

Energolux

Техническая инструкция

СПЛИТ-СИСТЕМА LAUSANNE on/off, R410a

 Designed in
Switzerland

www.energolux.com



СОДЕРЖАНИЕ

Спецификация	3
Холодильный контур.....	4
Схема подключения.....	7
Диагностика системы	9

1. Спецификация

1.1 Внешний вид. Серия Lausanne



SAS07L2-A		SAU07L2-A	
SAS09L2-A		SAU09L2-A	
SAS12L2-A		SAU12L2-A	
SAS18L2-A		SAU18L2-A	
SAS24L2-A		SAU24L2-A	
SAS30L2-A		SAU30L2-A	
SAS36L2-A		SAU36L2-A	



1.2 Габаритные размеры

Внутренние блоки

Модель		SAS07L2-A	SAS09L2-A	SAS12L2-A	SAS18L2-A	SAS24L2-A	SAS30(36)L2-A
Ш	мм	700	700	800	850	970	1100
В	мм	285	285	300	300	315	330
Г	мм	188	188	198	198	235	235

Наружные блоки

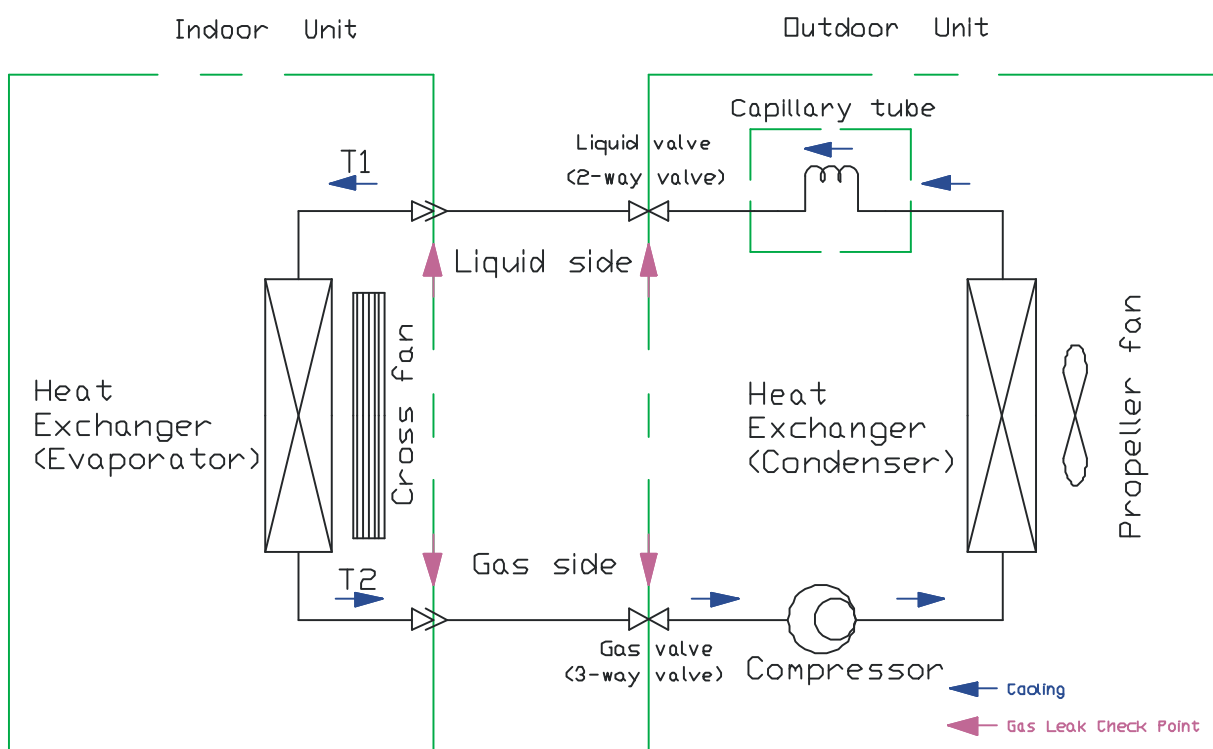
Модель		SAU07L1-A	SAU09L2-A	SAU12L2-A	SAU18L2-A	SAU24L2-A	SAU30L2-A	SAU36L2-A
Ш	мм	708	710	710	855	880	880	900
В	мм	421	500	500	525	690	690	700
Г	мм	254	240	240	290	310	310	350

Технические характеристики

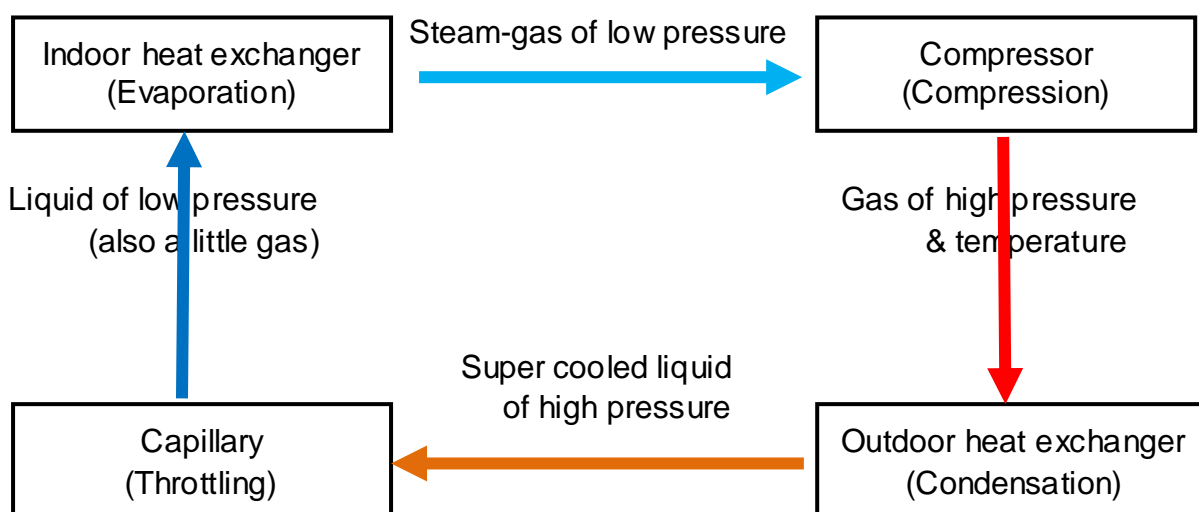
Модель		SAS07L2-A	SAS09L2-A	SAS12L2-A	SAS18L2-A	SAS24L2-A	SAS30L2-A	SAS36L2-A	
Производительность, кВт	Охлаждение	2,10	2,70	3,55	5,30	7,00	8,00	9,95	
	Обогрев	2,20	2,80	3,65	5,45	7,20	8,20	10,50	
Потребляемая мощность, кВт	Охлаждение	0,65	0,84	1,11	1,66	2,33	2,50	3,30	
	Обогрев	0,61	0,78	1,01	1,51	2,11	2,27	3,10	
Энергоэффективность, кВт/кВт	Охлаждение	EER / Класс	3,21 / A	3,21 / A	3,21 / A	3,21 / A	3,01 / A	3,21 / A	3,01 / B
	Обогрев	COP / Класс	3,61 / A	3,61 / A	3,61 / A	3,61 / A	3,41 / A	3,61 / A	3,40 / B
Рабочий ток, А	Охлаждение	2,82	3,66	4,80	7,20	10,10	11,10	14,78	
	Обогрев	2,65	3,37	4,39	6,60	9,75	10,20	13,47	
Электропитание	1 фаза, 230 В, 50 Гц								
Сторона подключения	Внутренний блок								
Максимальная длина фреонпровода, м	15								
Максимальный перепад высот, м	5								
Диаметр жидкостной трубы, мм (дюймы)	6,35 (1/4)								
Диаметр газовой трубы, мм (дюймы)	9,52 (3/8)								
Внутренний блок	SAS07L2-A SAS09L2-A SAS12L2-A SAS18L2-A SAS24L2-A SAS30L2-A SAS36L2-A								
Расход воздуха (макс./выс./сред./низк.), м³/ч	480/420/370/330 520/450/400/350 650/560/500/440 980/850/750/660 1200/1050/930/830 1200/1100/980/870 1200/1100/980/870								
Осушение, л/ч	0,8 1 1,3 1,8 2,2 2,6 3								
Уровень звукового давления, дБ(А)	22/27/29/33 22/27/30/33 23/27/29/33 29/32/35/38 30/34/37/40 34/36/39/40 37/39/41/45								
Диаметр дренажной трубы, мм	16								
Размеры (В x Ш x Г), мм	Без упаковки	285×700×188 285×700×188 300×800×197 300×850×198 315×970×235 330×1100×235 330×1100×235							
	В упаковке	355×770×272 355×770×272 370×870×282 355×885×255 385×1047×317 400×1180×317 400×1180×317							
Вес, кг	Без упаковки	8,0 8,5 10,0 11,0 15,0 16,0 23,0							
	В упаковке	9,65 10,15 11,8 13,3 17,3 19,0 26,0							
Наружный блок	SAU07L2-A SAU09L2-A SAU12L2-A SAU18L2-A SAU24L2-A SAU30L2-A SAU36L2-A								
Расход воздуха, м³/ч	1040 1430 1430 2340 2600 2600 4000								
Уровень звукового давления, дБ(А)	48 50 52 54 55 58 58								
Гарантированный диапазон рабочих температур наружного воздуха, °С	Охлаждение	0 ~ +43 (-30 ~ +24 для моделей, доработанных низкотемпературным комплектом)							
	Обогрев	-7 ~ +24							
Заводская заправка хладагента R410a (до 5 м), г	500 640 660 1150 1500 2550 2100								
Дополнительная заправка хладагента, г/м	20 20 20 30 30 30 30								
Размеры (В x Ш x Г), мм	Без упаковки	421×708×254 500×710×240 500×710×240 525×855×290 655×880×310 690×880×310 700×900×350							
	В упаковке	478×770×338 570×780×345 570×780×345 620×920×400 725×945×435 725×945×435 770×1020×430							
Вес, кг	Без упаковки	21,5 25,0 25,0 36,5 44,0 49,5 57,0							
	В упаковке	24,0 27,7 27,9 40,0 50,0 54,0 63,0							

