SAMSUNG

MULTI AIR CONDITIONER

INDOOR UNIT	OUTDOOR UNIT
AR07/09/12/15/18/24TSFABWKN	AJ020BXJ2CH
AR07/09/12/15/18/24BSFCMWKN	AJ024BXJ3CH
AC009/012/018BNNDCH	AJ036BXJ4CH
AC009/012/018BNLDCH	AJ048BXJ5CH
AJ009/012/015/018BNHDCH	AJ020BXS3CH
AC009/012BN1DCH	AJ024BXS4CH
AC009/012/015/018BNJDCH	AJ030BXS4CH
AC012/018/024BNZDCH	AJ036BXS4CH

SERVICE *Manual*

AIR CONDITIONER

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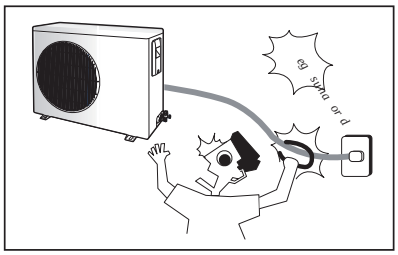
1. Precautions

1-1 Precautions for the Service

- Users should not install the air conditioner by themselves.
  Ask the dealer or authorized company to install the air conditioner except the window-type air conditioner in U.S.A and Canada.
- If you don't install the air conditioner properly, it may cause a fire, a water leakage or an electric shock.
- You must install the air conditioner according to the national wiring regulations and safety regulations.
- Install the indoor unit higher than 2.5m from the floor to avoid the injury caused by the operation of the fan.
  (except the window-type air conditioner)

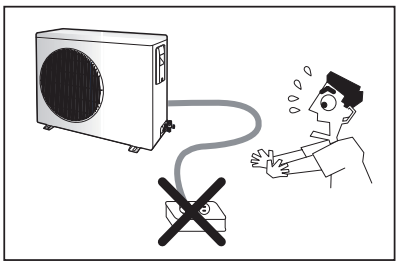


Avoid Dangerous Contact

- The manufacturer is not responsible for any accidents or injury caused by an incorrect installation.
  When installing the built-in type air conditioner, keep all electric cables such as the power cable and the connection cord in pipes, ducts, or cable channels to protect them from the danger of impact or any other incidents.
- More than 2 indoor units should be installed when you use Free Joint Multi air conditioner.
- AJ020BXJ2CH outdoor unit
  - AR18/24TSFABWKN, AR18/24BSFCMWKN, AJ018BNNDCH, AJ018BNLDCH, AC***BNHDCH, AJ015/018TNJDCH, AC018/024BNZDCH indoor units cannot be connected.
- AJ020BXS3CH outdoor unit
  - AR18/24TSFABWKN, AR18/24BSFCMWKN, AJ018BNNDCH, AJ018BNLDCH, AC018BNHDCH, AJ015/018TNJDCH, AC018/024BNZDCH indoor units cannot be connected.
- AJ024BXJ3CH/AJ024BXS4CH outdoor units
  - AR24TSFABWKN/AR24BSFCMWKN, AC024BNZDCH indoor units cannot be connected

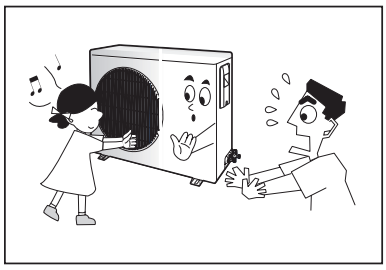
1-2 Precautions for the Static Electricity and PL

- If the power cord of the air conditioner is damaged, it must be replaced by themanufacturer or a qualified person in order to avoid a hazard.
- The air conditioner must be plugged into an independent circuit if applicable or connect the power cable to the auxiliary circuit breaker.
  An all pole disconnection from the power supply must be incorporated in the fixed wiring with a contact opening of >3mm.
- Do not extend an electric cord to the air conditioner.
- The air conditioner must be plugged in after you complete the installation.



No Tapping and No Extension Cords

1-3 During operation



No children Nearby

- Do not repair the air conditioner at your discretion.
  It is recommended to contact a service center directly.
- Never spill any kind of liquid on the air conditioner.
  If this happens, turn off the air conditioner and contact an authorized service center.
- Do not insert anything between the airflow blades to prevent damage of the inner fan and consequent injury.
  Keep children away from the air conditioner.
- Do not place any obstacles in front of the air conditioner.
- Do not spray any kind of liquid into the indoor unit. If this happens, turn off the air conditioner and contact a service center.
- Make sure that the air conditioner is well ventilated at all times:
  Do not place a cloth or other materials over it.
- Remove the batteries if you don't use the remote control for a long time. (If applicable)
- Use the remote control within 7 meters from the indoor unit. (If applicable)

1-4 Disposing of the unit

- Before throwing out the air conditioner, remove the batteries from the remote control.
- When you dispose of the air conditioner, consult your dealer. If pipes are removed incorrectly, refrigerant may blow out and cause air pollution. When it contacts with your skin, it can cause skin injury.
- The package of the air conditioner should be recycled or disposed of properly for environmental reasons.

1-5 Precautions for the Pump Down

- The pipes should have no leaks during installation, and the compressor must be stopped before removing connecting pipes for pump down work. Operating the compressor while the service valve is open and coolant pipe is not properly connected may cause explosion or injury due to abnormal high pressure created inside the coolant cycle as the air can be absorbed through the pipe.
- Pump Down work procedure (When uninstalling the product)
  - Turn on the air conditioner, select cooling operation, and run the compressor for more than 5 minutes.
  - Release the high pressure and low pressure valve caps.
  - Close the high pressure valve completely using an L-wrench.
  - After about 2 minutes, close the low pressure valve completely.

1-6 Others

- Never store or load the air conditioner upside down or sideways to prevent the damage to the compressor.
- Young children or infirm persons should be always supervised when they use the air conditioner.
- Max current is measured according to IEC standard for safety.
- Current is measured according to ISO standard for energy efficiency.
- For servicing the units containing flammable refrigerants, safety checks are required to minimise the risk of ignition.
- Servicing shall be performed following the controlled procedure to minimize the risk of flammable refrigerant or gases.

2. Product Specifications

2-1 The Feature of Product

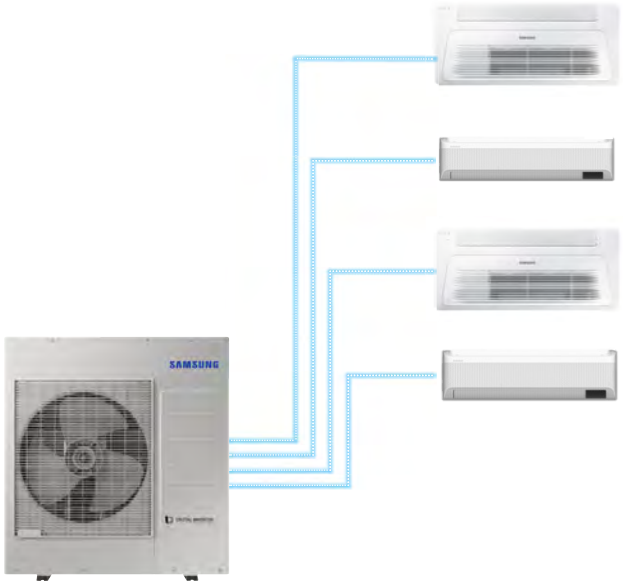
2-1-1 Features

■ **FJM (Free Joint Multi)**

The simpler design of the outdoor unit uses space more efficiently.

■ **Universal Connection**

Multi Inverter(Free Joint Multi) Series delivers comfort to 2~5 rooms with a Single Outdoor Unit.
Free Joint Multi added Universal indoor units, which can be universally connected to other Samsung outdoor units, to all lineup.



■ **Various Indoor units & combinations**

- Wind-Free Wall Mounted
- Wind-Free Slim 1Way Cassette
- Wind-Free Mini 4way Cassette
- Home Duct
- Duct S
- Console
- MPAH

■ Auto Addressing & Auto Pipe Inspection

Improved Installation Procedure

- It can automatically set the address of the indoor unit and inspect pipes with one push of the button. Installation is very simple.

▼ AJ020BXJ2CH/AJ024BXJ3CH

▼ AJ036BXJ4CH/AJ048BXJ5CH/AJ020BXS3CH/ AJ024BXS4CH/AJ030BXS4CH/AJ036BXS4CH

■ Setting to Cool or Heat only mode

This function enables the indoor units connected to the outdoor unit to operate in a specific mode.
When you want to operate all indoor units with the cooling mode or heating mode.

■ Wi-Fi Fuction (SmartThings app)

SmartThings app is the easy way to turn your home into a smart home.
Control the FJM with only one application.
This feature is optional to the several models.

2-2 Product Specifications

2-2-1 Indoor Unit

Type				Wall-mounted			
Model				Wind-Free QF2 GEO			
				AR07TSFABWKN	AR09TSFABWKN	AR12TSFABWKN	AR15TSFABWKN
Performance	Capacity	Cooling	kW	2.05	2.64	3.52	4.40
		Heating		2.20	3.22	3.52	5.28
		Cooling	Btu/h	7,000	9,000	12,000	15,000
		Heating		7,500	11,000	12,000	18,000
	Noise	Sound Pressure	dB(A)	38	38	39	40
Power	Power		ϕ,V,Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz
	Power Consumption	Cooling	W	40	40	40	40
		Heating		40	40	40	40
	Operating Current	Cooling	A	0.4	0.4	0.4	0.4
		Heating		0.4	0.4	0.4	0.4
Size	Net Size	W*H*D	mm	889*299*215	889*299*215	889*299*215	889*299*215
	Net Weight		kg	10.6	10.6	10.6	10.6
Part	Refrigerant Pipe	Liquid	mm	6.35	6.35	6.35	6.35
		Gas		9.52	9.52	9.52	9.52
	Fan	Type	-	Cross flow fan	Cross flow fan	Cross flow fan	Cross flow fan
	Fan Motor	Type	-	BLDC	BLDC	BLDC	BLDC
		Code	-	DB31-00636A	DB31-00636A	DB31-00636A	DB31-00636A
	Heat Exchanger		Row, Step	2Rx16S + 1Rx8S	2Rx16S + 1Rx8S	2Rx16S + 1Rx8S	2Rx16S + 1Rx8S
	Refrigerant Control Device		-	EEV NOT INCLUDED	EEV NOT INCLUDED	EEV NOT INCLUDED	EEV NOT INCLUDED

Type				Wall-mounted	
Model				Wind-Free QF3 GEO	
				AR18TSFABWKN	AR24TSFABWKN
Performance	Capacity	Cooling	kW	5.28	6.15
		Heating		6.04	8.06
		Cooling	Btu/h	18,000	21,000
		Heating		20,600	27,500
	Noise	Sound Pressure	dB(A)	42	47
Power	Power		ϕ,V,Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz
	Power Consumption	Cooling	W	50	50
		Heating		50	50
	Operating Current	Cooling	A	0.5	0.5
		Heating		0.5	0.5
Size	Net Size	W*H*D	mm	1055*299*215	1055*299*215
	Net Weight		kg	12.5	12.5
Part	Refrigerant Pipe	Liquid	mm	6.35	6.35
		Gas		12.7	15.88
	Fan	Type	-	Cross flow fan	Cross flow fan
	Fan Motor	Type	-	BLDC	BLDC
		Code	-	DB31-00637A	DB31-00637A
	Heat Exchanger		Row, Step	2Rx16S + 1Rx8S	2Rx16S + 1Rx8S
	Refrigerant Control Device		-	EEV NOT INCLUDED	EEV NOT INCLUDED

Type				Wall-mounted		
Model				Wind-Free QF1 AIRISE		
				AR07BSFCMWKN	AR09BSFCMWKN	AR12BSFCMWKN
Performance	Capacity	Cooling	kW	2.05	2.64	3.52
		Heating		2.20	3.22	3.52
		Cooling	Btu/h	7,000	9,000	12,000
		Heating		7,500	11,000	12,000
	Noise	Sound Pressure	dB(A)	37	37	37
Power	Power		ϕ,V,Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz
	Power Consumption	Cooling	W	30	30	30
		Heating		30	30	30
	Operating Current	Cooling	A	0.3	0.3	0.3
		Heating		0.3	0.3	0.3
Size	Net Size	W*H*D	mm	820*299*215	820*299*215	820*299*215
	Net Weight		kg	9.1	9.1	9.1
Part	Refrigerant Pipe	Liquid	mm	6.35	6.35	6.35
		Gas		9.52	9.52	9.52
	Fan	Type	-	Cross flow fan	Cross flow fan	Cross flow fan
	Fan Motor	Type	-	BLDC	BLDC	BLDC
		Code	-	DB31-00694A	DB31-00694A	DB31-00694A
	Heat Exchanger		Row, Step	2Rx16S	2Rx16S	2Rx16S
	Refrigerant Control Device		-	EEV NOT INCLUDED	EEV NOT INCLUDED	EEV NOT INCLUDED

Type				Wall-mounted		
Model				Wind-Free QF2 AIRISE	Wind-Free QF3 AIRISE	
				AR15BSFCMWKN	AR18BSFCMWKN	AR24BSFCMWKN
Performance	Capacity	Cooling	kW	4.40	5.28	6.45
		Heating		5.28	6.15	7.03
		Cooling	Btu/h	15,000	18,000	22,000
		Heating		18,000	21,000	24,000
	Noise	Sound Pressure	dB(A)	40	41	45
Power	Power		ϕ,V,Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz
	Power Consumption	Cooling	W	40	50	50
		Heating		40	50	50
	Operating Current	Cooling	A	0.4	0.5	0.5
		Heating		0.4	0.5	0.5
Size	Net Size	W*H*D	mm	889*299*215	1055*299*215	1055*299*215
	Net Weight		kg	10.6	11.5	11.5
Part	Refrigerant Pipe	Liquid	mm	6.35	6.35	6.35
		Gas		9.52	12.7	15.88
	Fan	Type	-	Cross flow fan	Cross flow fan	Cross flow fan
	Fan Motor	Type	-	BLDC	BLDC	BLDC
		Code	-	DB31-00636A	DB31-00636A	DB31-00636A
	Heat Exchanger		Row, Step	2Rx16S + 1Rx8S	2Rx16S	2Rx16S
	Refrigerant Control Device		-	EEV NOT INCLUDED	EEV NOT INCLUDED	EEV NOT INCLUDED

Type				Cassette	
Model				Wind-Free Slim 1Way	
				AC009BN1DCH	AC012BN1DCH
Performance	Capacity	Cooling	kW	2.64	3.52
		Heating		3.52	4.10
		Cooling	Btu/h	9,000	12,000
		Heating		12,000	14,000
	Noise	Sound Pressure	dB(A)	32	35
Power	Power		ϕ,V,Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz
	Power Consumption	Cooling	W	25	25
		Heating		25	25
	Operating Current	Cooling	A	0.26	0.26
		Heating		0.26	0.26
Size	Net Size	W*H*D	mm	970*135*410	970*135*410
	Net Weight		kg	10.0	10.0
Part	Refrigerant Pipe	Liquid	mm	6.35	6.35
		Gas		9.52	9.52
	Fan	Type	-	Cross flow fan	Cross flow fan
	Fan Motor	Type	-	BLDC	BLDC
		Code	-	DB31-00636G	DB31-00636G
	Heat Exchanger		Row, Step	2Rx12S	2Rx12S
	Refrigerant Control Device		-	EEV NOT INCLUDED	EEV NOT INCLUDED

Type				Cassette		
Model				Wind-Free Mini 4Way		
				AC009BNNDCH	AC012BNNDCH	AC018BNNDCH
Performance	Capacity	Cooling	kW	2.67	3.17	5.10
		Heating		2.93	3.96	5.86
		Cooling	Btu/h	9,100	10,800	17,400
		Heating		10,000	13,500	20,000
	Noise	Sound Pressure	dB(A)	31	34	39
Power	Power		ϕ,V,Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz
	Power Consumption	Cooling	W	30	30	30
		Heating		30	30	30
	Operating Current	Cooling	A	0.3	0.3	0.3
		Heating		0.3	0.3	0.3
Size	Net Size	W*H*D	mm	575*250*575	575*250*575	575*250*575
	Net Weight		kg	11.5	11.5	11.5
Part	Refrigerant Pipe	Liquid	mm	6.35	6.35	6.35
		Gas		9.52	9.52	9.52
	Fan	Type	-	Turbo Fan	Turbo Fan	Turbo Fan
	Fan Motor	Type	-	BLDC	BLDC	BLDC
		Code	-	DB31-00578C	DB31-00578C	DB31-00578C
	Heat Exchanger		Row, Step	2Rx8S	2Rx8S	2Rx8S
	Refrigerant Control Device		-	EEV NOT INCLUDED	EEV NOT INCLUDED	EEV NOT INCLUDED

Type				Duct		
Model				Home Duct-1		Home Duct-2
				AC009BNLDCH	AC012BNLDCH	AC018BNLDCH
Performance	Capacity	Cooling	kW	2.64	3.52	5.28
		Heating		3.52	4.10	5.86
		Cooling	Btu/h	9,000	12,000	18,000
		Heating		12,000	14,000	20,000
	Noise	Sound Pressure	dB(A)	33	34	35
Power	Power		ϕ,V,Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz
	Power Consumption	Cooling	W	120	120	120
		Heating		120	120	120
	Operating Current	Cooling	A	1.06	1.06	1.06
		Heating		1.06	1.06	1.06
Size	Net Size	W*H*D	mm	900*199*440	900*199*440	1100*199*440
	Net Weight		kg	18.9	18.9	22.0
Part	Refrigerant Pipe	Liquid	mm	6.35	6.35	6.35
		Gas		9.52	9.52	12.7
	Fan	Type	-	Cross Flow FAN	Cross Flow FAN	Cross Flow FAN
	Fan Motor	Type	-	BLDC	BLDC	BLDC
		Code	-	DB31-00671A	DB31-00671A	DB31-00671B
	Heat Exchanger		Row, Step	2Rx10S	2Rx10S	2Rx10S
	Refrigerant Control Device		-	EEV NOT INCLUDED	EEV NOT INCLUDED	EEV NOT INCLUDED

Type				Duct			
Model				Duct S			
				AJ009BNHDCH	AJ012BNHDCH	AJ015BNHDCH	AJ018BNHDCH
Performance	Capacity	Cooling	kW	2.64	3.52	4.40	5.28
		Heating		3.52	4.10	5.28	6.15
		Cooling	Btu/h	9,000	12,000	15,000	18,000
		Heating		12,000	14,000	18,000	21,000
	Noise	Sound Pressure	dB(A)	30	31	33	34
Power	Power		ϕ,V,Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz
	Power Consumption	Cooling	W	240	240	240	240
		Heating		240	240	240	240
	Operating Current	Cooling	A	2.1	2.1	2.1	2.1
		Heating		2.1	2.1	2.1	2.1
Size	Net Size	W*H*D	mm	850*250*700	850*250*700	850*250*700	850*250*700
	Net Weight		kg	26.5	26.5	26.5	26.5
Part	Refrigerant Pipe	Liquid	mm	6.35	6.35	6.35	6.35
		Gas		9.52	9.52	12.7	12.7
	Fan	Type	-	Cross Flow FAN	Cross Flow FAN	Cross Flow FAN	Cross Flow FAN
	Fan Motor	Type	-	BLDC	BLDC	BLDC	BLDC
		Code	-	DB31-00639B	DB31-00639B	DB31-00639B	DB31-00639B
	Heat Exchanger		Row, Step	3Rx16S	3Rx16S	3Rx16S	3Rx16S
	Refrigerant Control Device		-	EEV NOT INCLUDED	EEV NOT INCLUDED	EEV NOT INCLUDED	EEV NOT INCLUDED

Type				Floor Standing			
Model				Console			
				AC009BNJDCH	AC012BNJDCH	AC015BNJDCH	AC018BNJDCH
Performance	Capacity	Cooling	kW	2.64	2.99	4.40	4.98
		Heating		2.96	3.81	5.28	5.57
		Cooling	Btu/h	9,000	10,200	15,000	17,000
		Heating		10,100	13,000	18,000	19,000
	Noise	Sound Pressure	dB(A)	35	38	42	43
Power	Power		ϕ,V,Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz
	Power Consumption	Cooling	W	54	54	54	54
		Heating		54	54	54	54
	Operating Current	Cooling	A	0.49	0.49	0.49	0.49
		Heating		0.49	0.49	0.49	0.49
Size	Net Size	W*H*D	mm	720*620*199	720*620*199	720*620*199	720*620*199
	Net Weight		kg	15.7	15.7	15.7	15.7
Part	Refrigerant Pipe	Liquid	mm	6.35	6.35	6.35	6.35
		Gas		9.52	9.52	12.7	12.7
	Fan	Type	-	Turbo FAN	Turbo FAN	Turbo FAN	Turbo FAN
	Fan Motor	Type	-	BLDC	BLDC	BLDC	BLDC
		Code	-	DB31-00517A	DB31-00517A	DB31-00517A	DB31-00517A
	Heat Exchanger		Row, Step	2Rx20S	2Rx20S	2Rx20S	2Rx20S
	Refrigerant Control Device		-	EEV NOT INCLUDED	EEV NOT INCLUDED	EEV NOT INCLUDED	EEV NOT INCLUDED

Type				Unitary		
Model				MPAH		
				AC012BNZDCH	AC018BNZDCH	AC024BNZDCH
Performance	Capacity	Cooling	kW	3.52	5.28	7.03
		Heating		3.96	5.86	7.91
		Cooling	Btu/h	12,000	18,000	24,000
		Heating		13,500	20,000	27,000
	Noise	Sound Pressure	dB(A)	38	40	43
Power	Power		ϕ,V,Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz	1, 208-230V, 60Hz
	Power Consumption	Cooling	W	170	170	170
		Heating		170	170	170
	Operating Current	Cooling	A	1.5	1.5	1.5
		Heating		1.5	1.5	1.5
Size	Net Size	W*H*D	mm	445*1092*533	445*1092*533	445*1092*533
	Net Weight		kg	44.5	44.5	44.5
Part	Refrigerant Pipe	Liquid	mm	6.35	6.35	6.35
		Gas		9.52	12.7	15.88
	Fan	Type	-	Sirroco FAN	Sirroco FAN	Sirroco FAN
	Fan Motor	Type	-	BLDC	BLDC	BLDC
		Code	-	DB81-05891A	DB81-04294H	DB81-04294J
	Heat Exchanger		Row, Step	2Rx24S	3Rx24S	3Rx24S
	Refrigerant Control Device		-	EEV NOT INCLUDED	EEV NOT INCLUDED	EEV NOT INCLUDED

2-2-2 Outdoor Unit

Type				Free Joint Multi			
Model				AJ020BXJ2CH	AJ024BXJ3CH	AJ036BXJ4CH	AJ048BXJ5CH
Performance	Capacity	Cooling	Btu/h	18000	22000	32000	47000
		Heating		22000	25000	36000	48500
	Noise	Sound Pressure	dB(A)	48	48	54	52
Power	Power		Φ,V,Hz	1, 208-230, 60	1, 208-230, 60	1, 208-230, 60	1, 208-230, 60
	Power Consumption	Cooling	W	1410	1730	2560	4470
		Heating		1730	1780	2550	3790
	Operating Current	Cooling	A	6.8	8.3	12.2	21.4
		Heating		8.3	8.5	12.2	18.1
Size	Net Size	W*H*D	mm	880 x 798 x 310	880 x 798 x 310	940 x 998 x 330	940 x 1,210 x 330
	Net Weight		kg	53.0	57.0	76.5	87.5
Part	Refrigerant Pipe	Liquid	mm	6.35*2	6.35*3	6.35*4	6.35*5
		Gas		9.52*1+12.7*1	9.52*1+12.7*2	9.52*2+12.7*2	9.52*2+12.7*3
	Compressor	Type	-	Twin BLDC Rotary	BLDC Rotary	Twin BLDC Rotary	Twin BLDC Rotary
		Model Name	-	UG4T200FUAE4	G8T260FUAEW	KTF310D43UMT	KTF310D43UMT
		Output	kW	5.919	7.766	10.01	10.01
	Fan Motor	Type	-	BLDC	BLDC	BLDC	BLDC
		Code	-	DB31-00579A	DB31-00579A	DB31-00579A	DB31-00579A
	Heat Exchanger		Row, Step	2R*36S	2R*36S	2R*46S	2R*56S
	Refrigerant Control Device		-	EEV	EEV	EEV	EEV
Refrigerant	Type		-	R-410A	R-410A	R-410A	R-410A
	Factory Charging		g	2200	2650	3100	3800

Type				Free Joint Multi			
Model				AJ020BXS3CH	AJ024BXS4CH	AJ030BXS4CH	AJ036BXS4CH
Performance	Capacity	Cooling	Btu/h	21000	25000	28400	34000
		Heating		22000	25000	28600	36600
	Noise	Sound Pressure	dB(A)	54	54	54	52
Power	Power		Φ,V,Hz	1, 208-230, 60	1, 208-230, 60	1, 208-230, 60	1, 208-230, 60
	Power Consumption	Cooling	W	1560	1920	2270	2720
		Heating		1610	1830	2090	2550
	Operating Current	Cooling	A	7.4	9.2	10.9	13.0
		Heating		7.7	8.8	10.0	12.2
Size	Net Size	W*H*D	mm	940 x 998 x 330	940 x 998 x 330	940 x 998 x 330	940 x 1,210 x 330
	Net Weight		kg	77.5	78.5	78.5	87.5
Part	Refrigerant Pipe	Liquid	mm	6.35*3	6.35*4	6.35*4	6.35*4
		Gas		9.52*3	9.52*2+12.7*2	9.52*2+12.7*2	9.52*2+12.7*2
	Compressor	Type	-	Twin BLDC Rotary	Twin BLDC Rotary	Twin BLDC Rotary	Twin BLDC Rotary
		Model Name	-	UG8T300FUBJU	UG8T300FUBJU	UG8T300FUBJU	KTF310D43UMT
		Output	kW	9.171	9.171	9.171	10.01
	Fan Motor	Type	-	BLDC	BLDC	BLDC	BLDC
		Code	-	DB31-00579A	DB31-00579A	DB31-00579A	DB31-00579A
	Heat Exchanger		Row, Step	2R*46S	2R*46S	2R*46S	2R*56S
	Refrigerant Control Device		-	EEV	EEV	EEV	EEV
Refrigerant	Type		-	R-410A	R-410A	R-410A	R-410A
	Factory Charging		g	3400	3400	3400	3600

2-3 The Comparative Specifications of Product

Type		Design	Model Name	Specifications		
				Net Size [W*H*D,mm]	Net Weight [kg]	Noise [dB(A)] Sound Pressure
Outdoor	Normal		AJ020BXJ2CH	880*798*310	53.0	48
			AJ024BXJ3CH		57.0	48
			AJ036BXJ4CH	940*998*330	76.5	54
			AJ048BXJ5CH	940*1210*330	87.5	52
	Max Heat		AJ020BXS3CH	940*998*330	77.5	54
			AJ024BXS4CH		78.5	54
			AJ030BXS4CH		78.5	54
			AJ036BXS4CH	940*1210*330	87.5	52

Type		Design	Model Name	Specifications		
				Net Size [W*H*D,mm]	Net Weight [kg]	Noise [dB(A)] Sound Pressure
Indoor	Wall Mounted		AR07/09/12/15TSFABWKN	889*299*215	10.6	38/38/39/40
			AR18/24TSFABWKN	1055*299*215	12.5	42/47
			AR07/09/12BSFCMWKN	820*299*215	9.1	37/37/37
			AR15BSFCMWKN	889*299*215	10.6	40
			AR18/24BSFCMWKN	1055*299*215	11.5	41/45
	Cassette		AC009/012BN1DCH	970*135*410	10.0	32/35
			AC009/012/018BNNDCH	575*250*575	11.5	31/34/39
	Duct		AC009/12BNLDCH	900*199*440	18.9	33/34
			AC018BNLDCH	1100*199*440	22.0	35
			AJ009/012/015/018BNHDCH	850*250*700	26.5	30/31/33/34
	Console		AC009/012/015/018BNJDCH	720*620*199	15.7	35/38/42/43
	MPAH		AC012/018/024BNZDCH	445*1092*533	44.5	38/40/43

2-4 Combination Table (Outdoor-Indoor)

Design	Model Name	Model								
			AJ020BXJ2CH	AJ024BXJ3CH	AJ036BXJ4CH	AJ048BXJ5CH	AJ020BXS3CH	AJ024BXS4CH	AJ030BXS4CH	AJ036BXS4CH
Model		Capacity [kBtu/h]	20	24	36	48	20	24	30	36
	AR07/09/12TSFABWKN	7/9/12	●	●	●	●	●	●	●	●
	AR15TSFABWKN	15	●	●	●	●	●	●	●	●
	AR18TSFABWKN	18		●	●	●		●	●	●
	AR24TSFABWKN	24			●	●			●	●
	AR07/09/12BSFCMWKN	7/9/12	●	●	●	●	●	●	●	●
	AR15BSFCMWKN	15	●	●	●	●	●	●	●	●
	AR18BSFCMWKN	18		●	●	●		●	●	●
	AR24BSFCMWKN	24			●	●			●	●
	AC009/012BN1DCH	9/12	●	●	●	●	●	●	●	●
	AC009/012BNNDCH	9/12	●	●	●	●	●	●	●	●
	AC018BNNDCH	18		●	●	●		●	●	●
	AC009/12BNLDCH	9/12	●	●	●	●	●	●	●	●
	AC018BNLDCH	18		●	●	●		●	●	●
	AJ009/012BNHDCH	9/12		●	●	●	●	●	●	●
	AJ015BNHDCH	15		●	●	●	●	●	●	●
	AJ018BNHDCH	18		●	●	●		●	●	●

Design	Model Name	Model							
			AJ020BXJ2CH	AJ024BXJ3CH	AJ036BXJ4CH	AJ048BXJ5CH	AJ020BXS3CH	AJ024BXS4CH	AJ030BXS4CH	AJ036BXS4CH
Model		Capacity [kBtu/h]	20	24	36	48	20	24	30	36
	AC009/012BNJDCH	9/12	●	●	●	●	●	●	●	●
	AC015BNJDCH	15		●	●	●		●	●	●
	AC018BNJDCH	18		●	●	●		●	●	●
	AC012BNZDCH	12	●	●	●	●	●	●	●	●
	AC018BNZDCH	18		●	●	●		●	●	●
	AC024BNZDCH	24			●	●			●	●

CAUTION

■ Combination Guide for Installation including AJ***BNHDCH / AJ***BNZDCH
- Only one AJ***BNZDCH (MPAH) indoor unit can be included in the combination.
- AJ***BNHDCH (Duct S) indoor units cannot be connected to outdoor unit model AJ020BXJ2CH.
- If AJ***BNHDCH and AC***BNZDCH indoor units are included in the combination, total sum of indoor unit index must be configured so as not to exceed the outdoor index.
- If the indoor unit combination includes AJ***BNHDCH / AC***BNZDCH indoor units and does not meet the installation combination restrictions, E563 error will display and the system will not operate.
. If error code E563 occurs, Cool Mode Try run and Pipe Check operations are still possible.

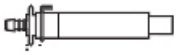
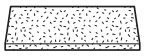
Combination Guide for Installation including AJ***BNHDCH / AC***BNZDCH						
Outdoor Unit	Mixed Installation	4rooms Installation	3rooms Installation	2rooms Installation	Combination Ratio	Outdoor Index
AJ024BXJ3CH	Enabled	N/A	N/A	Enabled	≤1.0	24
AJ036BXJ4CH	Enabled	N/A	N/A	Enabled	≤1.0	36
AJ048BXJ5CH	Enabled	N/A	Enabled	Enabled	≤1.0	48
AJ020BXS3CH	Enabled	N/A	N/A	Enabled	≤1.0	21
AJ024BXS4CH	Enabled	N/A	N/A	Enabled	≤1.0	24
AJ030BXS4CH	Enabled	N/A	N/A	Enabled	≤1.0	30
AJ036BXS4CH	Enabled	N/A	N/A	Enabled	≤1.0	36

* Mixed installation means the case of mixing AJ***BNHDCH and AC***BNZDCH.

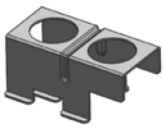
2-5 Accessory and Option Specifications

2-5-1 Indoor Unit Accessories

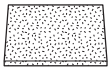
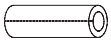
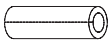
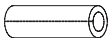
■ AC***BN1DCH

Item	Description	Code No.	Q'ty	Remark
			AC009BN1DCH AC012BN1DCH	
	PAD INSTALL	DB69-01947A,B	1	Indoor Unit
		DB69-03017C,D	-	
	SEAL-DRAIN ASSY	DB62-05810A	1	
	HOSE DRAIN-JOINT	DB94-01258C	1	
	GROMMET-HANGER	DB63-00237A	8	
	MANUAL USERS	DB68-11305A	1	
	MANUAL INSTALL	DB68-11272A	1	
	INSULATION-BASE	DB72-00401C	2	
	CABLE TIE	DB65-10088C	3	
	CARD WARRANTY	6801-002246	1	
	BRACKET-BUSHING	DB61-04340A	1	

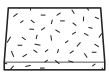
■ AC***BNNDCH

Item	Description	Code No.	Q'ty	Remark
	ASSY DRAIN-HOSE	DB94-03287A	1	Essential Offer (Indoor Unit)
	CABLE TIE	DB65-10088C	6	
	SEAL-DRAIN ASSY	DB62-11028A	1	
	SEAL-DRAIN ASSY	DB62-11028H	1	
	SEAL-DRAIN ASSY	DB62-11028J	1	
	MANUAL USERS	DB68-11208A	1	
	MANUAL INSTALL	DB68-11209A	1	
	CARD WARRANTY	6801-002246	1	
	BRACKET-CONDUIT	DB61-05788A	1	

■ AC***BNLDCH, AJ***BNHDCH

Item	Description	Code No.	Q'ty	Remark
	MANUAL USERS	AC***BNLDCH : DB68-11206A AJ***BNHDCH : DB68-11295A	1	Indoor Unit
	MANUAL INSTALL	AC***BNLDCH : DB68-11207A AJ***BNHDCH : DB68-11296A	1	
	INSULATION-COVER BAND	DB62-04318S	1	
	INSULATION-HOSE	DB62-11028M	1	
	INSULATION-HOSE D	DB62-11028E	1	
	ASSY DRAIN HOSE	DB62-11028F	1	
	INSULATION-TUBE OUT	DB94-06964B	1	
	GROMMET-HANGER	DB63-00237A	4	
	CARD WARRANTY	6801-002246	1	
	CABLE TIE	6501-001110	8	

■ AC***BNJDCH

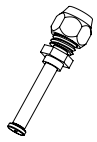
Item	Description	Code No.	Q'ty	Remark
	ASSY WIRELESS REMOCON	DB96-24901P	1	Essential Offer (Indoor Unit)
	BATTERY-MN	4301-000121	2	
	MANUAL USERS	DB68-11212A	1	
	MANUAL INSTALL	DB68-11213A	1	
	HOLDER-REMOCON	DB61-06087A	1	
	SCREW-TAPPING(M4*L12)	6002-000213	2	
	CARD WARRNATY	6801-002246	1	
	SEAL-INSTALL OUTLET	B62-05580V	1	
	SEAL-PIPE SVC	DB62-05691C	1	
	CABLE TIE	DB65-10088C	8	

■ AC***BNZDCH

Item	Description	Code No.	Q'ty	Remark
	CARD WARRANTY	6801-002246	1	Indoor Unit
	MANUAL INSTALL	-	1	

2-5-2 Outdoor Unit Accessories

■ AJ***BX**CH

Item	Descriptions	Code No.	Q'ty	Remark
	Drain Plug	DB67-00477A (AJ020TXJ2CH, AJ024TXJ3CH)	1	
		DB67-00806A (AJ036TXJ4CH, AJ048TXJ5CH, AJ***TXS*CH)		
	Rubber Leg	DB73-20134A	4	
	Installation Manual	DB68-11297A (AJ020BXJ2CH/AJ024BXJ3CH)	1	
		DB68-11298A (AJ036BXJ4CH, AJ048BXJ5CH, AJ***BXS*CH)		
	Nipple Connector	DB67-00789A	1 (AJ020BXJ2CH) 2 (AJ024BXJ3CH)	12.7mm → 9.52mm
	Flare Nuts	DB60-30010B	1 (AJ020BXJ2CH) 2 (AJ024BXJ3CH)	12.7mm → 9.52mm
	Ass'y Tube Connector	DB96-16155A	2 (AJ***BX*4CH) 3 (AJ***BX*5CH)	12.7mm → 9.52mm
		DB96-16155B	2 (AJ020BXS3CH, AJ***BX*4CH, AJ***BX*5CH)	12.7mm → 15.88mm

※ The design and shape can be changed according to the model.

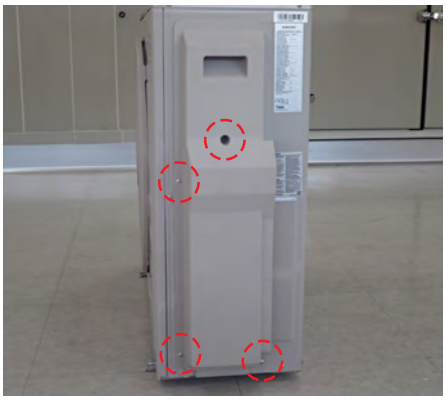
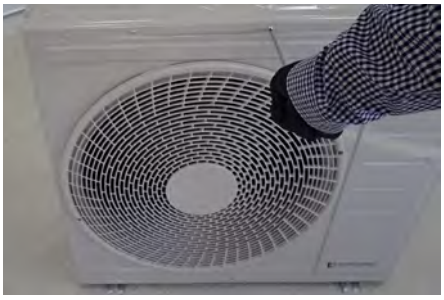
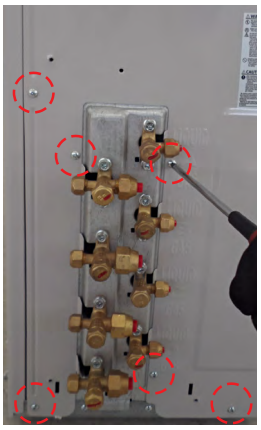
3. Disassembly and Reassembly

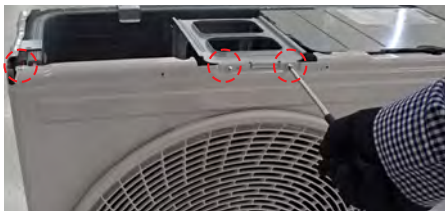
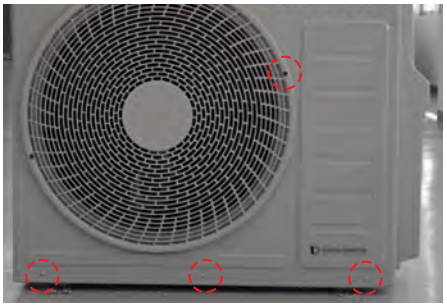
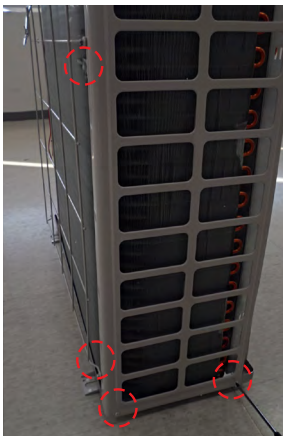
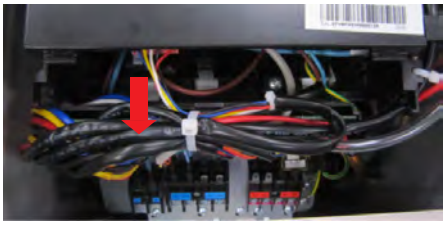
■ Necessary Tools

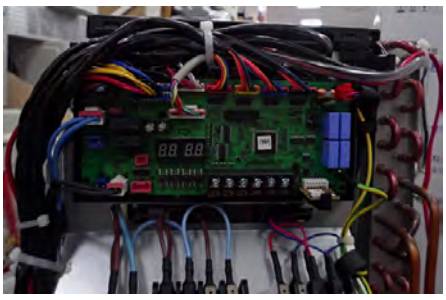
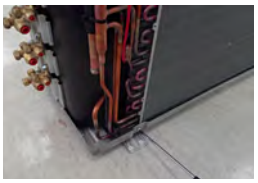
Item	Remark
+Screw driver	
Monkey spanner	

3-1 Outdoor Unit

3-1-1 AJ020BXJ3CH, AJ024BXJ4CH

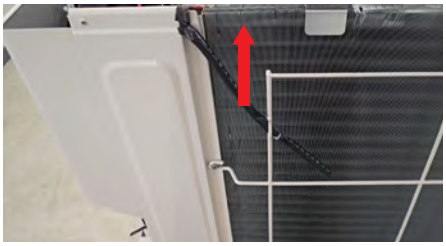
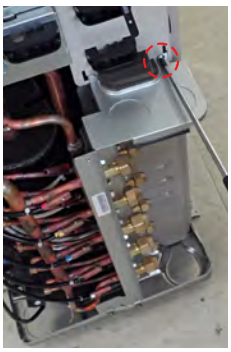
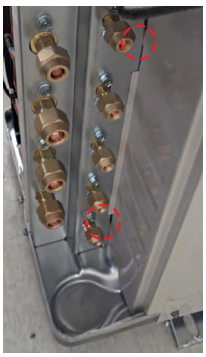
No	Parts	Procedure	Remark
1	Common Work & Control Out	⚠ You must turn off the Power before disassembly. 1) Loosen 4 fixing screws(CCW) of the Cover-Valve. (Use +Screw Driver).	
		2) Loosen each 9 screws(CCW) on Cabi-Top. (Use +Screw Driver).	
		3) Loosen 2 screws(CCW) fixed to assemble Plate Control Out with Cabinet-Side RH. (Use +Screw Driver.)	
		4) Loosen 10 fixing screws(CCW) on Cabinet-Side RH. (Use +Screw Driver.)	 

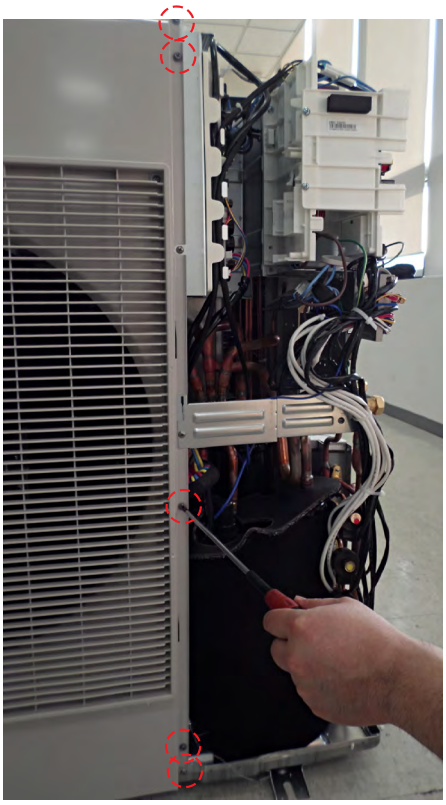
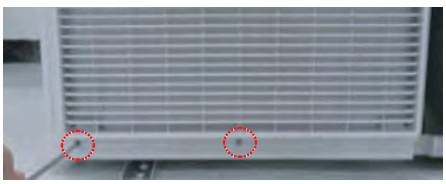
No	Parts	Procedure	Remark
		5) Loosen each 7 screws (CCW) on Cabinet Front. (Use +Screw Driver.)	 
		6) Loosen each 4 screws (CCW) on Cabinet-Side LF. (Use +Screw Driver.)	
2	Ass'y Control Out	1) Detach the Motor Wire from the PCB of Ass'y Control Out.	
		2) Detach comp wire and pressure switch-wire from the PCB of A'ssy Control Out. 3) Detach 2 Connect Wires from Reactor.	

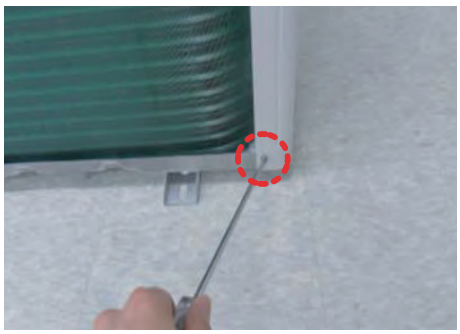
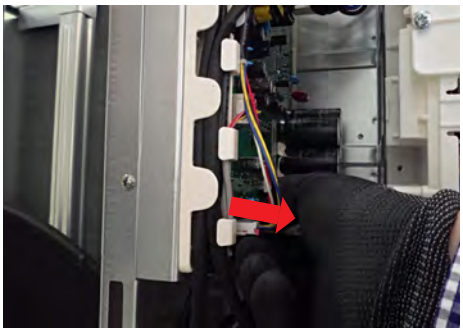
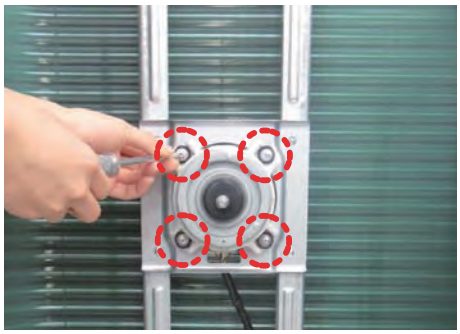
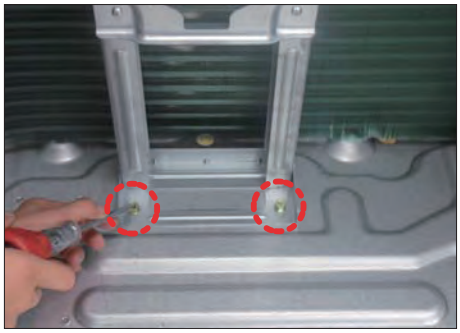
No	Parts	Procedure	Remark
		4) Detach several connectors from the PCB of Ass'y Control Out. 5) Loosen 2 screws (CCW) fixed to assemble Ass'y Control Out with Partition. (Use +Screw Driver.)	 
3	Fan & Motor	1) Loosen the fixing nut (CW) and detach the Fan. (Use Monkey Spanner.) 2) Loosen 4 fixing bolts and detach the Motor. (Use +Screw Driver.) 3) Loosen 2 fixing screws and detach the Bracket Motor. (Use +Screw Driver.)	  
4	Heat Exchanger & Compressor	1) Release the refrigerant at first. 2) Disassemble the Inlet and Outlet Pipe by welding. 3) Loosen the fixing 3 screws of the Heat Exchanger. (Use +Screw Driver.) 4) Detach the Heat Exchanger. ⚠ Befor you disassemble the pipes and Condensor, be sure that there should be no refrgerant remained in the unit. 5) Loosen 3 nuts of the Compressor. (Use Monkey Spanner.) 6) Detach the Compressor.	   

3-1-2 AJ036BXJ4CH, AJ020BXS3CH, AJ024BXS4CH, AJ030BXS4CH

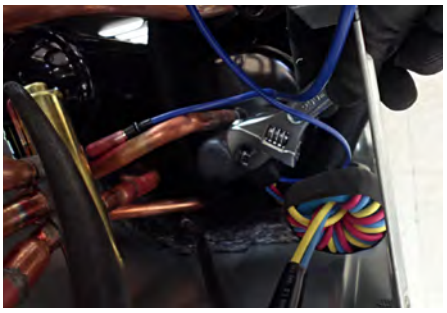
No	Parts	Procedure	Remark
1	Cabi side RH	⚠ You must turn off the Power before disassembly. 1) Loosen 6 fixing screws (CCW) on the Cabinet-Side RH. (Use +Screw Driver).	
2	Cabi Front RH	1) Loosen 3 fixing screws (CCW) on the Cabinet-Front RH. (Use +Screw Driver).	
3	Cabi Top	1) Loosen 7 or 9 fixing screws (CCW) on the Cabi-Top. (Use +Screw Driver).	

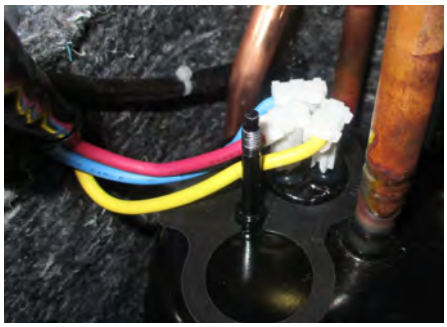
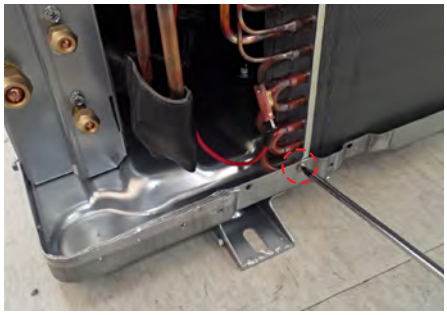
No	Parts	Procedure	Remark
4	Guard Cond	1) Detach the Sensor from the Guard Cond.	
		2) Loosen 4 fixing screws (CCW) on the Gurad Cond. (Use +Screw Driver).	
5	Cabi Back RH	1) Detach the Sensor from the Cabi-Back RH.	
		2) Loosen 5 fixing screws (CCW) on Cabi-Back RH. (Use +Screw Driver).	 
		3) Pull the hook of Cabi Back RH from the Bracket Valve.	 

No	Parts	Procedure	Remark
6	Plate Case Control Support	1) Loosen 2 fixing screws (CCW) on the Plate Case Control Support. (Use +Screw Driver).	
7	Cabi Front LF	1) Loosen 10 fixing screws (CCW) on the Cabinet-Front LF. (Use +Screw Driver).	  

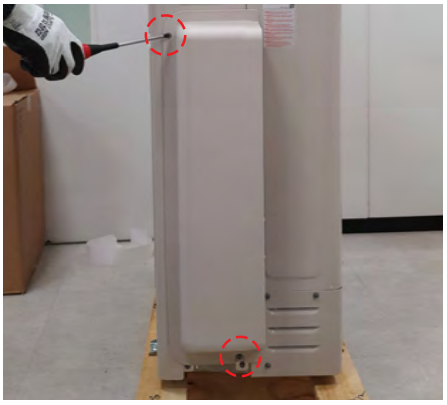
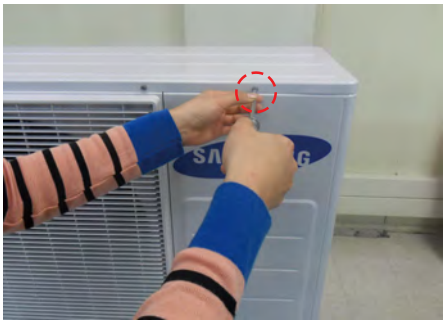
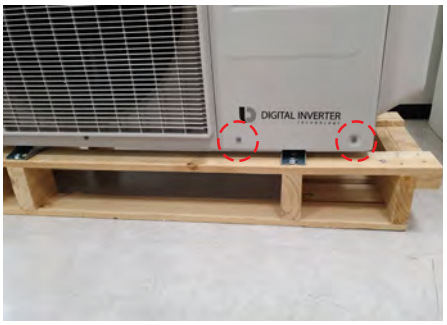
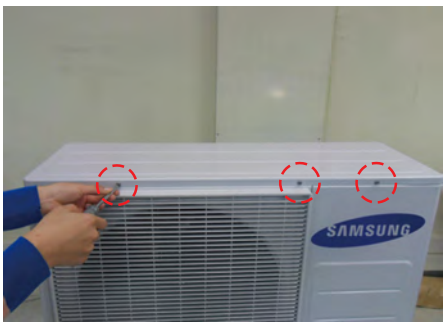
No	Parts	Procedure	Remark
			
8	Fan	1) Loosen the fixing nut (CW). (Use Monkey Spanner) 2) Detache the fan.	
9	Motor	1) Detach the Motor Wire from PCB of A'ssy Control Out. 2) Loosen 4 fixing bolts (CCW) and detach the Motor. (Use +Screw Driver.)	 
10	Backet Motor	1) Loosen 2 fixing screws (CCW) and detach the Bracket Motor. (Use +Screw Driver.)	

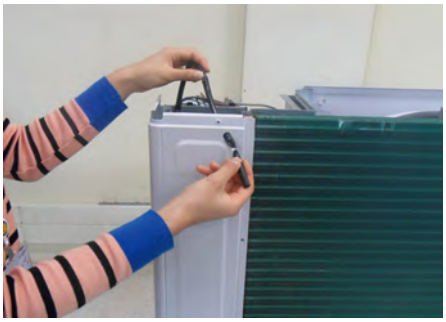
No	Parts	Procedure	Remark
11	Control Out	1) Detach Comp-Wire and Pressure-Wire from PCB of A'ssy Control Out.	
			
		2) Loosen 4 fixing screws (CCW) and detach the Bracket Motor. (Use +Screw Driver.)	 
		3) Separate A'ssy Control Out.	

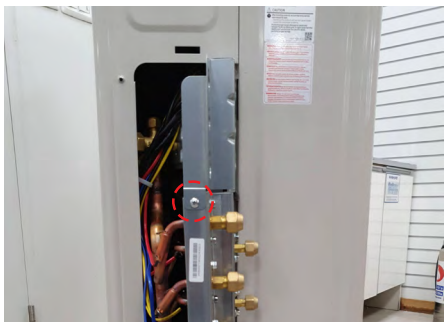
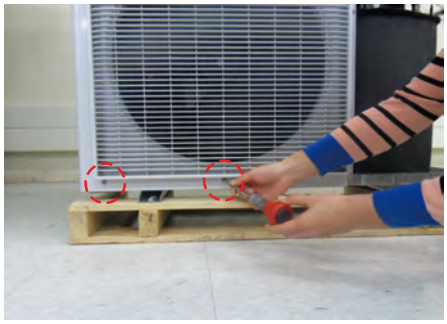
No	Parts	Procedure	Remark
12	Ass'y 4way Valve	1) Disassemble the pipes in both inlet and outlet with welding torch. ⚠ Before you disassemble the pipes and Condenser, be sure that there should be no refrigenrant remained in the unit.	
13	Assy EEV Valve	1) Disassemble the pipes in both inlet and outlet with welding torch. 2) Loosen 2 fixing screws (CCW) and detach the Bracket Valve. (Use +Screw Driver.)	 
14	Compressor	1) Loosen fixing nut (CCW) on the Cover-Terminal. (Use Monkey Spanner or adjust-able Wrench.)	

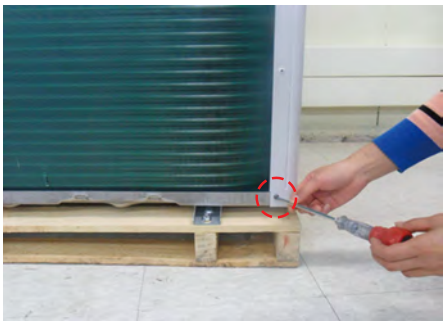
No	Parts	Procedure	Remark
		2) Separate the Conpressor Felt Sound. 3) Loosen 3 nuts (CCW) at the bottom of Compressor. (Use Monkey Spanner.) ⚠ When assembling Comp Wire, make sure to match the color and location of the wire with the picture.	 
15	Heat Exchanger	1) Loosen 2 fixing screws(CCW) on both sides. And loosen 1 fixed screws(CCW) Partition with base.(Use +Screw Driver.)	  

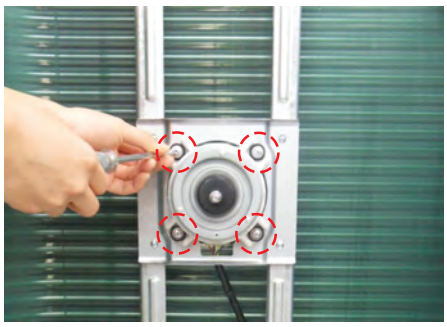
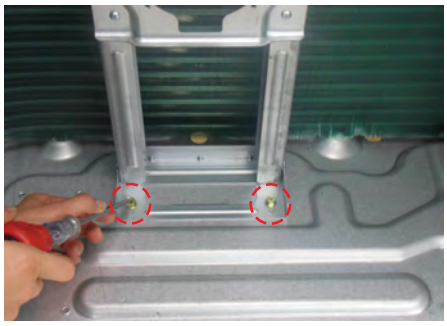
3-1-3 AJ048BXJ5CH, AJ036BXS4CH

No	Parts	Procedure	Remark
1	Cover valve	⚠ Turn off the power before disassembly necessarity. 1) Remove the 2 screws from the cover valve and seperate it. (Use + Screw Driver)	
2	Cabinet Front RH	2) Remove the 4 screws from the Cabinet Front RH and separate it. (Use + Screw Driver)	 
3	Cabinet Top	1) Remove the 8 screws which is fixed to each side of cabinet top and separate it. (Use + Screw Driver)	

No	Parts	Procedure	Remark
4	Guard Cond	1) Pull out the sensor from the guard cond and separate it.	
		2) Remove the 4 screws which is fixed to guard cond and separate it. (Use + Screw Driver)	
5	Cabinet Back RH	1) Pull out the sensor from the cabinet back RH and separate it.	
		2) Remove the 4 screws which is fixed to each side cabinet back RH and separate it. (Use + Screw Driver)	

No	Parts	Procedure	Remark
6	Plate Control	1) Remove the 1 screw from the Plate Conrtol and separate it. (Use + Screw Driver)	
7	Cabinet Front LH	1) Remove the 10 screws from the canbinet Front LF and separate it. (Use + Screw Driver)	 

No	Parts	Procedure	Remark
7	Cabinet Front LH		 
8	Fan	1) Remove the 2 fixing nuts like the picture on the right side. (Use Hexagon Wrench, Monkey Spanner, Hexagon Socket)	

No	Parts	Procedure	Remark
9	Motor	1) Separate the Fan Propeller. 2) Remove the 8 screws which is fixed to Motor. (Use + Screw Driver)	
		3) Separate the Motor Wire connector from the Outdoor Unit Control Part.	
10	Bracket Motor	1) Remove the 2 screws from the Bracket Motor and separate it. (Use + Screw Driver)	

4. Troubleshooting

4-1 Display and Check Method

4-1-1 Indoor unit

■ AC*BN1DCH**

Abnormal conditions	LED lamp display					Remarks
	Operation	Defrost	Timer	Fan	Filter reset	
	Blue	Yellow				
	⏻					
Power reset	◑	X	X	X	X	
Error of temperature sensor in the indoor unit (Open/ Short)	X	X	◑	X	X	
Error of heat exchanger sensor in the indoor unit	◑	X	◑	X	X	
Error of the outdoor temperature sensor Error of the condensor temperature sensor Error of the discharge temperature sensor	◑	X	X	◑	X	
1. No communication for 2 minutes between indoor units (Communication error for more than 2 minutes) 2. Indoor unit receiving the communication error from outdoor unit 3. Outdoor unit tracking 3 minutes error 4. When sending the communication error from the outdoor unit, the mismatching of the communication numbers and installed numbers after completion of tracking. (Communication error for more than 2 minutes	X	X	◑	◑	X	1. Indoor unit error (Display is unrelated with operation) 2. Outdoor unit error (Display is unrelated with operation
1. Error of electronic expansion valve open 2. 2'nd detection of high temperature cond 3. 2'nd detection of high temperature discharge 4. Error of reverse phase 5. Compressor down due to 6th detection of freezing	X	X	◑	◑	◑	
Detection of the float switch	X	X	X	◑	◑	
EEPROM error EEPROM option error	◑	◑	◑	◑	◑	
Error on indoor fan motor (E154)	X	X	X	◑	X	
Outdoor valve clogging error	◑	X	◑	◑	X	
Error due to connecting outdoor units that do not support the WindFree function	◑	◑	X	◑	X	

● : On ◑ : Flickering x: Off

• If you turn off the air conditioner when the LED is flickering, the LED is also turned off.

■ AC***BNNDCH

Abnormal conditions	LED lamp display			
	Opertion	Defrost	Timer	Filter
	⏻	❄	🕒	▦
Power reset	◑	x	x	x
Error of tempreature sensor in the indoor unit (Open/Short)	x	◑	x	x
Error of heat exchanger sensor in the indoor unit (Open/Short)	◑	◑	x	x
Error of fan motor in the indoor unit	x	x	◑	x
Error of the outdoor temperature sensor Error of the condensor temperature sensor Error of the discharge temperature sensor	◑	x	◑	x
No communication for 2 minutes between indoor and outdoor unit (communication error for more than 2 minutes)	x	◑	◑	x
Error of outdoor unit Error of the terminal block thermal fuse (Open)	x	◑	◑	◑
Detection of the float switch	x	x	◑	◑
EEPROM error EEPROM option error	◑	◑	◑	◑
Motion detect sensor error	◑	x	x	◑
Mixed operatiion error	x	x	x	◑
Outdoor valve clogging error	◑	x	◑	◑
Miss matching error between indoor unit and outdoor unit	◑	◑	x	◑

● : On ◑ : Flickering x: Off

• If you turn off the air conditioner when the LED is flickering, the LED is also turned off.

■ AC***BNLDCH, AJ***BNHDCH

• If an error occurs during the operation, one or more LED flickers and the operation is stopped except the LED.
• If you re-operate the air conditioner, it operates normally at first, then detect an error again.

Abnormal conditions	Indicators					Operating
	Concealed Type					
	Green	Red				
	Standard Type					
	⏻					
Power reset	◑	x	x	x	x	
Error of Room sensor in the indoor unit(Open/Short)	x	x	◑	x	x	
Error of EVA-IN,EVA-OUT sensor in the indoor unit (Open/Short)	◑	x	◑	x	x	
Error of Fan motor in the indoor unit	x	x	x	◑	x	
Error of Outdoor or Terminal Block Thermal Fuse (Open)	x	x	◑	◑	◑	
Clogging of outdoor's service valve	◑	x	x	◑	◑	
Detection of the float switch	x	x	x	◑	◑	
Error of EEPROM or OPTION SETTING	◑	◑	◑	◑	◑	
1. No communication for 2 minutes between indoor units (Communication error for more than 2 minutes) 2. Indoor unit receiving the communication error from outdoor unit 3. Outdoor unit tracking 3 minutes error 4. When sending the communication error from the outdoor unit, the mismatching of the communication numbers and installed numbers after completion of tracking. (Communication error for more than 2 minutes)	x	x	◑	◑	x	1. Indoor unit error (Display is unrelated with operation) 2. Outdoor unit error (Display is unrelated with operation)

● : On ◑ : Flickering x: Off

• If you turn off the air conditioner when the LED is flickering, the LED is also turned off.

■ AC***BNZDCH

Abnormal conditions	Indicators					Remarks
	Concealed Type					
	⏻					
	GREEN	RED	◷	✣	▦	
	Standard Type					
	⏻	✣				
Power reset	◑	X	X	X	X	
Error of Room sensor in the indoor unit(Open/Short)	X	X	◑	X	X	
Error of EVA-IN,EVA-OUT discharge sensor in the indoor unit(Open/Short)	◑	X	◑	X	X	
Error of Fan motor in the indoor unit	X	X	X	◑	X	
1. Error of Outdoor 2. Thermal Fuse Open Error of Indoor's Terminal Block	X	X	◑	◑	◑	
1. Clogging of outdoor's service valve 2. the refrigerant leakage	◑	X	X	◑	◑	
Detection of the float switch	X	X	X	◑	◑	
1. Error of EEPROM 2. Error of Option setting	◑	◑	◑	◑	◑	
1. Error of Outdoor Temp. sensor 2. Error of Cond Temp. sensor 3. Error of discharge Temp. sensor	◑	X	X	◑	X	
1. No communication for 2 minutes between indoor units (Communication error for more than 2 minutes) 2. Indoor unit receiving the communication error from outdoor unit 3. Outdoor unit tracking 3 minutes error 4. When sending the communication error from the outdoor unit, the mismatching of the communication numbers and installed numbers after completion of tracking.(Communication error for more than 2 minutes)	X	X	◑	◑	X	1. Indoor unit error (Display is unrelated with opteration) 2. Outdoor unit error (Display is unrelated with operation)

● : On ◑ : Flickering x: Off

• If you turn off the air conditioner when the LED is flickering, the LED is also turned off.

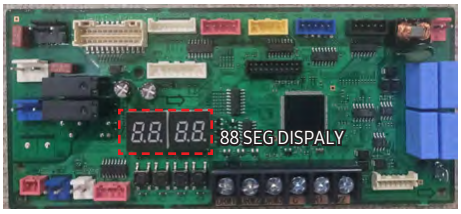
• If an error occurs,  is displayed on the wired remote controller. If you would like to see an error code, press the Test button.

Display	Explanation	Remark
	Communication Error between indoor and outdoor unit	
	Error of Room sensor in the indoor unit(Open/Short)	
	Error of Eva In sensor in the indoor unit(Open/Short)	
	Error of Eva Out sensor in the indoor init(Open/Short)	
	2nd Detection of the float switch	
	Error of Fan motor in the indoor unit	
	EEPROM error	
	EEPROM option setting error	
	Error of Terminal Block's Thermal Fuse(Open)	
	No communication for 2minutes betwwen indoor units (Communication error for more than 2minutes)	
	Clogging of outdoor's service valve	
	Option code miss matching among the indoors (only for DPM)	Check indoor option code
	Error of communication down between the indoor unit and wired remote controller after 3minutes.	Wired remote controller error
	Error of communication down between the indoor unit and wired remote controller after completion of 10 times tracking.	
	COM1/COM2 Cross-installed error	

4-1-2 Outdoor Unit

The table below list the self-diagnostic routines. For some of error, you must contact an authorized service center. If an error occurs during the operation, it is displayed on the outdoor unit PCB MAIN-OUT.

- **PCB MAIN - OUT**
  (AJ020BXJ2CH, AJ024BXJ3CH)



- **PCB MAIN – OUT**
  (AJ020BXS3CH, AJ***BX*4CH, AJ048BXJ5CH)

Error Code	Explanation	Remark
E108	ERROR DUE TO REPEATED ADDRESS SETTING(WHEN 2 OR MORE DEVICES HAS THE SAME ADDRESS WITHIN THE NETWORK)	
E190	PIPE CHECK ERROR	
E199	PIPE CHECK OPERATION HAS NOT BEEN COMPLETED	
E201	COMMUNICATION ERROR BETWEEN INDOOR AND OUTDOOR UNIT(INSTALLATION NUMBER SETTING ERROR, REPEATED INDOOR UNIT ADDRESS, INDOOR UNIT COMM	
E202	COMMUNICATION ERROR BETWEEN INDOOR AND OUTDOOR UNIT(COMMUNICATION ERROR ON ALL INDOOR UNITS, OUTDOOR UNIT COMMUNICATION CABLE ERROR)	
E203	COMMUNICATION ERROR BETWEEN INVERTER PBA AND MAIN PBA	
E221	ERROR ON AMBIENT TEMPERATURE SENSOR (SHORT OR OPEN)	
E237	ERROR ON CONDENSOR TEMPERATURE SENSOR(SHORT OR OPEN)	
E251	ERROR ON DISCHARGE TEMPERATURE SENSOR(SHORT OR OPEN)	
E320	ERROR ON COMPRESSOR OLP TEMPERATURE SENSOR(SHORT OR OPEN)	
E330	ERROR ON PIPE IN-A TEMPERATURE SENSOR(SHORT OR OPEN)	
E331	ERROR ON PIPE IN-B TEMPERATURE SENSOR(SHORT OR OPEN)	
E332	ERROR ON PIPE IN-C TEMPERATURE SENSOR(SHORT OR OPEN)	
E333	ERROR ON PIPE IN-D TEMPERATURE SENSOR(SHORT OR OPEN)	
E334	ERROR ON PIPE IN-E TEMPERATURE SENSOR(SHORT OR OPEN)	
E335	ERROR ON PIPE OUT-A TEMPERATURE SENSOR(SHORT OR OPEN)	
E336	ERROR ON PIPE OUT-B TEMPERATURE SENSOR(SHORT OR OPEN)	

Error Code	Explanation	Remark
E337	ERROR ON PIPE OUT-C TEMPERATURE SENSOR(SHORT OR OPEN)	
E338	ERROR ON PIPE OUT-D TEMPERATURE SENSOR(SHORT OR OPEN)	
E339	ERROR ON PIPE OUT-E TEMPERATURE SENSOR(SHORT OR OPEN)	
E401	OUTDOOR UNIT FREEZING-SAFETY CONTROL(COMPRESSOR STOP)	
E404	OUTDOOR UNIT OVERLOAD-SAFETY CONTROL(COMPRESSOR STOP)	
E416	COMPRESSOR OPERATION STOP DUE TO DISCHARGE TEMPERATURE PROTECTION CONTROL	
E422	HIGH PRESSURE BLOCKAGE CONTROL	
E440	HEATING MODE RESTRICTION DUE TO HIGH AIR TEMPERATURE	
E441	COOLING MODE RESTRICTION DUE TO LOW AIR TEMPERATURE	
E458	FAN MOTOR ERROR	
E461	OPERATION FAILURE OF COMPRESSOR	
E462	COMPRESSOR OPERATION STOP DUE TO FULL LOAD CURRENT CONTROL	
E463	COMPRESSOR OPERATION STOP DUE TO OLP TEMPERATURE CONTROL	
E464	ERROR DUE TO OVER-CURRENT OF COMPRESSOR	
E465	VOLTAGE-LIMIT ERROR OF COMPRESSOR	
E466	ERROR DUE TO LOW/OVER VOLTAGE OF DC LINK IN INVERTER PBA	
E467	ABNORMAL RPM IN COMPRESSOR OR WIRE FOR COMPRESSOR HAS NOT BEEN CONNECTED	
E468	ERROR DUE TO OUTPUT CURRENT SENSOR OF INVERTER PBA(SHORT/OPEN)	
E469	ERROR DUE TO DC LINK VOLTAGE SENSOR OF INVERTER PBA(SHORT/OPEN)	
E470	OUTDOOR UNIT EEPROM READ/WRITE ERROR	
E471	OUTDOOR UNIT EEPROM READ/WRITE ERROR(OTP)	
E474	ERROR ON IPM/PFCM TEMPERATURE SENSOR OF INVERTER PBA(SHORT OR OPEN)	
E475	FAN2 MOTOR ERROR	
E483	OVERVOLTAGE OF H/W DETECT DC LINK	
E484	PFC OVERLOAD(OVER CURRENT) ERROR	
E485	ERROR DUE TO INPUT CURRENT SENSOR OF INVERTER PBA(SHORT/OPEN)	
E488	INCOMING VOLTAGE SENSOR ERROR	
E500	IPM/PFCM OVERHEAT ERROR	
E554	THE REFRIGERANT LEAKS COMPLETELY FROM THE OUTDOOR UNIT	
E563	ERROR DUE TO INDOOR UNIT SOFTWARE VERSION COMBINATION(INCOMPATIBLE INDOOR UNITSOFTWARE ON A SYSTEM)	
E590	INVERTER EEPROM CHECKSUM ERROR	

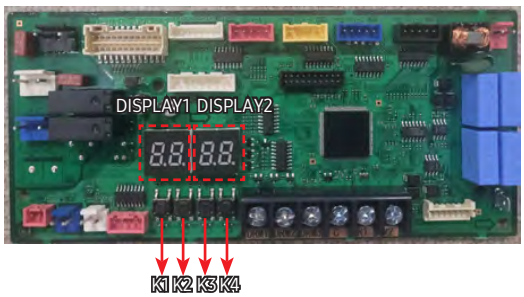
4-2 Setting an indoor unit address and installation option

1. Setting the indoor unit addresses automatically

CAUTION

• This product is prohibited one indoor unit installation. Don't use pipe checking operation and auto addressing mode when one indoor unit is installed.

- **PCB MAIN - OUT**
  (AJ020BXJ2CH, AJ024BXJ3CH)



- **PCB MAIN – OUT**
  (AJ020BXS3CH, AJ***BX*4CH, AJ048BXJ5CH)

1 Turn on the outdoor unit, and then check whether the display 1/2 indications are displayed "E199" code.
※ During the initial , display 1 shows " " and display 2 shows the connected indoor number.
• If different display code is shown, see Troubleshooting on page 37 and take corrective actions.

2 Push once the K1 button.

3 After the operations described above have been performed, the system starts in Cooling or Heating mode, depending on the external ambient temperature. After a few minutes (from a minimum of 3 to 5 minutes for the internal unit), the system stops automatically, completing the self-test and addressing procedure. " " appears on the display of the outdoor unit.

4 If you press the K1 button one more time, " " disappears and inspection is complete.

NOTE

• At this point it is possible to start the internal units in the desired mode.
※ If "E199" doesn't display, the procedure has failed and it is therefore necessary to read ALL the operator's manual before repeating the operating described in steps 1-2-3-4.

3. Setting the indoor unit addresses manually

1. Review all the following elements in the installation:
   - Installation site strength
   - Piping connection tightness to detect any gas leakage
   - Connection wiring
   - Heat-resistant insulation of the piping
   - Drainage
   - Earthing wire connection
2. Manually set options in each room's the indoor unit by referring to page 4-11.
3. Press the K3 button once or reset the outdoor unit.

NOTE
- The Display 1/2 indications are the same as in the automatic address setting mode.

Setting of Key and Display of the outdoor unit

- Key option of the outdoor unit
  - K1: Function button - K3: Reset button

Push \ Key	K1	K3
1	Pipe Checking Operation	Reset
2	Cool Mode Try run	
3	Heat Mode Try run	
4	Pump Down	
5	Inverter Fault Detection (Comp#1)[1)]	
6	Auto Mode Try run	
7	Finish Key Operation	

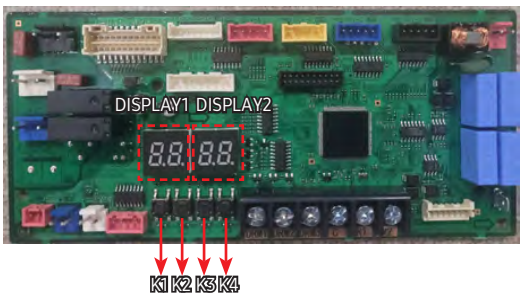
※ For more information of the Cool or Heat or Auto mode Try run test, refer to page 4-39.

[1)] Indication on the display and action to take when an inverter fault is detected.

	SEG1	SEG2	SEG3	SEG4	Action to take
Fault detection is in progress	7	1	-	-	-
OK	7	1	0	h	-
NG	7	1	n	0	PBA defect: Replace the PBA
Check	7	1	C	h	Manual inspection is required
Going into fault detection mode failed	7	1	F	b	Try fault detection again

• K4 View mode Display changes

- **PCB MAIN - OUT**
  (AJ020BXJ2CH, AJ024BXJ3CH)



- **PCB MAIN – OUT**
  (AJ020BXS3CH, AJ***BX*4CH, AJ***BX*5CH)

• K4 View mode Display changes

Push	Display Explanation	Push	Display Explanation
1	Present Compressor Frequency	9	Discharge temperature
2	Target Compressor Frequency	10	OLP temperature
3	EEV0 current step	11	Condenser temperature
4	EEV1 current step	12	Outdoor temperature
5	EEV2 current step	13	Running current
6	EEV3 current step	14	Target Discharge temperature
7	EEV4 current step	15	Total capacity of the indoor units
8	Fan RPM (H: high, L: low, Blank: off)	16	Safety Control (just For Service Technician)

4-3 Setting Option

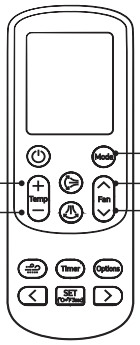
Entering mode for setting option

Option setting mode

‹ AR**TSFABWKN / AR**BSFCMWKN ›

❶ Mode button
❹ Fast button
❺ Wind-Free button
❷ High Temp button
❸ Low Temp button

‹ AC***BN*DCH / AJ***BNHDCH ›



❶ Mode button
❹ High Fan button
❺ Low Fan button
❷ High Temp button
❸ Low Temp button

4-3-1 Setting Option

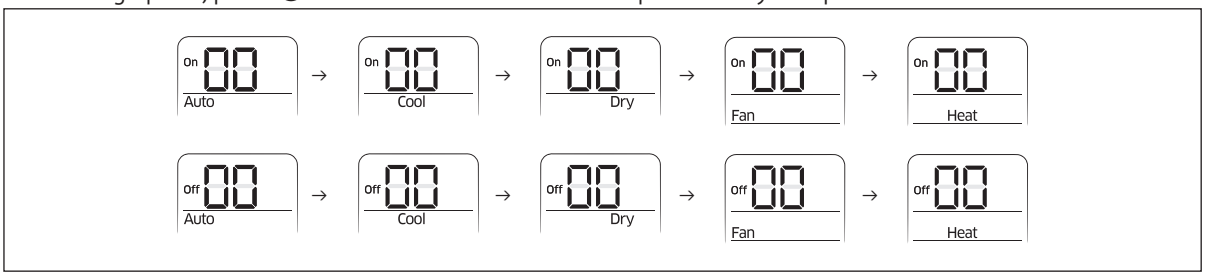
1 Remove batteries from the remote controller

2 Insert batteries and enter the option setting mode while pressing ❷ button and ❸ button.

3 Each time you press ❺ button, 7-seg on left side is increased by “1” and each time you press ❹ button, 7-seg on right side is increased by “1”

4 You press ❶ button to move to the next setteing page.

5 After setting option, press ❶ button to check whether the option code you input is correct or not.

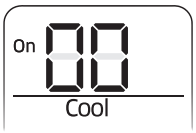
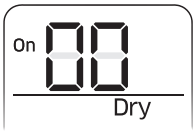
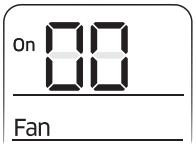


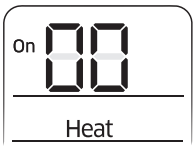
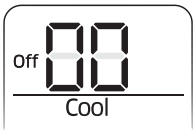
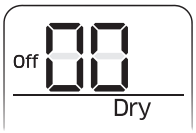
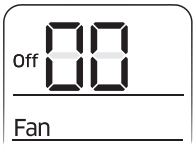
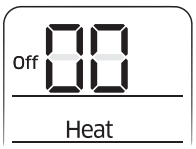
6 Press operation button ⏻ with the direction of remote control for set.

CAUTION

- SEG1, SEG7, SEG13, SEG19 are not set as page option.
- Set the SEG1, SEG7 as ON status and SEG13, SEG19 as OFF status.
  - Set the each option separately since you cannot set the ADDRESS setting and indoor unit installation setting option at the same time.

4-3-2 The procedure of setting option

Operation	Indication
Step 1 1 Remove the batteries from the remote controller. 2 Insert batteries while pressing ❷ Button and ❸ Button.	
Step 2 1 Press ❺ button to enter SEG2 value. 2 Press ❹ button to enter SEG3 value.	
Step 3 Press ❶ button to be change to Cool mode in the ON status. 1 Press ❺ button to enter SEG4 value. 2 Press ❹ button to enter SEG5 value.	
Step 4 Press ❶ button to be changed to DRY mode in the ON status. 1 Press ❺ button to enter SEG6. 2 Press ❹ button to enter SEG8.	
Step 5 Press ❶ button to be changed to FAN mode in the ON status. 1 Press ❺ button to enter SEG9 value. 2 Press ❹ button to enter SEG10 value.	

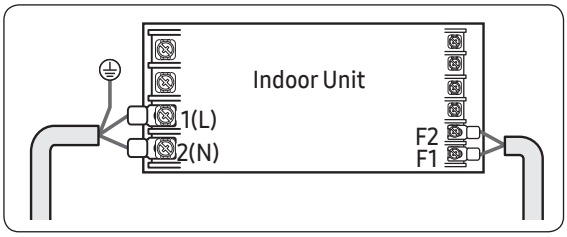
Operation	Indication
Step 6 Press ❶ button to be changed to HEAT mode in the ON status. 1 Press ❺ button to enter SEG11 value. 2 Press ❹ button to enter SEG12value	
Step 7 Press ❶ button to be changed to AUTO mode in the OFF status. 1 Press ❺ button to enter SEG14 value. 2 Press ❹ button to enter SEG15 value.	
Step 8 Press ❶ button to be changed to Cool mode in the OFF status. 1 Press ❺ button to enter SEG16 value. 2 Press ❹ button to enter SEG17 value.	
Step 9 Press ❶ button to be changed to DRY mode in the OFF status. 1 Press ❺ button to enter SEG18 value. 2 Press ❹ button to enter SEG20 value.	
Step 10 Press ❶ button to be changed to FAN mode in OFF status 1 Press ❺ button to enter SEG21 value. 2 Press ❹ button to enter SEG22 value.	
Step 11 Press ❶ button to be changed to HEAT mode in the OFF status 1 Press ❺ button to enter SEG23 value. 2 Press ❹ button to enter SEG24 value.	
Step 12 Press ❶ button to check whether the option code you entered is correct or not. Press operation button ⏻ to enter option.	

4-3-3 Setting an indoor unit address (MAIN/RMC)

1 Check whether power is supplied or not.
- When the indoor unit is not plugged in, there should be additional power supply in the indoor unit.

2 The panel(display) should be connected to an indoor unit to receive option.

3 Before installing the indoor unit, assign an address to the indoor unit according to the air conditioning system plan.



4 Assign an indoor unit address by wireless remote controller.
- The initial setting status of indoor unit ADDRESS(MAIN/RMC) is "0A0000-100000-200000-300000"
- There is no need to assign extra ADDRESS for 1:1 installation between indoor unit and outdoor unit.

Option No. : 0AXXXX-1XXXXX-2XXXXX-3XXXXX

Option	SEG1		SEG2		SEG3		SEG4		SEG5		SEG6	
Explanation	Page		Mode		Setting main address		100-digit of indoor unit address		10-digit of indoor unit		A single digit of indoor unit	
Indication and details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details
	0		A		0	No Main address	0~9	100-digit	0~9	10-digit	0~9	A single digit
					1	Main address setting mode						
Option	SEG7		SEG8		SEG9		SEG10		SEG11		SEG12	
Explanation	Page				Setting RMC address				Group channel(*16)		Group address	
Indication and details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details
	1				0	No RMC address			RMC1	1~F	RMC2	1~F
					1	RMC address setting mode						

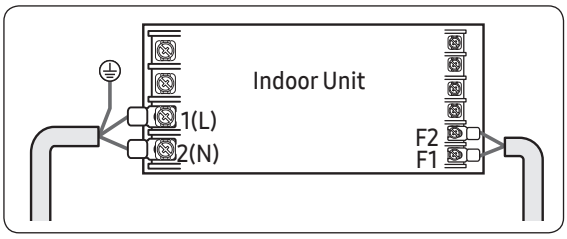
※ You must set RMC address setting mode when using the centralized Control.

CAUTION
- When “A”~”F” is entered to SEG4~6, the indoor unit MAIN ADDRESS is not changed.
- If you set the SEG 3 as 0, the indoor unit will maintain the previous MAIN ADDRESS even if you input the option value of SEG4~6.
- If you set the SEG 9 as 0, the indoor unit will maintain previous RMC ADDRESS even if you input the option value of SEG11~12.

5 The MAIN address is for commnication between the indoor unit and the outdoor unit. Therefore, you must set it to operate the air conditioner properly

4-3-4 Setting an indoor unit installation option (suitable for the condition of each installation location)

■ Wall mounted



1. Make sure that the power is supplied to the indoor unit. If the indoor unit is not plugged in, it must include a power supply.
2. Make sure that the panel is connected to the indoor unit so that it can receive options
3. Set the functional options of indoor units, by referring to the following table and by following the steps in Common steps for setting the addresses and optionson page 4-1.
   • The SEG20 option, Individual control with remotecontrol, allows you to control multiple indoor units individually by using the remote control.

■ AR**TSFABWKN, AR**BSFCMWKN

• The installation options of indoor units are set to like a below table by default.

Model	AR07/09/12/15TSFABWKN	AR18/24TSFABWKN AR18/24BSFCMWKN	AR07/09/12/15BSFCMWKN
Installation option	020010-100000-200101-300346	020010-100000-200101-300357	020010-100000-200101-300335

Option	SEG1		SEG2		SEG3	SEG4		SEG5		SEG6
Explanation	Page		Mode		Reserved	Use of external temperature sensor		Use of central control		Reserved
Indication and Details	Indication	Details	Indication	Details		Indication	Details	Indication	Details	
	0		2			0	Use	0	Disuse	
						1	Disuse	1	Use	
Option	SEG7		SEG8		SEG9	SEG10		SEG11		SEG12
Explanation	Page		Use of drain pump (*1)		Reserved	Reserved		Reserved		Reserved
Indication and Details	Indication	Details	Indication	Details						
	1		0	Disuse						
			8	External drain pump signal use						

<table>
<tr><td>Option</td><td colspan="2">SEG13</td><td colspan="2">SEG14</td><td colspan="2">SEG15</td><td>SEG16</td><td colspan="2">SEG17</td><td>SEG18</td></tr>
<tr><td>Explanation</td><td colspan="2">Page</td><td colspan="2">Use of external control</td><td colspan="2">Setting the output of external control</td><td rowspan="6">Reserved</td><td colspan="2">Buzzer control</td><td rowspan="6">Reserved</td></tr>
<tr><td rowspan="6">Indication and Details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td></tr>
<tr><td colspan="2" rowspan="4">2</td><td>0</td><td>Disuse</td><td rowspan="2">0</td><td rowspan="2">Thermo ON</td><td rowspan="2">0</td><td rowspan="2">Use of buzzer</td></tr>
<tr><td>1</td><td>ON or OFF control</td></tr>
<tr><td>2</td><td>OFF control</td><td rowspan="2">1</td><td rowspan="2">Operation ON</td><td rowspan="2">1</td><td rowspan="2">Disuse of buzzer</td></tr>
<tr><td>3</td><td>Window ON or OFF control (*2)</td></tr>
<tr><td>Option</td><td colspan="2">SEG19</td><td colspan="2">SEG20</td><td colspan="2">SEG21</td><td>SEG22</td><td colspan="2">SEG23</td><td>SEG24</td></tr>
<tr><td>Explanation</td><td colspan="2">Page</td><td colspan="2">Individual control with remote control (*3)</td><td colspan="2" rowspan="6">Reserved</td><td rowspan="6">Reserved</td><td colspan="2" rowspan="6">Reserved</td><td rowspan="6">Reserved</td></tr>
<tr><td rowspan="6">Indication and Details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td></tr>
<tr><td colspan="2" rowspan="5">3</td><td>0</td><td>Channel1</td></tr>
<tr><td>1</td><td>Channel1</td></tr>
<tr><td>2</td><td>Channel 2</td></tr>
<tr><td>3</td><td>Channel 3</td></tr>
<tr><td>4</td><td>Channel 4</td></tr>
</table>

(*1) If external drain pump signal is used, external control (SEG14) can't be used.
(*2) The window on/off function applies to the following unit
- AR**********
(*3) If you input a number other than 0~4 of the individual control of the indoor unit(SEG20), the indoor is set as "indoor 1".

■ AC***BN1DCH

• The installation options of indoor units are set to like a below table by default.

Model	AC009BN1DCH	AC012BN1DCH
Installation option	020010-100031-200000-300000	020010-100051-200000-300000

Option No. for an indoor unit : 02XXXX-1XXXXX-2XXXXX-3XXXXX

Option	SEG1		SEG2		SEG3	SEG4			SEG5		SEG6	
Function	Page		Mode			Use of external room temperature sensor / Minimizing fan operation when thermostat is off [1)]			Use of central control		Compensation of the fan RPM	
	Indication	Details	Indication	Details		Indication	Details		Indication	Details	Indication	Details
							Use of external room temperature sensor	Minimizing fan operation when thermostat is off				
Indication and details	0		2		Reserved	0	Disuse	Disuse	0	Disuse	0	Disuse (recessed installation
						1	Use	Disuse	1	Use	1	RPM compensation
						2	Disuse	Use(Heating)				
						3	Use	Use(Heating)				
						4	Disuse	Use(Cooling)				
						5	Use	Use(Cooling)				
						6	Disuse	Use (Cooling/Heating)				
						7	Use	Use (Cooling/Heating)				
						8	Disuse	Use (Cooling Ultra low speed)				
						9	Use	Use (Cooling Ultra low speed)				
						A	Disuse	Use (Heating/ Cooling Ultra low speed))				
						B	Use	Use (Heating/ Cooling Ultra low speed)				

Option	SEG7		SEG8		SEG9	SEG10	SEG11			SEG12			
Function	Page		Use of drain pump[2]				WindFree FAN RPM[3]			Dew removal operation in WindFree mode/ WindFree mode in Auto cleaning/ Smart Comfort in Auto mode			
Indication and details	Indication	Details	Indication	Details	Reserved	Reserved	Indication	Details		Indication	Details		
								AC009BN1DCH	AC012BN1DCH		Dew removal operation in Wind-Free mode	WindFree mode in Auto cleaning	Smart Comfort in Auto mode
	1		0	Disuse			0	3STEP↑	5STEP↑	0	Maintain blade	Wind-Free disuse	Smart Comfort use
							1	2STEP↑	4STEP↑	1	Open blade		
			1	Use			2	1STEP↑	3STEP↑	2	Maintain blade	Wind-Free use	
							3	Default	2STEP↑	3	Open blade		
			2	Use with 3 minute delay			4	1STEP↓	1STEP↑	4	Maintain blade	Wind-Free disuse	Smart Comfort disuse
							5	2STEP↓	Default	5	Open blade		
							6	3STEP↓	1STEP↓	6	Maintain blade	Wind-Free use	
							7	4STEP↓	2STEP↓	7	Open blade		

Option	SEG13		SEG14			SEG15		SEG16	SEG17		SEG18	
Function	Page		Use of external control			Setting the output of external control			Buzzer control		Maximum filter usage time 4)	
Indication and details	Indication	Details	Indication	Details		Indication	Details		Indication	Details	Indication	Details
	2		0	Disuse	Sub, Existing control	0	Thermo on	Reserved	0	Use of buzzer	2	1000 hours
			1	On/Off								
			2	Off								
			3	Window								
			4	Disuse	Main, Existing control							
			5	On/Off								
			6	Off								
			7	Window								
			8	Disuse	Sub, Reverse control	1	Operation On		1	Disuse of buzzer	6	2000 hours
			9	On/Off								
			A	Off								
			B	Window								
			C	Disuse	Main, Reverse control							
			D	On/Off								
			E	Off								
			F	Window								

Option	SEG19		SEG20		SEG21		SEG22	SEG23	SEG24
Function	Page		Individual control with remote control[5]		Heating setting compensation[6]		Reserved	Reserved	Reserved
Indication and details	Indication	Details	Indication	Details	Indication	Details			
	3		0 or 1	Indoor1	0	Default			
			2	Indoor2	1	3.6˚F(2˚C)			
			3	Indoor3	2	9˚F(5˚C)			
			4	Indoor4					

- 1) SEG4
  By SEG4 setting, Minimizing fan operation when thermostat is off.
  – Fan operates for 20 seconds at an interval of 5 minutes in heat mode.
  – Fan stops or operates Ultra low in Cooling when thermostat is off.
- 2) SEG8
  Even if you set the Use of drain pump option to 0, it is utomatically set to 2 (the drain pump is used with 3 minute delay).
- 3) SEG11
  Compensation of the WindFree fan RPM option adjusts 20 rpm per1 step.
- 4) SEG18
  If you set the Maximum filter usage time option to a value other than 2 and 6, it is automatically set to 2 (1000 hours).
- 5) SEG20
  If you set the Individual control with remote control option to a value other than 0 to 4, it is automatically set to 0 (Indoor1)
- 6) SEG21
  Default value of Heating setting compensation is 9°F(5°C).

■ AC***BNNDCH

• The installation options of indoor units are set to 020010-100000-200000-300000 by default.

Option No. for an indoor unit : 02XXXX-1XXXXX-2XXXXX-3XXXXX

Option	SEG1		SEG2		SEG3	SEG4			SEG5		SEG6	
Function	Page		Mode			Use of external room temperature sensor / Minimizing fan operation when thermostat is off			Central control		Compensation of the fan RPM	
Indication and details	Indication	Details	Indication	Details	Reserved	Indication	Details		Indication	Details	Indication	Details
							Use of external room temperature sensor	Minimizing fan operation when thermostat is off 1)				
	0		2			0	Disuse	Disuse	0	Disuse	0	Disuse
						1	Use	Disuse				
						2	Disuse	Use(Heating)				
						3	Use	Use(Heating)				
						4	Disuse	Use(Cooling)				
						5	Use	Use(Cooling)	1	Use	1	High ceiling mode
						6	Disuse	Use (Cooling/Heating)				
						7	Use	Use (Cooling/Heating)				
						8	Disuse	Use (Cooling Ultra low speed)				
						9	Use	Use (Cooling Ultra low speed)				
						A	Disuse	Use (Cooling Ultra low speed)				
						B	Use	Use (Cooling Ultra low speed)				

<table>
<tr><td>Option</td><td colspan="2">SEG7</td><td colspan="2">SEG8</td><td>SEG9</td><td>SEG10</td><td colspan="2">SEG11</td><td colspan="4">SEG12</td></tr>
<tr><td>Function</td><td colspan="2">Page</td><td colspan="2">Use of drain pump[2)]</td><td rowspan="15">Reserved</td><td rowspan="15">Reserved</td><td colspan="2">Wind-free fan speed [3)]</td><td colspan="4">Dew removal operation in Wind-Free mode/Wind-Free mode in Auto cleaning/Smart Comfort in Auto mode</td></tr>
<tr><td rowspan="16">Indication and details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td><td>Indication</td><td colspan="3">Details</td></tr>
<tr><td colspan="2" rowspan="3">1</td><td>0</td><td>Disuse</td><td rowspan="2">0</td><td>Default</td><td>0</td><td>Maintain blade</td><td rowspan="2">Wind-Free disuse</td><td rowspan="3">Smart Comfort use</td></tr>
<tr><td rowspan="2">1</td><td rowspan="2">Use</td><td rowspan="2">1Step↓</td><td>1</td><td>Open blade</td></tr>
<tr><td rowspan="6">2</td><td rowspan="6">Use with 3 minute delay</td><td rowspan="2">2</td><td rowspan="2">2Step↓</td><td>2</td><td>Maintain blade</td><td rowspan="2">Wind-Free use</td></tr>
<tr><td>3</td><td>Open blade</td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">3Step↓</td><td>4</td><td>Maintain blade</td><td rowspan="2">Wind-Free disuse</td><td rowspan="4">Smart Comfort disuse</td></tr>
<tr><td>5</td><td>Open blade</td></tr>
<tr><td>4</td><td>4Step↓</td><td>6</td><td>Maintain blade</td><td rowspan="2">Wind-Free use</td></tr>
<tr><td>7</td><td>Open blade</td></tr>
<tr><td>Option</td><td colspan="2">SEG13</td><td colspan="3">SEG14</td><td colspan="2">SEG15</td><td>SEG16</td><td colspan="2">SEG17</td><td colspan="2">SEG18</td></tr>
<tr><td>Function</td><td colspan="2">Page</td><td colspan="3">Use of external control</td><td colspan="2">Setting the output of extermal control</td><td rowspan="16">Reserved</td><td colspan="2">Buzzer control</td><td colspan="2">Maximum filter usage time [4)]</td></tr>
<tr><td rowspan="17">Indication and details</td><td>Indication</td><td>Details</td><td>Indication</td><td colspan="2">Details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td></tr>
<tr><td colspan="2" rowspan="16">2</td><td>0</td><td>Disuse</td><td rowspan="4">Sub, Existing control</td><td rowspan="8">0</td><td rowspan="8">Thermo on</td><td rowspan="8">0</td><td rowspan="8">Use of buzzer</td><td rowspan="8">2</td><td rowspan="8">1000 hours</td></tr>
<tr><td>1</td><td>On/Off</td></tr>
<tr><td>2</td><td>Off</td></tr>
<tr><td>3</td><td>Window On/Off</td></tr>
<tr><td>4</td><td>Disuse</td><td rowspan="4">Main, Existing control</td></tr>
<tr><td>5</td><td>On/Off</td></tr>
<tr><td>6</td><td>Off</td></tr>
<tr><td>7</td><td>Window On/Off</td></tr>
<tr><td>8</td><td>Disuse</td><td rowspan="4">Sub, Reverse control</td><td rowspan="8">1</td><td rowspan="8">Operation On</td><td rowspan="8">1</td><td rowspan="8">Disuse of buzzer</td><td rowspan="8">6</td><td rowspan="8">2000 hours</td></tr>
<tr><td>9</td><td>On/Off</td></tr>
<tr><td>A</td><td>Off</td></tr>
<tr><td>B</td><td>Window On/Off</td></tr>
<tr><td>C</td><td>Disuse</td><td rowspan="4">Main, Reverse control</td></tr>
<tr><td>D</td><td>On/Off</td></tr>
<tr><td>E</td><td>Off</td></tr>
<tr><td>F</td><td>Window On/Off</td></tr>
</table>

<table>
<tr><td>Option</td><td colspan="2">SEG19</td><td colspan="2">SEG20</td><td colspan="2">SEG21</td><td>SEG22</td><td colspan="3">SEG23</td><td>SEG24</td></tr>
<tr><td>Function</td><td colspan="2">Page</td><td colspan="2">Individual control with remote control [5]</td><td colspan="2">Heating setting compensation [6]</td><td rowspan="16">Reserved</td><td colspan="3">Setting the MDS Kit installation option7)</td><td rowspan="16">Reserved</td></tr>
<tr><td rowspan="15">Indication and details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td><td colspan="2">Indication</td><td>Details</td></tr>
<tr><td rowspan="15">3</td><td rowspan="3">0 or 1</td><td rowspan="3">Indoor1</td><td rowspan="3">0</td><td rowspan="3">Default</td><td colspan="2">0</td><td>Disuse (Soft Off+Hard off)</td></tr>
<tr><td rowspan="3">Standard</td><td>1</td><td>Off after 20 min. (Soft Off+Hard off)</td></tr>
<tr><td>2</td><td>Off after 40 min. (Soft Off+Hard off)</td></tr>
<tr><td rowspan="3">2</td><td rowspan="3">Indoor2</td><td rowspan="3">1</td><td rowspan="3">3.6˚F(2˚C)</td><td>3</td><td>Off after 80 min. (Soft Off+Hard off)</td></tr>
<tr><td rowspan="3">Premium</td><td>4</td><td>Off after 20 min. (Soft Off+Hard off)</td></tr>
<tr><td>5</td><td>Off after 40 min. (Soft Off+Hard off)</td></tr>
<tr><td rowspan="3">3</td><td rowspan="3">Indoor3</td><td rowspan="6">2</td><td rowspan="6">9˚F(5˚C)</td><td>6</td><td>Off after 80 min. (Soft Off+Hard off)</td></tr>
<tr><td rowspan="3">Standard</td><td>7</td><td>Off after 20 min. (Soft Off only)</td></tr>
<tr><td>8</td><td>Off after 40 min. (Soft Off only)</td></tr>
<tr><td rowspan="3">4</td><td rowspan="3">Indoor4</td><td>9</td><td>Off after 80 min. (Soft Off only)</td></tr>
<tr><td rowspan="3">Premium</td><td>A</td><td>Off after 20 min. (Soft Off only)</td></tr>
<tr><td>B</td><td>Off after 40 min. (Soft Off only)</td></tr>
<tr><td>C</td><td>Off after 80 min. (Soft Off only)</td></tr>
</table>

- 1) SEG4
  By SEG4 setting, Minimizing fan operation when thermostat is off.
  - Fan operates for 20 seconds at an interval of 5 minutes in heat mode.
  - Fan stops or operates Ultra low in Cooling when thermostat is off.
- 2) SEG8
  Even if you set the Use of drain pump option to 0, it is utomatically set to 2 (the drain pump is used with 3 minute delay).
- 3) SEG11
  Compensation of the wind-free fan RPM option adjusts 20 rpm per1 step.
- 4) SEG18
  If you set the Maximum filter usage time option to a value other than 2 and 6, it is automatically set to 2 (1000 hours).
- 5) SEG20
  If you set the Individual control with remote control option to a value other than 0 to 4, it is automatically set to 0 (Indoor1)
- 6) SEG21
  Default value of Heating setting compensation is 9°F(5°C).
- 7) SEG23
  Soft Off: The indoor unit turns off its operation at the indicated time in the table for Installation Option after its final motion detection. But, it turns on again if the MDS detects motion.
  Hard Off: Designated time after SOFT OFF, it cannot turn on automatically when it detects motion. Users should control to turn on the indoor unit with remote control, etc.

■ AC***BNLDCH, AJ***BNHDCH

• The installation options of indoor units are set to 020010-120000-200000-300000 by default.

Option No. for an indoor unit : 0AXXXX-1XXXXX-2XXXXX-3XXXXX

<table>
<tr><td>Option</td><td colspan="2">SEG1</td><td colspan="2">SEG2</td><td colspan="3">SEG3</td><td colspan="2">SEG4</td></tr>
<tr><td>Explanation</td><td colspan="2">PAGE</td><td colspan="2">MODE</td><td colspan="3" rowspan="2">RESERVED</td><td colspan="2">Use of external temperature sensor</td></tr>
<tr><td rowspan="3">Indication and Details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td><td colspan="2">Indication</td><td>Details</td></tr>
<tr><td colspan="2" rowspan="2">0</td><td colspan="2" rowspan="2">2</td><td colspan="2">0</td><td>Disuse</td></tr>
<tr><td colspan="2">1</td><td>Use</td></tr>
<tr><td>Option</td><td colspan="2">SEG5</td><td colspan="2">SEG6</td><td colspan="2">SEG7</td><td>Details</td><td colspan="2">SEG8</td></tr>
<tr><td>Explanation</td><td colspan="2">Use of central control</td><td colspan="2" rowspan="3">RESERVED</td><td colspan="2">Indication</td><td>Details</td><td colspan="2">Use of drain pump 1)</td></tr>
<tr><td rowspan="3">Indication and Details</td><td>Indication</td><td>Details</td><td colspan="3" rowspan="3">1</td><td>Indication</td><td>Details</td></tr>
<tr><td>0</td><td>Disuse</td><td>0</td><td>Disuse</td></tr>
<tr><td>1</td><td>Use</td><td>1</td><td>Use</td></tr>
<tr><td>Option</td><td colspan="2">SEG9</td><td colspan="2">SEG10</td><td colspan="3">SEG11</td><td colspan="2">SEG12</td></tr>
<tr><td>Explanation</td><td colspan="2">Use of Hot Coil</td><td colspan="2">Use of auxiliary heater</td><td colspan="3">Controller variables for auxiliary heater</td><td colspan="2" rowspan="14">RESERVED</td></tr>
<tr><td rowspan="14">Indication and Details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td><td rowspan="2">Indication</td><td colspan="2">Details</td></tr>
<tr><td rowspan="3">0</td><td rowspan="3">Disuse</td><td rowspan="3">0</td><td rowspan="3">Disuse</td><td>Set temperature for auxiliary heat on</td><td>Time delay for auxiliary heat on</td></tr>
<tr><td>0</td><td>No temperature offset</td><td>No delay</td></tr>
<tr><td>1</td><td>No temperature offset</td><td>10 minutes</td></tr>
<tr><td rowspan="6">1</td><td rowspan="6">Use</td><td rowspan="6">1</td><td rowspan="6">Use</td><td>2</td><td>No temperature offset</td><td>20 minutes</td></tr>
<tr><td>3</td><td>2.7°F(1.5°C)</td><td>No delay</td></tr>
<tr><td>4</td><td>2.7°F(1.5°C)</td><td>10 minutes</td></tr>
<tr><td>5</td><td>2.7°F(1.5°C)</td><td>20 minutes</td></tr>
<tr><td>6</td><td>5.4°F(3°C)</td><td>No delay</td></tr>
<tr><td>7</td><td>5.4°F(3°C)</td><td>10 minutes</td></tr>
<tr><td rowspan="6">-</td><td rowspan="6"></td><td rowspan="6">2</td><td rowspan="6">Use (Heater time delay)</td><td>8</td><td>5.4°F(3°C)</td><td>20 minutes</td></tr>
<tr><td>9</td><td>8.1°F(4.5°C)</td><td>No delay</td></tr>
<tr><td>A</td><td>8.1°F(4.5°C)</td><td>10 minutes</td></tr>
<tr><td>B</td><td>8.1°F(4.5°C)</td><td>20 minutes</td></tr>
<tr><td>C</td><td>10.8°F(6°C)</td><td>No delay</td></tr>
<tr><td>D</td><td>10.8°F(6°C)</td><td>10 minutes</td></tr>
<tr><td>E</td><td>10.8°F(6°C)</td><td>20 minutes</td></tr>
</table>

<table>
<tr><td>Option</td><td colspan="2">SEG13</td><td colspan="3">SEG14</td><td colspan="2">SEG15</td><td colspan="2">SEG16</td></tr>
<tr><td>Explanation</td><td colspan="2">PAGE</td><td colspan="3">Use of external control</td><td colspan="2">Setting the output of external control</td><td colspan="2" rowspan="17">RESERVED</td></tr>
<tr><td rowspan="17">Indication and Details</td><td>ndication</td><td>Details</td><td>ndication</td><td colspan="2">Details</td><td>ndication</td><td>Details</td></tr>
<tr><td colspan="2" rowspan="16">2</td><td>0</td><td>Disuse</td><td rowspan="4">Sub, Existing Control</td><td rowspan="8">0</td><td rowspan="8">Thermo on</td></tr>
<tr><td>1</td><td>On/Off</td></tr>
<tr><td>2</td><td>Off</td></tr>
<tr><td>3</td><td>Window</td></tr>
<tr><td>4</td><td>Disuse</td><td rowspan="4">Main, Existing Control</td></tr>
<tr><td>5</td><td>On/Off</td></tr>
<tr><td>6</td><td>Off</td></tr>
<tr><td>7</td><td>Window</td></tr>
<tr><td>8</td><td>Disuse</td><td rowspan="4">Sub, Reverse Control</td><td rowspan="8">1</td><td rowspan="8">Operation on</td></tr>
<tr><td>9</td><td>On/Off</td></tr>
<tr><td>A</td><td>Off</td></tr>
<tr><td>B</td><td>Window</td></tr>
<tr><td>C</td><td>Disuse</td><td rowspan="4">Main, Reverse Control</td></tr>
<tr><td>D</td><td>On/Off</td></tr>
<tr><td>E</td><td>Off</td></tr>
<tr><td>F</td><td>Window</td></tr>
<tr><td>Option</td><td colspan="2">SEG17</td><td colspan="3">SEG18</td><td colspan="2">SEG19</td><td colspan="2">SEG20</td></tr>
<tr><td>Explanation</td><td colspan="2">Buzzer control</td><td colspan="3">Maximum filter usage time [2)]</td><td colspan="2">PAGE</td><td colspan="2">Individual control with remote control [3)]</td></tr>
<tr><td rowspan="5">Indication and Details</td><td>Indication</td><td>Details</td><td>Indication</td><td colspan="2">Details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td></tr>
<tr><td>0</td><td>Use of buzzer</td><td>2</td><td colspan="2">1000 Hour</td><td rowspan="4" colspan="2">3</td><td>0 or 1</td><td>Indoor1</td></tr>
<tr><td rowspan="3">1</td><td rowspan="3">Disuse</td><td rowspan="3">6</td><td rowspan="3" colspan="2">2000 Hour</td><td>2</td><td>Indoor2</td></tr>
<tr><td>3</td><td>Indoor3</td></tr>
<tr><td>4</td><td>Indoor4</td></tr>
<tr><td>Option</td><td colspan="2">SEG21</td><td colspan="2">SEG22</td><td colspan="2">SEG23</td><td colspan="2">SEG24</td></tr>
<tr><td>Explanation</td><td colspan="2">Heating setting compensation[4)]</td><td colspan="2" rowspan="5">RESERVED</td><td colspan="2">Away Set OFF Timer</td><td colspan="2" rowspan="5">RESERVED</td></tr>
<tr><td rowspan="5">Indication and Details</td><td>Indication</td><td>Details</td><td>Indication</td><td colspan="2">Details</td></tr>
<tr><td>0</td><td>Disuse</td><td>0 or 1</td><td colspan="2">Auto Set OFF 30Min.</td></tr>
<tr><td>1</td><td>3.6°F(2°C)</td><td>2</td><td colspan="2">Auto Set OFF 60Min.</td></tr>
<tr><td rowspan="2">2</td><td rowspan="2">9°F(5°C)</td><td>3</td><td colspan="2">Auto Set OFF 120Min.</td></tr>
<tr><td>4</td><td colspan="2">Auto Set OFF 180Min.</td></tr>
</table>

•1) SEG4
By SEG4 setting, Minimizing fan operation when thermostat is off.
- Fan operates for 20 seconds at an interval of 5 minutes in heat mode.
- Fan stops or operates Ultra low in Cooling when thermostat is off.

• 2) SEG18
If you set the Maximum filter usage time option to a value other than 2 and 6, it is automatically set to 2 (1000 hours).

• 3) SEG20
If you set the Individual control with remote control option to a value other than 0 to 4, it is automatically set to 0 (Indoor1)

• 4) SEG21
Default value of Heating setting compensation is 3.6°F(2°C).

■ AC***BNJDCH

• The installation options of indoor units are set to 020010-100000-200000-300000 by default.

Option No. for an indoor unit : 02XXXX-1XXXXX-2XXXXX-3XXXXX

<table>
<tr><td>Option</td><td colspan="2">SEG1</td><td colspan="2">SEG2</td><td>SEG3</td><td colspan="3">SEG4</td><td colspan="2">SEG5</td><td>SEG6</td></tr>
<tr><td>Function</td><td colspan="2">Page</td><td colspan="2">Mode</td><td rowspan="14">Reserved</td><td colspan="3">Use of external room temperature sensor / Minimizing fan operation when thermostat is off 1)</td><td colspan="2">Central control</td><td rowspan="14">Reserved</td></tr>
<tr><td rowspan="14">Indication and details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td><td rowspan="2">Indication</td><td colspan="2">Details</td><td>Indication</td><td>Details</td></tr>
<tr><td rowspan="13">0</td><td rowspan="13">1</td><td>Use of external room temperature sensor</td><td>Minimizing fan operation when thermostat is off 1)</td><td rowspan="5">0</td><td rowspan="5">Disuse</td></tr>
<tr><td>0</td><td>Disuse</td><td>Disuse</td></tr>
<tr><td>1</td><td>Use</td><td>Disuse</td></tr>
<tr><td>2</td><td>Disuse</td><td>Use(Heating)</td></tr>
<tr><td>3</td><td>Use</td><td>Use(Heating)</td></tr>
<tr><td>4</td><td>Disuse</td><td>Use(Cooling)</td><td rowspan="9">1</td><td rowspan="9">Use</td></tr>
<tr><td>5</td><td>Use</td><td>Use(Cooling)</td></tr>
<tr><td>6</td><td>Disuse</td><td>Use (Cooling/Heating)"</td></tr>
<tr><td>7</td><td>Use</td><td>Use (Cooling/Heating)"</td></tr>
<tr><td>8</td><td>Disuse</td><td>Use (Cooling Ultra low speed)</td></tr>
<tr><td>9</td><td>Use</td><td>Use (Cooling Ultra low speed)</td></tr>
<tr><td>A</td><td>Disuse</td><td>Use (Heating/Cooling Ultra low speed)</td></tr>
<tr><td>B</td><td>Use</td><td>Use (Heating/Cooling Ultra low speed)</td></tr>
</table>

Option	SEG7		SEG8	SEG9	SEG10	SEG11	SEG12
Function	Page		Reserved	Reserved	Reserved	Reserved	Reserved
Indication and details	Indication	Details					
	1						

<table>
<tr><td>Option</td><td colspan="2">SEG13</td><td colspan="3">SEG14</td><td colspan="2">SEG15</td><td>SEG16</td><td colspan="2">SEG17</td><td colspan="2">SEG18</td></tr>
<tr><td>Function</td><td colspan="2">Page</td><td colspan="3">Use of external control</td><td colspan="2">Setting the output of extermal control</td><td rowspan="17">Reserved</td><td colspan="2">Buzzer control</td><td colspan="2">Maximum filter usage time 4)</td></tr>
<tr><td rowspan="17">Indication and details</td><td>Indication</td><td>Details</td><td>Indication</td><td colspan="2">Details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td></tr>
<tr><td rowspan="16">2</td><td>0</td><td>Disuse</td><td rowspan="4">Sub, Existing control</td><td rowspan="8">0</td><td rowspan="8">Thermo on</td><td rowspan="8">0</td><td rowspan="8">Use of buzzer</td><td rowspan="8">2</td><td rowspan="8">1000 hours</td></tr>
<tr><td>1</td><td>On/Off</td></tr>
<tr><td>2</td><td>Off</td></tr>
<tr><td>3</td><td>Window On/Off</td></tr>
<tr><td>4</td><td>Disuse</td><td rowspan="4">Main, Existing control</td></tr>
<tr><td>5</td><td>On/Off</td></tr>
<tr><td>6</td><td>Off</td></tr>
<tr><td>7</td><td>Window On/Off</td></tr>
<tr><td>8</td><td>Disuse</td><td rowspan="4">Sub, Reverse control</td><td rowspan="8">1</td><td rowspan="8">Operation On</td><td rowspan="8">1</td><td rowspan="8">Disuse of buzzer</td><td rowspan="8">6</td><td rowspan="8">2000 hours</td></tr>
<tr><td>9</td><td>On/Off</td></tr>
<tr><td>A</td><td>Off</td></tr>
<tr><td>B</td><td>Window On/Off</td></tr>
<tr><td>C</td><td>Disuse</td><td rowspan="4">Main, Reverse control</td></tr>
<tr><td>D</td><td>On/Off</td></tr>
<tr><td>E</td><td>Off</td></tr>
<tr><td>F</td><td>Window On/Off</td></tr>
<tr><td>Option</td><td colspan="2">SEG19</td><td colspan="2">SEG20</td><td colspan="2">SEG21</td><td colspan="2">SEG22</td><td colspan="2">SEG23</td><td>SEG24</td></tr>
<tr><td>Function</td><td colspan="2">Page</td><td colspan="2">Individual control with remote control 5)</td><td colspan="2">Heating setting compensation 4)</td><td rowspan="5" colspan="2">Reserved</td><td rowspan="5" colspan="2">Reserved</td><td rowspan="5">Reserved</td></tr>
<tr><td rowspan="5">Indication and details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td></tr>
<tr><td rowspan="4">3</td><td>0 or 1</td><td>Indoor1</td><td>0</td><td>Default</td></tr>
<tr><td>2</td><td>Indoor2</td><td>1</td><td>3.6˚F(2˚C)</td></tr>
<tr><td>3</td><td>Indoor3</td><td rowspan="2">2</td><td rowspan="2">9˚F(5˚C)</td></tr>
<tr><td>4</td><td>Indoor4</td></tr>
</table>

• 1) SEG4
By SEG4 setting, Minimizing fan operation when thermostat is off.
- Fan operates for 20 seconds at an interval of 5 minutes in heat mode.
- Fan stops or operates Ultra low in Cooling when thermostat is off.

• 2) SEG18
If you set the Maximum filter usage time option to a value other than 2 and 6, it is automatically set to 2 (1000 hours).

• 3) SEG20
If you set the Individual control with remote control option to a value other than 0 to 4, it is automatically set to 0 (Indoor1)

• 4) SEG21
Default value of Heating setting compensation is 9°F(5°C).

■ AC***BNZDCH

• The installation options of indoor units are set to 020010-100000-200000-300000 by default.

Option No. for an indoor unit : 02XXXX-1XXXXX-2XXXXX-3XXXXX

<table>
<tr><td>Option</td><td colspan="2">SEG1</td><td colspan="2">SEG2</td><td>SEG3</td><td colspan="3">SEG4</td><td colspan="2">SEG5</td><td>SEG6</td></tr>
<tr><td>Function</td><td colspan="2">Page</td><td colspan="2">Mode</td><td rowspan="18">Reserved</td><td colspan="3">Use of external room temperature sensor / Minimizing fan operation when thermostat is off 1)</td><td colspan="2">Central control</td><td rowspan="18">Reserved</td></tr>
<tr><td rowspan="17">Indication and details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td><td rowspan="2">Indication</td><td colspan="2">Details</td><td>Indication</td><td>Details</td></tr>
<tr><td rowspan="17">0</td><td rowspan="17">2</td><td>Use of external room temperature sensor</td><td>Minimizing fan operation when thermostat is off</td><td rowspan="5">0</td><td rowspan="5">Disuse</td></tr>
<tr><td>0</td><td>Disuse</td><td>Disuse</td></tr>
<tr><td>1</td><td>Use</td><td>Disuse</td></tr>
<tr><td>2</td><td>Disuse</td><td>Use(Heating)</td></tr>
<tr><td>3</td><td>Use</td><td>Use(Heating)</td></tr>
<tr><td>4</td><td>Disuse</td><td>Use(Cooling)</td></tr>
<tr><td>5</td><td>Use</td><td>Use(Cooling)</td><td rowspan="10">1</td><td rowspan="10">Use</td></tr>
<tr><td>6</td><td>Disuse</td><td>Use (Cooling/Heating)</td></tr>
<tr><td>7</td><td>Use</td><td>Use (Cooling/Heating)</td></tr>
<tr><td>8</td><td>Disuse</td><td>Use (Cooling Ultra low speed)</td></tr>
<tr><td>9</td><td>Use</td><td>Use (Cooling Ultra low speed)</td></tr>
<tr><td>A</td><td>Disuse</td><td>Use (Heating/Cooling Ultra low speed)</td></tr>
<tr><td>B</td><td>Use</td><td>Use (Heating/Cooling Ultra low speed)</td></tr>
</table>

Option	SEG7		SEG8		SEG9		SEG10		SEG11			SEG12	
Function	Page		Use of drain pump		Use of Hot Coil		Use of Hot auxiliary heater		Controller variables for auxiliary heater			Master / Slave	
Indication and details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details		Use of drain pump	
										Set temperature for auxiliary heat on	Time delay for auxiliary heat on	Indication	Details
			0	Disuse	0	Disuse	0	Disuse	0	No temperature offset	No delay	0	Slave
									1	No temperature offset	10 minutes		
									2	No temperature offset	20 minutes		
									3	2.7°F(1.5°C)	No delay		
							1	Use	4	2.7°F(1.5°C)	10 minutes		
									5	2.7°F(1.5°C)	20 minutes		
									6	5.4°F(3°C)	No delay		
			8	Use external drain pump	1	Use			7	5.4°F(3°C)	10 minutes	8	Master
									8	5.4°F(3°C)	20 minutes		
									9	8.1°F(4.5°C)	No delay		
							2	Use (Heater time delay)	A	8.1°F(4.5°C)	10 minutes		
									B	8.1°F(4.5°C)	20 minutes		
									C	10.8°F(6°C)	No delay		
									D	10.8°F(6°C)	10 minutes		
									E	10.8°F(6°C)	20 minutes		

<table>
<tr><td>Option</td><td colspan="2">SEG 13</td><td colspan="3">SEG 14</td><td colspan="2">SEG 15</td><td>SEG 16</td><td colspan="2">SEG 17</td><td>SEG 18</td></tr>
<tr><td>Function</td><td colspan="2">Page</td><td colspan="3">Use of external control</td><td colspan="2">Setting the output of extermal control</td><td rowspan="18">Reserved</td><td colspan="2">Buzzer control</td><td rowspan="18">Reserved</td></tr>
<tr><td rowspan="18">Indication and details</td><td>Indication</td><td>Details</td><td>Indication</td><td colspan="2">Details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td></tr>
<tr><td colspan="2" rowspan="17">2</td><td>0</td><td>Disuse</td><td rowspan="4">Sub, Existing control</td><td rowspan="8">0</td><td rowspan="8">Thermo on</td><td rowspan="8">0</td><td rowspan="8">Use of buzzer</td></tr>
<tr><td>1</td><td>On/Off</td></tr>
<tr><td>2</td><td>Off</td></tr>
<tr><td>3</td><td>Window On/Off</td></tr>
<tr><td>4</td><td>Disuse</td><td rowspan="4">Main, Existing control</td></tr>
<tr><td>5</td><td>On/Off</td></tr>
<tr><td>6</td><td>Off</td></tr>
<tr><td>7</td><td>Window On/Off</td></tr>
<tr><td>8</td><td>Disuse</td><td rowspan="4">Sub, Reverse control</td><td rowspan="8">1</td><td rowspan="8">Operation On</td><td rowspan="8">1</td><td rowspan="8">Disuse of buzzer</td></tr>
<tr><td>9</td><td>On/Off</td></tr>
<tr><td>A</td><td>Off</td></tr>
<tr><td>B</td><td>Window On/Off</td></tr>
<tr><td>C</td><td>Disuse</td><td rowspan="4">Main, Reverse control</td></tr>
<tr><td>D</td><td>On/Off</td></tr>
<tr><td>E</td><td>Off</td></tr>
<tr><td>F</td><td>Window On/Off</td></tr>
<tr><td>Option</td><td colspan="2">SEG 19</td><td colspan="2">SEG 20</td><td colspan="2">SEG 21</td><td>SEG 22</td><td colspan="2">SEG 23</td><td>SEG 24</td></tr>
<tr><td>Function</td><td colspan="2">Page</td><td colspan="2">Individual control with remote control 3)</td><td colspan="2">Heating setting compensation 4)</td><td rowspan="5">Reserved</td><td colspan="2" rowspan="5">Reserved</td><td rowspan="5">Reserved</td></tr>
<tr><td rowspan="5">Indication and details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td><td>Indication</td><td>Details</td></tr>
<tr><td colspan="2" rowspan="4">3</td><td>0,1</td><td>Indoor1</td><td>0</td><td>Default</td></tr>
<tr><td>2</td><td>Indoor2</td><td rowspan="2">1</td><td rowspan="2">3.6°F(2°C)</td></tr>
<tr><td>3</td><td>Indoor3</td></tr>
<tr><td>4</td><td>Indoor4</td><td>2</td><td>9°F(5°C)</td></tr>
</table>

• 1) SEG4
By SEG4 setting, Minimizing fan operation when thermostat is off.
- Fan operates for 20 seconds at an interval of 5 minutes in heat mode.
- Fan stops or operates Ultra low in Cooling when thermostat is off.

• 3) SEG20
If you set the Individual control with remote control option to a value other than 0 to 4, it is automatically set to 0 (Indoor1)

• 4) SEG21
Default value of Heating setting compensation is 3.6°F(2°C).

4-3-5 Changing the addresses and option individually

When you want to change the value of a specific option, refer to the following table and follow the steps in Common steps for setting the addresses and options on page 18.

Option	SEG1		SEG2		SEG3		SEG4		SEG5		SEG6	
Function	Page		Mode		Type of the option to change		Tens position of the option number		Units position of the option number		New value	
Indication and details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details
	0		D		Option type	0 to F	Tens position value	0 to 9	Units position value	0 to 9	New value	0 to F

Example: Changing the Buzzer control (SEG17) option of the installation options to 1 disuse.

Option	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
Function	Page	Mode	Type of the option to change	Tens position of the option number	Units position of the option number	New value
Indication	0	D	2	1	7	1

CAUTION

- If your indoor units support both cooling and heating, the mixed operation (two or more indoor units operate in different modes simultaneously) is not available when the indoor units are connected to the same outdoor unit. If you set an indoor unit as the master indoor unit by using the remote control, the outdoor unit automatically operate in the current mode of the master indoor unit.

4-3-6 Changing a particular option

Option Code	Wall Mounted					
	AR07TSFABWKNCV	AR09TSFABWKNCV	AR12TSFABWKNCV	AR15TSFABWKNCV	AR18TSFABWKNCV	AR24TSFABWKNCV
SEG1~6	011A25	011A25	011A25	011A25	011A25	011A25
SEG7~12	17C0E7	17C0E7	17C217	17C227	16C23B	15C29D
SEG13~18	271416	271A20	272323	272C38	27353C	273E51
SEG19~24	37140D	37140D	37140D	37140D	37140D	37160D
SEG25~30	020010	020010	020010	020010	020010	020010
SEG31~36	100000	100000	100000	100000	100000	100000
SEG37~42	200101	200101	200101	200101	200101	200101
SEG43~48	300346	300346	300346	300346	300357	300357
SEG49~54	034039	034039	03463A	03463A	03413F	033E47
SEG55~60	10222C	10222C	103131	103131	11262C	112D38
SEG61~66	200000	200000	200000	200000	200000	200000
SEG67~72	300001	300001	300001	300001	300001	300001

Option Code	Wall Mounted					
	AR07BSFCMWKN	AR09BSFCMWKN	AR12BSFCMWKN	AR15BSFCMWKN	AR18BSFCMWKN	AR24BSFCMWKN
SEG1~6	011A25	011A25	011A25	011A25	011A25	011A25
SEG7~12	1740DA	17C0EA	17C0FA	17422A	15C21B	15C24B
SEG13~18	271416	271A20	272323	272C38	27353E	274046
SEG19~24	37280D	37280D	37280D	37180D	37240D	37140D
SEG25~30	020010	020010	020010	020010	020010	20010
SEG31~36	100000	100000	100000	100000	100000	100000
SEG37~42	200101	200101	200101	200101	200101	200101
SEG43~48	300335	300335	300335	300335	300357	300357
SEG49~54	034140	034140	034842	034140	034D4B	03484D
SEG55~60	10252F	10252F	103533	10252F	10464D	113535
SEG61~66	200000	200000	200000	200000	200000	200000
SEG67~72	300001	300001	300001	300001	300001	300001

Option Code	Wind-Free Slim 1Way Cassette	
	AC009BN1DCH	AC012BN1DCH
SEG1~6	0173FC	0173FC
SEG7~12	1930F8	19344D
SEG13~18	271A23	272328
SEG19~24	371120	371120
SEG25~30	020010	020010
SEG31~36	100031	100051
SEG37~42	200000	200000
SEG43~48	300000	300000
SEG49~54	030000	030000
SEG55~60	100000	100000
SEG61~66	200000	200000
SEG67~72	300002	300002

Option Code	Wind-Free Mini 4Way Cassette		
	AC009BNNDCH	AC012BNNDCH	AC018BNNDCH
SEG1~6	0153FF	0153FF	0153FF
SEG7~12	1910C8	1930F9	19345D
SEG13~18	271A23	272328	25343B
SEG19~24	370040	370000	370000
SEG25~30	020010	020010	020010
SEG31~36	100001	100001	100001
SEG37~42	200000	200000	200000
SEG43~48	300000	300000	300000
SEG49~54	030000	030000	030000
SEG55~60	100000	100000	100000
SEG61~66	200000	200000	200000
SEG67~72	300002	300002	300002

Option Code	Home Duct		
	AC009BNLDCH	AC012BNLDCH	AC018BNLDCH
SEG1~6	01C3FC	01C3FC	01C3FC
SEG7~12	1C546B	1C55F0	1C583D
SEG13~18	271A23	272328	23343C
SEG19~24	370000	370000	370000
SEG25~30	020010	020010	020010
SEG31~36	120000	120000	120000
SEG37~42	200000	200000	200000
SEG43~48	300000	300000	300000
SEG49~54	030000	030000	030000
SEG55~60	100000	100000	100000
SEG61~66	200000	200000	200000
SEG67~72	300002	300002	300002
0.3≤P≤1.5 mmAq	01C3FC-1C5407-271A23-370000	01C3FC-1C54BC-272328-370000	01C3FC-1C54FB-23343C-370000
1.5≤P≤2.6 mmAq	01C3FC-1C546B-271A23-370000	01C3FC-1C55F0-272328-370000	01C3FC-1C583D-23343C-370000
2.6≤P≤4.0 mmAq	01C3FC-1C55C0-271A23-370000	01C3FC-1C5944-272328-370000	01C3FC-1C5980-23343C-370000
4.0≤P≤5.0 mmAq	01C3FC-1C5903-271A23-370000	01C3FC-1C5986-272328-370000	01C3FC-1C59B2-23343C-370000
5.0≤P≤6.0 mmAq	01C3FC-1C5945-271A23-370000	01C3FC-1C59B9-272328-370000	01C3FC-1C59F5-23343C-370000

Option Code	Duct S			
	AJ009BNHDCH	AJ012BNHDCH	AJ015BNHDCH	AJ018BNHDCH
SEG1~6	01B3FC	01B3FC	01B3FC	01B3FC
SEG7~12	1C50D3	1C5404	1C5435	1C5456
SEG13~18	271A23	272328	272C34	27343C
SEG19~24	370000	370000	370000	370000
SEG25~30	020010	020010	020010	020010
SEG31~36	120000	120000	120000	120000
SEG37~42	200000	200000	200000	200000
SEG43~48	300000	300000	300000	300000
SEG49~54	030000	030000	030000	030000
SEG55~60	100000	100000	100000	100000
SEG61~66	200000	200000	200000	200000
SEG67~72	300002	300002	300002	300002
2.5≤P≤5.0 mmAq	01B3FC-1C50D3-271A23-370000	01B3FC-1C5404-272328-370000	01B3FC-1C5435-272C34-370000	01B3FC-1C5456-27343C-370000
5.0≤P≤7.5 mmAq	01B3FC-1C5466-271A23-370000	01B3FC-1C5477-272328-370000	01B3FC-1C5488-272C34-370000	01B3FC-1C5499-27343C-370000
7.5≤P≤10.0 mmAq	01B3FC-1C54D9-271A23-370000	01B3FC-1C54EA-272328-370000	01B3FC-1C54FB-272C34-370000	01B3FC-1C580C-27343C-370000
10.0≤P≤12.5 mmAq	01B3FC-1C582C-271A23-370000	01B3FC-1C583D-272328-370000	01B3FC-1C584E-272C34-370000	01B3FC-1C585F-27343C-370000
12.5≤P≤15.0 mmAq	01B3FC-1C5970-271A23-370000	01B3FC-1C5981-272328-370000	01B3FC-1C5992-272C34-370000	01B3FC-1C59A3-27343C-370000

Option Code	Console			
	AC009BNJDCH	AC012BNJDCH	AC015BNJDCH	AC018BNJDCH
SEG1~6	0193FF	0193FF	0193FF	0193FF
SEG7~12	1930B6	1930D8	1920FB	19240A
SEG13~18	271A23	272328	272C34	20343A
SEG19~24	370400	370500	370408	370408
SEG25~30	020010	020010	020010	020010
SEG31~36	100000	100000	100000	100000
SEG37~42	200000	200000	200000	200000
SEG43~48	300000	300000	300000	300000
SEG49~54	030000	030000	030000	030000
SEG55~60	100000	100000	100000	100000
SEG61~66	200000	200000	200000	200000
SEG67~72	300002	300002	300002	300002

Option Code	MPAH		
	AC012BNZDCH	AC018BNZDCH	AC024BNZDCH
SEG1~6	01E2FC	01E2FC	01E2FC
SEG7~12	105020	105020	105020
SEG13~18	272328	2F343C	27484F
SEG19~24	370000	370000	370000
SEG25~30	020010	020010	020010
SEG31~36	100000	100000	100000
SEG37~42	200000	200000	200000
SEG43~48	300000	300000	300000
SEG49~54	030000	030000	030000
SEG55~60	100000	100000	100000
SEG61~66	200000	200000	200000
SEG67~72	300002	300002	300002

4-4 Items to be checked first

1. The input voltage should be rating voltage ±10% range.
   The air conditioner may not operate properly if the voltage is out of this range.

2. Is the link cable linking the indoor unit and the outdoor unit linked properly?
   The indoor unit and the outdoor unit shall be linked by 4 cables.
   Check the terminals if the indoor unit and outdoor unit are properly linked by the same number of cables.
   Otherwise the air conditioner may not operate properly.

3. When a problem occurs due to the contents illustrated in the table below it is a symptom not related to the malfunction of the air conditioner.

No	Operation of air conditioner	Explanation
1	In a COOL operation mode, the compressor does not operate at a room temperature higher than the setting temperature that the INDOOR FAN should operate. In a HEAT operation mode, the compressor does not operate at a room temperature lower than the setting temperature that indoor fan should operate.	In happens after a delay of 3 minutes when the compressor is reoperated. The same phenomenon occurs when a power is on. As a phenomenon that the compressor is reoperated after a delay of 3 minutes, the indoor fan is adjusted automatically with reference to a temperature of the air blew
2	Fan speed setting is not allowed in AUTO( ) or DRY( ) mode.	The speed of the indoor fan is set to LL in DRY mode. Fan speed is 5 steps and is selected automatically in AUTO mode.
3	Compressor stops operation intermittently in DRY( ) mode.	Compressor operation is controlled automatically in DRY mode depending on the room temperature and humidity.
4	Compressor of the outdoor unit is operating although it is turned off in a HEAT mode.	When the unit is turned off while de-ice is activated, the compressor continues operation for up to 12 minutes (maximum) until the deice is completed.
5	Timer LED( ) only of the indoor unit lights up and the air conditioner does not operate.	Timer is being activated and the unit is in ready mode. The unit operates normally if the timer operation is cancelled.
6	The compressor and indoor fan stop intermittently in HEAT mode.	The compressor and indoor fan stop intermittently if room temperature exceeds a setting temperature in order to protect the compressor from overheated air in a HEAT mode.
7	Indoor fan and outdoor fan stop operation intermittently in a HEAT mode.	The compressor operates in a reverse cycle to remove exterior ice in a HEAT mode, and indoor fan and outdoor fan do not operate intermittently for within 20% of the total heater operation.
8	The compressor stops intermittently in a COOL mode or DRY mode, and fan speed of the indoor unit decreases.	The compressor stops intermittently or the fan speed of the indoor unit decreases to prevent inside/outside air frozen depending on the inside/outside air temperature.

■ If Error code is displayed on indoor or outdoor LED, check as follows;

Contents		
Q1	Turn on the system. But outdoor units PCB displayed E201 or E101 Error code. Check point Remarks	
	Check point	Remarks
Step 1	Check to power cable to indoor units. Check to communication cable indoor units.	Wire connect

Contents		
Q2	Turn on the system. But outdoor units PCB displayed E203 Error code.	
	Check point	Remarks
Guidance	Outdoor communication error between the outdoor main PCB and sub PCB.	Outdoor PCB SW01
Step 1	Check to sub PCB wire and replace it.	Wire connect

Contents	
Q3	Turn on the indoor units. But indoor unit displayed E121/122/123/154 Error code.
Error code	Explanation
E121	Indoor unit room temperature sensor error (open/short)
E122	Indoor unit heat exchanger in temperature sensor error (open/short)
E123	Indoor unit heat exchanger out temperature sensor error (open/short)
E154	Indoor unite fan error
Guidance	Please, all units turn off and check to indoor unit's PCB and wire connection. E121/122/123 error detected, replace related sensor.

Contents	
Q4	Turn on the system. But indoor unit displayed E162/163 Error code.
Error code	Explanation
E162	Indoor unit EEPROM Error.
E163	Indoor unit EEPROM Option Error.
Guidance	Please, all units turn off and follow guidance. E163 : Please reset indoor Option code. E163 : If you don't know about that, replace indoor unit PCB which is related. E162 : Please replace indoor unit PCB which is related.

Contents	
Q5	Turn on the system. But outdoor unit displayed E221/237/251/320 Error code.
Error code	Explanation
E221	Outside temperature sensor error (open/short)
E237	Condenser temperature sensor error (open/short)
E251	Compressor Discharge temperature sensor error (open/short)
E320	Compressor OLP sensor error (open/short)
Guidance	Please, The System turn off and replace sensor which is related.

Contents		
Q6	When the pipe checking operation is finished, outdoor sub PCB display E190 Error code.	
	Check point	Remarks
Analysis	Outdoor unit fails to search indoor units or to check indoor address.	The pipe checking operation
Step 1	Whether The gas and liquid pipes are crossed with each other, check to connecting.	Pipe connecting
Step 2	Check to indoor unit's sensor being connected in proper location.	EEV Coil
Step 3	Check to indoor unit's sensor being connected in proper location.	Indoor sensor
Guidance	During the pipe checking operation , system check temperature change of indoor Heat exchanger. In case, indoor sensor defect, EEV coil connector detach, malfunction of EEV, Leakage of Refrigerant, and etc can make this case.	

- Address setting another case

Contents		
Q1	When the system installation is finished, outdoor unit's PCB display E202 Error code.	
	Check point	Remarks
Analysis	This problem is caused by outdoor unit's communication part trouble or indoor units power and communication line trouble.	The pipe checking operation
Step 1	Check to connect outdoor unit and indoor units cable.	Pipe connecting
Step 2	Replace outdoor unit's ass'y control or indoor unit's ass'y control.	EEV Coil
Guidance	Basically, This error caused by communication between Indoor Units and Outdoor Unit. First of all, check the all communication connection and PCB's status.	

- Operation Error

Contents		
Q1	While using cooling or heating, indoor units display E161 Error code.	
	Check point	Remarks
Analysis	This problem is caused by user's fault. User's simultaneously operate 2 more indoor units in the same time cooling and heating mode.	
Guidance	FJM is operate by just cooling or heating mode only. (Only, HR system can operate cooling and heating mode simultaneously in the same time) Outdoor unit will be operate by first received signal, another operation signal is not applied system.	

Contents		
Q2	While using cooling or heating, System turn off and display E416 Error code.	
	Check point	Remarks
Analysis	E416 is outdoor unit high discharge temperature safety control Error code. After System restart automatically until 3 times, system stop and display this error. System can be operated by remote controller signal and K3(reset) key input.	
Step 1	Check outdoor units installation environment. (air flow blocking, the halation of another outdoor air flow)	
Step 2	Check refrigerant leakage.	
Step 3	Check outdoor EEV operation.	

Contents		
Q3	While using cooling or heating, System Turn off and display E458 Error code.	
	Check point	Remarks
Analysis	E458 Error is related with outdoor unit fan Error. Especially, If system have a some problem in fan, in heating mode , it will be happened. And In auto address setting, without pipe checking operation must be happened it.	
Step 1	Check to outdoor fan operation.	
Step 2	If outdoor fan operation is clear, start to pipe checking operation.	
Guidance	When Auto address setting is finished without pipe checking operation, in heating mode, outdoor unit refrigerant distribution control is malfunction. It make our system to confuse it's condition. But, basically this error code is concerned about fan error.	

Contents		
Q4	While using cooling mode, outdoor unit turn off and display E401 Error code.	
	Check point	Remarks
Analysis	This is caused by protection mode behavior. This is indoor Evaporator Freezing protection mode. It can also occur intermittently when using 1 or 2 indoor units for cooling at low indoor and outdoor temperatures.	
Step 1	Please, check indoor unit, whether inlet or outlet grill is closed.	
Step 2	Please, check indoor unit, whether indoor fan is working.	

Contents		
Q5	When system start in cooling mode, System don't operate and display E441 Error code.	
	Check point	Remarks
Analysis	The product is out of the range of cooling operation. Please, Remember cooling operation range.	

Contents		
Q6	While using heating, outdoor unit turn off and display E404 Error code.	
	Check point	Remarks
Analysis	Heating overload safety mode make this situation. After System restart automatically until 3 times, System display this error code and stop. System can operate by remote controller input signal or K3(reset) key input.	
Step 1	Check indoor units air flow.	
Step 2	Check outdoor unit air flow and installation (outdoor air flow blocking & over charging)	

Contents		
Q7	When system start in Heating mode, System don't operate and display E440 Error code.	
	Check point	Remarks
Analysis	The product is out of the range of heating operation. But we admit that Maximum Heating temperature is up to 24°C Please, Remember Heating operation range.	

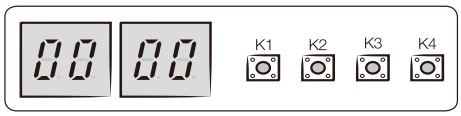
- Try-run Check Error

Contents		
Q1	While the system is working try-run mode, system turn off and display E128 / 129 / 246 / 261 / 419 / 422 / 554 Error code.	
	Check point	Remarks
Analysis	These Error codes only apply with Try-run mode, in case of system have some defect as result of try-run operation. * Refer to self-detection algorithm (Check Error Code meaning and check it out)	

4-5 Setting to Cool or Heat only mode, checking and Cool/Heat modes operation test

Setting the outdoor option

• 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.



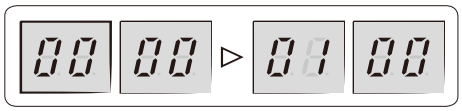
- Seg 1 and Seg 2 will display the number for selected option.
- Seg 3 and Seg 4 will display the number for set value of the selected option.

CAUTION

• 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.

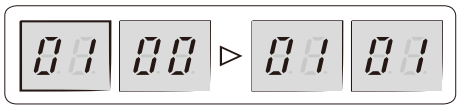
• If you have selected desired option, you can shortly press the K1 switch to adjust the value of the Seg 1, Seg 2 and change the function for the selected option.

Example)



• 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)



• 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.

Option item	Input unit	SEG1	SEG2	SEG3	SEG4	Function
Setting to Cool or Heat only mode	Main	0	0	0	0	Cooling and Heating (Factory default)"
				0	1	Only Cooling
				0	2	Only Heating
Unused option	Main	0	1	0	0	Unused option
				0	1	Unused option
Mixed mode indoor input	Main	0	2	0	0	Disabled (Factory default)
				0	1	Enabled
Auto Change Over	Main	0	3	0	0	Disabled (Factory default)
				0	1	Enabled (Factory default)
Channel address	Main	0	4	A	U	Automatic setting (Factory default)
				00 ~ 15		Manual setting

CAUTION

• 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.

■ Cool and Heat modes operation Test

After installing the outdoor and indoor units, test the Cool and Heat modes.

- When you test the Cool mode, set the set temperature of the indoor unit to the lowest one. And when you test the Heat mode, set the set temperature of the indoor unit to the highest one.
- Check if each indoor unit operates normally and then also check if all indoor units operate normally together.
  - Check both of the Cool and Heat modes.
- About 20 minutes after the air conditioner is started, check the temperature difference between the air inlet and outlet of the indoor unit. If the temperature difference is larger than the value given in the following table, the operation is normal.

Mode	Temperature
Cool	Approximately 14.4 °F (-10 °C)
Heat	Approximately 21.6 °F (-6 °C)

CAUTION

- If the outdoor unit is turned off and then immediately turned on again, the compressor does not operate for about 3 minutes.
- During the Cool mode, frost may temporarily develop on valves and other parts.

NOTE

- You can also test the Cool or Heat Try run using K1 button.
  - Cool mode try-run: Push the [K1] button twice.
  - Heat mode try-run: Push the [K1] button three times.
  - Auto mode try-run: Push the [K1] button six times. Automatically select mode according to outdoor temperature.

■ Optional : Setting to Cool or Heat only mode

This function enables the indoor units connected to the outdoor unit to operate in a specific mode.
You can set each mode with Keys on the Main PCB in the outdoor unit.

Set mode	SEG1	SEG2	SEG3	SEG4
Cooling and Heating	0	0	0	0
Only Cooling			0	1
Only Heating			0	2

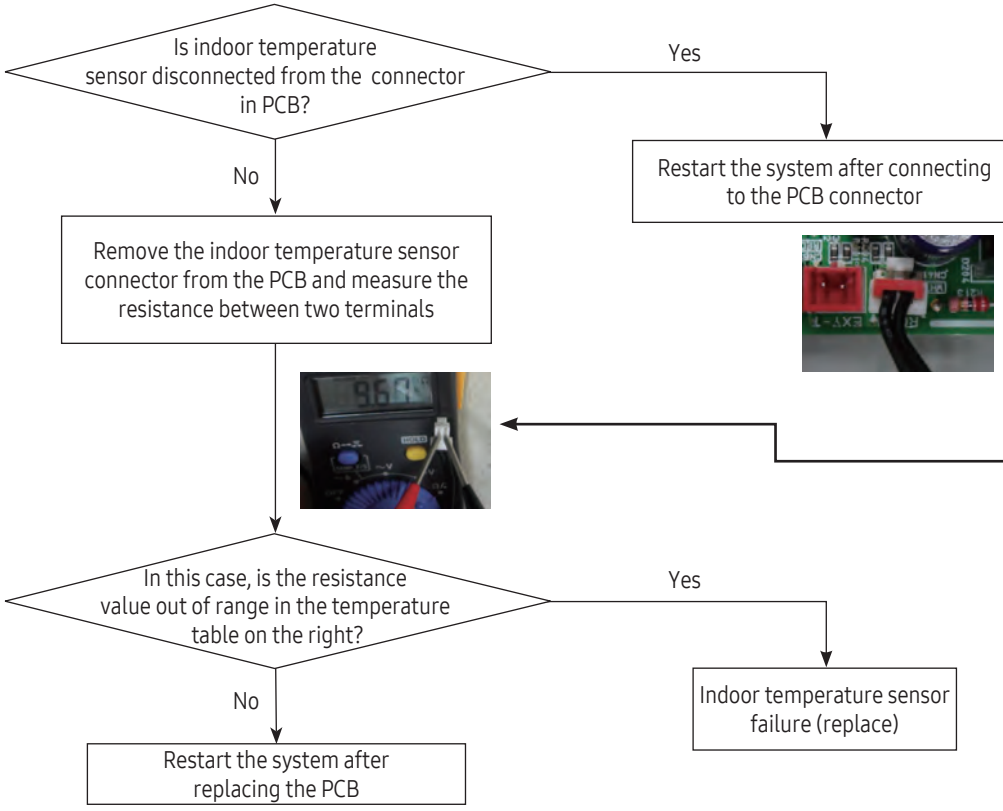
- Default value: Cooling and Heating mode

4-6 Fault Diagnosis by Symptom

4-6-1 Indoor

4-6-1-1 Indoor temperature sensor (open/short)

Indoor unit display	**4Way**	◑ (Operation) X (Defrost) ◑ (Timer) X (Filter)
	1Way	◑ (Operation) X (Timer) ◑ (Fan) X (Filter)
	Console	◑ (Operation) X (Defrost) X (Timer) ◑ (Fan) X (Filter)
Symptom		In case of open or short circuit of indoor temperature sensor
Failure		Short or leakage of the corresponding sensor

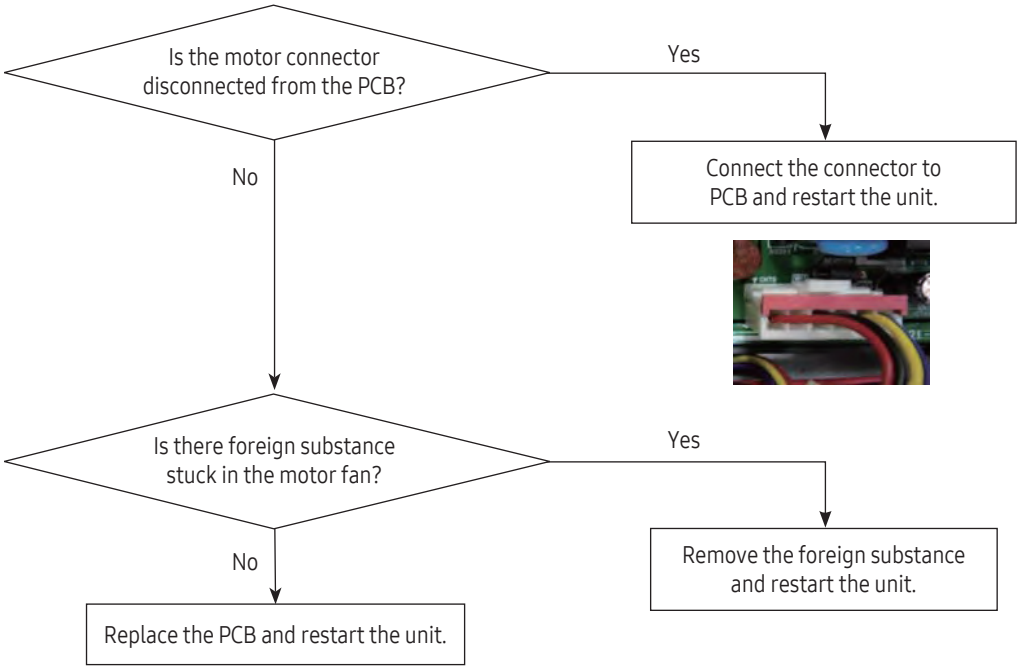


‹Temperature sensor resistance value›

Current temperature (°C)	Resistance (kΩ)
40	5.800
35	6.900
30	8.300
25	10.00
20	12.10
15	14.70
10	18.00
5	22.00
0	28.30
-5	33.90
-10	42.30

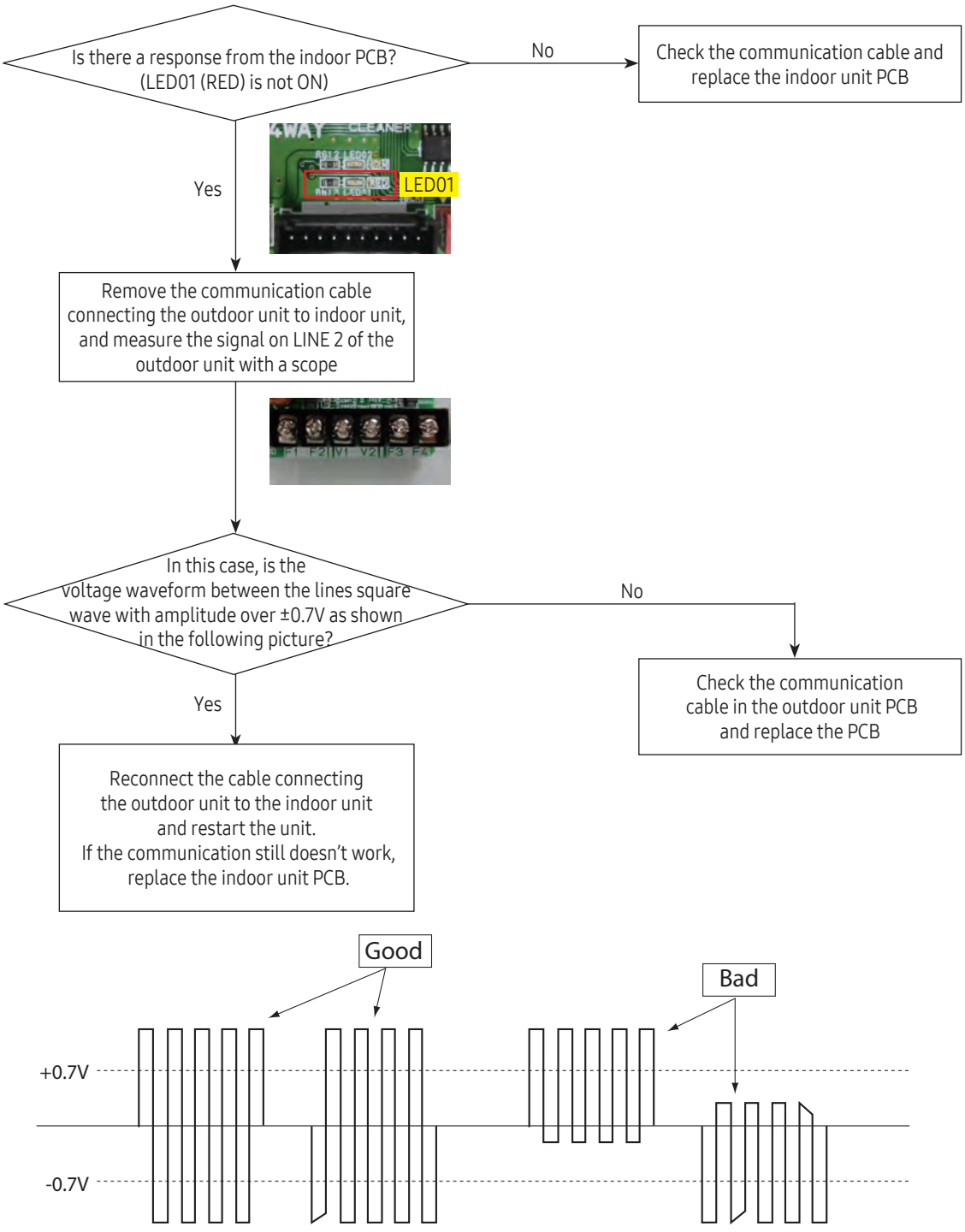
4-6-1-2 Indoor FAN ERROR (BLDC MOTOR MODEL)

Indoor unit display	**4Way**	X (Operation) X (Defrost) ◑ (Timer) X (Filter)
	1Way	X (Operation) X (Timer) ◑ (Fan) X (Filter)
	Console	X (Operation) X (Defrost) X (Timer) ◑ (Fan) X (Filter)
Symptom		Indoor unit fan dose not run/Runs at excessive high speed and stops.
Failure		Check if the motor connector is disconnected/check the motor fan assembly status.



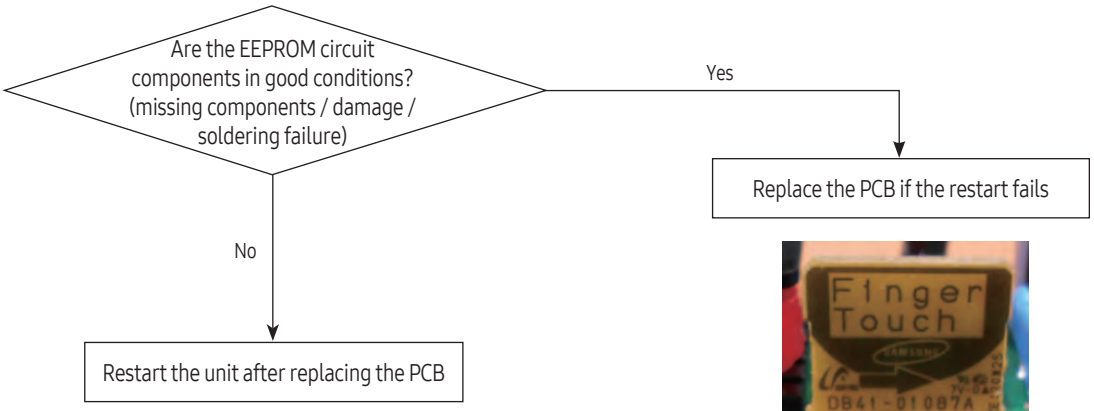
4-6-1-3 Communication error after finishing Tracking

Indoor unit display	4Way	X (Operation) ◑ (Defrost) ◑ (Timer) X (Filter)
	1Way	X (Operation) ◑ (Timer) ◑ (Fan) X (Filter)
	Console	X (Operation) X (Defrost) ◑ (Timer) ◑ (Fan) X (Filter)
Symptom		Communication error between the indoor and outdoor unit for two minutes
Failure		Communication error between the indoor unit and outdoor unit



4-6-1-4 Indoor FAN ERROR (BLDC MOTOR MODEL)

Indoor unit display	**4Way**	◑ (Operation) ◑ (Defrost) ◑ (Timer) ◑ (Filter)
	1Way	◑ (Operation) ◑ (Timer) ◑ (Fan) ◑ (Filter)
	Console	◑ (Operation) ◑ (Defrost) ◑ (Timer) ◑ (Fan) ◑ (Filter)
Symptom		EEPROM circuit failure.
Failure		EEPROM component failure, EEPROM circuit parts missing/damaged/soldering failure.

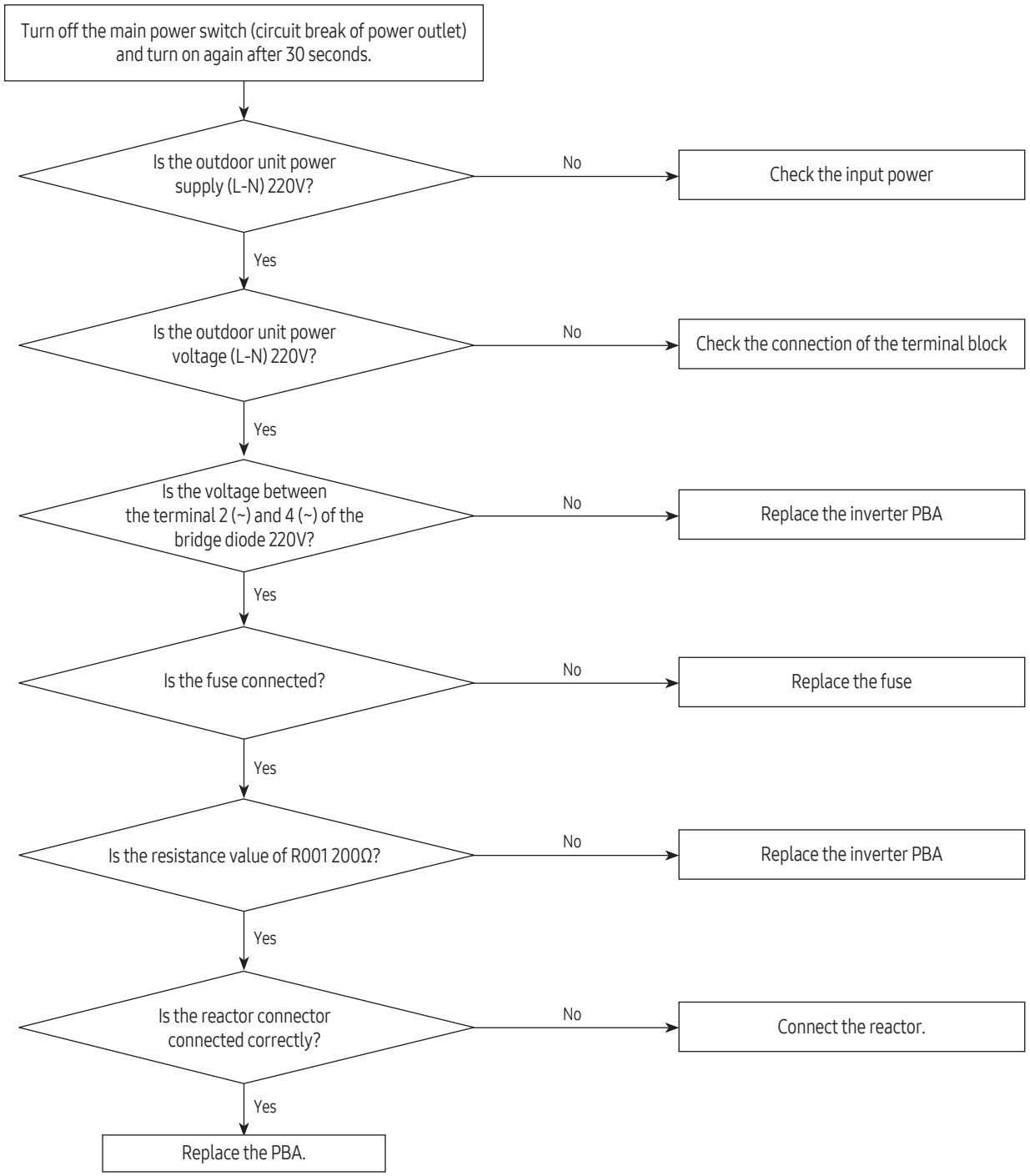


4-6-2 Outdoor unit is not powered on – Initial diagnosis

1. Check items

1) Is the power supply voltage 220V?
2) Is the AC power connected correctly?
3) Are the LEDs in the main PCB and inverter PCB of the outdoor unit ON?
4) Is the input power voltage of the indoor unit 220V?
5) Is the wired remote controller connected correctly?

2. Check procedure



4-6-3 Checking Outdoor Controller

1. Making sure the wire connections.

2. Checking AC(220~240V) line

Caution!

When you remove PBA, you have to check DC link Voltage. After Power off, DC link Voltage is so high!

3. Checking DC voltage on each point

AJ020BXJ2CH, AJ024BXJ3CH (INVERTER PBA)

Item	Measuring point	Nomal value
DC LINK	CE151 Voltage	AC220V → 305~310Vdc
Main control 15V	CE161 Voltage	14.5V - 15.5V
Main control 12V	CE175 Voltage	10.8V - 13.2V
Main control 5V	CE174 Voltage	4.75V - 5.25V

AJ020BXS3CH, AJ***BX*4CH, AJ***BX*5CH (MAIN PCB)

Item	Measuring point	Nomal value
12V	CE101Voltage	10.8V - 13.2V
5V	CE105 Voltage	4.75V - 5.25V

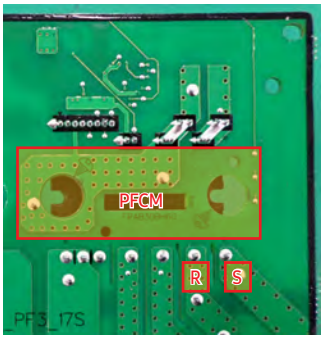
AJ020BXS3CH, AJ***BX*4CH, AJ***BX*5CH (INVERTER PCB)

Item	Measuring point	Nomal value
DC LINK	CE151 Voltage	AC220V → 305~310Vdc
Main control 15V	CE158 Voltage	14.5V - 15.5V
Main control 12V	CE157 Voltage	10.8V - 13.2V
Main control 5V	CE159 Voltage	4.75V - 5.25V

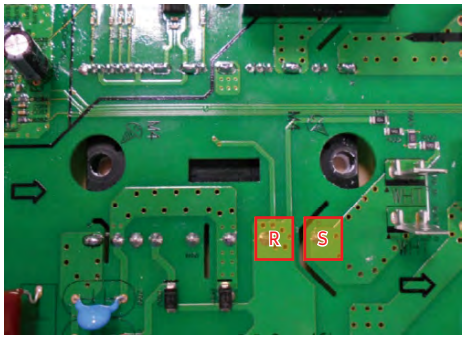
4. Checking PFCM

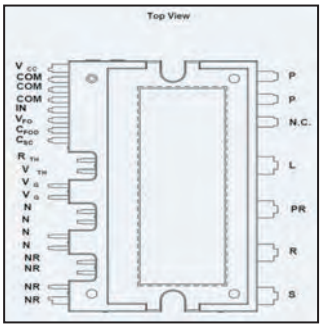
Check Resistance between R and S

AJ020BXJ2CH, AJ024BXJ3CH



AJ020BXS3CH, AJ***BX*4CH, AJ***BX*5CH (INVERTER PBA)





	Measuring point	Normal value
Resistance	R - S	over the hundreds kΩ

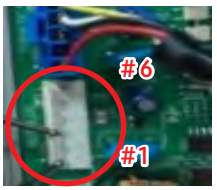
4-6-4 Outdoor unit fan error

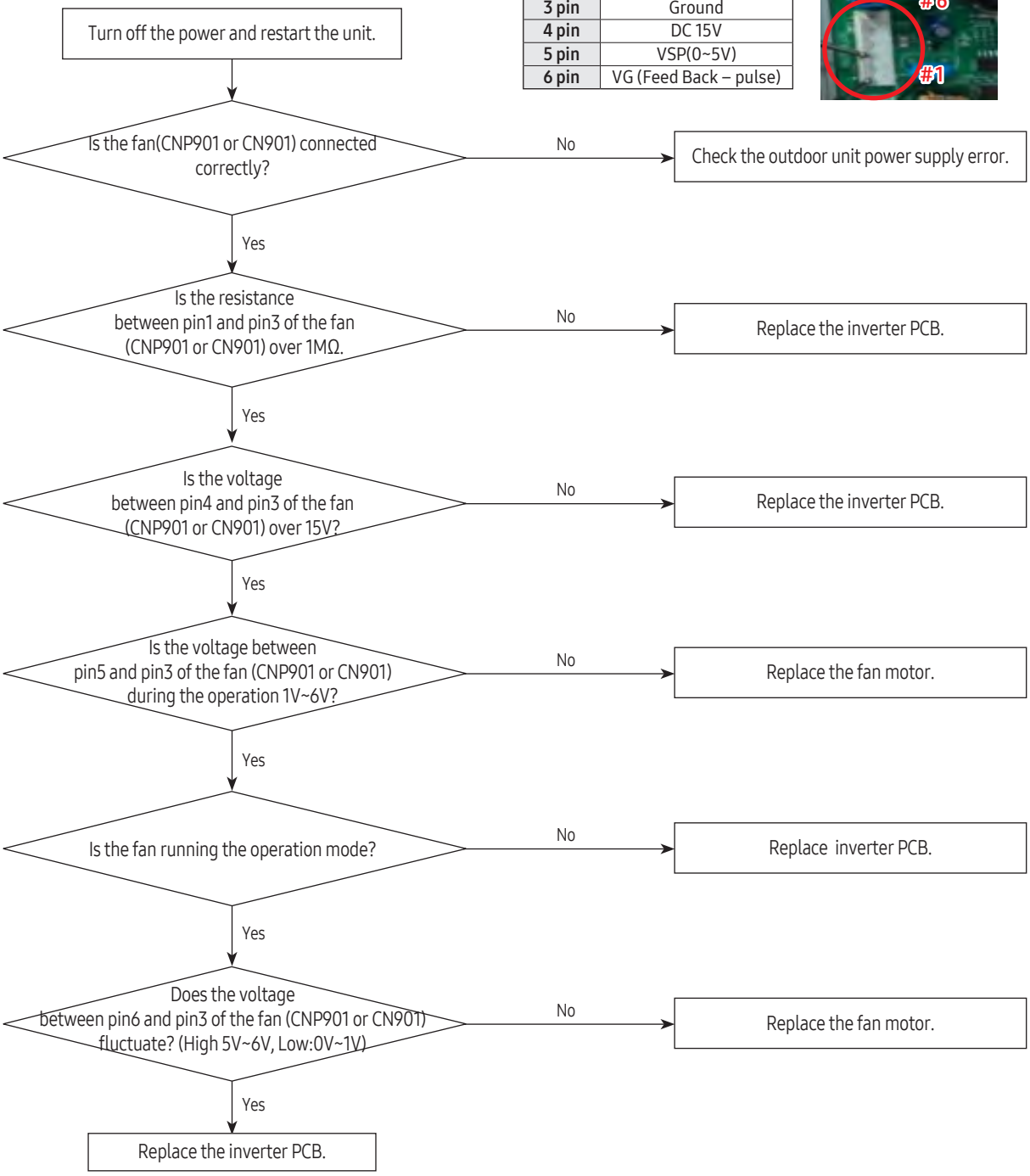
1. Check items

1) Are the input voltage and power connection correct?
2) Is the motor connecting wire connected to the outdoor unit PCB correctly?
3) Are the indoor/outdoor fuses connected?
4) Are there any obstacles near the motor or propeller?
5) Is the motor driver out of order?
6) AJ020BXJ2CH, AJ024BXJ3CH Model check CNP901, AJ020BXS3CH, AJ***BX*4CH, AJ***BX*5CH Model check CN901.

2. Check procedure

1 pin	DC 310V
2 pin	-
3 pin	Ground
4 pin	DC 15V
5 pin	VSP(0~5V)
6 pin	VG (Feed Back – pulse)



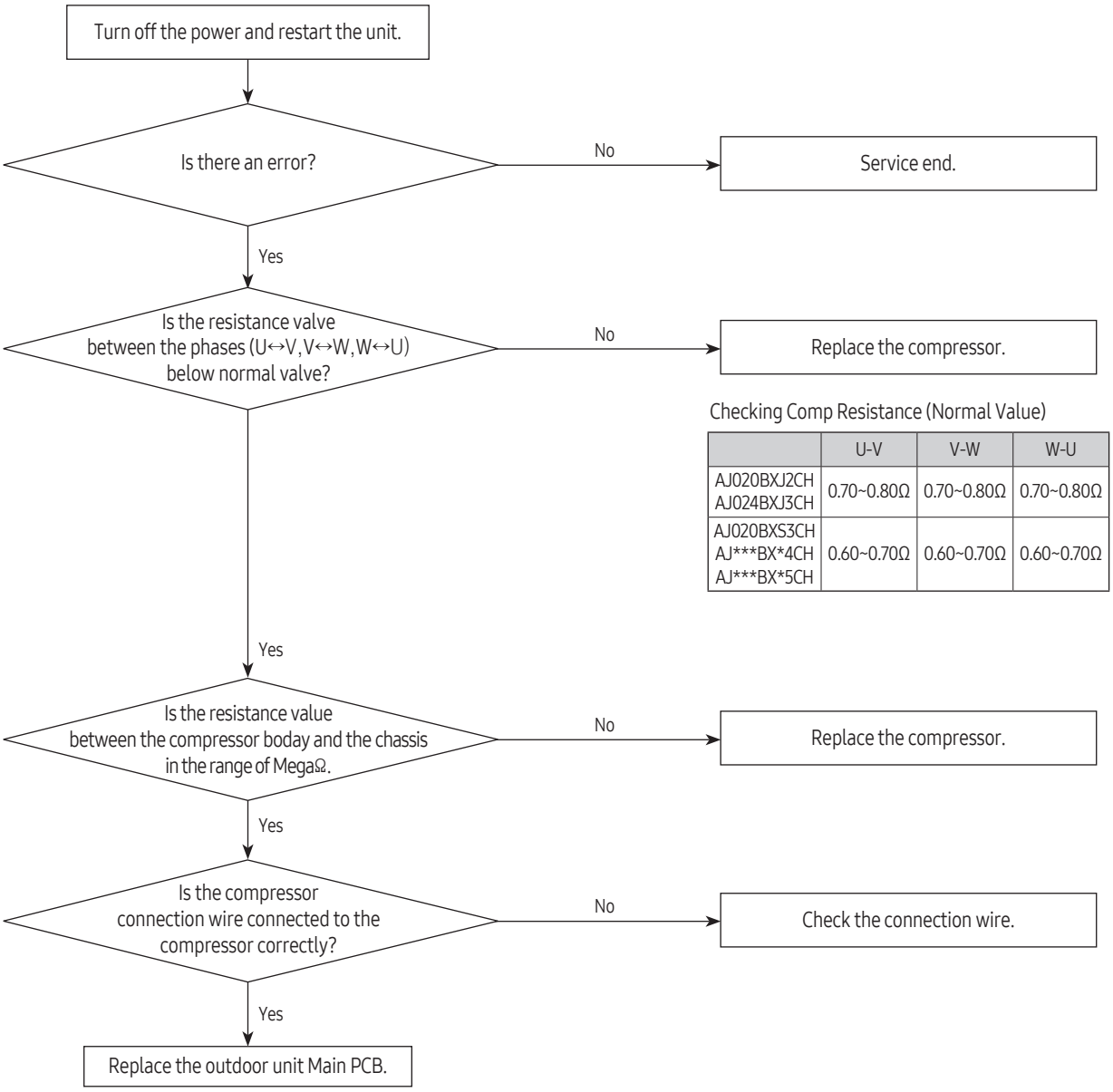


4-6-5 Compressor startup error, Compressor lock error, Compressor rotation error

1. Check items

1) Are the power supply and compressor connecting wires connected correctly?
2) Is the inter-phase resistance of the compressor normal?

2. Check procedure



Checking Comp Resistance (Normal Value)

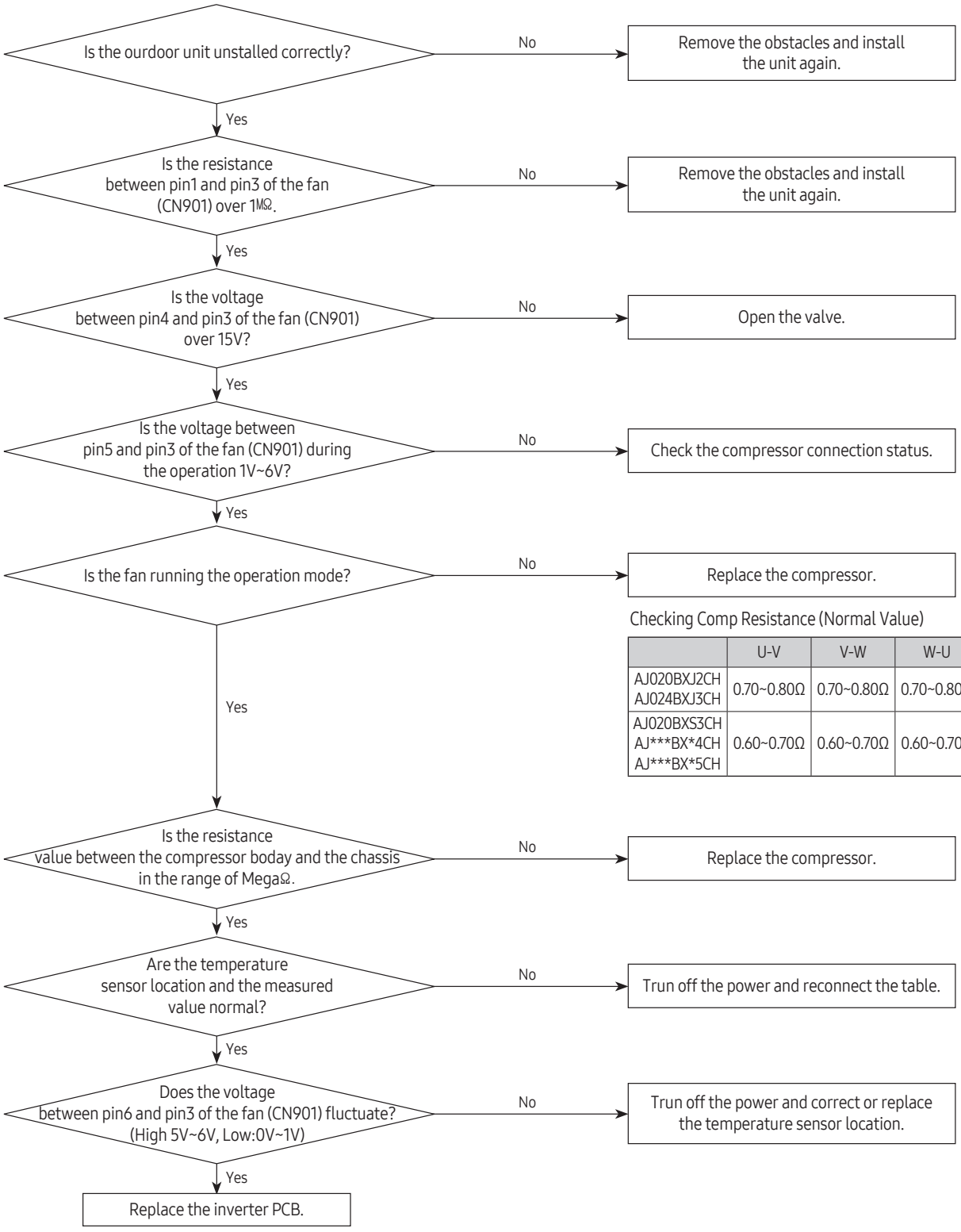
	U-V	V-W	W-U
AJ020BXJ2CH AJ024BXJ3CH	0.70~0.80Ω	0.70~0.80Ω	0.70~0.80Ω
AJ020BXS3CH AJ***BX*4CH AJ***BX*5CH	0.60~0.70Ω	0.60~0.70Ω	0.60~0.70Ω

4-6-6 IPM Over current error

1. Check items

1) Is the cool ant changed?
2) Is the compressor running normally?
3) Is the compressor connected correctly?
4) Are there any obstacles near the indoor and outdoor units?

2. Check procedure



Checking Comp Resistance (Normal Value)

	U-V	V-W	W-U
AJ020BXJ2CH AJ024BXJ3CH	0.70~0.80Ω	0.70~0.80Ω	0.70~0.80Ω
AJ020BXS3CH AJ***BX*4CH AJ***BX*5CH	0.60~0.70Ω	0.60~0.70Ω	0.60~0.70Ω

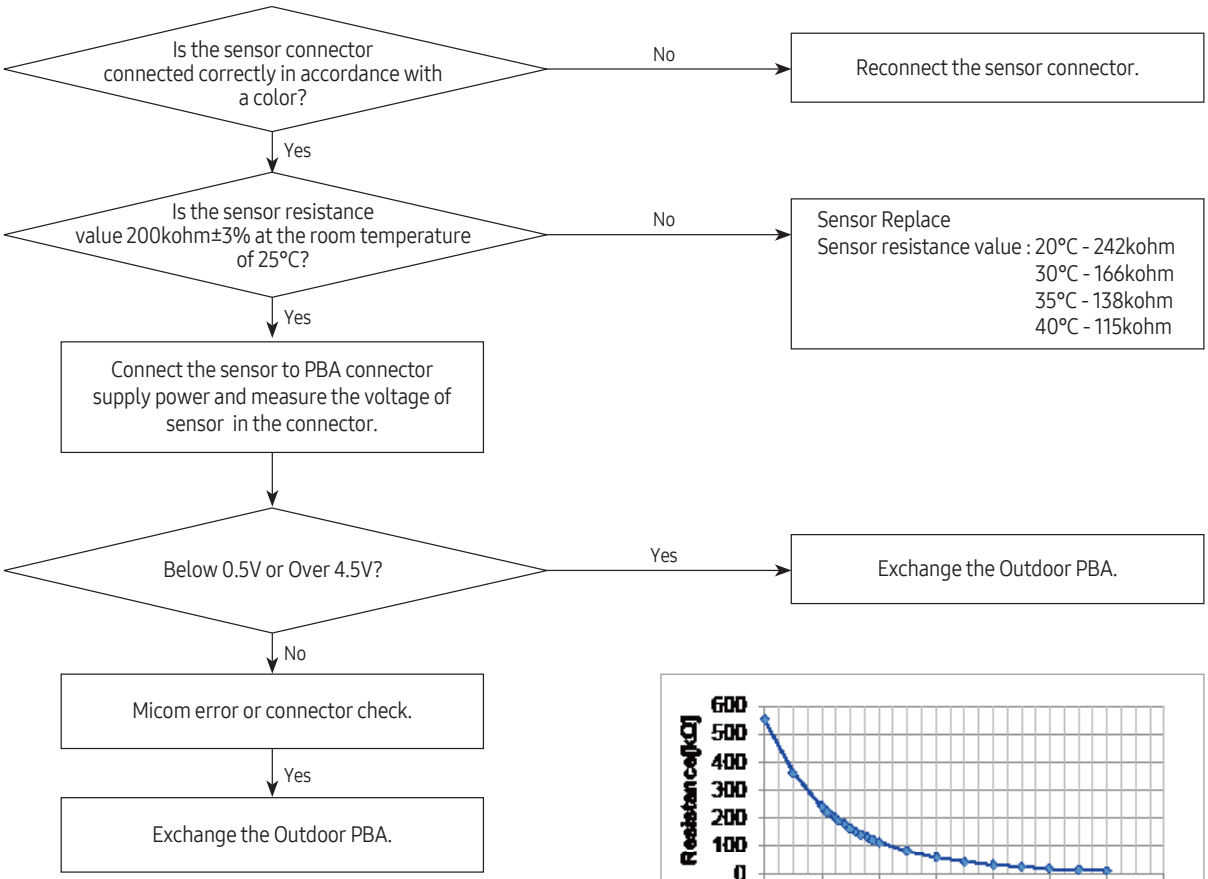
4-6-7 Checking Temperature sensor

4-6-7-1 Checking Compressor OLP and Discharge temperature sensor

1. Check items

1) Is the sensor connected correctly?
2) Is the sensor placed correctly?
3) Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
4) Is the resistance value of sensor connection pull-up correct?

2. Check procedure

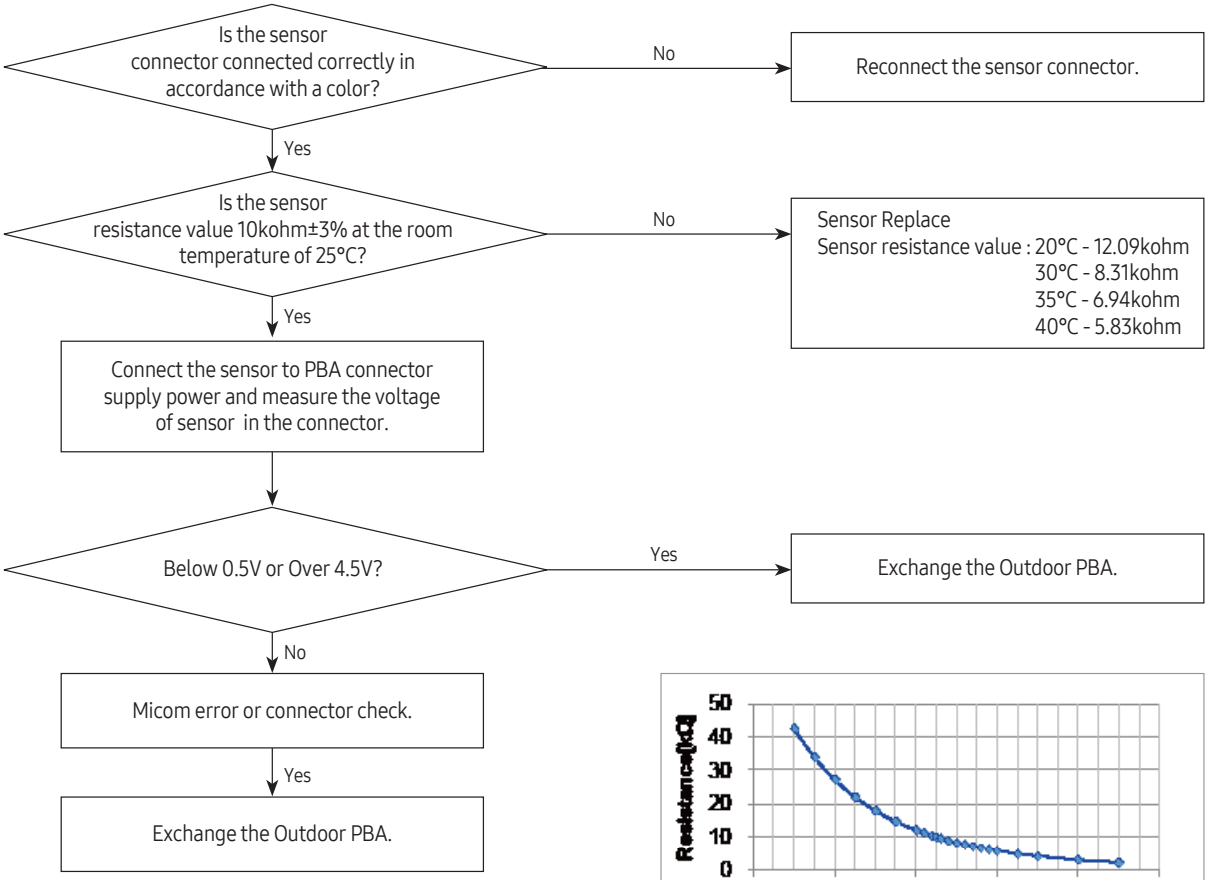


4-6-7-2 Checking Pipe in/out and Cond and Ambient temperature sensor

1. Check items

1) Is the sensor connected correctly?
2) Is the sensor placed correctly?
3) Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
4) Is the resistance value of sensor connection pull-up correct?

2. Check procedure



4-7 PCB Inspection

4-7-1 Cautions for Part Replacement

1. The human body carries much static electricity. Before touching a part for repair, replacement or the similar purpose, be sure to touch a grounded metallic portion by hand to let the static electricity go through the metallic portion to the earth. Especially when handling any micro computer or IC, carefully remove such static electricity before touching them.

2. When repairing any part on a work bench, be sure to place an insulative sheet on the bench and always keep the sheet surface neat without any metal fragments. If any such fragment touches a part, a secondary trouble will possibly be caused in the part.

3. Before replacing any parts, be sure to turn off the power supply. If such replacement is done with the power supply kept on, an electric shock, short circuit or destruction of a part may result.

4. During replacement or repair of a part, carefully handle it : The printed circuit board has fine lead wires (jumper wires) and glass-made parts (diode) on its substrate. So if a circuit board is roughly handled, such lead wires and parts will be easily broken or damaged by bending orshock.

5. When soldering the lead wires of any new part, be sure to polish them using an emery paper or the like before soldering them. Since the lead wires of any new part are covered with an oxide film, solder cannot adhere to the lead wires if not polished.

6. When soldering any part, care should be exercised not to apply any high-wattage soldering iron to the part for a long time. Some parts are of so low a heat resistance that they may be broken or have the properties changed if a soldering iron is so applied (Otherwise, the pattern may possibly be separated and raised).

7. The heat of the soldering iron should be transferred to the entire object to be soldered. If the solder pieces are not well fused due to insufficient transfer of the heat from the soldering iron, no satisfactory electrical continuity can be assured even if the soldered objects appear well connected to each other.

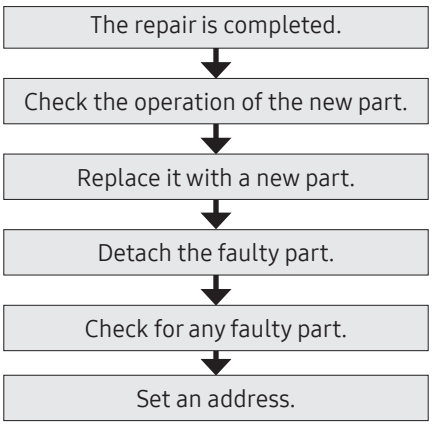
8. The solder used should be limited to a minimum. If excessive solder is used, it will cause inter-pattern contact, which may cause malfunction of the circuit.

9. Although some part of the PCB surface are coated with coating material for protection from dust and dirt, soldering is also available to the coating part. Because this coating is thin and is weak for soldering heat. But coating material remaining on the solder part should be cleaned up before soldering a new component to prevent the solder part from becoming bad conduction.

10. After replacing a faulty PCB by a new one, the same address setting must be applied to the new PCB. (refer to the page 4-19 ~ page 4-24)

4-7-2 Procedure

The parts should be replaced in the following procedure.



5. PCB Diagram

5-1 Indoor unit

■ Slim 1 Way, Mini 4Way

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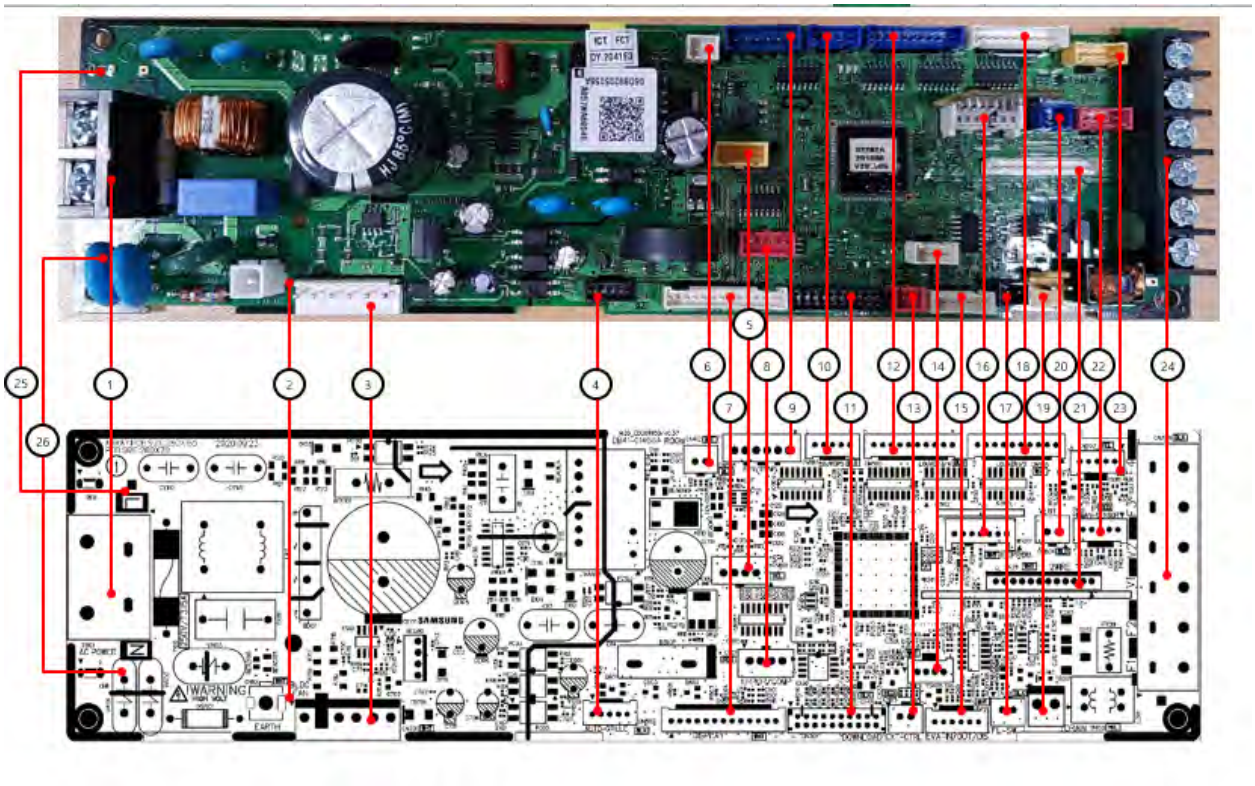

1. CN101 - AC POWER INPUT #1 : L POWER #2 : N POWER	**2. CN101-EARTH** #1 : EARTH	**3. CN701-BLDC MOTOR** #1: DC310V #3 : GND #4 : DC15V #5 : FAN RPM #6 : RPM FEEDBACK	**4. CN809-AUTO GRILLE** #1 : DC12V #4 : REMOCON OUT #5 : GND
5. CN801 - SPI #1~2 : GND #3 : SPI CONTROL SIGNAL #4 : NOT USED	**6. CN412 - TEMPERATURE SENSOR** #1 : INDOOR TEMP #2: GND	**7. CN501 - DISPLAY** #1 : DC12V #2 : LED_0 #3 : LED_1 #4 : LED_2 #5 : LED_3 #6 : LED_4	#7 : LED_5 #8 : REMOCON OUT #9 : AUTO SWITCH #10 : REMOCON IN #11 : GND #12 : DC5V #13 : GND
8. CN81 - ERROR/ COMP CHECK #1 : DC 12V #2 : ERROR CHECK #3 : DC 12V #4 : COMP CHECK	**9. CN808 - EEV(DVM)** #1: WATER VALVE1 #2: WATER VALVE2 #3: NC #4: NC #5~#6: DC12V	**10. CN807-LOUVER5** #1 : DC12V #2~#5 : LOUVER SIGNAL	**11. CN301-DOWNLOAD**
12. CN806-LOUVER3/4 #1 : DC12V #2~#5 : LOUVER #6 : DC12V #7~#10 : LOUVER	**13. CN83-EXTERNAL CONTROL** #1 : GND #2 : EXTERNAL CONTROL INPUT SIGNAL	**14. CN414-HUMIDITY SENSOR** #1 : DC5V #2 : GND #3 : THERMISTOR SENSOR #4 : HUMIDITY SENSOR	**15. CN413-THERMISTOR** #1 : EVA-IN SENSOR #2 : GND #3 : EVA-OUT SENSOR #4 : GND #5 : DISCHARGE SENSOR #6 : GND
16. CN201-EEPROM #1 : GND #3 : DC5V #4 : EEPROM_SELECT #5 : EEPROM_SO #6 : EEPROM_SI #7 : EEPROM_CLK	**17. CN411-FLOAT SWITCH** #1 : FLOAT SWITCH SIGNAL #2 : GND	**18. CN805-LOUVER1/2** #1 : DC12V #2~#5 : LOUVER SIGNAL	**19. CN103-DRAIN PUMP** #1 : DRAIN PUMP (DC12V) #2 : GND
20. CN804-VENTILATOR #1 : DC12V #2 : VENT SIGNAL OUTPUT(GND)	**21. CN311-2 WIRED SUB**	**22. CN401-HUMAN SENSOR** #1 : DC12V #2 : TXD #3 : RXD #4 : GND	**23. CN302-WIFI** #1 : TXD #2 : RXD #3 : C5V #4 : GND #5 : DC12V
24. TE04-COMMUNICATION #1 : COM1(F1) #2 : COM1(F2) #3 : V1(DC12V) #4 : V2(GND) #5 : COM2(F3) #6 : COM2(F4)	**25. CN110-AC POWER** #1 : L- LIVE POWER INPUT	**26. CN111-AC POWER** #1 : N-NEUTRAL POWER OUTPUT	

■ Slim 1Way (PANEL)

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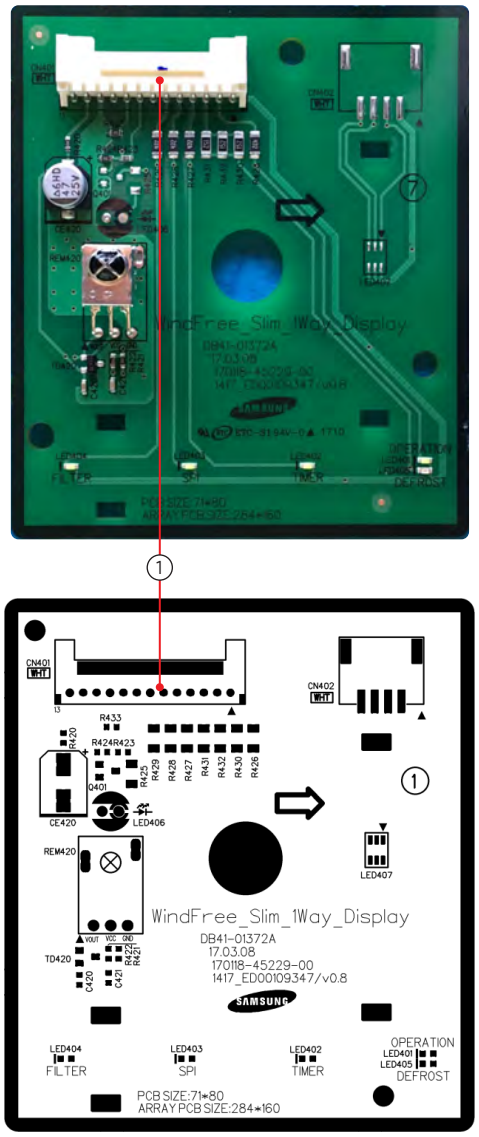
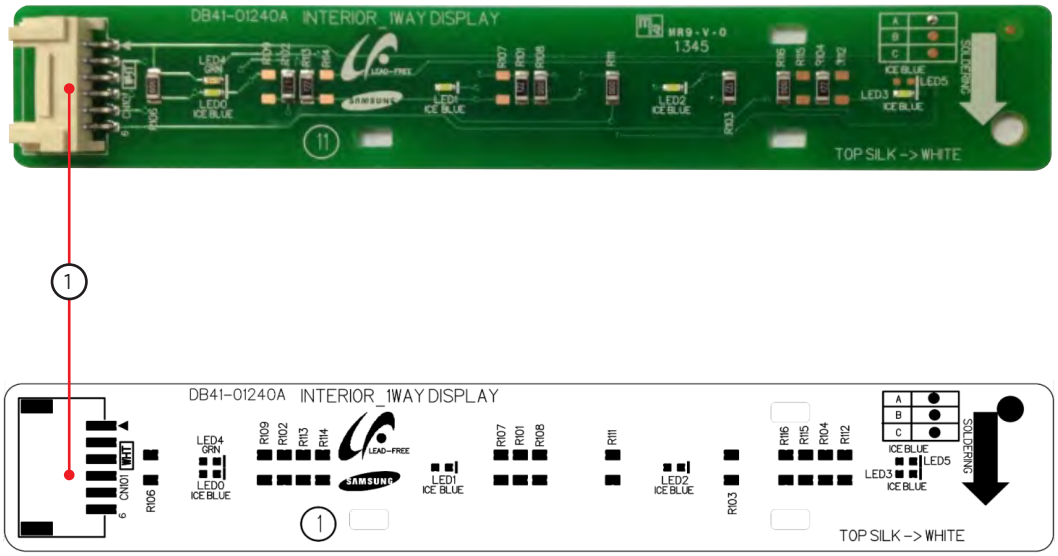
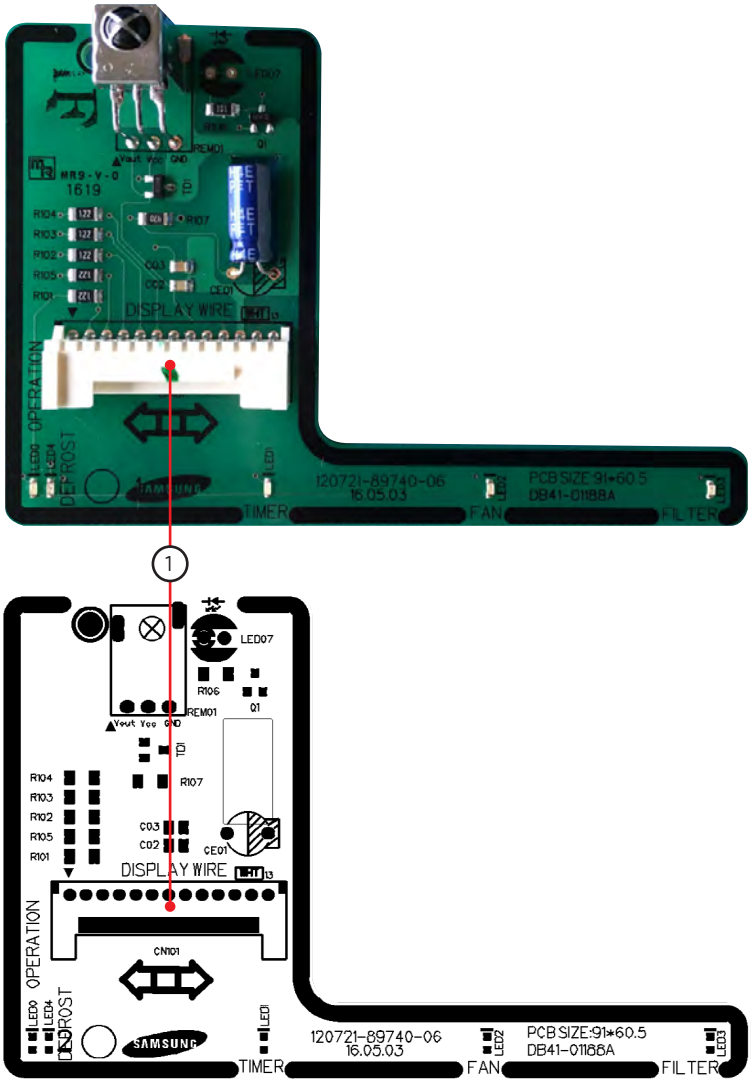


① CN401-DISPLAY
#1: DC12V
#2: LED_0
#3: LED_1
#4: LED_2
#5: LED_3
#6: LED_4
#7: -
#8: REMOCON Signal Out
#9 : PANEL SELECTION
#10: REMOCON Signal In
#11: GND
#12: DC5V
#13: -



1. CN101-DISPLAY

#1 : 12V
#2~6 : LED CONTROL SIGNAL



1. CN101-DISPLAY
#1: DC12V
#2: LED_0
#3: LED_1
#4: LED_2
#5: LED_3
#6: LED_4
#7: -
#8: REMOCON OUTPUT SIGNAL
#9 : PANEL SELECTION
#10: REMOCON INPUT SIGNAL
#11: GND
#12: DC5V
#13: -

■ Mini 4Way (PANEL)

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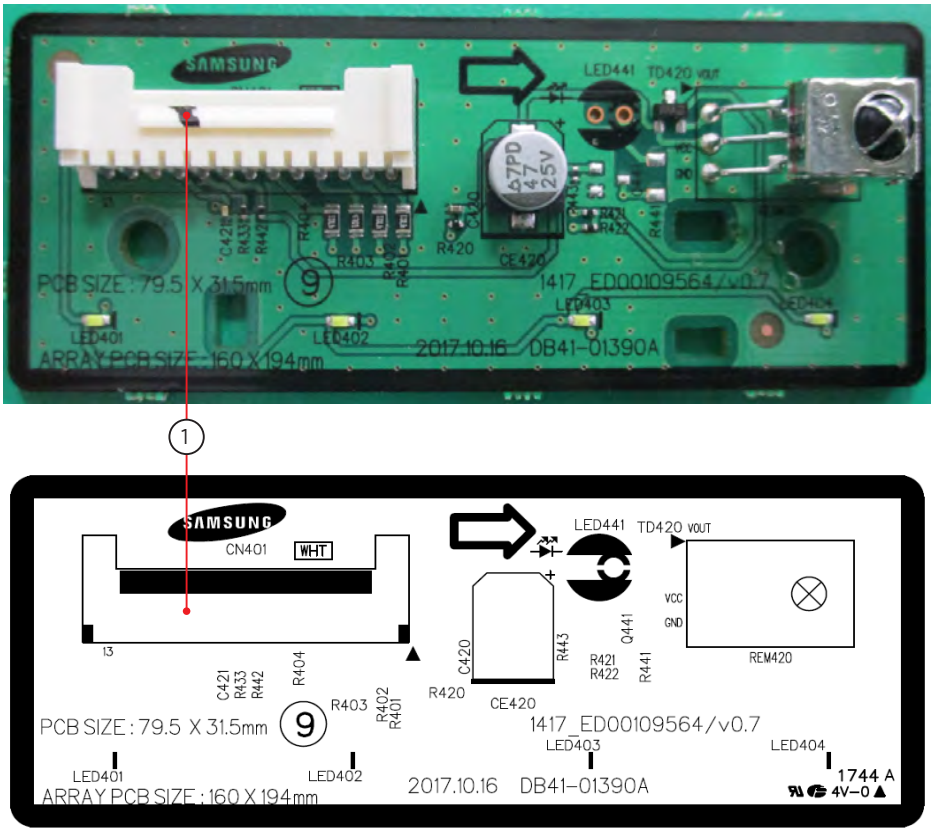

1. CN01-DISPLAY
#1 : DC12V
#2 : LED_Operation
#3 : LED_Defrost
#4 : LED_Timer
#5 : -
#6 : LED_Filter
#7 : -
#8 : Remocon Signal Out
#9 : Panel Select
#10 : Remocon Signal In
#11 : GND
#12 : DC5V
#13 : -

■ Home Duct

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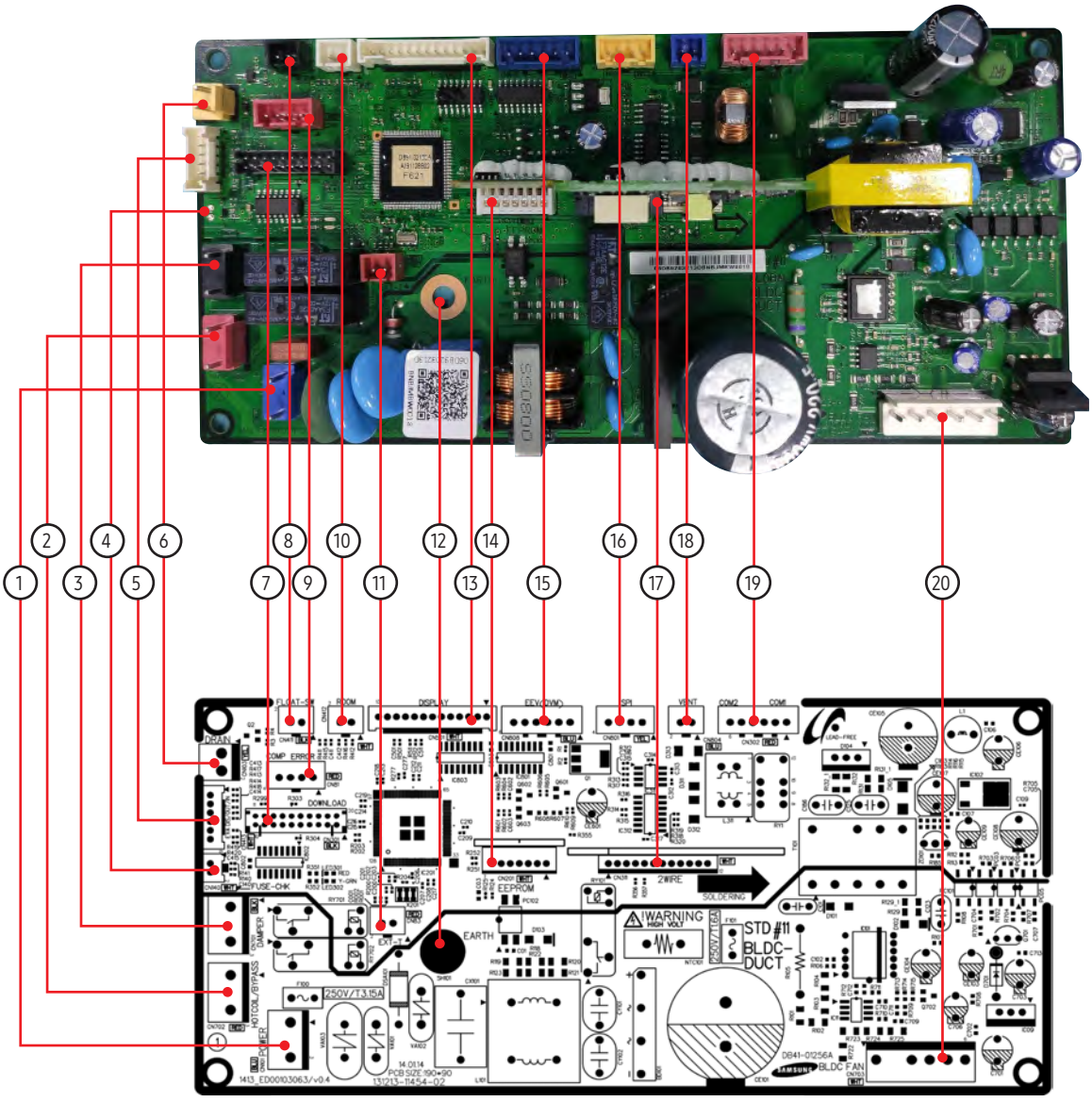

1. CN100 - AC POWER #1 : L #3 : N	**2. CN702 - HOT COIL or BYPASS** #1 : N #3 : HOT COIL or BYPASS CONTROL SIGANL	**3. CN703 - DAMPER** #1 : N #3 : DAMPER CONTROL SIGANL	**4. CN140 - THERMAL FUSE** #1 : THERMAL FUSE SIGNAL #2 : GND
5. CN413 - EVA IN/OUT/DIS TEMP. SENSOR #1 : EVI IN TEMP. SENSOR #3 : EVI OUT TEMP. SENSOR #5 : DISCHARGE TEMP. SENSOR #2,4,6 : GND	**6. CN103 - DRAIN PUMP** #1 : DRAIN PUMP CONTROL SIGNAL #2 : GND	**7. CN301 - DOWNLOAD** #1~8 : DOWNLOAD SIGNAL #9 : GND #10~11 : DC 5V #12~16 : DOWNLOAD SIGNAL #17 : GND #18~20 : DOWNLOAD SIGNAL	**8. CN411 - FLOAT SWITCH** #1 : FLOAT SWITCH SIGNAL #2 : GND
9. CN81 - ERROR/ COMP CHECK #1 : DC 12V #2 : ERROR CHECK SIGNAL #3 : DC 12V #4 : COMP CHECK SIGNAL	**10. CN412 - ROOM TEMP. SENSOR** #1 : ROOM TEMP. SENSOR #2 : GND	**11. CN83 - EXTERNAL CONTROL** #1 : GND #2 : EXTERNAL CONTROL SIGNAL	**12. SH101 - EARTH** #1 : EARTH
13. CN501 - DISPLAY #1 : DC 12V #3~10,13 : PANEL SIGNAL #11 : GND #12 : DC 5V	**14. CN201 - EEPROM** #1 : GND #2 : NOT USED #3 : DC 5V #4~7 : EEPROM SIGNAL	**15. CN808 - EEV(DVM)** #1~4 : EEV CONTROL SIGNAL #5~6 : DC 12V	**16. CN801 - SPI** #1~2 : GND #3 : SPI CONTROL SIGNAL #4 : NOT USED
17. CN311 - 2WIRE SUB #1 : DC 12V #2~5 : COMMUNICATION SIGNAL #6 : DC 5V #7~12 : COMMUNICATION SIGNAL	**18. CN804 - VENTILATOR** #1 : DC 12V #2 : VENTILATOR CONTROL SIGNAL	**19. CN302-COMMUNICATION** #1~2 : COM1 COMMUNICATION SIGNAL #3 : DC 12V #4 : GND #4~6 : COM2 COMMUNICATION SIGNAL	**20. CN703 - BLDC MOTOR** #1 : DC 310V #3~6 : FAN MOTOR CONTROL SIGNAL

■ Duct S

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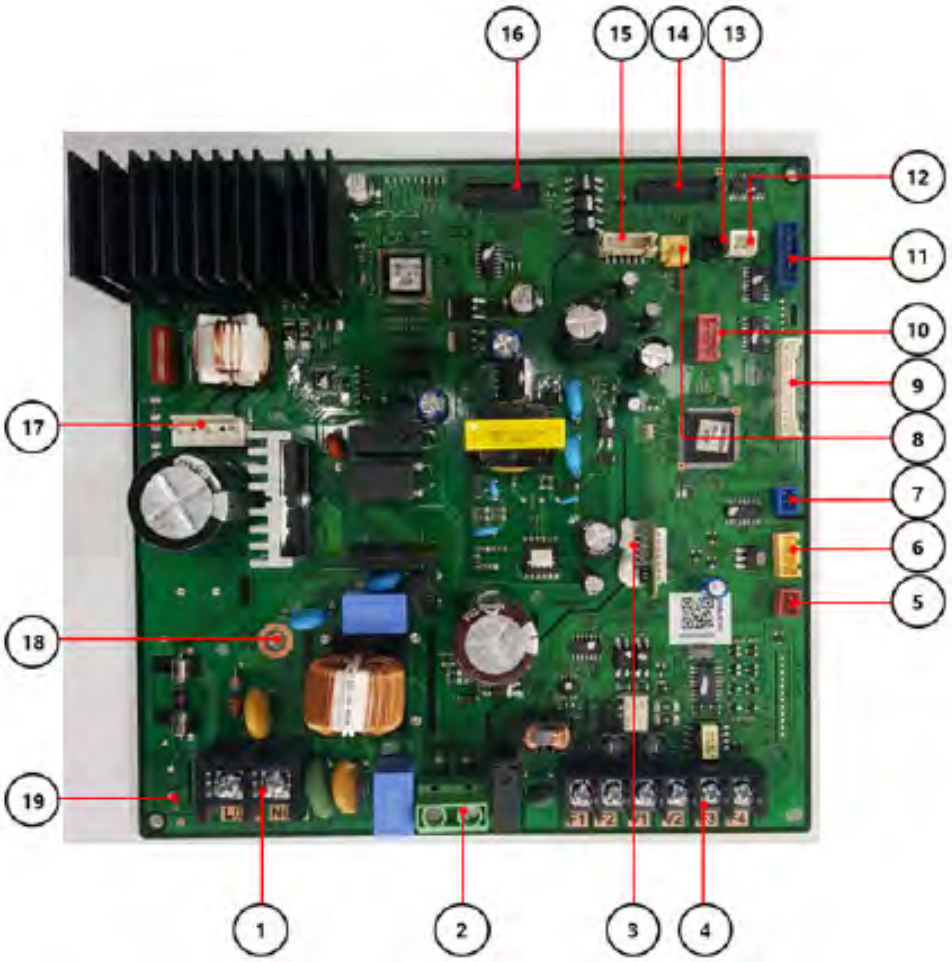

1. TE100-AC POWER	2. CN701-HOT COIL	3. CN290-EEPROM	4. CN300-COMMUNICATION
#1 : AC POWER(L1) #2 : AC POWER(L2)	#1 : AC POWER(L2) #2 : AC POWER(L1)	#1 : GND #3 : DV 5V #4 : EEPROM_SELECT #5 : EEPROM_SO #6 : EEPROM_SI #7 : EEPROM_CLK	#1 : COM1(F1) #2 : COM1(F2) #3 : V1(DC12V) #4 : V2(GND) #5 : COM2(F3) #1 : COM2(F4)
5. CN820-EXT CTRL	**6. CN825-SPI**	**7. CN823-VENTILATOR**	**8. CN821-DRAIN PUMP**
#1 : GND #2 : EXTERNAL CONTROL SIGNAL	#1 : GND #2 : GND #3 : SPI SIGNAL(DC 12V)	#1 : DC 12V #2 : VENT SIGNAL OUTPUT(GND)	#1 : DRAIN PUMP(DC 12V) #2 : GND
9. CN500-DISPLAY	**10. CN822-COMP/ERROR MONITOR**	**11. CN824-EEV**	**12. CN401-ROOM SENSOR**
#1 : DC 12V #2~#6 : LED OUT(0,1,2,3,4) #7 : BUZZER_1 #8 : REMOCON_SIGN_OUT #9 : AUTO_SW #10 : REMOCON_INT #11 : GND #12 : DV 5V #13 : BUZZER_2	#1 : DC 12V #2 : ERROR OUT(GND) #3 : DC12V #4 : COMP/OPER OUT(GND)	#1 : EEV_B_bar_OUT #2 : EEV_A_bar_OUT #3 : EEV_B_OUT #4 : EEV_A_OUT #5 : DC 12V #6 : DC 12V	#1 : ROOM SENSOR #2 : GND
13. CN400-FLOAT SWITCH	**14. CN200-MAIN DOWNLOAD**	**15. CN402-THERMISTOR**	**16. CN220-INV DOWNLOAD**
#1 : FLOAT SWITCH SIGNAL #2 : GND		#1 : EVA-IN SENSOR #2 : GND #3 : EEV_OUT SENSOR #4 : GND #5 : DISCHARGE SENSOR #6 : GND	
17. CN826-FAN MOTOR	**18. SH100-EARTH**		
#1 : MOTOR-U PHASE #2 : MOTOR-V PHASE #3 : MOTOR-W PHASE	#1 : GND EARTH		

■ Console

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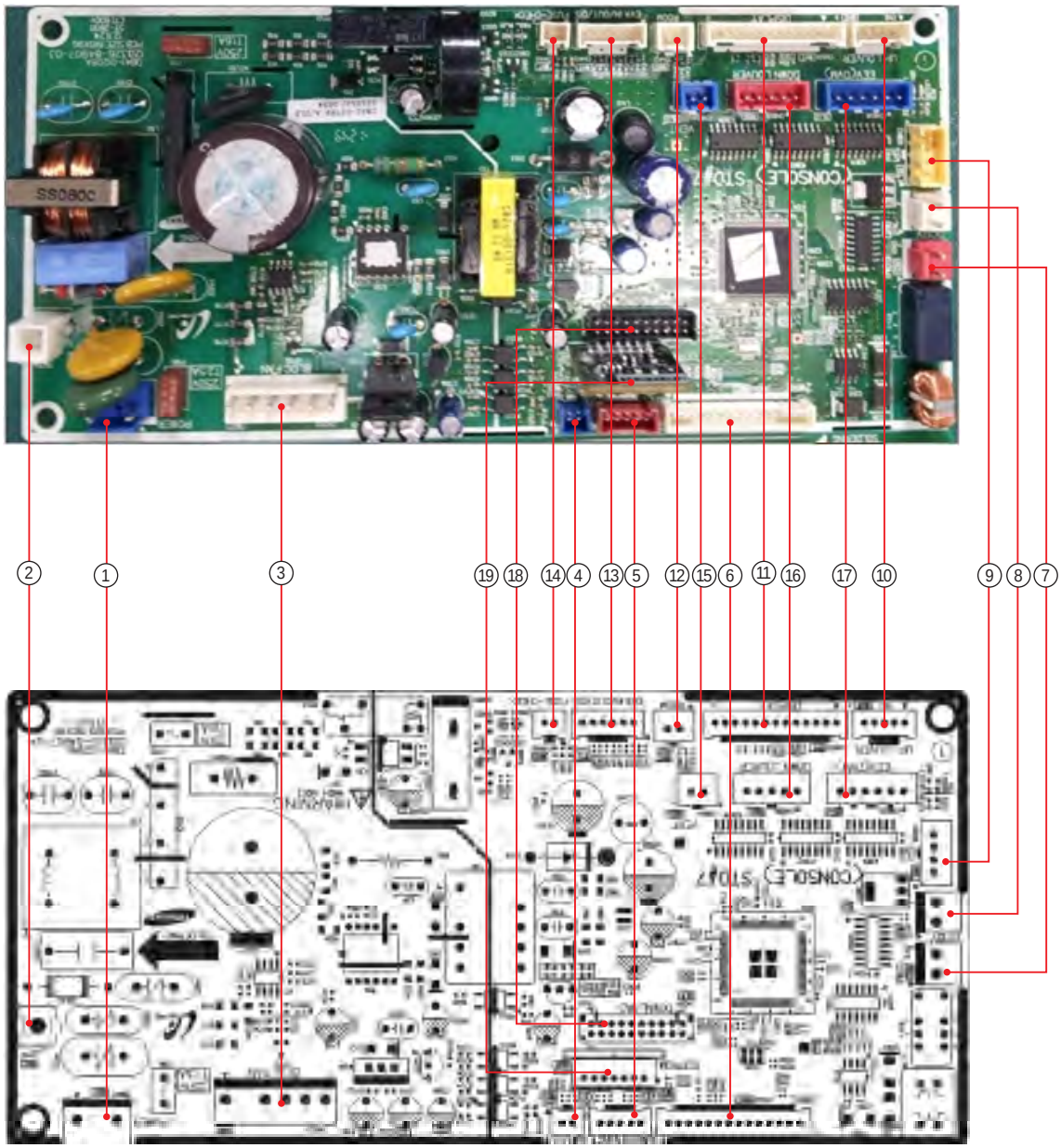

1. CN100-AC POWER	2. CN101-GND	3. CN703-FAN MOTOR	4. CN411-FLOAT S/W
#1: L #3: N	#1: GND	#1:DC310V #2:NOT USED #3:AGND #4:DC15V #5:PC04 OUTPUT #6:RPM OUTPUT	#1:FLOAT S/W #2:GND
5. CN401-HUMAN SENSING	**6. CN313-2WIRES COMM.**	**7. CN31-COMM.1**	**8. CN32-DC12V**
#1:DC12V #2,#3:COMM. SIGNAL #4:NOT USED #5:GND	#1~#4:COMM. SIGNAL #5:EXTERNAL CONTROL #6:COMP CHECK #7:ERROR CHECK #8:VCC(DC5V) #9:GND #10:DC12V #11~#14:COMM. SIGNAL	#1:COMM. SIGNAL F1 #2:COMM. SIGNAL F2	#1:DC12V #2:GND
9. CN801-SPI	**10. CN2-UP LOUVER**	**11. CN501-DISPLAY**	**12. CN412-ROOM SENSOR**
#1:GND #2:GND #3:CONTROL SIGNAL #4:NOT USED	#1:DC12V #2~#5:CONTROL SIGNAL	#1:DC12V #2~#6:DISPLAY LED CONTROL #7:VCC(DC5V) #8:REMOCON SIGNAL OUT #9:TOUCH SWITCH SIGNAL #10:REMOCON SIGNAL IN #11:GND #12:VCC(DC5V) #13:NOT USED	#1:ROOM TEMP. SENSOR #2:GND
13. CN413-EVA IN/OUT	**14. CN140-FUSE CHECK**	**15. CN804-VENT**	**16. CN806-DOWN LOUVER**
#1:EVA IN/OUT TEMP. SENSOR #2:GND	#1:FUSE CHECK SIGNAL #2:GND	#1:DC12V #2:VENT SIGNAL	#2~#5:CONTROL SIGNAL
17. CN808-EEV	**18. CN301-DOWNLOAD**	**19. CN201-EEPROM PBA CONNECTOR**	
#1~#4:EEV CONTROL SIGNAL #5,#6:DC12V	→For Developer only,Not available in Actual Site →20 Pin Down Loader	#1:GND #2:NOT USED #3~#7:EEPROM SIGNAL	

5-2 Outdoor PCB Diagram

■ AJ020BXJ2CH, AJ024BXJ3CH (INVERTER PBA)

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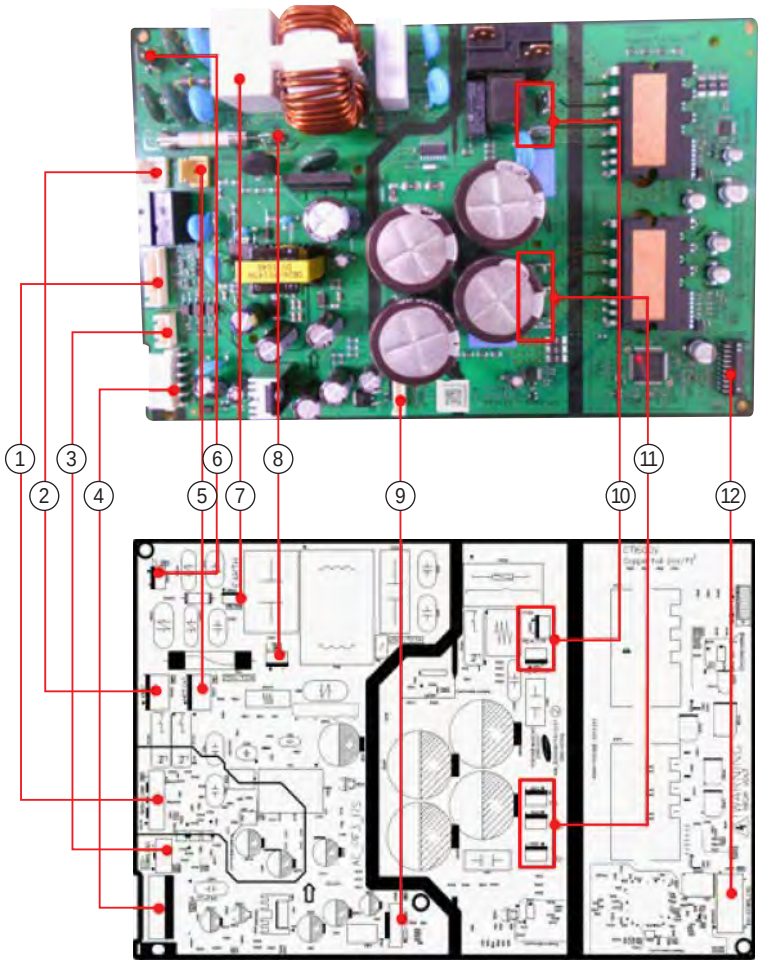

1. CNP351-MAIN INV	2. CN030-MAIN POWER	3. CN571-ECO DOWNLOAD	4. CNP901-BLDC FAN
#1 : RXD #2 : TXD #3 : DC5V #4 : GND #5 : DC12V #6 : POWER CTRL #7 : AC LOAD #8 : AC LOAD2	#1 : N #2 : - #3 : L	#1 ~ 4 : ECO DOWNLOAD	#1 : DC310V #2 : - #3 : PGND #4 : DC15V #5 : V_SP #6 : F/B
5. CN241-HOT GAS(AC LOAD)	**6. CN001-N/TAPTERMINAL**	**7. CN571- EARTH TAP TERMINAL**	**8. CN002-L/TAP TERMINAL**
#1 : L/RELAY CONTACT #2 : - #3 : N	#1 : N	#1 : EARTH	#1 :L
9. CN581-ECO COMM	**10. CN401, 402, 403-COMP**	**11. CN051, 052-REACTOR**	**12. CN551-DOWNLOAD**
#1~7 : ECO COMM port	#CN401 : U, RED #CN402 : V, BLU #CN403 : W, YEL	#CN501, 052 : REACTOR	#1~20 : DOWNLOAD

■ AJ020BXJ2CH, AJ024BXJ3CH (MAIN PBA)

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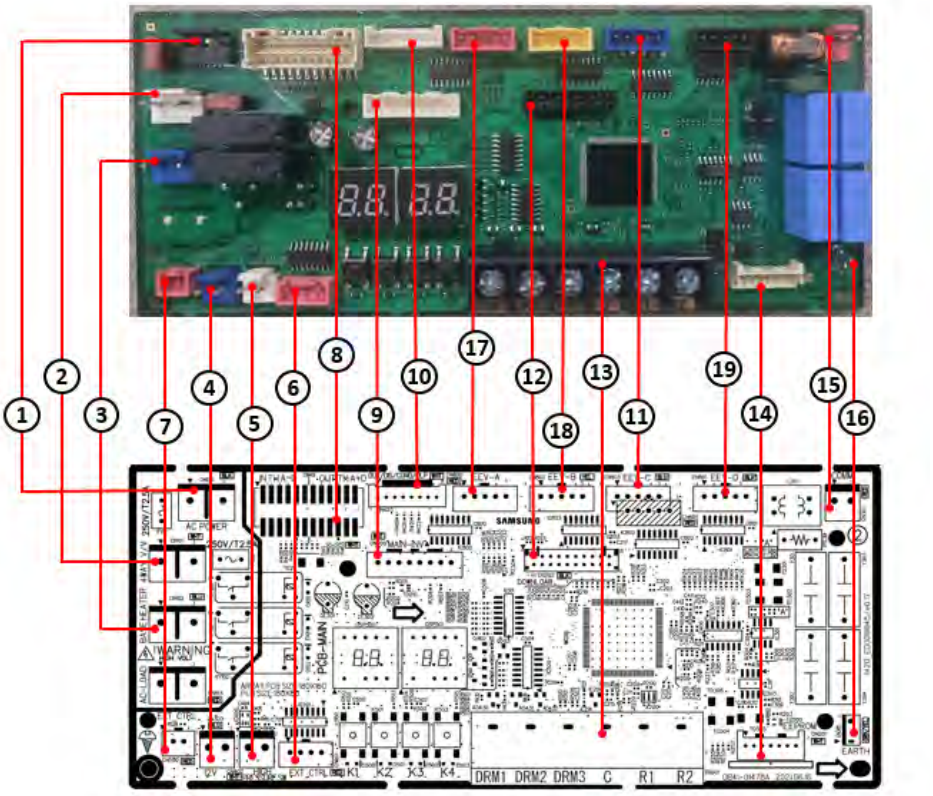

E1. CN100-AC LOAD POWER	2. CN101-4WAY VALVE	3. CN102-BASE HEATER	4. CN303-12V
#1 : L-LIVE POWER INPUT #2 : - #3 : N-NEUTRAL POWER IN PUT	#1 : L-RELAY CONTACT OUTPUT #2 : - #3 : N-NEUTRAL POWER OUTPUT	#1 : L-RELAY CONTACT OUTPUT #2 : - #3 : N-NEUTRAL POWER OUTPUT	#1 : DC 12V #2 : GND
5. CN402-HIGH PRESSURE SWITCH	**6. CN501-ERROR CHECK/COMP CHECK**	**7. CN500- EXTERNAL CONTROL**	**8. CN401-PIPE IN/OUT TEMPERATURE SENSOR**
#1 : HIGH PRESSURE SWITCH INPUT SIGNAL #2 : GND	#1 : DC 12V #2 : ERROR CHECK OUTPUT SIGNAL #3 : DC 12V #4 : COMP CHECK OUTPUT SIGNAL	#1 : GND #2 : EXTERNAL CONTROL INPUT SIGNAL	#1 ~ #8 : PIPE IN TEMPERATURE SENSOR #13 ~ #20 : PIPE OUT TEMPERATURE SENSOR
9. CN200 - MAIN ↔ INV COMMUNICATION	**10. CN403 - TEMPERATURE SEMSOR**	**11. CN805 - EEV C**	**12. CN202 - DOWNLOAD**
#1 : TCD #2 : RXD #3 : DC 5V #4 : GND #5 : DC 12V #6 : INV POWER CTRL #7 : MAIN AC LOAD POWER CTRL #8 : -	#1 : OUTDOOR TEMPERATURE SENSOR #3 : DISCHARGE TEMPERATURE SENSOR #5 : CONDENSOR TEMPERATURE SENSOR #7 : OLP TEMPERATURE SENSOR #2,4,6,8 : GND	#1 : EEV C SIGNAL #2 : EEV C SIGNAL #3 : EEV C SIGNAL #4 : EEV CSIGNAL #5 : GND	#1~20 : DOWNLOAD SIGNAL
13.TB001-DRED & UPPER CTRL	**14. CN201 - EEPROM**	**15. CN301 - ODU ↔ IDU COMMUNICATION**	**16. CN305 - COMMUNICATION EMI EARTH**
#1 : DRED SIGNAL(DRM1) #2 : DRED SIGNAL(DRM2) #3 : DRED SIGNAL(DRM3) #4 : GND #5 : R1 #6 : R2	#1 : GND #2 : - #3 : 5V #4 : EEPROM SIGNAL #5 : EEPROM SIGNAL #6 : EEPROM SIGNAL #7 : EEPROM SIGNAL	#1 : F1 #2 : F2	#1 : EARTH
17. CN805 - EEV A	**18. CN820 - EEV B**	**19. CN801 - EEV D**	
#1 : EEV A SIGNAL #2 : EEV A SIGNAL #3 : EEV A SIGNAL #4 : EEV A SIGNAL #5 : GND	#1 : EEV B SIGNAL #2 : EEV B SIGNAL #3 : EEV B SIGNAL #4 : EEV B SIGNAL #5 : GND	#1 : EEV D SIGNAL #2 : EEV D SIGNAL #3 : EEV D SIGNAL #4 : EEV D SIGNAL #5 : GND	

■ AJ020BXS3CH, AJ***BX*4CH, AJ***BX*5CH (INVERTER PBA)

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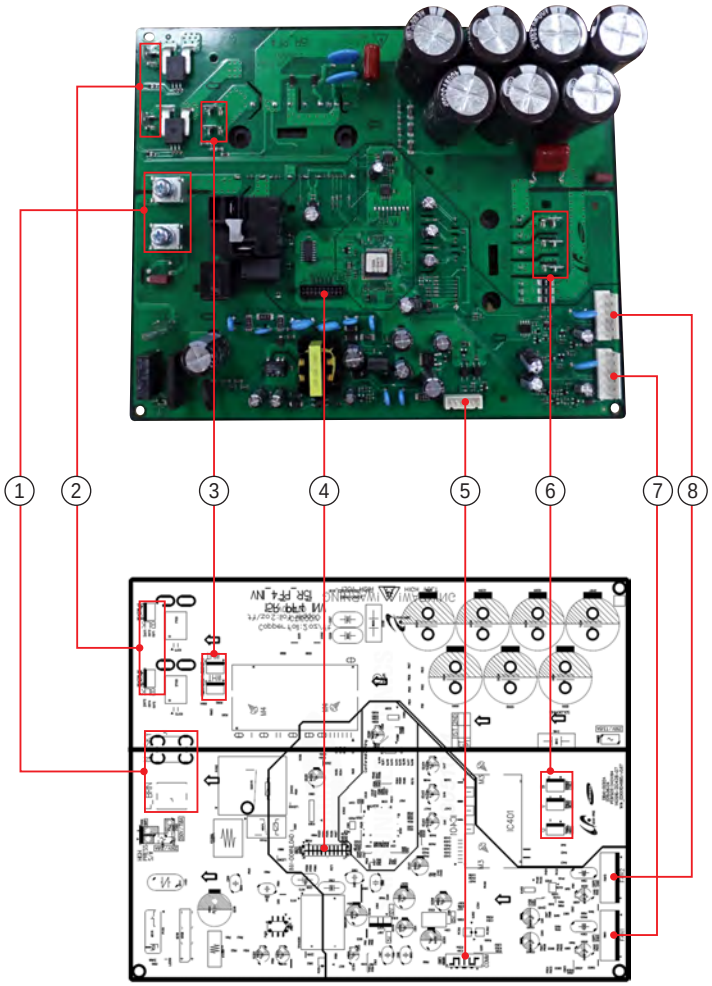

1. L, N - AC POWER INPUT	2. REACTOR-A1/B1	3. REACTOR-A2/B2	4. CN551 - DOWNLOAD
#1 : L - LIVE POWER INPUT / BRN #2 : N - NEUTRAL POWER INPUT / SKY	#REACTOR-A1 : WHT #REACTOR-B1 : WHT	#REACTOR-A2 : BLK #REACTOR-B2 : BLK	#1~20 : DOWNLOAD SIGNAL
5. CN351 - MAIN ↔ INV COMMUNICATION	**6. CN401,402,403 – COMPRESSOR**	**7. CN901 - FAN MOTOR 1**	**8. CN911 - FAN MOTOR 2**
#1 : RXD #2 : TXD #3 : GND #4 : DC 5V #5 : DC 12V #6 : INV POWER CTRL	#CN401 : COMP. U-phase(RED) #CN402 : COMP. V-phase(BLU) #CN403 : COMP. W-phase(YEL)	#1 : DC310V #2 : N.C #3 : GND #4 : DC 15V #5 : FAN RPM #6 : FAN RPM FEEDBACK	#1 : DC310V #2 : N.C #3 : GND #4 : DC 15V #5 : FAN RPM #6 : FAN RPM FEEDBACK

■ AJ020BXS3CH, AJ***BX*4CH, AJ***BX*5CH (MAIN PBA)

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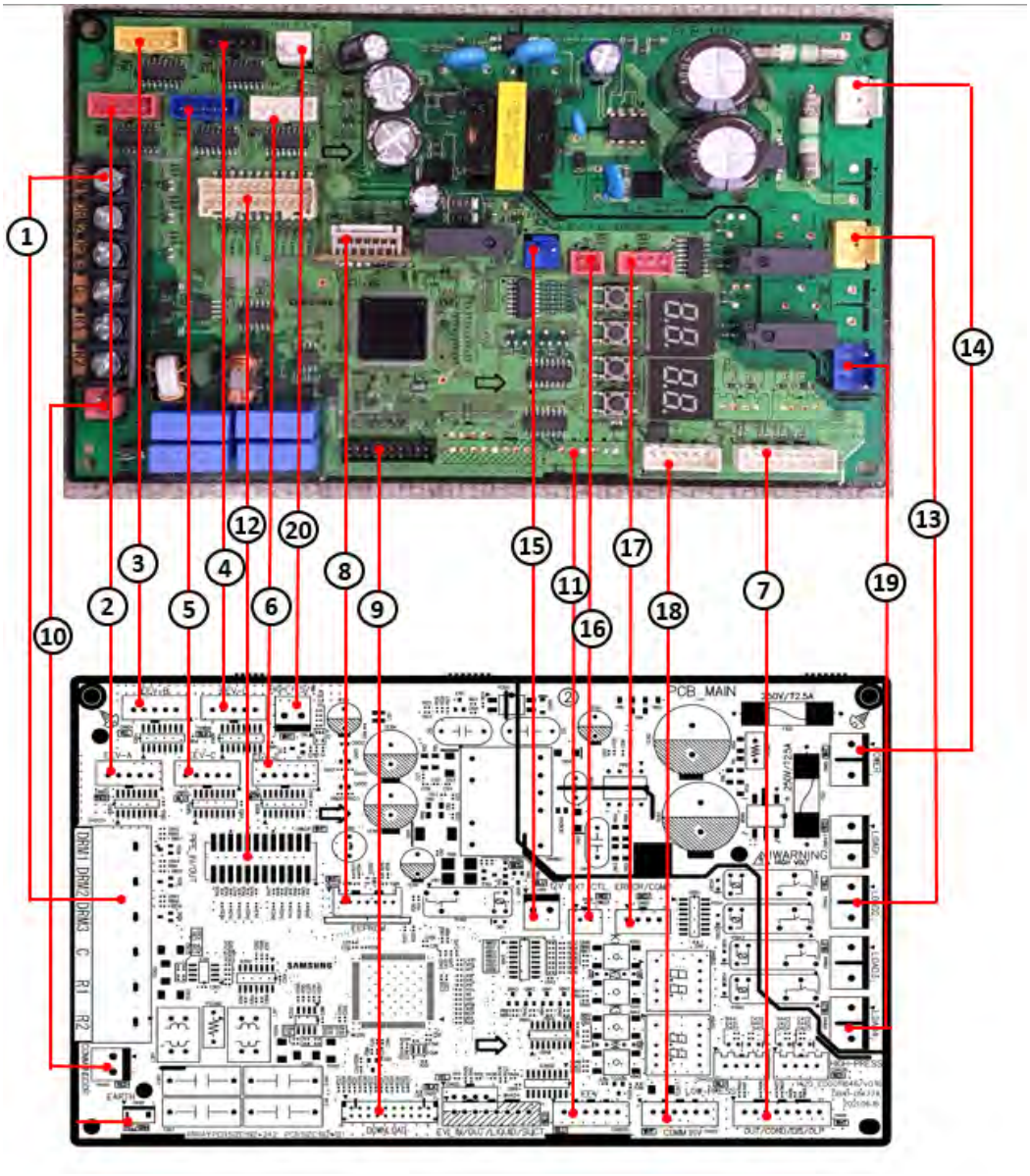

1. CN303 - DRED & UPPER CTRL	2. CN803 - EEV A	3. CN804 - EEV B	4. CN806 - EEV D
#1 : DRED SIGNAL(DRM1) #2 : DRED SIGNAL(DRM2) #3 : DRED SIGNAL(DRM3) #4 : GND #5 : R1 #6 : R2	#1 : EEV A SIGNAL #2 : EEV A SIGNAL #3 : EEV A SIGNAL #4 : EEV A SIGNAL #5 : GND	#1 : EEV B SIGNAL #2 : EEV B SIGNAL #3 : EEV B SIGNAL #4 : EEV B SIGNAL #5 : GND	#1 : EEV D SIGNAL #2 : EEV D SIGNAL #3 : EEV D SIGNAL #4 : EEV D SIGNAL #5 : GND
5. CN805 - MAIN EEV	**6. CN807 - EEV E**	**7. CN401 - TEMPERATURE SENSOR**	**8. CN200 - EEPROM**
#1 : EEV D SIGNAL #2 : EEV D SIGNAL #3 : EEV D SIGNAL #4 : EEV D SIGNAL #5 : GND	#1 : EEV E SIGNAL #2 : EEV E SIGNAL #3 : EEV E SIGNAL #4 : EEV E SIGNAL #5 : GND	#1 : OUTDOOR TEMPERATURE SENSOR #3 : DISCHARGE TEMPERATURE SENSOR #5 : CONDENSOR TEMPERATURE SENSOR #7 : OLP TEMPERATURE SENSOR #2,4,6,8 : GND	#1 : GND #2 : - #3 : 5V #4 : EEPROM SIGNAL #5 : EEPROM SIGNAL #6 : EEPROM SIGNAL #7 : EEPROM SIGNAL
9. CN306 - DOWNLOAD	**10. CN303 - ODU ↔ IDU COMMUNICATION**	**11. CN809 - MAIN EEV(EDM)**	**12. CN401-PIPE TEMPERATURE SENSOR**
#1~20 : DOWNLOAD SIGNAL	#1 : F1 #2 : F2	#1 : EEV A SIGNAL #2 : EEV A SIGNAL #3 : EEV A SIGNAL #4 : EEV A SIGNAL #5 : GND	#1 ~ #10 : PIPE IN TEMPERATURE SENSOR #13 ~ #22 : PIPE OUT TEMPERATURE SENSOR
13. CN844 - 4WAY VALVE	**14. CN101 - AC POWER INPUT**	**15. CN12 - 12V**	**16. CN800- EXTERNAL CONTROL**
#1 : L - RELAY CONTACT OUTPUT #2 : - #3 : N - NEUTRAL POWER OUTPUT	#1 : L - LIVE POWER INPUT #2: - #3 : N - NEUTRAL POWER INPUT	#1 : DC 12V #2 : GND	#1 : GND #2 : EXTERNAL CONTROL INPUT SIGNAL
17. CN501-ERROR CHECK/ COMP CHECK	**18. CN302 - MAIN ↔ INV COMMUNICATION**	**19. CN845 - BASE HEATER**	**20 CN1 - HIGH PRESSURE SW**
#1 : DC 12V #2 : ERROR CHECK #3 : DC 12V #4 : COMP CHECK	#1 : TXD #2 : RXD #3 : GND #4 : DC 5V #5 : DC 12V #6 : INV POWER CTRL	#1 : L - RELAY CONTACT OUTPUT #2 : - #3 : N - NEUTRAL POWER OUTPUT	#1 : DC 5V #2 : GND

■ AJ020BXS3CH, AJ***BX*4CH, AJ***BX*5CH (MAIN PBA)

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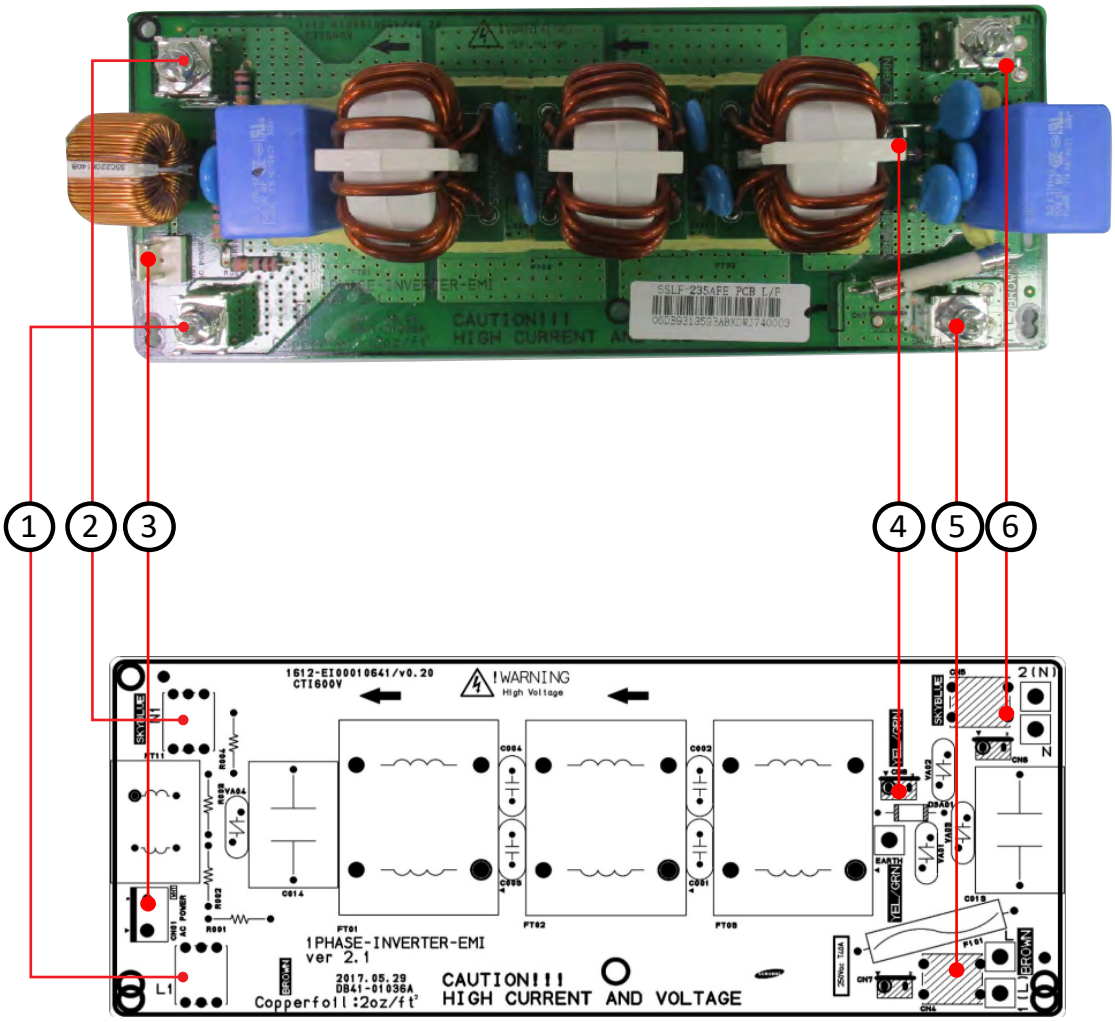
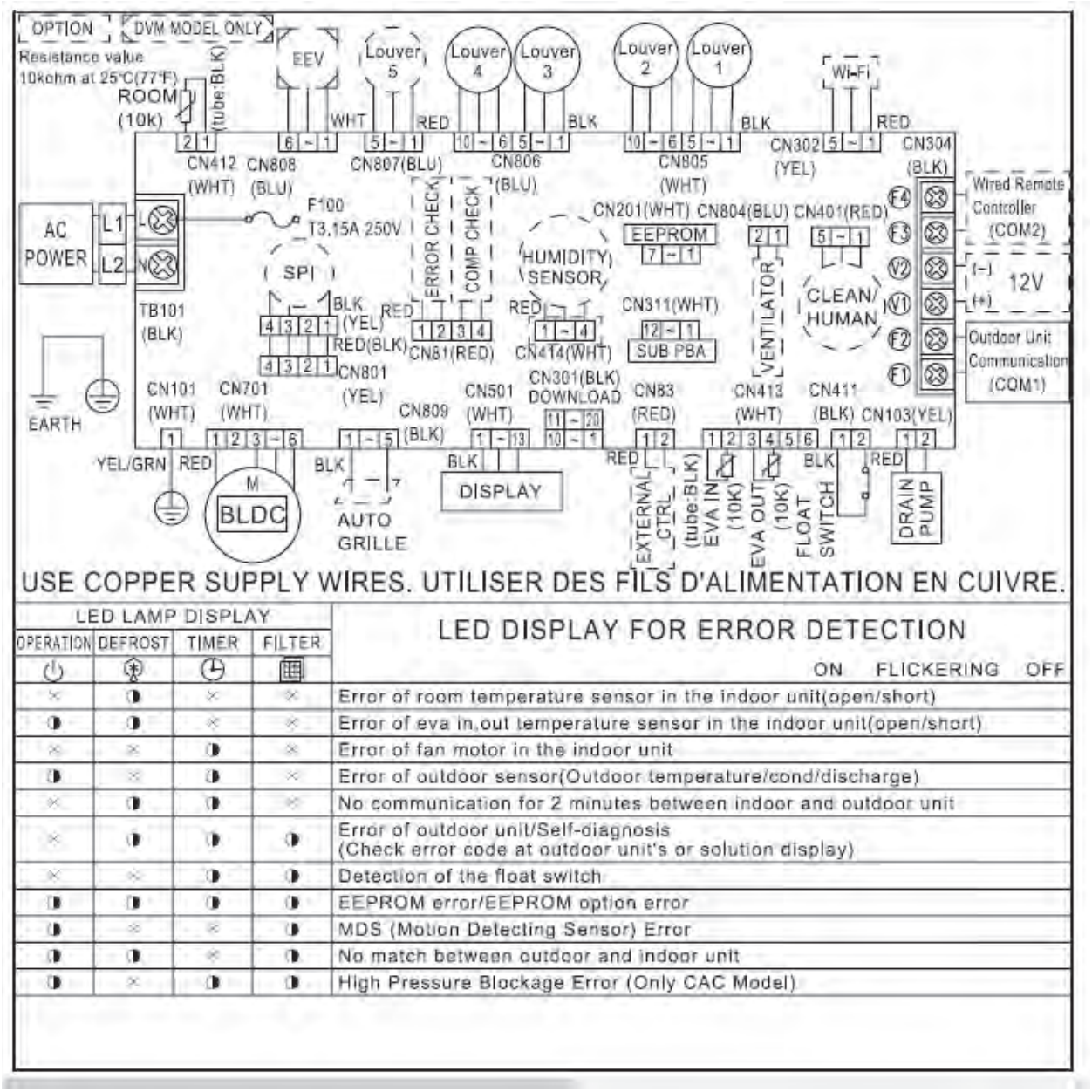


1. L1 - AC POWER OUTPUT	2. L2 - AC POWER OUTPUT	3. CN01 - AC POWER OUTPUT	4. EARTH
#1 : L - RELAY CONTACT OUTPUT	#1 : N - NEUTRAL POWER OUTPUT	#1 : L - RELAY CONTACT OUTPUT #2 : - #3 : N - NEUTRAL POWER OUTPUT	#1 : EARTH
5. L, 1(L) - AC POWER INPUT	**6. N, 2(N) - AC POWER INPUT**		
#1 :L - LIVE POWER INPUT	#1 :N - NEUTRAL POWER INPUT		

6. Wiring Diagram

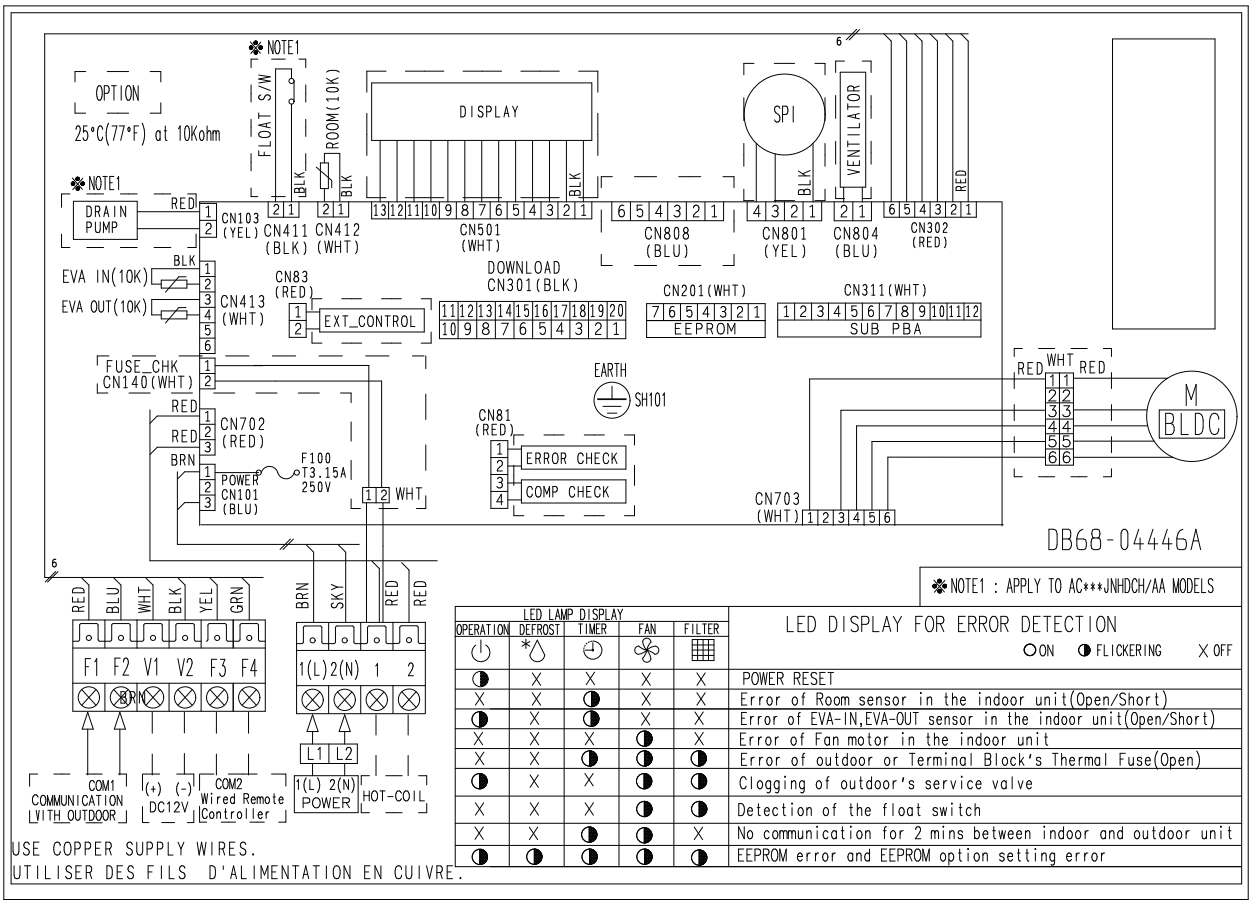
6-1 Indoor Unit

■ Slim 1Way, Mini 4Way

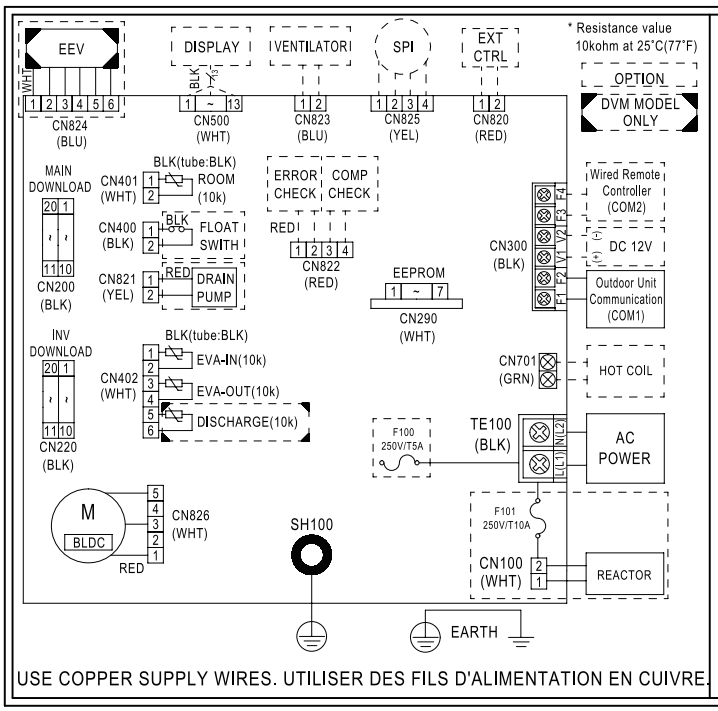


LED LAMP DISPLAY				LED DISPLAY FOR ERROR DETECTION
OPERATION	DEFROST	TIMER	FILTER	ON FLICKERING OFF
×	◑	×	×	Error of room temperature sensor in the indoor unit(open/short)
◑	◑	×	×	Error of eva in,out temperature sensor in the indoor unit(open/short)
×	×	◑	×	Error of fan motor in the indoor unit
◑	×	◑	×	Error of outdoor sensor(Outdoor temperature/cond/discharge)
×	◑	◑	×	No communication for 2 minutes between indoor and outdoor unit
×	◑	◑	◑	Error of outdoor unit/Self-diagnosis (Check error code at outdoor unit's or solution display)
×	×	◑	◑	Detection of the float switch
◑	◑	◑	◑	EEPROM error/EEPROM option error
◑	×	×	◑	MDS (Motion Detecting Sensor) Error
◑	◑	×	◑	No match between outdoor and indoor unit
◑	×	◑	◑	High Pressure Blockage Error (Only CAC Model)

■ Home Duct

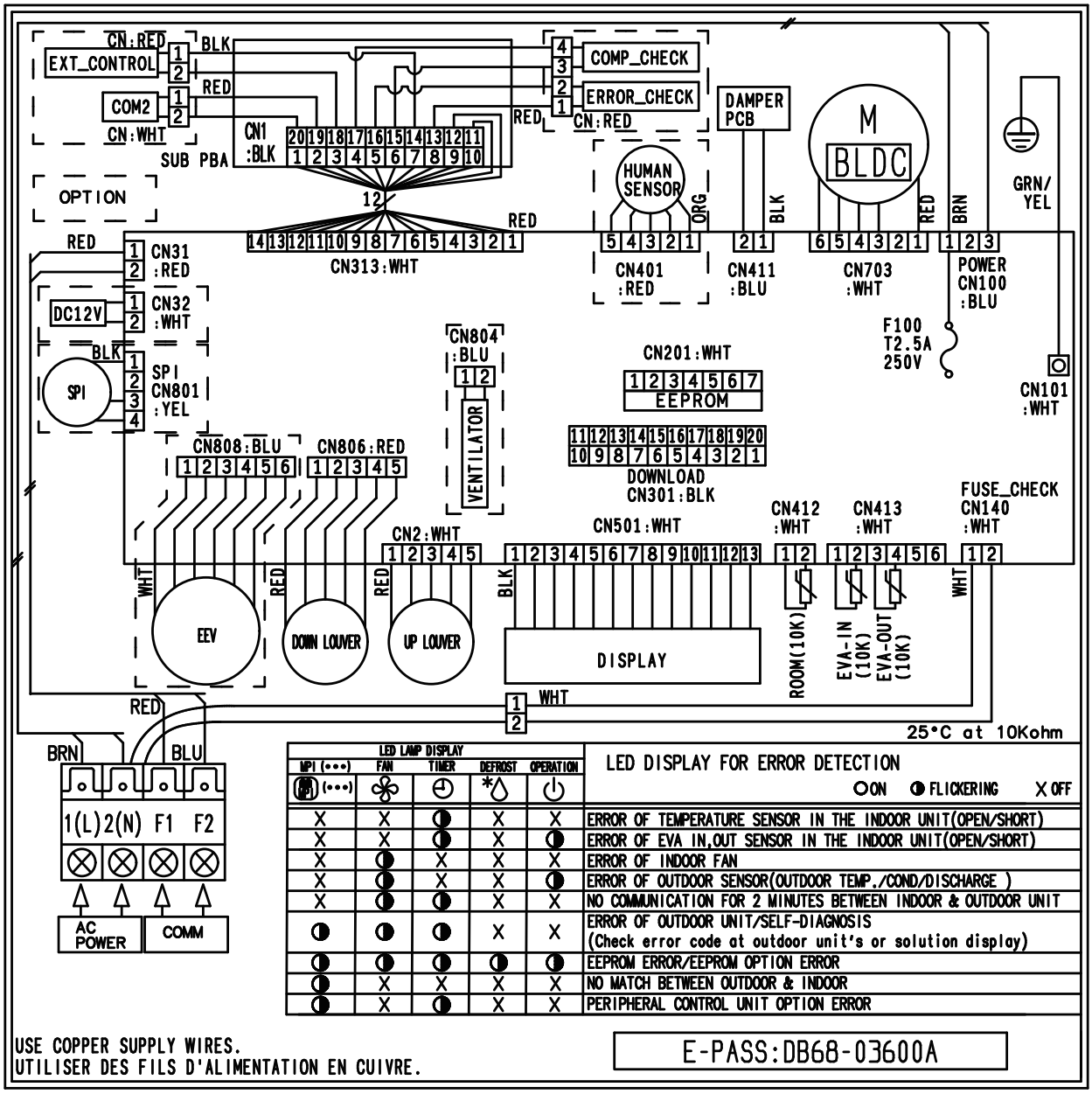


■ Duct S

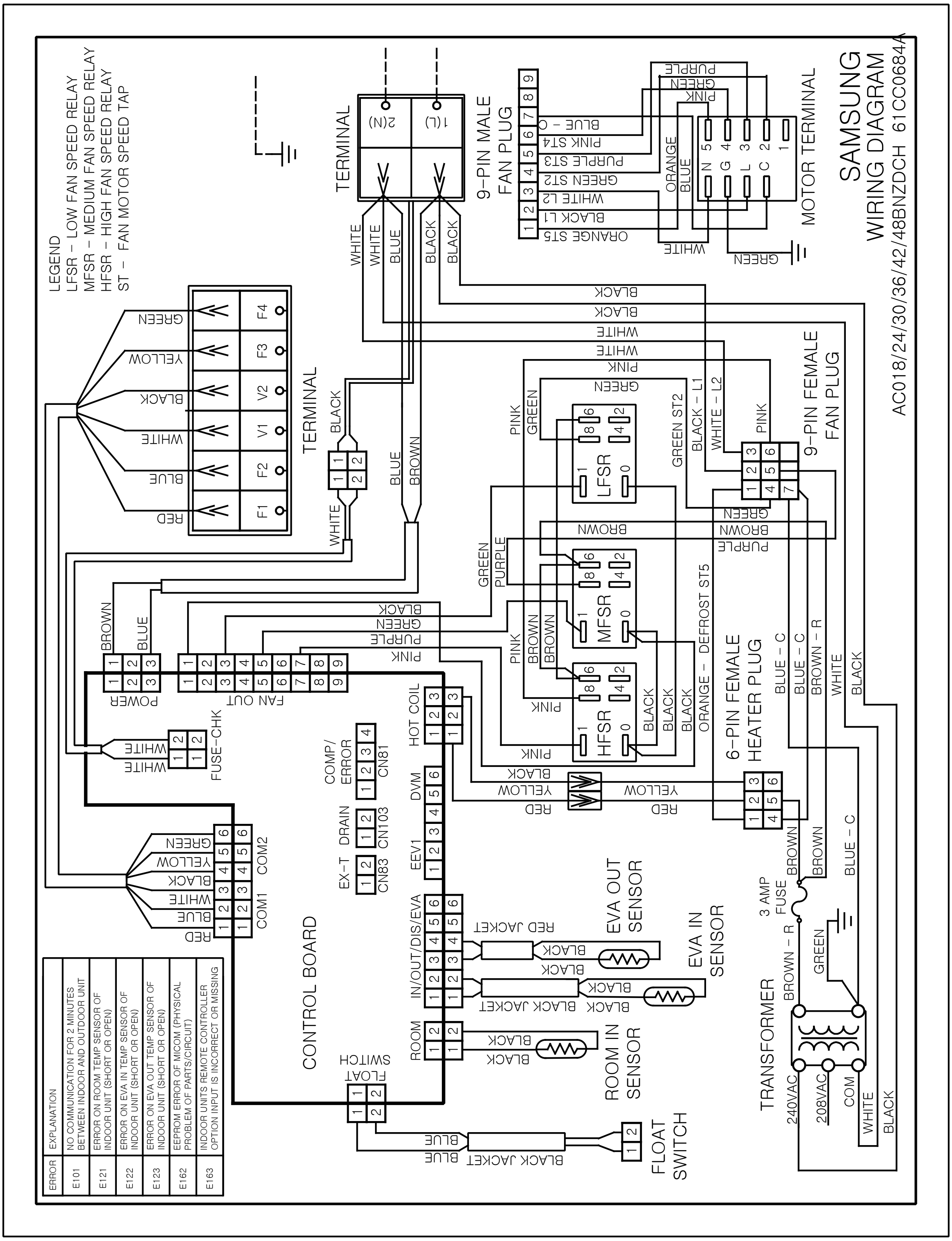


LED LAMP DISPLAY				LED DISPLAY FOR ERROR DETECTION
OPERATION	TIMER	FAN	FILTER	●ON ◑FLICKERING ×OFF
◑	×	×	×	Power Reset
×	◑	×	×	Error of room temperature sensor in the indoor unit (open/short)
◑	◑	×	×	Error of eva in,out,discharge temperature sensor in the indoor unit (open/short)
×	×	◑	×	Error of fan motor in the indoor unit
◑	×	◑	×	Error of outdoor sensor (Outdoor temperature/cond/discharge)
×	◑	◑	×	No communication for 2 minutes beween indoor and outdoor unit
×	◑	◑	◑	Error of outdoor unit/self-diagnosis (Check error code at outdoor unit's or solution display)
×	×	◑	◑	Detection of the float switch
◑	◑	◑	◑	EEPROM error/EEPROM option error
×	×	×	◑	No match between outdoor and indoor unit

■ Console

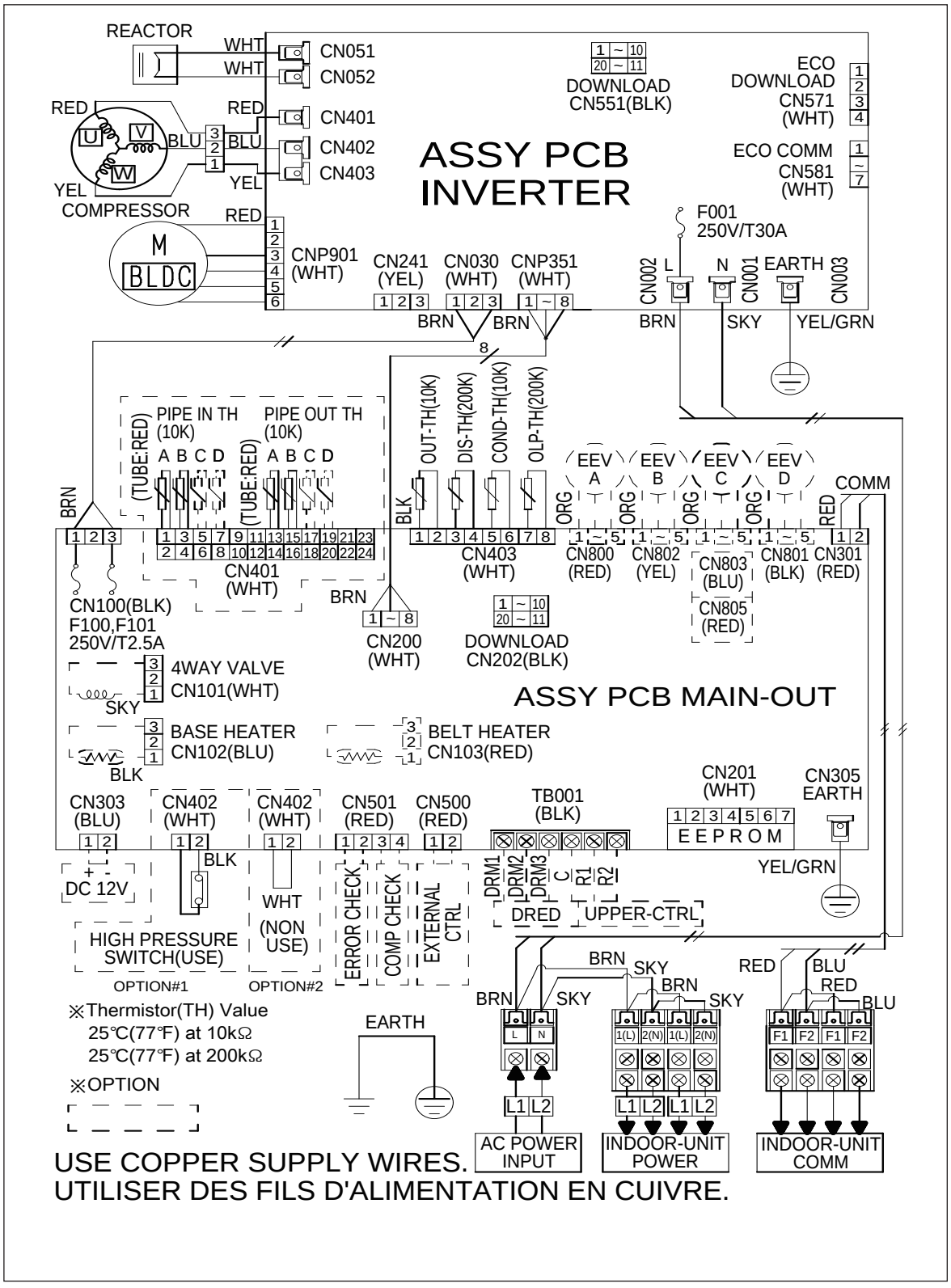


■ MPAH

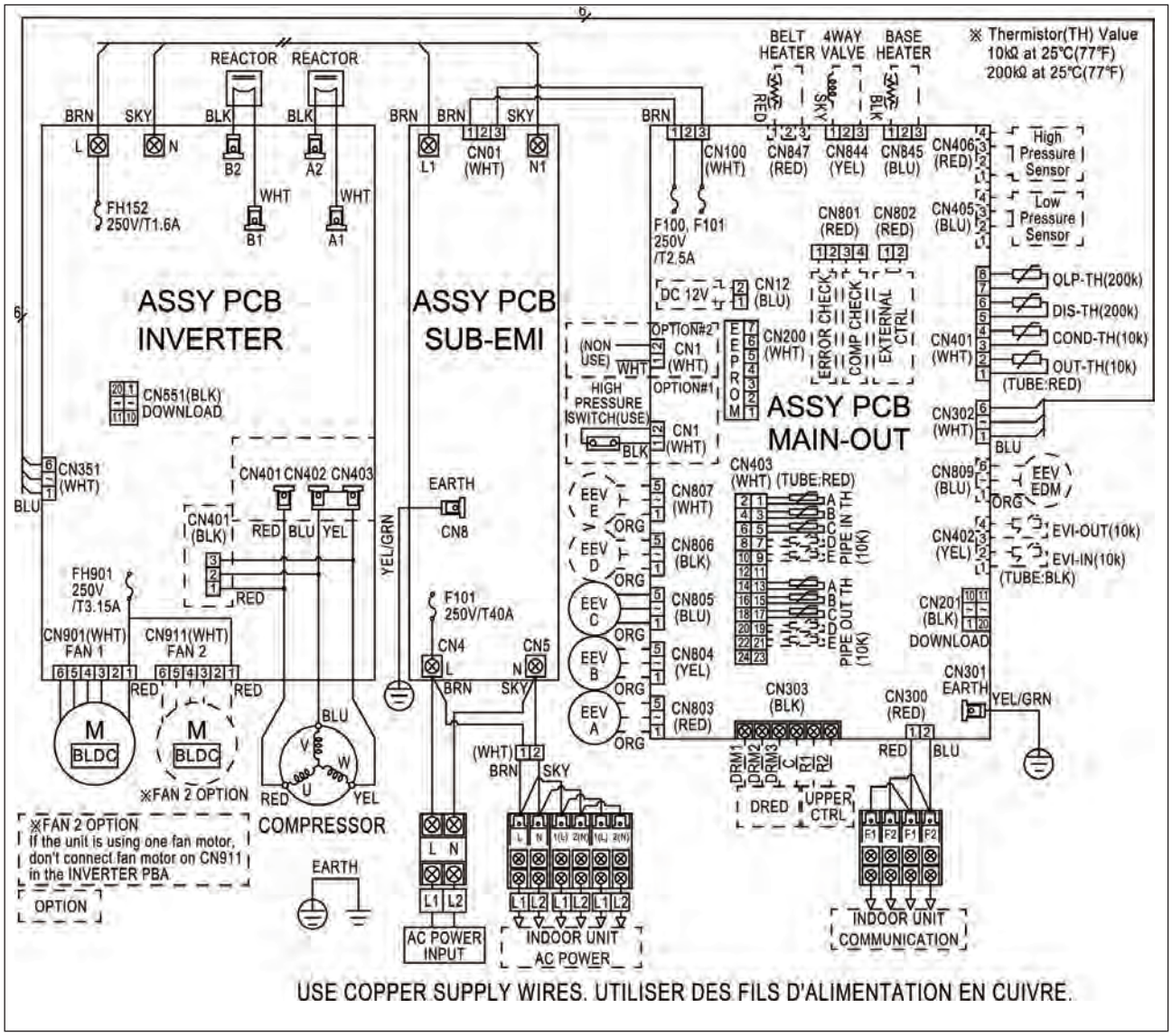

SAMSUNG
WIRING DIAGRAM
AC018/24/30/36/42/48BNZDCH 61CC0684A
LEGEND
LFSR – LOW FAN SPEED RELAY
MFSR – MEDIUM FAN SPEED RELAY
HFSR – HIGH FAN SPEED RELAY
ST – FAN MOTOR SPEED TAP
TERMINAL
9–PIN MALE FAN PLUG
9–PIN FEMALE FAN PLUG
6–PIN FEMALE HEATER PLUG
MOTOR TERMINAL
CONTROL BOARD
TRANSFORMER
3 AMP FUSE
ROOM IN SENSOR
EVA IN SENSOR
EVA OUT SENSOR
FLOAT SWITCH
FUSE–CHK
POWER
FAN OUT
COM1
COM2
ERROR
EXPLANATION
E101
NO COMMUNICATION FOR 2 MINUTES BETWEEN INDOOR AND OUTDOOR UNIT
E121
ERROR ON ROOM TEMP SENSOR OF INDOOR UNIT (SHORT OR OPEN)
E122
ERROR ON EVA IN TEMP SENSOR OF INDOOR UNIT (SHORT OR OPEN)
E123
ERROR ON EVA OUT TEMP SENSOR OF INDOOR UNIT (SHORT OR OPEN)
E162
EEPROM ERROR OF MICOM (PHYSICAL PROBLEM OF PARTS/CIRCUIT)
E163
INDOOR UNITS REMOTE CONTROLLER OPTION INPUT IS INCORRECT OR MISSING

6-2 Outdoor unit

■ AJ020BXJ2CH, AJ024BXJ3CH



■ AJ020BXS3CH, AJ***BX*4CH, AJ***BX*5CH



7. Preference Sheet

7-1 Selecting Area for Installation

Select an area for installation that is suitable to customer's needs.

7-1-1 Indoor Unit

1. Make sure that you install the indoor unit in an area providing good ventilation. It must not be blocked by an obstacle affecting the airflow near the air inlet and the air outlet.
2. Make sure that you install the indoor unit in an area allowing good air handling and endurance of vibration of the indoor unit.
3. Make sure that you install the indoor unit in an area where there is no source of heat or vapor nearby.
4. Make sure that you install the indoor unit in an area from which hot or cool air is spread evenly in a room.
5. Make sure that you install the indoor unit in an area away from TVs, audio units, cordless phones, fluorescent lighting fixtures and other electrical appliances (at least 1 meter).
6. Make sure that you install the indoor unit in an area which provides easy pipe connection with the outdoor unit, and easy drainage for condensed water.
7. Make sure that you install the indoor unit in an area which is large enough to accommodate the measurements shown in figure on the next page.

CAUTION

- It is harmful to the air conditioner if it is used in the following environments: greasy areas (including areas near machines), salty areas such as coast areas, areas where sulfuric gas is present such as hot spring areas. Contact your dealer for advice.

- Minimum installation height of indoor unit is 0.6 m for floor mounted, 1.8 m for wall, 2.2 m for ceiling.

7-1-2 Outdoor Unit

1. Make sure that you install the outdoor unit in an area not exposed to the rain or direct sun light. (Install a separate sunblind if exposed to direct sun light.)
2. Make sure that you install the outdoor unit in an area allowing the good air moment, not amplifying noise or vibration, especially to avoid distrubing neghbors. (Fix the unit firmly if it is mounted in a high place.)
3. Make sure that you install the outdoor unit in an area providing the good ventilation and which is not dusty. It must not be blocked by any dbstacle affecting the airflow near the air inlet and the air outlet.
4. Make sure that you install the outdoor unit in an area free from animals or plants.
5. Make sure that you install the outdoor unit in an area not blocking traffic.
6. Make sure that you install the outdoor unit in an area easy to drain condensed water from the indoor unit.
7. Make sure that you install the outdoor unit in an area which provieds easy connection within the maximum allowable length of a coolant pipe.
   If you install the excessive length of pipe, add additional refrigerant as 10 g or 20 g per unit meter; refer to the table below.

Model Name	Total connecting pipe length (L)		Adding refrigerant
AJ020BXJ2CH	(LT) ft	≤ 98.4 ft	Chargeless
		≥ 98.4 ft	(LT-98.4) ft x 0.11 oz
AJ024BXJ3CH	(LT) ft	≤131.2 ft	Chargeless
		≥131.2 ft	(LT-131.2) ft x 0.11 oz
AJ020BXS3CH AJ024BXS4CH AJ030BXS4CH AJ036BXJ4CH	(LT) ft	≤131.2 ft	Chargeless
		>131.2 ft	(LT-131.2) ft x 0.22 oz
AJ036BXS5CH AJ048BXJ5CH	(LT) ft	≤164.0 ft	Chargeless
		>164.0 ft	(LT-164.0) ft x 0.11 oz

8. Make sure that you install the outdoor unit in an area which is large enough to accommodate the measurements shown in figure on the next page.

7-1-3 Remote Control Unit

1. Make sure that you use the remote control unit in an area free from obstacles such as curtains etc, which may block signals from the remote control unit.
2. Make sure that you put the remote control unit in an area not exposed to direct sunlight, and where there is no source of heat.
3. Make sure that you use the remote control unit in an area away from TVs, audio units, cordlessphones, fluorescent lighting.

7-2 Connecting Up and Purging the Circuit

WARNING

- When installing, make sure there is no leakage. When recovering the refrigerant, ground the compressor first before removing the connection pipe. If the refrigerant pipe is not properly connected and the compressor works with the service valve open, the pipe inhales the air and it makes the pressure inside of the refrigerant cycle abnormally high. It may cause explosion and injury.

The outdoor unit is loaded with sufficient R-410A refrigerant.
Do not vent R-32 into atmosphere: it is a fluorinated greenhouse gas, covered by Kyoto Protocol, with a Global Warming Potential (GWP) = 2088.
You should purge the air in the indoor unit and in the pipe. If air remains in the refrigerant pipes, it affects the compressor.
It may cause reduction of cooling capacity and malfunction.
Refrigerant for air purging is not charged in the outdoor unit.
Use Vacuum Pump as seen in the picture.

1. Check the piping connections.
2. Connect the charging hose of low pressure side of manifold gauge to the packed valve having a service port .

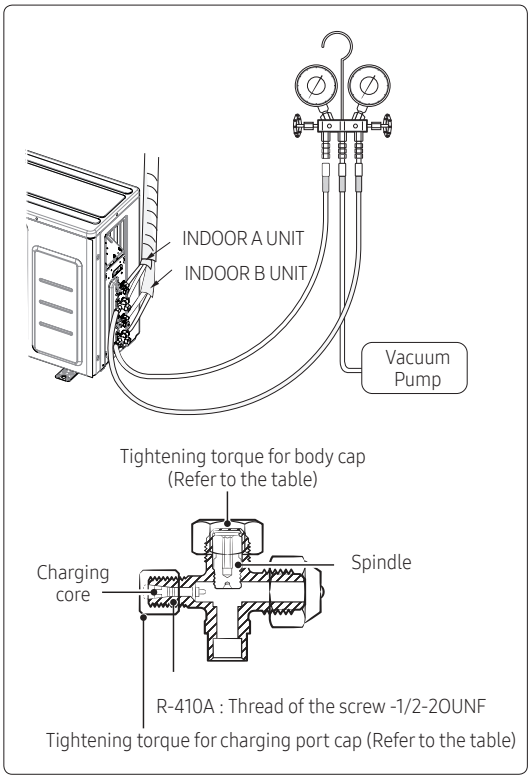
CAUTION

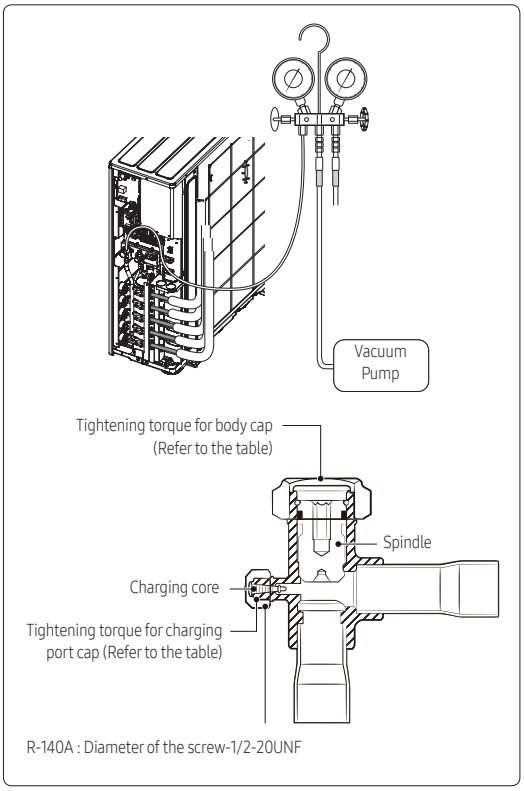
- Make the electrical connection and leave the system into "stand by mode". Do not turn on the system! This is necessary for better vacuum operation (full OPEN position of Electronic Expansion Valve - EEV-).

Model Name	Valve	
	3/8"	1/2"
AJ020BXJ2CH	1	1
AJ024BXJ3CH	1	2
AJ020BXS3CH	3	-
AJ024BXS4CH	2	2
AJ030BXS4CH		
AJ036BXS4CH		
AJ036BXJ4CH		
AJ048BXJ5CH		3

3. Open the valve of the low pressure side of manifold gauge counter clockwise.
4. Purge the air from the system using vacuum pump for about 30 minutes.
   - Close the valve of the low pressure side of manifold gauge clockwise.
   - Make sure that pressure gauge show -0.1MPa(-76cmHg) after about 1 hour. This procedure is very important in order to avoid gas leak.
   - Turn off the vacuum pump.
   - Remove the hose of the low pressure side of manifold gauge.
5. Set spindle of both liquid side and gas side of stop valve to the open position.
6. Mount the valve stem nuts and the service port cap to the valve, and tighten them with a torque wrench.

Outer diameter (mm)	Tightening torque	
	Body cap (N · m)	Charging port cap (N · m)
ø 6.35	20 to 25	10 to 12
ø 9.52	20 to 25	
ø 12.70	25 to 30	
ø 15.88	30 to 35	





7-3 Refrigerant Refill

Refill an air conditioner with refrigerant when refrigerant has been leaked at installing or using.

1) Purge air(for new installation only).

2) Turn the 3 way valve clockwise to close, connect the pressure gauge (low pressure side) to the service valve, and open the 3 way valve again.

3) Connect the tank to refill with refrigerant.

4) Set the unit to cool operation mode.

5) Check the pressure indicated by the pressure gauge(low pressure side).

* Standard pressure should be 8.0~9.0kg/cm2 in a regular and high operation mode.

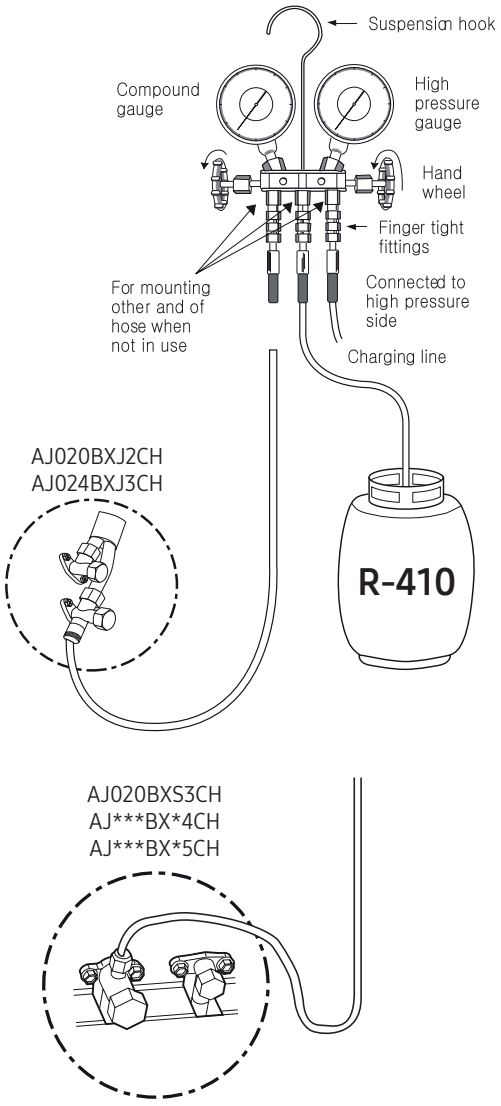
6) Open the refrigerant tank and fill with refrigerant until the rated pressure is reached.

* It is recommended not to pour the refrigerant in too quickly, but gradually while operating a pressure valve.

7) Stop operation of the air conditioner.

8) Close the 3 way valve, disconnect the pressure gauge, and open the 3 way valve again.

9) Close the cap of each valve.



7-4 Refrigerant Adjustment

Model Name	Class	At installation		At service	
	Total Connecting Pipe Length (LT)	Air-Purge Method	Refrigerant Adjustment	Air-Purge Method	Refrigerant Quantity
AJ020BXJ2CH	LT≤30m	Refer to the detailed Connecting up and purging the circuit. (8-2 page)	Unnecessary	Purge air using a vacuum pump or an additional refrigerant cylinder.	Refer to specification sheet
	30m≤LT≤50m		Add 10g of refrigerant (R-410A) for every 1m		Add 10g of refrigerant (R-410A) for every 1m
AJ020BXS3CH	LT≤40m		Unnecessary		Refer to specification sheet
	40m≤LT≤50m		Add 20g of refrigerant (R-410A) for every 1m		Add 20g of refrigerant (R-410A) for every 1m
AJ024BXJ3CH	LT≤40m		Unnecessary		Refer to specification sheet
	40m≤LT≤70m		Add 10g of refrigerant (R-410A) for every 1m		Add 10g of refrigerant (R-410A) for every 1m
AJ024BXS4CH AJ030BSX4CH AJ036BXJ4CH	LT≤40m		Unnecessary		Refer to specification sheet
	40m≤LT≤70m		Add 20g of refrigerant (R-410A) for every 1m		Add 20g of refrigerant (R-410A) for every 1m
AJ036BXS4CH	LT≤50m		Unnecessary		Refer to specification sheet
	50m≤LT≤70m		Add 20g of refrigerant (R-410A) for every 1m		Add 20g of refrigerant (R-410A) for every 1m
AJ048BXJ5CH	LT≤50m		Unnecessary		Refer to specification sheet
	50m≤LT≤70m		Add 10g of refrigerant (R-410A) for every 1m		Add 10g of refrigerant (R-410A) for every 1m

It would be the best choice to use the standard tube length to keep the basic quality of Room Air conditioner, for example cooling and heating capacity, sound level, vibration level, and reliability.
But, according to a certain different installation condition, the connection tube length could be changed in the recommendation length that is shown above.
In this case, installer should keep the installation condition to keep the quality of Room Air conditioner.

- Refrigerant should be charged additionally as written above according to the change of the length of the connection tube. It needs to affect the decrease in cooling and heating capacity or of the reliability of compressor that may be caused by a lack of refrigerant.
- Installation position difference between the indoor unit and the outdoor unit should not exceed over than 15 meters.
- When the connection pipe is been extended longer than 5 meters, it might need to change the diameter of the electrical wire to a larger size in order to keep a voltage drop for starting room air conditioner is not less than 85% of the rated voltage.And then, a voltage meter will be useful to check the rate of the voltage drop.

7-5 Flare Nut Fixing Torque

Outer diameter (mm)	Tightening torque	
	Body cap (N · m)	Charging port cap (N · m)
ø 6.35	20 to 25	10 to 12
ø 9.52	20 to 25	
ø 12.70	25 to 30	
ø 15.88	30 to 35	

7-6 "Pump down" Procedure

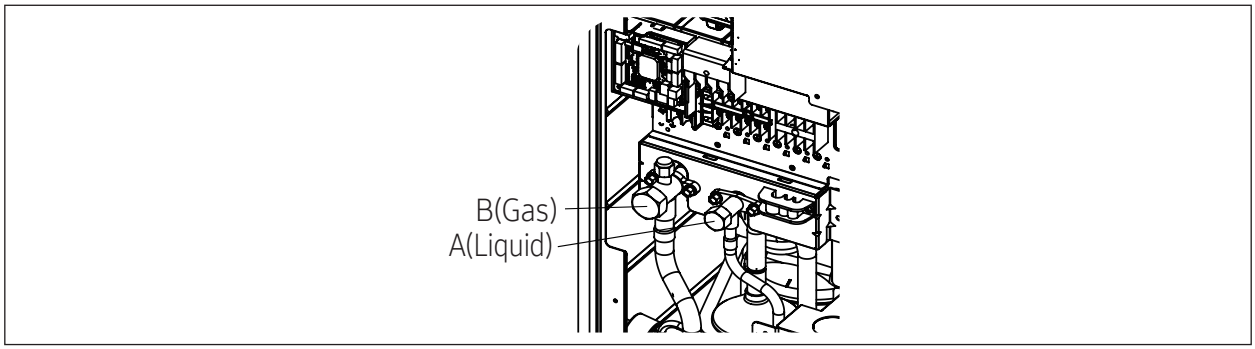
Pump down will be carried out when an evaporator is replaced or when the unit is relocated in another area.

WARNING

- After installing the product, be sure to perform leak tests on the piping connections. After pumping down refrigerant to inspect or relocate the outdoor unit, be sure to stop the compressor and then remove the connected pipes.
  - Do not operate the compressor while a valve is open due to refrigerant leakage from a pipe or an unconnected or incorrectly connected pipe. Failure to do so may cause air to flow into the compressor and too a high pressure to develop inside the refrigerant circuit, leading to an explosion or product malfunction.

Pump-down is an operation intended to collect all the system refrigerant in the outdoor unit.
This operation must be carried out before disconnecting the refrigerant pipe in order to avoid refrigerant loss to the atmosphere.

1. Turn the system on in cooling with fan operating at high velocity and then let the compressor run for more than 5 minutes. (Compressor will immediately start, provided 3 minutes have elapsed since the last stop.)
2. Release the valve caps on High and Low pressure side.
3. Use L-wrench to close the valve on the high pressure side.
4. After approximately 2 minute, close the valve on the low pressure side.
5. Stop operation of the air conditioner by pressing the (Power) button on the indoor unit or remote control.
6. Disconnect the pipes.



