



2.2 Troubleshooting flow

(1) List of troubles

Model FDC125VNP-W

Remote control display	Description of trouble	Reference page
None	Operates but does not cool.	56
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(2) Troubleshooting

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

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				
<table border="1"> <thead> <tr> <th>Diagnosis</th> <th>Countermeasure</th> </tr> </thead> <tbody> <tr> <td> <p>Check the indoor fan operation. Check the temperature difference between return and supply air.</p> <pre> graph TD Start[Check indoor fan operation and temperature difference] --> D1{Is the temperature difference between return and supply air 10-20°C at cooling?} D1 -- YES --> D2{Does the heat load increase after installation?} D1 -- NO --> D3{Is the compressor operating?} D2 -- YES --> Box1[Mistake in model selection. Calculate heat load once more.] D2 -- NO --> CM1[It is normal. (This unit is designed to start in the soft start mode by detecting the under dome temperature of compressor when it restart after power reset.)] Box1 --> CM2[It is necessary to replace to higher capacity unit or to install additional unit.] D3 -- NO --> D4{"⌚ WAIT ⌚" message is displayed (for 3 seconds) when performing cooling, dehumidifying and heating operations from the remote control.} D3 -- YES --> D5{Is the compressor rotation speed low?} D4 -- YES --> CM3[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 --> CM4[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 --> CM5[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 --> CM6[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> </td> <td> <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 unit 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. 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Note:

Error code Remote control: None	LED	Green	Red	Content Operates but does not heat.
	Indoor	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 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, dehumidifying 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 unit 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	

1. Applicable model	5. Troubleshooting		
All models	Diagnosis	Countermeasure	
2. Error detection method	<pre> graph TD D1{Are OK the insulation resistance and resistance between terminals (1) of compressor? (1)0.448Ω or more at 20°C (Model FDC125VNP-W)} D2{Is insulation of respective harnesses OK? Is any harness bitten between pannel and casing or etc?} P1[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 --> P1 </pre>		
3. Condition of error displayed	<p>Check of the outdoor unit grounding wire/earth leakage breaker</p> <p>① Run an independent grounding wire from the grounding screw of outdoor unit to the grounding terminal on the distribution panel. (Do not connect to another grounding wire.)</p> <p>② In order to prevent malfunction of the earth leakage breaker itself, confirm that it is conformed to higher harmonic regulation.</p> <p>* Insulation resistance of compressor</p> <ul style="list-style-type: none"> • Immediately after installation or when the unit has been left for long time without power source, the insulation resistance may drop to a few MΩ because of refrigerant migrated in the compressor. <p>When the earth breaker is activated at lower insulation resistance, check the following points.</p> <p>① Check if the earth leakage breaker is conformed to higher harmonic regulation or not.</p> <p>Since the unit is equipped with inverter, it is necessary to use components conformed to higher harmonic regulation in order to prevent malfunction of earth leakage breaker.</p>		
4. Presumable cause	<ul style="list-style-type: none"> • Defective compressor • Noise 		

Note:

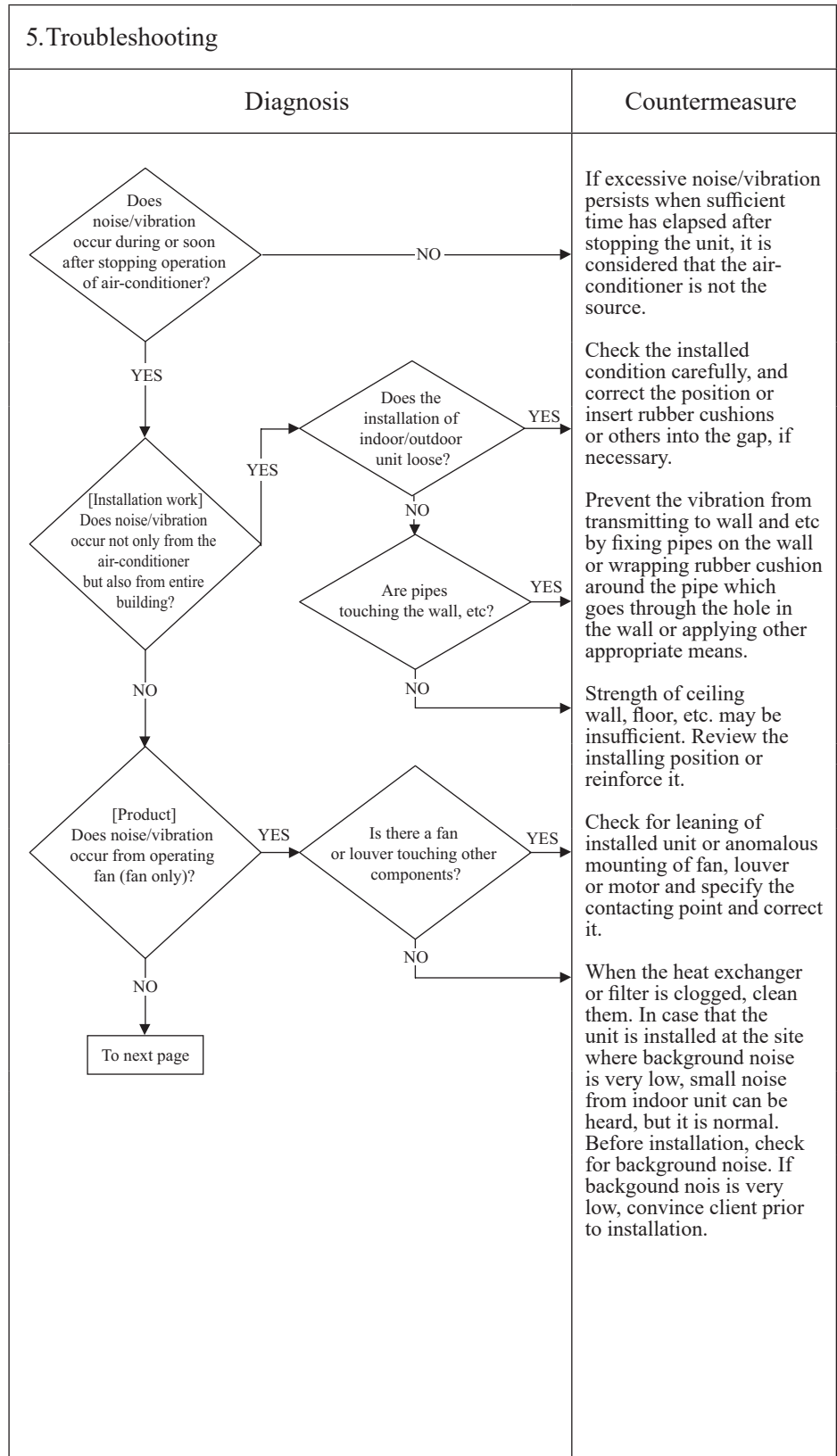
Error code Remote control: None	LED	Green	Red	Content Excessive noise/vibration (1/3)
	Indoor	-	-	

