

SERVICE MANUAL

AIR CONDITIONER

Please read this manual carefully before operating your set and retain it for future reference.

EXPLODED VIEW

MULTI V TM 

ARUN040GSS0	ARUN050GSS0	ARUN060GSS0
ARUN040LSS0	ARUN050LSS0	ARUN060LSS0
ARUN080LSS0	ARUN100LSS0	ARUN120LSS0
ARUV140LSS0		

P/NO : MFL42395723

ARUN Series

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1. Specification

HP			4	5	6
Model Name	Combination Unit		ARUN040GSS0	ARUN050GSS0	ARUN060GSS0
Capacity ¹⁾ (Rated)	Cooling	kW	12.1	14.0	15.5
		kcal/h	10,400	12,000	13,300
		Btu/h	41,200	47,800	52,900
	Heating	kW	12.5	16.0	18.0
		kcal/h	10,800	13,800	15,500
		Btu/h	42,700	54,600	61,400
Input (Rated) ¹⁾	Cooling	kW	3.57	3.51	4.18
	Heating	kW	2.91	3.60	4.31
EER			3.39	3.99	3.71
COP			4.3	4.44	4.18
Power Factor ⁶⁾	Rated	-	0.93	0.93	0.93
Casing Color			Warm Gray	Warm Gray	Warm Gray
Heat Exchanger			Gold fin	Gold fin	Gold fin
Compressor	Type		BLDC Inverter Twin Rotary	BLDC Inverter Twin Rotary	BLDC Inverter Twin Rotary
	Piston Displacement	cm ³ /rev	44.2	44.2	44.2
	Number of Revolution	rev/min	3,600	3,600	3,600
	Motor Output	W	4,000	4,000	4,000
	Starting Method		DC Inverter Starting	DC Inverter Starting	DC Inverter Starting
	Oil Type		FVC68D(PVE)	FVC68D(PVE)	FVC68D(PVE)
	Oil Charge		1,300	1,300	1,300
Fan	Type		Axial Flow Fan	Axial Flow Fan	Axial Flow Fan
	Motor Output x Number	W	124 x 1	124 x 2	124 x 2
	Air Flow Rate(High)	m ³ /min	60	110	110
		ft ³ /min	2,119	3,885	3,885
	Drive		DC INVERTER	DC INVERTER	DC INVERTER
Piping Connections	Liquid	mm(inch)	Ø 9.52(3/8)	Ø 9.52(3/8)	Ø 9.52(3/8)
	Gas	mm(inch)	Ø 15.88(5/8)	Ø 15.88(5/8)	Ø 19.05(3/4)
Dimensions(W x H x D)		mm	950 x 834 x 330	950 x 1,380 x 330	950 x 1,380 x 330
		inch	37-13/32 x 32-27/32 x 13	37-13/32 x 54-11/32 x 13	37-13/32 x 54-11/32 x 13
Net Weight		kg	69	94	94
		lbs	152	207	207
Sound Pressure Level	Cooling	dB(A)	50	51	52
	Heating	dB(A)	52	53	54
Sound Power Level		dB(A)	62	66	67
Protection Devices	High pressure protection	-	High pressure sensor / High pressure switch	High pressure sensor / High pressure switch	High pressure sensor / High pressure switch
	Compressor/ Fan	-	Over-heat protection / Fan driver overload protector	Over-heat protection / Fan driver overload protector	Over-heat protection / Fan driver overload protector
	Inverter	-	Over-heat protection / Over-current protection	Over-heat protection / Over-current protection	Over-heat protection / Over-current protection
Communication Cable		No.xmm ² (VCTF-SB)	2C x 1.0 ~ 1.5	2C x 1.0 ~ 1.5	2C x 1.0 ~ 1.5
Refrigerant	Refrigerant name		R410A	R410A	R410A
	Precharged Amount	kg	1.8	3.0	3.0
		lbs	4.0	6.6	6.6
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Power Supply		V, Ø, Hz	220-240, 1, 50 220, 1, 60	220-240, 1, 50 220, 1, 60	220-240, 1, 50 220, 1, 60
Number of maximum connectable indoor units ²⁾			8	10	13

Notes:

1. Eurovent Test Condition : Maximum 4 Indoor units are connected (Indoor unit type is only Ceiling Concealed Duct)

- Refer to EUROVENT certification regulation for more detail test conditions.
- Performances of Combination units are sum of Independent unit(Outdoor Units).

2. Performances are based on the following conditions :

- Cooling Temperature : Indoor 27°C(80.6°F) DB / 19°C(66.2°F) WB
Outdoor 35°C(95°F) DB / 24°C(75.2°F) WB
- Heating Temperature : Indoor 20°C(68°F) DB / 15°C(59°F) WB
Outdoor 7°C(44.6°F) DB / 6°C(42.8°F) WB

- Piping Length : Interconnected Pipe Length = 7.5m

- Difference Limit of Elevation (Outdoor ~ Indoor Unit) is Zero.

3. The maximum combination ratio is 160%.

4. Wiring cable size must comply with the applicable local and national codes.

5. Due to our policy of innovation some specifications may be changed without notification.

6. Sound Level Values are measured at Anechoic chamber. Therefore, these values can be increased owing to ambient conditions during operation.

7. Power factor could vary less than ±1% according to the operating conditions.

8. This product contains Fluorinated greenhouse gases.

Specification

HP			4	5	6
Model Name	Combination Unit		ARUN040LSS0	ARUN050LSS0	ARUN060LSS0
Capacity ¹⁾ (Rated)	Cooling	kW	12.1	14.0	15.5
		kcal/h	10,400	12,000	13,300
		Btu/h	41,200	47,800	52,900
	Heating	kW	12.5	16.0	18.0
		kcal/h	10,800	13,800	15,500
Btu/h		42,700	54,600	61,400	
Input (Rated) ¹⁾	Cooling	kW	2.88	3.56	4.18
	Heating	kW	2.79	3.60	4.31
EER			4.20	3.93	3.71
COP			4.48	4.44	4.18
Power Factor ⁶⁾	Rated	-	0.93	0.93	0.93
Casing Color			Warm Gray	Warm Gray	Warm Gray
Heat Exchanger			Gold fin	Gold fin	Gold fin
Compressor	Type		BLDC Inverter Twin Rotary	BLDC Inverter Twin Rotary	BLDC Inverter Twin Rotary
	Piston Displacement	cm ³ /rev	44.2	44.2	44.2
	Number of Revolution	rev/min	3,600	3,600	3,600
	Motor Output	W	4,000	4,000	4,000
	Starting Method		DC Inverter Starting	DC Inverter Starting	DC Inverter Starting
	Oil Type		FVC68D(PVE)	FVC68D(PVE)	FVC68D(PVE)
	Oil Charge		1,300	1,300	1,300
Fan	Type		Axial Flow Fan	Axial Flow Fan	Axial Flow Fan
	Motor Output x Number	W	124 x 2	124 x 2	124 x 2
	Air Flow Rate(High)	m ³ /min	110	110	110
		ft ³ /min	3,885	3,885	3,885
	Drive		DC INVERTER	DC INVERTER	DC INVERTER
Discharge	Side / Top	Side	Side	Side	
Piping Connections	Liquid	mm(inch)	Ø 9.52(3/8)	Ø 9.52(3/8)	Ø 9.52(3/8)
	Gas	mm(inch)	Ø 15.88(5/8)	Ø 15.88(5/8)	Ø 19.05(3/4)
Dimensions(W x H x D)	mm		950 x 1,380 x 330	950 x 1,380 x 330	950 x 1,380 x 330
	inch		37-13/32 x 54-11/32 x 13	37-13/32 x 54-11/32 x 13	37-13/32 x 54-11/32 x 13
Net Weight	kg		96	96	96
	lbs		212	212	212
Sound Pressure Level	Cooling	dB(A)	50	51	52
	Heating	dB(A)	52	53	54
Sound Power Level		dB(A)	63	66	67
Protection Devices	High pressure protection	-	High pressure sensor / High pressure switch	High pressure sensor / High pressure switch	High pressure sensor / High pressure switch
	Compressor/ Fan	-	Over-heat protection / Fan driver overload protector	Over-heat protection / Fan driver overload protector	Over-heat protection / Fan driver overload protector
	Inverter	-	Over-heat protection / Over-current protection	Over-heat protection / Over-current protection	Over-heat protection / Over-current protection
Communication Cable		No.xmm ² (VCTF-SB)	2C x 1.0 ~ 1.5	2C x 1.0 ~ 1.5	2C x 1.0 ~ 1.5
Refrigerant	Refrigerant name		R410A	R410A	R410A
	Precharged Amount	kg	3.0	3.0	3.0
		lbs	6.6	6.6	6.6
Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Power Supply	V, Ø, Hz		380-415, 3, 50	380-415, 3, 50	380-415, 3, 50
			380, 3, 60	380, 3, 60	380, 3, 60
Number of maximum connectable indoor units ²⁾			8	10	13

Notes:

- Eurovent Test Condition : Maximum 4 Indoor units are connected (Indoor unit type is only Ceiling Concealed Duct)
 - Refer to EUROVENT certification regulation for more detail test conditions.
 - Performances of Combination units are sum of Independent unit(Outdoor Units).
- Performances are based on the following conditions :
 - Cooling Temperature : Indoor 27°C(80.6°F) DB / 19°C(66.2°F) WB
Outdoor 35°C(95°F) DB / 24°C(75.2°F) WB
 - Heating Temperature : Indoor 20°C(68°F) DB / 15°C(59°F) WB
Outdoor 7°C(44.6°F) DB / 6°C(42.8°F) WB

- Piping Length : Interconnected Pipe Length = 7.5m
 - Difference Limit of Elevation (Outdoor ~ Indoor Unit) is Zero.
- The maximum combination ratio is 160%.
 - Wiring cable size must comply with the applicable local and national codes.
 - Due to our policy of innovation some specifications may be changed without notification.
 - Sound Level Values are measured at Anechoic chamber. Therefore, these values can be increased owing to ambient conditions during operation.
 - Power factor could vary less than ±1% according to the operating conditions.
 - This product contains Fluorinated greenhouse gases.

HP		8	10	12	14	
Model Name	Combination Unit	ARUN080LSS0	ARUN100LSS0	ARUN120LSS0	ARUV140LSS0	
Capacity ¹⁾ (Rated)	Cooling	kW	22.4	28.0	33.6	38.0
		kcal/h	19,300	24,100	28,900	32,700
		Btu/h	76,400	95,900	114,700	129,700
	Heating	kW	24.5	30.6	36.7	-
		kcal/h	21,100	26,300	31,600	-
Btu/h		83,600	104,400	125,200	-	
Input (Rated) ¹⁾	Cooling	kW	6.27	8.70	10.50	11.88
	Heating	kW	6.28	7.56	9.66	-
EER			3.57	3.22	3.20	3.20
COP			3.90	4.05	3.80	-
Power Factor ⁶⁾	Rated	-	0.93	0.93	0.93	0.93
Casing Color			Warm Gray	Warm Gray	Warm Gray	Warm Gray
Heat Exchanger			Gold fin	Gold fin	Gold fin	Gold fin
Compressor	Type		Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll
	Piston Displacement	cm ³ /rev	43.8	62.1	62.1	62.1
	Number of Revolution	rev/min	3,600	3,600	3,600	3,600
	Motor Output	W	4,200	5,300	5,300	5,300
	Starting Method		Direct On Line	Direct On Line	Direct On Line	Direct On Line
	Oil Type		FVC68D(PVE)	FVC68D(PVE)	FVC68D(PVE)	FVC68D(PVE)
	Oil Charge		2,400	2,600	3,400	3,400
Fan	Type		Propeller fan	Propeller fan	Propeller fan	Propeller fan
	Motor Output x Number	W	124 x 2	250 x 2	250 x 2	250 x 2
	Air Flow	m ³ /min	140	190	190	190
	Rate(High)	ft ³ /min	4,944	6,710	6,710	6,710
	Drive		DC INVERTER	DC INVERTER	DC INVERTER	DC INVERTER
	Discharge	Side / Top	Side	Side	Side	Side
Piping Connections	Liquid	mm(inch)	Ø 9.52(3/8)	Ø 9.52(3/8)	Ø 12.7(1/2)	Ø 12.7(1/2)
	Gas	mm(inch)	Ø 19.05(3/4)	Ø 22.2(7/8)	Ø 28.58(1 1/8)	Ø 28.58(1 1/8)
Dimensions(W x H x D)	mm	950 x 1,380 x 330	1,090 x 1,625 x 380	1,090 x 1,625 x 380	1,090 x 1,625 x 380	
	inch	37-13/32 x 54-11/32 x 13	42-29/32 x 63-31/32 x 14-31/32	42-29/32 x 63-31/32 x 14-31/32	42-29/32 x 63-31/32 x 14-31/32	
Net Weight	kg	115	144	157	157	
	lbs	254	317	346	346	
Sound Pressure Level	Cooling	dB(A)	57	58	60	61
	Heating	dB(A)	57	58	60	-
Sound Power Level		dB(A)	69	70	71	74
Protection Devices	High pressure protection	-	High pressure sensor / High pressure switch	High pressure sensor / High pressure switch	High pressure sensor / High pressure switch	High pressure sensor / High pressure switch
	Comperssor/ Fan	-	Over-heat protection / Fan driver overload protector	Over-heat protection / Fan driver overload protector	Over-heat protection / Fan driver overload protector	Over-heat protection / Fan driver overload protector
	Inverter	-	Over-heat protection / Over-current protection	Over-heat protection / Over-current protection	Over-heat protection / Over-current protection	Over-heat protection / Over-current protection
Communication Cable		No.xmm ² (VCTF-SB)	2C x 1.0 ~ 1.5	2C x 1.0 ~ 1.5	2C x 1.0 ~ 1.5	2C x 1.0 ~ 1.5
Refrigerant	Refrigerant name		R410A	R410A	R410A	R410A
	Precharged Amount	kg	3.5	4.5	6.0	6.0
		lbs	7.7	9.9	13.2	13.2
Control			Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Power Supply	V, Ø, Hz		380-415, 3, 50	380-415, 3, 50	380-415, 3, 50	380-415, 3, 50
			380, 3, 60	380, 3, 60	380, 3, 60	380, 3, 60
Number of maximum connectable indoor units ²⁾			13	16	20	23

Notes:

- Eurovent Test Condition : Maximum 4 Indoor units are connected (Indoor unit type is only Ceiling Concealed Duct)
 - Refer to EUROVENT certification regulation for more detail test conditions.
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- Power factor could vary less than ±1% according to the operating conditions.
- This product contains Fluorinated greenhouse gases.

2. Functions

Basic functions

Category	Functions	Multi V S
Reliability	Defrost / Deicing	O
	High pressure switch	O
	Phase protection	O
	Restart delay (3-minutes)	O
	Self diagnosis	O
	Soft start	O
	Test Run function	X
Convenience	Night Silent Operation	O
CAC network function	Network solution(LGAP)	O

Note :

O : Applied, X : Not applied

Network solution Accessory List

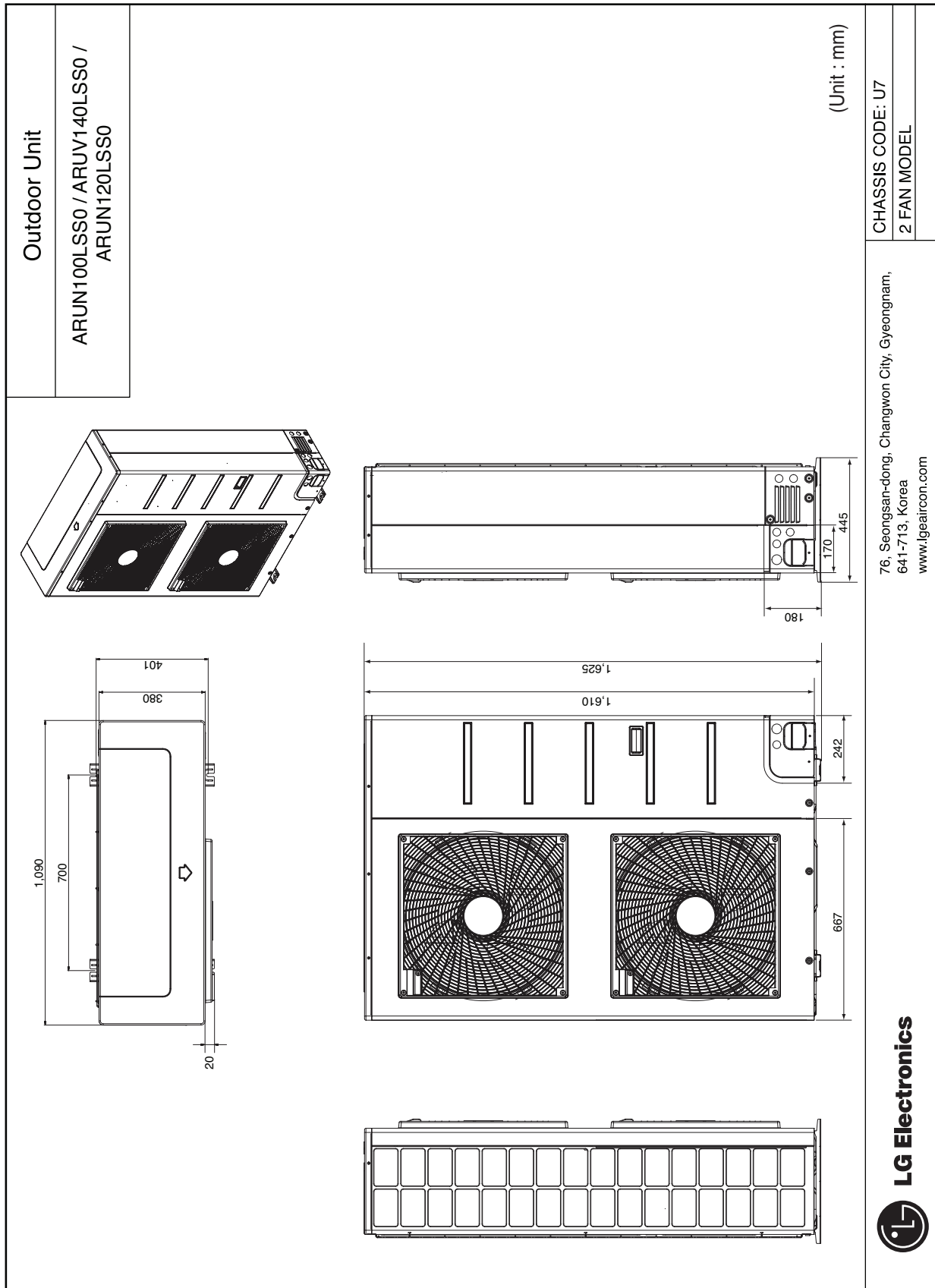
Device		Multi V S
Central Controller	AC Ez (Simple Controller)	PQCSZ250S0
	AC Smart II	PQCSW320A1E
	AC Smart Premium	PQCSW421E0A
	128 Unit Expansion Kit for AC Smart	PQCSE440U0
	Option Kit (SD card type) for AC Smart	PQCSE341A0 / PQCSE342A0
	ACP(Advanced Control Platform)	PQCPA11A0E / PQCPB11A0E
	AC Manager	PQCSS520A0E
	ACP(Advanced Control Platform) Standard	PQCP22N0
	ACP(Advanced Control Platform) Premium	PQCP22A0
	AC Manager Plus	PQCSSA21E0
	DO(Digital Output) Kit	PQNFP00T0
BNU (Building Network Unit)	LONWORKS Gateway (DC 12V Adapter)	PQNFB16A1 / PLNWKB000
	LONWORKS Gateway (AC 24 V)	X
	BACnet Gateway (DC 12V Adapter)	PQNFB17B0 / PQNFB17C0
	BACnet Gateway (AC 24 V)	X
Installation	Refrigerant Charging Kit	O (Logical operation)
	Variable Water Flow Control Kit	X
PDI(power distribution indicator)		PQNUD1S00
PDI(power distribution indicator) Premium		PQNUD1S40
Cool / Heat Selector		PRDSBM
IO Module (ODU Dry Contact)		PVDSMN000
Low Ambient Kit		X
Cycle Monitoring Device	LG MV	PRCT-FE1
	Mobile LGMV(Bluetooth)	PMVBTQ01
DS(Data Saving) Module		PVADTN000
Internet Bridge		PWFMDB000

