

July 2011

No.OCH467

REVISED EDITION-A



# SERVICE MANUAL

## R410A

Outdoor unit

[Model names]

SUZ-KA09NA

SUZ-KA12NA

SUZ-KA15NA

SUZ-KA18NA

[Service Ref.]

**SUZ-KA09NA.TH**
**SUZ-KA12NA.TH**
**SUZ-KA15NA.TH**
**SUZ-KA18NA.TH**

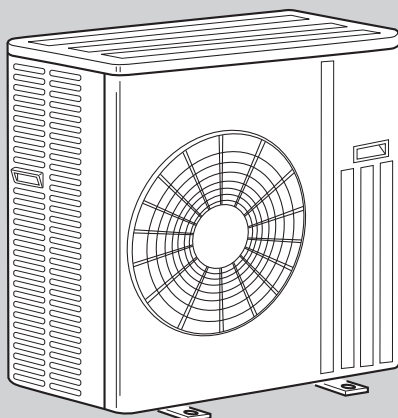
Revision:

- SLZ-KA-NA models have been added as connectable indoor units.
- Some descriptions have been modified.

- Please void OCH467.

Note:

- This service manual describes service data of the outdoor units.
- RoHS compliant products have <G> mark on the spec name plate.


**SUZ-KA18NA.TH**

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**PARTS CATALOG (OCB467)**

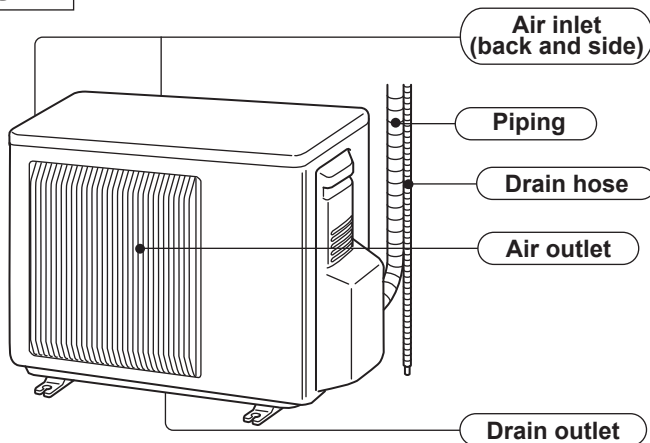
# 1 COMBINATION OF INDOOR AND OUTDOOR UNITS

	Indoor unit		Outdoor unit			
			Heat pump type			
			SUZ-			
	Service Ref.	Service Manual No.	KA09NA.TH	KA12NA.TH	KA15NA.TH	KA18NA.TH
Heat pump without electric heater	SEZ-KD09NA4.TH	HWE08020	○	—	—	—
	SEZ-KD12NA4.TH		—	○	—	—
	SEZ-KD15NA4.TH		—	—	○	—
	SEZ-KD18NA4.TH		—	—	—	○
	SLZ-KA09NA.TH	OCH487 OCB487	○	—	—	—
	SLZ-KA12NA.TH		—	○	—	—
	SLZ-KA15NA.TH		—	—	○	—

# 2 PART NAMES AND FUNCTIONS

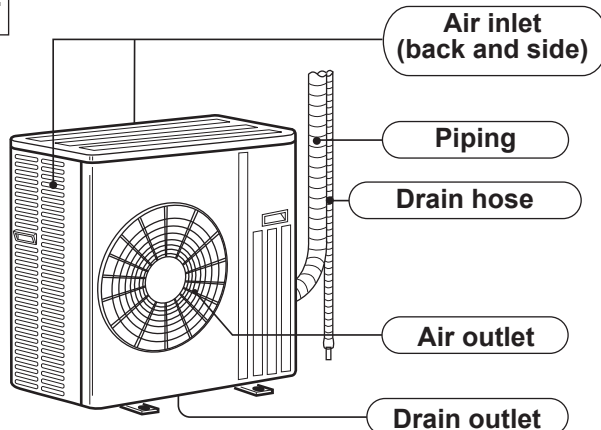
SUZ-KA09NA    SUZ-KA12NA    SUZ-KA15NA

## OUTDOOR UNIT



SUZ-KA18NA

## OUTDOOR UNIT



# 3

## SPECIFICATION

Outdoor unit model			SUZ-KA09NA	SUZ-KA12NA	SUZ-KA15NA	SUZ-KA15NA
Power supply	V , phase , Hz		208/230 , 1 , 60			
Max. fuse size (time delay)		A	15			
Min. circuit ampacity		A	12	12	12	14
Fan motor		F.L.A	0.50			0.93
Compressor	Model		KNB073FQDHC	KNB092FQAHC	SNB130FQBH	
		R.L.A	6.6	6.6	7.4	10.0
		L.R.A	8.2	8.2	9.3	12.5
	Refrigeration oil oz. (Model)		10.8 (NEO22)		15.2 (NEO22)	
Refrigerant control			Linear expansion valve			
Sound level ※1	Cooling	dB(A)	46	49	49	54
	Heating	dB(A)	50	51	51	56
Defrost method			Reverse cycle			
Dimensions	W	in.	31-1/2			33-1/16
	D	in.	11-1/4			13
	H	in.	21-5/8			33-7/16
Weight	lb.		66	77	80	119
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 (0.0315)			
	Gas	in.	3/8 (0.0315)		1/2 (0.0315)	
Connection method	Indoor		Flared			
	Outdoor		Flared			
Between the indoor & outdoor units	Height difference	ft.	40			50
	Piping length	ft.	65			100
Refrigerant charge (R410A)			1 lb. 16 oz.	2 lb. 9 oz.		3 lb. 16 oz.

**NOTE:** Test conditions are based on AHRI 210/240.

※1: Rating conditions (Cooling) — Indoor: 80°FDB, 67°FWB, Outdoor: 95°FDB, (75°FWB)

(Heating) — Indoor: 70°FDB, 60°FWB, Outdoor: 47°FDB, 43°FWB

## OPERATING RANGE

### (1) POWER SUPPLY

	Rated voltage	Guaranteed voltage (V)
Outdoor unit	208/230 V 1 phase 60 Hz	<div> Min. 187 208 230 Max. 253 </div>

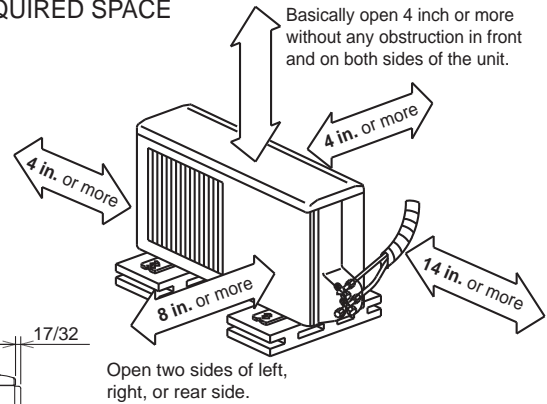
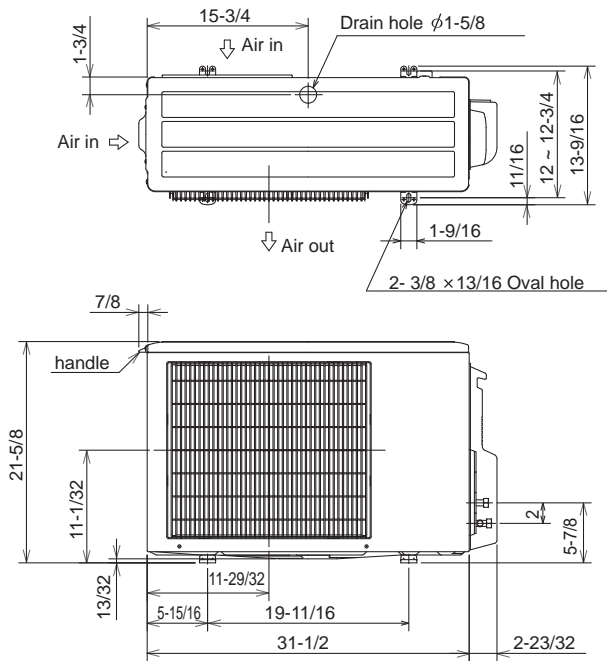
SUZ-KA09NA

SUZ-KA12NA

SUZ-KA15NA

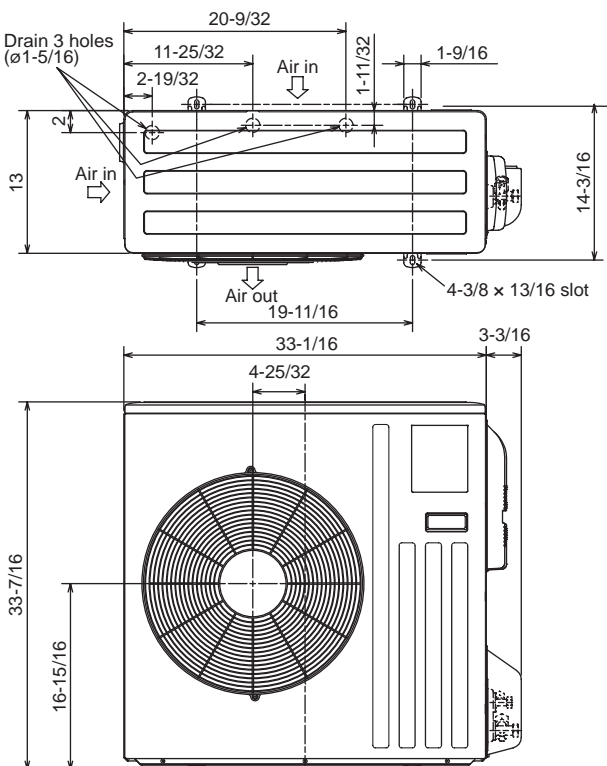
Unit: inch

## REQUIRED SPACE

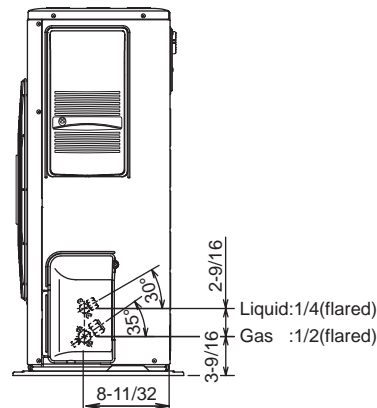
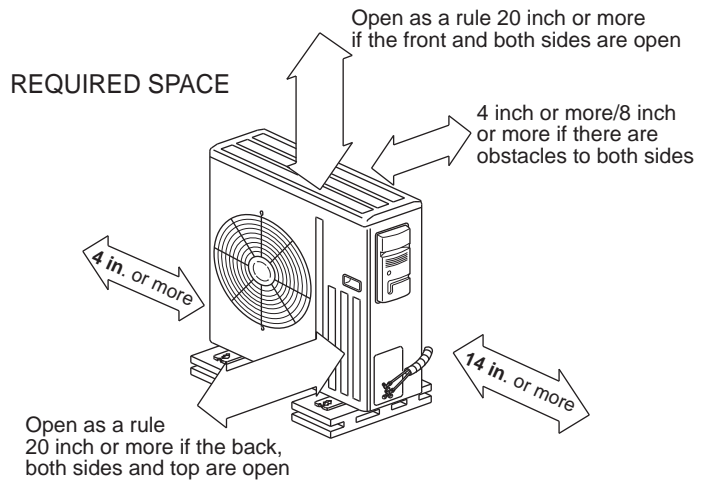


Liquid pipe : 1/4 (flared)  
 Gas pipe : 3/8 (flared) (KA09/12)  
 1/2 (flared) (KA15)

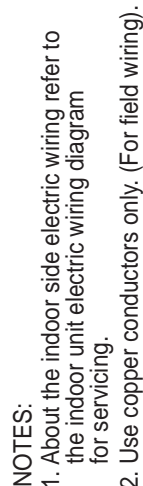
SUZ-KA18NA



## REQUIRED SPACE

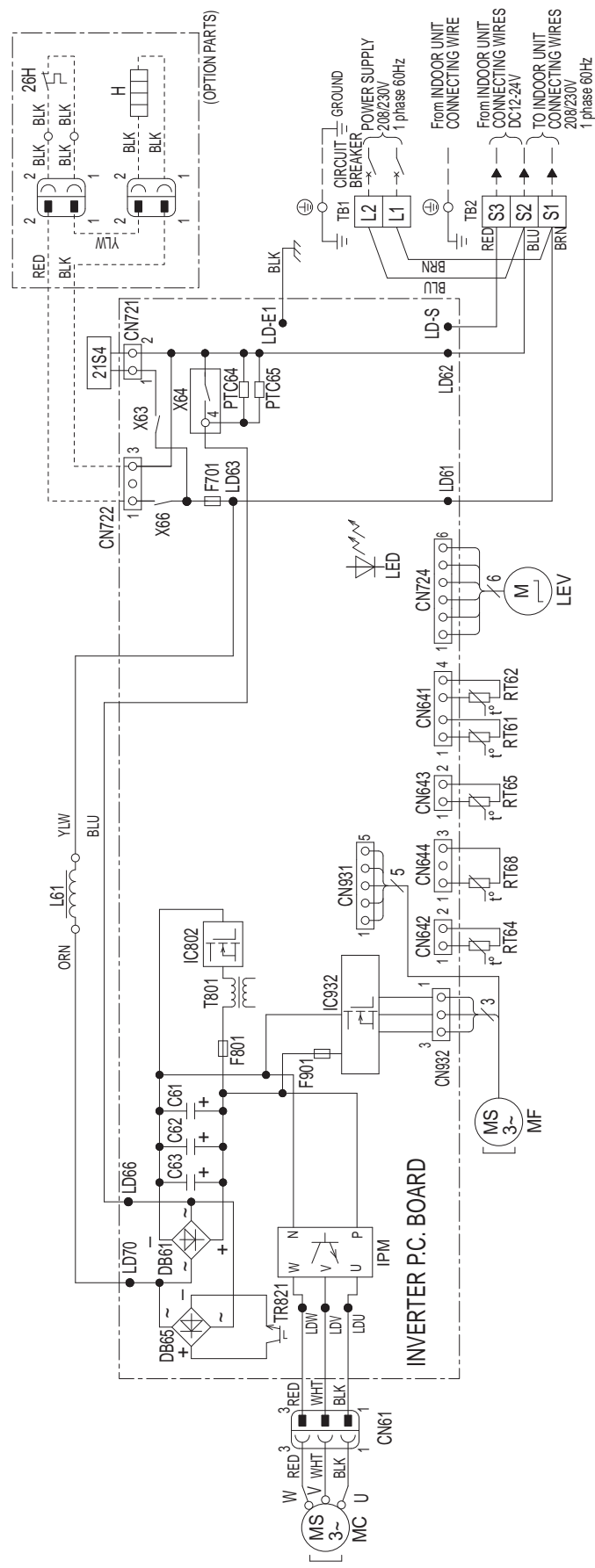


# SUZ-KA12NA



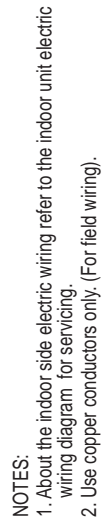
SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
C82.2B63	SMOOTHING CAPACITOR	LEV	EXPANSION VALVE COIL		
D861.D865	DIODE MODULE	MC	COMPRESSOR		RT68
F7.01.F801.F901	FUSE (73.15AL250V)	MF	FAN MOTOR	TB1.TB2	
H	DEFOG HEATER(OPTION PARTS)	PTC64.PTC65	CIRCUIT PROTECTION	TR821	TERMINAL BLOCK
IC802	INTELLIGENT POWER DEVICE	R761	DICROST THERMISTOR	T801	TRANSFORMER
IPM.IC932	INTELLIGENT POWER MODULE	R762	DISCHARGE TEMP.THERMISTOR	X63.X64.X66	RELAY
L61	REACTOR	R764	FIN TEMP.THERMISTOR	21.S4	
LED	LED	R765	AMBIENT TEMP.THERMISTOR	26H	REVERSING VALVE COIL
					HEATER PROTECTOR(OPTION PARTS)

SUZ-KA15NA



- NOTES:
1. About the indoor side electric wiring refer to the indoor unit electric wiring diagram for servicing.
  2. Use copper conductors only. (For field wiring).

