ROOM AIR CONDITIONER

Service Manual

AA-2122

contents

1. **Range and Conditions**

1.1 Operating Range

Temperature	Temperature	Indoor inlet temperature	Outdoor inlet temperature
Cooling	Max.	32℃ DB/23℃ WB	43℃ DB/26℃ WB
	Min.	21℃ DB/15℃ WB	21℃ DB

1.2 Operating Conditions

Cooling	Indoor inlet temperature	Outdoor inlet temperature
Rated operating conditions	27℃ DB/19℃ WB	35℃ DB/24℃ WB
Max. operating conditions	32℃ DB/23℃ WB	43℃ DB/26℃ WB

DB: Dry-bulb temperature

WB: Wet-bulb temperature

2. Specifications

2.1 Unit Specifications

Item \ Model	AA-2122
Rated capacity (Btu)	9000
Air circulation (high)(m^3/h)	350
Operating current (A)	9.2
Power input (W)	990
Power factor (%)	95
EER (Btu/W)	9.1
Refrigerant / Filling amount (g)	R22 / 430
Package dimensions (Height × Width × Depth)	420×533×698
Net weight (kg)	35
Power	115V 60Hz single phase
Power range (v)	103.5~126.5
Air filter	Anti-mold, washable

Note: Specifications are measured out under the rated operating conditions. Specifications refer to the name plate of the air conditioner when they changed.

2.2 Specifications of main parts

Fan				
	Centrifugal fan (inside)	Number….Diameter		1…… ϕ 180mm
	Propeller fan (outside)			1…… ϕ 345mm
Fan motor				
	Fan motor type			Y5L613B59 (BROAD-OCEAN)
	Pole / rotation (rpm, 115V, high speed)			6/1030
	Rated power output (W)			40
	Coil resistance (Ω) (Ambient temperature 20℃)	White-brown		42.5
		yellow - Orange		44
	Internal protector	Safety devices operating temperature	On (℃)	85
			Off ℃)	130
		Operating capacitor	(μF)	8
			(VAC)	450
Rotary type compressor				
	Compressor type			EH130X1C-1DZDU3
	Compressor oil Type…Amount (CC)			SUNISO 4GSD…350
	Nominal power input (W)			865
	Blocked current (A)			40.3
	Coil resistance (Ω) (Ambient temperature 20℃)	Primary		0.77
		Secondary		1.82
	Protect devices	Type		
		Overload relay (OLR)		B350-135-141E or MRA99948-9084
		Operating temperature	On(℃)	-
			Off(℃)	-
	Operating capacitor	(μF)		45
		AC (V)		450
Heat exchanger				
	Evaporator	Fin		Aluminum fin/ copper tube (female screw thead)
		Rows		2
		Fin pitch (mm)		1.3
	Condenser	Fin		Aluminum fin/ copper tube (female screw thead)
		Rows		2

		Fin pitch (mm)	1.5

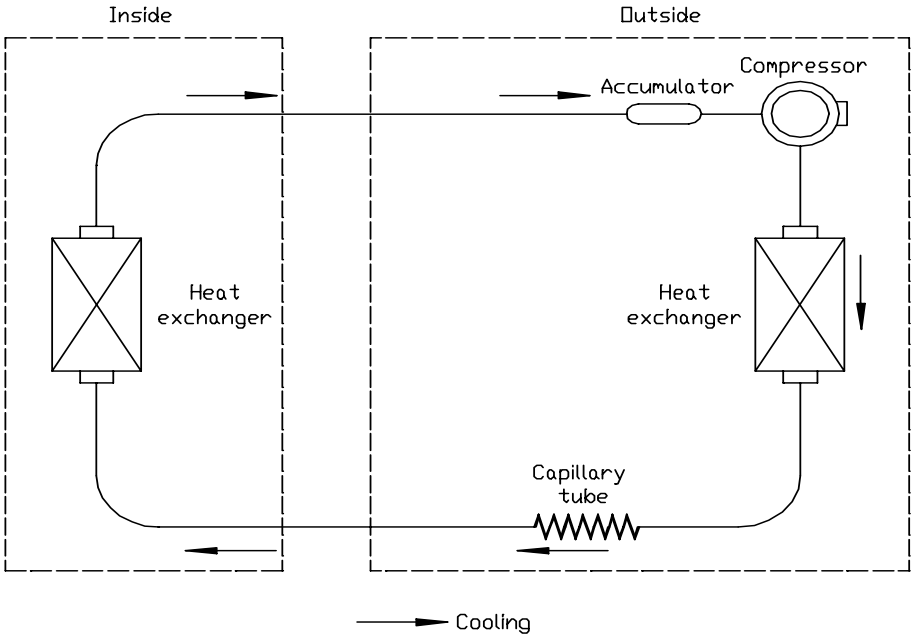
2.3 Specifications of electric control parts.

Controller			
	Part No.	PCB Ass'y	
		Light Ass'y	
	Fuse		
Electric controller Ass 'y (Part No.)			JUZ6.100.455
Remote controller			
Power wire		Length	2.5m
		Rated value	UL1015 3G16AWG
Louver motor			
	Synchronism motor	Type	---
		Rated voltage (Single-phase AC 50 Hz, V)	---
		Coil resistance (KΩ) (Ambient temperature 25℃)	---

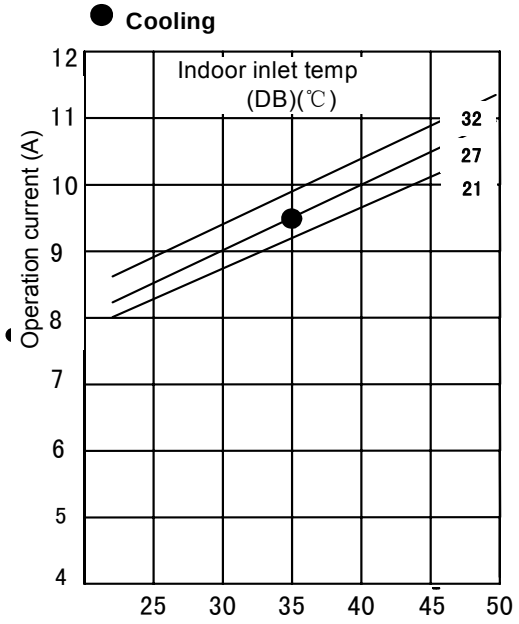
2.4 Other electric control parts.

Temperature switch			WK16G-100-160
Thermal resistor （temperature sensor）			/
Resistance （KΩ）			/
Transformer			/
Power relay			/
	Coil	rated voltage	/
		resistance（Ω）20℃	/
		Contact ratings	/

3. Refrigerant flow diagram

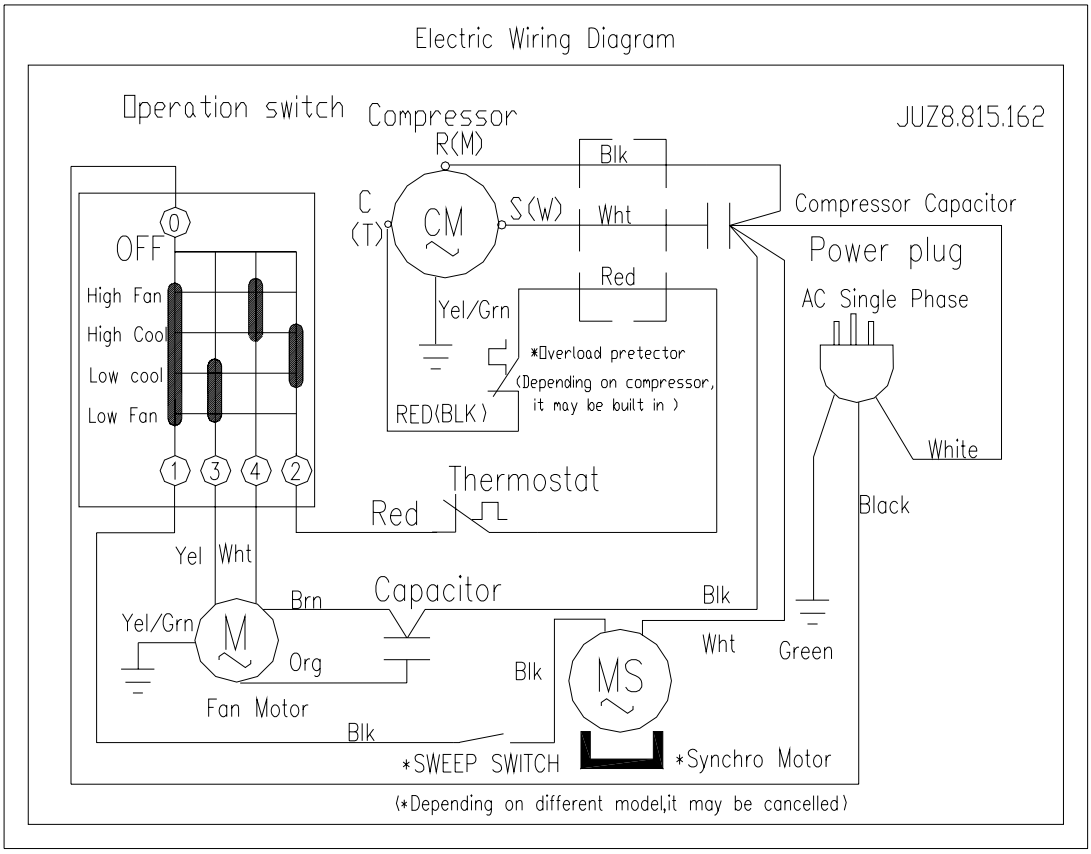


4. Performance curve



Note: ● Rated operating conditions point

5. Electric wiring diagram



6. Control Specifications

6.1 Control specifications

6.1.1 Adjusting the temperature range: Turn the temperature control knob on the control panel to clockwise. Dextrorotation is from 'HIGH' to 'LOW'. The set temperature is from high to low. The set temperature range: 16℃-30℃(60-90℉).

6.1.2 When the indoor temperature is greater than the set temperature, the compressor runs.
When the indoor temperature is less than the set temperature, the compressor stops.

6.1.3 When operating maintenance or testing capacity, the temperature control knob can be turned to the maximum thermostat setting. It is in the TEST RUN position. The air conditioner gets into cooling operation forcedly.

6.1.4 There are six modes of operation.

Off (O): All functions stop.

High Fan: Fan turns at high speed and circulates filtered air without cooling;

High Cool: Fan turns at high speed and circulates filtered air. High fan speed is for rapid cooling.

Middle Cool: Fan turns at middle speed and circulates cooled, filtered air.

Low Cool: Fan turns quietly at low speed and circulates cooled, filtered air.

Low Fan: Fan turns quietly at low speed and circulates filtered air without cooling.

6.1.5 Horizontal Auto deflection: Press one end with "I" mark on the Auto deflector switch, the grille will turn automatically from side to side; press one end with "O" mark on the Auto deflector switch, Auto deflection function will be cancelled.

6.1.6 In cooling operation, the compressor will stop when the temperature set by the temperature control knob is greater than or equal to the indoor temperature. The fan is still running in former speed for keeping air circulation.

6.2 Operating mode

6.2.1 Cooling:

Temperature control range: 16℃-30℃(60-90℉); Original value: 24℃(75℉);

Temperature control precision: ±1℃(±1℉);

Characters on control:

When Tr≥Ts+1℃(±1℉),the compressor runs;

When Tr≤Ts℃, the compressor stops. The control circuit will stop compressor only after it has run at least 5minutes(Except air conditioner is turned off). The compressor can be restarted 3minutes later the turn off (Effective in any status).

Fan speed control:

Manual: Users can select the fan speed of high, medium or low level as needed in the turn-on status.

6.2.2 Dry:

Temperature control range: 16℃-30℃(60-90℉); Original value: 24℃(75℉);

Temperature control precision: ±1℃(±1℉);

Characters on control:

When Ts-1℃(1℉)< Tr, the compressor runs continuously, and the fan motor runs at low speed .

When 16℃(60℉)< Tr ≤Ts-1℃(1℉), the compressor works for 3 minutes, then stops for 9 minutes. The fan motor runs at low speed. The fan motor stops working 30 seconds later the turn-off the compressor.

When Tr≤16℃(60℉), compressor, indoor and outdoor units and grill blades all stop running.

6.3 Protect function

6.3.1 Delay-starting protection for the compressor

The compressor will restart working 3 minutes later the turn-off the compressor or power-off to keep the pressure balance of the cooling system.

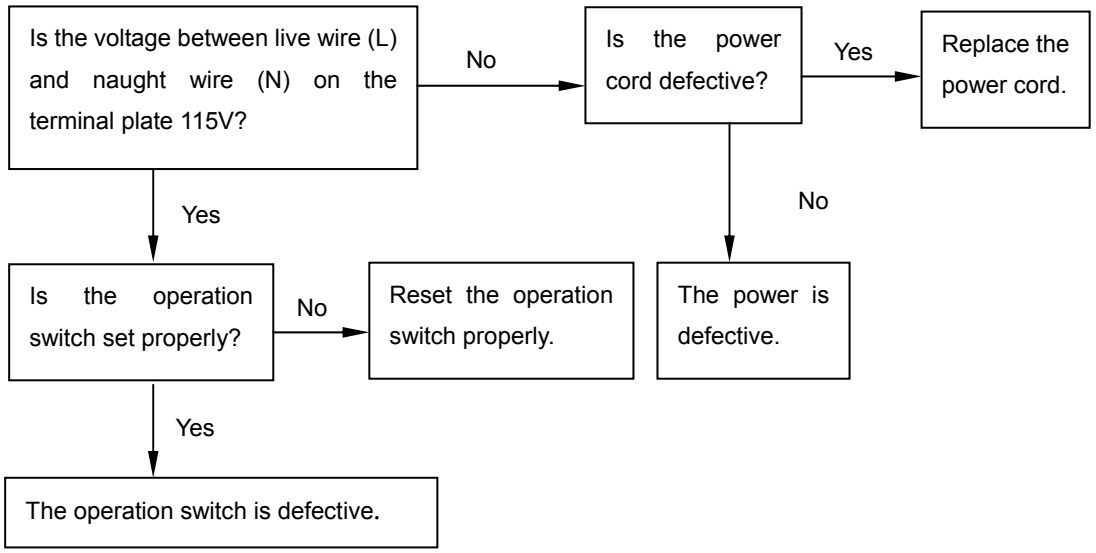
6.3.2 The protection of the temperature sensor open or short

The air conditioner is in on status; failure will be displayed when the temperature sensor is open or short.

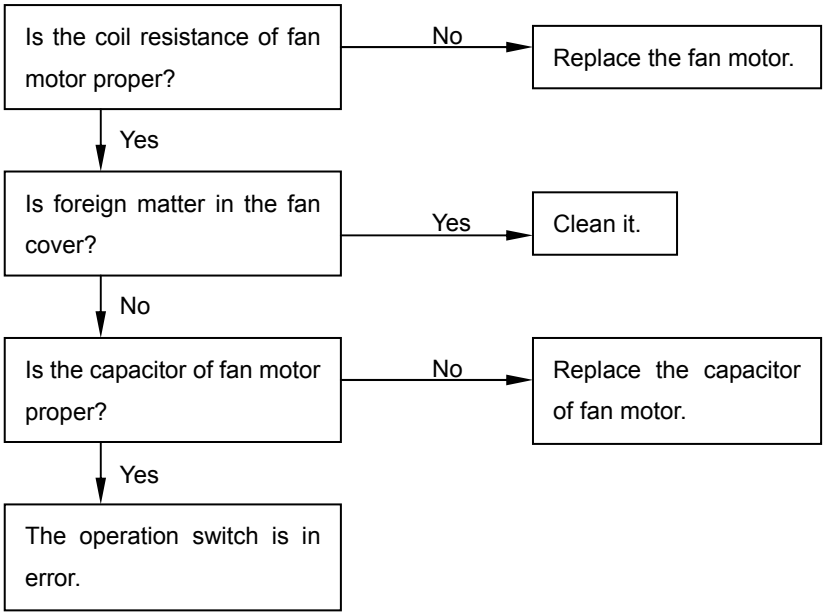
Indoor temp sensor is failure: The on/off indicator on the control panel flashes. The unit runs in 24℃.

7. Troubleshooting

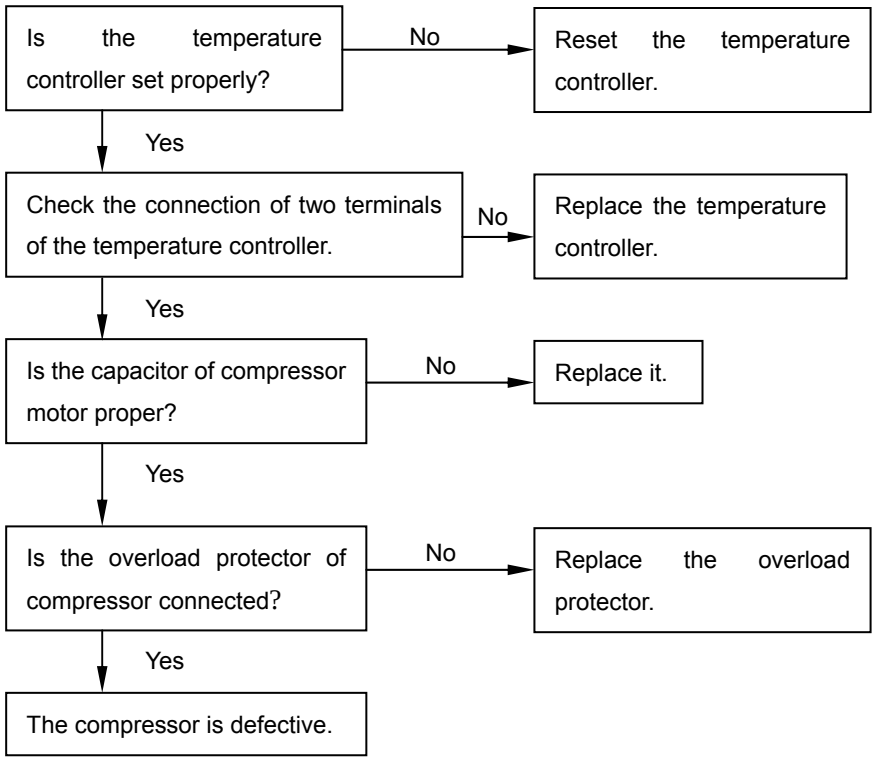
7.1 The air conditioner does not work at all



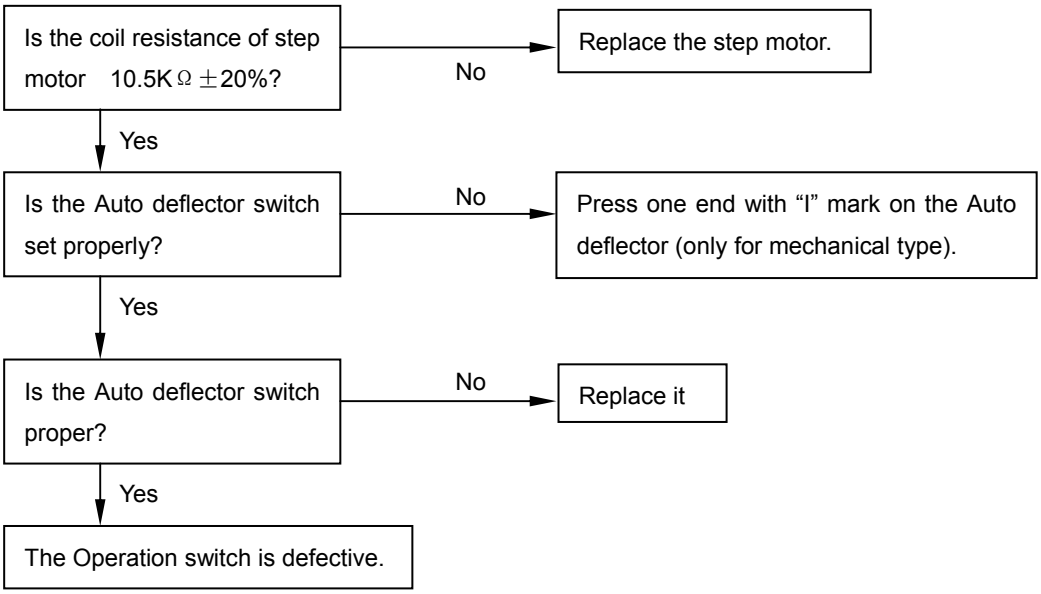
7.2 The compressor runs, but the fan motor does not run.



7.3 The fan runs, but the compressor does not work.



7.4 Horizontal Auto deflection does not work



7.5 Poor cooling