

Air Conditioner

SERVICE MANUAL

(Exploded View)

**MODEL : LUU188HV LUU189HV LUU248HV
LUU249HV LUU368HV LUU369HV
LUU428HV LUU429HV LUU488HV**

CAUTION

Before Servicing the unit, read the safety precautions in General SVC manual.
Only for authorized service personnel.

1. Specification

Outdoor unit				LUU188HV / LUU248HV	LUU189HV
Power Supply		V, Ø, Hz		208 / 230, 1, 60	208 / 230, 1, 60
Wiring Connections	Power Supply Cable (included Earth)	No. x mm ² (AWG)		3C x 2.5 (12)	3C x 2.5 (12)
Casing Color		-		Warm Gray	Warm Gray
Dimensions	W x H x D	mm		950 x 834 x 330	950 x 834 x 330
	W x H x D	inch		37-13/32 x 32-27/32	37-13/32 x 32-27/32
Net Weight		kg (lbs)		58.5 (129)	59.6 (131)
Compressor	Type	-		Twin Rotary	Twin Rotary
	Model	Model x No.		GJT240MAA x 1	GJT240MAA x 1
	Motor type	-		BLDC	BLDC
	Motor Output	W x No.		2 137 (at 60Hz) x 1	2 137 (at 60Hz) x 1
Refrigerant	Type	-		R410A	R410A
	Precharged Amount	g (lbs)		2 200(4.9)	1 700(3.75)
	Chargeless-Pipe Length	m (ft)		7.5 (24.6)	7.5 (24.6)
	Additional Charging Volume	g/m (oz/ft)		40 (0.43)	40 (0.43)
	Control	-		Electronic Expansion Valve	Electronic Expansion Valve
Refrigerant Oil	Type	-		FVC68D	FVC68D
	Charged volume	cc x No.		900 x 1	900 x 1
Heat Exchanger	(Row x Column x Fins per inch) x No.	-		(2 x 38 x 14) x 1	(2 x 38 x 14) x 1
Fan	Type	-		Axial	Axial
	Air Flow Rate	m ³ /min x No.		58 x 1	58 x 1
Fan Motor	Type	-		BLDC	BLDC
	Output	W x No.		124 x 1	124 x 1
Sound Pressure Level	Cooling	Rated	dB(A)	48	48
	Heating	Rated	dB(A)	52	52
Piping Connections	Liquid	Outer Dia.	mm(inch)	Ø 9.52 (3/8)	Ø 9.52 (3/8)
	Gas	Outer Dia.	mm(inch)	Ø 15.88 (5/8)	Ø 15.88 (5/8)
Piping Length		Max.	m (ft)	50 (164)	50 (164)
Maximum Height	Outdoor Unit ~ Indoor Unit	Max.	m (ft)	30 (98)	30 (98)
Operation Range (Outdoor Temperature)	Cooling	Min. ~ Max.	°C DB (°F DB)	-20 (-4) ~ 48 (118)	-20 (-4) ~ 48 (118)
	Heating	Min. ~ Max.	°C DB (°F DB)	-20 (-4) ~ 18 (64)	-20 (-4) ~ 18 (64)
Electric Leakage Circuit Breaker		A		30	30

Note:

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.
4. Cooling Operation Range : -15(5)~48(118)
When applying the Wind Baffle: -20(-4)~

Outdoor unit				LUU249HV	LUU368HV / LUU428HV / LUU488HV
Power Supply			V, Ø, Hz	208 / 230, 1, 60	208 / 230, 1, 60
Wiring Connections	Power Supply Cable (included Earth)		No. x mm² (AWG)	3C x 2.5 (12)	3C x 6.0 (10)
Casing Color			-	Warm Gray	Warm Gray
Dimensions		W x H x D	mm	950 x 834 x 330	950 x 1 380 x 330
		W x H x D	inch	37-13/32 x 32-27/32	37-13/32 x 54-11/32 x 13
Net Weight			kg (lbs)	59 (130)	92 (203)
Compressor	Type		-	Twin Rotary	Twin Rotary
	Model		Model x No.	GJT240MAA x 1	GPT442MBA x 1
	Motor type		-	BLDC	BLDC
	Motor Output		W x No.	2 137 (at 60Hz) x 1	4 241 (at 60 Hz) x 1
Refrigerant	Type		-	R410A	R410A
	Precharged Amount		g (lbs)	2 000 (4.41)	3 400 (7.5)
	Chargeless-Pipe Length		m (ft)	7.5 (24.6)	7.5 (24.6)
	Additional Charging Volume		g/m (oz/ft)	40 (0.43)	40 (0.43)
	Control		-	Electronic Expansion Valve	Electronic Expansion Valve
Refrigerant Oil	Type		-	FVC68D	FVC68D
	Charged volume		cc x No.	900 x 1	1 300 x 1
Heat Exchanger	(Row x Column x Fins per inch) x No.		-	(2 x 38 x 14) x 1	(2 x 32 x 14) x 2
Fan	Type		-	Axial	Axial
	Air Flow Rate		m³/min x No.	58 x 1	120 x 2
Fan Motor	Type		-	BLDC	BLDC
	Output		W x No.	124 x 1	124 x 2
Sound Pressure Level	Cooling	Rated	dB(A)	48	52
	Heating	Rated	dB(A)	52	54
Piping Connections	Liquid	Outer Dia.	mm(inch)	Ø 9.52 (3/8)	Ø 9.52 (3/8)
	Gas	Outer Dia.	mm(inch)	Ø 15.88 (5/8)	Ø 15.88 (5/8)
Piping Length		Max.	m (ft)	50 (164)	75 (246)
Maximum Height	Outdoor Unit ~ Indoor Unit	Max.	m (ft)	30 (98)	30 (98)
Operation Range (Outdoor Temperature)	Cooling	Min. ~ Max.	°C DB (°F DB)	-20 (-4) ~ 48 (118)	-20 (-4) ~ 48 (118)
	Heating	Min. ~ Max.	°C DB (°F DB)	-18(-0.4) ~ 18 (64)	-20 (-4) ~ 18 (64)
Electric Leakage Circuit Breaker			A	30	40

Note:

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.
4. Cooling Operation Range : -15(5)~48(118)
When applying the Wind Baffle: -20(-4)~

Outdoor unit				LUU369HV / LUU429HV	
Power Supply			V, Ø, Hz		208 / 230, 1, 60
Wiring Connections	Power Supply Cable (included Earth)		No. x mm² (AWG)		3C x 6.0 (10)
Casing Color			-		Warm Gray
Dimensions		W x H x D	mm		950 x 1 380 x 330
		W x H x D	inch		37-13/32 x 54-11/32 x 13
Net Weight			kg (lbs)		90.2 (199)
Compressor	Type		-		Scroll
	Model		Model x No.		RJA036MAA x 1
	Motor type		-		BLDC
	Motor Output		W x No.		3 198 (at 60 Hz) x 1
Refrigerant	Type		-		R410A
	Precharged Amount		g (lbs)		3 400 (7.5)
	Chargeless-Pipe Length		m (ft)		7.5 (24.6)
	Additional Charging Volume		g/m (oz/ft)		40 (0.43)
	Control		-		Electronic Expansion Valve
Refrigerant Oil	Type		-		FVC68D
	Charged volume		cc x No.		1 000 x 1
Heat Exchanger	(Row x Column x Fins per inch) x No.		-		(2 x 32 x 14) x 2
Fan	Type		-		Axial
	Air Flow Rate		m³/min x No.		120 x 2
Fan Motor	Type		-		BLDC
	Output		W x No.		124 x 2
Sound Pressure Level	Cooling	Rated	dB(A)		52
	Heating	Rated	dB(A)		54
Piping Connections	Liquid	Outer Dia.	mm(inch)		Ø 9.52 (3/8)
	Gas	Outer Dia.	mm(inch)		Ø 15.88 (5/8)
Piping Length		Max.	m (ft)		75 (246)
Maximum Height	Outdoor Unit ~ Indoor Unit	Max.	m (ft)		30 (98)
Operation Range (Outdoor Temperature)	Cooling	Min. ~ Max.	°C DB (°F DB)		-20 (-4) ~ 48 (118)
	Heating	Min. ~ Max.	°C DB (°F DB)		-20 (-4) ~ 18 (64)
Electric Leakage Circuit Breaker			A		40

Note:

1. Wiring cable size must comply with the applicable local and national code.
2. Due to our policy of innovation some specifications may be changed without notification.
3. Sound Level Values are measured at Anechoic chamber.
Therefore, these values can be increased owing to ambient conditions during operation.
4. Cooling Operation Range : -15(5)~48(118)
When applying the Wind Baffle: -20(-4)~

2. Function Table

■ Outdoor Units

Category	Functions	LUU188HV / LUU189HV / LUU248HV LUU249HV / LUU368HV / LUU369HV LUU428HV / LUU429HV / LUU488HV
Reliability	Defrost / Deicing	O
	Base Pan Heater	PQSH1200
	High pressure switch	X
	Low pressure switch	X
	Phase protection	X
	Restart delay (3-minutes)	O
	Self diagnosis	O
	Soft start	O
Convenience	Test function	X
	Night Silent Operation	O
	Wiring Error Check	X
	Peak Control	X
	Mode Lock	O
	Pump Down	O
Network function	Network solution(LGAP)	O

Device		LUU188HV / LUU189HV / LUU248HV LUU249HV / LUU368HV / LUU369HV LUU428HV / LUU429HV / LUU488HV
Central Controller	AC Smart IV	PACS4B000
	ACP IV	PACP4B000
	PI485	PMNFP14A1

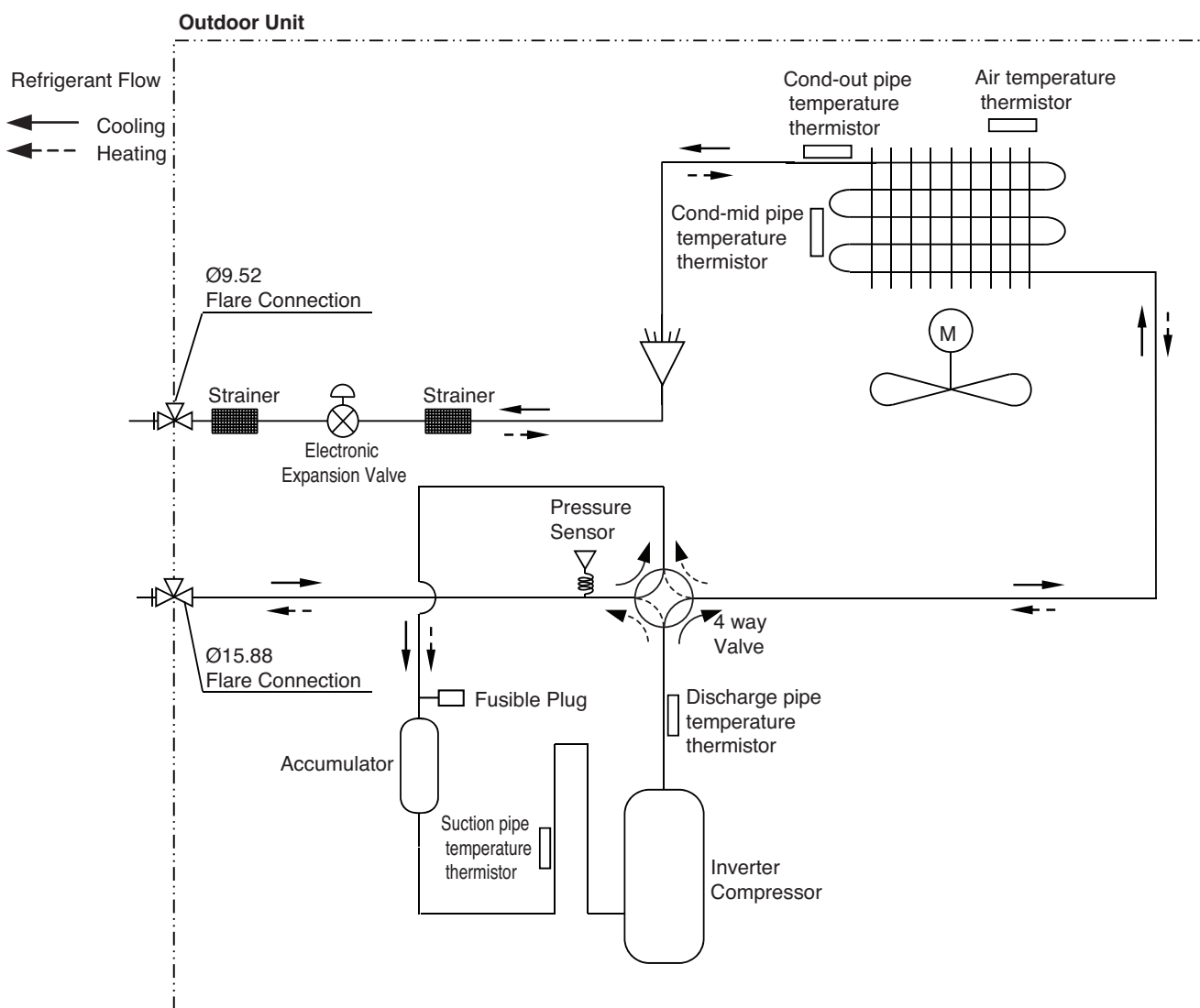
Note:

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. Piping Diagrams

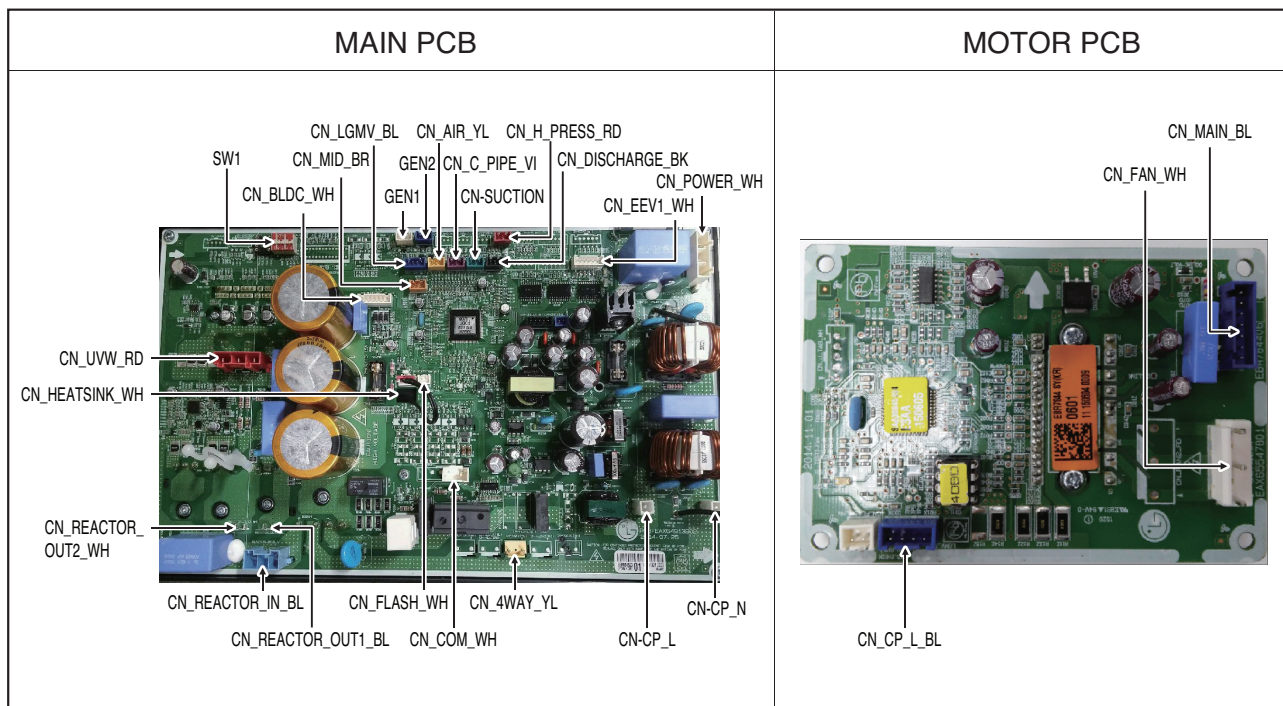
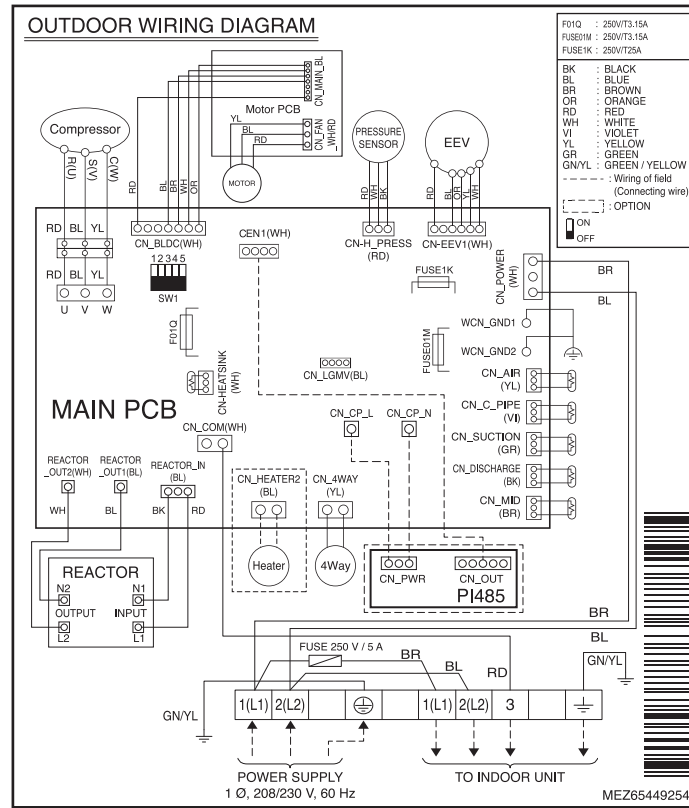
**Models : LUU188HV / LUU189HV / LUU248HV
LUU249HV / LUU368HV / LUU369HV
LUU428HV / LUU429HV / LUU488HV**

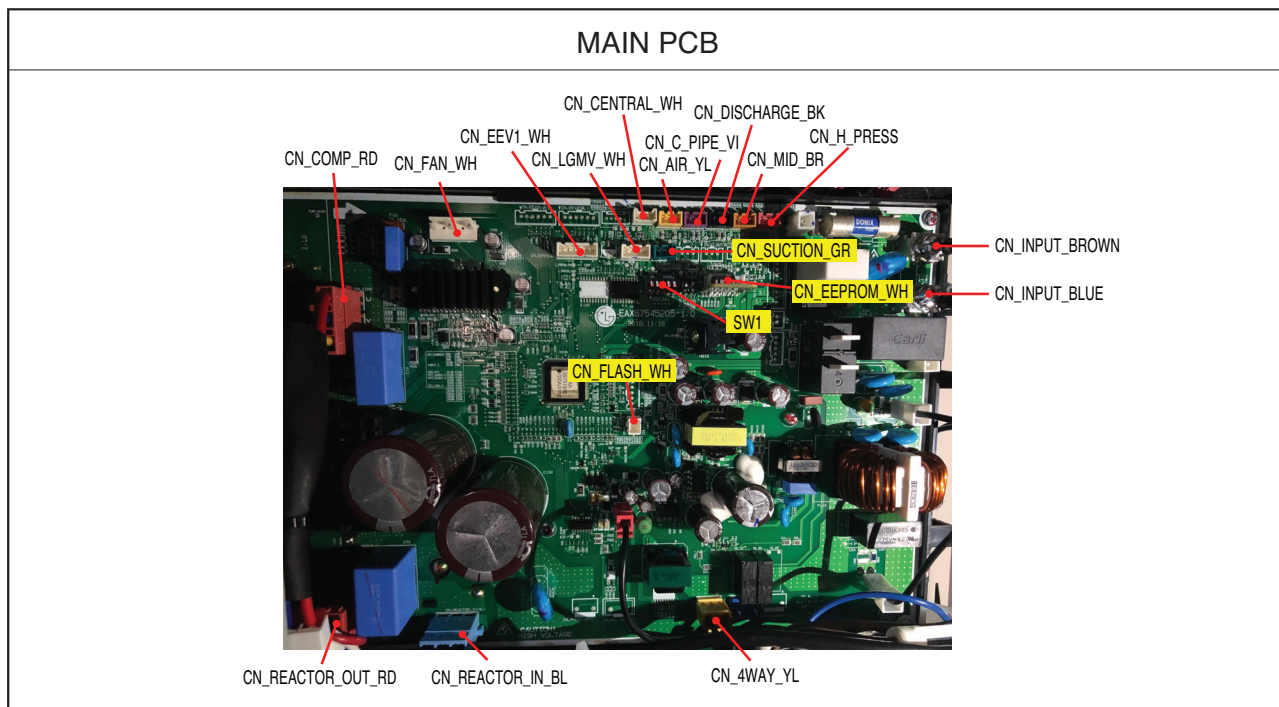
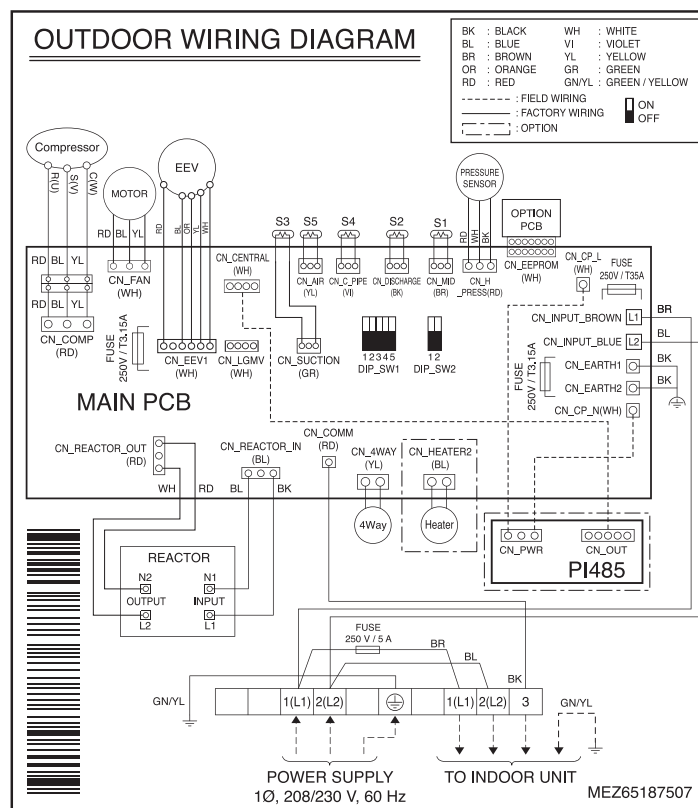


Sensor information	PCB Connector
Discharge pipe temperature	CN_DISCHA_BK
Suction pipe temperature	CN_SUCTION_GR
Cond-out pipe temperature	CN_C_PIPE_VI
Air temperature	CN_AIR_YL
Cond-mid pipe temperature	CN_MID_BR
Pressure	CN_H_PRESS_RD

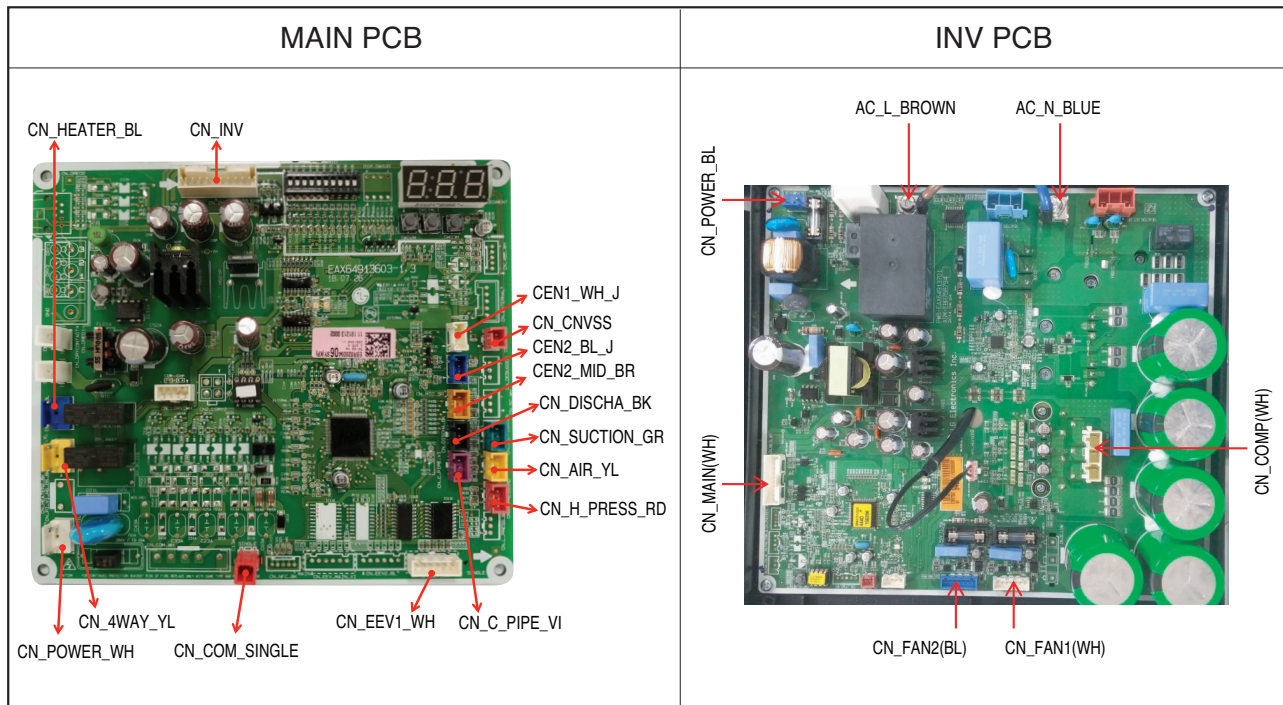
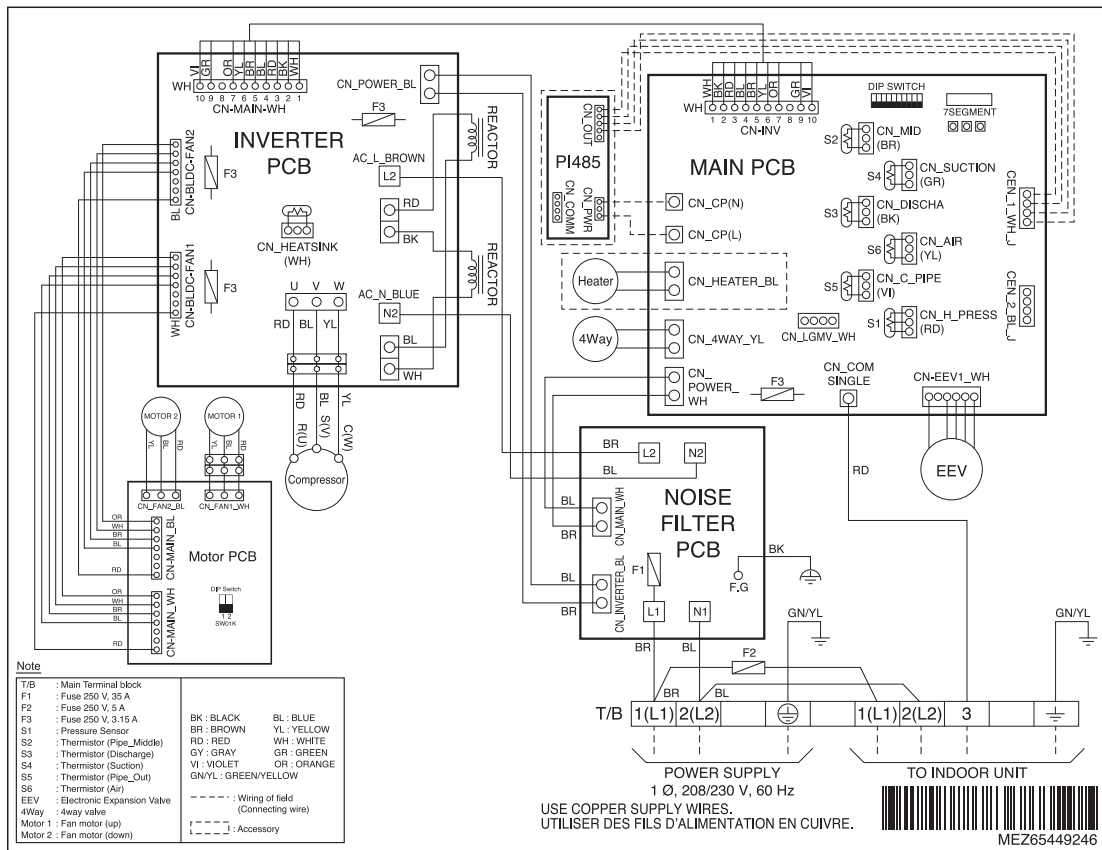
4. Wiring Diagrams

Models : LUU188HV / LUU189HV / LUU248HV

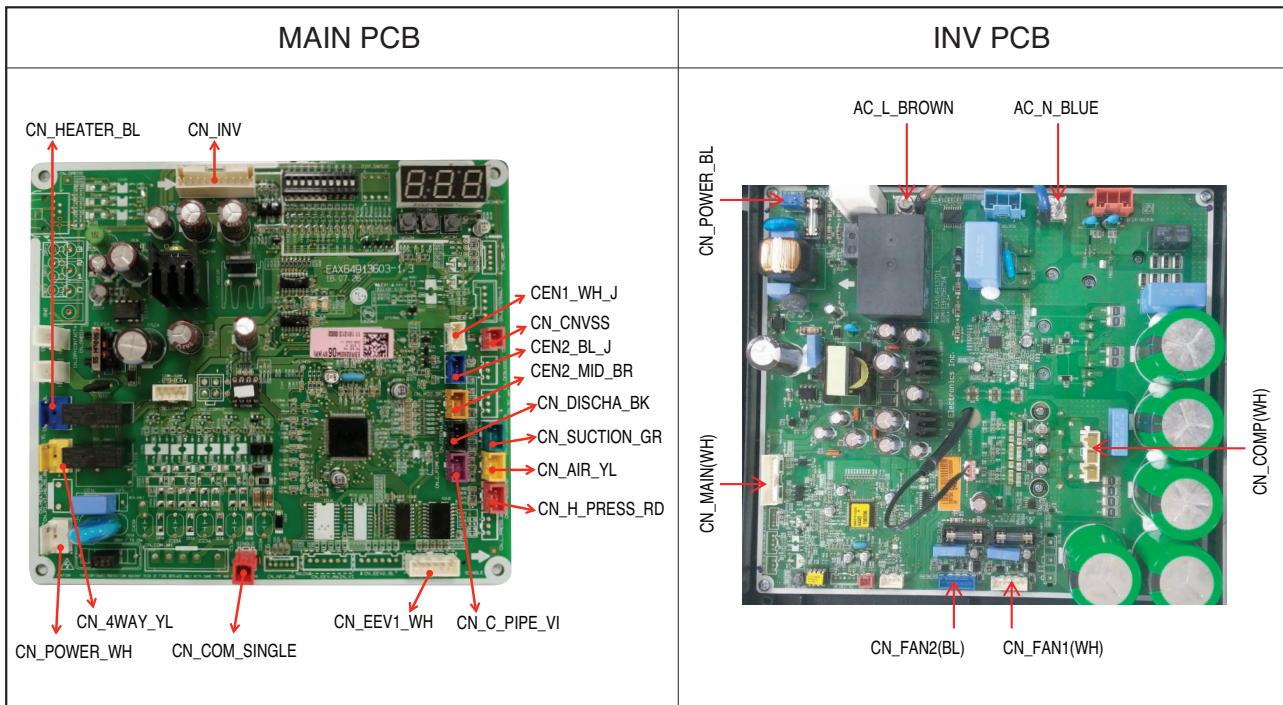
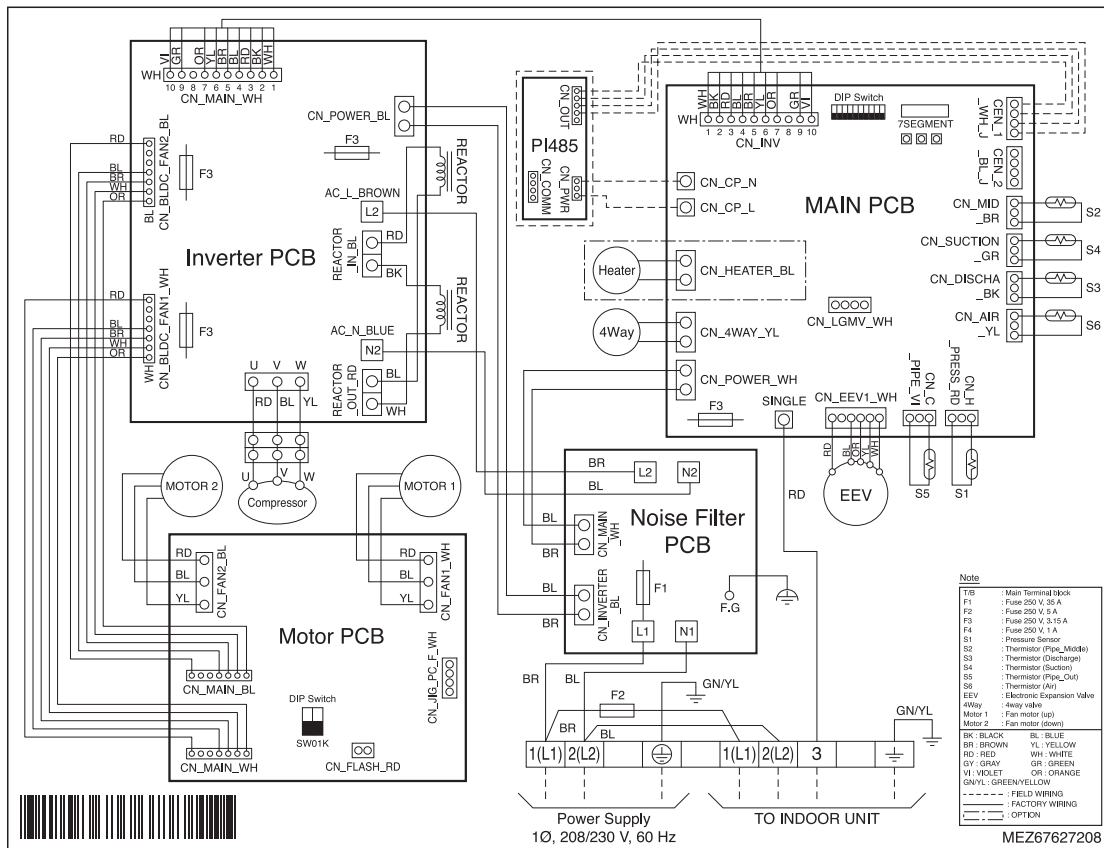




Models : LUU368HV / LUU428HV / LUU488HV



Models : LUU369HV / LUU429HV



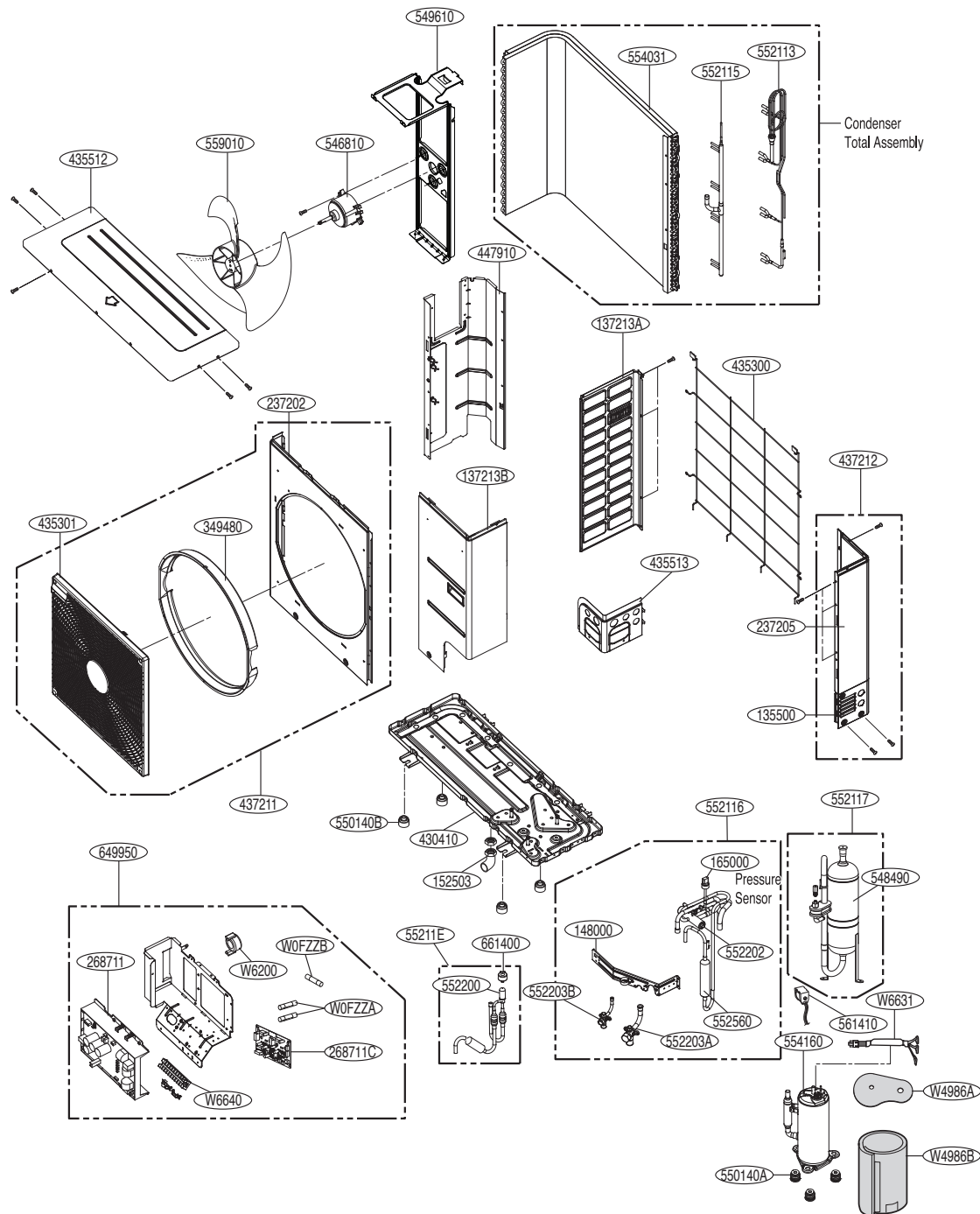
The diagram shows the MOTOR PCB with the following components and connectors labeled:

- CN_FAN1_WH**: A white 4-pin connector for the fan, located at the top center.
- CN_FAN2_BL**: A blue 4-pin connector for the fan, located on the left side.
- CN_MAIN_BL**: A blue 4-pin connector for the main power, located on the left side.
- CN_MAIN_WH**: A white 4-pin connector for the main power, located on the left side.
- CN_LGMV_WH**: A white 4-pin connector for the LGMV, located on the right side.

The PCB also features various electronic components, including capacitors (e.g., EAX665, C06A, C07A, C07B, C07C, C07D, C07E, C07F, C07G, C07H, C07I, C07J, C07K, C07L, C07M, C07N, C07O, C07P, C07Q, C07R, C07S, C07T, C07U, C07V, C07W, C07X, C07Y, C07Z), resistors (e.g., 10K, 100K, 1M, 10M, 100M, 1G, 10G, 100G, 1T, 10T, 100T, 1P, 10P, 100P, 1T, 10T, 100T, 1P, 10P, 100P), and integrated circuits (e.g., IPM1, IPM2, IPM3, IPM4, IPM5, IPM6, IPM7, IPM8, IPM9, IPM10, IPM11, IPM12, IPM13, IPM14, IPM15, IPM16, IPM17, IPM18, IPM19, IPM20, IPM21, IPM22, IPM23, IPM24, IPM25, IPM26, IPM27, IPM28, IPM29, IPM30, IPM31, IPM32, IPM33, IPM34, IPM35, IPM36, IPM37, IPM38, IPM39, IPM40, IPM41, IPM42, IPM43, IPM44, IPM45, IPM46, IPM47, IPM48, IPM49, IPM50, IPM51, IPM52, IPM53, IPM54, IPM55, IPM56, IPM57, IPM58, IPM59, IPM60, IPM61, IPM62, IPM63, IPM64, IPM65, IPM66, IPM67, IPM68, IPM69, IPM70, IPM71, IPM72, IPM73, IPM74, IPM75, IPM76, IPM77, IPM78, IPM79, IPM80, IPM81, IPM82, IPM83, IPM84, IPM85, IPM86, IPM87, IPM88, IPM89, IPM90, IPM91, IPM92, IPM93, IPM94, IPM95, IPM96, IPM97, IPM98, IPM99, IPM100).

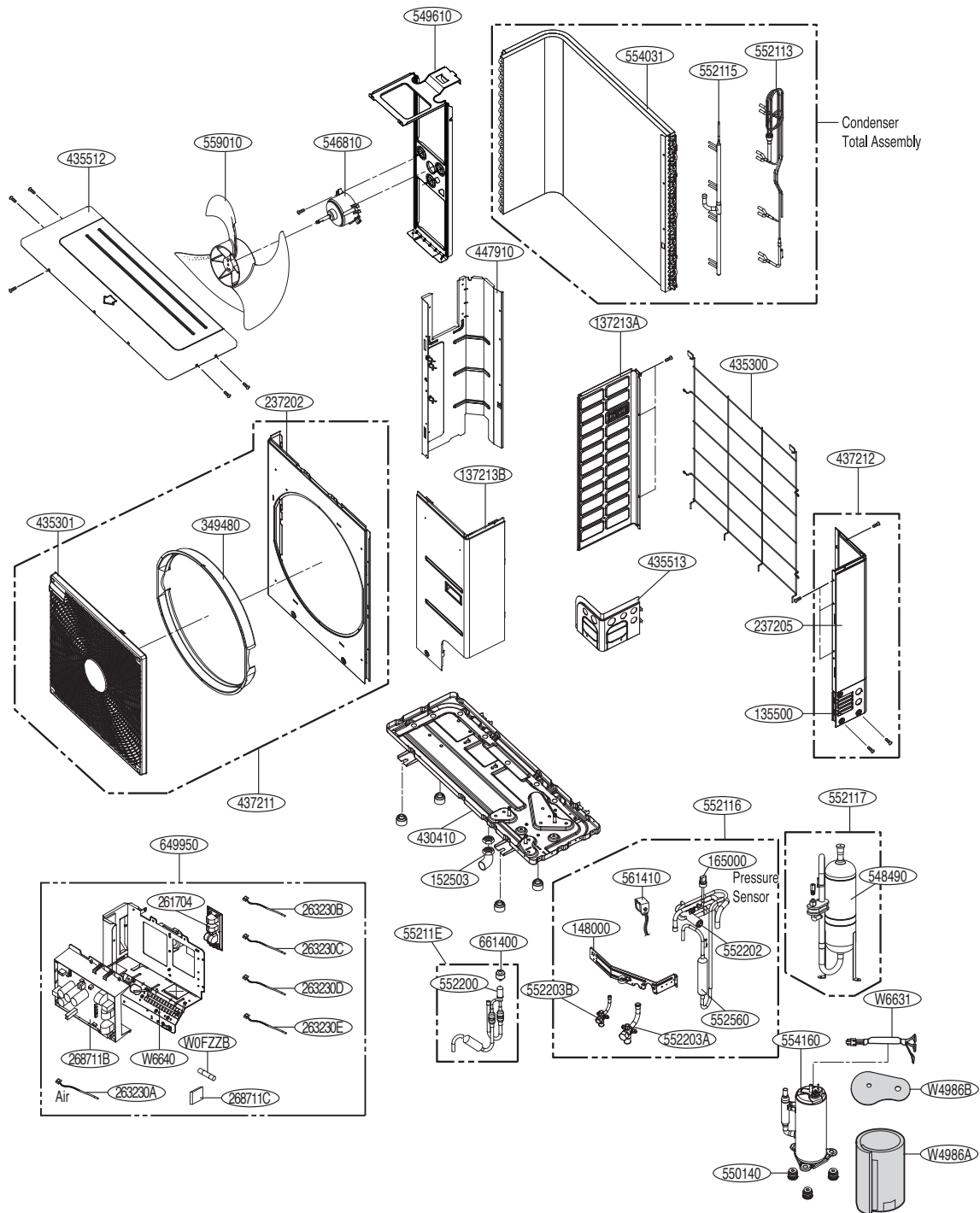
5. Exploded View

Models : LUU188HV / LUU189HV / LUU248HV



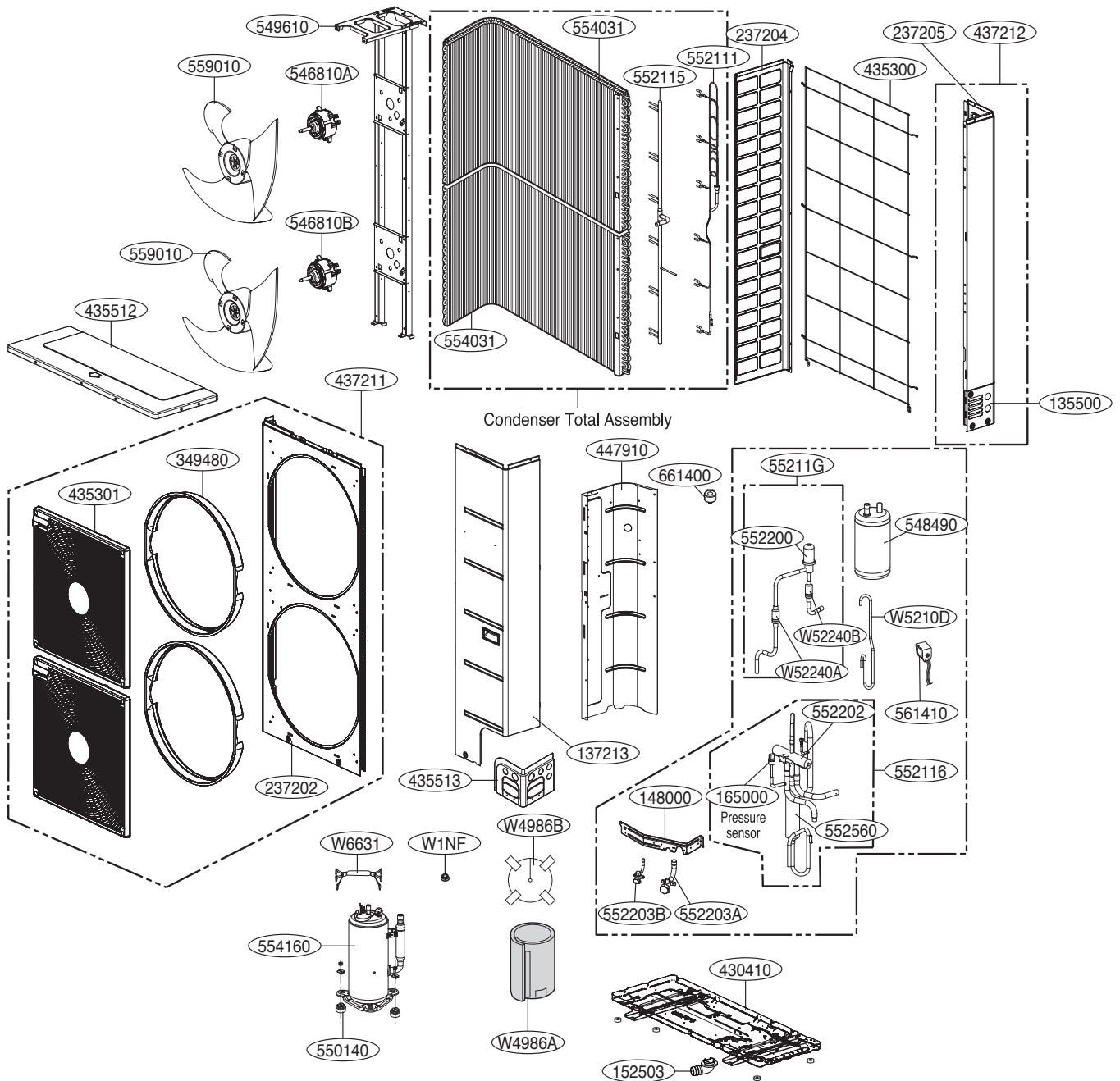
Location No.	Description	Sensor Information	Housing Color
263230A	Thermistor S3 (CN_DISCHA_BK)	Discharge pipe temperature	Black
263230B	Thermistor S4 (CN_SUCTION_GR)	Suction pipe temperature	Green
263230C	Thermistor S5 (CN_C_PIPE_VI)	Cond-out pipe temperature	Violet
263230D	Thermistor S6 (CN_AIR_YL)	Air temperature	Yellow
263230E	Thermistor S2 (CN_MID_BR)	Cond-mid pipe temperature	Brown
165000	Pressure sensor S1 (CN_H_PRESS_RD)	Pressure	Red

Models : LUU249HV



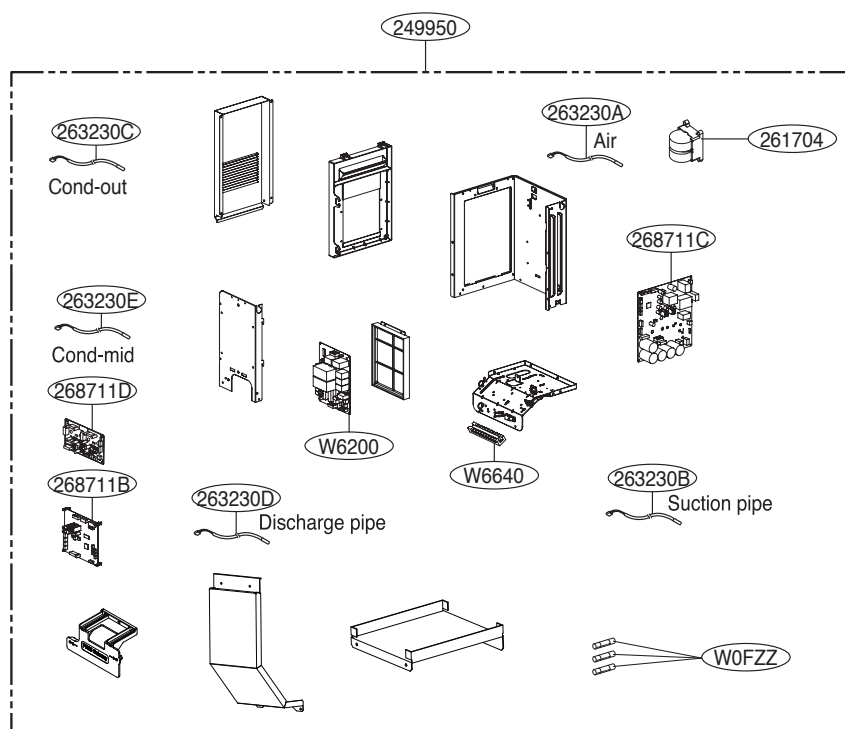
Location No.	Description	Sensor Information	Housing Color
263230A	Thermistor S6 (CN_AIR_YL)	Air temperature	Yellow
263230B	Thermistor S4 (CN_SUCTION_GR)	Suction pipe temperature	Green
263230C	Thermistor S5 (CN_C_PIPE_VI)	Cond-out pipe temperature	Violet
263230D	Thermistor S3 (CN_DISCHA_BK)	Discharge pipe temperature	Black
263230E	Thermistor S2 (CN_MID_BR)	Cond-mid pipe temperature	Brown
165000	Pressure sensor S1 (CN_H_PRESS_RD)	Pressure	Red

Models : LUU368HV / LUU428HV / LUU488HV



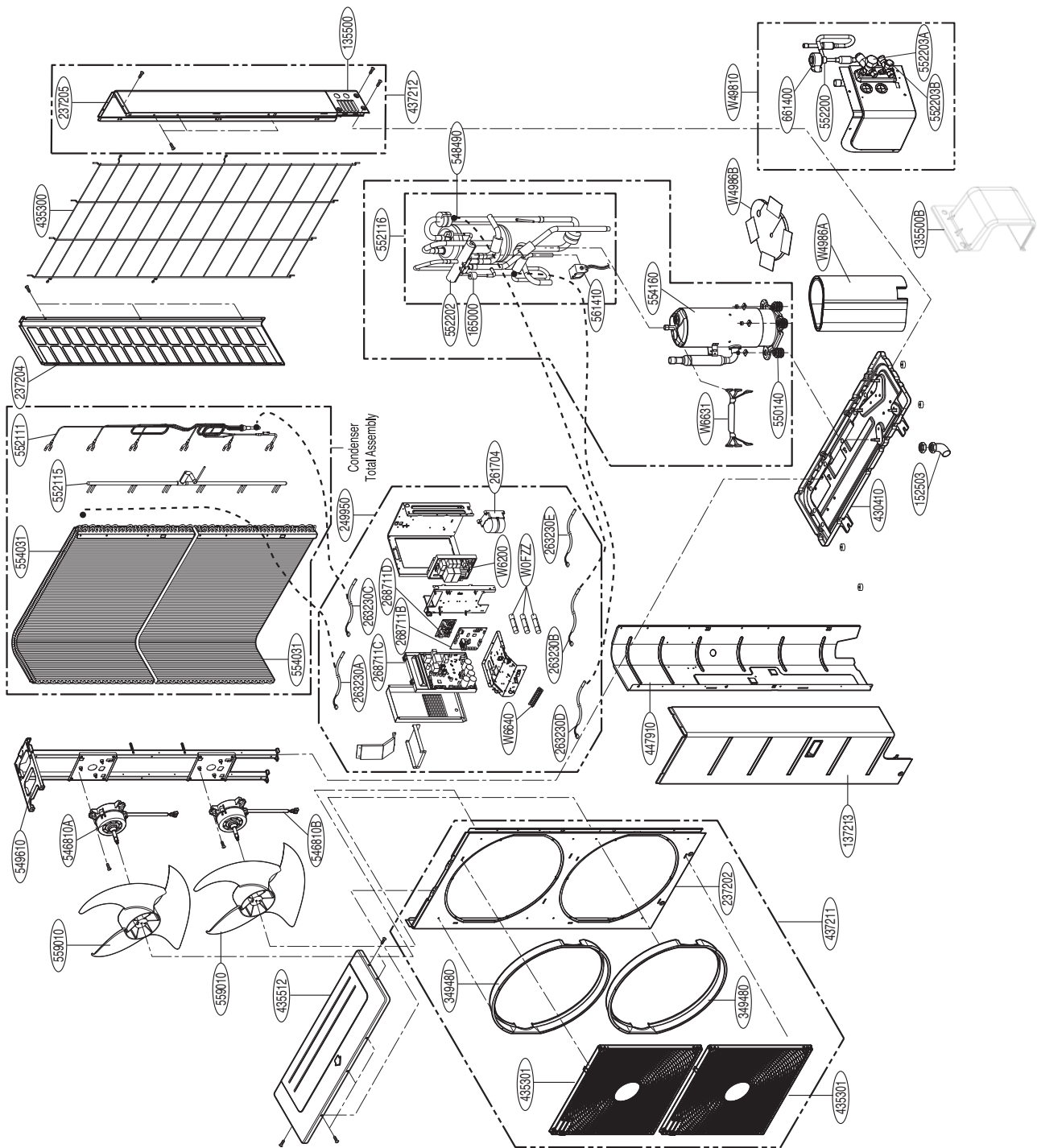
Location No.	Description	Sensor Information	Housing Color
263230A	Thermistor S6 (CN_AIR_YL)	Air temperature	Yellow
263230B	Thermistor S4 (CN_SUCTION_GR)	Suction pipe temperature	Green
263230C	Thermistor S5 (CN_C_PIPE_VI)	Cond-out pipe temperature	Violet
263230D	Thermistor S3 (CN_DISCHA_BK)	Discharge pipe temperature	Black
263230E	Thermistor S2 (CN_MID_BR)	Cond-mid pipe temperature	Brown
165000	Pressure sensor S1 (CN_H_PRESS_RD)	Pressure	Red

Models : LUU368HV / LUU428HV / LUU488HV



Location No.	Description	Sensor Information	Housing Color
263230A	Thermistor S6 (CN_AIR_YL)	Air temperature	Yellow
263230B	Thermistor S4 (CN_SUCTION_GR)	Suction pipe temperature	Green
263230C	Thermistor S5 (CN_C_PIPE_VI)	Cond-out pipe temperature	Violet
263230D	Thermistor S3 (CN_DISCHA_BK)	Discharge pipe temperature	Black
263230E	Thermistor S2 (CN_MID_BR)	Cond-mid pipe temperature	Brown
165000	Pressure sensor S1 (CN_H_PRESS_RD)	Pressure	Red

Models : LUU369HV / LUU429HV



Location No.	Description	Sensor Information	Housing Color
263230A	Thermistor S6 (CN_AIR_YL)	Air temperature	Yellow
263230B	Thermistor S4 (CN_SUCTION_GR)	Suction pipe temperature	Green
263230C	Thermistor S5 (CN_C_PIPE_VI)	Cond-out pipe temperature	Violet
263230D	Thermistor S3 (CN_DISCHA_BK)	Discharge pipe temperature	Black
263230E	Thermistor S2 (CN_MID_BR)	Cond-mid pipe temperature	Brown
165000	Pressure sensor S1 (CN_H_PRESS_RD)	Pressure	Red

■ **Condenser Total Assembly Required parts**

Models : LUU188HV / LUU189HV / LUU248HV / LUU249HV

Description	Location No.	Q'ty
Condenser Assembly,Bending	554031	1
Tube Assembly,Manifold(Outdoor)	552115	1
Tube Assembly,Condenser(Out)	552113	1

Models : LUU368HV / LUU369HV / LUU428HV / LUU429HV / LUU488HV

Description	Location No.	Q'ty
Condenser Assembly,Bending	554031	2
Tube Assembly,Manifold(Outdoor)	552115	1
Tube Assembly,Capillary	552111	1



P/NO : MFL68082948