Note :

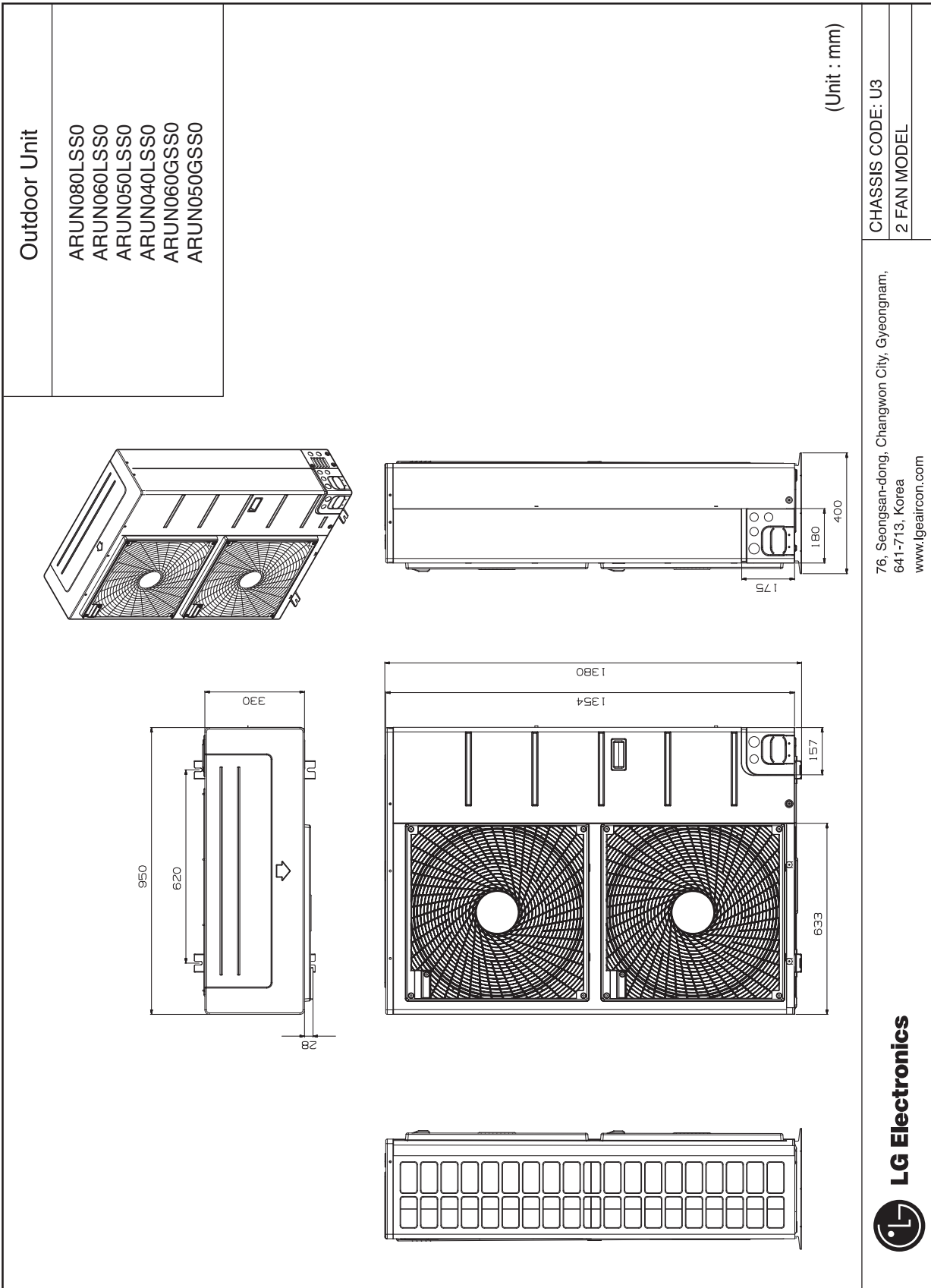
O : Applied, X : Not applied

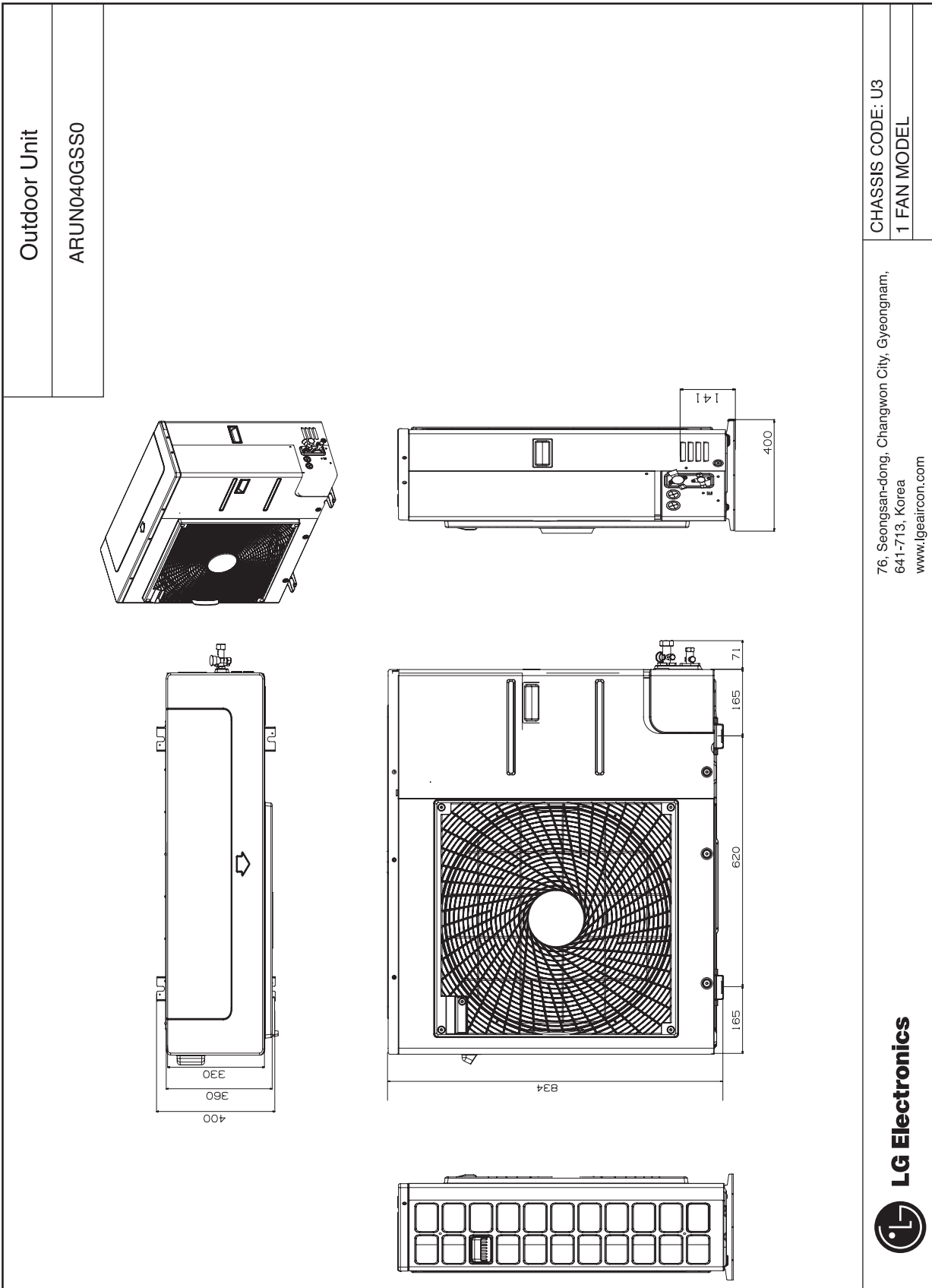
Accessory model name : Installed at field, ordered and purchased separately by the corresponding model name, supplied with separate package.

3. Dimensions



Dimensions

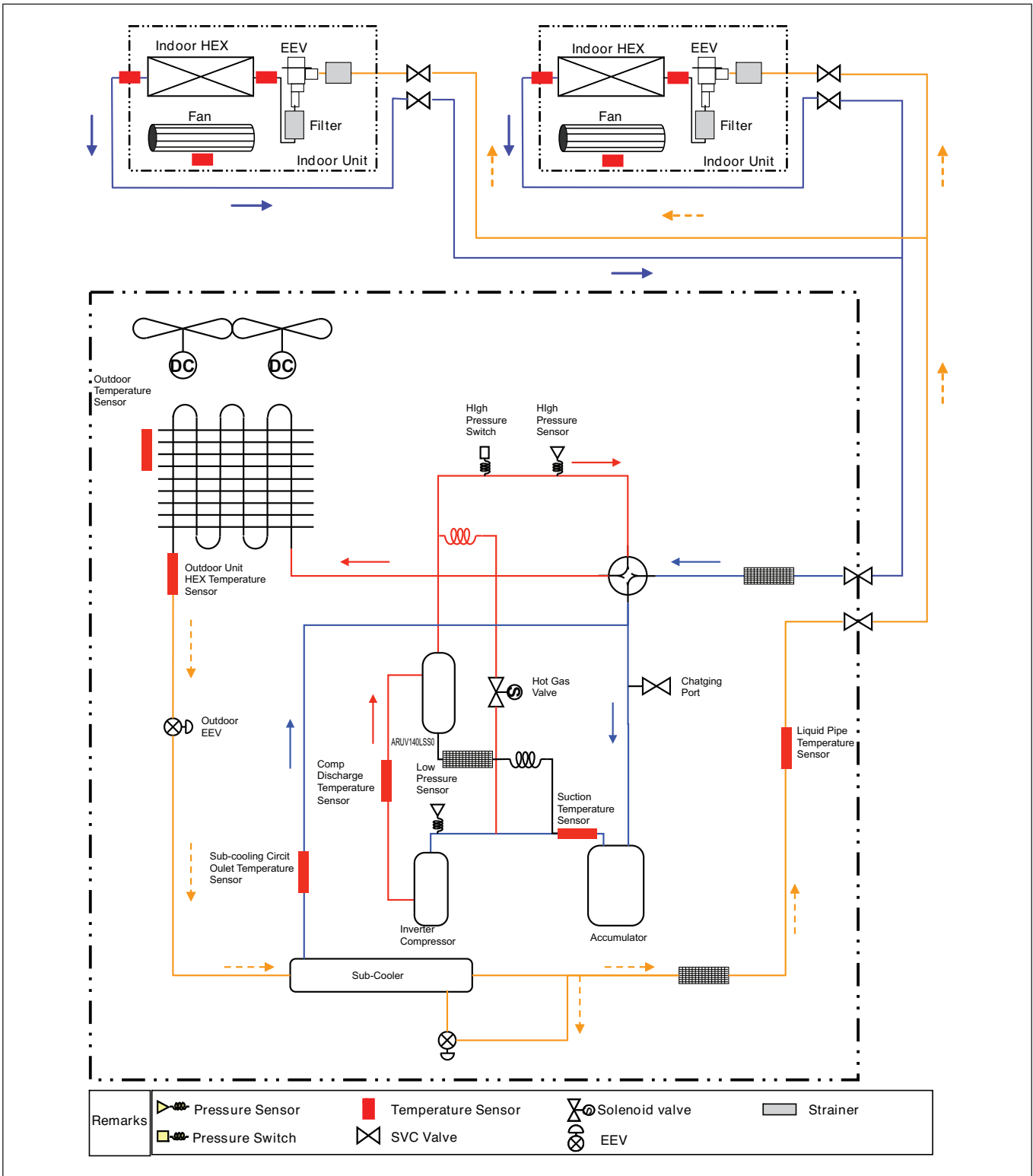




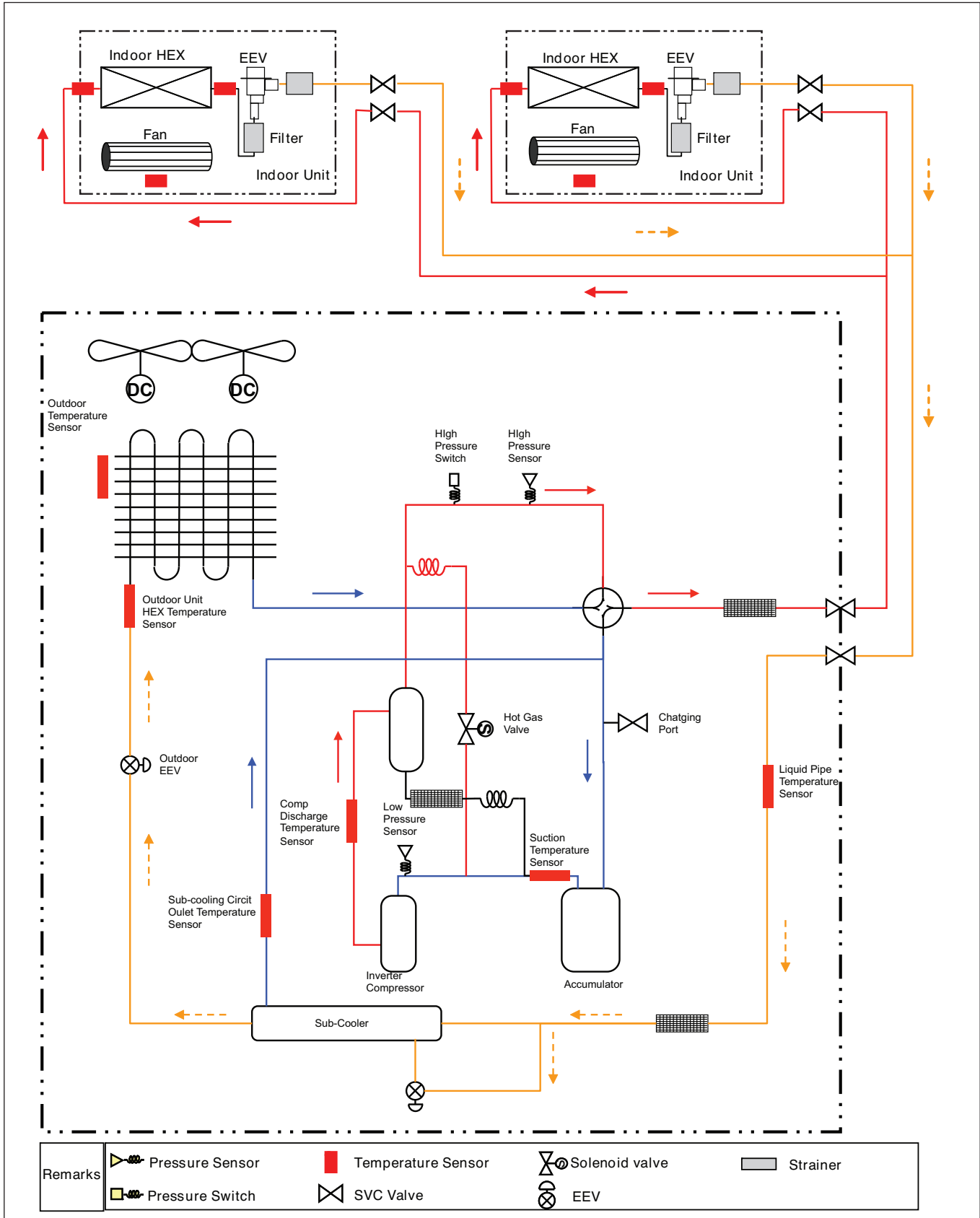
4. Piping Diagrams

4.1 ARUN100LSS0/ARUN120LSS0/ARUV140LSS0

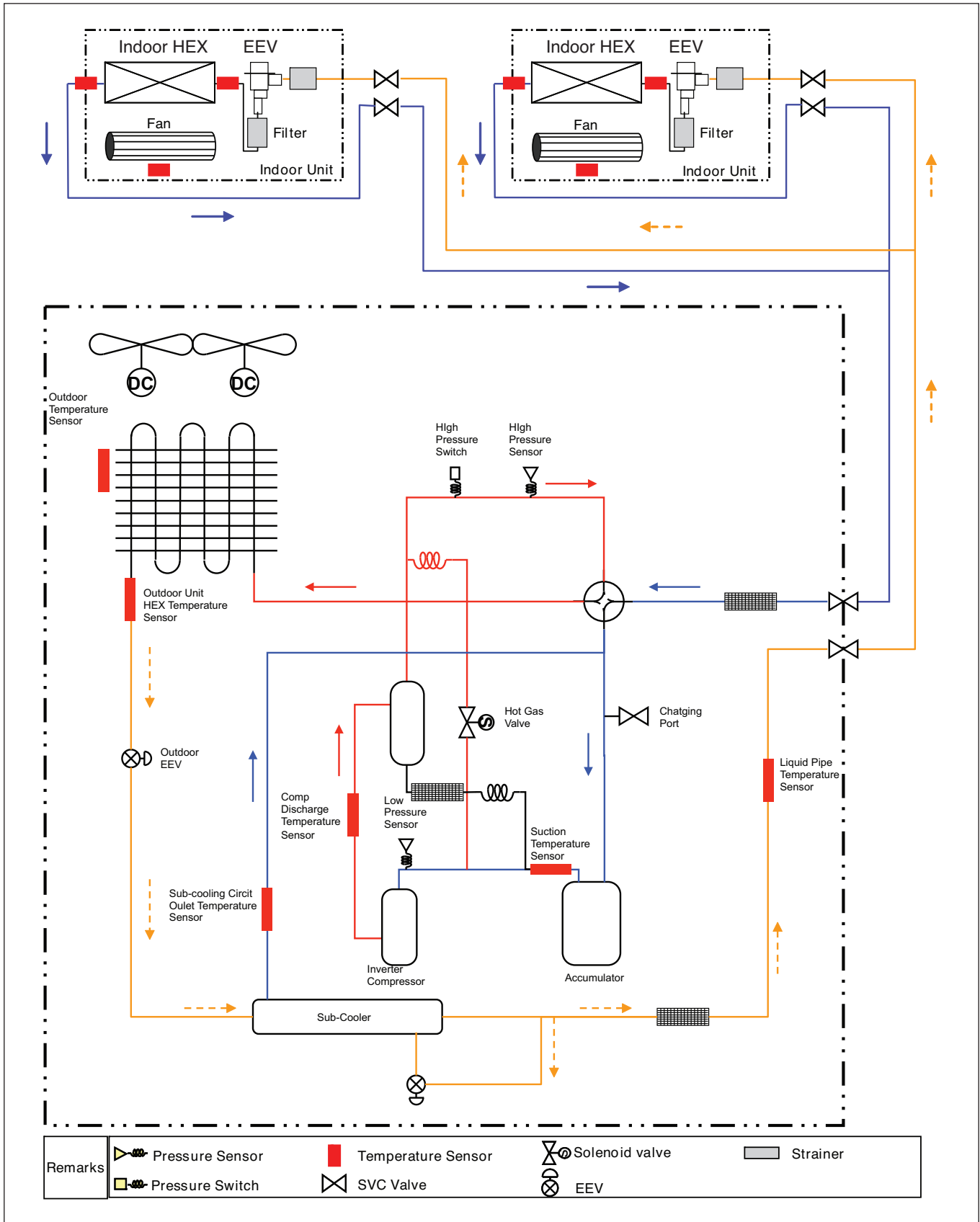
Cooling Operation



Heating Operation

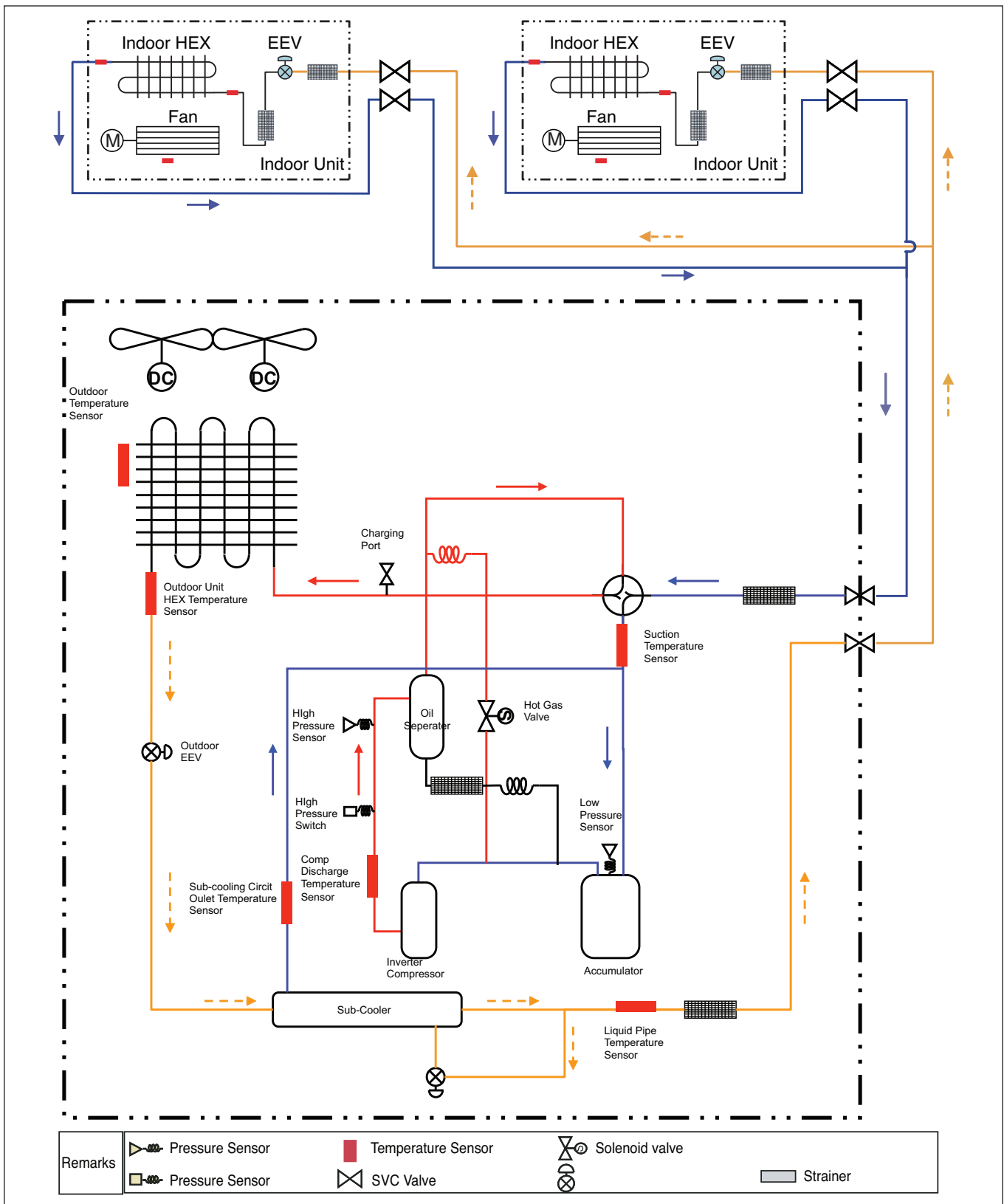


Oil Return/ Defrost Operation

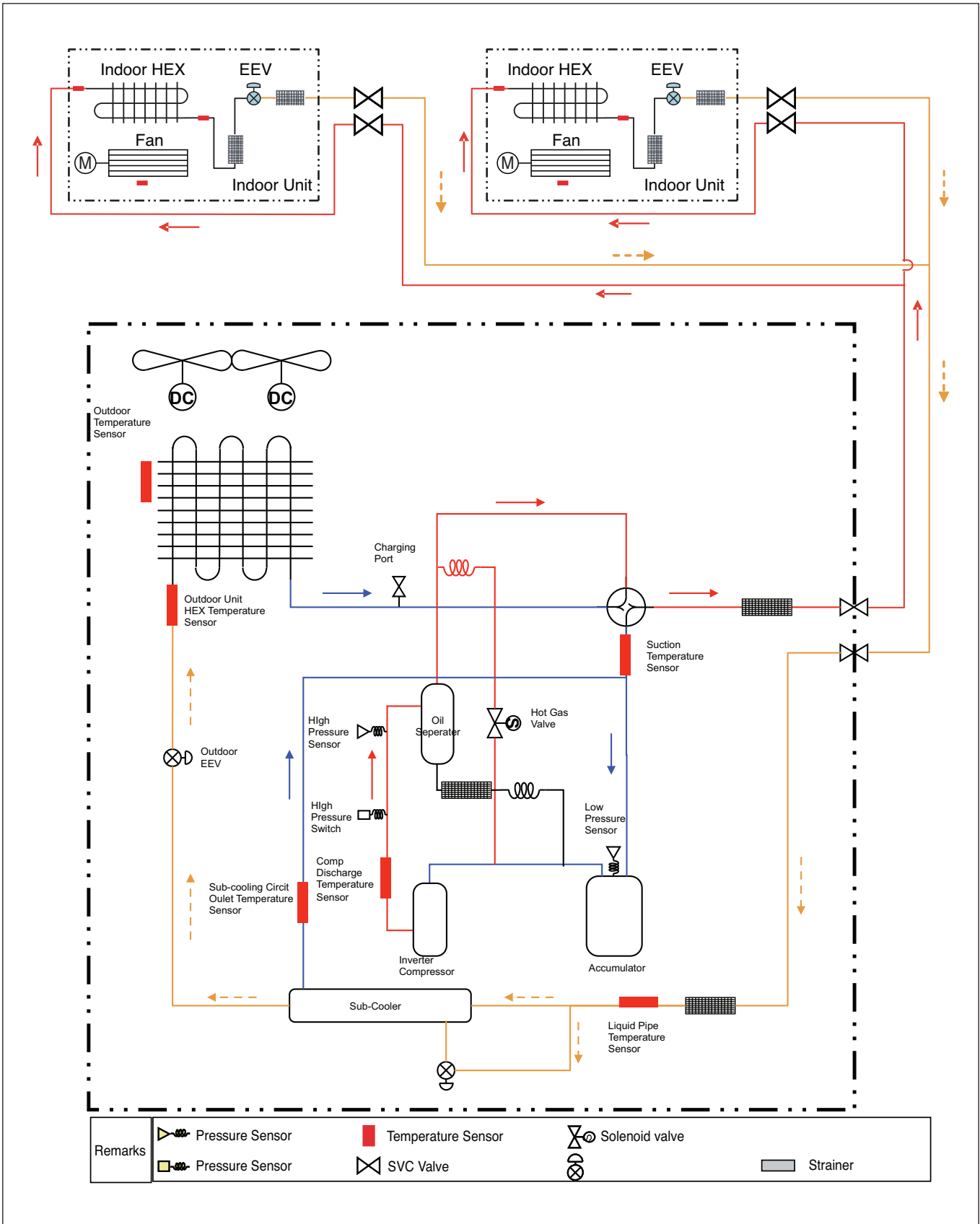


4.2 ARUN080LSS0

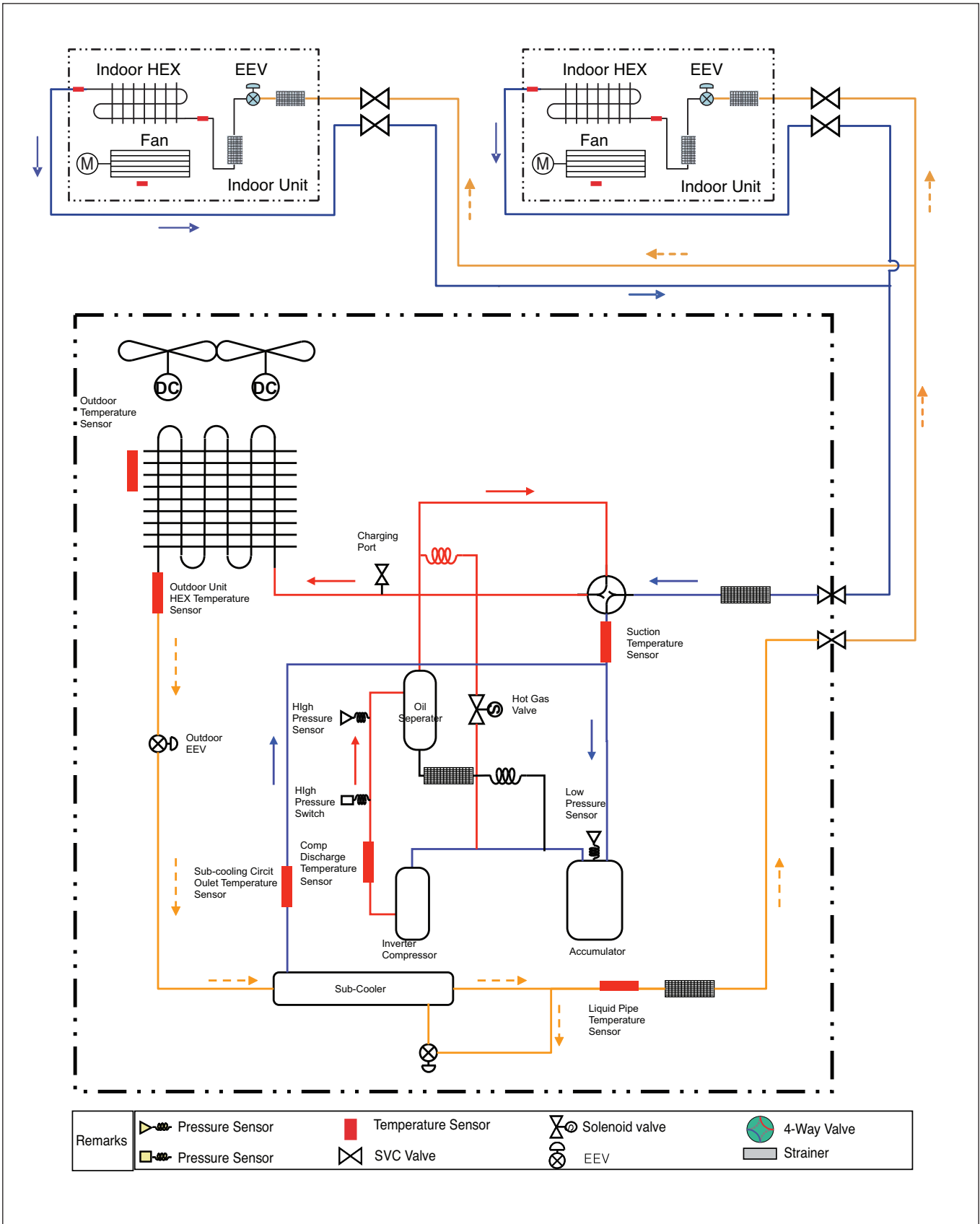
Cooling Operation



Heating Operation