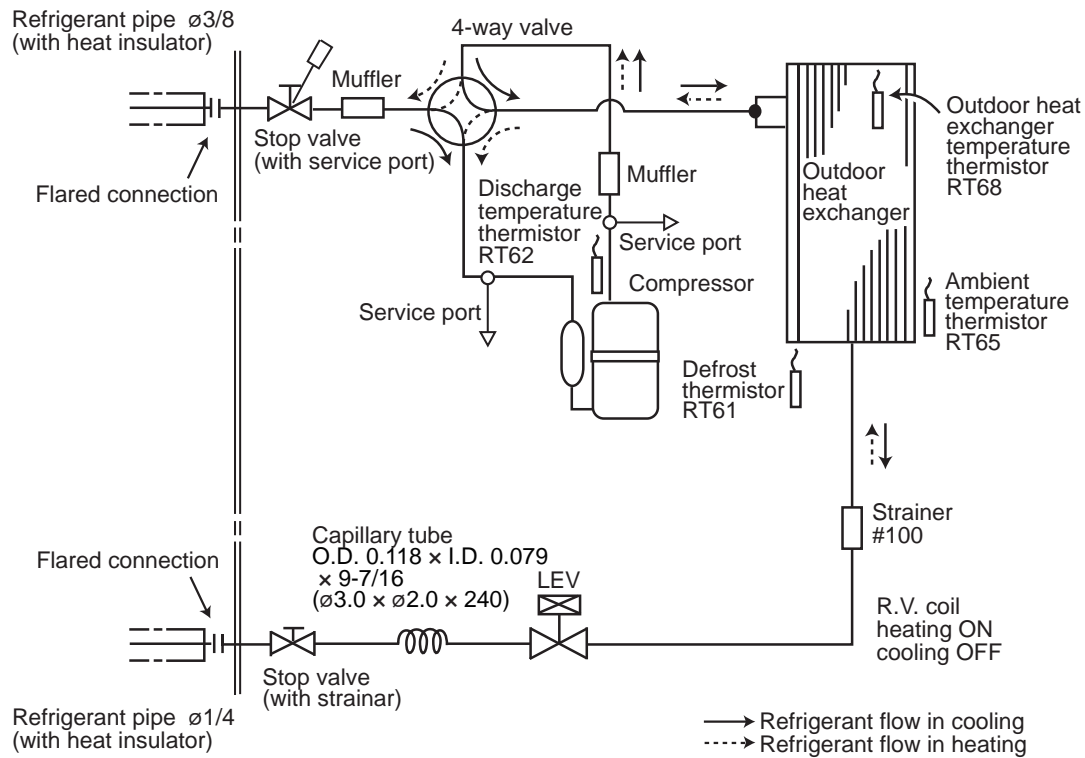
SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
C61,C62,C63	SMOOTHING CAPACITOR	LEV	EXPANSION VALVE COIL	RT68	OUTDOOR HEAT EXCHANGER
DB61, DB65	DIODE MODULE	MC	COMPRESSOR	TB1, TB2	TEMP. THERMISTOR.
F701, F801, F901	FUSE (T3:15A/250V)	MF	FAN MOTOR	TR821	TERMINAL BLOCK
H	DEFROST HEATER(OPTION PARTS)	PTC65	CIRCUIT PROTECTION	TR821	SWITCHING POWER TRANSISTOR
IC802	DEFROST THERMISTOR	RT61	DEFROST THERMISTOR	TB01	TRANSFORMER
IPM, IC932	INTELLIGENT POWER MODULE	RT62	DISCHARGE TEMP.THERMISTOR	X63,X64,X66	RELAY
L61	REACTOR	RT64	FIN TEMP.THERMISTOR	21S4	REVERSING VALVE COIL
LED	LED	RT65	AMBIENT TEMP.THERMISTOR	26H	HEATER PROTECTOR(OPTION PARTS)



SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
C61, C62, C63	SMOOTHING CAPACITOR	LEV	EXPANSION VALVE COIL	RT68	OUTDOOR HEAT EXCHANGER
DB61, DB65	DIODE MODULE	MC	COMPRESSOR		TEMP. THERMISTOR.
F70, F71, F901, F901	FUSE (T3:15A/250V)	MF	FAN MOTOR	TB1, TB2	TERMINAL BLOCK
H	DEFROST HEATER(OPTION PARTS)	PTC64, PTC66	CIRCUIT PROTECTION	TR821	SWITCHING POWER TRANSISTOR
IC802	INTELLIGENT POWER DEVICE	RT61	DEFROST THERMISTOR	T801	TRANSFORMER
IPM1, HC930	INTELLIGENT POWER MODULE	RT62	DISCHARGE TEMP THERMISTOR	X63, X64, X68	RELAY
L61	REACTOR	RT64	FIN TEMP THERMISTOR	21S4	REVERSING VALVE COIL
LED	LED	RT65	AMBIENT TEMP THERMISTOP	26H	HEATED DUCT COIL(OPTION PARTS)

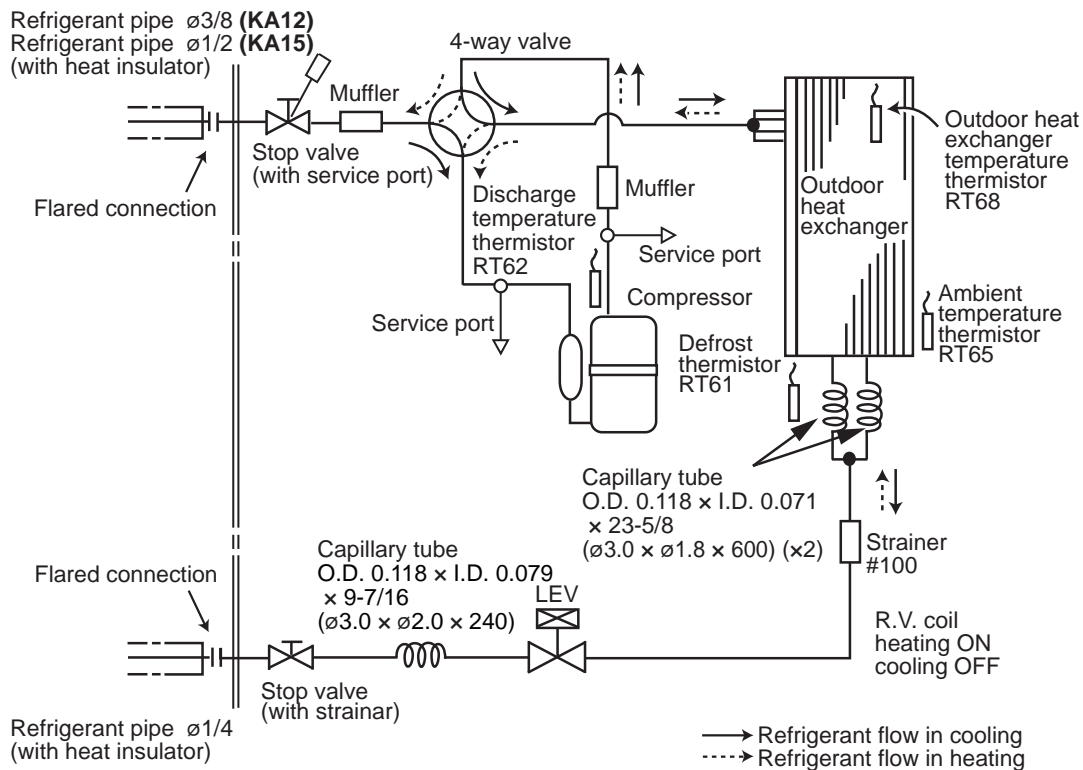
## SUZ-KA09NA

Unit: inch (mm)



## SUZ-KA12NA SUZ-KA15NA

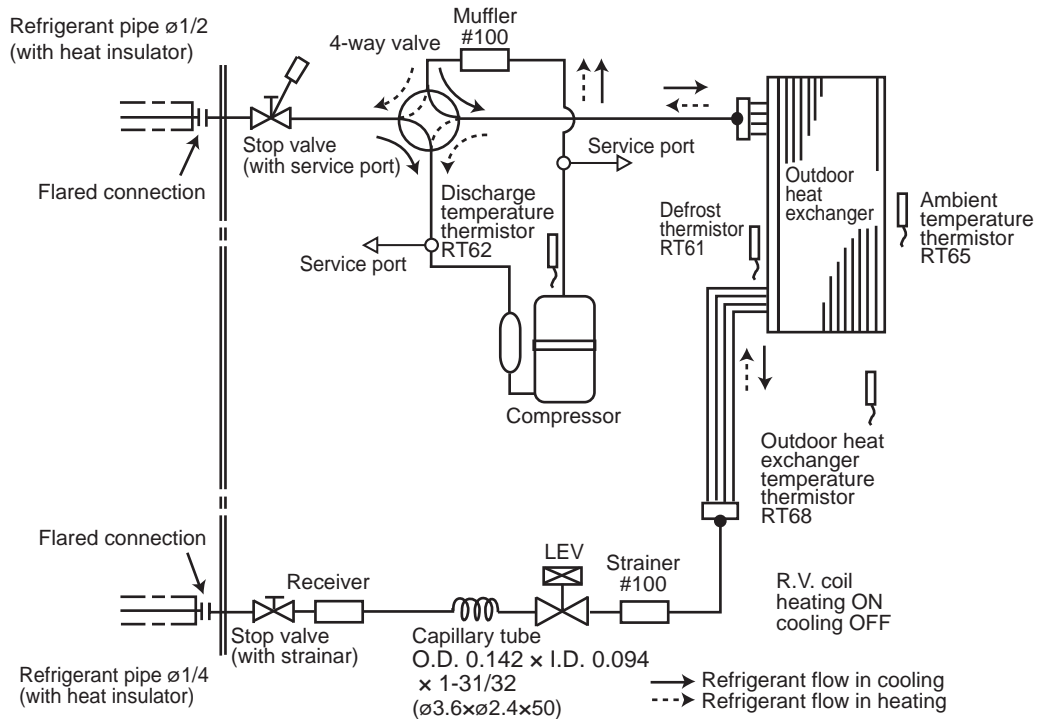
Unit: inch (mm)





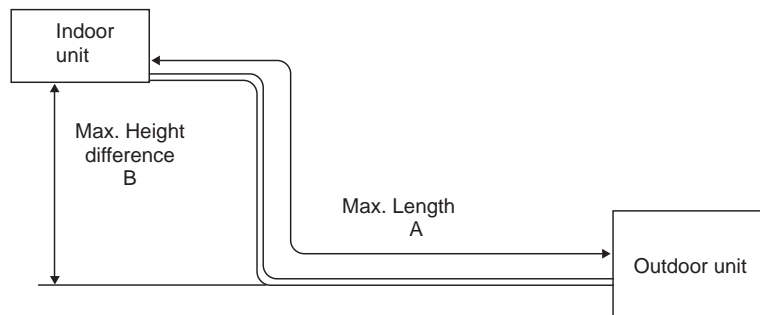
## SUZ-KA18NA

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
<b>SUZ-KA09/12/15NA</b>	65	40	3/8 ( <b>KA09/12</b> ) 1/2 ( <b>KA15</b> )	1/4
<b>SUZ-KA18NA</b>	100	50	1/2	



## ADDITIONAL REFRIGERANT CHARGE (R410A: oz.)

Refrigerant piping exceeding 25 ft. requires additional refrigerant charge according to the calculation.

Model	Outdoor unit precharged	Refrigerant piping length (one way): ft.					
		25	30	40	50	60	65
SUZ-KA09NA	1 lb. 16 oz.	0	1.62	4.86	8.10	11.34	12.96
SUZ-KA12NA	2 lb. 9 oz.						
SUZ-KA15NA							

Calculation: X oz. = 1.62/5 oz. / ft. × (Refrigerant piping length (ft.) - 25)

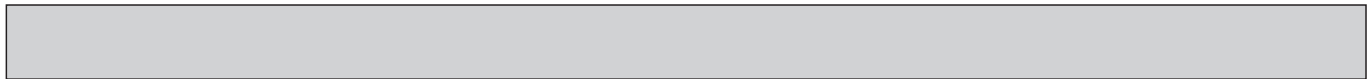
Model	Outdoor unit precharged	Refrigerant piping length (one way): ft.								
		25	30	40	50	60	70	80	90	100
<b>SUZ-KA18NA</b>	3 lb. 16 oz.	0	1.08	3.24	5.40	7.56	9.72	11.88	14.04	16.20

Calculation: X oz. = 1.08/5 oz. / ft. × (Refrigerant piping length (ft.) - 25)

**NOTE:** Refrigerant piping exceeding 25 ft. requires additional refrigerant charge according to the calculation.

## 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	8100	10900	11500	13600	14100	18000	17200	21600	
	SHF	-	0.80	—	0.76	—	0.80	—	0.79	—	
	Input	kW	0.670	1.020	0.920	1.140	1.170	1.500	1.380	1.700	
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	0.51	0.39	0.57	0.46	0.74	0.63	0.74	0.63	
	Outdoor unit		SUZ-KA09NA		SUZ-KA12NA		SUZ-KA15NA		SUZ-KA18NA		
	Power supply (V, phase, Hz)		230, 1, 60								
	Input	kW	0.61	0.98	0.85	1.09	1.08	1.43	1.39	1.63	
	Current	A	2.80	4.33	3.64	4.65	4.45	5.96	5.38	6.91	
Refrigerant circuit	Condensing pressure	PSIG	398	448	387	386	399	389	373	397	
	Suction pressure	PSIG	135	97	135	104	133	96	142	100	
	Discharge temperature	°F	148	170	162	165	159	182	150	172	
	Condensing temperature	°F	116	125	114	114	116	115	112	116	
	Suction temperature	°F	49	33	55	35	46	41	52	33	
	Ref. pipe length	ft.	25								
Indoor unit	Refrigerant charge (R410A)	-	1 lb. 16 oz.		2 lb. 9 oz.				3 lb. 16 oz.		
	Intake air temperature	DB	°F	80	70	80	70	80	70	80	70
		WB	°F	67	60	67	60	67	60	67	60
Outdoor unit	Discharge air temperature	DB	°F	61	102	58	103	60	102	60	101
	Intake air temperature	DB	°F	95	47	95	47	95	47	95	47
		WB	°F	—	43	—	43	—	43	—	43



