PBA Comm.(Outdoor)
7	COMM PBA Comm.(Indoor)
8	COMM PBA Comm.(SOL-COM)
9	IN-COM
10	5V
11	12V
12	Pump Down
13	Gas Leak
14	Option Switch
15	Error/Comp
16	EEPROM

5-2 ASS'Y PCB MAIN-HUB

■ AC



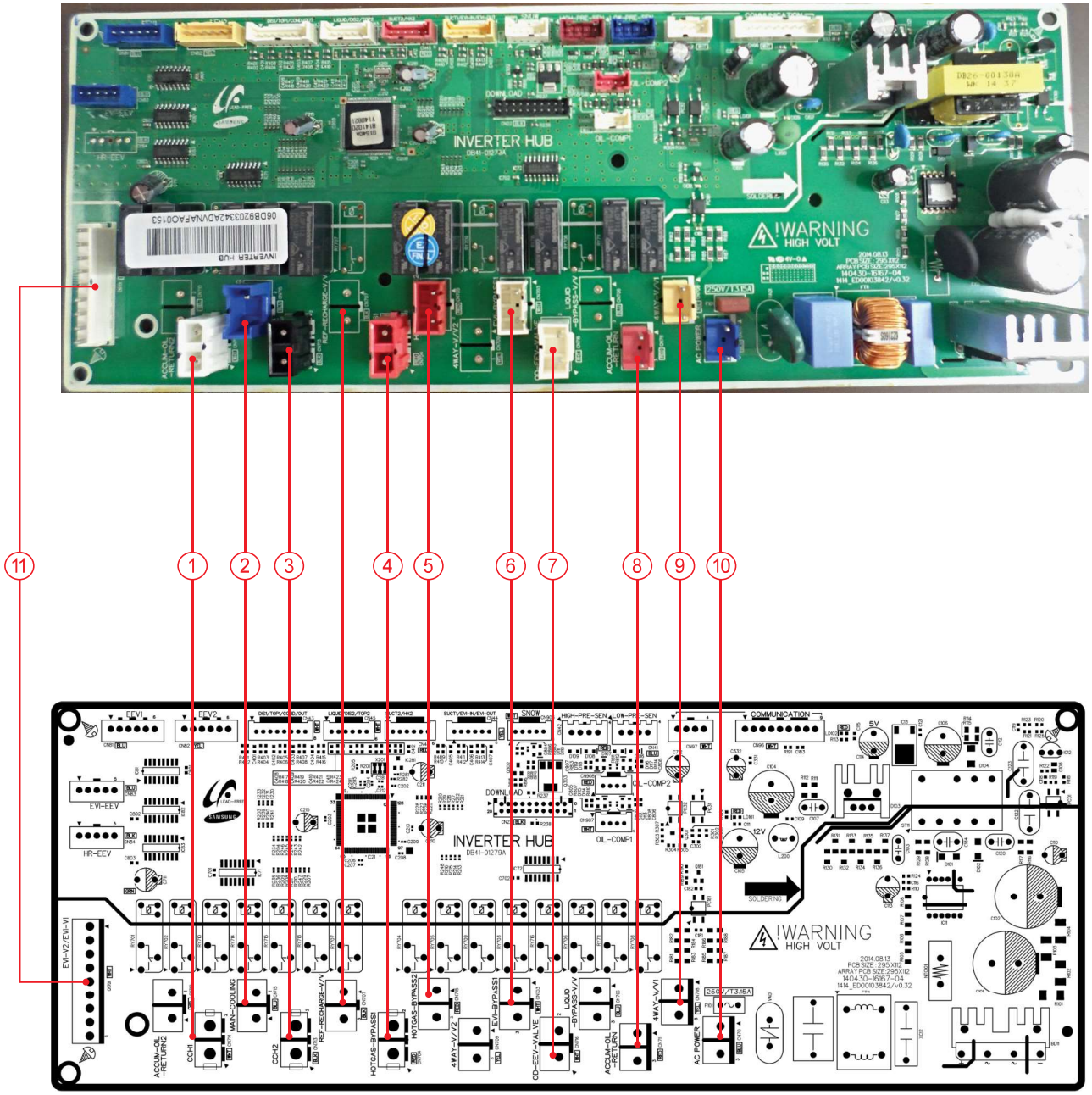
ASS'Y PCB MAIN-HUB (cont.)

■ AC (cont.)

① CN83-EVI EEV #1 : EEV3_A_OUT #2 : EEV3_B_OUT #3 : EEV3_A'_OUT #4 : EEV3_B'_OUT #5 : 12V	② CN81-EEV1 #1 : EEV1_B'_OUT #2 : EEV1_A'_OUT #3 : EEV1_B_OUT #4 : EEV1_A_OUT #5 : 12V #6 : 12V	③ CN82-EEV2 #1 : EEV2_B'_OUT #2 : EEV2_A'_OUT #3 : EEV2_B_OUT #4 : EEV2_A_OUT #5 : 12V #6 : 12V	④ CN43-TEMP. SENSOR #1 : COMP1 DISACHRGE #2 : COMP1 DISCHARGE #3 : COMP1 TOP #4 : COMP1 TOP1 #5 : COND OUT #6 : COND OUT #7 : OUTDOOR TEMP. #8 : OUTDOOR TEMP.
⑤ CN45-TEMP. SENSOR #1 : LIQUID #2 : LIQUID #3 : COMP2 DISCHARGE #4 : COMP2 DISCHARGE #5 : COMP2 TOP #6 : COMP2 TOP	⑥ CN46-SUCT #1 : SUCTION 2 #2 : SUCTION 2 #3 : GND #4 : GND #6 : GND	⑦ CN44 – TEMP. SENSOR #1 : SUCTION 1 #2 : SUCTION 1 #3 : EVI INLET #4 : ENI INLET #5 : ENI OUT ##6 : EVI OUT	⑧ CN906 –SNOW SENSOR #1 : 12V #3 : GND #4 : SNOW_SENSOR #5 : PSD_POWER
⑤ CN42 –HIGH PRESSURE SENSOR #1 : HIGH PRESSURE SENSOR #3 : GND #4 : VCC	⑥ CN41- LOW PRESSURE SENSOR #2 : LOW PRESSURE SENSOR #3 : GND #4 : VCC	⑦ CN97- INV COMM #1 : 12V #2 : INV_SMPS_RELAY #3 : COMM OUT #4 : GND	⑧ CN96 – MAIN–HUB COMM. #1 : 12V #2 : INV_SMPS_RELAY #3 : COMM-MAIN #4 : GND #5 : HIGH-PRESSURE-SENSOR #6 : LOW-PRESSURE-SENSOR #7 : ZERO-CROSSING #8 : GND #9 : VCC

ASS'Y PCB MAIN-HUB (cont.)

■ DC



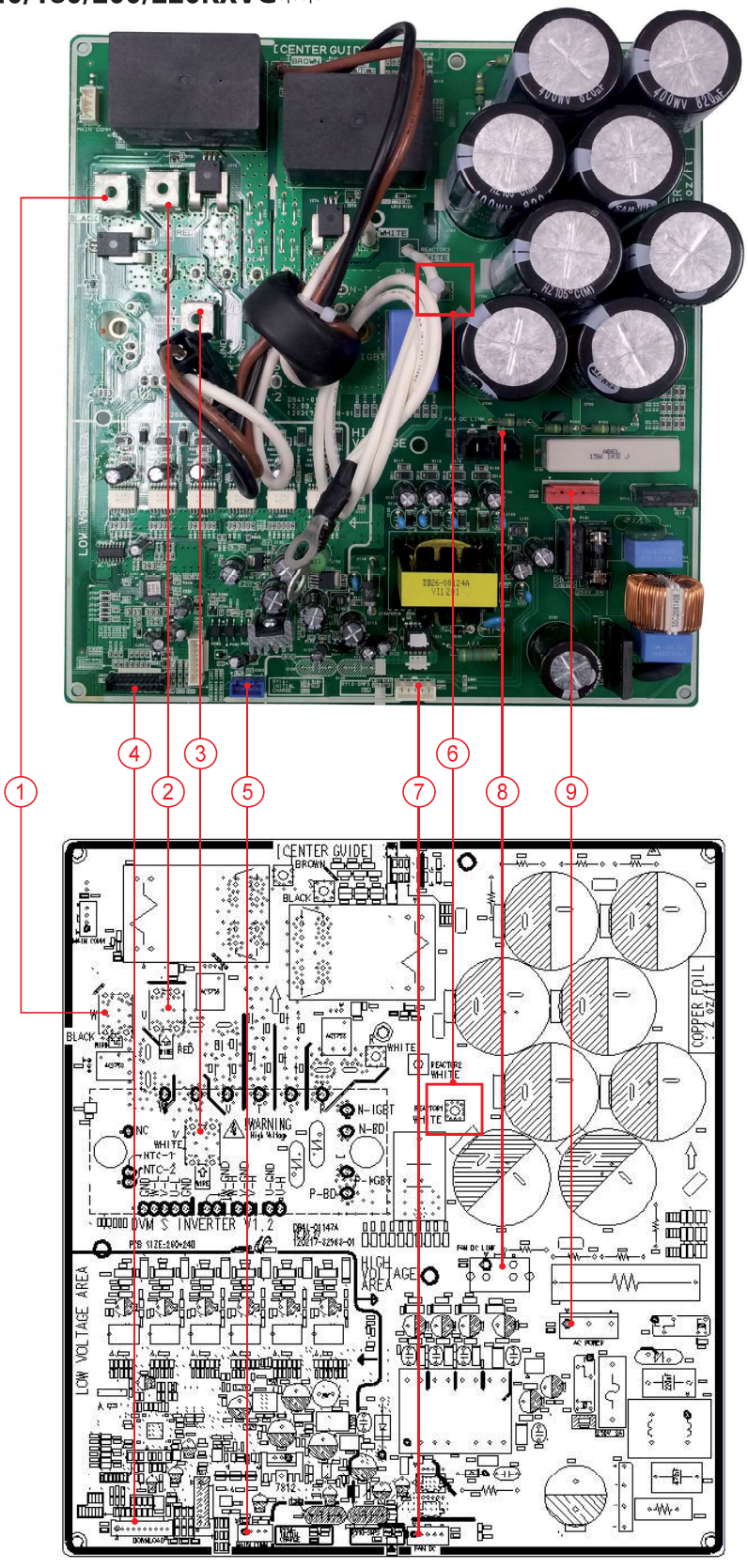
ASS'Y PCB MAIN-HUB (cont.)

■ DC (cont.)

① CN714-CCH1 #1 : CCH1 #2 : CCH1	② CN715-MAIN-COOLING #1: MAIN-COOLING #2: MAIN-COOLING	③ CN713-CCH2 ##1 : CCH2 #2 : CCH2	④ CN704-HOTGAS-VALVE1 #1 : HOTGAS BYPASS1 #2 : HOTGAS BYPASS1
⑤ CN705-HOTGAS-BYPASS2 #1:HOTGAS BYPASS2 #2:HOTGAS BYPASS2	⑥ CN703-EVI-BYPASS #1 : EVI BYPASS1 #2 : EVI BYPASS1	⑦ CN716-OD-EEV-VALVE #1: OD EEV VALVE #2: OD EEV VALVE	⑧ CN711-OIL-RETURN-VALVE #1 : ACCUM OIL RETURN VALVE #2 : ACCUM OIL RETURN VALVE
⑨ CN708- 4-WAY-VALVE #1 : 4-WAY VALVE #2 : 4-WAY VALVE	⑩ CN70-AC POWER INPUT #1 : AC LIVE #2 : AC NEUTRAL	⑪ CN701 EVI VALVE 1,2 #1: EVI VALVE 1 #3: EVI VALVE 2 #7: EVI VALVE 1 #8: EVI VALVE 2 #9: AC NEUTRAL	

5-3 ASSY PCB INVERTER

- Model : AM080/100/120/140/160/180/200/220FXV✳✳✳, AM080/100/120/140/160/180/200/220JXV✳✳✳, AM140/200/220KXVA✳✳, AM140/180/200/220KXVG✳✳

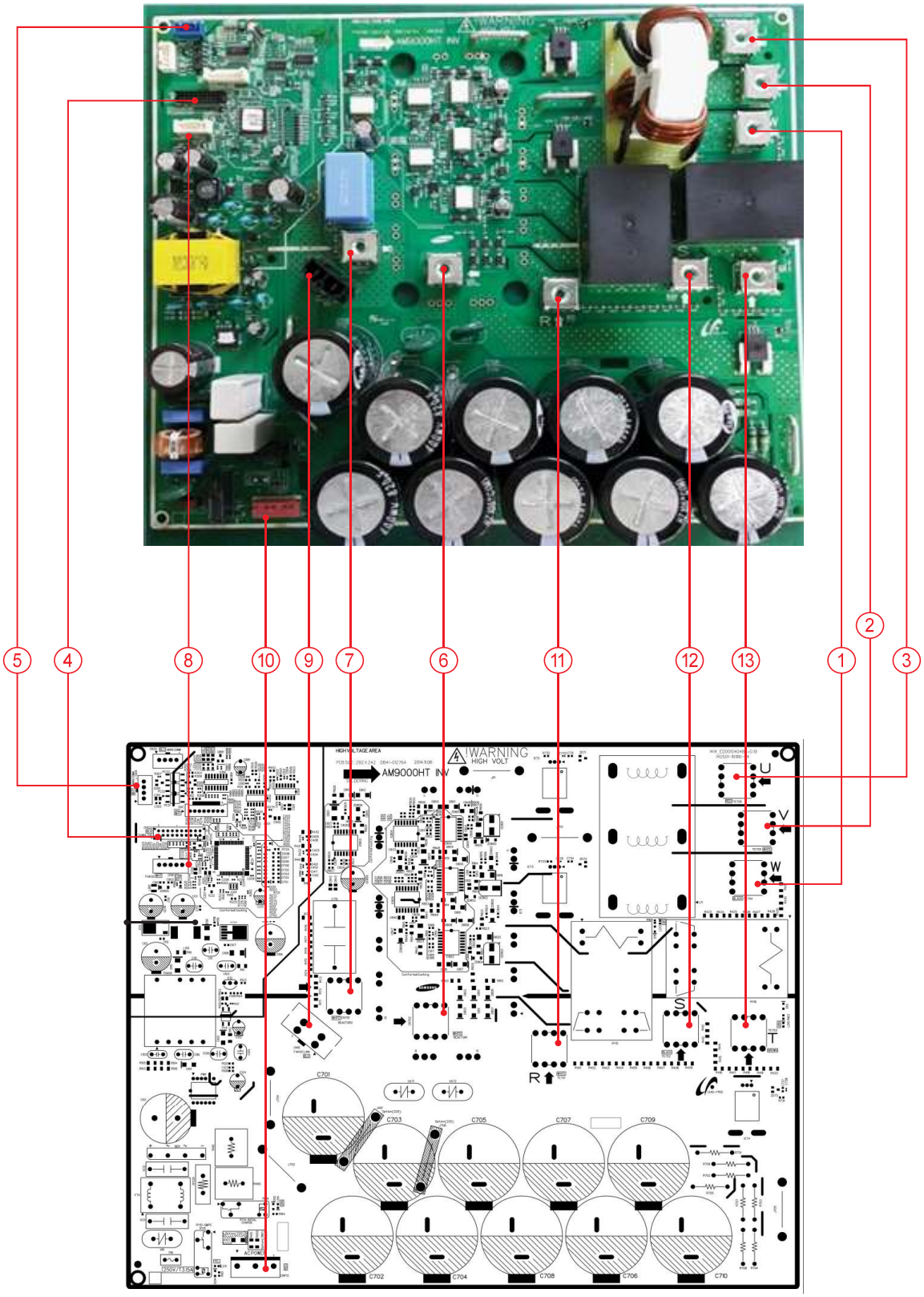


ASSY PCB INVERTER (cont.)

① W- COMP W #1 : COMP W	② U-COMP U #1 : COMP U	③ V-COMP V #1 : COMP V	④ CN22-DOWNLOAD #1 : RX-DOWN #2 : TX-DOWN #3 : N-TRST #4 : TDO #5 : TCK #6 : TDI #7 : TMS #8 : #9 : GND #10 : VCC
⑤ CN32 – MAIN COMM #1 : 12V-MAIN #2 : IN-SMPS-RELAY #3 : COMM-IN #4 : GND-MAIN	⑥ REACTOR (WIRE CONNECTION) #1 : REACTOR #2 : REACTOR	⑦ CN91- FAN DC #1 : 18V #2 : GND #3 : 5V-FAN #4 : AD-SELECT	⑧ CN15-FAN DC LINK #1 : 500V #2 : GND(500V)
⑨ CN13 - ACPOWER #1 : AC #2 : #3 : AC			

ASS'Y PCB INVERTER (cont.)

- Model : AM240/260HXV✳✳✳, AM240/260JXV✳✳✳,
AM160/180/240/260/280/300KXVA✳✳,
AM160/240/260/280KXVG✳✳, AM080KXVS✳✳

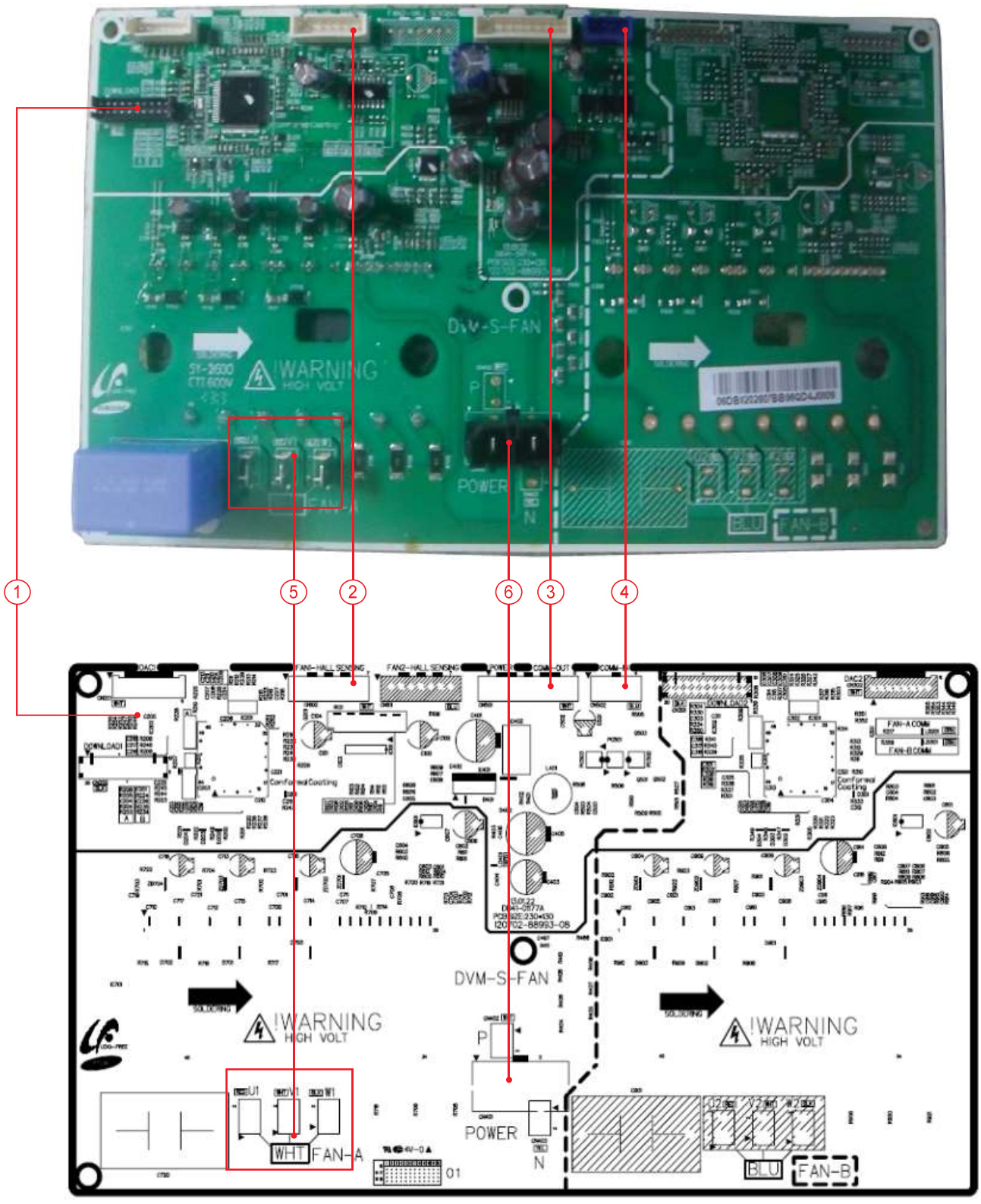


ASSY PCB INVERTER (cont.)

① W-COMP W #1 : COMP W	② U-COMP U #1 : COMP U	③ V-COMP V #1 : COMP V	④ CN22-DOWNLOAD #1: RX-DOWN #2: TX-DOWN #3: BOOT #4: TDO #5: TCK #6: TDI #7: TMS #9: GND #10: VCC
⑤ N COMM #1 : 12V-MAIN #2 : IN-SMPS-RELAY #3 : COMM-IN #4 : GND-MAIN	⑥ CN702-REACTOR1 #1: REACTOR1	⑦ CN701-REACTOR2 #1: REACTOR2	⑧ CN91-FAN DC #1: 18V #2: GND #3: 5V-FAN #4: AD-SELECT
⑨ CN15-FAN DC LINK #1 : AC #2 : #3 : AC	⑩ CN13-AC POWER #1: AC LIVE #2: AC NEUTRAL #3: AC NEUTRAL	⑪ R-INPUT R TOP #1: R-IN	⑫ S-INPUT S TOP #1: S-IN
⑬ T-INPUT T TOP #1: T-IN			

5-4 ASS'Y PCB FAN

- Model : 1-FAN chassis

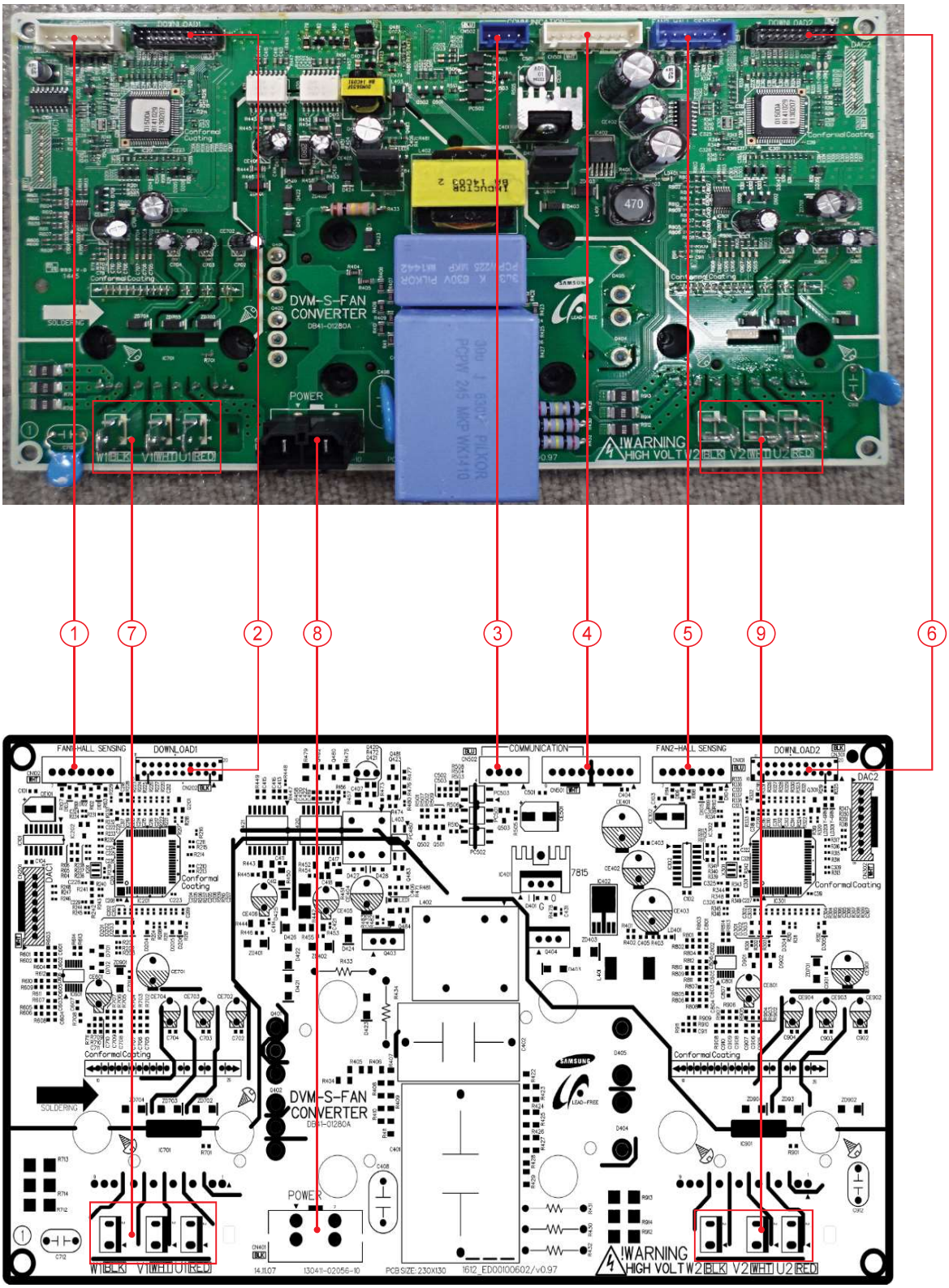


ASS'Y PCB FAN (cont.)

① CN102-FAN1 HALL SENSING #1 : HALL-U #2 : 5V #3 : HALL-V #4 : GND #5 : HALL-W #6 : MOTOR-TEMP #7 : GND	② CN202-DOWNLOAD1 #1 : RX-DEBUG #2 : TX-DEBUG #3 : BOOT #4 : TDO #5 : TCK #6 : TDI #7 : TMS #9 : GND #10 : 5V	③ CN502-COMMUNICATION #1 : 12V-MAIN #2 : INV SMPS RELAY-MAIN #3 : COMM-MAIN #4 : GND-MAIN	④ CN501-COMMUNICATION #1 : 18V-INV #2 : GND-INV #4 : GND-INV #6 : 12V-MAIN #7 : INV SMPS RELAY-INV #8 : COMM-INV #9 : GND-INV
⑤ U1-V1-W1 #1 : FAN1-U #2 : FAN1-V #3 : FAN1-W	⑥ CN401-POWER #1 : DC 540V #2 : GND		

ASS'Y PCB FAN (cont.)

- Model : 2-FAN chassis

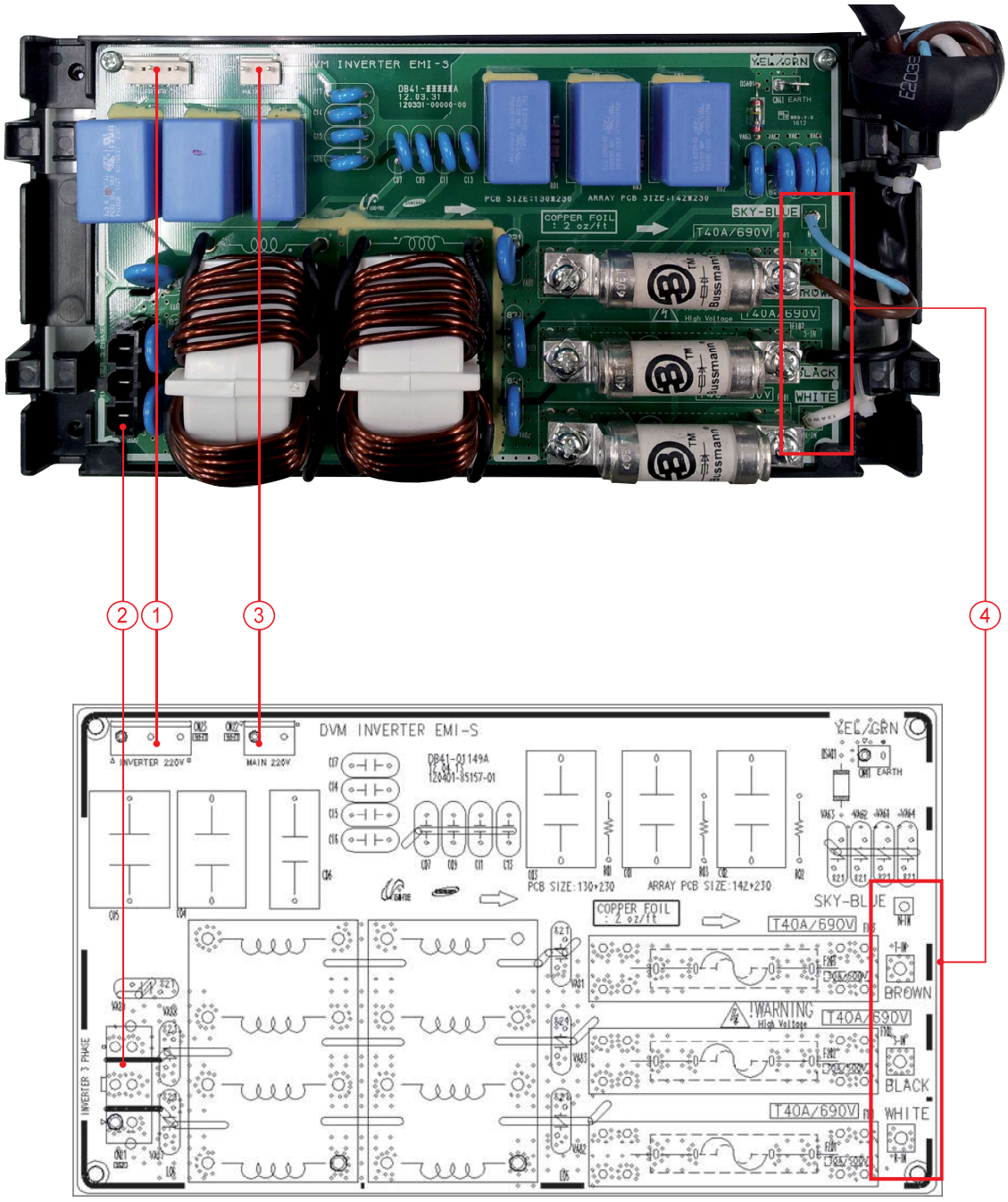


ASS'Y PCB FAN (cont.)

① CN102-FA1 HALL SENSING #1 : HALL-U #2 : 5V #3 : HALL-V #4 : GND #5 : HALL-W #6 : MOTOR-TEMP #7 : GND	② CN202-DOWNLOAD1 #1 : RX-DEBUG #2 : TX-DEBUG #3 : BOOT #4 : TDO #5 : TCK #6 : TDI #7 : TMS #9 : GND #10 : 5V	③ CN502-COMMUNICATION #1 : 12V-MAIN #2 : INV SMPS RELAY-MAIN #3 : COMM-MAIN #4 : GND-MAIN	④ CN501-COMMUNICATION #1 : 18V-INV #2 : GND-INV #4 : GND-INV #6 : 12V-MAIN #7 : INV SMPS RELAY-INV #8 : COMM-INV #9 : GND-INV
⑤ CN101-FAN2 HALL SENSING #1 : HALL-U #2 : 5V #3 : HALL-V #4 : GND #5 : HALL-W #6 : MOTOR-TEMP #7 : GND	⑥ CN301-DOWNLOAD2 #1 : RX-DEBUG #2 : TX-DEBUG #3 : BOOT #4 : TDO #5 : TCK #6 : TDI #7 : TMS #9 : GND #10 : 5V	⑦ U1-V1-W1 #1 : FAN1-U #2 : FAN1-V #3 : FAN1-W	⑧ CN401-POWER #1 : DC 540V #2 : GND
⑨ U2-V2-W2 #1 : FAN2-U #2 : FAN2-V #3 : FAN2-W			

5-5 ASS'Y PCB EMI

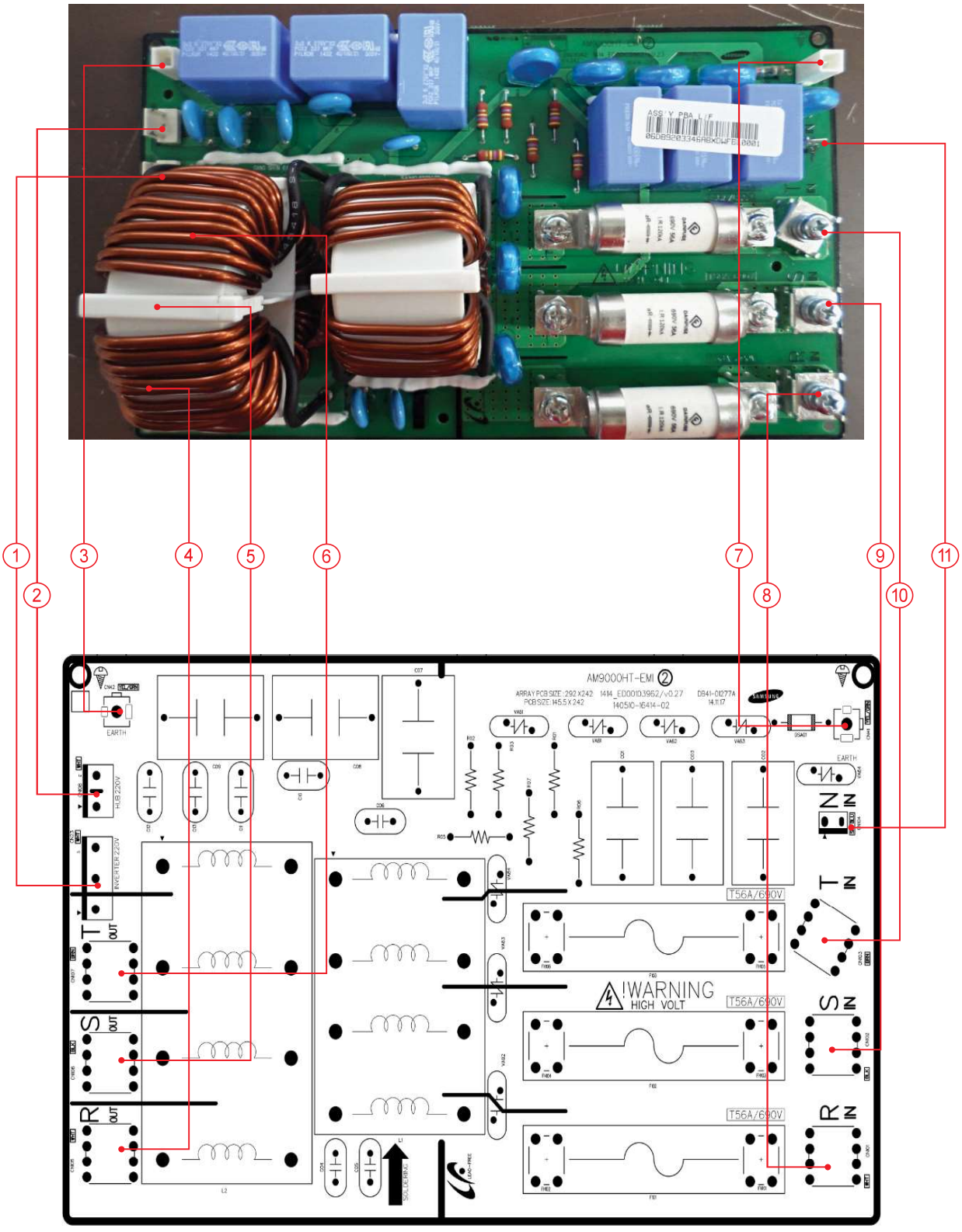
- Model : AM080/100/120/140/160/180/200/220FXV✳✳✳,
AM080/100/120/140/160/180/200/220JXV✳✳✳,
AM140/200/220KXVA✳✳,
AM140/180/200/220KXVG✳✳



① CN23- INVERTER 220V	② CN21-FAN A	③ CN22-MAIN 220	④ RST- RST INPUT
#1 : AC #2 : #3 : AC	#1 : R #2 : S #3 : T	#1 : AC #2 : AC	T-IN S-IN R-IN

ASS'Y PCB EMI (cont.)