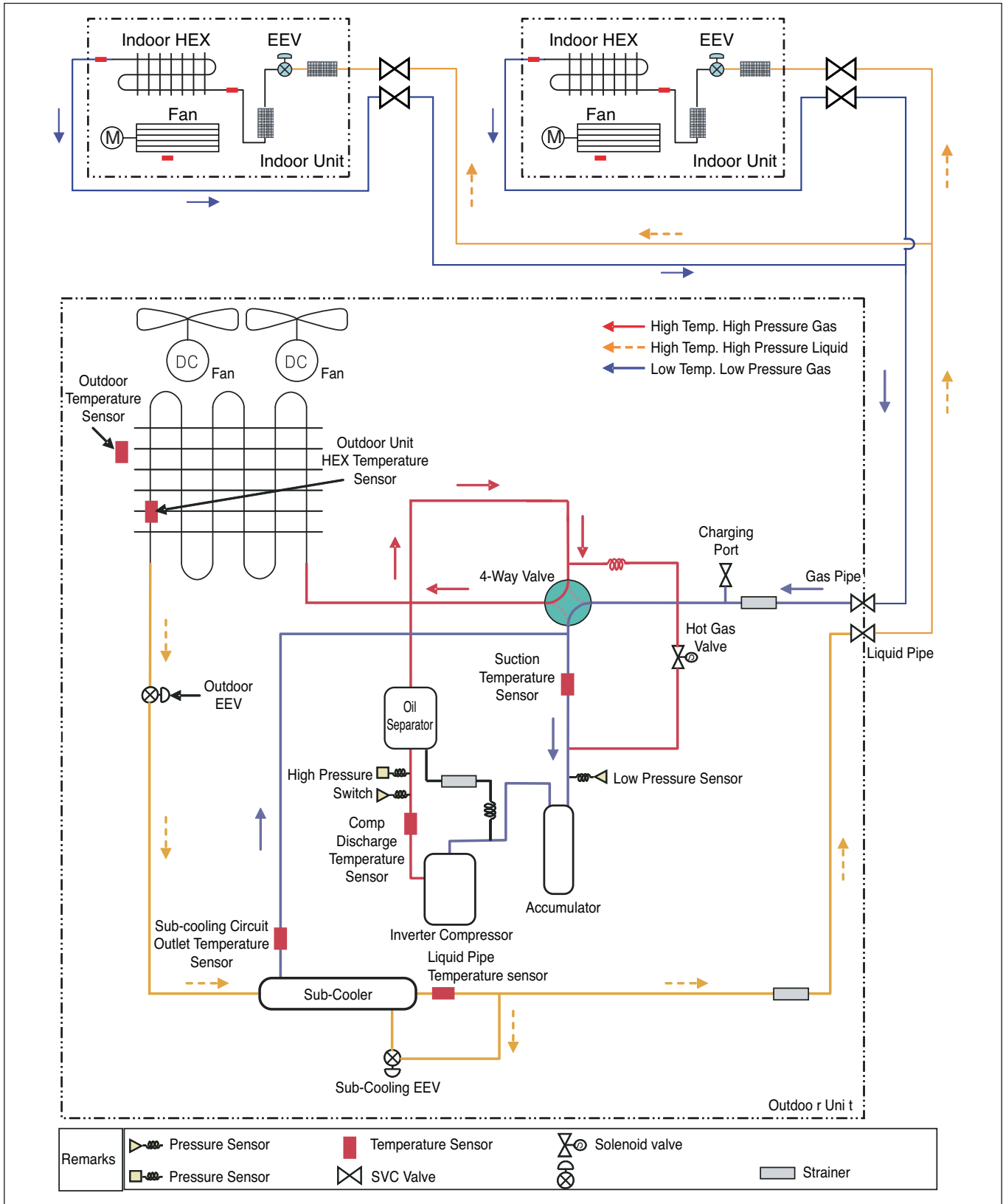


Oil Return/ Defrost Operation

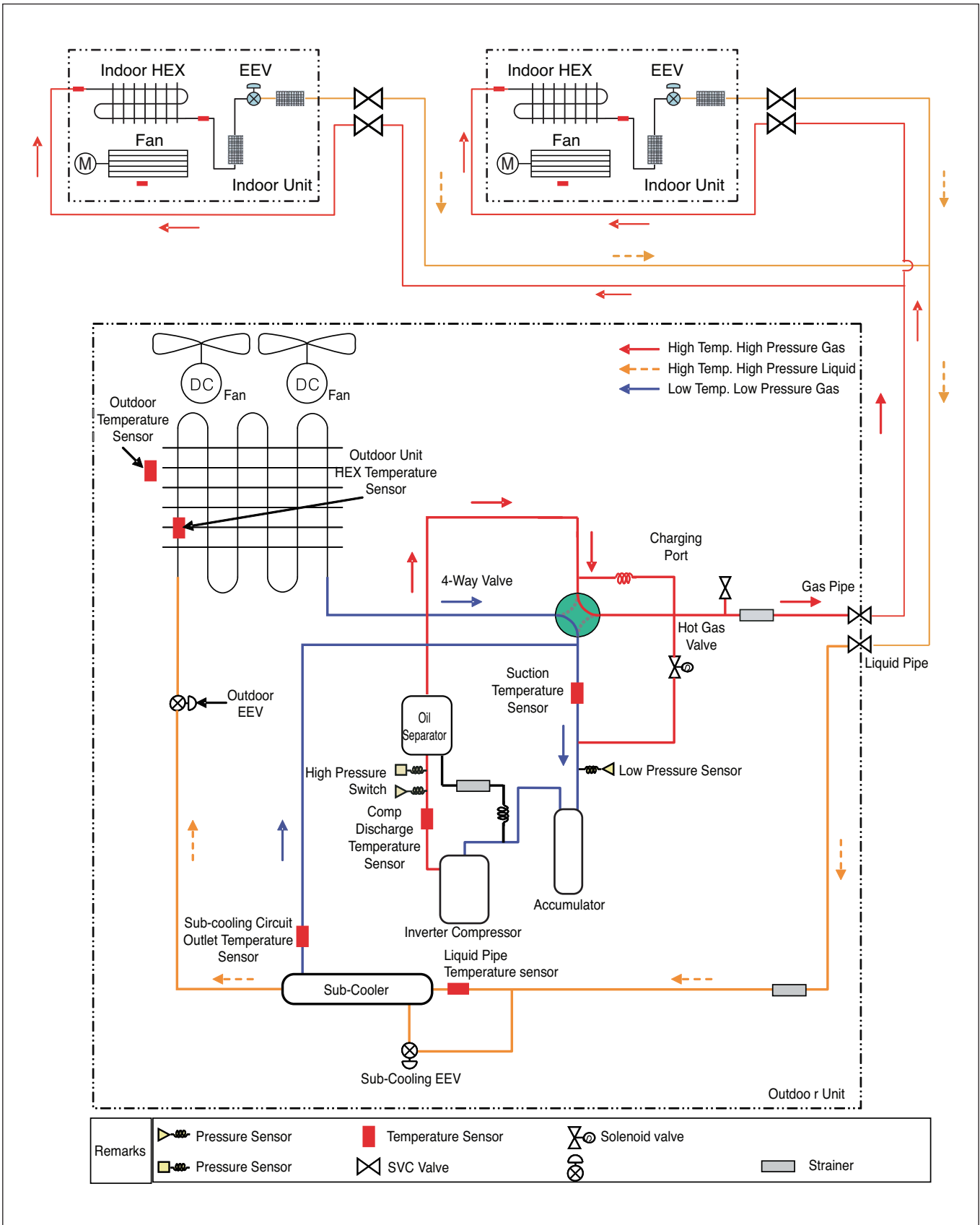


4.3 ARUN050GSS0, ARUN060GSS0, ARUN040LSS0
ARUN050LSS0, ARUN060LSS0

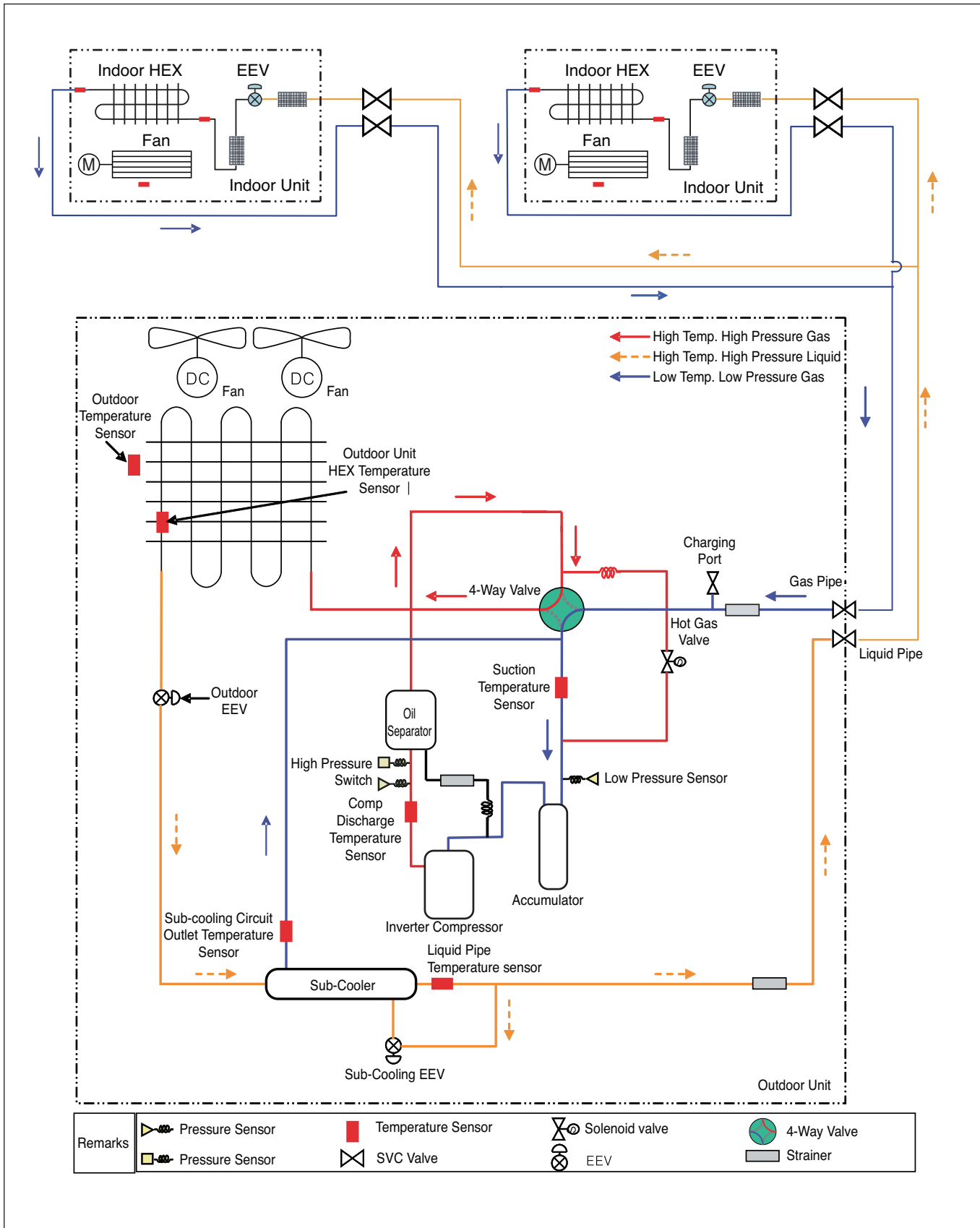
Cooling Operation



Heating Operation

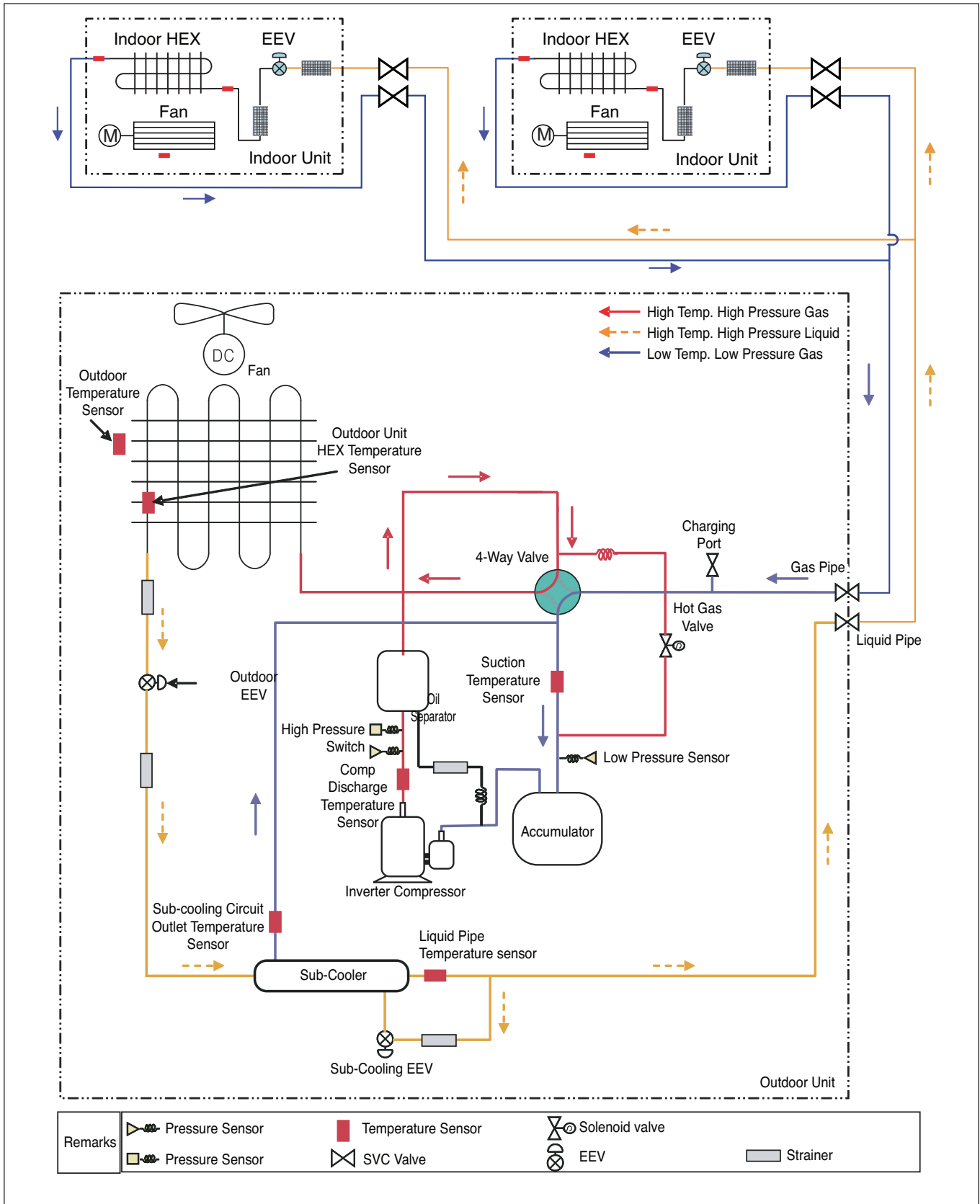


Oil Return/ Defrost Operation

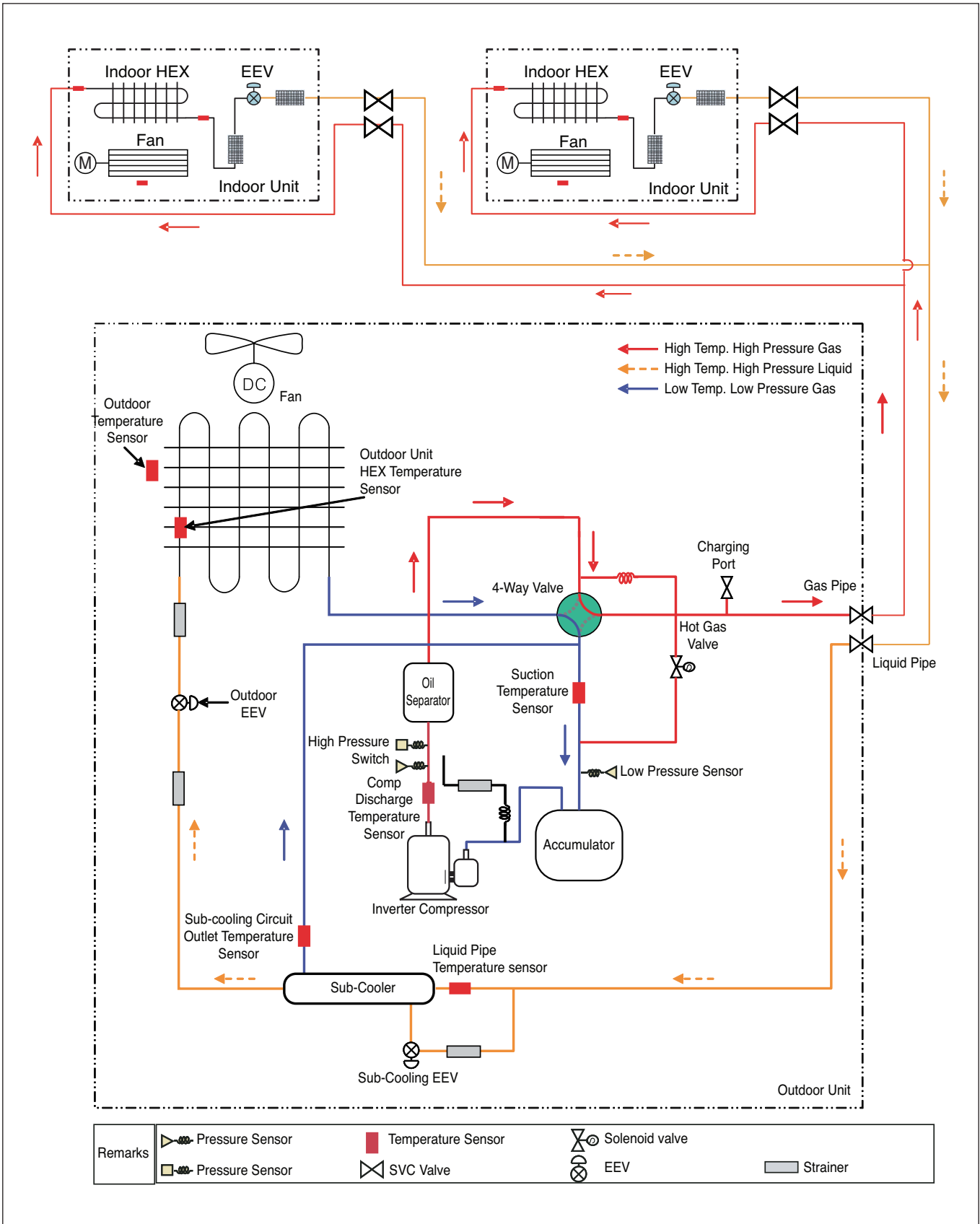


4.4 ARUN040GSS0

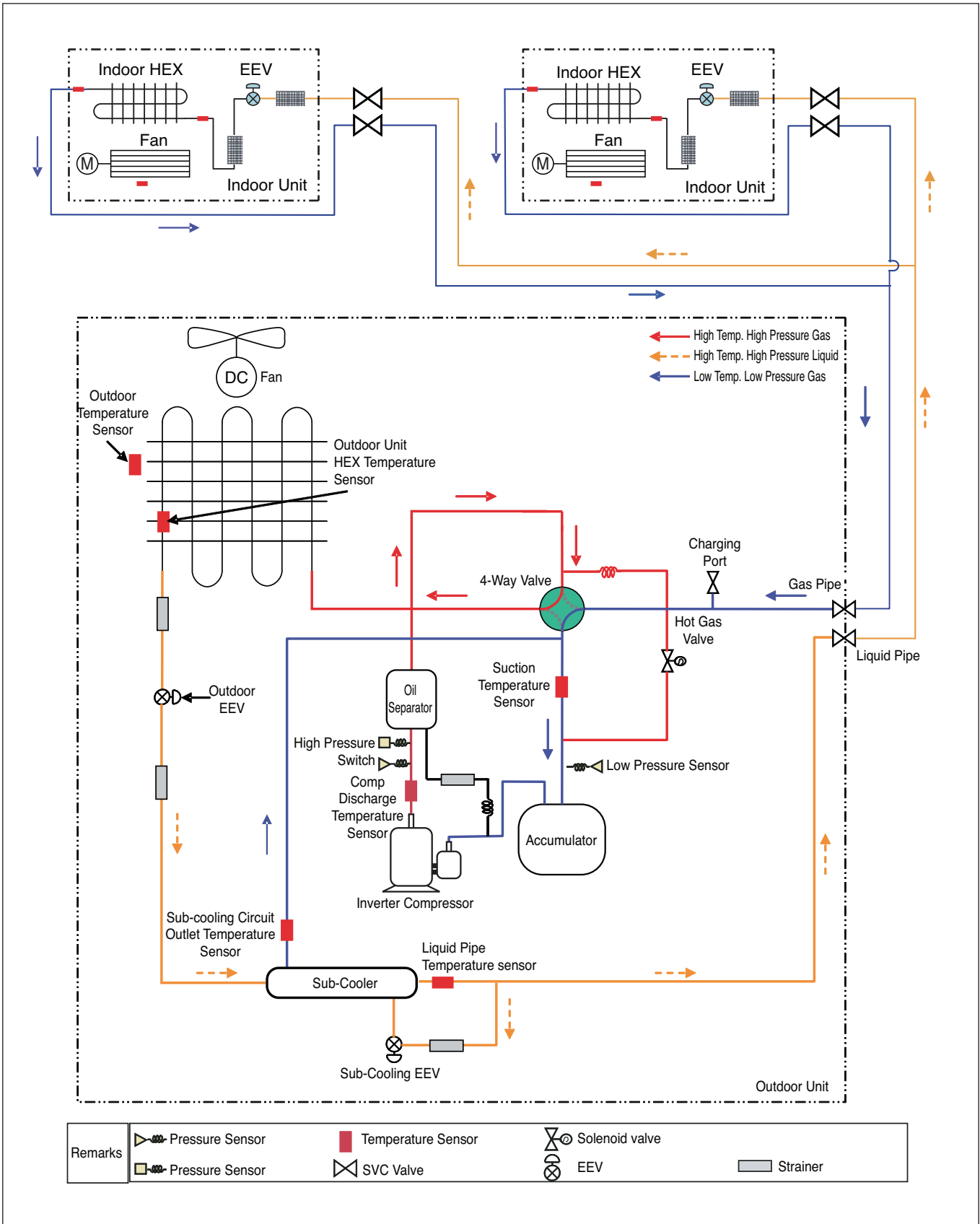
Cooling Operation