2. Холодильный контур

Только охлаждение

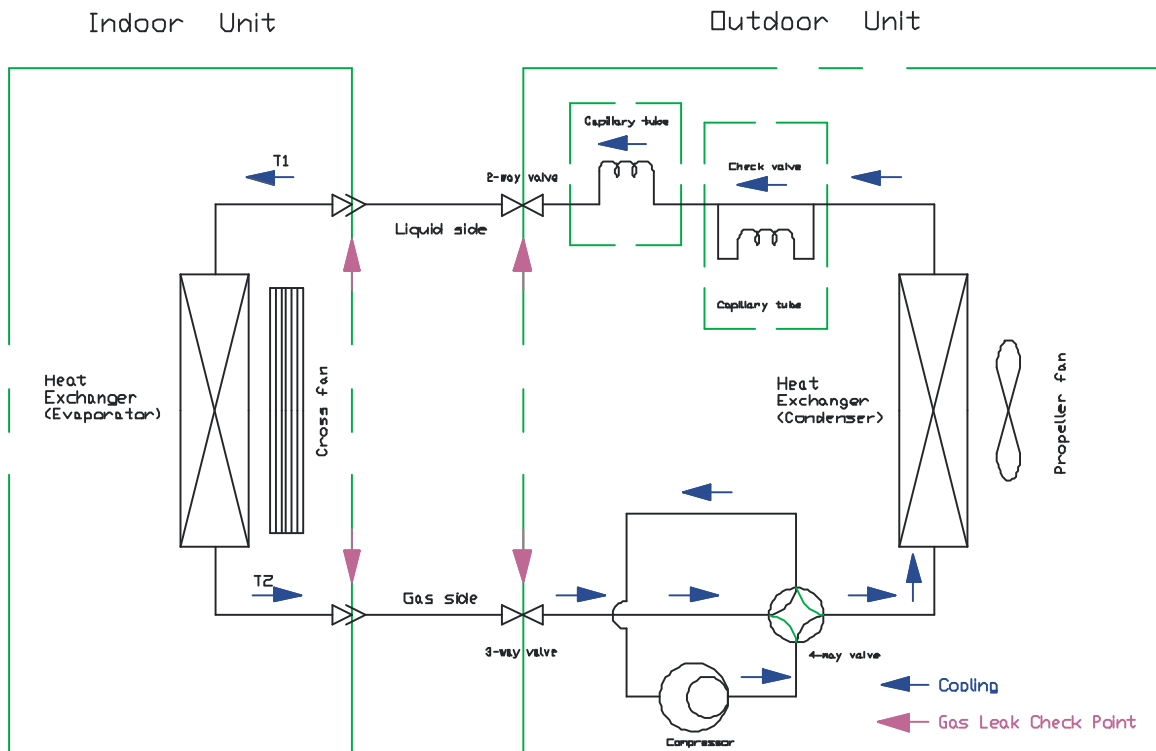


Холодильный цикл

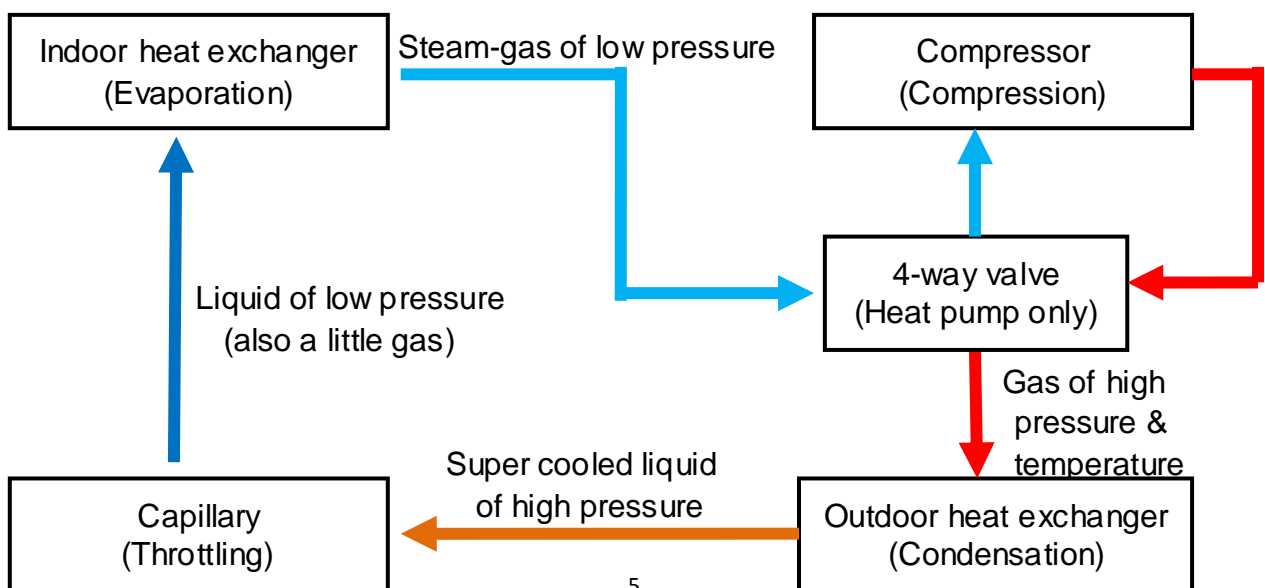


2.2 Охлаждение & Обогрев

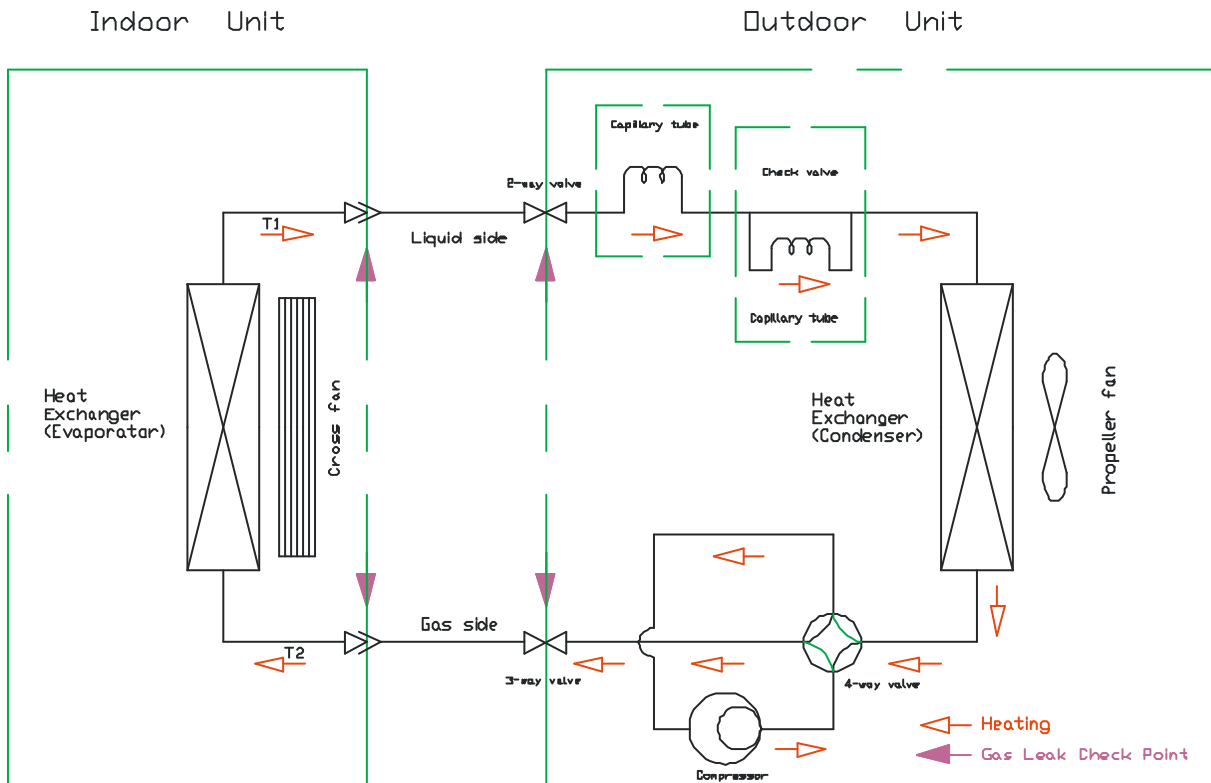
Работа системы в режиме охлаждения



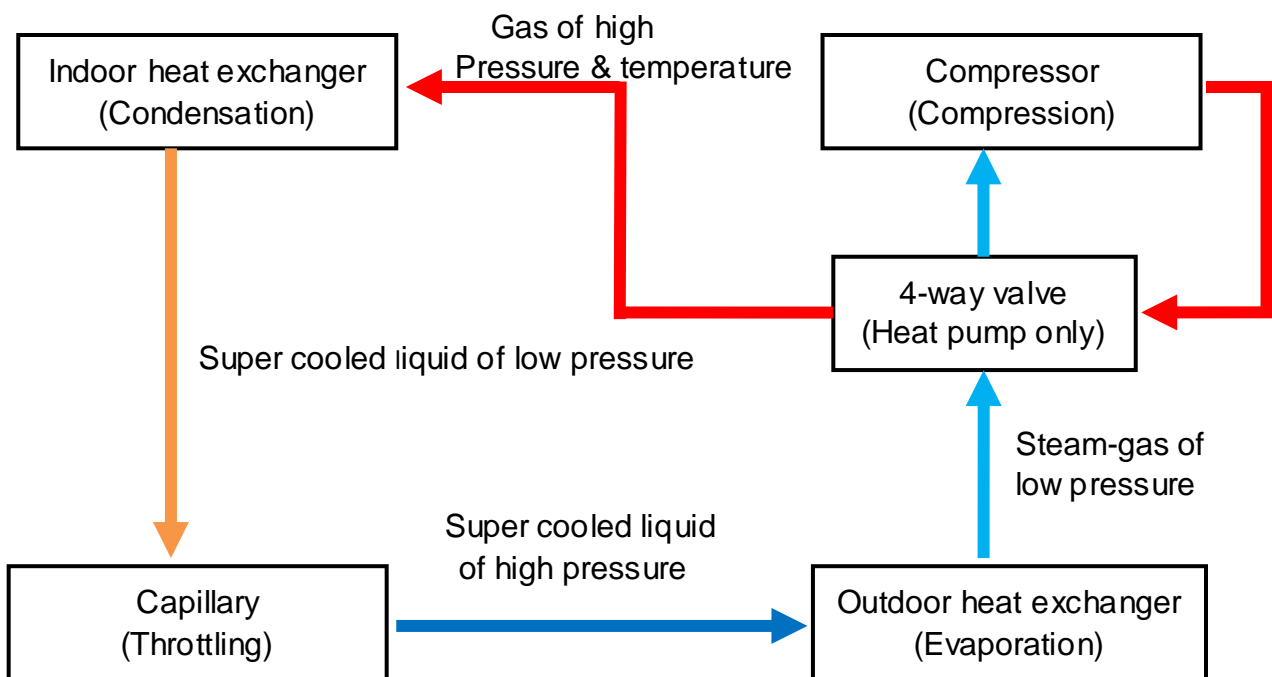
Холодильный цикл в режиме охлаждения



Работа системы в режиме обогрева



Холодильный цикл в режиме обогрева



3. Схема подключения

для моделей SAS07/09/12/18L2-A

Внутренний блок

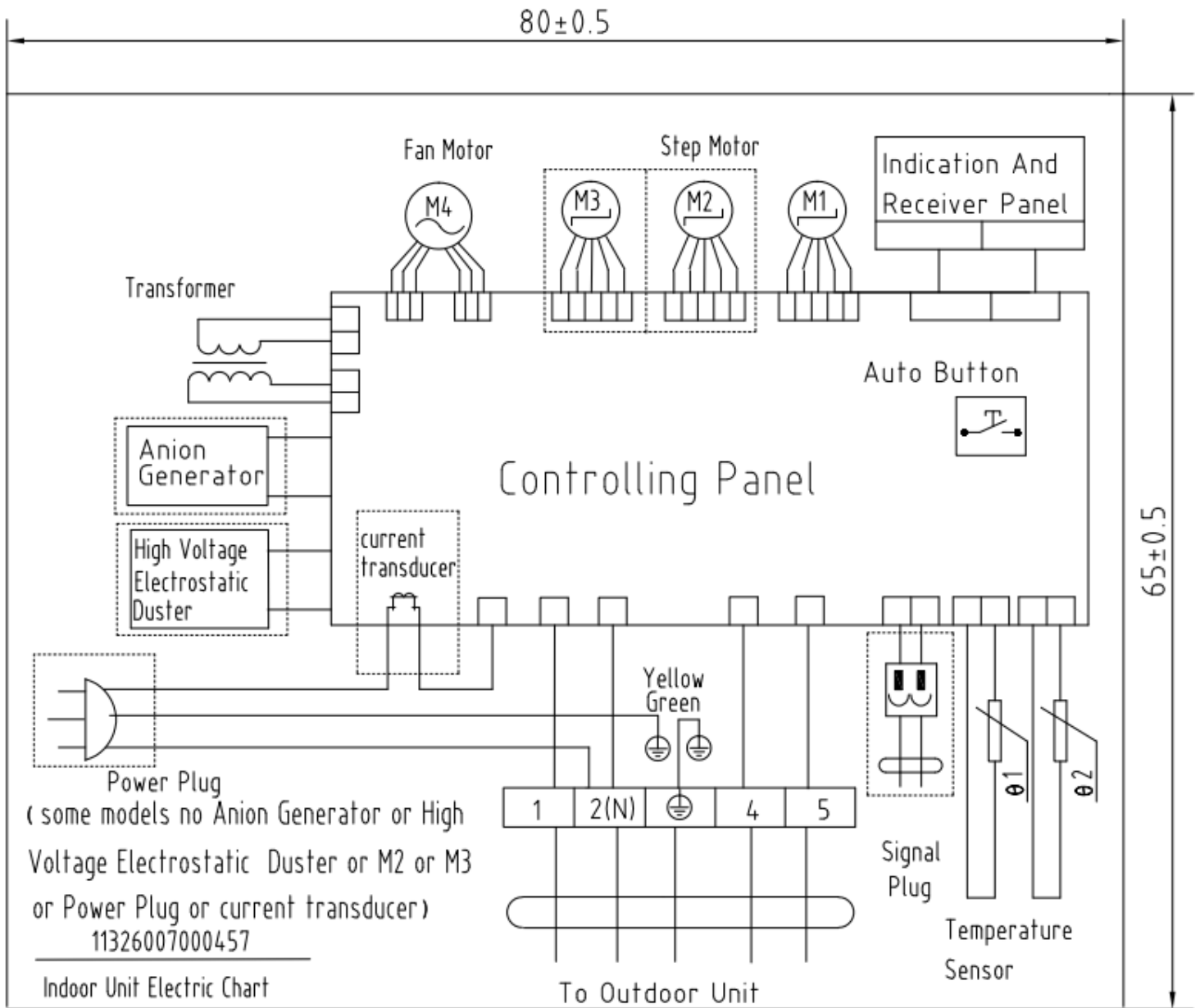
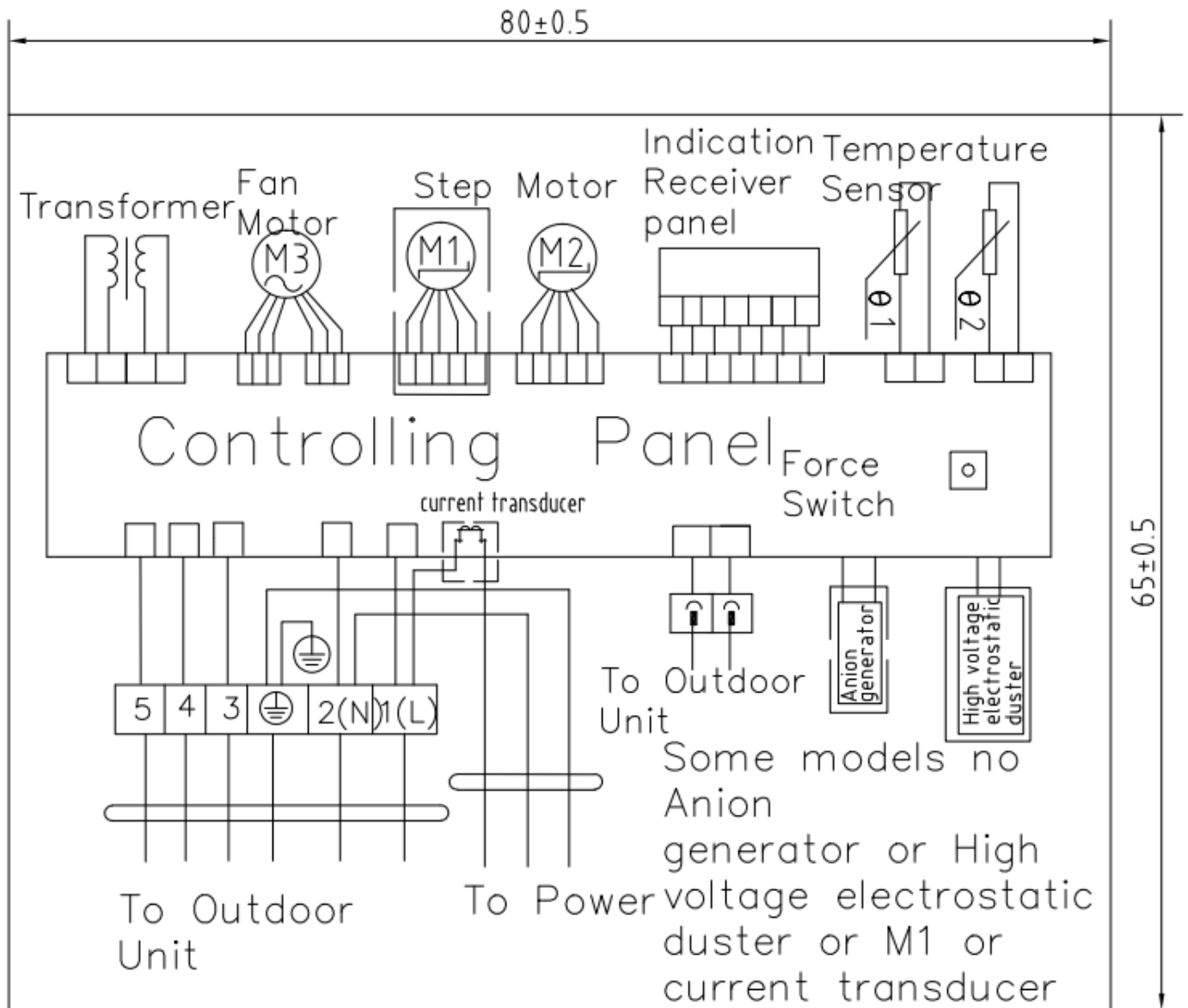