Representative matching			SLZ-KA09NA		SLZ-KA12NA		SLZ-KA15NA		
Item		Unit	Cooling	Heating	Cooling	Heating	Cooling	Heating	
Total	Capacity	Btu/h	8400	10900	11100	13600	15000	18000	
	SHF	-	0.84	—	0.77	—	0.67	—	
	Input	kW	0.700	0.930	0.920	1.180	1.460	1.950	
Electrical circuit	Indoor unit		SLZ-KA09NA		SLZ-KA12NA		SLZ-KA15NA		
	Power supply (V, Phase, Hz)		230, 1, 60						
	Input	kW	0.08	0.08	0.09	0.09	0.09	0.09	
	Current	A	0.35	0.35	0.40	0.40	0.65	0.65	
	Outdoor unit		SUZ-KA09NA		SUZ-KA12NA		SUZ-KA15NA		
	Power supply (V, phase, Hz)		230, 1, 60						
	Input	kW	0.63	0.86	0.84	1.10	1.38	1.87	
	Current	A	3.12	4.02	3.82	4.93	5.98	8.10	
Refrigerant circuit	Condensing pressure	PSIG	401	406	379	418	422	475	
	Suction pressure	PSIG	147	104	139	106	128	98	
	Discharge temperature	°F	154	169	152	173	174	188	
	Condensing temperature	°F	116	117	111	118	118	128	
	Suction temperature	°F	52	34	51	36	51	31	
	Ref. pipe length	ft.	25						
	Refrigerant charge (R410A)	-	1 lb. 16 oz.		2 lb. 9 oz.				
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	62	97	60	101	57	111
Outdoor unit	Intake air temperature	DB	°F	95	47	95	47	95	47
		WB	°F	—	43	—	43	—	43

SUZ-KA09NA

SUZ-KA12NA

SUZ-KA15NA

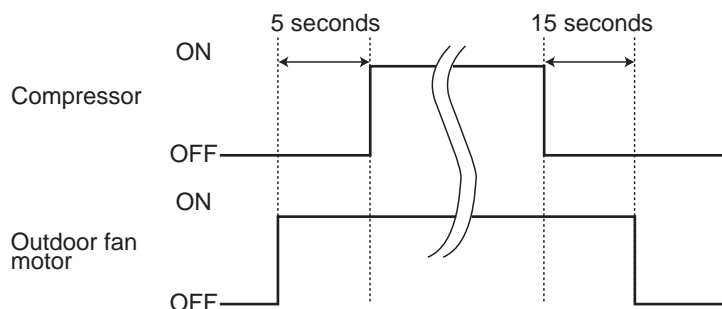
SUZ-KA18NA

**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.

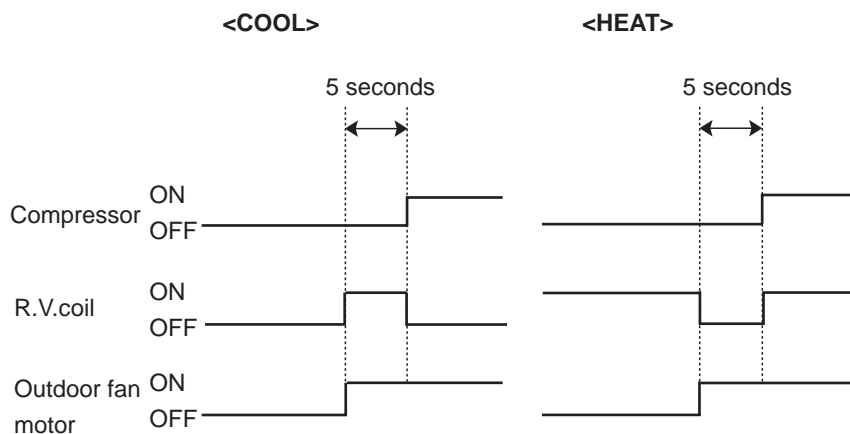
**8-2. R.V. COIL CONTROL**

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	○	○	○		

SUZ-KA09NA

SUZ-KA12NA

SUZ-KA15NA

SUZ-KA18NA

**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 10-6-1.)

Jumper		Defrost finish temperature	
		SUZ-KA09/12/15	SUZ-KA18
JS	Soldered (Initial setting)	41°F (5°C)	48°F (9°C)
	None (Cut)	50°F (10°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 10-6.1)

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

SUZ-KA09NA

SUZ-KA12NA

SUZ-KA15NA

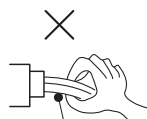
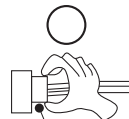
SUZ-KA18NA

**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.

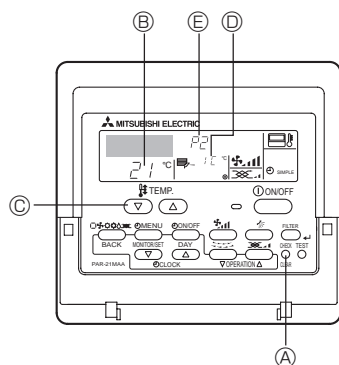
**Lead wiring****Housing point****3. Troubleshooting procedure**

- 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. and 10-3.

## 10-2. FAILURE MODE RECALL FUNCTION

As this air conditioner has a function to memorize all the failures that had happened, the latest failure detail can be recalled by following the procedures below.

### 10-2-1. Wired remote controller



- Ⓐ CHECK button
- Ⓑ Refrigerant address
- Ⓒ TEMP. button
- Ⓓ IC: Indoor unit  
OC: Outdoor unit
- Ⓔ Check code

- ① Turn on the power.
- ② Press the [CHECK] button twice.
- ③ Set refrigerant address with [TEMP] button if system control is used.
- ④ Press the [ON/OFF] button to stop the self-check.

### 10-2-2. Failure mode table (Wired remote controller)

[Output pattern A] Errors detected by indoor unit

Wired remote controller		
Check code	Symptom	Remark
P1	Intake sensor error	
P2	Pipe (TH2) sensor error	
P9	Pipe (TH5) sensor error	
E6,E7	Indoor/outdoor unit communication error	
P4	Drain sensor error/Float switch connector open	
P5	Drain pump error	
P6	Freezing/Overheating protection operation	
EE	Communication error between indoor and outdoor units	
P8	Pipe temperature error	
E4, E5	Remote controller signal receiving error	
Fb	Indoor unit control system error (memory error, etc.)	
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.)

Wired remote controller		
Check code	Symptom	Remark
E9	Indoor/outdoor unit communication error (Transmitting error) (Outdoor unit)	For details, check the LED display of the outdoor controller board.
UP	Compressor overcurrent interruption	
U3,U4	Open/short of outdoor unit thermistors	
UF	Compressor overcurrent interruption (When compressor locked)	
U2	Abnormal high discharging temperature/insufficient refrigerant	
U1,Ud	Abnormal high pressure/Overheating protection operation	
U5	Abnormal temperature of heat sink	
U8	Outdoor unit fan protection stop	
U6	Compressor overcurrent interruption/Abnormal of power module	
U7	Abnormality of super heat due to low discharge temperature	
U9,UH	Abnormality such as overvoltage or voltage shortage and abnormal synchronous signal to main circuit/Current sensor error	
Others	Other errors	

- On wired remote controller  
Check code displayed in the LCD.

### 10-2-3. Outdoor unit failure mode table

Abnormal point (Failure mode / protection)	LED indication (Outdoor P.C. board)	Condition	Remedy	Indoor/ outdoor unit failure mode recall function	Outdoor unit failure mode recall function
None (Normal)	—	—	—	—	—
Outdoor power system	—	Overcurrent protection stop is continuously performed 3 times within 1 minute after the compressor gets started.	<ul style="list-style-type: none"> <li>•Reconnect connectors.</li> <li>•Refer to 10-5. Ⓐ "How to check inverter/compressor".</li> <li>•Check stop valve.</li> </ul>	○	○
Discharge temperature thermistor	1-time flash every 2.5 seconds	Thermistor shorts or opens during compressor running.	<ul style="list-style-type: none"> <li>•Refer to 10-5. Ⓒ "Check of outdoor thermistors". Defective outdoor thermistors can be identified by checking the blinking pattern of LED.</li> </ul>	○	○
Defrost thermistor					
Fin temperature thermistor	3-time flash 2.5 seconds OFF				
P.C. board temperature thermistor	4-time flash 2.5 seconds OFF				
Ambient temperature thermistor	2-time flash 2.5 seconds OFF				
Overcurrent	11-time flash 2.5 seconds OFF	Large current flows into intelligent power module.	<ul style="list-style-type: none"> <li>•Reconnect compressor connector.</li> <li>•Refer to 10-5. Ⓐ "How to check inverter/compressor".</li> <li>•Check stop valve.</li> </ul>	—	○
Compressor synchronous abnormality (Compressor start-up failure protection)	12-time flash 2.5 seconds OFF	Waveform of compressor current is distorted.	<ul style="list-style-type: none"> <li>•Reconnect compressor connector.</li> <li>•Refer to 10-5. Ⓐ "How to check inverter/compressor".</li> </ul>	—	○
Discharge temperature	—	Temperature of discharge temperature thermistor exceeds 241°F (116°C), compressor stops. Compressor can restart if discharge temperature thermistor reads 212°F (100°C) or less 3 minutes later.	<ul style="list-style-type: none"> <li>•Check refrigerant circuit and refrigerant amount.</li> <li>•Refer to 10-5. Ⓒ "Check of LEV".</li> </ul>	—	○
High pressure	—	Temperature of indoor coil thermistor exceeds 158°F (70°C) in HEAT mode. Temperature of outdoor heat exchanger temperature thermistor exceeds 158°F (70°C) in COOL mode.	<ul style="list-style-type: none"> <li>•Check refrigerant circuit and refrigerant amount.</li> <li>•Check stop valve.</li> </ul>	—	○
Fin temperature/ P.C. board temperature	7-time flash 2.5 seconds OFF	Temperature of fin temperature thermistor on the inverter P.C. board exceeds 167 ~ 176°F (75 ~ 80°C), or temperature of P.C. board temperature thermistor on the inverter P.C. board exceeds 158 ~ 167°F (70 ~ 75°C).	<ul style="list-style-type: none"> <li>•Check around outdoor unit.</li> <li>•Check outdoor unit air passage.</li> <li>•Refer to 10-5. Ⓓ "Check of outdoor fan motor".</li> </ul>	—	○
Outdoor fan motor	—	Outdoor fan has stopped 3 times in a row within 30 seconds after outdoor fan start-up.	<ul style="list-style-type: none"> <li>•Refer to 10-5. Ⓓ "Check of outdoor fan motor". Refer to 10-5. Ⓓ "Check of inverter P.C. board".</li> </ul>	—	○
Nonvolatile memory data	5-time flash 2.5 seconds OFF	Nonvolatile memory data cannot be read properly.	<ul style="list-style-type: none"> <li>•Replace the inverter P.C. board.</li> </ul>	○	○
Discharge temperature	—	Temperature of discharge temperature thermistor has been 122°F (50°C) or less for 20 minutes.	<ul style="list-style-type: none"> <li>•Refer to 10-5. Ⓒ "Check of LEV".</li> <li>•Check refrigerant circuit and refrigerant amount.</li> </ul>	—	○
DC voltage	8-time flash 2.5 seconds OFF	DC voltage of inverter cannot be detected normally.	<ul style="list-style-type: none"> <li>•Refer to 10-5. Ⓐ "How to check inverter/compressor".</li> </ul>	—	○
Each phase current of compressor	9-time flash 2.5 seconds OFF	Each phase current of compressor cannot be detected normally.			
Overcurrent Compressor open-phase	10-time flash 2.5 seconds OFF	Large current flows into intelligent power module (IPM). The open-phase operation of compressor is detected. The interphase short out occurs in the output of the intelligent power module (IPM). The compressor winding shorts out.	<ul style="list-style-type: none"> <li>•Reconnect compressor connector.</li> <li>•Refer to 10-5. Ⓐ "How to check inverter/compressor".</li> </ul>	—	○
Stop valve (Closed valve)	14-time flash 2.5 seconds OFF	Closed valve is detected by compressor current.	<ul style="list-style-type: none"> <li>•Check stop valve</li> </ul>	○	○

**NOTE:** Blinking patterns of this mode differ from the ones of Troubleshooting check table (10-3.).



## 10-3. TROUBLESHOOTING CHECK TABLE

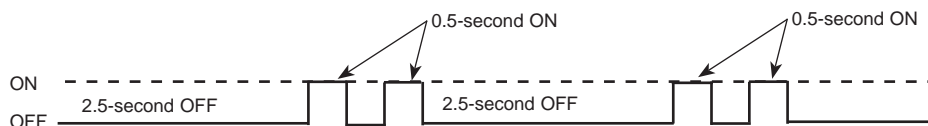
No.	Symptom	LED indication	Abnormal point/Condition	Condition	Remedy
1	Outdoor unit does not operate.	1-time flash every 2.5 seconds	Outdoor power system	Overcurrent protection stop is continuously performed 3 times within 1 minute after the compressor gets started, or failure of re-start of compressor has repeated 24 times.	•Reconnect connector of compressor. •Refer to 10-5.⑤ "How to check inverter/compressor". •Check stop valve.
2			Outdoor thermistors	Discharge temperature thermistor, fin temperature thermistor, defrost thermistor, outdoor heat exchanger temperature thermistor, P.C. board temperature thermistor or ambient temperature thermistor shorts or opens during compressor running.	•Refer to 10-5.⑥ "Check of outdoor thermistors".
3			Outdoor control system	Nonvolatile memory data cannot be read properly.	•Replace inverter P.C. board.
4		6-time flash 2.5 seconds OFF	Serial signal	The communication fails between the indoor and outdoor unit for 3 minutes.	•Refer to 10-5.⑥ "How to check miswiring and serial signal error."
5		11-time flash 2.5 seconds OFF	Stop valve/Closed valve	Closed valve is detected by compressor current.	•Check stop valve.
6		14-time flash 2.5 seconds OFF	Outdoor unit (Other abnormality)	Outdoor unit is defective.	•Refer to 10-2.2. "Flow chart of the detailed outdoor unit failure mode recall function".
7	'Outdoor unit stops and re-starts 3 minutes later' is repeated.	2-time flash 2.5 seconds OFF	Overcurrent protection	Large current flows into intelligent power module. ※ When overcurrent protection occurs within 10 seconds after compressor starts, compressor restarts after 15 seconds.	•Reconnect connector of compressor. •Refer to 10-5.⑤ "How to check inverter/compressor". •Check stop valve.
8		3-time flash 2.5 seconds OFF	Discharge temperature overheat protection	Temperature of discharge temperature thermistor exceeds 241°F (116°C), compressor stops. Compressor can restart if discharge temperature thermistor reads 212°F (100°C) or less 3 minutes later.	•Check refrigerant circuit and refrigerant amount. •Refer to 10-5.⑥ "Check of LEV".
9		4-time flash 2.5 seconds OFF	Fin temperature /P.C. board temperature thermistor overheat protection	Temperature of fin temperature thermistor on the heat sink exceeds 167 ~ 176°F (75 ~ 80°C) or temperature of P.C. board temperature thermistor on the inverter P.C. board exceeds 158 ~ 167°F (70 ~ 75°C).	•Check around outdoor unit. •Check outdoor unit air passage. •Refer to 10-5.① "Check of outdoor fan motor".
10		5-time flash 2.5 seconds OFF	High pressure protection	Temperature of indoor coil thermistor exceeds 158°F (70°C) in HEAT mode. Temperature of outdoor heat exchanger temperature thermistor exceeds 158°F (70°C) in COOL mode.	•Check refrigerant circuit and refrigerant amount. •Check stop valve.
11		8-time flash 2.5 seconds OFF	Compressor synchronous abnormality	The waveform of compressor current is distorted.	•Reconnect connector of compressor. •Refer to 10-5.⑤ "How to check inverter/compressor".
12		10-time flash 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 10-5.① "Check of outdoor fan motor." •Refer to 10-5.⑥ "Check of inverter P.C. board."
13		12-time flash 2.5 seconds OFF	Each phase current of compressor	Each phase current of compressor cannot be detected normally.	•Refer to 10-5.⑤ "How to check inverter/compressor".
14		13-time flash 2.5 seconds OFF	DC voltage	DC voltage of inverter cannot be detected normally.	•Refer to 10-5.⑤ "How to check inverter/compressor".
15		1-time flash 2.5 seconds OFF	Frequency drop by current protection	Current from power outlet is nearing Max. fuse size.	The unit is normal, but check the following.
16		3-time flash 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.	•Check if indoor filters are clogged. •Check if refrigerant is short.
17	Outdoor unit operates.	3-time flash 2.5 seconds OFF	Frequency drop by defrosting in COOL mode	Indoor coil thermistor reads 46°F (8°C) or less in COOL mode, compressor frequency lowers.	•Check if indoor/outdoor unit air circulation is short cycled.
18		4-time flash 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 10-5.⑥ "Check of LEV". •Refer to 10-5.⑥ "Check of outdoor thermistors".
19		7-time flash 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 10-5.⑥ "Check of LEV". •Check refrigerant circuit and refrigerant amount.
20	Outdoor unit operates.	8-time flash 2.5 seconds OFF	PAM protection PAM: Pulse Amplitude Modulation	The overcurrent flows into IGBT (Insulated Gate Bipolar 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.
20		9-time flash 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 10-5.⑤ "How to check inverter/compressor".

