



1.2.2 Troubleshooting flow

(1) List of troubles

(a) FDT, FDTC, FDU, FDUM, FDE series

Remote control display	Description of trouble	Reference page
None	Operates but does not cool	81
None	Operates but does not heat	82
None	Earth leakage breaker activated	83
None	Excessive noise/vibration (1/3)	84
None	Excessive noise/vibration (2/3)	85
None	Excessive noise/vibration (3/3)	86
None	Louver motor failure	87
None	Power source system error (Power source to indoor unit control PCB)	88
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INSPECT I/U	INSPECT I/U (When 1 or 2 remote controls are connected)	90
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E51	Inverter and fan motor anomaly	123
E53	Suction pipe temperature sensor anomaly	124
E54	Low pressure sensor anomaly	125
E57	Insufficient refrigerant amount or detection of service valve closure	126
E59	Compressor startup failure	127 · 128

(b) SRK series

Remote control display	Description of trouble	Reference page
None	Operates but does not cool.	129
None	Operates but does not heat.	130
None	Earth leakage breaker activated	131
None	Excessive noise/vibration (1/3)	132
None	Excessive noise/vibration (2/3)	133
None	Excessive noise/vibration (3/3)	134
None	Louver motor failure	135
None	Power source system error (Power source to indoor control PCB)	136
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INSPECT I/U	INSPECT I/U (When 1 or 2 remote controls are connected)	139
INSPECT I/U	INSPECT I/U (Connection of 3 units or more remote controls)	140
 WAIT 	Communication error at initial operation	141 - 143
None	No display	144
E1	Remote control communication circuit error	145
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E6	Indoor heat exchanger temperature sensor anomaly	147
None	Room temperature sensor anomaly	148
E10	Excessive number of connected indoor units (more than 17 units) by controlling with one remote control	149
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E40	High pressure error (63H1 activated)	158
E41	Power transistor overheat	159
E42	Current cut	160 · 161
E45	Communication error between inverter PCB and outdoor control PCB	162
E48	Outdoor fan motor anomaly	163
E49	Low pressure error or low pressure sensor anomaly	164 · 165
E51	Inverter and fan motor anomaly	166
E53	Suction pipe temperature sensor anomaly	167
E54	Low pressure sensor anomaly	168
E57	Insufficient refrigerant amount or detection of service valve closure	169
E59	Compressor startup failure	170 · 171

(2) Troubleshooting

(a) FDT, FDTC, FDU, FDUM, FDE series

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

<p>1. Applicable model</p>	5. Troubleshooting	
<p>2. Error detection method</p>	Diagnosis	Countermeasure
<p>3. Condition of error displayed</p>	<pre> graph TD Start[Check the indoor fan operation. Check the temperature difference between return and supply air.] --> 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 -- NO --> C1[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.)] D2 -- YES --> B1[Mistake in model selection. Calculate heat load once more.] B1 --> C2[It is necessary to replace to higher capacity one or to install additional unit.] 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 --> C3[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.] D4 -- NO --> C4[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 --> C5[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 --> B2[Check which control "Determination control of compressor rotation speed" or "Protective control by controlling compressor rotation speed" is appropriate to this phenomenon.] B2 --> D6{Are the (1) temperature conditions of room and outdoor air close to the rated conditions?} D6 -- YES --> C6[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 --> B3[The unit is operating normally but is operating under the control for protecting compressor or other respective parts.] Note(1) Outdoor : 35°C, Indoor : 27°C </pre>	
<p>4. Presumable cause</p> <ul style="list-style-type: none"> • Poor compression of compressor • Faulty expansion valve operation 		

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 to 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 D1{Are OK the insulation resistance and resistance between terminals (1) of compressor? (1) 1.044Ω or more at 20°C (Models FDC100-140VNX-W) 1.044Ω or more at 20°C (Models FDC100-140VXS-W)} D2{Is insulation of respective harnesses OK? Is any harness bitten between pannel and casing or etc?} B1[Check the outdoor unit grounding wire/earth leakage breaker.] D1 -- NO --> C1[Replace compressor.*] D1 -- YES --> D2 D2 -- NO --> C2[Secure insulation resistance.] D2 -- YES --> B1 </pre>	
<p>Check of the outdoor unit grounding wire/earth leakage breaker</p> <ul style="list-style-type: none"> 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.) ② In order to prevent malfunction of the earth leakage breaker itself, confirm that it is conformed to higher harmonic regulation. <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> <ul style="list-style-type: none"> ① Check if the earth leakage breaker is conformed to higher harmonic regulation or not. <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:

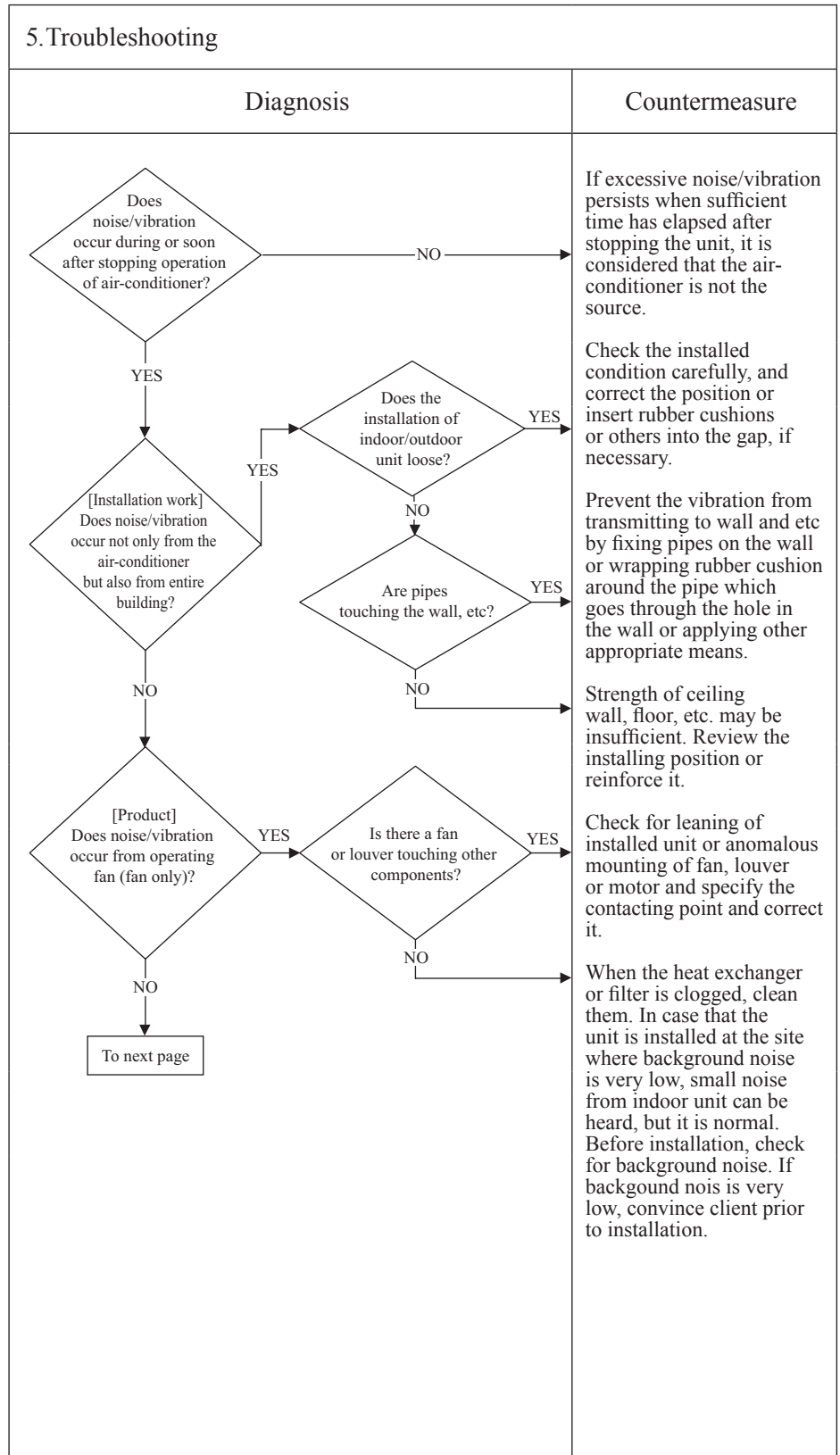
Error code Remote control: None	LED	Green	Red	Content Excessive noise/vibration (1/3)
	Indoor	—	—	
	Outdoor	—	—	

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>[Adjustment during commissioning] 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>[Adjustment during commissioning] 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
Diagnosis	Countermeasure				
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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

- 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>LM: louver motor</p>	

Note:

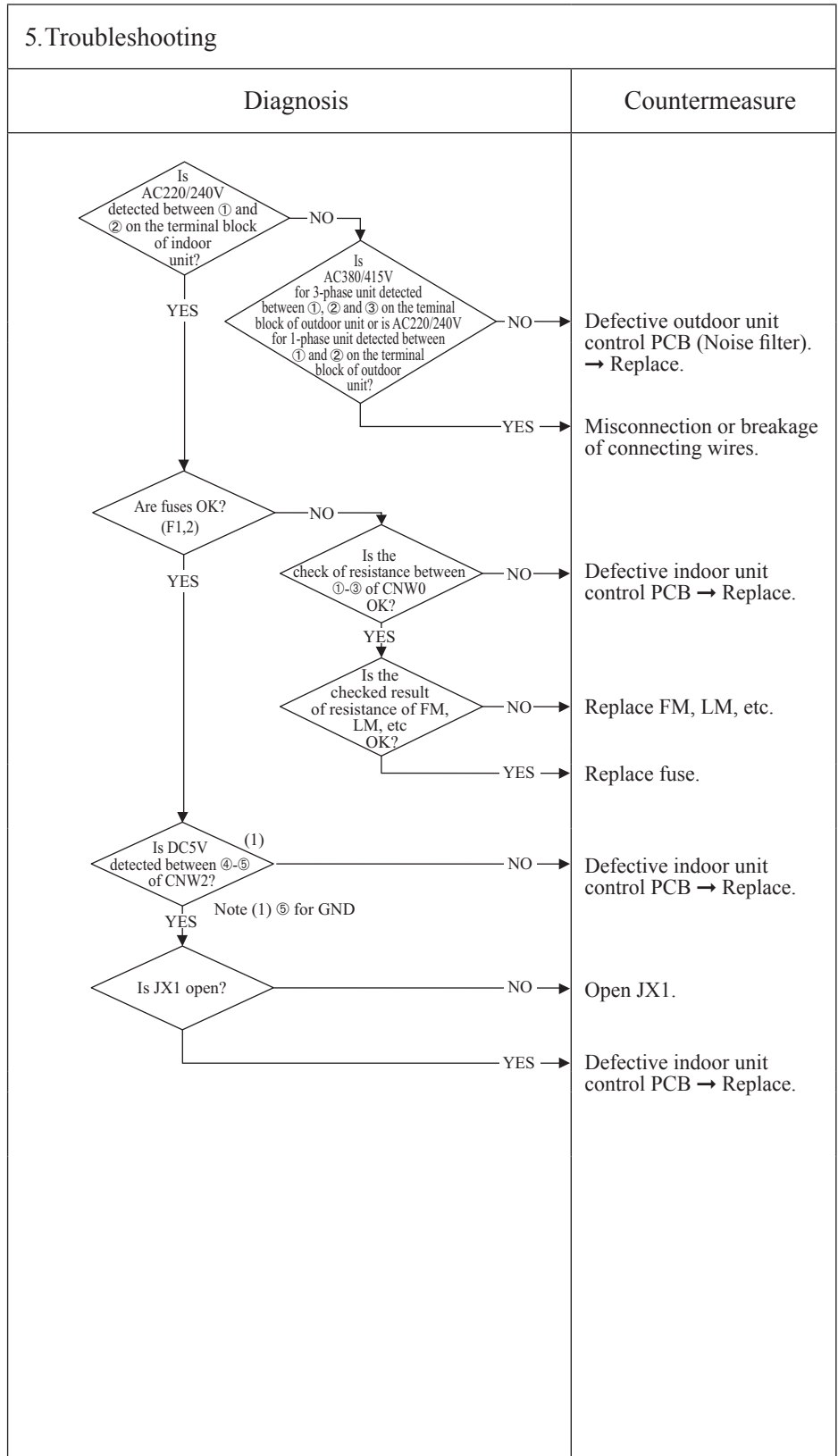
Error code Remote control: None	LED	Green	Red	Content Power source system error (Power source to indoor unit control PCB)
	Indoor	Stays OFF	Stays OFF	
	Outdoor	Keeps flashing	2-time flash	

1. Applicable model

2. Error detection method

3. Condition of error displayed

4. Presumable cause
- Misconnection or breakage of connecting wires
 - Blown fuse
 - Faulty transformer
 - Faulty indoor unit control PCB
 - Broken harness
 - Faulty outdoor unit control PCB (Noise filter)



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	

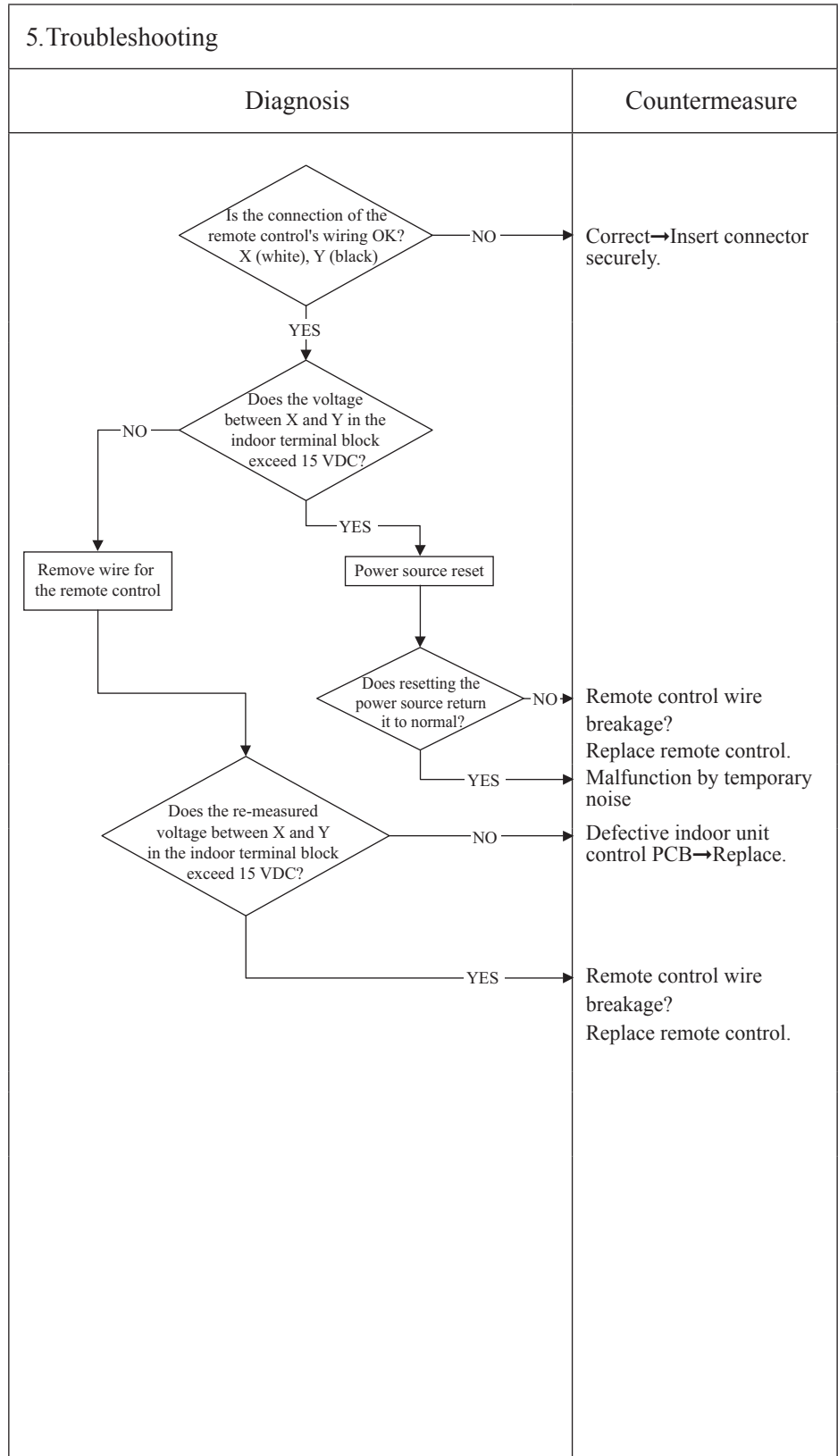
1. Applicable model

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?} Q2{Is it set at the slave remote control?} Q3{Does it become normal?} Q4{Do more than one indoor units have the same address?} Q5{Are remote control wires laid along high voltage wires?} Q6{Does DM start 60 seconds later automatically?} Q1 -- YES --> S1[Set one remote control for "Master" and the other for "Slave"] S1 --> Q3 Q3 -- YES --> C1[Normal] Q3 -- NO --> Q4 Q1 -- NO --> Q2 Q2 -- YES --> C2[Set SW1 on remote control PCB at "Master".] Q2 -- NO --> Q3 Q4 -- YES --> C3[Set address again. (SW2 on indoor unit control PCB)] Q4 -- NO --> Q5 Q5 -- YES --> C4[Separate remote control wires from high voltage wires.] Q5 -- NO --> S2[Disconnect the connecting wire ③ between the indoor and outdoor unit.] S2 --> S3[Power source reset] S3 --> Q6 Q6 -- YES --> C5[Defective indoor unit control PCB -> Replace.] Q6 -- NO --> C6[Defective remote control -> Change.] Note1[Note (1) Use SW1 to set at master or slave.] Note2[Note (2) "Slave" is displayed on the remote control LCD.] Note3[Note (3) Only indoor unit with drain pump] S1 --- Note1 Q2 --- Note2 Note3 --- Q6 </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	

<p>1. Applicable model</p>	<p>5. Troubleshooting</p>	
<p>2. Error detection method</p> <p>Indoor unit cannot communicate for more than 30 minutes after the power on with remote control.</p>	<p>Diagnosis</p>	<p>Countermeasure</p>
<p>3. Condition of error displayed</p> <p>Same as above</p>		
<p>4. Presumable cause</p> <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 		

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

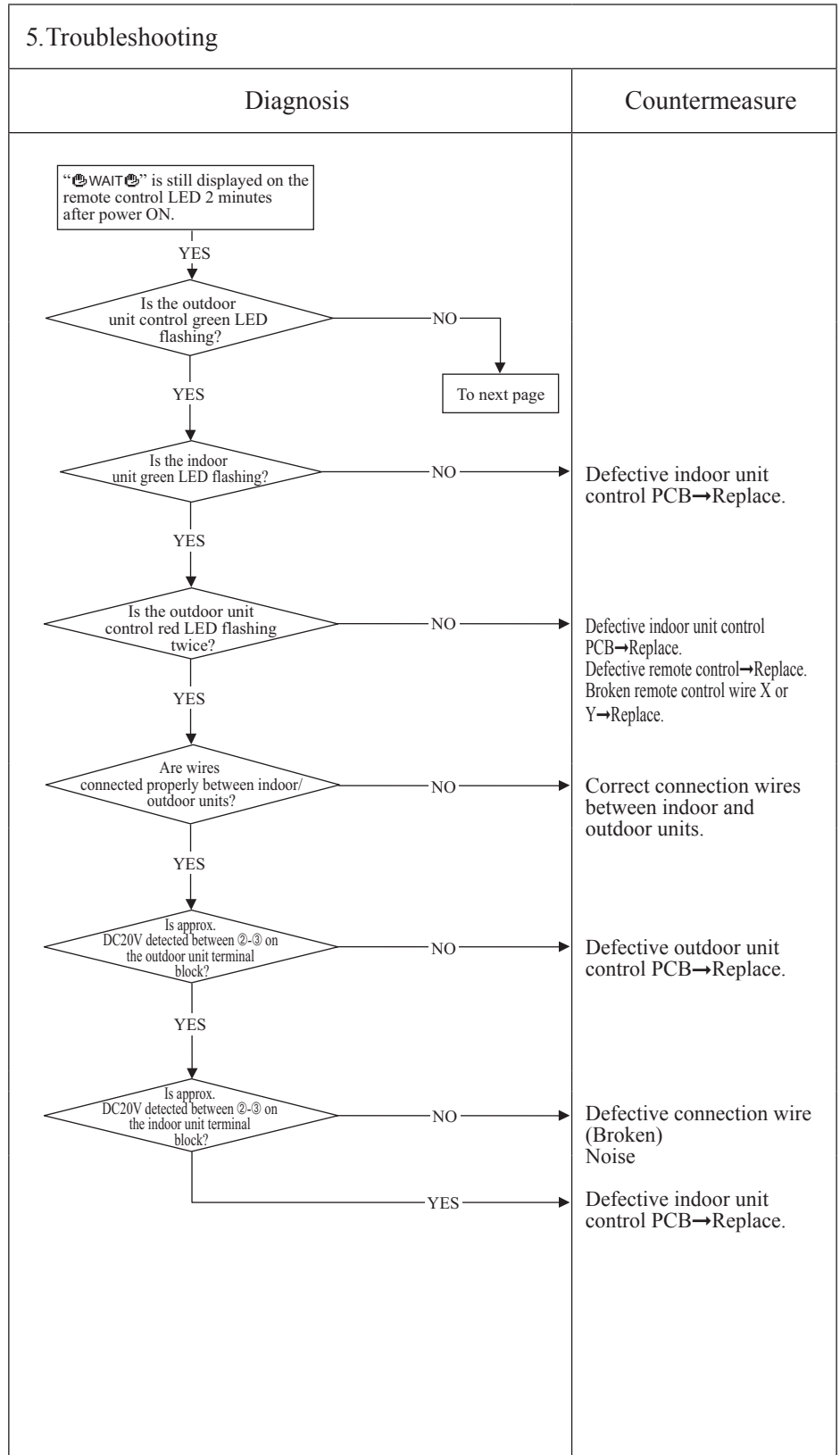
Error code Remote control: 🟡WAIT🟡	LED	Green	Red	Content Communication error at initial operation (1/3)
	Indoor	Keeps flashing	Stays OFF	
	Outdoor	Keeps flashing	2-time flash	

