

SAMSUNG

ECO HEATING SYSTEM

	OUTDOOR UNIT	CLIMATEHUB	HYDRO UNIT
	(All In One)	(MONO)	(MONO)
Model :	AE125HCTPES AE125HCTPGS AE160HCTPES AE160HCTPGS	AE200DNWMPK AE200DNXMPK	AE160DNYMPK AE160DNZMPK

SERVICE *Manual*

ECO HEATING SYSTEM

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AE200DN*MPK



AE160DN*MPK



AE***HCTP*S

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1. Precautions

- Ventilation should safely disperse any released refrigerant and preferably expel it externally to the outside.
- Suitable flammable gas detectors must be present and operating to warn workers of a dangerous concentration of refrigerants and that the gas detection equipment used is non-sparking, adequately sealed, or intrinsically safe.
- All maintenance staff have been instructed.
- Erect proper signage, including "No smoking" and "Do not enter the area" signs.
- All appropriate and necessary tools and equipment are available.
- All staff and others working in the local area must be instructed on the nature of the work being carried out.
- The area around the workspace must be sectioned off.
- In case of requirement, a work permit must be obtained from the relevant responsible on the site.
- Working within confined spaces should be avoided.
- No flammable materials should be stored in the work area.
- No ignition sources must be present anywhere in the work area.
- Suitable fire extinguishing equipment (CO₂ or dry-powder type) must be available within the immediate area.
- The work area should be appropriately ventilated before working on the refrigerant circuit, brazing, or handling electrics.
- Only oxygen-free dry nitrogen (OFDN) must be in use. The presence of oxygen can raise the flammability risk (and the presence of moisture can damage the reliability and operation of the refrigerating system). The technician should always carefully read the installation and/or service manual provided by the manufacturer so that they are aware of any particular special requirements associated with the
- equipment under consideration. New or replacement components should be according to the manufacturer's specifications.
- Leak detectors rated for combustible gas must be in use; if the leak cannot be located with an electronic detector, remove the charge, purge, fill with nitrogen, and use a micro leak detector spray.
(GUIDE FOR THE USE OF HCs REFRIGERANTS)

NOTE

- Work may only be performed by qualified personnel.
- Service work should only be performed in accordance with the manufacturer's specifications.
- A safety check is required before starting work on equipment containing flammable refrigerants to minimize the risk of ignition.

Point	Check prerequisites	Compliance (Y/N)
1	Awareness Familiar with the information provided by other sources, such as the system equipment manufacturers, component manufacturers, refrigerant suppliers, and Material Safety Datasheets (MSDSs). Occupants should be aware of manufacturer operating instructions, procedures, guidelines and safety issues regarding the equipment. Be made aware	
2	Safety distance Safety distance to building openings with regard to the movement of refrigerant required. For outdoor installations refrigerating system sited in the open air shall be positioned to avoid leaked refrigerant following into a building or otherwise endangering people and property.	
3	No ignition Sources No smoking, including displaying 'No Smoking' signs. Survey the area around the equipment before servicing to establish any flammability or ignition risks. Remove all sources of ignition. Be aware that a cell phone or similar electronic devices could be the source of ignition.	
4	Labels R32 is classified as a low flammable category A2L gas and must be labeled accordingly.	
5	General Work Area Instruct anyone in the temporary flammable zones as to the nature of the work.	
6	Personal Protective Equipment Technicians should wear appropriate protective equipment, including chemical goggles, protective gloves, grounding probes, and anti-static bands.	
7	Free Air Movement Ensure that free air movement around all refrigerant-containing parts of the systems can be achieved. Depending on the size of the room, especially in a confined space, mechanical ventilation may need to be considered. The ventilation should displace any released refrigerant and preferably expel it externally.	
8	Base Emptiness Precautions should be made against refrigerant collecting in troughs and low points of the structure.	
9	Electrical Devices An initial safety check of components to see if a fault exists that could compromise safety. Capacitors should be discharged with bleed resistors (minimum 2 Watt/ 10,000 Ω) or multimeters. Do not work on 'live' electrical components. Ensure good ground equipment and user are maintained.	
10	Certified Equipment - Gas Leak Detectors and Monitors, Electrical Test meters, Portable Lighting, non-sparking tool, and etc.	
11	Work Space Guidelines - Good ventilation - Dry powder fire extinguishers	

2. General Overview

2-1 Product Specifications

Model Name					Indoor Unit	AE200DNWMPK/EU	AE200DNWMPK/EU	AE200DNWMPK/EU	AE200DNWMPK/EU	AE200DNXMPK/EU	AE200DNXMPK/EU	AE200DNXMPK/EU	AE200DNXMPK/EU
					Outdoor Unit	AE125HCTPES/EU	AE125HCTPGS/EU	AE160HCTPES/EU	AE160HCTPGS/EU	AE125HCTPES/EU	AE125HCTPGS/EU	AE160HCTPES/EU	AE160HCTPGS/EU
Outdoor Unit & Tank Hydro Unit Figure													
System		Nominal Capacity	Heating	W		12,500	12,500	16,000	16,000	12,500	12,500	16,000	16,000
			Cooling	W		12,500	12,500	14,500	14,500	12,500	12,500	14,500	14,500
		Power Input (Nominal)	Heating	W		2,680	2,680	3,620	3,620	2,680	2,680	3,620	3,620
			Cooling	W		3,120	3,120	3,770	3,770	3,120	3,120	3,770	3,770
		Current Input (Nominal)	Heating	A		12.67	4.20	17.11	5.68	12.67	4.20	17.11	5.68
			Cooling	A		14.74	4.89	17.82	5.91	14.74	4.89	17.82	5.91
		COP (Nominal Heating)		W/W		4.66	4.66	4.42	4.42	4.66	4.66	4.42	4.42
		EER (Nominal Heating)		W/W		4.01	4.01	3.85	3.85	4.01	4.01	3.85	3.85
		SCOP (35°C)		-		4.67	4.67	4.64	4.64	4.67	4.67	4.64	4.64
		SCOP (55°C)		-		3.32	3.32	3.31	3.31	3.32	3.32	3.31	3.31
		SEER		-		4.95	4.95	4.93	1.93	4.95	4.95	4.93	1.93
	Field Wiring	Tank Integrated Hydro Unit	MCA	A		18.3	3Φ 8.7/1Φ 0.9	18.3	3Φ 8.7/1Φ 0.9	18.7	3Φ 8.7/1Φ 1.3	18.7	3Φ 8.7/1Φ 1.3
			MFA	A		22.9	3Φ 10.9/1Φ 1.2	22.9	3Φ 10.9/1Φ 1.2	23.4	3Φ 10.9/1Φ 1.6	23.4	3Φ 10.9/1Φ 1.6
		Outdoor Unit	MCA	A		32.0	16.1	32.0	16.1	32.0	16.1	32.0	16.1
			MFA	A		35.2	17.7	35.2	17.7	35.2	17.7	35.2	17.7
	Refrigerant Connections	Refrigerant Pipe	Type	-		Flare nut	Flare nut	Flare nut	Flare nut	Flare nut	Flare nut	Flare nut	Flare nut
			Liquid	Φ, mm		9.52	9.52	9.52	9.52	9.52	9.52	9.52	9.52
			Gas	Φ, mm		15.88	15.88	15.88	15.88	15.88	15.88	15.88	15.88
	Water Connections	Water Pipe	Type	-		Theaded male	Theaded male	Theaded male	Theaded male	Theaded male	Theaded male	Theaded male	Theaded male
			Inlet	Φ, mm		28	28	28	28	28	28	28	28
			Outlet	Φ, mm		28	28	28	28	28	28	28	28
	Refrigerant	Type		-		R32	R32	R32	R32	R32	R32	R32	R32
		Factory Charging		kg		2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70
		Control Method		-		EEV	EEV	EEV	EEV	EEV	EEV	EEV	EEV
		Power Supply		Φ, #, V, Hz		1,2,220-240,50	3,4,380-415,50	1,2,220-240,50	3,4,380-415,50	1,2,220-240,50	3,4,380-415,50	1,2,220-240,50	3,4,380-415,50
Hydro Unit	Water Pump (Primary)		Type	-		BLDC Inv (PWM)	BLDC Inv (PWM)	BLDC Inv (PWM)	BLDC Inv (PWM)	BLDC Inv (PWM)	BLDC Inv (PWM)	BLDC Inv (PWM)	BLDC Inv (PWM)
			Motor input	W		95	95	95	95	95	95	95	95
			Max static pressure	mAq		9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
			Max water flow	LPM		75	75	75	75	75	75	75	75
	Water Pump (2 Zone)		Type	-		N/A	N/A	N/A	N/A	BLDC Inv (Fixed)	BLDC Inv (Fixed)	BLDC Inv (Fixed)	BLDC Inv (Fixed)
			Motor Input	W		N/A	N/A	N/A	N/A	95	95	95	95
			Max static pressure	mAq		N/A	N/A	N/A	N/A	9	9	9	9
			Max water flow	LPM		N/A	N/A	N/A	N/A	75	75	75	75
	Water Flow rate		Min.	L/min		7	7	7	7	7	7	7	7
			Max	L/min		58	58	58	58	58	58	58	58

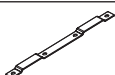
Model Name			Indoor Unit		AE200DNWMPK/EU	AE200DNWMPK/EU	AE200DNWMPK/EU	AE200DNWMPK/EU	AE200DNXMPK/EU	AE200DNXMPK/EU	AE200DNXMPK/EU	AE200DNXMPK/EU	
			Outdoor Unit		AE125HCTPES/EU	AE125HCTPGS/EU	AE160HCTPES/EU	AE160HCTPGS/EU	AE125HCTPES/EU	AE125HCTPGS/EU	AE160HCTPES/EU	AE160HCTPGS/EU	
Outdoor Unit & Tank Hydro Unit Figure													
Hydro Unit	Backup Heater		Power	-	1Φ 2/4kW	3Φ 6kW	1Φ 2/4kW	3Φ 6kW	1Φ 2/4kW	3Φ 6kW	1Φ 2/4kW	3Φ 6kW	
			Thermostat	°C	85±4	85±4	85±4	85±4	85±4	85±4	85±4	85±4	
			Thermostat (Thermal Fuse)	°C	98 +0 -5	98 +0 -5	98 +0 -5	98 +0 -5	98 +0 -5	98 +0 -5	98 +0 -5	98 +0 -5	
	Expansion Vessel		Internal Water Volume	liter	10	10	10	10	10	10	10	10	
	Sound	Sound Pressure	Heating	dB (A)	28	28	28	28	30	30	30	30	
			Cooling	dB (A)	28	28	28	28	30	30	30	30	
		Sound Power	Heating	dB (A)	42	42	42	42	44	44	44	44	
	External Dimension		Net Weight	kg	136	136	136	136	145	145	145	145	
			Net Dimensions (WxHxD)	mm	598x1,850x600	598x1,850x600	598x1,850x600	598x1,850x600	598x1,850x600	598x1,850x600	598x1,850x600	598x1,850x600	
outdoor unit	PowerSupply			Φ, #, V, Hz	1,2,220-240,50	3,4,380-415,50	1,2,220-240,50	3,4,380-415,50	1,2,220-240,50	3,4,380-415,50	1,2,220-240,50	3,4,380-415,50	
	Compressor		Type	-	BLDC Twin Rotary	BLDC Twin Rotary	BLDC Twin Rotary	BLDC Twin Rotary	BLDC Twin Rotary	BLDC Twin Rotary	BLDC Twin Rotary	BLDC Twin Rotary	
			Model Name		UB5TD8450FJX	UB5TD8450FJX	UB5TD8450FJX	UB5TD8450FJX	UB5TD8450FJX	UB5TD8450FJX	UB5TD8450FJX	UB5TD8450FJX	
		Oil	Type	-	POE	POE	POE	POE	POE	POE	POE	POE	
	Fan		Heating/ Cooling	m³/min	87/ 70	87/ 70	87/81	87/81	87/ 70	87/ 70	87/81	87/81	
			Diameter of Fan	mm	630	630	630	630	630	630	630	630	
	Base Heater			W	150	150	150	150	150	150	150	150	
	Sound	Sound Pressure (Nominal)	Heating	dB (A)	49	49	49	49	49	49	49	49	
			Cooling	dB (A)	51	51	55	55	51	51	55	55	
		Sound Power (Nominal)	Heating	dB (A)	62	62	62	62	62	62	62	62	
			Cooling	dB (A)	-	-	-	-	-	-	-	-	-
	External Dimension		Net Weight	kg	126.5	126.5	126.5	126.5	126.5	126.5	126.5	126.5	
			Net Dimensions (WxHxD)	mm	1,270 x 850 x 500	1,270 x 850 x 500	1,270 x 850 x 500	1,270 x 850 x 500	1,270 x 850 x 500	1,270 x 850 x 500	1,270 x 850 x 500	1,270 x 850 x 500	
	Operating Temp. Range		Heating	°C	-25~43	-25~43	-25~43	-25~43	-25~43	-25~43	-25~43	-25~43	-25~43
			Cooling	°C	10~46	10~46	10~46	10~46	10~46	10~46	10~46	10~46	10~46
			DHW TANK	°C	-25~43	-25~43	-25~43	-25~43	-25~43	-25~43	-25~43	-25~43	-25~43

Model Name					Indoor Unit	AE200DNWMPK/EU	AE200DNWMPK/EU	AE200DNWMPK/EU	AE200DNWMPK/EU	AE200DNXMPK/EU	AE200DNXMPK/EU	AE200DNXMPK/EU	AE200DNXMPK/EU
					Outdoor Unit	AE125HCTPES/EU	AE125HCTPGS/EU	AE160HCTPES/EU	AE160HCTPGS/EU	AE125HCTPES/EU	AE125HCTPGS/EU	AE160HCTPES/EU	AE160HCTPGS/EU
Outdoor Unit & Tank Hydro Unit Figure													
System		Nominal Capacity	Heating	W		12,500	12,500	16,000	16,000	12,500	12,500	16,000	16,000
			Cooling	W		12,500	12,500	14,500	14,500	12,500	12,500	14,500	14,500
		Power Input (Nominal)	Heating	W		2,680	2,680	3,620	3,620	2,680	2,680	3,620	3,620
			Cooling	W		3,120	3,120	3,770	3,770	3,120	3,120	3,770	3,770
		Current Input (Nominal)	Heating	A		12.67	4.20	17.11	5.68	12.67	4.20	17.11	5.68
			Cooling	A		14.74	4.89	17.82	5.91	14.74	4.89	17.82	5.91
		COP(Nominal Heating)		W/W		4.66	4.66	4.42	4.42	4.66	4.66	4.42	4.42
		EER(Nominal Heating)		W/W		4.01	4.01	3.85	3.85	4.01	4.01	3.85	3.85
		SCOP(35°C)		-		4.67	4.67	4.64	4.64	4.67	4.67	4.64	4.64
		SCOP(55°C)		-		3.32	3.32	3.31	3.31	3.32	3.32	3.31	3.31
		SEER		-		4.95	4.95	4.93	1.93	4.95	4.95	4.93	1.93
	Field Wiring	Tank Integrated Hydro Unit	MCA	A		18.3	3Φ 8.7/1Φ 0.9	18.3	3Φ 8.7/1Φ 0.9	18.7	3Φ 8.7/1Φ 1.3	18.7	3Φ 8.7/1Φ 1.3
			MFA	A		22.9	3Φ 10.9/1Φ 1.2	22.9	3Φ 10.9/1Φ 1.2	23.4	3Φ 10.9/1Φ 1.6	23.4	3Φ 10.9/1Φ 1.6
		Outdoor Unit	MCA	A		32.0	16.1	32.0	16.1	32.0	16.1	32.0	16.1
			MFA	A		35.2	17.7	35.2	17.7	35.2	17.7	35.2	17.7
	Refrigerant Connections	Refrigerant Pipe	Type	-		Flare nut	Flare nut	Flare nut	Flare nut	Flare nut	Flare nut	Flare nut	Flare nut
			Liquid	Φ, mm		9.52	9.52	9.52	9.52	9.52	9.52	9.52	9.52
			Gas	Φ, mm		15.88	15.88	15.88	15.88	15.88	15.88	15.88	15.88
	Water Connections	Water Pipe	Type	-		Theaded male	Theaded male	Theaded male	Theaded male	Theaded male	Theaded male	Theaded male	Theaded male
			Inlet	Φ, mm		28	28	28	28	28	28	28	28
			Outlet	Φ, mm		28	28	28	28	28	28	28	28
	Refrigerant	Type		-		R32	R32	R32	R32	R32	R32	R32	R32
		Factory Charging		kg		2.70	2.70	2.70	2.70	2.70	2.70	2.70	2.70
		Control Method		-		EEV	EEV	EEV	EEV	EEV	EEV	EEV	EEV
		Power Supply		Φ, #, V, Hz		1,2,220-240,50	3,4,380-415,50	1,2,220-240,50	3,4,380-415,50	1,2,220-240,50	3,4,380-415,50	1,2,220-240,50	3,4,380-415,50
Hydro Unit	Water Pump (Primary)		Type	-		BLDC Inv (PWM)	BLDC Inv (PWM)	BLDC Inv (PWM)	BLDC Inv (PWM)	BLDC Inv (PWM)	BLDC Inv (PWM)	BLDC Inv (PWM)	BLDC Inv (PWM)
			Motor input	W		95	95	95	95	95	95	95	95
			Max static pressure	mAq		9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
			Max water flow	LPM		75	75	75	75	75	75	75	75
	Water Pump (2 Zone)		Type	-		N/A	N/A	N/A	N/A	BLDC Inv (PWM)	BLDC Inv (PWM)	BLDC Inv (PWM)	BLDC Inv (PWM)
			Motor Input	W		N/A	N/A	N/A	N/A	95	95	95	95
			Max static pressure	mAq		N/A	N/A	N/A	N/A	9.0	9.0	9.0	9.0
			Max water flow	LPM		N/A	N/A	N/A	N/A	75	75	75	75
	Water Flow rate		Min.	L/min		7	7	7	7	7	7	7	7
			Max	L/min		58	58	58	58	58	58	58	58

Model Name			Indoor Unit		AE200DNWMPK/EU	AE200DNWMPK/EU	AE200DNWMPK/EU	AE200DNWMPK/EU	AE200DNXMPK/EU	AE200DNXMPK/EU	AE200DNXMPK/EU	AE200DNXMPK/EU
			Outdoor Unit		AE125HCTPES/EU	AE125HCTPGS/EU	AE160HCTPES/EU	AE160HCTPGS/EU	AE125HCTPES/EU	AE125HCTPGS/EU	AE160HCTPES/EU	AE160HCTPGS/EU
Outdoor Unit & Tank Hydro Unit Figure												
Hydro Unit	Backup Heater		Power	-	1Φ 2/4kW	3Φ 6kW	1Φ 2/4kW	3Φ 6kW	1Φ 2/4kW	3Φ 6kW	1Φ 2/4kW	3Φ 6kW
			Thermostat	℃	85±4	85±4	85±4	85±4	85±4	85±4	85±4	85±4
			Thermostat (Thermal Fuse)	℃	98 +0 -5	98 +0 -5	98 +0 -5	98 +0 -5	98 +0 -5	98 +0 -5	98 +0 -5	98 +0 -5
	Expansion Vessel		Internal Water Volume	liter	10	10	10	10	10	10	10	10
	Sound	Sound Pressure	Heating	dB (A)	28	28	28	28	30	30	30	30
			Cooling	dB (A)	28	28	28	28	30	30	30	30
		Sound Power	Heating	dB (A)	42	42	42	42	44	44	44	44
	External Dimension		Net Weight	kg	43	43	43	43	54	54	54	54
			Net Dimensions (WxHxD)	mm	530x840x360	530x840x360	530x840x360	530x840x360	530x840x360	530x840x360	530x840x360	530x840x360
outdoor unit	PowerSupply			Φ, #, V, Hz	1,2,220-240,50	3,4,380-415,50	1,2,220-240,50	3,4,380-415,50	1,2,220-240,50	3,4,380-415,50	1,2,220-240,50	3,4,380-415,50
	Compressor		Type	-	BLDC Twin Rotary	BLDC Twin Rotary	BLDC Twin Rotary	BLDC Twin Rotary	BLDC Twin Rotary	BLDC Twin Rotary	BLDC Twin Rotary	BLDC Twin Rotary
			Model Name		UB5TD8450FJX	UB5TD8450FJX	UB5TD8450FJX	UB5TD8450FJX	UB5TD8450FJX	UB5TD8450FJX	UB5TD8450FJX	UB5TD8450FJX
		Oil	Type	-	POE	POE	POE	POE	POE	POE	POE	POE
	Fan		Heating/ Cooling	m³/min	87/ 70	87/ 70	87/81	87/81	87/ 70	87/ 70	87/81	87/81
			Diameter of Fan	mm	630	630	630	630	630	630	630	630
	Base Heater			W	150	150	150	150	150	150	150	150
	Sound	Sound Pressure (Nominal)	Heating	dB (A)	49	49	49	49	49	49	49	49
			Cooling	dB (A)	51	51	55	55	51	51	55	55
		Sound Power (Nominal)	Heating	dB (A)	62	62	62	62	62	62	62	62
			Cooling	dB (A)	-	-	-	-	-	-	-	-
	External Dimension		Net Weight	kg	126.5	126.5	126.5	126.5	126.5	126.5	126.5	126.5
			Net Dimensions (WxHxD)	mm	1,270 x 850 x 500	1,270 x 850 x 500	1,270 x 850 x 500	1,270 x 850 x 500	1,270 x 850 x 500	1,270 x 850 x 500	1,270 x 850 x 500	1,270 x 850 x 500
	Operating Temp. Range		Heating	℃	-25~43	-25~43	-25~43	-25~43	-25~43	-25~43	-25~43	-25~43
			Cooling	℃	10~46	10~46	10~46	10~46	10~46	10~46	10~46	10~46
			DHW TANK	℃	-25~43	-25~43	-25~43	-25~43	-25~43	-25~43	-25~43	-25~43

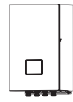
2-2 Specifications of optional items

2-2-1 Accessories

Item	Description	Code No.	Q'ty	Remark
	Drain-Plug Out	DB67-00477A	1	AE125/160HCTP*S
	Rubber Leg	DB73-20134A	4	AE125/160HCTP*S
	Installation Manual	DB68-13787A	1	AE125/160HCTP*S
	Instruction Manual	DB68-13789A	1	AE125/160HCTP*S
	Shut-off valve out (inc. Filter)	DB96-25958A	1	AE125/160HCTP*S
	Magnetic filter Opening tool	DB61-08246A	1	AE200DN*MPK AE160DN*MPK
	Bottom Decoration panel	DB90-13325A	1	AE200DN*MPK
	Pattern Sheet	DB69-02490B	1	AE160DN*MPK
	Wall Mounting Bracket	DB61-04402A	1	AE160DN*MPK
	Ring band	DB81-01572B	1	AE160DN*MPK
	Quick connector pipe (short)	DB96-26794A	3 4	AE160DNYMPK AE160DNZMPK
	Quick connector pipe (long)	DB96-26795A	2 3	AE160DNYMPK AE160DNZMPK
	Quick connector pipe (long with port)	DB96-26797A	1	AE160DN*MPK
	Quick connector clip	DB60-00565A	6 8	AE160DNYMPK AE160DNZMPK
	Gasket	DB67-01835A	8 10	AE160DNYMPK AE160DNZMPK
	O-ring	6044-002510	2	AE160DN*MPK

2-3 Product compatibility

2-3-1 Indoor unit compatibility

Indoor unit		LSP Duct	MSP Duct	QMD RAC	1way cassette	Wall mounted hydro unit	Tank integrated hydro unit	Control kit
Outdoor unit								
Classification	Features	2.2~5.6 kW	3.6~9.0 kW	1.5~7.1 kW	1.7~5.6 kW	16.0 kW	200 L	
	- Heat pump for heating and hot water system [Eco Heating Full System] - Outdoor unit: 12.5/16.0 kW - Long pipe reliability: 75m	AM022DNLDKG	AM036DNMDKG	AE015HEADKG	AM017DN1DKG	AE160DNYMPK	AE200DNWMPK	MIM-E03FN
		AM028DNLDKG	AM056DNMDKG	AE022HEADKG	AM022DN1DKG	AE160DNZMPK	AE200DNXMPK	-
		AM036DNLDKG	AM071DNMDKG	AE028HEADKG	AM028DN1DKG	-	-	-
		AM056DNLDKG	AM090DNMDKG	AE036HEADKG	AM036DN1DKG	-	-	-
		-	-	AM056DNVDKG	AM056DN1DKG	-	-	-
		-	-	AM071DNVDKG	-	-	-	-

2-3-2 Subsidiary materials compatibility

Indoor unit Subsidiary materials		LSP Duct	MSP Duct	RAC		1 Way Cassette	Remark
		 2.2~5.6 kW	 3.6~9.0 kW	 1.5~3.6 kW	 5.6~7.1 kW	 1.7~5.6 kW	
EEV Kit	 EEV Kit for 1/2/3 room	-	-	MXD-J24K200A MXD-J24K300A	-	-	Requisite
Y-joint		MXJ-YA1509M (≤15.0kW and below)					Requisite
Drain Pump		MDP-Z075SZED (Option, Internal Type)	MDP-G075SP (Option, External Type) MDP-G075SQ (Option, Internal Type)	-			-
Wireless remote controller		AR-EH03E (Option)					-
		AR-CH01* (Option)					-
Remote controller receive kit		MRK-A10N (Option)		-			-
Wired remote controller		MWR-WG01JN/KN					Requisite

NOTE

- Subsidiary materials are compatible with DVM products.
- EEV KIT: Required installation. It is not included inside of product. Install distribution kit for 1, 2 or 3 indoor on the ceiling or outdoor area.

3. Disassembly and Reassembly

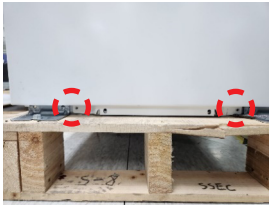
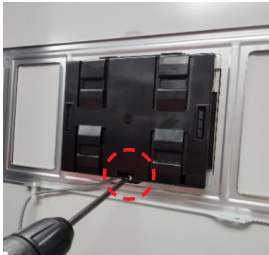
■ Hand Tool sets

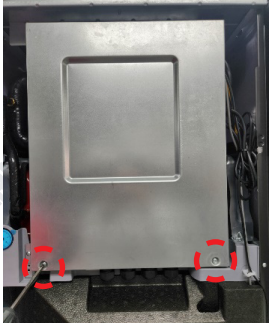
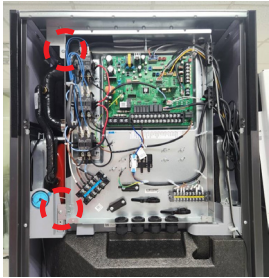
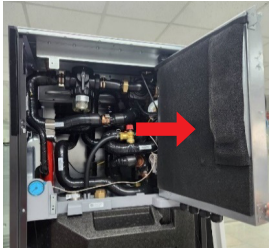
Item	Remark
+Screw Driver	
Adjustable wrench	
-Screw Driver	
Nipper	
Electric Motion Driver	
L-Wrench	
Torque Lench	
Latchet Lench	
Leak Detector	

NOTE

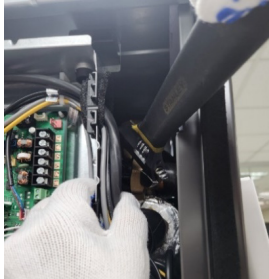
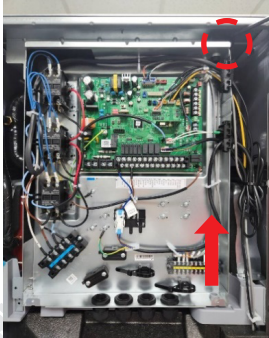
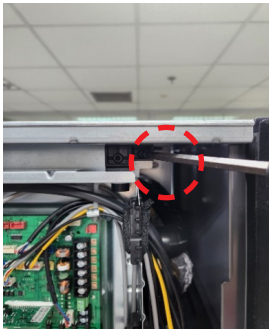
- Leak detector shall be set at percentage of LFL of the refrigerant and shall be calibrated to the refrigerant employed and the appropriate percentage of the of gas (25% maximum) is confirmed.

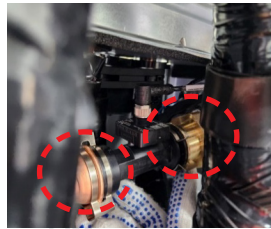
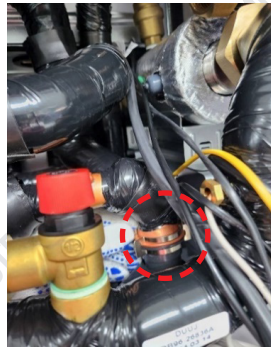
■ AE200DNWMPK/EU

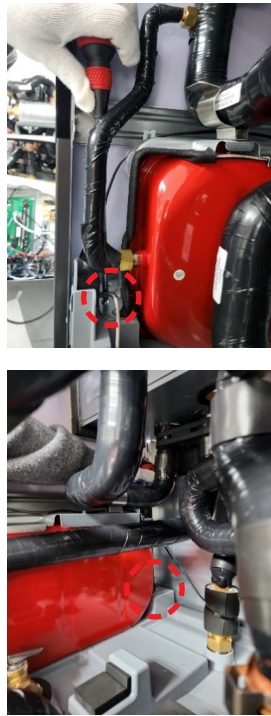
No	Parts	Procedure	Remark
1	PANEL	1) Remove Decoration panel from the front cabinet	 
		2) Remove 2 screws from the front cabinet.	
		3) Remove the front cabinet by lifting it up and pulling it out	
2	Controller	1) Remove 1 screw at the bottom of the rear case cover.	

No	Parts	Procedure	Remark
2	Controller	2) Pull the controller out	
		3) Remove the rear cover of the controller.	
		4) Cut the cable tie on the wire and remove the connector from the PCB board.	
3	MAGNETIC FILTER	1) Remove 2 screws and the control box cover.	
		2) Remove 2 screws on the left side of the control box and open the control box.	 

No	Parts	Procedure	Remark
3	MAGNETIC FILTER	3) Rotate the magnetic filter's valve clockwise by using the opening tool provided in the accessory.	
		4) Remove the cover of the filter by using the opening tool to check for the filter inside.	 
		5) Remove 2 quick connector clips and separate the magnetic filter from the pipes.	

No	Parts	Procedure	Remark
4	Water Pump (Main)	1) Remove 2 nuts and separate the water pump from the pipes. (Use adjustable wrench 350~380 kgf*cm)	 
5	Control Box	1) Remove 1 screw of the upper hinge and separate the control box.	  

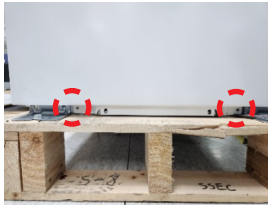
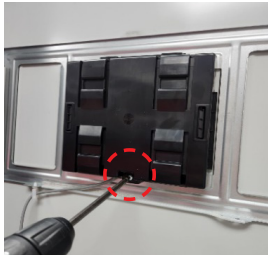
No	Parts	Procedure	Remark
6	Flow Sensor	1) Remove 2 quick connector clips and separate the flow sensor from the pipes.	
7	Backup Heater	1) Remove 1 nut and separate the backup heater from the pipe. (Use adjustable wrench 350~380 kgf*cm)	 
8	3 Way Valve	1) Remove 3 quick connector clips and separate the 3 way valve from the pipes.	 

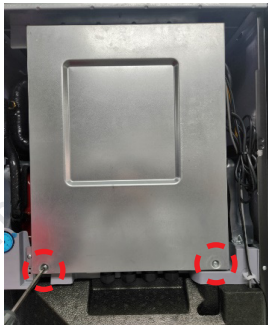
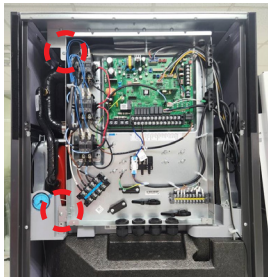
No	Parts	Procedure	Remark
9	Expansion Vessel		
10	Anode Bar	1) Rotate the cap of the Anode Bar.	

No	Parts	Procedure	Remark
10	Anode Bar	2) Pull the Anode Bar up to remove it.	 
11	Manometer	1) Rotate the nut and separate it from the pipe. (Use adjustable 92~102 kgf*cm)	
		2) Remove the Manometer from the drain pan by pressing 2 hooks on the back.	
12	Tank sensor	1) Remove EPP cover on the left side of the tank.	

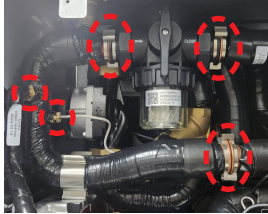
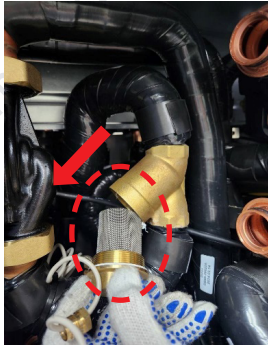
No	Parts	Procedure	Remark
12	Tank sensor	2) Rotate the plastic nut	
		3) Take the tank sensor out.	

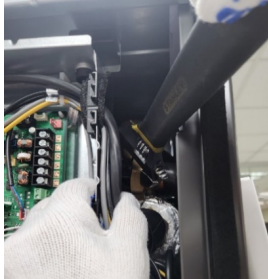
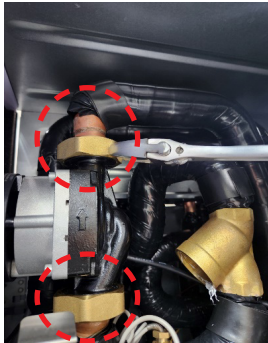
■ AE200DNXMPK/EU

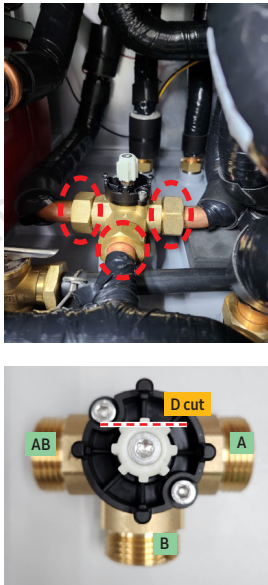
No	Parts	Procedure	Remark
1	PANEL	1) Remove Decoration panel from the front cabinet.	 
		2) Remove 2 screws from the front cabinet.	
		3) Remove the front cabinet by lifting it up and pulling it out	
2	Controller	1) Remove 1 screw at the bottom of the rear case cover.	

