2.2 Troubleshooting flow

(1) List of troubles

Models FDC200, 250, 280VSA-W

Remote control display	Description of trouble	Reference page
None	Operates but does not cool	64
None	Operates but does not heat	65 · 66
None	Earth leakage breaker activated	67
None	Excessive noise/vibration (1/3)	68
None	Excessive noise/vibration (2/3)	69
None	Excessive noise/vibration (3/3)	70
None	Louver motor failure (FDT, FDTC, FDE series)	71
None	Power source system error (Power source to indoor unit control PCB)	72 · 73
None	Power source system error (Power source to remote control)	74
INSPECT I/U	INSPECT I/U (When 1 or 2 remote controls are connected)	75
INSPECT I/U	INSPECT I/U (Connection of 3 units or more remote controls)	76
WAIT	Communication error at initial operation	77 · 78
None	No display	79
E1	Remote control communication circuit error	80
E5	Communication error during operation	81
E6	Indoor heat exchanger temperature sensor anomaly	82
E7	Return air temperature sensor anomaly	83
E8	Heating overload operation	84
E9	Drain trouble	85
E10	Excessive number of connected indoor units (more than 17 units) by controlling with one remote control	86
E11	Address setting error of indoor units	87
E14	Communication error between master and slave indoor units (Except for single type)	88
E16	Indoor fan motor anomaly (Except for FDU series)	89
E16	Indoor fan motor anomaly (FDU series)	90 · 91
E18	Address setting error of master and slave indoor units (Except for single type)	92
E19	Indoor unit operation check, drain pump motor check setting error	93
E20	Indoor fan motor rotation speed anomaly (Except for FDU series)	94
E20	Indoor fan motor rotation speed anomaly (FDU series)	95 · 96
E28	Remote control temperature sensor anomaly	97
E35	Cooling overload operation	98
E36	Discharge pipe temperature error	99
E37	Outdoor heat exchanger temperature sensor anomaly	100
E38	Outdoor air temperature sensor anomaly	101
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E40	High pressure error (63H1 activated)	103
E41	Power transistor overheat	104
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E45	Communication error between inverter PCB and outdoor unit control PCB	109
E48	Outdoor fan motor anomaly	110
E49	Low pressure error or low pressure sensor anomaly	111 · 112
E51	Inverter or power transistor anomaly	113
E53	Suction pipe temperature sensor anomaly	114
E54	Low pressure sensor anomaly	115
E55	Compressor under-dome temperature sensor anomaly	116
E57	Insufficient refrigerant amount or detection of service valve closure	117
E59	Compressor startup failure	118 · 119

(2) Troubleshooting

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

1. Applicable model

All models

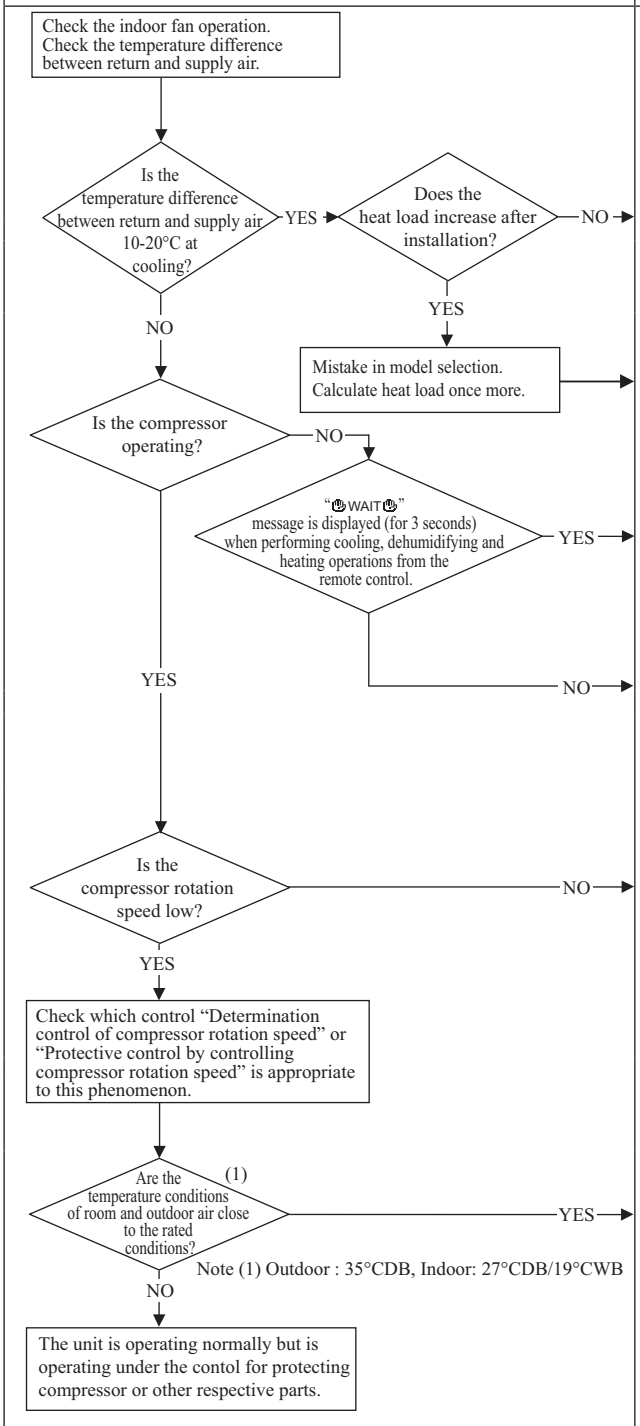
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Poor compression of compressor
- Faulty expansion valve operation

5. Troubleshooting



Note:

Error code

Remote control: None

LED	Green	Red
Indoor	Keeps flashing	Stays OFF
Outdoor	Keeps flashing	Stays OFF

Content

Operates but does not heat (1/2)

1.Applicable model

All models

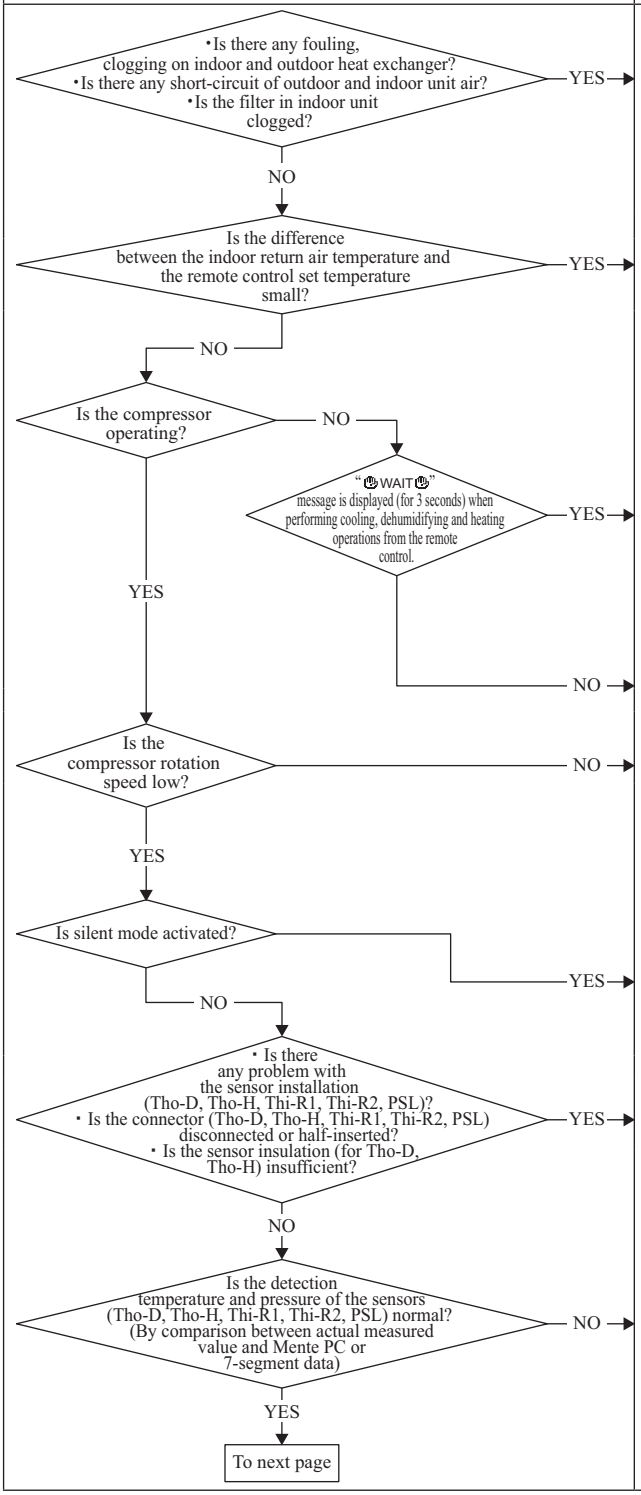
2.Error detection method

3. Condition of error displayed

4.Presumable cause

- Faulty 4-way valve operation
- Poor compression of compressor
- Faulty body of EEVH, EEVC
- Faulty coil of EEVH, EEVC
- Faulty body of SV1
- Faulty coil of SV1
- Faulty temperature sensor (Tho-D, Tho-H, Thi-R1, Thi-R2)
- Faulty pressure sensor PSL
- Insufficient amount of refrigerant

5.Troubleshooting



Note:

Error code

Remote control: None

LED	Green	Red
Indoor	Keeps flashing	Stays OFF
Outdoor	Keeps flashing	Stays OFF

Content

Operates but does not heat (2/2)

1.Applicable model

All models

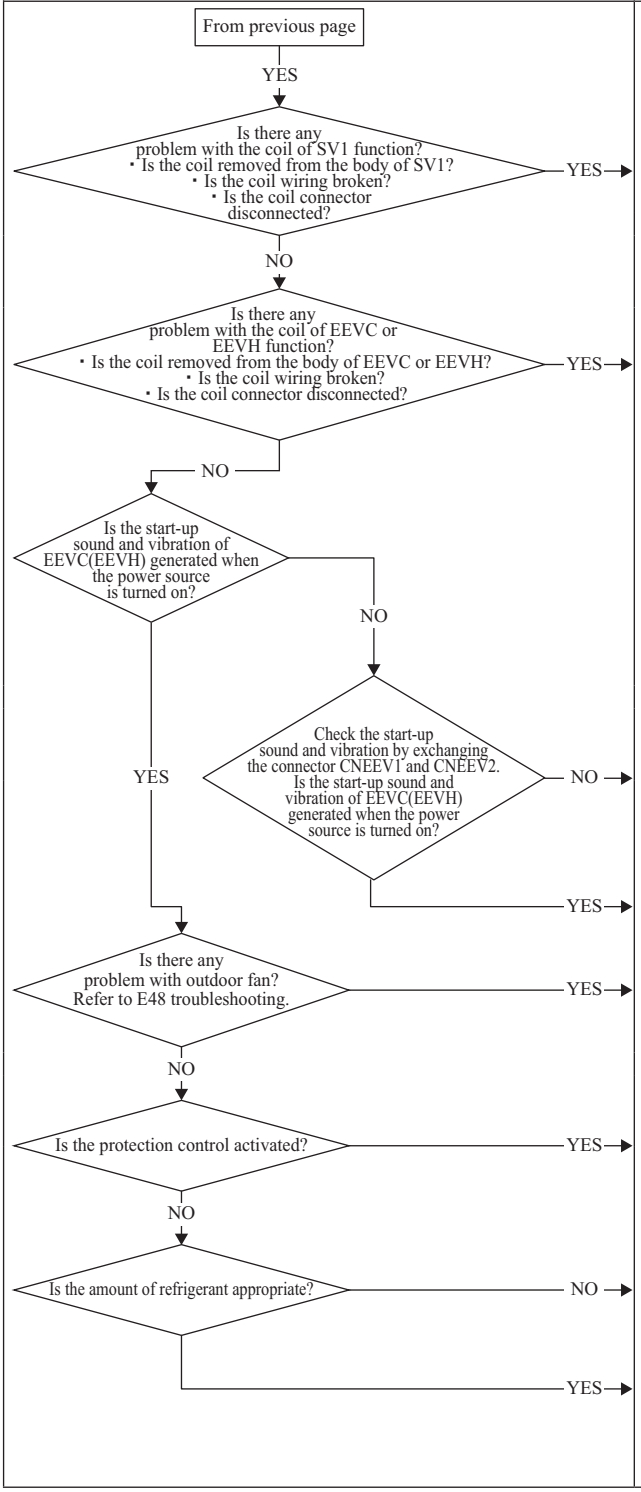
2.Error detection method

3. Condition of error displayed

4.Presumable cause

- Faulty 4-way valve operation
- Poor compression of compressor
- Faulty body of EEVH, EEVC
- Faulty coil of EEVH, EEVC
- Faulty body of SV1
- Faulty coil of SV1
- Faulty temperature sensor (Tho-D, Tho-H, Thi-R1, Thi-R2)
- Faulty pressure sensor PSL
- Insufficient amount of refrigerant

5.Troubleshooting



Note:

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

1. Applicable model

All models

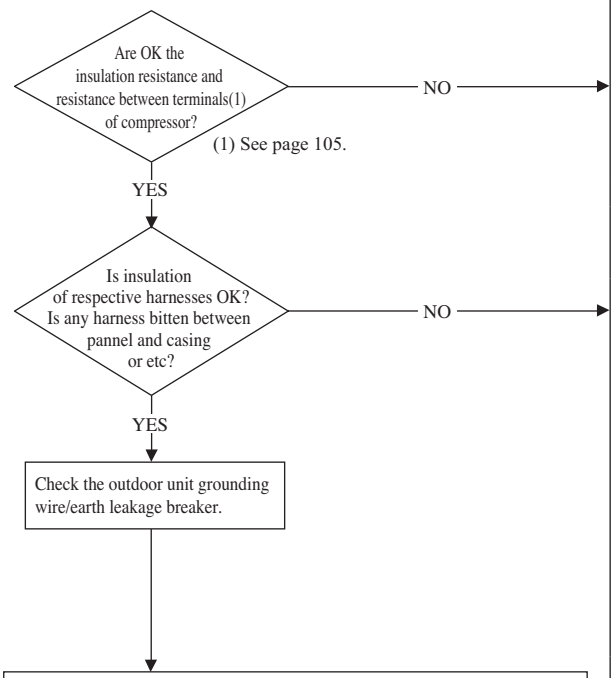
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Defective compressor
- Noise

5. Troubleshooting



Check of the outdoor unit grounding wire/earth leakage breaker

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.

* Insulation resistance of compressor

- 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.
  When the earth breaker is activated at lower insulation resistance, check the following points.

① 6 hours after power ON, check if the insulation resistance recovers to normal.
When power ON, crankcase heater heat up compressor and evaporate the refrigerant migrated in the compressor.
② Check if the earth leakage breaker is conformed to higher harmonic regulation or not.
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.

