

ORSUK0919

**DAIKIN**



# Operation Manual for Transmission Monitor RSUK0919



**ENGLISH  
CHINESE  
JAPANESE**

**DAIKIN INDUSTRIES, LTD.**  
AFTER SALES SERVICE DIVISION  
GLOBAL SERVICE DEPT,

# Operation Manual for Transmission Monitor RSUK0919



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# Introduction

## Purpose of Transmission monitor and its advantage Purpose of Transmission monitor and its advantage

Transmission Monitor has advantages as follows, which will allow to prevent incorrect diagnose and reduce man-hours for maintenance.

1. Make it possible to check transmission data between indoor unit and outdoor unit.
2. Make it possible to check error code during retry operation.
3. Make it possible to check thermistor detection temperature and various control modes.
4. Easily access to data from indoor unit, which is convenient if outdoor unit installation condition is improper or on a rainy day
5. Light weight and easy for installation
6. Power is supplied from product, which does not require extra power source or battery.

# 1. Application

This operation manual describes Transmission Monitor RSUK0919 (hereinafter referred to the Transmission Monitor) developed by Daikin Industries, Ltd.

## 2. Outline

Daikin's air conditioners carry out communication between indoor and outdoor units. The communication data can serve as very useful information when conducting problem diagnosis. Transmission Monitor RSUK0919 received the data to indicate it on LCD. The Transmission Monitor is featured as follows.

- (1) Since the power supply is provided from the product to be monitored, no extra power supply, battery, etc. is required.
- (2) Applicable to voltage ranging from 100V to 240V (50/60 Hz).
- (3) Since the changeover of transmission methods is automatically judged, users are only required to connect the Transmission Monitor to the product.
- (4) IN/OUT Changeover Switch : Serves to switch the sender (Outdoor or Indoor unit · · Maximum four indoor units may be connected depending on the circumstances) of data to be displayed.
- (5) Display Changeover Switch : Serves to switch pages displaying the data.
- (6) The data can be displayed in Japanese or English, which can be switched by an internal jumper. (Factory setting is English)

## 3. Applicable models

The Transmission Monitor is applicable to products performing the data transmission between indoor and outdoor unit through three- wire system among split & multi air conditioners and Skyair units developed by Daikin Industries, Ltd.

- Representative models of applicable/non applicable models are shown in the list in the next page. All models cannot be described in the list. To judge whether the model is applicable or not, confirm the wiring diagram of product.
- Reference wiring diagram is shown in the page 6.
- Figure 1 and 2 show examples of applicable model. Figure 3 shows an example of non applicable model. Even the product performs data transmission through 3-wire system, it cannot be determined as an applicable mode when ON/OFF operation is controlled by relay circuit.
- The models carrying out transmission of digital communication with transmission circuit and receiving circuit using photo-triac and photo-coupler (see figure 1) are applicable models.

Applicable/non-applicable model list

Example of applicable model (room air conditioner)	
Model Name	Sales start
2/3/4MK to FV	1997
2/3/4MX to HV	1999
CDK25 to 60HA	2001
CDK25 to 60HV	1999
CTK to FV	1997
FTK(D) to JV	2001
FTX35/50HV	1998
FTX50HA	2000
FTY50GA	2001
FTY to 3B	1994
FTY to 3C	1992
FTY to D7	1993
FTY25 to 60F (G) V	1998
FVY to 3C	1992
MY to C (J)	1994
RKD50 to 71JV	2000
RX50JV	2000
RX35/50HV	1998
RY	1994
RY to C	1992
RY to D7	1993
RY25 to 60F(G)V	1998
RY50GV	2001
Example of applicable model(Skyair)	
Model name	Sales start
FAY71 to F	1996
FHK to F	1996
FHK35 to 71FV1	2000
FHYB to DA	1994
FVY to DA	1992
FHYC to DA	1992
FHYK to DA	1992
FHY to DA	1992
FHYC to KVE	2000
FHYC50 to 125K	2001
FUJ71 to 125FJ	1999
FUY71 to 125FJV1	2000
R125 to 250KU	2001
R71 to F	1995
RY to F	1995
R71 to KU	2000
RY35 to FV	2000
RY to DA	1994
RY35 to 60C	1992
RY to D	1992
RY50 to GV1A	2000
Double/twin/triple	2001

Example of non applicable model (room air conditioner)	
Model Name	Sales start
ANW to GV1	1999
ARW to GV1	1999
FHC to C	1993
FL13HV	1999
FT to 1B	1995
FT to C	1992
FT to F	1997
FT to EB	1997
FT25G	1998
FT50GAVE	2001
FT60CV	1991
FTY to A(B)	1991
FV to CJ	1993
MA to CJ	1993
MA to E	1998
MA28 to 90C	1992
MY to B	1992
R to E	1995
R to FV1	1995
R to F	1997
R25G	1998
R13HV	1999
R50GV	2001
Example of non applicable model (Skyair)	
Model name	Sales start
FAY71B	1994
FH to 60F	1995
FH35 to 60FV	1999
FHB35 to 60FV1	2000
FH to C	1992
FHC 71 to C	1995
FHJ to B	1991
FHC to FU	1997
FHC35 to 60KVE	2000
FHK to BB	1992
FHY to LE	1992
FV to B	1992
FHS to BA	1992
R to 60B (-K)	1996
R to C	1992
R to BB	1992
RU to J	1992
R to DA7	1993
R to FU	1997
R35 to 60GV1	2000
R to 60F	1995
RY to DTGU	1994

Figure 1

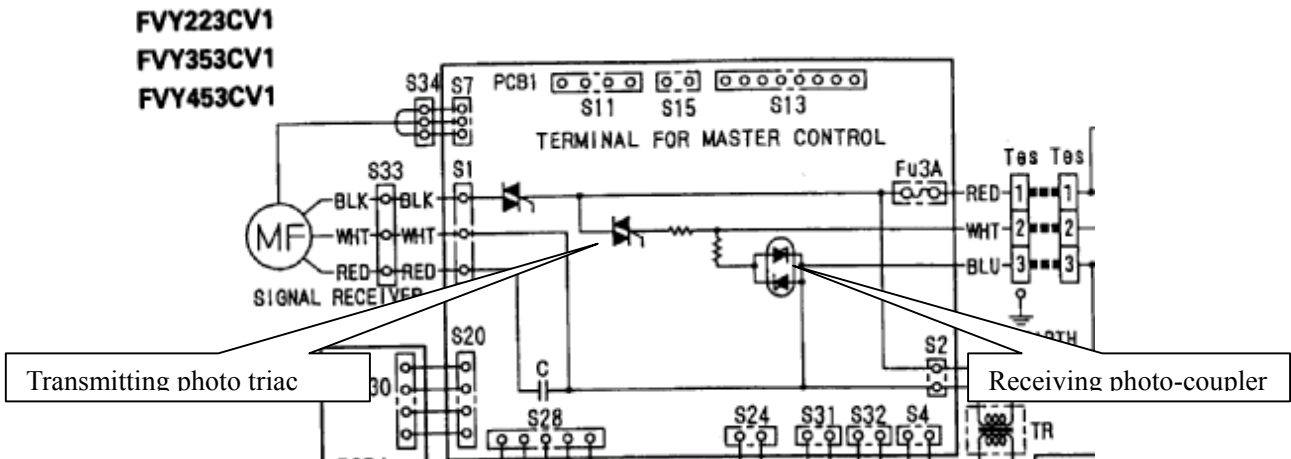


Figure 2

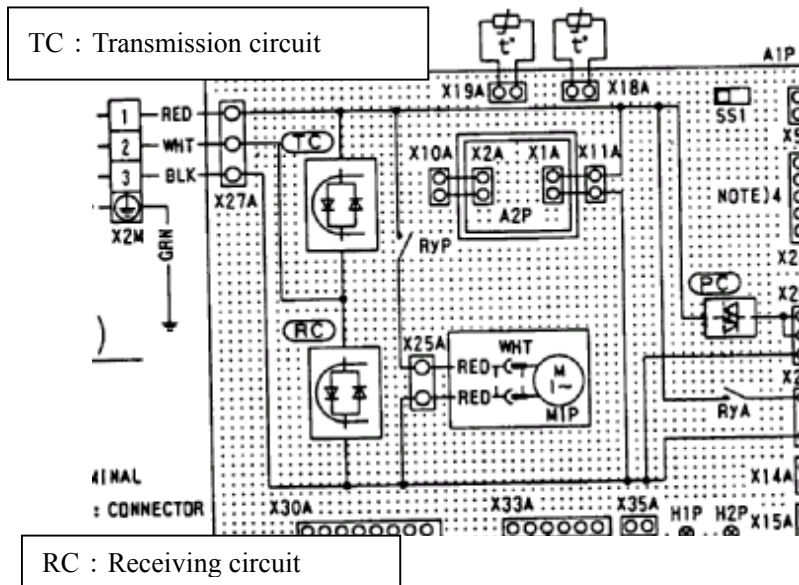
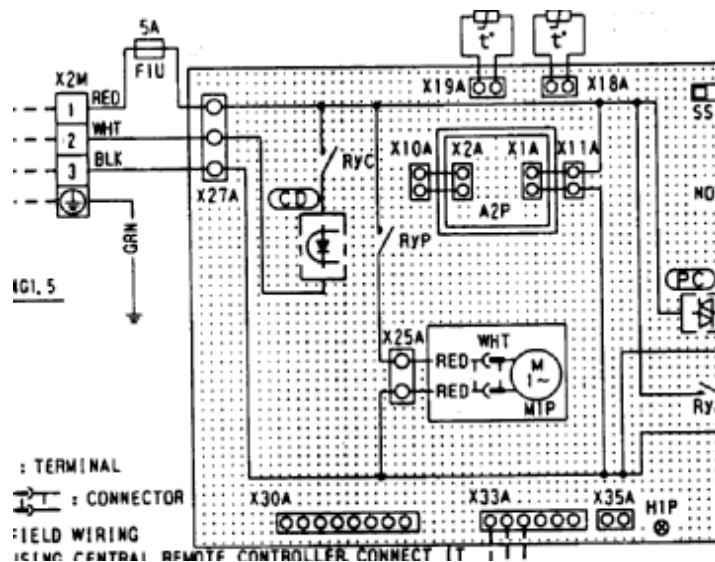


Figure 3



## 4. Connection method to product

Basically, Transmission Monitor should be connected to the communication wires (3 wires) of indoor and outdoor units. As for some RA products produced in and after 2001, assignment of transmission wire has been changed from No. 2 to No.3 of the terminal block. Therefore, the connection method should be selected from the following two methods according to the models applied.

It is recommended to measure the voltage to determine the connection method. Take Connection method 1 when the power supply voltage is impressed between connection wire 1-3, and Connection method 2 when the power supply voltage is impressed between connection wires 1-2. However, since connection method cannot be determined with voltage measurement when any malfunction in communication wiring or in transmission is occurred, it is required to confirm with wiring diagrams or those in service manual.