Heating Operation

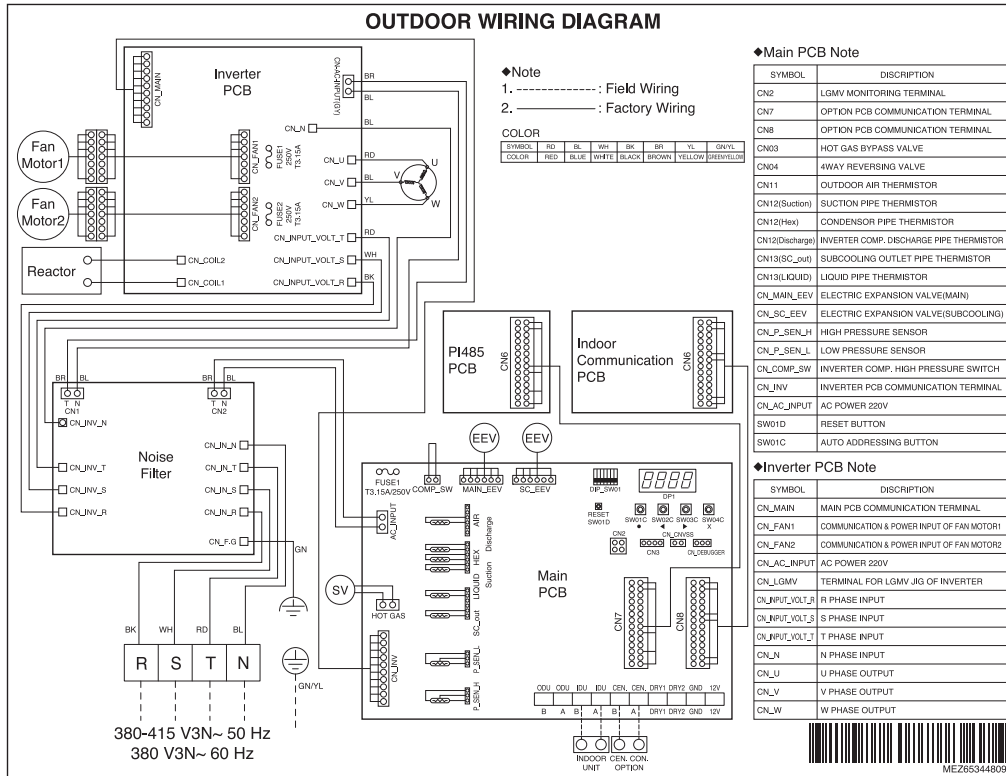


Oil Return/ Defrost Operation

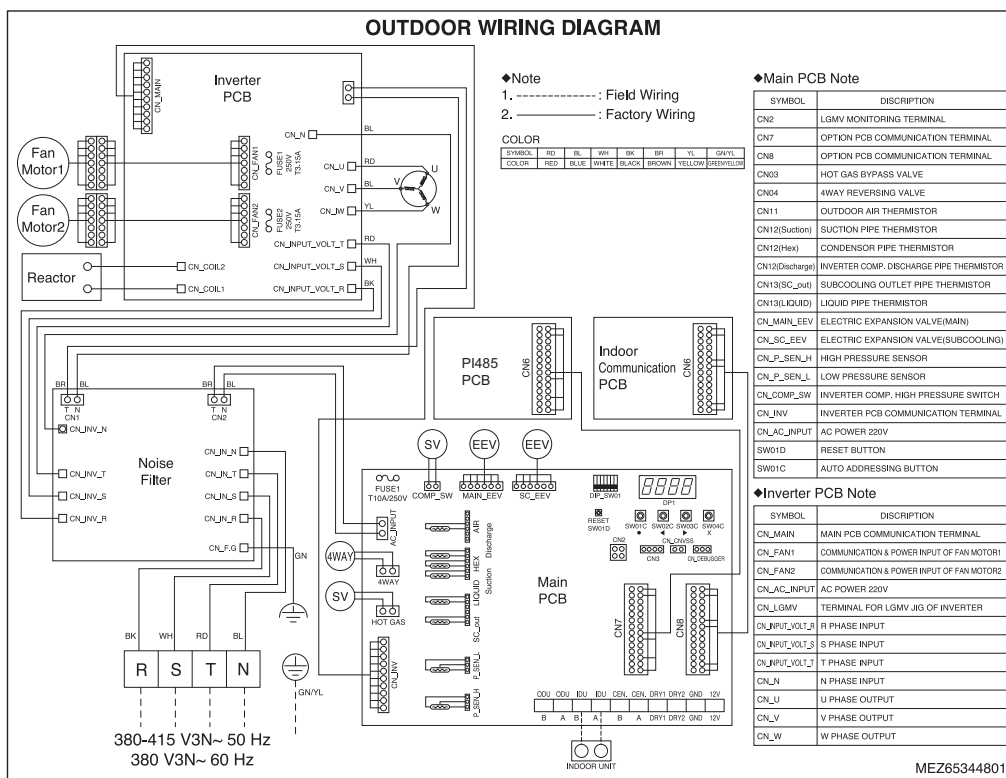


5. Wiring Diagrams

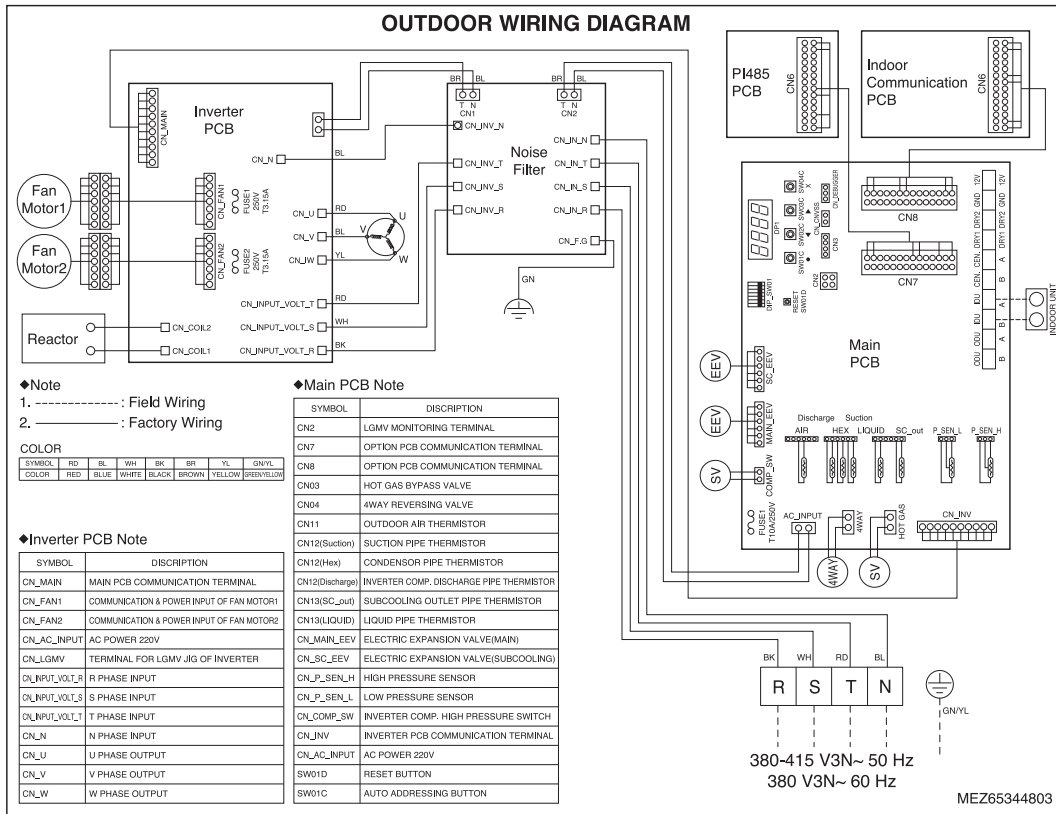
■ U7 chassis, ARUV140LSS0



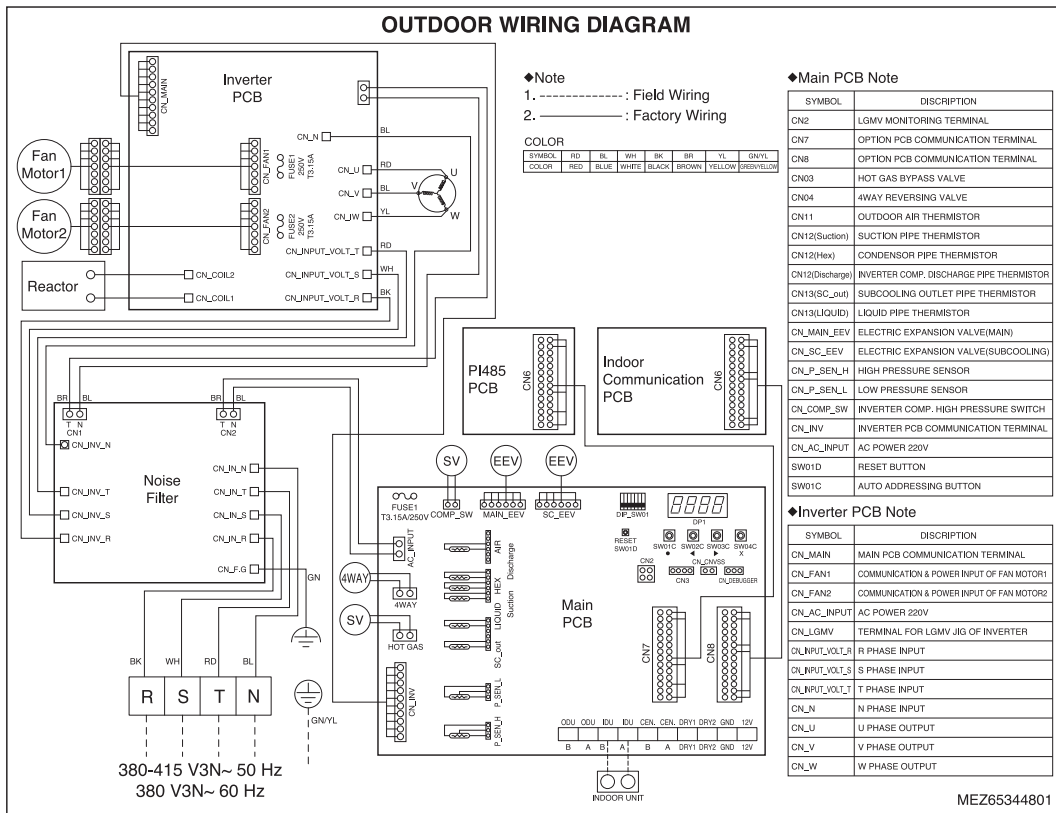
■ U7 chassis, ARUN100LSS0/ARUN120LSS0



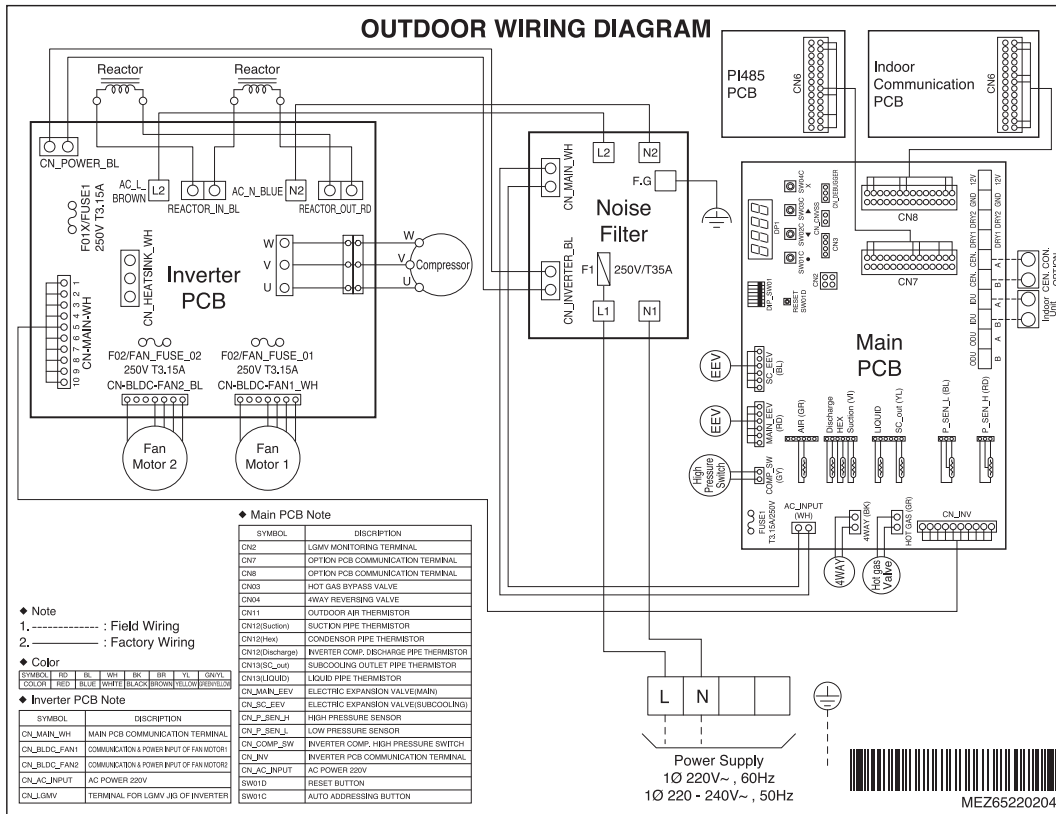
■ U3 chassis, ARUN080LSS0



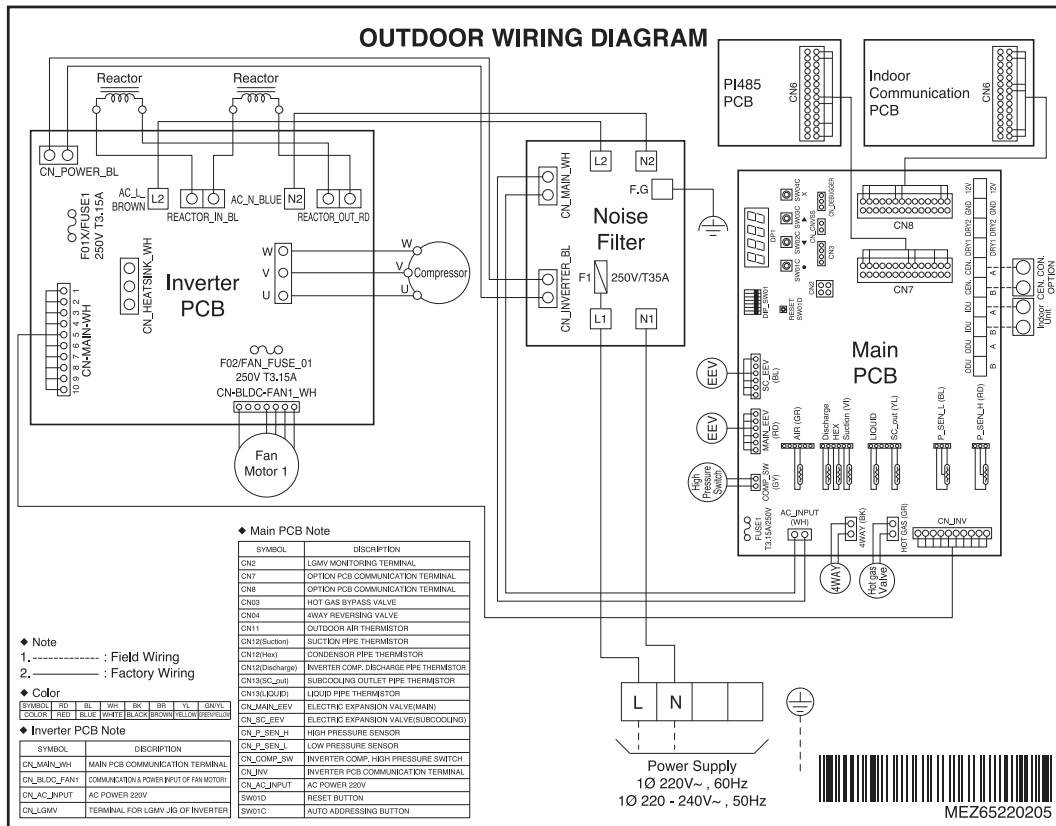
■ U3 Chassis 3Φ, ARUN040LSS0/ARUN050LSS0/ARUN060LSS0