**NOTE:** 1. The location of LED is illustrated at the right figure. Refer to 10-6.1.

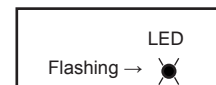
2. LED is lighted during normal operation.

The flashing frequency shows the number of times the LED blinks after every 2.5-second OFF.

(Example) When the flashing frequency is "2".



Inverter P.C. board (Parts side)



## 10-4. TROUBLE CRITERION OF MAIN PARTS

SUZ-KA09NA

SUZ-KA12NA

SUZ-KA15NA

SUZ-KA18NA

Part name	Check method and criterion	Figure																				
Defrost thermistor (RT61)  Fin temperature thermistor (RT64)  Ambient temperature thermistor (RT65)  Outdoor heat exchanger temperature thermistor (RT68)	Measure the resistance with a tester.  Refer to 10-6. “Test point diagram and voltage”, 1. “Inverter P.C. board”, for the chart of thermistor.																					
Discharge temperature thermistor (RT62)	Measure the resistance with a tester. Before measurement, hold the thermistor with your hands to warm it up.  Refer to 10-6. “Test point diagram and voltage”, 1. “Inverter P.C. board”, for the chart of thermistor.																					
Compressor	Measure the resistance between terminals with a tester. (Temperature: 14 ~ 104 °F (-10 ~ 40 °C)) <table border="1"><thead><tr><th></th><th colspan="3">Normal (Ω)</th></tr><tr><th></th><th>KA09</th><th>KA12</th><th>KA15/18</th></tr></thead><tbody><tr><td>U-V</td><td></td><td></td><td></td></tr><tr><td>U-W</td><td>1.36 ~ 1.93</td><td>1.52 ~ 2.17</td><td>0.78 ~ 1.11</td></tr><tr><td>V-W</td><td></td><td></td><td></td></tr></tbody></table>		Normal (Ω)				KA09	KA12	KA15/18	U-V				U-W	1.36 ~ 1.93	1.52 ~ 2.17	0.78 ~ 1.11	V-W				
	Normal (Ω)																					
	KA09	KA12	KA15/18																			
U-V																						
U-W	1.36 ~ 1.93	1.52 ~ 2.17	0.78 ~ 1.11																			
V-W																						
Outdoor fan motor	Measure the resistance between lead wires with a tester. (Temperature: 14 ~ 104 °F (-10 ~ 40 °C)) <table border="1"><thead><tr><th rowspan="2">Color of lead wire</th><th colspan="2">Normal (Ω)</th></tr><tr><th>KA09/12/15</th><th>KA18</th></tr></thead><tbody><tr><td>RED – BLK</td><td rowspan="3">28 ~ 40</td><td rowspan="3">11 ~ 16</td></tr><tr><td>BLK – WHT</td></tr><tr><td>WHT – RED</td></tr></tbody></table>	Color of lead wire	Normal (Ω)		KA09/12/15	KA18	RED – BLK	28 ~ 40	11 ~ 16	BLK – WHT	WHT – RED											
Color of lead wire	Normal (Ω)																					
	KA09/12/15	KA18																				
RED – BLK	28 ~ 40	11 ~ 16																				
BLK – WHT																						
WHT – RED																						
R. V. coil (21S4)	Measure the resistance with a tester. (Temperature: 14 ~ 104 °F (-10 ~ 40 °C)) <table border="1"><thead><tr><th>Normal (kΩ)</th></tr></thead><tbody><tr><td>0.97 ~ 1.38</td></tr></tbody></table>	Normal (kΩ)	0.97 ~ 1.38																			
Normal (kΩ)																						
0.97 ~ 1.38																						
Expansion valve coil (LEV)	Measure the resistance with a tester. (Temperature: 14 ~ 104 °F (-10 ~ 40 °C)) <table border="1"><thead><tr><th>Color of lead wire</th><th>Normal (Ω)</th></tr></thead><tbody><tr><td>WHT – RED</td><td rowspan="5">37 ~ 54</td></tr><tr><td>RED – ORN</td></tr><tr><td>YLW – BRN</td></tr><tr><td>BRN – BLU</td></tr><tr><td></td></tr></tbody></table>	Color of lead wire	Normal (Ω)	WHT – RED	37 ~ 54	RED – ORN	YLW – BRN	BRN – BLU														
Color of lead wire	Normal (Ω)																					
WHT – RED	37 ~ 54																					
RED – ORN																						
YLW – BRN																						
BRN – BLU																						

## 10-5. TROUBLESHOOTING FLOW

### A How to check inverter/compressor

Disconnect the connector (CN61) between compressor and the intelligent power module (IPM).

Check the voltage between terminals.

.....See 10-5.ⓑ “Check of open phase”.

Are the voltages balanced?

No

Replace the inverter P.C. board.

Yes

Check the compressor.

.....See 10-5.ⓒ “Check of compressor”.

### B 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

BLK (U) - WHT (V)

BLK (U) - RED (W)

WHT(V) - RED (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 flashes 9 times. (Refer to 10-6.1.)

### C Check of compressor

Refer to 10-5.ⓐ “Check of compressor winding”.

Is the compressor normal?

No

Replace the compressor.

Yes

Refer to 10-5.ⓑ “Check of compressor operation time”.

Does the compressor operate continuously?

No

Refer to 10-5.ⓐ “Check of compressor start failure”.

Yes

OK.

## D Check of compressor winding

- Disconnect the connector (CN61) between the compressor and intelligent power module, and measure the resistance between the compressor terminals.

<<Measurement point>>

at 3 points

BLK - WHT

BLK - RED

WHT - RED

※ Measure the resistance between the lead wires at 3 points.

<<Judgement>>

Refer to 10-4.

0[Ω] ..... Abnormal [short]

Infinite [Ω] ..... Abnormal [open]

**NOTE:** Be sure to zero the ohmmeter before measurement.

## E 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

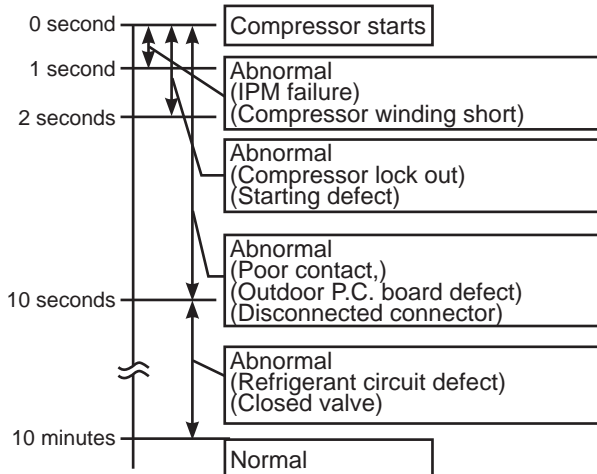
twice on the remote controller. (Test run mode)

(TEST RUN OPERATION: Refer to 10-5 ⑤.)

<<Measurement>>

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

<<Judgement>>



## F Check of compressor start failure

Confirm that 1~4 is normal.

- Electrical circuit check

1. Contact of the compressor connector (including CN61)

2. Output voltage of inverter P.C. board and balance of them (See 10-5.⑤)

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

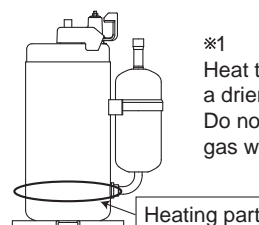
After the compressor is heated with a drier, does the compressor start? ※1

No

Replace the compressor.

Yes

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

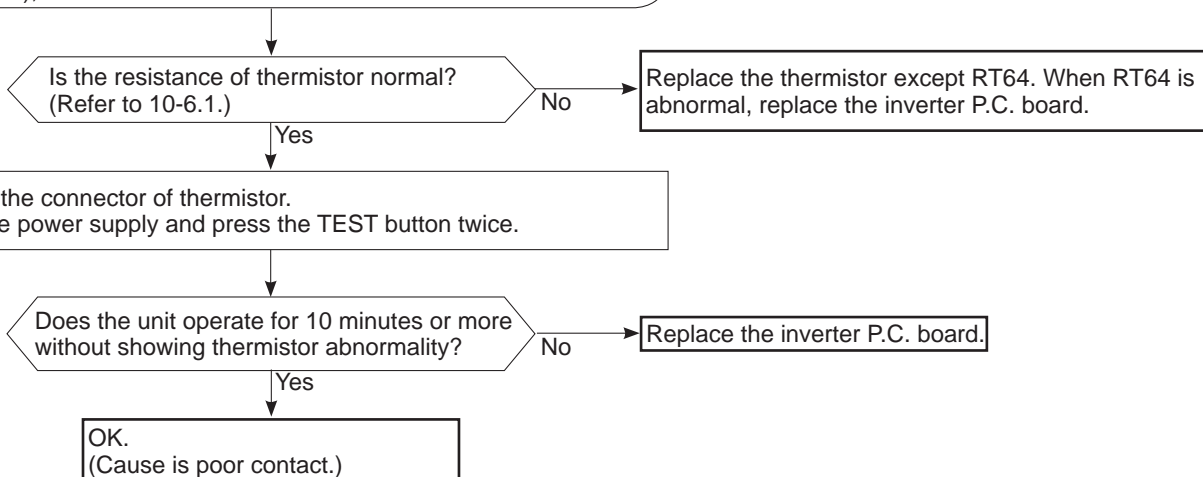


※1

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

## G Check of outdoor thermistors

Disconnect the connector of thermistor in the outdoor P.C. board (see below table), and measure the resistance of thermistor.



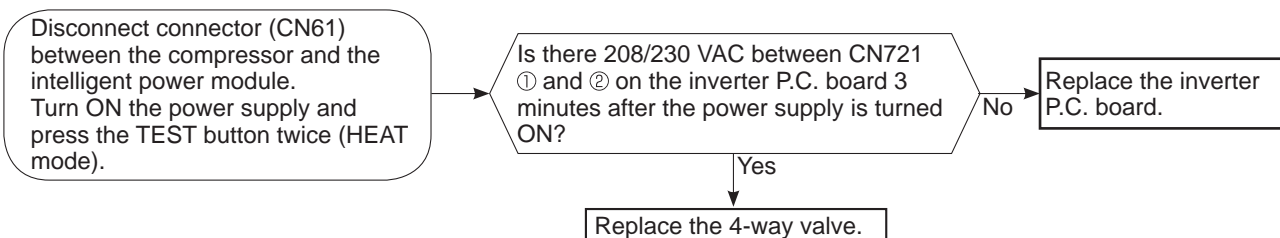
Thermistor	Symbol	Connector, Pin No.	Board
Defrost	RT61	Between CN641 pin1 and pin2	Inverter P.C. board
Discharge temperature	RT62	Between CN641 pin3 and pin4	
Fin temperature	RT64	Between CN642 pin1 and pin2	
Ambient temperature	RT65	Between CN643 pin1 and pin2	
Outdoor heat exchanger temperature	RT68	Between CN644 pin1 and pin3	

## H Check of R.V. coil

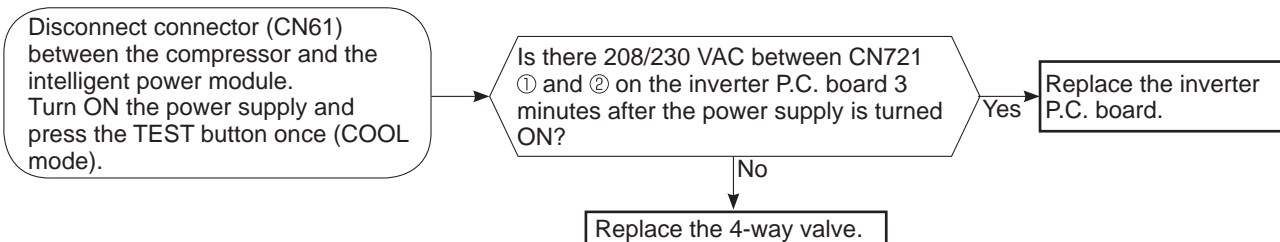
※ First of all, measure the resistance of R.V. coil to check if the coil is defective. Refer to 10-4.

※ 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 COOL mode even if it is set to HEAT mode.

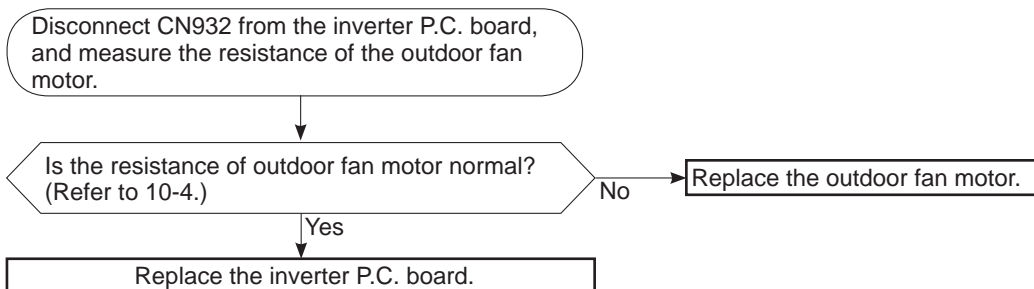


### Unit operates HEAT mode even if it is set to COOL mode.

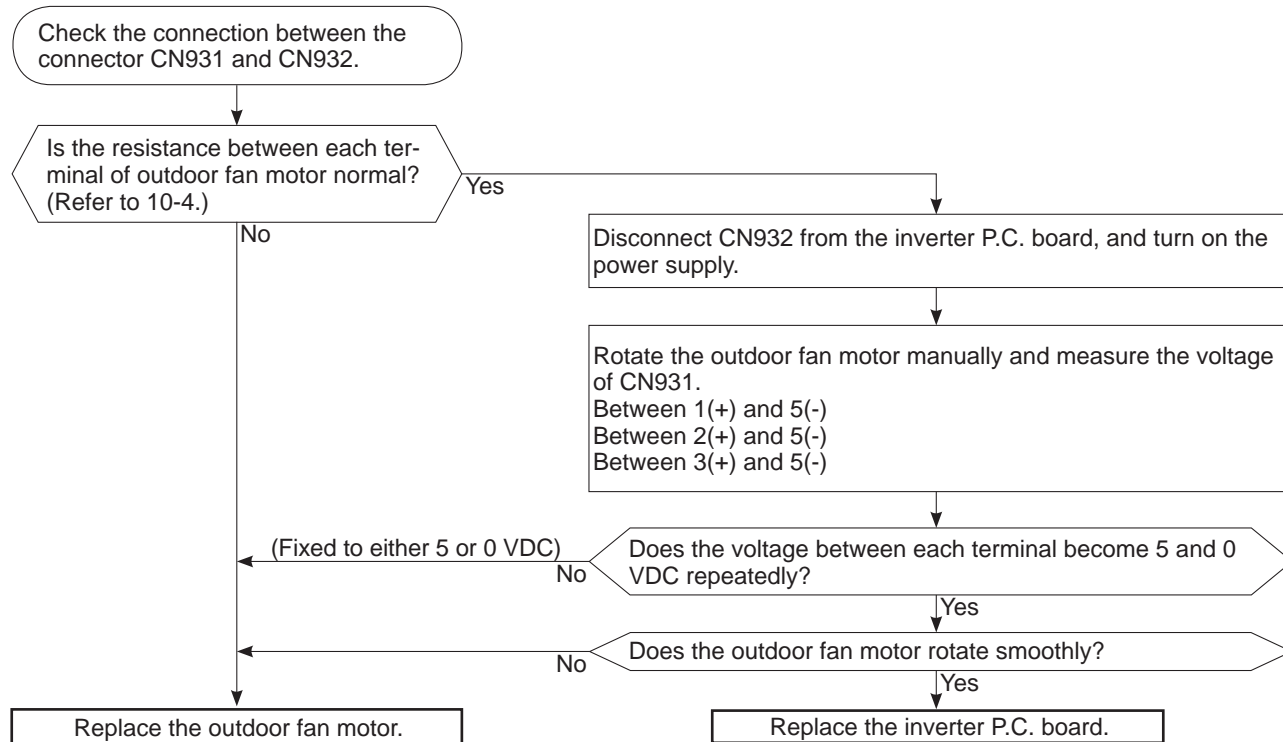


## ① Check of outdoor fan motor

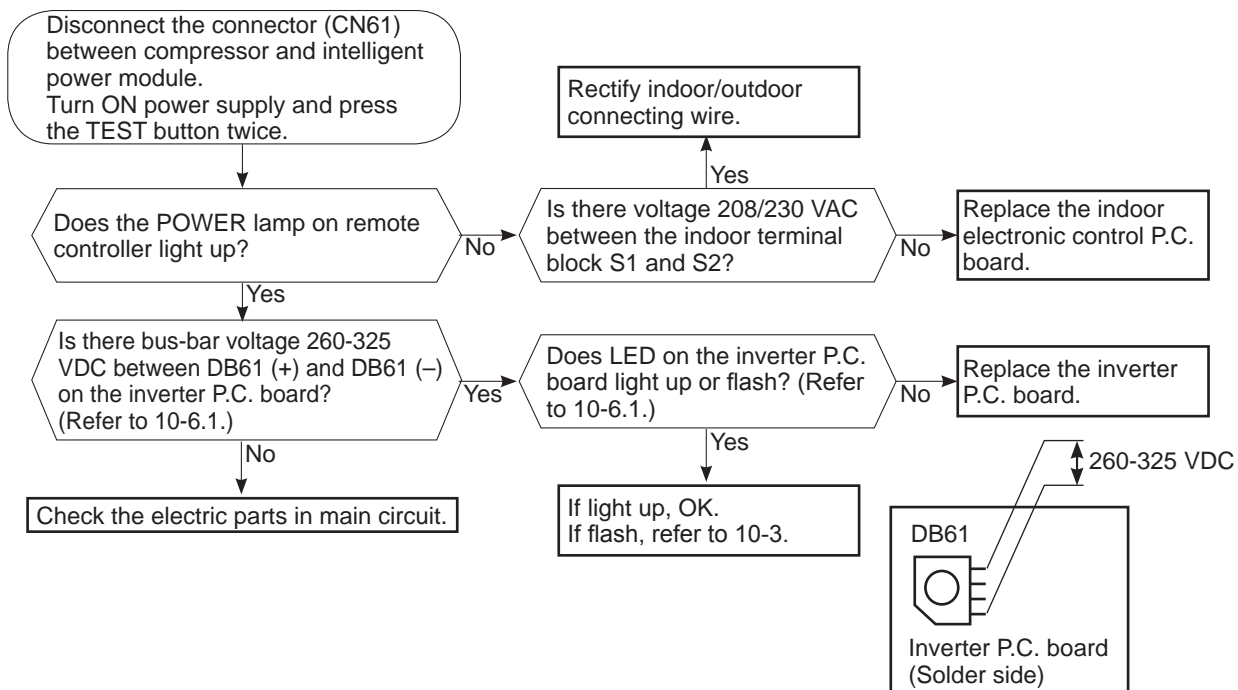
### SUZ-KA09/12/15NA



### SUZ-KA18NA



## J Check of power supply



## K Check of LEV (Expansion valve)

Self-check (Refer to 10-2-1.) start.

Expansion valve operates in full-opening direction.

Do you hear the expansion valve "click, click....."?  
Do you feel the expansion valve vibrate on touching it?

Yes

OK

\*1. Regardless of normal or abnormal condition, a short beep is emitted once the signal is received.

No

Is LEV coil properly fixed to the expansion valve?

No

Properly fix the LEV coil to the expansion valve.

Yes

Does the resistance of LEV coil have the characteristics? (Refer to 10-4.)

Yes

Measure each voltage between connector pins of CN724 on the inverter P.C. board.

1. Pin③(-) — Pin①(+)
2. Pin④(-) — Pin①(+)
3. Pin⑤(-) — Pin①(+)
4. Pin⑥(-) — Pin①(+)

Is there about 3 ~ 5 VAC between each?  
**NOTE** : Measure the voltage with an analog tester.

No

Replace the inverter P.C. board.

No

Replace the LEV coil.

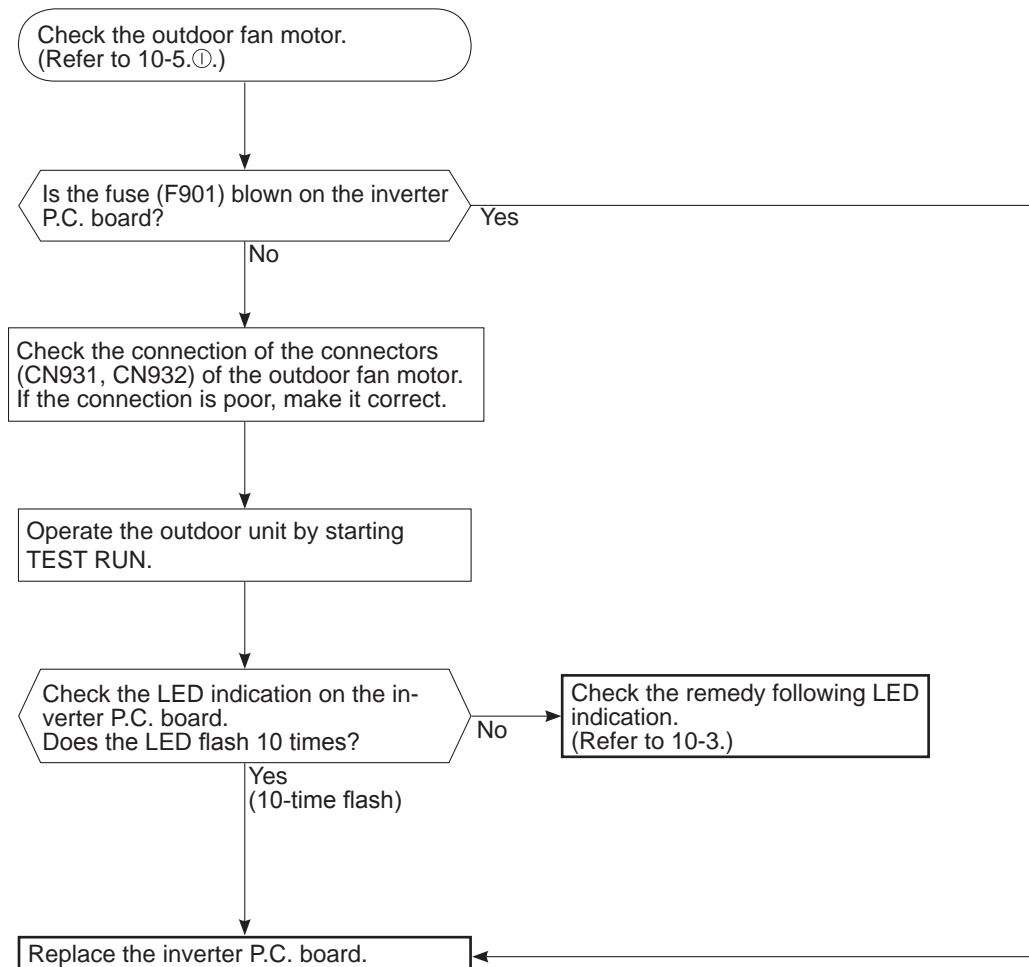
Yes

Replace the expansion valve.

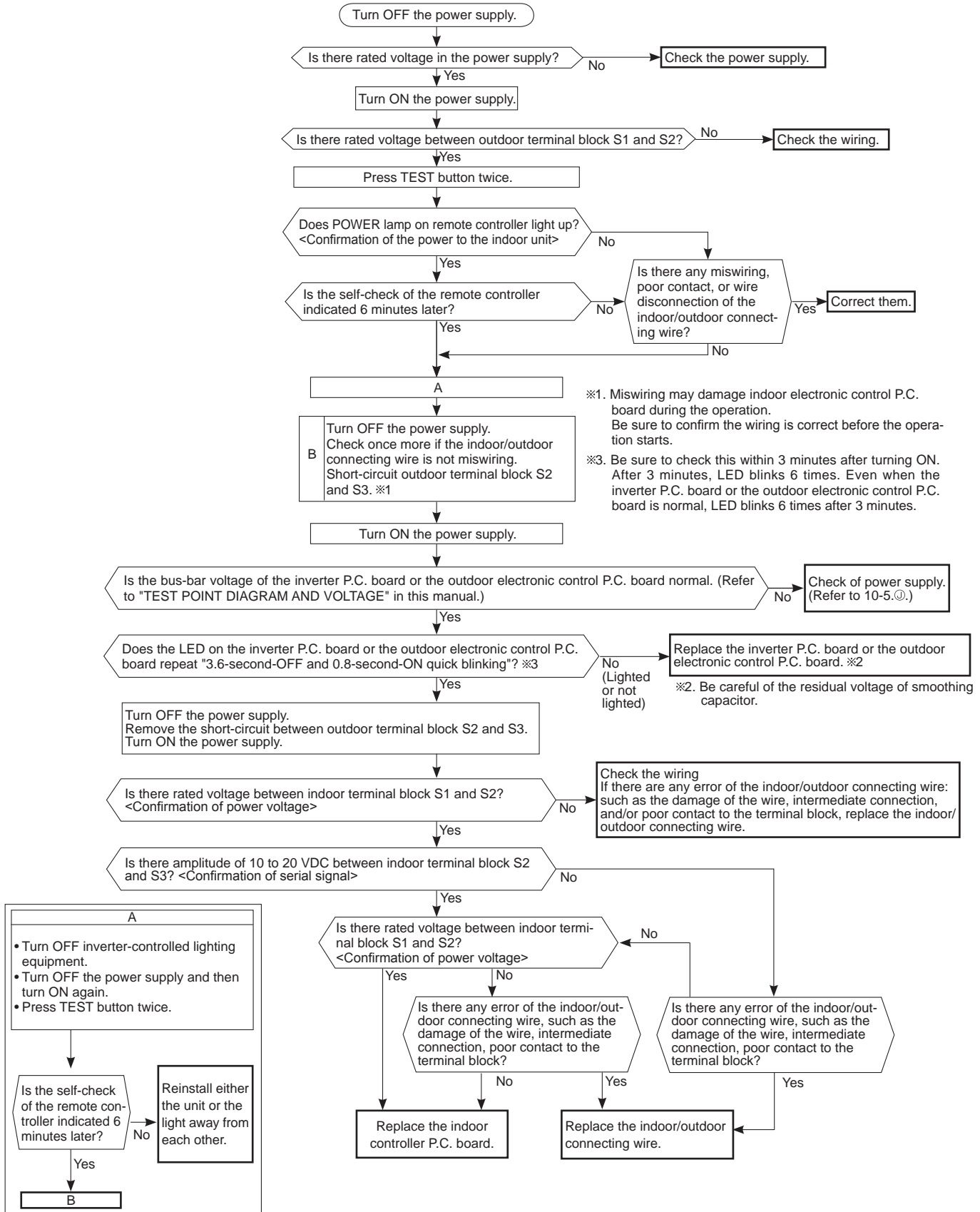
**NOTE** : After check of LEV, turn OFF the power supply and turn ON it again.