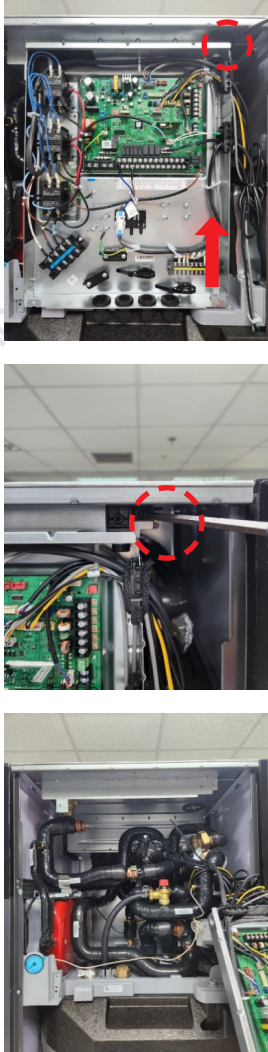
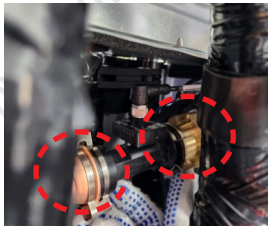
No	Parts	Procedure	Remark
2	Controller	2) Pull the controller out	
		3) Remove the rear cover of the controller.	
		4) Cut the cable tie on the wire and remove the connector from the PCB board.	
3	MAGNETIC FILTER	1) Remove 2 screws and the control box cover.	
		2) Remove 2 screws on the left side of the control box and open the control box.	 

No	Parts	Procedure	Remark
3	MAGNETIC FILTER	3) Rotate the magnetic filter's valve clockwise by using the opening tool provided in the accessory.	
		4) Remove the cover of the filter by using the opening tool to check for the filter inside.	 
		5) Remove 2 quick connector clips and separate the magnetic filter from the pipes.	

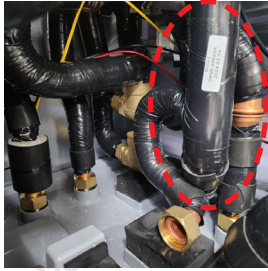
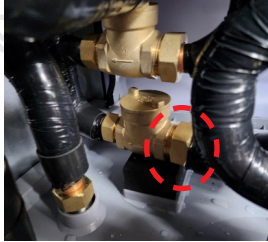
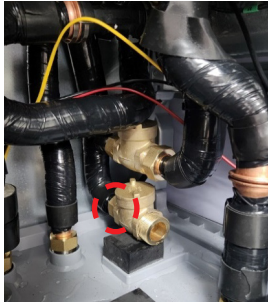
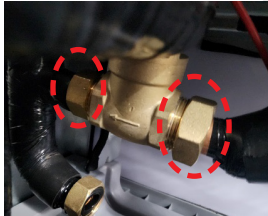
No	Parts	Procedure	Remark
4	Strainer	1) Remove 2 quick connector clips to remove the magnetic filter. Then, remove 1 quick connector clip and 2 nuts to remove the long pipe. (Use adjustable wrench 120~150 kgf·cm)	 
		2) Remove the cap of strainer by adjustable wrench. (Use adjustable wrench 350~380 kgf·cm)	
		3) Disassemble the filter of strainer.	

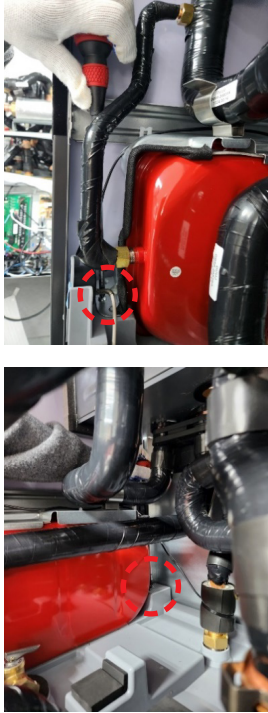
No	Parts	Procedure	Remark
5	Water Pump (Main)	1) Remove 2 nuts and separate the water pump from the pipes. (Use adjustable wrench 350~380 kgf*cm)	 
6	Water Pump (Zone 1)	1) Remove 2 nuts and separate the water pump from the pipes. (Use adjustable wrench 350~380 kgf*cm)	 

No	Parts	Procedure	Remark
7	Mixing Valve	1) Remove the head of mixing valve while pressing the button on the side.	
		2) Remove 3 nuts and separate the mixing valve from the pipes. ※ Check the direction when you assemble it.	

No	Parts	Procedure	Remark
8	Control Box	1) Remove 1 screw of the upper hinge and separate the control box.	
9	Flow Sensor	1) Remove 2 quick connector clips and separate the flow sensor from the pipes.	

No	Parts	Procedure	Remark
10	Backup Heater	1) Remove 1 nut and separate the backup heater from the pipe. (Use adjustable wrench 350~380 kgf*cm)	 
11	3 Way Valve	1) Remove 3 quick connector clips and separate the 3 way valve from the pipes.	 

No	Parts	Procedure	Remark
12	Check Valve	1) Remove 1 nut of the lower check valve and separate the pipe assembly on the front.	 
		2) Remove the other nut to separate the lower check valve.	
		3) Separate the upper check valve by removing 2 nuts.	

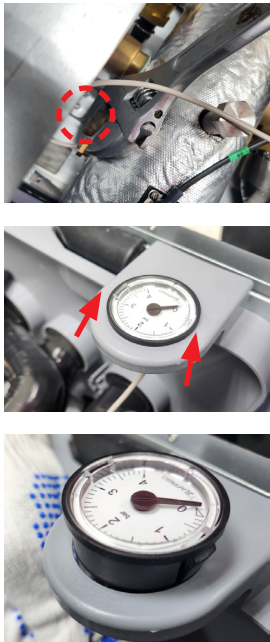
No	Parts	Procedure	Remark
13	Expansion Vessel		
14	Anode Bar	1) Rotate the cap of the Anode Bar.	

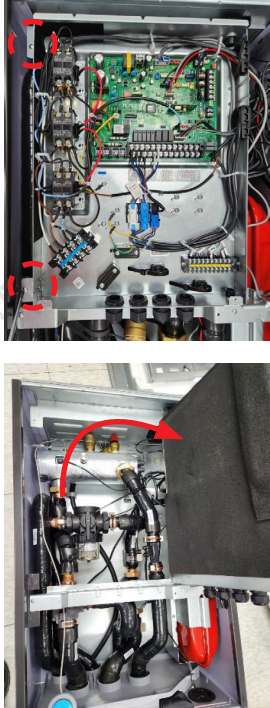
No	Parts	Procedure	Remark
14	Anode Bar	2) Pull the Anode Bar up to remove it.	 
15	Manometer	1) Rotate the nut and separate it from the pipe. (Use adjustable 92~102 kgf*cm)	
		2) Remove the Manometer from the drain pan by pressing 2 hooks on the back.	
16	Tank sensor	1) Remove EPP cover on the left side of the tank.	

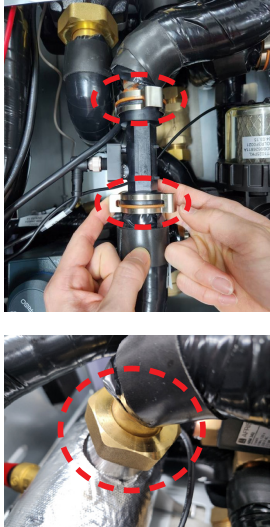
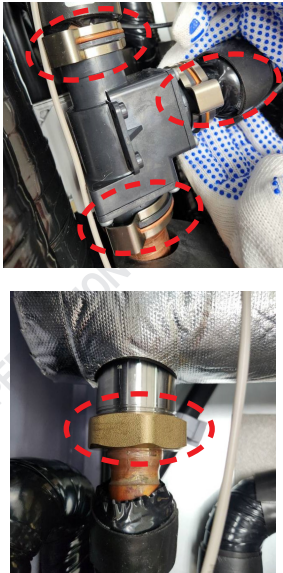
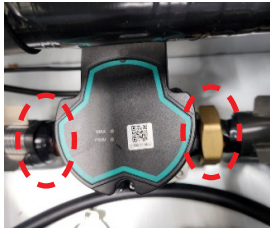
No	Parts	Procedure	Remark
16	Tank sensor	2) Rotate the plastic nut	
		3) Take the tank sensor out.	

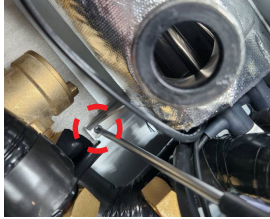
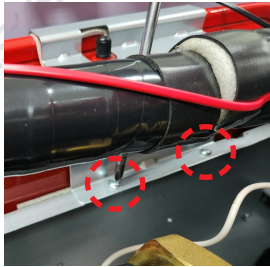
■ AE160DNYMPK/EU

No	Parts	Procedure	Remark
1	PANEL	1) Remove 2 cover screws from the Hydro unit. (Use '+' type screw driver)	
2	Control box	1) Remove 2 screws from it (Use '+' type screw driver) and open the cover of control box. 2) Remove 1 screw from it. (Use '+' type screw driver) 3) Remove 1 screw (Use '+' type screw driver) and take control box out.	  

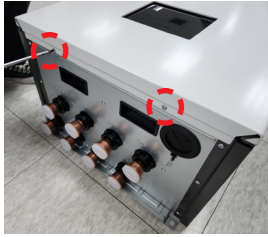
No	Parts	Procedure	Remark
3	MANOMETER	1) Disassemble the pressure sensor from Back Up Heater by adjustable wrench. (Use adjustable wrench 92~102kgf·cm) 2) Pull the manometer out.	
4	Controller	1) Remove 1 screw. (Use '+' type screw driver) 2) Pull the remocon up and take it out. 3) Disassemble the cover of remocon. 4) Disassemble the connector of remocon.	

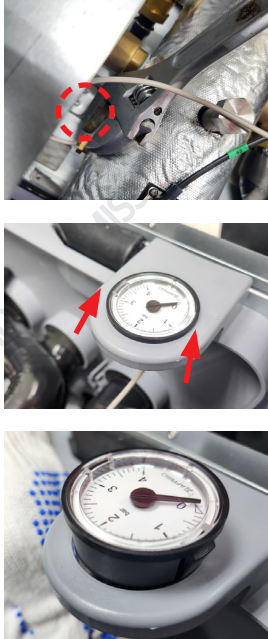
No	Parts	Procedure	Remark
5	Control box (open)	For simple service, just open the control box, without taking it out. 1) Remove 2 screws from it. (Use '+' type screw driver) 2) Open the control box to designated direction.	
6	Magnetic filter	1) Rotate the valve of magnetic filter using the supplied tool to designated direction. 2) Remove the cap of magnetic filter using the supplied tool. 3) Disassemble the filter inside the magnetic filter. 4) For removing magnetic filter, remove 2 clips and disassemble it.	

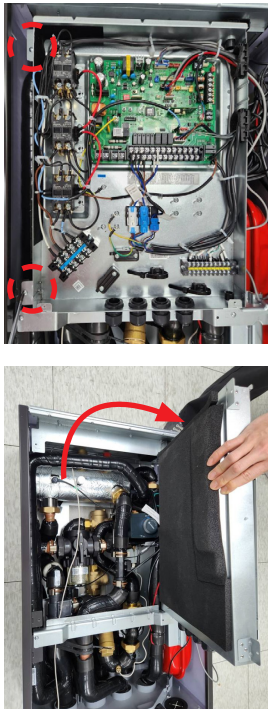
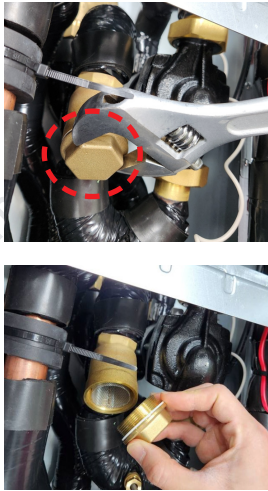
No	Parts	Procedure	Remark
7	Flow sensor	1) Disassemble 2 clips. 2) Remove the nut connected to back up heater using adjustable wrench and remove flow sensor. (Use adjustable wrench 350~380kgf·cm)	
8	3 Way valve	1) Remove 3 clips of 3way valve. 3) Remove the nut connected to back up heater using adjustable wrench and disassemble 3way valve. (Use adjustable wrench 350~380kgf·cm)	
9	Water pump (main)	1) Remove 2 nuts from water pump using adjustable wrench (Use adjustable wrench 350~380kgf·cm)	

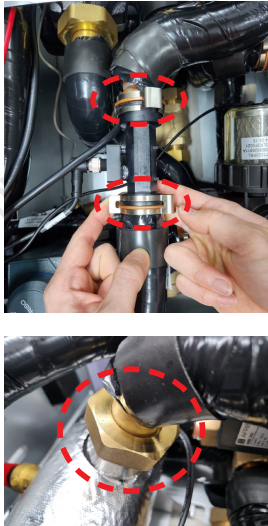
No	Parts	Procedure	Remark
10	Back Up Heater	1) Remove 3 screws from back up heater and remove it.	  
11	Expansion vessel	1) Remove 1 nut connected to expansion vessel using adjustable wrench. 2) Remove 2 screws from expansion vessel bracket and remove it.	 

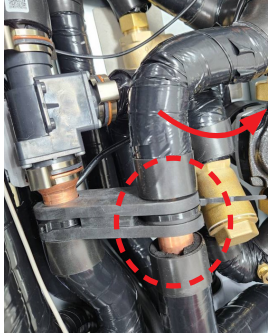
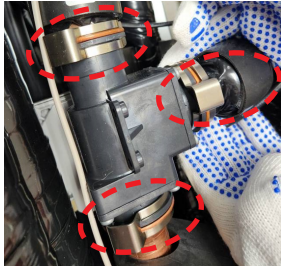
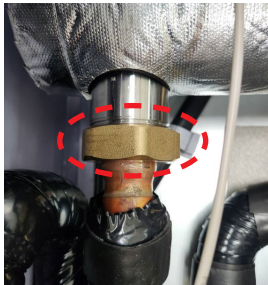
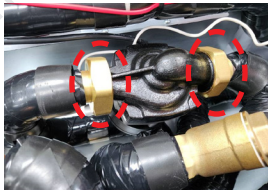
■ AE160DNZMPK/EU

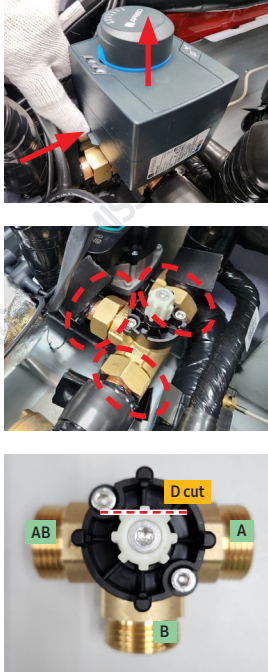
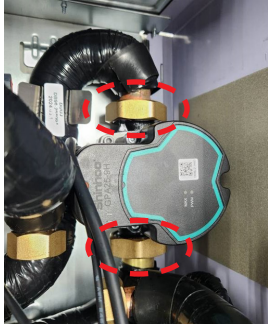
No	Parts	Procedure	Remark
1	Panel	1) Remove 2 cover screws from the Hydro unit. (Use '+' type screw driver)	
2	Control box	1) Remove 2 screws from it (Use '+' type screw driver) and open the cover of control box. 2) Remove 1 screw from it. (Use '+' type screw driver) 3) Remove 1 screw (Use '+' type screw driver) and take control box out.	  

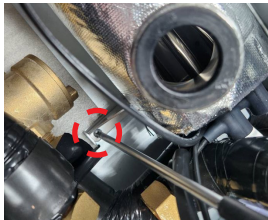
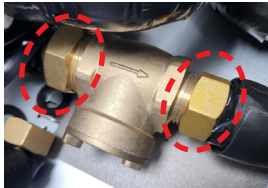
No	Parts	Procedure	Remark
3	Manometer	1) Disassemble the pressure sensor from Back Up Heater by adjustable wrench. (Use adjustable wrench 92~102kgf-cm) 2) Pull the manometer out.	
4	Controller	1) Remove 1 screw. (Use '+' type screw driver) 2) Pull the remocon up and take it out. 3) Disassemble the cover of remocon. 4) Disassemble the connector of remocon.	

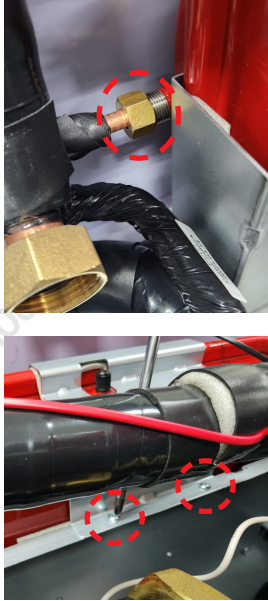
No	Parts	Procedure	Remark
5	Control box (open)	For simple service, just open the control box, without taking it out. 1) Remove 2 screws from it. (Use '+' type screw driver) 2) Open the control box to designated direction.	
6	Strainer	1) Remove the cap of strainer by adjustable wrench. (Use adjustable wrench 350~380kgf·cm) 2) Disassemble the filter of strainer.	

No	Parts	Procedure	Remark
7	Magnetic filter	1) Rotate the valve of manetic filter using the supplied tool to designated direction. 2) Remove the cap of magnetic filter using the supplied tool. 3) Disassemble the filter inside the magnetic filter. 4) For removing magetic filter, remove 2 clips and disassemble it.	
8	Flow sensor	1) Disassemble 2 clips. 2) Remove the nut connected to back up heater using adjustable wrench and remove flow sensor. (Use adjustable wrench 350~380kgf·cm)	

No	Parts	Procedure	Remark
9	3 Way valve	1) Remove the cable tie and move the pipe to designated direction. 2) Remove 3 clips of 3way valve. 3) Remove the nut connected to back up heater using adjustable wrench and disassemble 3way valve. (Use adjustable wrench 350~380kgf·cm)	  
10	Water pump (main)	1) Remove 2 nuts from water pump using adjustable wrench (Use adjustable wrench 350~380kgf·cm)	

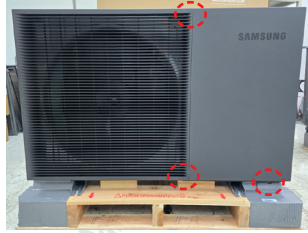
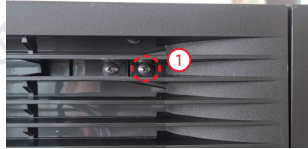
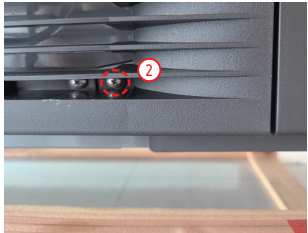
No	Parts	Procedure	Remark
11	Mixing valve	1) Push the button on the side of mixing valve and remove the head of it. 2) Remove 3 nuts using adjustable wrench. ※ Check the direction when you assembl it.	
12	Water pump (zone 1)	1) Remove 2 nuts from water pump using adjustable wrench (Use adjustable wrench 350~380kgf·cm)	

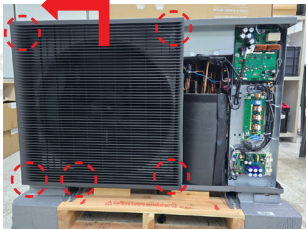
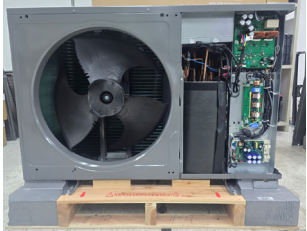
No	Parts	Procedure	Remark
13	Back Up Heater	1) Remove 3 screws from back up heater and remove it.	  
14	Check valve	1) Remove 2 screws for each check valve, and disassemble it using adjustable wrench.	 

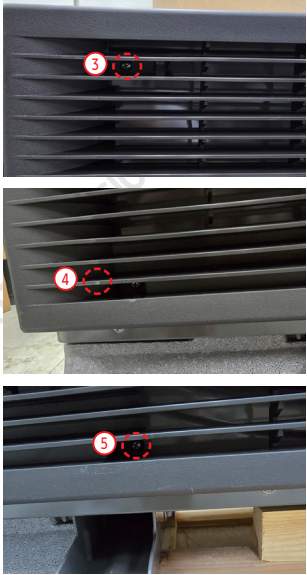
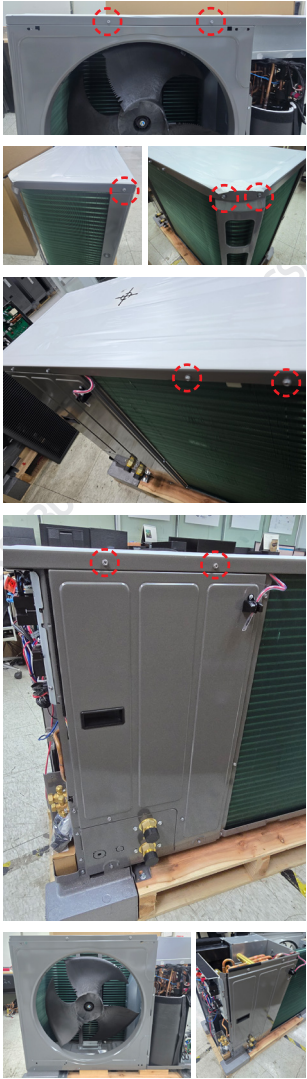
No	Parts	Procedure	Remark
15	Expansion vessel	1) Remove 1 nut connected to expansion vessel using adjustable wrench. 2) Remove 2 screws from expansion vessel bracket and remove it.	

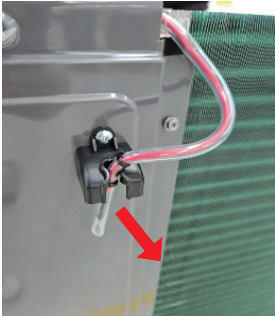
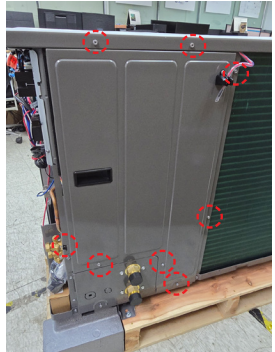
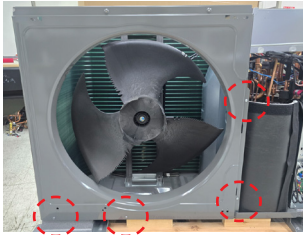
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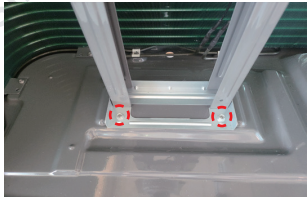
No	Parts	Procedure	Remark
1	CABI SIDE RH	⚠ You must turn off the power before disassembling. 1) Unscrew and remove 3 screws on the CABI SIDE RH. (Use '+' type screw driver) 2) Hold CABI SIDE RH handle and push to downside. Pull the left side of Cabinet and remove it.	

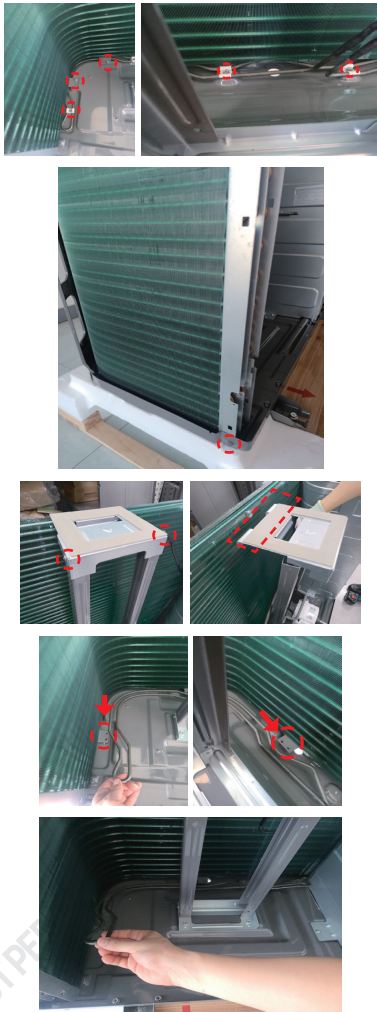
No	Parts	Procedure	Remark
2	COVER FRONT	1) Unscrew and remove 3 screws on the COVER FRONT. (Use '+' type screw driver) 2) Hold Top and Bottom of the COVER FRONT and push it to right side.	    

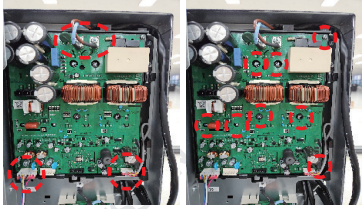
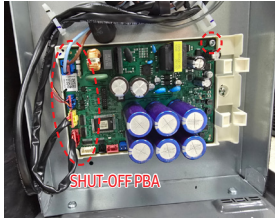
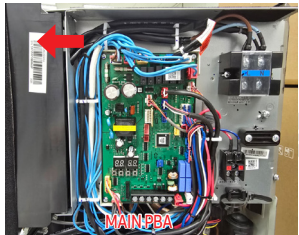
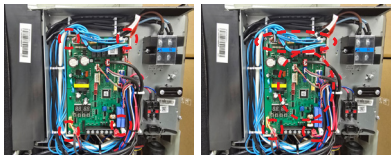
No	Parts	Procedure	Remark
3	CABI FRONT RH	1) Unscrew and remove 3 screws on the CABI FRONT RH. (Use '+' type screw driver) 2) Hold the handle and pull the right-bottom side of cabinet. 3) Remove the CABI FRONT RH to downside.	 
4	GUARD FAN	1) Unscrew and remove 5 screws on the GUARD FAN. (Use '+' type screw driver) 2) Remove it to up and left side.	   

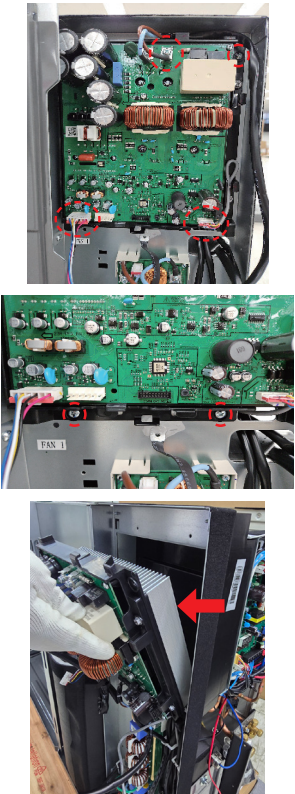
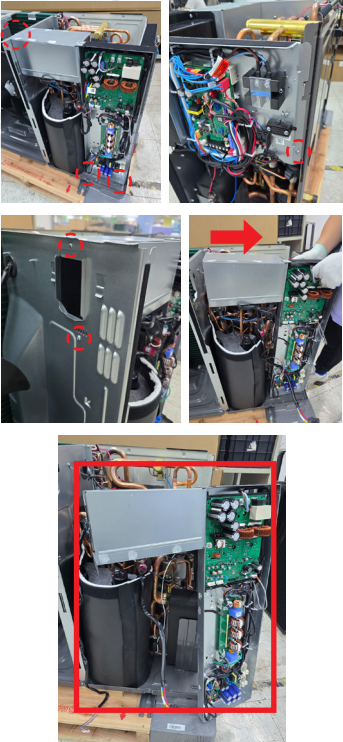
No	Parts	Procedure	Remark
4	GUARD FAN		
5	CABI TOP	1) Unscrew and remove 9 screws on the CABI TOP. (Use '+' type screw driver)	

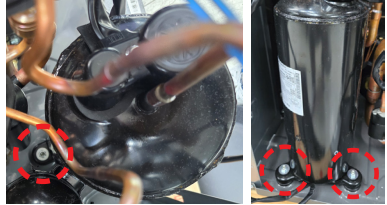
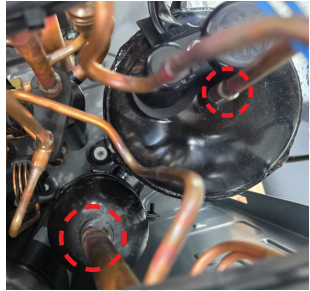
No	Parts	Procedure	Remark
6	CABI BACK RH	* You can remove the CABI BACK RH before disassembling CABI TOP. 1) Remove the temperature sensor. 2) Unscrew and remove 9 screws on the CABI BACK RH. (Use '+' type screw driver)	  
7	CABI FRONT LF	1) Unscrew and remove 5 screws on the CABI FRONT LF. (Use '+' type screw driver)	 

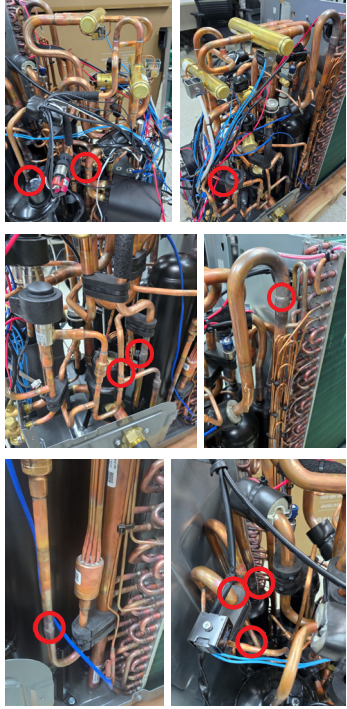
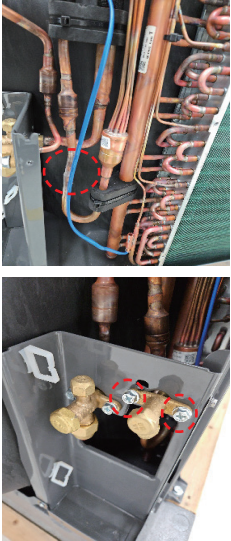
No	Parts	Procedure	Remark
8	FAN	1) Remove the nut. (Use the Wrench) 2) Remove the fan.	
9	MOTOR	1) Disconnect the motor wire from the Inverter PBA 2) Loosen the 4 Holder wire points which are fixing the motor wire 3) Unscrew and remove 4 motor screws.	
10	BRACKET MOTOR	1) Unscrew and remove 2 screws on the BRACKET MOTOR. (Use '+' type screw driver)	

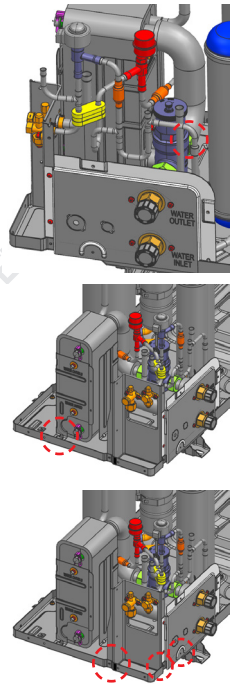
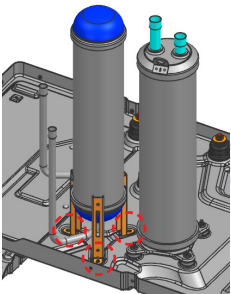
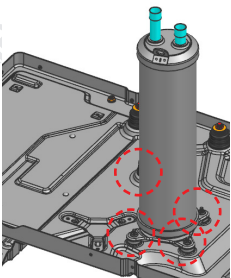
No	Parts	Procedure	Remark
11	HEATER	1) Unscrew and remove 4 screws on the HEATER. (Use '+' type screw driver) 2) Unscrew and remove 1 screw on the COND & BASE 3) Unscrew and remove 2 screws on the BRACKET MOTOR TOP and remove it from the Cond. 4) Pull the COND and move 2EA COND SUPPORT like right picture. 5) Remove the heater.	

No	Parts	Procedure	Remark
12-1	CONTROL OUT_PBA	[INVERTER PBA] 1) Disconnect 4 connectors from the Inverter PBA 2) Unscrew and remove 6 screws with Heatsink. 3) Unscrew and remove 4 screws from Case PCB [EMI PBA] 1) Unscrew and remove 5 screws 2) Unscrew and remove 2 screws from 2 pin terminal block beside the Main PBA 3) Unscrew and remove 2 screws from Inverter PBA [SHUT-OFF PBA] 1) Disconnect 4 connectors from the Shut-off PBA 2) Unscrew and remove 1 screw [MAIN PBA] 1) Disconnect connectors from the Main PBA. 2) Unscrew and remove 4 screws	     

No	Parts	Procedure	Remark
12-2	CONTROL OUT_HEAT SINK SERVICE	[MAIN PBA] 1) Disconnect 3 connectors from the Main PBA. 2) Unscrew and remove 3 screws. 3) Remove Case PCB with Heat sink.	
12-3	ASSY C-BOX	* If you want to service comp and pipe more easily, remove the ASSY C-BOX following below instruction 1) Unscrew and remove 6 screws 2) Remove ASSY C-BOX (Refer to the right photo)	

No	Parts	Procedure	Remark
13	COMPRESSOR	1) Remove the all COMP FELT ① Felt-Comp Top In ② Felt-Comp Out ③ Felt-Comp Side 2) Unscrew the CONNECTOR NUT and CONNECTOR. 3) Unscrew and remove 3 nuts. 4) Separate the pipes from Comp.	   

No	Parts	Procedure	Remark
14	ASSY TUBE 4WAY	1) Separate the pipes from the ASSY TUBE 4WAY (9 points)	
15	ASSY TUBE EEV	1) Separate the pipes from the ASSY TUBE EEV (1 yellow point) 2) Unscrew and remove 2 screws of the liquid service valve from the bracket.	

No	Parts	Procedure	Remark
16	ASSY TUBE SUBCOOLER	1) Separate the pipes from the ASSY TUBE SUBCOOLER (1 points) 2) Unscrew and remove 1 screw from PHE bracket. 3) Unscrew and remove 3 screw from Service valve bracket.	
17	ASSY TUBE CONNECTOR -RECEIVER	1) Unscrew and remove 3 screws from receiver.	
18	ASSY TUBE CONNECTOR -ACCUM	1) Unscrew and remove 4 screws from accumulator.	

4. Troubleshooting

4-1 Wired remote controller

- Press the Test button to see the error code.

Display	Explanation	Error Source
105	Wi-Fi communication error	HYDRO UNIT
108	Setting Address Duplicate Error	OUTDOOR UNIT, CONTROL KIT
109	Address incomplete communication error	HYDRO UNIT
E116	Refrigerant Leak Detection Sensor Short/Open/Abnormal Signal Error	INDOOR UNIT (ONLY AE1**HCTP*S/EU MODEL)
E118	Indoor Unit Fan Controller PCB Overheat Error	INDOOR UNIT (ONLY AE1**HCTP*S/EU MODEL)
120	Zone2 Indoor Room Temperature Sensor Short/Open	CONTROL KIT
121	Error of ROOM Temperature Sensor in Indoor unit short/open	CONTROL KIT
122	Error of Evaporator_in Sensor of Indoor unit short/open	CONTROL KIT
123	Error of Evaporator_out Sensor of Indoor unit short/open	CONTROL KIT
E128	Indoor Unit Eva In Sensor Disconnection	INDOOR UNIT (Only AE1**HCTP*S/EU Model)
E129	Indoor Unit Eva Out Sensor Disconnection	INDOOR UNIT (Only AE1**HCTP*S/EU Model)
E151	Indoor Unit EEV Open Error (2nd Detection)	INDOOR UNIT (Only AE1**HCTP*S/EU Model)
E152	Indoor Unit EEV Closure Failure (2nd Detection)	INDOOR UNIT (Only AE1**HCTP*S/EU Model)
E153	Indoor Unit Floating Switch Error (2nd Detection)	INDOOR UNIT (Only AE1**HCTP*S/ EU Model)
E154	Indoor Unit Fan Error	INDOOR UNIT (Only AE1**HCTP*S/EU Model)
162	Outdoor UNIT EEPROM Error	OUTDOOR UNIT
163	EEPROM OPTION SETTING Error	OUTDOOR UNIT
177	In hydro box, take place emergency signal Error	CONTROL KIT
E198	Thermal Fuse Error	INDOOR UNIT (Only AE1**HCTP*S/EU Model)
201	CONTROL KIT/ Outdoor UNIT Communication Error (Matching Error)	OUTDOOR UNIT
202	CONTROL KIT/ Outdoor UNIT Communication Error	OUTDOOR UNIT
203	Communication error between indoor/ outdoor INV <-> MAIN MICOM (4~6min)	OUTDOOR UNIT
205	Communication Error Between Outdoor Unit Inv Micom - Fan Motor Micom	OUTDOOR UNIT
E206	C005: ShutOff Micom 통신에러	OUTDOOR UNIT (Only AE1**HCTP*S/EU Model)
221	Outdoor Temperature Sensor Error(open/short)	OUTDOOR UNIT
231	COND_OUT Main Temperature Sensor Error (open/short)	OUTDOOR UNIT
E232	Cond In Sensor Short/Open	OUTDOOR UNIT (Only AE1**HCTP*S/EU Model)
241	COND OUT Sensor of Outdoor Unit breakaway Error	OUTDOOR UNIT
251	Discharge Temperature Sensor Error (open/short)	OUTDOOR UNIT
262	Discharge Sensor breakaway Error	OUTDOOR UNIT
266	Comp Top Sensor breakaway Error	OUTDOOR UNIT
269	SUCTION Sensor breakaway Error	OUTDOOR UNIT
276	Compressor Top Temperature Sensor Error (open/short)	OUTDOOR UNIT

Wired remote controller (cont.)

Display	Explanation	Error Source
291	High Pressure Sensor Error (open/short)	OUTDOOR UNIT
296	Low Pressure Sensor Error (open/short)	OUTDOOR UNIT
308	Suction Sensor Error (open/short)	OUTDOOR UNIT
321	EVI Inlet Sensor Error (open/short)	OUTDOOR UNIT
322	EVI Outlet Sensor Error (open/short)	OUTDOOR UNIT
381	Inverter1 PCB overheat error	OUTDOOR UNIT
403	Protect for Freezing Control Error	OUTDOOR UNIT
404	Protection of OUTDOOR UNIT when it is overload	OUTDOOR UNIT
407	COMP down due to High Pressure Sensor Protection Control	OUTDOOR UNIT
410	COMP down due to Low Pressure Sensor Protection Control	OUTDOOR UNIT
416	Comp down due to discharge Temperature	OUTDOOR UNIT
425	Outdoor Reverse Phase or Missing Phase Detect Error	OUTDOOR UNIT
428	COMP down by Compression Ratio control Error	OUTDOOR UNIT
436	Protect for Freezing Burst Control Error	OUTDOOR UNIT
438	EVI EEV Opening Error	OUTDOOR UNIT
439	Refrigerant Leakage Error (Detect when the system is not operated)	OUTDOOR UNIT
440	Forbid Heat mode Operation when Outdoor Temperature is over 43°C	OUTDOOR UNIT
441	Forbid Cooling Mode when Outdoor Temperature is Low 10°C	OUTDOOR UNIT
E442	Heating Charging Operation Startup Prohibited	OUTDOOR UNIT (Only AE1**HCTP*S/EU Model)
443	No startup due to Low pressure	OUTDOOR UNIT
450	Error due to high cond temperature	OUTDOOR UNIT
458	Outdoor unit Fan Error	OUTDOOR UNIT
461	[Inverter] COMP Operating failure	OUTDOOR UNIT
462	All currency control COMP Stop Or CT2 Low currency	OUTDOOR UNIT
463	OLP over heat and comp stop	OUTDOOR UNIT
464	[Inverter] DC peak Error	OUTDOOR UNIT
465	Compressor V limit Error	OUTDOOR UNIT
466	[Inverter] DC-Link voltage under/over Error	OUTDOOR UNIT
467	COMP Revolute Error	OUTDOOR UNIT
468	[Inverter] Comp Current Sensor Error	OUTDOOR UNIT
469	DC Link Sensor Error	OUTDOOR UNIT
471	Outdoor unit EEPROM Read/Write Error (OTP error)	OUTDOOR UNIT
474	[Inverter] IPM Heat Sink Error	OUTDOOR UNIT
475	Outdoor unit BLDC Fan Error	OUTDOOR UNIT
483	H/W DC_link over voltage Error	OUTDOOR UNIT
484	PFC Overload Error	OUTDOOR UNIT
485	[Inverter] Input Current Sensor Error (open/short)	OUTDOOR UNIT
488	AC Input Voltage Sensor Error	OUTDOOR UNIT
500	IPM Overheat Error for Inverter COMP	OUTDOOR UNIT
536	PHE refrigerant leak Error	OUTDOOR UNIT
554	GasLeak Error	OUTDOOR UNIT
507	Comp Down due to high pressure or High Pressure Switch Open	OUTDOOR UNIT

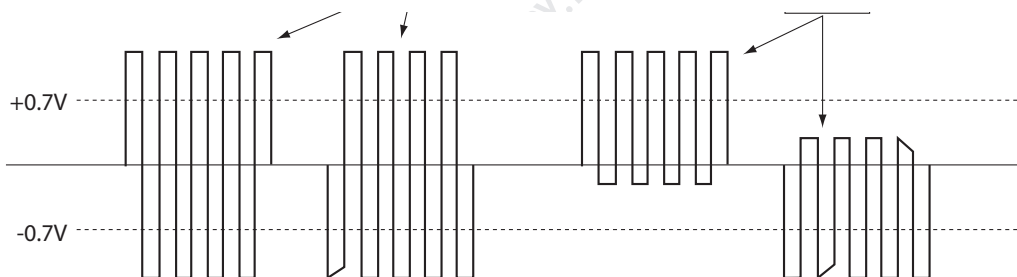
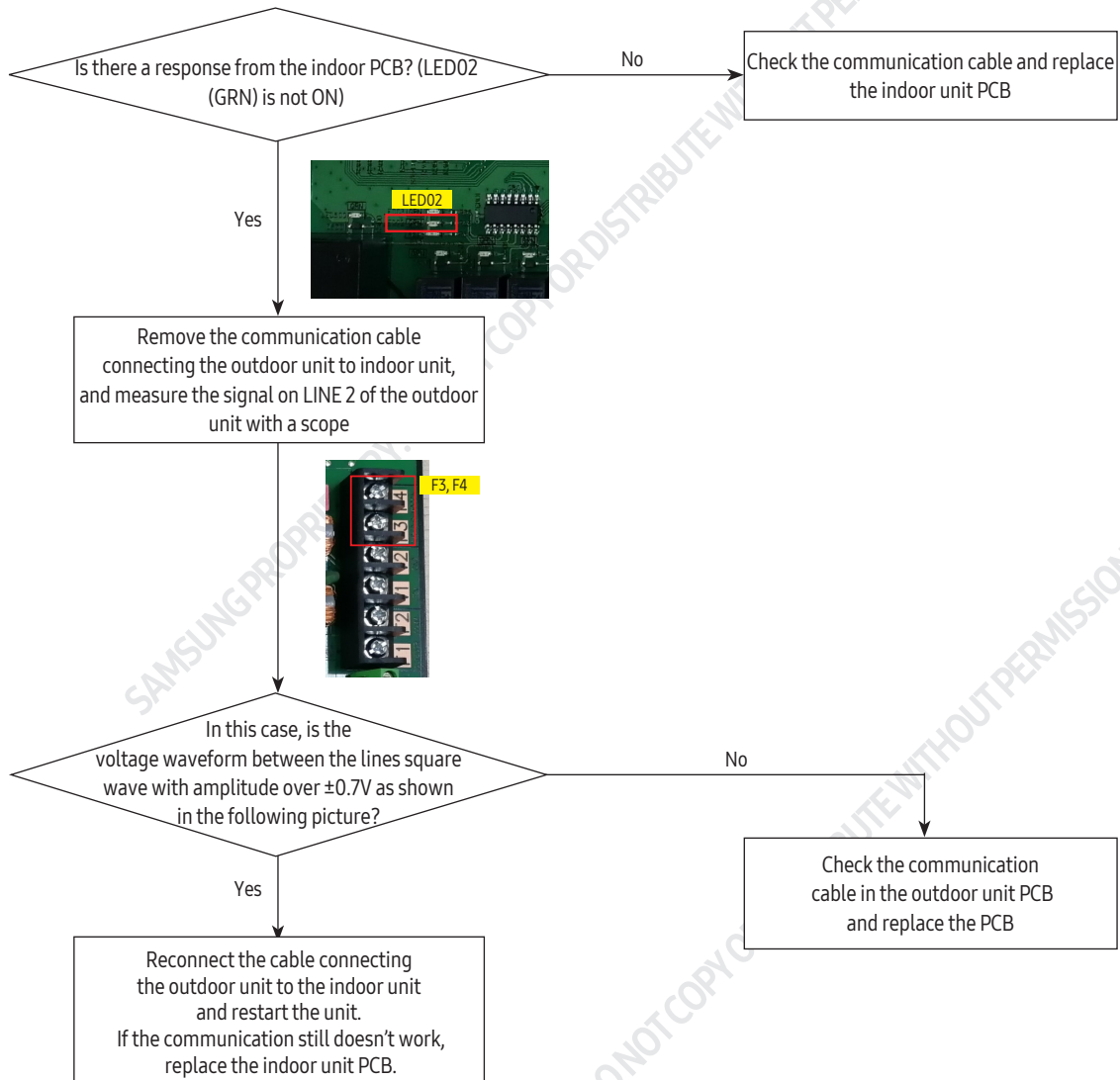
Wired remote controller (cont.)

Display	Explanation	Error Source
563	INDOOR UNIT Mixed Install Error	OUTDOOR UNIT
590	[Inverter] Data flash Error	OUTDOOR UNIT
E601	Wired remote controller ↔ Indoor Unit Communication Error	INDOOR UNIT (Only AE1**HCTP*S/EU Model)
E641	Wired remote controller ↔ Indoor Unit Communication Error (Indoor Unit Side Occurrence)	INDOOR UNIT (Only AE1**HCTP*S/EU Model)
670	Controller combination error	HYDRO UNIT
E694	R32 Indoor Unit and Wired Remote Control Installation Combination Error	INDOOR UNIT (Only AE1**HCTP*S/EU Model)
E695	Refrigerant Leak Detection Sensor Lifetime Prediction Error	INDOOR UNIT (Only AE1**HCTP*S/EU Model)
E697	Refrigerant Leak Detection Error	INDOOR UNIT (Only AE1**HCTP*S/EU Model)
E698	Refrigerant Leak Detection Sensor Failure Error	INDOOR UNIT (Only AE1**HCTP*S/EU Model)
E699	Refrigerant Leak Detection Sensor Replacement Notification Error	INDOOR UNIT (Only AE1**HCTP*S/EU Model)
E700	Refrigerant Leak Detection Sensor Lifetime Expiry Error	INDOOR UNIT (Only AE1**HCTP*S/EU Model)
E702	Indoor Unit EEV Closure Failure (1st Detection)	INDOOR UNIT (Only AE1**HCTP*S/EU Model)
E703	Indoor Unit EEV Open Error (1st Detection)	INDOOR UNIT (Only AE1**HCTP*S/EU Model)
896	Water outlet temperature sensor(Tw5) for external heater short/open	HYDRO UNIT
897	Water TANK Inlet Thermistor SHORT or OPEN	CONTROL KIT
899	Zone1 Tw Temperature Sensor Short/Open	CONTROL KIT
900	Zone2 Tw Temperature Sensor Short/Open	CONTROL KIT
901	Water Inlet Sensor Error (open/short)	OUTDOOR UNIT
902	Water Outlet Sensor Error (open/short)	OUTDOOR UNIT
904	Water TANK Sensor SHORT/ OPEN	CONTROL KIT
906	Outdoor EVA in Sensor Error (open/short)	OUTDOOR UNIT
907	Error due to pipe rupture protection	CONTROL KIT
908	Error due to freeze prevention(Re-Operation is possible)	CONTROL KIT
909	Error due to freeze prevention(Re-Operation is impossible)	CONTROL KIT
910	Water Temperature Sensor on water Outlet pipe is datached	CONTROL KIT
911	FLow Swtich Open Error	CONTROL KIT
913	Six times detection for FLow Switch Error(Re-Operation is not possible)	CONTROL KIT
914	Error due to Incorrect Thermostat Connection	CONTROL KIT
915	Error on DC fan(Non-operating)	CONTROL KIT
916	Mixing Sensor Short/Open	CONTROL KIT
919	Disinfection Operation Incomplete Error	CONTROL KIT
920	FSV SD Card Read Error	CONTROL KIT
973	Water Pressure Error (Short/Open)	OUTDOOR UNIT
E982	Outdoor Unit PHE EVA Out Sensor Short/Open	OUTDOOR UNIT (Only AE1**HCTP*S/EU Model)

4-2 Troubleshooting by symptoms

4-2-1 Communication error after finishing Tracking

Indoor unit display	E604
Symptom	Communication error between the indoor and outdoor unit for two minutes
Failure	Communication error between the indoor unit and outdoor unit

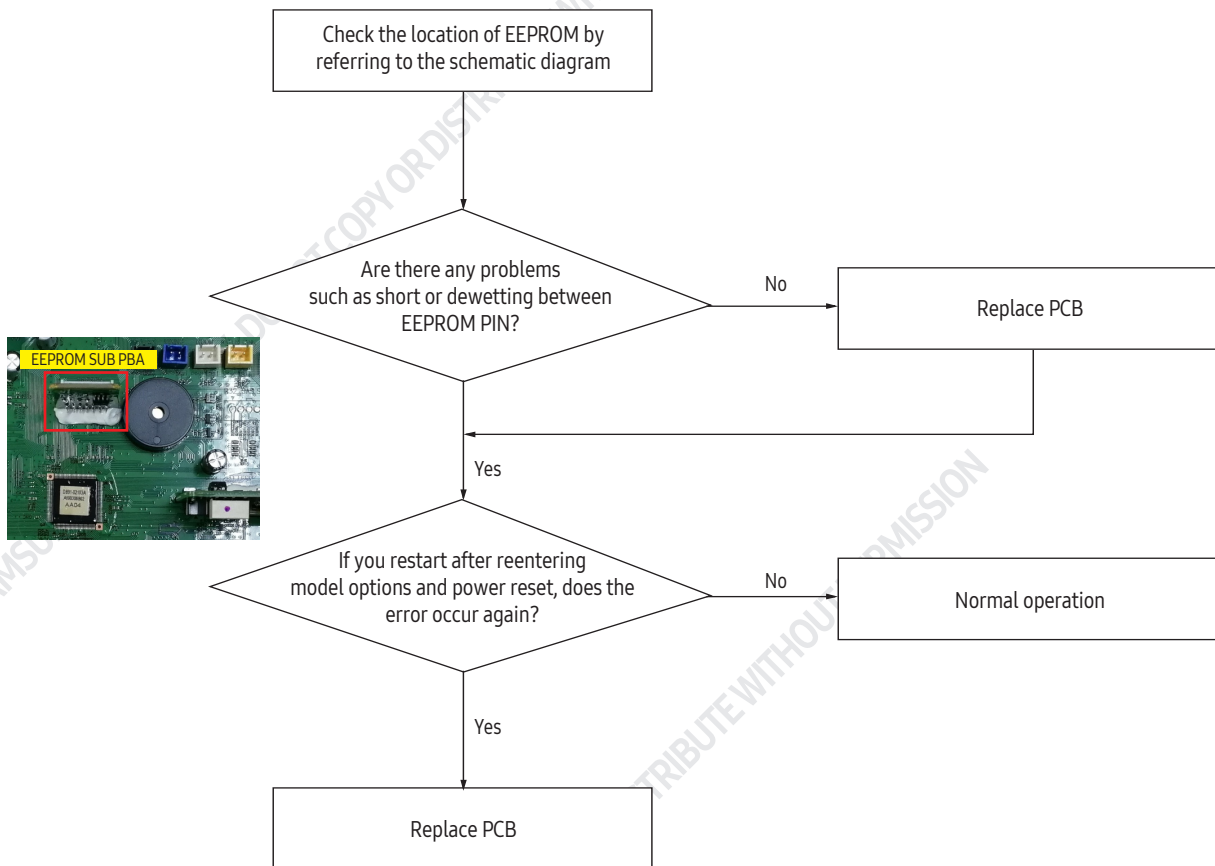


4-3 ClimateHub/ Hydro Unit

4-3-1 EEPROM error

Outdoor unit display	<i>E 162</i>
Indoor unit display	×(Operation) ●(Timer) ●(Fan) ●(Filter) ×(Defrost)
Criteria	• Communication failure between EEPROM and MICOM
Cause of problem	• PCB replacement due to defective EEPROM

1. How to check

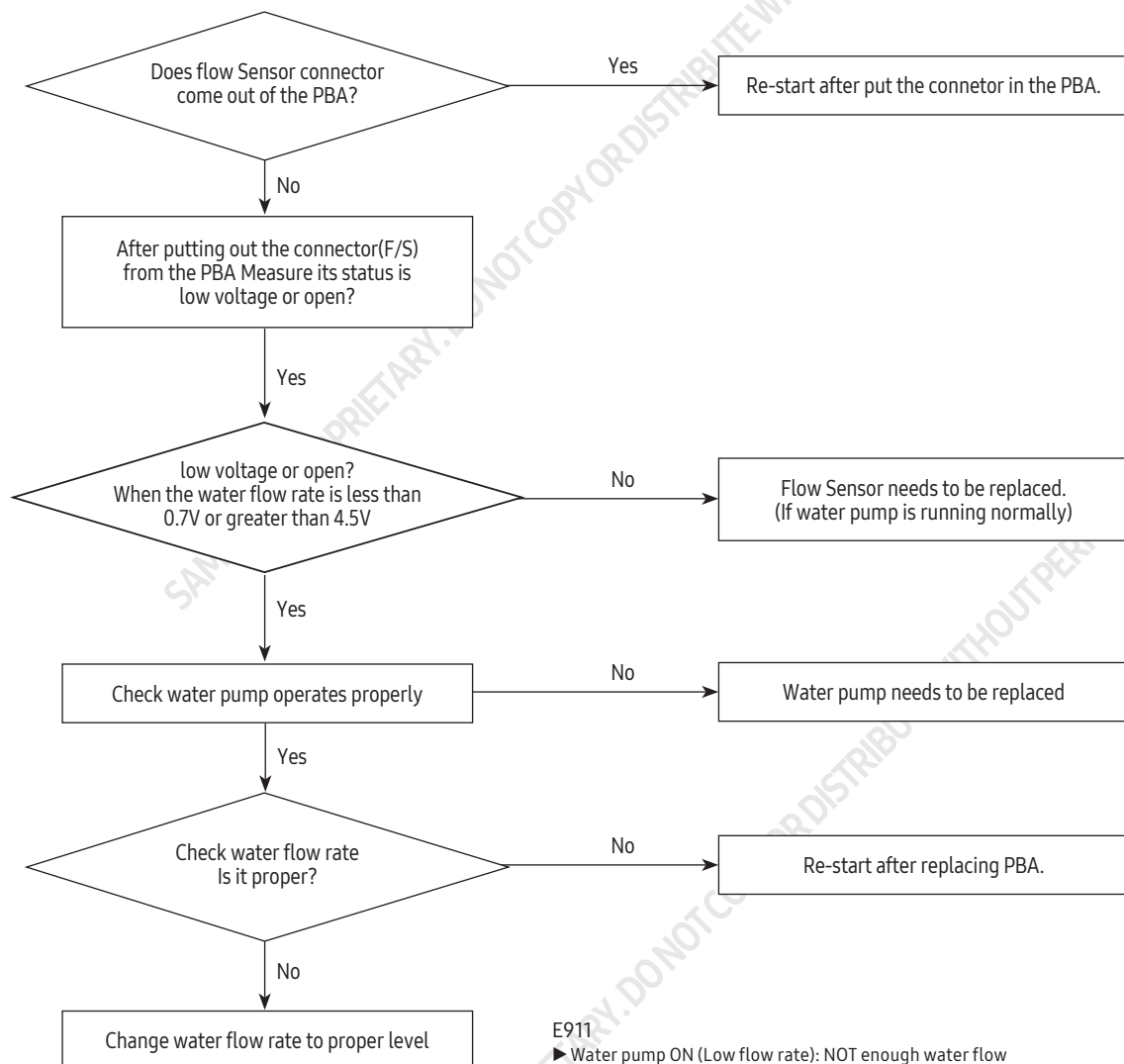


4-3-2 Water pump & Flow Sensor error

Wired remote display	E911
Criteria	Refer to how to determine below
Cause of problem	Low flow rate error - In case of low flow rate in 30 sec during water pump signals is ON(Starting) - In case of low flow rate in 15 sec during water pump signals is ON(After Starting)

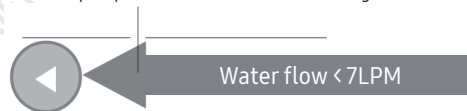
1. How to check

* Water pump is detected only during operation



E911

► Water pump ON (Low flow rate): NOT enough water flow



► Water flow range

	Water flow rates (LPM)	
	Min	Max
Outdoor unit capacity ≤ 8kW	7	48
Outdoor unit capacity > 8kW	7	58

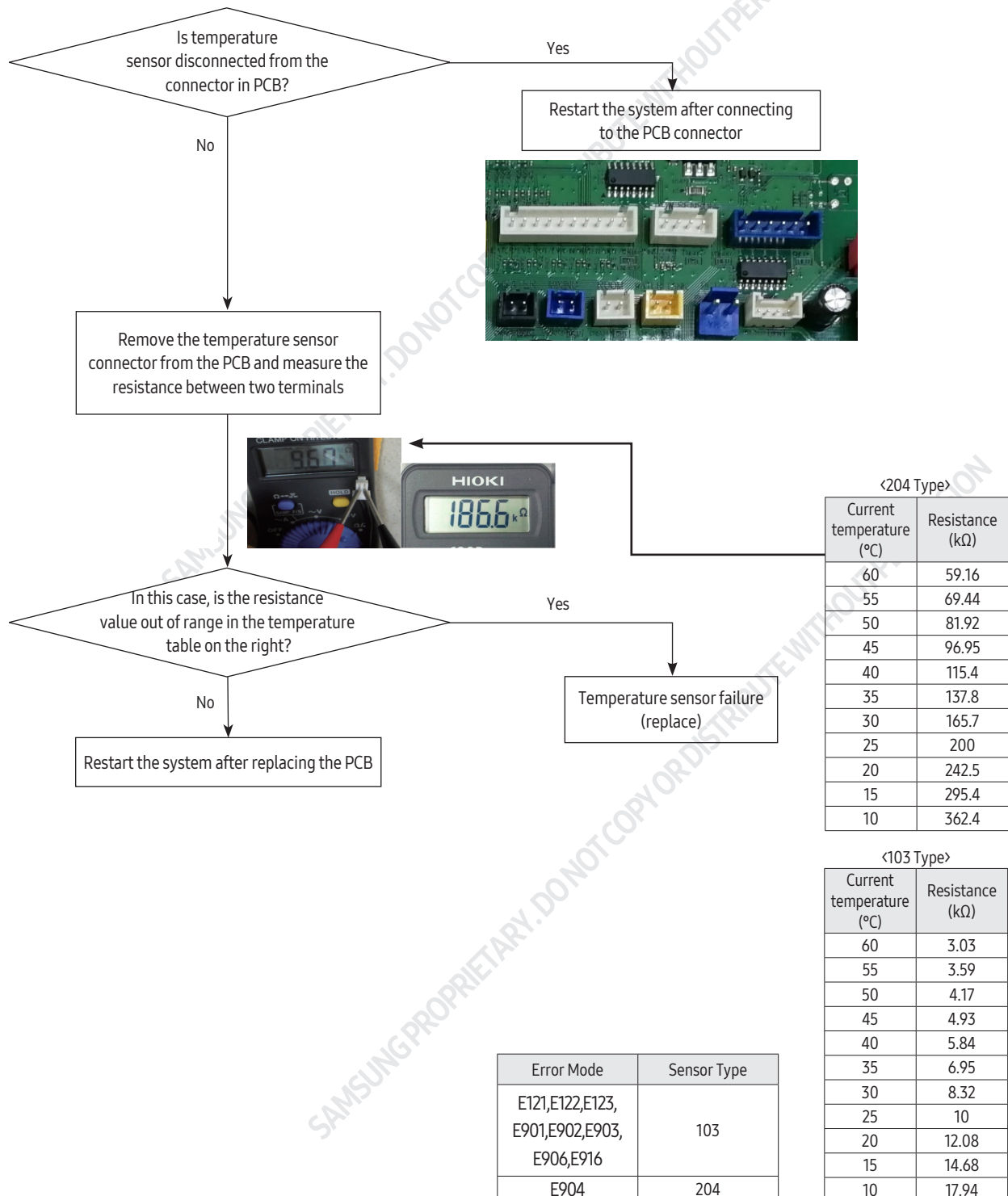
2. Table for Water flow rate

DC Voltage	Water flow rate
0.50	1.2
0.55	2.1
0.60	3.1
0.65	4.1
0.70	5.1
0.75	6.1
0.80	7.1
0.85	8.0
0.90	9.0
0.95	10.0
1.00	11.0
1.05	12.0
1.10	13.0
1.15	14.0
1.20	14.9
1.25	15.9
1.30	16.9
1.35	17.9
1.40	18.9
1.45	19.9
1.50	20.9
1.55	21.8
1.60	22.8
1.65	23.8
1.70	24.8
1.75	25.8
1.80	26.8
1.85	27.7
1.90	28.7
1.95	29.7
2.00	30.7
2.05	31.7
2.10	32.7
2.15	33.7
2.20	34.6
2.25	35.6
2.30	36.6
2.35	37.6
2.40	38.6
2.45	39.6
2.50	40.6
2.55	41.5
2.60	42.5
2.65	43.5

DC Voltage	Water flow rate
2.70	44.5
2.75	45.5
2.80	46.5
2.85	47.4
2.90	48.4
2.95	49.4
3.00	50.4
3.05	51.4
3.10	52.4
3.15	53.4
3.20	54.3
3.25	55.3
3.30	56.3
3.35	57.3
3.40	58.3
3.45	59.3
3.50	60.3
3.55	61.2
3.60	62.2
3.65	63.2
3.70	64.2
3.75	65.2
3.80	66.2
3.85	67.1
3.90	68.1
3.95	69.1
4.00	70.1
4.05	71.1
4.10	72.1
4.15	73.1
4.20	74.0
4.25	75.0
4.30	76.0
4.35	77.0
4.40	78.0
4.45	79.0
4.50	80.0
4.55	80.9
4.60	81.9
4.65	82.9
4.70	83.9

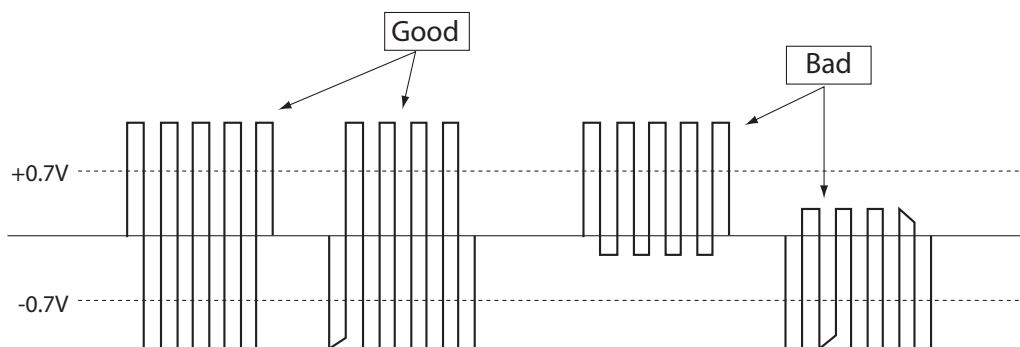
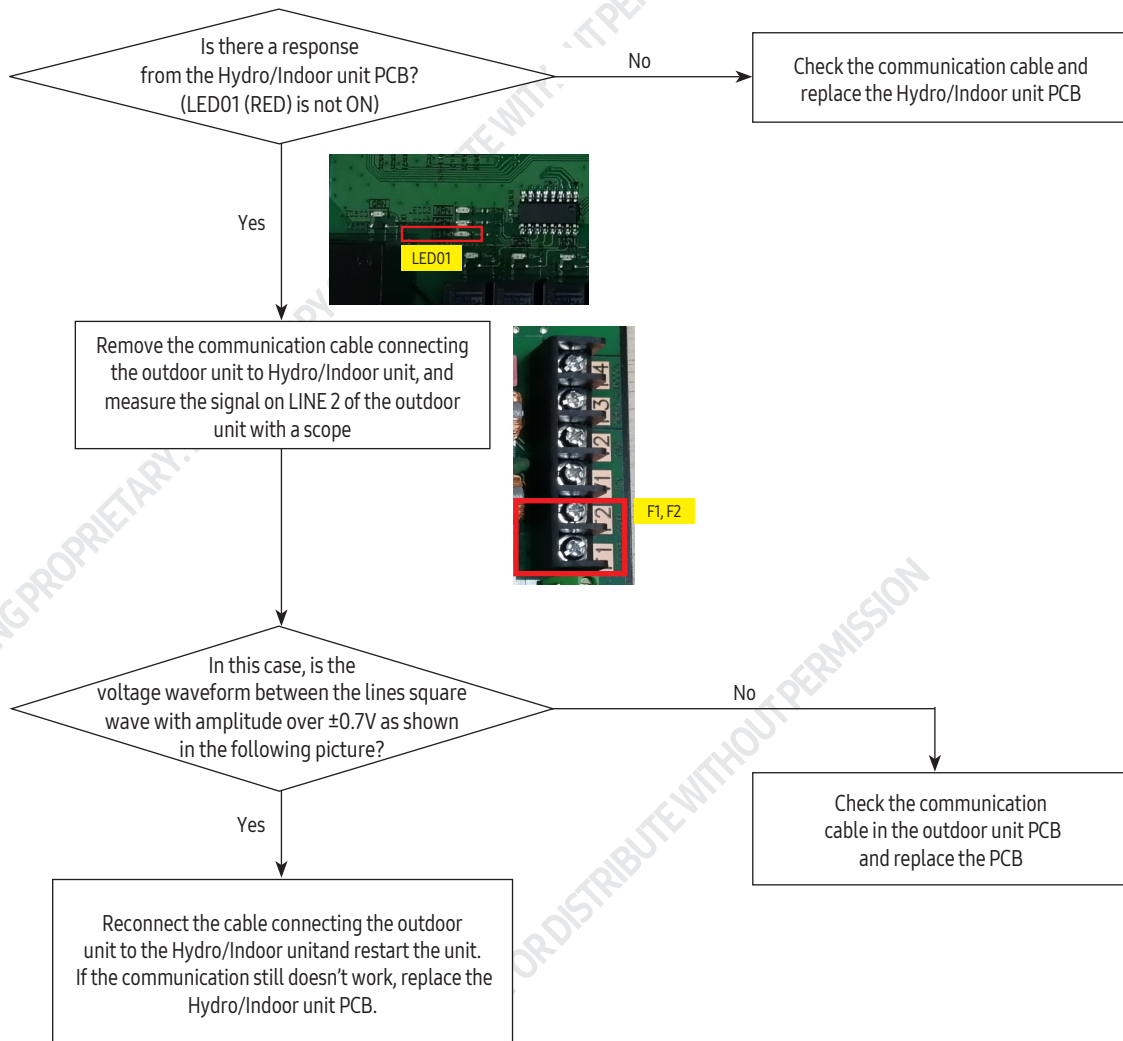
4-3-3 Hydro unit temperature sensor (open/short)

Error Mode	E121, E122, E123, E896, E901, E902, E903, E904, E906, E916
Symptom	In case of open or short circuit of indoor temperature sensor
Failure	Short or leakage of the corresponding sensor



4-3-4 Communication error after finishing Tracking (Hydro/Indoor unit)

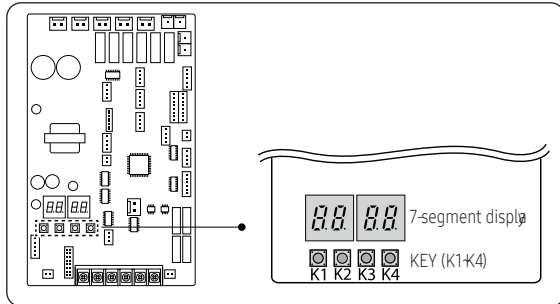
Error Mode	E201, E202
Symptom	Communication error between the Hydro/Indoor unit and outdoor unit for two minutes
Failure	Communication error between the Hydro/Indoor unit and outdoor unit



4-4 Items to check before diagnostics

4-4-1 Setting the outdoor options via K-button tactile switches

Setting the correct options for the outdoor unit for site specific conditions via K-button tactile switches and explanation of their functions.



1 In the initial, display will show the following.



2 Press and hold simultaneously K1, K2 to enter the setting mode.
If you enter the setting mode, display will show the following.



3 If you want to set manually, press K2 or K4 shortly.
- K2: 10 digit/ K4: 1 digit

Example) total number of installed indoor unit: 08 press K2 1 time, press K4 2 times.
then, display will show(The displayed value is including hydro unit.)



4 If you want to set automatically, press and hold K4 for 2 seconds.

Display will show total number of installed indoor units.

But you have to be careful, it is displayed only for the indoor unit in which a communication and power lines are connected normally.

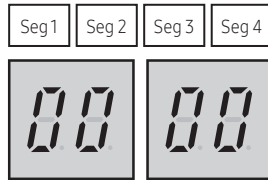
5 If you want to finish setting mode, press and hold K2. And then Main PCB will be reset after display blinking in 3 seconds.

* In case of inputting in the wrong way while you inputting, press "K3" (Main PCB reset) and progress again from the first step.

Setting the option

1 Press and hold K2 to enter the option setting. (Only available when the operation is stopped)

- When entering the option setting, the display will show the following:



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

2 After entering the option setting mode, shortly press the K1 switch to go to the desired option to change, indicated by Seg 1, Seg 2 and select the desired option.

Example)



3 After selecting the desired option, you can shortly press the K2 switch to adjust the value of the option, as indicated by Seg 3 and Seg 4, and change the function setting for the selected option.



4 After selecting the function setting for the selected options, press and hold the K2 switch for 2 seconds to store the value. The changed value of the option will be saved when the entire segment display blinks and tracking mode begins.



WARNING

- If the above instruction is not exactly followed, there is a risk that changed option settings are not saved.

* To restore the previous setting, press and hold the K1 button.

* To call for the factory default setting, press and hold K4 during the option setting mode.

- After the factory default value is displayed, it needs to be saved. Press and hold the K2 button. When the segments show that tracking mode is in progress, the setting is saved.

Key Option

Option item	Input unit	SEG1	SEG2	SEG3	SEG4	Function of the option	Remarks
Cooling capacity correction	Main	0	0	0	0	7-9	Targeted evaporation temperature [°C]. (When low temperature value is set, discharged air temperature of the indoor unit will decrease)
				0	1	5-7 (Factory default)	
				0	2	9-11	
				0	3	10-12	
				0	4	11-13	
				0	5	12-14	
				0	6	13-15	
Capacity correction for heating	Main	0	1	0	0	3.0 (Factory default)	Targeted high pressure [MPa]. (When low temperature value is set, discharged air temperature of the indoor unit will decrease)
				0	1	2.5	
				0	2	2.6	
				0	3	2.7	
				0	4	2.8	
				0	5	2.9	
				0	6	3.1	
				0	7	3.2	
Current restriction rate	Main	0	2	0	0	100% (Factory default)	When restriction option is set, cooling and heating performance may decrease. If the rate is set to 1 and 1, there is no current limit, so current usage exceeding 100% is possible. Current usage may be limited due to protection control.
				0	1	95%	
				0	2	90%	
				0	3	85%	
				0	4	80%	
				0	5	75%	
				0	6	70%	
				0	7	65%	
				0	8	60%	
				0	9	55%	
				1	0	50%	
				1	1	No restriction	
Oil collection interval	Main	0	3	0	0	Factory default	
				0	1	Shorten the interval by 1/2	
Temperature to trigger defrost operation	Main	0	4	0	0	Factory default	
				0	1	Apply setting when the product is being installed in humid area such as near river or lake	The defrost option shortens the starting time of the defrost operation.
Fan speed correction for outdoor unit	Main	0	5	0	0	Disabled (Factory default)	
				0	1	Increase fan speed	Increase the outdoor unit's fan speed to maximum value.
Quiet mode	Main	0	6	0	0	Low noise (Basic)	
				0	1	Level1	
				0	2	Level2	
				0	3	Level3	
Standby power saving	Main	0	7	0	0	Disabled (Factory default)	
				0	1	Enabled	

Option item	Input unit	SEG1	SEG2	SEG3	SEG4	Function of the option	Remarks
Energy saving setting	Main	0	8	0	0	Disabled (Factory default)	
				0	1	Energy saving mode	Energy saving mode triggers when the room temperature reaches desired temperature while operation in heating mode.
				0	2	Rapid cooling	This function increases cooling speed.
Snow accumulation prevention control	Main	0	9	0	0	Enabled (Factory default)	During snow accumulation, the fan my spin even when the unit is not in operation.
				0	1	Disabled	
Max. capacity restriction	Main	1	0	0	0	Enabled (Factory default)	Restrict excessive capacity increase when operating indoor units with small capacity.
				0	1	Disabled	
Channel address	Main	1	3	0	0	Automatic setting (Factory default)	
				0	1	Manual setting for channel 0~15	
View mode unit option	Main	1	4	0	0	°C & MPa (Factory default)	Converts the temperature, pressure units in the view mode (K4 switch).
				0	1	°F & psi	
Gas leak pump down	Main	1	9	0	0	Disabled (Factory default)	If the gas leak occurred, it should be entered in the pump down operation.
				0	1	Enabled	
Unused option	Main	2	0~2	0	0	Unused option	Unused option by this model
Base Heater	Main	2	3	0	0	Disabled (Factory default)	
				0	1	Enabled	Set when base heater is installed.
Emergency heat	Main	3	0	0	0	Disabled (Factory default)	While configured, in case of the system errors, emergency heating operation is possible using an external heater.
				0	1	Enabled	



- Incorrect handling of the thermostat, safety valve or other valves may lead to tank rupture or plate heat exchanger damage.

When servicing the unit follow the instructions carefully:

- Always turn off the main power supply when the water supply is being shut off.
- Test the free operation of the safety valve regularly by opening the valve ensuring the water flows freely.
- Electrical connection and all servicing of the electrical components should only be carried out by an authorized electrician.
- Fitting and all servicing of plumbing fixtures should only be carried out by an authorized installer.
- When replacing the thermostat, safety valve, or any other valve or part supplied with this unit, use only approved parts of the same specification.

4-4 Items to check before diagnostics (cont.)

4-4-1 Test run mode and view mode

- Check the power supply between the outdoor unit and the auxiliary circuit breaker.
 - 1 phase power supply: L, N
 - 3 phases power supply: R, S, T, N
- Check the control panel.
 - Check that you have connected the power and communication cables correctly.
(If the power cable and communication cables one mixed up or connected incorrectly, the PCB will be damaged.)
 - Check the temp. sensor, drain pump/hose, and display are connected correctly.
- Press K1 or K2 on the outdoor unit PCB to run the test mode and stop.

K1 (Number of press)	KEY operation	Display on segment
1 time	Refrigerant charging in Heating mode	"K" "1" "BLANK" "BLANK"
2 times	Trial operation in Heating mode	"K" "2" "BLANK" "BLANK"
3 times	Vacuuming	"K" "3" "BLANK" "1"
4 times	Inverter Fault Detection	"K" "4" "1" "1"
5 times	End Key operation	-

K2 (Number of press)	KEY operation	Display on segment
1 time	Refrigerant charging in Cooling mode	"K" "5" "BLANK" "BLANK"
2 times	Trial operation in Cooling mode	"K" "6" "BLANK" "BLANK"
3 times	Pump down in Cooling mode	"K" "7" "BLANK" "BLANK"
4 times	Automatic setting of operation mode (Cooling/Heating) for trial operation	"K" "8" "BLANK" "BLANK"
5 times	Discharge mode of DC link voltage	"K" "9" "BLANK" "BLANK"
6 times	Forced defrost operation	"K" "A" "BLANK" "BLANK"
7 times	Forced oil collection	"K" "B" "BLANK" "BLANK"
8 times	Inverter compressor check	"K" "C" "BLANK" "BLANK"
9 times	Checking the amount of refrigerant	"K" "D" "BLANK" "BLANK"
10 times	End Key operation	-

K3 (Number of Press)	KEY operation	7-segment display
1 time	Intialize (Reset) setting	Same as initial state

- View Mode: When the K4 switch is pressed, you can see information about our system state as below.

K4 (Number of press)	KEY operation	Display on segment	
		SEG 1	SEG2, 3, 4
1 time	Outdoor unit Capacity (HP)	1	6HP → 0, 0, 6
2 times	Order frequency of compressor	2	120 Hz → 1, 2, 0
3 times	High pressure (kgf/cm ²)	3	15.2 kgf/cm ² → 1, 5, 2/ 220 psi → 2, 2, 0
4 times	Low pressure (kgf/cm ²)	4	4.3 kgf/cm ² → 0, 4, 3/ 62 psi → 0, 6, 2
5 times	Discharge temperature of compressor	5	87 °C → 0, 8, 7/ 189 °F → 1, 8, 9
6 times	IPM temperature of compressor	6	87 °C → 0, 8, 7/ 189 °F → 1, 8, 9
7 times	CT sensor value of compressor	7	2 A → 0, 2, 0
8 times	Suction temperature	8	-42 °C → -, 4, 2/ -44 °F → -, 4, 4
9 times	COND OUT temperature	9	-42 °C → -, 4, 2/ -44 °F → -, 4, 4
10 times	Cond in temperature	A	87 °C → 0, 8, 7/ 189 °F → 1, 8, 9
11 times	TOP temperature of compressor	B	87 °C → 0, 8, 7/ 189 °F → 1, 8, 9
12 times	Outdoor temperature	C	-42 °C → -, 4, 2/ -44 °F → -, 4, 4
13 times	PHE in temperature	D	-42 °C → -, 4, 2/ -44 °F → -, 4, 4
14 times	PHE out temperature	E	-42 °C → -, 4, 2/ -44 °F → -, 4, 4
15 times	Main EEV step	F	2000 steps → 2, 0, 0
16 times	Liquid bypass EEV	G	300 steps → 3, 0, 0
17 times	Fan step	H	13 steps → 0, 1, 3
18 times	Current frequency of compressor	I	120 Hz → 1, 2, 0

K4 (Number of press)	KEY operation	Display on segment	
		SEG 1	SEG 2, 3, 4
19 times	Master indoor unit address (Master indoor unit can be selected by wired remote-controller)	J	Master indoor unit not selected → BLANK, N, D If indoor unit No.1 is selected as the master unit → 0, 0, 1
20 times	PHE EEV Step	K	300 steps → 3, 0, 0
21 times	Refrigerant leak detection sensor operational duration	L	1000 days → 100
22 times	Water in temperature	M	-42 °C → -, 4, 2/ -44 °F → -, 4, 4
23 times	Water out temperature	N	-42 °C → -, 4, 2/ -44 °F → -, 4, 4
24 times	End Key operation	-	-

K4 (Press and hold for 2 seconds to enter the setting) → K4 press (Number of press)	Displayed content	Display on segment		
		Page 1	Page 2	
1 time	Main version	MAIN	Ver. (ex) 1412)	
2 times	Inverter version	INV1	Ver. (ex) 1412)	
3 times	EEP version	EEP	Ver. (ex) 1412)	
4 times	SHUT OFF version	SHOF	Ver. (ex) 1412)	
5 times	Assigned address of the units	AUTO	SEG 1,2	SEG 3,4
			Indoor unit: "A", ""0"" HR Changer/MCU Unit : "C", "1"	Address (ex) 07)
6 times	Manually assigned address of the units	MANU	SEG 1,2	SEG 3,4
			Indoor unit: "A", "0"	Address (ex) 15)
Press and hold (for 2 sec.)	Key operation ends	-		

Troubleshooting of error code

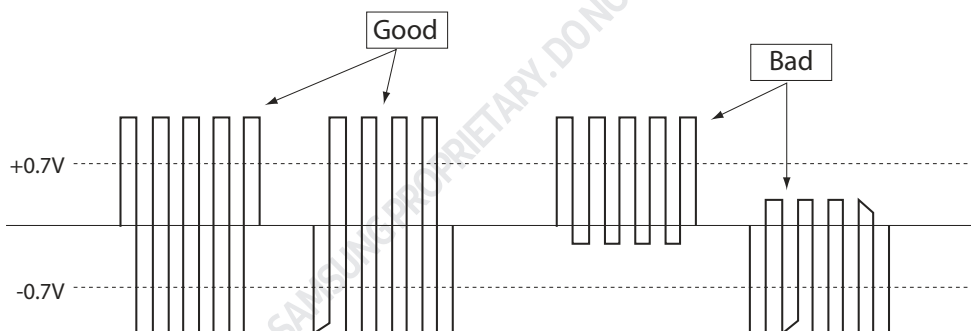
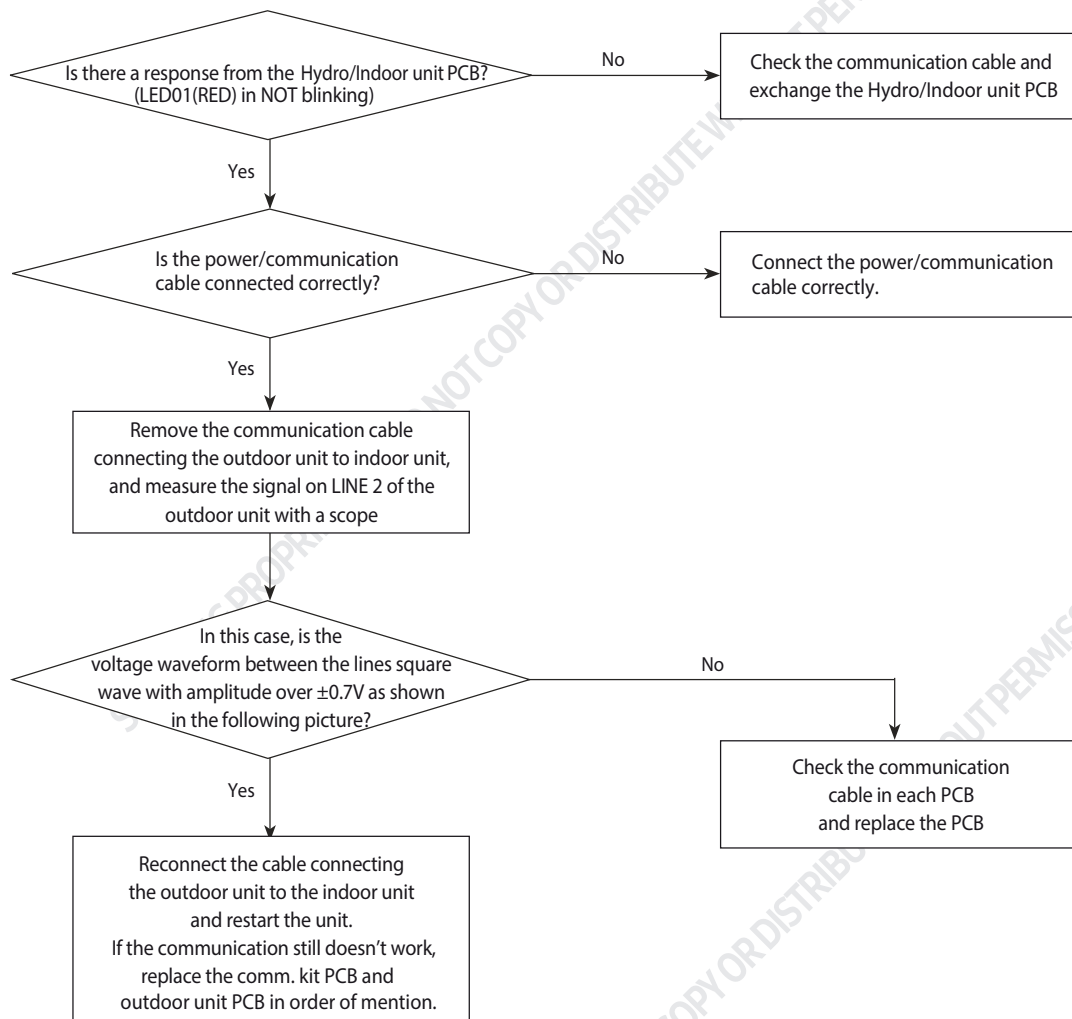
Display	Explanation	Error Source
E108	Setting Address Duplicate Error	Outdoor unit/ Hydro Unit
E116	Refrigerant leak detection sensor (open/ short)	Indoor unit
E120	Zone2 Indoor Room Temperature Sensor Short/Open	Hydro Unit
E121	Error of ROOM Temperature Sensor in Indoor unit short/open	Hydro Unit
E122	Error of Evaporator_in Sensor of Indoor unit short/open	Hydro Unit
E123	Error of Evaporator_out Sensor of Indoor unit short/open	Hydro Unit
E128	Indoor unit Eva in sensor dislodged	Indoor unit
E129	Indoor unit Eva out sensor dislodged	Indoor unit
E151	Error due to opened EEV of indoor unit (2nd detection)	Indoor unit
E152	Error due to closed EEV of indoor unit (2nd detection)	Indoor unit
E153	Indoor unit Floating s/w abnormality (secondary detection)	Indoor unit
E154	Indoor unit fan abnormality	Indoor unit
E162	Outdoor UNIT EEPROM Error	Outdoor unit
E163	EEPROM OPTION SETTING Error	Outdoor unit
E177	In hydro box, take place emergency signal Error	Hydro Unit
E201	CONTROL KIT / Outdoor UNIT Communication Error (Matching Error)	Outdoor unit
E202	CONTROL KIT / Outdoor UNIT Communication Error	Outdoor unit
E205	Communication Error Between Outdoor Unit Inv Micom - Fan Motor Micom	Outdoor unit
E221	Outdoor Temperature Sensor Error (open/short)	Outdoor unit
E231	COND_OUT Main Temperature Sensor Error (open/short)	Outdoor unit
E232	Cond in Sensor Error (open/short)	Outdoor unit
E241	COND OUT Sensor of Outdoor Unit breakaway Error	Outdoor unit
E251	Discharge Temperature Sensor Error (open/short)	Outdoor unit
E262	Discharge Sensor breakaway Error	Outdoor unit
E266	Comp Top Sensor breakaway Error	Outdoor unit
E269	SUCTION Sensor breakaway Error	Outdoor unit
E276	Compressor Top Temperature Sensor Error (open/short)	Outdoor unit
E291	High Pressure Sensor Error (open/short)	Outdoor unit
E296	Low Pressure Sensor Error (open/short)	Outdoor unit
E308	Suction Sensor Error (open/short)	Outdoor unit
E381	Outdoor Inverter1 Controller PCB Overheat	Outdoor unit
E403	Protect for Freezing Control Error	Outdoor unit
E407	COMP down due to High PressureSensor Protection Control	Outdoor unit
E410	COMP down due to Low PressureSensor Protection Control	Outdoor unit
E416	Comp down due to discharge Temperature	Outdoor unit
E425	Outdoor Reverse Phase or Missing Phase Detect Error	Outdoor unit
E428	COMP down by Compression Ratio control Error	Outdoor unit
E436	Protect for Freezing Burst Control Error	Outdoor unit
E438	EVI EEV Opening Error	Outdoor unit
E439	Refrigerant Leakage Error (Detect when the system is not operated)	Outdoor unit
E440	Forbid Heat mode Operation when Outdoor Temperature is over 43 °C	Outdoor unit
E441	Forbid Cooling Mode when Outdoor Temperature is Low 10 °C	Outdoor unit
E443	No startup due to Low pressure	Outdoor unit
E458	Outdoor unit Fan Error	Outdoor unit
E461	[Inverter] COMP Operating failure	Outdoor unit
E462	All currency control COMP Stop Or CT2 Low currency	Outdoor unit
E464	[Inverter] DC peak Error	Outdoor unit

Display	Explanation	Error Source
E465	Compressor V limit Error	Outdoor unit
E466	[Inverter] DC-Link voltage under/over Error	Outdoor unit
E467	COMP Revolute Error	Outdoor unit
E468	[Inverter] Comp Current Sensor Error	Outdoor unit
E469	DC Link Sensor Error	Outdoor unit
E471	[Inverter] OTP Error → Outdoor unit EEPROM Read/Write Error (OTP error)	Outdoor unit
E474	[Inverter] IPM Heat Sink Error	Outdoor unit
E475	Outdoor unit BLDC Fan Error	Outdoor unit
E483	H/W DC_link over voltage Error	Outdoor unit
E484	PFC Overload Error	Outdoor unit
E485	[Inverter] Input Current Sensor Error (open/short)	Outdoor unit
E488	AC Input Voltage Sensor Error	Outdoor unit
E500	IPM Overheat Error for Inverter COMP	Outdoor unit
E507	Comp Down due to high pressure or High Pressure Switch Open	Outdoor unit
E536	PHE refrigerant leakage error	Outdoor unit
E554	Refrigerant leakage error (detection during system operation)	Outdoor unit
E563	INDOOR UNIT Mixed Install Error	Outdoor unit
E590	[Inverter] Data flash Error	Outdoor unit
E601	Wired LCD ↔ indoor unit communication error	Indoor unit
E694	R-32 indoor unit and wired remote control installation combination error	Indoor unit
E695	Refrigerant leak detection sensor lifespan prediction impossible error	Indoor unit
E697	Secondary refrigerant leak detection	Indoor unit
E698	Refrigerant leak detection sensor malfunction error	Indoor unit
E699	Refrigerant leak detection sensor replacement notification error	Indoor unit
E700	Refrigerant leak detection sensor lifespan expiration error	Indoor unit
E702	Error due to closed EEV of indoor unit (1st detection)	Indoor unit
E703	Error due to opened EEV of indoor unit (1st detection)	Indoor unit
E897	Water Tank in sensor error(Short/Open)	Indoor unit
E899	Zone1 Tw Temperature Sensor Short/ Open	Hydro Unit
E900	Zone2 Tw Temperature Sensor Short/ Open	Hydro Unit
E901	Water Inlet Sensor Error (open/short)	Outdoor unit
E902	Water Outlet Sensor Error (open/short)	Outdoor unit
E904	Water TANK Sensor SHORT / OPEN	Hydro Unit
E906	PHE in Sensor Error(open/short)	Outdoor unit
E910	Water Temperature Sensor on water Outlet pipe is datached	Hydro Unit
E911	FLow Swtich Open Error	Hydro Unit
E912	FLow Swtich Close Error	Hydro Unit
E914	Error due to Incorrect Thermostat Connection	Hydro Unit
E916	Mixing Sensor Short/Open	Hydro Unit
E919	Disinfection Operation Incomplete Error	Hydro Unit
E973	Water pressure sensor research (Short/ Open)	Outdoor unit
E982	PHE out Sensor Error(open/short)	Outdoor unit

4-5 Troubleshooting by symptoms

4-5-1 Communication error after finishing tracking (E202)

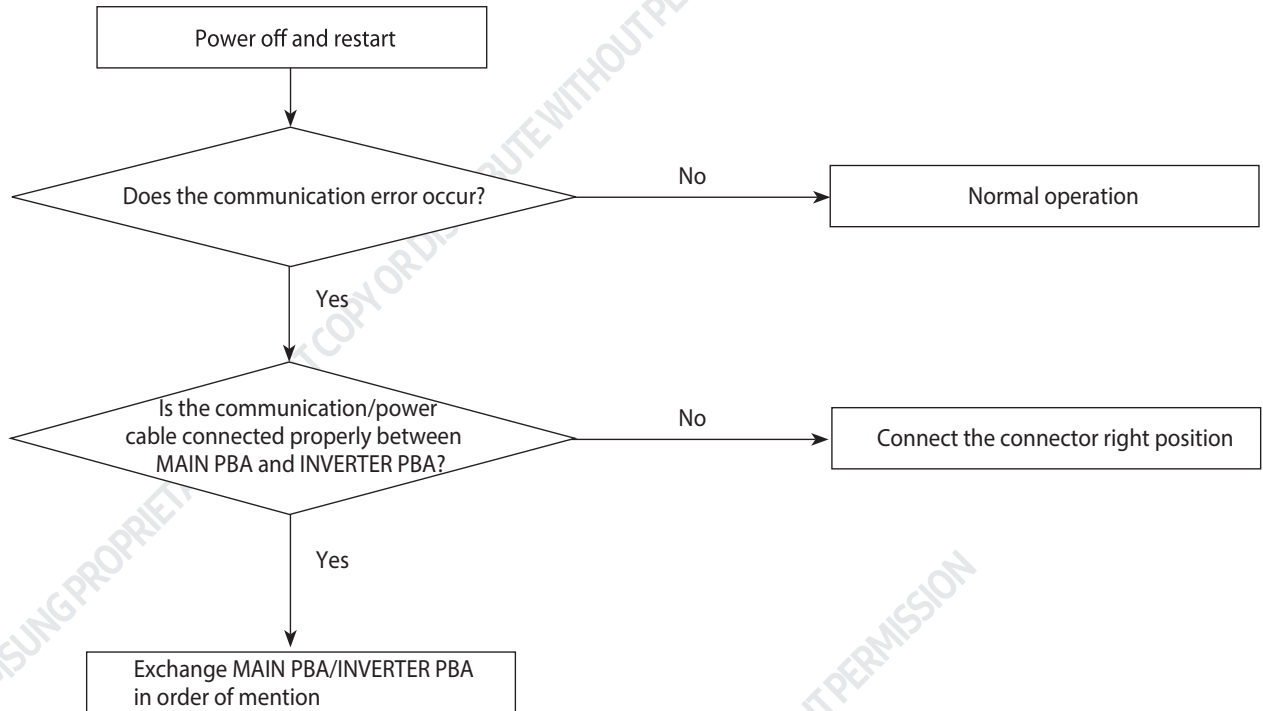
1. Check items
 - 1) Is the communication cable short/open?
 - 2) Is there a response from the Hydro/Indoor unit PCB?
2. Check procedure



cf.) If there is no oscillo scope, it can be replaced multimeter instead of osillo scope.
If measured voltage is floating value from 0.1V to 4.5V, then it means that the PCB is normal.

4-5-2 Time out (1min.) of communication error between MAIN PBA and INV. PBA (E203)

1. Check items
 - 1) Is the communication cable connected properly between MAIN PBA and INVERTER PBA?
 - 2) Is the power cable connected correctly?
2. Check procedure



4-5-3 Temperature sensor error (E221, E231, E251, E320)

〈Error code for each temperature sensor〉

CN43 in MAIN PBA	Pin no.	Temp. sensor	Error code
	1,2	Outdoor	E221
	3,4	Condenser	E231
	5,6	Discharge	E251
	7,8	OLP	E320

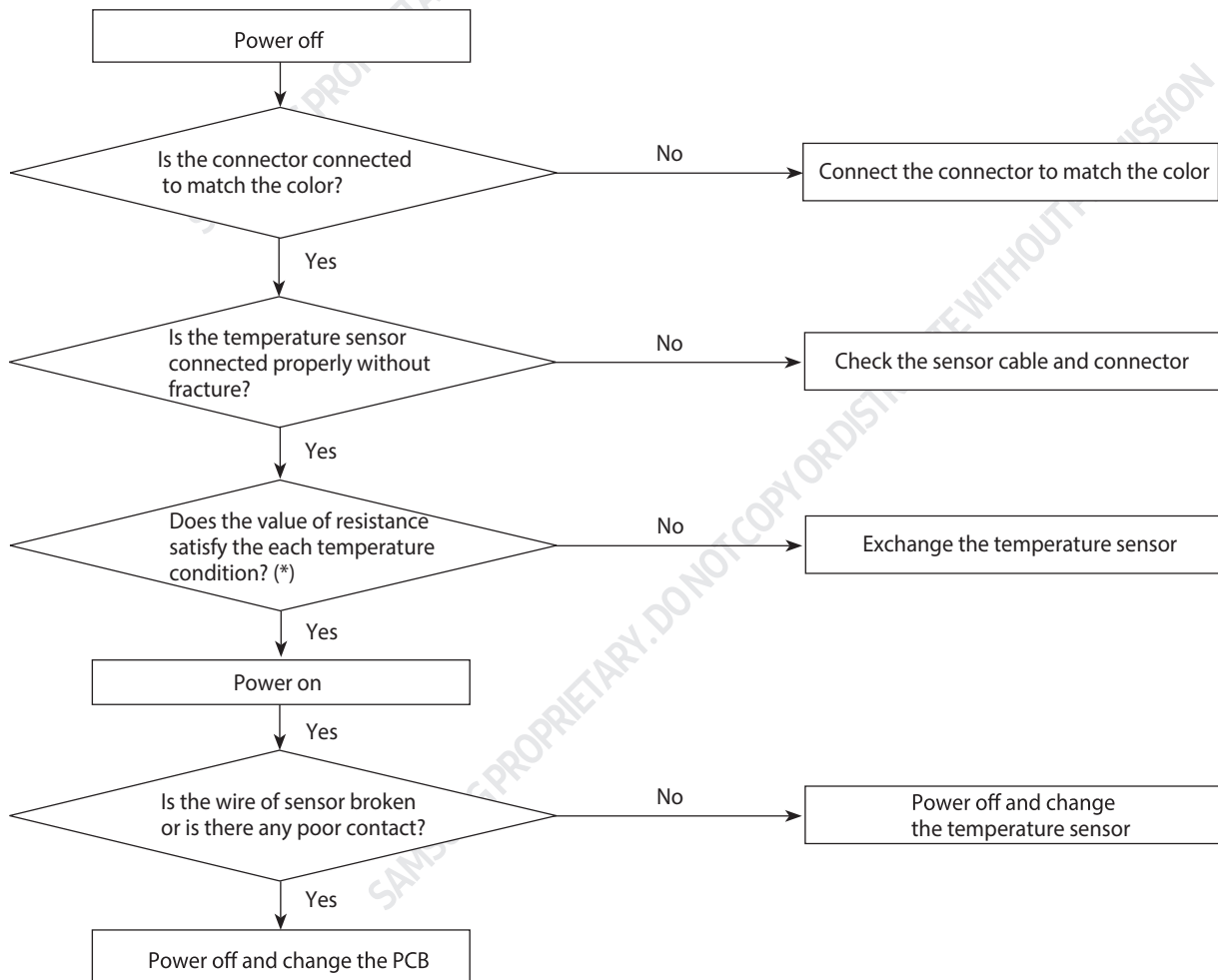
〈AE***BXD*G Model Only (CN403/ WHT)〉

Pin no.	Temp. sensor	Error code
1,2	Ambient-Out (10kΩ @ 25°C)	E221
3,4	Cond (10kΩ @ 25°C)	E231
5,6	discharge (200kΩ @ 25°C)	E251
7,8	OLP (200kΩ @ 25°C)	E276
9,10	SUCTION (10kΩ @ 25°C)	E308
11,12	EVA-IN (10kΩ @ 25°C)	E906
13,14	EVI-IN (10kΩ @ 25°C)	E321
15,16	EVI-OUT (10kΩ @ 25°C)	E322
17,18	WATER-IN (10kΩ @ 25°C)	E901
19,20	WATER-OUT (10kΩ @ 25°C)	E902

1. Check items

- 1) Is the sensor connected correctly (CN403 in MAIN PBA)?
- 2) Is the position of sensor correct?
- 3) Does the value of resistance satisfy the each temperature condition?

2. Check procedure



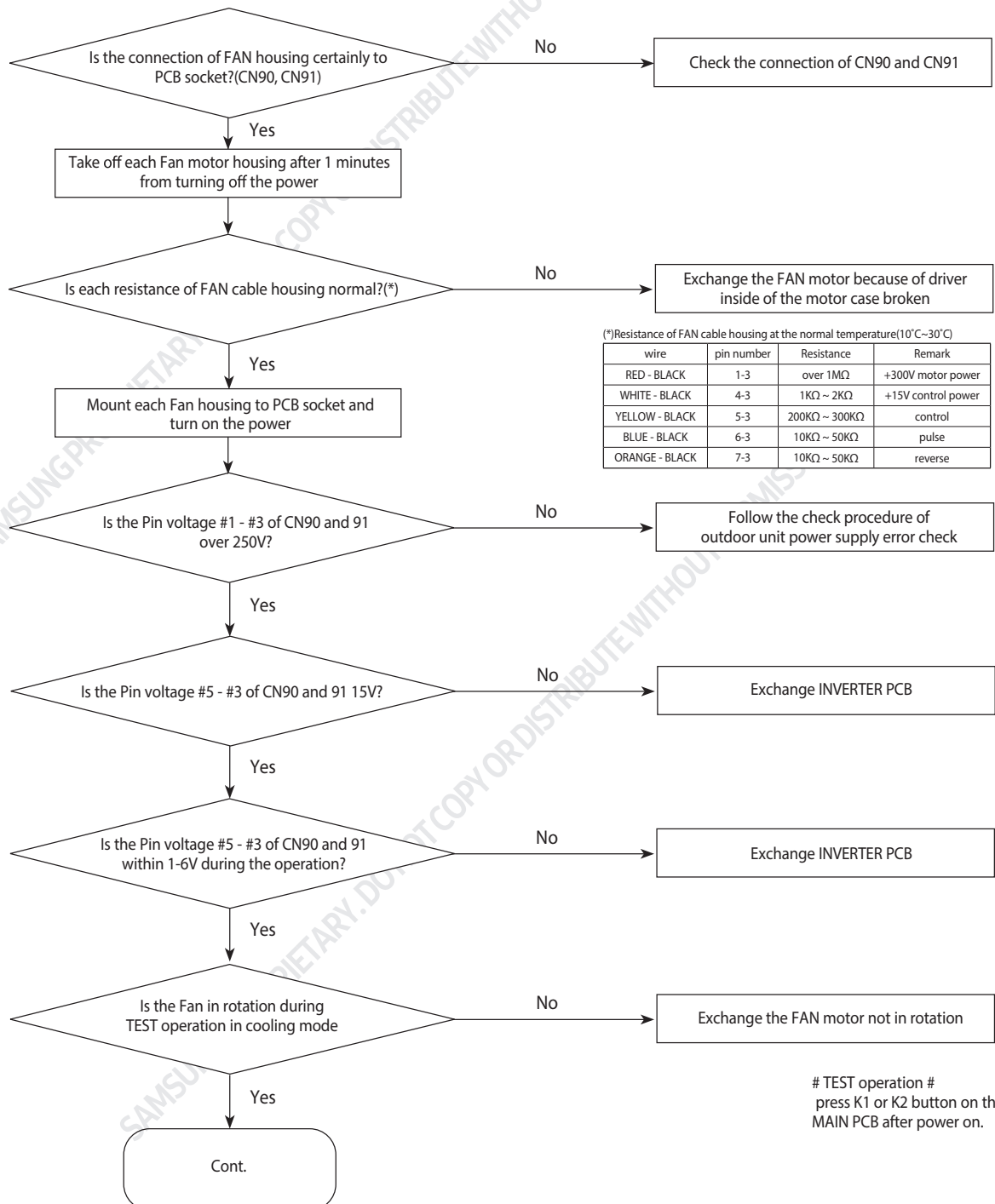
4-5-4 Fan error (E458, E475)

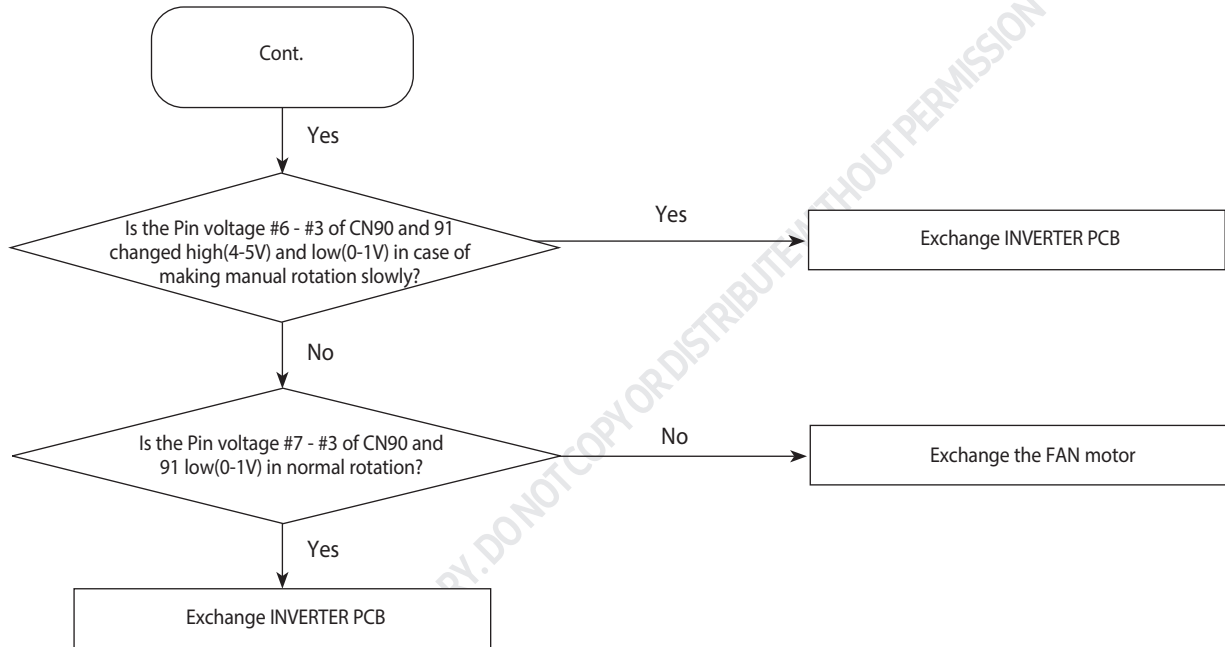
FAN 1 error(E458), FAN 2 error(E475)

1. Check items

- 1) Are the input power voltage and power connection correct?
- 2) Is the motor wire connected to the outdoor PCB correctly?
- 3) Is there no obstacle at the surrounding of motor and propeller?
- 4) Does the driver in the motor case broken?

2. Check procedure



Fan error (E458, E475) (cont.)

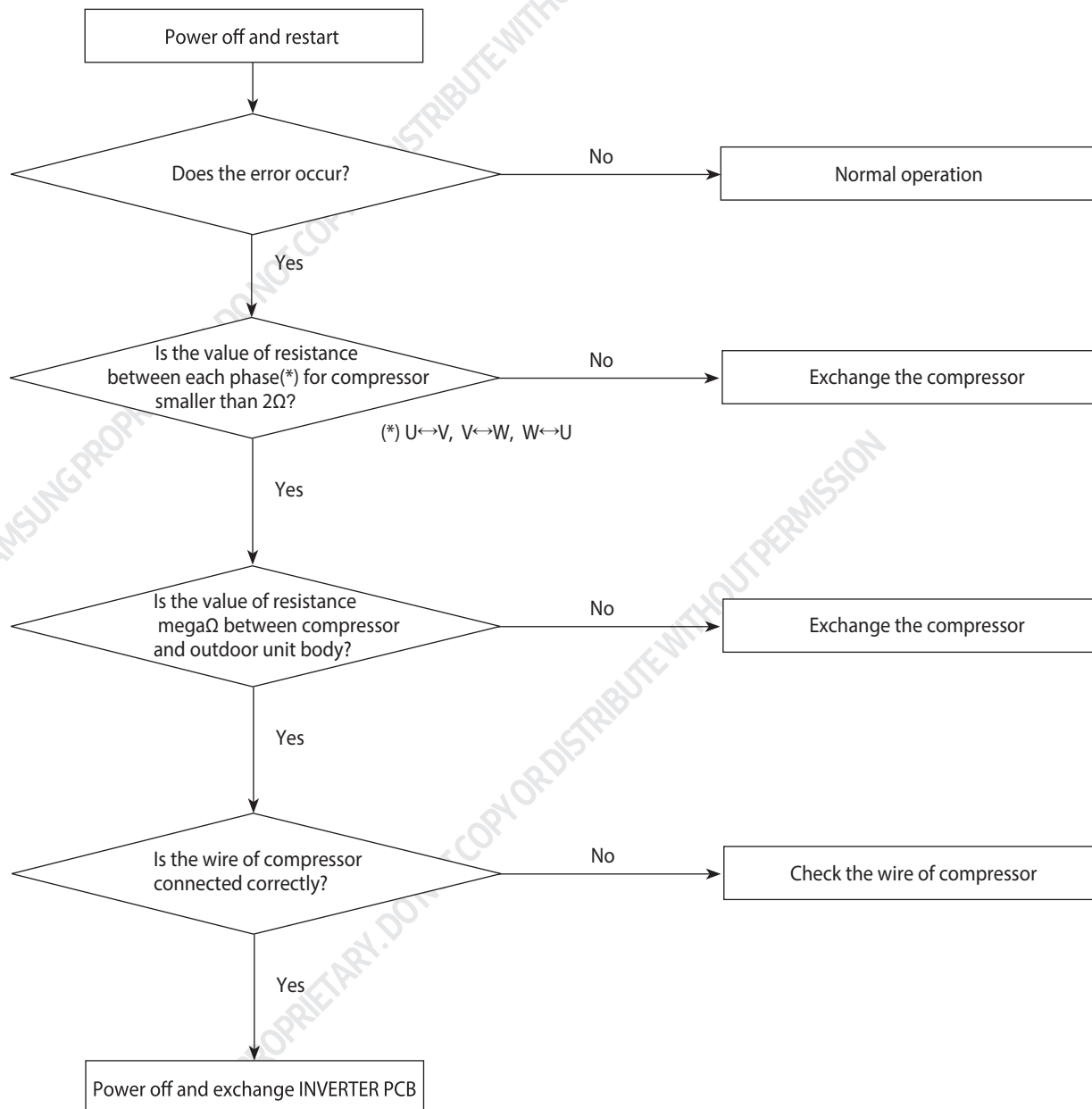
4-5-5 Compressor error (E461, E467)

Compressor starting error(E461), Compressor wire missing error(E467)

1. Check items

- 1) Is the power connected properly?
- 2) Is the connector of compressor connected correctly?
- 3) Is the resistance normal between each phase for compressor ?

2. Check procedure



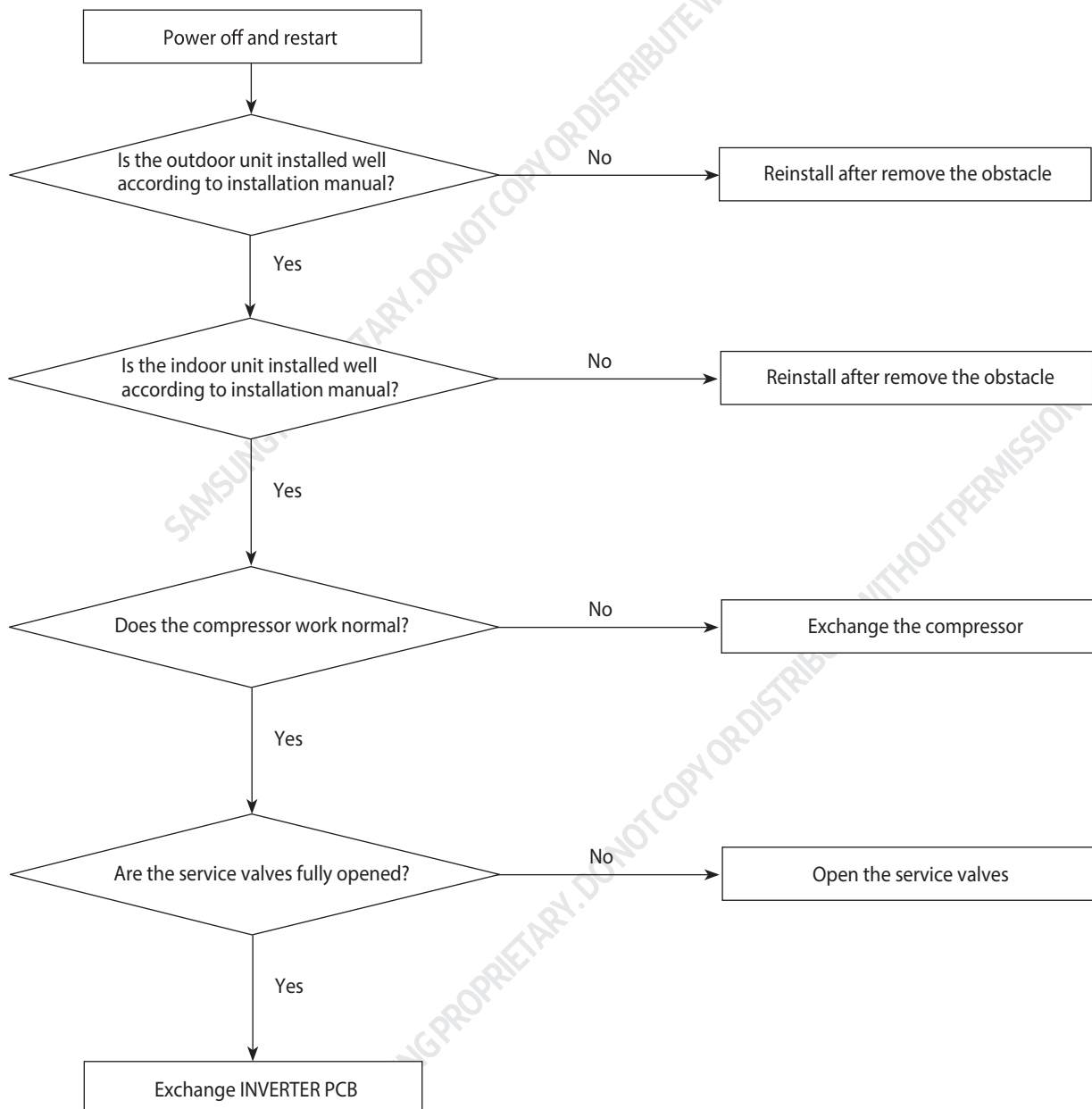
4-5-6 Current trip error (E462, E463)

Primary current trip error(E462), Over current trip / PFC over current error(E463)

1. Check items

- 1) Is the voltage of power suitable?
- 2) Is refrigerant charged?
- 3) Does the fan of outdoor unit work normally?
- 4) Is there any obstacle around indoor and outdoor unit?

2. Check procedure

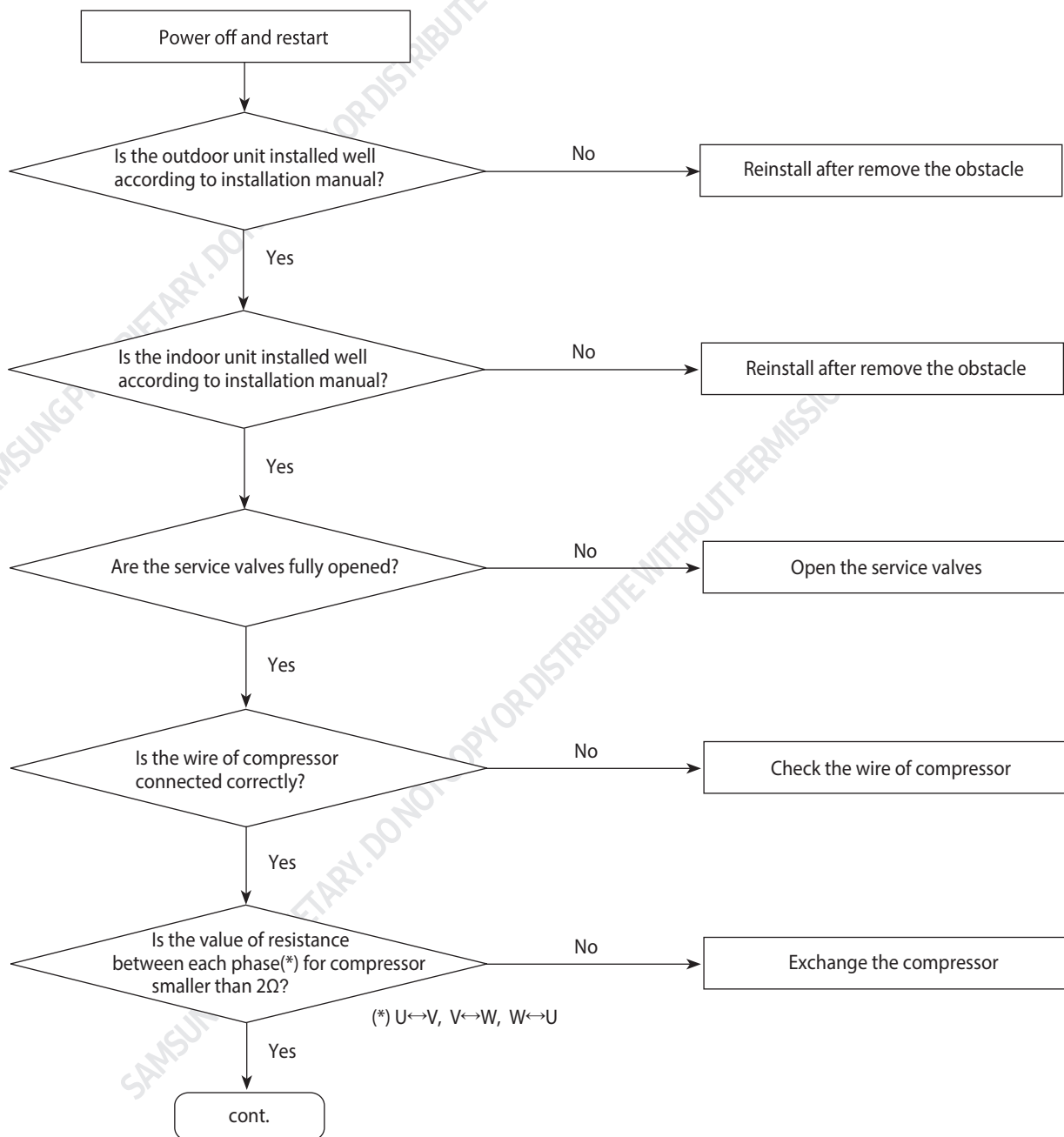


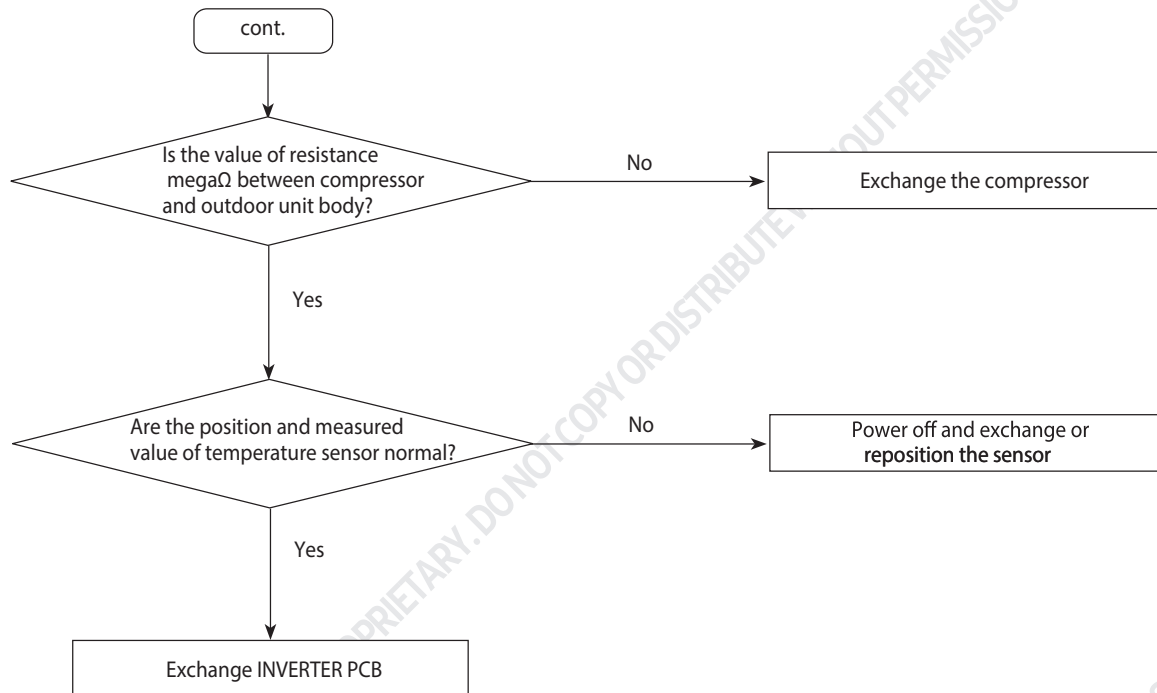
4-5-7 IPM(IGBT module) over current error (E464)

1. Check items

- 1) Is refrigerant charged?
- 2) Does the compressor work normally?
- 3) Is the connection of compressor correctly?
- 4) Is there any obstacle around indoor and outdoor unit?

2. Check procedure



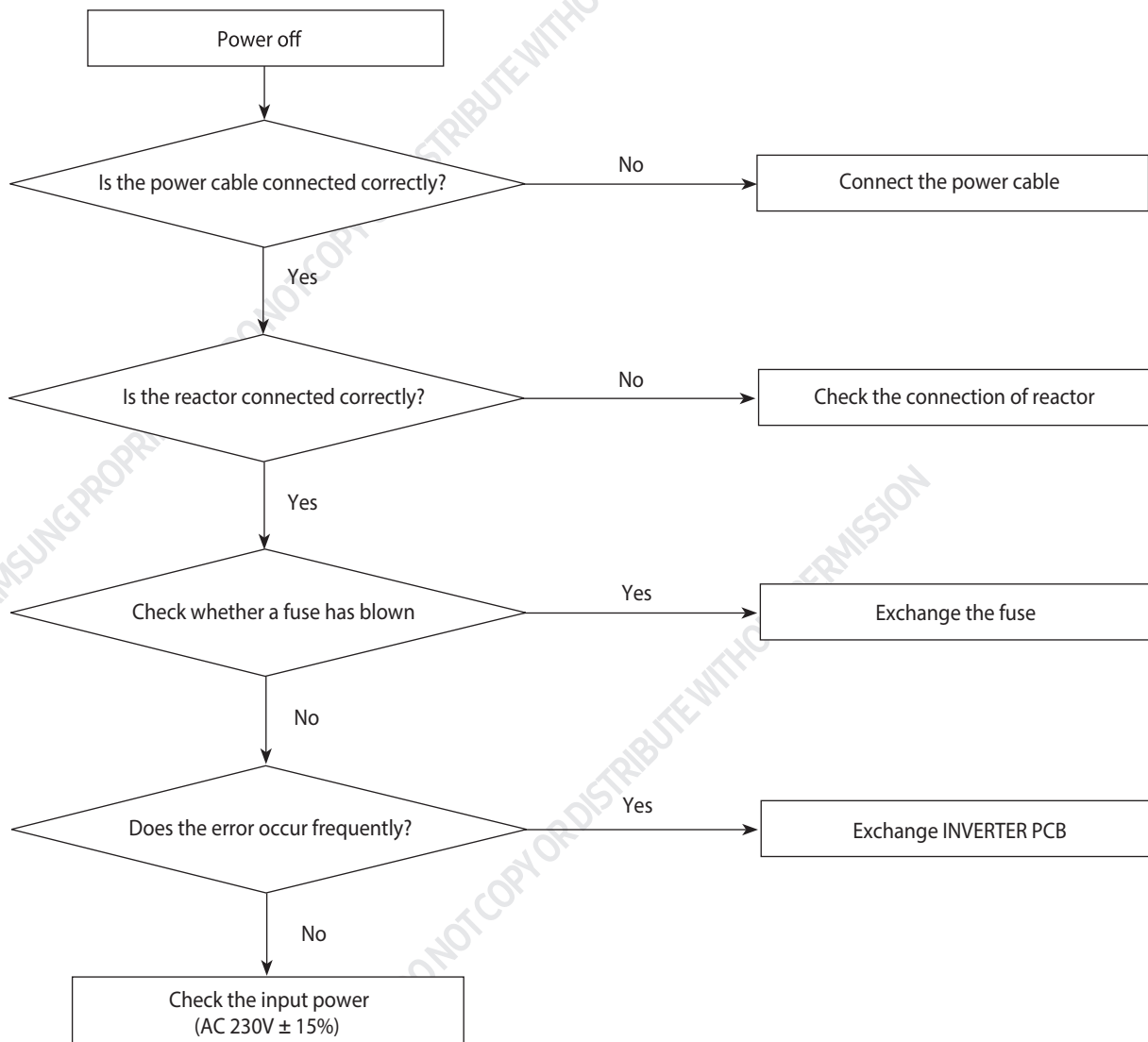
IPM(IGBT module) over current error (E464) (cont.)

4-5-8 DC-link voltage under/over error (E466)

1. Check items

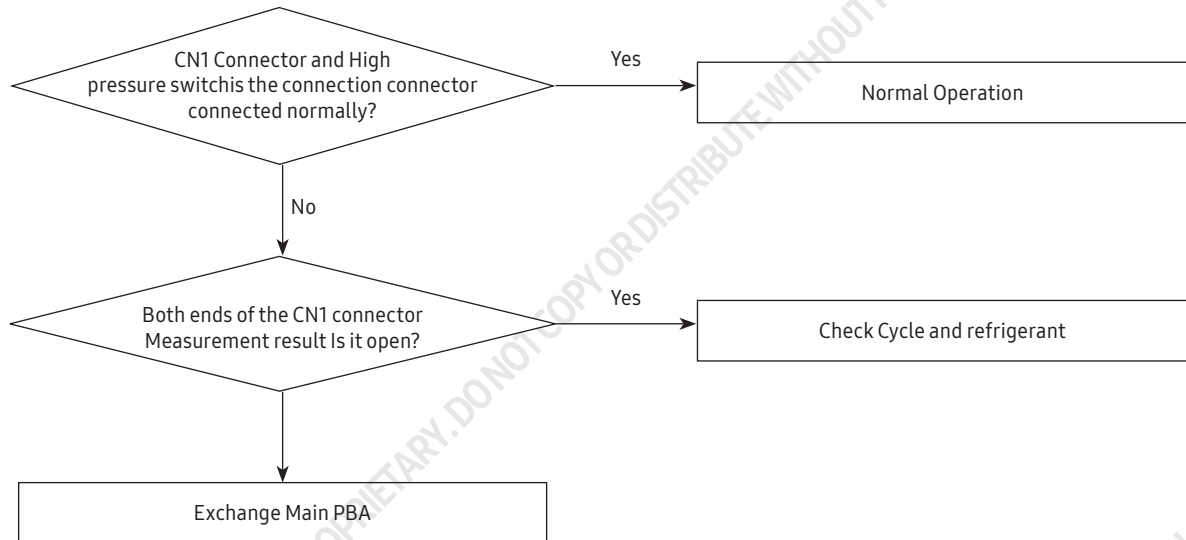
- 1) Is the input power normal?
- 2) Is the AC power connected correctly?

2. Check procedure



4-5-9 High Pressure Switch Error (E507)

1. Check items
 - 1) Is the CN1 connector and the high pressure switch connection connector normally engaged?
 - 2) Is the high-voltage switch open? (Protection operation by high pressure)
2. Check procedure

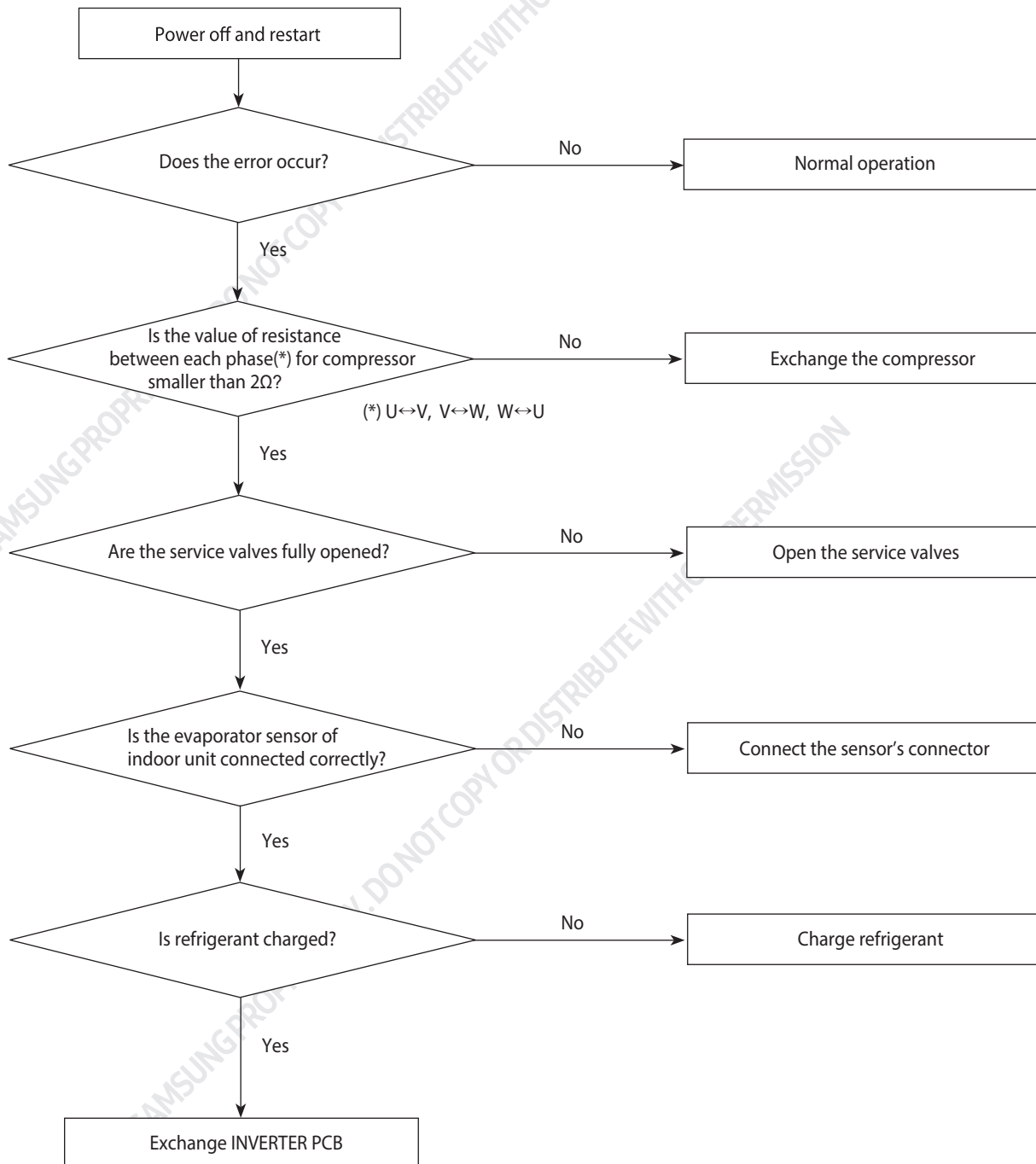


4-5-10 GAS leak error(E554)

1. Check items

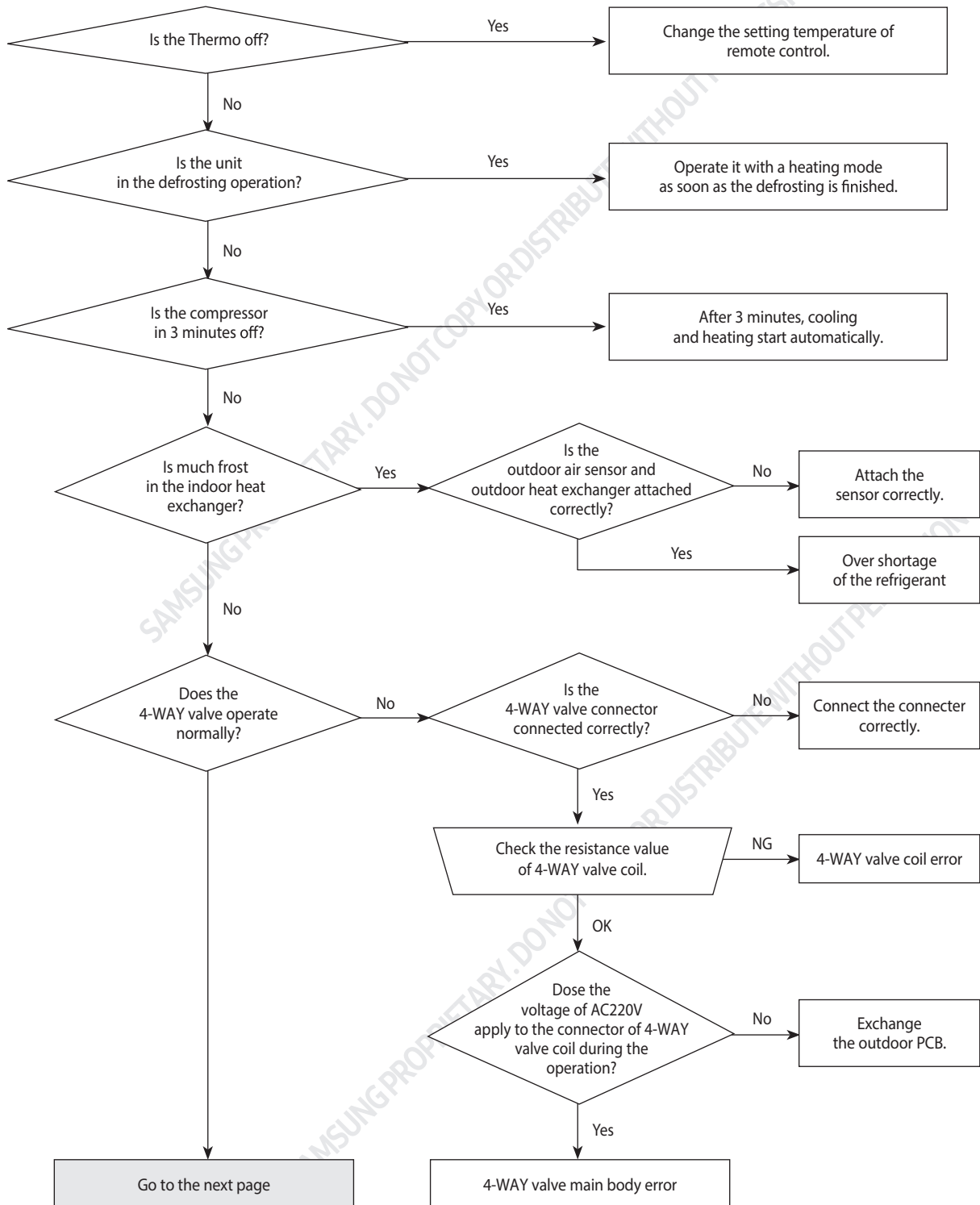
- 1) Is refrigerant charged?
- 2) Is the evaporator sensor of indoor unit connected correctly?

2. Check procedure

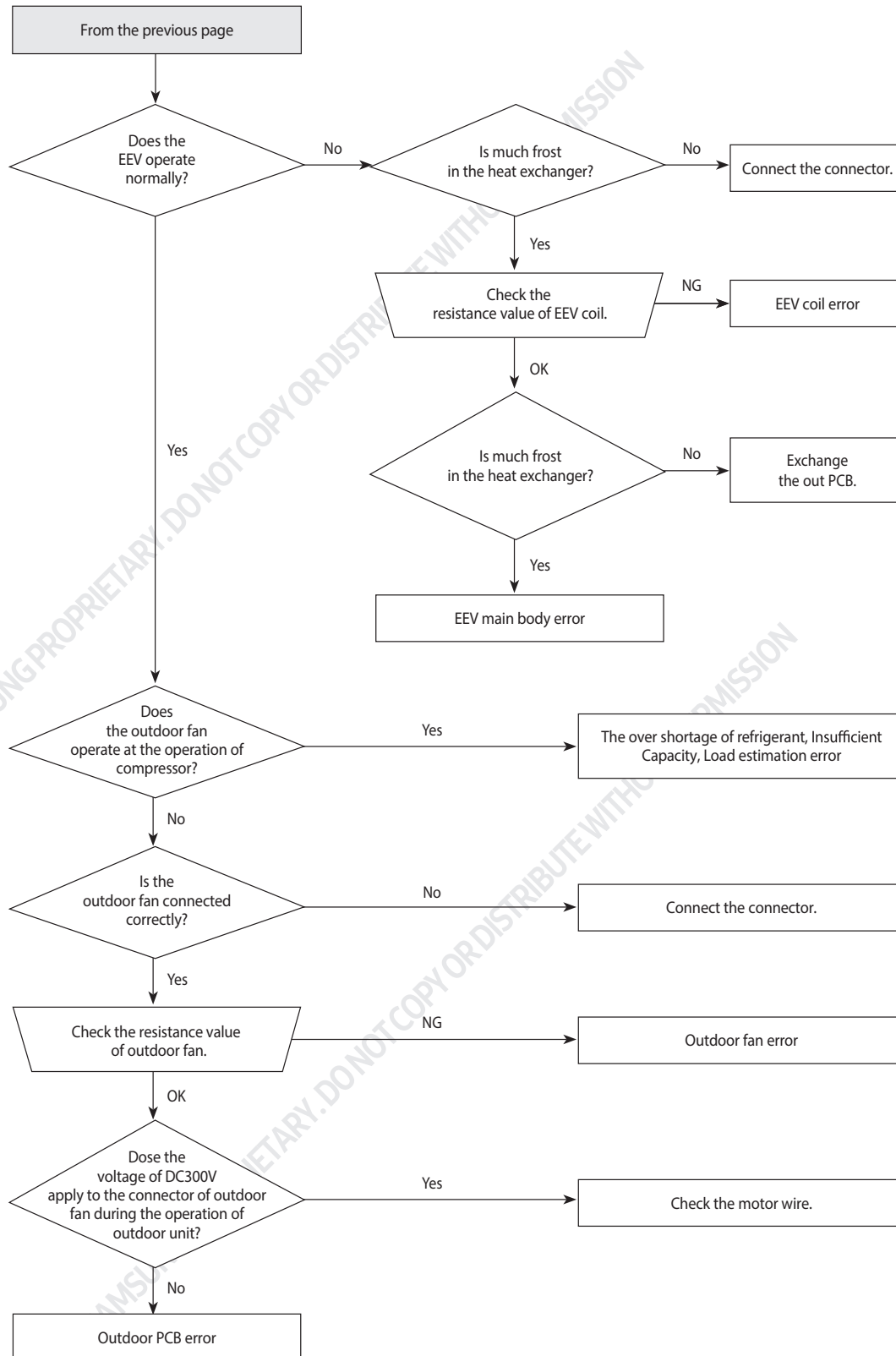


4-5-11 In case of heating at the cooling mode or cooling at the heating mode

1. Troubleshooting procedure



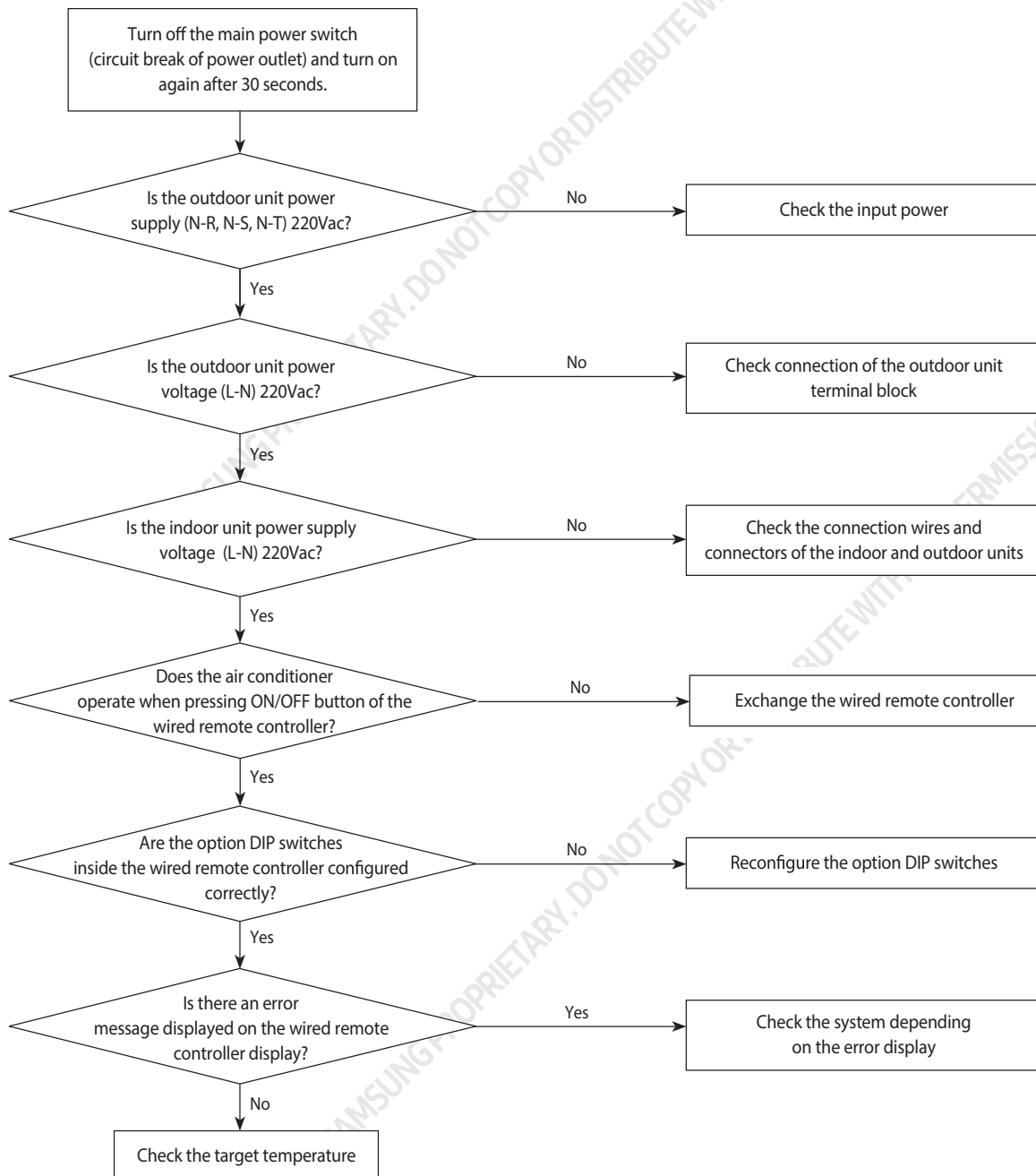
In case of heating at the cooling mode or cooling at the heating mode (cont.)



ormal resistance value of EEV valve coil(Red-Black or Yellow-Orange) : $92 \pm 8\Omega$ (at 20℃)

4-5-12 Outdoor unit is not powerde on - Intial diagnosis

1. Check items
 - 1) Is the power supply voltage 380V?
 - 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

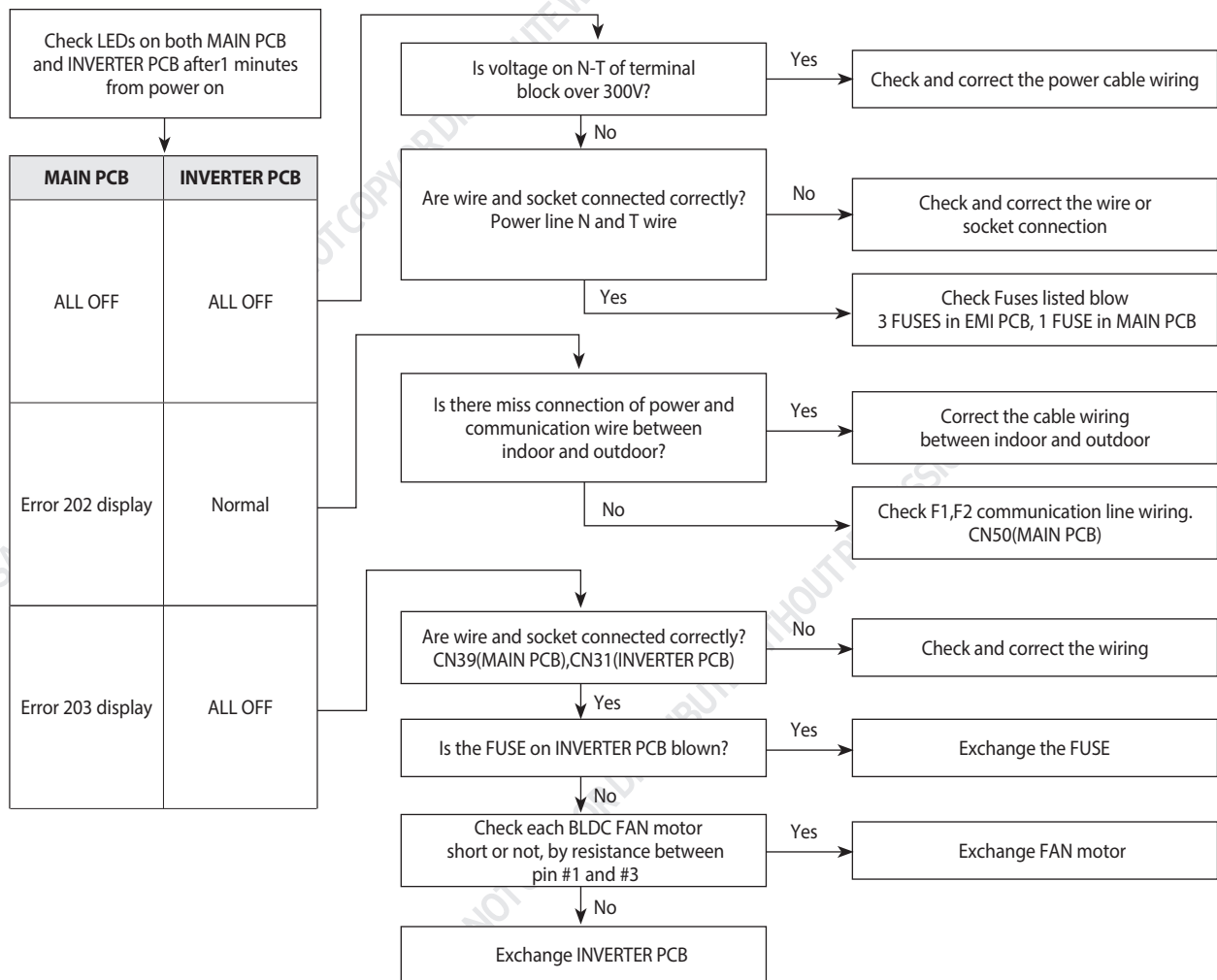


4-5-13 Outdoor unit power supply error

1. Checklist:

- 1) Are the input power voltage and power connection correct?
- 2) Is there any Fuse Short of the indoor or outdoor unit?
- 3) Is any LED lit on both MAIN PCB and INVERTER PCB?
- 4) Are Reactor wires of the outdoor unit connected correctly?

2. Troubleshooting procedure

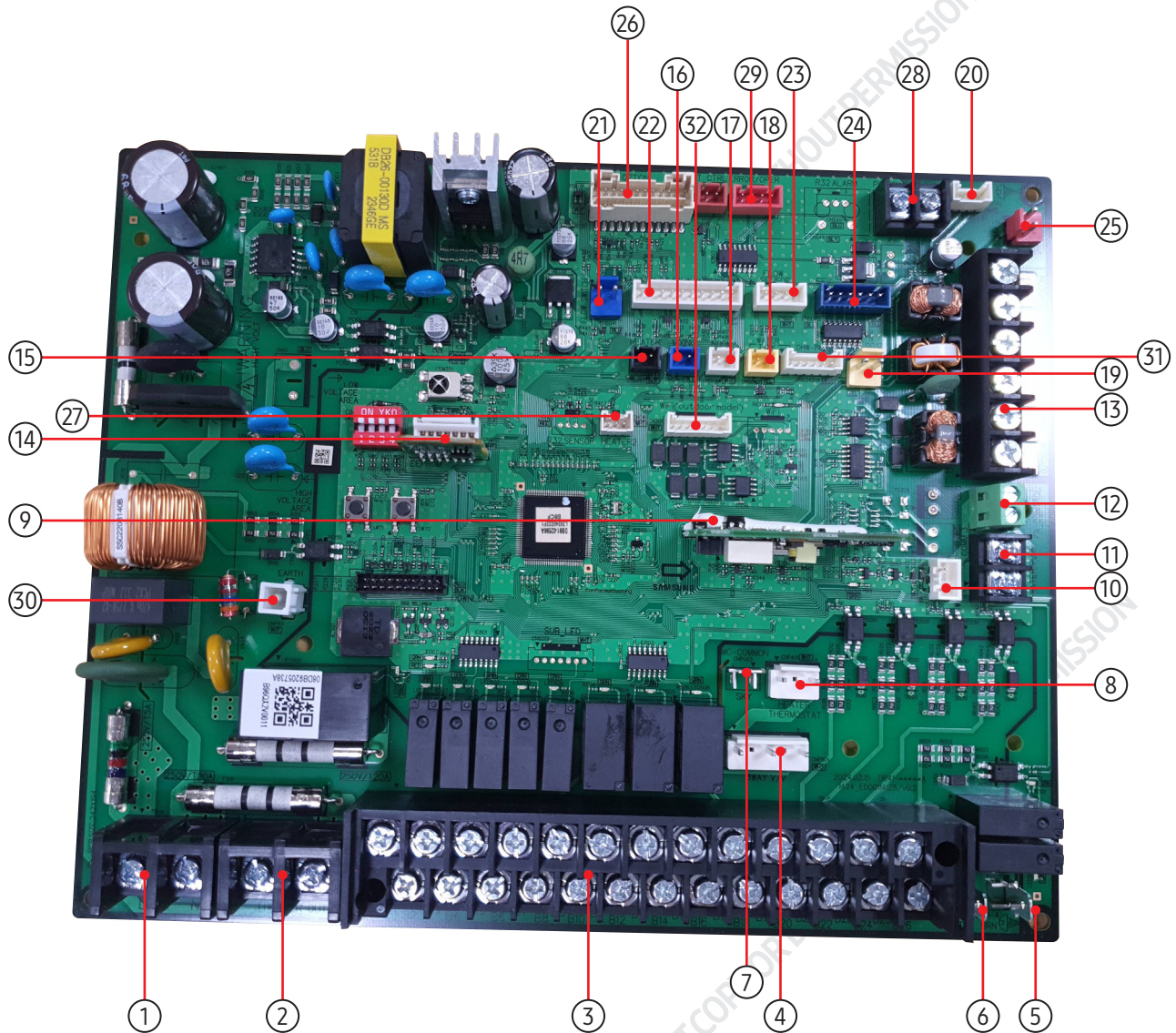


5. PCB Diagram

5-1 Climate Hub/ Hydro Unit

Layout of PCB

(AE***DN*MPK)



No.	Local	Function	Terminal	Terminal description
1	TB-A	AC POWER-IN	#1: L	AC INPUT
			#2: N	AC INPUT
2 ⁽¹⁾	TB-A1	BOOSTER HEATER	#1: BOOSTER HEATER SIGNAL(L)	AC OUTPUT
			#2: N	AC OUTPUT

(1) No. 2 TB-A1 is only used for AE160DN*** (Not applicable for AE200DN***)

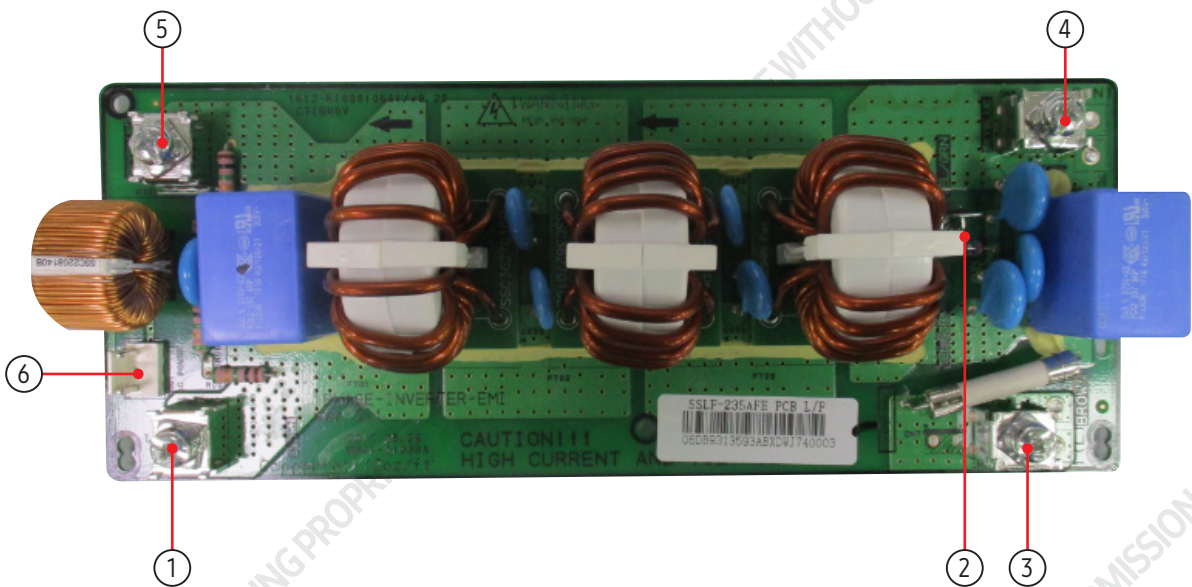
No.	Local	Function	Terminal	Terminal description
3	TB-B	LOAD CONTROL	#1: N	AC OUTPUT
			#2: MIXING VALVE_CW (L)	AC OUTPUT
			#3: MIXING VALVE_CCW (L)	AC OUTPUT
			#4: BOILER (L)	AC OUTPUT
			#5: N	AC OUTPUT
			#6: WATER PUMP (L)	AC OUTPUT
			#7: N	AC OUTPUT
			#8: WATER PUMP ADD (L)	AC OUTPUT
			#9: 2WAY VALVE1_NO (L)	AC OUTPUT
			#10: 2WAY VALVE1_NC (L) Zone1 Water Pump output (FSV 4061=1)	AC OUTPUT
			#11: N	AC OUTPUT
3	TB-B	LOAD CONTROL	#12: L	AC OUTPUT
			#13: 2WAY VALVE2_NO (L)	AC OUTPUT
			#14: 2WAY VALVE2_NC (L) Zone2 Water Pump output (FSV 4061=1)	AC OUTPUT
			#15: N	AC OUTPUT
			#16: L	AC OUTPUT
			#17: 3WAY VALVE1_NO (L)	AC OUTPUT
			#18: 3WAY VALVE1_NC (L)	AC OUTPUT
			#19: N	AC OUTPUT
			#20: L	AC OUTPUT
			#21: THERMOSTAT1_C (L)	AC INPUT
			#22: THERMOSTAT1_H (L)	AC INPUT
			#23: THERMOSTAT2_C (L)	AC INPUT
			#24: THERMOSTAT2_H (L)	AC INPUT
4	CNP501	3WAY VALVE	#1: N	AC OUTPUT
			#2: -	
			#3: 3WAY VALVE_NO (L)	AC OUTPUT
			#4: -	
			#5: 3WAY VALVE_NC (L)	AC OUTPUT
5	CNP001	MC1-A	#1: BACK UP HEATER (L)	AC OUTPUT
6	CNP002	MC2-A	#1: BACK UP HEATER FOR MHC-300FP MODEL (L)	AC OUTPUT
7	CNP003	MC-COMMON	#1: THERMOSTAT OUTPUT (N)	AC OUTPUT
8	CNP401	HEATER THERMOSTAT	#1: THERMOSTAT OUTPUT (N)	AC OUTPUT
			#2: -	
			#3: N	AC OUTPUT
9	CN1	WIRED REMOCON COMM. SUB PBA		
10	CNS001	WATER PUMP	#1: WATER PUMP PWM SIGNAL	DC OUTPUT
			#2: -	
			#3: GND	DIGITAL GROUND

No.	Local	Function	Terminal	Terminal description
11	CNS002	WATER PUMP	#1: WATER PUMP PWM SIGNAL	DC OUTPUT
			#2: GND	DIGITAL GROUND
12	CNS003	FR_CONTROL	#1: FR CONTROL DC INPUT	DC INPUT
			#2: GND	DIGITAL GROUND
13	TB-C	COMMUNICATION & DC12V	#1: COM1 (F1)	RS485-COMM
			#2: COM1 (F2)	
			#3: V1 (DC12V)	DC OUTPUT
			#4: V2 (GND)	DIGITAL GROUND
			#5: COM2 (F3)	WIRED REMOTE CONTROLLER
			#6: COM2 (F4)	
14	CN900	EEPROM	#1: GND	DIGITAL GROUND
			#2: -	
			#3: DC 5V	DC OUTPUT
			#4: EEPROM_SELECT	DC SIGNAL
			#5: EEPROM_SO	DC SIGNAL
			#6: EEPROM_SI	DC SIGNAL
			#7: EEPROM_CLK	DC SIGNAL
15	CNS047	HEATER SENSOR	#1: HEATER TEMP. (10kΩ@25°C)	DIGITAL INPUT
			#2: GND	DIGITAL GROUND
16	CNS045	MIXING VALVE SENSOR	#1: MIXING VALVE TEMP. (10kΩ@25°C)	DIGITAL INPUT
			#2: GND	DIGITAL GROUND
17	CNS047	ROOM SENSOR	#1: ROOM TEMP. (10kΩ@25°C)	DIGITAL INPUT
			#2: GND	DIGITAL GROUND
18	CNS042	WATER TANK SENSOR	#1: WATER TANK TEMP. (10kΩ@25°C)	DIGITAL INPUT
			#2: GND	DIGITAL GROUND
19	CNS012	DC12V	#1: DC12V	DIGITAL OUTPUT
			#2: GND	DIGITAL GROUND
20	CNS202	EHS CONVERTER	#1: COM1 (F1)	RS485-COMM
			#2: COM1 (F2)	
			#3: GND	DIGITAL GROUND
			#4: DC12V	DC OUTPUT
21	CNS041	FLOW SWITCH	#1: FLOW SWITCH	DIGITAL INPUT
			#2: GND	DIGITAL GROUND
22	CNS043	SENSOR	#1: HEATER TEMP. (10kΩ@25°C)	DIGITAL INPUT
			#2: GND	DIGITAL GROUND
			#3: EVA-OUT TEMP. (10kΩ@25°C)	DIGITAL INPUT
			#4: GND	DIGITAL GROUND
			#5: EVA-IN TEMP. (10kΩ@25°C)	DIGITAL INPUT
			#6: GND	DIGITAL GROUND
			#7: WATER-OUT TEMP. (10kΩ@25°C)	DIGITAL INPUT
			#8: GND	DIGITAL GROUND
			#9: WATER-IN TEMP. (10kΩ@25°C)	DIGITAL INPUT
			#10: GND	DIGITAL GROUND

No.	Local	Function	Terminal	Terminal description
23	CNS057	FLOW SENSOR	#1: DC 5V	DC OUTPUT
			#2: FLOW SENSOR DC INPUT	DC INPUT
			#3: GND	DIGITAL GROUND
			#4: -	
24	CNS062/ CNS063	EEV (SPLIT/MONO: Not use)	#1~#4: EEV CONTROL PWM SIGNAL	DC OUTPUT
			#5: DC 12V	DC OUTPUT
			#6: DC 12V (CNS063 ONLY)	DC OUTPUT
25	CNS304	COMMUNICATION	#1: COM2 (F3)	WIRED REMOTE CONTROLLER
			#2: COM2 (F4)	
26	CNS051	OPTION CONNECT (DRY CONTACT, Thermistor)	#1: SG READY1 SIGNAL	DC INPUT
			#2: OPTION TEMP. (10kΩ@25°C)	DIGITAL GROUND
			#5: SG READY2 SIGNAL	DC INPUT
			#6: ZONE2 TEMP. (10kΩ@25°C)	DIGITAL GROUND
			#9: EMERGENCY_STOP	DC INPUT
			#10: ZONE1 FLOW TEMP. (10kΩ@25°C)	DIGITAL GROUND
			#13: DRY CONTACT_1	DC INPUT
			#14: ZONE2 FLOW TEMP. (10kΩ@25°C)	DIGITAL GROUND
			#17: DRY CONTACT_2	DC INPUT
			#21: DRY CONTACT_3	DC INPUT
			#3,4,7,8,11,12,15,16,19,23: GND	DIGITAL GROUND
			#18,20,22,24: -	
27	CN048	HEATER SENSOR2	#1: HEATER TEMP. (10kΩ@25°C)	DIGITAL INPUT
			#2: GND	DIGITAL GROUND
28	CNS046	PV/Peak power control SIGNAL	#1: PV (Photovoltaic) Control Signal/ Peak power control Signal	DC INPUT
			#2: GND	DIGITAL GROUND
29	CN201	DOWNLOAD		
30	CNP101	EARTH	#1: EARTH	EARTH
31	CNS042-1	WATER TANK/ DHW IN SENSOR	#1: WATER TANK TEMP. (200kΩ@25°C)	DIGITAL INPUT
			#2: GND	DIGITAL GROUND
			#3: DHW IN TEMP. (10kΩ@25°C)	DIGITAL INPUT
			#4: GND	DIGITAL GROUND
			#5: -	
			#6: -	
32	CN301	AI Home	#1,2: MICOM Tx SIGNAL	URAT
			#3,4: MICOM Tx SIGNAL	URAT
			#6: GND	DIGITAL OUTPUT
			#7: DC 12V	DC OUTPUT

EMI PCB

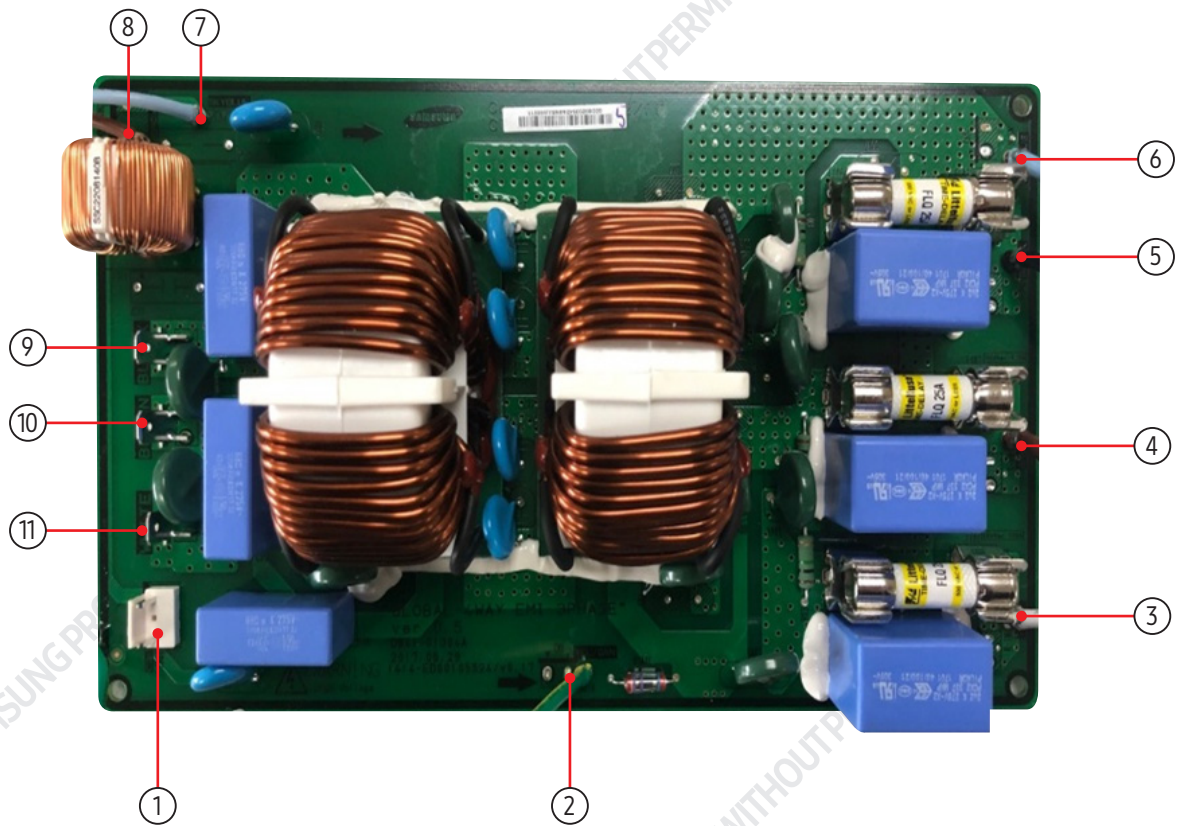
(AE125/160HCTP*S)



No.	Local	Function	Description
1	L1	AC POWER	OT-048
2	CN8	EARTH	YTR250
3	CN4	AC POWER L	OT-048
4	CN5	AC POWER N	OT-048
5	N1	AC POWER	OT-048
6	CN01	AC POWER	YW396-03AV WHT

■ EMI PCB

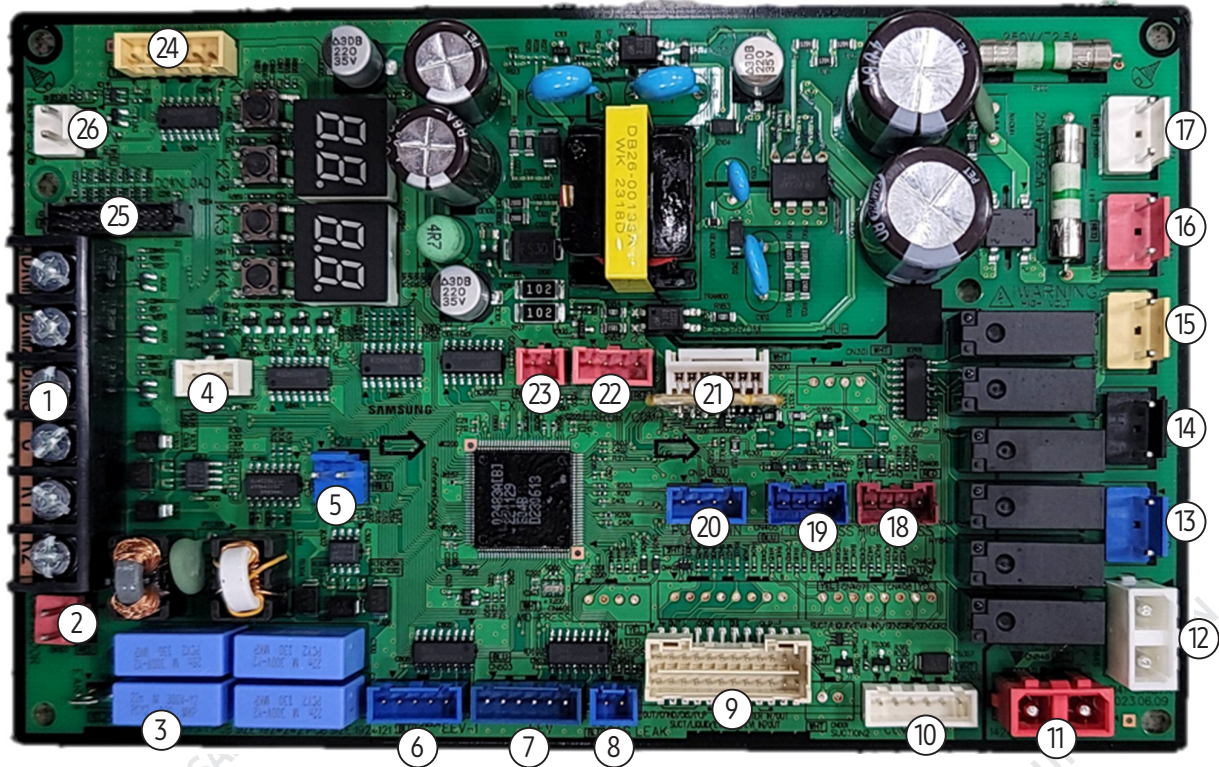
(AE125/160HCTP*S)



No.	Local	Function	Description
1	CN01	AC POWER	YW396-03AV WHT
2	EARTH	EARTH	YEL/GRN WIRE
3	R-IN	AC POWER	WHT WIRE
4	S-IN	AC POWER	BRN WIRE
5	T-IN	AC POWER	BLK WIRE
6	N-IN	AC POWER	SKY/BLU WIRE
7	N-INV	AC POWER	SKY/BLU WIRE
8	T-INV	AC POWER	BRN WIRE
9	T-OUT	AC POWER	YTR250
10	S-OUT	AC POWER	YTR250
11	R-OUT	AC POWER	YTR250

■ MAIN PCB

(AE125/160HCTP*S)

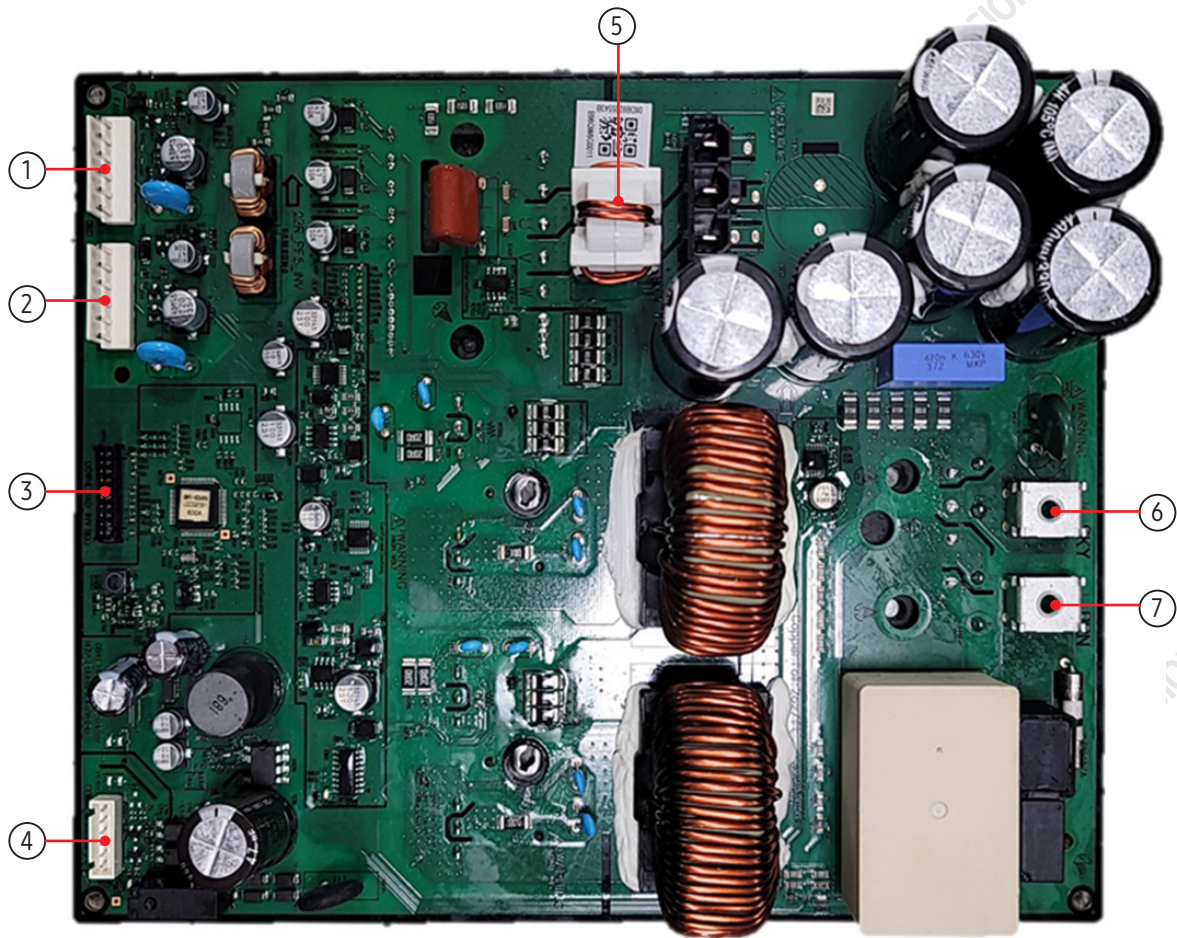


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① TB303 - DRED & UPPER CTRL #1 DRED SIGNAL(DRM1) #2 DRED SIGNAL(DRM2) #3 DRED SIGNAL(DRM3) #4 GND #5 R1 COMM. #6 R2 COMM.	② CN303 - 실내외통신 #1 F1 #2 F2	③ CN300 - EARTH #1 EARTH	④ CN501 - MODE CHANGE #1 SIGNAL #2 GND #3 SIGNAL
⑤ CN12 - DC12V #1 DC12V #2 GND	⑥ CN804 - EEV1 #1 EEV1 SIGNAL #2 EEV1 SIGNAL #3 EEV1 SIGNAL #4 EEV1 SIGNAL #5 DC12V	⑦ CN803 - EEV #1 EEV SIGNAL #2 EEV SIGNAL #3 EEV SIGNAL #4 EEV SIGNAL #5 DC12V #6 DC12V	⑧ CN2 - GAS LEAK #1 GND #2 SIGNAL
⑨ CN403 - THERMISTOR #1 OUT TEMP #3 COND TEMP #5 DISCHARGE TEMP #7 OLP TEMP #9 SUCTION TEMP #11 EVA IN TEMP #13 EVI IN TEMP #15 EVI OUT TEMP #17 WATER IN TEMP #19 WATER OUT TEMP #2,4,6,8,10,12,14,16,18,20,22,24 GND	⑩ CN302 - MAIN ↔ INV COMM. #1 TXD #2 RXD #3 GND #4 DC5V #5 DC12V #6 INV POWER CTRL	⑪ CN846 - PHE HEATER #1 POWER_L (Relay Output) #2 POWER_N	⑫ CN845 - EVI BYPASS VALVE #1 POWER_L (Relay Output) #2 POWER_N
⑬ CN844 - BASE HEATER #1 POWER_L (Relay Output) #3 POWER_N	⑭ CN843 - EVI SOL VALVE #1 POWER_L (Relay Output) #3 POWER_N	⑮ CN842 - 4WAY VALVE #1 POWER_L (Relay Output) #3 POWER_N	⑯ CN841 - HOT GAS #1 POWER_L (Relay Output) #3 POWER_N
⑰ CN100 - POWER INPUT #1 POWER_L #3 POWER_N	⑱ CN406 - HIGH PRESSURE SENSOR #1 SIGNAL #3 GND #4 DC5V	⑲ CN405 - LOW PRESSURE SENSOR #1 SIGNAL #3 GND #4 DC5V	⑳ CN10 - PUMP DOWN #1 PUMP DOWN START SIGNAL #2 DC12V #3 PUMP DOWN END SIGNAL #4 DC12V
㉑ CN200 - EEPROM #1 GND #3 DC5V #4 EEPROM CS #5 EEPROM SO #6 EEPROM SI #7 EEPROM CLOCK	㉒ CN801 - ERROR CHECK/COMP CHECK #1 DC12V #2 ERROR CHECK #3 DC12V #4 COMP CHECK	㉓ CN802 - EXTERNAL CONTROL #1 GND #2 EXT_CTRL	㉔ CN805 - EEV 2 #1 EEV 2 SIGNAL #2 EEV 2 SIGNAL #3 EEV 2 SIGNAL #4 EEV 2 SIGNAL #5 DC12V #6 DC12V
㉕ CN201 - DOWNLOAD #1~20 DOWNLOAD SIGNAL	㉖ CN1 - HIGH PRESSURE SWITCH #1 HIGH PRESSURE SWITCH #2 GND		

■ INV. PCB

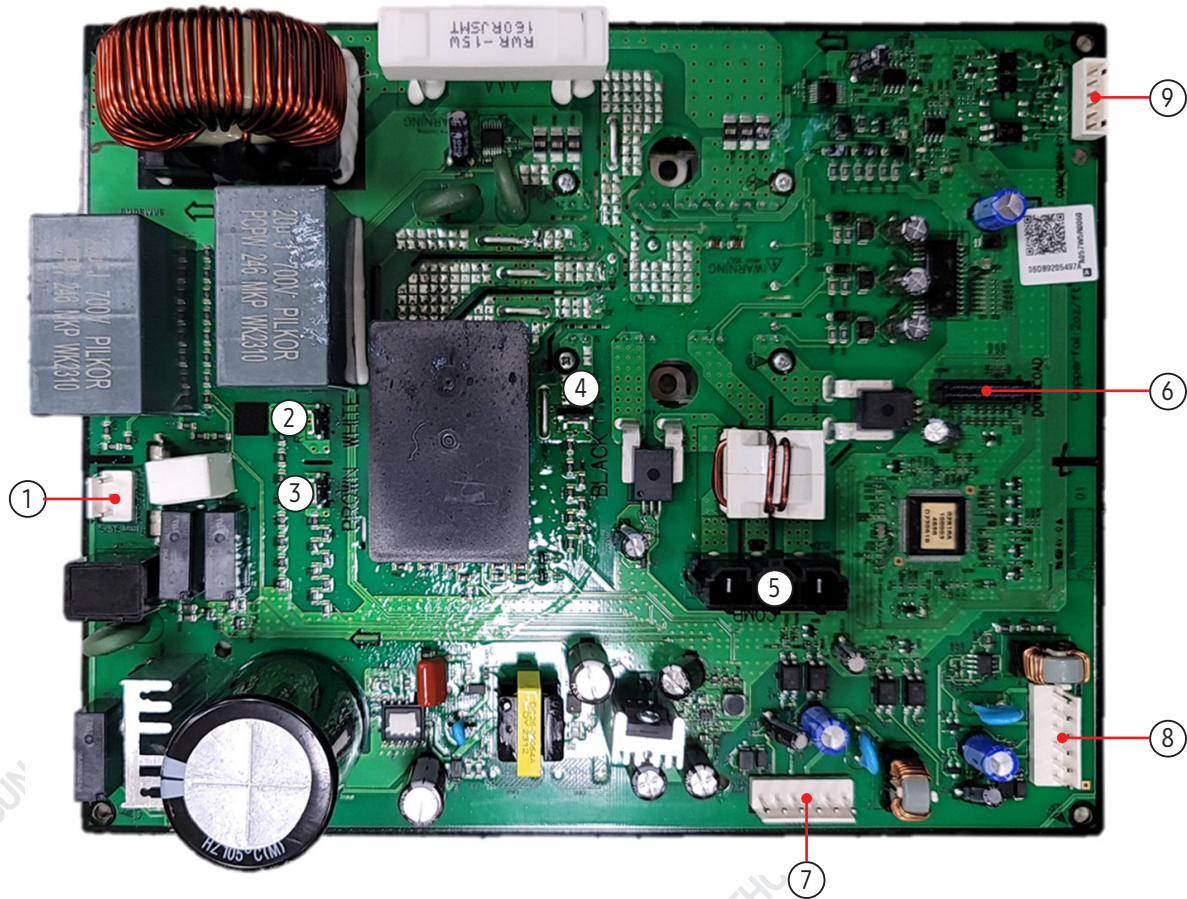
(AE125/160HCTP*S)



① CN901 - FAN1 #1 DC 310V #2 N.C #3 GND #4 DC 15V #5 FAN RPM #6 FAN RPM F/B	② CN911 - FAN2 #1 DC 310V #2 N.C #3 GND #4 DC 15V #5 FAN RPM #6 FAN RPM F/B	③ CN551 - DOWNLOAD #1~20 DOWNLOAD SIGNAL	④ CN351 - MAIN ↔ INV COMM. #1 RXD #2 TXD #3 GND #4 DC 5V #5 DC 12V #6 INV POWER CTRL
⑤ CN404 - COMP #1 COMP_U PHASE #2 COMP_V PHASE #3 COMP_W PHASE	⑥ L_ - AC POWER #1 POWER_L	⑦ N_ - AC POWER #1 POWER_N	

■ INV. PCB

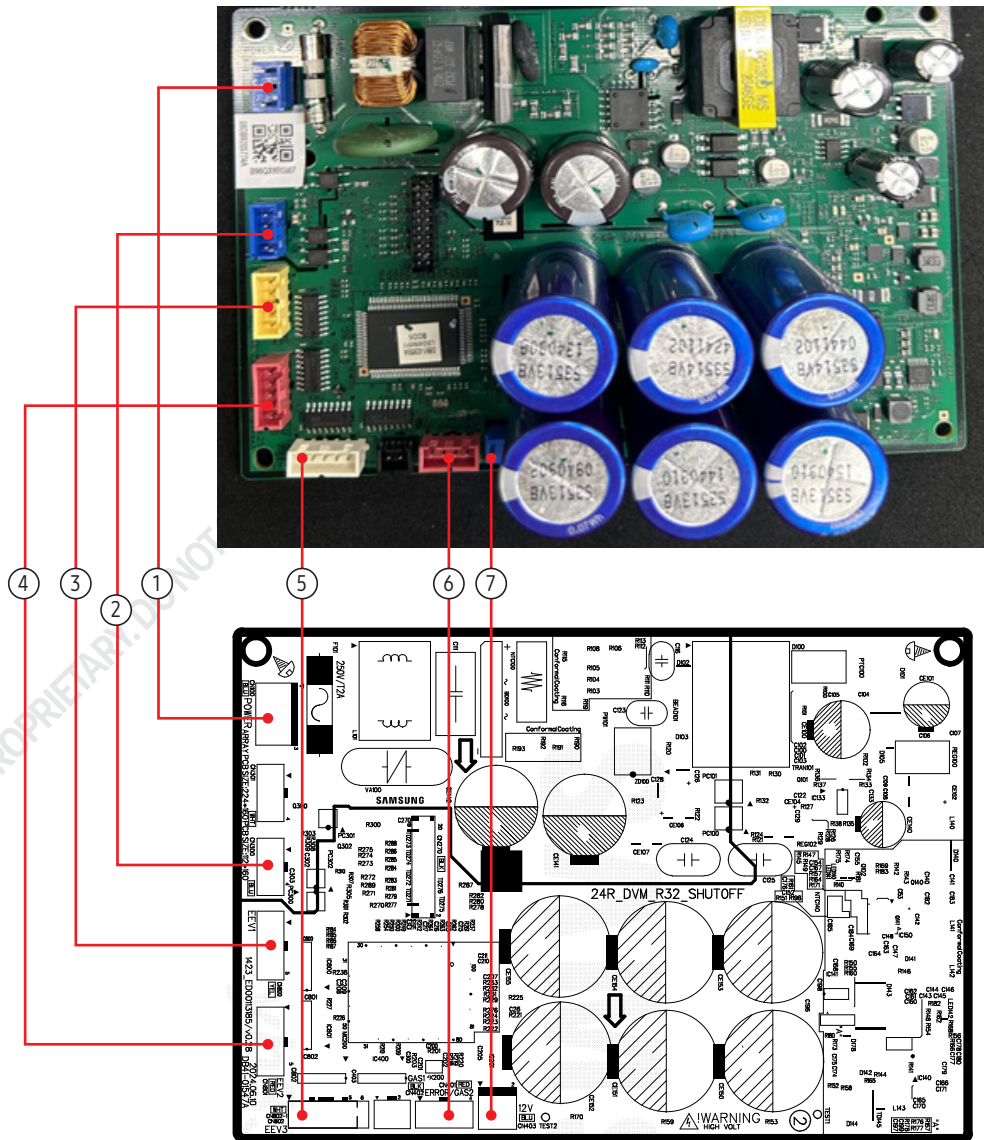
(AE125/160HCTP*S)



① CNP101 - AC POWER #1 POWER_L #3 POWER_N	② CNP701 - AC POWER #1 POWER_R	③ CNP702 - AC POWER #1 POWER_S	④ CNP703 - AC POWER #1 POWER_T
⑤ CNP704 - COMP #1 COMP_U PHASE #2 COMP_V PHASE #3 COMP_W PHASE	⑥ CNS201 - DOWNLOAD #1~20 DOWNLOAD SIGNAL	⑦ CNS651 - FAN1 #1 DC 310V #2 N.C #3 GND #4 DC15V #5 FAN RPM #6 FAN RPM F/B	⑧ CNS652 - FAN2 #1 DC 310V #2 N.C #3 GND #4 DC15V #5 FAN RPM #6 FAN RPM F/B
⑨ CNS301 - MAIN ↔ INV COMM. #1 RXD #2 TXD #3 GND #4 DC5V #5 DC12V #6 INV POWER CTRL			

■ Shut-off PBA

(AE125/160HCTP*S)

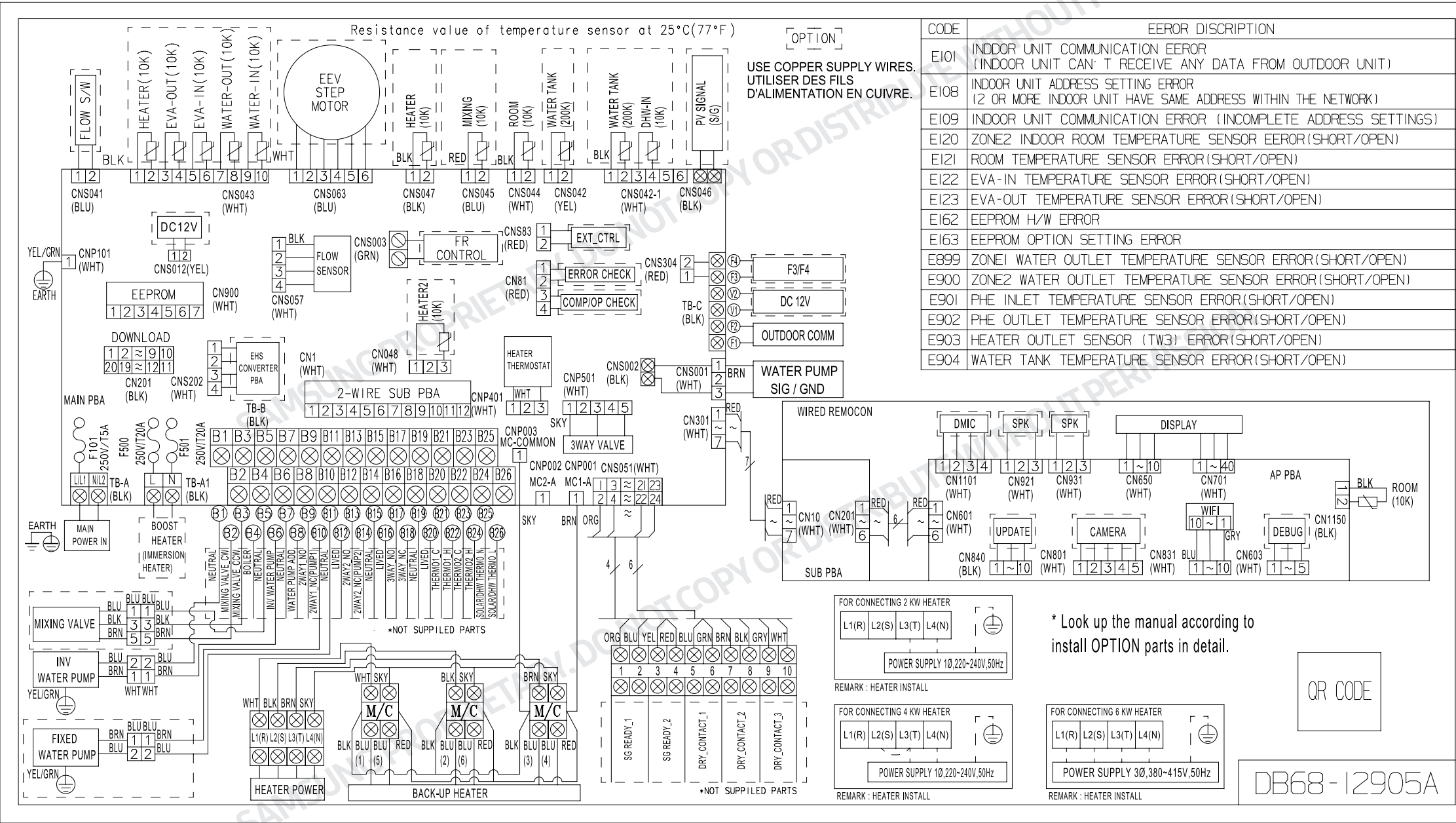


① AC POWER #1~#3: AC220~240V	② CN300 - COMMUNICATION #1: DC12V #2: CN301 - #2 #3: RXD #4: TXD #5: GND	③ CN800 - EEV 0 #1: DC12V #2~#5: EEV SIGNAL	④ CN801 - EEV1 #1: DC12V #2~#5: EEV SIGNAL
⑤ CN802 - EEV3 (N/A) #1: DC12V #2~#5: EEV SIGNAL	⑥ CN401 - Error Output #1: DC12V #2: ERROR OUT #3~#4: N/A	⑦ CN403 #1: DC12V #2: GND	

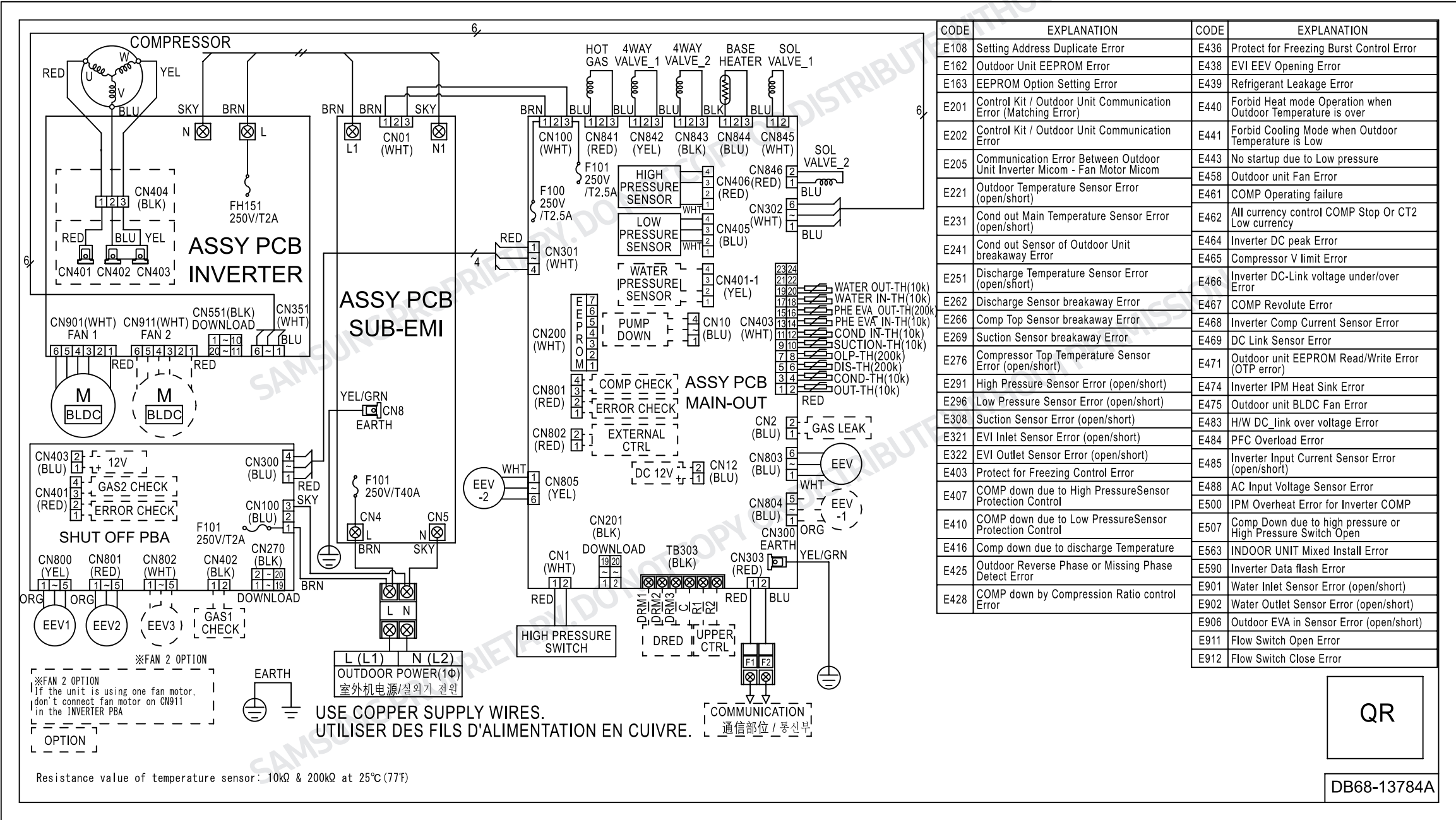
6. Wiring Diagram

6-1 Climate Hub/ Hydro Unit

6-1-1 Wiring diagram (AE***DN*MPK) 1, 3 Phase integrated



6-1-2 Wiring diagram (AE125/160HCTPES)



Wiring Diagram for DB68-13783A Outdoor Unit

The diagram illustrates the electrical connections for the outdoor unit, including power input, inverter control, sensor monitoring, and communication. Key components and their connections are as follows:

- Power Input:** Outdoor Power (3Φ) is connected to the terminal block (L1(R), L2(S), L3(T), L4(N)).
- Inverter Assembly:** The inverter PCB controls the compressor and two fans (FAN1, FAN2). It includes a BLDC motor and various control lines.
- Sensors:** High Pressure Sensor, Low Pressure Sensor, Water Pressure Sensor, and Temperature Sensors (Water In/Out, PHE EVA, Suction, Discharge, and Outdoor) are connected to the main PCB.
- Communication:** The unit features a communication module (COMMUNICATION) for data exchange.
- Error Codes:** A comprehensive table of error codes and their explanations is provided on the right.

CODE	EXPLANATION	CODE	EXPLANATION
E108	Setting Address Duplicate Error	E436	Protect for Freezing Burst Control Error
E162	Outdoor Unit EEPROM Error	E438	EVI EEV Opening Error
E163	EEPROM Option Setting Error	E439	Refrigerant Leakage Error
E201	Control Kit / Outdoor Unit Communication Error (Matching Error)	E440	Forbid Heat mode Operation when Outdoor Temperature is over
E202	Control Kit / Outdoor Unit Communication Error	E441	Forbid Cooling Mode when Outdoor Temperature is Low
E205	Communication Error Between Outdoor Unit Inverter Micom - Fan Motor Micom	E443	No startup due to Low pressure
E221	Outdoor Temperature Sensor Error (open/short)	E458	Outdoor unit Fan Error
E231	Cond out Main Temperature Sensor Error (open/short)	E461	COMP Operating failure
E241	Cond out Sensor of Outdoor Unit breakaway Error	E462	All currency control COMP Stop Or CT2 Low currency
E251	Discharge Temperature Sensor Error (open/short)	E464	Inverter DC peak Error
E262	Discharge Sensor breakaway Error	E465	Compressor V limit Error
E266	Comp Top Sensor breakaway Error	E466	Inverter DC-Link voltage under/over Error
E269	Suction Sensor breakaway Error	E467	COMP Revolute Error
E276	Compressor Top Temperature Sensor Error (open/short)	E468	Inverter Comp Current Sensor Error
E291	High Pressure Sensor Error (open/short)	E469	DC Link Sensor Error
E296	Low Pressure Sensor Error (open/short)	E471	Outdoor unit EEPROM Read/Write Error (OTP error)
E308	Suction Sensor Error (open/short)	E474	Inverter IPM Heat Sink Error
E321	EVI Inlet Sensor Error (open/short)	E475	Outdoor unit BLDC Fan Error
E322	EVI Outlet Sensor Error (open/short)	E483	H/W DC link over voltage Error
E403	Protect for Freezing Control Error	E484	PFC Overload Error
E407	COMP down due to High Pressure Sensor Protection Control	E485	Inverter Input Current Sensor Error (open/short)
E410	COMP down due to Low Pressure Sensor Protection Control	E488	AC Input Voltage Sensor Error
E416	Comp down due to discharge Temperature	E500	IPM Overheat Error for Inverter COMP
E425	Outdoor Reverse Phase or Missing Phase Detect Error	E507	Comp Down due to high pressure or High Pressure Switch Open
E428	COMP down by Compression Ratio control Error	E563	INDOOR UNIT Mixed Install Error
		E590	Inverter Data flash Error
		E901	Water Inlet Sensor Error (open/short)
		E902	Water Outlet Sensor Error (open/short)
		E906	Outdoor EVA in Sensor Error (open/short)
		E911	Flow Switch Open Error
		E912	Flow Switch Close Error

USE COPPER SUPPLY WIRES. UTILISER DES FILS D'ALIMENTATION EN CUIVRE.

***FAN 2 OPTION**
If the unit is using one fan motor, don't connect fan motor on CNS652 in the INVERTER PBA

QR

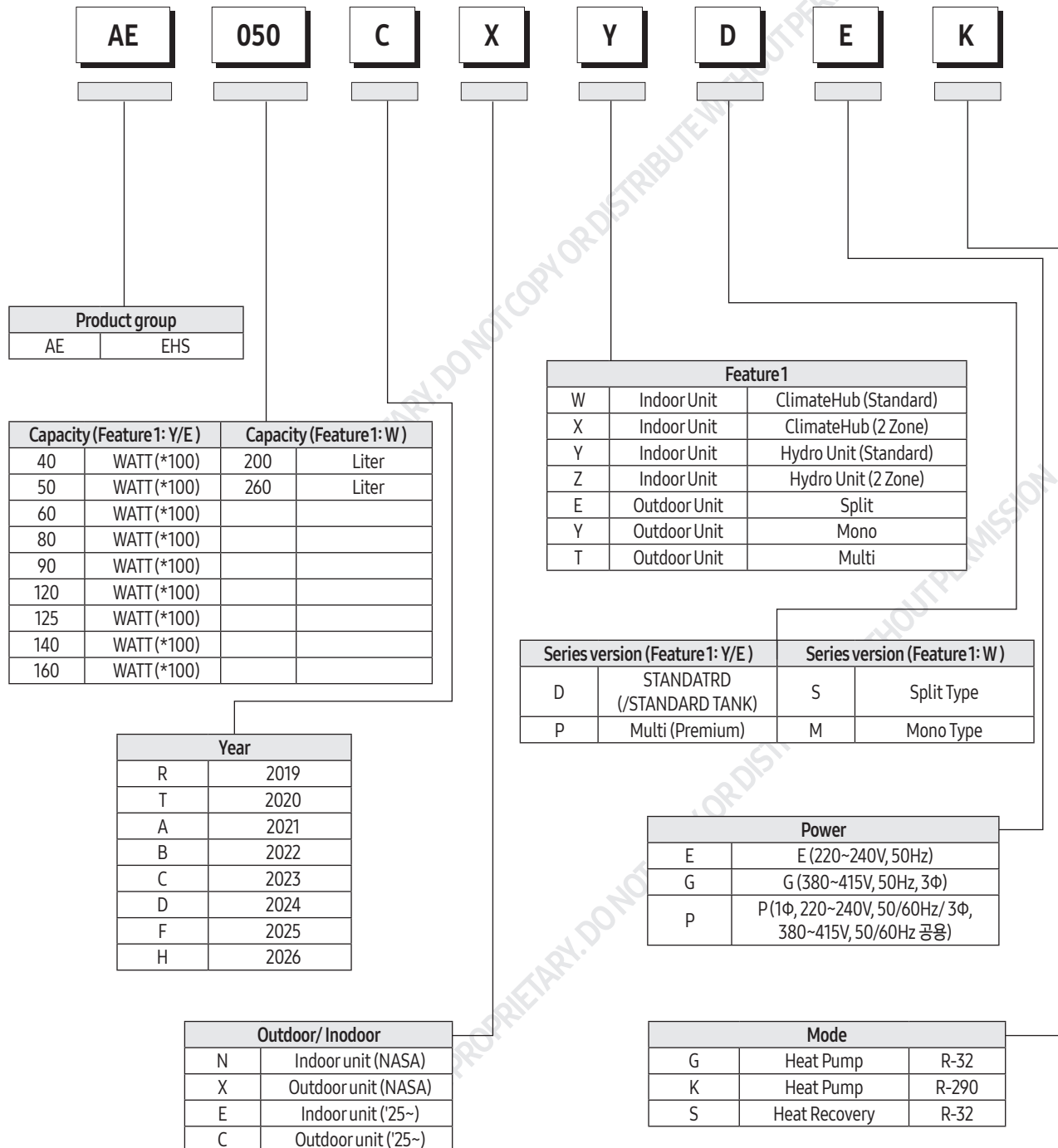
Resistance value of temperature sensor: 10kΩ & 200kΩ at 25℃(77°F)

DB68-13783A

7. Reference Sheet

7-1 Index for Model Name

Model Code



Model Code

AE	200	D	N	W	M	P	K	/	EU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		(Buyer)

(1) Classification	
AE	EHS
AM	DVM
AJ	FJM
AE	EHS

(2) Capacity (3 Digit)	
kW	x1/10
Liter	200

(3) Year	
R	2019
T	2020
A	2021
B	2022
C	2023
D	2024

(4) Product Type	
S	SET (NASA)
N	Indoor unit (NASA)
X	Outdoor Unit (NASA)
A	SET (Non NASA)
B	Indoor unit (Non NASA)
C	Outdoor Unit (Non NASA)

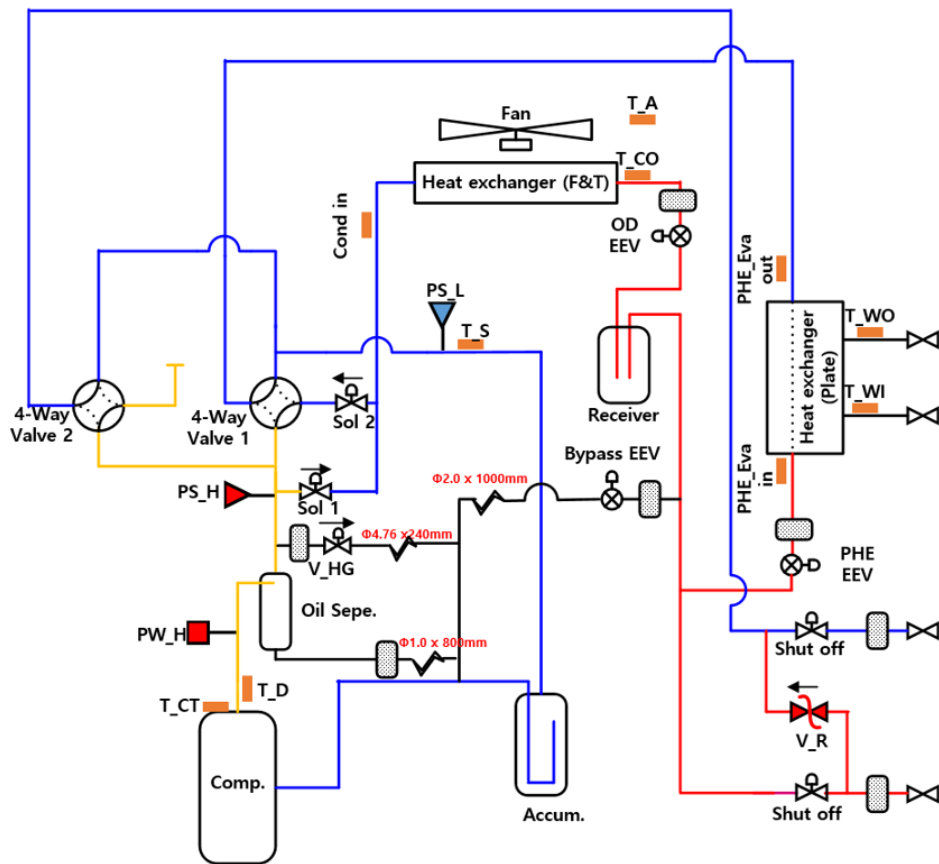
(5) Feature 1	
W	ClimateHub
X	ClimateHub 2 Zone
Y	Hydro Unit
Z	Hydro Unit 2 Zone
E	Split
Y	Mono

(6) Feature 2	
D	Standard
S	Split
M	Mono

(7) Voltage	
A	115V, 60Hz, 1Φ
B	220V, 60Hz, 1Φ
C	208~230V, 60Hz, 1Φ
D	200~220V, 50Hz, 1Φ
E	220~240V, 50Hz, 1Φ
F	208~230V, 60Hz, 3Φ
G	380~415V, 50Hz, 3Φ
P	1Φ, 220~240V, 50/60Hz / 3Φ, 380~415V, 50/60Hz

(8) Mode	
H	Heat Pump (R410A)
G	Heat Pump (R32)
K	Heat Pump (R290)

■ (AE125/160HCTP*S)