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	LED	Green	Red	Content Excessive noise/vibration (2/3)
	Indoor	-	-	

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

5. Troubleshooting	
Diagnosis	Countermeasure
	<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	LED	Green	Red	Content Excessive noise/vibration (3/3)
	Indoor	-	-	

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

Error code Remote control: None	LED	Green	Red	Content Louver motor failure (FDT, FDE series)
	Indoor	Keeps flashing	Stays OFF	

1. Applicable model
FDT, FDE series only

2. Error detection method

3. Condition of error displayed

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

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

Note:

Error code Remote control: None	LED	Green	Red	Content Power source system error (Power source to remote control)
	Indoor	Keeps flashing	3-time flash	

1.Applicable model	5.Troubleshooting		
All models	Diagnosis	Countermeasure	
2.Error detection method	<pre> graph TD D1{Are there any loose connection of remote control wires?} -- YES --> C1[Correct it.] D1 -- NO --> D2{Are remote control wires 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 indoor unit terminal block?} D3 -- YES --> C3[Replace remote control.] D3 -- NO --> D4{Is DC180V between ①-② of CNW2?} D4 -- NO --> C4[Defective indoor unit power PCB → Replace.] D4 -- YES --> 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 • Faulty indoor unit power PCB • 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	

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 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	

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

5.Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD D1{Are more than 3 units of remote control connected?} -- YES --> C1[Reduce to 2 units or less.] D1 -- NO --> D2{Does remote control display "Slave"?} D2 -- YES --> C2[Change remote control setting to "Master". (SW1 on remote control PCB)] D2 -- NO --> D3{Do more than one indoor units have the same address?} D3 -- YES --> C3[Change address. (SW2 on indoor unit control PCB)] D3 -- NO --> D4{Is it set to a slave indoor unit? (SW5-1, 2)} D4 -- YES --> C4[Change to master. (SW5-1, 2 on indoor unit control PCB)] D4 -- NO --> D5{Is there loose or wrong connection at the terminal of wiring between indoor and outdoor units?} D5 -- YES --> C5[Correct it.] D5 -- NO --> D6{Is the grounding wire connected properly?} D6 -- NO --> C6[Correct it.] D6 -- YES --> D7{Is approx. DC20V detected between ②-③ on the outdoor unit terminal block?} D7 -- NO --> C7[Defective outdoor unit control PCB→Replace.] D7 -- YES --> D8{Is approx. DC20V detected between ②-③ on the indoor unit terminal block?} D8 -- NO --> C8[Broken connecting wire→Correct it.] D8 -- YES --> C9[Defective indoor unit control PCB→Replace.] </pre>	

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

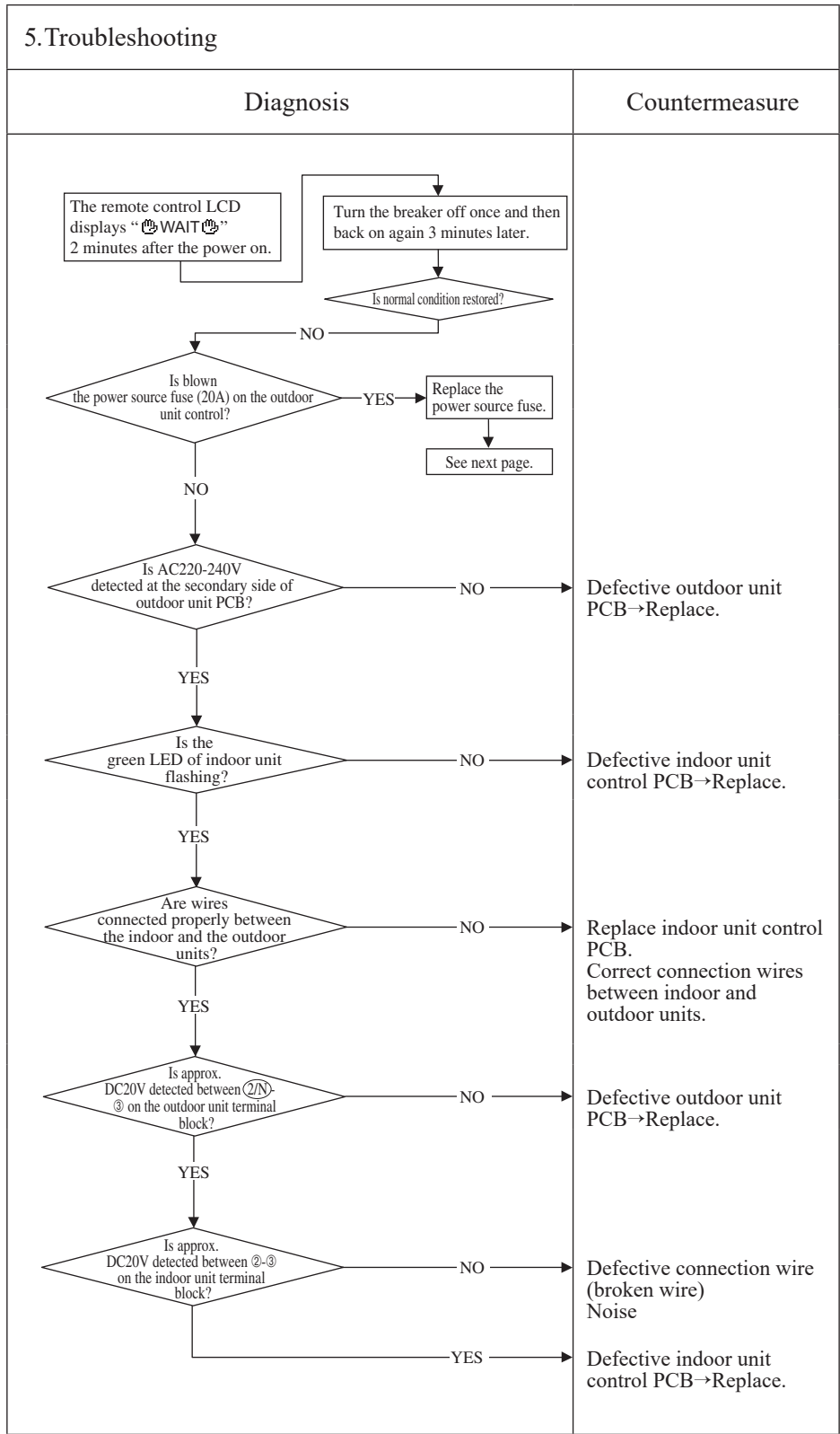
Error code Remote control: 🗲WAIT🗲	LED	Green	Red	Content Communication error at initial operation (1/3)
	Indoor	Keeps flashing	Stays OFF	

1.Applicable model
All models
When the remote control LCD displays “🗲WAIT🗲” 2 minutes after the power on.

2.Error detection method

3.Condition of error displayed

- 4.Presumable cause**
- Blown fuse
 - Faulty outdoor unit PCB
 - Connection between PCB's
 - Faulty indoor unit control PCB
 - Defective remote control
 - Broken remote control wire



Note: If any anomaly is detected during communication, the error code E5 is displayed. Inspection procedure is same as above. (Excluding matters related to connection) When the power source is reset after the occurrence of E5, the LED will display “🗲WAIT🗲” if the anomaly continues. If the breaker ON/OFF is repeated in a short period of time (within 1 minute), “🗲WAIT🗲” may be displayed. In such occasion, turn the breaker off and wait for 3 minutes.

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

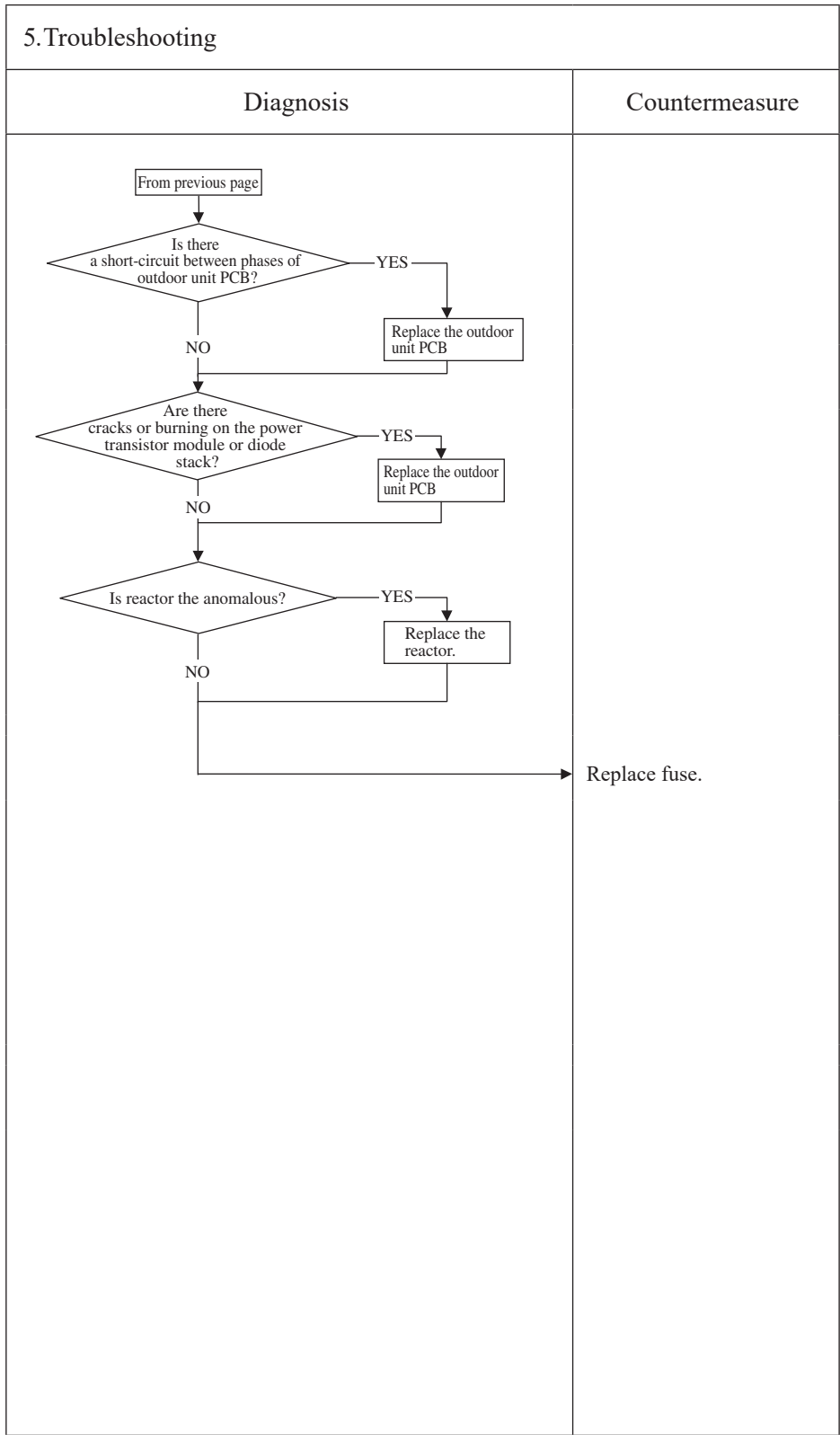
1. Applicable model
All models
When the fuse is blown, the method to inspect outdoor unit PCB before replacing the power source fuse

2. Error detection method

3. Condition of Error displayed

4. Presumable cause

- Blown fuse
- Faulty outdoor unit PCB
- Faulty reactor



Note:

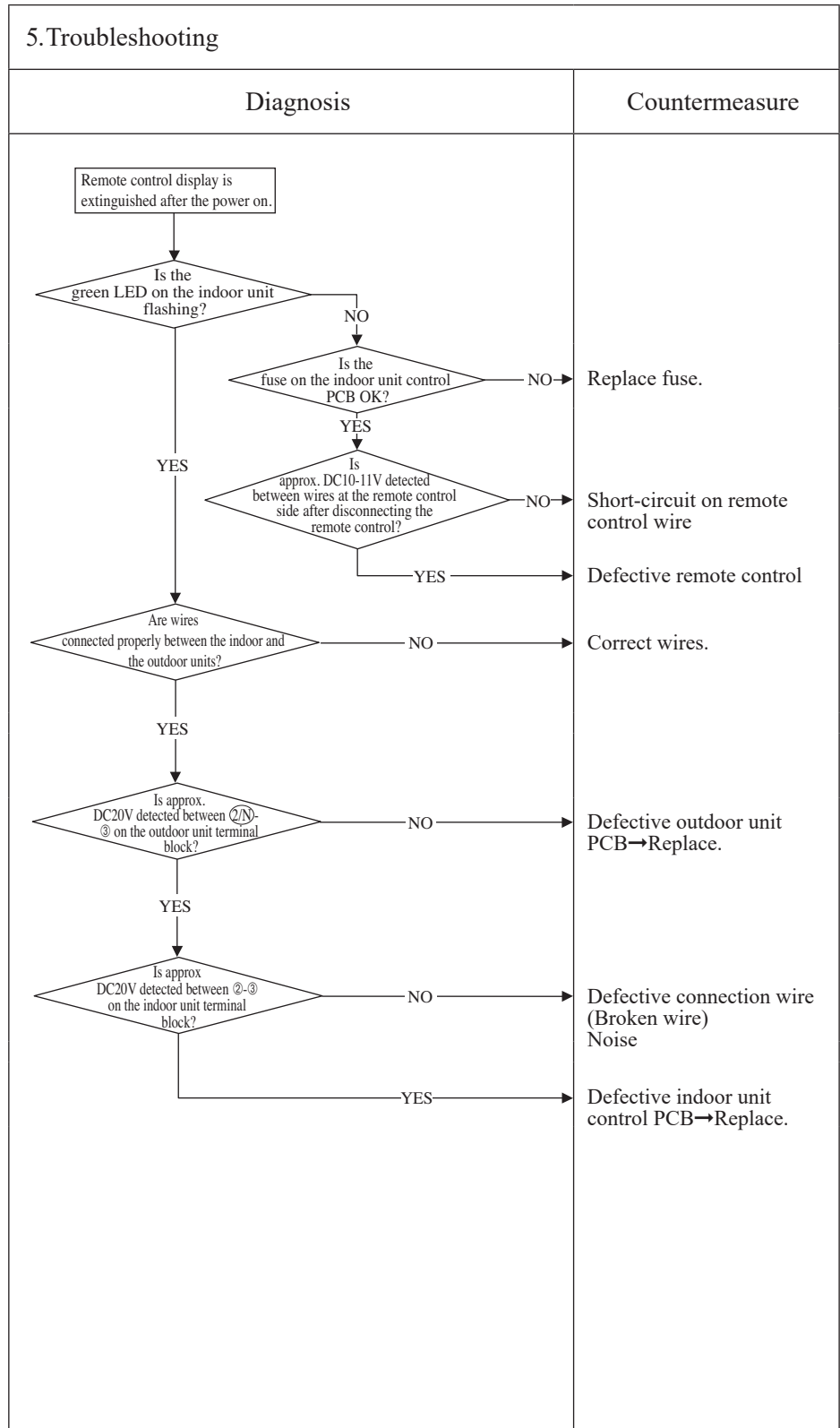
Error code Remote control: 🖱️ WAIT 🖱️	LED	Green	Red	Content Communication error at initial operation (3/3)
	Indoor	Keeps flashing	Stays OFF	

1.Applicable model
All models
When the remote control display is extinguished after the power on.

2.Error detection method

3.Condition of error displayed

- 4.Presumable cause**
- Blown fuse
 - Connection between PCB's
 - Blown fuse
 - Faulty indoor unit control PCB
 - Defective remote control
 - Wire breakage on remote control
 - Faulty outdoor unit PCB



Note:

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

Remote control communication circuit error

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

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?} Note(1) Only indoor unit with drain pump --- E 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	

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 PCB

5. Troubleshooting	
Diagnosis	Countermeasure
<p style="text-align: center;">Note (1) Inspect faulty connections (disconnection, looseness) on the outdoor unit terminal block.</p> <p style="text-align: center;">Is the connection of signal wires at the outdoor unit side OK?</p> <p style="text-align: center;">NO → Repair signal wires.</p> <p style="text-align: center;">YES</p> <p style="text-align: center;">Note (2) Check for faulty connection or breakage of signal wires between indoor-outdoor units.</p> <p style="text-align: center;">Is the connection of signal wires between indoor-outdoor units OK?</p> <p style="text-align: center;">NO → Repair signal wires.</p> <p style="text-align: center;">YES</p> <p style="text-align: center;">Power source reset</p> <p style="text-align: center;">Has the remote control LCD returned to normal state?</p> <p style="text-align: center;">NO → To the diagnosis of “WAIT”.</p> <p style="text-align: center;">YES → Unit is normal. (Malfunction by temporary noise, etc.)</p>	

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

1. Applicable model
All models

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 short-circuit is detected for 5 seconds continuously

4. Presumable cause

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

5. Troubleshooting

Diagnosis	Countermeasure
<p>Is the connection of indoor heat exchanger temperature sensor connector OK?</p> <p>NO →</p> <p>YES →</p> <p>Are characteristics of indoor heat exchanger temperature sensor OK?</p> <p>NO →</p> <p>YES →</p>	<p>Correct it. → 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>

(Broken wire) **Temperature-resistance characteristic**

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

(Short-circuit)

Note:

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

1. Applicable model
All models

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 it. → 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	

1.Applicable model
All models
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 it.] 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 (FDT, FDU, FDUM series)
	Indoor	Keeps flashing	1-time flash	

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

5. Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD Start[Check the error data in the remote control.] --> Q1{Is there any overflow?} Q1 -- NO --> Q2{Is DC12V at CNI connector?} Q2 -- YES --> C1[Check float switch.] Q2 -- NO --> Q3{Is the CNI connected firmly?} Q3 -- NO --> C2[Correct it. → Connect connector.] Q3 -- YES --> Q4{Is there any anomaly on the option equipment?} Q4 -- NO --> C3[Defective indoor unit control PCB → Replace.] Q4 -- YES --> C4[Check option equipment.] Q1 -- YES --> Q5{Is the humidifier connected?} Q5 -- YES --> Q6{Is the humidifier drain pump motor interlocked by the indoor unit function setting of remote control?} Q6 -- NO --> C5[Correct setting to "Humidifier drain pump motor interlock".] Q6 -- YES --> P1[Drain pump motor ON from the remote control] P1 --> Q7{Does drain pump motor operate?} Q7 -- NO --> Q8{Is DC12V detected at CNR connector?} Q8 -- NO --> C6[Defective indoor unit control PCB → Replace.] Q8 -- YES --> C7[Check wiring of drain pump motor.] Q7 -- YES --> Q9{Is the drain piping unclogged? Is the drain pipe slope OK?} Q9 -- NO --> C8[Correct it.] Q9 -- YES --> C9[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	

1.Applicable model	5.Troubleshooting		
All models	Diagnosis		Countermeasure
	<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>		
2.Error detection method			
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: E11	LED	Green	Red	Content Address setting error of indoor units
	Indoor	Keeps flashing	Stays OFF	

1. Applicable model	5. Troubleshooting		
All models	Diagnosis		Countermeasure
2. Error detection method	<p>In case the wiring is below and "Master IU address set" is used, E11 is appeared.</p>		Change of address setting method Set the address by DIP switch SW2 on indoor unit control PCB.
IU address has been set using the "Master IU address set" function of remote control.	<p>In case the wiring is below and "Master IU address set" is appeared.</p>		
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.)		

Note:

Error code	LED	Green	Red	Content
Remote control: E16	Indoor	Keeps flashing	1(2)-time flash	Indoor fan motor anomaly

Note(1) Value in () is for the FDU, FDUM series FMi2 only.

<p>1.Applicable model</p> <p>All models</p>	<p>5.Troubleshooting</p>	
<p>2.Error detection method</p> <p>Detected by rotation speed of indoor fan motor</p>	<p style="text-align: center;">Diagnosis</p> <pre> graph TD D1{Does any foreign material intervene in rotational area of fan propeller?} -- YES --> C1[Remove foreign material.] D1 -- NO --> D2{Does the fan rotate smoothly when turned by hand?} D2 -- YES --> D3{Is DC280V detected between ①-④ of fan motor connector CNM?} D2 -- NO --> C2[Replace the fan motor.] D3 -- YES --> B1[Power source reset] D3 -- NO --> D4{Is the fuse F2 or F3, 4 blown?} B1 --> D5{Is it normalized?} D4 -- YES --> C3[Replace faulty fan motor and indoor unit control or power PCB.] D4 -- NO --> C4[Check power source voltage.] D5 -- YES --> C5[Malfunction by temporary noise] D5 -- NO --> C6[Replace fan motor. (If the error persists after replacing the fan motor, replace the indoor unit control PCB.)] </pre>	<p style="text-align: center;">Countermeasure</p>
<p>3.Condition of Error displayed</p> <p>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.</p>		
<p>4.Presumable cause</p> <ul style="list-style-type: none"> • Defective indoor unit control or power 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: E19	LED	Green	Red	Content Indoor unit operation check, drain pump motor check setting error
	Indoor	Keeps flashing	1-time flash	

1.Applicable model
All models

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>	

Note:

Error code Remote control: E20	LED	Green	Red	Content Indoor fan motor rotation speed anomaly
	Indoor	Keeps flashing	1(2)-time flash	

Note(1) Value in () is for the FDU, FDUM series FMi2 only.

1.Applicable model	5.Troubleshooting		
All models	Diagnosis	Countermeasure	
2.Error detection method	<pre> graph TD Q1{Does any foreign material intervene in rotational area of fan propeller?} -- YES --> C1[Remove foreign material.] Q1 -- NO --> Q2{Does the fan rotate smoothly when turned by hand?} Q2 -- NO --> C2[Replace the fan motor.] Q2 -- YES --> Q3{Is DC280V detected between ①-④ of fan motor connector CNM?} Q3 -- YES --> R1[Power source reset] R1 --> Q4{Is it normalized?} Q4 -- YES --> C3[Malfunction by temporary noise] Q4 -- NO --> Q5{Is the fuse F2 or F3, 4 blown?} Q5 -- YES --> C4[Replace faulty fan motor and indoor unit control or power PCB.] Q5 -- NO --> C5[Check power source voltage.] </pre>		
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 (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	<ul style="list-style-type: none"> • Defective indoor unit control or power 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	

1.Applicable model
All models

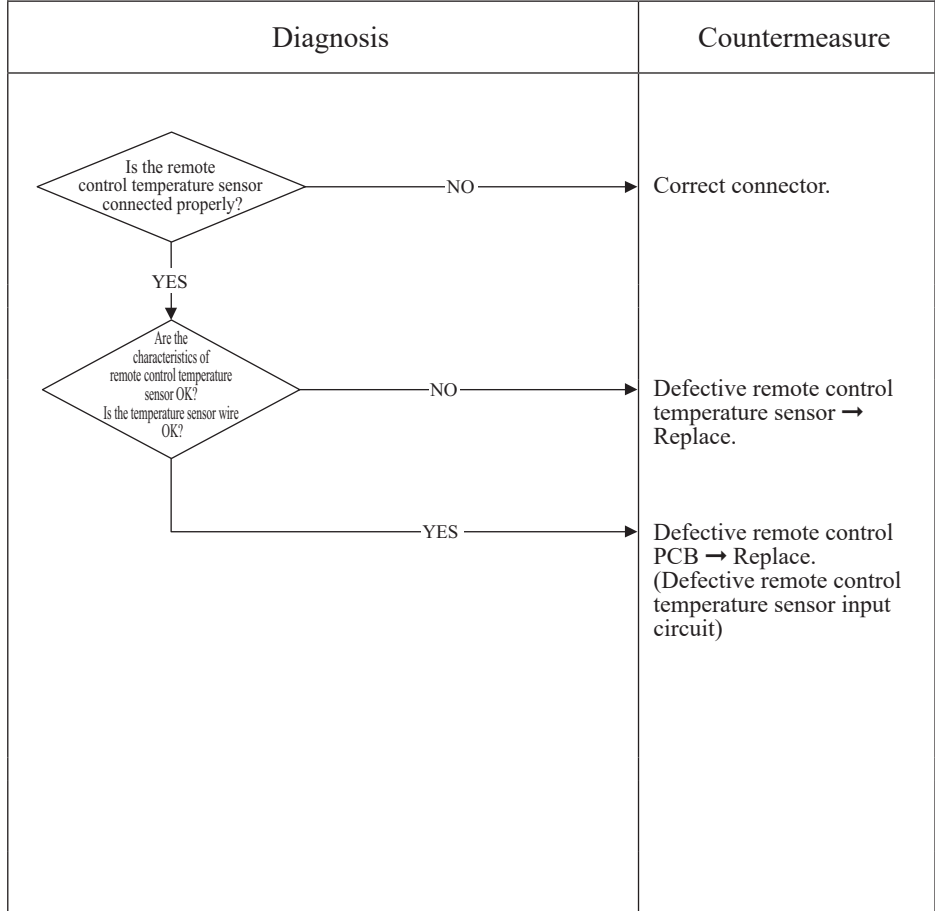
2.Error detection method
Detection of anomalously low temperature (resistance) of remote control temperature sensor (The)

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	LED	Green	Red	Content Cooling overload operation
	Indoor	Keeps flashing	Stays OFF	

1. Applicable model
All models

2. Error detection method

Outdoor heat exchanger temperature (°C)
Note(1) Values in () are applicable when outdoor air temperature (TH2) is lower than 32°C

3. Condition of error displayed
When anomalous outdoor heat exchanger temperature occurs 5 times within 60 minutes or 60(56)°C or higher continues for 10 minutes, including the 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 quantity

5. Troubleshooting

Diagnosis	Countermeasure
<p>* For the characteristics of outdoor heat exchanger temperature sensor, refer to E37.</p> <p>Are the characteristics of outdoor heat exchanger temperature sensor normal?</p> <p>NO →</p> <p>YES →</p> <p>Is the unit operating in the state of cooling overload?</p> <p>NO →</p> <p>YES →</p> <p>Is the high pressure control normal?</p> <p>NO →</p> <p>YES →</p> <p>Is the temperature (measured actually) at direction of error correct?</p> <p>NO →</p> <p>YES →</p>	<p>Replace outdoor heat exchanger temperature sensor.</p> <p>Check unit side.</p> <ul style="list-style-type: none"> • Isn't the air circulation of outdoor unit short-circuited? • Are installation spaces adequate? • Isn't there any fouling or clogging on heat exchanger? <p>Control operation check*</p> <p>Defective outdoor unit control PCB → Replace.</p> <p>Excessive refrigerant amount: Recharge refrigerant by weighing proper amount on a scale.</p>

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

Note:

Error code Remote control: E36	LED	Green	Red	Content	<h2>Discharge pipe temperature error</h2>
	Indoor control PCB	Keeps flashing	Stays OFF		

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 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
<ul style="list-style-type: none"> • Defective outdoor unit 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
<pre> graph TD D1{Are the characteristics of discharge pipe temperature sensor normal?} -- NO --> C1[Replace discharge pipe temperature sensor.] D1 -- YES --> D2{Is the discharge pipe temperature error persisted during cooling/heating operation?} D2 -- YES --> C2[Insufficient refrigerant amount : Recharge refrigerant by weighing proper amount on a scale.] D2 -- NO --> D3{Is the discharge pipe temperature control normal?} D3 -- NO --> C3[Control operation check *] D3 -- YES --> D4{Is the temperature (measured actually) at detection of error correct?} D4 -- NO --> C4[Defective outdoor unit PCB -> Replace.] D4 -- 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 characteristics of discharge pipe temperature sensor, refer to E39.</p> <p>* For the contents of control, refer to compressor overheat protective control in the protective control by controlling compressor rotation speed of microcomputer control function for corresponding models.</p>	

Note:

Error code Remote control: E37	LED	Green	Red	Content Outdoor heat exchanger temperature sensor anomaly
	Indoor	Keeps flashing	Stays OFF	

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 -55 °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 -55 °C or lower is detected for 5 seconds continuously within 20 seconds after power ON

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

5.Troubleshooting																	
Diagnosis	Countermeasure																
<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>6</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	6	25	5	30	4	40	3	50	2
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0	15																
10	10																
20	6																
25	5																
30	4																
40	3																
50	2																

Note:

Error code Remote control: E38	LED	Green	Red	Content Outdoor air temperature sensor anomaly
	Indoor	Keeps flashing	Stays OFF	

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

- When the temperature sensor detects -55 °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 -55 °C or lower is detected for 5 seconds continuously within 20 seconds after power ON

4.Presumable cause

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

5.Troubleshooting

Diagnosis	Countermeasure																
<pre> graph TD Q1{Is the outdoor air temperature sensor connector connected properly?} -- NO --> C1[Correct connector.] Q1 -- YES --> Q2{Is the characteristics of the outdoor air temperature sensor OK?} Q2 -- NO --> C2[Defective outdoor air temperature sensor → Replace.] Q2 -- YES --> C3[Defective outdoor unit PCB → Replace. (Defective outdoor air temperature sensor input circuit)] </pre>																	
<p>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>15</td> </tr> <tr> <td>10</td> <td>10</td> </tr> <tr> <td>20</td> <td>6</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	6	25	5	30	4	40	3	50	2	
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0	15																
10	10																
20	6																
25	5																
30	4																
40	3																
50	2																

Note:

Error code Remote control: E39	LED	Green	Red	Content Discharge pipe temperature sensor anomaly
	Indoor	Keeps flashing	Stays OFF	

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 -25 °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
<ul style="list-style-type: none"> • Defective outdoor unit PCB • Broken sensor harness or temperature sensing section (Check molding.) • Disconnected wire connection (connector)

5.Troubleshooting																			
Diagnosis	Countermeasure																		
<p>(Broken wire) Temperature-resistance characteristics</p> <table border="1"> <caption>Approximate data points from the Temperature-resistance characteristics graph</caption> <thead> <tr> <th>Temperature (°C)</th> <th>Temperature sensor resistance (kΩ)</th> </tr> </thead> <tbody> <tr><td>10</td><td>100</td></tr> <tr><td>20</td><td>75</td></tr> <tr><td>40</td><td>40</td></tr> <tr><td>60</td><td>20</td></tr> <tr><td>80</td><td>10</td></tr> <tr><td>100</td><td>5</td></tr> <tr><td>120</td><td>2</td></tr> <tr><td>140</td><td>1</td></tr> </tbody> </table>		Temperature (°C)	Temperature sensor resistance (kΩ)	10	100	20	75	40	40	60	20	80	10	100	5	120	2	140	1
Temperature (°C)	Temperature sensor resistance (kΩ)																		
10	100																		
20	75																		
40	40																		
60	20																		
80	10																		
100	5																		
120	2																		
140	1																		

Note:

Error code Remote control: E40	LED	Green	Red	Content Service valve (gas side) closing operation
	Indoor	Keeps flashing	Stays OFF	

1.Applicable model
All models

2.Error detection method
If the inverter output current value exceeds the setting value within 80 seconds after the compressor ON in the heating mode, the compressor stops.

3.Condition of Error displayed
<ul style="list-style-type: none"> • If the output current of inveter exceeds the specifications, it makes the compressor stopping. (In heating mode) • After 3-minute delay, the compressor restarts, but if this anomaly occurs 2 times within 20 minutes after the intial detection.

4.Presumable cause
<ul style="list-style-type: none"> • Service valve (gas side) closing • Defective outdoor unit PCB

5.Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD Q1{Are the service valve (gas side) opened?} -- NO --> C1[Open the service valve.] Q1 -- YES --> Q2{Is the checked result of power transistor module OK?} Q2 -- NO --> C2[Defective outdoor unit PCB -> Replace.] Q2 -- YES --> L1[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 heating, does the indoor fan motor run? Is the filter clogged? Is there any liquid flooding? Is there any anomalous sound on the compressor?] L1 --> Q3{After resetting power for several times does it become normal?} Q3 -- NO --> C3[Defective outdoor unit PCB -> Replace.] Q3 -- YES --> B1[Temporary noise may cause of anomaly. If noise source can be found, take countermeasure.] </pre>	

Note:

Error code Remote control: E42	LED	Green	Red	Content Current cut (1/2)
	Indoor	Keeps flashing	Stays OFF	

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.

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? (1) 0.448Ω or more at 20°C (Model FDC125VNP-W)} Q4 -- NO --> C4[Replace compressor.] Q4 -- YES --> E[To next page.] </pre>	<p>Check power source.</p> <p>Open the service valves.</p> <p>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.</p> <p>Replace compressor.</p>

Note:

Error code Remote control: E42	LED	Green	Red	Content Current cut (2/2)
	Indoor	Keeps flashing	Stays OFF	

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 inveter exceeds the specifications, it makes the compressor stopping.

4.Presumable cause
<ul style="list-style-type: none"> • Defective outdoor unit PCB • Faulty power source • Insufficient refrigerant amount • Faulty compressor • Faulty power transistor module

5.Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD Start[From previous page] --> D1{Is the checked result of power transistor module OK?} D1 -- NO --> C1[Defective outdoor unit PCB -> Replace.] D1 -- YES --> L1[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 there any anomalous sound on the compressor?] L1 --> D2{After resetting power for several times does it become normal?} D2 -- NO --> C2[Defective outdoor unit PCB -> Replace.] D2 -- YES --> E[Temporary noise may cause of anomaly.
If noise source can be found, take countermeasure.] </pre>	

Note:

Error code Remote control: E47	LED	Green	Red	Content Active filter voltage error
	Indoor	Keeps flashing	Stays OFF	

1.Applicable model
All models

2.Error detection method
Error is displayed if the converter voltage exceeds target voltage (3 times within 20 minutes). Remote control may be set after 3-minute delay. Error is displayed if the converter voltage is lower than 210V (1-time within 5 seconds after power ON)

3.Condition of Error displayed
Same as above

4.Presumable cause
<ul style="list-style-type: none"> • Defective outdoor unit PCB • Dust on outdoor unit PCB • Anomalous power source

5.Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD A{Is the power source normal?} -- NO --> B[Restore normal condition.] A -- YES --> C{Is voltage within the specified range?} C -- NO --> D[Restore normal condition.] C -- YES --> E{Check soldered surfaces on the outdoor unit PCB for foreign matter like dust, fouling, etc.} E -- NO --> F[Remove foreign matter like dust, fouling, etc.] E -- YES --> G[Defective outdoor unit PCB -> Replace.] </pre>	

Note:

Error code Remote control: E48	LED	Green	Red	Content Outdoor fan motor anomaly
	Indoor	Keeps flashing	Stays OFF	

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 drops to 75min^{-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 3 times within 60 minutes after the initial detection.

4.Presumable cause
<ul style="list-style-type: none"> • Defective outdoor unit PCB • Foreign material at rotational area of fan propeller • Defective fan motor • Dust on outdoor unit PCB • Blown F3 fuse

5.Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD D1{Does any foreign material intervene in rotational area of fan propeller?} -- YES --> C1[Remove foreign matter.] D1 -- NO --> D2{Does the fan rotate smoothly when turned by hand?} D2 -- YES --> D3{Is DC308-336V detected between (CNFAN ④ -⑥) of fan motor connector?} D2 -- NO --> C2[Replace fan motor. If resistance between ⑥ (Vm):red -④(GND):blue is detected 1kΩ or lower, it is faulty.] D3 -- YES --> R[Power source reset] D3 -- NO --> D4{Is F3 (250V1A) fuse blown?} R --> D5{Is normal state restored?} D4 -- YES --> C3[Replace faulty fan motor and outdoor unit PCB.] D4 -- NO --> C4[Check power source voltage.] D5 -- YES --> C5[Malfunction by temporary noise] D5 -- NO --> C6[Replace fan motor (If anomaly persists after replacing fan motor, replace outdoor unit PCB.)] </pre>	

Note: When E48 error occurs, in almost cases F3 fuse (1A) on the outdoor unit 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 PCB (or fuse) is replaced,, another trouble 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.)

Error code Remote control: E51	LED	Green	Red	Content Power transistor anomaly
	Indoor	Keeps flashing	Stays OFF	

<p>1.Applicable model</p> <p>All models</p>	5.Troubleshooting	
<p>2.Error detection method</p> <p>Power transistor primary current</p>	Diagnosis	Countermeasure
<p>3.Condition of Error displayed</p> <p>If the power transistor primary current exceeds the setting value for 3 seconds, the compressor stops.</p>	<pre> graph LR A{Check soldered surfaces on the outdoor unit PCB for foreign matter like dust, fouling, etc.} -- NO --> B[Remove foreign matter like dust, fouling, etc.] A -- YES --> C[Defective outdoor unit PCB -> Replace.] </pre>	
<p>4.Presumable cause</p> <ul style="list-style-type: none"> • Faulty outdoor unit PCB • Dust on outdoor unit PCB 		

Note:

Error code Remote control: E57	LED	Green	Red	Content Insufficient refrigerant amount or detection of service valve closure
	Indoor	Keeps flashing	Stays OFF	

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 (Thi-R) and indoor return air (Thi-A).
3. Condition of error displayed
When the insufficient refrigerant amount is detected 3 times within 60 minutes.
4. Presumable cause
<ul style="list-style-type: none"> 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 style="text-align: center;">Indoor heat exchanger, return air temperature sensor Temperature-resistance characteristics</p> <p style="text-align: center;">(Broken wire)</p> <p style="text-align: center;">(Short-circuit)</p>	

Note: When the compressor speed is faster than 40 rps or 60 rps ^{※1} after several minutes ^{※2} from compressor start, the low refrigerant protection control judges, by satisfying the under condition for 5 minutes, that it is in the state of gas leakage, and stops the compressor.
 Cooling: Indoor return air temperature (Thi-A) – Indoor heat exchanger temperature (Thi-R) < 4 deg C
 Heating: Indoor heat exchanger temperature (Thi-R) – Indoor return air temperature (Thi-A) < 4 deg C
^{※1} : In case of heating at low air temperature.
^{※2} : Cooling is 5 minutes, heating is 9 minutes.

Error code Remote control: E58	LED	Green	Red	Content Current safe stop
	Indoor	Keeps flashing	Stays OFF	

<p>1.Applicable model</p> <p>All models</p>	5.Troubleshooting		
<p>2.Error detection method</p> <p>When the current safe control has operated at the compressor speed of 30 rps or under</p>	Diagnosis	Countermeasure	
<p>3.Condition of error displayed</p> <p>Same as above</p>	<pre> graph TD D1{Is the refrigerant amount normal?} -- NO --> C1[Adjust the refrigerant amount properly.] D1 -- YES --> D2{Is outdoor ventilation condition good?} D2 -- NO --> C2[Secure space for inlet and outlet.] D2 -- YES --> D3{Inspect compressor. Is it normal?} D3 -- NO --> C3[Replace compressor.] D3 -- YES --> D4{Inspect outdoor air temperature sensor. Is it normal?} Note[For the characteristics of outdoor air temperature sensor, see E38.] D4 -- NO --> C4[Replace outdoor air temperature sensor.] D4 -- YES --> C5[Defective outdoor unit PCB -> Replace. (Defective outdoor air temperature sensor input circuit)] </pre>		
<p>4.Presumable cause</p> <ul style="list-style-type: none"> • Excessive refrigerant amount • Indoor,outdoor unit installation spaces • Faulty compressor • Defective outdoor air temperature sensor • Defective outdoor unit PCB 			

Note:

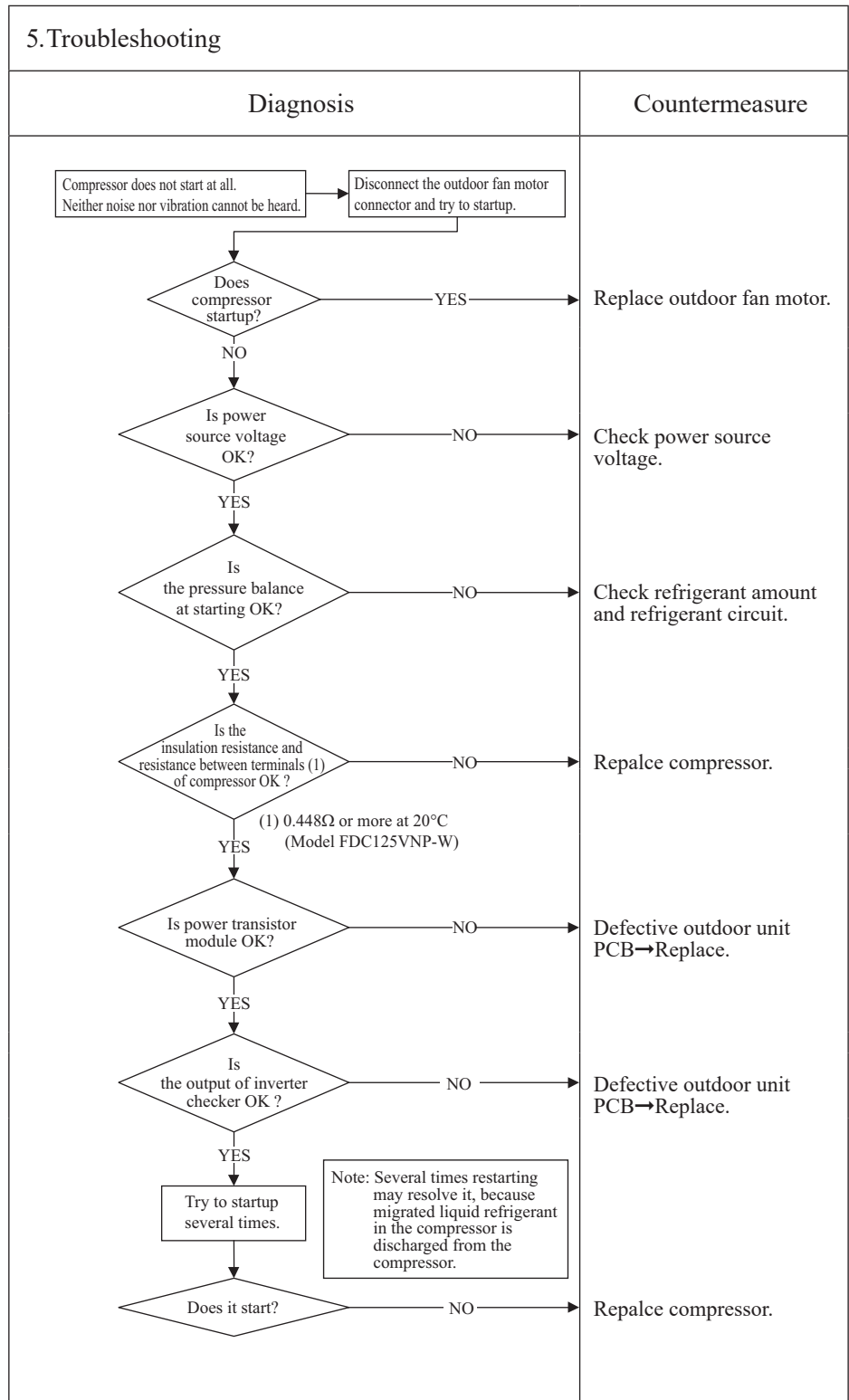
<table border="1"> <tr> <td>Error code</td> <td>LED</td> <td>Green</td> <td>Red</td> <td>Content</td> </tr> <tr> <td>Remote control: E59</td> <td>Indoor</td> <td>Keeps flashing</td> <td>Stays OFF</td> <td rowspan="2">Compressor startup failure</td> </tr> </table>	Error code	LED	Green	Red	Content	Remote control: E59	Indoor	Keeps flashing	Stays OFF	Compressor startup failure
Error code	LED	Green	Red	Content						
Remote control: E59	Indoor	Keeps flashing	Stays OFF	Compressor startup failure						

1.Applicable model
All models

2.Error detection method
<ul style="list-style-type: none"> If it fails to change over to the rotor detection operation of compressor motor

3.Condition of Error displayed
If compressor fails to startup for 42 times

4.Presumable cause
<ul style="list-style-type: none"> Faulty outdoor fan motor Faulty outdoor unit PCB Anomalous power source voltage Improper refrigerant amount and refrigerant circuit Faulty compressor (Motor bearing)



Note: Insulation resistance

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

Error code Remote control: E60	LED	Green	Red	Content Compressor rotor lock error
	Indoor	Keeps flashing	Stays OFF	

1. Applicable model
All models
2. Error detection method
Compressor rotor position
3. Condition of error displayed
If it fails again to detect the rotor position after shifting to the compressor rotor position detection operation, the compressor stops.
4. Presumable cause
<ul style="list-style-type: none"> • Defective outdoor fan motor • Defective outdoor unit PCB • Anomalous power source voltage • Improper refrigerant amount and refrigerant circuit • Defective compressor (motor, bearing)

5. Troubleshooting	
Diagnosis	Countermeasure
<pre> graph TD Q1{Is the power source voltage OK?} -- NO --> C1[Check and correct the power source voltage.] Q1 -- YES --> R1[Reset the power source and restart operation.] R1 --> Q2{Does the compressor start?} Q2 -- NO --> Q3{Does E59 occur?} Q3 -- YES --> C2[Correct it based on the troubleshooting of E59.] Q3 -- NO --> Q4{Does the compressor run without occurrence of E42?} Q4 -- NO --> C3[Correct it based on the troubleshooting of E42.] Q4 -- YES --> Q5{Is the output from inverter checker OK?} Q5 -- NO --> C4[Defective outdoor unit PCB -> Replace.] Q5 -- YES --> Q6{Is the noise or vibration of compressor normal?} Q6 -- NO --> C5[Replace compressor.] Q6 -- YES --> Q7{Does it start up normally without recurrence of E60?} Q7 -- NO --> C6[Check compressor for insulation resistance. Replace compressor if necessary.] Q7 -- YES --> C7[Defective outdoor unit PCB -> Replace.] </pre>	

Note: Insulation resistance

- The unit is left for long period without power source or soon after installation, migrated liquid refrigerant may dissolve in the refrigerant oil in the compressor. In such case insulation resistance decreases upto several MΩ or lower. 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, migrated liquid refrigerant in the refrigerant oil in compressor can be evaporated.)
 - ② Check whether the electric leakage breaker conforms to high-harmonic specifications.
(As units has inverter, in order to prevent from improper operation, be sure to use high-harmonic one.)