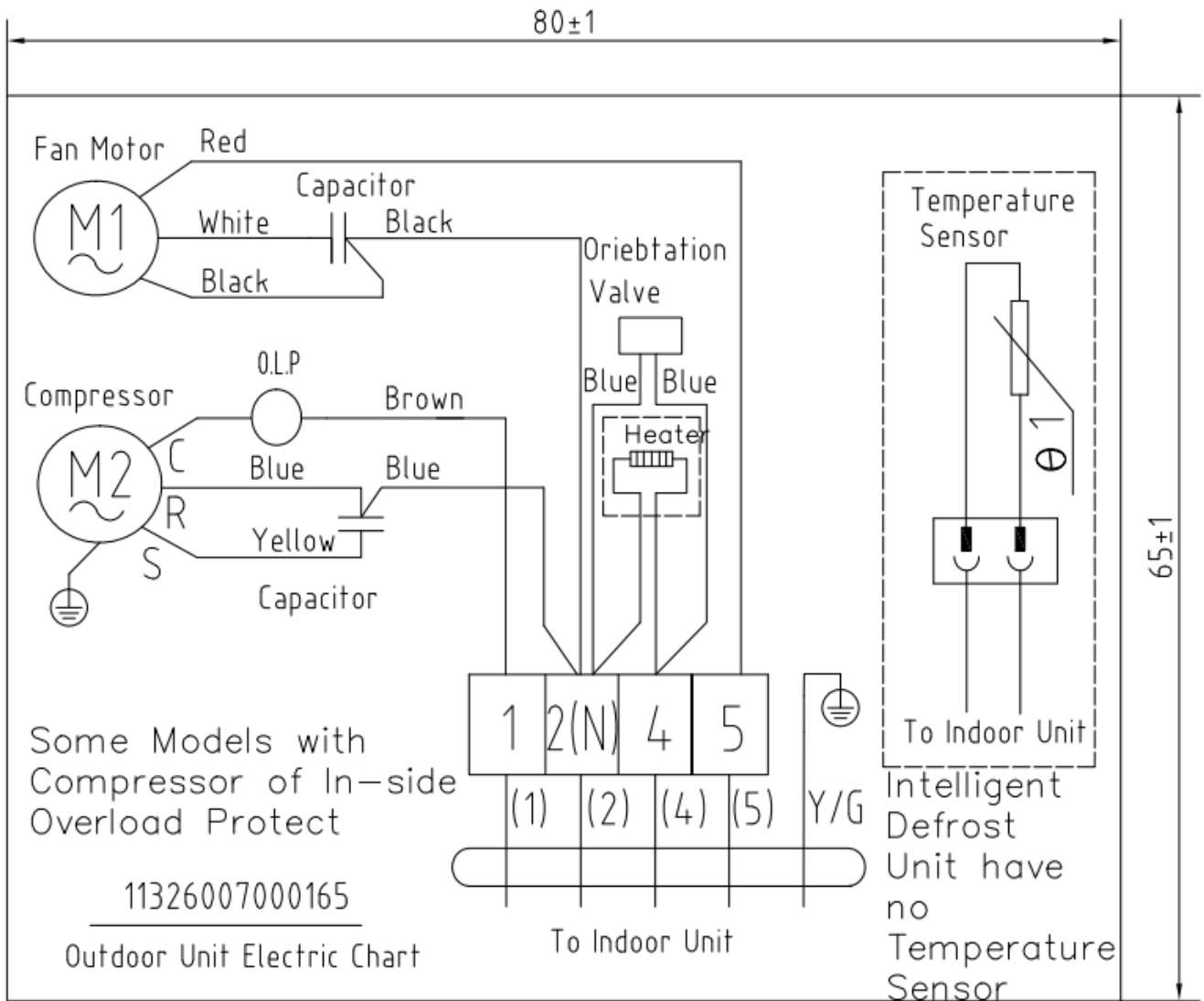
Схема подключения

для моделей SAS24/30/36L2-A

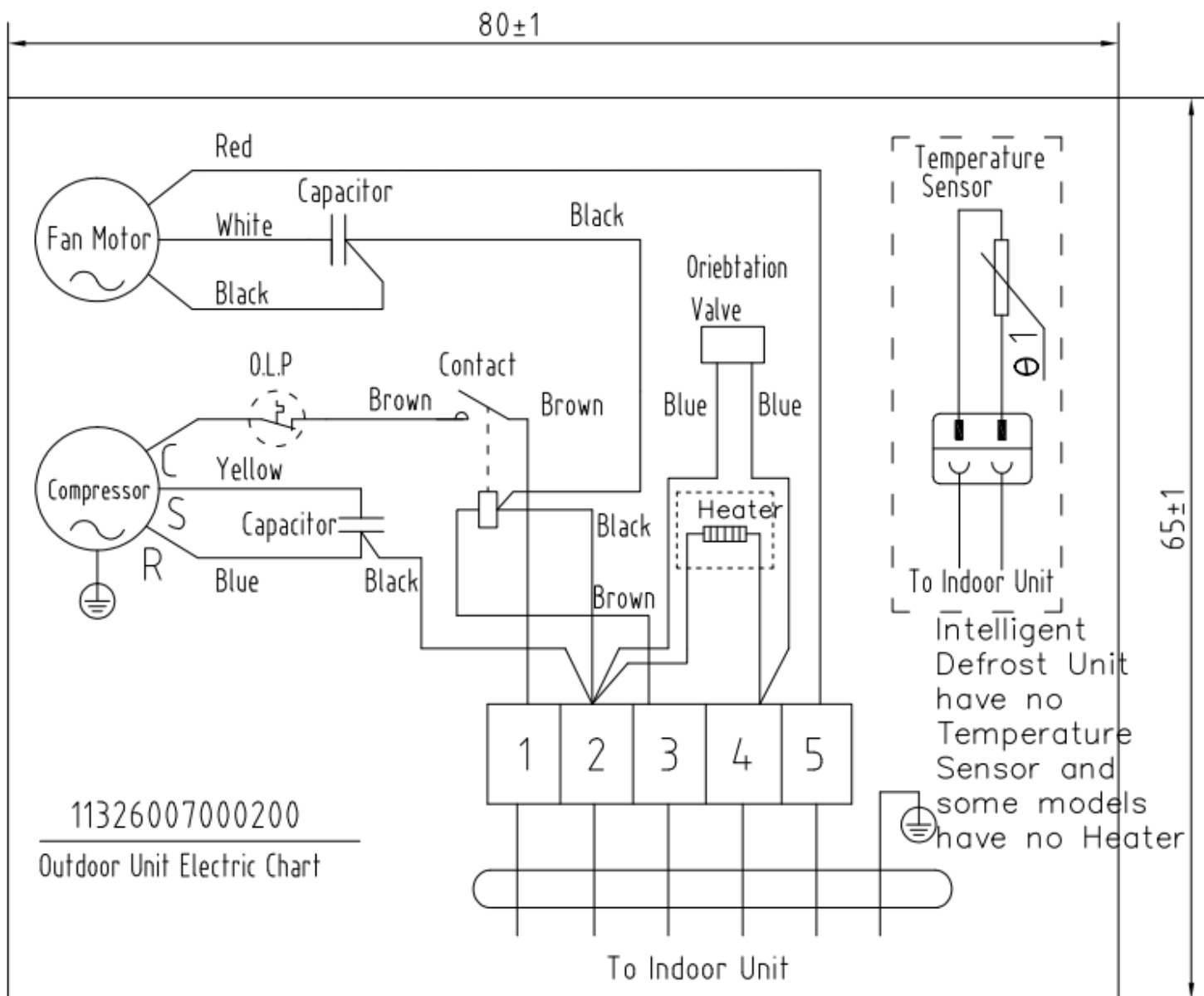
Внутренний блок



Наружный блок SAU07/09/12/18L2-A



Наружный блок SAU24/30/36L2-A



SAS07L2-A, SAS09L2-A, SAS12L2-A,
SAS18L2-A, SAS24L2-A, SAS30L2-A, SAS36L2-A

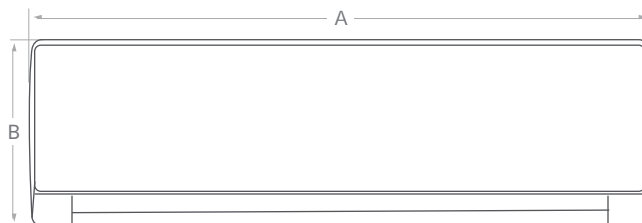
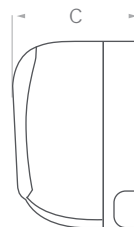
1 фаза
220-230 В,
50 Гц



Модель	Силовой кабель	Автомат защиты	Кабель межблочный
SAS07L2-A SAS09L2-A SAS12L2-A	3 × 1,5 мм ²	16 А	5 × 1,5 мм ²
SAS18L2-A		20 А	
SAS24L2-A		25 А	
SAS30L2-A SAS36L2-A	3 × 2,5 мм ²	32 А	8 × 1,5 мм ²

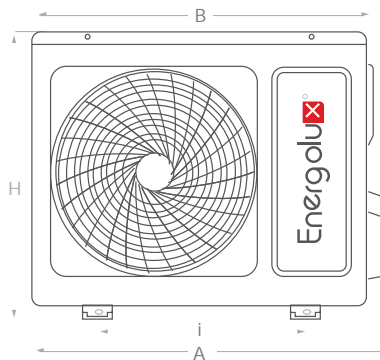
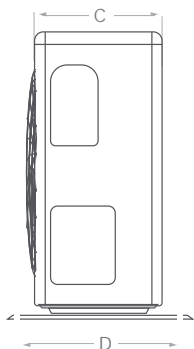
ВНУТРЕННИЕ БЛОКИ

Модель	А, мм	В, мм	С, мм
SAS07L2-A	700	285	188
SAS09L2-A	700	285	188
SAS12L2-A	800	300	197
SAS18L2-A	850	300	198
SAS24L2-A	970	315	235
SAS30L2-A	1100	330	235
SAS36L2-A	1100	330	235



НАРУЖНЫЕ БЛОКИ

Модель	А, мм	В, мм	С, мм	Д, мм	Н, мм	І, мм
SAU07L2-A	708	663	254	275	421	430
SAU09L2-A	710	660	240	265	500	500
SAU12L2-A	710	660	240	265	500	500
SAU18L2-A	855	795	290	310	525	545
SAU24L2-A	880	800	310	325	655	535
SAU30L2-A	880	800	310	325	690	535
SAU36L2-A	900	895	350	355	700	630



5. Диагностика неисправностей

5.1 Коды ошибок

No.	Error Code	Problem
1	E1	Room temperature sensor fault
2	E2	Outdoor coil temperature sensor fault
3	E3	Indoor coil temperature sensor fault
4	E4	indoor fan motor or DC motor feedback fault

5.2 Руководство для моделей SAS07/09/12/18. Алгоритм. Проблемы и их устранение.

1. The Foremost Inspecting Items

(1)The input voltage must be within +10% tolerance of the rated Voltage. If it is not the case, the air-conditioner will probably not work normally.

(2)Check the connecting cord between indoor unit and outdoor unit to see if it is properly connected. The connecting must be done according to the wiring diagram, please also notice that even different models may have the connecting cord of the same specification.

Please check if the marks at the connecting terminal and the marks on the cord can match, otherwise, the air-conditioner will not work normally.

(3)If the following phenomena are found, the problem is not from the air-conditioner itself.

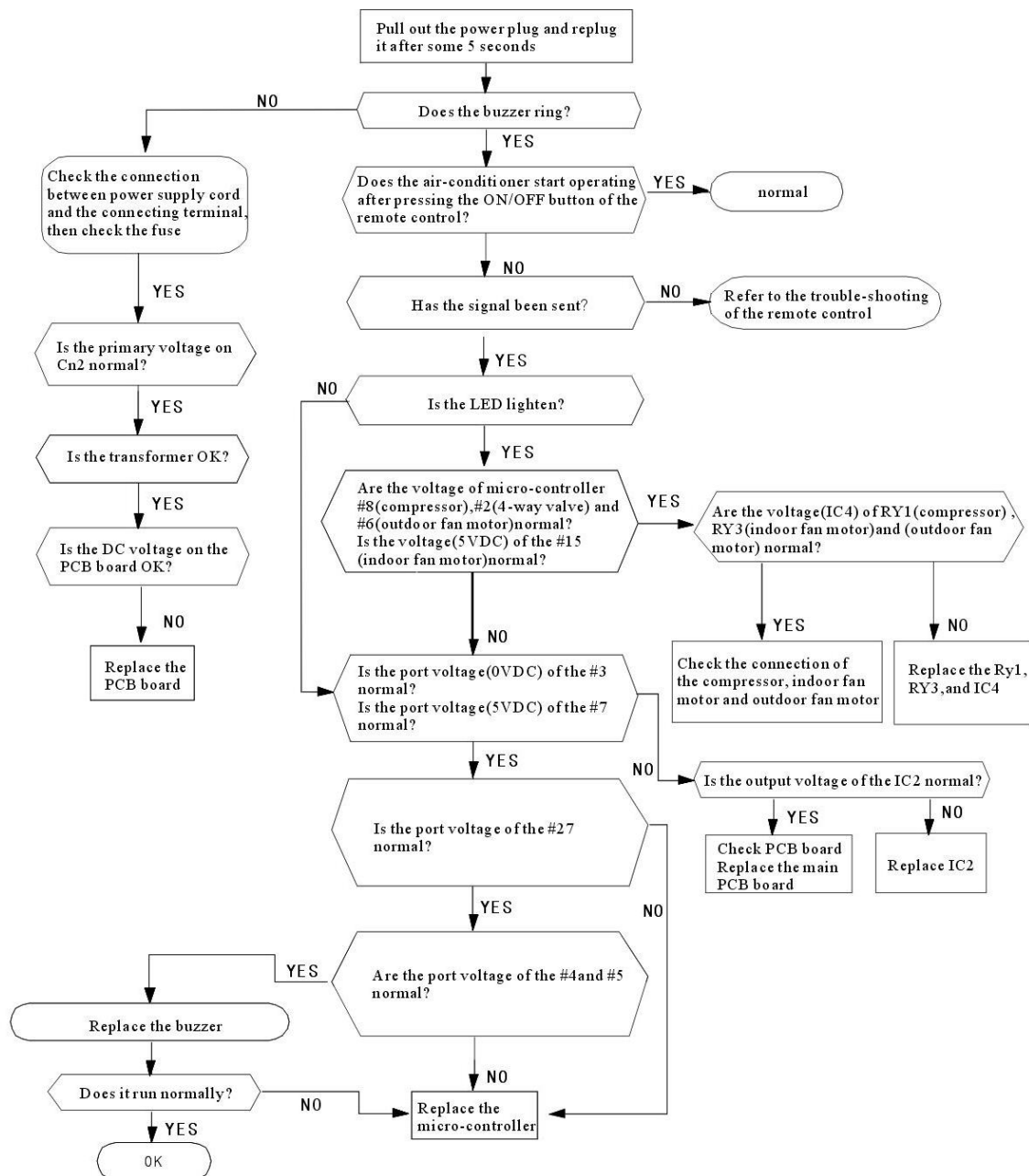
NO.	Problems	Causes
1	The motor is heard operating but the air-conditioner dose not work when the indoor unit is powered on	Since the air-conditioner is powered on, it will come to working condition as long as you press the ON/OFF button of the remote control and the Signal is well received.
2	The compressor stops running but the indoor fan motor keeps working when it is at cooling mode with the indoor temperature higher than set temperature.	If you turn off the air-conditioner and restart it immediately, it will return to normal in 3 minutes, after that, the air-conditioner will automatically adjust the indoor fan speed to what you set.
3	The compressor works discontinuously at dehumidifying mode.	The air-conditioner will automatically control the working of the compressor according to the inside temperature
4	The air-conditioner does not work while the LED display is on.	The TIMER is set with the air-conditioner; it will be in hold on condition. If the TIMER setting is cancelled, the air-conditioner will return to normal working condition
5	The compressor works discontinuously at cooling and dehumidifying mode, and the indoor fan motor slows down.	The compressor stops internally or the fan motor slows down to prevent the indoor heat exchanger from being frozen.

2. No Power Display

(1) Items

- a) Check if the input voltage is correct?
- b) Check if the AC power supply connecting is correct?
- c) Check if the output voltage of the manostat L7805 (IC2) is correct?

