



Si10-417

Pocket Manual

Service Diagnosis SPLIT & MULTI



1. Diagnosis by LED	2
1.1 Indoor Unit	2
1.2 Outdoor Unit	4
2. Diagnosis by Remote Controller ..	6
2.1 To know the error code.....	6
3. List of applicable models	11
3.1 Indoor Units	11
3.2 Outdoor Units	17
4. Error Codes and Description of Fault.....	21
4.1 Indoor Unit	21
4.2 Outdoor Unit	22
4.3 System.....	23
5. Troubleshooting	24
5.1 Indoor Unit	24
5.2 Outdoor Unit	35
5.3 System.....	124
5.4 Check	149

1. Diagnosis by LED

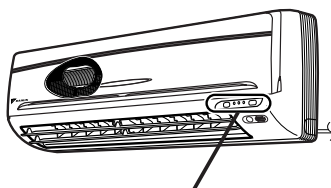
1.1 Indoor Unit

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

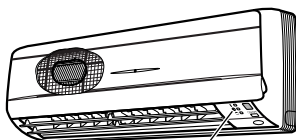
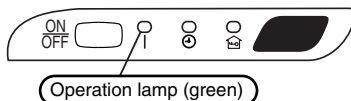
1. When a protection device of the indoor or outdoor unit is activated or when the thermistor malfunctions, disabling equipment operation.
2. When a signal transmission error occurs between the indoor and outdoor units.

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

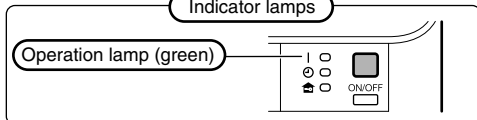
Wall Mounted Type



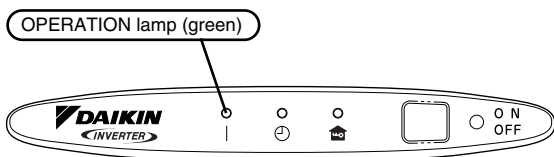
Indicator lamps



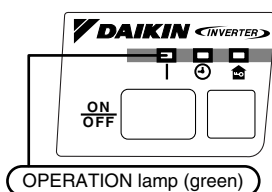
Indicator lamps



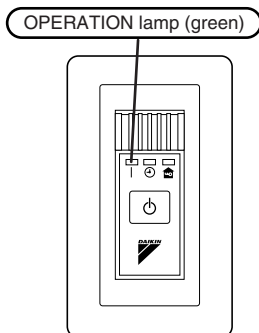
Floor Ceiling Suspended Dual Type



Floor Standing Type

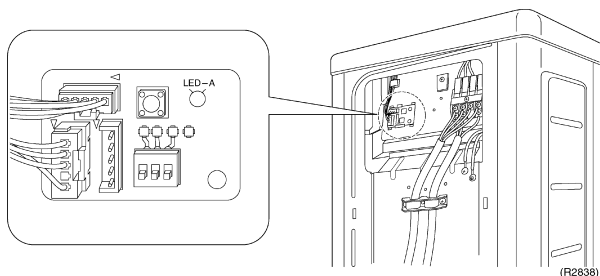


Duct Connected Type



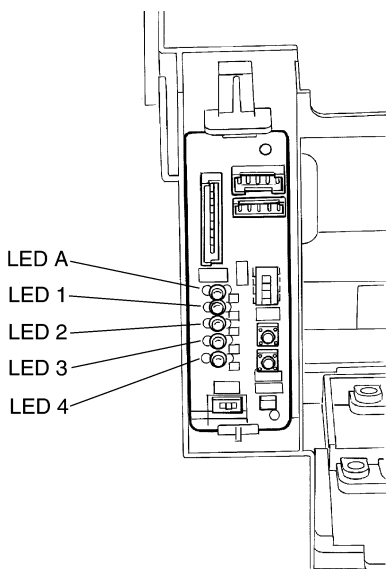
1.2 Outdoor Unit

Pair



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

Multi



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)

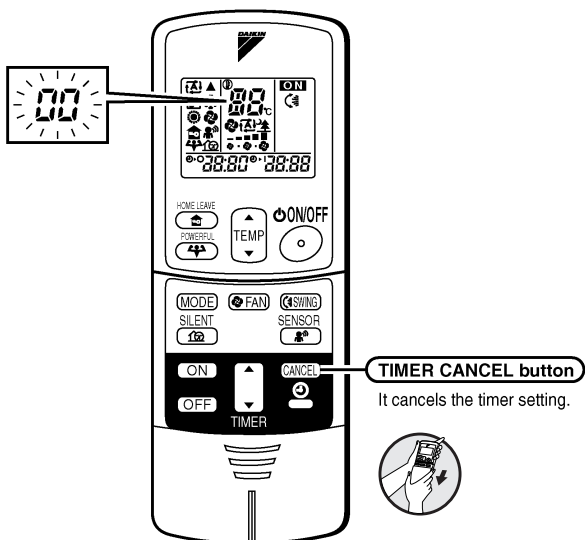
The LED A (green) of the outdoor unit indicate microcomputer operation condition.

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.



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.

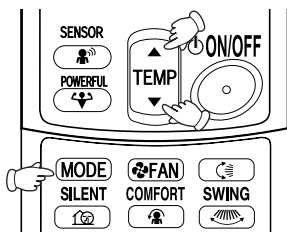
No.	Code	No.	Code
1	00	16	A1
2	U4	17	C4
3	F3	18	C5
4	E6	19	H9
5	L5	20	J6
6	A6	21	U8
7	E5	22	A5
8	LC	23	J9
9	C9	24	E8
10	U0	25	P4
11	E7	26	L3
12	C7	27	L4
13	H8	28	H6
14	J3	29	H7
15	A3	30	U2

**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.

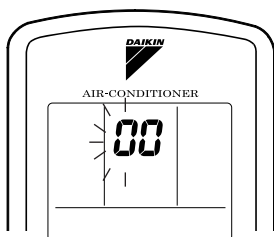
Method 2

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

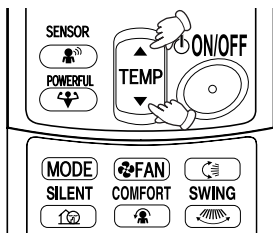


The digit of the number of tens blinks.

★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”.



3. Diagnose by the sound.

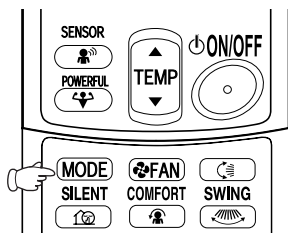
★“pi” : The number of tens does not accord with the error code.

★“pi pi” : The number of tens accords with the error code.

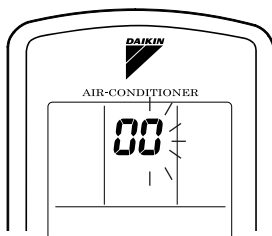
★“beep” : The both numbers of tens and units accord with the error code. (→See 7.)

4. Enter the diagnosis mode again.

Press the MODE button.

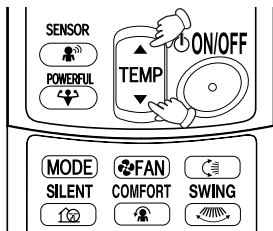


The digit of the number of units blinks.



5. Press the TEMP button.

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



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.

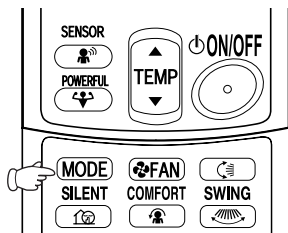
7. Determine the error code.

The digits indicated when you hear the “beep” sound are error code.

(Error codes and description → Refer to page 21.)

8. Exit from the diagnosis mode.

Press the MODE button.



3. List of applicable models

Even the same error code may be explained on different flowchart pages. Follow the classification Nos. in the table below and check the related page according to the table on page 21.

3.1 Indoor Units

3.1.1 Wall Mounted Type

Model	Classification No.	Model	Classification No.
AT12BV1LS	★2	FTK35AVM(A)(T)	★1
AT18BV1LS	★2	FTK35AZVMB	★1
ATK25BVMB	★1	FTK35BVMB	★1
ATK35BVMB	★1	FTK50AVM(A)(T)	★2
ATKS20CVMB(9)	★1	FTK60AVM(A)(T)	★2
ATKS25BVMB	★1	FTK71AVM(A)(T)	★2
ATKS25CVMB(9)	★1	FTKD18BVMS	★2
ATKS35BVMB	★1	FTKD24BVMS	★2
ATKS35CVMB(9)	★1	FTKD28BVMS	★2
ATX25BVMB	★1	FTKD50BVM	★2
ATX35BVMB	★1	FTKD50BVMA(9)	★2
ATXS20CVMB(9)	★1	FTKD50BVMD	★2
ATXS25BVMB	★1	FTKD50BVMT	★2
ATXS25CVMB(9)	★1	FTKD60BVM	★2
ATXS35BVMB	★1	FTKD60BVMA(9)	★2
ATXS35CVMB(9)	★1	FTKD60BVMD	★2
ATXS50CVMB	★2	FTKD60BVMT	★2
FT13BV1LS	★2	FTKD71BVM	★2
FT18BV1LS	★2	FTKD71BVMA(9)	★2
FT24BV1LS	★2	FTKD71BVMD	★2
FT50BVM	★2	FTKD71BVMT	★2
FT50CV1A	★2	FTKE09BVMS	★1
FT60BVM	★2	FTKE12BVMS	★1
FT60CV1A	★2	FTKE25BVM	★1
FTK25AVM(A)(T)	★1	FTKE25BVMA(9)	★1
FTK25AZVMB	★1	FTKE25BVMD	★1
FTK25BVMB	★1	FTKE25BVMT	★1



Refer the classification No. to page 21

Model	Classification No.	Model	Classification No.
FTKE35BVM	★1	FTX35BVM	★1
FTKE35BVMA(9)	★1	FTX50AMVMC	★2
FTKE35BVMD	★1	FTX50AVMA	★2
FTKE35BVMT	★1	FTX50AVMC	★2
FTKS20CVMB(9)	★1	FTX50AVMT	★2
FTKS25BVM	★1	FTX60AMVMC	★2
FTKS25CVMB(9)(8)	★1	FTX60AVMA	★2
FTKS35BVM	★1	FTX60AVMC	★2
FTKS35CVMB(9)(8)	★1	FTX60AVMT	★2
FTKS50BVMA(9)	★2	FTX71AMVMC	★2
FTKS50BVM	★2	FTX71AVMA	★2
FTKS60BVMA(9)	★2	FTX71AVMC	★2
FTKS60BVM	★2	FTX71AVMT	★2
FTKS71BVMA(9)	★2	FTXD50BMVMC	★2
FTKS71BVM	★2	FTXD50BV4(9)	★2
FTN20CVMB9	★1	FTXD50BVMA(9)	★2
FTN25CVMB9	★1	FTXD50BVMC	★2
FTN35CVMB9	★1	FTXD50BVMT	★2
FTS20BVM	★1	FTXD50CMV2C	★2
FTS25BVM	★1	FTXD60BMVMC	★2
FTS35BVM	★1	FTXD60BVMA(9)	★2
FTS50BVM	★2	FTXD60BVMC	★2
FTS60BVM	★2	FTXD60BVMT	★2
FTX25AMVMC	★1	FTXD71BVMA(9)	★2
FTX25AVMA	★1	FTXD71BVMC	★2
FTX25AVMC	★1	FTXD71BVMT	★2
FTX25AVMT	★1	FTXD80CV4(9)	★2
FTX25AZVM	★1	FTXE25BMVMC	★1
FTX25BVM	★1	FTXE25BVMA(9)	★1
FTX35AMVMC	★1	FTXE25BVMC	★1
FTX35AVMA	★1	FTXE25BVMT	★1
FTX35AVMC	★1	FTXE35BMVMC	★1
FTX35AVMT	★1	FTXE35BVMA(9)	★1
FTX35AZVM	★1	FTXE35BVMC	★1



Refer the classification No. to page 21

Model	Classification No.	Model	Classification No.
FTXE35BVMT	★1	FTXS71BVMB	★2
FTXS20CVMB(9)	★1	FTY25CVMA	★1
FTXS25BVMB(A)	★1	FTY35CVMA	★1
FTXS25CVMB(9)(8)	★1	FTYN20CVMB9	★1
FTXS35BVMB(A)	★1	FTYN25CVMB9	★1
FTXS35CVMB(9)(8)	★1	FTYN35CVMB9	★1
FTXS50BVMA(9)	★2	FTYS20BVMB	★1
FTXS50BVMB	★2	FTYS25BVMB	★1
FTXS60BVMA(9)	★2	FTYS35BVMB	★1
FTXS60BVMB	★2	FTYS50BVMB	★2
FTXS71BVMA(9)	★2	FTYS60BVMB	★2



Refer the classification No. to page 21

3.1.2 Floor Standing Type

Model	Classification No.
FVK25AZVMB	★2
FVK35AZVMB	★2
FVK50AZVMB	★2
FVKS25BVMB	★2
FVKS35BVMB	★2
FVKS50BVMB	★2
FVX25AZVMB	★2
FVX35AZVMB	★2
FVX50AZVMB	★2
FVX56AV1C	★2
FVXD56CMV2C	★2
FVXD68CMV2C	★2
FVXS25BVMB	★2
FVXS35BVMB(A)	★2
FVXS50BVMB(A)	★2



Refer the classification No. to page 21

3.1.3 Duct Connected Type

Model	Classification No.	Model	Classification No.
CDK25AVM	★ 1	CDX35AZVMB	★ 1
CDK25AVMA	★ 1	CDX35BVMC(9)	★ 1
CDK25AVMD	★ 1	CDX50AVMA	★ 1
CDK25AZVMB	★ 1	CDX50AVMC(9)	★ 1
CDK35AVM	★ 1	CDX50AZVMB	★ 1
CDK35AVMA	★ 1	CDX60AVMA	★ 1
CDK35AVMD	★ 1	CDX60AVMC(9)	★ 1
CDK35AZVMB	★ 1	CDX60AZVMB	★ 1
CDK50AVM	★ 1	CDXD25AVMC	★ 1
CDK50AVMA	★ 1	CDXD25BMVMC	★ 1
CDK50AVMD	★ 1	CDXD25CMVMC	★ 1
CDK50AZVMB	★ 1	CDXD25CVMA	★ 1
CDK60AVM	★ 1	CDXD35AVMC	★ 1
CDK60AVMA	★ 1	CDXD35BMVMC	★ 1
CDK60AVMD	★ 1	CDXD35CMVMC	★ 1
CDK60AZVMB	★ 1	CDXD35CVMA	★ 1
CDKD25CVM(A)	★ 1	CDXD50AVMC	★ 1
CDKD35CVM(A)	★ 1	CDXD50CVMA	★ 1
CDKD50CVM(A)	★ 1	CDXD60AVMC	★ 1
CDKD60CVM(A)	★ 1	CDXD60BMVMC	★ 1
CDKS25BVMB	★ 1	CDXD60CMVMC	★ 1
CDKS25CVMB	★ 1	CDXD60CVMA	★ 1
CDKS35BVMB	★ 1	CDXS25BVMB	★ 1
CDKS35CVMB	★ 1	CDXS25CVMB(A)	★ 1
CDKS50BVMB	★ 1	CDXS35BVMB	★ 1
CDKS50CVMB	★ 1	CDXS35CVMB(A)	★ 1
CDKS60BVMB	★ 1	CDXS50BVMB	★ 1
CDKS60CVMB	★ 1	CDXS50CVMB(A)	★ 1
CDX25AVMA	★ 1	CDXS60BVMB	★ 1
CDX25AZVMB	★ 1	CDXS60CVMB(A)	★ 1
CDX25BVMC(9)	★ 1	FDXD50BMVMC	★ 1
CDX35AVMA	★ 1	FDXD50CMVMC	★ 1



Refer the classification No. to page 21

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
FLK50AVMD	★ 1
FLK50AZVMB	★ 1
FLK60AVMA	★ 1
FLK60AVMD	★ 1
FLK60AZVMB	★ 1
FLKS25BVMB	★ 1
FLKS35BVMB	★ 1
FLKS50BVMB	★ 1
FLKS60BVMB	★ 1
FLX25AVMA	★ 1
FLX25AZVMB	★ 1
FLX25BVMB	★ 1
FLX35AVMA	★ 1
FLX35AZVMB	★ 1
FLX35BVMB	★ 1
FLX50AVMA	★ 1
FLX50AZVMB	★ 1
FLX60AVMA	★ 1
FLX60AZVMB	★ 1
FLXS25BVMB(A)	★ 1
FLXS35BVMB(A)	★ 1
FLXS50BVMB(A)	★ 1
FLXS60BVMB(A)	★ 1



Refer the classification No. to page 21

3.2 Outdoor Units

Model	Classification No.	Model	Classification No.
2AMKS40BVMB	★6	4MKD75BVM	★5
2AMXS40BVMB	★6	4MKS58BVMB	★5
2MK58AVM	★5	4MKS75BVMB	★5
2MK58AVM	★5	4MX68AZVMB	★5
2MKD58BVM	★5	4MXS68BVMB	★5
2MKS40BVMB	★6	4MXS68BVMB9	★5
2MXS40BVMB	★6	AR09BV1LS	★3
3AMXS52BVMB	★5	AR25AV1B	★3
3MK58AVM	★5	AR25AV1B9	★3
3MK58AVM	★5	AR35AV1B	★3
3MK75AVM	★5	AR35AV1B9	★3
3MK75AVM	★5	ARK25BVMB	★3
3MK75AVMA	★5	ARK35BVMB	★3
3MK75AVMT	★5	ARKH20CVMB9	★3
3MKD58BVM	★5	ARKH25CVMB9	★3
3MKD75BVM	★5	ARKH35CVMB9	★3
3MKD75BVMA	★5	ARKS25BVMB	★3
3MKD75BVMT	★5	ARKS35BVMB	★3
3MKS50BVMB	★5	ARX25BVMB	★3
3MX52AZVMB	★5	ARX35BVMB	★3
3MX68AVMA	★5	ARXH20CVMB9	★3
3MX68AVMC	★5	ARXH25CVMB9	★3
3MX68AVMT	★5	ARXH35CVMB9	★3
3MXD68BVMA	★5	ARXS25BVMB	★3
3MXD68BVMC	★5	ARXS35BVMB	★3
3MXD68BVMT	★5	ARXS50CVMB	★4
3MXD80BMVMC	★5	R25CV1A	★3
3MXS52BVMB	★5	R25JV16	★3
4MK58AZVMB	★5	R25JV17	★3
4MK75AVM	★5	R25JV1A	★3
4MK75AVM	★5	R35CV1A	★3
4MK75AZVMB	★5	R35JV16	★3



Refer the classification No. to page 22

Model	Classification No.
R35JV17	★3
R35JV1A	★3
RE09JV1LS	★3
RE12JV1LS	★3
RE25JV1	★3
RE25JV1C	★3
RE35JV1	★3
RE35JV1C	★3
REY22GV1B	★3
REY35GV1B	★3
RK25BVMB	★3
RK25JAVET	★3
RK25JV1NB9	★3
RK25JVE9	★3
RK25JVEA9	★3
RK35BVMB	★3
RK35JAVET	★3
RK35JV1NB9	★3
RK35JVE9	★3
RK35JVEA9	★3
RKD18BVMS	★4
RKD24BVMS	★4
RKD25KZV1B	★3
RKD28BVMS	★4
RKD35KZV1B	★3
RKD50BVM	★4
RKD50BVMA	★4
RKD50BVMT	★4
RKD50JVE9	★4
RKD50JVEA9	★4
RKD50JVET	★4
RKD60BVM	★4
RKD60BVMA	★4
RKD60BVMT	★4