※ The design and shape can be changed according to the model.

Remarks

Relocation of the air conditioner.

- Refer to this procedure when the unit is relocated.
  1. Carry out the pump down procedure (refer to the details of 'pump down').
  2. Remove the power cord.
  3. Disconnect the assembly cable from the indoor and outdoor units.
  4. Remove the flare nut connecting the indoor unit and the pipe. At this time, cover the pipe of the indoor unit and the other pipe using a cap or vinyl plug to avoid foreign material entering.
  5. Disconnect the pipe connected to the outdoor unit.
  4. At this time, cover the valve of the outdoor unit and the other pipe using a cap or vinyl plug to avoid foreign material entering.
  6. Make sure you do not bend the connection pipes in the middle and store together with the cables.
  7. Move the indoor and outdoor units to a new location.
  8. Remove the mountin g plate for the indoor unit and move it to a new location.

7-7 Index of Model Name

■ Indoor (RAC)

AR	07	B	S	F	C	M	WK	N	CV
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

(1) Model	
AR	RAC

(2) Capacity	
**	X 1,000 Btu/h (2digits)

(3) Year	
K	2016
M	2017
N	2018
R	2019
T	2020
A	2021
B	2022
C	2023

(4) Inverter type	
S	HP, R410A
X	HP, R32

(5) Feature	
A	MDS + PM1.0 Filter + PM1.0 Sensor + Wi-Fi
B	MDS + PM1.0 Filter + Wi-Fi
C	MDS + Wi-Fi + Tri-care Filter
D	MDS + Wi-Fi
E	Wi-Fi + Tri-care Filter
F	Wi-Fi
G	Tri-care Filter
H	-

(6) Design	
A	Wind-Free, GEO
C	Wind-Free, AIRISE
Y	GEO
Z	AIRISE

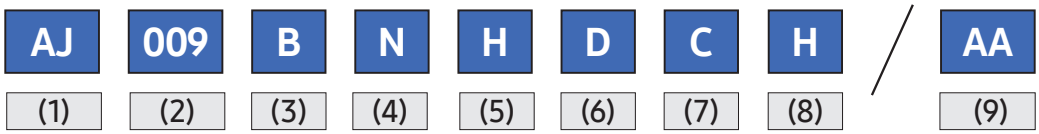
(7) Series	
A	1st Model
B	2nd Model
M	Wind-Free Mass

(8) Color	
WK	DA White

(9) Product	
N	Indoor

(10) Buyer	
CV	America
EU	Europe

■ Indoor (SAC)



(1) Model	
AM	DVM
AJ	FJM
AC	CAC

(2) Capacity	
***	X1,000 Btu/h
***	X1/10 kW/h

(3) Year	
K	2016
M	2017
N	2018
R	2019
T	2020
A	2021
B	2022
C	2023

(4) Inverter type	
N	Indoor unit (NASA)
X	Outdoor unit (NASA)
B	Indoor unit (Non NASA)
C	Outdoor unit (Non NASA)

(5) Indoor Type	
1	1Way CST
J	Console
N	Mini 4Way CST
H	HSP Duct
M	MSP Duct
L	LSP Duct
Z	AIR HANDLING UNIT WITH FRESH

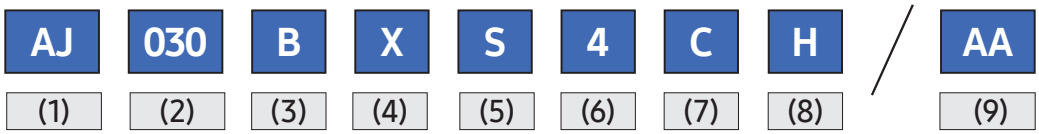
(6) Grade	
D	DELUXE

(7) Rating voltage			
A	115,60Hz, 1Φ	H	380V, 60Hz, 3Φ
B	220V, 60Hz	J	460V, 60Hz, 3Φ
C	208~230, 60Hz	K	220~240V, 50/60Hz
D	200~220V, 50Hz	F	208~230V, 60Hz, 3Φ
E	220~240V, 50Hz	M	127V, 50Hz
F	208~230V, 60Hz, 3Φ	N	380~415, 50/60Hz, 3Φ
G	380~415V, 50Hz, 3Φ		

(8) Mode / Refrigerant		
C	Cooling only	R410A
H	Heat pump	
R	Heat recovery	
D	Cooling only	R22
E	Heat pump	
A	Cooling only	R134A R32
G	Heat pump	

(9) Buyer	
AA	America
EU	Europe

■ Outdoor Unit



(1) Model	
AM	DVM
AJ	FJM
AC	CAC
AR	RAC

(2) Capacity	
***	X 1/10HP (3digits)
***	X 1/10kW (3digits)
***	X 1,000 Btu/h (3digits)

(3) Year	
K	2016
M	2017
N	2018
R	2019
T	2020
A	2021
B	2022
C	2023

(4) Product type	
N	Indoor unit (NASA)
X	Outdoor unit (NASA)
B	Indoor unit (Non NASA)
C	Outdoor unit (Non NASA)

(5) Outdoor Type	
J	Normal FJM
S	Low Ambient Heating FJM

(6) Max room number	
2	2 rooms
3	3 rooms
4	4 rooms
5	5 rooms

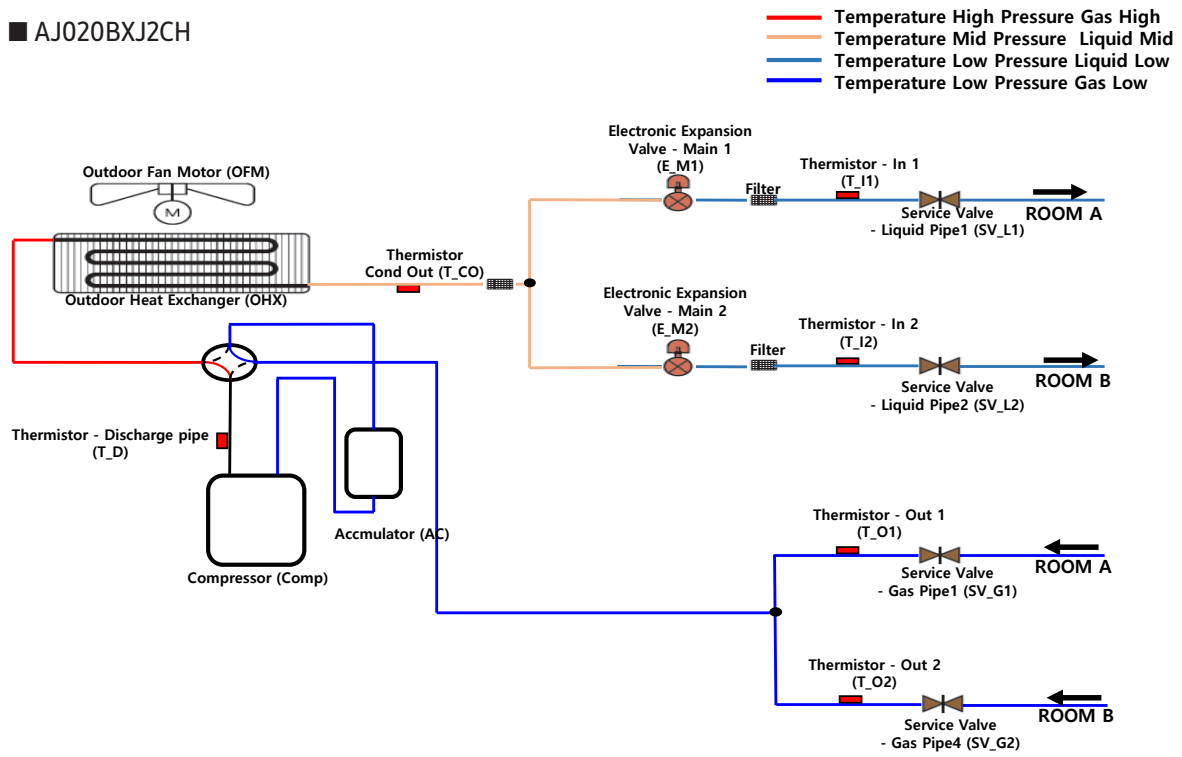
(7) Rating voltage			
A	115,60Hz, 1Φ	H	380V, 60Hz, 3Φ
B	220V, 60Hz	J	460V, 60Hz, 3Φ
C	208~230, 60Hz	K	220~240V, 50/60Hz
D	200~220V, 50Hz	F	208~230V, 60Hz, 3Φ
E	220~240V, 50Hz	M	127V, 50Hz
F	208~230V, 60Hz, 3Φ	N	380~415, 50/60Hz, 3Φ
G	380~415V, 50Hz, 3Φ		

(8) Mode / Refrigerant		
C	Cooling only	R410A
H	Heat pump	
R	Heat recovery	
D	Cooling only	R22
E	Heat pump	
A	Cooling only	R134A R32
G	Heat pump	

(9) Buyer	
AA	America
EU	Europe

7-8 Refrigerating Cycle Diagram

■ AJ020BXJ2CH



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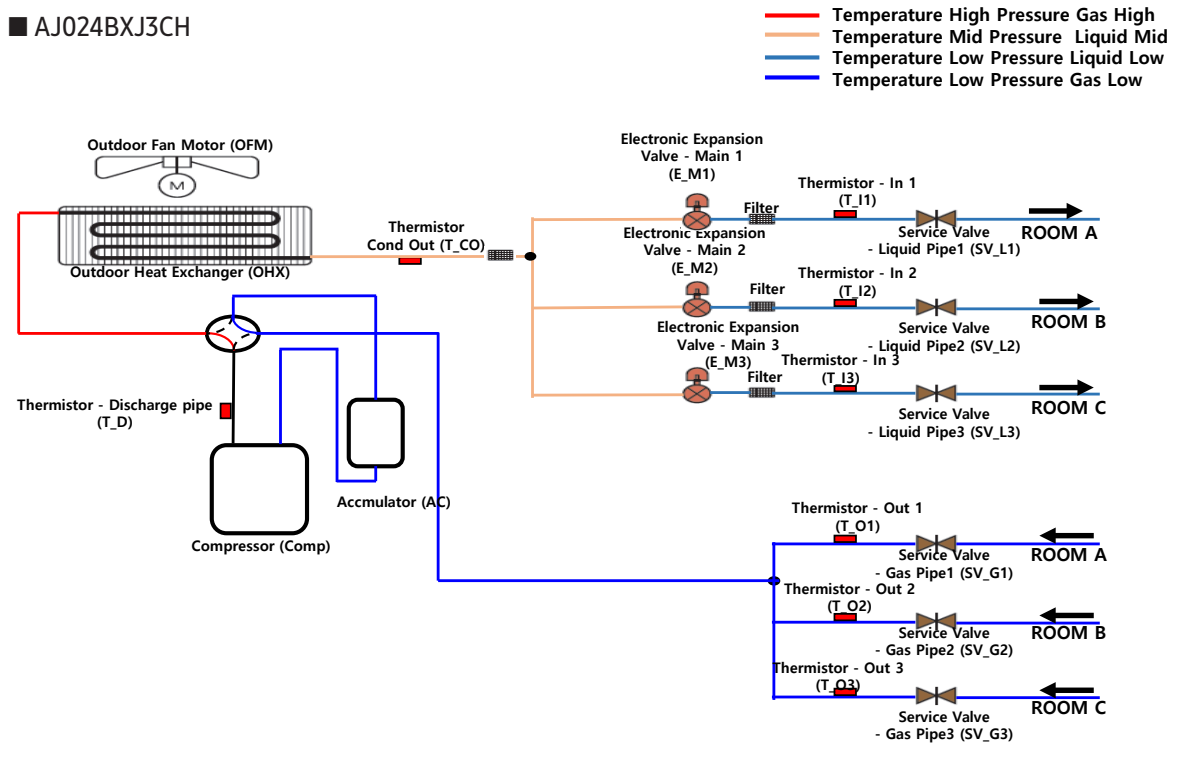

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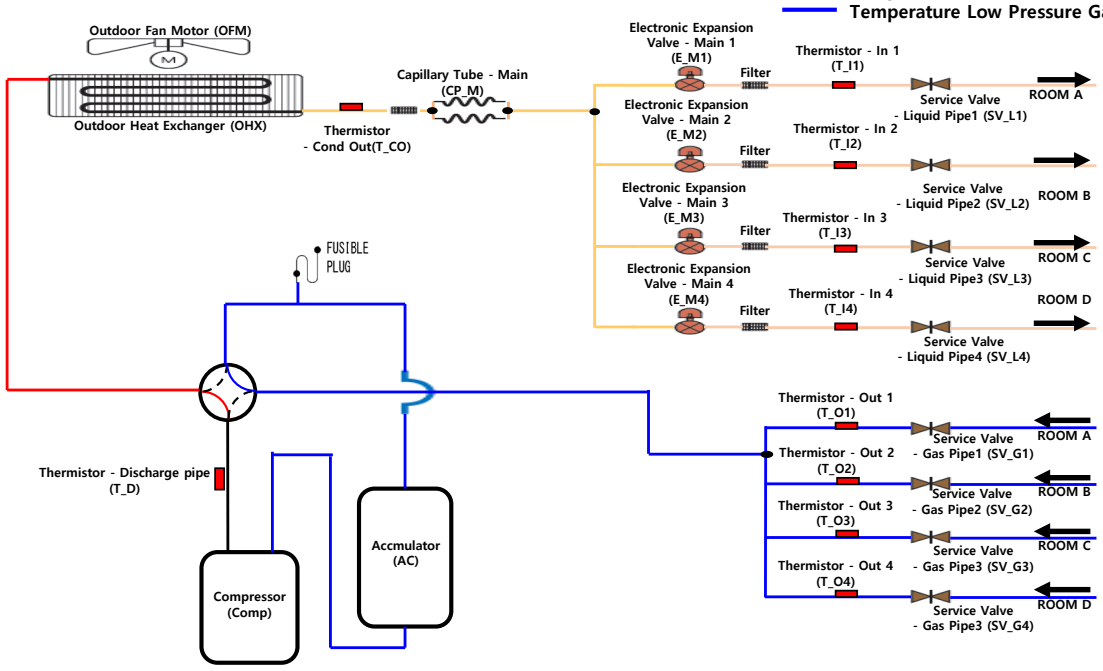

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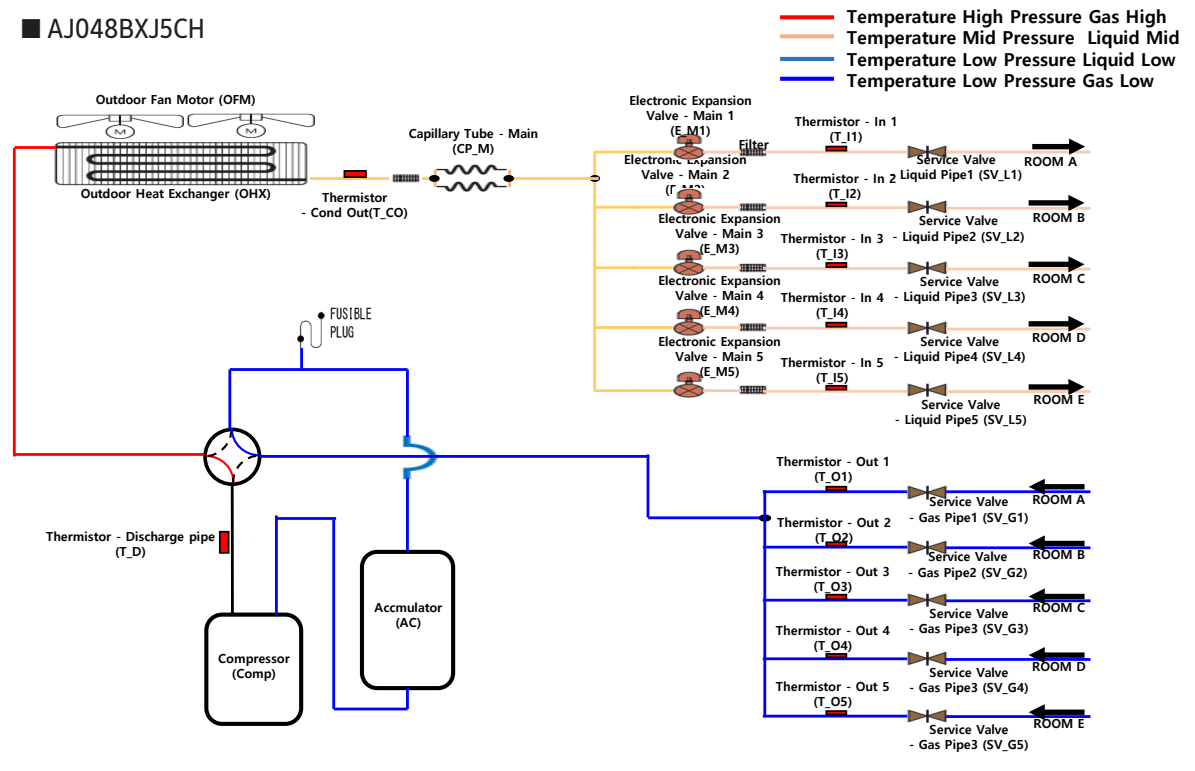

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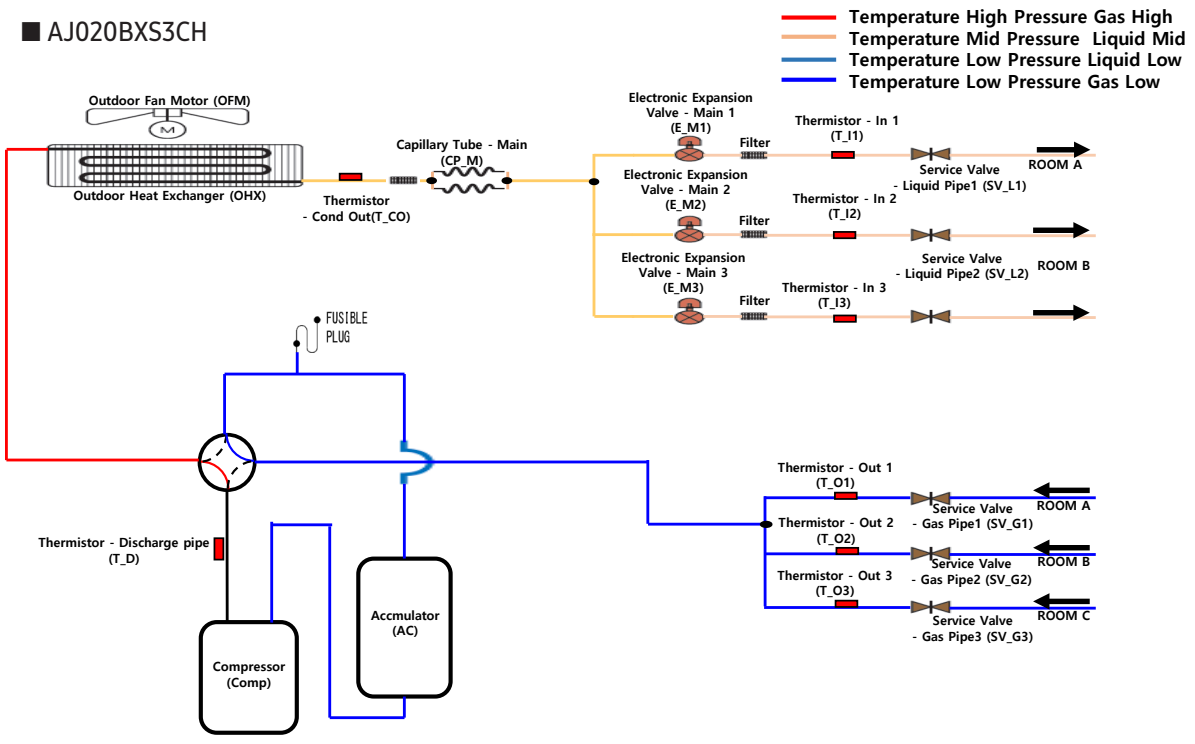

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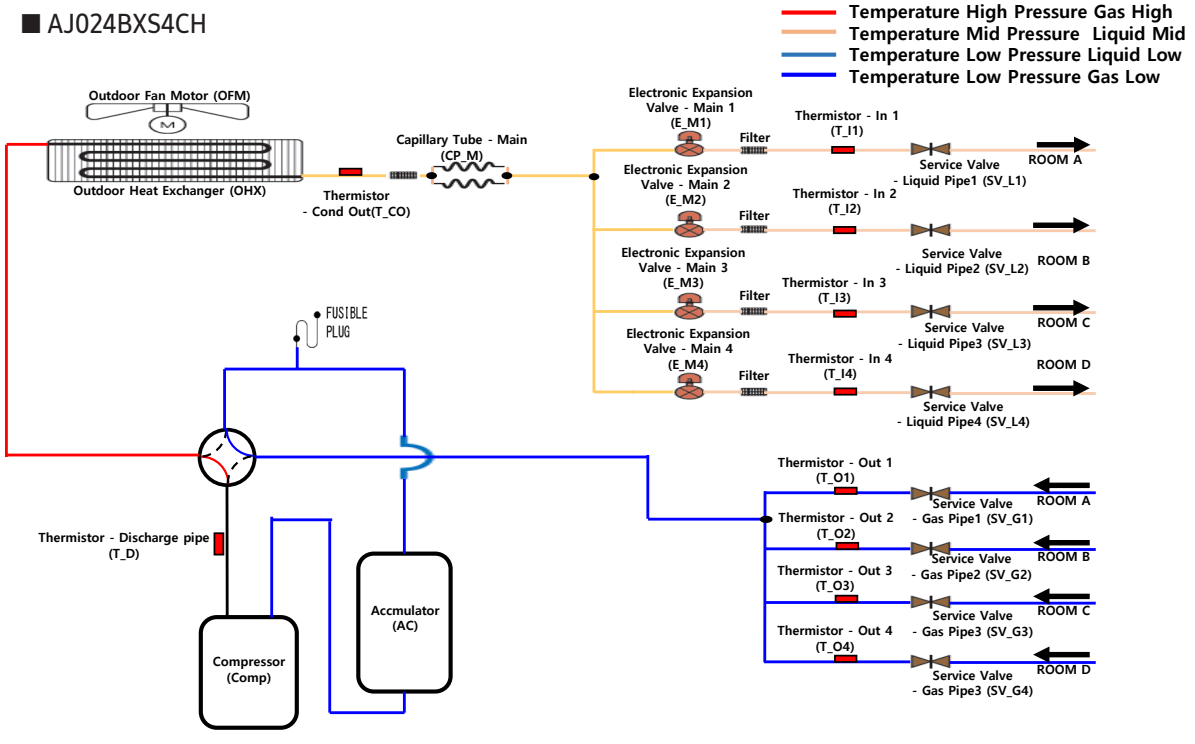

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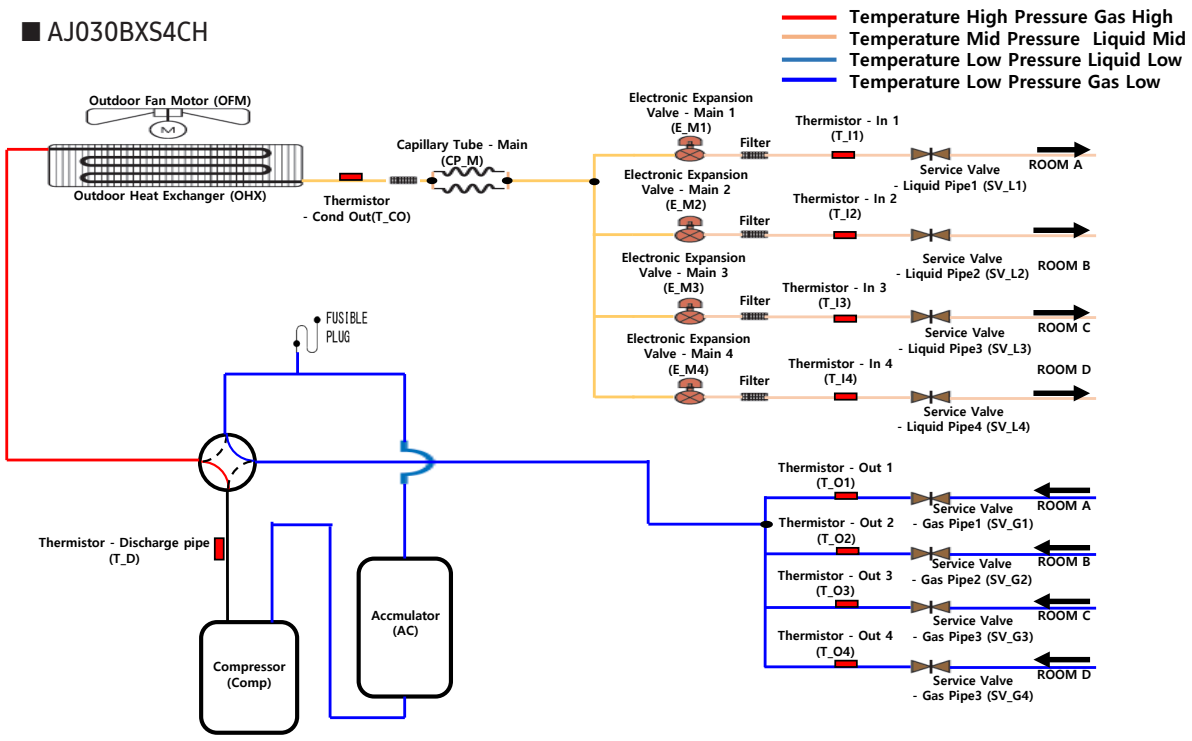

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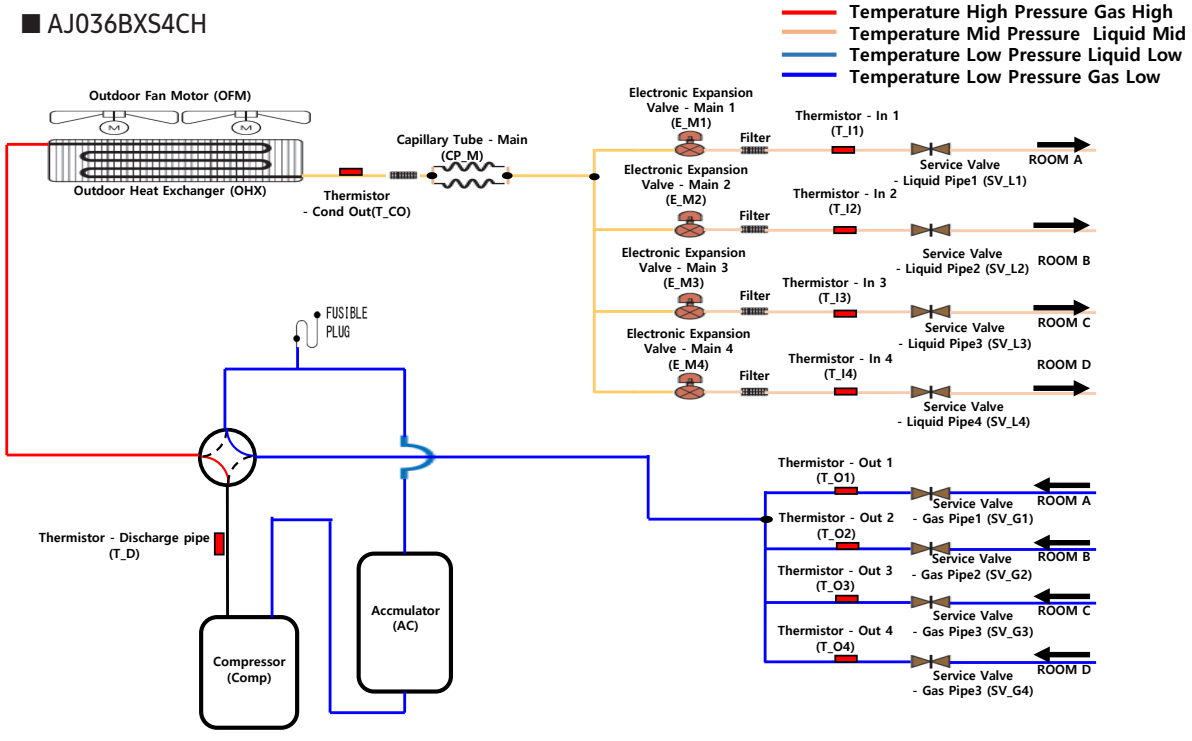


7-9 Pressure & Capacity mark

W	cal/s	kcal/h	Btu/h	HP	kg.m/s	ib.m/s
1	0.23885	0.85985	3.4121	0.001341	0.10197	0.73756
4.1868	1	3.6	14.286	0.0056146	0.42693	3.088
1.163	0.27778	1	3.9683	0.0015596	0.11859	0.85778
0.29307	0.06999	0.252	1	3.9302x10-4	0.029885	0.21616
745.7	178.11	641.19	2,544.4	1	76.04	550
9.8067	2.3423	8.4322	33.462	0.013151	1	7.233
1.3558	0.32383	1.1658	4.6262	0.0018182	0.13826	1

7-10 The abbreviated technology words & the definition of technology terms

Abbreviated technology words	Definition of technology terms
COMP (Full name compressor)	One that compresses, especially a machine used to compress gases.
BLOWER	One that blows, especially a mechanical device, such as fan, produces a current of air.
FAN	A device for reeting a current of air or a breeze.
ASS'Y CONTROL BOX (Full name : Assemble control box)	A restraining device of air-condition, measure, or limit.
MOTOR	Something, such as a machine or an engine, that produces or imparts motion.
ASS'Y EVAP/ASS'Y COND (Full name : assemble evaporator / assemble condenser)	Heat exchanger; A device, used to transfer heat from a fluid on one side of a barrier to a fluid on the other side without bringing the fluids into direct contact.

7-11 Q & A for Non-trouble

Classification	Class	Description
Cooling	Q	**The cooling is weak.**
	A	When it is hot outside, its cooling capacity decreases due to the increase of the ambient temperature. When the dust filter gets blocked or warm outside air gets in, the cooling capacity will decrease. So, make sure to clean the dust filter frequently, prevent heat loss by closing the doors and insulate the cooling area by using curtains, blinds, shades or window tinting.
	Q	**The cooling is good generally. But, it gets weak when it is considerably hot.**
	A	It occurs when the outdoor unit is exposed to direct sun light and heat-up air is not ventilated well. So, set up a sun blind over the outdoor unit and keep stuff away from the unit to increase the ventilation. When the cooling capacity decreases during a heat wave, clean the heat exchanger of the outdoor unit or spray some cold water to the heat exchanger to increase the cooling capability.
	Q	**The cooling is weak. Does it need refrigerant charging?**
	A	It is not correct charging refrigerant regularly. Except that you have moved in several times or the connection pipes are broken, the refrigerant does not run low. So, when refrigerant is additionally charged, it could be costly and cause a product's failure. When the refrigerant leaks, all of it will escape in a short time resulting in cooling failure and no water coming out of the drain hose. So, if water comes out from the drain hose, it indicates the normal operation of the product and it does not need refrigerant charging.
	Q	**It fails to do cooling.**
	A	When the air conditioner is set to Ventilation or the desired temperature is set higher than the current temperature, it fails to do cooling. In this case, select Cooling or set the desired temperature lower.
Leakage	Q	**It floods the floor.**
	A	Place the drain hose properly. When it is not placed properly, the drain water would flow back flooding the floor. So, straighten out the drain hose for the water to be drained well.
	Q	**Water drips at the drain connection (service valve) of the outdoor unit.**
	A	When a glass bottle is taken out of the refrigerator, moisture gets condensed on its surface due to the temperature differences. The same principle applies to the air conditioner. When cold refrigerant goes through the copper tube, moisture gets condensed on the surface of the tube and the connection areas. To prevent the water condensation, the pipes are insulated. But, the connection areas of the outdoor unit are not insulated for the purpose of maintenance or repair, and water gets condensed due to the temperature differences and drips down. Generally, it evaporates right away. But, when it drips much during muggy days, put a water pan on the floor.
	Q	**It leaks even though a drain pump is used.**
	A	It occurs when the drain pump is plugged out or it is out of order. Check the power of the drain pump and the position of the drain hose, and when the pump is faulty, contact the drain pump manufacturer. Samsung Electronics do not manufacture drain pumps. So, we are not able to correct the drain pump problems.
Smells	Q	**Whenever the air conditioner is turned on, it irritates my eyes and gives me a headache.**
	A	There are no components in the air conditioner irritating the eyes and sending out chemical smells. But, when the air conditioner is turned on, other smell sources are sucked into the air conditioner and get out of it. So, find and root out the smell sources. Generally, it occurs at a interior renovated place, a pharmacy, a gasoline handling place, a tire shop, a second-hand book shop or an electronic component handling place; when its chemical or musty smells are sucked in and sent out, it can be misled that the air conditioner generates them. So, find and root out the problem or refresh the room frequently.

Classification	Class	Description
Smells	Q	**Whenever the air conditioner is turned on, it stinks.**
	A	There are no components in the air conditioner sending out chemical smells. But, when the air conditioner is turned on, other smell sources are sucked into the air conditioner and get out of it. So, find and root out the smell sources. Generally, when the drain hose is taken out to the washing room or there are sources of smells such as a diaper bin, a shoe shelf or a socks bin, bad smells generate. Also, it occurs where glass cleaners or air fresheners are used; when they are sucked in interacting with dusts and moistures inside, bad smells generate. These kinds of organic materials noxious to human bodies. So, we recommend against the use of them.
	Q	**Whenever the air conditioner is turned on, it smells sour.**
	A	When the room is papered recently, its paste smells would be sucked inside. Also, when the air conditioner is installed in the study room of young boys loving sweat-generating activities such as the basketball, excessive sweats evaporate and get sucked into the air conditioner resulting in bad smells. So, find and root out the problem or refresh the room frequently.
	Q	**Whenever the air conditioner is turned on, it smells musty.**
	A	It is due to the improper keeping of the product after its use. When keeping the product, dry up the inside with the operation of Ventilation to prevent must. When the product is kept without drying up the inside with Ventilation, mold would grow inside resulting in must. So, open the windows and switch on the Ventilation function to get rid of the saturated smell inside.
	Q	**Whenever the air conditioner is turned on, it sends out bad smells such as stale smells.**
	A	It occurs generally when there are pet animals in the house. Their smells stay at the same place. But, when the air conditioner is turned on, the air gets circulated resulting in the circulation of the smells. So, find and root out the problem or refresh the room frequently.
	Q	**It sends out bad smells.**
	A	When the air filter is filthy, it could send out bad smells. So, clean the filter and ventilate the room with the windows open while operating the Ventilation function.
Operation	Q	**It won't start.**
	A	There is a power failure or it is plugged out. Also, check if the power distribution panel is switched off.
	Q	**It goes off during operation.**
	A	When the hot air does not escape properly, it goes off during operation. It occurs when it does not ventilate properly because the outdoor unit is covered, the back of the outdoor unit is blocked by a cardboard or a plywood panel, and the front of the outdoor unit is blocked by the closed window or other obstacles. Clear the above obstacles from the outdoor unit.
	Q	**It generally works properly. But, when it's considerably hot, it goes off during operation.**
	A	It occurs when the outdoor unit is exposed to direct sunlight and the hot air does not escape properly. Set up a sun blind over the outdoor unit and clear the neighboring obstacles from the outdoor unit to provide good ventilation. When it goes off frequently during a heat wave, it would prevent the turn-off and increase the cooling capacity cleaning the outdoor unit or spraying some water to the heat exchanger.
	Q	**The remote controller won't operate.**
	A	When the batteries run out or the transmitter or receiver of the remote controller is blocked by obstacles, change the batteries or keep the obstacles away from the controlling area. Also, the remote controller may not work under intensive light from a 3-wave length lamp or a neon sign due to the EMI. In this case, take the remote controller closer to the receiver.

Classification	Class	Description
Installation	Q	**Who installs the air conditioner? (Relocation/Re-installation)**
	A	When relocating or re-installing the air conditioner, make sure to contact Samsung Electronics Service Center or Authorized Service Agent and have them to do the job.(If not, it could cause personal injury or product damage.) The cost for the relocation/re-installation of the air conditioner is subject to the customer's expense. There is a cost table. But, our service engineer needs to visit to total up the cost correctly. When you move in, make sure to contact Samsung Electronics Service Center or Authorized Service Agent in advance to streamline the process.
	Q	**Is it possible to install the outdoor unit outside?**
	A	It is possible to install it at a designated place in the apartment or on the rooftop nearby. But, it's illegal hanging an angle iron case with the outdoor unit in it outside the apartment. Also, it is illegal obstructing passers-by with the outdoor unit installed outside.
	Q	**What can be done to install the outdoor unit facing the road because it is a commercial building?**
	A	The following is an excerpt from Building Code going into effect from JUNE 1st 2005. "The exhaust pipe of a cooling or ventilation facility installed in a building adjacent to the streets of commercial or residential areas shall be installed higher than 2m to prevent the exhaust air from blowing directly to passers-by and the current facilities shall be corrected by MAY 31st 2005." So, please install it higher than 2m or not to blow the hot exhausting air directly to passers-by.
	Q	**What about installing a windscreen during installation not to blow hot air directly to passers-by?**
	A	When the hot air from the front of the outdoor unit is blocked, the product's performance will be affected and it will fail to operate properly. So, keep it at least 300mm away from its surrounding walls and give it good ventilation.

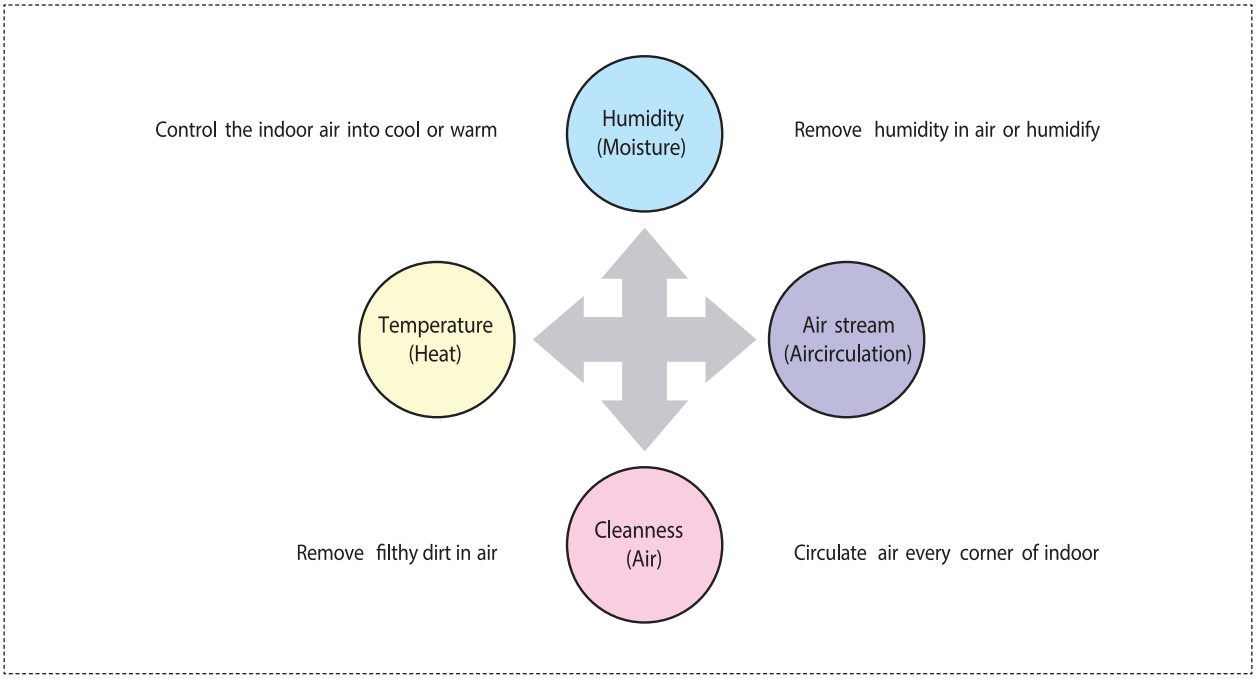
7-12 Common sense of refrigeration

■ Air supplier?

It supplies fresh air to the building or room through procedure of air circulation for fresh environment.

■ Effectiveness of air supplier

It diminishes the stress or fatigue and enhances vivid desire through fresh air circulation. Also, filthy air indoor is being cleaned by Air-Filter and it keeps clean and fresh environment and dehumidification. Temperature, humidity, air stream, cleanness are called for factors of air supplier and they are kept in proper condition for usage purpose.



■ Four factors of air suppliers

The human body keeps regular temperature regarding the human body's freshness.
For keeping freshness, heat generated from human body should emit outside of the body by air circulation, conduction, emission, and evaporation. The human body feels freshness when the emission rate is 40~45%, which was emitted by a radiation when it is comfortable and warm, and air circulation and conduction is 20~30%, and evaporation is 20~24%.
It sometimes may depends on seasonal factor, wearing condition, age, sex and mental state other than indoor environment.
But generally the value of fresh indoor temperature is that below 0.2(m/s) of indoor air circulation, the temperature is 21~28°C when the wall temperature is the same as the indoor's and relative humidity is 30~31% in summer, the winter temperature is 20~24°C and relative humidity is 30~60% in winter.

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