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:

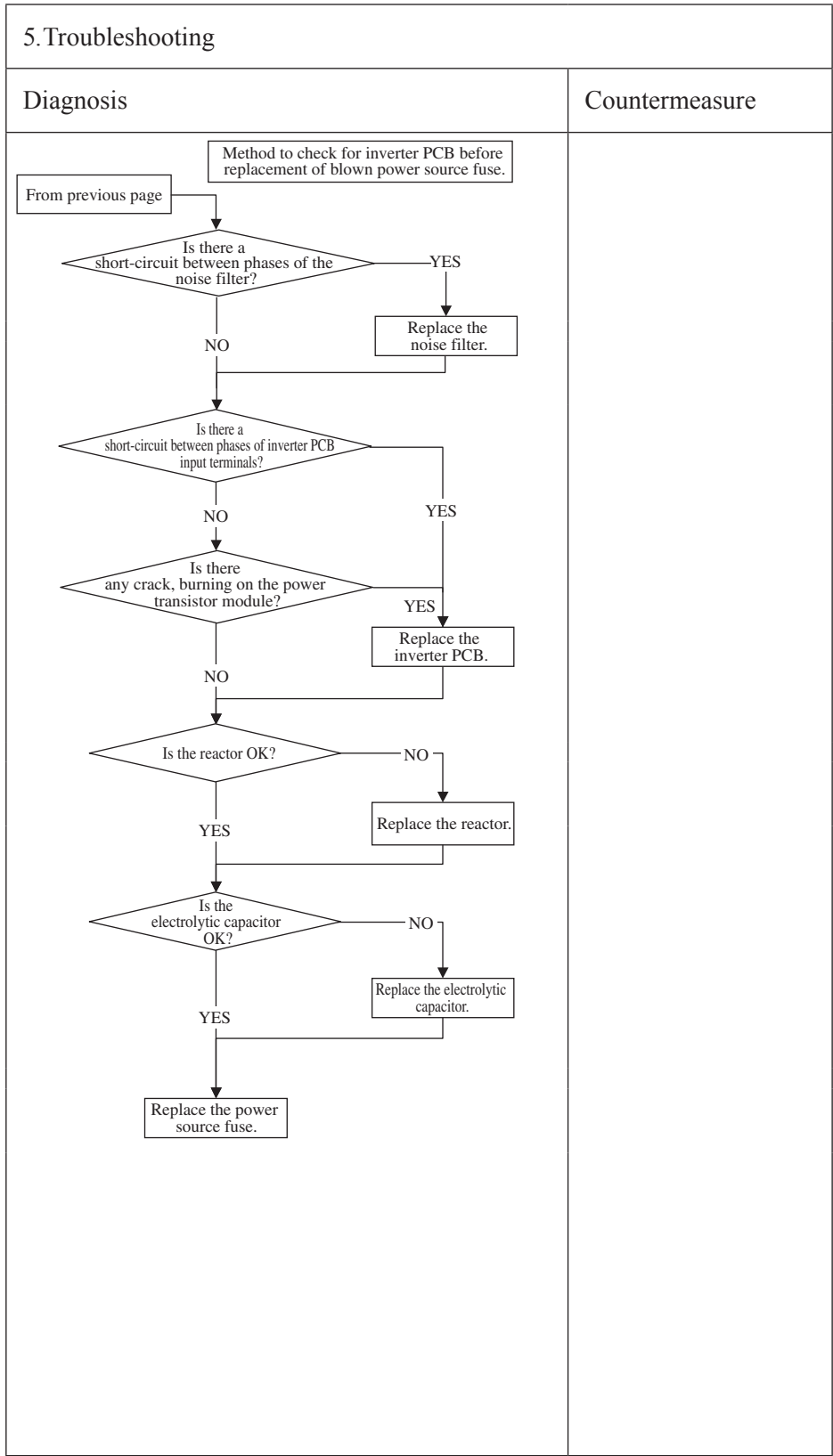
Error code Remote control: 🏠 WAIT 🏠	LED	Green	Red	Content Communication error at initial operation (3/3)
	Indoor	Keeps flashing	Stays OFF	
	Outdoor	Keeps flashing	2-time flash	

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



Note:

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

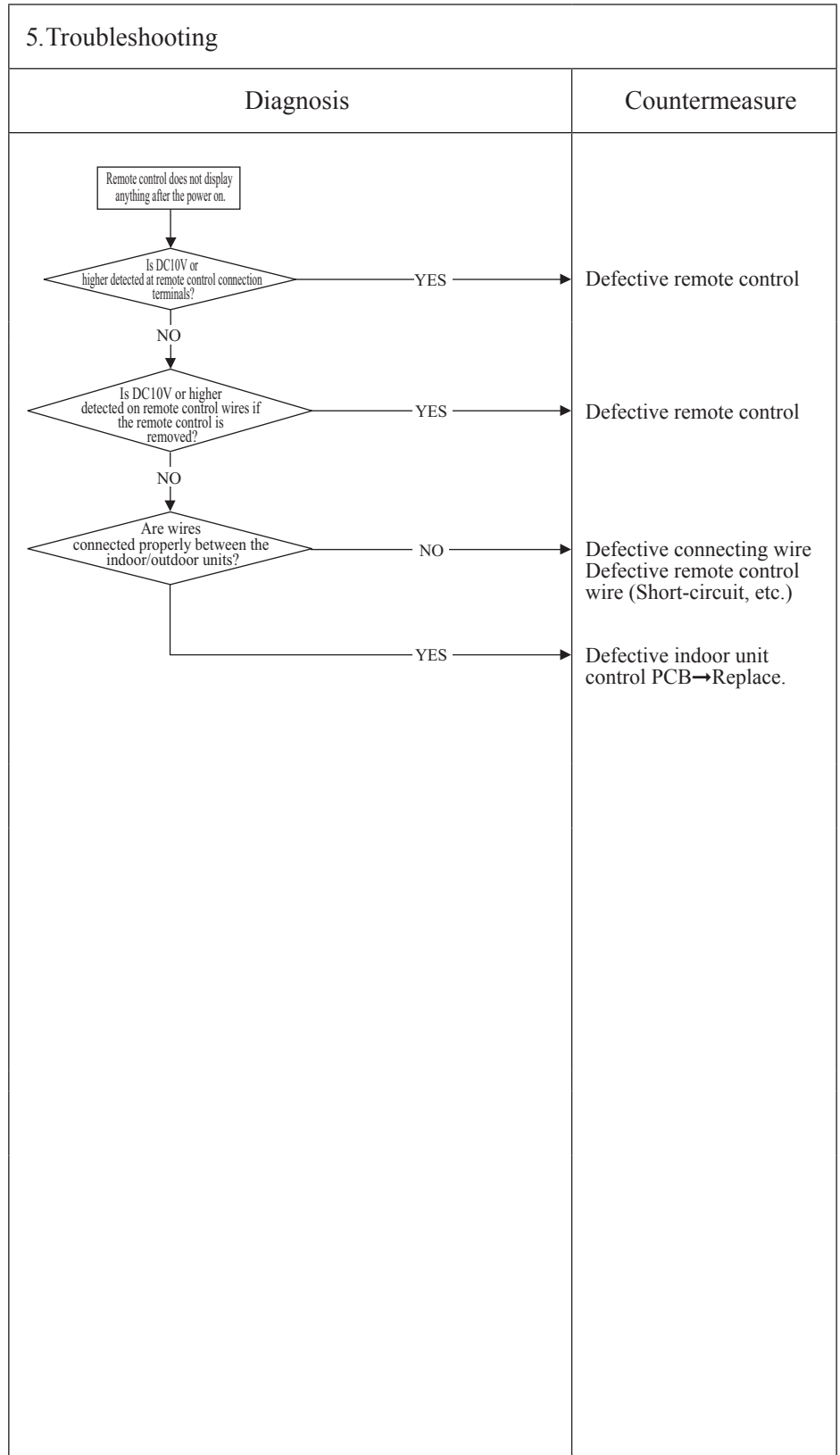
1. Applicable model

2. Error detection method

3. Condition of error displayed

4. Presumable cause

- 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>Correct. → Insert connector securely.</p>
<p>Are characteristics of indoor heat exchanger temperature sensor OK?</p> <p>NO →</p> <p>YES →</p>	

Defective indoor heat exchanger temperature sensor → Replace.

Defective indoor unit control PCB → Replace. (Defective indoor heat exchanger temperature sensor input circuit)

Temperature-resistance characteristic

Temperature (°C)	Temperature sensor resistance (kΩ)
0	15
10	10
20	6
25	5
30	4
40	3
50	2

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	15
10	10
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
<ul style="list-style-type: none"> • 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 A{Is the air filter clogged?} -- YES --> B[Wash.] A -- NO --> C{Is the indoor heat exchanger temperature sensor connection OK?} C -- YES --> D{Are the characteristics of indoor heat exchanger temperature sensor OK?} C -- NO --> E[Defective indoor heat exchanger temperature sensor connector -> Correct.] D -- YES --> F[Check the error data with the remote control.] D -- NO --> G[Defective indoor heat exchanger temperature sensor -> Replace.] F --> H{Is the unit operating in the state of heating overload?} H -- YES --> I[Adjust.] H -- NO --> J[Check refrigerant system.] </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 style="text-align: center;">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.] --> Overflow{Is there any overflow?} Overflow -- NO --> DC12V_CNI{Is DC12V at CNI connector?} DC12V_CNI -- YES --> CheckFloat[Check float switch.] DC12V_CNI -- NO --> CNI_Firm{Is the CNI connected firmly?} CNI_Firm -- NO --> DefectivePCB1[Defective indoor unit control PCB → Replace.] CNI_Firm -- YES --> Anomaly{Is there any anomaly on the option equipment?} Anomaly -- NO --> DefectivePCB2[Defective indoor unit control PCB → Replace.] Anomaly -- YES --> CheckOption[Check option equipment.] Overflow -- YES --> Humidifier{Is the humidifier connected?} Humidifier -- YES --> Interlock{Is the humidifier drain pump motor interlocked by the indoor unit function setting of remote control?} Interlock -- NO --> CorrectSetting[Correct setting to "Humidifier drain pump motor interlock".] Interlock -- YES --> MotorON[Drain pump motor ON from the remote control] MotorON --> MotorOperate{Does drain pump motor operate?} MotorOperate -- NO --> DC12V_CNR{Is DC12V detected at CNR connector?} DC12V_CNR -- NO --> DefectivePCB3[Defective indoor unit control PCB → Replace.] DC12V_CNR -- YES --> CheckWiring[Check wiring of drain pump motor.] MotorOperate -- YES --> DrainPipe{Is the drain piping unclogged? Is the drain pipe slope OK?} DrainPipe -- NO --> Correct[Correct.] DrainPipe -- YES --> CheckMotor[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	

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

Mistake of address setting method
(Address setting from remote control can't be done)

5. Troubleshooting

Diagnosis	Countermeasure
<pre> graph TD A[E11 occurs] --> B{Is "Master IU address set" function of remote control used?} B -- YES --> C[Change of address setting method] </pre> <p>In case the wiring is below and “Master IU address set” is used, E11 is appeared.</p>	<p>Change of address setting method Set the address by DIP switch SW2 on indoor unit control PCB.</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>	

Note (1) Set DIP switches SW5-1 and SW5-2 as shown in the following table.
(Factory default setting – “Master”)

		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

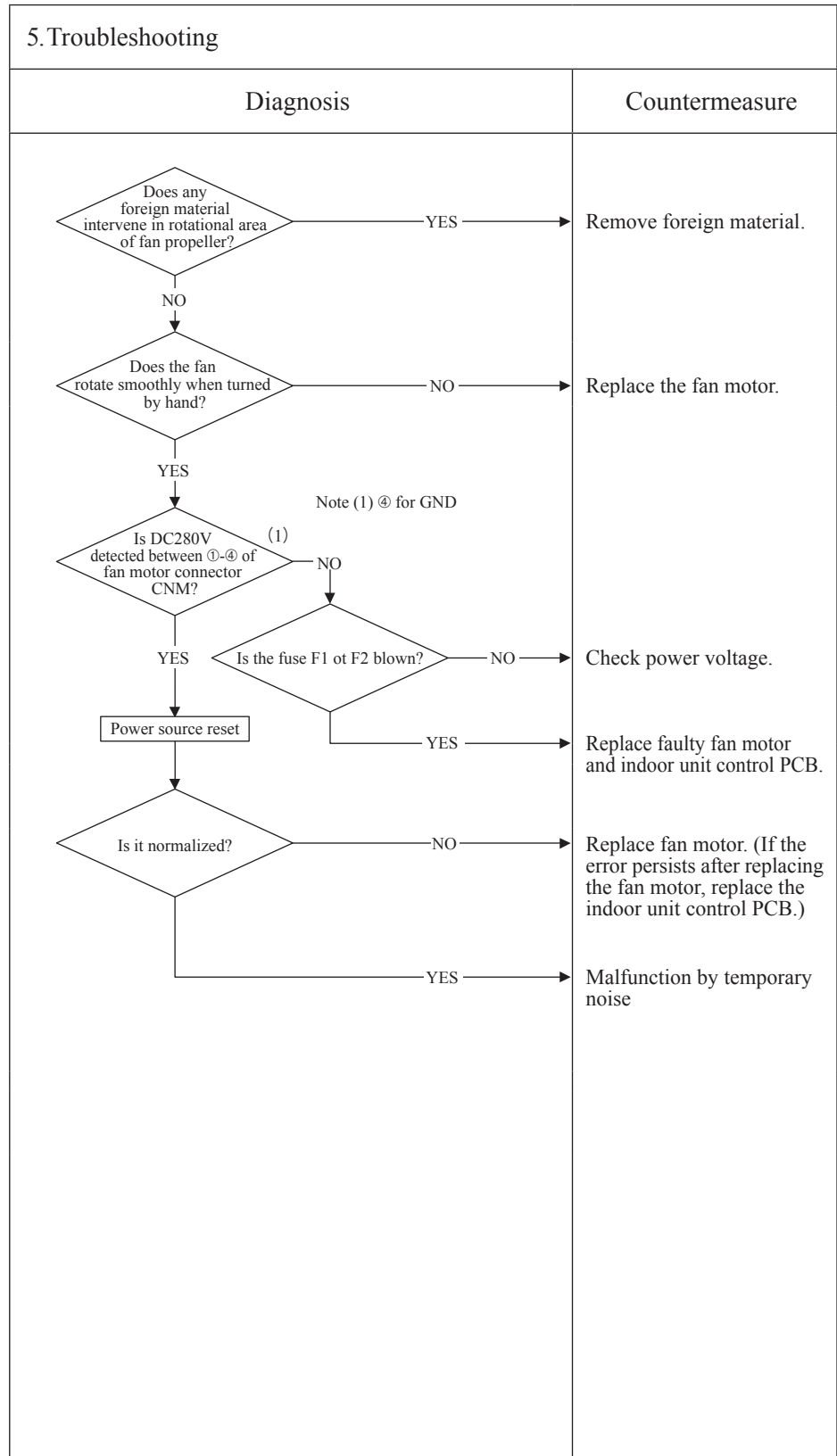
Detected by rotation speed of indoor fan motor

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[] </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

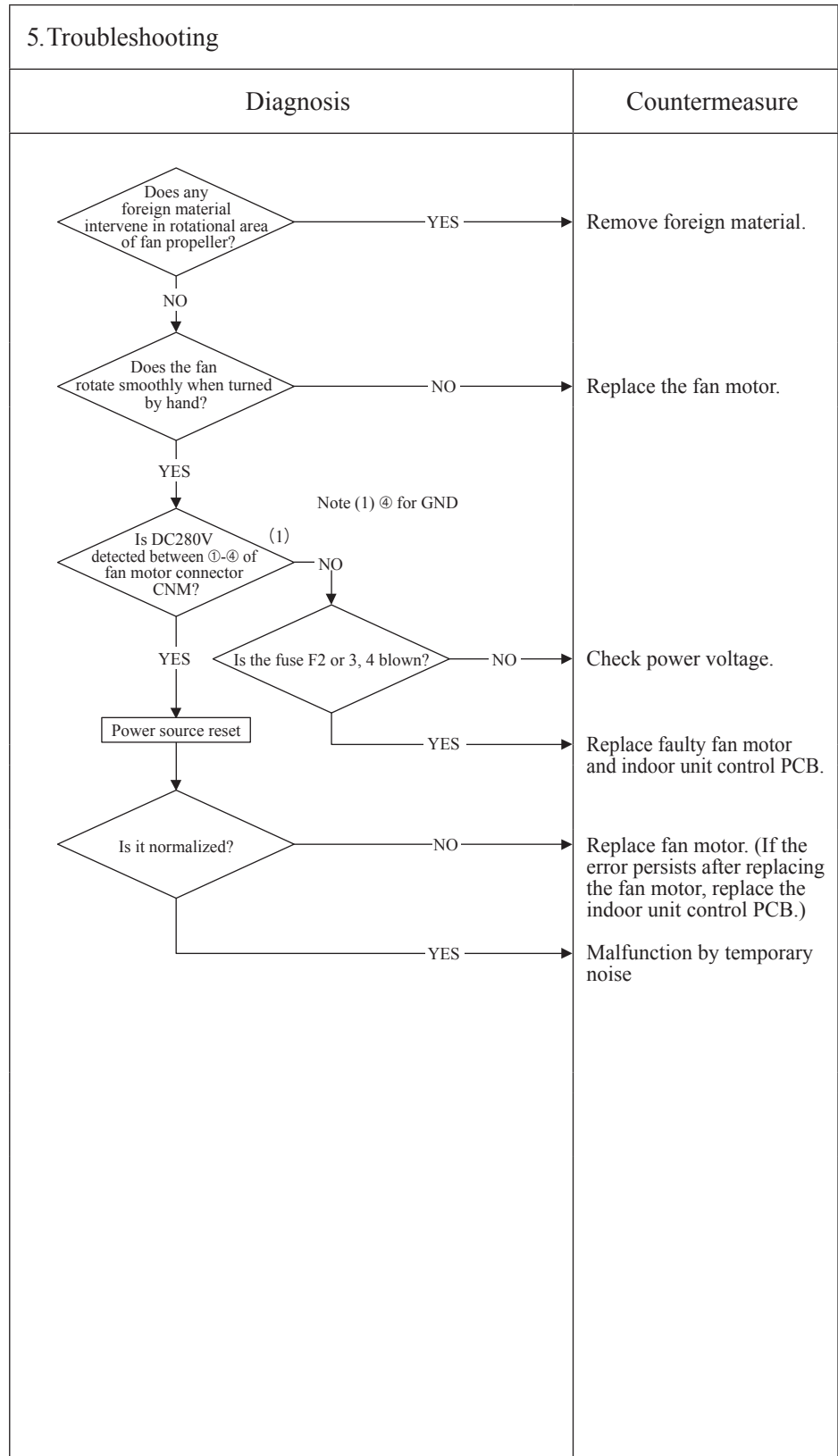
2. Error detection method

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

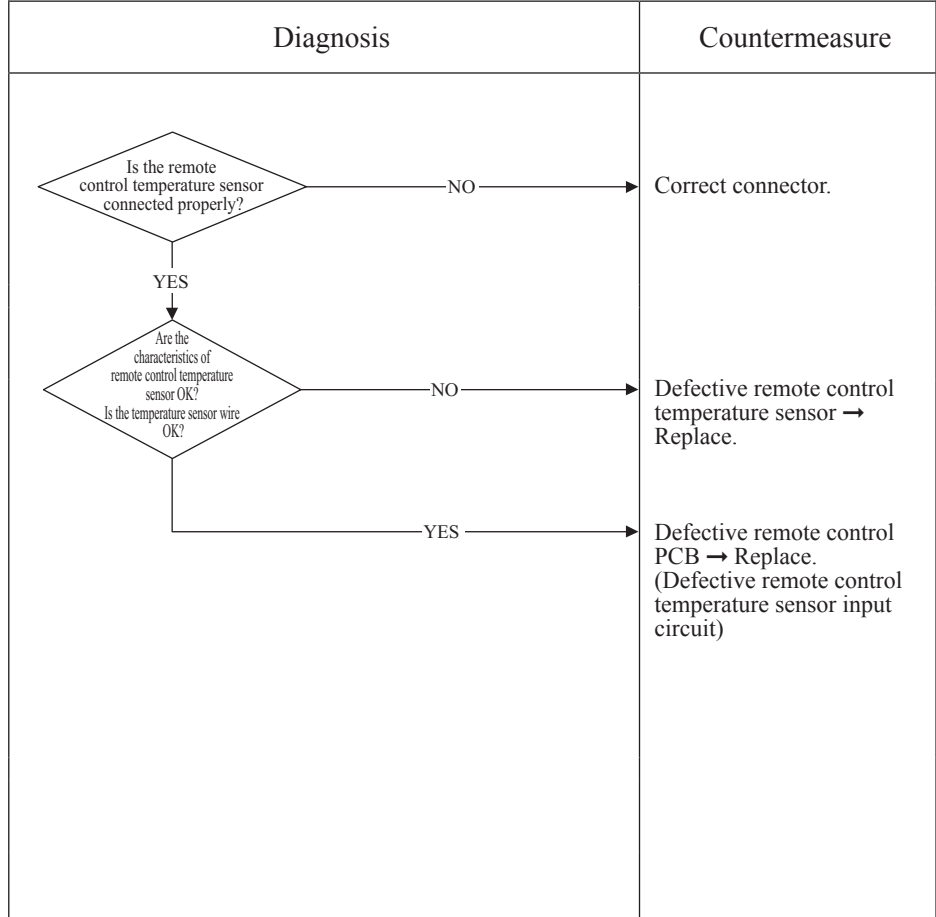
2. Error detection method
Detection of anomalously low temperature (resistance) of remote control temperature sensor (The)

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 temperature 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

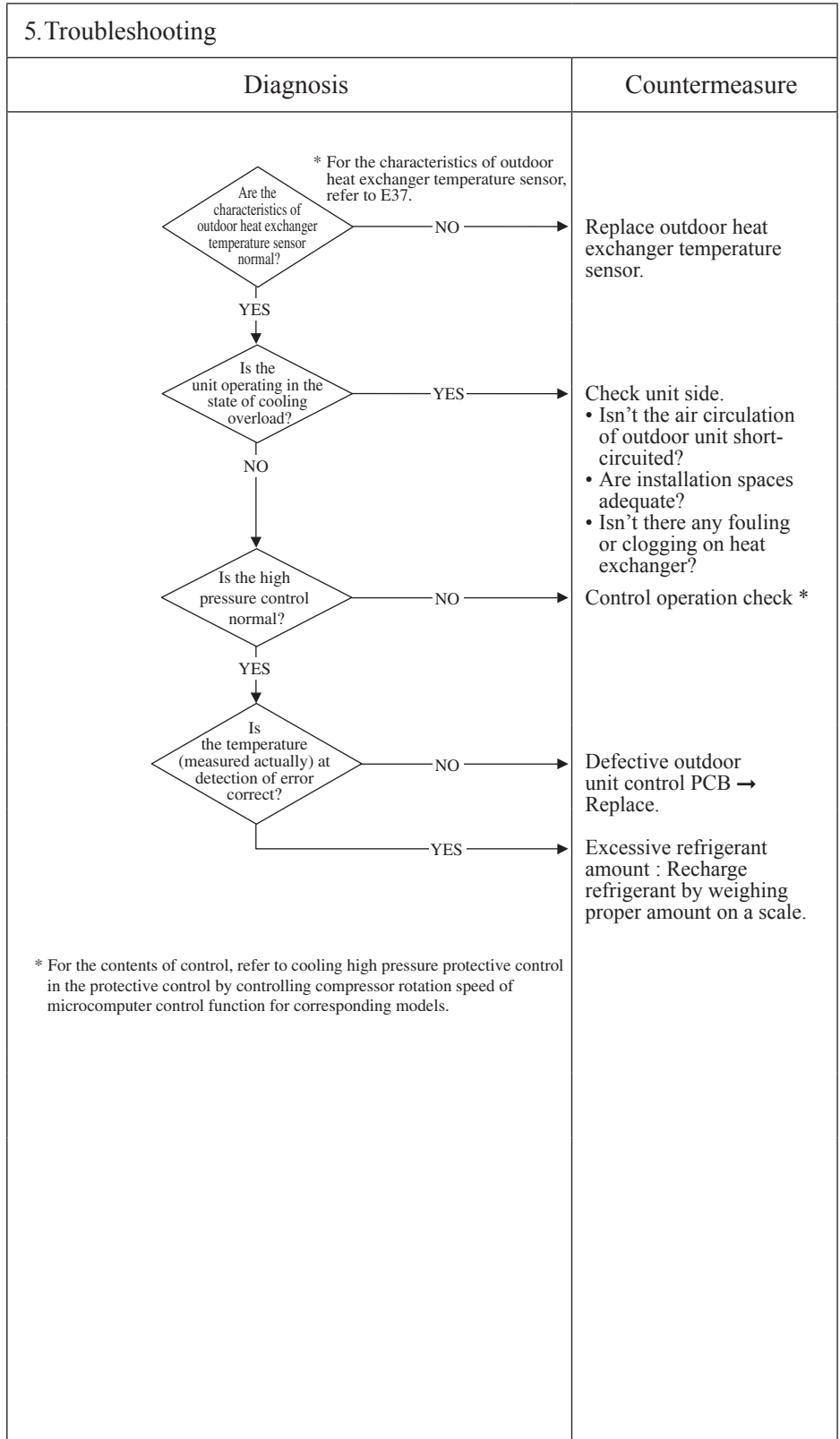
2. Error detection method

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 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

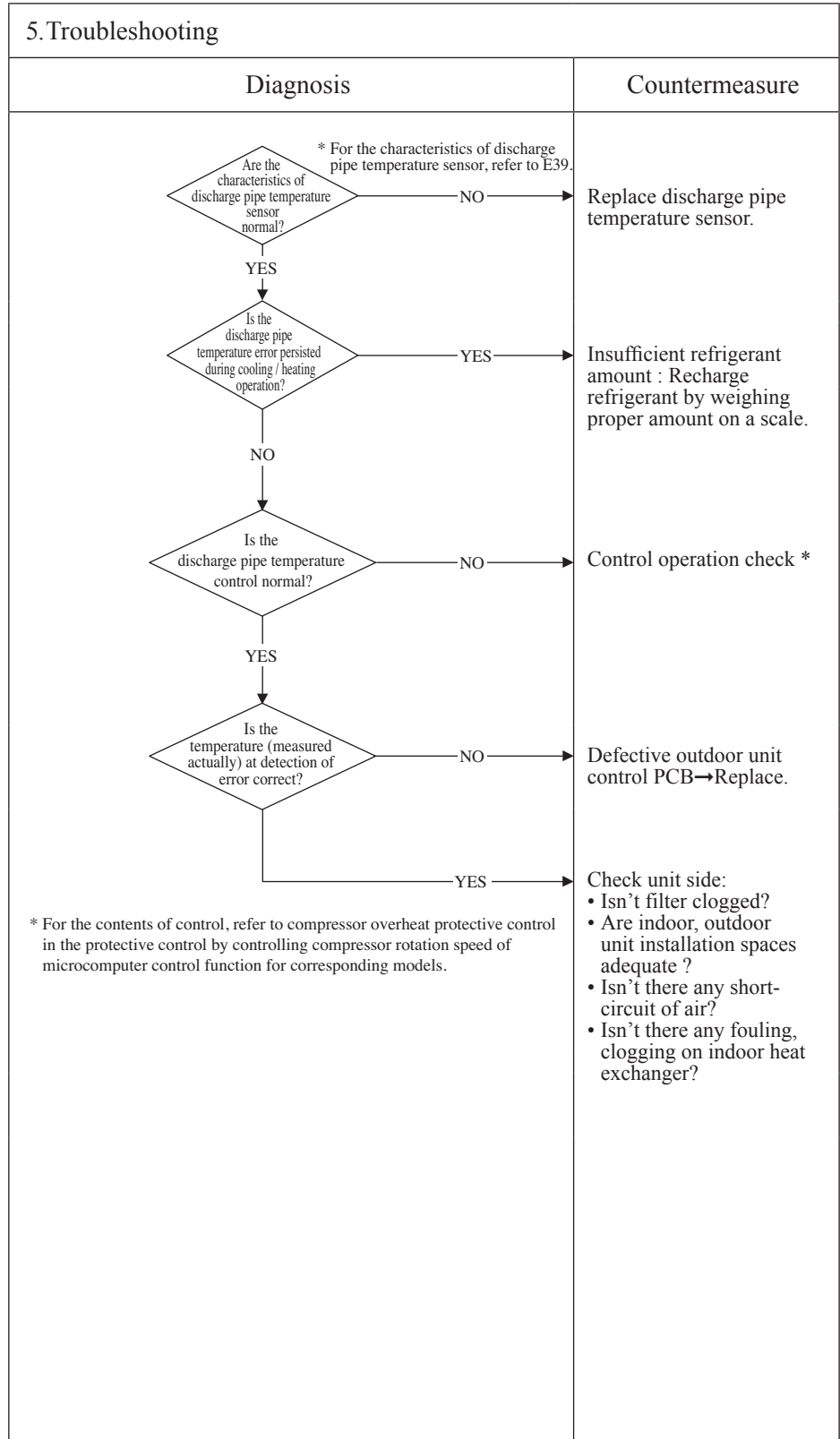
2. Error detection method

For the error detection method, refer to compressor overheat 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 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



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 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 -50°C or lower is detected for 5 seconds continuously within 20 seconds after compressor ON.

4. Presumable cause

- Defective outdoor unit control 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 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>Correct connector.</p> <p>Defective outdoor heat exchanger temperature sensor → Replace.</p> <p>Defective outdoor unit control PCB → Replace. (Defective outdoor heat exchanger temperature sensor input circuit)</p>

Temperature-resistance characteristics

(Broken wire) (Short-circuit)

Temperature (°C)	Temperature sensor resistance (kΩ)
0	~15
10	~10
20	~6
25	5
30	~4
40	~3
50	~2.5

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
	<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-resistance characteristics

(Broken wire) 35

Temperature (°C)	Temperature sensor resistance (kΩ)
0	35
10	25
20	18
30	12
40	8
50	5

(Short-circuit) 0

Temperature (°C)

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>(Broken wire) Temperature-resistance characteristics</p> <table border="1"> <caption>Temperature-resistance characteristics</caption> <thead> <tr> <th>Temperature (°C)</th> <th>Temperature sensor resistance (kΩ)</th> </tr> </thead> <tbody> <tr><td>0</td><td>180</td></tr> <tr><td>20</td><td>100</td></tr> <tr><td>40</td><td>60</td></tr> <tr><td>60</td><td>40</td></tr> <tr><td>80</td><td>30</td></tr> <tr><td>100</td><td>25</td></tr> <tr><td>120</td><td>22</td></tr> <tr><td>140</td><td>20</td></tr> <tr><td>160</td><td>18</td></tr> </tbody> </table>	Temperature (°C)	Temperature sensor resistance (kΩ)	0	180	20	100	40	60	60	40	80	30	100	25	120	22	140	20	160	18	
Temperature (°C)	Temperature sensor resistance (kΩ)																				
0	180																				
20	100																				
40	60																				
60	40																				
80	30																				
100	25																				
120	22																				
140	20																				
160	18																				

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>On operation of 63H1</p> <div style="border: 1px solid black; padding: 5px;"> <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> </div> <p>Is the electronic expansion valve connector connection OK?</p> <p>NO → Correct electronic expansion valve connector.</p> <p>YES</p> <p>If any anomaly exists on the electronic expansion valve connector connection, the power source must be reset.</p> <p>YES → Defective outdoor unit control (or main) PCB → Replace. (Defective 63H1 input circuit)</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
<p>• Single phase models (FDC71-140VNX-W)</p> <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)} Q1 -- YES --> C1[Replace inverter PCB . If not solved, replace noise filter PCB as well.] Q1 -- NO --> N1[Note(1) Under anomalous conditions, the voltage becomes less than DC14V.] N1 --> Q2 Q2 -- YES --> C2[Replace outdoor fan motor.] Q2 -- NO --> C3[Replace outdoor unit control PCB . If not solved, replace inverter PCB as well.] </pre> <p>Note(2) How to check the voltage between ② and ③ of CNI3? ⇒See E51</p> <p>• 3 phase models (FDC100-140VSX-W) E41⇒Replace inverter PCB.</p>	<p>Replace inverter PCB . If not solved, replace noise filter PCB as well.</p> <p>Replace outdoor fan motor.</p> <p>Replace outdoor unit control PCB . If not solved, replace inverter PCB as well.</p>

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

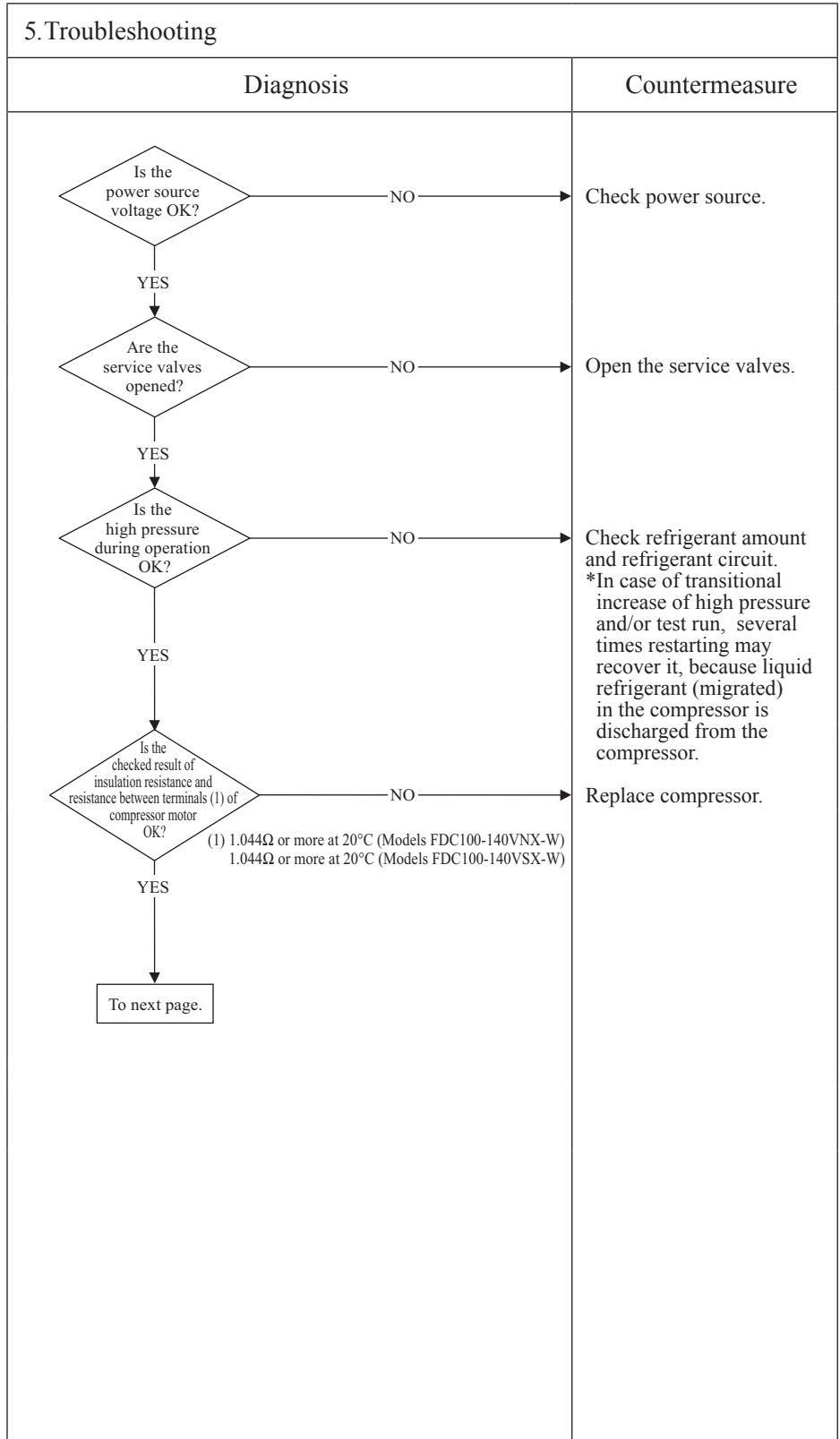
In order to prevent from overcurrent of inverter, if the current exceeds the specifications, it makes the compressor stopping.

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		

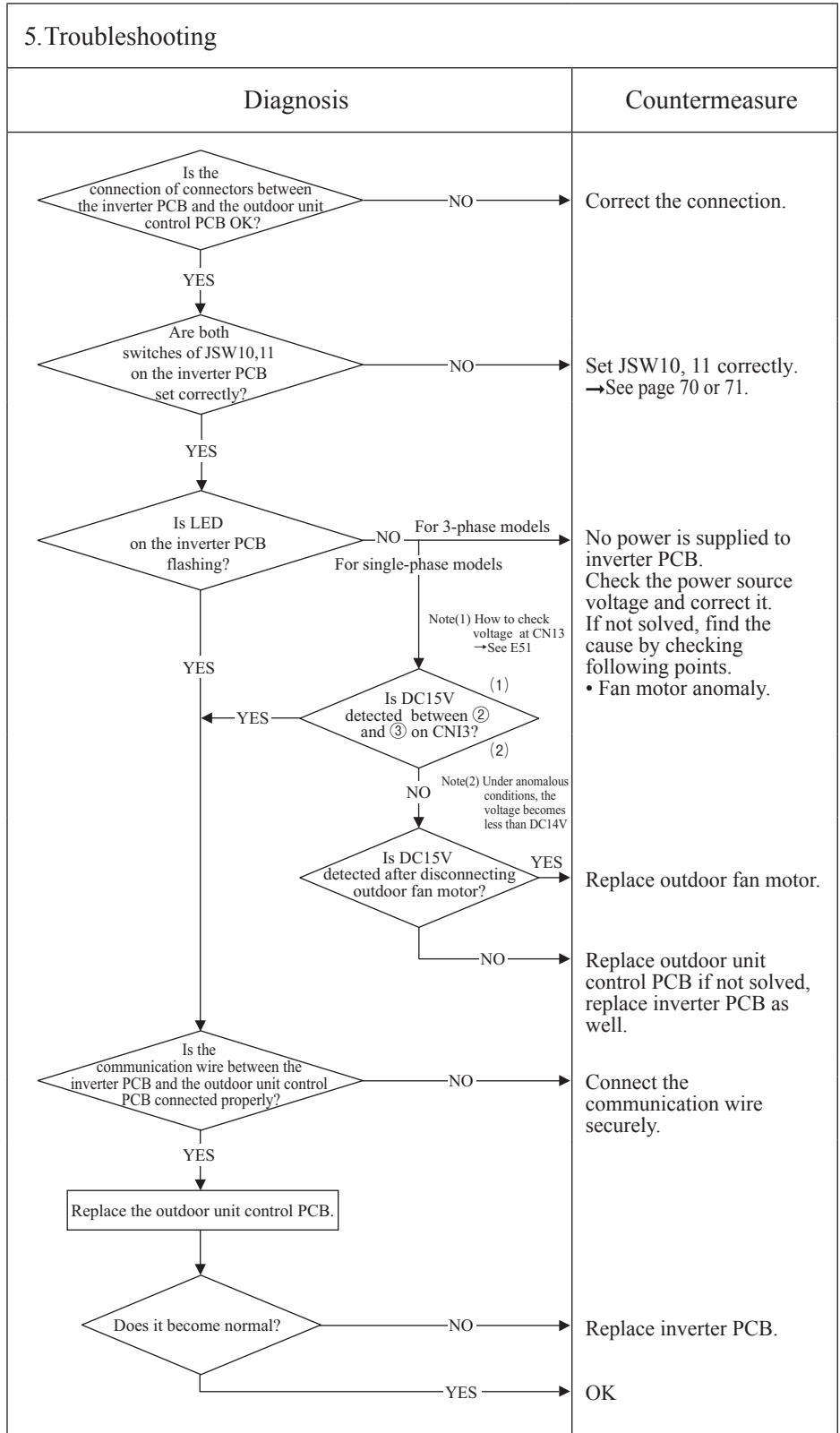
1. Applicable model
All models

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:

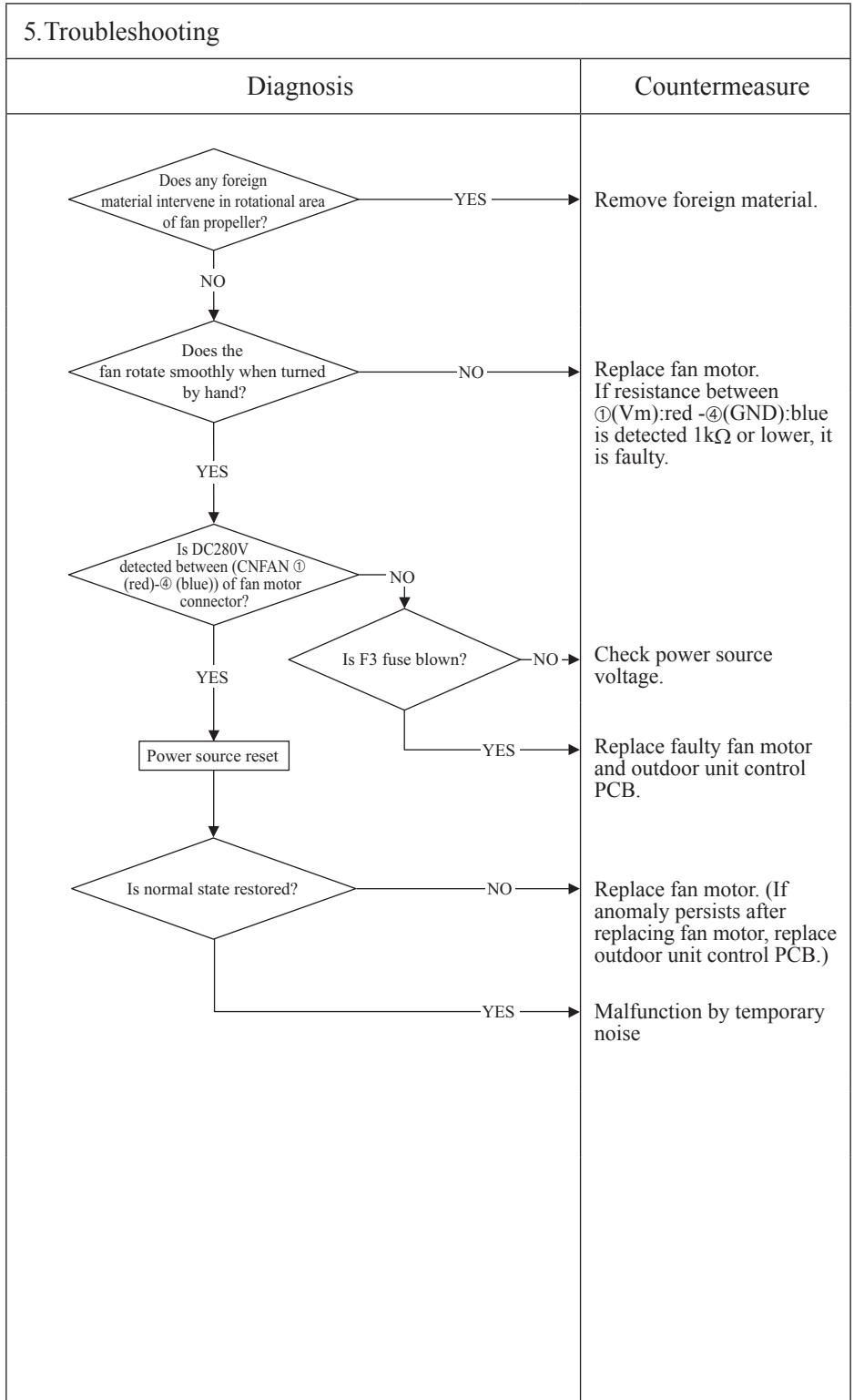
Error code Remote control: E48	LED	Green	Red	Content Outdoor fan motor anomaly
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED Keeps flashing		


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, 2) drops to 100min⁻¹ or lower for 30 seconds 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 “”, 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

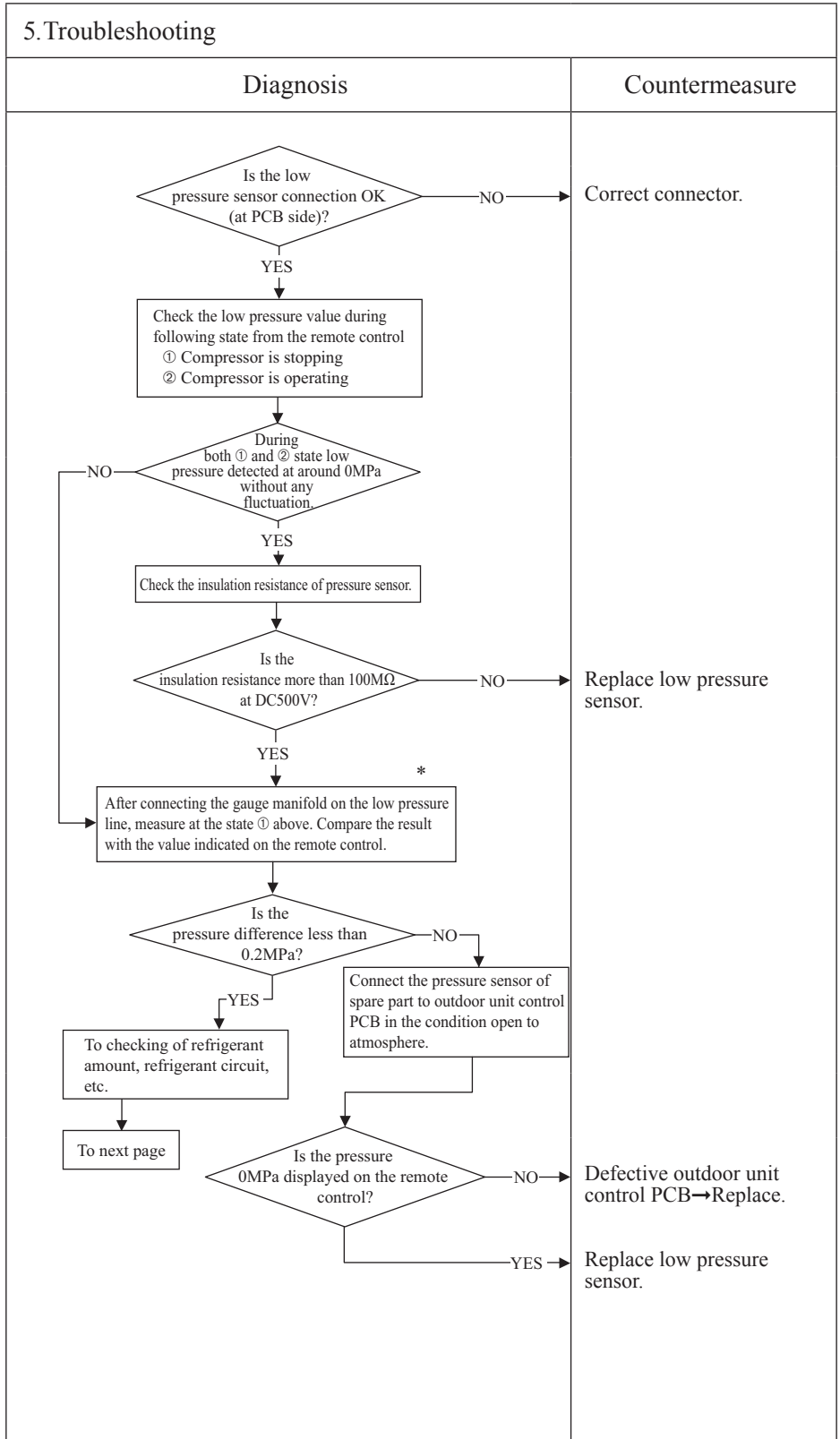
2. Error detection method
Detected by low pressure drop and suction superheat

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 seconds continuously and compressor suction superheat is detected 30degC or higher for 60 seconds 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.

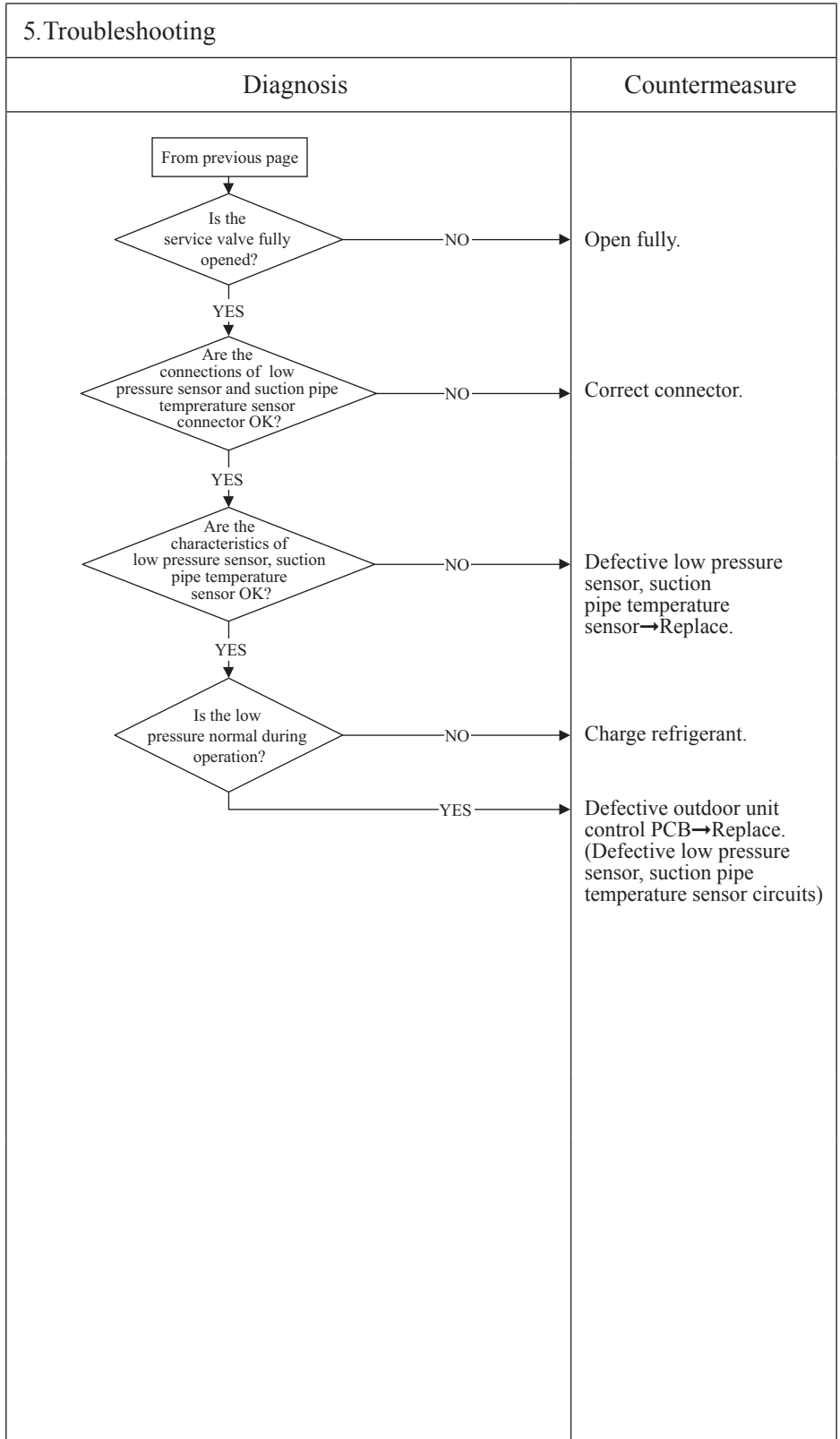
Error code Remote control: E49	LED	Green	Red	Content Low pressure error or low pressure sensor anomaly (2/2)
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED Keeps flashing		

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		

1. Applicable model

2. Error detection method
When power transistor anomaly is detected for 15 minutes continuously

3. Condition of error displayed
Same as above

4. Presumable cause

- Outdoor fan motor anomaly
- Inverter PCB anomaly
- Outdoor unit control (or main) PCB anomaly

5. Troubleshooting

Diagnosis	Countermeasure
<p>• Models FDC100-140VNX-W</p> <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)} Q1 -- YES --> C1[Replace inverter PCB. If not solved, replace noise filter PCB as well.] Q1 -- NO --> Note1[Note(1) Under anomalous conditions, the voltage becomes less than DC14V.] Note1 --> Q2 Q2 -- YES --> C2[Replace outdoor fan motor.] Q2 -- NO --> C3[Replace outdoor unit control PCB. If not solved, replace inverter PCB as well.] </pre> <p>• Models FDC100-140VSX-W Replace immediately the inverter PCB and the power transistor.</p> <p>Note(2) How to check the voltage between ② and ③ of CNI3</p> <p>② : DC15V (+) ③ : GND (-)</p>	

Note:

Error code Remote control: E53	LED	Green	Red	Content
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED Keeps flashing		

Suction pipe temperature sensor anomaly

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 PCB

5. Troubleshooting

Diagnosis	Countermeasure
	<p>Correct connection of suction pipe temperature sensor connector.</p> <p>Defective suction pipe temperature sensor → Replace.</p> <p>Defective outdoor unit control PCB → Replace. (Defective suction pipe temperature sensor input circuit)</p>

Temperature-resistance characteristics

Temperature (°C)	Temperature sensor resistance (kΩ)
0	15
10	10
20	6
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

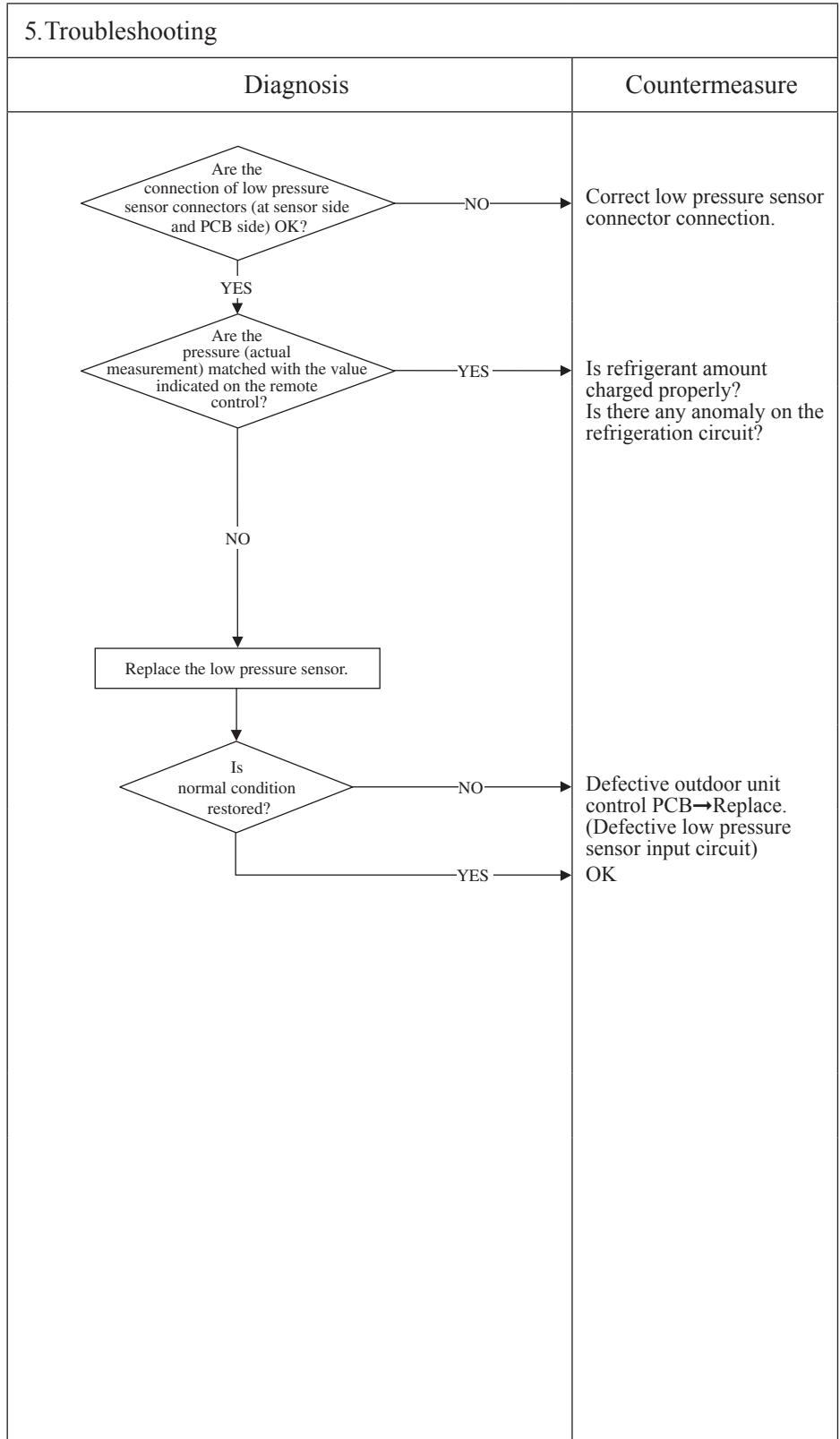
2. Error detection method

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).
- It detects at initial startup in cooling or dehumidifying mode after power ON.

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 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>For the characteristics of indoor heat exchanger, return air temperature sensor, see the following graph.</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 PCB → Replace. (Defective indoor heat exchanger, return air temperature sensor input circuits)</p>

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

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

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 5 minutes 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		

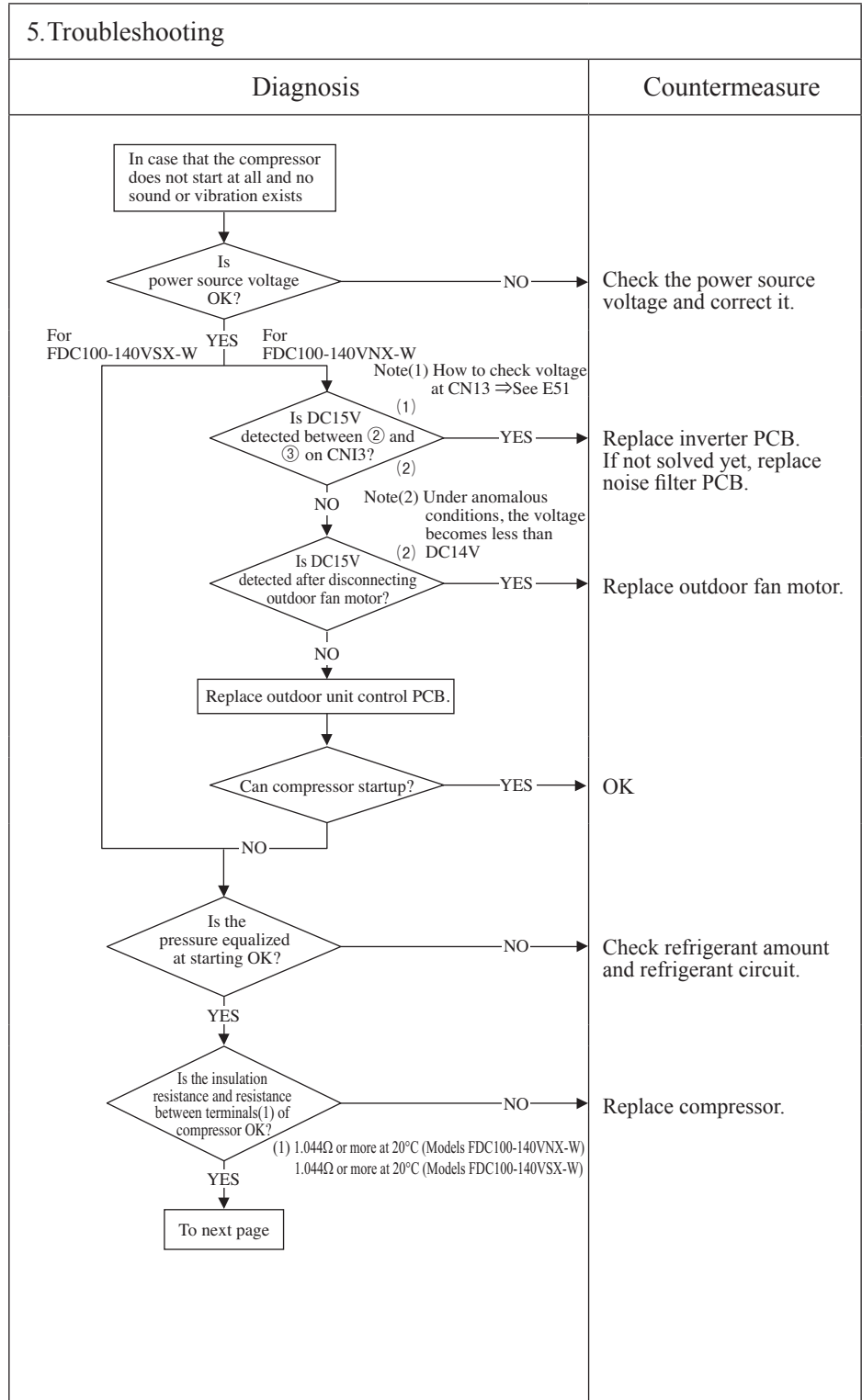
1. Applicable model
All models

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)

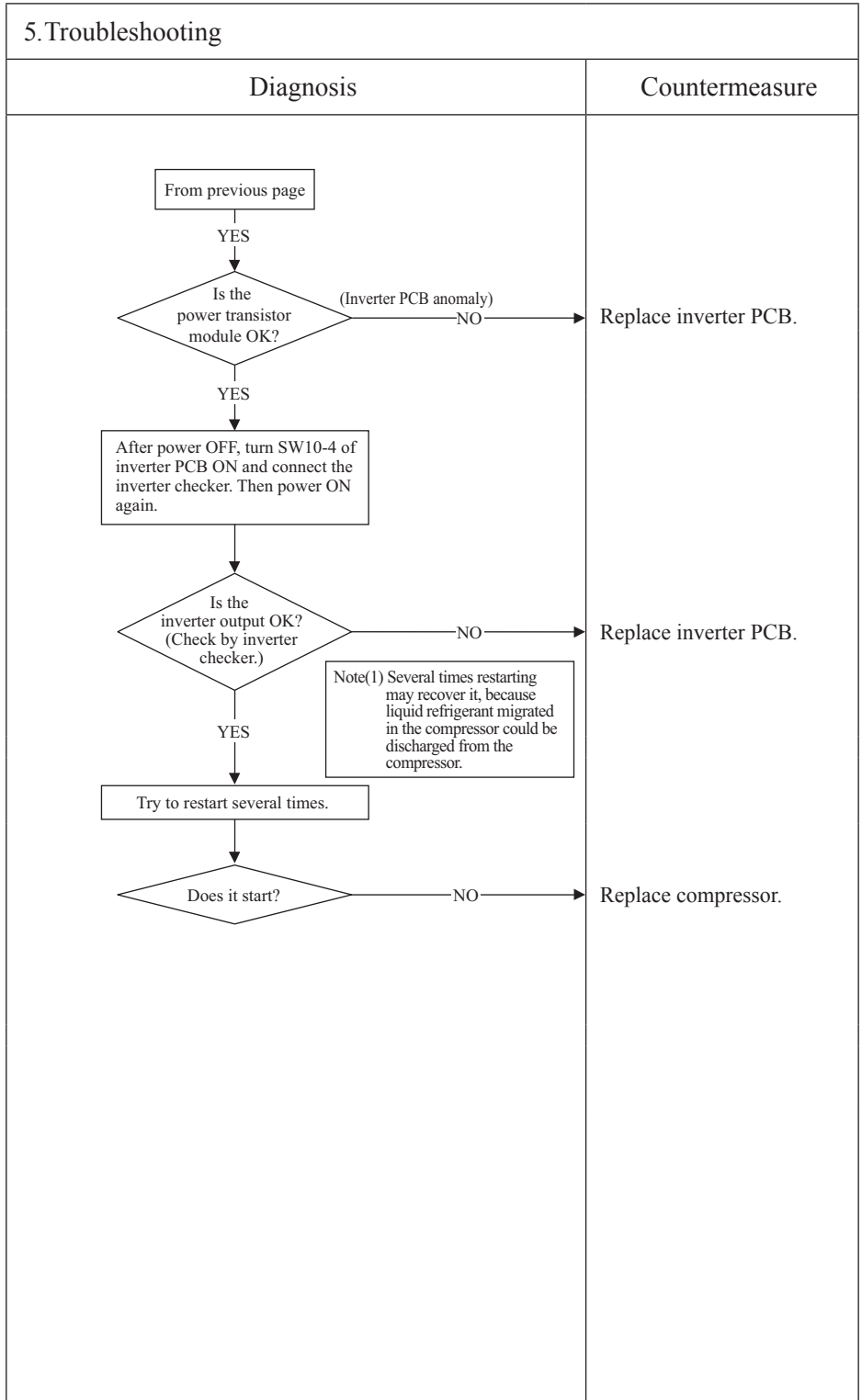
Error code Remote control: E59	LED	Green	Red	Content Compressor startup failure (2/2)
	Indoor control PCB	Keeps flashing	Stays OFF	
	Outdoor control PCB	Keeps flashing	5-time flash	
	Outdoor inverter PCB	Yellow LED Stays OFF		

1. Applicable model

2. Error detection method

3. Condition of error displayed

4. Presumable cause



Note:

(b) SRK series

Error code Remote control: None	Indoor display	RUN light —	TIMER light —	Content Operates but does not cool
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model
All models
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 unit fan operation. Check the temperature difference between return and supply air.</p> <pre> graph TD Start[Check indoor unit 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 --> Counter[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.)] Box1 --> Counter 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 --> Counter D4 -- NO --> Counter D5 -- NO --> Counter 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 --> Counter D6 -- NO --> End[The unit is operating normally but is operating under the control for protecting compressor or other respective parts.] </pre>	
<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	Indoor display	RUN light -	TIMER light -	Content Operates but does not heat
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

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

5. Troubleshooting	
Diagnosis	Countermeasure
<p>Check the indoor unit fan operation. Check the temperature difference between return and supply air.</p> <pre> graph TD Start[Check indoor unit fan operation and temperature difference] --> D1{Is the temperature difference between return and supply air 10-30°C at heating?} 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 again.] D2 -- NO --> D4{“WAIT” message is displayed for 3 seconds when performing cooling, defrost and heating operations from the remote control?} D3 -- NO --> D4 D3 -- YES --> D5{Is the compressor rotation speed low?} Box1 --> CM1[It is necessary to replace to higher capacity one or two install additional unit.] D4 -- YES --> CM2[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.] 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 --> Box3[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	Indoor display	RUN light -	TIMER light -	Content Earth leakage breaker activated
	Outdoor unit control PCB	Green LED Stays OFF	Red LED Stays OFF	

<p>1. Applicable model</p> <p>All models</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;"> </td> <td style="vertical-align: top;"> <p>Replace compressor.*</p> <p>Secure insulation resistance.</p> </td> </tr> <tr> <td colspan="2" style="vertical-align: top;"> <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 6 hours after power ON, check if the insulation resistance recovers to normal.</p> <p>When power ON, crankcase heater heat up compressor and evaporate the refrigerant migrated in the compressor.</p> <p>② 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> </td> </tr> </tbody> </table>		Diagnosis	Countermeasure		<p>Replace compressor.*</p> <p>Secure insulation resistance.</p>	<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 6 hours after power ON, check if the insulation resistance recovers to normal.</p> <p>When power ON, crankcase heater heat up compressor and evaporate the refrigerant migrated in the compressor.</p> <p>② 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>	
Diagnosis	Countermeasure							
	<p>Replace compressor.*</p> <p>Secure insulation resistance.</p>							
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<p>2. Error detection method</p>								
<p>3. Condition of error displayed</p>								
<p>4. Presumable cause</p> <ul style="list-style-type: none"> Defective compressor Noise 								

Note:

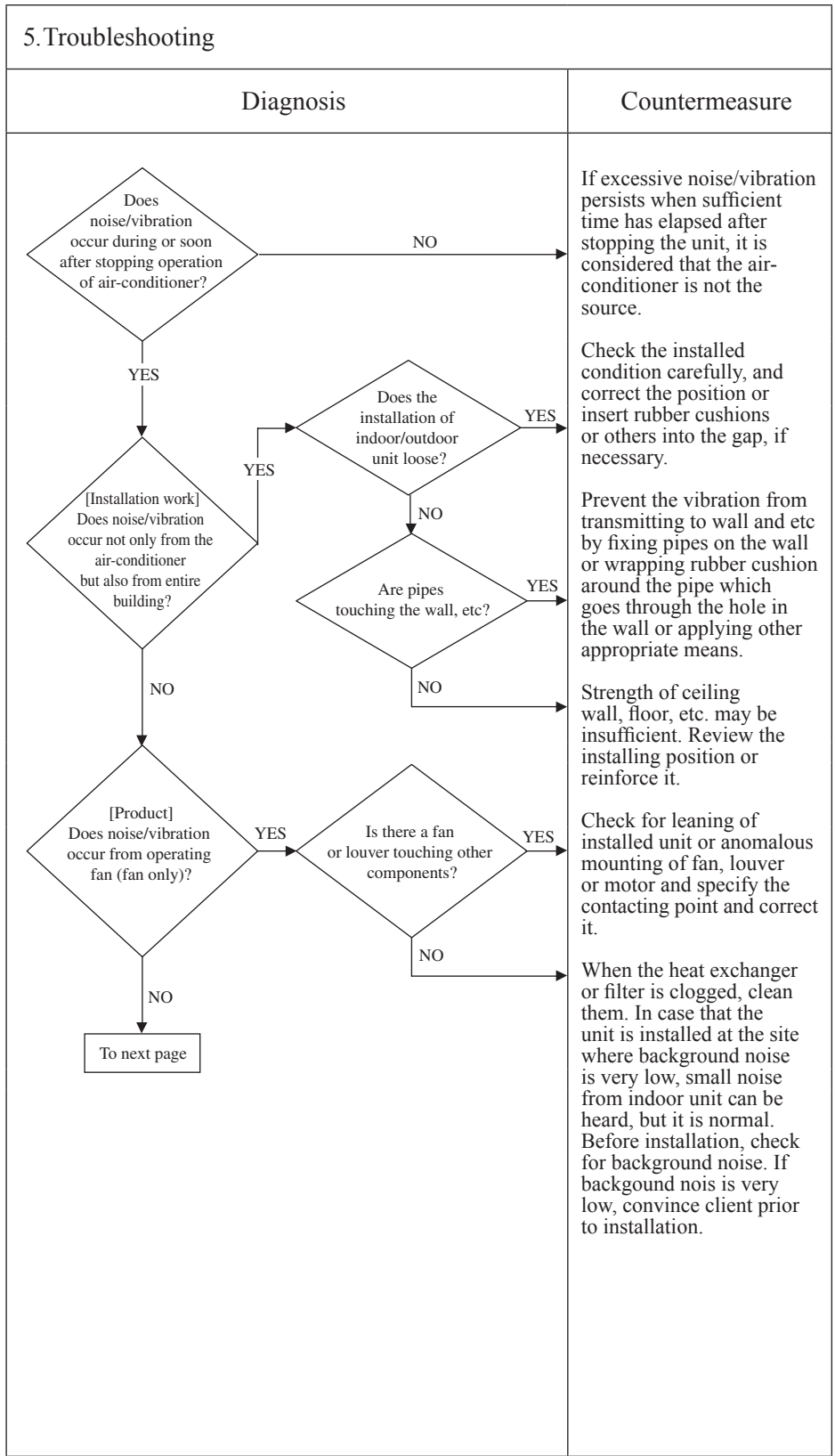
Error code Remote control: None	Indoor display	RUN light -	TIMER light -	Content Excessive noise/vibration (1/3)
	Outdoor unit control PCB	Green LED -	Red LED -	

1. Applicable model
All models

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	Indoor display	RUN light -	TIMER light -	Content Excessive noise/vibration (2/3)
	Outdoor unit control PCB	Green LED -	Red LED -	

1. Applicable model All models
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 -- YES --> D2{Are the pipes contacting the casing?} D1 -- NO --> End1([To next page]) 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>	<p>Rearrange the piping to avoid contact with the casing.</p> <p>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.</p> <p>The noise/vibration occurs when the refrigerant starts or stops flowing. It is normal.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Apply the damper sealant at places considered to be the sources such as the pressure reducing mechanism (expansion valve), capillary, etc.</p>

Note:

Error code Remote control: None	Indoor display	RUN light -	TIMER light -	Content Excessive noise/vibration (3/3)
	Outdoor unit control PCB	Green LED -	Red LED -	

<p>1. Applicable model</p> <p>All models</p>	5. Troubleshooting	
<p>2. Error detection method</p>	Diagnosis	Countermeasure
<p>3. Condition of error displayed</p>	<pre> graph TD A[From previous page] --> B{[Adjustment during commissioning] Does noise/vibration occur when the cooling/heating operation is in anomalous condition?} B -- YES --> C[Countermeasure] </pre>	
<p>4. Presumable cause</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 	

Note:

Error code Remote control: None	Indoor display	RUN light -	TIMER light -	Content <h1>Louver motor failure</h1>
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model
All models

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 -- YES --> C2[Replace LM.] Q3 -- NO --> C3[Defective indoor unit control PCB → Replace.] 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	Indoor display	RUN light —	TIMER light —	Content Power source system error (Power source to indoor unit control PCB)
	Outdoor unit control PCB	Green LED Stays OFF	Red LED 2-time flash	

1. Applicable model
All models

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 indoor unit control PCB • Broken harness • Faulty outdoor unit control PCB (Noise filter)

5. Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD D1{Is AC220/240V detected between 1 and 2 on the terminal block of indoor unit?} D2{Is AC380/415V for 3-phase unit detected between 1, 2 and 3 on the terminal block of outdoor unit or is AC220/240V for 1-phase unit detected between 1 and 2 on the terminal block of outdoor unit?} D3{Are fuse OK (250V 3.15A)?} C1[Defective outdoor unit control PCB (Noise filter) → Replace.] C2[Misconnection or breakage of connecting wires] C3[Replace fuse.] C4[Defective indoor unit control PCB → Replace.] D1 -- NO --> D2 D1 -- YES --> D3 D2 -- YES --> C2 D2 -- NO --> C1 D3 -- NO --> C3 D3 -- YES --> C4 </pre>	

Note:

Error code Remote control: None	Indoor display	RUN light -	TIMER light -	Content Power source system error (Power source to remote control)
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model	5. Troubleshooting		
All models	Diagnosis	Countermeasure	
2. Error detection method	<pre> graph TD D1{Is there any loose connection of remote control wires?} -- YES --> C1[Correct. -> Insert connector securely.] D1 -- NO --> D2{Is remote control wire broken or short-circuited?} D2 -- YES --> C2[Replace wires.] D2 -- NO --> P1[Disconnect remote control wires.] P1 --> D3{Is DC15V or higher detected between X-Y of interface kit terminal block?} D3 -- YES --> C3[Replace remote control.] D3 -- NO --> P2[Disconnect connecting wires.] P2 --> D4{Is DC15V or higher detected between X-Y of indoor unit terminal block?} D4 -- YES --> C4[Replace interface kit.] D4 -- NO --> C5[Defective indoor unit control PCB -> Replace.] </pre>		
3. Condition of error displayed			
4. Presumable cause	<ul style="list-style-type: none"> • Remote control wire breakage/short-circuit • Defective remote control • Malfunction by noise • Broken harness • Faulty indoor unit control PCB • Faulty interface kit 		

Note:

Error code Remote control: None	Indoor display	RUN light Stays OFF	TIMER light Keeps flashing	Content <h2 style="text-align: center;">Limit switch anomaly</h2>
	Outdoor unit control PCB	Green LED Keeps flashing	Red LED Stays OFF	

1. Applicable model
All models

2. Error detection method
The limit switch operates when the indoor unit is stopped.

3. Condition of error displayed
Same as above

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

5. Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD A{Is the inlet panel set correctly?} -- NO --> B[Correction, re-set] A -- YES --> C{Are limit switch OK? (1)} C -- NO --> D[Defective limit switch -> Replace.] C -- YES --> E[Defective indoor unit control PCB -> Replace. (Defective limit switch input circuit)] </pre>	
<p>Note (1) Check the operation of limit switch by checking if the error can be reset or not by pushing the limit switch by finger when the inlet panel is removed.</p>	

Note:

Error code Remote control: INSPECT I/U	Indoor display	RUN light -	TIMER light -	Content INSPECT I/U (When 1 or 2 remote controls are connected)
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	2-time flash	

1. Applicable model
All models
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 interface kit PCB

5. Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD Q1{Are 2 units of remote control connected?} Q2{Is it set at the slave remote control?} Q3{Does it become normal?} Q4{Do more than one interface kit have the same address?} Q5{Are remote control wires laid along high voltage wires?} Q6{Is approx. DC20V detected between ②-③ on the interface kit terminal block?} Q7{Is approx. DC20V detected between ②-③ on the remote control terminal block?} Q1 -- YES --> S1[Set one remote control for "Master" and the other for "Slave"] S1 --> Q3 Q3 -- YES --> C1[Normal] Q3 -- NO --> Q4 Q4 -- YES --> C2[Set address again. (SW3 on interface kit PCB)] Q4 -- NO --> Q5 Q5 -- YES --> C3[Separate remote control wires from high voltage wires.] Q5 -- NO --> Q6 Q6 -- YES --> C4[Defective interface kit PCB -> Replace.] Q6 -- NO --> Q7 Q7 -- YES --> C5[Defective remote control PCB -> Replace.] Q7 -- NO --> C6[Broken connecting wire -> Correct.] Q1 -- NO --> Q2 Q2 -- YES --> C7[Set SW1 on remote control PCB at "Master".] Q2 -- NO --> C1 </pre>	<p>Set SW1 on remote control PCB at "Master".</p> <p>Normal</p> <p>Set address again. (SW3 on interface kit PCB)</p> <p>Separate remote control wires from high voltage wires.</p> <p>Defective interface kit PCB → Replace.</p> <p>Broken connecting wire → Correct.</p> <p>Defective remote 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: INSPECT I/U	Indoor display	RUN light -	TIMER light -	Content INSPECT I/U (Connection of 3 units or more remote control)
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	2-time flash	

1. Applicable model
All models
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 • Faulty interface kit PCB

5. Troubleshooting	
Diagnosis	Countermeasure

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🏠	Indoor display	RUN light -	TIMER light -	Content Communication error at initial operation (1/3)
	Outdoor unit control PCB	Green LED Keeps flashing	Red LED 2-time flash	

1. Applicable model
All models

2. Error detection method

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 • Faulty outdoor unit control PCB • Broken connection wires

5. Troubleshooting	
Diagnosis	Countermeasure
<p>“🏠WAIT🏠” is still displayed on the remote control LED 2 minutes after power ON.</p> <p>YES</p> <p>Is the outdoor unit control green LED flashing?</p> <p>NO → To next page</p> <p>YES</p> <p>Is the outdoor unit control red LED flashing twice?</p> <p>NO → Defective indoor unit control PCB → Replace. Defective remote control → Replace. Broken remote control wire X or Y → Replace.</p> <p>YES</p> <p>Are wires connected properly between indoor/outdoor units?</p> <p>NO → Correct connection wires between indoor and outdoor units.</p> <p>YES</p> <p>Is approx. DC20V detected between ②-③ on the outdoor unit terminal block?</p> <p>NO → Defective outdoor unit control PCB → Replace.</p> <p>YES</p> <p>Is approx. DC20V detected between ②-③ on the indoor unit terminal block?</p> <p>NO → Defective connection wire (Broken) Noise</p> <p>YES → Defective indoor unit control PCB → Replace.</p>	

Note:

Error code Remote control: 🏠 WAIT 🏠	Indoor display	RUN light -	TIMER light -	Content Communication error at initial operation (2/3)
	Outdoor unit control PCB	Green LED Keeps flashing	Red LED 2-time flash	

1. Applicable model
All models

2. Error detection method

3. Condition of error displayed

4. Presumable cause
<ul style="list-style-type: none"> • 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 (30A) 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 ①-② of CNV)?} Dec6 -- NO --> C5[Defective outdoor unit control PCB→Replace.] Dec6 -- YES --> Dec7{Is DC5V detected if the connector of outdoor unit fan motor is disconnected?} Dec7 -- NO --> C6[Defective outdoor unit fan motor] Dec7 -- YES --> Dec8{Is DC5V detected if the inverter power source connector (CN2) 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 🏠	Indoor display	RUN light -	TIMER light -	Content Communication error at initial operation (3/3)
	Outdoor unit control PCB	Green LED Keeps flashing	Red LED 2-time flash	

1. Applicable model
All models

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	Indoor display	RUN light -	TIMER light -	Content No display
	Outdoor unit control PCB	Green LED Stays OFF	Red LED Stays OFF	

1. Applicable model
All models

2. Error detection method

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 • Defective interface kit

5. Troubleshooting	
Diagnosis	Countermeasure
<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{Is DC10V or higher detected at interface kit connection terminals?} D3 -- YES --> C3[Defective interface kit] D3 -- NO --> D4{Is DC10V or higher detected on connecting wires if the interface kit is removed?} D4 -- YES --> C4[Defective interface kit] D4 -- NO --> D5{Are wires connected properly between the indoor/outdoor units?} D5 -- NO --> C5["Defective connecting wire Defective remote control wire (Short-circuit, etc.)"] D5 -- YES --> C6[Defective indoor unit control PCB → Replace.] </pre>	

Note:

Error code Remote control: E1	Indoor display	RUN light -	TIMER light -	Content <h2 style="text-align: center;">Remote control communication circuit error</h2>
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model
All models
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 • Defective interface kit

5. Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD Q1{Is it possible to reset normally by the power reset?} -- YES --> C1[Malfunction by noise Check peripheral environment.] Q1 -- NO --> Q2{Is DC10V or higher detected at remote control connection terminals?} Q2 -- YES --> C2[Defective remote control] Q2 -- NO --> Q3{Is DC10V or higher detected on remote control wires if the remote control is removed?} Q3 -- YES --> C3[Defective remote control] Q3 -- NO --> Q4{Is DC10V or higher detected at interface kit connection terminals?} Q4 -- YES --> C4[Defective interface kit] Q4 -- NO --> Q5{Is DC10V or higher detected on connecting wires if the interface kit is removed?} Q5 -- YES --> C5[Defective interface kit] Q5 -- NO --> Q6{Are wires connected properly between the indoor/outdoor units?} Q6 -- NO --> C6[Defective connecting wire Defective remote control wire (Short-circuit, etc.)] Q6 -- YES --> C7[Defective indoor unit control PCB -> Replace.] </pre> <p>Note (1) Does the remote control still display “ WAIT ” even after 3 minutes?</p>	

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	Indoor display	RUN light ON	TIMER light 6-time flash	Content Communication error during operation
	Outdoor unit control PCB	Green LED Keeps flashing	Red LED See below	

1. Applicable model
All models
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

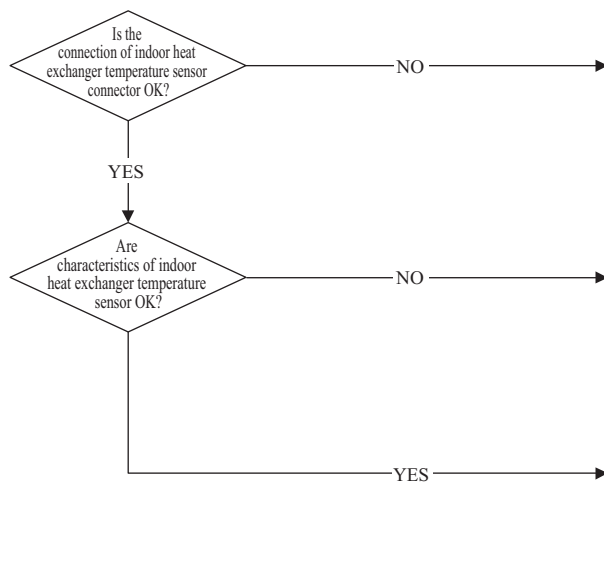
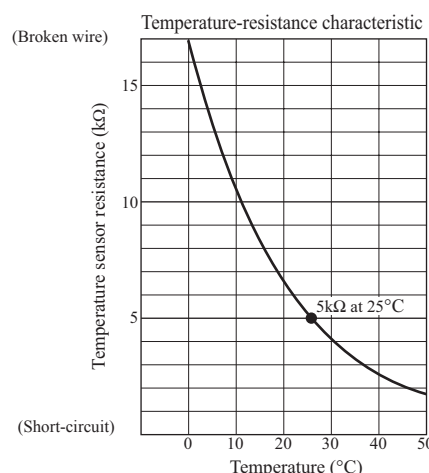
5. Troubleshooting	
Diagnosis	Countermeasure
<p>In case that the outdoor unit red LED flashes 2-time</p> <p>Note (1) Inspect faulty connections (disconnection, looseness) on the outdoor unit terminal block.</p> <p>Is the connection of signal wires at the outdoor unit side OK?</p> <p>NO → Repair signal 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 control 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	Indoor display	RUN light 1(3)-time flash ⁽¹⁾	TIMER light ON	Content Indoor heat exchanger temperature sensor anomaly
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

Note(1) Value in () are the Th2.

1. Applicable model
All models
2. Error detection method
Anomalously low temperature or high temperature (resistance) is detected on the indoor heat exchanger sensor (Th2 ₁ , Th2 ₂).
3. Condition of error displayed
<ul style="list-style-type: none"> When the temperature sensor detects -28°C or lower for 15 seconds continuously, the compressor stops. After 3-minutes delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.
4. Presumable cause
<ul style="list-style-type: none"> Defective indoor heat exchanger sensor connector Indoor heat exchanger temperature sensor anomaly Faulty indoor unit control PCB

5. Troubleshooting	
Diagnosis	Countermeasure
	<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>(Broken wire)</p> <p style="text-align: center;">Temperature-resistance characteristic</p>  <p>(Short-circuit)</p>	

Note:

Error code Remote control: None	Indoor display	RUN light 2-time flash	TIMER light ON	Content Room temperature sensor anomaly
	Outdoor unit control PCB	Green LED Keeps flashing	Red LED Stays OFF	

1. Applicable model
All models

2. Error detection method
Anomalously low temperature or high temperature (resistance) is detected by indoor room temperature sensor (Th1)

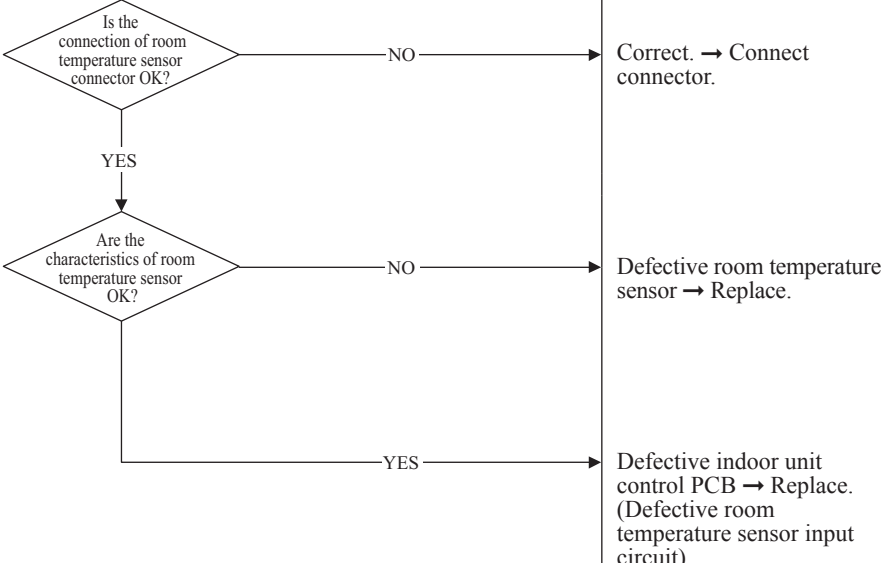
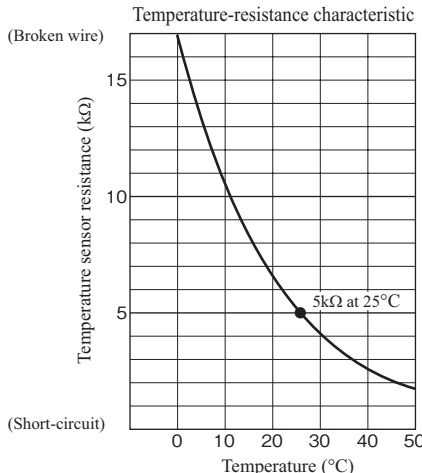
3. Condition of error displayed

- When the temperature sensor detects -45°C or lower for 15 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 room temperature sensor connector
- Defective room temperature sensor
- Faulty indoor unit control PCB

5. Troubleshooting

Diagnosis	Countermeasure
 <pre> graph TD Q1{Is the connection of room temperature sensor connector OK?} Q2{Are the characteristics of room temperature sensor OK?} C1[Correct. -> Connect connector.] C2[Defective room temperature sensor -> Replace.] C3[Defective indoor unit control PCB -> Replace. (Defective room temperature sensor input circuit)] Q1 -- NO --> C1 Q1 -- YES --> Q2 Q2 -- NO --> C2 Q2 -- YES --> C3 </pre>	
<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: E10	Indoor display	RUN light -	TIMER light -	Content Excessive number of connected indoor units (more than 17 units) by controlling with one remote control
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model	5. Troubleshooting		
All models	Diagnosis		Countermeasure
2. Error detection method	<pre> graph LR 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>		Defective remote control → Replace. Reduce to 16 or less units.
When it detects more than 17 of indoor units connected to one remote control			
3. Condition of error displayed	Same as above		
4. Presumable cause	<ul style="list-style-type: none"> • Excessive number of indoor units connected • Defective remote control 		

Note:

Error code Remote control: E14	Indoor display	RUN light —	TIMER light —	Content Communication error between master and slave indoor units
	Outdoor unit control PCB	Green LED Keeps flashing	Red LED Stays OFF	

1. Applicable model
All models

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
 - Broken interface kit wire
 - Defective interface kit 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 interface kit?} D2{Is the remote control wiring between interface kit defective?} D3{Is the interface kit wiring between indoor units defective?} D4{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 -- YES --> C3[Correct wiring.] D3 -- NO --> D4 D4 -- NO --> C4[Defective indoor unit control PCB -> Replace.] D4 -- YES --> C5["• Malfunction by noise • Check surrounding environment."] </pre>																		
<p>Note (1) Set dip switches SW3-1 and SW3-2 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">Interface kit</th> </tr> <tr> <th>Master</th> <th>Slave1</th> <th>Slave2</th> </tr> </thead> <tbody> <tr> <th rowspan="2">Dip switch</th> <th>SW3-1</th> <td>OFF</td> <td>OFF</td> <td>ON</td> </tr> <tr> <th>SW3-2</th> <td>OFF</td> <td>ON</td> <td>OFF</td> </tr> </tbody> </table>				Interface kit			Master	Slave1	Slave2	Dip switch	SW3-1	OFF	OFF	ON	SW3-2	OFF	ON	OFF
				Interface kit														
		Master	Slave1	Slave2														
Dip switch	SW3-1	OFF	OFF	ON														
	SW3-2	OFF	ON	OFF														

Note:

Error code Remote control: E16	Indoor display	RUN light 6-time flash	TIMER light ON	Content Indoor fan motor anomaly
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model
All models

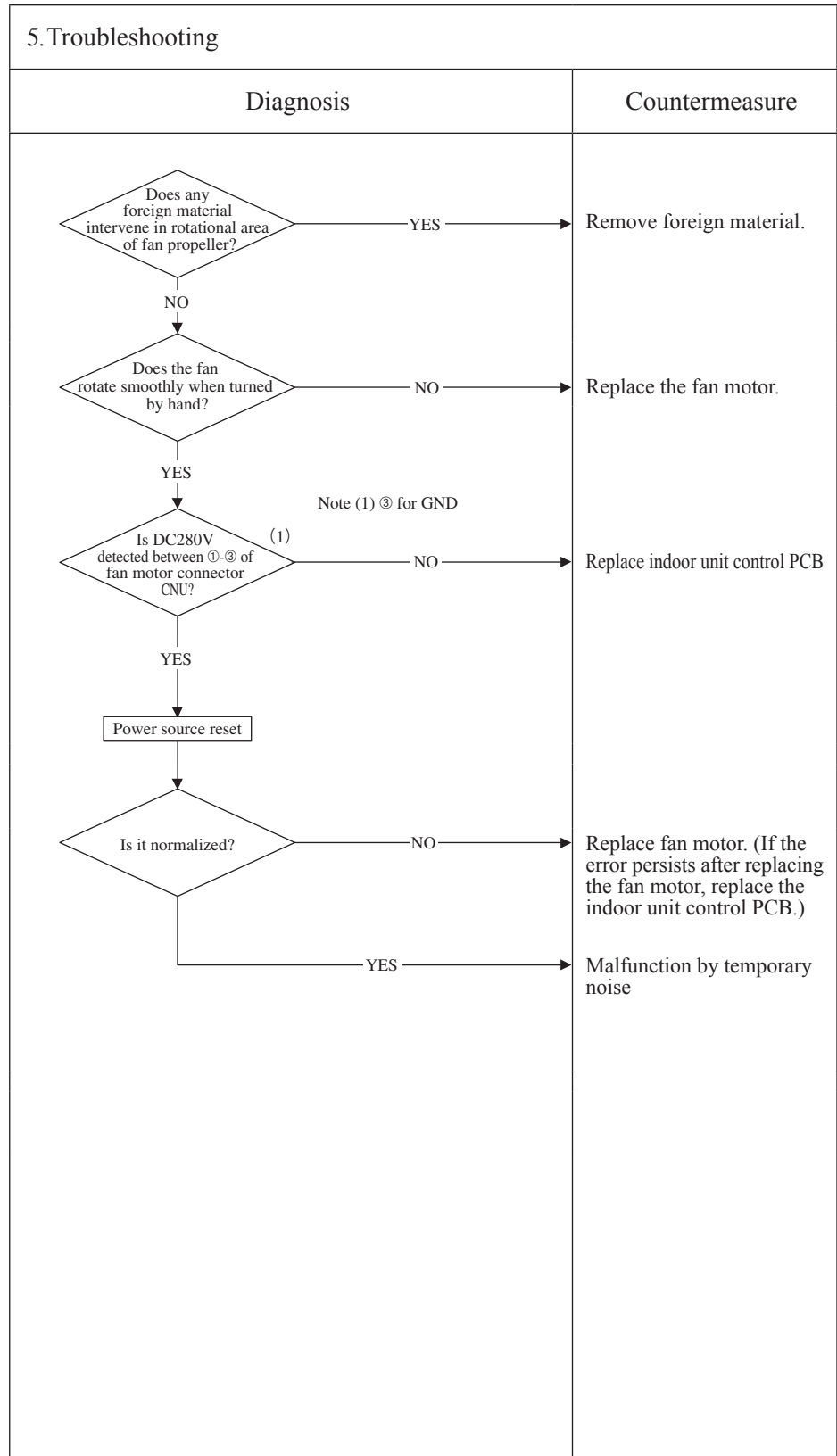
2. Error detection method
Detected by rotation speed of indoor fan motor

3. Condition of error displayed

- When actual rotation speed of indoor fan motor drops to lower than 300min⁻¹ for 30 seconds continuously, the compressor and the indoor fan motor stop.

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
- External noise, surge



Note:

Error code Remote control: E28	Indoor display	RUN light -	TIMER light -	Content Remote control temperature sensor anomaly
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	Stays OFF	

1. Applicable model
All models

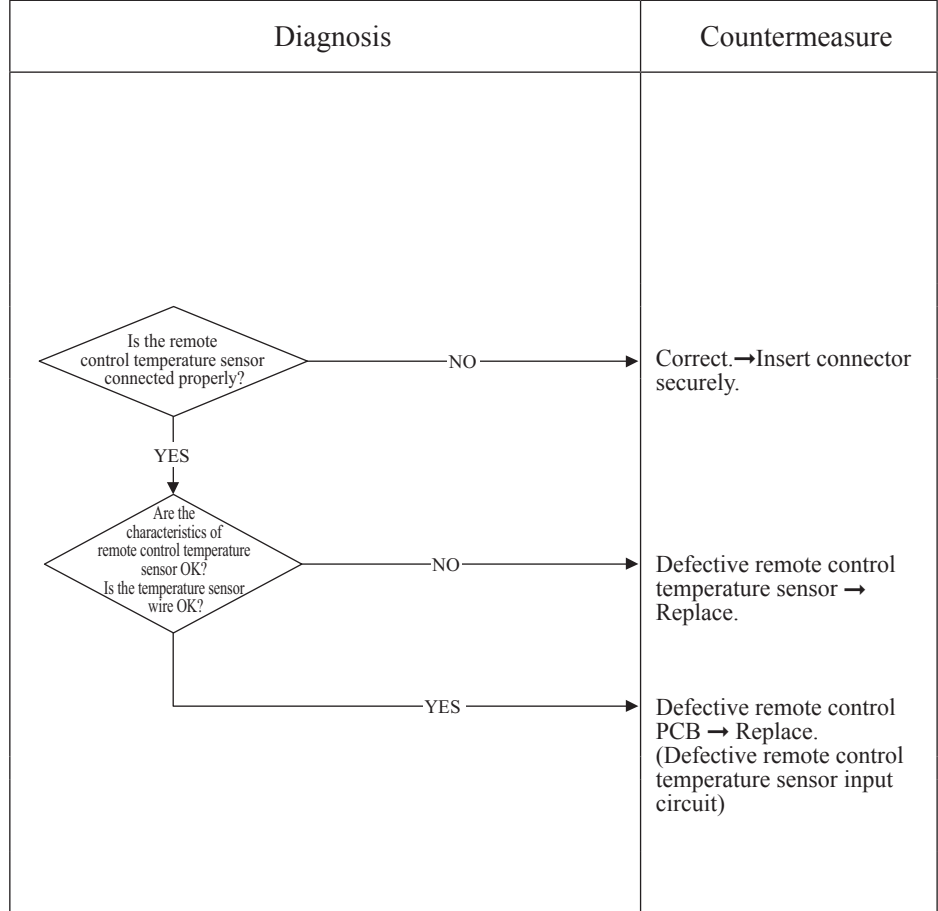
2. Error detection method
Detection of anomalously low temperature (resistance) of remote control temperature sensor (The)

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 invalid to valid, E28 will not be displayed even if the temperature sensor harness is disconnected. At same time the temperature 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	Indoor display	RUN light ON	TIMER light Keeps flashing	Content Cooling overload operation
	Outdoor unit control PCB	Green LED Keeps flashing	Red LED 1-time flash	
		Yellow LED Keeps flashing		
	Outdoor unit inverter PCB			

1. Applicable model
All models

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 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
<ul style="list-style-type: none"> • Defective outdoor heat exchanger temperature sensor • Defective outdoor unit control PCB • Indoor, outdoor unit installation spaces • Short-circuit of air on indoor, outdoor units • Fouling, clogging of heat exchanger • Excessive refrigerant amount

5. Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD Q1{Are the characteristics of outdoor heat exchanger temperature sensor normal?} Q2{Is the unit operating in the state of cooling overload?} Q3{Is the high pressure control normal?} Q4{Is the temperature (measured actually) at detection of error correct?} Q1 -- NO --> C1[Replace outdoor heat exchanger temperature sensor.] Q1 -- YES --> Q2 Q2 -- YES --> C2["Check unit side. • Isn't the air circulation of outdoor unit short-circuited? • Are installation spaces adequate? • Isn't there any fouling or clogging on heat exchanger?"] Q2 -- NO --> Q3 Q3 -- NO --> C3[Control operation check *] Q3 -- YES --> Q4 Q4 -- NO --> C4[Defective outdoor unit control PCB → Replace.] Q4 -- YES --> C5["Excessive refrigerant amount : Recharge refrigerant by weighing proper amount on a scale."] </pre> <p>* For the characteristics of outdoor heat exchanger temperature sensor, refer to E37.</p> <p>* For the contents of control, refer to cooling high pressure protective control in the protective control by controlling compressor rotation speed of micro computer control function for corresponding models.</p>	

Note:

Error code Remote control: E36	Indoor display	RUN light ON	TIMER light 5-time flash	Content Discharge pipe temperature error
	Outdoor unit control PCB	Green LED Keeps flashing	Red LED 1-time flash	
		Yellow LED Keeps flashing		
	Outdoor unit inverter PCB			

1.Applicable model
All models

2. Error detection method
For the error detection method, refer to compressor overheat protective control in the protective control by controlling compressor rotation speed of micro computer 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
<ul style="list-style-type: none"> • Defective outdoor unit control 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 style="text-align: right;">* For the characteristics of discharge pipe temperature sensor, refer to E39.</p> <pre> graph TD Q1{Are the characteristics of discharge pipe temperature sensor normal?} Q2{Is the discharge pipe temperature error persisted during cooling/heating operation?} Q3{Is the discharge pipe temperature control normal?} Q4{Is the temperature (measured actually) at detection of error correct?} Q1 -- NO --> C1[Replace discharge pipe temperature sensor.] Q1 -- YES --> Q2 Q2 -- YES --> C2[Insufficient refrigerant amount : Recharge refrigerant by weighing proper amount on a scale.] Q2 -- NO --> Q3 Q3 -- NO --> C3[Control operation check *] Q3 -- YES --> Q4 Q4 -- NO --> C4[Defective outdoor unit control PCB → Replace.] Q4 -- YES --> C5[Check unit side: • 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?] </pre>	
<p>* For the contents of control, refer to compressor overheat protective control in the protective control by controlling compressor rotation speed of micro computer control function for corresponding models.</p>	

Note:

Error code Remote control: E37	Indoor display	RUN light Keeps flashing	TIMER light 2-time flash	Content Outdoor heat exchanger temperature sensor anomaly
	Outdoor unit control PCB	Green LED Keeps flashing	Red LED 1-time flash	
		Yellow LED Keeps flashing		
	Outdoor unit inverter PCB			

1. Applicable model
All models

2. Error detection method
Detection of anomalously low temperature (resistance) on the outdoor heat exchanger temperature sensor

3. Condition of error displayed
<ul style="list-style-type: none"> When the temperature sensor detects -50°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 -50°C or lower is detected for 5 seconds continuously within 20 seconds after compressor ON.

