DAIKIN

Si10 - 417_A

Pocket Manual

Service Diagnosis
SPLIT & MULTI

1. Diagnosis by LED

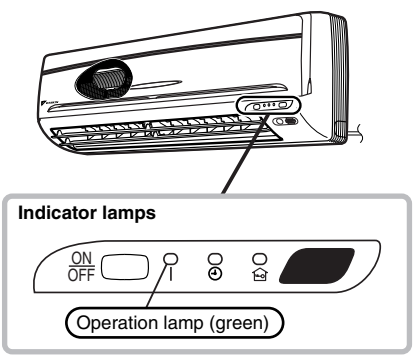
1.1 Indoor Unit

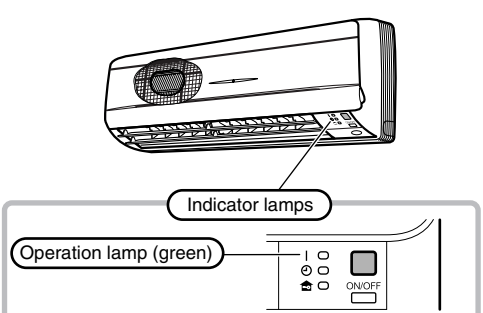
The operation lamp flashes when any of the following errors is detected.

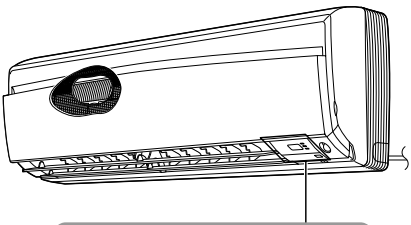
1. When a protection device of the indoor or outdoor unit is activated or when the thermistor malfunctions, disabling equipment operation.
2. When a signal transmission error occurs between the indoor and outdoor units.

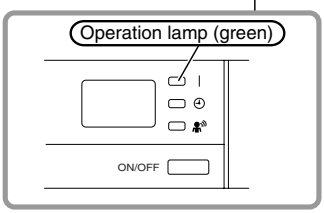
In either case, conduct the diagnostic procedure described in the following pages.

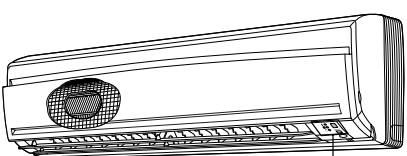
Wall Mounted Type

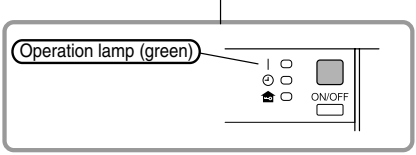


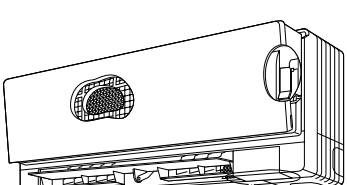


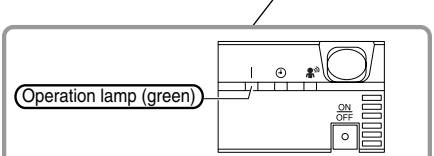


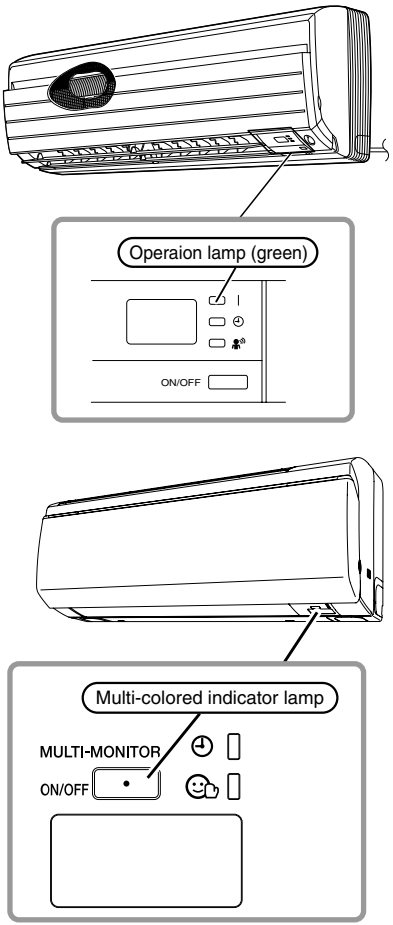

Operation lamp (green)
ON/OFF



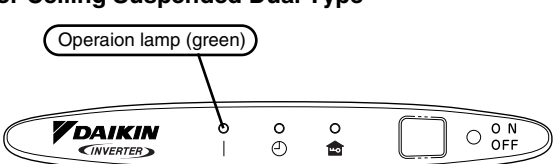

Operation lamp (green)
ON/OFF



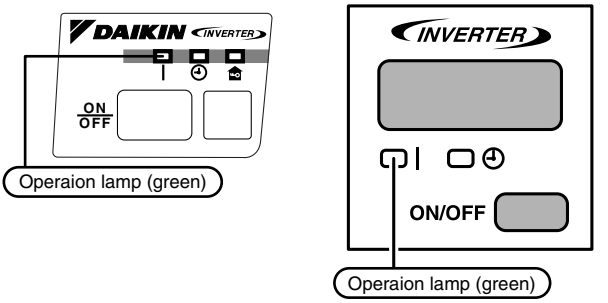

Operation lamp (green)
ON
OFF



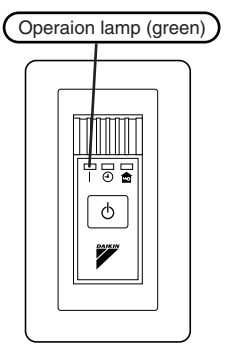
Floor Ceiling Suspended Dual Type



Floor Standing Type

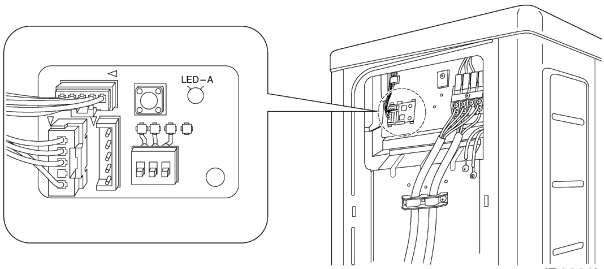


Duct Connected Type



1.2 Outdoor Unit

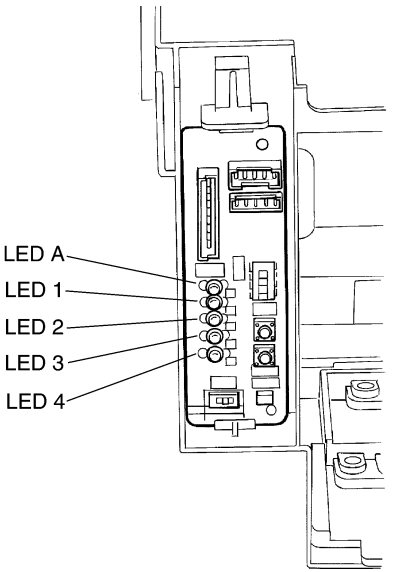
Pair



<In case of RXD50-71BVMA>

The outdoor unit has one green LED (LED A) on the PCB. The flashing green LED indicates normal condition of microcomputer operation.

Multi



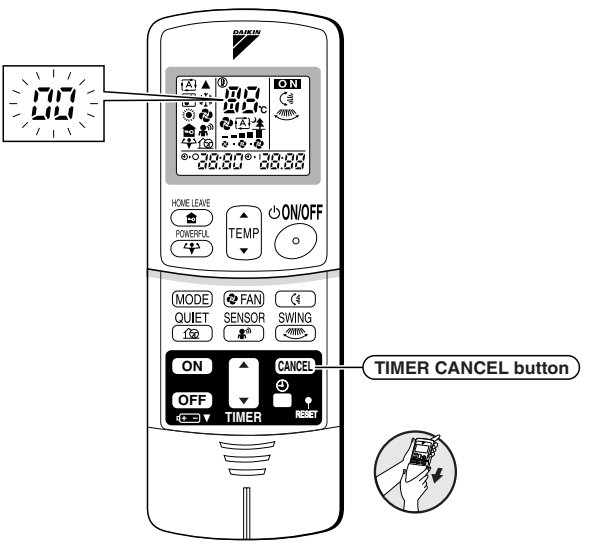
<In case of 2MXS52E2V1B>

There are green and red LEDs on the PCB. The flashing green LED indicates normal equipment condition, and the OFF condition of the red LED indicates normal equipment condition.
(Troubleshooting with the green LED)
The LED A (green) of the outdoor unit indicate microcomputer operation condition.
Even after the error is cancelled and the equipment operates in normal condition, the LED indication remains.

2. Diagnosis by Remote Controller

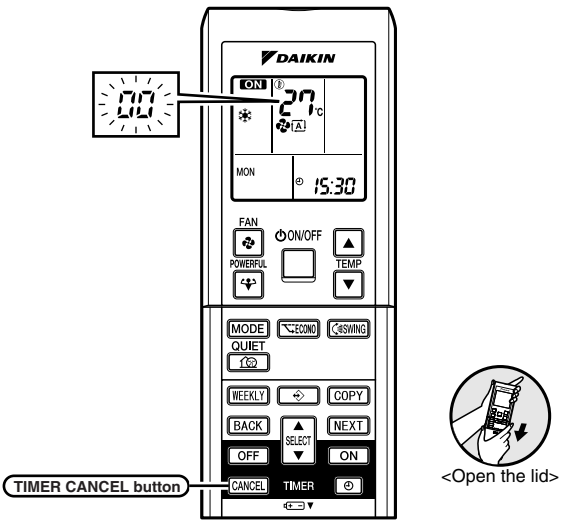
2.1 To know the error code

Method 1 1. When the timer cancel button is held down for 5 seconds, a "00" indication flashes on the temperature display section.



< ARC433B >

(R7568)



< ARC452A2 >

(R7704)

2. Press the timer cancel button repeatedly until a continuous beep is produced.

■ The code indication changes in the sequence shown below, and notifies with a long beep.

<In case of basic order>

No.	Code	No.	Code
1	00	18	C5
2	U4	19	H8
3	F3	20	J6
4	E6	21	U8
5	L5	22	A5
6	A6	23	H0
7	E5	24	E1
8	F6	25	P4
9	C9	26	L3
10	U0	27	L4
11	E7	28	H6
12	C7	29	H7
13	H8	30	U2
14	J3	31	UH
15	A3	32	E8
16	A1	33	AH
17	C4		

Note: 1. A short beep and two consecutive beeps indicate non-corresponding codes.
2. To cancel the code display, hold the timer cancel button down for 5 seconds. The code display also cancels itself if the button is not pressed for 1 minute.

<In case of ARC433B41, 43, 46, 47, 50, A49, 57, 58, 74, 84>

No.	Code	No.	Code
1	00	18	C4
2	U4	19	C5
3	L5	20	J3
4	E6	21	J6
5	H6	22	E5
6	H0	23	A1
7	A6	24	E1
8	E7	25	U8
9	U0	26	UA
10	F3	27	P4
11	A5	28	L3
12	F6	29	L4
13	C7	30	H7
14	A3	31	U2
15	H8	32	EA
16	H9	33	AA
17	C9		

Note:
1. A short beep and two consecutive beeps indicate non-corresponding codes.
2. To cancel the code display, hold the timer cancel button down for 5 seconds. The code display also cancels itself if the button is not pressed for 1 minute.

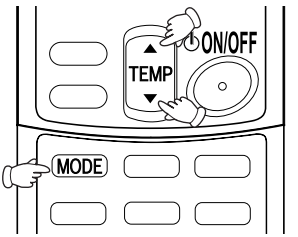
<In case of ARC452 series>

No.	Code	No.	Code
1	00	18	C4
2	U4	19	C5
3	L5	20	J3
4	E6	21	J6
5	H6	22	E5
6	H0	23	A1
7	A6	24	E1
8	E7	25	UR
9	U0	26	UH
10	F3	27	P4
11	A5	28	L3
12	F6	29	L4
13	C7	30	H7
14	A3	31	U2
15	H8	32	ER
16	H9	33	AH
17	C9	34	FR

Note: 1. A short beep and two consecutive beeps indicate non-corresponding codes.
2. To cancel the code display, hold the timer cancel button down for 5 seconds. The code display also cancels itself if the button is not pressed for 1 minute.

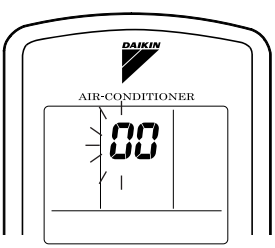
Method 2

1. Enter the diagnosis mode.
   Press the 3 buttons (TEMP▲,TEMP▼, MODE) simultaneously.

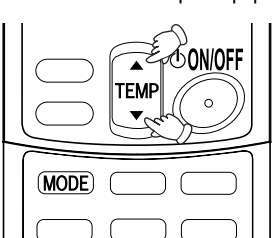


(R4272)

   The digit of the number of tens blinks.
   ★Try again from the start when the digit does not blink.



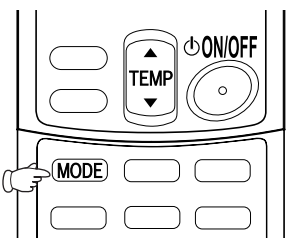
2. Press the TEMP button.
   Press TEMP▲ or TEMP▼ and change the digit until you hear the sound of “beep” or “pi pi”.



(R4274)

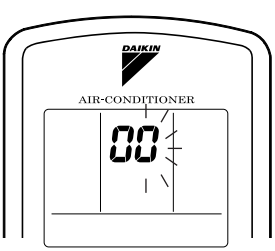
3. Diagnose by the sound.
   ★"pi" : The number of tens does not accord with the error code.
   ★"pi pi" : The number of tens accords with the error code.
   ★"beep" : The both numbers of tens and units accord with the error code. (→See 7.)

4. Enter the diagnosis mode again.
   Press the MODE button.

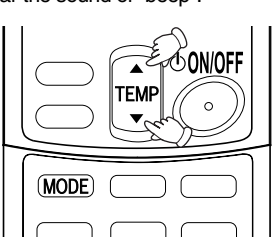


(R4275)

The digit of the number of units blinks.



5. Press the TEMP button.
   Press TEMP▲ or TEMP▼ and change the digit until you hear the sound of "beep".

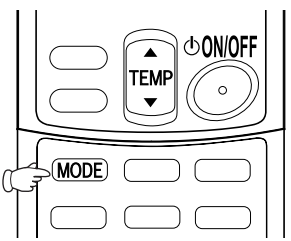


(R4277)

6. Diagnose by the sound.
   ★"pi" : The both numbers of tens and units do not accord with the error code.
   ★"pi pi" : The number of tens accords with the error code.
   ★"beep" : The both numbers of tens and units accord with the error code.

7. Determine the error code.
   The digits indicated when you hear the "beep" sound are error code.
   (Error codes and description → Refer to page 39.)

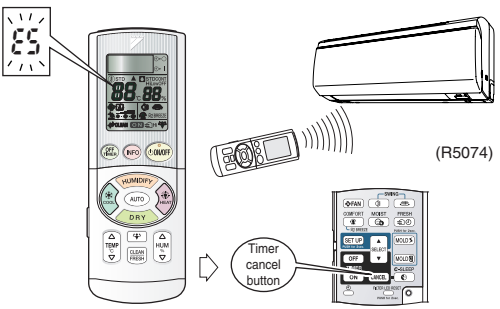
8. Exit from the diagnosis mode.
   Press the MODE button.



(R4278)

Method 3

<ARC447 series only>



1. Hold the timer cancel button down for 5 seconds, with the remote controller set toward the indoor unit.
2. The temperature display on the remote controller changes to the error code display and a long beep notifies this indication change.

Note: To cancel indication of error code, hold the timer cancel button down for 5 seconds.
The code display also cancels itself if the button is not pressed for 1 minute.

3. List of applicable models

Even the same error code may be explained on different flowchart pages. Follow the classification No. in the table below and check the related page according to the table on page 39.

3.1 Indoor Units

3.1.1 Wall Mounted Type

Model	Classification No.
AT09BV1LS	★1
AT09DV2S	★1
AT09GV2S	★1
AT09HV2S	★1
AT12BV1LS	★2
AT13DV2S	★2
AT13GV2S	★1
AT13HV2S	★1
AT18BV1LS	★2
AT18DV2S	★2
AT18GV2S	★2
AT18HV2S	★2
ATK25BVMB	★1
ATK35BVMB	★1
ATKS20CVMB	★1
ATKS20CVMB9	★1
ATKS20DAVMB	★1
ATKS20DVMB	★1
ATKS20E2V1B	★3
ATKS25BVMB	★1
ATKS25CVMB	★1
ATKS25CVMB9	★1
ATKS25DAVMB	★1
ATKS25DVMB	★1
ATKS25E2V1B	★3
ATKS35BVMB	★1
ATKS35CVMB	★1

Model	Classification No.
ATKS35CVMB9	★1
ATKS35DAVMB	★1
ATKS35DVMB	★1
ATKS35E2V1B	★3
ATX25BVMB	★1
ATX35BVMB	★1
ATX50EV1B	★2
ATXD50CV4	★2
ATXD60CV4	★2
ATXD71CV4	★2
ATXD80CV4	★2
ATXG25CVMB	★5
ATXG25EV1B	★5
ATXG35CVMB	★5
ATXG35EV1B	★5
ATXG50EV1B	★5
ATXS20CVMB	★1
ATXS20CVMB9	★1
ATXS20DAVMB	★1
ATXS20DVMB	★1
ATXS20E2V1B	★3
ATXS25BVMB	★1
ATXS25CVMB	★1
ATXS25CVMB9	★1
ATXS25DAVMB	★1
ATXS25DVMB	★1
ATXS25E2V1B	★3

Refer the classification No. to page 39

Model	Classification No.
ATXS35BVMB	★1
ATXS35CVMB	★1
ATXS35CVMB9	★1
ATXS35DAVMB	★1
ATXS35DVMB	★1
ATXS35E2V1B	★3
ATXS50CVMB	★2
ATXS50DVMB	★2
ATXS50E2V1B	★3
ATY20DV2	★1
ATY25DV2	★1
ATY35DV2	★1
CTKS50D2VMW(L)	★3
CTKS50DVMW(L)	★3
CTXG50EV1BW(S)	★5
CTXS09DVJU	★2
CTXS25EV2C	★3
CTXS35EV2C	★3
CTXS50D2VMW(L)	★3
CTXS50DVMW(L)	★3
FT09BV1LS	★1
FT09DV2S	★1
FT09FV2S	★1
FT09GV2S	★1
FT13BV1LS	★2
FT13DV2S	★1
FT13FV2S	★1
FT13GV2S	★1
FT15DV2S	★2
FT15FV2S	★2
FT15GV2S	★2
FT18BV1LS	★2
FT18FV2S	★2
FT18GV2S	★2

Model	Classification No.
FT24BV1LS	★2
FT24FV2S	★2
FT24GV2S	★2
FT25DSG	★1
FT25DVM	★1
FT28GV2S	★2
FT35DSG	★3
FT35DVM	★1
FT50BVM	★2
FT50CV1A	★2
FT50DSG	★2
FT50FVM	★2
FT60BVM	★2
FT60CV1A8	★2
FT60DSG	★2
FT60DVMK	★2
FT60FVM	★2
FT60GAVAL	★2
FTD25FV1A	★1
FTD35FV1A	★3
FTD50FV1K	★2
FTD60FV1K	★2
FTE09DV2S	★1
FTE09GV2S	★1
FTE09JV1LS	★1
FTE12DV2S	★2
FTE12GV2S	★1
FTE12JV1LS	★1
FTE18GV2S	★2
FTE25FV1	★1
FTE35FV1	★1
FTK25AZVMB	★1
FTK25BVMB	★1
FTK35AZVMB	★1

Refer the classification No. to page 39

Model	Classification No.
FTK35BVMB	★1
FTK50AVMA	★2
FTK50AVMT	★2
FTK60AVMA	★2
FTK60AVMT	★2
FTK71AVMA	★2
FTK71AVMT	★2
FTKD09DVMS	★1
FTKD09FV2S	★1
FTKD12DVMS	★1
FTKD12FV2S	★1
FTKD15FV2S	★2
FTKD15GV2S	★2
FTKD18BVMS	★2
FTKD18FV2S	★2
FTKD18GV2S	★2
FTKD24BVMS	★2
FTKD24FV2S	★2
FTKD24GV2S	★2
FTKD25DV2Z	★1
FTKD25DVM	★1
FTKD25DVMA	★1
FTKD25DVMT	★1
FTKD28BVMS	★2
FTKD28FV2S	★2
FTKD28GV2S	★2
FTKD35DV2Z	★1
FTKD35DVM	★1
FTKD35DVMA	★1
FTKD35DVMT	★1
FTKD50BVM	★2
FTKD50BVMA	★2
FTKD50BVMA8	★2
FTKD50BVMA9	★2

Model	Classification No.
FTKD50BVMD	★2
FTKD50BVMT	★2
FTKD50DSG	★2
FTKD50FV2Z	★2
FTKD50FVM	★2
FTKD60BVM	★2
FTKD60BVMA	★2
FTKD60BVMA8	★2
FTKD60BVMA9	★2
FTKD60BVMD	★2
FTKD60BVMT	★2
FTKD60DSG	★2
FTKD60FV2Z	★2
FTKD60FVM	★2
FTKD71BVM	★2
FTKD71BVMA	★2
FTKD71BVMA8	★2
FTKD71BVMA9	★2
FTKD71BVMD	★2
FTKD71BVMT	★2
FTKD71FV2Z	★2
FTKD71FVM	★2
FTKD80BVMA	★2
FTKE09BVMS	★1
FTKE12BVMS	★1
FTKE25BVM	★1
FTKE25BVMA	★1
FTKE25BVMA8	★1
FTKE25BVMA9	★1
FTKE25BVMD	★1
FTKE25BVMT	★1
FTKE35BVM	★1
FTKE35BVMA	★1
FTKE35BVMA8	★1

Refer the classification No. to page 39

Model	Classification No.
FTKE35BVMA9	★1
FTKE35BVMD	★1
FTKE35BVMT	★1
FTKS20CAVMB	★1
FTKS20CVMB	★1
FTKS20CVMB9	★1
FTKS20D(2)(3)VMW(L)	★3
FTKS20DVMA	★3
FTKS20DVMT	★3
FTKS25BVMB	★1
FTKS25CAVMB	★1
FTKS25CVMB	★1
FTKS25CVMB8	★1
FTKS25CVMB9	★1
FTKS25D(2)(3)VMW(L)	★3
FTKS25DVM	★3
FTKS25DVMA	★3
FTKS25DVMT	★3
FTKS25EVMA	★3
FTKS35BVMB	★1
FTKS35CAVMB	★1
FTKS35CVMB	★1
FTKS35CVMB8	★1
FTKS35CVMB9	★1
FTKS35D(2)(3)VMW(L)	★3
FTKS35DVM	★3
FTKS35DVMA	★3
FTKS35DVMT	★3
FTKS35DVMW(L)	★3
FTKS35EVMA	★3
FTKS50BVMA	★2
FTKS50BVMA8	★2
FTKS50BVMA9	★2
FTKS50BVMB	★2

Model	Classification No.
FTKS50D2V1W(L)	★3
FTKS50DVMT	★2
FTKS50EV1B	★2
FTKS50FV1B	★2
FTKS50FVLT	★2
FTKS50FVM	★2
FTKS50FVMA	★2
FTKS60BVMA	★2
FTKS60BVMA8	★2
FTKS60BVMA9	★2
FTKS60BVMB	★2
FTKS60DVMT	★2
FTKS60EV1B	★2
FTKS60FV1B	★2
FTKS60FVLT	★2
FTKS60FVM	★2
FTKS60FVMA	★2
FTKS71BAVMB	★2
FTKS71BVMA	★2
FTKS71BVMA8	★2
FTKS71BVMA9	★2
FTKS71BVMB	★2
FTKS71DVMT	★2
FTKS71EV1B	★2
FTKS71FV1B	★2
FTKS71FVLT	★2
FTKS71FVM	★2
FTKS71FVMA	★2
FTN20CVMB9	★1
FTN25CVMB9	★1
FTN25DAV3B	★1
FTN25DV3B	★1
FTN35CVMB9	★1
FTN35DAV3B	★1

Refer the classification No. to page 39

Model	Classification No.
FTN35DV3B	★1
FTN50EV1B	★2
FTN50FV1B	★2
FTN60FV1B	★2
FTS20BVMB	★1
FTS25BVMB	★1
FTS35BVMB	★1
FTS50BVMB	★2
FTS60BVMB	★2
FTW25FV1	★1
FTW35FV1	★1
FTX25AMVMC	★1
FTX25AVMA	★1
FTX25AVMC	★1
FTX25AVMT	★1
FTX25AZVMB	★1
FTX25BVMB	★1
FTX35AMVMC	★1
FTX35AVMA	★1
FTX35AVMC	★1
FTX35AVMT	★1
FTX35AZVMB	★1
FTX35BVMB	★1
FTX50AMVMC	★2
FTX50AVMA	★2
FTX50AVMC	★2
FTX50AVMT	★2
FTX60AMVMC	★2
FTX60AVMA	★2
FTX60AVMC	★2
FTX60AVMT	★2
FTX71AMVMC	★2
FTX71AVMA	★2
FTX71AVMC	★2

Model	Classification No.
FTX71AVMT	★2
FTXD25DV2C(A)(G)(W)(N)(P)	★1
FTXD25DV2Z	★1
FTXD25DVMA	★1
FTXD25DVMT	★1
FTXD25FV2C(A)(G)(W)(N)(P)	★1
FTXD35DV2C(A)(G)(W)(N)(P)	★1
FTXD35DV2Z	★1
FTXD35DVMA	★1
FTXD35DVMT	★1
FTXD35FV2C(A)(G)(W)(N)(P)	★1
FTXD50BMVMC	★2
FTXD50BV4	★2
FTXD50BV48	★2
FTXD50BV49	★2
FTXD50BVMA	★2
FTXD50BVMA8	★2
FTXD50BVMA9	★2
FTXD50BVMC	★2
FTXD50BVMT	★2
FTXD50CMV2C	★2
FTXD50FV2C	★2
FTXD50FV2Z	★2
FTXD50FVM	★2
FTXD60BMVMC	★2
FTXD60BVMA	★2
FTXD60BVMA8	★2
FTXD60BVMA9	★2
FTXD60BVMC	★2
FTXD60BVMT	★2
FTXD60FV2Z	★2
FTXD60FVM	★2
FTXD71BVMA	★2
FTXD71BVMA8	★2

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Model	Classification No.
FTXD71BVMA9	★2
FTXD71BVMC	★2
FTXD71BVMT	★2
FTXD71FV2Z	★2
FTXD71FVM	★2
FTXD80BVMA	★2
FTXD80CV4	★2
FTXD80CV48	★2
FTXD80CV49	★2
FTXE25BMVMC	★1
FTXE25BVMA	★1
FTXE25BVMA8	★1
FTXE25BVMA9	★1
FTXE25BVMC	★1
FTXE25BVMT	★1
FTXE25CMV2C	★1
FTXE35BMVMC	★1
FTXE35BVMA	★1
FTXE35BVMA8	★1
FTXE35BVMA9	★1
FTXE35BVMC	★1
FTXE35BVMT	★1
FTXE35CMV2C	★1
FTXG25CVMA(W)(S)	★5
FTXG25CVMBW(S)	★5
FTXG25EV1BW(S)	★5
FTXG25EVMAW(S)	★5
FTXG35CVMA(W)(S)	★5
FTXG35CVMBW(S)	★5
FTXG35EV1BW(S)	★5
FTXG35EVMAW(S)	★5
FTXR28EV1B	★6
FTXR28EV1B9	★6
FTXR28FVLT	★6

Model	Classification No.
FTXR42EV1B	★6
FTXR42EV1B9	★6
FTXR50EV1B	★6
FTXR50EV1B9	★6
FTXR50FVLT	★6
FTXS09DVJU	★1
FTXS12DVJU	★1
FTXS15DVJU	★2
FTXS18DVJU	★2
FTXS20CAVMB	★1
FTXS20CVMB	★1
FTXS20CVMB9	★1
FTXS20D(2)(3)VMW(L)	★3
FTXS20DVMA	★3
FTXS20DVMT	★3
FTXS24DVJU	★2
FTXS25BVMA	★1
FTXS25BVMB	★1
FTXS25CAVMB	★1
FTXS25CVMB	★1
FTXS25CVMB8	★1
FTXS25CVMB9	★1
FTXS25D(2)(3)VMW(L)	★3
FTXS25DVMA	★3
FTXS25DVMT	★3
FTXS25EVMA	★3
FTXS25FV2CW	★3
FTXS35BVMA	★1
FTXS35BVMB	★1
FTXS35CAVMB	★1
FTXS35CVMB	★1
FTXS35CVMB8	★1
FTXS35CVMB9	★1
FTXS35D(2)(3)VMW(L)	★3

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Model	Classification No.
FTXS35DVMA	★3
FTXS35DVMT	★3
FTXS35EVMA	★3
FTXS35FV2CW	★3
FTXS50BVMA	★2
FTXS50BVMA8	★2
FTXS50BVMA9	★2
FTXS50BVMB	★2
FTXS50D2V1W(L)	★3
FTXS50DVMT	★2
FTXS50EV1B	★2
FTXS50FV1B	★2
FTXS50FVLT	★2
FTXS50FVMA	★2
FTXS60BVMA	★2
FTXS60BVMA8	★2
FTXS60BVMA9	★2
FTXS60BVMB	★2
FTXS60DVMT	★2
FTXS60EV1B	★2
FTXS60FV1B	★2
FTXS60FVLT	★2
FTXS60FVMA	★2
FTXS71BAVMB	★2
FTXS71BVMA	★2
FTXS71BVMA8	★2
FTXS71BVMA9	★2
FTXS71BVMB	★2
FTXS71DVMT	★2
FTXS71EV1B	★2
FTXS71FV1B	★2

Model	Classification No.
FTXS71FVLT	★2
FTXS71FVMA	★2
FTXS80FVMA	★2
FTXS90FVMA	★2
FTY25CVMA	★1
FTY25DV2C	★1
FTY35CVMA	★1
FTY35DV2C	★1
FTYN20CVMB9	★1
FTYN25CVMB9	★1
FTYN25DAV3B	★1
FTYN25DV1A	★3
FTYN25DV3B	★1
FTYN35CVMB9	★1
FTYN35DAV3B	★1
FTYN35DV1A	★3
FTYN35DV3B	★1
FTYN50DV1A	★2
FTYN50EV1B	★2
FTYN50FV1A	★2
FTYN50FV1B	★2
FTYN60DV1A	★2
FTYN60EV1B	★2
FTYN60FV1A	★2
FTYN60FV1B	★2
FTYN71FV1A	★2
FTYS20BVMB	★1
FTYS25BVMB	★1
FTYS35BVMB	★1
FTYS50BVMB	★2
FTYS60BVMB	★2

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3.1.2 Floor Standing Type

Model	Classification No.
FVK25AZVMB	★4
FVK35AZVMB	★4
FVK50AZVMB	★4
FVKS25BAVMB	★4
FVKS25BVMB	★4
FVKS35BAVMB	★4
FVKS35BVMB	★4
FVKS50BAVMB	★4
FVKS50BVMB	★4
FVX25AZVMB	★4
FVX35AZVMB	★4
FVX50AZVMB	★4
FVX56AV1C	★4
FVXD56CMV2C	★4
FVXD56FV2C	★4
FVXD60DV2CW(N)	★4
FVXD60FV2CW(N)	★4
FVXD68CMV2C	★4

Model	Classification No.
FVXD71DV2CW(N)	★4
FVXD71FV2CW(N)	★4
FVXS25BAVMB	★4
FVXS25BVMB	★4
FVXS25FV1A	★3
FVXS25FV1B	★3
FVXS35BAVMB	★4
FVXS35BVMA	★4
FVXS35BVMB	★4
FVXS35FV1A	★3
FVXS35FV1B	★3
FVXS50BAVMB	★4
FVXS50BVMA	★4
FVXS50BVMB	★4
FVXS50FV1A	★3
FVXS50FV1B	★3
FVXS71FV2CW	★4
FVZ71DMV2C	★4

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3.1.3 Duct Connected Type

Model	Classification No.
CDK25AVM	★1
CDK25AVMA	★1
CDK25AVMD	★1
CDK25AZVMB	★1
CDK35AVM	★1
CDK35AVMA	★1
CDK35AVMD	★1
CDK35AZVMB	★1
CDK50AVM	★1
CDK50AVMA	★1
CDK50AVMD	★1
CDK50AZVMB	★1
CDK60AVM	★1
CDK60AVMA	★1
CDK60AVMD	★1
CDK60AZVMB	★1
CDKD25CVM	★1
CDKD25CVMA	★1
CDKD25DVMT	★1
CDKD25EAVM	★1
CDKD25EAVMA	★1
CDKD25EAVMT	★1
CDKD35CVM	★1
CDKD35CVMA	★1
CDKD35DVMT	★1
CDKD35EAVM	★1
CDKD35EAVMA	★1
CDKD35EAVMT	★1
CDKD50CVM	★1
CDKD50CVMA	★1
CDKD50DVMT	★1
CDKD60CVM	★1
CDKD60CVMA	★1

Model	Classification No.
CDKD60DVMT	★1
CDKS25BVMB	★1
CDKS25CVMA	★1
CDKS25CVMB	★1
CDKS25DVMT	★1
CDKS25EAVMA	★1
CDKS25EAVMT	★1
CDKS35BVMB	★1
CDKS35CVMA	★1
CDKS35CVMB	★1
CDKS35DVMT	★1
CDKS35EAVMA	★1
CDKS35EAVMT	★1
CDKS50BVMB	★1
CDKS50CVMA	★1
CDKS50CVMB	★1
CDKS50DVMT	★1
CDKS60BVMB	★1
CDKS60CVMA	★1
CDKS60CVMB	★1
CDKS60DVMT	★1
CDX25AVMA	★1
CDX25AZVMB	★1
CDX25BVMC	★1
CDX25BVMC9	★1
CDX35AVMA	★1
CDX35AZVMB	★1
CDX35BVMC	★1
CDX35BVMC9	★1
CDX50AVMA	★1
CDX50AVMC	★1
CDX50AVMC9	★1
CDX50AZVMB	★1

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Model	Classification No.
CDX60AVMA	★1
CDX60AVMC	★1
CDX60AVMC9	★1
CDX60AZVMB	★1
CDXD25AVMC	★1
CDXD25BMVMC	★1
CDXD25CMVMC	★1
CDXD25CVMA	★1
CDXD25DVMT	★1
CDXD25EAVMA	★1
CDXD25EAVMT	★1
CDXD35AVMC	★1
CDXD35BMVMC	★1
CDXD35CMVMC	★1
CDXD35CVMA	★1
CDXD35DVMT	★1
CDXD35EAVMA	★1
CDXD35EAVMT	★1
CDXD50AVMC	★1
CDXD50CVMA	★1
CDXD50DVMT	★1
CDXD60AVMC	★1
CDXD60BMVMC	★1
CDXD60CMVMC	★1
CDXD60CVMA	★1
CDXD60DVMT	★1
CDXS25BVMB	★1
CDXS25CVMA	★1
CDXS25CVMB	★1
CDXS25DVMT	★1
CDXS25EAVMA	★1
CDXS25EAVMT	★1
CDXS25EV2C	★1
CDXS35BVMB	★1

Model	Classification No.
CDXS35CVMA	★1
CDXS35CVMB	★1
CDXS35DVMT	★1
CDXS35EAVMA	★1
CDXS35EAVMT	★1
CDXS35EV2C	★1
CDXS50BVMB	★1
CDXS50CVMA	★1
CDXS50CVMB	★1
CDXS50DVMT	★1
CDXS50EV2C	★1
CDXS60BVMB	★1
CDXS60CVMA	★1
CDXS60CVMB	★1
CDXS60DVMT	★1
CDXS60EV2C	★1
FDKS25CAVMB	★1
FDKS25CVMB	★1
FDKS25EAVMB	★1
FDKS35CAVMB	★1
FDKS35CVMB	★1
FDKS35EAVMB	★1
FDKS50CVMB	★1
FDKS60CVMB	★1
FDXD25DV2C	★1
FDXD35DV2C	★1
FDXD50BMVMC	★1
FDXD50CMVMC	★1
FDXS09DVJU	★1
FDXS12DVJU	★1
FDXS25CAVMB	★1
FDXS25CVMA	★1
FDXS25CVMB	★1
FDXS25EAVMB	★1

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Model	Classification No.
FDXS35CAVMB	★1
FDXS35CVMA	★1
FDXS35CVMB	★1
FDXS35EAVMB	★1

Model	Classification No.
FDXS50CVMA	★1
FDXS50CVMB	★1
FDXS60CVMA	★1
FDXS60CVMB	★1

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3.1.4 Floor / Ceiling Suspended Dual Type

Model	Classification No.
FLK25AVMA	★1
FLK25AVMD	★1
FLK25AZVMB	★1
FLK25BVMB	★1
FLK35AVMA	★1
FLK35AVMD	★1
FLK35AZVMB	★1
FLK35BVMB	★1
FLK50AVMA	★1
FLK50AVMA8	★1
FLK50AVMD	★1
FLK50AZVMB	★1
FLK60AVMA	★1
FLK60AVMA8	★1
FLK60AVMD	★1
FLK60AZVMB	★1
FLKS25BAVMB	★1
FLKS25BVMB	★1
FLKS35BAVMB	★1
FLKS35BVMB	★1
FLKS50BAVMB	★1
FLKS50BVMB	★1
FLKS60BAVMB	★1
FLKS60BVMB	★1

Model	Classification No.
FLX25AVMA	★1
FLX25BVMB	★1
FLX35AVMA	★1
FLX35AZVMB	★1
FLX35BVMB	★1
FLX50AVMA	★1
FLX50AVMA8	★1
FLX50AZVMB	★1
FLX60AVMA	★1
FLX60AVMA8	★1
FLX60AZVMB	★1
FLXS25BAVMB	★1
FLXS25BVMA	★1
FLXS25BVMB	★1
FLXS35BAVMB	★1
FLXS35BVMA	★1
FLXS35BVMB	★1
FLXS50BAVMB	★1
FLXS50BVMA	★1
FLXS50BVMB	★1
FLXS60BAVMB	★1
FLXS60BVMA	★1
FLXS60BVMB	★1

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3.2 Outdoor Units

Model	Classification No.
2AMK40BAVMB	★12
2AMK40FV1B	★12
2AMK50FV1B	★12
2AMKS40BVMB	★12
2AMX40BAVMB	★12
2AMX40FV1B	★12
2AMX50FV1B	★12
2AMX52D2VMB	★14
2AMX52DVMB	★14
2AMX52E2V1B	★15
2AMX52E3V1B	★15
2AMXS40BVMB	★12
2MK58AVM	★16
2MKD58BVM	★16
2MKD58BVM8	★16
2MKD58DVM	★14
2MKS40BVMB	★12
2MKS40DAVMB	★12
2MKS40DVM	★12
2MKS40DVMB	★12
2MKS40FV1B	★12
2MKS50FV1B	★12
2MXS40BVMB	★12
2MXS40DAVMB	★12
2MXS18DVJU	★14
2MXS40DVMB	★12
2MXS40FV1B	★12
2MXS50FV1B	★12
2MXS52D2VMB	★14
2MXS52DVMB	★14

Model	Classification No.
2MXS52E2V1B	★15
2MXS52E3V1B	★15
3AMX52C2VMB	★16
3AMX52CVMB	★16
3AMX52E2V1B	★15
3AMX52E3V1B	★15
3AMXS52BVMB	★16
3MK58AVM	★16
3MK75AVM	★16
3MK75AVMT	★16
3MKD58BVM	★16
3MKD58BVM8	★16
3MKD58DVM	★14
3MKD75BVM	★16
3MKD75BVM8	★16
3MKD75BVMA	★16
3MKD75BVMA8	★16
3MKD75BVMT	★16
3MKD75BVMT8	★16
3MKD75DVM	★14
3MKS50BVMB	★16
3MKS50BVMB8	★16
3MKS50D2VMB	★14
3MKS50DVM	★14
3MKS50DVMB	★14
3MKS50E2V1B	★15
3MKS50E3V1B	★15
3MKS50ESG	★15
3MKS58EVMA	★15
3MKS71ESG	★15

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Model	Classification No.
3MKS75EVMA	★15
3MKS90EVLT	★15
3MX52AZVMB	★16
3MX68AVMA	★16
3MX68AVMC	★16
3MX68AVMT	★16
3MXD68BVMA	★16
3MXD68BVMA8	★16
3MXD68BVMC	★16
3MXD68BVMT	★16
3MXD68BVMT8	★16
3MXD80BMVMC	★16
3MXS52BVMB	★16
3MXS52BVMB8	★16
3MXS52D2VMB	★14
3MXS52DVMA	★14
3MXS52DVMB	★14
3MXS52E2V1B	★15
3MXS52E3V1B	★15
3MXS52EVMA	★15
3MXS68EVMA	★15
3MXS80EV2C	★15
4MK58AZVMB	★16
4MK75AVM	★16
4MK75AZVMB	★16
4MKD100DVM	★14
4MKD75BVM	★16
4MKD75DVM	★14
4MKD90BVM	★16
4MKD90BVMA	★16
4MKD90BVMD	★16
4MKD90BVMT	★16
4MKS100EVLT	★15
4MKS58BVMB	★16
4MKS58BVMB8	★16
4MKS58D2VMB	★14
4MKS58DVMA	★14
4MKS58DVMB	★14
4MKS58E2V1B	★15
4MKS58E3V1B	★15
4MKS71DVM	★14
4MKS75BVMB	★16
4MKS75D2VMB	★14
4MKS75DVMA	★14
4MKS75DVMB	★14
4MKS75E2V1B	★15
4MKS75E3V1B	★15
4MKS80DVM	★20
4MKS80ESG	★15
4MKS90BVMB	★16
4MKS90DAVMB	★16
4MKS90DVMA	★16
4MKS90DVMB	★16
4MKS90DVMT	★16
4MKS90EVMA	★15
4MX100DMV2C	★14
4MX68AZVMB	★16
4MXD80BVMA	★16
4MXD80BVMC	★16
4MXD80BVMT	★16

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Model	Classification No.
4MXS100EV2C	★15
4MXS100EVLT	★15
4MXS68BVMB	★16
4MXS68BVMB9	★16
4MXS68D2VMB	★14
4MXS68DVMA	★14
4MXS68DVMB	★14
4MXS68E2V1B	★15
4MXS68E3V1B	★15
4MXS68F2V1B	★15
4MXS80BVMB	★16
4MXS80BVMB9	★16
4MXS80CVMA	★16
4MXS80DAVMB	★16
4MXS80DVMA	★16
4MXS80DVMB	★16
4MXS80DVMT	★16
4MXS80E7V3B	★15
4MXS80EVMA	★15
5MKS90E7V3B	★15
5MXS90E7V3B	★15
ARK20E2V1B	★11
ARK25BVMB	★7
ARK25E2V1B	★11
ARK35BVMB	★7
ARK35E2V1B	★11
ARKH20CAVMB	★7
ARKH20CVMB7	★7
ARKH20CVMB9	★7
ARKH25CAVMB	★7

Model	Classification No.
ARKH25CVMB7	★7
ARKH25CVMB9	★7
ARKH35CAVMB	★7
ARKH35CVMB7	★7
ARKH35CVMB9	★7
ARKS20C2VMB	★11
ARKS20CVMB	★11
ARKS20CVMB9	★11
ARKS20E2V1B	★11
ARKS20F2V1B	★11
ARKS25BVMB	★7
ARKS25C2VMB	★11
ARKS25CVMB	★11
ARKS25CVMB9	★11
ARKS25E2V1B	★11
ARKS25F2V1B	★11
ARKS35BVMB	★7
ARKS35C2VMB	★11
ARKS35CVMB	★11
ARKS35CVMB9	★11
ARKS35E2V1B	★11
ARKS35F2V1B	★11
ARX20E2V1B	★11
ARX25BVMB	★7
ARX25E2V1B	★11
ARX35BVMB	★7
ARX35E2V1B	★11
ARXD50CV4	★9
ARXD60CV4	★9
ARXD71CV4	★9

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Model	Classification No.
ARXD80CV4	★9
ARXG25CVMB	★11
ARXG25CVMB9	★11
ARXG25E2V1B	★11
ARXG35CVMB	★11
ARXG35CVMB9	★11
ARXG35E2V1B	★11
ARXH20CAVMB	★7
ARXH20CVMB7	★7
ARXH20CVMB9	★7
ARXH25CAVMB	★7
ARXH25CVMB7	★7
ARXH25CVMB9	★7
ARXH35CAVMB	★7
ARXH35CVMB7	★7
ARXH35CVMB9	★7
ARXS20C2VMB	★11
ARXS20CVMB	★11
ARXS20CVMB9	★11
ARXS20F2V1B	★11
ARXS25BVMB	★7
ARXS25C2VMB	★11
ARXS25CVMB	★11
ARXS25CVMB9	★11
ARXS25E2V1B	★11
ARXS25F2V1B	★11
ARXS35BVMB	★7
ARXS35C2VMB	★11
ARXS35CVMB	★11
ARXS35CVMB9	★11

Model	Classification No.
ARXS35E2V1B	★11
ARXS35F2V1B	★11
ARXS50C2VMB	★9
ARXS50CVMB	★9
ARXS50E2V1B	★10
ARXS50E3V1B	★10
ARY20DV2	★8
ARY25DV2	★8
ARY35DV2	★8
R25CV1A	★7
R25DV1	★7
R35CV1A	★7
R35DV1	★7
R35JV1A	★7
RE25JV1	★7
RE35JV1	★7
RK20E2V1B	★11
RK25BVMB	★7
RK25E2V1B	★11
RK25JAVET	★7
RK25JV1NB9	★7
RK25JVE9	★7
RK25JVEA9	★7
RK35BVMB	★7
RK35E2V1B	★11
RK35JAVET	★7
RK35JV1NB9	★7
RK35JVE9	★7
RK35JVEA9	★7
RKD09DVMS	★11

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Model	Classification No.
RKD09FV2S	★11
RKD12DVMS	★11
RKD12FV2S	★11
RKD15FV2S	★13
RKD15GV2S	★9
RKD18BVMS	★9
RKD18FV2S	★9
RKD18GV2S	★9
RKD24BVMS	★9
RKD24FV2S	★9
RKD24GV2S	★9
RKD25DV2Z	★11
RKD25DVM	★11
RKD25DVMA	★11
RKD25DVMT	★11
RKD25KZV1B	★7
RKD28BVMS	★9
RKD28FV2S	★9
RKD28GV2S	★9
RKD35DV2Z	★11
RKD35DVM	★11
RKD35DVMA	★11
RKD35DVMT	★11
RKD35KZV1B	★7
RKD50BVM	★9
RKD50BVMA	★9
RKD50BVMT	★9
RKD50DSG	★9
RKD50JVE	★9
RKD50JVE9	★9

Model	Classification No.
RKD50JVEA	★9
RKD50JVEA9	★9
RKD50JVET	★9
RKD60BVM	★9
RKD60BVMA	★9
RKD60BVMT	★9
RKD60DSG	★9
RKD60JVE	★9
RKD60JVEA	★9
RKD60JVET	★9
RKD71BVM	★9
RKD71BVMA	★9
RKD71BVMT	★9
RKD71JVE	★9
RKD71JVEA	★9
RKD71JVET	★9
RKD80BVMA	★9
RKE09BVMS	★7
RKE12BVMS	★7
RKE25BVM	★7
RKE25BVMA	★7
RKE25BVMT	★7
RKE35BVM	★7
RKE35BVMA	★7
RKE35BVMT	★7
RKH20CAVMB	★7
RKH20CVMB7	★7
RKH20CVMB9	★7
RKH25CAVMB	★7
RKH25CVMB7	★7

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Model	Classification No.
RKH25CVMB9	★7
RKH35CAVMB	★7
RKH35CVMB7	★7
RKH35CVMB9	★7
RKS20C2VMB	★11
RKS20CVMB	★11
RKS20CVMB9	★11
RKS20D2VMB	★11
RKS20D3VMB	★11
RKS20DVMB	★11
RKS20DVMT	★11
RKS20E2V1B	★11
RKS25BVMB	★7
RKS25C2VMB	★11
RKS25CVMB	★11
RKS25CVMB9	★11
RKS25D2VMB	★11
RKS25D3VMB	★11
RKS25DVM	★11
RKS25DVMA	★11
RKS25DVMB	★11
RKS25DVMT	★11
RKS25E2V1B	★11
RKS25EVMA	★11
RKS25F2V1B	★11
RKS35BVMB	★7
RKS35C2VMB	★11
RKS35CVMB	★11
RKS35CVMB9	★11
RKS35D2VMB	★11

Model	Classification No.
RKS35D3VMB	★11
RKS35DVM	★11
RKS35DVMA	★11
RKS35DVMB	★11
RKS35DVMT	★11
RKS35E2V1B	★11
RKS35EVMA	★11
RKS35F2V1B	★11
RKS50B2VMB	★9
RKS50BVMA	★9
RKS50BVMB	★9
RKS50BVMB9	★9
RKS50DVMT	★9
RKS50E2V1B	★10
RKS50E3V1B	★10
RKS50F2V1B	★10
RKS50FVLT	★10
RKS50FVM	★10
RKS50FVMA	★10
RKS60B2VMB	★9
RKS60BVMA	★9
RKS60BVMB	★9
RKS60BVMB9	★9
RKS60DVMT	★9
RKS60E2V1B	★10
RKS60E3V1B	★10
RKS60F2V1B	★10
RKS60FVLT	★10
RKS60FVM	★10
RKS60FVMA	★10

Refer the classification No. to page 40

Model	Classification No.
RKS71B2VMB	★9
RKS71B3VMB	★9
RKS71BVMA	★9
RKS71BVMB	★9
RKS71BVMB9	★9
RKS71DVMT	★9
RKS71E2V1B	★10
RKS71E3V1B	★10
RKS71FV1B	★10
RKS71FVLT	★10
RKS71FVM	★10
RKS71FVMA	★10
RN20CVMB7	★7
RN20CVMB9	★7
RN25CVMB7	★7
RN25CVMB9	★7
RN25DAV3B	★8
RN25DV3B	★8
RN35CVMB7	★7
RN35CVMB9	★7
RN35DAV3B	★8
RN35DV3B	★8
RN50E2V1B	★10
RN50E3V1B	★10
RN60E2V1B	★10
RN60E3V1B	★10
RS20BVMB	★7
RS25BVMB	★7
RS35BVMB	★7
RS50B2VMB	★9

Model	Classification No.
RS50BVMB	★9
RS60B2VMB	★9
RS60BVMB	★9
RX09FVJU	★11
RX12FVJU	★11
RX15FVJU	★9
RX18FVJU	★9
RX20E2V1B	★11
RX24FVJU	★9
RX25BVMB	★7
RX25E2V1B	★11
RX25JV1NB5	★7
RX25JV1NB9	★7
RX25JVEA9	★7
RX25LV1C	★7
RX25LV1C9	★7
RX35BVMB	★7
RX35E2V1B	★11
RX35JAVET	★7
RX35JV1NB5	★7
RX35JV1NB9	★7
RX35JVEA9	★7
RX35LV1C	★7
RX35LV1C9	★7
RX50AZVMB	★9
RX56AV1C	★9
RX60AZVMB	★9
RX71AZVMB	★9
RXD25DAV2C	★11
RXD25DV2C	★11

Refer the classification No. to page 40

Model	Classification No.
RXD25DV2Z	★11
RXD25DVMA	★11
RXD25DVMT	★11
RXD25FAV2C	★11
RXD25FV2C	★11
RXD25KZV1B	★7
RXD35DAV2C	★11
RXD35DV2C	★11
RXD35DV2Z	★11
RXD35DVMA	★11
RXD35DVMT	★11
RXD35FAV2C	★11
RXD35FV2C	★11
RXD35KZV1B	★7
RXD50BMVMC	★9
RXD50BV4	★9
RXD50BVMA	★9
RXD50BVMT	★9
RXD50CMVMC	★9
RXD50JV1B	★9
RXD50JV1B5	★9
RXD50JVEA9	★9
RXD50JVET	★9
RXD60BVMA	★9
RXD60BVMT	★9
RXD60DMV2C	★9
RXD60JV1B	★9
RXD60JV1B5	★9
RXD60JVEA	★9
RXD60JVET	★9

Model	Classification No.
RXD68CMV2C	★9
RXD71BMVMC	★9
RXD71BVMA	★9
RXD71BVMT	★9
RXD71DMV2C	★9
RXD71JV1B	★9
RXD71JV1B5	★9
RXD71JVEA	★9
RXD71JVET	★9
RXD80BVMA	★9
RXD80CV4	★9
RXE25BVMA	★7
RXE25BVMT	★7
RXE25CMV2C	★7
RXE35BVMA	★7
RXE35BVMT	★7
RXE35CMV2C	★7
RXG25CVMA	★11
RXG25CVMB	★11
RXG25CVMB9	★11
RXG25E2V1B	★11
RXG25EVMA	★11
RXG35CVMA	★11
RXG35CVMB	★11
RXG35CVMB9	★11
RXG35E2V1B	★11
RXG35EVMA	★11
RXH20CAVMB	★7
RXH20CVMB7	★11
RXH20CVMB9	★7

Refer the classification No. to page 40

Model	Classification No.
RXH25CAVMB	★7
RXH25CVMB7	★11
RXH25CVMB9	★7
RXH35CAVMB	★7
RXH35CVMB7	★11
RXH35CVMB9	★7
RXR28EV1B9	★17
RXR28FVLT	★17
RXR42EV1B9	★17
RXR50EV1B9	★17
RXR50FVLT	★17
RXS09DVJU	★11
RXS12DVJU	★11
RXS15DVJU	★9
RXS18DVJU	★9
RXS20C2VMB	★11
RXS20CVMB	★11
RXS20CVMB9	★11
RXS20D2VMB	★11
RXS20D3VMB	★11
RXS20DVMB	★11
RXS20DVMT	★11
RXS20E2V1B	★11
RXS24DVJU	★9
RXS25BVMA	★7
RXS25BVMB	★7
RXS25C2VMB	★11
RXS25CVMB	★11
RXS25CVMB9	★11
RXS25D2VMB	★11

Model	Classification No.
RXS25D3VMB	★11
RXS25DVMA	★11
RXS25DVMB	★11
RXS25DVMT	★11
RXS25E2V1B	★11
RXS25EAVMA	★11
RXS25EVMA	★11
RXS25F2V1B	★11
RXS25FV2C	★11
RXS35BVMA	★7
RXS35BVMB	★7
RXS35C2VMB	★11
RXS35CVMB	★11
RXS35CVMB9	★11
RXS35D2VMB	★11
RXS35D3VMB	★11
RXS35DVMA	★11
RXS35DVMB	★11
RXS35DVMT	★11
RXS35E2V1B	★11
RXS35EAVMA	★11
RXS35EVMA	★11
RXS35F2V1B	★11
RXS35FV2C	★11
RXS50B2VMB	★9
RXS50BVMA	★9
RXS50BVMB	★9
RXS50DVMT	★9
RXS50E2V1B	★10
RXS50E3V1B	★10

Refer the classification No. to page 40

Model	Classification No.
RXS50F2V1B	★10
RXS50FAVMA	★10
RXS50FVLT	★10
RXS50FVMA	★10
RXS60B2VMB	★9
RXS60BVMA	★9
RXS60BVMB	★9
RXS60DVMT	★9
RXS60E2V1B	★10
RXS60E3V1B	★10
RXS60F2V1B	★10
RXS60FVLT	★10
RXS60FVMA	★10
RXS71B2VMB	★9
RXS71B3VMB	★9
RXS71BVMA	★9
RXS71BVMB	★9
RXS71BVMB	★9
RXS71DVMT	★9
RXS71E2V1B	★10
RXS71E3V1B	★10
RXS71FMV2C	★10
RXS71FV1B	★10
RXS71FVLT	★10
RXS71FVMA	★10
RXS80FVMA	★10
RXS90FVMA	★10
RY25CVMA	★7
RY35CVMA	★7

Model	Classification No.
RYN20CVMB7	★7
RYN20CVMB9	★7
RYN25CVMB7	★7
RYN25CVMB9	★7
RYN25DAV3B	★8
RYN25DV1A	★11
RYN25DV3B	★8
RYN35CVMB7	★7
RYN35CVMB9	★7
RYN35DAV3B	★8
RYN35DV1A	★11
RYN35DV3B	★8
RYN50DV1A	★9
RYN50E2V1B	★10
RYN50E3V1B	★10
RYN50FV1A	★10
RYN60DV1A	★9
RYN60E2V1B	★10
RYN60E3V1B	★10
RYN60FV1A	★10
RYN71FV1A	★10
RYS20BVMB	★7
RYS25BVMB	★7
RYS35BVMB	★7
RYS50B2VMB	★9
RYS50BVMB	★9
RYS60B2VMB	★9
RYS60BVMB	★9
RZY71DMV2C	★9

Refer the classification No. to page 40

4. Error Codes and Description of Fault

Note: Numerical values vary from model to model. For accurate values, refer to the service manual.

4.1 Indoor Unit

Code Indication	Description	Classification No. and related page					
		★1	★2	★3	★4	★5	★6
A1	Indoor unit PCB abnormality	43	43	43	43	43	44
A5	Freeze-up protection control or high pressure control	46	46	46	46	46	48
A6	Fan motor or related abnormality	50	52	52	52	52	55
AH	Streamer unit fault	—	—	—	—	—	57
C4	Heat exchanger temperature thermistor abnormality	59	59	59	59	59	60
C7	Shutter drive motor/Shutter limit switch abnormality	—	—	—	61	—	—
	Front panel open/close fault	—	—	—	—	63	—
CC	Humidity sensor fault	—	—	—	—	—	65
C9	Room temperature thermistor abnormality	59	59	59	59	59	60
U4	Signal transmission error	66	66	66	66	66	68
U8	Incompatible power supply between indoor unit and outdoor unit	—	—	—	—	—	71
	Unspecified voltage (between indoor and outdoor units)	70	—	70	70	70	
	Incomplete setting for hose length	—	—	—	—	—	72

4.2 Outdoor Unit

Note: Numerical values and LED indication vary from model to model. For accurate values and indication, refer to the service manual.

Code Indication	Description of Problem	Classification No. and related page					
		★7	★8	★9	★10	★11	★12
P5	Anti-icing function	—	—	—	—	—	73
E1	Outdoor unit PCB abnormality	—	—	—	79	80	—
E5	OL activation (Compressor overloaded)	84	—	84	85	85	85
E6	Compressor lock	92	—	93	93	92	92
E7	DC fan lock	100	—	101	100	100	101
E8	Input overcurrent detection	104	—	106	106	104	108
E9	Four way valve abnormality	118	—	122	122	118	—
F3	Discharge pipe temperature	126	—	126	126	126	130
F6	High pressure control in cooling	138	136	138	138	138	138
H0	Compressor system sensor abnormality	—	—	—	145	144	147
H1	Damper fault	—	—	—	—	—	—
H6	Position sensor abnormality	151	—	151	151	151	155
H8	DC voltage/Current sensor abnormality	—	—	—	—	159	159
	CT or related abnormality	161	—	161	161	—	—
H9	Outdoor air thermistor or related abnormality	167	—	167	167	167	171
J3	Discharge pipe thermistor or related abnormality	167	—	167	167	167	171
J6	Heat exchanger thermistor or related abnormality	167	169	167	167	167	171
J8	Liquid pipe thermistor or related abnormality	—	—	—	—	—	171
J9	Gas pipe thermistor or related abnormality	—	—	—	—	—	171
L3	Electrical box temperature rise	177	—	179	179	179	188
L4	Radiation fin temperature rise	195	—	195	197	197	202
L5	Output overcurrent detection	205	—	205	205	205	205
P4	Radiation fin thermistor or related abnormality	167	—	167	167	167	171

Code Indication	Description of Problem	Classification No. and related page				
		★13	★14	★15	★16	★17
85	Anti-icing function	73	75	75	75	77
E1	Outdoor unit PCB abnormality	—	—	82	—	83
E5	OL activation (Compressor overloaded)	85	90	86	90	88
E6	Compressor lock	93	96	94	96	98
E7	DC fan lock	101	102	102	102	103
E8	Input overcurrent detection	110	114	114	112	116
E9	Four way valve abnormality	—	124	—	124	120
F3	Discharge pipe temperature	130	132	128	132	134
F6	High pressure control in cooling	138	140	140	—	142
H0	Compressor system sensor abnormality	—	—	145	—	148
H1	Damper fault	—	—	—	—	149
H6	Position sensor abnormality	151	153	153	153	157
H8	DC voltage/Current sensor abnormality	—	—	—	—	160
	CT or related abnormality	165	163	163	163	—
H9	Outdoor air thermistor or related abnormality	171	173	173	173	175
J3	Discharge pipe thermistor or related abnormality	171	173	173	173	175
J6	Heat exchanger thermistor or related abnormality	171	173	173	173	175
J8	Liquid pipe thermistor or related abnormality	171	173	173	173	175
J9	Gas pipe thermistor or related abnormality	171	173	173	173	—
L3	Electrical box temperature rise	188	181	183	181	185
L4	Radiation fin temperature rise	202	190	192	190	199
L5	Output overcurrent detection	205	208	208	208	211
P4	Radiation fin thermistor or related abnormality	171	173	173	173	175

4.3 System

Note: Numerical values and LED indication vary from model to model.
For accurate values and indication, refer to the service manual.

Code Indication	Description of Problem	Classification No. and related page					
		★7	★8	★9	★10	★11	★12
U0	Refrigerant shortage	218	—	218	218	214	236
U2	Low/Over voltage detection	242	—	244	244	242	242
U4	Outdoor unit PCB abnormality or signal transmission circuit abnormality	—	—	—	—	—	250
U7	Signal transmission error on outdoor unit PCB	—	—	—	258	—	—
U8	Unspecified voltage (between indoor and outdoor units)	—	—	—	—	—	259
UA	Anti-icing function in other rooms	—	—	—	—	—	259

Code Indication	Description of Problem	Classification No. and related page				
		★13	★14	★15	★16	★17
U0	Refrigerant shortage	239	221	232	225	228
U2	Low/Over voltage detection	242	246	246	246	248
U4	Outdoor unit PCB abnormality or signal transmission circuit abnormality	254	—	—	—	250
U7	Signal transmission error on outdoor unit PCB	—	—	258	—	256
U8	Unspecified voltage (between indoor and outdoor units)	259	260	260	260	—
UA	Anti-icing function in other rooms	259	260	260	260	—

5. Troubleshooting

5.1 Indoor Unit

5.1.1 Indoor Unit PCB Abnormality

Remote Controller Display

R1

Method of Malfunction Detection

Evaluation of zero-cross detection of power supply by indoor unit.

Malfunction Decision Conditions

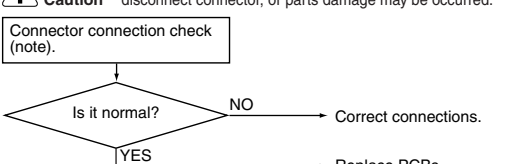
When there is no zero-cross detection in approximately 10 continuous seconds.

Supposed Causes

- Faulty indoor unit PCB
- Faulty connector connection

Trouble-shooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(R1400)

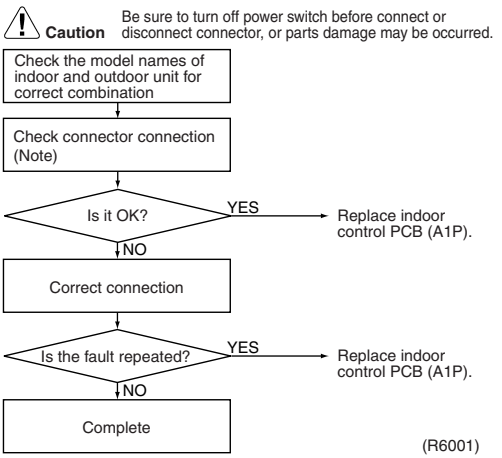
Note: Connector Nos. vary depending on models.
Control connector

Model Type	Connector No.
Wall Mounted Type	Terminal strip~Control PCB
Ceiling Embedded Duct Type	Terminal strip~Control PCB
Duct Connected Type	Terminal strip~Control PCB
Floor / Ceiling Suspended Dual Type	S37
Floor Standing Type	(A, B, D series) Control PCB : S7, S201, S203 Power Supply PCB : S8, S202, S204 (F series) Terminal strip~Control PCB

5.1.2 Indoor Unit PCB Fault (FTXR 28/42/50 class)

Remote Controller Display	A1
Method of Malfunction Detection	Check zero-cross detection from the power supply of the indoor unit
Malfunction Decision Conditions	When no zero-cross detection is performed in approximately 10 continuous seconds
Supposed Causes	■ Defective indoor unit PCB (Faulty EEPROM data) ■ Improper connector connection ■ Defective indoor terminal board

Trouble-shooting



Note: ■ Between terminal board and indoor control PCB.

5.1.3 Freeze-up Protection Control or High Pressure Control

Remote Controller Display

A5

Method of Malfunction Detection

- High pressure control (heat pump model only)
  During heating operations, the temperature detected by the indoor heat exchanger thermistor is used for the high pressure control (stop, outdoor fan stop, etc.)
- The freeze-up protection control (operation halt) is activated during cooling operation according to the temperature detected by the indoor unit heat exchanger thermistor.

Malfunction Decision Conditions

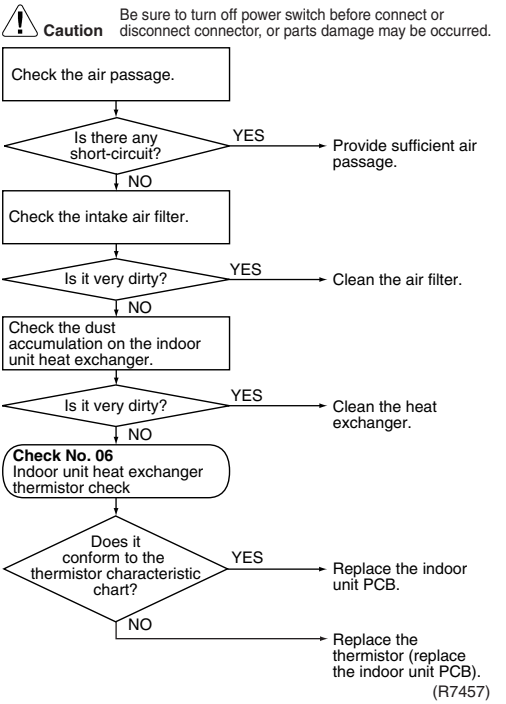
- High pressure control
  During heating operations, the temperature detected by the indoor heat exchanger thermistor is above 65°C
- Freeze-up protection
  When the indoor unit heat exchanger temperature is below 0°C during cooling operation.

Supposed Causes

- Operation halt due to clogged air filter of the indoor unit.
- Operation halt due to dust accumulation on the indoor unit heat exchanger.
- Operation halt due to short-circuit.
- Detection error due to faulty indoor unit heat exchanger thermistor.
- Detection error due to faulty indoor unit PCB.

Trouble-shooting

Check No.06
Refer to P.272



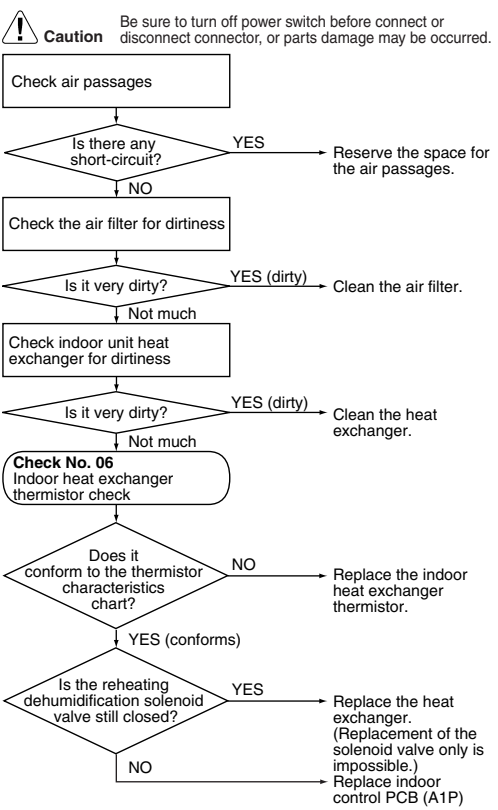
Note: If the outside temperature is below –10°C in the cooling mode, the system may get interrupted with error 85 displayed. The system resets itself, but this stop is recorded in the error history memory.

5.1.4 Peak-cut Control or Freeze-up Protection

Remote Controller Display	A5
Method of Malfunction Detection	■ Peak-cut control (high pressure control) During heating operation, the temperature detected by the indoor heat exchanger thermistor is used for the high pressure control (stop, outdoor fan stop, etc.). ■ Freeze-up protection control (operation halt) is activated during cooling operation according to the temperature detected by the indoor heat exchanger thermistor.
Malfunction Decision Conditions	■ Peak-cut control On heating operation, when indoor heat exchanger temperature is about 65°C or more ■ Freeze-up protection On cooling operation, indoor heat exchanger temperature is 0°C or less
Supposed Causes	■ Halt due to dirty indoor unit filter ■ Halt due to dirty indoor heat exchanger ■ Halt due to short circuit ■ Faulty detection due to defective indoor heat exchanger thermistor ■ Reheating dehumidification solenoid valve remains closed (on cooling operation) ■ Faulty detection due to defective indoor unit PCB

Trouble-shooting

Check No.06
Refer to P.272



(R7458)

5.1.5 Fan Motor (AC Motor) or Related Abnormality

Remote Controller Display

A6

Method of Malfunction Detection

The rotation speed detected by the Hall IC during fan motor operation is used to determine abnormal fan motor operation.

Malfunction Decision Conditions

When the detected rotation speed does not reach the demanded rotation speed of the target tap, and is less than 50% of the maximum fan motor rotation speed.

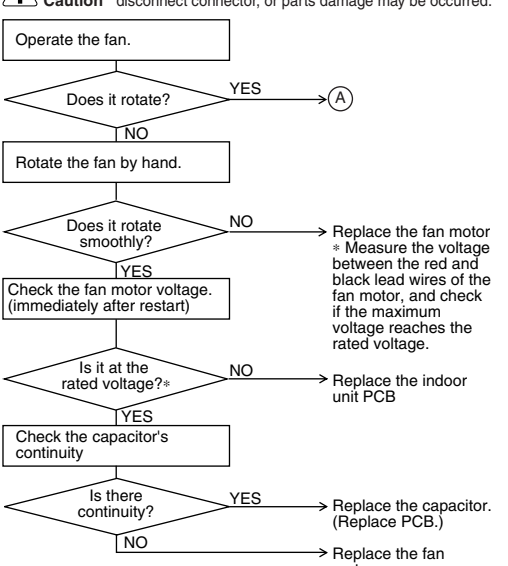
Supposed Causes

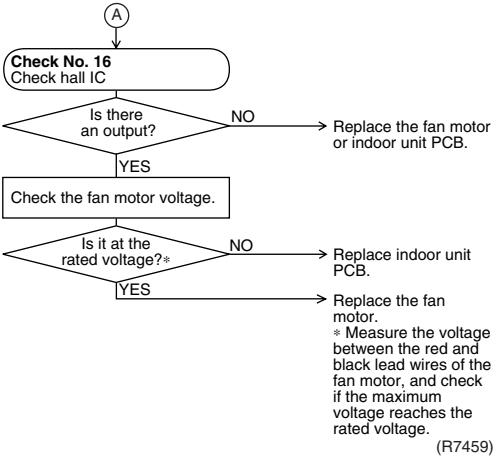
- Operation halt due to short circuit inside the fan motor winding.
- Operation halt due to breaking of wire inside the fan motor.
- Operation halt due to breaking of the fan motor lead wires.
- Operation halt due to faulty capacitor of the fan motor.
- Detection error due to faulty indoor unit PCB.

Trouble-shooting

Check No.16 Refer to P.284

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



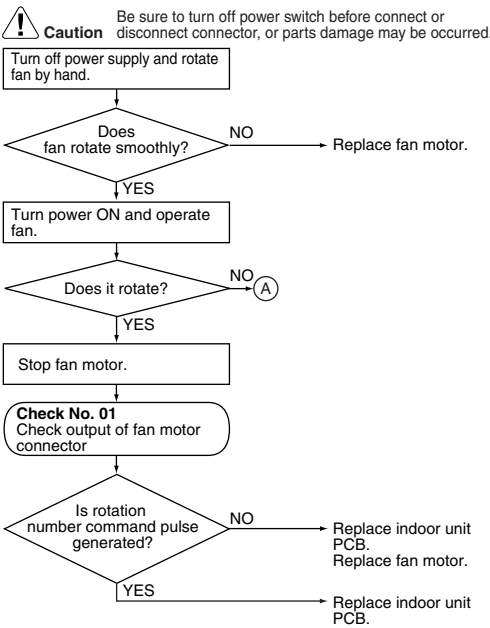

A
Check No. 16
Check hall IC
Is there an output?
NO
Replace the fan motor or indoor unit PCB.
YES
Check the fan motor voltage.
Is it at the rated voltage?*
NO
Replace indoor unit PCB.
YES
Replace the fan motor.
* Measure the voltage between the red and black lead wires of the fan motor, and check if the maximum voltage reaches the rated voltage.
(R7459)

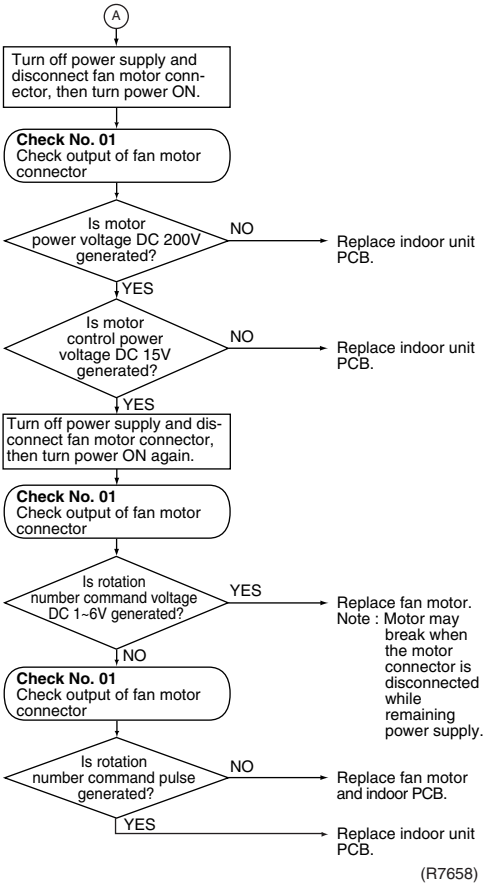
5.1.6 Fan Motor (DC Motor) or Related Abnormality

Remote Controller Display	A6
Method of Malfunction Detection	The rotation speed detected by the Hall IC during fan motor operation is used to determine abnormal fan motor operation.
Malfunction Decision Conditions	When the detected rotation speed does not reach the demanded rotation speed of the target tap, and is less than 50% of the maximum fan motor rotation speed.
Supposed Causes	■ Operation halt due to short circuit inside the fan motor winding. ■ Operation halt due to breaking of wire inside the fan motor. ■ Operation halt due to breaking of the fan motor lead wires. ■ Operation halt due to faulty capacitor of the fan motor. ■ Detection error due to faulty indoor unit PCB.

Trouble-shooting

Check No.01
Refer to P.261




A
Turn off power supply and disconnect fan motor connector, then turn power ON.
Check No. 01
Check output of fan motor connector
Is motor power voltage DC 200V generated?
NO
Replace indoor unit PCB.
YES
Is motor control power voltage DC 15V generated?
NO
Replace indoor unit PCB.
YES
Turn off power supply and disconnect fan motor connector, then turn power ON again.
Check No. 01
Check output of fan motor connector
Is rotation number command voltage DC 1~6V generated?
YES
Replace fan motor.
Note : Motor may break when the motor connector is disconnected while remaining power supply.
NO
Check No. 01
Check output of fan motor connector
Is rotation number command pulse generated?
NO
Replace fan motor and indoor PCB.
YES
Replace indoor unit PCB.

(R7658)

5.1.7 Fan Motor System (DC Motor) Fault

Remote Controller Display

A6

Method of Malfunction Detection

The fan speed detected by the Hall IC during operation of high-pressure fan motor is used to determine abnormal fan operation.

Malfunction Decision Conditions

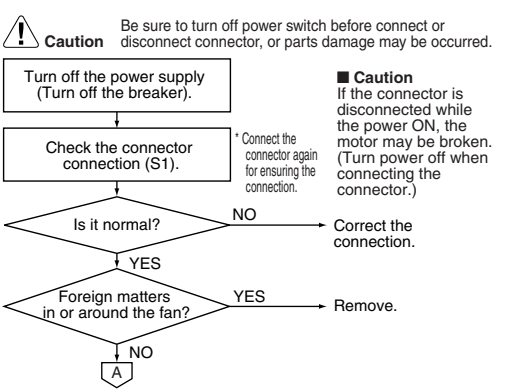
When the detected fan speed is less than 50% of the HH tap under maximum fan motor rpm demanded

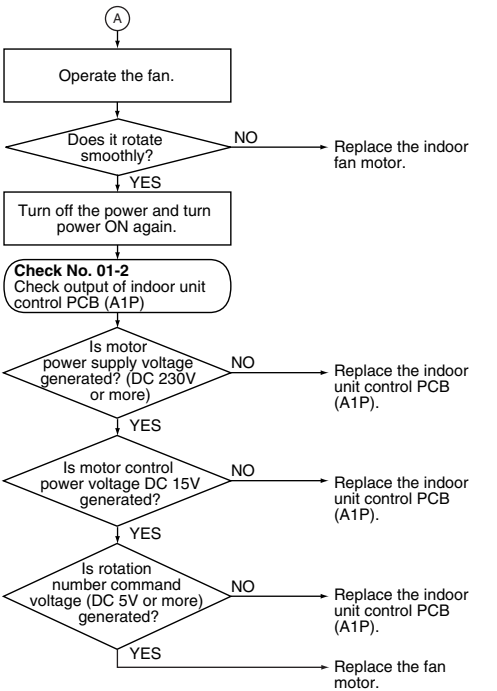
Supposed Causes

- Halt due to rare short circuit inside the fan motor
- Halt due to breakage of wire inside the fan motor
- Halt due to breakage of the lead wire of fan motor
- Faulty detection due to defective indoor control PCB

Trouble-shooting

Check No.01-2
Refer to P.262




A
Operate the fan.
Does it rotate smoothly?
NO
Replace the indoor fan motor.
YES
Turn off the power and turn power ON again.
Check No. 01-2
Check output of indoor unit control PCB (A1P)
Is motor power supply voltage generated? (DC 230V or more)
NO
Replace the indoor unit control PCB (A1P).
YES
Is motor control power voltage DC 15V generated?
NO
Replace the indoor unit control PCB (A1P).
YES
Is rotation number command voltage (DC 5V or more) generated?
NO
Replace the indoor unit control PCB (A1P).
YES
Replace the fan motor.

(R7461)

5.1.8 Streamer Unit Fault

Remote Controller Display

RH

Method of Malfunction Detection

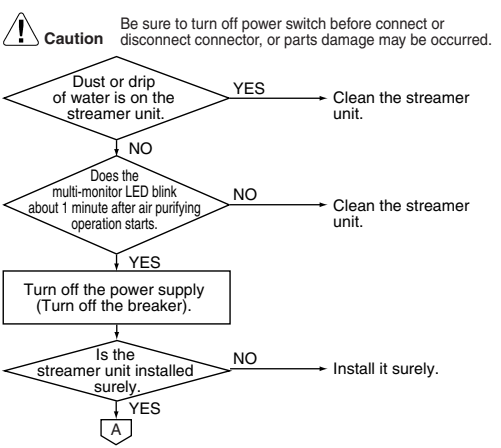
Malfunction Decision Conditions

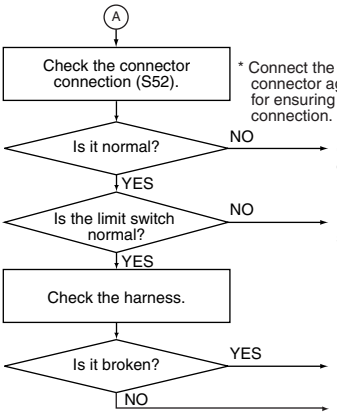
- If the error repeats 3 times in air purifying operation.
- Clearing condition: Continuous run for about 2 minutes (normal).

Supposed Causes

- Short circuit caused by the dust or drip of water on the streamer unit electrode part.
- Scratch or crack in the harness for the streamer unit.
- Faulty streamer unit PCB

Trouble-shooting





Replace the streamer unit PCB (A5P)

■ **Note 1.**
Be careful not to break the electrode in cleaning.

■ **Note 2.**
Since the electrode part is electrified in high voltage, be sure to pull out the power supply plug or turn breaker off in cleaning the electrode part. (Touching in electrifying results in electrical shock.)

(R7462)

5.1.9 Thermistor or Related Abnormality (Indoor Unit)

Remote Controller Display

C4, C9

Method of Malfunction Detection

The temperatures detected by the thermistors are used to determine thermistor errors.

Malfunction Decision Conditions

When the thermistor input is more than 4.96 V or less than 0.04 V during compressor operation*.
* (reference)
When above about 212°C (less than 120 ohms) or below about -50°C (more than 1,860 kohms).

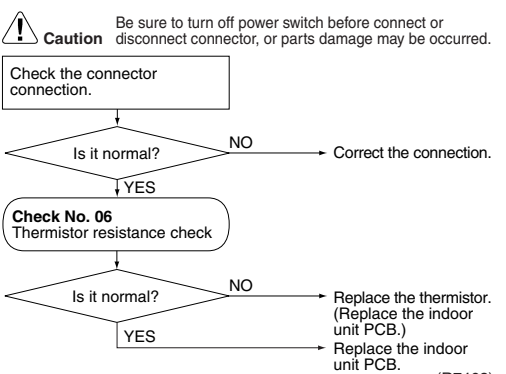
Note: The values vary slightly in some models.

Supposed Causes

- Faulty connector connection
- Faulty thermistor
- Faulty PCB

Trouble-shooting

Check No.06 Refer to P.272



C4 : Heat exchanger temperature thermistor
C9 : Room temperature thermistor

5.1.10 Thermistor System Fault

Remote Controller Display

C4,C9

Method of Malfunction Detection

Thermistor fault is detected based on the temperature determined by each thermistor

Malfunction Decision Conditions

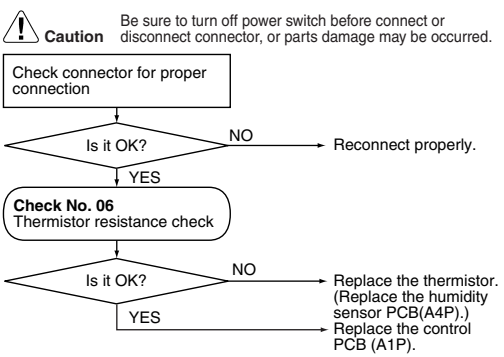
When power is supplied and the input of thermistor is more than 4.96 V, or less than 0.04 V
* (for reference)
In case of 120 Ω (equivalent to 212°C) or less or 1860 kΩ (equivalent to –50°C) or more

Supposed Causes

- Improper connector connection
- Defective thermistor
- Defective PCB for indoor unit control system
- Defective PCB for indoor humidity sensor

Trouble-shooting

Check No.06 Refer to P.272



(R7464)

C4 : Indoor heat exchanger thermistor
C9 : Room temperature thermistor

5.1.11 Shutter Drive Motor / Shutter Limit Switch Abnormality

Remote Controller Display

E7

Method of Malfunction Detection

The shutter open / close performance is detected by the limit switch attached on its structure. In this way, the shutter drive motor and the shutter limit switch are checked for failure.

Malfunction Decision Conditions

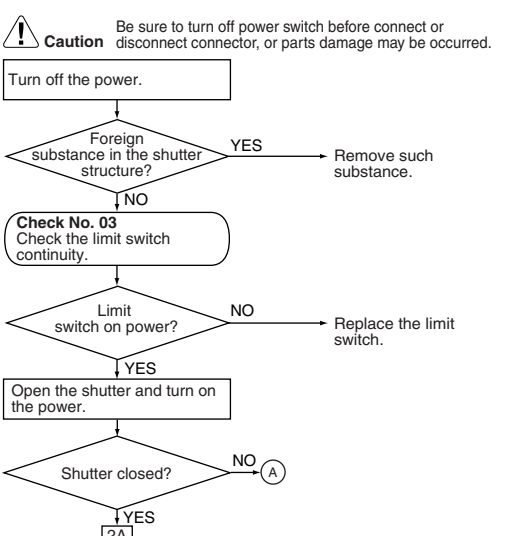
When the shutter is open, the limit switch is closed.

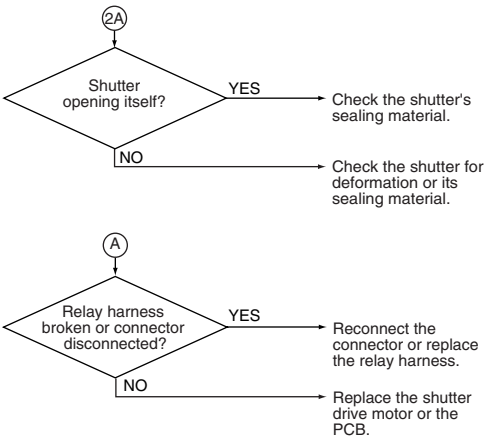
Supposed Causes

- Shutter drive motor defective
- Shutter limit switch defective
- Shutter itself deformed (warped)
- Shutter's sealing material too thick
- Detection error by broken relay harness or disconnected connector
- Detection error due to defective PCB
- Foreign substance in blow port

Trouble-shooting

Check No.03 Refer to P.263




2A
Shutter opening itself?
YES
Check the shutter's sealing material.
NO
Check the shutter for deformation or its sealing material.
A
Relay harness broken or connector disconnected?
YES
Reconnect the connector or replace the relay harness.
NO
Replace the shutter drive motor or the PCB.

(R7466)

5.1.12 Front Panel Open / Close Fault

Remote Controller Display

E7

Method of Malfunction Detection

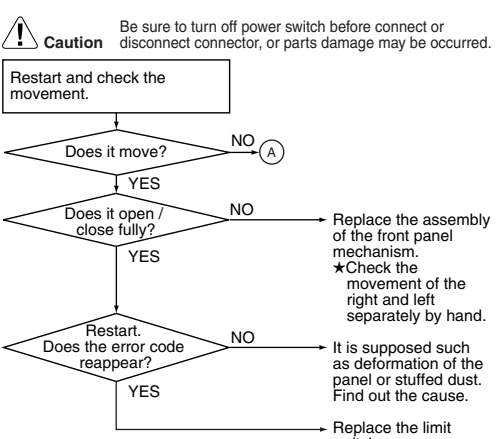
Malfunction Decision Conditions

- The system is shut down when the error occurs twice.

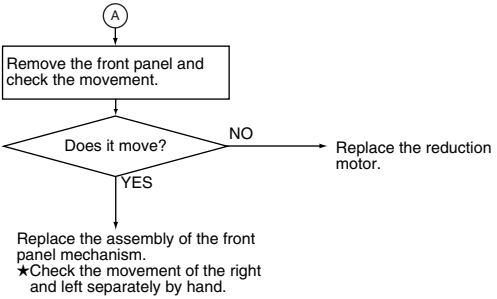
Supposed Causes

- Malfunction of the reduction motor
- Malfunction or deterioration of the front panel mechanism
- Malfunction of the limit switch

Trouble-shooting



(R7467)



Note: You cannot operate the unit by the remote controller when the front panel mechanism breaks down.
<To the dealers: temporary measure before repair>
1. Pull the plug out or turn the breaker off.
2. Remove the decorative plate.
3. Remove the slot-in panel.
4. Put the plug in or turn the breaker on.
   (Wait until the initialization finishes.)
5. Operate the unit by the indoor unit ON/OFF switch.

5.1.13 Humidity Sensor Fault

Remote Controller Display

cc

Method of Malfunction Detection

Sensor fault is detected by input value.

Malfunction Decision Conditions

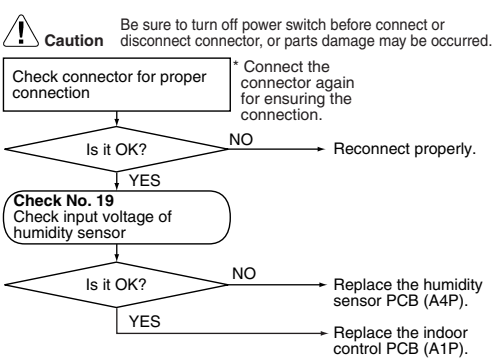
When the input from the temperature sensor is more than 4.96 V, or less than 0.04 V*

Supposed Causes

- Improper connector connection
- Defective indoor control PCB
- Defective humidity sensor PCB

Trouble-shooting

Check No.19 Refer to P.289



(R7465)

cc : Humidity sensor

5.1.14 Signal Transmission Error (between Indoor and Outdoor Units)

Remote Controller Display

U4

Method of Malfunction Detection

The data received from the outdoor unit in indoor unit-outdoor unit signal transmission is checked whether it is normal.

Malfunction Decision Conditions

When the data sent from the outdoor unit cannot be received normally, or when the content of the data is abnormal.

Supposed Causes

- Faulty outdoor unit PCB.
- Faulty indoor unit PCB.
- Indoor unit-outdoor unit signal transmission error due to wiring error.
- Indoor unit-outdoor unit signal transmission error due to disturbed power supply waveform.
- Indoor unit-outdoor unit signal transmission error due to breaking of wire in the connection wires between the indoor and outdoor units (wire No. 3).
- Short circuit inside the fan motor winding.

Trouble-shooting

Check No.10
Refer to P.276

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

Check the indoor unit-outdoor unit connection wires.

Is there any wiring error?
- YES → Correct the indoor unit-outdoor unit connection wires.
- NO ↓

Check the outdoor unit's LED A.

Is LED A flashing?
- NO → Diagnose the outdoor unit.
- YES ↓

Check the voltage of the indoor unit-outdoor unit connection wires between No. 1 and No. 2, and between No. 2 and No. 3.

Is the voltage 0 V?
- YES → Replace the connection wires between the indoor and outdoor units.
- NO ↓

Rotate fan by hand.

Does fan rotate smoothly?
- NO → Replace fan motor and outdoor unit PCB.
- YES ↓

Check No. 10
Check power supply waveform.

Is there any disturbance?
- NO → Replace indoor unit control PCB .
- YES → Locate the cause of the disturbance of the power supply waveform, and correct it.

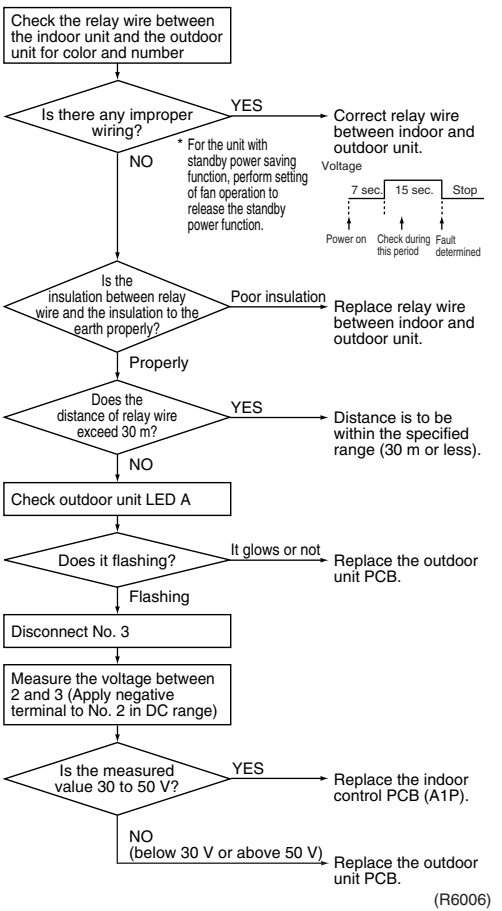
(R7537)

5.1.15 Signal Transmission Error (Indoor Unit - Outdoor Unit)

Remote Controller Display	U4
Method of Malfunction Detection	The data sent from the outdoor unit is checked for problem.
Malfunction Decision Conditions	When the data sent from the outdoor unit can not be received without error, or when the disable status of signal transmission continues for 15 seconds and the same status continuously repeats 3 times.
Supposed Causes	■ Defective outdoor unit PCB ■ Defective indoor unit PCB ■ Signal transmission error between indoor and outdoor unit due to improper wiring ■ Signal transmission error between indoor and outdoor unit due to breakage of relay wire (transmission wire)

Trouble-shooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(R6006)

5.1.16 Unspecified Voltage (between Indoor and Outdoor Units)

Remote Controller Display

U8

Method of Malfunction Detection

The supply power is detected for its requirements (different from separate type and multi type) by the indoor / outdoor transmission signal.

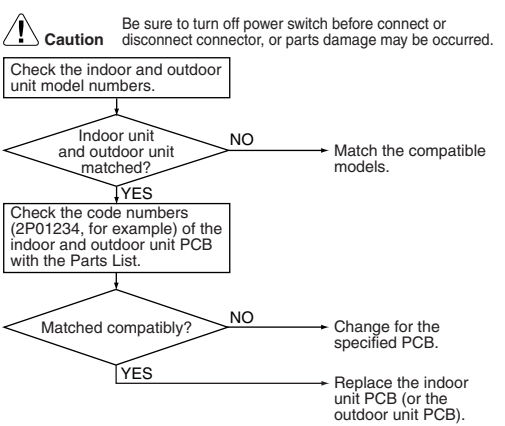
Malfunction Decision Conditions

The pair type and multi type are interconnected.

Supposed Causes

- Wrong models interconnected
- Wrong indoor unit PCB mounted
- Indoor unit PCB defective
- Wrong outdoor unit PCB mounted or defective

Trouble-shooting



(R7540)

5.1.17 Incompatible Power Supply between Indoor Unit and Outdoor Unit

Remote Controller Display

U9

Method of Malfunction Detection

Check the incompatible power supply between indoor unit and outdoor unit by using signal transmission.

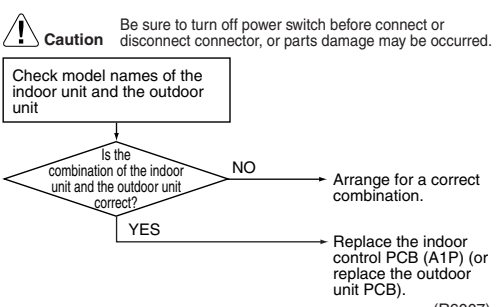
Malfunction Decision Conditions

In case that the indoor intake model is connected to outdoor intake model.

Supposed Causes

- Connected to wrong model
- Mounted improper indoor unit PCB
- Defective indoor unit PCB
- Mounted improper outdoor unit PCB or defective PCB

Trouble-shooting



(R6007)

5.1.18 Incomplete Setting for Hose Length

Remote Controller Display

UA

Method of Malfunction Detection

This fault occurs when the humidification hose length is not stored in the EEPROMs of the indoor unit and the outdoor unit.
(Hose length is not stored at initial power on.)

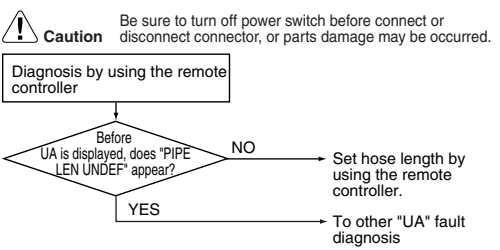
Malfunction Decision Conditions

- When the humidification hose length is not stored in EEPROMs of the indoor unit and the outdoor unit.

Supposed Causes

Hose length is not set.
Hose length is erased by replacement of the indoor unit PCB or the outdoor unit PCB. (When both the indoor unit and the outdoor unit PCBs are replaced simultaneously, the set value is erased.)

Trouble-shooting



(R3418)

5.2 Outdoor Unit

5.2.1 Anti-icing Function

Remote Controller Display

A5

Method of Malfunction Detection

Indoor unit icing, during cooling operation, is detected by checking the temperatures sensed by the indoor unit heat exchanger temperature thermistor and room temperature thermistor that are located in a shut-down room.
At another room (the indoor unit is normal), "U4" is displayed on the remote controller.

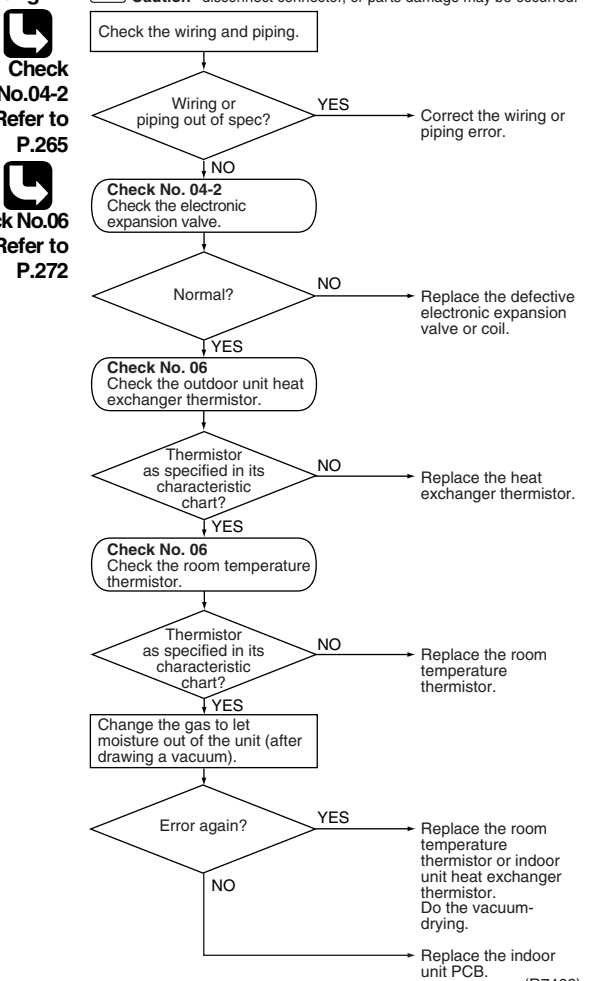
Malfunction Decision Conditions

In the cooling mode, the following conditions (A) and (B) are kept together for 5 minutes.
(A) Indoor unit heat exchanger temperature ≤ –1°C
(B) Indoor unit heat exchanger temperature ≤ Room temperature –10°C
If the anti-icing function is activated 4 times repeatedly, the system is shut down.
(The 4-time counter resets itself if any of the following errors does not occur for 60 minutes.
: OL, radiation fin temperature rise, refrigerant shortage, and compressor lock.)

Supposed Causes

- Wrong wiring or piping
- Electronic expansion valve malfunctioning in each room
- Short-circuit
- Indoor unit heat exchanger temperature thermistor abnormality
- Room temperature thermistor abnormality

Trouble-shooting



Check No.04-2
Refer to P.265

Check No.06
Refer to P.272

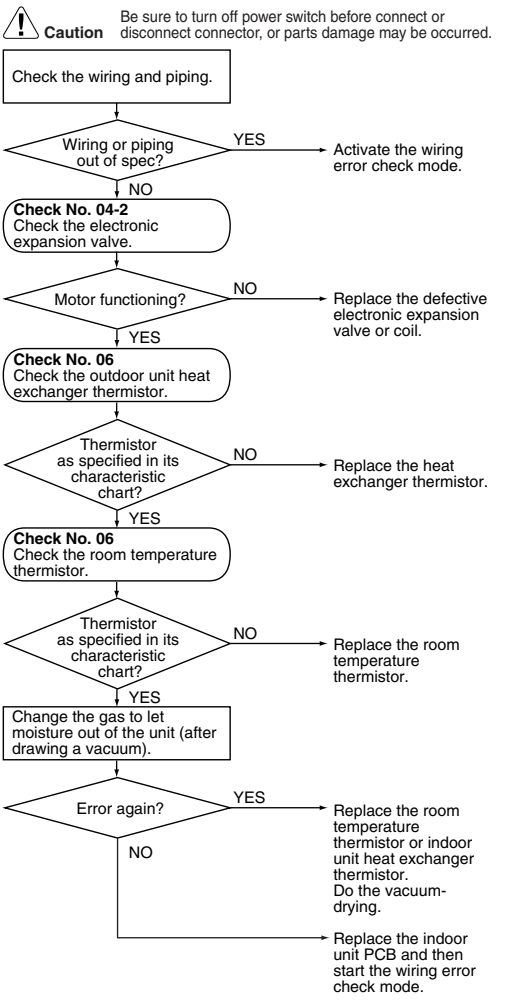
5.2.2 Anti-icing Function

Remote Controller Display	A5
Outdoor Unit LED Display	A ◑ 1 ☼ 2 ● 3 ☼ 4 ☼ 5 ●
Method of Malfunction Detection	Indoor unit icing, during cooling operation, is detected by checking the temperatures sensed by the indoor unit heat exchanger thermistor and room temperature thermistor that are located in a shut-down room.
Malfunction Decision Conditions	In the cooling mode, the following conditions (A) and (B) are kept together for 5 minutes. (A) Indoor unit heat exchanger temperature ≤ –1°C (B) Indoor unit heat exchanger temperature ≤ Room temperature –10°C If the anti-icing function is activated 4 times repeatedly, the system is shut down. (The 4-time counter resets itself if any of the following errors does not occur for 60 minutes: OL, radiation fin temperature rise, refrigerant shortage, and compressor startup.)
Supposed Causes	■ Wrong wiring or piping ■ Electronic expansion valve malfunctioning in each room ■ Short-circuit ■ Indoor unit heat exchanger thermistor defective ■ Room temperature thermistor defective

Trouble-shooting

Check No.04-2 Refer to P.265

Check No.06 Refer to P.272



(R4715)

5.2.3 Peak-cut Control or Freeze-up Protection

Remote Controller Display

A5

Method of Malfunction Detection

- Peak-cut control (high pressure control)
  During heating operation, the temperature detected by the indoor heat exchanger thermistor is used for the high pressure control (stop, outdoor fan stop, etc.).
- Freeze-up protection control (operation halt) is activated during cooling operation according to the temperature detected by the indoor heat exchanger thermistor.

Malfunction Decision Conditions

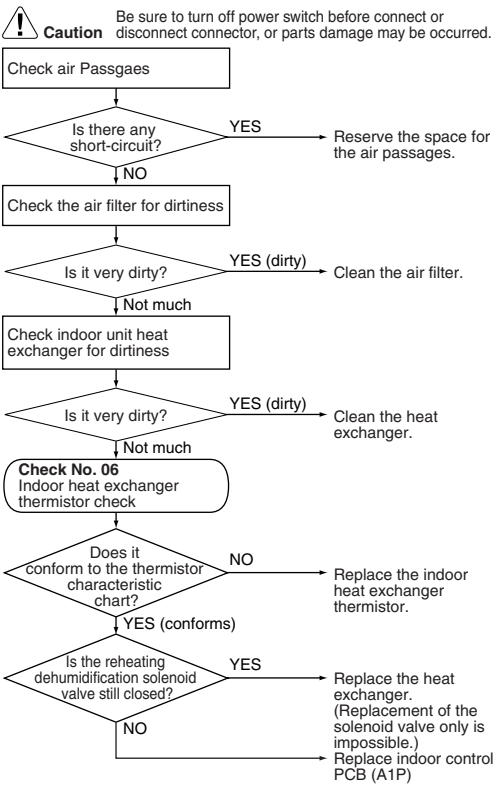
- Peak-cut control
  On heating operation, when indoor heat exchanger temperature is about 65°C or more
- Freeze-up protection
  On cooling operation, indoor heat exchanger temperature is 0°C or less

Supposed Causes

- Halt due to dirty indoor unit filter
- Halt due to dirty indoor heat exchanger
- Halt due to short circuit
- Faulty detection due to defective indoor heat exchanger thermistor
- Reheating dehumidification solenoid valve remains closed (on cooling operation)
- Faulty detection due to defective indoor unit PCB

Trouble-shooting

Check No.06 Refer to P.272



(R7551)

5.2.4 Outdoor Unit PCB Abnormality

Remote Controller Display

E1

Method of Malfunction Detection

- Detect within the program of the microcomputer that the program is in normal running order.

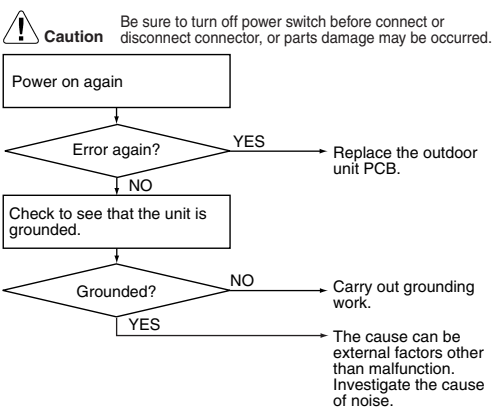
Malfunction Decision Conditions

- When the program of the microcomputer is in abnormal running order.

Supposed Causes

- Out of control of microcomputer caused by external factors
  - Noise
  - Momentary fall of voltage
  - Momentary power loss
- Defective outdoor unit PCB

Trouble-shooting

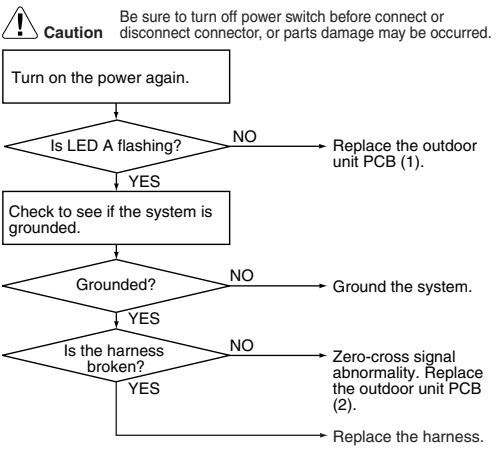


(R5142)

5.2.5 Outdoor Unit PCB Abnormality

Remote Controller Display	E1
Method of Malfunction Detection	■ The system follows the microprocessor program to make sure it runs normally. ■ The system checks to see if the zero-cross signal comes in properly.
Malfunction Decision Conditions	■ The microprocessor program runs out of control. ■ The zero-cross signal is not detected.
Supposed Causes	■ The microcomputer is out of control due to external factors. ◆ Noise ◆ Momentary voltage drop ◆ Momentary power failure, etc. ■ Outdoor unit PCB defective ■ Broken harness between PCBs

Trouble-shooting



5.2.6 Outdoor Unit PCB Abnormality

Remote Controller Display

E1

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ☼ 3 ☼ 4 ● 5 ●

Method of Malfunction Detection

- Detect within the program of the microcomputer that the program is in normal running order.

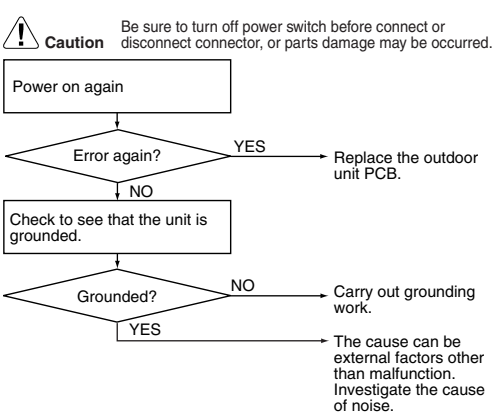
Malfunction Decision Conditions

- When the program of the microcomputer is in abnormal running order.

Supposed Causes

- Out of control of microcomputer caused by external factors
  - Noise
  - Momentary fall of voltage
  - Momentary power loss
- Defective outdoor unit PCB

Trouble-shooting



(R5142)

5.2.7 Outdoor Unit PCB Fault

Remote Controller Display

E1

Outdoor Unit LED Display

A ◑ 5 ◑

Method of Malfunction Detection

- Detect within the program of the microcomputer that the program is in good running order.
- Detect input of zero-cross signal.

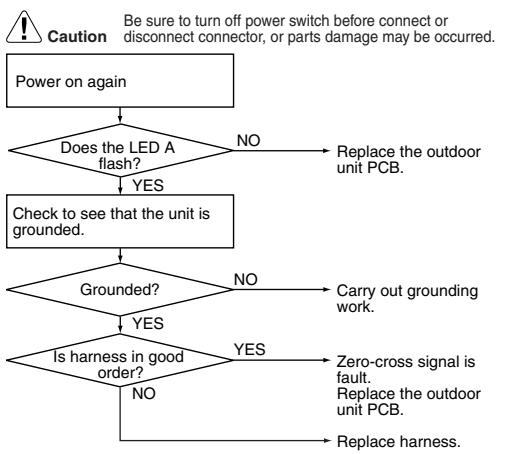
Malfunction Decision Conditions

- When the program of the microcomputer is in bad running order.
- Zero-cross signal can not be detected.

Supposed Causes

- Out of control of microcomputer caused by external factors
  - Noise
  - Momentary fall of voltage
  - Momentary power loss
- Defective outdoor unit PCB
- Breakage of harness between PCBs

Trouble-shooting



5.2.8 OL Activation (Compressor Overload)

Remote Controller Display

E5

Method of Malfunction Detection

A compressor overload is detected through compressor OL.

Malfunction Decision Conditions

- If the compressor OL is activated twice, the system is shut down.
- The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

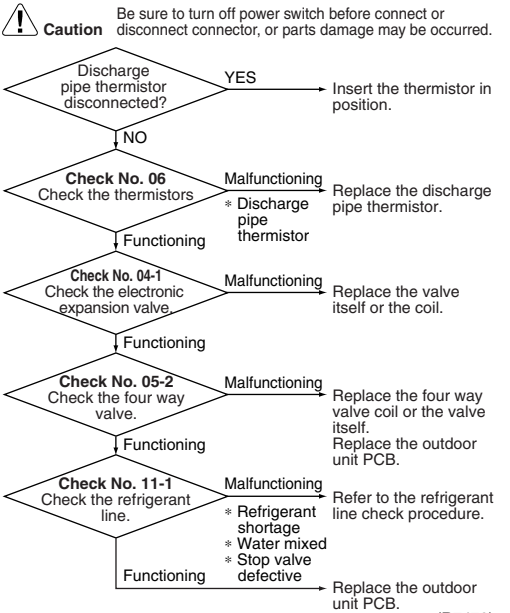
* The operating temperature condition is not specified.

Supposed Causes

- Refrigerant shortage
- Four way valve malfunctioning
- Outdoor unit PCB defective
- Water mixed in the local piping
- Electronic expansion valve defective
- Stop valve defective

Trouble-shooting

Check No.04-1 Refer to P.264
Check No.05-2 Refer to P.269
Check No.06 Refer to P.272
Check No.11-1 Refer to P.276



(R7470)

5.2.9 OL Activation (Compressor Overload)

Remote Controller Display

E5

Method of Malfunction Detection

A compressor overload is detected through compressor OL.

Malfunction Decision Conditions

- If the compressor OL is activated twice, the system is shut down.
- The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

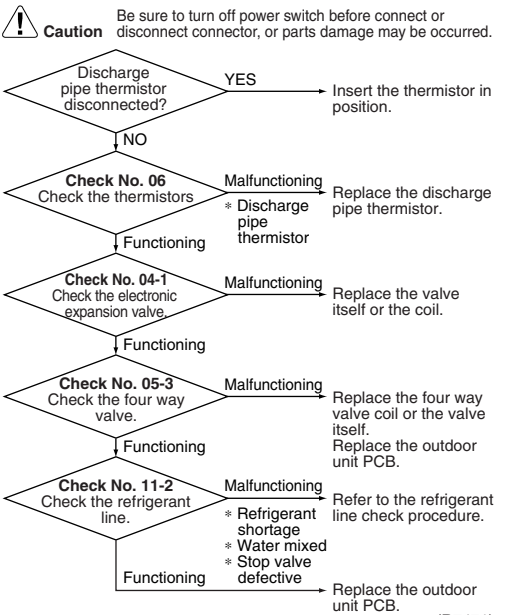
* The operating temperature condition is not specified.

Supposed Causes

- Refrigerant shortage
- Four way valve malfunctioning
- Outdoor unit PCB defective
- Water mixed in the local piping
- Electronic expansion valve defective
- Stop valve defective

Trouble-shooting

Check No.04-1 Refer to P.264
Check No.05-3 Refer to P.270
Check No.06 Refer to P.272
Check No.11-2 Refer to P.277



5.2.10 OL Activation (Compressor Overload)

Remote Controller Display	E5
Outdoor Unit LED Display	A ◑ 1 ☼ 2 ● 3 ☼ 4 ● 5 ●
Method of Malfunction Detection	A compressor overload is detected through compressor OL.
Malfunction Decision Conditions	■ If the compressor OL is activated twice, the system is shut down. ■ The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time). * The operating temperature condition is not specified.
Supposed Causes	■ Refrigerant shortage ■ Four way valve malfunctioning ■ Outdoor unit PCB defective ■ Water mixed in the local piping ■ Electronic expansion valve defective ■ Stop valve defective

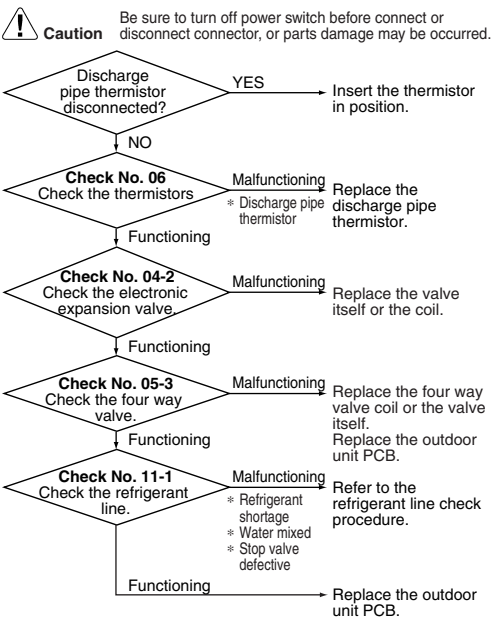
Trouble-shooting

Check No.04-2 Refer to P.265

Check No.05-3 Refer to P.269

Check No.06 Refer to P.272

Check No.11-1 Refer to P.276



(R7659)

5.2.11 OL Activation (Compressor Overload)

Remote Controller Display	E5
Method of Malfunction Detection	A compressor overload is detected through compressor OL.
Malfunction Decision Conditions	■ If the compressor OL is activated twice, the system is shut down. ■ The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time). * The operating temperature condition is not specified.
Supposed Causes	■ Refrigerant shortage ■ Four way valve malfunctioning ■ Outdoor unit PCB defective ■ Water mixed in the local piping ■ Electronic expansion valve defective ■ Stop valve defective

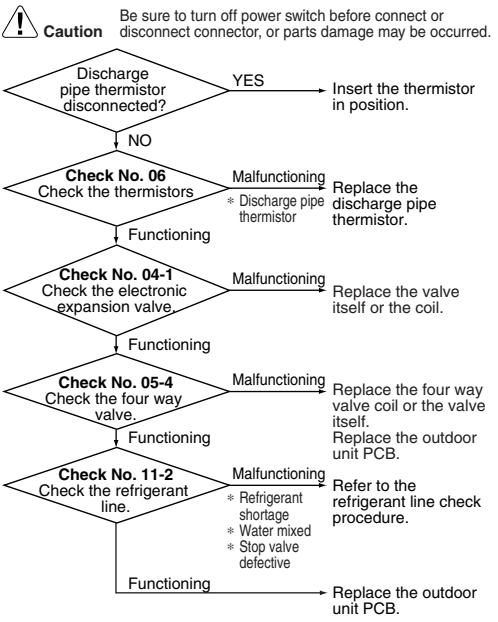
Trouble-shooting

Check No.04-1 Refer to P.264

Check No.05-4 Refer to P.271

Check No.06 Refer to P.272

Check No.11-2 Refer to P.277



(R7660)

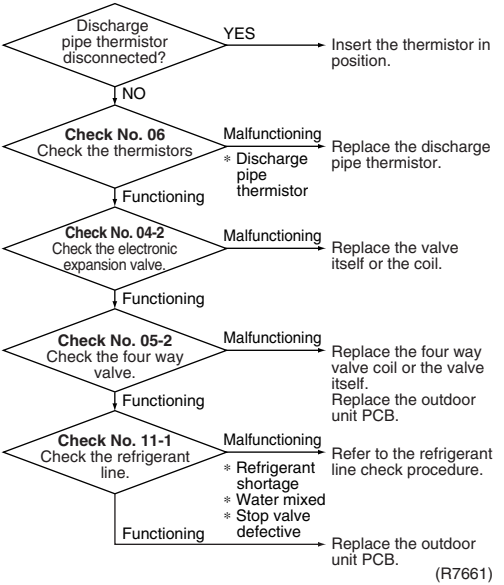
5.2.12 OL Activation (Compressor Overload)

Remote Controller Display	E5
Outdoor Unit LED Display	A ◑ 1 ☼ 2 ● 3 ☼ 4 ●
Method of Malfunction Detection	A compressor overload is detected through compressor OL.
Malfunction Decision Conditions	■ If the compressor OL is activated twice, the system is shut down. ■ The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time). * The operating temperature condition is not specified.
Supposed Causes	■ Refrigerant shortage ■ Four way valve malfunctioning ■ Outdoor unit PCB defective ■ Water mixed in the local piping ■ Electronic expansion valve defective ■ Shut-off valve defective

Trouble-shooting

Check No.04-2 Refer to P.265
Check No.05-2 Refer to P.269
Check No.06 Refer to P.272
Check No.11-1 Refer to P.276

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(R7661)

5.2.13 Compressor Lock

Remote Controller Display

E6

Method of Malfunction Detection

A compressor lock is detected by checking the compressor running condition through the position detection circuit.

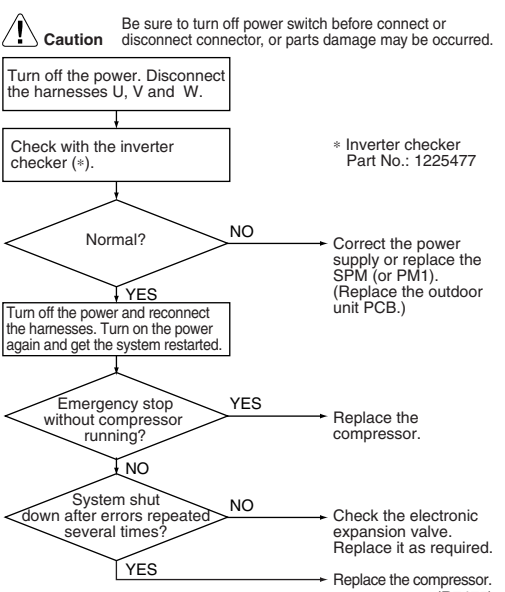
Malfunction Decision Conditions

- The system judges the compressor lock, and stops due to overcurrent.
- The system judges the compressor lock, and cannot operation with position detection within 15 seconds after start up.
- The system is shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 5~11 minutes (normal)

Supposed Causes

- Compressor locked
- Compressor harness disconnected

Trouble-shooting



Note: If the model does not have SPM (or PM1), replace the outdoor unit PCB.

5.2.14 Compressor Lock

Remote Controller Display

E6

Method of Malfunction Detection

A compressor lock is detected by checking the compressor running condition through the position detection circuit.

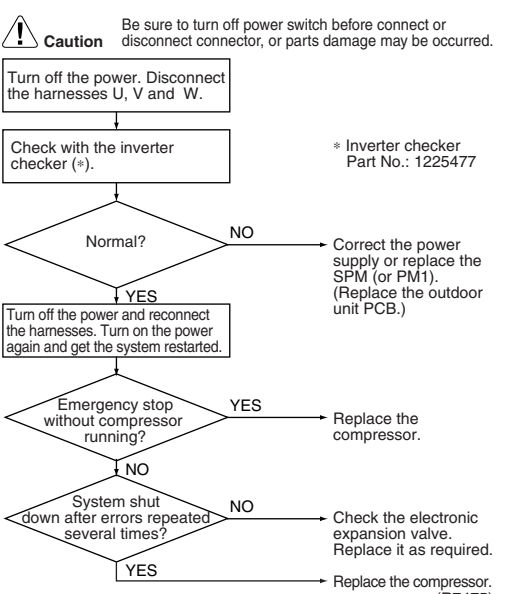
Malfunction Decision Conditions

- The position detection circuit detects a compressor frequency of below 5~10 Hz for several tens of seconds.
- The system is shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 5 minutes (normal)

Supposed Causes

- Compressor locked

Trouble-shooting

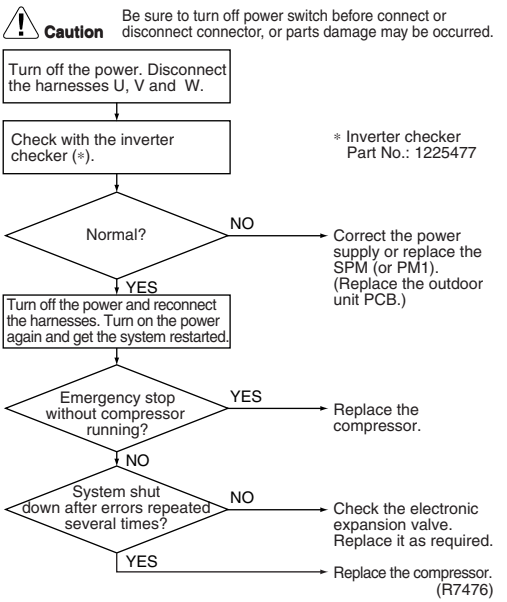


Note: If the model does not have SPM (or PM1), replace the outdoor unit PCB.

5.2.15 Compressor Lock

Remote Controller Display	E6
Outdoor Unit LED Display	A ◑ 1 ● 2 ☼ 3 ☼ 4 ● 5 ●
Method of Malfunction Detection	A compressor lock is detected by checking the compressor running condition through the position detection circuit.
Malfunction Decision Conditions	■ Judging from current waveform generated when high-frequency voltage is applied to the compressor. ■ The system is shut down if the error occurs 16 times. ■ Clearing condition: Continuous run for about 5 minutes (normal)
Supposed Causes	■ Compressor locked

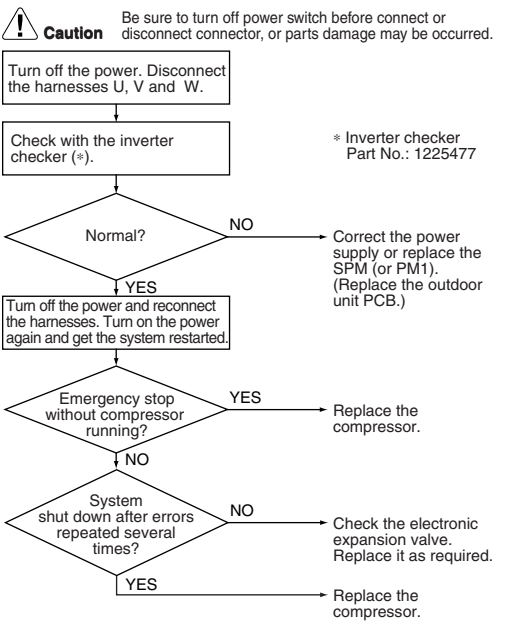
Trouble-shooting



5.2.16 Compressor Lock

Remote Controller Display	E6
Outdoor Unit LED Display	A ◑ 1 ● 2 ☼ 3 ☼ 4 ●
Method of Malfunction Detection	A compressor lock is detected by checking the compressor running condition through the position detection circuit.
Malfunction Decision Conditions	■ The position detection circuit detects a compressor frequency of below 10 Hz for 20 seconds or a frequency of above 160 Hz. ■ 40 seconds after the compressor has started, the position detection circuit detects a compressor frequency of above 180 Hz. ■ The system is shut down if the error occurs 16 times. ■ Clearing condition: Continuous run for about 5 minutes (normal)
Supposed Causes	■ Compressor locked

Trouble-shooting



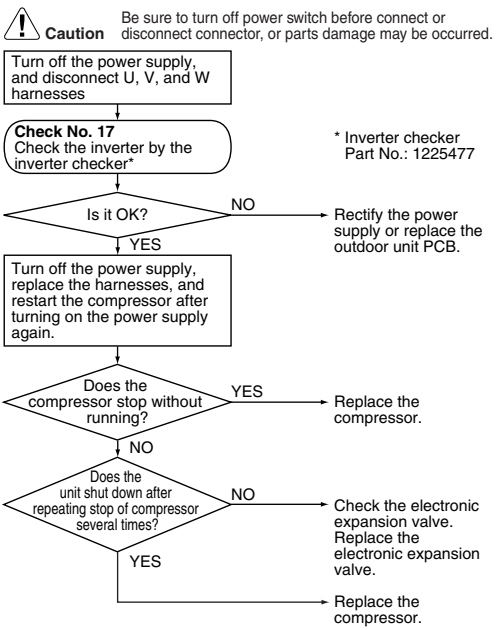
(R7478)

5.2.17 Compressor Lock

Remote Controller Display	E6
Outdoor Unit LED Display	A ◑ 5 ◑ (-)
Method of Malfunction Detection	Judging from current waveform generated when high-frequency voltage is applied to the compressor.
Malfunction Decision Conditions	■ The unit is shut down when the fault count reaches 16 times. ■ Clear condition: Continuous operation for 11 minutes (without fault)
Supposed Causes	■ Compressor lock ■ Disconnection of compressor harness

Trouble-shooting

Check No.17 Refer to P.285



(R7479)

5.2.18 DC Fan Lock

Remote Controller Display

E7

Method of Malfunction Detection

A fan motor or related error is detected by checking the high-voltage fan motor rpm being detected by the Hall IC.

Malfunction Decision Conditions

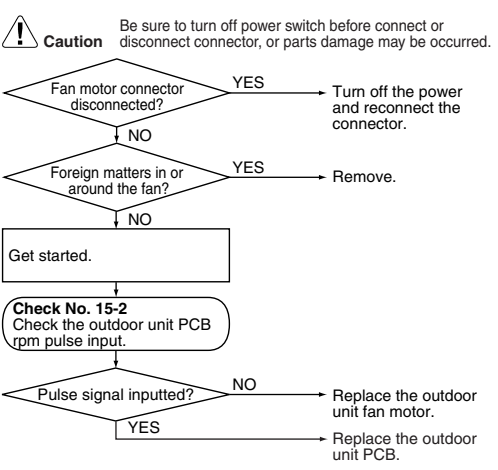
- The fan does not start in 30~60 seconds even when the fan motor is running.
- The system is shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 5~11 minutes (normal)

Supposed Causes

- Fan motor breakdown
- Harness or connector disconnected between fan motor and PCB or in poor contact
- Foreign matters stuck in the fan

Trouble-shooting

Check No.15-2 Refer to P.282



(R7480)

5.2.19 DC Fan Lock

Remote Controller Display

E7

Method of Malfunction Detection

A fan motor or related error is detected by checking the high-voltage fan motor rpm being detected by the Hall IC.

Malfunction Decision Conditions

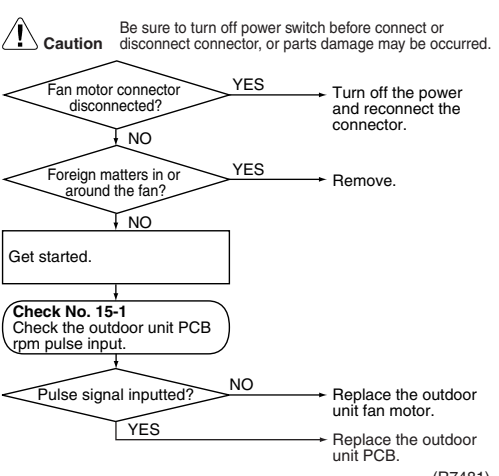
- The fan does not start in 30~60 seconds even when the fan motor is running.
- The system is shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 5 ~ 11 minutes (normal)

Supposed Causes

- Fan motor breakdown
- Harness or connector disconnected between fan motor and PCB or in poor contact
- Foreign matters stuck in the fan

Trouble-shooting

Check No.15-1 Refer to P.281



(R7481)

5.2.20 DC Fan Lock

Remote Controller Display

E7

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ☼ 3 ☼ 4 ☼ 5 ●

Method of Malfunction Detection

A fan motor line error is detected by checking the high-voltage fan motor rpm being detected by the Hall IC.

Malfunction Decision Conditions

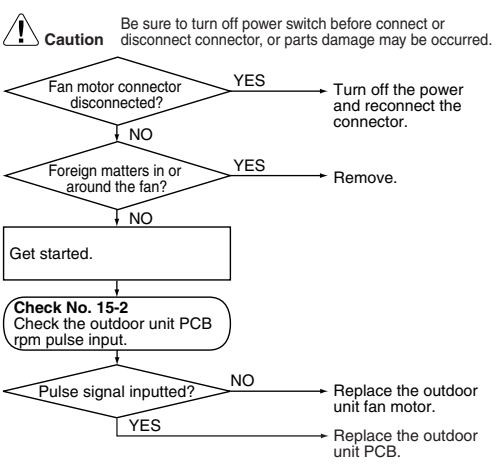
- The fan does not start in 30 seconds even when the fan motor is running.
- The system is shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 5 minutes (normal)

Supposed Causes

- Fan motor breakdown
- Harness or connector disconnected between fan motor and PCB or in poor contact
- Foreign matters stuck in the fan

Trouble-shooting

Check No.15-2
Refer to P.282



(R7482)

5.2.21 DC Fan Lock

Remote Controller Display

E7

Outdoor Unit LED Display

A ◑ 5 ◑ (-)

Method of Malfunction Detection

Identify the fan motor system fault based on fan speed detected by Hall IC during high pressure fan motor running.

Malfunction Decision Conditions

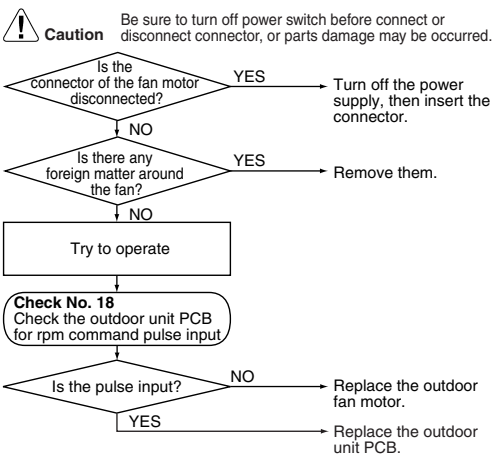
- When the fan motor is running, the fan does not rotate for 60 seconds or more.
- Shut down when the error repeats 16 times
- Clear condition: The fan repeatedly rotates for 11 minutes. (without fault)

Supposed Causes

- Failure in fan motor
- Disconnection or improper connection of harness/ connector between fan motor and PCB
- The fan does not rotate because it gets caught in foreign matter

Trouble-shooting

Check No.18 Refer to P.287



(R7483)

5.2.22 Input Overcurrent Detection

Remote Controller Display

E8

Method of Malfunction Detection

An input overcurrent is detected by checking the input current value being detected by CT with the compressor running.

Malfunction Decision Conditions

- The following current with the compressor running continues for 2.5 seconds.
  Cooling / Heating: Above 9.25A~13A

Supposed Causes

- Overcurrent due to compressor failure
- Overcurrent due to defective power transistor
- Overcurrent due to defective outdoor unit PCB
- Error detection due to outdoor unit PCB
- Overcurrent due to short-circuit

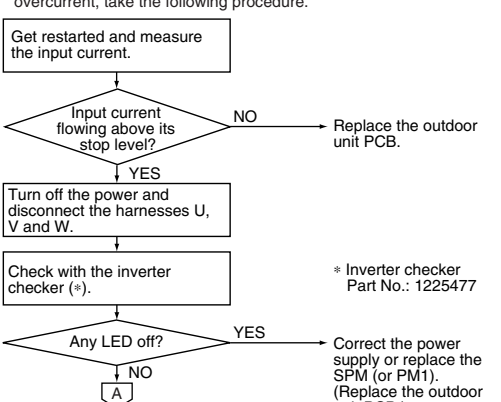
Trouble-shooting

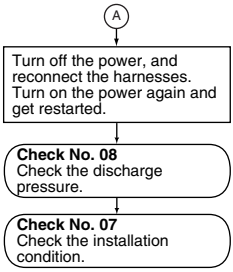
Check No.07 Refer to P.273

Check No.08 Refer to P.274

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

* An input overcurrent may result from wrong internal wiring. If the wires have been disconnected and reconnected for part replacement, for example, and the system is interrupted by an input overcurrent, take the following procedure.




A
Turn off the power, and reconnect the harnesses. Turn on the power again and get restarted.
Check No. 08
Check the discharge pressure.
Check No. 07
Check the installation condition.

(R7484)

5.2.23 Input Overcurrent Detection

Remote Controller Display	E8
Method of Malfunction Detection	An input overcurrent is detected by checking the input current value being detected by CT with the compressor running.
Malfunction Decision Conditions	■ The following CT input with the compressor running continues for 2.5 seconds. CT input : Above 20 A ■ The system is shut down if the error occurs 16 times. ■ Clearing condition : Continuous run for about 5 minutes (normal)
Supposed Causes	■ Overcurrent due to compressor failure ■ Overcurrent due to defective power transistor ■ Overcurrent due to defective inverter main circuit electrolytic capacitor ■ Overcurrent due to defective outdoor unit PCB ■ Error detection due to outdoor unit PCB ■ Overcurrent due to short-circuit

Trouble-shooting

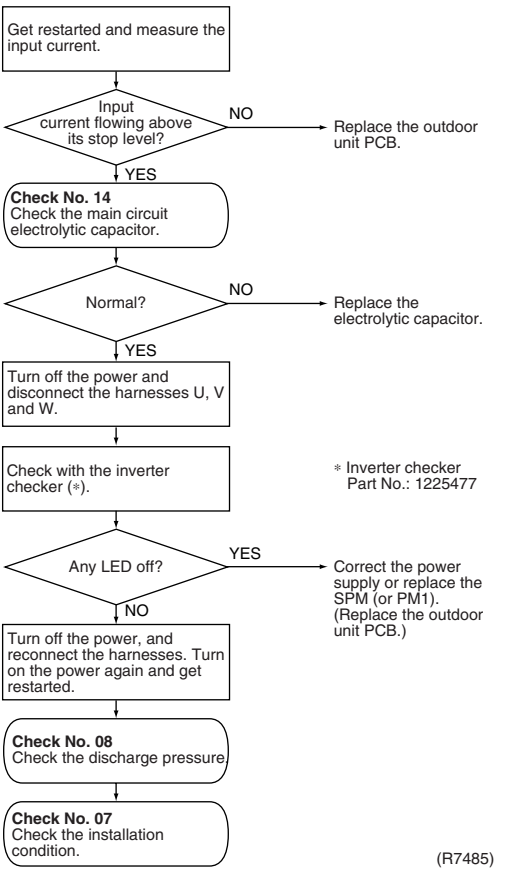
Check No.07
Refer to P.273

Check No.08
Refer to P.274

Check No.14
Refer to P.280

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

* An input overcurrent may result from wrong internal wiring. If the wires have been disconnected and reconnected for part replacement, for example, and the system is interrupted by an input overcurrent, take the following procedure.



(R7485)

5.2.24 Input Overcurrent Detection

Remote Controller Display	E8
Method of Malfunction Detection	An input overcurrent is detected by checking the power consumption value of outdoor unit with the compressor running.
Malfunction Decision Conditions	■ The following input value (calculated from power consumption of outdoor unit) with the compressor running continues for 2.5 seconds. Input value : Above 15 A
Supposed Causes	■ Overcurrent due to compressor failure ■ Overcurrent due to defective power transistor ■ Overcurrent due to defective inverter main circuit electrolytic capacitor ■ Overcurrent due to defective outdoor unit PCB ■ Error detection due to outdoor unit PCB ■ Overcurrent due to short-circuit

Trouble-shooting

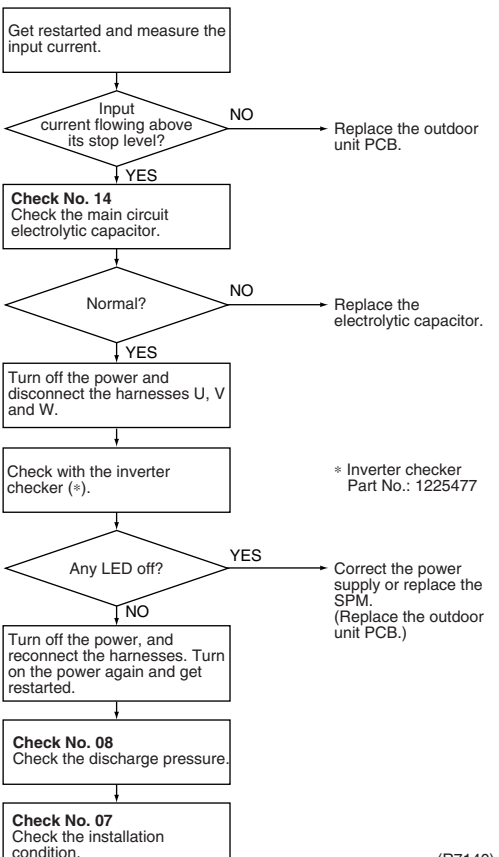
Check No.07 **Refer to P.273**

Check No.08 **Refer to P.274**

Check No.14 **Refer to P.280**

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

* An input overcurrent may result from wrong internal wiring. If the wires have been disconnected and reconnected for part replacement, for example, and the system is interrupted by an input overcurrent, check the wires again.



(R7140)

Note: If the model does not have SPM, replace the outdoor unit PCB.

5.2.25 Input Overcurrent Detection

Remote Controller Display	E8
Method of Malfunction Detection	An input overcurrent is detected by checking the input current value being detected by CT with the compressor running.
Malfunction Decision Conditions	■ The following CT input with the compressor running continues for 2.5 seconds. CT input: Above 11 A ■ The system is shut down if the error occurs 16 times. ■ Clearing condition : Continuous run for about 5 minutes (normal)
Supposed Causes	■ Overcurrent due to compressor failure ■ Overcurrent due to defective power transistor ■ Overcurrent due to defective inverter main circuit electrolytic capacitor ■ Overcurrent due to defective outdoor unit PCB ■ Error detection due to outdoor unit PCB ■ Overcurrent due to short-circuit

Trouble-shooting

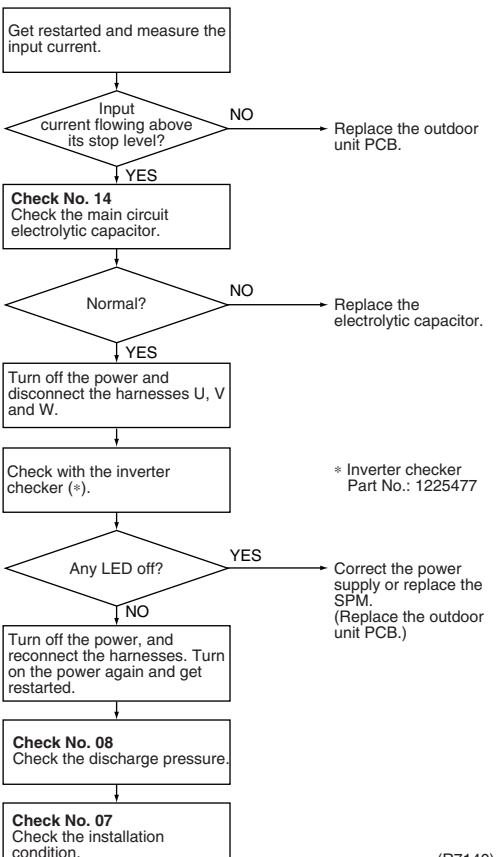
Check No.07 Refer to P.273

Check No.08 Refer to P.274

Check No.14 Refer to P.280

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

* An input overcurrent may result from wrong internal wiring. If the wires have been disconnected and reconnected for part replacement, for example, and the system is interrupted by an input overcurrent, check the wires again.



(R7140)

Note: If the model does not have SPM, replace the outdoor unit PCB.

5.2.26 Input Overcurrent Detection

Remote Controller Display	E8
Outdoor Unit LED Display	A ◑ 1 ● 2 ☼ 3 ● 4 ☼
Method of Malfunction Detection	An input overcurrent is detected by checking the input current value being detected by CT with the compressor running.
Malfunction Decision Conditions	■ The following CT input with the compressor running continues for 2.5 seconds. CT input : Above 20 A ■ The system is shut down if the error occurs 16 times. ■ Clearing condition : Continuous run for about 5 minutes (normal)
Supposed Causes	■ Overcurrent due to compressor failure ■ Overcurrent due to defective power transistor ■ Overcurrent due to defective inverter main circuit electrolytic capacitor ■ Overcurrent due to defective outdoor unit PCB ■ Error detection due to outdoor unit PCB ■ Overcurrent due to short-circuit

Trouble-shooting

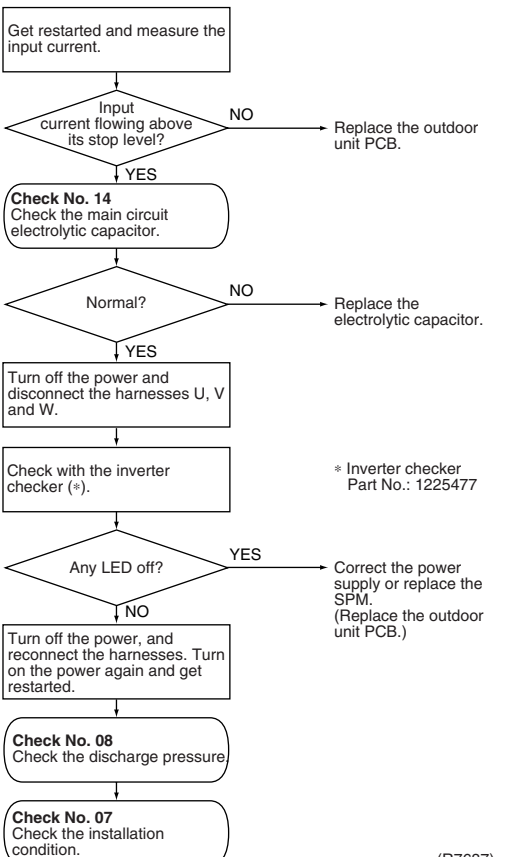
Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

* An input overcurrent may result from wrong internal wiring. If the wires have been disconnected and reconnected for part replacement, for example, and the system is interrupted by an input overcurrent, take the following procedure.

Check No.07 **Refer to P.273**

Check No.08 **Refer to P.274**

Check No.14 **Refer to P.280**



(R7687)

5.2.27 Input Overcurrent Detection

Remote Controller Display	E8
Outdoor Unit LED Display	A ◑ 1 ● 2 ☼ 3 ● 4 ☼ 5 ●
Method of Malfunction Detection	Malfunction is detected by checking the input current value.
Malfunction Decision Conditions	■ The following condition continues for 2.5 seconds. Input current ≥ 11~20A (typical value) ■ The compressor halts if the error occurs, and restarts automatically after 3-minute standby.
Supposed Causes	■ Overcurrent due to compressor failure ■ Overcurrent due to defective power transistor ■ Overcurrent due to defective inverter main circuit electrolytic capacitor ■ Overcurrent due to defective outdoor unit PCB ■ Error detection due to outdoor unit PCB ■ Overcurrent due to short-circuit

Trouble-shooting

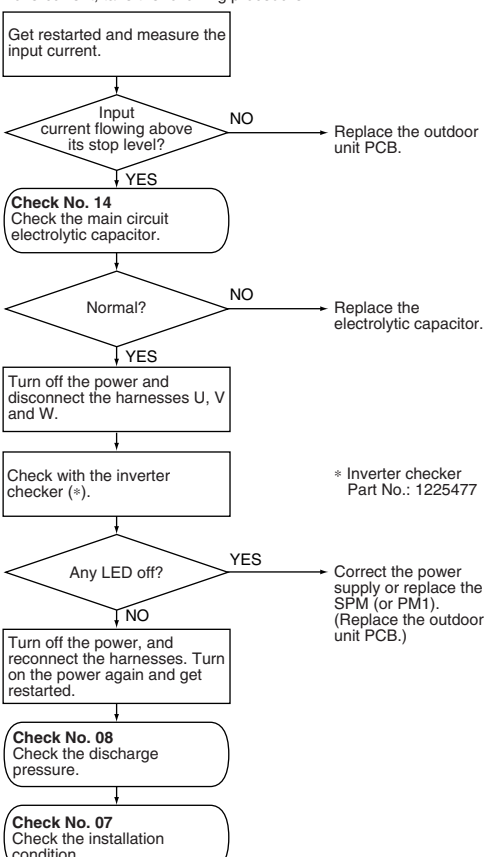
Check No.07 Refer to P.273

Check No.08 Refer to P.274

Check No.14 Refer to P.280

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

* An input overcurrent may result from wrong internal wiring. If the wires have been disconnected and reconnected for part replacement, for example, and the system is interrupted by an input overcurrent, take the following procedure.



(R7487)

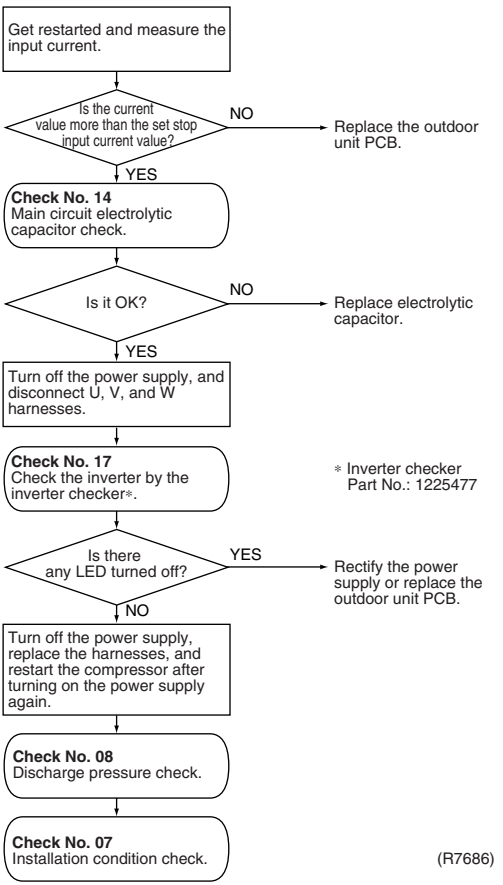
5.2.28 Input Overcurrent Detection

Remote Controller Display	E8
Outdoor Unit LED Display	A ◑ 5 ◑ (-)
Method of Malfunction Detection	Detect an input overcurrent by checking the inverter power consumption or the input current detected by CT with the compressor running.
Malfunction Decision Conditions	■ When 14 A or more of inverter power consumption or CT input continues for 5 seconds. ■ The compressor stops if the error occurs, and restarts automatically after 3-minute standby.
Supposed Causes	■ Overcurrent due to defective compressor ■ Overcurrent due to defective power transistor ■ Overcurrent due to defective electrolytic capacitor of inverter main circuit ■ Overcurrent due to defective outdoor unit PCB ■ Detection error due to defective outdoor unit PCB ■ Overcurrent due to short circuit

Trouble-shooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

* Input overcurrent may be caused by improper wiring inside the unit. If the machine stops due to input overcurrent after connecting or disconnecting wires to replace part, check wiring for proper connection.



(R7686)

Check No.07 Refer to P.273
Check No.14 Refer to P.280
Check No.17 Refer to P.285
Check No.08 Refer to P.274

5.2.29 Four Way Valve Abnormality

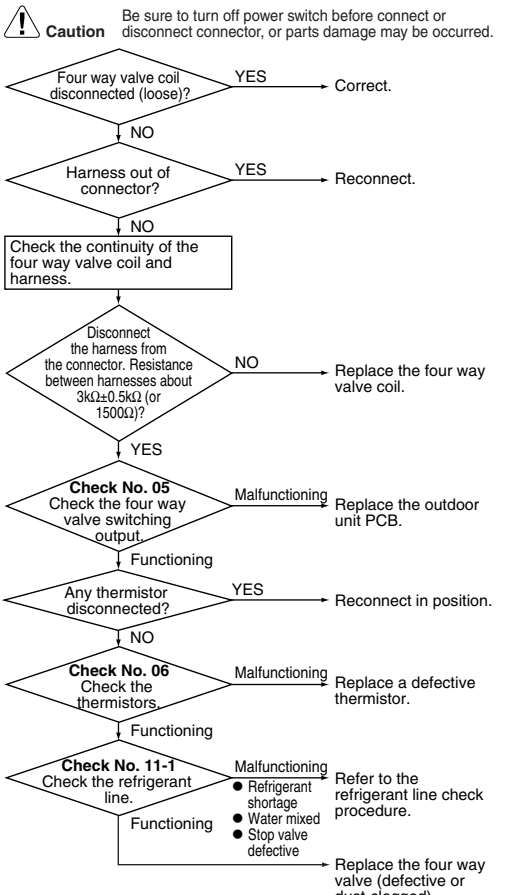
Remote Controller Display	E8
Method of Malfunction Detection	The liquid pipe temperature thermistor, the outdoor air temperature thermistor and the outdoor unit heat exchanger thermistor are checked to see if they function within their normal ranges in the operating mode.
Malfunction Decision Conditions	A following condition continues over 10 minutes after operating 5 minutes. ■ Cooling / dry operation (room temp. – indoor heat exchanger temp.) < –5~–10°C ■ Heating (indoor unit heat exchanger temp. – room temp.) < –5~–10°C
Supposed Causes	■ Connector in poor contact ■ Thermistor defective ■ Outdoor unit PCB defective ■ Four way valve coil or harness defective ■ Four way valve defective ■ Foreign substance mixed in refrigerant ■ Refrigerant shortage

Trouble-shooting

Check No.05-1 Refer to P.268

Check No.06 Refer to P.272

Check No.11-1 Refer to P.276



(R7685)

5.2.30 Four Way Valve Abnormality

Remote Controller Display

E8

Outdoor Unit LED Display

A ◑ 5 ◑ (-)

Method of Malfunction Detection

The room temperature thermistor, the indoor heat exchanger thermistor, the outdoor air thermistor, and the outdoor heat exchanger thermistor are checked to see if they function within their normal ranges in the operating mode.

Malfunction Decision Conditions

- When one of the follow condition continues for 10 minutes the compressor stops, and restarts automatically after 3 minutes standby.

Cooling / drying

(Room temperature – temperature of indoor heat exchanger) < – 5°C

Heating

(Temperature of indoor heat exchanger – room temperature) < – 5°C

- Shut down when the error repeats twice
- Clear condition : Continuous operation for 60 minutes.

Supposed Causes

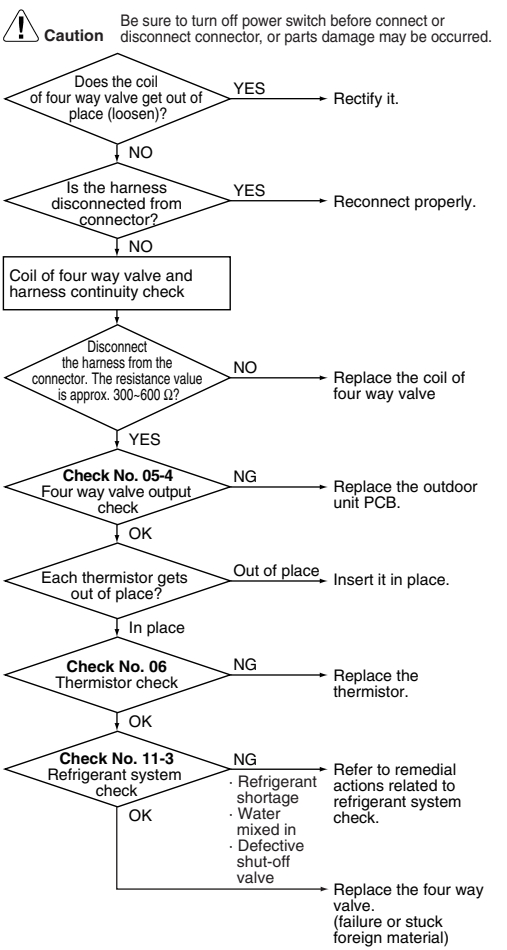
- Improper connector connection
- Defective thermistor
- Defective outdoor unit PCB
- Defective coil or harness of four way valve
- Defective four way valve
- Refrigerant shortage
- Foreign substance mixed in refrigerant

Trouble-shooting

Check No.05-4 **Refer to P.271**

Check No.06 **Refer to P.272**

Check No.11-3 **Refer to P.277**



5.2.31 Four Way Valve Abnormality

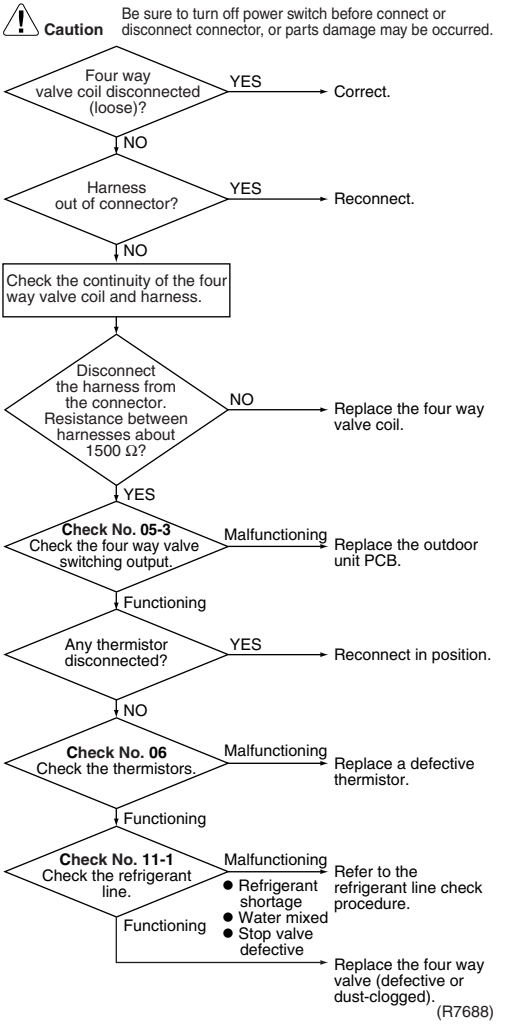
Remote Controller Display	E8
Method of Malfunction Detection	The room temperature thermistor, the indoor unit heat exchanger thermistor, the outdoor temperature thermistor and the outdoor unit heat exchanger thermistor are checked to see if they function within their normal ranges in the operating mode.
Malfunction Decision Conditions	A following condition continues over 1 minute after operating 10 minutes. ■ Cooling / dry operation (room temp. – indoor heat exchanger temp.) < –10°C ~ –5°C ■ Heating (indoor unit heat exchanger temp. – room temp.) < –10°C ~ –5°C
Supposed Causes	■ Connector in poor contact ■ Thermistor defective ■ Outdoor unit PCB defective ■ Four way valve coil or harness defective ■ Four way valve defective ■ Foreign substance mixed in refrigerant ■ Refrigerant shortage

Trouble-shooting

Check No.05-3 Refer to P.270

Check No.06 Refer to P.272

Check No.11-1 Refer to P.276



5.2.32 Four Way Valve Abnormality

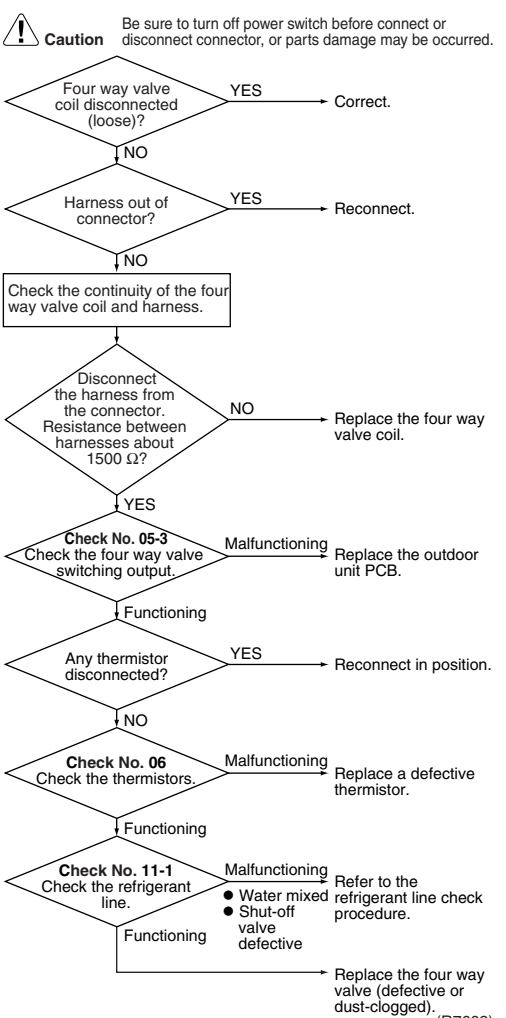
Remote Controller Display	E8
Outdoor Unit LED Display	A ◑ 1 ☼ 2 ● 3 ● 4 ●
Method of Malfunction Detection	The liquid pipe thermistor, the outdoor temperature thermistor and the outdoor unit heat exchanger thermistor are checked to see if they function within their normal ranges in the operating mode.
Malfunction Decision Conditions	Either of the following conditions occurs 3~6 minutes after the compressor has started. ■ Cooling / dry operation (Outdoor unit heat exchanger temperature – Liquid pipe temperature) < –5°C ■ Heating operation (Liquid pipe temperature – Outdoor unit heat exchanger temperature) < –5 ~ 0°C
Supposed Causes	■ Connector in poor contact ■ Thermistor defective ■ Outdoor unit PCB defective ■ Four way valve coil or harness defective ■ Four way valve defective ■ Foreign substance mixed in refrigerant

Trouble-shooting

Check No.05-3 **Refer to P.270**

Check No.06 **Refer to P.272**

Check No.11-1 **Refer to P.276**



5.2.33 Discharge Pipe Temperature Control

Remote Controller Display

F3

Method of Malfunction Detection

The discharge pipe temperature control (stop, frequency drooping, etc.) is checked with the temperature being detected by the discharge pipe thermistor.

Malfunction Decision Conditions

- If a stop takes place repeatedly due to abnormal discharge pipe temperature, the system is shut down.
- If the temperature being detected by the discharge pipe thermistor rises above Ⓐ °C, the compressor stops. (The error is cleared when the temperature has dropped below Ⓑ °C.)

Stop temperatures

Note : The values are different from model to model.

	Ⓐ	Ⓑ
(1) above 45Hz (rising), above 40Hz (dropping)	120	80
(2) 130~45Hz (rising), 25~40Hz (dropping)	110	70
(3) below 30Hz (rising), below 25Hz (dropping)	105	65

- The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

Supposed Causes

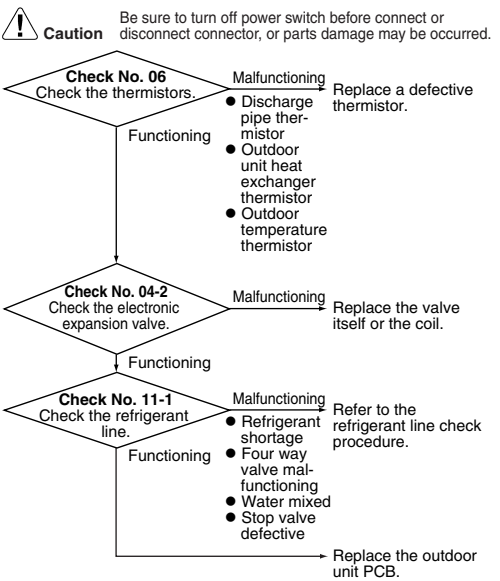
- Refrigerant shortage
- Four way valve malfunctioning
- Discharge pipe thermistor defective
- (heat exchanger or outdoor air temperature thermistor defective)
- Outdoor unit PCB defective
- Water mixed in the local piping
- Electronic expansion valve defective
- Stop valve defective

Trouble-shooting

Check No.04-2 Refer to P.265

Check No.06 Refer to P.272

Check No.11-1 Refer to P.276



(R7663)

5.2.34 Discharge Pipe Temperature Control

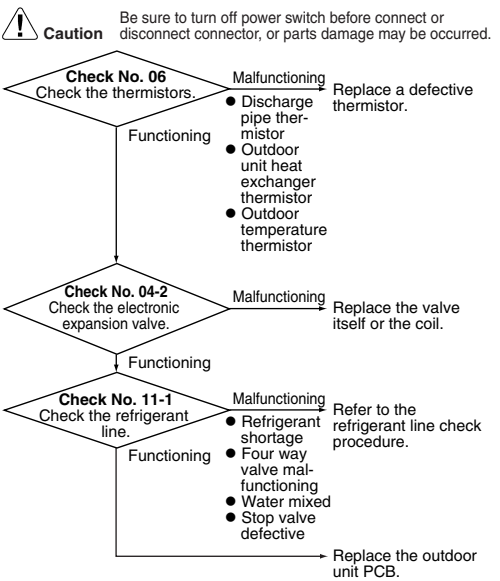
Remote Controller Display	F3
Outdoor Unit LED Display	A ◑ 1 ☼ 2 ● 3 ☼ 4 ● 5 ●
Method of Malfunction Detection	The discharge pipe temperature control (stop, frequency drooping, etc.) is checked with the temperature being detected by the discharge pipe thermistor.
Malfunction Decision Conditions	If the temperature being detected by the discharge pipe thermistor rises above 110°C~120°C, the compressor stops. (The error is cleared when the temperature has dropped below 95°C~107°C.) ■ If the compressor stops 6 times straight due to abnormal discharge pipe temperature, the system is shut down. ■ The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).
Supposed Causes	■ Refrigerant shortage ■ Four way valve malfunctioning ■ Discharge pipe thermistor defective (heat exchanger or outdoor temperature thermistor defective) ■ Outdoor unit PCB defective ■ Water mixed in the local piping ■ Electronic expansion valve defective ■ Stop valve defective

Trouble-shooting

Check No.04-2 Refer to P.265

Check No.06 Refer to P.272

Check No.11-1 Refer to P.276



(R7663)

5.2.35 Discharge Pipe Temperature Control

Remote Controller Display

F3

Method of Malfunction Detection

The discharge pipe temperature control (stop, frequency drooping, etc.) is checked with the temperature being detected by the discharge pipe thermistor.

Malfunction Decision Conditions

<In case of F series>
If the temperature being detected by the discharge pipe thermistor rises, the compressor stops. The temperature at which the compressor halts varies according to the frequency.

(1) 110°C when the frequency is above 30Hz on ascending or above 25Hz on descending.
(2) 108°C when the frequency is below 30Hz on ascending or below 25Hz on descending.

- The error is cleared when the temperature has dropped below 95°C.
- If the compressor stops 6 times successively due to abnormal discharge pipe temperature, the system is shut down.
- The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

Supposed Causes

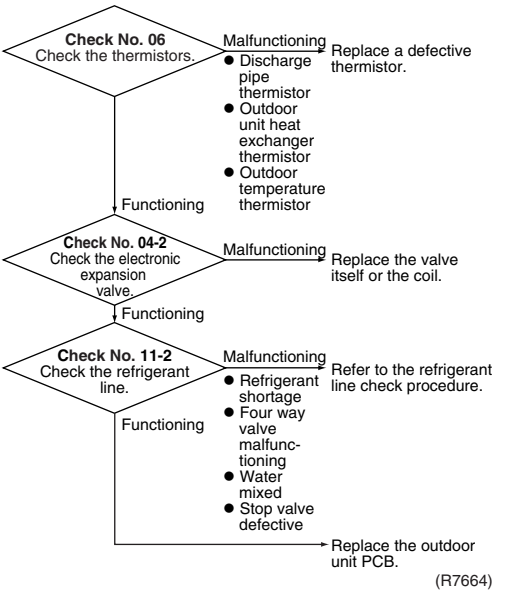
- Refrigerant shortage
- Four way valve malfunctioning
- Discharge pipe thermistor defective
- (heat exchanger or outdoor temperature thermistor defective)
- Outdoor unit PCB defective
- Water mixed in the local piping
- Electronic expansion valve defective
- Stop valve defective

Trouble-shooting

Check No.04-2 Refer to P.265

Check No.06 Refer to P.272

Check No.11-2 Refer to P.277



(R7664)

5.2.36 Discharge Pipe Temperature Control

Remote Controller Display

F3

Outdoor Unit LED Display

Method of Malfunction Detection

The discharge pipe temperature control (stop, frequency drooping, etc.) is checked with the temperature being detected by the discharge pipe thermistor.

Malfunction Decision Conditions

2YC45, 2YC63

If the temperature being detected by the discharge pipe thermistor rises above 120°C, the compressor stops. (The error is cleared when the temperature has dropped below 107°C.)

2YC32

The temperature at which the compressor halts varies according to the frequency.

(1) 110°C when the frequency is above 45 Hz on ascending or above 40 Hz on descending.
(2) 102°C when the frequency is between 30 Hz and 45 Hz on ascending or between 40Hz and 25Hz on descending.
(3) 98°C when the frequency is below 30 Hz on ascending or below 25 Hz on descending.

- If the compressor stops 6 times straight due to abnormal discharge pipe temperature, the system is shut down.
- The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

Supposed Causes

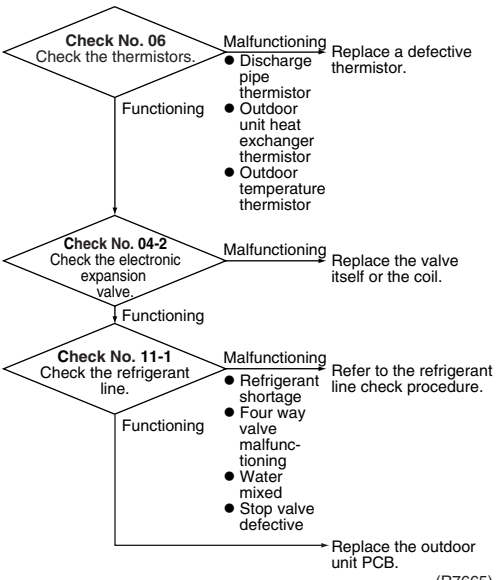
- Refrigerant shortage
- Four way valve malfunctioning
- Discharge pipe thermistor defective
- (heat exchanger or outdoor temperature thermistor defective)
- Outdoor unit PCB defective
- Water mixed in the local piping
- Electronic expansion valve defective
- Stop valve defective

Trouble-shooting

Check No.04-2 Refer to P.265

Check No.06 Refer to P.272

Check No.11-1 Refer to P.276



(R7665)

5.2.37 Discharge Pipe Temperature Control

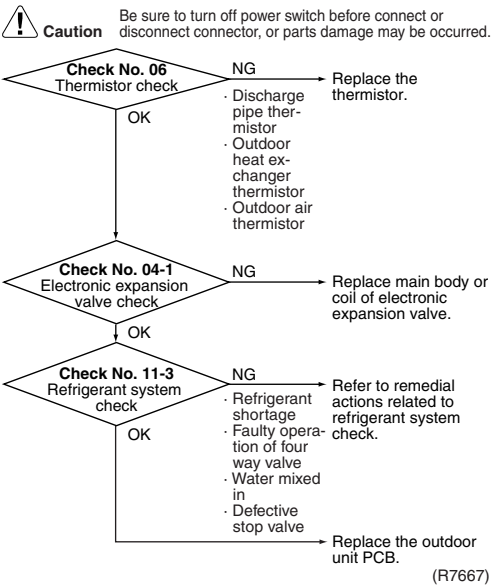
Remote Controller Display	F3
Outdoor Unit LED Display	A ◑ 5 ◑ (-)
Method of Malfunction Detection	Discharge pipe temperature control (stop, frequency attenuation, etc.) is executed based on the temperature detected by the discharge pipe thermistor.
Malfunction Decision Conditions	■ The compressor stops when the discharge pipe temperature is 118°C or more. (Fault condition is cleared when the discharge pipe temperature is below 85°C) ■ Shut down when the error repeats 4 times ■ Clear condition : Continuous operation for 60 minutes
Supposed Causes	■ Refrigerant shortage ■ Faulty operation of four way valve ■ Defective discharge pipe thermistor (Defective heat exchanger thermistor or outdoor air thermistor) ■ Defective outdoor unit PCB ■ Water mixed in the field piping ■ Defective electronic expansion valve ■ Defective stop valve ■ Defective indoor solenoid valve

Trouble-shooting

Check No.06
Refer to P.272

Check No.11-3
Refer to P.277

Check No.04-1
Refer to P.264



(R7667)

5.2.38 High Pressure Control in Cooling

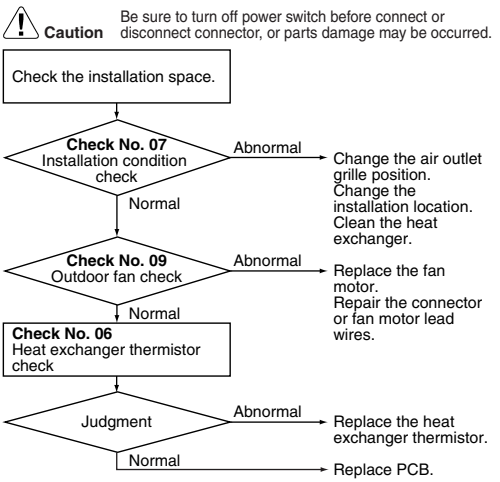
Remote Controller Display	F6
Method of Malfunction Detection	High-pressure control (stop, frequency drop, etc.) is activated in the cooling mode if the temperature being sensed by the heat exchanger thermistor exceeds the limit.
Malfunction Decision Conditions	■ Activated when the temperature being sensed by the heat exchanger thermistor rises above 63°C (RN, RYN models) or 65°C (ARY models). ■ Deactivated when the temperature drops below 48°C (RN, RYN models) or 50°C (ARY models).
Supposed Causes	■ The installation space is not large enough. ■ Faulty outdoor unit fan ■ Faulty heat exchanger thermistor ■ Faulty stop valve ■ Dirty heat exchanger

Trouble-shooting

Check No.06 Refer to P.272

Check No.07 Refer to P.273

Check No.09 Refer to P.274



(R4742)

5.2.39 High Pressure Control in Cooling

Remote Controller Display	F6
Method of Malfunction Detection	High-pressure control (stop, frequency drop, etc.) is activated in the cooling mode if the temperature being sensed by the heat exchanger thermistor exceeds the limit.
Malfunction Decision Conditions	■ Activated when the temperature being sensed by the heat exchanger thermistor rises above 54~65°C. ■ Deactivated when the temperature drops below about 53°C.
Supposed Causes	■ The installation space is not large enough. ■ Faulty outdoor unit fan ■ Faulty electronic expansion valve ■ Faulty outdoor unit heat exchanger thermistor ■ Faulty outdoor unit PCB ■ Faulty stop valve ■ Dirty heat exchanger

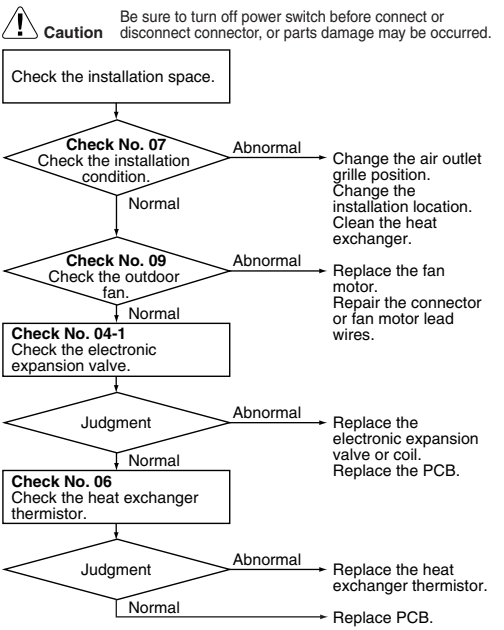
Trouble-shooting

Check No.04-1
Refer to P.264

Check No.06
Refer to P.272

Check No.07
Refer to P.273

Check No.09
Refer to P.274



5.2.40 High Pressure Control in Cooling

Remote Controller Display	F6
Outdoor Unit LED Display	A ◑ 1 ☼ 2 ● 3 ☼ 4 ☼ 5 ●
Method of Malfunction Detection	High-pressure control (stop, frequency drop, etc.) is activated in the cooling mode if the temperature being sensed by the heat exchanger thermistor exceeds the limit.
Malfunction Decision Conditions	■ Activated when the temperature being sensed by the heat exchanger thermistor rises above 58~65°C. ■ The error is cleared when the temperature drops below 48.5~55°C.
Supposed Causes	■ The installation space is not large enough. ■ Faulty outdoor unit fan ■ Faulty electronic expansion valve ■ Faulty outdoor unit heat exchanger thermistor ■ Faulty outdoor unit PCB ■ Faulty stop valve ■ Dirty heat exchanger

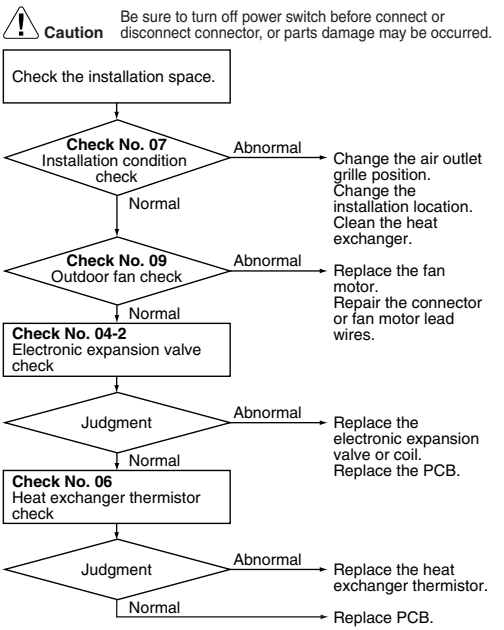
Trouble-shooting

Check No.04-2
Refer to P.265

Check No.06
Refer to P.272

Check No.07
Refer to P.273

Check No.09
Refer to P.274



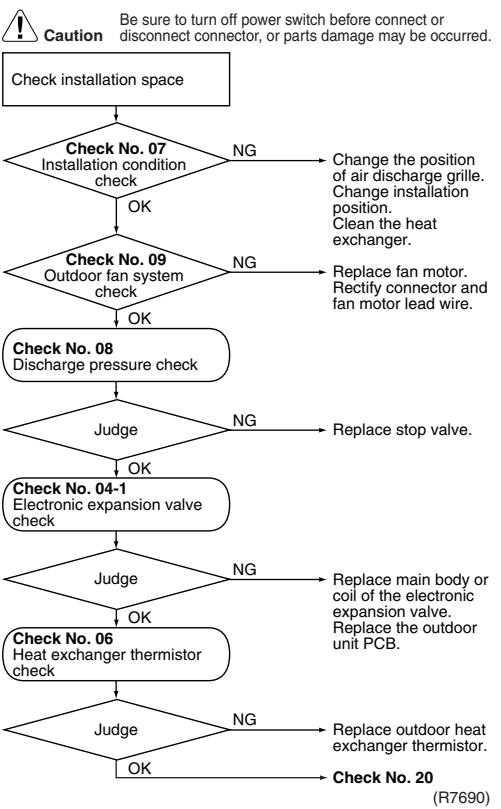
(R7689)

5.2.41 High Pressure Control in Cooling

Remote Controller Display	F6
Outdoor Unit LED Display	A ◑ 5 ◑ (-)
Method of Malfunction Detection	During cooling, high pressure control (stop, frequency attenuation, etc.) is executed according to the temperature detected by the heat exchanger thermistor.
Malfunction Decision Conditions	During cooling, when the temperature detected by the heat exchanger thermistor is 63°C or more. (Fault condition is cleared when the temperature is below 52°C.)
Supposed Causes	■ Insufficient installation space ■ Defective outdoor fan ■ Defective electronic expansion valve ■ Defective heat exchanger thermistor ■ Defective outdoor unit PCB ■ Defective stop valve ■ Defective solenoid valve for dehumidification

Trouble-shooting

Check No.04-1 Refer to P.264
Check No.06 Refer to P.272
Check No.07 Refer to P.273
Check No.08 Refer to P.274
Check No.09 Refer to P.274
Check No.20 Refer to P.290



(R7690)

5.2.42 Compressor System Sensor Abnormality

Remote Controller Display

H0

Method of Malfunction Detection

- The system checks the DC current before the compressor starts.

Malfunction Decision Conditions

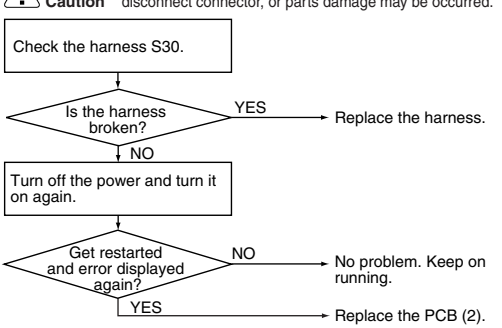
- If the DC current before compressor start-up is out of the range 0.5 ~ 4.5 V (sensor output converted to voltage value) or if the DC voltage before compressor start-up is below 50 V.

Supposed Causes

- PCB defective
- Broken or poorly connected harness

Trouble shooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



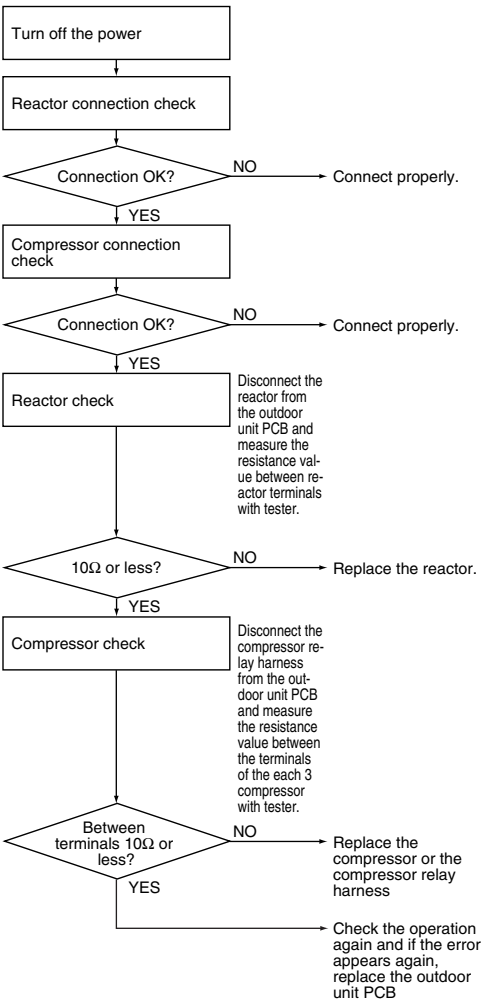
(R4564)

5.2.43 Compressor Sensor System Abnormality

Remote Controller Display	H0
Outdoor Unit LED Display	A ◑ 1 ☼ 2 ☼ 3 ● 4 ● 5 ●
Method of Malfunction Detection	■ Fault condition is identified by the supply voltage and the DC voltage which is detected before the compressor startup. ■ Fault condition is identified by compressor current which is detected right after the compressor startup.
Malfunction Decision Conditions	■ The detected valve of the supply voltage and the DC voltage is obviously low or high. ■ The compressor current does not run when the compressor is started.
Supposed Causes	■ Reactor disconnection ■ Compressor disconnection ■ Outdoor unit PCB defective ■ Compressor defective

Trouble-shooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(R5131)

5.2.44 Compressor Sensor System Abnormality

Remote Controller Display

H0

Method of Malfunction Detection

Fault condition is identified by DC current which is detected before compressor startup.

Malfunction Decision Conditions

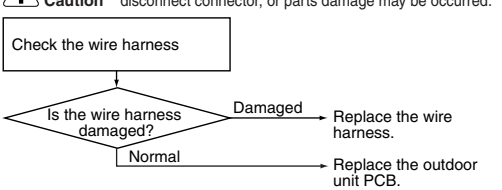
- When the DC current before compressor startup is other than 0.5 ~ 4.5 V (detected by converting the sensor output to voltage), or the DC voltage is 50 V or less.

Supposed Causes

- Defective PCB
- Harness disconnection / defective connection

Trouble-shooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(R7143)

5.2.45 Compressor Sensor System Fault

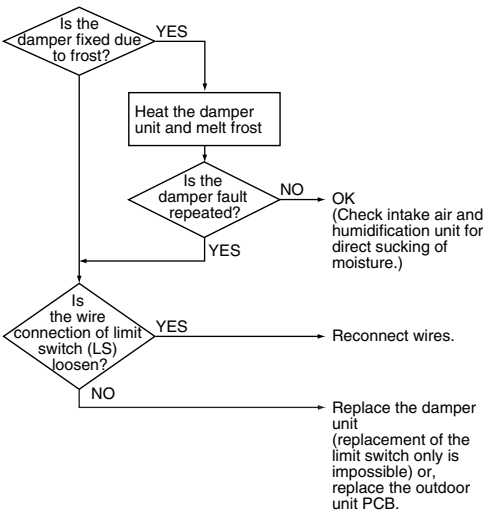
Remote Controller Display	H0
Outdoor Unit LED Display	A ◑ 5 ◑ (-)
Method of Malfunction Detection	Fault condition is identified by DC current which is detected before compressor startup.
Malfunction Decision Conditions	■ When the DC current before compressor startup is other than 0.5 ~ 4.5 V (detected by converting the sensor output to voltage), or the DC voltage is 50 V or less.
Supposed Causes	■ Defective PCB ■ Harness disconnection / defective connection
Trouble shooting	⚠ **Caution** Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred. **Replace the outdoor unit PCB.**

5.2.46 Damper Fault

Remote Controller Display	H 1
Outdoor Unit LED Display	A 5
Method of Malfunction Detection	Detected by the limit switch (LS) in the humidification unit.
Malfunction Decision Conditions	■ Limit switch does not turn on or off when the operation of humidification unit starts or finishes. For example, when turning on the power supply, when humidification operation (including air intake) starts, or when inner heating dry cleaning starts.
Supposed Causes	■ Faulty damper operation due to frost ■ Faulty damper operation due to foreign material ■ Limit switch fault (including improper connection) ■ Defective motor for damper

Trouble-shooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



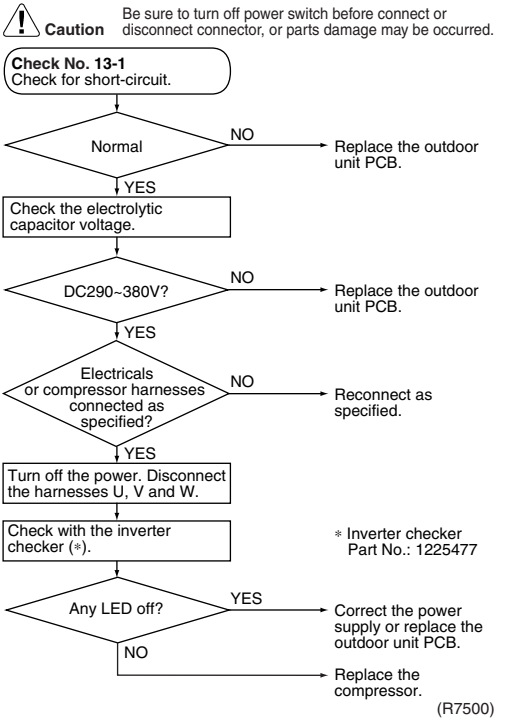
(R3435)

5.2.47 Position Sensor Abnormality

Remote Controller Display	H6
Method of Malfunction Detection	A compressor startup failure is detected by checking the compressor running condition through the position detection circuit.
Malfunction Decision Conditions	■ The compressor fails to start in about 15 seconds after the compressor run command signal is sent. ■ Clearing condition: Continuous run for about 5~10 minutes (normal) ■ The system is shut down if the error occurs repeatedly.
Supposed Causes	■ Compressor relay cable disconnected ■ Compressor itself defective ■ Outdoor unit PCB defective ■ Stop valve closed ■ Input voltage out of specification

Trouble-shooting

Check No.13-1
Refer to P.278



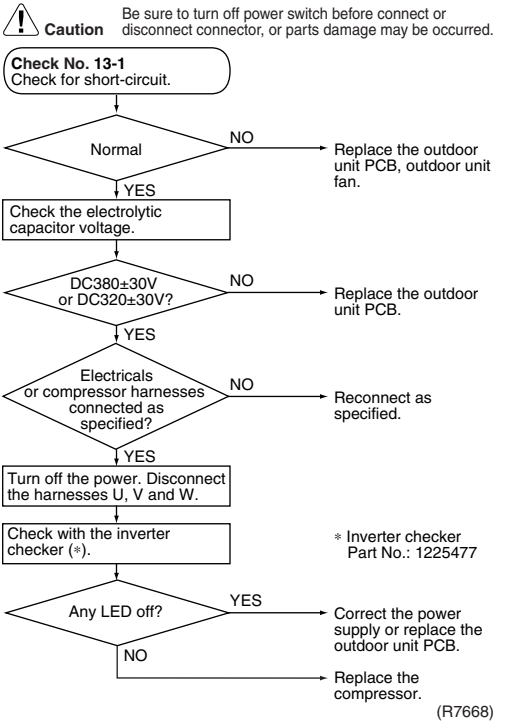
(R7500)

5.2.48 Position Sensor Abnormality

Remote Controller Display	H6
Outdoor Unit LED Display	A ◑ 1 ☼ 2 ☼ 3 ● 4 ● 5 ●
Method of Malfunction Detection	A compressor startup failure is detected by checking the compressor running condition through the position detection circuit.
Malfunction Decision Conditions	■ The compressor fails to start in about 15 seconds after the compressor run command signal is sent. ■ Clearing condition: Continuous run for about 5 minutes (normal) ■ The system is shut down if the error occurs repeatedly.
Supposed Causes	■ Compressor relay cable disconnected ■ Compressor itself defective ■ Outdoor unit PCB defective ■ Stop valve closed ■ Input voltage out of specification

Trouble-shooting

Check No.13-1
Refer to P.278



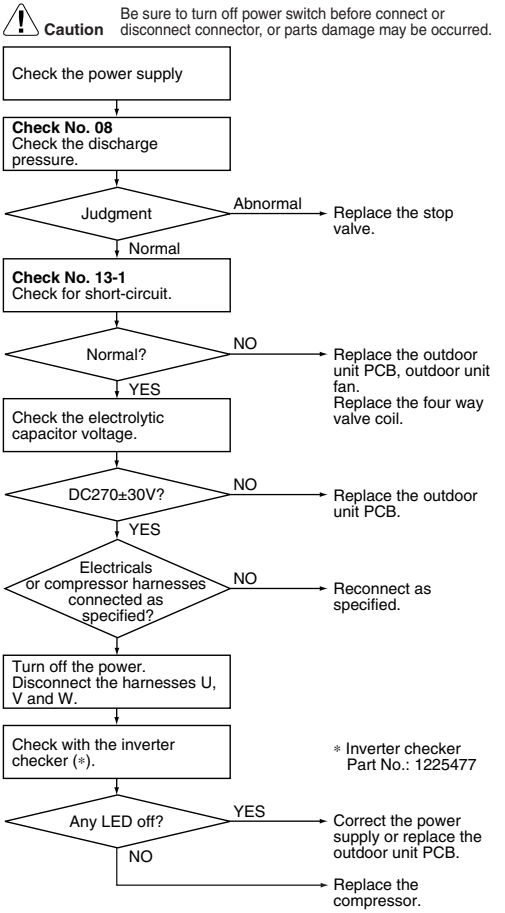
5.2.49 Position Sensor Abnormality

Remote Controller Display	H6
Method of Malfunction Detection	A compressor startup failure is detected by checking the compressor running condition through the position detection circuit.
Malfunction Decision Conditions	■ The compressor is not running in about 15 seconds after the compressor run command signal is sent. ■ Clearing condition: Continuous run for about 11 minutes (normal) ■ The system is shut down if the error occurs 16 times.
Supposed Causes	■ Compressor relay cable disconnected ■ Compressor itself defective ■ Outdoor unit PCB defective ■ Stop valve closed ■ Input voltage out of specification

Trouble-shooting

Check No.08
Refer to P.274

Check No.13-1
Refer to P.278



(R7503)

5.2.50 Position Sensor Fault

Remote Controller Display

H6

Outdoor Unit LED Display

A 5 (-)

Method of Malfunction Detection

Startup failure of the compressor is identified by rpm information of the compressor and by electric component position detector.

Malfunction Decision Conditions

- When the compressor does not run for 15 seconds after receiving operation start command
- The unit shuts down if the fault occurs 16 times
- Clear condition: The compressor continuously runs for 10 minutes without fault

Supposed Causes

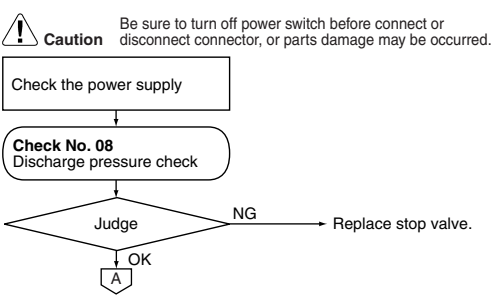
- Detection error due to disconnection of compressor harness
- Startup failure due to defective compressor
- Startup failure due to defective outdoor unit PCB
- Startup failure due to closed stop valve
- Input voltage fault

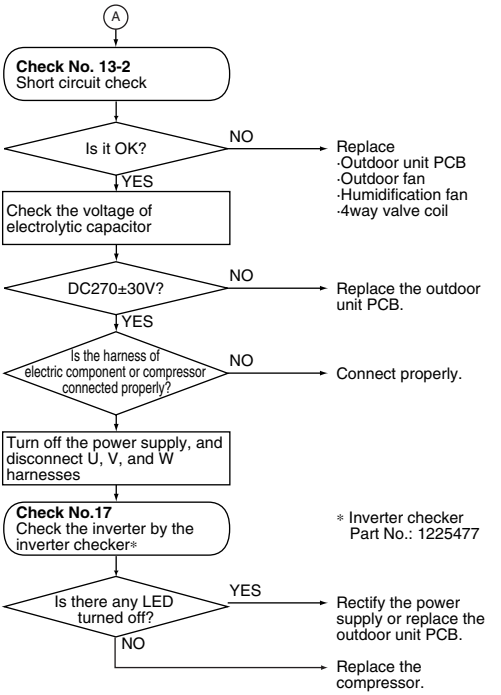
Trouble-shooting

Check No.08 Refer to P.274

Check No.13-2 Refer to P.279

Check No.17 Refer to P.285




A
Check No. 13-2
Short circuit check
Is it OK?
NO
Replace
·Outdoor unit PCB
·Outdoor fan
·Humidification fan
·4way valve coil
YES
Check the voltage of electrolytic capacitor
DC270±30V?
NO
Replace the outdoor unit PCB.
YES
Is the harness of electric component or compressor connected properly?
NO
Connect properly.
Turn off the power supply, and disconnect U, V, and W harnesses
Check No.17
Check the inverter by the inverter checker*
* Inverter checker Part No.: 1225477
Is there any LED turned off?
YES
Rectify the power supply or replace the outdoor unit PCB.
NO
Replace the compressor.

(R7669)

5.2.51 DC Voltage / Current Sensor Abnormality

Remote Controller Display

H8

Method of Malfunction Detection

Detecting abnormality of the DC sensor by the running frequency of compressor and by the input current multiplied DC voltage and current.

Malfunction Decision Conditions

The compressor running frequency is below 52 Hz. (The input current is also below 0.1 A~0.5 A or DC voltage is less than 50V.)

- If this error repeats 4 times, the system is shut down.
- The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

Supposed Causes

- Power transistor defective
- Internal wiring broken or in poor contact
- Reactor defective
- Outdoor unit PCB defective
- Refrigerant shortage

Trouble-shooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

Replace the outdoor unit PCB.

5.2.52 DC Voltage / DC Current Sensor Fault

Remote Controller Display

H8

Outdoor Unit LED Display

A ◑ 5 ◑ (-)

Method of Malfunction Detection

DC voltage or DC current sensor system fault is identified based on the compressor operation frequency and the input current detected by the product of DC current and DC voltage.

Malfunction Decision Conditions

When the compressor operation frequency is more than 62 Hz and when the input current is less than 0.75 A for 90 seconds continuously (Input current is below 0.5 A)

- The unit shuts down when the fault occurs 4 times.
- Fault counter is reset to zero if the unit does not stop during accumulated compressor operation time of 60 minutes after being restored from fault conditions.

Supposed Causes

- Defective outdoor unit PCB

Trouble-shooting

⚠ **Caution** Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

Replace the outdoor unit PCB.

5.2.53 CT or Related Abnormality

Remote Controller Display

H8

Method of Malfunction Detection

A CT or related error is detected by checking the compressor running frequency and CT-detected input current.

Malfunction Decision Conditions

The compressor running frequency is below 55~62 Hz and the CT input is below 0.1 V.
(The input current is also below 0.5 A.)

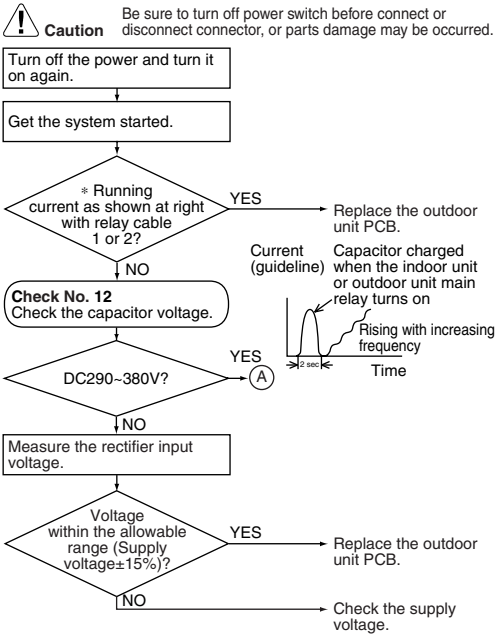
- If this error repeats 4 times, the system is shut down.
- The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

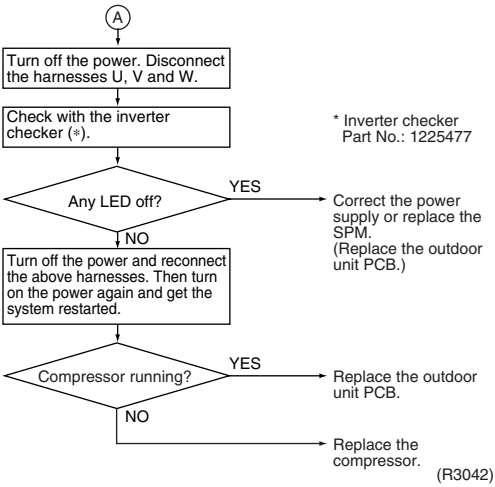
Supposed Causes

- Power transistor defective
- Internal wiring broken or in poor contact
- Reactor defective
- Outdoor unit PCB defective

Trouble-shooting

Check No.12 Refer to P.278





Note: If the model does not have SPM, replace the outdoor unit PCB.

5.2.54 CT or Related Abnormality

Remote Controller Display	H8
Outdoor Unit LED Display	A ◑ 1 ☼ 2 ☼ 3 ● 4 ● 5 ●
Method of Malfunction Detection	A CT or related error is detected by checking the compressor running frequency and CT-detected input current.
Malfunction Decision Conditions	The compressor running frequency is below 55 Hz and the CT input is below 0.1 V. (The input current is also below 0.5~1.25 A.) ■ If this error repeats 4 times, the system is shut down. ■ The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).
Supposed Causes	■ Power transistor defective ■ Internal wiring broken or in poor contact ■ Reactor defective ■ Outdoor unit PCB defective

Trouble-shooting

Check No.12
Refer to P.278

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

Turn off the power and turn it on again.

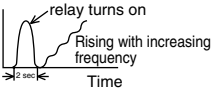
Get the system started.

∗ Running current as shown at right with relay cable 1 or 2?

YES → Replace the outdoor unit PCB.

NO

Current (guideline)



Check No. 12
Check the capacitor voltage.

DC320±30V or DC380±30V?

YES → (A)

NO

Measure the rectifier input voltage.

Voltage within the allowable range (Supply voltage±15%)?

YES → Replace the outdoor unit PCB.

NO → Check the supply voltage.

(A)

Turn off the power. Disconnect the harnesses U, V and W.

Check with the inverter checker (∗).

* Inverter checker Part No.: 1225477

Any LED off?

YES → Correct the power supply or replace the SPM (or PM1). (Replace the outdoor unit PCB.)

NO

Turn off the power and reconnect the above harnesses. Then turn on the power again and get the system restarted.

Compressor running?

YES → Replace the outdoor unit PCB.

NO → Replace the compressor.

(R7505)

5.2.55 CT or Related Abnormality

Remote Controller Display

H8

Method of Malfunction Detection

A CT or related error is detected by checking the compressor running frequency and CT-detected input current.

Malfunction Decision Conditions

The compressor running frequency is above 68 Hz and the CT input is below 0.1 V.
(The input current is also below 1.25 A.)

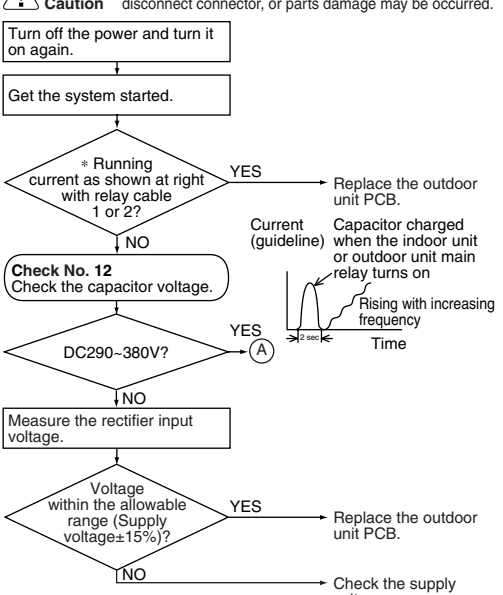
- If this error repeats 4 times, the system is shut down.
- The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

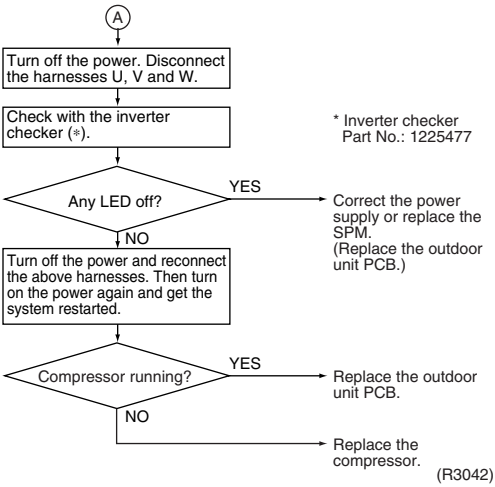
Supposed Causes

- Power transistor defective
- Internal wiring broken or in poor contact
- Reactor defective
- Outdoor unit PCB defective

Trouble-shooting

Check No.12 Refer to P.278





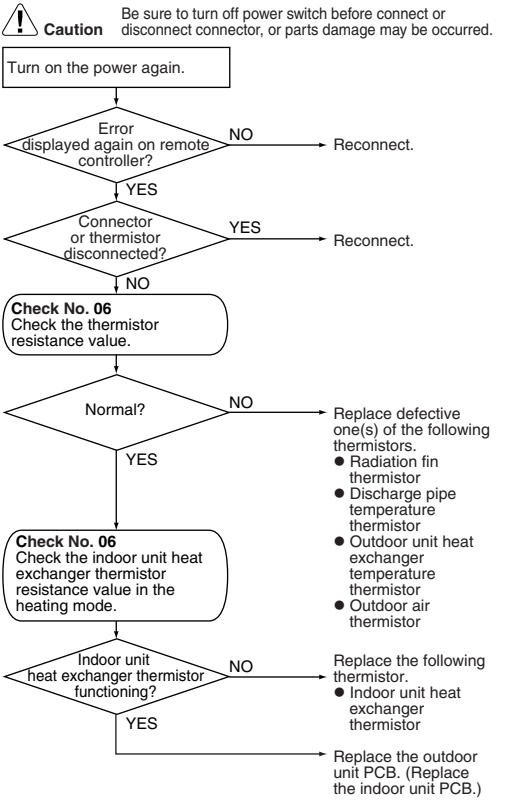
Note: If the model does not have SPM, replace the outdoor unit PCB.

5.2.56 Thermistor or Related Abnormality (Outdoor Unit)

Remote Controller Display	P4, J3, J6, H9
Method of Malfunction Detection	This type of error is detected by checking the thermistor input voltage to the microcomputer. [A thermistor error is detected by checking the temperature.]
Malfunction Decision Conditions	The thermistor input is above 4.96 V or below 0.04 V with the power on. Error J3 is judged if the discharge pipe thermistor temperature is smaller than the heat exchanger thermistor temperature.
Supposed Causes	■ Connector in poor contact ■ Thermistor defective ■ Outdoor unit PCB defective ■ Indoor unit PCB defective ■ Heat exchanger thermistor defective in the case of J3 error (outdoor unit heat exchanger thermistor in the cooling mode, or indoor unit heat exchanger thermistor in the heating mode)

Trouble-shooting

Check No.06
Refer to P.272



(R7507)

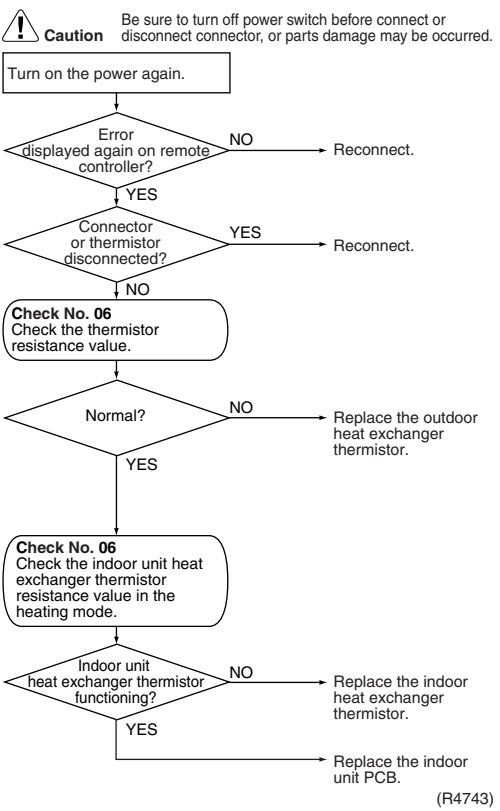
P4: Radiation fin thermistor
J3: Discharge pipe thermistor
J6: Outdoor heat exchanger thermistor
H3: Outdoor air thermistor

5.2.57 Thermistor or Related Abnormality (Outdoor Unit)

Remote Controller Display	J6
Method of Malfunction Detection	This type of error is detected by checking the thermistor input voltage to the microcomputer. [A thermistor error is detected by checking the temperature.]
Malfunction Decision Conditions	The thermistor input is above 4.96 V or below 0.04 V with the power on. Outdoor heat exchanger thermistor: above about 100°C (less than 670Ω)
Supposed Causes	■ Connector in poor contact ■ Thermistor defective ■ Indoor unit PCB defective

Trouble-shooting

Check No.06
Refer to P.272



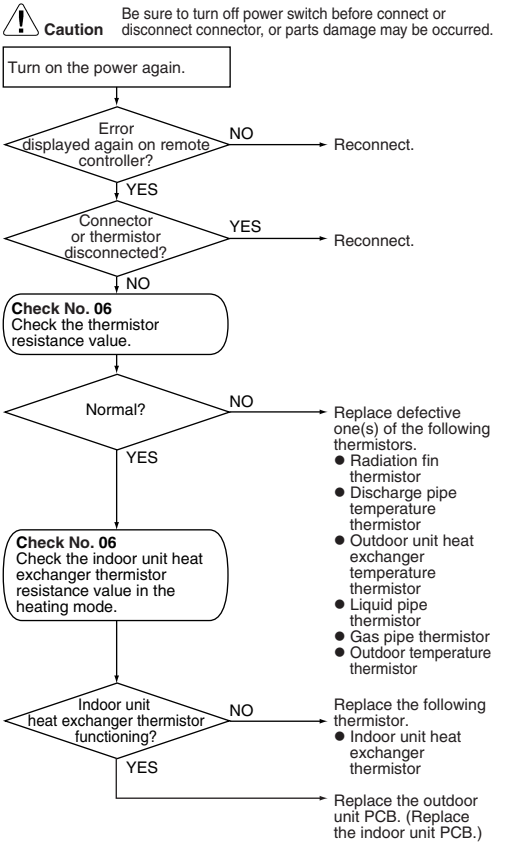
ชื่อ: Outdoor heat exchanger thermistor

5.2.58 Thermistor or Related Abnormality (Outdoor Unit)

Remote Controller Display	P4,J3,J6,J8,J9,H9
Method of Malfunction Detection	This type of error is detected by checking the thermistor input voltage to the microcomputer. [A thermistor error is detected by checking the temperature.]
Malfunction Decision Conditions	The thermistor input is above 4.96~4.98 V or below 0.02~0.04 V with the power on. Error J3 is judged if the discharge pipe thermistor temperature is smaller than the heat exchanger thermistor temperature. In case of J8 or J9, the system is shut down when the error is detected at all of operating units.
Supposed Causes	■ Connector in poor contact ■ Thermistor defective ■ Outdoor unit PCB defective ■ Indoor unit PCB defective ■ Heat exchanger thermistor defective in the case of J3 error (outdoor unit heat exchanger thermistor in the cooling mode, or indoor unit heat exchanger thermistor in the heating mode)

Trouble-shooting

Check No.06
Refer to P.272



(R7509)

P4: Radiation fin thermistor
J3: Discharge pipe temperature thermistor
J5: Outdoor unit heat exchanger temperature thermistor
J8: Liquid pipe temperature thermistor
J9: Gas pipe temperature thermistor
X9: Outdoor air temperature thermistor

5.2.59 Thermistor or Related Abnormality (Outdoor Unit)

Remote Controller Display

P4, J3, J6, J8, J9, H9

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ☼ 3 ● 4 ● 5 ●

Method of Malfunction Detection

This type of error is detected by checking the thermistor input voltage to the microcomputer.
[A thermistor error is detected by checking the temperature being detected by each thermistor.]

Malfunction Decision Conditions

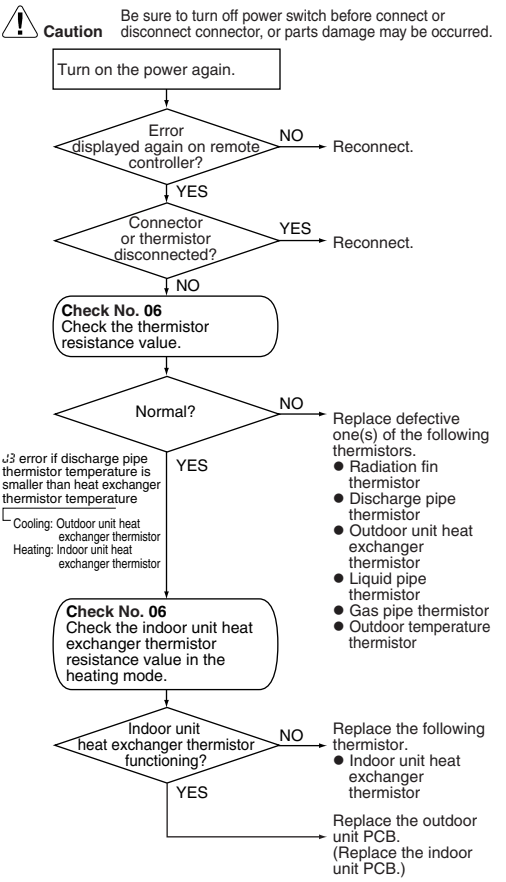
When the thermistor input is above 4.96 V or below 0.04 V with the power on, the J3 error is judged if the discharge pipe thermistor temperature is smaller than the heat exchanger thermistor temperature, or the system is shut down if all the units are judged with the J8 error.

Supposed Causes

- Connector in poor contact
- Thermistor defective
- Outdoor unit PCB defective
- Indoor unit PCB defective
- Heat exchanger thermistor defective in the case of J3 error (outdoor unit heat exchanger thermistor in the cooling mode, or indoor unit heat exchanger thermistor in the heating mode)

Trouble-shooting

Check No.06 Refer to P.272



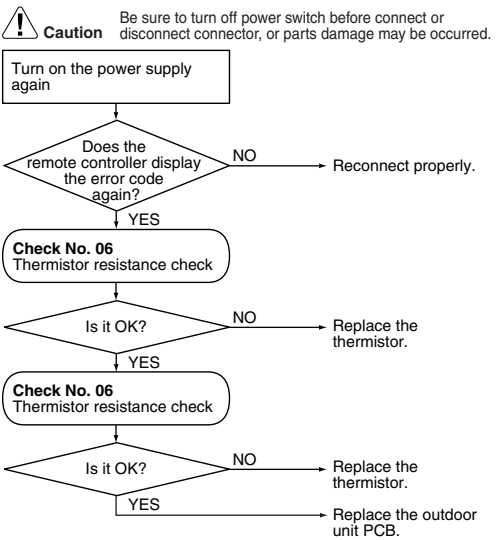
P4: Radiation fin thermistor
U3: Discharge pipe thermistor
U5: Outdoor unit heat exchanger thermistor
U8: Liquid pipe thermistor
U9: Gas pipe thermistor
H9: Outdoor temperature thermistor

5.2.60 Thermistor System Fault

Remote Controller Display	P4, J3, J6, H9
Outdoor Unit LED Display	A 5 -
Method of Malfunction Detection	This fault is identified based on the thermistor input voltage to the microcomputer. A thermistor fault is identified based on the temperature detected by each thermistor.
Malfunction Decision Conditions	When power is supplied and the thermistor input is more than 4.98 V, or when the thermistor input is 0.02 V or less for 5 seconds continuously For J3, "Discharge pipe thermistor < heat exchanger thermistor" is take into consideration to identify the fault.
Supposed Causes	■ Improper connection of connector ■ Defective thermistor ■ Defective indoor unit PCB ■ For J3, defective heat exchanger thermistor (Cooling: outdoor heat exchanger thermistor, heating: indoor heat exchanger thermistor)

Trouble-shooting

Check No.06
Refer to P.272



(R7511)

P4: Radiation fin thermistor
J3: Discharge pipe thermistor
J5: Outdoor heat exchanger thermistor
H3: Outdoor air thermistor

5.2.61 Electrical Box Temperature Rise

Remote Controller Display

L3

Method of Malfunction Detection

An electrical box temperature rise is detected by checking the radiation fin thermistor with the compressor off.

Malfunction Decision Conditions

With the compressor off, the radiation fin temperature is above 122°C. (Reset is made when the temperature drops below 113°C.)

Supposed Causes

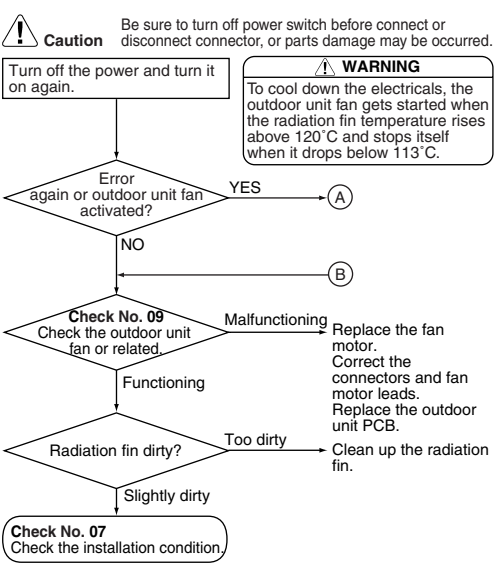
- Fin temperature rise due to defective outdoor unit fan
- Fin temperature rise due to short-circuit
- Fin thermistor defective
- Connector in poor contact
- Outdoor unit PCB defective

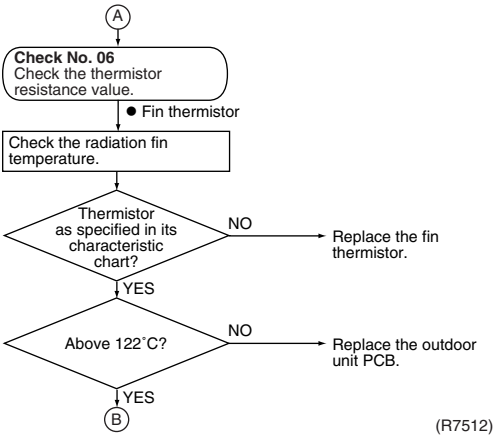
Trouble-shooting

Check No.06 Refer to P.272

Check No.07 Refer to P.273

Check No.09 Refer to P.274




A
Check No. 06
Check the thermistor resistance value.
● Fin thermistor
Check the radiation fin temperature.
Thermistor as specified in its characteristic chart?
NO
Replace the fin thermistor.
YES
Above 122˚C?
NO
Replace the outdoor unit PCB.
YES
B
(R7512)

5.2.62 Electrical Box Temperature Rise

Remote Controller Display

L3

Method of Malfunction Detection

An electrical box temperature rise is detected by checking the radiation fin thermistor with the compressor off.

Malfunction Decision Conditions

With the compressor off, the radiation fin temperature is above 80~95°C. Reset is made when the temperature drops below 70~80°C.

Supposed Causes

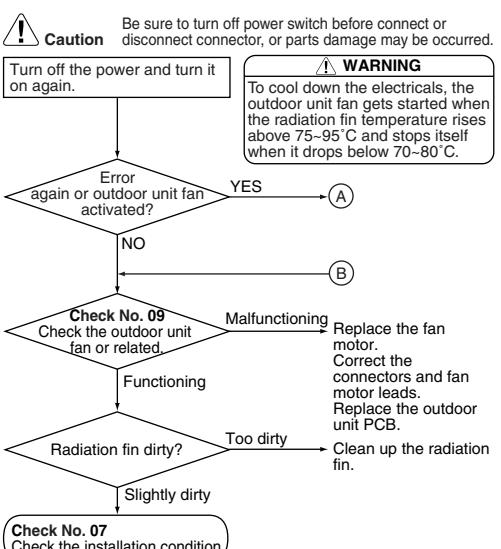
- Fin temperature rise due to defective outdoor unit fan
- Fin temperature rise due to short-circuit
- Fin thermistor defective
- Connector in poor contact
- Outdoor unit PCB defective

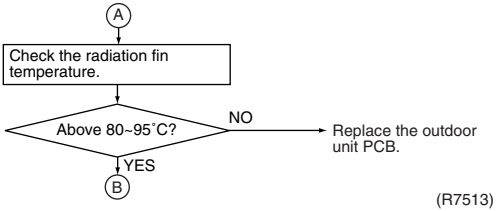
Trouble-shooting

Check No.06 Refer to P.272

Check No.07 Refer to P.273

Check No.09 Refer to P.274




A
Check the radiation fin temperature.
Above 80~95˚C?
NO
Replace the outdoor unit PCB.
YES
B

(R7513)

5.2.63 Electrical Box Temperature Rise

Remote Controller Display

L3

Outdoor Unit LED Display

A ◑ 1 ☼ 2 ☼ 3 ● 4 ☼

Method of Malfunction Detection

An electrical box temperature rise is detected by checking the radiation fin thermistor with the compressor off.

Malfunction Decision Conditions

With the compressor off, the radiation fin temperature is above 75~80°C. (Reset is made when the temperature drops below 65~75°C.)

Supposed Causes

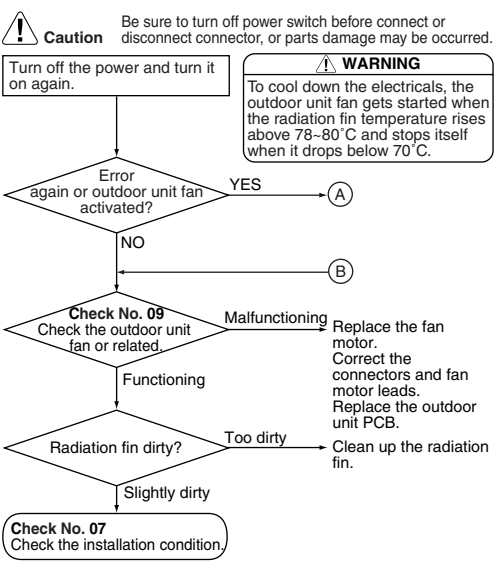
- Fin temperature rise due to defective outdoor unit fan
- Fin temperature rise due to short-circuit
- Fin thermistor defective
- Connector in poor contact
- Outdoor unit PCB defective

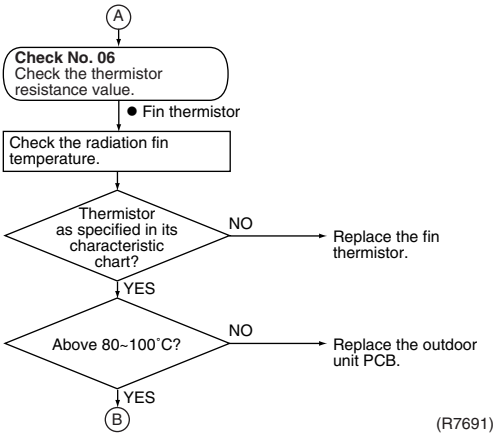
Trouble-shooting

Check No.06 Refer to P.272

Check No.07 Refer to P.273

Check No.09 Refer to P.274




A
Check No. 06
Check the thermistor resistance value.
● Fin thermistor
Check the radiation fin temperature.
Thermistor as specified in its characteristic chart?
NO
Replace the fin thermistor.
YES
Above 80~100˚C?
NO
Replace the outdoor unit PCB.
YES
B
(R7691)

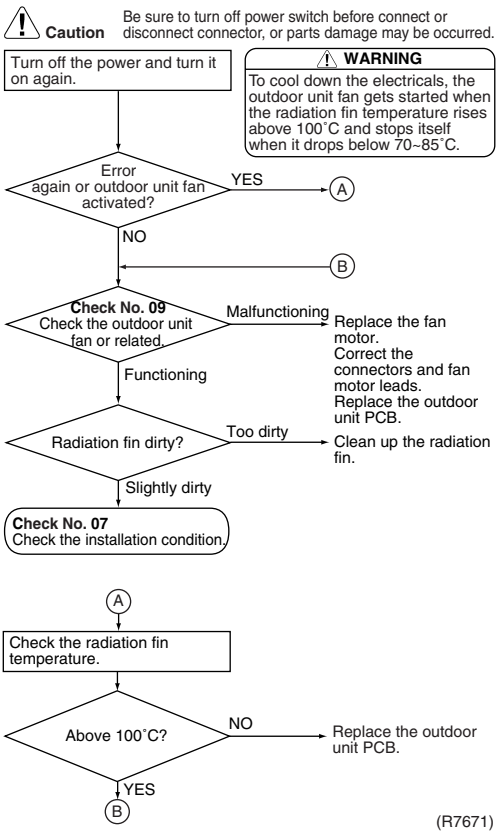
5.2.64 Electrical Box Temperature Rise

Remote Controller Display	L3
Outdoor Unit LED Display	A ◑ 1 ☼ 2 ☼ 3 ● 4 ☼ 5 ●
Method of Malfunction Detection	An electrical box temperature rise is detected by checking the radiation fin thermistor with the compressor off.
Malfunction Decision Conditions	■ With the compressor off, the radiation fin temperature is above 100°C for over 30 seconds. ■ The error is cleared when the temperature drops below 70°C.
Supposed Causes	■ Fin temperature rise due to defective outdoor unit fan ■ Fin temperature rise due to short-circuit ■ Fin thermistor defective ■ Connector in poor contact ■ Outdoor unit PCB defective

Trouble-shooting

Check No.07
Refer to P.273

Check No.09
Refer to P.274



5.2.65 Abnormal Temperature in Electrical Box

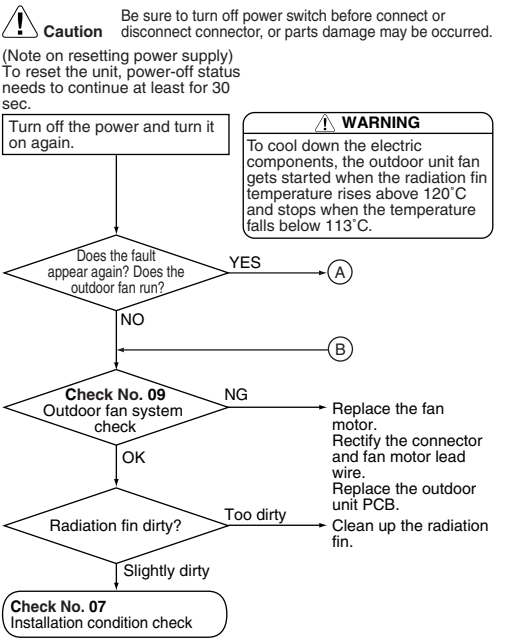
Remote Controller Display	L3
Outdoor Unit LED Display	A ◑ 5 -
Method of Malfunction Detection	Temperature rise in the electrical box is identified based on the temperature of the radiation fin detected by the fin thermistor with the compressor off.
Malfunction Decision Conditions	When the temperature of the radiation fin is 122°C or more during the compressor off. (When the temperature drops below 113°C, fault condition is cleared.)
Supposed Causes	■ Fin temperature rise due to defective outdoor fan ■ Fin temperature rise due to short circuit ■ Detection error due to defective fin thermistor ■ Detection error due to improper connection of connector ■ Detection error due to defective outdoor unit PCB

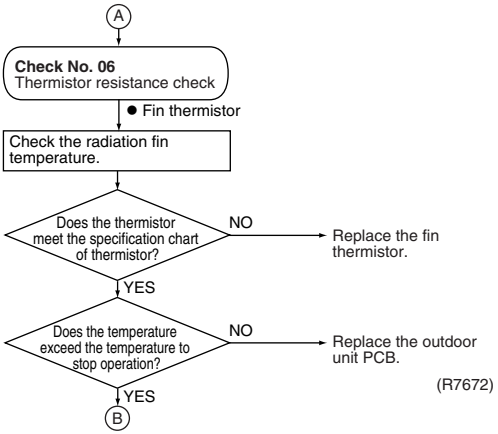
Trouble-shooting

Check No.06
Refer to P.272

Check No.07
Refer to P.273

Check No.09
Refer to P.274




A
Check No. 06
Thermistor resistance check
● Fin thermistor
Check the radiation fin temperature.
Does the thermistor meet the specification chart of thermistor?
NO
Replace the fin thermistor.
YES
Does the temperature exceed the temperature to stop operation?
NO
Replace the outdoor unit PCB.
YES
B
(R7672)

5.2.66 Electrical Box Temperature Rise

Remote Controller Display

L3

Method of Malfunction Detection

An electrical box temperature rise is detected by checking the radiation fin thermistor with the compressor off.

Malfunction Decision Conditions

With the compressor off, the radiation fin temperature is above 80°C. (Reset is made when the temperature drops below 70°C.)

Supposed Causes

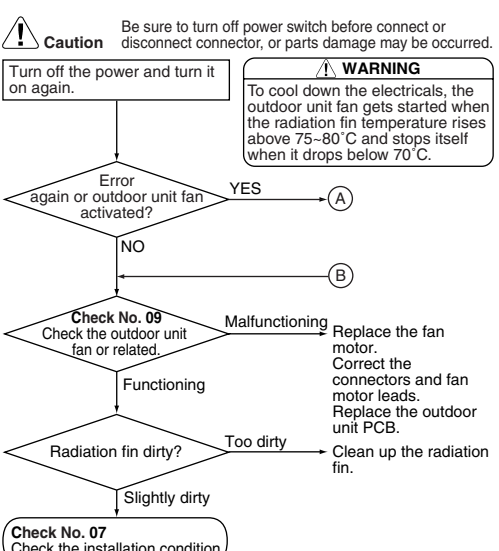
- Fin temperature rise due to defective outdoor unit fan
- Fin temperature rise due to short-circuit
- Fin thermistor defective
- Connector in poor contact
- Outdoor unit PCB defective

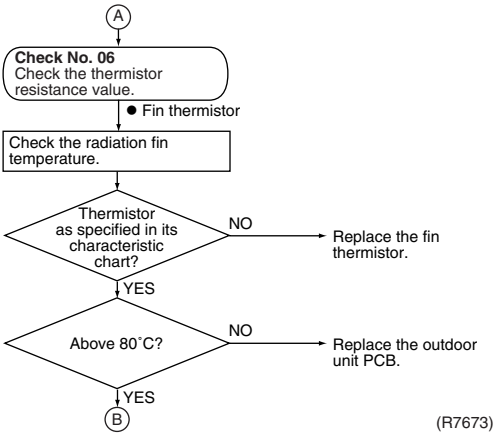
Trouble-shooting

Check No.06 Refer to P.272

Check No.07 Refer to P.273

Check No.09 Refer to P.274




A
Check No. 06
Check the thermistor resistance value.
● Fin thermistor
Check the radiation fin temperature.
Thermistor as specified in its characteristic chart?
NO
Replace the fin thermistor.
YES
Above 80˚C?
NO
Replace the outdoor unit PCB.
YES
B
(R7673)

5.2.67 Radiation Fin Temperature Rise

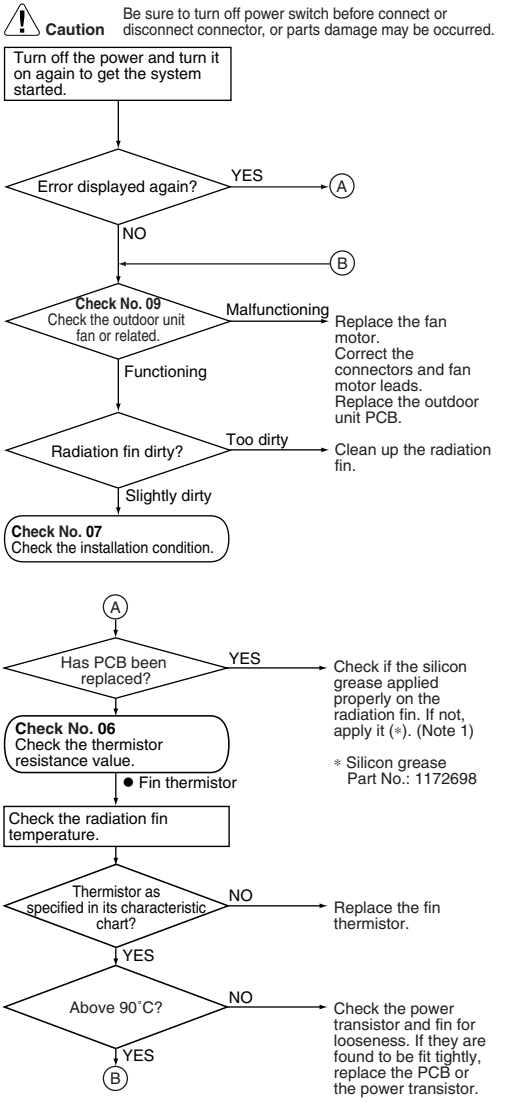
Remote Controller Display	L4
Outdoor Unit LED Display	A ◑ 1 ● 2 ● 3 ● 4 ☼
Method of Malfunction Detection	A radiation fin temperature rise is detected by checking the radiation fin temperature being detected by the fin thermistor with the compressor on.
Malfunction Decision Conditions	■ The radiation fin temperature with the compressor on is above 85~90°C. ■ The error is cleared when the temperature drops below 80~85°C. ■ If a radiation fin temperature rise takes place repeatedly, the system is shut down. ■ The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).
Supposed Causes	■ Fin temperature rise due to defective outdoor unit fan ■ Fin temperature rise due to short-circuit ■ Fin thermistor defective ■ Connector in poor contact ■ Outdoor unit PCB defective ■ Silicon grease is not applied properly on the heat radiation fin after replacing outdoor unit PCB.

Trouble-shooting

Check No.06 Refer to P.272

Check No.07 Refer to P.273

Check No.09 Refer to P.274



(R7675)

5.2.68 Radiation Fin Temperature Rise

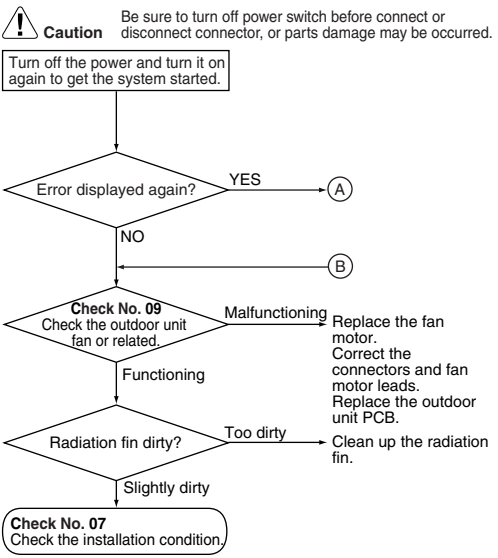
Remote Controller Display	L4
Outdoor Unit LED Display	A ◑ 1 ● 2 ● 3 ● 4 ☼ 5 ●
Method of Malfunction Detection	A radiation fin temperature rise is detected by checking the radiation fin temperature being detected by the fin thermistor with the compressor on.
Malfunction Decision Conditions	■ The radiation fin temperature with the compressor on is above 103~105°C. ■ The error is cleared when the temperature drops below 95~97°C. ■ If a radiation fin temperature rise takes place 255 times successively, the system is shut down. ■ The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).
Supposed Causes	■ Fin temperature rise due to defective outdoor unit fan ■ Fin temperature rise due to short-circuit ■ Fin thermistor defective ■ Connector in poor contact ■ Outdoor unit PCB defective ■ Silicon grease is not applied properly on the heat radiation fin after replacing outdoor unit PCB.

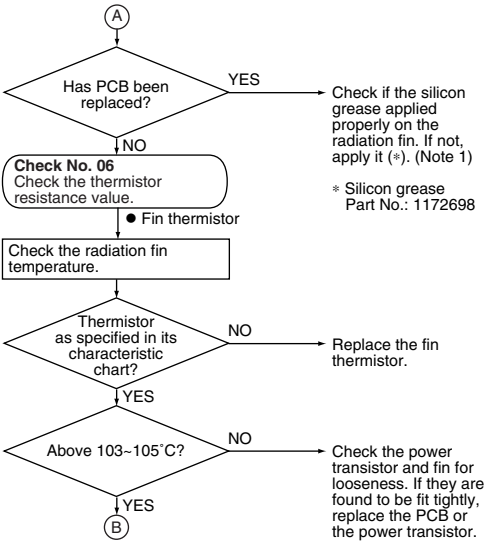
Trouble-shooting

Check No.06
Refer to P.272

Check No.07
Refer to P.273

Check No.09
Refer to P.274




A
Has PCB been replaced?
YES
Check if the silicon grease applied properly on the radiation fin. If not, apply it (*). (Note 1)
* Silicon grease Part No.: 1172698
NO
Check No. 06
Check the thermistor resistance value.
● Fin thermistor
Check the radiation fin temperature.
Thermistor as specified in its characteristic chart?
NO
Replace the fin thermistor.
YES
Above 103~105˚C?
NO
Check the power transistor and fin for looseness. If they are found to be fit tightly, replace the PCB or the power transistor.
YES
B

(R7636)

5.2.69 Radiation Fin Temperature Rise

Remote Controller Display

L4

Method of Malfunction Detection

A radiation fin temperature rise is detected by checking the radiation fin thermistor with the compressor on.

Malfunction Decision Conditions

If the radiation fin temperature with the compressor on is above 81~90°C,

- If a radiation fin temperature rise takes place 4 times successively, the system is shut down.
- The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

Supposed Causes

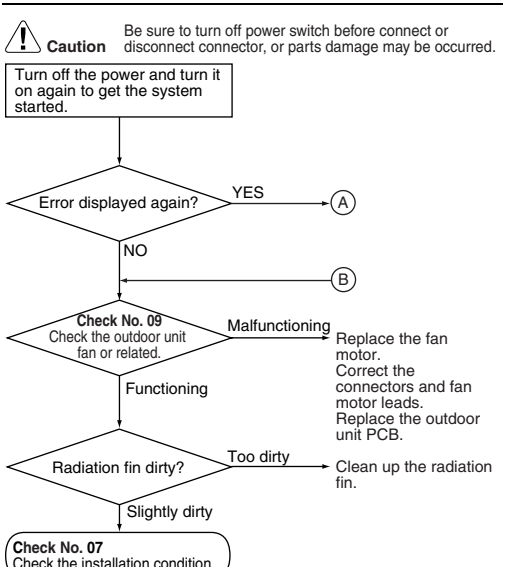
- Fin temperature rise due to defective outdoor unit fan
- Fin temperature rise due to short-circuit
- Fin thermistor defective
- Connector in poor contact
- Outdoor unit PCB defective
- Silicon grease is not applied properly on the heat radiation fin after replacing outdoor unit PCB.

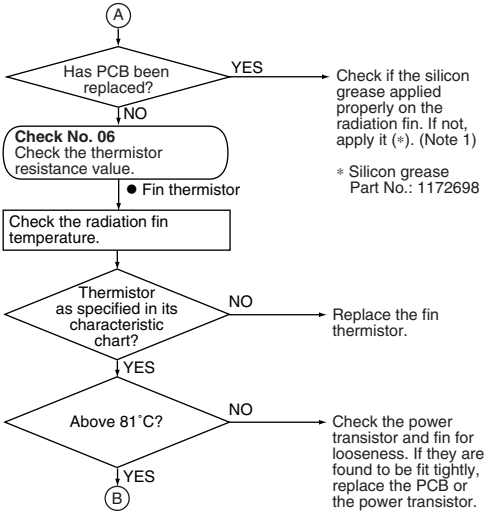
Trouble-shooting

Check No.06 Refer to P.272

Check No.07 Refer to P.273

Check No.09 Refer to P.274




A
Has PCB been replaced?
YES
Check if the silicon grease applied properly on the radiation fin. If not, apply it (*). (Note 1)
* Silicon grease Part No.: 1172698
NO
Check No. 06
Check the thermistor resistance value.
● Fin thermistor
Check the radiation fin temperature.
Thermistor as specified in its characteristic chart?
NO
Replace the fin thermistor.
YES
Above 81˚C?
NO
Check the power transistor and fin for looseness. If they are found to be fit tightly, replace the PCB or the power transistor.
YES
B

(R7674)

5.2.70 Radiation Fin Temperature Rise

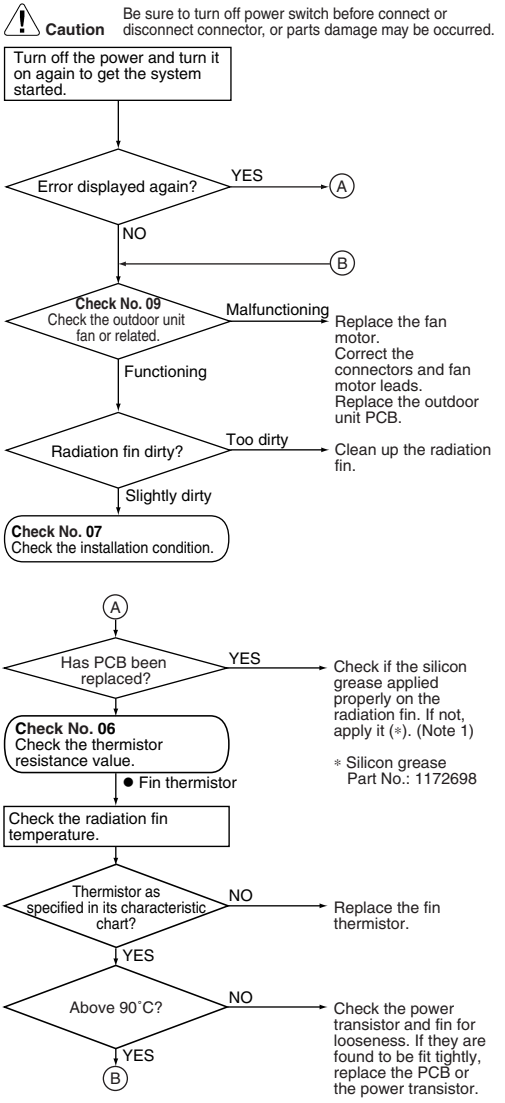
Remote Controller Display	L4
Method of Malfunction Detection	A radiation fin temperature rise is detected by checking the radiation fin thermistor with the compressor on.
Malfunction Decision Conditions	If the radiation fin temperature with the compressor on is above 90~105°C, ■ If a radiation fin temperature rise takes place repeatedly, the system is shut down. ■ The error is cleared when the temperature drops below 85~99°C. ■ The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).
Supposed Causes	■ Fin temperature rise due to defective outdoor unit fan ■ Fin temperature rise due to short-circuit ■ Fin thermistor defective ■ Connector in poor contact ■ Outdoor unit PCB defective ■ Silicon grease is not applied properly on the heat radiation fin after replacing outdoor unit PCB.

Trouble-shooting

Check No.06 Refer to P.272

Check No.07 Refer to P.273

Check No.09 Refer to P.274



(R7675)

5.2.71 Temperature Rise in Radiation Fin

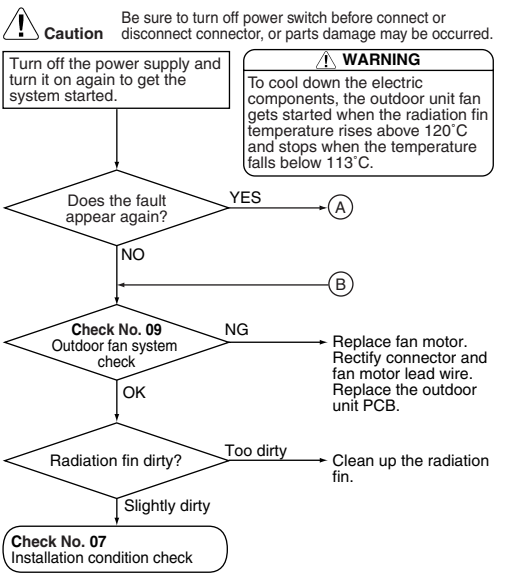
Remote Controller Display	L4
Outdoor Unit LED Display	A ◑ 5 ◑
Method of Malfunction Detection	Temperature rise in the radiation fin is identified based on the temperature of the radiation fin detected by the fin thermistor with the compressor on.
Malfunction Decision Conditions	■ The compressor stops when the radiation fin temperature is 86 °C or more. (Fault condition is cleared when the radiation fin temperature is below 67 °C.) ■ Shut down when the error repeats 255 times ■ Clear condition : Continuous operation for 60 minutes
Supposed Causes	■ Fin temperature rise due to defective outdoor fan ■ Fin temperature rise due to short circuit ■ Detection error due to defective fin thermistor ■ Detection error due to improper connection of connector ■ Detection error due to defective outdoor unit PCB ■ Silicon grease is not applied properly on the heat radiation fin after replacing outdoor unit PCB.

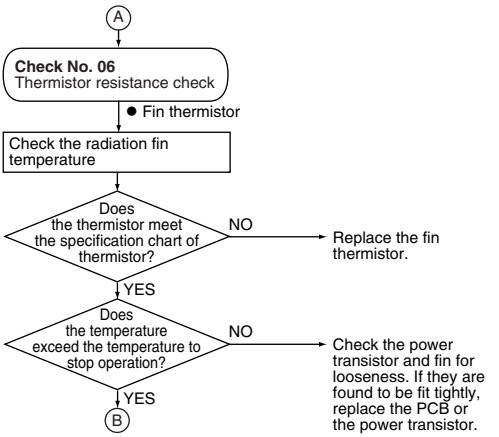
Trouble-shooting

Check No.06
Refer to P.272

Check No.07
Refer to P.273

Check No.09
Refer to P.274




A
Check No. 06
Thermistor resistance check
● Fin thermistor
Check the radiation fin temperature
Does the thermistor meet the specification chart of thermistor?
NO
Replace the fin thermistor.
YES
Does the temperature exceed the temperature to stop operation?
NO
Check the power transistor and fin for looseness. If they are found to be fit tightly, replace the PCB or the power transistor.
YES
B

(R7657)

5.2.72 Radiation Fin Temperature Rise

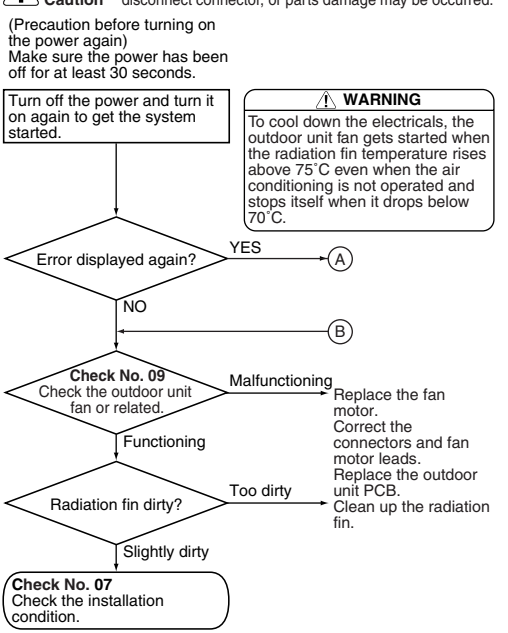
Remote Controller Display	L4
Method of Malfunction Detection	A radiation fin temperature rise is detected by checking the radiation fin thermistor with the compressor on.
Malfunction Decision Conditions	If the radiation fin temperature with the compressor on is above 90~93°C, ■ If a radiation fin temperature rise takes place repeatedly, the system is shut down. ■ The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).
Supposed Causes	■ Fin temperature rise due to defective outdoor unit fan ■ Fin temperature rise due to short-circuit ■ Fin thermistor defective ■ Connector in poor contact ■ Outdoor unit PCB defective ■ Silicon grease is not applied properly on the heat radiation fin after replacing outdoor unit PCB.

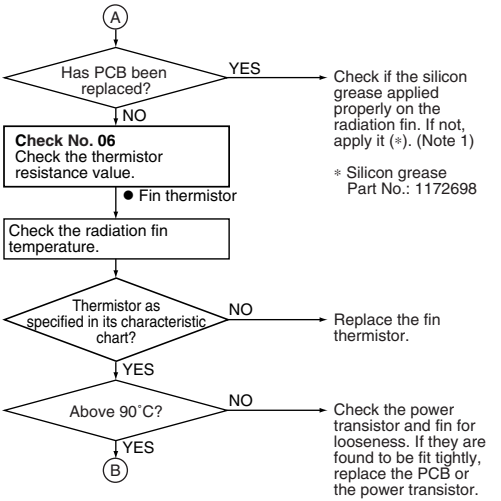
Trouble-shooting

Check No.06 Refer to P.272

Check No.07 Refer to P.273

Check No.09 Refer to P.274




A
Has PCB been replaced?
YES
Check if the silicon grease applied properly on the radiation fin. If not, apply it (*). (Note 1)
* Silicon grease Part No.: 1172698
NO
Check No. 06
Check the thermistor resistance value.
● Fin thermistor
Check the radiation fin temperature.
Thermistor as specified in its characteristic chart?
NO
Replace the fin thermistor.
YES
Above 90˚C?
NO
Check the power transistor and fin for looseness. If they are found to be fit tightly, replace the PCB or the power transistor.
YES
B

(R7523)

5.2.73 Output Overcurrent Detection

Remote Controller Display

L5

Method of Malfunction Detection

An output overcurrent is detected by checking the current that flows in the inverter DC section.

Malfunction Decision Conditions

- A position signal error occurs while the compressor is running.
- A speed error occurs while the compressor is running.
- An output overcurrent input is fed from the output overcurrent detection circuit to the microcomputer.
- The system is shut down if the error occurs repeatedly.
- Clearing condition: Continuous run for about 5~11 minutes (normal)

Supposed Causes

- Overcurrent due to defective power transistor
- Overcurrent due to wrong internal wiring
- Overcurrent due to abnormal supply voltage
- Overcurrent due to defective PCB
- Error detection due to defective PCB
- Overcurrent due to closed stop valve
- Overcurrent due to compressor failure
- Overcurrent due to poor installation condition

Trouble-shooting

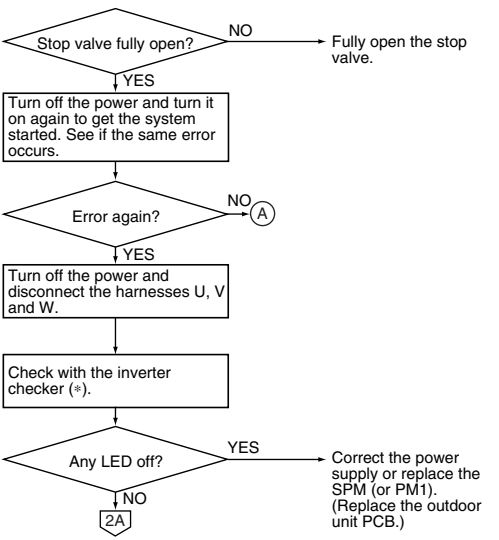
Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

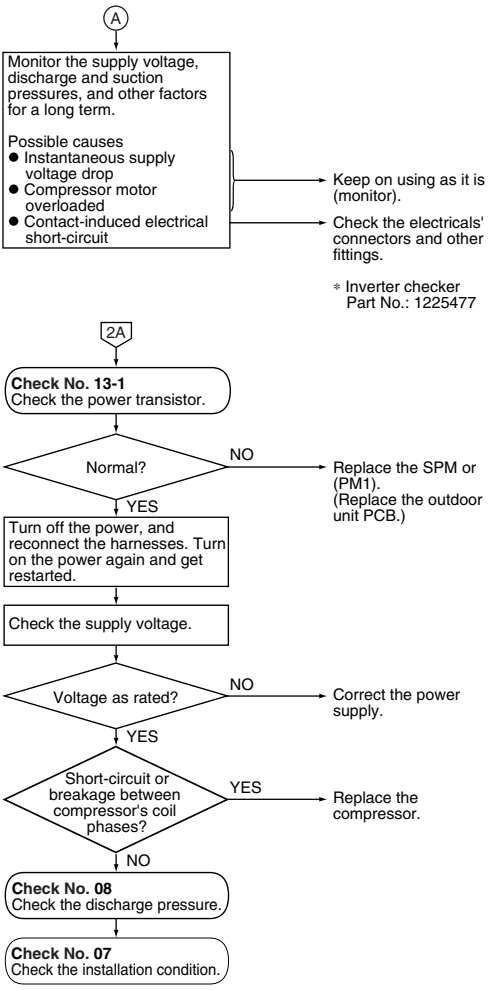
* An output overcurrent may result from wrong internal wiring. If the wires have been disconnected and reconnected for part replacement, for example, and the system is interrupted by an output overcurrent, take the following procedure.

Check No.07 Refer to P.273

Check No.08 Refer to P.274

Check No.13-1 Refer to P.278




A
Monitor the supply voltage, discharge and suction pressures, and other factors for a long term.
Possible causes
● Instantaneous supply voltage drop
● Compressor motor overloaded
● Contact-induced electrical short-circuit
Keep on using as it is (monitor).
Check the electricals' connectors and other fittings.
* Inverter checker Part No.: 1225477
2A
Check No. 13-1
Check the power transistor.
Normal?
NO
Replace the SPM or (PM1).
(Replace the outdoor unit PCB.)
YES
Turn off the power, and reconnect the harnesses. Turn on the power again and get restarted.
Check the supply voltage.
Voltage as rated?
NO
Correct the power supply.
YES
Short-circuit or breakage between compressor's coil phases?
YES
Replace the compressor.
NO
Check No. 08
Check the discharge pressure.
Check No. 07
Check the installation condition.

(R7692)

5.2.74 Output Overcurrent Detection

Remote Controller Display	L5
Outdoor Unit LED Display	A ◑ 1 ● 2 ● 3 ☼ 4 ● 5 ●
Method of Malfunction Detection	An output overcurrent is detected by checking the current that flows in the inverter DC section.
Malfunction Decision Conditions	■ A position signal error occurs while the compressor is running. ■ A speed error occurs while the compressor is running. ■ An output overcurrent input is fed from the output overcurrent detection circuit to the microcomputer. ■ The system is shut down if the error occurs 16 times. ■ Clearing condition: Continuous run for about 5 minutes (normal)
Supposed Causes	■ Overcurrent due to defective power transistor ■ Overcurrent due to wrong internal wiring ■ Overcurrent due to abnormal supply voltage ■ Overcurrent due to defective PCB ■ Error detection due to defective PCB ■ Overcurrent due to closed stop valve ■ Overcurrent due to compressor failure ■ Overcurrent due to poor installation condition

Trouble-shooting

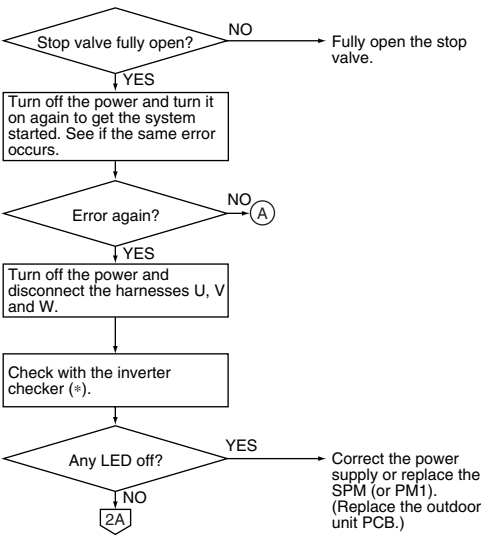
Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

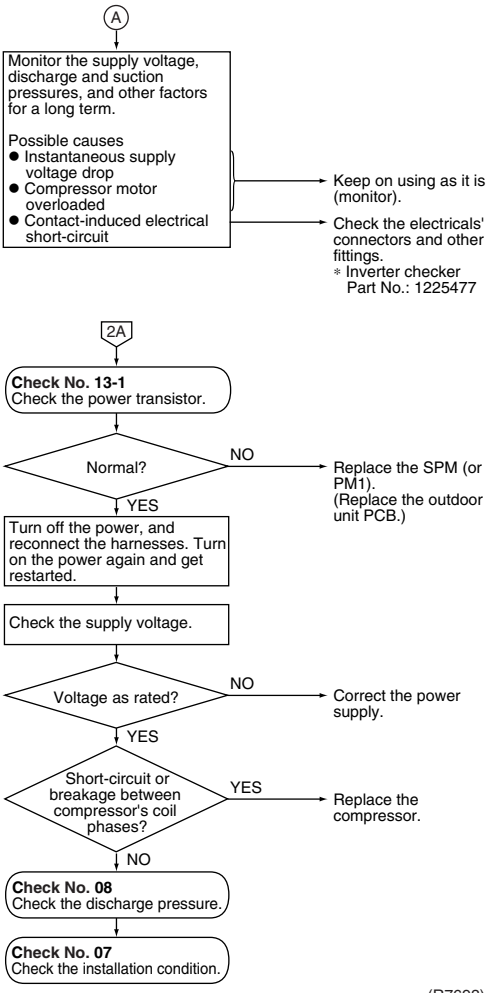
* An output overcurrent may result from wrong internal wiring. If the wires have been disconnected and reconnected for part replacement, for example, and the system is interrupted by an output overcurrent, take the following procedure.

Check No.07 Refer to P.273

Check No.08 Refer to P.274

Check No.13-1 Refer to P.278




A
Monitor the supply voltage, discharge and suction pressures, and other factors for a long term.
Possible causes
● Instantaneous supply voltage drop
● Compressor motor overloaded
● Contact-induced electrical short-circuit
Keep on using as it is (monitor).
Check the electricals' connectors and other fittings.
∗ Inverter checker Part No.: 1225477
2A
Check No. 13-1
Check the power transistor.
Normal?
NO
Replace the SPM (or PM1).
(Replace the outdoor unit PCB.)
YES
Turn off the power, and reconnect the harnesses. Turn on the power again and get restarted.
Check the supply voltage.
Voltage as rated?
NO
Correct the power supply.
YES
Short-circuit or breakage between compressor's coil phases?
YES
Replace the compressor.
NO
Check No. 08
Check the discharge pressure.
Check No. 07
Check the installation condition.
(R7693)

5.2.75 Output Overcurrent

Remote Controller Display	L5
Outdoor Unit LED Display	A ◑ 5 ◑
Method of Malfunction Detection	An output overcurrent is detected by checking the current that flows in the inverter DC section.
Malfunction Decision Conditions	■ A position signal error occurs while the compressor is running. ■ A speed error occurs while the compressor is running. ■ The unit shuts down when the signal of output overcurrent is sent 8 times from the output overcurrent detection circuit to the microcomputer. ■ Clear condition: The unit continuously runs for about 11 minutes (without fault)
Supposed Causes	■ Overcurrent due to defective power transistor ■ Overcurrent due to wrong internal wiring ■ Overcurrent due to abnormal supply voltage ■ Overcurrent due to defective PCB ■ Detection error due to defective PCB ■ Overcurrent due to closed stop valve ■ Overcurrent due to defective compressor ■ Overcurrent due to poor installation condition ■ Defective indoor four way valve

Trouble-shooting

Check No.07
Refer to P.273

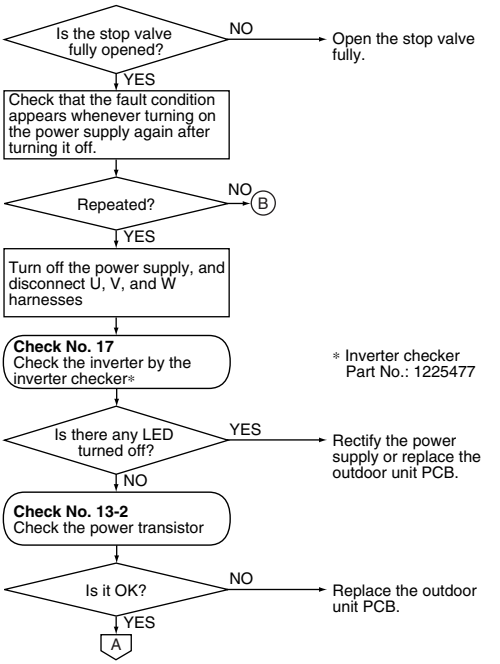
Check No.08
Refer to P.274

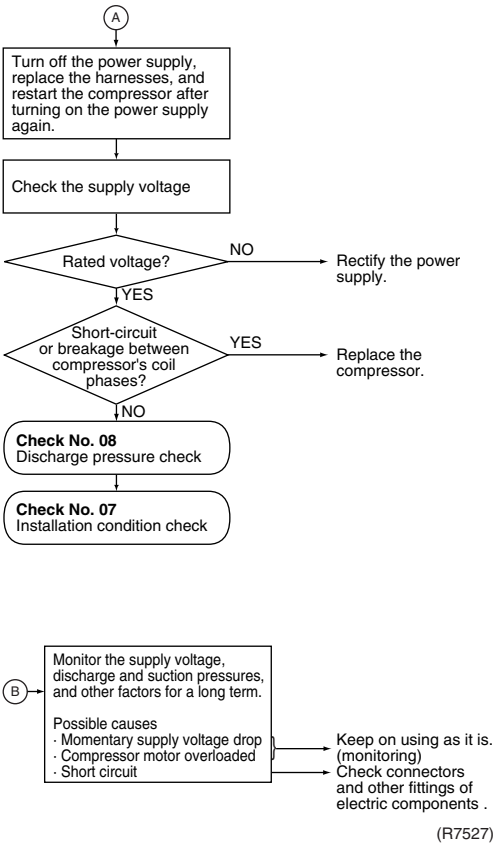
Check No.13-2
Refer to P.279

Check No.17
Refer to P.285

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

* Output overcurrent may caused by improper wiring inside the unit. If the unit stops due to output overcurrent after connecting or disconnecting wires to replace part, check wiring for proper connection.




A
Turn off the power supply, replace the harnesses, and restart the compressor after turning on the power supply again.
Check the supply voltage
Rated voltage?
NO
Rectify the power supply.
YES
Short-circuit or breakage between compressor's coil phases?
YES
Replace the compressor.
NO
Check No. 08
Discharge pressure check
Check No. 07
Installation condition check
B
Monitor the supply voltage, discharge and suction pressures, and other factors for a long term.
Possible causes
· Momentary supply voltage drop
· Compressor motor overloaded
· Short circuit
Keep on using as it is. (monitoring)
Check connectors and other fittings of electric components .

(R7527)

5.3 System

5.3.1 Refrigerant shortage

Remote Controller Display

U0

Method of Malfunction Detection

Refrigerant shortage detection I:
Refrigerant shortage is detected by checking the input current value and the compressor running frequency. If the refrigerant is short, the input current is smaller than the normal value.

Refrigerant shortage detection II:
Refrigerant shortage is detected by checking the discharge pipe temperature and the opening of the electronic expansion valve. If the refrigerant is short, the discharge pipe temperature tends to rise.

Refrigerant shortage detection III:
Refrigerant shortage is detected by checking the difference between inhale and exhale temperature.

Malfunction Decision Conditions

Refrigerant shortage detection I:
The following conditions continue for 7 minutes.
- Input current × input voltage ≤ 640 / 256 × output frequency
- Output frequency > 55 (Hz)

Refrigerant shortage detection II:
The following conditions continue for 80 seconds.
- Target opening of the electronic expansion valve ≥ 480 (pulse)
- Discharge pipe temperature > 255 / 256 × target discharge pipe temperature +30 (°C)

Refrigerant shortage detection III:
When the difference of the temperature is smaller than △, it is regarded as refrigerant shortage.

		△
Cooling	room temperature – indoor heat exchanger temperature	4.0°C
	outdoor heat exchanger temperature – outdoor temperature	4.0°C
Heating	indoor heat exchanger temperature – room temperature	3.0°C
	outdoor temperature – outdoor heat exchanger temperature	3.0°C

If a refrigerant shortage error takes place 4 times straight, the system is shut down. The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

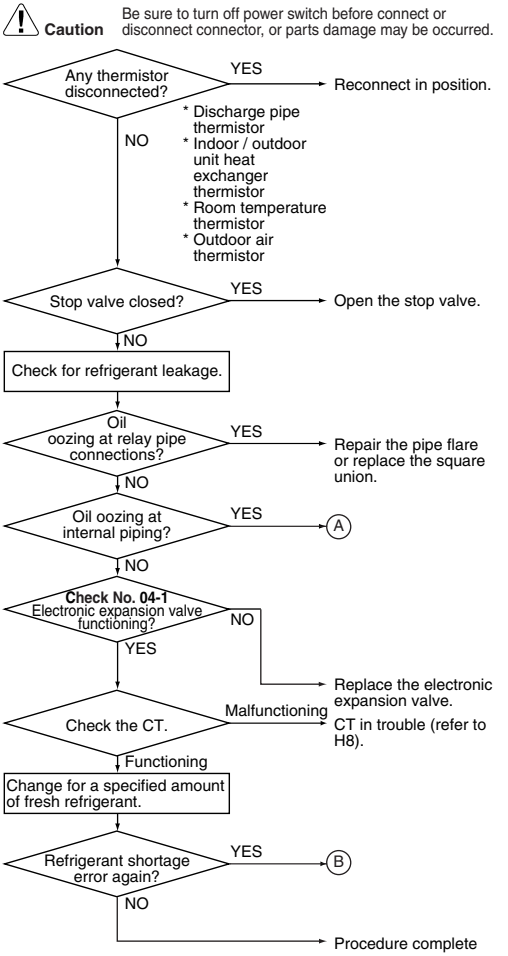
Supposed Causes

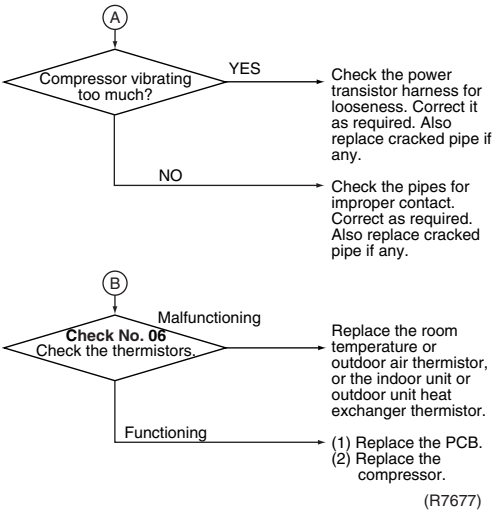
- Refrigerant shortage (refrigerant leakage)
- Poor compression performance of compressor
- Discharge pipe thermistor disconnected, or indoor unit or outdoor unit heat exchanger thermistor disconnected, room or outdoor air temperature thermistor disconnected
- Stop valve closed
- Electronic expansion valve defective

Trouble-shooting

Check No.04-1 Refer to P.264

Check No.06 Refer to P.272




A
Compressor vibrating too much?
YES
Check the power transistor harness for looseness. Correct it as required. Also replace cracked pipe if any.
NO
Check the pipes for improper contact. Correct as required. Also replace cracked pipe if any.
B
Malfunctioning
Check No. 06
Check the thermistors.
Replace the room temperature or outdoor air thermistor, or the indoor unit or outdoor unit heat exchanger thermistor.
Functioning
(1) Replace the PCB.
(2) Replace the compressor.
(R7677)

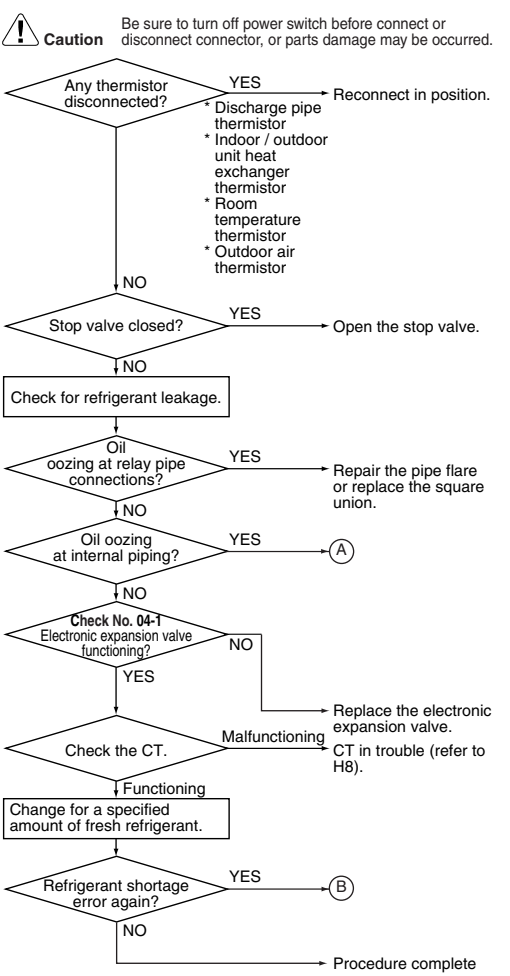
5.3.2 Refrigerant Shortage

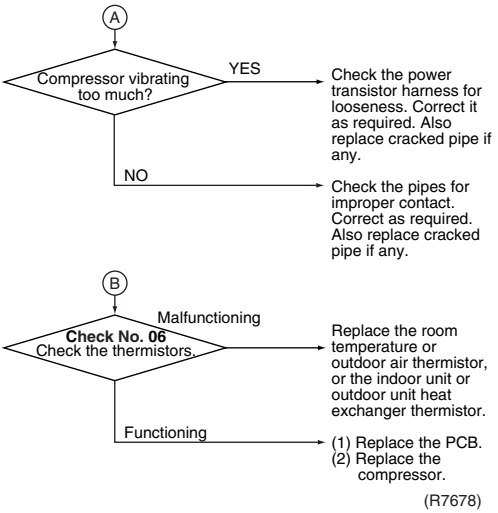
Remote Controller Display	U0
Method of Malfunction Detection	**Refrigerant shortage detection I :** Refrigerant shortage is detected by checking the CT-detected input current value and the compressor running frequency. **Refrigerant shortage detection II :** Refrigerant shortage is detected by checking the difference between indoor unit heat exchanger temperature and room temperature as well as the difference between outdoor unit heat exchanger temperature and room temperature.
Malfunction Decision Conditions	**Refrigerant shortage detection I :** Input current < 1120 / 256 (A/Hz) x Compressor running frequency × Voltage - 80 However, when the status of running frequency > 65 (Hz) is kept on for a certain time. Note : The values are different from model to model. **Refrigerant shortage detection II :** If a refrigerant shortage error takes place 4 times successively, the system is shut down. The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).
Supposed Causes	■ Refrigerant shortage (refrigerant leakage) ■ Poor compression performance of compressor ■ Discharge pipe thermistor disconnected, or indoor unit or outdoor unit heat exchanger thermistor disconnected, room or outside air temperature thermistor disconnected ■ Stop valve closed ■ Electronic expansion valve defective

Trouble-shooting

Check No.04-1 Refer to P.264

Check No.06 Refer to P.272




A
Compressor vibrating too much?
YES
Check the power transistor harness for looseness. Correct it as required. Also replace cracked pipe if any.
NO
Check the pipes for improper contact. Correct as required. Also replace cracked pipe if any.
B
Malfunctioning
Check No. 06
Check the thermistors.
Replace the room temperature or outdoor air thermistor, or the indoor unit or outdoor unit heat exchanger thermistor.
Functioning
(1) Replace the PCB.
(2) Replace the compressor.
(R7678)

5.3.3 Refrigerant Shortage

Remote Controller Display

U0

Outdoor Unit LED Display

A ◑ 1 ● 2 ● 3 ☼ 4 ☼

Method of Malfunction Detection

Refrigerant shortage detection I:
Refrigerant shortage is detected by checking the input current value and the compressor running frequency. If the refrigerant is short, the input current is smaller than the normal value.

Refrigerant shortage detection II:
Refrigerant shortage is detected by checking the discharge pipe temperature and the opening of the electronic expansion valve. If the refrigerant is short, the discharge pipe temperature tends to rise.

Malfunction Decision Conditions

Refrigerant shortage detection I (typical value):
The following conditions continue for 7 minutes.

- Input current × input voltage ≤ 1756 / 256 × output frequency + 50 (W)
- Output frequency > 55 (Hz)

Refrigerant shortage detection II:
The following conditions continue for 80 seconds.

- Target opening of the electronic expansion valve ≥ 450 (pulse)
- Cooling: discharge pipe temperature > 255 / 256 × target discharge pipe temperature +20 (°C)
  Heating: discharge pipe temperature > 255 / 256 × target discharge pipe temperature +40 (°C)

If a refrigerant shortage error takes place 4 times straight, the system is shut down. The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

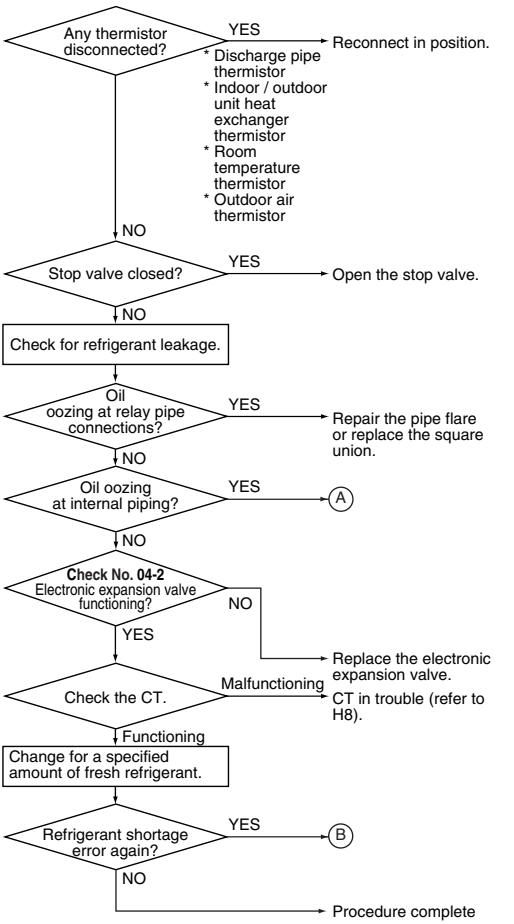
Supposed Causes

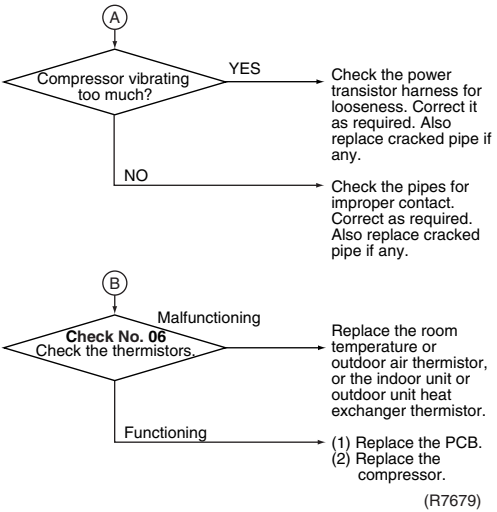
- Refrigerant shortage (refrigerant leakage)
- Poor compression performance of compressor
- Discharge pipe thermistor disconnected, or indoor unit or outdoor unit heat exchanger thermistor disconnected, room or outside air temperature thermistor disconnected
- Stop valve closed
- Electronic expansion valve defective

Trouble-shooting

Check No.04-2 Refer to P.265

Check No.06 Refer to P.272




A
Compressor vibrating too much?
YES
Check the power transistor harness for looseness. Correct it as required. Also replace cracked pipe if any.
NO
Check the pipes for improper contact. Correct as required. Also replace cracked pipe if any.
B
Malfunctioning
Check No. 06
Check the thermistors.
Replace the room temperature or outdoor air thermistor, or the indoor unit or outdoor unit heat exchanger thermistor.
Functioning
(1) Replace the PCB.
(2) Replace the compressor.
(R7679)

5.3.4 Refrigerant Shortage

Remote Controller Display

Outdoor Unit LED Display

A ◑ 1 ● 2 ● 3 ☼ 4 ☼

Method of Malfunction Detection

Refrigerant shortage detection I :
Refrigerant shortage is detected by checking the CT-detected input current value and the compressor running frequency.

Refrigerant shortage detection II :
Refrigerant shortage is detected by checking the difference between indoor unit heat exchanger temperature and room temperature as well as the difference between outdoor unit heat exchanger temperature and room temperature.

Malfunction Decision Conditions

Refrigerant shortage detection I :
Input current < 8.78 / 256 (A/Hz) x Compressor running frequency + 0.25
However, when the status of running frequency > 55 (Hz) is kept on for a certain time.
Note : The values are different from model to model.

Refrigerant shortage detection II :
If a refrigerant shortage error takes place 4 times straight, the system is shut down. The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

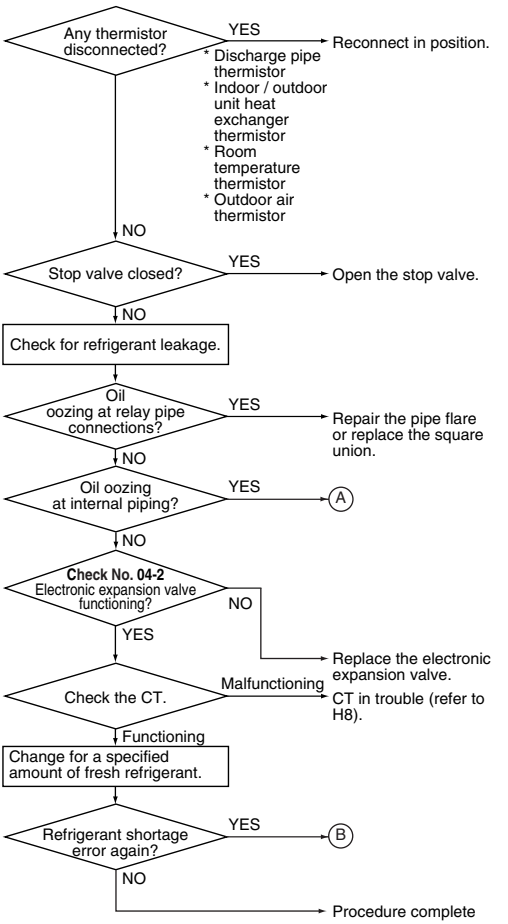
Supposed Causes

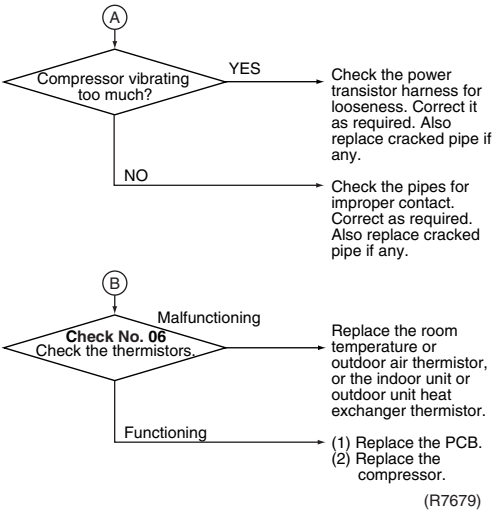
- Refrigerant shortage (refrigerant leakage)
- Poor compression performance of compressor
- Discharge pipe thermistor disconnected, or indoor unit or outdoor unit heat exchanger thermistor disconnected, room or outside air temperature thermistor disconnected
- Stop valve closed
- Electronic expansion valve defective

Trouble-shooting

Check No.04-2 Refer to P.265

Check No.06 Refer to P.272




A
Compressor vibrating too much?
YES
Check the power transistor harness for looseness. Correct it as required. Also replace cracked pipe if any.
NO
Check the pipes for improper contact. Correct as required. Also replace cracked pipe if any.
B
Malfunctioning
Check No. 06
Check the thermistors.
Replace the room temperature or outdoor air thermistor, or the indoor unit or outdoor unit heat exchanger thermistor.
Functioning
(1) Replace the PCB.
(2) Replace the compressor.
(R7679)

5.3.5 Refrigerant Shortage

Remote Controller Display

U0

Outdoor Unit LED Display

A ◑ 5 ◑ (-)

Method of Malfunction Detection

Refrigerant shortage detection I:
Refrigerant shortage is detected by checking the input current value and the compressor running frequency. If the refrigerant is short, the input current is smaller than the normal value.

Refrigerant shortage detection III:
Refrigerant shortage is detected by checking the difference between ambient temperature and heat exchanger temperature. If the refrigerant is short, the difference is smaller than the normal value.

Malfunction Decision Conditions

Refrigerant shortage detection I:
The following conditions continue for 7 minutes.

- Input current × input voltage ≤ 2800 / 256 × output frequency –350 (W)
- Output frequency > 54 (Hz)

Refrigerant shortage detection III:
When the difference of the temperature is smaller than △, it is regarded as refrigerant shortage.

		△
Cooling	room temperature - indoor heat exchanger temperature	4.0°C
	outdoor heat exchanger temperature - outdoor temperature	4.0°C
Heating	indoor heat exchanger temperature - room temperature	4.0°C
	outdoor temperature - outdoor heat exchanger temperature	4.0°C

If a refrigerant shortage error takes place 4 times straight, the system is shut down. The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

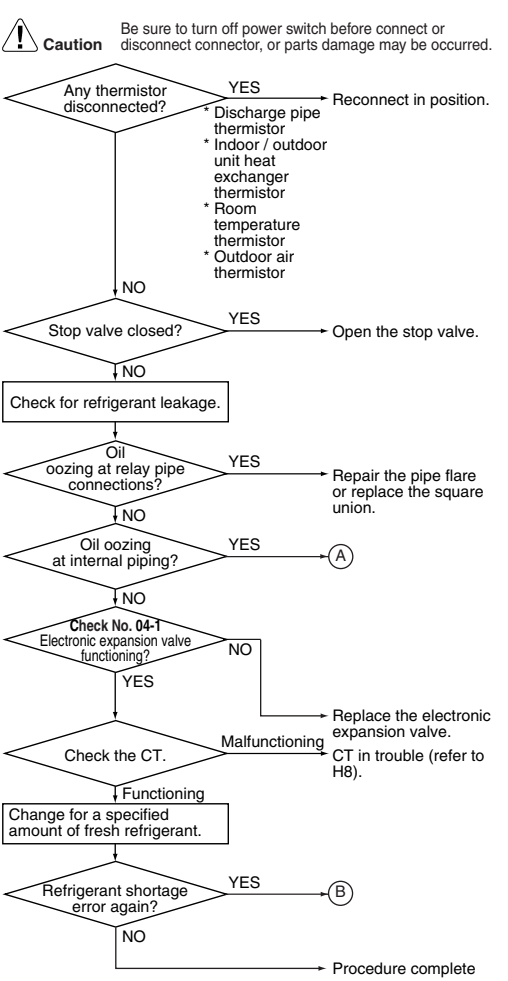
Supposed Causes

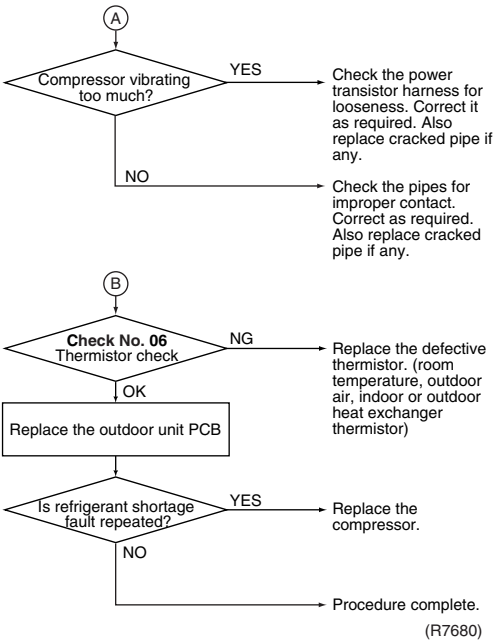
- Refrigerant shortage (refrigerant leakage)
- Refrigerant heat exchanger drift
- Poor compression performance of compressor
- Closed stop valve
- Defective electronic expansion valve
- Defective solenoid valve for dehumidifying

Trouble-shooting

Check No.04-1
Refer to P.264

Check No.06
Refer to P.272




A
Compressor vibrating too much?
YES
Check the power transistor harness for looseness. Correct it as required. Also replace cracked pipe if any.
NO
Check the pipes for improper contact. Correct as required. Also replace cracked pipe if any.
B
Check No. 06 Thermistor check
NG
Replace the defective thermistor. (room temperature, outdoor air, indoor or outdoor heat exchanger thermistor)
OK
Replace the outdoor unit PCB
Is refrigerant shortage fault repeated?
YES
Replace the compressor.
NO
Procedure complete.
(R7680)

5.3.6 Refrigerant Shortage

Remote Controller Display

U0

Outdoor Unit LED Display

A ◑ 1 ● 2 ● 3 ☼ 4 ☼ 5 ●

Method of Malfunction Detection

Refrigerant shortage detection I:
Refrigerant shortage is detected by checking the input current value and the compressor running frequency. If the refrigerant is short, the input current is smaller than the normal value.

Refrigerant shortage detection II:
Refrigerant shortage is detected by checking the discharge pipe temperature and the opening of the electronic expansion valve. If the refrigerant is short, the discharge pipe temperature tends to rise.

Malfunction Decision Conditions

Refrigerant shortage detection I :
The following conditions continue for 7 minutes.

- Input current ≤ 0.01~0.035 × output frequency + 0.3~2 (A)
- Output frequency > 40 (Hz)

Refrigerant shortage detection II:
The following conditions continue for 80 seconds.

- Target opening of the electronic expansion valve ≥ 450 (pulse)
- Cooling: discharge pipe temperature > 255 / 256 × target discharge pipe temperature +20 (°C)
  Heating: discharge pipe temperature > 255 / 256 × target discharge pipe temperature +40 (°C)

If a refrigerant shortage error takes place 4 times straight, the system is shut down. The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

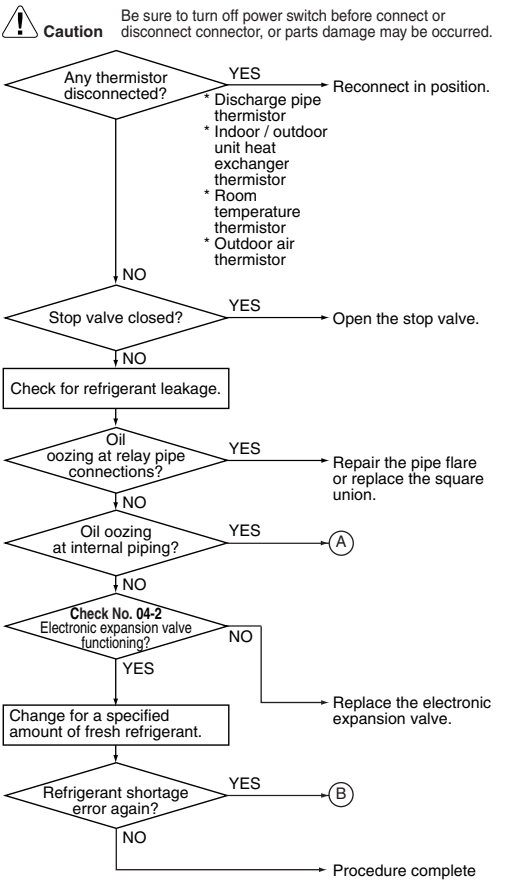
Supposed Causes

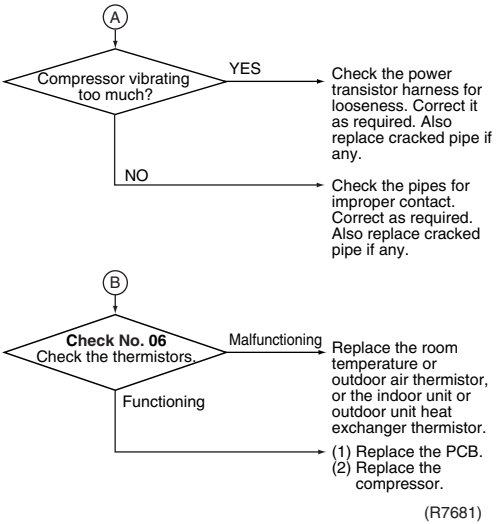
- Refrigerant shortage (refrigerant leakage)
- Poor compression performance of compressor
- Discharge pipe thermistor disconnected, or indoor unit or outdoor unit heat exchanger thermistor disconnected, room or outside air temperature thermistor disconnected
- Stop valve closed
- Electronic expansion valve defective

Trouble-shooting

Check No.04-2
Refer to P.265

Check No.06
Refer to P.272




A
Compressor vibrating too much?
YES
Check the power transistor harness for looseness. Correct it as required. Also replace cracked pipe if any.
NO
Check the pipes for improper contact. Correct as required. Also replace cracked pipe if any.
B
Check No. 06
Check the thermistors.
Malfunctioning
Replace the room temperature or outdoor air thermistor, or the indoor unit or outdoor unit heat exchanger thermistor.
Functioning
(1) Replace the PCB.
(2) Replace the compressor.
(R7681)

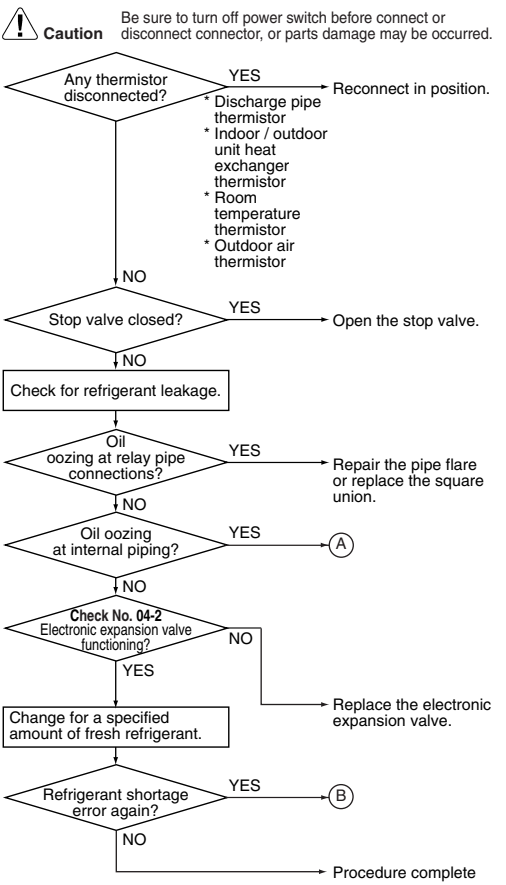
5.3.7 Refrigerant Shortage

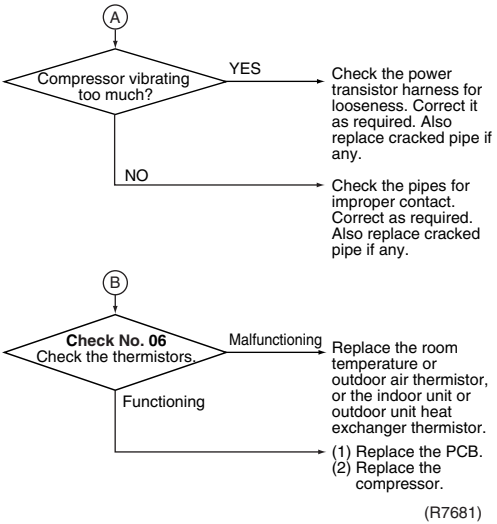
Remote Controller Display	U0
Method of Malfunction Detection	**Refrigerant shortage detection I :** Refrigerant shortage is detected by checking the power consumption value and the compressor running frequency.
Malfunction Decision Conditions	**Refrigerant shortage detection I :** Power consumption < 4578 / 256 (W/Hz) × Compressor running frequency – 638 (W) However, when the status of running frequency > 48 (Hz) is kept on for a certain time. If a refrigerant shortage error takes place 4 times successively, the system is shut down. The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).
Supposed Causes	■ Refrigerant shortage (refrigerant leakage) ■ Poor compression performance of compressor ■ Stop valve closed ■ Electronic expansion valve defective

Trouble-shooting

Check No.04-2
Refer to P.265

Check No.06
Refer to P.272




A
Compressor vibrating too much?
YES
Check the power transistor harness for looseness. Correct it as required. Also replace cracked pipe if any.
NO
Check the pipes for improper contact. Correct as required. Also replace cracked pipe if any.
B
Check No. 06
Check the thermistors.
Malfunctioning
Replace the room temperature or outdoor air thermistor, or the indoor unit or outdoor unit heat exchanger thermistor.
Functioning
(1) Replace the PCB.
(2) Replace the compressor.
(R7681)

5.3.8 Refrigerant Shortage

Remote Controller Display

U0

Method of Malfunction Detection

Refrigerant shortage detection I :
Refrigerant shortage is detected by checking the power consumption value and the compressor running frequency.

Refrigerant shortage detection II :
Refrigerant shortage is detected by checking the difference between indoor unit heat exchanger temperature and room temperature as well as the difference between outdoor unit heat exchanger temperature and room temperature.

Malfunction Decision Conditions

Refrigerant shortage detection I :
Power consumption < 1862 / 256 (A/Hz) × Compressor running frequency + (-18)
However, when the status of running frequency > 61 (Hz) is kept on for a certain time.
Note : The values are different from model to model.

Refrigerant shortage detection II :
When the condition of the following 1-3 continued for a certain time.
1. During discharge pipe temperature control
2. Discharge pipe temp. > (255 / 256) × target discharge pipe temp. +20
3. Electronic expansion valve opening (the biggest value among operating units) ≥ 450

If a refrigerant shortage error takes place 4 times successively, the system is shut down. The error counter resets itself if this or any other error does not occur during the following 60-minute compressor running time (total time).

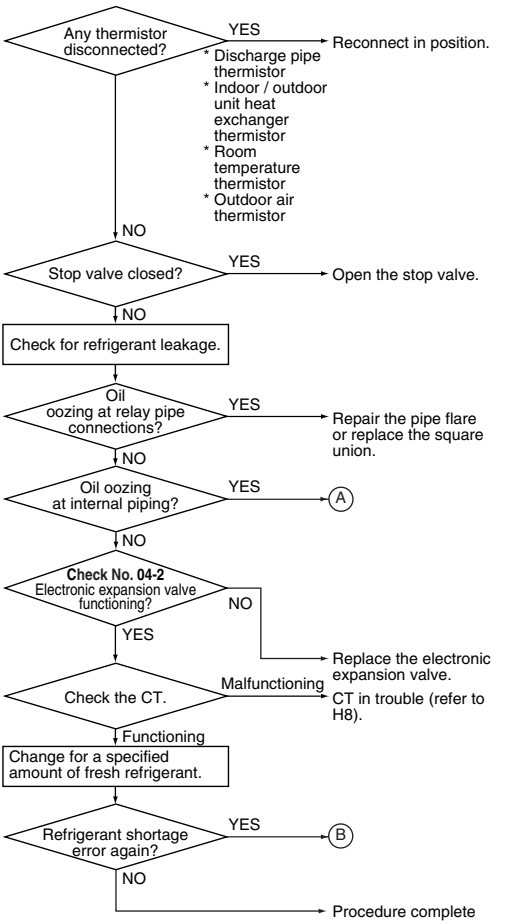
Supposed Causes

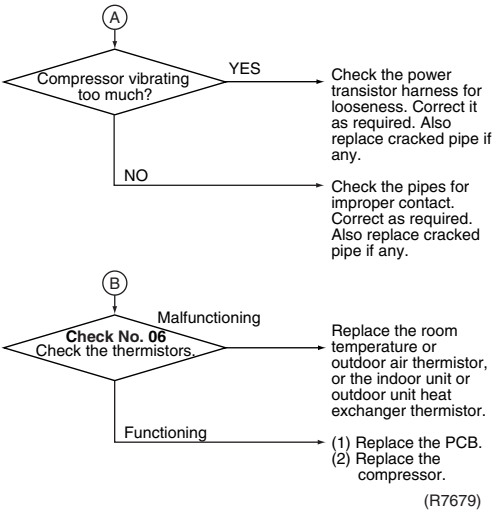
- Refrigerant shortage (refrigerant leakage)
- Poor compression performance of compressor
- Discharge pipe thermistor disconnected, or indoor unit or outdoor unit heat exchanger thermistor disconnected, room or outdoor air temperature thermistor disconnected
- Stop valve closed
- Electronic expansion valve defective

Trouble-shooting

Check No.04-2 Refer to P.265

Check No.06 Refer to P.272

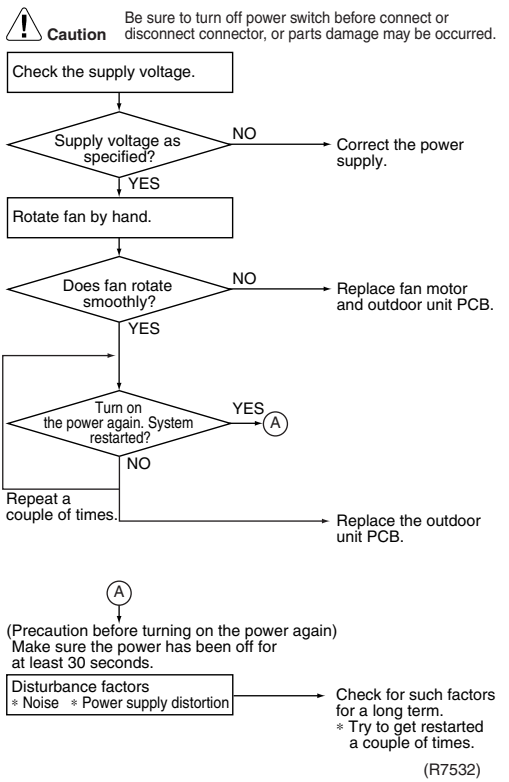



A
Compressor vibrating too much?
YES
Check the power transistor harness for looseness. Correct it as required. Also replace cracked pipe if any.
NO
Check the pipes for improper contact. Correct as required. Also replace cracked pipe if any.
B
Malfunctioning
Check No. 06
Check the thermistors.
Replace the room temperature or outdoor air thermistor, or the indoor unit or outdoor unit heat exchanger thermistor.
Functioning
(1) Replace the PCB.
(2) Replace the compressor.
(R7679)

5.3.9 Low-voltage Detection or Over-voltage Detection

Remote Controller Display	U2
Method of Malfunction Detection	An abnormal voltage rise or drop is detected by checking the specified over-voltage detection circuit or DC voltage detection circuit.
Malfunction Decision Conditions	■ An over-voltage signal is fed from the over-voltage detection circuit to the microcomputer (The voltage is over 400V) or the voltage being detected by the DC voltage detection circuit is judged to be below 150V for 0.1 second. ■ The system is shut down if the error occurs repeatedly. ■ Clearing condition: Continuous run for about 10 ~ 60 minutes (normal)
Supposed Causes	■ Supply voltage not as specified ■ Over-voltage detection circuit defective ■ PAM control part(s) defective ■ Short circuit inside the fan motor winding

Trouble-shooting



5.3.10 Low-voltage Detection or Over-voltage Detection

Remote Controller Display

U2

Method of Malfunction Detection

An abnormal voltage rise or drop is detected by checking the over-voltage detection circuit or DC voltage detection circuit.

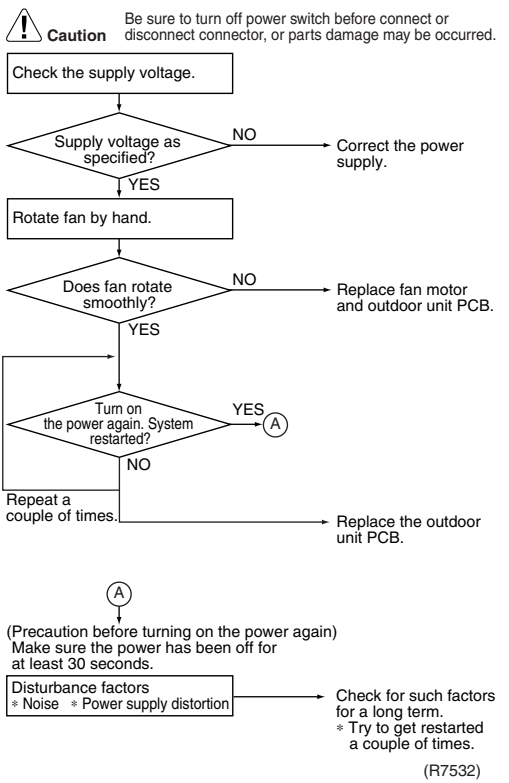
Malfunction Decision Conditions

- An over-voltage signal is fed from the over-voltage detection circuit to the microcomputer, or the voltage being detected by the DC voltage detection circuit is judged to be below 150 V for 0.1 second.
- The system is shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 60 minutes (normal)

Supposed Causes

- Supply voltage not as specified
- Over-voltage detector or DC voltage detection circuit defective
- PAM control part(s) defective

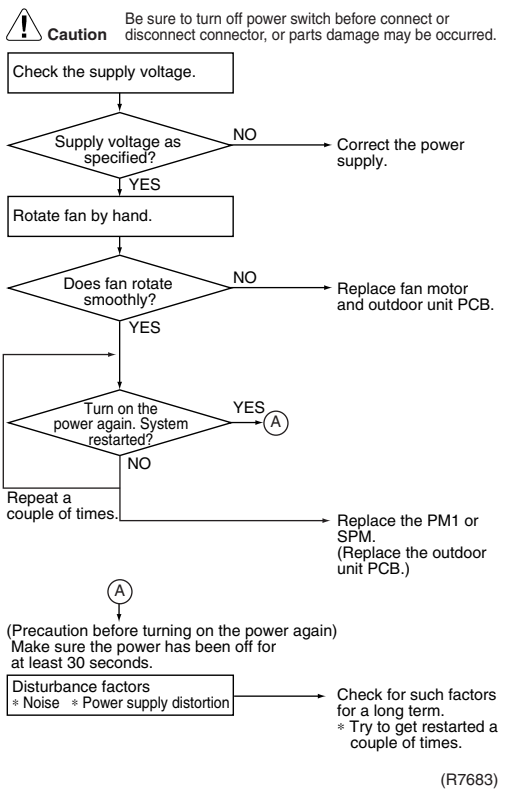
Trouble-shooting



5.3.11 Low-voltage Detection

Remote Controller Display	U2
Outdoor Unit LED Display	A ◑ 1 ☼ 2 ● 3 ● 4 ☼ 5 ●
Method of Malfunction Detection	An abnormal voltage drop is detected by checking the DC voltage detection circuit.
Malfunction Decision Conditions	■ The voltage being detected by the DC voltage detection circuit is judged to be below 150 V for 0.1 second. ■ The system is shut down if the error occurs 16 times. ■ Clearing condition: Continuous run for about 60 minutes (normal)
Supposed Causes	■ Supply voltage not as specified ■ DC voltage detection circuit defective ■ PAM control part(s) defective ■ Short circuit inside the fan motor winding

Trouble-shooting

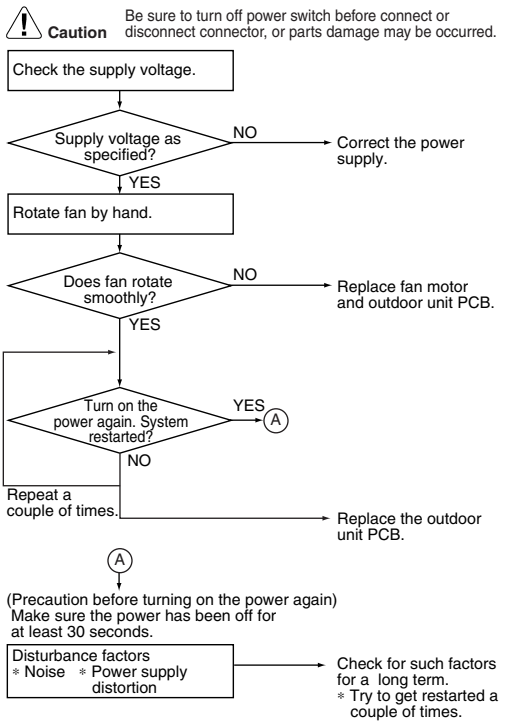


(R7683)

5.3.12 Low-voltage Detection / Over-voltage Detection

Remote Controller Display	U2
Outdoor Unit LED Display	A ◑ 5 ◑ (-)
Method of Malfunction Detection	Detect an abnormal rise or drop of voltage by the over-voltage detection circuit or DC voltage detection circuit.
Malfunction Decision Conditions	■ When an over-voltage signal is sent to the microcomputer from the over-voltage detection circuit, or the voltage detected by DC voltage detection circuit is less than 150 V and that voltage continues for about 0.1 seconds. ■ The unit shuts down if the fault conditions occurs 255 times. ■ Fault counter is reset when the unit continuously runs for 60 minutes without fault.
Supposed Causes	■ Abnormal supply voltage, momentary power failure ■ Defective over-voltage detector or defective DC voltage detection circuit ■ Failure in PAM controlled parts ■ Short circuit inside the fan motor winding.

Trouble-shooting



(R7536)

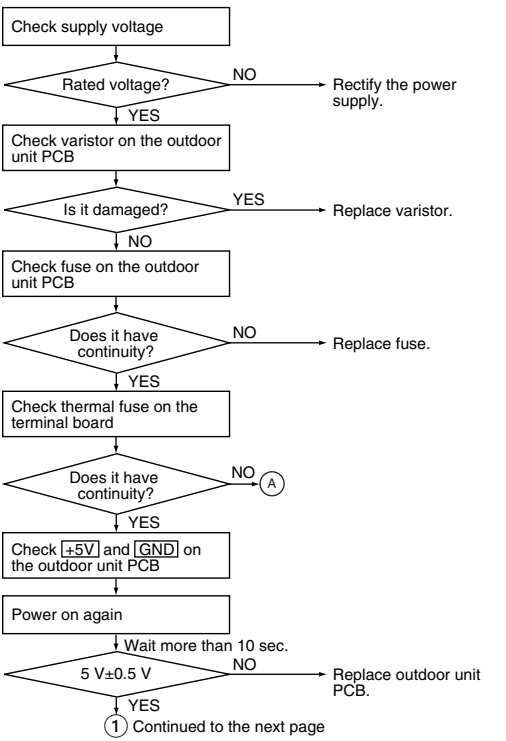
5.3.13 Outdoor Unit PCB Abnormality or Signal Transmission Circuit Abnormality

Remote Controller Display	U4
Outdoor Unit LED Display	A 5 -
Method of Malfunction Detection	1. Detect within the program of the microcomputer that the program is in good running order. 2. When indoor-outdoor unit signal transmission can not be performed for more than 15 seconds. 3. Detection of the presence or absence of zero-cross signal.
Malfunction Decision Conditions	1. When the program of the microcomputer is in bad running order. 2. When indoor-outdoor unit signal transmission can not be performed for more than 15 seconds. 3. When zero-cross signal can not be detected for more than 10 seconds.
Supposed Causes	■ Display disabled due to power supply fault ■ Communication circuit fault in outdoor unit PCB ■ Out of control of microcomputer caused by external factors ● Noise ● Momentary voltage drop ● Momentary power loss ■ Defective outdoor unit PCB ■ Defective thermal fuse in outdoor terminal board

Trouble-shooting

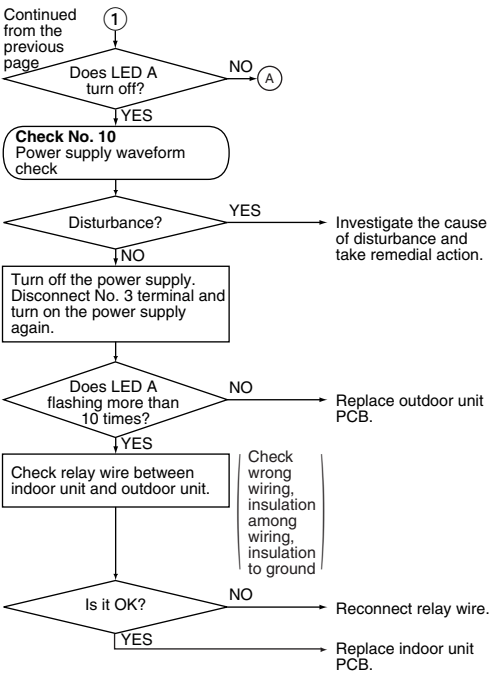
Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

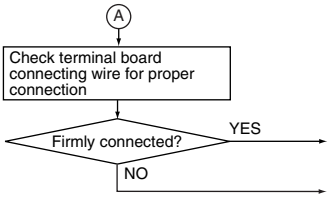
Check indoor unit also, because a communication circuit fault may be caused by the problem related to the indoor unit.



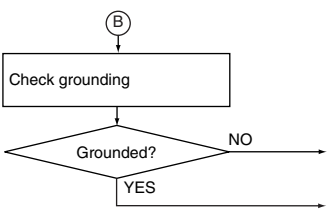
Trouble-shooting

Check No.10 Refer to P.276




A
Check terminal board connecting wire for proper connection
Firmly connected?
YES
NO
Replace thermal fuse on the terminal board.
Reconnect properly.
Replace terminal board.
Replace thermal fuse on the terminal board.

(R7538)


B
Check grounding
Grounded?
NO
YES
Carry out grounding work.
The cause seems to be an external factor other than failure of the outdoor unit PCB. Investigate source of noise and take measures.

(R7539)

5.3.14 Outdoor Unit PCB Abnormality or Signal Transmission Circuit Abnormality

Remote Controller Display

U4

Method of Malfunction Detection

The data received from the outdoor unit in indoor unit-outdoor unit signal transmission is checked whether it is normal.

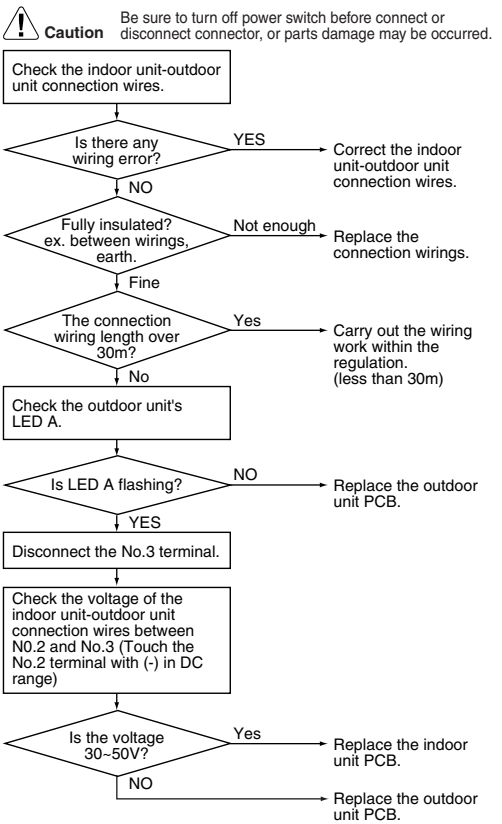
Malfunction Decision Conditions

When the data sent from the outdoor unit cannot be received normally, or when the content of the data is abnormal.
If the indoor unit cannot communicate with the outdoor unit for 15 seconds, the system is shut down.

Supposed Causes

- Faulty outdoor unit PCB.
- Faulty indoor unit PCB.
- Indoor unit-outdoor unit signal transmission error due to wiring error.
- Indoor unit-outdoor unit signal transmission error due to breaking of wire in the connection wires between the indoor and outdoor units (the transmission wire).

Trouble-shooting

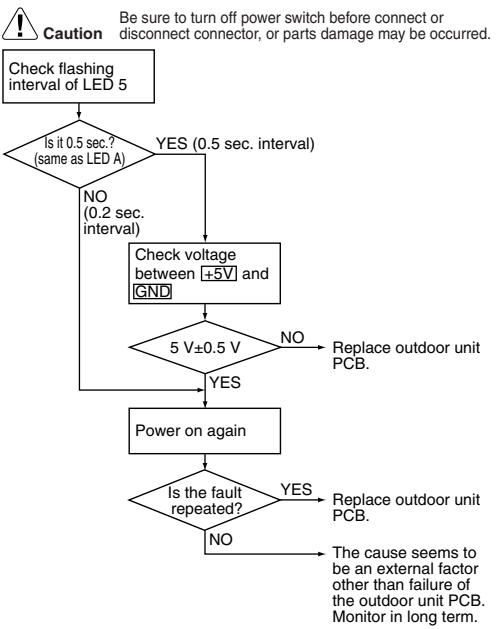


(R3046)

5.3.15 Signal Transmission Error on Outdoor Unit PCB

Remote Controller Display	U7
Outdoor Unit LED Display	A ◑ 5 ◑ (-)
Method of Malfunction Detection	Communication error between microcomputer mounted on the main body and inverter.
Malfunction Decision Conditions	■ When the data sent from the microcomputer of the inverter can not be received 15 times successively or for 15 seconds, the unit shuts down. ■ Fault counter is reset when the data from the microcomputer of the inverter can be successfully received.
Supposed Causes	■ Defective outdoor unit PCB ■ Disconnection or breakage of harness between PCBs

Trouble-shooting



5.3.16 Signal Transmission Error (on Outdoor Unit PCB)

Remote Controller Display

U7

Outdoor Unit LED Display

A◑ 1 ● 2 ☼ 3 ☼ 4 ☼ 5 ●

Method of Malfunction Detection

Communication error between microcomputer mounted on the main PCB and PM1.

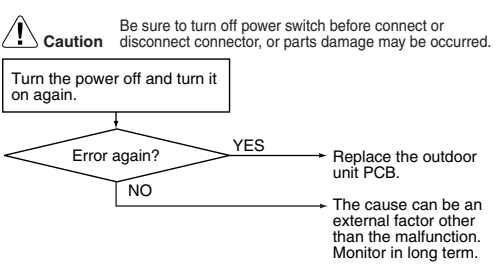
Malfunction Decision Conditions

- When the data sent from the PM1 can not be received successively for 9 seconds.
- The abnormality is determined if the above fault conditions occurs once.
- Fault counter is reset when the data from the PM1 can be successfully received.

Supposed Causes

- Defective outdoor unit PCB

Trouble-shooting



(R5152)

5.3.17 Anti-icing Function in Other Rooms / Unspecified Voltage (between Indoor and Outdoor Units)

Remote Controller Display

U8, U9

Method of Malfunction Detection

A wrong connection is detected by checking the combination of indoor and outdoor units on the microcomputer.

Malfunction Decision Conditions

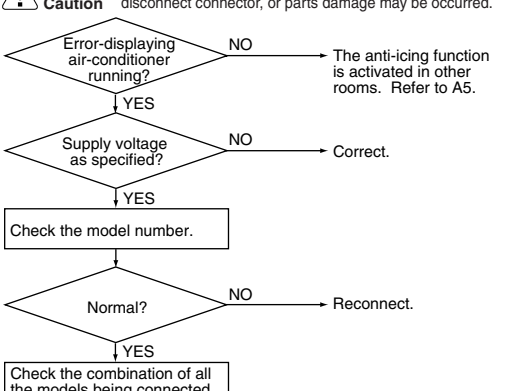
- Operation halt due to the anti-icing function in other rooms
- Operation halt due to unspecified voltage between indoor and outdoor units

Supposed Causes

- Operation halt due to the anti-icing function in other rooms
- Wrong connections at the indoor unit
- PCB wrongly connected

Trouble-shooting

Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



(R3045)

5.3.18 Anti-icing Function in Other Rooms / Unspecified Voltage (between Indoor and Outdoor Units)

Remote Controller Display

U8, U4

Outdoor Unit LED Display

A ◑ 1 ● 2 ● 3 ● 4 ● 5 ●

Method of Malfunction Detection

A wrong connection is detected by checking the combination of indoor and outdoor units on the microcomputer.

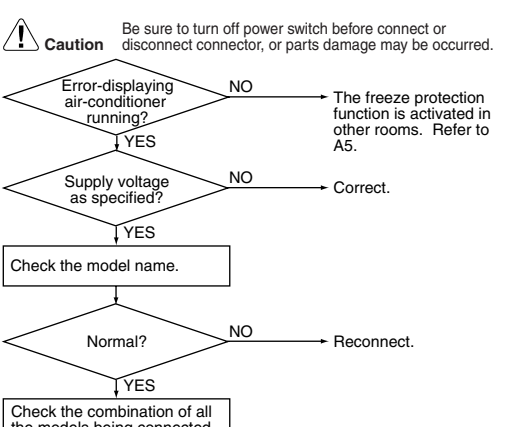
Malfunction Decision Conditions

- Operation halt due to the anti-icing function in other rooms
- Operation halt due to unspecified internal and/or external voltages
- Operation halt due to mismatching of indoor and outdoor units

Supposed Causes

- Operation halt due to the anti-icing function in other rooms
- Wrong connections at the indoor unit
- PCB wrongly connected

Trouble-shooting



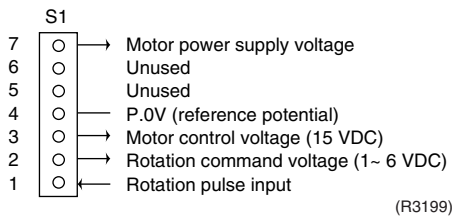
(R3066)

5.4 Check

5.4.1 Fan Motor Connector Output Check

Check No.01

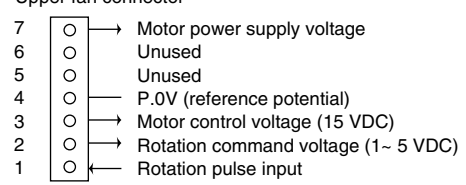
1. Check connector connection.
2. Check motor power supply voltage output (pins 4-7 and 4-8).
3. Check motor control voltage (pins 4-3).
4. Check rotation command voltage output (pins 4-2).
5. Check rotation pulse input (pins 4-1).



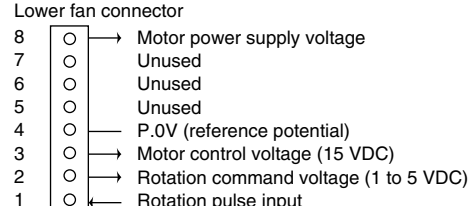
(R3199)

<In case of Floor Standing Type>

Upper fan connector



Lower fan connector



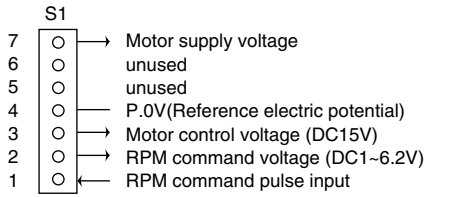
(R1224)

Check No.01-2

<Control PCB (A1P)>

1. Check for proper connection.
2. Check that the supply voltage applied to the motor is output (pins 4-7).
3. Check that the motor control voltage is output (pins 4-3).

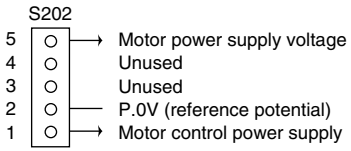
Check that the rpm command voltage is output (pins 4-2).



(R4023)

Check No.02

1. Check connector connection.
2. Check motor control voltage output (pins 2-1).

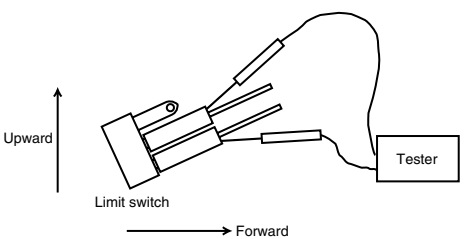


(R1073)

5.4.2 Limit Switch Continuity Check

Check No.03

Remove the front grille. The limit switch is located at the left side of the drain pan assembly. Check the continuity of the switch connection.



Shutter status	Open	Closed
Continuity	Continuity	No continuity

(Q0363)

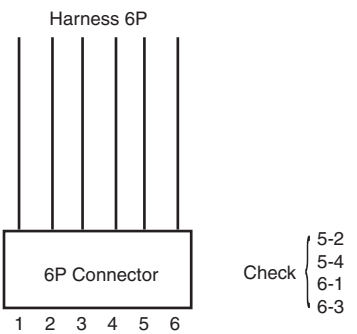
* The shutter can be opened and closed with hand. Keep the shutter open and closed all the way for each continuity check steps.

5.4.3 Electronic Expansion Valve Check

Check No.04-1

Conduct the followings to check the electronic expansion valve (EV).

1. Check to see if the EV connector is correctly inserted in the PCB. Compare the EV unit and the connector number.
2. Turn the power off and back on again, and check to see if all the EVs generate latching sound.
3. If any of the EVs does not generate latching noise in the above step 2, disconnect that connector and check the continuity using a tester.
   Check the continuity between pins 1, 3 and 6, and between pins 2, 4 and 5. If there is no continuity between the pins, the EV coil is faulty.



(R1082)

4. If no EV generates latching sound in the above step 2, the outdoor unit PCB is faulty.
5. If the continuity is confirmed in the above step 3, mount a good coil (which generated latching sound) in the EV unit that did not generate latching sound, and check to see if that EV generates latching sound.
   ∗If latching sound is generated, the outdoor unit PCB is faulty.
   ∗If latching sound is not generated, the EV unit is faulty.

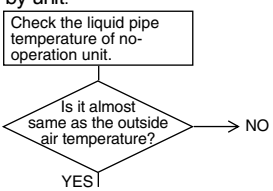
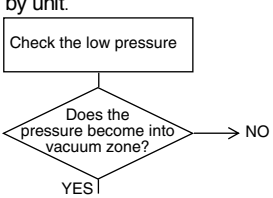
Note: Please note that the latching sound varies depending on the valve type.

Check No.04-2

Conduct the followings to check the electronic expansion valve (EV).

1. Check to see if the EV connector is correctly inserted in the PCB. Compare the EV unit and the connector number.
2. Turn the power off and back on again, and check to see if all the EVs generate latching sound.
3. If any of the EVs does not generate latching noise in the above step 2, disconnect that connector and check the continuity using a tester.
   Check the continuity between pins 1, 3 and 6, and between pins 2, 4 and 5. If there is no continuity between the pins, the EV coil is faulty.
4. If no EV generates latching sound in the above step 2, the outdoor unit PCB is faulty.
5. If the continuity is confirmed in the above step 2, mount a good coil (which generated latching sound) in the EV unit that did not generate latching sound, and check to see if that EV generates latching sound.
   ∗If latching sound is generated, the outdoor unit PCB is faulty.
   ∗If latching sound is not generated, the EV unit is faulty.

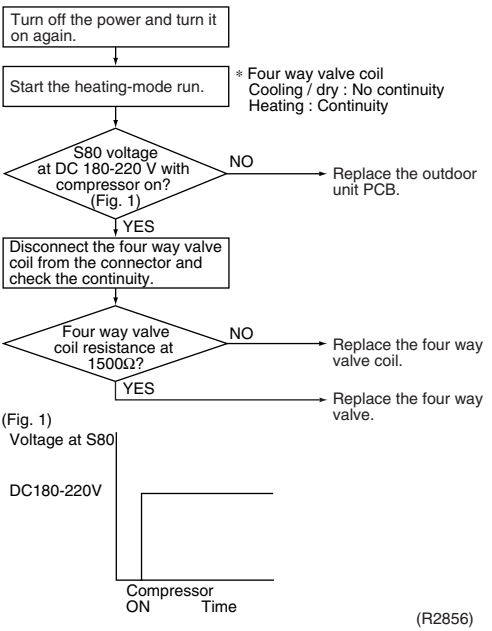
Note: Please note that the latching sound varies depending on the valve type.

Valve Body Condition (Symptom)	Check Method / Measure
(1) Valve body catches at fully opened or half opened position. (Symptom) Cooling: ■Water leakage at the no-operation unit ■Flow noise of refrigerant in the no-operation unit ■Operation halt due to icing protection Heating: ■The unit does not heat ■Refrigerant flow rate varies by unit (Discharge air temperatures are different by room) ■Peak cut	Reset power supply and conduct cooling operation unit by unit.  Replace the EVn of the room. (R1431)
(2) Valve body catches at complete close position. (Symptom) Cooling: ■The only unit having problem does not cool the room . ■When the only faulty unit is in operation, the unit makes pump down. (The low pressure of the unit becomes vacuum) ■IT is activated. ■Abnormal discharge pipe temperature Heating: Refrigerant shortage due to liquid refrigerant stagnation inside the faulty indoor unit (Only for heat pump model) ■The unit does not heat the room. ■IT is activated. ■Abnormal discharge pipe temperature	Reset power supply and conduct cooling operation unit by unit.  Replace the EVn of the room. (R1432)

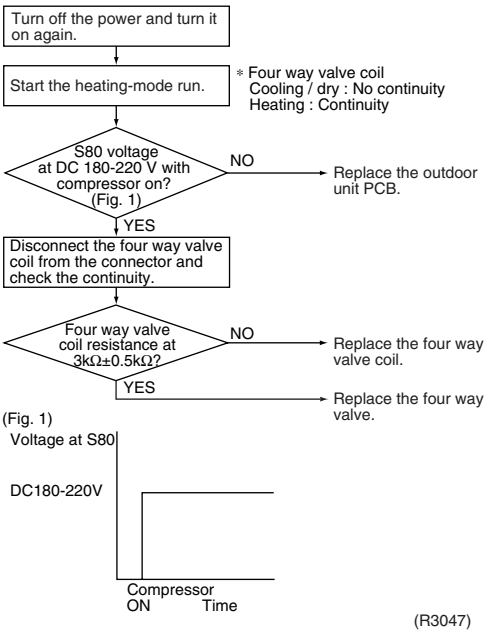
Valve Body Condition (Symptom)	Check Method / Measure
(3) Valve does not open fully. (Symptom) ■The unit does not cool nor heat (only for heat pump model.) ■IT is actuated. ■Abnormal discharge pipe temperature	Check the number of rotation of shaft if it is 5 and half from full open to complete close using manual coil for electronic expansion valve. When the number of rotation of shaft is less than the above value, the valve may catch anywhere of the body.

5.4.4 Four Way Valve Performance Check

Check No.05-1

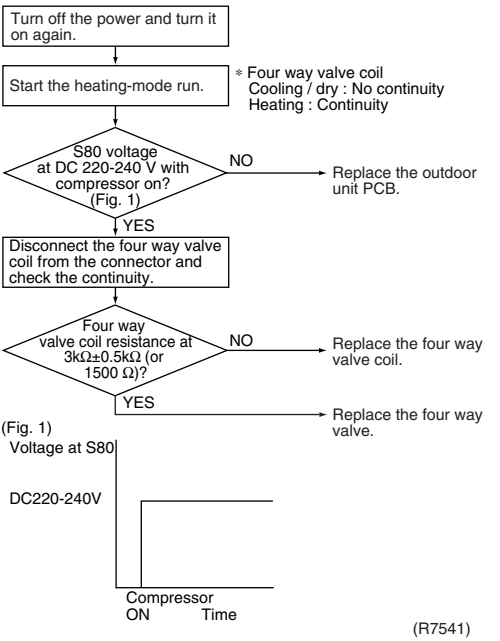


Check No.05-2



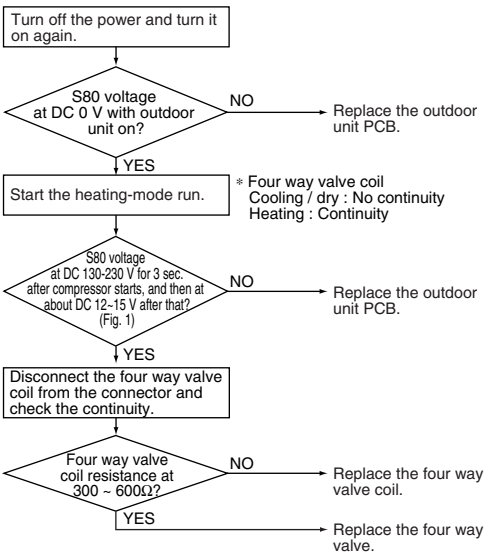
(R3047)

Check No.05-3

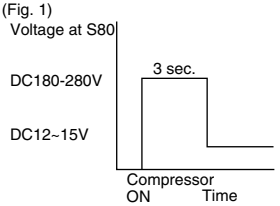

Turn off the power and turn it on again.
Start the heating-mode run.
* Four way valve coil
Cooling / dry : No continuity
Heating : Continuity
S80 voltage at DC 220-240 V with compressor on? (Fig. 1)
NO
Replace the outdoor unit PCB.
YES
Disconnect the four way valve coil from the connector and check the continuity.
Four way valve coil resistance at 3kΩ±0.5kΩ (or 1500 Ω)?
NO
Replace the four way valve coil.
YES
Replace the four way valve.
(Fig. 1)
Voltage at S80
DC220-240V
Compressor ON
Time
(R7541)

Check No.05-4

< Caution on resetting the power supply >
* Be sure to wait for 30 sec. or more after turning off the power supply.



(Fig. 1)



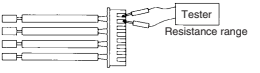
(R6025)

5.4.5 Thermistor Resistance Check

Check No.06

Remove the connectors of the thermistors on the PCB, and measure the resistance of each thermistor using tester.
The relationship between normal temperature and resistance is shown in the graph and the table below.

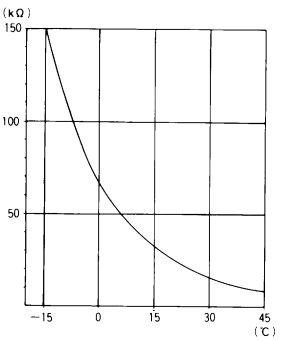
Thermistor Temperature (°C)	R25°C=20kΩ B=3950
-20	211.0 (kΩ)
-15	150
-10	116.5
-5	88
0	67.2
5	51.9
10	40
15	31.8
20	25
25	20
30	16
35	13
40	10.6
45	8.7
50	7.2



■ For the models in which the thermistor is directly mounted on the PCB.

(R3460)

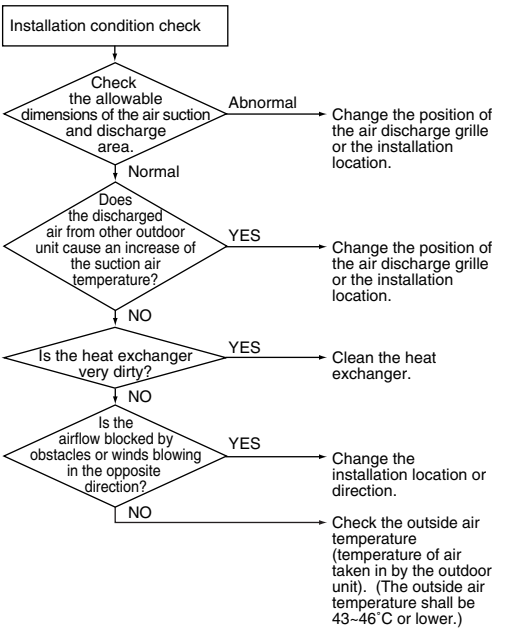
（R25＝20kΩ、B＝3950）



(R1437)

5.4.6 Installation Condition Check

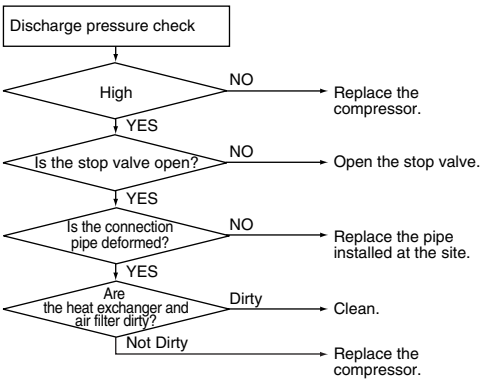
Check No.07



(R7542)

5.4.7 Discharge Pressure Check

Check No.08

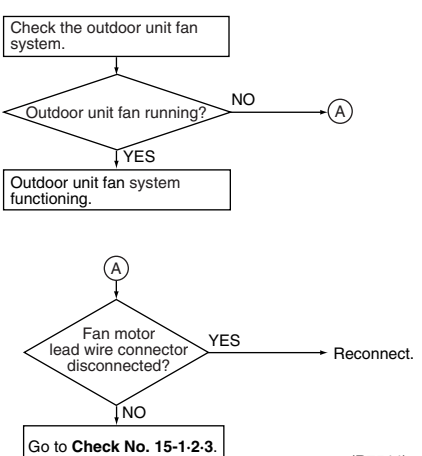


(R7543)

5.4.8 Outdoor Unit Fan System Check

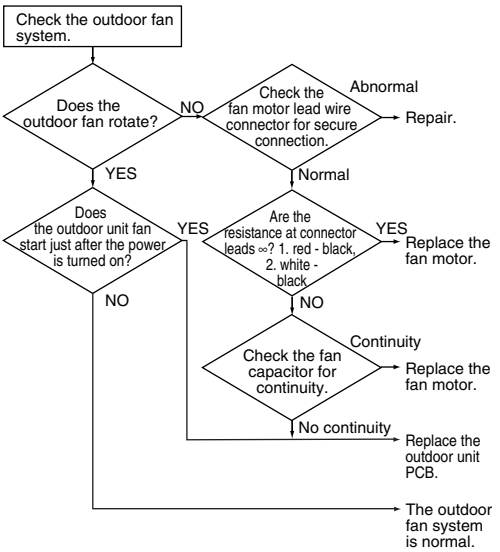
Check No.09

■ With DC Motor



(R7544)

■ With AC Motor



(R2670)

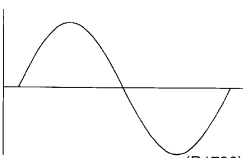
5.4.9 Power Supply Waveforms Check

Check No.10

Measure the power supply waveform between pins 1 and 3 on the terminal board, and check the waveform disturbance.

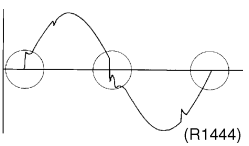
- Check to see if the power supply waveform is a sine wave (Fig.1).
- Check to see if there is waveform disturbance near the zero cross (sections circled in Fig.2)

[Fig.1]



(R1736)

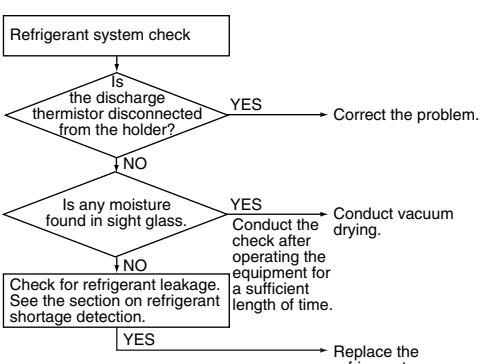
[Fig.2]



(R1444)

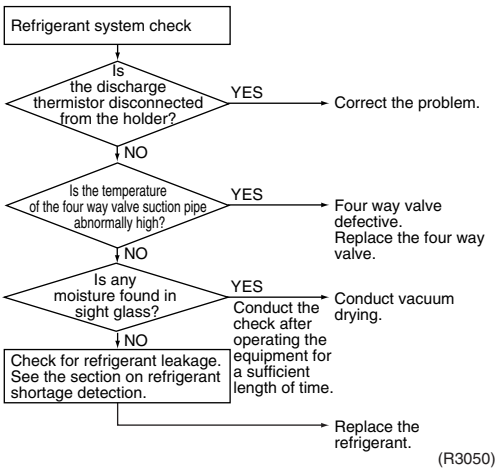
5.4.10 Inverter Units Refrigerant System Check

Check No.11-1



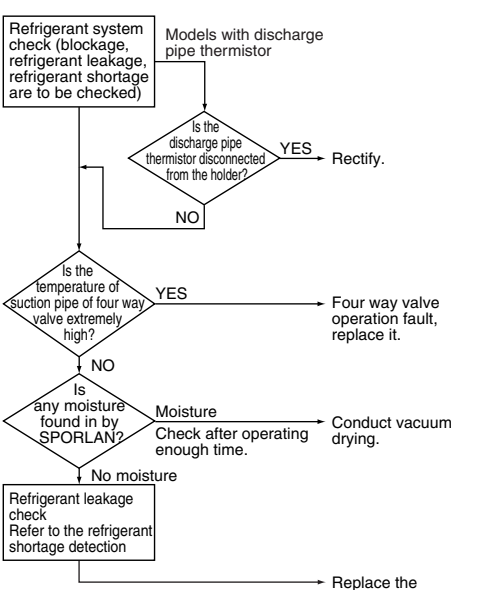
(R1445)

Check No.11-2



(R3050)

Check No.11-3



(R6022)

5.4.11 Capacitor Voltage Check

Check No.12

■ Checking the capacitor voltage

- With the circuit breaker still on, measure the voltage at the power transistor (+) and (-) terminals. Set the multi-tester to DC and VOLTAGE RANGE before measurement. Be careful never to touch any live parts.

* Since capacitor (+) and (-) are connected to power transistor (+) and (-), capacitor voltage can be measured at the power transistor (+) and (-) terminals.

5.4.12 Power Transistor Check

Check No.13-1

■ Checking the power transistor

- Never touch any live parts for at least 10 minutes after turning off the circuit breaker.
- If you cannot avoid to touch a live part, make sure that the power transistor's supply voltage is below 50 V using the tester.
- For the UVW, make measurements at the FASTON terminal on the board or the relay connector.

Tester's negative terminal	Power transistor (+)	UVW	Power transistor (–)	UVW
Tester's positive terminal	UVW	Power transistor (+)	UVW	Power transistor (–)
Normal resistance	Several kΩ to several MΩ			
Abnormal resistance	0 or ∞			

Check No.13-2

- Measure the resistance between pins at both ends of DB1.
- If the resistance is ∞ or less than 1 kΩ, the main circuit short.

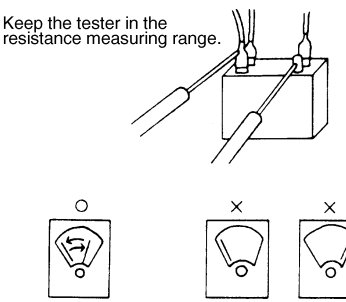
(–) terminal of the tester (in case of digital, (+) terminal)	(~)	(+)	(~)	(–)
(+) terminal of the tester (in case of digital, (–) terminal)	(+)	(~)	(–)	(~)
Resistance in OK	several kΩ ~ several MΩ	∞	∞	several kΩ ~ several MΩ
Resistance in NG	0 or ∞	0	0	0 or ∞

5.4.13 Main Circuit Electrolytic Capacitor Check

Check No.14

■ Checking the main circuit electrolytic capacitor

- Never touch any live parts for at least 10 minutes after turning off the circuit breaker.
- If unavoidably necessary to touch a live part, make sure there is no DC voltage using the tester.
- Check the continuity with the tester. Reverse the pins and make sure there is continuity.



When the pointer swings, it means the capacitor functions.

If the pointer does not swing at all, or if it swings all the way but does not return, it means the capacitor malfunction.

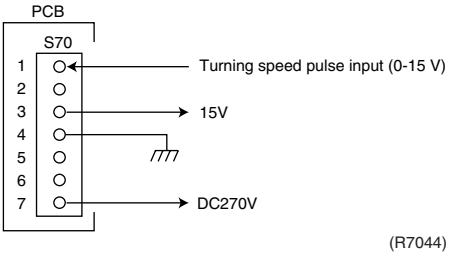
(Q0367)

5.4.14 Turning Speed Pulse Input on the Outdoor Unit PCB Check

Check No.15-1

<Propeller fan motor>
Make sure the voltage of 270±30V is being applied.
(1) Stop the operation first and then the power, and disconnect the connector S70.
(2) Make sure there is about DC 270 V between pins 4 and 7.
(3) With the system and the power still off, reconnect the connector S70.
(4) Make a turn of the fan motor with a hand, and make sure the pulse (0-15 V) appears twice at pins 1 and 4.

If the fuse is blown out, the outdoor-unit fan may also be in trouble. Check the fan too.
If the voltage in Step (2) is not applied, it means the PCB is defective. Replace the PCB.
If the pulse in Step (4) is not available, it means the Hall IC is defective. Replace the DC fan motor.If there are both the voltage (2) and the pulse (4), replace the PCB.

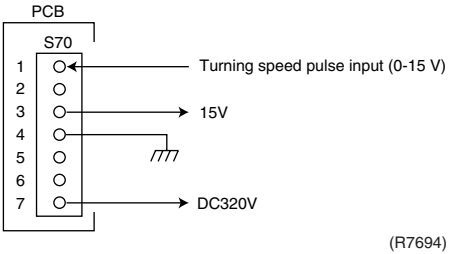


∗ Propeller fan motor : S70

Check No.15-2

<Propeller fan motor>
Make sure the voltage of 320±30V is being applied.
(1) Stop the operation first and then the power off, and disconnect the connector S70.
(2) Make sure there is about DC 320 V between pins 4 and 7.
(3) With the system and the power still off, reconnect the connector S70.
(4) Make a turn of the fan motor with a hand, and make sure the pulse (0-15 V) appears twice at pins 1 and 4.

If the fuse for fan motor protection is blown out, the outdoor-unit fan may also be in trouble. Check the fan too.
If the voltage in Step (2) is not applied, it means the PCB is defective. Replace the PCB.
If the pulse in Step (4) is not available, it means the Hall IC is defective. Replace the DC fan motor.If there are both the voltage (2) and the pulse (4), replace the PCB.

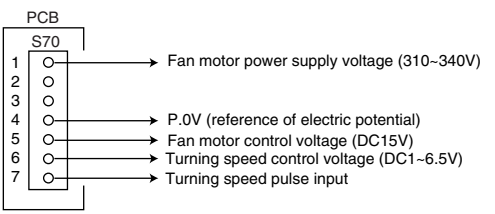


* Propeller fan motor : S70

Check No.15-3

<Propeller fan motor>
Make sure the voltage of 290~380V is being applied.
(1) Stop the operation first and then the power off, and disconnect the connector S70.
(2) Make sure there is about DC 280 V between pins 4 and 7.
(3) With the system and the power still off, reconnect the connector S70.
(4) Make a turn of the fan motor with a hand, and make sure the pulse (0-15 V) appears twice at pins 1 and 4.

If the fuse is blown out, the outdoor-unit fan may also be in trouble. Check the fan too.
If the voltage in Step (2) is not applied, it means the PCB is defective. Replace the PCB.
If the pulse in Step (4) is not available, it means the Hall IC is defective. Replace the DC fan motor.
If there are both the voltage (2) and the pulse (4), replace the PCB.



(R7695)

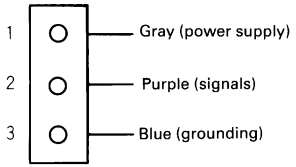
* Propeller fan motor : S70

5.4.15 Hall IC Check

Check No.16

1. Check the connector connection.
2. With the power ON, operation OFF, and the connector connected, check the following.
   ∗Output voltage of about 5 V between pins 1 and 3.
   ∗Generation of 3 pulses between pins 2 and 3 when the fan motor is operating.

Failure of (1) → faulty PCB → Replace the PCB.
Failure of (2) → faulty hall IC → Replace the fan motor.
Both (1) and (2) result → Replace the PCB.



(R1968)

5.4.16 “Inverter Checker” Check

Check No.17

1. Characteristics

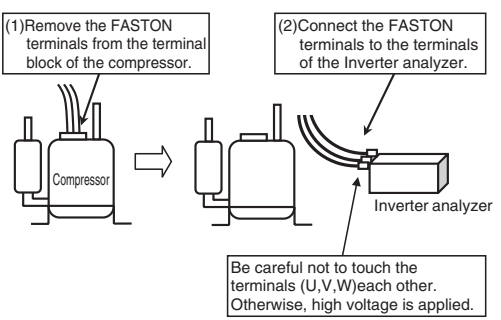
If abnormal stop occurs due to compressor startup failure or overcurrent output when using inverter unit, it is difficult to judge whether it is caused by the compressor failure or other failure (control PCB, power transistor, etc.). The inverter analyzer makes it possible to judge the cause of trouble easily and securely. (Connect this analyzer as a quasi-compressor instead of compressor and check the output of inverter)

2. Operation Method

1) Be sure to turn the power off.

2) Install the Inverter analyzer instead of a compressor.

Note: Make sure the charged voltage of the built-in smoothing electrolytic capacitor drops to 10 VDC or below before carrying out the service work.



(R5160)

Reference
If the connector terminal of compressor is not a FASTON terminal (difficult to remove the wire on the terminal), it is possible to connect a wire available on site to the unit from output side of PCB. (Do not connect it to the compressor at the same time, otherwise it may result in incorrect detection.)

3) Turn the power on and operate the air conditioner.

3. Diagnosis method (Diagnosis can be made according to 6 LEDs lighting status as follows:)

(1) When all LEDs are lit uniformly, → Compressor malfunction (to be replaced)
(2) When some of LEDs are not lit (LEDs are not lit or go off, etc.):
Check the individual power transistor. (Refer to check No.15)
* When the power transistor and control PCB are integrated :
→ Replace the control PCB.
* When the power transistor can be checked individually :
↓ Check the resistance value. (Refer to check No.15)

If NG : → The power transistor may have a failure. (Replace the power transistor).
If the power transistor is normal, check if there is any solder cracking on filter PCB.
* If any solder cracking is found: → Replace the filter PCB (or repair the soldered section).
* If filter PCB is normal: → Replace the control PCB.

5.4.17 Rotating Pulse Input on Outdoor Unit PCB Check

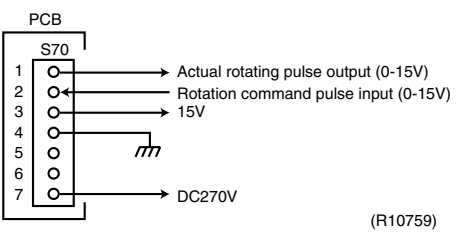
Check No.18

< For outdoor fan motor or humidifying fan motor>

■ Outdoor fan motor

Make sure that the voltage of 270 ± 30 V is applied.

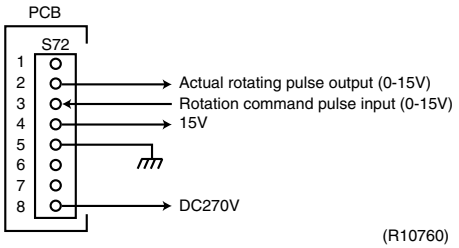
1. Set operation OFF and power OFF. Remove the connector S70.
2. Check that the voltage between the pins 4-7 is 270 VDC.
3. Check that the control voltage between the pins 3-4 is 15 VDC.
4. Check that the rotation command voltage between the pins 2-4 is 5 VDC.
5. Keep operation OFF and power OFF. Connect the connector S70.
6. Check whether 2 pulses (0 - 15 V) are output at the pins 1-4 when the fan motor is rotated 1 turn by hand.



■ Humidifying fan motor

Make sure that the voltage of 270 ± 30 V is applied.

1. Set operation OFF and power OFF. Remove the connector S72.
2. Check that the voltage between the pins 5-8 is 270 VDC.
3. Check that the control voltage between the pins 4-5 is 15 VDC.
4. Check that the rotation command voltage between the pins 3-5 is 5 VDC.
5. Keep operation OFF and power OFF. Connect the connector S72.
6. Check whether 2 pulses (0 - 15 V) are output at the pins 2-5 when the fan motor is rotated 1 turn by hand.



Fuses are commonly used as follows. Refer to the corresponding wiring diagram.

FU1	SW power supply Hygroscopic fan motor
FU2	Outdoor fan motor Humidifying fan motor Four way valve

When the FU2 is melted, check the outdoor fan motor for proper function.
If NG in step 2 → Defective PCB → Replace the PCB.
If NG in step 4 → Defective Hall IC → Replace the outdoor fan motor.
If OK in both steps 2 and 4 → Replace the PCB.

<For hygroscopic fan motor>
Check that the connectors HK1, HK2, HK3 for proper connection.
1. Check that the power supply voltage is applied between HK1 and HK3.

2. If NG in step 1 → Defective PCB → Replace the PCB.

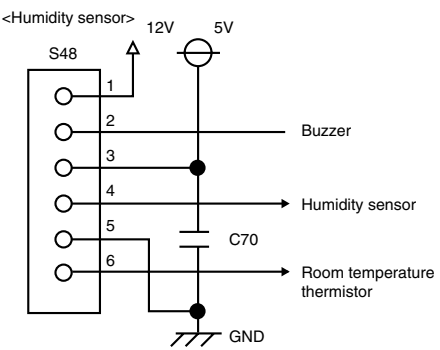
FU1	SW power supply Hygroscopic fan motor
FU2	Outdoor fan motor Humidifying fan motor Four way valve

When the FU2 is melted, check the rotor motor for proper function.

5.4.18 Humidity Sensor Check

Check No.19

1. Check for proper connection.
2. Check sensor input level (*1).
3. Change ambient conditions (*2) and check that input level changes accordingly.
   *1 Input level varies depending on the sensor.
   *2 To change humidity, temperature, or airflow rate, blow breath into the sensor.

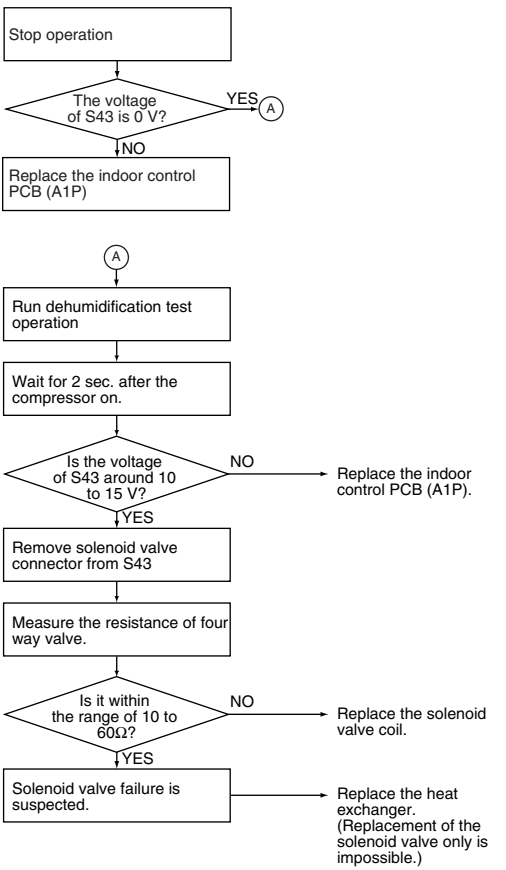


(R6023)

5.4.19 Solenoid Valve for Dehumidification Check

Check No.20

Faulty criterion:
In dehumidification test operation mode, PCB is identified as a faulty when the solenoid valve does not turn on within 2 sec. after compressor start-up.
(When reheating dehumidifying is not used, the operation mode is similar to cooling operation.)



(R7545)

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- Ask a qualified installer or contractor to install this product. Do not try to install the product yourself. Improper installation can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Use only those parts and accessories supplied or specified by Daikin. Ask a qualified installer or contractor to install those parts and accessories. Use of unauthorised parts and accessories or improper installation of parts and accessories can result in water or refrigerant leakage, electrical shock, fire or explosion.
- Read the User's Manual carefully before using this product. The User's Manual provides important safety instructions and warnings. Be sure to follow these instructions and warnings.

If you have any enquiries, please contact your local importer, distributor and/or retailer.

Cautions on product corrosion

1. Air conditioners should not be installed in areas where corrosive gases, such as acid gas or alkaline gas, are produced.
2. If the outdoor unit is to be installed close to the sea shore, direct exposure to the sea breeze should be avoided. If you need to install the outdoor unit close to the sea shore, contact your local distributor.

JMI-0107

Organization:
DAIKIN INDUSTRIES, LTD.
AIR CONDITIONING MANUFACTURING DIVISION

Scope of Registration:
THE DESIGN/DEVELOPMENT AND MANUFACTURE OF COMMERCIAL AIR CONDITIONING, HEATING, COOLING, REFRIGERATING EQUIPMENT, COMMERCIAL HEATING EQUIPMENT, RESIDENTIAL AIR CONDITIONING EQUIPMENT, HEAT RECLAIM VENTILATION, AIR CLEANING EQUIPMENT, MARINE TYPE CONTAINER REFRIGERATION UNITS, COMPRESSORS AND VALVES.

JQA-1452

Organization:
DAIKIN INDUSTRIES (THAILAND) LTD.

Scope of Registration:
THE DESIGN/DEVELOPMENT AND MANUFACTURE OF AIR CONDITIONERS AND THE COMPONENTS INCLUDING COMPRESSORS USED FOR THEM

EC99J2044

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Dealer

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