

September 2013

No. OCH493

REVISED EDITION-E

TECHNICAL & SERVICE MANUAL

Series SLZ Ceiling Cassettes R410A

Indoor unit

[Model Name]

[Service Ref.]

SLZ-KA25VAQ

**SLZ-KA25VAQ.TH
SLZ-KA25VAQR1.TH**

SLZ-KA25VAQ2

SLZ-KA25VAQ2.TH

SLZ-KA35VAQ

**SLZ-KA35VAQ.TH
SLZ-KA35VAQR1.TH**
SLZ-KA35VAQR2.TH

SLZ-KA50VAQ

**SLZ-KA50VAQ.TH
SLZ-KA50VAQR1.TH
SLZ-KA50VAQR2.TH**

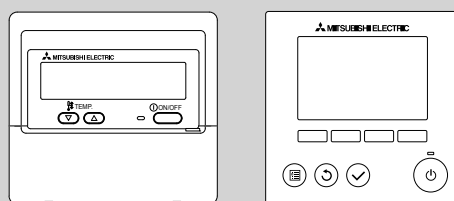
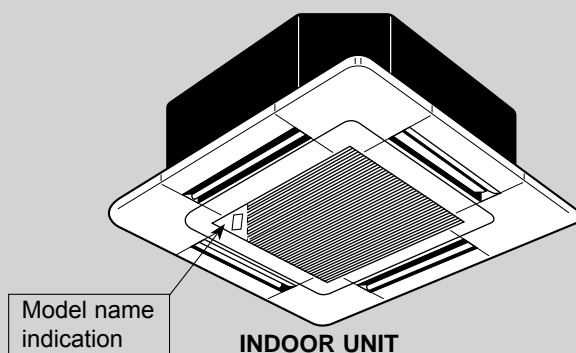
Revision:

- Added connectable outdoor unit SUZ-KA25/35/50VA4.TH in REVISED EDITION-E.
- Some descriptions have been modified.

- Please void OCH493 REVISED EDITION-D.

Note:

- This manual describes only service data of the indoor units.


 WIRED REMOTE CONTROLLER
(Option)

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PARTS CATALOG (OCB493)

Use the specified refrigerant only

Never use any refrigerant other than that specified.

Doing so may cause a burst, an explosion, or fire when the unit is being used, serviced, or disposed of. Correct refrigerant is specified in the manuals and on the spec labels provided with our products.

We will not be held responsible for mechanical failure, system malfunction, unit breakdown or accidents caused by failure to follow the instructions.

1 TECHNICAL CHANGES

SLZ-KA35VAQR1.TH → SLZ-KA35VAQR2.TH
SLZ-KA50VAQR1.TH → SLZ-KA50VAQR2.TH

• INDOOR CONTROLLER BOARD has been changed.

SLZ-KA25VAQ.TH → SLZ-KA25VAQR1.TH
SLZ-KA35VAQ.TH → SLZ-KA35VAQR1.TH
SLZ-KA50VAQ.TH → SLZ-KA50VAQR1.TH

• TURBO FAN and WASHER have been changed.

2 REFERENCE SERVICE MANUAL

2-1. OUTDOOR UNIT'S SERVICE MANUAL

Service Ref.	Service Manual No.
SUZ-KA25/50VA3.TH-A	OCH511/OCB511
SUZ-KA25/35/50VA2.TH	OCH472/OCB472
SUZ-KA25/35/50VA2.TH-A	OCH473/OCB473
SUZ-KA25/35/50VA3.TH	OCH530/OCB530
SUZ-KA25/35/50VA4.TH	OCH545/OCB545

2-2. TECHNICAL DATA BOOK

Series (Outdoor unit)	Data Book No.
SUZ-KA·VA SUZ-KA·VAH	OCS03
SUZ-KA·VA3	OCS22/OCS25
SUZ-KA·VA4	OCS26

3 PARTS NAMES AND FUNCTIONS

3-1. Indoor unit

Horizontal Air Outlet

Sets horizontal airflow automatically during cooling or dehumidifying.

Filter

Removes dust and pollutants from drawn in air.

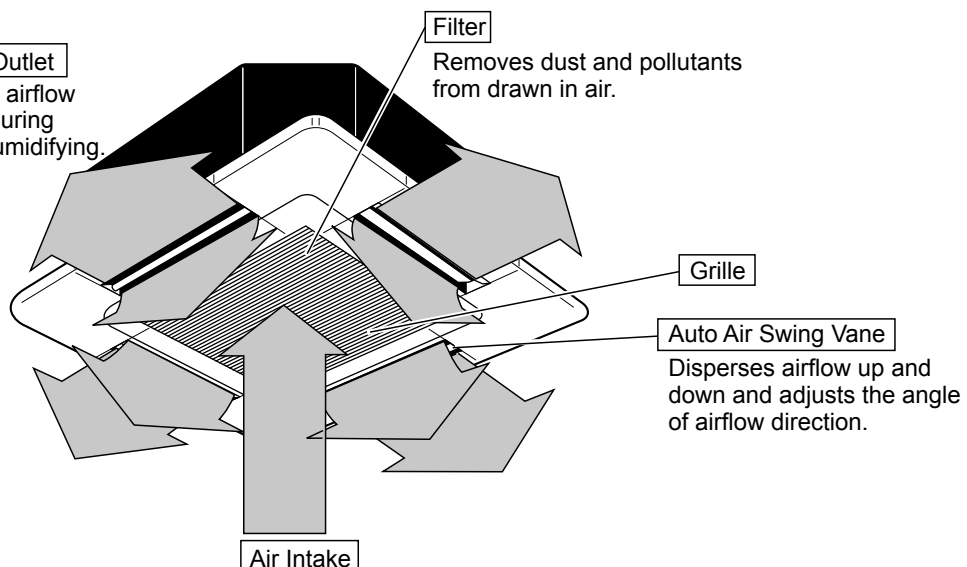
Grille

Auto Air Swing Vane

Disperses airflow up and down and adjusts the angle of airflow direction.

Air Intake

Draws in air from room.



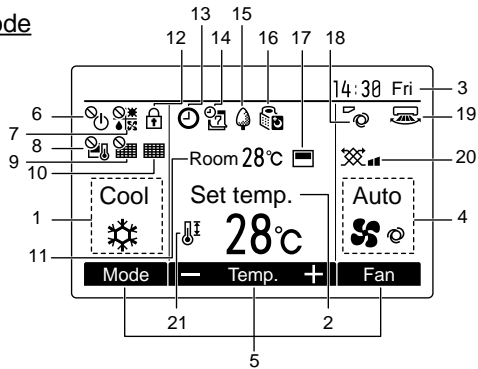
3-2. Wired remote controller (Option) PAR-30MAA

The functions which can be used are restricted according to the model.

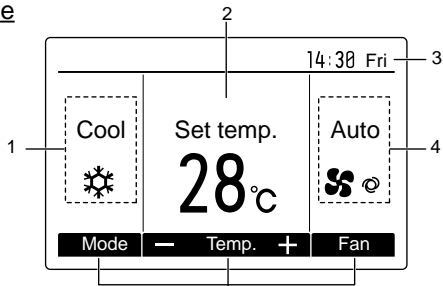
Display

The main display can be displayed in two different modes: "Full" and "Basic."
The initial setting is "Full."

Full mode



Basic mode



Note: All icons are displayed for explanation.

1 Operation mode

Indoor unit operation mode appears here.

2 Preset temperature

Preset temperature appears here.

3 Clock

(See the Installation Manual.)

Current time appears here.

4 Fan speed

Fan speed setting appears here.

5 Button function guide

Functions of the corresponding buttons appear here.

6

Appears when the ON/OFF operation is centrally controlled.

7

Appears when the operation mode is centrally controlled.

8

Appears when the preset temperature is centrally controlled.

9

Appears when the filter reset function is centrally controlled.

10

Indicates when filter needs maintenance.

11 Room temperature

(See the Installation Manual.)

Current room temperature appears here.

12

Appears when the buttons are locked.

13

Appears when the On/Off timer or Night setback function is enabled.

14

Appears when the Weekly timer is enabled.

15

Appears while the units are operated in the energy-save mode.

16

Appears while the outdoor units are operated in the silent mode.

17

Appears when the built-in thermistor on the remote controller is activated to monitor the room temperature (a).

(a) appears when the thermistor on the indoor unit is activated to monitor the room temperature.

18

Indicates the vane setting.

19

Indicates the louver setting.

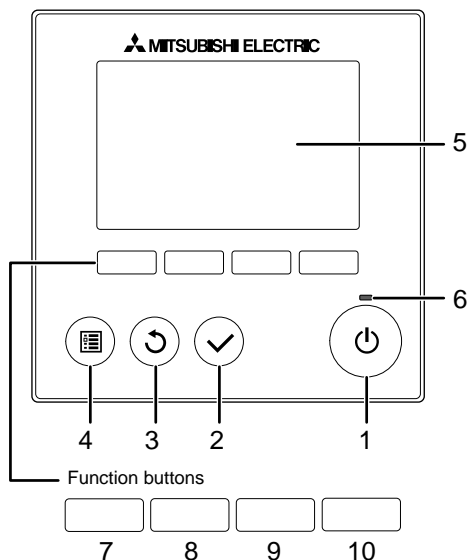
20

Indicates the ventilation setting.

21

Appears when the preset temperature range is restricted.

Controller interface



- When the backlight is off, pressing any button turns the backlight on and does not perform its function. (except for the ON/OFF button)
- Most settings (except ON/OFF, mode, fan speed, temperature) can be made from the Menu screen.

1 ON/OFF button

Press to turn ON/OFF the indoor unit.

2 SELECT button

Press to save the setting.

3 RETURN button

Press to return to the previous screen.

4 MENU button

Press to bring up the Main menu.

5 Backlit LCD

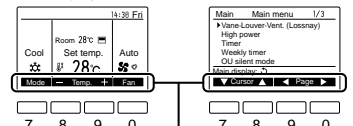
Operation settings will appear. When the backlight is off, pressing any button turns the backlight on and it will stay lit for a certain period of time depending on the screen.

6 ON/OFF lamp

This lamp lights up in green while the unit is in operation. It blinks while the remote controller is starting up or when there is an error.

The functions of the function buttons change depending on the screen. Refer to the button function guide that appears at the bottom of the LCD for the functions they serve on a given screen. When the system is centrally controlled, the button function guide that corresponds to the locked button will not appear.

Main display



Function guide

7 Function button [F1]

Main display: Press to change the operation mode.

Main menu: Press to move the cursor down.

8 Function button [F2]

Main display: Press to decrease temperature.

Main menu: Press to move the cursor up.

9 Function button [F3]

Main display: Press to increase temperature.

Main menu: Press to go to the previous page.

10 Function button [F4]

Main display: Press to change the fan speed.

Main menu: Press to go to the next page.

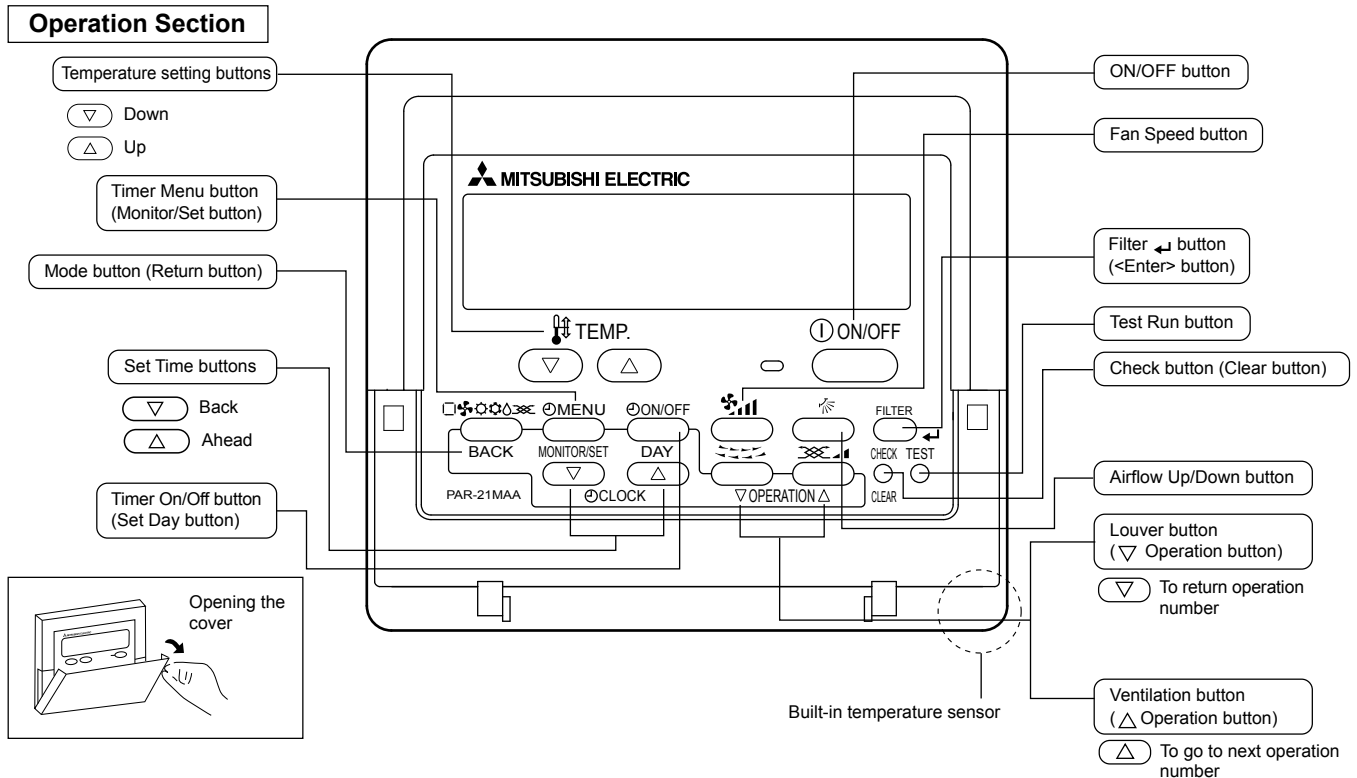
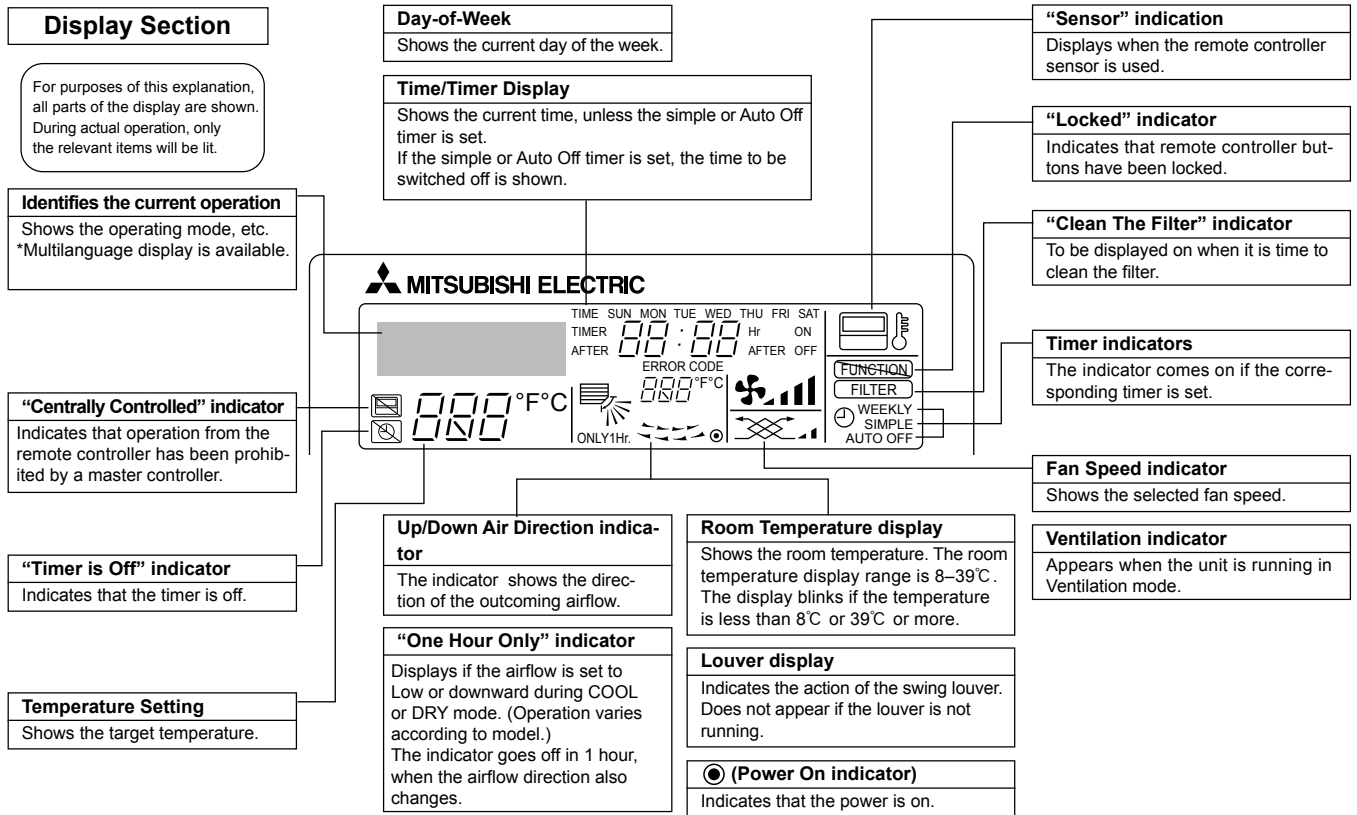
Main menu list

Setting and display items		Setting details
Vane · Louver · Vent. (Lossnay)		<p>Use to set the vane angle.</p> <ul style="list-style-type: none"> • Select a desired vane setting from five different settings. <p>Use to turn ON / OFF the louver.</p> <ul style="list-style-type: none"> • Select a desired setting from "ON" and "OFF." <p>Use to set the amount of ventilation.</p> <ul style="list-style-type: none"> • Select a desired setting from "Off," "Low," and "High."
High power		<p>Use to reach the comfortable room temperature quickly.</p> <ul style="list-style-type: none"> • Units can be operated in the High-power mode for up to 30 minutes.
Timer	On/Off timer	<p>Use to set the operation On/Off times.</p> <ul style="list-style-type: none"> • Time can be set in 5-minute increments. * Clock setting is required.
	Auto-Off timer	<p>Use to set the Auto-Off time.</p> <ul style="list-style-type: none"> • Time can be set to a value from 30 to 240 in 10-minute increments.
Filter information		<p>Use to check the filter status.</p> <ul style="list-style-type: none"> • The filter sign can be reset.
Error information		<p>Use to check error information when an error occurs.</p> <ul style="list-style-type: none"> • Error code, error source, refrigerant address, unit model, manufacturing number, contact information (dealer's phone number) can be displayed. * The unit model, manufacturing number, and contact information need to be registered in advance to be displayed.
Weekly timer		<p>Use to set the weekly operation On / Off times.</p> <ul style="list-style-type: none"> • Up to eight operation patterns can be set for each day. * Clock setting is required. * Not valid when the On/Off timer is enabled.
Energy saving	Auto return	<p>Use to get the units to operate at the preset temperature after performing energy-save operation for a specified time period.</p> <ul style="list-style-type: none"> • Time can be set to a value from 30 and 120 in 10-minute increments. * This function will not be valid when the preset temperature ranges are restricted.
	Schedule	<p>Set the start/stop times to operate the units in the energy-save mode for each day of the week, and set the energy-saving rate.</p> <ul style="list-style-type: none"> • Up to four energy-save operation patterns can be set for each day. • Time can be set in 5-minute increments. • Energy-saving rate can be set to a value from 0% and 50 to 90% in 10% increments. * Clock setting is required.
Night setback		<p>Use to make Night setback settings.</p> <ul style="list-style-type: none"> • Select "Yes" to enable the setting, and "No" to disable the setting. The temperature range and the start/stop times can be set. * Clock setting is required.
Restriction	Temp. range	<p>Use to restrict the preset temperature range.</p> <ul style="list-style-type: none"> • Different temperature ranges can be set for different operation modes.
	Operation lock	<p>Use to lock selected functions.</p> <ul style="list-style-type: none"> • The locked functions cannot be operated.
Maintenance	Auto descending panel	Auto descending panel (Optional parts) Up / Down you can do.
	Manual vane angle	Use to set the vane angle for each vane to a fixed position.
Initial setting	Main/Sub	When connecting two remote controllers, one of them needs to be designated as a sub controller.
	Clock	Use to set the current time.
	Main display	Use to switch between "Full" and "Basic" modes for the Main display. • The initial setting is "Full."
	Contrast	Use to adjust screen contrast.
Initial setting	Display details	<p>Make the settings for the remote controller related items as necessary.</p> <p>Clock: The initial settings are "Yes" and "24h" format. Temperature: Set either Celsius (°C) or Fahrenheit (°F). Room temp.: Set Show or Hide. Auto mode: Set the Auto mode display or Only Auto display.</p>
	Auto mode	<p>Whether or not to use the AUTO mode can be selected by using the button.</p> <p>This setting is valid only when indoor units with the AUTO mode function are connected.</p>
	Administrator password	<p>The administrator password is required to make the settings for the following items.</p> <ul style="list-style-type: none"> • Timer setting • Energy-save setting • Weekly timer setting • Restriction setting • Outdoor unit silent mode setting • Night set back
	Language selection	Use to select the desired language.
Service	Test run	<p>Select "Test run" from the Service menu to bring up the Test run menu.</p> <ul style="list-style-type: none"> • Test run • Drain pump test run
	Input maintenance	<p>Select "Input maintenance Info." from the Service menu to bring up the Maintenance information screen. The following settings can be made from the Maintenance Information screen.</p> <ul style="list-style-type: none"> • Model name input • Serial No. input • Dealer information input
	Function setting	Make the settings for the indoor unit functions via the remote controller as necessary.
	LOSSNAY setting (City Multi only)	This setting is required only when the operation of City Multi units is interlocked with LOSSNAY units.
	Check	<p>Error history: Display the error history and execute delete error history.</p> <p>Refrigerant leak check: Refrigerant leaks can be judged.</p> <p>Smooth maintenance: The indoor and outdoor maintenance data can be displayed.</p> <p>Request cord: Details of the operation data including each thermistor temperature and error history can be checked.</p>
	Self check	Error history of each unit can be checked via the remote controller.
	Maintenance password	Take the following steps to change the maintenance password.
Remote controller check	When the remote controller does not work properly, use the remote controller checking function to troubleshoot the problem.	

3-3. Wired remote controller (Option) PAR-21MAA

Once the controllers are set, the same operation mode can be repeated by simply pressing the ON/OFF button.

* The functions which can be used are restricted according to the model.



4

SPECIFICATIONS

Indoor service ref.			SLZ-KA25VAQ.TH SLZ-KA25VAQR1.TH	SLZ-KA25VAQ2.TH	SLZ-KA35VAQ.TH SLZ-KA35VAQR1.TH SLZ-KA35VAQR2.TH	SLZ-KA50VAQ.TH SLZ-KA50VAQR1.TH SLZ-KA50VAQR2.TH						
Function			Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating		
Power supply			Single phase 230V, 50Hz		Single phase 230V, 50Hz		Single phase 230V, 50Hz		Single phase 230V, 50Hz			
Capacity	Air flow (High/Medium/Low)	m ³ /h	600/540/480		660/540/480		660/540/480		660/540/480			
Electrical data	Power outlet	A	10		10		10		20			
	Running current*	A	0.35		0.40		0.40		0.65			
	Power input Rated frequency	W	75		85		85		85			
	Dew prevention heater	(kW)	0.014		0.014		0.014		0.014			
	Power factor*	%	90	93	94	94	94	94	97	97		
	Fan motor current*	A	0.19		0.26		0.26		0.27			
Fan motor	Model		PK6V15-LD		PK6V20-LL		PK6V20-LL		PK6V20-LM			
	Winding resistance (at 26°C)	Ω	WHT-BLK: 407 BLK-BLU: 86 BLU-YLW: 30 BRN-RED: 165		WHT-BLK: 393 BLK-BLU: 164 BLU-YLW: 47 BRN-RED: 319		WHT-BLK: 393 BLK-BLU: 164 BLU-YLW: 47 BRN-RED: 319		WHT-BLK: 325 BLK-BLU: 143 BLU-YLW: 47 BRN-RED: 309			
Dimensions	Width	mm(in)	UNIT: 570(22-7/16)				PANEL: 650(25-9/16)					
	Height	mm(in)	UNIT: 235(9-1/4)				PANEL: 20(13/16)					
	Depth	mm(in)	UNIT: 570(22-7/16)				PANEL: 650(25-9/16)					
Weight		kg	UNIT: 16.5				PANEL: 3					
Special remarks	Air direction		4		4		4		4			
	Sound level(High/Medium/Low)		dB(A)		37/31/28		38/33/29		38/33/29		39/34/30	
	Fan speed(High/Medium/Low)		rpm		650/530/480		690/570/510		690/570/510		710/590/530	
	Fan speed regulator		3		3		3		3			
	Thermistor TH1(at 25°C)		kΩ		10		10		10		10	
	Thermistor TH2(at 25°C)		kΩ		10		10		10		10	
Thermistor TH5(at 25°C)		kΩ		10		10		10		10		

NOTE : Test conditions are based on ISO 5151.

Cooling : Indoor D.B. 27°C W.B. 19°C

Outdoor D.B. 35°C W.B. 24°C

Heating : Indoor D.B. 20°C W.B. 15°C

Outdoor D.B. 7°C W.B. 6°C

Refrigerant piping length (one way): 5 m

*Measured under rated operating frequency

Specifications and rating conditions of main electric parts

INDOOR UNIT

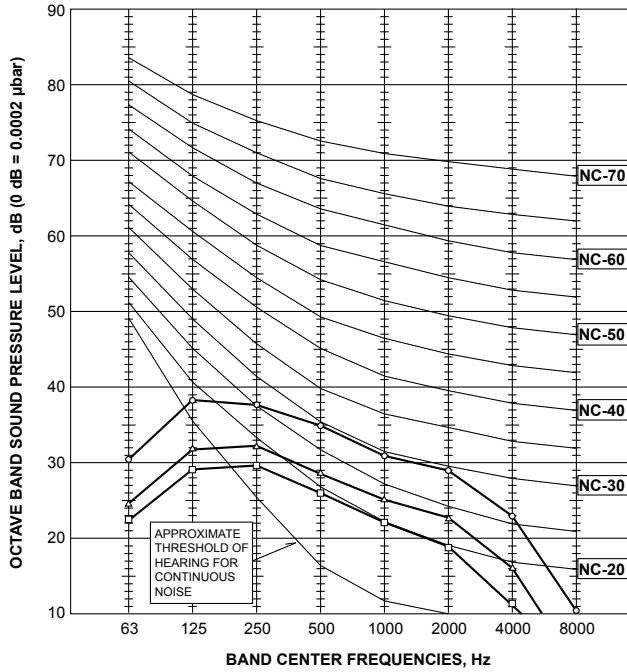
Item	Service ref.	SLZ-KA25VAQ.TH SLZ-KA25VAQR1.TH SLZ-KA25VAQ2.TH	SLZ-KA35VAQ.TH SLZ-KA35VAQR1.TH SLZ-KA35VAQR2.TH	SLZ-KA50VAQ.TH SLZ-KA50VAQR1.TH SLZ-KA50VAQR2.TH
		Indoor fan capacitor	(C1)	1.5μF 440V
Fuse	(FUZE)	250V 6.3A		
Vane motor	(MV)	MSBPC20 12V 250Ω		
Terminal block	(TB)	TO OUTDOOR UNIT: 3P TO WIRED REMOTE CONTROLLER: 2P		
Indoor fan motor thermal fuse		141°C ± 3°C		
Cord Heater	(H2)	240V AC 15W		

NOISE CRITERION CURVES

SLZ-KA25VAQ.TH
SLZ-KA25VAQR1.TH

<50Hz>

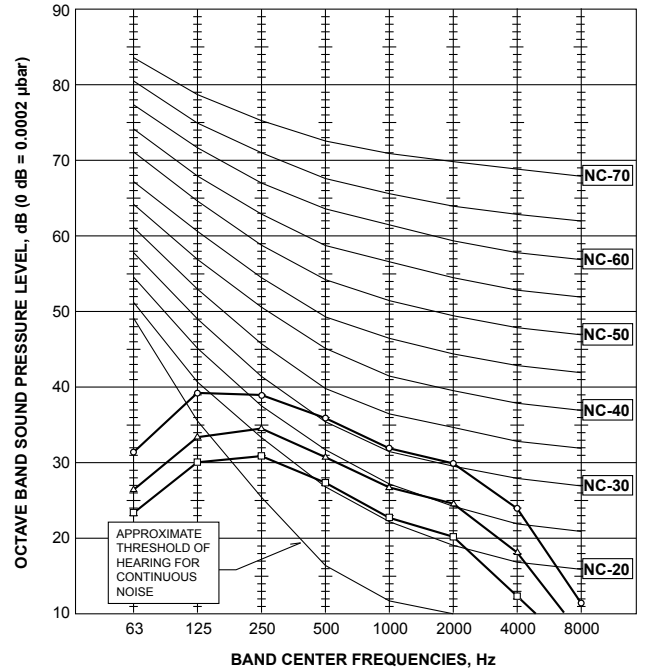
NOTCH	SPL(dB)	LINE
High	37	○—○
Medium	31	△—△
Low	28	□—□



SLZ-KA25VAQ2.TH
SLZ-KA35VAQ.TH
SLZ-KA35VAQR1.TH
SLZ-KA35VAQR2.TH

<50Hz>

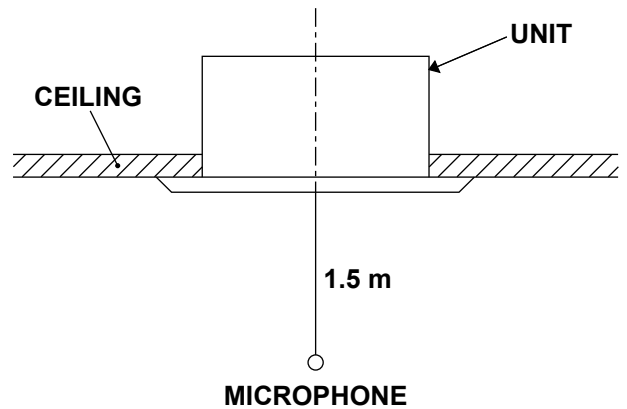
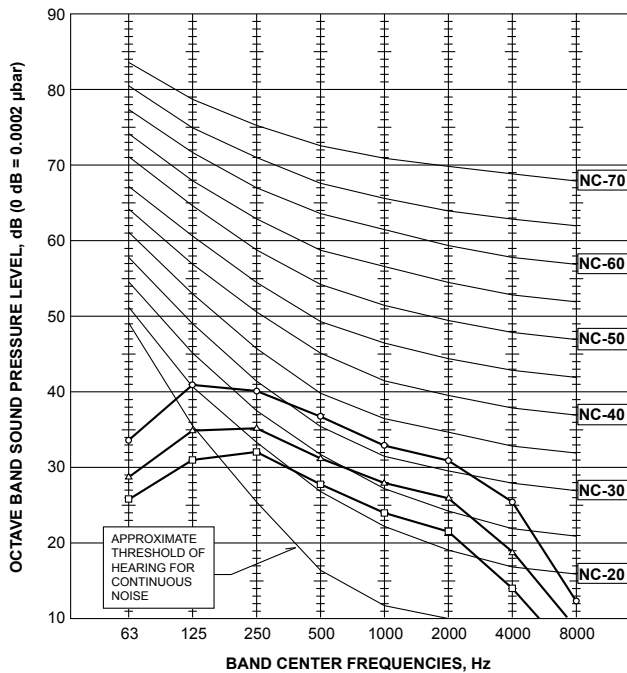
NOTCH	SPL(dB)	LINE
High	38	○—○
Medium	33	△—△
Low	29	□—□



SLZ-KA50VAQ.TH
SLZ-KA50VAQR1.TH
SLZ-KA50VAQR2.TH

<50Hz>

NOTCH	SPL(dB)	LINE
High	39	○—○
Medium	34	△—△
Low	30	□—□



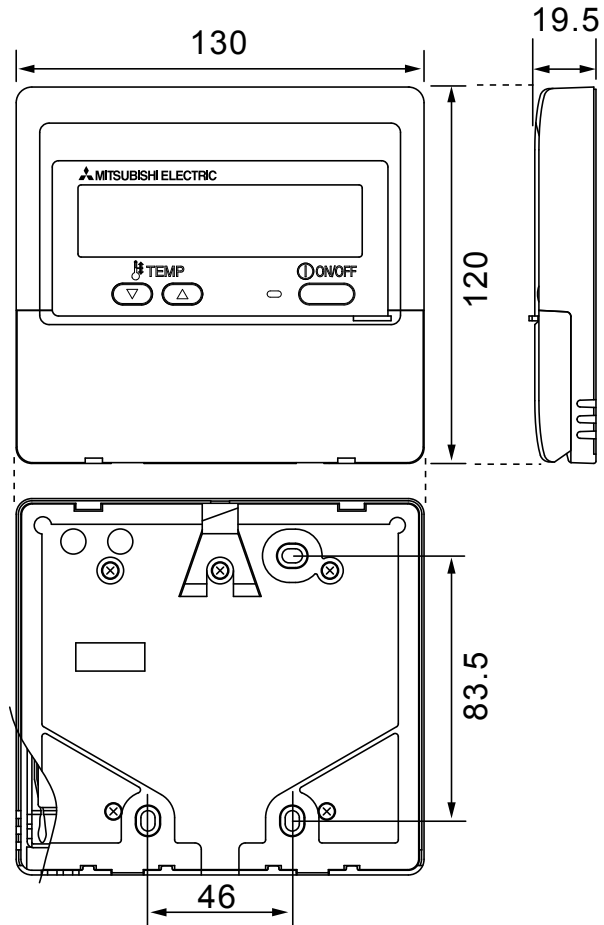
NOTE: The sound level is measured in an anechoic room where echoes are few, when compressor stops. The sound may be bigger than the indicated level in actual use due to surrounding echoes. The sound level can be higher by about 2 dB than the indicated level during cooling and heating operation.

WIRED REMOTE CONTROLLER

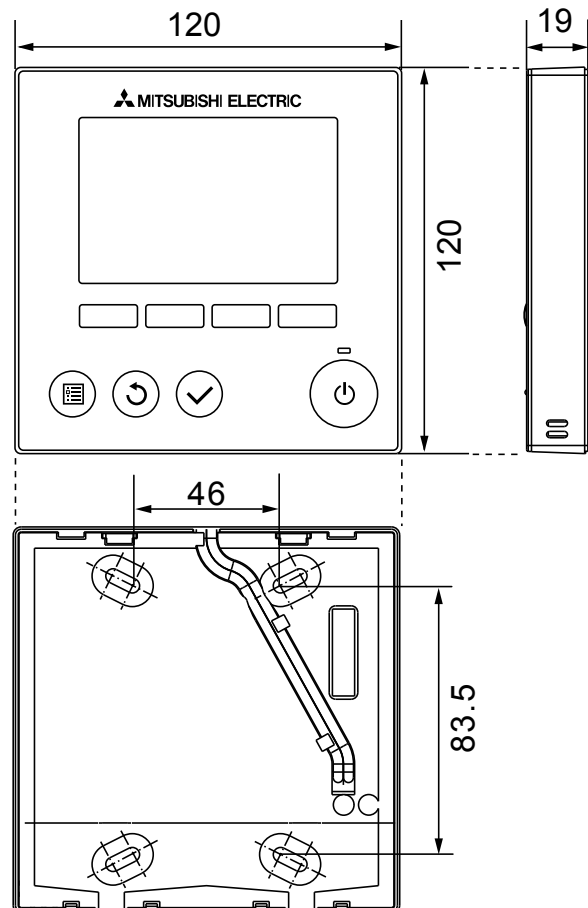
(Option)

Unit: mm

PAR-21MAA



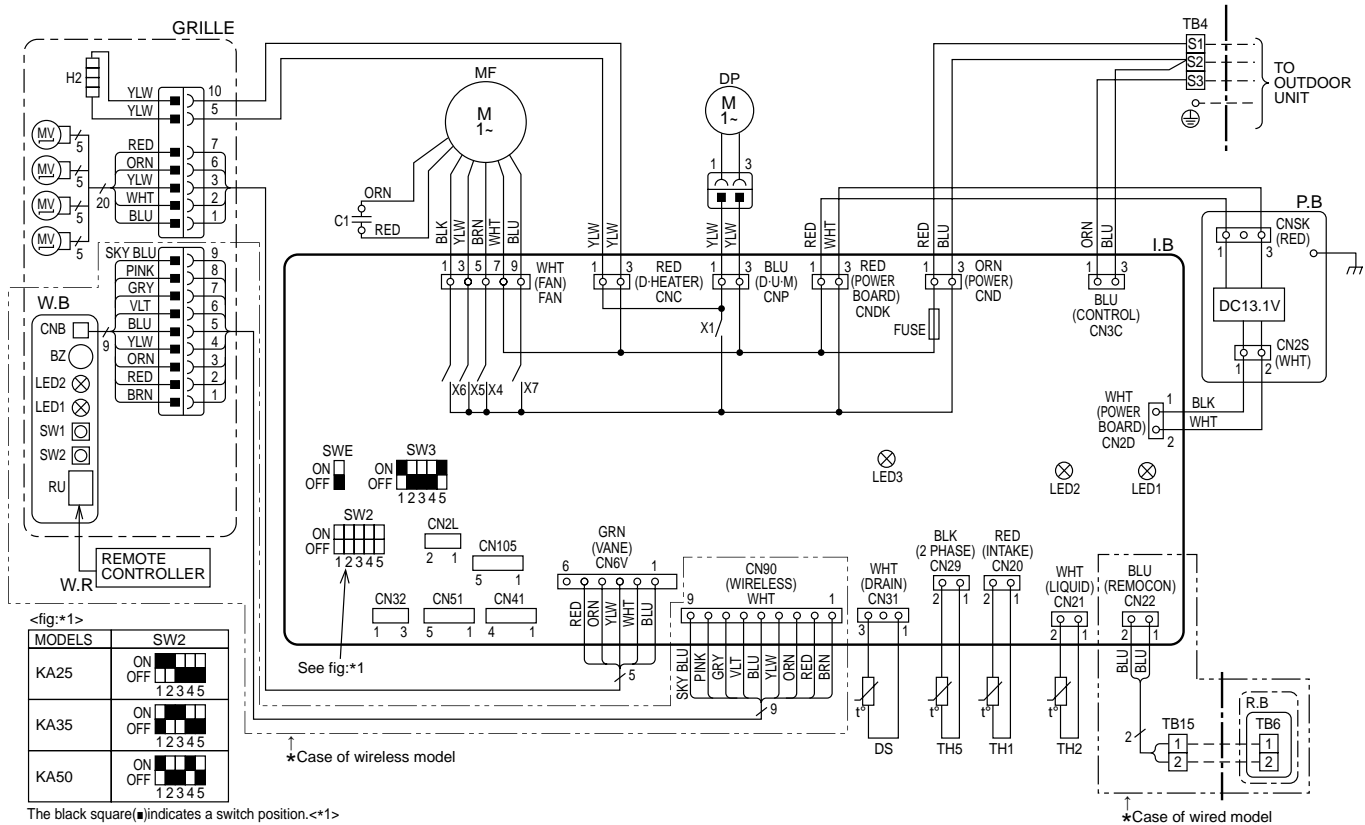
PAR-30MAA



SLZ-KA25VAQ.TH
SLZ-KA25VAQR1.TH
SLZ-KA25VAQ2.TH

SLZ-KA35VAQ.TH
SLZ-KA35VAQR1.TH
SLZ-KA35VAQR2.TH

SLZ-KA50VAQ.TH
SLZ-KA50VAQR1.TH
SLZ-KA50VAQR2.TH



[LEGEND]

SYMBOL	NAME	SYMBOL	NAME
P.B	INDOOR POWER BOARD	C1	CAPACITOR (FAN MOTOR)
I.B	INDOOR CONTROLLER BOARD	DP	DRAIN PUMP
CN2L	CONNECTOR (LOSSNAY)	DS	DRAIN SENSOR
CN32	CONNECTOR (REMOTE SWITCH)	H2	DEW PREVENTION HEATER
CN41	CONNECTOR (HA TERMINAL-A)	MF	FAN MOTOR (WITH THERMAL FUSE)
CN51	CENTRALLY CONTROL	MV	VANE MOTOR
FUSE	FUSE (T6.3AL250V)	TB4	TERMINAL BLOCK (INDOOR/OUTDOOR CONNECTING LINE)
LED1	POWER SUPPLY (I.B)	TB15	TERMINAL BLOCK (REMOTE CONTROLLER TRANSMISSION LINE)
LED2	POWER SUPPLY (I.B)	TH1	ROOM TEMP. THERMISTOR (0°C / 15kΩ, 25°C / 5.4kΩ DETECT)
LED3	TRANSMISSION (INDOOR-OUTDOOR)	TH2	PIPE TEMP. THERMISTOR/LIQUID (0°C / 15kΩ, 25°C / 5.4kΩ DETECT)
SW2	SWITCH (CAPACITY CODE)	TH5	COND. / EVA. TEMP. THERMISTOR (0°C / 15kΩ, 25°C / 5.4kΩ DETECT)
SW3	SWITCH (MODE SELECTION)		
SWE	SWITCH (EMERGENCY OPERATION)		
X1	DRAIN PUMP/DEW PREVENTION HEATER		
X4	RELAY (FAN MOTOR LL)		
X5	RELAY (FAN MOTOR Lo)		
X6	RELAY (FAN MOTOR Hi)		
X7	RELAY (FAN MOTOR Me)		
			OPTION PARTS
W.B	WIRELESS REMOTE CONTROLLER BOARD	R.B	WIRED REMOTE CONTROLLER BOARD
RU	RECEIVING UNIT	TB6	TERMINAL BLOCK (REMOTE CONTROLLER TRANSMISSION LINE)
BZ	BUZZER		
LED1	LED (RUN INDICATOR)		
LED2	LED (HOT ADJUST)		
SW1	SWITCH (HEATING ON/OFF)		
SW2	SWITCH (COOLING ON/OFF)		

NOTES: 1. Since the outdoor side electric wiring may change, be sure to check the outdoor unit electric wiring for servicing.
2. Indoor and outdoor connecting wires are made with polarities, make wiring matching terminal numbers (S1, S2, S3).
3. Symbols used in wiring diagram above are, : Connector, : Terminal (block).
*For details on how to operate self-diagnosis refer to the technical manuals etc.

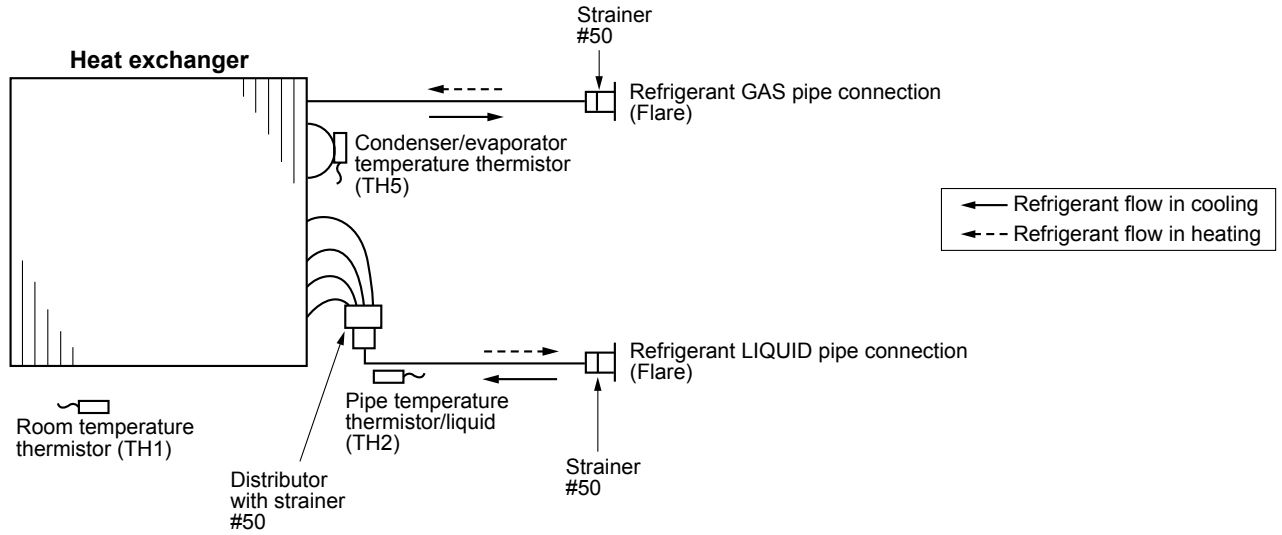
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REFRIGERANT SYSTEM DIAGRAM

SLZ-KA25VAQ.TH
SLZ-KA25VAQR1.TH
SLZ-KA25VAQ2.TH

SLZ-KA35VAQ.TH
SLZ-KA35VAQR1.TH
SLZ-KA35VAQR2.TH

SLZ-KA50VAQ.TH
SLZ-KA50VAQR1.TH
SLZ-KA50VAQR2.TH



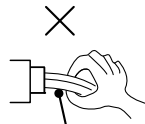
8-1. CAUTIONS ON TROUBLESHOOTING

(1) Before troubleshooting, check the followings:

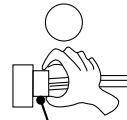
- ① Check the power supply voltage.
- ② Check that the indoor/outdoor connecting wire is correct.

(2) Take care of the followings during servicing:

- ① Before servicing the air conditioner, be sure to turn off the remote controller first to stop the main unit, and then turn off the breaker.
- ② When removing the indoor controller board, hold the edge of the board with care NOT to apply stress on the components.
- ③ When connecting or disconnecting the connectors, hold the housing of the connector. DO NOT pull the lead wires.



Lead wire



Housing point

8-2. MALFUNCTION-DIAGNOSIS METHOD BY REMOTE CONTROLLER

Errors detected by indoor unit

Wired remote controller	Symptom	Remarks
① Check code		
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	
P5	Drain pump error	
P6	Freezing/Overheating protection operation	
PL	Abnormal refrigerant circuit	
EE	Communication error between indoor and outdoor units	
P8	Pipe temperature error	
E4, E5	Remote controller signal receiving error	
—	—	
—	—	
Fb (FB)*	Indoor unit control system error (memory error, etc.)	
E0, E3	Remote controller transmission error	
E1, E2	Remote controller control board error	

Errors detected by unit other than indoor unit (outdoor unit, etc.)

Wired remote controller	Symptom	Remarks
① Check code		
E9	Indoor/outdoor unit communication error (Transmitting error) (Outdoor unit)	For details, check the LED display of the outdoor controller board. As for outdoor unit, refer to outdoor unit's service manual.
UP	Compressor overcurrent interruption	
U3, U4	Open/short of outdoor unit thermistors	
UF	Compressor overcurrent interruption (When compressor locked)	
U2	Abnormal high discharging temperature/49C operated/insufficient refrigerant	
U1, Ud (UD)*	Abnormal high pressure (63H operated)/Overheating protection operation	
U5	Abnormal temperature of heatsink	
U8	Outdoor unit fan protection stop	
U6	Compressor overcurrent interruption/Abnormal of power module	
U7	Abnormality of superheat 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 (Refer to the technical manual for the outdoor unit.)	

*The check code in the parenthesis indicates PAR-30MAA model.

continued to the next page.

- On wired remote controller
Check code displayed in the LCD.
- If the unit cannot be operated properly after the test run, refer to the following table to find out the cause.

Symptom		Cause
Wired remote controller		
PLEASE WAIT	For about 2 minutes after power-on	• For about 2 minutes after power-on, operation of the remote controller is not possible due to system start-up. (Correct operation)
PLEASE WAIT → Error code	Subsequent to about 2 minutes after power-on	• Connector for the outdoor unit's protection device is not connected. • Reverse or open phase wiring for the outdoor unit's power terminal block
No messages appear even when operation switch is turned ON (operation lamp does not light up).		• Incorrect wiring between indoor and outdoor units. (incorrect polarity of S1, S2, S3) • Remote controller wire short

Note:
Operation is not possible for about 30 seconds after cancellation of function selection. (Correct operation)

For description of each LED (LED1, 2, 3) provided on the indoor controller, refer to the following table.

LED1 (power for microprocessor)	Indicates whether control power is supplied. Make sure that this LED is always lit.
LED2 (power for wired remote controller)	Indicates whether power is supplied to the wired remote controller. This LED lights only in the case of the indoor unit which is connected to the outdoor unit refrigerant address "0".
LED3 (communication between indoor and outdoor units)	Indicates state of communication between the indoor and outdoor units. Make sure that this LED is always blinking.

8-3. SELF-DIAGNOSIS ACTION TABLE

Note: Refer to the manual of outdoor unit for the details of display such as F, U, and other E.

Error Code	Abnormal point and detection method	Cause	Countermeasure
P1	<p>Room temperature thermistor (TH1)</p> <p>① The unit is in 3-minute resume prevention mode if short/open of thermistor is detected. Abnormal if the unit does not reset normally after 3 minutes. (The unit returns to normal operation, if it has been reset normally.)</p> <p>② Constantly detected during cooling, drying and heating operation Short: 90°C or more Open: -40°C or less</p>	<p>① Defective thermistor characteristics</p> <p>② Contact failure of connector (CN20) on the indoor controller board (Insert failure)</p> <p>③ Breaking of wire or contact failure of thermistor wiring</p> <p>④ Defective indoor controller board</p>	<p>①~③ Check resistance value of thermistor. 0°C.....15.0kΩ 10°C.....9.6kΩ 20°C.....6.3kΩ 30°C.....4.3kΩ 40°C.....3.0kΩ</p> <p>If you put force on (draw or bend) the lead wire with measuring resistance value of thermistor, breaking of wire or contact failure can be detected.</p> <p>② Check contact failure of connector (CN20) on the indoor controller board. Refer to 8-5. Turn the power back on and check restart after inserting connector again.</p> <p>④ Check room temperature display on remote controller. Replace indoor controller board if there is abnormal difference with actual room temperature.</p> <p>Turn the power off, and on again to operate after checking.</p>
P2	<p>Pipe temperature thermistor/Liquid (TH2)</p> <p>① The unit is in 3-minute resume prevention mode if short/open of thermistor is detected. Abnormal if the unit does not reset normally after 3 minutes. (The unit returns to normal operation, if it has been reset normally.)</p> <p>② Constantly detected during cooling, drying, and heating (except defrosting) operation. Short: 90°C or more Open: -40°C or less</p>	<p>① Defective thermistor characteristics</p> <p>② Contact failure of connector (CN21) on the indoor controller board (Insert failure)</p> <p>③ Breaking of wire or contact failure of thermistor wiring</p> <p>④ Defective refrigerant circuit is causing thermistor temperature of 90°C or more or -40°C or less.</p> <p>⑤ Defective indoor controller board</p>	<p>①~③ Check resistance value of thermistor. For characteristics, refer to (P1) above.</p> <p>② Check contact failure of connector (CN21) on the indoor controller board. Refer to 8-5. Turn the power on and check restart after inserting connector again.</p> <p>④ Check pipe <liquid> temperature with remote controller in test run mode. If pipe <liquid> temperature is extremely low (in cooling mode) or high (in heating mode), refrigerant circuit may have defect.</p> <p>⑤ Check pipe <liquid> temperature with remote controller in test run mode. If there is extreme difference with actual pipe <liquid> temperature, replace indoor controller board.</p> <p>Turn the power off, and on again to operate after checking.</p>
P4	<p>Drain sensor (DS)</p> <p>① Suspensive abnormality, if short/open of thermistor is detected for 30 seconds continuously. Turn off compressor and indoor fan.</p> <p>② Short/open is detected for 30 seconds continuously during suspensive abnormality. (The unit returns to normal operation, if it has been reset normally.)</p> <p>③ Detect the following condition.</p> <ul style="list-style-type: none"> • During cooling and drying operation • In case that pipe <liquid> temperature - room temperature < -10 deg (Except defrosting) • When pipe <liquid> temperature or room temperature is short/open temperature. • During drain pump operation 	<p>① Defective thermistor characteristics</p> <p>② Contact failure of connector (CN31) on the indoor controller board (Insert failure)</p> <p>③ Breaking of wire or contact failure of drain sensor wiring</p> <p>④ Defective indoor controller board</p>	<p>①~③ Check resistance value of thermistor. 0°C.....6.0kΩ 10°C.....3.9kΩ 20°C.....2.6kΩ 30°C.....1.8kΩ 40°C.....1.3kΩ</p> <p>② Check contact failure of connector (CN31) on the indoor controller board. Refer to 8-5. Turn the power back on and check restart after inserting connector again.</p> <p>④ Replace indoor controller board if drain pump operates with the line of drain sensor connector CN31-① and ② is short-circuited, and abnormality reappears.</p> <p>Turn the power off, and on again to operate after checking.</p>
P5	<p>Malfunction of drain pump (DP)</p> <p>① Suspensive abnormality, if thermistor of drain sensor heats itself and temperature rises slightly. Turn off compressor and indoor fan.</p> <p>② Drain pump is abnormal if the condition above is detected during suspensive abnormality.</p> <p>③ Constantly detected during drain pump operation</p>	<p>① Malfunction of drain pump</p> <p>② Defective drain Clogged drain pump Clogged drain pipe</p> <p>③ Attached drop of water at the drain sensor</p> <ul style="list-style-type: none"> • Drops of drain trickles from lead wire • Clogged filter is causing wave of drain. <p>④ Defective indoor controller board</p>	<p>① Check if drain pump works.</p> <p>② Check drain function.</p> <p>③ Check the setting of lead wire of drain sensor and check clogs of the filter.</p> <p>④ Replace indoor controller board if drain pump operates with the line of drain sensor connector CN31-① and ② is short-circuited and abnormality reappears. Refer to 8-5.</p> <p>Turn the power off, and on again to operate after checking.</p>



Error Code	Abnormal point and detection method	Cause	Countermeasure
P6	<p>Freezing/overheating protection is operating</p> <p>① Freezing protection (Cooling mode) The unit is in 6-minute resume prevention mode if pipe <liquid or condenser/evaporator> temperature stays under -15°C for 3 minutes after the compressor started. Abnormal if it stays under 15°C for 3 minutes again within 16 minutes after 6-minute resume prevention mode.</p> <p>② Overheating protection (Heating mode) The units is in 6-minute resume prevention mode if pipe <condenser / evaporator> temperature is detected as over 70°C after the compressor started. Abnormal if the temperature of over 70°C is detected again within 10 minutes after 6-minute resume prevention mode.</p>	<p>(Cooling or drying mode)</p> <p>① Clogged filter (reduced airflow) ② Short cycle of air path ③ Low-load (low temperature) operation out of the tolerance range ④ Defective indoor fan motor • Fan motor is defective. • Indoor controller board is defective.</p> <p>⑤ Defective outdoor fan control ⑥ Overcharge of refrigerant ⑦ Defective refrigerant circuit (clogging)</p> <p>(Heating mode)</p> <p>① Clogged filter (reduced airflow) ② Short cycle of air path ③ Overload (high temperature) operation out of the tolerance range ④ Defective indoor fan motor • Fan motor is defective. • Indoor controller board is defective.</p> <p>⑤ Defective outdoor fan control ⑥ Overcharge of refrigerant ⑦ Defective refrigerant circuit (clogging) ⑧ Bypass circuit of outdoor unit is defective.</p>	<p>(Cooling or drying mode)</p> <p>① Check clogging of the filter. ② Remove blockage.</p> <p>④ Measure the resistance of fan motor's winding. Measure the output voltage of fan's connector (FAN) on the indoor controller board. * The indoor controller board should be normal when voltage of AC 220 - 240V is detected while fan motor is connected. Refer to 8-5. ⑤ Check outdoor fan motor. ⑥⑦ Check operating condition of refrigerant circuit.</p> <p>(Heating mode)</p> <p>① Check clogs of the filter. ② Remove blockage.</p> <p>④ Measure the resistance of fan motor's winding. Measure the output voltage of fan's connector (FAN) on the indoor controller board. * The indoor controller board should be normal when voltage of AC 220 - 240V is detected while fan motor is connected. Refer to 8-5. ⑤ Check outdoor fan motor. ⑥~⑧ Check operating condition of refrigerant circuit.</p>
P8	<p>Pipe temperature</p> <p><Cooling mode> Detected as abnormal when the pipe temperature is not in the cooling range 3 minutes after compressor start and 6 minutes after the liquid or condenser/evaporator pipe is out of cooling range. Note 1) It takes at least 9 min. to detect. Note 2) Abnormality P8 is not detected in drying mode. Cooling range : -3 deg ≥ (TH-TH1) TH: Lower temperature between liquid pipe temperature (TH2) and condenser/evaporator temperature (TH5) TH1: Intake temperature</p> <p><Heating mode> When 10 seconds have passed after the compressor starts operation and the hot adjustment mode has finished, the unit is detected as abnormal when condenser/evaporator pipe temperature is not in heating range within 20 minutes. Note 3) It takes at least 27 minutes to detect abnormality. Note 4) It excludes the period of defrosting (Detection restarts when defrosting mode is over) Heating range : 3 deg ≤ (TH5-TH1)</p>	<p>① Slight temperature difference between indoor room temperature and pipe <liquid or condenser/evaporator> temperature thermistor • Shortage of refrigerant • Disconnected holder of pipe <liquid or condenser/evaporator> thermistor • Defective refrigerant circuit</p> <p>② Converse connection of extension pipe (on plural units connection) ③ Converse wiring of indoor/outdoor unit connecting wire (on plural units connection) ④ Defective detection of indoor room temperature and pipe <condenser/evaporator> temperature thermistor ⑤ Stop valve is not opened completely.</p>	<p>①~④ Check pipe <liquid or condenser / evaporator> temperature with room temperature display on remote controller and outdoor controller circuit board. Pipe <liquid or condenser / evaporator> temperature display is indicated by setting SW2 of outdoor controller circuit board as follows.</p> <p>(Conduct temperature check with outdoor controller circuit board after connecting 'A-Control Service Tool(PAC-SK52ST)')</p> <p>②③ Check converse connection of extension pipe or converse wiring of indoor/outdoor unit connecting wire.</p>



Error Code	Abnormal point and detection method	Cause	Countermeasure
P9	<p>Pipe temperature thermistor / Condenser / Evaporator (TH5)</p> <p>① The unit is in 3-minute resume protection mode if short/open of thermistor is detected. Abnormal if the unit does not get back to normal within 3 minutes. (The unit returns to normal operation, if it has been reset normally.)</p> <p>② Constantly detected during cooling, drying, and heating operation (except defrosting) Short: 90°C or more Open: -40°C or less</p>	<p>① Defective thermistor characteristics</p> <p>② Contact failure of connector (CN29) on the indoor controller board (Insert failure)</p> <p>③ Breaking of wire or contact failure of thermistor wiring</p> <p>④ Temperature of thermistor is 90°C or more or -40°C or less caused by defective refrigerant circuit.</p> <p>⑤ Defective indoor controller board</p>	<p>①~③ Check resistance value of thermistor. For characteristics, refer to (P1) above.</p> <p>② Check contact failure of connector (CN29) on the indoor controller board. Refer to 8-5. Turn the power on and check restart after inserting connector again.</p> <p>④ Operate in test run mode and check pipe <condenser/evaporator> temperature with outdoor controller circuit board. If pipe <condenser/evaporator> temperature is extremely low (in cooling mode) or high (in heating mode), refrigerant circuit may have defect.</p> <p>⑤ Operate in test run mode and check pipe <condenser/evaporator> temperature with outdoor control circuit board. If there is extreme difference with actual pipe <condenser/evaporator> temperature replace indoor controller board. There is no abnormality if none of above comes within the unit. Turn the power off and on again to operate.</p> <p>(In case of checking pipe temperature with outdoor controller circuit board, be sure to connect A-control service tool (PAC-SK52ST).)</p>
PL	<p>Abnormal refrigerant circuit</p> <p>During Cooling, Dry, or Auto Cooling operation, when the following are regarded as failures when detected for one second.</p> <p>a)The compressor continues to run for 30 or more seconds.</p> <p>b)The liquid pipe temperature or the condense/evaporator temperature is 75°C or more.</p> <p>*These detected errors will not be cancelled until the power source is reset.</p>	<p>① Abnormal operation of 4-way valve</p> <p>② Disconnection of or leakage in refrigerant pipes</p> <p>③ Air into refrigerant piping</p> <p>④ Abnormal operation (no rotation) of indoor fan · Defective fan motor. · Defective indoor control board.</p> <p>⑤ Defective refrigerant circuit (clogging)</p>	<p>① <u>When this error occurs, be sure to replace the 4-way valve.</u></p> <p>② Check refrigerant pipes for disconnection or leakage.</p> <p>③ After the recovery of refrigerant, vacuum dry the whole refrigerant circuit.</p> <p>④ Refer to section 8-7.</p> <p>⑤ Check refrigerant circuit for operation.</p> <p><u>*To avoid entry of moisture or air into refrigerant circuit which could cause abnormal high pressure, purge air in refrigerant circuit or replace refrigerant.</u></p>
E0 or E4	<p>Remote controller transmission error(E0)/signal receiving error(E4)</p> <p>① Abnormal if main or sub remote controller cannot receive any transmission normally from indoor unit of refrigerant address "0" for 3 minutes. (Error code: E0)</p> <p>② Abnormal if sub-remote controller could not receive for any signal for 2 minutes. (Error code: E0)</p> <p>① Abnormal if indoor controller board cannot receive normally any data from remote controller board or from other indoor controller board for 3 minutes. (Error code: E4)</p> <p>② Indoor controller board cannot receive any signal from remote controller for 2 minutes. (Error code: E4)</p>	<p>① Contact failure at transmission wire of remote controller</p> <p>② All remote controllers are set as "sub" remote controller. In this case, E0 is displayed on remote controller, and E4 is displayed at LED (LED1, LED2) on the outdoor controller circuit board.</p> <p>③ Miswiring of remote controller</p> <p>④ Defective transmitting/receiving circuit of remote controller</p> <p>⑤ Defective transmitting/receiving circuit of indoor controller board of refrigerant address "0"</p> <p>⑥ Noise has entered into the transmission wire of remote controller.</p>	<p>① Check disconnection or looseness of indoor unit or transmission wire of remote controller.</p> <p>② Set one of the remote controllers "main", if there is no problem with the action above.</p> <p>③ Check wiring of remote controller. · Total wiring length: max. 500 m (Do not use cable × 3 or more) · The number of connecting indoor units: max. 16 units · The number of connecting remote controller: max. 2 units</p> <p>When the above-mentioned problem of ①~③ are not seen.</p> <p>④ Diagnose remote controllers. a) When "RC OK" is displayed, remote controllers have no problem. Turn the power off, and on again to check. If abnormality generates again, replace indoor controller board. b) When "RC NG" is displayed, replace remote controller. c) When "RC E3" or "ERC 00-66" is displayed, noise may be causing abnormality.</p>



Error Code	Abnormal point and detection method	Cause	Countermeasure
E3 or E5	Remote controller transmission error(E3)/signal receiving error(E5) ① Abnormal if remote controller could not find blank of transmission path for 6 seconds and could not transmit. (Error code: E3) ② Remote controller receives transmitted data at the same time, compares the data, and when detecting it, judges different data to be abnormal 30 continuous times. (Error code: E3) ① Abnormal if indoor controller board could not find blank of transmission path. (Error code: E5) ② Indoor controller board receives transmitted data at the same time, compares the data, and when detecting it, judges different data to be abnormal 30 continuous times. (Error code: E5)	① 2 remote controllers are set as "main." (In case of 2 remote controllers) ② Remote controller is connected with 2 indoor units or more. ③ Repetition of refrigerant address ④ Defective transmitting/receiving circuit of remote controller ⑤ Defective transmitting/receiving circuit of indoor controller board ⑥ Noise has entered into transmission wire of remote controller.	① Set a remote controller to main, and the other to sub. ② Remote controller is connected with only one indoor unit. ③ The address changes to a separate setting. ④~⑥ Diagnose remote controller. a) When "RC OK" is displayed, remote controllers have no problem. Turn the power off, and on again to check. When becoming abnormal again, replace indoor controller board. b) When "RC NG" is displayed, replace remote controller. c) When "RC E3" or "ERC 00-66" is displayed, noise may be causing abnormality.
E6	Indoor/outdoor unit communication error (Signal receiving error) ① Abnormal if indoor controller board cannot receive any signal normally for 6 minutes after turning the power on. ② Abnormal if indoor controller board cannot receive any signal normally for 3 minutes. ③ Consider the unit abnormal under the following condition: When 2 or more indoor units are connected to one outdoor unit, indoor controller board cannot receive a signal for 3 minutes from outdoor controller circuit board, a signal which allows outdoor controller circuit board to transmit signals.	① Contact failure, short circuit or, miswiring (converse wiring) of indoor/outdoor unit connecting wire ② Defective transmitting/receiving circuit of indoor controller board ③ Defective transmitting/receiving circuit of indoor controller board ④ Noise has entered into indoor/outdoor unit connecting wire.	① Check disconnection or looseness of indoor/outdoor unit connecting wire of indoor unit or outdoor unit. Check all the units in case of twin indoor unit system. ②~④ Turn the power off, and on again to check. If abnormality generates again, replace indoor controller board or outdoor controller circuit board. * Other indoor controller board may have defect in case of twin indoor unit system.
E7	Indoor/outdoor unit communication error (Transmitting error) Abnormal if "1" receiving is detected 30 times continuously though indoor controller board has transmitted "0".	① Defective transmitting receiving circuit of indoor controller board ② Noise has entered into power supply. ③ Noise has entered into outdoor control wire.	①~③ Turn the power off, and on again to check. If abnormality generates again, replace indoor controller board.
Fb (FB)*	Indoor controller board Abnormal if data cannot be normally read from the nonvolatile memory of the indoor controller board.	① Defective indoor controller board	① Replace indoor controller board. * The check code in the parenthesis indicates PAR-30MAA model.
E1 or E2	Remote controller control board ① Abnormal if data cannot be normally read from the nonvolatile memory of the remote controller control board. (Error code: E1) ② Abnormal if the clock function of remote controller cannot be normally operated. (Error code: E2)	① Defective remote controller	① Replace remote controller.



Error Code	Abnormal point and detection method	Cause	Countermeasure
PA (2502) (2500)	<p>Forced compressor stop (due to water leakage abnormality)</p> <p>① When the intake temperature subtracted from liquid pipe temperature is less than -10°C, drain sensor detects whether it is soaked in the water or not at the interval of 90 seconds. (Drain pump will start operating when the drain sensor detects to be soaked in the water.)</p> <p>② The unit has a water leakage abnormality when the following conditions, a) and b), are satisfied while the above-mentioned detection is performed.</p> <p>a) The drain sensor detects to be soaked in the water 10 times in a row.</p> <p>b) The intake temperature subtracted from liquid pipe temperature is detected to be less than -10°C for a total of 30 minutes. (When the drain sensor detects to be NOT soaked in the water, the detection record of a) and b) will be cleared.)</p> <p>③ The drain sensor detection is performed in operations other than cooling. (When the unit stops operating, during heating or fan operation, when the unit stops because of some abnormality)</p> <p>*Once the water leakage abnormality is detected, abnormality state will not be released until the main power is reset.</p>	<p>① Drain pump trouble</p> <p>② Drain defective · Drain pump clogging · Drain pipe clogging</p> <p>③ Open circuit of drain sensor side heater</p> <p>④ Contact failure of drain sensor connector</p> <p>⑤ Dew condensation on drain sensor · Drain water trickles along lead wire. · Drain water waving due to filter clogging</p> <p>⑥ Extension piping connection difference at twin, triple, quadruple system</p> <p>⑦ Miswiring of indoor/outdoor connecting at twin, triple, quadruple system</p> <p>⑧ Room temperature thermistor/ liquid pipe temperature thermistor detection is defective.</p>	<p>① Check the drain pump.</p> <p>② Please check whether water can be drained.</p> <p>③ Check the resistance of the drain sensor side heater.</p> <p>④ Check the connector contact failure.</p> <p>⑤ Check the drain sensor lead wire mounted. Check the filter clogging.</p> <p>⑥ Check the piping connection.</p> <p>⑦ Check the indoor/outdoor connecting wires.</p> <p>⑧ Check the room temperature display of remote controller. Check the indoor liquid pipe temperature display of outdoor controller board.</p>

8-4. TROUBLESHOOTING OF PROBLEMS

Note: Refer to the manual of outdoor unit for the detail of remote controller.

Phenomena	Cause	Countermeasure
(1) LED2 on indoor controller board is off.	<ul style="list-style-type: none"> • When LED1 on indoor controller board is also off. <p>① Power supply of rated voltage is not supplied to outdoor unit.</p> <p>② Defective outdoor controller circuit board</p> <p>③ Power supply of 220~240V is not supplied to indoor unit.</p> <p>④ Defective indoor power board</p> <p>⑤ Defective indoor controller board</p>	<p>① Check the voltage of outdoor power supply terminal block (L, N) or (L₃, N).</p> <ul style="list-style-type: none"> • When AC 220-240V is not detected, check the power wiring to outdoor unit and the breaker. • When AC 220-240V is detected, check ② (below). <p>② Check the voltage between outdoor terminal block S1 and S2.</p> <ul style="list-style-type: none"> • When AC 220-240V is not detected, —check the fuse on outdoor controller circuit board. —check the wiring connection. • When AC 220-240V is detected, check ③ (below). <p>③ Check the voltage between indoor terminal block S1 and S2.</p> <ul style="list-style-type: none"> • When AC 220-240V is not detected, check indoor/outdoor unit connecting wire for miswiring. • When AC 220-240V is detected, check ④ (below). <p>④ Check voltage output from CN2S on indoor power board (DC13.1V). Refer to 8-5.</p> <ul style="list-style-type: none"> • When no voltage is output, check the wiring connection. • When output voltage is between DC12.5V and DC13.7V, check ⑤ (below). <p>⑤ Check the wiring connection between indoor controller board and indoor power board. Check the fuse on indoor controller board. If no problems are found, indoor controller board is defective.</p>
	<ul style="list-style-type: none"> • When LED1 on indoor controller board is lit. <p>① Mis-setting of refrigerant address for outdoor unit (There is no unit corresponding to refrigerant address "0".)</p>	<p>① Check the setting of refrigerant address for outdoor unit. Set the refrigerant address to "0". (For grouping control system under which 2 or more outdoor units are connected, set one of the units to "0".) Set refrigerant address using SW1 (3-6) on outdoor controller circuit board.</p>
(2) LED2 on indoor controller board is blinking.	<ul style="list-style-type: none"> • When LED1 on indoor controller board is also blinking. Connection failure of indoor/outdoor unit connecting wire • When LED1 is lit <p>① Miswiring of remote controller wires Under twin indoor unit system, 2 or more indoor units</p> <p>② Refrigerant address for outdoor unit is wrong or not set. Under grouping control system, there are some units whose refrigerant address is 0.</p> <p>③ Short-cut of remote controller wires</p> <p>④ Defective remote controller</p>	<p>Check indoor/outdoor unit connecting wire for connection failure.</p> <p>① Check the connection of remote controller wires in case of twin triple indoor unit system. When 2 or more indoor units are wired in one refrigerant system, connect remote controller wires to one of those units.</p> <p>② Check the setting of refrigerant address in case of grouping control system. If there are some units whose refrigerant addresses are 0 in one group, set one of the units to 0 using SW1 (3-6) on outdoor controller circuit board.</p> <p>③④ Remove remote controller wires and check LED2 on indoor controller board.</p> <ul style="list-style-type: none"> • When LED2 is blinking, check the short-cut of remote controller wires. • When LED2 is lit, connect remote controller wires again and: if LED2 is blinking, remote controller is defective; if LED2 is lit, connection failure of remote controller terminal block etc. has returned to normal.

8-5. TEST POINT DIAGRAM

8-5-1. Indoor power board

SLZ-KA25VAQ.TH

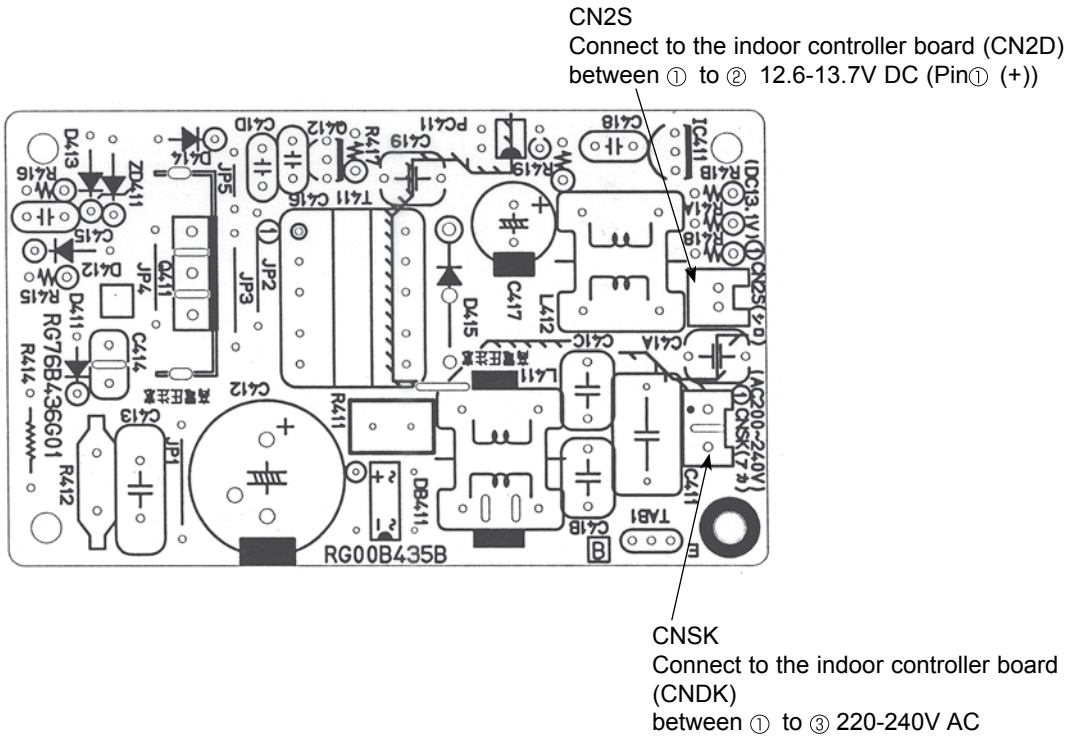
SLZ-KA35VAQ.TH

SLZ-KA50VAQ.TH

SLZ-KA25VAQR1.TH

SLZ-KA35VAQR1.TH

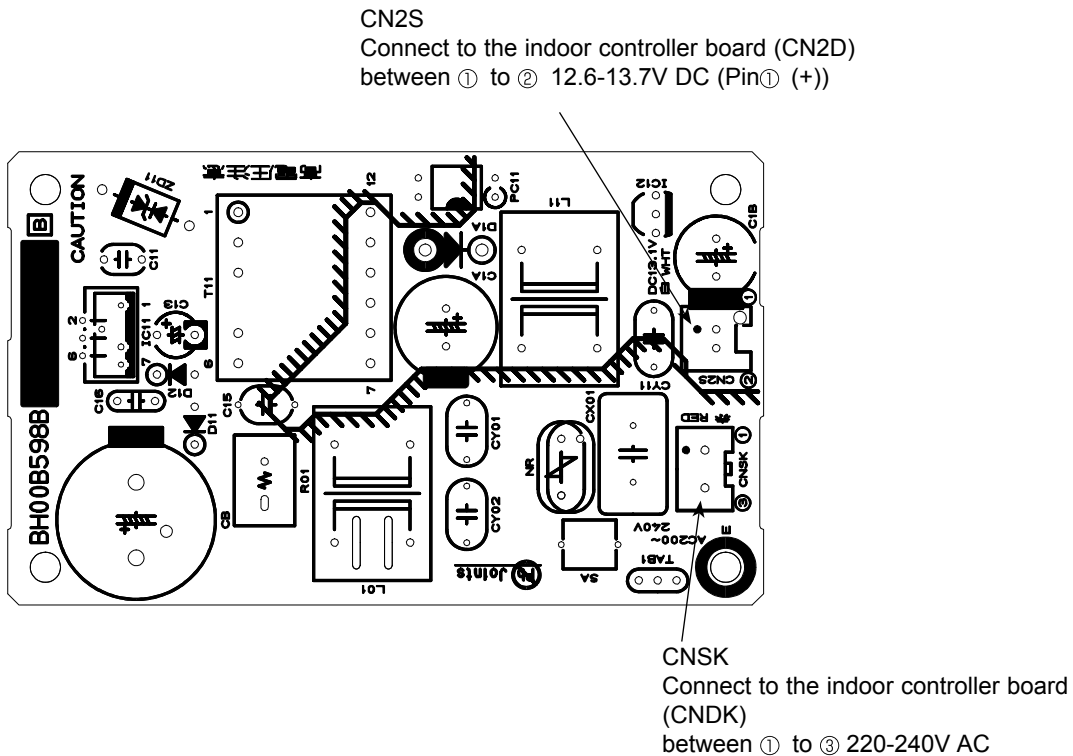
SLZ-KA50VAQR1.TH



SLZ-KA25VAQ2.TH

SLZ-KA35VAQR2.TH

SLZ-KA50VAQR2.TH

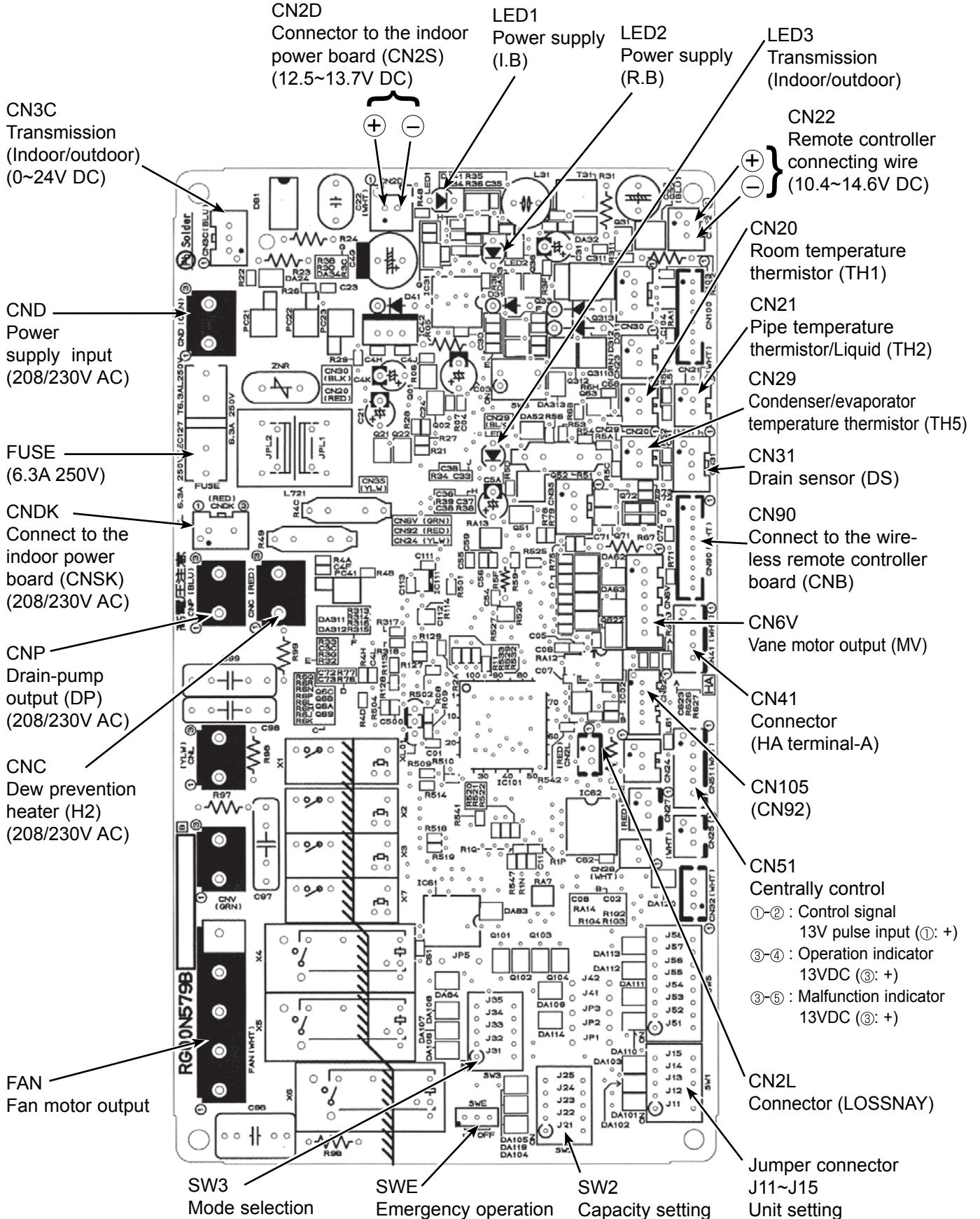


8-5-2. Indoor controller board

SLZ-KA25VAQ.TH
 SLZ-KA25VAQR1.TH
 SLZ-KA25VAQ2.TH

SLZ-KA35VAQ.TH
 SLZ-KA35VAQR1.TH
 SLZ-KA35VAQR2.TH

SLZ-KA50VAQ.TH
 SLZ-KA50VAQR1.TH
 SLZ-KA50VAQR2.TH



8-6. FUNCTIONS OF DIP SWITCH AND JUMPER WIRE

Each function is controlled by the dip switch on control P.C. board.

Model setting and capacity setting are memorised in the nonvolatile memory of the indoor controller board.

The black square (■) indicates a switch position.

Jumper wire	Functions	Setting by the dip switch and jumper wire	Remarks																																																																																																														
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• Function setting becomes effective when the Dip switch SW3-5 is ON.

* Switch off SW3-5 when the function setting is done by wired remote controller.

8-7. TROUBLE CRITERION OF MAIN PARTS

SLZ-KA25VAQ.TH

SLZ-KA35VAQ.TH

SLZ-KA50VAQ.TH

SLZ-KA25VAQR1.TH

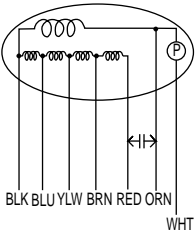
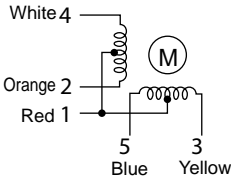
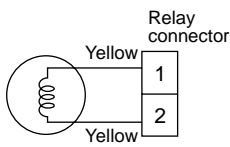
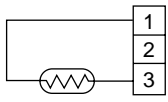
SLZ-KA35VAQR1.TH

SLZ-KA50VAQR1.TH

SLZ-KA25VAQ2.TH

SLZ-KA35VAQR2.TH

SLZ-KA50VAQR2.TH

Parts name	Check method and criterion																										
Room temperature thermistor (TH1)	Measure the resistance with a tester. (Parts temperature 10 °C ~ 30 °C)																										
Pipe temperature thermistor/liquid (TH2)																											
Condenser/evaporator temperature thermistor (TH5)																											
Indoor fan motor (MF)  BLK BLU YLW BRN RED ORN WHT P : Thermal fuse 141 ± 3°C	Measure the resistance between the terminals with a tester. (Coil wiring temperature 10 °C ~ 30 °C)																										
	<table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="3">Normal</th> <th rowspan="2">Abnormal</th> </tr> <tr> <th>KA25VAQ</th> <th>KA35VAQ KA25VAQ2</th> <th>KA50VAQ</th> </tr> </thead> <tbody> <tr> <td>WHT-BLK</td> <td>386~428Ω</td> <td>373~413Ω</td> <td>308~341Ω</td> <td rowspan="4">Opened or short-circuited</td> </tr> <tr> <td>BLK-BLU</td> <td>81~91Ω</td> <td>155~172Ω</td> <td>135~151Ω</td> </tr> <tr> <td>BLU-YLW</td> <td>28~32Ω</td> <td>44~49Ω</td> <td>44~49Ω</td> </tr> <tr> <td>BRN-RED</td> <td>157~174Ω</td> <td>302~335Ω</td> <td>293~324Ω</td> </tr> </tbody> </table>		Normal			Abnormal	KA25VAQ	KA35VAQ KA25VAQ2	KA50VAQ	WHT-BLK	386~428Ω	373~413Ω	308~341Ω	Opened or short-circuited	BLK-BLU	81~91Ω	155~172Ω	135~151Ω	BLU-YLW	28~32Ω	44~49Ω	44~49Ω	BRN-RED	157~174Ω	302~335Ω	293~324Ω	
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Vane motor (MV) 	Measure the resistance between the terminals with a tester. (At the ambient temperature 20 °C ~ 30 °C)																										
	<table border="1"> <thead> <tr> <th>Connector</th> <th>Normal</th> <th>Abnormal</th> </tr> </thead> <tbody> <tr> <td>Red — Yellow</td> <td rowspan="4">300Ω</td> <td rowspan="4">Open or short</td> </tr> <tr> <td>Red — Blue</td> </tr> <tr> <td>Red — Orange</td> </tr> <tr> <td>Red — White</td> </tr> </tbody> </table>	Connector	Normal	Abnormal	Red — Yellow	300Ω	Open or short	Red — Blue	Red — Orange	Red — White																	
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Drain sensor (DS) 	Measure the resistance between the terminals with a tester. Measure the resistance after 3 minutes have passed since the power supply was intercepted. (At the ambient temperature 0 °C ~ 60 °C)																										
	<table border="1"> <thead> <tr> <th>Normal</th> <th>Abnormal</th> </tr> </thead> <tbody> <tr> <td>0.6kΩ ~ 6.0kΩ</td> <td>Open or short</td> </tr> </tbody> </table>	Normal	Abnormal	0.6kΩ ~ 6.0kΩ	Open or short	(Refer to the next page for a detail.)																					
Normal	Abnormal																										
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<Thermistor Characteristic graph>

Thermistor for lower temperature

- Room temperature thermistor (TH1)
- Pipe temperature thermistor/liquid (TH2)
- Condenser/evaporator temperature thermistor (TH5)

Thermistor $R_0=15k\Omega \pm 3\%$
 Fixed number of $B=3480 \pm 2\%$

$$R_t = 15 \exp \left\{ 3480 \left(\frac{1}{273+t} - \frac{1}{273} \right) \right\}$$

0°C	15kΩ
10°C	9.6kΩ
20°C	6.3kΩ
25°C	5.2kΩ
30°C	4.3kΩ
40°C	3.0kΩ

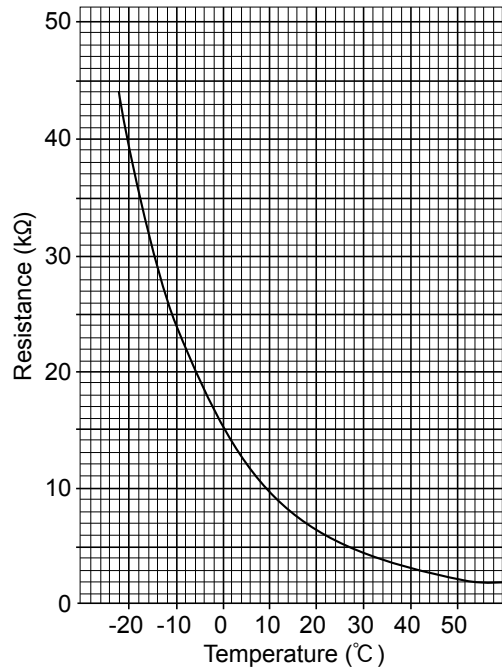
Thermistor for drain sensor

Thermistor $R_0=6.0k\Omega \pm 5\%$
 Fixed number of $B=3390 \pm 2\%$

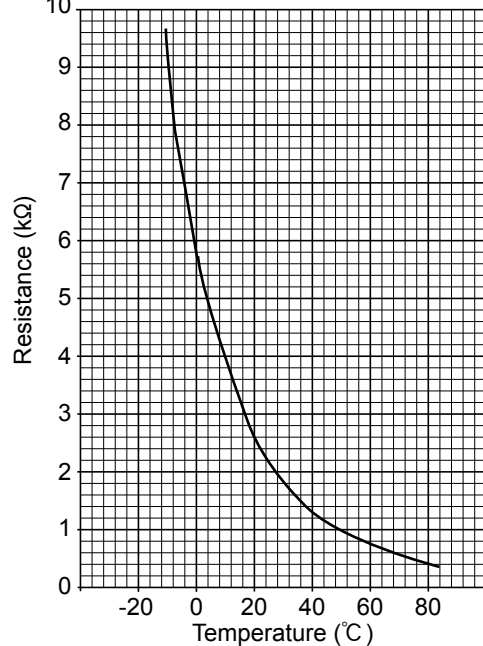
$$R_t = 6 \exp \left\{ 3390 \left(\frac{1}{273+t} - \frac{1}{273} \right) \right\}$$

0°C	6.0kΩ
10°C	3.9kΩ
20°C	2.6kΩ
25°C	2.2kΩ
30°C	1.8kΩ
40°C	1.3kΩ
60°C	0.6kΩ

< Thermistor for lower temperature >

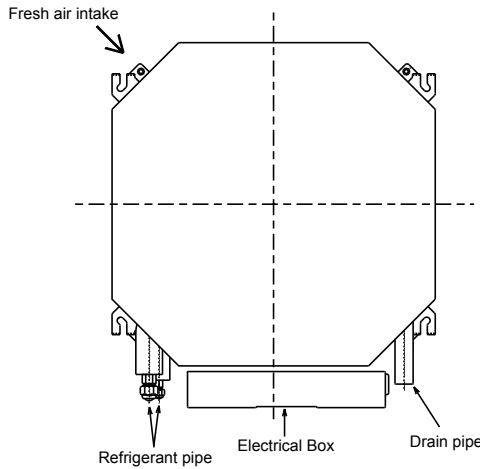


< Thermistor for drain sensor >

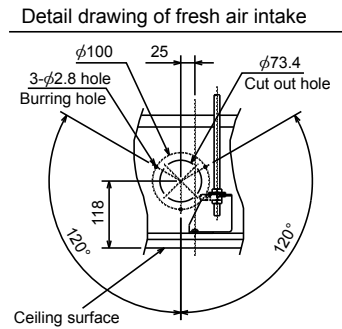


9-1. FRESH AIR INTAKE (LOCATION FOR INSTALLATION)

At the time of installation, use the duct holes (cut out) located at the positions shown in following diagram, as and when required.



Unit: mm



9-2. FRESH AIR INTAKE AMOUNT & STATIC PRESSURE CHARACTERISTICS

SLZ-KA25VAQ.TH

SLZ-KA35VAQ.TH

SLZ-KA50VAQ.TH

SLZ-KA25VAQR1.TH

SLZ-KA35VAQR1.TH

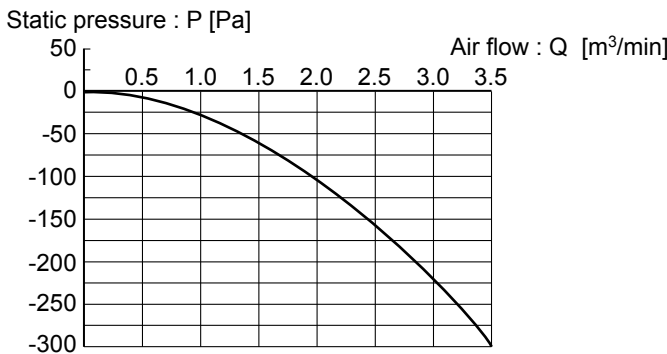
SLZ-KA50VAQR1.TH

SLZ-KA25VAQ2.TH

SLZ-KA35VAQR2.TH

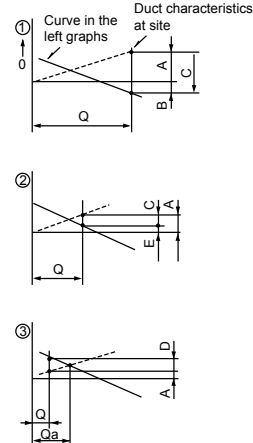
SLZ-KA50VAQR2.TH

Taking air into the unit



NOTE: Fresh air intake amount should be 20% or less of whole air amount to prevent dew dripping.

How to read curves



- Q...Designed amount of fresh air intake $\lt; m^3/min >$
- A...Static pressure loss of fresh air intake duct system with air flow amount Q $\lt; Pa >$
- B...Forced static pressure at air conditioner inlet with air flow amount Q $\lt; Pa >$
- C...Static pressure of booster fan with air flow amount Q $\lt; Pa >$
- D...Static pressure loss increase amount of fresh air intake duct system for air flow amount Q $\lt; Pa >$
- E...Static pressure of indoor unit with air flow amount Q $\lt; Pa >$
- Qa...Estimated amount of fresh air intake without D $\lt; m^3/min >$

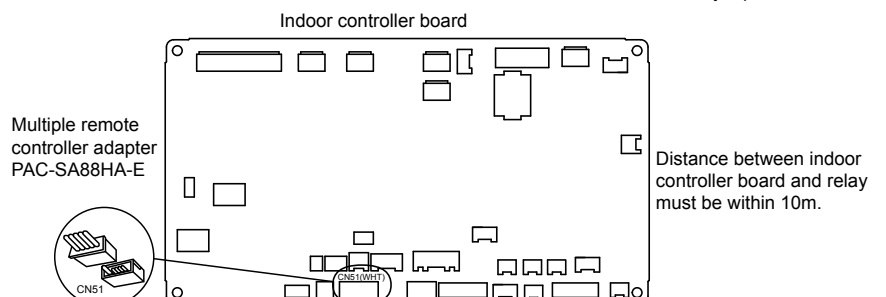
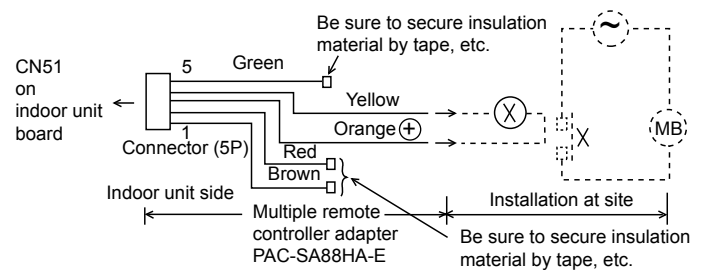
9-3. OPERATION IN CONJUNCTION WITH DUCT FAN (BOOSTER FAN)

• Whenever the indoor unit operates, the duct fan operates.

- (1) Connect the optional multiple remote controller adapter (PAC-SA88HA-E) to the connector CN51 on the indoor controller board.
- (2) Drive the relay after connecting the 12V DC relay between the Yellow and Orange connector wires.

Use a nonpolar relay of 1W or smaller.
MB: Electromagnetic switch power relay for duct fan.
X: Auxiliary relay (12V DC LY-1F)

X: Auxiliary relay (12V DC LY-1F)



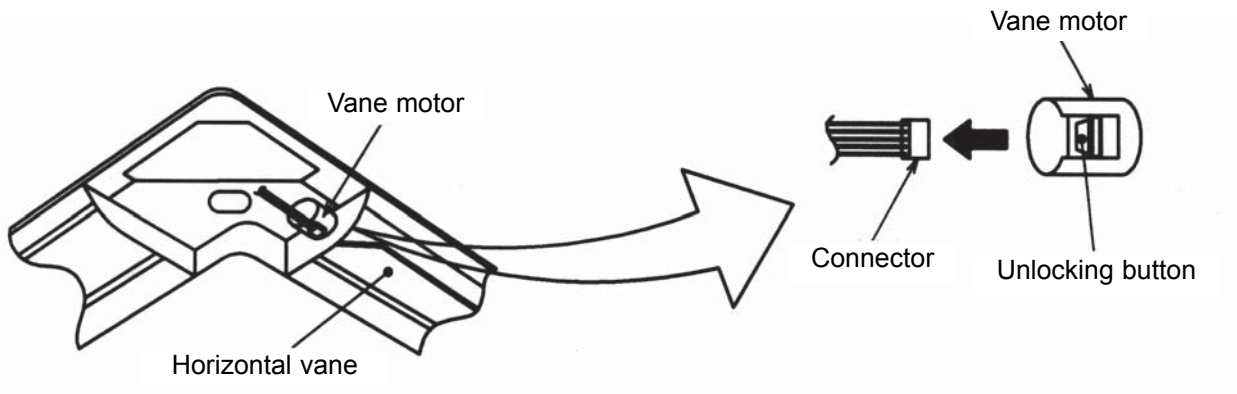
9-4. FIXING HORIZONTAL VANE

Horizontal vane of each air outlet can be fixed according to the environment where it is installed.

Setting procedure

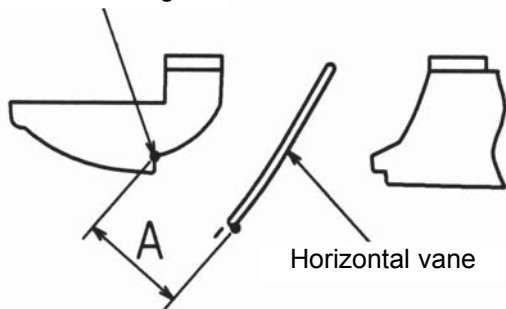
- 1) Turn off a main power supply (Turn off a breaker).
- 2) Remove the vane motor connector in the direction of the arrow shown below with pressing the unlocking button as in the figure below.

Insulate the disconnected connector with the plastic tape.



- 3) Set the vertical vane of the air outlet by hand slowly within the range in the table below.

Measured standard position of the grille



< Specified range >

Up/down airflow direction	Horizontal 30°	Downward 45°	Downward 55°	Downward 70°
A	21 mm	25 mm	28 mm	30 mm

The vanes can be set between 21mm and 30 mm.



Caution:

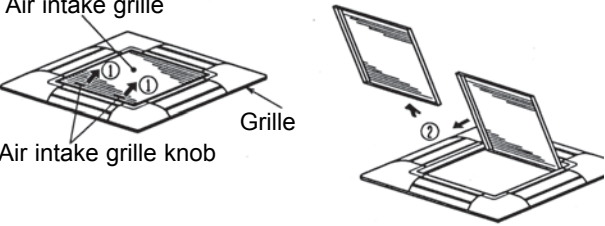
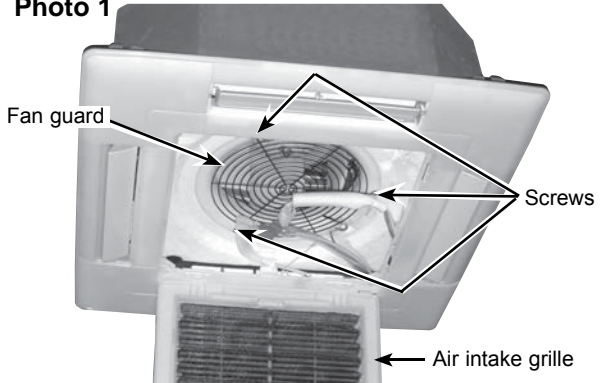
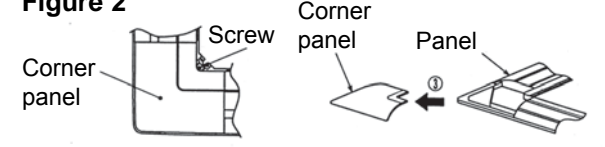
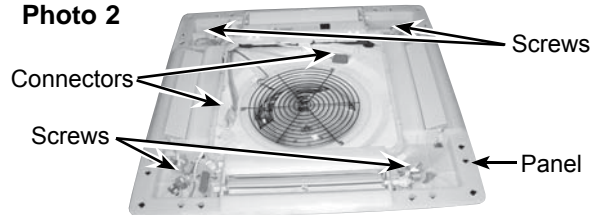
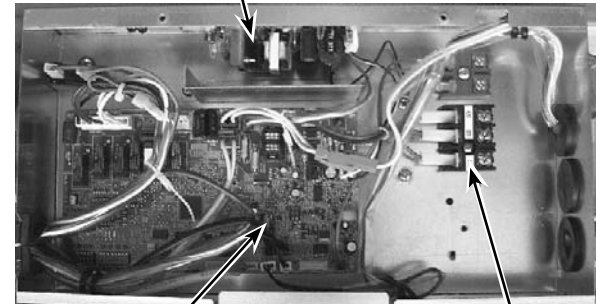
Do not set the up/down vanes passed the specified range. Condensation could form and drop from the ceiling, or the unit could malfunction.

SLZ-KA25VAQ.TH
SLZ-KA25VAQR1.TH
SLZ-KA25VAQ2.TH

SLZ-KA35VAQ.TH
SLZ-KA35VAQR1.TH
SLZ-KA35VAQR2.TH

SLZ-KA50VAQ.TH
SLZ-KA50VAQR1.TH
SLZ-KA50VAQR2.TH

Be careful when removing heavy parts.

OPERATING PROCEDURE	PHOTOS & ILLUSTRATIONS
<p>1. Removing the air intake grille</p> <p>(1) Slide the knob of air intake grille to the direction of the arrow ① to open the air intake grille.</p> <p>(2) Remove the string hook from the panel to prevent the grille from dropping.</p> <p>(3) Slide the hinge of the intake grille to the direction of the arrow ② and remove the air intake grille.</p>	<p>Figure 1</p>  <p>Air intake grille Grille Air intake grille knob</p>
<p>2. Removing the fan guard</p> <p>(1) Open the air intake grille.</p> <p>(2) Remove the 3 screws of fan guard.</p>	<p>Photo 1</p>  <p>Fan guard Screws Air intake grille</p>
<p>3. Removing the panel</p> <p>(1) Remove the air intake grille. (Refer to Procedure 1)</p> <p>Corner panel (See Figure 2)</p> <p>(1) Remove the screw of the corner.</p> <p>(2) Slide the corner panel to the direction of the arrow ③, and remove the corner panel.</p> <p>Panel (See Photo 2)</p> <p>(1) Disconnect the connector that connects with the unit.</p> <p>(2) Remove the 2 screws from the panel and loose another 2 screws, which are fixed to the oval hole, have different diameter.</p> <p>(3) Rotate the panel a little to remove the screws. (Slide the panel so that the screw comes to a larger diameter of the oval hole, which has 2 different diameters.)</p>	<p>Figure 2</p>  <p>Corner panel Screw Corner panel Panel</p> <p>Photo 2</p>  <p>Connectors Screws Panel</p>
<p>4. Removing the electrical parts</p> <p>(1) Remove the 2 screws and the control box cover.</p> <p><Electrical parts in the control box></p> <ul style="list-style-type: none"> • Indoor controller board (I.B) • Terminal block (TB4) • Indoor power board (P.B) 	<p>Photo 3</p>  <p>Indoor power board (P.B) Indoor controller board (I.B) Terminal block (TB4)</p>



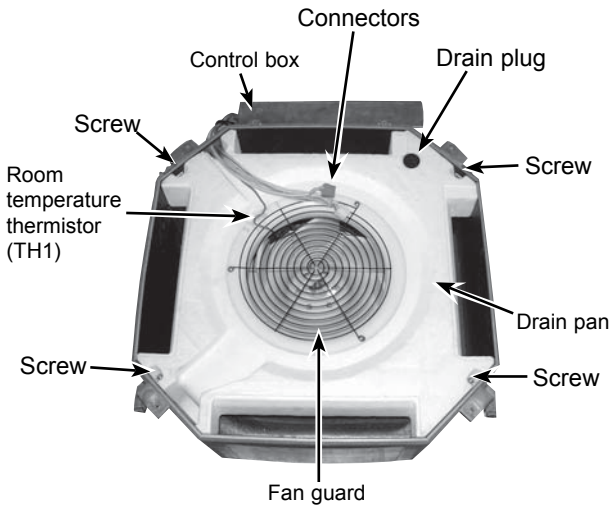
OPERATING PROCEDURE

PHOTOS & ILLUSTRATIONS

5. Removing the room temperature thermistor (TH1)

- (1) Remove the panel. (Refer to Procedure 3)
- (2) Pull out the room temperature thermistor from the drain pan.
- (3) Remove the 2 screws fixed to the control box cover, and remove the control box cover.
- (4) Remove the connector (CN20) from the indoor controller board, and disconnect the room temperature thermistor.

Photo 4



6. Removing the drain pan

- (1) Remove the panel. (Refer to Procedure 3)
- (2) Remove the room temperature thermistor and the 2 lead wires held with fastener; wireless controller board relay connector (9P red) and panel relay connector (10P white).
- (3) Remove the 4 screws fixed to the drain pan, and remove the drain pan.
- (4) Remove the fan guard. (Refer to Procedure 2)

7. Removing the pipe temperature thermistor/liquid (TH2) and condenser/evaporator temperature thermistor (TH5)

- (1) Remove the panel. (Refer to Procedure 3)
- (2) Remove the drain pan. (Refer to Procedure 6)
- (3) Disconnect the indoor coil thermistor from the holder.
- (4) Remove the 3 screws fixed to the piping cover, and remove the piping cover. (See Photo 9)
- (5) Remove the 2 screws fixed to the control box cover, and remove the control box cover.

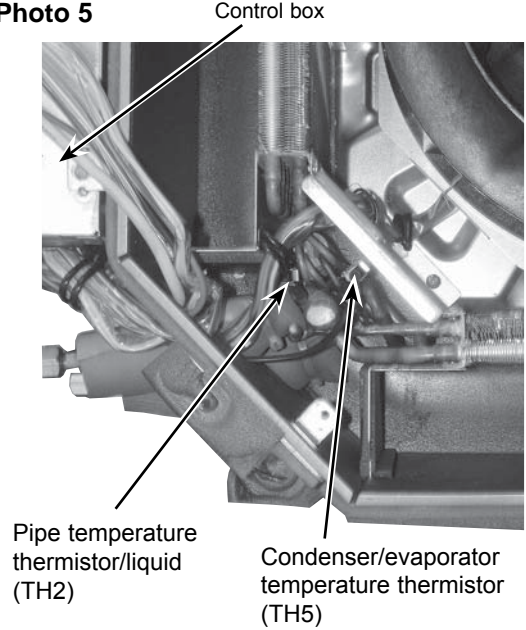
Pipe temperature thermistor/liquid (TH2)

- (6) Remove the connector (CN21) from the indoor controller board, and disconnect the pipe temperature thermistor/liquid.

Condenser/evaporator temperature thermistor (TH5)

- (6) Remove the connector (CN29) from the indoor controller board, and disconnect the condenser/evaporator temperature thermistor.

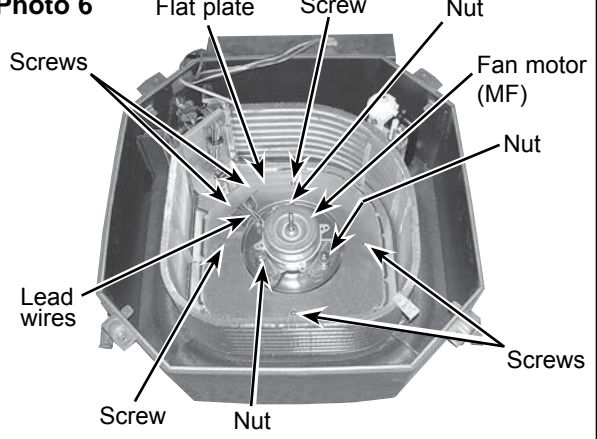
Photo 5



8. Removing the fan motor (MF)

- (1) Remove the panel. (Refer to Procedure 3)
- (2) Remove the drain pan. (Refer to Procedure 6)
- (3) Remove the nut and the washer from the turbo fan, and remove the turbo fan.
- (4) Remove the 2 screws fixed to the control box cover, and remove the control box cover.
- (5) Disconnect the connectors of the (fan 1) and the (fan 2) from the indoor controller board.
- (6) Remove the 3 screws fixed to the piping cover, and remove the piping cover. (See Photo 9)
- (7) Remove the 6 screws fixed to the flat plate, and remove the flat plate.
- (8) Disconnect the lead wires to the direction of the fan motor, and remove the 3 nuts of the fan motor.

Photo 6





OPERATING PROCEDURE

PHOTOS & ILLUSTRATIONS

9. Removing the drain pump (DP) and drain sensor (DS)

- (1) Remove the panel. (Refer to Procedure 3)
- (2) Remove the drain pan. (Refer to Procedure 6)
- (3) Remove the 2 screws fixed to the control box cover, and remove the control box cover.
- (4) Remove the connectors of the (CNP) and the (CN31) from the indoor controller board.
- (5) Remove the 1 screw fixed to the cover, and remove the cover.
- (6) Disconnect the lead wires to the direction of the drain pump. (See Photo 7)
- (7) Remove the 3 screws of the drain pump.
- (8) Cut the drain hose band, pull out the drain hose from the drain pump.
- (9) Pull out the drain pump.
- (10) Remove the drain sensor and the holder.

Photo 7

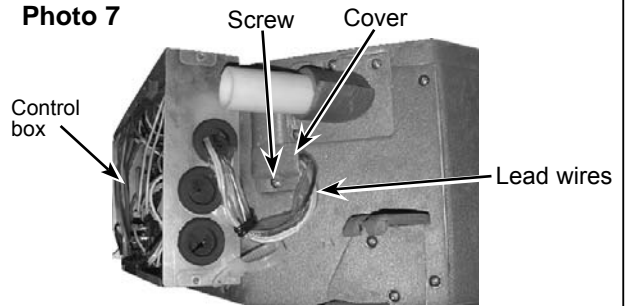
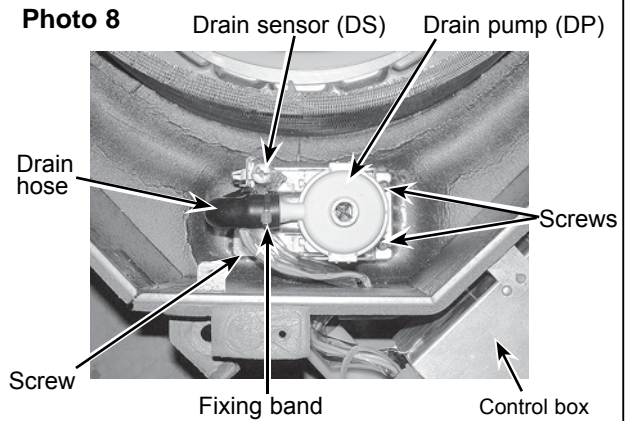


Photo 8



10. Removing the heat exchanger

- (1) Remove the panel. (Refer to Procedure 3)
- (2) Remove the drain pan. (Refer to Procedure 6)
- (3) Remove the nut and the washer from the turbo fan, and remove the turbo fan.
- (4) Remove the 2 screws fixed to the control box cover, and remove the control box cover.
- (5) Disconnect the connector of the (fan) from the indoor controller board.
- (6) Remove the 3 screws fixed to the piping cover, and remove the piping cover. (See Photo 9)
- (7) Remove the pipe temperature thermistor/liquid and condenser/evaporator temperature thermistor. (Refer to Procedure 7)
- (8) Disconnect the lead wires to the direction of the fan motor.
- (9) Remove the 1 coil support screw, the 2 inside coil screws (See Photo 10), and the 4 outside coil screws (See Photo 9) from the heat exchanger, and remove the heat exchanger.

Photo 9

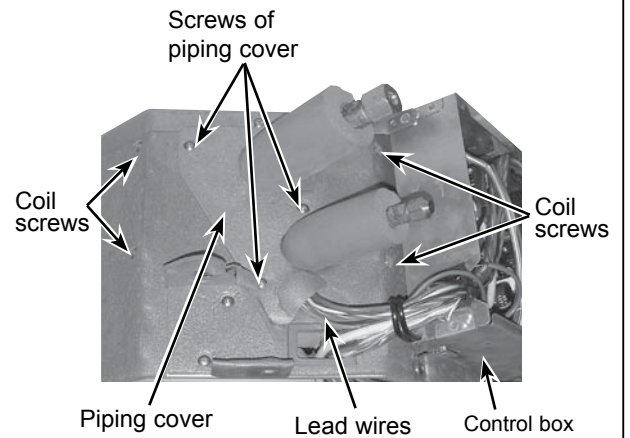
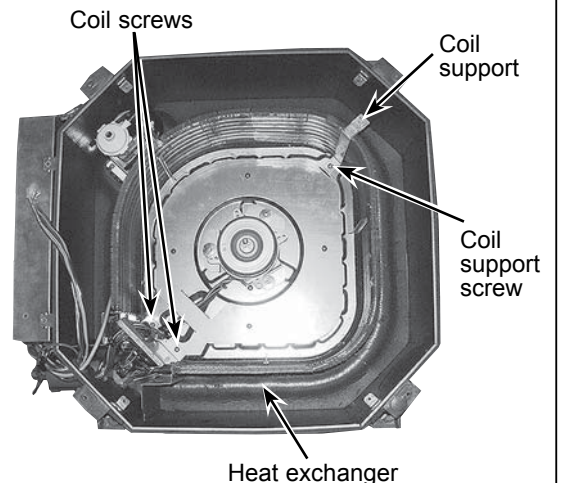


Photo 10



Mr. SLIM™

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Distributed in Sep. 2013 No.OCH493 REVISED EDITION-E
Distributed in Oct. 2012 No.OCH493 REVISED EDITION-D
Distributed in Feb. 2012 No.OCH493 REVISED EDITION-C
Distributed in Dec. 2011 No.OCH493 REVISED EDITION-B
Distributed in Mar. 2011 No.OCH493 REVISED EDITION-A
Distributed in Dec. 2010 No.OCH493
Made in Japan

New publication, effective Sep. 2013
Specifications are subject to change without notice.