4. Presumable cause
<ul style="list-style-type: none"> Defective outdoor unit control PCB Broken sensor harness or temperature sensing section Disconnected wire connection (connector)

5. Troubleshooting																	
Diagnosis	Countermeasure																
<p style="text-align: center;">Is the outdoor heat exchanger temperature sensor connector connected properly?</p> <p style="text-align: center;">NO → Correct connector.</p> <p style="text-align: center;">YES</p> <p style="text-align: center;">For the characteristics of outdoor heat exchanger temperature sensor, see the following graph.</p> <p style="text-align: center;">Are the characteristics of outdoor heat exchanger temperature sensor OK?</p> <p style="text-align: center;">NO → Defective outdoor heat exchanger temperature sensor → Replace.</p> <p style="text-align: center;">YES → Defective outdoor unit control PCB → Replace. (Defective outdoor heat exchanger temperature sensor input circuit)</p>																	
<p style="text-align: center;">Temperature-resistance characteristics</p> <table border="1"> <caption>Temperature-resistance characteristics data points (approximate)</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: E38	Indoor display	RUN light Keeps flashing	TIMER light 1-time flash	Content Outdoor air temperature sensor anomaly
	Outdoor unit control PCB	Green LED Keeps flashing	Red LED 1-time flash	
		Yellow LED Keeps flashing		
	Outdoor unit inverter PCB			

1. Applicable model
All models

2. Error detection method
Detection of anomalously low temperature (resistance) on outdoor air temperature sensor

3. Condition of error displayed
<ul style="list-style-type: none"> 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
<ul style="list-style-type: none"> Defective outdoor unit control PCB Broken sensor harness or temperature sensing section (Check molding.) Disconnected wire connection (connector)

5. Troubleshooting															
Diagnosis	Countermeasure														
<p style="text-align: center;">Is the outdoor air temperature sensor connector connected properly?</p> <p style="text-align: center;">NO → Correct connector.</p> <p style="text-align: center;">YES</p> <p style="text-align: center;">For the characteristics of outdoor air temperature sensor, see the following graph.</p> <p style="text-align: center;">Is the characteristics of the outdoor air temperature sensor OK?</p> <p style="text-align: center;">NO → Defective outdoor air temperature sensor → Replace.</p> <p style="text-align: center;">YES → Defective outdoor unit control PCB → Replace. (Defective outdoor air temperature sensor input circuit)</p>															
<p style="text-align: center;">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>35</td></tr> <tr><td>10</td><td>25</td></tr> <tr><td>20</td><td>15</td></tr> <tr><td>30</td><td>10</td></tr> <tr><td>40</td><td>7</td></tr> <tr><td>50</td><td>5</td></tr> </tbody> </table>		Temperature (°C)	Temperature sensor resistance (kΩ)	0	35	10	25	20	15	30	10	40	7	50	5
Temperature (°C)	Temperature sensor resistance (kΩ)														
0	35														
10	25														
20	15														
30	10														
40	7														
50	5														

Note:

Error code Remote control: E39	Indoor display	RUN light Keeps flashing	TIMER light 4-time flash	Content Discharge pipe temperature sensor anomaly
	Outdoor unit control PCB	Green LED Keeps flashing	Red LED 1-time flash	
		Yellow LED Keeps flashing		
	Outdoor unit inverter PCB			

1. Applicable model
All models

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 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?} Q2{Are the characteristics of discharge pipe temperature sensor OK?} C1[Correct connector.] C2[Defective discharge pipe temperature sensor -> Replace.] C3[Defective outdoor unit control PCB -> Replace. (Defective discharge pipe temperature sensor input circuit)] Q1 -- NO --> C1 Q1 -- YES --> Q2 Q2 -- NO --> C2 Q2 -- YES --> C3 </pre>	
<p>(Broken wire) Temperature-resistance characteristics</p> <p>(Short-circuit)</p>	

Note:

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

1. Applicable model
All models

2. Error detection method
When the high pressure switch 63H1 is activated.
<p>Compressor ON</p> <p>Compressor OFF</p> <p>3.15 4.15 High pressure (MPa)</p>

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
<ul style="list-style-type: none"> • Short-circuit of air flow, disturbance of air flow and clogging filter at outdoor heat exchanger/Breakdown of fan motor • Defective outdoor unit control 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> <pre> graph TD Start[If the power source breaker is turned OFF and ON too quickly, E40 may be displayed. (This is normal.)] --> Q1{Is the service valve fully opened?} Q1 -- NO --> C1[Open the service valve.] Q1 -- YES --> Q2{Has 63H1 activated?} Q2 -- NO --> Q3{Is 63H1 connector connected properly?} Q3 -- NO --> C2[Correct 63H1 connector.] Q3 -- YES --> Q4{Is the electronic expansion valve connector connection OK?} Q4 -- NO --> C3[Correct electronic expansion valve connector.] Q4 -- YES --> C4[Defective outdoor unit control PCB → Replace. (Defective 63H1 input circuit)] </pre> <p>On operation of 63H1</p> <div style="border: 1px solid black; padding: 5px;"> <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> </div>	

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	Indoor display	RUN light	TIMER light	Content Power transistor overheat
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	1-time flash	
	Outdoor unit inverter PCB	Yellow LED		
		6-time flash		

1. Applicable model
All models

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
Same as above.

4. Presumable cause
<ul style="list-style-type: none"> • Defective inverter PCB • Defective outdoor fan motor • Defective outdoor unit control PCB • Defective noise filter PCB

5. Troubleshooting	
Diagnosis	Countermeasure
<p>• Single phase models (FDC100-140VNX-W)</p> <pre> graph TD Q1{Is DC15V detected between ② and ③ on CNI3? (1) (2)} Q1 -- YES --> C1[Replace inverter PCB. If not solved, replace noise filter PCB as well.] Q1 -- NO --> N1[Note(1) Under anomalous conditions, the voltage becomes less than DC14V.] N1 --> Q2{Is DC15V detected after disconnecting outdoor fan motor? (1)} Q2 -- YES --> C2[Replace outdoor fan motor.] Q2 -- NO --> C3[Replace outdoor unit control PCB. If not solved, replace inverter PCB as well.] </pre> <p>Note(2) How to check the voltage between ② and ③ of CNI3? ⇒ See E51</p> <p>• 3 phase models (FDC100-140VSX-W) E41 ⇒ Replace inverter PCB</p>	

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	Indoor display	RUN light ON	TIMER light 1-time flash	Content Current cut (1/2)
	Outdoor unit control PCB	Green LED Keeps flashing	Red LED 1-time flash	
		Yellow LED 1-time flash		

1. Applicable model
All models

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
<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • The service valves closed • Faulty power source • Insufficient refrigerant amount • Faulty compressor • Faulty power transistor module

5. Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD Q1{Is the Power source voltage OK?} -- NO --> C1[Check power source.] Q1 -- YES --> Q2{Are the service valves opened?} Q2 -- NO --> C2[Open the service valves.] Q2 -- YES --> Q3{Is the high pressure during operation OK?} Q3 -- NO --> C3[Check refrigerant amount and refrigerant circuit *In case of transitional increase of high pressure and/or test run, several times restarting may recover it, because liquid refrigerant (migrated) in the compressor is discharged from the compressor.] Q3 -- YES --> Q4{Is the checked result of insulation resistance and resistance between terminals (1) of compressor motor OK?} Q4 -- NO --> C4[Replace compressor.] Q4 -- YES --> E[To next page.] </pre>	

Note:

Error code Remote control: E42	Indoor display	RUN light ON	TIMER light 1-time flash	Content Current cut (2/2)
	Outdoor unit control PCB	Green LED Keeps flashing	Red LED 1-time flash	
		Yellow LED 1-time flash		
	Outdoor unit inverter PCB			

1. Applicable model
All models

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 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 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 PCB → Replace.</p> <p>YES</p> <p>Temporary noise may cause of anomaly. If noise source can be found, take countermeasure.</p>	

Note:

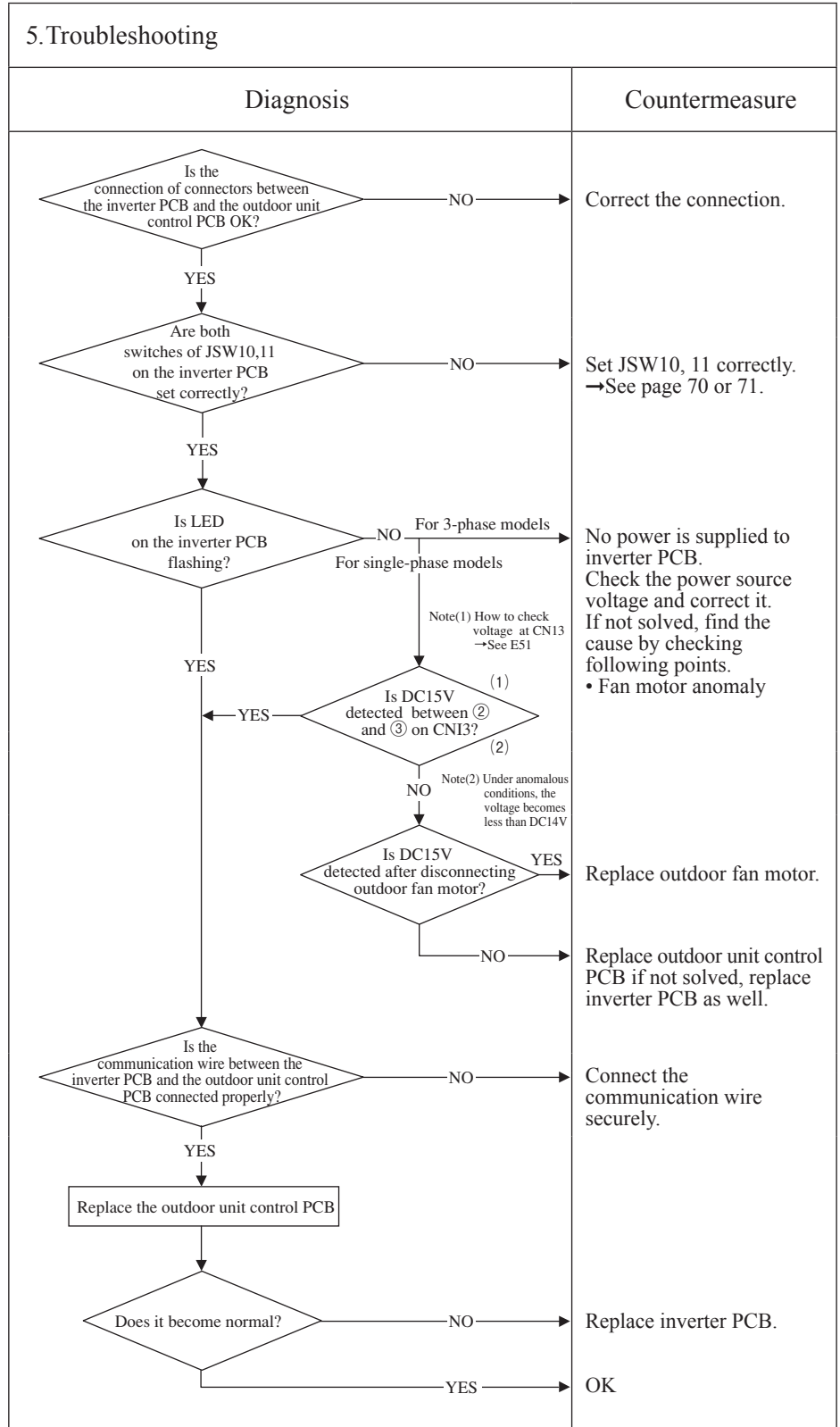
Error code Remote control: E45	Indoor display	RUN light	TIMER light	Content Communication error between inverter PCB and outdoor unit control PCB
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	1-time flash	
	Outdoor unit inverter PCB	Yellow LED		

1. Applicable model
All models

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
<ul style="list-style-type: none"> • Defective inverter PCB • Defective connector between the outdoor unit control PCB and inverter PCB • Defective outdoor unit control PCB • Defective outdoor fan motor



Note:

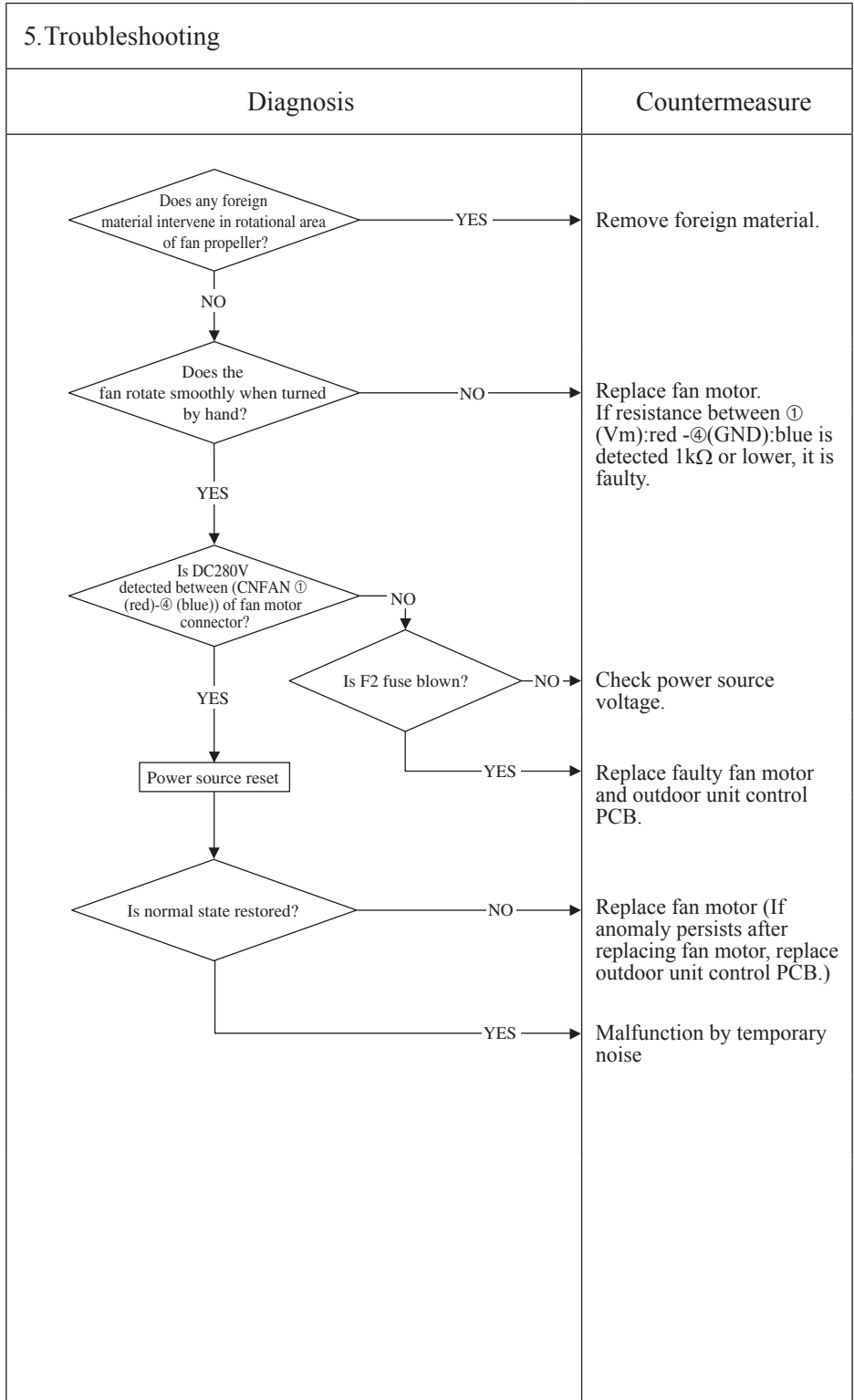
Error code Remote control: E48	Indoor display	RUN light ON	TIMER light 7-time flash	Content Outdoor fan motor anomaly
	Outdoor unit control PCB	Green LED Keeps flashing	Red LED 1-time flash	
		Yellow LED Keeps flashing		
	Outdoor unit inverter PCB			

1. Applicable model
All models

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, 2) drops to 100min ⁻¹ or lower for 30 seconds 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
<ul style="list-style-type: none"> • 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 F2 fuse (4A) 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	Indoor display	RUN light	TIMER light	Content Low pressure error or low pressure sensor anomaly (1/2)
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	1-time flash	
	Outdoor unit inverter PCB	Yellow LED		
		Keeps flashing		

