MITSUBISHI ELECTRIC

SPLIT-TYPE, AIR CONDITIONERS

December 2019

No. OCH709

REVISED EDITION-A

SERVICE MANUAL R410A

Outdoor unit [Model Name] | **[Service Ref.]**

SUZ-KA09NAHZ — **SUZ-KA09NAHZ.TH**

SUZ-KA12NAHZ — **SUZ-KA12NAHZ.TH**

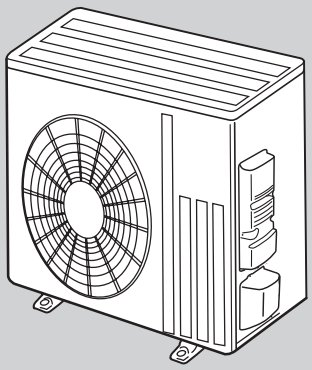
SUZ-KA15NAHZ — **SUZ-KA15NAHZ.TH**

SUZ-KA18NAHZ — **SUZ-KA18NAHZ.TH**

Revision:
- 3.SPECIFICATION has been revised in REVISED EDITION-A.

OCH709 is void.

Note:
- This manual describes service data of the outdoor units only.



SUZ-KA09NAHZ.TH

CONTENTS

PARTS CATALOG (OCB709)

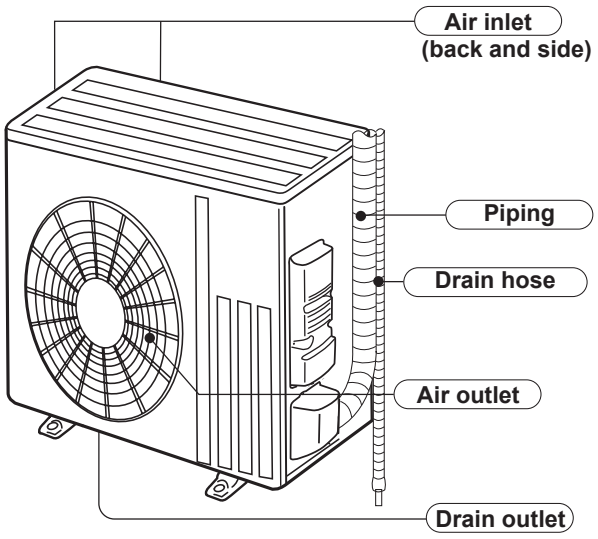
1 COMBINATION OF INDOOR AND OUTDOOR UNITS

Indoor unit \ Outdoor unit		SUZ-KA09NAHZ.TH	SUZ-KA12NAHZ.TH	SUZ-KA15NAHZ.TH	SUZ-KA18NAHZ.TH
Service Ref.	Service Manual No.				
SLZ-KF09/12/15/18NA	OCH669 OCB669	○	○	○	○
SEZ-KD09/12/15/18NA4	HWE08020 BWE10180	○	○	○	○
PEAD-09/12/15/18AA7	HWE16080 BWE016290	○	○	○	○
SVZ-KP12/18NA	MD-1404-K019 MD-1404-K018		○		○
MLZ-KP09/12/18NA	OBH802 OBB802	○	○		○

2 PART NAMES AND FUNCTIONS

SUZ-KA09NAHZ.TH SUZ-KA12NAHZ.TH SUZ-KA15NAHZ.TH SUZ-KA18NAHZ.TH

OUTDOOR UNIT



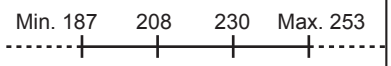
3 SPECIFICATION

Outdoor unit model			SUZ-KA09 NAHZ	SUZ-KA12 NAHZ	SUZ-KA15 NAHZ	SUZ-KA18 NAHZ
Power supply	V , phase , Hz		208/230 , 1 , 60			
Max. fuse size (time delay)		A	15		20	
Min. circuit ampacity		A	14		17	
Fan motor		F.L.A	0.67		1.00	
Compressor	Model		SNB130FHBM2T		SNB220FQGMT	
		R.L.A	10.0		13.0	
		L.R.A	12.5		16.0	
	Refrigeration oil oz. (Model)		22.0 (FV50S)		23.7 (FV50S)	
Refrigerant control			Linear expansion valve			
Sound level*1	Cooling	dB(A)	54		55	
	Heating	dB(A)	55			
Defrost method			Reverse cycle			
Dimensions	W	in	33-1/16			
	D	in	13			
	H	in	34-5/8			
Weight		lb	129		131	
External finish			Munsell 3Y 7.8/1.1			
Control voltage (by built-in transformer)		VDC	12 - 24			
Refrigerant piping			Not supplied			
Refrigerant pipe size (Min. wall thickness)	Liquid	in	1/4 (0.0265)		1/4 (0.0265)	
	Gas	in	3/8 (0.0285)		1/2 (0.0285)	
Connection method	Indoor		Flared			
	Outdoor		Flared			
Between the indoor & outdoor units	Height difference	ft	40			50
	Piping length	ft	65			100
Refrigerant charge (R410A)			3 lb. 9 oz.		3 lb. 12 oz.	

Note: Test conditions are based on AHRI 210/240.
Rating conditions (Cooling) — Indoor: 80˚F D.B., 67˚F W.B., Outdoor: 95˚F D.B., (75˚F W.B.)
(Heating) — Indoor: 70˚F D.B., 60˚F W.B., Outdoor: 47˚F D.B., 43˚F W.B.

OPERATING RANGE

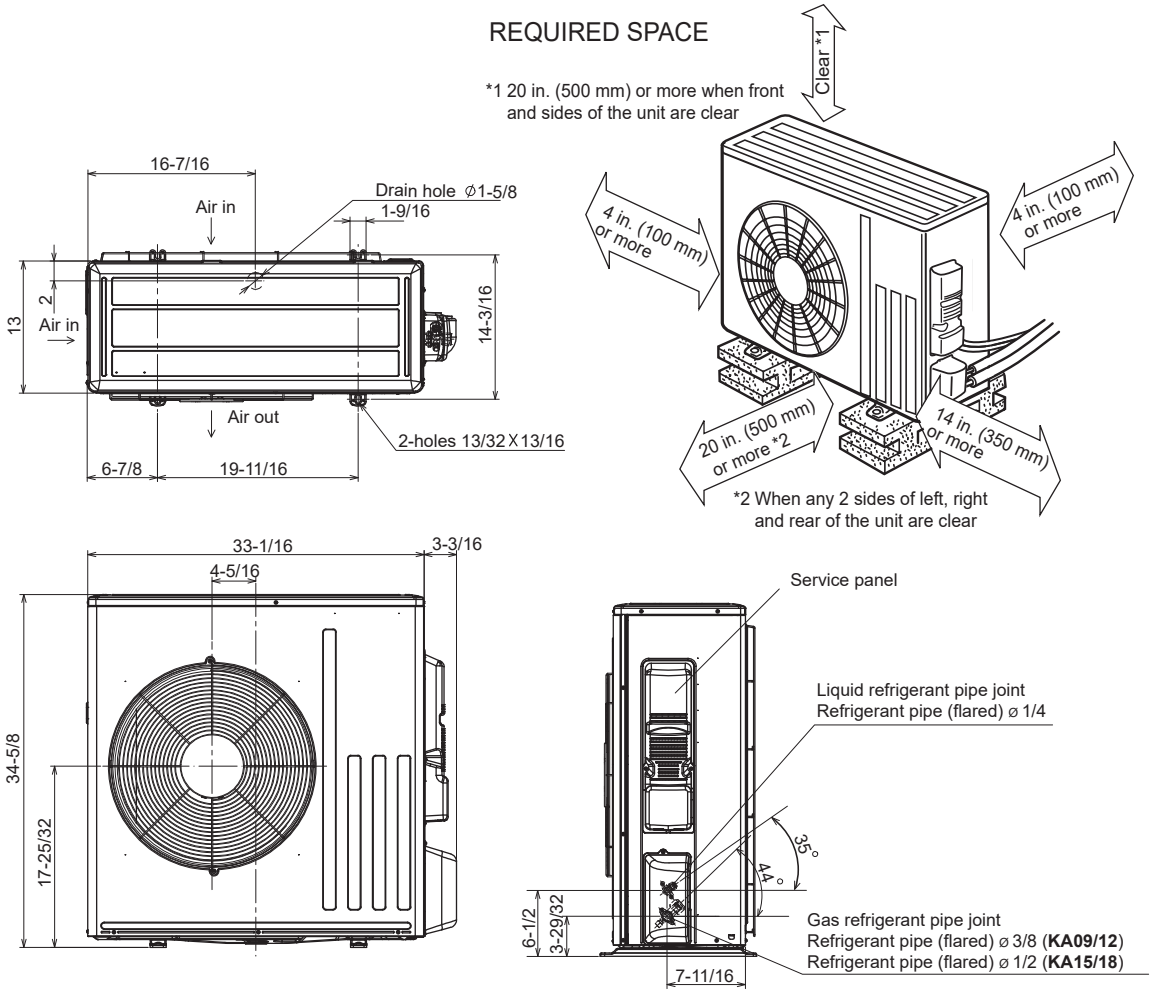
(1) POWER SUPPLY

	Rated voltage	Guaranteed voltage (V)
Outdoor unit	208/230 V 1 phase 60 Hz	

4 OUTLINES AND DIMENSIONS

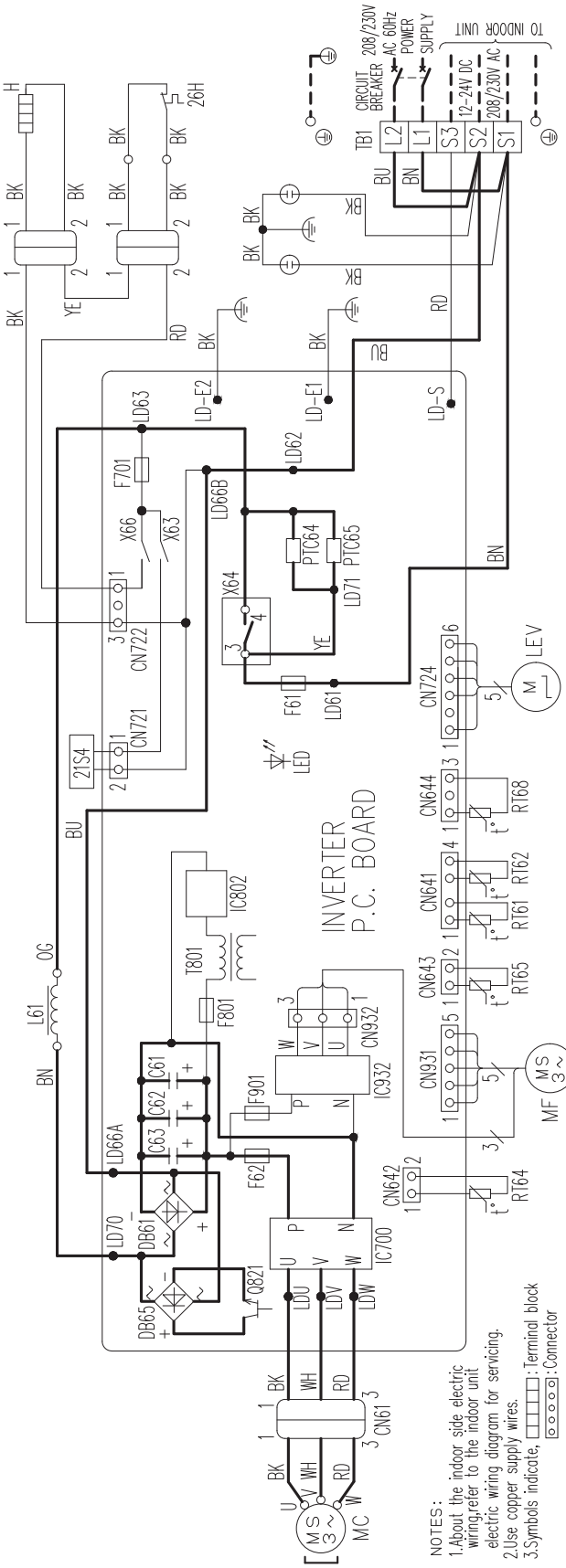
SUZ-KA09NAHZ.TH SUZ-KA12NAHZ.TH SUZ-KA15NAHZ.TH SUZ-KA18NAHZ.TH

Unit: inch



5 WIRING DIAGRAM

SUZ-KA09NAHZ.TH SUZ-KA12NAHZ.TH



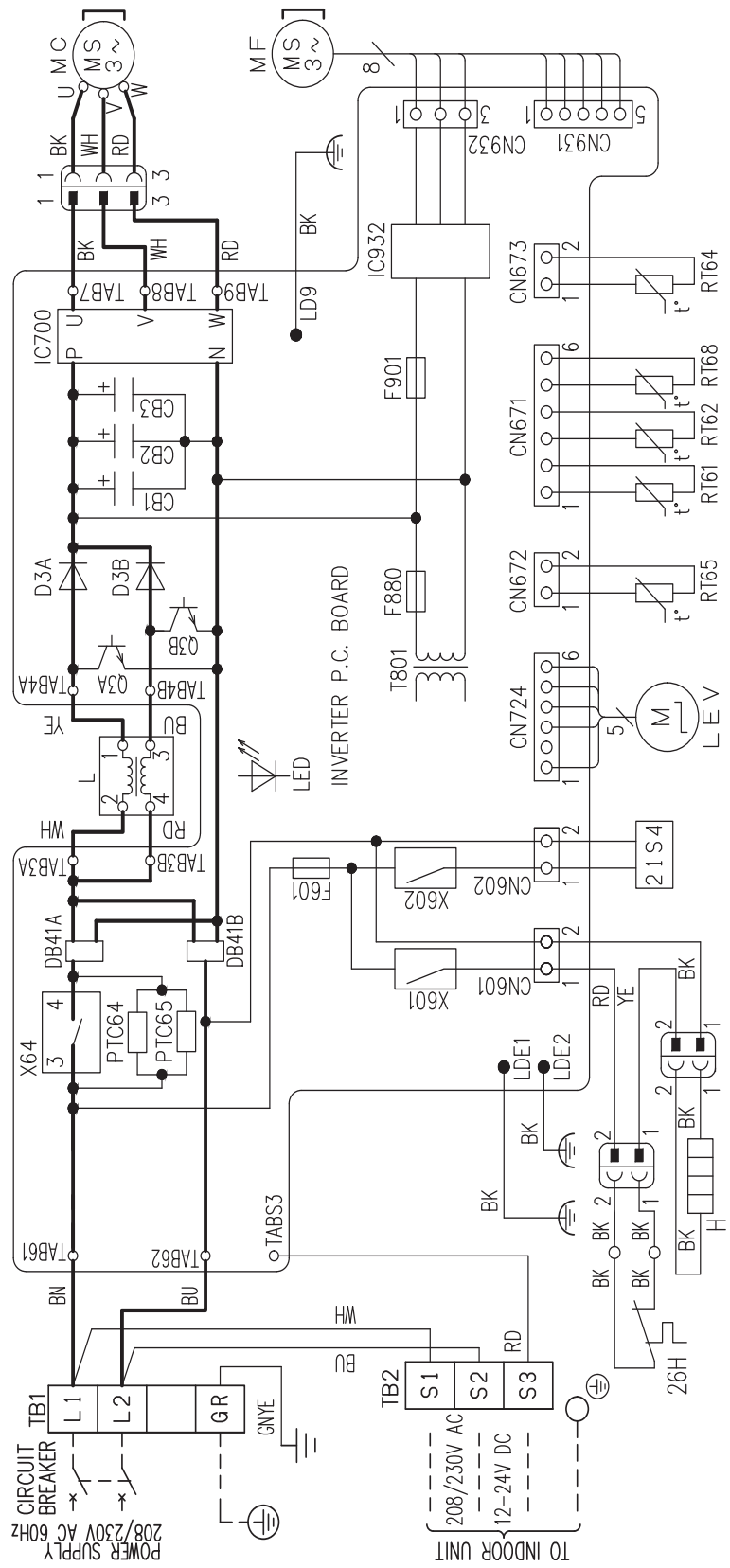
NOTES:
1. About the indoor side electric wiring, refer to the indoor unit electric wiring diagram for servicing.
2. Use copper supply wires.
3. Symbols indicate, □□□□□: Terminal block, ⊙⊙⊙⊙⊙: Connector

REMARQUES:
1. Pour le câblage électronique côté intérieur, se reporter au schéma d'entretien du câblage électronique de l'appareil intérieur.
2. Utiliser des fils d'alimentation en cuivre.
3. Les symboles ont les significations suivantes, □□□□□: Borne, ⊙⊙⊙⊙⊙: Connecteur

SYMBOL	NAME
CN61	CONNECTOR
C61,C62,C63	SMOOTHING CAPACITOR
DB61,DB65	DIODE MODULE
F61	FUSE (25A 250V)
F62	FUSE (15A 250V)
F701,F801,F901	FUSE (T3.15AL250V)
H	DEFROST HEATER
IC700,IC932	POWER MODULE
IC802	POWER DEVICE

SYMBOL	NAME
LED	LED
LEV	EXPANSION VALVE COIL
L61	REACTOR
MC	COMPRESSOR
MF	FAN MOTOR
PTC64,PTC65	CIRCUIT PROTECTION
Q821	SWITCHING POWER TRANSISTOR
RT61	DEFROST THERMISTOR
RT62	DISCHARGE TEMP. THERMISTOR
RT64	FIN TEMP. THERMISTOR
RT65	AMBIENT TEMP. THERMISTOR
RT68	OUTDOOR HEAT EXCHANGER TEMP. THERMISTOR
TB1	TERMINAL BLOCK
T801	TRANSFORMER
X63,X64,X66	RELAY
21S4	REVERSING VALVE COIL
26H	HEATER PROTECTOR

SUZ-KA15NAHZ.TH SUZ-KA18NAHZ.TH



SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
CB1, CB2, CB3	SMOOTHING CAPACITOR	IC700, IC932	POWER MODULE	Q3A, Q3B	SWITCHING POWER TRANSISTOR	TB1, TB2	TERMINAL BLOCK
DB41A, DB41B	DIODE MODULE	L	REACTOR	RT61	DEFROST THERMISTOR	T801	TRANSFORMER
D3A, D3B	DIODE	LED	LED	RT62	DISCHARGE TEMP. THERMISTOR	X64	RELAY
F601	FUSE (T3.15AL250V)	LEV	EXPANSION VALVE COIL	RT64	FIN TEMP. THERMISTOR	X601, X602	RELAY
F880	FUSE (T3.15AL250V)	MC	COMPRESSOR	RT65	AMBIENT TEMP. THERMISTOR	21S4	REVERSING VALVE COIL
F901	FUSE (T3.15AL250V)	MF	FAN MOTOR	RT68	OUTDOOR HEAT EXCHANGER	26H	HEATER PROTECTOR
H	DEFROST HEATER	PTC64, PTC65	CIRCUIT PROTECTION		TEMP. THERMISTOR		

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2.Use copper supply wires. 3.Symbols indicate, □□□ : Terminal block ○○○ : Connector

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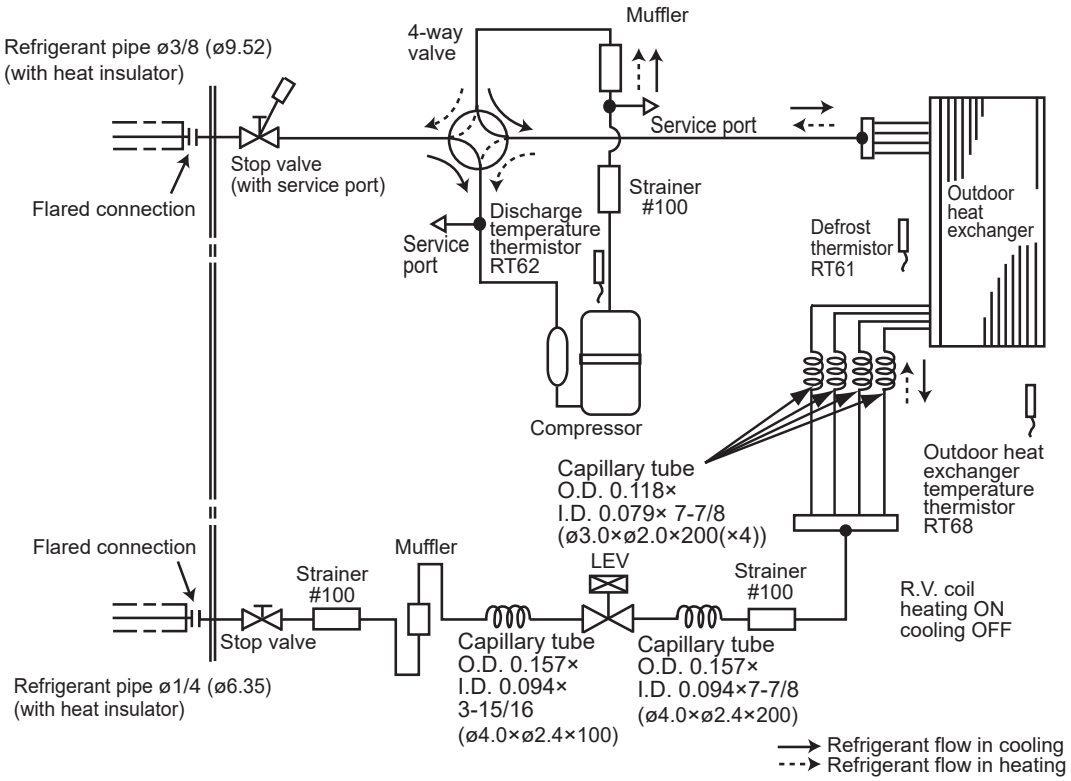
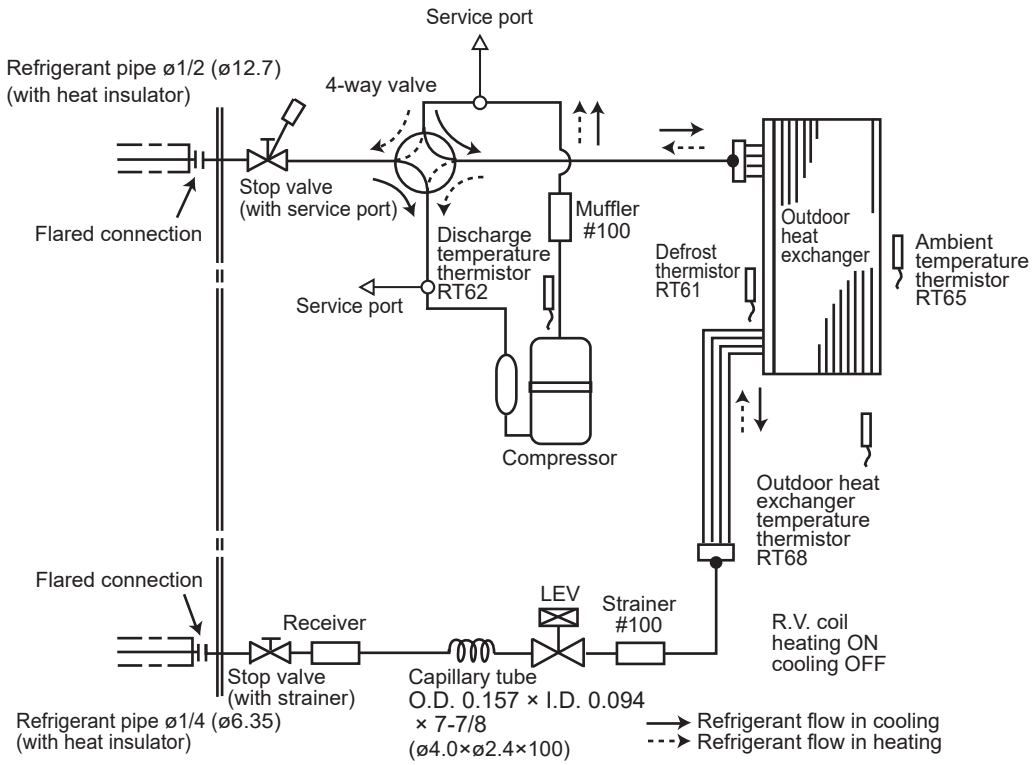
2.Utiliser des fils d'alimentation en cuivre. 3.Les symboles ont les significations suivantes, □□□ : Borne ○○○ : Connecteur

6 REFRIGERANT SYSTEM DIAGRAM

SUZ-KA09NAHZ.TH SUZ-KA12NAHZ.TH **Unit: inch (mm)**

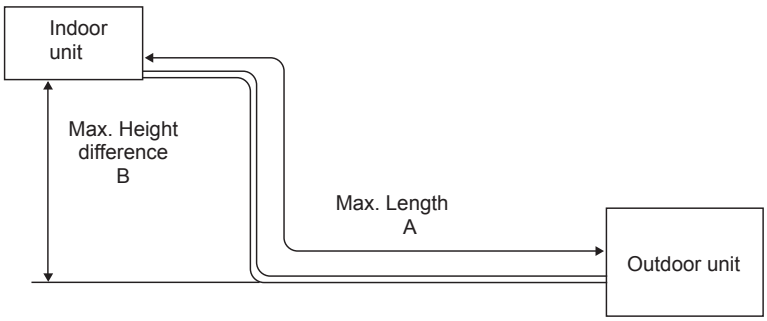


SUZ-KA15NAHZ.TH SUZ-KA18NAHZ.TH **Unit: inch (mm)**



MAX. REFRIGERANT PIPING LENGTH and MAX. HEIGHT DIFFERENCE

Model	Refrigerant piping: ft.		Piping size O.D: in.	
	Max. Length A	Max. Height difference B	Gas	Liquid
SUZ-KA09NAHZ	65	40	3/8	1/4
SUZ-KA12NAHZ	65	40	3/8	1/4
SUZ-KA15NAHZ	65	40	1/2	1/4
SUZ-KA18NAHZ	100	50	1/2	1/4



ADDITIONAL REFRIGERANT CHARGE (R410A: oz.)

No additional refrigerant charge up to the maximum refrigerant piping length.

7 DATA

STANDARD OPERATION DATA

Representative matching				SEZ-KD09NA4		SEZ-KD12NA4		SEZ-KD15NA4		SEZ-KD18NA4	
Item			Unit	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating
Total	Capacity		BTU/h	9,000	12,500	12,000	15,000	15,000	18,000	18,000	21,600
	SHF		–	0.79	-	0.76	-	0.80	-	0.87	-
	Input		kW	0.69	1.30	0.92	1.12	1.20	1.92	1.37	1.84
Electrical circuit	Indoor unit			**SEZ-KD09NA4**		**SEZ-KD12NA4**		**SEZ-KD15NA4**		**SEZ-KD18NA4**	
	Power supply (V, phase, Hz)			230, 1, 60							
	Input		kW	0.06	0.04	0.07	0.05	0.09	0.07	0.09	0.07
	Current		A	0.50	0.39	0.57	0.46	0.74	0.63	0.74	0.63
	Outdoor unit			**SUZ-KA09NAHZ**		**SUZ-KA12NAHZ**		**SUZ-KA15NAHZ**		**SUZ-KA18NAHZ**	
	Power supply (V, phase, Hz)			230, 1, 60							
	Input		kW	0.63	1.26	0.85	1.07	1.11	1.85	1.28	1.77
	Current		A	3.4	5.41	3.42	4.29	4.51	7.67	5.22	7.37
Refrigerant circuit	Condensing pressure		PSIG	339	513	357	393	378	425	359	391
	Suction pressure		PSIG	135	118	134	113	133	89	141	96
	Discharge temperature		°F	137	163	147	162	149	172	149	173
	Condensing temperature		°F	103	131	108	115	149	121	109	115
	Suction temperature		°F	49	40	47	38	46	26	52	29
	Ref. pipe length		ft.	25							
	Refrigerant charge (R410A)		–	1.6				1.7			
Indoor unit	Intake air temperature	DB	°F	80	70	80	70	80	70	80	70
		WB	°F	67	60	67	60	67	60	67	60
	Discharge air temperature	DB	°F	61	107	56	105	57	101	57	101
Outdoor unit	Intake air temperature	DB	°F	95	47	95	47	95	47	95	47
		WB	°F	75	43	75	43	75	43	75	43

Representative matching				SLZ-KF09NA		SLZ-KF12NA		SLZ-KF15NA		SLZ-KF18NA	
Item			Unit	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating
Total	Capacity		BTU/h	9,000	11,000	12,000	13,800	13,700	16,400	16,800	18,800
	SHF		–	0.77	-	0.71	-	0.72	-	0.72	-
	Input		kW	0.60	0.82	0.94	1.17	1.10	1.83	1.34	2.02
Electrical circuit	Indoor unit			SLZ-KF09NA		SLZ-KF12NA		SLZ-KF15NA		SLZ-KF18NA	
	Power supply (V, phase, Hz)			230, 1, 60							
	Input		kW	0.02	0.02	0.02	0.02	0.03	0.03	0.04	0.04
	Current		A	0.20	0.15	0.24	0.19	0.32	0.27	0.43	0.38
	Outdoor unit			SUZ-KA09NAHZ		SUZ-KA12NAHZ		SUZ-KA15NAHZ		SUZ-KA18NAHZ	
	Power supply (V, phase, Hz)			230, 1, 60							
	Input		kW	0.58	0.80	0.92	1.15	1.07	1.80	1.3	1.98
	Current		A	2.41	3.42	3.85	4.90	4.44	7.69	5.40	8.40
Refrigerant circuit	Condensing pressure		PSIG	340	423	335	428	375	506	354	512
	Suction pressure		PSIG	145	118	124	119	128	111	121	107
	Discharge temperature		°F	137	162	139	162	149	172	159	171
	Condensing temperature		°F	105	121	102	120	112	131	107	123
	Suction temperature		°F	51	40	45	39	57	38	46	37
	Ref. pipe length		ft.	25							
	Refrigerant charge (R410A)		–	1.6				1.7			
Indoor unit	Intake air temperature	DB	°F	80	70	80	70	80	70	80	70
		WB	°F	67	60	67	60	67	60	67	60
	Discharge air temperature	DB	°F	56	104	58	106	59	111	57	108
Outdoor unit	Intake air temperature	DB	°F	95	47	95	47	95	47	95	47
		WB	°F	75	43	75	43	75	43	75	43

Representative matching				PEAD-A09AA7		PEAD-A12AA7		PEAD-A15AA7		PEAD-A18AA7	
Item			Unit	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating
Total	Capacity		BTU/h	9,000	12,000	12,000	15,000	15,000	18,000	18,000	21,600
	SHF		–	0.82	-	0.82	-	0.82	-	0.78	-
	Input		kW	0.65	0.91	0.85	1.12	1.19	1.71	1.4	1.89
Electrical circuit	Indoor unit			**PEAD-A09AA7**		**PEAD-A12AA7**		**PEAD-A15AA7**		**PEAD-A18AA7**	
	Power supply (V, phase, Hz)			230, 1, 60							
	Input		kW	0.07	0.05	0.09	0.07	0.11	0.09	0.11	0.09
	Current		A	0.54	0.43	0.67	0.56	0.95	0.84	0.95	0.84
	Outdoor unit			**SUZ-KA09NAHZ**		**SUZ-KA12NAHZ**		**SUZ-KA15NAHZ**		**SUZ-KA18NAHZ**	
	Power supply (V, phase, Hz)			230, 1, 60							
	Input		kW	0.58	0.86	0.76	1.05	1.08	1.62	1.29	1.8
	Current		A	2.29	3.53	3.03	4.31	4.22	6.59	5.14	7.38
Refrigerant circuit	Condensing pressure		PSIG	340	421	348	335	379	392	359	383
	Suction pressure		PSIG	148	116	146	113	144	87	135	95
	Discharge temperature		°F	137	162	140	162	149	172	156	159
	Condensing temperature		°F	105	121	106	113	113	111	108	114
	Suction temperature		°F	52	39	51	38	50	25	56	29
	Ref. pipe length		ft.	25							
	Refrigerant charge (R410A)		–	1.6				1.7			
Indoor unit	Intake air temperature	DB	°F	80	70	80	70	80	70	80	70
		WB	°F	67	60	67	60	67	60	67	60
	Discharge air temperature	DB	°F	58	103	58	101	58	100	56	103
Outdoor unit	Intake air temperature	DB	°F	95	47	95	47	95	47	95	47
		WB	°F	75	43	75	43	75	43	75	43

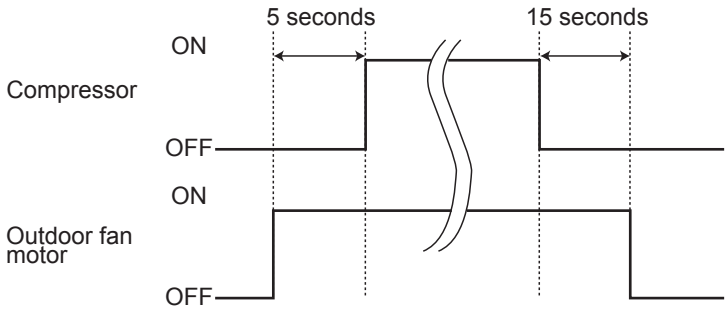
Representative matching				SVZ-KP12NA		SVZ-KP18NA	
Item			Unit	Cooling	Heating	Cooling	Heating
Total	Capacity		BTU/h	12,000	15,000	18,000	21,600
	SHF		–	0.92	-	0.93	-
	Input		kW	0.86	1.10	1.44	1.88
Electrical circuit	Indoor unit			SVZ-KP12NA		SVZ-KP18NA	
	Power supply (V, phase, Hz)			230, 1, 60			
	Input		kW	0.10	0.10	0.16	0.16
	Current		A	0.90	0.90	1.44	1.44
	Outdoor unit			SUZ-KA12NAHZ		SUZ-KA18NAHZ	
	Power supply (V, phase, Hz)			230, 1, 60			
	Input		kW	0.76	1.00	1.28	1.72
	Current		A	2.84	3.88	4.82	6.73
Refrigerant circuit	Condensing pressure		PSIG	351	338	359	373
	Suction pressure		PSIG	146	113	137	95
	Discharge temperature		°F	140	162	158	167
	Condensing temperature		°F	106	113	108	111
	Suction temperature		°F	51	38	58	29
	Ref. pipe length		ft.	25			
	Refrigerant charge (R410A)		–	1.6		1.7	
Indoor unit	Intake air temperature	DB	°F	80	70	80	70
		WB	°F	67	60	67	60
	Discharge air temperature	DB	°F	59	100	58	99
Outdoor unit	Intake air temperature	DB	°F	95	47	95	47
		WB	°F	75	43	75	43

Representative matching				MLZ-KP09NA		MLZ-KP12NA		MLZ-KP18NA	
Item			Unit	Cooling	Heating	Cooling	Heating	Cooling	Heating
Total	Capacity		BTU/h	9,000	12,000	12,000	15,000	16,700	18,600
	SHF		–	0.78	-	0.71	-	0.66	-
	Input		kW	0.72	0.84	0.94	1.13	1.335	1.78
Electrical circuit	Indoor unit			MLZ-KP09NA		MLZ-KP12NA		MLZ-KP18NA	
	Power supply (V, phase, Hz)			230, 1, 60					
	Input		kW	0.04	0.04	0.04	0.04	0.04	0.04
	Current		A	0.30	0.30	0.30	0.30	0.4	0.4
	Outdoor unit			SUZ-KA09NAHZ		SUZ-KA12NAHZ		SUZ-KA18NAHZ	
	Power supply (V, phase, Hz)			230, 1, 60					
	Input		kW	0.68	0.80	0.90	1.09	1.295	1.74
	Current		A	2.83	3.35	3.79	4.61	5.40	7.34
Refrigerant circuit	Condensing pressure		PSIG	337	404	345	399	356	476
	Suction pressure		PSIG	128	116	123	113	121	107
	Discharge temperature		°F	137	162	142	163	153	180
	Condensing temperature		°F	104	117	106	117	108	130
	Suction temperature		°F	44	39	42	38	44	35
	Ref. pipe length		ft.	25					
	Refrigerant charge (R410A)		–	1.6				1.7	
Indoor unit	Intake air temperature	DB	°F	80	70	80	70	80	70
		WB	°F	67	60	67	60	67	60
	Discharge air temperature	DB	°F	57	104	54	110	52	111
Outdoor unit	Intake air temperature	DB	°F	95	47	95	47	95	47
		WB	°F	75	43	75	43	75	43

8 ACTUATOR CONTROL

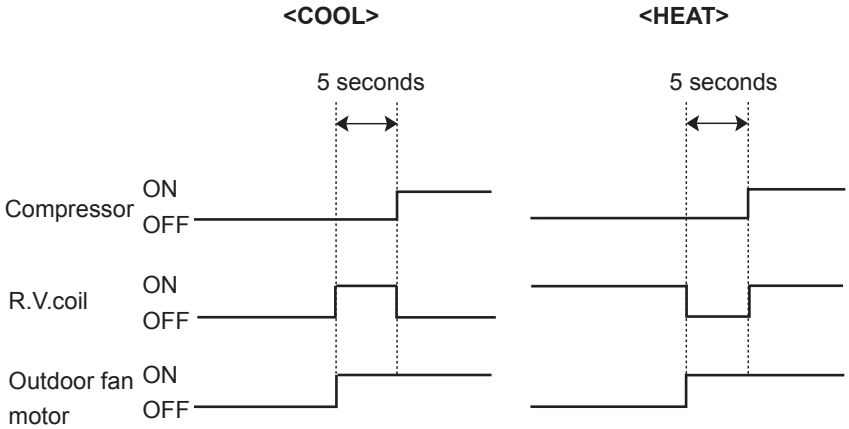
8-1. OUTDOOR FAN MOTOR CONTROL

The fan motor turns ON/OFF, interlocking with the compressor.
[ON] The fan motor turns ON 5 seconds before the compressor starts up.
[OFF] The fan motor turns OFF 15 seconds after the compressor has stopped running.



8-2. R.V. COIL CONTROL

Heating · · · · · · · · · · · · · · · · · · ON
Cooling · · · · · · · · · · · · · · · · · · OFF
Dry · OFF
NOTE: The 4-way valve reverses for 5 seconds right before start-up of the compressor.



8-3. RELATION BETWEEN MAIN SENSOR AND ACTUATOR

Sensor	Purpose	Actuator				
		Compressor	LEV	Outdoor fan motor	R.V.coil	Indoor fan motor
Discharge temperature thermistor	Protection	○	○			
Indoor coil temperature thermistor	Cooling: Coil frost prevention	○				
	Heating: High pressure protection	○	○			
Defrost thermistor	Heating: Defrosting	○	○	○	○	○
Fin temperature thermistor	Protection	○		○		
Ambient temperature thermistor	Cooling: Low ambient temperature operation	○	○	○		
Outdoor heat exchanger temperature thermistor	Cooling: Low ambient temperature operation	○	○	○		
	Cooling: High pressure protection	○	○	○		

9 SERVICE FUNCTIONS

9-1. CHANGE IN DEFROST SETTING

Changing defrost finish temperature

<JS> To change the defrost finish temperature, cut/solder the JS wire of the outdoor inverter P.C. board. (Refer to "10-6. TEST POINT DIAGRAM AND VOLTAGE".)

Jumper		Defrost finish temperature	
		SUZ-KA09NAHZ SUZ-KA12NAHZ	SUZ-KA15NAHZ SUZ-KA18NAHZ
JS	Soldered (Initial setting)	48°F (9°C)	50°F (10°C)
	None (Cut)	64°F (18°C)	64°F (18°C)

9-2. PRE-HEAT CONTROL SETTING

PRE-HEAT CONTROL

When moisture gets into the refrigerant cycle, it may interfere the start-up of the compressor at low outside temperature. The pre-heat control prevents this interference. The pre-heat control turns ON when outside temperature is 68°F (20°C) or below. When pre-heat control is turned ON, compressor is energized. (About 50 W)

<JK> To activate the pre-heat control, cut the JK wire of the inverter P.C. board. (Refer to "10-6. TEST POINT DIAGRAM AND VOLTAGE".)

NOTE: When the inverter P.C. board is replaced, check the Jumper wires, and cut/solder them if necessary.

10 TROUBLESHOOTING

10-1. CAUTIONS ON TROUBLESHOOTING

1. Before troubleshooting, check the following

1) Check the power supply voltage.
2) Check the indoor/outdoor connecting wire for miswiring.

2. Take care of the following during servicing

1) Before servicing the air conditioner, be sure to turn OFF the main unit first with the remote controller, and turn off the breaker.
2) Be sure to turn OFF the power supply before removing the front panel, the cabinet, the top panel, and the electronic control P.C. board.
3) When removing the electrical parts, be careful of the residual voltage of smoothing capacitor.
4) When removing the electronic control P.C. board, hold the edge of the board with care NOT to apply stress on the components.
5) When connecting or disconnecting the connectors, hold the housing of the connector. DO NOT pull the lead wires.

3. Troubleshooting procedure

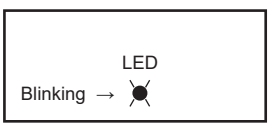
1) First, check if the OPERATION INDICATOR lamp is blinking ON and OFF to indicate an abnormality.
2) Before servicing check that the connector and terminal are connected properly.
3) When the electronic control P.C. board seems to be defective, check the copper foil pattern for disconnection and the components for bursting and discoloration.
4) Refer to "10-2. TROUBLESHOOTING CHECK TABLE" and "10-3. HOW TO PROCEED "SELF-DIAGNOSIS"".

10-2. TROUBLESHOOTING CHECK TABLE

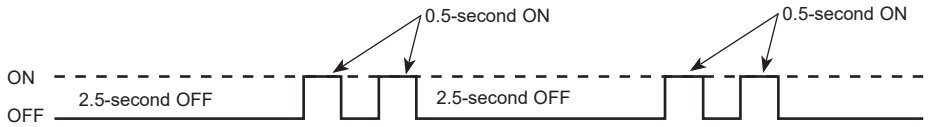
No.	Symptoms	LED indication	check code	Abnormal point/ Condition	Condition	Remedy
1	Outdoor unit does not operate.	1-time blink every 2.5 seconds	UP	Outdoor power system	Overcurrent protection cut-out operates 3 consecutive times within 1 minute after the compressor gets started.	• Reconnect connector of compressor. • Refer to "10-5.Ⓐ How to check inverter/compressor". • Check stop valve.
2			U3	Outdoor thermistors	Discharge temperature thermistor shorts, or opens during compressor running.	• Refer to "10-5.Ⓕ Check of outdoor thermistors".
			U4		Fin temperature thermistor, defrost thermistor, P.C. board temperature thermistor, outdoor heat exchanger temperature thermistor or ambient temperature thermistor shorts, or opens during compressor running.	
3		6-time blink 2.5 seconds OFF	FC	Outdoor control system	Nonvolatile memory data cannot be read properly.	• Replace inverter P.C. board.
4			E8 / E9	Serial signal	The communication fails between the indoor and outdoor unit for 3 minutes.	• Check indoor/outdoor connecting wire. • Replace indoor or outdoor P.C.board if abnormality is displayed again.
5		11-time blink 2.5 seconds OFF	UE	Stop valve/ Closed valve	Closed valve is detected by compressor current.	• Check stop valve.
6		16-time flash 2.5 seconds OFF	PL	Outdoor refrigerant system abnormality	A closed valve and air trapped in the refrigerant circuit are detected based on the temperature sensed by the indoor and outdoor thermistors and the current of the compressor.	• Check for a gas leak in a connecting piping, etc. • Check stop valve. • Refer to "10-5. Ⓞ Check of outdoor fan motor".
7	'Outdoor unit stops and restarts 3 minutes later' is repeated.	2-time blink 2.5 seconds OFF		Overcurrent protection	Large current flows into intelligent power module.	• Reconnect connector of compressor. • Refer to "10-5.Ⓐ How to check inverter/compressor". • Check stop valve.
8		3-time blink 2.5 seconds OFF		Discharge temperature overheat protection	Temperature of discharge temperature thermistor exceeds 240°F, compressor stops. Compressor can restart if discharge temperature thermistor reads 212°F or less 3 minutes later.	• Check refrigerant circuit and refrigerant amount. • Refer to "10-5. Ⓚ Check of LEV".
9		4-time blink 2.5 seconds OFF		Fin temperature/P.C. board temperature thermistor overheat protection	Temperature of fin temperature thermistor on the heat sink exceeds 162 to 187°F or temperature of P.C. board temperature thermistor on the inverter P.C.board exceeds 162 to 185°F.	• Check around outdoor unit. • Check outdoor unit air passage. • Refer to "10-5. Ⓘ Check of outdoor fan motor".
10		5-time blink 2.5 seconds OFF		High pressure protection	Indoor coil thermistor exceeds 158°F in HEAT mode. Defrost thermistor exceeds 158°F in COOL mode.	• Check refrigerant circuit and refrigerant amount. • Check stop valve.
11		8-time blink 2.5 seconds OFF		Compressor synchronous abnormality	The waveform of compressor current is distorted.	• Reconnect connector of compressor. • Refer to "10-5.Ⓐ How to check inverter/compressor".
12		10-time blink 2.5 seconds OFF		Outdoor fan motor	Outdoor fan has stopped 3 times in a row within 30 seconds after outdoor fan start-up.	• Refer to "10-5.Ⓘ Check of outdoor fan motor. • Refer to "10-5.Ⓛ Check of inverter P.C. board.
13		12-time blink 2.5 seconds OFF		Each phase current of compressor	Each phase current of compressor cannot be detected normally.	• Refer to "10-5.Ⓛ How to check inverter/compressor".
14		13-time blink 2.5 seconds OFF		DC voltage	DC voltage of inverter cannot be detected normally.	• Refer to "10-5.Ⓐ How to check inverter/compressor".
15	Outdoor unit operates.	1-time blink 2.5 seconds OFF		Frequency drop by current protection	When the input current exceeds approximately 12A(KA09)/12A(KA12) /17A(KA15)/17A(KA18), compressor frequency lowers.	• The unit is normal, but check the following. • Check if indoor filters are clogged. • Check if refrigerant is short. • Check if indoor/outdoor unit air circulation is short cycled.
16		3-time blink 2.5 seconds OFF		Frequency drop by high pressure protection	Temperature of indoor coil thermistor exceeds 131 °F [55 °C] in HEAT mode, compressor frequency lowers.	
				Frequency drop by defrosting in COOL mode	Indoor coil thermistor reads 46 °F [8 °C] or less in COOL mode, compressor frequency lowers.	
17		4-time blink 2.5 seconds OFF		Frequency drop by discharge temperature protection	Temperature of discharge temperature thermistor exceeds 232 °F [111 °C], compressor frequency lowers.	• Check refrigerant circuit and refrigerant amount. • Refer to "10-5.Ⓚ Check of LEV". • Refer to "10-5.Ⓖ Check of outdoor thermistors".
18		7-time blink 2.5 seconds OFF		Low discharge temperature protection	Temperature of discharge temperature thermistor has been 122 °F [50 °C] or less for 20 minutes.	• Refer to "10-5.Ⓚ Check of LEV". • Check refrigerant circuit and refrigerant amount.
19		8-time blink 2.5 seconds OFF		PAM protection PAM: Pulse Amplitude Modulation	The overcurrent flows into IGBT (Insulated Gate Biopolar transistor: TR821) or the bus-bar voltage reaches 320 V or more, PAM stops and restarts.	This is not malfunction. PAM protection will be activated in the following cases: 1. Instantaneous power voltage drop. (Short time power failure) 2. When the power supply voltage is high.
				Zero cross detecting circuit	Zero cross signal for PAM control cannot be detected.	
20		9-time blink 2.5 seconds OFF		Inverter check mode	The connector of compressor is disconnected, inverter check mode starts.	• Check if the connector of the compressor is correctly connected. • Refer to "10-5.Ⓐ How to check inverter/compressor".

NOTE: 1. The location of LED is illustrated at the right figure. Refer to "10-6. TEST POINT DIAGRAM".
2. LED is lighted during normal operation.

Inverter P.C. board



The blinking frequency shows the number of times the LED blinks after every 2.5-second OFF.
(Example) When the blinking frequency is "2".



10-3. HOW TO PROCEED "SELF-DIAGNOSIS"

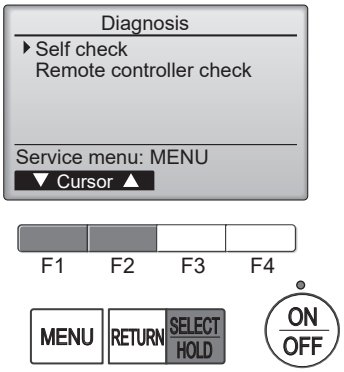
10-3-1. Self-diagnosis <PAR-4xMAA ("x" represents 0 or later)>

① Select "Service" from the Main menu,
and press the [SELECT] button.

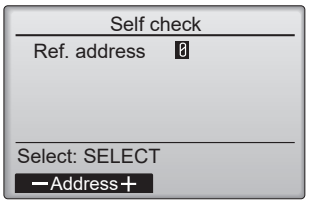
Select "Check" from the Service menu,
and press the [SELECT] button.

Select "Diagnosis" from the Check menu,
and press the [SELECT] button.

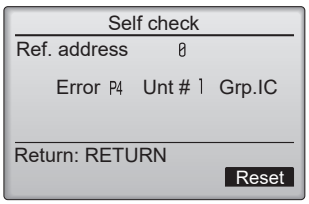
Select "Self check" with the F1 or F2 button,
and press the [SELECT] button.



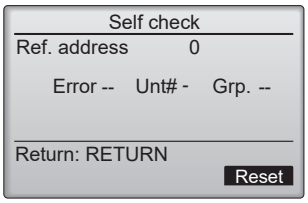
② With the F1 or F2 button, enter the refrigerant address, and press the [SELECT button.



③ Check code, unit number, attribute will appear.
"-" will appear if no error history is available.



When there is no error history



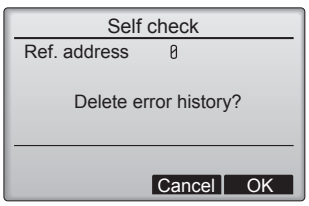
④ Resetting the error history

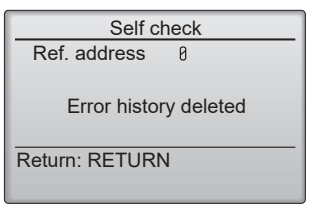
Press the F4 button (Reset) on the screen that shows the error history.

A confirmation screen will appear asking if you want to delete the error history.

Press the F4 button (OK) to delete the error history.

If deletion fails, "Request rejected" will appear.
"Unit not exist" will appear if no indoor units that are correspond to the entered address are found.





Navigating through the screens
- To go back to the Service menu ..... [MENU] button
- To return to the previous screen.....[RETURN] button

10-3-2. Remote controller check <PAR-4xMAA ("x" represents 0 or later)>

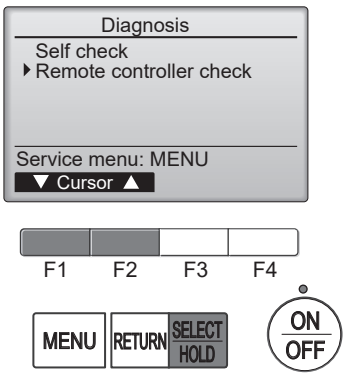
If operations cannot be completed with the remote controller, diagnose the remote controller with this function.

① Select "Service" from the Main menu, and press the [SELECT] button.

Select "Check" from the Service menu, and press the [SELECT] button.

Select "Diagnosis" from the Check menu, and press the [SELECT] button.

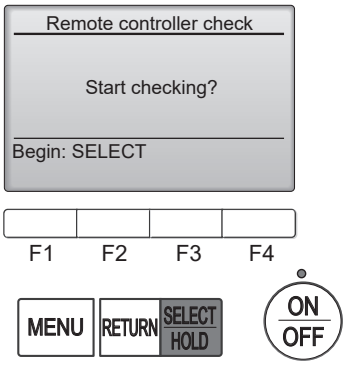
Select "Remote controller check" with the F1 or F2 button, and press the [SELECT] button.



② Select "Remote controller check" from the Diagnosis menu and press the [SELECT] button to start the remote controller check and see the check results.

To cancel the remote controller check and exit the "Remote controller check" menu screen, press the [MENU] or the [RETURN] button.

The remote controller will not reboot itself.



③

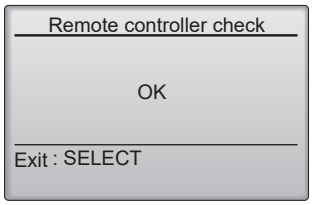
OK: No problems are found with the remote controller. Check other parts for problems.

E3, 6832: There is noise on the transmission line, or the indoor unit or another remote controller is faulty. Check the transmission line and the other remote controllers.

NG (ALL0, ALL1): Send-receive circuit fault. The remote controller needs replacing.

ERC: The number of data errors is the discrepancy between the number of bits in the data transmitted from the remote controller and that of the data that was actually transmitted over the transmission line. If data errors are found, check the transmission line for external noise interference.

Remote controller check results screen



If the [SELECT] button is pressed after the remote controller check results are displayed, remote controller check will end, and the remote controller will automatically reboot itself.

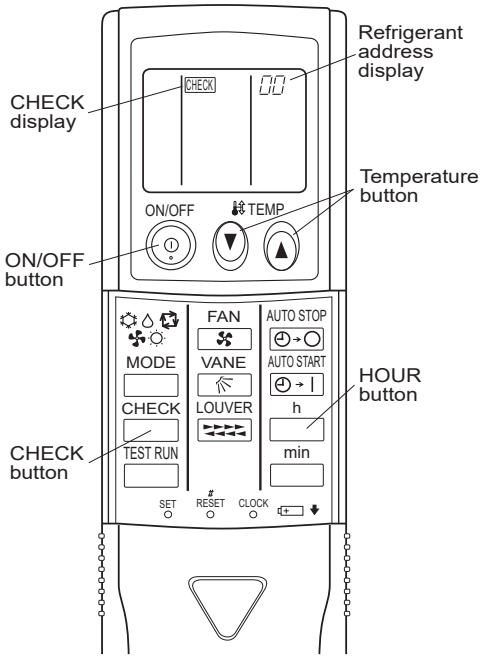
Check the remote controller display and see if anything is displayed (including lines). Nothing will appear on the remote controller display if the correct voltage (8.5–12 VDC) is not supplied to the remote controller. If this is the case, check the remote controller wiring and indoor units.

10-3-3. Malfunction-diagnosis method by IR wireless remote controller

<In the case of trouble during operation>

When a malfunction occurs to air conditioner, both indoor unit and outdoor unit will stop and operation lamp blinks to inform unusual stop.

<Malfunction-diagnosis method at maintenance service>



[Procedure]

1. Press the CHECK button twice.
   - "CHECK" lights, and refrigerant address "00" blinks.
   - Check that the remote controller's display has stopped before continuing.

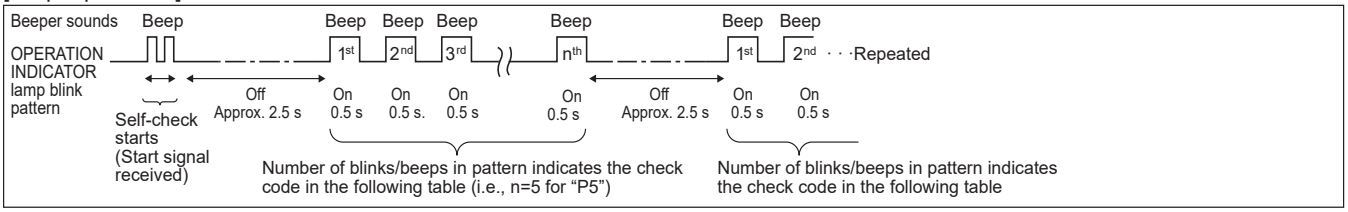
2. Press the TEMP ▼ ▲ buttons.
   - Select the refrigerant address of the indoor unit for the self-diagnosis.
     Note: Set refrigerant address using the outdoor unit's DIP switch (SW1).
     (For more information, see the outdoor unit installation manual.)

3. Point the remote controller at the sensor on the indoor unit and press the HOUR button.
   - If an air conditioner error occurs, the indoor unit's sensor emits an intermittent buzzer sound, the operation lamp blinks, and the check code is output.
     (It takes 3 seconds at most for check code to appear.)

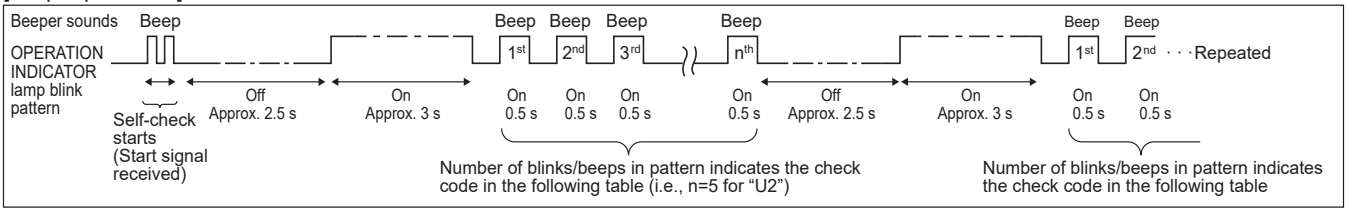
4. Point the remote controller at the sensor on the indoor unit and press the ON/OFF button.
   - The check mode is cancelled.

• Refer to the following tables for details on the check codes.

[Output pattern A]



[Output pattern B]



[Output pattern A] Errors detected by indoor unit

IR wireless remote controller / Beeper sounds/OPERATION INDICATOR lamp blinks (Number of times)	Wired remote controller / Check code	Symptom	Remark
1	P1	Intake sensor error	As for indoor unit, refer to indoor unit's service manual.
2	P2	Pipe (TH2) sensor error	
	P9	Pipe (TH5) sensor error	
3	E6, E7	Indoor/outdoor unit communication error	
4	P4	Drain sensor error/Float switch connector open	
5	P5	Drain pump error	
	PA	Forced compressor stop (due to water leakage abnormality)	
6	P6	Freezing/Overheating protection operation	
7	EE	Combination error between indoor and outdoor units	
8	P8	Pipe temperature error	
9	E4, E5	Remote controller signal receiving error	
10	–	–	
11	–	–	
12	Fb (FB)*	Indoor unit control system error (memory error, etc.)	
14	PL	Refrigerant circuit abnormal	
–	E0, E3	Remote controller transmission error	
–	E1, E2	Remote controller control board error	

[Output pattern B] Errors detected by unit other than indoor unit (outdoor unit, etc.)

IR wireless remote controller / Beeper sounds/OPERATION INDICATOR lamp blinks (Number of times)	Wired remote controller / Check code	Symptom	Remark
1	E9	Indoor/outdoor unit communication error (Transmitting error) (Outdoor unit)	For details, check the LED display of the outdoor controller board.
2	UP	Compressor overcurrent interruption	
3	U3, U4	Open/short of outdoor unit thermistors	
4	UF	Compressor overcurrent interruption (When compressor locked)	
5	U2	Abnormal high discharging temperature/49C worked/ insufficient refrigerant	
6	U1, Ud (UD)*	Abnormal high pressure (63H worked)/Overheating protection operation	
7	U5	Abnormal temperature of heat sink	
8	U8	Outdoor unit fan protection stop	
9	U6	Compressor overcurrent interruption/Abnormal of power module	
11	U9, UH	Abnormality such as overvoltage or voltage shortage and abnormal synchronous signal to main circuit/Current sensor error	
12	–	–	
13	–	–	
14	Others	Other errors	

Notes: 1. If the beeper does not sound again after the initial 2 beeps to confirm the self-check start signal was received and the OPERATION INDICATOR lamp does not come on, there are no error records.

2. If the beeper sounds 3 times continuously "beep, beep, beep (0.4 + 0.4 + 0.4 seconds)" after the initial 2 beeps to confirm the self-check start signal was received, the specified refrigerant address is incorrect.

*The check code in the parenthesis indicates PAR-4xMAA ("x" represents 0 or later).

10-4. TROUBLE CRITERION OF MAIN PARTS
SUZ-KA09NAHZ.TH SUZ-KA12NAHZ.TH SUZ-KA15NAHZ.TH SUZ-KA18NAHZ.TH

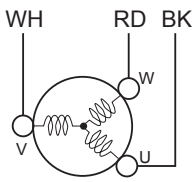
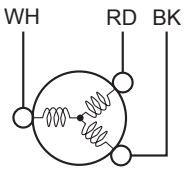
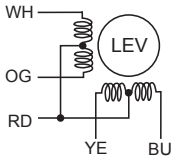
<table>
<tr><th>Part name</th><th>Check method and criterion</th><th>Figure</th></tr>
<tr><td>Defrost thermistor (RT61)

Fin temperature thermistor (RT64)

Ambient temperature thermistor (RT65)

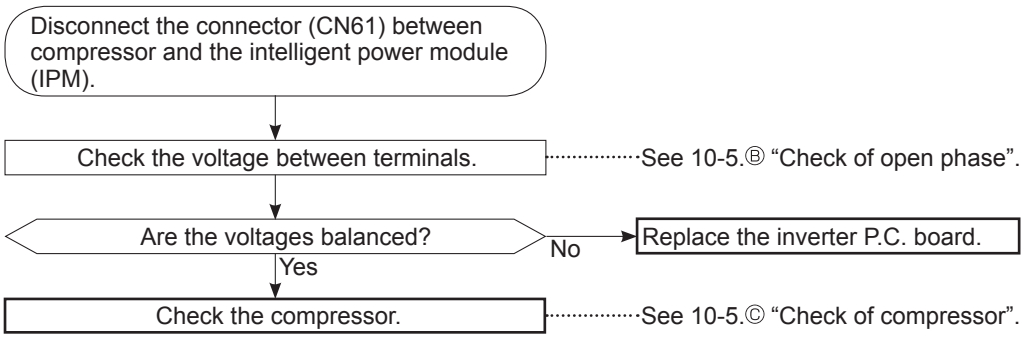
Outdoor heat exchanger temperature thermistor (RT68)</td><td>Measure the resistance with a tester.

Refer to “Inverter P.C. board” in "10-6. TEST POINT DIAGRAM AND VOLTAGE”, for the chart of thermistor.</td><td></td></tr>
<tr><td>Discharge temperature thermistor (RT62)</td><td>Measure the resistance with a tester. Before measurement, hold the thermistor with your hands to warm it up.

Refer to “Inverter P.C. board” in "10-6. TEST POINT DIAGRAM AND VOLTAGE”, for the chart of thermistor.</td><td></td></tr>
<tr><td>Compressor</td><td>Measure the resistance between terminals with a tester.
(Temperature: 14 to 104 °F (-10 to 40 °C))
<table><tr><th></th><th colspan="2">Normal (Ω)</th></tr><tr><th></th><th>KA09/12</th><th>KA15/18</th></tr><tr><td>U-V
U-W
V-W</td><td>0.82 to 1.11</td><td>0.83 to 1.03</td></tr></table></td><td> 
</td></tr>
<tr><td>Outdoor fan motor</td><td>Measure the resistance between lead wires with a tester.
(Temperature: 14 ~ 104 °F (-10 ~ 40 °C))
<table><tr><th rowspan="2">Color of lead wire</th><th colspan="2">Normal (Ω)</th></tr><tr><th>KA09/12</th><th>KA15/18</th></tr><tr><td>RD – BK
BK – WH
WH – RD</td><td>12 to 16</td><td>12 to 17</td></tr></table></td><td> 
</td></tr>
<tr><td>R. V. coil (21S4)</td><td>Measure the resistance with a tester.
(Temperature: 14 to 104 °F (-10 to 40°C))
<table><tr><th>Normal (kΩ)</th></tr><tr><td>0.97 to 1.38</td></tr></table></td><td></td></tr>
<tr><td>Expansion valve coil (LEV)</td><td>Measure the resistance with a tester.
(Temperature: 14 ~ 104 °F (-10 ~ 40 °C))
<table><tr><th>Color of lead wire</th><th>Normal (Ω)</th></tr><tr><td>RD – OG</td><td rowspan="4">37 to 54</td></tr><tr><td>RD – WH</td></tr><tr><td>RD – BU</td></tr><tr><td>RD – YE</td></tr></table></td><td> 
</td></tr>
<tr><td>Defrost heater</td><td>Measure the resistance using a tester.
[Temperature: 14 - 104°F (-10 - 40°C)]
<table><tr><th>Normal (kΩ)</th></tr><tr><td>349 to 428</td></tr></table></td><td></td></tr>
</table>

10-5. TROUBLESHOOTING FLOW

Ⓐ How to check inverter/compressor



Ⓑ Check of open phase

- With the connector between the compressor and the intelligent power module disconnected, activate the inverter and check if the inverter is normal by measuring the voltage balance between the terminals.

Output voltage is 50 - 130 V. (The voltage may differ according to the tester.)

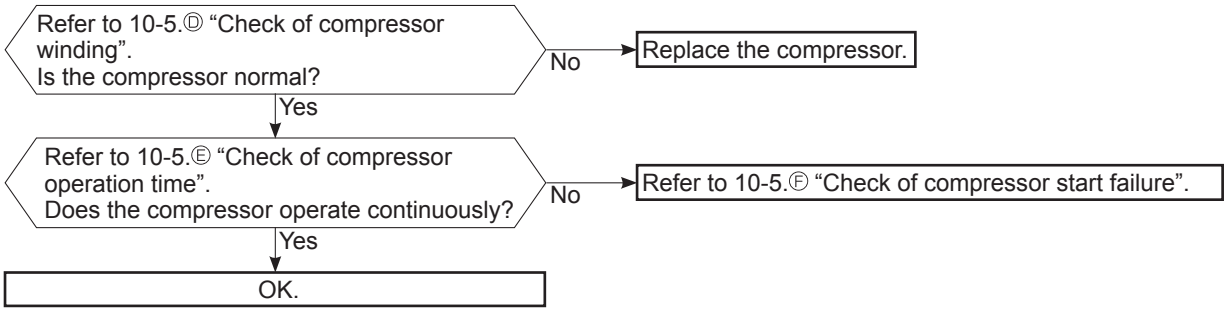
<Operation method (Test run operation)>
1. Press the TEST (RUN) button twice.
2. Press the MODE button and switch to the COOL (or HEAT) mode.
3. Compressor starts at rated frequency in COOL mode or 58 Hz in HEAT mode.
4. Indoor fan operates at High speed.
5. To cancel test run operation, press the ON/OFF button on remote controller.

<Measurement point>
at 3 points
BK (U) - WH (V)
BK (U) - RD (W)
WH(V) - RD (W)

Measure AC voltage between the lead wires at 3 points.

NOTE: 1. Output voltage varies according to power supply voltage.
2. Measure the voltage by analog type tester.
3. During this check, LED of the inverter P.C. board blinks 9 times.
(Refer to "10-6. TEST POINT DIAGRAM AND VOLTAGE".)

Ⓒ Check of compressor



Ⓓ Check of compressor winding

● Disconnect the connector between the compressor and intelligent power module, and measure the resistance between the compressor terminals.

<Measurement point>

Measure the resistance between the lead wires at 3 points.

BK - WH

BK - RD

WH - RD

<Judgement>

Refer to "10-4. TROUBLE CRITERION OF MAIN PARTS".

0[Ω] ····· Abnormal [short]

Infinite [Ω]····· Abnormal [open]

NOTE: Be sure to zero the ohmmeter before measurement.

Ⓔ Check of compressor operation time

● Connect the compressor and activate the inverter. Then measure the time until the inverter stops due to over current.

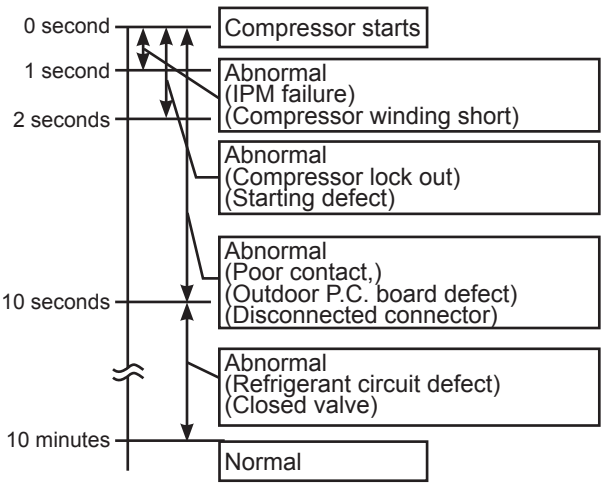
<Operation method>

Start heating or cooling operation by pressing the TEST button twice on the remote controller. (Test run mode)
(TEST RUN OPERATION: Refer to 10-5 Ⓑ.)

<Measurement>

Measure the time from the start of compressor to the stop of compressor due to overcurrent.

<<Judgement>>



Ⓕ Check of compressor start failure

Confirm that 1~4 is normal.
- Electrical circuit check

1. Contact of the compressor connector
2. Output voltage of inverter P.C. board and balance of them (See 10-5.Ⓑ)
3. Direct current voltage between DB61(+) and (-) on the inverter P.C. board
4. Voltage between outdoor terminal block S1-S2

Does the compressor run for 10 seconds or more after it starts? — Yes → Check the refrigerant circuit. Check the stop valve.

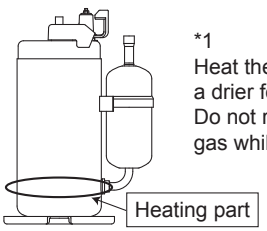
No

After the compressor is heated with a drier, does the compressor start?*1 — No → Replace the compressor.

Yes

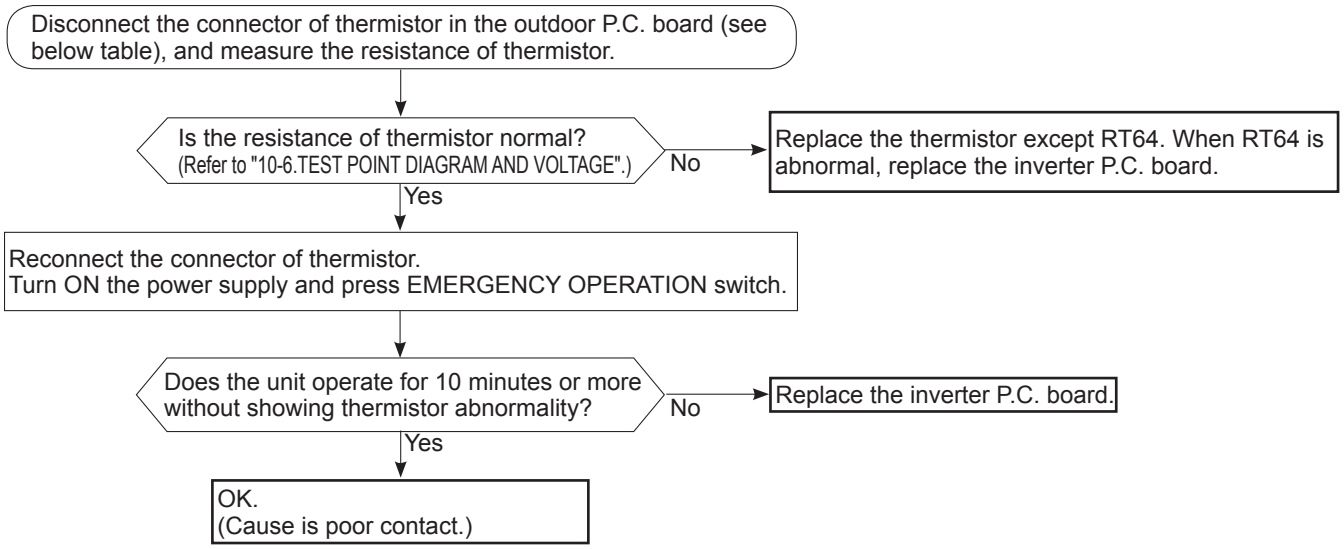
Compressor start failure. Activate pre-heat control. (Refer to "9-2. PRE-HEAT CONTROL SETTING")

WARNING:
When opening or closing the valve below freezing temperatures, refrigerant may spurt out from the gap between the valve stem and the valve body, resulting in injuries.



*1
Heat the compressor with a drier for about 20 minutes. Do not recover refrigerant gas while heating.

Ⓖ Check of outdoor thermistors

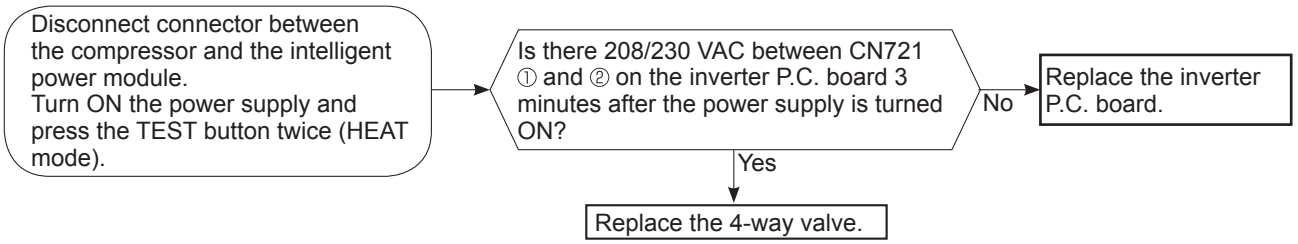


Thermistor	Symbol	Connector, Pin No.		Board
		SUZ-KA09NAHZ SUZ-KA12NAHZ	SUZ-KA15NAHZ SUZ-KA18NAHZ	
Defrost	RT61	Between CN641 pin1 and pin2	Between CN671 pin1 and pin2	Inverter P.C. board
Discharge temperature	RT62	Between CN641 pin3 and pin4	Between CN671 pin3 and pin4	
Fin temperature	RT64	Between CN642 pin1 and pin2	Between CN673 pin1 and pin2	
Ambient temperature	RT65	Between CN643 pin1 and pin2	Between CN672 pin1 and pin2	
Outdoor heat exchanger temperature	RT68	Between CN644 pin1 and pin3	Between CN671 pin5 and pin6	

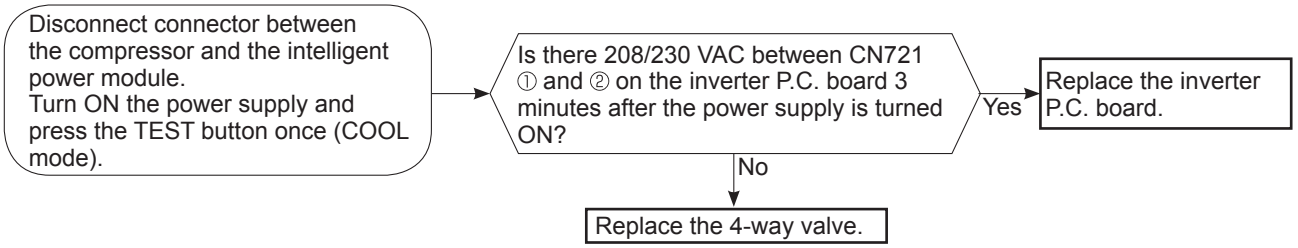
Ⓗ Check of R.V. coil

- First of all, measure the resistance of R.V. coil to check if the coil is defective. Refer to "10-4. TROUBLE CRITERION OF MAIN PARTS".
  In case CN721 is disconnected or R.V. coil is open, voltage is generated between the terminal pins of the connector although no signal is being transmitted to R.V. coil. Check if CN721 is connected.

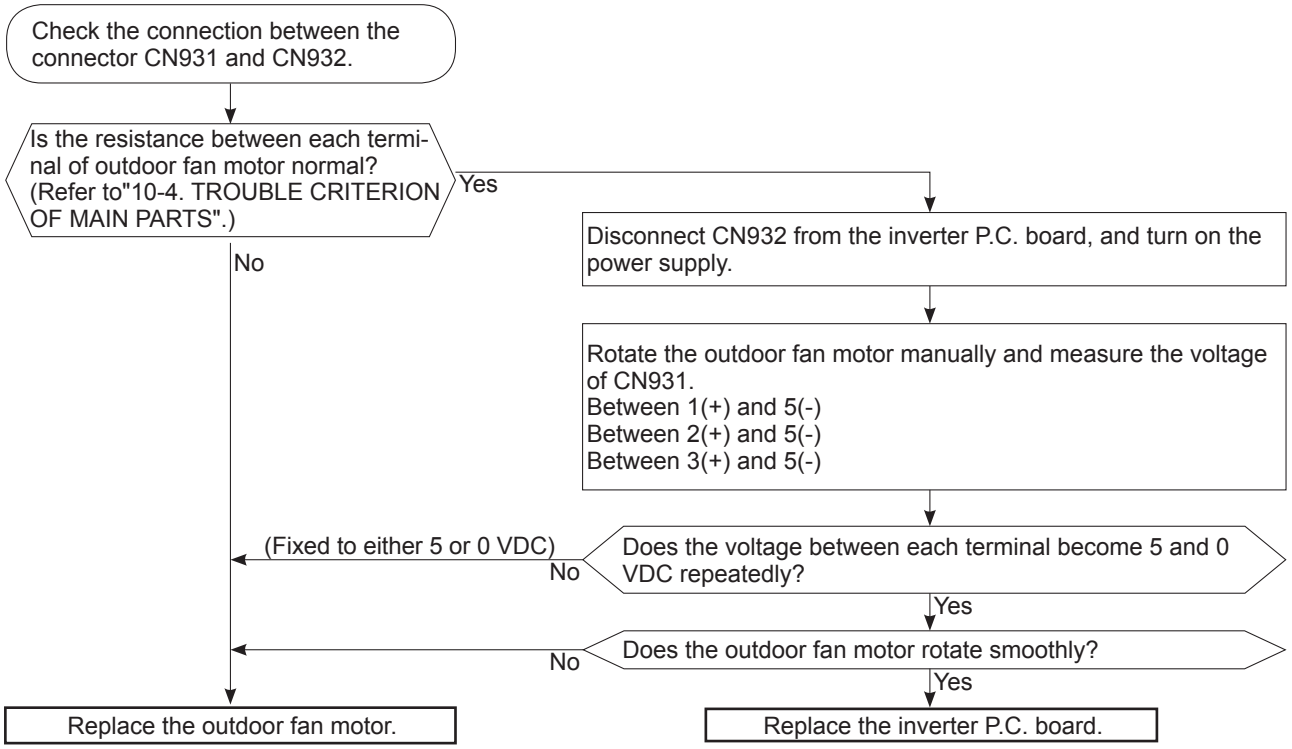
Unit operates in COOL mode even if it is set to HEAT mode.



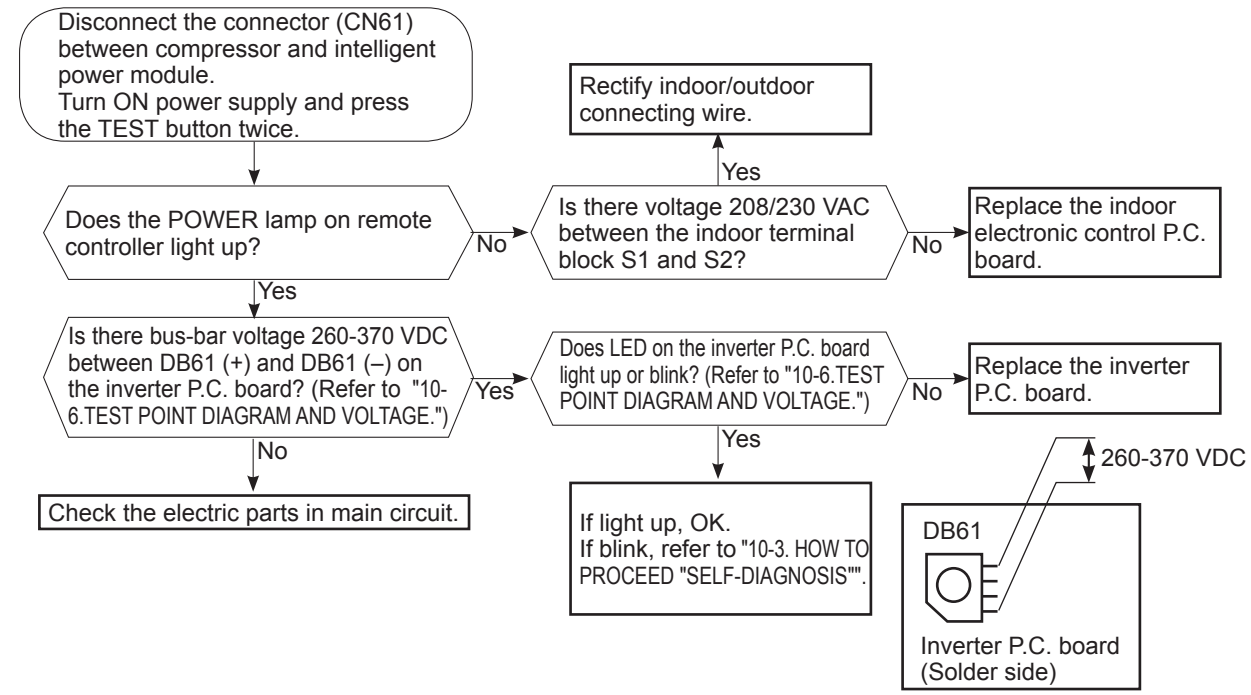
Unit operates in HEAT mode even if it is set to COOL mode.



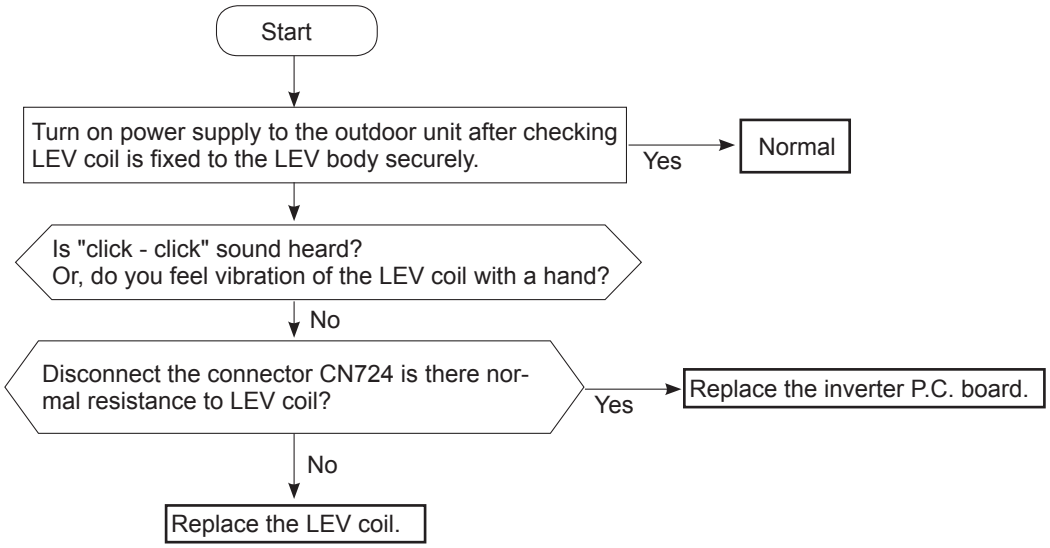
Ⓘ Check of outdoor fan motor



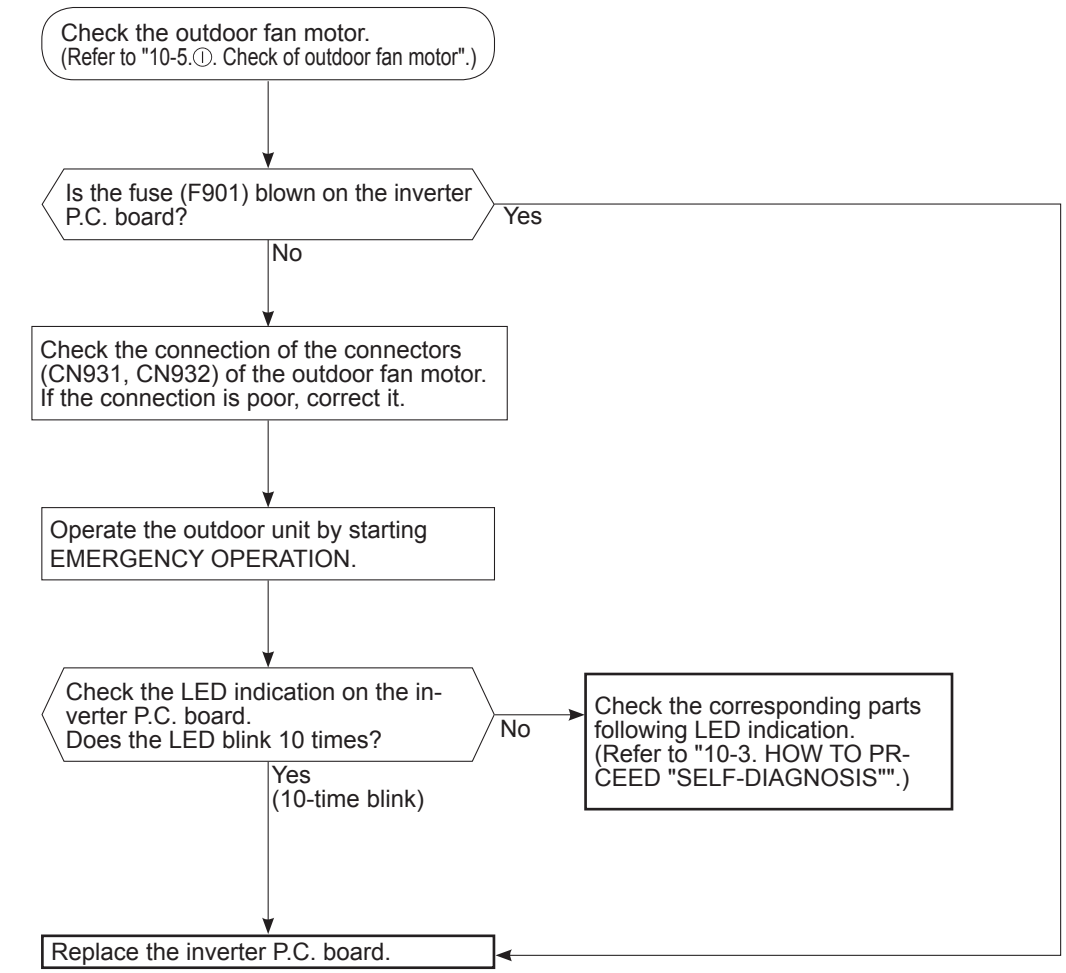
Ⓙ Check of power supply



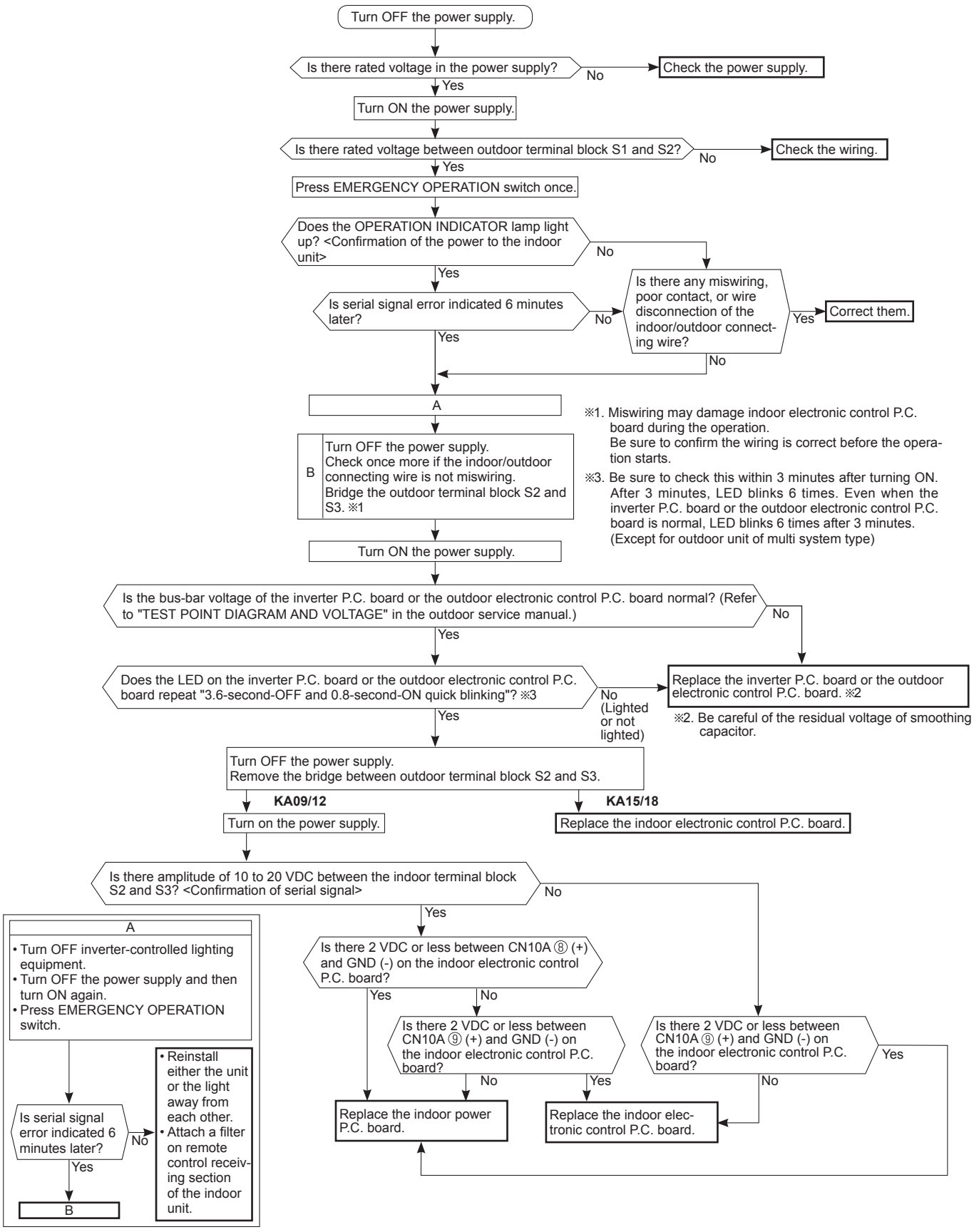
Ⓚ Check of LEV



Ⓛ Check of inverter P.C. board



Ⓜ How to check miswiring and serial signal error



Ⓝ Check the defrost heater (base pan heater)

Check the following points before checking electric continuity.
1. Does the resistance of ambient temperature thermistor have the characteristics? Refer to 10-6.1.
2. Is the resistance of defrost heater normal? Refer to 10-4.
3. Does the heater protector remain conducted (not open)?
4. Are both ambient temperature thermistor and circuit of defrost heater securely connected to connectors?

In HEAT mode, for more than 5 minutes, let the ambient temperature thermistor continue to read 32°F (0°C) or below, and let the defrost thermistor continue to read 30°F (-1°C) or below.

NOTE: In case both thermistors are more than the above temperature, cool them with cold water etc...

Is there 208/230 VAC between CN722 ① and ③ (**SUZ-KA09/12NAHZ**)/CN601 ① and ② (**Other models**) on the inverter P.C. board? Refer to 10-6.1.

Yes → Not the problem of the inverter P.C. board.

No → Replace the inverter P.C. board.

Ⓞ Check of outdoor refrigerant circuit

Has the operation stopped during pump down?

No → Was the operation started with the stop valve closed, and was it opened during operation?

Yes → The unit occasionally stops when the stop valve is opened or closed during operation. Open the stop valve and start the cooling operation again.

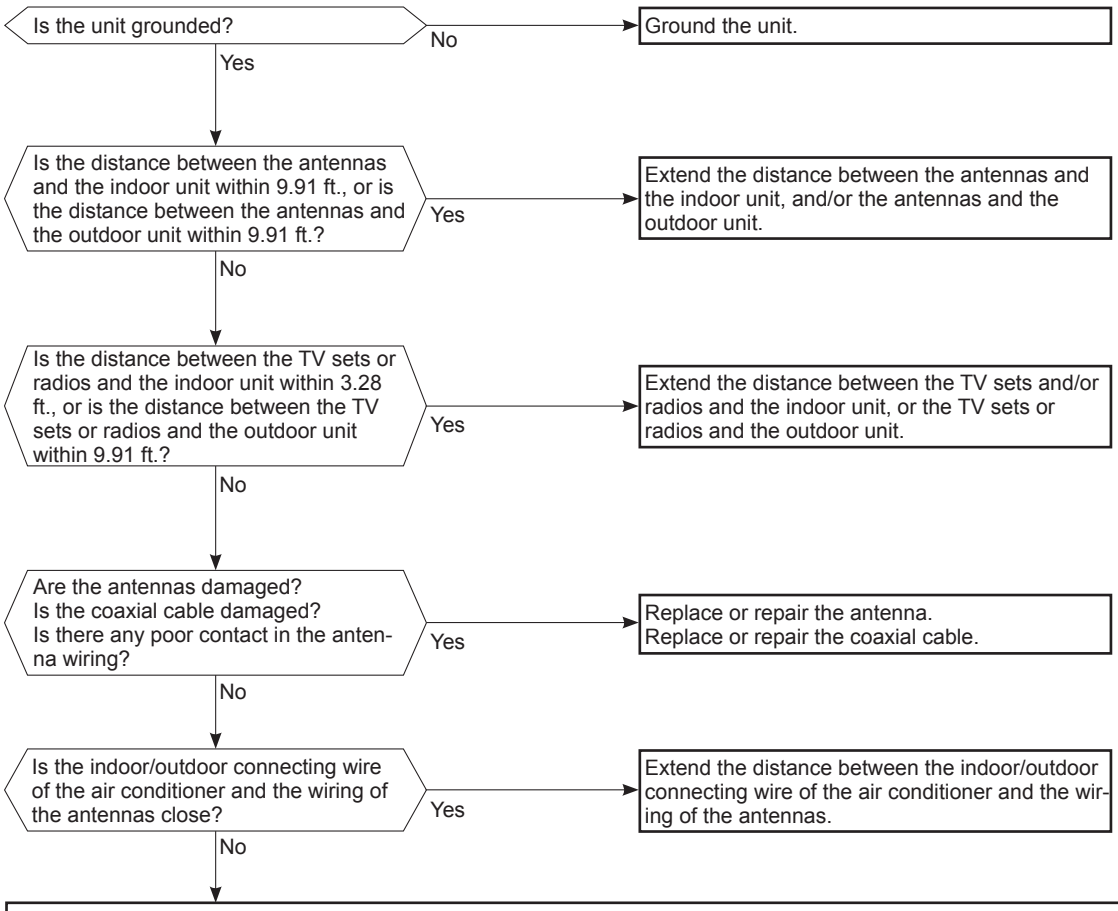
Yes → The operation has stopped to prevent the diesel explosion caused by air trapped in the refrigerant circuit. Close the stop valve, and disconnect the power plug or turn the breaker OFF. *

WARNING:
When opening or closing the valve below freezing temperatures, refrigerant may spurt out from the gap between the valve stem and the valve body, resulting in injuries.

No → The refrigerant gas amount may be 60% or less than the normal amount. Identify where the gas is leaking from, and fix the leak.

* **CAUTION : Do not start the operation again to prevent hazards.**

Ⓟ Electromagnetic noise enters into TV sets or radios



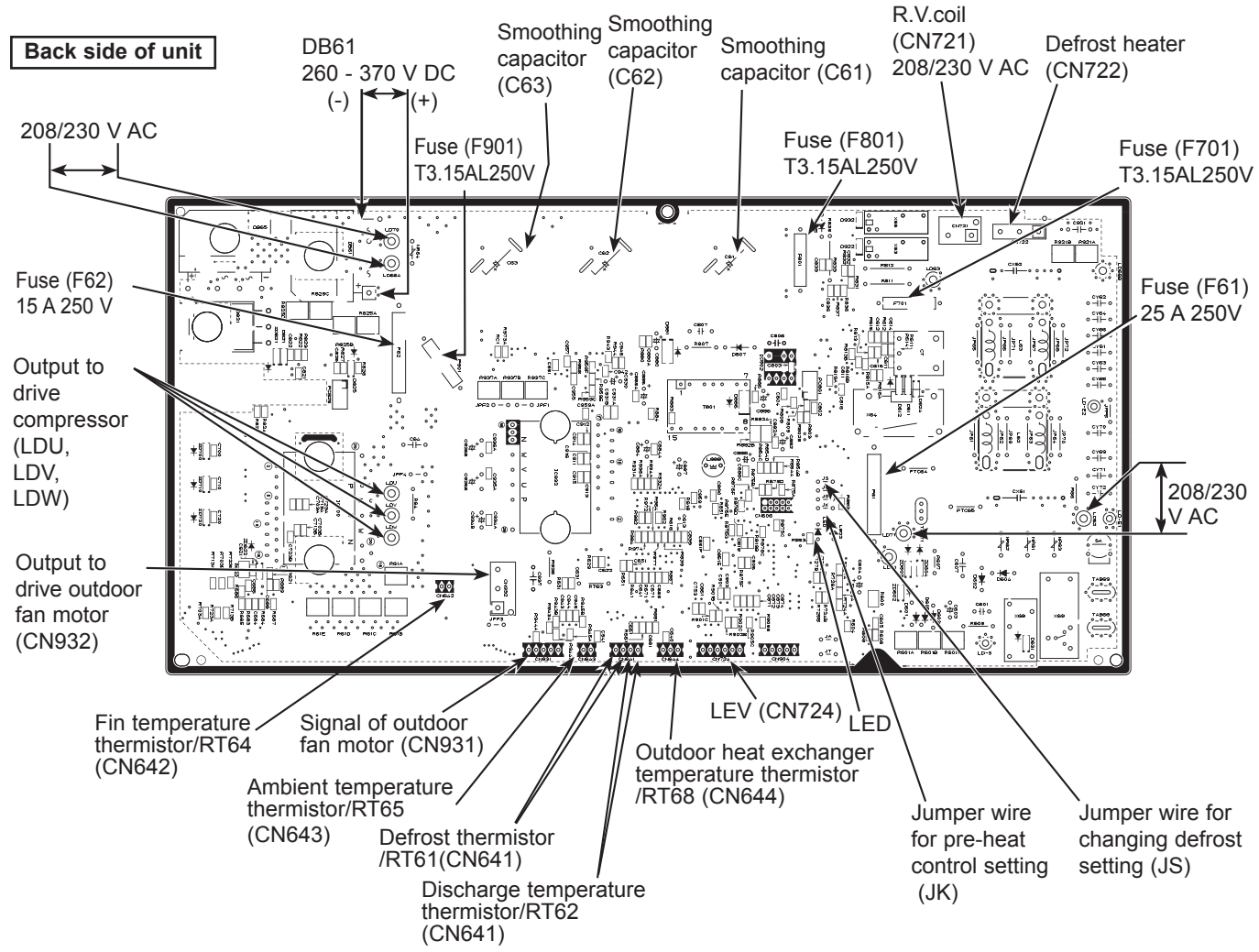
Even if all of the above conditions are fulfilled, the electromagnetic noise may enter, depending on the electric field strength or the installation condition (combination of specific conditions such as antennas or wiring).
Check the followings before asking for service.

1. Devices affected by the electromagnetic noise
   TV sets, radios (FM/AM broadcast, shortwave)
2. Channel, frequency, broadcast station affected by the electromagnetic noise
3. Channel, frequency, broadcast station unaffected by the electromagnetic noise
4. Layout of:
   indoor/outdoor unit of the air conditioner, indoor/outdoor wiring, grounding wire, antennas, wiring from antennas, receiver
5. Electric field intensity of the broadcast station affected by the electromagnetic noise
6. Presence or absence of amplifier such as booster
7. Operation condition of air conditioner when the electromagnetic noise enters in
   1) Turn OFF the power supply once, and then turn ON the power supply. In this situation, check for the electromagnetic noise.
   2) Within 3 minutes after turning ON the power supply, press OPERATE/STOP (ON/OFF) button on the remote controller for power ON, and check for the electromagnetic noise.
   3) After a short time (3 minutes later after turning ON), the outdoor unit starts running. During operation, check for the electromagnetic noise.
   4) Press OPERATE/STOP (ON/OFF) button on the remote controller for power OFF, when the outdoor unit stops but the indoor/outdoor communication still runs on. In this situation, check for the electromagnetic noise.

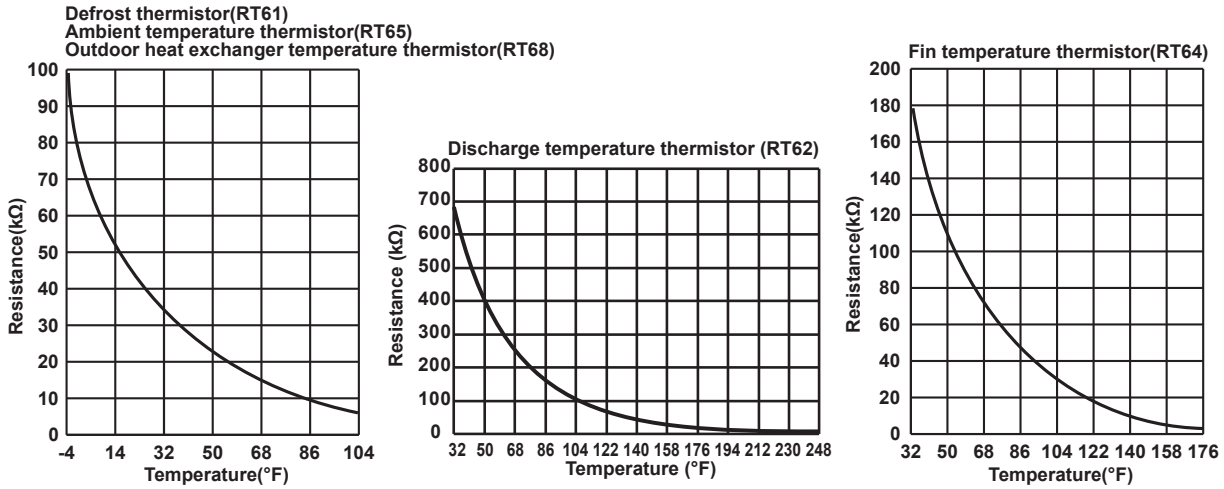
10-6. TEST POINT DIAGRAM AND VOLTAGE

Inverter P.C. board

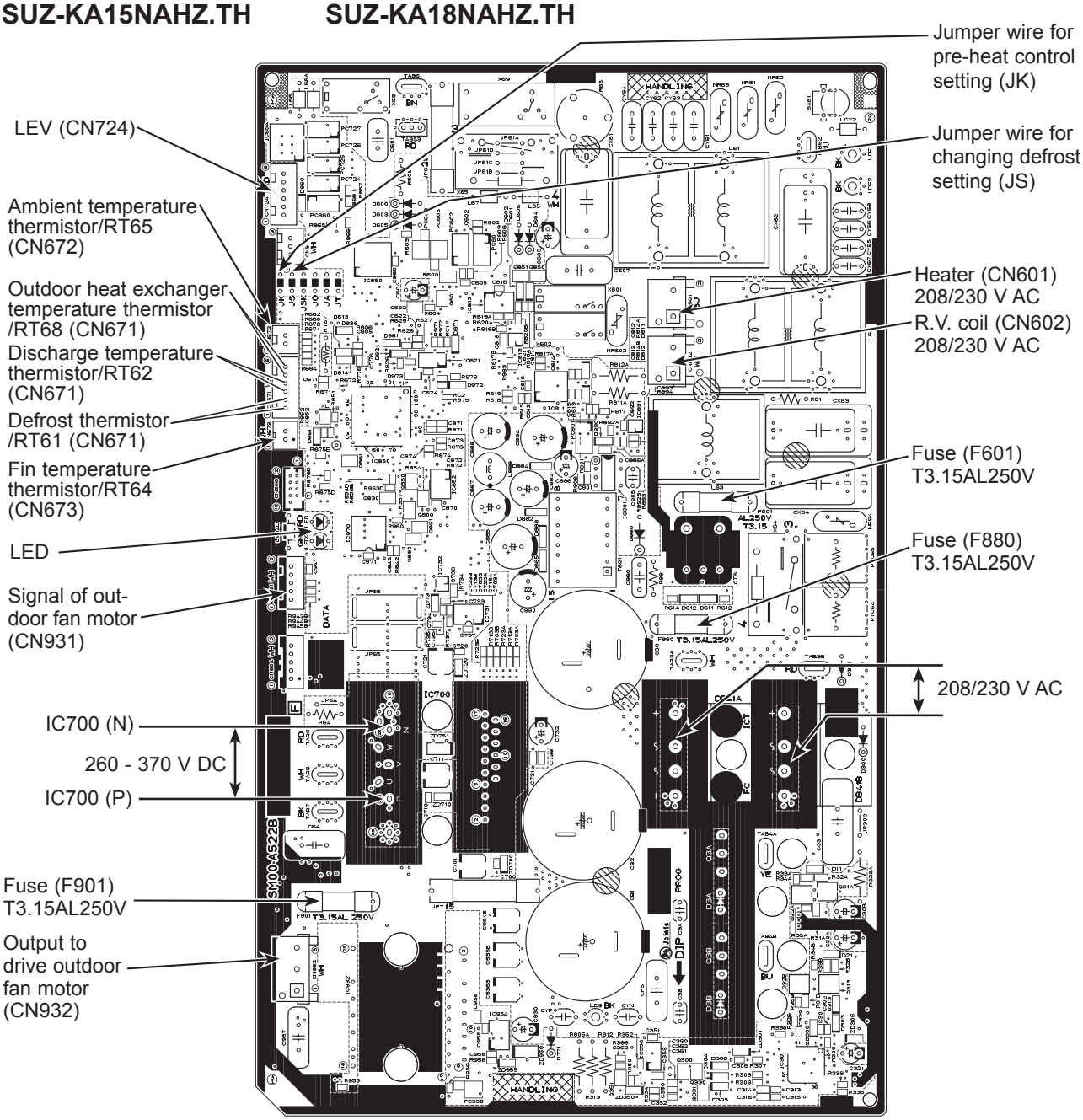
SUZ-KA09NAHZ.TH SUZ-KA12NAHZ.TH

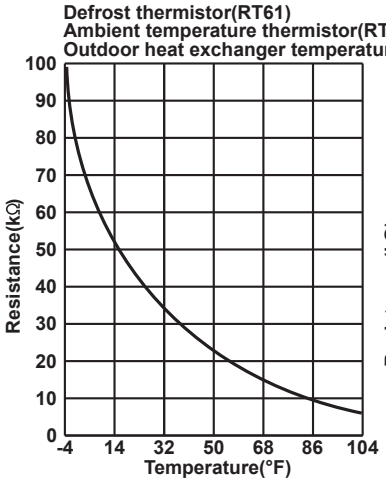


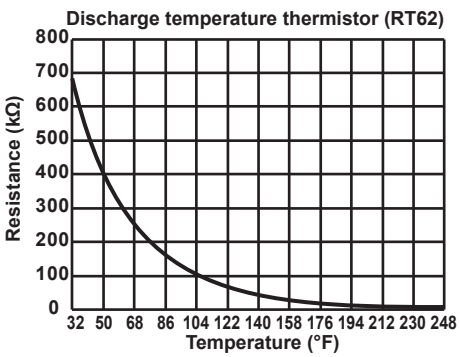
Front side of unit

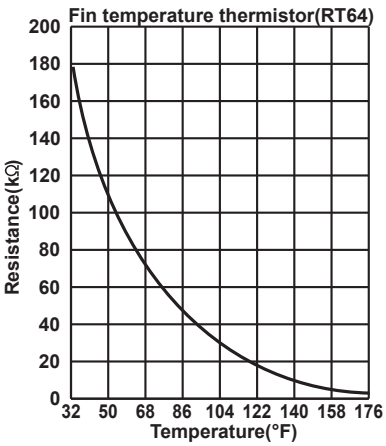


SUZ-KA15NAHZ.TH **SUZ-KA18NAHZ.TH**









11 FUNCTION SETTING

11-1. UNIT FUNCTION SETTING BY THE REMOTE CONTROLLER

Each function can be set according to necessity using the remote controller. The setting of function for each unit can only be done by the remote controller. Select function available from the table 1.

<Table 1> Function selections

(1) Functions available when setting the unit number to 00 (Select 00 referring to ④ setting the indoor unit number.)

Function	Settings	Mode No. (Wired remote controller (RF thermostat))	Setting No.	● : Initial setting (when sent from the factory)	Check	Remarks
Power failure automatic recovery	Not available	01 (101)	1			The setting is applied to all the units in the same refrigerant system.
	Available (Approx. 4-minute wait-period after power is restored.)		2	●		
Indoor temperature detecting	Indoor unit's internal sensor	02 (—)	1	●		
			2			
	Data from main remote controller *1		3			
LOSSNAY connectivity	Not supported	03 (103)	1	●		
	Supported (indoor unit dose not intake outdoor air through LOSSNAY)		2			
	Supported (indoor unit intakes outdoor air through LOSSNAY)		3			
Power supply voltage	230V	04 (104)	1	●		
	208V		2			
Frost prevention temperature	2℃ [36°F] (Normal)	15 (115)	1	●		
	3℃ [37°F]		2			

*1 Can be set only when a wired remote controller is used.
When using 2 remote controllers (2-remote controller operation), the remote controller with built-in sensor must be set as a main remote controller.

(2) Functions are available when setting the unit number to 01.

Function	Settings	Mode No. (Wired remote controller (RF thermostat))	Setting No.	● : Initial setting (Factory setting) Ceiling concealed SEZ-KD·NA4	Ceiling cassette SLZ-KA·NA	Ceiling suspended PEAD-A·AA	Multi position SVZ-KP·NA	Check
Filter sign	100h	07 (107)	1					
	2500h		2		●			
	No filter sign indicator		3	●		●	●	
External static pressure	5/15/35/50Pa (0.02/0.06/0.14/0.20in.WG)	08 (108)		Refer to the table below	—	Refer to the table below	Refer to the table below	
		10 (110)		Refer to the table below	—	Refer to the table below	Refer to the table below	
Heater control *2	No heater present	11 (111)	1	—	—	●	●	
	Heater present		2	—	—			
	SEZ, SLZ :Set temp -4.5°F ON PEAD, SVZ :Heater not operation in Defrost/Error	23 (123)	1	●	●	●	●	
	SEZ, SLZ :Set temp -1.8°F ON PEAD, SVZ :Heater not operation in Defrost/Error*4		2					
Set temperature in heating mode *3	Available	24 (124)	1	●	●	●	●	
	Not available		2					
Fan speed during the heating thermo OFF	Extra low	25 (125)	1	●	●	●	●	
	Stop		2					
	Set fan speed		3					
Fan speed during the cooling thermo OFF	Set fan speed	27 (127)	1	●	●	●	●	
	Stop		2					
Detection of abnormality of the pipe temperature (P8)	Available	28 (128)	1	●	●			
	Not available		2			●	●	

*2 For the detail of Heater control, refer to the service manual.
*3 4 degC (7.2 degF) up
*4 Depend on the error, heater may not operate please refer to SVZ service manual.

External static pressure setting for SEZ.

External static pressure	Setting No. Mode No. 08	Setting No. Mode No. 10	● : Initial setting (Factory setting)	Check
5Pa (0.02in.WG)	1	2		
15Pa (0.06in.WG)	1	1	●	
35Pa (0.14in.WG)	2	1		
50Pa (0.20in.WG)	3	1		

External static pressure setting for PEAD.

External static pressure	Setting No. Mode No. 08	Setting No. Mode No. 10	● : Initial setting (Factory setting)	Check
35Pa (0.14in.WG)	2	1		
50Pa (0.20in.WG)	3	1	●	
70Pa (0.28in.WG)	1	2		
100Pa (0.40in.WG)	2	2		
150Pa (0.60in.WG)	3	2		

External static pressure setting for SVZ (Vertical, Horizontal left, Horizontal right position*).

External static pressure	Setting No. Mode No. 08	Setting No. Mode No. 10	● : Initial setting (Factory setting)	Check
75Pa (0.3in.WG)	1	1		
125Pa (0.5in.WG)	2	1	●	
200Pa (0.8in.WG)	3	1		

* Regarding to down flow setting, please refer to down flow kit installation manual.

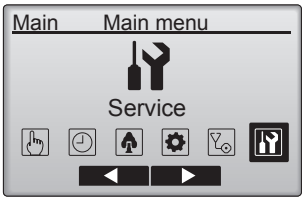
11-1-1. Selecting functions using the wired remote controller (PAR-4xMAA)

<Service menu>

Maintenance password is required

① Select "Service" from the Main menu, and press the [SELECT] button.

*At the main display, the menu button and select "Service" to make the maintenance setting.



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② When the Service menu is selected, a window will appear asking for the password.

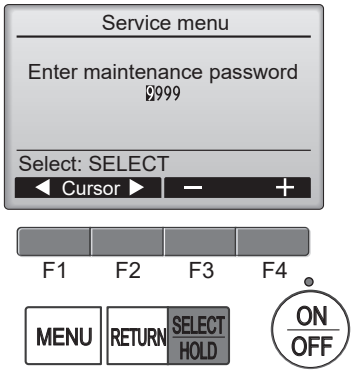
To enter the current maintenance password (4 numerical digits), move the cursor to the digit you want to change with the F1 or F2 button.

▼

Set each number (0 through 9) with the F3 or F4 button.

▼

Then, press the [SELECT] button.



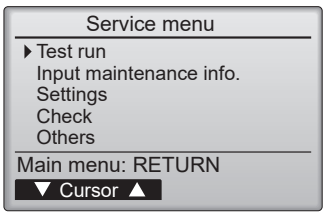
Note: The initial maintenance password is "9999". Change the default password as necessary to prevent unauthorized access. Have the password available for those who need it.

: If you forget your maintenance password, you can initialize the password to the default password "9999" by pressing and holding the F1 button for 10 seconds on the maintenance password setting screen.

---

③ If the password matches, the Service menu will appear.

The type of menu that appears depends on the connected indoor units' type.



Note: Air conditioning units may need to be stopped to make certain settings. There may be some settings that cannot be made when the system is centrally controlled. (As for PAR-4xMAA, the units need to be stopped only at "Settings".)

▼

A screen will appear that indicates the setting has been saved.

Navigating through the screens

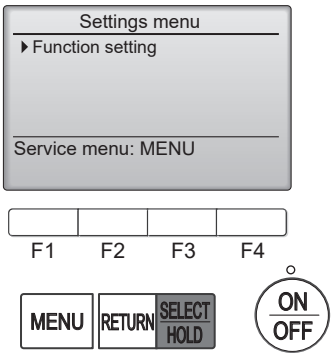
- To go back to the Service menu ..... [MENU] button
- To return to the previous screen..... [RETURN] button

<Function setting>

① Select "Service" from the Main menu, and press the [SELECT] button.

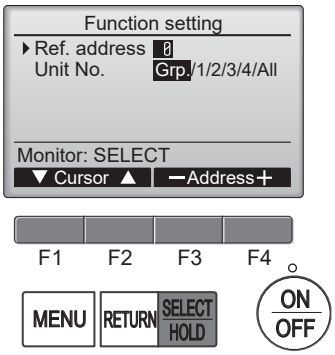
Select "Setting" from the Service menu, and press the [SELECT] button.

Select "Function setting", and press the [SELECT] button.

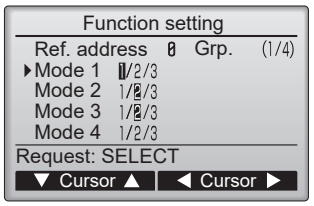


② Set the indoor unit refrigerant addresses and unit numbers with the F1 through F4 buttons, and then press the [SELECT] button to confirm the current setting.

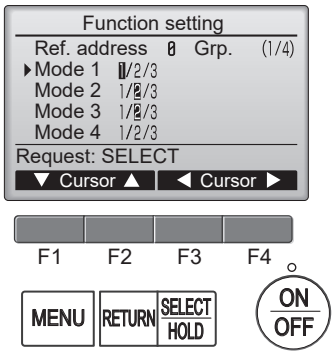
Note: Checking the indoor unit No.
When the [SELECT] button is pressed, the target indoor unit will start fan operation. If the unit is common or when running all units, all indoor units for the selected refrigerant address will start fan operation.



③ When data collection from the indoor units is completed, the current settings appears highlighted.
Non-highlighted items indicate that no function settings are made.
Screen appearance varies depending on the "Unit No." setting.

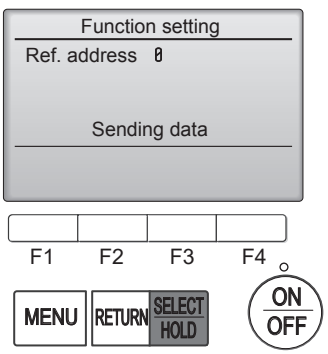


④ Use the F1 or F2 button to move the cursor to select the mode number, and change the setting number with the F3 or F4 button.



⑤ When the settings are completed, press the [SELECT] button to send the setting data from the remote controller to the indoor units.
When the transmission is successfully completed, the screen will return to the Function setting screen.

Note: • Make the above settings only on Mr. Slim units as necessary.
• The above function settings are not available for the CITY MULTI units.
• Table 1 summarizes the setting options for each mode number. Refer to the indoor unit Installation Manual for the detailed information about initial settings, mode numbers, and setting numbers for the indoor units.
• Be sure to write down the settings for all functions if any of the initial settings has been changed after the completion of installation work.

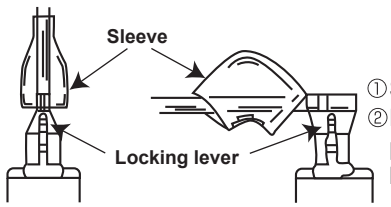


12 DISASSEMBLY INSTRUCTIONS

<"Terminal with locking mechanism" Detaching points>

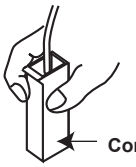
The terminal which has the locking mechanism can be detached as shown below.
There are two types (refer to (1) and (2)) of the terminal with locking mechanism.
The terminal without locking mechanism can be detached by pulling it out.
Check the shape of the terminal before detaching.

(1) Slide the sleeve and check if there is a locking lever or not.



①Slide the sleeve.
②Pull the terminal while pushing the locking lever.

(2) The terminal with this connector has the locking mechanism.



①Hold the sleeve, and pull out the terminal slowly.

SUZ-KA09NAHZ.TH SUZ-KA12NAHZ.TH SUZ-KA15NAHZ.TH SUZ-KA18NAHZ.TH

——→ : Indicates the visible parts in the photos/figures.
- - - - - - → : Indicates the invisible parts in the photos/figures.

NOTE: Turn OFF the power supply before disassembly.

OPERATING PROCEDURE

1. Removing the cabinet

(1) Remove the screws of the service panel.
(2) Remove the screws of the top panel.
(3) Remove the screw of the valve cover.
(4) Remove the service panel.
(5) Remove the screws fixing the conduit cover.
(6) Remove the conduit cover.
(7) Remove the screw of fixing the conduit plate.
(8) Remove the conduit plate.
(9) Remove the top panel.
(10) Remove the valve cover.
(11) Disconnect the power supply and indoor/outdoor connecting wire.
(12) Remove the screws of the cabinet.
(13) Remove the cabinet.
(14) Remove the screws of the back panel.
(15) Remove the back panel.

PHOTOS/FIGURES

Photo 1

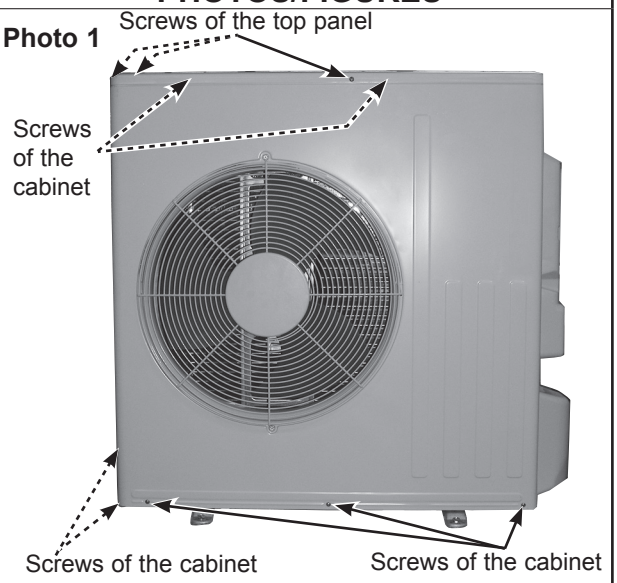


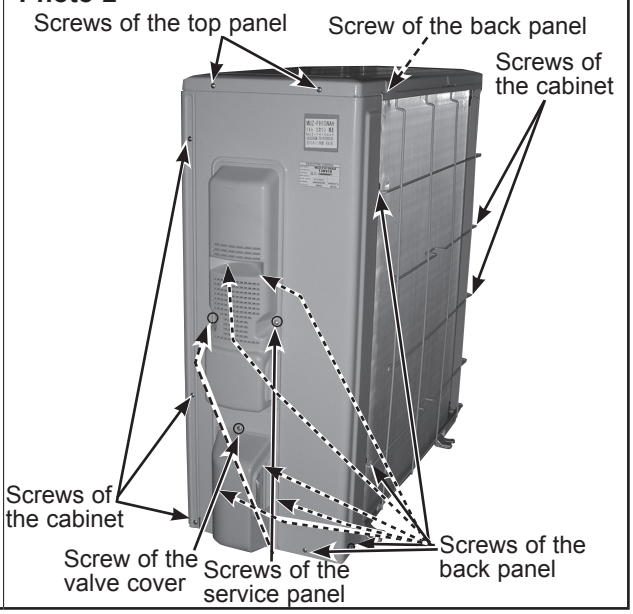
Photo 3

Screws of the conduit cover

Photo 4

Screw of the conduit plate

Photo 2



OPERATING PROCEDURE

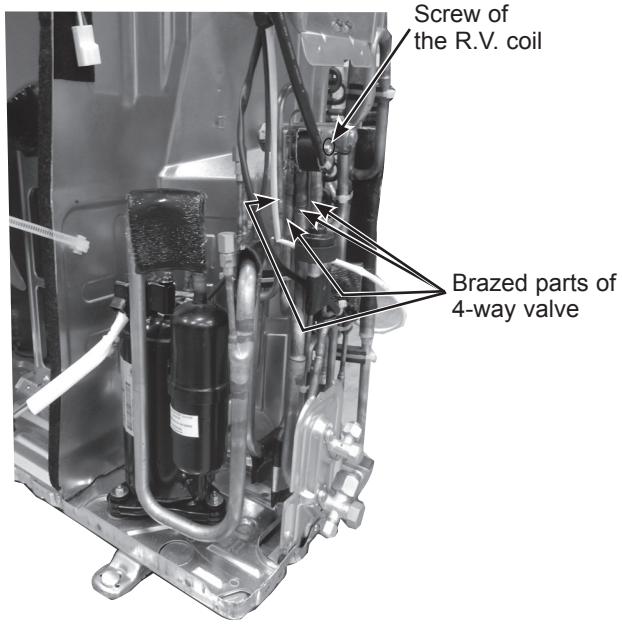
2. Removing the inverter assembly, inverter P.C. board

(1) Remove the cabinet and panels. (Refer to 1.)
(2) Disconnect the lead wire to the reactor and the following connectors:
<Inverter P.C. board>
CN721 (R.V. coil)
CN722 (Defrost heater) (**SUZ-KA09/12NAHZ**)
CN931, CN932 (Fan motor)
CN601(Defrost heater) (**SUZ-KA15/18NAHZ**)
CN641 (Defrost thermistor and discharge temperature thermistor)
CN643 (Ambient temperature thermistor)
CN644 (Outdoor heat exchanger temperature thermistor)
CN724 (LEV)
(3) Remove the compressor connector.
(4) Remove the screw fixing the heat sink support and the separator.
(5) Remove the fixing screws of the terminal block support and the back panel.
(6) Remove the inverter assembly.
(7) Remove the screw of the ground wire, screw of the P.C. board cover and screws of the terminal block support.
(8) Remove the heat sink support from the P.C. board support.
(9) Remove the screw of the inverter P.C. board and the inverter P.C. board from the P.C. board support.

3. Removing R.V. coil

(1) Remove the cabinet and panels. (Refer to 1.)
(2) Disconnect the following connector:
<Inverter P.C. board>
CN721 (R.V. coil)
(3) Remove the R.V. coil.

Photo 7



PHOTOS/FIGURES

Photo 5

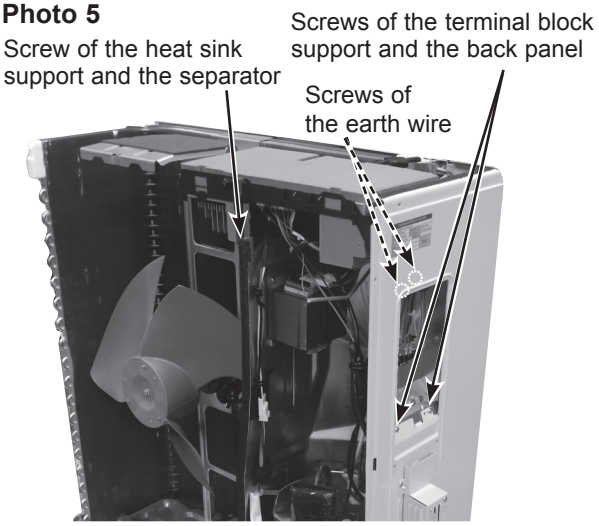


Photo 6-1 (KA09/12)

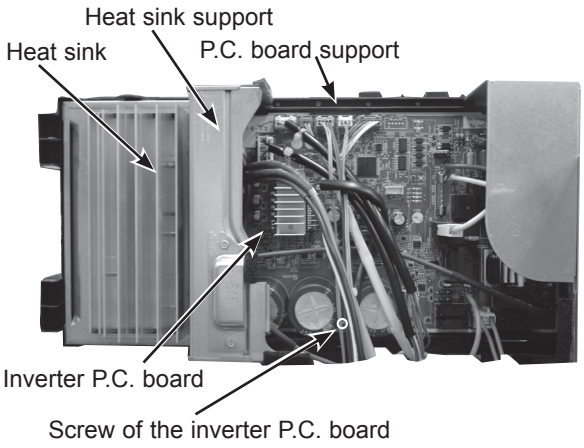
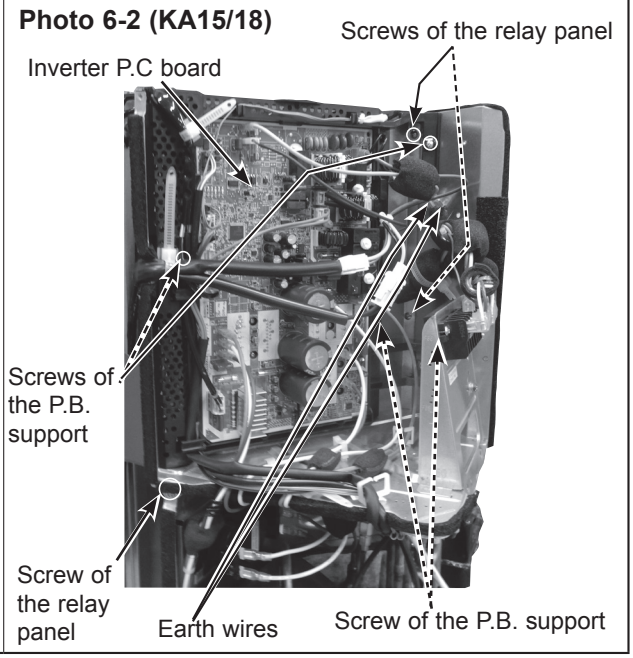
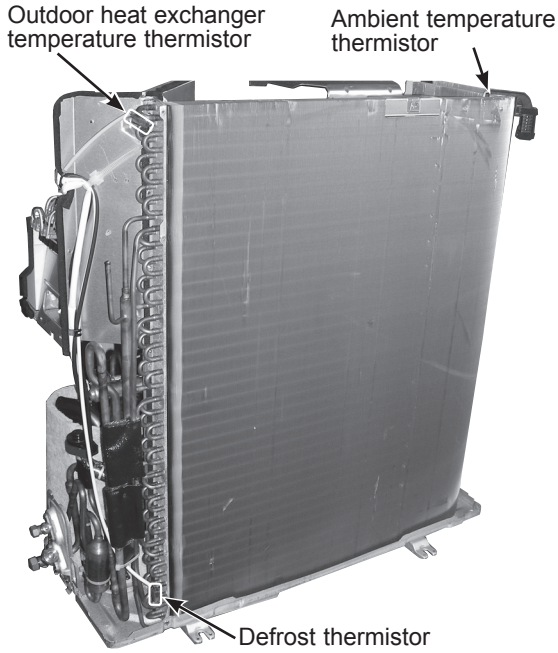
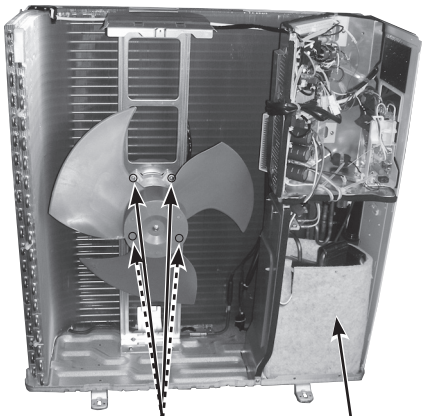
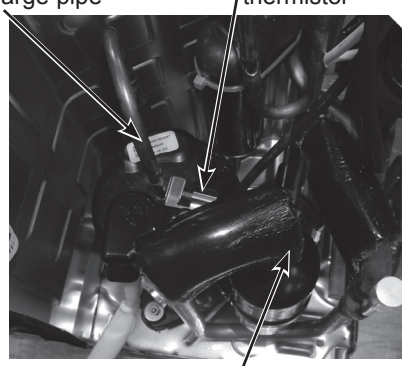


Photo 6-2 (KA15/18)



OPERATING PROCEDURE	PHOTOS/FIGURES
4. Removing the discharge temperature thermistor, defrost thermistor, outdoor heat exchanger temperature thermistor and ambient temperature thermistor (1) Remove the cabinet and panels. (Refer to 1.) (2) Disconnect the lead wire to the reactor and the following connectors: <Inverter P.C. board> CN641 (Defrost thermistor and discharge temperature thermistor) CN643 (Ambient temperature thermistor) CN644 (Outdoor heat exchanger temperature thermistor) (3) Pull out the discharge temperature thermistor from its holder. (4) Pull out the defrost thermistor from its holder. (5) Pull out the outdoor heat exchanger temperature thermistor from its holder. (6) Pull out the ambient temperature thermistor from its holder.	**Photo 8** 
5. Removing outdoor fan motor (1) Remove the top panel, cabinet and service panel. (Refer to 1.) (2) Disconnect the following connectors: <Inverter P.C. board> CN931 and CN932 (Fan motor) (3) Remove the propeller fan nut. (4) Remove the propeller fan. (5) Remove the screws fixing the fan motor. (6) Remove the fan motor. **NOTE**: The propeller fan nut is a revers thread.	**Photo 9** 
6. Removing the compressor and 4-way valve (1) Remove the top panel, cabinet and service panel. (Refer to 1.) (2) Remove the back panel. (Refer to 1.) (3) Remove the inverter assembly. (Refer to 2.) (4) Recover gas from the refrigerant circuit. **NOTE:** Recover gas from the pipes until the pressure gauge shows 0 PSIG. (5) Detach the brazed part of the suction and the discharge pipe connected with compressor. (6) Remove the compressor nuts. (7) Remove the compressor. (8) Detach the brazed part of 4-way valve and pipe. (Photo 7)	**Photo 10** 

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