(2) Trouble shooting procedure



3. The Indoor Fan Motor Does Not Work

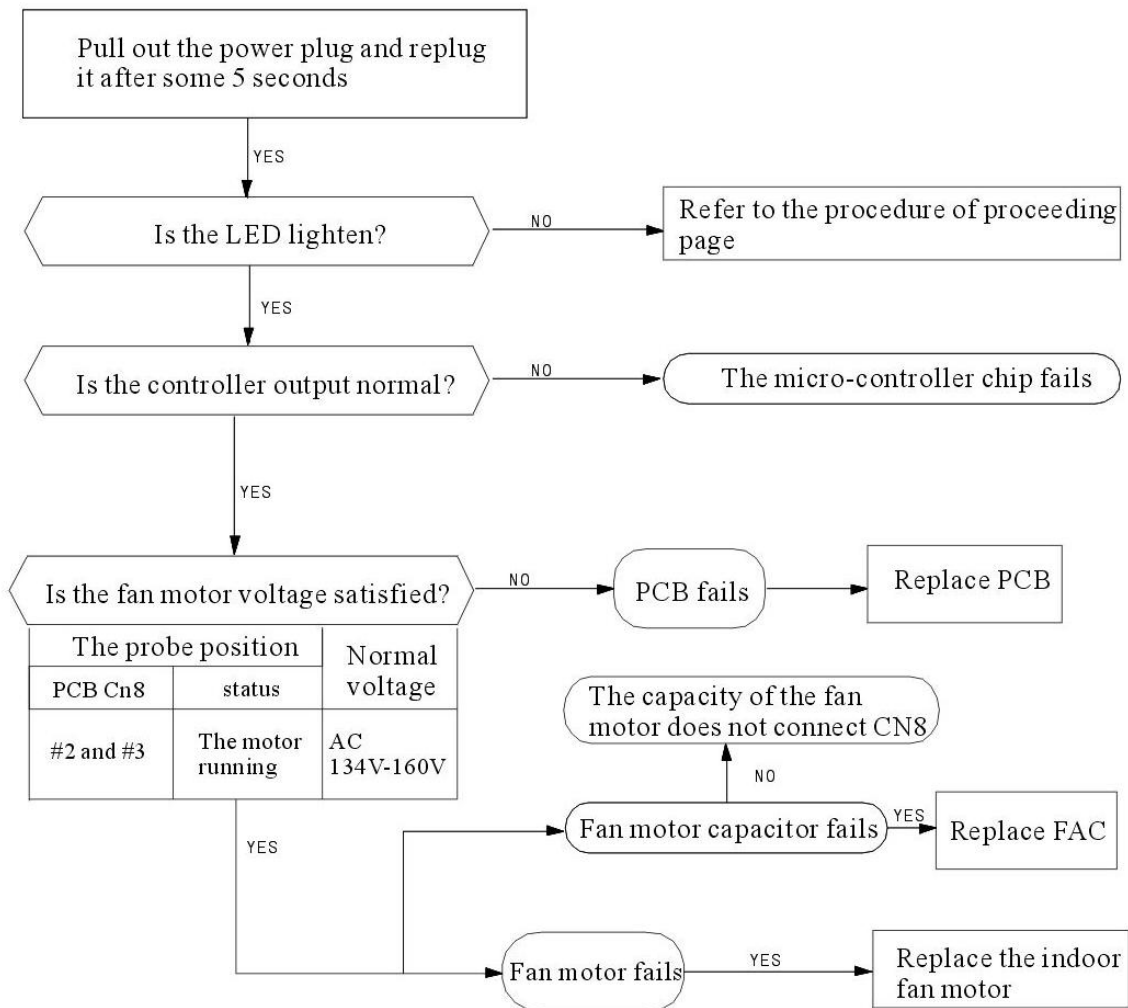
(1) Items

- a) Check if the indoor fan motor is connected correctly to the connector (CN8)?
- b) Check if the AC input voltage is correct?
- c) Check if the IC of indoor fan motor is connected correctly to the connector (CN2)?

(CN2)?

- d) Check if the capacity of indoor fan motor is connected correctly to the connector (CN8)?

(2) Trouble shooting procedure

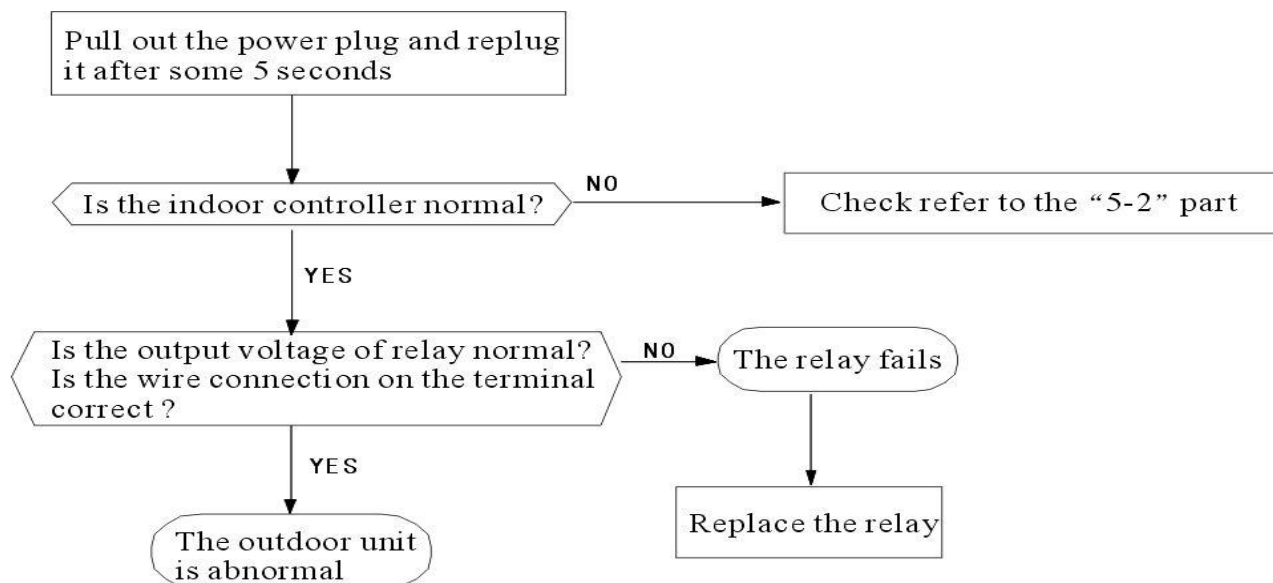


4. The Outdoor Unit Does Not Work

(1) Items

- a) Check if the input voltage is correct?
- b) Check if the wire connection of the outdoor connecting terminal is correct?

(2) Trouble shooting procedure



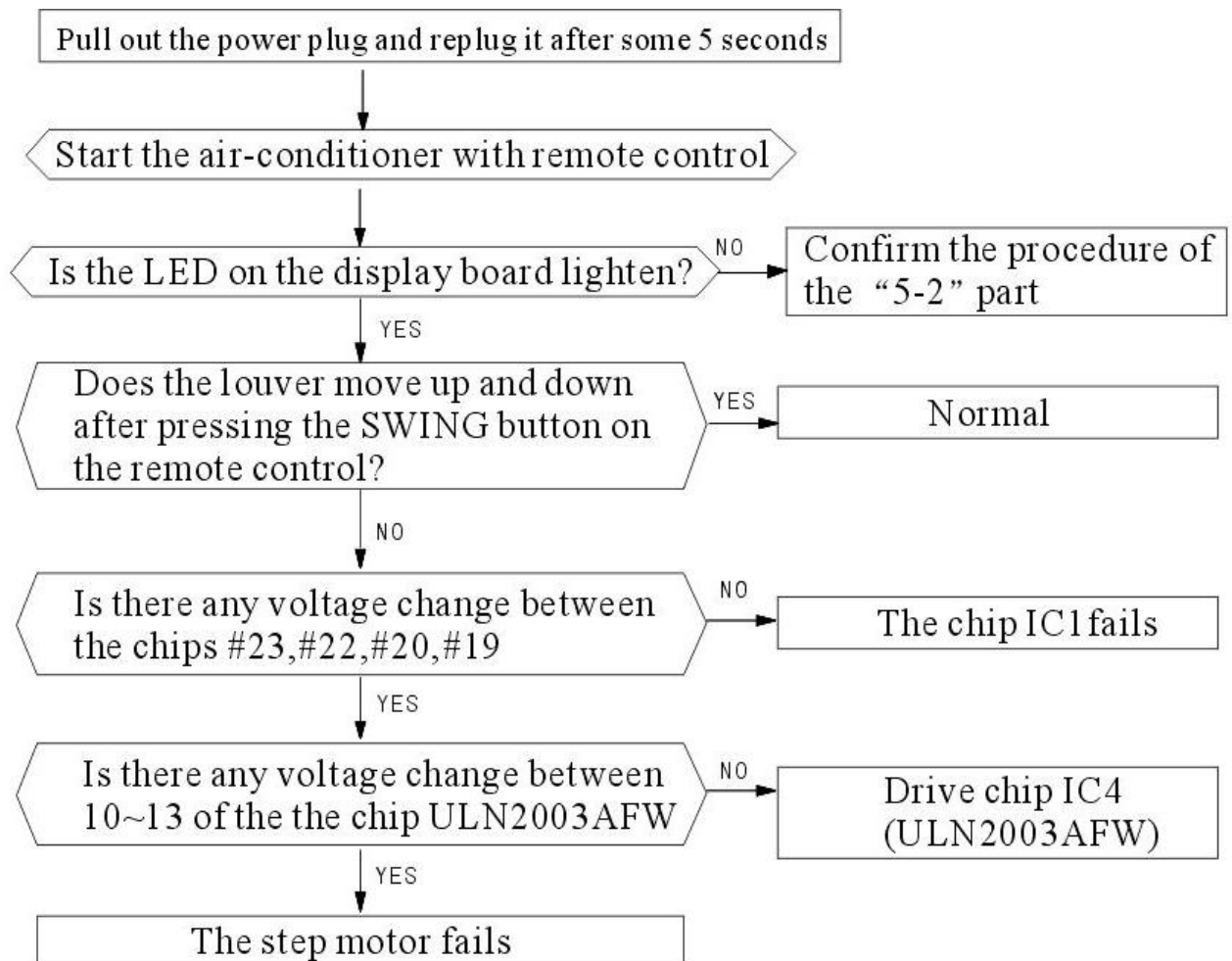
5. The Step Motor Does Not Work

(1)Items

a) Check if the input voltage is correct?

b) Check if the step motor controlling the up-down movement firmly connected to Cn2?

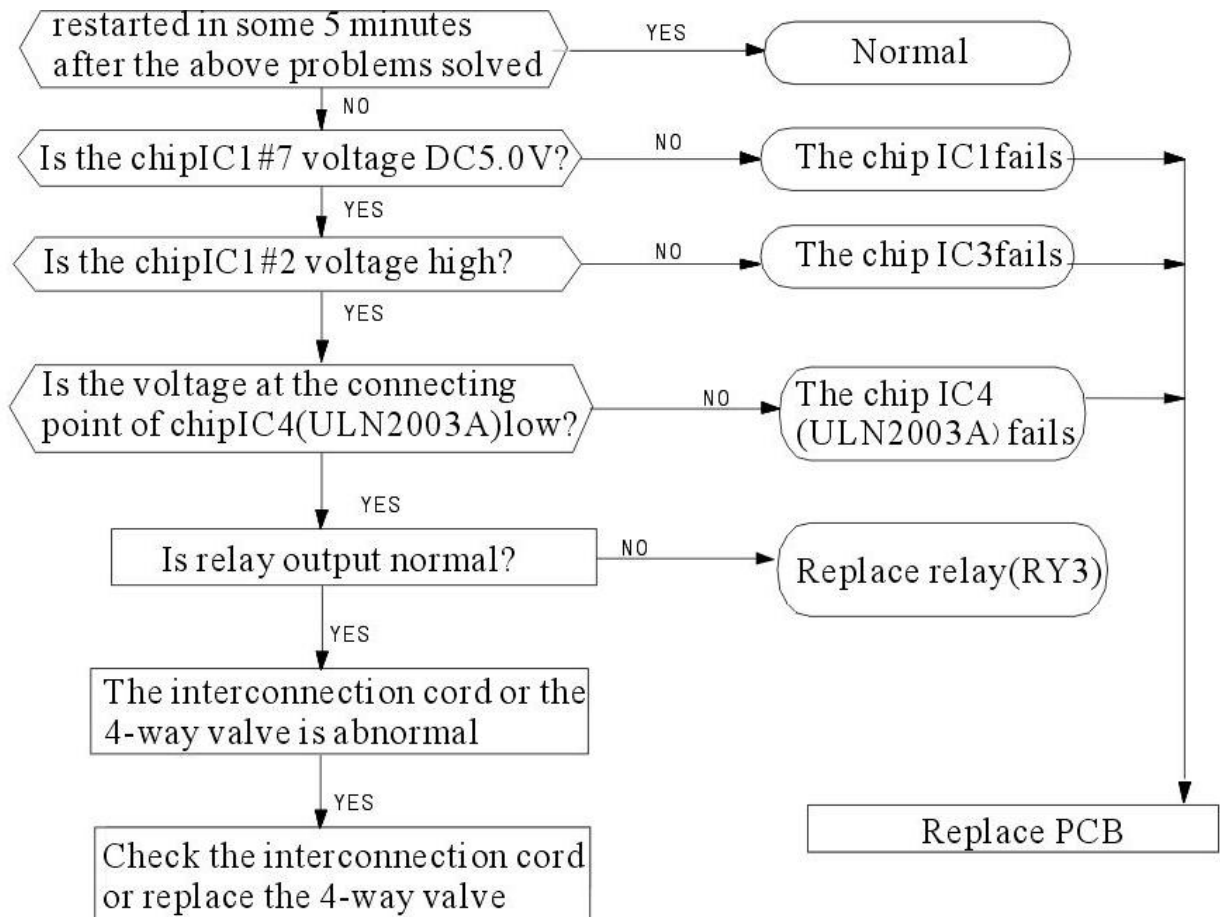
(2)Trouble shooting procedure



6. Heating Mode Can Work, But No Hot Air Blow

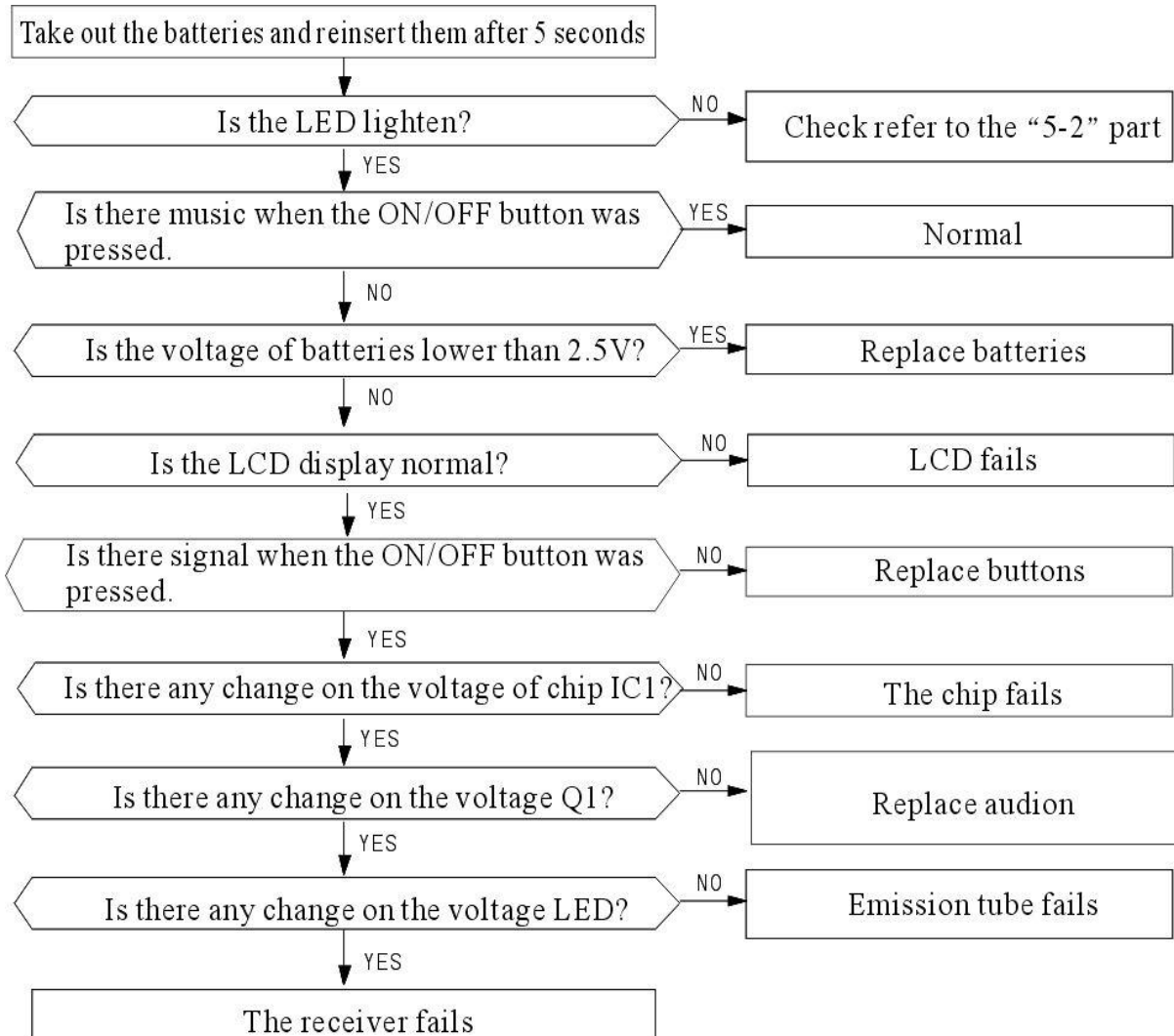
(1) Check if the set temperature is lower than the indoor temperature?

(2) Check if the indoor PCB is connected to the terminal correctly?



7. Remote Control Can Not Work

Trouble shooting rocedure



8. The Failure Analysis of the Main Parts

Part	Analysis																										
Heat exchanger	Measure resistance																										
	Normal	<table border="1"> <thead> <tr> <th>Environment temperature</th> <th>15℃</th> <th>20℃</th> <th>25℃</th> <th>30℃</th> <th>35℃</th> <th>40℃</th> </tr> </thead> <tbody> <tr> <td>Resistance of transformer(KΩ)</td> <td>7.45</td> <td>6.08</td> <td>5</td> <td>4.13</td> <td>3.43</td> <td>2.86</td> </tr> </tbody> </table>	Environment temperature	15℃	20℃	25℃	30℃	35℃	40℃	Resistance of transformer(KΩ)	7.45	6.08	5	4.13	3.43	2.86											
		Environment temperature	15℃	20℃	25℃	30℃	35℃	40℃																			
Resistance of transformer(KΩ)	7.45	6.08	5	4.13	3.43	2.86																					
Abnormal	∞ : Turn-off ; 0 Ω : Short-cut																										
The indoor fan motor	Detecting the resistance between each connecting terminal																										
	Normal	Environment temperature (10℃ ~30℃) <table border="1"> <thead> <tr> <th colspan="2">Between</th> <th>1</th> <th>2</th> <th>3</th> </tr> </thead> <tbody> <tr> <td>Blue、yellow</td> <td>Main</td> <td>410Ω ±10%</td> <td>350Ω ±10%</td> <td>370Ω ±10%</td> </tr> <tr> <td>Blue、red</td> <td>Auxiliary</td> <td>325Ω ±10%</td> <td>270Ω ±10%</td> <td>300Ω ±10%</td> </tr> <tr> <td colspan="2">Input</td> <td colspan="3">YYK13-4: 13W YYK19-4: 19W</td> </tr> </tbody> </table>	Between		1	2	3	Blue、yellow	Main	410Ω ±10%	350Ω ±10%	370Ω ±10%	Blue、red	Auxiliary	325Ω ±10%	270Ω ±10%	300Ω ±10%	Input		YYK13-4: 13W YYK19-4: 19W							
		Between		1	2	3																					
		Blue、yellow	Main	410Ω ±10%	350Ω ±10%	370Ω ±10%																					
		Blue、red	Auxiliary	325Ω ±10%	270Ω ±10%	300Ω ±10%																					
Input		YYK13-4: 13W YYK19-4: 19W																									
Abnormal	∞ : Turn-off ; 0 Ω : Short-cut																										
Detecting the voltage between the signal wire of fan motor and ground																											
Normal	<table border="1"> <thead> <tr> <th colspan="2">Between</th> <th>Voltage</th> </tr> </thead> <tbody> <tr> <td>Gray、Orange</td> <td></td> <td>0.5V~4.5V</td> </tr> <tr> <td>Yellow、Orange</td> <td></td> <td>5V</td> </tr> </tbody> </table>	Between		Voltage	Gray、Orange		0.5V~4.5V	Yellow、Orange		5V																	
Between		Voltage																									
Gray、Orange		0.5V~4.5V																									
Yellow、Orange		5V																									
Abnormal	voltage<0, voltage>5 is abnormal																										
Step motor	Normal	Environment temperature (10℃ ~30℃) <table border="1"> <thead> <tr> <th colspan="2">Between</th> <th>1</th> <th>2</th> <th>-</th> </tr> </thead> <tbody> <tr> <td colspan="2"></td> <td>24BYJ48</td> <td>35BYJ412B</td> <td>-</td> </tr> <tr> <td>Blue、yellow</td> <td>-</td> <td>Above 300Ω</td> <td>Around 120Ω</td> <td>-</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td colspan="2">Input</td> <td>1.5W</td> <td>-</td> <td>-</td> </tr> </tbody> </table>	Between		1	2	-			24BYJ48	35BYJ412B	-	Blue、yellow	-	Above 300Ω	Around 120Ω	-	-	-	-	-	-	Input		1.5W	-	-
		Between		1	2	-																					
				24BYJ48	35BYJ412B	-																					
Blue、yellow		-	Above 300Ω	Around 120Ω	-																						
-	-	-	-	-																							
Input		1.5W	-	-																							
Abnormal	∞ : Turn-off ; 0 Ω : Short-cut																										
The outdoor fan motor	Detecting the resistance between the red wire and every connecting end																										
	Normal	When the temperature is20℃ ~30℃ ,around 300Ω and 120Ω																									
	Abnormal	∞ : Turn-off ; 0 Ω : Short-cut																									

5.3 Руководство для моделей SAS24/30. Алгоритм. Проблемы и их устранение.

1. The Foremost Inspecting Items

(1)The input voltage must be within +10% tolerance of the rated Voltage. If it is not the case, the air-conditioner will probably not work normally.

(2)Check the connecting cord between indoor unit and outdoor unit to see if it is properly connected. The connecting must be done according to the wiring diagram, please also notice that even different models may have the connecting cord of the same specification.

Please check if the marks at the connecting terminal and the marks on the cord can match, otherwise, the air-conditioner will not work normally.

(3)If the following phenomena are found, the problem is not from the air-conditioner itself.

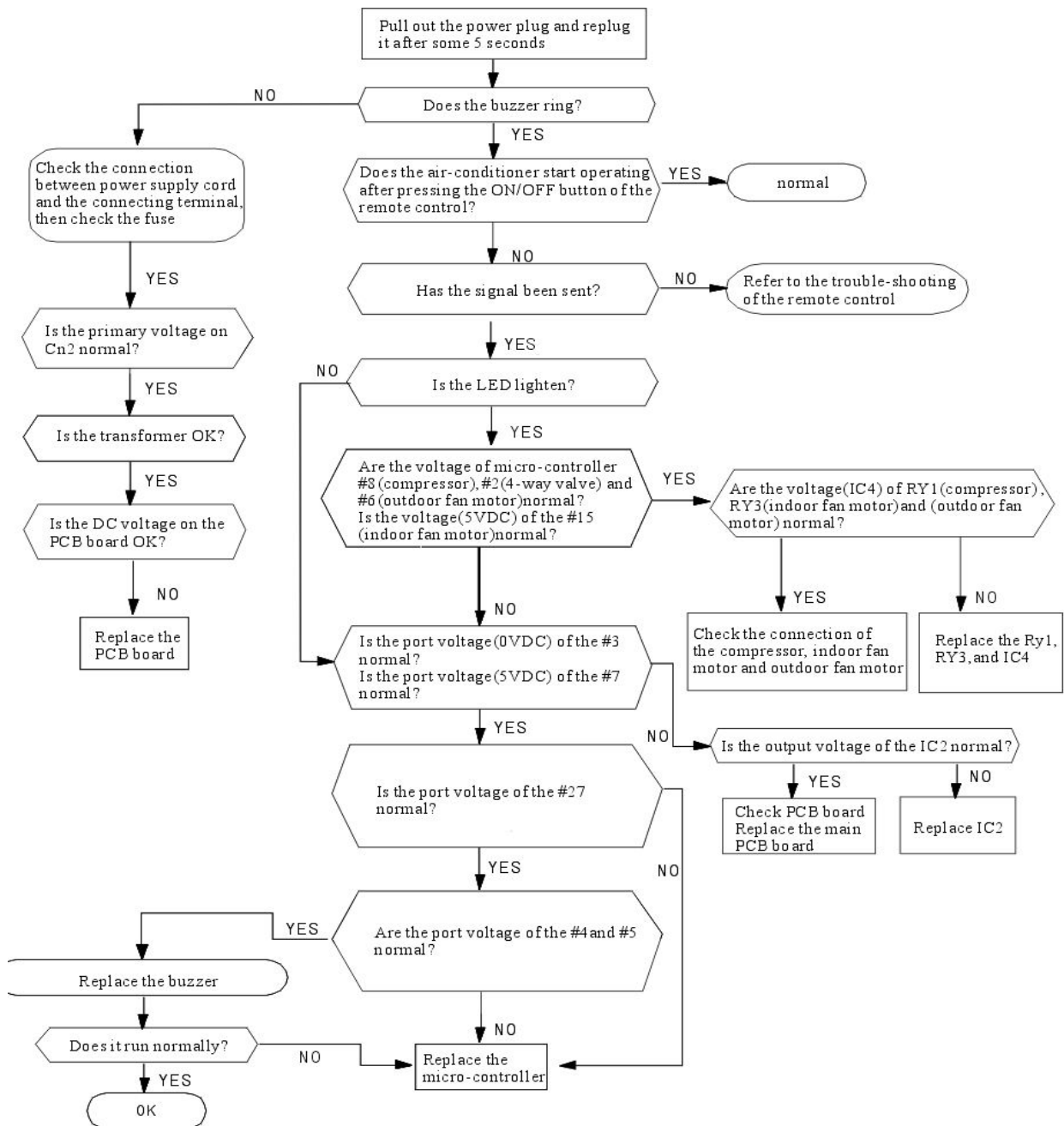
NO.	Problems	Causes
1	The motor is heard operating but the air-conditioner does not work when the indoor unit is powered on	Since the air-conditioner is powered on, it will come to working condition as long as you press the ON/OFF button of the remote control and the signal is well received.
2	The compressor stops running but the indoor fan motor keeps working when it is at cooling mode with the indoor temperature higher than set temperature.	If you turn off the air-conditioner and restart it immediately, it will return to normal in 3 minutes, after that, the air-conditioner will automatically adjust the indoor fan speed to what you set.
3	The compressor works discontinuously at dehumidifying mode.	The air-conditioner will automatically control the working of the compressor according to the inside temperature
4	The air-conditioner does not work while the LED display is on.	The TIMER is set with the air-conditioner; it will be in hold on condition. If the TIMER setting is cancelled, the air-conditioner will return to normal working condition.
5	The compressor works discontinuously at cooling and dehumidifying mode, and the indoor fan motor slows down.	The compressor stops internally or the fan motor slows down to prevent the indoor heat exchanger from being frozen.

2. No Power Display

(1) Items

- ① Check if the input voltage is correct?
- ② Check if the AC power supply connecting is correct?
- ③ Check if the output voltage of the manostat L7805(IC2) is correct?

(2) Trouble shooting procedure

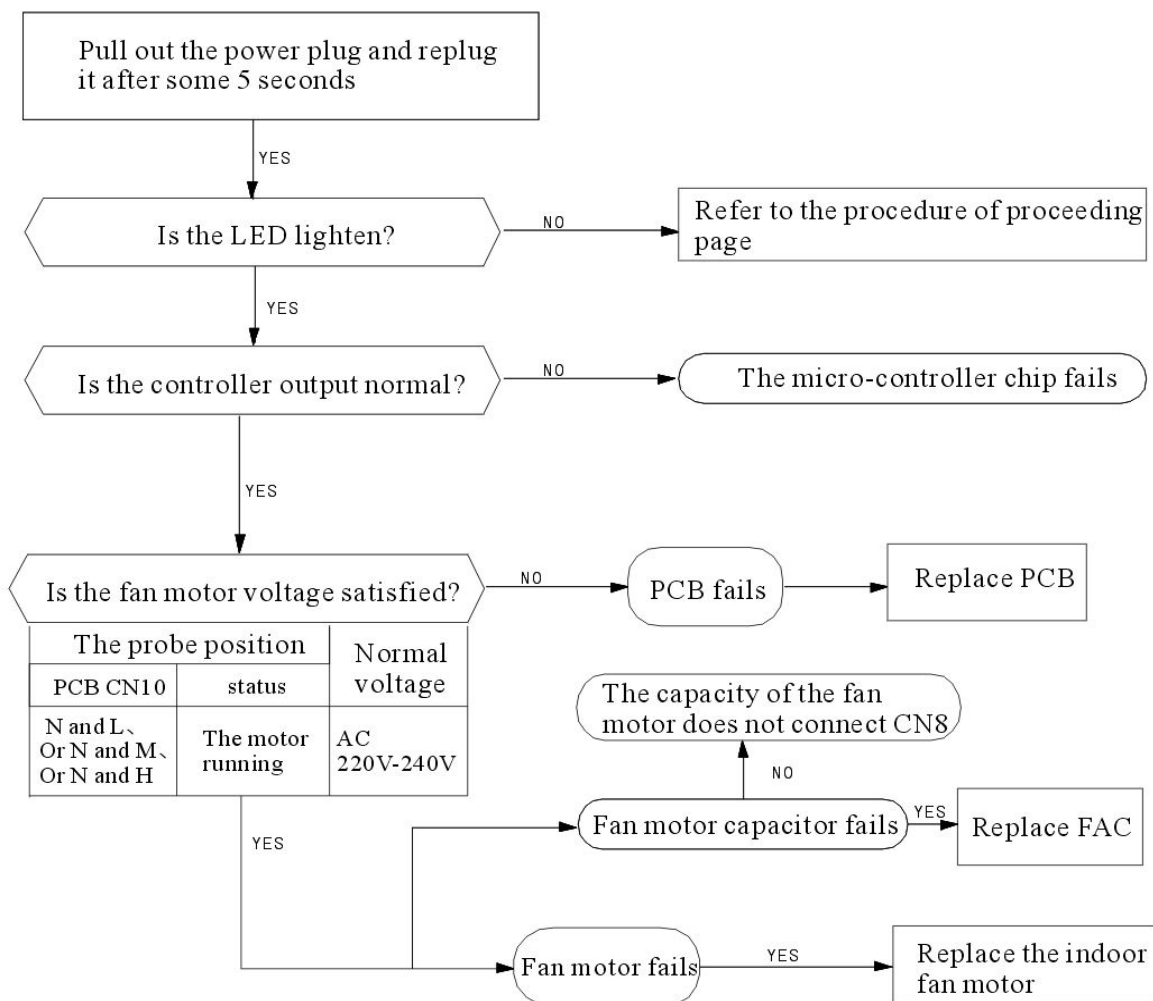


3. The Indoor Fan Motor Does Not Work

(1)Items

- ① Check if the indoor fan motor is connected correctly to the connector(CN8)?
- ② Check if the AC input voltage is correct?
- ③ Check if the IC of indoor fan motor is connected correctly to the connector(CN2)?
- ④ Check if the capacity of indoor fan motor is connected correctly to the connector(CN8)?

(2)Trouble shooting procedure

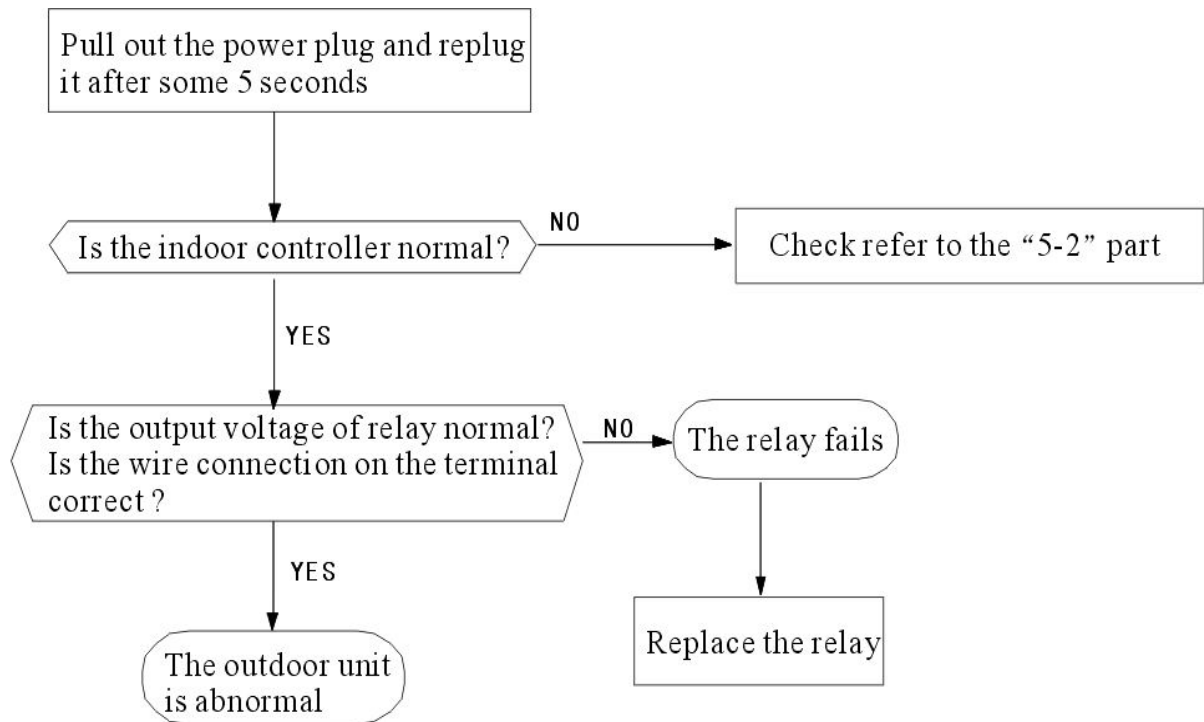


4. The Outdoor Unit Does Not Work

(1)Items

- ① Check if the input voltage is correct?
- ② Check if the wire connection of the outdoor connecting terminal is correct?

(2)Trouble shooting procedure



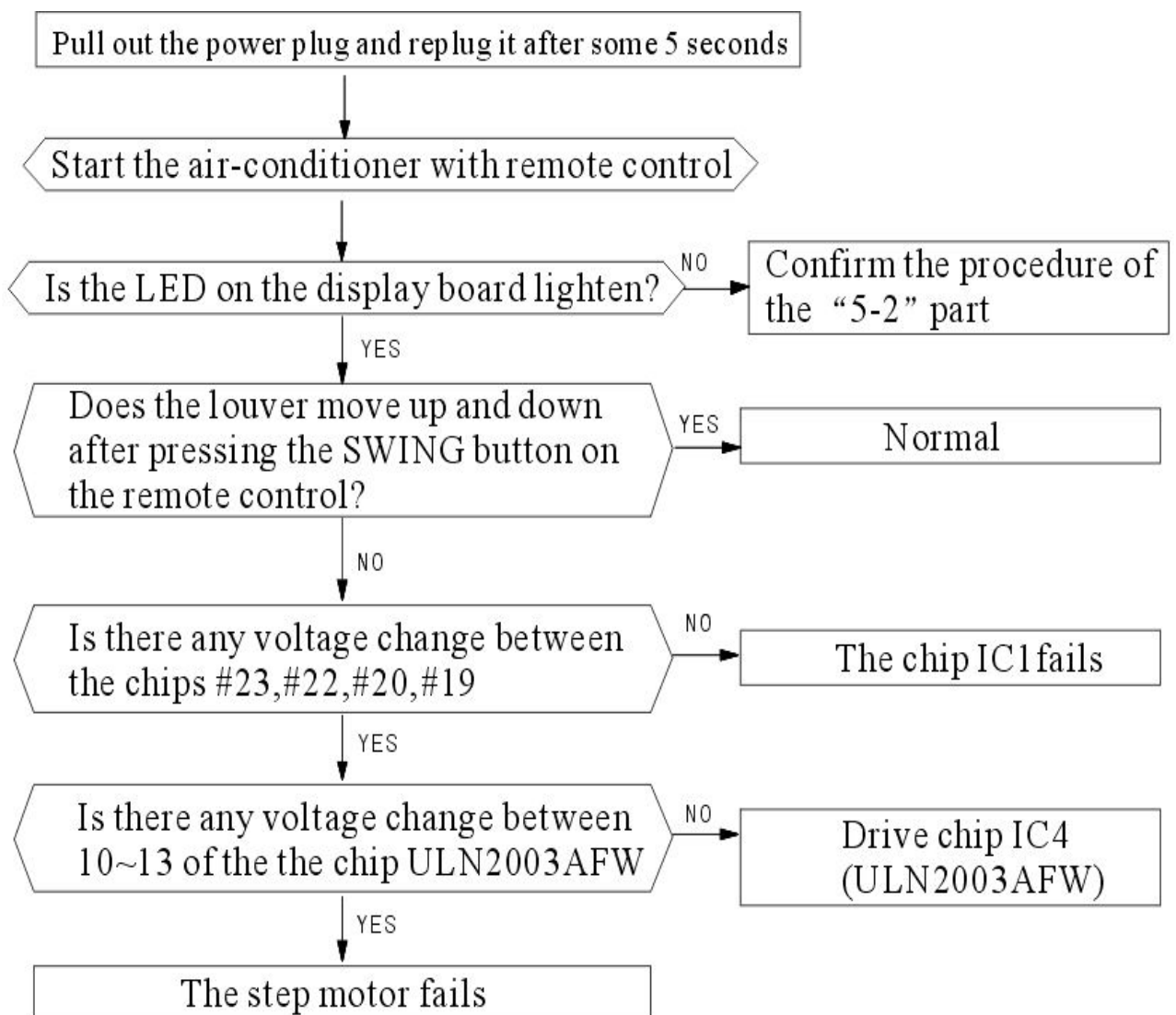
5. The Step Motor Does Not Work

(1)Items

①Check if the input voltage is correct?

②Check if the step motor controlling the up-down movement firmly connected to Cn2?

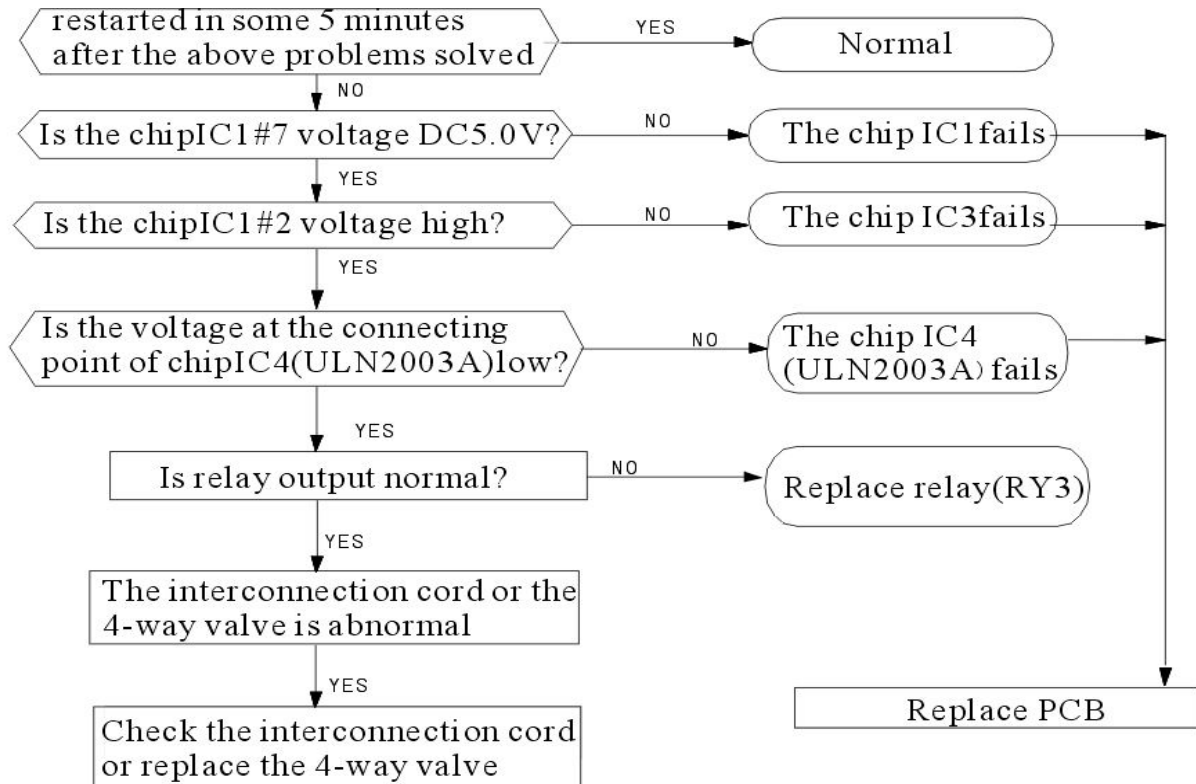
(2)Trouble shooting procedure



6. Heating Mode Can Work, But No Hot Air Blow

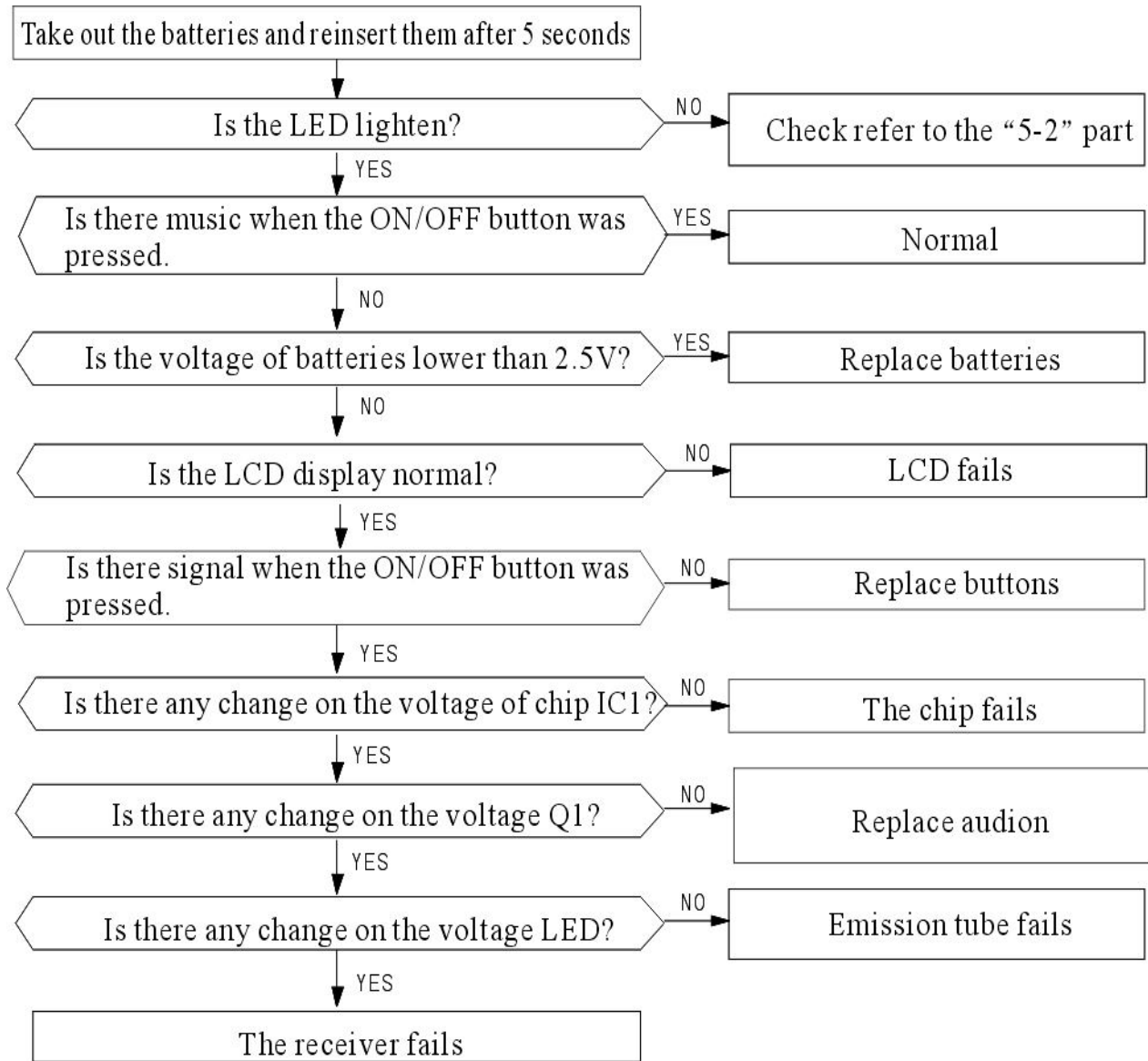
(1) Check if the set temperature is lower than the indoor temperature?

(2) Check if the indoor PCB is connected to the terminal correctly?



7. Remote Control Can Not Work

Trouble shooting procedure



8. The Failure Analysis of the Main Parts

Part	Analysis							
Transformer Heat exchanger	Measure resistance							
	Normal	Environment temperature	15°C	20°C	25°C	30°C	35°C	40°C
		Resistance of transformer(KΩ)	7.45	6.08	5	4.13	3.43	2.86
Abnormal	∞ : Turn-off ; 0Ω : Short-cut							
Step motor	Normal	Environment temperature (10°C ~30°C)						
		Between		1	2	-		
				24BYJ48	35BYJ412B	-		
		Blue, yellow	-	Above300Ω	Around120Ω	-		
		-	-	-	-	-		
Input	1.5W		-	-				
Abnormal	∞ : Turn-off ; 0Ω : Short-cut							
The outdoor fan motor	Detecting the resistance between the red wire and every connecting end							
	Normal	When the temperature is20°C ~30°C ,around 300Ω and 120Ω						
	Abnormal	∞ : Turn-off ; 0Ω : Short-cut						