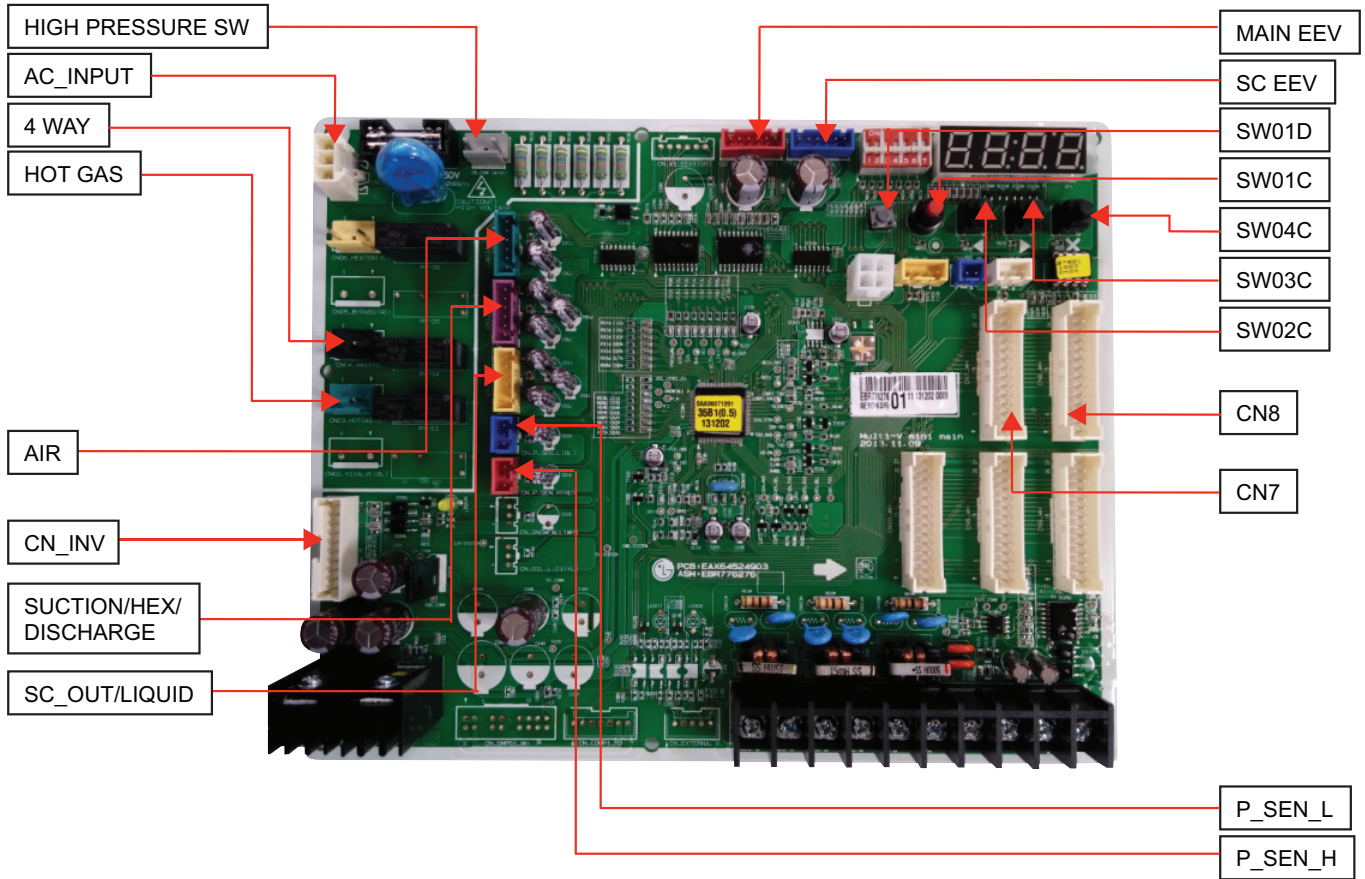
■ U3 Chassis 1Φ, ARUN050GSS0/ARUN060GSS0



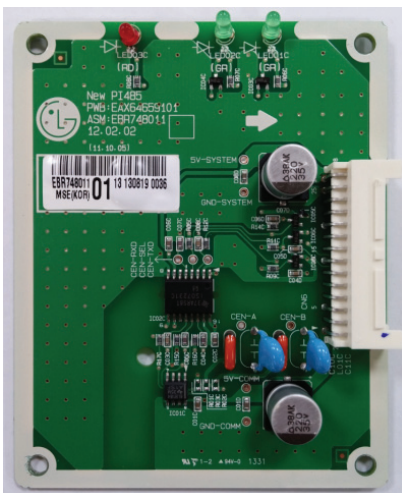
■ U3 Chassis 1Φ, ARUN040GSS0



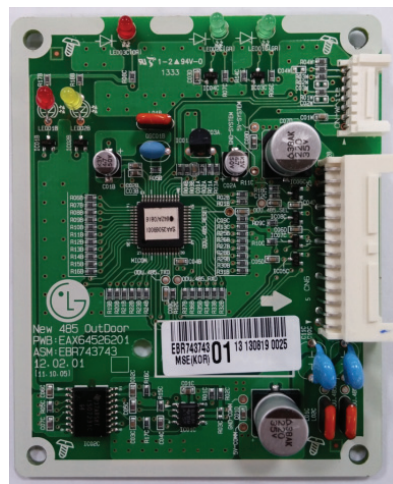
■ Main PCB



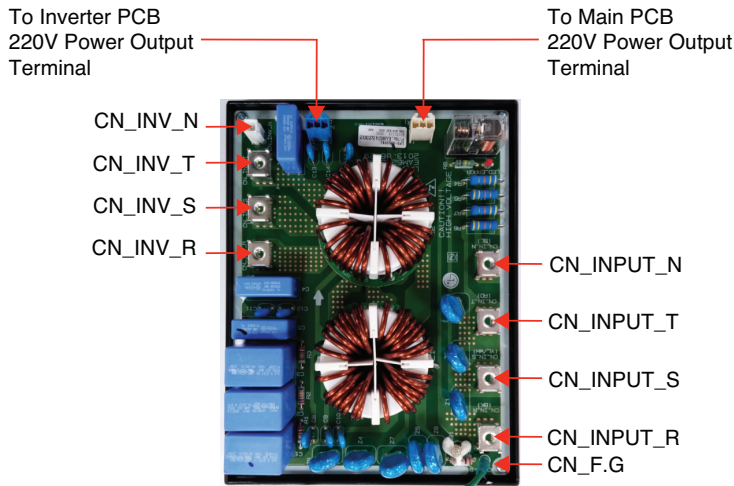
■ PI485 PCB



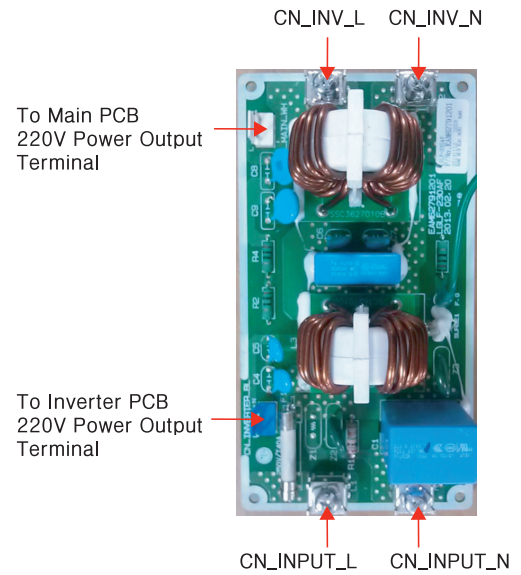
■ Indoor Communication PCB



■ Noise Filter 3Ø



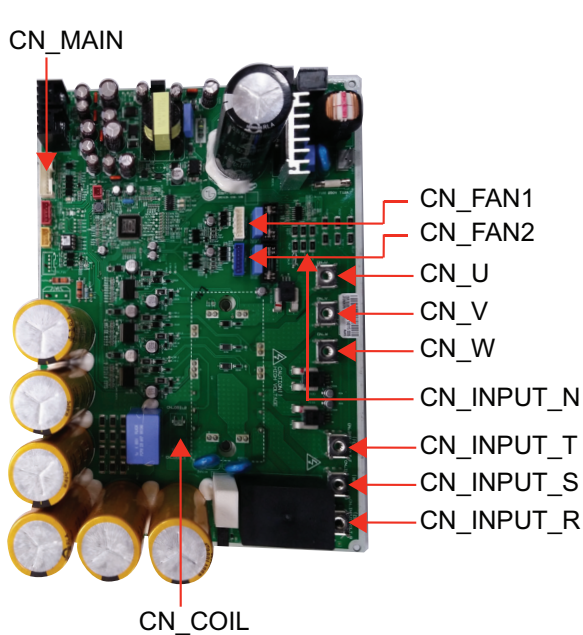
■ Noise Filter 1Ø



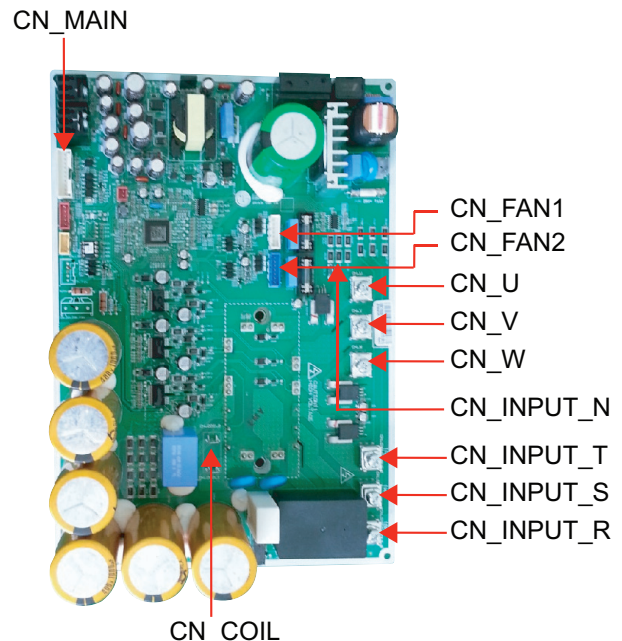
■ Reactor



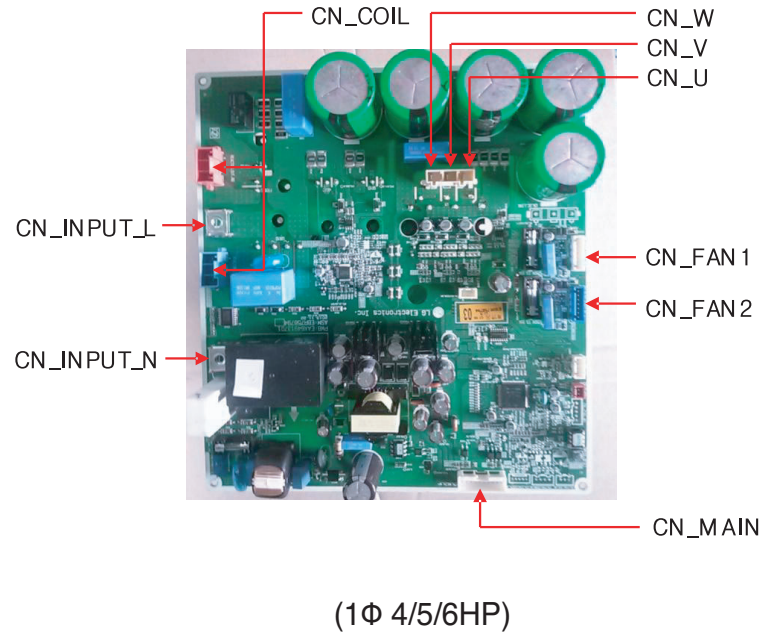
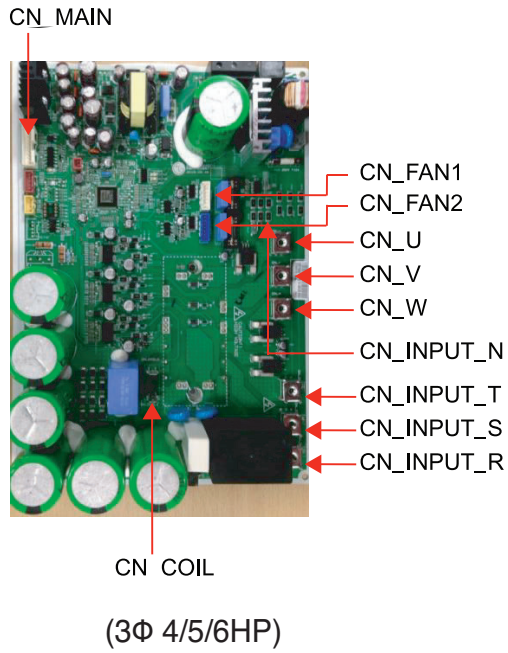
■ Inverter PCB



(U7 chassis, 14HP, 12HP, 10HP)



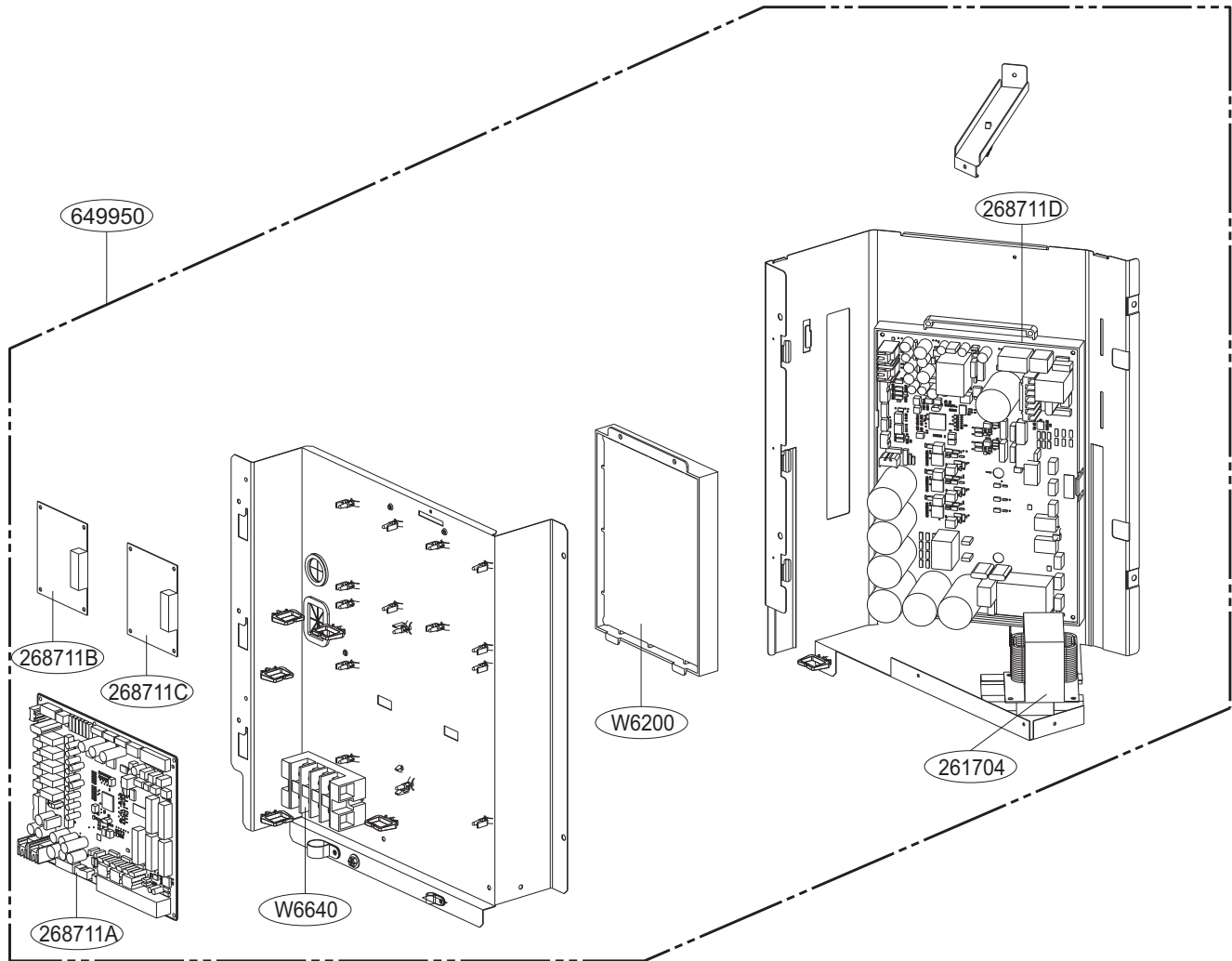
(U3 chassis, 8HP)



6. Exploded View

Control Box

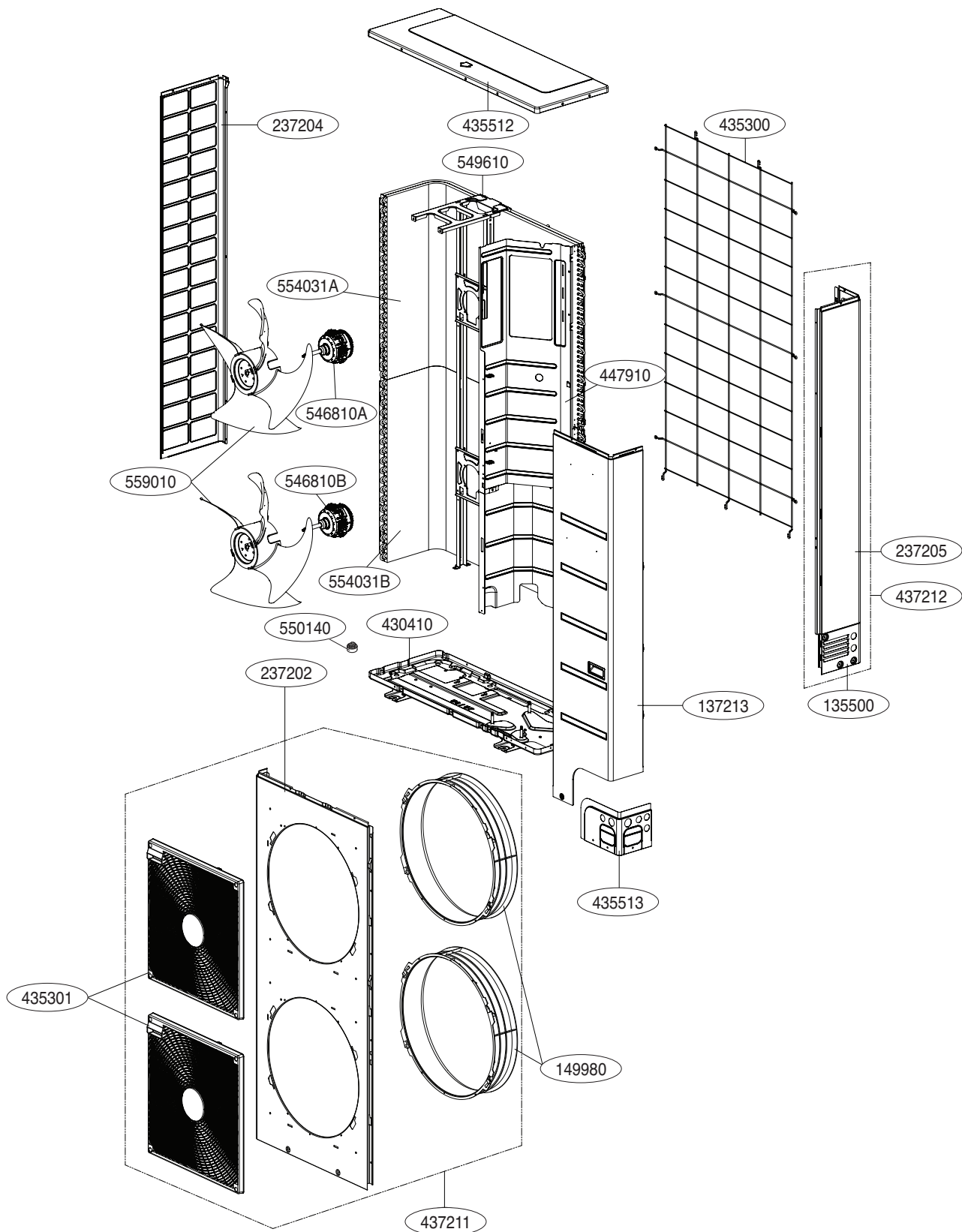
■ U7 chassis, ARUN100LSS0/ARUN120LSS0/ARUV140LSS0



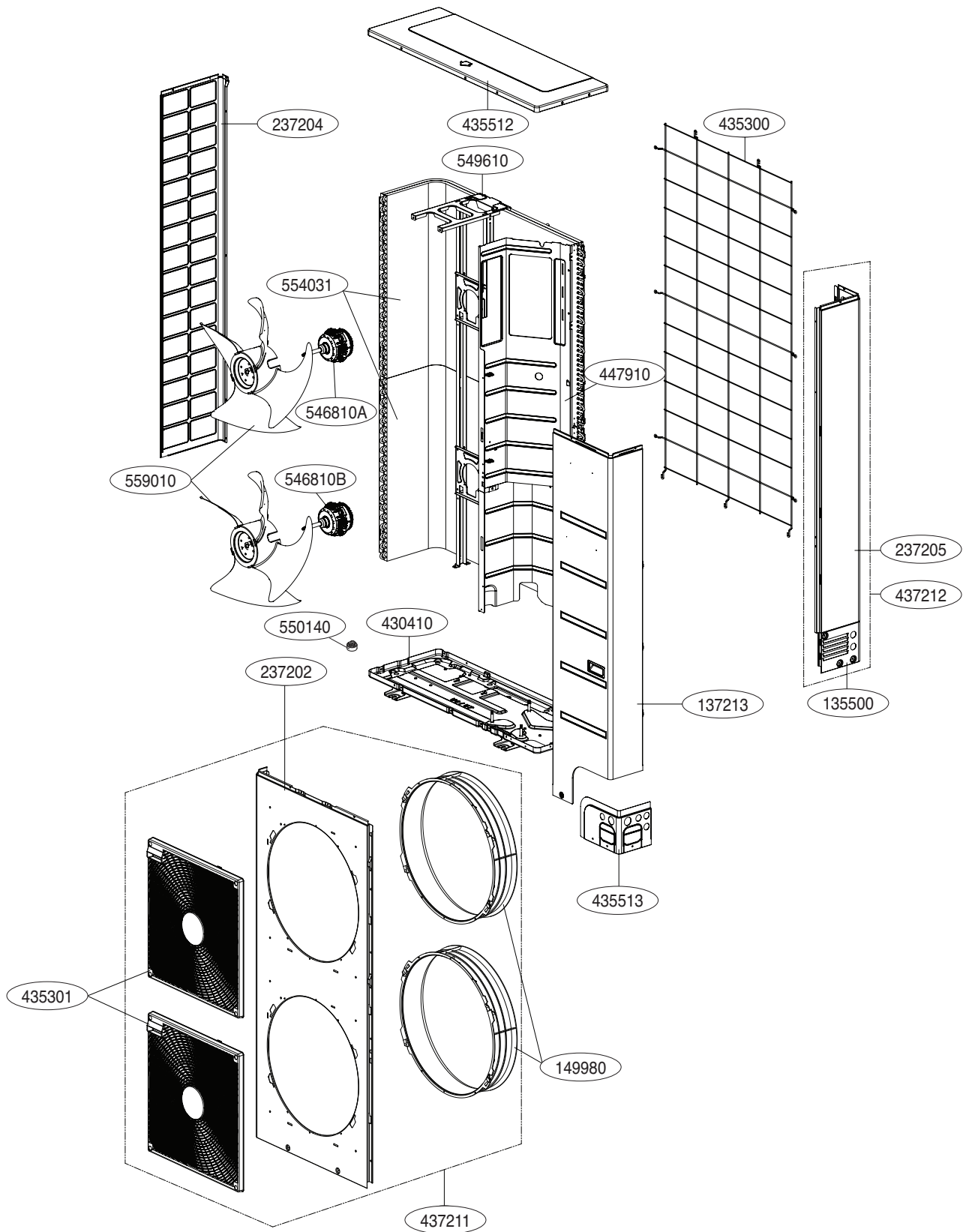
SVC Location	Applied	Housing color
263230A	Subcool out pipe + liquid pipe	yellow
263230B	Suction pipe + hex + discharge pipe	purple
263230C	Air temperature sensor	green

Mechanical Parts and Panels

■ U7 chassis, ARUN100LSS0

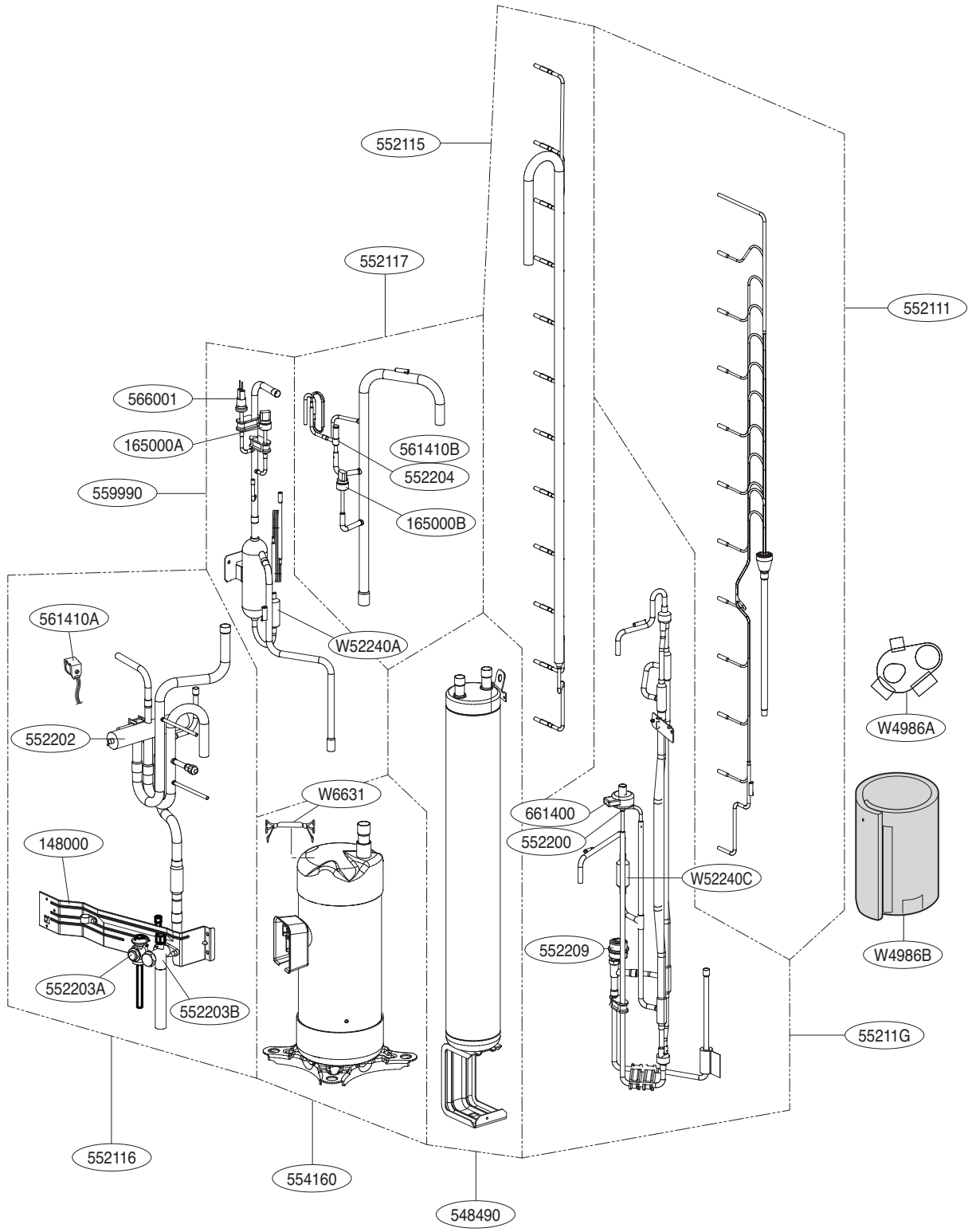


■ U7 chassis, ARUN120LSS0/ARUV140LSS0



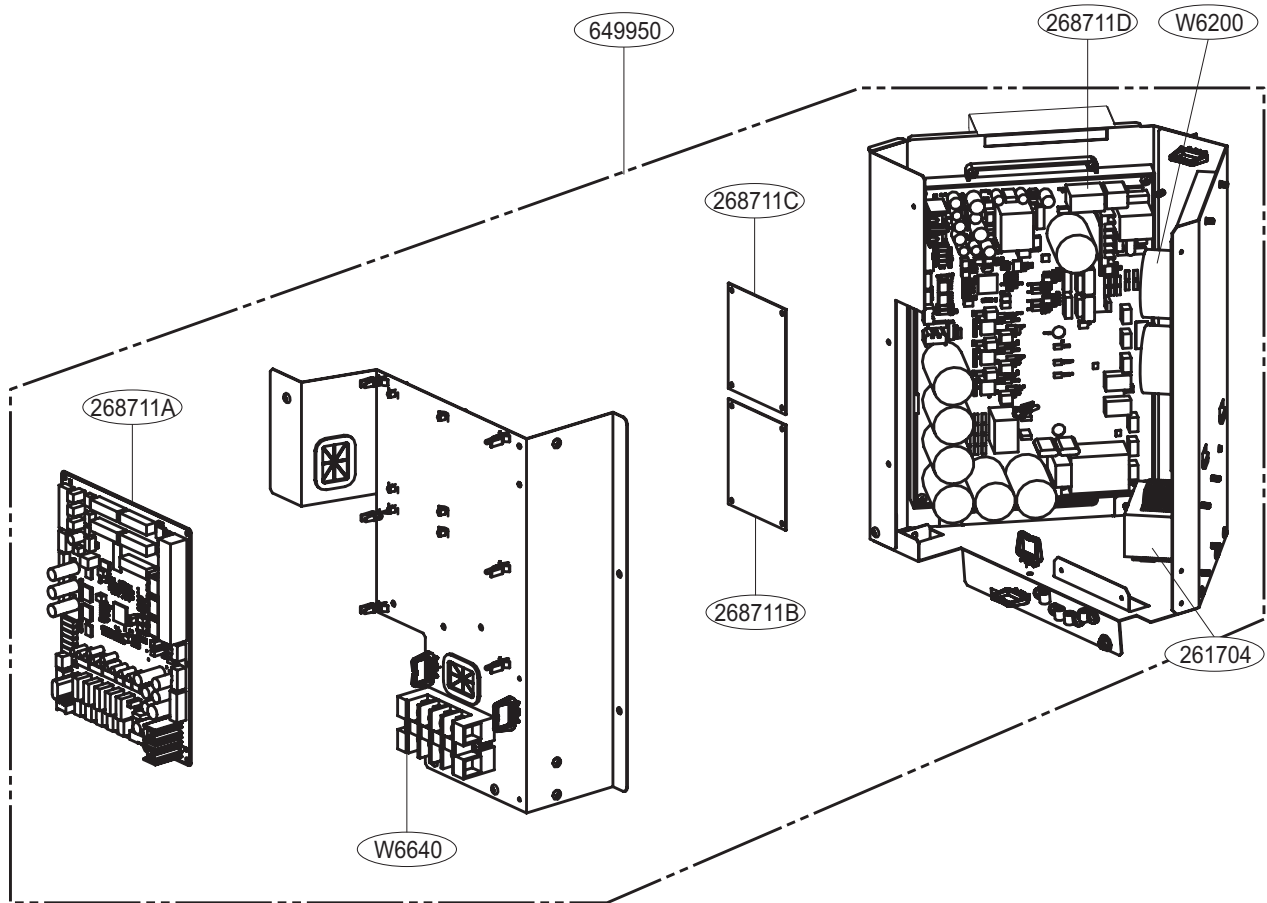
Cycle Parts

■ U7 chassis, ARUN100LSS0/ARUN120LSS0/ARUV140LSS0



Control Box

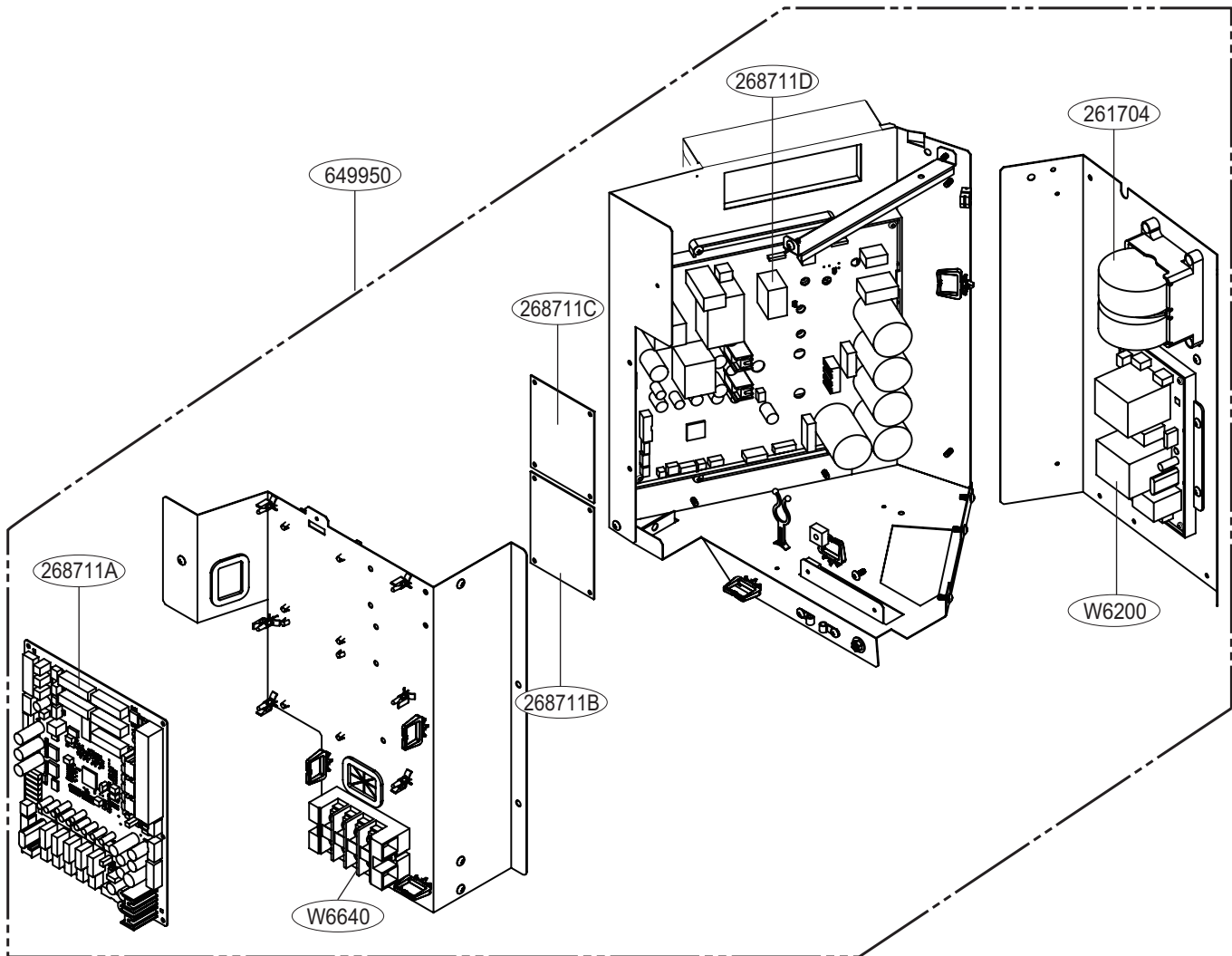
■ U3 chassis 3Ø, ARUN040LSS0/ARUN050LSS0/ARUN060LSS0/ARUN080LSS0



SVC Location	Applied	Housing color
263230A	Subcool out pipe + liquid pipe	yellow
263230B	Suction pipe + hex + discharge pipe	purple
263230C	Air temperature sensor	green

Control Box

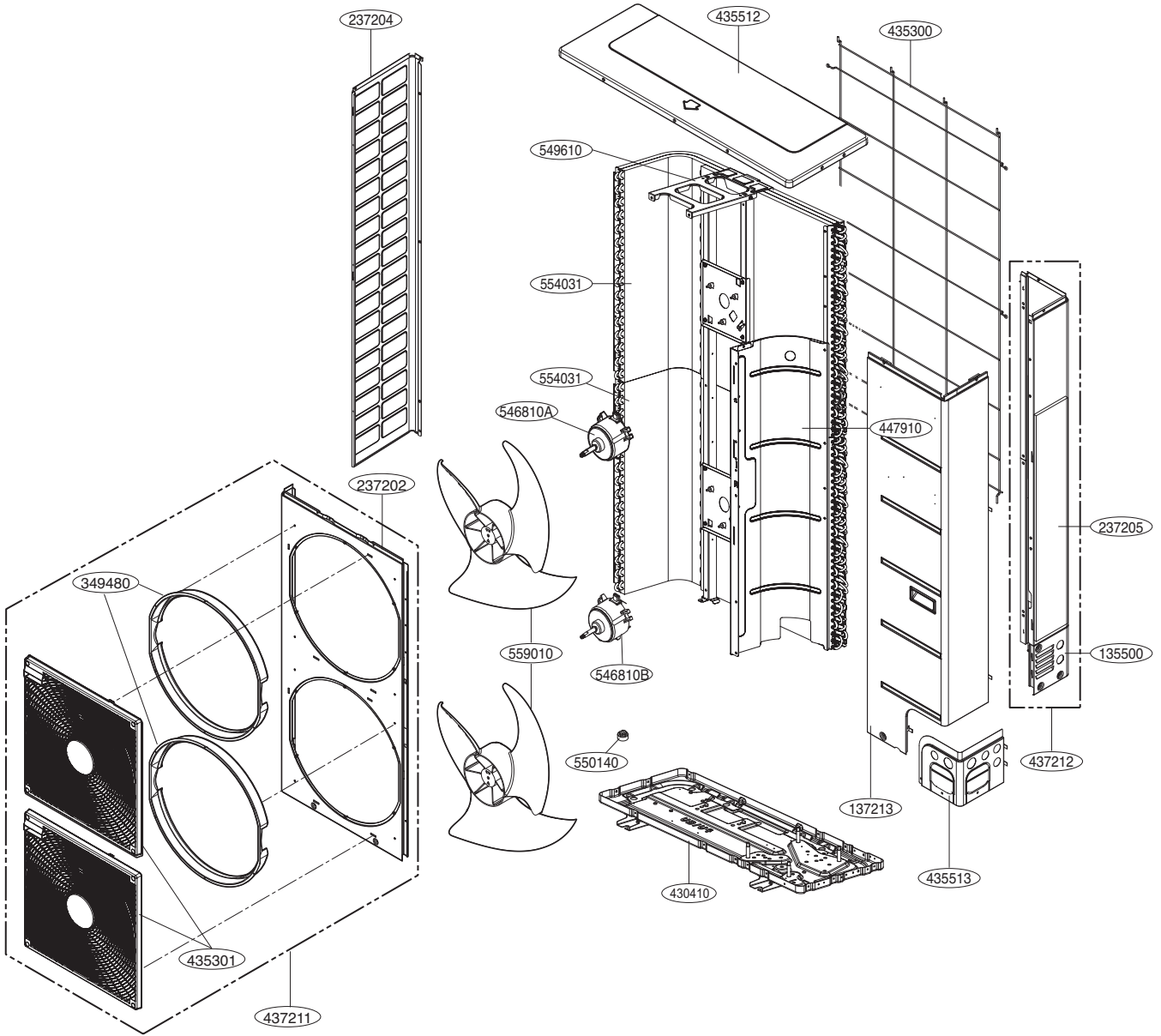
■ U3 chassis 1Ø, ARUN050GSS0/ARUN060GSS0



SVC Location	Applied	Housing color
263230A	Subcool out pipe + liquid pipe	yellow
263230B	Suction pipe + hex + discharge pipe	purple
263230C	Air temperature sensor	green

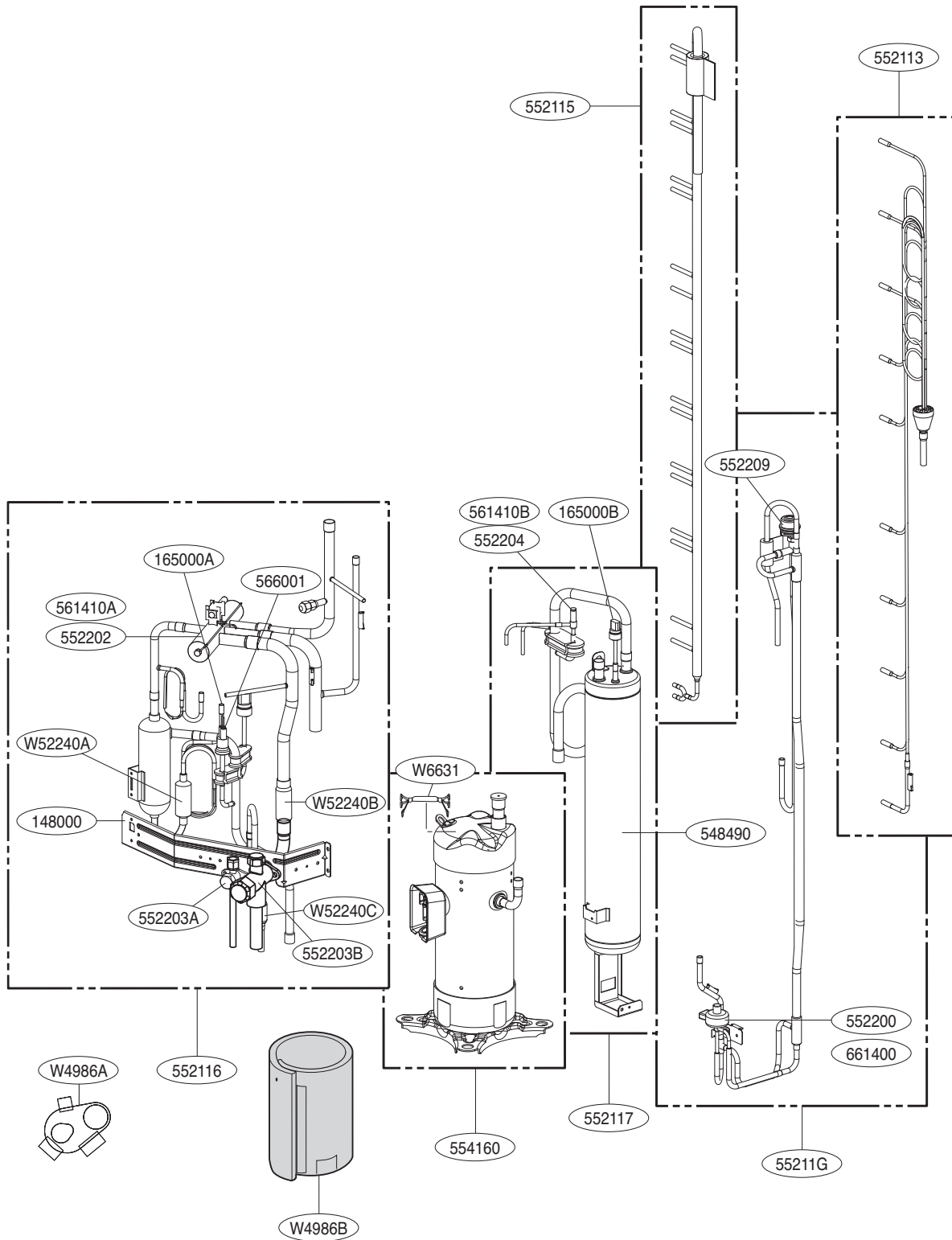
Mechanical Parts and Panels

■ U3 chassis, ARUN050GSS0/ARUN060GSS0/ARUN040LSS0/ARUN050LSS0/ARUN060LSS0 /ARUN080LSS0



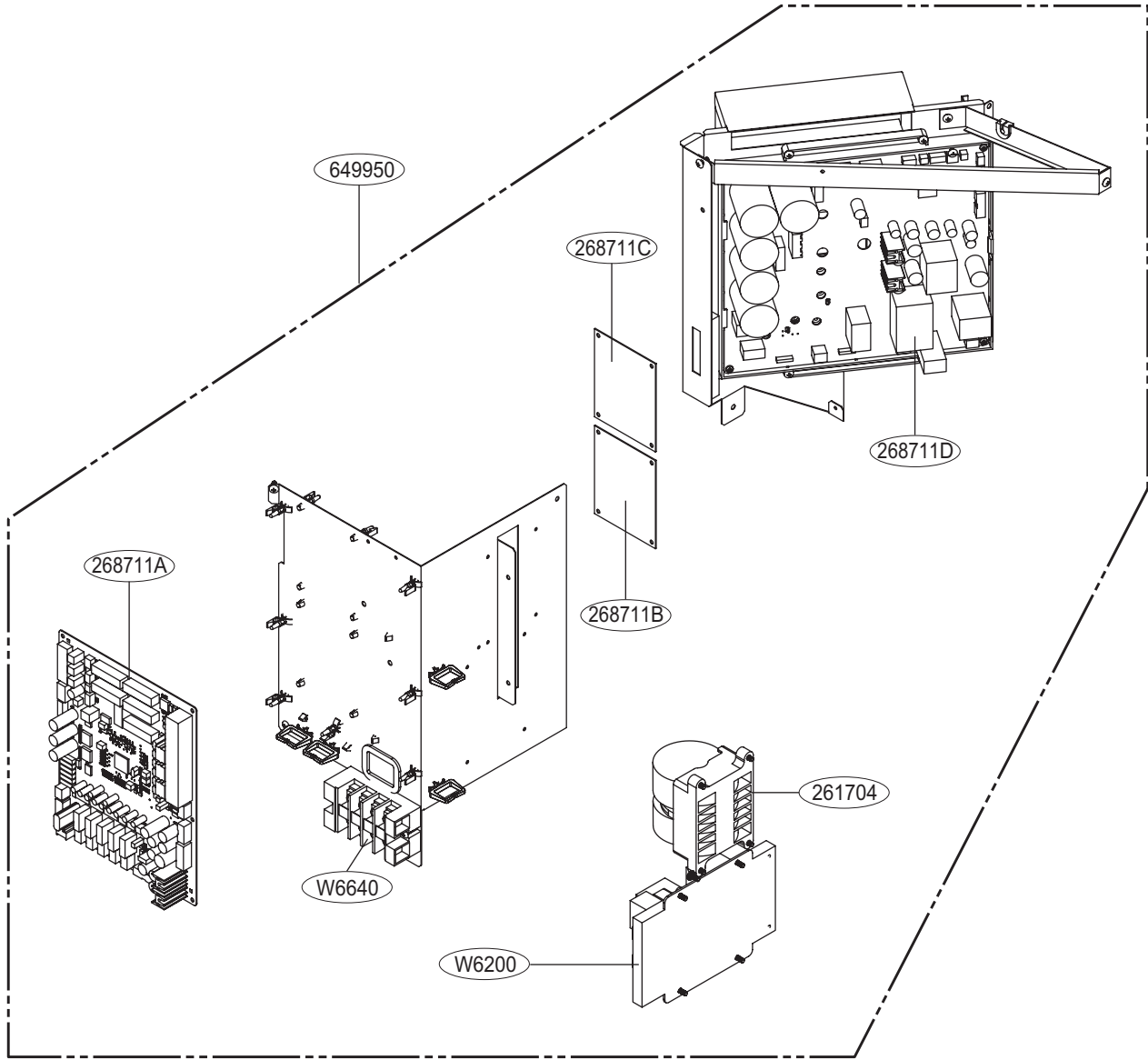
Cycle Parts

■ U3 chassis, ARUN050GSS0/ARUN060GSS0/ARUN040LSS0/ARUN050LSS0/ARUN060LSS0 /ARUN080LSS0



Control Box

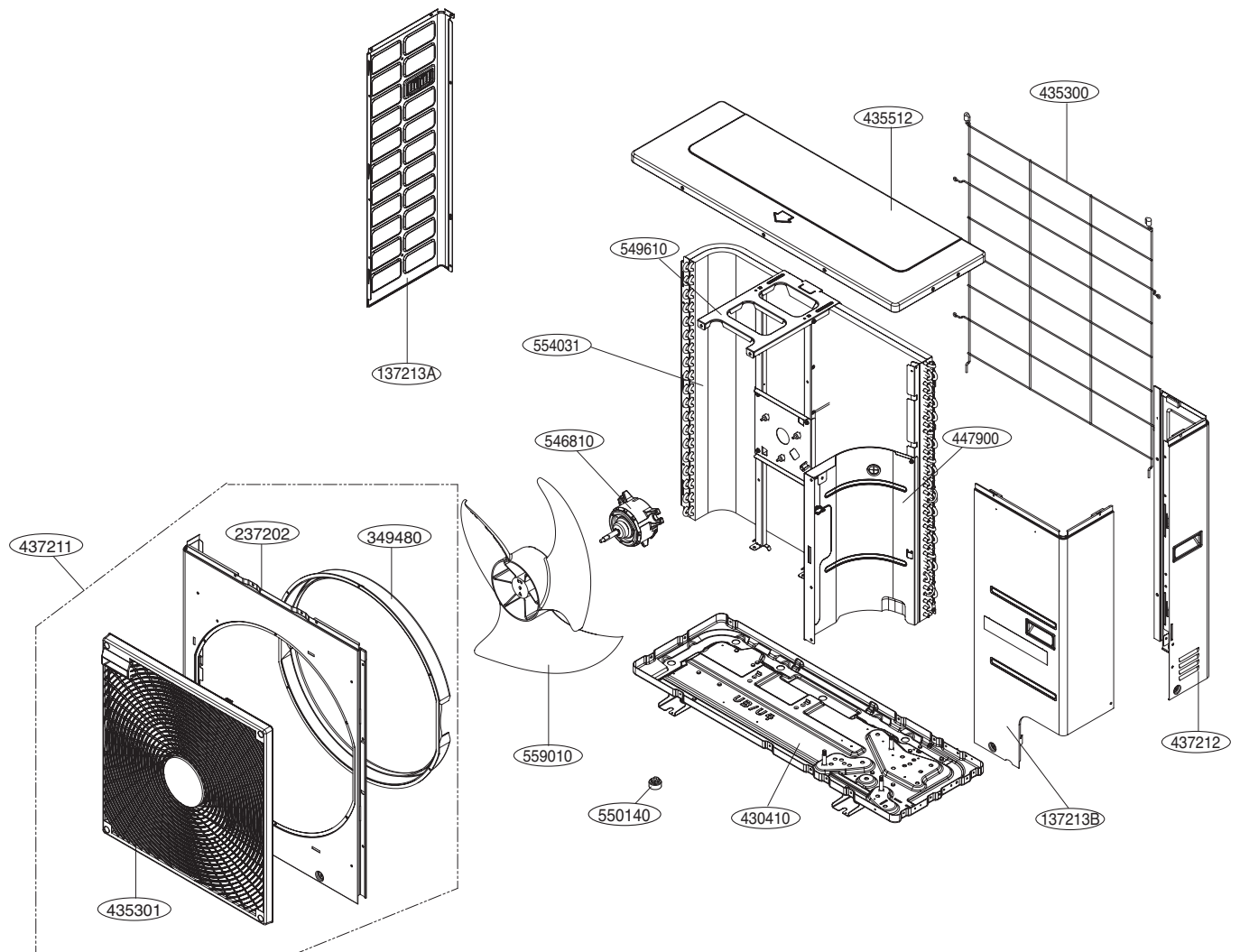
■ U4 chassis, ARUN040GSS0



SVC Location	Applied	Housing color
263230A	Subcool out pipe + liquid pipe	yellow
263230B	Suction pipe + hex + discharge pipe	purple
263230C	Air temperature sensor	green

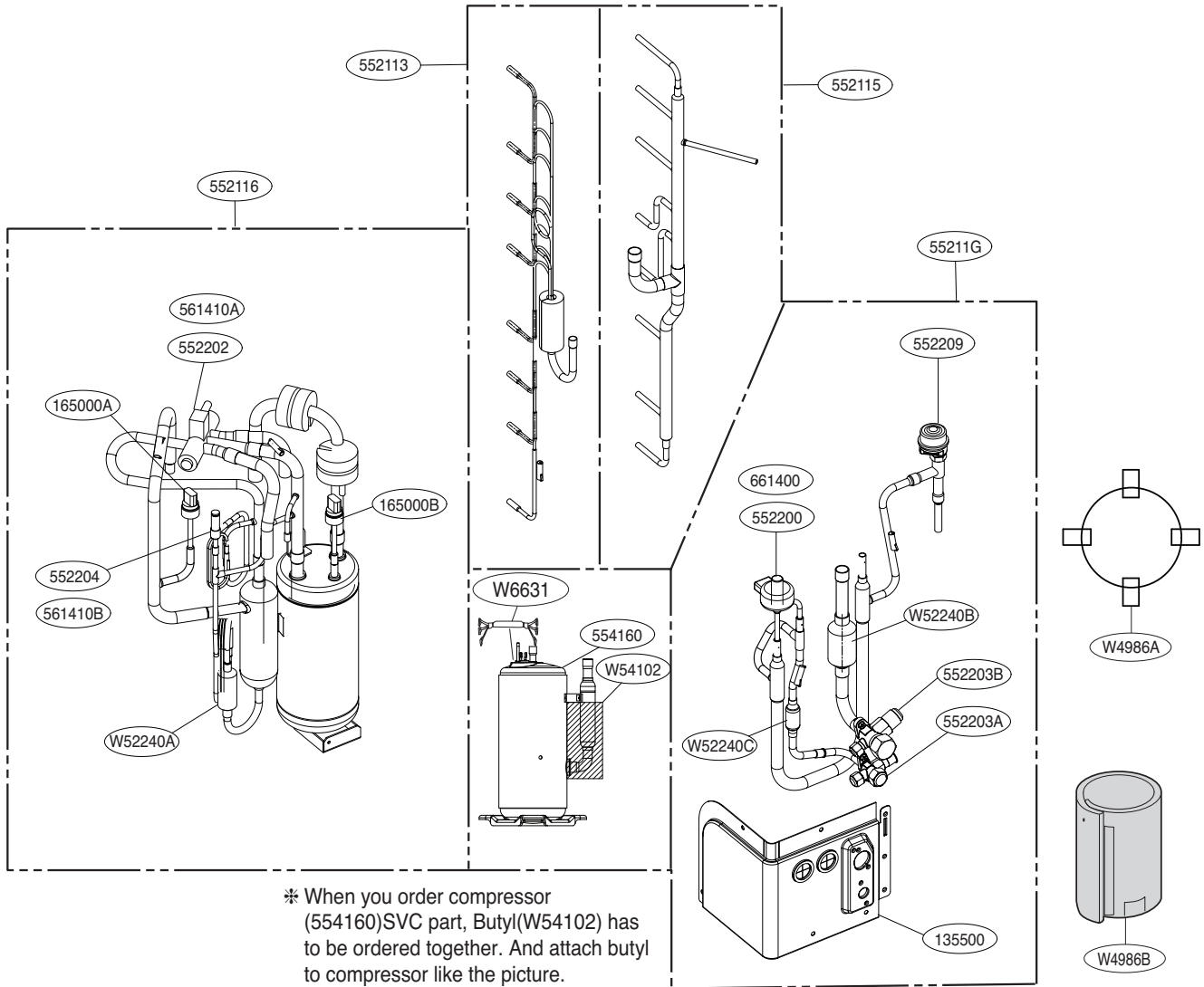
Mechanical Parts and Panels

■ U4 chassis, ARUN040GSS0



Cycle Parts

■ U4 chassis, ARUN040GSS0



* When you order compressor (554160)SVC part, Butyl(W54102) has to be ordered together. And attach butyl to compressor like the picture.