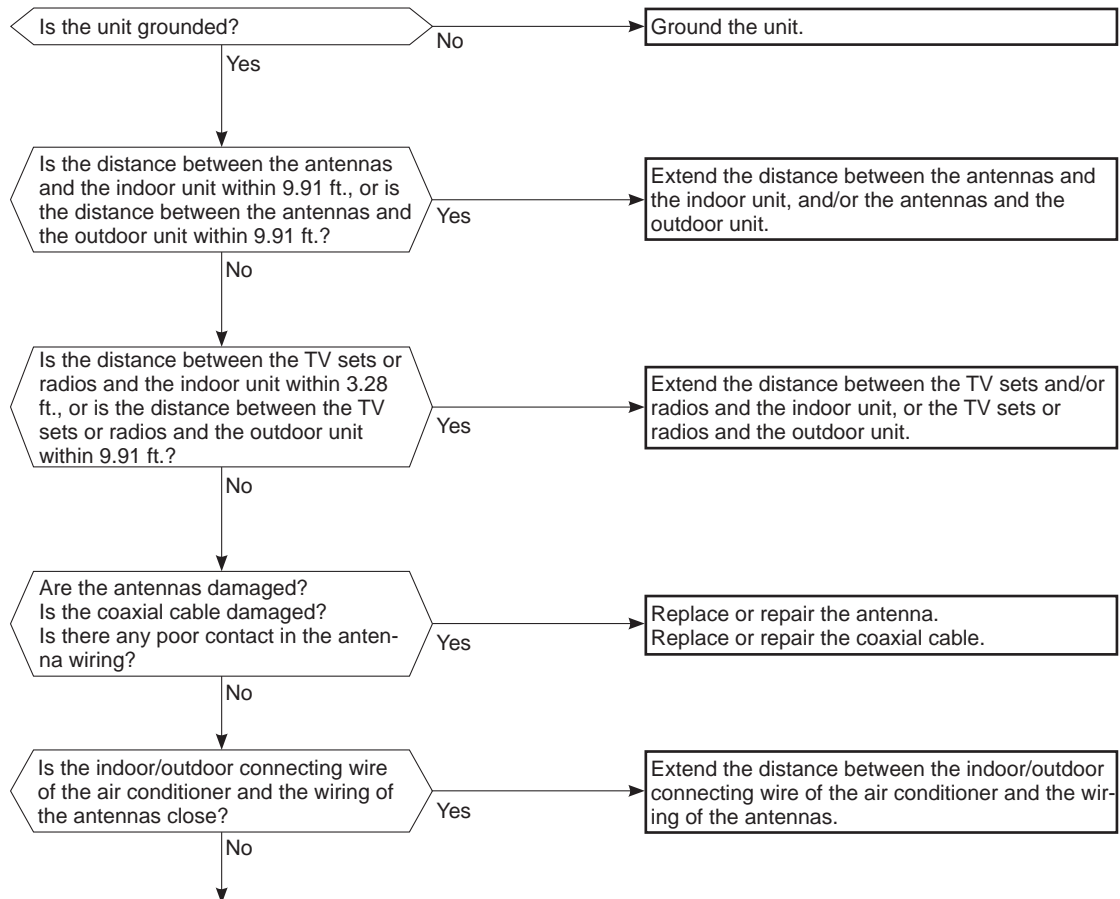
## L Check of inverter P.C. board



## M How to check miswiring and serial signal error



## N 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.

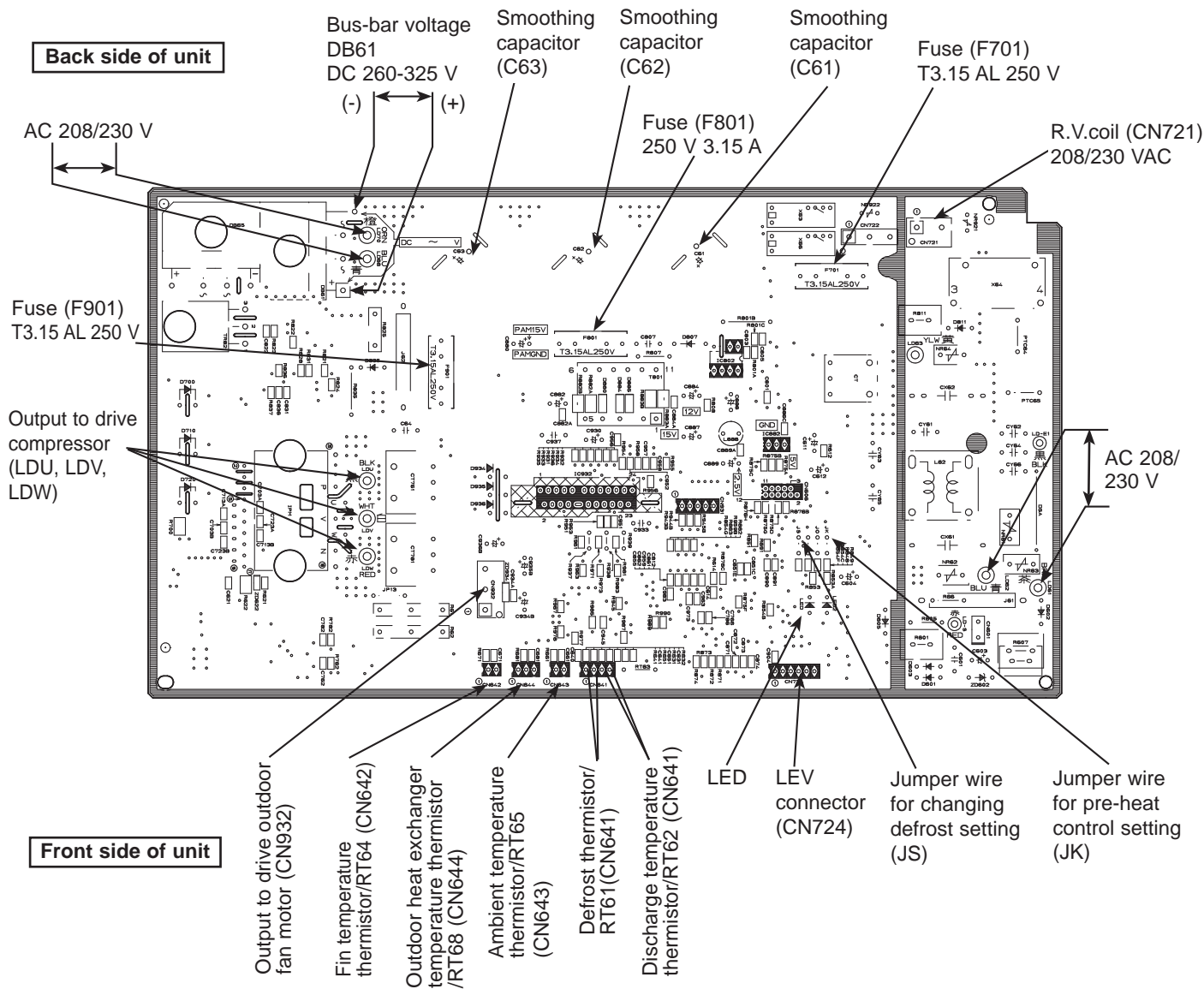
## 10-6. TEST POINT DIAGRAM AND VOLTAGE

### 1. Inverter P.C. board

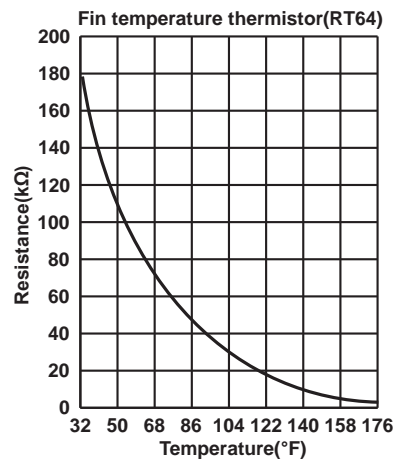
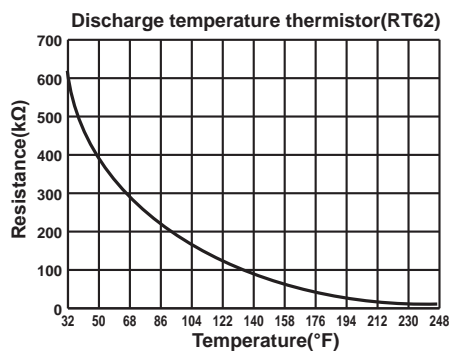
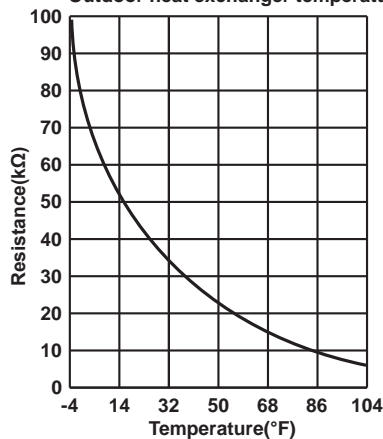
SUZ-KA09NA

SUZ-KA12NA

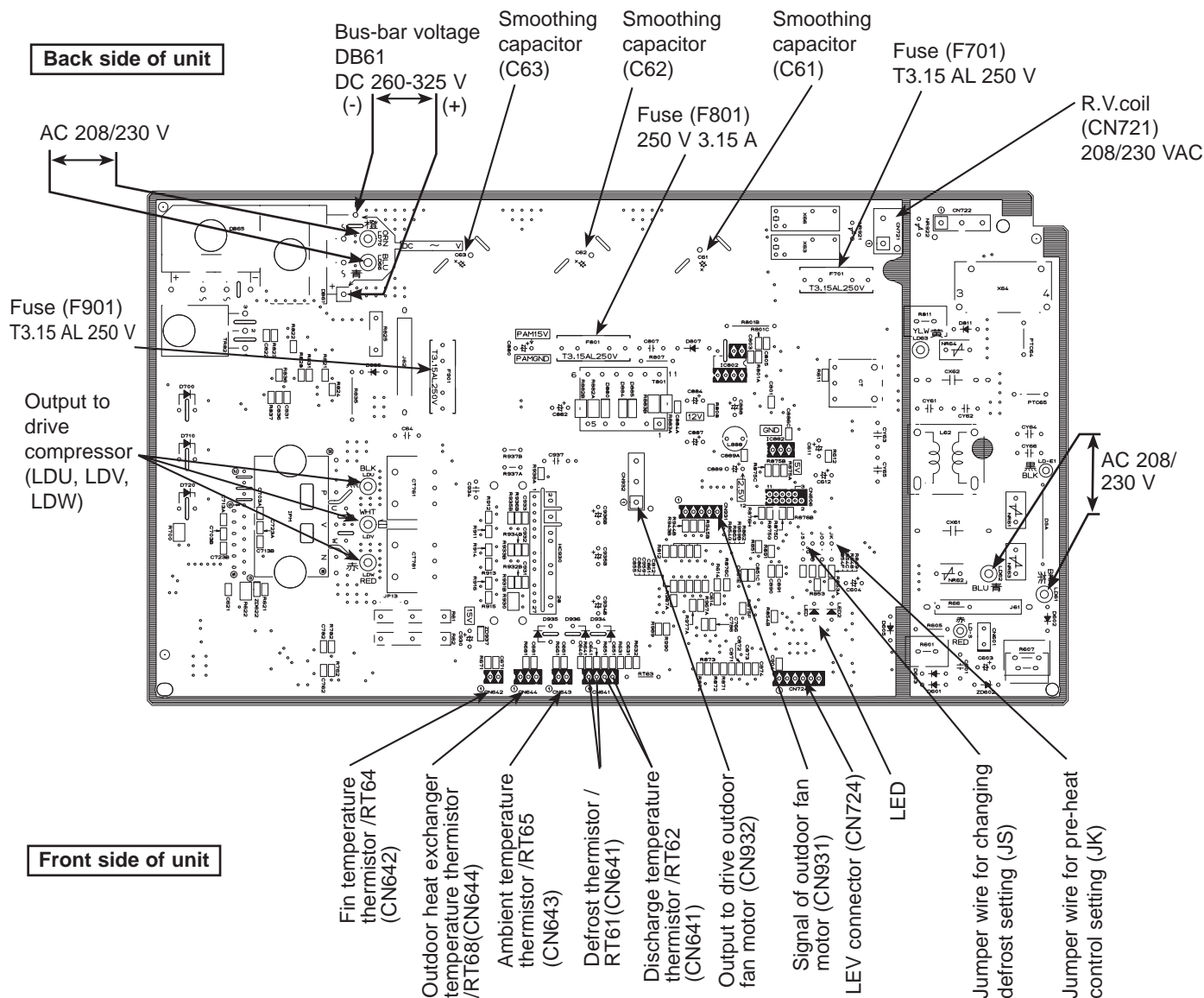
SUZ-KA15NA



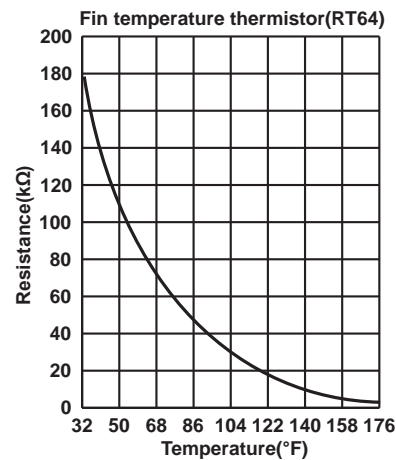
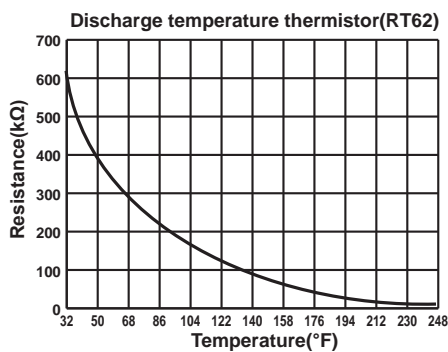
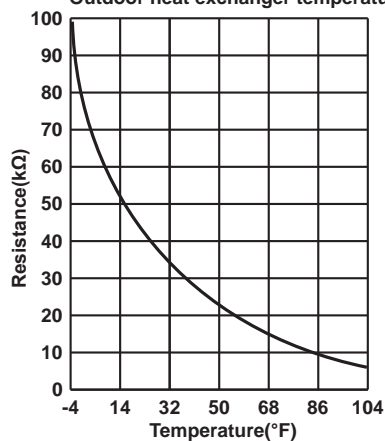
Defrost thermistor (RT61)  
Ambient temperature thermistor (RT65)  
Outdoor heat exchanger temperature thermistor (RT68)



# SUZ-KA18NA



Defrost thermistor (RT61)  
Ambient temperature thermistor (RT65)  
Outdoor heat exchanger temperature thermistor (RT68)



### 11-1. UNIT FUNCTION SETTING BY THE REMOTE CONTROLLER (S series only)

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	●		
	Data from main remote controller *1		2			
			3			
LOSSNAY connectivity	Not supported	03 (103)	1	●		
	Supported (indoor unit does 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°C [36°F] (Normal)	15 (115)	1	●		
	3°C [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.	Setting No.	● : Initial setting (Factory setting)		Check
				Ceiling concealed	Ceiling cassette	
				SEZ-KD-NA4	SLZ-KA-NA	
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	—		
		10 (110)	Refer to the table below	—		
Heater control *2	Set temp -4.5°F ON	23 (123)	1	●	●	
	Set temp -1.8°F ON		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 of SEZ-KD-NA4.