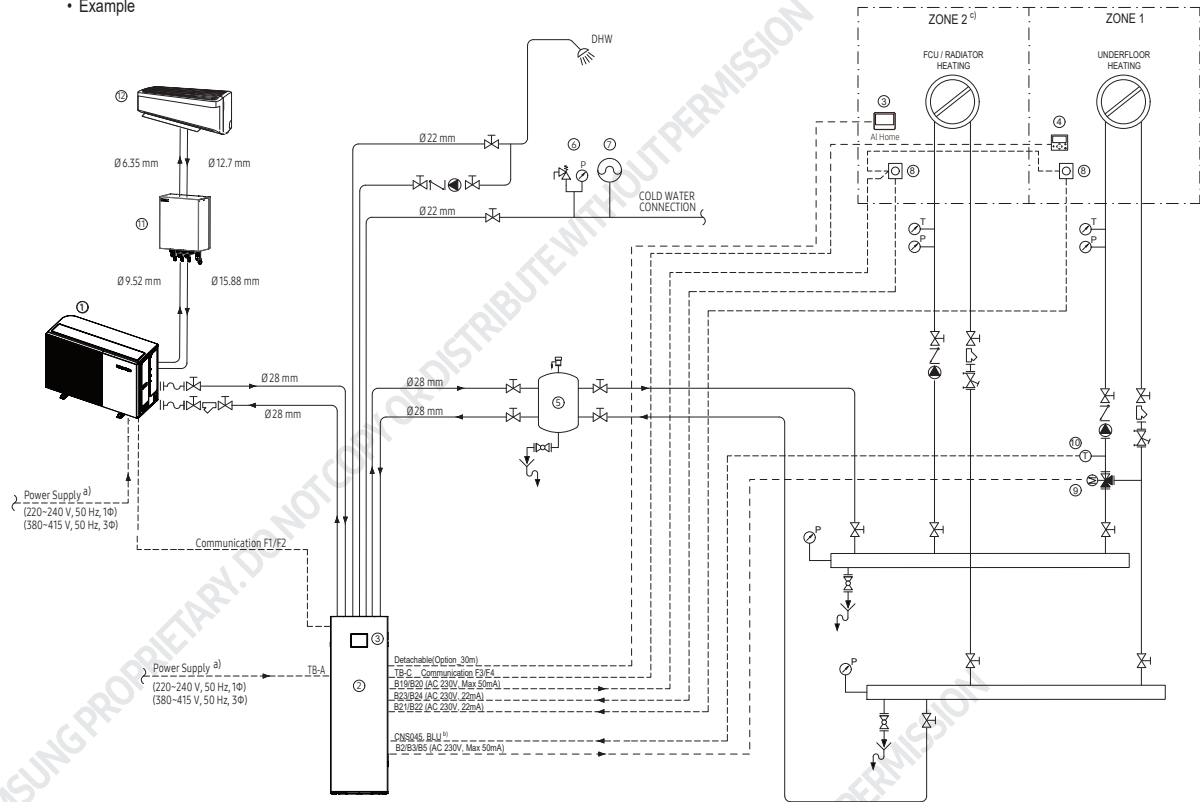
Part	Description
COMP	Compressor
HX_M	Heat Exchanger - Main (Outdoor unit)
AC	Accumulator
Receiver	Receiver
Oil Sepa.	Oil Separator
PS_H	High Pressure Sensor
PS_L	Low Pressure Sensor
PW_H	High Pressure Switch
V_HG	Hot Gas Bypass Valve
E_M	OD EEV
PHE EEV	PHE EEV
Bypass EEV	Bypass EEV
V_4W	4 Way Valve 1/2
T_CT	Top Temperature Sensor

Part	Description
T_D	Discharge Temperature Sensor
T_S	Suction Temperature Sensor
T_CO	Condenser Out Temperature Sensor
T_A	Outdoor Temperature Sensor
OFM	Fan Motor
PHE_Eve in	Eve in Temperature Sensor
PHE_Eve out	Eve out Temperature Sensor
Cond in	Condenser in Temperature Sensor
T_WI	Entering Water Temperature Sensor
T_WO	Leaving Water Temperature Sensor
SV_G	Service Valve (Gas)
SV_L	Service Valve (Liquid)
V_R	Pressure Relief Valve

7-3 Piping & Wiring diagram

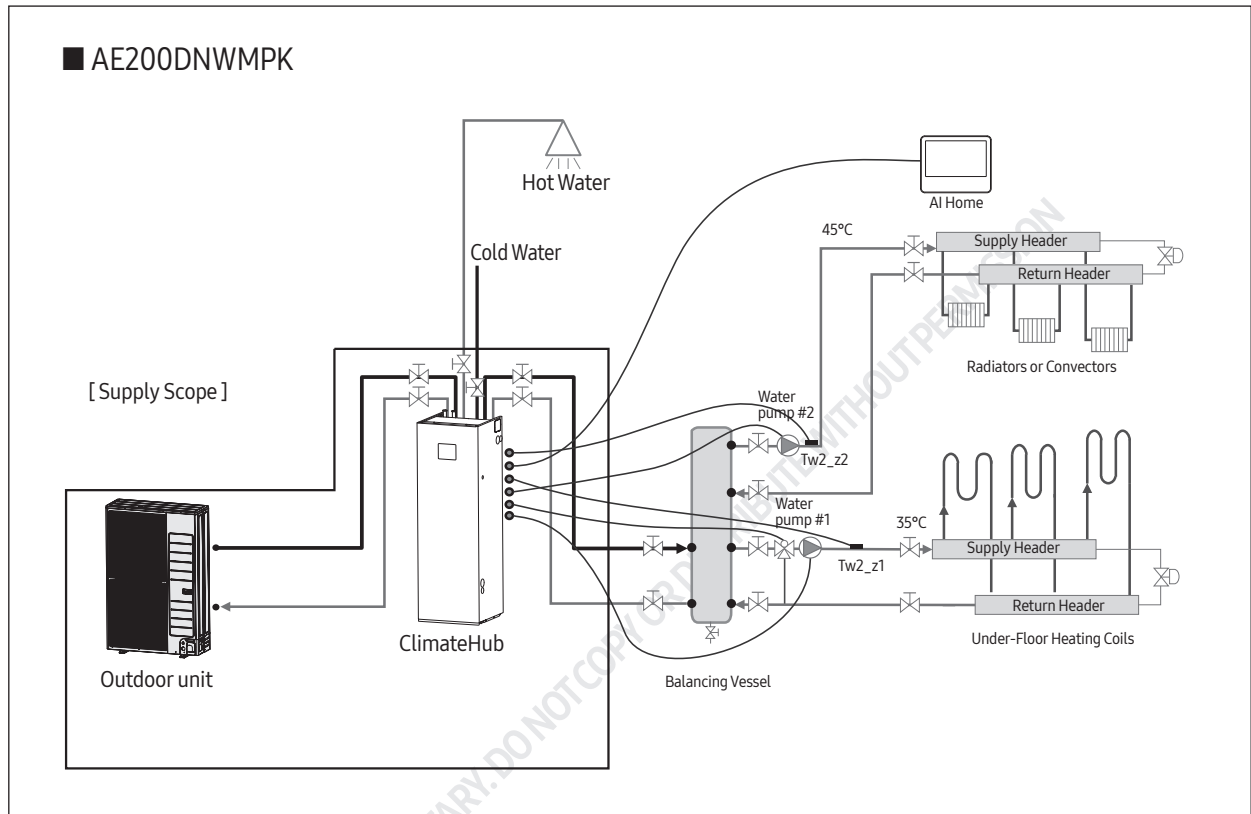
■ (AE125/160HCTP*S)

• Example

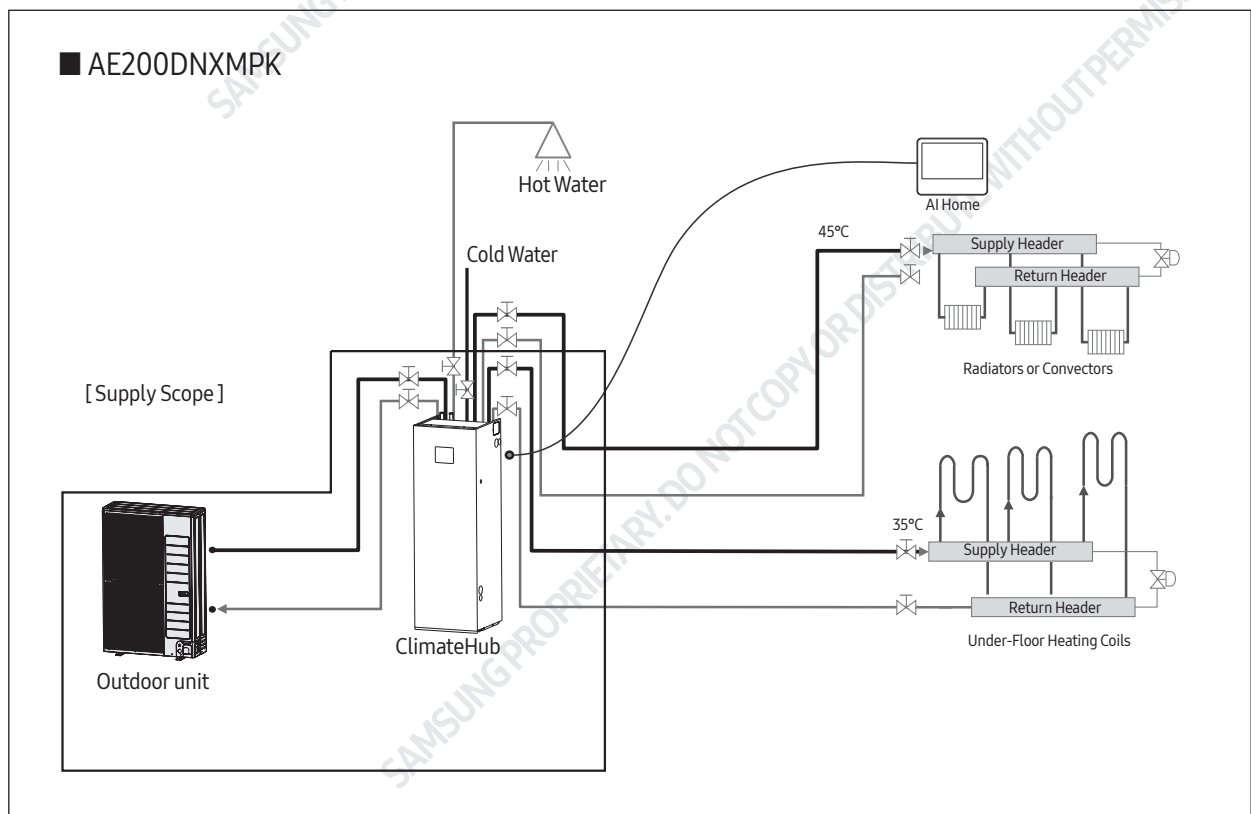


- Samsung EHS ClimateHub is available in 1-phase and 3-phase version.
- Mixing valve temperature sensor for floor heating comes with tank integrated hydro unit (15 m red cable, blue connector on PBA).
- When both zones are simultaneously Thermo On, the operation is performed based on Zone 2.
Set the zone with the higher set temperature to Zone 2.
- Air vent included in tank integrated hydro unit. In case that the water piping would be located in a higher position than the air vent of the tank integrated hydro unit, it is necessary to add additional one at the highest position of the water circuit.
- Pumps for radiator and floor heating can be regulated (on/off) by tank integrated hydro unit (terminals B10/B11 and B14/B15) or their own regulators. Based on the current logic only with two zones control with wired remote controller. Not with thermostat.
- 200 L tank integrated hydro unit has six connection pipes (water inlet/outlet, space heating inlet/outlet and DHW inlet/outlet).
- The 4-pipe structure buffer tank shown in this scheme is an example of the installation, and the buffer tank installation in the actual site can differ depending on the project requirements.

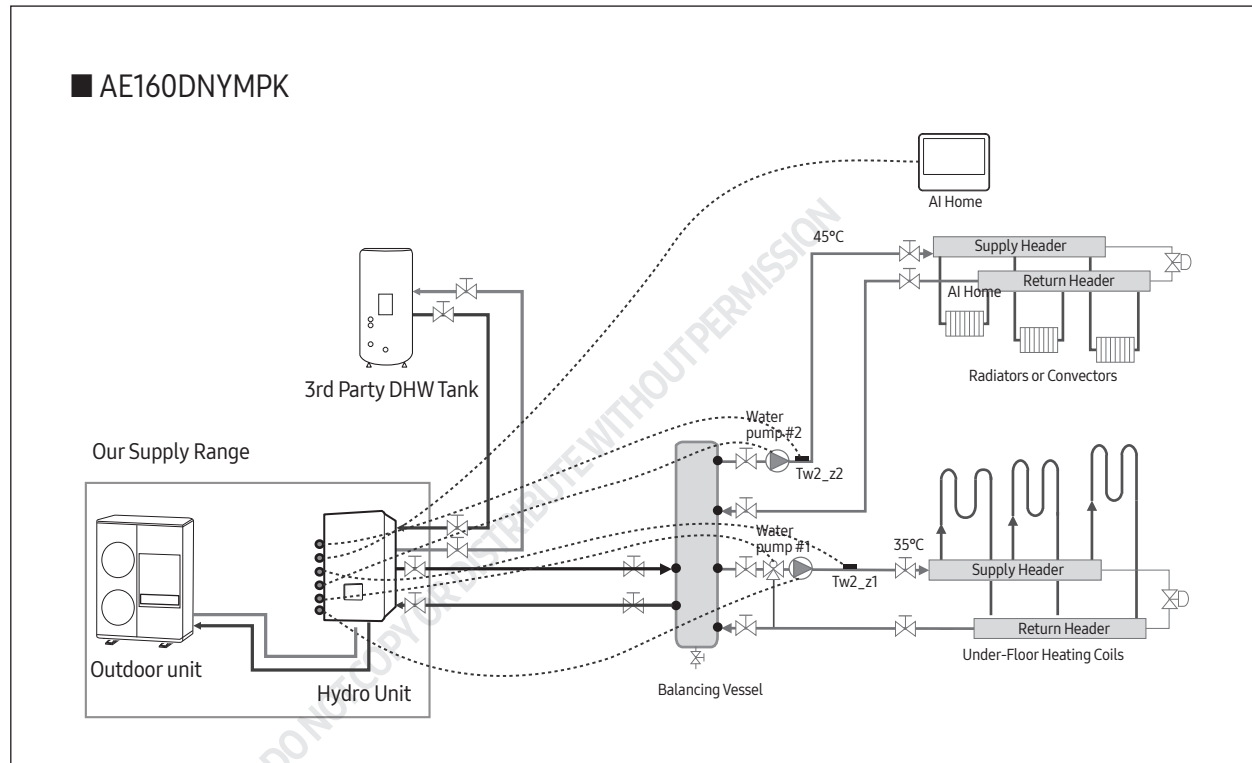
■ AE200DNWMPK



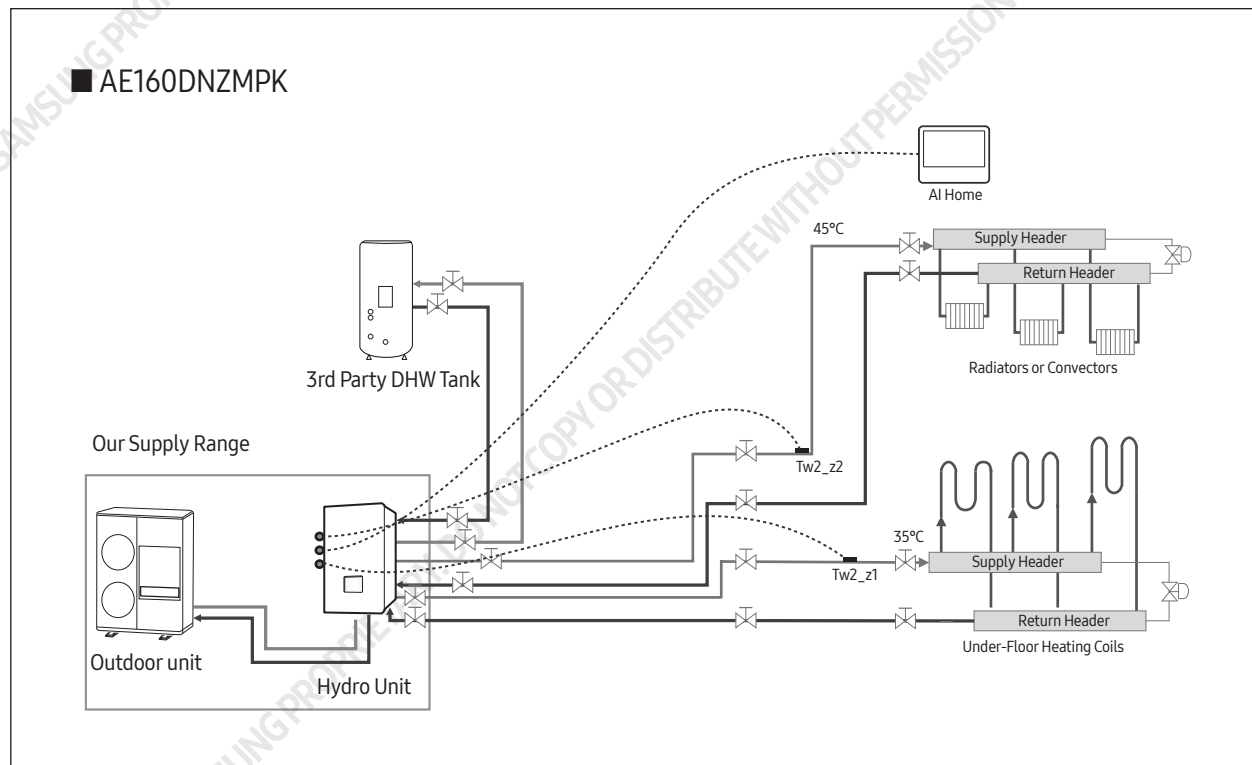
■ AE200DNXMPK



■ AE160DNYMPK

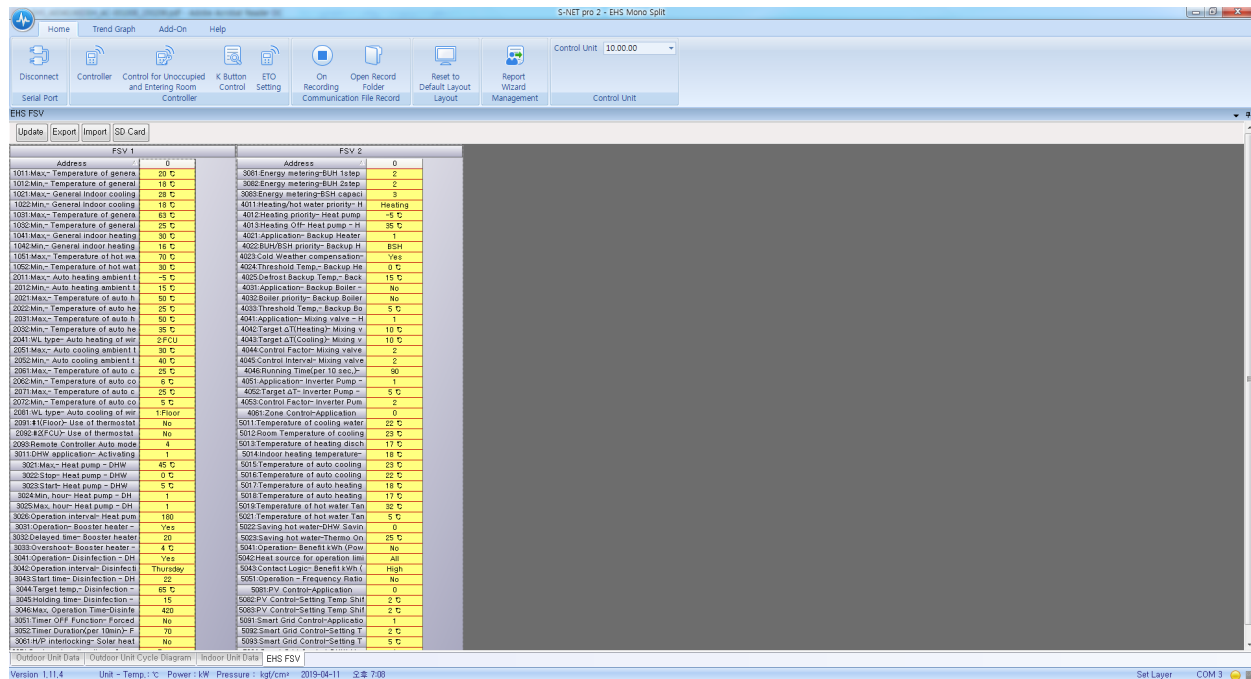


■ AE160DNZMPK

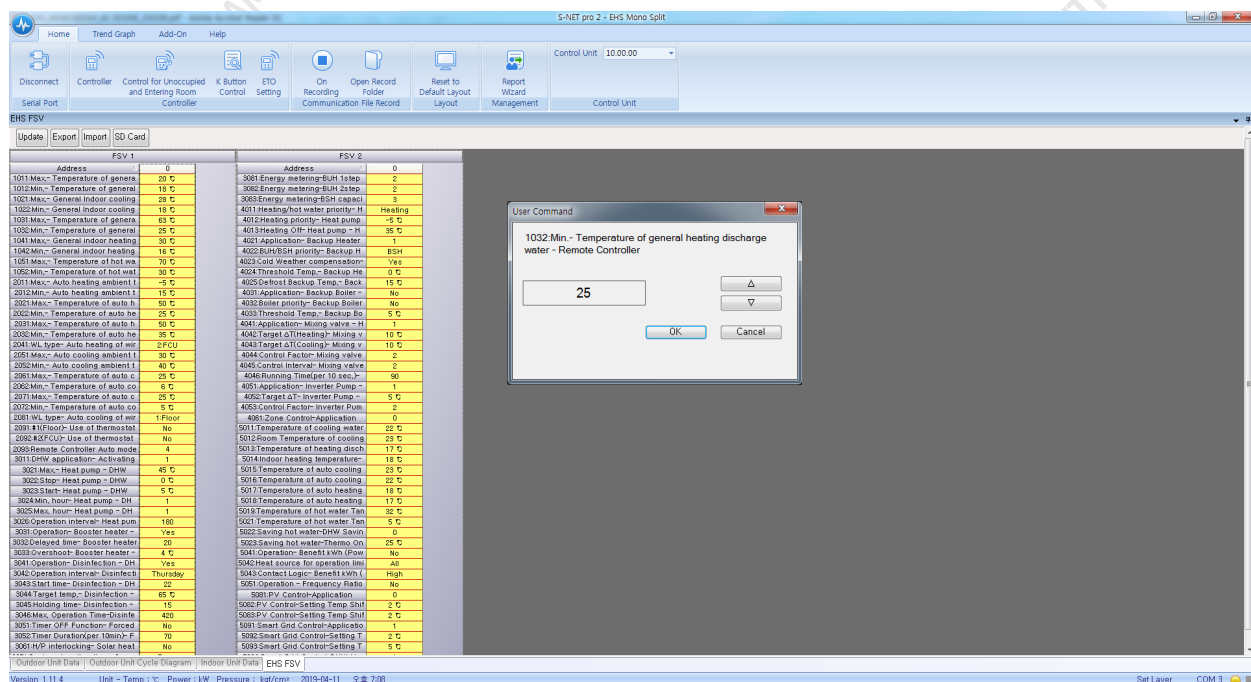


7-4 FSV Data check and update using S-NET Pro2

To check the EHS FSV data the [Update] button must be selected.

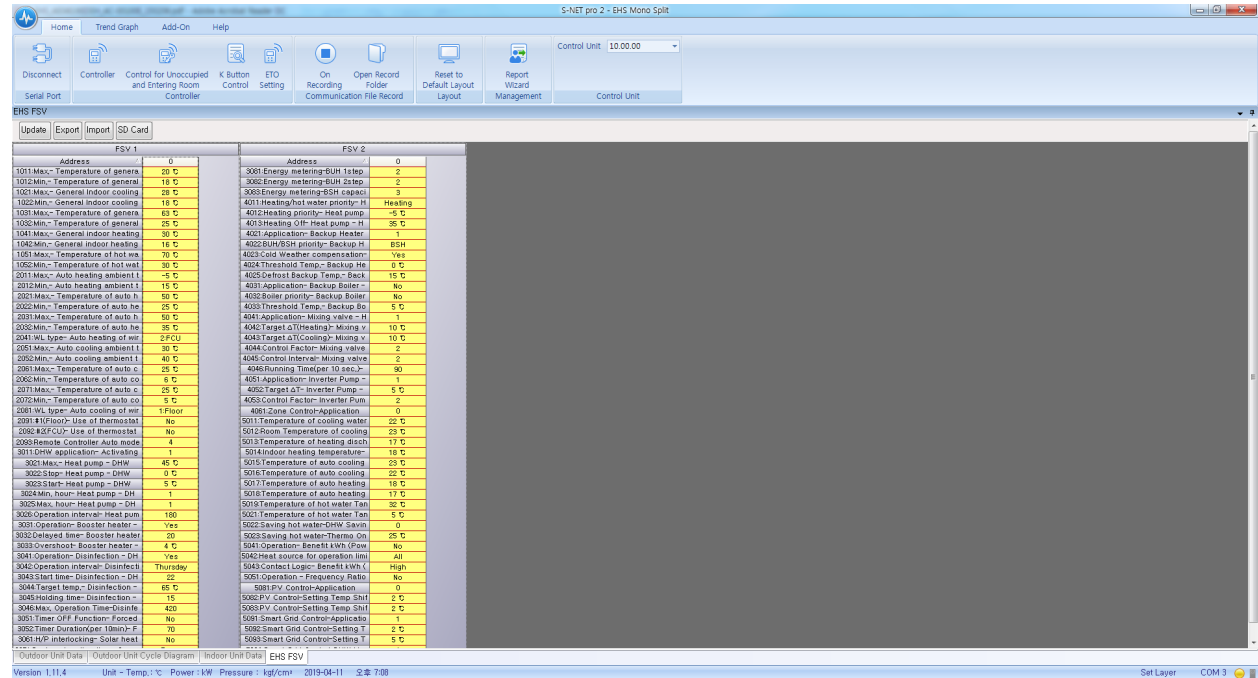


FSV value has been updated, double-click each cell can set the value of the FSV.



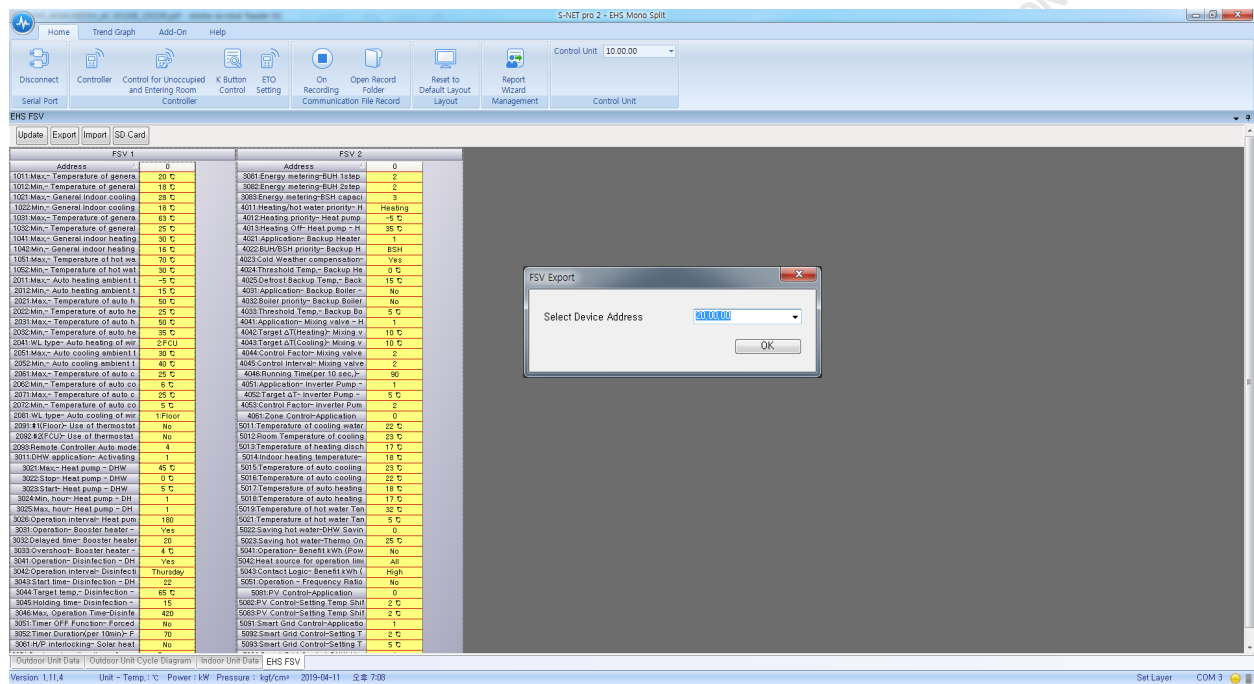
7-5 EHS FSV Values Import and Export

The User can now export the existing FSV values into an XML file and update later onto a new unit the saved values.



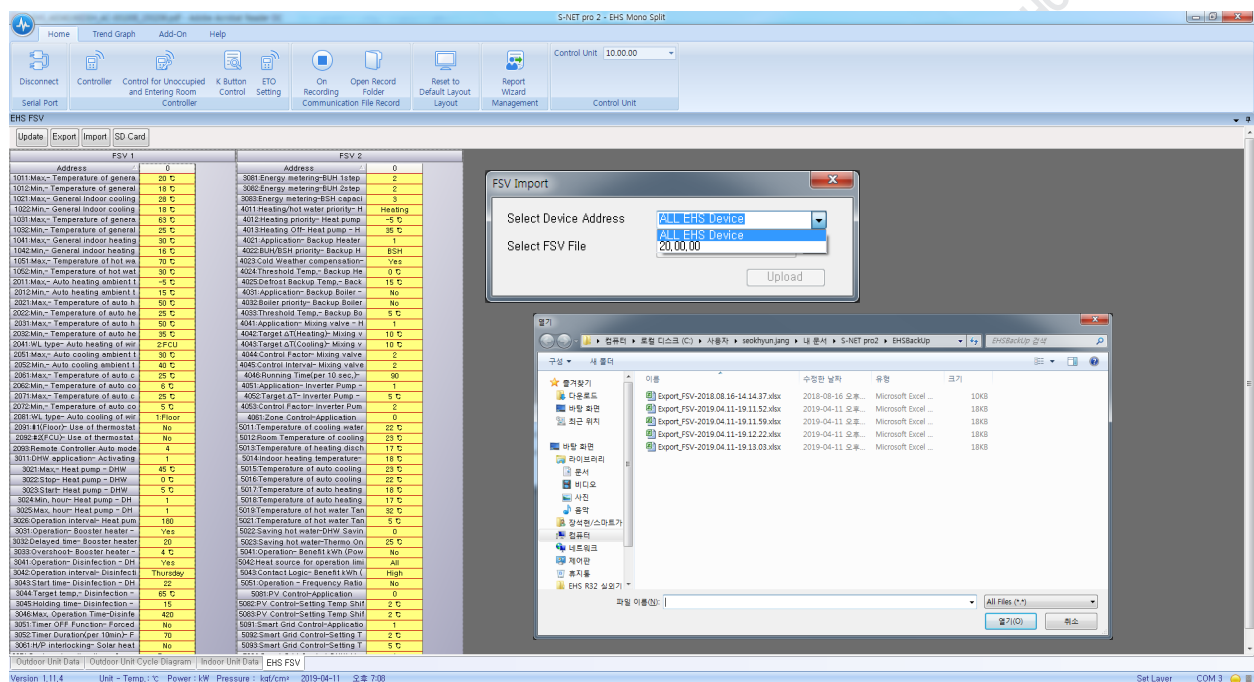
Export Values:

The existing FSV values can be exported by click on the "Export" button.

**FSV Import:**

The FSV values can be imported by the click on the import button.

The user is prompted to browse and select the XML file for update on the EHS unit selected in the dropdown menu.

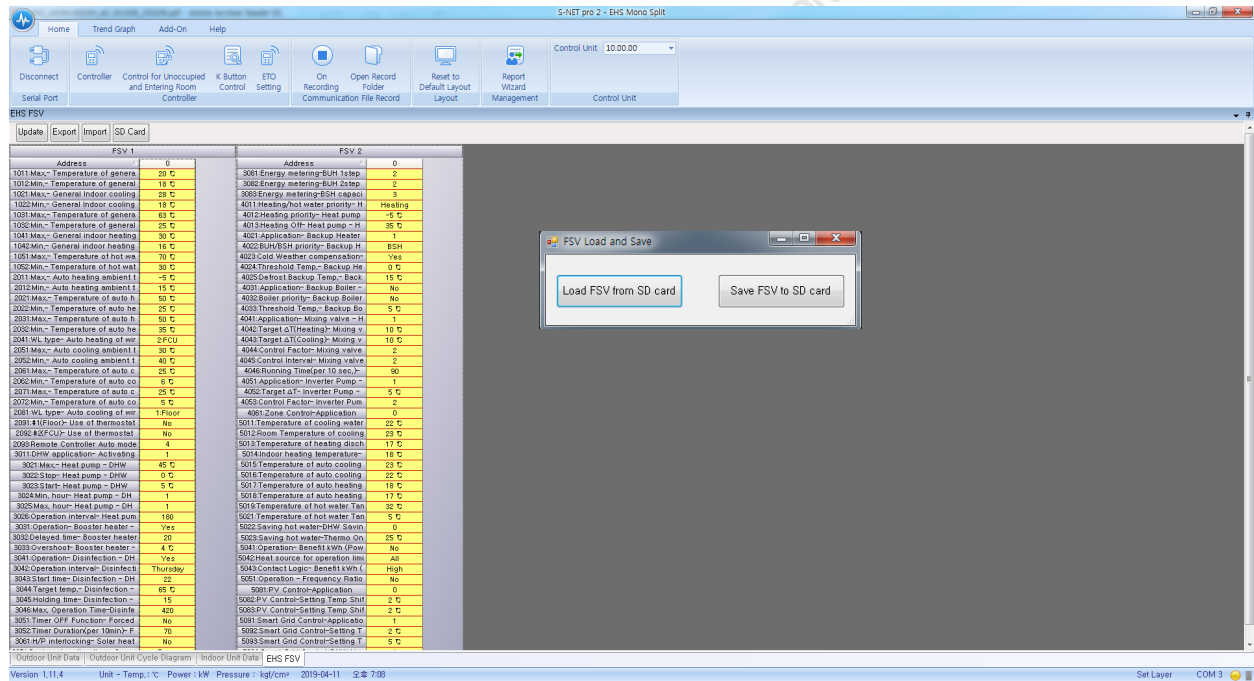


Reference Sheet

SD Card

The FSV values can be loaded from SD card or saved to SD card by the click on the import button

SD card should be connected in EHS Converter.





GSPN (Global Service Partner Network)

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

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Printed in Korea.
Code No. AC-00379E_1