### 1. Connection method 1 (Power Supply1 to 3)

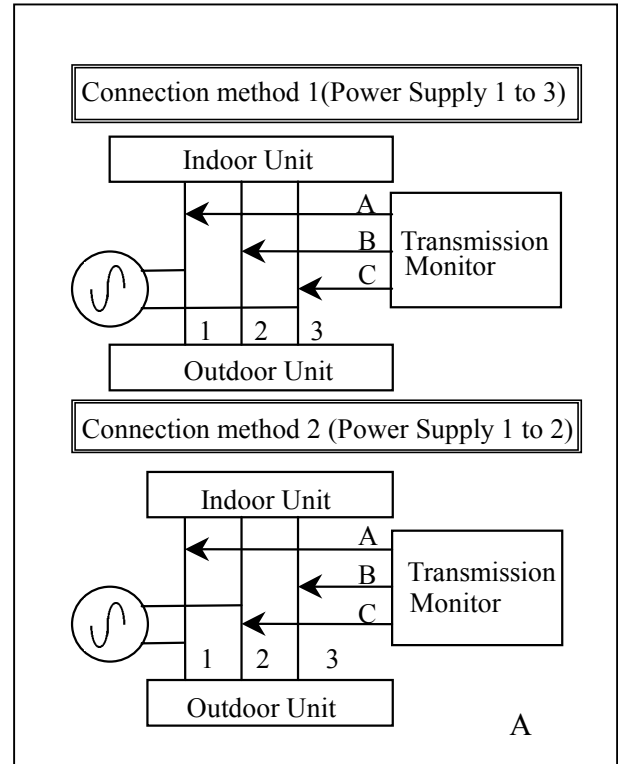
When power supply 1 to 3.

Connection wire/ No. of product	Transmission monitor wiring	Meaning of wiring
1	A(Red)	Power supply
2	B(White)	Signal (between connection wire 2 to 3)
3	C(Black)	Power supply

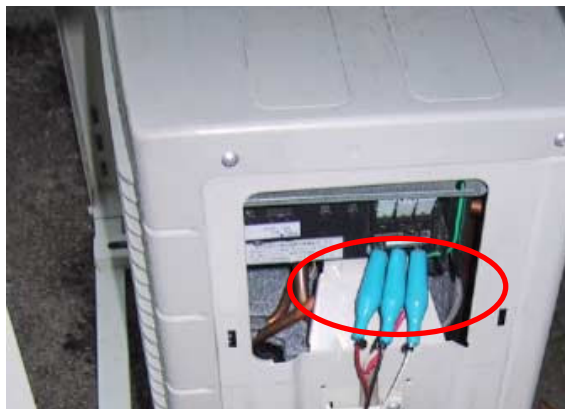
### 2. Connection method 2 (Power Supply1 to 2)

When power supply 1 to 2.

Connection wire/ No. of product	Transmission monitor wiring	Meaning of wiring
1	A(Red)	Power supply
2	C(Black)	Power supply
3	B(White)	Signal (between connection wire 2 to 3)

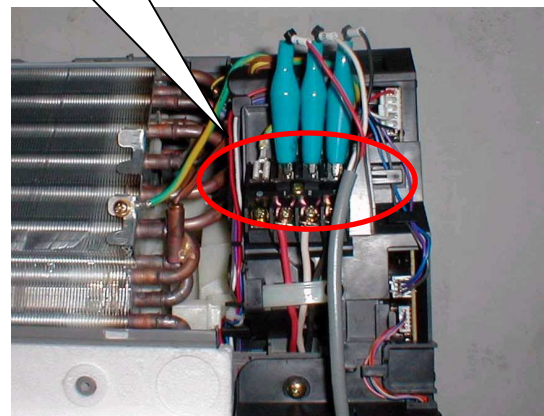


**Caution:** Incorrect connection (incorrect wiring) may not damage the Transmission Monitor or the product itself but may cause transmission error. The short-circuited clip of Transmission Monitor could result in damage of the components of product. Therefore, care should be taken for the positive connection.



Example of connection to out door unit

Be careful for short circuiting caused by the



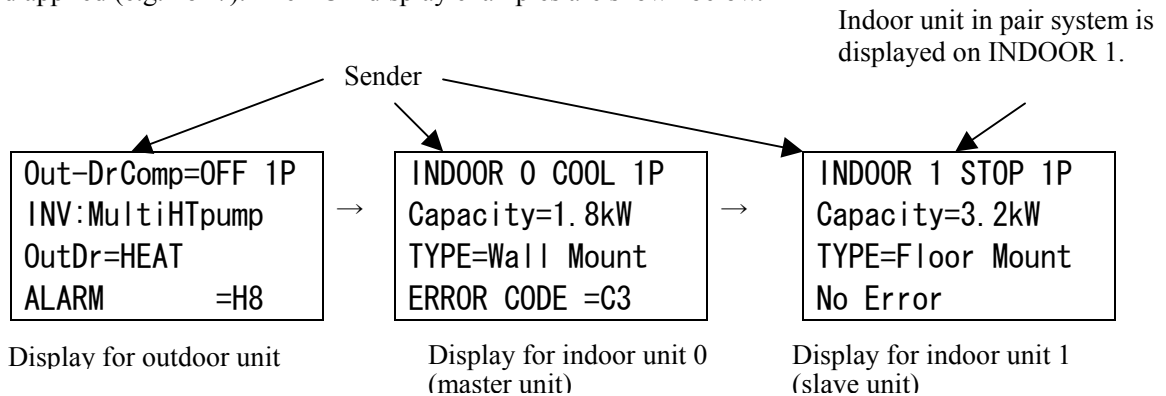
Example of connection to indoor unit



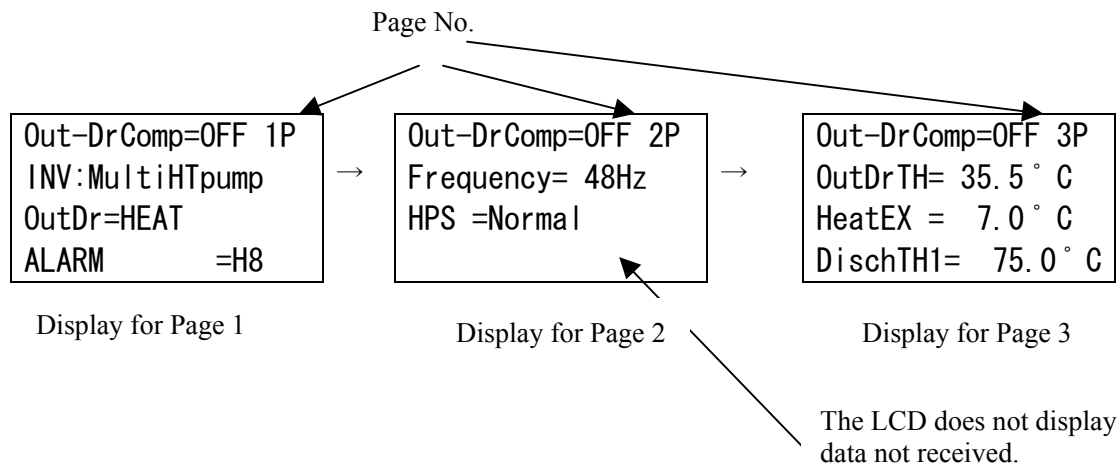
## 5. Operation method

Turn the power on to the product after connecting the Transmission Monitor according to "4.Connection method to product". After five seconds, the product starts communication between indoor and outdoor units. The Transmission Monitor automatically judges the communication method to display the received data on LCD.

The user selects the sender of signal to be monitored with the use of IN/OUT changeover switch, (select indoor unit to monitor the indoor temperature, or outdoor unit to monitor compressor operating frequency of outdoor unit) and then select pages that display the required data using of Display changeover switch. Page No. is displayed by xP on the upper right of LCD. The number of pages depends on the transmission method applied (e.g.1 or 7). The LCD display examples are shown below.



Line 1 indicates the sender and its operating status. Whenever pushing the IN/OUT changeover switch, the display changes from "Out-Dr" to "INDOOR 0" to "INDOOR 1" ..., then "Out-Dr". Indoor unit in pair system is displayed at "INDOOR 1". "INDOOR 0" displays only for the master unit (remote controller connected units) of multiple systems including twin, triple, double twin, etc.



The line 1 displays the sender and its status and switching page can not change the data displayed. The line 2 and 3 change displaying data whenever pressing the Display changeover switch.

There may be blank line partially when any data has not been received to be displayed in the line.

In some case, data ca not be received due to different type sending data depending on model or transmission version.

## 6. Transmission Monitor display

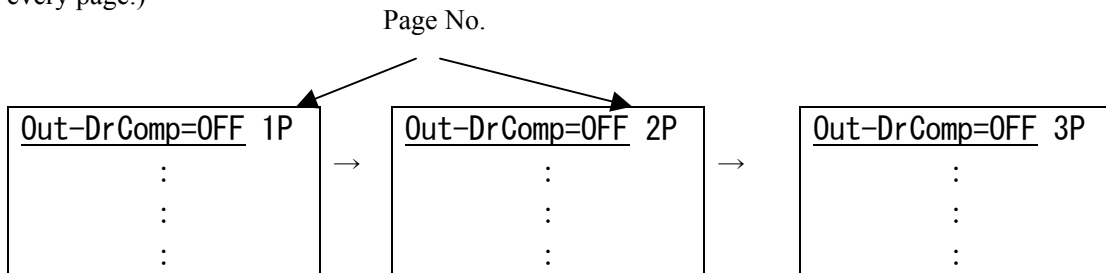
Since the number of letters to display on the LCD of Transmission Monitor is limited, abbreviations are used to display the data. This chapter explains what the display indicates.

The LCD can display 4 lines × 16 letters. "line x" in this document should be read as 1st line, 2nd line, from the top, and the bottom line as line 4.

Line 1 →	Out-DrComp=OFF 1P
Line 2 →	INV:MultiHTpump
Line 3 →	OutDr=HEAT
Line 4 →	ALARM =H8

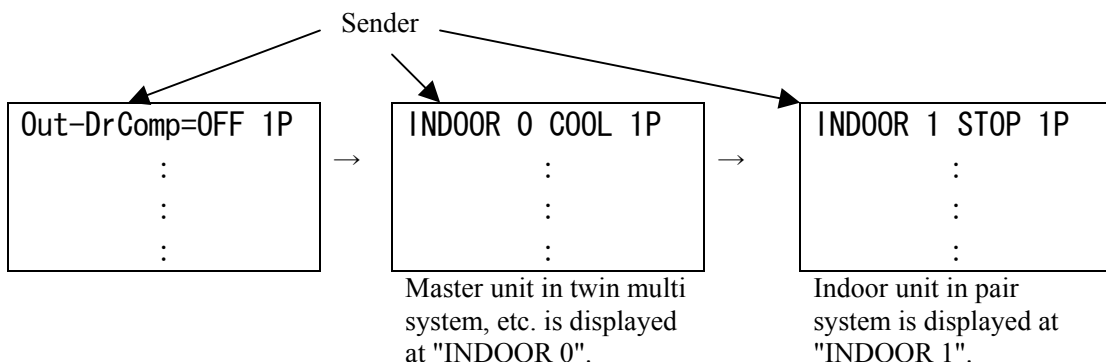
### 6-1 Contents of line 1

Line 1 displays the sender of the data (outdoor unit, master unit of indoor unit, slave unit of indoor units and their number) its operating status, and the page number of data displayed. Data on the line 1 does not change even when switching the page displayed. (Section underlined in the tables below is the same on every page.)



For indoor units, the following numbers indicate No. of connected indoor units. For Skyair using a new refrigerant (R407C) in twin, triple, and double twin multi system, the LCD displays indoor unit with remote controller connected at "INDOOR 0", and others at "INDOOR 1 to 3". However, for Skyair using a R22 refrigerant in twin, triple, and double twin multi system, the data of slave unit of indoor unit cannot be distinguished from the transmission data. Therefore, the LCD displays all indoor units at "INDOOR 1". (See Chapter 7-12.)

For pair systems, the LCD displays the unit at "INDOOR 1". No data is displayed at "INDOOR 0".



## 6-2 Contents of line 2 to 4

Line 2 through 4 displays data received. However, since the position to display the data received is specified (for example, the compressor operating frequency is displayed on page 2 line 2), no data is displayed on the line when the data is not received.

Exceptionally, when transmission error occurs, the data appears on line 4 regardless of the page.

### Caution 1:

Although some meaningless data could be displayed, ignore such data. For example, the data on the liquid pipe temperature thermistor is displayed on indoor unit in RA pair system sometimes. However, since the product is not equipped with the liquid pipe temperature thermistor, ignore the data. (Refer to heat exchanger thermistor value)

### Caution 2:

If incompatible data between operating status and checker is displayed, that is, if required operating frequency=F13 (operating frequency instruction on level 13) and direct operating frequency instruction=0Hz are displayed at the same time, carry out problem diagnosis checking actual operating conditions.

## 6-3 Line 4 on page 1 for outdoor/indoor units display

Malfunction data indicated on remote controller is displayed here. Since the data is displayed with malfunction codes, refer to service manual, etc. for the meaning of malfunction codes. Problems that occurred in indoor unit are indicated only on the indoor unit display, and malfunctions that occurred in outdoor unit are indicated only on the outdoor unit display. For example, although the remote controller displays C9 (indoor temperature thermistor malfunction), the malfunction code is displayed as 00 when the outdoor unit data is displayed on the Transmission Monitor. Since A5 (High pressure control) is a failure that could occur on indoor and outdoor units, the use of the Transmission Monitor can judge whether A5 comes from the indoor unit or outdoor unit.

Further, there is the following level in the malfunction codes.

- (1) Caution error “CAUTION”: Outputs malfunction code but let the unit keep running (clogged air filter, overtime of filter cleaning set time, etc.)
- (2) Alarm error “ALARM”: Anyway, keeps running. Frequent actuation of ALARM stops the unit to run.
- (3) Thermostat-OFF error “Th-off Er”: Stops the compressor once and carry out control similar to thermostat OFF control. When the problem is released, resets automatically (Overload, Freeze-up protection, etc.)
- (4) System down error “ERROR”: Does not reset unless the system is stopped once, the power is turned off, the problem is released by the remote controller, etc.

The difference in the level is displayed on the Transmission Monitor.

Out-DrComp=OFF 1P
:
:
ALARM =H8

For ALARM error

Out-DrComp=OFF 1P
:
:
ERROR CODE =C3

For system down

Out-DrComp=OFF 1P
:
:
No Error

For normal operation

With regard to handling of the product against the error level, various detailed control methods are applicable depending on the characteristics (difference in RA/SA) of the product. (For example, the system should be down at how many times the error occurs, or the counting of error occurrence should be cleared in which condition, etc.) Therefore, the error level can be recognized as a target when the actual servicing is carried out.

## 6-4 Meaning of Abbreviation


### Transmission from outdoor unit to indoor unit

Abbreviations in English	Meaning	Abbreviations in English	Meaning
Active	ON	Htpump	Heat pump
ALARM	ON	INV	Inverter
CAUTION	CAUTION ERROR	Multi	Multi system
Comp TH	Compressor head temperature	no data	No data
Cool	Cooling only unit	No Error	No malfunction
Current	Input current	Non:	Non-inverter
DEFROST	In defrost operation	Normal	Normal reset (normal status)
Disch P	Discharge pressure	OPERATION	In operation
DischTH1	Discharge temperature 1	Out Fan	Outdoor unit fan
DischTH2	Discharge temperature 2	Out Fan1	Speed of outdoor unit fan1
DRY	Dry operation	Out Fan2	Speed of outdoor unit fan2
ERROR CODE	Malfunction code	OutDr	Outdoor unit
FIN TH	Radiation fin temperature	OutDrTH	Outdoor temperature
Frequency	Compressor operating frequency	Pair	Pair system
HEAT	Heating operation	STOP/Free	In stop mode
Heat EX	Heat exchanger temperature	SuctionTH	Suction temperature
Hot Only	Heating only unit	Th-off Er	Thermostat-OFF error
HPS	High pressure protection device		

### Transmission from indoor unit to outdoor unit

Abbreviations in English	Meaning	Abbreviations in English	Meaning
ACT	ON	LEVEL	Operation level
Actuate	ON	LevelH	Level high
Built in	Built-in type	LevelL	Level low
Built in Hi	Built-in Hi type	Liquid Th	Indoor unit liquid pipe temperature (for multi system)
Capacity	Cooling capacity	Low Noise	Low noise instruction
Ceil Casset	Ceiling mounted cassette type	NewWallMont	New wall mounted type
CeilCasset2	Ceiling suspended, double flow type	NoCMD toNEXT	No command to next room
CeilConceal	Ceiling concealed type	Non	Non
CeilSuspend	Ceiling suspended type	OFF	Not activated
Circulator	Circulator	ON	ON
CMDto NextRM	With command to next room	Out FAN CMD	Demand for outdoor unit fan
Cntrl TH	Remote controller temperature	Out-DrComp	Status of outdoor unit compressor
Concealed	Concealed type	P0~P6	Flap position
COOL	Cooling operation	PeakCut	Peak cut status
Corner	Corner type	PeakCut/Freez=OK	Peak cut and freeze-up protection are not activated (normal)
DEMAND	Demand	PeakCut/Freez=ACT	Peak cut and freeze-up protection are activated. (malfunction)
dif tmp	Difference between remote controller set value and room temperature.	PMT	Permission
DRY	Dry operation	PowerSave	Power save
ERROR CODE	Malfunction code	PowerSelect	Current restriction by power selection
FAN	Fan operation	PRT	Prohibition
FAN	Fan operating status	Req realHz	Direct operating frequency instruction
Flap	Flap status	Required Hz	Indoor unit demand operating frequency
Floor Mount	Floor mounted type	Room Th	Room temperature
FloorCnceal	Floor concealed type	SubUNIT Prot	Slave unit in peak cut and freeze-up protection status
Forced Thermo	Forced thermostat OFF	SubUNIT PrtctACT	Peak cut and freeze-up protection actuated on slave unit (malfunction)
FreezPRT	In freeze-up protection status	SubUNIT_Prtct=OK	Peak cut and freeze-up protection for slave unit in normal status
Heater	Heater	SW	Swing status
HOT	Heating operation	Thermo	Thermostat demand
HOT WT	Hot water supply operation	TYPE	Type
HtEX Th	Indoor unit heat exchanger temperature	unknown	Unknown
HtEx Th2	Indoor unit heat exchanger 2 temperature	Venti.	Ventilation operation
INDOOR	Indoor unit	Wall Mount	Wall mounted type
IntakeTH	Indoor unit suction temperature	WallConceal	Wall concealed type
Jet TH	Indoor unit discharge temperature		

## 7. Problem diagnosis

Since the respective model has its own characteristics, all problem diagnosis cannot be described in details. This chapter describes typical diagnosis (in which the Transmission Monitor is used effectively) for individual cases. In the chart, the inspection item which is not possible or difficult without Transmission Monitor is indicated in color .

Especially, to diagnose for maintenance relating transmission such as ON/OFF operation of LED and “Error U4”, connection wire inspection is required in the first stage, which does not make sense if no malfunction is found out. Transmission Monitor enables to distinguish malfunction in internal/external PCB and communication wire and diagnosis is carried out synchronously with the function. Since an incorrect diagnosis may be occurred when using only LED data, it is required to carry out diagnosis confirming the judgement by using the data of the Transmission Monitor.

Possible cause is described in the order of frequent occurrence.

Reference sheet: Procedure for Indoor unit and outdoor unit diagnosis by LED

### Diagnosis by LED

7-1: Indoor Unit LED-A On

7-2: Indoor Unit LED-A Off

7-3: Indoor Unit LED-B On

7-4: Indoor Unit LED-B Off

7-5: Outdoor Unit LED-A On

7-6: Outdoor Unit LED-A Off

### Malfunction code diagnosis

7-7: Malfunction code “U4” is displayed.

7-8: Malfunction Code “A5” (Overload/Freeze-up Protection) is displayed

7-9: Malfunction code “C4”, ”C9”, ”J6”, ”H9” (Malfunction of thermistors) is displayed.

7-10: Malfunction code “U0” is displayed.

### Other diagnosis

7-11: Cannot Cool/Cannot Heat (Too Cool/Too Hot)

7-12: Problem Diagnosis for Skyair Twin/Triple/Double twin multi-unit using a R22 refrigerant




7-13: Water leakage occurs under a certain condition.

7-14: Noise occurs from compressor (main unit).

### Procedure of Indoor Unit Diagnosis









STEP 1: Diagnosis of incorrect or disconnected transmission wiring

If LED-B (green) on indoor unit PC board is off, the transmission wiring between indoor and outdoor unit is incorrect or disconnected.

Green	Blinks when normal
	LED on
	LED off
	LED blinks
—	No connection with diagnosis

STEP 2: Diagnosis of other than incorrect or disconnected transmission wiring









<Indoor unit PC board LED>

Green		Contents	Diagnosis method
Micro Computer Normal Monitor LED-A	Transmissio Normal Monitor LED-B		
		Normal → Outdoor unit	—
	—	(Note)	Malfunction 7-1
	—	Malfunction of power supply or (Note)	Malfunction 7-2
		Faulty indoor unit PC board	Malfunction 7-3
		If outdoor unit's LED-A blinks, faulty indoor unit PC board	Malfunction 7-4

(Note) If the LED display is reproduced by turning on the power supply, indoor unit PC board is faulty.