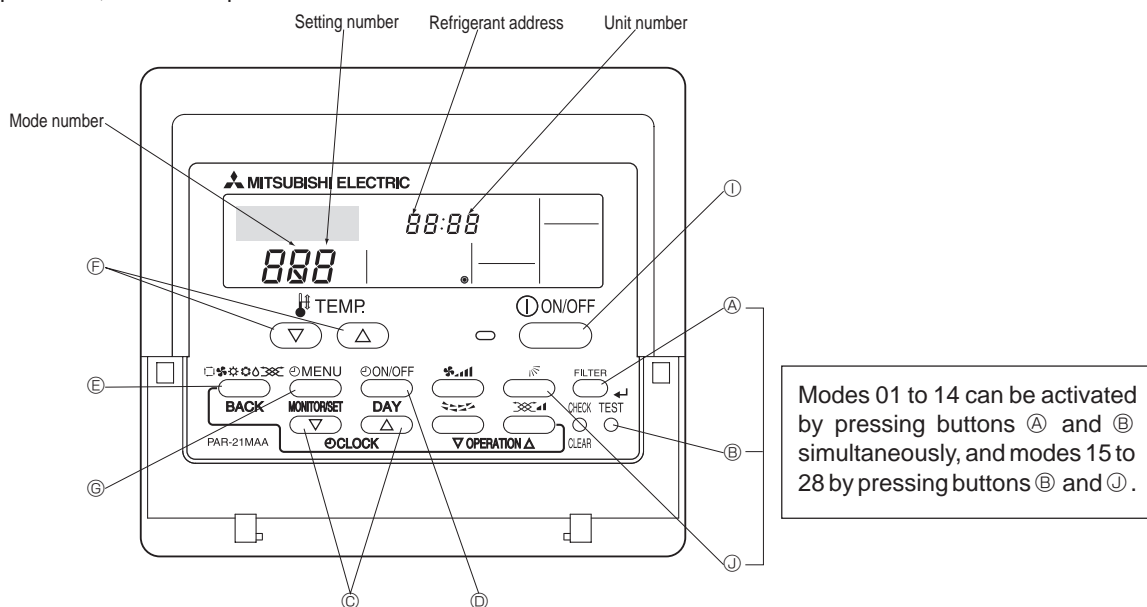
\*3 4 degC (7.2 degF) up

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

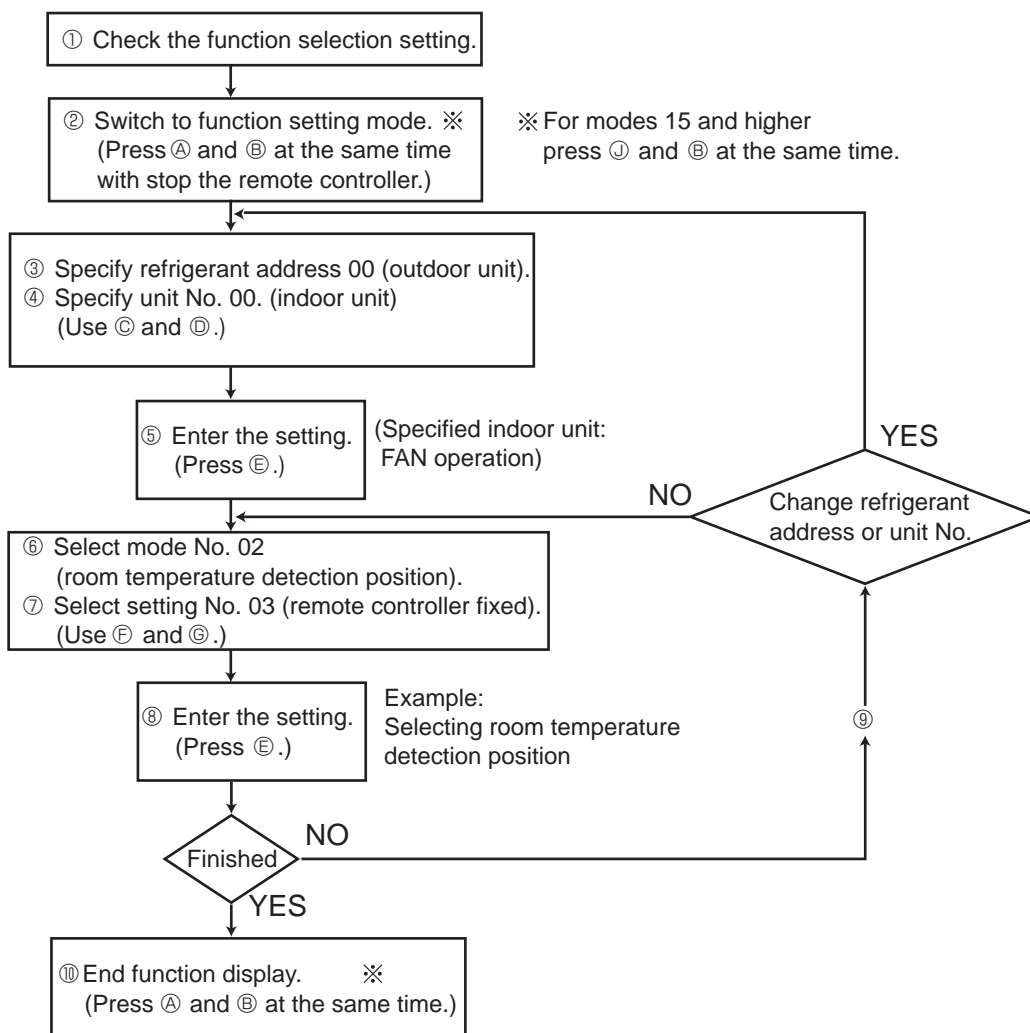
### 11-1-1. Selecting functions using the wired remote controller

First, try to familiarize yourself with the flow of the function selection procedure. In this section, an example of setting the room temperature detection position is given.

For actual operations, refer to steps ① to ⑩.



#### Selecting functions using the wired remote controller



The above procedure must be carried out only if changes are necessary.

## [Operating Procedure]

### ① Check the function selection settings.

Changing the function selection settings for each mode will change its relevant mode function. Perform steps ② through ⑦ to check all the function selection settings, and write down the current settings in the Check column of the function selection <Table 1> in the chapter 11-1, and then change the settings as necessary. For the initial settings, refer to the <Table 1> in the chapter 11-1. The following is the procedure to operate the remote controller internal sensor.

### ② Turn off the remote controller.

Hold down 2 buttons simultaneously for 2 seconds: the **Ⓐ FILTER** and **Ⓑ TEST** buttons to set the modes 01 through 14, and the **Ⓐ FILTER** and **Ⓒ TEST** buttons to set the modes 15 through 28. The "FUNCTION SELECTION" will flash for a while and show "--" as below.



\*If the FUNCTION SELECTION and temperature displays flash "88" for 2 seconds and stop flashing, this seems to be an error. Check for noise source or interference around the transmission path.

Note: If the operation is made incorrectly before completion, finish operation by going to the step ⑩ and restart from the step ②.

### ③ Set the indoor unit No.

Press the **Ⓓ ON/OFF** button to flash "--" in the unit No. display.

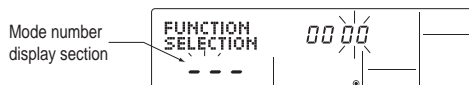


③ Press the **Ⓔ CLOCK** buttons (**⏮** and **⏭**) to indicate the indoor unit No. in turn such as 00 → 02 → 03 → 04 → AL. Select the unit No. to which the function selection applies.

\* To set the modes 01 through 06 or 15 through 22, select "00".  
\* To set the modes 07 through 14 or 23 through 28, select "01" or "02".

### ④ Confirm the address and unit No.

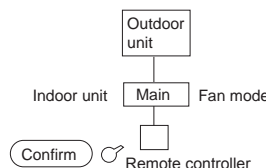
Press the **Ⓔ MODE** button to confirm the address and unit No. After a while, the mode No. display will flash "--".



\*If the temperature display flashes "88", this indicates that the selected address does not exist in the system. Or, if the unit No. shows "F" and the address flashes, this indicates that the selected unit No. does not exist. In this case, set the correct address and unit No. at the steps ② through ③.

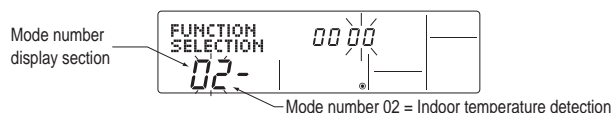
### ⑤ When the address and unit number are confirmed by pressing the

**Ⓔ MODE** button, the corresponding indoor unit will start fan operation. This helps you find the location of the indoor unit for which you want to perform function selection.



### ⑥ Select the mode number.

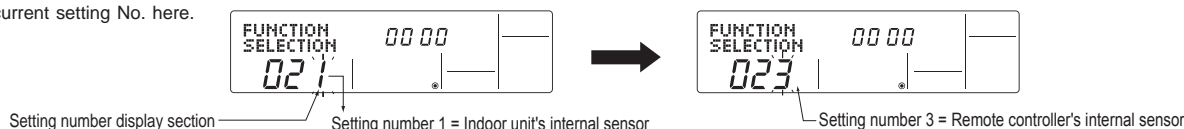
⑥ Press the **Ⓕ TEMP** buttons (**⏮** and **⏭**) to select the desired mode number. (Only valid mode numbers can be selected.)



### ⑦ Select the setting No. in the selected mode.

Press the **Ⓖ MENU** button to flash the applying setting No. Check the current setting No. here.

Press the **Ⓕ TEMP** buttons (**⏮** and **⏭**) to select the desired setting No.



### ⑧ Confirm the settings made at the steps ③ through ⑦.

Press the **Ⓔ MODE** button to flash the mode No. and setting No., and to start registration.

The mode No. and setting No. stop flashing to confirm the settings.



\*If the mode No. or setting No. shows "---" and the temperature shows "88", this seems to be a transmission error. Check for noise source or interference around the transmission path.

### ⑨ To make additional settings in the FUNCTION SELECTION screen, repeat the steps ③ through ⑧.

Note. After setting the modes 07 through 14, the modes 23 through 28 cannot be set continuously, or vice versa. In this case, after completing the settings for the modes 07 through 14 or 23 through 28, go to the step 10 to finish setting, and restart setting from the step 1. At this point, wait for 30 seconds or more before restarting setting. Otherwise, the temperature may indicate "88".

### ⑩ Exit the Function Selection screen.

Hold down 2 buttons simultaneously for 2 seconds or more: the **Ⓐ FILTER** and **Ⓑ TEST** buttons for the modes 01 through 14, and the **Ⓐ FILTER** and **Ⓒ TEST** buttons for the modes 15 through 28. After a few seconds the Function Selection screen returns to the OFF screen.





## &lt;"Terminal with locking mechanism" Detaching points&gt;

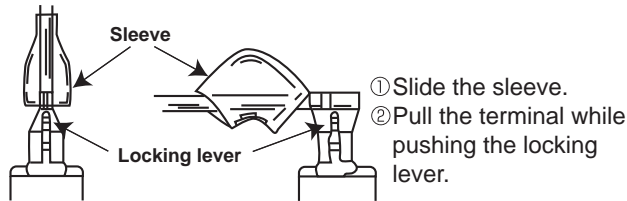
The terminal which has the locking mechanism can be detached as shown below.

There are two types (refer to (1) and (2)) of the terminal with locking mechanism.

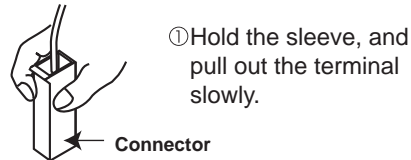
The terminal without locking mechanism can be detached by pulling it out.

Check the shape of the terminal before detaching.

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



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



SUZ-KA09NA

SUZ-KA12NA

SUZ-KA15NA

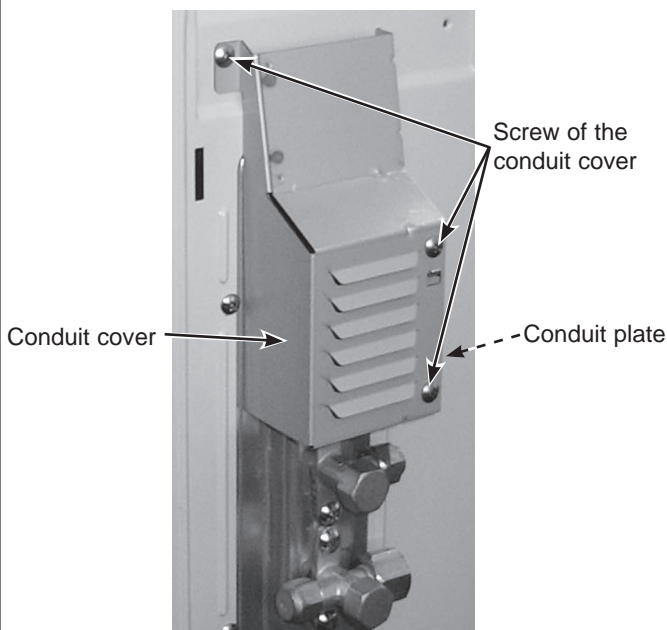
**NOTE:** Turn OFF power supply before disassembling.

## OPERATING PROCEDURE

## 1. Removing the cabinet

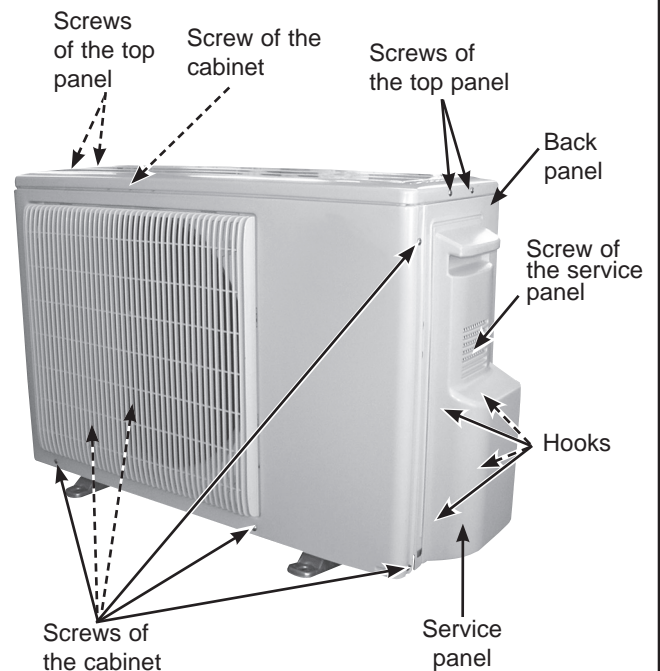
- (1) Remove the screw fixing the service panel.
- (2) Pull down the service panel and remove it.
- (3) Remove the screws fixing the conduit cover.
- (4) Remove the conduit cover.
- (5) Disconnect the power supply wire and indoor/outdoor connecting wire.
- (6) Remove the screws fixing the top panel.
- (7) Remove the top panel.
- (8) Remove the screws fixing the cabinet.
- (9) Remove the cabinet.
- (10) Remove the screws fixing the back panel.
- (11) Remove the back panel.

## Photo 2



## PHOTOS

## Photo 1



## OPERATING PROCEDURE

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

- (1) Remove the cabinet and panels. (Refer to procedure 1.)
- (2) Disconnect the lead wire to the reactor and the following connectors:  
 <Inverter P.C. board>  
 CN721 (R.V. coil)  
 CN931, CN932 (Fan motor)  
 CN641 (Defrost thermistor and discharge temperature thermistor)  
 CN643 (Ambient temperature thermistor)  
 CN644 (Outdoor heat exchanger temperature thermistor)  
 CN724 (LEV)
- (3) Remove the compressor connector (CN61).
- (4) Remove the screws fixing the relay panel. (See Photo 3)
- (5) Remove the inverter assembly. (See Photo 4)
- (6) Remove the screw of the ground wire and screw of the T.B.support. (See Photo 4)
- (7) Remove the relay panel from the inverter assembly.
- (8) Remove the inverter P.C. board from the relay panel.

### 3. Removing R.V. coil

- (1) Remove the cabinet and panels. (Refer to procedure 1.)
- (2) Disconnect the following connectors:  
 <Inverter P.C. board>  
 CN721 (R.V. coil)
- (3) Remove the R.V. coil. (See Photo 5)

### 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 procedure 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. (See Photo 5)
- (4) Pull out the defrost thermistor from its holder. (See Photo 6)
- (5) Pull out the outdoor heat exchanger temperature thermistor from its holder. (See Photo 6)
- (6) Pull out the ambient temperature thermistor from its holder.

## PHOTOS

Photo 3

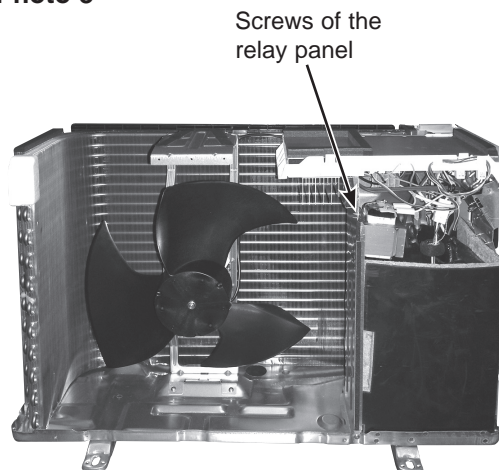


Photo 4 (Inverter assembly)

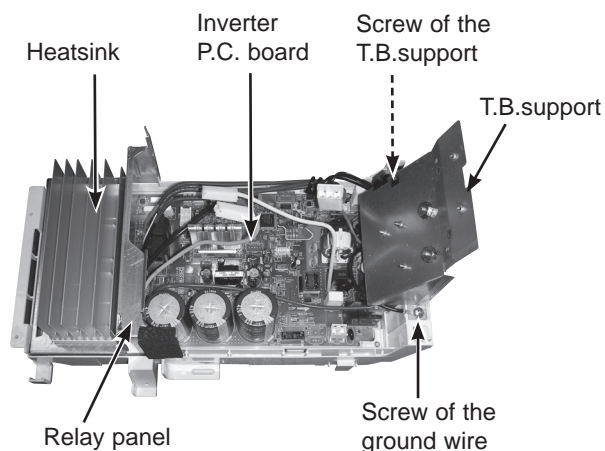
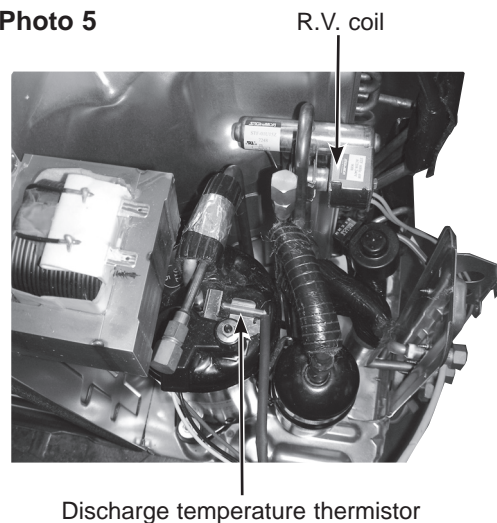


Photo 5



## OPERATING PROCEDURE

### 5. Removing outdoor fan motor

- (1) Remove the cabinet and panels. (Refer to procedure 1.)
- (2) Disconnect the following connectors:  
<Inverter P.C. board>  
CN931, CN932 (Fan motor)
- (3) Remove the propeller nut. (See Photo 7)
- (4) Remove the propeller. (See Photo 7)
- (5) Remove the screws fixing the fan motor. (See Photo 7)
- (6) Remove the fan motor.

