



1.2.1.2 Troubleshooting flow

(1) List of troubles

Model FDC71VNX-W

Remote control display	Description of trouble	Reference page
None	Operates but does not cool	71
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(2) Troubleshooting

Error code Remote control: None	LED	Green	Red	Content Operates but does not cool
	Indoor	Keeps flashing	Stays OFF	
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model
2. Error detection method
3. Condition of error displayed
4. Presumable cause
<ul style="list-style-type: none"> • Poor compression of compressor • Faulty expansion valve operation

5. Troubleshooting	
Diagnosis	Countermeasure
<p>Check the indoor fan operation. Check the temperature difference between return and supply air.</p> <pre> graph TD Start[Check indoor fan operation and temperature difference] --> D1{Is the temperature difference between return and supply air 10-20°C at cooling?} D1 -- YES --> D2{Does the heat load increase after installation?} D1 -- NO --> D3{Is the compressor operating?} D2 -- YES --> Box1[Mistake in model selection. Calculate heat load once more.] D2 -- NO --> CM1[It is normal. (This unit is designed to start in the soft start mode by detecting the under dome temperature of compressor when it restart after power reset.)] D3 -- NO --> D4{"⌚ WAIT ⌚" message is displayed (for 3 seconds) when performing cooling, defrost and heating operations from the remote control.} D3 -- YES --> D5{Is the compressor rotation speed low?} D4 -- YES --> CM2[It is necessary to replace to higher capacity one or two install additional unit.] D4 -- NO --> CM3[Compressor may be stopped by the error detection control. For the contents of control, refer to anomalous stop control by controlling compressor rotation speed of microcomputer control functions.] D5 -- NO --> CM4[Inspect the followings. • Minor clogging of filter • Minor clogging of heat exchanger • Minor short-circuit • Minor shortage of refrigerant amount • Poor compression of compressor] D5 -- YES --> Box2[Check which control "Determination control of compressor rotation speed" or "Protective control by controlling compressor rotation speed" is appropriate to this phenomenon.] Box2 --> D6{Are the temperature conditions of room and outdoor air close to the rated conditions? (1)} D6 -- YES --> CM5[Considering appropriate operation control, check suspicious points. Inspect the followings for reference. • Major clogging of filter • Major clogging of heat exchanger • Major short-circuit • Major shortage of refrigerant amount • Compressor protection ON • Indoor fan tap • Valid setting of silent mode] D6 -- NO --> End[The unit is operating normally but is operating under the control for protecting compressor or other respective parts.] </pre>	

Note:

Error code Remote control: None	LED	Green	Red	Content Operates but does not heat
	Indoor	Keeps flashing	Stays OFF	
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model
2. Error detection method
3. Condition of error displayed
4. Presumable cause

- Faulty 4-way valve operation
- Poor compression of compressor
- Faulty expansion valve operation

5. Troubleshooting	
Diagnosis	Countermeasure
<p>Check the indoor fan operation. Check the temperature difference between return and supply air.</p> <p>Is the temperature difference between return and supply air 10-30°C at heating?</p> <p>NO</p> <p>Is the compressor operating?</p> <p>NO</p> <p>“WAIT” message is displayed (for 3 seconds) when performing cooling, defrost and heating operations from the remote control.</p> <p>NO</p> <p>Is the compressor rotation speed low?</p> <p>NO</p> <p>Check which control “Determination control of compressor rotation speed” or “Protective control by controlling compressor rotation speed” is appropriate to this phenomenon.</p> <p>Are the (1) temperature conditions of room and outdoor air close to the rated conditions?</p> <p>NO</p> <p>The unit is operating normally but is operating under the control for protecting compressor or other respective parts.</p>	<p>It is normal. (This unit is designed to start in the soft start mode by detecting the under dome temperature of compressor when it restart after power reset.)</p> <p>It is necessary to replace to higher capacity one or two install additional unit.</p> <p>Compressor refrigerant oil protection control at starting is activated. For the contents of control, refer to the compressor start control of the microcomputer control functions.</p> <p>Compressor may be stopped by the error detection control. For the contents of control, refer to anomalous stop control by controlling compressor rotation speed of microcomputer control functions.</p> <p>Inspect the followings.</p> <ul style="list-style-type: none"> • Minor clogging of filter • Minor clogging of heat exchanger • Minor short-circuit • Minor shortage of refrigerant amount • Poor compression of compressor <p>Considering appropriate operation control, check suspicious points. Inspect the followings for reference.</p> <ul style="list-style-type: none"> • Major clogging of filter • Major clogging of heat exchanger • Major short-circuit • Major shortage of refrigerant amount • Compressor protection ON • Indoor fan tap • Valid setting of silent mode

Note:

Error code Remote control: None	LED	Green	Red	Content Earth leakage breaker activated
	Indoor	Stays OFF	Stays OFF	
	Outdoor	Stays OFF	Stays OFF	

1. Applicable model
2. Error detection method
3. Condition of error displayed
4. Presumable cause
<ul style="list-style-type: none"> • Defective compressor • Noise

5. Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD A{Are OK the insulation resistance and resistance between terminals (1) of compressor? (1)0.722Ω or more at 20°C (Model FDC71VNX-W)} -- NO --> B[Replace compressor.*] A -- YES --> C{Is insulation of respective harnesses OK? Is any harness bitten between pannel and casing or etc?} C -- NO --> D[Secure insulation resistance.] C -- YES --> E[Check the outdoor unit grounding wire/earth leakage breaker.] </pre>	
<p>Check of the outdoor unit grounding wire/earth leakage breaker</p> <p>① Run an independent grounding wire from the grounding screw of outdoor unit to the grounding terminal on the distribution panel. (Do not connect to another grounding wire.)</p> <p>② In order to prevent malfunction of the earth leakage breaker itself, confirm that it is conformed to higher harmonic regulation.</p> <p>* Insulation resistance of compressor</p> <ul style="list-style-type: none"> • Immediately after installation or when the unit has been left for long time without power source, the insulation resistance may drop to a few MΩ because of refrigerant migrated in the compressor. <p>When the earth breaker is activated at lower insulation resistance, check the following points.</p> <p>① Check if the earth leakage breaker is conformed to higher harmonic regulation or not.</p> <p>Since the unit is equipped with inverter, it is necessary to use components conformed to higher harmonic regulation in order to prevent malfunction of earth leakage breaker.</p>	

Note:

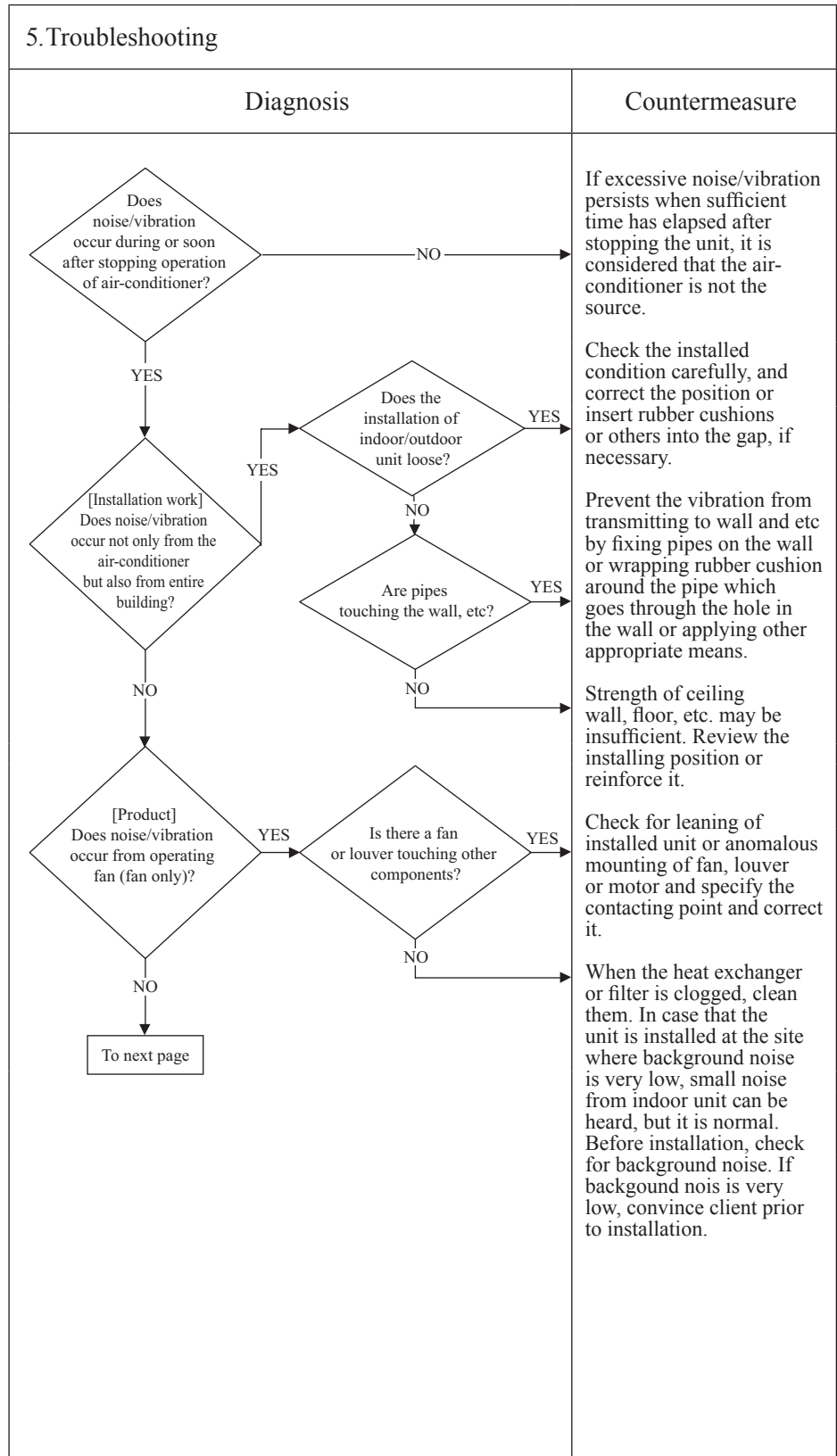
Error code Remote control: None	LED	Green	Red	Content Excessive noise/vibration (1/3)
	Indoor	—	—	
	Outdoor	—	—	

1. Applicable model

2. Error detection method

3. Condition of error displayed

4. Presumable cause
- ① Improper installation work
 - Improper anti-vibration work at installation
 - Insufficient strength of mounting face
 - ② Defective product
 - Before/after shipping from factory
 - ③ Improper adjustment during commissioning
 - Excess/shortage of refrigerant, etc.



Note:

Error code Remote control: None	LED	Green	Red	Content Excessive noise/vibration (2/3)
	Indoor	—	—	
	Outdoor	—	—	

1. Applicable model
2. Error detection method
3. Condition of error displayed
4. Presumable cause

5. Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD Start[From previous page] --> D1{[Unit side] Does noise/vibration occur when the cooling/heating operation is performed normally?} D1 -- NO --> Next[To next page] D1 -- YES --> D2{Are the pipes contacting the casing?} D2 -- YES --> C1[Rearrange the piping to avoid contact with the casing.] D2 -- NO --> D3{Is it heard continuous hissing or roaring sound?} D3 -- YES --> C2[It is noise/vibration that is generated when the refrigerant gas or liquid flow through inside of piping of air-conditioner. It is likely to occur particularly during cooling or defrost operation in the heating mode. It is normal.] D3 -- NO --> D4{Are hissing sounds heard at the startup or stopping?} D4 -- YES --> C3[The noise/vibration occurs when the refrigerant starts or stops flowing. It is normal.] D4 -- NO --> D5{Is blowing sound heard at the start/stop of defrost operation during heating?} D5 -- YES --> C4[When the defrost operation starts or stops during heating, the refrigerant flow is reversed due to switching 4-way valve. This causes a large change in pressure which produces a blowing sound. It may accompany also the hissing sounds as mentioned above. They are normal.] D5 -- NO --> D6{Is cracking noise heard during heating operation?} D6 -- YES --> C5[After the start or stop of heating operation or during defrost operation, abrupt changes in temperature cause resin parts to shrink or expand. This is normal.] D6 -- NO --> D7{Hissing noise is heard during cooling operation or after stopping?} D7 -- YES --> C6[It is the sound produced by the drain pump that discharges drain from the indoor unit. The pump continues to run for 5 minutes after stopping the cooling operation. This is normal.] D7 -- NO --> C7[Apply the damper sealant at places considered to be the sources such as the pressure reducing mechanism (expansion valve), capillary, etc.] </pre>	

Note:

Error code Remote control: None	LED	Green	Red	Content Excessive noise/vibration (3/3)
	Indoor	-	-	
	Outdoor	-	-	

<p>1. Applicable model</p> <p>2. Error detection method</p> <p>3. Condition of error displayed</p> <p>4. Presumable cause</p> 	<p>5. Troubleshooting</p> <table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 50%;">Diagnosis</th> <th style="width: 50%;">Countermeasure</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">From previous page</div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 0 auto;"> <p style="text-align: center;">[Adjustment during commissioning]</p> <p style="text-align: center;">Does noise/vibration occur when the cooling/heating operation is in anomalous condition?</p> </div> <p style="text-align: center;">↓</p> <p style="text-align: center;">YES →</p> </td> <td> <p>If insufficient cooling/heating problem happens due to anomalous operating conditions at cooling/heating, followings are suspicious.</p> <ul style="list-style-type: none"> • Overcharge of refrigerant • Insufficient charge of refrigerant • Intrusion of air, nitrogen, etc. <p>In such occasion, it is necessary to recover refrigerant, vacuum-dry and recharge refrigerant.</p> <p>* Since there could be many causes of noise/vibration, the above do not cover all. In such case, check the conditions when, where, how the noise/vibration occurs according to following check point.</p> <ul style="list-style-type: none"> • Indoor/outdoor unit • Cooling/heating/fan mode • Startup/stop/during operation • Operating condition (Indoor/outdoor air temperatures, pressure) • Time it occurred • Operation data retained by the remote control such as compressor rotation speed, heat exchanger temperature, EEV opening degree, etc. • Tone (If available, record the noise) • Any other anomalies </td> </tr> </tbody> </table>	Diagnosis	Countermeasure	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">From previous page</div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 0 auto;"> <p style="text-align: center;">[Adjustment during commissioning]</p> <p style="text-align: center;">Does noise/vibration occur when the cooling/heating operation is in anomalous condition?</p> </div> <p style="text-align: center;">↓</p> <p style="text-align: center;">YES →</p>	<p>If insufficient cooling/heating problem happens due to anomalous operating conditions at cooling/heating, followings are suspicious.</p> <ul style="list-style-type: none"> • Overcharge of refrigerant • Insufficient charge of refrigerant • Intrusion of air, nitrogen, etc. <p>In such occasion, it is necessary to recover refrigerant, vacuum-dry and recharge refrigerant.</p> <p>* Since there could be many causes of noise/vibration, the above do not cover all. In such case, check the conditions when, where, how the noise/vibration occurs according to following check point.</p> <ul style="list-style-type: none"> • Indoor/outdoor unit • Cooling/heating/fan mode • Startup/stop/during operation • Operating condition (Indoor/outdoor air temperatures, pressure) • Time it occurred • Operation data retained by the remote control such as compressor rotation speed, heat exchanger temperature, EEV opening degree, etc. • Tone (If available, record the noise) • Any other anomalies
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Note:

Error code Remote control: None	LED	Green	Red	Content Louver motor failure
	Indoor	Keeps flashing	Stays OFF	
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model
FDT, FDTC, FDE series

2. Error detection method

3. Condition of error displayed

4. Presumable cause
<ul style="list-style-type: none"> • Defective LM • LM wire breakage • Faulty indoor unit control PCB

5. Troubleshooting	
Diagnosis	Countermeasure
<p>▲ Check at the indoor unit side.</p> <pre> graph TD Start[Operate after waiting for more than 1 minute.] --> Q1{Does the louver operate at the power on?} Q1 -- NO --> Q2{Is LM wiring broken?} Q2 -- YES --> C1[Repair wiring.] Q2 -- NO --> Q3{Is LM locked?} Q3 -- NO --> C2[Defective indoor unit control PCB → Replace.] Q3 -- YES --> C3[Replace LM.] Q1 -- YES --> Q4{Is the louver operable with the remote control?} Q4 -- YES --> C4[Normal] Q4 -- NO --> C5[Adjust LM lever and then check again.] </pre> <p style="text-align: center;">LM: louver motor</p>	

Note:

Error code Remote control: None	LED	Green	Red	Content Power source system error (Power source to indoor unit control PCB)
	Indoor	Stays OFF	Stays OFF	
	Outdoor	Keeps flashing	2-time flash	

1. Applicable model
2. Error detection method
3. Condition of error displayed
4. Presumable cause <ul style="list-style-type: none"> • Misconnection or breakage of connecting wires • Blown fuse • Faulty transformer • Faulty indoor unit control PCB • Broken harness • Faulty outdoor unit control PCB (Noise filter)

5. Troubleshooting	
Diagnosis	Countermeasure
	Defective outdoor unit control PCB (Noise filter). → Replace. Misconnection or breakage of connecting wires. Defective indoor unit control PCB → Replace. Replace FM, LM, etc. Replace fuse. Defective indoor unit control PCB → Replace. Open JX1. Defective indoor unit control PCB → Replace.

Note:

Error code Remote control: None	LED	Green	Red	Content Power source system error (Power source to remote control)
	Indoor	Keeps flashing	Stays OFF	
	Outdoor	Keeps flashing	2-time flash	

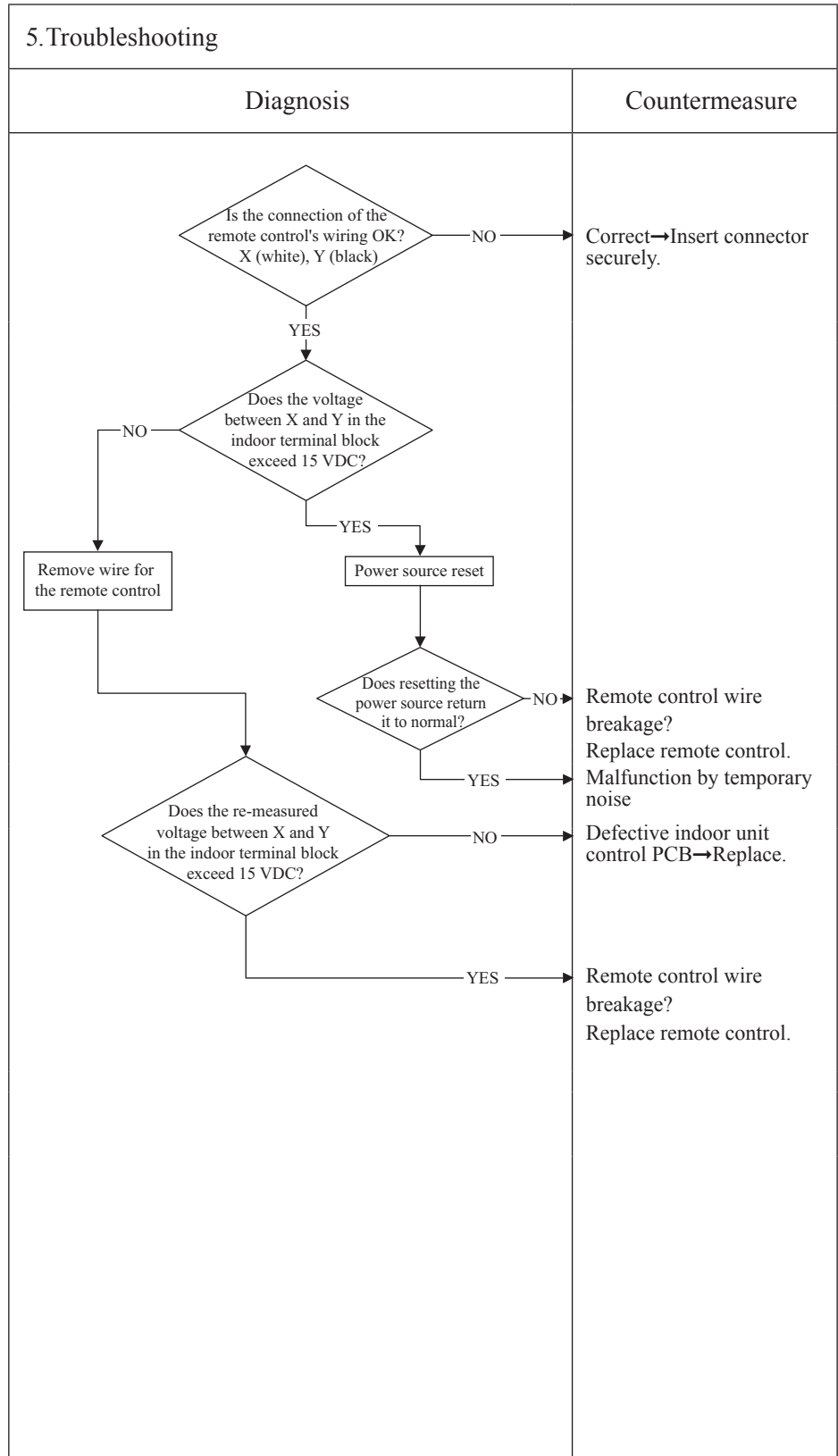
1. Applicable model

2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Remote control wire breakage/short-circuit
- Defective remote control
- Malfunction by noise
- Broken harness
- Faulty indoor unit control PCB



Note:

Error code Remote control: INSPECT I/U	LED	Green	Red	Content INSPECT I/U (When 1 or 2 remote controls are connected)
	Indoor	Keeps flashing	Stays OFF	
	Outdoor	Keeps flashing	2-time flash	

1. Applicable model
2. Error detection method Communication between indoor unit and remote control is disabled for more than 30 minutes after the power on.
3. Condition of error displayed Same as above
4. Presumable cause <ul style="list-style-type: none"> • Improper setting • Surrounding environment • Defective remote control communication circuit • Faulty indoor unit control PCB

5. Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD Q1{Are 2 units of remote control connected?} Q1 -- YES --> S1[Set one remote control for "Master" and the other for "Slave"] S1 --> Q2{Does it become normal?} Q2 -- YES --> C1[Normal] Q2 -- NO --> Q3{Do more than one indoor units have the same address?} Q3 -- YES --> C2[Set address again. (SW2 on indoor unit control PCB)] Q3 -- NO --> Q4{Are remote control wires laid along high voltage wires?} Q4 -- YES --> C3[Separate remote control wires from high voltage wires.] Q4 -- NO --> S2[Disconnect the connecting wire ③ between the indoor and outdoor unit.] S2 --> S3[Power source reset] S3 --> Q5{Does DM start 60 seconds later automatically?} Q5 -- YES --> C4[Defective indoor unit control PCB → Replace.] Q5 -- NO --> C5[Defective remote control → Change.] </pre>	

Note: If any error is detected 30 minutes after displaying “WAIT” on the remote control, the display changes to “INSPECT I/U”.

Error code Remote control: INSPECT I/U	LED	Green	Red	Content INSPECT I/U (Connection of 3 units or more remote controls)
	Indoor	Keeps flashing	Stays OFF	
	Outdoor	Keeps flashing	2-time flash	

1. Applicable model
2. Error detection method
Indoor unit cannot communicate for more than 30 minutes after the power on with remote control.
3. Condition of error displayed
Same as above
4. Presumable cause
<ul style="list-style-type: none"> • Improper setting • Surrounding environment • Defective remote control communication circuit • Faulty indoor unit control PCB • Faulty outdoor unit control PCB

5. Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD Q1{Are more than 3 units of remote control connected?} -- YES --> C1[Reduce to 2 units or less.] Q1 -- NO --> Q2{Does remote control display "Slave"?} Q2 -- YES --> C2[Change remote control setting to "Master". (SW1 on remote control PCB)] Q2 -- NO --> Q3{Do more than one indoor units have the same address?} Q3 -- YES --> C3[Change address. (SW2 on indoor unit control PCB)] Q3 -- NO --> Q4{Is it set to a slave indoor unit? (SW5-1, 2)} Q4 -- YES --> C4[Change to master. (SW5-1, 2 on indoor unit control PCB)] Q4 -- NO --> Q5{Is there loose or wrong connection at the terminal of wiring between indoor and outdoor units?} Q5 -- YES --> C5[Correct.] Q5 -- NO --> Q6{Is the grounding wire connected properly?} Q6 -- YES --> Q7{Is approx. DC20V detected between ②-③ on the outdoor unit terminal block?} Q6 -- NO --> C6[Correct.] Q7 -- NO --> C7[Defective outdoor unit control PCB → Replace.] Q7 -- YES --> Q8{Is approx. DC20V detected between ②-③ on the indoor unit terminal block?} Q8 -- NO --> C8[Broken connecting wire → Correct.] Q8 -- YES --> C9[Defective indoor unit control PCB → Replace.] </pre>	<p>Reduce to 2 units or less.</p> <p>Change remote control setting to “Master”. (SW1 on remote control PCB)</p> <p>Change address. (SW2 on indoor unit control PCB)</p> <p>Change to master. (SW5-1, 2 on indoor unit control PCB)</p> <p>Correct.</p> <p>Correct.</p> <p>Defective outdoor unit control PCB → Replace.</p> <p>Broken connecting wire → Correct.</p> <p>Defective indoor unit control PCB → Replace.</p>

Note: If any error is detected 30 minutes after displaying “WAIT” on the remote control, the display changes to “INSPECT I/U”.

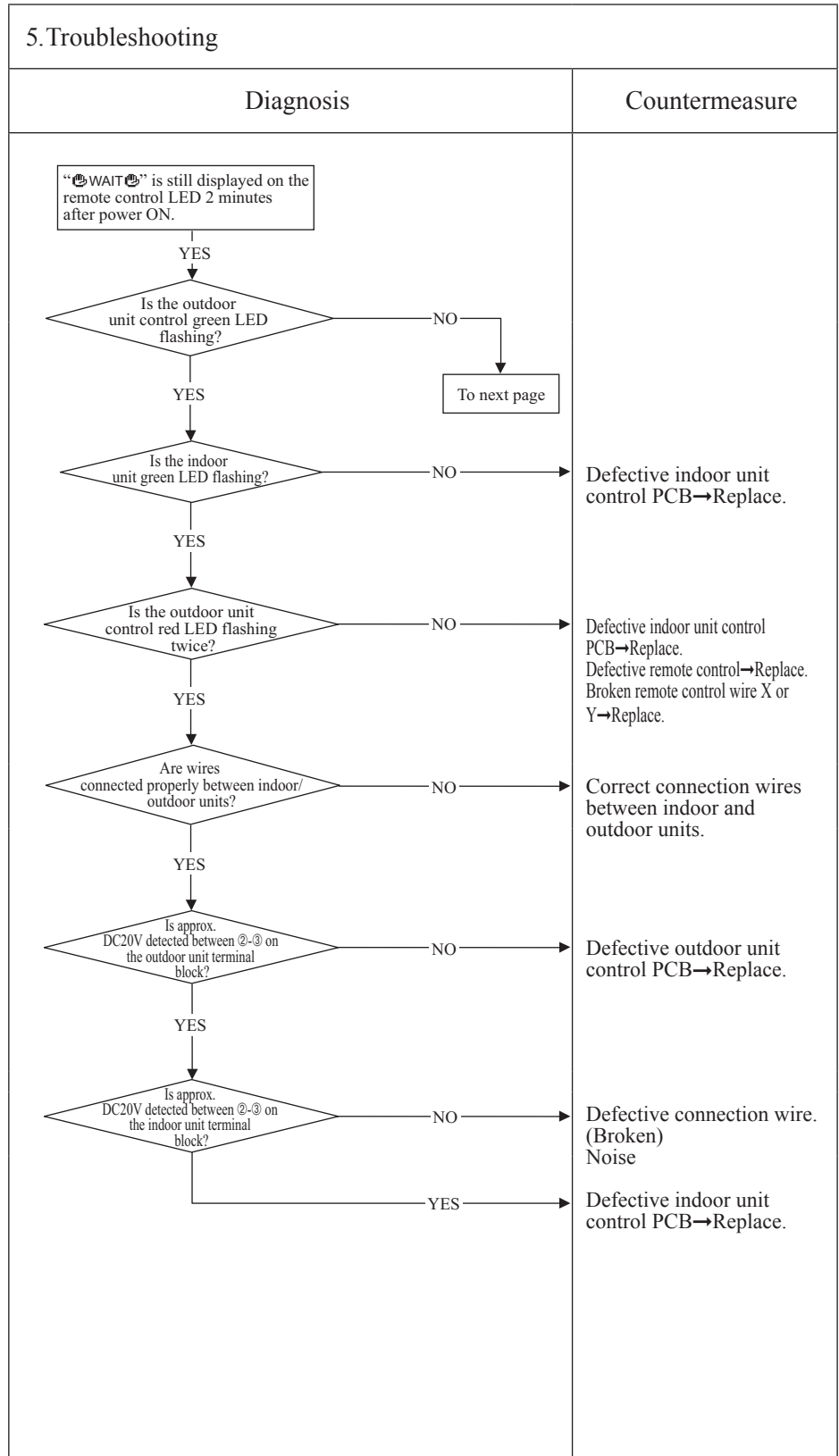
Error code Remote control: 🟡WAIT🟡	LED	Green	Red	Content Communication error at initial operation (1/3)
	Indoor	Keeps flashing	Stays OFF	
	Outdoor	Keeps flashing	2-time flash	

1. Applicable model

2. Error detection method

3. Condition of error displayed

4. Presumable cause
- Faulty indoor unit control PCB
 - Defective remote control
 - Broken remote control wire
 - Faulty outdoor unit control PCB
 - Broken connection wires



Note:

Error code Remote control: WAIT	LED	Green	Red	Content Communication error at initial operation (2/3)
	Indoor	Keeps flashing	Stays OFF	
	Outdoor	Keeps flashing	2-time flash	

1. Applicable model
2. Error detection method
3. Condition of error displayed
4. Presumable cause

- Faulty noise filter
- Faulty indoor unit control PCB
- Faulty outdoor unit control PCB
- Faulty inverter PCB
- Faulty fan motor

5. Troubleshooting	Diagnosis	Countermeasure
	<p>Diagnosis for when the outdoor unit control PCB LED is turned off</p> <pre> graph TD Start[From previous page] --> Step1[Shut down the breaker and back on again the breaker 3 minutes later.] Step1 --> Dec1{Does it reset normally?} Dec1 -- YES --> C1[Normal. (Malfunction by noise)] Dec1 -- NO --> Dec2{Is the outdoor unit control power source fuse (71:20A) blown?} Dec2 -- YES --> Note1[Note (1) 1-phase model only] Note1 --> Step2[To check method for inverter PCB before replacment of blown power source fuse.] Step2 --> Dec3{Is AC220/240V or AC380/415V detected at the noise filter secondary side?} Dec3 -- NO --> C2[Replace noise filter.] Dec3 -- YES --> Dec4{Is DC255-310V detected at CNA2?} Dec4 -- NO --> C3[Check connection of diode stack and electrolytic capacitor by refering main electrical circuit diagram] Dec4 -- YES --> Dec5{Is fuse [250V, 2A] on the outdoor unit control PCB blown?} Dec5 -- YES --> C4[Defective outdoor unit control PCB→Replace.] Dec5 -- NO --> Dec6{Is DC5V detected on the outdoor unit control PCB (Between ①-④ of CNV)?} Dec6 -- NO --> C5[Defective outdoor unit control PCB→Replace.] Dec6 -- YES --> Dec7{Is DC5V detected if the connector of outdoor fan motor is disconnected?} Dec7 -- NO --> C6[Defective outdoor fan motor] Dec7 -- YES --> Dec8{Is DC5V detected if the inverter power source connector (CN12) is disconnected?} Dec8 -- NO --> C7[Defective inverter PCB →Replace.] Dec8 -- YES --> C8[Defective outdoor unit control PCB→Replace.] </pre>	

Note:

Error code Remote control: 🏠 WAIT 🏠	LED	Green	Red	Content Communication error at initial operation (3/3)
	Indoor	Keeps flashing	Stays OFF	
	Outdoor	Keeps flashing	2-time flash	

1. Applicable model

2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Blown fuse
- Faulty noise filter
- Faulty inverter PCB
- Faulty reactor
- Faulty electrolytic capacitor

5. Troubleshooting

Diagnosis	Countermeasure
<p>Method to check for inverter PCB before replacement of blown power source fuse.</p> <pre> graph TD Start([From previous page]) --> D1{Is there a short-circuit between phases of the noise filter?} D1 -- YES --> C1[Replace the noise filter.] D1 -- NO --> D2{Is there a short-circuit between phases of inverter PCB input terminals?} D2 -- YES --> C2[Replace the inverter PCB.] D2 -- NO --> D3{Is there any crack, burning on the power transistor module?} D3 -- YES --> C2 D3 -- NO --> D4{Is the reactor OK?} D4 -- NO --> C3[Replace the reactor.] D4 -- YES --> D5{Is the electrolytic capacitor OK?} D5 -- NO --> C4[Replace the electrolytic capacitor.] D5 -- YES --> C5[Replace the power source fuse.] </pre>	

Note:

Error code Remote control: None	LED	Green	Red	Content No display
	Indoor	Stays OFF	Stays OFF	
	Outdoor	Stays OFF	Stays OFF	

1. Applicable model	5. Troubleshooting		
	Diagnosis	Countermeasure	
2. Error detection method	<pre> graph TD Start[Remote control does not display anything after the power on.] --> D1{Is DC10V or higher detected at remote control connection terminals?} D1 -- YES --> C1[Defective remote control] D1 -- NO --> D2{Is DC10V or higher detected on remote control wires if the remote control is removed?} D2 -- YES --> C2[Defective remote control] D2 -- NO --> D3{Are wires connected properly between the indoor/outdoor units?} D3 -- NO --> C3[Defective connecting wire Defective remote control wire (Short-circuit, etc.)] D3 -- YES --> C4[Defective indoor unit control PCB -> Replace.] </pre>		
3. Condition of error displayed			
4. Presumable cause	<ul style="list-style-type: none"> • Faulty indoor unit control PCB • Defective remote control • Broken remote control wire 		

Note:

Error code Remote control: E1	LED	Green	Red	Content
	Indoor	Keeps flashing	Stays OFF	
	Outdoor	Keeps flashing	Stays OFF	

Remote control communication circuit error

1. Applicable model
2. Error detection method
When normal communication between the remote control and the indoor unit is interrupted for more than 2 minutes. (Detectable only with the remote control)
3. Condition of error displayed
Same as above
4. Presumable cause
<ul style="list-style-type: none"> • Defective communication circuit between remote control-indoor unit • Noise • Defective remote control • Faulty indoor unit control PCB

5. Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD A{Is it possible to reset normally by the power reset?} -- YES --> B[Malfunction by noise Check peripheral environment.] A -- NO --> C[Turn SW7-1 to OFF → ON. Remove the wire ③ connecting between indoor/outdoor units.] C --> D[Power source reset] D --> E{Does the drain pump restart automatically 1 minute later? (1)} E -- YES --> F[Defective indoor unit control PCB → Replace.] E -- NO --> G[Connect the wire ③ connecting between indoor/outdoor units.] G --> H[Move to E5. (Communication error during operation) Check.] </pre>	

Note: If the indoor unit cannot communicate normally with the remote control for 180 seconds, the indoor unit PCB starts to reset automatically.

Error code Remote control: E5	LED	Green	Red	Content Communication error during operation
	Indoor	Keeps flashing	2-time flash	
	Outdoor	Keeps flashing	See below	

1. Applicable model
2. Error detection method
When normal communication between indoor and outdoor unit is interrupted for more than 2 minutes.
3. Condition of error displayed
Same as above is detected during operation.
4. Presumable cause
<ul style="list-style-type: none"> • Unit No. setting error • Broken remote control wire • Faulty remote control wire connection • Faulty outdoor unit control PCB

5. Troubleshooting	
Diagnosis	Countermeasure
<p>● In case that the outdoor unit red LED flashes 2-time</p> <p>Note (1) Inspect faulty connections (disconnection, looseness) on the outdoor unit terminal block.</p> <p>Is the connection of signal wires at the outdoor unit side OK?</p> <p>NO → Repair signal wires.</p> <p>YES</p> <p>Note (2) Check for faulty connection or breakage of signal wires between indoor-outdoor units.</p> <p>Is the connection of signal wires between indoor-outdoor units OK?</p> <p>NO → Repair signal wires.</p> <p>YES</p> <p>Power source reset</p> <p>Has the remote control LCD returned to normal state?</p> <p>NO → To the diagnosis of “WAIT”.</p> <p>YES → Unit is normal. (Malfunction by temporary noise, etc.)</p> <p>● In case that the outdoor unit red LED stays OFF</p> <p>Power source reset</p> <p>Has the remote control LCD returned to normal state?</p> <p>NO → Defective outdoor unit PCB (Defective network communication circuit) → Replace.</p> <p>YES → Unit is normal. (Malfunction by temporary noise, etc.)</p>	

Note: Pressing the pump-down switch cancels communications between indoor and outdoor unit so that “communication error-E5” is displayed on indoor unit and remote control, but it is normal.

Error code Remote control: E6	LED	Green	Red	Content Indoor heat exchanger temperature sensor anomaly
	Indoor	Keeps flashing	1-time flash	
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

2. Error detection method

Anomalously low temperature or high temperature (resistance) is detected on the indoor heat exchanger temperature sensor (Thi-R1, R2 or R3).

3. Condition of error displayed

- When the temperature sensor detects -50°C or lower for 5 seconds continuously, the compressor stops. After 3-minute delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.
- Or if 70°C or higher is detected for 5 seconds continuously.

4. Presumable cause

- Defective indoor heat exchanger temperature sensor connector
- Indoor heat exchanger temperature sensor anomaly
- Faulty indoor unit control PCB

5. Troubleshooting

Diagnosis	Countermeasure
<p>Is the connection of indoor heat exchanger temperature sensor connector OK?</p> <p>NO →</p> <p>YES →</p> <p>Are characteristics of indoor heat exchanger temperature sensor OK?</p> <p>NO →</p> <p>YES →</p>	<p>Correct. → Insert connector securely.</p> <p>Defective indoor heat exchanger temperature sensor → Replace.</p> <p>Defective indoor unit control PCB → Replace. (Defective indoor heat exchanger temperature sensor input circuit)</p>
<p>Temperature-resistance characteristic</p> <p>(Broken wire)</p> <p>Temperature sensor resistance (kΩ)</p> <p>5kΩ at 25°C</p> <p>Temperature (°C)</p> <p>(Short-circuit)</p>	

Note:

Error code Remote control: E7	LED	Green	Red	Content Return air temperature sensor anomaly
	Indoor	Keeps flashing	1-time flash	
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

2. Error detection method

Anomalously low temperature or high temperature (resistance) is detected by indoor return air temperature sensor (Thi-A)

3. Condition of error displayed

- When the temperature sensor detects -50°C or lower for 5 seconds continuously, the compressor stops. After 3-minute delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.

4. Presumable cause

- Defective return air temperature sensor connector
- Defective return air temperature sensor
- Faulty indoor unit control PCB

5. Troubleshooting

Diagnosis	Countermeasure
<p>Is the connection of return air temperature sensor connector OK?</p> <p>NO →</p> <p>YES →</p> <p>Are the characteristics of return air temperature sensor OK?</p> <p>NO →</p> <p>YES →</p>	<p>Correct. → Connect connector.</p> <p>Defective return air temperature sensor → Replace.</p> <p>Defective indoor unit control PCB → Replace. (Defective return air temperature sensor input circuit)</p>

Temperature-resistance characteristic

Temperature (°C)	Temperature sensor resistance (kΩ)
0	~16
10	~11
20	~7
25	5
30	~4
40	~3
50	~2

Note:

Error code Remote control: E8	LED	Green	Red	Content Heating overload operation
	Indoor	Keeps flashing	1-time flash	
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

2. Error detection method
Indoor heat exchanger temperature sensor (Thi-R1, R2, R3)

3. Condition of error displayed
When it is detected 5 times within 60 minutes from initial detection or when the overload condition is detected for 6 minutes continuously.

- 4. Presumable cause**
- Clogged air filter
 - Defective indoor heat exchanger temperature sensor connector
 - Defective indoor heat exchanger temperature sensor
 - Anomalous refrigerant system

5. Troubleshooting

Diagnosis	Countermeasure
<pre> graph TD Q1{Is the air filter clogged?} -- YES --> C1[Wash.] Q1 -- NO --> Q2{Is the indoor heat exchanger temperature sensor connection OK?} Q2 -- NO --> C2[Defective indoor heat exchanger temperature sensor connector → Correct.] Q2 -- YES --> Q3{Are the characteristics of indoor heat exchanger temperature sensor OK? (2)} Q3 -- NO --> C3[Defective indoor heat exchanger temperature sensor → Replace.] Q3 -- YES --> R1[Check the error data with the remote control.] R1 --> Q4{Is the unit operating in the state of heating overload?} Q4 -- NO --> C4[Check refrigerant system.] Q4 -- YES --> C5[Adjust.] </pre>	
<p>Note (1) Judge if it is in the state of overload or not as follows.</p> <ul style="list-style-type: none"> • Is there any short-circuit of air? • Isn't there any fouling or clogging on the indoor heat exchanger? • Is the outdoor fan control normal? • Isn't the room and outdoor air temperature too high? <p>Note (2) For characteristics of indoor heat exchanger temperature sensor, see the error display E6.</p> <p>The graph shows a horizontal line representing indoor heat exchanger temperature. A vertical line at 56°C is labeled 'Reset'. A vertical line at 63°C is labeled 'Error stop'. The x-axis is labeled 'Indoor heat exchanger temperature (°C)'.</p>	

Note: During heating operation; After starting compressor, compressor rotation speed is decreased by detecting indoor heat exchanger temperature (Thi-R) in order to control high pressure.

Error code Remote control: E9	LED	Green	Red	Content	Drain trouble
	Indoor	Keeps flashing	1-time flash		
	Outdoor	Keeps flashing	Stays OFF		

1. Applicable model
FDT, FDTC, FDU, FDUM series
2. Error detection method
Float switch is activated
3. Condition of error displayed
If the float switch OPEN is detected for 3 seconds continuously or if float switch connector or wire is disconnected.
4. Presumable cause
<ul style="list-style-type: none"> • Defective indoor unit control PCB • Float switch setting error • Humidifier drain pump motor interlock setting error • Option equipment setting error • Drain piping error • Defective drain pump motor • Disconnection of drain pump motor wiring

5. Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD Start[Check the error data in the remote control.] --> Q1{Is there any overflow?} Q1 -- NO --> Q2{Is DC12V at CNI connector?} Q2 -- YES --> C1[Check float switch.] Q2 -- NO --> Q3{Is the CNI connected firmly?} Q3 -- NO --> C2[Defective indoor unit control PCB → Replace.] Q3 -- YES --> Q4{Is there any anomaly on the option equipment?} Q4 -- NO --> C3[Defective indoor unit control PCB → Replace.] Q4 -- YES --> C4[Check option equipment.] Q1 -- YES --> Q5{Is the humidifier connected?} Q5 -- YES --> Q6{Is the humidifier drain pump motor interlocked by the indoor unit function setting of remote control?} Q6 -- YES --> C5[Correct setting to "Humidifier drain pump motor interlock".] Q6 -- NO --> C6[Correct setting to "Humidifier drain pump motor interlock".] Q5 -- NO --> C6 Q6 --> Start2[Drain pump motor ON from the remote control] Start2 --> Q7{Does drain pump motor operate?} Q7 -- NO --> Q8{Is DC12V detected at CNR connector?} Q8 -- NO --> C7[Defective indoor unit control PCB → Replace.] Q8 -- YES --> C8[Check wiring of drain pump motor.] Q7 -- YES --> Q9{Is the drain piping unclogged? Is the drain pipe slope OK?} Q9 -- NO --> C9[Correct.] Q9 -- YES --> C10[Check drain pump motor.] </pre>	

Note: When this error occurred at power ON, disconnection of wire or connector of the float switch is suspected. Check and correct it (or replace it, if necessary).

Error code Remote control: E10	LED	Green	Red	Content Excessive number of connected indoor units (more than 17 units) by controlling with one remote control
	Indoor	Keeps flashing	Stays OFF	
	Outdoor	Keeps flashing	Stays OFF	

<p>1. Applicable model</p>	<p>5. Troubleshooting</p> <table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 50%;">Diagnosis</th> <th style="width: 50%;">Countermeasure</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"> <pre> graph TD A{Are more than 17 indoor units connected to one remote control?} -- NO --> B[Defective remote control -> Replace.] A -- YES --> C[Reduce to 16 or less units.] </pre> </td> <td></td> </tr> </tbody> </table>		Diagnosis	Countermeasure	<pre> graph TD A{Are more than 17 indoor units connected to one remote control?} -- NO --> B[Defective remote control -> Replace.] A -- YES --> C[Reduce to 16 or less units.] </pre>	
Diagnosis	Countermeasure					
<pre> graph TD A{Are more than 17 indoor units connected to one remote control?} -- NO --> B[Defective remote control -> Replace.] A -- YES --> C[Reduce to 16 or less units.] </pre>						
<p>2. Error detection method</p> <p>When it detects more than 17 of indoor units connected to one remote control</p>						
<p>3. Condition of error displayed</p> <p>Same as above</p>						
<p>4. Presumable cause</p> <ul style="list-style-type: none"> • Excessive number of indoor units connected • Defective remote control 						

Note:

Error code Remote control: E11	LED	Green	Red	Content Address setting error of indoor units
	Indoor	Keeps flashing	Stays OFF	
	Outdoor	Keeps flashing	Stays OFF	

<p>1. Applicable model</p>	<p>5. Troubleshooting</p>	
<p>2. Error detection method</p> <p>IU address has been set using the “Master IU address set” function of remote control.</p>	<p>Diagnosis</p>	<p>Countermeasure</p> <p>Change of address setting method Set the address by DIP switch SW2 on indoor unit control PCB.</p>
<p>3. Condition of error displayed</p> <p>Same as above</p>		
<p>4. Presumable cause</p> <p>Mistake of address setting method (Address setting from remote control can't be done)</p>		

Note:

Error code Remote control: E14	LED	Green	Red	Content Communication error between master and slave indoor units
	Indoor	Keeps flashing	3-time flash	
	Outdoor	Keeps flashing	Stays Off	

1. Applicable model

2. Error detection method

When communication error between master and slave indoor units occurs

3. Condition of error displayed

Same as above

4. Presumable cause

- Unit address setting error
- Broken remote control wire
- Defective remote control wire connection
- Defective indoor unit control PCB

5. Troubleshooting

Diagnosis	Countermeasure																	
<pre> graph TD D1{Is it OK the unit address setting for master and slave indoor units?} D2{Is the remote control wiring between indoor units defective?} D3{Is it restored by resetting the power source?} D1 -- NO --> C1[Correct unit address setting.] D1 -- YES --> D2 D2 -- YES --> C2[Correct wiring.] D2 -- NO --> D3 D3 -- NO --> C3[Defective indoor unit control PCB -> Replace.] D3 -- YES --> C4["• Malfunction by noise • Check surrounding environment."] </pre>																		
<p>Note (1) Set DIP switches SW5-1 and SW5-2 as shown in the following table. (Factory default setting – “Master”)</p> <table border="1"> <thead> <tr> <th colspan="2" rowspan="2"></th> <th colspan="3">Indoor unit</th> </tr> <tr> <th>Master</th> <th>Slave-a</th> <th>Slave-b</th> </tr> </thead> <tbody> <tr> <th rowspan="2">DIP switch</th> <th>SW5-1</th> <td>OFF</td> <td>OFF</td> <td>ON</td> </tr> <tr> <th>SW5-2</th> <td>OFF</td> <td>ON</td> <td>OFF</td> </tr> </tbody> </table>				Indoor unit			Master	Slave-a	Slave-b	DIP switch	SW5-1	OFF	OFF	ON	SW5-2	OFF	ON	OFF
				Indoor unit														
		Master	Slave-a	Slave-b														
DIP switch	SW5-1	OFF	OFF	ON														
	SW5-2	OFF	ON	OFF														

Note:

Error code Remote control: E16	LED	Green	Red	Content Indoor fan motor anomaly
	Indoor	Keeps flashing	1-time flash	
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

2. Error detection method

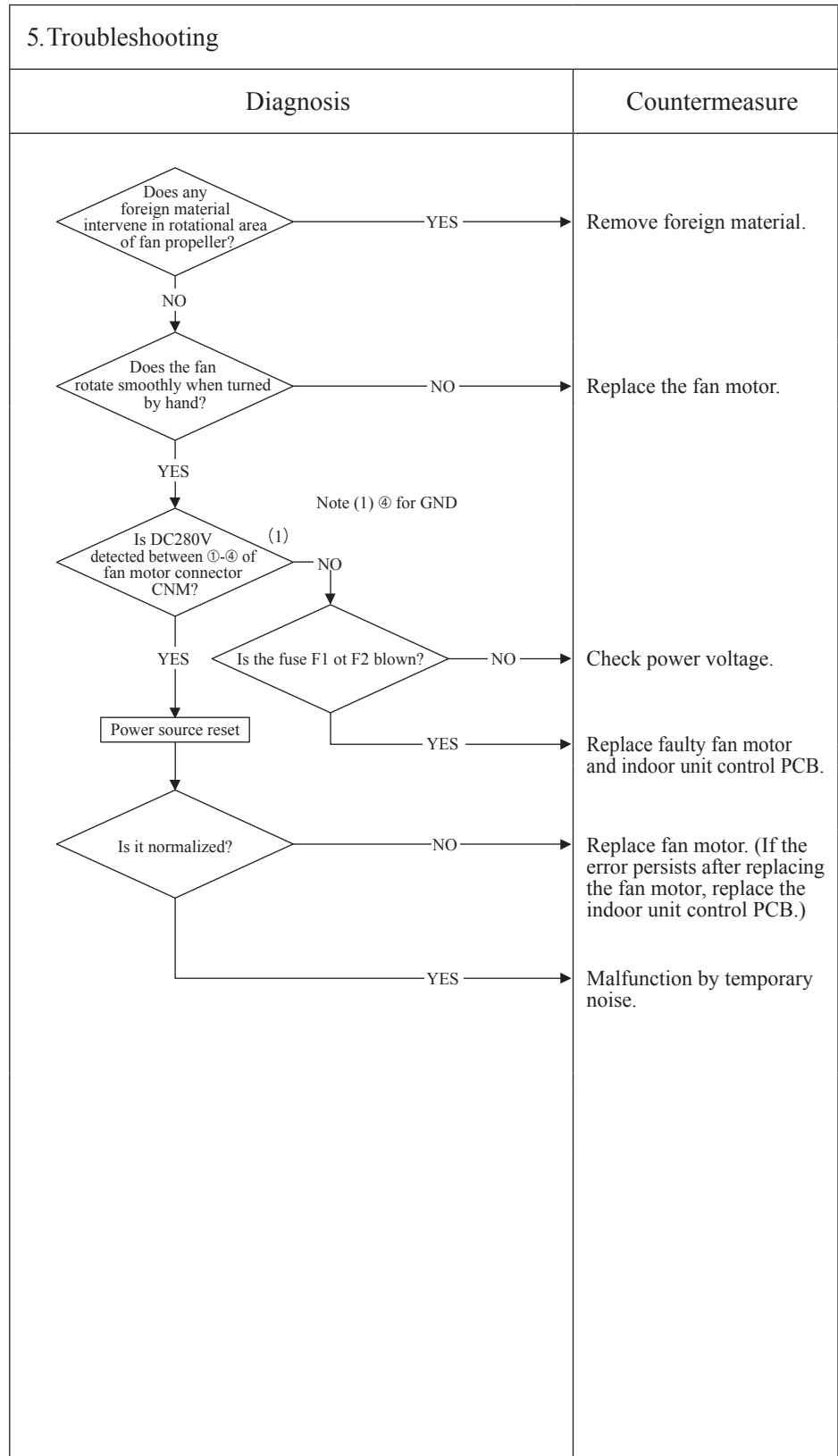
Detected by rotation speed of indoor fan motor

3. Condition of error displayed

- When actual rotation speed of indoor fan motor drops to lower than 200min^{-1} for 30 seconds continuously, the compressor and the indoor fan motor stop.
- After 2-seconds, it starts again automatically, but if this error occurs 4 times within 60 minutes after the initial detection.

4. Presumable cause

- Defective indoor unit control PCB
- Foreign material at rotational area of fan propeller
- Defective fan motor
- Dust on indoor unit control PCB
- Blown fuse
- External noise, surge



Note:

Error code Remote control: E18	LED	Green	Red	Content Address setting error of master and slave indoor units
	Indoor	Keeps flashing	1-time flash	
	Outdoor	Keeps flashing	Stays Off	

1. Applicable model

2. Error detection method

IU address has been set using the “Master IU address set” function of remote control.

3. Condition of error displayed

Same as above

4. Presumable cause

Same as above

5. Troubleshooting

Diagnosis	Countermeasure
<pre> graph TD A[E18 occurs] --> B{Is "Master IU address set" function of remote control used?} B -- YES --> C[Countermeasure] </pre>	<ul style="list-style-type: none"> • In cases of RC-EX3A Menu → Service setting → IU settings → Select IU • In cases of RC-E5 Return address No. to “IU ...” using [▲] or [▼] button.

Note:

Error code Remote control: E19	LED	Green	Red	Content Indoor unit operation check, drain pump motor check setting error
	Indoor	Keeps flashing	1-time flash	
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

2. Error detection method

After indoor operation check, when the communication between indoor and outdoor unit is established and SW7-1 is still kept ON.

3. Condition of error displayed

Same as above

4. Presumable cause

Mistake in SW7-1 setting (Due to forgetting to turn OFF SW7-1 after indoor operation check)

5. Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD Start[E19 occurs when the power ON] --> Decision{Is SW7-1 on the indoor unit control PCB ON?} Decision -- NO --> Countermeasure1[Defective indoor unit control PCB (Defective SW7) -> Replace.] Decision -- YES --> Countermeasure2[Turn SW7-1 on the indoor unit control PCB OFF and reset the power.] </pre>	<p>Defective indoor unit control PCB (Defective SW7) → Replace.</p> <p>Turn SW7-1 on the indoor unit control PCB OFF and reset the power.</p>

Note:

Error code Remote control: E20	LED	Green	Red	Content Indoor fan motor rotation speed anomaly
	Indoor	Keeps flashing	1-time flash	
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

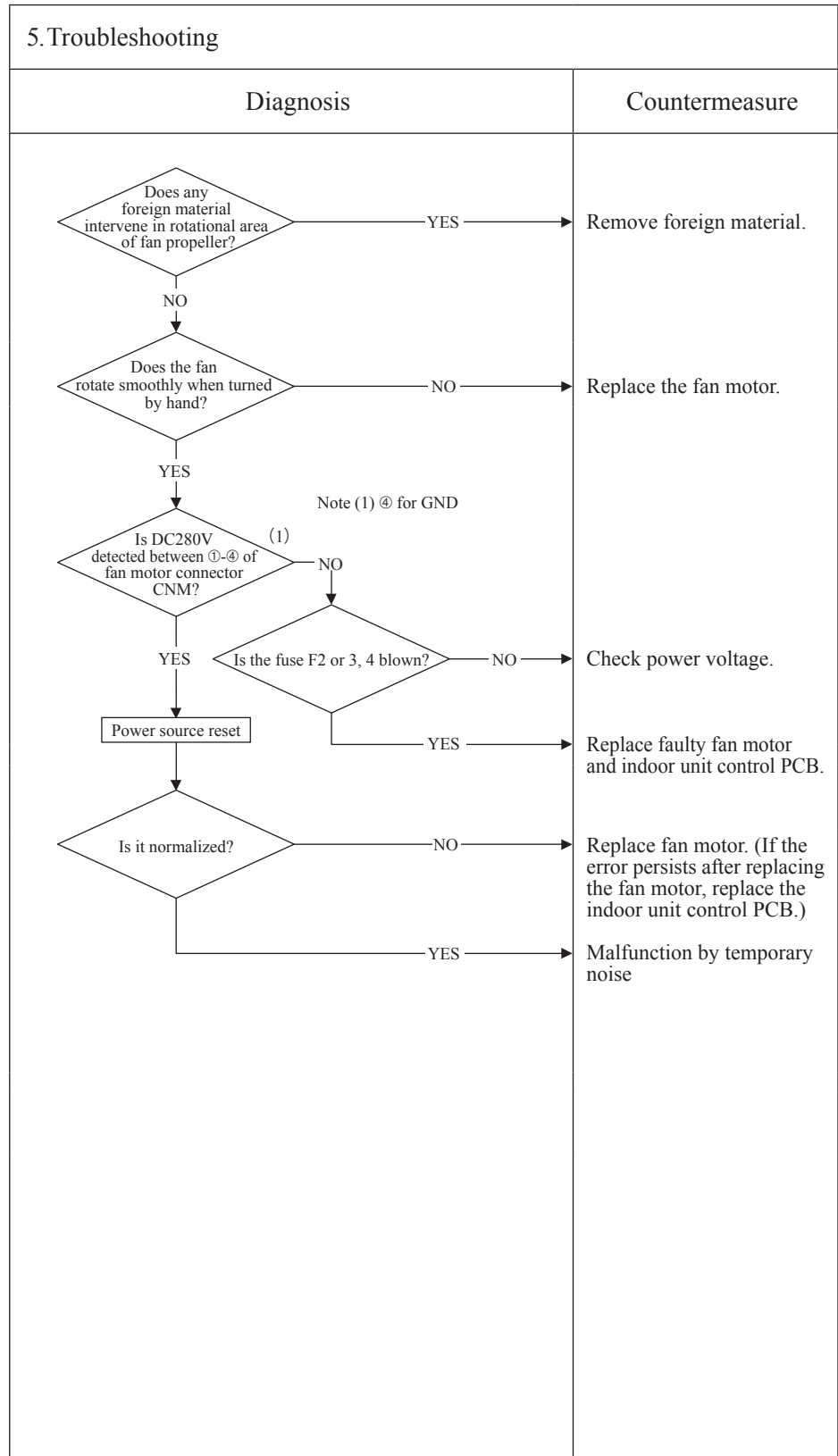
2. Error detection method

Detected by rotation speed of indoor fan motor

3. Condition of error displayed

When the actual fan rotation speed does not reach to the speed of [required speed -50 min⁻¹(FDU: -500 min⁻¹)] after 2 minutes have been elapsed since the fan motor rotation speed command was output, the unit stops by detecting indoor fan motor anomaly.

- 4. Presumable cause**
- Defective indoor unit control PCB
 - Foreign material at rotational area of fan propeller
 - Defective fan motor
 - Dust on indoor unit control PCB
 - Blown fuse
 - External noise, surge



Note:

Error code Remote control: E28	LED	Green	Red	Content Remote control temperature sensor anomaly
	Indoor	Keeps flashing	Stays OFF	
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

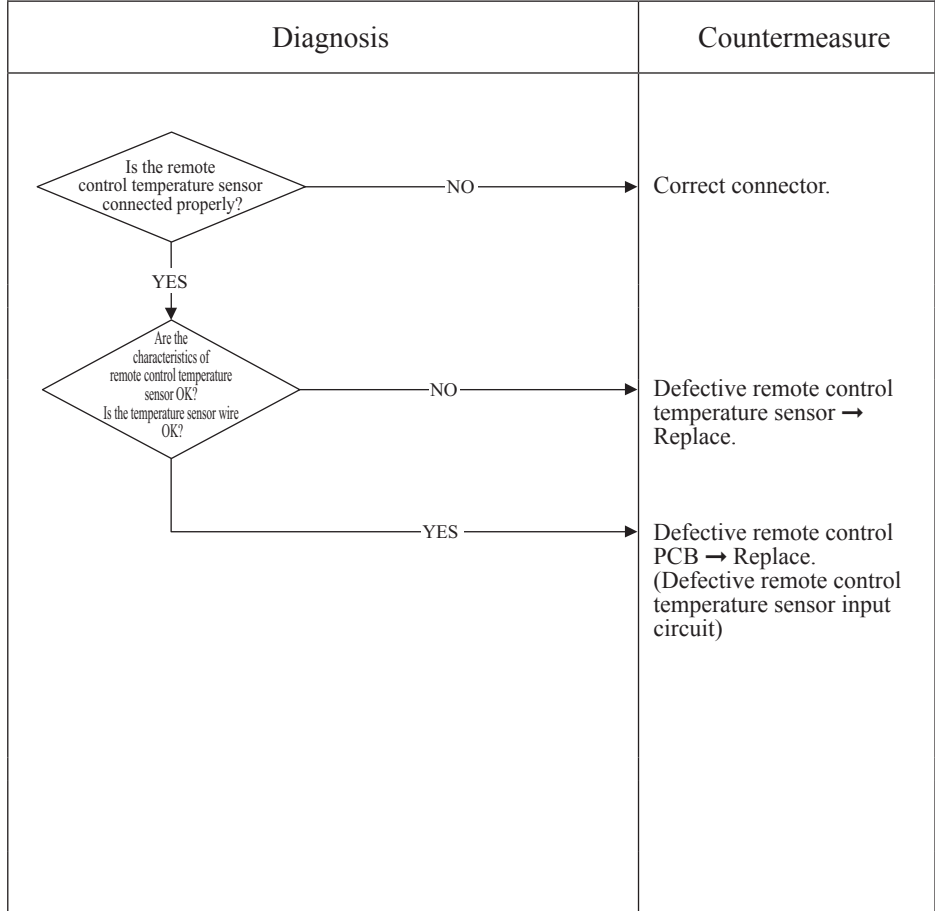
2. Error detection method
Detection of anomalously low temperature (resistance) of remote control temperature sensor (The)

3. Condition of error displayed
When the temperature sensor detects -50°C or lower for 5 seconds continuously, the compressor stops. After 3-minute delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.

4. Presumable cause

- Faulty connection of remote control temperature sensor
- Defective remote control temperature sensor
- Defective remote control PCB

5. Troubleshooting



Temperature-resistance characteristics of remote control temperature sensor (The)

Temperature (°C)	Resistance value (kΩ)	Temperature (°C)	Resistance value (kΩ)
0	65	30	16
1	62	32	15
2	59	34	14
4	53	36	13
6	48	38	12
8	44	40	11
10	40	42	9.9
12	36	44	9.2
14	33	46	8.5
16	30	48	7.8
18	27	50	7.3
20	25	52	6.7
22	23	54	6.3
24	21	56	5.8
26	19	58	5.4
28	18	60	5.0

Note: After 10 seconds has passed since remote control temperature sensor was switched from valid to invalid, E28 will not be displayed even if the sensor harness is disconnected. At same time the sensor, which is effective, is switched from remote control temperature sensor to indoor return air temperature sensor. Even though the remote control temperature sensor is set to be Effective, the return air temperature displayed on remote control for checking still shows the value detected by indoor return air temperature sensor, not by remote control temperature sensor.