### Procedure of Outdoor Unit Diagnosis

<Outdoor unit PC board LED>

Micro Computer Normal Monitor LED-A	Contents	Diagnosis method	Green	Blinks when normal
				LED on
	Normal → Indoor unit	—		LED off
	(Note 1)	Malfunction 7-5		LED blinks
	Malfunction of power supply or (Note 2)	Malfunction 7-6	—	No connection with diagnosis
 → 	Blinks right after the power supply is turned on, then off after that.	Malfunction 7-6		

(Note 1) If LED display is reproduced by turning the power supply back on, outdoor unit PC board 1 is faulty. (only on unit equipped with PC board 1 and 2)

(Note 2) If LED display is reproduced by turning the power supply back on, when turning the power supply off again and then turning the power supply back on with the transmission wire No.2 disconnected (No. 1 and 3 are power supply voltage units.)

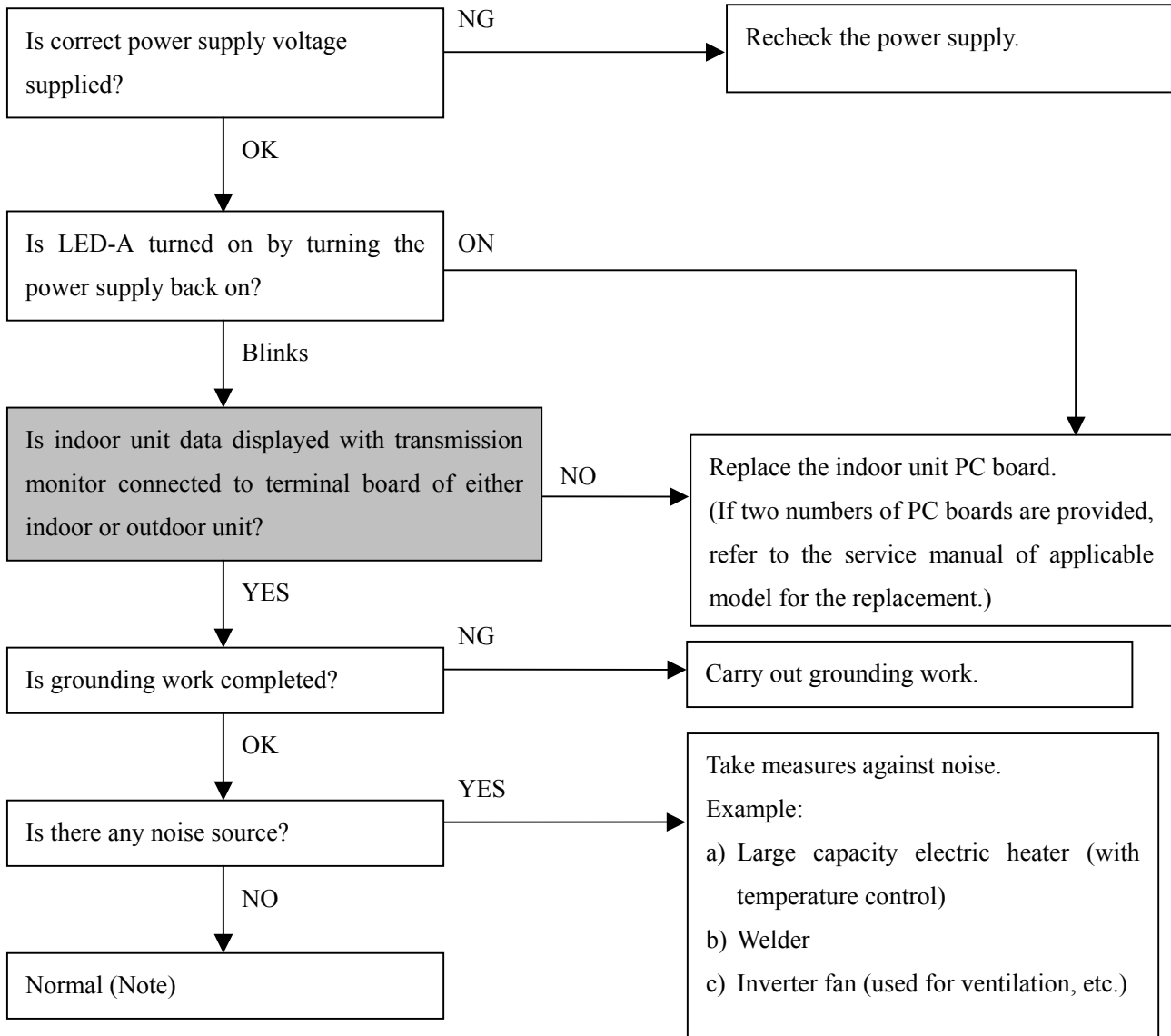
If LED-A goes out, outdoor unit PC board (See Note 1) is faulty.

If LED-A blinks, indoor unit PC board faulty.

## Malfunction 7-1: Indoor Unit LED-A On

### Possible causes

- ① Faulty indoor unit PC board
- ② Malfunction of microcomputer



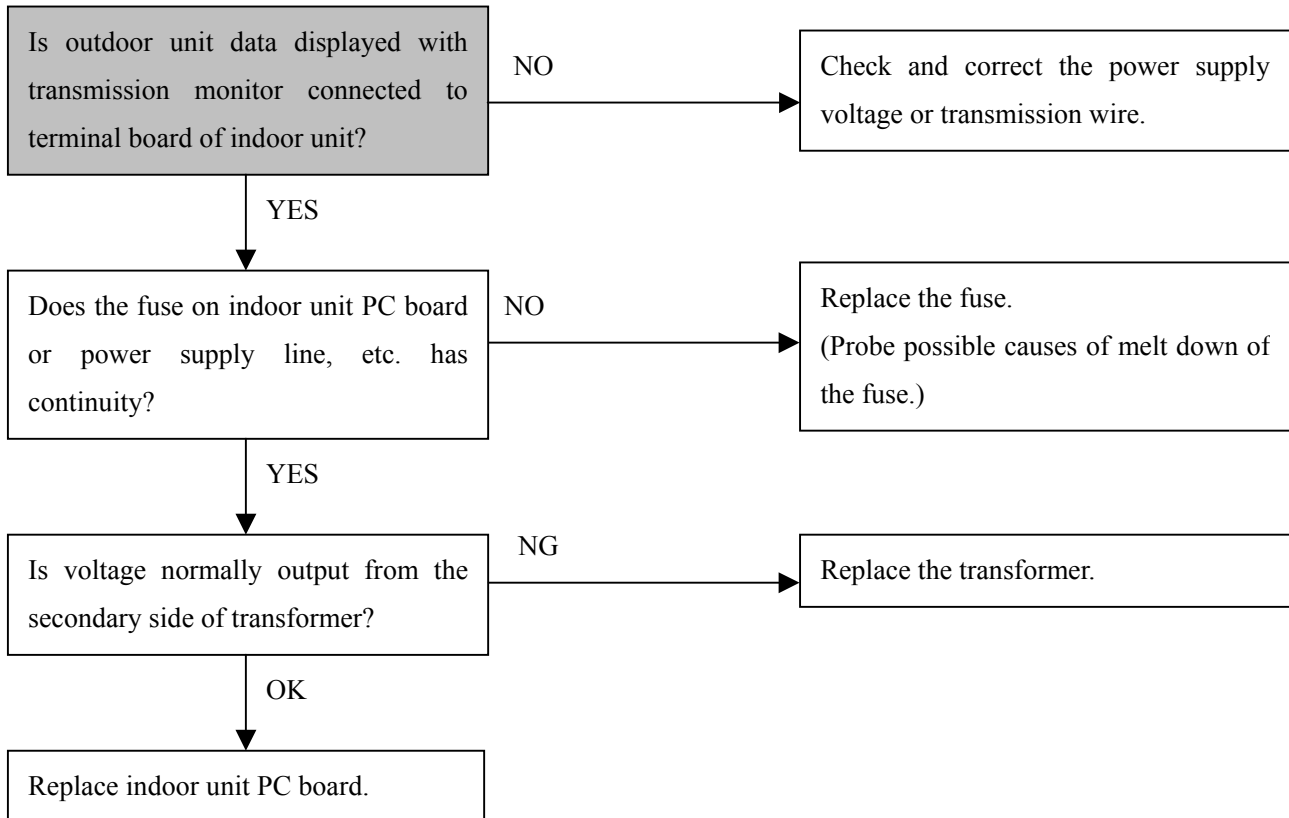
(Note) Be careful that, even when LED-A starts blinking normally after the power supply is turned back on, this malfunction may reoccur within a few minutes to a few days.

(Reference) The microcomputer for PC boards is not programmed to turn LED-A on. The program may not be functioned while LED-A is ON as it repeats ON/OFF operation (blinks).

## Malfunction 7-2: Indoor Unit LED-A Off

### Possible causes

- ① Incorrect power supply voltage or faulty transmission wire
- ② Faulty indoor unit PC board
- ③ Molten fuse
- ④ Faulty transformer



(Reference)

Normally, LED-A blinks when the power is supplied correctly. However, when indoor unit receives a signal from outdoor unit but cannot send the data, LED-A is turned off.



### **Malfunction 7-3: Indoor Unit LED-B On**

<b>Possible causes</b>	① Faulty indoor unit PC board
------------------------	-------------------------------

Replace indoor unit PC board.
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(Reference)

LED-B displays the sent data transmitted between indoor and outdoor unit. Since LED-B cannot be turned on, faulty PC board is suspected.

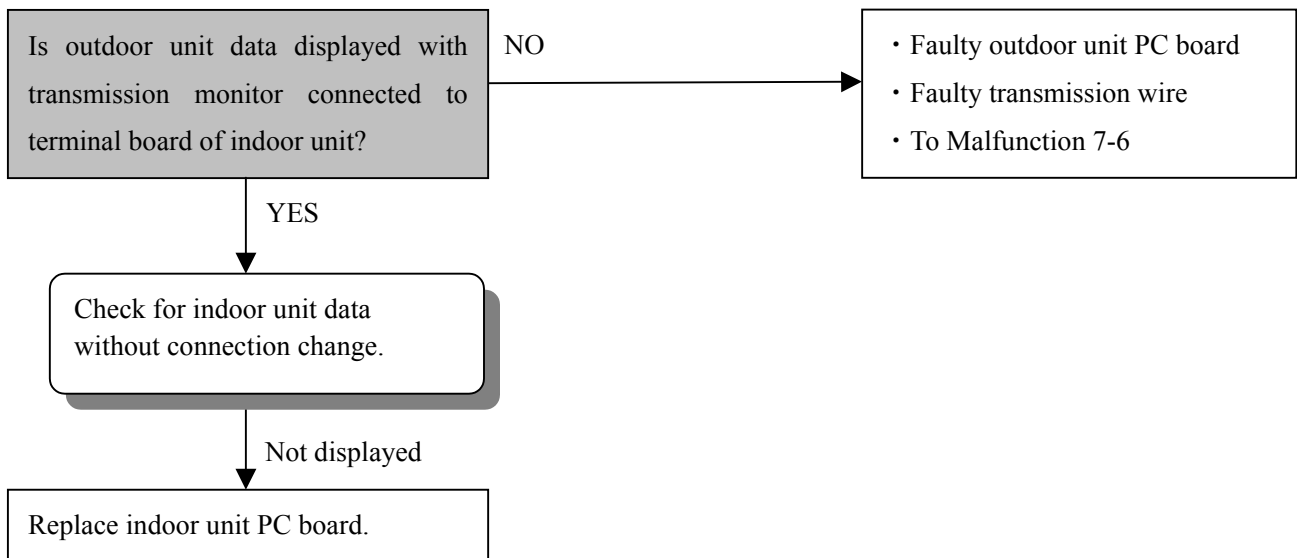
## Malfunction 7-4: Indoor Unit LED-B Off (LED-A Blinks)

### Possible causes

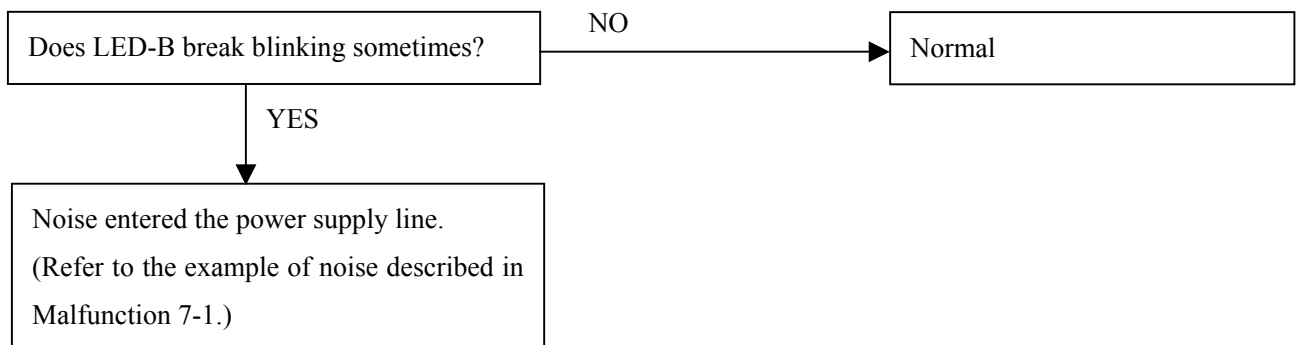
- ① Faulty transmission wiring
- ② Faulty outdoor unit PC board
- ③ Faulty indoor unit PC board

(Reference)

Since this malfunction relates to outdoor unit very much, diagnose together with Malfunction 7-5 and 7-6. If the outdoor unit can be easily checked, it is recommended to check of outdoor unit LED-A first to start diagnosing with the outdoor unit.



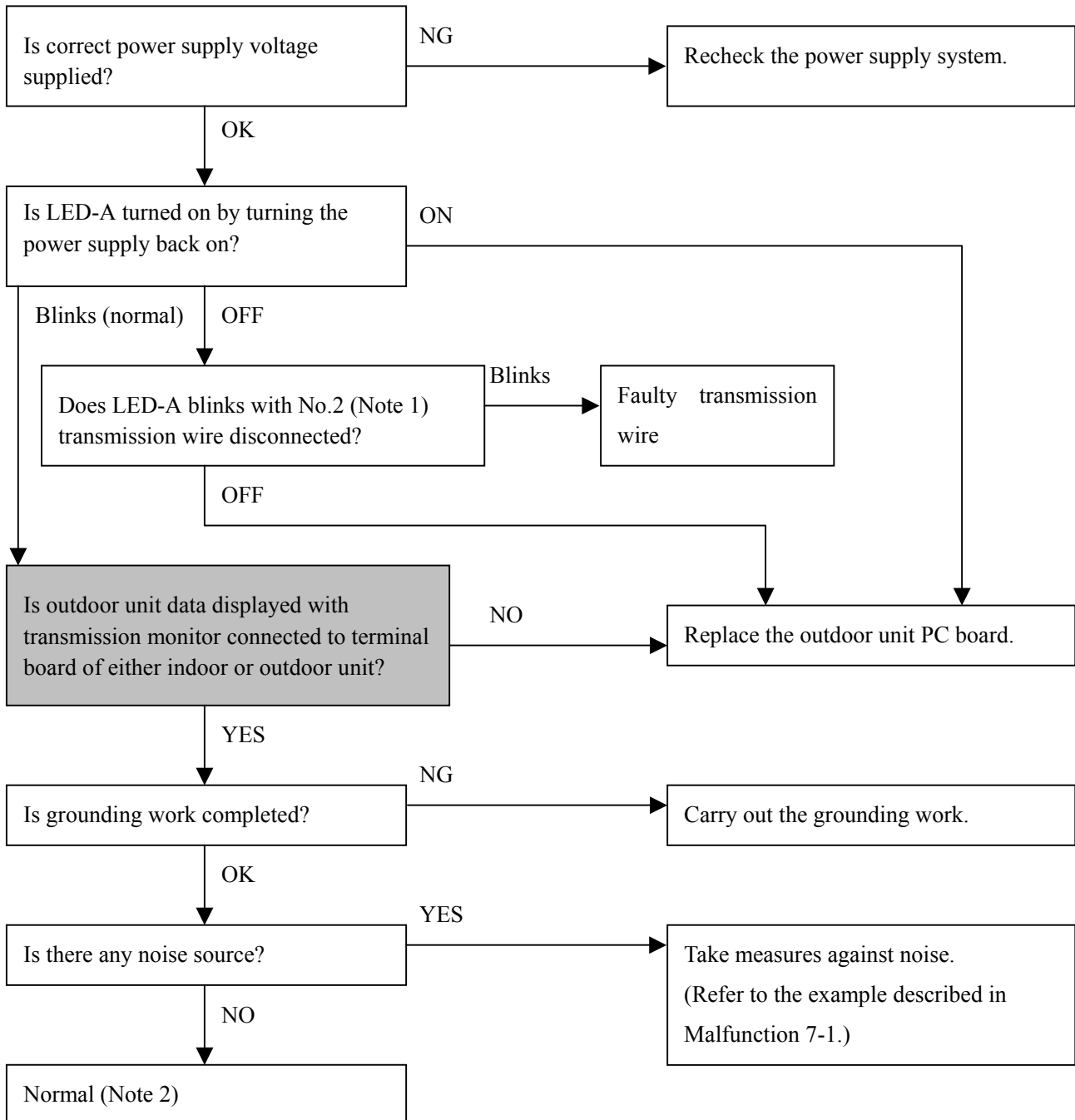
(Reference example) LED-B is turned off sometimes. (Other LED blinks normally.)



## Malfunction 7-5: Outdoor Unit LED-A On

### Possible causes

- ① Faulty outdoor unit PC board
- ② Malfunction of microcomputer



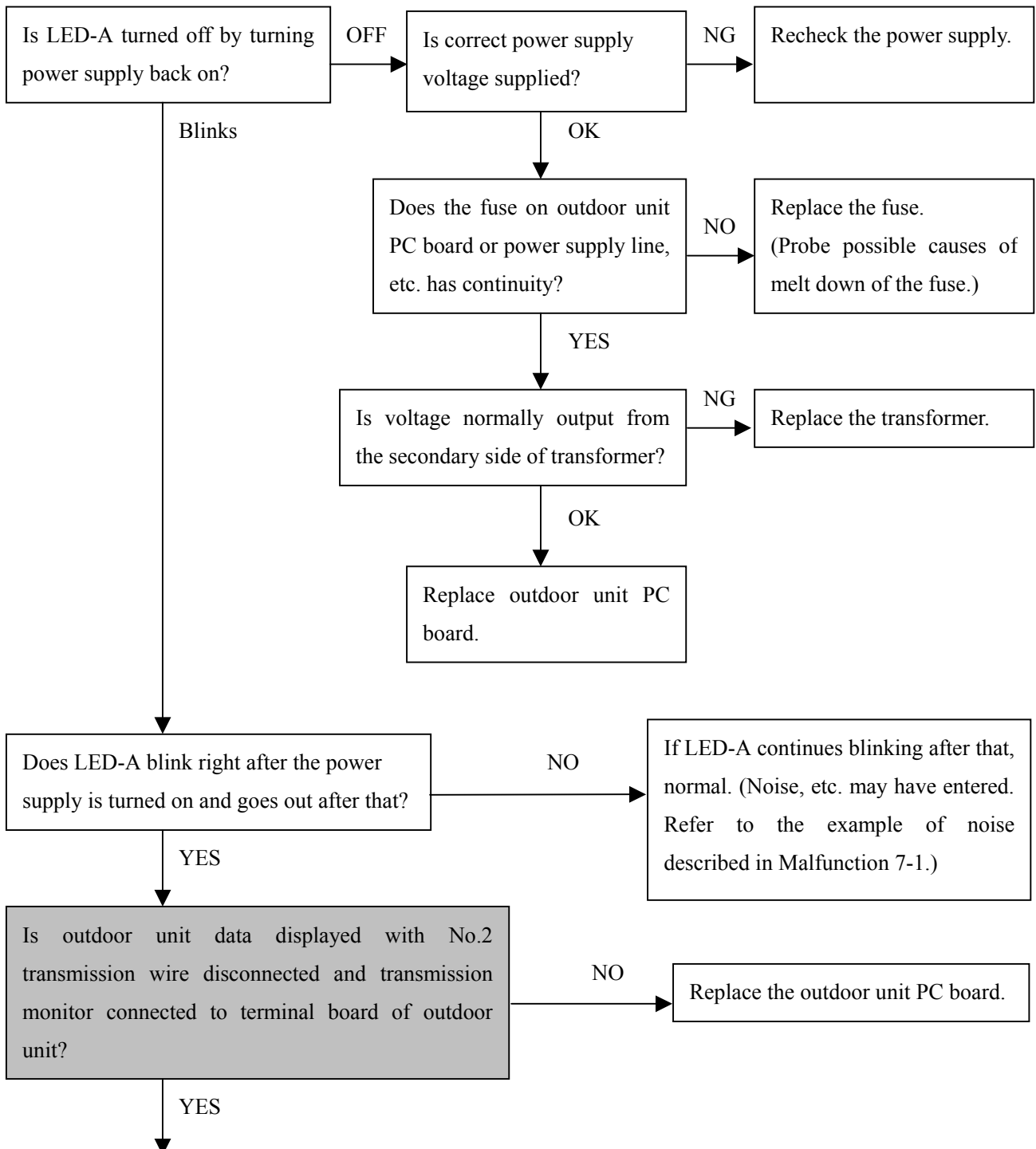
(Note 1) This No.2 means that the wire is other than that of power supply line. Therefore, it can be No.3

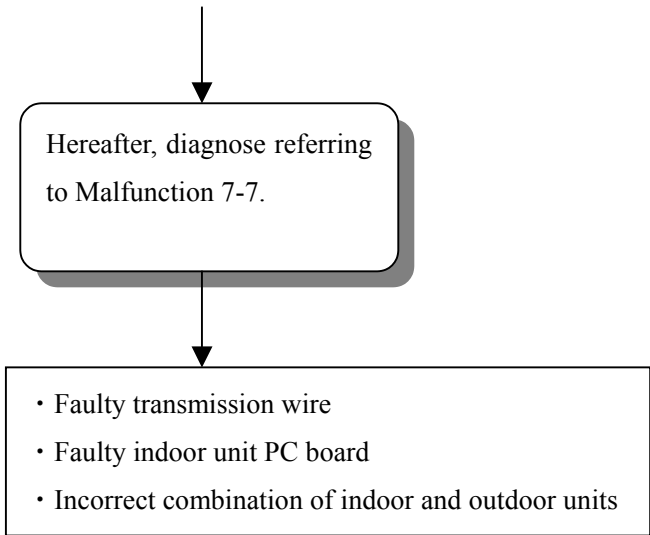
(Note 2) Be careful that, even when LED-A starts blinking normally after the power supply is turned back on, this malfunction may reoccur within a few minutes to a few days.

## Malfunction 7-6: Outdoor Unit LED-A Off

### Possible causes

- ① Incorrect power supply voltage or faulty transmission wire
- ② Faulty outdoor unit PC board
- ③ Faulty indoor unit PC board
- ④ Molten fuse
- ⑤ Faulty transformer
- ⑥ Incorrect combination of indoor and outdoor units

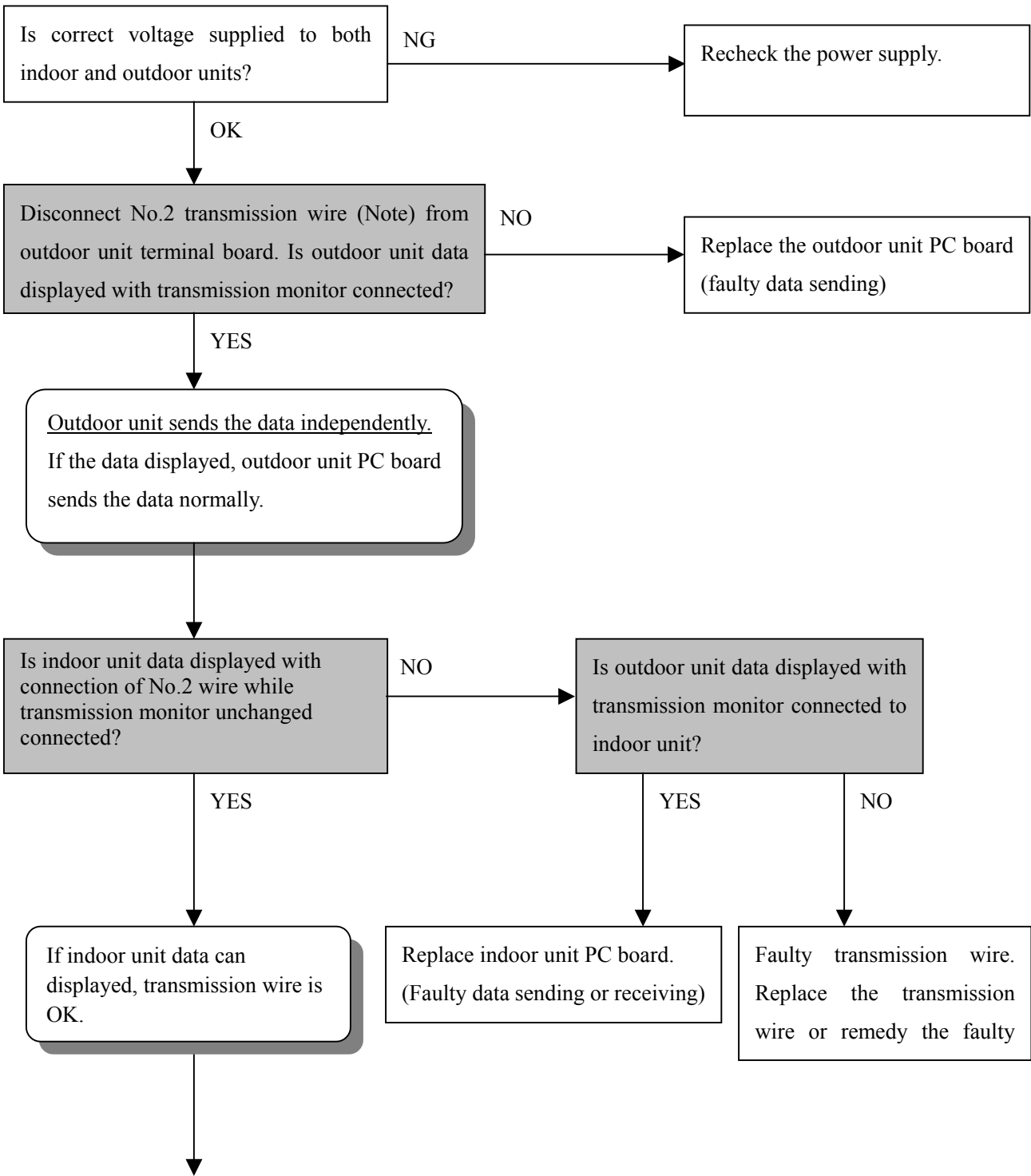


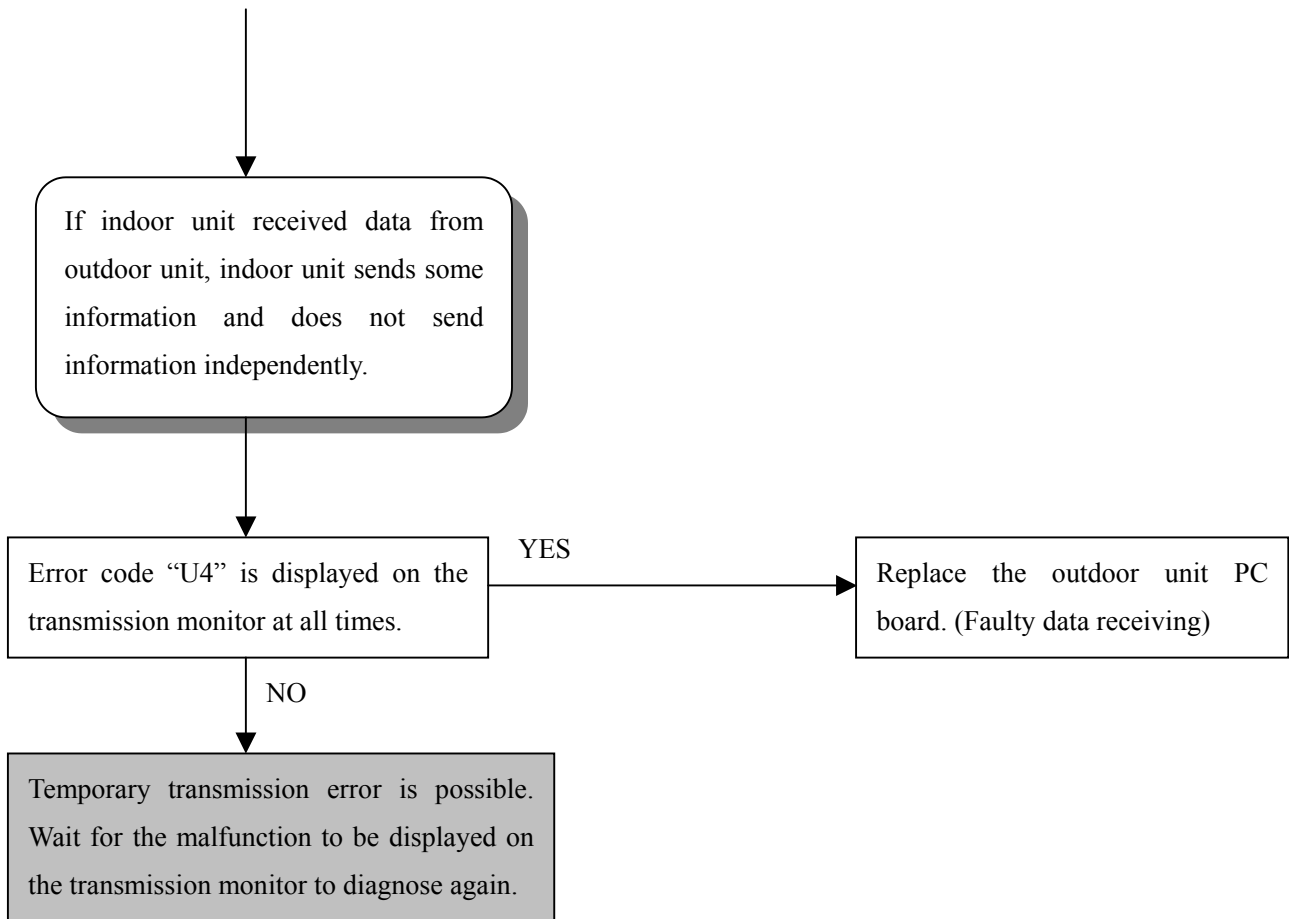


(Note 1) This No.2 means that the wire is other than that of power supply line. Therefore, it can be No.3

**Malfunction 7-7: Error code “U4” (Transmission error between indoor and outdoor units) is displayed.**

<b>Possible causes</b>	<ul style="list-style-type: none"> <li>① No power supply to indoor or outdoor unit</li> <li>② Disconnection in transmission wire between indoor and outdoor units, short circuit, poor insulation between phases, poor insulation unit and ground, incorrect wiring</li> <li>③ Faulty indoor unit PC board (Faulty data sending or receiving of indoor unit )</li> <li>④ Faulty outdoor unit PC board (Faulty data sending or receiving of outdoor unit)</li> </ul>
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(Reference)

When diagnosing the “U4” malfunction, since it is impossible to judge which PC board of indoor or outdoor unit is faulty, both PC boards are replaced in most cases at present.

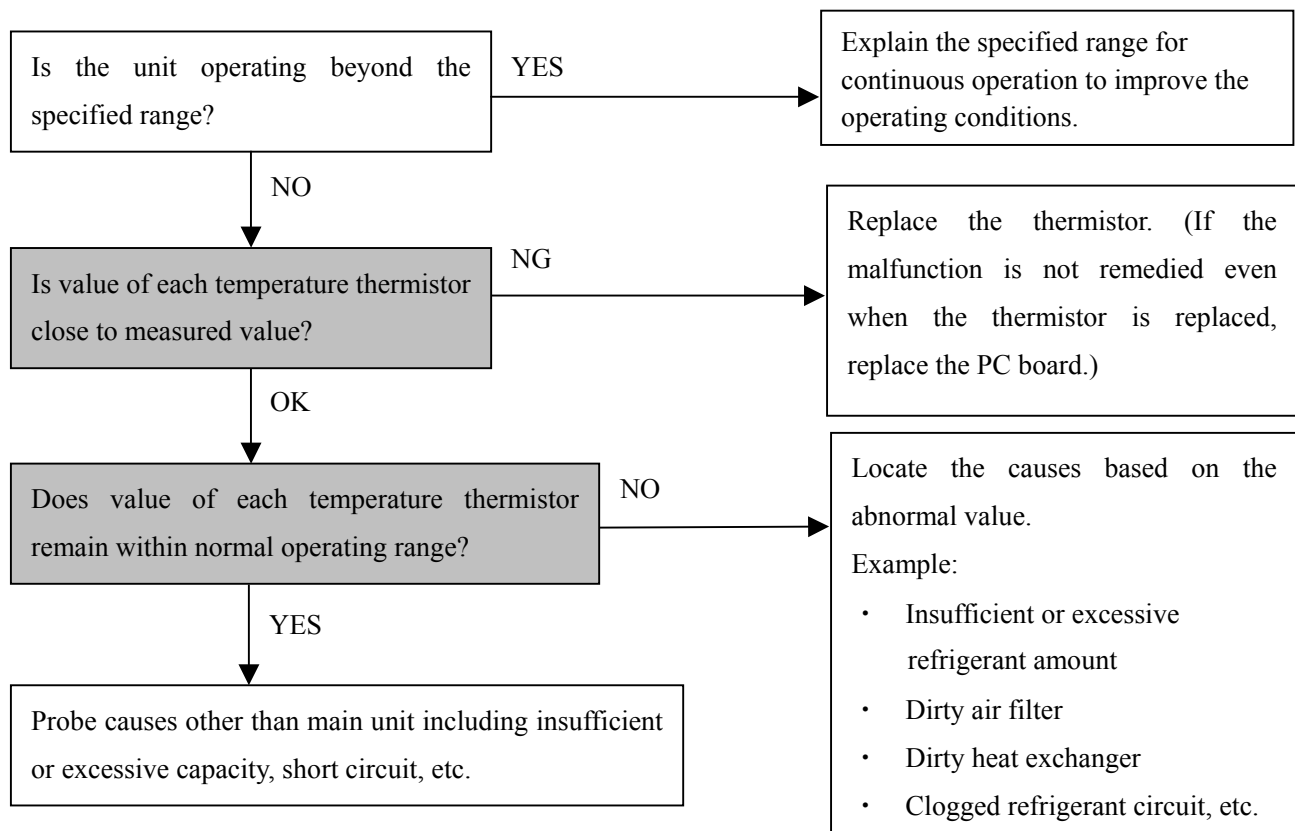
The transmission monitor has the following benefits.

- ① When the indoor unit cannot communicate for about 15 seconds, the “U4” is displayed. The transmission monitor can display it even when an instantaneous malfunction occurs.
- ② Since the exchange of signals can be monitored on the transmission monitor visually, it is possible to judge which PC board of indoor or outdoor unit is faulty.

(Note) This No.2 means that the wire is other than that of power supply line. Therefore, it can be No.3

<b>Malfunction 7-8: Error Code “A5” (Overload/Freeze-up Protection) is displayed</b>	
<b>Possible causes</b>	<ul style="list-style-type: none"> <li>① Dirty indoor unit filter or heat exchanger</li> <li>② Faulty thermistor</li> <li>③ Insufficient or excessive refrigerant amount</li> <li>④ Clogged refrigerant circuit</li> <li>⑤ Local causes (cooling in low outside air temperature, heating in high temperature, short circuit, etc.)</li> <li>⑥ Faulty PC board</li> </ul>

\*Since information may not enough with the transmission monitor to verify on some models, refer to the operating pressure, operating current, etc. as well for diagnosis.

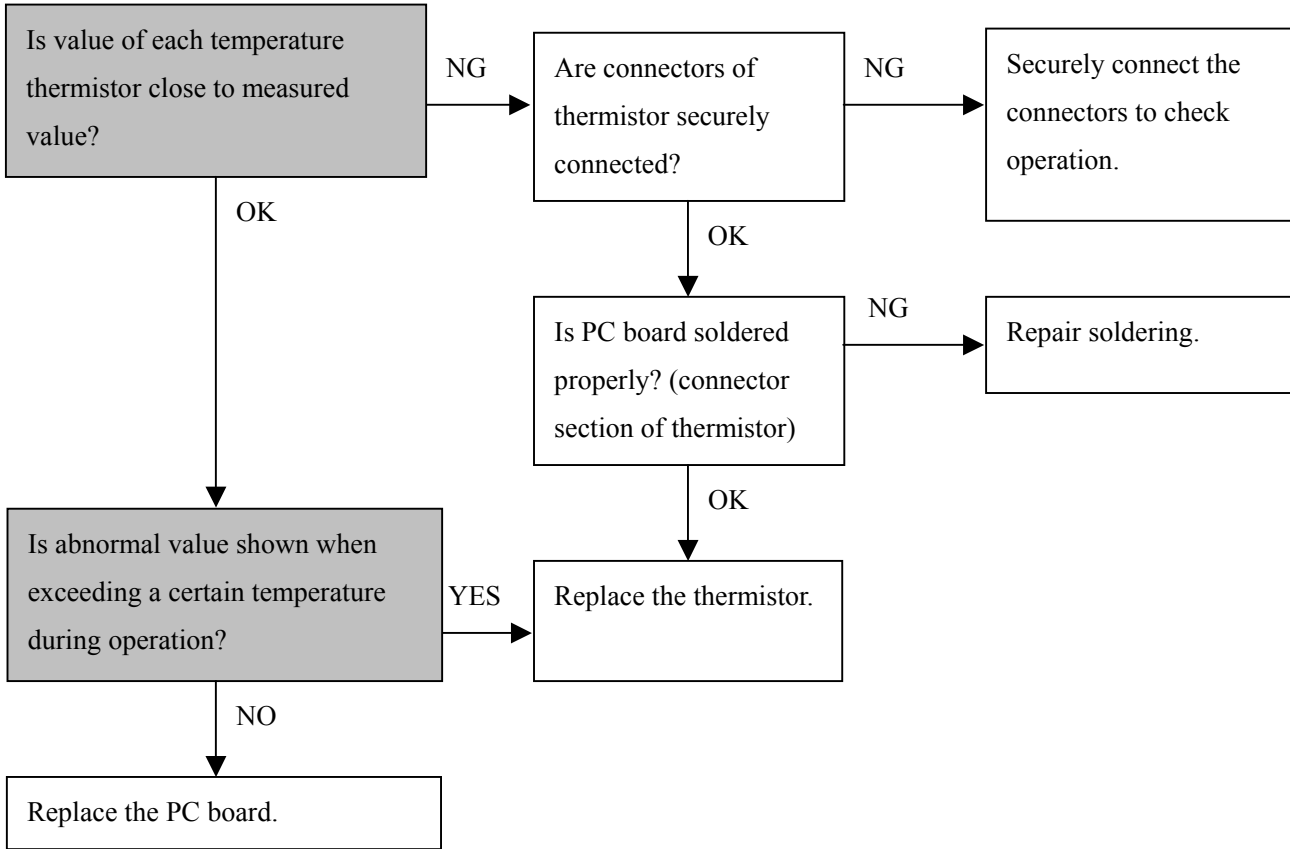


(Reference)

The error code “A5” (Overload/Freeze-up Protection) is detected by the indoor unit heat exchange thermistor and outdoor unit heat exchange thermistor. Check for the reading of microcomputer with the transmission monitor while measuring the temperature through the heat exchanger thermistors. If both temperatures are coincided, probe real causes to actuate the overload control.



<b>Malfunction 7-9: Error code “C4”, ”C9”, ”J6”, ”H9” (Malfunction of thermistors) is displayed.</b>	
<b>Possible causes</b>	<ul style="list-style-type: none"> <li>① Faulty thermistor</li> <li>② Disconnection of connector</li> <li>③ Poor soldering of PC board</li> <li>④ Faulty PC board</li> </ul>



(Reference)

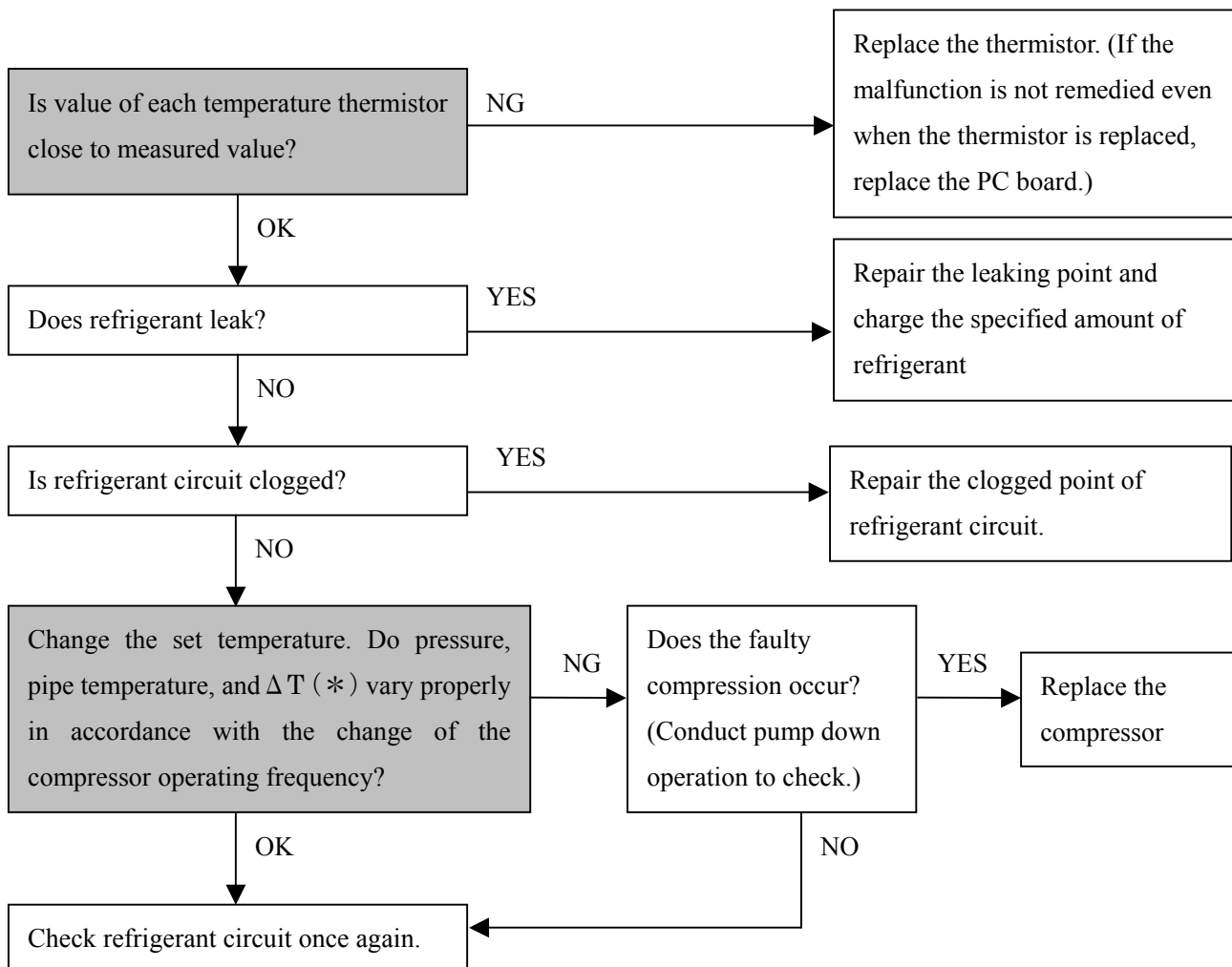
This malfunction is automatically reset. If the malfunction is present even in stop mode, disconnection of thermistor, poor soldering inside PC board, or affixed foreign matter, etc. are presumed. Judge by measuring the resistance of thermistor. If the malfunction has been reset when servicing, operate the unit while comparing the actual temperature measured at the thermistor position to the reading of the transmission monitor to check for the difference in temperature.

## Malfunction 7-10: Error code “U0” (Refrigerant shortage) is displayed.

### Possible causes

- ① Refrigerant shortage
- ② Clogged refrigerant circuit
- ③ Faulty thermistor
- ④ Faulty compressor (inverter type only)
- ⑤ Faulty PC board

\*“U0” is decided when the compressor operating frequency exceeds a certain frequency (that varies depending on the model) while low current continues or when there is no difference in temperature between indoor and outdoor heat exchangers. Measure the compressor operating frequency and temperature of each section with the transmission monitor, and actual value of current, temperature at the thermistor section, gas pressure, etc. to compare the values and probe the causes.

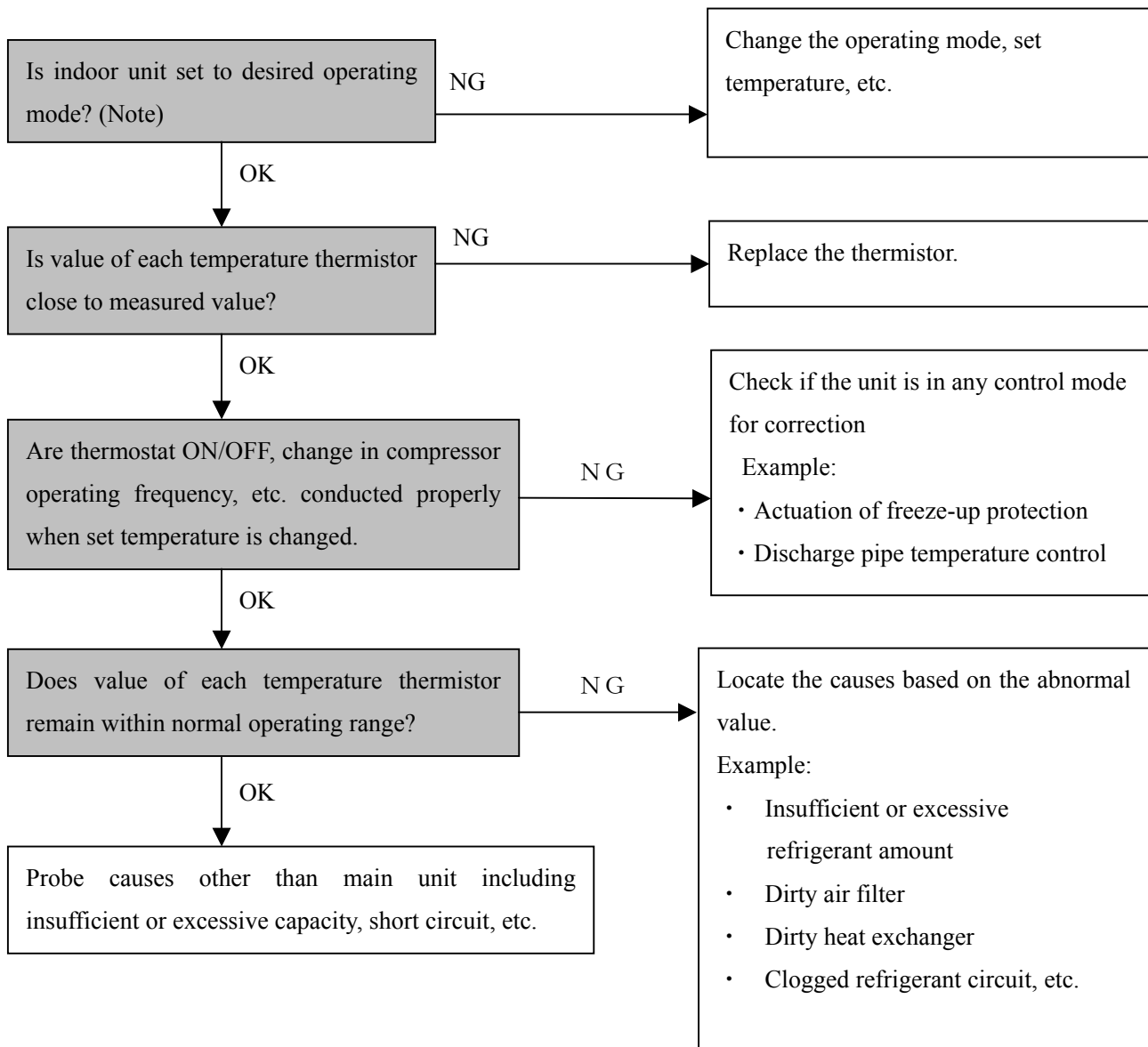


(\*) Difference between the suction and discharge temperatures of indoor unit

## Malfunction 7-11: Cannot Cool/Cannot Heat (Too Cool/Too Hot)

<b>Possible causes</b>	<ul style="list-style-type: none"> <li>① Dirty filter (heat exchanger)</li> <li>② Insufficient or excessive refrigerant amount</li> <li>③ Local causes (insufficient or excessive equipment capacity, short circuit, etc.)</li> <li>④ Faulty thermistor</li> <li>⑤ Clogged refrigerant circuit</li> <li>⑥ Incorrect setting of remote controller</li> </ul>
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\* Since information may not be enough with the transmission monitor to verify on some models, refer to the operating pressure, operating current, etc. as well for diagnosis.



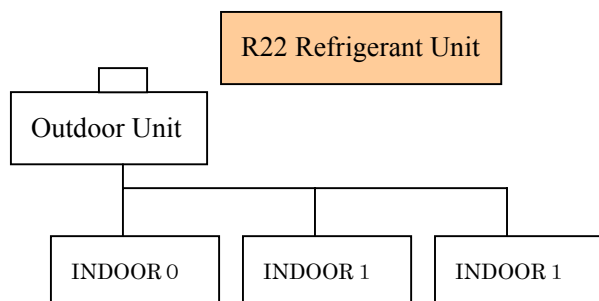
(Note) When the automatic operation mode is selected by the remote controller, the unit is presumed to operate in cooling mode but actually in dry mode.

## Malfunction 7-12: Problem Diagnosis for Twin/Triple/Double twin multi-unit of Skyair using a R22 refrigerant

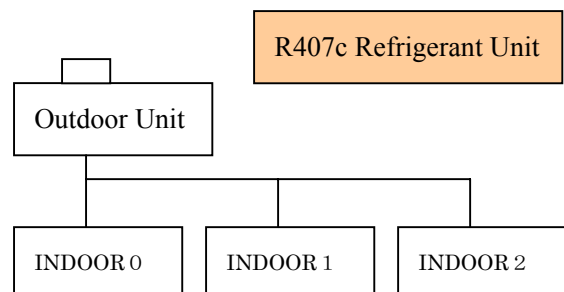
<b>Possible cause</b>	_____
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This system is provided with several indoor units, which are defined as master unit (with remote controller connected) and as slave unit. On the Transmission Monitor the master unit is displayed as "INDOOR 0", and the slave unit as "INDOOR 1". However, regarding the slave unit, the Transmission Monitor cannot judge from which slave unit the error is sent and displays as "INDOOR 1". Since the master unit manages all controls in normal operation, such display matters little. But when malfunction occurs (for example when float switch malfunctions on any of slave units), the slave unit where the float switch malfunctions cannot be located, because the malfunction code is sent once in 5-10 minutes when monitoring the slave unit only. The Transmission Monitor displays the error instantaneously. But when the Transmission Monitor receives the normal data from a slave unit after several minutes, it displays "No Error" and maintains the normal display until it receives the data from slave unit that malfunctions again. Further, when a critical error such as actuation of float switch occurs, the Transmission Monitor cannot locate which indoor unit malfunctions because the master unit sends the error data to the outdoor unit after it receives the error data of the slave unit. Eventually, there is no other method than to inspect all indoor units for triple multi or double twin multi system.

However, the transmission method is changed for twin/triple/double twin multi system applying a new refrigerant (R407C). Individual address is given to respective slave unit to display as "INDOOR1", "INDOOR 2" and "INDOOR 3" on the Transmission Monitor. With these units, it is possible to identify which indoor unit corresponds to "INDOOR 1" or "INDOOR 2" by purposely generating a different malfunction (for example, to activate the float switch).



When malfunction occurs on slave unit, it is difficult to locate the faulty unit.



When malfunction occurs on slave unit, it is easy to locate the faulty unit.

**Malfunction 7-13: Water leakage occurs under a certain condition.**

**Possible causes**

\_\_\_\_\_

It may be difficult to reproduce water leakage under a certain condition at factory.

Providing objective data can support to shorten the response time.

Example: The following information can be transmitted.

- ① Since the compressor operating frequency can be checked, “When the compressor conducts stable operation under operating frequency of ( )Hz and at heat exchange temperature of ( )°C, water leakage occurs.”
  
- ② “When the compressor operates under operating frequency of ( )Hz or lower, at outside air temperature of ( )°C and heat exchange temperature of ( )°C, the drift of refrigerant occurs.”

**Malfunction 7-14: Noise occurs from compressor (main unit).**

**Possible causes**

\_\_\_\_\_

It may be difficult to reproduce abnormal noise from compressor at factory.

Providing objective data can support to shorten the response time.

Example: The following information can be transmitted.

- ① Since the compressor operating frequency can be checked, “Abnormal noise occurs when the compressor operating frequency reaches ( )Hz or higher.”
- ② Since various control modes are checked, “Liquid compression sound is heard at outdoor temperature of ( )°C in defrost ON mode.
- ③ “Refrigerant passing sound occurs under compressor operating frequency of ( )Hz at remote controller setting temperature of ( )°C .”

### 8. Check method of microcomputer software version built in transmission checker

When supplying power for the Transmission Monitor by pushing the IN/OUT changeover switch, the following display appears on LCD.



V2.00 is the latest version as of November 2001.