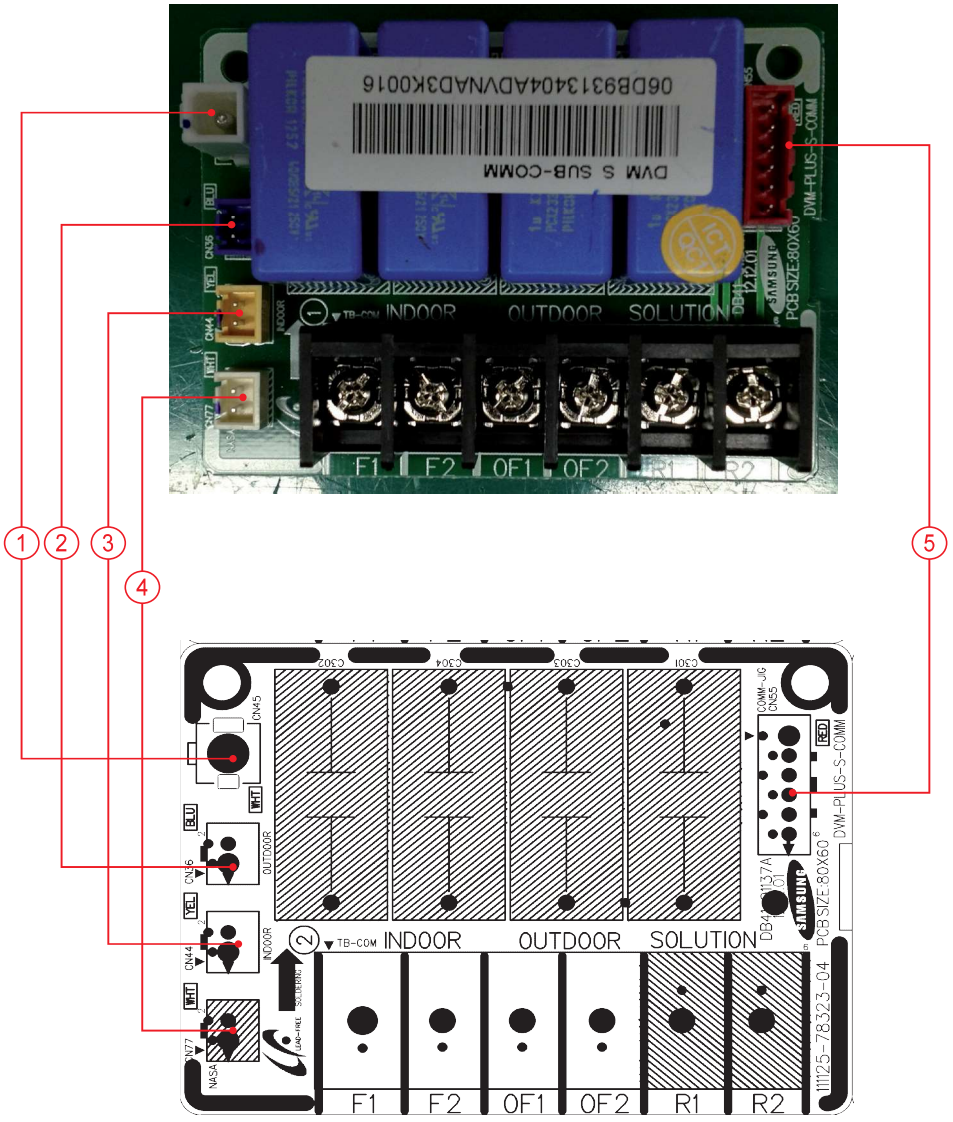
- Model : AM240/260HXV✳✳✳, AM240/260JXV✳✳✳,
AM160/180/240/260/280/300KXVA✳✳,
AM160/240/260/280KXVG✳✳,
AM080KXVS✳✳



ASS'Y PCB EMI (cont.)

① CN23-INVERTER 220V #1 : AC LIVE #2 : #3 : AC NEUTRAL #4 : #5 : AC NEUTRAL	② CNCN108-HUB 220V #1 : AC LIVE #2 : #3 : AC NEUTRAL	③ CN502-COMMUNICATION #1 : EARTH (PE)	④ CN501-COMMUNICATION #1 : R-OUT
⑤ CN106-S OUT #1 : S-OUT	⑥ CN107-T OUT #1 : T-OUT	⑦ CN41-EARTH #1 : EARTH (PE)	⑧ CN101-R IN #1 : R-IN
⑨ CN102-S IN #1 : S-IN	⑩ CN103-T IN #1 : T-IN	⑪ R-INPUT R TOP #1: R-IN	

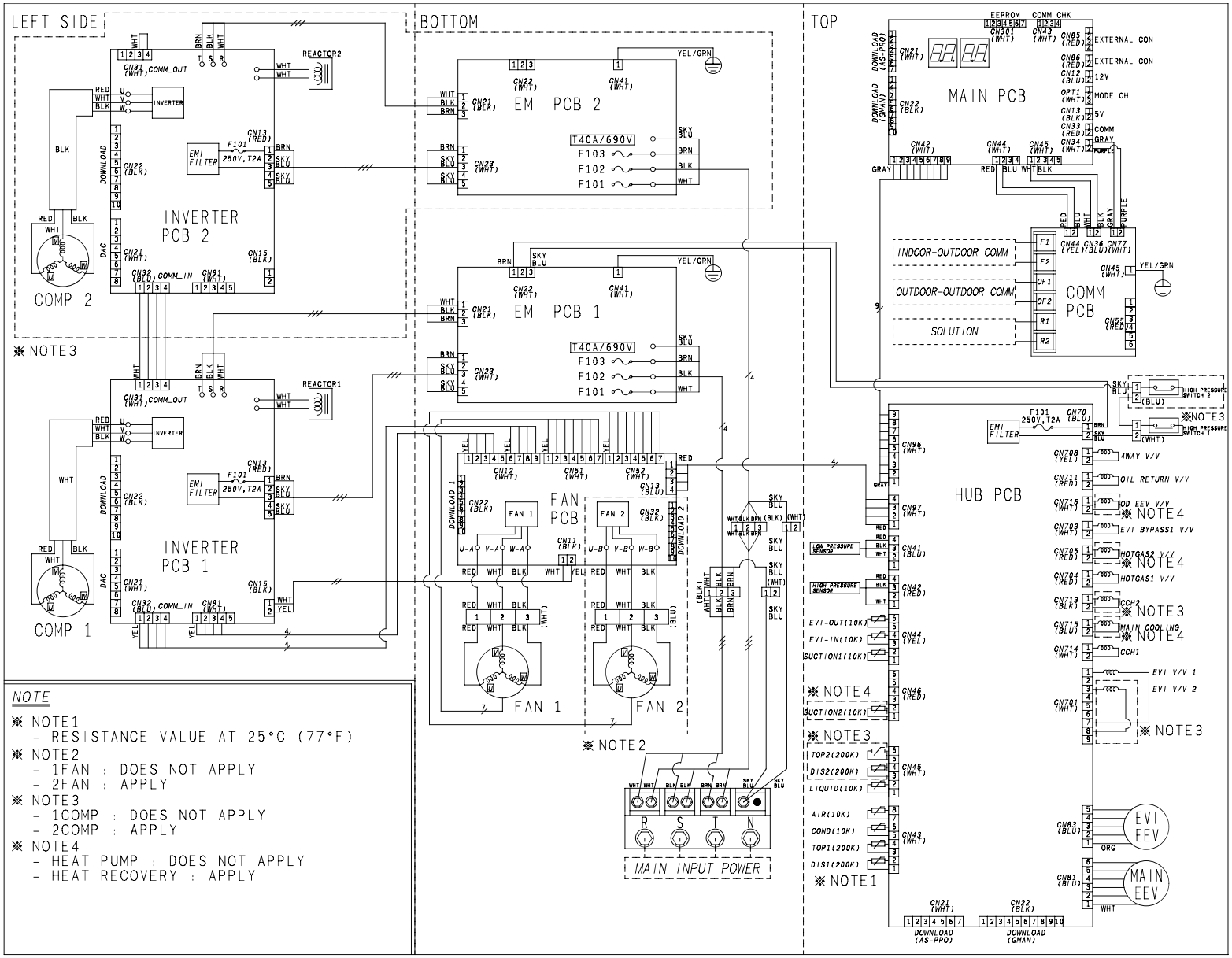
5-6 SUB-COMM



① CN44	② CN36	③ CN#44	④ CN45	⑤ CN55
#1 : F1 #2 : F2	#1 : OF1 #2 : OF2	#1 : R1 #2 : R2	GND	#1 :F1 #2 :F2 #3 :OF1 #4 :OF2 #5 :R1 #6 :R2

6. Wiring Diagram

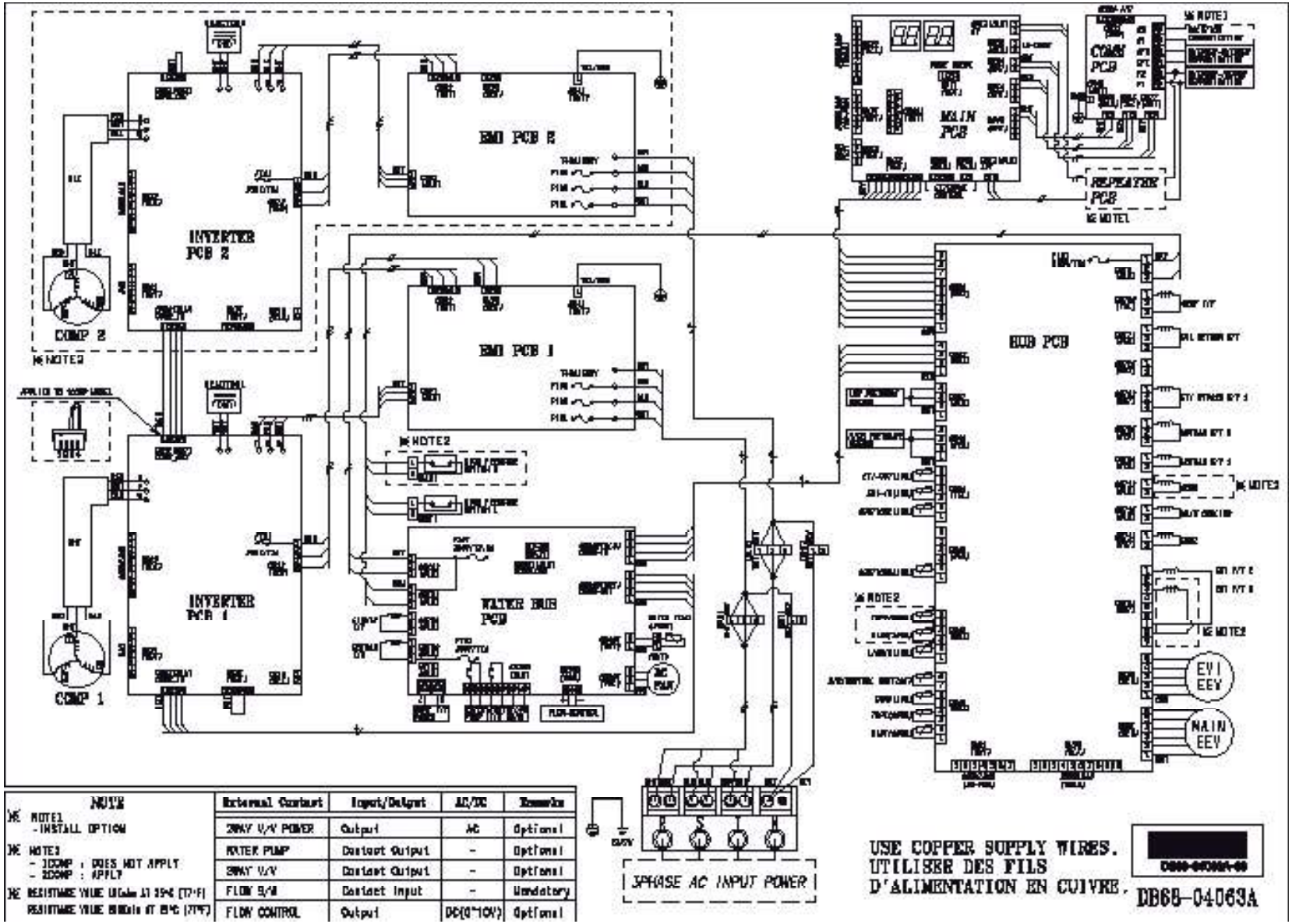
6-1 AM080/100/120/140/160/180/200/220FXV✳✳✳, AM080/100/120/140/160/180/200/220JXV✳✳✳, AM140/200/220KXVA✳✳, AM140/180/200/220KXVG✳✳



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Wiring Diagram

6-2 AM080/100/120/200FXWA✳✳

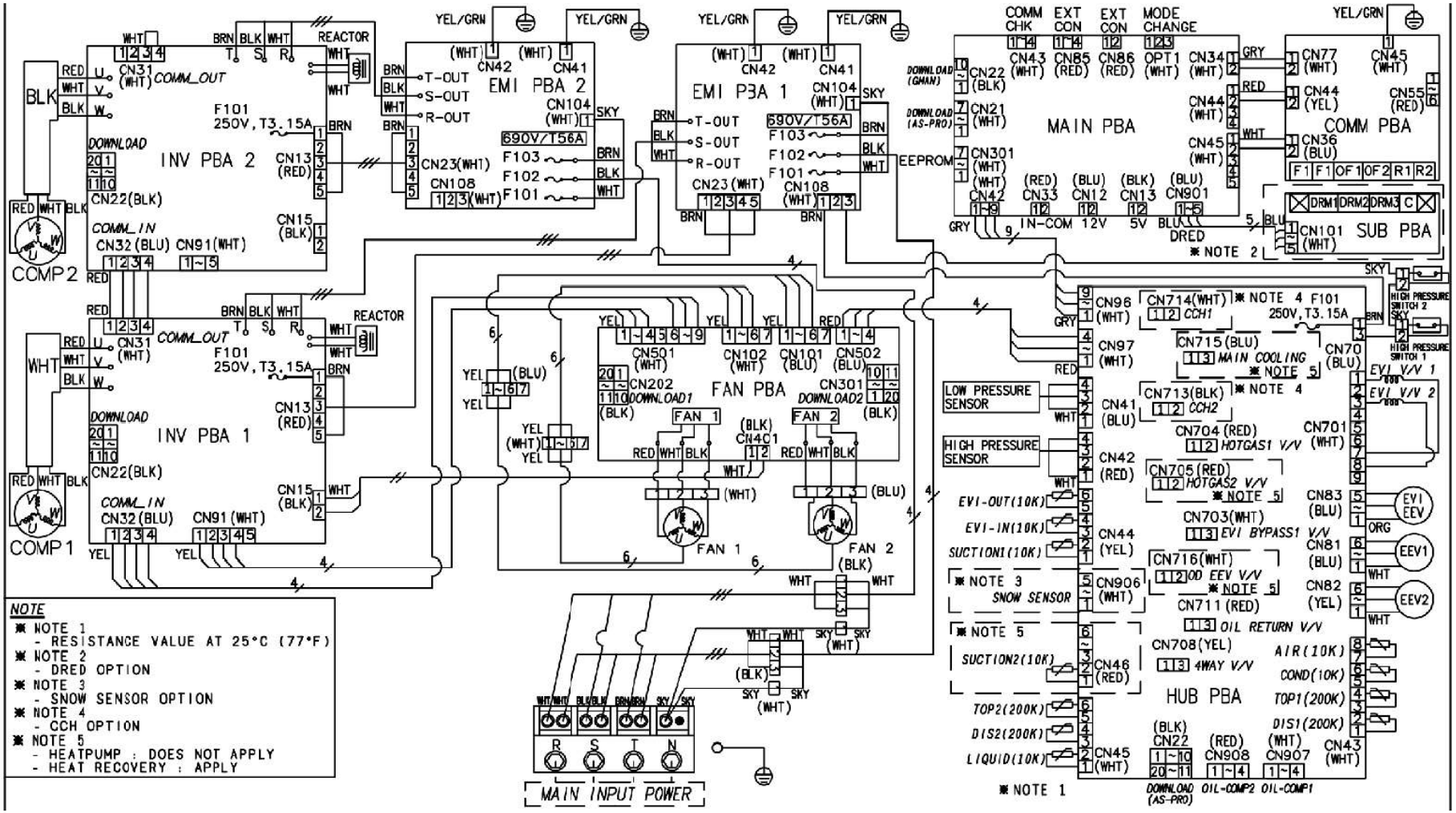


NOTE	External Contact	Input/Output	AC/DC	Remarks
※ NOTE1 -INSTALL OPTION	3WAY V/V POWER	Output	AC	Optional
※ NOTE2 - 1COMP : DOES NOT APPLY - 2COMP : APPLY	WATER PUMP	Contact Output	-	Optional
※ RESISTANCE VALUE (Cable AT 25℃ (77°F)	3WAY V/V	Contact Output	-	Optional
RESISTANCE VALUE (Cable AT 85℃ (77°F)	FLOW S/W	Contact Input	-	Mandatory
	FLOW CONTROL	Output	DC(0~10V)	Optional

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Wiring Diagram

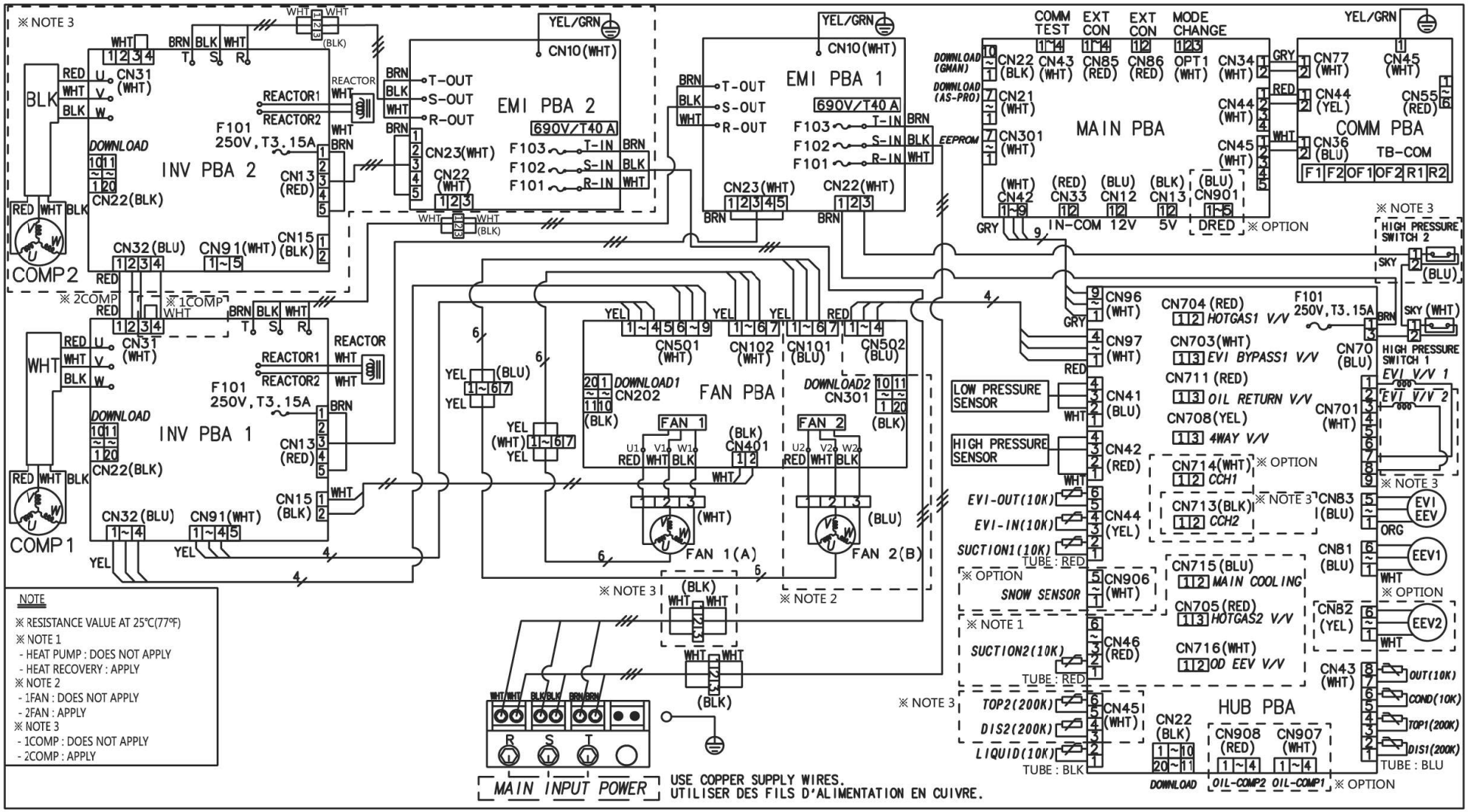
6-3 AM240/260HXV✻✻✻, AM240/260JXV✻✻✻, AM160/180/240/260/280/300KXVA✻✻, AM160/240/260/280KXVG✻✻, AM080KXVS✻✻



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Wiring Diagram

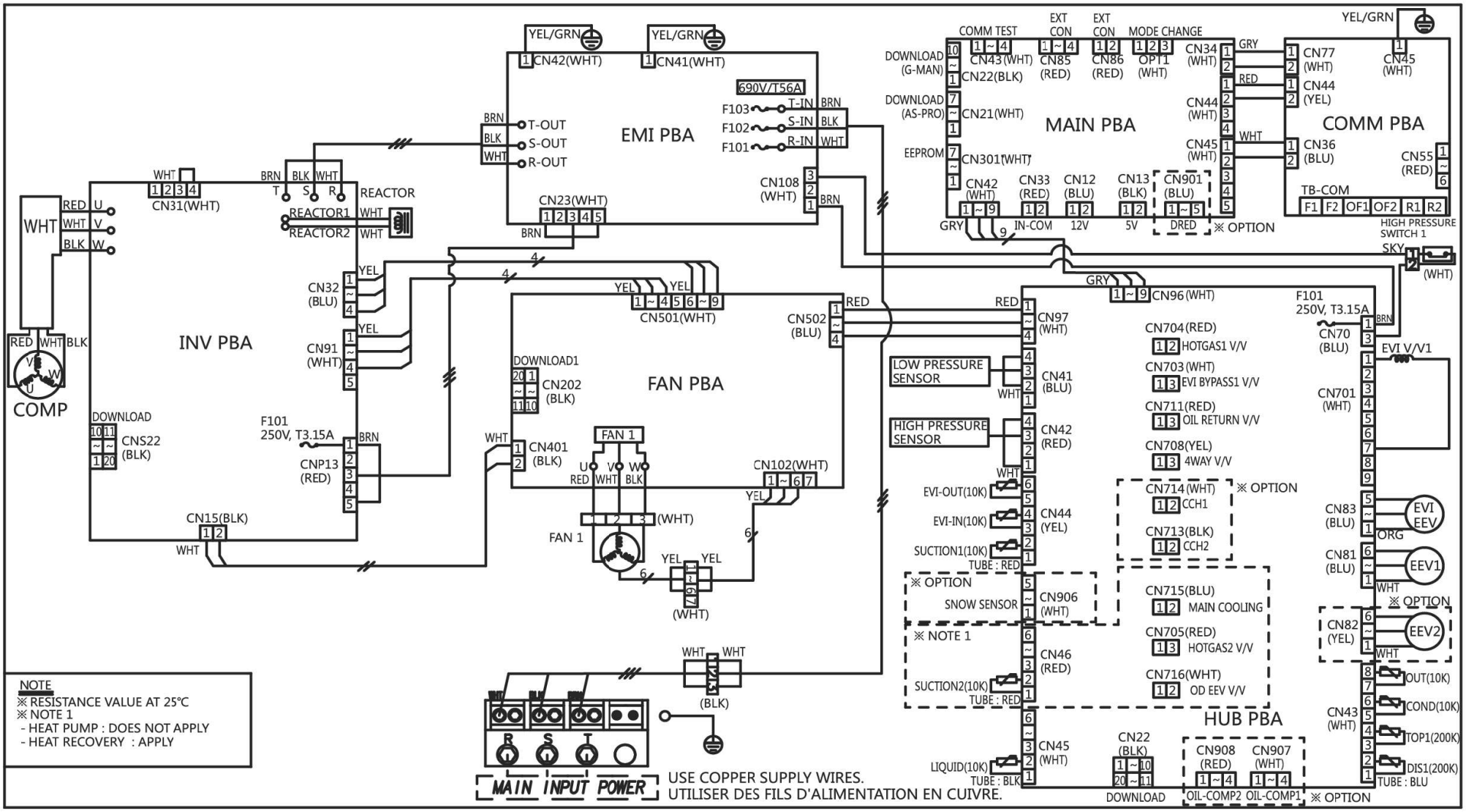
6-4 AM080JXVAFH



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Wiring Diagram

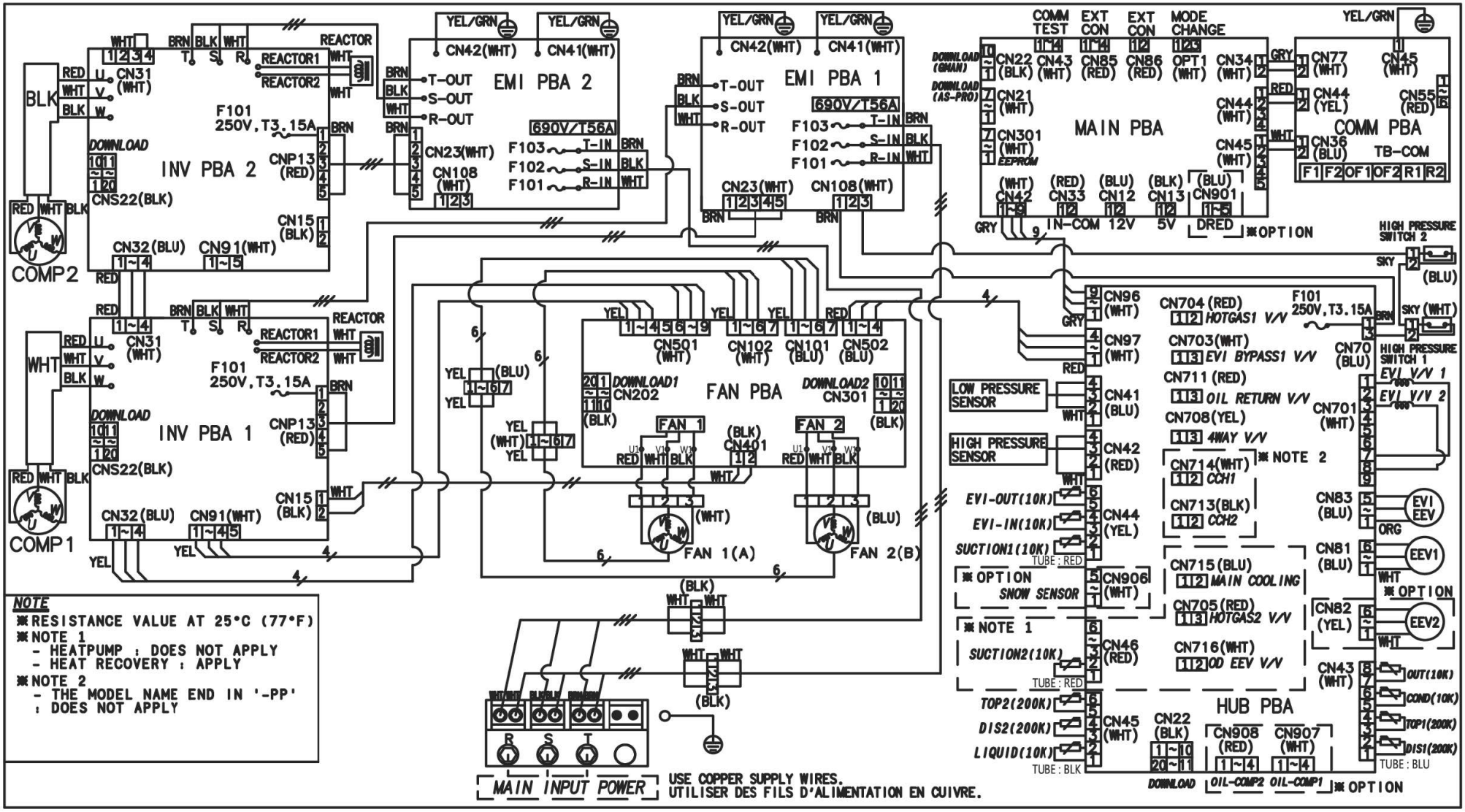
6-5 AM100/120JXVAFH



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Wiring Diagram

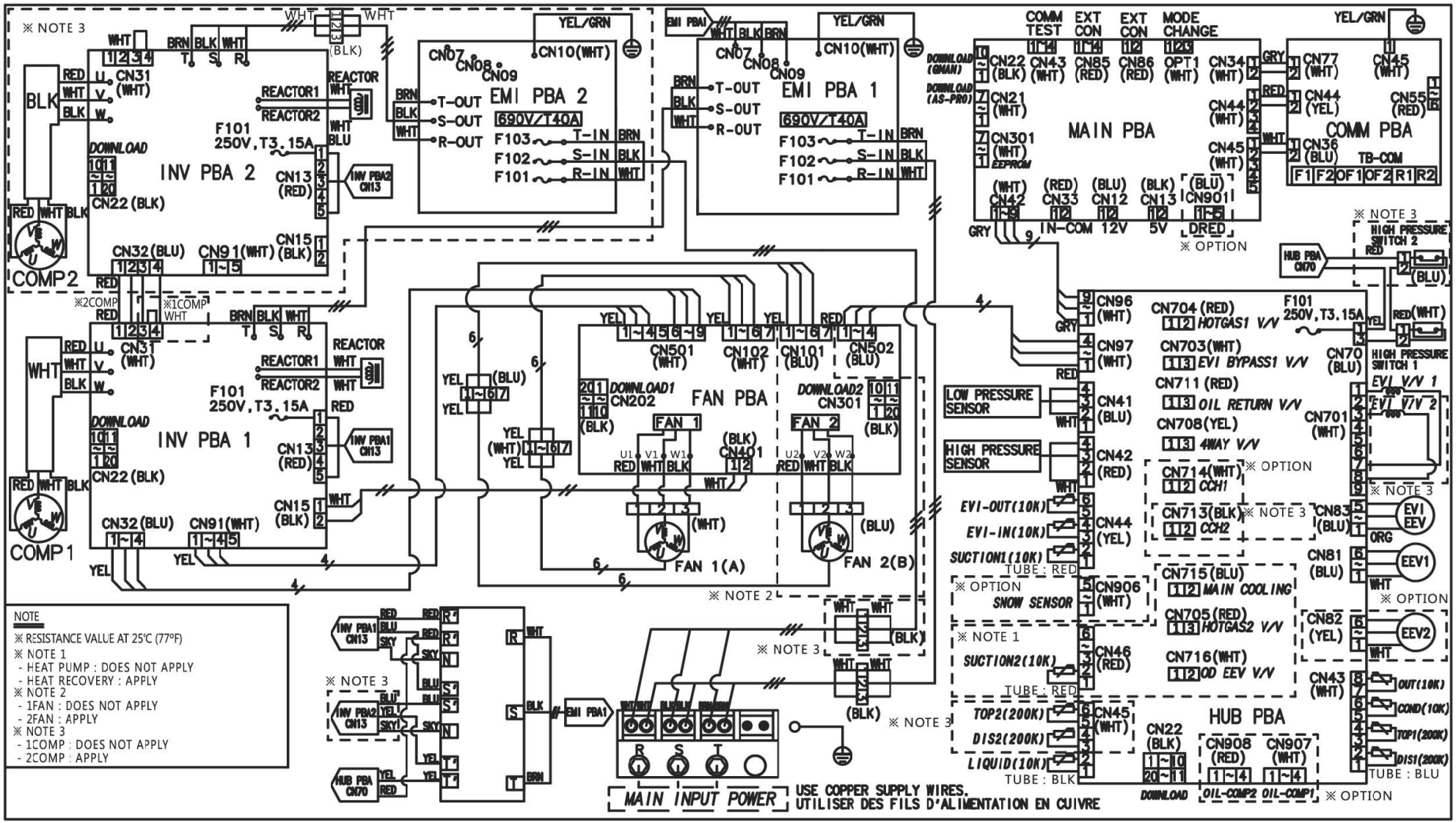
6-6 AM140/160/180/200JXVAFH



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Wiring Diagram

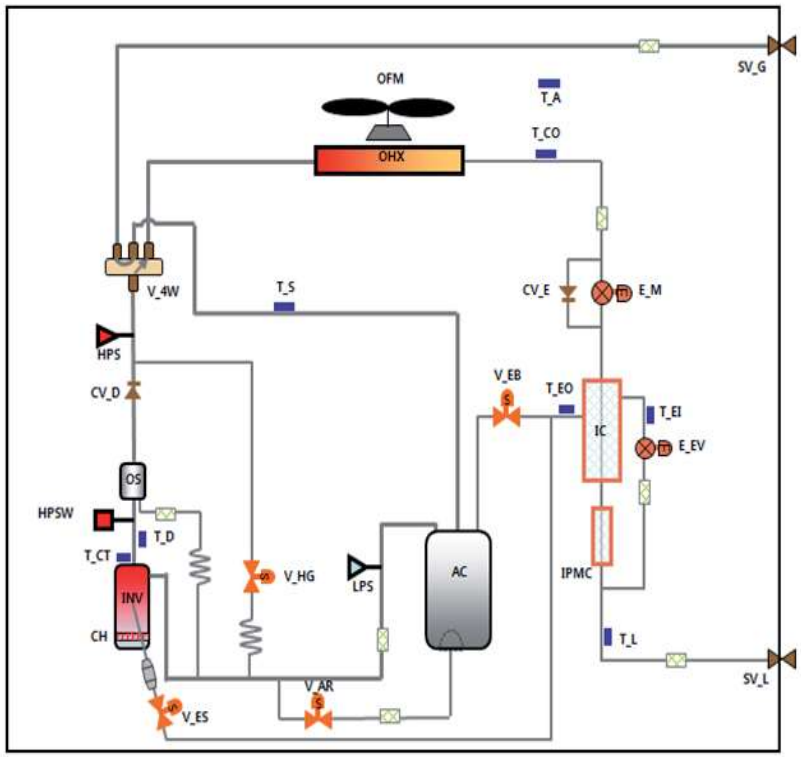
6-7 AM080/100/120/140/160/180/200/220JXVAJH



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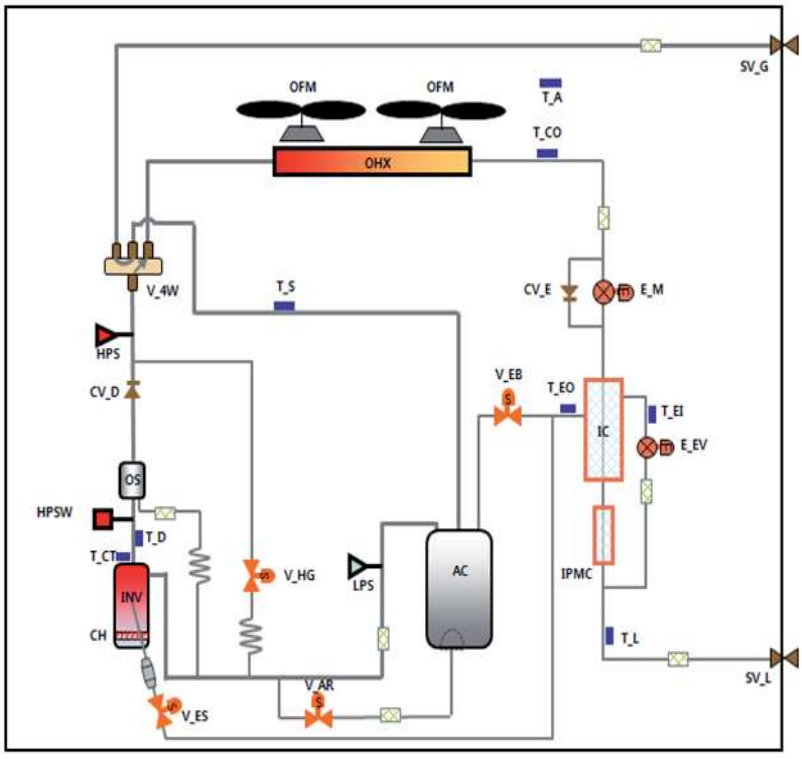
7. Cycle Diagram

7-1 AM080/100/120✳XV✳✳H



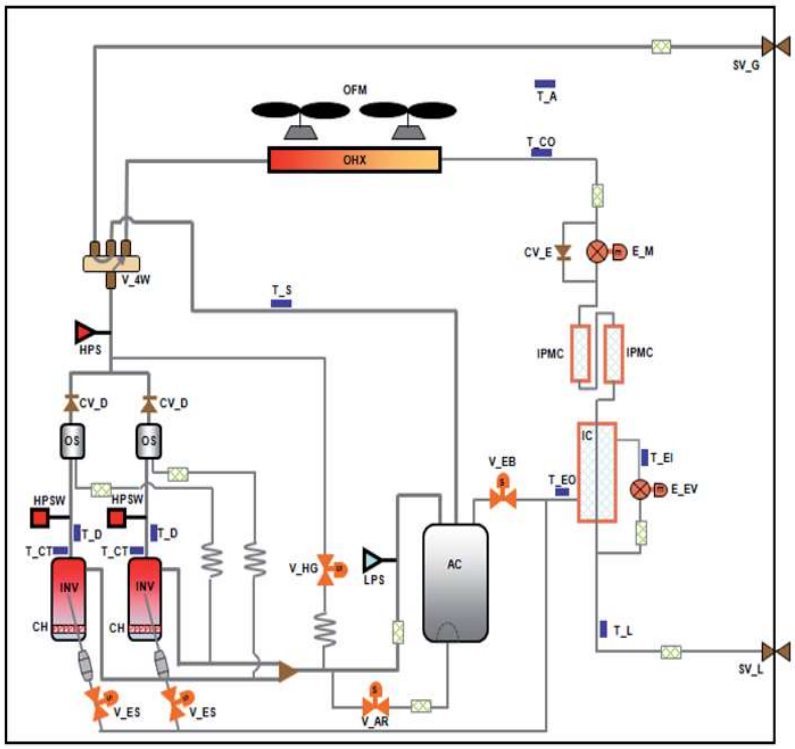
Abbreviation	Name
INV	Inveter Compressor
OFM	Outdoor Fan Motor
OHX	Outdoor Heat Exchanger
AC	Accumulator
OS	Oil Separator
IC	Intercooler
IPMC	IPM Cooler
CH	Crank Case Heater
HPS	High Pressure Sensor
LPS	Low Pressure Sensor
HPSW	High Pressure Switch
E_M	Main EEV
E_EV	EVI EEV
V_ES	EVI Sol. Valve
V_EB	EVI Bypass Valve
V_HG	Hot Gas Bypass Valve
V_4W	4Way Valve
V_AR	Accumulator Oil Return Valve
CV_E	EEV Bypass Check Valve
CV_D	Discharge Check Valve
T_D	Discharge Temperature Sensor
T_S	Suction Temperature Sensor
T_CO	Cond. Out Temperature Sensor
T_EI	EVI In Temperature Sensor
T_EO	EVI Out Temperature Sensor
T_L	Liquid Pipe Temperature Sensor
T_CT	Comp. Top Temperature Sensor
T_A	Ambient Temperature Sensor
SV_G	Gas Pipe Service Valve
SV_L	Liquid Pipe Service Valve

7-2 AM140✳XV✳GH



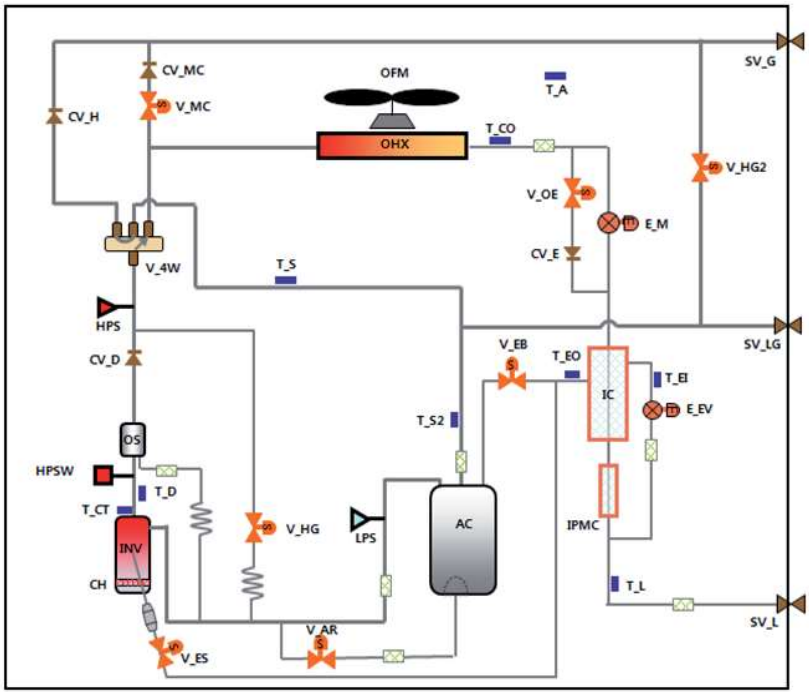
Abbreviation	Name
INV	Inveter Compressor
OFM	Outdoor Fan Motor
OHX	Outdoor Heat Exchanger
AC	Accumulator
OS	Oil Separator
IC	Intercooler
IPMC	IPM Cooler
CH	Crank Case Heater
HPS	High Pressure Sensor
LPS	Low Pressure Sensor
HPSW	High Pressure Switch
E_M	Main EEV
E_EV	EVI EEV
V_ES	EVI Sol. Valve
V_EB	EVI Bypass Valve
V_HG	Hot Gas Bypass Valve
V_4W	4Way Valve
V_AR	Accumulator Oil Return Valve
CV_E	EEV Bypass Check Valve
CV_D	Discharge Check Valve
T_D	Discharge Temperature Sensor
T_S	Suction Temperature Sensor
T_CO	Cond. Out Temperature Sensor
T_EI	EVI In Temperature Sensor
T_EO	EVI Out Temperature Sensor
T_L	Liquid Pipe Temperature Sensor
T_CT	Comp. Top Temperature Sensor
T_A	Ambient Temperature Sensor
SV_G	Gas Pipe Service Valve
SV_L	Liquid Pipe Service Valve

7-3 AM160/180/200/220✳XV✳✳H



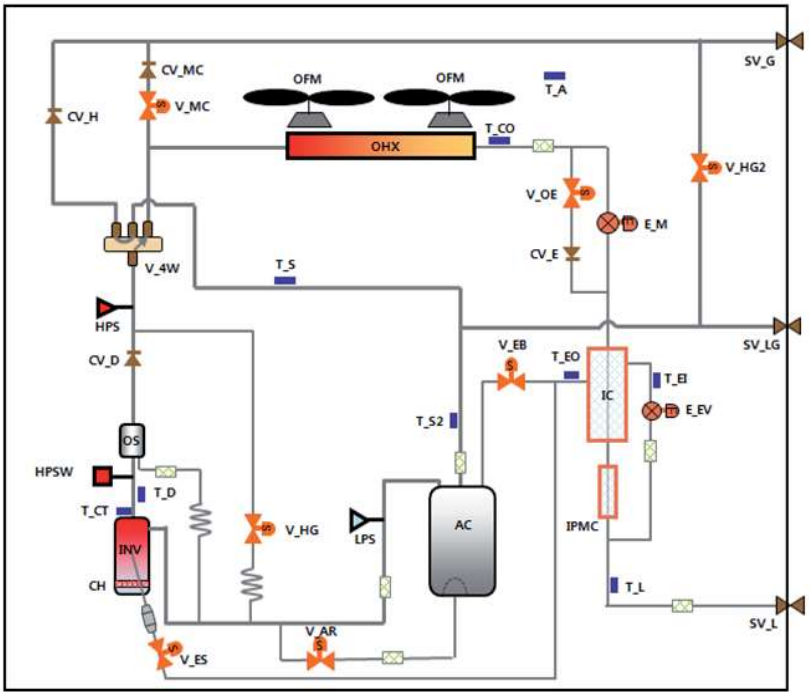
Abbreviation	Name
INV	Inveter Compressor
OFM	Outdoor Fan Motor
OHX	Outdoor Heat Exchanger
AC	Accumulator
OS	Oil Separator
IC	Intercooler
IPMC	IPM Cooler
CH	Crank Case Heater
HPS	High Pressure Sensor
LPS	Low Pressure Sensor
HPSW	High Pressure Switch
E_M	Main EEV
E_EV	EVI EEV
V_ES	EVI Sol. Valve
V_EB	EVI Bypass Valve
V_HG	Hot Gas Bypass Valve
V_4W	4Way Valve
V_AR	Accumulator Oil Return Valve
CV_E	EEV Bypass Check Valve
CV_D	Discharge Check Valve
T_D	Discharge Temperature Sensor
T_S	Suction Temperature Sensor
T_CO	Cond. Out Temperature Sensor
T_EI	EVI In Temperature Sensor
T_EO	EVI Out Temperature Sensor
T_L	Liquid Pipe Temperature Sensor
T_CT	Comp. Top Temperature Sensor
T_A	Ambient Temperature Sensor
SV_G	Gas Pipe Service Valve
SV_L	Liquid Pipe Service Valve

7-4 AM080/100/120✳XV✳GR



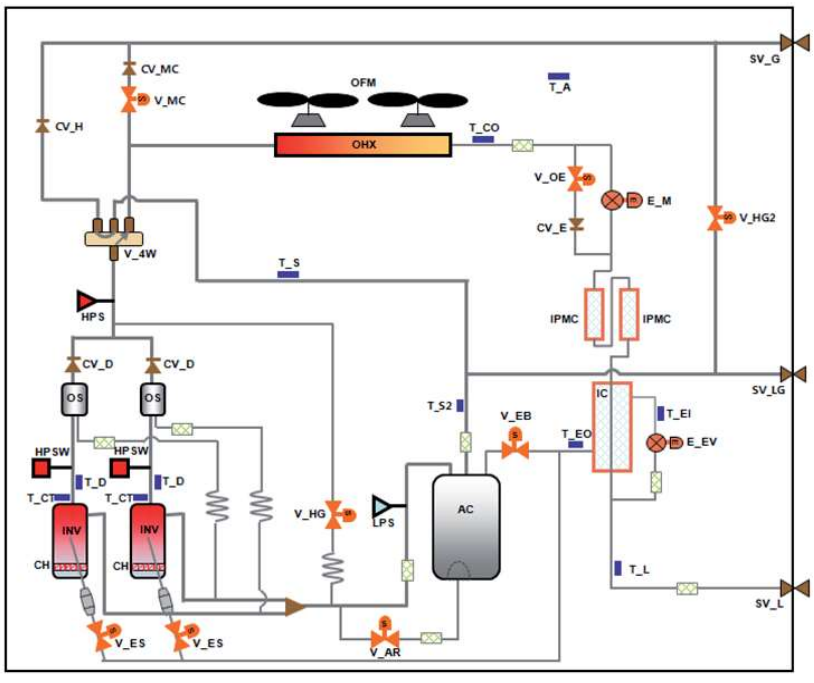
Abbreviation	Name
INV	Inveter Compressor
OFM	Outdoor Fan Motor
OHX	Outdoor Heat Exchanger
AC	Accumulator
OS	Oil Separator
IC	Intercooler
IPMC	IPM Cooler
CH	Crank Case Heater
HPS	High Pressure Sensor
LPS	Low Pressure Sensor
HPSW	High Pressure Switch
E_M	Main EEV
E_EV	EVI EEV
V_ES	EVI Sol. Valve
V_EB	EVI Bypass Valve
V_HG	Hot Gas Bypass Valve
V_HG2	Hot Gas Bypass Valve 2
V_4W	4Way Valve
V_AR	Accumulator Oil Return Valve
CV_E	EEV Bypass Check Valve
CV_D	Discharge Check Valve
CV_MC	MainCooling Check Valve
T_D	Discharge Temperature Sensor
T_S	Suction Temperature Sensor
T_S2	Suction Temperature Sensor 2
T_CO	Cond. Out Temperature Sensor
T_EI	EVI In Temperature Sensor
T_EO	EVI Out Temperature Sensor
T_L	Liquid Pipe Temperature Sensor
T_CT	Comp. Top Temperature Sensor
T_A	Ambient Temperature Sensor
SV_G	Gas Pipe Service Valve
SV_LG	Low P. Gas Pipe Service Valve
SV_L	Liquid Pipe Service Valve

7-5 AM140✳XV✳GR



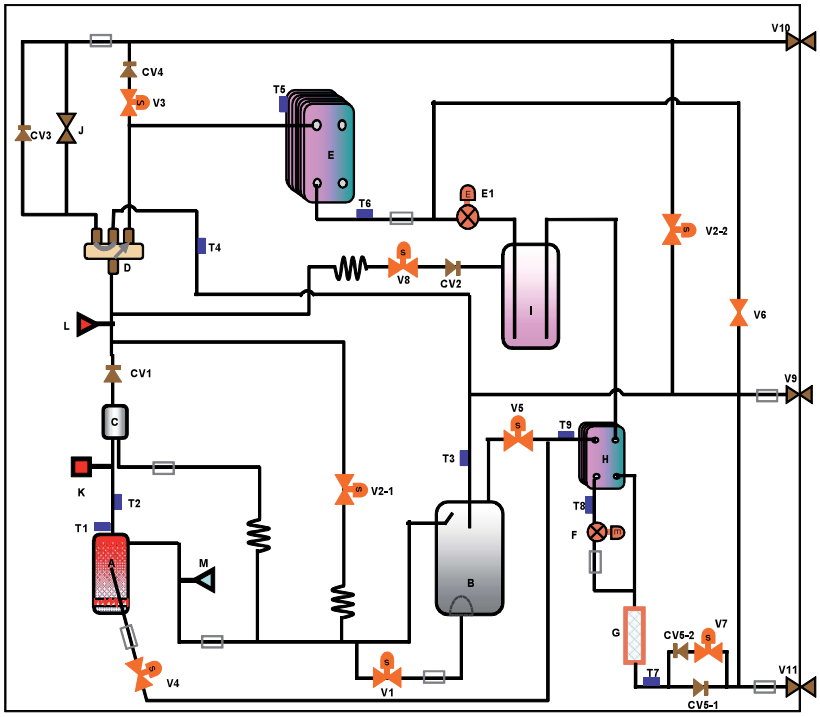
Abbreviation	Name
INV	Inveter Compressor
OFM	Outdoor Fan Motor
OHX	Outdoor Heat Exchanger
AC	Accumulator
OS	Oil Separator
IC	Intercooler
IPMC	IPM Cooler
CH	Crank Case Heater
HPS	High Pressure Sensor
LPS	Low Pressure Sensor
HPSW	High Pressure Switch
E_M	Main EEV
E_EV	EVI EEV
V_ES	EVI Sol. Valve
V_EB	EVI Bypass Valve
V_HG	Hot Gas Bypass Valve
V_HG2	Hot Gas Bypass Valve 2
V_4W	4Way Valve
V_AR	Accumulator Oil Return Valve
CV_E	EEV Bypass Check Valve
CV_D	Discharge Check Valve
CV_MC	MainCooling Check Valve
T_D	Discharge Temperature Sensor
T_S	Suction Temperature Sensor
T_S2	Suction Temperature Sensor 2
T_CO	Cond. Out Temperature Sensor
T_EI	EVI In Temperature Sensor
T_EO	EVI Out Temperature Sensor
T_L	Liquid Pipe Temperature Sensor
T_CT	Comp. Top Temperature Sensor
T_A	Ambient Temperature Sensor
SV_G	Gas Pipe Service Valve
SV_LG	Low P. Gas Pipe Service Valve
SV_L	Liquid Pipe Service Valve

7-6 AM160/180/200/220✳XV✳GR



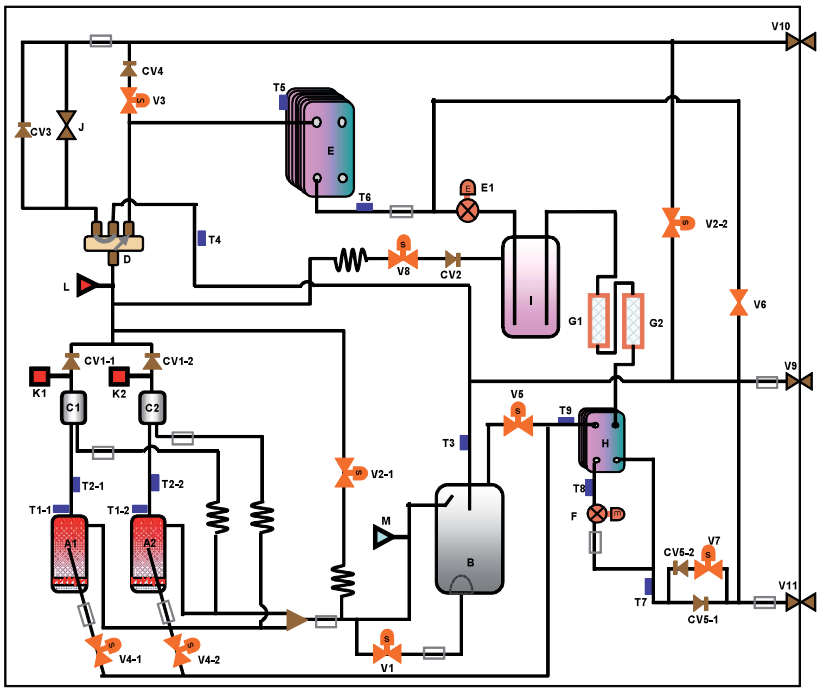
Abbreviation	Name
INV	Inveter Compressor
OFM	Outdoor Fan Motor
OHX	Outdoor Heat Exchanger
AC	Accumulator
OS	Oil Separator
IC	Intercooler
IPMC	IPM Cooler
CH	Crank Case Heater
HPS	High Pressure Sensor
LPS	Low Pressure Sensor
HPSW	High Pressure Switch
E_M	Main EEV
E_EV	EVI EEV
V_ES	EVI Sol. Valve
V_EB	EVI Bypass Valve
V_HG	Hot Gas Bypass Valve
V_HG2	Hot Gas Bypass Valve 2
V_4W	4Way Valve
V_AR	Accumulator Oil Return Valve
CV_E	EEV Bypass Check Valve
CV_D	Discharge Check Valve
CV_MC	MainCooling Check Valve
T_D	Discharge Temperature Sensor
T_S	Suction Temperature Sensor
T_S2	Suction Temperature Sensor 2
T_CO	Cond. Out Temperature Sensor
T_EI	EVI In Temperature Sensor
T_EO	EVI Out Temperature Sensor
T_L	Liquid Pipe Temperature Sensor
T_CT	Comp. Top Temperature Sensor
T_A	Ambient Temperature Sensor
SV_G	Gas Pipe Service Valve
SV_LG	Low P. Gas Pipe Service Valve
SV_L	Liquid Pipe Service Valve

7-7 AM080/100/120FXWA✳✳



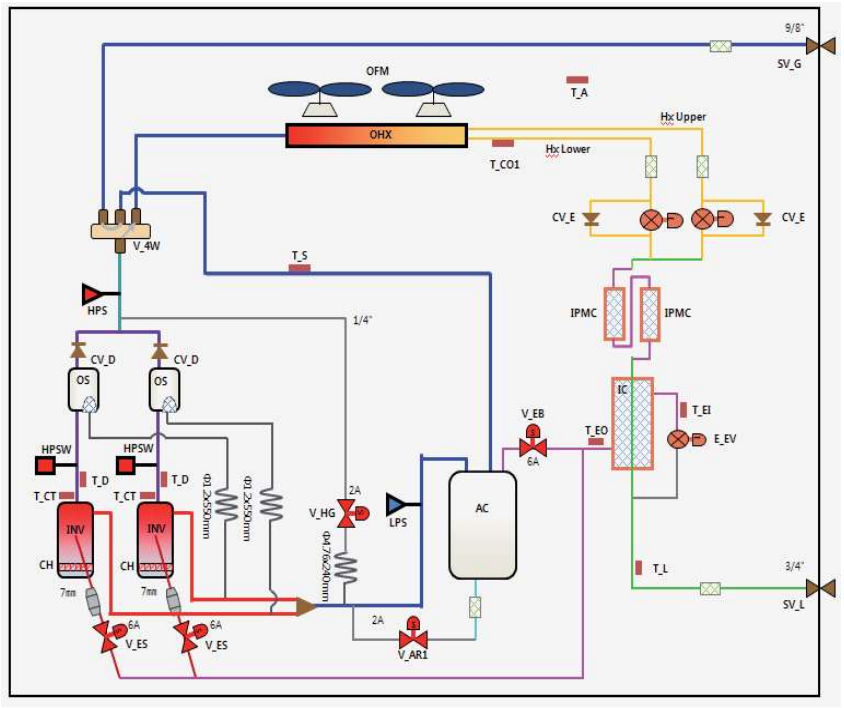
Abbreviation	Name
A	INV COMP
B	ACCUM
C	O/S
D	4WAY V/V
E	PLATE HEAT EXCHANGER
E1	MAIN EEV
F	EVI EEV
G	IPM COOLER
H	SUB COOLER
I	RECEIVER
J	HEAT PUMP V/V
K	HIGH PRE. S/W
L	HIGH PRE. SENSOR
M	LOW PRE. SENSOR
V1	ACCUM RETRUN V/V
V2-1, V2-2	HOT GAS BYPASS VV
V3	MAIN COOLING V/V
V4	EVI V/V
V5	EVI B/P V/V
V6	DPR V/V
V7	LIQUID TUBE V/V
V8	HOT GAS CHARGING V/V
V9	LOW PRE. GAS SERVICE V/V
V10	HIGH PRE. GAS SERVICE V/V
V11	LIQUID SERVICE V/V
CV1	DISC. CHECK V/V
CV2	HRV CHECK V/V
CV3	HR CHECK V/V
CV4	MAIN COOL CHECK V/V
CV5-1, CV5-2	LIQUID TUBE CHECK V/V
T1	COMP TOP SENSOR
T2	DISC. SENSOR
T3	SUC. SENSOR 2
T4	SUC. SENSOR 1
T5	WATER SENSOR
T6	COND OUT SENSOR
T7	LIQUID TUBE SENSOR
T8	SC IN SENSOR
T9	SC OUT SENSOR

7-8 AM200FXWA✳✳



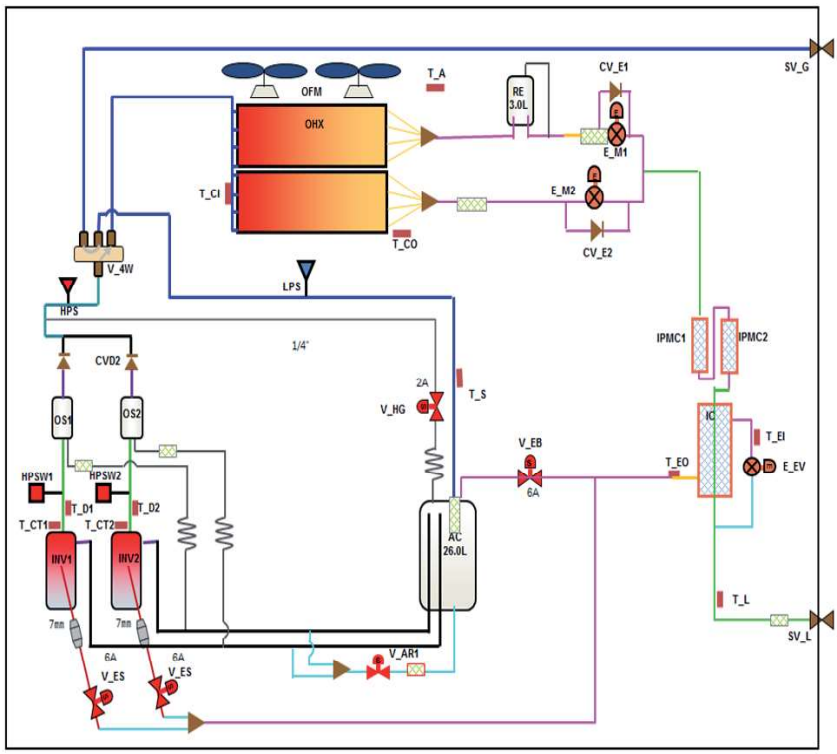
Abbreviation	Name
A1, A2	INV COMP
B	ACCUM
C1, C2	O/S
D	4WAY V/V
E	PLATE HEAT EXCHANGER
E1	MAIN EEV
F	EVI EEV
G1, G2	IPM COOLER
H	SUB COOLER
I	RECEIVER
J	HEAT PUMP V/V
K1, K2	HIGH PRE. S/W
L	HIGH PRE. SENSOR
M	LOW PRE. SENSOR
V1	ACCUM RETRUN V/V
V2-1, V2-2	HOT GAS BYPASS VV
V3	MAIN COOLING V/V
V4-1, V4-2	EVI V/V
V5	EVI B/P V/V
V6	DPR V/V
V7	LIQUID TUBE V/V
V8	HOT GAS CHARGING V/V
V9	LOW PRE. GAS SERVICE V/V
V10	HIGH PRE. GAS SERVICE V/V
V11	LIQUID SERVICE V/V
CV1-1, CV-2	DISC. CHECK V/V
CV2	HRV CHECK V/V
CV3	HR CHECK V/V
CV4	MAIN COOL CHECK V/V
CV5-1, CV5-2	LIQUID TUBE CHECK V/V
T1-1, T1-2	COMP TOP SENSOR
T2-1, T2-2	DISC. SENSOR
T3	SUC. SENSOR 2
T4	SUC. SENSOR 1
T5	WATER SENSOR
T6	COND OUT SENSOR
T7	LIQUID TUBE SENSOR
T8	SC IN SENSOR
T9	SC OUT SENSOR

7-9 AM240/260HXVAGH/EU



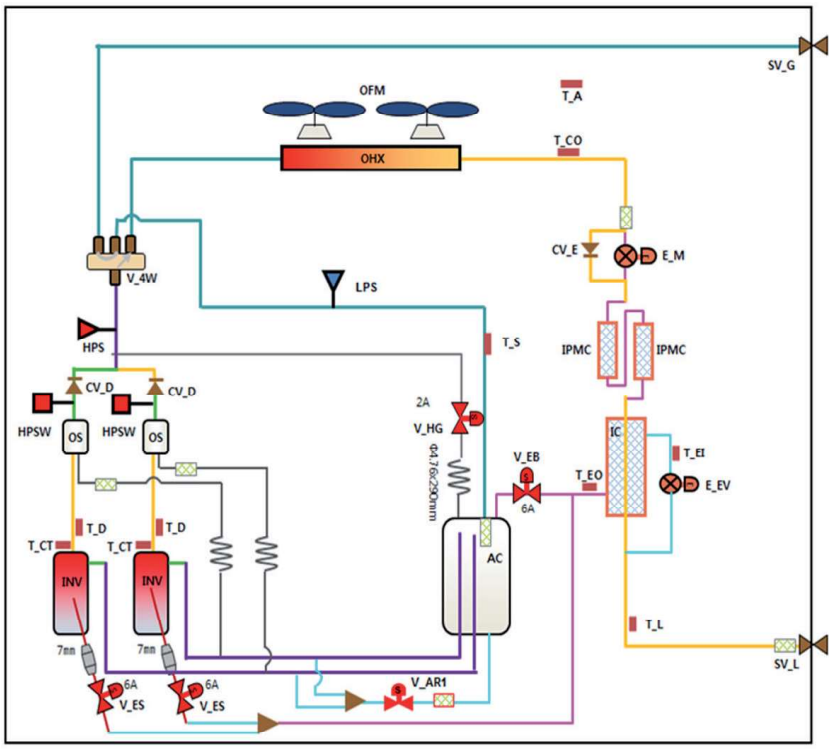
Abbreviation	Name
INV	Inverter compressor
OFM	Outdoor Fan Motor
OHX	Outdoor Heat Exchanger
AC	Accumulator
OS	Oil Separator
IC	Intercooler
IPMC	IPM Cooler
CH	Crank Case Heater
HPS	High Pressure Sensor
LPS	Low Pressure Sensor
HPSW	High Pressure Switch
E_M	Main EEV
E_EV	EVI EEV
V_ES	EVI Sol. Valve
V_EB	EVI Bypass Valve
V_HG	Hot Gas Bypass Valve
V_4W	4Way Valve
V_AR	Accumulator Oil Return Valve
CV_E	EEV Bypass Check Valve
CV_D	Discharge Check Valve
T_D	Discharge Temperature Sensor
T_S	Suction Temperature Sensor
T_CO	Cond. Out Temperature Sensor
T_EI	EVI In Temp. Sensor
T_EO	EVI Out Temp. Sensor
T_L	Liquid Pipe Temp. Sensor
T_CT	Comp. Top Temp. Sensor
T_A	Ambient Temperature Sensor
SV_G	Gas Pipe Service Valve
SV_L	Liquid Pipe Service Valve

7-10 AM240/260/280KXVG✳✳, AM280/300KXVA✳✳, AM080KXVS✳✳



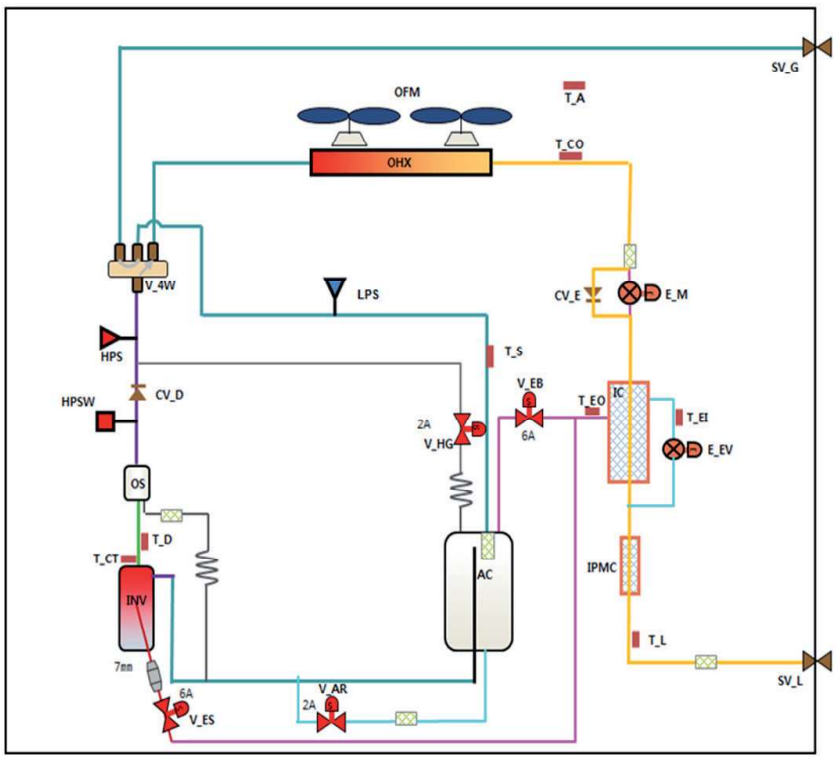
Abbreviation	Name
INV1	Inverter Compressor
INV2	Inverter Compressor
OFM	Outdoor Fan Motor
OHX	Outdoor Heat Exchanger
AC	Accumulator
RE	Receiver
OS1	Oil Separator
OS2	Oil Separator
CVD1	Discharge Check Valve
CVD2	Discharge Check Valve
IC	Intercooler
IPMC1	IPM Cooler
IPMC2	IPM Cooler
HPS	High Pressure Sensor
LPS	Low Pressure Sensor
HPSW1	High Pressure Switch
HPSW2	High Pressure Switch
E_M1	Main EEV
E_M2	Main EEV
E_EV	EVI EEV
V_ES	EVI Sol. Valve
V_EB	EVI Bypass Valve
V_HG	Hot Gas Bypass Valve
V_4W	4Way Valve
V_AR1	Accumulator Oil Return Valve
CV_E1	EEV Bypass Check Valve 1
CV_E2	EEV Bypass Check Valve 2
T_D1	Discharge Temp. Sensor
T_D2	Discharge Temp. Sensor
T_S	Suction Temp. Sensor
T_CO	Cond Out Temp. Sensor
T_CL	Cond In Temp. Sensor
T_EI	EVI In Temp. Sensor
T_EO	EVI Out Temp. Sensor
T_L	Liquid Tube Temp. Sensor
T_CT1	Comp. Top Temp. Sensor
T_CT2	Comp. Top Temp. Sensor
T_A	Ambient Temp. Sensor
SV_G	Gas Pipe Service Valve
SV_L	Liquid Pipe Service Valve

7-11 AM180/200/220KXVG✳✳, AM200/220KXVA✳✳



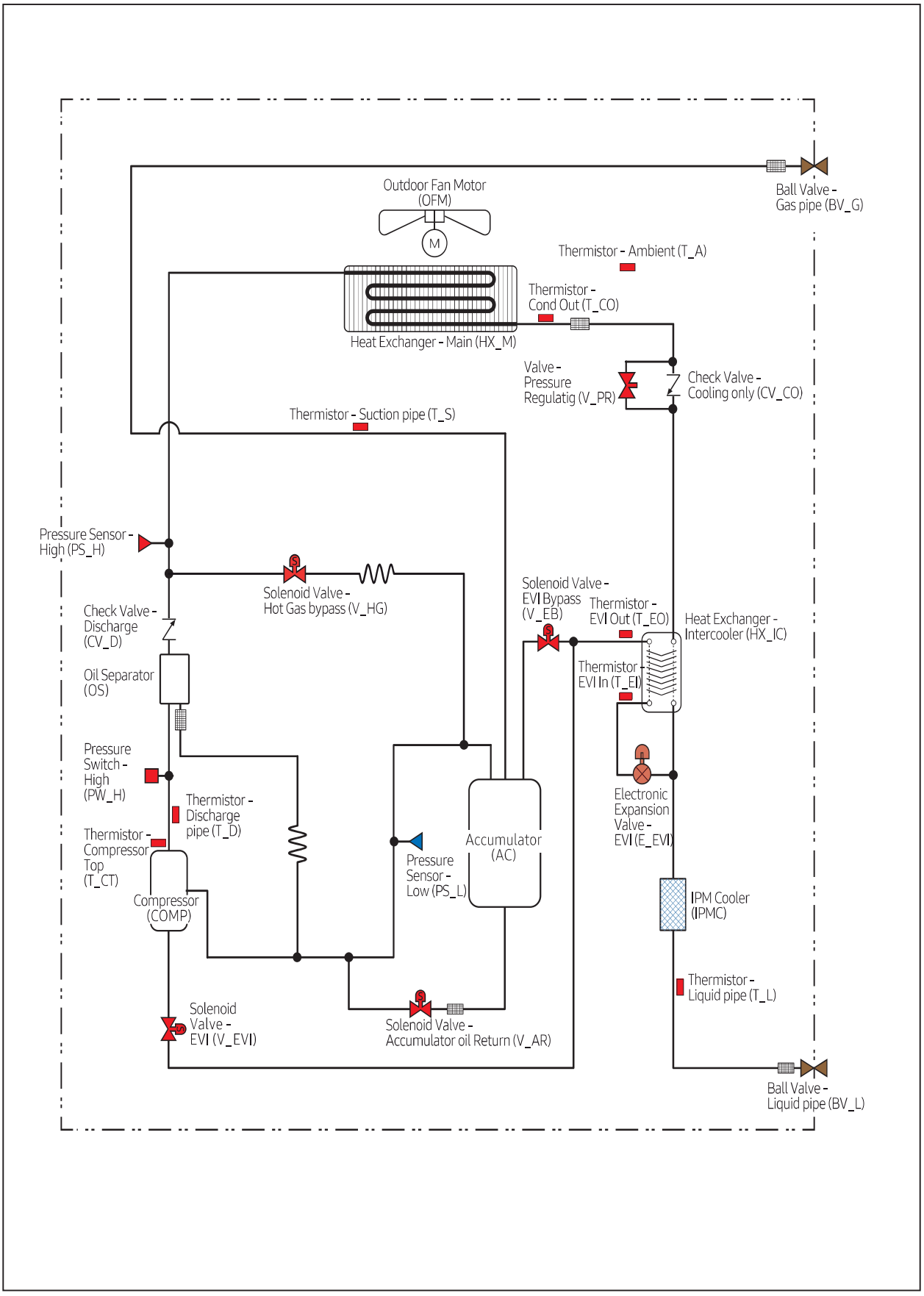
Abbreviation	Name
INV1	Inverter Compressor
INV2	Inverter Compressor
OFM	Outdoor Fan Motor
OHX	Outdoor Heat Exchanger
AC	Accumulator
RE	Receiver
OS1	Oil Separator
OS2	Oil Separator
CVD1	Discharge Check Valve
CVD2	Discharge Check Valve
IC	Intercooler
IPMC1	IPM Cooler
IPMC2	IPM Cooler
HPS	High Pressure Sensor
LPS	Low Pressure Sensor
HPSW1	High Pressure Switch
HPSW2	High Pressure Switch
E_M1	Main EEV
E_M2	Main EEV
E_EV	EVI EEV
V_ES	EVI Sol. Valve
V_EB	EVI Bypass Valve
V_HG	Hot Gas Bypass Valve
V_4W	4Way Valve
V_AR1	Accumulator Oil Return Valve
CV_E1	EEV Bypass Check Valve 1
CV_E2	EEV Bypass Check Valve 2
T_D1	Discharge Temp. Sensor
T_D2	Discharge Temp. Sensor
T_S	Suction Temp. Sensor
T_CO	Cond Out Temp. Sensor
T_CI	Cond In Temp. Sensor
T_EI	EVI In Temp. Sensor
T_EO	EVI Out Temp. Sensor
T_L	Liquid Tube Temp. Sensor
T_CT1	Comp. Top Temp. Sensor
T_CT2	Comp. Top Temp. Sensor
T_A	Ambient Temp. Sensor
SV_G	Gas Pipe Service Valve
SV_L	Liquid Pipe Service Valve

7-12 AM140/160KXVG✳✳, AM140/160/180KXVA✳✳

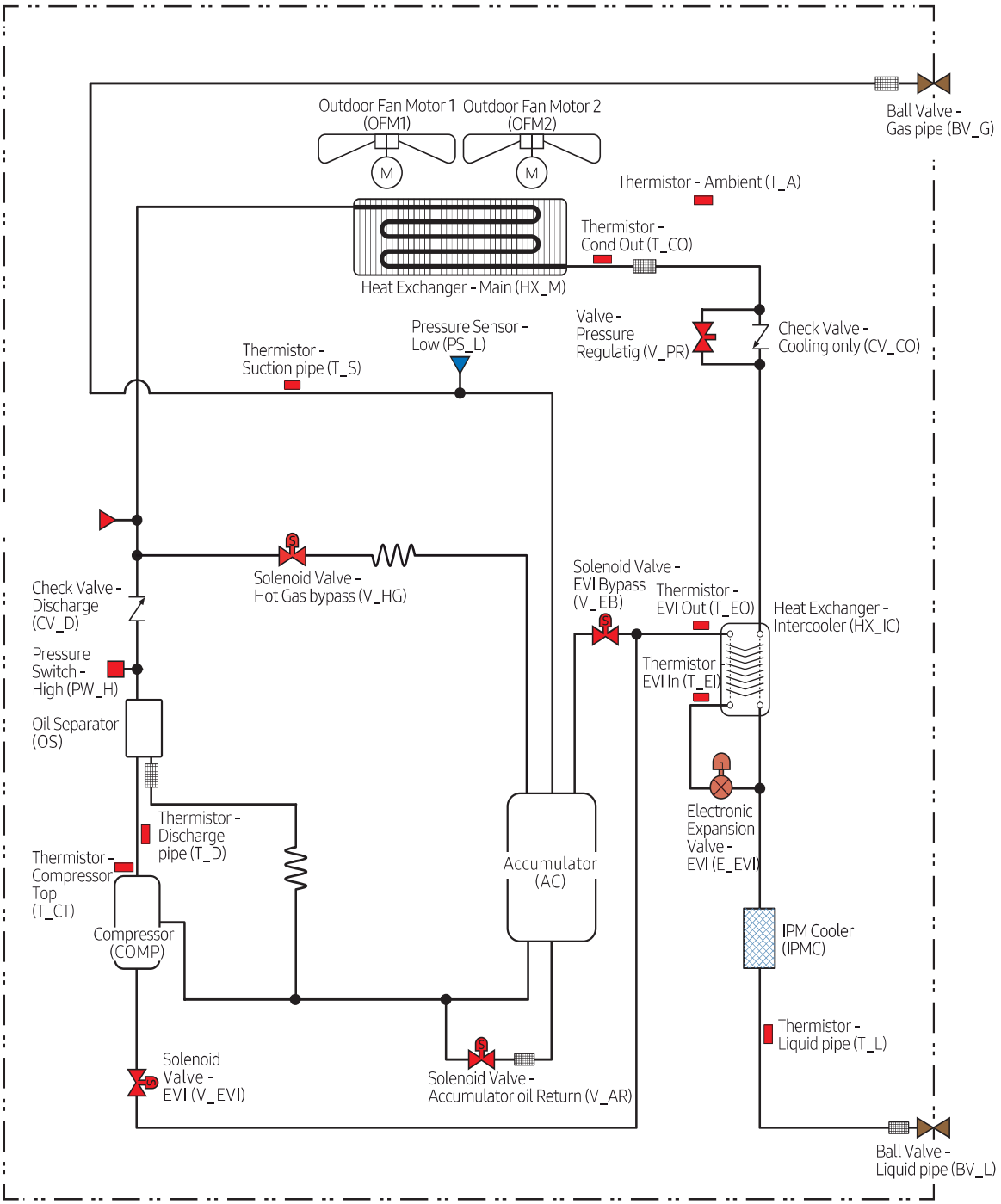


Abbreviation	Name
INV	Inveter Compressor
OFM	Outdoor Fan Motor
OHX	Outdoor Heat Exchanger
AC	Accumulator
OS	Oil Separator
IC	Intercooler
IPMC	IPM Cooler
HPS	High Pressure Sensor
LPS	Low Pressure Sensor
HPSW	High Pressure Switch
E_M	Main EEV
E_EV	EVI EEV
V_ES	EVI Sol. Valve
V_EB	EVI Bypass Valve
V_HG	Hot Gas Bypass Valve
V_4W	4Way Valve
V_AR	Accumulator Oil Return Valve
CV_E	EEV Bypass Check Valve
CV_D	Discharge Check Valve
T_D	Discharge Temp. Sensor
T_S	Suction Temp. Sensor
T_CO	Cond Out Temp. Sensor
T_EI	EVI In Temp. Sensor
T_EO	EVI Out Temp. Sensor
T_L	Liquid Tube Temp. Sensor
T_CT	Comp. Top Temp. Sensor
T_A	Ambient Temp. Sensor
SV_G	Gas Pipe Service Valve
SV_L	Liquid Pipe Service Valve

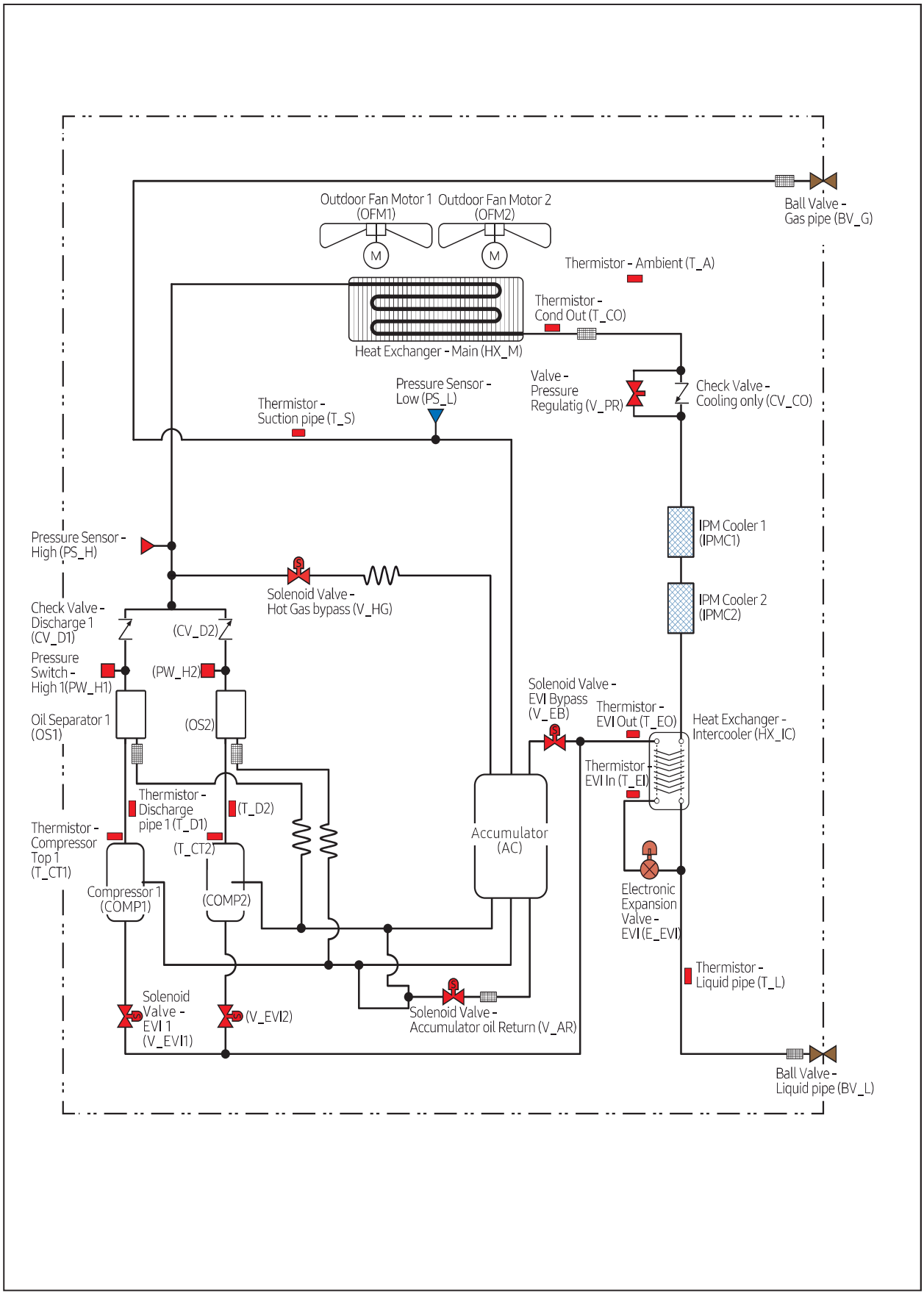
7-13 AM080/100/120MXVA*C



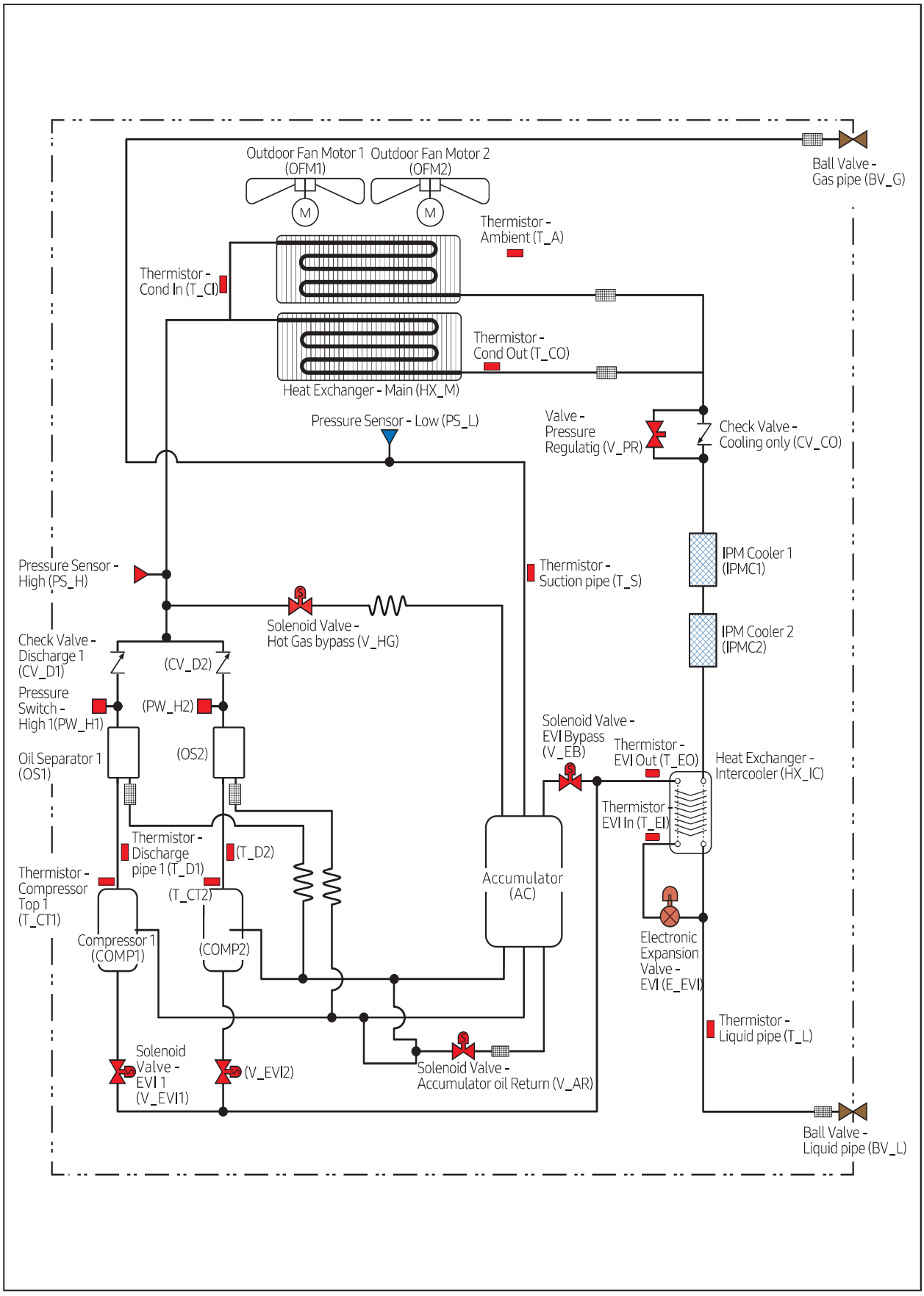
7-14 AM140/160/180MXVAGC



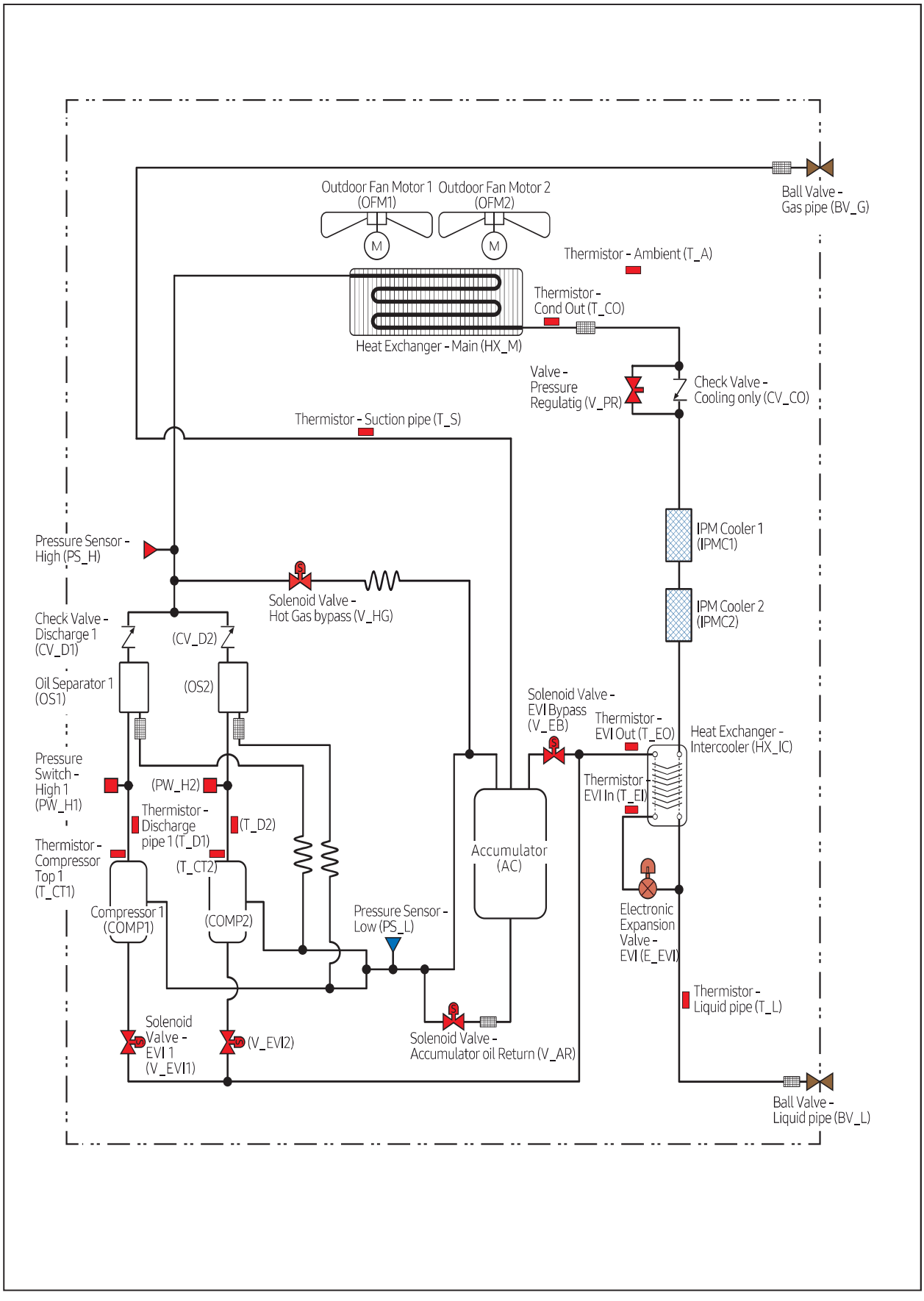
7-15 AM200/220MXVAGC



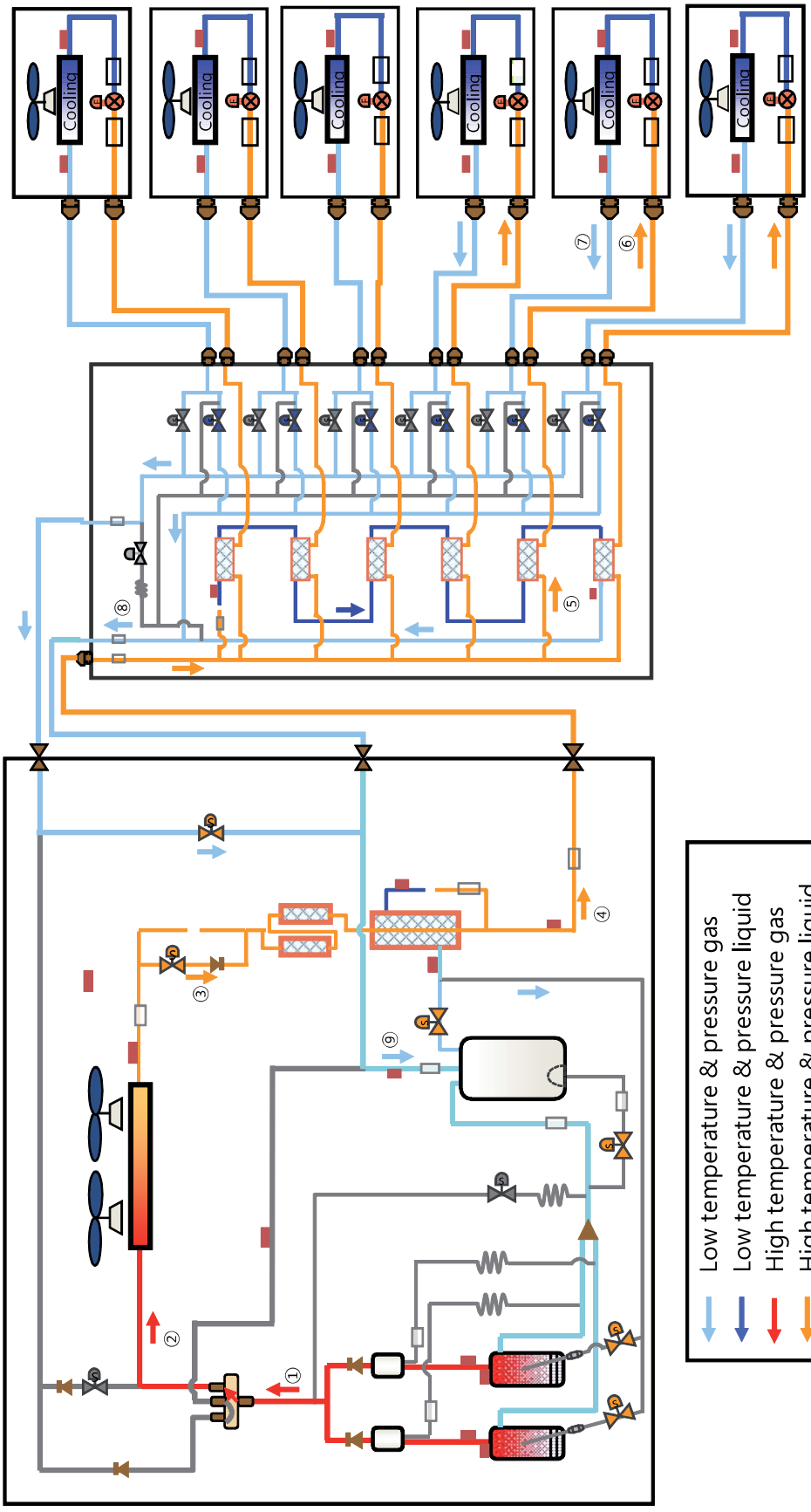
7-16 AM240/260/280/300MXVAGC



7-17 AM140/160/180/200MXVAFC

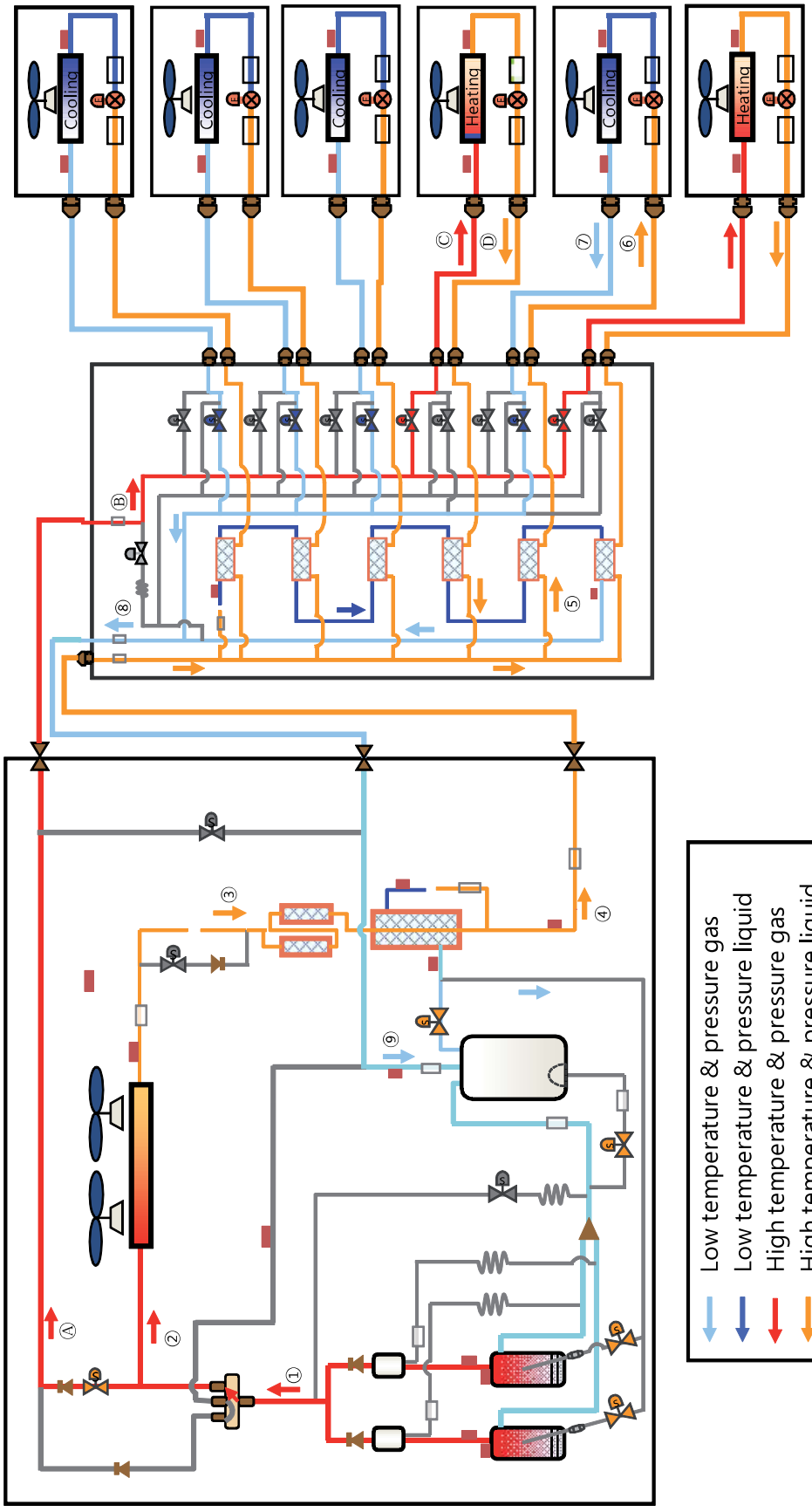


7-18 Cooling operation (H/R)



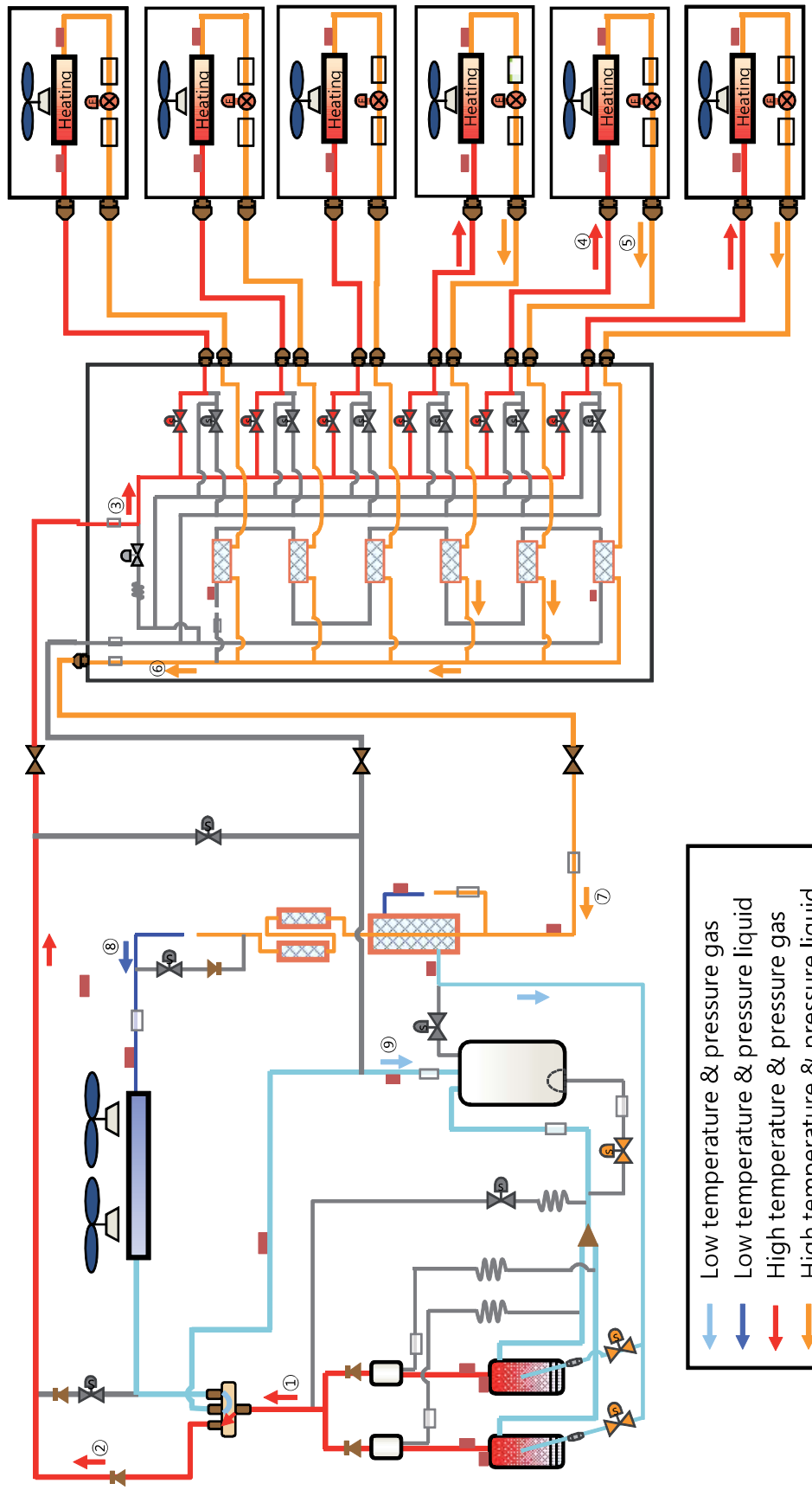
Unit	Outdoor unit	MCU	Indoor units	MCU	Outdoor unit
Cooling operation	① ② ③ ④	⑤	⑥ ⑦	⑧	⑨
Main cooling oper.					
Heating operation					
Main heating oper.					

7-19 Main cooling operation (H/R)



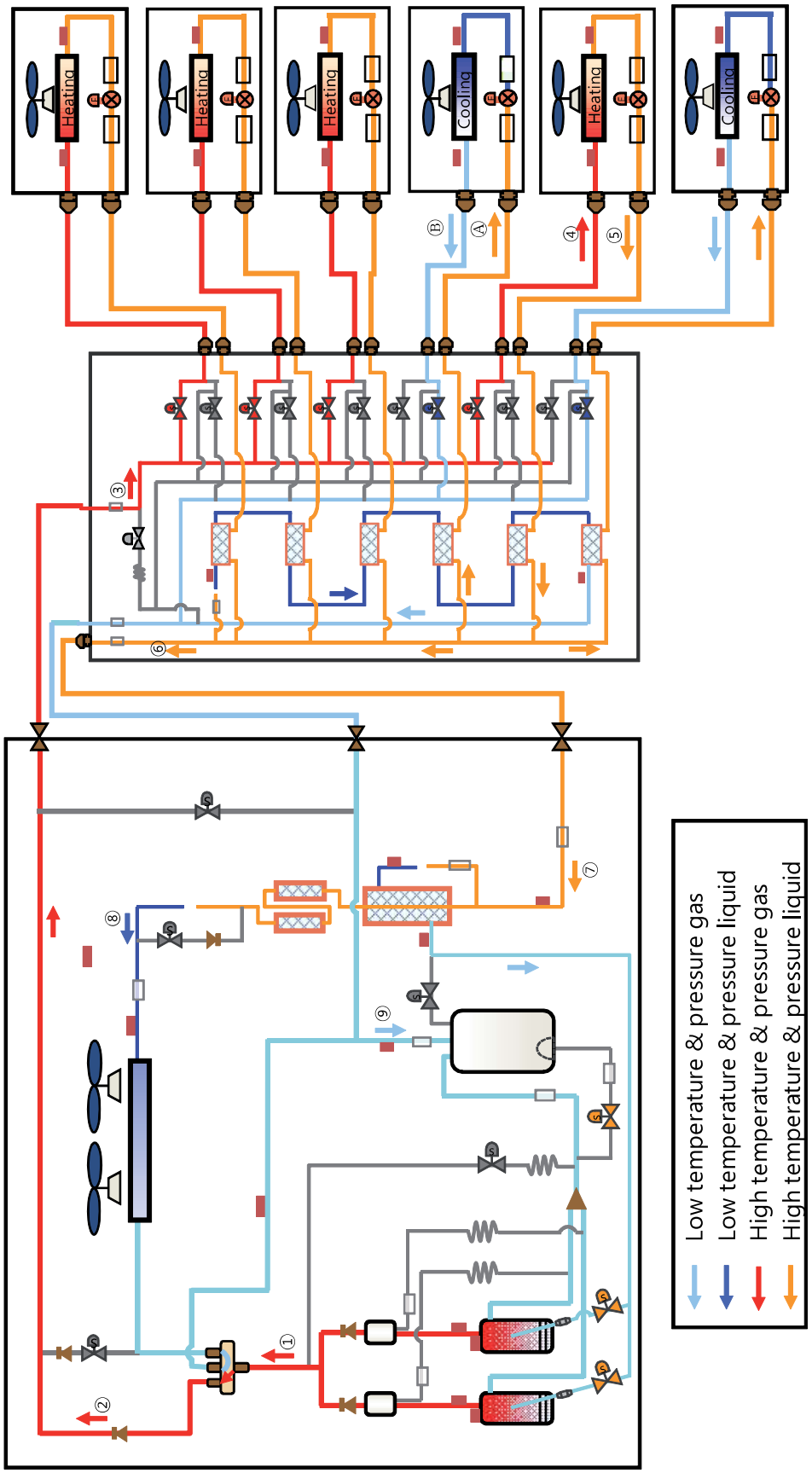
Unit	Outdoor unit	MCU	Indoor units	MCU	Outdoor unit
Cooling operation					
Main cooling oper.	① ② ③ ④ (Ⓐ)	⑤ (Ⓑ)	⑥ ⑦ (Ⓒ Ⓓ)	⑧	⑨
Heating operation					
Main heating oper.					

7-20 Heating operation (H/R)



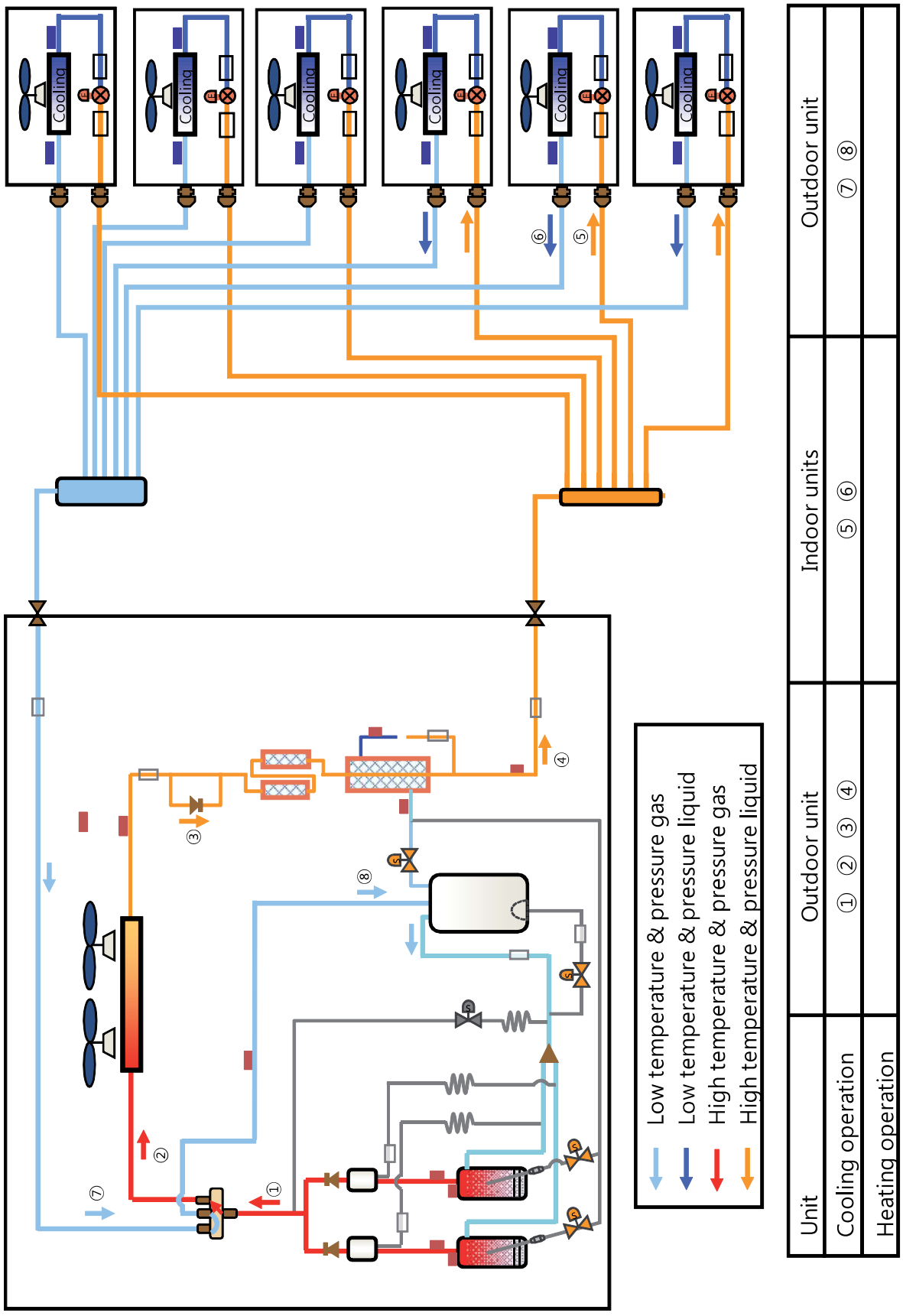
Unit	Outdoor unit	MCU	Indoor units	MCU	Outdoor unit
Cooling operation					
Main cooling oper.					
Heating operation	① ②	③	④ ⑤	⑥	⑦ ⑧ ⑨
Main heating oper.					

7-21 Main heating operation (H/R)

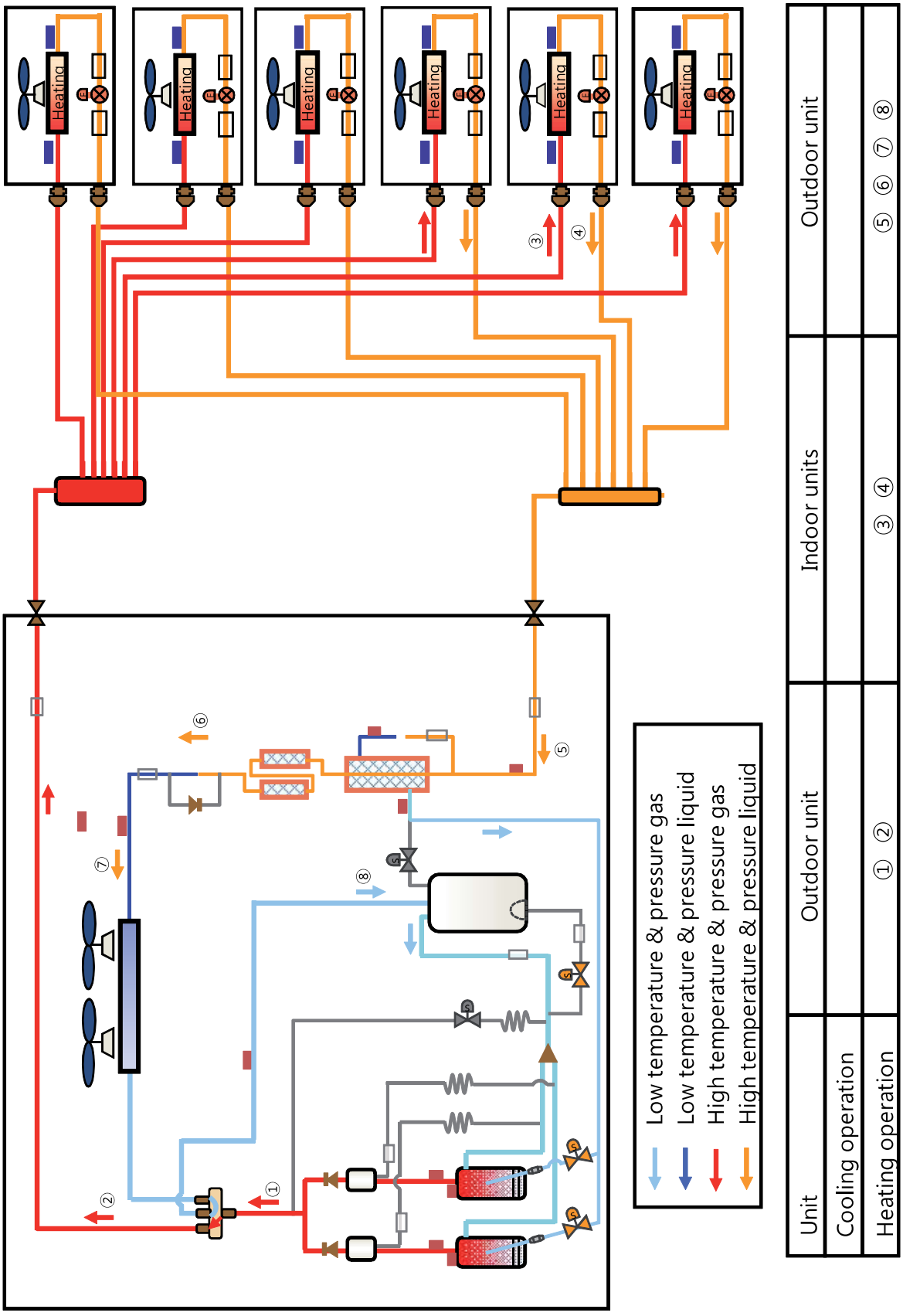


Unit	Outdoor unit	MCU	Indoor units	MCU	Outdoor unit
Cooling operation					
Main cooling oper.					
Heating operation					
Main heating oper.	① ②	③	④ ⑤ (Ⓐ Ⓑ)	⑥ (Ⓒ)	⑦ ⑧ ⑨

7-22 Cooling operation (H/P)

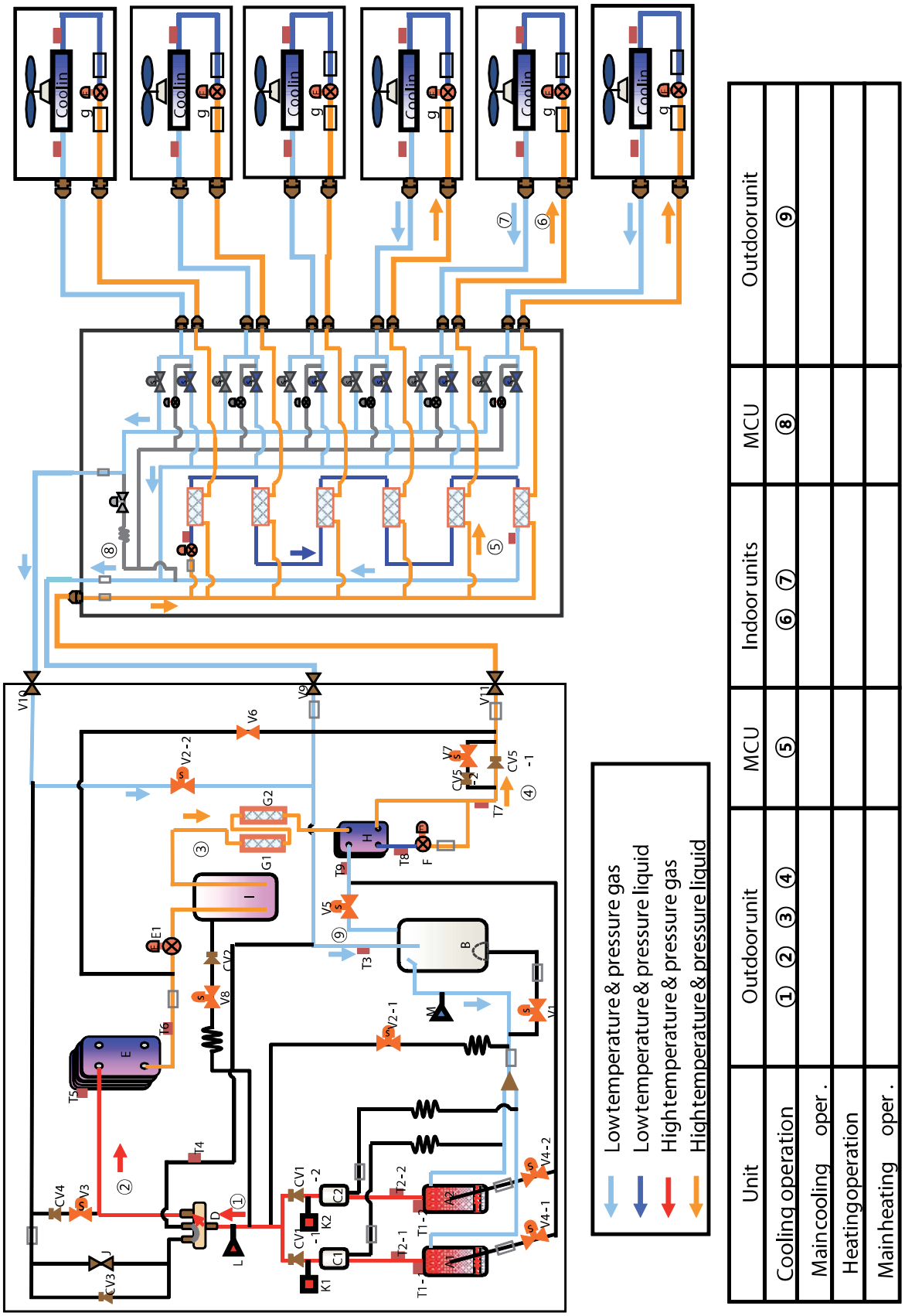


7-23 Heating operation (H/P)



7-24 Cooling operation(H/R)

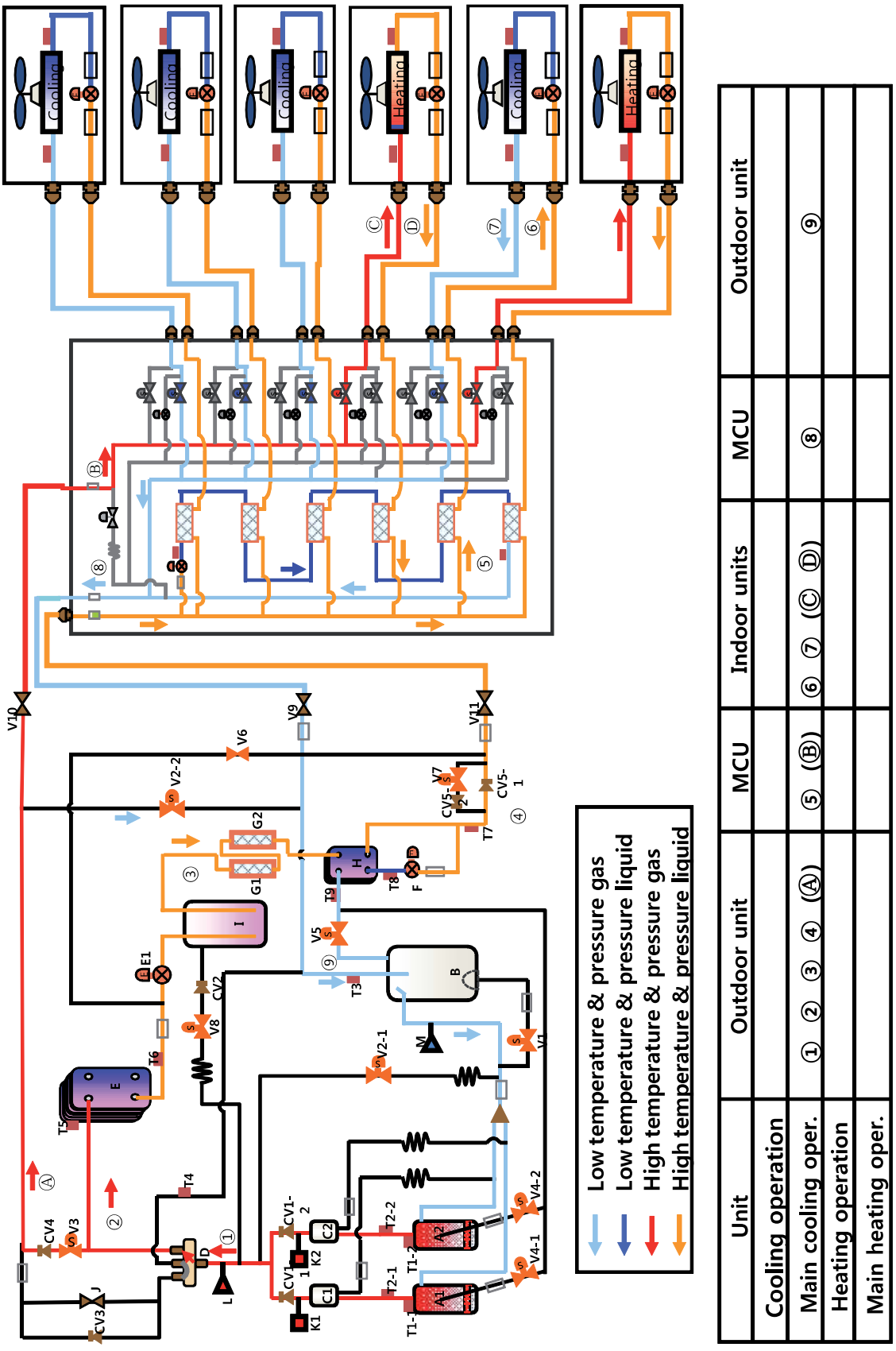
■ **AM080/100/120/200FXWA**✳✳



Unit	Outdoor unit	MCU	Indoor units	MCU	Outdoor unit
	① ② ③ ④	⑤	⑥ ⑦	⑧	⑨
Cooling operation					
Maincooling oper.					
Heatingoperation					
Mainheating oper.					

7-25 Main cooling operation(H/R)

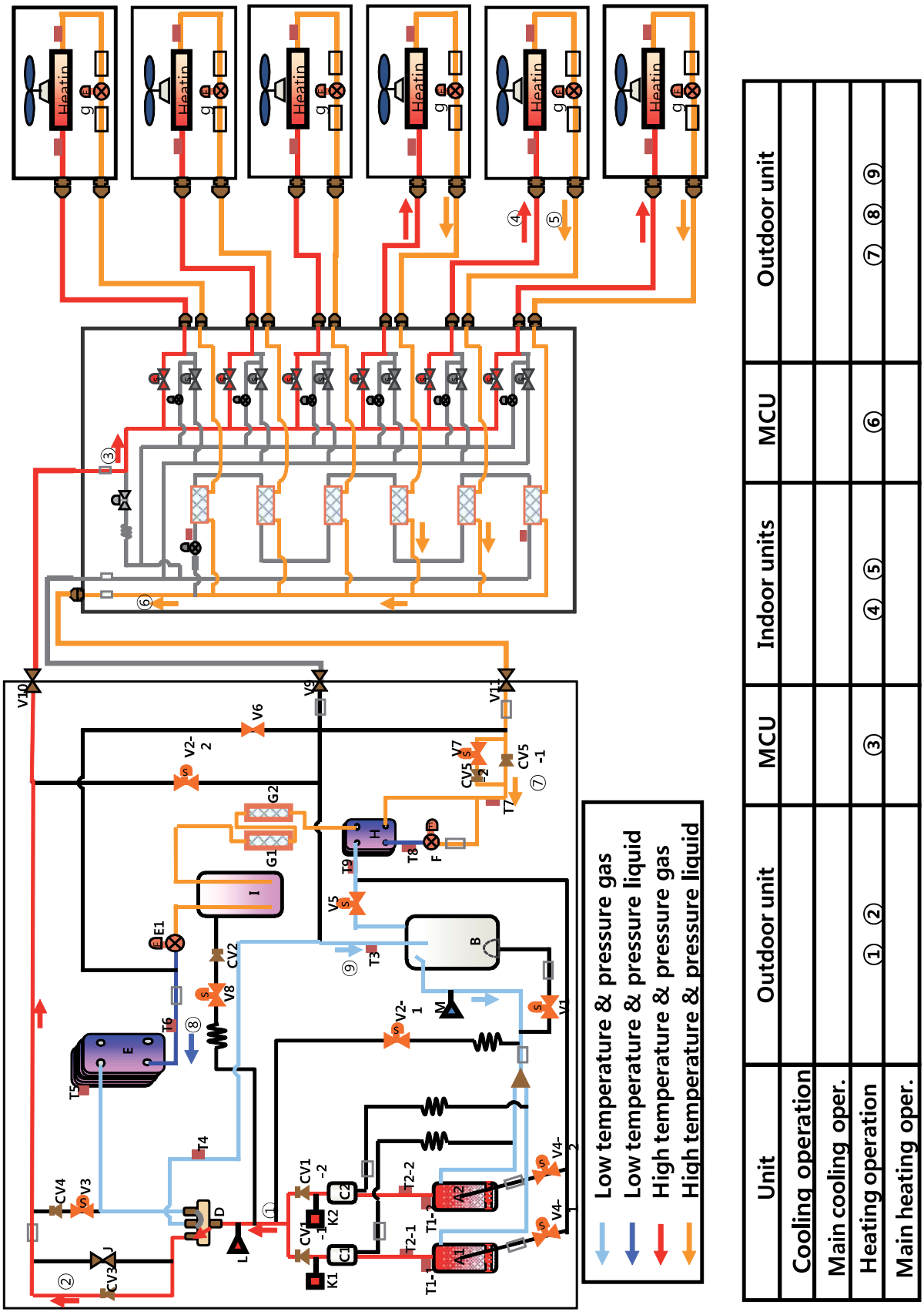
■ AM080/100/120/200FXWA✳✳



Unit	Outdoor unit	MCU	Indoor units	MCU	Outdoor unit
Cooling operation					
Main cooling oper.	① ② ③ ④ (Ⓐ)	⑤ (Ⓑ)	⑥ ⑦ (Ⓒ Ⓓ)	⑧	⑨
Heating operation					
Main heating oper.					

7-26 Heating operation(H/R)

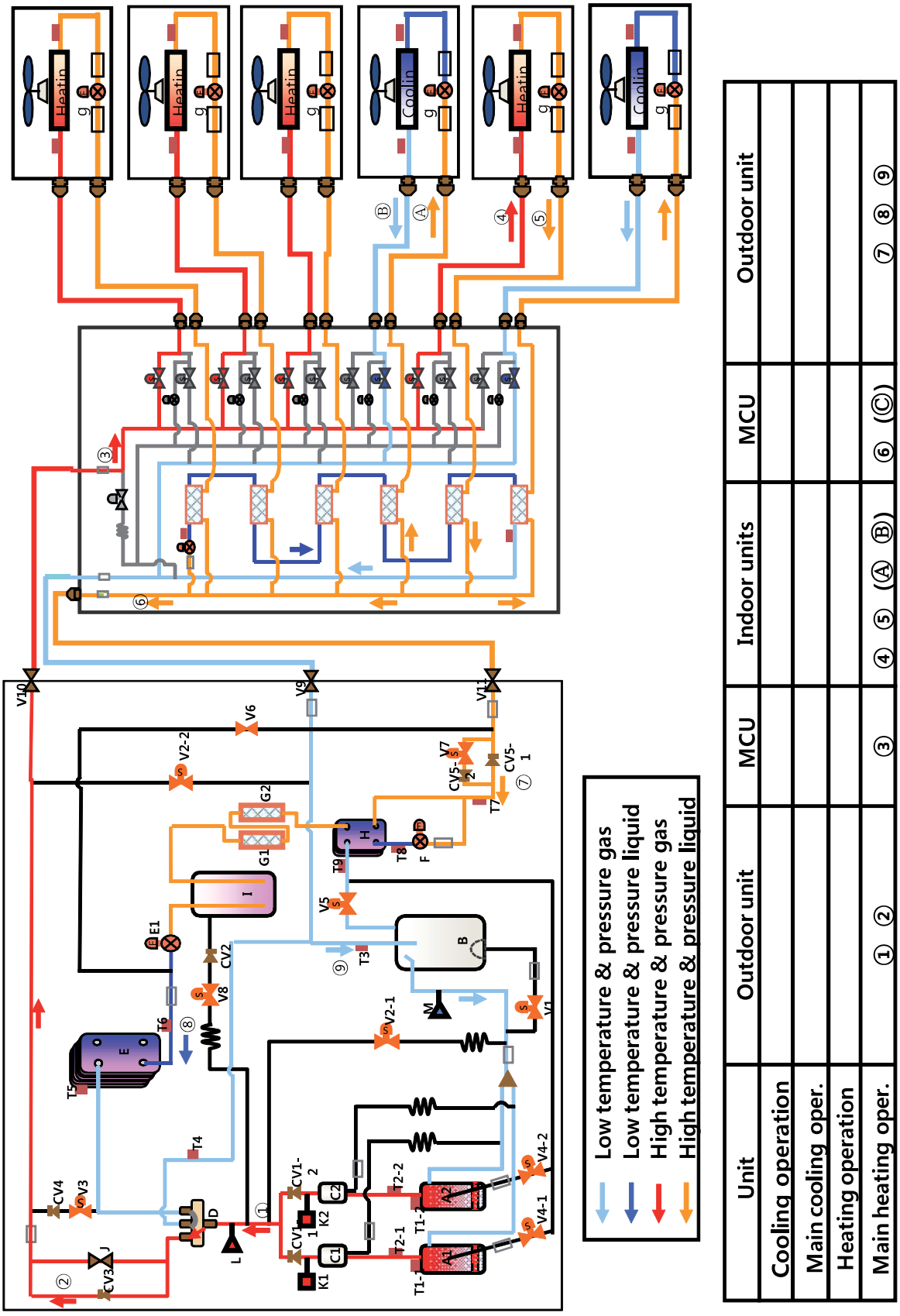
■ AM080/100/120/200FXWA✳✳



Unit	Outdoor unit	MCU	Indoor units	MCU	Outdoor unit
Cooling operation					
Main cooling oper.					
Heating operation	① ②	③	④ ⑤	⑥	⑦ ⑧ ⑨
Main heating oper.					

7-27 Main heating operation(H/R)

■ AM080/100/120/200FXWA✳✳



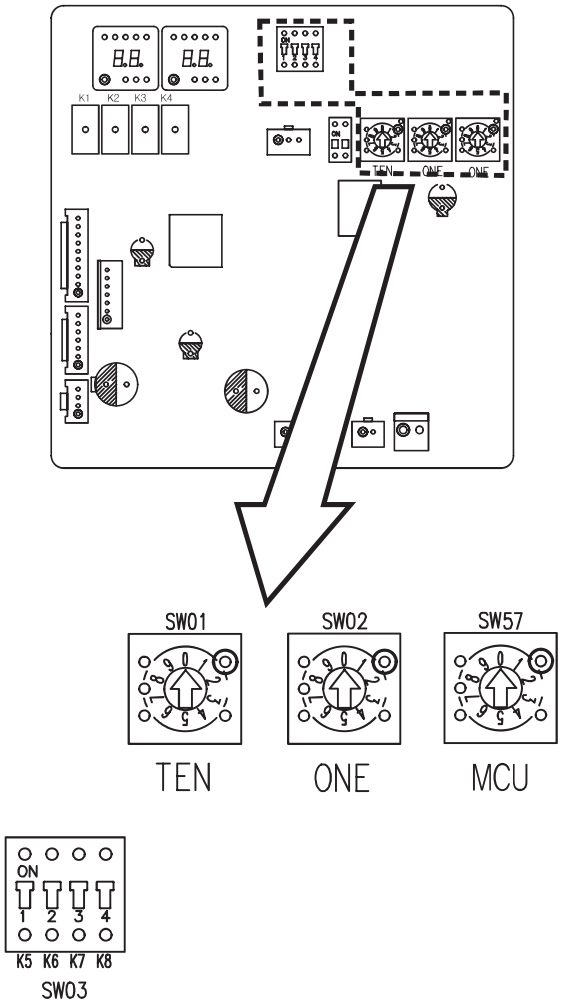
Unit	Outdoor unit	MCU	Indoor units	MCU	Outdoor unit
Cooling operation	① ②	③	④ ⑤ (Ⓐ Ⓑ)	⑥ (Ⓒ)	⑦ ⑧ ⑨
Main cooling oper.					
Heating operation					
Main heating oper.					

7-28 Cycle Component Function Explanation

1. Accumulator : Separating the incoming liquid refrigerant to the compressor in order to prevent liquid refrigerant.
2. Oil Separator : Separating the oil from the refrigerant discharged from the compressor, and the separated oil is returned to the compressor.
3. Intercooler : Supercooled liquid refrigerant through the heat exchanger and makes the medium pressure gas refrigerant injected into the compressor.
4. IPM Cooler : IPM (Intelligent Power Module) by cooling to prevent overheating.
5. High/Low Pressure Sensor : Measure high/low Pressure of system.
6. High Pressure Switch : Suspend immediately for protection of system if high pressure of system exceeds setting value.
7. Outdoor EEV (Main EEV) : Adjust the incoming refrigerant to the outdoor heat exchanger during heating operation.
8. EVI EEV : By adjusting the amount of refrigerant passing through the Subcooler to obtain the degree of supercooling and adjust the amount of gas refrigerant entering to the compressor.
9. 4Way Valve : Change the direction of flow of the refrigerant to the cooling / heating operation.
10. ARV (Accumulator Oil Return Valve) : Remaining at the bottom of the Accumulator recovered oil to the compressor.
11. MainCooling Valve : In the main cooling operation, sending the high pressure refrigerant to indoor unit in heating mode.
12. Outdoor EEV Valve : In the main cooling operation, It's closed so that the Outdoor EEV Valve can control the amount of the refrigerant.
13. Hotgas Valve : Sending the high pressure gas to low pressure pipe in order to protect low pressure.
14. Hotgas Valve 2 : In the cooling operation, changing high pressure pipe to low pressure pipe.
15. EVI SOL V : This valve opens when using the vapor Injection.
16. EVI BYPASS V : This valve opens in the sub cooling control. It's closed when using the vapor injection.
17. Discharge Temperature Sensor : Measure the temperature of the refrigerant discharged from the compressor.
18. Suction Temperature Sensor : Measure the temperature of the refrigerant to the compressor suction.
19. Cond. Out Temperature Sensor : Measure the temperature of the outdoor heat exchanger of the air conditioning operation.
20. EVI In/Out Temperature Sensor : Measure the temperature of the refrigerant inlet and outlet of the Subcooler.
21. Liquid Pipe Temperature Sensor : Measure the temperature of supercooling refrigerant in the outdoor unit of the air conditioning.
22. Comp. Top Temperature Sensor : Measure the temperature of compressor top cover.
23. Ambient Temperature Sensor : Measure the outdoor temperature.
24. Water Temperature Sensor : Plate Heat Exchanger internal temperature measurement
25. Control box temp. Sensor : Control box internal temperature measurement, thermal protection used for the control.
26. Receiver : Storing the refrigerant piping system, a stable liquid refrigerant supply
27. Liquid Tube Valve : Refrigerant in the outdoor unit side, the indoor unit during heating operation to rotate the valve operation.

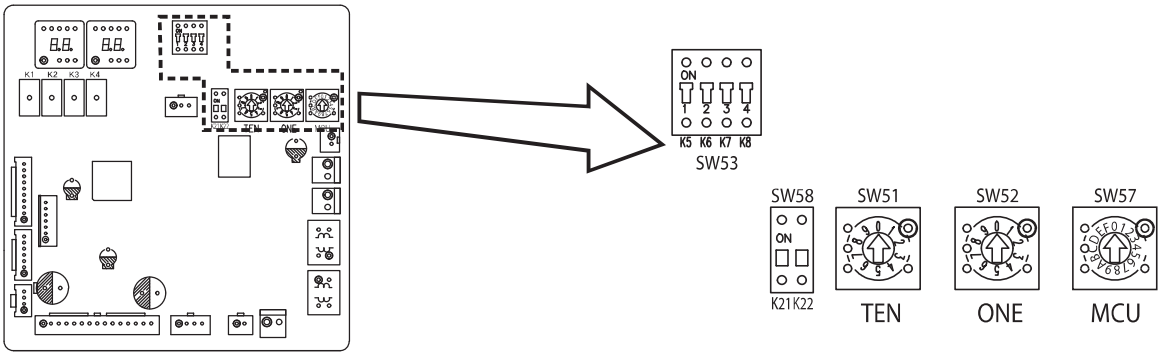
8. Key Options

8-1 Outdoor unit option switch settings



■ AM080~260✳XV✳✳✳

Switch	Setting		Function	Remarks
SW51/ SW52			Setting total number of installed indoor unit SW51: Tens digit, SW52: Units digit	Setting can be done from the main outdoor unit only (sub unit: setting is nnecessary) Ex) When 12 indoor units are installed → SW51: 1, SW52: 2
SW53	K6	ON	Enable maximum capacity restriction for cooling operation	Restrict excessive capacity increase when operating indoor units with small capacity
		OFF	Disable maximum capacity restriction for cooling operation	-
	K7	K8	Selecting outdoor unit address	
	ON	ON	Outdoor unit address: No 1	Main unit
	ON	OFF	Outdoor unit address: No 2	Sub unit 1
	OFF	ON	Outdoor unit address: No 3	Sub unit 2
	OFF	OFF	Outdoor unit address: No 4	Sub unit 3
SW57			Setting total number of connected MCU	Setting can be done from Main unit only. Ex) When 3 MCUs are installed → SW57: 3, When 10 MCUs are installed → SW57: A



■ AM080/100/120/200FXWA✳✳

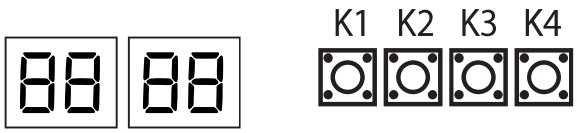
※ If you install HR products, you must match the address between the MCU and the indoor unit.

Switch	Setting		Function	Remarks
SW51/ SW52			Setting total number of installed indoor unit SW51: Tens digit, SW52: Units digit	Setting can be done from the main outdoor unit only (sub unit: setting is unnecessary) Ex) When 12 indoor units are installed → SW51: 1, SW52: 2
	K5	ON	H/P(Heat Pump) System	Connect Liguid pipe and High pressure gas pipe
		OFF	HR(Heat Recovery) System	Close outdoor unit's heatpump valve
	K6	ON	Enable maximum capacity restriction for cooling operation	Restrict excessive capacity increase when operating indoor units with small capacity
		OFF	Disable maximum capacity restriction for cooling operation	-
	K7	K8	Selecting outdoor unit address	
	ON	ON	Outdoor unit address: No 1	Main unit
	ON	OFF	Outdoor unit address: No 2	Sub unit 1
	OFF	ON	Outdoor unit address: No 3	Sub unit 2
	OFF	OFF	Outdoor unit address: No 4	Sub unit 3
SW57			Setting total number of connected MCU	Setting can be done from main unit only Ex) When 3 MCUs are installed → SW57: 3, SW52: 2
SW58	K21	K22	Selecting type of circulating water	
	ON	ON	Water circulation	-
	ON	OFF	Anti-freeze circulation (freezing point of anti-freeze must be below -8 °C)	Minimum temperature of entering water -5 °C
	OFF	ON	Anti-freeze circulation (freezing point of anti-freeze must be below -15 °C)	Minimum temperature of entering water -10 °C

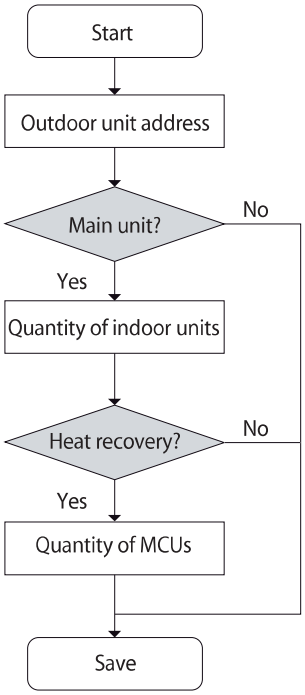
※ Maintain appropriate concentration level of anti-freeze according to SW58 switch setting.

■ AM140/160/180/200/220/240/260/280/300KXV✳✳✳✳

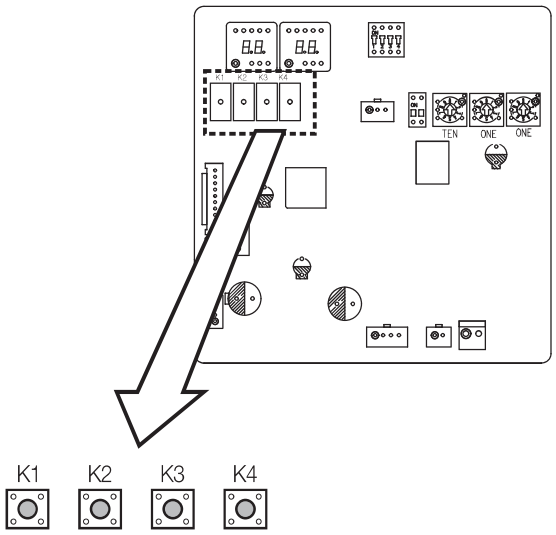
※ Setting outdoor install option



Step	Button	Display	Description	Note
Outdoor unit address				
Step1	Outdoor unit display	ad ad	Setting required-	
Step2	Press (K1+K2) for 2 seconds	ad 00	Unit address for module combination	00: Main unit
	K4 x 1 time	ad 01		01: Sub1 unit
	K4 x 2 times	ad 02		02: Sub2 unit
	K4 x 3 times	ad 03		03: Sub3 unit
Step3	If it is main unit, go to step4. Otherwise, press K2 button for 2 seconds to save & exit (system will be reset)			
Quantity of indoor units				
Step4	Press K1	nd 00	Ready to set-	
Step5	K2 x n times	nd X0	Tens digit (0 ~ 6)	Ex) 03: 3 units 64: 64 units
	K4 x n times	nd 0X	Ones digit (0 ~ 9)	
	* K4: Press for 2 seconds - automatic detection of indoor units' quantity			
Step6	If it is heat recovery model, go to step 7. Otherwise, press K2 button for 2 seconds to save & exit (system will be reset)			
Quantity of MCUs * Heat recovery model only				
Step7	Press K1	nC 00	Ready to set-	
Step8	K2 x n times	nC X0	Tens digit (0 ~ 1)	Ex) 03: 3 units 16: 16 units
	K4 x n times	nC 0X	Ones digit (0 ~ 9)	
	* K4: Press for 2 seconds - automatic detection of MCUs' quantity			
Step9	K2: long	Ad 00	Save	Restart
* Press K1 for 2 seconds to exit without save regardless of setting step.				



8-2 How to set the key function of the outdoor unit

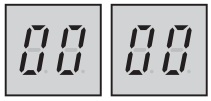


■ AM080~260✳XV✳✳✳

Tact switch installation and options of how to set up and functional description

■ Options of how to set up

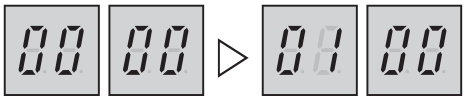
1. Entry by pressing the K2 for a long time.(However, the operation is only possible during the stop.)
   - Upon entering the following is displayed. (If the compressor is set truncation, 1 or 2 is displayed in Seg4.)



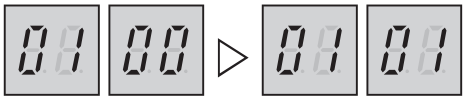
   - Displays the number of the currently selected option. Seg1, Seg2.
   - Displays the set value of the currently selected option. Seg3, Seg4.

2. After entering the option, briefly press the K1 switch will change the value of Seg1, Seg2 and then select the option to change.

   Example)



3. Press the switch briefly to the option you want to change the items of K2 will change the value of Seg3, Seg4 and then select the option to change.
   Example)



(4) K2 switch is pressed for 2 seconds after the option is selected, 7-Segment entire blinks and enters the tracking mode, and the option value is saved.

- As described above, if you do not normal shutdown the option settings can not be saved.

※ Press K1 for a long time, if you want to go back to the settings before the entry while setting the option to cancel the setting.

※ If you want the factory settings option in the setting mode, press K4 for a long time.

- K4 switch is pressed for a long time, all options settings return to the factory settings, but the settings are saved is not.
  K2 switch is pressed for a long time, 7-Segment enters the tracking mode and the settings will be saved.

How to set the key function of the outdoor unit (cont.)

■ AM080/100/120/200FXWA✳✳

Setting the option

■ Options of how to set up

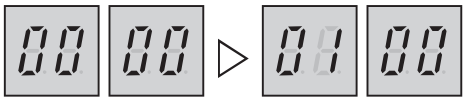
1. Press and hold K2 to enter the option setting. (Only available when the operation is stopped)
   – If you enter the option setting, display will show the following. (If you have set the 'Emergency operation for compressor malfunction', 1 or 2 will be displayed on Seg 4.)



   – Seg 1 and Seg 2 will display the number for selected option.
   – Seg 3 and Seg 4 will display the number for set value of the selected option..

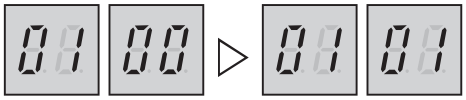
2. If you have entered option setting, you can shortly press the K1 switch to adjust the value of the Seg 1, Seg 2 and select the desired option. (Refer to pages 71~73 for the Seg number of the function for each option)

   Example)



3. If you have selected desired option, you can shortly press the K2 switch to adjust the value of the Seg 3, Seg 4 and change the function for the selected option.

   Example)



4. After selecting the function for options, press and hold the K2 switch for 2 seconds. Edited value of the option will be saved when entire segments blinks and tracking mode begins.

   ● Edited option will not be saved if you do not end the option setting as explained in above instruction.

※ While you are setting the option, you may press and hold the K1 button to reset the value to previous setting.

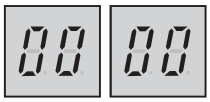
※ If you want to restore the setting to factory default, press and hold the K4 button while you are in the option setting mode.
– If you press and hold the K4 button, setting will be restored to factory default but it doesn't mean that restored setting is saved.
Press and hold the K2 button. When the segments shows that tracking mode is in progress, setting will be saved.

How to set the key function of the outdoor unit (cont.)

■ AM140/160/180/200/220/240/260/280/300KXV✳✳✳✳

Setting the option

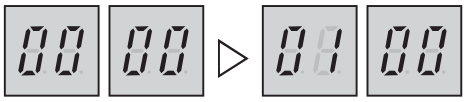
1. Press and hold K2 to enter the option setting. (Only available when the operation is stopped)
   - If you enter the option setting, display will show the following.
     (If you have set the 'Emergency operation for compressor malfunction', 1 or 2 will be displayed on Seg 4 .)

   -- Seg 1 and Seg 2 will display the number for selected option.
   -- Seg 3 and Seg 4 will display the number for set value of the selected option..

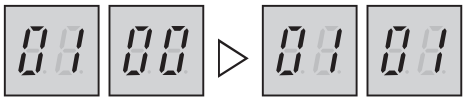
2. If you have entered option setting, you can shortly press the K1 switch to adjust the value of the Seg 1, Seg 2 and select the desired option.
   (Refer to pages 76~78 for the Seg number of the function for each option.)

   Example)

3. If you have selected desired option, you can shortly press the K2 switch to adjust the value of the Seg 3, Seg 4 and change the function for the selected option. (Refer to pages 76~78 for the Seg number of the function for each option.)

   Example)

4. After selecting the function for options, press and hold the K2 switch for 2 seconds.
   Edited value of the option will be saved when entire segments blinks and tracking mode begins.

   ⚠ Edited option will not be saved if you do not end the option setting as explained in above instruction.

※ While you are setting the option, you may press and hold the K1 button to reset the value to previous setting.

※ If you want to restore the setting to factory default, press and hold the K4 button while you are in the option setting mode.
   -- If you press and hold the K4 button, setting will be restored to factory default but it doesn't mean that restored setting is saved Press and hold the K2 button When the segments shows that tracking mode is in progress, setting will be saved.

How to set the key function of the outdoor unit (cont.)

■ AM080~260✳XV✳✳✳

Optional item	Input unit	SEG1	SEG2	SEG3	SEG4	Function of the option	Remarks
Emergency operation for compressor malfunction	Individual	0	0	0	0	Disabled (Factory default)	E560 will occur when all the compressors are set as malfunction state.
				0	1	Set compressor 1 as malfunction state	
				0	2	Set compressor 2 as malfunction state	
Capacity correction for cooling	Main	0	1	0	0	7-9 (Factory default)	Targeted evaporation temperature [?C] (When low temperature value is set, discharged air temperature of the indoor unit will decrease)
				0	1	5-7	
				0	2	9-11	
				0	3	10-12	
				0	4	11-13	
				0	5	12-14	
				0	6	13-15	
Capcity correction for heating	Main	0	2	0	0	3.0 (Factory default)	Targeted high pressure [MPa] (When low pressure value is set, discharged air temperature of the indoor unit will decrease)
				0	1	2.5	
				0	2	2.6	
				0	3	2.7	
				0	4	2.8	
				0	5	2.9	
				0	6	3.1	
				0	7	3.2	
				0	8	3.3	
Current restriction rate	Individual	0	3	0	0	100% (Factory default)	When restriction option is set, cooling and heating performance may decrease
				0	1	0.95	
				0	2	0.9	
				0	3	0.85	
				0	4	0.8	
				0	5	0.75	
				0	6	0.7	
				0	7	0.65	
				0	8	0.6	
				0	9	0.55	
				1	0	0.5	
				1	1	No restriction	
Oil collection interval	Main	0	4	0	0	Factory default	
				0	1	Shorten the interval by 1/2	
Temperature to trigger defrost operation	Main	0	5	0	0	Factory default	
				0	1	Apply setting when the product is being installed in humid area such as near river or lake	
Fan speed correction for outdoor unit	Individual	0	6	0	0	Factory default	
Silent mode for night-time	Main	0	7	0	0	Disabled (Factory default)	Enable the silent mode for night-time (Itoperates automatically depending on the temperrature.) However, if the external contact ineterface module(MIM-B14) is used, entering the silent mode is available with contact signal
				0	1	LEVEL 1/Auto	
				0	2	LEVEL 2/Auto	
				0	3	LEVEL 3/Auto	
				0	4	LEVEL 1/External contact	
				0	5	LEVEL 2/External contact	
				0	6	LEVEL 3/External contact	
Long-piping condition setting (Setting is unnecessary if high-head condition is set)	Main	0	9	0	0	Disabled (Factory default)	
				0	1	LEVEL 1	When equivalent length of farthest indoor unit from the outdoor unit is between 100~170m
				0	2	LEVEL 2	When equivalent length of farthest indoor unit from the outdoor unit is over 170m
Energy saving setting	Main	1	0	0	0	Disabled (Factory default)	
				0	1	Enabled	Energy saving mode triggers when the room temperature reaches desired temperature while operating in heating mode.

How to set the key function of the outdoor unit (cont.)

■ AM080/100/120/200FXWA✳✳

Optional item	Input unit	SEG1	SEG2	SEG3	SEG4	Function of the option	Remarks
Rotation defrost (HR only)	Main	1	1	0	0	Disabled (Factory default)	
				0	1	Enabled	When enabled, continuous heating operation is possible but heating performance will decrease during rotation defrost operation
Expand operational temperature range for cooling operation	Main	1	2	0	0	Disabled (Factory default)	
				0	1	Enabled	When enabled, continuous cooling operation is possible even in low temperature condition up to -15?C, but noise of the MCU will increase
Channel address	Main	1	3	A	U	Automatic setting (Factory default)	Address for classifying the product from upper level controller (DMS, S-NET 3, etc.)
				0~15		Manual setting for channel 0~15	
Snow accumulation prevention control	Main	1	4	0	0	Enabled (Factory default)	During snow accumulation prevention, the fan mayspin even when the unit is not in operation
				0	1	Disabled	
Unused option	Main	1	5	0	0	Unused option	Unused option option by this model
Unused option	Main	1	6	0	0	Unused option	Unused option option by this model
Speed operatin	Main	1	7	0	0	Disabled(Factory default)	Enabling this setting will command the air conditioner to cool/heat faster at initial start-up However this function will not wortk when High-head conditionsetting or Long-piping condition setting is enabled.
				0	1	Enable	
Current restriction rate	Individual	0	3	0	0	100% (Factory default)	When restriction option is set, cooling and heating performance may decrease.
				0	1	95 %	
				0	2	90 %	
				0	3	85 %	
				0	4	80 %	
				0	5	75 %	
				0	6	70 %	
				0	7	65 %	
				0	8	60 %	
				0	9	55 %	
				1	0	50 %	
				1	1	No restriction	
Oil collection interval	Main	0	4	0	0	Factory default	
				0	1	Shorten the interval by 1/2	
Disable	Main	0	5	0	0	Disable	This function is not applicable for this model
				0	1	Disable	
Disable	Individual	0	6	0	0	Disable	This function is not applicable for this model
				0	1	Disable	
Disable	Main	0	7	0	0	Disable	This function is not applicable for this model
				0	1	Disable	
				0	2	Disable	
				0	3	Disable	
Setting highhead condition	Main	0	8	0	0	Disable (Factory default)	
				0	1	Level 1 of height difference type 1 (Indoor unit is lower than outdoor unit)	When outdoor unit is over 40 ~ 80 m above the indoor unit
				0	2	Level 2 of height difference type 1 (Indoor unit is lower than outdoor unit)	When outdoor unit is over 80 m above the indoor unit
				0	3	Height difference type 2 (Outdoor unit is lower than indoor unit)	When indoor unit is over 30 m above the outdoor unit

How to set the key function of the outdoor unit (cont.)

■ AM080/100/120/200FXWA✳✳

Optional item	Input unit	SEG1	SEG2	SEG3	SEG4	Function of the option	Remarks
Setting longpiping condition (Setting is unnecessary if high-head condition is set.)	Main	0	9	0	0	Disable (Factory default)	
				0	1	Long piping level 1	When equivalent length of farthest indoor unit from the outdoor unit is between 100~170 m
				0	2	Long piping level 2	When equivalent length of farthest indoor unit from the outdoor unit is over 170 m
Energy saving setting	Main	1	0	0	0	Disable (Factory default)	
				0	1	Enable	Energy saving mode triggers when the room temperature reaches desired temperature while operating in heating mode.
Disable	Main	1	1	0	0	Disable	This function is not applicable for this model
				0	1	Disable	
Expand operational temperature range for cooling operation	Main	1	2	0	0	Disable	
				0	1	Enable	
Channel address	Main	1	3	A	U	Automatic setting (Factory default)	Address for classifying the product from upper level controller (DMS, S-NET 3, etc)
				0 ~ 15		Manual setting for channel 0~15	
Disable	Main	1	4	0	0	Disable	This function is not applicable for this model
				0	1	Disable	
Circulation water flow control	Individual	1	5	0	0	Disable (Factory default)	
				0	1	7-10 V	When variable flow control valve is applied
				0	2	5-10 V	
				0	3	3-10 V	

How to set the key function of the outdoor unit (cont.)

■ AM140/160/180/200/220/240/260/280/300KXV✳✳✳✳

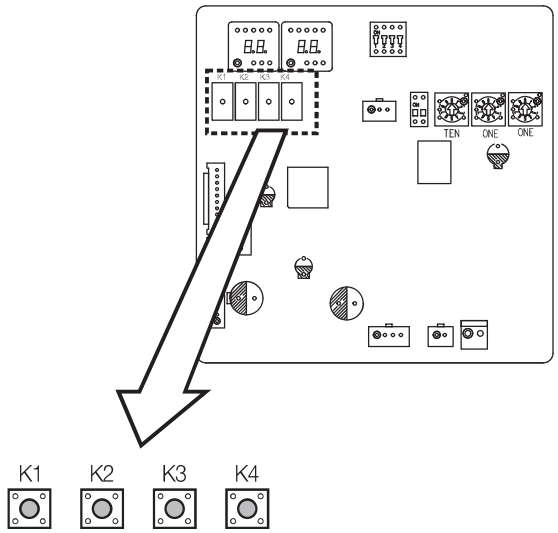
Optional item	Input unit	SEG1	SEG2	SEG3	SEG4	Function of the option	Remarks
Emergency operation for compressor malfunction	Individual	0	0	0	0	Disabled (Factory default)	E560 will occur when all the compressors are set as malfunction state.
				0	1	Set compressor 1 as malfunction state	
				0	2	Set compressor 2 as malfunction state	
Cooling capacity correction	Main	0	1	0	0	7~9	Targeted evaporation temperature [℃] (When low temperature value is set, discharged air temperature of the indoor unit will decrease)
				0	1	5~7(Factory default)	
				0	2	9~11	
				0	3	10~12	
				0	4	11~13	
				0	5	12~14	
				0	6	13~15	
Capcity correction for heating	Main	0	2	0	0	3 0 (Factory default)	Targeted high pressure [MPa] (When low pressure value is set, discharged air temperature of the indoor unit will decrease)
				0	1	2 5	
				0	2	2 6	
				0	3	2 7	
				0	4	2 8	
				0	5	2 9	
				0	6	3 1	
				0	7	3 2	
				0	8	3 3	
Current restriction rate	Individual	0	3	0	0	100% (Factory default)	When restriction option is set, cooling and heating performance may decrease.
				0	1	95 %	
				0	2	90 %	
				0	3	85 %	
				0	4	80 %	
				0	5	75 %	
				0	6	70 %	
				0	7	65 %	
				0	8	60 %	
				0	9	55 %	
				1	0	50 %	
				1	1	No restriction	
Oil collection interval	Main	0	4	0	0	Factory default	
				0	1	Shorten the interval by 1/2	
Temperature to trigger defrost operation	Main	0	5	0	0	Factory default	
				0	1	Apply setting when the product is being installed in humid area such as near river or lake	
Fan speed correction for outdoor unit	Individual	0	6	0	0	Factory default	
				0	1	Increase fan speed	Increase the outdoor unit's fan speed to maximum value.
Silent mode for night-time	Main	0	7	0	0	Disabled (Factory default)	Enables the silent mode for night-time (It operates automatically depending on the temperature) However, if the external contact interface module (MIM-B14) is used, entering the silent mode is available with contact signal
				0	1	LEVEL 1 / Auto	
				0	2	LEVEL 2 / Auto	
				0	3	LEVEL 3 / Auto	
				0	4	LEVEL 1 / External contact	
				0	5	LEVEL 2 / External contact	
				0	6	LEVEL 3 / External contact	
High-head condition setting	Main	0	8	0	0	Disabled (Factory default)	
				0	1	Level 1 of height difference type 1 (Indoor unit is lower than outdoor unit)	When outdoor unit is located 40~80m above the indoor unit
				0	2	Level 2 of height difference type 1 (Indoor unit is lower than outdoor unit)	When outdoor unit is located over 80m above the indoor unit
				0	3	Height difference type 2 (Outdoor unit is lower than indoor unit)	When indoor unit is over 30 m above the outdoor unit

How to set the key function of the outdoor unit (cont.)

■ AM140/160/180/200/220/240/260/280/300KXV✳✳✳✳

Optional item	Input unit	SEG1	SEG2	SEG3	SEG4	Function of the option	Remarks
Long-pipng condition setting (Setting is unnecessary if high-head condition is set)	Main	0	9	0	0	Disabled (Factory default)	
				0	1	LEVEL 1	When equivalent length of farthest indoor unit from the outdoor unit is between 100~170m
				0	2	LEVEL 2	When equivalent length of farthest indoor unit from the outdoor unit is over 170m
Energy control Operaton	Individual	1	0	0	0	Basic (Factory default)	Energy control option of designated operation sequence. ※ Operating in energy saving mode, capacity might decrease compared to normal operation mode.
				0	1	Energy saving	
				0	2	Power	
Rotation defrost (HR only)	Main	1	1	0	0	Disabled (Factory default)	
				0	1	Enabled	When enabled, continuous heating operation is possible but heating performance will decrease during rotation defrost operation.
Expand operational temperature range for cooling operation (HR only)	Individual	1	2	0	0	Disabled (Factory default)	
				0	1	Enabled	When enabled, continuous cooling operation is possible even in low temperature condition up to -15℃, but noise of the MCU will increase.
Channel address	Main	1	3	A	U	Automatic setting (Factory default)	Address for classifying the product from upper level controller. (DMS, S-NET 3, etc)
				0 ~ 15		Manual setting for channel 0~15	
Snow accumulation prevention control	Main	1	4	0	0	Enabled (Factory default)	During snow accmulation , the fan may spin even when the unit is not in operation.
				0	1	Disabled	
Unused option	Main	1	5	0	0	Unused option	Unused option by this model.
Unused option	Main	1	6	0	0	Unused option	Unused option by this model.
Speed operation	Main	1	7	0	0	Disabled (Factory default)	Enabling this setting will command the air conditioner to cool/ heat faster at initial start-up. However, this function will not work when High-head condition setting or Longpiping condition setting is enabled.
				0	1	Enabled	
Max capacity restriction	Main	1	8	0	0	Enabled (Factory default)	Restrict excessive capacity increase when operating indoor units with small capacity.
				0	1	Disabled	
Gasleak Pumpdown	Main	1	9	0	0	Disabled (Factory default)	If the gas leak occurred it should be entered in the pumpdown operation.
				0	1	Enabled	

8-3 How to check the view mode using a tact switch



■ AM080~260✳XV✳✳✳

K3 (Number of press)	Key operation	Display on segment
1 time	Intialize (Reset) setting	Same as initial state

K4 (Number of press)	Key operation	Display on segment	
		SEG 1	SEG 2, 3, 4
1 time	Outdoor unit model	1	AM160FXV✳✳✳✳ → 0ff, 1, 6
2 times	Order frequency of the compressor 1	2	120 Hz → 1, 2, 0
3 times	Order frequency of the compressor 2	3	120 Hz → 1, 2, 0
4 times	High pressure (MPa)	4	1.52 MPa → 1, 5, 2
5 times	Low pressure (MPa)	5	0.43 MPa → 0, 4, 3
6 times	Discharge temperature (Compressor 1)	6	87 °C → 0, 8, 7
7 times	Discharge temperature (Compressor 2)	7	87 °C → 0, 8, 7
8 times	IPM temperature (Compressor 1)	8	87 °C → 0, 8, 7
9 times	IPM temperature (Compressor 2)	9	87 °C → 0, 8, 7
10 times	CT sensor value (Compressor 1)	A	2 A → 0, 2, 0
11 times	CT sensor value (Compressor 2)	B	2 A → 0, 2, 0
12 times	Suction temperature	C	-42 °C → -, 4, 2
13 times	COND OUT temperautre	D	-42 °C → -, 4, 2
14 times	Temperature of liquid pipe	E	-42 °C → -, 4, 2
15 times	TOP temperature (Compressor 1)	F	87 °C → 0, 8, 7
16 times	TOP temperature (Compressor 2)	G	87 °C → 0, 8, 7
17 times	Outdoor temperature	H	-42 °C → -, 4, 2
18 times	EVI inlet temperature	I	-42 °C → -, 4, 2
19 times	EVI outlet temperature	J	-42 °C → -, 4, 2
20 times	Main EEV1 step	K	2000 → 2, 0, 0
21 times	Main EEV2 step	L	2000 → 2, 0, 0
22 times	EVI EEV step	M	300 → 3, 0, 0
23 times	HR EEV step	N	300 → 3, 0, 0
24 times	Fan step (SSR or BLDC)	O	13 STEP → 0, 1, 3
25 times	Current frequency (Compressor 1)	P	120 Hz → 1, 2, 0
26 times	Current frequency (Compressor 2)	Q	120 Hz → 1, 2, 0
27 times	Suction 2 temperature (HR Only)	R	-42 °C → -, 4, 2
28 times	Master Indoor Unit Address	S	master indoor unit not selected → BLANK, N, D if indoor unit no.1 is selected as the master unit → 0, 0, 1

✻ When you install the product, optional function for outdoor unit must be set in compliance with installation conditions.

✻ Press and hold the K4 button for 5 seconds to check the SW version and address of the indoor units. (Information will be displayed in following order; Main-Hub-INV1-INV2-FAN1-FAN2-EEP-Automatically assigned address - Manually assigned address)

✻ Display method of automatically assigned addresses in K4 View mode (Ex: "AUTO" → "A001" → "AUTO" → "A002" → "AUTO" → "A003")

Page1	Display		
	Page2		
	SEG1	SEG2	SEG3,4
AUTO	Indoor unit: "A" MCU: "C"	Indoor unit: "0" MCU: "1"	Address (No. 1 → 0,1)

✻ Display method of manually assigned addresses in K4 View mode (Ex: "MANU" → "A004" → "MANU" → "A005" → "MANU" → "A006")

Page1	Display		
	Page2		
	SEG1	SEG2	SEG3,4
MANU	Indoor unit: "A"	Indoor unit: "0"	Address (No. 1 → 0,1)

■ AM080/100/120/200FXWA✳✳

K3 (Number of press)	KEY operation	Display on segment
1 time	Intialize (Reset) setting	Same as initial state

K4 (Number of press)	KEY operation	Display on segment	
		SEG 1	SEG2, 3, 4
1 time	Outdoor unit model	1	AM120FXW✳ → Off, 1, 2
2 times	Target frequency (Compressor 1)	2	120 Hz → 1, 2, 0
3 times	Target frequency (Compressor 2)	3	120 Hz → 1, 2, 0
4 times	High pressure (MPa)	4	1.52 MPa → 1, 5, 2
5 times	Low pressure (MPa)	5	0.43 MPa → 0, 4, 3
6 times	Discharge temperature (Compressor	6	87 °C → 0, 8, 7
7 times	Discharge temperature (Compressor	7	87 °C → 0, 8, 7
8 times	IPM temperature (Compressor 1)	8	87 °C → 0, 8, 7
9 times	IPM temperature (Compressor 2)	9	87 °C → 0, 8, 7
10 times	CT sensor value (Compressor 1)	A	2 A → 0, 2, 0
11 times	CT sensor value (Compressor 2)	B	2 A → 0, 2, 0
12 times	Suction temperature	C	-42 °C → -, 4, 2
13 times	COND OUT temperautre	D	-42 °C → -, 4, 2
14 times	Temperature of liquid pipe	E	-42 °C → -, 4, 2
15 times	TOP temperature (Compressor 1)	F	-42 °C → -, 4, 2
16 times	TOP temperature (Compressor 2)	G	-42 °C → -, 4, 2
17 times	Water temperature	H	-42 °C → -, 4, 2
18 times	EVI inlet temperature	I	-42 °C → -, 4, 2
19 times	EVI outlet temperature	J	-42 °C → -, 4, 2
20 times	Main EEV 1 step	K	2000 steps → 2, 0, 0
21 times	Main EEV2 step	L	2000 steps → 2, 0, 0
22 times	EVI EEV step	M	300 steps → 3, 0, 0
23 times	HR EEV step	N	2000 steps → 2, 0, 0
24 times	-	O	-
25 times	Current frequency of the compressor	P	120 Hz → 1,2,0
26 times	Current frequency of the compressor	Q	120 Hz → 1,2,0
27 times	Suction 2 temperature	R	-42 °C → -, 4, 2
28 times	Address of master indoor unit	S	When master indoor unit is not set → BLANK, N, D When indoor unit No.1 is set as master indoor unit →0, 0, 1
29 times	Temperature of control box	T	-42 °C → -, 4, 2

- When you install the product, optional function for outdoor unit must be set in compliance with installation conditions.
- SW version, View mode 2 and address of the indoor unit, press and hold for three seconds to enter the K4.
  (Information will be displayed in following order. Main-Hub-INV1-INV2 FAN1-FAN2-EEP-Automatically assigned address - manually assigned address.)

View mode 2

K4 (Number of press)	KEY operation	KEY operation	Display on Page		
			Page 1	Page 2	
1 TIME	Main version	Main version	Main	Version(ex. 1412)	
2 TIMES	HUB version	HUB version	HUB	Version(ex. 1412)	
3 TIMES	Water HUB version	Water HUB version	HUB2	Version(ex. 1412)	
4 TIMES	Inverter1 version	Inverter1 version	INV1	Version(ex. 1412)	
5 TIMES	Inverter2 version	Inverter2 version	INV2	Version(ex. 1412)	
6 TIMES	EEPROM version	EEPROM version	EEPROM	Version(ex. 1412)	
7 TIMES	The device receives automatic address	The device receives automatic address	AUTO	SEG1,2	SEG3,4
				Indoor unit : "A","0" MCU : "C","1"	Adress(ex. 07)
8 TIMES	The device receives a manual address	The device receives a manual address	MANU	SEG1,2	SEG3,4
				Indoor unit : "A","0"	Adress(ex. 15)

□ Display method of automatically assigned address in K4 View mode. (EX : "AUTO"→ "A001" →"AUTO" →"A003")

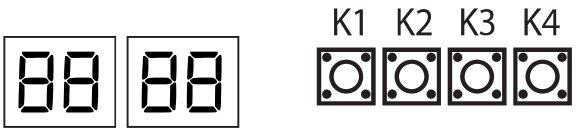
Page 1	Display		
	Page 2		
AUTO	SEG 1	SEG 2	SEC 3,4
	Indoor unit : "A" MCU : "C"	Indoor unit : "0" MCU : "C"	Address (No. 1→01)

□ Display method of automatically assigned address in K4 View mode. (EX : "MANU"→ "A004" →"MANU" →"A005" →"MANU" →"A006")

Page 1	Display		
	Page 2		
MANU	SEG 1	SEG 2	SEC 3,4
	Indoor unit : "A"	Indoor unit : "0"	Address (No. 1→01)

How to check the view mode using a tact switch (cont.)

■ AM140/160/180/200/220/240/260/280/300KXV✳✳✳✳



K1 control	KEY operation	Display on segment
Press and hold 1 time	Auto trial operation	"K" "K" "BLANK" "BLANK"

K1 (Number of press)	KEY operation	Display on segment
1 time	Refrigerant charging in Heating mode	"K" "1" "BLANK" "BLANK"
2 times	Trial operation in Heating mode	"K" "2" "BLANK" "BLANK"
3 times	Pump out in Heating mode (Outdoor unit address 1)	"K" "3" "BLANK" "1"
4 times	Pump out in Heating mode (Outdoor unit address 2)	"K" "3" "BLANK" "2"
5 times	Pump out in Heating mode (Outdoor unit address 3)	"K" "3" "BLANK" "3"
6 times	Pump out in Heating mode (Outdoor unit address 4)	"K" "3" "BLANK" "4"
7 times	Vacuumig (Outdoor unit address 1)	"K" "4" "BLANK" "1"
8 times	Vacuumig (Outdoor unit address 2)	"K" "4" "BLANK" "2"
9 times	Vacuumig (Outdoor unit address 3)	"K" "4" "BLANK " "3"
10 times	Vacuumig (Outdoor unit address 4)	"K" "4" "BLANK" "4"
11 times	Vacuuming (All outdoor units)	"K" "4" "BLANK" "A"
12 times	End Key operation	-

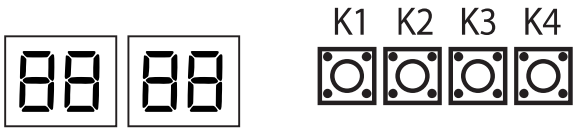
K2 (Number of press)	KEY operation	Display on segment
1 time	Refrigerant charging in Cooling mode	"K" "5" "BLANK" "BLANK"
2 times	Trial operation in Cooling mode	"K" "6" "BLANK" "BLANK"
3 times	Pump down all units in Cooling mode	"K" "7" "BLANK" "BLANK"
4 times	H/R: Checking the pipe connection H/P: Automatic setting of operation mode (Cooling/Heating) for trail operation	"K" "8" "BLANK" "BLANK"
5 times	Checking the amount of refrigerant	"K" "9" X X (Display of last two digits may differ depending on the progress)
6 times	Discharge mode of DC link voltage	"K" "A" "BLANK" "BLANK"
7 times	Forced defrost operation	"K" "B" "BLANK" "BLANK"
8 times	Forced oil collection	"K" "C" "BLANK" "BLANK"
9 times	Inverter compressor 1 check	"K" "D" "BLANK" "BLANK"
10 times	Inverter compressor 2 check	"K" "E" "BLANK" "BLANK"
11 times	Fan 1 check	"K" "F" "BLANK" "BLANK"
12 times	Fan 2 check	"K" "G" "BLANK" "BLANK"
13 times	End Key operation	-

※ During "Discharge mode of DC link voltage", voltage of INV1 and INV2 will be displayed alternately.
※ Even when the outdoor unit power is off, it is dangerous when you come in contact with inverter PCB and fan PCB since they are charged with high DC voltage.
※ When replacing/repairing the PCB, cut-off the power and wait until the DC voltage is discharged before replacing/ repairing them. (Wait for more than 15 minutes to allow it to discharge naturally.)
※ When there were error, 'Dicharge mode of DC link voltage' may not have been effective Especialy if error E464 and E364 have been occured, power element might be damaged by fire and therefore, do not use the 'Discharge mode of DC link voltage'.

K3 (Number of press)	KEY operation	Display on segment
1 time	Intialize (Reset) setting	Same as initial state

How to check the view mode using a tact switch (cont.)

■ AM140/160/180/200/220/240/260/280/300KXV✳✳✳✳



K4 (Number of press)	KEY operation	Display on segment	
		Outdoor unit model	SEG2, 3, 4
1 time	Order frequency (Compressor 1)	1	AM160FXV✳✳✳✳ → Off, 1, 6
2 times	Order frequency (Compressor 2)	2	120 Hz → 1, 2, 0
3 times	High pressure (MPa)	3	120 Hz → 1, 2, 0
4 times	Low pressure (MPa)	4	1 52 MPa → 1, 5, 2
5 times	Discharge temperature (Compressor 1)	5	0 43 MPa → 0, 4, 3
6 times	Discharge temperature (Compressor 2)	6	87 °C → 0, 8, 7
7 times	IPM temperature (Compressor 1)	7	87 °C → 0, 8, 7
8 times	IPM temperature (Compressor 2)	8	87 °C → 0, 8, 7
9 times	CT sensor value (Compressor 1)	9	87 °C → 0, 8, 7
10 times	CT sensor value (Compressor 2)	A	2 A → 0, 2, 0
11 times	Suction temperature	B	2 A → 0, 2, 0
12 times	COND OUT temperautre	C	-42 °C → -, 4, 2
13 times	Temperature of liquid pipe	D	-42 °C → -, 4, 2
14 times	TOP temperature (Compressor 1)	E	-42 °C → -, 4, 2
15 times	TOP temperature (Compressor 2)	F	-42 °C → -, 4, 2
16 times	Outdoor temperature	G	-42 °C → -, 4, 2
17 times	EVI inlet temperature	H	-42 °C → -, 4, 2
18 times	EVI outlet temperature	I	-42 °C → -, 4, 2
19 times	Main EEV1 step	J	-42 °C → -, 4, 2
20 times	Main EEV2 step	K	2000 steps → 2, 0, 0
21 times	EVI EEV step	L	2000 steps → 2, 0, 0
22 times	HR EEV step	M	300 steps → 3, 0, 0
23 times	Fan step (SSR or BLDC)	N	300 steps → 3, 0, 0
24 times	Current frequency (Compressor 1)	O	13 steps → 0, 1, 3
25 times	Current frequency (Compressor 2)	P	120 Hz → 1,2,0
26 times	Suction 2 temperature (H/R)	Q	120 Hz → 1,2,0
27 times	Master indoor unit address	R	-42 °C → -, 4, 2
28 times	Address of master indoor unit	S	Master indoor unit not selected → BLANK, N, D If indoor unit No 1 is selected as the master unit → 0, 0, 1

K4 (Number of press) Press and hold the K4 to enter the setting	Displayed content	Display on segment			
		page1	page2		
1 time	Main version	MAIN	Version (ex 1412)		
2 times	Hub version	HUB	Version (ex 1412)		
3 times	Inverter 1 version	INV1	Version (ex 1412)		
4 times	Inverter 2 version	INV2	Version (ex 1412)		
5 times	Fan 1 version	FAN1	Version (ex 1412)		
6 times	Fan 2 version	FAN2	Version (ex 1412)		
7 times	EEP version	EEP	Version (ex 1412)		
8 times	Automatically assigned address of the units	AUTO	SEG1	SEG2	SEG3
			Indoor unit: "A" MCU: "C"	Indoor unit: "0" MCU: "1"	Address (ex: 07)
9 times	Manually assigned address of the units	MANU	SEG4	SEG5	SEG6
			Indoor unit: "A"	Indoor unit: "0"	Address (ex: 15)

9. Test Operation

9-1 Auto Trial Operation

9-1-1 Auto Trial Operation Synopsis

1) What is the Auto Trial Operation?

DVM S main components defective check and check the status of the installation, provide guidelines that can promptly and accurately resolve the problems that may occur in the field.
If does not end the Auto Trial Operation, normal operation is impossible to enter, it should protect the system from the abnormal state. ("UP")

2) Auto Trial Operation Preliminary checking.

(1) Check the Power cable of Indoor / Outdoor Unit and communication wire.

(2) Turn on the power 6 hours before to start the Auto Trial Operation.
(Crankcase heater to be heated sufficiently.)

(3) Check before applying power voltage and phase using a phase tester and voltmeter.
- R, S, T, N Terminal : Check the between the wire, 380V (R-S, S-T, T-R) / phase-to-phase, 220V (R-N, S-N, T-N).

(4) Power on, perform the tracking. (Outdoor Unit inspects Indoor Unit and optional.)

(5) Card to verify the installation of the control box front : must be record the installation details.

※ Necessarily turn on the power 6 hours before to start the Auto Trial Operation.

3) How to use the Auto Trial Operation.

(1) If does not complete the Auto Trial Operation, normal operation is prohibited.



- If does not complete the Auto Trial Operation, Display the "UP"(Unprepared) on the LED after checking communication.
(Compressor to operate normal operation is prohibited.)

※ UP Mode will be turned off automatically at finished the Auto Trial Operation.

- Auto Trial Operation is carried out by the operating conditions.
(From 20 minutes to maximum 2 hours)
- During Auto Trial Operation due to the valve check, the noise can be generated.
(Sustained abnormal noise occurs, check it)

(2) When an error occurs during the Auto Trial Operation, check the error code in the product and then service it.

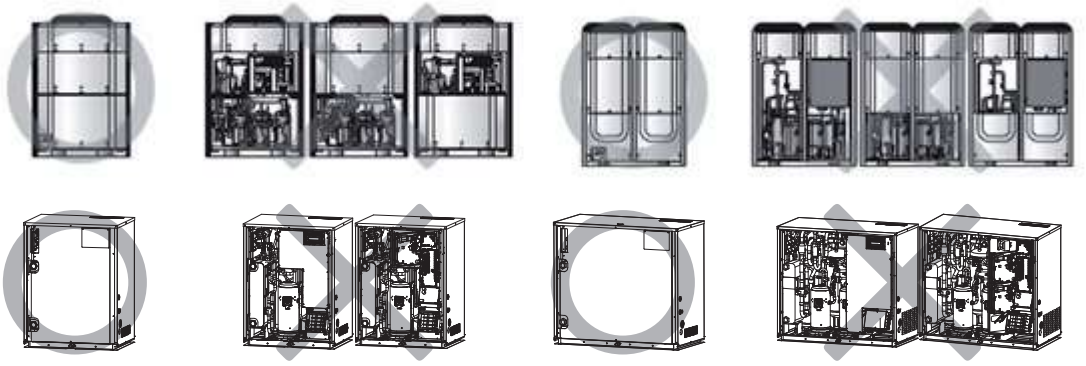
(3) Shut down the Auto Trial Operation, resulting report will be issued using the S-NET or S-CHECKER.
- The resulting report of the "Undetermined"item, troubleshoot the accordance with the service manual.
- Troubleshoot all the items of "Undetermined" and then restart the Auto Trial Operation.

(4) Check the following as Trial Operation. (Heating / Cooling)
- Check the Cooling and Heating operation is progressing well.
- Individual Indoor Unit control : check the wind direction, wind speed.
- Check the Indoor and Outdoor abnormal noise.
- Check the drainage of the Indoor Unit cooling operation.
- More operation : Checking status by using the S-NET.

(5) Refer to manual and explain air conditioner usage to user.

※ If out of warranty coverage and bounds, installation, operation according to the conditions the some of items displayed as "Undetermined" and judgment is not.
Ex) system that module installed : If the outdoor unit is not operation by the load on the indoor and outdoor, corresponding Sub Outdoor Unit does not judge the inspection entries. (However, Indoor / Outdoor Temperature sensor and Pressure sensor judgment is available.)

※ Operation must close the upper and lower cabinets on the front of the Outdoor Unit.
If the cabinet opened while operation : Can cause damage to the product and can not get the exact S-NET data.



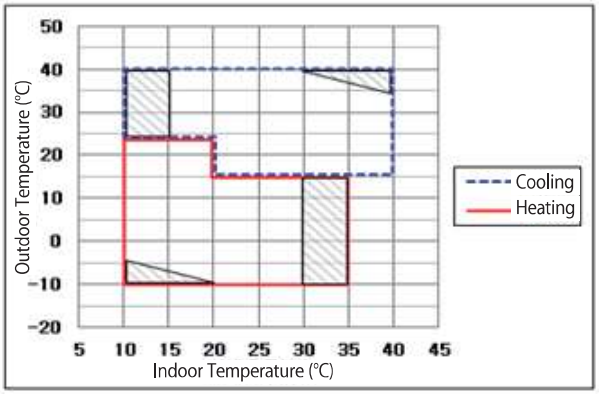
4) Inspection item of the Auto Trial Operation

During the Auto Trial Operation of the DVM S, defect check items are as follows.

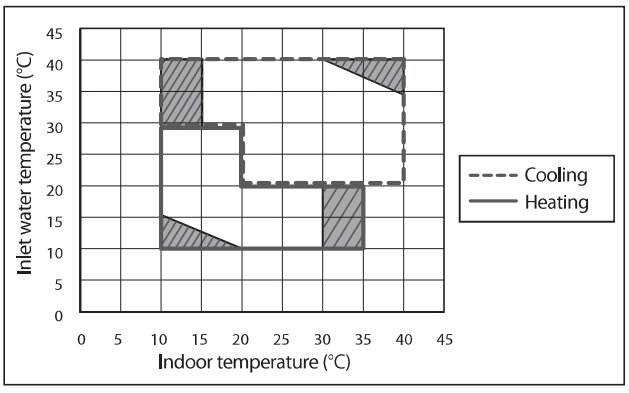
- Indoor Unit Temperature sensor (Indoor temperature of each Indoor Unit, EVA In/Out Temperature sensor)
- Outdoor Unit Temperature sensor
  (Outdoor temperature of each Outdoor Unit, Cond_Out, EVI In/Out, Suction, Liquid Pipe Temperature sensor)
- Outdoor Unit High Pressure sensor & Low Pressure sensor
- Outdoor Unit Service Valve : judgment of the Open/Closed
- Outdoor Unit Compressor : Judgment of the operation current
- Cycle state judgment of the Outdoor Unit
- Outdoor Unit 4Way Valve : Judgment of the operation
- Outdoor Unit EVI EEV : Judgment of the operation
  (※ The operation mode of the Auto Trial Operation : "Heating" only if the detection.)

5) Warranty Coverage of the Auto Trial Operation

As follows, in order to accurately measure Indoor / Outdoor temperature conditions in the Auto Trial Operation is carried out.



<AM080/100/120/200FXWA**>



<AM080/100/120/140/160/180/200FXV***>

- Heating / Cooling mode is automatically selected of Auto Trial Operation .
- Oblique line marked area in the during operation of the system can be protection control.
  (Auto Trial Operation of normal judgment can be difficult by the protection control operation.)
- If out of warranty coverage and the boundary area : Auto Trial Operation judgment accuracy may be reduced.

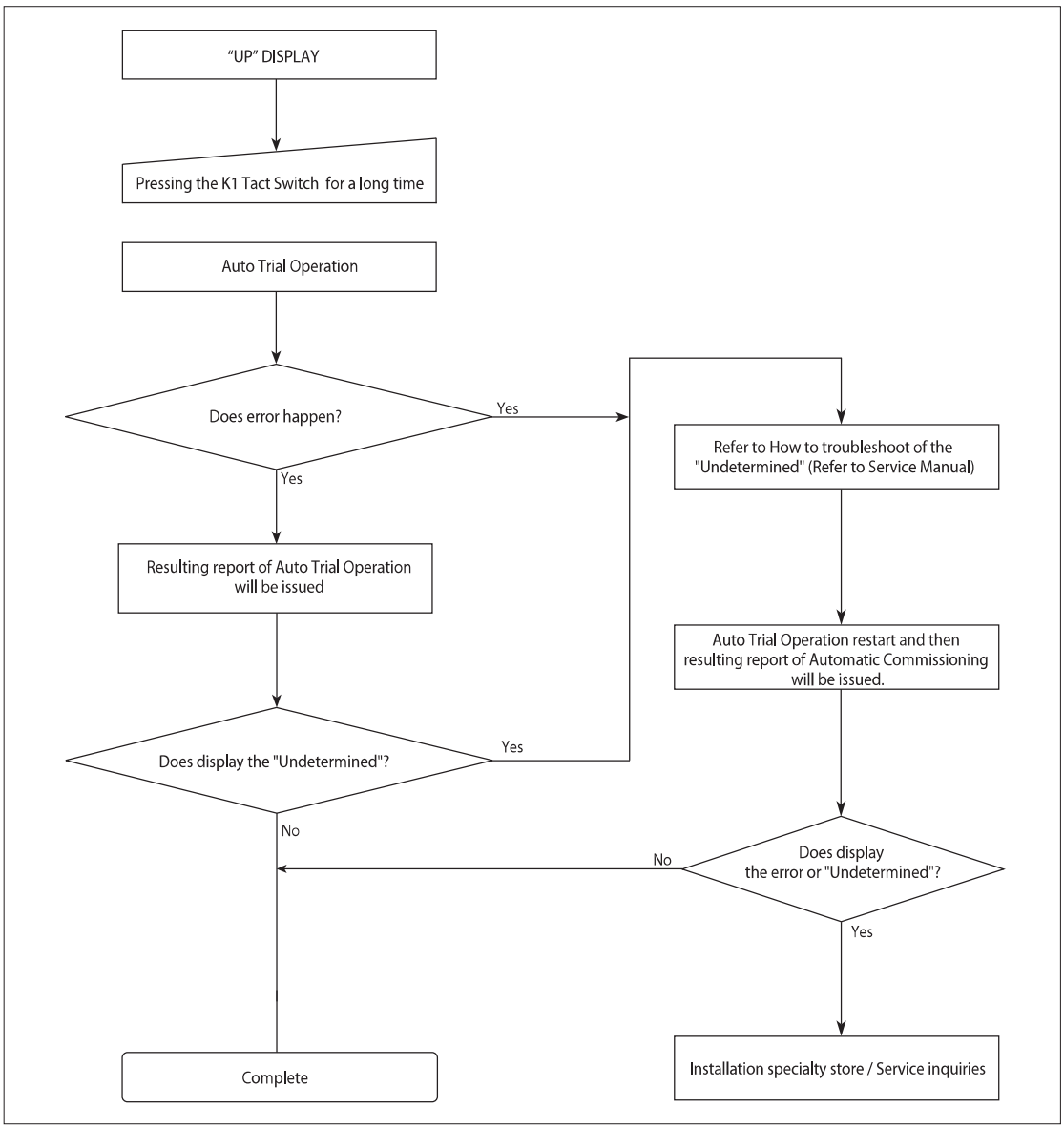
9-1-2 Auto Trial Operation functions

1)Preliminary checking and Auto Trial Operation flow chart

(1) Preliminary checking

- Check the installation status : Outdoor and Indoor Unit piping, Communication, Power, Amount of refrigerant added, etc.

(2) Auto Trial Operation methods



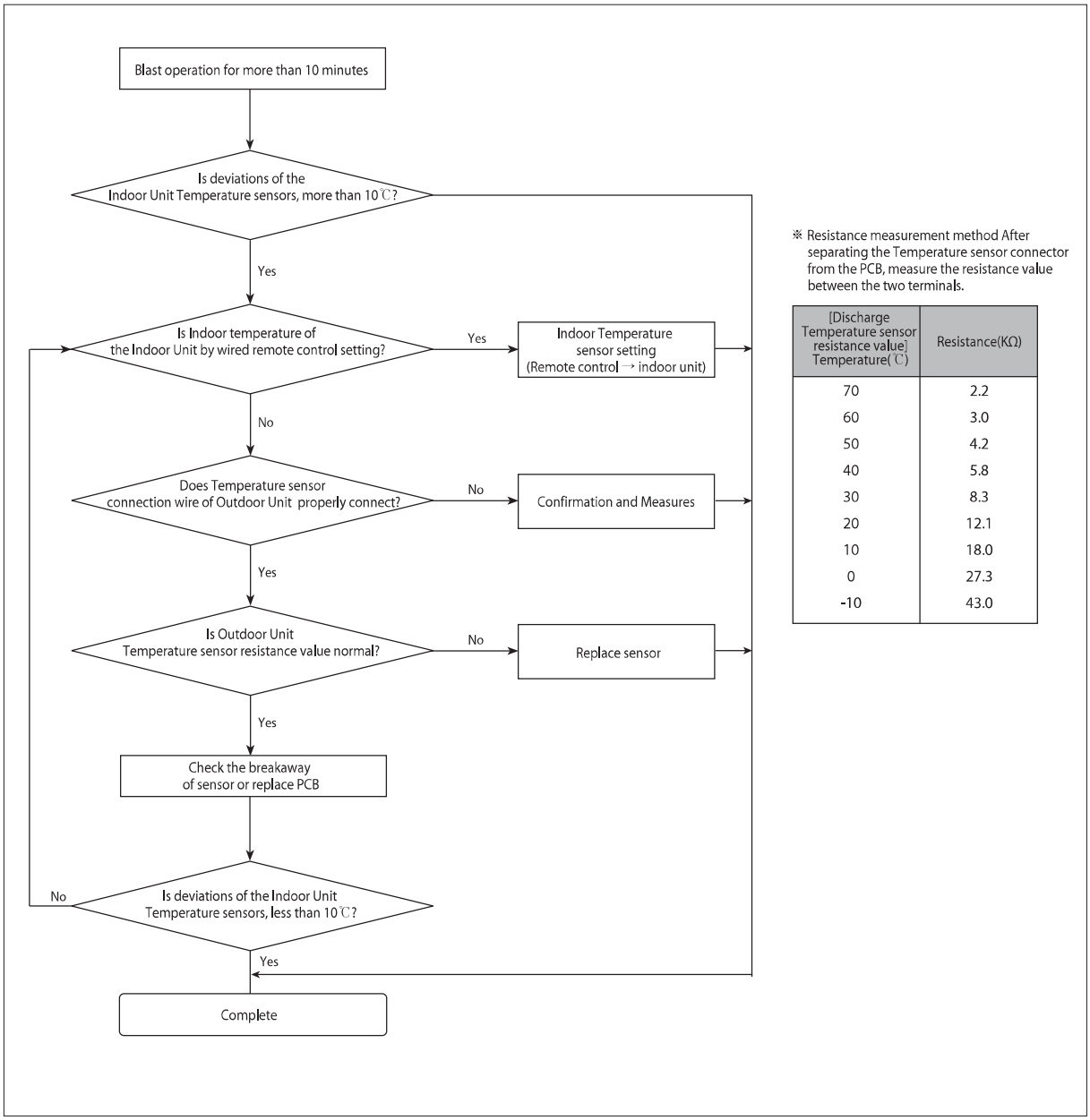
(3) Other Precautions

- If the problem of more than one components at the same time occurs, accurate decisions can be difficult.
- If stop the Sub outdoor during the Auto Trial Operation by load conditions in status of module combination, Outdoor Unit does not judge. (Undetermined)
- If the Outdoor Unit with a history of operation (Auto Trial Operation inclusion) : Must be carried out Auto Trial Operation after 1 hour from final operation stopped. (In this case, the vacuum mode of the air must maintain for more than 5 minutes.)
- Restart of Auto Trial Operation after troubleshoot the item that "Undetermined"

9-1-3 How to troubleshoot of the "Undetermined"

1) Indoor Unit Temperature sensor

- ■ Inspection item : Indoor temperature of each Indoor Unit, EVA In / Out Temperature sensor
- ■ Error code: None (The resulting report "Undetermined")
- ■ Determine the status of the Temperature sensor of the Indoor Unit installed before the compressor start.
- ■ If the judgment of Indoor Unit temperature sensor is "Undetermined" : Checking in accordance with the following order.



※ Resistance measurement method After separating the Temperature sensor connector from the PCB, measure the resistance value between the two terminals.

[Discharge Temperature sensor resistance value] Temperature(℃)	Resistance(KΩ)
70	2.2
60	3.0
50	4.2
40	5.8
30	8.3
20	12.1
10	18.0
0	27.3
-10	43.0

[Caution]

- If the Outdoor Unit with a history of operation (Auto Trial Operation inclusion) :
  Must be carried out Auto Trial Operation after 1 hour from final operation stopped.
- If the Indoor temperature setting by wired remote control :
  Carried out the Auto Trial Operation after setting the Temperature sensor of Indoor Unit.
- Indoor Unit of outdoor air introduction : Will be excluded from the Indoor air temperature, EVA In / Out Temperature sensor checking.

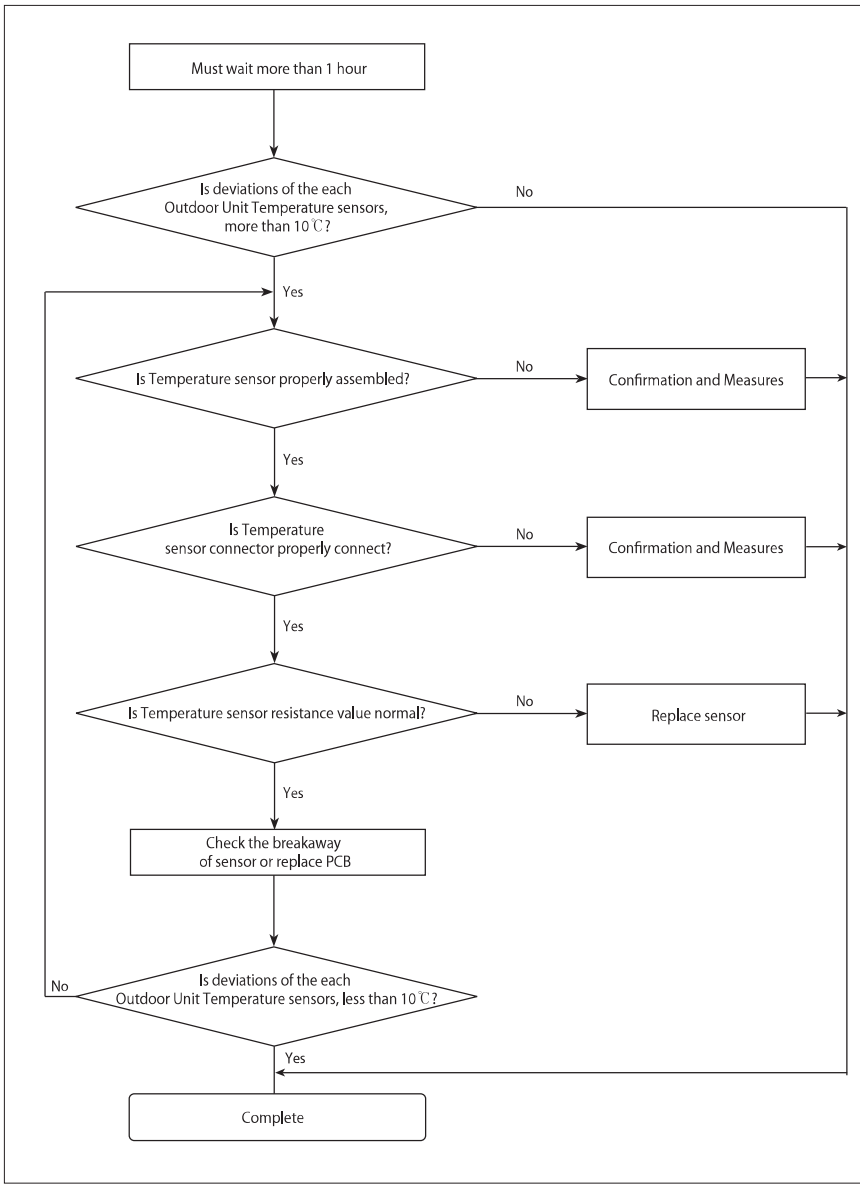
2) Outdoor Unit Temperature sensor

■ Inspection item : Outdoor temperature of each Outdoor Unit, Cond_Out, EVI In / Out, Suction, Liquid pipe temperature sensor

■ Error code: None (The resulting report "Undetermined")

■ Determine the status of the Temperature sensor of the each Outdoor Unit installed before the compressor start.

■ If the judgment of Outdoor Unit Temperature sensor is "Undetermined" : Checking in accordance with the following order.



※ Resistance measurement method After separating the Temperature sensor connector from the PCB, measure the resistance value between the two terminals.

[Discharge Temperature sensor resistance value] Temperature(℃)	Resistance(KΩ)
70	2.2
60	3.0
50	4.2
40	5.8
30	8.3
20	12.1
10	18.0
0	27.3
-10	43.0

[Caution]

- If the Outdoor Unit with a history of operation (Auto Trial Operation inclusion) : Must be carried out Auto Trial Operation after 1 hour from final operation stopped.

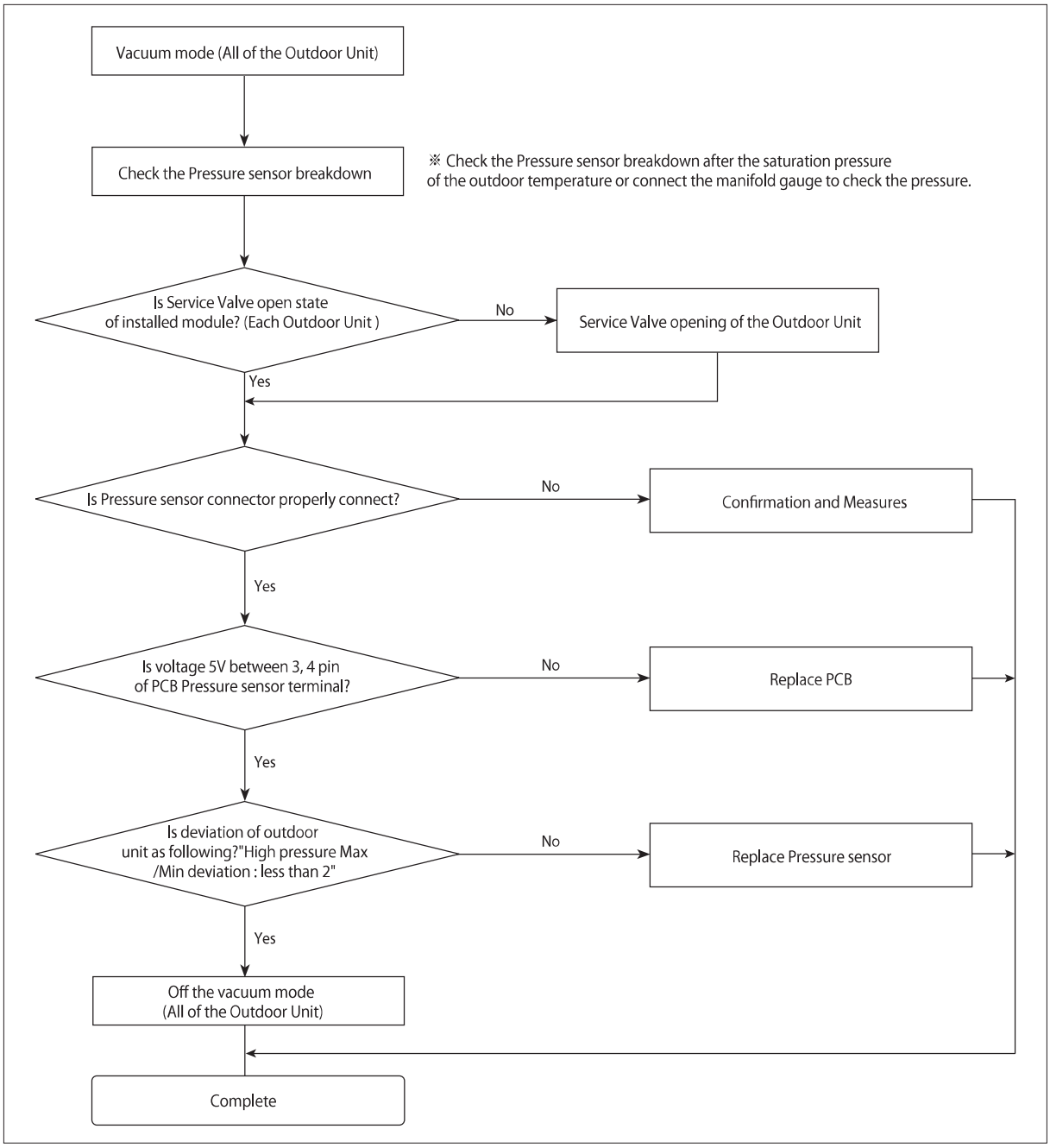
3) High / Low pressure sensor (Module installed)

■ High/Low Pressure sensor of each of the outdoor unit that module is installed.

■ Error code of High Pressure sensor : E505 (The resulting report "Undetermined")
Error code of Low Pressure sensor : E506 (The resulting report "Undetermined")

■ Determine the status of the High/Low Pressure sensor of the each Outdoor Unit installed before the compressor start.

■ If the judgment of Outdoor Unit High/Low Pressure sensor is "Undetermined" : Checking in accordance with the following order.



[Caution]

- If the judgment of Pressure sensor "Undetermined" :
  Display the error to all of the Outdoor Unit and then Auto Trial Operation is exited. (Stop the overall system)

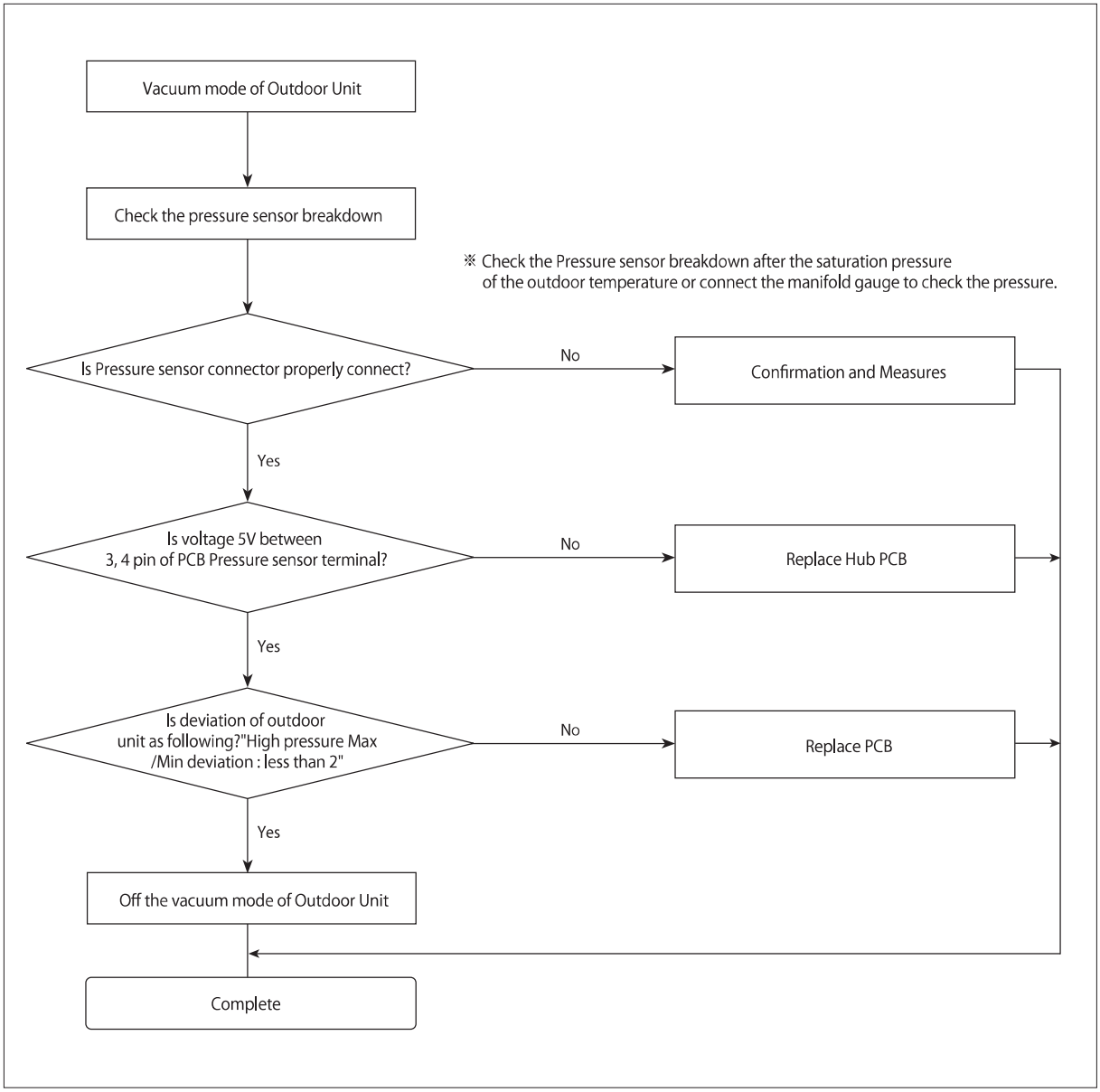
4) Pressure sensor (Independent installation)

■ Inspection item : High/Low Pressure sensor of the independent installed Outdoor Unit.

■ Error code: None (The resulting report "Undetermined")

■ Determine the status of the Pressure sensor of the independent installed Outdoor Unit before the compressor start.

■ If the judgment of Outdoor Unit Pressure sensor is "Undetermined" : Checking in accordance with the following order.



[Caution]

- If the Outdoor Unit with a history of operation (Auto Trial Operation inclusion) : Maintain the vacuum mode for more than 5 minutes.

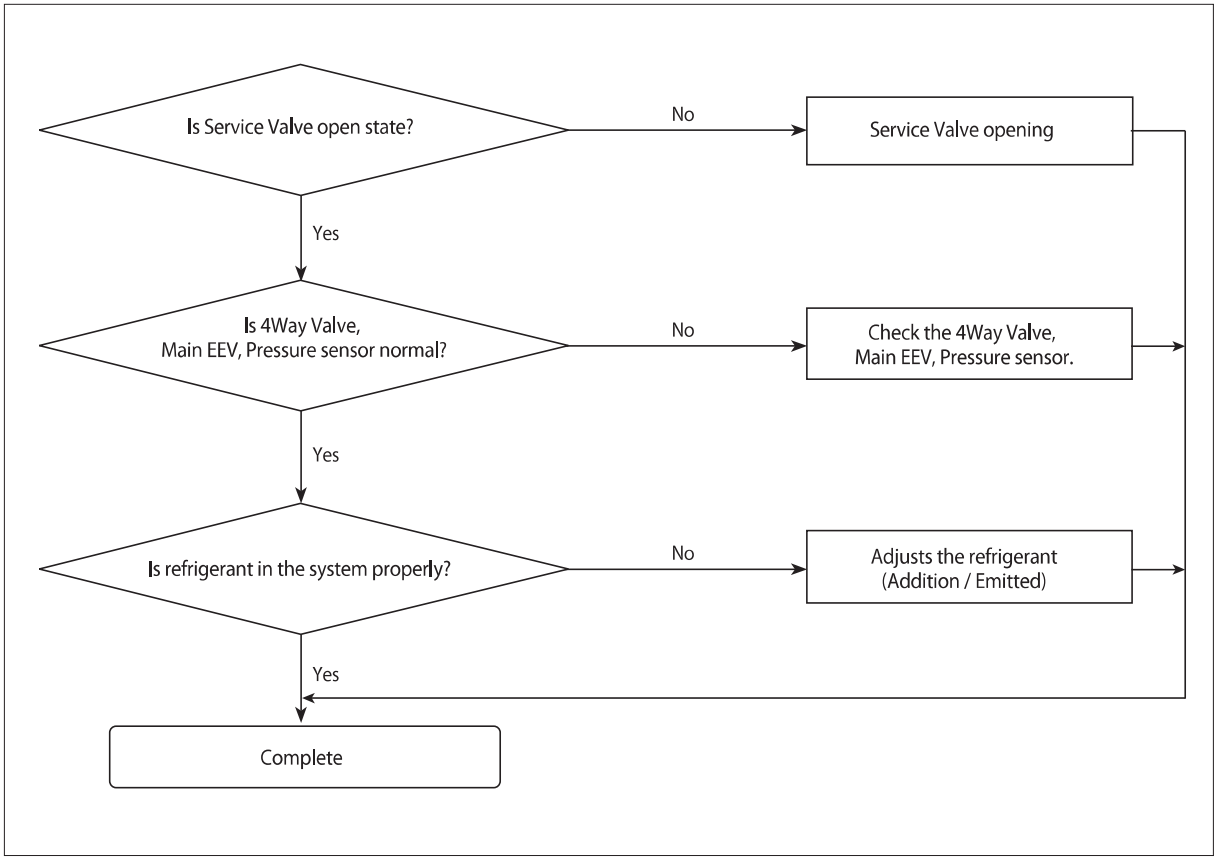
5) Service Valve

■ Inspection item : Outdoor Unit Service Valve is open / closed

■ Error code: E503 (The resulting report "Undetermined")

■ Determine the status of the Service Valve open / closed of the each Outdoor Unit.

■ If the judgment of Outdoor Unit Service Valve is "Undetermined" : Checking in accordance with the following order.



[Caution]

- If the judgment of Service Valve "Undetermined" : Display the error to corresponding Outdoor Unit and then Auto Trial Operation is exited. (Stop the overall system)
- If inspect service valve : Check the Liquid pipe and Gas pipe, Service Valve.
- If the frost formation of Outdoor Heat exchanger, continue Trial Operation until defrost operation begins.
  And then complete after add more than 1 hour operation after end of defrost operation.
  (Execute checking of 4Way Valve and Main EEV together.)
- 4Way Valve abnormal symptoms
  1) Strange noise of compressor to operate.
  2) Indoor unit EVA In/Out maintain the temperature below zero (Less than -0°C)
  3) 4Way Valve : Refer to the Service Manual.
- Main EEV abnormal symptoms
  1) When closed Main EEV opening : Compressor suction degree of overheat impossible to ensure and less than DSH 20K.
  2) When opened Main EEV opening : Compressor suction degree of overheat is high status.
  3) Main EEV : Refer to the Service Manual.
- Pressure sensor abnormal symptoms : Refer to the Service Manual.

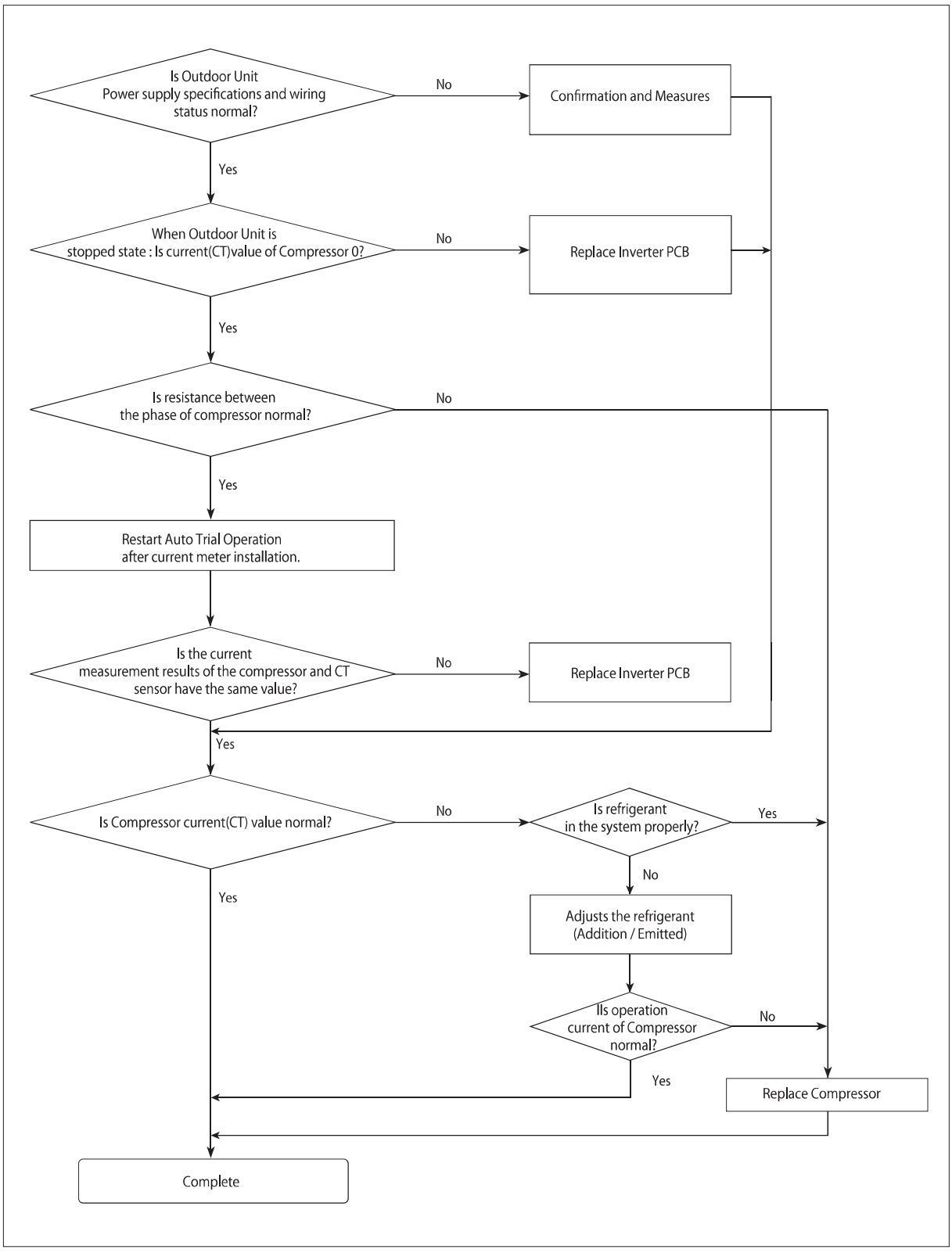
6) Abnormal operation of the Compressor

■ Inspection item : Operation current of Outdoor Unit Compressor.

■ Error code: None (The resulting report "Undetermined")

■ Determine the status of the operating current of the each Outdoor Unit Compressor.

■ If the judgment of operation current of Outdoor Unit Compressor is "Undetermined" :
Checking in accordance with the following order.



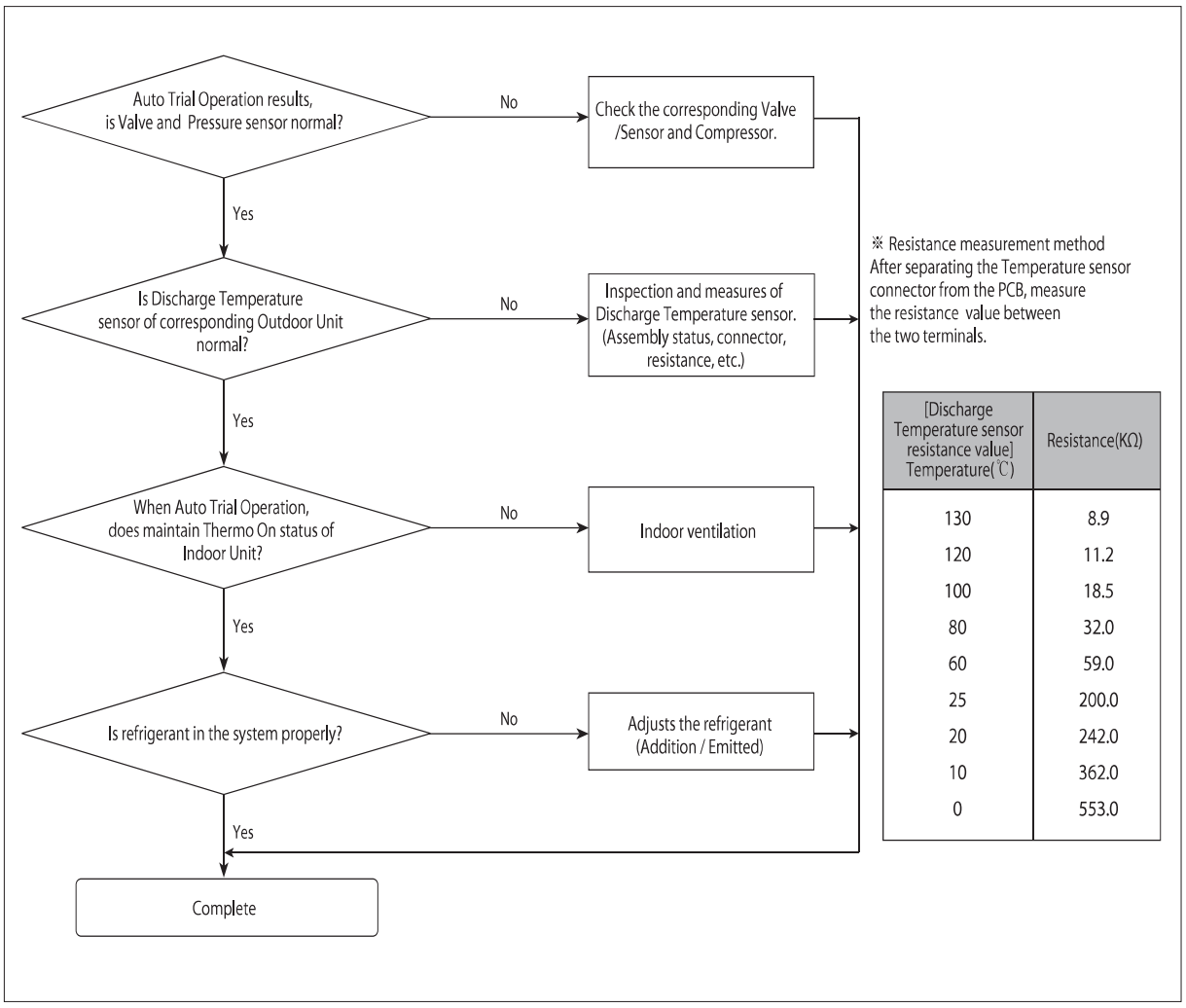
7) Cycle status

■ Inspection item : Cycle status of Outdoor Unit.

■ Error code: None (The resulting report "Undetermined")

■ Determine the Cycle status of the each Outdoor Unit.

■ If the judgment of Cycle status is "Undetermined" : Checking in accordance with the following order.



[Discharge Temperature sensor resistance value] Temperature(℃)	Resistance(KΩ)
130	8.9
120	11.2
100	18.5
80	32.0
60	59.0
25	200.0
20	242.0
10	362.0
0	553.0

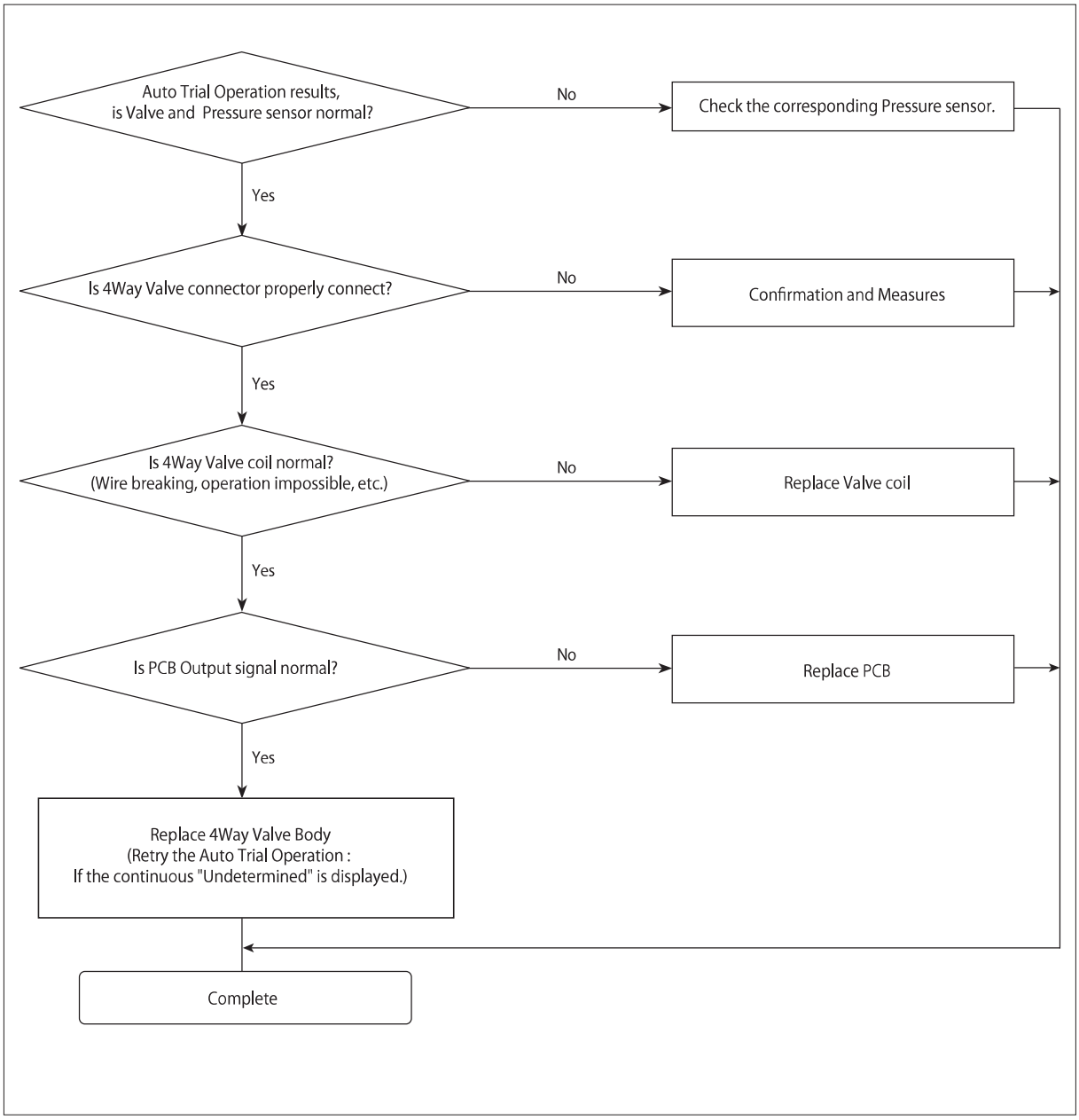
8) 4Way Valve

■ Inspection item : 4Way Valve of Outdoor Unit.

■ Error code: None (The resulting report "Undetermined")

■ Determine the 4Way Valve operation status of the each Outdoor Unit.

■ If the judgment of 4Way Valve is "Undetermined" : Checking in accordance with the following order.



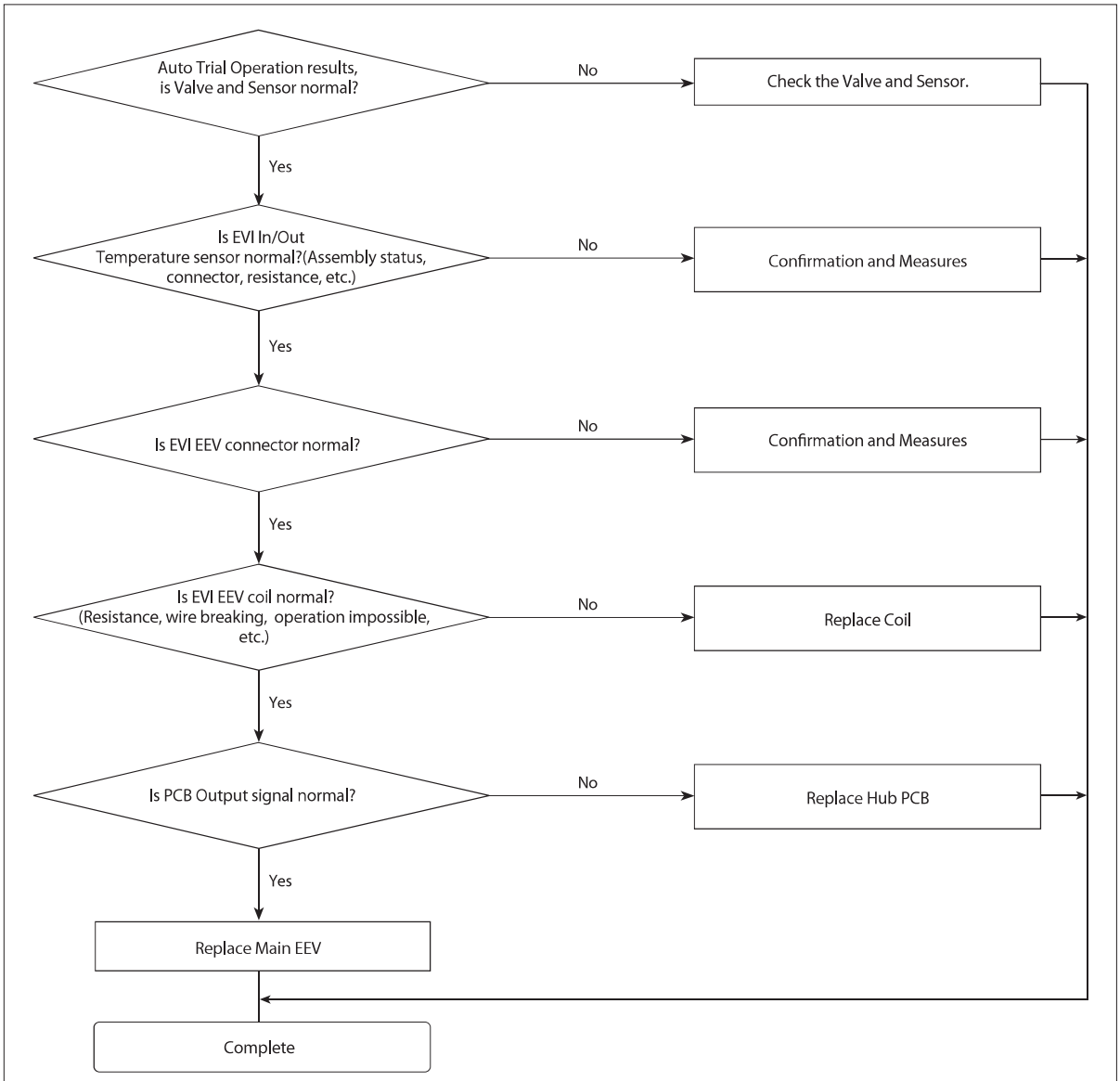
9) EVI EEV

■ Inspection item : EVI EEV of Outdoor Unit.

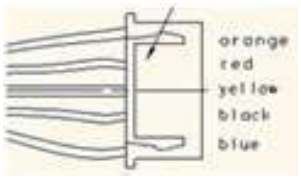
■ Error code: None (The resulting report "Undetermined")

■ Determine the EVI EEV operation status of the each Outdoor Unit.

■ If the judgment of EVI EEV is "Undetermined" : Checking in accordance with the following order.



※ Main EEV coil resistance value based (Measured temperature is 20°C)

EEV Wiring Diagram	Operating Voltage (VDC)	Resistance of between the phase (Ω)
	12±2.0	Blue-Orange Blue-Red Blue-Yellow Blue-Black ------- 92±7.4

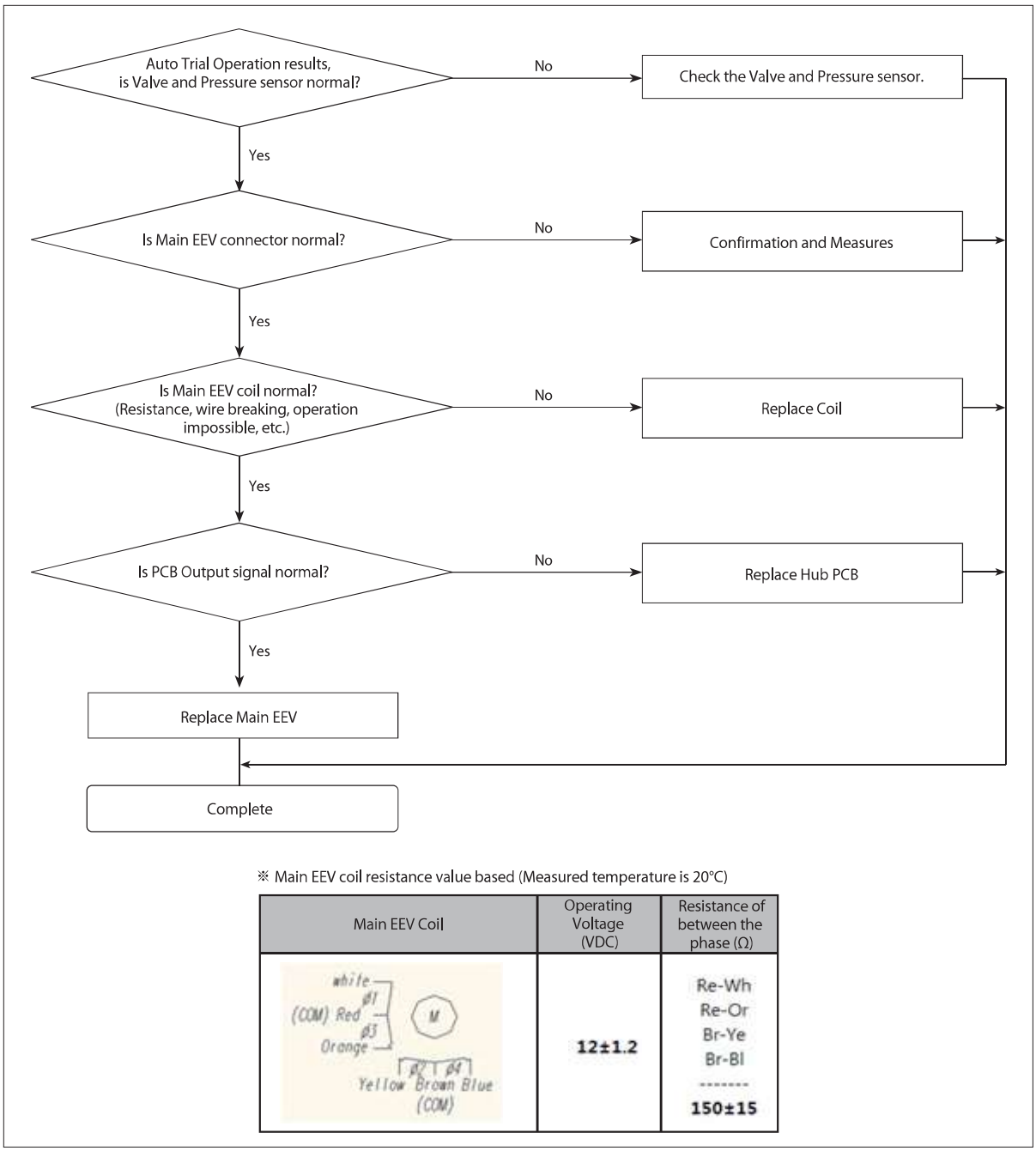
10) Main EEV

■ Inspection item : Main EEV of Outdoor Unit.(Auto Trial Operation : Heating only)

■ Error code: None (The resulting report "Undetermined")

■ Determine the Main EEV operation status of the each Outdoor Unit.

■ If the judgment of Main EEV is "Undetermined" : Checking in accordance with the following order.



※ Main EEV coil resistance value based (Measured temperature is 20°C)

Main EEV Coil	Operating Voltage (VDC)	Resistance of between the phase (Ω)
	12±1.2	Re-Wh Re-Or Br-Ye Br-Bl ------- 150±15

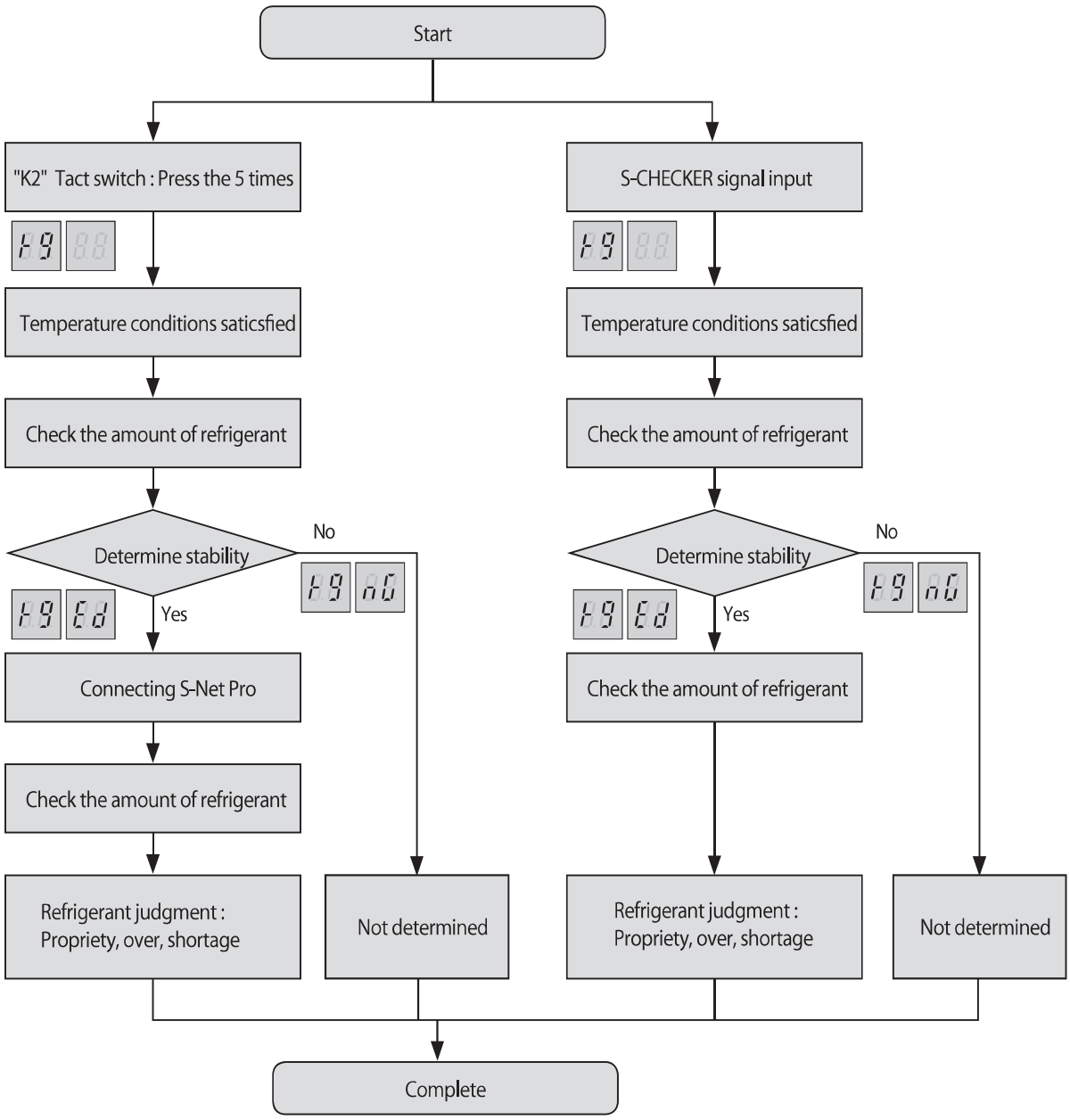
9-1-4 Auto Trial Operation Error Code

Division	Error Code	Description	Remark
Dedicated Error Code	E503	Service Valve is closed	Refer to "Service Valve"
	E505	High pressure sensor breakdown	Refer to "High / Low pressure sensor (Module installed)"
	E506	Low pressure sensor breakdown	

※ Other error codes : Refer to Service Manual.

9-2 Amount of refrigerant automatically checking

Through the detect operation is the ability to verify automatically for the amount of refrigerant.



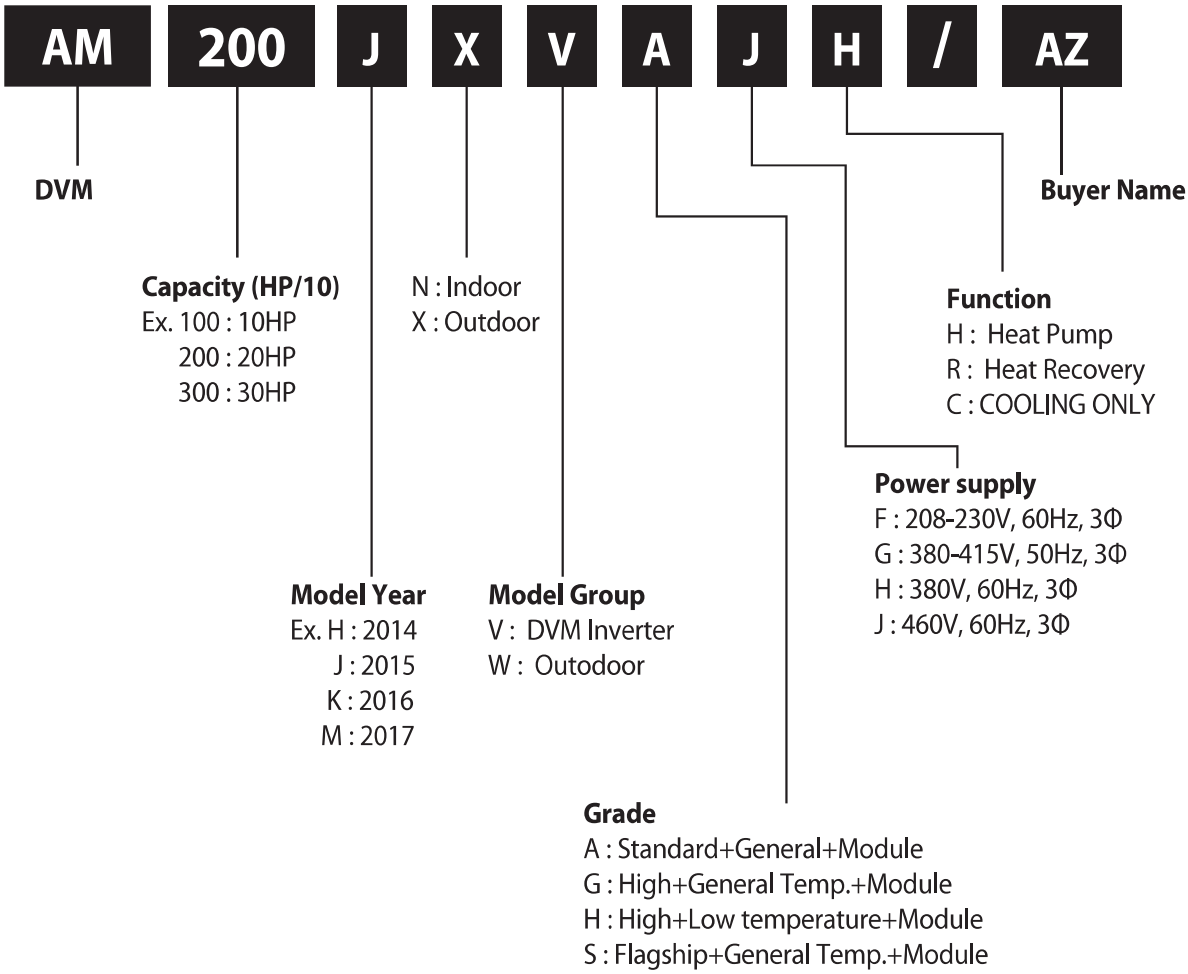
[Caution]

- If escape the warranty temperatures, can not get the accurate results.
  - Indoor : 20~30°C
  - Outdoor : 5~43°C
- If operation cycle is not stable, Checking the amount of refrigerant can be forced to shut down.
- If did not operation for a long time, or when running the heating operation, the accuracy may be lower. Therefore carried out for more than 30 minutes cooling operation.
- Depending on the installation environment, system protection operation is performed, in this case, the check result may be inaccurate.

[How to troubleshoot the judged results]

- Excessive of refrigerant amount : After the 5% emissions of calculated total refrigerant amount, retry Checking the amount of refrigerant.
- Deficiency of refrigerant amount : After the 5% addition of calculated total refrigerant amount, retry Checking the amount of refrigerant.
- Deficiency of Over-cooling : After the 10% addition of calculated total refrigerant amount, retry Checking the amount of refrigerant.
- Undetermined : Checking the amount of refrigerant confirms that is performed in warranty temperatures area. Ensure that there is no other problems in the system by Test Operation.

9-3 Model Naming



SAMSUNG

GSPN (GLOBAL SERVICE PARTNER NETWORK)

Area	Web Site
Europe, CIS, Mideast & Africa	gspn1.samsungcsportal.com
Asia	gspn2.samsungcsportal.com
North & Latin America	gspn3.samsungcsportal.com
China	china.samsungportal.com

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