Note:

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

1.Applicable model

All models

2. Error detection method

3. Condition of error displayed

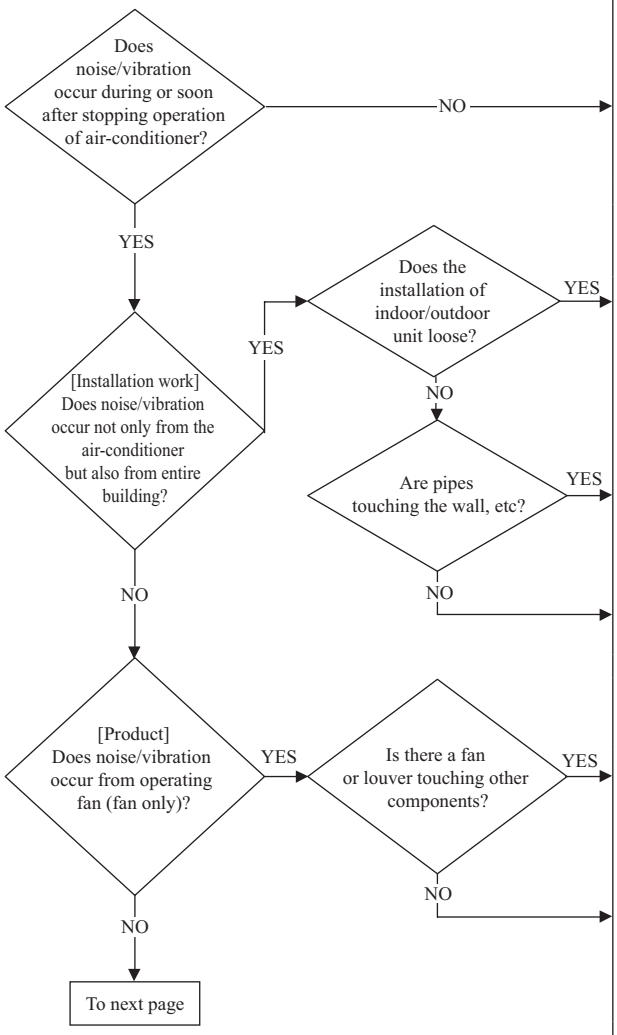
4. Presumable cause

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.

5.Troubleshooting



Diagnosis	Countermeasure
	If excessive noise/vibration persists when sufficient time has elapsed after stopping the unit, it is considered that the air-conditioner is not the source. Check the installed condition carefully, and correct the position or insert rubber cushions or others into the gap, if necessary. Prevent the vibration from transmitting to wall and etc by fixing pipes on the wall or wrapping rubber cushion around the pipe which goes through the hole in the wall or applying other appropriate means. Strength of ceiling wall, floor, etc. may be insufficient. Review the installing position or reinforce it. Check for leaning of installed unit or anomalous mounting of fan, louver or motor and specify the contacting point and correct it. When the heat exchanger or filter is clogged, clean them. In case that the unit is installed at the site where background noise is very low, small noise from indoor unit can be heard, but it is normal. Before installation, check for background noise. If backgound nois is very low, convince client prior to installation.

Note:

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

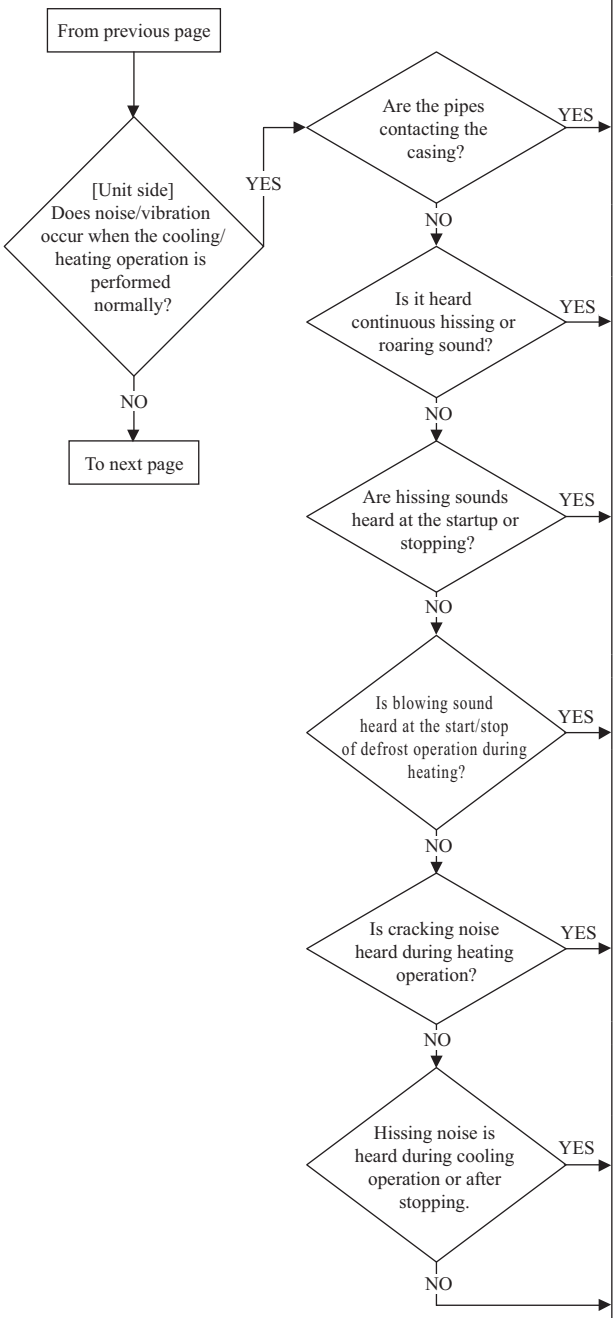
1. Applicable model

2. Error detection method

3. Condition of error displayed

4. Presumable cause

5. Troubleshooting



Diagnosis	Countermeasure
Are the pipes contacting the casing? YES	Rearrange the piping to avoid contact with the casing.
Is it heard continuous hissing or roaring sound? YES	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.
Are hissing sounds heard at the startup or stopping? YES	The noise/vibration occurs when the refrigerant starts or stops flowing. It is normal.
Is blowing sound heard at the start/stop of defrost operation during heating? YES	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.
Is cracking noise heard during heating operation? YES	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.
Hissing noise is heard during cooling operation or after stopping. YES	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.
NO	Apply the damper sealant at places considered to be the sources such as the pressure reducing mechanism (expansion valve), capillary, etc.

Note:

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

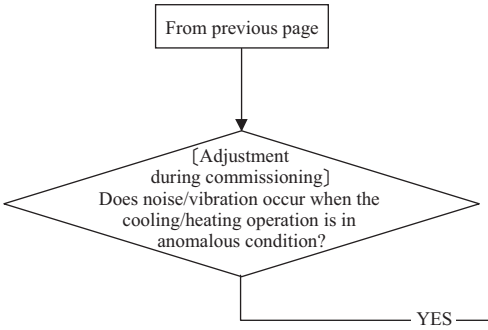
1.Applicable model

2.Error detection method

3. Condition of error displayed

4.Presumable cause

5.Troubleshooting

Diagnosis	Countermeasure
	If insufficient cooling/ heating problem happens due to anomalous operating conditions at cooling/ heating, followings are suspicious. • Overcharge of refrigerant • Insufficient charge of refrigerant • Intrusion of air, nitrogen, etc. In such occasion, it is necessary to recover refrigerant, vacuum-dry and recharge refrigerant. * 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. • 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

LED	Green	Red
Indoor	Keeps flashing	Stays OFF
Outdoor	Keeps flashing	Stays OFF

Content

Louver motor failure (FDT, FDTC, FDE series)

1. Applicable model

FDT, FDTC, FDE series

2. Error detection method

3. Condition of error displayed

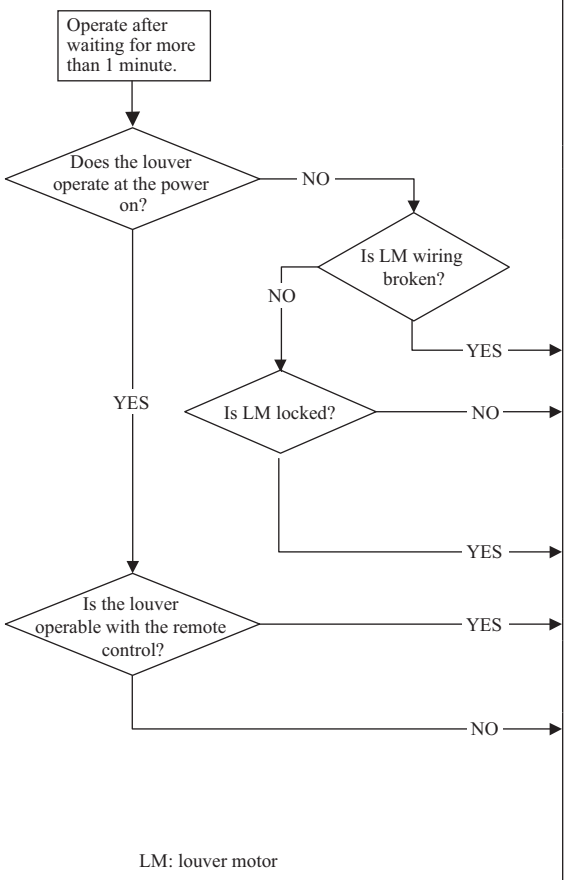
4. Presumable cause

- Defective LM
- LM wire breakage
- Faulty indoor unit control PCB

5. Troubleshooting

Diagnosis	Countermeasure

▲ Check at the indoor unit side.



LM: louver motor

Note:

Error code

Remote control: None

LED	Green	Red
Indoor	Stays OFF	Stays OFF
Outdoor	Keeps flashing	2-time flash

Content

Power source system error (Power source to indoor unit control PCB)

1. Applicable model

FDT, FDTC series only

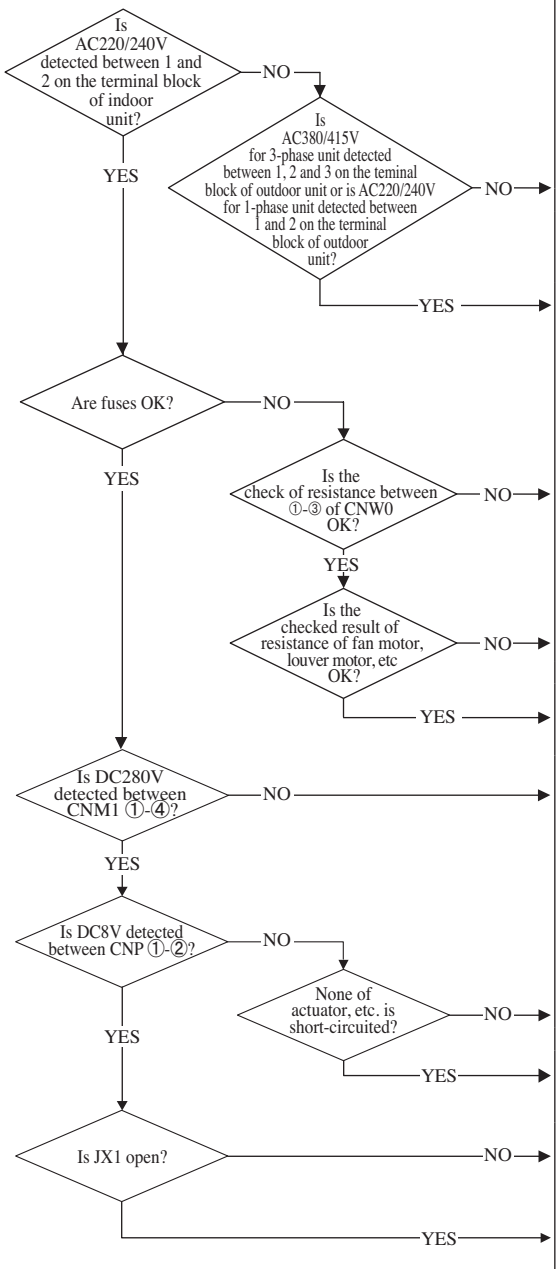
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Misconnection or breakage of connecting wires
- Blown fuse
- Faulty transformer
- Faulty indoor unit PCB
- Broken harness
- Faulty outdoor unit main PCB (Noise filter)

5. Troubleshooting



Note:

Error code

Remote control: None

LED	Green	Red
Indoor	Stays OFF	Stays OFF
Outdoor	Keeps flashing	2-time flash

Content

Power source system error (Power source to indoor unit control PCB)

1.Applicable model

Except FDT, FDTC series

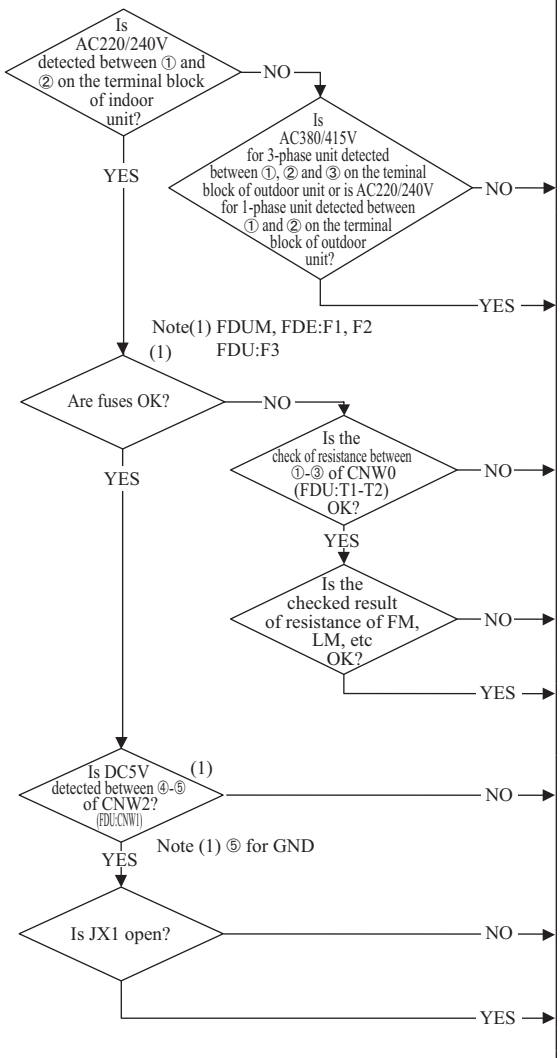
2.Error detection method

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)

5.Troubleshooting



Note:

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

1. Applicable model

All models

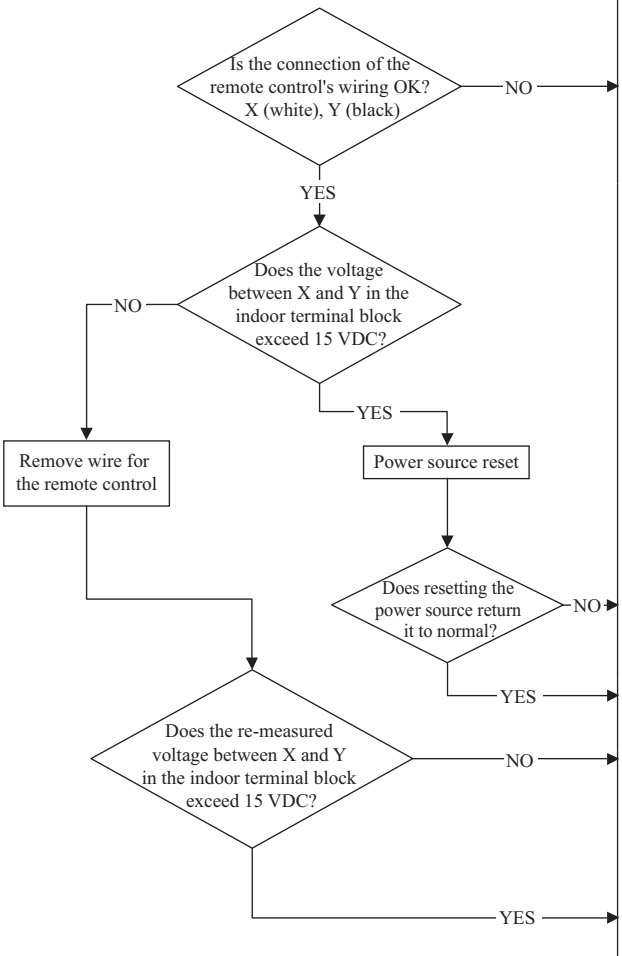
2. Error detection method

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

5. Troubleshooting



Note:

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

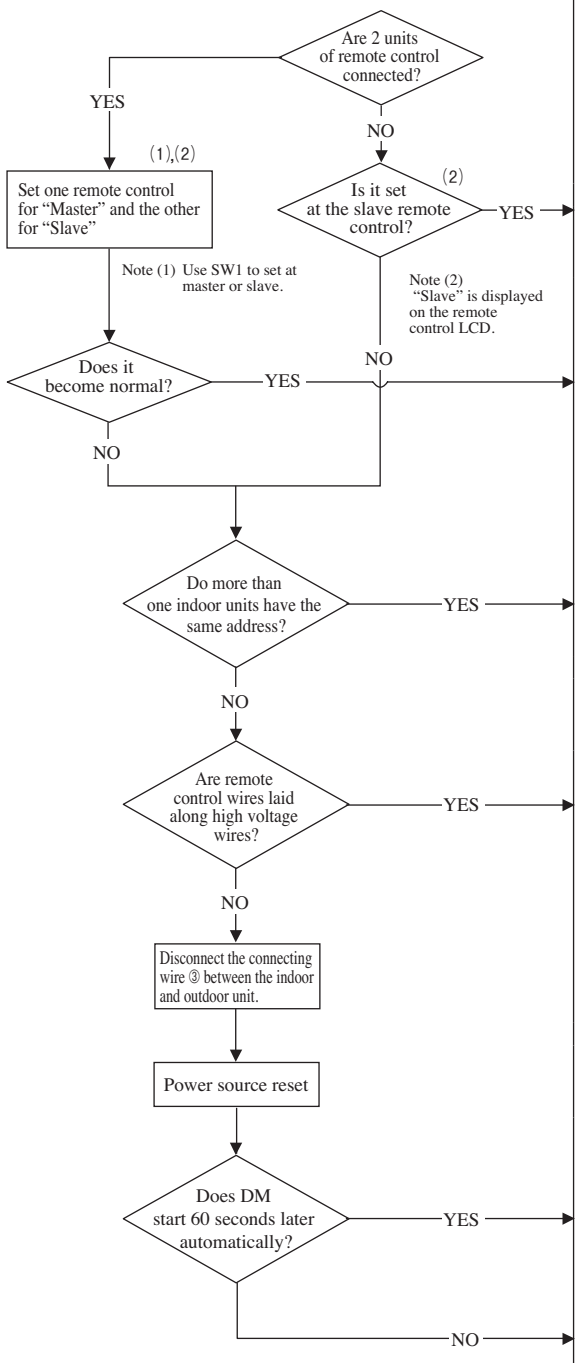
3. Condition of error displayed

Same as above

4. Presumable cause

- Improper setting
- Surrounding environment
- Defective remote control communication circuit
- Faulty indoor unit control PCB

5. Troubleshooting



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

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

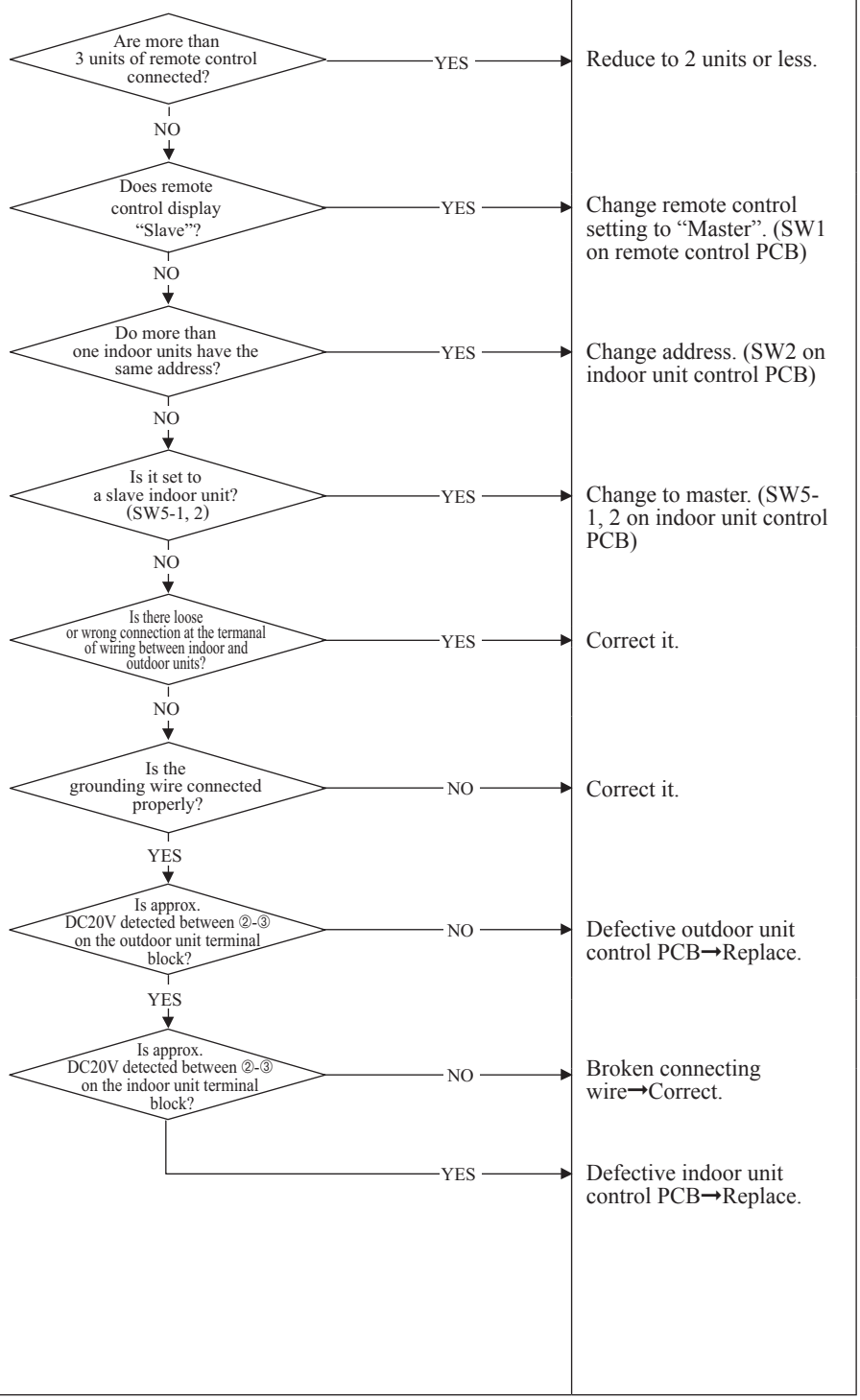
3. Condition of error displayed

Same as above

4. Presumable cause

- Improper setting
- Surrounding environment
- Defective remote control communication circuit
- Faulty indoor unit control PCB
- Faulty outdoor unit control PCB

5. Troubleshooting



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
Indoor	Keeps flashing	Stays OFF
Outdoor	Keeps flashing	2-time flash

Content

Communication error at initial operation (1/2)

1. Applicable model

All models

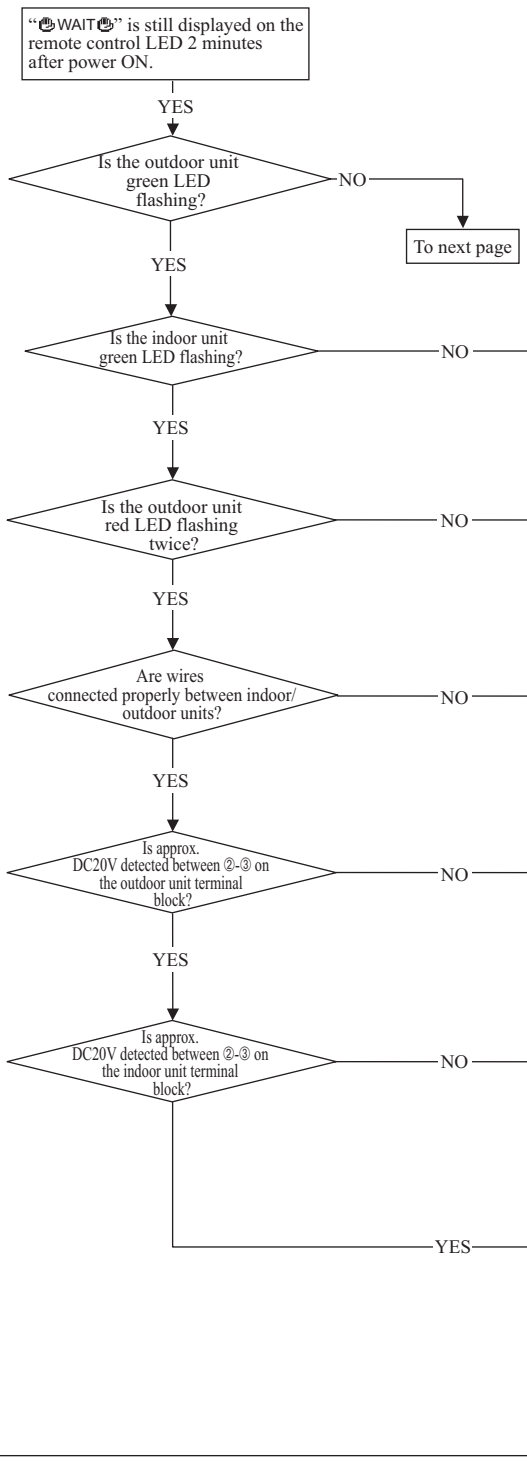
2. Error detection method

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

5. Troubleshooting



Note:

Error code

Remote control: WAIT

LED	Green	Red
Indoor	Keeps flashing	Stays OFF
Outdoor	Keeps flashing	2-time flash

Content

Communication error at initial operation (2/2)

1. Applicable model

All models

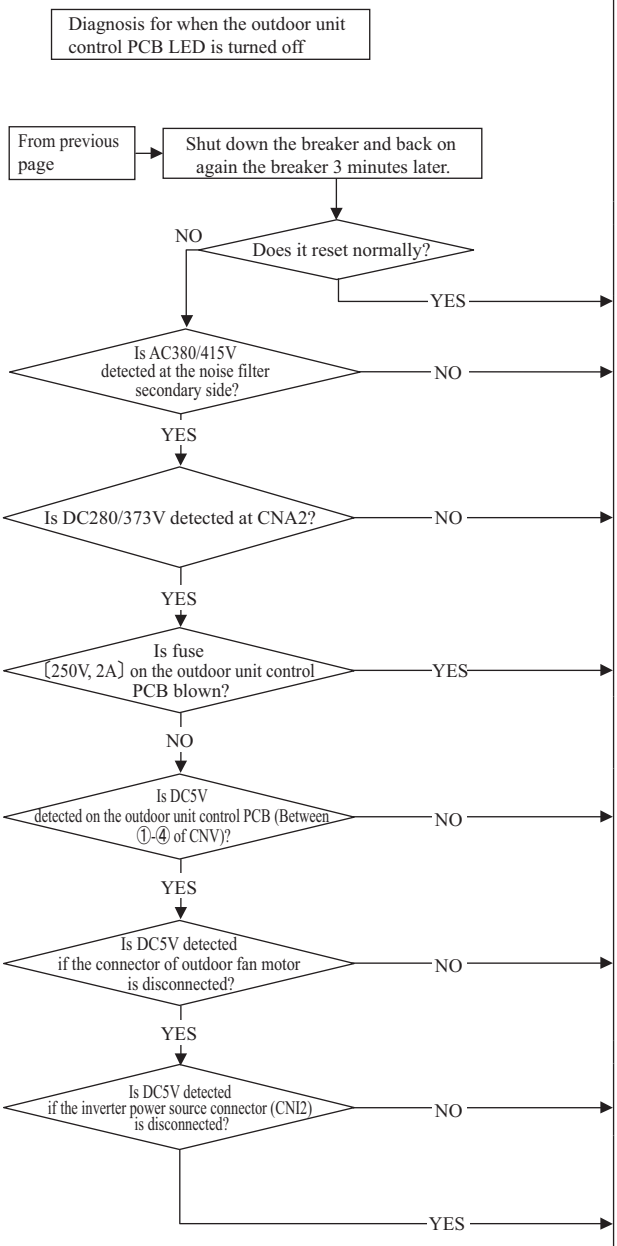
2. Error detection method

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



Note:

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

1. Applicable model

All models

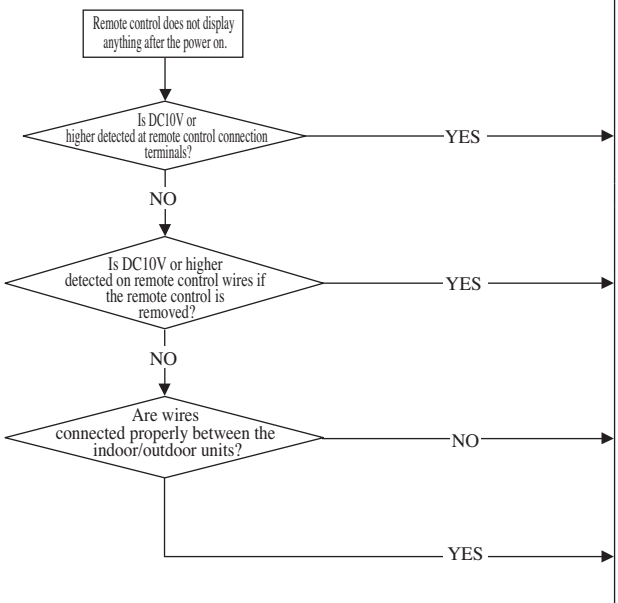
2. Error detection method

3. Condition of error displayed

4. Presumable cause

- Faulty indoor unit control PCB
- Defective remote control
- Broken remote control wire

5. Troubleshooting



Note:

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

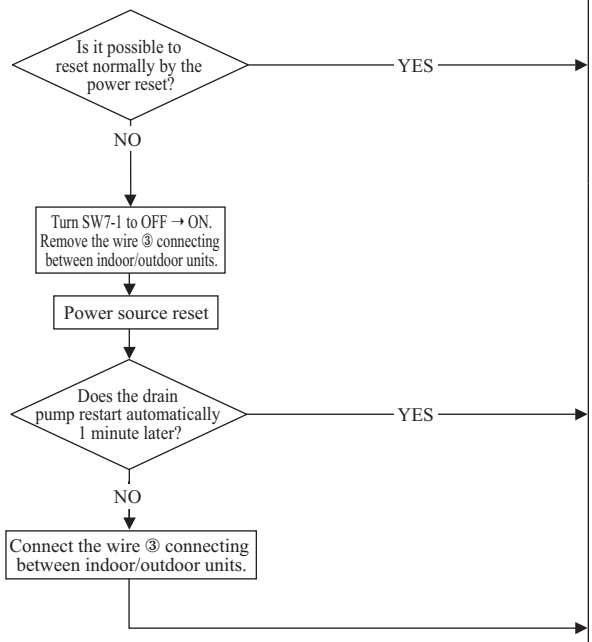
3. Condition of error displayed

Same as above

4. Presumable cause

- Defective communication circuit between remote control-indoor unit
- Noise
- Defective remote control
- Faulty indoor unit control PCB

5. Troubleshooting



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

- Unit No. setting error
- Broken remote control wire
- Faulty remote control wire connection
- Faulty outdoor unit control PCB

5. Troubleshooting

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

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

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

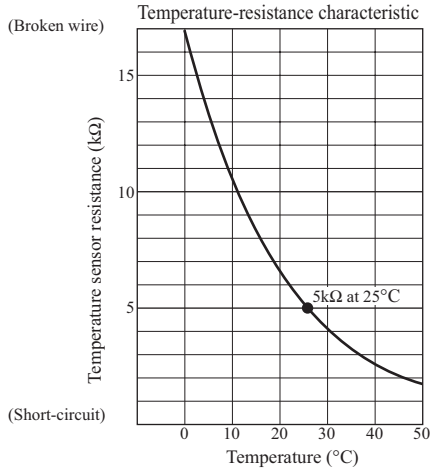
- When the temperature sensor detects -50°C or lower for 5 seconds continuously, the compressor stops. After 3-minute delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.
- Or if short-circuit is detected for 5 seconds continuously

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
Is the connection of indoor heat exchanger temperature sensor connector OK? — NO	Correct it. → Insert connector securely.
YES → Are characteristics of indoor heat exchanger temperature sensor OK? — NO	Defective indoor heat exchanger temperature sensor → Replace.
YES	Defective indoor unit control PCB → Replace. (Defective indoor heat exchanger temperature sensor input circuit)



Note:

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

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

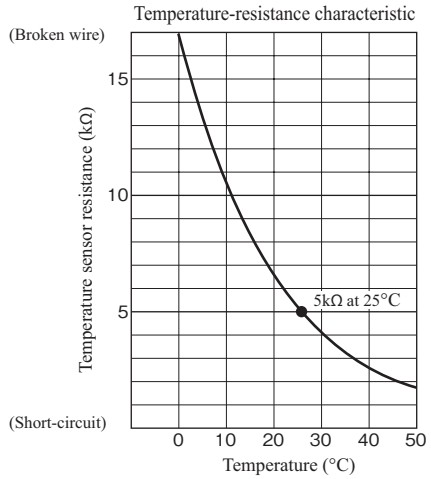
- When the temperature sensor detects -50°C or lower for 5 seconds continuously, the compressor stops. After 3-minute delay, the compressor starts again automatically, but if this error occurs again within 60 minutes after the initial detection.

4. Presumable cause

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

5. Troubleshooting

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



Note:

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

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

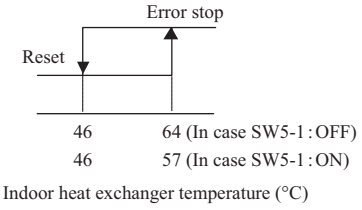
- Clogged air filter
- Defective indoor heat exchanger temperature sensor connector
- Defective indoor heat exchanger temperature sensor
- Anomalous refrigerant system

5. Troubleshooting

Diagnosis	Countermeasure
Is the air filter clogged? NO	
Is the air filter clogged? YES	Wash.
Is the indoor heat exchanger temperature sensor connection OK? NO	Defective indoor heat exchanger temperature sensor connector→Correct it.
Are the characteristics of indoor heat exchanger temperature sensor OK? (2) NO	Defective indoor heat exchanger temperature sensor→Replace.
Check the error data with the remote control.	
Is the unit operating in the state of heating overload? NO	Check refrigerant system.
Is the unit operating in the state of heating overload? YES	Adjust.

Note (1) Judge if it is in the state of overload or not as follows.
- 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?

Note (2) For characteristics of indoor heat exchanger temperature sensor, see the error display E6.



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

1. Applicable model

FDT, FDTC, FDU, FDUM series

2. Error detection method

Float switch is activated

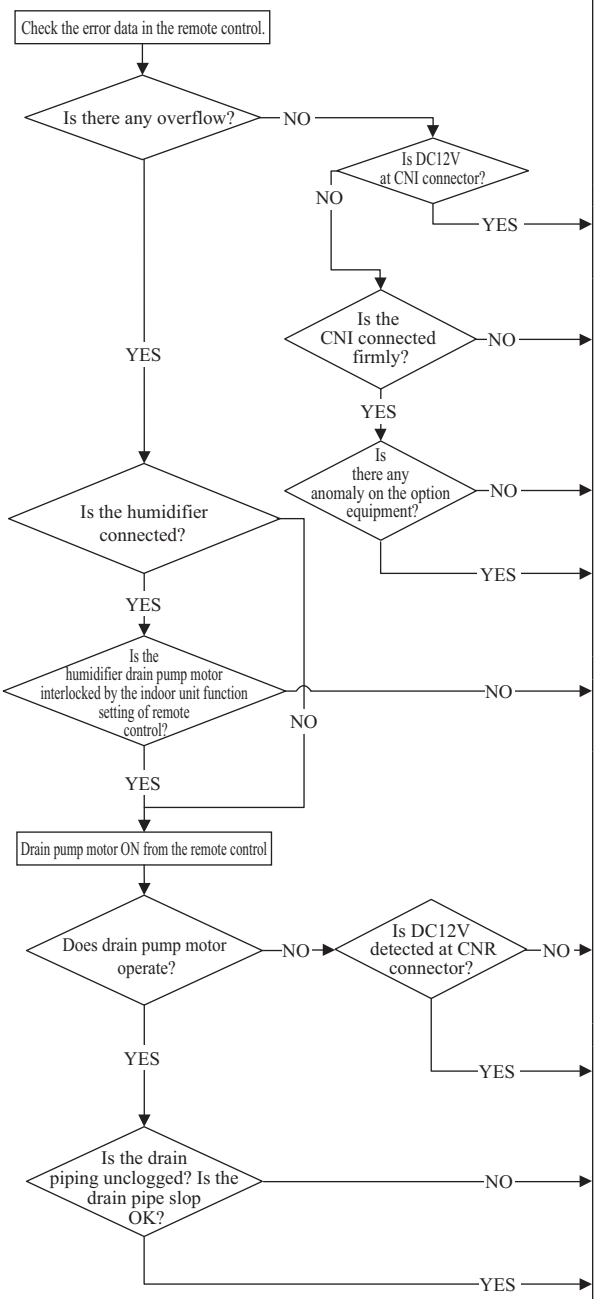
3. Condition of error displayed

If the float switch OPEN is detected for 3 seconds continuously or if float switch connector or wire is disconnected

4. Presumable cause

- 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



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
Indoor	Keeps flashing	Stays OFF
Outdoor	Keeps flashing	Stays OFF

Content: Excessive number of connected indoor units (more than 17 units) by controlling with one remote control

1. Applicable model

All models

2. Error detection method

When it detects more than 17 of indoor units connected to one remote contorl

3. Condition of error displayed

Same as above

4. Presumable cause

- Excessive number of indoor units connected
- Defective remote control

5. Troubleshooting

Diagnosis	Countermeasure
Are more than 17 indoor units connected to one remote control? — NO	Defective remote control → Replace.
YES	Reduce to 16 or less units.

Note:

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

1. Applicable model

All models

2. Error detection method

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

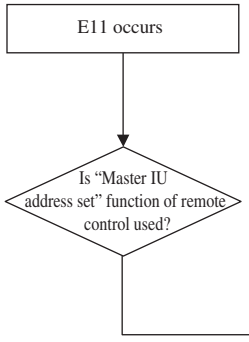
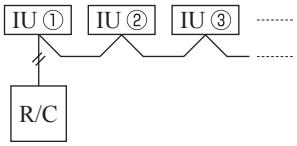
3. Condition of error displayed

Same as above

4. Presumable cause

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

5. Troubleshooting

Diagnosis	Countermeasure
	Change of address setting method Set the address by DIP switch SW2 on indoor unit control PCB.
In case the wiring is below and "Mastar IU address set" is used, E11 is appeared. 	

Note:

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

1. Applicable model

Except for FDU series

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
Is it OK the unit address setting for master and slave indoor units? → NO	Correct unit address setting.
YES → Isn't the remote control wiring between indoor units defective? → YES	Correct wiring.
NO → Is it restored by resetting the power source? → NO	Defective indoor unit control PCB → Replace.
YES	• Malfunction by noise. • Check surrounding environment.

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	LED	Green	Red	Content
Remote control: E16	Indoor	Keeps flashing	1-time flash	Indoor fan motor anomaly (Except for FDU series)
	Outdoor	Keeps flashing	Stays OFF	

1. Applicable model

Except for FDU series

2. Error detection method

Detected by rotation speed of indoor fan motor

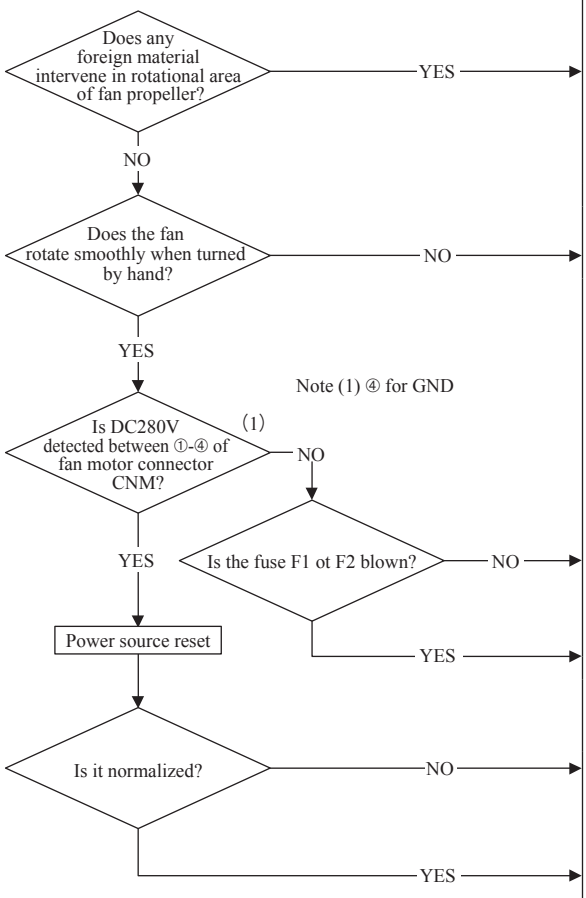
3. Condition of error displayed

- 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

5. Troubleshooting



Note:

Error code

Remote control: E16

LED	Green	Red
Indoor	Keeps flashing	1(2)-time flash
Outdoor	Keeps flashing	Stays OFF

Content

Indoor fan motor anomaly (1/2) (FDU series)

Note (1) Value in ( ) is for FMi2.

1. Applicable model

FDU series

2. Error detection method

Detected by rotation speed of indoor fan motor

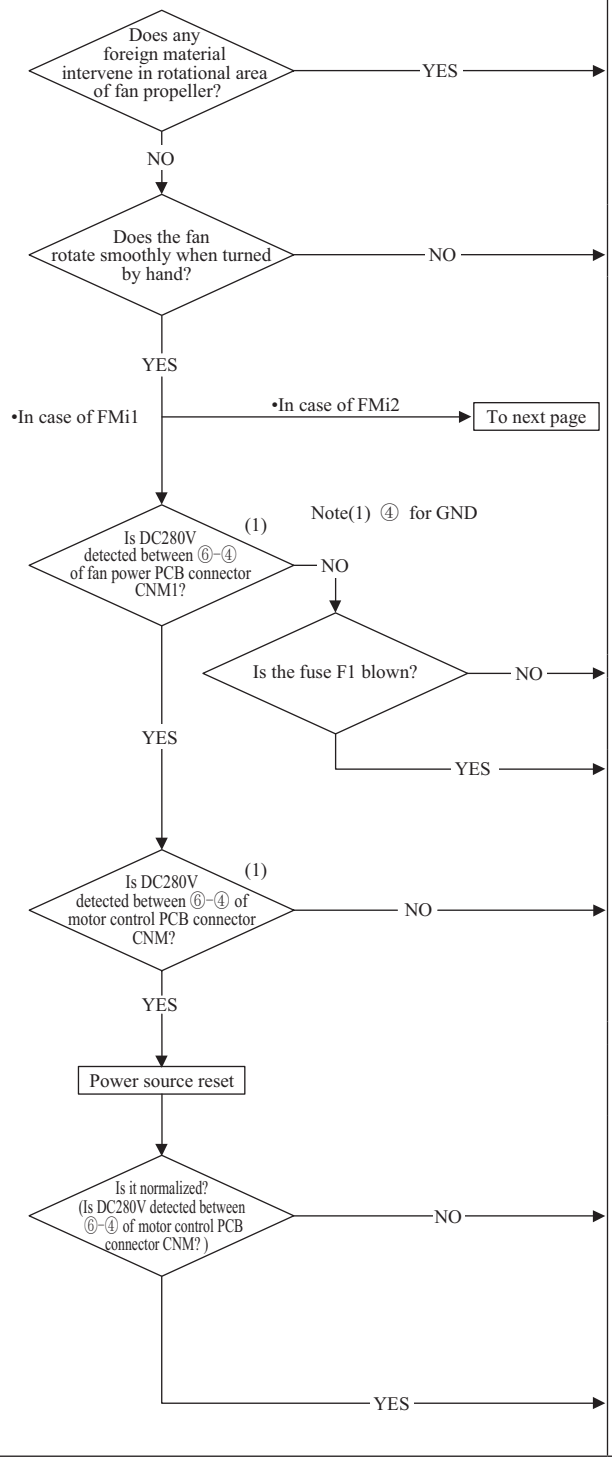
3. Condition of Error displayed

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

5. Troubleshooting



Note:

Error code	LED	Green	Red
Remote control: E16	Indoor	Keeps flashing	1(2)-time flash
	Outdoor	Keeps flashing	Stays OFF

Content: Indoor fan motor anomaly (2/2) (FDU series)

Note (1) Value in ( ) is for FMi2.

1. Applicable model

FDU series

2. Error detection method

Detected by rotation speed of indoor fan motor

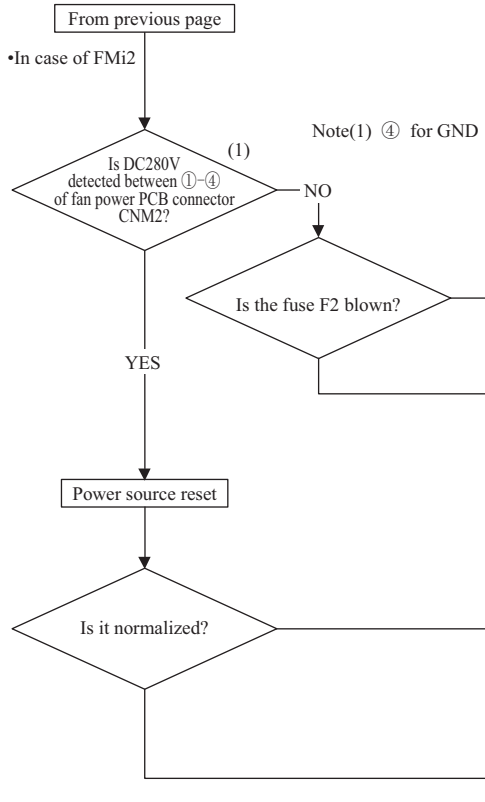
3. Condition of Error displayed

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

5. Troubleshooting

Diagnosis	Countermeasure
	Check power source voltage. Replace faulty fan motor and indoor unit power PCB. Replace fan motor. 〔If the error persists after replacing the fan motor, replace the indoor unit control PCB〕 Malfunction by temporary noise.

Note:

Error code

Remote control: E18

LED	Green	Red
Indoor	Keeps flashing	1-time flash
Outdoor	Keeps flashing	Stays Off

Content

Address setting error of master and slave indoor units (Except for single type)

1. Applicable model

Except for single type

2. Error detection method

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

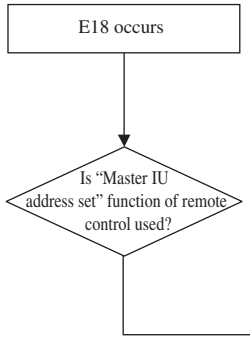
3. Condition of error displayed

Same as above

4. Presumable cause

Same as above

5. Troubleshooting

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

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.

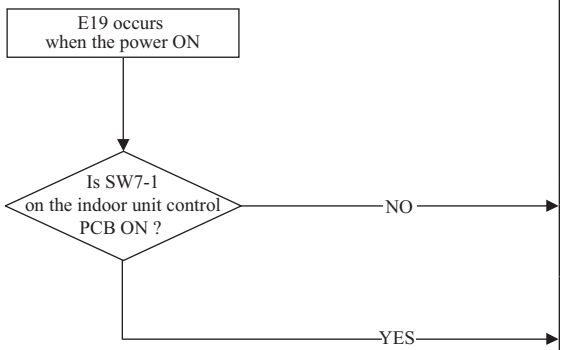
3. Condition of error displayed

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
Is SW7-1 on the indoor unit control PCB ON ? NO	Defective indoor unit control PCB (Defective SW7)→Replace.
Is SW7-1 on the indoor unit control PCB ON ? YES	Turn SW7-1 on the indoor unit control PCB OFF and reset the power.

Note:

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

1. Applicable model

Except for FDU series

2. Error detection method

Detected by rotation speed of indoor fan motor

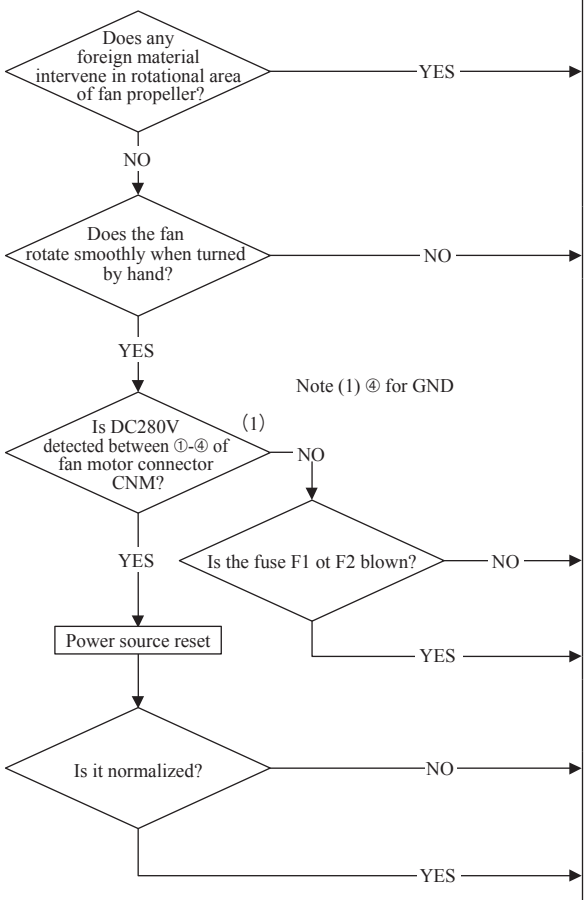
3. Condition of error displayed

When the actual fan rotation speed does not reach to the speed of [required speed -50 min^{-1}] 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

5. Troubleshooting



Note:

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

Note (1) Value in ( ) is for FMi2.

1. Applicable model

FDU series

2. Error detection method

Detected by rotation speed of indoor fan motor

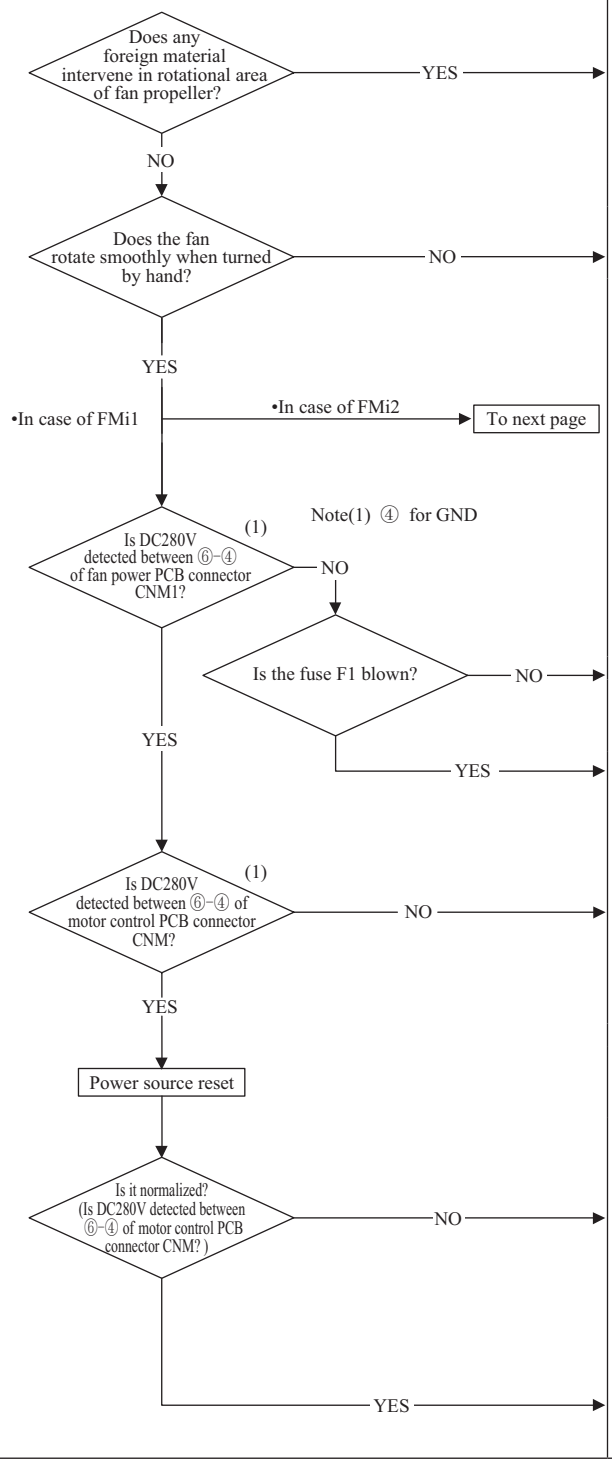
3. Condition of Error displayed

When the actual fan rotation speed does not reach to the speed of [required speed -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 power PCB
- Foreign material at rotational area of fan propeller
- Defective fan motor
- Dust on indoor unit control PCB
- Blown fuse
- External noise, surge
- Indoor unit control PCB anomaly
- Motor control PCB

5. Troubleshooting



Note:

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

Note (1) Value in ( ) is for FMi2.

1. Applicable model

FDU series

2. Error detection method

Detected by rotation speed of indoor fan motor

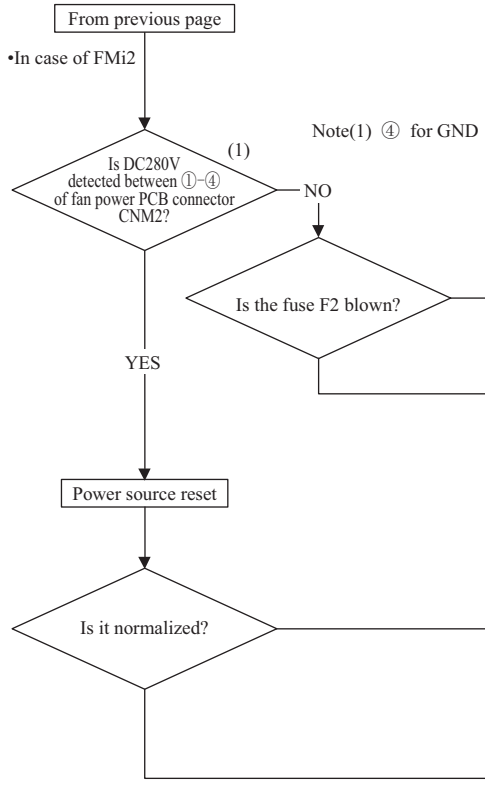
3. Condition of Error displayed

When the actual fan rotation speed does not reach to the speed of [required speed -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 power PCB
- Foreign material at rotational area of fan propeller
- Defective fan motor
- Dust on indoor unit control PCB
- Blown fuse
- External noise, surge
- Indoor unit control PCB anomaly
- Motor control PCB

5. Troubleshooting

Diagnosis	Countermeasure
	

Note:

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

1. Applicable model

All models

2. Error detection method

Detection of anomalously low temperature (resistance) of remote control temperature sensor (Thc)

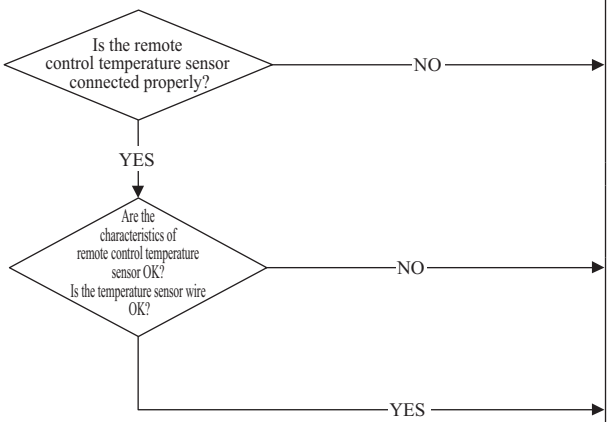
3. Condition of error displayed

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 (Thc)

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
Indoor control PCB	Keeps flashing	Stays OFF
Outdoor control PCB	Keeps flashing	1-time flash
Outdoor inverter PCB	Yellow LED	
	Keeps flashing	

Content

Cooling overload operation

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 microcomputer control function for corresponding models.

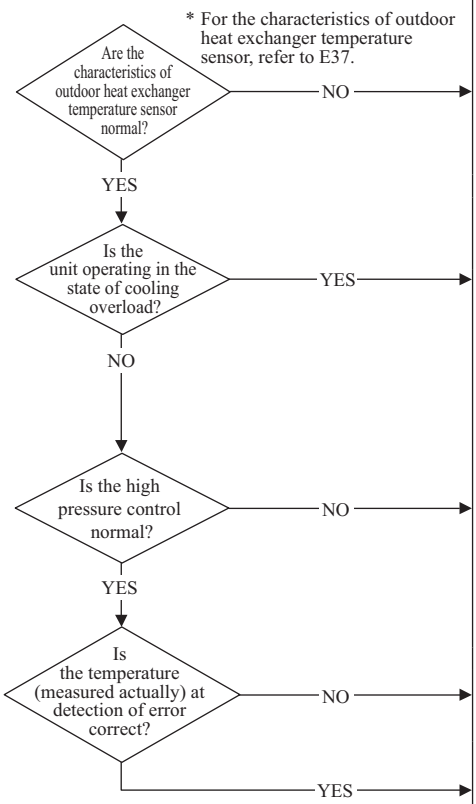
3. Condition of error displayed

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

5. Troubleshooting



* 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	LED	Green	Red
Remote control: E36	Indoor control PCB	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	1-time flash
	Outdoor inverter PCB	Yellow LED	
		Keeps flashing	

Content

Discharge pipe temperature error

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

- 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
- Faulty solenoid valve SV1 (at heating mode)
- Clogging of capillary tube of SV1 circuit (at heating mode)
- Faulty coil of SV1
- Faulty control PCB
- Faulty body of SV1
- Clogging of the strainer on the upstream of SV1(at heating mode)
- Insufficient amount of refrigerant

5. Troubleshooting

Diagnosis	Countermeasure
* For the characteristics of discharge pipe temperature sensor, refer to E39.	
Are the characteristics of discharge pipe temperature sensor normal? — NO	Replace discharge pipe temperature sensor.
YES	
Is the discharge pipe temperature error persisted during cooling /heating operation? — YES	Insufficient refrigerant amount : Recharge refrigerant by weighing proper amount on a scale.
NO	
Is the discharge pipe temperature control normal? — NO	Control operation check *
YES	
Is the temperature (measured actually) at detection of error correct? — NO	Defective outdoor unit control PCB→Replace.
YES	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? • In addition to the above, check the clogging and malfunction of the SV1 circuit by the flow chart * 1.
* For the contents of control, refer to compressor discharge pipe temperature protection in page 35.	
* 1	
Check the following when SV1 is on. (Check On/OFF status of SV1 with Mente PC)	
Is there any problem with the coil of SV1 function? • Is the coil removed from the body of SV1? • Is the coil wiring broken? • Is the coil connector disconnected? — YES	Fix abnormal condition.
NO	
Is 220-240 VAC applied to the CNF terminal of the control PCB ? — NO	Change control PCB.
YES	
Is the temperature between capillary tube and compressor of the SV1 circuit below 40 °C when the compressor is running? — NO	Change the body of SV1, the capillary tube and/or the strainer in the SV1 circuit.
YES	
Is there a temperature difference between upstream and downstream of the strainer in the SV1 circuit? — YES	Change the strainer in the SV1 circuit.
NO	
Is the amount of refrigerant appropriate? — NO	Adjust to the appropriate amount of refrigerant.
YES	Due to suspected partial clogging of SV1 circuit, change the body of SV1, the capillary tube and/or the strainer in the SV1 circuit. or Check the other actuator.

Note:

Error code	LED	Green	Red
Remote control: E37	Indoor control PCB	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	1-time flash
	Outdoor inverter PCB	Yellow LED	
		Keeps flashing	

Content: **Outdoor heat exchanger temperature sensor anomaly**

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

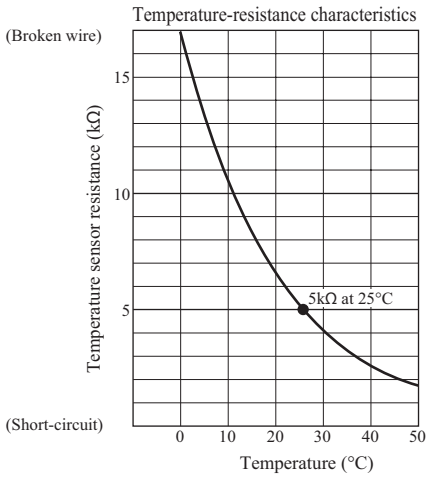
- When the temperature sensor detects -50°C or lower for 5 seconds continuously within 2 minutes to 2 minutes 20 seconds after the compressor ON, the compressor stops. After 3-minute delay, the compressor starts again automatically, but if this anomalous temperature is detected 3 times within 40 minutes
- 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
Is the outdoor heat exchanger temperature sensor connector connected properly? — NO	Correct connector.
YES	
For the characteristics of outdoor heat exchanger temperature sensor, see the following graph.	
Are the characteristics of outdoor heat exchanger temperature sensor OK? — NO	Defective outdoor heat exchanger temperature sensor→Replace.
YES	Defective outdoor unit control PCB→Replace. (Defective outdoor heat exchanger temperature sensor input circuit)



Note:

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

Content

Outdoor air temperature sensor anomaly

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 -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

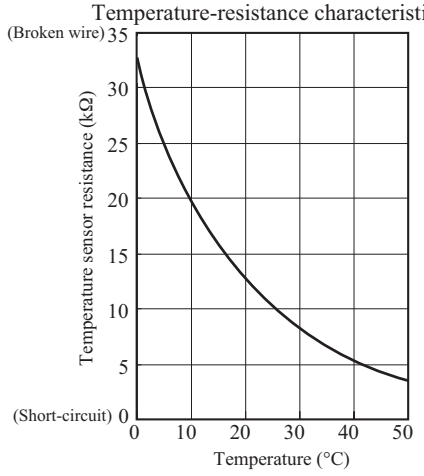
4. Presumable cause

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

5. Troubleshooting

Diagnosis	Countermeasure
Is the outdoor air temperature sensor connector connected properly? → NO	Correct connector.
YES → For the characteristics of outdoor air temperature sensor, see the following graph. Is the characteristics of the outdoor air temperature sensor OK? → NO	Defective outdoor air temperature sensor→Replace.
YES	Defective outdoor unit control PCB→Replace. (Defective outdoor air temperature sensor input circuit)

Temperature-resistance characteristics



Note:

Error code	LED	Green	Red
Remote control: E39	Indoor control PCB	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	1-time flash
	Outdoor inverter PCB	Yellow LED	
		Keeps flashing	

Content

Discharge pipe temperature sensor anomaly

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

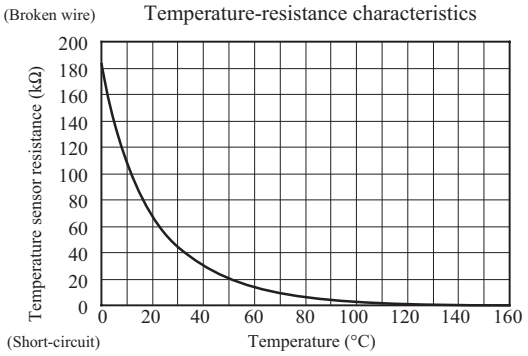
When the temperature sensor detects -10°C or lower for 5 seconds continuously within 10 minutes to 10 minutes 20 seconds after the compressor ON, the compressor stops. After 3-minute delay, the compressor starts again automatically, but if this anomalous temperature is detected 3 times within 40 minutes

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
Is the discharge pipe temperature sensor connector connected properly? → NO	Correct connector.
YES → Are the characteristics of discharge pipe temperature sensor OK? (For the characteristics of discharge pipe temperature sensor, see the following graph.) → NO	Defective discharge pipe temperature sensor→Replace.
YES	Defective outdoor unit control PCB→Replace. (Defective discharge pipe temperature sensor input circuit)



Note:

Error code	LED	Green	Red
Remote control: E40	Indoor control PCB	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	1-time flash
	Outdoor inverter PCB	Yellow LED	
		Keeps flashing	

Content

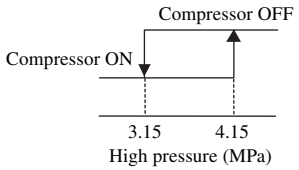
High pressure error (63H1 activated)

1. Applicable model

All models

2. Error detection method

When the high pressure switch 63H1 is activated.



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 PCB
- Defective 63H1 connector
- Defective electronic expansion valve connector
- Closed service valve
- Mixing of non-condensing gas (nitrogen, etc.)
- Faulty sensor(Tho-R1, Tho-R2, Thi-R1, Thi-R2, Tho-H, PSL)

5. Troubleshooting

Diagnosis	Countermeasure
If the power source breaker is turned OFF and ON too quickly, E40 may be displayed. (This is normal.)	
Is the service valve fully opened? — NO	Open the service valve.
YES	
Has 63H1 activated? — NO	
On operation of 63H1 — YES	
1. During cooling ・ Is the outdoor fan motor running? ・ Isn't any short-circuit of air on the outdoor unit? ・ Is Tho-R1, Tho-R2, Tho-H, PSL normal? ・ Is the sensor(Tho-R1, Tho-R2, Tho-H) detached from the sensor holder? ・ Is the sensor(Tho-H) covered with insulation? ・ Are sufficient return air/supply air space secured? 2. During heating ・ Isn't the indoor heat exchanger temperature sensor disconnected from the sensor casing? ・ Isn't the filter clogged? ・ Is Thi-R1, Thi-R2, Tho-H, PSL normal? ・ Is the sensor(Tho-R1, Tho-R2, Tho-H) detached from the sensor holder? ・ Is the sensor(Tho-H) covered with insulation? * Under the condition of overcharging refirgerant, 63H1 may activate due to delay of starting the preventive control by compressor speed control, because detected heat exhanger temperature, which conducts compressor speed control, becomes lower than normal condition due to excess subcooling degree.	
Is 63H1 connector connected properly? — NO	Correct 63H1 connector.
YES	
Is the electronic expansion valve connector connection OK? — NO	Correct electronic expansion valve connector.
If any anomaly exists on the electronic expansion valve connector connection, the power source must be reset.	
YES	Defective outdoor unit control PCB→Replace. (Defective 63H1 input circuit)

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	LED	Green	Red
Remote control: E41	Indoor control PCB	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	1-time flash
	Outdoor inverter PCB	Yellow LED	
		8-time flash	

Content

Power transistor overheat

1. Applicable model

All models

2. Error detection method

When anomalously high temperature is detected by power transistor

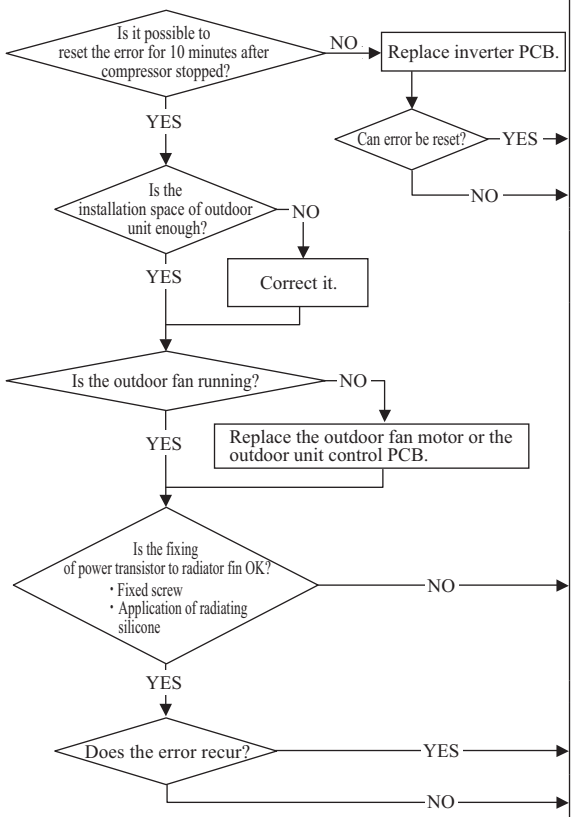
3. Condition of error displayed

Anomalously high temperature of power transistor is detected 5 times within 60 minutes.

4. Presumable cause

- Inverter PCB anomaly
- Outdoor fan motor anomaly
- Improperly fixing of power transistor to radiator fin
- Inadequate installation space of outdoor unit
- Outdoor unit control PCB anomaly
- Power transistor module anomaly

5. Troubleshooting



Note:

Error code	LED	Green	Red
Remote control: E42	Indoor control PCB	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	1-time flash
	Outdoor inverter PCB	Yellow LED	
		9-time flash	

Content

Current cut (1/2)

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.
- After 3-minute delay, the compressor restarts, but if this amonaly occurs 4 times within 30 minutes after the intial detection.

4. Presumable cause

- The service valves closed
- Faulty power source
- Insufficient refrigerant amount
- Faulty compressor
- Faulty power transistor module
- Faulty body of SV1
- Faulty outdoor unit control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the power source voltage OK? NO	Check power source.
YES → Are the service valves opened? NO	Open the service valves.
YES → Is the high pressure during operation OK? NO	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.
YES → Is the checked result of insulation resistance and resistance between terminals (1) of compressor motor OK? NO (1) 0.309Ω or more at 20°C (Model FDC200VSA-W) 0.309Ω or more at 20°C (Model FDC250VSA-W) 0.309Ω or more at 20°C (Model FDC280VSA-W)	Replace compressor.
YES → To next page.	

Note:

Error code	LED	Green	Red
Remote control: E42	Indoor	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	1-time flash
	Outdoor inverter PCB	Yellow LED	
		9-time flash	

Content

Current cut (2/2)

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.

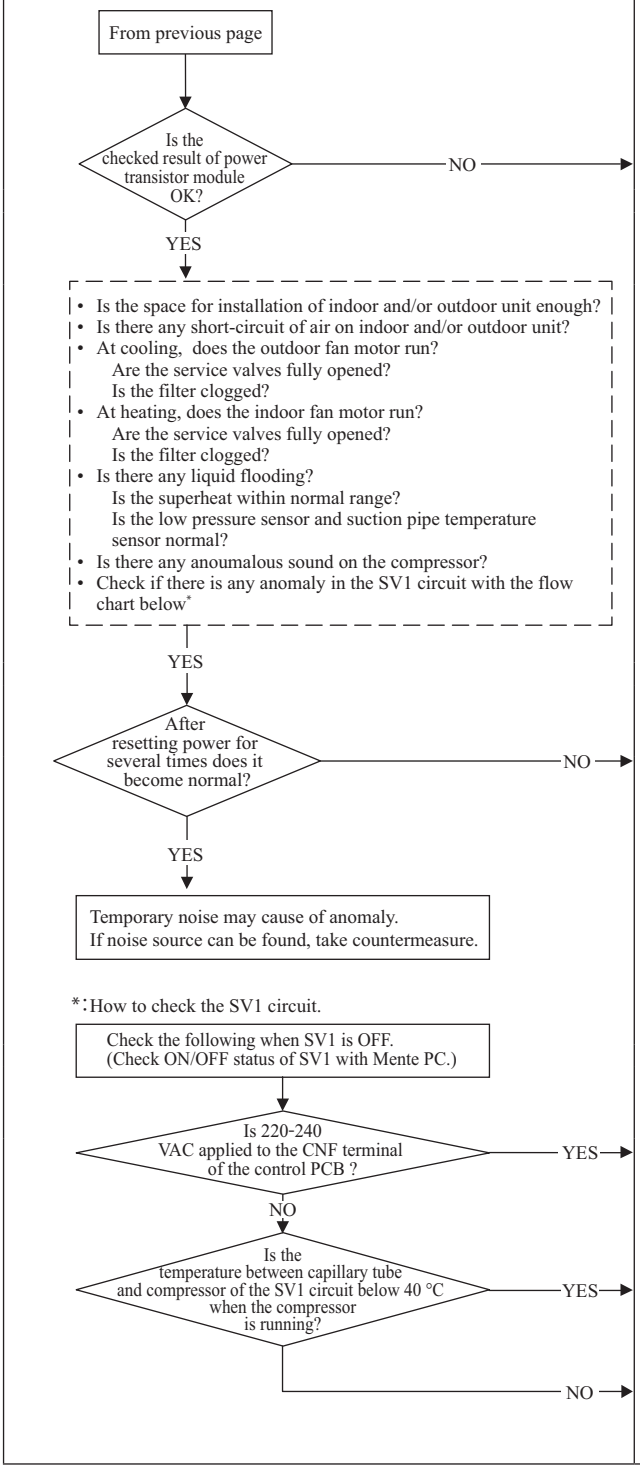
3. Condition of error displayed

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

4. Presumable cause

- Defective outdoor unit control PCB
- Defective inverter PCB
- Faulty power source
- Insufficient refrigerant amount
- Faulty compressor
- Faulty power transistor module

5. Troubleshooting



Note:

Error code	LED	Green	Red
Remote control: E44	Indoor control PCB	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	1-time flash
	Outdoor inverter PCB	Yellow LED	
		Keeps flashing	

Content

Liquid back error (Cooling mode)

1. Applicable model

All models

2. Error detection method

Detected by under-dome superheat.

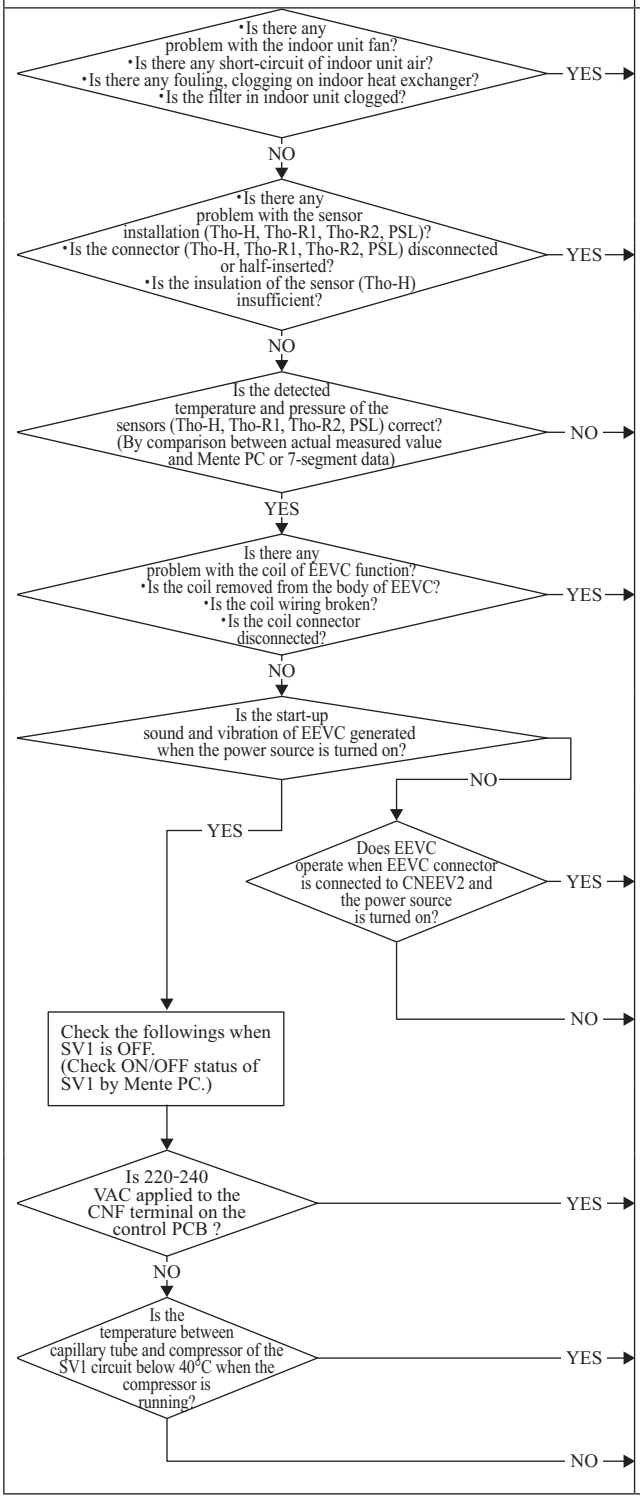
3. Condition of error displayed

When abnormal liquid back is detected 3 times within 90 minutes, the compressor stops.

4. Presumable cause

- Faulty indoor unit fan
- Faulty body of SV1
- Faulty outdoor unit control PCB
- Short-circuit of air on indoor units
- Fouling, clogging of heat exchanger
- Clogged filter
- Abnormal condition of Tho-H, Tho-R1, Tho-R2, PSL
- Faulty coil of EEVC
- Faulty body of EEVC

5. Troubleshooting



Note:

Error code	LED	Green	Red
Remote control: E44	Indoor control PCB	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	1-time flash
	Outdoor inverter PCB	Yellow LED	
		Keeps flashing	

Content

Liquid back error (Heating mode)

1. Applicable model

All models

2. Error detection method

Detected by under-dome superheat.

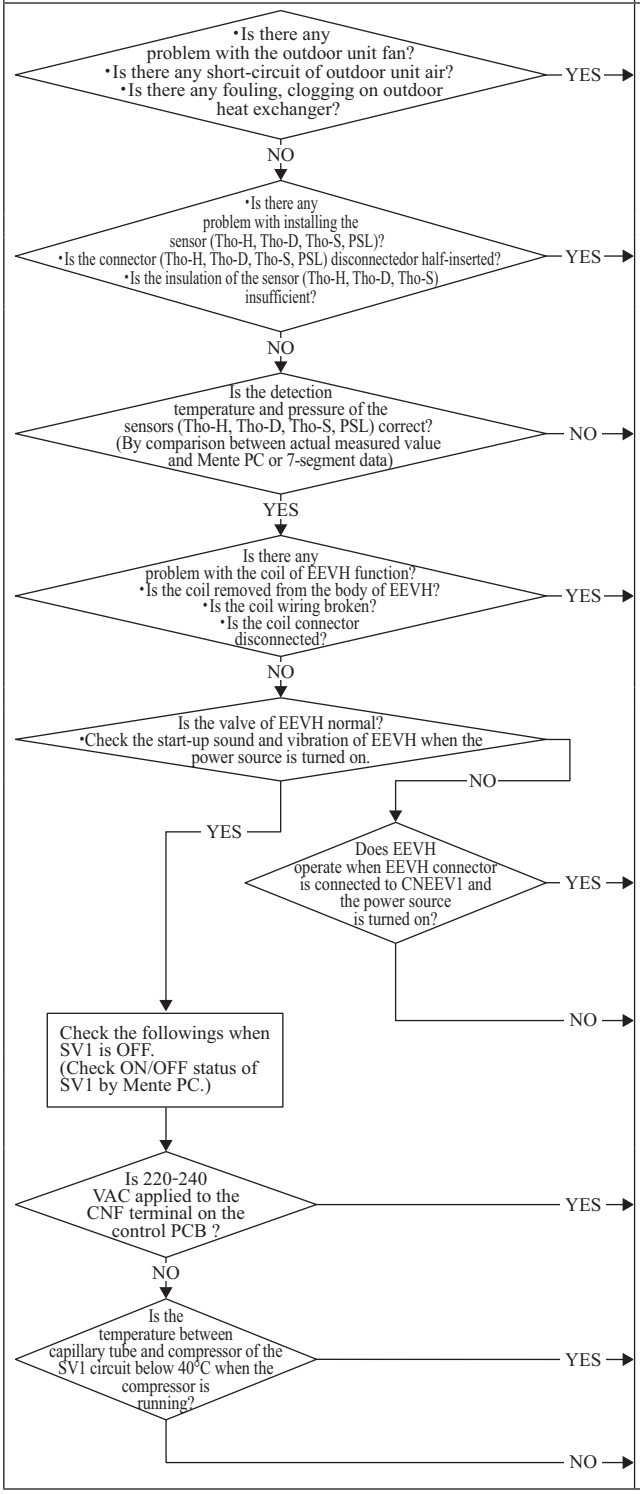
3. Condition of error displayed

When abnormal liquid back is detected 3 times within 90 minutes, the compressor stops.

4. Presumable cause

- Faulty outdoor unit fan
- Faulty body of SV1
- Faulty outdoor unit control PCB
- Short-circuit of air on outdoor units
- Fouling, clogging of heat exchanger
- Clogged filter
- Abnormal condition of Tho-H, Tho-D, Tho-S, PSL
- Faulty coil of EEVH
- Faulty body of EEVH

5. Troubleshooting



Note:

Error code	LED	Green	Red
Remote control: E45	Indoor control PCB	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	1-time flash
	Outdoor inverter PCB	Yellow LED	
		Keeps flashing	

Content

Communication error between inverter PCB and outdoor unit control PCB

1. Applicable model

All models

2. Error detection method

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

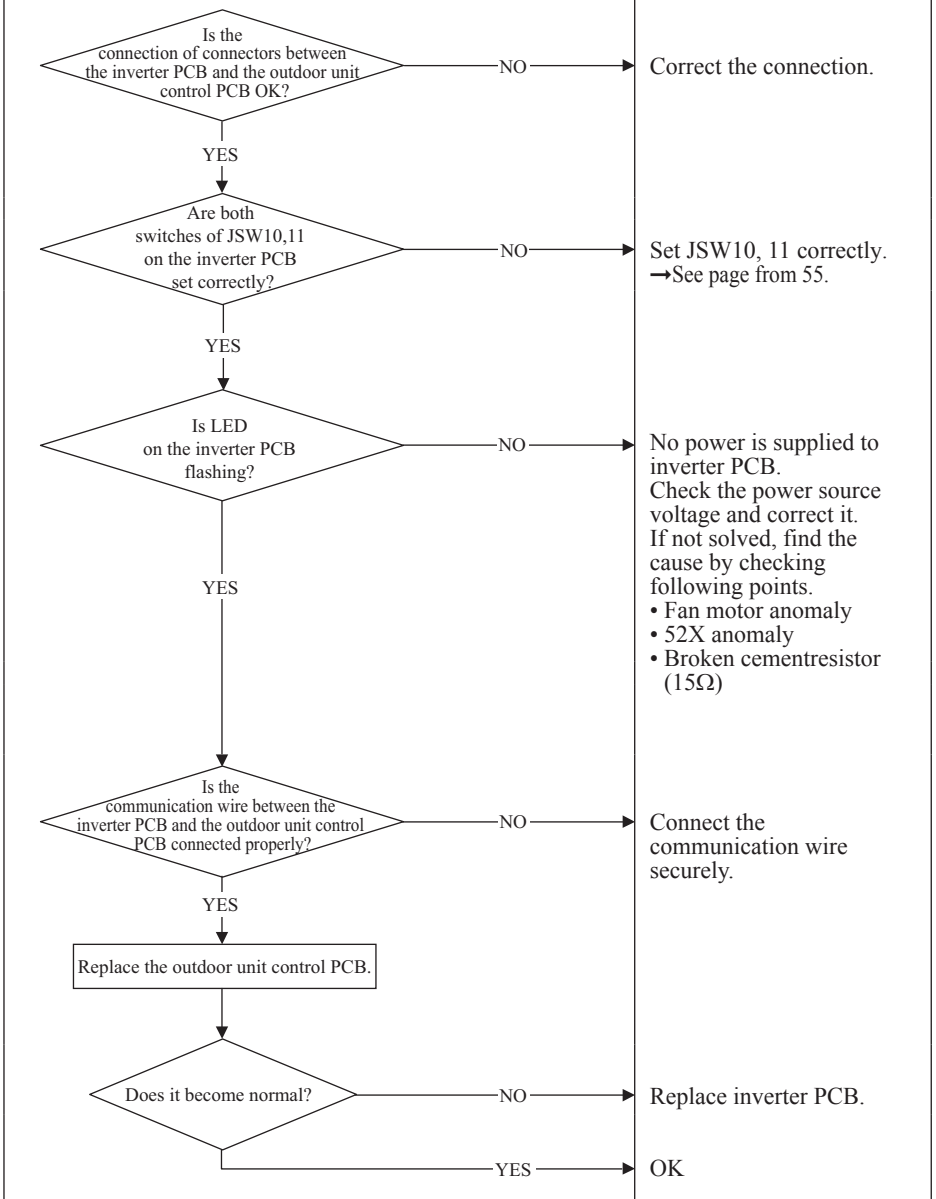
3. Condition of error displayed

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

5. Troubleshooting



Note:

Error code

Remote control: E48

LED	Green	Red
Indoor control PCB	Keeps flashing	Stays OFF
Outdoor control PCB	Keeps flashing	1-time flash
Outdoor inverter PCB	Yellow LED	
	Keeps flashing	

Content

Outdoor fan motor anomaly

1. Applicable model

All models

2. Error detection method

Detected by rotation speed of outdoor fan motor

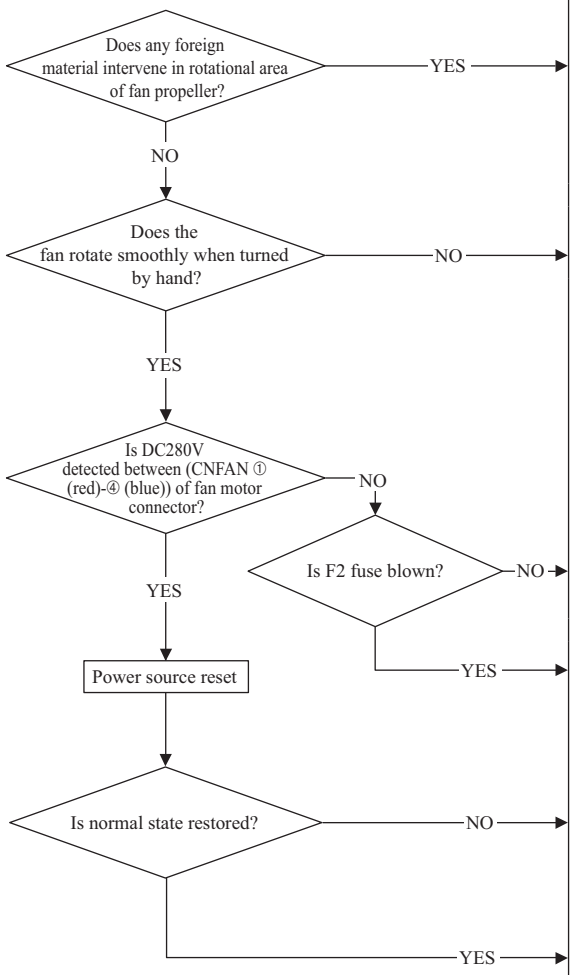
3. Condition of error displayed

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

- 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

5. Troubleshooting



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	LED	Green	Red
Remote control: E49	Indoor control PCB	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	1-time flash
	Outdoor inverter PCB	Yellow LED	
		Keeps flashing	

Content

Low pressure error or low pressure sensor anomaly (1/2)