1. Applicable model
All models

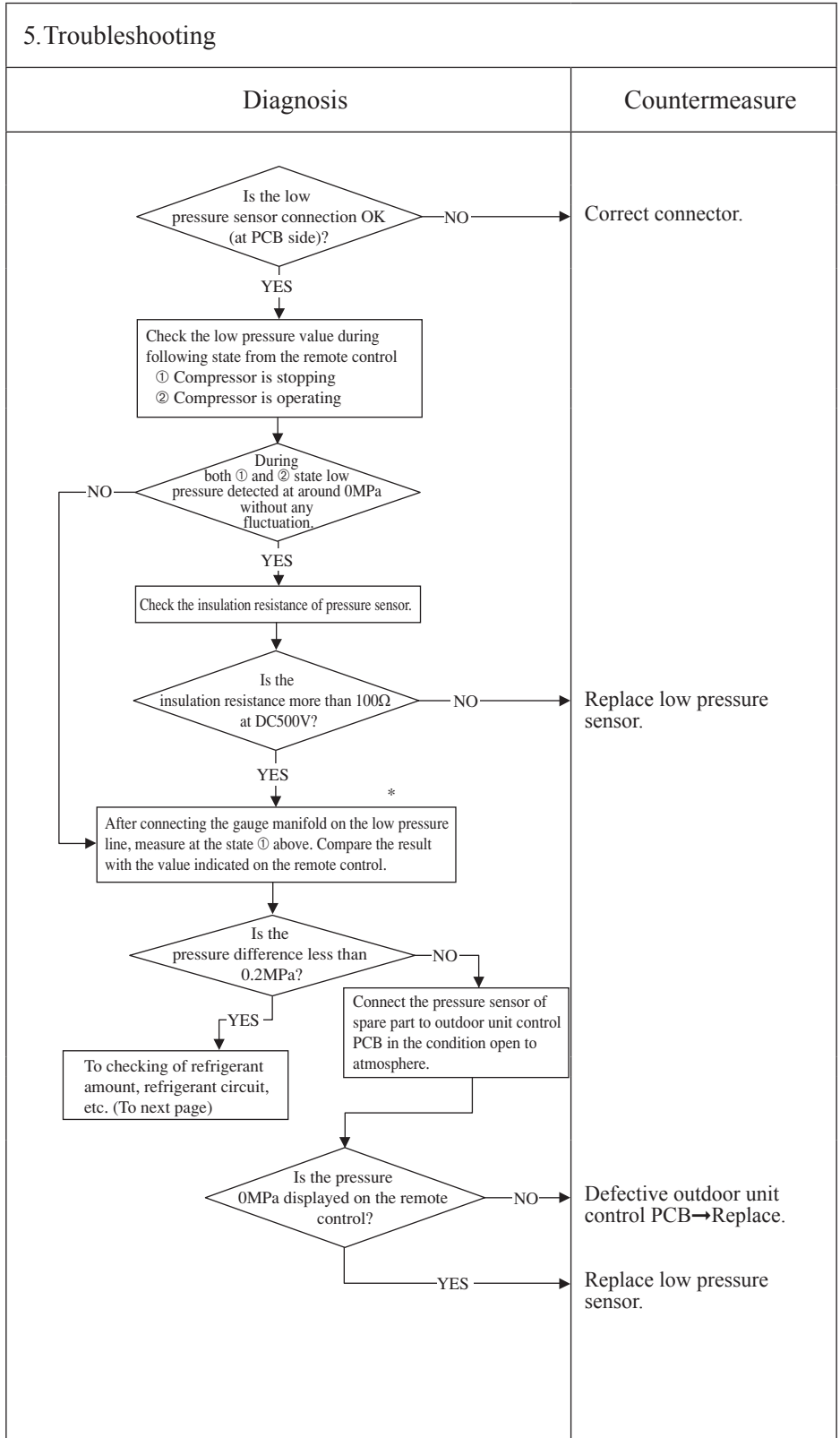
2. Error detection method
Detected by low pressure drop and suction superheat

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 seconds continuously and compressor suction superheat is detected 30degC or higher for 60 seconds 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	Indoor display	RUN light	TIMER light	Content Low pressure error or low pressure sensor anomaly (2/2)
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	1-time flash	
	Outdoor unit inverter PCB	Yellow LED		
		Keeps flashing		

1.Applicable model
All models

2.Error detection method

3.Condition of error displayed

4.Presumable cause

5.Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD Start[From previous page.] --> D1{Is the service valve fully opened?} D1 -- NO --> C1[Open fully.] D1 -- YES --> D2{Are the connections of low pressure sensor and suction pipe temperature sensor connector OK?} D2 -- NO --> C2[Correct connector.] D2 -- YES --> D3{Are the characteristics of low pressure sensor, suction pipe temperature sensor OK?} D3 -- NO --> C3["Defective low pressure sensor, suction pipe temperature sensor -> Replace."] D3 -- YES --> D4{Is the low pressure normal during operation?} D4 -- NO --> C4[Charge refrigerant.] D4 -- YES --> C5["Defective outdoor unit control PCB -> Replace. (Defective low pressure sensor, suction pipe temperature sensor circuits)"] </pre>	

Note:

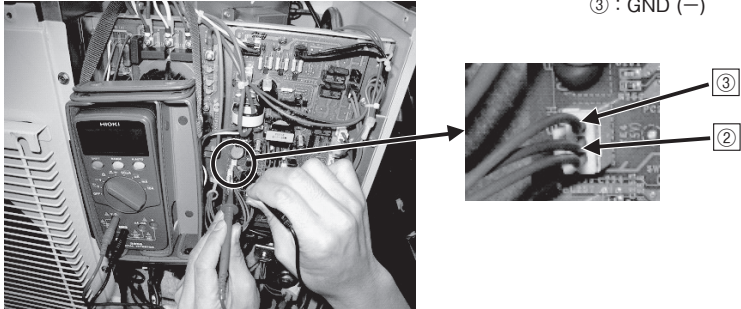
Error code Remote control: E51	Indoor display	RUN light ON	TIMER light 4-time flash	Content Inverter and fan motor anomaly
	Outdoor unit control PCB	Green LED Keeps flashing	Red LED 1-time flash	
		Yellow LED 6-time flash		
	Outdoor unit inverter PCB			

1. Applicable model
All models

2. Error detection method
When power transistor anomaly is detected for 15 minutes continuously

3. Condition of error displayed
Same as above

4. Presumable cause
<ul style="list-style-type: none"> Defective outdoor fan motor Defective inverter PCB Defective outdoor unit control PCB

5. Troubleshooting	
Diagnosis	Countermeasure
<p>• Model FDC100-140VNX-W</p> <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)} Q1 -- YES --> C1[Replace inverter PCB. If not solved, replace noise filter PCB as well.] Q1 -- NO --> Q2 Q2 -- YES --> C2[Replace outdoor fan motor.] Q2 -- NO --> C3[Replace outdoor unit control PCB. If not solved, replace inverter PCB as well.] </pre> <p>Note(1) Under anomalous conditions, the voltage becomes less than DC14V.</p> <p>Note(2) How to check the voltage between ② and ③ of CNI3</p>	
<p>• Model FDC100-140VSX-W Replace immediately the inverter PCB and the power transistor.</p>	
 <p>② : DC15V (+) ③ : GND (-)</p>	

Note:

Error code Remote control: E53	Indoor display	RUN light Keeps flashing	TIMER light 5-time flash	Content Suction pipe temperature sensor anomaly
	Outdoor unit control PCB	Green LED Keeps flashing	Red LED 1-time flash	
		Yellow LED Keeps flashing		
	Outdoor unit inverter PCB			

1. Applicable model
All models

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
<ul style="list-style-type: none"> • Defective suction pipe temperature sensor connection • Defective suction pipe temperature sensor • Defective outdoor unit control PCB

5. Troubleshooting	
Diagnosis	Countermeasure
<p>Temperature-resistance characteristics</p>	

Note:

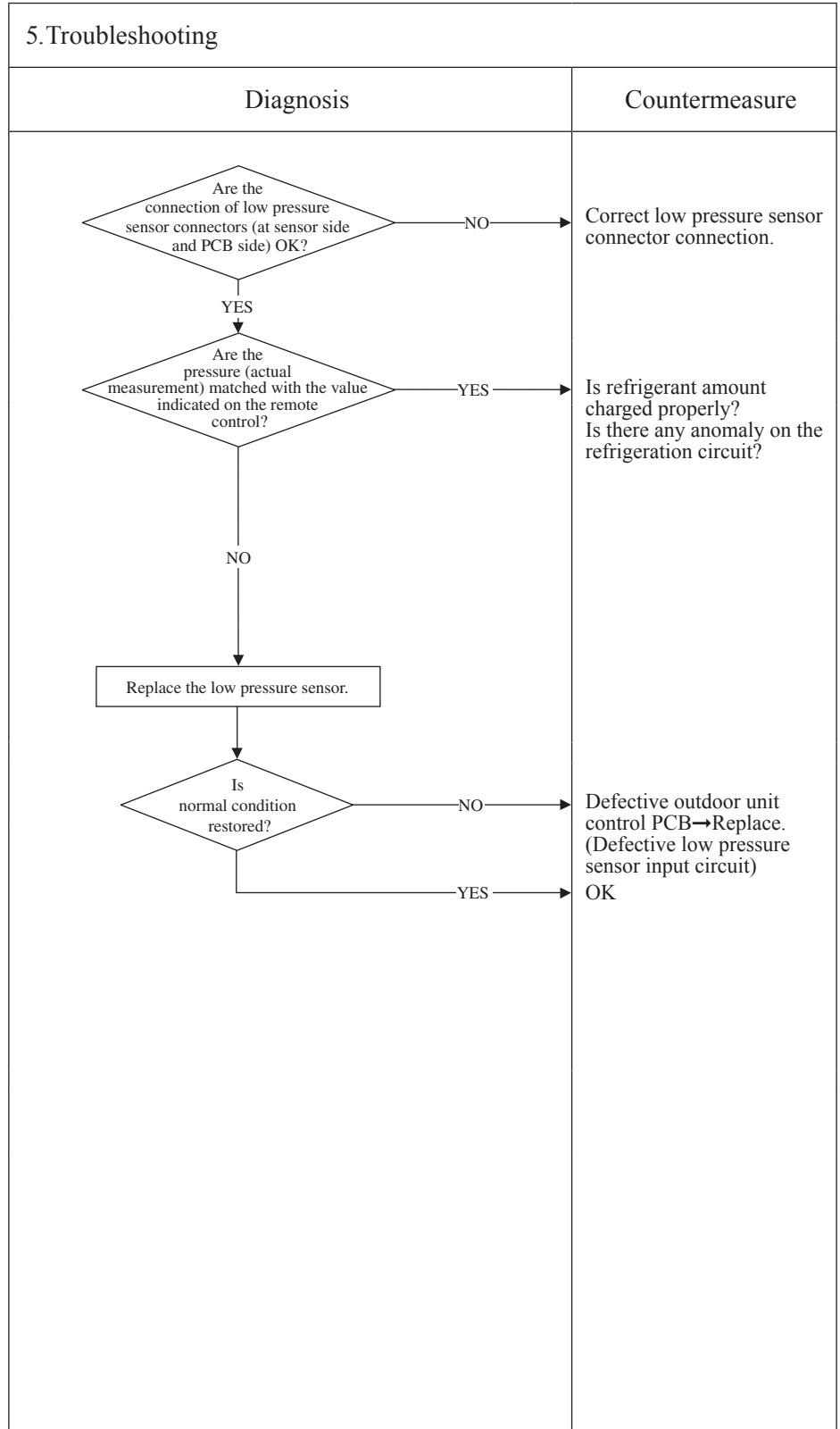
Error code Remote control: E54	Indoor display	RUN light	TIMER light	Content Low pressure sensor anomaly
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	1-time flash	
	Outdoor unit inverter PCB	Yellow LED		
Keeps flashing				

1. Applicable model
All models

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
<ul style="list-style-type: none"> • 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	Indoor display	RUN light 7-time flash	TIMER light ON	Content Insufficient refrigerant amount or detection of service valve closure
	Outdoor unit control PCB	Green LED Keeps flashing	Red LED 1-time flash	
		Yellow LED Keeps flashing		
	Outdoor unit inverter PCB			

1. Applicable model
All models

2. Error detection method
<ul style="list-style-type: none"> • Judge insufficient refrigerant amount by detecting the temperature difference between indoor heat exchanger (Th2) and indoor room (Th1). • It detects at initial startup in cooling or dehumidifying mode after power ON.

3. Condition of error displayed
Anomalous stop at initial detection

4. Presumable cause
<ul style="list-style-type: none"> • Defective indoor heat exchanger temperature sensor • Defective indoor room temperature sensor • Defective indoor unit control PCB • Insufficient refrigerant amount

5. Troubleshooting

Diagnosis	Countermeasure
<p>Indoor heat exchanger, room temperature sensor Temperature-resistance characteristics</p> <p>(Broken wire)</p> <p>(Short-circuit)</p>	

Note: Insufficient refrigerant amount preventive control makes compressor stopped, if it judges insufficient refrigerant amount by detecting the temperature difference between indoor heat exchanger (Th2) and room temperature (Th1) for 5 minutes after compressor ON in cooling or dehumidifying mode and for 9 minutes after compressor ON in heating mode. [in cooling mode: (Th1)-(Th2)<4degC, in heating mode: (Th2)-(Th1)<4degC]

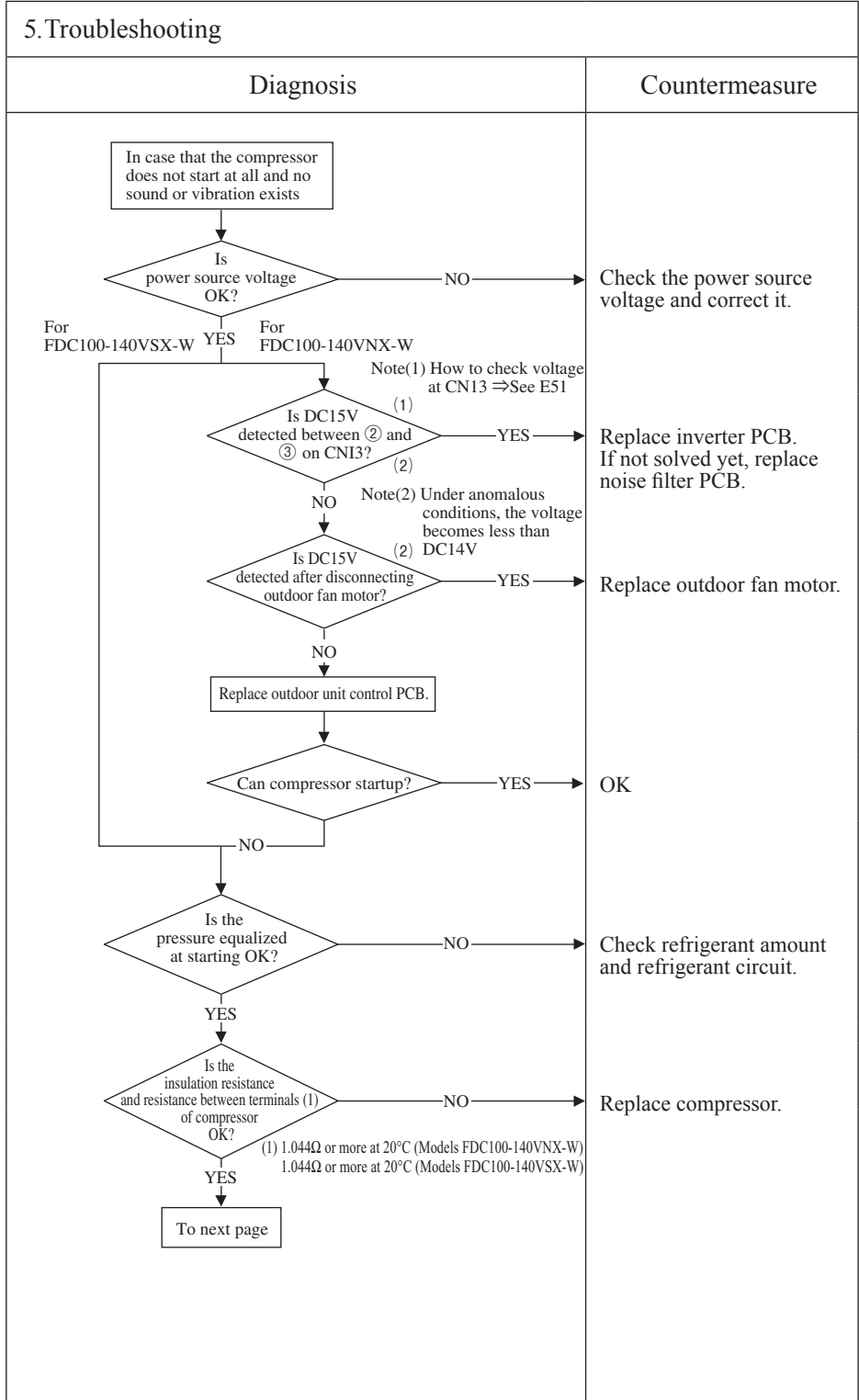
Error code Remote control: E59	Indoor display	RUN light	TIMER light	Content Compressor startup failure (1/2)
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	5-time flash	
	Outdoor unit inverter PCB	Yellow LED		
		Stays OFF		

1. Applicable model
All models

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
<ul style="list-style-type: none"> Faulty outdoor fan motor Faulty outdoor unit control PCB Faulty inverter PCB 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)

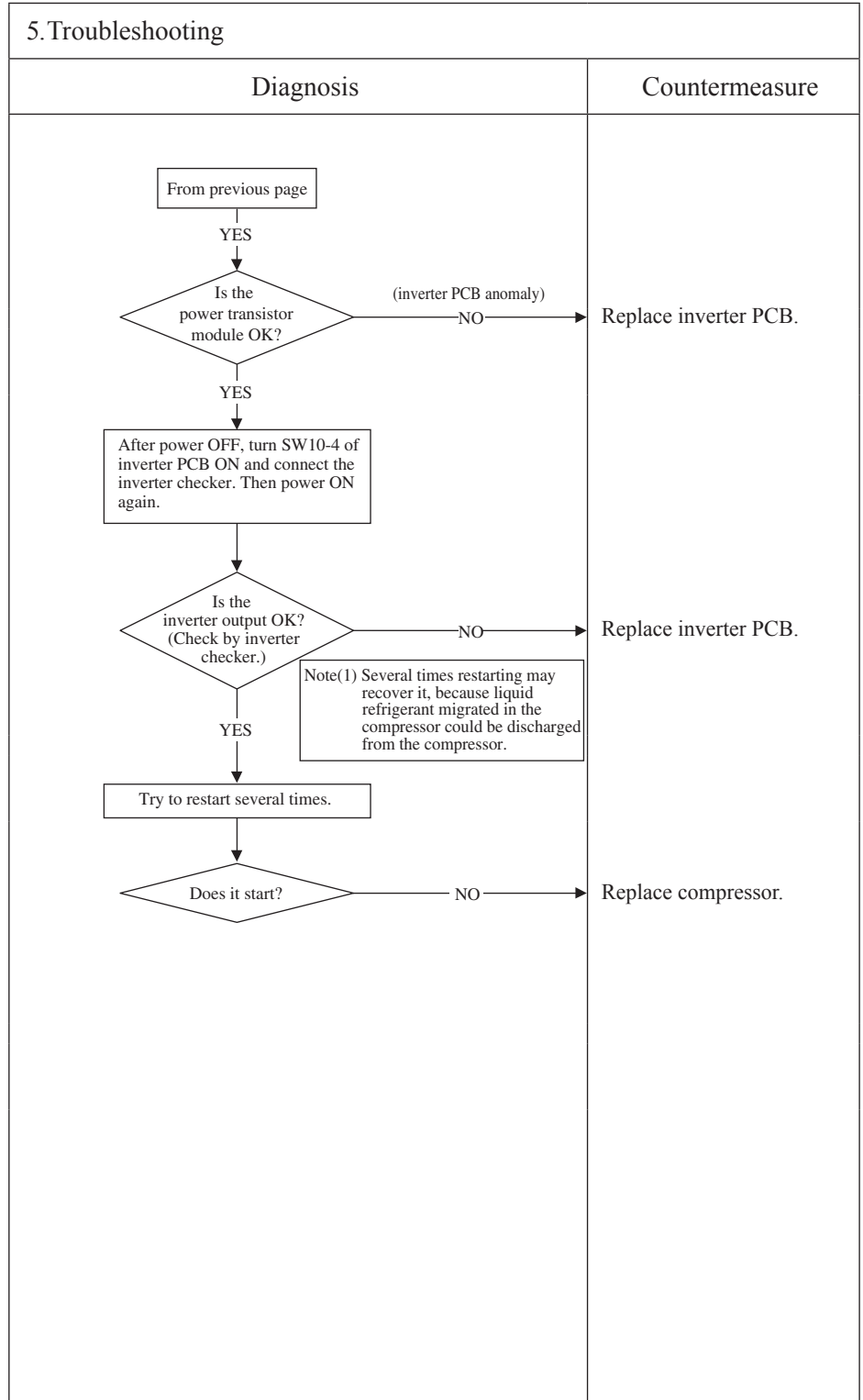
Error code Remote control: E59	Indoor display	RUN light	TIMER light	Content Compressor startup failure (2/2)
	Outdoor unit control PCB	Green LED	Red LED	
		Keeps flashing	5-time flash	
	Outdoor unit inverter PCB	Yellow LED		
Stays OFF				

1. Applicable model
All models

2. Error detection method

3. Condition of error displayed

4. Presumable cause



Note: