(17) Outline of automatic operation

(a) Determination of operation mode

The unit checks the indoor air temperature and setting temperature and the outdoor air temperature, determines the operation mode, and then begins in the automatic operation.



- (b) The unit checks the temperature every hour after the start of operation and, if the result of check is not same as the previous operation mode, changes the operation mode.
 - (i) If the setting temperature is changed with the remote control, the operation mode is judged immediately.
 - (ii) When both the indoor and the outdoor air temperatures are in the range "A", cooling or heating is switched depending on the difference between the setting temperature and the indoor air temperature.
 - (iii) When the operation mode has been judged following the change of setting temperature with the remote control, the hourly judgment of operation mode is cancelled.
- (c) When the unit is started again within one hour after the stop of automatic operation or when the automatic operation is selected during heating, cooling or dehumidifying operation, the unit is operated in the previous operation mode.
- (d) Setting temperature can be adjusted within the following range. There is the relationship as shown below between the signals of the wireless remote control and the setting temperature.
 Unit: °C.

				Sig	nals of v	vireless	remote	control	(Display	/)				
		-6	-5	-4	-3	-2	-1	±0	+1	+2	+3	+4	+5	+6
Catting	Cooling													
temperature	Dehumidifying	18	19	20	21	22	23	24	25	26	27	28	29	30
	Heating						1							

(18) Protection control function

(a) Dew prevention control [Cooling]: Prevents dewing on the indoor unit.

- (i) **Operating conditions:** When the following conditions have been satisfied for more than 30 minutes after starting operation.
 - 1) Compressor's command speed is 28 rps or higher.
 - 2) Detected value of humidity is 68% or higher.

(ii) Contents of operation

1) Air capacity control

Item	Model	SRK63ZSPR	-S	SRK71ZSPR-S	SRK80ZSPR-S	
Upper limit of compressor's command sp	eed ⁽¹⁾	Range A:	As per	r following table, R	ange B: 40 rps	
Note (1) Ranges A and B are as shown below. Range B Cancel	Condition Compress Unit heat temperat	• Condition for range A Compressor's command speed is controlled according to the indoor unit heat exchanger temperature (Th2) and the indoor unit room temperature (Th1).				
	Condition		Compressor's command speed			
63 68 78 Humidity (%)	Th2 ≦	5 Th1 - 10	 Decreases the compressor's target max spe by 4 rps. If the condition is met still 20 seconds lat the speed is decreased further by 4 rps. T process is repeated further so far as t condition is met. (Lower limit is 30 rps.) 			
	Th1 - 10 <	$\mathrm{Th}2 \leq \mathrm{Th}1 - 6$	Comp	Compressor's target max. speed or changed value of the same is maintained.		
	Th2 -	6 < Th1	Chang increa	ged compressor's sed at a rate of 1 rp	target max. speed is s/20 seconds.	

- When this control has continued for more than 30 minutes continuously, the following wind direction control is performed.
 - a) When the vertical wind direction is set at other than the vertical swing, the flaps change to the horizontal position.
 - b) When the horizontal wind direction is set at other than the horizontal swing, the louver changes to the vertical position.

(iii) Reset condition: When any of followings is satisfied.

- 1) Compressor's command speed is less than 28 rps.
- 2) Detected value of humidity is less than 63%.
- (b) Frost prevention control (During cooling or dehumidifying)

(i) Operating conditions

- 1) Indoor heat exchanger temperature (Th2) is lower than 5°C.
- 2) 5 minutes after reaching the compressor command speed except 0 rps.

(ii) Detail of anti-frost operation

Indoor heat exchanger temperature	5°C or lower	2.5°C or lower	
Lower limit of compressor command speed	22 rps (model SRK63 : 25rps)	0 rps	
Indoor fan	Depends on operation mode	Protects the fan tap just before frost prevention control	
Outdoor fan	Depends on command speed	Depends on stop mode	
4-way valve	OFF		



Notes (1) When the indoor heat exchanger temperature is in the range of 2.5–5°C, the speed is reduced by 4 rps at each 20 seconds. (2) When the temperature is lower than 2.5°C, the compressor is stopped.

(3) When the indoor heat exchanger temperature is in the range of 5-8°C, the compressor command speed is been maintained.

(iii) Reset conditions: When either of the following condition is satisfied.

- 1) The indoor heat exchanger temperature (Th2) is 8°C or higher.
- 2) The compressor command speed is 0 rps.

(c) Cooling overload protective control

Operating conditions: Reset conditions: When the outdoor air temperature (TH2) has become continuously for 30 (i)

seconds at 38(41) °C or more, with the compressor running, the lower limit speed of compressor is brought up.



(ii) Detail of operation

The lower limit of compressor command speed is set to 25. 30 or 40 rps and even if the calculated result becomes lower than that after fuzzy calculation, the speed is kept to 25. 30 or 40 rps. However, when the thermo OFF, the speed is reduced to 0 rps.

(iii) **Reset conditions:** When either of the following condition is satisfied.

- 1) The doudoor aie temperature is lower than $37(40)^{\circ}$ C.
- 2) The compressor command speed is 0 rps.

(d) Cooling high pressure control

- Purpose: Prevents anomalous high pressure operation during cooling. (i)
- (ii) **Detector:** Outdoor heat exchanger temperature (TH1)
- (iii) Detail of operation:

(Example) Fuzzy



Notes(1) When the outdoor heat exchanger temperature is in the range of P2 -P3, the speed is reduced by 8 rps at each 20 seconds.

(2) When the temperature is P3 or higher, the compressor is stopped.

(3) When the outdoor heat exchanger temperature is in the range of P1 -P2, if the compressor command speed is been maintained and the operation has continued for more than 30 seconds at the same speed, it returns to the normal cooling operation.

(e) Cooling low outdoor air temperature protective control

(i) **Operating conditions:** When the outdoor air temperature (TH2) is 22°C or lower continues for 20 seconds while the compressor command speed is other than 0 rps.

Detail of operation: (ii)

1)

- The lower limit of the compressor command speed is set to B (D) rps and even if the speed becomes lower than 1) 40 (30) rps, the speed is kept to 40 (30) rps. However, when the thermo OFF, the speed is reduced to 0 rps.
- The upper limit of the compressor command speed is set to A (C) rps and even if the calculated result becomes 2) higher than that after fuzzy calculation, the speed is kept to A (C) rps.

Note(1) Values in () are for outdoor air temperature is 0° C.



(iii) Reset conditions: When either of the following condition is satisfied.

- The outdoor air temperature (TH2) is 25°C or higher.
- 2) The compressor command speed is 0 rps.



(f) Heating high pressure control

- Purpose: Prevents anomalous high pressure operation during heating. (i)
- (ii) **Detector:** Indoor heat exchanger temperature (Th2)

(iii) **Detail of operation:**

(Example) Fuzzy



Notes (1) When the indoor heat exchanger temperature is in the range of B-C °C, the speed is reduced by 4 rps at each E seconds.

- (2) When the indoor heat exchanger temperature is in the range of C-D °C, the speed is reduced by 8 rps at each E seconds. When the temperature is D °C or higher continues for 5 seconds, the compressor is stopped.
- (3) When the indoor heat exchanger temperature is in the range of A-B °C, if the compressor command speed is been maintained and the operation has continued for more than E seconds at the same speed, it returns to the normal heating operation.

TIM: + . OC

Unit : °C

(4) Indoor fan retains the fan tap when it enters in the high pressure control. Outdoor fan is operated in accordance with the speed.

Temperature list

Model SRK63ZSPR-S

	-			Unit : C
	Α	В	С	D
RPSmin < 45	45	52	54.5 - 56	56.5
45 < RPSmin < 115	45	52	56	57.0
115 ≦ RPSmin < 120	45 - 43	52 - 50	56 - 55	56.5
120 ≦ RPSmin	43	50	55	56.5

Models SRK71, 80ZSPR-S

	Α	В	С	D
RPSmin < 90	45	52	57	58
90 < RPSmin < 108	45 - 44	52 - 48	57 - 52	56.5
108 ≦ RPSmin < 120	44 - 43	48 - 45	52 - 48	51.5
120 ≦ RPSmin	43	45	48	51.5

Note (1) RPSmin: The lower one between the outdoor speed and the compressor command speed.

(g) Heating overload protective control

Indoor unit side (i)

- Operating conditions : When the outdoor air temperature (TH2) is 17°C or higher continues for 30 seconds while 1) the compressor command speed other than 0 rps.
- **Detail of operation :** The indoor fan is stepped up by 1 speed step. (Upper limit 10th speed) 2)
- **Reset conditions :** The outdoor air temperature (TH2) is lower than 16°C. 3)

(ii) Outdoor unit side

Operating conditions : When the outdoor air temperature (TH2) is 13°C or 17°C or higher continues for 30 seconds 1) while the compressor command speed other than 0 rps.

2) **Detail of operation**

- a) Taking the upper limit of compressor command speed range at 90 rps or 50 (75) rps, if the output speed obtained with the fuzzy calculation exceeds the upper limit, the upper limit value is maintained.
- b) The lower limit of compressor command speed is set to 30 rps or 40 rps and even if the calculated result becomes lower than that after fuzzy calculation, the speed is kept to 30 rps or 40 rps. However, when the thermo OFF, the speed is reduced to 0 prs.
- Inching prevention control is activated and inching prevention control is carried out with the minimum speed c) set at 30 rps or 40 rps.





Note(1) Values in () are for the model SRK63.

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(h) Heating low outdoor temperature protective control

- (i) **Operating conditions:** When the outdoor air temperature (TH2) is lower than 4°C or higher continues for 30 seconds while the compressor command speed is other than 0 rps.
- (ii) **Detail of operation:** The lower limit compressor command speed is change as shown in the figure below.



Note(1) Values in () are for the model SRK63.

- (iii) Reset conditions: When either of the following condition is satisfied.
 - 1) The outdooe air temperature (TH2) becomes 6° C.
 - 2) The compressor command speed is 0 rps.

(i) Compressor overheat protection

(i) **Purpose:** It is designed to prevent deterioration of oil, burnout of motor coil and other trouble resulting from the compressor overheat.

(ii) Detail of operation

- 1) Speeds are controlled with temperature detected by the sensor (TH3) mounted on the discharge pipe.
 - (Example) Fuzzy



- Notes (1) When the discharge pipe temperature is in the range of 105-115°C, the speed is reduced by 4 rps.
 - (2) When the discharge pipe temperature is raised and continues operation for 20 seconds without changing, then the speed is reduced again by 4 rps.
 (3) If the discharge pipe temperature is in the range of 95-105°C even when the compressor command speed is maintained for 180 second when the temperature is in the range of 95-105°C, the speed is raised by 1 rps and kept at that speed for 180 second. This process is repeated until the command speed is reached.
 - (4) Lower limit speed

_

Model	em	Cooling	Heating
Lower limit speed		25 rps	32 rps

2) If the temperature of 115°C is detected by the sensor on the discharge pipe, then the compressor will stop immediately. When the discharge pipe temperature drops and the time delay of 3 minutes is over, the unit starts again within 1 hour but there is no start at the third time.

(j) Current safe

- (i) **Purpose:** Current is controlled not to exceed the upper limit of the setting operation current.
- (ii) Detail of operation: Input current to the converter is monitored with the current sensor fixed on the printed circuit board of the outdoor unit and, if the operation current value reaches the limiting current value, the compressor command speed is reduced.

If the mechanism is actuated when the compressor command speed is less than 30 rps, the compressor is stopped immediately. Operation starts again after a delay time of 3 minutes.

(k) Current cut

- (i) **Purpose:** Inverter is protected from overcurrent.
- (ii) Detail of operation: Output current from the inverter is monitored with a shunt resistor and, if the current exceeds the setting value, the compressor is stopped immediately. Operation starts again after a delay time of 3 minutes.

(I) Outdoor unit failure

This is a function for determining when there is trouble with the outdoor unit during air-conditioning.

The compressor is stopped if any one of the following in item (i), (ii) is satisfied. Once the unit is stopped by this function, it is not restarted.

- (i) When the input current is measured at 1 A or less for 3 continuous minutes or more.
- (ii) If the outdoor unit sends a 0 rps signal to the indoor unit 3 times or more within 20 minutes of the power being turned on.

(m) Indoor fan motor protection

When the air-conditioner is operating and the indoor fan motor is turned ON, if the indoor fan motor has operated at 300 min⁻¹ or under for more than 30 seconds, the unit enters first in the stop mode and then stops the entire system.

(n) Serial signal transmission error protection

- (i) **Purpose:** Prevents malfunction resulting from error on the indoor \leftrightarrow outdoor signals.
- (ii) **Detail of operation:** If the compressor is operating and a serial signal cannot be received from the indoor control with outdoor control having serial signals continues for 7 minute and 35 seconds, the compressor is stopped.

After the compressor has been stopped, it will be restarted after the compressor start delay if a serial signal can be received again from the indoor control.

(o) Rotor lock

If the motor for the compressor does not turn after it has been started, it is determined that a compressor lock has occurred and the compressor is stopped.

(p) Outdoor fan motor protection

If the outdoor fan motor has operated at 75 min⁻¹ or under for more than 30 seconds, the compressor and fan motor are stopped.

(q) Outdoor fan control at low outdoor temperature

- (i) Cooling
 - **1) Operating conditions:** When the outdoor air temperature (TH2) is 22°C or lower continues for 30 seconds while the compressor command speed is other than 0 rps.
 - 2) Detail of operation: After the outdoor fan operates at A speed for 60 seconds; the corresponding outdoor heat exchanger temperature shall implement the following controls.

• Value of A	
	Outdoor fan
Outdoor temperature > 10°C	2nd speed
Outdoor temperature ≦ 10°C	1st speed

a) Outdoor heat exchanger temperature $(TH1) \leq 22^{\circ}C$

After the outdoor fan speed drops (down) to 1 speed for 60 seconds; if the outdoor heat exchanger temperature is lower than 22°C, gradually reduce the outdoor fan speed by 1 speed.

• Lower limit fan speed

	Outdoor fan
Outdoor temperature > 16°C	2nd speed
Outdoor temperature ≦ 16°C	1st speed

- b) 22°C < Outdoor heat exchanger temperature (TH1) ≤ 40°C
 After the outdoor fan speed maintains at A speed for 20 seconds; if the outdoor heat exchanger temperature is 22°C 40°C, maintain outdoor fan speed.
- c) Outdoor heat exchanger tempeature (TH1) > 40°C
 After the outdoor fan speed rises (up) to 1 speed for 60 seconds; if the outdoor heat exchanger temperature is higher than 40°C, gradually increase outdoor fan speed by 1 speed. (Upper limit 3rd speed)
- 3) Reset conditions: When either of the following conditions is satisfied.
 - a) The outdoor air temperature (TH2) is 24°C or higher.
 - b) The compressor command speed is 0 rps.

(ii) Heating

2)

- **1) Operating conditions:** When the outdoor air temperature (TH2) is 3°C or lower continues for 30 seconds while the compressor command speed is other than 0 rps.
 - Detail of operation: The outdoor fan is stepped up by 2 speed step at each 20 seconds.

(Upper limit 8th (model SRK71 : 7th) speed)

- 3) **Reset conditions:** When either of the following conditions is satisfied.
 - a) The outdoor air temperature (TH2) is 5°C or higher.
 - b) The compressor command speed is 0 rps.

(r) Outdoor fan control at overload conditions.

- (i) Cooling
 - **1) Operating conditions:** When the outdoor air temperature (TH2) is 41°C(model SRK63:38°C) or higher continue for 30 seconds while the compressor ON.
 - 2) Detail of operation: The outdoor fan is stepped up by 3 speed step. (Upper limit 8th speed).
 - 3) **Reset conditions:** When either of the fllowing conditions is satisfied.
 - a) The outdoor air temperature (TH2) is 40° C(model SRK63:37°C) or lower.
 - b) The compressor command speed 0 rps.
- (ii) Heating
 - **1) Operating conditions:** When the outdoor heat exchaner temperature (TH1) is 13°C or higher continues for 30 seconds while the compressor ON.
 - 2) Detail of operation: The outdoor fan is lowered by 3 speed step. (Lower limit 2nd speed).
 - 3) **Reset conditions:** When either of the fllowing conditions is satisfied.
 - a) The outdoor heat exchaner temperature (TH1) is 10° C or lower.
 - b) The compressor command speed 0 rps.

(s) Refrigeration cycle system protection

(i) Starting conditions

- 1) When A minutes have elapsed after the compressor ON or the completion of the defrost operation
- 2) Other than the defrost operation
- 3) When, after meeting the conditions of 1) and 2) above, the compressor speed, indoor air temperature (Th1) and indoor heat exchanger temperature (Th2) have satisfied the conditions in the following table for 5 minutes:

Operation mode		А	Compressor speed (N)	Room temperature (Th1)	Room temperature (Th1)/ Indoor heat exchanger temperature (Th2)
Cooling		5	40≦N	$10 \leq Th1 \leq 40$	Th1-4 <th2< td=""></th2<>
Heating ⁽¹⁾	Model 63	8	$\begin{array}{l} 40 \leq \! \mathrm{N} \left(\mathrm{TH2} \geq \! 0^{\circ} \! \mathrm{C} \right) \\ 60 \leq \! \mathrm{N} \left(\mathrm{TH2} \! < \! 0^{\circ} \! \mathrm{C} \right) \end{array}$	$0 \leq Th1 \leq 40$	Th2 <th1+6< td=""></th1+6<>
	Model 71, 80	5	40≦N		

Note (1) Except that the fan speed is HI in heating operation and silent mode control.

(ii) Contents of control

- 1) When the conditions of (i) above are satisfied, the compressor stops.
- 2) Error stop occurs when the compressor has stopped 3 times within 60 minutes.

(iii) Reset condition

When the compressor has been turned OFF

(t) Service valve (gas side) closing operation

(i) Starting conditions

- 1) Operation mode : Heating
- 2) Compressor conditions : OFF \rightarrow ON

(ii) Contents control

If the output current of inverter exceeds the specifications, it makes the compressor stopping.

(iii) Anomalous stop control

- 1) If the inverter output current value exceeds the setting value within 80 seconds the compressor stops.
- 2) After 3 minutes delay. the compressor restarts, but if this anomaly occurs 2 times within 20 minutes after this initial detection.

10. MAINTENANCE DATA

(1) Cautions

- (a) If you are disassembling and checking an air-conditioner, be sure to turn off the power before beginning. When working on indoor units, let the unit sit for about 1 minute after turning off the power before you begin work. When working on an outdoor unit, there may be an electrical charge applied to the main circuit (electrolytic condenser), so begin work only after discharging this electrical charge (to DC 10 V or lower).
- (b) When taking out printed circuit boards, be sure to do so without exerting force on the circuit boards or package components.
- (c) When disconnecting and connecting connectors, take hold of the connector housing and do not pull on the lead wires.

(2) Items to check before troubleshooting

- (a) Have you thoroughly investigated the details of the trouble which the customer is complaining about?
- (b) Is the air-conditioner running? Is it displaying any self-diagnosis information?
- (c) Is a power source with the correct voltage connected?
- (d) Are the control lines connecting the indoor and outdoor units wired correctly and connected securely?
- (e) Is the outdoor unit's service valve open?

(3) Troubleshooting procedure (If the air-conditioner does not run at all)

If the air-conditioner does not run at all, diagnose the trouble using the following troubleshooting procedure. If the airconditioner is running but breaks down, proceed to troubleshooting step (4).

Important When all the following conditions are satisfied, we say that the air-conditioner will not run at all.

- (a) The RUN light does not light up.
- (b) The flaps do not open.
- (c) The indoor unit fan motors do not run.
- (d) The self-diagnosis display does not function.



(4) Troubleshooting procedure (If the air-conditioner runs)



Note (1) Even in cases where only intermittent stop data are generated, the air-conditioning system is normal. However, if the same protective operation recurs repeatedly (3 or more times), it will lead to customer complaints. Judge the conditions in comparison with the contents of the complaints.

(5) Self-diagnosis table

When this air-conditioner performs an emergency stop, the reason why the emergency stop occurred is displayed by the flashing of display lights. If the air-conditioner is operated using the wireless remote control 3 minutes or more after the emergency stop, the trouble display stops and the air-conditioner resumes operation. ⁽¹⁾

(a) Models SRK20, 25, 35, 45ZSPR-S

Indoor unit display section		Description	Course	Dioplay (floching) condition
RUN light	TIMER light	of trouble	Cause	Display (flashing) condition
1 - time flash	ON	Indoor heat exchanger sensor error	 Broken heat exchanger sensor wire, poor connector connection Indoor PCB is faulty 	When a heat exchanger sensor wire disconnection is detected while operation is stopped. (If a temperature of -28°C or lower is detected for 15 seconds, it is judged that the wire is disconnected.) (Not displayed during operation.)
2 - time flash	ON	Room temperature sensor error	 Broken room temperature sensor wire, poor connector connection Indoor PCB is faulty 	When a room temperature sensor wire disconnection is detected while operation is stopped. (If a temperature of -45°C or lower is detected for 15 seconds, it is judged that the wire is disconnected.) (Not displayed during operation.)
5 - time flash	ON	Active filter voltage error	• Defective active filter	When the wrong voltage connected for the power source. When the outdoor PCB is faulty.
6 - time flash	ON	Indoor fan motor error	• Defective fan motor, poor connector connection	When conditions for turning the indoor unit's fan motor on exist during air- conditioner operation, an indoor unit fan motor speed of 300 min ⁻¹ or lower is measured for 30 seconds or longer. (The air-conditioner stops.)
7 - time flash	ON	Refrigeration cycle system protective control	Service valve is closed.Refrigerant is insufficient	When refrigeration cycle system protective control operates.
Keeps flashing	1 - time flash	Outdoor air temperature sensor error	 Broken outdoor air temp. sensor wire, poor connector connection Outdoor PCB is faulty 	-55°C or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. Or -55°C or higher is detected for within 20 seconds after power ON. (The compressor is stopped.)
Keeps flashing	2 - time flash	Outdoor heat exchanger sensor error	 Broken heat exchanger sensor wire, poor connector connection Outdoor PCB is faulty 	-55° or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. Or -55° or higher is detected for within 20 seconds after power ON. (The compressor is stopped.)
Keeps flashing	4 - time flash	Discharge pipe sensor error	 Broken discharge pipe sensor wire, poor connector connection Outdoor PCB is faulty 	-25° C or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. (The compressor is stopped.)
ON	1 - time flash	Current cut	Compressor locking, open phase on compressor output, shortcircuit on power transistor, closed service valve	The inverter output current (compressor motor current) exceeds the set value during compressor start. (The air-conditioner stops.)
ON	2 - time flash	Trouble of outdoor unit	Broken compressor wireCompressor blockage	When there is an emergency stop caused by trouble in the outdoor unit, or the input current value is found to be lower than the set value. (The air-conditioner stops.)
ON	3 - time flash	Current safe stop	Overload operationOverchargeCompressor locking	When the compressor command speed is lower than the set value and the current safe has operated. (The compressor is stopped.)
ON	4 - time flash	Power transistor error	Broken power transistor	When there is an emergency stop caused by trouble in the outdoor unit, or the input current value is found to be lower than the set value continuously for 3 minutes or longer. (The compressor is stopped.)
ON	5 - time flash	Over heat of compressor	• Gas shortage, defective discharge pipe sensor, closed service valve	When the value of the discharge pipe sensor exceeds the set value. (The air-conditioner stops.)
ON	6 - time flash	Error of signal transmission	• Defective power source Broken signal wire, defective indoor/outdoor PCB	When there is no signal between the indoor PCB and outdoor PCB for 10 seconds or longer (when the power is turned on), or when there is no signal for 7 minute 35 seconds or longer (during operation) (The compressor is stopped).
ON	7 - time flash	Outdoor fan motor error	Defective fan motor, poor connector connection	When the outdoor unit's fan motor sped continues for 30 seconds or longer at 75 min ⁻¹ or lower. (3 times) (The air-conditioner stops.)
ON	Keeps flashing	Cooling high pressure protection	 Overload operation, over charge Broken outdoor heat exchange sensor wire Service valve is closed. 	When the value of the outdoor heat exchanger sensor exceeds the set value.
2 - time flash	2 - time flash	Rotor lock	 Defective compressor Open phase on compressor Defective outdoor PCB 	If the compressor motor's magnetic pole positions cannot be correctly detected when the compressor starts. (The air-conditioner stops.)

(b) Models SRK63, 71, 80ZSPR-S

Indoor unit d	lisplay panel	Wired ⁽²⁾ remote	Description	Course	Display (flocking) condition
RUN light	TIMER light	control display	of trouble	Cause	Display (liasning) condition
1-time flash	ON	_	Heat exchanger sensor 1 error	Broken heat exchanger sensor I wire, poor connector connection Indoor PCB is faulty	When a heat exchanger sensor 1 wire disconnection is detected while operation is stopped. (If a temperature of -28° C or lower is detected for 15 seconds, it is judged that the wire is disconnected.) (Not displayed during operation.)
2-time flash	ON	-	Room temperature sensor error	 Broken room temperature sensor wire, poor connector connection Indoor PCB is faulty 	When a room temperature sensor wire disconnection is detected while operation is stopped. (If a temperature of -45°C or lower is detected for 15 seconds, it is judged that the wire is disconnected.) (Not displayed during operation.)
3-time flash	ON	_	Heat exchanger sensor 2 error	 Broken heat exchanger sensor 2 wire, poor connector connection Indoor PCB is faulty 	When a heat exchanger sensor 2 wire disconnection is detected while operation is stopped. (If a temperature of -28°C or lower is detected for 15 seconds, it is judged that the wire is disconnected.) (Not displayed during operation.)
6-time flash	ON	E 16	Indoor fan motor error	Defective fan motor, poor connector connection	When conditions for turning the indoor unit's fan motor on exist during air- conditioner operation, an indoor unit fan motor speed of 300 min ⁻¹ or lower is measured for 30 seconds or longer. (The air-conditioner stops.)
Keeps flashing	1-time flash	E 38	Outdoor air temperature sensor error	 Broken outdoor air temp. sensor wire, poor connector connection Outdoor PCB is faulty 	 -55°C or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. Or −55°C or lower is detected for within 20 seconds after power ON. (The compressor is stopped.)
Keeps flashing	2-time flash	E 37	Outdoor heat exchanger sensor error	 Broken heat exchanger sensor wire, poor connector connection Outdoor PCB is faulty 	-55° C or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. Or -55° C or lower is detected for within 20 seconds after power ON. (The compressor is stopped.)
Keeps flashing	4-time flash	E 39	Discharge pipe sensor error	 Broken discharge pipe sensor wire, poor connector connection Outdoor PCB is faulty 	-25°C or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. (The compressor is stopped.)
ON	1-time flash	E 42	Current cut	• Compressor locking, open phase on compressor output, short circuit on power transistor, service valve is closed	The compressor output current exceeds the set value during compressor start. (The air-conditioner stops.)
ON	2-time flash	E 59	Trouble of outdoor unit	Broken compressor wire Compressor blockage	When there is an emergency stop caused by trouble in the outdoor unit, or the input current value is found to be lower than the set value. (The air-conditioner stops.)
ON	3-time flash	E 58	Current safe stop	 Overload operation Overcharge Compressor locking 	When the compressor command speed is lower than the set value and the current safe has operated. (the compressor stops)
ON	4-time flash	E 51	Power transistor error	Broken power transistor	When the power transistor is judged breakdown while compressor starts. (The compressor is stopped.)
ON	5-time flash	E 36	Over heat of compressor	Gas shortage, defective discharge pipe sensor, service valve is closed	When the value of the discharge pipe sensor exceeds the set value. (The air-conditioner stops.)
ON	6-time flash	E 5	Error of signal transmission	• Defective power source, Broken signal wire, defective indoor/outdoor PCB	When there is no signal between the indoor PCB and outdoor PCB for 10 seconds or longer (when the power is turned on), or when there is no signal for 7 minute 35 seconds or longer (during operation) (the compressor is stopped).
ON	7-time flash	E 48	Outdoor fan motor error	• Defective fan motor, poor connector connection	When the outdoor unit's fan motor speed continues for 30 seconds or longer at 75 min ⁻¹ or lower. (3 times) (The air-conditioner stops.)
ON	Keeps flashing	E 35	Cooling high pressure protecton	 Overload operation, overcharge Broken outdoor heat exchange sensor wire Service valve is closed 	When the value of the outdoor heat exchanger sensor exceeds the set value.
2-time flash	2-time flash	E 60	Rotor lock	 Defective compressor Open phase on compressor Defective outdoor PCB 	If the compressor motor's magnetic pole positions cannot be correctly detected when the compressor starts. (The air-conditioner stops.)
5-time flash	ON	E 47	Circuit error	Defective circuit	When L1 cable or L2 cable disconnect. When the outdoor PCB is faulty.
7-time flash	ON	E 57	Refrigeration cycle system protective control	 Service valve is closed. Refrigerant is insufficient 	When refrigeration cycle system protective control operates.
7-time flash	1-time flash	E 40	Service valve (gas side) closed opertion	Service valve (gas side) closedDefective outdoor PCB	If the output current of inverter exceeds the specifications, it makes the compressor stopping. (In heating mode).
_	-	E 1	Error of wired remote control wiring	Broken wired remote control wire, defective indoor PCB	The wired remote control wire Y is open. The wired remote control wires X and Y are reversely connected. Noise is penetrating the wired remote control lines. The wired remote control or indoor PCB is faulty. (The communications circuit is faulty.)

Notes (1)The air - conditioner cannot be restarted using the remote control for 3 minutes after operation stops. (2)The wired remote control is option parts.

(6) Service mode (Trouble mode access function)

This air-conditioner is capable of recording error displays and protective stops (service data) which have occurred in the past. If self-diagnosis displays cannot be confirmed, it is possible to get a grasp of the conditions at the time trouble occurred by checking these service data.

Term	Explanation
Service mode	The service mode is the mode where service data are displayed by flashing of the display lights when the operations in item (b) below are performed with the indoor controller.
Service data	These are the contents of error displays and protective stops which occurred in the past in the air- conditioner system. Error display contents and protective stop data from past anomalous operations of the air-conditioner system are saved in the indoor unit control's non-volatile memory (memory which is not erased when the power goes off). There are two types of data, self-diagnosis data and stop data, described below.
Self-diagnosis data	These are the data which display the reason why a stop occurred when an error display(self- diagnosis display) occurred in an indoor unit. Data are recorded for up to 5 previous occurrences. Data which are older than the 5th previous occurrence are erased. In addition, data on the temperature of each sensor (room temperature, indoor heat exchanger, outdoor heat exchanger, outdoor air temperature, discharge pipe), remote control information (operation switching, fan speed switching) are recorded when trouble occurs, so more detailed information can be checked.
Stop data	These are the data which display the reason by a stop occurred when the air-conditioning system performed protective stops, etc. in the past. Even if stop data alone are generated, the system restarts automatically. (After executing the stop mode while the display is normal, the system restarts automatically.) Data for up to 10 previous occasions are stored. Data older than the 10th previous occasion are erased. (Important) In cases where transient stop data only are generated, the air-conditioner system may still be normal. However, if the same protective stop occurs frequently (3 or more times), it could lead to customer complaints.

(a) Explanation of terms

(b) Service mode display procedure



*3: To count the number of flashes in the service mode, count the number of flashes after the light lights up for 1.5 second

initially (start signal). (The time that the light lights up for 1.5 second (start signal) is not counted in the number of flashes.)



*4: When in the service mode, when the wireless remote control settings (operation mode, fan speed mode, temperature setting)

are set as shown in the following table and sent to the air-conditioner unit, the unit switches to display of service data.

(i) Self-diagnosis data

What are Self-diagnosis Data?

These are control data (reasons for stops, temperature at each sensor, wireless remote control information) from the time when there were error displays (abnormal stops) in the indoor unit in the past.

Data from up to 5 previous occasions are stored in memory. Data older than the 5th previous occasion are erased.

The temperature setting indicates how many occasions previous to the present setting the error display data are and the operation mode and fan speed mode data show the type of data.

Wireless remote control setting		Contents of output data			
Operation mode	Fan speed mode	Contents of output data			
	MED	Displays the reason for stopping display in the past (error code).			
Cooling	HI	Displays the room temperature sensor temperature at the time the error code was displayed in the past.			
AUTO		Displays the indoor heat exchanger sensor temperature at the time the error code was displayed in the past.			
	LO	Displays the wireless remote control information at the time the error code was displayed in the past.			
MED Displays the		Displays the outdoor air temperature sensor temperature at the time the error code was displayed in the past.			
neating	HI	Displays the outdoor heat exchanger sensor temperature at the time the error code was displayed in the past.			
AUTO		Displays the discharge pipe sensor temperature at the time the error code was displayed in the past.			

Wireless remote control setting	Indicates the number of occasions previous to the present the error display data are from.				
Temperature setting					
21°C	1 time previous (previous time)				
22°C	2 times previous				
23°C	3 times previous				
24°C	4 times previous				
25°C	5 times previous				

Only for indoor heat exchanger sensor 2 (Models SRK63, 71, 80 only)

Wireless remote control setting	Indicates the number of					
Temperature setting	the error display data are from.					
26°C	1 time previous (previous time)					
27°C	2 times previous					
28°C	3 times previous					
29°C	4 times previous					
30°C	5 times previous					

(Example)

Wireless remote control setting			
Operation mode	Fan speed mode	Temperature setting	Displayed data
Cooling		21°C	Displays the reason for the stop (error code) the previous time an error was displayed.
		22°C	Displays the reason for the stop (error code) 2 times previous when an error was displayed.
	MED	23°C	Displays the reason for the stop (error code) 3 times previous when an error was displayed.
		24°C	Displays the reason for the stop (error code) 4 times previous when an error was displayed.
		25°C	Displays the reason for the stop (error code) 5 times previous when an error was displayed.

(ii) Stop data

Wireless remote control setting		ol setting		
Operation mode	Fan speed mode	Temperature setting	Displayed data	
		21°C	Displays the reason for the stop (stop code) the previous time when the air-conditioner was stopped by protective stop control.	
		22°C	Displays the reason for the stop (stop code) 2 times previous when the air-conditioner was stopped by protective stop control.	
Cooling	LO	23°C	Displays the reason for the stop (stop code) 3 times previous when the air-conditioner was stopped by protective stop control.	
		24°C	Displays the reason for the stop (stop code) 4 times previous when the air-conditioner was stopped by protective stop control.	
		IO	25°C	Displays the reason for the stop (stop code) 5 times previous when the air-conditioner was stopped by protective stop control.
		26°C	Displays the reason for the stop (stop code) 6 times previous when the air-conditioner was stopped by protective stop control.	
		27°C	Displays the reason for the stop (stop code) 7 times previous when the air-conditioner was stopped by protective stop control.	
		28°C	Displays the reason for the stop (stop code) 8 times previous when the air-conditioner was stopped by protective stop control.	
		29°C	Displays the reason for the stop (stop code) 9 times previous when the air-conditioner was stopped by protective stop control.	
		30°C	Displays the reason for the stop (stop code) 10 times previous when the air-conditioner was stopped by protective stop control.	

(c) Error code, stop code table (Assignment of error codes and stop codes is done in common for all models.)
(i) Models SRK20, 25, 35, 45ZSPR-S

Number of fla	shes when in						
RUN light (10's digit)	e mode TIMER light (1's digit)	Stop coad or Error coad	Error content	Cause	Occurrence conditions	Error display	Auto recovery
	OFF	0	Normal	—	_	-	-
OFF	5 - time flash	05	Can not receive signals for 35 seconds (if communications have recovered)	Power source is faulty. Power source cables and signal lines are improperly wired. Indoor or outdoor PCB are faulty.	When 35 seconds passes without communications signals from either the outdoor unit or the indoor unit being detected correctly.	0	_
	5 - time flash	35	Cooling high pressure control	Cooling overload operation. Outdoor unit fan speed drops. Outdoor heat exchanger sensor is short circuit.	When the outdoor heat exchanger sensor's value exceeds the set value.	(5 times)	0
	6 - time flash	36	Compressor overheat 110°C	Refrigerant is insufficient. Discharge pipe sensor is faulty. Service valve is closed. When the discharge pipe sensor's value exceeds the service value.		(2 times)	0
3 - time flash	3 - time flash 7 - time flash 37 Outdoor heat exchanger sensor is abnormal Outdoor heat exchanger sensor connected. Outdoor heat exchanger sensor disconnected. 0 utdoor PCB is faulty. 0 utdoor PCB is faulty.		Outdoor heat exchanger sensor wire is disconnected. Connector connections are poor. Outdoor PCB is faulty.	-55°C or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. Or-55°C higher is detected for 5 seconds continuously within 20 seconds after power ON.	(3 times)	0	
	8 - time flash	38	Outdoor air temperature sensor is abnormal	Outdoor air temperature sensor wire is disconnected. Connector connections are poor. Outdoor PCB is faulty. Outdoor PCB is faulty.		(3 times)	0
	9 - time flash	39	Discharge pipe sensor is abnormal (anomalous stop)	Discharge pipe sensor wire is disconnected. Connector connections are poor. Outdoor PCB is faulty.	-25°C or lower is detected for 5 seconds continuously 3 times within 40 minutes after intial detection of this anomalous temperature.	(3 times)	0
4 - time flash	2 - time flash	42	Current cut	Compressor lock. Compressor output is open phase. Dutdoor PCB is faulty. Compressor output is closed. Compressor start fails 42 times in succession and the reason for the final failure is current cut. Compressor is faulty.		(2 times)	0
liasii	7 - time flash 47 Active filter voltage error Defective active filter		Defective active filter	When the wrong voltage connected for the power source. When the outdoor PCB is faulty.	0	_	
	8 - time flash		Outdoor unit's fan motor is abnormal	Outdoor fan motor is faulty. Connector connections are poor. Outdoor PCB is faulty.	When a fan speed of 75 min ⁻¹ or lower continues for 30 seconds or longer.	(3 times)	0
	1 - time flash	51	Short circuit in the power transistor (high side) Current cut circuit breakdown	Outdoor PCB is faulty. Power transistor is damaged.	When it is judged that the power transistor was damaged at the time the compressor started.	0	_
	7 - time flash	57	Refrigeration cycle system protective control	Service valve is closed. Refrigerant is insufficient.	When refrigeration cycle system protective control operates.	(3 times)	0
5 - time flash	8 - time flash	58	Current safe	Refrigerant is overcharge. Compressor lock. Overload operation.	When there is a current safe stop during operation.	_	0
	9 - time flash	- time 59 Compressor wiring is unconnection Voltage drop Low speed protective control Compressor wiring is disconnected. Power transistor is damaged. Power source construction is defective. Outdoor PCB is faulty. Compressor is faulty. Compresso		When the current is 1A or less at the time the compressor started. When the power source voltage drops during operation. When the compressor command speed is 1 ower than 32 rps for 60 minutes.	0	0	
	OFF	60	Rotor lock	Compressor is faulty. Compressor output is open phase. Electronic expansion valve is faulty. Overload operation. Outdoor PCB is faulty.		(2 times)	0
6 - time flash	1 - time flash	1 - time flash 61 Connection lines between the indoor and outdoor units are faulty Connection lines are faulty. Indoor or outdoor PCB are faulty. When 10 seconds passes after the power is turned on without communications signals from the indoor or outdoor unit being detected correctly.		When 10 seconds passes after the power is turned on without communications signals from the indoor or outdoor unit being detected correctly.	0	_	
	2 - time flash	62	Serial transmission error	Indoor or outdoor PCB are faulty. Noise is causing faulty operation. When 7 minute 35 seconds passes without communications signals from either the outdoor unit the indoor unit being detected correctly.		0	_
	OFF	80	Indoor unit's fan motor is abnormal	Indoor fan motor is faulty. When the indoor unit's fan motor is detected to be r at 300 min ⁻¹ or lower speed with the fan motor in condition while the air-conditioner is running.		0	_
	2 - time flash 82 Indoor heat exchanger sensor is abnormal (anomalous stop) Indoor heat exchanger sensor wire is disconnected. Connector connections are poor. When a temperature of -28°C or lower is s continuously for 0 minutes during heating (the compressor stops).		When a temperature of -28°C or lower is sensed continuously for 40 minutes during heating operation. (the compressor stops).	0	_		
8 - time flash	4 - time flash	84	Anti-condensation control	High humidity condition. Humidity sensor is faulty.	Anti-condensation prevention control is operating.	_	0
	5 - time flash	85	Anti-frost control	Indoor unit fan speed drops. Indoor heat exchanger sensor is broken wire.	When the anti-frost control operates and the compressor stops during cooling operation.	_	0
	6 - time flash	86	Heating high pressure control	Heating overload operation. Indoor unit fan speed drops. Indoor heat exchanger sensor is short circuit.		_	0

(ii) Models SRK63, 71, 80ZSPR-S

Number of fla	ashes when in	Stop good					
RUN light (10's digit)	TIMER light (1's digit)	or Error coad	Error content	Cause	Occurrence conditions	Error display	Auto recovery
	OFF	0	Normal	_	—	—	-
OFF	1-time flash	01	Error of wired remote control wiring	Broken wired remote control wire, defective indoor PCB	The wired remote control wire Y is open. The wired remote control wires X and Y are reversely connected. Noise is penetrating the wired remote control lines. The wired remote control or indoor PCB is faulty.	_	0
	5-time flash	05	Can not receive signals for 35 seconds (if communications have recovered)	Power source is faulty. Power source cables and signal lines are improperly wired. Indoor or outdoor PCB are faulty.	When 35 seconds passes without communications signals from either the outdoor unit or the indoor unit being detected correctly.	0	_
	5-time flash	35	Cooling high pressure control	Cooling overload operation. Outdoor unit fan speed drops. Outdoor heat exchanger sensor is short circuit.	ooling overload operation. utdoor unit fan speed drops. utdoor heat exchanger sensor is short circuit.		0
	6-time flash	6-time flash 36 Compressor overheat 115°C Refrigerant is insufficient. Discharge pipe sensor is faulty. Service valve is closed. When the discharge pipe sensor's value exceeds the value.		When the discharge pipe sensor's value exceeds the set value.	(2 times)	0	
3-time flash	7-time flash	37	Outdoor heat exchanger sensor is abnormal	Outdoor heat exchanger sensor wire is disconnected. Connector connections are poor. Outdoor PCB is faulty.	-55°C or lower is detected for 5 seconds continuously 3 times within 40 minutes after initial detection of this anomalous temperature. Or-55°C lower is detected for 5 seconds continuously within 20 seconds after power ON.	(3 times)	0
	8-time flash	38	Outdoor air temperature sensor is abnormal	Outdoor air temperature sensor wire is disconnected. Connector connections are poor. Outdoor PCB is faulty.	 -55°C or lower is detected for 5 seconds continuously 3 times within 40 minutes after inial detection of this anomalous temperature. Or-55°C lower is detected for 5 seconds continuously within 20 seconds after power ON. 		0
	9-time flash	39	Discharge pipe sensor is abnormal (anomalous stop)	Discharge pipe sensor wire is disconnected. Connector connections are poor. Outdoor PCB is faulty.	-25°C or lower is detected for 5 seconds continuously 3 times within 40 minutes after intial detection of this anomalous temperature.	(3 times)	0
	OFF	40	Service valve (gas side) closed operation	Service valve (gas side) closed Outdoor PCB is faulty.	rvice valve (gas side) closed utdoor PCB is faulty. If the inverter output current value exceeds the setting value within 80 seconds after the compressor ON in the heating mode, the compressor stops.		0
4-time flash	2-time 4-time flash flash		Current cut	Compressor lock. Compressor wiring short circuit. Compressor output is open phase. Outdoor PCB is faulty. Service valve is closed. Electronic expansion valve is faulty. Compressor is faulty.	Compressor start fails 42 times in succession and the reason for the final failure is current cut.	(2 times)	0
	7-time flash	47	Circuit error	Defective circuit	When L1 cable or L2 cable disconnect. When the outdoor PCB is faulty.	0	-
	8-time flash	48	Outdoor unit's fan motor is abnormal	Outdoor fan motor is faulty. Connector connections are poor. Outdoor PCB is faulty.	When a fan speed of 75 min ⁻¹ or lower continues for 30 seconds or longer.	(3 times)	0
	1-time flash	51	Short circuit in the power transistor (high side) Current cut circuit breakdown	Outdoor PCB is faulty. Power transistor is damaged.	When it is judged that the power transistor was damaged at the time the compressor started.	0	_
	7-time flash	57	Refrigeration cycle system protective control	Service valve is closed. Refrigerant is insufficient.	When refrigeration cycle system protective control operates.	(3 times)	0
5-time flash	8-time flash	time ash 58 Current safe Refrigerant is overcharge. Compressor lock. Overload operation. When there is a current safe stop during operation.		_	0		
	9-time flash 59 Compressor wiring is unconnection Voltage drop Low speed protective control Compressor wiring is disconnected. Power transistor is damaged. Power source construction is defective. Outdoor PCB is faulty. Compressor is faulty. When the current is 1A or less at the time the compressor started. When the power source voltage drops during of When the compressor command speed is 1ow rps for 60 minutes.		When the current is 1A or less at the time the compressor started. When the power source voltage drops during operation. When the compressor command speed is 1 ower than 32 rps for 60 minutes.	0	0		
	OFF	60	Rotor lock	Compressor is faulty. Compressor output is open phase. Electronic expansion valve is faulty. Overload operation. Outdoor PCB is faulty.		(2 times)	0
6-time flash	6-time flash 1-time flash 61 Connection lines between the indoor and outdoor units are faulty		Connection lines between the indoor and outdoor units are faulty	Connection lines are faulty. Indoor or outdoor PCB are faulty.	When 10 seconds passes after the power is turned on without communications signals from the indoor or outdoor unit being detected correctly.	0	-
2-time flash 62 Serial transmission error		Serial transmission error	Indoor or outdoor PCB are faulty. Noise is causing faulty operation.	When 7 minute 35 seconds passes without communications signals from either the outdoor unit or the indoor unit being detected correctly.	0	-	
	OFF	80	Indoor unit's fan motor is abnormal	Indoor fan motor is faulty. Connector connections are poor. Indoor PCB is faulty.	When the indoor unit's fan motor is detected to be running at 300 min ⁻¹ or lower speed with the fan motor in the ON condition while the air-conditioner is running.	0	_
	2-time flash	82	Indoor heat exchanger sensor is abnormal (anomalous stop)	Indoor heat exchanger sensor wire is disconnected. Connector connections are poor.	When a temperature of -28° C or lower is sensed continuously for 40 minutes during heating operation. (the compressor stops).	0	_
8-time flash	4-time flash	84	Anti-condensation control	High humidity condition. Humidity sensor is faulty.	Anti-condensation prevention control is operating.	_	0
	5-time flash	85	Anti-frost control	Indoor unit fan speed drops. Indoor heat exchanger sensor is broken wire.	When the anti-frost control operates and the compressor stops during cooling operation.	_	0
	6-time flash	86	Heating high pressure control	Heating overload operation. Indoor unit fan speed drops. Indoor heat exchanger sensor is short circuit.	When high pressure control operates during heating operation and the compressor stops.	_	0

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Notes (1) The number of flashes when in the Service Mode do not include the 1.5 second period when the lights light up at first (start signal). (See the example shown below.)



(ii) Fan speed mode

Auto recovery occurs.

(d) Operation mode and fan speed mode information tables

(i) Operation mode

Display pattern when in service mode	Operation mode					
RUN light (10's digit)	abnormal stop					
_	AUTO					
1-time flash	DRY					
2-time flash	COOL					
3-time flash	FAN					
4-time flash	HEAT					

Display pattern when in service mode	Fan speed mode when				
TIMER light (1's digit)	there is an abnormal stop				
_	AUTO				
2-time flash	HI				
3-time flash	MED				
4-time flash	LO				
5-time flash	ULO				
6-time flash	HI POWER				
7-time flash	ECONO				

* If no data are recorded (error code is normal), the information display in the operation mode and fan speed mode becomes as follows.

Mode	Display when error code is normal.
Operation mode	AUTO
Fan speed mode	AUTO

(Example): Operation mode: COOL, Fan speed mode: HI



(e) Room temperature sensor temperature, indoor heat exchanger sensor temperature, outdoor air temperature sensor temperature, outdoor heat exchanger sensor temperature table

										U	nit: °C
TIMER light (1's digit)											
(10's di	0	1	2	3	4	5	6	7	8	9	
Buzzer sound											
,	6	-60	-61	-62	-63	-64					
	5	-50	-51	-52	-53	-54	-55	-56	-57	-58	-59
M	4	-40	-41	-42	-43	-44	-45	-46	-47	-48	-49
Yes (sounds for 0.1 second)	3	-30	-31	-32	-33	-34	-35	-36	-37	-38	-39
	2	-20	-21	-22	-23	-24	-25	-26	-27	-28	-29
	1	-10	-11	-12	-13	-14	-15	-16	-17	-18	-19
	0		-1	-2	-3	-4	-5	-6	-7	-8	-9
	0	0	1	2	3	4	5	6	7	8	9
	1	10	11	12	13	14	15	16	17	18	19
	2	20	21	22	23	24	25	26	27	28	29
	3	30	31	32	33	34	35	36	37	38	39
No	4	40	41	42	43	44	45	46	47	48	49
(does not sound)	5	50	51	52	53	54	55	56	57	58	59
	6	60	61	62	63	64	65	66	67	68	69
	7	70	71	72	73	74	75	76	77	78	79
	8	80	81	82	83	84	85	86	87	88	89
	9	90	91	92	93	94	95	96	97	98	99

* If no data are recorded (error code is normal), the display for each sensor becomes as shown below.

Sensor name	Sensor value displayed when the error code is normal
Room temperature sensor temperature	-64°C
Indoor heat exchanger sensor temperature	-64°C
Outdoor air temperature sensor temperature	-64°C
Outdoor heat exchanger sensor temperature	-64°C

(Example) Room temperature, indoor heat exchanger, outdoor air temperature, outdoor heat exchanger: "-9°C"



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(f) Discharge pipe temperature table

										U	nit: °C
TIMER light (1's digit) RUN light (10's digit) Buzzer sound			1	2	3	4	5	6	7	8	9
	3	-60	-62	-64							
Yes	2	-40	-42	-44	-46	-48	-50	-52	-54	-56	-58
(sounds for 0.1 second)	1	-20	-22	-24	-26	-28	-30	-32	-34	-36	-38
	0		-2	-4	-6	-8	-10	-12	-14	-16	-18
	0	0	2	4	6	8	10	12	14	16	18
	1	20	22	24	26	28	30	32	34	36	38
	2	40	42	44	46	48	50	52	54	56	58
No	3	60	62	64	66	68	70	72	74	76	78
(does not sound)	4	80	82	84	86	88	90	92	94	96	98
	5	100	102	104	106	108	110	112	114	116	118
	6	120	122	124	126	128	130	132	134	136	138
	7	140	142	144	146	148	150				

* If no data is recorded (error code is normal), the display for sensor becomes as shown below.

Sensor name	Sensor value displayed when the error code is normal
Discharge pipe sensor temperature	-64°C

(Example) Discharge pipe temperature: "122°C"

* In the case of discharge pipe data, multiply the reading value by 2. (Below, $61 \times 2 = (122^{\circ}C)$)



(g) Service data record form (i) Models SRK20, 25, 35, 45ZSPR-S

Customer				Model			
Date of inv	estigation						
Machine na	ime						
Content of	complaint						
Remo	te control se	ttings			Display resu	lts	
Temperature setting	Operation switching	Fan speed switching	Content of displayed data	Buzzer (Yes/No.)	RUN light (Times) TIMER light (Times)	Display content
		MED	Error code on previous occasion.				
	Cooling	HI	Room temperature sensor temperature on previous occasion.				
		AUTO	Indoor heat exchanger sensor temperature on previous occasion.				
21		LO	Remote control information on previous occasion.				
	Heating	MED	Outdoor air temperature sensor temperature on previous occasion.				
		HI	Outdoor heat exchanger sensor temperature on previous occasion.				
		AUTO	Discharge pipe sensor temperature on previous occasion.				
		MED	Error code on second previous occasion.				
	Cooling	HI	Room temperature sensor temperature on second previous occasion.				
		AUTO	Indoor heat exchanger sensor temperature on second previous occasion.				
22		LO	Remote control information on second previous occasion.				
	Heating	MED	Outdoor air temperature sensor temperature on second previous occasion.				
	intening	HI	Outdoor heat exchanger sensor temperature on second previous occasion.				
		AUTO	Discharge pipe sensor temperature on second previous occasion.				
		MED	Error code on third previous occasion.				
	Cooling	HI	Room temperature sensor temperature on third previous occasion.				
		AUTO	Indoor heat exchanger sensor temperature on third previous occasion.				
23		LO	Remote control information on third previous occasion.				
	Heating	MED	Outdoor air temperature sensor temperature on third previous occasion.				
	Ticating	HI	Outdoor heat exchanger sensor temperature on third previous occasion.				
		AUTO	Discharge pipe sensor temperature on third previous occasion.				
		MED	Error code on fourth previous occasion.				
	Cooling	HI	Room temperature sensor temperature on fourth previous occasion.				
		AUTO	Indoor heat exchanger sensor temperature on fourth previous occasion.				
24		LO	Remote control information on fourth previous occasion.				
	TT time	MED	Outdoor air temperature sensor temperature on fourth previous occasion.				
	Heating	HI	Outdoor heat exchanger sensor temperature on fourth previous occasion.				
		AUTO	Discharge pipe sensor temperature on fourth previous occasion.				
		MED	Error code on fifth previous occasion.				
	Cooling	HI	Room temperature sensor temperature on fifth previous occasion.				
		AUTO	Indoor heat exchanger sensor temperature on fifth previous occasion.				
25		LO	Remote control information on fifth previous occasion.				
	**	MED	Outdoor air temperature sensor temperature on fifth previous occasion.				
	Heating	HI	Outdoor heat exchanger sensor temperature on fifth previous occasion.				
		AUTO	Discharge pipe sensor temperature on fifth previous occasion.				
21			Stop code on previous occasion.				
22			Stop code on second previous occasion.				
23			Stop code on third previous occasion.				
24			Stop code on fourth previous occasion.				
25	Ceeline	10	Stop code on fifth previous occasion.				
26	Cooling	LU	Stop code on sixth previous occasion.				
27			Stop code on seventh previous occasion.				
28			Stop code on eighth previous occasion.				
29			Stop code on ninth previous occasion.				
30			Stop code on tenth previous occasion.				
							5
Judgment							
							Exa
Remarks							

(ii) Models SRK63, 71, 80ZSPR-S

Customer				Model				
Date of investigation								
Machine name								
Content of	complaint				1			
Wireless 1	remote contro	ol settings				Display resul	ts	
Temperature setting	Operation mode	Fan speed mode	Content of displayed da	ata	Buzzer (Yes/No.)	RUN light (Times)	TIMER light (Times)	Display content
	1	MED	Error code on previous occasion.					
	Cooling	Н	Room temperature sensor on previous occasi	on				
		AUTO	Indoor heat exchanger sensor 1 on previous of	ccasion.				
21		LO	Wireless remote control information on previ	ous occasion.				
		MED	Outdoor air temperature sensor on previous of	ccasion.				
	Heating	HI	Outdoor heat exchanger sensor on previous of	ccasion.				
		AUTO	Discharge pipe sensor on previous occasion.					
26	Cooling	AUTO	Indoor heat exchanger sensor 2 on previous of	ccasion.				
		MED	Error code on second previous occasion.					
	Cooling	HI	Room temperature sensor on second previous	occasion.				
		AUTO	Indoor heat exchanger sensor 1 on second previ	ous occasion.				
22		LO	Wireless remote control information on second	nd previous occasion.				
		MED	Outdoor air temperature sensor on second pre	vious occasion.				
	Heating	HI	Outdoor heat exchanger sensor on second pre	vious occasion.				
		AUTO	Discharge pipe sensor on second previous occ	asion.				
27	Cooling	AUTO	Indoor heat exchanger sensor 2 on second occ	asion.				
		MED	Error code on third previous occasion					
	Cooling	HI	Room temperature sensor on third previous of	ccasion.				
		AUTO	Indoor heat exchanger sensor 1 on third previo	ous occasion				
23		LO	Wireless remote control information on third	previous occasion.				
		MED	Outdoor air temperature sensor on third previ	ous occasion				
	Heating	Н	Outdoor heat exchanger sensor on third previo	ous occasion.				
		AUTO	Discharge pipe sensor on third previous occas	ion				
28	Cooling	AUTO	Indoor heat exchanger sensor 2 on third occas	ion.				
		MED	Error code on fourth previous occasion					
	Cooling	HI	Room temperature sensor on fourth previous	occasion.				
		AUTO	Indoor heat exchanger sensor 1 on fourth prev	vious occasion.				
24		LO	Wireless remote control information on four	h previous occasion.				
		MED	Outdoor air temperature sensor on fourth prev	vious occasion.				
	Heating	HI	Outdoor heat exchanger sensor on fourth prev	ious occasion.				
		AUTO	Discharge pipe sensor on fourth previous occa	asion.				
29	Cooling	AUTO	Indoor heat exchanger sensor 2 on fouth occas	sion.				
		MED	Error code on fifth previous occasion.					
	Cooling	HI	Room temperature sensor on fifth previous oc	casion.				
		AUTO	Indoor heat exchanger sensor 1 on fifth previo	ous occasion.				
25		LO	Wireless remote control information on fifth	previous occasion.				
	11	MED	Outdoor air temperature sensor on fifth previo	ous occasion.	ſ			
	Heating	HI	Outdoor heat exchanger sensor on fifth previo	ous occasion.				
		AUTO	Discharge pipe sensor on fifth previous occas	ion.				
30	Cooling	AUTO	Indoor heat exchanger sensor 2 on fifth occas	ion.				
21			Stop code on previous occasion.					
22	1		Stop code on second previous occasion.					
23	1		Stop code on third previous occasion.					
24	1		Stop code on fourth previous occasion.					
25			Stop code on fifth previous occasion.					
26	Cooling LO		Stop code on sixth previous occasion.					
27	1		Stop code on seventh previous occasion.					
28]		Stop code on eighth previous occasion.					
29]		Stop code on ninth previous occasion.					
30	1	Stop code on tenth previous occasion.						
Judgment								Examiner
Remarks								· · · ·

Note (1) In the case of indoor heat exchanger sensor 2, match from 26 to 30 the temperature setting of wireless remote control. (Refor to page 98)

(7) Inspection procedures corresponding to detail of trouble











Outdoor fan motor error





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'17 • SRK-T-206



Humidity sensor

Humidity sensor assembly

 \sim

element Connector (CNF)

1

0 2 ċ

(8) Phenomenon observed after shortcircuit, wire breakage on sensor

(a) Indoor unit

Concer	Operation	Phenomenon				
Sensor	mode	Shortcircuit	Disconnected wire			
Room temperature Cooling		Release of continuous compressor operation command.	Continuous compressor operation command is not released.			
sensor	Heating	Continuous compressor operation command is not released.	Release of continuous compressor operation command.			
Heat exchanger sensor	Cooling	Freezing cycle system protection trips and stops the compressor.	Continiuous compressor operation command is not released. (Anti-frosting)			
	Heating	High pressure control mode (Compressor stop command)	Hot keep (Indoor fan stop)			
Humidity sensor	Cooling	Refer to the table below.	Refer to the table below.			
	Heating	Normal system operation is possible.				

Humidity sensor operation

	Failure mode	Control input circuit resding	Air-conditioning system operation
cted	1 Disconnected wire		
onne wire	② Disconnected wire	Humidity reading is 0%	Anti-condensation control is not done.
Dise	12 Disconnected wire		
Short circuit	1) and 2) are short circuited	Humidity reading is 100%	Anti-condensation control keep doing.

Remark: Do not perform a continuity check of the humidity sensor with a tester. If DC current is applied, it could damage the sensor.

(b) Outdoor unit

Sanaar	Operation	Phenomenon				
Sensor	mode	Shortcircuit	Disconnected wire			
Heat exchanger	Cooling	Compressor stop.	Compressor stop.			
sensor	Heating	Defrosting is not performed.	Defrosting is performed for 10 minutes at approx. 35 (model SRK35:45) minutes.			
Ourdoor air temperature sensor	Cooling	The compressor cannot pick up its speed owing to the current safe so that the designed capacity is not achieved.	Compressor stop.			
	Heating	The compressor cannot pick up its speed owing to the heating overload protection so that the designed capacity is not achieved.	Defrosting is performed for 10 minutes at approx. 35 (model SRK35:45) minutes.			
Discharge pipe sensor	All modes	Compressor overload protection is disabled. (Can be operated.)	Compressor stop.			

(9) Checking the indoor electrical equipment

(a) Indoor PCB check procedure



(b) Indoor unit fan motor check procedure

This is a diagnostic procedure for determining if the indoor unit's fan motor or the indoor PCB is broken down.

1) Indoor PCB output check

- a) Turn off the power.
- b) Remove the front panel, then disconnect the fan motor lead wire connector.
- c) Turn on the power. If the unit operates when the ON/OFF button is pressed, if trouble is detected after the voltages in the following figure are output for approximately 30 seconds, it means that the indoor PCB is normal and the fan motor is broken down.

If the voltages in the following figure are not output at connector pins No. (1), (4) and (5), the indoor PCB has failed and the fan motor is normal.



2) Fan motor resistance check

Measuring point	Resistance when normal
1 - 3 (Red - Black)	20 M Ω or higher
④ - ③ (White - Black)	20 k Ω or higher

- Notes (1) Remove the fan motor and measure it without power connected to it.
 - (2) If the measured value is below the value when the motor is normal, it means that the fan motor is faulty.

(10) How to make sure of wireless remote control





Note (1) Check method of wireless remote control (a) Press the reset switch of the wireless remote control. (b) If all LCD are displayed after one (1) display, it is basically normal.





• Models SRK63, 71, 80ZSPR-S



◆ Simplified check methd of wireless remote control It is normal if the signal transmission section of the wireless remote control emits a whitish light at each transmission on the monitor of digital camera.





(12) Outdoor unit inspection points Models SRK20, 25, 35, 45ZSPR-S



Check point of outdoor unit

CAUTION- HIGH VOLTAGE

Models SRK63, 71, 80ZSPR-S



(a) Inspection of electronic expansion valve

Electronic expansion valve operates for approx. 10 seconds after the power on, in order to determine its aperture. Check the operating sound and voltage during the period of time. (Voltage cannot be checked during operation in which only the aperture change occurs.)

- (i) If it is heard the sound of operating electronic expansion valve, it is almost normal.
- (ii) If the operating sound is not heard, check the output voltage.



Approx. DC5 V is detected for 10 seconds after the power on.

- (iii) If voltage is detected, the outdoor PCB is normal.
- (iv) If the expansion valve does not operate (no operating sound) while voltage is detected, the expansion valve is defective.

• Inspection of electronic expansion valve as a separate unit

Measure the resistance between terminals with an analog tester.

Measuring point	Resistance when normal
1-6	
1-4	$46 \pm 4\Omega$
1-3	(at 20°C)
1-5	

(b) Outdoor unit fan motor check procedure

When the outdoor unit fan motor error is detected, diagnose which of the outdoor unit fan motor or outdoor PCB is defective.
Diagnose this only after confirming that the indoor unit is normal.

- (i) Outdoor PCB output check
 - 1) Turn off the power.
 - 2) Disconnect the outdoor unit fan motor connector CNFAN.
 - 3) When the indoor unit is operated by inserting the power source plug and pressing (ON) the backup switch for more than 5 seconds, if the voltage of pin No. ② in the following figure is output for 30 seconds at 20 seconds after turning "ON" the backup switch, the outdoor PCB is normal but the fan motor is defective.

If the voltage is not detected, the outdoor PCB is defective but the fan motor is normal.

Note (1) The voltage is output 3 times repeatedly. If it is not detected, the indoor unit displays the error message.





(ii) Fan motor resistance check

Measuring point	Resistance when normal
6 - 4 (Red - Blue)	20 M Ω or higher
③ - ④ (White - Blue)	20 k Ω or higher

Notes (1) Remove the fan motor and measure it without power connected to it.(2) If the measured value is below the value when the motor is normal, it means that the fan motor is faulty.

PJA012D730

11. OPTION PARTS

(1) Wired remote control (RC-E5)

Read together with indoor unit's installation manual.



④ Install the lower case to the flat wall with attached two wooden screws.

ТОО "Everest climate", Р.К, г.Алматы, микрорайон Аксай 2, дом 53 | Телефон: +7 727 230 00 10 / +7 727 327 93 03 | info@aircon.kz

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Lowe

S Connect the remote control cord to the terminal block. Connect the terminal of remote control (X,Y) with the terminal of indoor unit (X,Y).

(X and Y are no polarity)

Wiring route is as shown in the right diagram depending on the pulling out direction.



The wiring inside the remote control case should be within 0.3mm² (recommended) to 0.5mm². The sheath should be peeled off inside the remote control case. The peeling-off length of each wire is as below.

The peeling-on length of each wire is as below.

Pulling out from upper left	Pulling out from upper center	
X wiring : 215mm	X wiring : 170mm	The peeling-off length
Y wiring : 195mm	Y wiring : 190mm	of sheath

- Install the upper case as before so as not to catch up the remote control cord, and tighten with the screws.
- \odot In case of exposing cord, fix the cord on the wall with cord clamp so as not to slack.

Installation and wiring of remote control

- U Wiring of remote control should use 0.3mm² × 2 core wires or cables. (on-site configuration)
- ② Maximum prolongation of remote control wiring is 600 m.

If the prolongation is over 100m, change to the size below.

But, wiring in the remote control case should be under 0.5mm². Change the wire size outside of the case according to wire connecting. Waterproof treatment is necessary at the wire connecting section. Be careful about contact failure.

100 - 200m ······	$\cdot 0.5 \text{mm}^2 \times 2 \text{ cores}$
Lin da a 000 an	0.75

Under 300m $\cdots 0.75$ mm² \times 2 cores Under 400m $\cdots 1.25$ mm² \times 2 cores

Under 600m \cdots 2.0mm² \times 2 cores

Master/ slave setting when more than one remote controls are used

A maximum of two remote controls can be connected to one indoor unit (or one group of indoor units.)



Set SW1 to "Slave" for the slave remote control. It was factory set to "Master" for shipment.

Note: The setting "Remote control thermistor enabled" is only selectable with the master remote control in the position where you want to check room temperature.

The air-conditioner operation follows the last operation of the remote control regardless of the master/ slave setting of it.

The indication when power source is supplied

When power source is turned on, the following is displayed on the remote control until the communication between the remote control and indoor unit settled.

Master remote control : "	owaito	"M
Slave remote control : "	owaito	"S

At the same time, a mark or a number will be displayed for two seconds first.

This is the software's administration number of the remote control, not an error cord.

 Db
 AC
 * Th

 OWAITO
 M
 example

* The left mark is only an example. Other marks may appear.

When remote control cannot communicate with the indoor unit for half an hour, the below indication will appear.

Check wiring of the indoor unit and the outdoor unit etc.

INSPECT I/U

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The range of temperature setting

When shipped, the range of set temperature differs depending on the operation mode as below.

Heating : 16-30°C (55-86°F) Except heating (cooling, fan, dehumidifying, automatic) : 18-30°C (62-86°F)

Output limit and lower limit of set temperature can be changed with remote control.

Upper limit setting: valid during heating operation. Possible to set in the range of 20 to 30°C (68 to 86°F). Lower limit setting: valid except heating (automatic, cooling, fan, dehumidifying) Possible to set in the range of 18 to 26°C (62 to 79°F).

When you set upper and lower limit by this function, control as below.

1. When 2 TEMP RANGE SET, remote control function of function setting mode is "INDN CHANGE" (factory setting), [If upper limit value is set]

During heating, you cannot set the value exceeding the upper limit.

[If lower limit value is set]

During operation mode except heating, you cannot set the value below the lower limit.

2. When TEMP RANGE SET, remote control function of function setting mode is "NO INDN CHANGE"

[If upper limit value is set] During heating, even if the value exceeding the upper limit is set, upper limit value will be sent to the indoor unit.

But, the indication is the same as the temperature set.

[If lower limit value is set]

During except heating, even if the value lower than the lower limit is set, lower limit value will be sent to the indoor unit. But, the indication is the same as the temperature set.

How to set upper and lower limit value

1. Stop the air-conditioner, and press O(SET) and C(MODE) button at the same time for over three seconds .

The indication changes to "FUNCTION SET abla".

- 2. Press 🔽 button once, and change to the "TEMP RANGE 🔺 " indication.
- 3. Press O (SET) button, and enter the temperature range setting mode.
- 4. Select "UPPER LIMIT ▼ " or "LOWER LIMIT ▲ " by using ▲ ▼ button.
- 5. Press O(SET) button to fix.
- 6. When "UPPER LIMIT ▼ " is selected (valid during heating)
 - ① Indication: " $\textcircled{b} \lor \land$ SET UP" \rightarrow "UPPER 30°C \lor '
 - O Select the upper limit value with temperature setting button \bigtriangledown . Indication example: "UPPER 26°C $\lor \land$ " (blinking)

③ Press (SET) button to fix. Indication example: "UPPER 26°C" (Displayed for two seconds) After the fixed upper limit value displayed for two seconds, the indication will return to "UPPER LIMIT V".

- 7. When "LOWER LIMIT **A**" is selected (valid during cooling, dry, fan, automatic)
 - ① Indication: " $𝔥 ∨ \land SET UP" \rightarrow "LOWER 18°C \land "$
 - O Select the lower limit value with temperature setting button \fbox{O} . Indication example: "LOWER 24°C $\lor \land$ " (blinking)
 - ③ Press (SET) button to fix. Indication for example: "LOWER 24°C" (Displayed for two seconds) After the fixed lower limit value displayed for two seconds, the indication will return to "LOWER LIMIT V".
- 8. Press ON/OFF button to finish.



initial function setting for t	ypical using is performe	utomatically by the indoor unit connected, when remote	
ol and indoor unit are con ing as they are used in a u would like to change the	inected. typical manner, there will initial setting marked "(atting is shown as the fol	e no need to change the initial settings. ", set your desired setting as for the selected item.	
of function settir	ig]		
: Stop air-conditioner and	press " O ," (SET) an	Record and keep the	
"(1)" (MODE) butto : Press "()" (SET) b	ns at the same time for ov outton.	three seconds. setting	
: Press " (RESE	Γ) button.		
: Press ON/OFF button.		Consult the technical data etc. for each control details	
inished change of setting is Initial settings Automatic criterion	unavailable.	Stop air-conditioner and press	
			To next p
TION T (Remote control	function)		
Function	1 settina		
	ALAR BE AND ALAR AND AND ALAR AND AND ALAR AND AND AND ALAR AND	Validate setting of ESP:External Static Pressure	
02 AUTO RUN SET	I AUTO RUN ON		
03 MA TEMP SW	AUTO RUN OFF	Automatical operation is impossible	
		Temperature setting button is not working	
04 EET MODE SW	ା ଜୁଙ୍ଗ Valid		
05 @ ON/OFF SW	I Internet invalid	Mode button is not working	
	CO VALID	On/Off button is not working	
		X Ean around button in pot working	
07 E LOUVER SW			
08 TOTTINER SW	E INVALID	Louver button is not working	
001	ତ୍ତି VALIO କୁହା INVALID	Timer button is not working	
09 ESENSOR SET	ESENSOR OFF	Remote thermistor is not working.	
	SENSOR ON SENSOR +3.0%	Remote thermistor is working. Remote thermistor is working, and to be set for producing +3.0°C increase in temperature.	
	I≣SENSOR+2.0% I≣SENSOR+1.0%	Remote thermistor is working, and to be set for producing +2.0°C increase in temperature. Remote thermistor is working, and to be set for producing +1.0°C increase in temperature.	
	SENSOR - 1.0%	Remote thermistor is working, and to be set for producing -1.0 C increase in temperature. Remote thermistor is working, and to be set for producing -2.0 C increase in temperature.	
10 AUTO RESTART		Hemote thermistor is working, and to be set for producing -3.0 C increase in temperature.	
* 11 UONT I THU SCT			
	NO VENT	O	
	VENT LINK	indoor printed circuit board (in case of VHF series, by connecting it to CND of th indoor printed circuit board), the operation of ventilation device is linked with th operation of indoor unit.	e e
	NO VENT LINK	In case of Single split series, by connecting ventilation device to CNT of the indoor printed circuit board (in case of VRF series, by connecting it to CND of the indoor printed circuit	
12 TEMP RANGE SET		uovaru), you can operate /stop the ventilation device independently by the (VENT) butto	ι.
	INDN CHANGE	will vary following the control.	
13 TZUFAN		will not vary following the control, and keep the set temperature.	
13 12 01114	HI-HID-LO	Airflow of fan becomes of and - and	bari).
	HI-HID 1 Fen speed	Airflow of fan becomes of * _* *	
14 I⇒≓POSITION	T	If you change the remote control function "14 3-POSITION	
14 1 VI TOUTION	4POSITION STOP	you must change the indoor function "04 S-POSITION" accordingly.	
15 MODEL TYPE	FREE STOP	The louver can stop at any position.	
	HEAT PUMP COOLING ONLY	<u>×</u>	
16 EXTERNAL CONTROL SET		If you input signal into CNT of the indoor printed circuit board from external, the indoor printed circuit board from exter	9
	FOR ALL UNITS	indoor unit will be operated independently according to the input from external, a from external from the indoor printed circuit board from external, all units which	
17 ROOM TEMP INDICATION SET		connect to the same remote control are operated according to the input from external	
	INDICATION ON	In normal working indication, indoor unit temperature is indicated instead of airfle	w.
18 XCSINDICATION	T Indication on		
	INDICATION OFF	Heating preparation indication should not be indicated.	
<u> 19 č/† SET</u>		C Temperature indication is by degree C	
	1 F	Temperature indication is by degree F	To next p

Note 1: The initial set	ting marked " ※ " is	decided by connected inde	oor and outdoor unit, and is automatically defined as following table.		
Function No.	Item	Default	Model		
Remote control	AUTO RUN SET	AUTO RUN ON	"Auto-RUN" mode selectable indoor unit.		
function02		AUTO RUN OFF	Indoor unit without "Auto-RUN" mode		
Remote control	SELFAN SPEED SW	8월 VALID	Indoor unit with two or three step of air flow setting		
function06		ලාෂා INVALID	Indoor unit with only one of air flow setting		
Remote control	ECTI LOUVER SW	esiz⊇ VALIO	Indoor unit with automatically swing louver		
function07		종교 INVALID	Indoor unit without automatically swing louver		
Remote control	I/UFAN	HI-MID-LO	Indoor unit with three step of air flow setting		
function13		HI-LO	Indoor unit with two step of air flow setting		
		HI-MID			
		1 FAN SPEED	Indoor unit with only one of air flow setting		
Remote control	NODEL TYPE	HEAT PUNP	Heat pump unit		
function15 COOLING ONLY Exclusive cooling unit					

Note 3: As for plural indoor unit, set indoor functions to each master and slave indoor unit. But only master indoor unit is received the setting change of indoor unit function "05 EXTERNAL INPUT" and "06 PERMISSION / PROHIBISHION".

From previous page			Note2: Fa	n setting of "HI	GH SPEED"			
Indoor unit	No. are indicated only whe	n	F	an tap	Inc	loor unit air flow se	tting	
(Indoor unit function)	or units are connected.			1		- Stall - Sall - Sall	Rad - Ra ii	8ai - 8ai
I/U000 ▲	* 02 FAN SPEED SET	setting	FAN SPEED	STANDARD	UH - Hi - Me - Lo	Hi - Me - Lo	Hi - Lo	Hi - Me
I/1001 ≑ I/1002 ≑		STANDARD × HIGH SPEED 1 ×	SET	HIGH SPEED1, 2	UH - UH - Hi - Me	UH - Hi - Me	UH - Me	UH - Hi
[7/003≑ [7/004≑	* 03 FILTER SIGN SET	RIGR SPEED 2	Initial fund 4 speed is	tion setting of a not able to be	some indoor unit is "HIGH set with wireless remote of	SPEED". control.		
ļ L]			The filter sig	n is indicated a	fter running for 180 hours			
÷		TYPE2	The filter sign	n is indicated a	fter running for 600 hours.			
I o set other indoor unit, press		TYPE 3	The filter sign	n is indicated a	fter running for 1000 hours	S.		
[AIRCON NO.] button, which		TYPE 4	The filter sign	n is indicated a	fter running for 1000 hours	s, then the indoor un	it will be stop	bed by
allows you to go back to the indoo			Compulsion a	illei 24 ilouis.	ation 104 - DESITION			
(for example: 1/11000 A)		<u> </u>	vou must cha	ange the remot	e control function "14 🖘	", "PUSITION " accordir	nalv.	
(ioi example. 1/0 000 —).		4POSITION STOP	You can sele	ect the louver st	op position in the four.		57	
	05 EXTERNAL INPUT		The louver c	an stop at any	position.			
		LEVEL INPUT O	1					
		PULSE INPUT	-					
	09 Inseriouseneesinesine		-					
		VALID	Permission/p	rohibition contr	rol of operation will be vali	d.		
	* 07 EMERGENCY STOP							
			With the VD	corioo it io uo	ad to atop all indeer units	connected with the	ama autdoor	unit immodiate
			When stop s	ianal is inputed	from remote on-off termin	nal "CNT-6", all indoc	or units are st	opped immediate
		INTERSET +30%	To be report f	or producing ·	3.0°C increase in tempore	ture during besting		
		OFFSET +2.0°C	To be reset f	or producing +	2.0°C increase in tempera	ture during heating.		
	* 08 🕸 SP OFFSET	OFFSET + 1.0%	To be reset f	or producing +	1.0°C increase in tempera	ture during heating.		
			-					
		OFFSET +2.0%	To be reset r	producina +2.0°	C increase in return air te	mperature of indoor	unit.	
		OFFSET +1.5°c	To be reset p	producing +1.5	C increase in return air te	mperature of indoor	unit.	
	* 09 RETURN AIR TEMP	OFFSET + 1.0%	To be reset p	producing +1.0°	C increase in return air te	mperature of indoor	unit.	
		INFISET -1.0tc	To be report r	voducina 1.0°	C increases in return oir ter	moorature of indoor u	unit	
		OFFSET -1.5°c	To be reset p	producing -1.5°	C increase in return air ter	nperature of indoor u	unit.	
		OFFSET 2.0c	To be reset p	producing -2.0°	C increase in return air ter	mperature of indoor u	unit.	
		LINN FAN SPIED	When heatin	a thermostat is	OFF, fan speed is low sp	eed.		
			When heatin	g thermostat is	OFF, fan speed is set spe	eed.		
			When beatin	a tharmaatat ia	OFF for around in opport	ad intermittantly		
		FAN OFF	When heatin	g thermostat is	OFF, the fan is stopped.	eu internittentity.		
		L	When the ren	note thermisto	r is working, "FAN OFF" is	set automatically.		
			Do not set "F	AN OFF" wher	the indoor unit's thermist	tor is working.		
	* 11 FROST PREVENTION TEMP		Change of in	door heat exch	anger temperature to star	t frost prevention cor	ntrol.	
		T84P HIGH						
		TBHP LOW O						
	* 12 FROST PREVENTION CONTROL		Working only	with the Single	a solit sorios			
		FAN CONTROL ON 🛛 🔿	To control fro	ost prevention,	the indoor fan tap is raise	d.		
		FAN CONTROL OFF	4		·			
	* 13 TORHTH SOULSTINK	\$ 0	Drain nump i	s run durina co	oling and dry			
		SCAND *	Drain pump i	s run during co	oling, dry and heating.			
		XOANDXANDX	Drain pump i	s run during co	oling, dry, heating and far	1.		
	* 14 A FEW REMAINING	440 ANU =\$	Drain pump i	s run during co	oling, dry and fan.			
	* 1 * 1 * 1 * 1 * 1 * 1	NU REMAINING	After cooling	is stopped. the	fan does not perform ext	ra operation.		
		D.5 HOUR	After cooling	is stopped, the	fan perform extra operati	on for half an hour.		
			After cooling	is stopped, the	fan perform extra operati	on for an hour.		
	* 15 🕸 FAN REMAINING	[* (mol)	Aiter cooling	is stopped, the	nan periorin extra operati	UT IUT SIX HOURS.		
		NO REMAINING 🛛 🔿	After heating	is stopped or h	neating thermostat is OFF	, the fan does not pe	erform extra o	peration.
		10.5 HUUK	After heating	is stopped or h	neating thermostat is OFF	the fan perform extr	a operation fo	or half an hour.
		6 HOUR	After heating	is stopped or h	neating thermostat is OFF	, the fan perform extr	a operation for ra operation f	or six hours.
* 16 × FAN INTERMITTENCE]		3			
		INU KE MAINENG	During heating	na is stonned o	r heating thermostat is OF	F the fan nerform in	ntermittent on	eration for five
		zowinOFF swinON	with low fan	speed after twe	enty minutes' OFF.	., are run perroriti II		station for nive i
		Swin/IFF Spin/IN	During heating	ng is stopped o	r heating thermostat is OF	F, the fan perform in	ntermittent op	eration for five r
		Sarriori Sarriori	with low fan	speed after five	minutes' OFF.			
	* <u> / Finegounte Guntinul </u>	STANDARD	1					
		TYPEI X	Connected "	OA Processing	" type indoor unit, and is a	utomatically defined		
rom previous page]	0		-		

Hov	v to set function	Operation message
1.	Stop air-conditioner and press ○ (SET) ⓒ (MODE) buttons at the same time for over three seconds, and the "FUNCTION SET ▼ " will be displayed.	Setting description: (C)
•		AUTO RUN SET
2.	Press (SEI) button.	7 Finishing button
3.	Make sure which do you want to set, "■ FUNCTION ▼" (remote control function) or "I/U FUNCTION ▲" (indoor unit function).	
4.	Press ▲ or ▼ button. Selecct IIII FUNCTION ▼" (remote control function) or "I/U FUNCTION ▲" (indoor unit function).	1 Contraction Contraction
		Indoor unit selection button Previous screen button
5.	Press ()(SET) button.	
6.	LOn the occasion of remote control function selection J	Con the occasion of indoor unit function selection I
	 "DATA LOADING" (Indication with blinking) 	 "DATA LOADING" (Blinking for 2 to 23 seconds to read the data)
	↓ Display is changed to "01 小MA :\$P {ET".	\downarrow Indication is changed to "02 FAN SPEED SET". Go to $@$.
	Press or button.	741 4 . 3
	"No. and function"are indicated by turns on the remote control function table, then you can select from them. (For example)	[Note] (1) If plural indoor units are connected to a remote control, the indication is "I/U 000" (blinking) ← The lowest number of the indoor unit connected is indicated
	AUTO RUN SET Function No. Function	
	③ Press ○ (SET) button. The current setting of selected function is indicated. (for example) "AUTO RUN ON" ← If "02 AUTO RUN SET" is selected	(2) Press or button. Select the number of the indoor unit you are to set If you select "ALL UNIT ▼", you can set the same setting with all unites
	AUTO RUN ON <	(3) Press () (SET) button.
	④ Press ▲ or ▼ button. Select the setting.	 Press or button. "No. and function" are indicated by turns on the indoor unit function table, then you can select from them. (For example)
		FAN SPEED SET Function No.
		③ Press ○ (SET) button. The current setting of selected function is indicated. (For example) "STANDARD" ← If "02 FAN SPEED SET" is
	"SET COMPLETE" will be indicated, and the setting will be completed.	
	Then after "No. and function" indication returns, Set as the	STRNDAKD <setting< th=""></setting<>
	finish, go to 7.	 ④ Press ▲ or ▼ button. Select the setting.
	SET COMPLETE	Press (SET) button. "SET COMPLETE" will be indicated, and the setting will be completed.
7.	Press ON/OFF button.	I hen atter "No. and function" indication returns, set as the same procedure if you want to set continuously , and if to finish, go to 7.
	Setting is finished.	SET COMPLETE
		When plural indoor units are connected to a remote control, press the <u>AIRCON No.</u> button, which allows you to go back to the indoor unit selection screen. (example */U 000 ▲*)
	It is possible to finish by pressing ON/OFF buttor unavailable. During setting, if you press (RESET) buttor Setting is managized in the control and it is saved	n on the way, but unfinished change of setting is
	L How to check the current setting J When you select from "No. and funcion" and press set button b setting. (But, if you select "ALL UNIT ▼ ", the setting of the lowest num	by the previous operation, the "Setting" displayed first is the current ber indoor unit is displayed.)

(2) Interface kit (SC-BIKN-E)

RKZ012A088B





Installation check items

□ Are the connection cables connected securely to the terminal blocks and connectors?

 \Box Are the thickness and length of the connection cables conformed with the standard?





(3) Superlink E board (SC-ADNA-E)

Read and understand the instructions completely before starting installation. Refer to the instructions for both indoor and outdoor units.

Safety precautions

• Carefully read "Safety precautions" first. Follow the instructions for installation.

- Precautions are grouped into "Warning A" and "Caution A". The "Warning A" group includes items that may lead to serious injury or death if not observed. The items included in the "Caution 🖄" group also may lead to serious results under certain conditions. Both groups are crucial for safety installation. Read and understand them carefully • After installation, conduct the test operation of the device to check for any abnormalities. Describe how to operate the device to the customer following the installation instruc-
- tion manual. Instruct the customer to keep this installation instruction for future reference.

A Warning

- This device should be installed by the dealer where you purchase the device or a licensed professional shop. If the device is incorrectly installed by the
- customer, it may result in electric shock or fire.
 Install the device carefully following the installation instruction. If the device is incorrectly installed, it may result in electric shock or fire.
 Use the accessory parts and specified parts for installation. If any parts that do
- not match the specifications are used, it may result in electric shock or fire.
- A person with the electrical service certification should conduct the service based on the "Technical standards for electrical facilities", "Electrical Wiring Code", and the installation instruction. If the work is done incorrectly, it may result in electric shock or fire.
- Wiring should be securely connected using the specified types of wire. No external force on the wire should be applied to any terminals. If a secure connection is not achieved, it may result in electric shock or fire.

11 Application

Indoor-to-outdoor three core communication specification type 3 (since October 2007)

2 Accessories



3 Function

Allowing the central control SL1N-E, SL2N-E, and SL4-AE/BE to control and monitor the commercial air-conditioning unit.

4 Control switching

Settings can be changed by the switch SW3 on the SL E board as in the following

Switch	Symbol	Switch	Remarks		
SW3	-1	ON	Master		
	1	OFF (default)	Slave		
		ON	Fixed previous protocol		
	2	OFF (default)	Automatic adjustment of Superlink protocol		
	2	ON	Indicates the forced operation stop when abnormality has occurred.		
	3	OFF (default)	Indicates the status of running/stop as it is, when abnormality has occurred.		
	4	ON	The hundredth address activated "1"		
		OFF (default)	The hundredth address activated "0"		

≜Caution

- Provide ground connection. The ground line should never be connected to the gas supply piping, the water supply piping, the lightning conductor rod, nor the telephone ground. If the grounding is improper, it may result in electric shock.
- Do not install the device in the following locations.
 1. Where there is mist/spray of oil or steam such as kitchens. 2.Where there is corrosive gases such as sulfurous acid gas.
- 3.Where there is a device generating electromagnetic waves. These may interfere with the control system resulting in the device becoming uncontrollable.
- 4.Where flammable volatile materials such as paint thinner and gasoline may exist or where they are handled. This may cause a fire

5 Connection Outline

Note for setting the address

- Set the address between 00 and 47 for the previous Superlink connection
- and between 000 and 127 for the new Superlink connection. (*1)
- Do not set the address overlapping with those of the other devices in the network. (The default is 000)



(*1) Whether the actual link is either the new Superlink or the previous Superlink depends on the models of the connected outdoor and indoor units. Consult the agent or the dealer.

Signal line specification

Communication method	Previous Superlink	New Superlink
Line type	MVVS	MVVS
Line diameter	0.75 - 1.25mm ²	0.75/1.25mm ²
Signal line (total length)	up to 1000m	up to 1500/1000m (*2)
Signal line (maximum length)	up to 1000m	up to 1000m

(*2) Up to 1500 m for 0.75 mm², and up to 1000 m for 1.25 mm². Do not use 2.0 mm². It may cause an error.

(*3) Connect grounding on both ends of the shielding wire. For the grounding method, refer to the section "6 Installation".

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PJZ012D029F

- Set the Superlink network address with SW1 (tens place), SW2 (ones place), and SW3 (hundreds place).
- (2) Set the SL E board SW3-1 to be ON (Master) when using this without any remote control (no wired remote control nor wireless remote control).
- (3) Set up the plural master/slave device using the dip switches on the indoor unit board.
- (4) Set up the remote control master/slave device using the slide switch on the remote control board.
- (5) Set up "0" to "F" using the address rotary switch on the indoor unit board when controlling the indoor unit with the multiple remote control.



6 Installation

- 1. When using the metal box (mounted on the indoor unit / mounted on the back of the remote control):
 - (1) Mount the SL E board in the metal box using the locking supports.
 - (2) Wiring should go through the provided grommet since then through the wiring to the hole on the Metal box.

Secure the grommet after inserting the grommet into the Metal box as shown in below figure, then tie the wiring at the outlet of the unit using a binding band.



Locking supports (4)

▲ When installed outside the indoor unit, put the metal cover on.



When installed on the back of the remote control, mount it directly on the remote control bottom case.



Connect grounding. Connect grounding for the power line to Ground , and grounding for the signal line to Ground or to the Ground on the indoor unit control box.



When connecting to the indoor unit control box (ceiling-concealed type and FDT type only):

Mount the SL E board in the control box using the locking supports.
 Remove 6 bands from the box and put the wiring through the bands to be secured.



Electrical shock hazard! Make sure to turn the power off for servicing. Be cautious so that no abnormal force should be applied to the wiring. Do not let the SL E board hung by the wiring. Do not damage the board with a screw driver.

The board is sensitive to static electricity. Release the static electricity of your body before servicing.

(you can do this by touching the control board which is grounded).

Location of installation

Install the device at the location where there are no electromagnetic waves nor where there is water and dust. The specified temperature range of the device is 0 to 40°C. Install the device at the location where the ambient temperature stays within the range. If it exceeds the specification, make sure to provide solution such as installing a cooling fan. When used outside of the range, it may cause abnormal operation.

7 Indicator display

Check the LED 3 (green) and LED 2 (red) on the SL E board for flashing.

SL E board LEDs			Display on the
Red	Green	Inspection mode	integrated network control device
Off	Flashing	Normal communication	
Off	Off	Disconnection in the remote control communication line (X or Y) Short-circuit in the remote control communication line (between X and Y) Faulty indoor unit remote control power Faulty remote control communication circuit Faulty CPU on SL E board	No corresponding unit number
One flash	Flashing	 Disconnection in the Superlink signal line (A or B) Short-circuit in the Superlink signal line (between A and B) Faulty Superlink signal circuit 	
Two flashes	Flashing	Faulty address setting for the SL E board (Set up the address for previous SL E board : more than 48 new SL E board : more than 128)	
Three flashes	Flashing	 SL E board parent not set up when used without a remote control Faulty remote control communication circuit 	E1
Four flashes	Flashing	 Address overlapping for the SL E board and the Superlink network connected indoor unit 	E2
Off	Flashing	 Number of connected devices exceeds the specification for the multiple indoor unit control 	E10

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INVERTER MULTI-SPLIT SYSTEM RESIDENTIAL AIR-CONDITIONERS



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