1. Applicable model

All models

2. Error detection method

Detected by low pressure drop and suction superheat

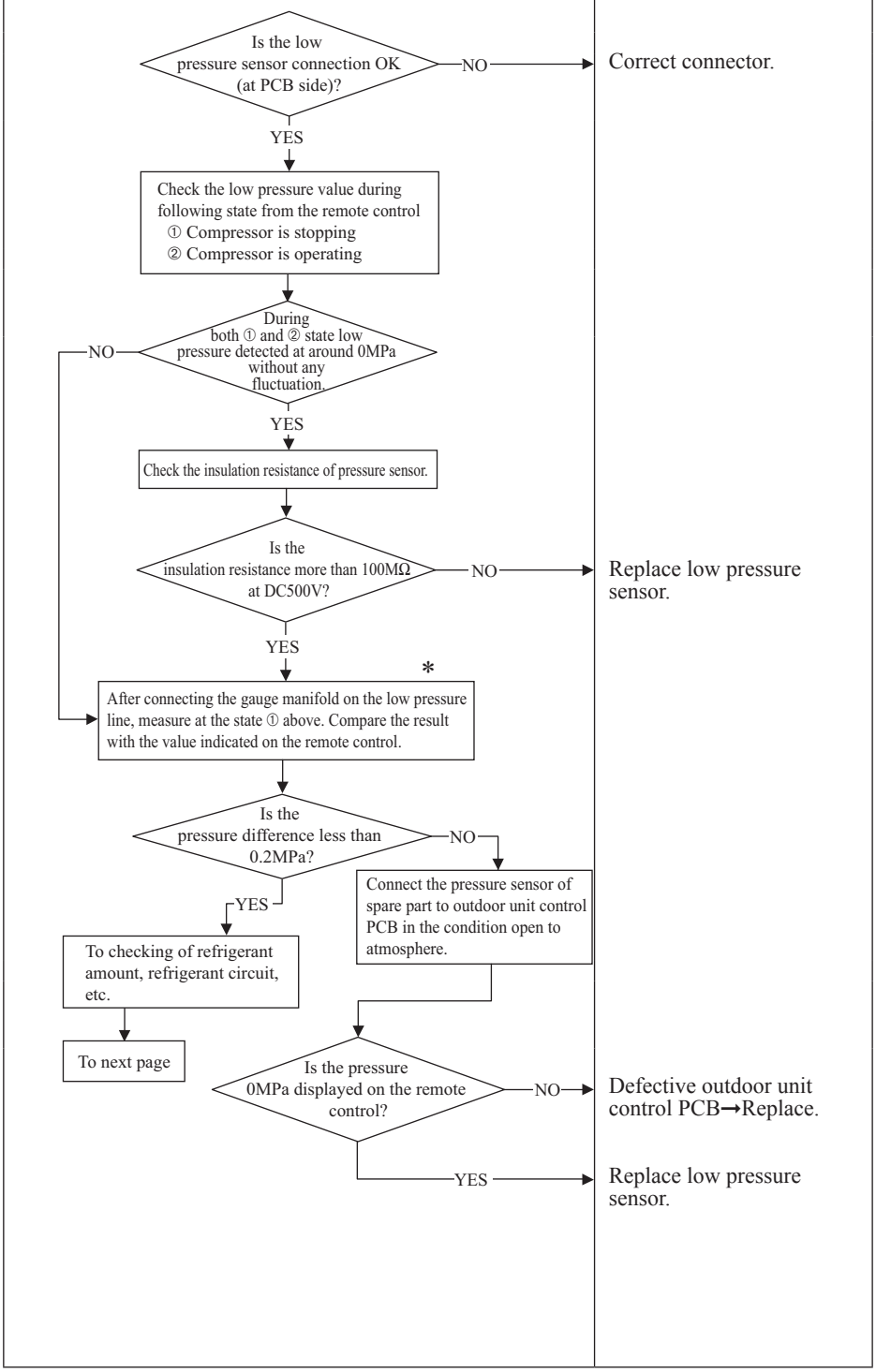
3. Condition of error displayed

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 5 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 5 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

5. Troubleshooting



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	LED	Green	Red
Remote control: E49	Indoor control PCB	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	1-time flash
	Outdoor inverter PCB	Yellow LED	
		Keeps flashing	

Content

Low pressure error or low pressure sensor anomaly (2/2)

1. Applicable model

All models

2. Error detection method

Detected by low pressure drop and suction superheat

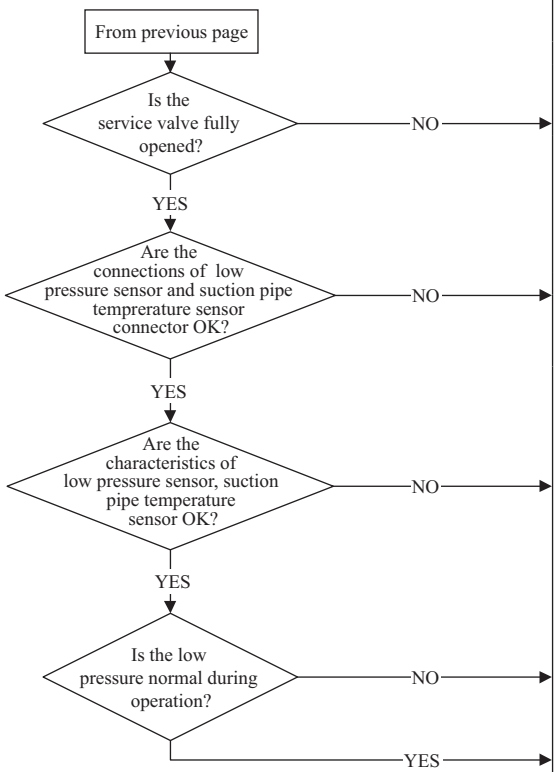
3. Condition of error displayed

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 5 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 5 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

5. Troubleshooting



Note:

Error code	LED	Green	Red	Content
Remote control:E51	Indoor control PCB	Keeps flashing	Stays OFF	Inverter or power transistor anomaly
	Outdoor control PCB	Keeps flashing	1-time flash	
	Outdoor inverter PCB	Yellow LED		
		8-time flash		

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

• Inverter PCB anomaly
• Power transistor anomaly

5.Troubleshooting

Diagnosis	Countermeasure
Replace inverter PCB.	
Did it return? YES	OK
NO	Replace power transistor.

Note:

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

Content

Suction pipe temperature sensor anomaly

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 ocuurs 3 times within 40 minutes.

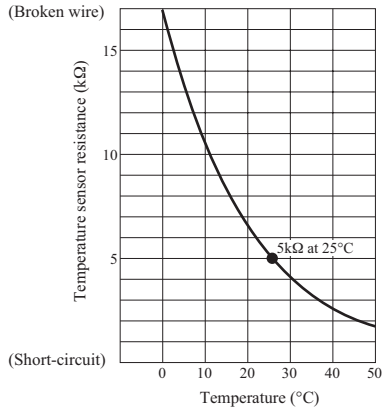
4. Presumable cause

- Defective suction pipe temperature sensor connection
- Defective suction pipe temperature sensor
- Defective outdoor unit control PCB

5. Troubleshooting

Diagnosis	Countermeasure
Is the connection of suction pipe temperature sensor connector OK? — NO	Correct connection of suction pipe temperature sensor connector.
YES → For the characteristics of suction pipe temperature sensor, see the following graph.	
Are the characteristics of suction pipe temperature sensor OK? — NO	Defective suction pipe temperature sensor→ Replace.
YES	Defective outdoor unit control PCB→Replace. (Defective suction pipe temperature sensor input circuit)

Temperature-resistance characteristics



Note:

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

Content

Low pressure sensor anomaly

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

- Defective low pressure sensor connection
- Defective low pressure sensor
- Defective outdoor unit control PCB
- Improper amount of refrigerant
- Anomalous refrigeration circuit

5. Troubleshooting

Diagnosis	Countermeasure
Are the connection of low pressure sensor connectors (at sensor side and PCB side) OK? — NO	Correct low pressure sensor connector connection.
YES → Are the pressure (actual measurement) matched with the value indicated on the remote control? — YES	Is refrigerant amount charged properly? Is there any anomaly on the refrigeration circuit?
NO → Replace the low pressure sensor. → Is normal condition restored? — NO	Defective outdoor unit control PCB→Replace. (Defective low pressure sensor input circuit)
YES	OK

Note:

Error code

Remote control:E55

LED	Green	Red
Indoor control PCB	Keeps flashing	Stays OFF
Outdoor control PCB	Keeps flashing	1-time flash
Outdoor inverter PCB	Yellow LED	
	Keep flashing	

Content

Compressor under-dome temperature sensor anomaly

1.Applicable model

All models

2.Error detection method

When anoumalous low temperature (resistance) is detected by the compressor under-dome temperature sensor

3.Condition of error displayed

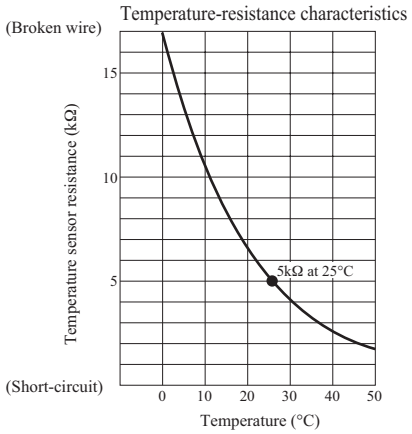
If the temperature sensor detcts -50°C or lower for 5 seconds continuously within 10 minutes to 10 minutes 20 seconds after compressor ON, the compressor stops. When the compressor is restarted automatically after 3-minute delay, if this anomaly ocuurs 3 times within 40 minutes.

4.Presumable cause

- Defective under-dome temperature sensor connection
- Defective under-dome temperature sensor
- Defective outdoor unit control PCB

5.Troubleshooting

Diagnosis	Countermeasure
Is the connection of under-dome temperature sensor connector OK? → NO	Correct connection of under-dome temperature sensor connector.
YES → For the characteristics of under-dome temperature sensor, see the following graph. Are the characteristics of under-dome temperature sensor OK? → NO	Defective under-dome temperature sensor →Replace.
YES	Replace outdoor unit control PCB. (Defective under-dome temperature sensor input circuit)



Note:

Error code	LED	Green	Red
Remote control: E57	Indoor control PCB	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	1-time flash
	Outdoor inverter PCB	Yellow LED	
		Keeps flashing	

Content

Insufficient refrigerant amount or detection of service valve closure

1. Applicable model

All models

2. Error detection method

- Judge insufficient refrigerant amount by detecting the temperature differnce 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

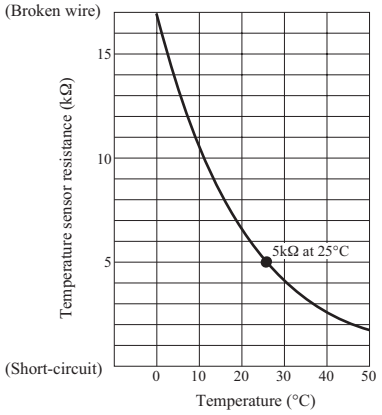
4. Presumable cause

- Defective indoor heat exchanger temperature sensor
- Defective indoor return air temperature sensor
- Defective indoor unit control PCB
- Insufficient refrigerant amount

5. Troubleshooting

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

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



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	LED	Green	Red
Remote control: E59	Indoor control PCB	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	5-time flash
	Outdoor inverter PCB	Yellow LED	
		4-time flash	

Content

Compressor startup failure (1/2)

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)

5. Troubleshooting

Diagnosis	Countermeasure
In case that the compressor does not start at all and no sound or vibration exists	
Is power source voltage OK? — NO	Check the power source voltage and correct it.
YES	
Is the pressure equalized at starting OK? — NO	Check refrigerant amount and refrigerant circuit.
YES	
Is the insulation resistance and resistance between terminals(1) of compressor OK? — NO	Replace compressor.
(1) 0.309Ω or more at 20°C (Model FDC200VSA-W) 0.309Ω or more at 20°C (Model FDC250VSA-W) 0.309Ω or more at 20°C (Model FDC280VSA-W)	
YES	
To next page	

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 INV PAC units has inverter, in order to prevent from improper operation, be sure to use the breaker of high-harmonic type.)

Error code	LED	Green	Red
Remote control: E59	Indoor control PCB	Keeps flashing	Stays OFF
	Outdoor control PCB	Keeps flashing	5-time flash
	Outdoor inverter PCB	Yellow LED	
		4-time flash	

Content

Compressor startup failure (2/2)

1. Applicable model

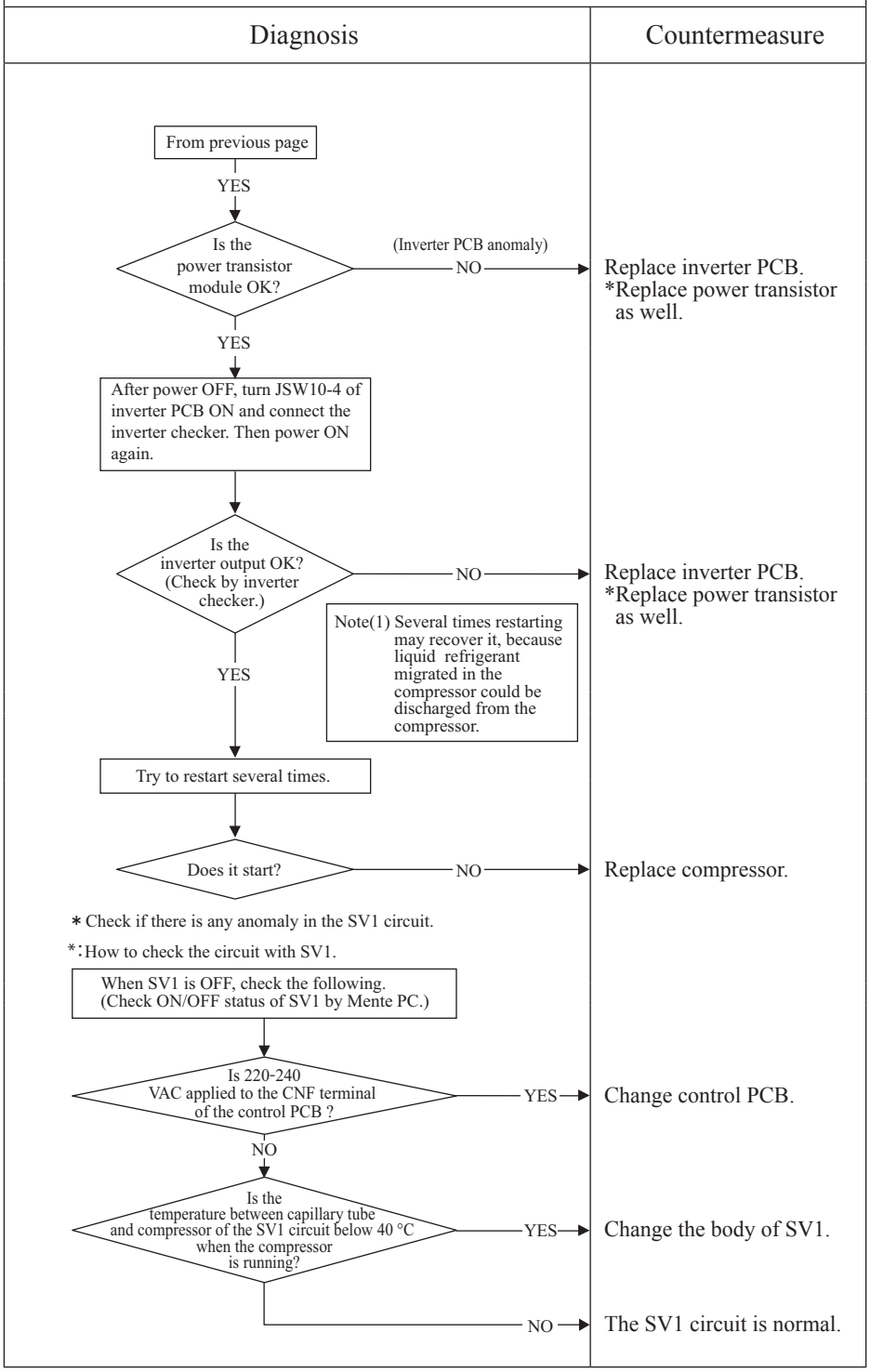
All models

2. Error detection method

3. Condition of error displayed

4. Presumable cause

5. Troubleshooting



Note: