

12-2 Fault Diagnosis by Symptom

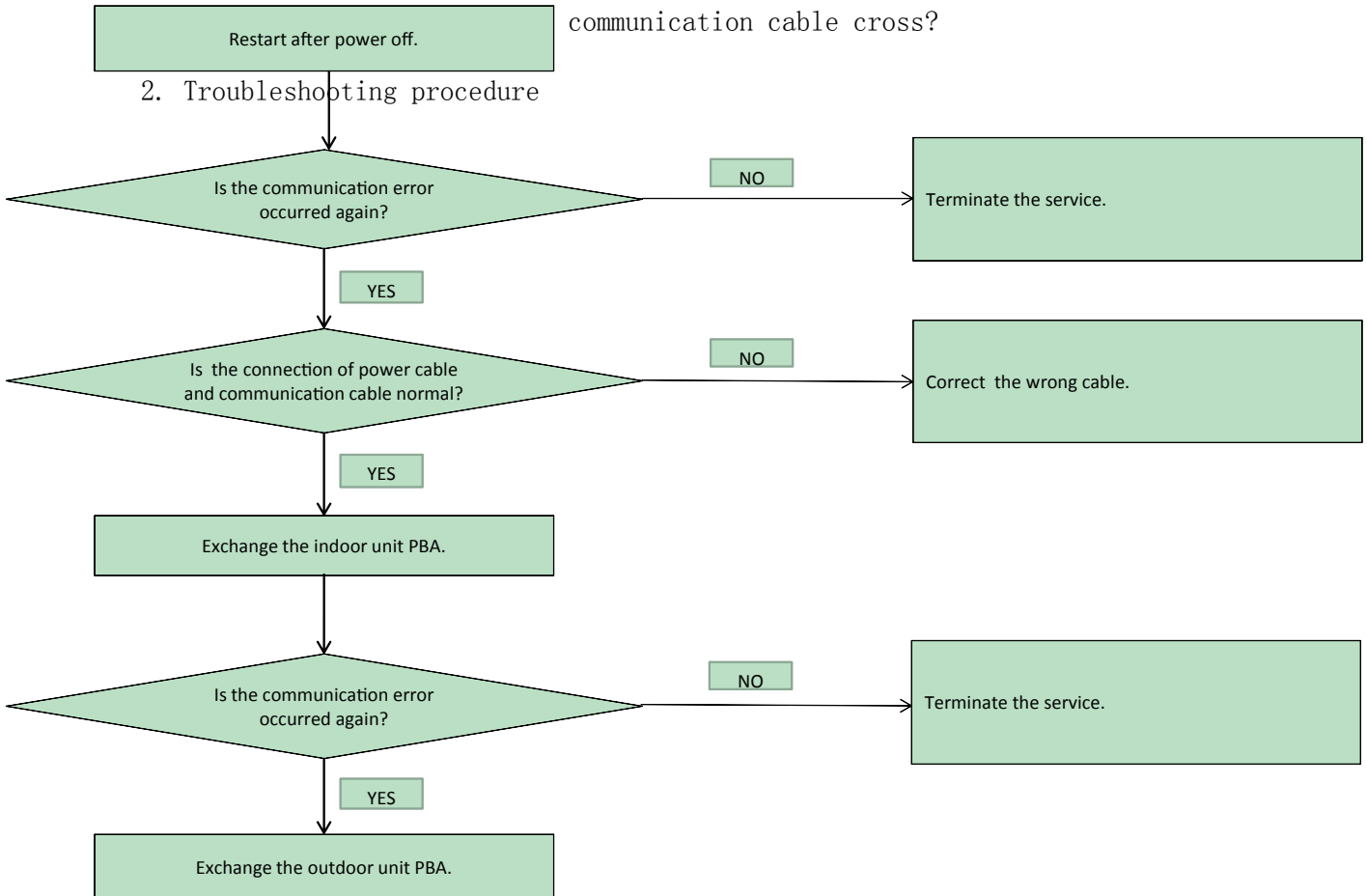
Communication error (A*V**P*A*)

Outdoor display

●	●	●	lmin. Time out Comm.
○	○	●	Abnormal Communication
○	●	●	

1. Checklist :

- 1) Is the cable between the indoor unit and outdoor unit connected correctly?
communication cable cross?



Communication error (A*V**PSB*)

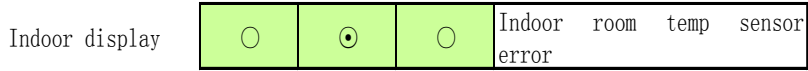
Indoor display	○	◐	◑	Communication error
Outdoor display	◐	●	●	1min. Time out Comm.
	○	○	●	Abnormal Communication
	○	●	●	

1. Checklist :

- 1) Is the cable between the indoor unit and outdoor unit connected correctly?
- 2) Isn't the power cable and communication cable cross?

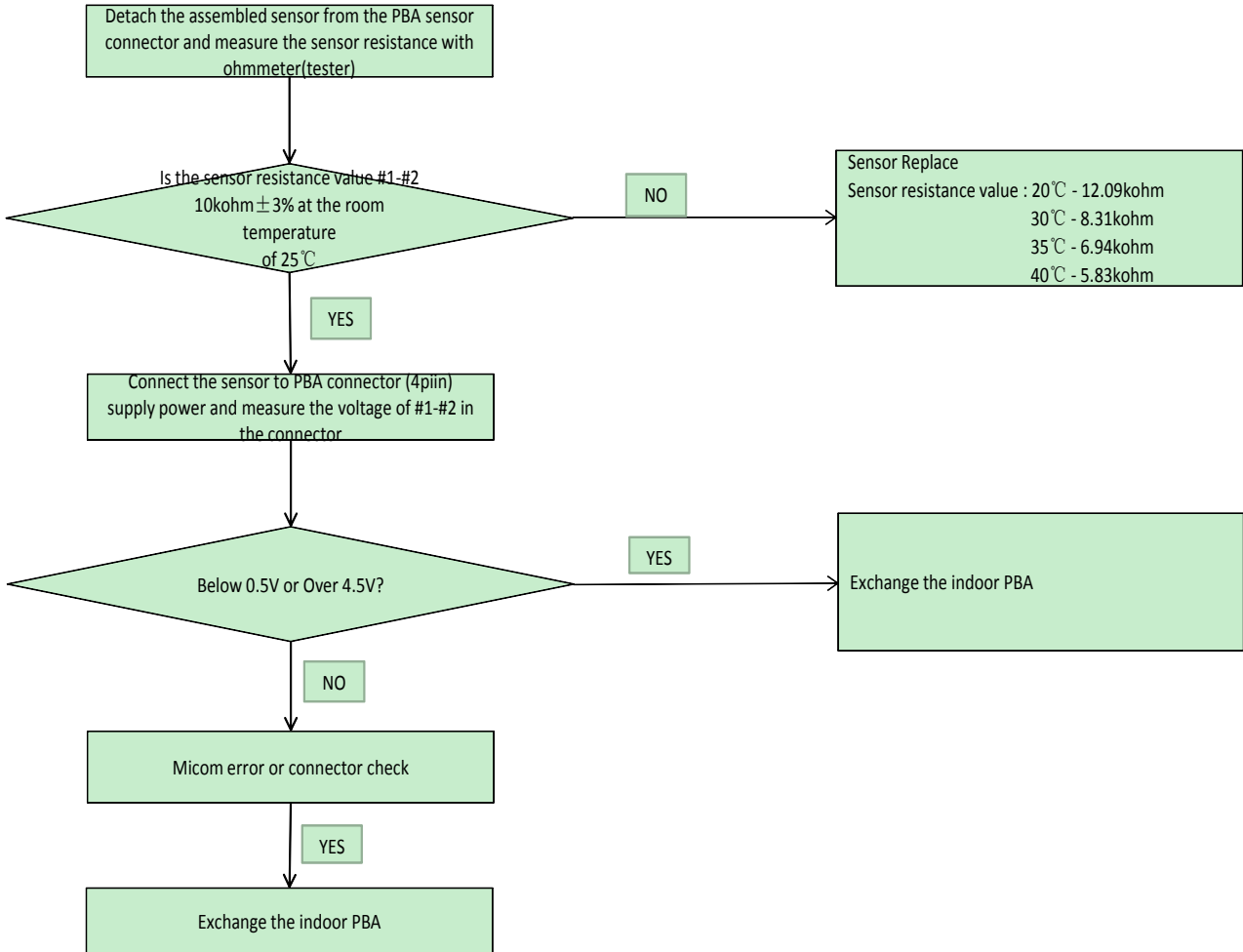


Indoor temperature sensor error



1. Checklist :

- 1) Is the indoor units temperature sensor connected correctly?
- 2) Is the sensor placed correctly?
- 3) Does the both terminal of sensor satisfy the resistance value in accordance with temperature?

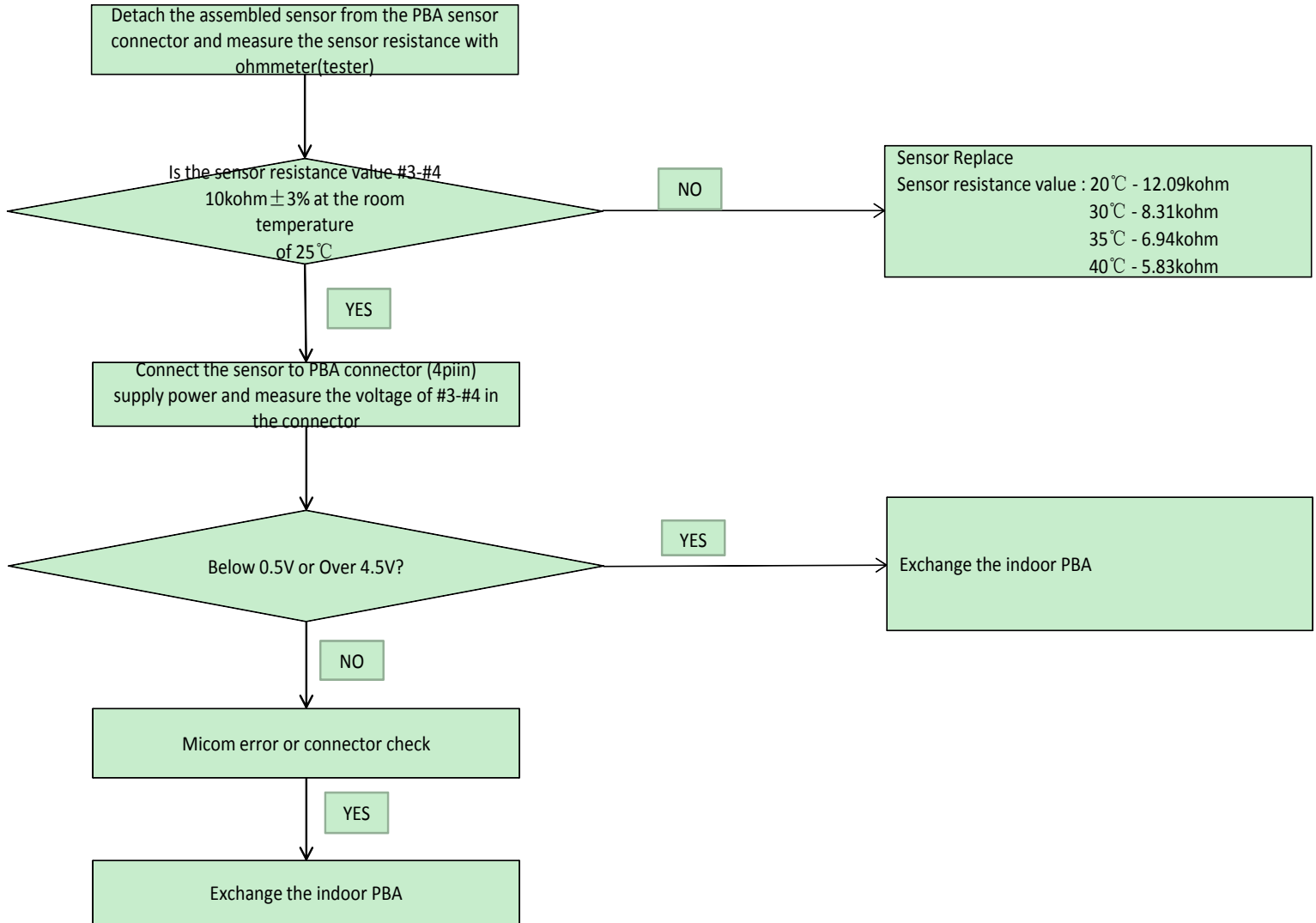


Indoor Eva-in temperature sensor error



1. Checklist :

- 1) Is the indoor units temperature sensor connected correctly?
- 2) Is the sensor placed correctly?
- 3) Does the both terminal of sensor satisfy the resistance value in accordance with temperature?

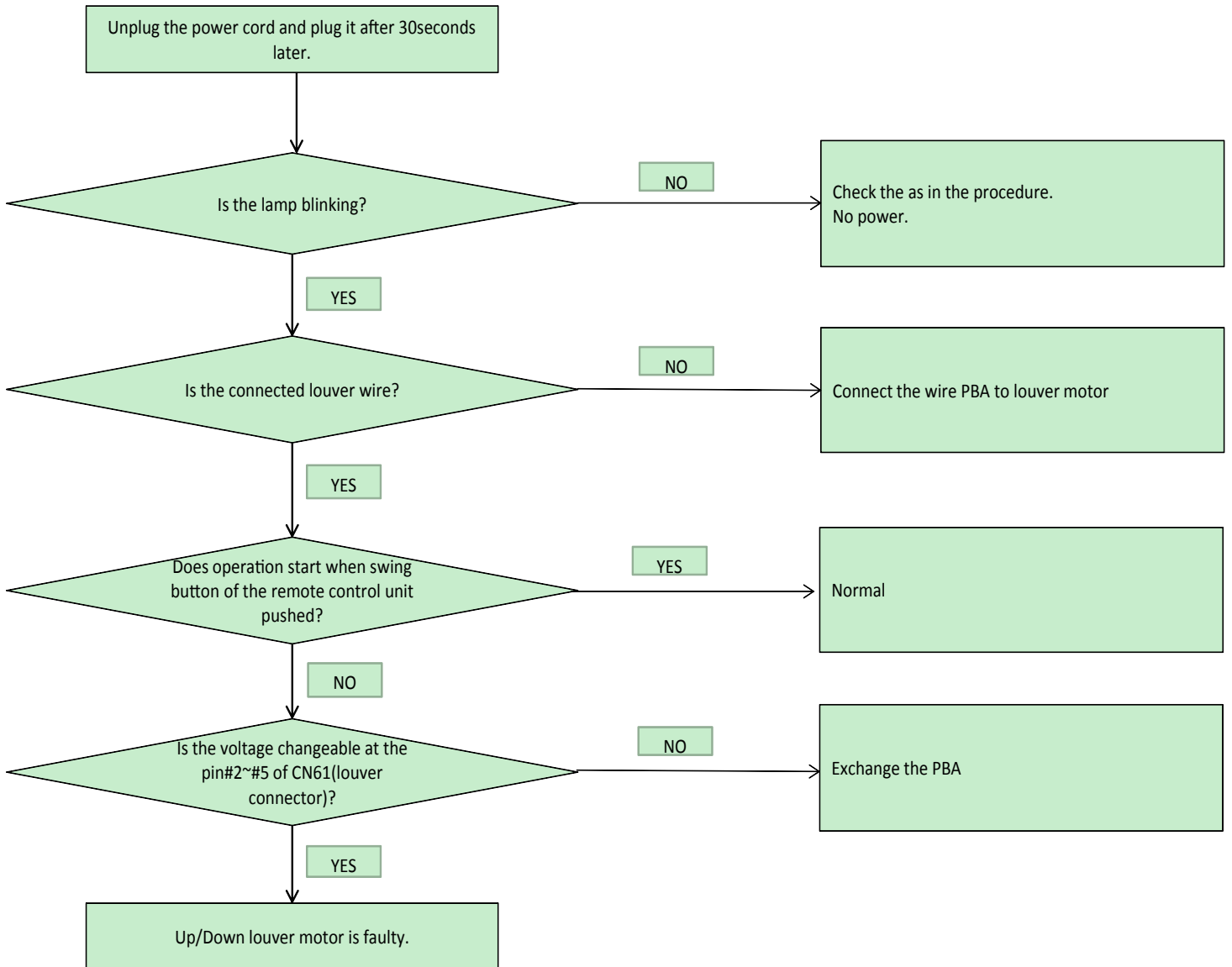


When the Up/Down louver motor does not operate (Initial Diagnosis) (Not displayed)

1. Checklist :

- 1) Is the input power voltage normal?
- 2) Is the Up/Down louver motor properly connected with the connector? (CN61)

2. Troubleshooting procedure



When the remote control is not receiving

1. Checklist :

- 1) Check if the connector was normally assembled.
- 2) Check the battery in remote control
- 3) All the lights out and check again : Change electronic typed to a fluorescent
- 4) Put the set in operation and check the voltage of display PBA
- 5) Replace the display PBA

Indoor fan motor speed detecting error (AC fan)

Indoor display

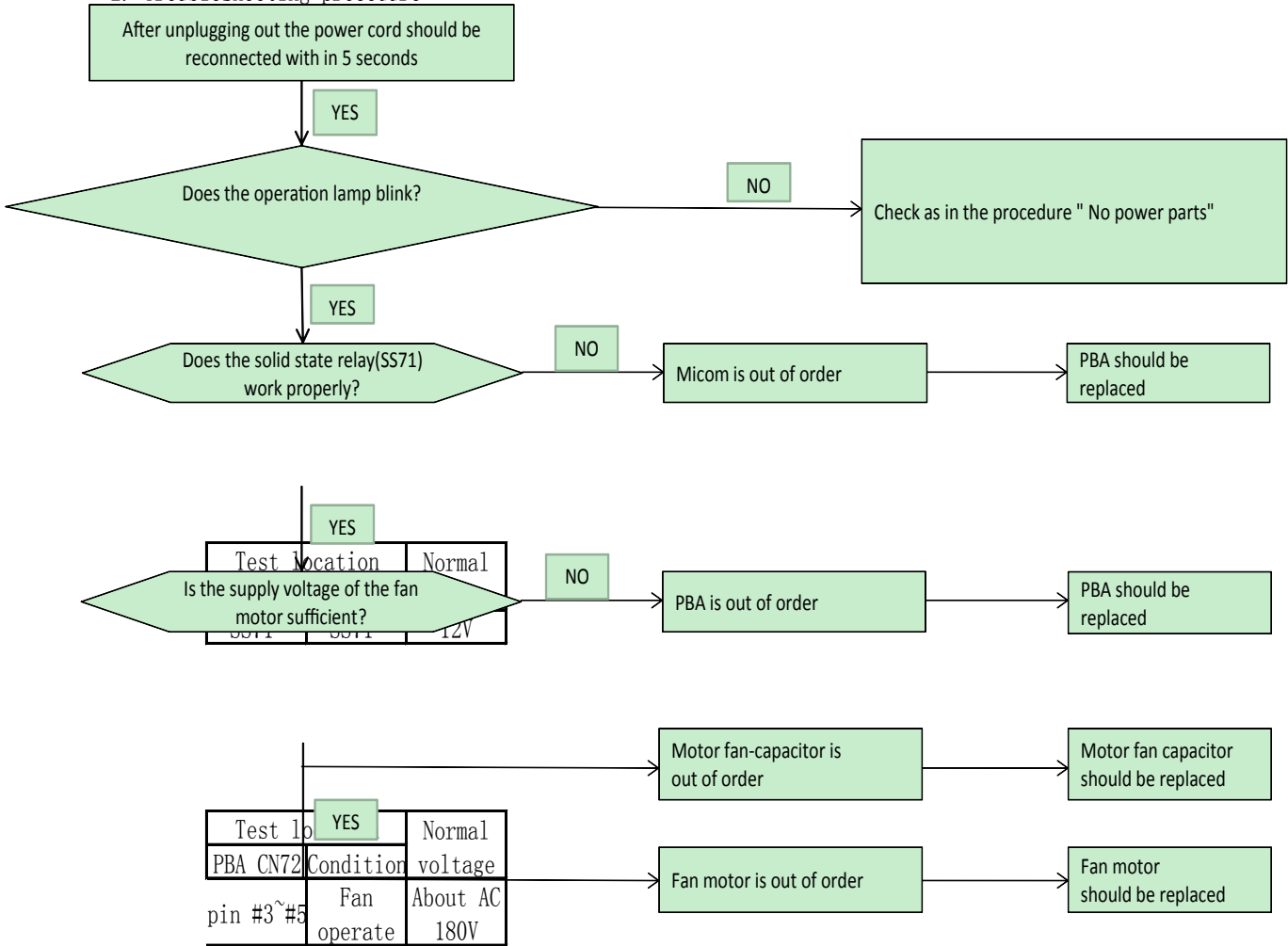
		●
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 Indoor fan error

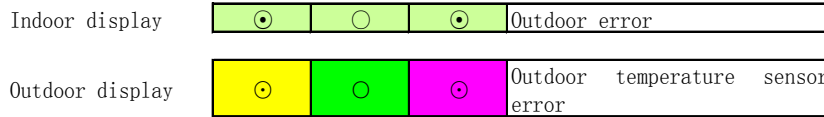
1. Checklist :

- 1) Is the indoor units fan motor properly connected with the connector(CN72)?
- 2) Is the AC voltage correct?
- 3) Is the HALL IC(feedback sensing) in indoor fan motor properly connected with the connector(CN44)?
- 4) Is the running capacitor(CR71) properly connected with PBA?

2. Troubleshooting procedure

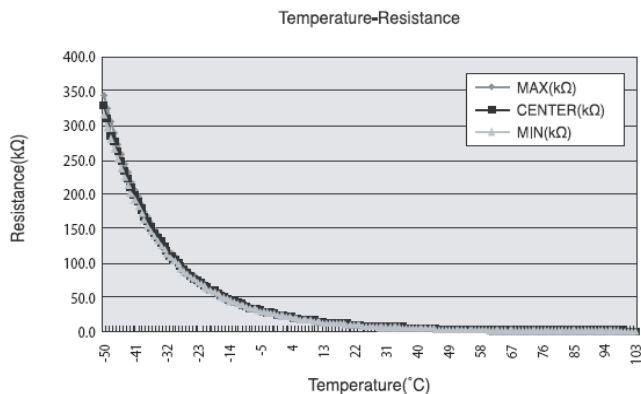
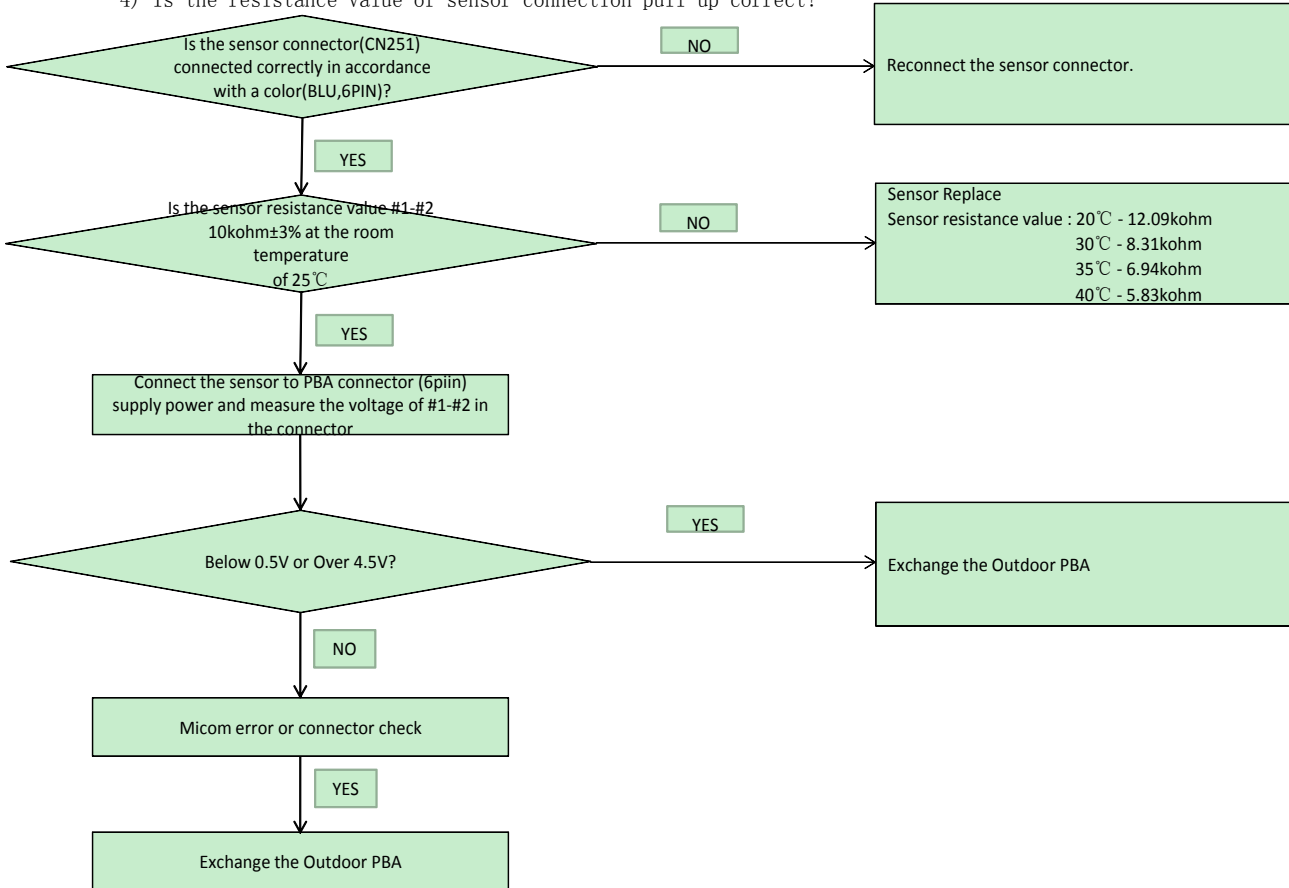


Outdoor temperature sensor error (A*V**PSB*)



1. Checklist :

- 1) Is the sensor connected correctly?
- 2) Is the sensor placed correctly?
- 3) Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
- 4) Is the resistance value of sensor connection pull-up correct?



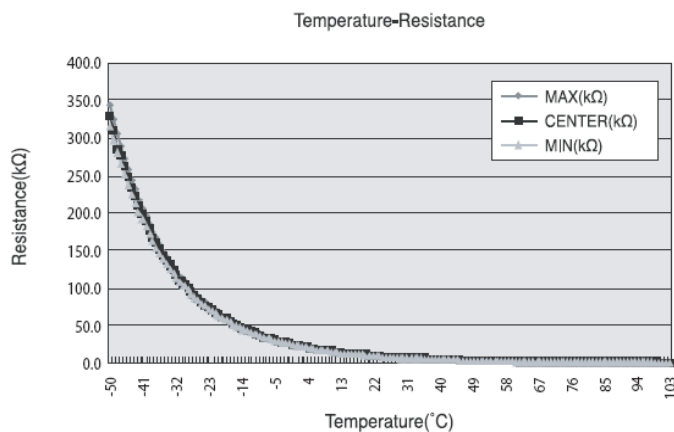
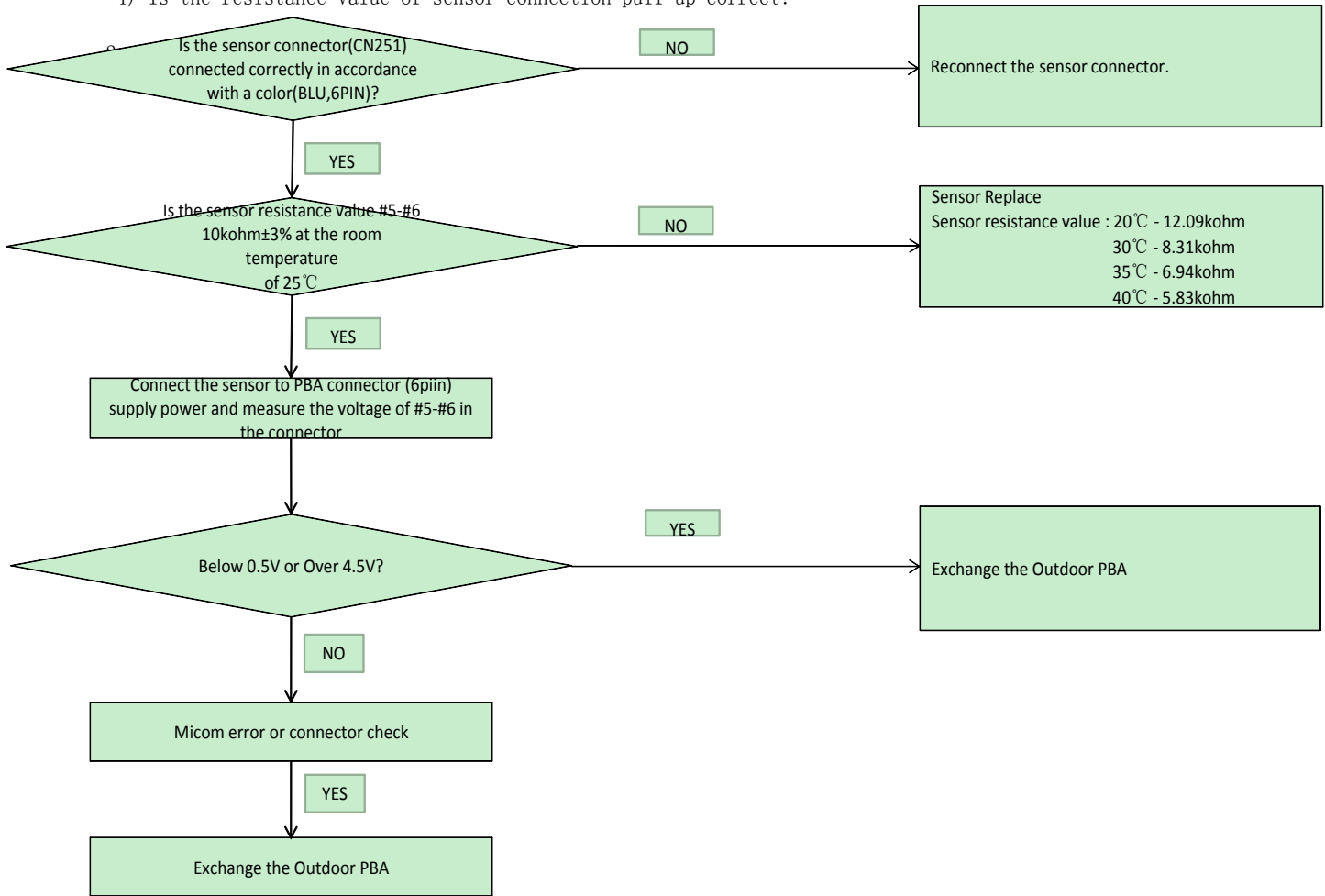
Outdoor Coil temperature sensor error (A*V**PSB*)

Indoor display  Outdoor error

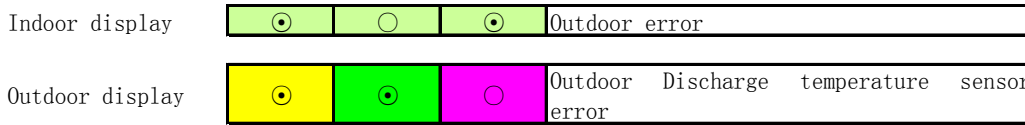
Outdoor display  Outdoor Coil temperature sensor error

1. Checklist :

- 1) Is the sensor connected correctly?
- 2) Is the sensor placed correctly?
- 3) Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
- 4) Is the resistance value of sensor connection pull-up correct?

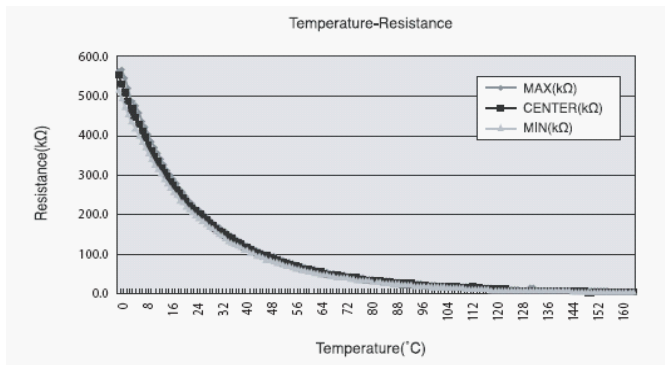
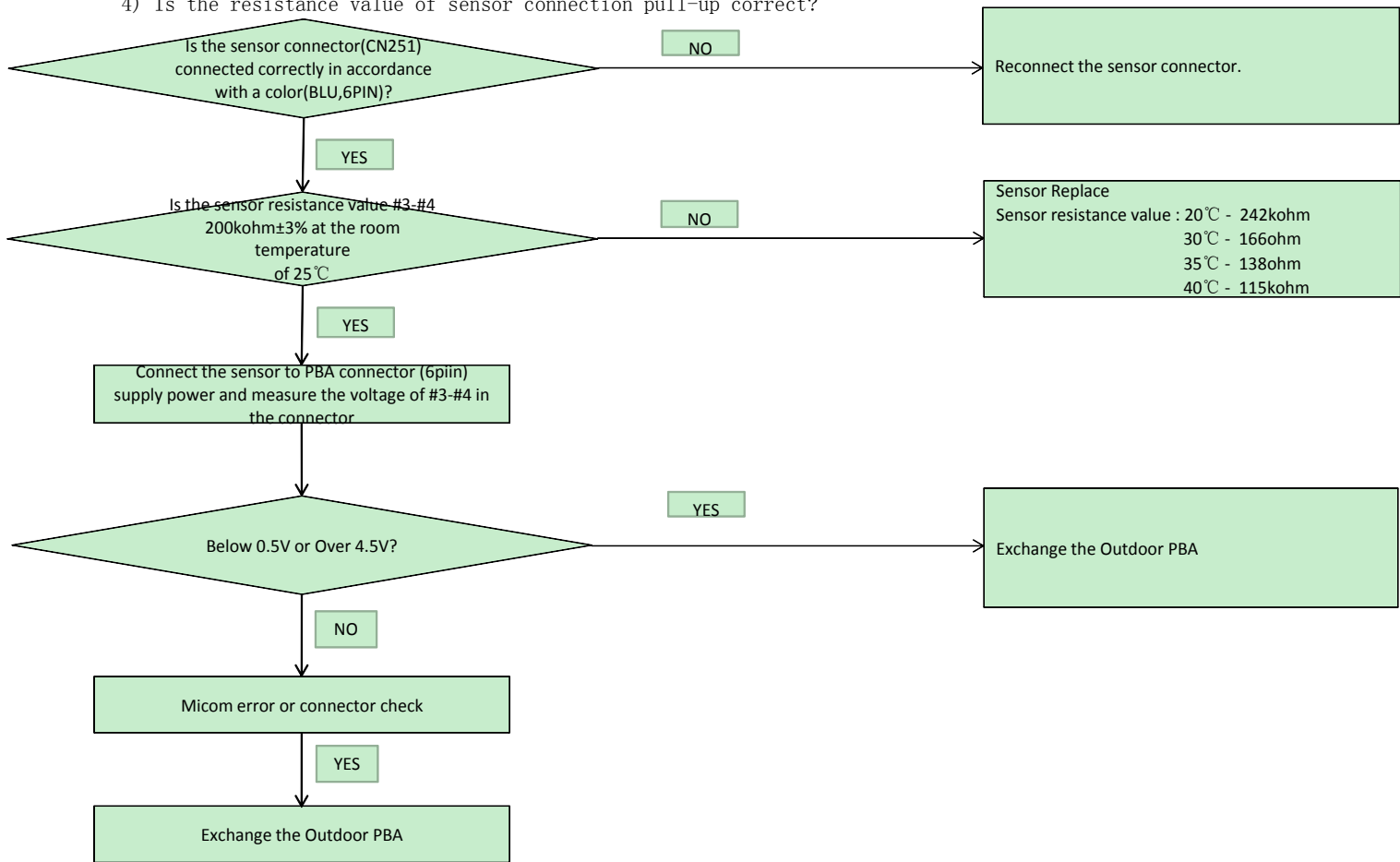


Outdoor Discharge temperature sensor error (A*V**PSB*)



1. Checklist :

- 1) Is the sensor connected correctly?
- 2) Is the sensor placed correctly?
- 3) Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
- 4) Is the resistance value of sensor connection pull-up correct?

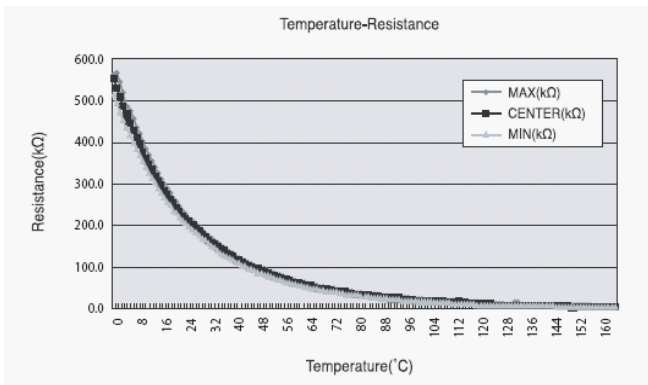
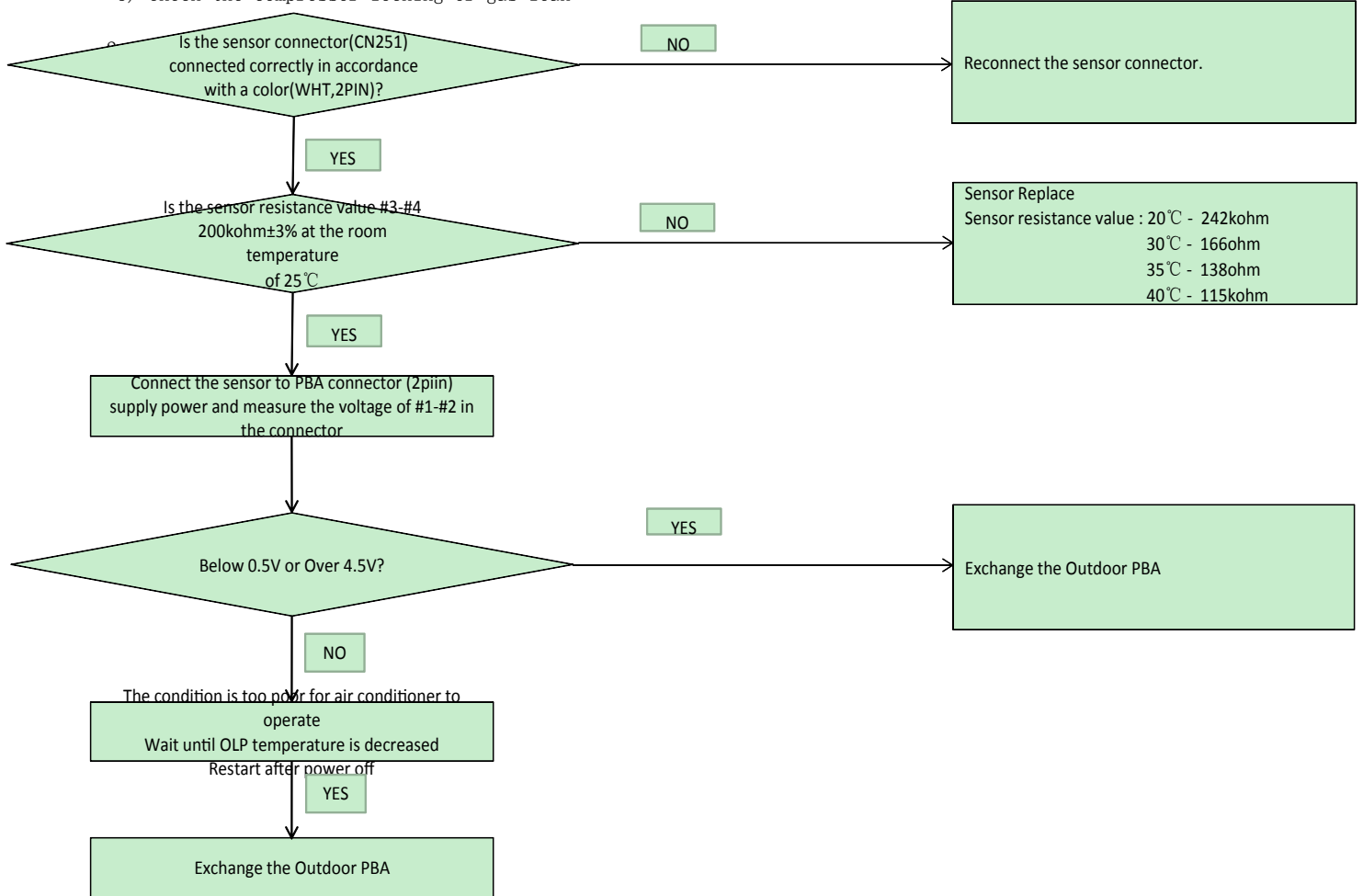


OLP sensor error/OLP over heat (A*V**P*A*)

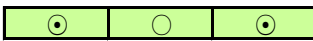
Outdoor display				OLP over heat
				OLP sensor error

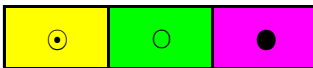
1. Checklist :

- 1) Is the sensor connected correctly?
- 2) Is the sensor placed correctly?
- 3) Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
- 4) Is the resistance value of sensor connection pull-up correct?
- 5) Check the compressor locking or gas leak



Outdoor Discharge over temperature error (A*V**PSB*)

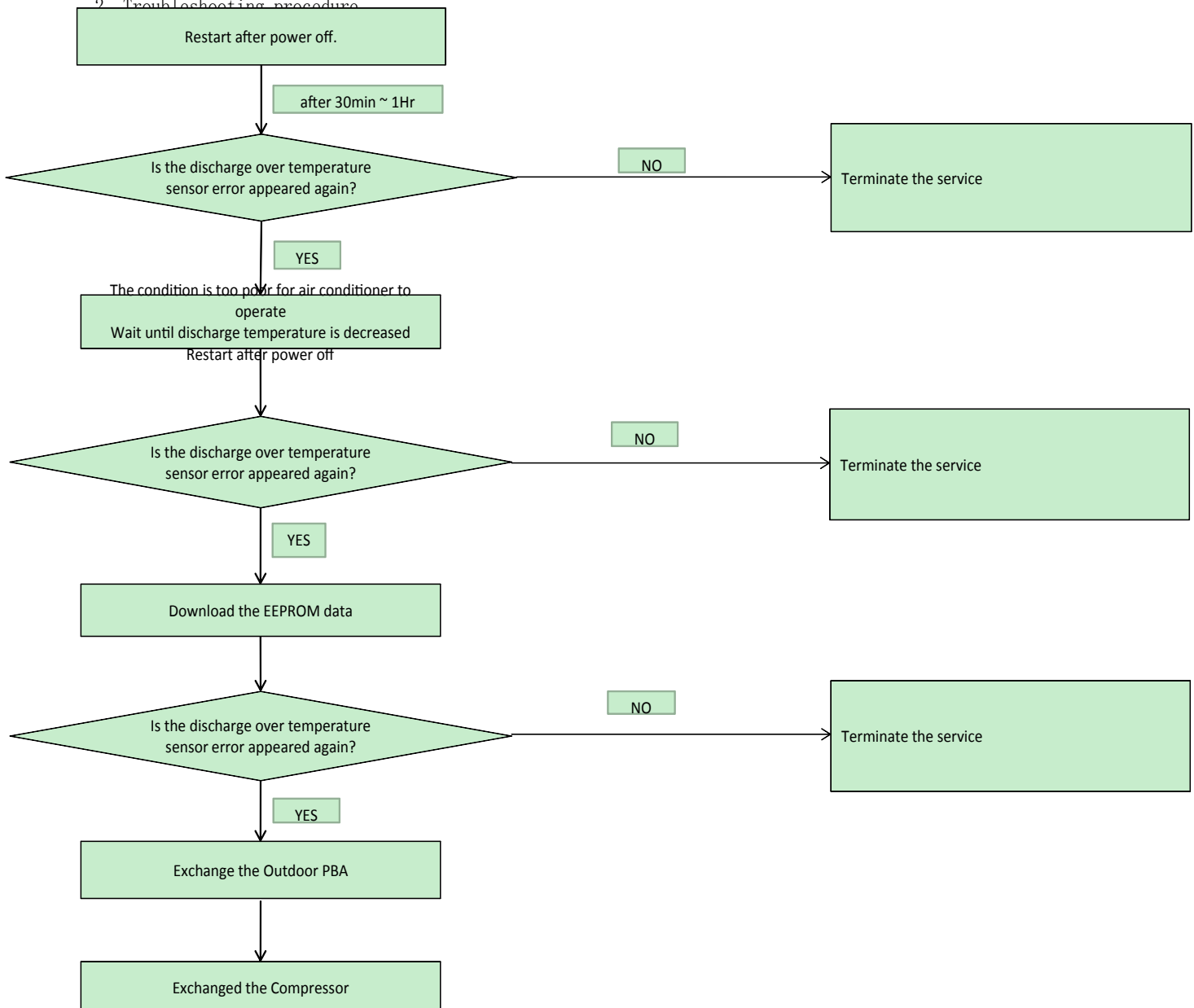
Indoor display  Outdoor error

Outdoor display  Outdoor Discharge over temperature error

1. Checklist :

- 1) Check the discharge temperature in the outdoor unit
- 2) Check the compressor locking or gas leak
- 3) Download the EEPROM data

2. Troubleshooting procedure



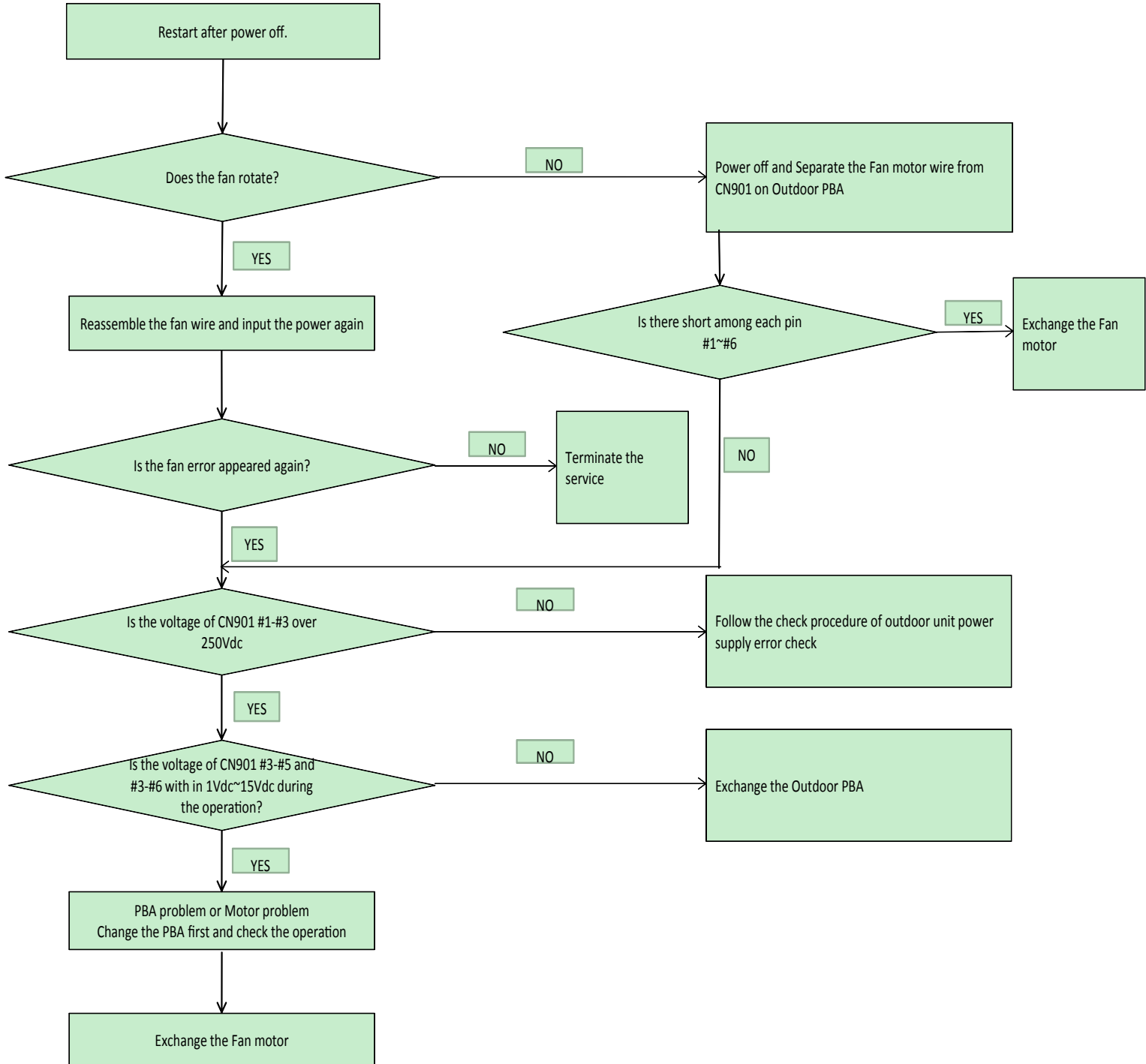
Outdoor Fan motor error (A*V**PSB*)

Indoor display  Outdoor error

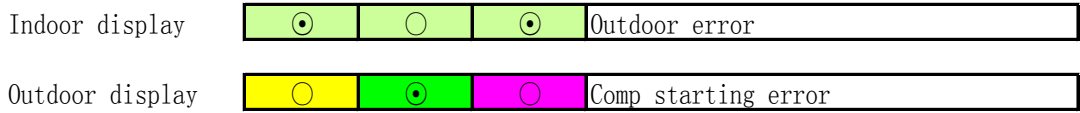
Outdoor display  Outdoor fan error

1. Checklist :

- 1) Are the input power voltage and the power connection correct?
- 2) Is the motor wire connected to the outdoor PBA correctly?
- 3) Is there no assembly error or none-assembly in the terminal of motor wire connector?
- 4) Is there no obstacle at the surrounding of motor and propeller?