Error code Remote control: E35	LED	Green	Red	Content Cooling overload operation
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED Keeps flashing		

1. Applicable model

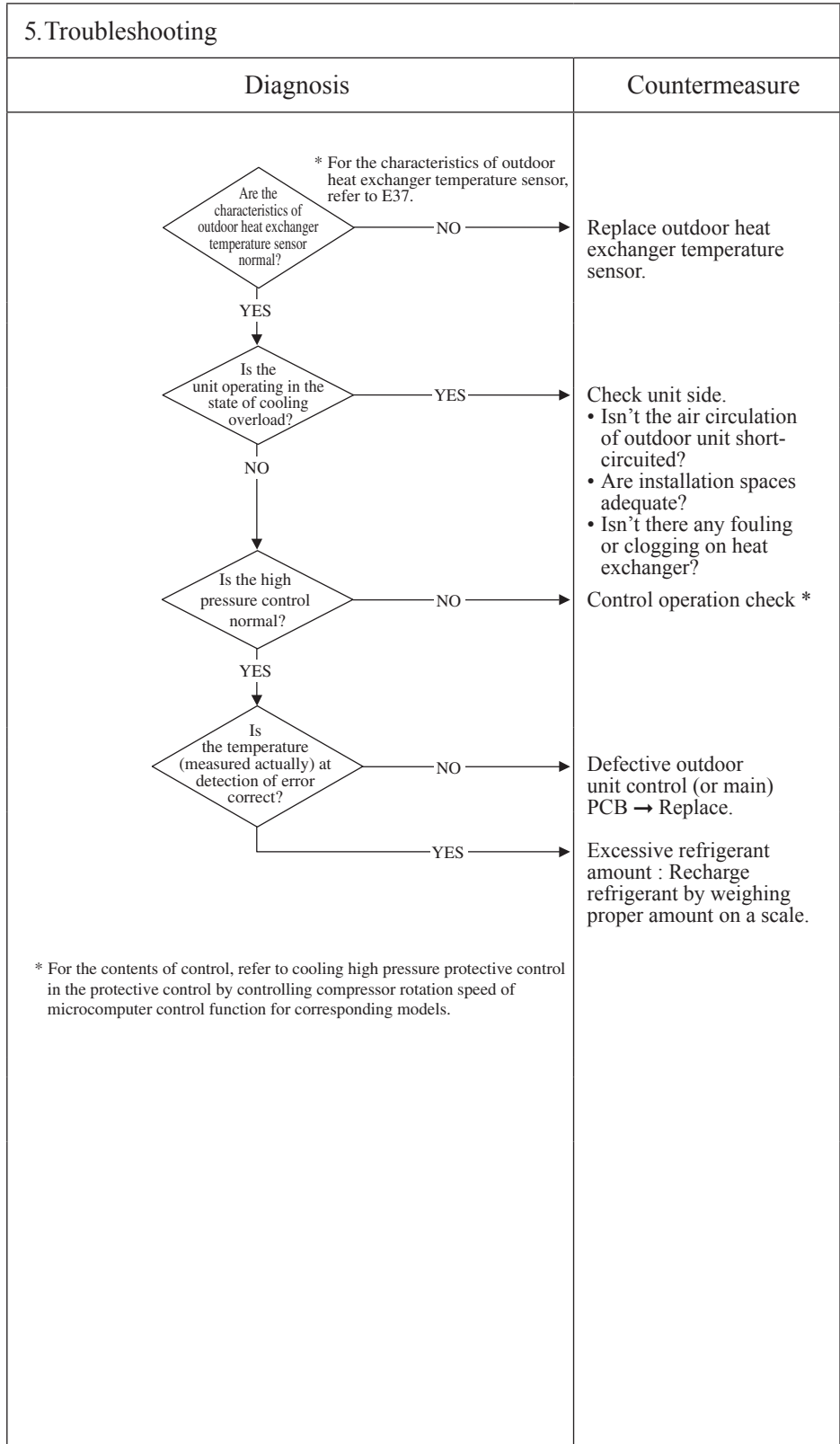
2. Error detection method

For the error detection method, refer to the protective control by controlling compressor rotation speed and cooling high pressure protective control of micro-computer control function for corresponding models.

3. Condition of error displayed

When outdoor heat exchanger temperature anomaly is detected 5 times within 60 minutes or this anomalous state is detected 60 minutes continuously including compressor stop.

- 4. Presumable cause**
- Defective outdoor heat exchanger temperature sensor
 - Defective outdoor unit control (or main) PCB
 - Indoor, outdoor unit installation spaces
 - Short-circuit of air on indoor, outdoor units
 - Fouling, clogging of heat exchanger
 - Excessive refrigerant amount



Note:

Error code Remote control: E36	LED	Green	Red	Content Discharge pipe temperature error
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED Keeps flashing		

1.Applicable model

2. Error detection method

For the error detection method, refer to cooling high pressure protective control in the protective control by controlling compressor rotation speed of microcomputer control function for corresponding models.

3. Condition of error displayed

When discharge pipe temperature anomaly is detected 2 times within 60 minutes or this anomalous state is detected 60 minutes continuously including compressor stop.

- 4. Presumable cause**
- Defective outdoor unit control (or main) PCB
 - Defective discharge pipe temperature sensor
 - Clogged filter
 - Indoor, outdoor unit installation spaces
 - Short-circuit of air on indoor, outdoor units
 - Fouling, clogging of heat exchanger

5. Troubleshooting

Diagnosis	Countermeasure
<p>* For the characteristics of discharge pipe temperature sensor, refer to E39.</p> <p>Are the characteristics of discharge pipe temperature sensor normal?</p> <p>NO →</p> <p>YES ↓</p> <p>Is the discharge pipe temperature error persisted during cooling / heating operation?</p> <p>YES →</p> <p>NO ↓</p> <p>Is the discharge pipe temperature control normal?</p> <p>NO →</p> <p>YES ↓</p> <p>Is the temperature (measured actually) at detection of error correct?</p> <p>NO →</p> <p>YES →</p>	<p>Replace discharge pipe temperature sensor.</p> <p>Insufficient refrigerant amount : Recharge refrigerant by weighing proper amount on a scale.</p> <p>Control operation check *</p> <p>Defective outdoor unit control (or main) PCB → Replace.</p> <p>Check unit side:</p> <ul style="list-style-type: none"> • Isn't filter clogged? • Are indoor, outdoor unit installation spaces adequate ? • Isn't there any short-circuit of air? • Isn't there any fouling, clogging on indoor heat exchanger?

* For the contents of control, refer to cooling high pressure protective control in the protective control by controlling compressor rotation speed of microcomputer control function for corresponding models.

Note:

Error code Remote control: E37	LED	Green	Red	Content Outdoor heat exchanger temperature sensor anomaly
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED Keeps flashing		

1. Applicable model

2. Error detection method

Detection of anomalously low temperature (resistance) on the outdoor heat exchanger temperature sensor

3. Condition of error displayed

- When the temperature sensor detects -50°C or lower for 20 seconds continuously within 2 minutes to 2 minutes 20 seconds after the compressor ON, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this anomalous temperature is detected 3 times within 40 minutes.
- When -50°C or lower is detected for 5 seconds continuously within 20 seconds after compressor ON.

4. Presumable cause

- Defective outdoor unit control (or main) PCB
- Broken sensor harness or temperature sensing section
- Disconnected wire connection (connector)

5. Troubleshooting

Diagnosis	Countermeasure
<pre> graph TD Q1{Is the outdoor heat exchanger temperature sensor connector connected properly?} Q2{Are the characteristics of outdoor heat exchanger temperature sensor OK?} C1[Correct connector.] C2[Defective outdoor heat exchanger temperature sensor -> Replace.] C3[Defective outdoor unit control (or main) PCB -> Replace. (Defective outdoor heat exchanger temperature sensor input circuit)] Q1 -- NO --> C1 Q1 -- YES --> Q2 Q2 -- NO --> C2 Q2 -- YES --> C3 </pre>	
<p>For the characteristics of outdoor heat exchanger temperature sensor, see the following graph.</p> <p>Temperature-resistance characteristics</p> <p>(Broken wire)</p> <p>Temperature sensor resistance (kΩ)</p> <p>5kΩ at 25°C</p> <p>Temperature (°C)</p> <p>(Short-circuit)</p>	

Note:

Error code Remote control: E38	LED	Green	Red	Content Outdoor air temperature sensor anomaly
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED Keeps flashing		

1. Applicable model

2. Error detection method

Detection of anomalously low temperature (resistance) on outdoor air temperature sensor

3. Condition of error displayed

- When the temperature sensor detects -45°C or lower for 5 seconds continuously within 2 minutes to 2 minutes 20 seconds after the compressor ON, the compressor stops. After 3-minute delay, the compressor starts again automatically, but if this anomalous temperature is detected 3 times within 40 minutes.
- When -45°C or lower is detected for 5 seconds continuously within 20 seconds after compressor ON.

4. Presumable cause

- Defective outdoor unit control (or main) PCB
- Broken sensor harness or temperature sensing section (Check molding.)
- Disconnected wire connection (connector)

5. Troubleshooting

Diagnosis	Countermeasure														
<pre> graph TD Q1{Is the outdoor air temperature sensor connector connected properly?} -- NO --> C1[Correct connector.] Q1 -- YES --> Q2{Is the characteristics of the outdoor air temperature sensor OK?} Q2 -- NO --> C2[Defective outdoor air temperature sensor -> Replace.] Q2 -- YES --> C3[Defective outdoor unit control (or main) PCB -> Replace. (Defective outdoor air temperature sensor input circuit)] </pre> <p>• Model FDC71</p> <p>Temperature-resistance characteristics (Broken wire) 35 (Short-circuit) 0</p> <table border="1"> <caption>Temperature-resistance characteristics (Approximate values)</caption> <thead> <tr> <th>Temperature (°C)</th> <th>Temperature sensor resistance (kΩ)</th> </tr> </thead> <tbody> <tr><td>0</td><td>35</td></tr> <tr><td>10</td><td>25</td></tr> <tr><td>20</td><td>18</td></tr> <tr><td>30</td><td>12</td></tr> <tr><td>40</td><td>8</td></tr> <tr><td>50</td><td>5</td></tr> </tbody> </table>	Temperature (°C)	Temperature sensor resistance (kΩ)	0	35	10	25	20	18	30	12	40	8	50	5	<p>Correct connector.</p> <p>Defective outdoor air temperature sensor → Replace.</p> <p>Defective outdoor unit control (or main) PCB → Replace. (Defective outdoor air temperature sensor input circuit)</p>
Temperature (°C)	Temperature sensor resistance (kΩ)														
0	35														
10	25														
20	18														
30	12														
40	8														
50	5														

Note:

Error code Remote control: E39	LED	Green	Red	Content Discharge pipe temperature sensor anomaly
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED Keeps flashing		

1. Applicable model

2. Error detection method

Detection of anomalously low temperature (resistance) on the discharge pipe temperature sensor

3. Condition of error displayed

When the temperature sensor detects -10°C or lower for 5 seconds continuously within 10 minutes to 10 minutes 20 seconds after the compressor ON, the compressor stops. After 3-minute delay, the compressor starts again automatically, but if this anomalous temperature is detected 3 times within 40 minutes.

4. Presumable cause

- Defective outdoor unit control (or main) PCB
- Broken sensor harness or temperature sensing section (Check molding.)
- Disconnected wire connection (connector)

5. Troubleshooting

Diagnosis	Countermeasure
<pre> graph TD Q1{Is the discharge pipe temperature sensor connector connected properly?} -- NO --> C1[Correct connector.] Q1 -- YES --> Q2{Are the characteristics of discharge pipe temperature sensor OK?} Q2 -- NO --> C2[Defective discharge pipe temperature sensor -> Replace.] Q2 -- YES --> C3[Defective outdoor unit control (or main) PCB -> Replace. (Defective discharge pipe temperature sensor input circuit)] </pre>	
<p>• Model FDC71</p> <p>(Broken wire) Temperature-resistance characteristics</p> <p>(Short-circuit)</p>	

Note:

Error code Remote control: E40	LED	Green	Red	Content High pressure error (63H1 activated)
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED Keeps flashing		

1. Applicable model

2. Error detection method

When the high pressure switch 63H1 is activated.

Compressor ON

Compressor OFF

3.15 4.15
High pressure (MPa)

3. Condition of error displayed

If 63H1 turns OFF (opened), the compressor stops. After 3-minute delay, the compressor restarts. If this anomaly occurs 5 times within 60 minutes or continues for 60 minutes continuously.

4. Presumable cause

- Short-circuit of air flow, disturbance of air flow and clogging filter at outdoor heat exchanger/Breakdown of fan motor
- Defective outdoor unit control (or main) PCB
- Defective 63H1 connector
- Defective electronic expansion valve connector
- Closed service valve
- Mixing of non-condensing gas (nitrogen, etc.)

5. Troubleshooting

Diagnosis	Countermeasure
<p>If the power source breaker is turned OFF and ON too quickly, E40 may be displayed. (This is normal.)</p> <p>Is the service valve fully opened?</p> <p>NO → Open the service valve.</p> <p>YES</p> <p>Has 63H1 activated?</p> <p>NO → Is 63H1 connector connected properly?</p> <p>NO → Correct 63H1 connector.</p> <p>YES</p> <p>Is the electronic expansion valve connector connection OK?</p> <p>NO → Correct electronic expansion valve connector.</p> <p>YES → Defective outdoor unit control (or main) PCB → Replace. (Defective 63H1 input circuit)</p> <p>If any anomaly exists on the electronic expansion valve connector connection, the power source must be reset.</p> <p>1. During cooling</p> <ul style="list-style-type: none"> • Is the outdoor fan motor running? • Isn't any short-circuit of air on the outdoor unit? • Are sufficient return air/supply air space secured? <p>2. During heating</p> <ul style="list-style-type: none"> • Isn't the indoor heat exchanger temperature sensor disconnected from the sensor casing? • Isn't the filter clogged? <p>* Under the condition of overcharging refrigerant, 63H1 may activate due to delay of starting the preventive control by compressor speed control, because detected heat exchanger temperature, which conducts compressor speed control, becomes lower than normal condition due to excess sub-cooling degree.</p>	

Note: In the protective control range for compressor startup (initial startup after power ON), even if 63H1 is activated only once (63H1 turns OFF), immediately the error is displayed.

Error code Remote control: E41	LED	Green	Red	Content Power transistor overheat
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED 6-time flash		

1. Applicable model

2. Error detection method

When less than DC14V of the output voltage is detected between ② and ③ on CNI3, E41 is displayed.
(See "Note" mentioned below.)

3. Condition of error displayed

Seme as above.

4. Presumable cause

- Inverter PCB anomaly
- Outdoor fan motor anomaly
- Outdoor unit control PCB anomaly
- Noise filter PCB anomaly

5. Troubleshooting

Diagnosis	Countermeasure
<pre> graph TD D1{Is DC15V detected between ② and ③ on CNI3? (1)(2)} D2{Is DC15V detected after disconnecting outdoor fan motor? (1)} D1 -- YES --> C1[Replace inverter PCB. If not solved, replace noise filter PCB as well.] D1 -- NO --> D2 D2 -- YES --> C2[Replace outdoor fan motor.] D2 -- NO --> C3[Replace outdoor unit control PCB. If not solved, replace inverter PCB as well.] Note1[Note(1) Under anomalous conditions, the voltage becomes less than DC14V.] Note2[Note(2) How to check the voltage between ② and ③ of CNI3? => See E51] D1 --- Note1 D2 --- Note2 </pre>	

Note: The "Single phase models" of inverter PAC have no function to output the signal for the power transistor overheat. However since the power source for the power transistor and the outdoor fan motor is in the same line, when the anomaly of the outdoor fan motor occurs, E41 is displayed.

Error code Remote control: E42	LED	Green	Red	Content Current cut (1/2)
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED 1-time flash		

1. Applicable model

2. Error detection method

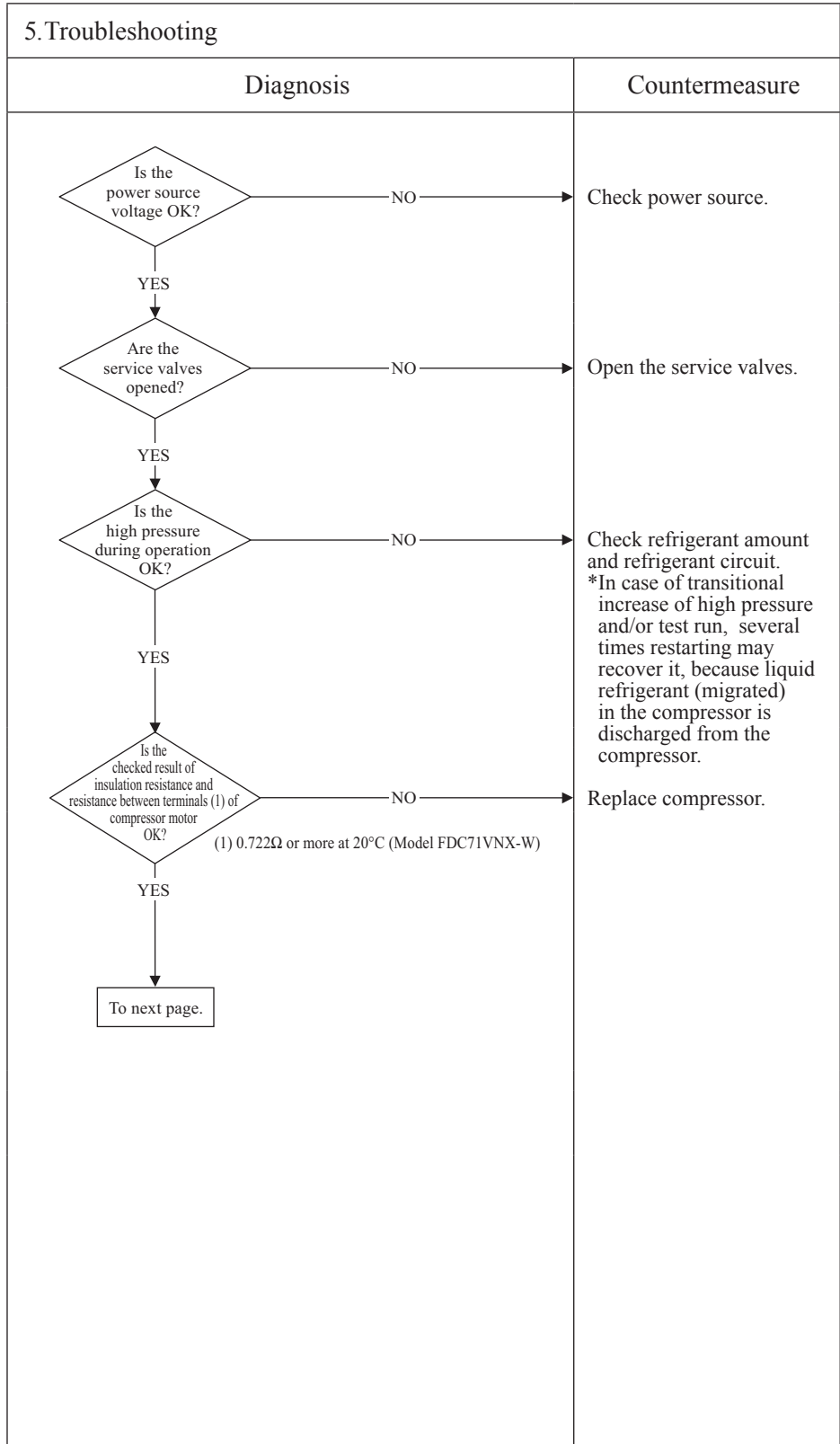
In order to prevent from overcurrent of inverter, if the current exceeds the specifications, it makes the compressor stopping.

3. Condition of error displayed

- If the output current of inverter exceeds the specifications, it makes the compressor stopping.
- After 3-minute delay, the compressor restarts, but if this anomaly occurs 4 times within 30 minutes after the initial detection.

4. Presumable cause

- The service valves closed
- Faulty power source
- Insufficient refrigerant amount
- Faulty compressor
- Faulty power transistor module



Note:

Error code Remote control: E42	LED	Green	Red	Content Current cut (2/2)
	Indoor	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED 1-time flash		

1. Applicable model

2. Error detection method

In order to prevent from overcurrent of inverter, if the current exceeds the specifications, it makes the compressor stopping.

3. Condition of error displayed

- If the output current of inverter exceeds the specifications, it makes the compressor stopping.
- After 3-minute delay, the compressor restarts, but if this anomaly occurs 4 times within 30 minutes after the initial detection.

4. Presumable cause

- Defective inverter (or outdoor unit main) PCB
- Faulty power source
- Insufficient refrigerant amount
- Faulty compressor
- Faulty power transistor module

5. Troubleshooting

Diagnosis	Countermeasure
<p>From previous page</p> <p>Is the checked result of power transistor module OK?</p> <p>NO → Defective inverter (or outdoor unit main) PCB → Replace.</p> <p>YES</p> <div style="border: 1px dashed black; padding: 5px;"> <ul style="list-style-type: none"> • Is the space for installation of indoor and/or outdoor unit enough? • Is there any short-circuit of air on indoor and/or outdoor unit? • At cooling, does the outdoor fan motor run? Are the service valves fully opened? Is the filter clogged? • At heating, does the indoor fan motor run? Are the service valves fully opened? Is the filter clogged? • Is there any liquid flooding? Is the superheat within normal range? • Is the low pressure sensor and suction pipe temperature sensor normal? • Is there any anomalous sound on the compressor? </div> <p>YES</p> <p>After resetting power for several times does it become normal?</p> <p>NO → Defective inverter (or outdoor unit main) PCB → Replace.</p> <p>YES</p> <p>Temporary noise may cause of anomaly. If noise source can be found, take countermeasure.</p>	

Note:

Error code Remote control: E45	LED	Green	Red	Content Communication error between inverter PCB and outdoor unit control PCB
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED Keeps flashing		

1. Applicable model

2. Error detection method

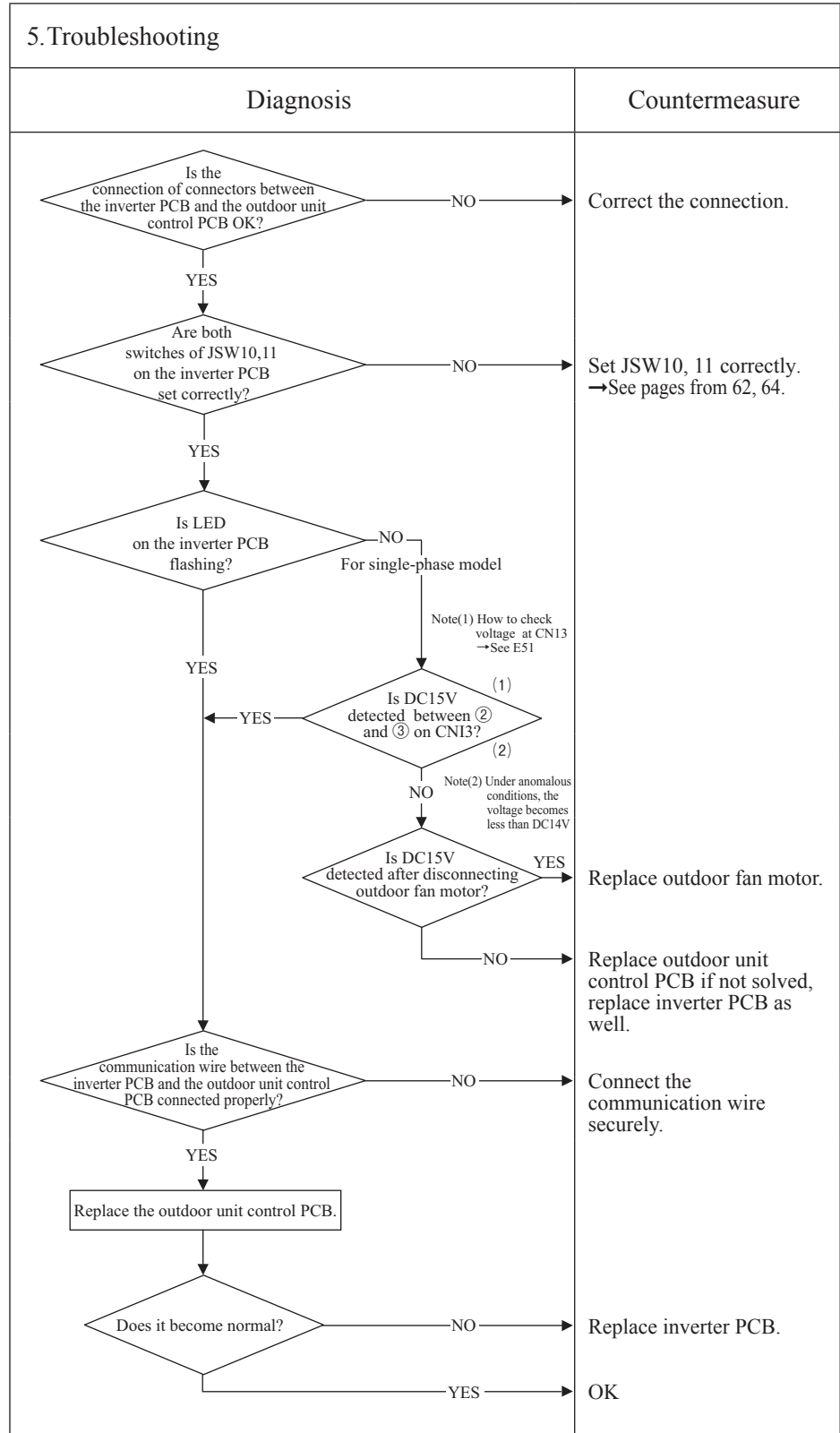
When the communication between inverter PCB and outdoor unit control PCB is not established.

3. Condition of error displayed

Same as above.

4. Presumable cause

- Inverter PCB anomaly
- Anomalous connection of connector between the outdoor unit control PCB and inverter PCB
- Outdoor unit control PCB anomaly
- Outdoor fan motor anomaly



Note:

Error code Remote control: E47	LED	Green	Red	Content Inverter PCB A/F module anomaly
	Indoor	Keeps flashing	Stays off	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED 7-time flashing		

1. Applicable model

2. Error detection method

In order to prevent from overcurrent of A/F, if the current exceeds the specifications, it makes the compressor stopping.

3. Condition of error displayed

- If the output current of A/F exceeds the specifications, it makes the compressor stopping.

4. Presumable cause

- Defective inverter PCB

5. Troubleshooting

Diagnosis	Countermeasure
<pre> graph TD A{Is the power source voltage OK?} -- NO --> B[Check power source.] A -- YES --> C{Is the checked results of insulation resistance and resistance between terminals (1) of compressor motor OK?} C -- NO --> D[Replace compressor.] C -- YES --> E[Defective outdoor inverter PCB → Replace.] </pre>	

Note:

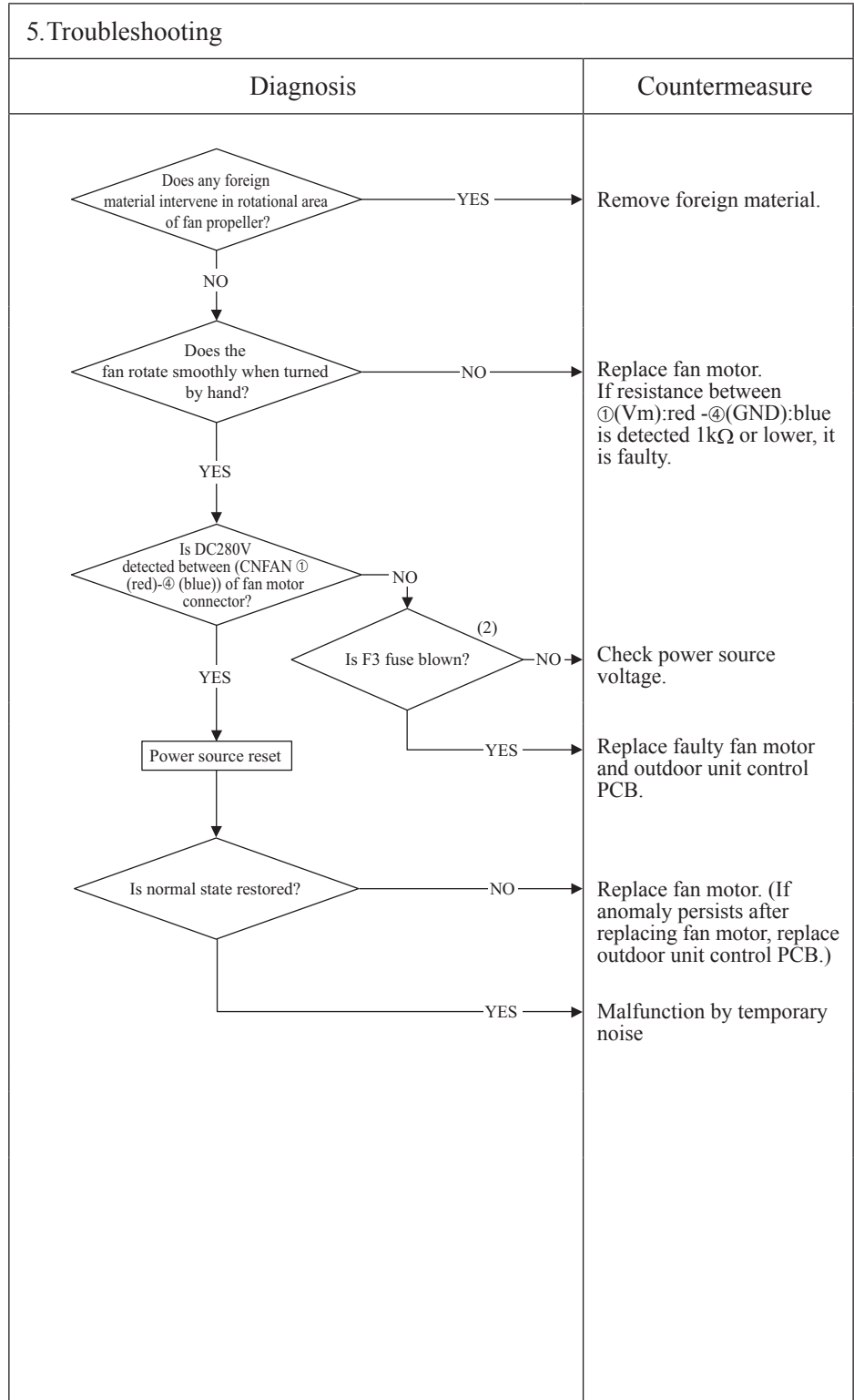
Error code Remote control: E48	LED	Green	Red	Content Outdoor fan motor anomaly
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED Keeps flashing		

1. Applicable model

2. Error detection method
Detected by rotation speed of outdoor fan motor

3. Condition of error displayed
When actual rotation speed of outdoor fan motor (FMo1) drops to 100min⁻¹ or lower for 30 minutes continuously, the compressor and the outdoor fan motor stop. After 3-minute delay, it starts again automatically, but if this anomaly occurs 5 times within 60 minutes after the initial detection.

- 4. Presumable cause**
- Defective outdoor unit control PCB
 - Foreign material at rotational area of fan propeller
 - Defective fan motor
 - Dust on outdoor unit control PCB
 - Blow fuse
 - External noise, surge



Note: When E48 error occurs, in almost cases F3 fuse (2A) on the outdoor unit control PCB is blown. There are a lot of cases that fuse is blown and E48 occurs due to defective fan motor. And even though only the outdoor unit control PCB (or fuse) is replaced, another trouble (*1) could occur. Therefore when fuse is blown, check whether the fan motor is OK or not.
After confirming the fan motor normal, check by power ON. (Don't power ON without confirming the fan motor normal.)
*1 The error which does not seem to relate E48 may occur like as "WAIT", Stay OFF of LED on outdoor unit control PCB, inverter communication error (E45) and etc.

Error code Remote control: E49	LED	Green	Red	Content Low pressure error or low pressure sensor anomaly (1/2)
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED Keeps flashing		

1. Applicable model

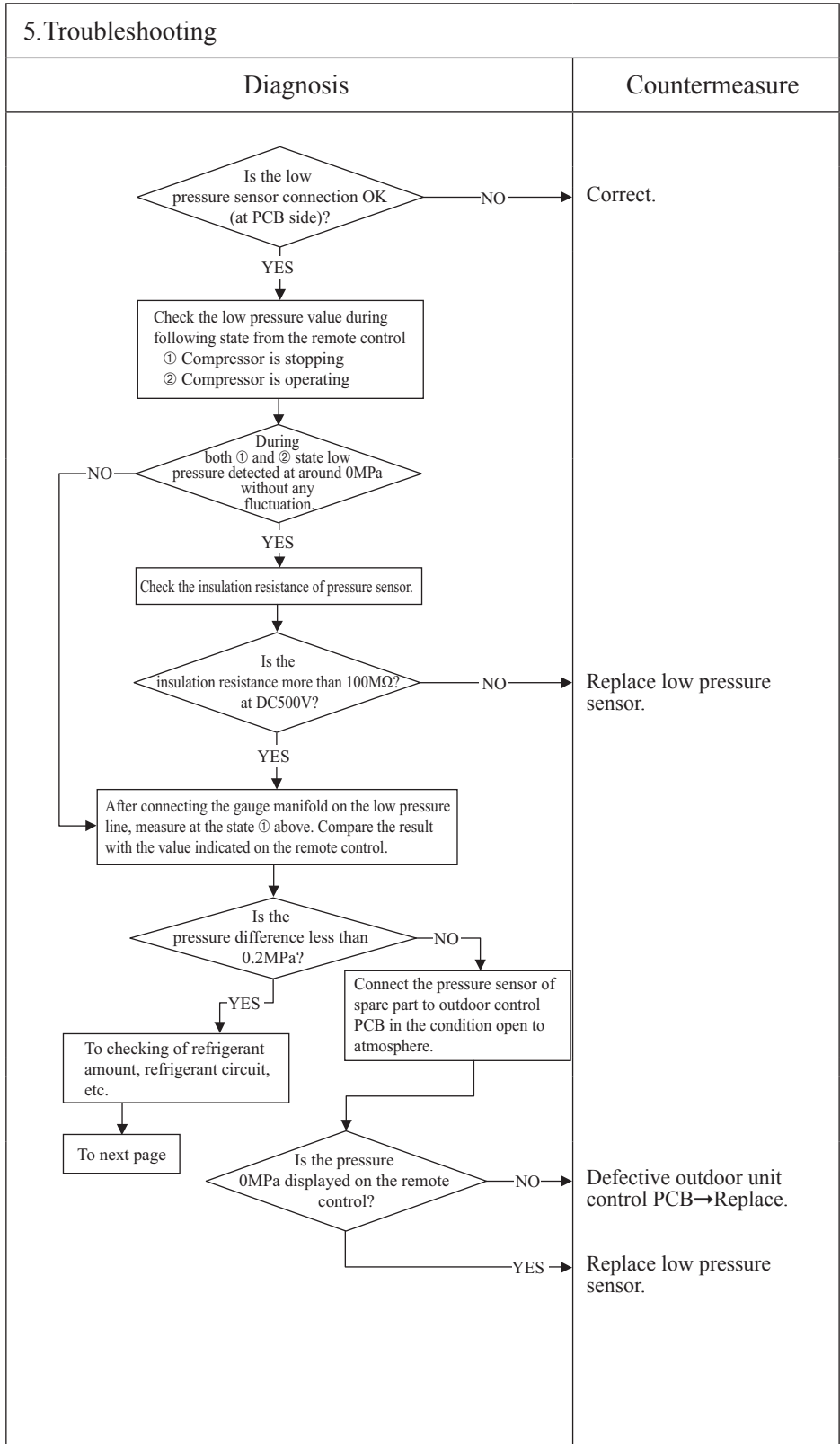
2. Error detection method
Detected by low pressure drop and suction superheat

3. Condition of error displayed

- ① When the low pressure sensor detects 0.079MPa or lower for 15 seconds continuously, compressor stops and it restarts automatically after 3-minute delay. And if this anomaly occurs 3 times within 60 minutes.
- ② 10 minutes after the compressor starts, if the low pressure sensor detects 0.15MPa or lower for 60 minutes continuously and compressor suction superheat is detected 30degC or higher for 60 minutes continuously. And if this anomaly occurs 3 times within 60 minutes.
- ③ If low pressure sensor detects 0.079MPa or lower for 5 minutes continuously (including the compressor stop status).

4. Presumable cause

- Defective outdoor unit control PCB
- Defective low pressure sensor connector
- Defective low pressure sensor
- Defective suction pipe temperature sensor connector
- Defective suction pipe temperature sensor



Note: * Connect the gauge manifold to the service valve check joint during cooling, or connect it to the check joint at internal piping of outdoor unit during heating.

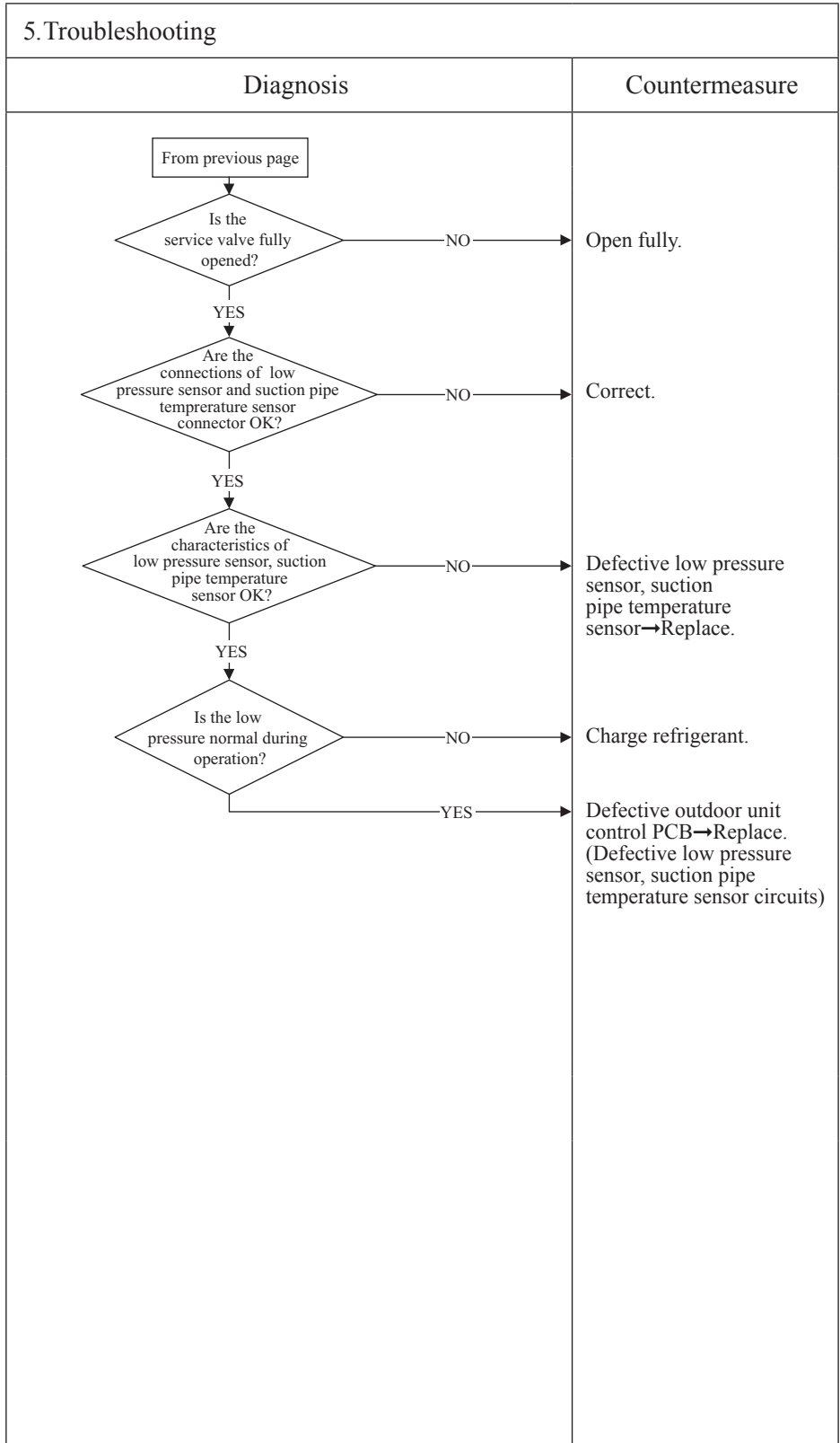
Error code Remote control: E49	LED	Green	Red	Content Low pressure error or low pressure sensor anomaly (2/2)
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED Keeps flashing		

1.Applicable model

2.Error detection method

3.Condition of error displayed

4.Presumable cause



Note:

Error code Remote control: E51	LED	Green	Red	Content Inverter and fan motor anomaly
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED 6-time flash		

<p>1.Applicable model</p>	<p>5.Troubleshooting</p> <table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 50%;">Diagnosis</th> <th style="width: 50%;">Countermeasure</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"> <pre> graph TD Q1{Is DC15V detected between ② and ③ on CNI3? (1)(2)} Q2{Is DC15V detected after disconnecting outdoor fan motor? (1)} C1[Replace inverter PCB. If not solved, replace noise filter PCB as well.] C2[Replace outdoor fan motor.] C3[Replace outdoor unit control PCB. If not solved, replace inverter PCB as well.] Q1 -- YES --> C1 Q1 -- NO --> Note[Note(1) Under anomalous conditions, the voltage becomes less than DC14V.] Note --> Q2 Q2 -- YES --> C2 Q2 -- NO --> C3 </pre> </td> <td></td> </tr> </tbody> </table>		Diagnosis	Countermeasure	<pre> graph TD Q1{Is DC15V detected between ② and ③ on CNI3? (1)(2)} Q2{Is DC15V detected after disconnecting outdoor fan motor? (1)} C1[Replace inverter PCB. If not solved, replace noise filter PCB as well.] C2[Replace outdoor fan motor.] C3[Replace outdoor unit control PCB. If not solved, replace inverter PCB as well.] Q1 -- YES --> C1 Q1 -- NO --> Note[Note(1) Under anomalous conditions, the voltage becomes less than DC14V.] Note --> Q2 Q2 -- YES --> C2 Q2 -- NO --> C3 </pre>	
Diagnosis	Countermeasure					
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<p>2.Error detection method</p> <p>When power transistor anomaly is detected for 15 minutes continuously</p>						
<p>3.Condition of error displayed</p> <p>Same as above</p>						
<p>4.Presumable cause</p> <ul style="list-style-type: none"> • Outdoor fan motor anomaly • Inverter PCB anomaly • Outdoor unit control (or main) PCB anomaly 						

Note:

Error code Remote control: E53	LED	Green	Red	Content <h2>Suction pipe temperature sensor anomaly</h2>
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED Keeps flashing		

1.Applicable model

2.Error detection method

When the suction pipe temperature sensor detects anomalously low temperature

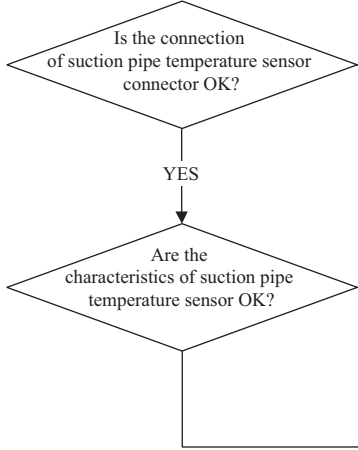
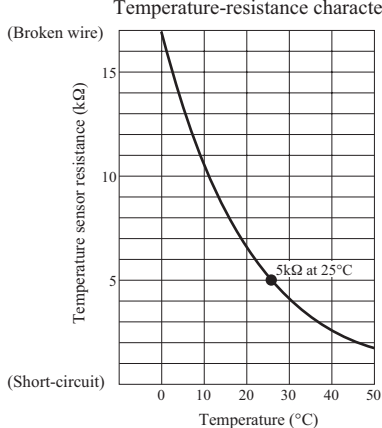
3.Condition of error displayed

If the temperature sensor detects -50°C or lower for 5 seconds continuously within 10 minutes to 10 minutes 20 seconds after compressor ON, the compressor stops. When the compressor is restarted automatically after 3-minute delay, if this anomaly occurs 3 times within 40 minutes.

4.Presumable cause

- Defective suction pipe temperature sensor connection
- Defective suction pipe temperature sensor
- Defective outdoor unit control (or main) PCB

5.Troubleshooting

Diagnosis	Countermeasure																
 <pre> graph TD Q1{Is the connection of suction pipe temperature sensor connector OK?} Q2{Are the characteristics of suction pipe temperature sensor OK?} C1[Correct connection of suction pipe temperature sensor connector.] C2[Defective suction pipe temperature sensor -> Replace.] C3[Defective outdoor unit control (or main) PCB -> Replace. (Defective suction pipe temperature sensor input circuit)] Q1 -- NO --> C1 Q1 -- YES --> Q2 Q2 -- NO --> C2 Q2 -- YES --> C3 </pre>																	
<p>Temperature-resistance characteristics</p>  <table border="1"> <caption>Temperature-resistance characteristics data</caption> <thead> <tr> <th>Temperature (°C)</th> <th>Temperature sensor resistance (kΩ)</th> </tr> </thead> <tbody> <tr><td>0</td><td>15</td></tr> <tr><td>10</td><td>10</td></tr> <tr><td>20</td><td>7</td></tr> <tr><td>25</td><td>5</td></tr> <tr><td>30</td><td>4</td></tr> <tr><td>40</td><td>3</td></tr> <tr><td>50</td><td>2</td></tr> </tbody> </table>	Temperature (°C)	Temperature sensor resistance (kΩ)	0	15	10	10	20	7	25	5	30	4	40	3	50	2	
Temperature (°C)	Temperature sensor resistance (kΩ)																
0	15																
10	10																
20	7																
25	5																
30	4																
40	3																
50	2																

Note:

Error code Remote control: E54	LED	Green	Red	Content Low pressure sensor anomaly
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED Keeps flashing		

1. Applicable model

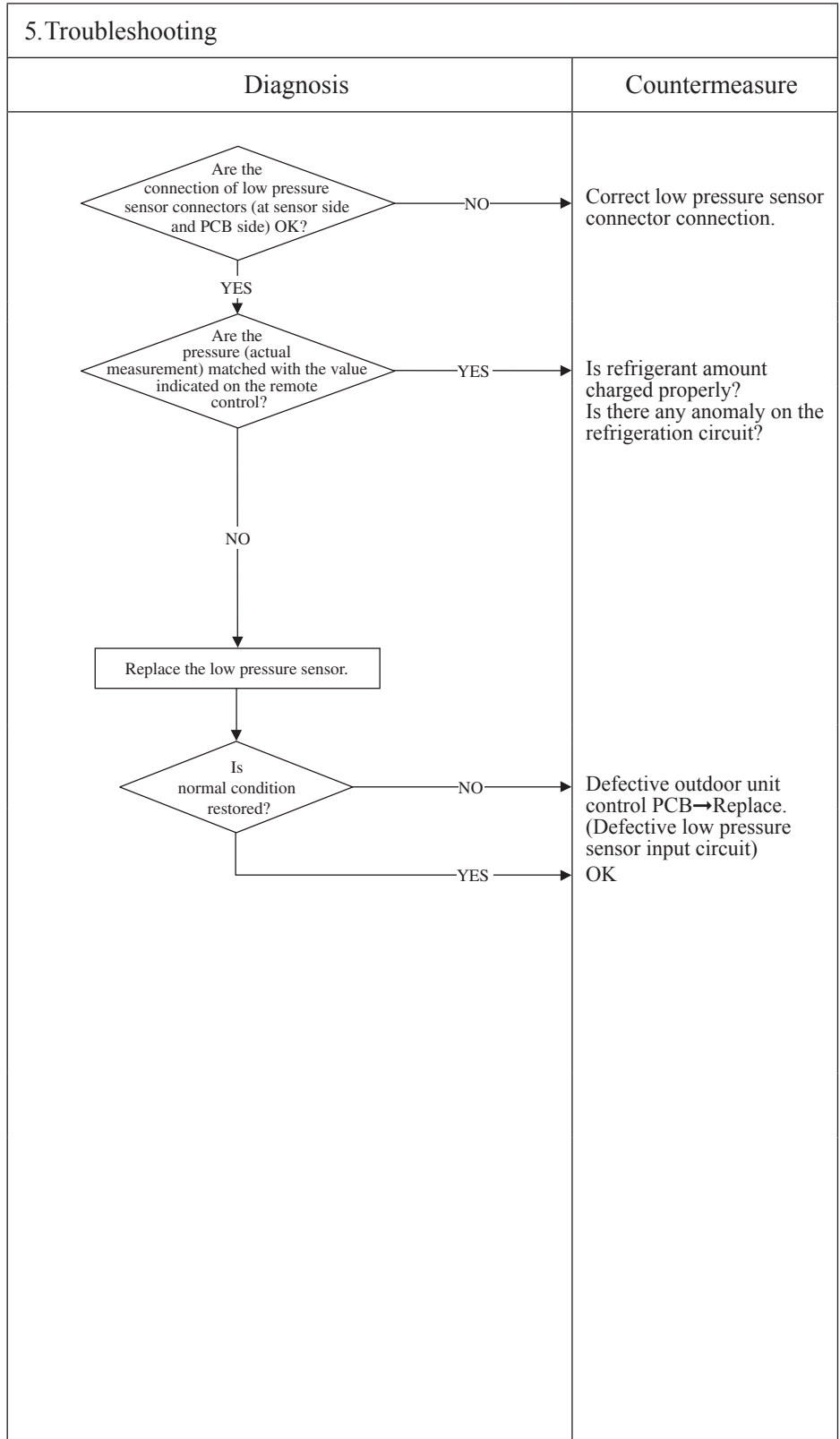
2. Error detection method

When anomalous voltage (pressure) is detected

3. Condition of error displayed

If the pressure sensor detects DC0V or lower and DC4.0V or higher for 5 seconds continuously within 2 minutes to 2 minutes 20 seconds after compressor ON, the compressor stops. When the compressor is restarted automatically after 3-minute delay, if this anomaly occurs 3 times within 40 minutes.

- 4. Presumable cause**
- Defective low pressure sensor connection
 - Defective low pressure sensor
 - Defective outdoor unit control PCB
 - Improper amount of refrigerant
 - Anomalous refrigeration circuit



Note:

Error code Remote control: E57	LED	Green	Red	Content Insufficient refrigerant amount or detection of service valve closure
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED Keeps flashing		

1. Applicable model

2. Error detection method

- Judge insufficient refrigerant amount by detecting the temperature difference between indoor heat exchanger (Thi-R) and indoor return air (Thi-A).

3. Condition of error displayed

Anomalous stop at initial detection

4. Presumable cause

- Defective indoor heat exchanger temperature sensor
- Defective indoor return air temperature sensor
- Defective indoor unit control (or main) PCB
- Insufficient refrigerant amount

5. Troubleshooting

Diagnosis	Countermeasure
<p>Is the service valve fully opened?</p> <p>NO →</p> <p>YES ↓</p> <p>Are the connections of indoor heat exchanger and/or return air temperature sensor connectors OK?</p> <p>NO →</p> <p>YES ↓</p> <p>Are the characteristics of indoor heat exchanger and/or return air temperature sensor OK?</p> <p>NO →</p> <p>YES ↓</p> <p>Is the low pressure during operation normal?</p> <p>NO →</p> <p>YES →</p>	<p>Open fully.</p> <p>Correct indoor heat exchanger, return air temperature sensor connector connections.</p> <p>Defective indoor heat exchanger, return air temperature sensor → Replace.</p> <p>Charge refrigerant.</p> <p>Defective indoor unit control (or main) PCB → Replace. (Defective indoor heat exchanger, return air temperature sensor input circuits)</p>

Indoor heat exchanger, return air temperature sensor
Temperature-resistance characteristics

(Broken wire)

(Short-circuit)

Note: Insufficient refrigerant amount preventive control makes compressor stopped, if it judges insufficient refrigerant amount by detecting the temperature difference between indoor heat exchanger (Thi-R) and return air temperature (Thi-A) for 1 minute after compressor ON in cooling or dehumidifying mode and for 9 minutes after compressor ON in heating mode. [in cooling mode: (Thi-A)-(Thi-R) ≤ 4degC, in heating mode: (Thi-R)-(Thi-A) ≤ 4degC]

Error code Remote control: E59	LED	Green	Red	Content Compressor startup failure (1/2)
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	5-time flash	
	Outdoor inverter PCB	Yellow LED Stays OFF		

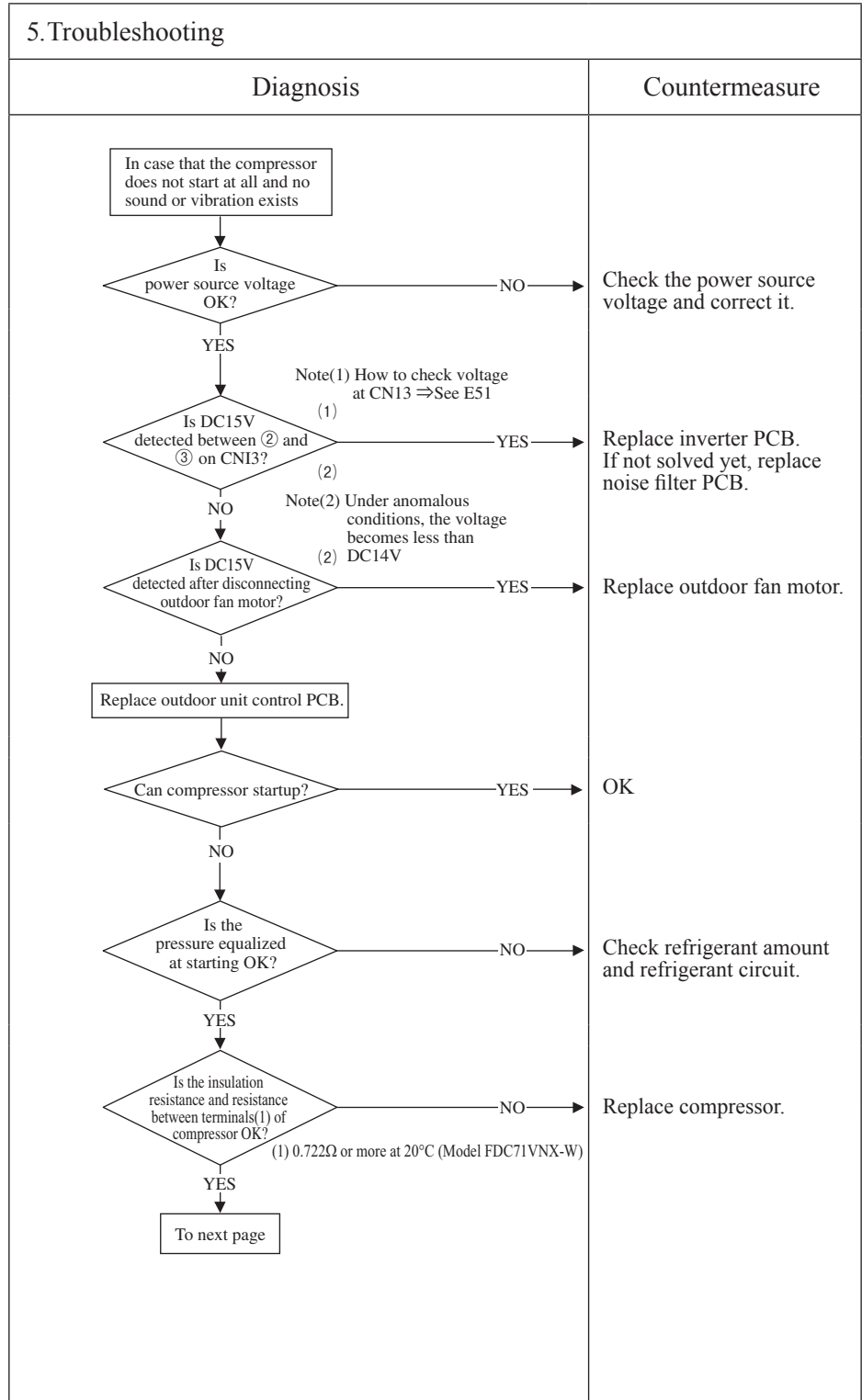
1. Applicable model

2. Error detection method
When it fails to change over to the operation for rotor position detection of compressor motor

3. Condition of error displayed
If the compressor fails to startup for 20 times (10 patterns × 2 times) continuously.

4. Presumable cause

- Outdoor fan motor anomaly
- Outdoor unit control PCB anomaly
- Inverter PCB anomaly
- Anomalous power source voltage
- Insufficient or excessive refrigerant amount
- Faulty component for refrigerant circuit
- Compressor anomaly (Motor or bearing)



Note: Insulation resistance

- The unit is left for long period without power source or soon after installation, insulation resistance may decrease to several MΩ or lower due to the liquid refrigerant migrated in the refrigerant oil in compressor. If the electric leakage breaker is activated due to low insulation resistance, check followings.
 - ① Check whether the insulation resistance can recover or not, after 6 hours has passed since power ON. (By energize the crankcase heater, liquid refrigerant migrated in the refrigerant oil in compressor can be evaporated)
 - ② Check whether the electric leakage breaker conforms to high-harmonic specifications. (As inverter PAC units has inverter, in order to prevent from improper operation, be sure to use the breaker of high-harmonic type)

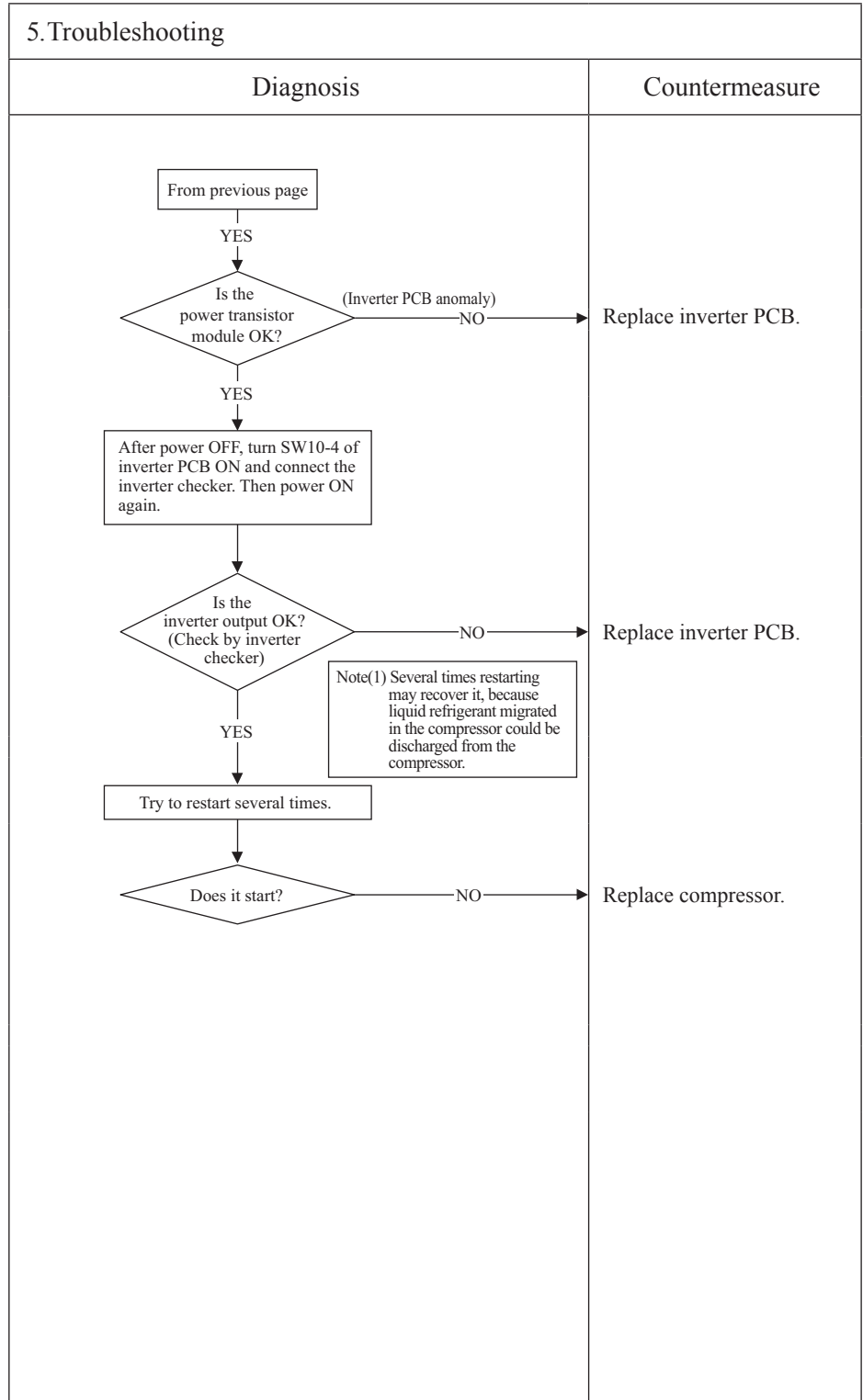
Error code Remote control: E59	LED	Green	Red	Content Compressor startup failure (2/2)
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	5-time flash	
	Outdoor inverter PCB	Yellow LED Stays OFF		

1. Applicable model

2. Error detection method

3. Condition of error displayed

4. Presumable cause



Note:

1.2.2 SRK series

This chapter has described about an indoor unit. Look at 1.2.1 chapters about the outdoor unit.

(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.
- (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

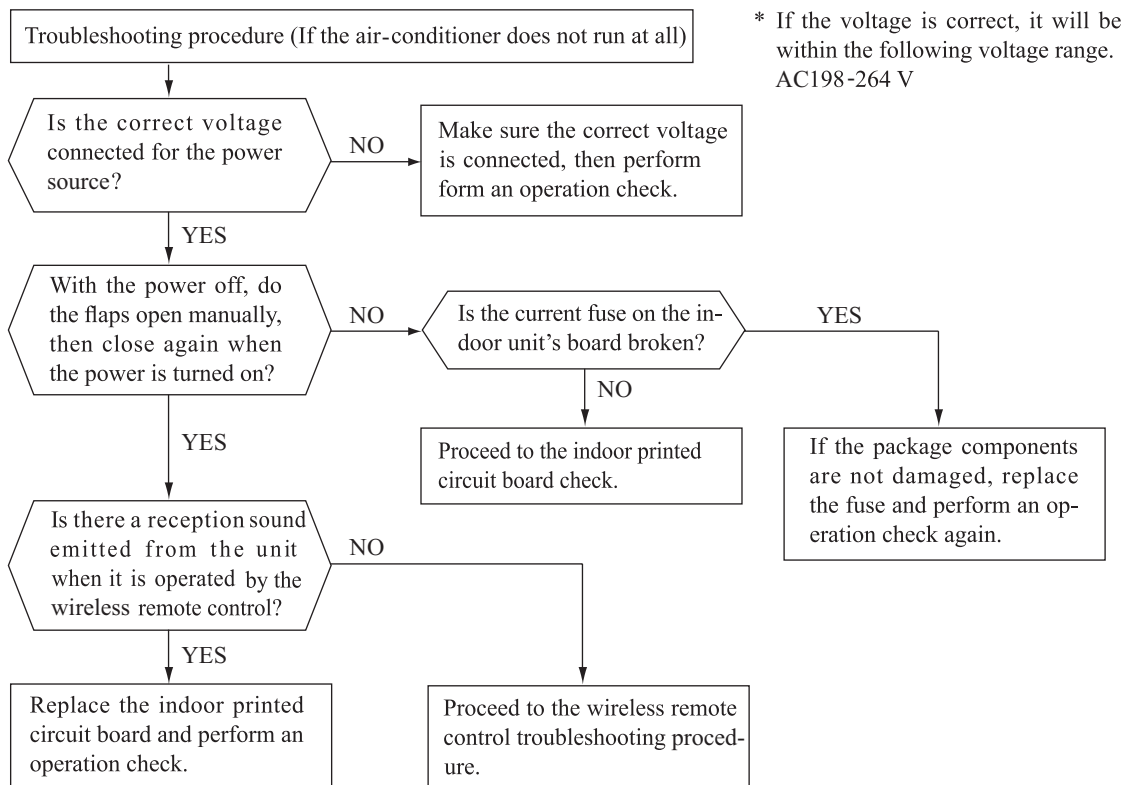
- (a) Have you thoroughly investigated the details of the trouble which the customer is complaining about?
- (b) Is the air-conditioner running? Is it displaying any self-diagnosis information?
- (c) Is a power source with the correct voltage connected?
- (d) Are the control lines connecting the indoor 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)

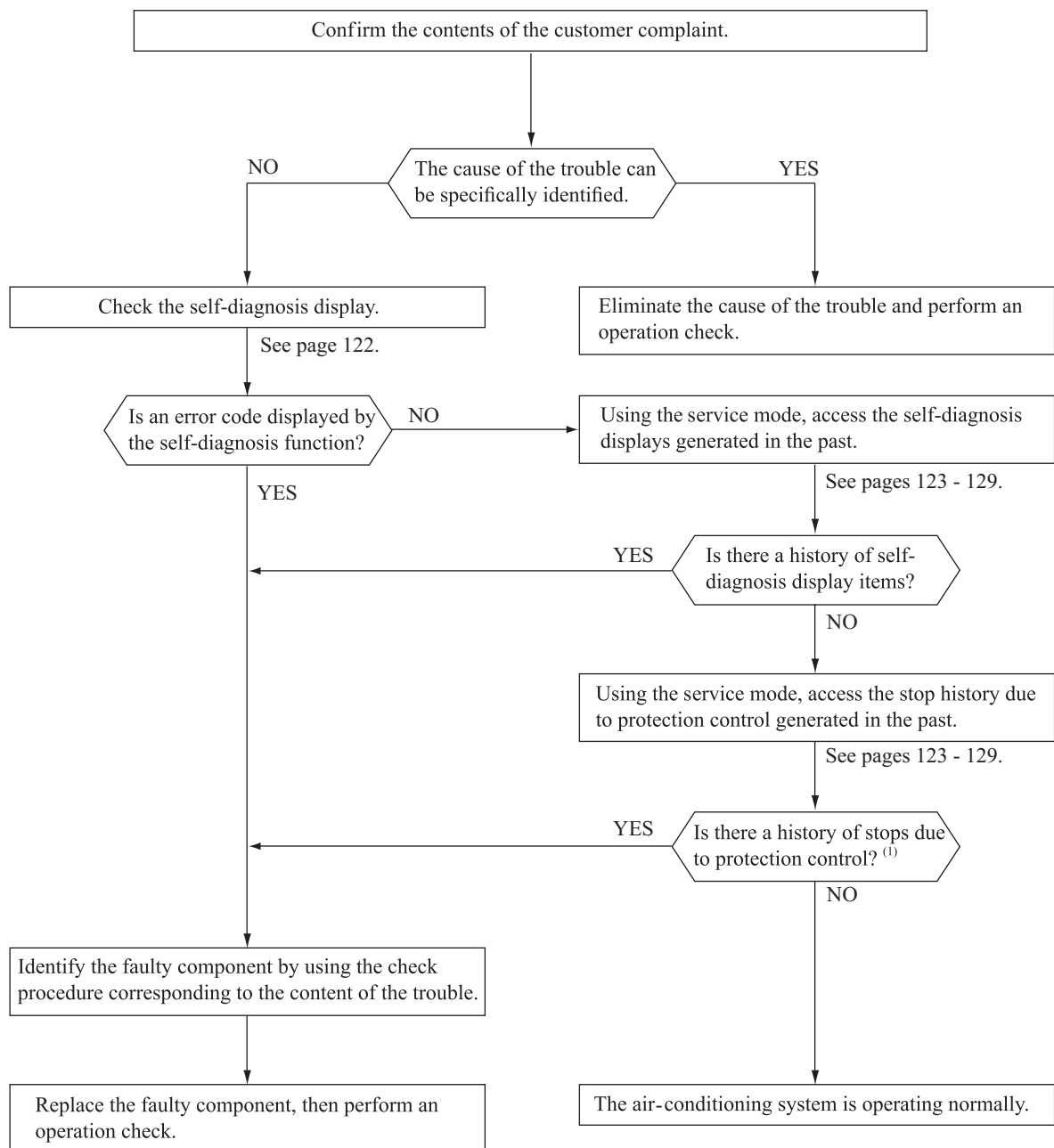
If the air-conditioner does not run at all, diagnose the trouble using the following troubleshooting procedure. If the air-conditioner is running but breaks down, proceed to troubleshooting step (4).

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 remote control 3 minutes or more after the emergency stop, the trouble display stops and the air-conditioner resumes operation. ⁽¹⁾

Indoor unit display panel		Wired remote control display ⁽²⁾	Description of trouble	Cause	Display (flashing) condition
RUN light	TIMER light				
1-time flash	ON	—	Heat exchanger sensor 1 error	<ul style="list-style-type: none"> Broken heat exchanger sensor 1 wire, poor connector connection Indoor unit 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	<ul style="list-style-type: none"> Broken room temperature sensor wire, poor connector connection Indoor unit 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	<ul style="list-style-type: none"> Broken heat exchanger sensor 2 wire, poor connector connection Indoor unit 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Broken outdoor air temp. sensor wire, poor connector connection Outdoor unit 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	<ul style="list-style-type: none"> Broken heat exchanger sensor wire, poor connector connection Outdoor unit 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	Compressor startup failure	<ul style="list-style-type: none"> Defective compressor Outdoor unit PCB is faulty 	If compressor fails to startup for 42 times.
ON	3-time flash	E 58	Current safe stop	<ul style="list-style-type: none"> 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 anomaly	<ul style="list-style-type: none"> Power transistor error (Outdoor unit PCB is faulty) 	If the power transistor primary current exceeds the setting value for 3 seconds, the compressor stops.
ON	5-time flash	E 36	Discharge pipe temperature error	<ul style="list-style-type: none"> Installation, operation status Discharge pipe temperature sensor Outdoor unit PCB is faulty 	When discharge pipe temperature anomaly is detected 2 times within 60 minutes is compressor stop.
ON	6-time flash	E 5	Error of signal transmission	<ul style="list-style-type: none"> Defective power source, Broken signal wire, defective indoor/outdoor PCB 	When there is no signal between the indoor unit PCB and outdoor unit 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	<ul style="list-style-type: none"> Defective fan motor, poor connector connection 	When the outdoor 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 overload operation	<ul style="list-style-type: none"> Installation, operation status Outdoor heat exchanger temperature sensor Outdoor unit PCB is faulty 	When the value of the outdoor heat exchanger sensor exceeds the set value.
2-time flash	2-time flash	E 60	Compressor rotor lock error	<ul style="list-style-type: none"> Defective compressor 	If it fails again to detect the rotor position after shifting to the compressor rotor position detection operation, the compressor stops.
5-time flash	ON	E 47	Active filter voltage error	<ul style="list-style-type: none"> Outdoor unit PCB is faulty 	Error is displayed if the converter voltage exceeds target voltage (3 times within 20 minutes). Remote control may be set after 3-minute delay. Error is displayed if the converter voltage is lower than 210V.
7-time flash	ON	E 57	Insufficient refrigerant amount or detection of service valve closure	<ul style="list-style-type: none"> Operation status Installation status 	When the insufficient refrigerant amount is detected 3 times within 60 minutes.
7-time flash	1-time flash	E 40	Service valve (gas side) closed operation	<ul style="list-style-type: none"> Service valve (gas side) closed Defective outdoor unit 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	<ul style="list-style-type: none"> Broken wired remote control wire, defective indoor unit 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 unit 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.

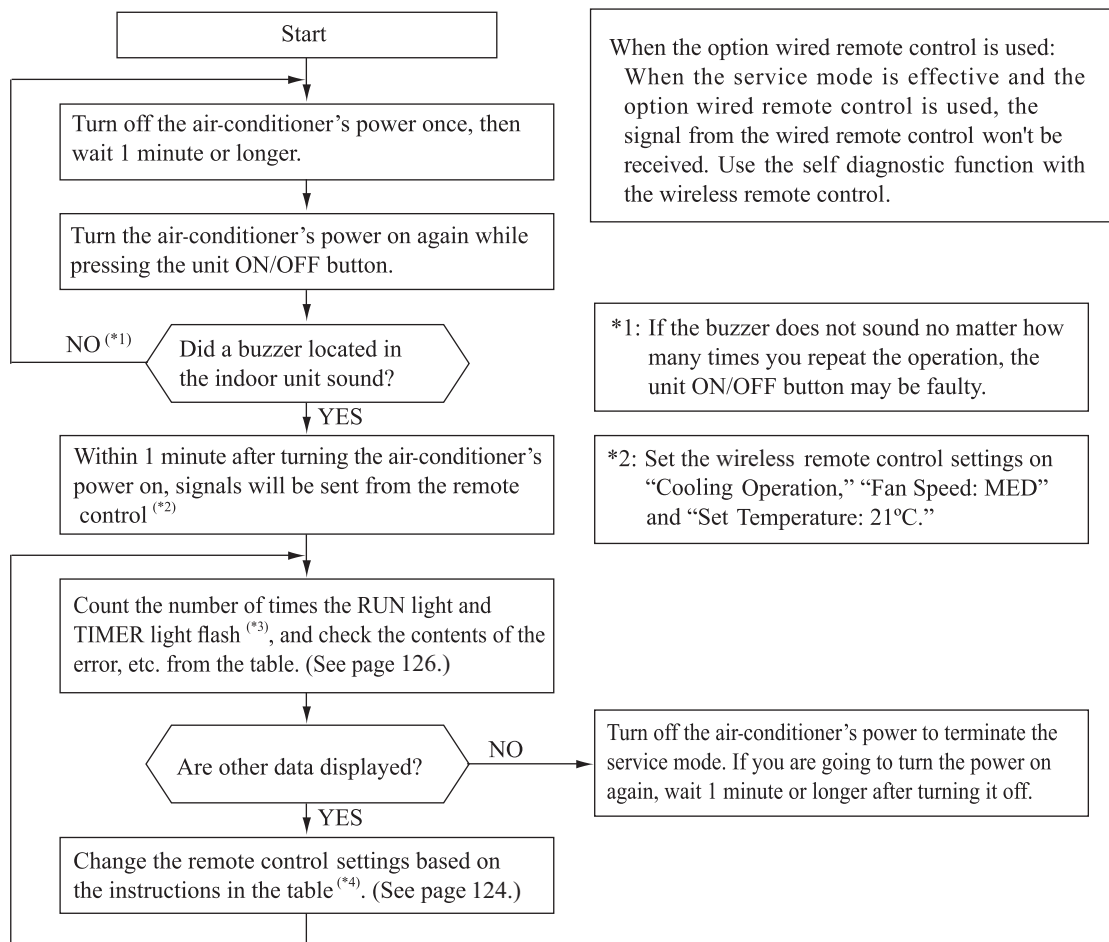
(6) Service mode (Trouble mode access function)

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.

(a) Explanation of terms

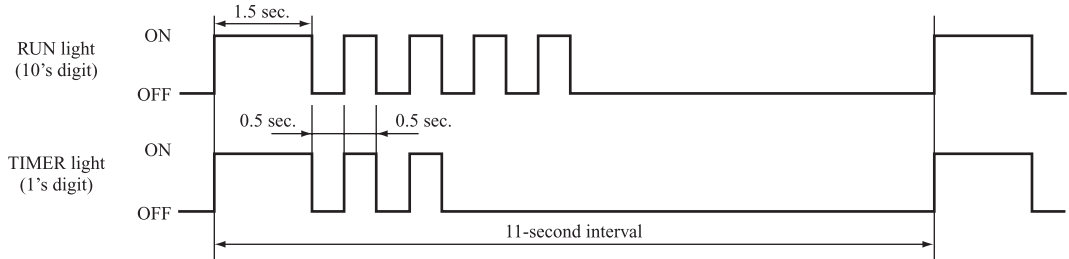
Term	Explanation
Service mode	The service mode is the mode where service data are displayed by flashing of the display lights when the operations in item (b) below are performed with the indoor control.
Service data	These are the contents of error displays and protective stops which occurred in the past 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.

(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.)

• In the case of current cut (example: stop code "42")
 The RUN light (10's digit) 4-time flash and the TIMER light (1's digit) 2-time flash.
 $4 \times 10 + 2 \times 1 = 42 \rightarrow$ From the table, read the instructions for error code 42, "current cut".



*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 (a bnormal 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	
Cooling	MED	Displays the reason for stopping display in the past (error code).
	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.
Heating	LO	Displays the wireless remote control information at the time the error code was displayed in the past.
	MED	Displays the outdoor air temperature sensor temperature at the time the error code was displayed in the past.
	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 temperature sensor 2

Wireless remote control setting	Indicates the number of occasions previous to the present the error display data are from.
Temperature setting	
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			Displayed data
Operation mode	Fan speed mode	Temperature setting	
Cooling	MED	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.
		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

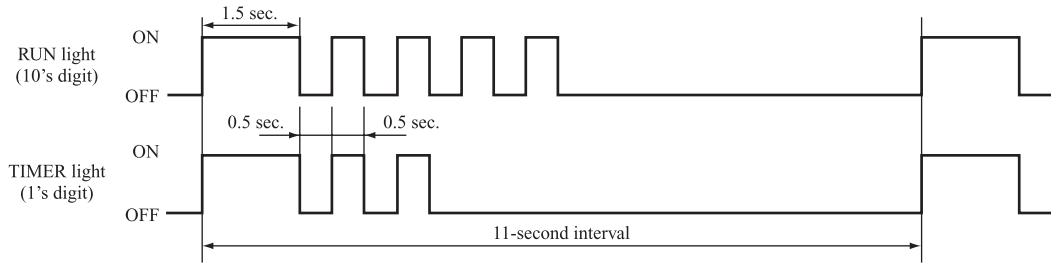
Wireless remote control setting			Displayed data
Operation mode	Fan speed mode	Temperature setting	
Cooling	LO	21°C	Displays the reason for the stop (stop code) the previous time when the air-conditioner was stopped by protective stop control.
		22°C	Displays the reason for the stop (stop code) 2 times previous when the air-conditioner was stopped by protective stop control.
		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.
		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.)

Number of flashes when in service mode		Stop code or Error code	Error content	Cause	Occurrence conditions	Error display	Auto recovery
RUN light (10's digit)	TIMER light (1's digit)						
OFF	OFF	0	Normal	—	—	—	—
	1-time flash	01	Error of wired remote control wiring	Broken wired remote control wire, defective indoor unit 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 unit PCB is faulty.	—	○
	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 unit PCB are faulty.	When 35 seconds passes without communications signals from either the outdoor unit or the indoor unit being detected correctly.	○	—
3-time flash	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)	○
	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 set value.	○ (2 times)	○
	7-time flash	37	Outdoor heat exchanger sensor is abnormal	Outdoor heat exchanger sensor wire is disconnected. Connector connections are poor. Outdoor unit 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)	○
	8-time flash	38	Outdoor air temperature sensor is abnormal	Outdoor air temperature sensor wire is disconnected. Connector connections are poor. Outdoor unit 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)	○
	9-time flash	39	Discharge pipe sensor is abnormal (anomalous stop)	Discharge pipe sensor wire is disconnected. Connector connections are poor. Outdoor unit 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.	○ (3 times)	○
4-time flash	OFF	40	Service valve (gas side) closed operation	Service valve (gas side) closed. Outdoor unit 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.	○ (2 times)	○
	2-time flash	42	Current cut	Compressor lock. Compressor wiring short-circuit. Compressor output is open phase. Outdoor unit PCB is faulty. Service valve is closed. Electronic expansion valve is faulty. Compressor is faulty.	In order to prevent from overcurrent of inverter, if the current exceeds the specifications, it makes the compressor stopping.	○ (2 times)	○
	7-time flash	47	Active filter voltage error	Defective active filter.	Error is displayed if the converter voltage exceeds target voltage (3 times within 20 minutes). Remote control may be set after 3-minute delay. Error is displayed if the converter voltage is lower than 210V (1-time within 5 seconds after power ON).	○	—
	8-time flash	48	Outdoor unit's fan motor is abnormal	Outdoor fan motor is faulty. Connector connections are poor. Outdoor unit PCB is faulty.	When a fan speed of 75 min ⁻¹ or lower continues for 30 seconds or longer.	○ (3 times)	○
5-time flash	1-time flash	51	Short-circuit in the power transistor (high side) Current cut circuit breakdown	Outdoor unit PCB is faulty. Power transistor is damaged.	When it is judged that the power transistor was damaged at the time the compressor started.	○	—
	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)	○
	8-time flash	58	Current safe	Refrigerant is overcharge. Compressor lock. Overload operation.	When there is a current safe stop during operation.	—	○
	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 unit 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 operation. When the compressor command speed is lower than 32 rps for 60 minutes.	○	○
6-time flash	OFF	60	Rotor lock	Compressor is faulty. Compressor output is open phase. Electronic expansion valve is faulty. Overload operation. Outdoor unit PCB is faulty.	After the compressor starts, when the compressor stops due to rotor lock.	○ (2 times)	○
	1-time flash	61	Connection lines between the indoor and outdoor units are faulty	Connection lines are faulty. Indoor or outdoor unit 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.	○	—
	2-time flash	62	Serial transmission error	Indoor or outdoor unit PCB are faulty. Noise is causing faulty operation.	When 7 minutes 35 seconds passes without communications signals from either the outdoor unit or the indoor unit being detected correctly.	○	—
8-time flash	OFF	80	Indoor unit's fan motor is abnormal	Indoor fan motor is faulty. Connector connections are poor. Indoor unit PCB is faulty.	When the indoor 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.	○	—
	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).	○	—
	4-time flash	84	Anti-condensation control	High humidity condition. Humidity sensor is faulty.	Anti-condensation prevention control is operating.	—	○
	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.	—	○
	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.	—	○

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.)

• In the case of current cut (example: stop code “42”)
 The RUN light (10’s digit) 4-time flash and the TIMER light (1’s digit) 2-time flash.
 $4 \times 10 + 2 \times 1 = 42 \rightarrow$ From the table, read the instructions for error code 42, “current cut”.



- (2) Error display:
 — Is not displayed. (automatic recovery only)
 Displayed.
 If there is a () displayed, the error display shows the number of times that an auto recovery occurred for the same reason has reached the number of times in ().
 If no () is displayed, the error display shows that the trouble has occurred once.
- (3) Auto Recovery:
 — Does not occur
 Auto recovery occurs.

(d) Operation mode, Fan speed mode information tables

(i) Operation mode

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

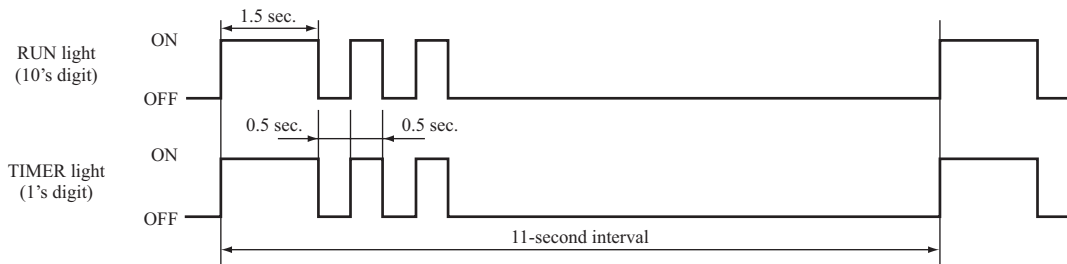
(ii) Fan speed mode

Display pattern when in service mode	Fan speed mode when there is an abnormal stop
TIMER light (1's digit)	
—	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) Temperature information

(i) Room temperature sensor, indoor heat exchanger temperature sensor, outdoor air temperature sensor, outdoor heat exchanger temperature sensor temperature

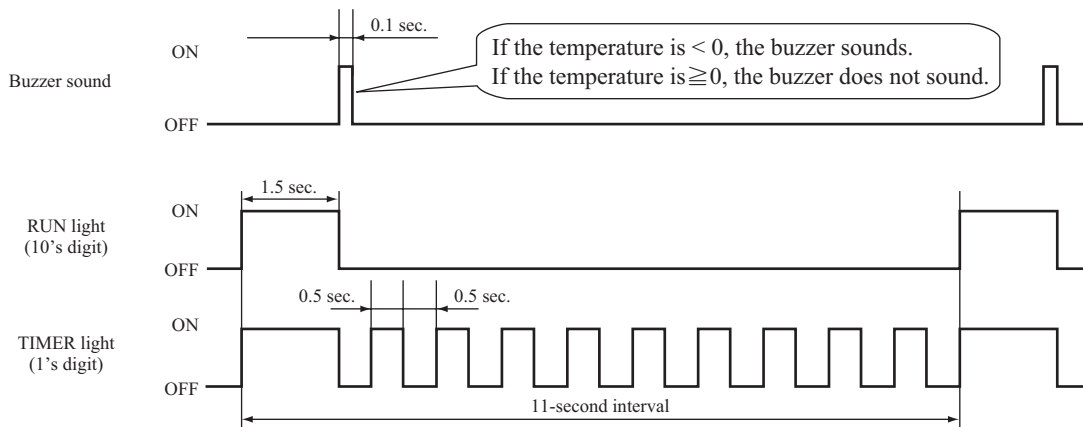
Unit: °C

Buzzer sound	RUN light (10's digit)	TIMER light (1's digit)									
		0	1	2	3	4	5	6	7	8	9
Yes (sounds for 0.1 second)	6	-60	-61	-62	-63	-64					
	5	-50	-51	-52	-53	-54	-55	-56	-57	-58	-59
	4	-40	-41	-42	-43	-44	-45	-46	-47	-48	-49
	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
No (does not sound)	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
	4	40	41	42	43	44	45	46	47	48	49
	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 temperature information becomes as shown below.

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

(Example) Outdoor heat exchanger temperature data: “-9°C”



(ii) Discharge pipe sensor temperature

Unit: °C

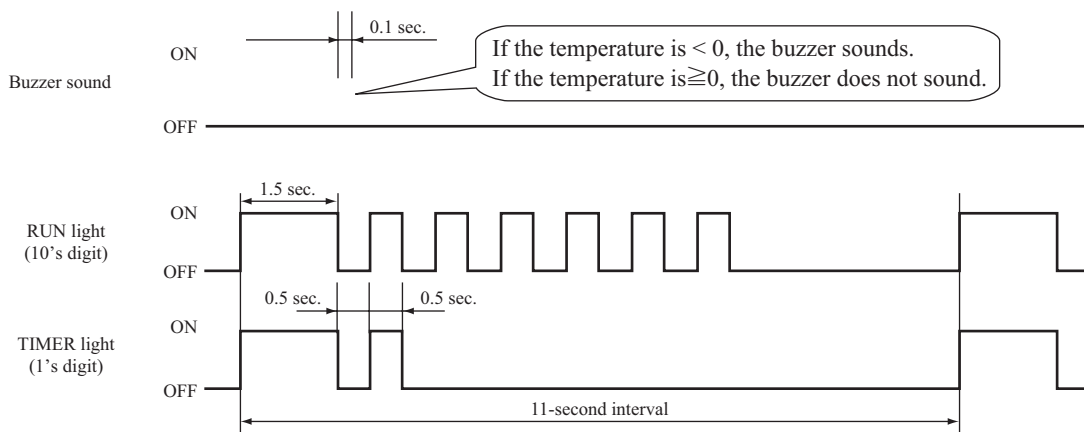
Buzzer sound	RUN light (10's digit)	TIMER light (1's digit)											
		0	1	2	3	4	5	6	7	8	9		
Yes (sounds for 0.1 second)	3	-60	-62	-64									
	2	-40	-42	-44	-46	-48	-50	-52	-54	-56	-58		
	1	-20	-22	-24	-26	-28	-30	-32	-34	-36	-38		
	0	/	-2	-4	-6	-8	-10	-12	-14	-16	-18		
No (does not sound)	0	0	2	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		
	3	60	62	64	66	68	70	72	74	76	78		
	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 are recorded (error code is normal), the display for each temperature information becomes as shown below.

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

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

* In the case of discharge pipe temperature data, multiply the reading value by 2. (Below, 61 x 2 = "122°C")



Service data record form

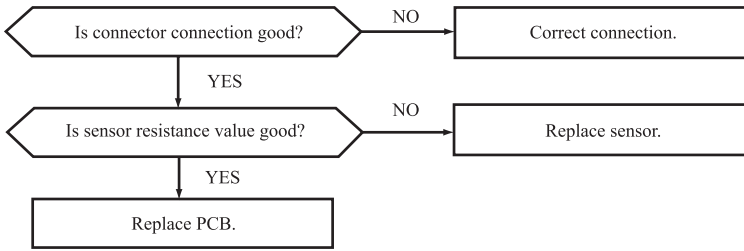
Customer		Model					
Date of investigation							
Machine name							
Content of complaint							
Wireless remote control settings			Content of displayed data	Display results			Display content
Temperature setting	Operation mode	Fan speed mode		Buzzer (Yes/No.)	RUN light (Times)	TIMER light (Times)	
21	Cooling	MED	Error code on previous occasion.	/			
		HI	Room temperature sensor on previous occasion.				
		AUTO	Indoor heat exchanger sensor 1 on previous occasion.				
	Heating	LO	Wireless remote control information on previous occasion.	/			
		MED	Outdoor air temperature sensor on previous occasion.				
		HI	Outdoor heat exchanger sensor on previous occasion.				
	AUTO	Discharge pipe sensor on previous occasion.					
26	Cooling	AUTO	Indoor heat exchanger sensor 2 on previous occasion.				
22	Cooling	MED	Error code on second previous occasion.	/			
		HI	Room temperature sensor on second previous occasion.				
		AUTO	Indoor heat exchanger sensor 1 on second previous occasion.				
	Heating	LO	Wireless remote control information on second previous occasion.	/			
		MED	Outdoor air temperature sensor on second previous occasion.				
		HI	Outdoor heat exchanger sensor on second previous occasion.				
	AUTO	Discharge pipe sensor on second previous occasion.					
27	Cooling	AUTO	Indoor heat exchanger sensor 2 on second occasion.				
23	Cooling	MED	Error code on third previous occasion.	/			
		HI	Room temperature sensor on third previous occasion.				
		AUTO	Indoor heat exchanger sensor 1 on third previous occasion.				
	Heating	LO	Wireless remote control information on third previous occasion.	/			
		MED	Outdoor air temperature sensor on third previous occasion.				
		HI	Outdoor heat exchanger sensor on third previous occasion.				
	AUTO	Discharge pipe sensor on third previous occasion.					
28	Cooling	AUTO	Indoor heat exchanger sensor 2 on third occasion.				
24	Cooling	MED	Error code on fourth previous occasion.	/			
		HI	Room temperature sensor on fourth previous occasion.				
		AUTO	Indoor heat exchanger sensor 1 on fourth previous occasion.				
	Heating	LO	Wireless remote control information on fourth previous occasion.	/			
		MED	Outdoor air temperature sensor on fourth previous occasion.				
		HI	Outdoor heat exchanger sensor on fourth previous occasion.				
	AUTO	Discharge pipe sensor on fourth previous occasion.					
29	Cooling	AUTO	Indoor heat exchanger sensor 2 on fourth occasion.				
25	Cooling	MED	Error code on fifth previous occasion.	/			
		HI	Room temperature sensor on fifth previous occasion.				
		AUTO	Indoor heat exchanger sensor 1 on fifth previous occasion.				
	Heating	LO	Wireless remote control information on fifth previous occasion.	/			
		MED	Outdoor air temperature sensor on fifth previous occasion.				
		HI	Outdoor heat exchanger sensor on fifth previous occasion.				
	AUTO	Discharge pipe sensor on fifth previous occasion.					
30	Cooling	AUTO	Indoor heat exchanger sensor 2 on fifth occasion.				
21	Cooling	LO	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			Stop code on fifth previous occasion.				
26			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.				
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. (Refer to page 124)

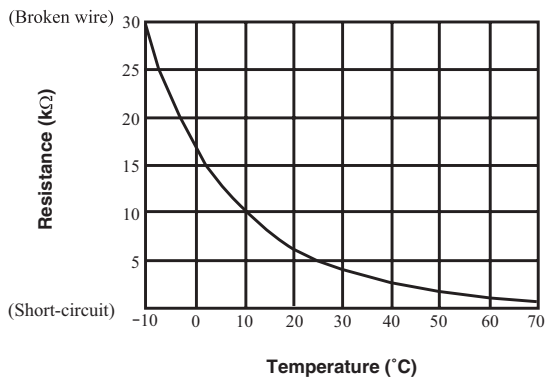
(7) Inspection procedures corresponding to detail of trouble

Sensor error

[Broken sensor wire, connector poor connection]

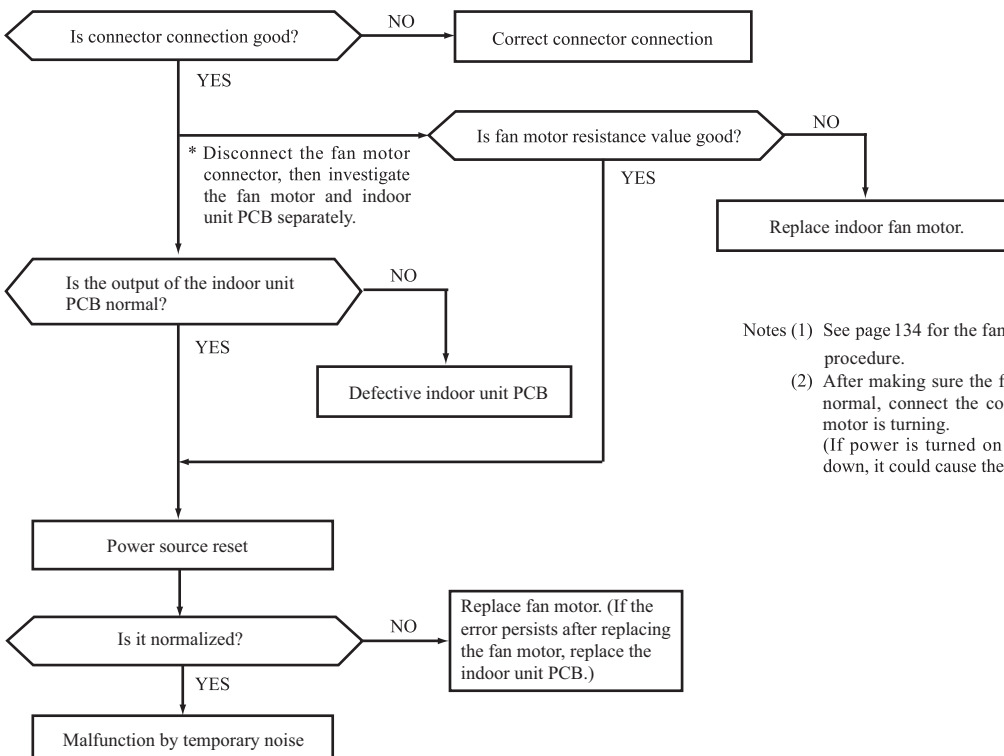


◆ **Sensor temperature characteristics**
(Room temperature, indoor heat exchanger temperature)



Indoor fan motor error

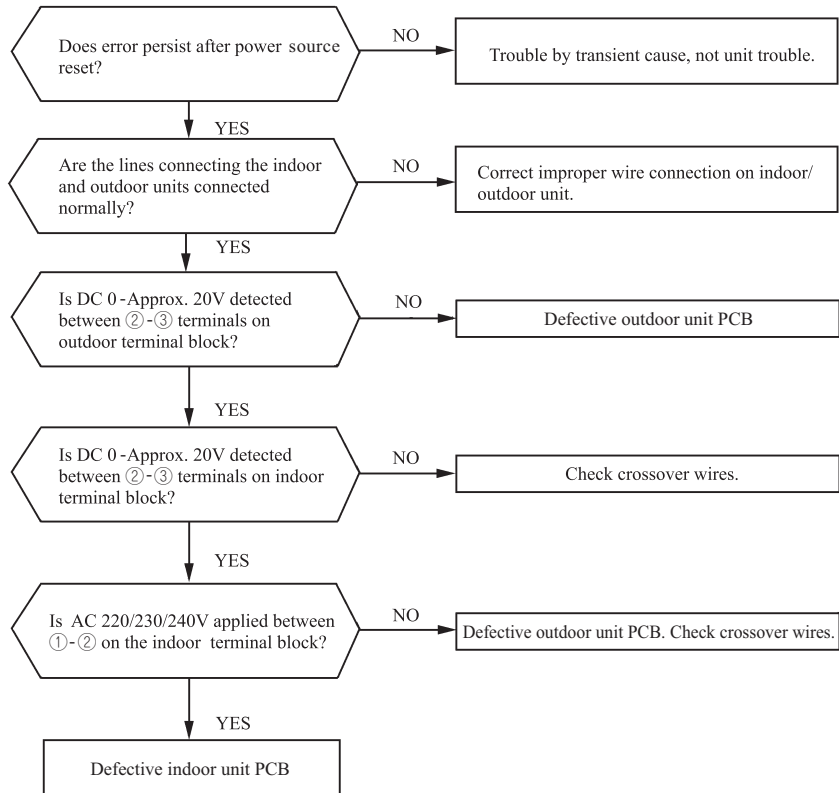
[Defective fan motor, connector poor connection, defective indoor unit PCB]



Notes (1) See page 134 for the fan motor and indoor unit PCB check procedure.
 (2) After making sure the fan motor and indoor unit PCB are normal, connect the connectors and confirm that the fan motor is turning.
 (If power is turned on while one or the other is broken down, it could cause the other to break down also.)

Error of signal transmission

[Wiring error including power cable, defective indoor/
outdoor unit PCB]



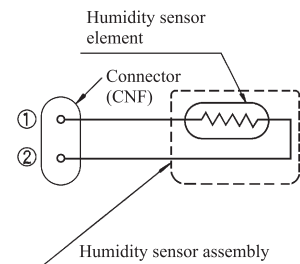
(8) Phenomenon observed after short-circuit, wire breakage on sensor

Sensor	Operation mode	Phenomenon	
		Short-circuit	Disconnected wire
Room temperature sensor	Cooling	Release of continuous compressor operation command.	Continuous compressor operation command is not released.
	Heating	Continuous compressor operation command is not released.	Release of continuous compressor operation command.
Heat exchanger temperature sensor	Cooling	Freezing cycle system protection trips and stops the compressor.	Continuous 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

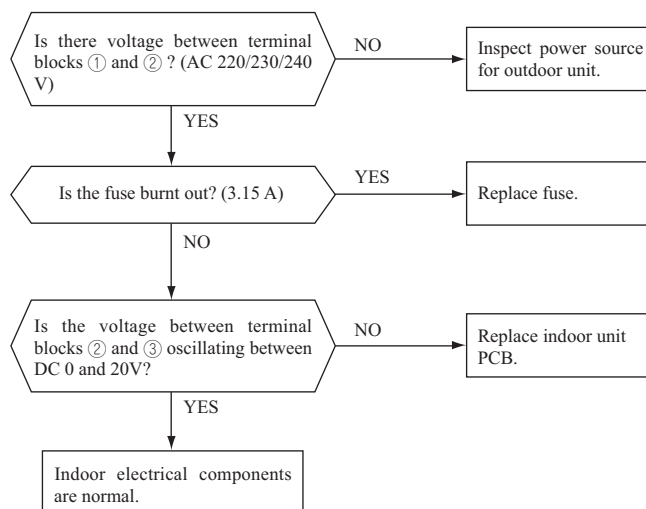
Failure mode	Control input circuit reading	Air-conditioning system operation
Disconnected wire	① Disconnected wire	Humidity reading is 0%
	② Disconnected wire	
	①② Disconnected wire	
Short-circuit	① and ② are short-circuited	Humidity reading is 100%

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



(9) Checking the indoor electrical equipment

(a) Indoor unit PCB check procedure



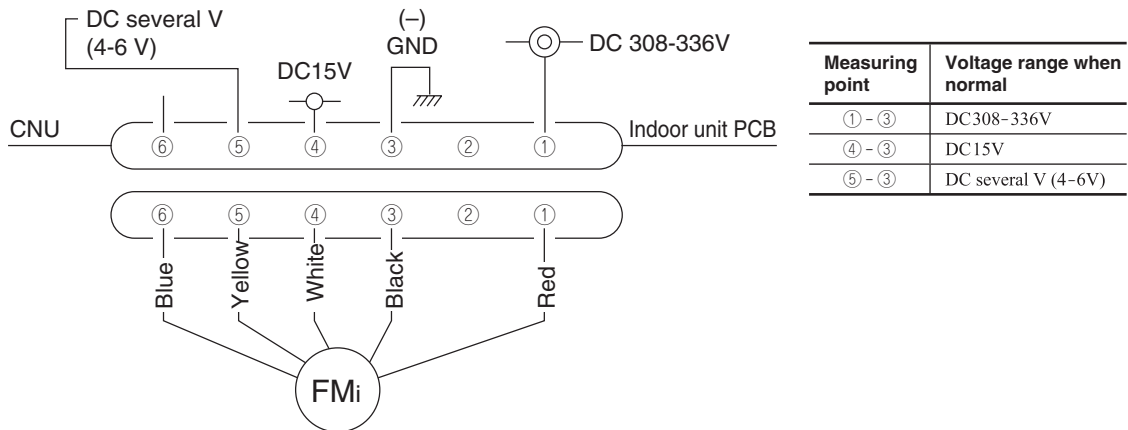
(b) Indoor fan motor check procedure

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

(i) Indoor unit PCB output check

- 1) Turn off the power.
- 2) Remove the front panel, then disconnect the fan motor lead wire connector.
- 3) 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 unit 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 unit PCB has failed and the fan motor is normal.

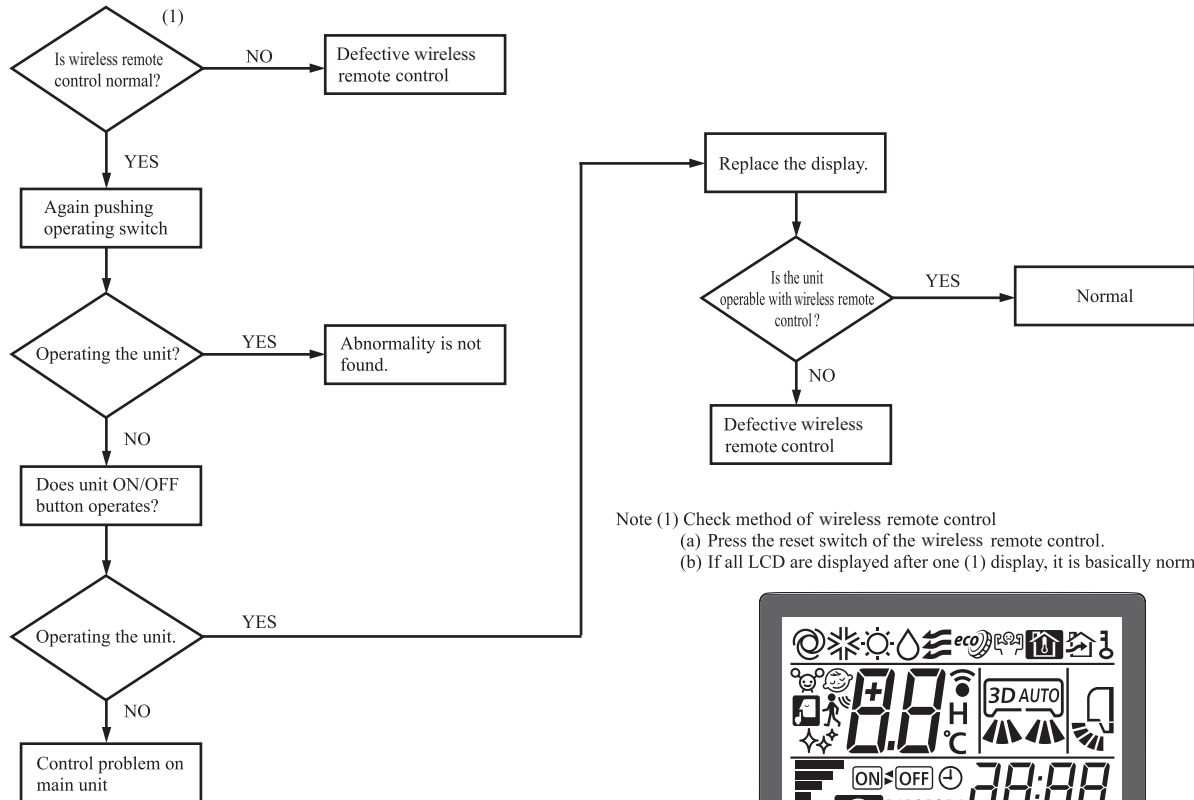


(ii) Fan motor resistance check

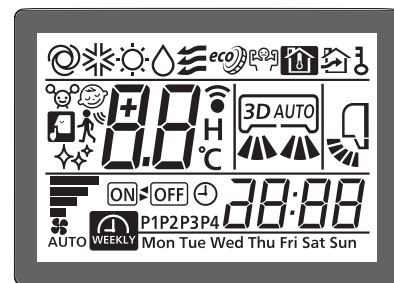
Measuring point	Resistance when normal
① - ③ (Red - Black)	20 MΩ or higher
④ - ③ (White - Black)	20 kΩ or higher

- 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.



◆ Simplified check method 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.

(11) Inspection procedure for blown fuse on the indoor unit PCB