Model	Classification No.
RKD60JVE	★4
RKD60JVEA	★4
RKD60JVET	★4
RKD71BVM	★4
RKD71BVMA	★4
RKD71BVMT	★4
RKD71JVE	★4
RKD71JVEA	★4
RKD71JVET	★4
RKD80BVMA	★4
RKE09BVMS	★3
RKE12BVMS	★3
RKE25BVM	★3
RKE25BVMA	★3
RKE25BVMT	★3
RKE35BVM	★3
RKE35BVMA	★3
RKE35BVMT	★3
RKH20CVMB9	★3
RKH25CVMB9	★3
RKH35CVMB9	★3
RKS25BVMB	★3
RKS35BVMB	★3
RKS50BVMA	★4
RKS50BVMB	★4
RKS50BVMB9	★4
RKS60BVMA	★4
RKS60BVMB	★4
RKS60BVMB9	★4
RKS71BVMA	★4
RKS71BVMB	★4
RKS71BVMB9	★4
RN20CVMB9	★3
RN25CVMB9	★3



Refer the classification No. to page 22

Model	Classification No.	Model	Classification No.
RN35CVMB9	★3	RXD50JV1B	★4
RS20BVMB	★3	RXD50JV1B5	★4
RS25BVMB	★3	RXD50JVEA9	★4
RS35BVMB	★3	RXD50JVET	★4
RS50BVMB	★4	RXD60BVMA	★4
RS50BVMB	★4	RXD60BVMT	★4
RS60BVMB	★4	RXD60JV1B	★4
RX25BVMB	★3	RXD60JV1B5	★4
RX25JAVET	★3	RXD60JVEA	★4
RX25JV1NB5	★3	RXD60JVET	★4
RX25JV1NB9	★3	RXD68CMV2C	★4
RX25JVEA9	★3	RXD71BMVMC	★4
RX25LV1C	★3	RXD71BVMA	★4
RX25LV1C9	★3	RXD71BVMT	★4
RX35BVMB	★3	RXD71JV1B	★4
RX35JAVET	★3	RXD71JV1B5	★4
RX35JV1NB5	★3	RXD71JVEA	★4
RX35JV1NB9	★3	RXD71JVET	★4
RX35JVEA9	★3	RXD80BVMA	★4
RX35LV1C	★3	RXD80CV4	★4
RX35LV1C9	★3	RXE25BVMA	★3
RX50AZVMB	★4	RXE25BVMT	★3
RX50JV4N	★4	RXE25CMV2C	★3
RX56AV1C	★4	RXE35BVMA	★3
RX60AZVMB	★4	RXE35BVMT	★3
RX71AZVMB	★4	RXE35CMV2C	★3
RXD25KZV1B	★3	RXH20CVMB9	★3
RXD35KZV1B	★3	RXH25CVMB9	★3
RXD50BMVMC	★4	RXH35CVMB9	★3
RXD50BV4	★4	RXS25BVMB	★3
RXD50BVMA	★4	RXS35BVMB	★3
RXD50BVMT	★4	RXS35BVMB	★3
RXD50CMVMC	★4	RXS50BVMA	★4
RXD50JV1B	★4	RXS50BVMB	★4



Refer the classification No. to page 22

Model	Classification No.
RXS60BVMA	★4
RXS60BVMB	★4
RXS71BVMA	★4
RXS71BVMB	★4
RY25CVMA	★3
RY35CVMA	★3
RYN20CVMB9	★3



Model	Classification No.
RYN25CVMB9	★3
RYN35CVMB9	★3
RYS20BVMB	★3
RYS25BVMB	★3
RYS35BVMB	★3
RYS50BVMB	★4
RYS60BVMB	★4



Refer the classification No. to page 22

4. Error Codes and Description of Fault

4.1 Indoor Unit

Code Indication	Description of Problem	Classification No. and related page	
		★1	★2
<i>R1</i>	Indoor unit PCB abnormality	24	24
<i>R5</i>	Freeze-up protection function or high pressure control	25	25
<i>R6</i>	Fan motor or related abnormality	27	29
<i>C4</i>	Heat exchanger temperature thermistor abnormality	32	32
<i>C7</i>	Shutter drive motor / shutter limit switch abnormality	33	33
<i>C9</i>	Room temperature thermistor abnormality	32	32

4.2 Outdoor Unit

Code Indication	Description of Problem	Classification No. and related page			
		★3	★4	★5	★6
R5	Anti-icing function	—	—	—	35
	Freeze-up protection	—	—	37	—
E5	OL activation (compressor overloaded)	39	40	41	39
E6	Compressor lock	43	44	45	47
E7	DC fan lock	—	48	49	48
E8	Input over current detection	50	52	54	56
ER	Four way valve abnormality	58	60	62	64
F3	Discharge pipe temperature control	66	68	70	72
F6	High pressure control in cooling	74	74	—	75
H6	Position sensor abnormality	77	79	81	83
H8	CT or related abnormality	85	87	89	91
H9	Outdoor air thermistor or related abnormality	93	93	95	97
J3	Discharge pipe thermistor or related abnormality	93	93	95	97
J6	Heat exchanger thermistor or related abnormality	93	93	95	97
J8	Liquid pipe thermistor or related abnormality	—	—	95	97
J9	Gas pipe thermistor or related abnormality	—	—	95	97
L3	Electrical box temperature rise	99	101	103	105
L4	Radiation fin temperature rise	107	109	111	113
L5	Output over current detection	115	115	118	121
P4	Radiation fin thermistor or related abnormality	93	93	95	97

4.3 System

Code Indication	Description of Problem	Classification No. and related page			
		★3	★4	★5	★6
00	Normal	—	—	—	—
U0	Insufficient gas	124	127	130	133
U2	Low-voltage detection	—	137	138	—
	Over-voltage detection	136	—	—	140
U4	Signal transmission error (between indoor and outdoor units)	142	142	—	142
	Outdoor unit PCB abnormality or signal transmission circuit abnormality	—	—	144	—
UR	Unspecified voltage (between indoor and outdoor units)	146	146	147	148
UH	Anti-icing function in other rooms	—	—	147	148

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.

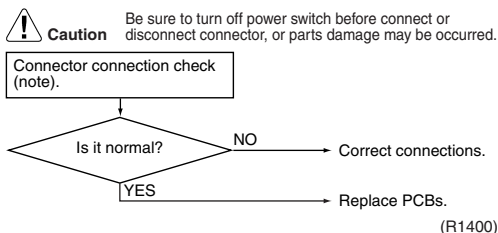
Malfunction
Decision
Conditions

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

Supposed
Causes

- Faulty indoor unit PCB
- Faulty connector connection

Trouble
shooting



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

Model Type	Connector No.
Wall Mounted Type 20/25/35 class	Terminal strip~Control PCB
Wall Mounted Type 50/60/71 class	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	Control PCB : S7, S201, S203 Power Supply PCB : S8, S202, S204

5.1.2 Freeze-up Protection Control or High Pressure Control

**Remote
Controller
Display**

R5

**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

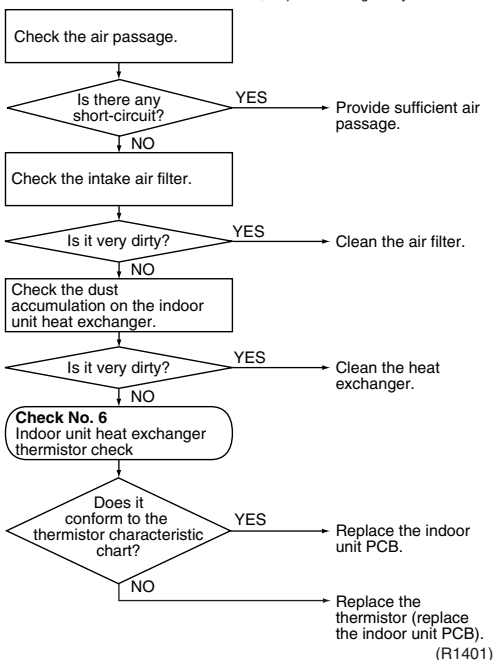


Check No.6
Refer to
P.157



Caution

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



Note:

If the outside temperature is below -10°C in the cooling mode, the system may get interrupted with error *R5* displayed. The system will be reset itself, but this stop will be put in the error history memory.

5.1.3 Fan Motor (AC Motor) or Related Abnormality

Remote
Controller
Display

RG

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 is less than 50% of the HH tap under maximum fan motor rotation demand.

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

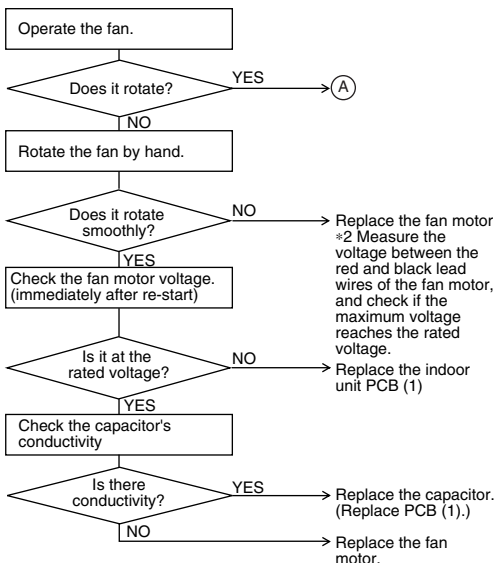


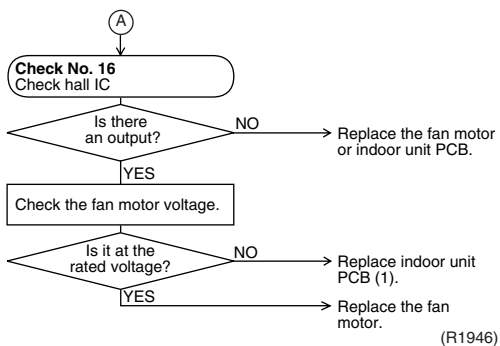
Check No.16
Refer to
P.167



Caution

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





5.1.4 Fan Motor (DC Motor) or Related Abnormality

**Remote
Controller
Display**

RE

**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 is less than 50% of the H tap under maximum fan motor rotation demand.

**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 (1).

Trouble shooting



Check No.1
Refer to
P.149



Check No.2
Refer to
P.150



Caution

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

Turn off power supply and rotate fan by hand.

Does fan rotate smoothly?

NO

Replace fan motor.

YES

Turn power ON and operate fan.

Does it rotate?

NO

(A)

YES

Stop fan motor.

Check No.01

Check output of fan motor connector

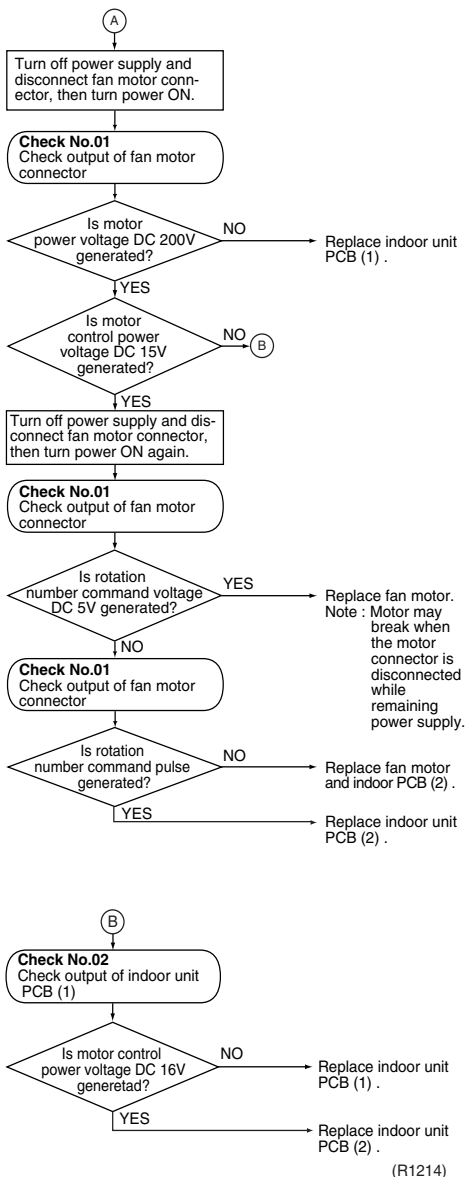
Is rotation number command pulse generated?

NO

Replace indoor
Replace fan motor.

YES

Replace indoor unit
PCB (2) .



5.1.5 Thermistor or Related Abnormality (Indoor Unit)

Remote
Controller
Display

Ⓒ4, Ⓒ9

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.

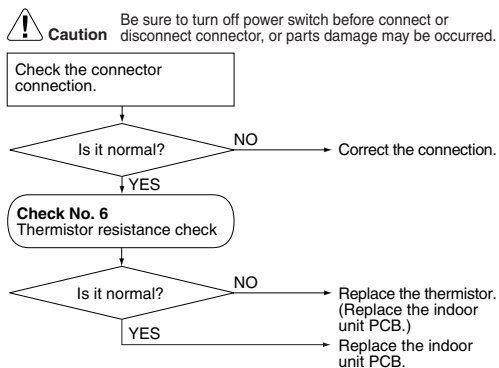
Supposed
Causes

- Faulty connector connection
- Faulty thermistor
- Faulty PCB

Trouble
shooting



Check No.6
Refer to
P.157



(R1403)

Ⓒ4: Heat exchanger temperature thermistor

Ⓒ9: Room temperature thermistor

5.1.6 Shutter Drive Motor / Shutter Limit Switch Abnormality

Remote
Controller
Display

□7

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.

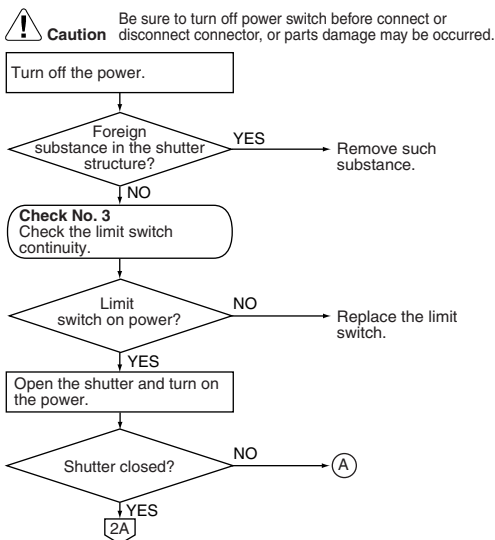
Supposed
Causes

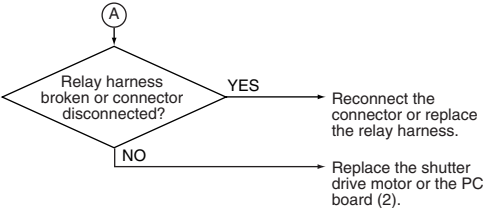
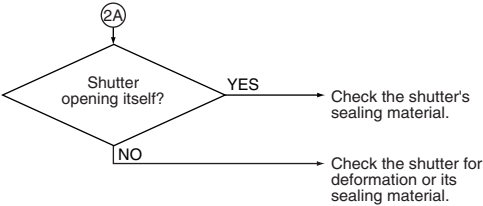
- Shutter drive motor defective
- Shutter limit switch defective
- Shutter itself deformed (warped)
- Shutter's sealing material too thick
- Detection error by broken relay harness or disconnected connector
- Detection error due to defective PCB (2)
- Foreign substance in blow port

Trouble
shooting



Check No.3
Refer to
P.150





(Q0346)

5.2 Outdoor Unit

5.2.1 Anti-icing Function

Remote Controller Display	<i>R5</i>
Method of Malfunction Detection	<p>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.</p> <p>At another room (the indoor unit is normal), "UH" is displayed on the remote controller.</p>
Malfunction Decision Conditions	<p>In the cooling mode, the following conditions (A) and (B) are kept together for 5 minutes.</p> <p>(A) Indoor unit heat exchanger temperature $\leq -1^{\circ}\text{C}$</p> <p>(B) Indoor unit heat exchanger temperature \leq Room temperature -10°C</p> <p>■ If the indoor unit anti-icing function is activated four times continuity, the system will be shut down. (The 4-time counter will reset itself if any of the following errors does not occur during the compressor running time (total time): OL, radiation fin temperature rise, insufficient gas, and compressor lock.)</p> <p><Total 60 minutes></p>
Supposed Causes	<ul style="list-style-type: none"> ■ Wrong wiring or piping ■ Ev malfunctioning in each room ■ Short-circuit ■ Indoor unit heat exchanger temperature thermistor abnormality ■ Room temperature thermistor abnormality

Trouble shooting



Check No.4

Refer to
P.151



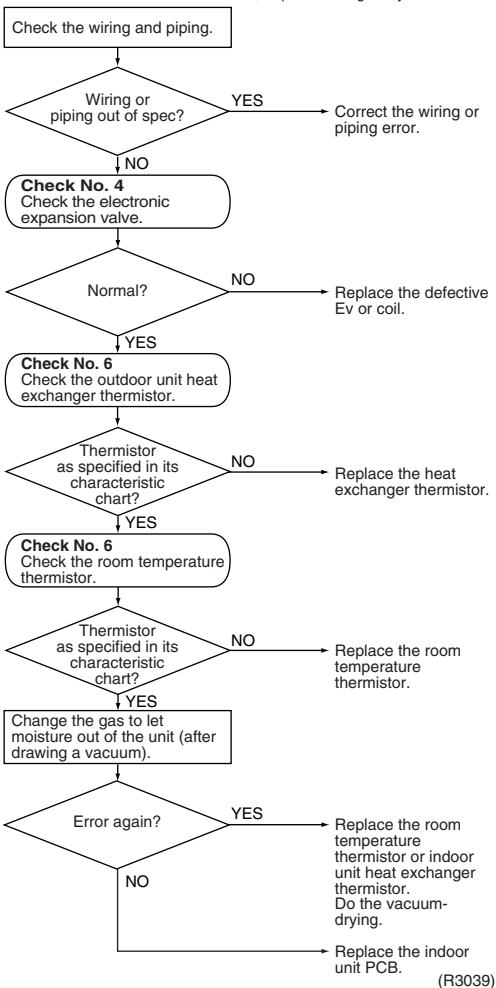
Check No.6

Refer to
P.157








Caution

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



5.2.2 Freeze-up Protection Control

Remote Controller Display	<i>R5</i>
Outdoor Unit LED Display	A  1  2  3  4 
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	<p>In the cooling mode, the following conditions (A) and (B) are kept together for 5 minutes.</p> <p>(A) Indoor unit heat exchanger temperature $\leq -1^{\circ}\text{C}$ (B) Indoor unit heat exchanger temperature \leq Room temperature -10°C</p> <p>■ If the indoor unit icing protector is activated four times straight, the system will be shut down. (The 4-time counter will reset itself if any of the following errors does not occur during the compressor running time (total time): OL, radiation fin temperature rise, gas shortage, and compressor startup.) <Total 60 minutes></p>
Supposed Causes	<ul style="list-style-type: none"> ■ Wrong wiring or piping ■ Ev malfunctioning in each room ■ Short-circuit ■ Indoor unit heat exchanger thermistor defective ■ Indoor unit thermistor defective

Trouble shooting



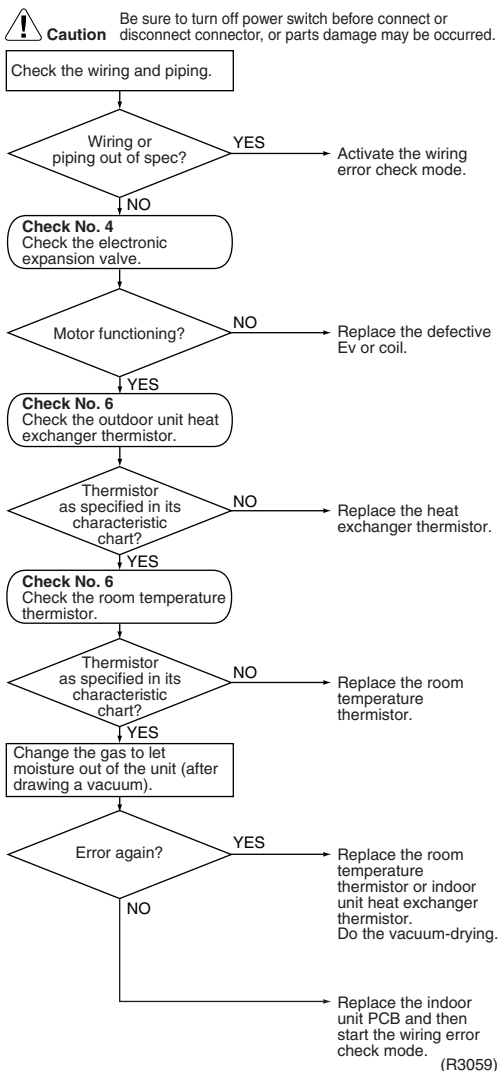
Check No.4

Refer to P.151



Check No.6

Refer to P.157



5.2.3 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 will be shut down.
- The error counter will reset 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.4
Refer to
P.151



Check
No.5-2
Refer to
P.156



Check No.6
Refer to
P.157

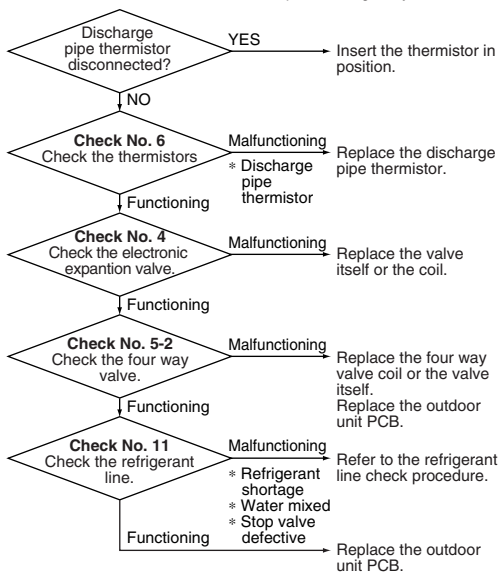


Check No.11
Refer to
P.162



Caution

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



(R2841)

5.2.4 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 will be shut down.
- The error counter will reset 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.4
Refer to
P.151



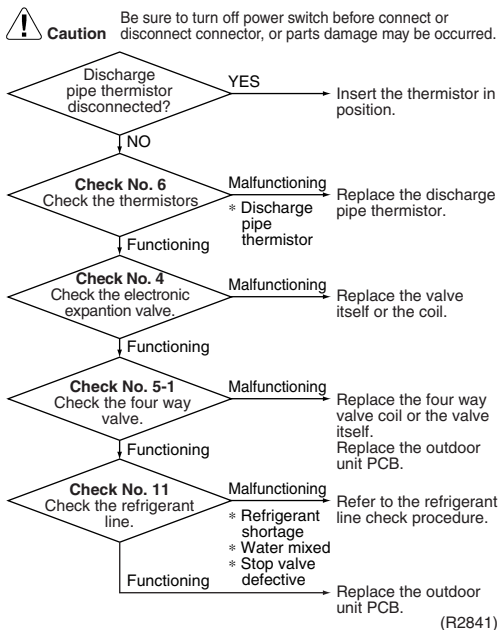
Check
No.5-1
Refer to
P.155








Check No.6
Refer to
P.157



Check No.11
Refer to
P.162



5.2.5 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	<ul style="list-style-type: none"> ■ If the compressor OL is activated twice, the system will be shut down. ■ The error counter will reset itself if this or any other error does not occur during the following 60-minute compressor running time (total time). <p>* The operating temperature condition is not specified.</p>
Supposed Causes	<ul style="list-style-type: none"> ■ 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.4

Refer to
P.151



Check
No.5-1

Refer to
P.155



Check No.6

Refer to
P.157



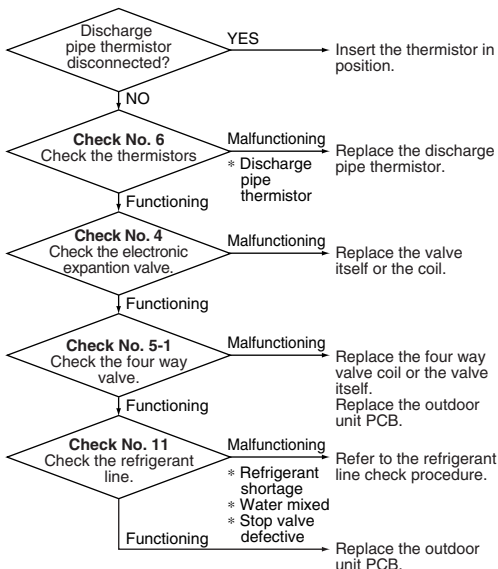
Check No.11

Refer to
P.162



Caution

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



(R2841)

5.2.6 Compressor Lock

Remote Controller Display

E5

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 over current.
- The system judges the compressor lock, and cannot operation with position detection within 15 seconds after start up.
- The system will be shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 5 minutes (normal)

Supposed Causes

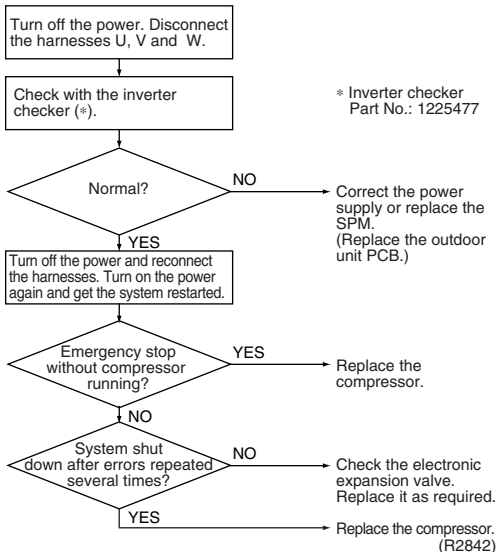
- Compressor locked

Trouble shooting



Caution

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



Note: If the model doesn't have SPM, replace the outdoor unit PCB.

5.2.7 Compressor Lock

Remote Controller Display

E5

Method of Malfunction Detection

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

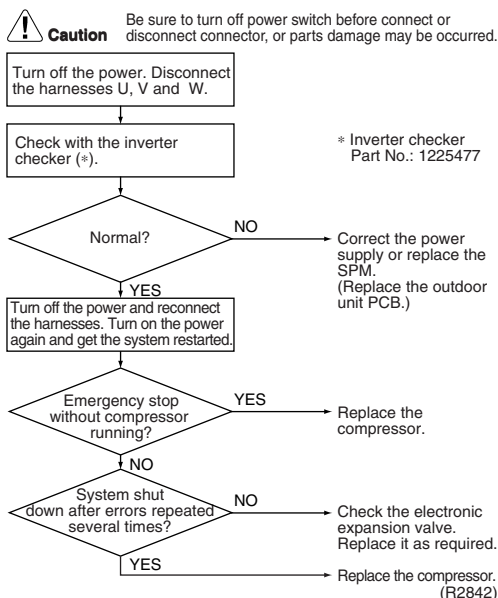
Malfunction Decision Conditions

- 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 will be shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 5 minutes (normal)

Supposed Causes

- Compressor locked

Trouble shooting








5.2.8 Compressor Lock

Remote
Controller
Display

EE

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.

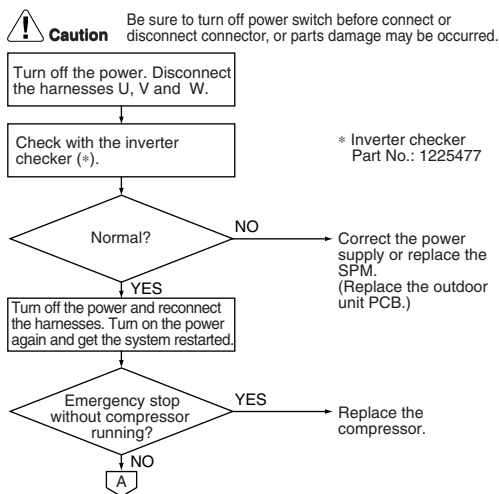
Malfunction
Decision
Conditions

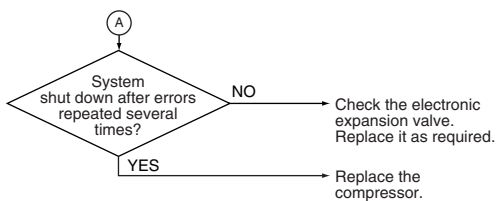
- The position detection circuit detects a compressor frequency of below 10 Hz for 20 seconds or a frequency of above 160 Hz.
- 40 seconds after the compressor has started, the position detection circuit detects a compressor frequency of above 180 Hz.
- The system will be shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 5 minutes (normal)

Supposed
Causes

- Compressor locked

Trouble
shooting





(R2842)

5.2.9 Compressor Lock

Remote Controller Display

E5

Method of Malfunction Detection

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

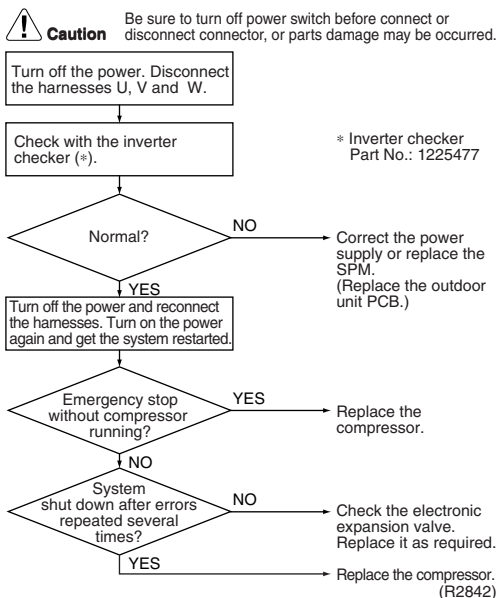
Malfunction Decision Conditions

- The position detection circuit detects a compressor frequency of below 5 Hz for several tens of seconds.
- The system will be 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 doesn't have SPM, replace the outdoor unit PCB.

5.2.10 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 seconds even when the fan motor is running.
- The system will be shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 5 minutes (normal)

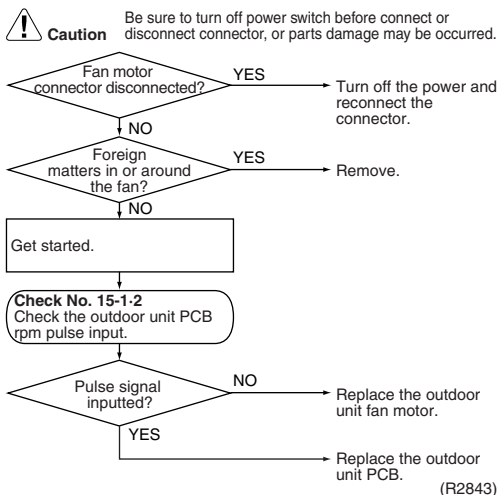
Supposed Causes

- 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.15-1-2
Refer to
P.165








5.2.11 DC Fan Lock

Remote
Controller
Display

E7

Outdoor
Unit LED
Display

A  1  2  3  4 

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 will be shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 5 minutes (normal)

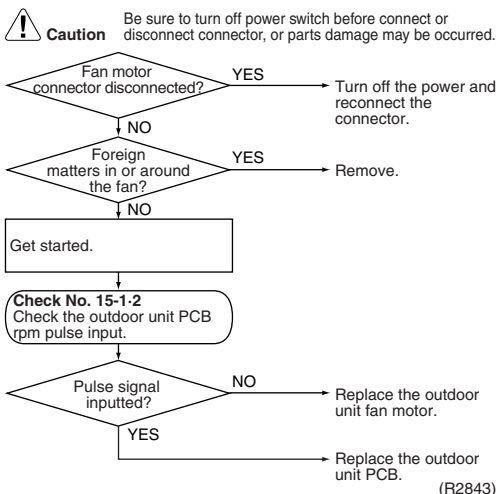
Supposed
Causes

- 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.15-1.2
Refer to
P.165**



5.2.12 Input Over Current Detection

Remote
Controller
Display

EB

Method of
Malfunction
Detection

An input over-current 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.
Cooling: Above 11A, Heating: Above 13A

Supposed
Causes

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

Trouble
shooting



Check
No.7-1
Refer to
P.158



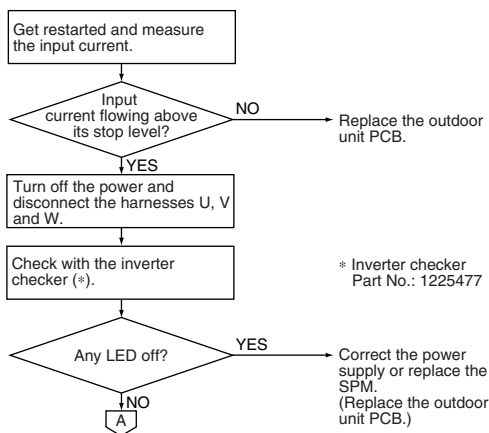
Check No.8
Refer to
P.160

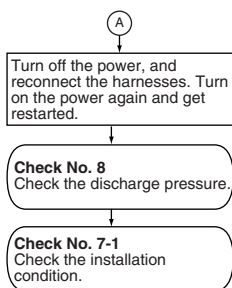


Caution

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

* An input over-current 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 over-current, take the following procedure.





(R2952)



Note: If the model doesn't have SPM, replace the outdoor unit PCB.

5.2.13 Input Over Current Detection

Remote Controller Display	<i>EB</i>
Method of Malfunction Detection	An input over-current is detected by checking the input current value being detected by CT with the compressor running.
Malfunction Decision Conditions	<ul style="list-style-type: none"> ■ The following CT input with the compressor running continues for 2.5 seconds. CT input : Above 20 A ■ The system will be shut down if the error occurs 16 times. ■ Clearing condition : Continuous run for about 5 minutes (normal)
Supposed Causes	<ul style="list-style-type: none"> ■ Over-current due to compressor failure ■ Over-current due to defective power transistor ■ Over-current due to defective inverter main circuit electrolytic capacitor ■ Over-current due to defective outdoor unit PCB ■ Error detection due to outdoor unit PCB ■ Over-current due to short-circuit

Trouble shooting



Check No.7-1
Refer to P.158



Check No.8
Refer to P.160



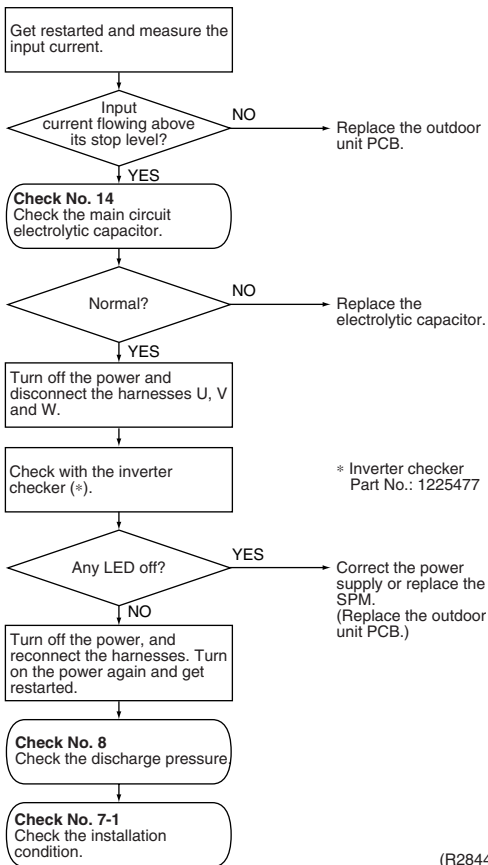
Check No.14
Refer to P.164



Caution

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

* An input over-current 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 over-current, take the following procedure.








(R2844)

5.2.14 Input Over Current Detection

**Remote
Controller
Display**

EB

**Outdoor
Unit LED
Display**

A  1  2  3  4 

**Method of
Malfunction
Detection**

An input over-current 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 will be shut down if the error occurs 16 times.
- Clearing condition : Continuous run for about 5 minutes (normal)

**Supposed
Causes**

- Over-current due to compressor failure
- Over-current due to defective power transistor
- Over-current due to defective inverter main circuit electrolytic capacitor
- Over-current due to defective outdoor unit PCB
- Error detection due to outdoor unit PCB
- Over-current due to short-circuit

Trouble shooting



Check No.7-1
Refer to P.158



Check No.8
Refer to P.160



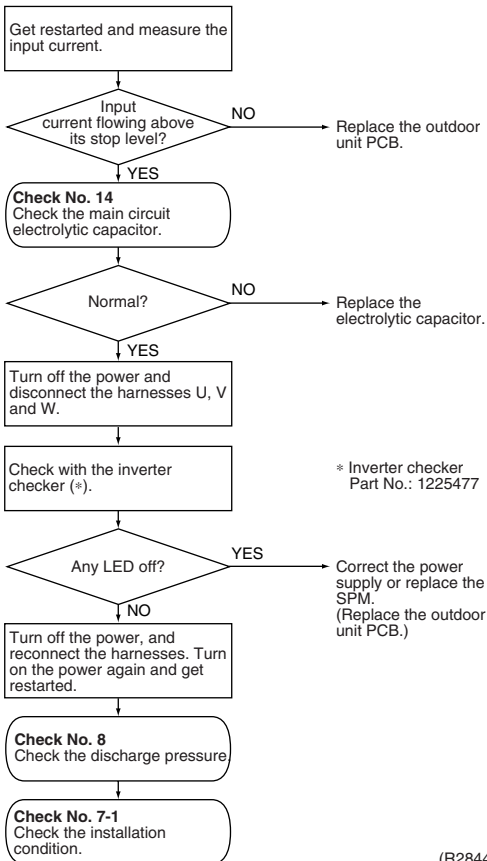
Check No.14
Refer to P.164



Caution

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

* An input over-current 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 over-current, take the following procedure.



(R2844)

5.2.15 Input Over Current Detection

**Remote
Controller
Display***EB***Method of
Malfunction
Detection**

An input over-current 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 will be shut down if the error occurs 16 times.
- Clearing condition : Continuous run for about 5 minutes (normal)

**Supposed
Causes**

- Over-current due to compressor failure
- Over-current due to defective power transistor
- Over-current due to defective inverter main circuit electrolytic capacitor
- Over-current due to defective outdoor unit PCB
- Error detection due to outdoor unit PCB
- Over-current due to short-circuit

Trouble shooting



Check No.7-2
Refer to P.159



Check No.8
Refer to P.160



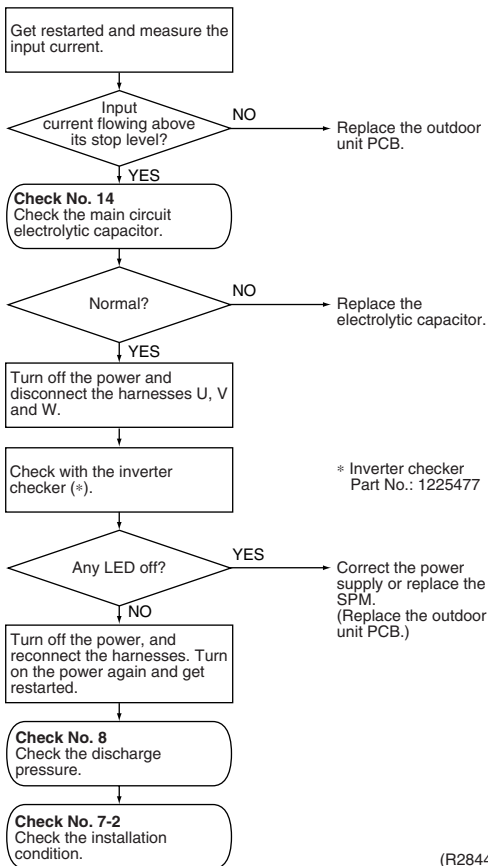
Check No.14
Refer to P.164



Caution

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

* An input over-current 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 over-current, take the following procedure.



Note:

If the model doesn't have SPM, replace the outdoor unit PCB.

5.2.16 Four Way Valve Abnormality

Remote Controller Display	<i>ER</i>
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	<p>A following condition occurs after 3 minutes of the compressor start.</p> <ul style="list-style-type: none"> ■ Cooling / dry operation (outdoor unit heat exchanger temp. – liquid pipe temp.) < -5°C ■ Heating (liquid pipe temp. – outdoor unit heat exchanger temp.) < 0°C
Supposed Causes	<ul style="list-style-type: none"> ■ 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 ■ Insufficient gas

Trouble shooting



Check No.5-2
Refer to P.156



Check No.6
Refer to P.157

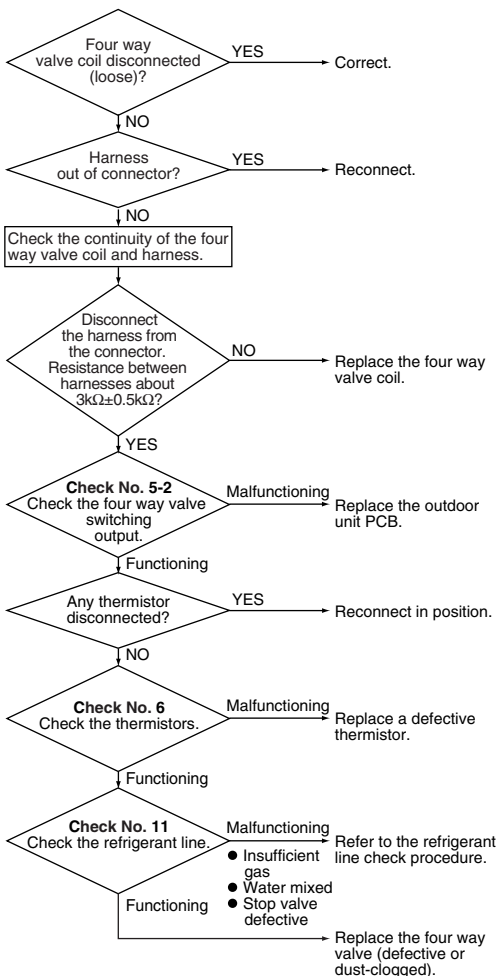


Check No.11
Refer to P.162



Caution

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



(R3040)

5.2.17 Four Way Valve Abnormality

**Remote
Controller
Display***ER*

**Method of
Malfunction
Detection**

The indoor air 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 10 minute after operating 5 minutes.

- Cooling / dry operation
(room temp. – indoor heat exchanger temp.) < -10°C
- Heating
(indoor unit heat exchanger temp. – room temp.) < -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
- Insufficient gas

Trouble shooting



Check No.5-2
Refer to P.156



Check No.6
Refer to P.157

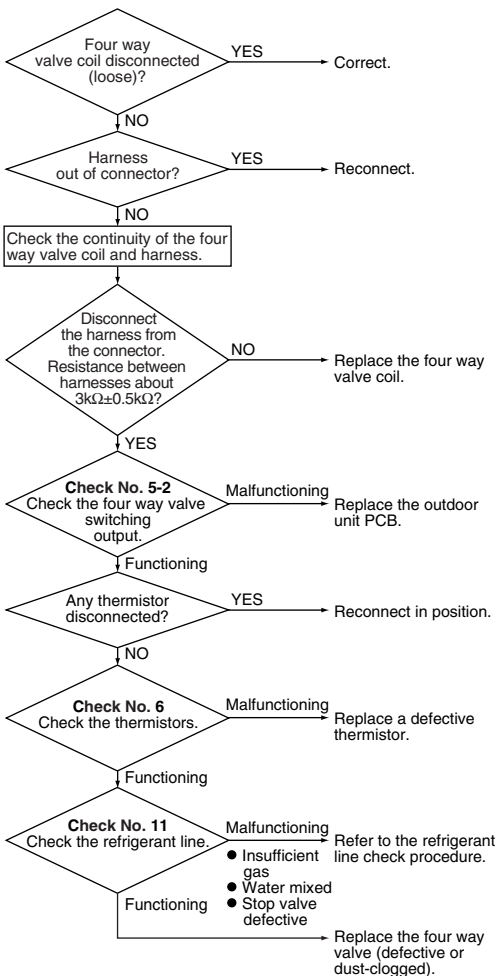


Check No.11
Refer to P.162



Caution

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



(R3040)

5.2.18 Four Way Valve Abnormality

**Remote
Controller
Display***ER*

**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.) $< -10^{\circ}\text{C}$
 - Heating
(indoor unit heat exchanger temp. – room temp.) $< -10^{\circ}\text{C}$
-

**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
- Insufficient gas

Trouble shooting



Check No.5-1
Refer to P.155



Check No.6
Refer to P.157

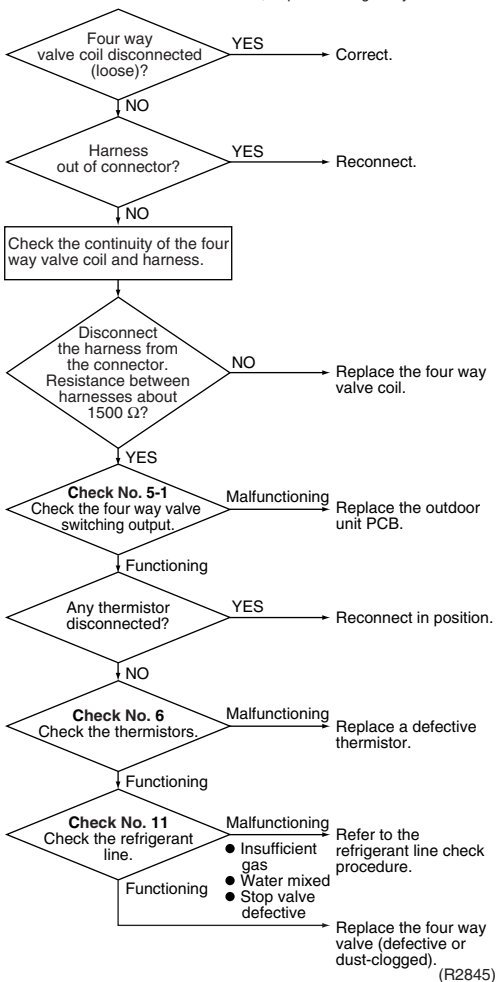


Check No.11
Refer to P.162



Caution

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







5.2.19 Four Way Valve Abnormality

Remote
Controller
Display

ER

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 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°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.5-1
Refer to P.155



Check No.6
Refer to P.157

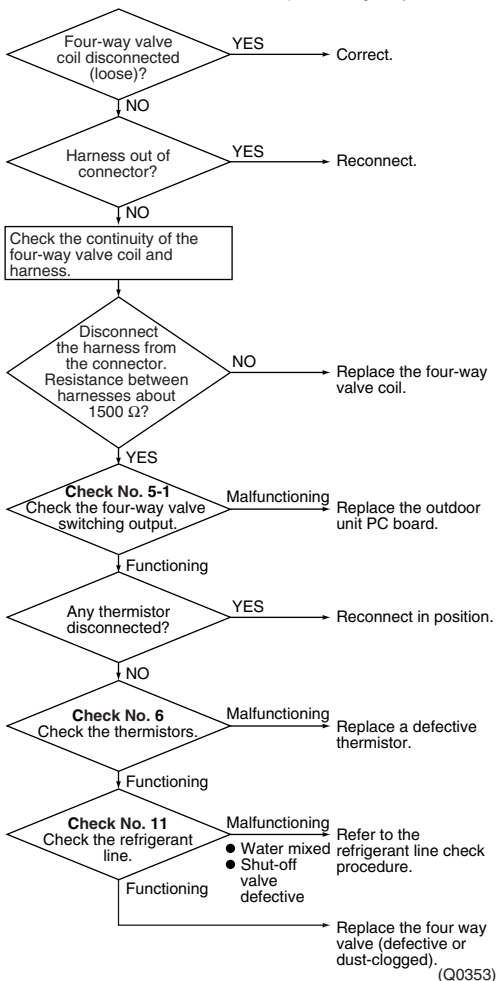


Check No.11
Refer to P.162



Caution

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



5.2.20 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 6 times successively due to abnormal discharge pipe temperature, the system will be shut down.
- If the temperature being detected by the discharge pipe thermistor rises above $A^{\circ}\text{C}$, the compressor will stop. (The error is cleared when the temperature has dropped below $B^{\circ}\text{C}$.)

Stop temperatures

	FTK(X)S, ATK(X)S series		others	
	A	B	A	B
1. above 45Hz (rising), above 40Hz (dropping)	120	80	117	80
2. 130~45Hz (rising), 25~40Hz (dropping)	110	70	117	80
3. below 30Hz (rising), below 25Hz (dropping)	105	65	117	80

- The error counter will reset 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.4

Refer to
P.151



Check No.6

Refer to
P.157



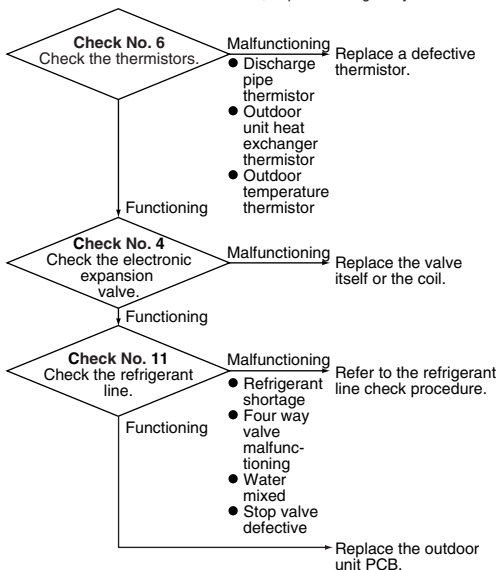
Check No.11

Refer to
P.162



Caution

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



(R2846)

5.2.21 Discharge Pipe Temperature Control

Remote Controller Display	<i>F3</i>
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	<ul style="list-style-type: none"> ■ If a stop takes place 6 times successively due to abnormal discharge pipe temperature, the system will be shut down. ■ If the temperature being detected by the discharge pipe thermistor rises above 120°C, the compressor will stop. (The error is cleared when the temperature has dropped below 107°C.) <p>Stop temperatures (in case of 5.0kW class)</p> <p>(1) 110°C : above 45Hz (rising), above 40Hz (dropping)</p> <p>(2) 102°C : 30~45Hz (rising), 25~40Hz (dropping)</p> <p>(3) 98°C : below 30Hz (rising), below 25Hz (dropping)</p> <ul style="list-style-type: none"> ■ The error counter will reset itself if this or any other error does not occur during the following 60-minute compressor running time (total time).
Supposed Causes	<ul style="list-style-type: none"> ■ 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.4

Refer to
P.151



Check No.6

Refer to
P.157



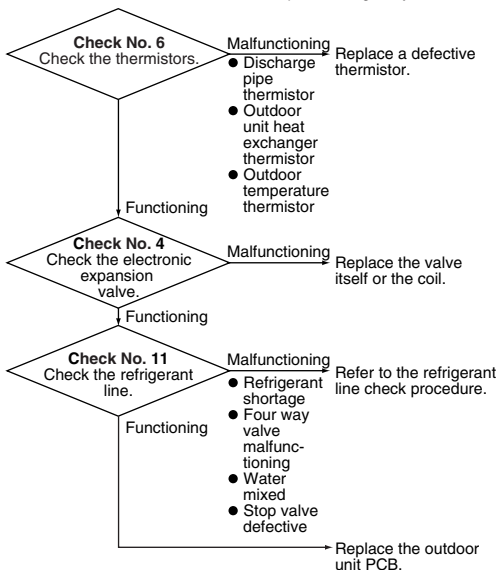
Check No.11

Refer to
P.162



Caution

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





(R2846)

5.2.22 Discharge Pipe Temperature Control

Remote
Controller
Display

F3

Outdoor
Unit LED
Display

A  1  2  3  4 

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 6 times straight due to abnormal discharge pipe temperature, the system will be shut down.
 - If the temperature being detected by the discharge pipe thermistor rises above 120°C, the compressor will stop. (The error is cleared when the temperature has dropped below 107°C.)
- Stop temperatures (in the case of 3MXS52BVMB)
- (1) 110°C when the frequency rises above 45 Hz or drops below 40 Hz.
 - (2) 102°C when the frequency rises from 30 Hz to 45 Hz or drops from 40 Hz to 25 Hz.
 - (3) 98°C when the frequency rises just up to 30 Hz or drops below 25 Hz.
- The error counter will reset 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.4
Refer to
P.151



Check No.6
Refer to
P.157

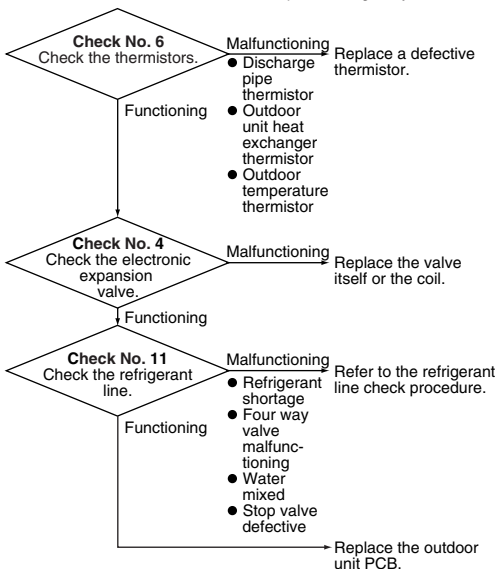


Check No.11
Refer to
P.162



Caution

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



(R2846)

5.2.23 Discharge Pipe Temperature Control

Remote Controller Display	<i>F3</i>
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	<ul style="list-style-type: none"> ■ If a stop takes place 6 times successively due to abnormal discharge pipe temperature, the system will be shut down. ■ If the temperature being detected by the discharge pipe thermistor rises above 110°C, the compressor will stop. (The error is cleared when the temperature has dropped below 97°C.) <p>Stop temperatures</p> <p>(1) 110°C : above 45Hz (rising), above 40Hz (dropping)</p> <p>(2) 102°C : 30~45Hz (rising), 25~40Hz (dropping)</p> <p>(3) 98°C : below 30Hz (rising), below 25Hz (dropping)</p> <ul style="list-style-type: none"> ■ The error counter will reset itself if this or any other error does not occur during the following 60-minute compressor running time (total time).
Supposed Causes	<ul style="list-style-type: none"> ■ 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.4

Refer to
P.151



Check No.6

Refer to
P.157



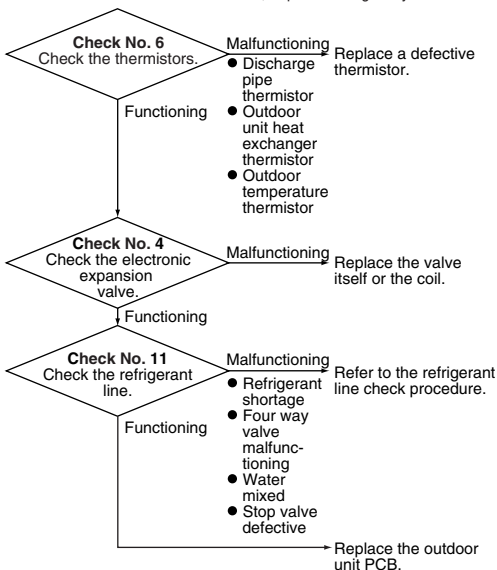
Check No.11

Refer to
P.162



Caution

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



(R2846)

5.2.24 High Pressure Control in Cooling

**Remote
Controller
Display**

F5

**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 60°C.
(Deactivated when the said temperature drops below 50°C.)

**Supposed
Causes**

- The installation space is not large enough.
- Faulty outdoor unit fan
- Faulty electronic expansion valve
- Faulty defrost thermistor
- Faulty outdoor unit PCB
- Faulty stop valve
- Dirty heat exchanger

**Trouble
shooting**



**Check No.4
Refer to
P.151**



**Check No.6
Refer to
P.157**



**Check
No.7-1
Refer to
P.158**

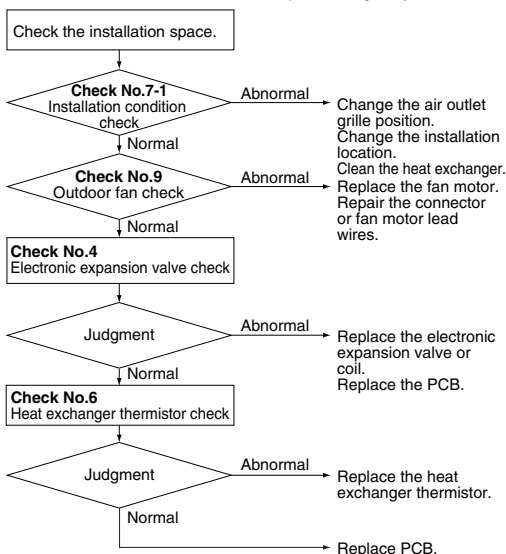


**Check No.9
Refer to
P.160**



Caution

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



(R2855)

5.2.25 High Pressure Control in Cooling

Remote Controller Display

F5

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°C.
(Deactivated when the said temperature drops below 52°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.4

Refer to
P.151



Check No.6

Refer to
P.157



Check
No.7-2

Refer to
P.159



Check No.9

Refer to
P.160



Caution

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

Check the installation space.

Check No.7-2
Installation condition check

Abnormal

Change the air outlet grille position.
Change the installation location.
Clean the heat exchanger.
Replace the fan motor.
Repair the connector or fan motor lead wires.

Normal

Check No.9
Outdoor fan check

Abnormal

Normal

Check No.4
Electronic expansion valve check

Judgment

Abnormal

Replace the electronic expansion valve or coil.
Replace the PCB.

Normal

Check No.6
Heat exchanger thermistor check

Judgment

Abnormal

Replace the heat exchanger thermistor.

Normal

Replace PCB.

(R2855)

5.2.26 Position Sensor Abnormality

Remote Controller Display	<i>H5</i>
Method of Malfunction Detection	FTK(X)S, ATK(X)S series only A compressor startup failure is detected by checking the compressor running condition through the position detection circuit.
Malfunction Decision Conditions	<ul style="list-style-type: none"> ■ 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 will be shut down if the error occurs 16 times.
Supposed Causes	<ul style="list-style-type: none"> ■ Compressor relay cable disconnected ■ Compressor itself defective ■ Outdoor unit PCB defective ■ Stop valve closed ■ Input voltage out of specification

Trouble shooting



Check No.13
Refer to
P.163



Caution

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

Check No. 13
Check for short-circuit.

Normal
NO → Replace the outdoor unit PCB.

YES
Check the electrolytic capacitor voltage.

DC290~380V?
NO → Replace the outdoor unit PCB.

YES
Electricals or compressor harnesses connected as specified?
NO → Reconnect as specified.

YES
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 outdoor unit PCB.

NO → Replace the compressor.

(R3041)

5.2.27 Position Sensor Abnormality

Remote Controller Display	<i>H5</i>
Method of Malfunction Detection	A compressor startup failure is detected by checking the compressor running condition through the position detection circuit.
Malfunction Decision Conditions	<ul style="list-style-type: none"> ■ 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 will be shut down if the error occurs 16 times.
Supposed Causes	<ul style="list-style-type: none"> ■ Compressor relay cable disconnected ■ Compressor itself defective ■ Outdoor unit PCB defective ■ Stop valve closed ■ Input voltage out of specification

Trouble shooting

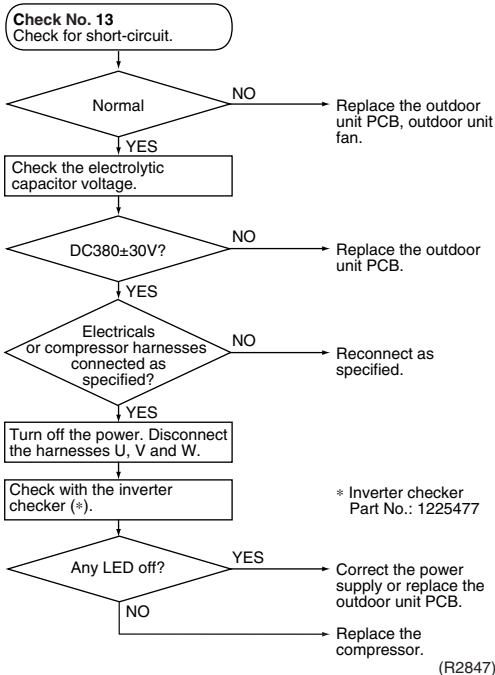


Check No.13
Refer to
P.163








Caution

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



5.2.28 Position Sensor Abnormality

Remote Controller Display	H5
Outdoor Unit LED Display	A  1  2  3  4 
Method of Malfunction Detection	A compressor startup failure is detected by checking the compressor running condition through the position detection circuit.
Malfunction Decision Conditions	<ul style="list-style-type: none"> ■ 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 will be shut down if the error occurs 16 times.
Supposed Causes	<ul style="list-style-type: none"> ■ Compressor relay cable disconnected ■ Compressor itself defective ■ Outdoor unit PCB defective ■ Stop valve closed ■ Input voltage out of specification

Trouble shooting



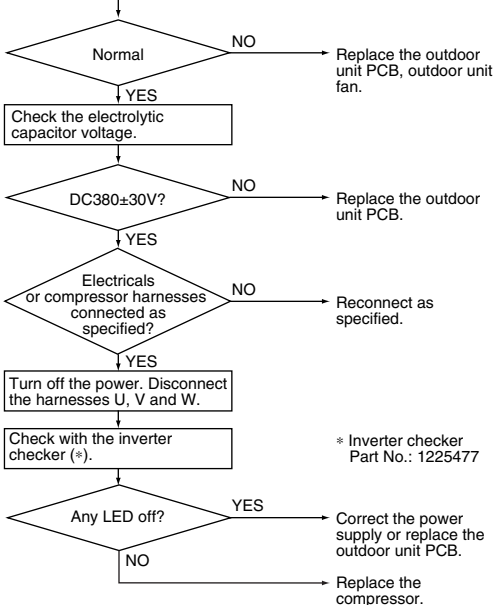
Check No.13
Refer to
P.163



Caution

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

Check No. 13
Check for short-circuit.



* Inverter checker
Part No.: 1225477

(R2847)

5.2.29 Position Sensor Abnormality

Remote Controller Display	<i>H5</i>
Method of Malfunction Detection	A compressor startup failure is detected by checking the compressor running condition through the position detection circuit.
Malfunction Decision Conditions	<ul style="list-style-type: none"> ■ The compressor is not running in about 15 seconds after the compressor run command signal is sent. ■ Clearing condition: Continuous run for about 5 minutes (normal) ■ The system will be shut down if the error occurs 8 times.
Supposed Causes	<ul style="list-style-type: none"> ■ Compressor relay cable disconnected ■ Compressor itself defective ■ Outdoor unit PCB defective ■ Stop valve closed ■ Input voltage out of specification

Trouble shooting



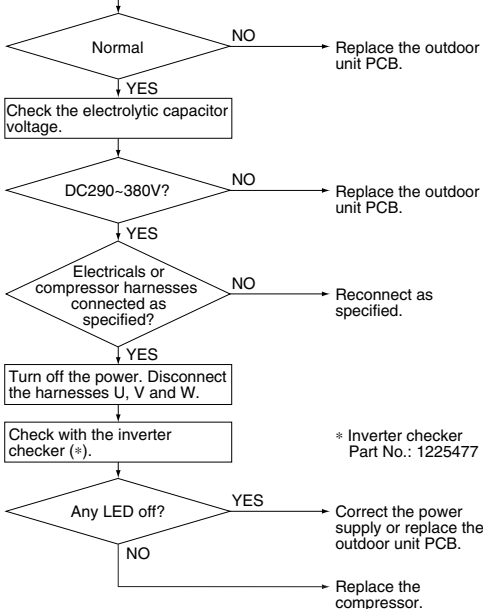
Check No.13
Refer to P.163



Caution

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

Check No. 13
Check for short-circuit.



* Inverter checker
Part No.: 1225477

(R3041)

5.2.30 CT or Related Abnormality

Remote
Controller
Display

HB

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 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 will be shut down.
- The error counter will reset 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.163



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

Check No. 12
Check the capacitor voltage.

DC290~380V?

YES

(A)

NO

Measure the rectifier input voltage.

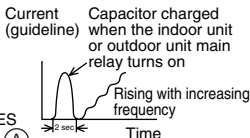
Voltage within the allowable range (Supply voltage $\pm 15\%$)?

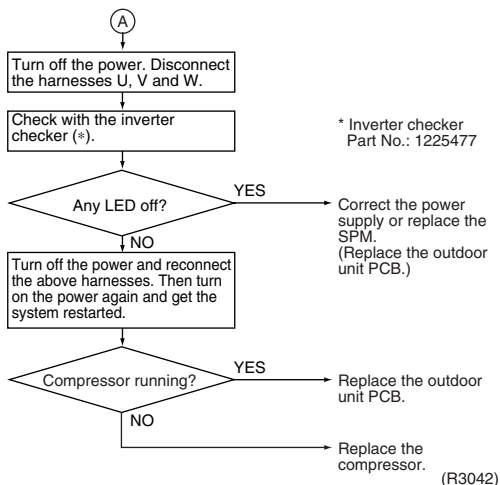
YES

Replace the outdoor unit PCB.

NO

Check the supply voltage.





Note: If the model doesn't have SPM, replace the outdoor unit PCB.

5.2.31 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 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 will be shut down.
- The error counter will reset 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.163



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

Check No. 12
Check the capacitor voltage.

DC380±30V?

YES

(A)

NO

Measure the rectifier input voltage.

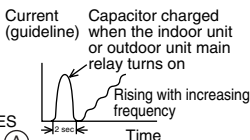
Voltage within the allowable range (Supply voltage±15%)?

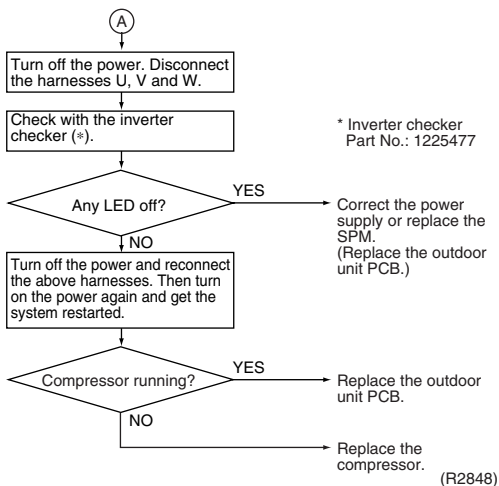
YES

Replace the outdoor unit PCB.






NO

Check the supply voltage.





5.2.32 CT or Related Abnormality

Remote Controller Display	<i>H8</i>
Outdoor Unit LED Display	A  1  2  3  4 
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	<p>The compressor running frequency is below 55 Hz and the CT input is below 0.1 V. (The input current is also below 1.25 A.)</p> <ul style="list-style-type: none"> ■ If this error repeats 4 times, the system will be shut down. ■ The error counter will reset itself if this or any other error does not occur during the following 60-minute compressor running time (total time).
Supposed Causes	<ul style="list-style-type: none"> ■ Power transistor defective ■ Internal wiring broken or in poor contact ■ Reactor defective ■ Outdoor unit PCB defective

Trouble shooting



Check No.12
Refer to
P.163



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

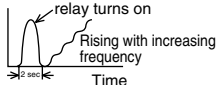
Check No. 12
Check the capacitor voltage.

DC380±30V?

YES

Current (guideline)

Capacitor charged when the indoor unit or outdoor unit main relay turns on



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.
(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.

(R2848)

5.2.33 CT or Related Abnormality

Remote
Controller
Display

HB

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 will be shut down.
- The error counter will reset 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.163



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

Check No. 12
Check the capacitor voltage.

DC290~380V?

YES



NO

Measure the rectifier input voltage.

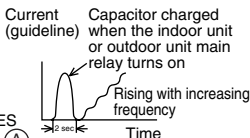
Voltage within the allowable range (Supply voltage $\pm 15\%$)?

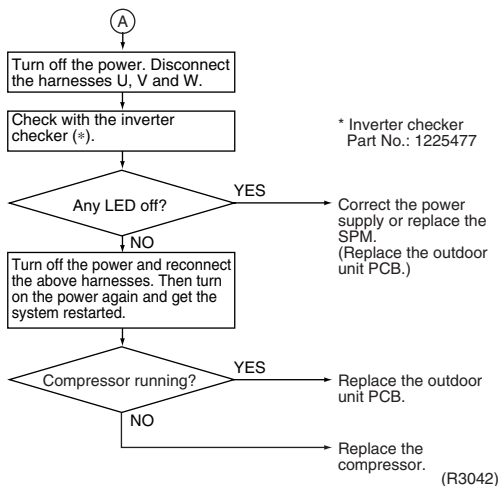
YES

Replace the outdoor unit PCB.

NO

Check the supply voltage.





Note: If the model doesn't have SPM, replace the outdoor unit PCB.

5.2.34 Thermistor or Related Abnormality (Outdoor Unit)

Remote Controller Display	<i>P4, J3, J6, H9</i>
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 condenser thermistor temperature.
Supposed Causes	<ul style="list-style-type: none"> ■ Connector in poor contact ■ Thermistor defective ■ Outdoor unit PCB defective ■ Indoor unit PCB defective ■ Condenser 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

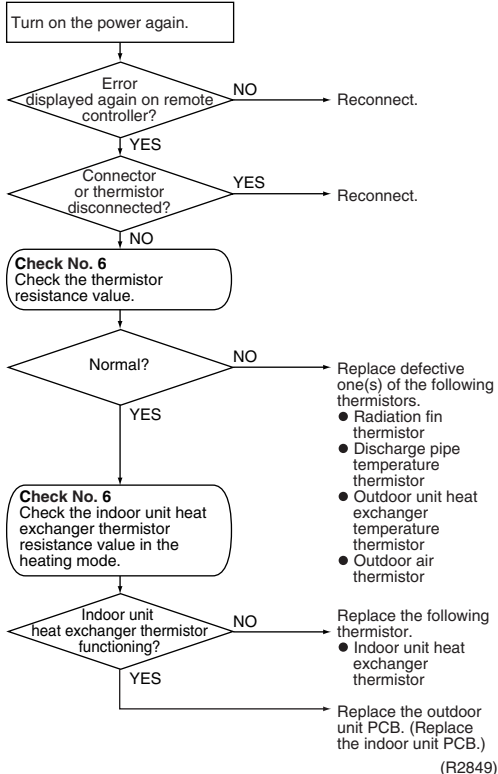


Check No.6
Refer to
P.157



Caution

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








P4: Radiation fin thermistor

J3: Discharge pipe thermistor

J6: Outdoor heat exchanger thermistor

H9: Outdoor air thermistor

5.2.35 Thermistor or Related Abnormality (Outdoor Unit)

Remote Controller Display	<i>P4, J3, J6, J8, J9, H9</i>
Outdoor Unit LED Display	A  1  2  3  4 
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 <i>J3</i> error is judged if the discharge pipe thermistor temperature is smaller than the condenser thermistor temperature, or the system will be shut down if all the units are judged with the <i>J3</i> error.
Supposed Causes	<ul style="list-style-type: none"> ■ Connector in poor contact ■ Thermistor defective ■ Outdoor unit PCB defective ■ Indoor unit PCB defective ■ Condenser thermistor defective in the case of <i>J3</i> error (outdoor unit heat exchanger thermistor in the cooling mode, or indoor unit heat exchanger thermistor in the heating mode)

Trouble shooting

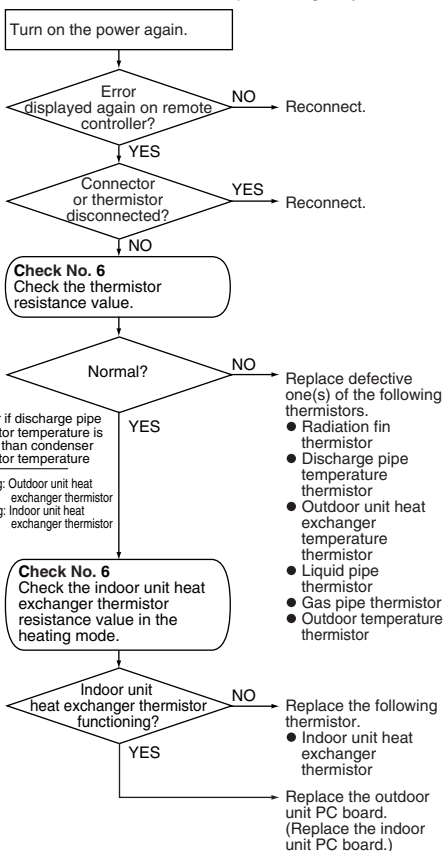


Check No.6
Refer to
P.157



Caution

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



(Q0357)

P4: Radiation fin thermistor

J3: Discharge pipe temperature thermistor

J5: Outdoor unit heat exchanger temperature thermistor

J8: Liquid pipe thermistor

J9: Gas pipe thermistor

H9: Outdoor temperature thermistor

5.2.36 Thermistor or Related Abnormality (Outdoor Unit)

Remote Controller Display	<i>P4,J3,J6,J8,J9,H9</i>
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 <i>J3</i> is judged if the discharge pipe thermistor temperature is smaller than the condenser thermistor temperature. In case of <i>J8</i> or <i>J9</i> , the system will be shut down when the error is detected at all of operating units.
Supposed Causes	<ul style="list-style-type: none"> ■ Connector in poor contact ■ Thermistor defective ■ Outdoor unit PCB defective ■ Indoor unit PCB defective ■ Condenser thermistor defective in the case of <i>J3</i> error (outdoor unit heat exchanger thermistor in the cooling mode, or indoor unit heat exchanger thermistor in the heating mode)

Trouble shooting



Check No.6
Refer to
P.157



Caution

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

Turn on the power again.

Error
displayed again on remote
controller?

NO

Reconnect.

YES

Connector
or thermistor
disconnected?

YES

Reconnect.

NO

Check No. 6
Check the thermistor
resistance value.

Normal?

NO

Replace defective
one(s) of the following
thermistors.

- Radiation fin thermistor
- Discharge pipe temperature thermistor
- Outdoor unit heat exchanger temperature thermistor
- Liquid pipe thermistor
- Gas pipe thermistor
- Outdoor temperature thermistor

YES

Check No. 6
Check the indoor unit heat
exchanger thermistor
resistance value in the
heating mode.

Indoor unit
heat exchanger thermistor
functioning?

NO

Replace the following
thermistor.

- Indoor unit heat exchanger thermistor

YES

Replace the outdoor
unit PCB. (Replace
the indoor unit PCB.)

(R3043)

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

H9: Outdoor air temperature thermistor

5.2.37 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



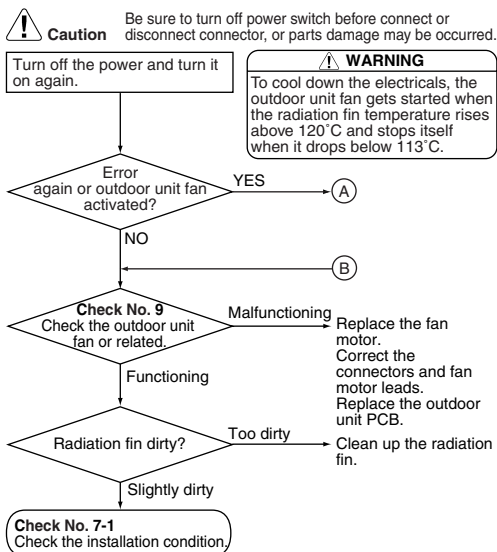
Check No.6
Refer to
P.157

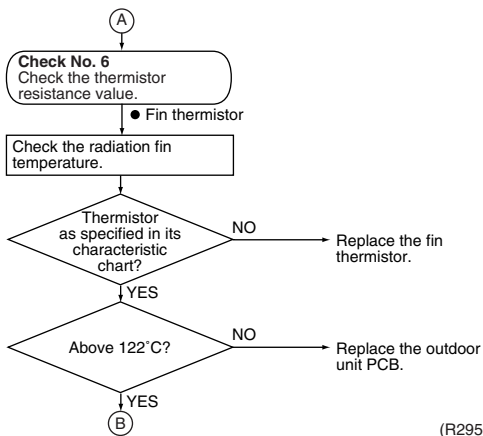


Check
No.7-1
Refer to
P.158



Check No.9
Refer to
P.160





(R2953)

5.2.38 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 (above 75°C in the case of 7.1kW class). (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



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.



WARNING

To cool down the electricals, the outdoor unit fan gets started when the radiation fin temperature rises above 78°C and stops itself when it drops below 70°C.

Check No.6
Refer to
P.157

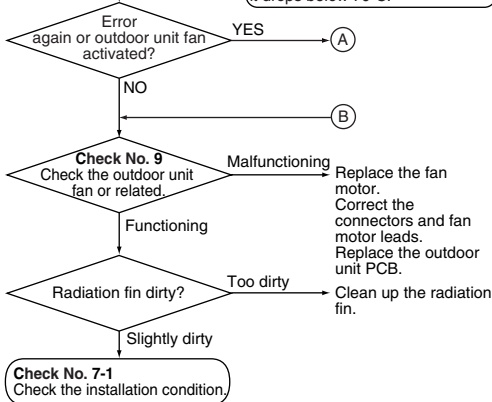


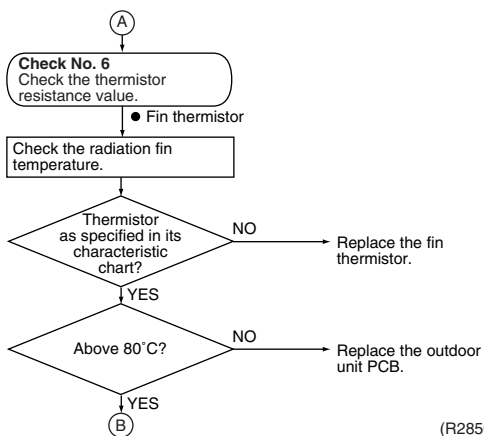
Check
No.7-1

Refer to
P.158



Check No.9
Refer to
P.160









(R2850)

5.2.39 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 80°C (above 75°C in the case of 8.0 · 9.0kW class). (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



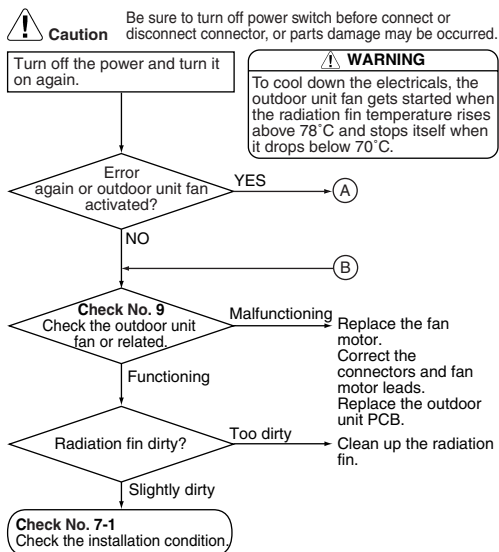
Check No.6
Refer to
P.157

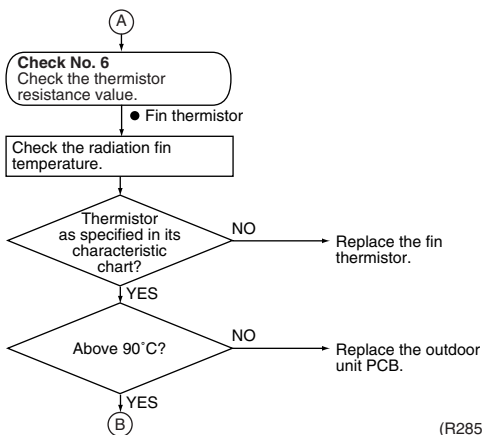


Check
No.7-1
Refer to
P.158



Check No.9
Refer to
P.160





5.2.40 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 (above 75°C in the case of 7.1kW class).
(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



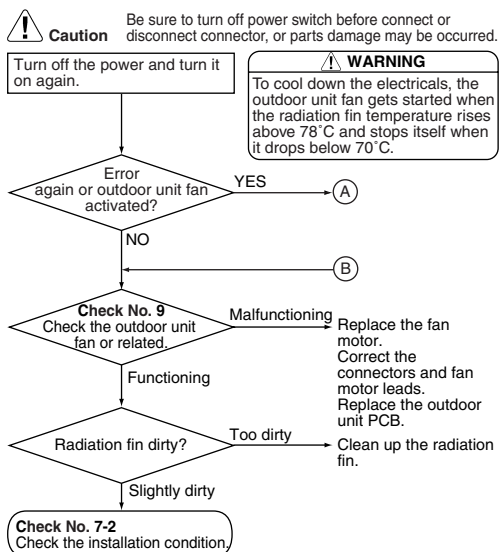
Check No.6
Refer to
P.157

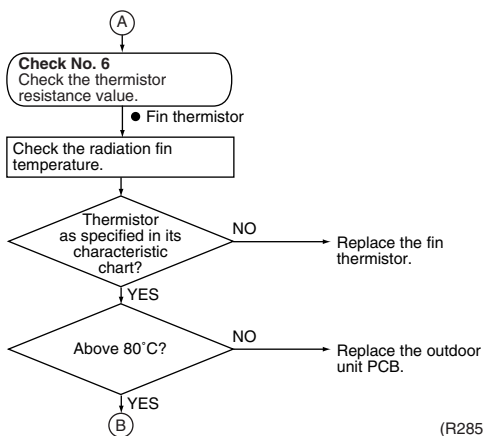


Check
No.7-2
Refer to
P.159



Check No.9
Refer to
P.160





5.2.41 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°C,

- If a radiation fin temperature rise takes place 4 times successively, the system will be shut down.
- The error counter will reset 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

Trouble
shooting



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 to get the system started.

Check No.6

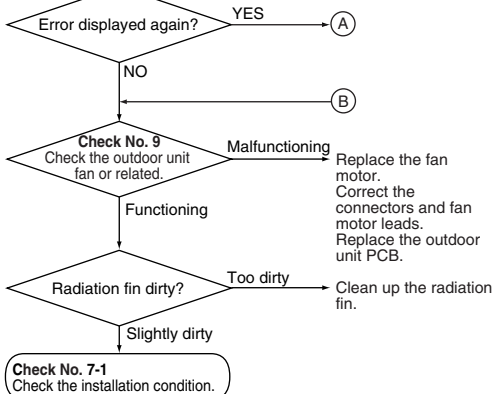
Refer to
P.157

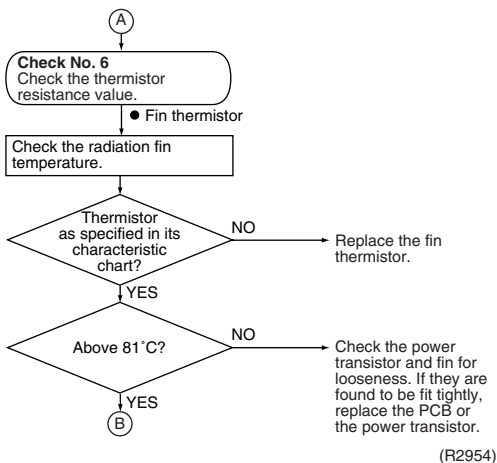


Check
No.7-1
Refer to
P.158



Check No.9
Refer to
P.160





5.2.42 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°C,

- If a radiation fin temperature rise takes place 4 times successively, the system will be shut down.
- The error counter will reset 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

Trouble
shooting



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 to get the system started.

Check No.6

Refer to

P.157



Check

No.7-1

Refer to

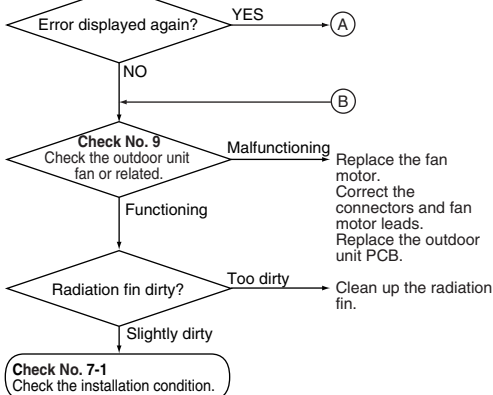
P.158

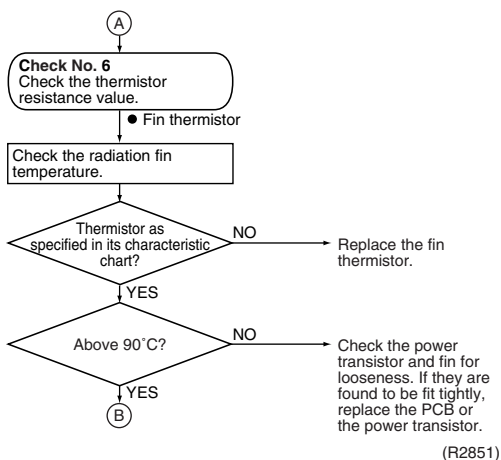


Check No.9

Refer to

P.160









5.2.43 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

If the radiation fin temperature with the compressor on is above 90°C for 5.2~7.5 kW-or-smaller class systems or above 85°C for 8.0 · 9.0 kW class systems,

- If a radiation fin temperature rise takes place 4 times successively, the system will be shut down.
- The error counter will reset 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

Trouble
shooting



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 to get the system started.

Check No.6
Refer to
P.157



Error displayed again?

YES

(A)

NO

(B)

Check
No.7-1
Refer to
P.158



Check No. 9
Check the outdoor unit
fan or related.

Malfunctioning

Replace the fan motor.
Correct the connectors and fan motor leads.
Replace the outdoor unit PCB.

Functioning

Check No.9
Refer to
P.160



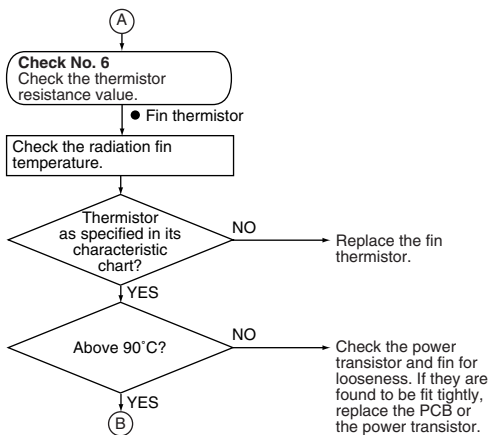
Radiation fin dirty?

Too dirty

Clean up the radiation fin.

Slightly dirty

Check No. 7-1
Check the installation condition.



(R2851)

5.2.44 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°C,

- If a radiation fin temperature rise takes place 4 times successively, the system will be shut down.
- The error counter will reset 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

Trouble
shooting



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 to get the system started.

Check No.6
Refer to
P.157



Check
No.7-2
Refer to
P.159



Check No.9
Refer to
P.160

Error displayed again? YES → (A)

NO

(B) →

Check No. 9
Check the outdoor unit fan or related.

Malfunctioning

Replace the fan motor.
Correct the connectors and fan motor leads.

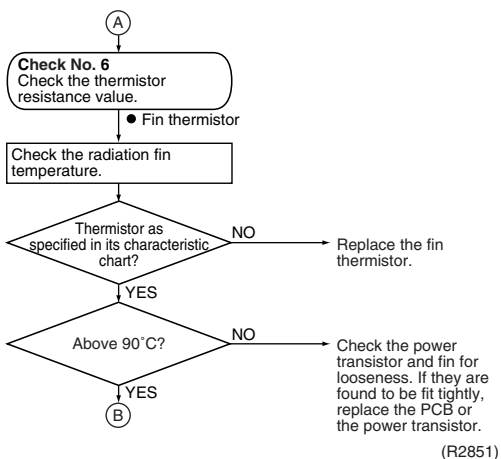
Functioning

Radiation fin dirty? Too dirty

Replace the outdoor unit PCB.
Clean up the radiation fin.

Slightly dirty

Check No. 7-2
Check the installation condition.



5.2.45 Output Over Current Detection

Remote Controller Display

L5

Method of Malfunction Detection

An output over-current 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 over-current input is fed from the output over-current detection circuit to the microcomputer.
- The system will be shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 5 minutes (normal)

Supposed Causes

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

Trouble shooting



Check No.7-1
Refer to P.158



Check No.8
Refer to P.160



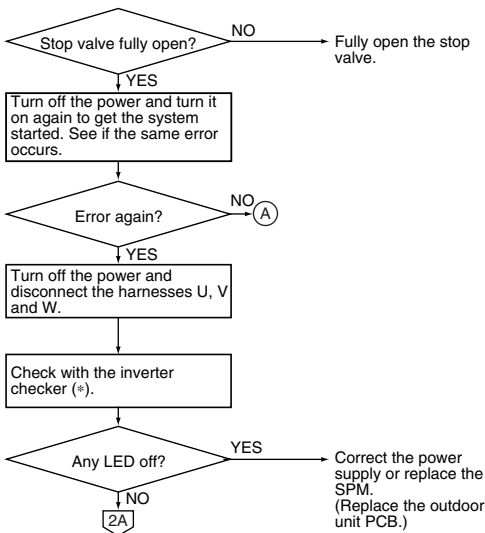
Check No.13
Refer to P.163

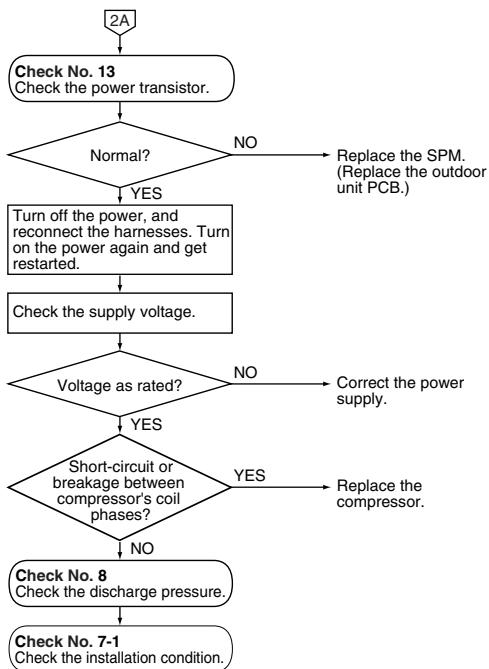
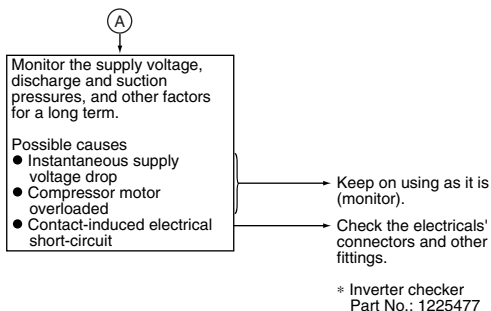


Caution

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

* An output over-current 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 over-current, take the following procedure.










(R2852)

5.2.46 Output Over Current Detection

**Remote
Controller
Display**

L5

**Outdoor
Unit LED
Display**

A  1  2  3  4 

**Method of
Malfunction
Detection**

An output over-current 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 over-current input is fed from the output over-current detection circuit to the microcomputer.
- The system will be shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 5 minutes (normal)

**Supposed
Causes**

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

Trouble shooting



Check No.7-1
Refer to P.158



Check No.8
Refer to P.160



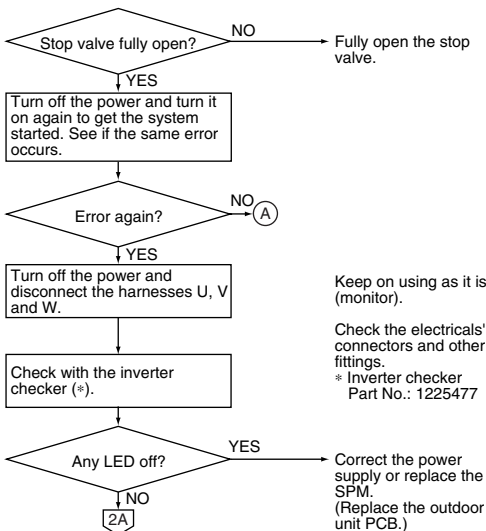
Check No.13
Refer to P.163

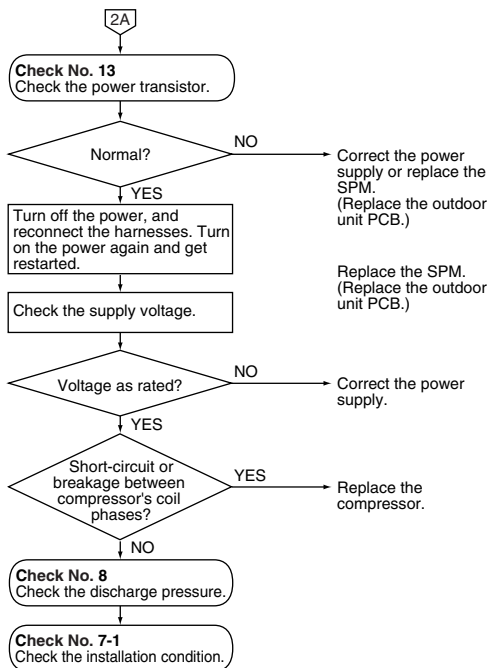
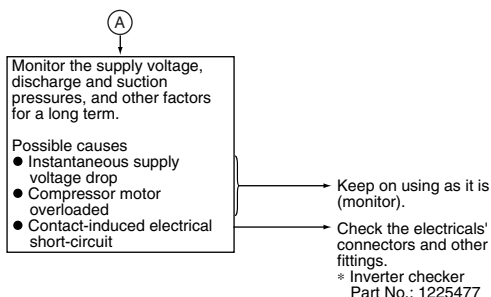


Caution

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

* An output over-current 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 over-current, take the following procedure.





(R2852)

5.2.47 Output Over Current Detection

Remote Controller Display

L5

Method of Malfunction Detection

An output over-current 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 over-current input is fed from the output over-current detection circuit to the microcomputer.
- The system will be shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 5 minutes (normal)

Supposed Causes

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

Trouble shooting



Check No.7-2
Refer to P.159



Check No.8
Refer to P.160



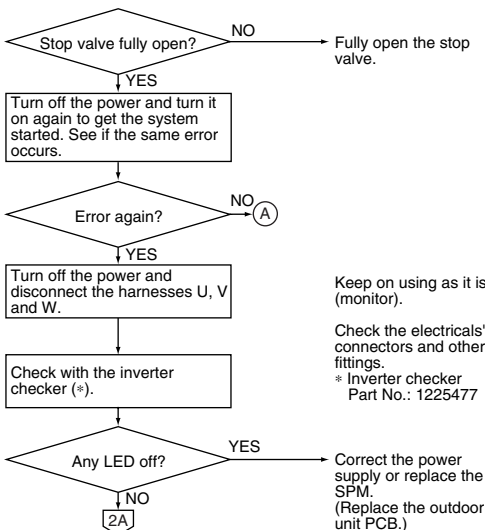
Check No.13
Refer to P.163



Caution

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

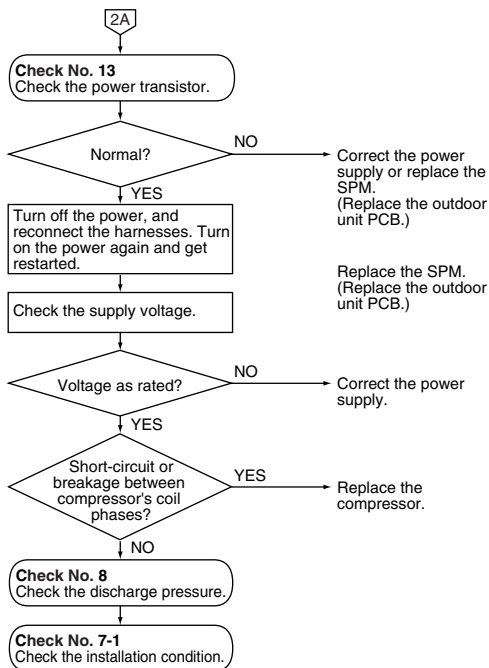
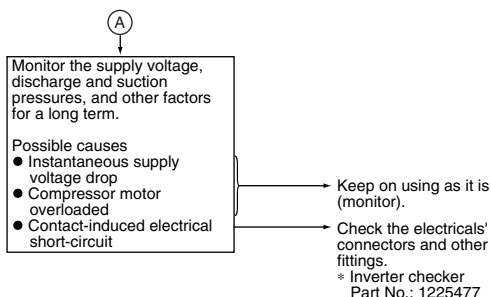
* An output over-current may result from wrong internal wiring. If the wires have been disconnected and reconnected for part replacement, for example, and the system is interrupted by an output over-current, take the following procedure.



Keep on using as it is (monitor).

Check the electricals' connectors and other fittings.

* Inverter checker
Part No.: 1225477



5.3 System

5.3.1 Insufficient Gas

**Remote
Controller
Display** *U0*

**Method of
Malfunction
Detection**

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

Gas shortage detection II : A gas 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**

Gas shortage detection I :
Input current < A (A/Hz) x Compressor running
frequency x Voltage + B

However, when the status of running frequency
> C (Hz) is kept on for a certain time.

Note : The values are different from model to model.

	A	B	C
FTK(X)S, ATK(X)S series.	1120 / 256	-80	65
Others	2760 / 256	-140	55

Gas shortage detection II :

If a gas shortage error takes place 4 times successively,
the system will be shut down. The error counter will reset
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.4
Refer to
P.151

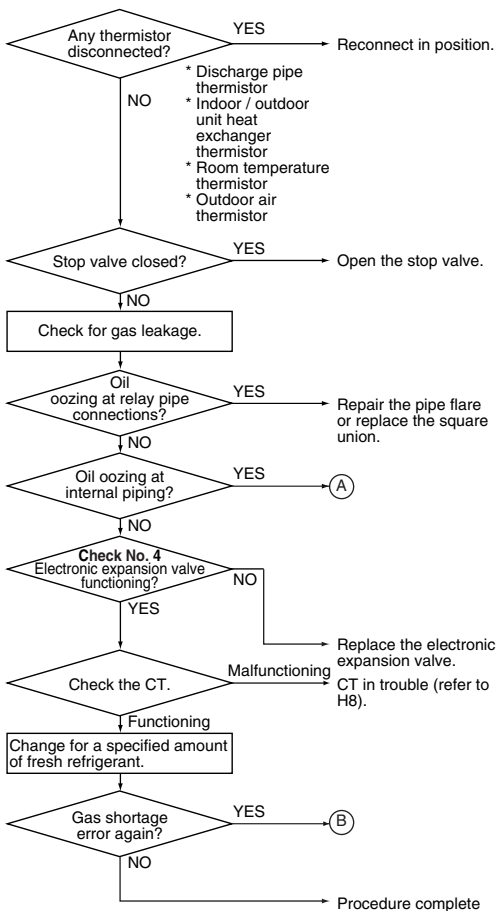


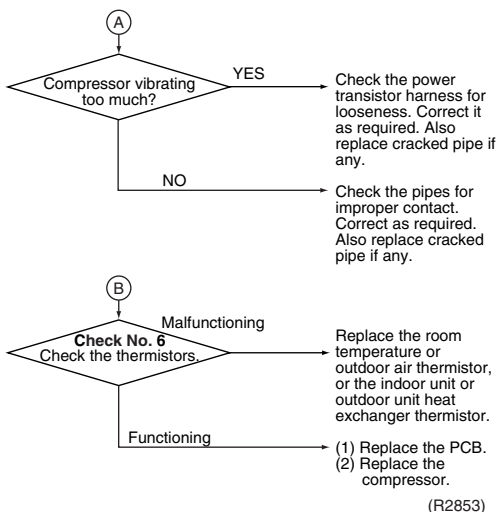
Check No.6
Refer to
P.157



Caution

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





5.3.2 Insufficient Gas

Remote Controller Display

U0

Method of Malfunction Detection

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

Gas shortage detection II : A gas 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

Gas shortage detection I :

Input current < A (A/Hz) x Compressor running frequency x Voltage + B

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.

	A	B
R410A	1756 / 256	-50
R22	2600 / 256	-300
RXD71BVMA	2420 / 256	55

Gas shortage detection II :

If a gas shortage error takes place 4 times successively, the system will be shut down. The error counter will reset 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.4
Refer to
P.151

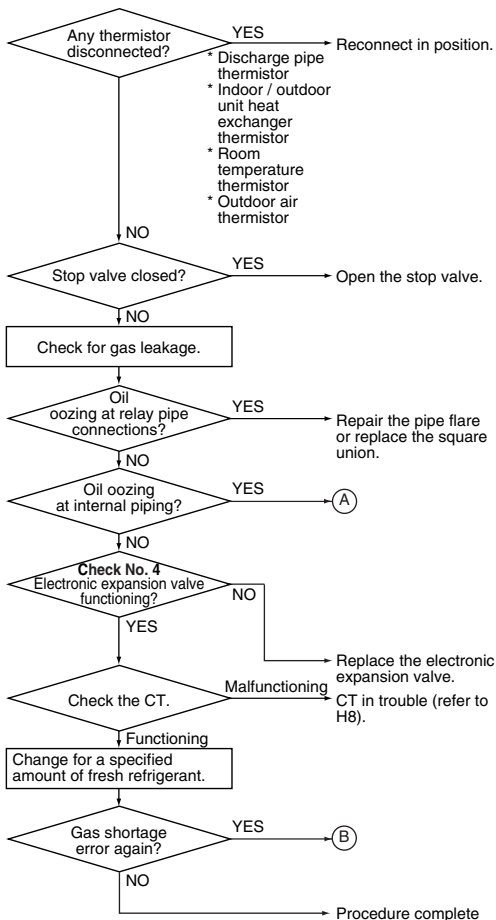


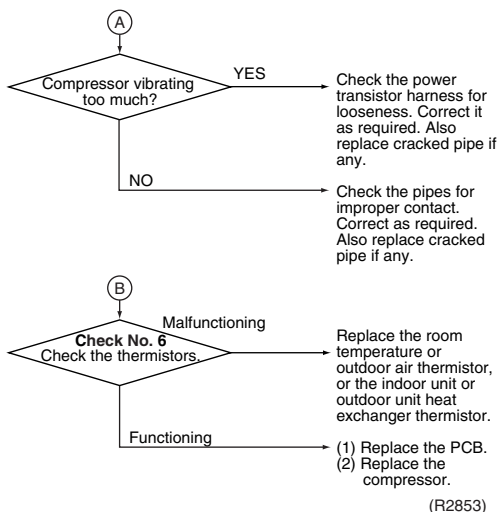
Check No.6
Refer to
P.157



Caution

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










5.3.3 Insufficient Gas

Remote Controller Display

UD

Outdoor Unit LED Display

A  1  2  3  4 

Method of Malfunction Detection

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

Gas shortage detection II : A gas 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

Gas shortage detection I :
 $\text{Input current} < 8.78 / 256 \text{ (A/Hz)} \times \text{Compressor running frequency} + 0.25$

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.

Gas shortage detection II :

If a gas shortage error takes place 4 times straight, the system will be shut down. The error counter will reset 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.4

Refer to P.151



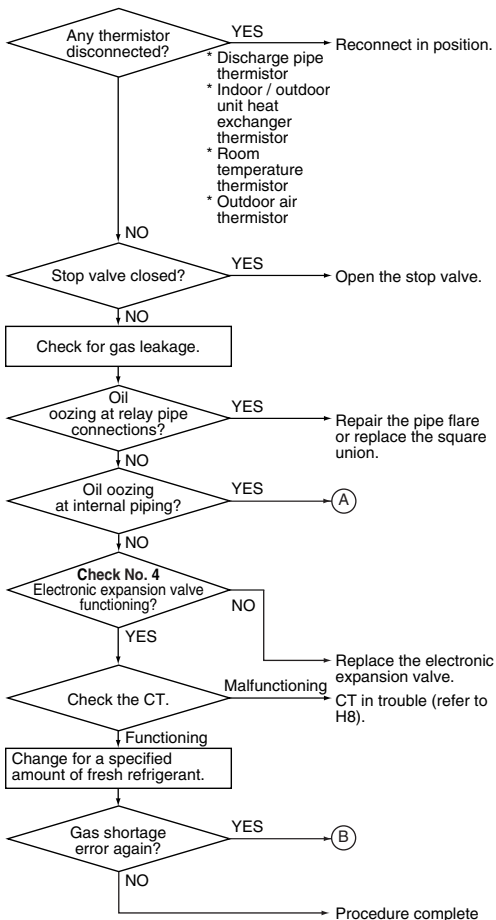
Check No.6

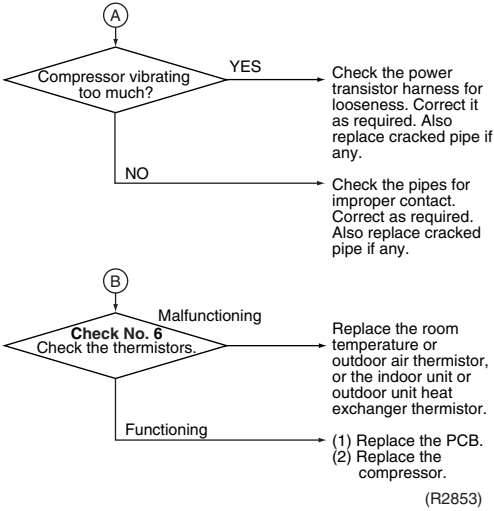
Refer to P.157



Caution

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





5.3.4 Insufficient Gas

Remote Controller Display

UD

Method of Malfunction Detection

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

Gas shortage detection II : A gas 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

Gas shortage detection I :

Power consumption < $1862 / 256 \text{ (A/Hz)} \times \text{Compressor running frequency} + (-18)$

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.

Gas 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. > $(255 / 256) \times \text{target discharge pipe temp.} + 20$
3. Electronic expansion valve opening (the biggest value among operating units) ≥ 450

If a gas shortage error takes place 4 times successively, the system will be shut down. The error counter will reset 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.4
Refer to
P.151

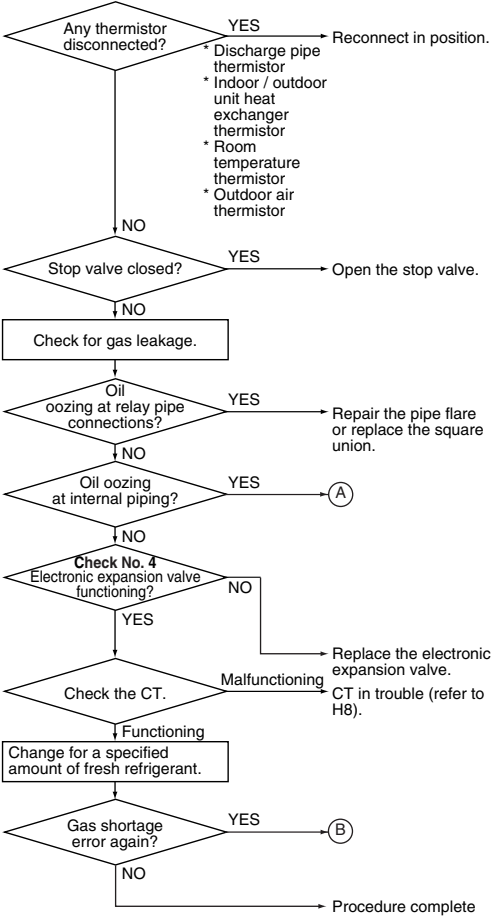


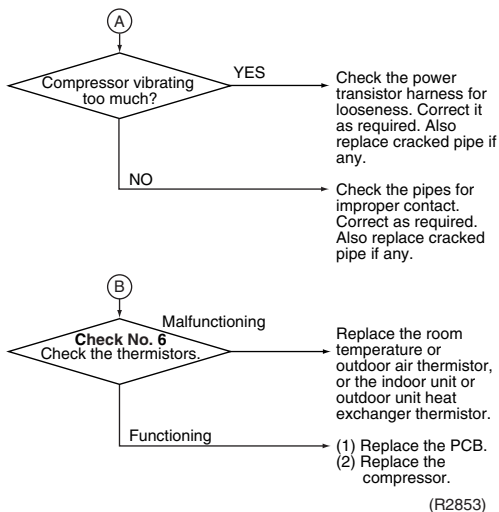
Check No.6
Refer to
P.157



Caution

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





5.3.5 Over-voltage Detection

Remote Controller Display

U2

Method of Malfunction Detection

An abnormal voltage rise is detected by checking the specified over-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).
- The system will be shut down if the error occurs 5 times.
- Clearing condition: Continuous run for about 60 minutes (normal)

Supposed Causes

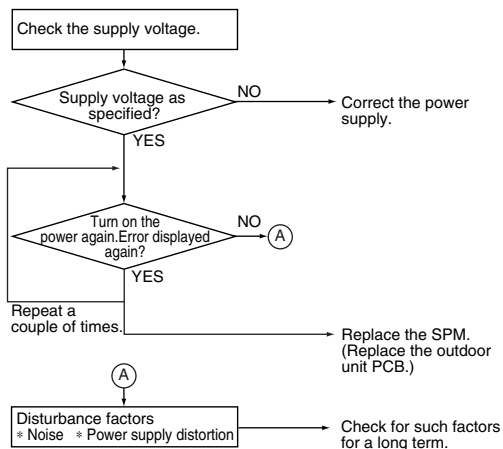
- Supply voltage not as specified
- Over-voltage detection circuit defective
- PAM control part(s) defective

Trouble shooting



Caution

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



(R2957)



Note:

If the model doesn't have SPM, replace the outdoor unit PCB.

5.3.6 Low-voltage Detection

Remote Controller Display

U2

Method of Malfunction Detection

An abnormal voltage rise or drop is detected by checking the 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 will be shut down if the error occurs 16 times.
- Clearing condition: Continuous run for about 60 minutes (normal)

Supposed Causes

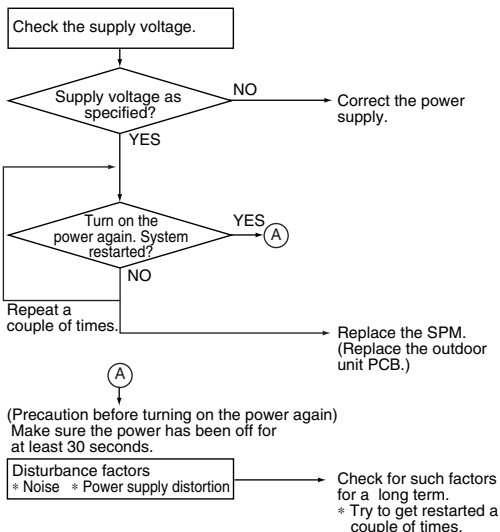
- Supply voltage not as specified
- Over-voltage detector or DC voltage detection circuit defective
- PAM control part(s) defective

Trouble shooting



Caution

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








(R2854)

5.3.7 Low-voltage Detection

**Remote
Controller
Display**

U2

**Outdoor
Unit LED
Display**

A  1  2  3  4 

**Method of
Malfunction
Detection**

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

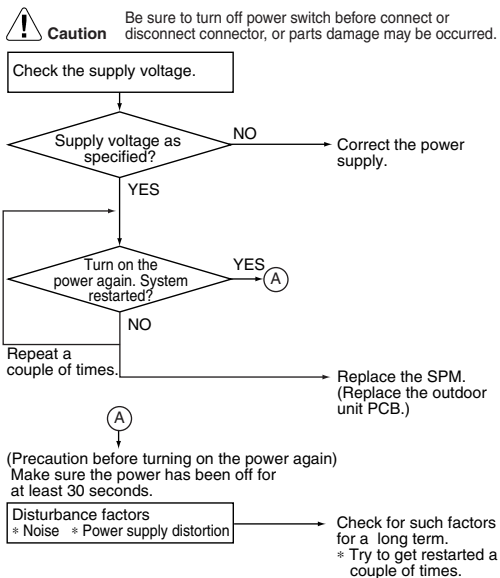
**Malfunction
Decision
Conditions**

- 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 will be 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



(R2854)

5.3.8 Over-voltage Detection

**Remote
Controller
Display**

U2

**Method of
Malfunction
Detection**

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

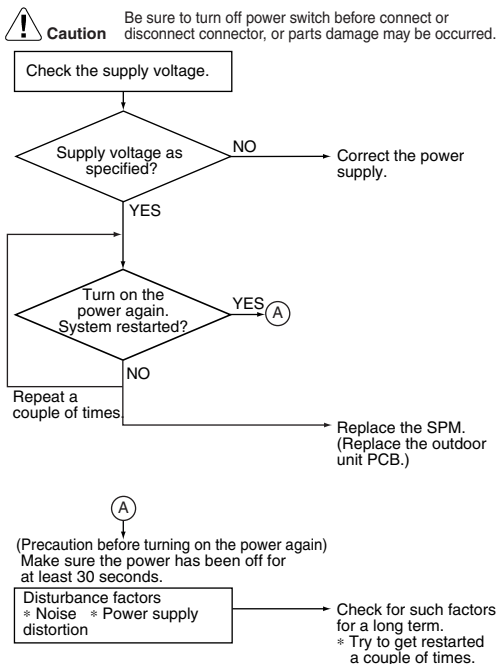
**Malfunction
Decision
Conditions**

- An over-voltage signal is fed from the over-voltage detection circuit to the microcomputer, or more than 430 V occurred the voltage detected by the DC voltage detection circuit.
 - The system will be shut down if the error occurs 4 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



(R2854)



Note: If the model doesn't have SPM, replace the outdoor unit PCB.

5.3.9 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. 2).

Trouble shooting

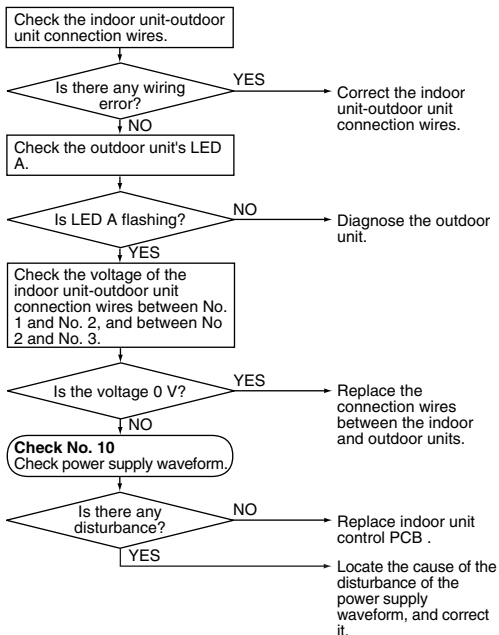


Check No.10
Refer to
P.162



Caution

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



(R2840)

5.3.10 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 will be shut down.

**Supposed
Causes**

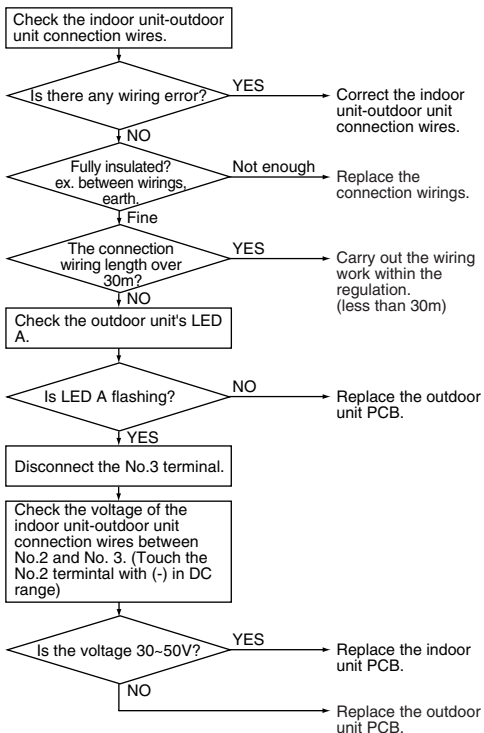
- Faulty outdoor unit PCB.
- Faulty indoor unit PCB.
- Indoor unit-outdoor unit signal transmission error due to wiring error.
- Indoor unit-outdoor unit signal transmission error due to breaking of wire in the connection wires between the indoor and outdoor units (the transmission wire).

Trouble shooting



Caution

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



(R3046)

5.3.11 Unspecified Voltage (between Indoor and Outdoor Units)

Remote
Controller
Display

UR

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.

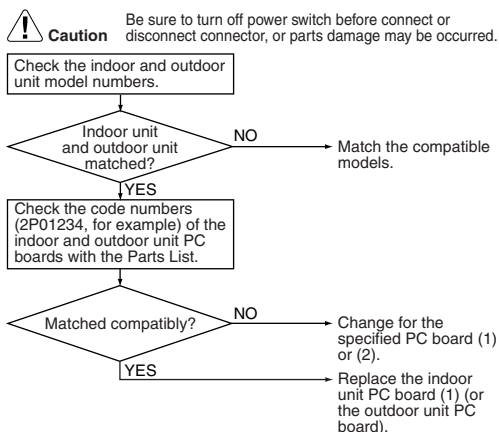
Malfunction
Decision
Conditions

The separate 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



(Q0347)

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

Remote
Controller
Display

UR, UH

Outdoor
Unit LED
Display

A  1  2  3  4 

Method of
Malfunction
Detection

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

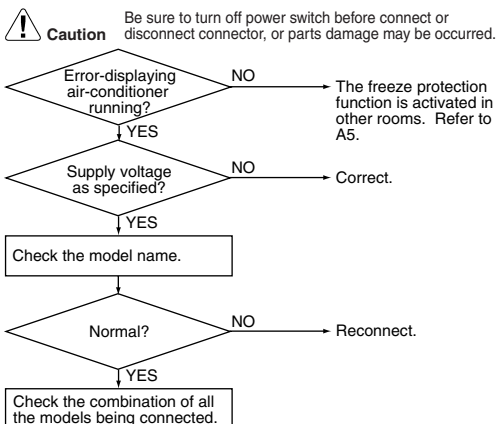
Malfunction
Decision
Conditions

- 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)

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

Remote Controller Display

UR,UH

Method of Malfunction Detection

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

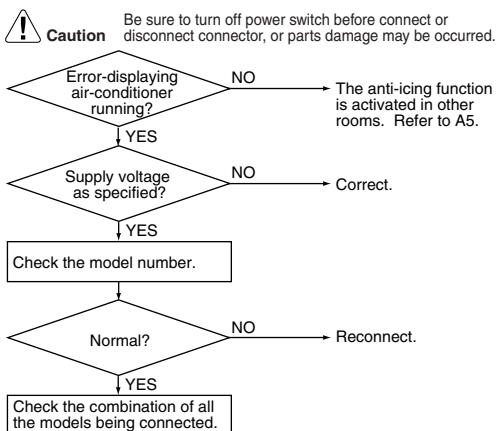
Malfunction Decision Conditions

- 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



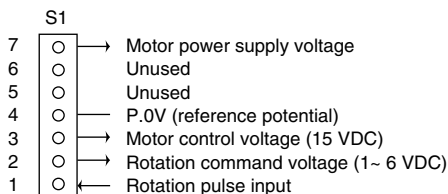
(R3045)

5.4 Check

5.4.1 Fan Motor Connector Output Check

Check No.01

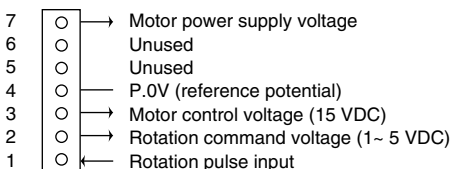
1. Check connector connection.
2. Check motor power supply voltage output (pins 4-7 and 4-8).
3. Check motor control voltage (pins 4-3).
4. Check rotation command voltage output (pins 4-2).
5. Check rotation pulse input (pins 4-1).



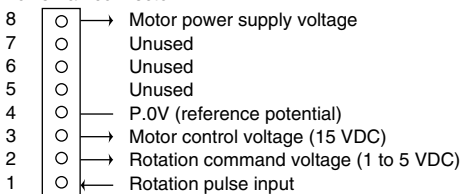
(R3199)

<In case of Floor Standing Type>

Upper fan connector



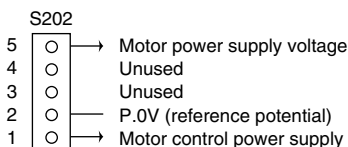
Lower fan connector



(R1224)

Check No.02

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

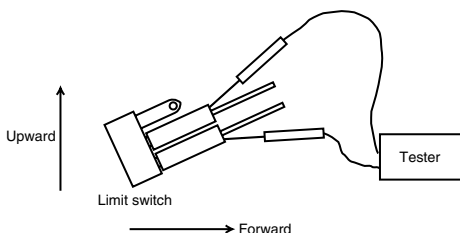


(R1073)

5.4.2 Limit Switch Continuity Check

Check No.3

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)

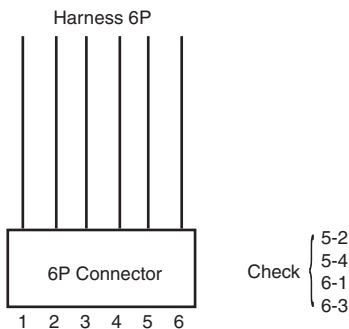
- * The shutter can be opened and closed with hand. Keep the shutter open and closed all the way for each continuity check steps.

5.4.3 Electronic Expansion Valve Check

Check No.4 (for Pair System)

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 conductivity using a tester.
Check the conductivity between pins 1, 3 and 6, and between pins 2, 4 and 5. If there is no conductivity 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 conductivity 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.

**Check No.4
(for Multi
System)**

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 conductivity using a tester.
Check the conductivity between pins 1, 3 and 6, and between pins 2, 4 and 5. If there is no conductivity 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 conductivity 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:**

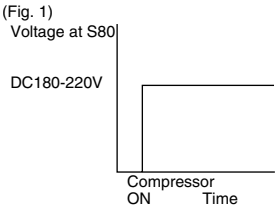
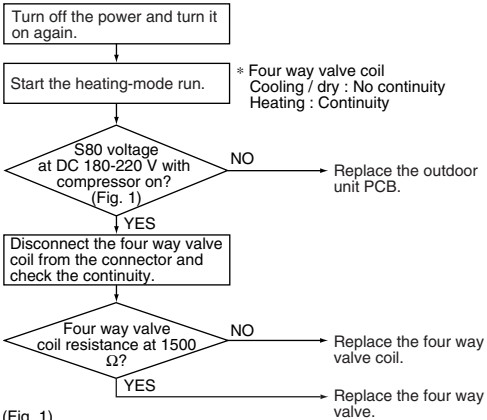
Please note that the latching sound varies depending on the valve type.

Valve Body Condition (Symptom)	Check Method / Measure
<p>(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</p> <p>Heating: ■ The unit does not heat ■ Refrigerant flow rate vary by unit (Discharge air temperatures are different by room) ■ Peak cut</p>	<p>Reset power supply and conduct cooling operation unit by unit.</p> <div data-bbox="581 306 837 380" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Check the liquid pipe temperature of no-operation unit. </div> <div data-bbox="576 408 940 547" style="border: 1px solid black; padding: 10px; margin-bottom: 10px;"> <p style="text-align: center;">Is it almost same as the outside air temperature?</p> <p style="text-align: right;">→ NO</p> <p style="text-align: center;">YES ↓</p> </div> <p>Replace the EVn of the room. (R1431)</p>
<p>(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</p> <p>Heating: Insufficient gas due to liquid refrigerant stagnation inside the faulty indoor unit</p> <p>(Only for heat pump model) ■ The unit does not heat the room. ■ IT is activated. ■ Abnormal discharge pipe temperature</p>	<p>Reset power supply and conduct cooling operation unit by unit.</p> <div data-bbox="581 912 837 986" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Check the low pressure </div> <div data-bbox="576 1014 940 1153" style="border: 1px solid black; padding: 10px; margin-bottom: 10px;"> <p style="text-align: center;">Does the pressure become into vacuum zone?</p> <p style="text-align: right;">→ NO</p> <p style="text-align: center;">YES ↓</p> </div> <p>Replace the EVn of the room. (R1432)</p>

Valve Body Condition (Symptom)	Check Method / Measure
<p>(3) Valve does not open fully. (Symptom)</p> <ul style="list-style-type: none"> ■ The unit does not cool nor heat (only for heat pump model.) ■ IT is actuated. ■ Abnormal discharge pipe temperature 	<p>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.</p>

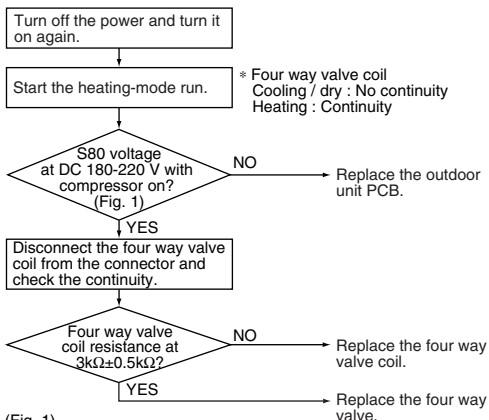
5.4.4 Four Way Valve Performance Check

**Check
No.5-1**

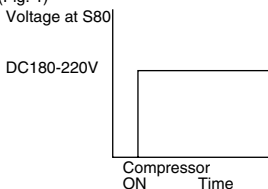


(R2856)

Check No.5-2



(Fig. 1)



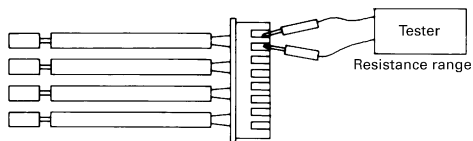
(R3047)

5.4.5 Thermistor Resistance Check

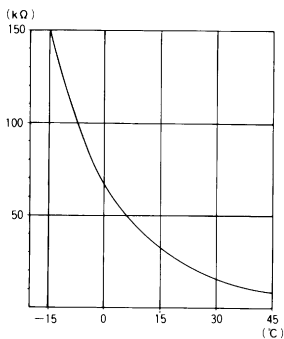
Check No.6 Remove the connectors of the thermistors on the PCB, and measure the resistance of each thermistor using tester.

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



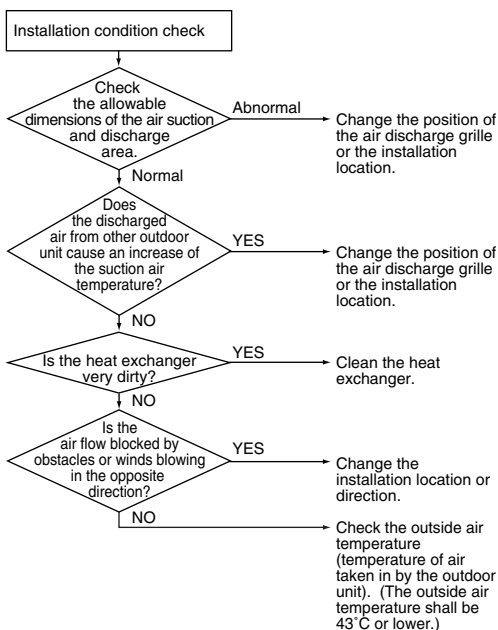
(R25=20kΩ、B=3950)



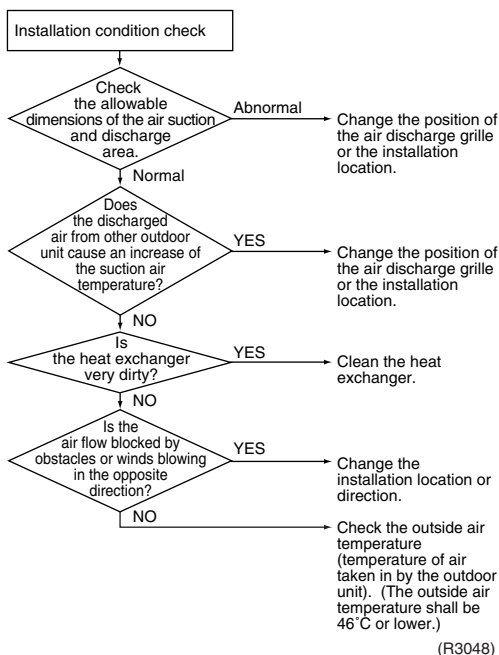
(R1437)

5.4.6 Installation Condition Check

Check No.7-1

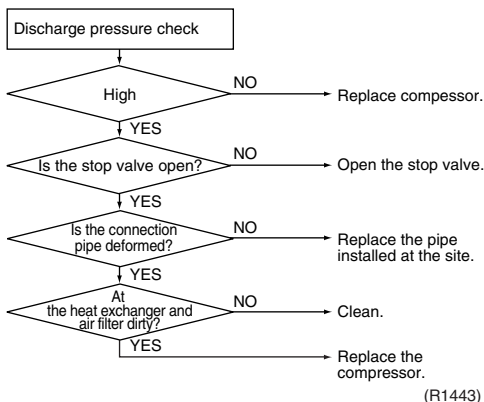


(R1438)

**Check
No.7-2**

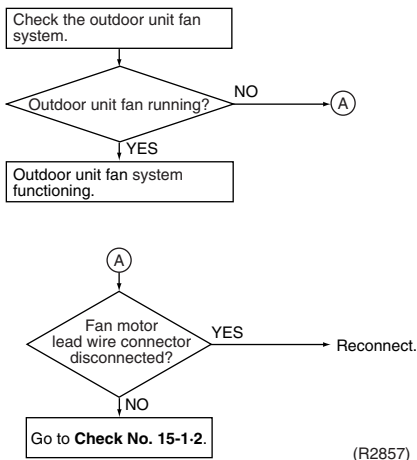
5.4.7 Discharge Pressure Check

Check No.8

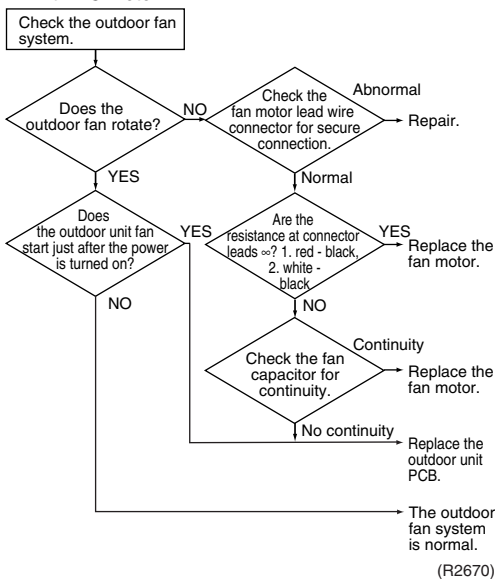


5.4.8 Outdoor Unit Fan System Check

Check No.9 ■ With DC Motor



■ With AC Motor



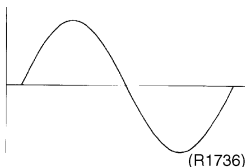
5.4.9 Power Supply Waveforms Check

Check No.10

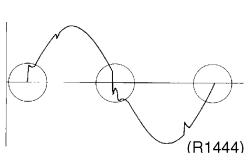
Measure the power supply waveform between pins 1 and 3 on the terminal board, and check the waveform disturbance.

- 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]

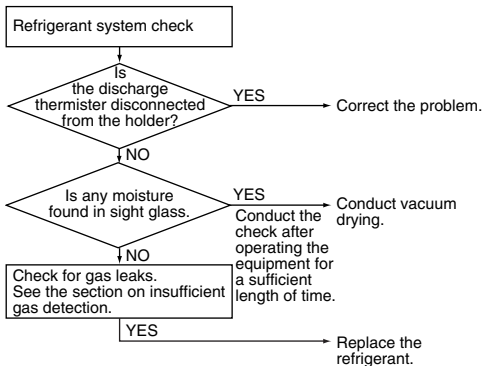


[Fig.2]



5.4.10 Inverter Units Refrigerant System Check

Check No.11



(R1445)

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

- 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.

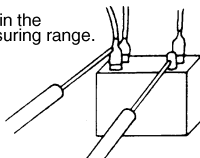
Tester's negative terminal	Power transistor (+)	UVW	Power transistor (-)	UVW
Tester's positive terminal	UVW	Power transistor (+)	UVW	Power transistor (-)
Normal resistance	Several kΩ to several MΩ			
Abnormal resistance	0 or ∞			

5.4.13 Main Circuit Electrolytic Capacitor Check

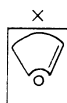
Check No.14

- 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.

Keep the tester in the resistance measuring range.



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>

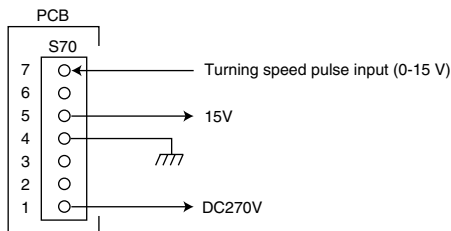
Make sure the voltage of $270 \pm 30V$ is being applied.

- (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.



(R2859)

* Propeller fan motor : S70

Check No.15-2

<Propeller fan motor>

Make sure the voltage of 290~380V is being applied.

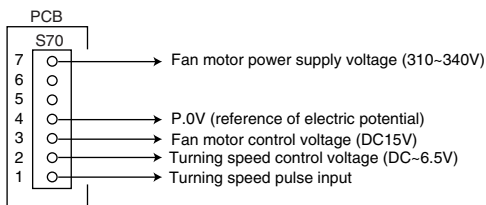
- (1) Stop the operation first and then the power off, and disconnect the connector S70.
- (2) Make sure there is about DC 280 V between pins 4 and 7.
- (3) With the system and the power still off, reconnect the connector S70.
- (4) Make a turn of the fan motor with a hand, and make sure the pulse (0-15 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.



(R3052)

* Propeller fan motor : S70

5.4.15 Hall IC Check

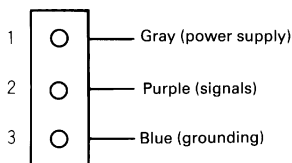
**Check
No.16**

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)



The air conditioners manufactured by Daikin Industries have received **ISO 9000 series** certification for quality assurance.

Certificate Number.
(ISO9001) JQA-0107 (ISO9002) JQA-1452
JQA-0495



All Daikin Industries locations and subsidiaries in Japan have received environmental management system standard **ISO 14001** certification.

Daikin Industries, Ltd.
Domestic Group
Certificate Number. EC99J2044

About ISO 14001

ISO 14001 is the standard defined by the International Organization for Standardization (ISO) relating to environmental management systems. Our group has been acknowledged by an internationally accredited compliance organisation as having an appropriate programme of environmental protection procedures and activities to meet the requirements of ISO 14001.

Dealer

DAIKIN INDUSTRIES, LTD.

Head Office:
Umeda Center Bldg., 4-12, Nakazaki-Nishi
2-chome, Kita-ku, Osaka, 530-8323 Japan
Tokyo Office:
JR Shinagawa East Bldg., 18-1, Konan
2-chome, Minato-ku, Tokyo, 108-0075 Japan
<http://www.daikin.com/global/>

©All rights reserved