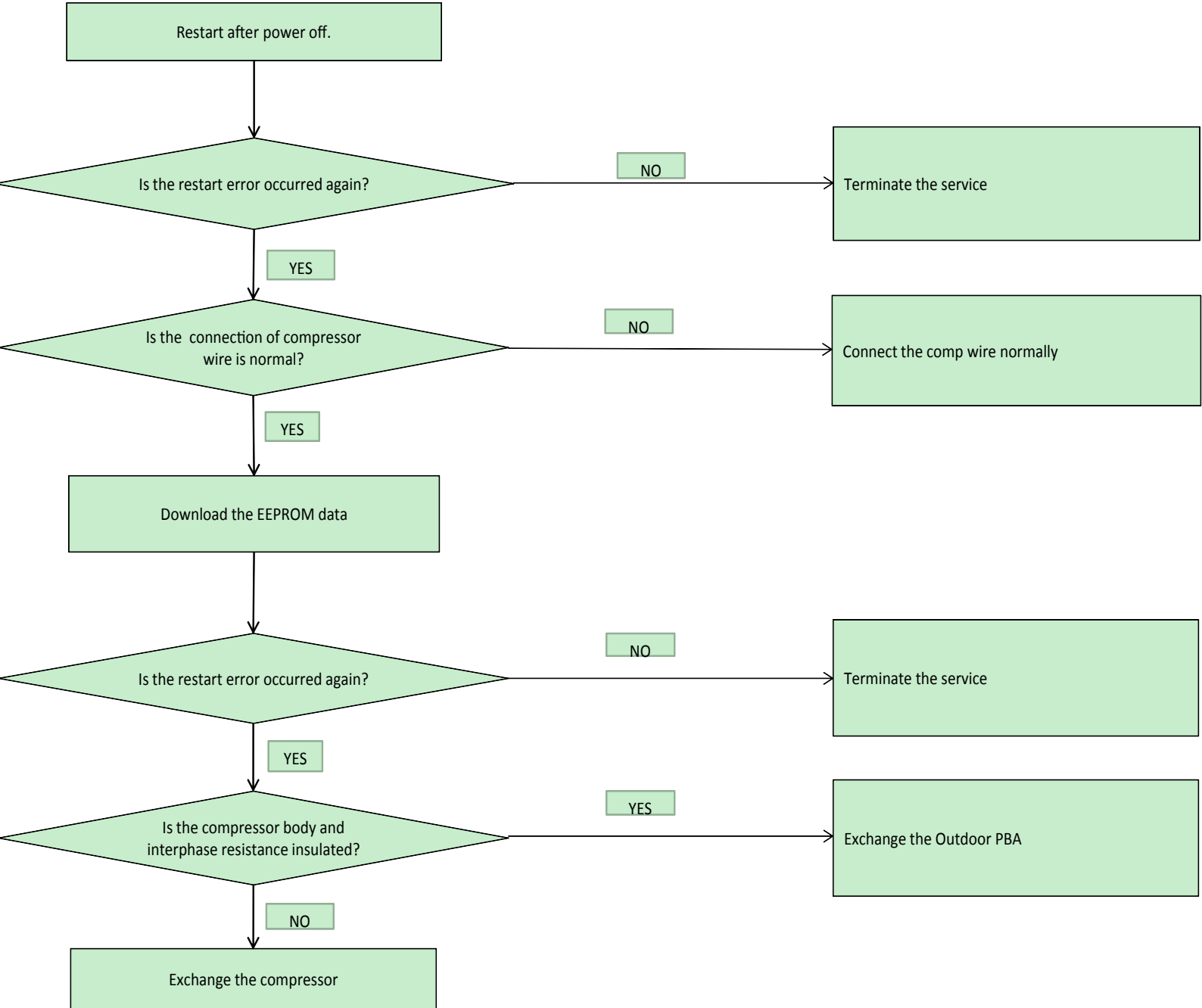


Compressor starting error

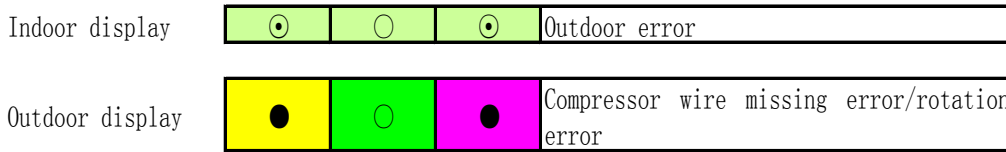


1. Checklist :

- 1) Is the connection of cable for the compressor?
- 2) Is the compressor wire is connected clockwise? U (RED) -V (BLU) -W (YEL)
- 3) Is the interphase resistance of compressor normal?

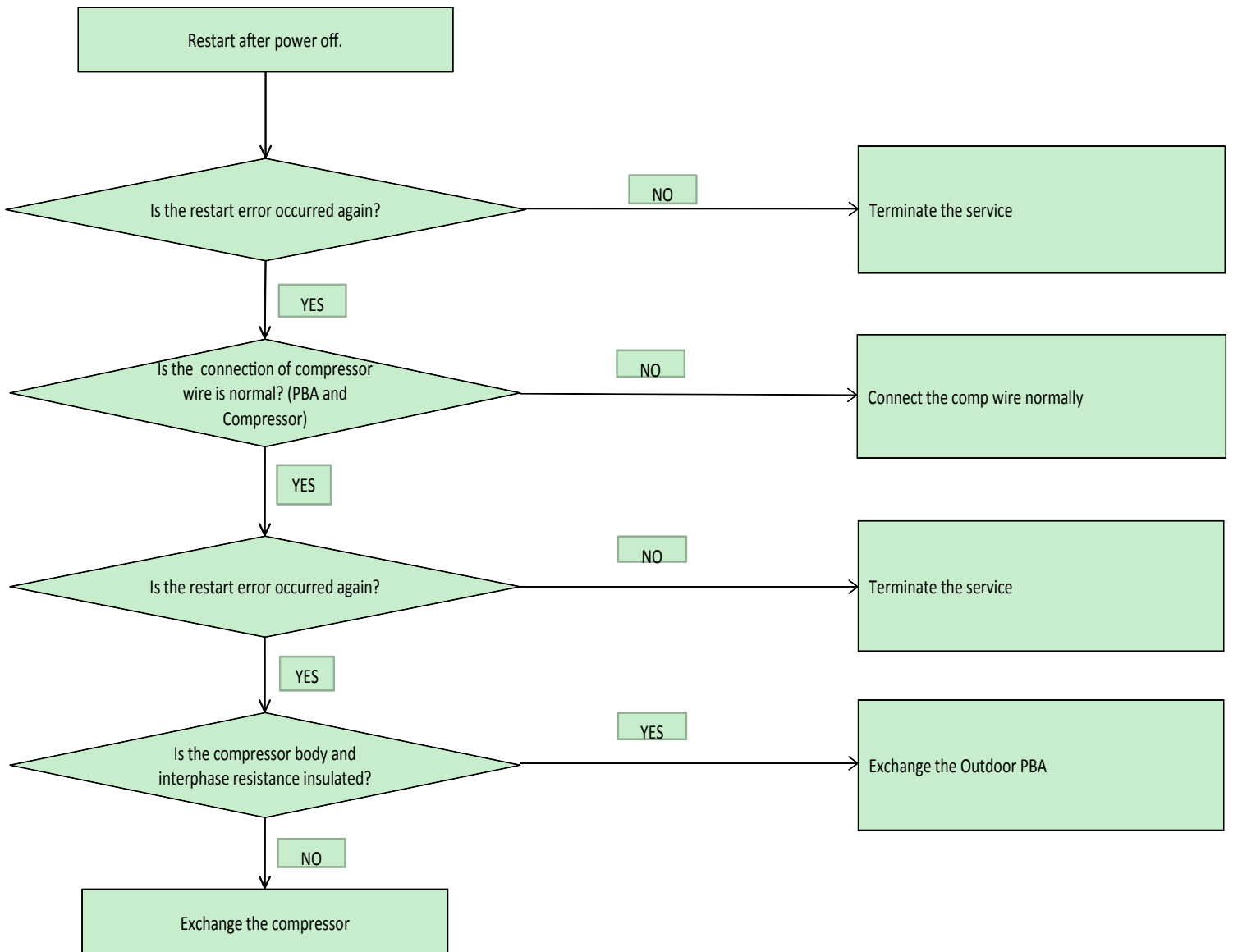


Compressor wire missing error/rotation error



1. Checklist :

- 1) Is the connection of cable for the compressor?
- 2) Is the compressor wire is connected clockwise? U (RED) -V (BLU) -W (YEL)
- 3) Is the interphase resistance of compressor normal?



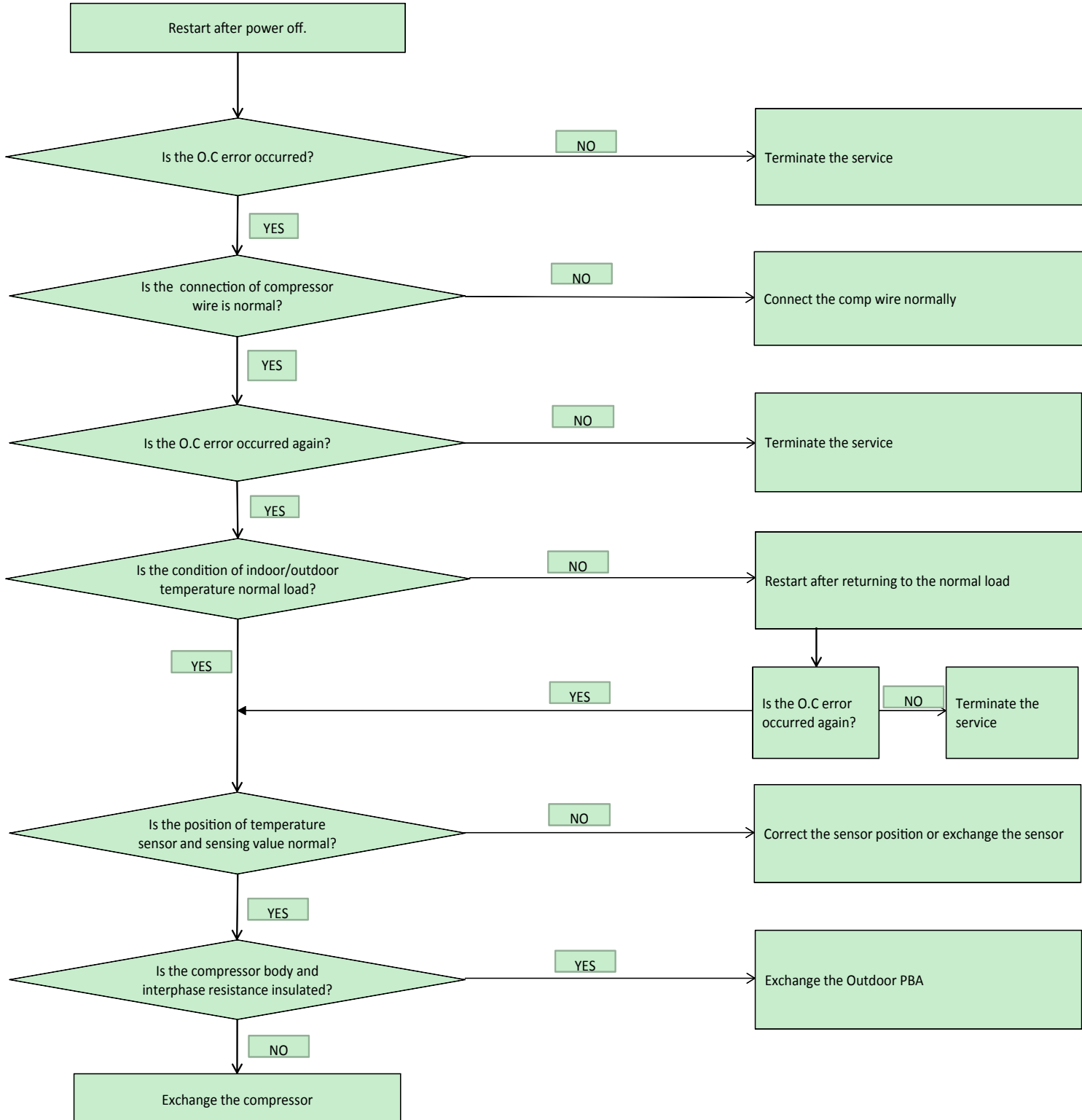
O.C(Over Current) error

Indoor display ● ○ ● Outdoor error

Outdoor display ○ ○ ● Comp starting error

1. Checklist :

- 1) Is the IPM Shunt (R451, R452, R453) resistance value correct? Check the resistor is opened
- 2) Is the condition of surrounding temperature abnormal overload?
- 3) Is there any problem as like the temperature sensor separation or measurement value error?
- 4) Is the interphase resistance of compressor normal?



DC_link voltage sensor error

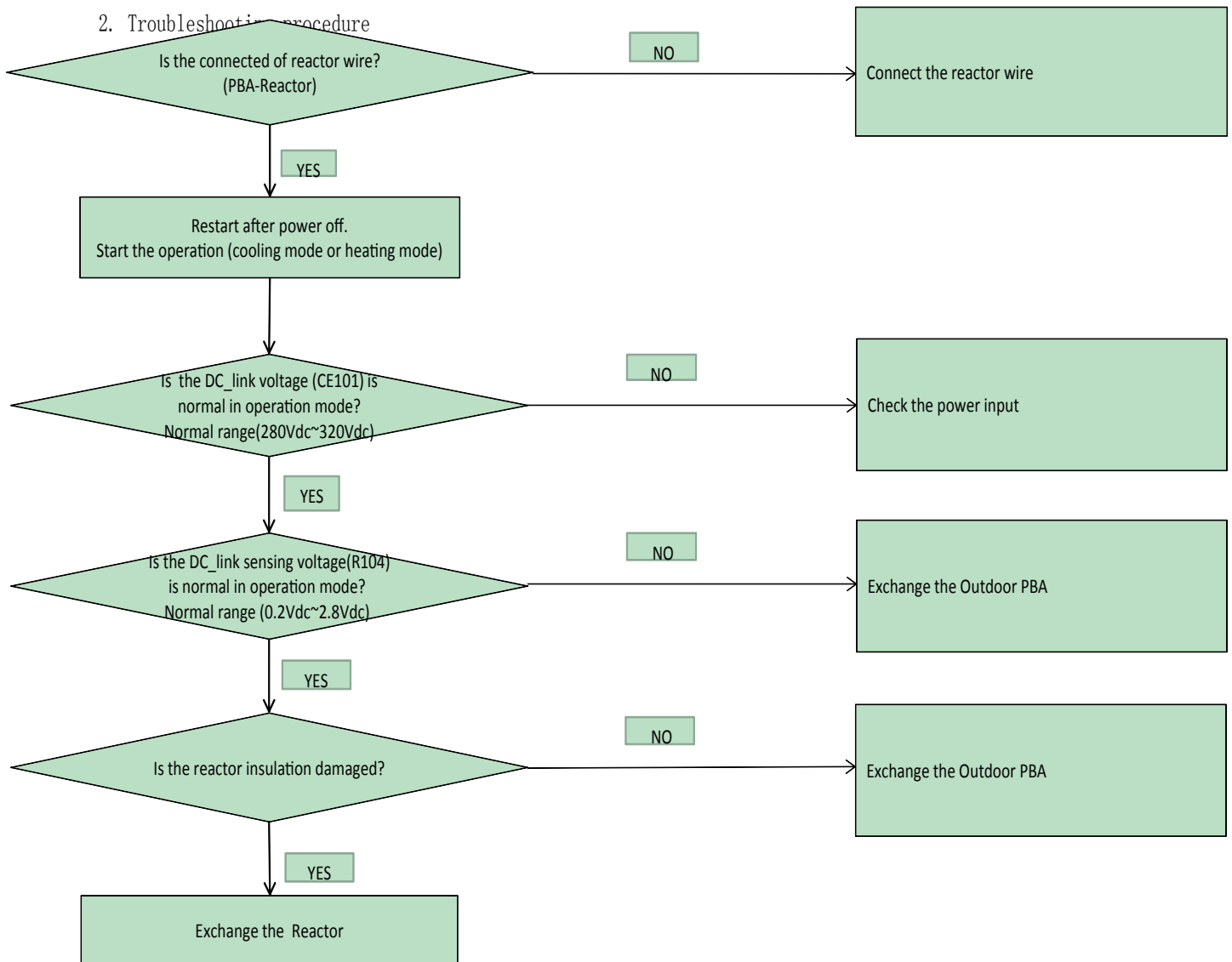
Indoor display  Outdoor error

Outdoor display  DC link voltage sensor error

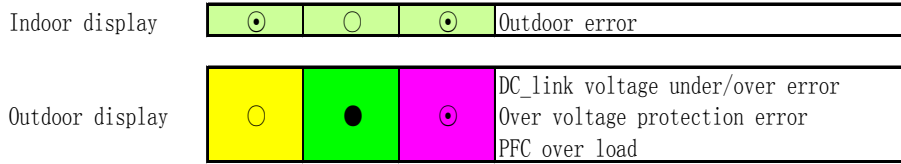
1. Checklist :

- 1) Is the input voltage of outdoor terminal block is normal?
- 2) Is the reactor wire connected?
- 3) Is the DC_link capacitor(CE101, CE102, CE103) assembled in accordance the specification? (Outdoor PBA)
- 4) Is the DC_link resistor(R104, R106, R107, R108) value is normal?

2. Troubleshooting procedure



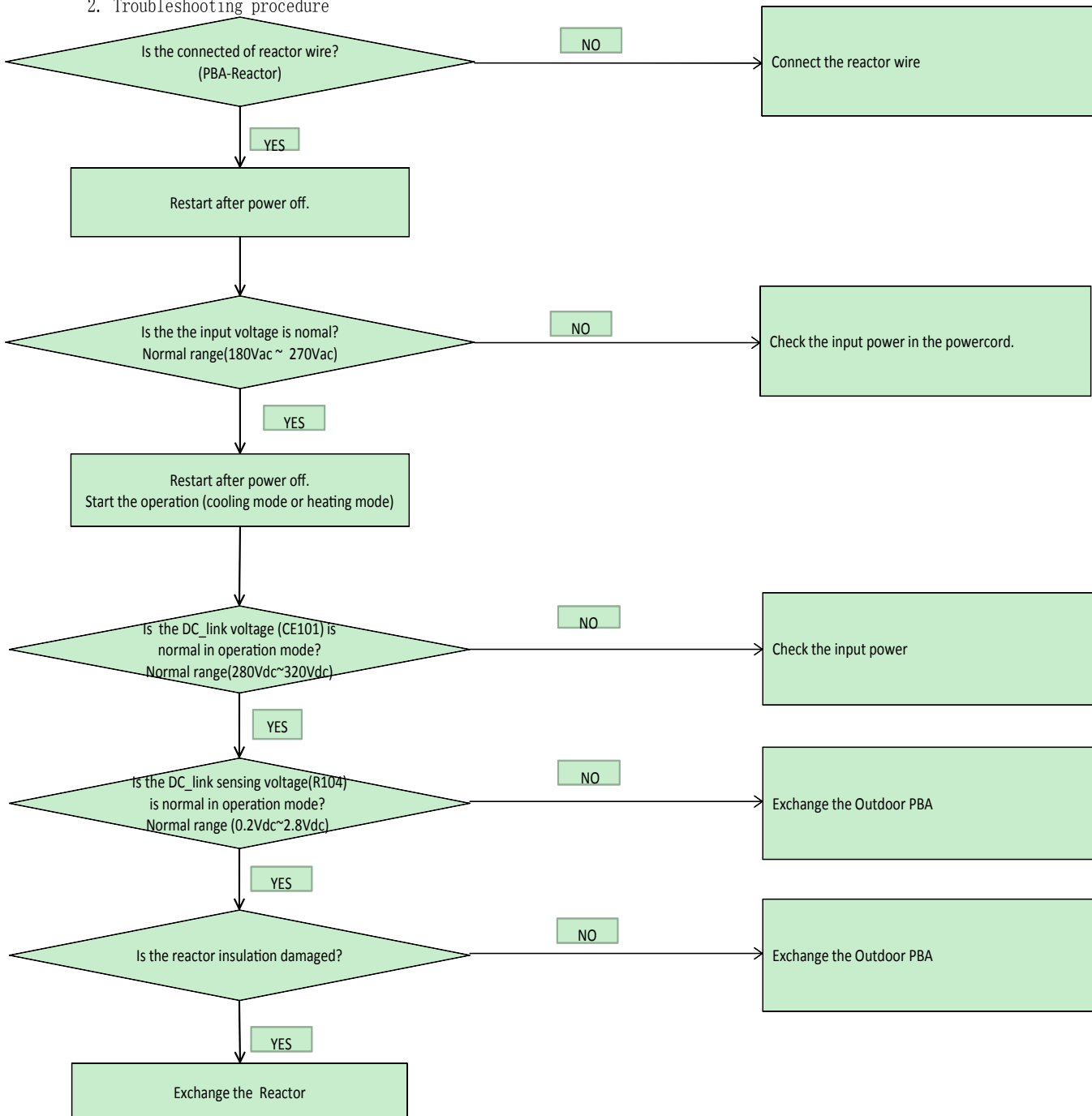
DC_link voltage under/over error, Over voltage protection error/PFC over load




1. Checklist :

- 1) Is the input voltage of outdoor terminal block is normal?
- 2) Is the input voltage is higher than 300Vac?
- 3) Is the reactor wire connected?
- 4) Is the DC_link capacitor(CE101,CE102,CE103) assembled in accordance the specification? (Outdoor PBA)
- 5) Is the DC_link resistor(R104,R106,R107,R108) value is normal?

2. Troubleshooting procedure



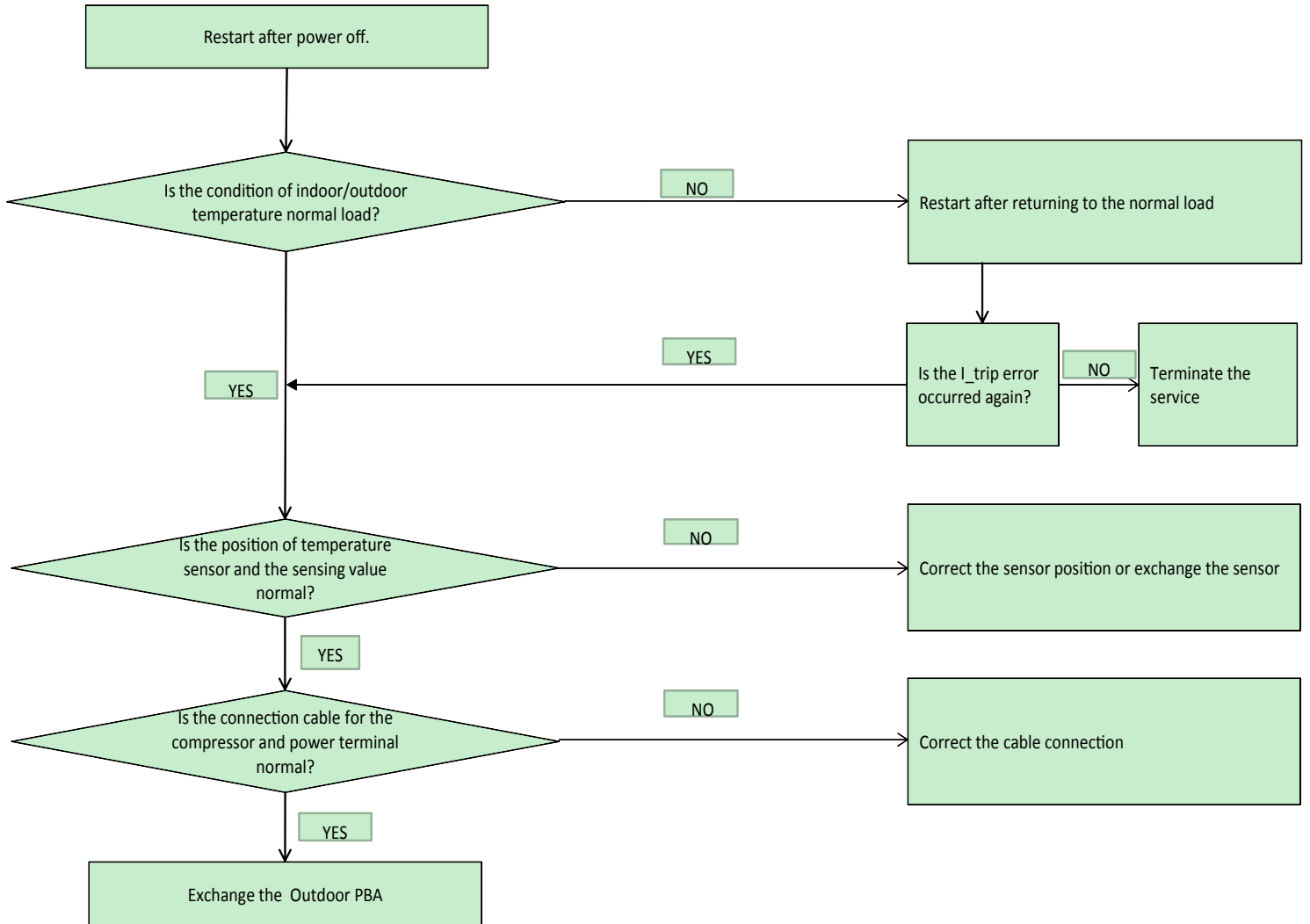
I_trip error, PFC over current

Indoor display  Outdoor error

Outdoor display  I_trip error, PFC over current

1. Checklist :

- 1) Is the PFC Shunt (R062, R063) resistance value correct? Check the resistor is opened
- 2) Is the condition of surrounding temperature abnormal overload?
- 3) Is there any problem as like the temperature sensor separation or measurement value error?
- 4) Is the interphase resistance of compressor normal?



Current sensor error/Input current sensor error

Indoor display

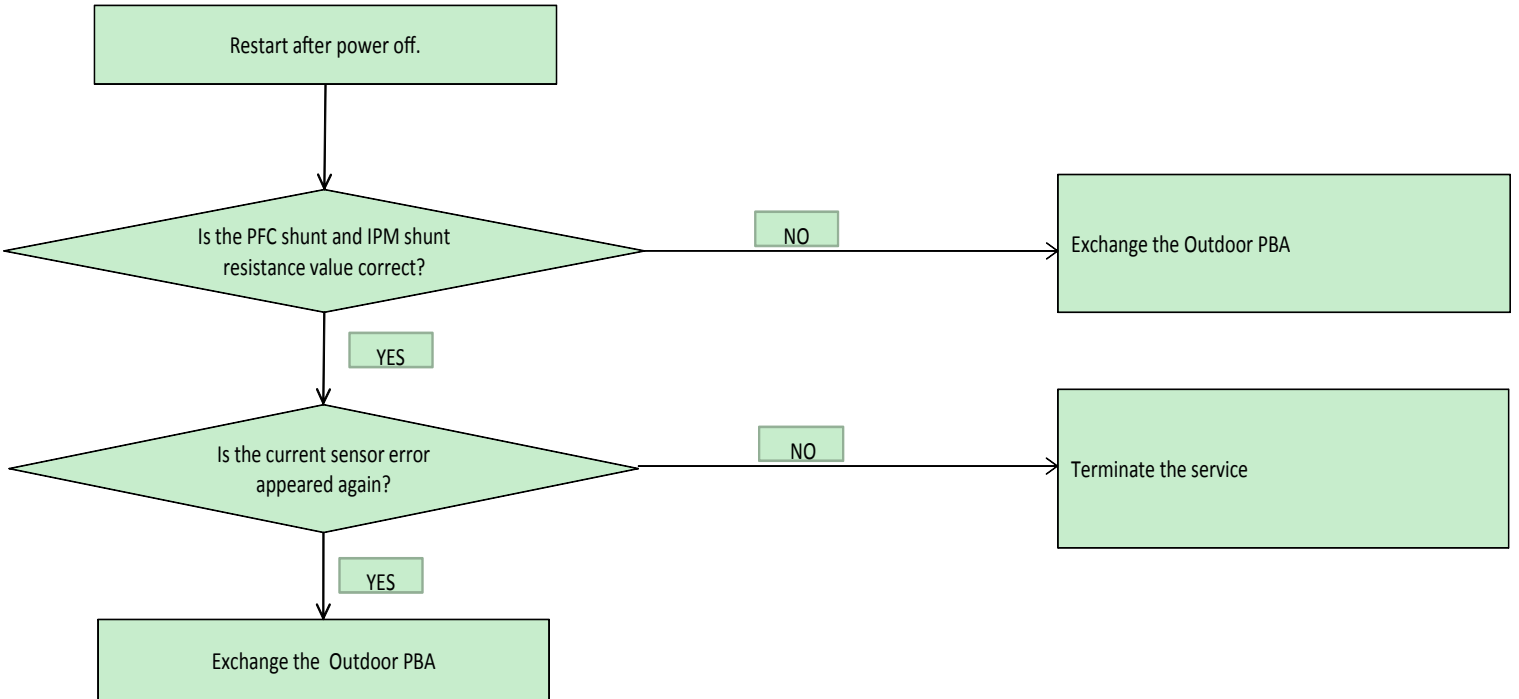
●	○	●	Outdoor error
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Outdoor display

●	●	●	Current sensor error/Input current sensor error
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1. Checklist :

- 1) Is the PFC Shunt (R062, R063) resistance value correct? Check the resistor is opened
- 2) Is the IPM Shunt (R451, R452, R453) resistance value correct? Check the resistor is opened
- 3) Is there no short or open around IC451?

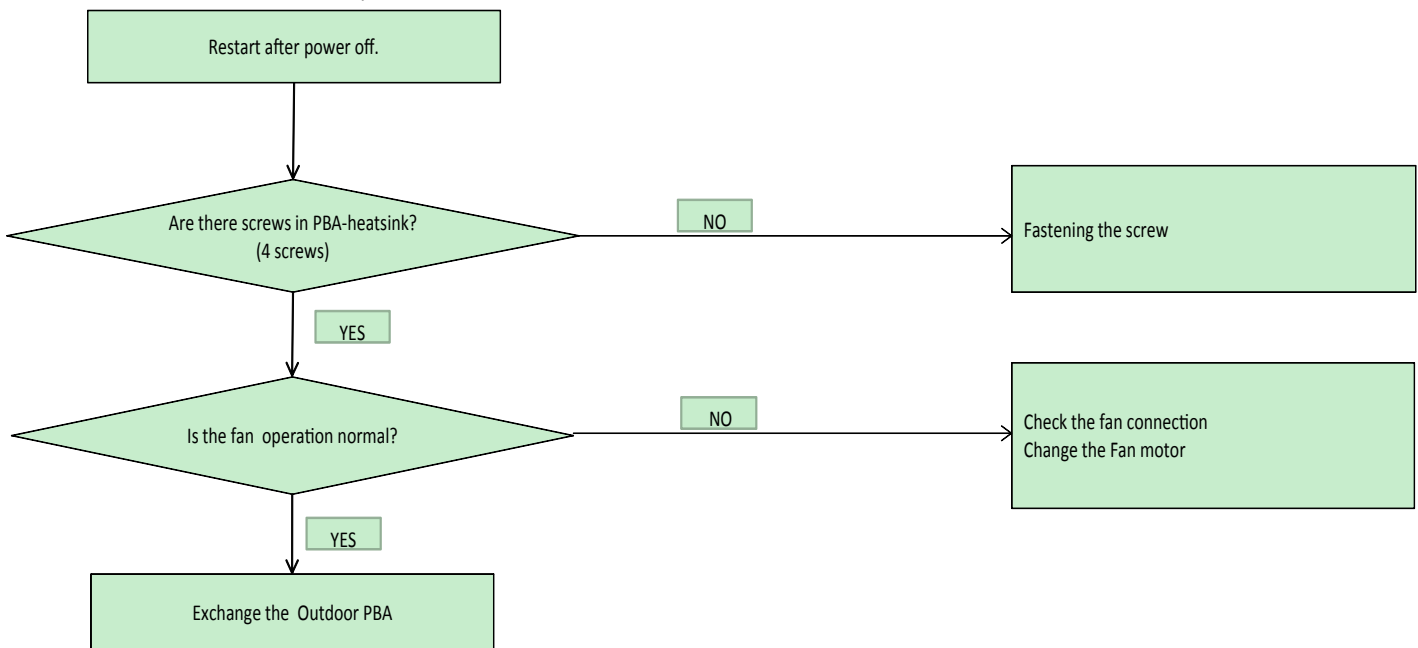


Heatsink sensor error/Heatsink over heat

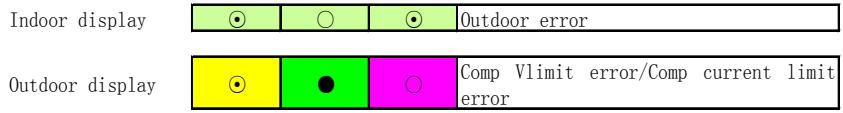
Indoor display	●	○	●	Outdoor error
Outdoor display	○	●	●	Heatsink sensor error/Heatsink over heat (A**V**PW**)
	●	●	●	Heatsink sensor error (A**V**PS**)
	●	●	●	Heatsink over heat (A**V**PS**)

1. Checklist :

- 1) Are there screws assembly in PBA-heatsink?
- 2) Is the gap PBA-heatsink
- 3) Is the fan operation normal?
- 4) Is the cover assembly in control-box normal?

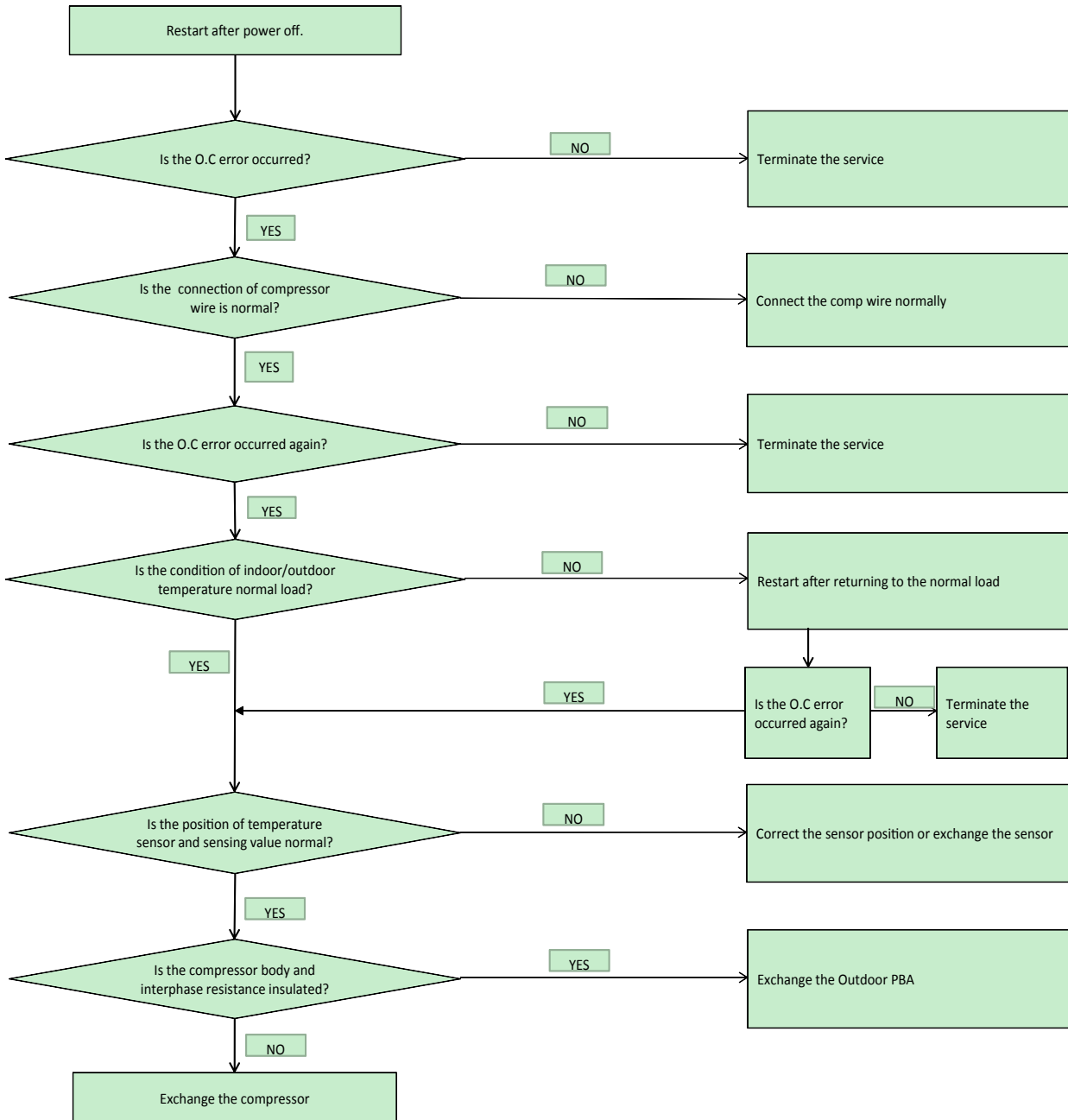


Comp Vlimit error/Comp current limit error



1. Checklist :

- 1) Is the IPM Shunt (R451, R452, R453) resistance value correct? Check the resistor is opened
- 2) Is the condition of surrounding temperature abnormal overload?
- 3) Is there any problem as like the temperature sensor separation or measurement value error?
- 4) Is the interphase resistance of compressor normal?

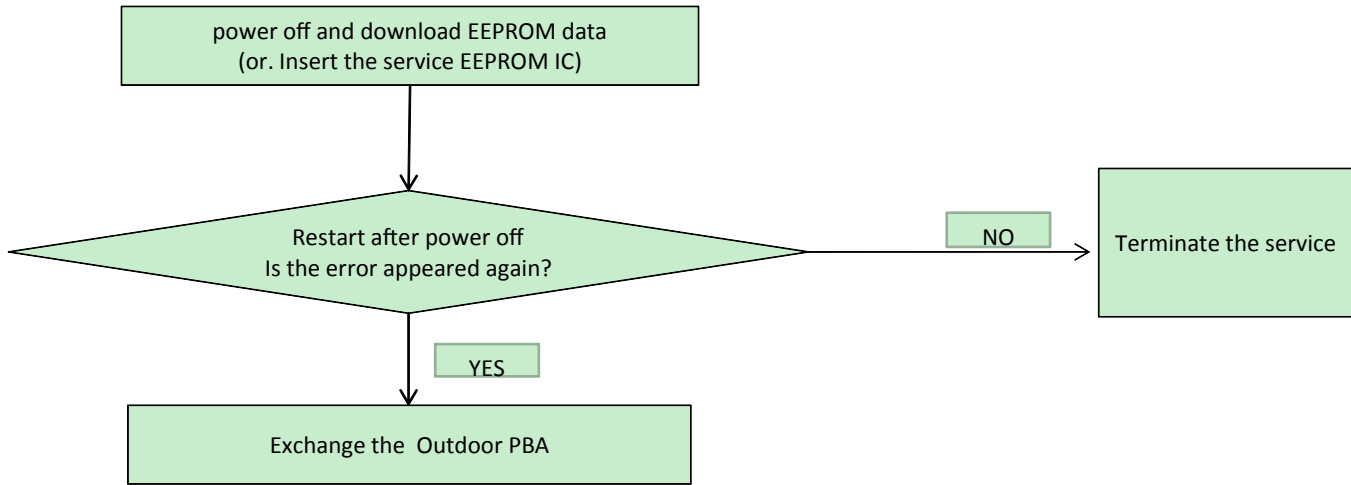


EEPROM error/OTP error

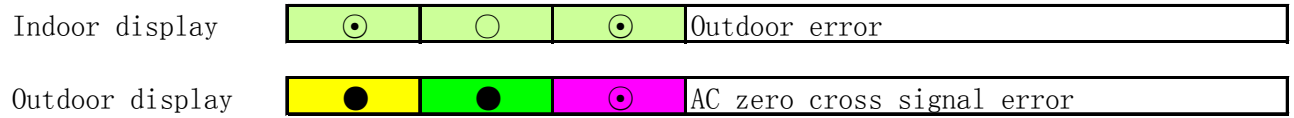
Indoor display				Outdoor error
Outdoor display				EEPROM error
				OTP error

1. Checklist :

- 1) Is there a short around micom?
- 2) Is there a short around IC502 (A*V**PW*) IC202 (A*V**PS*)?
- 3) Did you download or insert EEPROM IC, after changing outdoor PBA?

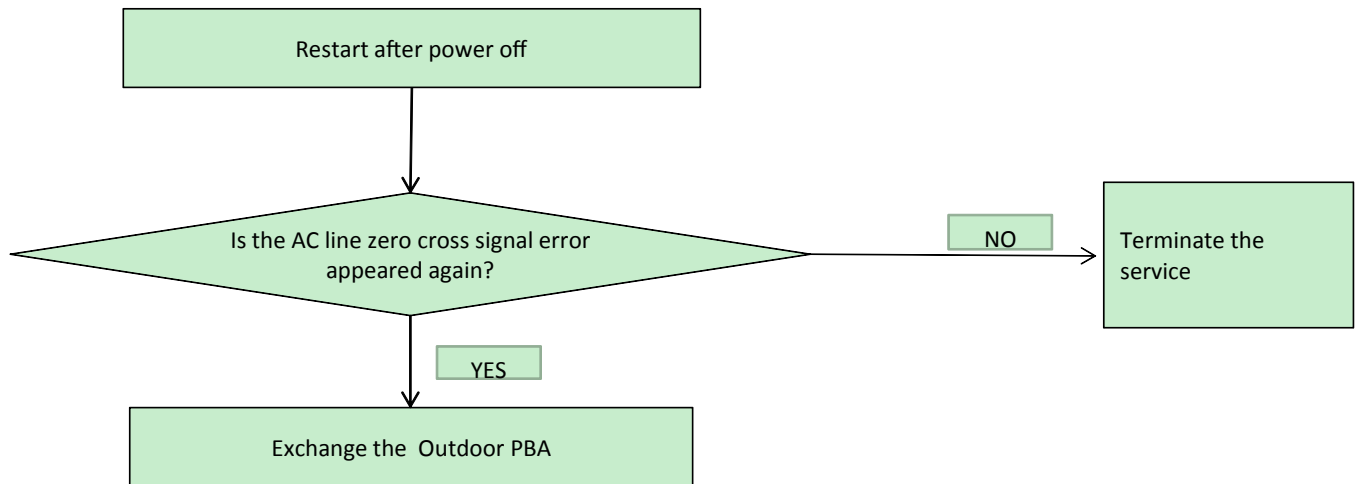


AC zero cross signal error



1. Checklist :

- 1) Check the power condition at customer's house (Is there any power noise?)
- 2) Have been there power failure?



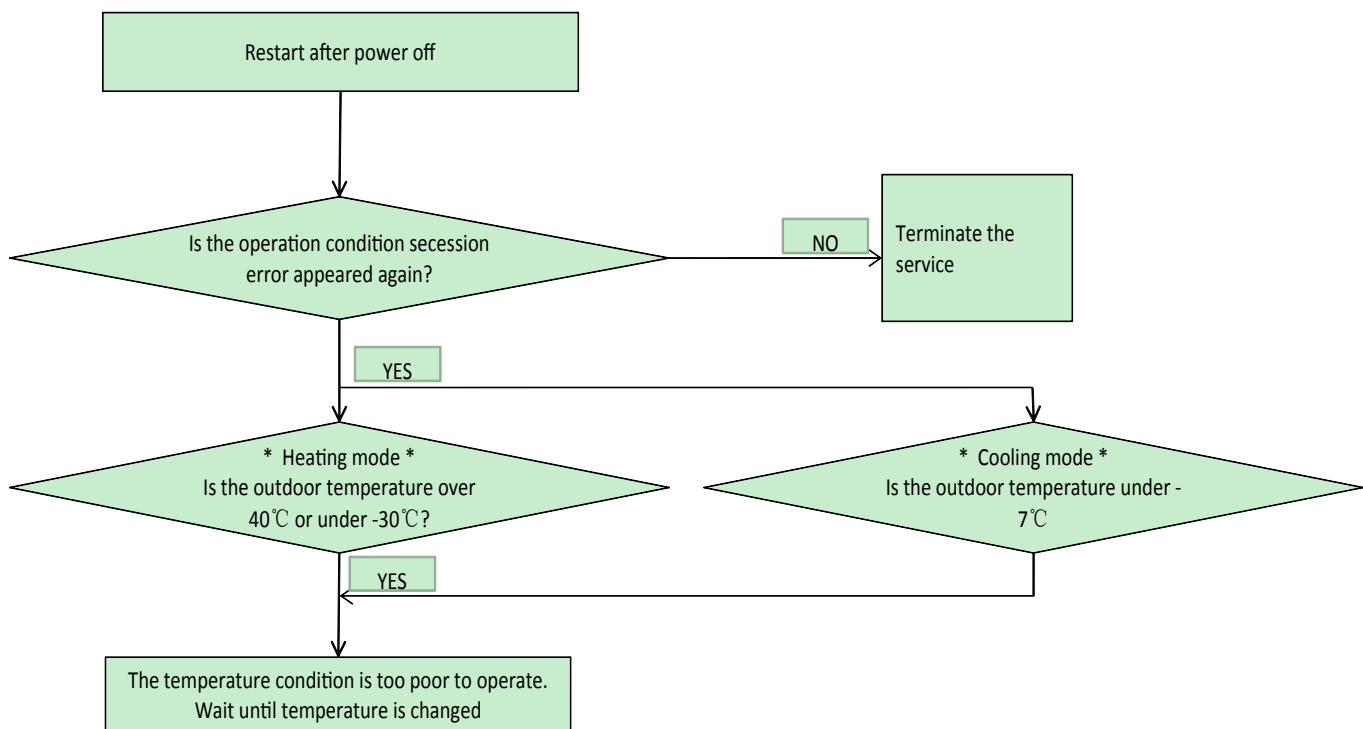
Operation condition secession error (A*V**PSB*)

Indoor display 

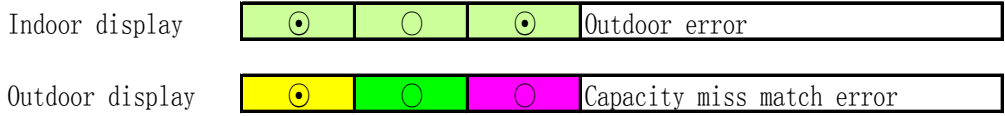
Outdoor display 

1. Checklist :

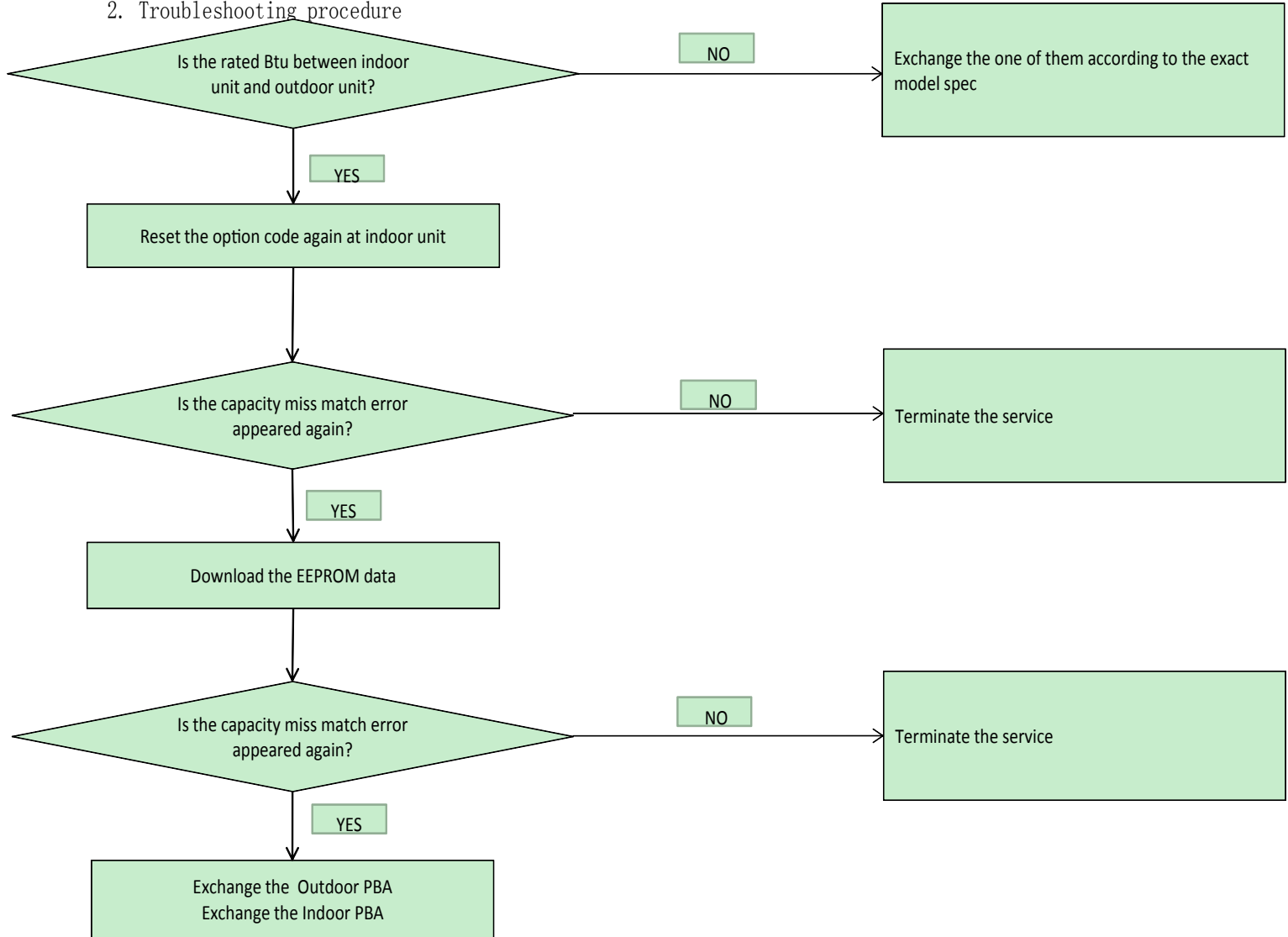
- 1) Check the temperature around the outdoor unit.



Capacity miss match error (A**V**PSB*)



1. Checklist :
 - 1) Check the Btu between indoor and outdoor unit
 - 2) Check the indoor unit option and outdoor unit EEPROM data
2. Troubleshooting procedure



Gas leak error (A*V**PSB*)

Indoor display  Outdoor error

Outdoor display  Gas leak error

1. Checklist :

- 1) Is the position of indoor Eva_in sensor normal?
- 2) Check the pipe crack
- 3) Check the EEV valve connection in Outdoor unit
- 4) Check the refrigerant was charged

2. Troubleshooting procedure



12-4 Main Part Inspection Method

Part	Breakdown Inspection Method			
Room Temperature Sensor	Measure resistance with a tester			
	Normal	At the normal temperature 37kΩ~ 8.3kΩ(-7°C~+30°C)		
	Abnormal	∞, 0Ω . . . Open or Short		
Room Fan Motor	Measure the resistance between terminals of the connector (CN72) with a tester.			
	Normal	At the normal temperature (10°C ~ 30°C)		
		Compare terminal	Resistance	Remark
		Yellow, Blue	404.4Ω ± 10%	Main
Yellow, Red	340Ω ± 10%	Sub		
Abnormal	∞, 0Ω . . . Open or Short			
Stepping Motor	Measure the resistance between the red wire and each terminal wire with a tester.			
	Normal	About 300Ω at the normal temperature (20°C ~ 30°C)		
	Abnormal	∞, 0Ω . . . Open or Short		