### 6. Removing the compressor and 4-way valve

- (1) Remove the cabinet and panels. (Refer to procedure 1.)
- (2) Remove the inverter assembly. (Refer to procedure 2.)
- (3) Recover gas from the refrigerant circuit.  
**NOTE:** Recover gas from the pipes until the pressure gauge shows 0 PSIG.
- (4) Detach the welded part of the suction and the discharge pipe connected with compressor.
- (5) Remove the nuts of compressor legs.
- (6) Remove the compressor.
- (7) Detach the welded part of pipes connected with 4-way valve. (See Photo 8.)

## PHOTOS

Photo 6

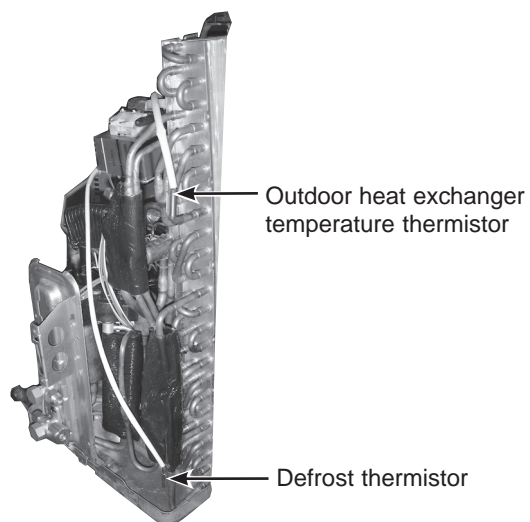


Photo 7 Screws of the outdoor fan motor

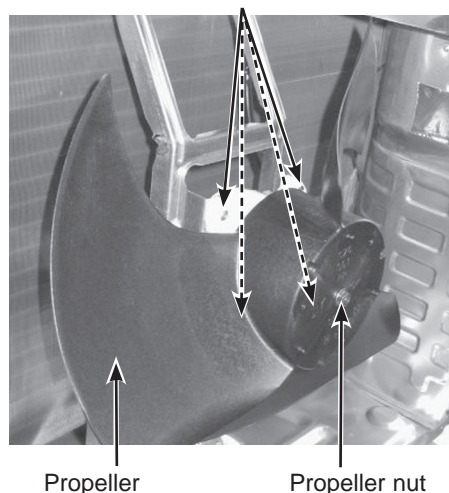
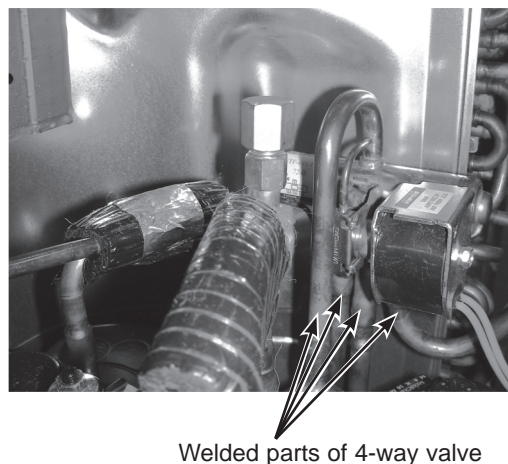
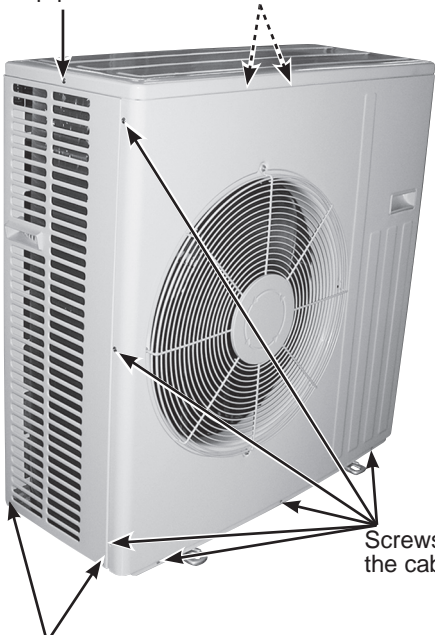
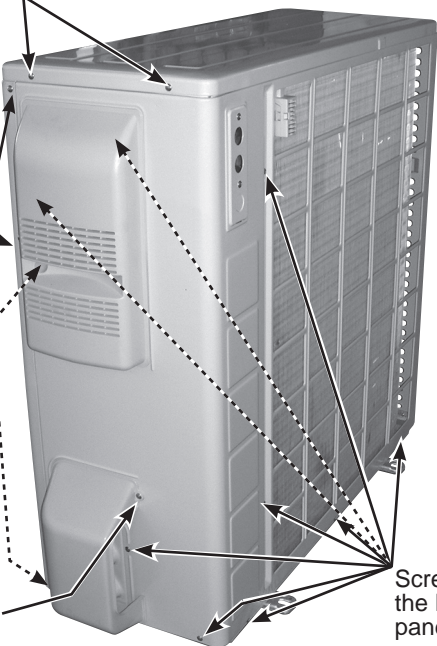


Photo 8

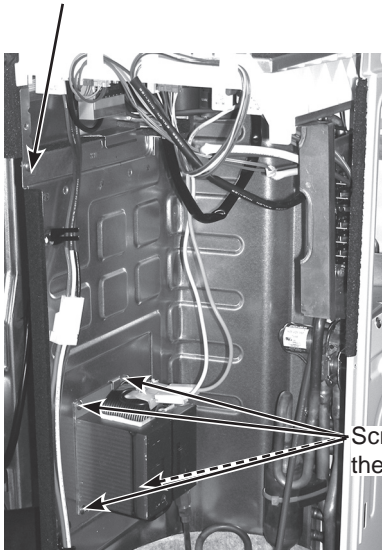
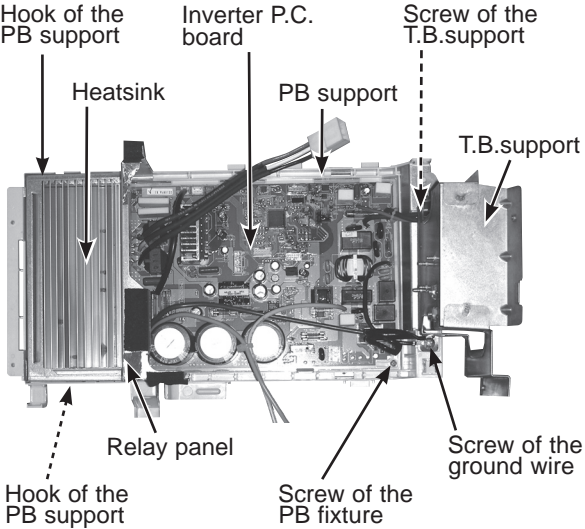
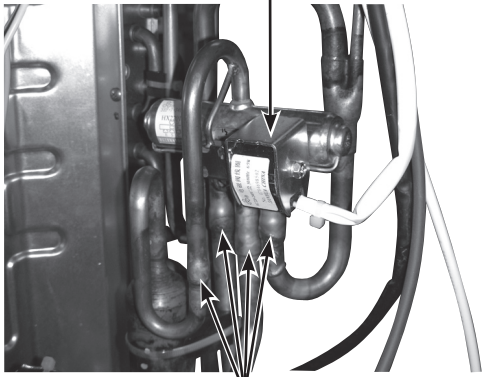


## 11-2. SUZ-KA18NA

**NOTE:** Turn OFF power supply before disassembling.

OPERATING PROCEDURE	PHOTOS
<p><b>1. Removing the cabinet</b></p> <ol style="list-style-type: none"> <li>(1) Remove the screws of the service panel.</li> <li>(2) Remove the screws of the top panel.</li> <li>(3) Remove the screw of the valve cover.</li> <li>(4) Remove the service panel.</li> <li>(5) Remove the top panel.</li> <li>(6) Remove the valve cover.</li> <li>(7) Disconnect the power supply and indoor/outdoor connecting wire.</li> <li>(8) Remove the screws of the cabinet.</li> <li>(9) Remove the cabinet.</li> <li>(10) Remove the screws of the back panel.</li> <li>(11) Remove the back panel.</li> </ol>	<p><b>Photo 1</b></p> <p>Screw of the top panel      Screws of the cabinet</p>  <p>Screws of the cabinet</p> <p>Screws of the back panel</p> <p><b>Photo 2</b></p> <p>Screw of the top panel</p>  <p>Screws of the cabinet</p> <p>Screw of the service panel</p> <p>Screw of the valve cover</p> <p>Screws of the back panel</p>



OPERATING PROCEDURE	PHOTOS
<p><b>2. Removing the inverter assembly, inverter P.C. board</b></p> <p>(1) Remove the cabinet and panels. (Refer to procedure 1.)</p> <p>(2) Disconnect the lead wire to the reactor and the following connectors:</p> <p>&lt;Inverter P.C. board&gt;</p> <p>CN721 (R.V.coil)</p> <p>CN931, CN932 (Fan motor)</p> <p>CN641 (Defrost thermistor and discharge temperature thermistor)</p> <p>CN643 (Ambient temperature thermistor)</p> <p>CN644 (Outdoor heat exchanger temperature thermistor)</p> <p>CN724 (LEV)</p> <p>(3) Remove the compressor connector (CN61).</p> <p>(4) Remove the screws fixing the relay panel. (See Photo 3)</p> <p>(5) Remove the inverter assembly. (See Photo 4)</p> <p>(6) Remove the screw of the ground wire and screw of the T.B.support. (See Photo 4)</p> <p>(7) Remove the screw of the PB fixture.</p> <p>(8) Remove the relay panel from the PB support.</p> <p>(9) Remove the inverter P.C. board from the inverter assembly.</p>	<p><b>Photo 3</b>    Screws of the relay panel</p>  <p>Screws of the reactor</p>
<p><b>3. Removing R.V. coil</b></p> <p>(1) Remove the cabinet and panels. (Refer to procedure 1.)</p> <p>(2) Disconnect the following connectors:</p> <p>&lt;Inverter P.C. board&gt;</p> <p>CN721 (R.V. coil)</p> <p>(3) Remove the R.V. coil. (See Photo 5)</p>	<p><b>Photo 4 (Inverter assembly)</b></p>  <p>Hook of the PB support    Inverter P.C. board    Screw of the T.B.support</p> <p>Heatsink    PB support    T.B.support</p> <p>Relay panel    Hook of the PB support    Screw of the PB fixture    Screw of the ground wire</p> <p><b>Photo5</b></p>  <p>R.V. coil</p> <p>Welded parts of 4-way valve</p>

## OPERATING PROCEDURE

### 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 procedure 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. (See Photo 8)
- (4) Pull out the defrost thermistor from its holder. (See Photo 6)
- (5) Pull out the outdoor heat exchanger temperature thermistor from its holder. (See Photo 6)
- (6) Pull out the ambient temperature thermistor from its holder. (See Photo 6)

### 5. Removing outdoor fan motor

- (1) Remove the top panel, cabinet and service panel. (Refer to procedure 1.)
- (2) Disconnect the following connectors:  
 <Inverter P.C. board>  
 CN931 and CN932 (Fan motor)
- (3) Remove the propeller.
- (4) Remove the screws fixing the fan motor.
- (5) Remove the fan motor.

### 6. Removing the compressor and 4-way valve

- (1) Remove the top panel, cabinet and service panel. (Refer to procedure 1.)
- (2) Remove the back panel. (Refer to procedure 1.)
- (3) Remove the inverter assembly. (Refer to procedure 2.)
- (4) Recover gas from the refrigerant circuit.  
**NOTE:** Recover gas from the pipes until the pressure gauge shows 0 PSIG.
- (5) Detach the welded part of the suction and the discharge pipe connected with compressor.
- (6) Remove the compressor nuts.
- (7) Remove the compressor.
- (8) Detach the welded part of 4-way valve and pipe. (See Photo 5)

## PHOTOS

Photo 6

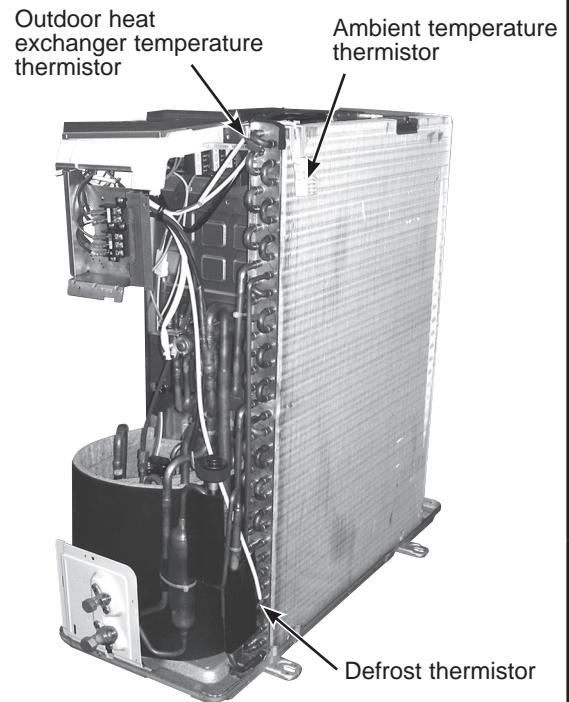


Photo 7

Screws of the outdoor fan motor

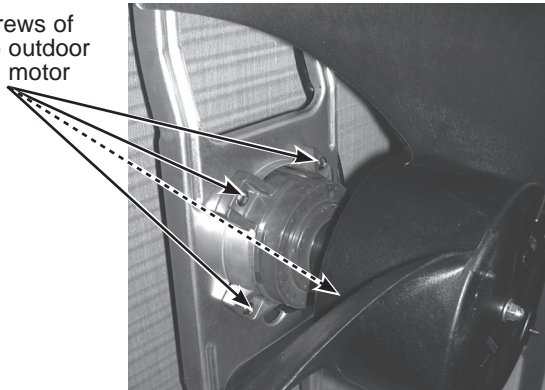
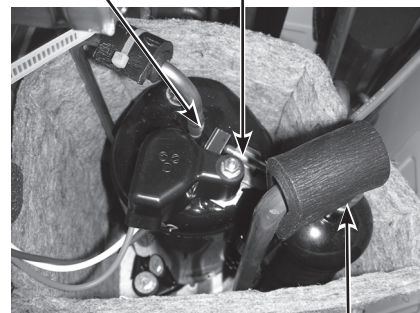


Photo 8

Welded part of the discharge pipe      Discharge temperature thermistor



Welded part of the suction pipe



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