

July 2006

**No.OC338  
REVISED EDITION-B**

# SERVICE MANUAL

**R410A**

 Outdoor unit  
[model names]

PUAH-RP200YHA

PUAH-RP250YHA

[Service Ref.]

**PUAH-RP200YHA  
PUAH-RP200YHA<sub>1</sub>  
PUAH-RP250YHA  
PUAH-RP250YHA<sub>1</sub>**

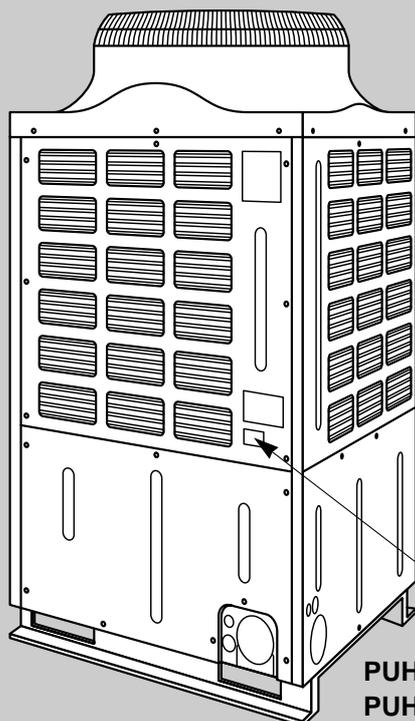
Revision:

- RoHS PARTS LIST is added.
- Some descriptions have been modified.

- Please void OC338 REVISED EDITION-A.

NOTE:

- This manual describes only service data of the outdoor units.
- RoHS compliant products have <G> mark on the spec name plate.
- For servicing of RoHS compliant products, refer to the RoHS Parts List.


 Model name  
indication

**PUAH-RP200YHA  
PUAH-RP200YHA<sub>1</sub>  
PUAH-RP250YHA  
PUAH-RP250YHA<sub>1</sub>**

## CONTENTS

|  |     |
|--|-----|
| 1. TECHNICAL CHANGES .....                                     | 2   |
| 2. REFERENCE MANUAL .....                                      | 2   |
| 3. SAFETY PRECAUTION .....                                     | 3   |
| 4. FEATURES .....  | 7   |
| 5. SPECIFICATIONS .....  | 8   |
| 6. DATA .....  | 9   |
| 7. OUTLINES AND DIMENSIONS .....                               | 12  |
| 8. WIRING DIAGRAM .....  | 13  |
| 9. WIRING SPECIFICATIONS .....                                 | 14  |
| 10. SPECIFICATIONS FOR ELECTRICAL WORK .....                   | 15  |
| 11. REFRIGERANT SYSTEM DIAGRAM .....                           | 19  |
| 12. TROUBLESHOOTING .....                                      | 21  |
| 13. FUNCTION SETTING .....                                     | 70  |
| 14. EASY MAINTENANCE FUNCTION .....                            | 76  |
| 15. MONITORING THE OPERATION DATA BY THE REMOTE CONTROLLER ... | 79  |
| 16. DISASSEMBLY PROCEDURE .....                                | 89  |
| 17. PARTS LIST .....   | 97  |
| 18. RoHS PARTS LIST .....                                      | 103 |

**1****TECHNICAL CHANGES**

PUHZ-RP200YHA → PUHZ-RP200YHA<sub>1</sub>

PUHZ-RP250YHA → PUHZ-RP250YHA<sub>1</sub>

The parts below have been changed.

- 4-WAY VALVE AND COIL(21S4)
- BYPASS VALVE AND COIL(SV)

**2****REFERENCE MANUAL****2-1. INDOOR UNIT'S SERVICE MANUAL**

| Model name   | Service Ref.   | Service Manual No. |
|--|--|--------------------|
| PLA-RP35/50/60/71AA                                | PLA-RP35/50/60/71AA.UK                                   | OC335              |
| PLA-RP100/125/140AA2                               | PLA-RP100/125/140AA2.UK                                  | OC357              |
| PCA-RP50/60/71/100/125/140GA<br>PCA-RP50GA2        | PCA-RP50/60/71/100/125/140GA<br>PCA-RP50GA2              | OC328              |
| PCA-RP71/125HA                                     | PCA-RP71/125HA   | OC329              |
| PKA-RP35/50GAL                                     | PKA-RP35/50GAL   | OC330              |
| PKA-RP60/71/100FAL<br>PKA-RP50FAL2                 | PKA-RP60/71/100FAL<br>PKA-RP50FAL2                       | OC331              |
| PEAD-RP35/50/60/71EA(2)<br>PEAD-RP100/125/140EA(2) | PEAD-RP35/50/60/71EA(2).UK<br>PEAD-RP100/125/140EA(2).UK | -                  |
| PEAD-RP60/71/100GA                                 | PEAD-RP60/71/100GA.UK                                    | -                  |
| PEH-RP200/250MYA                                   | PEH-RP200/250MYA   | -                  |

**2-2. TECHNICAL DATA BOOK**

Manual No. OCS01

### 3-1. CAUTIONS RELATED TO NEW REFRIGERANT

#### Cautions for units utilizing refrigerant R410A

##### Use new refrigerant pipes.

In case of using the existing pipes for R22, be careful with the followings.

- Change flare nut to the one provided with this product.  
Use a newly flared pipe.
- Avoid using thin pipes.

**Make sure that the inside and outside of refrigerant piping is clean and it has no contamination such as sulfur hazardous for use, oxides, dirt, shaving particles, etc.  
In addition, use pipes with specified thickness.**

Contamination inside refrigerant piping can cause deterioration of refrigerant oil etc.

**Store the piping to be used during installation indoors and keep both ends of the piping sealed until just before brazing. (Leave elbow joints, etc. in their packaging.)**

If dirt, dust or moisture enter into refrigerant cycle, that can cause deterioration of refrigerant oil or malfunction of compressor.

**Use ester oil, ether oil or alkylbenzene oil (small amount) as the refrigerant oil applied to flares and flange connections.**

If large amount of mineral oil enter, that can cause deterioration of refrigerant oil etc.

**Charge refrigerant from liquid phase of gas cylinder.**

If the refrigerant is charged from gas phase, composition change may occur in refrigerant and the efficiency will be lowered.

**Do not use refrigerant other than R410A.**

If other refrigerant (R22 etc.) is used, chlorine in refrigerant can cause deterioration of refrigerant oil etc.

**Use a vacuum pump with a reverse flow check valve.**

Vacuum pump oil may flow back into refrigerant cycle and that can cause deterioration of refrigerant oil etc.

**Use the following tools specifically designed for use with R410A refrigerant.**

The following tools are necessary to use R410A refrigerant.

| Tools for R410A   |                                       |
|-------------------|---------------------------------------|
| Gauge manifold    | Flare tool                            |
| Charge hose       | Size adjustment gauge                 |
| Gas leak detector | Vacuum pump adaptor                   |
| Torque wrench     | Electronic refrigerant charging scale |

**Keep the tools with care.**

If dirt, dust or moisture enter into refrigerant cycle, that can cause deterioration of refrigerant oil or malfunction of compressor.

**Do not use a charging cylinder.**

If a charging cylinder is used, the composition of refrigerant will change and the efficiency will be lowered.

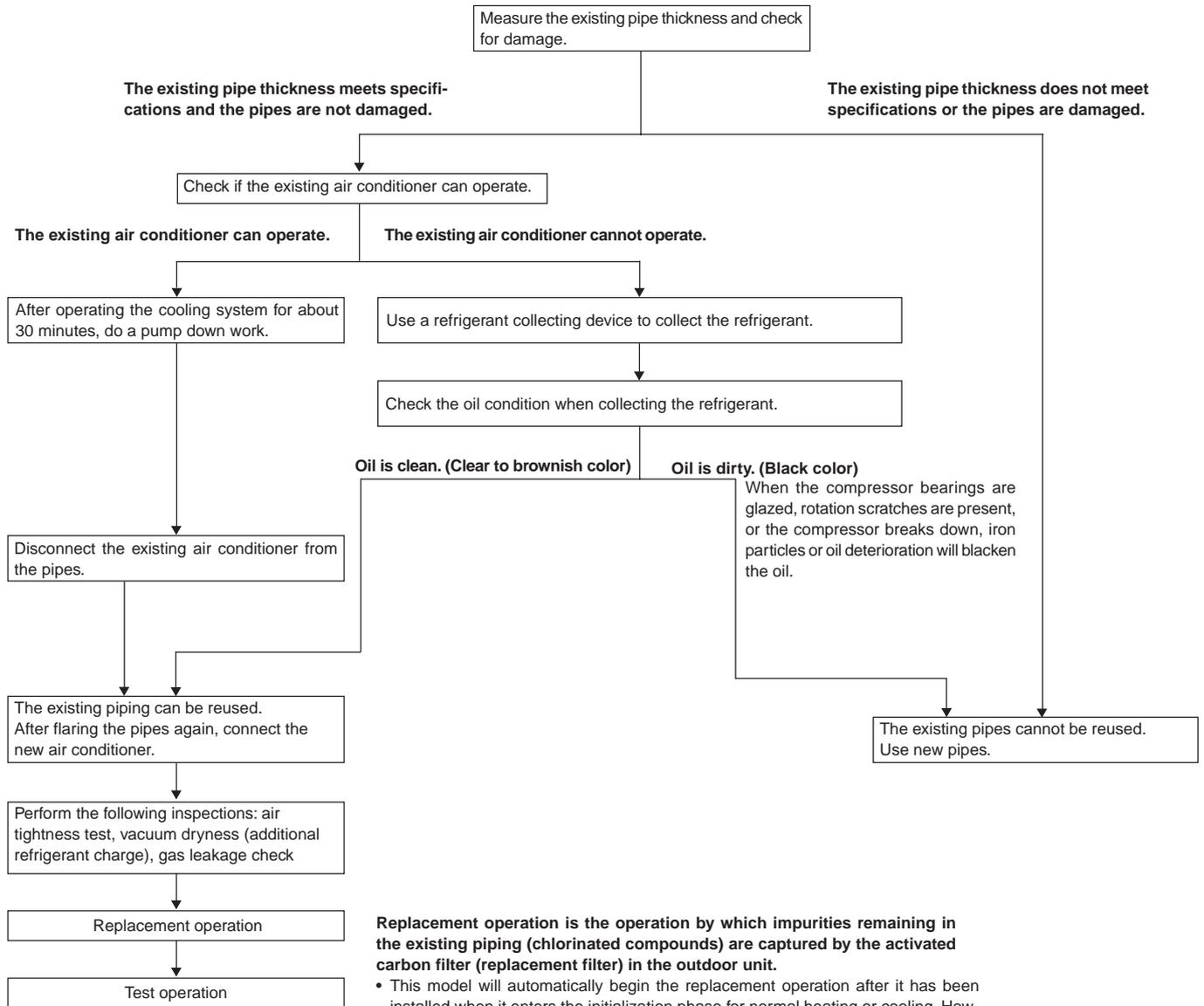
**Ventilate the room if refrigerant leaks during operation. If refrigerant comes into contact with a flame, poisonous gases will be released.**



### 3-2. CHANGED POINT

#### • Precautions when reusing existing R22 refrigerant pipes

##### (1) Flowchart



**Replacement operation is the operation by which impurities remaining in the existing piping (chlorinated compounds) are captured by the activated carbon filter (replacement filter) in the outdoor unit.**

- This model will automatically begin the replacement operation after it has been installed when it enters the initialization phase for normal heating or cooling. However, the unit will not automatically perform the replacement operation if it is moved to a new location where it will be used with existing R22 refrigerant piping. Under such conditions, always use the SW8-2 operations to perform the replacement operation before beginning the test operation.

#### Connecting a new air conditioner to existing R22 refrigerant pipes

- ① Flare the pipe for the use with R410A refrigerant.  
Use the flare nut attached to indoor and outdoor unit of the new air conditioner only.
- ② When reusing existing R22 refrigerant pipes of which gas pipe is  $\phi 28.58\text{mm}$  and, in addition, when the outdoor unit is installed to lower position than the indoor unit, be sure to change the setting of the DIP SW8-1 on the controller circuit board of the outdoor unit to ON.  
\* This is to increase the speed of refrigerant passing in the gas pipe so that refrigerant oil can smoothly flow in the system.  
• Use a different-diameter joint or brazing for the connection.
- ③ When reusing standard-size existing R22 refrigerant pipes.  
The pipes can be reused with pipe length restriction described on TECHNICAL DATA BOOK (OCS01).

## (2) Cautions for refrigerant piping work

New refrigerant R410A is adopted for replacement inverter series. Although the refrigerant piping work for R410A is same as for R22, exclusive tools are necessary so as not to mix with different kind of refrigerant. Furthermore as the working pressure of R410A is 1.6 time higher than that of R22, their sizes of flared sections and flare nuts are different.

### ① Thickness of pipes

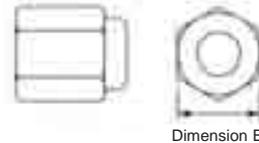
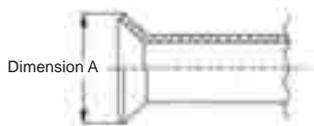
Because the working pressure of R410A is higher compared to R22, be sure to use refrigerant piping with thickness shown below. (Never use pipes of 0.7mm or below.)

Diagram below: Piping diameter and thickness

| Nominal dimensions | Outside diameter (mm) | Thickness (mm) |     |
|--------------------|-----------------------|----------------|-----|
|                    |                       | R410A          | R22 |
| 1/4"               | 6.35                  | 0.8            | 0.8 |
| 3/8"               | 9.52                  | 0.8            | 0.8 |
| 1/2"               | 12.70                 | 0.8            | 0.8 |
| 5/8"               | 15.88                 | 1.0            | 1.0 |
| 3/4"               | 19.05                 | —              | 1.0 |
| 7/8"               | 22.20                 | —              | 1.0 |
| 1"                 | 25.40                 | —              | 1.0 |
| 1"-1/8"            | 28.58                 | —              | 1.0 |

### ② Dimensions of flare cutting and flare nut

The component molecules in HFC refrigerant are smaller compared to conventional refrigerants. In addition to that, R410A is a refrigerant, which has higher risk of leakage because of its working pressure higher than that of other refrigerants. Therefore, to enhance airtightness and intensity, flare cutting dimension of copper pipe for R410A have been specified separately from the dimensions for other refrigerants as shown below. The dimension B of flare nut for R410A also have partly been changed to increase intensity as shown below. Set copper pipe correctly referring to copper pipe flaring dimensions for R410A below. For 1/2" and 5/8", the dimension B changes. Use torque wrench corresponding to each dimension.



Flare cutting dimensions (mm)

| Nominal dimensions | Outside diameter | Dimension A (mm) |      |
|--------------------|------------------|------------------|------|
|                    |                  | R410A            | R22  |
| 1/4"               | 6.35             | 9.1              | 9.0  |
| 3/8"               | 9.52             | 13.2             | 13.0 |
| 1/2"               | 12.70            | 16.6             | 16.2 |
| 5/8"               | 15.88            | 19.7             | 19.4 |
| 3/4"               | 19.05            | —                | 23.3 |

Flare nut dimensions (mm)

| Nominal dimensions | Outside diameter | Dimension B (mm) |      |
|--------------------|------------------|------------------|------|
|                    |                  | R410A            | R22  |
| 1/4"               | 6.35             | 17.0             | 17.0 |
| 3/8"               | 9.52             | 22.0             | 22.0 |
| 1/2"               | 12.70            | 26.0             | 24.0 |
| 5/8"               | 15.88            | 29.0 *           | 27.0 |
| 3/4"               | 19.05            | —                | 36.0 |

\*36.0mm for indoor unit of RP100, 125 and 140

### ③ Tools for R410A (The following table shows whether conventional tools can be used or not.)

| Tools and materials                                      | Use   | R410A tools  | Can R22 tools be used?                               | Can R407C tools be used?                             |
|--|---|--|--|--|
| Gauge manifold   | Air purge and refrigerant charge  | Tool exclusive for R410A   | ×  | ×  |
| Charge hose  | Operation check and the two above   | Tool exclusive for R410A   | ×  | ×  |
| Gas leak detector  | Gas leak check  | Tool for HFC refrigerant   | ×  | ○  |
| Refrigerant recovery equipment                           | Collection of refrigerant   | Tool exclusive for R410A   | ×  | ×  |
| Refrigerant cylinder                                     | Refrigerant charge  | Tool exclusive for R410A   | ×  | ×  |
| Applied oil  | Apply to flared section   | Ester oil and alkylbenzene oil (minimum amount)  | ×  | Ester oil: ○<br>Alkylbenzene oil: minimum amount     |
| Safety charger   | Prevent compressor malfunction when charging refrigerant by spraying liquid refrigerant                         | Tool exclusive for R410A   | ×  | ×  |
| Charge valve   | Prevent gas from blowing out when detaching charge hose   | Tool exclusive for R410A   | ×  | ×  |
| Vacuum pump  | Vacuum drying and air purge   | Tools for other refrigerants can be used if equipped with adpoter for reverse flow check | △ (Usable if equipped with adpoter for reverse flow) | △ (Usable if equipped with adpoter for reverse flow) |
| Flare tool   | Flaring work of piping  | Tools for other refrigerants can be used by adjusting flaring dimension                  | △ (Usable by adjusting flaring dimension)            | △ (Usable by adjusting flaring dimension)            |
| Bender   | Bend the pipes  | Tools for other refrigerants can be used   | ○  | ○  |
| Pipe cutter  | Cut the pipes   | Tools for other refrigerants can be used   | ○  | ○  |
| Welder and nitrogen gas cylinder                         | Weld the pipes  | Tools for other refrigerants can be used   | ○  | ○  |
| Refrigerant charging scale                               | Charge refrigerant  | Tools for other refrigerants can be used   | ○  | ○  |
| Vacuum gauge or thermistor vacuum gauge and vacuum valve | Check the degree of vacuum. (Vacuum valve prevents back flow of oil and refrigerant to thermistor vacuum gauge) | Tools for other refrigerants can be used   | ○  | ○  |
| Charging cylinder  | Charge refrigerant  | Tool exclusive for R410A   | ×  | —  |

× : Prepare a new tool. (Use the new tool as the tool exclusive for R410A.)

△ : Tools for other refrigerants can be used under certain conditions.

○ : Tools for other refrigerants can be used.

# 4

# FEATURES

## 4-1 COMBINATION OF INDOOR AND OUT DOOR UNITS

### 4-1-1 1:1 SYSTEM

| Indoor unit | Outdoor unit |     |
|-------------|--------------|-----|
|             | PUHZ-RP-YHA  |     |
|             | 200          | 250 |
| PEH-RP-MYA  | ○            | ○   |

### 4-1-2 SYNCHRONIZED TWIN, TRIPLE AND QUADRUPLE SYSTEM

#### (1) Synchronized twin (50:50)

| Indoor unit      | Outdoor unit |     |
|------------------|--------------|-----|
|                  | PUHZ-RP-YHA  |     |
|                  | 200          | 250 |
| PLA-RP100AA2 X 2 | ○            |     |
| PLA-RP125AA2X 2  |              | ○   |
| PEAD-RP100EA2X 2 | ○            |     |
| PEAD-RP125EA X 2 |              | ○   |
| PEAD-RP100GA X 2 | ○            |     |
| PKA-RP100FAL X 2 | ○            |     |
| PCA-RP100GA X 2  | ○            |     |
| PCA-RP125GA X 2  |              | ○   |
| PCA-RP125HA X 2  |              | ○   |

#### (2) Synchronized triple (33:33:33)

| Indoor unit     | Outdoor unit |     |
|-----------------|--------------|-----|
|                 | PUHZ-RP-YHA  |     |
|                 | 200          | 250 |
| PLA-RP60AA X 3  | ○            |     |
| PLA-RP71AA X 3  |              | ○   |
| PEAD-RP60EA X 3 | ○            |     |
| PEAD-RP71EA X 3 |              | ○   |
| PEAD-RP60GA X 3 | ○            |     |
| PEAD-RP71GA X 3 |              | ○   |
| PKA-RP60FAL X 3 | ○            |     |
| PKA-RP71FAL X 3 |              | ○   |
| PCA-RP60GA X 3  | ○            |     |
| PCA-RP71GA X 3  |              | ○   |
| PCA-RP71HA X 3  |              | ○   |

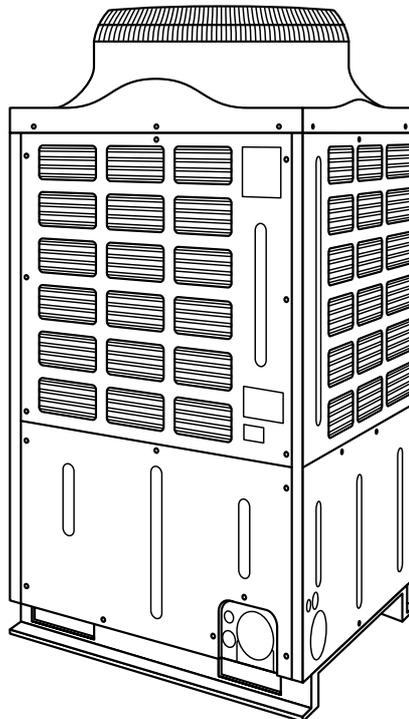
#### (3) Synchronized quadruple (25:25:25:25)

| Indoor unit       | Outdoor unit |     |
|-------------------|--------------|-----|
|                   | PUHZ-RP-YHA  |     |
|                   | 200          | 250 |
| PLA-RP50AA X 4    | ○            |     |
| PLA-RP60AA X 4    |              | ○   |
| PEAD-RP50EA X 4   | ○            |     |
| PEAD-RP60EA X 4   |              | ○   |
| PEAD-RP60GA X 4   |              | ○   |
| PKA-RP50GAL X 4   | ○            |     |
| PKA-RP50FAL2 X 4  | ○            |     |
| PKA-RP60FAL X 4   |              | ○   |
| PCA-RP50GA(2) X 4 | ○            |     |
| PCA-RP60GA X 4    |              | ○   |

### 4-1-3 MULTI DISTRIBUTION PIPE (OPTION)

|                        | Ratio of distributing | Part No.     |
|------------------------|-----------------------|--------------|
| Synchronized twin      | 50:50                 | MSDD-50WR-E  |
| Synchronized triple    | 33:33:33              | MSDT-111R-E  |
| Synchronized quadruple | 25:25:25:25           | MSDF-1111R-E |

## 4-2 FEATURES



**PUHZ-RP200YHA**  
**PUHZ-RP200YHA<sub>1</sub>**  
**PUHZ-RP250YHA**  
**PUHZ-RP250YHA<sub>1</sub>**

### CHARGELESS SYSTEM

#### PRE-CHARGED REFRIGERANT IS SUPPLIED FOR PIPING LENGTH AT SHIPMENT. (Max.30m)

The refrigerant circuit with LEV(Linear Expansion Valve) and accumulator always control the optimal refrigerant level regardless of the length (30m max. and 5m min.) of piping. The additional refrigerant charging work during installation often causes problems. Heretofore it is completely eliminated. This unique system improves the quality and reliability of the work done. It also helps to speed up the installation time.

# 5

# SPECIFICATIONS

| Service Ref.                         |  |  | PUHZ-RP200YHA<br>PUHZ-RP200YHA <sub>1</sub> |                  | PUHZ-RP250YHA<br>PUHZ-RP250YHA <sub>1</sub> |                 |
|--------------------------------------|--|--|---|------------------|---|-----------------|
| Mode                                 |  |  | Cooling                                     | Heating          | Cooling                                     | Heating         |
| Capacity                             |  |  | 64,800                                      | 76,400           | 75,000                                      | 92,100          |
|                                      |  |  | 19.0(10.0~22.4)                             | 22.4(10.0~25.0)  | 22.0(12.5~28.0)                             | 27.0(15.7~31.5) |
| Power supply (phase, cycle, voltage) |  |  | 3-ph, 50Hz, 400V (4wires)                   |                  |   |                 |
| Running current                      |  |  | A   | 10.0             | 10.4  | 11.5            |
| Max. current                         |  |  | A   | 24               |   | 24              |
| External finish                      |  |  | Munsell 3Y 7.8/1.1                          |                  |   |                 |
| Refrigerant control                  |  |  | Linear Expansion Valve                      |                  |   |                 |
| Compressor                           |  |  | Hermetic                                    |                  |   |                 |
| Model                                |  |  | ANV47FFBMT                                  |                  |   |                 |
| Motor output                         |  |  | kW  | 4.5              |   | 5.5             |
| Starter type                         |  |  | Line start                                  |                  |   |                 |
| Protection devices                   |  |  | HP switch, LP switch, Discharge thermo      |                  |   |                 |
| Crankcase heater                     |  |  | W   | —                |   |                 |
| Heat exchanger                       |  |  | Plate fin coil                              |                  |   |                 |
| Fan                                  |  |  | Propeller fan × 1                           |                  |   |                 |
| Fan(drive) × No.                     |  |  |   |                  |   |                 |
| Fan motor output                     |  |  | kW  | 0.635            |   |                 |
| Airflow                              |  |  | m <sup>3</sup> /min(CFM)                    | 150(5,300)       |   |                 |
| Defrost method                       |  |  | Reverse cycle                               |                  |   |                 |
| Noise level                          |  |  | Cooling                                     | dB               | 55  | 58              |
|                                      |  |  | Heating                                     | dB               | 56  | 58              |
| Dimensions                           |  |  | W   | mm(in.)          | 900(35-7/16)                                |                 |
|                                      |  |  | D   | mm(in.)          | 750(29-17/32)                               |                 |
|                                      |  |  | H   | mm(in.)          | 1,798(70-25/32)                             |                 |
| Weight                               |  |  | kg(lbs)                                     | 198(436)         |   |                 |
| Refrigerant                          |  |  | R410A                                       |                  |   |                 |
| Charge                               |  |  | kg(lbs)                                     | 10.5(23.1)       |   |                 |
| Oil (Model)                          |  |  | L   | 2.30(MEL56)      |   |                 |
| Pipe size O.D.                       |  |  | Liquid                                      | mm(in.)          | 9.52(3/8)                                   | 12.7(1/2)       |
|                                      |  |  | Gas   | mm(in.)          | 25.4(1)                                     | 28.58(1-1/8)    |
| Connection method                    |  |  | Indoor side                                 | Flared           |   |                 |
|                                      |  |  | Outdoor side                                | Flared & Brazing |   |                 |
| Between the indoor & outdoor unit    |  |  | Height difference                           | Max. 40m         |   |                 |
|                                      |  |  | Piping length                               | Max. 120m        |   |                 |

## 6-1. ELECTRICAL PARTS SPECIFICATIONS

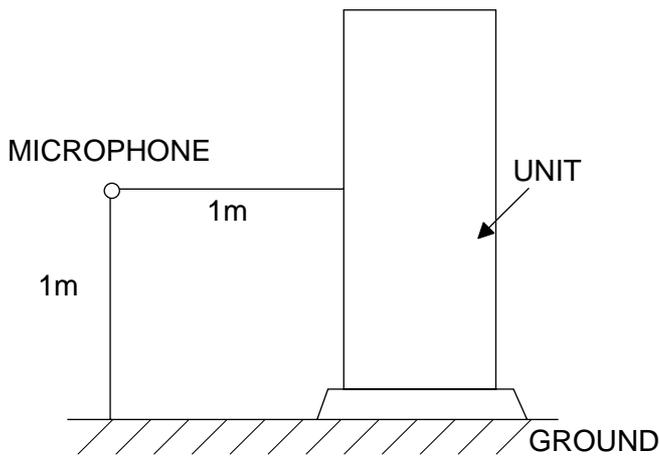
| Outdoor unit<br>Parts name                      | PUHZ-RP200YHA<br>PUHZ-RP250YHA  | PUHZ-RP200YHA <sub>1</sub><br>PUHZ-RP250YHA <sub>1</sub> |
|---|---|--|
| FUSE<br>(FUSE1,2)                               | 250V 15A  |  |
| FUSE<br>(F 3,4)                                 | 250V 6.3A   |  |
| Solenoid Valve<br>(Four-way Valve)              | VT60100   | STF0731Z   |
| Solenoid Valve Coil<br>(Four-way Valve)<br>21S4 | LB64 AC220~240V<br>(DM50G461)   | STF AC220~240V<br>(BG50T388)                             |
| Linear Expansion<br>Valve<br>(LEV-A)            | HAM-BD32<br>(0~480 Pulse)   |  |
| Linear Expansion<br>Valve Coil<br>(LEV-A)       | DC12V   |  |
| Solenoid Valve<br><Bypass Valve>                | VF20100   | FDF6A-008-RK   |
| Solenoid Valve Coil<br><Bypass Valve><br>(SV)   | LD2 AC220~240V  | AC220~240V   |
| Reactor<br>(DCL)                                | 2.7mH 25A   |  |
| High Pressure<br>Switch<br>(63H)                | OFF 3.60±0.2MPa<br>ON 2.80±0.15MPa  |  |
| Low Pressure<br>Switch<br>(63L)                 | OFF -0.03±0.03MPa<br>ON 0.05±0.04MPa  |  |
| Fan Motor<br>(MF)                               | 6P 635W ×1<br>PA6Y635-T   |  |
| Thermistor<br>(Outdoor Pipe)<br>(TH3, TH32)     | 0°C/15kΩ 10°C/9.6kΩ 20°C/6.3kΩ 25°C/5.4kΩ 30°C/4.3kΩ 40°C/3.0kΩ                               |  |
| Thermistor<br>(Discharge)<br>(TH4)              | 20°C/250kΩ 30°C/160kΩ 40°C/104kΩ 50°C/70kΩ 60°C/48kΩ 70°C/34kΩ 80°C/24kΩ 90°C/15kΩ 100°C/13kΩ |  |
| Thermistor<br>(Outdoor2-PhasePipe)<br>(TH6)     | 0°C/15kΩ 10°C/9.6kΩ 20°C/6.3kΩ 25°C/5.4kΩ 30°C/4.3kΩ 40°C/3.0kΩ                               |  |
| Thermistor<br>(Outdoor)<br>(TH7)                | 0°C/15kΩ 10°C/9.6kΩ 20°C/6.3kΩ 25°C/5.4kΩ 30°C/4.3kΩ 40°C/3.0kΩ                               |  |
| Terminal Block<br>(Power Supply)<br>(TB1)       | 5P<br>(L1, L2, L3, N, ⊕)  |  |
| Terminal Block<br>(Indoor / Outdoor)<br>(TB2)   | 3P<br>(S1, S2, S3)  |  |
| Main Smoothing Capacitor<br>(CB1, CB2)          | 2200μF 400V   |  |
| Rush Current<br>Protect Resister<br>(RS)        | 16Ω 30W   |  |
| Motor Compressor<br>(MC)                        | ANV47FFBMT  |  |

## 6-2. COMPRESSOR TECHNICAL DATA

(at 20°C)

|                        |     |   |
|------------------------|-----|---|
| Unit                   |     | PUHZ-RP200, 250YHA<br>PUHZ-RP200, 250YHA <sub>1</sub> |
| Compressor model       |     | ANV47FFBMT  |
| Winding Resistance (Ω) | U-V | 0.72  |
|                        | U-W | 0.72  |
|                        | W-V | 0.72  |

## 6-3. NOISE CRITERION CURVES

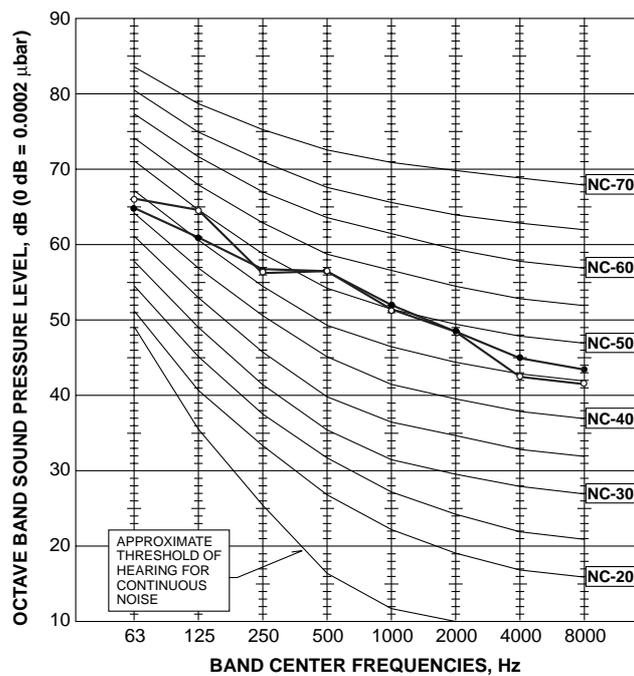
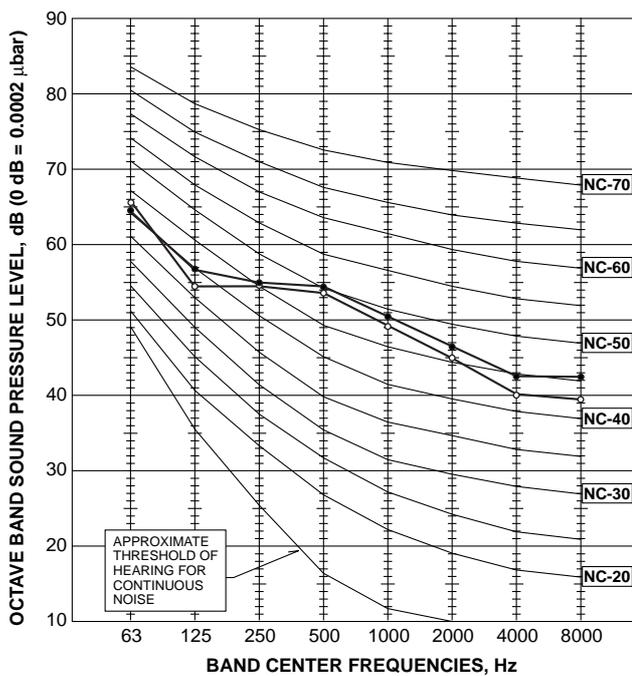


PUHZ-RP200YHA  
PUHZ-RP200YHA<sub>1</sub>

| MODE    | SPL(dB) | LINE |
|---------|---------|------|
| COOLING | 55.0    | ○—○  |
| HEATING | 56.0    | ●—●  |

PUHZ-RP250YHA  
PUHZ-RP250YHA<sub>1</sub>

| MODE    | SPL(dB) | LINE |
|---------|---------|------|
| COOLING | 58.0    | ○—○  |
| HEATING | 58.0    | ●—●  |



## 6-4. STANDARD OPERATION DATA

| Representative matching |                          |  |                               | PEH-RP200MYA                                |                | PEH-RP250MYA                                |                |      |
|-------------------------|--------------------------|--|-------------------------------|---|----------------|---|----------------|------|
| Mode                    |                          |  |                               | Cooling                                     | Heating        | Cooling                                     | Heating        |      |
| Electrical circuit      | Indoor unit              |  |                               | PEH-RP200MYA                                |                | PEH-RP250MYA                                |                |      |
|                         | Phase, Hz                |  |                               | 3, 50                                       |                | 3, 50                                       |                |      |
|                         | Volts                    |  | V                             | 400   |                | 400   |                |      |
|                         | Input                    |  | kW                            | 0.65  |                | 0.94  |                |      |
|                         | Current                  |  | A                             | 1.12  |                | 1.64  |                |      |
|                         | Outdoor unit             |  |                               | PUHZ-RP200YHA<br>PUHZ-RP200YHA <sub>1</sub> |                | PUHZ-RP250YHA<br>PUHZ-RP250YHA <sub>1</sub> |                |      |
|                         | Phase, Hz                |  |                               | 3, 50                                       |                | 3, 50                                       |                |      |
|                         | Volts                    |  | V                             | 400   |                | 400   |                |      |
|                         | Current                  |  | A                             | 10.63                                       | 10.15          | 12.01                                       | 11.98          |      |
| Refrigerant circuit     | Discharge pressure       |  | MPa<br>(kgf/cm <sup>2</sup> ) | 2.81<br>(28.7)                              | 2.59<br>(26.4) | 2.86<br>(29.2)                              | 2.27<br>(23.2) |      |
|                         | Suction pressure         |  | MPa<br>(kgf/cm <sup>2</sup> ) | 0.92<br>(9.4)                               | 0.69<br>(7.0)  | 0.96<br>(9.8)                               | 0.63<br>(6.4)  |      |
|                         | Discharge temreature     |  | °C                            | 73.0  | 71.3           | 70.2  | 67.1           |      |
|                         | Condensing temreature    |  | °C                            | 47.1  | 41.4           | 47.8  | 38.7           |      |
|                         | Suction temreature       |  | °C                            | 12.2  | 4.7            | 14.6  | 3.0            |      |
|                         | Ref. pipe length         |  | m                             | 5   | 5              | 5   | 5              |      |
| Indoor side             | Intake air temreature    |  | D.B.                          | °C  | 27             | 20  | 27             | 20   |
|                         |                          |  | W.B.                          | °C  | 19             | 15  | 19             | 15   |
|                         | Discharge air temreature |  | D.B.                          | °C  | 14.7           | 38.8  | 15.3           | 37.0 |
| Outdoor side            | Intake air temreature    |  | D.B.                          | °C  | 35             | 7   | 35             | 7    |
|                         |                          |  | W.B.                          | °C  | 24             | 6   | 24             | 6    |
| SHF                     |                          |  |                               | 0.75  | -              | 0.82  | -              |      |
| BF                      |                          |  |                               | 0.18  | -              | 0.15  | -              |      |

The unit of pressure has been changed to MPa based on international SI system.  
The conversion factor is : 1(MPa)=10.2(kgf/cm<sup>2</sup>)

## 6-5. ADJUSTING THE AMOUNT OF REFRIGERANT

<Table 2>

| Outdoor unit | permitted pipe length | At time of shipping (kg) | Amount of additional refrigerant charge (kg) |                  |                  |                  |                  |  |
|--------------|-----------------------|--------------------------|--|------------------|------------------|------------------|------------------|--|
|              |                       |                          | 30 m and less                                | 31-40 m and less | 41-50 m and less | 51-60 m and less | 61-70 m and less | 71-120 m and less  |
| RP200        | 120m or less          | 10.5                     | No additional charge necessary               | 0.9 kg           | 1.8 kg           | 2.7 kg           | 3.6 kg           | The additional charge amount is obtained by the following formula. |
| RP250        |                       | 10.5                     |  | 1.2 kg           | 2.4 kg           | 3.6 kg           | 4.8 kg           |  |

Calculate the additional charge amount based on the following procedure.

If the calculation results in an amount that is smaller than the "Additional charge amount for 70m," perform the additional charge using the amount shown in "Additional charge amount for 70m."

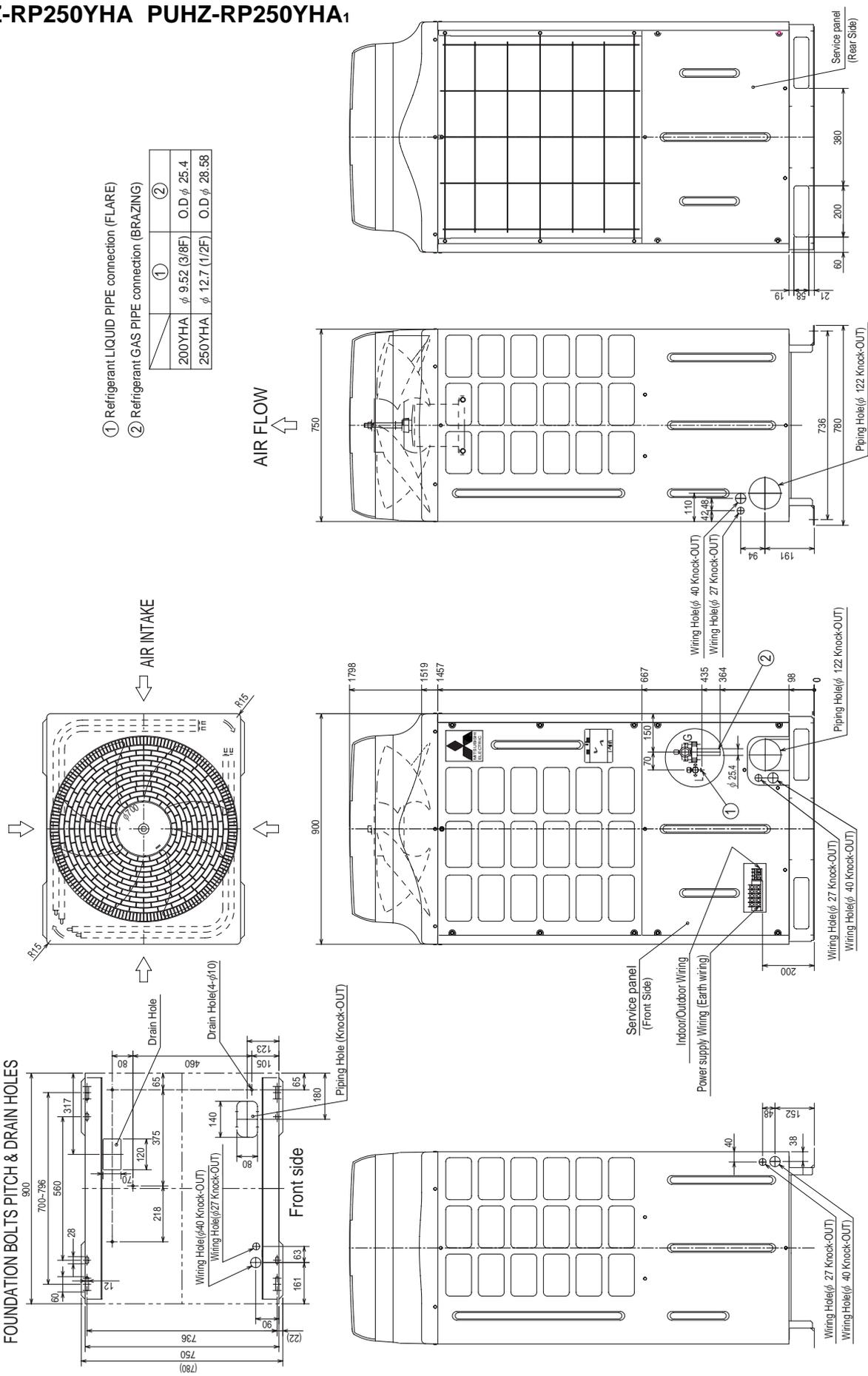
$$\begin{array}{|c|} \hline \text{Amount of additional charge [kg]} \\ \hline \end{array}
 = \begin{array}{|c|} \hline \text{Main piping:} \\ \text{Liquid line size} \\ \phi 12.7 \text{ over all length [m]} \\ \times 0.12 \text{ [kg/m]} \\ \hline \end{array}
 + \begin{array}{|c|} \hline \text{Main piping:} \\ \text{Liquid line size} \\ \phi 9.52 \text{ overall length [m]} \\ \times 0.09 \text{ [kg/m]} \\ \hline \end{array}
 + \begin{array}{|c|} \hline \text{Branch piping: Liquid} \\ \text{line size} \\ \phi 9.52 \text{ overall length [m]} \\ \times 0.06 \text{ [kg/m]} \\ \hline \end{array}
 + \begin{array}{|c|} \hline \text{Branch piping: Liquid} \\ \text{line size} \\ \phi 6.35 \text{ overall length [m]} \\ \times 0.02 \text{ [kg/m]} \\ \hline \end{array}
 - \begin{array}{|c|} \hline 3.6 \text{ (kg)} \\ \hline \end{array}$$

|                                   |       |        |
|-----------------------------------|-------|--------|
| Additional charge amount for 70 m | RP200 | 3.6 kg |
|                                   | RP250 | 4.8 kg |

PUHZ-RP200YHA PUHZ-RP200YHA<sub>1</sub>  
 PUHZ-RP250YHA PUHZ-RP250YHA<sub>1</sub>

Unit : mm

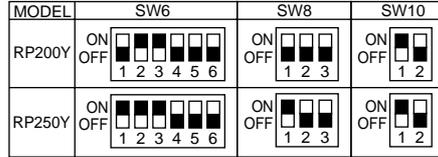
|  | ①             | ②           |
|--|---------------|-------------|
| ① Refrigerant LIQUID PIPE connection (FLARE) |               |             |
| 200YHA                                       | φ 9.52 (3/8F) | O.D φ 25.4  |
| 250YHA                                       | φ 12.7 (1/2F) | O.D φ 28.58 |



PUHZ-RP200YHA PUHZ-RP250YHA PUHZ-RP200YHA<sub>1</sub> PUHZ-RP250YHA<sub>1</sub>

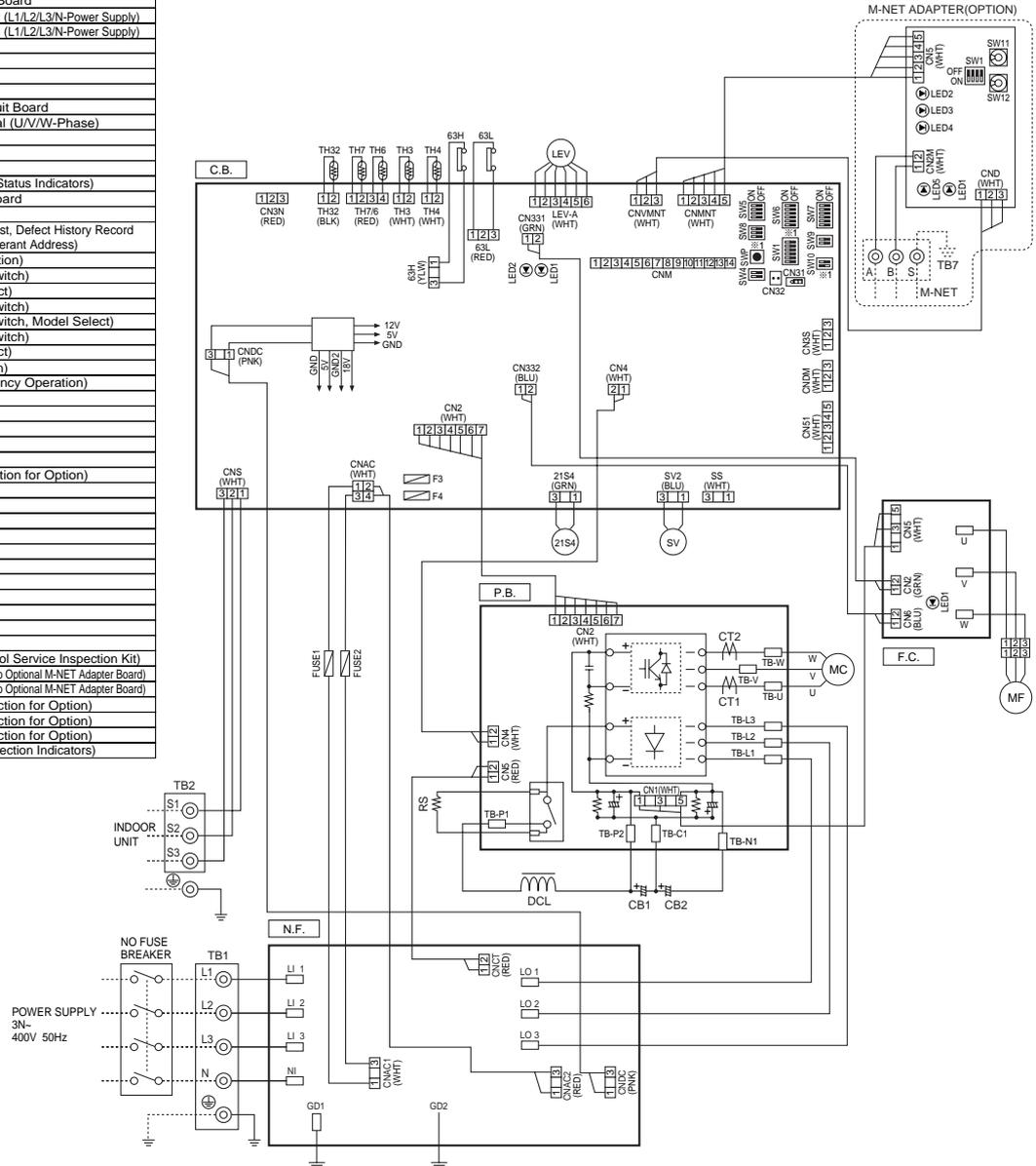
| SYMBOL        | NAME  |
|---------------|---|
| TB1           | Terminal Block (Power Supply)                       |
| TB2           | Terminal Block (Indoor/Outdoor)                     |
| MC            | Motor Compressor                                    |
| MF            | Fan Motor   |
| 21S4          | Solenoid Valve (Four-Way Valve)                     |
| SV            | Solenoid Valve (Bypass Valve)                       |
| 63H           | High Pressure Switch                                |
| 63L           | Low Pressure Switch                                 |
| TH3           | Thermistor (Outdoor Pipe)                           |
| TH32          | Thermistor (Outdoor Pipe)                           |
| TH4           | Thermistor (Discharge)                              |
| TH6           | Thermistor (Outdoor 2-Phase Pipe)                   |
| TH7           | Thermistor (Outdoor)                                |
| LEV           | Linear Expansion Valve                              |
| DCL           | Reactor   |
| CB1, CB2      | Main Smoothing Capacitor                            |
| RS            | Rush Current Protect Resistor                       |
| FUSE1, FUSE2  | FUSE (15 A)   |
| P.B.          | Power Circuit Board                                 |
| TB-U/V/W      | Connection Terminal (U/V/W-Phase)                   |
| TB-L1/L2/L3   | Connection Terminal (L1/L2/L3-Power Supply)         |
| TB-P1         | Connection Terminal                                 |
| TB-P2         | Connection Terminal                                 |
| TB-C1         | Connection Terminal                                 |
| TB-N1         | Connection Terminal                                 |
| CT1, CT2      | Current Trans                                       |
| CN1           | Connector   |
| CN2           | Connector   |
| CN4           | Connector   |
| CN5           | Connector   |
| N.F.          | Noise Filter Circuit Board                          |
| L1/L2/L3/N    | Connection Terminal (L1/L2/L3/N-Power Supply)       |
| L0/L02/L03/N0 | Connection Terminal (L1/L2/L3/N-Power Supply)       |
| CNAC1         | Connector   |
| CNAC2         | Connector   |
| CNCT          | Connector   |
| CNDC          | Connector   |
| F.C.          | Fan Controller Circuit Board                        |
| U/V/W         | Connection Terminal (U/V/W-Phase)                   |
| CN2           | Connector   |
| CN5           | Connector   |
| CN6           | Connector   |
| LED1          | LED (MF Operation Status Indicators)                |
| C.B.          | Controller Circuit Board                            |
| F3, F4        | FUSE (6.3 A)  |
| SW1           | Switch (Test Operation)                             |
| SW4           | Switch (Test Operation)                             |
| SW5           | Switch (Function Switch)                            |
| SW6           | Switch (Model Select)                               |
| SW7           | Switch (Function Switch)                            |
| SW8           | Switch (Function Switch, Model Select)              |
| SW9           | Switch (Function Switch)                            |
| SW10          | Switch (Model Select)                               |
| SWP           | Switch (Pump Down)                                  |
| CN31          | Connector (Emergency Operation)                     |
| CNAC          | Connector   |
| CNS           | Connector   |
| CNDC          | Connector   |
| 21S4          | Connector   |
| SV2           | Connector   |
| SS            | Connector (Connection for Option)                   |
| CN2           | Connector   |
| CN4           | Connector   |
| CN331         | Connector   |
| CN332         | Connector   |
| LEV-A         | Connector   |
| 63H           | Connector   |
| 63L           | Connector   |
| TH3           | Connector   |
| TH4           | Connector   |
| TH7/6         | Connector   |
| TH32          | Connector   |
| CNM           | Connector (A-Control Service Inspection Kit)        |
| CNMNT         | Connector (Connect to Optional M-NET Adapter Board) |
| CN3S          | Connector (Connection for Option)                   |
| CNDM          | Connector (Connection for Option)                   |
| CN51          | Connector (Connection for Option)                   |
| LED1, LED2    | LED (Operation Inspection Indicators)               |

※1 MODEL SELECT



M-NET ADAPTER

| SYMBOL | NAME                               |
|--------|------------------------------------|
| TB7    | Terminal Block (M-NET connection)  |
| CN5    | Connector (Transmission)           |
| CND    | Connector (Power Supply)           |
| CN2M   | Connector (M-NET communication)    |
| SW1    | Switch (Status of communication)   |
| SW11   | Switch (Address setting:1st digit) |
| SW12   | Switch (Address setting:2nd digit) |
| LED1   | LED (Power Supply:DC5V)            |
| LED2   | LED (Connection to Outdoor Unit)   |
| LED3   | LED (Transmission:Sending)         |
| LED4   | LED (Transmission:Receiving)       |
| LED5   | LED (Power Supply:DC 12V)          |

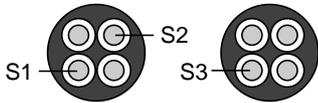


### WIRING SPECIFICATIONS FOR 220V-240V 50Hz (INDOOR - OUTDOOR CONNECTING CABLE)

The cable shall not be lighter than design 245 IEC or 227 IEC.

When cable length is 30m or more.

Use one cable for S1 and S2 and another for S3 as shown in the picture.



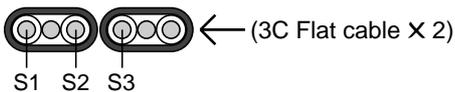
wire size :  
cable length 50m : 4mm<sup>2</sup>  
cable length 80m : 6mm<sup>2</sup>

The cable length may vary depending on the condition of installation, humidity or materials, etc.

| Cross section of cable | Wire size (mm <sup>2</sup> ) | Number of wires | Polarity   | L(m) *5              |
|------------------------|------------------------------|-----------------|--|----------------------|
| Round<br>              | 2.5                          | 3               | Clockwise : S1-S2-S3   | (30)<br>*1           |
| Flat<br>               | 2.5                          | 3               | Not applicable<br>(Because center wire has no cover finish)          | Not applicable<br>*2 |
| Flat<br>               | 1.5                          | 4               | From left to right : S1-Open-S2-S3                                   | (18)<br>*3           |
| Round<br>              | 2.5                          | 4               | Clockwise : S1-S2-S3-Open<br>Connect S1 and S3 to the opposite angle | 30<br>*4             |

\*1 : In case that cable with stripe of yellow and green is available.

\*2 : In the flat cables are connected as this picture, they can be used up to 30m.



\*3 : In case of regular polarity connection (S1-S2-S3), wire size is 1.5mm<sup>2</sup>.

\*4 : In case of regular polarity connection (S1-S2-S3).

\*5 : Mentioned cable length is just a reference value.

It may be different depending on the condition of installation, humidity or materials, etc.

Be sure to connect the indoor-outdoor connecting cables directly to the units (no intermediate connections).

Intermediate connections can lead to communication errors if water enters the cables and causes insufficient insulation to ground or a poor electrical contact at the intermediate connection point.

(If an intermediate connection is necessary, be sure to take measures to prevent water from entering the cables.)

If the wiring connecting the indoor and outdoor units is longer than 80m, use separate indoor / outdoor unit power supplies. (Refer to 10-2.)

10-1. FIELD ELECTRICAL WIRING (POWER WIRING SPECIFICATIONS)

|   |                                 |  |
|---|---------------------------------|--|
| Indoor unit model                         |                                 | RP200, 250   |
| Outdoor unit Power supply                 | Phase                           | 3N-(3ph 4-wires), 50Hz,  |
|   | Frequency & Voltage             | 380-400-415V   |
| Max. Permissive System Impedance (Ω)      |                                 | 0.25   |
| Outdoor unit input capacity               |                                 | *1 32A   |
| Main switch (Breaker)                     |                                 |  |
| Wiring Wire No. x size (mm <sup>2</sup> ) | Outdoor unit power supply       | 4 x Min. 6   |
|   | Outdoor unit power supply earth | 1 x Min. 6   |
|   | Indoor unit-Outdoor unit        | *2 Cable length 50 m : 3 x 4 (Polar) / Cable length 80 m : 3 x 6 (Polar) |
|   | Indoor unit-Outdoor unit earth  | 1 x Min. 2.5   |
| Circuit rating                            | Remote controller-Indoor unit   | *3 2 x 0.69 (Non-polar)  |
|   | Outdoor unit L1-N, L2-N, L3-N   | AC 220-230-240V  |
|   | Indoor unit-Outdoor unit S1-S2  | *4 AC 220-230-240V   |
|   | Indoor unit-Outdoor unit S2-S3  | *4 DC24V   |
| Remote controller-Indoor unit             |                                 | *4 DC12V   |

\*1. A breaker with at least 3 mm contact separation in each pole shall be provided. Use non-fuse breaker (NF) or earth leakage breaker (NV).

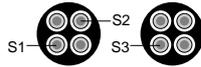
\*2. Max. 80 m Total Ma including all indoor/ indoor connection is 80 m.

· Use one cable for S1 and S2 and another for S3 as shown in the picture.

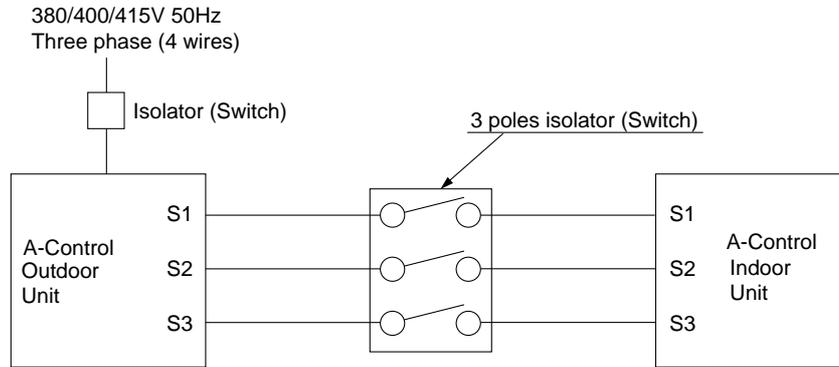
\*3. A 10 m wire is attached in the remote controller accessory.

\*4. The voltage are NOT against the ground.

S3 terminal has DC 24 V against S2 terminal. However between S3 and S1, these terminals are not electrically insulated by the transformer or other device.



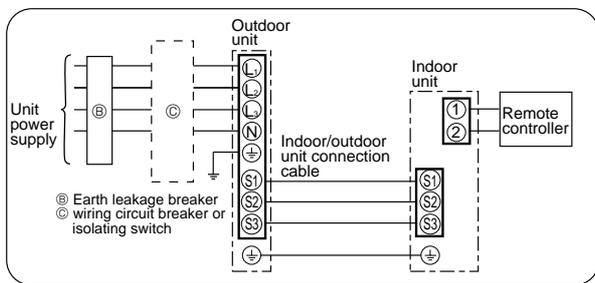
- Notes: 1. Wiring size must comply with the applicable local and national code.  
 2. Power supply cords and Indoor unit/Outdoor unit connecting cords shall not be lighter than polychloroprene sheathed flexible cord. (Design 245 IEC 57)  
 3. Use an earth wire which is longer than the other cords so that it will not become disconnected when tension is applied. The earth wire should also be thicker than the power supply cord so that it can stand any surge of electricity when trouble occurs.



Warning:

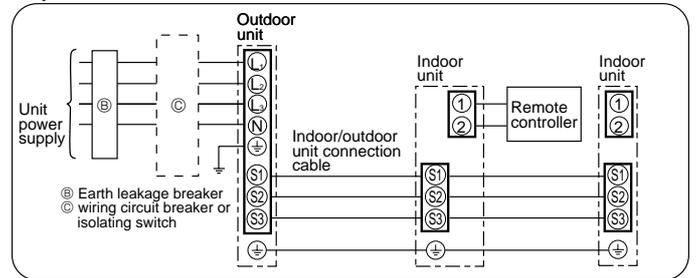
In case of A-control wiring, there is high voltage potential on the S3 terminal caused by electrical circuit design that has no electrical insulation between power line and communication signal line. Therefore, please turn off the main power supply when servicing. And do not touch the S1, S2, S3 terminals when the power is energized. If isolator should be used between indoor unit and outdoor unit, please use 3-pole type.

1:1 system

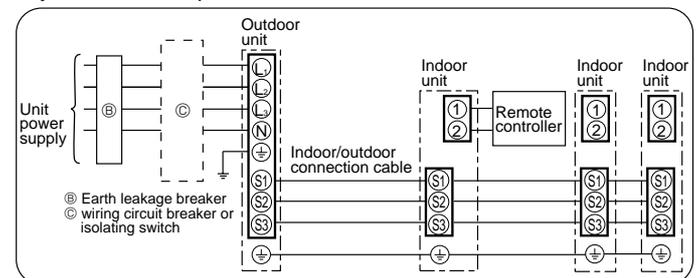


Synchronized twin and triple system Electrical wiring

• Synchronized twin



• Synchronized triple



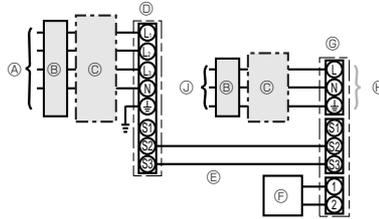
## 10-2. SEPARATE INDOOR UNIT/ OUTDOOR UNIT POWER SUPPLIES

The following connection patterns are available.  
The outdoor unit power supply patterns vary on models.

### 1:1 System

<For models without heater>

\* The optional indoor power supply terminal kit is required.



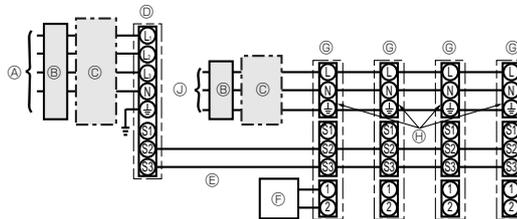
- Ⓐ Outdoor unit power supply
- Ⓑ Earth leakage breaker
- Ⓒ Wiring circuit breaker or isolating switch
- Ⓓ Outdoor unit
- Ⓔ Indoor unit/outdoor unit connecting cords
- Ⓕ Remote controller
- Ⓖ Indoor unit
- Ⓗ Option
- Ⓘ Indoor unit power supply

\* Affix a label B that is included with the manuals near each wiring diagram for the indoor and outdoor units.

### Simultaneous twin/triple/four system

<For models without heater>

\* The optional indoor power supply terminal kits are required.



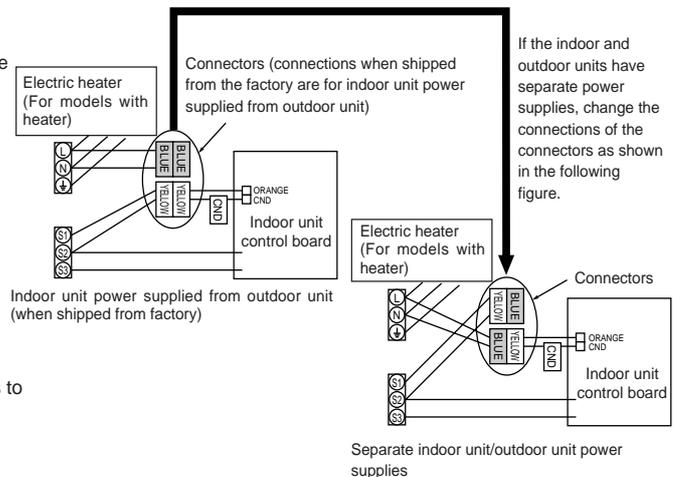
- Ⓐ Outdoor unit power supply
- Ⓑ Earth leakage breaker
- Ⓒ Wiring circuit breaker or isolating switch
- Ⓓ Outdoor unit
- Ⓔ Indoor unit/outdoor unit connecting cords
- Ⓕ Remote controller
- Ⓖ Indoor unit
- Ⓗ Option
- Ⓘ Indoor unit power supply

\* Affix a label B that is included with the manuals near each wiring diagram for the indoor and outdoor units.

If the indoor and outdoor units have separate power supplies, refer to the table at the below. If the optional indoor power supply terminal kit is used, change the indoor unit electrical box wiring referring to the figure in the right and the DIP switch settings of the outdoor unit control board.

|   | Indoor unit specifications   |    |   |  |   |     |   |   |  |
|---|--|----|---|--|---|-----|---|---|--|
| Indoor power supply terminal kit (option)   | Required   |    |   |  |   |     |   |   |  |
| Indoor unit electrical box connector connection change  | Required   |    |   |  |   |     |   |   |  |
| Label affixed near each wiring diagram for the indoor and outdoor units                             | Required   |    |   |  |   |     |   |   |  |
| Outdoor unit DIP switch settings (when using separate indoor unit/outdoor unit power supplies only) | <table border="1" style="display: inline-table;"> <tr> <td>ON</td> <td></td> <td></td> <td>3</td> </tr> <tr> <td>OFF</td> <td>1</td> <td>2</td> <td></td> </tr> </table> (SW8) | ON |   |  | 3 | OFF | 1 | 2 |  |
| ON  |  |    | 3 |  |   |     |   |   |  |
| OFF   | 1  | 2  |   |  |   |     |   |   |  |

\* There are three types of labels (labels A, B, and C). Affix the appropriate labels to the units according to the wiring method.



|   |                                |                           |                     |
|---|--------------------------------|---------------------------|---------------------|
| Indoor unit model                         |                                | RP35~140                  |                     |
| Indoor unit power supply                  |                                | ~N (single), 50 Hz, 230 V |                     |
| Indoor unit input capacity                |                                | 16 A                      |                     |
| Main switch (Breaker)                     | *1                             |                           |                     |
| Wiring Wire No. x size (mm <sup>2</sup> ) | Indoor unit power supply       | 2 × Min. 1.5              |                     |
|   | Indoor unit power supply earth | 1 × Min. 1.5              |                     |
|   | Indoor unit-Outdoor unit       | 2 × Min. 0.3              |                     |
|   | Indoor unit-Outdoor unit earth | -                         |                     |
|   | Remote controller-Indoor unit  | *3                        | 2 × 0.3 (Non-polar) |
| Circuit rating                            | Indoor unit L-N                | *4                        | AC 230 V            |
|   | Indoor unit-Outdoor unit S1-S2 | *4                        | -                   |
|   | Indoor unit-Outdoor unit S2-S3 | *4                        | DC24 V              |
|   | Remote controller-Indoor unit  | *4                        | DC12 V              |

\*1. A breaker with at least 3 mm contact separation in each pole shall be provided. Use non-fuse breaker (NF) or earth leakage breaker (NV).

\*2. Max. 120 m

\*3. The 10 m wire is attached in the remote controller accessory. Max. 500 m

\*4. The figures are NOT always against the ground.

Notes: 1. Wiring size must comply with the applicable local and national code.

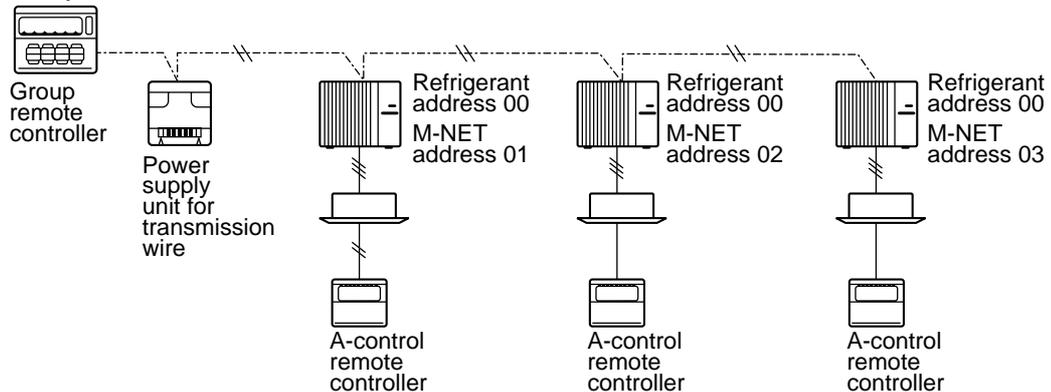
2. Power supply cords and indoor unit/outdoor unit connecting cords shall not be lighter than polychloroprene sheathed flexible cord. (Design 245 IEC 57)

3. Install an earth longer than other cables.

### 10-3. M-NET WIRING METHOD

(Points to notice)

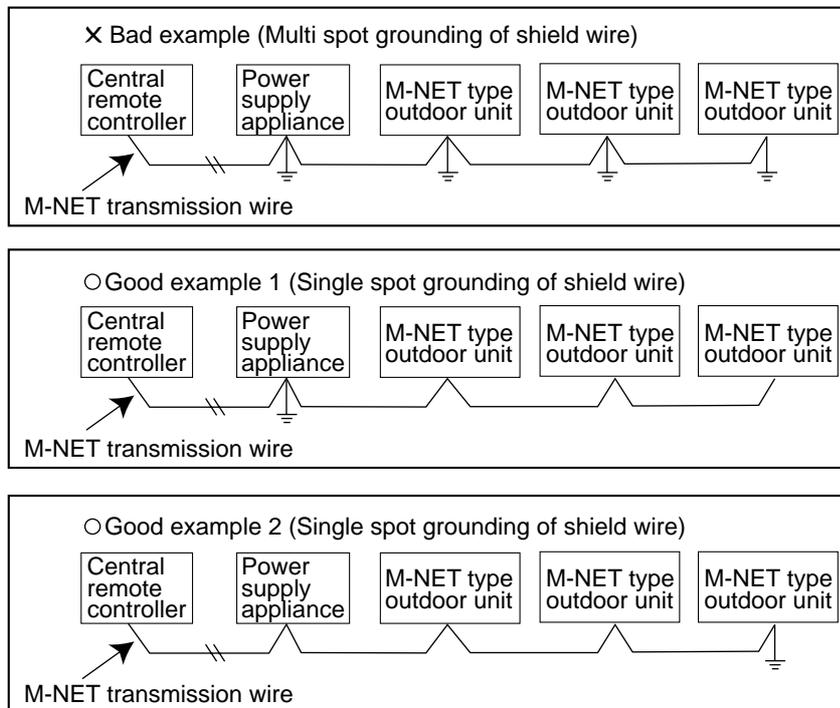
- (1) Outside the unit, transmission wires should stay away from electric wires in order to prevent electromagnetic noise from making an influence on the signal communication. Place them at intervals of more than 5cm. Do not put them in the same conduit tube.
- (2) Terminal block (TB7) for transmission wires should never be connected to 220~240V power supply. If it is connected, electronic parts on M-NET p.c. board may be burn out.
- (3) Use 2-core x 1.25mm<sup>2</sup> shield wire (CVVS, CPEVS) for the transmission wire. Transmission signals may not be sent or received normally if different types of transmission wires are put together in the same multi-conductor cable. Never do this because this may cause a malfunction.



It would be ok if M-NET wire (non-polar, 2-cores) is arranged in addition to the wiring for A-control.

- (4) Ground only one of any appliances through M-NET transmission wire (shield wire). Communication error may occur due to the influence of electromagnetic noise.

“Ed” error will appear on the LED display of outdoor unit.  
 “0403” error will appear on the central-control remote controller.

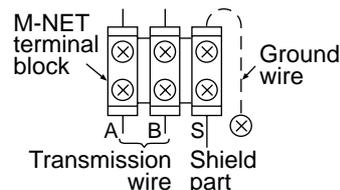


If there are more than two grounding spots on the shield wire, noise may enter into the shield wire because the ground wire and shield wire form one circuit and the electric potential difference occurs due to the impedance difference among grounding spots. In case of single spot grounding, noise does not enter into the shield wire because the ground wire and shield wire do not form one circuit.

To avoid communication errors caused by noise, make sure to observe the single spot grounding method described in the installation manual.

### ● M-NET wiring

- (1) Use 2-core x 1.25mm<sup>2</sup> shield wire for electric wires.  
(Excluding the case connecting to system controller.)
- (2) Connect the wire to the M-NET terminal block. Connect one core of the transmission wire (non-polar) to A terminal and the other to B. Peel the shield wire, twist the shield part to a string and connect it to S terminal.
- (3) In the system which several outdoor units are being connected, the terminal (A, B, S) on M-NET terminal block should be individually wired to the other outdoor unit's terminal, i.e. A to A, B to B and S to S. In this case, choose one of those outdoor units and drive a screw to fix an ground wire on the plate as shown on the right figure.



### 10-3-1. M-NET address setting

In A-control models, M-NET address and refrigerant address should be set only for the outdoor unit. Similar to Free Combo system, there is no need to set the address of outdoor unit and remote controller. To construct a central control system, the setting of M-NET address should be conducted only upon the outdoor unit. The setting range should be 1 to 50 (the same as that of the indoor unit in Free Combo system), and the address number should be consecutively set in a same group.

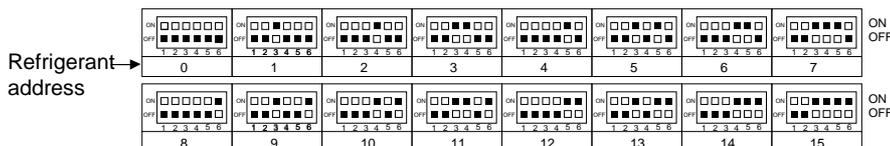
Address number can be set by using rotary switches (SW11 for ones digit and SW12 for tens digit), which is located on the M-NET p.c. board of outdoor unit. (Factory setting: all addresses are set to "0".)

<Setting example>

| M-NET Address No. | 1                  | 2                  | ... | 50                 |
|-------------------|--------------------|--------------------|-----|--------------------|
| Switng setting    | SW11 ones digit: 1 | SW11 ones digit: 2 | ~   | SW11 ones digit: 0 |
|                   | SW12 tens digit: 0 | SW12 tens digit: 0 |     | SW12 tens digit: 5 |

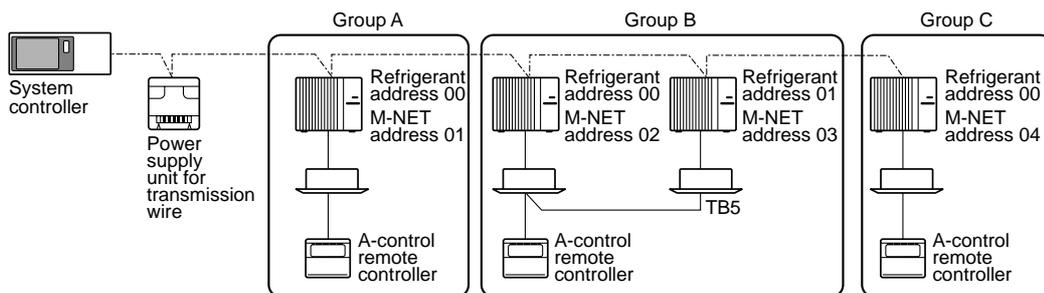
### 10-3-2. Refrigerant address setting

In case of multiple grouping system (multiple refrigerant circuits in one group), indoor units should be connected by remote controller wiring (TB5) and the refrigerant address needs to be set. Leave the refrigerant addresses to "00" if the group setting is not conducted. Set the refrigerant address by using DIP SW1-3 to -6 on the outdoor controller circuit board. [Factory setting: all switches are OFF. (All refrigerant addresses are "00".)]

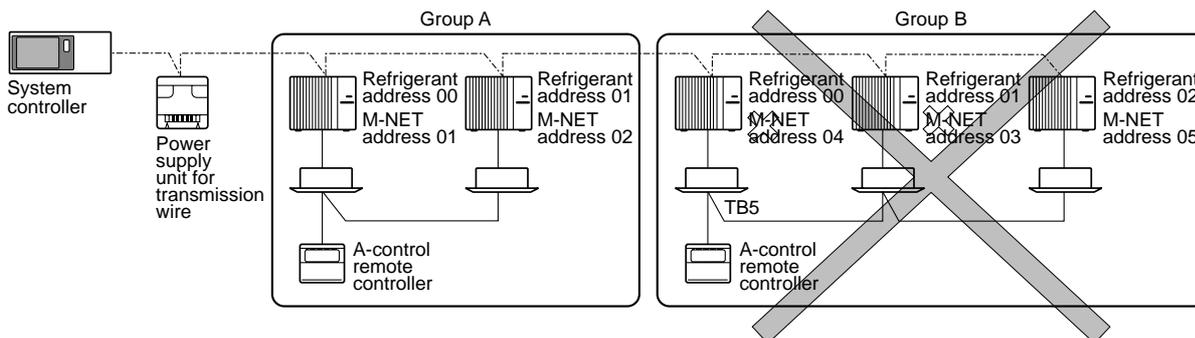


### 10-3-3. Regulations in address settings

In case of multiple grouping system, M-NET and refrigerant address settings should be done as explained in the above section. Set the lowest number in the group for the outdoor unit whose refrigerant address is "00" as its M-NET address.



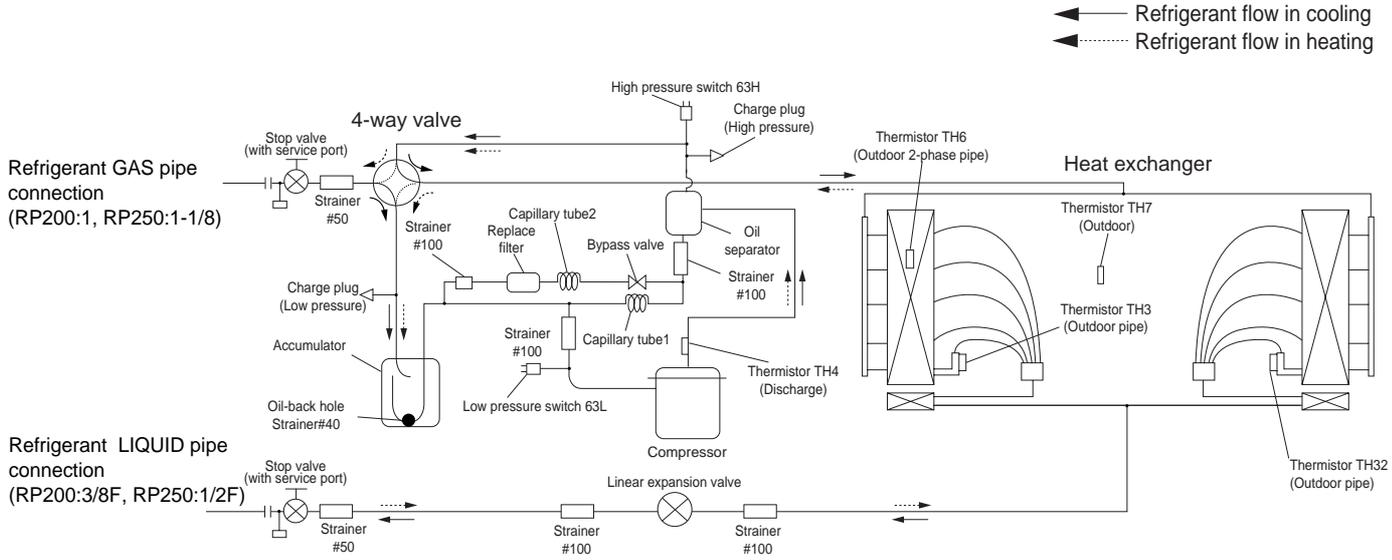
\* Refrigerant addresses can be overlapped if they are in the different group.



\* In group B, M-NET address of the outdoor unit whose refrigerant address is "00" is not set to the minimum in the group. As "3" is right for this situation, the setting is wrong. Taking group A as a good sample, set the minimum M-NET address in the group for the outdoor unit whose refrigerant address is "00".

# 11 REFRIGERANT SYSTEM DIAGRAM

**PUHZ-RP200YHA    PUAZ-RP200YHA<sub>1</sub>**  
**PUHZ-RP250YHA    PUAZ-RP250YHA<sub>1</sub>**



## Refrigerant collecting (pump down)

Perform the following procedures to collect the refrigerant when moving the indoor unit or the outdoor unit.

- ① Before collecting the refrigerant, first make sure that all of the SW5 DIP switches for function changes on the control board of the outdoor unit are set to OFF. If all of the SW5 switches are not set to OFF, record the settings and then set all of the switches to OFF. Start collecting the refrigerant. After moving the unit to a new location and completing the test run, set the SW5 switches to the previously recorded settings.
- ② Supply power (circuit breaker).
  - \* When power is supplied, make sure that "CENTRALLY CONTROLLED" is not displayed on the remote controller. If "CENTRALLY CONTROLLED" is displayed, the refrigerant collecting (pump down) cannot be completed normally.
- ③ After the liquid stop valve is closed, set the SWP switch on the control board of the outdoor unit to ON. The compressor (outdoor unit) and ventilators (indoor and outdoor units) start operating and refrigerant collecting operation begins. LED1 and LED2 on the control board of the outdoor unit are lit.
  - \* Set the SWP switch (push-button type) to ON in order to perform refrigerant collecting operation only when the unit is stopped. However, refrigerant collecting operation cannot be performed until compressor stops even if the unit is stopped. Wait three minutes until compressor is completely stopped and set the SWP switch to ON again.
- ④ As the unit automatically stops after two or three minutes of refrigerant collecting operation (LED1 if not lit and LED2 is lit), be sure to quickly close the gas stop valve. If the unit stops while both LED1 and LED2 are lit, open the liquid valve completely, wait three minutes, then repeat the step ③.
  - \* If the refrigerant collecting operation has been completed normally (LED1 and LED2 are lit), the unit will remain stopped until the power supply is turned off.
- ⑤ Turn off the power supply (circuit breaker).
  - \* Note that when the length of the extension piping is long, it may not be possible to perform a pump-down operation. When performing the pump-down operation, make sure that the low pressure is lowered to near 0 MPa (gauge).

## Unit replacement operation

- This model will automatically begin the replacement operation after it has been installed when it enters the initialization phase for normal heating or cooling. However, the unit will not automatically perform the replacement operation if it is moved to a new location where it will be used with existing R22 refrigerant piping. Under such conditions, always use the SW8-2 operations to perform the replacement operation before beginning the test operation. Some models can perform the replacement operation only by SW8-2 operation. Refer to the outdoor unit's Installation Manual for detail.

### Replacement operation procedures (When moving the unit and connecting it to existing R22 piping.)

- ① Supply power.
- ② Set DIP switch SW8-2 on the control board of the outdoor unit to ON to start replacement operation.
  - \* The replacement operation is performed using the cooling system. Cool air will flow from the indoor unit during the replacement operation.
  - \* During the replacement operation, **REPLN** is displayed on the remote controller and LED1 and LED2 on the control board of the outdoor unit flash together.
- ③ The duration of the replacement operation is determined by the length of the piping. Always perform the replacement operation for longer than the stipulated time.
  - \* Always perform one of the following operations at the completion of the replacement operation. The replacement operation will end and the unit will automatically stop.

- (1) Set SW8-2 from ON to OFF. (When ending a replacement operation of less than 2 hours.)

- Each time SW8-2 is set from OFF to ON, the replacement operation can be started. Always perform the replacement operation for longer than the stipulated time.

Required replacement operation times

| Piping Length   | Replacement Operation Time |
|-----------------|----------------------------|
| 0 to 20 meters  | 30 minutes or more         |
| 21 to 30 meters | 45 minutes or more         |
| 31 to 70 meters | 60 minutes or more         |

- (2) The replacement operation will automatically stop after 2 hours. (It will end with SW8-2 still in the ON position.)

- When the replacement operation has ended automatically after 2 hours of operation, there is no need to set SW8-2 from ON to OFF; normal air conditioning operations can be started with the SW8-2 being set to ON. However, to repeat the replacement operation, SW8-2 will have to be returned to OFF and then set to ON.

- \* If the indoor temperature is below 15°C, the compressor will operate intermittently but the unit is not faulty.

## Start and finish of test run

### • Operation from the indoor unit

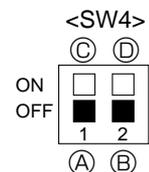
Execute the test run using the installation manual for the indoor unit.

### • Operation from the outdoor unit

By using the DIP switch SW4 on the control board of the outdoor unit, test run can be started and finished, and its operation mode (cooling/heating) can be set up.

- ① Set the operation mode (cooling/heating) using SW4-2.
- ② Turn on SW4-1 to start test run with the operation mode set by SW4-2.
- ③ Turn off SW4-1 to finish the test run.

- There may be a faint knocking sound around the machine room after power is supplied, but this is no problem with product because the linear expansion pipe is just moving to adjust opening pulse.
- There may be a knocking sound around the machine room for several seconds after compressor starts operating, but this is no problem with product because the check valve, itself, generates the sound because pressure difference is small in the refrigerant circuit.



- Ⓐ Stop      Ⓒ operation  
Ⓑ Cooling    Ⓓ Heating

### Note:

**The operation mode cannot be changed by SW4-2 during test run. (To change test run mode, stop the unit by SW4-1, change the operation mode and restart the test run by SW4-1.)**

### 12-1. TROUBLESHOOTING

#### <Error code display by self-diagnosis and actions to be taken for service (summary)>

Present and past error codes are logged and displayed on the wired remote controller and control board of outdoor unit. Actions to be taken for service, which depends on whether or not the inferior phenomenon is reoccurring at service, are summarized in the table below. Check the contents below before investigating details.

| Unit conditions at service                  | Error code    | Actions to be taken for service (summary)  |
|---|---------------|--|
| The inferior phenomenon is reoccurring.     | Displayed     | Judge what is wrong and take a corrective action according to "12-4. Self-diagnosis action table".   |
|   | Not displayed | Conduct trouble shooting and ascertain the cause of the inferior phenomenon according to "12-5. Troubleshooting by inferior phenomena".  |
| The inferior phenomenon is not reoccurring. | Logged        | ①Consider the temporary defects such as the work of protection devices in the refrigerant circuit including compressor, poor connection of wiring, noise and etc. Re-check the symptom, and check the installation environment, refrigerant amount, weather when the inferior phenomenon occurred, matters related to wiring and etc.<br>②Reset error code logs and restart the unit after finishing service.<br>③There is no abnormality concerning of parts such as electrical component, controller board, remote controller and etc. |
|   | Not logged    | ①Re-check the abnormal symptom.<br>②Conduct trouble shooting and ascertain the cause of the inferior phenomenon according to "12-5. Troubleshooting by inferior phenomena".<br>③Continue to operate unit for the time being if the cause is not ascertained.<br>④There is no abnormality concerning of parts such as electrical component, controller board, remote controller and etc.  |

### 12-2. CHECK POINT UNDER TEST RUN

#### (1) Before test run

- After installation of indoor and outdoor units, piping work and electric wiring work, re-check that there is no refrigerant leakage, loosened connections and incorrect polarity.
- Measure impedance between the ground and the power supply terminal block(L, N) on the outdoor unit by 500V Merger and check that it is 1.0MΩ or over.

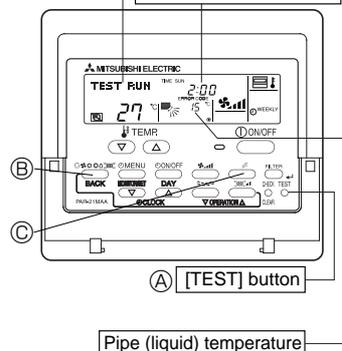
\*Don't use 500V Merger to indoor/outdoor connecting wire terminal block(S1, S2, S3) and remote controller terminal block (1, 2). This may cause malfunction.

- Make sure that test run switch (SW4) is set to OFF before turning on power supply.
- Turn on power supply twelve hours before test run in order to protect compressor.
- For specific models which requires higher ceiling settings or auto-recovery feature from power failure, make proper changes of settings referring to the description of "Selection of Functions through Remote Controller".

Make sure to read operation manual before test run. (Especially items to secure safety.)

"TEST RUN" and the currently selected operation mode are displayed alternately.

Displays the remaining test run time.



### Operating procedures

|   |   |
|---|---|
| 1. Turn on the main power supply.                               | While the room temperature display on the remote controller is "PLEASE WAIT", the remote controller is disabled. Wait until "PLEASE WAIT" disappears before using remote controller. "PLEASE WAIT" appears for about 2 minutes after power supply is turned on. *1  |
| 2. Press (A) [TEST] button twice.                               | The [TEST RUN] appears on the screen.   |
| 3. Press (B) [OPERATION SWITCH] button.                         | Cooling mode: Check if cool air blows and water is drained.<br>Heating mode: Check if warm air blows. (It takes a little while until warm air blows.)   |
| 4. Press (C) [AIR DIRECTION] button.                            | Check for correct motion of auto-vanes.   |
| 5. Check the outdoor unit fan for correct running.              | The outdoor unit features automatic capacity control to provide optimum fan speeds. Therefore, the fan keeps running at a low speed to meet the current outside air condition unless it exceeds its available maximum power. Then, in actuality, the fan may stop or run in the reverse direction depending on the outside air, but this does not mean malfunction. |
| 6. Press the [ON/OFF] button to reset the test run in progress. |   |
| 7. Register the contact number.                                 |   |

- In case of test run, the OFF timer will be activated, and the test run will automatically stop after two hours.
- The room temperature display section shows the pipe temperature of indoor units during the test run.
- Check that all the indoor units are running properly in case of simultaneous twin and triple operation. Malfunctions may not be displayed regardless of incorrect wiring.

\*1 After turning on the power supply, the system will go into startup mode, "PLEASE WAIT" will blink on the display section of the room temperature, and lamp(green) of the remote controller will flash.

As to INDOOR BOARD LED, LED1 will be lit up, LED2 will either be lit up in case the address is 0 or turned off in case the address is not 0. LED3 will blink.

As to OUTDOOR BOARD LED, LED1(green) and LED2(red) will light up. (After the startup mode of the system finishes, LED2(red) will be turned off.)

In case OUTDOOR BOARD LED is digital display, and will be displayed alternately every second.

- If one of the above operations doesn't function correctly, the causes written below should be considered. Find causes from the symptoms.

The below symptoms are under test run mode. "startup" in the table means the display status of \*1 written above.

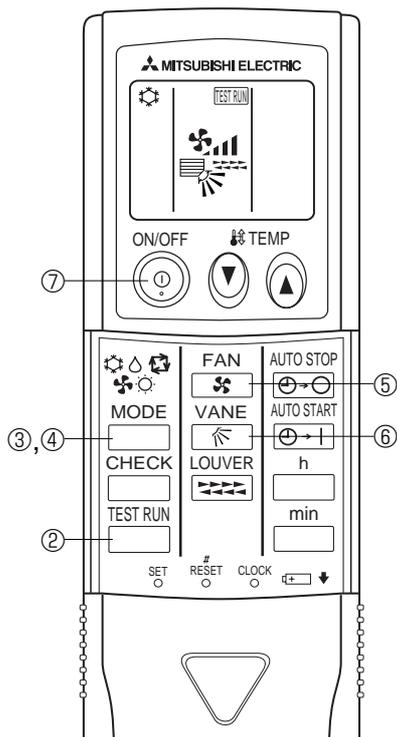
| Symptoms in test run mode   |  | Cause  |
|---|--|--|
| Remote Controller Display   | OUTDOOR BOARD LED Display<br>< > indicates digital display.                              |  |
| Remote controller displays "PLEASE WAIT", and cannot be operated.   | After "startup" is displayed, only green lights up. <00>                                 | • After power is turned on, "PLEASE WAIT" is displayed for 2 minutes during system startup. (Normal)   |
| After power is turned on, "PLEASE WAIT" is displayed for 3 minutes, then error code is displayed.                 | After "startup" is displayed, green(once) and red(once) blink alternately. <F1>          | • Incorrect connection of outdoor terminal block (L1, L2, L3 and S1, S2, S3.)  |
| No display appears even when remote controller operation switch is turned on. (Operation lamp does not light up.) | After "startup" is displayed, green(once) and red(twice) blink alternately. <F3, F5, F9> | • Outdoor unit's safeguard installation connector is open.   |
|   | After "startup" is displayed, only green lights up. <00>                                 | • Incorrect wiring between the indoor and outdoor unit (Polarity is wrong for S1, S2, S3.)<br>• Remote controller transmission wire short.   |
| Display appears but soon disappears even when remote controller is operated.                                      | After "startup" is displayed, only green lights up. <00>                                 | • There is no outdoor unit of address 0. (Address is other than 0.)<br>• Remote controller transmission wire open.<br>• After canceling function selection, operation is not possible for about 30 seconds. (Normal) |

\* Press the remote controller's [CHECK] button twice to perform self-diagnosis. See the table below for the contents of LCD display.

| LCD | Contents of inferior phenomena                       | LCD   | Contents of inferior phenomena          |
|-----|--|-------|---|
| P1  | Abnormality of room temperature thermistor           | U1~UP | Malfunction outdoor unit                |
| P2  | Abnormality of pipe temperature thermistor/Liquid    | F3~F9 | Malfunction outdoor unit                |
| P4  | Abnormality of drain sensor                          | E0~E5 | Remote controller transmitting error    |
| P5  | Drain overflow protection is working.                | E6~EF | Indoor/outdoor unit communication error |
| P6  | Freezing/overheating protection is working.          | ----  | No error history                        |
| P8  | Abnormality of pipe temperature                      | FFFF  | No applied unit                         |
| P9  | Abnormality of pipe temperature thermistor/Cond./Eva |       |   |
| Fb  | Abnormality of indoor controller board               |       |   |

See the table below for details of the LED display (LED 1, 2, 3) on the indoor controller board.

|                                     |   |
|-------------------------------------|---|
| LED1 (microcomputer power supply)   | Lits when power is supplied.  |
| LED2 (remote controller)            | Lits when power is supplied for wired remote controller.<br>The indoor unit should be connected to the outdoor unit with address "0" setting. |
| LED3 (indoor/outdoor communication) | Flash when indoor and outdoor unit are communicating.   |



### Test run [for wireless remote controller]

Measure an impedance between the power supply terminal block on the outdoor unit and ground with a 500V Megger and check that it is equal to or greater than 1.0MΩ.

- ① Turn on the main power to the unit.
- ② Press the  button twice continuously.  
(Start this operation from the status of remote controller display turned off.)  
A  and current operation mode are displayed.
- ③ Press the  (  ) button to activate **COOL**  mode, then check whether cool air is blown out from the unit.
- ④ Press the  (  ) button to activate **HEAT**  mode, then check whether warm air is blown out from the unit.
- ⑤ Press the  button and check whether strong air is blown out from the unit.
- ⑥ Press the  button and check whether the auto vane operates properly.
- ⑦ Press the ON/OFF button to stop the test run.

#### Note:

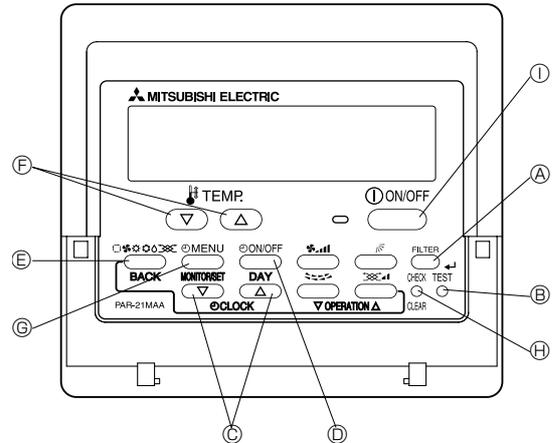
- Point the remote controller towards the indoor unit receiver while following steps ② to ⑦.
- It is not possible to run the in FAN, DRY or AUTO mode.

## 12-3. HOW TO PRECEED "SELF-DIAGNOSIS"

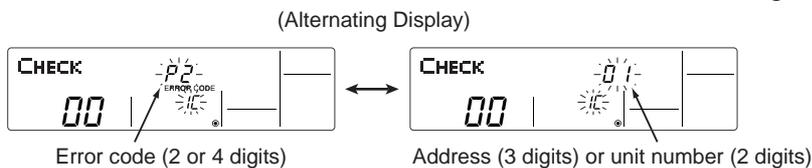
### 12-3-1. When a Problem Occurs During Operation

If a problem occurs in the air conditioner, the indoor and outdoor units will stop, and the problem is shown in the remote controller display.

[CHECK] and the refrigerant address are displayed on the temperature display, and the error code and unit number are displayed alternately as shown below.



- ① (If the outdoor unit is malfunctioning, the unit number will be "00".)
- ② In the case of group control, for which one remote controller controls multiple refrigerant systems, the refrigerant address and error code of the unit that first experienced trouble (i.e., the unit that transmitted the error code) will be displayed.
- ③ To clear the error code, press the **ON/OFF** button.



When using remote-/local-controller combined operation, cancel the error code after turning off remote operation. During central control by a MELANS controller, cancel the error code by pressing the **ON/OFF** button.

### 12-3-2. Self-Diagnosis During Maintenance or Service

Since each unit has a function that stores error codes, the latest check code can be recalled even if it is cancelled by the remote controller or power is shut off.

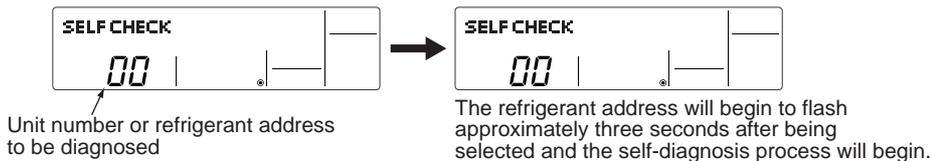
Check the error code history for each unit using the remote controller.

① Switch to self-diagnosis mode.

- ⊕ Press the **CHECK** button twice within three seconds. The display content will change as shown below.

② Set the unit number or refrigerant address you want to diagnose.

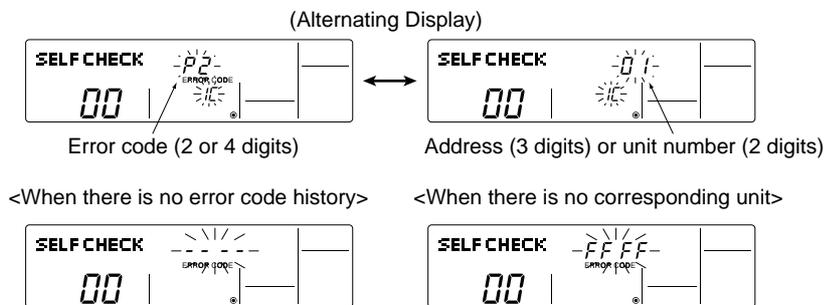
- ⓕ Press the [TEMP] buttons (**▽** and **△**) to select the desired number or address. The number (address) changes between [01] and [50] or [00] and [15].



③ Display self-diagnosis results.

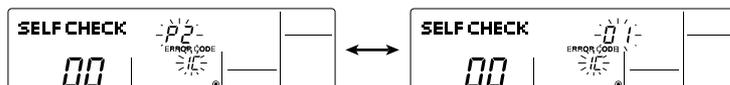
<When there is error code history>

(For the definition of each error code, refer to the indoor unit's installation manual or service handbook.)



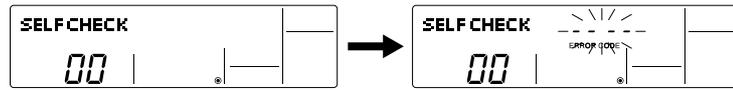
④ Reset the error history.

Display the error history in the diagnosis result display screen (see step ③).



- ④ Press the **ON/OFF** button twice within three seconds. The self-diagnosis address or refrigerant address will flash.

When the error history is reset, the display will look like the one shown below. However, if you fail to reset the error history, the error content will be displayed again.

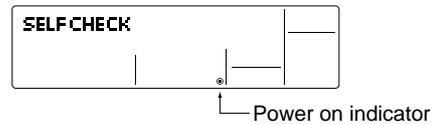


- ⑤ Cancel self-diagnosis.  
Self-diagnosis can be cancelled by the following two methods.
- ④ Press the **CHECK** button twice within three seconds. → Self-diagnosis will be cancelled and the screen will return to the previous state in effect before the start of self-diagnosis.
- ⑤ Press the **ON/OFF** button. → Self-diagnosis will be cancelled and the indoor unit will stop.

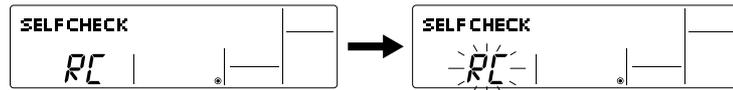
### 12-3-3. Remote Controller Diagnosis

If the air conditioner cannot be operated from the remote controller, diagnose the remote controller as explained below.

- ① First, check that the power-on indicator is lit.  
If the correct voltage (DC12 V) is not supplied to the remote controller, the indicator will not light.  
If this occurs, check the remote controller's wiring and the indoor unit.



- ② Switch to the remote controller self-diagnosis mode.
- ④ Press the **CHECK** button for five seconds or more. The display content will change as shown below.
- ④ Press the **FILTER** button to start self-diagnosis.



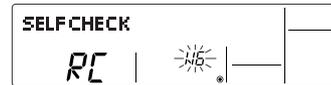
#### ③ Remote controller self-diagnosis result

[When the remote controller is functioning correctly]



Check for other possible causes, as there is no problem with the remote controller.

[When the remote controller malfunctions]  
(Error display 1) "NG" flashes. → The remote controller's transmitting-receiving circuit is defective.



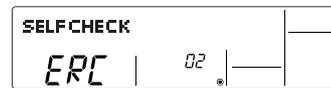
The remote controller must be replaced with a new one.

[Where the remote controller is not defective, but cannot be operated.]  
(Error display 2) [E3], [6833] or [6832] flashes. → Transmission is not possible.

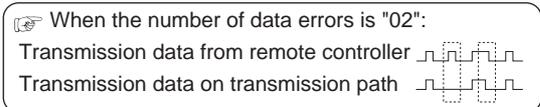


There might be noise or interference on the transmission path, or the indoor unit or other remote controllers are defective. Check the transmission path and other controllers.

(Error display 3) "ERC" and the number of data errors are displayed.  
→ Data error has occurred.



The number of data errors is the difference between the number of bits sent from the remote controller and the number actually transmitted through the transmission path. If such a problem is occurring, the transmitted data is affected by noise, etc. Check the transmission path.



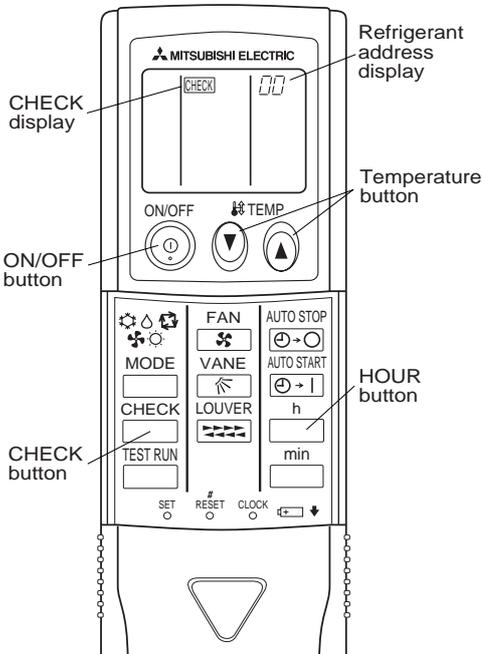
- ④ To cancel remote controller diagnosis
- ④ Press the **CHECK** button for five seconds or more. Remote controller diagnosis will be cancelled, "PLEASE WAIT" and operation lamp will flash. After approximately 30 seconds, the state in effect before the diagnosis will be restored.

## 12-3-4. Malfunction-diagnosis method by wireless remote controller

### <In case of trouble during operation>

When a malfunction occurs to air conditioner, both indoor unit and outdoor unit will stop and operation lamp blinks to inform unusual stop.

### <Malfunction-diagnosis method at maintenance service>

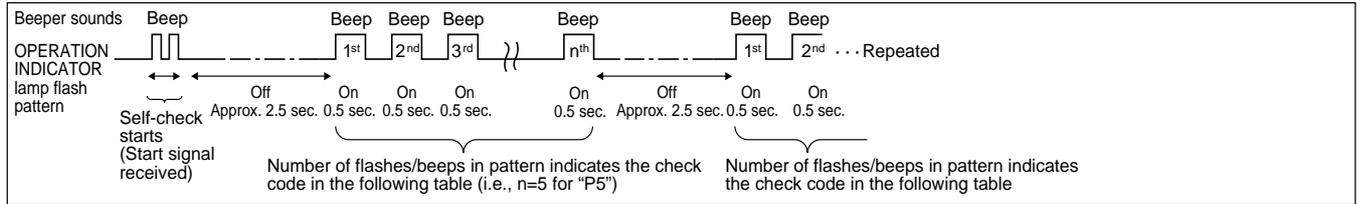


#### [Procedure]

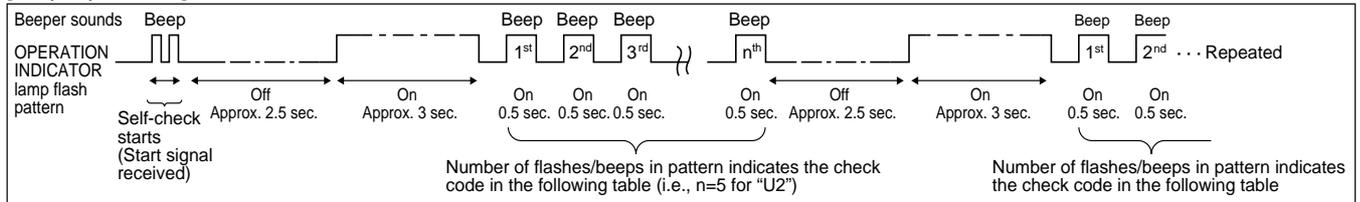
1. Press the CHECK button twice.
  - "CHECK" lights, and refrigerant address "00" flashes.
  - Check that the remote controller's display has stopped before continuing.
2. Press the temperature buttons.
  - Select the refrigerant address of the indoor unit for the self-diagnosis.
  - Note: Set refrigerant address using the outdoor unit's DIP switch (SW1). (For more information, see the outdoor unit installation manual.)
3. Point the remote controller at the sensor on the indoor unit and press the HOUR button.
  - If an air conditioner error occurs, the indoor unit's sensor emits an intermittent buzzer sound, the operation light flashes, and the error code is output. (It takes 3 seconds at most for error code to appear.)
4. Point the remote controller at the sensor on the indoor unit and press the ON/OFF button.
  - The check mode is cancelled.

- Refer to the following tables for details on the check codes.

[Output pattern A]



[Output pattern B]



[Output pattern A] Errors detected by indoor unit

| Wireless remote controller<br>Beeper sounds/OPERATION<br>INDICATOR lamp flashes<br>(Number of times) | Wired remote controller<br>Check code | Symptom   | Remark   |
|--|---------------------------------------|---|--|
| 1  | P1                                    | Intake sensor error                                   | As for indoor unit, refer to indoor unit's service manual. |
| 2  | P2                                    | Pipe (TH2) sensor error                               |  |
|  | P9                                    | Pipe (TH5) sensor error                               |  |
| 3  | E6, E7                                | Indoor/outdoor unit communication error               |  |
| 4  | P4                                    | Drain sensor error                                    |  |
| 5  | P5                                    | Drain pump error                                      |  |
| 6  | P6                                    | Freezing/Overheating safeguard operation              |  |
| 7  | EE                                    | Communication error between indoor and outdoor units  |  |
| 8  | P8                                    | Pipe temperature error                                |  |
| 9  | E4, E5                                | Remote controller signal receiving error              |  |
| 10   | -                                     | -   |  |
| 11   | -                                     | -   |  |
| 12   | Fb                                    | Indoor unit control system error (memory error, etc.) |  |
| -  | E0, E3                                | Remote controller transmission error                  |  |
| -  | E1, E2                                | Remote controller control board error                 |  |

[Output pattern B] Errors detected by unit other than indoor unit (outdoor unit, etc.)

| Wireless remote controller<br>Beeper sounds/OPERATION<br>INDICATOR lamp flashes<br>(Number of times) | Wired remote controller<br>Check code | Symptom  | Remark  |
|--|---------------------------------------|--|---|
| 1  | E9                                    | Indoor/outdoor unit communication error (Transmitting error) (Outdoor unit)  | For details, check the LED display of the outdoor controller board. |
| 2  | UP                                    | Compressor overcurrent interruption  |   |
| 3  | U3, U4                                | Open/short of outdoor unit thermistors   |   |
| 4  | UF                                    | Compressor overcurrent interruption (When compressor locked)   |   |
| 5  | U2                                    | Abnormal high discharging temperature/49C worked/insufficient refrigerant  |   |
| 6  | U1, Ud                                | Abnormal high pressure (63H worked)/Overheating safeguard operation  |   |
| 7  | U5                                    | Abnormal temperature of heat sink  |   |
| 8  | U8                                    | Outdoor unit fan safeguard stop  |   |
| 9  | U6                                    | Compressor overcurrent interruption/Abnormal of power module   |   |
| 10   | U7                                    | Abnormality of super heat due to low discharge temperature   |   |
| 11   | U9, UH                                | Abnormality such as overvoltage or voltage shortage and abnormal synchronous signal to main circuit/Current sensor error |   |
| 12   | -                                     | -  |   |
| 13   | -                                     | -  |   |
| 14   | Others                                | Other errors   |   |

\*1 If the beeper does not sound again after the initial two beeps to confirm the self-check start signal was received and the OPERATION INDICATOR lamp does not come on, there are no error records.

\*2 If the beeper sounds three times continuously "beep, beep, beep (0.4 + 0.4 + 0.4 sec.)" after the initial two beeps to confirm the self-check start signal was received, the specified refrigerant address is incorrect.

## 12-4. SELF-DIAGNOSIS ACTION TABLE

<Abnormalities detected when the power is put on>

(Note 1) Refer to indoor unit section for code P and code E.

| Error Code   | Meaning of error code and detection method  | Case   | Judgment and action   |
|--------------|---|--|---|
| None         | —   | <ul style="list-style-type: none"> <li>① No voltage is supplied to terminal block(TB1) of outdoor unit.                             <ul style="list-style-type: none"> <li>a) Power supply breaker is put off.</li> <li>b) Contact failure or disconnection of power supply terminal.</li> <li>c) Open phase (L2 or N phase)</li> </ul> </li> <li>② Electric power is not supplied to outdoor controller circuit board.                             <ul style="list-style-type: none"> <li>a) Disconnection of connector (CNDC)</li> </ul> </li> <li>③ Disconnection of outdoor noise filter circuit board or parts failure in outdoor noise filter circuit board.</li> <li>④ Defective outdoor controller circuit board.</li> </ul> | <ul style="list-style-type: none"> <li>① Check following items.                             <ul style="list-style-type: none"> <li>a) Power supply breaker</li> <li>b) Connection of power supply terminal block. (TB1)</li> <li>c) Connection of power supply terminal block. (TB1)</li> </ul> </li> <li>② Check connection of the connector (CNDC) on the outdoor controller circuit board. Check connection of the connector, (CNDC) the outdoor noise filter circuit board. Refer to 12-9.</li> <li>③ a) Check connection of outdoor noise filter circuit board.<br/>b) Replace outdoor noise filter circuit board. Refer to 12-9.</li> <li>④ Replace controller board (When items above are checked but the units can not be repaired.)</li> </ul> |
| F3<br>(5202) | <p><b>63L connector open</b><br/>Abnormal if 63L connector circuit is open for three minutes continuously after power supply.<br/>63L: Low-pressure switch</p>  | <ul style="list-style-type: none"> <li>① Disconnection or contact failure of 63L connector on outdoor controller circuit board.</li> <li>② Disconnection or contact failure of 63L.</li> <li>③ 63L is working due to refrigerant leakage or defective parts.</li> <li>④ Defective outdoor controller circuit board.</li> </ul>   | <ul style="list-style-type: none"> <li>① Check connection of 63L connector on outdoor controller circuit board. Refer to 12-9.</li> <li>② Check the 63L side of connecting wire.</li> <li>③ Check refrigerant pressure. Charge additional refrigerant. Check continuity by tester. Replace the parts if the parts are defective.</li> <li>④ Replace outdoor controller circuit board.</li> </ul>  |
| F5<br>(5201) | <p><b>63H connector open</b><br/>Abnormal if 63H connector circuit is open for three minutes continuously after power supply.<br/>63H: High-pressure switch</p>   | <ul style="list-style-type: none"> <li>① Disconnection or contact failure of 63H connector on outdoor controller circuit board.</li> <li>② Disconnection or contact failure of 63H.</li> <li>③ 63H is working due to defective parts.</li> <li>④ Defective outdoor controller circuit board.</li> </ul>  | <ul style="list-style-type: none"> <li>① Check connection of 63H connector on outdoor controller circuit board. Refer to 12-9.</li> <li>② Check the 63H side of connecting wire.</li> <li>③ Check continuity by tester. Replace the parts if the parts are defective.</li> <li>④ Replace outdoor controller circuit board.</li> </ul>   |
| F9<br>(4119) | <p><b>2 connector open</b><br/>Abnormal if both 63H and 63L connector circuits are open for three minutes continuously after power supply.<br/>63H: High-pressure switch<br/>63L: Low-pressure switch</p> | <ul style="list-style-type: none"> <li>① Disconnection or contact failure of connector (63H,63L) on outdoor controller circuit board.</li> <li>② Disconnection or contact failure of 63H, 63L.</li> <li>③ 63H and 63L are working due to defective parts.</li> <li>④ Defective outdoor controller circuit board.</li> </ul>  | <ul style="list-style-type: none"> <li>① Check connection of connector(63H,63L) on outdoor controller circuit board. Refer to 12-9.</li> <li>② Check the 63H and 63L side of connecting wire.</li> <li>③ Check continuity by tester. Replace the parts if the parts are defective.</li> <li>④ Replace outdoor controller circuit board.</li> </ul>  |



| Error Code   | Meaning of error code and detection method   | Case   | Judgment and action   |
|--------------|--|--|---|
| EA<br>(6844) | <p><b>Indoor/outdoor unit connector mis-wiring, excessive number of units (5 units or more)</b></p> <p>1. Outdoor controller circuit board can automatically check the number of connected indoor units. Abnormal if the number cannot be checked automatically due to mis-wiring of indoor/outdoor unit connecting wire and etc. after power is turned on for 4 minutes.</p> <p>2. Abnormal if outdoor controller circuit board recognizes the number of connected indoor units as "5 units or more".</p> | <p>① Contact failure or mis-wiring of indoor/outdoor unit connecting wire.</p> <p>② Diameter or length of indoor/outdoor unit connecting wire is out of specified capacity.</p> <p>③ 5 or more indoor units are connected to one outdoor unit.</p> <p>④ Defective transmitting receiving circuit of outdoor controller circuit board.</p> <p>⑤ Defective transmitting receiving circuit of indoor controller circuit board.</p> <p>⑥ Defective indoor power circuit board.</p> <p>⑦ Two or more outdoor units have refrigerant address "0" . (In case of group control)</p> <p>⑧ Noise has entered into power supply or indoor / outdoor unit connecting wire.</p> | <p>① Check disconnection or looseness or polarity of indoor/outdoor unit connecting wire of indoor and outdoor units.</p> <p>② Check diameter and length of indoor/outdoor unit connecting wire.<br/>Total wiring length: 80m (including wiring connecting each indoor unit and between indoor and outdoor unit)<br/>Also check if the connection order of flat cable is S1, S2, S3.</p> <p>③ Check the number of indoor units that are connected to one outdoor unit. (If EA is detected)</p> <p>④-⑥ Put the power off once, and on again to check.<br/>Replace outdoor controller circuit board, indoor controller circuit board or indoor power board if abnormality occurs again.</p> |
| Eb<br>(6845) | <p><b>Mis-wiring of indoor/outdoor unit connecting wire (converse wiring or disconnection)</b></p> <p>Outdoor controller circuit board can automatically set the unit number of indoor units.<br/>Abnormal if the indoor unit number can not be set within four minutes after power on because of mis-wiring (converse wiring or disconnection) of indoor/outdoor unit connecting wire.</p>  | <p>① Contact failure or mis-wiring of indoor/outdoor unit connecting wire.</p> <p>② Diameter or length of indoor/outdoor unit connecting wire is out of specified capacity.</p> <p>④ Defective transmitting receiving circuit of outdoor controller circuit board.</p> <p>⑤ Defective transmitting receiving circuit of indoor controller circuit board.</p> <p>⑥ Defective indoor power circuit board.</p> <p>⑦ Two or more outdoor units have refrigerant address "0" . (In case of group control)</p> <p>⑧ Noise has entered into power supply or indoor/outdoor unit connecting wire.</p>  | <p>⑦ Check if refrigerant addresses (SW1-3 to SW1-6 on outdoor controller circuit board) are overlapping in case of group control system.</p> <p>⑧ Check transmission path, and remove the cause.</p> <p>* The descriptions above, ①-⑧, are for EA, Eb and EC.</p>  |
| EC<br>(6846) | <p><b>Start-up time over</b></p> <p>The unit can not finish start-up process within four minutes after power on.</p>   | <p>① Contact failure of indoor/ outdoor unit connecting wire.</p> <p>② Diameter or length of indoor/ outdoor unit connecting wire is out of specified capacity.</p> <p>⑦ Two or more outdoor units have refrigerant address "0" . (In case of group control)</p> <p>⑧ Noise has entered into power supply or indoor/outdoor unit connecting wire.</p>  |   |

<Abnormalities detected while unit is operating>

| Error Code   | Meaning of error code and detection method  | Case   | Judgment and action   |
|--------------|---|--|---|
| U1<br>(1302) | <p><b>Abnormal high pressure (High-pressure switch 63H worked)</b><br/>Abnormal if high-pressure switch 63H worked ( 3.6MPa ) during compressor operation.</p> <p>63H: High-pressure switch</p>   | <p>① Short cycle of indoor unit.<br/>② Clogged filter of indoor unit.<br/>③ Decreased airflow caused by dirt of indoor fan.<br/>④ Dirt of indoor heat exchanger.<br/>⑤ Locked indoor fan motor.<br/>⑥ Malfunction of indoor fan motor.<br/>⑦ Defective operation of stop valve (Not full open).<br/>⑧ Clogged or broken pipe.<br/>⑨ Locked outdoor fan motor.<br/>⑩ Malfunction of outdoor fan motor.<br/>⑪ Short cycle of outdoor unit.<br/>⑫ Dirt of outdoor heat exchanger.<br/>⑬ Decreased airflow caused by defective inspection of outside temperature thermistor (It detects lower temperature than actual temperature.)<br/>⑭ Disconnection or contact failure of connector (63H) on outdoor controller circuit board.<br/>⑮ Disconnection or contact failure of 63H connection.<br/>⑯ Defective outdoor controller circuit board.<br/>⑰ Defective action of linear expansion valve.<br/>⑱ Malfunction of fan driving circuit.</p> | <p>①~⑥ Check indoor unit and repair defectives.<br/><br/>⑦ Check if stop valve is full open.<br/><br/>⑧ Check piping and repair defectives.<br/>⑨~⑫ Check outdoor unit and repair defectives.<br/><br/>⑬ Check the inspected temperature of outside temperature thermistor on LED display. (SW2 on A-Control Service Tool : Refer to 12-10.)<br/><br/>⑭~⑯ Put the power off and check F5 is displayed when the power is put again. When F5 is displayed, refer to "Judgment and action" for F5.<br/><br/>⑰ Check linear expansion valve. Refer to 12-6.<br/>⑱ Replace outdoor controller circuit board or FAN controller circuit board.</p> |
| U2<br>(1102) | <p><b>Abnormal high discharging temperature</b><br/>(1) Abnormal if discharge temperature thermistor (TH4) exceeds 125°C or 110°C continuously for 5 minutes. Abnormal if condenser/evaporator temperature thermistor (TH5) exceeds 40°C during defrosting and discharge temperature thermistor (TH4) exceeds 110°C .<br/><br/>(2) Abnormal if discharge super heat (Cooling: TH4 – TH5 / Heating: TH4 – TH6) increases. All the conditions in A or B are detected simultaneously for 10 minutes continuously after 6 minutes past from compressor start-up (including the thermostat indication or recovery from defrosting).<br/>&lt;Condition A&gt;<br/>• Heating mode<br/>• When discharge super heat is less than 70 deg.<br/>• When the TH6 temp is more than the value obtained by TH7 – 5 deg.<br/>• When the condensing temp of TH5 is less than 35°C .<br/><br/>&lt;Condition B&gt;<br/>• During comp operation (Cooling and Heating)<br/>• When discharge super heat is less than 80 deg in Cooling.<br/>• When discharge super heat is less than 90 deg in Heating.<br/>• When condensing temp of TH6 is more than –40°C . (In Cooling only.)</p> | <p>① Over-heated compressor operation caused by shortage of refrigerant.<br/>② Defective operation of stop valve.<br/>③ Defective thermistor.<br/>④ Defective outdoor controller circuit board.<br/>⑤ Defective action of linear expansion valve.</p>  | <p>① Check intake super heat. Check leakage of refrigerant. Charge additional refrigerant.<br/>② Check if stop valve is full open.<br/>③④ Put the power off and check if U3 is displayed when the power is put again. When U3 is displayed, refer to "Judgement and action" for U3.<br/>⑤ Check linear expansion valve. Refer to 12-6.</p>  |



| Error Code  | Meaning of error code and detection method  | Case   | Judgment and action  |             |  |                |                 |        |      |           |                           |                 |               |     |                                   |                 |               |     |                      |                 |               |     |                     |                 |                |
|---|---|--|--|-------------|--|----------------|-----------------|--------|------|-----------|---------------------------|-----------------|---------------|-----|-----------------------------------|-----------------|---------------|-----|----------------------|-----------------|---------------|-----|---------------------|-----------------|----------------|
| U3<br>(5104)  | <b>Open/short circuit of discharge temperature thermistor (TH4)</b><br>Abnormal if open (3°C or less) or short (217°C or more) is detected during compressor operation.<br>(Detection is inoperative for 10 minutes of compressor starting process and for 10 minutes after and during defrosting.)   | ① Disconnection or contact failure of connector (TH4) on the outdoor controller circuit board.<br>② Defective thermistor.<br>③ Defective outdoor controller circuit board.   | ① Check connection of connector (TH4) on the outdoor controller circuit board.<br>Check breaking of the lead wire for thermistor (TH4). Refer to 12-9.<br>② Check resistance value of thermistor (TH4) or temperature by microcomputer.<br>(Thermistor/TH4: Refer to 12-6.)<br>(SW2 on A-Control Service Tool: Refer to 12-10.)<br>③ Replace outdoor controller circuit board.   |             |  |                |                 |        |      |           |                           |                 |               |     |                                   |                 |               |     |                      |                 |               |     |                     |                 |                |
| U4<br>(TH3, TH32)<br>(:5105)<br>(TH6:5107)<br>(TH7:5106)<br>(TH8:5110)  | <b>Open/short of outdoor unit thermistors (TH3, TH32, TH6, TH7, and TH8)</b><br>Abnormal if open or short is detected during compressor operation.<br>Open detection of thermistors TH3 and TH6 is inoperative for 10 seconds to 10 minutes after compressor starting and 10 minutes after and during defrosting.<br>*Check which unit has abnormality in its thermistor by switching the mode of SW2.<br>(Refer to 12-10.) | ① Disconnection or contact failure of connectors.<br><div style="border-left: 1px solid black; border-right: 1px solid black; padding: 5px; display: inline-block;">           Outdoor controller circuit board: TH3, TH32, TH6/TH7<br/>           Outdoor power circuit board: CN3         </div><br>② Defective thermistor.<br>③ Defective outdoor controller circuit board. | ① Check connection of connector (TH3, TH32, TH6/TH7) on the outdoor controller circuit board.<br>Check connection of connector (CN3) on the outdoor power circuit board.<br>Check breaking of the lead wire for thermistor (TH3, TH32, TH6, TH7, TH8). Refer to 12-9.<br>② Check resistance value of thermistor (TH3, TH32, TH6, TH7, TH8) or check temperature by microcomputer.<br>(Thermistor/TH3, TH32, TH6, TH7, TH8: Refer to 12-6.)<br>(SW2 on A-Control Service Tool: Refer to 12-10.)<br>③ Replace outdoor controller circuit board.<br>*Emergency operation is available in case of abnormalities of TH3, TH32, TH6 and TH7.<br>Refer to 12-8. |             |  |                |                 |        |      |           |                           |                 |               |     |                                   |                 |               |     |                      |                 |               |     |                     |                 |                |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Thermistors</th> <th rowspan="2">Open detection</th> <th rowspan="2">Short detection</th> </tr> <tr> <th>Symbol</th> <th>Name</th> </tr> </thead> <tbody> <tr> <td>TH3, TH32</td> <td>Thermistor &lt;Outdoor pipe&gt;</td> <td>- 40°C or below</td> <td>90°C or above</td> </tr> <tr> <td>TH6</td> <td>Thermistor &lt;Outdoor 2-phase pipe&gt;</td> <td>- 40°C or below</td> <td>90°C or above</td> </tr> <tr> <td>TH7</td> <td>Thermistor &lt;Outdoor&gt;</td> <td>- 40°C or below</td> <td>90°C or above</td> </tr> <tr> <td>TH8</td> <td>Internal thermistor</td> <td>- 35°C or below</td> <td>170°C or above</td> </tr> </tbody> </table> |   |  |  | Thermistors |  | Open detection | Short detection | Symbol | Name | TH3, TH32 | Thermistor <Outdoor pipe> | - 40°C or below | 90°C or above | TH6 | Thermistor <Outdoor 2-phase pipe> | - 40°C or below | 90°C or above | TH7 | Thermistor <Outdoor> | - 40°C or below | 90°C or above | TH8 | Internal thermistor | - 35°C or below | 170°C or above |
| Thermistors   |   | Open detection   | Short detection  |             |  |                |                 |        |      |           |                           |                 |               |     |                                   |                 |               |     |                      |                 |               |     |                     |                 |                |
| Symbol  | Name  |  |  |             |  |                |                 |        |      |           |                           |                 |               |     |                                   |                 |               |     |                      |                 |               |     |                     |                 |                |
| TH3, TH32   | Thermistor <Outdoor pipe>   | - 40°C or below  | 90°C or above  |             |  |                |                 |        |      |           |                           |                 |               |     |                                   |                 |               |     |                      |                 |               |     |                     |                 |                |
| TH6   | Thermistor <Outdoor 2-phase pipe>   | - 40°C or below  | 90°C or above  |             |  |                |                 |        |      |           |                           |                 |               |     |                                   |                 |               |     |                      |                 |               |     |                     |                 |                |
| TH7   | Thermistor <Outdoor>  | - 40°C or below  | 90°C or above  |             |  |                |                 |        |      |           |                           |                 |               |     |                                   |                 |               |     |                      |                 |               |     |                     |                 |                |
| TH8   | Internal thermistor   | - 35°C or below  | 170°C or above   |             |  |                |                 |        |      |           |                           |                 |               |     |                                   |                 |               |     |                      |                 |               |     |                     |                 |                |
| U5<br>(4230)  | <b>Abnormal temperature of heat sink</b><br>Abnormal if heat sink thermistor TH8, which is built in the power module, detects temperature indicated below.<br>RP200YHA.....95°C<br>RP250YHA.....95°C  | ① The outdoor fan motor is locked.<br>② Failure of outdoor fan motor.<br>③ Air flow path is clogged.<br>④ Rise of ambient temperature.<br>⑤ Defective thermistor.<br>⑥ Defective input circuit of outdoor power circuit board.<br>⑦ Failure of outdoor fan drive circuit.  | ①② Check the resistance of outdoor fan motor wiring.<br>Refer to "12-6 HOW TO CHECK THE PART".<br>③ Check air flow path for cooling.<br>④ Check if there is something which causes temperature rise around outdoor unit.<br>(Upper limit of ambient temperature is 46°C.)<br>Turn off power, and on again to check if U5 is displayed within 30 minutes.<br>If U4 is displayed instead of U5, follow the action to be taken for U4.<br>⑤ Check TH8 temperature by microcomputer.<br>(SW2 on A-Control Service Tool: Refer to 12-10.)<br>⑥ Replace outdoor power circuit board.<br>⑦ Replace outdoor controller circuit board.                            |             |  |                |                 |        |      |           |                           |                 |               |     |                                   |                 |               |     |                      |                 |               |     |                     |                 |                |
|   | <b>Compressor overcurrent interruption (When compressor locked)</b><br>Abnormal if overcurrent of DC bus or compressor is detected within 30 seconds after compressor starts operating.   | ① Stop valve is closed.<br>② Decrease of power supply voltage.<br>③ Looseness, disconnection or converse of compressor wiring connection.<br>④ Defective compressor.<br>⑤ Defective outdoor power circuit board.   | ① Open stop valve.<br>② Check facility of power supply.<br>③ Correct the wiring (U•V•W phase) to compressor.<br>④ Check compressor.<br>Refer to 12-6.<br>⑤ Replace outdoor power circuit board.  |             |  |                |                 |        |      |           |                           |                 |               |     |                                   |                 |               |     |                      |                 |               |     |                     |                 |                |
| U6<br>(4250)  | <b>Abnormality of power module</b><br>Check abnormality by driving power module in case overcurrent is detected.  | ① Outdoor stop valve is closed.<br>② Decrease of power supply voltage<br>③ Looseness, disconnection or converse of compressor wiring connection.<br>④ Defective compressor.<br>⑤ Defective outdoor power circuit board.  | ① Open stop valve.<br>② Check facility of power supply.<br>③ Correct the wiring (U•V•W phase) to compressor. Refer to 12-9.<br>④ Check compressor referring to 12-6.<br>⑤ Replace outdoor power circuit board.   |             |  |                |                 |        |      |           |                           |                 |               |     |                                   |                 |               |     |                      |                 |               |     |                     |                 |                |



| Error Code   | Meaning of error code and detection method  | Case   | Judgment and action  |
|--------------|---|--|--|
| U9<br>(4220) | <p><b>Abnormality such as overvoltage or voltage shortage and abnormal synchronous signal to main circuit</b></p> <p>Abnormal if any of followings are detected during compressor operation;</p> <ul style="list-style-type: none"> <li>• Instantaneous decrease of DC bus voltage to 400V.</li> <li>• Increase of DC bus voltage to 760V.</li> <li>• Decrease of input current of outdoor unit to 0.5A only if operation frequency is more than or equal to 40Hz or compressor current is more than or equal to 5A.</li> </ul> | <ul style="list-style-type: none"> <li>① Decrease of power supply voltage.</li> <li>② Defective 52C drive circuit of outdoor power circuit board.</li> <li>③ Disconnection or loose connection of CN5 on the outdoor power circuit board or outdoor noise filter circuit board.</li> <li>④ Defective ACCT of outdoor noise filter circuit board.</li> <li>⑤ Disconnection or loose connection of CN2 on the outdoor power circuit board.</li> </ul>                                  | <ul style="list-style-type: none"> <li>① Check the facility of power supply.</li> <li>② Replace outdoor power circuit board.</li> <li>③ Check CN5 wiring on the outdoor power circuit board or outdoor noise filter circuit board.<br/>Refer to 12-9.</li> <li>④ Replace outdoor noise filter circuit board.</li> <li>⑤ Check CN2 wiring on the outdoor power circuit board.<br/>Refer to 12-9.</li> </ul>   |
| UF<br>(4100) | <p><b>Compressor overcurrent interruption (When compressor locked)</b></p> <p>Abnormal if overcurrent of DC bus or compressor is detected within 30 seconds after compressor starts operating.</p>  | <ul style="list-style-type: none"> <li>① Stop valve is closed.</li> <li>② Decrease of power supply voltage.</li> <li>③ Looseness, disconnection or converse of compressor wiring connection.</li> <li>④ Defective compressor.</li> <li>⑤ Defective outdoor power circuit board.</li> </ul>   | <ul style="list-style-type: none"> <li>① Open stop valve.</li> <li>② Check facility of power supply.</li> <li>③ Correct the wiring (U•V•W phase) to compressor.<br/>Refer to 12-9.</li> <li>④ Check compressor.<br/>Refer to 12-6.</li> <li>⑤ Replace outdoor power circuit board.</li> </ul>  |
| UH<br>(5300) | <p><b>Current sensor error</b></p> <p>Abnormal if current sensor detects -1.5A to 1.5A during compressor operation. (This error is ignored in case of test run mode.)</p>   | <ul style="list-style-type: none"> <li>① Disconnection of compressor wiring.</li> <li>② Defective circuit of current sensor on outdoor power circuit board.</li> </ul>   | <ul style="list-style-type: none"> <li>① Correct the wiring (U•V•W phase) to compressor. Refer to 12-9.</li> <li>② Replace outdoor power circuit board.</li> </ul>   |
| UL<br>(1300) | <p><b>Abnormal low pressure (63L worked)</b></p> <p>Abnormal if 63L is worked (under-0.03MPa) during compressor operation.<br/>63L: Low-pressure switch</p>   | <ul style="list-style-type: none"> <li>① Stop valve of outdoor unit is closed during operation.</li> <li>② Disconnection or loose connection of connector (63L) on outdoor controller circuit board.</li> <li>③ Disconnection or loose connection of 63L.</li> <li>④ Defective outdoor controller circuit board.</li> <li>⑤ Leakage or shortage of refrigerant.</li> <li>⑥ Malfunction of linear expansion valve.</li> </ul>   | <ul style="list-style-type: none"> <li>① Check stop valve.</li> <li>②-④ Put the power off and on again to check if F3 is displayed on restarting.<br/>If F3 is displayed, follow the F3 processing direction.</li> <li>⑤ Correct to proper amount of refrigerant.</li> <li>⑥ Check linear expansion valve.<br/>Refer to 12-6.</li> </ul>   |
| UP<br>(4210) | <p><b>Compressor overcurrent interruption</b></p> <p>Abnormal if overcurrent DC dc bus or compressor is detected after compressor starts operating for 30 seconds.</p>  | <ul style="list-style-type: none"> <li>① Stop valve of outdoor unit is closed.</li> <li>② Decrease of power supply voltage.</li> <li>③ Looseness, disconnection or converse of compressor wiring connection.</li> <li>④ Defective fan of indoor/outdoor units.</li> <li>⑤ Short cycle of indoor/outdoor units.</li> <li>⑥ Defective input circuit of outdoor controller circuit board.</li> <li>⑦ Defective compressor.</li> <li>⑧ Defective outdoor power circuit board.</li> </ul> | <ul style="list-style-type: none"> <li>① Open stop valve.</li> <li>② Check facility of power supply.</li> <li>③ Correct the wiring (U•V•W phase) to compressor. Refer to 12-9.</li> <li>④ Check indoor/outdoor fan.</li> <li>⑤ Solve short cycle.</li> <li>⑥ Replace outdoor controller circuit board.</li> <li>⑦ Check compressor.<br/>Refer to 12-6.</li> <li>* Before the replacement of the outdoor controller circuit board, disconnect the wiring to compressor from the outdoor power circuit board and check the output voltage among phases, U, V, W, during test run. No defect on board if voltage among phases (U-V, V-W and W-U) is same. Make sure to perform the voltage check with same performing frequency.</li> <li>⑧ Replace outdoor power circuit board.</li> </ul> |

(Note) Refer to indoor unit's service manual for error code E0~E7.

| Error Code                 | Meaning of error code and detection method  | Case  | Judgment and action   |
|----------------------------|---|---|---|
| E8<br>(6840)               | <b>Indoor/outdoor unit communication error (Signal receiving error) (Outdoor unit)</b><br>(1) Abnormal if outdoor controller circuit board could not receive anything normally for three minutes.   | ① Contact failure of indoor/outdoor unit connecting wire.<br>② Defective communication circuit of outdoor controller circuit board.<br>③ Defective communication circuit of indoor controller circuit board.<br>④ Noise has entered into indoor/outdoor unit connecting wire.   | ① Check disconnection or looseness of indoor/outdoor unit connecting wire of indoor or outdoor units.<br>②~④ Put the power off, and on again to check. Replace indoor controller circuit board or outdoor controller circuit board if abnormality is displayed again.   |
| E9<br>(6841)               | <b>Indoor/outdoor unit communication error (Transmitting error) (Outdoor unit)</b><br>(1) Abnormal if "0" receiving is detected 30 times continuously though outdoor controller circuit board has transmitted "1".<br>(2) Abnormal if outdoor controller circuit board could not find blank of transmission path for three minutes. | ① Indoor/ outdoor unit connecting wire has contact failure.<br>② Defective communication circuit of outdoor controller circuit board.<br>③ Noise has entered power supply.<br>④ Noise has entered indoor/ outdoor unit connecting wire.   | ① Check disconnection or looseness of indoor/outdoor unit connecting wire.<br>②~④ Put the power off, and on again to check. Replace outdoor controller circuit board if abnormality is displayed again.   |
| EF<br>(6607<br>or<br>6608) | <b>Non defined error code</b><br>This code is displayed when non defined error code is received.  | ① Noise has entered transmission wire of remote controller.<br>② Noise has entered indoor/ outdoor unit connecting wire.<br>③ Outdoor unit is not a series of power-inverter.<br>④ Model name of remote controller is PAR-S25A.   | ①② Put the power off, and on again to check. Replace indoor controller circuit board or outdoor controller circuit board if abnormality is displayed again.<br>③ Replace outdoor unit with power-inverter type outdoor unit.<br>④ Replace remote controller with MA remote controller.  |
| Ed<br>(0403)               | <b>Serial communication error</b><br>1. Abnormal if serial communication between outdoor controller circuit board and outdoor power circuit board is defective.   | ① Breaking of wire or contact failure of connector CN2 between the outdoor controller circuit board and the outdoor power circuit board.<br>② Breaking of wire or contact failure of connector CN4 between the outdoor controller circuit board and the outdoor power circuit board.<br>③ Defective communication circuit of outdoor power circuit board<br>④ Defective communication circuit of outdoor controller circuit board for outdoor power circuit board | ①② Check connection of each connector CN2 and CN4 between the outdoor controller circuit board and the outdoor power circuit board.<br>③ Replace outdoor power circuit board.<br>④ Replace outdoor controller circuit board.  |
|                            | 2. Abnormal if communication between outdoor controller circuit board and M-NET board is not available.   | ① Breaking of wire or contact failure of connector between outdoor controller circuit board and M-NET board<br>② Contact failure of M-NET board power supply line<br>③ Noise has entered into M-NET transmission wire.  | ① Check disconnection, looseness, or breaking of connection wire between outdoor controller circuit board (CNMNT) and M-NET board (CN5).<br>② Check disconnection, looseness, or breaking of connection wire between outdoor controller circuit board (CNMNT) and M-NET board (CND).<br>③ Refer to " 10-3. M-NET Wiring method ". |

| Error Code | Meaning of error code and detection method  | Case  | Judgment and action   |
|------------|---|---|---|
| P8         | <p><b>Abnormality of pipe temperature</b><br/>&lt;Cooling mode&gt;<br/>Detected as abnormal when the pipe temperature is not in the cooling range 3 minutes later of compressor start and 6 minutes later of the liquid or condenser/evaporator pipe is out of cooling range.<br/>Note 1) It takes at least 9 min. to detect.<br/>Note 2) Abnormality P8 is not detected in drying mode.<br/>Cooling range : Indoor pipe temperature (TH2 or TH5) – intake temperature (TH1) <math>\leq</math> -3 deg<br/>TH: Lower temperature between: liquid pipe temperature and condenser/evaporator temperature</p> <p>&lt;Heating mode&gt;<br/>When 10 seconds have passed after the compressor starts operation and the hot adjustment mode has finished, the unit is detected as abnormal when condenser/evaporator pipe temperature is not in heating range within 20 minutes.</p> <p>Note 3) It takes at least 27 minutes to detect abnormality.<br/>Note 4) It excludes the period of defrosting (Detection restarts when defrosting mode is over)<br/>Heating range : 3 deg <math>\leq</math> (Condenser/ Evaporator temperature(TH5) – intake temperature(TH1))</p> | <p>① Slight temperature difference between indoor room temperature and pipe &lt;liquid or condenser / evaporator&gt; temperature thermistor.<br/>• Shortage of refrigerant<br/>• Disconnected holder of pipe &lt;liquid or condenser / evaporator&gt; thermistor<br/>• Defective refrigerant circuit</p> <p>② Converse connection of extension pipe (on plural units connection).</p> <p>③ Converse wiring of indoor/outdoor unit connecting wire (on plural units connection).</p> <p>④ Defective detection of indoor room temperature and pipe &lt;condenser / evaporator&gt; temperature thermistor.</p> <p>⑤ Stop valve is not opened completely.</p> | <p>①~④ Check pipe &lt;liquid or condenser / evaporator&gt; temperature with room temperature display on remote controller and outdoor controller circuit board.<br/>Pipe &lt;liquid or condenser / evaporator&gt; temperature display is indicated by setting SW2 of outdoor controller circuit board as follows.</p> <p>( Conduct temperature check with outdoor controller circuit board after connecting 'A-Control Service Tool(PAC-SK52ST)' )</p> <p>A-Control Service Tool SW2 setting</p> <p>②③ Check converse connection of extension pipe or converse wiring of indoor/outdoor unit connecting wire.</p> |

<M-NET communication error>

(Note) "Indoor unit" in the text indicates M-NET board in outdoor unit.

| Error Code   | Meaning of error code and detection method   | Case  | Judgment and action  |
|--------------|--|---|--|
| A0<br>(6600) | <p><b>Address duplicate definition</b><br/>This error is displayed when transmission from the units of same address is detected.<br/>Note) The address and attribute displayed at remote controller indicate the controller that detected abnormality.</p>   | <p>① There are two or more same address of controller of outdoor unit, indoor unit, FRESH MASTER, or LOSSNAY.</p> <p>② Noise has entered into transmission signal and signal was transformed.</p>   | <p>Search the unit with same address as abnormality occurred. If the same address is found, shut of the power supply of outdoor unit and indoor unit and FRESH MASTER or LOSSNAY at the same time for two minutes or more after the address is corrected, and put the power on again.<br/>Check transmission wave form or noise on transmission wire.</p>  |
| A2<br>(6602) | <p><b>Hard ware error of transmission processor</b><br/>Transmission processor intended to transmit "0", but "1" appeared on transmission wire.<br/>Note) The address and attribute display at remote controller indicate the controller that detected abnormality.</p>  | <p>① Error is detected if wave form is transformed when wiring works of transmission wire of outdoor unit, indoor unit, FRESH MASTER or LOSSNAY are done, or polarity is changed with the power on and transmission data collide each other.</p> <p>② Defective transmitting receiving circuit of transmission processor.</p> <p>③ Transmission data is changed by the noise on transmission.</p>   | <p>① If the works of transmission wire is done with the power on, shut off the power supply of outdoor unit and indoor unit and FRESH MASTER or LOSSNAY at the same time for two minutes or more, and put the power on again.</p> <p>② Check transmission wave form or noise on transmission wire.</p>   |
| A3<br>(6603) | <p><b>BUS BUSY</b><br/>1. Over error by collision damage<br/>Abnormal if transmitting is not possible for 8-10 minutes continuously because of collision of transmission.<br/>2. Data could not reach transmission wire for 8-10 minutes continuously because of noise or etc.<br/>Note) The address and attribute displayed at remote controller indicate the controller that detected abnormality.</p> | <p>① Transmission processor could not transmit because short cycle voltage of noise and the like have entered into transmission wire continuously.</p> <p>② Transmission quantity has increased and transmission is not possible because there was wiring mistake of terminal block for transmission wire (TB3) and terminal block for central control (TB7) in outdoor unit.</p> <p>③ Transmission are mixed with others and occupation rate on transmission wire rose because of defective repeater (a function to connector or disconnect transmission of control and central control system) of outdoor unit, then abnormality is detected.</p> | <p>① Check if transmission wire of indoor unit, FRESH MASTER, LOSSNAY, or remote controller is not connected to terminal block for central control (TB7) of outdoor unit.</p> <p>② Check if transmission wire of indoor unit, FRESH MASTER or LOSSNAY is not connected to terminal block for transmission wire of outdoor unit.</p> <p>③ Check if terminal block for transmission wire (TB3) and terminal block for central control (TB7) is not connected.</p> <p>④ Check transmission wave form or noise on transmission wire.</p> |



| Error Code   | Meaning of error code and detection method   | Case  | Judgment and action   |
|--------------|--|---|---|
| A6<br>(6606) | <p><b>Communication error with communication processor</b><br/>Defective communication between unit processor and transmission processor<br/>Note) The address and attribute display at remote controller indicate the controller that detected abnormality.</p>   | <p>① Data of transmission processor or unit processor is not transmitted normally because of accidental trouble such as noise or thunder surge.<br/>② Address forwarding from unit processor is not transmitted normally because of defective transmission processor hardware.</p>  | <p>Shut of the power supply of outdoor unit and indoor unit and FRESH MASTER or LOSSNAY at the same time for two minutes or more, and put the power on again. System returns normally if abnormality was accidental malfunction. If the same abnormality generates again, abnormality-generated controller may be defective.</p>  |
| A7<br>(6607) | <p><b>NO ACK signal</b><br/>1. Transmitting side controller detects abnormal if a message was transmitted but there is no reply (ACK) that a message was received. Transmitting side detects abnormality every 30 seconds, six times continuously.<br/>Note) The address and attribute displayed at remote controller is indicate the controller that did not reply (ACK).</p> <p>2. If displayed address or attribute is outdoor unit,<br/>Indoor unit detects abnormality when indoor unit transmitted to outdoor unit and there was no reply (ACK).</p> <p>3. If displayed address or attribute is indoor unit,<br/>Remote controller detects abnormality when remote controller transmitted to indoor unit and there was no reply (ACK).</p> | <p>Common factor that has no relation with abnormality source.<br/>① The unit of former address does not exist as address switch has changed while the unit was energized.<br/>② Extinction of transmission wire voltage and signal is caused by over-range transmission wire.<br/>• Maximum distance .....200m<br/>• Remote controller line ..(12m)<br/>③ Extinction of transmission wire voltage and signal is caused by type-unmatched transmission wire.<br/>Type .....</p> <p>With shield wire-<br/>CVVS, CPEVS<br/>With normal wire (no shield)-<br/>VCTF, VCTFK, CVV<br/>CVS, VVR, VVF, VCT<br/>Diameter....1.25mm<sup>2</sup> or more<br/>④ Extinction of transmission wire voltage and signal is caused by over-numbered units.<br/>⑤ Accidental malfunction of abnormality-detected controller (noise, thunder surge).<br/>⑥ Defective of abnormality-generated controller.</p> <p>① Contact failure of transmission wire of outdoor unit or indoor unit.<br/>② Disconnection of transmission connector (CN2M) of outdoor unit.<br/>③ Defective transmitting receiving circuit of outdoor unit or indoor unit.</p> <p>① During group operation with indoor unit of multi- refrigerant system, if remote controller transmit to indoor unit while outdoor unit power supply of one refrigerant system is put off or within two minutes of restart, abnormality is detected.<br/>② Contact failure of transmission wire of remote controller or indoor unit.<br/>③ Disconnection of transmission connector (CN2M) of indoor unit.<br/>④ Defective transmitting receiving circuit of indoor unit or remote controller.</p> | <p><b>Always try the followings when the error "A7" occurs.</b></p> <p>① Shut off the power supply of outdoor unit and indoor unit and FRESH MASTER or LOSSNAY at the same time for two minutes or more, and put the power on again. If malfunction was accidental, the unit returns to normal.<br/>② Check address switch of abnormality-generated address.<br/>③ Check disconnection or looseness of abnormality-generated or abnormality-detected transmission wire (terminal block and connector)<br/>④ Check if tolerance range of transmission wire is not exceeded.<br/>⑤ Check if type of transmission wire is correct or not.</p> <p>If there were some trouble of ①-⑤ above, repair the defective, then shut off the power supply of outdoor unit and indoor unit and FRESH MASTER or LOSSNAY at the same time for two minutes or more, and put the power on again.<br/>• If there was no trouble with ①-⑤ above in single refrigerant system (one outdoor unit), controller of displayed address or attribute is defective.<br/>• If there was no trouble with ①-⑤ above in different refrigerant system (two or more outdoor units), judge with ⑥.</p> <p>⑥ If address of abnormality source is the address that should not exist, there is the unit that memorizes nonexistent address information. Delete useless address information with manual setting function of remote controller.<br/>Only the system FRESH MASTER or LOSSNAY are connected to, or the system that is equipped with group setting of different refrigerant system.</p> <p>If there was no trouble with ①-⑥ above, replace the controller board of displayed address or attribute.<br/>If the unit does not return normally, multi-controller board of outdoor unit may be defective (repeater circuit).<br/>Replace multi-controller board one by one to check if the unit returns normally.</p> |

Continued to the next page.

From the previous page.

| Error Code   | Meaning of error code and detection method  | Case  | Judgment and action                             |
|--------------|---|---|---|
| A7<br>(6607) | 4. If displayed address or attribute is remote controller,<br>Indoor unit detects abnormality when indoor unit transmitted to remote controller and there was no reply (ACK). | <ul style="list-style-type: none"> <li>① During group operation with indoor unit of multi- refrigerant system, if indoor unit transmit to remote controller while outdoor unit power supply of one refrigerant system is put off or within two minutes of restart, abnormality is detected.</li> <li>② Contact failure of transmission wire of remote controller or indoor unit.</li> <li>③ Disconnection of transmission connector (CN2M) of indoor unit.</li> <li>④ Defective transmitting receiving circuit of indoor unit or remote controller.</li> </ul>  | Same as mentioned in "A7" of the previous page. |
|              | 5. If displayed address or attribute is FRESH MASTER,<br>Indoor unit detects abnormality when indoor unit transmitted to FRESH MASTER and there was no reply (ACK).           | <ul style="list-style-type: none"> <li>① During sequential operation of indoor unit and FRESH MASTER of other refrigerant system, if indoor unit transmits to FRESH MASTER while outdoor unit power supply of same refrigerant system with FRESH MASTER is put off or within two minutes of restart, abnormality is detected.</li> <li>② Contact failure of transmission wire of indoor unit or FRESH MASTER.</li> <li>③ Disconnection of transmission connector (CN2M) of indoor unit or FRESH MASTER.</li> <li>④ Defective transmitting receiving circuit of indoor unit or FRESH MASTER.</li> </ul>  |   |
|              | 6. If displayed address or attribute is LOSSNAY,<br>Indoor unit detects abnormality when indoor unit transmitted to LOSSNAY and there was no reply (ACK).                     | <ul style="list-style-type: none"> <li>① If the power supply of LOSSNAY is off, indoor unit detects abnormality when it transmits to LOSSNAY.</li> <li>② During sequential operation of indoor unit and LOSSNAY of other refrigerant system, if indoor unit transmits to LOSSNAY while outdoor unit power supply of same refrigerant system with LOSSNAY is put off or within two minutes of restart, abnormality is detected.</li> <li>③ Contact failure of transmission wire of indoor unit of LOSSNAY.</li> <li>④ Disconnection of transmission connector (CN2M) of indoor unit.</li> <li>⑤ Defective transmitting receiving circuit of indoor unit or LOSSNAY.</li> </ul> |   |
|              | 7. If displayed address or attribute is nonexistent,  | <ul style="list-style-type: none"> <li>① The unit of former address does not exist as address switch has changed while the unit was energized.</li> <li>② Abnormality is detected when indoor unit transmitted because the address of FRESH MASTER and LOSSNAY are changed after sequential operation of FRESH MASTER and LOSSNAY by remote controller.</li> </ul>  |   |



| Error Code   | Meaning of error code and detection method  | Case   | Judgment and action  |
|--------------|---|--|--|
| A8<br>(6608) | <p><b>M-NET•NO RESPONSE</b></p> <p>Abnormal if a message was transmitted and there were reply (ACK) that message was received, but response command does not return. Transmitting side detects abnormality every 30 seconds, six times continuously.</p> <p>Note) The address and attribute displayed at remote controller is indicate the controller that did not reply (ACK).</p> | <p>① Transmitting condition is repeated fault because of noise and the like.</p> <p>② Extension of transmission wire voltage and signal is caused by over-range transmission wire.</p> <ul style="list-style-type: none"> <li>• Maximum distance .....200m</li> <li>• Remote controller line ..(12m)</li> </ul> <p>③ Extension of transmission wire voltage and signal is caused by type-unmatched transmission wire.</p> <p>Type .....</p> <ul style="list-style-type: none"> <li>With shield wire-<br/>CVVS, CPEVS</li> <li>With normal wire (no shield)-<br/>VCTF, VCTFK, CVV<br/>CVS, VVR, VVF, VCT</li> </ul> <p>Diameter.....1.25mm<sup>2</sup> or more</p> <p>④ Accidental malfunction of abnormality-generated controller.</p> | <p>① Check transmission wave form or noise on transmission wire.</p> <p>② Shut off the power supply of outdoor unit and indoor unit and FRESH MASTER or LOSS-NAY at the same time for two minutes or more, and put the power on again. If malfunction was accidental, the unit returns to normal. If the same abnormality generates again, controller of displayed address and attribute may be defective.</p> |

## 12-5. TROUBLESHOOTING BY INFERIOR PHENOMENA

| Phenomena   | Factor  | Countermeasure   |
|---|---|--|
| 1. Remote controller display does not work.   | <p>①DC12V is not supplied to remote controller. (Power supply display ● is not indicated on LCD.)</p> <p>②DC12~15V is supplied to remote controller, however, no display is indicated.</p> <ul style="list-style-type: none"> <li>• "PLEASE WAIT" is not displayed.</li> <li>• "PLEASE WAIT" is displayed.</li> </ul> | <p>①Check LED2 on indoor controller circuit board.</p> <p>(1) When LED2 is lit.<br/>Check the remote controller wiring for breaking or contact failure.</p> <p>(2) When LED2 is blinking.<br/>Check short circuit of remote controller wiring.</p> <p>(3) When LED2 is not lit.<br/>Refer to No.3 below.</p> <p>②Check the following.</p> <ul style="list-style-type: none"> <li>• Failure of remote controller if "PLEASE WAIT" is not displayed</li> <li>• Refer to No.2 below if "PLEASE WAIT" is displayed.</li> </ul>   |
| 2. "PLEASE WAIT" display is remained on the remote controller.  | <p>①At longest 2 minutes after the power supply "PLEASE WAIT" is displayed to start up.</p> <p>②Communication error between the remote controller and indoor unit.</p> <p>③Communication error between the indoor and outdoor unit.</p> <p>④Outdoor unit protection device connector is open.</p>                     | <p>①Normal operation</p> <p>②Self-diagnosis of remote controller</p> <p>③"PLEASE WAIT" is displayed for 6 minutes at most. In case of indoor/outdoor unit communication error. Check LED3 on indoor controller board.</p> <p>(1)When LED3 is not blinking.<br/>Check indoor/outdoor connecting wire for mis-wiring. (Converse wiring of S1 and S2, or break of S3 wiring.)</p> <p>(2)When LED3 is blinking.<br/>Indoor/outdoor connecting wire is normal.</p> <p>④Check LED display on outdoor controller circuit board. Refer to 12-10.<br/>Check protection device connector (63L and 63H) for contact failure.<br/>Refer to 12-9.</p> |
| 3. When pressing the remote controller operation switch the OPERATION display is appeared but it will be turned off soon.   | <p>①After cancelling to select function from the remote controller, the remote controller operation switch will be not accepted for approx. 30 seconds.</p>   | <p>①Normal operation</p>   |
| 4. Even controlling by the wireless remote controller no beep is heard and the unit does not start operating. Operation display is indicated on wireless remote controller. | <p>①The pair number settings of the wireless remote controller and indoor controller circuit board are mismatched.</p>  | <p>①Check the pair number settings.</p>  |



| Phenomena  | Factor  | Countermeasure  |
|--|---|---|
| 5. When operating by the wireless remote controller, beep sound is heard, however, unit does not start operating.  | ①No operation for 2 minutes at most after the power supply ON.<br>②Hand-held remote controller operation is prohibited. <ul style="list-style-type: none"> <li>• Remote controlling adaptor is connected to CN32 on the indoor controller circuit board.</li> <li>• Hand-held remote controller operation is prohibited by centralised controller etc. since it is connected to MELANS.</li> </ul> ③Factor of No.2 above. | ①Normal operation.<br>②Normal operation.<br>③Check the details of No.2 above.   |
| 6. Remote controller display works normally and the unit performs cooling operation, however, the capacity cannot be fully obtained. (The air does not cool well.)   | ①Refrigerant shortage.<br>②Filter clogging.<br>③Heat exchanger clogging.<br>④Air duct short cycle.  | ①• If refrigerant leaks, discharging temperature rises and LEV opening increases. Inspect leakage by checking the temperature and opening. <ul style="list-style-type: none"> <li>• Check pipe connections for gas leakage.</li> </ul> ②Open suction grill and check the filter. Clean the filter by removing dirt or dust on it.<br>③• If the filter is clogged, indoor pipe temperature rises and discharging pressure increases. Check if heat exchanger is clogged by inspecting discharging pressure. <ul style="list-style-type: none"> <li>• Clean the heat exchanger.</li> </ul> ④Remove the shield.  |
| 7. Remote controller display works normally and the unit performs heating operation, however, the capacity cannot be fully obtained.   | ①Linear expansion valve fault. Opening cannot be adjusted well due to linear expansion valve fault.<br>②Refrigerant shortage.<br>③Lack of insulation for refrigerant piping.<br>④Filter clogging.<br>⑤Heat exchanger clogging.<br>⑥Air duct short cycle .<br>⑦Bypass circuit of outdoor unit fault.   | ①• Discharging temperature and indoor heat exchanger temperature does not rise. Inspect the failure by checking discharging pressure. <ul style="list-style-type: none"> <li>• Replace linear expansion valve.</li> </ul> ②• If refrigerant leaks, discharging temperature rises and LEV opening increases. Inspect leakage by checking the temperature and opening. <ul style="list-style-type: none"> <li>• Check pipe connections for gas leakage.</li> </ul> ③Check the insulation.<br>④Open suction grill and check the filter. Clean the filter by removing dirt or dust on it.<br>⑤• If the filter is clogged, indoor pipe temperature rises and discharging pressure increases. Check if heat exchanger is clogged by inspecting discharging pressure. <ul style="list-style-type: none"> <li>• Clean the heat exchanger.</li> </ul> ⑥Remove the shield.<br>⑦Check refrigerant system during operation. |
| 8. ①For 3 minutes after temperature adjuster turns off, the compressor will not start operating even if temperature adjuster is turned on.<br>②For 3 minutes after temperature adjuster turns on, the compressor will not stop operating even if temperature adjuster is turned off. (Compressor stops operating immediately when turning off by the remote controller.) | ①②Normal operation. (For protection of compressor)  | ①②Normal operation  |
| 9. Defective fan of outdoor units. (Not rotate)  | ①Defective fan motor (Winding open or short).<br>②Disconnection or loose connection of connector on outdoor Fan controller circuit board.<br>③Defective Outdoor fan controller circuit board.   | ①Check the winding resistance. Refer to 12-6. However, make sure to check the resistance after it gets cold enough ( $\leq 87 \pm 15^{\circ}\text{C}$ ), as there is a possibility that the temperature protector housed in the fan motor is working.<br>②Check CN2, CN5, CN6, TAB-U, TAB-V, TAB-W, TAB-W wiring.<br>③Replace outdoor fan controller circuit board.   |

**Symptoms: "PLEASE WAIT" is kept being displayed on the remote controller.**

| Diagnosis flow  | Cause  | Inspection method and troubleshooting   |
|---|--|---|
| <pre> graph TD     Start[Check the display time of "PLEASE WAIT" after turning on the main power.] --&gt; D1{How long is "PLEASE WAIT" kept being displayed on the remote controller?}     D1 -- "2 minutes or less" --&gt; C1[• "PLEASE WAIT" will be displayed during the start-up diagnosis after turning on the main power.]     D1 -- "2 to 6 minutes" --&gt; D2{Are any error codes displayed on the remote controller?}     D2 -- NO --&gt; C1     D2 -- YES --&gt; S1[Check the LED display of the outdoor controller circuit board.]     S1 --&gt; D3{Are any error codes displayed on the LED?}     D3 -- YES --&gt; C2[• Mis-wiring of indoor/outdoor connecting wire<br/>• Breaking of indoor/outdoor connecting wire (S3)<br/>• Defective indoor controller board<br/>• Defective outdoor controller circuit board]     D3 -- NO --&gt; C3[• Defective indoor controller board<br/>• Defective remote controller]     D1 -- "6 minutes or more" --&gt; C3     </pre> | <ul style="list-style-type: none"> <li>• "PLEASE WAIT" will be displayed during the start-up diagnosis after turning on the main power.</li> <li>• Mis-wiring of indoor/outdoor connecting wire</li> <li>• Breaking of indoor/outdoor connecting wire (S3)</li> <li>• Defective indoor controller board</li> <li>• Defective outdoor controller circuit board</li> <li>• Defective indoor controller board</li> <li>• Defective remote controller</li> </ul> | <ul style="list-style-type: none"> <li>• Normal. The start-up diagnosis will be over in around 2 minutes.</li> <li>• Refer to "Self-diagnosis action table" in order to solve the trouble.</li> <li>• In case of communication errors, the display of remote controller may not match the LED display of the outdoor unit.</li> </ul> |



|  |  |
|--|--|
| <b>Symptoms: Nothing is displayed on the remote controller ①</b> | LED display of the indoor controller board<br>LED1 : ○<br>LED2 : ○<br>LED3 : ○ |
|--|--|

| Diagnosis flow  | Cause  | Inspection method and troubleshooting  |
|---|--|--|
| <p>Check the voltage between S1 and S2 on the terminal block (TB4) of the indoor unit which is used to connect the indoor unit and the outdoor unit.</p> <p>AC 198V to AC 264V?</p> <p>NO → Check the voltage among L(L<sub>3</sub>) and N on the terminal block (TB1) of the outdoor power circuit board.</p> <p>YES → AC 198V to AC 264V?</p> <p>NO →</p> <p>YES → Check the voltage between S1 and S2 on the terminal block (TB1) of the outdoor unit which is used to connect the indoor unit and the outdoor unit.</p> <p>AC 198V to AC 264V?</p> <p>NO →</p> <p>YES →</p> <p>Check the voltage of indoor controller board (CN2D).</p> <p>DC 12V to DC 16V?</p> <p>YES →</p> <p>NO → Check the voltage of the unit after removing the indoor power board (CN2S).</p> <p>DC 12V to DC 16V?</p> <p>YES →</p> <p>NO →</p> | <ul style="list-style-type: none"> <li>• Troubles concerning power supply.</li> <li>• Bad wiring of the outdoor controller board.</li> <li>• The fuses on the outdoor controller circuit board are blown.</li> <li>• Bad wiring of the outdoor controller board.</li> <li>• The fuses on the outdoor controller circuit board are blown.</li> <li>• Defective indoor controller board</li> <li>• Mis-wiring, breaking or poor connection of indoor/outdoor connecting wire.</li> <li>• Defective indoor power board</li> </ul> | <ul style="list-style-type: none"> <li>• Check the power wiring to the outdoor unit.</li> <li>• Check the breaker.</li> <li>• Check the wiring of the outdoor unit.</li> <li>• Check if the wiring is bad. The fuses on the outdoor controller circuit board will be blown when the indoor/outdoor connecting wire short-circuits.</li> <li>• Check if mis-wiring, breaking or poor contact is causing this problem. Indoor/outdoor connecting wire is polarized 3-core type. Connect the indoor unit and the outdoor unit by wiring each pair of S1, S2 and S3 on the both side of indoor/outdoor terminal blocks.</li> <li>• Replace the indoor controller board.</li> <li>• Check if there is mis-wiring or breaking of wire.</li> <li>• Replace the indoor power board.</li> </ul> |

## Symptoms: Nothing is displayed on the remote controller ②

LED display of the indoor controller board  
 LED1 : ●  
 LED2 : ○  
 LED3 : ○ or ●

| Diagnosis flow   | Cause  | Inspection method and troubleshooting   |
|--|--|---|
| <p>Check the voltage between S1 and S2 on the terminal block (TB4) of the indoor unit which is used to connect the indoor unit and the outdoor unit.</p> <p>AC 198V to AC 264V?</p> <p>NO → Check the looseness or disconnection of the indoor/outdoor connecting wire.</p> <p>YES → Check the status of the indoor controller board LED3 display.</p> <p>Not lighting. → Check the looseness or disconnection of the indoor/outdoor connecting wire.</p> <p>Blinking. → Are there looseness or disconnection of the indoor/outdoor connecting wire?</p> <p>NO → Check the refrigerant address of the outdoor unit. (SW1-3 to 1-6)</p> <p>Is the refrigerant address "0"?</p> <p>NO → Normal. Only the unit which has the refrigerant address "0" supplies power to the remote controller.</p> <p>YES → Check the LED display of the outdoor unit after turning on the main power again.</p> <p>Is anything displayed?</p> <p>Not displayed. → Defective outdoor controller circuit board.</p> <p>Displayed. → Is "EA" or "Eb" displayed?</p> <p>NO → Is "E8" displayed?</p> <p>YES → Defective outdoor controller circuit board.</p> <p>NO → Can the unit be restarted?</p> <p>Can all the indoor unit be operated?</p> <p>NO → Defective indoor controller board.</p> <p>YES → Check the voltage between S2 and S3 on the terminal block of the outdoor unit.</p> <p>DC 17V to DC 28V?</p> <p>NO → Defective outdoor power circuit board.</p> <p>YES → Defective indoor power board.</p> | <ul style="list-style-type: none"> <li>• Breaking or poor contact of the indoor/outdoor connecting wire.</li> <li>• Normal. Only the unit which has the refrigerant address "0" supplies power to the remote controller.</li> <li>• Defective outdoor controller circuit board.</li> <li>• Defective outdoor controller circuit board.</li> <li>• Defective indoor controller board</li> <li>• Influence of electromagnetic noise.</li> <li>• Defective outdoor power circuit board.</li> <li>• Defective indoor power board.</li> </ul> | <ul style="list-style-type: none"> <li>• Fix the breaking or poor contact of the indoor/outdoor connecting wire.</li> <li>• Set the refrigerant address to "0". In case of the multiple grouping system, recheck the refrigerant address again.</li> <li>• Replace the outdoor controller circuit board.</li> <li>• Replace the outdoor controller circuit board.</li> <li>• Replace the indoor controller board of the indoor unit which doesn't operate.</li> <li>• Not abnormal. There may be the influence of electromagnetic noise. Check the transmission wire and get rid of the causes.</li> <li>• Replace the outdoor power circuit board.</li> <li>• Replace the indoor power board.</li> </ul> |



|  |   |
|--|---|
| <b>Symptoms: Nothing is displayed on the remote controller</b> ③ | LED display of the indoor controller board<br>LED1 : ●<br>LED2 : ● or ●<br>LED3 : — |
|--|---|

| Diagnosis flow   | Cause   | Inspection method and troubleshooting   |
|--|---|---|
| <pre> graph TD     Start[ ] --&gt; Step1[Check the voltage of the terminal block (TB6) of the remote controller.]     Step1 --&gt; Dec1{DC 10V to DC 16V?}     Dec1 -- YES --&gt; Cause1[Defective remote controller.]     Dec1 -- NO --&gt; Step2[Check the status of the LED2.]     Step2 -- Lighting --&gt; Cause2[Breaking or poor contact of the remote controller wire.]     Step2 -- Blinking --&gt; Step3[Check the status of the LED2 after disconnecting the remote controller wire from the terminal block (TB5) of the indoor unit.]     Step3 --&gt; Dec2{Check the status of the LED2.}     Dec2 -- Lighting --&gt; Cause3[The remote controller wire short-circuits.]     Dec2 -- Blinking --&gt; Cause4[Defective indoor controller board.]     </pre> | <ul style="list-style-type: none"> <li>• Defective remote controller.</li> <li>• Breaking or poor contact of the remote controller wire.</li> <li>• The remote controller wire short-circuits.</li> <li>• Defective indoor controller board.</li> </ul> | <ul style="list-style-type: none"> <li>• Replace the remote controller.</li> <li>• Check if there is breaking or poor contact of the remote controller wire. Check the voltage of the terminal block (TB5) connecting the remote controller wire. If it is not between DC 10V and DC16V, the indoor controller board must be defective.</li> <li>• Check if the remote controller wire is short-circuited.</li> <li>• Replace the indoor controller board.</li> </ul> |

• Before repair

**Frequent calling from customers.**

| Phone Calls From Customers    |   | How to Respond   | Note  |
|-------------------------------|---|--|---|
| Unit does not operate at all. | ① The operating display of remote controller does not come on.          | ① Check if power is supplied to air conditioner. Nothing appears on the display unless power is supplied.  |   |
|                               | ② Unit cannot be restarted for a while after it's stopped.              | ② Wait around 3 minutes. to restart unit.<br>The air conditioner is in a state of being protected by the microcomputer's directive. Once the compressor is stopped, the unit cannot be restarted for 3 minutes. This control is also applied when the unit is turned on and off by remote controller or thermostat.  |   |
|                               | ③ Error code appears and blinks on the display of remote controller.    | ③ Error code will be displayed if any protection devices of the air conditioner are actuated. What is error code? -----  | Refer to "SELF-DIAGNOSIS ACTION TABLE".<br>▶ Check if servicing is required for the error.                |
| Remote controller.            | ① "PLEASE WAIT" is displayed on the screen.                             | ① Wait around 2 minutes.<br>An automatic startup test will be conducted for 2 minutes when power is supplied to the air conditioner. "PLEASE WAIT" will be kept being displayed while that time.   |   |
|                               | ② "FILTER" is displayed on the screen.                                  | ② This indicates that it is time to clean the air filters. Clean the air filters. Press the FILTER button on the remote controller twice to clear "FILTER" from the display.<br>See the operation manual that came with the product for how to clean the filters.  | Display time of "FILTER" depends on the model.<br>Long life filter: 2500 hrs.<br>Regular filter: 100 hrs. |
|                               | ③ "STANDBY" is displayed on the screen.                                 | ③ This is displayed when the unit starts HEAT operation, when the thermostat puts the compressor in operation mode, or when the outdoor unit ends DEFROST operation and returns to HEAT operation.<br>The display will automatically disappear around 10 minutes later.<br>While "STANDBY" is displayed on the remote controller, the airflow amount will be restricted because the indoor unit's heat exchanger is not fully heated up. In addition to that, the up/down vane will be automatically set to horizontal blow in order to prevent cold air from directly blowing out to human body. The up/down vane will return to the setting specified by the remote controller when "STANDBY" is released. |   |
|                               | ④ "DEFROST" is displayed on the screen. (No air comes out of the unit.) | ④ The outdoor unit gets frosted when the outside temperature is low and the humidity is high. "DEFROST" indicates the DEFROST operation is being performed to melt this frost. The DEFROST operation ends in around 10 minutes (at most 15 minutes).<br>During the DEFROST operation, the indoor unit's heat exchanger becomes cold, so the blower is stopped. The up/down vane will be automatically set to horizontal blow in order to prevent cold air from directly blowing out to human body. The display will turn into "STANDBY" when DEFROST operation ends.   |   |



| Phone Calls From Customers                        | How to Respond   | Note   |  |
|---|--|--|--|
| The room cannot be cooled or heated sufficiently. | ① Check the set temperature of remote controller. The outdoor unit cannot be operated if the set temperature is not appropriate.<br>The outdoor unit operates in the following modes.<br>COOL: When the set temperature is lower than the room temperature.<br>HEAT: When the set temperature is higher than the room temperature. |  |  |
|   | ② Check if filters are not dirty and clogged. If filters are clogged, the airflow amount will be reduced and the unit capacity will be lowered. See the instruction manual that came with the product for how to clean the filters.  |  |  |
|   | ③ Check there is enough space around the air conditioner.<br>If there are any obstacles in the air intake or air outlet of indoor/outdoor units, they block the airflow direction so that the unit capacity will be lowered.   |  |  |
| Sound comes out from the air conditioner.         | ① An gas escaping sound is heard sometimes.  | ① This is not a malfunction.<br>This is the sound which is heard when the flow of refrigerant in the air conditioner is switched.  |  |
|   | ② A cracking sound is heard sometimes.   | ② This is not a malfunction.<br>This is the sound which is heard when internal parts of units expand or contract when the temperature changes.   |  |
|   | ③ A buzzing sound is heard sometimes.  | ③ This is not a malfunction.<br>This is the sound which is heard when the outdoor unit starts operating.   |  |
|   | ④ A ticking sound is heard from the outdoor unit sometimes.  | ④ This is not a malfunction.<br>This is the sound which is heard when the blower of the outdoor unit is controlling the airflow amount in order to keep the optimum operating condition.   |  |
|   | ⑤ A sound, similar to water flowing, is heard from the unit.   | ⑤ This is not a malfunction.<br>This is the sound which is heard when the refrigerant is flowing inside the indoor unit.   |  |
| Something is wrong with the blower.....           | ① The fan speed doesn't match the setting of the remote controller during DRY operation.(No air comes out sometimes during DRY operation.)   | ① This is not a malfunction. During the DRY operation, the blower's ON/OFF is controlled by the microcomputer to prevent overcooling and to ensure efficient dehumidification. The fan speed cannot be set by the remote controller during DRY operation.  |  |
|   | ② The fan speed doesn't match the setting of the remote controller in HEAT operation.  | ② This is not a malfunction.<br>1) When the HEAT operation starts, to prevent the unit from blowing cold air, the fan speed is gradually increased from zero to the set speed, in proportion to the temperature rise of the discharged air.<br>2) When the room temperature reaches the set temperature and the outdoor unit stops, the unit starts the LOW AIR operation.<br>3) During the HEAT operation, the DEFROST operation is performed to defrost the outdoor unit. During the DEFROST operation, the blower is stopped to prevent cold air coming out of the indoor unit. | The up/down vane will be automatically set to horizontal blow in these cases listed up on the left (①~③). After a while, the up/down vane will be automatically moved according to the setting of the remote controller. |



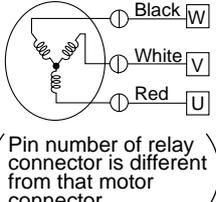
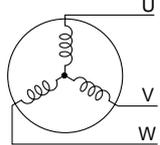
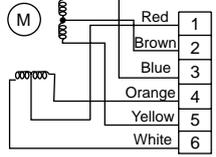
| Phone Calls From Customers   | How to Respond   | Note   |  |
|--|--|--|--|
| Something is wrong with the blower.....  | ③ This is not a malfunction.<br>The blower is operating just for cooling down the heated-up air conditioner. This will be done within one minute.<br>This control is conducted only when the HEAT operation is stopped with the electric heater ON.  | However, this control is also applied to the models which has no electric heater.  |  |
| Something is wrong with the airflow direction....  | ① The airflow direction is changed during COOL operation.  | ① If the up/down vane is set to downward in COOL operation, it will be automatically set to horizontal blow by the microcomputer in order to prevent water from dropping down.<br>"1 Hr." will be displayed on the remote controller if the up/down vane is set to downward with the fan speed set to be less than "LOW".  |  |
|  | ② The airflow direction is changed during HEAT operation.<br>(The airflow direction cannot be set by remote controller.)   | ② In HEAT operation, the up/down vane is automatically controlled according to the temperature of the indoor unit's heat exchanger. In the following cases written below, the up/down vane will be set to horizontal blow, and the setting cannot be changed by remote controller.<br>1) At the beginning of the HEAT operation<br>2) While the outdoor unit is being stopped by thermostat or when the outdoor unit gets started to operate.<br>3) During DEFROST operation<br>The airflow direction will be back to the setting of remote controller when the above situations are released. | "STANDBY" will be displayed on the remote controller in case of ① and ②.<br>"DEFROSTING" will be displayed on the screen in case of ③. |
|  | ③ The airflow direction doesn't change.<br>(Up/down vane, left/right louver)   | ③ 1) Check if the vane is set to a fixed position.<br>(Check if the vane motor connector is removed.)<br>2) Check if the air conditioner has a function for switching the air direction.<br>3) If the air conditioner doesn't have that function, "NOT AVAILABLE" will be displayed on the remote controller when "AIR DIRECTION" or "LOUVER" button is pressed.   |  |
| The air conditioner starts operating even though any buttons on the remote controller are not pressed. | ① Check if you set ON/OFF timer.<br>The air conditioner starts operating at the time designated if ON timer has been set before.   |  |  |
|  | ② Check if any operations are ordered by distant control system or the central remote controller.<br>While "CENTRALLY CONTROLLED INDICATOR" is displayed on the remote controller, the air conditioner is under the control of external directive.   | There might be a case that "CENTRALLY CONTROLLED INDICATOR" will not be displayed.   |  |
|  | ③ Check if power is recovered from power failure (black out).<br>The units will automatically start operating when power is recovered after power failure (black out) occurs. This function is called "auto recovery feature from power ".   |  |  |
| The air conditioner stops even though any buttons on the remote controller are not pressed.            | ① Check if you set ON/OFF timer.<br>The air conditioner stops operating at the time designated if OFF timer has been set before.<br>② Check if any operations are ordered by distant control system or the central remote controller.<br>While "CENTRALLY CONTROLLED INDICATOR" is displayed on the remote controller, the air conditioner is under the control of external directive. | There might be a case that "CENTRALLY CONTROLLED INDICATOR" will not be displayed.   |  |



| Phone Calls From Customers  | How to Respond  | Note |
|---|---|------|
| A white mist is expelled from the indoor unit.  | This is not a malfunction.<br>This may occur when the operation gets started in the room of high humidity.  |      |
| Water or moisture is expelled from the outdoor unit.  | Cooling; when pipes or piping joints are cooled, they get sweated and water drips down.<br>Heating; water drips down from the heat exchanger.<br>* Make use of optional parts "Drain Socket" and "Drain pan" if these water needs to be collected and drained out for once. |      |
| The display of wireless remote controller gets dim or doesn't come on.<br>The indoor unit doesn't receive a signal from remote controller at a long distance. | Batteries are being exhausted. Replace them and press the reset button of remote controller.  |      |

## 12-6. HOW TO CHECK THE PARTS

### PUHZ-RP200YHA PUHZ-RP200YHA<sub>1</sub> PUHZ-RP250YHA PUHZ-RP250YHA<sub>1</sub>

| Parts name   | Check points   |                           |                |               |
|--|--|---------------------------|----------------|---------------|
| Thermistor (TH3, TH32)<br><Outdoor pipe><br><br>Thermistor (TH4)<br><Discharge><br><br>Thermistor (TH6)<br><Outdoor 2-phase pipe><br><br>Thermistor (TH7)<br><Outdoor> | Disconnect the connector then measure the resistance using a tester.<br>(Surrounding temperature 10°C ~30°C) |                           |                |               |
|  |  | Normal                    | Abnormal       |               |
|  | TH4  | 160kΩ~410kΩ               | Open or short  |               |
|  | TH3, TH32  | 4.3kΩ~9.6kΩ               |                |               |
|  | TH6  |                           |                |               |
|  | TH7  |                           |                |               |
| Fan motor(MF1,MF2)<br><br>  | Measure the resistance between the terminals using a tester.<br>(Winding temperature 20°C)                   |                           |                |               |
|  | Relay connector  | Normal                    | Abnormal       |               |
|  | Red — Black  | 15.3±0.5Ω                 | Open or short  |               |
|  | Black — White  |                           |                |               |
|  | White — Red  |                           |                |               |
| Solenoid valve coil<br><Four-way valve><br>(21S4)  | Measure the resistance between the terminals using a tester.<br>(Surrounding temperature 20°C)               |                           |                |               |
|  |  | Normal                    | Abnormal       |               |
|  | RP200/250YHA   | RP200/250YHA <sub>1</sub> | Open or short  |               |
|  | 1370±100Ω  | 1435±150Ω                 |                |               |
| Motor for compressor<br>(MC)<br><br>  | Measure the resistance between the terminals using a tester.<br>(Winding temperature 20°C)                   |                           |                |               |
|  |  | Normal                    | Abnormal       |               |
|  |  | 0.72Ω                     | Open or short  |               |
| Linear expansion valve<br>( LEV(A) )<br><br>  | Disconnect the connector then measure the resistance using a tester.<br>(Winding temperature 20°C)           |                           |                |               |
|  |  | Normal                    | Abnormal       |               |
|  | Red - White  | Red - Orange              | Brown - Yellow | Open or short |
|  |  |                           | Brown - Blue   |               |
|  | 46±4Ω  |                           |                |               |
| Solenoid valve coil<br><Bypass valve><br>(SV)  | Measure the resistance between the terminals using a tester.<br>(Surrounding temperature 20°C)               |                           |                |               |
|  |  | Normal                    | Abnormal       |               |
|  | RP200/250YHA   | RP200/250YHA <sub>1</sub> | Open or short  |               |
|  | 1197±10Ω   | 1435±150Ω                 |                |               |

## 12-7. HOW TO CHECK THE COMPONENTS

<Thermistor feature chart>

### Low temperature thermistors

- Thermistor <Outdoor pipe> (TH3, TH32)
- Thermistor <Outdoor 2-phase pipe> (TH6)
- Thermistor <Outdoor> (TH7)

Thermistor R0 = 15kΩ ± 3%

B constant = 3480 ± 2%

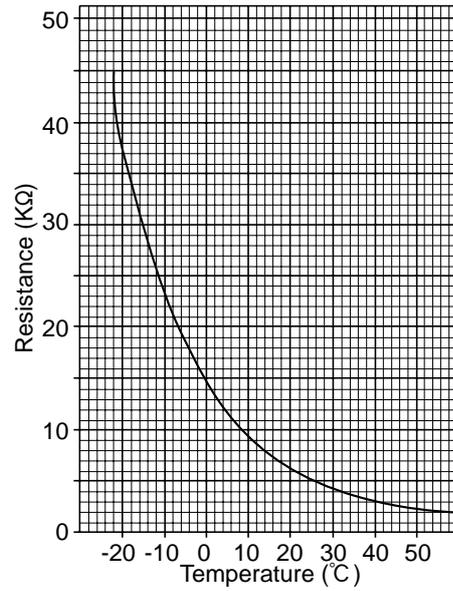
$$R_t = 15 \exp\left\{3480 \left( \frac{1}{273+t} - \frac{1}{273} \right)\right\}$$

0°C 15kΩ      30°C 4.3kΩ

10°C 9.6kΩ     40°C 3.0kΩ

20°C 6.3kΩ

25°C 5.2kΩ



### High temperature thermistor

- Thermistor <Discharge> (TH4)

Thermistor R120 = 7.465kΩ ± 2%

B constant = 4057 ± 2%

$$R_t = 7.465 \exp\left\{4057 \left( \frac{1}{273+t} - \frac{1}{393} \right)\right\}$$

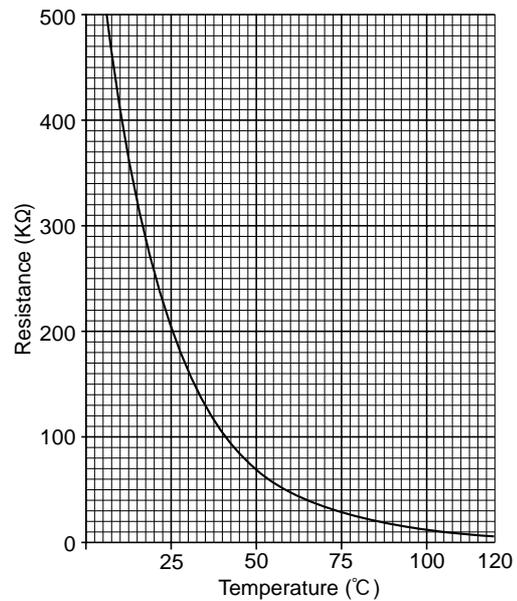
20°C 250kΩ      70°C 34kΩ

30°C 160kΩ      80°C 24kΩ

40°C 104kΩ      90°C 17.5kΩ

50°C 70kΩ        100°C 13.0kΩ

60°C 48kΩ        110°C 9.8kΩ

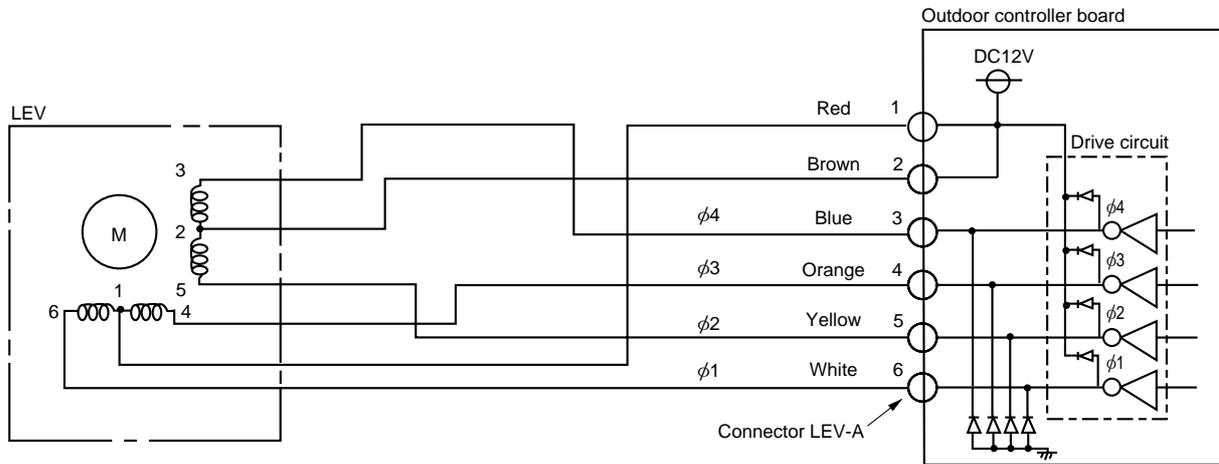


## Linear expansion valve

### (1) Operation summary of the linear expansion valve.

- Linear expansion valve open/close through stepping motor after receiving the pulse signal from the outdoor controller circuit board.
- Valve position can be changed in proportion to the number of pulse signal.

<Connection between the indoor controller circuit board and the linear expansion valve>



### <Output pulse signal and the valve operation>

| Output (Phase) | Output |     |     |     |     |     |     |     |
|----------------|--------|-----|-----|-----|-----|-----|-----|-----|
|                | 1      | 2   | 3   | 4   | 5   | 6   | 7   | 8   |
| $\phi 1$       | ON     | ON  | OFF | OFF | OFF | OFF | OFF | ON  |
| $\phi 2$       | OFF    | ON  | ON  | ON  | OFF | OFF | OFF | OFF |
| $\phi 3$       | OFF    | OFF | OFF | ON  | ON  | ON  | OFF | OFF |
| $\phi 4$       | OFF    | OFF | OFF | OFF | OFF | ON  | ON  | ON  |

Opening a valve : 8 → 7 → 6 → 5 → 4 → 3 → 2 → 1 → 8

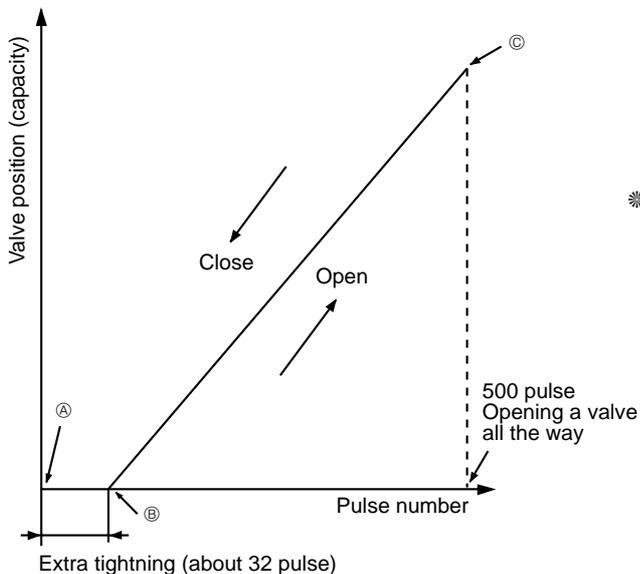
Closing a valve : 1 → 2 → 3 → 4 → 5 → 6 → 7 → 8 → 1

The output pulse shifts in above order.

※ 1. When linear expansion valve operation stops, all output phase become OFF.

※ When the switch is turned on, 700 pulse closing valve signal will be sent till it goes to ㉓ point in order to define the valve position. (The pulse signal is being sent for about 20 seconds.)

### (2) Linear expansion valve operation



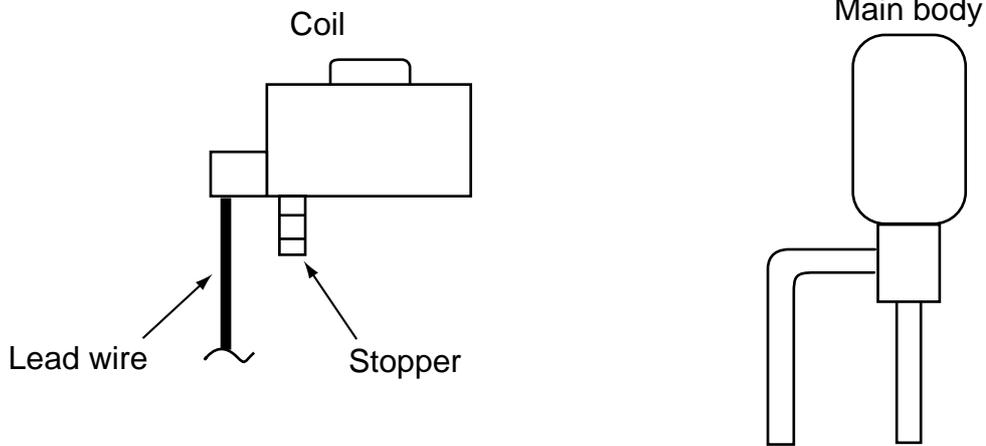
When the valve moves smoothly, there is no noise or vibration occurring from the linear expansion valve : however, when the pulse number moves from ㉓ to ㉓ or when the valve is locked, more noise can be heard than normal situation. No noise is heard when the pulse number moves from ㉓ to ㉓ in case coil is burn out or motor is locked by open-phase.

※ Noise can be detected by placing the ear against the screw driver handle while putting the screw driver to the linear expansion valve.

### (3) How to attach and detach the coil of linear expansion valve

<Composition>

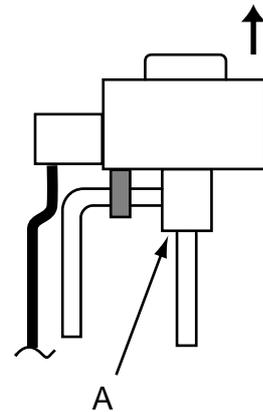
Linear expansion valve is separable into the main body and the coil as shown in the diagram below.



#### <How to detach the coil>

Hold the lower part of the main body (shown as A) firmly so that the main body does not move and detach the coil by pulling it upward.

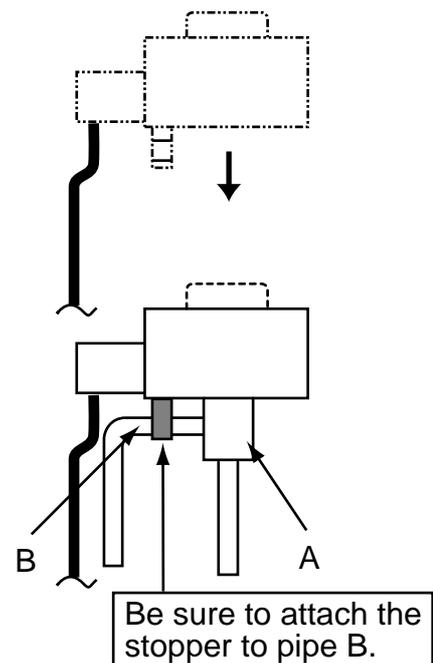
Be sure to detach the coil holding main body firmly. Otherwise pipes can bend due to pressure.



#### <How to attach the coil>

Hold the lower part of the main body (shown as A) firmly so that the main body does not move and attach the coil by inserting it downward into the main body. Then securely attach the coil stopper to pipe B. (At this time, be careful that stress is not added to lead wire and main body is not wound by lead wire.) If the stopper is not firmly attached to pipe B, coil may be detached from the main body and that can cause defective operation of linear expansion valve.

To prevent piping stress, be sure to attach the coil holding the main body of linear expansion valve firmly. Otherwise pipe may break.



## 12-8. EMERGENCY OPERATION

(1) When the error codes shown below are displayed on outdoor unit or microcomputer for wired remote controller or indoor unit has a failure, but no other problems are found, emergency operation will be available by setting the emergency operation switch (SWE) to ON and short-circuiting the connector (CN31) on outdoor controller circuit board.

●When following abnormalities occur, emergency operation will be available.

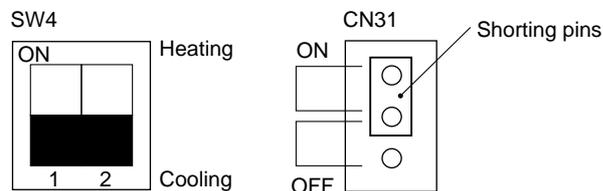
| Error code | Inspected content   |
|------------|---|
| U4         | Open/short of pipe thermistor (TH3, TH32/TH6)   |
| E8         | Indoor/outdoor unit communication error •Signal receiving error (Outdoor unit)                    |
| E9         | Indoor/outdoor unit communication error •Transmitting error (Indoor unit)                         |
| E0 ~ E7    | Communication error other than outdoor unit   |
| Ed         | Communication error between outdoor controller board and M-NET board (Serial communication error) |

(2) Check the following items and cautions for emergency operation

- ①Make sure that there is no abnormality in outdoor unit other than the above abnormalities. (Emergency operation will not be available when error code other than the above are indicated.)
- ②For emergency operation, it is necessary to set the emergency operation switch (SWE) on indoor controller circuit board. Refer to the electrical wiring diagram of indoor unit for how to set the indoor unit.)
- ③During emergency operation, the air-conditioner will continuously be operated by supplying power and stopping it: It can not be turned on or off by remote control, and temperature control is not possible.
- ④Do not perform emergency heating operation for an extended period of time: If the outdoor unit starts defrosting during this period, cold air will blow out from the indoor unit.
- ⑤Do not perform emergency cooling operation for more than 10 hours: Neglecting this could result in freezing the heat exchanger in indoor unit.

(3) Emergency operation procedure

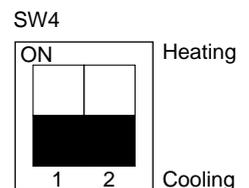
- ①Turn the main power supply off.
- ②Turn on the emergency operation switch (SWE) on indoor controller circuit board.
- ③Set the shorting pins of emergency operation connector (CN31) on outdoor controller circuit board to ON.
- ④Use SW4-2 on outdoor controller circuit board to set the operation mode (cooling or heating). (SW4-1 is not used.)



⑤Turning the main power supply on will start the emergency operation.

(4) Releasing emergency operation

- ①Turn the main power supply off.
- ②Set the emergency operation switch (SWE) on indoor controller circuit board to OFF.
- ③Set the shorting pins of emergency operation connector (CN31) on outdoor controller circuit board to OFF.
- ④Set SW4-2 on outdoor controller circuit board as shown in the right.



\*If shorting pins are not set on emergency operation connector (CN31), the setting remains OFF.

### (5) Operation data during emergency operation

During emergency operation, no communication is performed with the indoor unit, so the data items needed for operation are set to the following values:

| Operation data  | Operation mode |        | Remarks |
|---|----------------|--------|---------|
|   | COOL           | HEAT   |         |
| Intake temperature (TH1)  | 27°C           | 20.5°C |         |
| Indoor fluid pipe temperature (TH2)   | 5°C            | 45°C   |         |
| Indoor 2-phase pipe temperature (TH5)   | 5°C            | 50°C   |         |
| Set temperature   | 25°C           | 22°C   |         |
| Outdoor fluid pipe temperature (TH3)  | 45°C           | 5°C    | (*1)    |
| Outdoor discharge pipe temperature (TH4)  | 80°C           | 80°C   | (*1)    |
| Outdoor 2-phase pipe temperature (TH6)  | 50°C           | 5°C    | (*1)    |
| Outdoor air temperature (TH7)   | 35°C           | 7°C    | (*1)    |
| Temperature difference code (intake temperature - set temperature) ( $\Delta T$ ) | 5              | 5      |         |
| Discharge super heat (SHd)  | 30deg          | 30deg  | (*2)    |
| Sub-cool (SC)   | 5deg           | 5deg   | (*2)    |

\*1: If the thermistor temperature data is normal (not open/short), that data is loaded into the control as valid data.

If the unit enters emergency operation because TH values have become mismatched, setting the thermistors to open/short corrects the settings.

\*2: If one thermistor is set to open/short, the values for each will be different.

[Example] When liquid temperature thermistor (TH3) has an open or short circuit.

| Thermistor | COOL                                    | HEAT |
|------------|---|------|
| TH3        | 45°C                                    | 5°C  |
| TH6        | Ta                                      | Tb   |
|            | Regard normal figure as effective data. |      |
| TH4        | Tc                                      | Td   |
|            | Regard normal figure as effective data. |      |
| TH5        | 5°C                                     | 50°C |
| TH2        | 5°C                                     | 45°C |

Discharge superheat (SHd)

Cooling = TH4 - TH6 = Tc - Ta

Heating = TH4 - TH5 = Td - 50

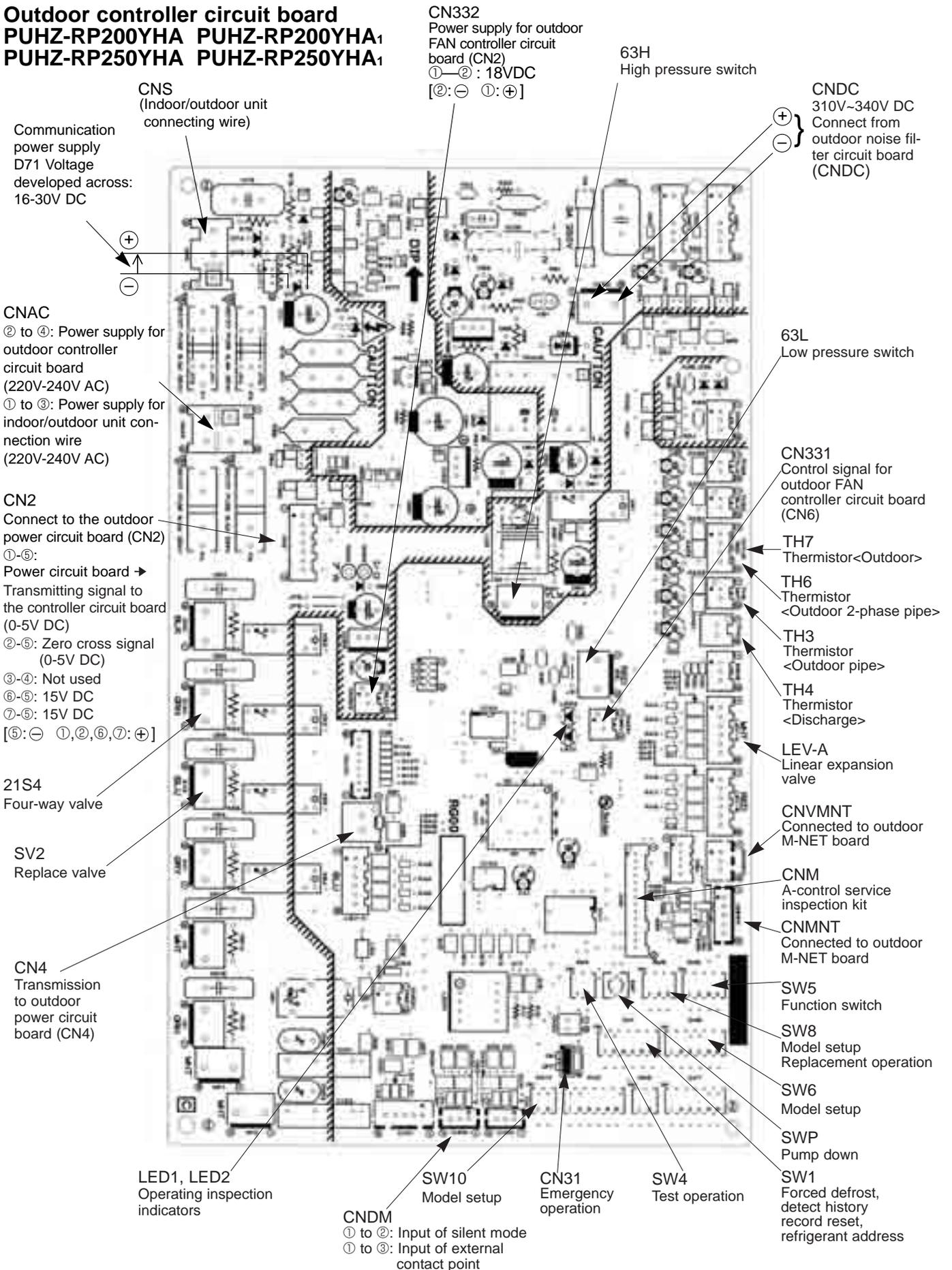
Degree of subcooling (SC)

Cooling = TH6 - TH3 = Ta - 45

Heating = TH5 - TH2 = 50 - 45 = 5 deg.

## 12-9. TEST POINT DIAGRAM

### Outdoor controller circuit board PUHZ-RP200YHA PUHZ-RP200YHA<sub>1</sub> PUHZ-RP250YHA PUHZ-RP250YHA<sub>1</sub>



**Outdoor Power circuit board**  
**PUHZ-RP200YHA**  
**PUHZ-RP250YHA**  
**PUHZ-RP200YHA<sub>1</sub>**  
**PUHZ-RP250YHA<sub>1</sub>**

**Brief Check of POWER MODULE**

※ Usually, they are in a state of being short-circuited if they are broken. Measure the resistance in the following points (connectors, etc.). If they are short-circuited, it means that they are broken.

**1. Check of POWER MODULE**

①. Check of DIODE circuit

L1-P1, L2-P1, L3-P1, L1-N1, L2-N1, L3-N1

②. Check of IGBT circuit

P2-U, P2-V, P2-W, N2-U, N2-V, N2-W

Note: The marks, L1, L2, L3, N1, N2, P1, P2, U, V and W shown in the diagram above are not actually printed on the board.

CN5  
 Detection of primary current  
 (Connect to the outdoor noise filter circuit board (CN5))

CN4  
 Connect to the outdoor controller circuit board (CN4)

CN2  
 Connect to the outdoor controller circuit board (CN2)  
 ①-⑤: Power circuit board → Transmitting signal to the controller board (0-5V DC)  
 ②-⑤: Zero cross signal (0-5V DC)  
 ③-④: Not used [⑤ : ⊖ ①, ②, ⑥, ⑦ : ⊕]  
 ⑥-⑤: 15V DC  
 ⑦-⑤: 15V DC

TB-U, TB-V, TB-W  
 Connect to the compressor (MC)  
 Voltage among phases:  
 10V-400V AC

TB-L1, TB-L2, TB-L3  
 Connect to the outdoor noise filter circuit board (LO1, LO2, LO3)  
 380V-415V AC

TB-N1  
 Connect to the smoothing capacitor CB2 ⊖

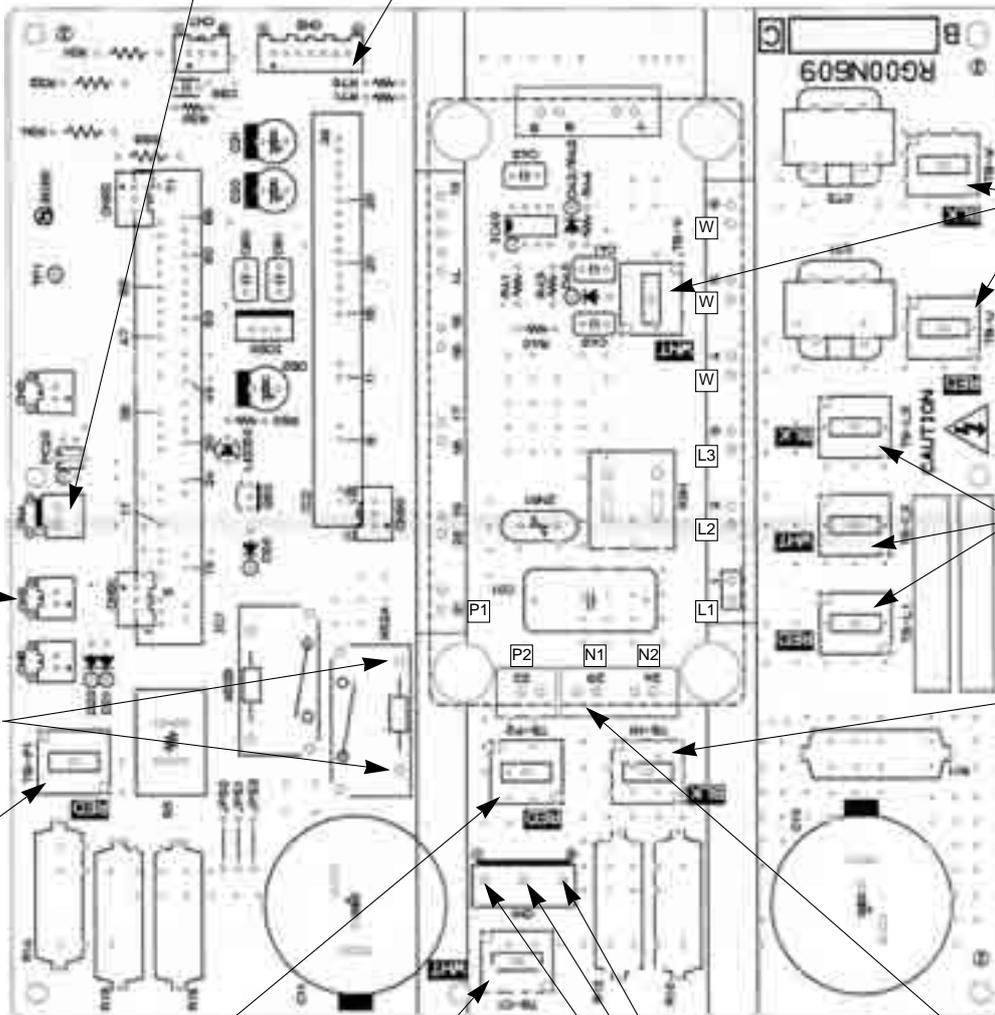
TAB connector on X52A  
 Connect to the RS resistor

TB-P1  
 Connect to the DCL

TB-P2  
 Connect to the DCL and the smoothing capacitor CB1 ⊕

TB-C1  
 Connect to the smoothing capacitor CB1 ⊖, CB2 ⊕

CN1  
 ⊖ } 282V DC }  
 ⊕ } 282V DC } 565V DC  
 ⊕ }  
 Connect to the outdoor FAN controller circuit board (CN5)



**Outdoor Noise filter circuit board**

**PUHZ-RP200YHA  
PUHZ-RP250YHA  
PUHZ-RP200YHA<sub>1</sub>  
PUHZ-RP250YHA<sub>1</sub>**

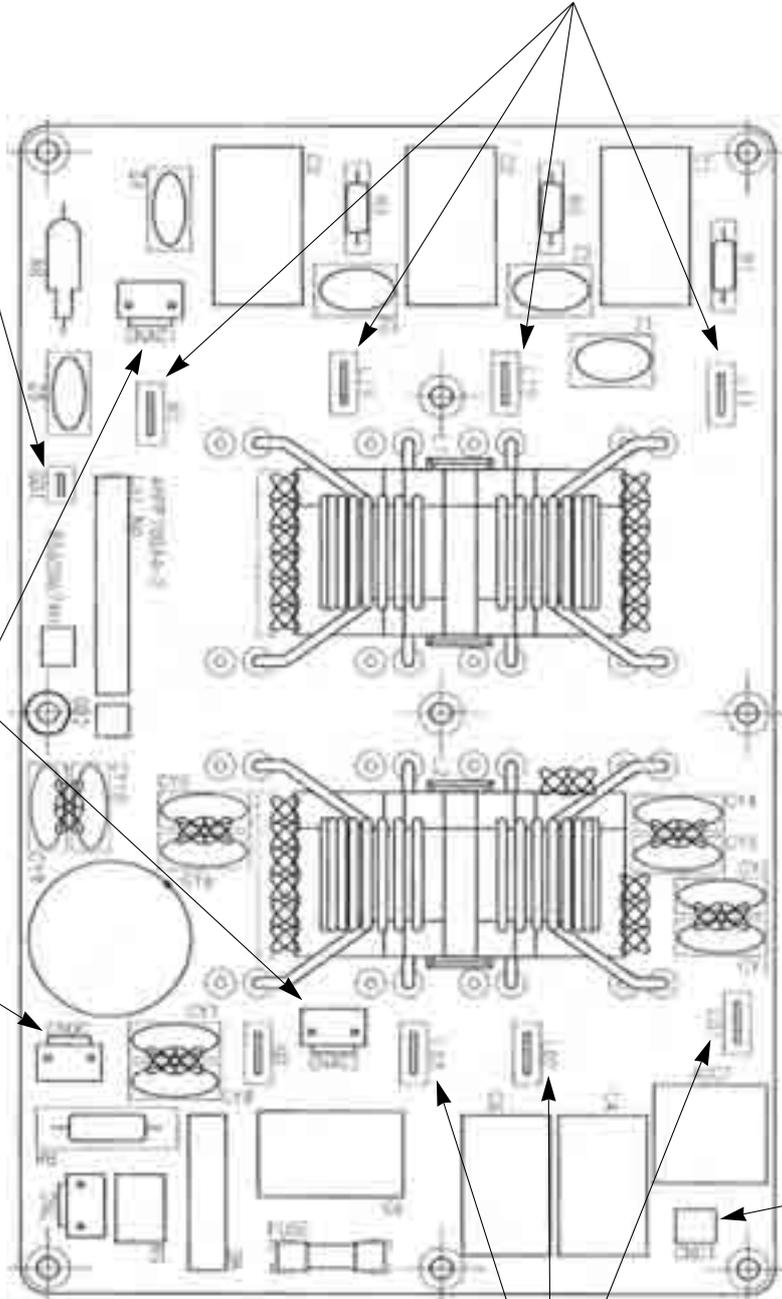
LI1, LI2, LI3, NI  
POWER SUPPLY  
LI1-LI2/LI-LI3/LI3-LI1 : AC380/400/415V input  
LI1-NI/LI2-NI/LI3-NI : AC220/230/240V input  
(Connect to the terminal block (TB1))

GD1  
Connect to the earth

CNAC1, CNAC2  
AC220/230/240V  
(Connect to the outdoor controller circuit board (CNAC))

CNDC  
(Connect to the outdoor controller circuit board (CNDC))

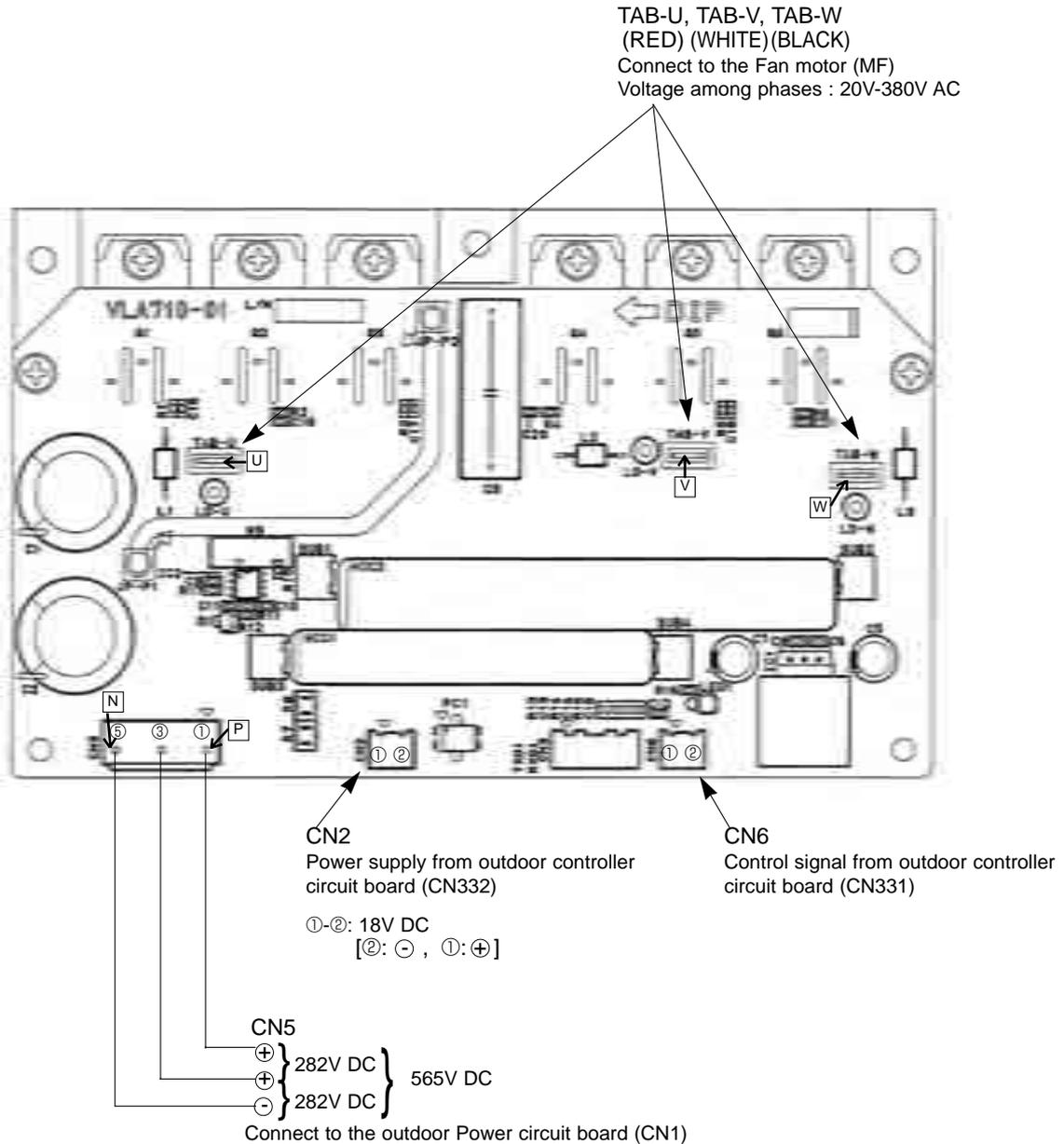
CNCT  
Primary current  
(Connect to the outdoor power circuit board (CN5))



LO1, LO2, LO3  
POWER SUPPLY  
LO1-LO2/LO2-LO3/LO3-LO1 : AC380/400/415V OUTPUT  
(Connect to the outdoor power circuit board (TB-L1, L2, L3))

## Outdoor Fan controller circuit board

PUHZ-RP200YHA  
 PUHZ-RP250YHA  
 PUHZ-RP200YHA<sub>1</sub>  
 PUHZ-RP250YHA<sub>1</sub>



**Brief Check of IGBT**  
 ※ Usually, they are in a state of being short-circuited if they are broken.  
 Measure the resistance in the following points (connectors, etc.).  
 If they are short-circuited, it means that they are broken.  
**Check of POWER MODULE**  
 Check of IGBT circuit  
 [P] - [U], [P] - [V], [P] - [W], [N] - [U], [N] - [V], [N] - [W]  
 Note: The marks, [U], [V] and [W]  
 shown in the diagram above are not actually printed on the board.

## 12-10. FUNCTION OF SWITCHES, CONNECTORS AND JUMPERS

### (1) Function of switches

| Type of switch | Switch | No. | Function                    | Action by the switch operation |                       | Effective timing                                   |                  |                      |                  |
|----------------|--------|-----|-----------------------------|--------------------------------|-----------------------|--|------------------|----------------------|------------------|
|                |        |     |                             | ON                             | OFF                   |  |                  |                      |                  |
| Dip switch     | SW1    | 1   | Compulsory defrosting       | Start                          | Normal                | When compressor is working in heating operation. * |                  |                      |                  |
|                |        | 2   | Abnormal history clear      | Clear                          | Normal                |  | off or operating |                      |                  |
|                |        | 3   | Refrigerant address setting |                                |                       |  |                  | When power supply ON |                  |
|                |        | 4   |                             |                                |                       |  |                  |                      |                  |
|                |        | 5   |                             |                                |                       |  |                  |                      |                  |
|                |        | 6   |                             |                                |                       |  |                  |                      |                  |
|                |        | 12  |                             |                                |                       |  |                  |                      |                  |
|                |        | 13  |                             |                                |                       |  |                  |                      |                  |
|                |        | 14  |                             |                                |                       |  |                  |                      |                  |
|                |        | 15  |                             |                                |                       |  |                  |                      |                  |
|                |        | SW4 |                             | 1                              | Test run              | Operating  | OFF              |                      | Under suspension |
|                |        |     |                             | 2                              | Test run mode setting | Heating  | Cooling          |                      |                  |

Compulsory defrosting should be done as follows.

① Change the DIP SW1-1 on the outdoor controller circuit board from OFF to ON.

② Compulsory defrosting will start by the above operation ① if these conditions written below are satisfied.

- Heat mode setting
- 10 minutes have passed since compressor started operating or previous compulsory defrosting finished.
- Pipe temperature is less than or equal to 8°C.

③ Compulsory defrosting will finish if certain conditions are satisfied.

\*Compulsory defrosting can be done if above conditions are satisfied when DIP SW1-1 is changed from OFF to ON. After DIP SW1-1 is changed from OFF to ON, there is no problem if DIP SW1-1 is left ON or changed to OFF again. This depends on the service conditions.

| Type of Switch | Switch | No.               | Function                            | Action by the switch operation  |                                       | Effective timing     |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
|----------------|--------|-------------------|-------------------------------------|---|---------------------------------------|----------------------|-------|-------|---------------------------------------|-----|-----|-----------|----|-----|-----|-----|----|-----|--------|
|                |        |                   |                                     | ON  | OFF                                   |                      |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
| Dip switch     | SW5    | 1                 | No function                         | —   | —                                     | —                    |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
|                |        | 2                 | Power failure automatic recovery *1 | Auto recovery   | No auto recovery                      | When power supply ON |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
|                |        | 3                 | No function                         | —   | —                                     | —                    |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
|                |        | 4                 | No function                         | —   | —                                     | —                    |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
|                | SW7    | 1                 | Switch to "Demand function"*2       | <table border="1"> <tr> <td>SW7-1</td> <td>SW7-2</td> <td>Power consumption when external input</td> </tr> <tr> <td>OFF</td> <td>OFF</td> <td>0% (STOP)</td> </tr> <tr> <td>ON</td> <td>OFF</td> <td>50%</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>70%</td> </tr> </table> |                                       |                      | SW7-1 | SW7-2 | Power consumption when external input | OFF | OFF | 0% (STOP) | ON | OFF | 50% | OFF | ON | 70% | Always |
|                |        | SW7-1             |                                     | SW7-2   | Power consumption when external input |                      |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
|                |        | OFF               |                                     | OFF   | 0% (STOP)                             |                      |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
|                |        | ON                | OFF                                 | 50%   |                                       |                      |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
|                |        | OFF               | ON                                  | 70%   |                                       |                      |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
|                |        | 2                 | —                                   | —   | —                                     |                      |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
|                | 3      | —                 | —                                   | —   |                                       |                      |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
|                | 4      | No function       | —                                   | —   | —                                     |                      |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
|                | 5      | No function       | —                                   | —   | —                                     |                      |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
|                | 6      | No function       | —                                   | —   | —                                     |                      |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
|                | SW8    | 1                 | Use of existing pipe                | Used or RP250Y*3  | Not used                              | Always               |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
|                |        | 2                 | Replacement operation               | Start   | Normal                                | Always               |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
| 3              |        | No function       | —                                   | —   | —                                     |                      |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
| SW9            | 1      | Fan speed setting | High external static pressure       | Normal  | Always                                |                      |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
|                | 2      | No function       | —                                   | —   | —                                     |                      |       |       |                                       |     |     |           |    |     |     |     |    |     |        |
| Push switch    | SWP    | Pump down         | Start                               | Normal  | Under suspension                      |                      |       |       |                                       |     |     |           |    |     |     |     |    |     |        |

\*1 'Power failure automatic recovery' can be set by either remote controller or this DIP SW. If one of them is set to ON, 'Auto recovery' activates. Please set "Auto recovery" basically by remote controller because all units have not DIP SW. Please refer to 12. FUNCTION SETTING.

\*2 Refer to the page for the wiring.

\*3 RP250YHA is always ON.

## (2) Function of connectors

| Types     | Connector | Function            | Action by the switch operation |        | Effective timing     |
|-----------|-----------|---------------------|--------------------------------|--------|----------------------|
|           |           |                     | Short                          | Open   |                      |
| Connector | CN31      | Emergency operation | Start                          | Normal | When power supply ON |
| SW6       | SW6-1     | Model select        |                                |        |                      |
|           | SW6-2     |                     |                                |        |                      |
|           | SW6-3     |                     |                                |        |                      |
|           | SW6-4     |                     |                                |        |                      |
|           | SW6-5     |                     |                                |        |                      |
|           | SW6-6     |                     |                                |        |                      |
| SW8       | SW8-1     |                     |                                |        |                      |
| SW10      | SW10-1    |                     |                                |        |                      |
|           | SW10-2    |                     |                                |        |                      |

\* 1 As for SW8, see also 12-10 (1) Function of switches, as SW8 sets the replacement operation as well.

### Special function

#### (a) Low-level sound priority mode (Local wiring)

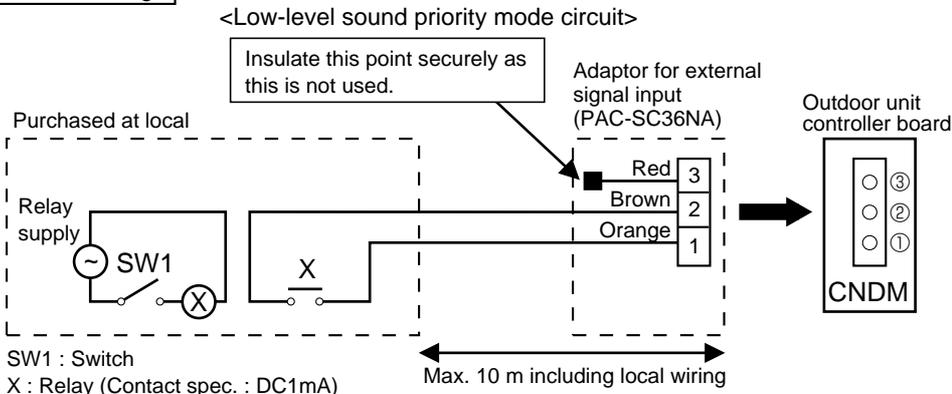
Unit enters into Low-level sound priority mode by external signal input setting.

Inputting external signals to the outdoor unit decreases the outdoor unit operation sound 3 to 4 dB lower than that of usual.

Adding a commercial timer or on-off switch contactor setting to the CNDM connector which is optional contactor for Demand input located on the outdoor controller board enables to control compressor operation frequency.

\* The performance is depends on the load of conditioned outdoor temperature.

#### How to wiring



1) Make the circuit as shown above with Adaptor for external signal input(PAC-SC36NA).

2) Turn SW1 to on for Low-level sound priority mode.

Turn SW1 to off to release Low-level sound priority mode and normal operation.

#### (b) On demand control (Local wiring)

Demand control is available by external input. In this mode, power consumption is decreased within the range of usual 0~100%.

#### How to wiring

Basically, the wiring is the same (a).

Connect an SW 1 which is procured at field to the between Orange and Red(1 and 3) of the Adaptor for external signal input(PAC-SC36NA), and insulate the tip of the brown lead wire.

It is possible to set it to the following power consumption (compared with ratings) by setting the SW7-1, 2.

| SW7-1 | SW7-2 | Power consumption (SW1 on) |
|-------|-------|----------------------------|
| OFF   | OFF   | 0% (Operation stop)        |
| ON    | OFF   | 50%                        |
| OFF   | ON    | 75%                        |

**<Display function of inspection for outdoor unit>**

The blinking patterns of both LED1(green) and LED2(red) indicate the types of abnormality when it occurs. Types of abnormality can be indicated in details by connecting an optional part 'A-Control Service Tool (PAC-SK52ST)' to connector CNM on outdoor controller circuit board.

[Display]

(1)Normal condition

| Unit condition                | Outdoor controller circuit board |             | A-Control Service Tool |                              |
|-------------------------------|----------------------------------|-------------|------------------------|------------------------------|
|                               | LED1 (Green)                     | LED2 (Red)  | Error code             | Indication of the display    |
| When the power is turned on   | Lighted                          | Lighted     | — ↔ —                  | Alternately blinking display |
| When unit stops               | Lighted                          | Not lighted | 00, etc.               | Operation mode               |
| When compressor is warming up | Lighted                          | Not lighted | 08, etc.               |                              |
| When unit operates            | Lighted                          | Lighted     | C5, H7 etc.            |                              |

(2)Abnormal condition

| Indication                       |   | Error   |   |  |  |              |
|----------------------------------|---|---|---|--|--|--------------|
| Outdoor controller circuit board |   | Contents  | Error code<br>※1  | Inspection method  | Detailed reference page  |              |
| LED1 (Green)                     | LED2 (Red)  |   |   |  |  |              |
| 1 blinking                       | 2 blinking  | Connector(63L) is open.   | F3  | ①Check if connector (63L or 63H) on the outdoor controller board is not disconnected.<br>②Check continuity of pressure switch (63L or 63H) by tester.  | P.28   |              |
|                                  |   | Connector(63H) is open.   | F5  |  | P.28   |              |
|                                  |   | 2 connectors are open.  | F9  |  | P.28   |              |
| 2 blinking                       | 1 blinking  | Mis-wiring of indoor/outdoor unit connecting wire, excessive number of indoor units (5 units or more) | —   | ①Check if indoor/outdoor connecting wire is connected correctly.<br>②Check if 5 or more indoor units are connected to outdoor unit.<br>③Check if noise entered into indoor/outdoor connecting wire or power supply.<br>④Re-check error by turning off power, and on again. | P.29<br>(EA)   |              |
|                                  |   | Mis-wiring of indoor/outdoor unit connecting wire (converse wiring or disconnection)                  | —   |  | P.29<br>(Eb)   |              |
|                                  |   | Startup time over   | —   |  | P.29<br>(EC)   |              |
|                                  | 2 blinking  | Indoor/outdoor unit communication error (signal receiving error) is detected by indoor unit.          | Indoor/outdoor unit communication error (transmitting error) is detected by indoor unit.      | E6   | ①Check if indoor/outdoor connecting wire is connected correctly.<br>②Check if noise entered into indoor/outdoor connecting wire or power supply.<br>③Check if noise entered into indoor/outdoor controller circuit board.<br>④Re-check error by turning off power, and on again. | ※2           |
|                                  |   |   | Indoor/outdoor unit communication error (signal receiving error) is detected by outdoor unit. | E7   |  | ※2           |
|                                  |   |   | Indoor/outdoor unit communication error (transmitting error) is detected by indoor unit.      | —  |  | P.33<br>(E8) |
|                                  |   |   | Indoor/outdoor unit communication error (transmitting error) is detected by outdoor unit.     | —  |  | P.33<br>(E9) |
|                                  | 3 blinking  | Remote controller signal receiving error is detected by remote controller.                            | Remote controller transmitting error is detected by remote controller.                        | E0   | ①Check if connecting wire of indoor unit or remote controller is connected correctly.<br>②Check if noise entered into transmission wire of remote controller.<br>③Re-check error by turning off power, and on again.   | ※2           |
|                                  |   |   | Remote controller transmitting error is detected by remote controller.                        | E3   |  | ※2           |
|                                  |   |   | Remote controller signal receiving error is detected by indoor unit.                          | E4   |  | ※2           |
|                                  |   |   | Remote controller transmitting error is detected by indoor unit.                              | E5   |  | ※2           |
|                                  | 4 blinking  | Error code is not defined.  | EF  | ①Check if remote controller is MA remote controller(PAR-21MAA).<br>②Check if noise entered into transmission wire of remote controller.<br>③Check if noise entered into indoor/outdoor connecting wire.<br>④Re-check error by turning off power, and on again.             | P.33   |              |
| 5 blinking                       | Serial communication error<br><Communication between outdoor controller board and outdoor power board><br><Communication between outdoor controller board and M-NET p.c. board> | Communication error of high prior signal(M-NET)   | A0-A8   | ①Check if connector (CN4) on outdoor controller circuit board and outdoor power circuit board is not disconnected.<br>②Check if there is poor connection of connector on outdoor controller circuit board(CNMNT and CNVMNT).<br>③Check M-NET communication signal.         | P.33   |              |
|                                  |   |   |   |  | P.34~<br>P.37  |              |

※1.Remote controller displays error code.

※2.Refer to service manual for indoor unit.



| Indication                       |                                 | Error   |  |   |                         |
|----------------------------------|---------------------------------|---|--|---|-------------------------|
| Outdoor controller circuit board |                                 | Contents  | Error code<br>*1   | Inspection method   | Detailed reference page |
| LED1 (Green)                     | LED2 (Red)                      |   |  |   |                         |
| 3 blinking                       | 1 blinking                      | Abnormality of shell thermostat and discharging temperature (TH4) | U2   | ①Check if stop valves are open.<br>②Check if connectors (TH4, LEV-A) on outdoor controller circuit board are not disconnected.<br>③Check if unit fills with specified amount of refrigerant.<br>④Measure resistance values among terminals on indoor valve and outdoor linear expansion valve using a tester. | P.30                    |
|                                  | 2 blinking                      | Abnormal high pressure (High pressure switch 63H worked.)         | U1   | ①Check if indoor/outdoor units have a short cycle on their air ducts.<br>②Check if connector (63H) on outdoor controller circuit board is not disconnected.<br>③Check if heat exchanger and filter is not dirty.<br>④Measure resistance values among terminals on linear expansion valve using a tester.      | P.30                    |
|                                  | 4 blinking                      | Compressor over current breaking (Start-up locked)                | UF   | ①Check if stop valves are open.<br>②Check looseness, disconnection, and converse connection of compressor wiring.   | P.32                    |
|                                  |                                 |   | UP   | ③Measure resistance values among terminals on compressor using a tester.  | P.32                    |
|                                  |                                 | Abnormality of current sensor (P.B.)                              | UH   | ④Check if outdoor unit has a short cycle on its air duct.   | P.32                    |
|                                  |                                 | Abnormality of power module                                       | U6   |   | P.31                    |
|                                  | 5 blinking                      | Open/short of discharge thermistor (TH4)                          | U3   | ①Check if connectors (TH3, TH32, TH4, TH6 and TH7) on outdoor controller circuit board and connector (CN3) on outdoor power circuit board are not disconnected.<br>②Measure resistance value of outdoor thermistors.  | P.31                    |
|                                  |                                 | Open/short of outdoor thermistors (TH3, TH32, TH6, TH7 and TH8)   | U4   |   | P.31                    |
|                                  | 6 blinking                      | Abnormality of heat sink temperature                              | U5   | ①Check if indoor/outdoor units have a short cycle on their air ducts.<br>②Measure resistance value of outdoor thermistor(TH8).  | P.31                    |
|                                  | 7 blinking                      | Abnormality of voltage  | U9   | ①Check looseness, disconnection, and converse connection of compressor wiring.<br>②Measure resistance value among terminals on compressor using a tester.<br>③Check if power supply voltage decreases.<br>④Check CN5 wiring on the outdoor power circuit board or noise filter circuit board.                 | P.32                    |
| 4 blinking                       | 1 blinking                      | Abnormality of room temperature thermistor (TH1)                  | P1   | ①Check if connectors (CN20, CN21 and CN29) on indoor controller circuit board are not disconnected.<br>②Measure resistance value of indoor thermistors.   | *2                      |
|                                  |                                 | Abnormality of pipe temperature thermistor /Liquid (TH2)          | P2   |   | *2                      |
|                                  |                                 | Abnormality of pipe temperature thermistor/Condenser-Evaporator   | P9   |   | *2                      |
|                                  | 2 blinking                      | Abnormality of drain sensor (DS)                                  | P4   | ①Check if connector (CN31) on indoor controller circuit board is not disconnected.<br>②Measure resistance value of indoor thermistors.<br>③Measure resistance value among terminals on drain-up machine using a tester.<br>④Check if drain-up machine works.<br>⑤Check drain function.                        | *2                      |
|                                  |                                 | Indoor drain overflow protection                                  | P5   |   |                         |
|                                  | 3 blinking                      | Freezing (cooling)/overheating (heating) protection               | P6   | ①Check if indoor unit has a short cycle on its air duct.<br>②Check if heat exchanger and filter is not dirty.<br>③Measure resistance value on indoor and outdoor fan motors.<br>④Check if the inside of refrigerant piping is not clogged.  | *2                      |
| 4 blinking                       | Abnormality of pipe temperature | P8  | ①Check if indoor thermistors (TH2 and TH5) are not disconnected from holder.<br>②Check if stop valve is open.<br>③Check converse connection of extension pipe. (on plural units connection)<br>④Check if indoor/outdoor connecting wire is connected correctly. (on plural units connection) | *2  |                         |

\*1 Error code displayed on remote controller  
\*2 Refer to service manual for indoor unit.

LED indications of fan operating condition (LED1 on outdoor Fan controller circuit board)

| Operation          | LED1 (Red) | Contents   |
|--------------------|------------|--|
| Normal (Stop)      | Lighted    | Fan stops.   |
| Normal (Operating) |            | Controller board is outputting waveform for fan driving. |

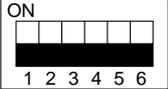
| Operation            | LED1 (Red) | Importance | Meaning of error code and detection method  | Remark                            |
|----------------------|------------|------------|---|-----------------------------------|
| Abnormal is detected | 2 blinks   | 1          | <b>Abnormality of bus voltage:</b> Abnormal if voltage is less than 200V or more than 760V.       | This LED is not used for service. |
|                      | 6 blinks   | 2          | <b>Abnormality of overcurrent:</b> Abnormal if current value of DC bus in over the cut-off point. |                                   |

**<Outdoor unit operation monitor function>**

**[When option part 'A-Control Service Tool(PAC-SK52ST)' is connected to outdoor controller circuit board(CNM)]**

Digital indicator LED1 displays 2 digit number or code to inform operation condition and the meaning of error code by controlling DIP SW2 on 'A-Control Service Tool'.

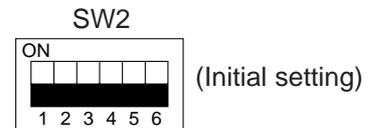
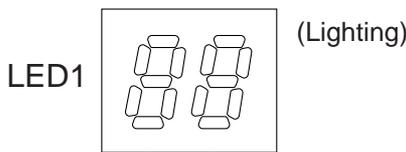
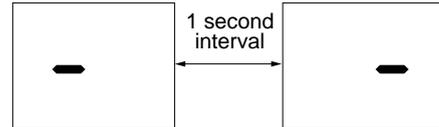
Operation indicator SW2 : Indicator change of self diagnosis

| SW2 setting   | Display detail | Explanation for display | Unit |
|---|----------------|-------------------------|------|
|  |                |                         |      |

**<Digital indicator LED1 working details>**

(Be sure the 1 to 6 in the SW2 are set to OFF.)

- (1) Display when the power supply ON.  
When the power supply ON, blinking displays by turns.  
Wait for 4 minutes at the longest.
- (2) When the display lights. (Normal operation)
  - ① Operation mode display.



The tens digit : Operation mode

| Display | Operation Model |
|---------|-----------------|
| O       | OFF / FAN       |
| C       | COOLING / DRY ※ |
| H       | HEATING         |
| d       | DEFROSTING      |

The ones digit : Relay output

| Display | Warming-up Compressor | Compressor | 4-way valve | Solenoid valve |
|---------|-----------------------|------------|-------------|----------------|
| 0       | —                     | —          | —           | —              |
| 1       | —                     | —          | —           | ON             |
| 2       | —                     | —          | ON          | —              |
| 3       | —                     | —          | ON          | ON             |
| 4       | —                     | ON         | —           | —              |
| 5       | —                     | ON         | —           | ON             |
| 6       | —                     | ON         | ON          | —              |
| 7       | —                     | ON         | ON          | ON             |
| 8       | ON                    | —          | —           | —              |
| A       | ON                    | —          | ON          | —              |

- ② Display during error postponement  
Postponement code is displayed when compressor stops due to the work of protection device.  
Postponement code is displayed while error is being postponed.

- (3) When the display blinks  
Inspection code is displayed when compressor stops due to the work of protection devices.

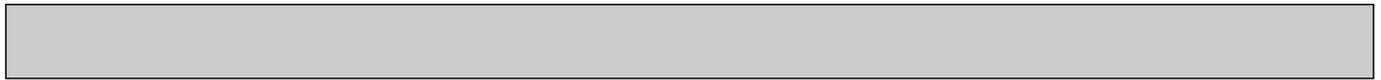
| Display | Inspection unit |
|---------|-----------------|
| 0       | Outdoor unit    |
| 1       | Indoor unit 1   |
| 2       | Indoor unit 2   |
| 3       | Indoor unit 3   |
| 4       | Indoor unit 4   |

| Display | Contents to be inspected (During operation)  |
|---------|--|
| U1      | Abnormal high pressure (63H worked)  |
| U2      | Abnormal high discharging temperature, shortage of refrigerant                               |
| U3      | Open/short circuit of discharging thermistor(TH4)  |
| U4      | Open/short of outdoor unit thermistors(TH3, TH32, TH6, TH7 and TH8)                          |
| U5      | Abnormal temperature of heat sink<br>Compressor overcurrent interruption (When Comp. locked) |
| U6      | Abnormality of power module  |
| U7      | Abnormality of super heat due to low discharge temperature                                   |
| UF      | Compressor overcurrent interruption (When Comp. locked)                                      |
| UH      | Current sensor error   |
| UL      | Abnormal low pressure (63L worked)   |
| UP      | Compressor overcurrent interruption  |
| P1~P8   | Abnormality of indoor units  |
| A0~A7   | Communication error of high-prior signal (M-NET)   |

| Display | Contents to be inspected (When power is turned on)  |
|---------|---|
| F3      | 63L connector(red) is open.   |
| F5      | 63H connector(yellow) is open.  |
| F9      | 2 connectors (63H/63L) are open.  |
| E8      | Indoor/outdoor communication error (Signal receiving error) (Outdoor unit)                            |
| E9      | Indoor/outdoor communication error (Transmitting error) (Outdoor unit)                                |
| EA      | Mis-wiring of indoor/outdoor unit connecting wire, excessive number of indoor units (5 units or more) |
| Eb      | Mis-wiring of indoor/outdoor unit connecting wire(converse wiring or disconnection)                   |
| Ec      | Startup time over   |
| E0~E7   | Communication error except for outdoor unit   |



| SW2 setting | Display detail   | Explanation for display   | Unit         |
|-------------|--|---|--------------|
|             | Pipe temperature / Liquid (TH3)<br>- 40~90             | - 40~90<br>(When the coil thermistor detects 0°C or below, “-” and temperature are displayed by turns.)<br>(Example)<br>When -10°C; 0.5 secs. 0.5 secs. 2 secs.<br>-□ → 10 → □□                                       | °C           |
|             | Discharge temperature (TH4)<br>3~217                   | 3~217<br>(When the discharge thermistor detects 100°C or more, hundreds digit, tens digit and ones digit are displayed by turns.)<br>(Example)<br>When 105°C; 0.5 secs. 0.5 secs. 2 secs.<br>□1 → 05 → □□             | °C           |
|             | Output step of outdoor FAN<br>0~10                     | 0~10  | Step         |
|             | The number of ON / OFF times of compressor<br>0~9999   | 0~9999<br>(When the number of times is 100 or more, hundreds digit, tens digit and ones digit are displayed by turns.)<br>(Example) When 42500 times (425 X100 times);<br>0.5 secs. 0.5 secs. 2 secs.<br>□4 → 25 → □□ | 100 times    |
|             | Compressor integrating operation times<br>0~9999       | 0~9999<br>(When it is 100 hours or more, hundreds digit, tens digit and ones digit are displayed by turns.)<br>(Example) When 2450 hours (245 X10 hours);<br>0.5 secs. 0.5 secs. 2 secs.<br>□2 → 45 → □□              | 10 hours     |
|             | Compressor operating current.<br>0~50                  | 0~50<br>*Omit the figures after the decimal fractions.  | A            |
|             | Compressor operating frequency<br>0~225                | 0~255<br>(When it is 100Hz or more, hundreds digit, tens digit and ones digit are displayed by turns.)<br>(Example)<br>When 125Hz; 0.5 secs. 0.5 secs. 2 secs.<br>□1 → 25 → □□  | Hz           |
|             | LEV-A opening pulse<br>0~480                           | 0~480<br>(When it is 100 pulse or more, hundreds digit, tens digit and ones digit are displayed by turns.)<br>(Example)<br>When 150 pulse; 0.5 secs. 0.5 secs. 2 secs.<br>□1 → 50 → □□                                | Pulse        |
|             | Error postponement code history (1)<br>of outdoor unit | Postponement code display<br>Blinking: During postponement<br>Lighting: Cancellation of postponement<br>“00” is displayed in case of no postponement.   | Code display |
|             | Operation mode on error occurring                      | Operation mode of when operation stops due to error is displayed by setting SW2 like below.<br><br>(SW2)  | Code display |



| SW2 setting | Display detail  | Explanation for display   | Unit         |
|-------------|---|---|--------------|
|             | Pipe temperature / Liquid (TH3) on error occurring<br>- 40~90                           | - 40~90<br>(When the coil thermistor detects 0°C or below, “-” and temperature are displayed by turns.)<br>(Example)<br>When -15°C; 0.5 secs. 0.5 secs. 2 secs.<br>-□ → 15 → □□                 | °C           |
|             | Compressor temperature (TH4) or discharge temperature (TH4) on error occurring<br>3~217 | 3~217<br>(When the temperature is 100°C or more, the hundreds digit, tens digit and ones digit are displayed by turns.)<br>(Example)<br>When 130°C; 0.5 secs. 0.5 secs. 2 secs.<br>□1 → 30 → □□ | °C           |
|             | Compressor operating current on error occurring<br>0~20                                 | 0~20  | A            |
|             | Error code history (1) (latest)<br>Alternate display of abnormal unit number and code   | When no error history,<br>“0” and “-” are displayed by turns.   | Code display |
|             | Error code history (2)<br>Alternate display of error unit number and code               | When no error history,<br>“0” and “-” are displayed by turns.   | Code display |
|             | Thermostat ON time<br>0~999   | 0~999<br>(When it is 100 minutes or more, the hundreds digit, tens digit and ones digit are displayed by turns.)<br>(Example)<br>When 245 minutes; 0.5 secs. 0.5 secs. 2 secs.<br>□2 → 45 → □□  | Minute       |
|             | Test run elapsed time<br>0~120  | 0~120<br>(When it is 100 minutes or more, the hundreds digit, tens digit and ones digit are displayed by turns.)<br>(Example)<br>When 105 minutes; 0.5 secs. 0.5 secs. 2 secs.<br>□1 → 05 → □□  | Minute       |



| SW2 setting                | Display detail   | Explanation for display   | Unit            |                 |                    |                               |                            |                                    |                 |                 |                   |                                     |              |
|----------------------------|--|---|-----------------|-----------------|--------------------|-------------------------------|----------------------------|------------------------------------|-----------------|-----------------|-------------------|-------------------------------------|--------------|
|                            | The number of connected indoor units                                   | 0~4<br>(The number of connected indoor units are displayed.)  | Unit            |                 |                    |                               |                            |                                    |                 |                 |                   |                                     |              |
|                            | Capacity setting display   | Displayed as an outdoor capacity code.<br><table border="1"> <thead> <tr> <th>Capacity</th> <th>Code</th> </tr> </thead> <tbody> <tr> <td>RP200Y</td> <td>40</td> </tr> <tr> <td>RP250Y</td> <td>50</td> </tr> </tbody> </table>  | Capacity        | Code            | RP200Y             | 40                            | RP250Y                     | 50                                 | Code display    |                 |                   |                                     |              |
| Capacity                   | Code   |   |                 |                 |                    |                               |                            |                                    |                 |                 |                   |                                     |              |
| RP200Y                     | 40   |   |                 |                 |                    |                               |                            |                                    |                 |                 |                   |                                     |              |
| RP250Y                     | 50   |   |                 |                 |                    |                               |                            |                                    |                 |                 |                   |                                     |              |
|                            | Outdoor unit setting information                                       | <ul style="list-style-type: none"> <li>The tens digit (Total display for applied setting)</li> </ul> <table border="1"> <thead> <tr> <th>Setting details</th> <th>Display details</th> </tr> </thead> <tbody> <tr> <td>H-P / Cooling only</td> <td>0 : H-P      1 : Cooling only</td> </tr> <tr> <td>Single phase / Three phase</td> <td>0 : Single phase   2 : Three phase</td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>The ones digit</li> </ul> <table border="1"> <thead> <tr> <th>Setting details</th> <th>Display details</th> </tr> </thead> <tbody> <tr> <td>Defrosting switch</td> <td>0 : Normal    1 : For high humidity</td> </tr> </tbody> </table> <p>(Example) When heat pump, three phase and defrosting (normal) are set up, "20" is displayed.</p> | Setting details | Display details | H-P / Cooling only | 0 : H-P      1 : Cooling only | Single phase / Three phase | 0 : Single phase   2 : Three phase | Setting details | Display details | Defrosting switch | 0 : Normal    1 : For high humidity | Code display |
| Setting details            | Display details  |   |                 |                 |                    |                               |                            |                                    |                 |                 |                   |                                     |              |
| H-P / Cooling only         | 0 : H-P      1 : Cooling only  |   |                 |                 |                    |                               |                            |                                    |                 |                 |                   |                                     |              |
| Single phase / Three phase | 0 : Single phase   2 : Three phase                                     |   |                 |                 |                    |                               |                            |                                    |                 |                 |                   |                                     |              |
| Setting details            | Display details  |   |                 |                 |                    |                               |                            |                                    |                 |                 |                   |                                     |              |
| Defrosting switch          | 0 : Normal    1 : For high humidity                                    |   |                 |                 |                    |                               |                            |                                    |                 |                 |                   |                                     |              |
|                            | Indoor pipe temperature / Liquid (TH2(1))<br>Indoor 1<br>– 39~88       | – 39~88<br>(When the temperature is 0°C or less, "–" and temperature are displayed by turns.)   | °C              |                 |                    |                               |                            |                                    |                 |                 |                   |                                     |              |
|                            | Indoor pipe temperature / Cond. / Eva. (TH5(1))<br>Indoor 1<br>– 39~88 | – 39~88<br>(When the temperature is 0°C or less, "–" and temperature are displayed by turns.)   | °C              |                 |                    |                               |                            |                                    |                 |                 |                   |                                     |              |
|                            | Indoor pipe temperature / Liquid (TH2(2))<br>Indoor 2<br>– 39~88       | – 39~88<br>(When the temperature is 0°C or less, "–" and temperature are displayed by turns.)   | °C              |                 |                    |                               |                            |                                    |                 |                 |                   |                                     |              |
|                            | Indoor pipe temperature / Cond. / Eva. (TH5(2))<br>Indoor 2<br>– 39~88 | – 39~88<br>(When the temperature is 0°C or less, "–" and temperature are displayed by turns.)   | °C              |                 |                    |                               |                            |                                    |                 |                 |                   |                                     |              |
|                            | Indoor room temperature (TH1)<br>8~39                                  | 8~39  | °C              |                 |                    |                               |                            |                                    |                 |                 |                   |                                     |              |



| SW2 setting | Display detail   | Explanation for display   | Unit  |
|-------------|--|---|-------|
|             | Indoor setting temperature<br>17~30  | 17~30   | °C    |
|             | Outdoor pipe temperature / Cond./<br>Eva. (TH6)<br>- 39~88                               | - 39~88<br>(When the temperature is 0°C or less, “-” and<br>temperature are displayed by turns.)  | °C    |
|             | Outdoor outside temperature (TH7)<br>- 39~88   | - 39~88<br>(When the temperature is 0°C or less, “-” and<br>temperature are displayed by turns.)  | °C    |
|             | Outdoor internal heat sink tempera-<br>ture (TH8)<br>- 40~200                            | - 40~200<br>(When the temperature is 0°C or less, “-” and<br>temperature are displayed by turns.)<br>(When the thermistor detects 100°C or more,<br>hundreds digit, tens digit and ones digit are<br>displayed by turns.) | °C    |
|             | Discharge super heat. SHd<br>0~255<br><br>[ Cooling = TH4-TH6 ]<br>[ Heating = TH4-TH5 ] | 0~255<br>(When the temperature is 100°C or more, hundreds<br>digit, tens digit and ones digit are displayed by<br>turns.)   | °C    |
|             | Sub cool. SC<br>0~130<br><br>[ Cooling = TH6-TH3 ]<br>[ Heating = TH5-TH4 ]              | 0~130<br>(When the temperature is 100°C or more, hundreds<br>digit, tens digit and ones digit are displayed by turns.)  | °C    |
|             | Input current of outdoor unit  | 0~500<br>(When it is 100 or more, hundreds digit, tens digit<br>and ones digit are displayed by turns.)   | 0.1 A |
|             | Targeted operation frequency<br>0~255  | 0~255<br>(When it is 100Hz or more, hundreds digit, tens<br>digit and ones digit are displayed by turns.)   | Hz    |
|             | DC bus voltage<br>360~760  | 360~760<br>(When it is 100V or more, hundreds digit, tens<br>digit and ones digit are displayed by turns.)  | V     |

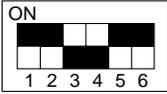
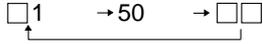
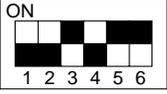
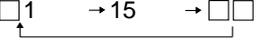
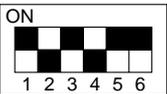
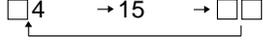
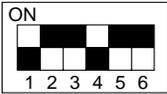
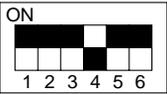
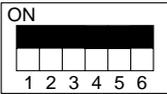


| SW2 setting | Display detail  | Explanation for display   | Unit         |
|-------------|---|---|--------------|
|             | <p>Capacity save<br/>0~255</p> <p>When air conditioner is connected to M-NET and capacity save mode is demanded, "0"~"100" is displayed.</p> <p>[ When there is no setting of capacity save "100" is displayed. ]</p> | <p>0~100<br/>(When the capacity is 100% hundreds digit, tens digit and ones digit are displayed by turns.)<br/>(Example)<br/>When 100%; 0.5 secs. 0.5 secs. 2 secs.<br/>□1 → 00 → □□</p>  | %            |
|             | <p>Error postponement code history (2) of outdoor unit</p>  | <p>Postponement code display<br/>Blinking: During postponement<br/>Lighting: Cancellation of postponement<br/>"00" is displayed in case of no postponement.</p>                           | Code display |
|             | <p>Error postponement code history (3) of outdoor unit</p>  | <p>Postponement code display<br/>Blinking: During postponement<br/>Lighting: Cancellation of postponement<br/>"00" is displayed in case of no postponement.</p>                           | Code display |
|             | <p>Error code history (3) (Oldest)<br/>Alternate display of abnormal unit number and code.</p>  | <p>When no error history, "0" and "-" are displayed by turns.</p>   | Code display |
|             | <p>Error thermistor display</p> <p>[ When there is no error thermistor, "-" is displayed. ]</p>   | <p>3: Outdoor pipe temperature /Liquid (TH3, TH32)<br/>6: Outdoor pipe temperature /Cond./Eva. (TH6)<br/>7: Outdoor outside temperature (TH7)<br/>8: Outdoor heat sink (TH8)</p>          | Code display |
|             | <p>Operation frequency on error occurring<br/>0~255</p>   | <p>0~255<br/>(When it is 100Hz or more, hundreds digit, tens digit and ones digit are displayed by turns.)<br/>(Example)<br/>When 125Hz; 0.5 secs. 0.5 secs. 2 secs.<br/>□1 → 25 → □□</p> | Hz           |
|             | <p>Fan step on error occurring<br/>0~10</p>   | <p>0~10</p>   | Step         |

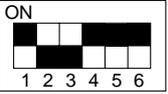
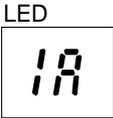
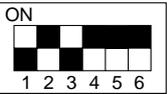
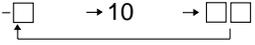
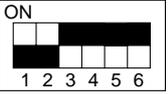
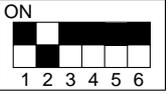
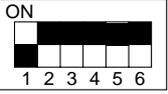


| SW2 setting | Display detail   | Explanation for display  | Unit  |
|-------------|--|--|-------|
|             | LEV-A opening pulse on error occurring<br>0~480                            | 0~480<br>(When it is 100 pulse or more, hundreds digit, tens digit and ones digit are displayed by turns.)<br>(Example)<br>When 130 pulse; 0.5 secs. 0.5 secs. 2 secs.<br>                                 | Pulse |
|             | Indoor room temperature (TH1) on error occurring<br>8~39                   | 8~39   | ℃     |
|             | Indoor pipe temperature / Liquid (TH2) on error occurring<br>- 39~88       | - 39~88<br>(When the temperature is 0℃ or less, “-” and temperature are displayed by turns.)<br>(Example)<br>When -15℃; 0.5 secs. 0.5 secs. 2 secs.<br>  | ℃     |
|             | Indoor pipe temperature / Cond./ Eva. (TH5) on error occurring<br>- 39~88  | - 39~88<br>(When the temperature is 0℃ or less, “-” and temperature are displayed by turns.)<br>(Example)<br>When -15℃; 0.5 secs. 0.5 secs. 2 secs.<br>  | ℃     |
|             | Outdoor pipe temperature / Cond./ Eva. (TH6) on error occurring<br>- 39~88 | - 39~88<br>(When the temperature is 0℃ or less, “-” and temperature are displayed by turns.)<br>(Example)<br>When -15℃; 0.5 secs. 0.5 secs. 2 secs.<br>  | ℃     |
|             | Outdoor outside temperature (TH7) on error occurring<br>- 39~88            | - 39~88<br>(When the temperature is 0℃ or less, “-” and temperature are displayed by turns.)<br>(Example)<br>When -15℃; 0.5 secs. 0.5 secs. 2 secs.<br>  | ℃     |
|             | Outdoor heat sink temperature (TH8) on error occurring<br>- 40~200         | - 40~200<br>(When the temperature is 0℃ or less, “-” and temperature are displayed by turns.)<br>(When the temperature is 100℃ or more, hundreds digit, tens digit and ones digit are displayed by turns.) | ℃     |



| SW2 setting  | Display detail   | Explanation for display   | Unit        |         |        |    |                   |    |                    |    |                     |    |                                   |    |   |
|--|--|---|-------------|---------|--------|----|-------------------|----|--------------------|----|---------------------|----|-----------------------------------|----|---|
|    | Discharge super heat on error occurring SHd<br>0~255<br>[Cooling = TH4-TH6]<br>[Heating = TH4-TH5] | 0~255<br>(When the temperature is 100°C or more, hundreds digit, tens digit and ones digit are displayed by turns.)<br>(Example)<br>When 150°C; 0.5 secs. 0.5 secs. 2 secs.<br>   | °C          |         |        |    |                   |    |                    |    |                     |    |                                   |    |   |
|    | Sub cool on error occurring. SC<br>0~130<br>[Cooling = TH6-TH3]<br>[Heating = TH5-TH2]             | 0~130<br>(When the temperature is 100°C or more, hundreds digit, tens digit and ones digit are displayed by turns.)<br>(Example)<br>When 115°C; 0.5 secs. 0.5 secs. 2 secs.<br>   | °C          |         |        |    |                   |    |                    |    |                     |    |                                   |    |   |
|    | Thermostat-on time until error stops<br>0~999  | 0~999<br>(When it is 100 minutes or more, hundreds digit, tens digit and ones digit are displayed by turns.)<br>(Example)<br>When 415 minutes; 0.5 secs. 0.5 secs. 2 secs.<br>   | Minute      |         |        |    |                   |    |                    |    |                     |    |                                   |    |   |
|  | Indoor pipe temperature / Liquid (TH2 (3))<br>Indoor 3<br>– 39~88                                  | – 39~88<br>(When the temperature is 0°C or less, “-” and temperature are displayed by turns.)   | °C          |         |        |    |                   |    |                    |    |                     |    |                                   |    |   |
|  | Indoor pipe temperature / Cond./ Eva. (TH5 (3))<br>Indoor 3<br>– 39~88                             | – 39~88<br>(When the temperature is 0°C or less, “-” and temperature are displayed by turns.)<br><br>When there is no indoor unit, “00” is displayed.   | °C          |         |        |    |                   |    |                    |    |                     |    |                                   |    |   |
|  | Suspensive U9 error detail   | (1) Display timing<br>① During the error suspensive period, the latest suspensive error is displayed according to the table below.<br>② When U9 error is determined, the latest error status is displayed according to the table below, and the display is cleared (=00) by the error clearing condition.<br>(2) Error display<br><table border="1" data-bbox="751 1809 1225 1995"> <thead> <tr> <th>Description</th> <th>Display</th> </tr> </thead> <tbody> <tr> <td>Normal</td> <td>00</td> </tr> <tr> <td>Overtoltage error</td> <td>01</td> </tr> <tr> <td>Undervoltage error</td> <td>02</td> </tr> <tr> <td>L1 phase open error</td> <td>04</td> </tr> <tr> <td>Abnormal power synchronous signal</td> <td>08</td> </tr> </tbody> </table> * Display examples for multiple errors:<br>Overtoltage (01) + Undervoltage (02) =03<br>Undervoltage (02) + Power-sync signal error (08) =0A | Description | Display | Normal | 00 | Overtoltage error | 01 | Undervoltage error | 02 | L1 phase open error | 04 | Abnormal power synchronous signal | 08 | - |
| Description  | Display  |   |             |         |        |    |                   |    |                    |    |                     |    |                                   |    |   |
| Normal   | 00   |   |             |         |        |    |                   |    |                    |    |                     |    |                                   |    |   |
| Overtoltage error  | 01   |   |             |         |        |    |                   |    |                    |    |                     |    |                                   |    |   |
| Undervoltage error   | 02   |   |             |         |        |    |                   |    |                    |    |                     |    |                                   |    |   |
| L1 phase open error  | 04   |   |             |         |        |    |                   |    |                    |    |                     |    |                                   |    |   |
| Abnormal power synchronous signal  | 08   |   |             |         |        |    |                   |    |                    |    |                     |    |                                   |    |   |



| SW2 setting   | Display detail   | Explanation for display   | Unit    |  |   |                         |   |                           |         |  |   |  |   |   |   |                             |   |   |              |
|---|--|---|---------|--|---|-------------------------|---|---------------------------|---------|--|---|--|---|---|---|-----------------------------|---|---|--------------|
|    | Controlling status of compressor operating frequency   | <p>The following code will be a help to know the operating status of unit.</p> <ul style="list-style-type: none"> <li>•The tens digit</li> </ul> <table border="1" data-bbox="831 362 1278 454"> <thead> <tr> <th>Display</th> <th>Compressor operating frequency control</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Primary current control</td> </tr> <tr> <td>2</td> <td>Secondary current control</td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>•The ones digit (In this digit, the total number of activated control is displayed.)</li> </ul> <table border="1" data-bbox="831 533 1278 772"> <thead> <tr> <th>Display</th> <th>Compressor operating frequency control</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Preventive control for excessive temperature rise of discharge temperature</td> </tr> <tr> <td>2</td> <td>Preventive control for excessive temperature rise of condensing temperature</td> </tr> <tr> <td>4</td> <td>Frosting preventing control</td> </tr> <tr> <td>8</td> <td>Preventive control for excessive temperature rise of radiator panel</td> </tr> </tbody> </table> <p>(Example)<br/>The following controls are activated.</p> <ul style="list-style-type: none"> <li>• Primary current control</li> <li>• Preventive control for excessive temperature rise of condensing temperature</li> <li>• Preventive control for excessive temperature rise of radiator panel</li> </ul>  | Display | Compressor operating frequency control | 1 | Primary current control | 2 | Secondary current control | Display | Compressor operating frequency control | 1 | Preventive control for excessive temperature rise of discharge temperature | 2 | Preventive control for excessive temperature rise of condensing temperature | 4 | Frosting preventing control | 8 | Preventive control for excessive temperature rise of radiator panel | Code display |
| Display   | Compressor operating frequency control   |   |         |  |   |                         |   |                           |         |  |   |  |   |   |   |                             |   |   |              |
| 1   | Primary current control  |   |         |  |   |                         |   |                           |         |  |   |  |   |   |   |                             |   |   |              |
| 2   | Secondary current control  |   |         |  |   |                         |   |                           |         |  |   |  |   |   |   |                             |   |   |              |
| Display   | Compressor operating frequency control   |   |         |  |   |                         |   |                           |         |  |   |  |   |   |   |                             |   |   |              |
| 1   | Preventive control for excessive temperature rise of discharge temperature   |   |         |  |   |                         |   |                           |         |  |   |  |   |   |   |                             |   |   |              |
| 2   | Preventive control for excessive temperature rise of condensing temperature  |   |         |  |   |                         |   |                           |         |  |   |  |   |   |   |                             |   |   |              |
| 4   | Frosting preventing control  |   |         |  |   |                         |   |                           |         |  |   |  |   |   |   |                             |   |   |              |
| 8   | Preventive control for excessive temperature rise of radiator panel  |   |         |  |   |                         |   |                           |         |  |   |  |   |   |   |                             |   |   |              |
|  | Liquid pipe temperature (TH32)<br>– 40~90  | – 40~90<br>(When the temperature is 0°C or less, “-” and temperature are displayed by turns.)<br>(Example)<br>When –10°C; 0.5 secs. 0.5 secs. 2 secs.<br>  | °C      |  |   |                         |   |                           |         |  |   |  |   |   |   |                             |   |   |              |
|  | Indoor pipe temperature / Liquid (TH2(4))<br>Indoor 4<br>– 39~88   | – 39~88<br>(When the temperature is 0°C or less, “-” and temperature are displayed by turns.)   | °C      |  |   |                         |   |                           |         |  |   |  |   |   |   |                             |   |   |              |
|  | Indoor pipe temperature / (Cond./Eva.) (TH5(4))<br>Indoor 4<br>– 39~88   | – 39~88<br>(When the temperature is 0°C or less, “-” and temperature are displayed by turns.)   | °C      |  |   |                         |   |                           |         |  |   |  |   |   |   |                             |   |   |              |
|  | Indication for performing status of unit replacement operation <ul style="list-style-type: none"> <li>•The ones digit<br/>Every time the unit replacement operation is performed by using SW8-2 for 2 hours, the number "1" is displayed. However, the operation less than 2 hours is not counted, and the number "0" is displayed.</li> <li>•The tens digit<br/>When specified time of unit replacement operation has been performed by using outdoor unit, the number "1" is displayed. (The number gets back to "0" when performing replacement operation by using SW8-2.)</li> </ul> | <ul style="list-style-type: none"> <li>•The ones digit<br/>1: Performed<br/>0: Not performed</li> <li>•The tens digit<br/>1: Specified time of replacement operation completed<br/>0: Now performing replacement operation</li> </ul>   | —       |  |   |                         |   |                           |         |  |   |  |   |   |   |                             |   |   |              |

13-1. UNIT FUNCTION SETTING BY THE REMOTE CONTROLLER

Each function can be set according to necessity using the remote controller. The setting of function for each unit can only be done by the remote controller. Select function available from the table 1.

(1) Functions available when setting the unit number to 00 (Select 00 referring to ④ setting the indoor unit number.)

\*1 The functions below are available only when the wired remote controller is used. The functions are not available for floor standing models.

<Table 1> Function selections

| Function                         | Settings  | Mode No. | Setting No. | Initial setting (when sent from the factory) | Remarks   |
|----------------------------------|---|----------|-------------|--|---|
| Power failure automatic recovery | OFF   | 01       | 1           |  | The setting is applied to all the units in the same refrigerant system. |
|                                  | ON  |          | 2           | ●  |   |
| Indoor temperature detecting     | Operating indoor units (The average is considered as indoor temperature.) |          | 1           | ●  |   |
|                                  | Indoor unit with remote controller  |          | 2           |  |   |
|                                  | Remote controller's internal sensor *1                                    |          | 3           |  |   |
| LOSSNAY connectivity             | Not supported   |          | 1           | ●  |   |
|                                  | Supported (indoor unit not equipped with outdoor air intake)              |          | 2           |  |   |
|                                  | Supported (indoor unit equipped with outdoor air intake)                  |          | 3           |  |   |
| Power supply voltage             | 240V  | 04       | 1           |  |   |
|                                  | 220V,230V   |          | 2           | ●  |   |
| Auto operating mode              | Auto energy-saving operation ON   |          | 1           | ●  |   |
|                                  | Auto energy-saving operation OFF  |          | 2           |  |   |
| Frost prevention temperature     | 2°C (Normal)  | 15       | 1           | ●  |   |
|                                  | 3°C   |          | 2           |  |   |
| Humidifier control               | When the compressor operates, the humidifier also operates.               |          | 1           | ●  |   |
|                                  | When the fan operates, the humidifier also operates.                      |          | 2           |  |   |
| Change of defrosting control     | Standard  |          | 1           | ●  |   |
|                                  | For high humidity   |          | 2           |  |   |

(2) Functions available when setting the unit number to 01-03 or AL (07 in case of wireless remote controller)

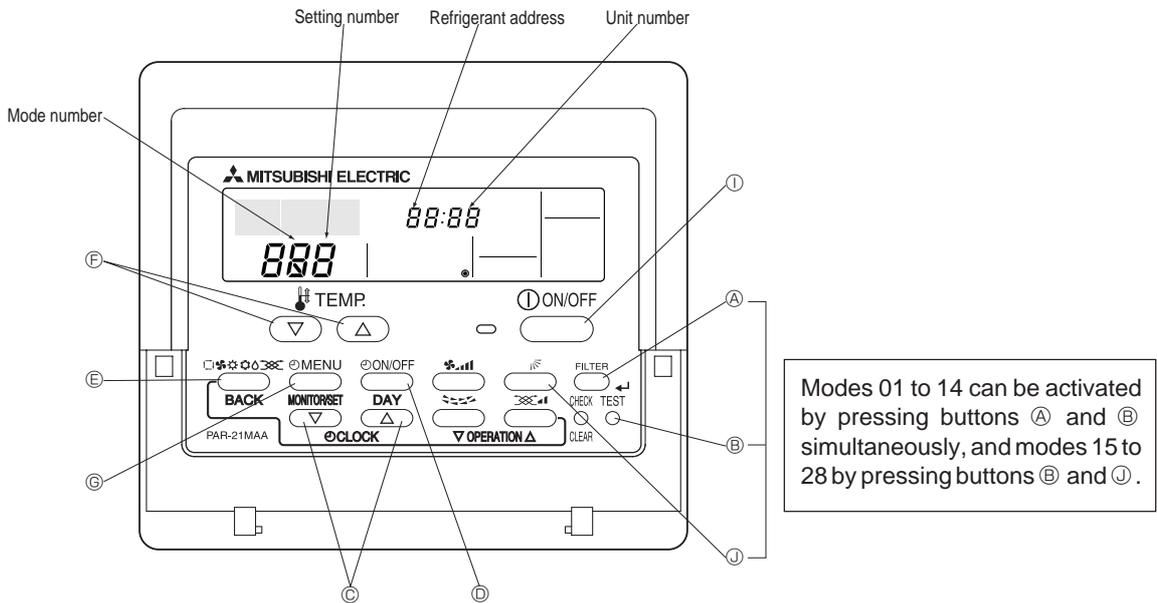
- When setting functions for an indoor unit in an independent system, set the unit number to 01 referring to ④ setting the indoor unit number.
- When setting functions for a simultaneous- Twin Triple indoor unit system, set the unit number to 01 to 03 for each indoor unit in case of selecting different functions for each unit referring to ④ setting the indoor unit number.
- When setting the same functions for an entire simultaneous Twin Triple-indoor unit system, set refrigerant address to AL (07 in case of wireless remote controller) referring to ④ setting the indoor unit number.

| Function   | Settings                                   | Mode No. | Setting No. | Initial setting (Factory setting)<br>- : Not available |                       |                   |                   |              |
|--|--|----------|-------------|--|-----------------------|-------------------|-------------------|--------------|
|  |  |          |             | 4-Way cassette   | Ceiling concealed     | Ceiling concealed | Ceiling suspended | Wall mounted |
|  |  |          |             | PLA-AA(2)  | PEAD-EA(2)<br>PEAD-GA | PEH-MYA           | PCA-GA(2)         | PCA-HA       |
| Filter sign  | 100Hr                                      | 07       | 1           |  |                       |                   |                   | ●            |
|  | 2500Hr                                     |          | 2           | ●  |                       | ●                 | ●                 |              |
|  | No filter sign indicator                   |          | 3           |  | ●                     | ●                 |                   |              |
| Air flow (Fan speed)   | Quiet                                      | 08       | 1           | ●  | -                     | -                 | -                 | -            |
|  | Standard                                   |          | 2           |  | -                     | -                 | ●                 | -            |
|  | High ceiling                               |          | 3           |  | -                     | -                 | -                 | -            |
| No. of air outlets   | 4 directions                               | 09       | 1           | ●  | -                     | -                 | -                 | -            |
|  | 3 directions                               |          | 2           |  | -                     | -                 | -                 | -            |
|  | 2 directions                               |          | 3           |  | -                     | -                 | -                 | -            |
| Optional high efficiency filter                                  | Not supported                              | 10       | 1           | ●  | -                     | -                 | ●                 | -            |
|  | Supported                                  |          | 2           |  | -                     | -                 | -                 | -            |
| Vane setting   | No vanes (Vane No.3 setting : PLA-AA only) |          | 1           |  | -                     | -                 | -                 | -            |
|  | Vane No.1 setting                          |          | 2           |  | -                     | -                 | ●                 | -            |
|  | Vane No.2 setting                          |          | 3           | ●  | -                     | -                 | -                 | -            |
| Energy saving air flow (Heating mode)                            | Disabled                                   | 12       | 1           | ●  | -                     | -                 | ●                 | -            |
|  | Enabled                                    |          | 2           |  | -                     | -                 | -                 | -            |
| Optional humidifier (PLA-AA only)                                | Not supported                              | 13       | 1           | ●  | -                     | -                 | -                 | -            |
|  | Supported                                  |          | 2           |  | -                     | -                 | -                 | -            |
| Vane differential setting in heating mode (cold wind prevention) | No.1 setting (TH5: 24-28°C)                |          | 1           |  | -                     | -                 | -                 | -            |
|  | No.2 setting (Standard. TH5:28-32°C)       |          | 2           | ●  | -                     | -                 | ●                 | ●            |
|  | No.3 setting (TH5: 32-38°C)                |          | 3           |  | -                     | -                 | -                 | -            |
| Swing  | Not available                              | 23       | 1           |  | -                     | -                 | -                 | -            |
|  | Available                                  |          | 2           | ●  | -                     | -                 | ●                 | ●            |
| Set temperature in heating mode (4 deg up)                       | Available                                  | 24       | 1           | ●  | ●                     | ●                 | ●                 | ●            |
|  | Not available                              |          | 2           |  |                       |                   |                   |              |
| Fan speed when the heating thermostat is OFF                     | Extra low                                  | 25       | 1           | ●  | ●                     | -                 | ●                 | ●            |
|  | Stop                                       |          | 2           |  | -                     | -                 | -                 | -            |
|  | Set fan speed                              |          | 3           |  | -                     | -                 | -                 | -            |
| Quiet operation mode of PLA-AA(Fan speed)                        | Disabled (Standard)                        | 26       | 1           | ●  | -                     | -                 | -                 | -            |
|  | Enabled (Quiet operation mode)             |          | 2           |  | -                     | -                 | -                 | -            |
| Fan speed when the cooling thermostat is OFF                     | Set fan speed                              | 27       | 1           | ●  | ●                     | ●                 | ●                 | ●            |
|  | Stop                                       |          | 2           |  |                       |                   |                   |              |
| Detection of abnormality of the pipe temperature (P8)            | Available                                  | 28       | 1           | ●  | ●                     | ●                 | ●                 | ●            |
|  | Not available                              |          | 2           |  |                       |                   |                   |              |

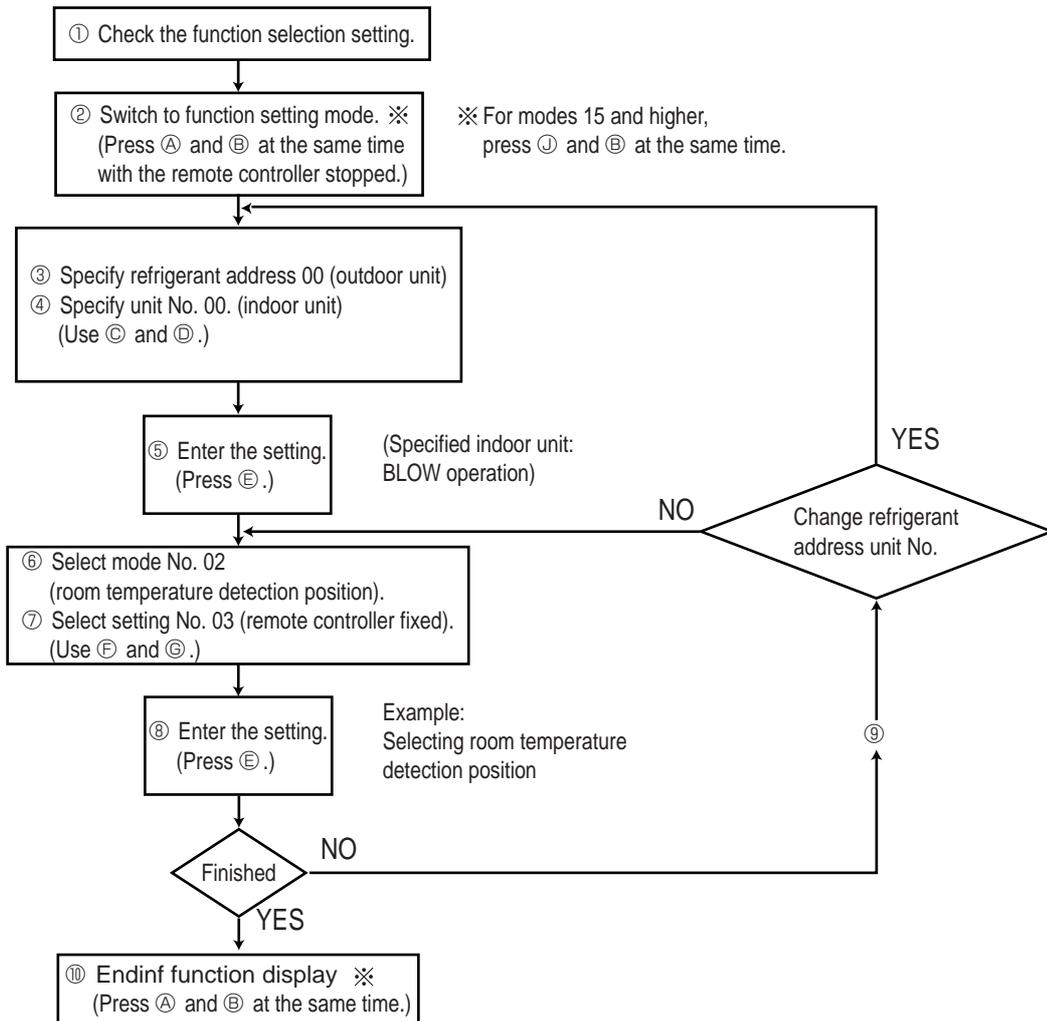
### 13-1-1. Selecting functions using the wired remote controller

First, try to familiarize yourself with the flow of the function selection procedure. In this section, an example of setting the room temperature detection position is given.

For actual operations, refer to steps ① to ⑩.



#### Selecting functions using the wired remote controller



The above procedure must be carried out only if changes are necessary.

## [Operating Procedure]

- ① Check the setting items provided by function selection.

If settings for a mode are changed by function selection, the functions of that mode will be changed accordingly. Check all the current settings according to steps ② to ⑦, fill in the "Check" column in Table 1, and then change them as necessary. For factory settings, refer to the indoor unit's installation manual.

- ② Switch off the remote controller.

Ⓐ Hold down the **FILTER** (mode is 15 to 28) and **TEST** buttons simultaneously for at least two seconds. **FUNCTION SELECTION** will start to flash, and then the remote controller's display content will change as shown below.



\* If the unit stops after **FUNCTION SELECTION** flashed for two seconds or "88" flashes in the room temperature display area for two seconds, a transmission error may have occurred. Check to see if there are any sources of noise or interference near the transmission path.

Note If you have made operational mistakes during this procedure, exit function selection (see step ⑩), and then restart from step ②.

- ④ Set the indoor unit number.

Ⓐ Press the **ON/OFF** button so that "-" flashes in the unit number display area.



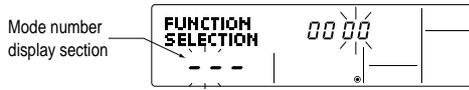
\* To set modes 01 to 06 or 15 to 22 select unit number "00".

\* To set modes 07 to 14 or 23 to 28 carry out as follows:

- To set each indoor unit individually, select "01" to "04".
- To set all the indoor units collectively, select "AL".

- ⑤ Confirm the refrigerant address and unit number.

Ⓐ Press the **MODE** button to confirm the refrigerant address and unit number. After a while, "-" will start to flash in the mode number display area.



\* "88" will flash in the room temperature display area if the selected refrigerant address does not exist in the system. Furthermore, if "F" appears and flashes in the unit number display area and the refrigerant address display area also flashes, there are no units that correspond to the selected unit number. In this case, the refrigerant address and unit number may be incorrect, so repeat steps ② and ③ to set the correct ones.

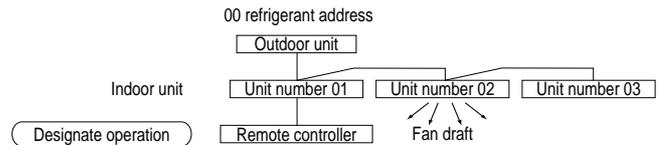
- ③ Set the outdoor unit's refrigerant address.

Ⓐ Press the [**CLOCK**] buttons ( and ) to select the desired refrigerant address. The refrigerant address changes from "00" to "15". (This operation is not possible for single refrigerant systems.)

Ⓐ Press the [**CLOCK**] buttons ( and ) to select the unit number of the indoor unit for which you want to perform function selection. The unit number changes to "00", "01", "02", "03", "04" and "AL" each time a button is pressed.

Ⓐ When the refrigerant address and unit number are confirmed by pressing the **MODE** button, the corresponding indoor unit will start fan operation. This helps you find the location of the indoor unit for which you want to perform function selection. However, if "00" or "AL" is selected as the unit number, all the indoor units corresponding to the specified refrigerant address will start fan operation.

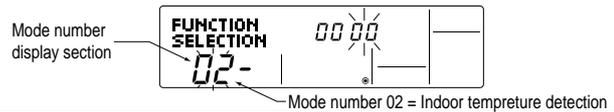
Example) When the refrigerant address is set to 00 and the unit number is 02.



\* When grouping different refrigerant systems, if an indoor unit other than the one to which the refrigerant address has been set performs fan operation, there may be another refrigerant address that is the same as the specified one. In this case, check the DIP switch of the outdoor unit to see whether such a refrigerant address exists.

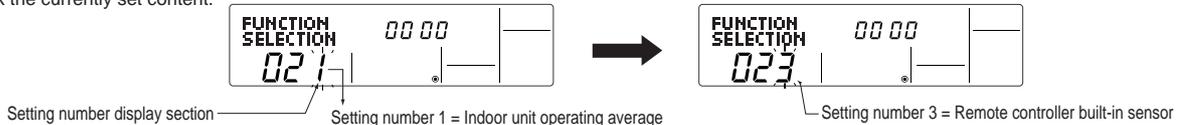
- ⑥ Select the mode number.

Ⓐ Press the [**TEMP**] buttons ( and ) to set the desired mode number. (Only the selectable mode numbers can be selected.)



- ⑦ Select the setting content for the selected mode.

Ⓐ Press the **MENU** button. The currently selected setting number will flash, so check the currently set content.



- ⑧ Register the settings you have made in steps ③ to ⑦.

Ⓐ Press the **MODE** button. The mode number and setting number will start to flash and registration starts.

The mode number and setting number will stop flashing and remain lit, indicating the end of registration.

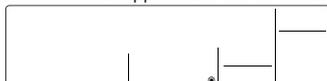


\* If "-" is displayed for both the mode number and setting number and "88" flashes in the room temperature display area, a transmission error may have occurred. Check to see if there are any sources of noise or interference near the transmission path.

- ⑨ If you wish to continue to select other functions, repeat steps ③ to ⑧.

- ⑩ Complete function selection.

Ⓐ Hold down the **FILTER** (mode is 15 to 28) and **TEST** buttons simultaneously for at least two seconds. After a while, the function selection screen will disappear and the air conditioner OFF screen will reappear.



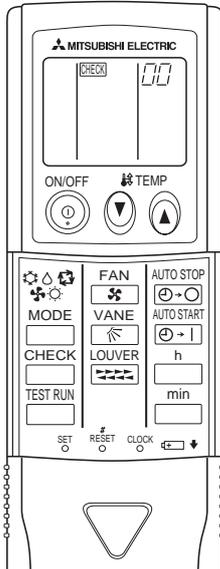
\* Do not operate the remote controller for at least 30 seconds after completing function selection. (No operations will be accepted even if they are made.)

Note If a function of an indoor unit is changed by function selection after installation is complete, make sure that a "O" mark, etc., is given in the "Check" column of Table 1 to indicate the change.

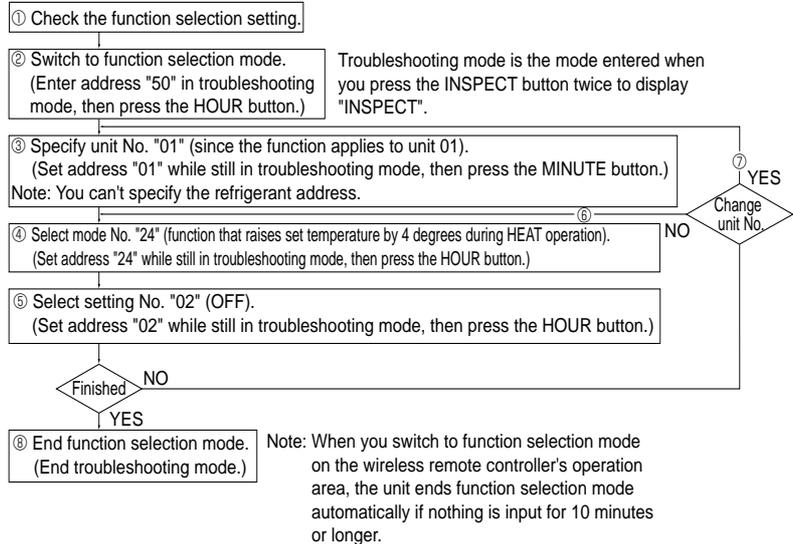
## 13-1-2. Selecting functions using the wireless remote controller (Type C)

Functions can be selected with the wireless remote controller. Function selection using wireless remote controller is available only for refrigerant system with wireless function. Refrigerant address cannot be specified by the wireless remote controller.

### [Flow of function selection procedure]



The flow of the function selection procedure is shown below. This example shows how to turn off the function that raises the set temperature by 4 degrees during HEAT operation. The procedure is given after the flow chart.



### [Operating instructions]

- ① Check the function settings.
  - ② Press the **CHECK** button twice continuously. → **CHECK** is lit and "00" blinks.  
Press the temp **h** button once to set "50". Direct the wireless remote controller toward the receiver of the indoor unit and press the **h** button.
  - ③ Set the unit number.  
Press the temp **h** button to set the unit number. (Press "01" to specify the indoor unit whose unit number is 01.)  
Direct the wireless remote controller toward the receiver of the indoor unit and press the **min** button.  
(By setting unit number with the **min** button, specified indoor unit starts performing fan operation.  
Detect which unit is assigned to which number using this function. If unit number is set to AL, all the indoor units in same refrigerant system start performing fan operation simultaneously.)  
\* If a unit number that cannot be recognized by the unit is entered, 3 beeps of 0.4 seconds will be heard. Reenter the unit number setting.  
\* If the signal was not received by the sensor, you will not hear a beep or a "double beep" may be heard. Reenter the unit number setting.
  - ④ Select a mode.  
Press the temp **h** button to set a mode. Press "24" to turn on the function that raises the set temperature by 4 degree during heat operation. Direct the wireless remote controller toward the sensor of the indoor unit and press the **h** button.  
→ The sensor-operation indicator will flash and beeps will be heard to indicate the current setting number.  
Current setting number: 1 = 1 beep (one second)  
2 = 2 beeps (one second each)  
3 = 3 beeps (one second each)  
\* If a mode number that cannot be recognized by the unit is entered, 3 beeps of 0.4 seconds will be heard. Reenter the mode number.  
\* If the signal was not received by the sensor, you will not hear a beep or a "double beep" may be heard. Reenter the mode number.
  - ⑤ Select the setting number.  
Press the temp **h** button to select the setting number. (02: Not available)  
Direct the wireless remote controller toward the receiver of the indoor unit and press the **h** button.  
→ The sensor-operation indicator will flash and beeps will be heard to indicate the the setting number.  
Setting number: 1 = 2 beeps (0.4 seconds each)  
2 = 2 beeps (0.4 seconds each, repeated twice)  
3 = 2 beeps (0.4 seconds each, repeated three times)  
\* If a setting number that cannot be recognized by the unit is entered, the setting will turn back to the original setting.  
\* If the signal was not received by the sensor, you will not hear a beep or a "double beep" may be heard. Reenter the setting number.
  - ⑥ Repeat steps ④ and ⑤ to make an additional setting without changing unit number.
  - ⑦ Repeat steps ③ to ⑤ to change unit number and make function settings on it.
  - ⑧ Complete the function settings  
Press **0** button.
- \* Do not use the wireless remote controller for 30 seconds after completing the function setting.

## 13-2. FUNCTION SELECTION OF REMOTE CONTROLLER

The setting of the following remote controller functions can be changed using the remote controller function selection mode. Change the setting when needed.

| Item 1                                   | Item 2  | Item 3 (Setting content)   |
|--|---|--|
| 1. Change Language ("CHANGE LANGUAGE")   | Language setting to display   | • Display in multiple languages is possible.   |
| 2. Function limit ("FUNCTION SELECTION") | (1) Operation function limit setting (operation lock) ("LOCKING FUNCTION")<br>(2) Use of automatic mode setting ("SELECT AUTO MODE")<br>(3) Temperature range limit setting ("LIMIT TEMP FUNCTION")             | • Setting the range of operation limit (operation lock)<br>• Setting the use or non-use of "automatic" operation mode<br>• Setting the temperature adjustable range (maximum, minimum)   |
| 3. Mode selection ("MODE SELECTION")     | (1) Remote controller main/sub setting ("CONTROLLER MAIN/SUB")<br>(2) Use of clock setting ("CLOCK")<br>(3) Timer function setting ("WEEKLY TIMER")<br>(4) Contact number setting for error situation ("CALL.") | • Selecting main or sub remote controller<br>* When two remote controllers are connected to one group, one controller must be set to sub.<br>• Setting the use or non-use of clock function<br>• Setting the timer type<br>• Contact number display in case of error<br>• Setting the telephone number |
| 4. Display change ("DISP MODE SETTING")  | (1) Temperature display °C/°F setting ("TEMP MODE °C/°F")<br>(2) Suction air temperature display setting ("ROOM TEMP DISP SELECT")<br>(3) Automatic cooling/heating display setting ("AUTO MODE DISP C/H")      | • Setting the temperature unit (°C or °F) to display<br>• Setting the use or non-use of the display of indoor (suction) air temperature<br>• Setting the use or non-use of the display of "Cooling" or "Heating" display during operation with automatic mode  |

[Function selection flowchart] Refer to next page.

[1] Stop the air conditioner to start remote controller function selection mode. → [2] Select from item1. → [3] Select from item2. → [4] Make the setting. (Details are specified in item3) → [5] Setting completed. → [6] Change the display to the normal one. (End)

[Detailed setting]

### [4] -1. CHANGE LANGUAGE setting

The language that appears on the dot display can be selected.

- Press the [⊖ MENU] button to change the language.
- ① Japanese (JP), ② English (GB), ③ German (D), ④ Spanish (E), ⑤ Russian (RU), ⑥ Italian (I), ⑦ Chinese (CH), ⑧ French (F)

### [4] -2. Function limit

#### (1) Operation function limit setting (operation lock)

- To switch the setting, press the [⊖ ON/OFF] button.
- ① no1 : Operation lock setting is made on all buttons other than the [⊖ ON/OFF] button.
- ② no2 : Operation lock setting is made on all buttons.
- ③ OFF (Initial setting value) : Operation lock setting is not made
- \* To make the operation lock setting valid on the normal screen, it is necessary to press buttons (Press and hold down the [FILTER] and [⊖ ON/OFF] buttons at the same time for two seconds.) on the normal screen after the above setting is made.

#### (2) Use of automatic mode setting

When the remote controller is connected to the unit that has automatic operation mode, the following settings can be made.

- To switch the setting, press the [⊖ ON/OFF] button.
- ① ON (Initial setting value) : The automatic mode is displayed when the operation mode is selected.
- ② OFF : The automatic mode is not display when the operation mode is selected.

### (3) Temperature range limit setting

After this setting is made, the temperature can be changed within the set range.

- To switch the setting, press the [⊖ ON/OFF] button.
- ① LIMIT TEMP COOL MODE :  
The temperature range can be changed on cooling/dry mode.
- ② LIMIT TEMP HEAT MODE :  
The temperature range can be changed on heating mode.
- ③ LIMIT TEMP AUTO MODE :  
The temperature range can be changed on automatic mode.
- ④ OFF (initial setting) : The temperature range limit is not active.
- \* When the setting, other than OFF, is made, the temperature range limit setting on cooling, heating and automatic mode is made at the same time. However the range cannot be limited when the set temperature range has not changed.
- To increase or decrease the temperature, press the [TEMP (▽) or (△)] button.
- To switch the upper limit setting and the lower limit setting, press the [TEMP (▽) or (△)] button. The selected setting will flash and the temperature can be set.
- Settable range  
Cooling/Dry mode : Lower limit: 19 °C ~ 30 °C Upper limit: 30 °C ~ 19 °C  
Heating mode : Lower limit: 17 °C ~ 28 °C Upper limit: 28 °C ~ 17 °C  
Automatic mode : Lower limit: 19 °C ~ 28 °C Upper limit: 28 °C ~ 19 °C

### [4] -3. Mode selection setting

#### (1) Remote controller main/sub setting

- To switch the setting, press the [⊖ ON/OFF] button.
- ① Main : The controller will be the main controller.
- ② Sub : The controller will be the sub controller.

#### (2) Use of clock setting

- To switch the setting, press the [⊖ ON/OFF] button.
- ① ON : The clock function can be used.
- ② OFF : The clock function cannot be used.

#### (3) Timer function setting

- To switch the setting, press the [⊖ ON/OFF] button (Choose one of the followings.).
- ① WEEKLY TIMER (initial setting on MA deluxe):  
The weekly timer can be used.
- ② AUTO OFF TIMER: The auto off timer can be used.
- ③ SIMPLE TIMER (Default setting on MA smooth):  
The simple timer can be used.
- ④ TIMER MODE OFF: The timer mode cannot be used.
- \* When the use of clock setting is OFF, the "WEEKLY TIMER" cannot be used.

#### (4) Contact number setting for error situation

- To switch the setting, press the [⊖ ON/OFF] button.
- ① CALL OFF : The set contact numbers are not displayed in case of error.
- ② CALL \*\*\*\* \* : The set contact numbers are displayed in case of error.
- CALL\_ : The contact number can be set when the display is as shown on the left.

- Setting the contact numbers  
To set the contact numbers, follow the following procedures.  
Move the flashing cursor to set numbers. Press the [TEMP (▽) and (△)] button to move the cursor to the right (left). Press the [⊖ CLOCK (▽) and (△)] button to set the numbers.

### [4] -4. Display change setting

#### (1) Temperature display °C/°F setting

- To switch the setting, press the [⊖ ON/OFF] button.
- ① °C : The temperature unit °C is used.
- ② °F : The temperature unit °F is used.

#### (2) Suction air temperature display setting

- To switch the setting, press the [⊖ ON/OFF] button.
- ① ON : The suction air temperature is displayed.
- ② OFF : The suction air temperature is not displayed.

#### (3) Automatic cooling/heating display setting

- To switch the setting, press the [⊖ ON/OFF] button.
- ① ON : One of "Automatic cooling" and "Automatic heating" is displayed under the automatic mode is running.
- ② OFF : Only "Automatic" is displayed under the automatic mode.



- Reduces maintenance work drastically.
  - Enables you to check operation data of the indoor and outdoor units by remote controller.
- Furthermore, use of maintenance stable-operation control that fixes the operating frequency, allows smooth inspection, even for inverter models.

Smooth Maintenance Function

**Discharge temperature 64°C**

- Conventional inspection work

Easy maintenance information (unit)

| Compressor                               | Outdoor unit                      | Indoor unit                       |
|--|-----------------------------------|-----------------------------------|
| ① Accumulated operating time (×10 hours) | ④ Heat exchanger temperature (°C) | ⑦ Intake air temperature (°C)     |
| ② Number of ON/OFF times (×10 times)     | ⑤ Discharge temperature (°C)      | ⑧ Heat exchanger temperature (°C) |
| ③ Operating current (A)                  | ⑥ Outside air temperature (°C)    | ⑨ Filter operating time* (Hours)  |

\* The filter operating time is the time that has elapsed since the filter was reset.

## 14-1.MAINTENANCE MODE OPERATION METHOD

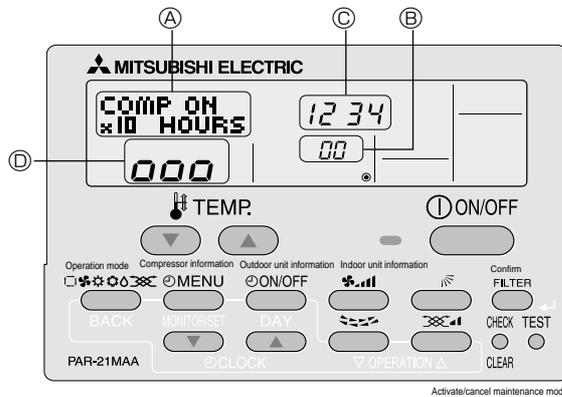
\* If you are going to use "14-2. GUIDE FOR OPERATION CONDITION", set the airflow to "High" before activating maintenance mode.

### ● Switching to maintenance mode

Maintenance mode can be activated either when the air conditioner is operated or stopped. It cannot be activated during test run.

※ Maintenance information can be viewed even if the air conditioner is stopped.

#### ■ Remote controller button information



(1) Press the **TEST** button for three seconds to switch to maintenance mode.

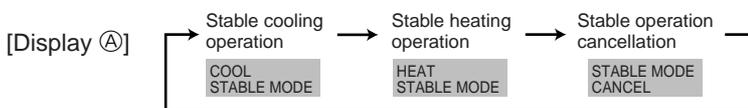
[Display A] MAINTENANCE

If stable operation is unnecessary or if you want to check the data with the air conditioner stopped, skip to step (4).

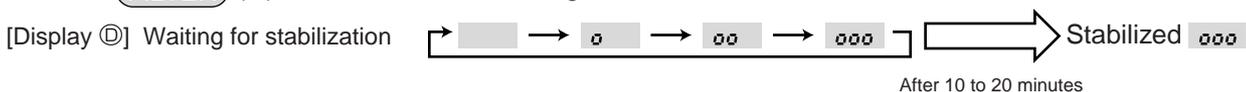
### ● Fixed Hz operation

The operating frequency can be fixed to stabilize operation of inverter model. If the air conditioner is currently stopped, start it by this operation.

(2) Press the **MODE** button to select the desired operation mode.



(3) Press the **FILTER** button to confirm the setting.



● **Data measurement**

When the operation is stabilized, measure operation data as explained below.

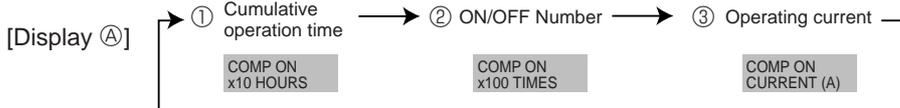
➔(4) Press the [TEMP] buttons ( and ) to select the desired refrigerant address.



➔(5) Select the type of data to be displayed.  
After selecting, go to step (6).

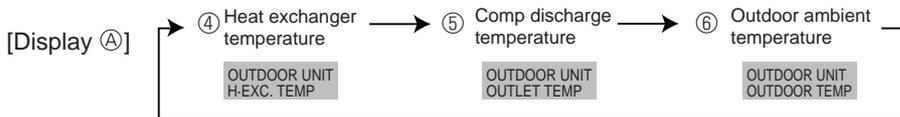
**Compressor information**

MENU button



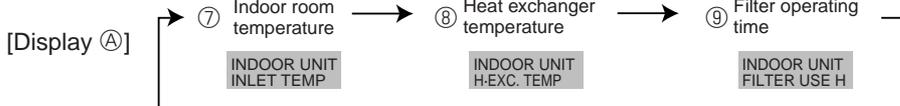
**Outdoor unit information**

ON/OFF button

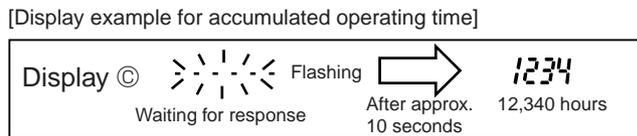


**Indoor unit information**

FILTER button



(6) Press the FILTER ( ) button to confirm the setting.



(7) Data is displayed on the display (at ④).

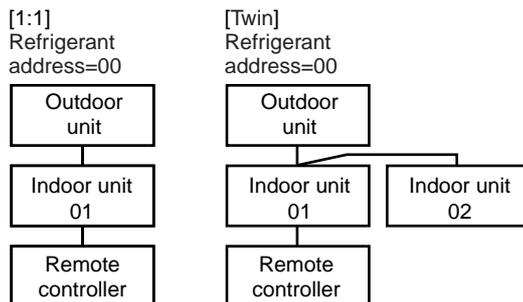
**To check the data for each item, repeat steps (5) to (7).**

(8) To cancel maintenance mode, press the TEST button for three seconds or press the ON/OFF button.

■ **Refrigerant address**

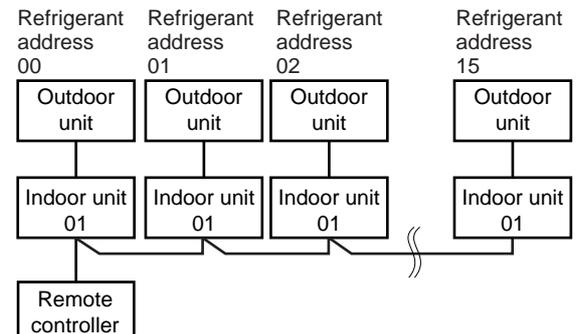
Single refrigerant system

In the case of single refrigerant system, the refrigerant address is "00" and no operation is required.  
Simultaneous twin, triple and quad units belong to this category (single refrigerant system).



Multi refrigerant system (group control)

Up to 16 refrigerant systems (16 outdoor units) can be connected as a group by one remote controller. To check or set the refrigerant addresses.



## 14-2.GUIDE FOR OPERATION CONDITION

|              |                  | Inspection item   | Result            |                   |             |
|--------------|------------------|---|-------------------|-------------------|-------------|
| Power supply | Loose connection | Terminal block  | Breaker           | Good              | Retightened |
|              |                  |   | Outdoor Unit      | Good              | Retightened |
|              |                  |   | Indoor Unit       | Good              | Retightened |
|              |                  | (Insulation resistance)                                   |                   | MΩ                |             |
|              |                  | (Voltage)   |                   | V                 |             |
| Compressor   |                  | ① Accumulated operating time                              |                   | Time              |             |
|              |                  | ② Number of ON/OFF times                                  |                   | Times             |             |
|              |                  | ③ Current   |                   | A                 |             |
| Outdoor Unit | Temperature      | ④ Refrigerant/heat exchanger temperature                  | COOL °C           | HEAT °C           |             |
|              |                  | ⑤ Refrigerant/discharge temperature                       | COOL °C           | HEAT °C           |             |
|              |                  | ⑥ Air/outside air temperature (Air/discharge temperature) | COOL °C           | HEAT °C           |             |
|              | Cleanliness      | Appearance  | Good              | Cleaning required |             |
|              |                  | Heat exchanger  | Good              | Cleaning required |             |
|              |                  | Sound/vibration   | None              | Present           |             |
| Indoor Unit  | Temperature      | ⑦ Air/intake air temperature (Air/discharge temperature)  | COOL °C           | HEAT °C           |             |
|              |                  | ⑧ Refrigerant/heat exchanger temperature                  | COOL °C           | HEAT °C           |             |
|              |                  | ⑨ Filter operating time*                                  |                   | Time              |             |
|              | Cleanliness      | Decorative panel  | Good              | Cleaning required |             |
|              |                  | Filter  | Good              | Cleaning required |             |
|              |                  | Fan   | Good              | Cleaning required |             |
|              | Heat exchanger   | Good  | Cleaning required |                   |             |
|              | Sound/vibration  | None  | Present           |                   |             |

\* The filter operating time is the time that has elapsed since the filter was reset.

| Area              | Check item   | Judgment |      |
|-------------------|--|----------|------|
|                   |  | Cool     | Heat |
| Normal            | Normal operation state                                     |          |      |
| Filter inspection | Filter may be clogged. *1                                  |          |      |
| Inspection A      | Performance has dropped. Detailed inspection is necessary. |          |      |
| Inspection B      | Refrigerant amount is dropping.                            |          |      |
| Inspection C      | Filter or indoor heat exchanger may be clogged.            |          |      |

\* The above judgement is just guide based on Japanese standard conditions. It may be changed depending on the indoor and outdoor temperature.

## Check Points

Enter the temperature differences between ⑤, ④, ⑦ and ⑧ into the graph given below.

Operation state is determined according to the plotted areas on the graph.

For data measurements, set the fan speed to "Hi" before activating maintenance mode.

| Classification | Item                   | Result  |    |
|----------------|------------------------|---|----|
| Cool           | Inspection             | Is "D000" displayed stably on the remote controller?                      |    |
|                | Temperature difference | (⑤ Discharge temperature) – (④ Outdoor heat exchanger temperature)        | °C |
|                |                        | (⑦ Indoor intake air temperature) – (⑧ Indoor heat exchanger temperature) | °C |
| Heat           | Inspection             | Is "D000" displayed stably on the remote controller?                      |    |
|                | Temperature difference | (⑤ Discharge temperature) – (⑧ Indoor heat exchanger temperature)         | °C |
|                |                        | (⑧ Indoor heat exchanger temperature) – (⑦ Indoor intake air temperature) | °C |

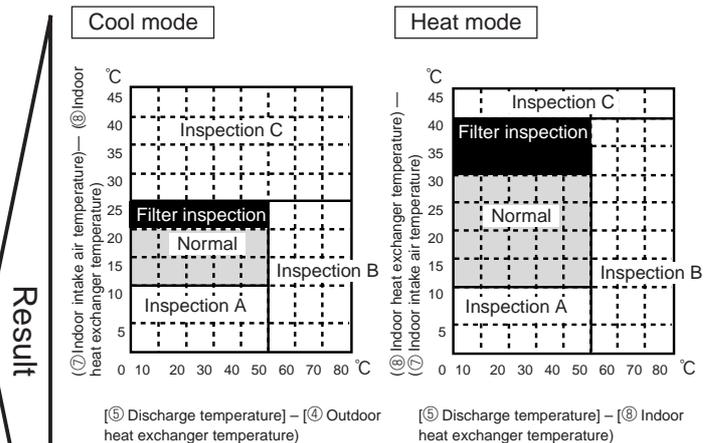
\* Fixed Hz operation may not be possible under the following temperature ranges.

A) In cool mode, outdoor intake air temperature is 40 °C or higher or indoor intake air temperature is 23 °C or lower

B) In heat mode, outdoor intake air temperature is 20 °C or higher or indoor intake air temperature is 25 °C or lower

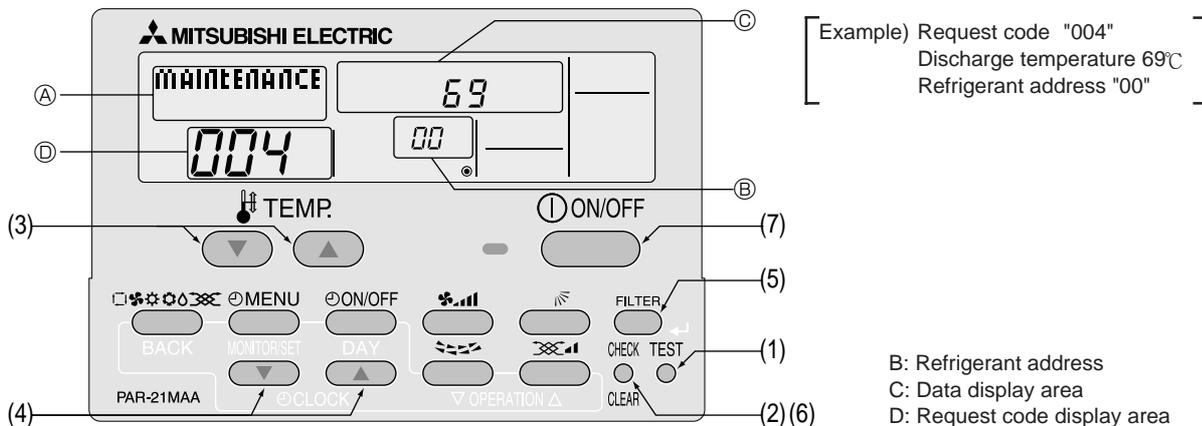
\* If the air conditioner is operated at a temperature range other than the ones above but operation is not stabilized after 30 minutes or more have elapsed, carry out inspection.

\* In heat mode, the operation state may vary due to frost forming on the outdoor heat exchanger.



## 15-1. HOW TO "MONITOR THE OPERATION DATA"

- Turn on the [Monitoring the operation data]



- (1) Press the **TEST** button for three seconds so that [Maintenance mode] appears on the screen (at A).
- (2) Press the **CHECK** button for three seconds to switch to [Maintenance monitor].  
 Note) It is not possible to switch to [Maintenance monitor] during data request in maintenance mode (i.e., while "----" is flashing), since no buttons are operative.

- Operating the service inspection monitor

[- - -] appears on the screen (at D) when [Maintenance monitor] is activated.

(The display (at D) now allows you to set a request code No.)

- (3) Press the [TEMP] buttons (**▽** and **△**) to select the desired refrigerant address.

[Screen D] → **00** ↔ **01** ↔ ..... ↔ **15** ←

- (4) Press the [CLOCK] buttons (**▽** and **△**) to set the desired request code No.
- (5) Press the **FILTER** button to perform data request.

(The requested data will be displayed at C in the same way as in maintenance mode.)

Data collected during operation of the remote controller will be displayed.

The collected data such as temperature data will not be updated automatically even if the data changes.

To display the updated data, carry out step (4) again.

- Canceling the Monitoring the operation data

- (6) While [Maintenance monitor] is displayed, press the **CHECK** button for three seconds to return to maintenance mode.
- (7) To return to normal mode, press the **ON/OFF** button.

## 15-2. REQUEST CODE LIST

\* Certain indoor/outdoor combinations do not have the request code function; therefore, no request codes are displayed.

| Request code | Request content   | Description<br>(Display range)                    | Unit      | Remarks  |
|--------------|---|---|-----------|--|
| 0            | Operation state   | Refer to 15-2-1. Detail Contents in Request Code. | –         |  |
| 1            | Compressor-Operating current (rms)  | 0 – 50  | A         |  |
| 2            | Compressor-Accumulated operating time   | 0 – 9999  | 10 hours  |  |
| 3            | Compressor-Number of operation times  | 0 – 9999  | 100 times |  |
| 4            | Discharge temperature (TH4)   | 3 – 217   | ℃         |  |
| 5            | Outdoor unit - Liquid pipe 1 temperature (TH3)                                  | -40 – 90  | ℃         |  |
| 6            | Outdoor unit - Liquid pipe 2 temperature  | -40 – 90  | ℃         |  |
| 7            | Outdoor unit-2-phase pipe temperature (TH6)                                     | -39 – 88  | ℃         |  |
| 8            |   |   |           |  |
| 9            | Outdoor unit-Outside air temperature (TH7)                                      | -39 – 88  | ℃         |  |
| 10           | Outdoor unit-Heat sink temperature (TH8)  | -40 – 200   | ℃         |  |
| 11           |   |   |           |  |
| 12           | Discharge super heat (SHd)  | 0 – 255   | ℃         |  |
| 13           | Sub-cool (SC)   | 0 – 130   | ℃         |  |
| 14           |   |   |           |  |
| 15           |   |   |           |  |
| 16           | Compressor-Operating frequency  | 0 – 255   | Hz        |  |
| 17           | Compressor-Target operating frequency   | 0 – 255   | Hz        |  |
| 18           | Outdoor unit-Fan output step  | 0 – 10  | Step      |  |
| 19           | Outdoor unit-Fan 1 speed<br>(Only for air conditioners with DC fan motor)       | 0 – 9999  | rpm       |  |
| 20           | Outdoor unit-Fan 2 speed<br>(Only for air conditioners with DC fan motor)       | 0 – 9999  | rpm       | "0" is displayed if the air conditioner is a single-fan type.    |
| 21           |   |   |           |  |
| 22           | LEV (A) opening   | 0 – 500   | Pulses    |  |
| 23           | LEV (B) opening   | 0 – 500   | Pulses    |  |
| 24           |   |   |           |  |
| 25           | Primary current   | 0 – 50  | A         |  |
| 26           | DC bus voltage  | 180 – 370   | V         |  |
| 27           |   |   |           |  |
| 28           |   |   |           |  |
| 29           | Number of connected indoor units  | 0 – 4   | Units     |  |
| 30           | Indoor unit-Setting temperature   | 17 – 30   | ℃         |  |
| 31           | Indoor unit-Intake air temperature <Measured by thermostat>                     | 8 – 39  | ℃         |  |
| 32           | Indoor unit-Intake air temperature (Unit No. 1)<br><Heat mode-4-deg correction> | 8 – 39  | ℃         | "0" is displayed if the target unit is not present.              |
| 33           | Indoor unit-Intake air temperature (Unit No. 2)<br><Heat mode-4-deg correction> | 8 – 39  | ℃         | ↑  |
| 34           | Indoor unit-Intake air temperature (Unit No. 3)<br><Heat mode-4-deg correction> | 8 – 39  | ℃         | ↑  |
| 35           | Indoor unit-Intake air temperature (Unit No. 4)<br><Heat mode-4-deg correction> | 8 – 39  | ℃         | ↑  |
| 36           |   |   |           |  |
| 37           | Indoor unit - Liquid pipe temperature (Unit No. 1)                              | -39 – 88  | ℃         | "0" is displayed if the target unit is not present.              |
| 38           | Indoor unit - Liquid pipe temperature (Unit No. 2)                              | -39 – 88  | ℃         | ↑  |
| 39           | Indoor unit - Liquid pipe temperature (Unit No. 3)                              | -39 – 88  | ℃         | ↑  |
| 40           | Indoor unit - Liquid pipe temperature (Unit No. 4)                              | -39 – 88  | ℃         | ↑  |
| 41           |   |   |           |  |
| 42           | Indoor unit-Cond./Eva. pipe temperature (Unit No. 1)                            | -39 – 88  | ℃         | "0" is displayed if the target unit is not present.              |
| 43           | Indoor unit-Cond./Eva. pipe temperature (Unit No. 2)                            | -39 – 88  | ℃         | ↑  |
| 44           | Indoor unit-Cond./Eva. pipe temperature (Unit No. 3)                            | -39 – 88  | ℃         | ↑  |
| 45           | Indoor unit-Cond./Eva. pipe temperature (Unit No. 4)                            | -39 – 88  | ℃         | ↑  |
| 46           |   |   |           |  |
| 47           |   |   |           |  |
| 48           | Thermostat ON operating time  | 0 – 999   | Minutes   |  |
| 49           | Test run elapsed time   | 0 – 120   | Minutes   | ← Not possible to activate maintenance mode during the test run. |



| Request code | Request content  | Description<br>(Display range)  | Unit | Remarks |
|--------------|--|---|------|---------|
| 50           | Indoor unit-Control state                                  | Refer to 15-2-1.Detail Contents in Request Code.  | —    |         |
| 51           | Outdoor unit-Control state                                 | Refer to 15-2-1.Detail Contents in Request Code.  | —    |         |
| 52           | Compressor-Frequency control state                         | Refer to 15-2-1.Detail Contents in Request Code.  | —    |         |
| 53           | Outdoor unit-Fan control state                             | Refer to 15-2-1.Detail Contents in Request Code.  | —    |         |
| 54           | Actuator output state                                      |   | —    |         |
| 55           | Error content (U9)   |   | —    |         |
| 56           |  |   |      |         |
| 57           |  |   |      |         |
| 58           |  |   |      |         |
| 59           |  |   |      |         |
| 60           | Signal transmission demand capacity                        | 0 – 255   | %    |         |
| 61           | Contact demand capacity                                    | Refer to 15-2-1.Detail Contents in Request Code.  | —    |         |
| 62           | External input state (silent mode, etc.)                   | Refer to 15-2-1.Detail Contents in Request Code.  | —    |         |
| 63           |  |   |      |         |
| 64           |  |   |      |         |
| 65           |  |   |      |         |
| 66           |  |   |      |         |
| 67           |  |   |      |         |
| 68           |  |   |      |         |
| 69           |  |   |      |         |
| 70           | Outdoor unit-Capacity setting display                      | Refer to 15-2-1.Detail Contents in Request Code.  | —    |         |
| 71           | Outdoor unit-Setting information                           | Refer to 15-2-1.Detail Contents in Request Code.  | —    |         |
| 72           |  |   |      |         |
| 73           | Outdoor unit-SW1 setting information                       | Refer to 15-2-1.Detail Contents in Request Code.  | —    |         |
| 74           | Outdoor unit-SW2 setting information                       | Refer to 15-2-1.Detail Contents in Request Code.  | —    |         |
| 75           |  |   |      |         |
| 76           | Outdoor unit-SW4 setting information                       | Refer to 15-2-1.Detail Contents in Request Code.  | —    |         |
| 77           | Outdoor unit-SW5 setting information                       | Refer to 15-2-1.Detail Contents in Request Code.  | —    |         |
| 78           | Outdoor unit-SW6 setting information                       | Refer to 15-2-1.Detail Contents in Request Code.  | —    |         |
| 79           | Outdoor unit-SW7 setting information                       | Refer to 15-2-1.Detail Contents in Request Code.  | —    |         |
| 80           | Outdoor unit-SW8 setting information                       | Refer to 15-2-1.Detail Contents in Request Code.  | —    |         |
| 81           | Outdoor unit-SW9 setting information                       | Refer to 15-2-1.Detail Contents in Request Code.  | —    |         |
| 82           | Outdoor unit-SW10 setting information                      | Refer to 15-2-1.Detail Contents in Request Code.  | —    |         |
| 83           |  |   |      |         |
| 84           | M-NET adapter connection (presence/absence)                | "0000": Not connected<br>"0001": Connected  | —    |         |
| 85           |  |   |      |         |
| 86           |  |   |      |         |
| 87           |  |   |      |         |
| 88           |  |   |      |         |
| 89           | Display of execution of replace/wash operation             | "0000": Not washed<br>"0001": Washed  | —    |         |
| 90           | Outdoor unit-Microcomputer version information             | Examples) Ver 5.01 → "0501"   | Ver  |         |
| 91           | Outdoor unit-Microcomputer version information (sub No.)   | Auxiliary information (displayed after version information)<br>Examples) Ver 5.01 A000 → "A000" | —    |         |
| 92           |  |   |      |         |
| 93           |  |   |      |         |
| 94           |  |   |      |         |
| 95           |  |   |      |         |
| 96           |  |   |      |         |
| 97           |  |   |      |         |
| 98           |  |   |      |         |
| 99           |  |   |      |         |
| 100          | Outdoor unit - Error postponement history 1 (latest)       | Displays postponement code. (" - " is displayed if no postponement code is present)             | Code |         |
| 101          | Outdoor unit - Error postponement history 2 (previous)     | Displays postponement code. (" - " is displayed if no postponement code is present)             | Code |         |
| 102          | Outdoor unit - Error postponement history 3 (last but one) | Displays postponement code. (" - " is displayed if no postponement code is present)             | Code |         |

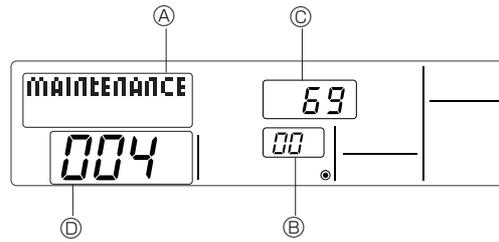


| Request code | Request content  | Description<br>(Display range)  | Unit             | Remarks  |
|--------------|--|---|------------------|--|
| 103          | Error history 1 (latest)   | Displays error history. ("--" is displayed if no history is present.) | Code             |  |
| 104          | Error history 2 (second to last)   | Displays error history. ("--" is displayed if no history is present.) | Code             |  |
| 105          | Error history 3 (third to last)  | Displays error history. ("--" is displayed if no history is present.) | Code             |  |
| 106          | Abnormal thermistor display<br>(TH3/TH6/TH7/TH8)                                       | 3 : TH3<br>6 : TH6<br>7 : TH7<br>8 : TH8<br>0 : No thermistor error   | Sensor<br>number |  |
| 107          | Operation mode at time of error  | Displayed in the same way as request code "0".                        | –                |  |
| 108          | Compressor-Operating current at time of error  | 0 – 50  | A                |  |
| 109          | Compressor-Accumulated operating time at time of error                                 | 0 – 9999  | 10 hours         |  |
| 110          | Compressor-Number of operation times at time of error                                  | 0 – 9999  | 100 times        |  |
| 111          | Discharge temperature at time of error   | 3 – 217   | °C               |  |
| 112          | Outdoor unit - Liquid pipe 1 temperature (TH3) at time of error                        | -40 – 90  | °C               |  |
| 113          | Outdoor unit - Liquid pipe 2 temperature at time of error                              | -40 – 90  | °C               |  |
| 114          | Outdoor unit-2-phase pipe temperature (TH6) at time of error                           | -39 – 88  | °C               |  |
| 115          |  |   |                  |  |
| 116          | Outdoor unit-Outside air temperature (TH7) at time of error                            | -39 – 88  | °C               |  |
| 117          | Outdoor unit-Heat sink temperature (TH8) at time of error                              | -40 – 200   | °C               |  |
| 118          | Discharge super heat (SHd) at time of error  | 0 – 255   | °C               |  |
| 119          | Sub-cool (SC) at time of error   | 0 – 130   | °C               |  |
| 120          | Compressor-Operating frequency at time of error  | 0 – 255   | Hz               |  |
| 121          | Outdoor unit at time of error<br>• Fan output step                                     | 0 – 10  | Step             |  |
| 122          | Outdoor unit at time of error<br>• Fan 1 speed (Only for air conditioners with DC fan) | 0 – 9999  | rpm              |  |
| 123          | Outdoor unit at time of error<br>• Fan 2 speed (Only for air conditioners with DC fan) | 0 – 9999  | rpm              | "0" is displayed if the air conditioner is a single-fan type.  |
| 124          |  |   |                  |  |
| 125          | LEV (A) opening at time of error   | 0 – 500   | Pulses           |  |
| 126          | LEV (B) opening at time of error   | 0 – 500   | Pulses           |  |
| 127          |  |   |                  |  |
| 128          |  |   |                  |  |
| 129          |  |   |                  |  |
| 130          | Thermostat ON time until operation stops due to error                                  | 0 – 999   | Minutes          |  |
| 131          |  |   |                  |  |
| 132          | Indoor - Liquid pipe temperature at time of error                                      | -39 – 88  | °C               | Average value of all indoor units is displayed if the air conditioner consists of two or more indoor units (twin, triple, quad). |
| 133          | Indoor-2-phase pipe temperature at time of error                                       | -39 – 88  | °C               | Average value of all indoor units is displayed if the air conditioner consists of two or more indoor units (twin, triple, quad). |
| 134          | Indoor at time of error<br>• Intake air temperature <Thermostat judge temperature>     | -39 – 88  | °C               |  |
| 135          |  |   |                  |  |
| 136          |  |   |                  |  |
| 137          |  |   |                  |  |
| 138          |  |   |                  |  |
| 139          |  |   |                  |  |
| 140          |  |   |                  |  |
| ~            |  |   |                  |  |
| 146          |  |   |                  |  |
| 147          |  |   |                  |  |
| 148          |  |   |                  |  |
| 149          |  |   |                  |  |
| 150          | Indoor-Actual intake air temperature   | -39 – 88  | °C               |  |
| 151          | Indoor - Liquid pipe temperature   | -39 – 88  | °C               |  |
| 152          | Indoor-2-phase pipe temperature  | -39 – 88  | °C               |  |



| Request code | Request content   | Description<br>(Display range)  | Unit     | Remarks                               |
|--------------|---|---|----------|---------------------------------------|
| 153          |   |   |          |                                       |
| 154          | Indoor-Fan operating time<br>(After filter is reset)    | 0 – 9999  | 1 hour   |                                       |
| 155          | Indoor-Total operating time<br>(Fan motor ON time)      | 0 – 9999  | 10 hours |                                       |
| 156          |   |   |          |                                       |
| 157          | Indoor fan output value (Sj value)                      | 0 – 255 Fan control data  | –        | For indoor fan phase control          |
| 158          | Indoor fan output value<br>(Pulsation ON/OFF)           | "00 ***" **** indicates fan control data.   | –        | For indoor fan pulsation control      |
| 159          | Indoor fan output value (duty value)                    | "00 ***" **** indicates fan control data.   | –        | For indoor DC brushless motor control |
| 160          |   |   |          |                                       |
| 161          |   |   |          |                                       |
| 162          | Indoor unit-Model setting information                   | Refer to 15-2-1 Detail Contents in Request Code.  | –        |                                       |
| 163          | Indoor unit-Capacity setting information                | Refer to 15-2-1 Detail Contents in Request Code.  | –        |                                       |
| 164          | Indoor unit-SW3 information                             | Undefined   | –        |                                       |
| 165          | Wireless pair No. (indoor control board side) setting   | Refer to 15-2-1 Detail Contents in Request Code.  | –        |                                       |
| 166          | Indoor unit-SW5 information                             | Undefined   | –        |                                       |
| 167          |   |   |          |                                       |
| ~            |   |   |          |                                       |
| 189          |   |   |          |                                       |
| 190          | Indoor unit-Microcomputer version information           | Examples) Ver 5.01 → "0501"   | Ver      |                                       |
| 191          | Indoor unit-Microcomputer version information (sub No.) | Auxiliary information (displayed after version information)<br>Examples) Ver 5.01 A000 → "A000"   | –        |                                       |
| 192          |   |   |          |                                       |
| ~            |   |   |          |                                       |
| 764          |   |   |          |                                       |
| 765          | Stable operation (Heat mode)                            | This request code is not provided to collect data. It is used to fix the operation state.   |          |                                       |
| 766          | Stable operation (Cool mode)                            | This request code is not provided to collect data. It is used to fix the operation state.   |          |                                       |
| 767          | Stable operation cancellation                           | This request code is not provided to collect data. It is used to cancel the operation state that has been fixed by request codes "765" and "766". |          |                                       |

## 15-2-1. Detail Contents in Request Code

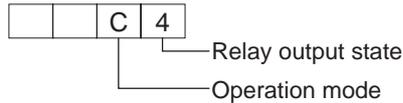


[ Example) Request code "004"  
Discharge temperature 69°C  
Refrigerant address "00" ]

B: Refrigerant address  
C: Data display area  
D: Request code display area

### [Operation state] (Request code "0")

Data display



Operation mode

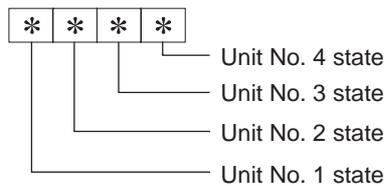
| Display | Operation mode |
|---------|----------------|
| 0       | STOP • FAN     |
| C       | COOL • DRY     |
| H       | HEAT           |
| d       | Defrost        |

Relay output state

| Display | Power currently supplied to compressor | Compressor | Four-way valve | Solenoid valve |
|---------|--|------------|----------------|----------------|
| 0       | —                                      | —          | —              | —              |
| 1       |  |            |                | ON             |
| 2       |  |            | ON             |                |
| 3       |  |            | ON             | ON             |
| 4       |  | ON         |                |                |
| 5       |  | ON         |                | ON             |
| 6       |  | ON         | ON             |                |
| 7       |  | ON         | ON             | ON             |
| 8       | ON                                     |            |                |                |
| A       | ON                                     |            | ON             |                |

### [Indoor unit – Control state] (Request code : "50 ")

Data display



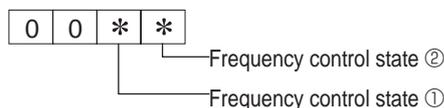
| Display | State                              |
|---------|------------------------------------|
| 0       | Normal                             |
| 1       | Preparing for heat operation.      |
| 2       | —                                  |
| 3       | —                                  |
| 4       | Heater is ON.                      |
| 5       | Anti-freeze protection is ON.      |
| 6       | Overheat protection is ON.         |
| 7       | Requesting compressor to turn OFF. |
| F       | There are no corresponding units.  |

### [Outdoor unit – Control state] (Request code "51")

| Data display | State                         |
|--------------|-------------------------------|
| 0 0 0 0      | Normal                        |
| 0 0 0 1      | Preparing for heat operation. |
| 0 0 0 2      | Defrost                       |

### [Compressor – Frequency control state] (Request code "52")

Data display



Frequency control state ①

| Display | Current limit control                  |
|---------|--|
| 0       | No current limit                       |
| 1       | Primary current limit control is ON.   |
| 2       | Secondary current limit control is ON. |

Frequency control state ②

| Display | Discharge temperature<br>overheat prevention | Condensation temperature<br>overheat prevention | Anti-freeze<br>protection control | Heat sink temperature<br>overheat prevention |
|---------|--|---|-----------------------------------|--|
| 0       |  |   |                                   |  |
| 1       | Controlled                                   |   |                                   |  |
| 2       |  | Controlled                                      |                                   |  |
| 3       | Controlled                                   | Controlled                                      |                                   |  |
| 4       |  |   | Controlled                        |  |
| 5       | Controlled                                   |   | Controlled                        |  |
| 6       |  | Controlled                                      | Controlled                        |  |
| 7       | Controlled                                   | Controlled                                      | Controlled                        |  |
| 8       |  |   |                                   | Controlled                                   |
| 9       | Controlled                                   |   |                                   | Controlled                                   |
| A       |  | Controlled                                      |                                   | Controlled                                   |
| b       | Controlled                                   | Controlled                                      |                                   | Controlled                                   |
| C       |  |   | Controlled                        | Controlled                                   |
| d       | Controlled                                   |   | Controlled                        | Controlled                                   |
| E       |  | Controlled                                      | Controlled                        | Controlled                                   |
| F       | Controlled                                   | Controlled                                      | Controlled                        | Controlled                                   |

**[Fan control state] (Request code : "53 ")**

Data display 

|   |   |   |   |
|---|---|---|---|
| 0 | 0 | * | * |
|---|---|---|---|

— Fan step correction value by heat sink temperature overheat prevention control  
 — Fan step correction value by cool condensation temperature overheat prevention control

| Display   | Correction value |
|-----------|------------------|
| - (minus) | - 1              |
| 0         | 0                |
| 1         | +1               |
| 2         | +2               |

**[Actuator output state] (Request code : "54")**

Data display 

|   |   |   |   |
|---|---|---|---|
| 0 | 0 | * | * |
|---|---|---|---|

— Actuator output state ①  
 — Actuator output state ②

Actuator output state ①

| Display | SV1 | Four-way valve | Compressor | Compressor is warming up |
|---------|-----|----------------|------------|--------------------------|
| 0       |     |                |            |                          |
| 1       | ON  |                |            |                          |
| 2       |     | ON             |            |                          |
| 3       | ON  | ON             |            |                          |
| 4       |     |                | ON         |                          |
| 5       | ON  |                | ON         |                          |
| 6       |     | ON             | ON         |                          |
| 7       | ON  | ON             | ON         |                          |
| 8       |     |                |            | ON                       |
| 9       | ON  |                |            | ON                       |
| A       |     | ON             |            | ON                       |
| b       | ON  | ON             |            | ON                       |
| C       |     |                | ON         | ON                       |
| d       | ON  |                | ON         | ON                       |
| E       |     | ON             | ON         | ON                       |
| F       | ON  | ON             | ON         | ON                       |

Actuator output state ②

| Display | 52C | SV2 | SS |
|---------|-----|-----|----|
| 0       |     |     |    |
| 1       | ON  |     |    |
| 2       |     | ON  |    |
| 3       | ON  | ON  |    |
| 4       |     |     | ON |
| 5       | ON  |     | ON |
| 6       |     | ON  | ON |
| 7       | ON  | ON  | ON |

**[Error content (U9)] (Request code : "55 ")**

Data display 

|   |   |   |   |
|---|---|---|---|
| 0 | 0 | * | * |
|---|---|---|---|

— Error content ①  
 — Error content ②

Error content ①

● : Detected

| Display | Overtoltage error | Undervoltage error | L <sub>1</sub> -phase open error | Power synchronizing signal error |
|---------|-------------------|--------------------|----------------------------------|----------------------------------|
| 0       |                   |                    |                                  |                                  |
| 1       | ●                 |                    |                                  |                                  |
| 2       |                   | ●                  |                                  |                                  |
| 3       | ●                 | ●                  |                                  |                                  |
| 4       |                   |                    | ●                                |                                  |
| 5       | ●                 |                    | ●                                |                                  |
| 6       |                   | ●                  | ●                                |                                  |
| 7       | ●                 | ●                  | ●                                |                                  |
| 8       |                   |                    |                                  | ●                                |
| 9       | ●                 |                    |                                  | ●                                |
| A       |                   | ●                  |                                  | ●                                |
| b       | ●                 | ●                  |                                  | ●                                |
| C       |                   |                    | ●                                | ●                                |
| d       | ●                 |                    | ●                                | ●                                |
| E       |                   | ●                  | ●                                | ●                                |
| F       | ●                 | ●                  | ●                                | ●                                |

Error content ②

● : Detected

| Display | Converter Fo error | PAM error |
|---------|--------------------|-----------|
| 0       |                    |           |
| 1       | ●                  |           |
| 2       |                    | ●         |
| 3       | ●                  | ●         |

**[Contact demand capacity] (Request code "61")**

Data display 

|   |   |   |   |
|---|---|---|---|
| 0 | 0 | 0 | * |
|---|---|---|---|

 Setting content

Setting content

| Display | Setting value | Setting |       |
|---------|---------------|---------|-------|
|         |               | SW7-1   | SW7-2 |
| 0       | 0%            |         |       |
| 1       | 50%           | ON      |       |
| 2       | 75%           |         | ON    |
| 3       | 100%          | ON      | ON    |

**[External input state] (Request code "62")**

Data display 

|   |   |   |   |
|---|---|---|---|
| 0 | 0 | 0 | * |
|---|---|---|---|

 Input state

Input state

● : Input present

| Display | Contact demand input | Silent mode input | Spare 1 input | Spare 2 input |
|---------|----------------------|-------------------|---------------|---------------|
| 0       |                      |                   |               |               |
| 1       | ●                    |                   |               |               |
| 2       |                      | ●                 |               |               |
| 3       | ●                    | ●                 |               |               |
| 4       |                      |                   | ●             |               |
| 5       | ●                    |                   | ●             |               |
| 6       |                      | ●                 | ●             |               |
| 7       | ●                    | ●                 | ●             |               |
| 8       |                      |                   |               | ●             |
| 9       | ●                    |                   |               | ●             |
| A       |                      | ●                 |               | ●             |
| b       | ●                    | ●                 |               | ●             |
| C       |                      |                   | ●             | ●             |
| d       | ●                    |                   | ●             | ●             |
| E       |                      | ●                 | ●             | ●             |
| F       | ●                    | ●                 | ●             | ●             |

**[Outdoor unit –Capacity setting display] (Request code : "70")**

| Data display | Capacity |
|--------------|----------|
| 9            | 35       |
| 10           | 50       |
| 11           | 60       |
| 14           | 71       |
| 20           | 100      |
| 25           | 125      |
| 28           | 140      |
| 40           | 200      |
| 50           | 250      |

**[Outdoor unit – Setting information] (Request code "71")**

Data display 

|   |   |   |   |
|---|---|---|---|
| 0 | 0 | * | * |
|---|---|---|---|

 Setting information ①  
Setting information ②

Setting information ①

| Display | Defrost mode      |
|---------|-------------------|
| 0       | Standard          |
| 1       | For high humidity |

Setting information ②

| Display | Single-/ three-phase | Heat pump/ cooling only |
|---------|----------------------|-------------------------|
| 0       | Single-phase         | Heat pump               |
| 1       |                      | Cooling only            |
| 2       | Three-phase          | Heat pump               |
| 3       |                      | Cooling only            |

**[Outdoor unit switch setting display (SW1 to SW10, except SW3)] (Request codes:73 to 82)**

0: Switch OFF 1: Switch ON

| SW1, SW2, SW6, SW7 |   |   |   |   |   | Data display |
|--------------------|---|---|---|---|---|--------------|
| 1                  | 2 | 3 | 4 | 5 | 6 |              |
| 0                  | 0 | 0 | 0 | 0 | 0 | 00 00        |
| 1                  | 0 | 0 | 0 | 0 | 0 | 00 01        |
| 0                  | 1 | 0 | 0 | 0 | 0 | 00 02        |
| 1                  | 1 | 0 | 0 | 0 | 0 | 00 03        |
| 0                  | 0 | 1 | 0 | 0 | 0 | 00 04        |
| 1                  | 0 | 1 | 0 | 0 | 0 | 00 05        |
| 0                  | 1 | 1 | 0 | 0 | 0 | 00 06        |
| 1                  | 1 | 1 | 0 | 0 | 0 | 00 07        |
| 0                  | 0 | 0 | 1 | 0 | 0 | 00 08        |
| 1                  | 0 | 0 | 1 | 0 | 0 | 00 09        |
| 0                  | 1 | 0 | 1 | 0 | 0 | 00 0A        |
| 1                  | 1 | 0 | 1 | 0 | 0 | 00 0b        |
| 0                  | 0 | 1 | 1 | 0 | 0 | 00 0C        |
| 1                  | 0 | 1 | 1 | 0 | 0 | 00 0d        |
| 0                  | 1 | 1 | 1 | 0 | 0 | 00 0E        |
| 1                  | 1 | 1 | 1 | 0 | 0 | 00 0F        |
| 0                  | 0 | 0 | 0 | 1 | 0 | 00 10        |
| 1                  | 0 | 0 | 0 | 1 | 0 | 00 11        |
| 0                  | 1 | 0 | 0 | 1 | 0 | 00 12        |
| 1                  | 1 | 0 | 0 | 1 | 0 | 00 13        |
| 0                  | 0 | 1 | 0 | 1 | 0 | 00 14        |
| 1                  | 0 | 1 | 0 | 1 | 0 | 00 15        |
| 0                  | 1 | 1 | 0 | 1 | 0 | 00 16        |
| 1                  | 1 | 1 | 0 | 1 | 0 | 00 17        |
| 0                  | 0 | 0 | 1 | 1 | 0 | 00 18        |
| 1                  | 0 | 0 | 1 | 1 | 0 | 00 19        |
| 0                  | 1 | 0 | 1 | 1 | 0 | 00 1A        |
| 1                  | 1 | 0 | 1 | 1 | 0 | 00 1B        |
| 0                  | 0 | 1 | 1 | 1 | 0 | 00 1C        |
| 1                  | 0 | 1 | 1 | 1 | 0 | 00 1D        |
| 0                  | 1 | 1 | 1 | 1 | 0 | 00 1E        |
| 1                  | 1 | 1 | 1 | 1 | 0 | 00 1F        |
| 0                  | 0 | 0 | 0 | 0 | 1 | 00 20        |
| 1                  | 0 | 0 | 0 | 0 | 1 | 00 21        |
| 0                  | 1 | 0 | 0 | 0 | 1 | 00 22        |
| 1                  | 1 | 0 | 0 | 0 | 1 | 00 23        |
| 0                  | 0 | 1 | 0 | 0 | 1 | 00 24        |
| 1                  | 0 | 1 | 0 | 0 | 1 | 00 25        |
| 0                  | 1 | 1 | 0 | 0 | 1 | 00 26        |
| 1                  | 1 | 1 | 0 | 0 | 1 | 00 27        |
| 0                  | 0 | 0 | 1 | 0 | 1 | 00 28        |
| 1                  | 0 | 0 | 1 | 0 | 1 | 00 29        |
| 0                  | 1 | 0 | 1 | 0 | 1 | 00 2A        |
| 1                  | 1 | 0 | 1 | 0 | 1 | 00 2B        |
| 0                  | 0 | 1 | 1 | 0 | 1 | 00 2C        |
| 1                  | 0 | 1 | 1 | 0 | 1 | 00 2D        |
| 0                  | 1 | 1 | 1 | 0 | 1 | 00 2E        |
| 1                  | 1 | 1 | 1 | 0 | 1 | 00 2F        |
| 0                  | 0 | 0 | 0 | 1 | 1 | 00 30        |
| 1                  | 0 | 0 | 0 | 1 | 1 | 00 31        |
| 0                  | 1 | 0 | 0 | 1 | 1 | 00 32        |
| 1                  | 1 | 0 | 0 | 1 | 1 | 00 33        |
| 0                  | 0 | 1 | 0 | 1 | 1 | 00 34        |
| 1                  | 0 | 1 | 0 | 1 | 1 | 00 35        |
| 0                  | 1 | 1 | 0 | 1 | 1 | 00 36        |
| 1                  | 1 | 1 | 0 | 1 | 1 | 00 37        |
| 0                  | 0 | 0 | 1 | 1 | 1 | 00 38        |
| 1                  | 0 | 0 | 1 | 1 | 1 | 00 39        |
| 0                  | 1 | 0 | 1 | 1 | 1 | 00 3A        |
| 1                  | 1 | 0 | 1 | 1 | 1 | 00 3B        |
| 0                  | 0 | 1 | 1 | 1 | 1 | 00 3C        |
| 1                  | 0 | 1 | 1 | 1 | 1 | 00 3D        |
| 0                  | 1 | 1 | 1 | 1 | 1 | 00 3E        |
| 1                  | 1 | 1 | 1 | 1 | 1 | 00 3F        |

0: Switch OFF 1: Switch ON

| SW5 |   |   |   | Data display |
|-----|---|---|---|--------------|
| 1   | 2 | 3 | 4 |              |
| 0   | 0 | 0 | 0 | 00 00        |
| 1   | 0 | 0 | 0 | 00 01        |
| 0   | 1 | 0 | 0 | 00 02        |
| 1   | 1 | 0 | 0 | 00 03        |
| 0   | 0 | 1 | 0 | 00 04        |
| 1   | 0 | 1 | 0 | 00 05        |
| 0   | 1 | 1 | 0 | 00 06        |
| 1   | 1 | 1 | 0 | 00 07        |
| 0   | 0 | 0 | 1 | 00 08        |
| 1   | 0 | 0 | 1 | 00 09        |
| 0   | 1 | 0 | 1 | 00 0A        |
| 1   | 1 | 0 | 1 | 00 0b        |
| 0   | 0 | 1 | 1 | 00 0C        |
| 1   | 0 | 1 | 1 | 00 0d        |
| 0   | 1 | 1 | 1 | 00 0E        |
| 1   | 1 | 1 | 1 | 00 0F        |

0: Switch OFF 1: Switch ON

| SW8 |   |   | Data display |
|-----|---|---|--------------|
| 1   | 2 | 3 |              |
| 0   | 0 | 0 | 00 00        |
| 1   | 0 | 0 | 00 01        |
| 0   | 1 | 0 | 00 02        |
| 1   | 1 | 0 | 00 03        |
| 0   | 0 | 1 | 00 04        |
| 1   | 0 | 1 | 00 05        |
| 0   | 1 | 1 | 00 06        |
| 1   | 1 | 1 | 00 07        |

0: Switch OFF 1: Switch ON

| SW4, SW9, SW10 |   | Data display |
|----------------|---|--------------|
| 1              | 2 |              |
| 0              | 0 | 00 00        |
| 1              | 0 | 00 01        |
| 0              | 1 | 00 02        |
| 1              | 1 | 00 03        |

**[Indoor unit – Model setting information] (Request code : 162)**

Data display

0 0 \* \*

See the table on the right.

| Display | Model setting state          | Display | Model setting state       |
|---------|------------------------------|---------|---------------------------|
| 00      | PSA-RP•GA, PSH-PGAH          | 20      |                           |
| 01      |                              | 21      | PKA-RP•FAL(2), PKH-P•FALH |
| 02      | PEAD-RP•EA(2)/GA, PEHD-P•EAH | 22      | PCA-RP•GA(2), PCH-P•GAH   |
| 03      | SEZ-KA•VA                    | 23      |                           |
| 04      |                              | 24      |                           |
| 05      | SLZ-KA•VA(L)                 | 25      |                           |
| 06      | PCA-RP•HA                    | 26      |                           |
| 07      |                              | 27      |                           |
| 08      |                              | 28      |                           |
| 09      | PEH-RP•MYA                   | 29      |                           |
| 0A      |                              | 2A      |                           |
| 0b      |                              | 2b      | PKA-RP•GAL, PKH-P•GALH    |
| 0C      |                              | 2C      |                           |
| 0d      |                              | 2d      |                           |
| 0E      |                              | 2E      |                           |
| 0F      |                              | 2F      | PLA-RP•AA                 |
| 10      |                              | 30      |                           |
| 11      | PEA-RP•EA                    | 31      | PLH-P•AAH                 |
| 12      | MEXZ-GA•VA(L)                | 32      |                           |
| 13      |                              | 33      |                           |
| 14      |                              | 34      |                           |
| 15      |                              | 35      |                           |
| 16      |                              | 36      | PLA-RP•AA2                |
| 17      |                              | 37      |                           |
| 18      |                              | 38      |                           |
| 19      |                              | 39      |                           |
| 1A      |                              | 3A      |                           |
| 1b      |                              | 3b      |                           |
| 1C      |                              | 3C      |                           |
| 1d      |                              | 3d      |                           |
| 1E      |                              | 3E      |                           |
| 1F      |                              | 3F      |                           |

**[Indoor unit – Capacity setting information] (Request code 163 )**

Data display

0 0 \* \*

See the table on the right.

| Display | Capacity setting state | Display | Capacity setting state |
|---------|------------------------|---------|------------------------|
| 00      | 12                     | 10      | 112                    |
| 01      | 16                     | 11      | 125                    |
| 02      | 22                     | 12      | 140                    |
| 03      | 25                     | 13      | 160                    |
| 04      | 28                     | 14      | 200                    |
| 05      | 32                     | 15      | 224                    |
| 06      | 36                     | 16      | 250                    |
| 07      | 40                     | 17      | 280                    |
| 08      | 45                     | 18      |                        |
| 09      | 50                     | 19      |                        |
| 0A      | 56                     | 1A      |                        |
| 0b      | 63                     | 1b      |                        |
| 0C      | 71                     | 1C      |                        |
| 0d      | 80                     | 1d      |                        |
| 0E      | 90                     | 1E      |                        |
| 0F      | 100                    | 1F      |                        |

**[Wireless pair No. (indoor control board side) setting] (Request code 165 )**

Data display

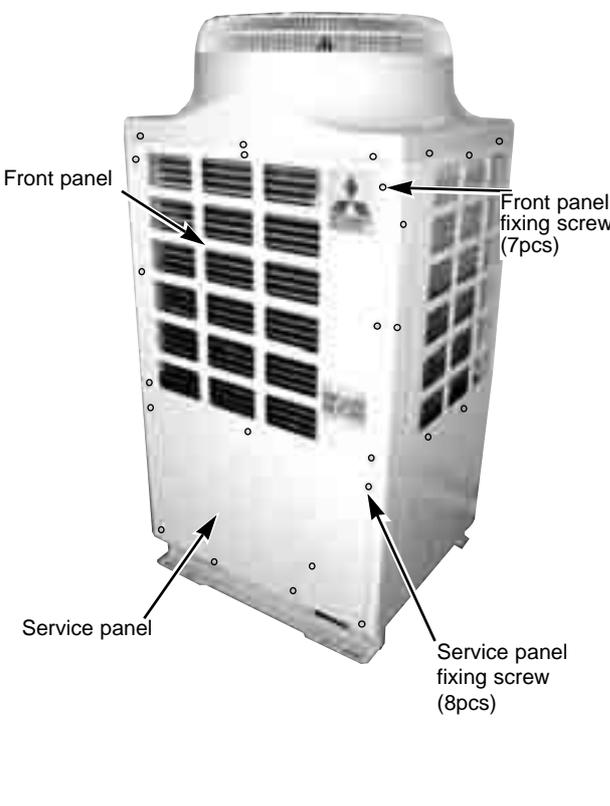
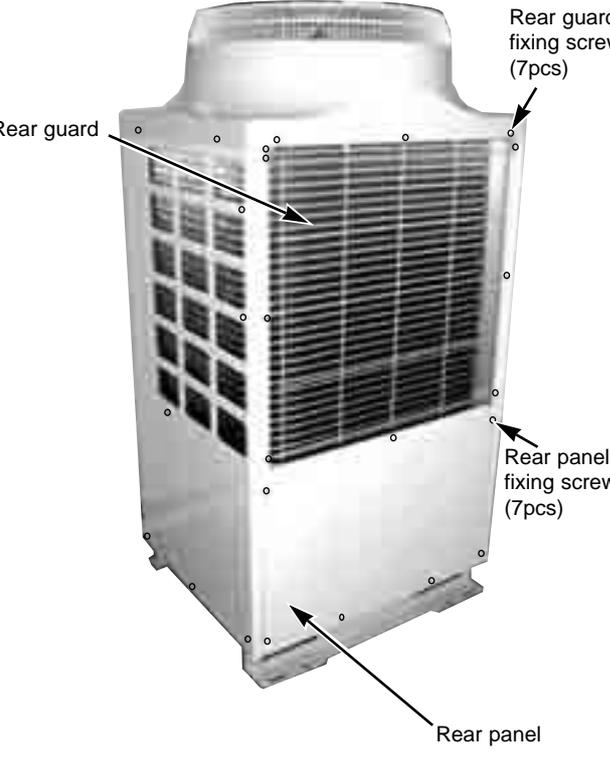
0 0 \* \*

See the table on the right.

| Display | Pair No. setting state      |
|---------|-----------------------------|
| 00      | No. 0                       |
| 01      | No. 1 J41 disconnected      |
| 02      | No. 2 J42 disconnected      |
| 03      | No. 3 J41, J42 disconnected |

**PUHZ-RP200YHA PUHZ-RP250YHA**  
**PUHZ-RP200YHA<sub>1</sub> PUHZ-RP250YHA<sub>1</sub>**

- ※ When servicing, pay careful attention in removing heavy parts.
- ※ Collect the refrigerant before you service the refrigerant system.
- ※ When brazing, make sure to apply the non-oxidizing braze.

| OPERATING PROCEDURE   | PHOTOS  |
|---|---|
| <p><b>1. Removing the service panel</b></p> <p>(1) Remove 8 service panel fixing screws (5×10) (see photo 1) .</p> <p>(2) Remove the service panel by sliding it towards you.</p> <p>※ It is the panel to remove when you maintain the refrigerant circuit, electrical parts, and compressor.</p> | <p><b>Photo 1 (front)</b></p>  <p>Front panel</p> <p>Service panel</p> <p>Front panel fixing screw (7pcs)</p> <p>Service panel fixing screw (8pcs)</p> |
| <p><b>2. Removing the rear panel</b></p> <p>(1) Remove 7 rear panel fixing screws (5×10) (see photo 2).</p> <p>(2) Remove the rear panel by sliding it towards you.</p> <p>※ It is the panel to remove when you maintain the machine room from the rear side.</p>                                 | <p><b>Photo 2 (rear)</b></p>  <p>Rear guard</p> <p>Rear panel</p> <p>Rear guard fixing screw (7pcs)</p> <p>Rear panel fixing screw (7pcs)</p>         |
| <p><b>3. Removing the front panel</b></p> <p>(1) Remove 7 front panel fixing screws (5×10) (see photo 1).</p> <p>(2) Remove the front panel by sliding it towards you, then upward.</p> <p>※ It is the panel to remove when you maintain the thermistor and the fan motor.</p>                    |   |

## OPERATING PROCEDURE

### 4. Removing the fan motor

(1) Remove

- 14 fan guard fixing screws (5×15) (see photo 3).
- Fan guard by sliding it upward.
- Cap by pulling it upward (see photo 4).
- Propeller fixing nut (M16, left screw).
- Washer ( $\phi$ 32) and the propeller from the fan motor shaft (see photo 4).
- Propeller holding washer ( $\phi$ 40) from the fan motor shaft.

**Note 1: Be careful not to drop any of the cap, nuts, and washers inside the unit.**

(2) Remove the service panel and the front panel.

(3) Disconnect the relay connector of the fan motor lead wire in the electrical parts box.

(4) Loosen all the clamps for the fan motor lead wire, and pull out the wire from the penetration part.

(5) Remove

- 4 motor support fixing screws (5×15).
- Motor support together with the fan motor (see photo 4).

**Note 2: The motor support and the fan motor should be held by two people.**

(6) Remove

- 4 fan motor fixing screws (M6×16).
- Fan motor (see photo 5).

## PHOTOS

Photo 3

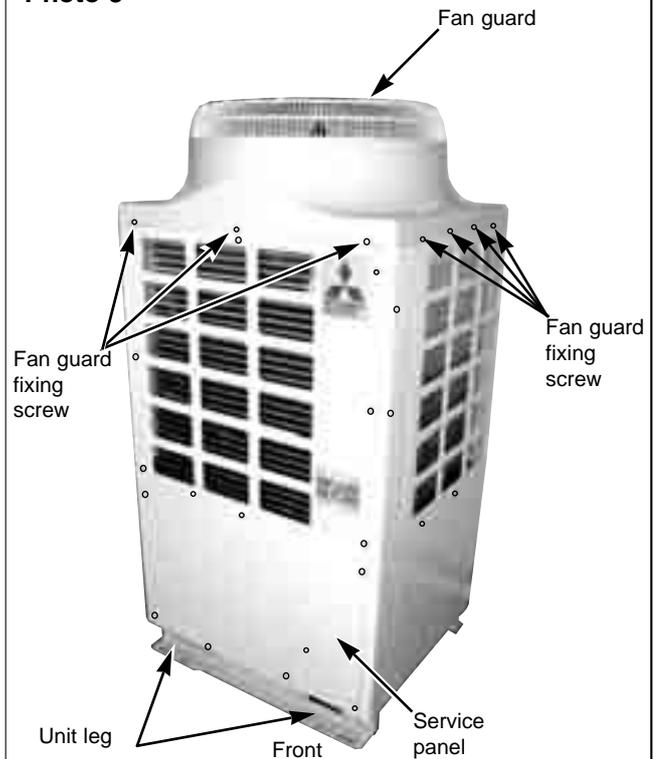


Photo 4

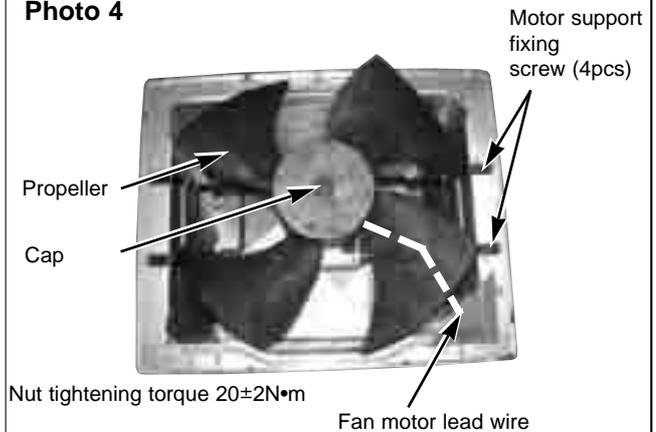
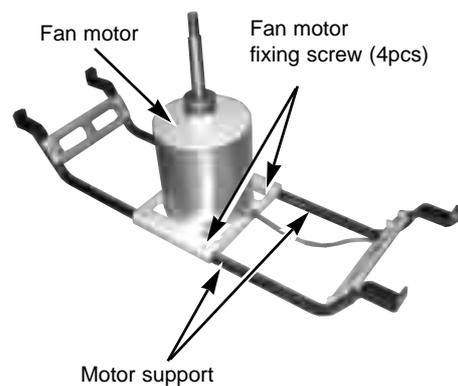


Photo 5





**OPERATING PROCEDURE**

**5. Removing the electrical parts box**

(1) Remove

- Service panel.
- Waterproof sheet for the electrical parts.

(2) Disconnect

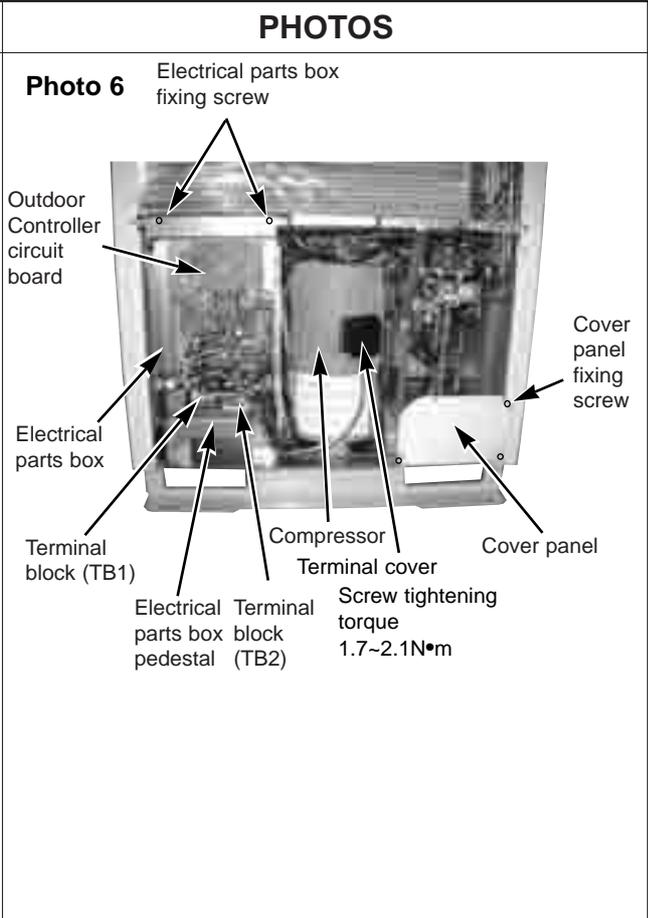
- Power wire from TB1, and the indoor / outdoor connecting wire from TB2 (see photo 6).
- Fan motor relay connector.
- Lead wires in the compressor terminal cover (see photo 6).

(3) Disconnect all the following connectors from the controller circuit board.

- LEV-A (Linear expansion valve / 6P, white)
- TH3 (Thermistor <Outdoor pipe> / 2P, white)
- TH32 (Thermistor <Outdoor pipe> / 2P, black)
- TH4 (Thermistor <Discharge> / 2P, white)
- TH6/7 (Thermistor <Outdoor 2-phase pipe>, <Outdoor> / 4P, red)
- 63H (High pressure switch / 3P, yellow)
- 63L (Low pressure switch / 3P, red)
- 21S4 (4-way solenoid valve / 3P, green)
- SV2 (Bypass solenoid valve / 3P, blue)

(4) Remove

- 4 electrical parts box fixing screws (5×10).
- Electrical parts box by sliding it towards you (see photo6).



**6. Removing the thermistor <Outdoor 2-phase pipe> (TH6) and thermistor <Outdoor> (TH7)**

※ TH6 and TH7 are replaced together, since they are combined at the connector to the controller circuit board.

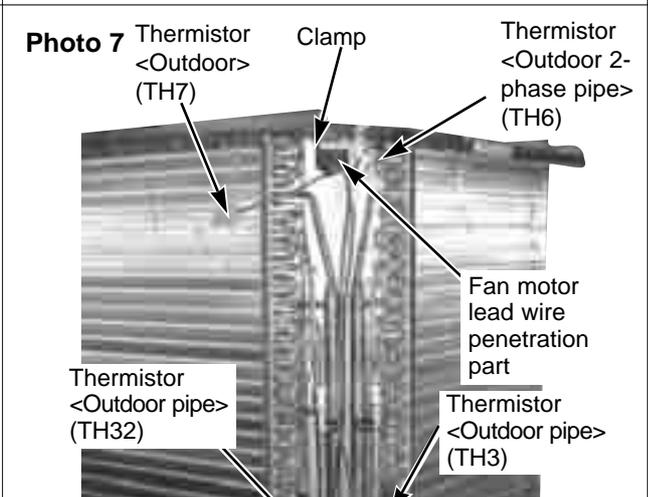
(1) Remove the service panel and the front panel.

(2) Disconnect the connector TH6/7 (4P, red) from the controller circuit board.

(3) Loosen all the clamps for the lead wire and cut 2 fasteners (see photo 7).

(4) Pull out

- Thermistor <Outdoor 2-phase pipe> (TH6) from the sensor holder mounted on the heat exchanger.
- Thermistor <Outdoor pipe> (TH7) from the sensor holder (see photo 7).



**7. Removing the thermistor <Outdoor pipe>**

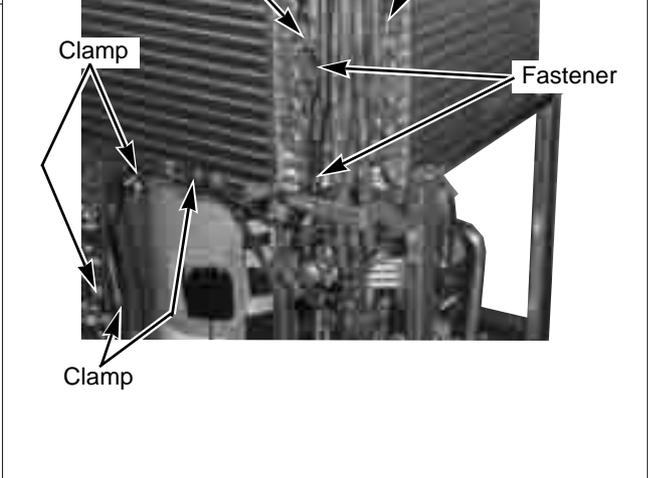
(1) Remove the service panel and the front panel.

(2) Disconnect the connector TH3 (2P, white) or TH32 (2P, black) from the controller circuit board.

(3) Loosen all the clamps for the lead wire and cut 2 fasteners (see photo 7).

(4) Pull out the thermistor (TH3 or TH32) from the sensor holder mounted on the heat exchanger (see photo 7).

※ When there is difficulty in pulling out TH3 from the heat exchanger, open the side panel (right) by removing 2 side panel fixing screws (5×10).



## OPERATING PROCEDURE

### 8. Removing the thermistor <Discharge>

- (1) Remove the service panel.
- (2) Disconnect the connector TH4 (2P, white) from the controller circuit board.
- (3) Loosen all the clamps for the lead wire (see photo 7).
- (4) Pull out the thermistor (TH4) from the sensor holder mounted on the compressor discharging pipe (see photo 8).

### 9. Removing the 4-way solenoid valve coil, the linear expansion valve coil, and the bypass solenoid valve coil

- (1) Remove the service panel.

#### <4-way solenoid valve coil>

- (2) Disconnect the connector 21S4 (3P, green) from the controller circuit board.
- (3) Loosen all the clamps for the lead wire and cut 2 fasteners (see photo 7).
- (4) Remove the 4-way solenoid valve coil fixing screw (M5×6 for 200/250YHA, M4×6 for 200/250YHA<sub>1</sub>) (see photo 9).
- (5) Remove the 4-way solenoid valve coil by sliding it towards you (see photo 8, 9).

#### <Bypass solenoid valve coil>

- (2) Disconnect the connector SV2 (3P, blue) from the controller circuit board.
- (3) Loosen all the clamps for the lead wire and cut 2 fasteners (see photo 7).
- (4) Remove the bypass solenoid valve coil fixing screw (M5×6) (see photo 9).
- (5) Remove the bypass solenoid valve coil by sliding it upward.

#### <Linear expansion valve coil>

2. Disconnect the connector LEV-A (6P, white) from the controller circuit board.
3. Loosen all the clamps for the lead wire and cut 2 fasteners (see photo 7).
4. Remove the linear expansion valve coil by sliding it upward (see photo 9).

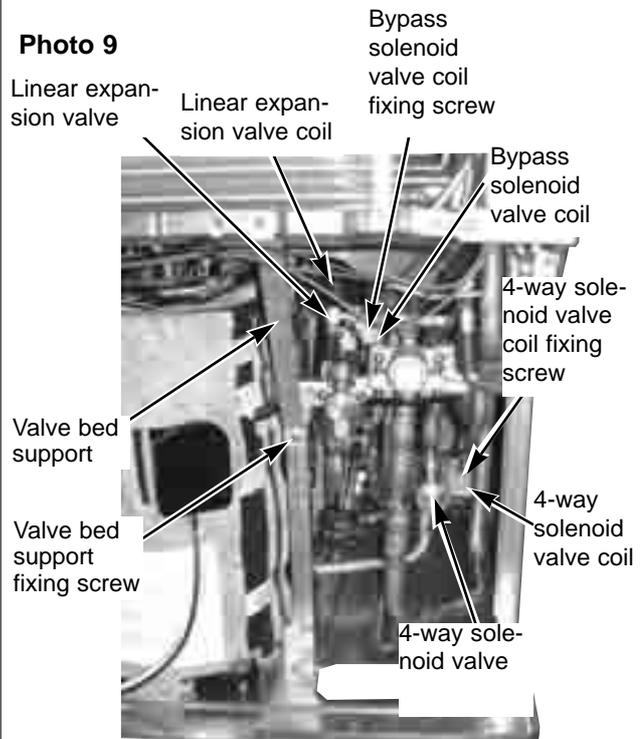
**Note) When attaching the coil, make sure to tie the lead wires with the fasteners that are equivalent to the ones you just cut.**

## PHOTOS

**Photo 8**



**Photo 9**



## OPERATING PROCEDURE

### 10. Removing the 4-way solenoid valve

- (1) Remove
  - Service panel.
  - 3 cover panel fixing screws (5×10).
  - Cover panel (see photo 6).
  - 4-way solenoid valve coil (see photo 8, 9).
  - 2 valve bed support fixing screws (5×10), then valve bed support (see photo 9).
  - 4 valve bed fixing screws (5×10), 4 stop valve fixing screws (5×16), then valve bed (see photo 15).
- (2) Collect the refrigerant.
- (3) Remove 4-way solenoid valve together with the pipes from 3 welded points shown in the photo 10.
- (4) Separate 4 welded pipes from the 4-way solenoid valve.

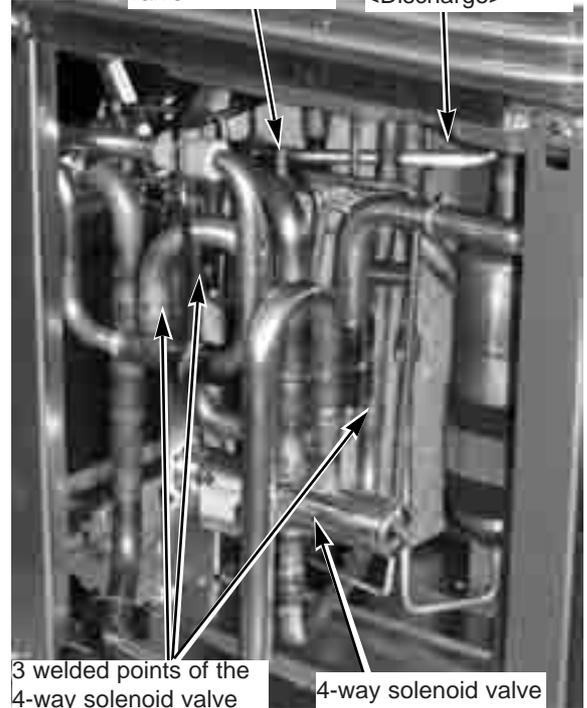
**Note 1:** Collect the refrigerant without releasing it in the air.

**Note 2:** The welded points can be accessed easily by removing the right side panel.

**Note 3:** When installing the 4-way solenoid valve, cover it with a wet cloth to prevent it from heating (120°C or more), then braze the pipe (non-oxidizing braze).

## PHOTOS

**Photo 10** Bypass solenoid valve Thermistor <Discharge>



3 welded points of the 4-way solenoid valve 4-way solenoid valve

<Side panel (right) is removed>

### 11. Removing the linear expansion valve

- (1) Remove
  - Service panel.
  - 3 cover panel fixing screws (5×10).
  - Cover panel (see photo 6).
  - Linear expansion valve coil (see photo 11).
  - 2 valve bed support fixing screws (5×10), then valve bed support (see photo 9).
  - 4 valve bed fixing screws (5×10), 4 stop valve fixing screws (5×16), then valve bed (see photo 15).
- (2) Collect the refrigerant.
- (3) Remove the linear expansion valve from 2 welded points.

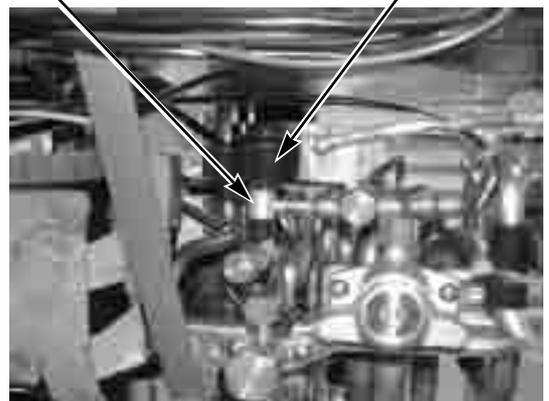
**Note 1:** Collect the refrigerant without releasing it in the air.

**Note 2:** The welded points can be accessed easily by removing the right side panel.

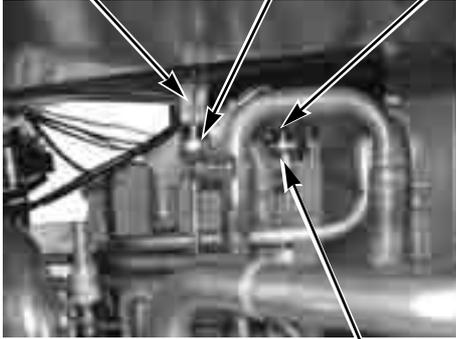
**Note 3:** When installing the linear expansion valve, cover it with a wet cloth to prevent it from heating (120°C or more), then braze the pipe (non-oxidizing braze).

**Photo 11**

Linear expansion valve Linear expansion valve coil





| OPERATING PROCEDURE   | PHOTOS & ILLUSTRATION  |
|---|--|
| <p><b>12. Removing the bypass solenoid valve</b></p> <p>(1) Remove</p> <ul style="list-style-type: none"><li>• Service panel</li><li>• 3 cover panel fixing screws (5×10).</li><li>• Cover panel (see photo 6).</li><li>• Bypass solenoid valve coil (see photo 9).</li><li>• 2 valve bed support fixing screws (5×10), then valve bed support (see photo 9).</li><li>• 4 valve bed fixing screws (5×10), 4 stop valve fixing screws (5×16), then valve bed (see photo 15).</li></ul> <p>(2) Collect the refrigerant.</p> <p>(3) Remove the bypass solenoid valve from 2 welded points.</p> <p><b>Note 1: Collect the refrigerant without releasing it in the air.</b></p> <p><b>Note 2: The welded points can be accessed easily by removing the right side panel.</b></p>   |  |
| <p><b>13. Removing the low pressure switch and the high pressure switch</b></p> <p>(1) Remove</p> <ul style="list-style-type: none"><li>• Service panel (see photo 1).</li><li>• 3 cover panel fixing screws (5×10).</li><li>• Cover panel (see photo 6).</li><li>• 2 valve bed support fixing screws (5×10), then valve bed support (see photo 9).</li><li>• 4 valve bed fixing screws (5×10), 4 stop valve fixing screws (5×16), then valve bed (see photo 15).</li></ul> <p>(3) Disconnect the lead wire for the low pressure switch or the high pressure switch (see photo 12).</p> <p>(4) Collect the refrigerant</p> <p>(5) Remove the low pressure switch or the high pressure switch from the welded part.</p> <p><b>Note 1: Collect the refrigerant without releasing it in the air.</b></p> <p><b>Note 2: The welded points can be accessed easily by removing the right side panel.</b></p> <p><b>Note 3: When installing the low / high pressure switch, cover it with a wet cloth to prevent it from heating (100°C or more), then braze the pipe (non-oxidizing braze).</b></p> | <p><b>Photo 12</b></p> <p>Lead wire for the high pressure switch      High pressure switch      Lead wire for the low pressure switch</p>  <p>Low pressure switch</p> |

## OPERATING PROCEDURE

### 14. Removing the reactor

(1) Remove

- Service panel
- 2 screws (4×8) that hold the terminal block fixing metal plate in front of the electrical parts box, then slightly pull the plate towards you.
- 4 screws (4×8) that hold the controller circuit board fixing metal plate in front of the electrical parts box, then tilt the plate towards you (see photo 6).
- 3 reactor fixing screws (4×8).
- Remove the reactor by sliding it upward (see photo 14).

## PHOTOS & ILLUSTRATION

Photo 13

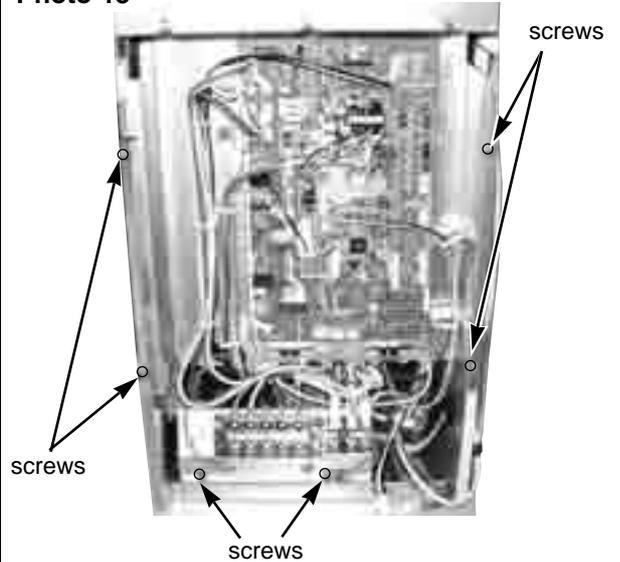
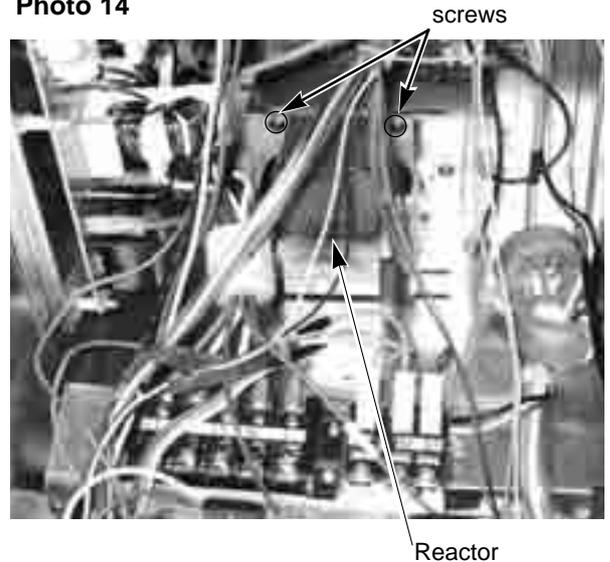


Photo 14



### 15. Removing the compressor

(1) Remove

- Service panel (see photo 2).
- 3 cover panel fixing screws (5×10).
- Cover panel (see photo 6).
- 2 valve bed support fixing screws (5×10), then valve bed support (see photo 9).
- 4 valve bed fixing screws (5×10), 4 stop valve fixing screws (5×16), then valve bed (see photo 15).
- Terminal cover.
- 3 lead wire fixing screws (M5×10), then disconnect the lead wire (see photo 15).

(2) Collect the refrigerant.

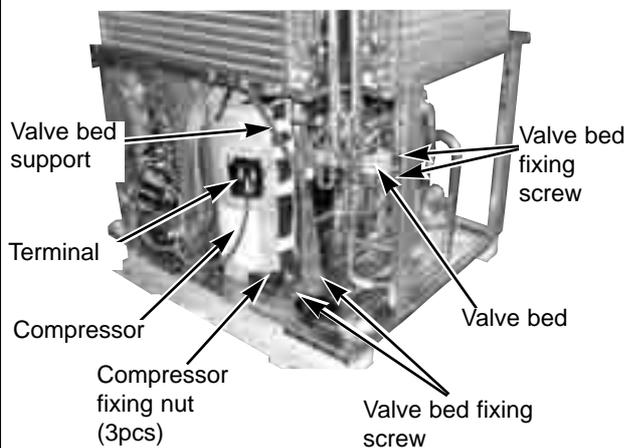
(3) Remove the sound insulation.

(4) Disengage the welded points of the compressor inlet and discharge pipes.

(5) Remove 3 compressor fixing nuts by using a spanner or an adjustable wrench.

**Note: Collect the refrigerant without releasing it in the air.**

photo 15



## OPERATING PROCEDURE

### 16. Removing the accumulator

(1) Remove

- Service panel (see photo 1).
- Electrical parts box (see photo 6).
- 2 electrical parts box leg fixing screws (5×10), then electrical parts box legs (see photo 6).
- 2 lower fixing screws (5×10) of the heat sink duct.
- 2 screws (4×10) which hold the metal plate above the heat sink, then remove the plate.
- Fan guard.
- 3 upper fixing screws (5×10) of the heat sink duct located below the fan motor, then remove the heat sink duct (see photo 15).

(2) Collect the refrigerant.

(3) Disengage 2 welded points of the accumulator inlet and outlet (see photo 17).

(4) Remove 4 accumulator fixing screws (5×10), then take out the accumulator.

**Note 1:** Collect the refrigerant without releasing in the air.

**Note 2:** The welded points can be accessed easily by removing the rear panel. When servicing from the rear side, remove the rear panel first, then follow the procedure from number 2 (collecting the refrigerant) mentioned above (see photo 16).

## PHOTOS

Photo 16

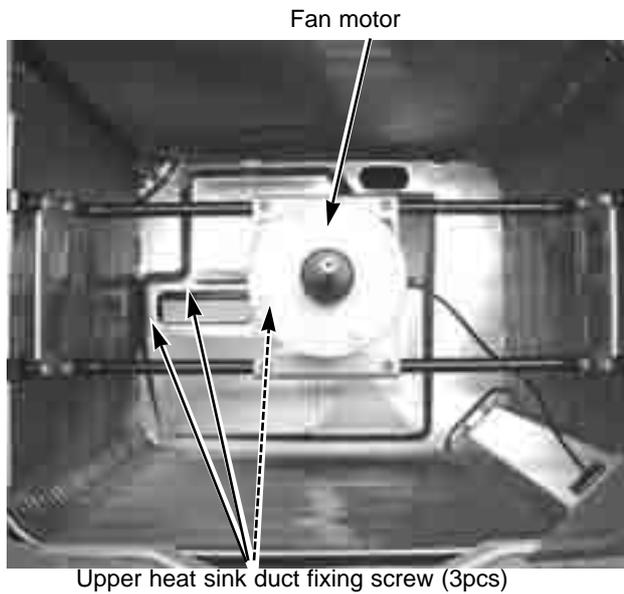
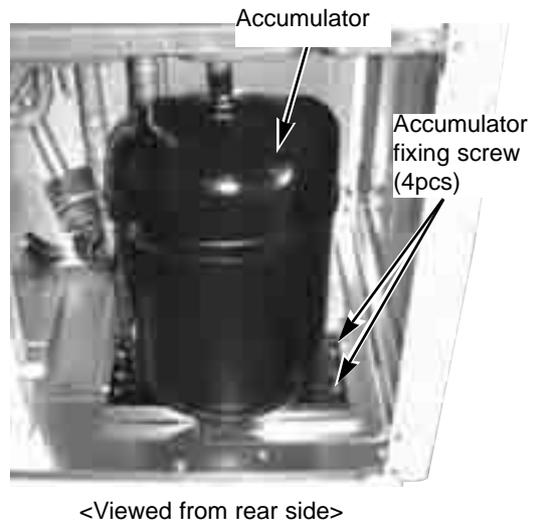
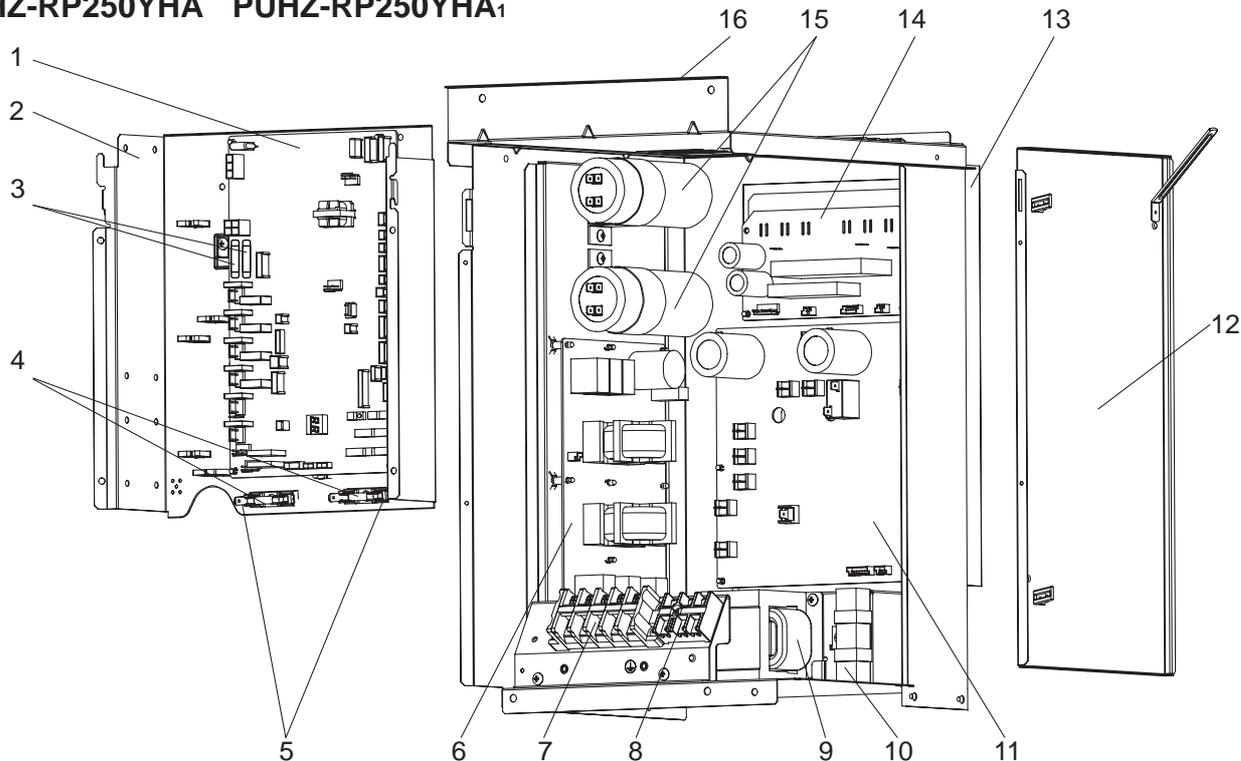


Photo 17



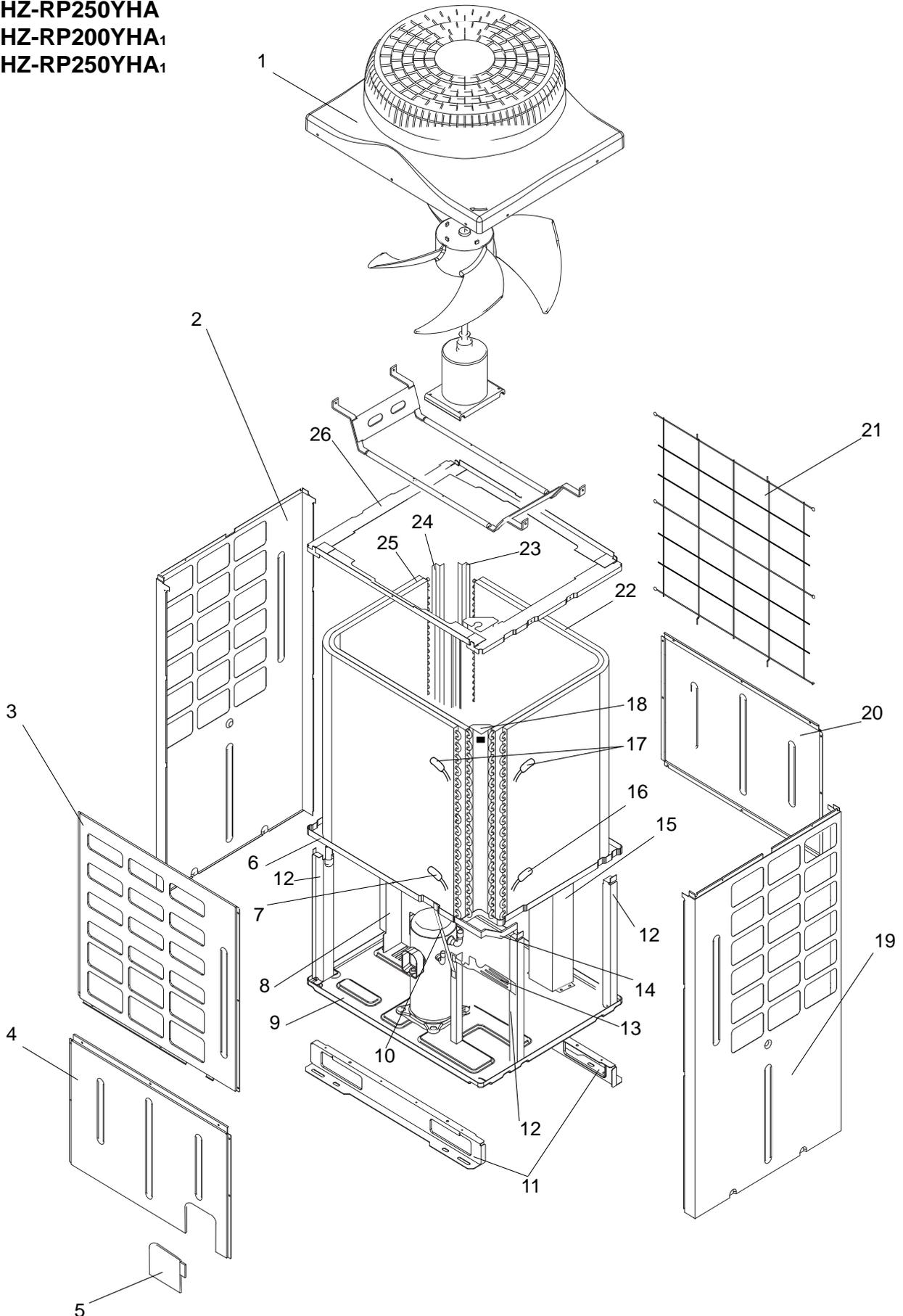
## ELECTRICAL PARTS

PUHZ-RP200YHA PUHZ-RP200YHA<sub>1</sub>PUHZ-RP250YHA PUHZ-RP250YHA<sub>1</sub>

Part number that is circled is not shown in the figures.

| No. | Part No.    | Part Name                                 | Specification    | Q'ty/set       |                  | Remarks<br>(Drawing No.) | Wiring<br>Diagram<br>Symbol | Recom-<br>mended<br>Q'ty | Price |        |
|-----|-------------|---|------------------|----------------|------------------|--------------------------|-----------------------------|--------------------------|-------|--------|
|     |             |   |                  | PUHZ-RP200/250 |                  |                          |                             |                          | Unit  | Amount |
|     |             |   |                  | YHA            | YHA <sub>1</sub> |                          |                             |                          |       |        |
| 1   | T7W E27 315 | CONTROLLER CIRCUIT BOARD                  |                  | 1              |                  |                          | C.B.                        |                          |       |        |
|     | T7W E41 315 | CONTROLLER CIRCUIT BOARD                  |                  |                | 1                |                          | C.B.                        |                          |       |        |
| 2   | —           | CIRCUIT BOARD SUPPORT PLATE               |                  | 1              | 1                | (RG02N450G10)            |                             |                          |       |        |
| 3   | R01 E02 239 | FUSE                                      | 250V 6.3A        | 2              | 2                |                          | F 3,4                       |                          |       |        |
| 4   | R01 E03 239 | FUSE                                      | 250V 15A         | 2              | 2                |                          | FUSE1,2                     |                          |       |        |
| 5   | R01 30L 241 | FUSE HOLDER                               |                  | 2              | 2                |                          |                             |                          |       |        |
| 6   | T7W E06 346 | NOISE FILTER CIRCUIT BOARD                |                  | 1              |                  |                          | N.F.                        |                          |       |        |
|     | T7W E15 346 | NOISE FILTER CIRCUIT BOARD                |                  |                | 1                |                          | N.F.                        |                          |       |        |
| 7   | T7W E06 716 | TERMINAL BLOCK (POWER SUPPLY)             | 5P(L1,L2,L3,N,⊕) | 1              | 1                |                          | TB1                         |                          |       |        |
| 8   | R01 17J 246 | TERMINAL BLOCK (INDOOR / OUTDOOR)         | 3P(S1,S2,S3)     | 1              | 1                |                          | TB2                         |                          |       |        |
| 9   | T7W E05 259 | REACTOR                                   | 2.7mH 25A        | 1              | 1                |                          | DCL                         |                          |       |        |
| 10  | R01 E08 233 | RUSH CURRENT PROTECT RESISTOR             | 16Ω              | 1              | 1                |                          | RS                          |                          |       |        |
| 11  | T7W E11 313 | POWER CIRCUIT BOARD                       |                  | 1              |                  |                          | P.B.                        |                          |       |        |
|     | T7W E27 313 | POWER CIRCUIT BOARD                       |                  |                | 1                |                          | P.B.                        |                          |       |        |
| 12  | —           | ELECTRICAL PARTS BOX RIGHT SIDE PLATE     |                  | 1              | 1                | (RG02N349G06)            |                             |                          |       |        |
| 13  | —           | HEAT SINK                                 |                  | 1              | 1                | (RG11N336G05)            |                             |                          |       |        |
| 14  | T7W E38 310 | FAN CONTROLLER CIRCUIT BOARD              |                  | 1              |                  |                          | F.C.                        |                          |       |        |
|     | T7W E49 310 | FAN CONTROLLER CIRCUIT BOARD              |                  |                | 1                |                          | F.C.                        |                          |       |        |
| 15  | T7W E03 254 | MAIN SMOOTHING CAPACITOR                  |                  | 2              | 2                |                          | CB1, 2                      |                          |       |        |
| 16  | —           | ELECTRICAL PARTS BOX                      |                  | 1              | 1                | (RG00N768G02)            |                             |                          |       |        |
| ⑰   | —           | WATERPROOF SHEET FOR THE ELECTRICAL PARTS |                  | 1              | 1                | (BH00C028G10)            |                             |                          |       |        |

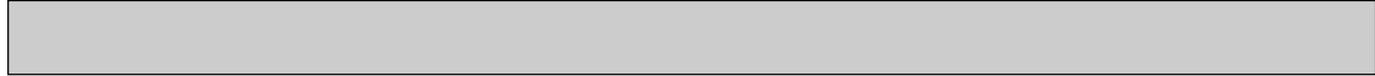
**STRUCTURAL PARTS**  
**PUHZ-RP200YHA**  
**PUHZ-RP250YHA**  
**PUHZ-RP200YHA<sub>1</sub>**  
**PUHZ-RP250YHA<sub>1</sub>**



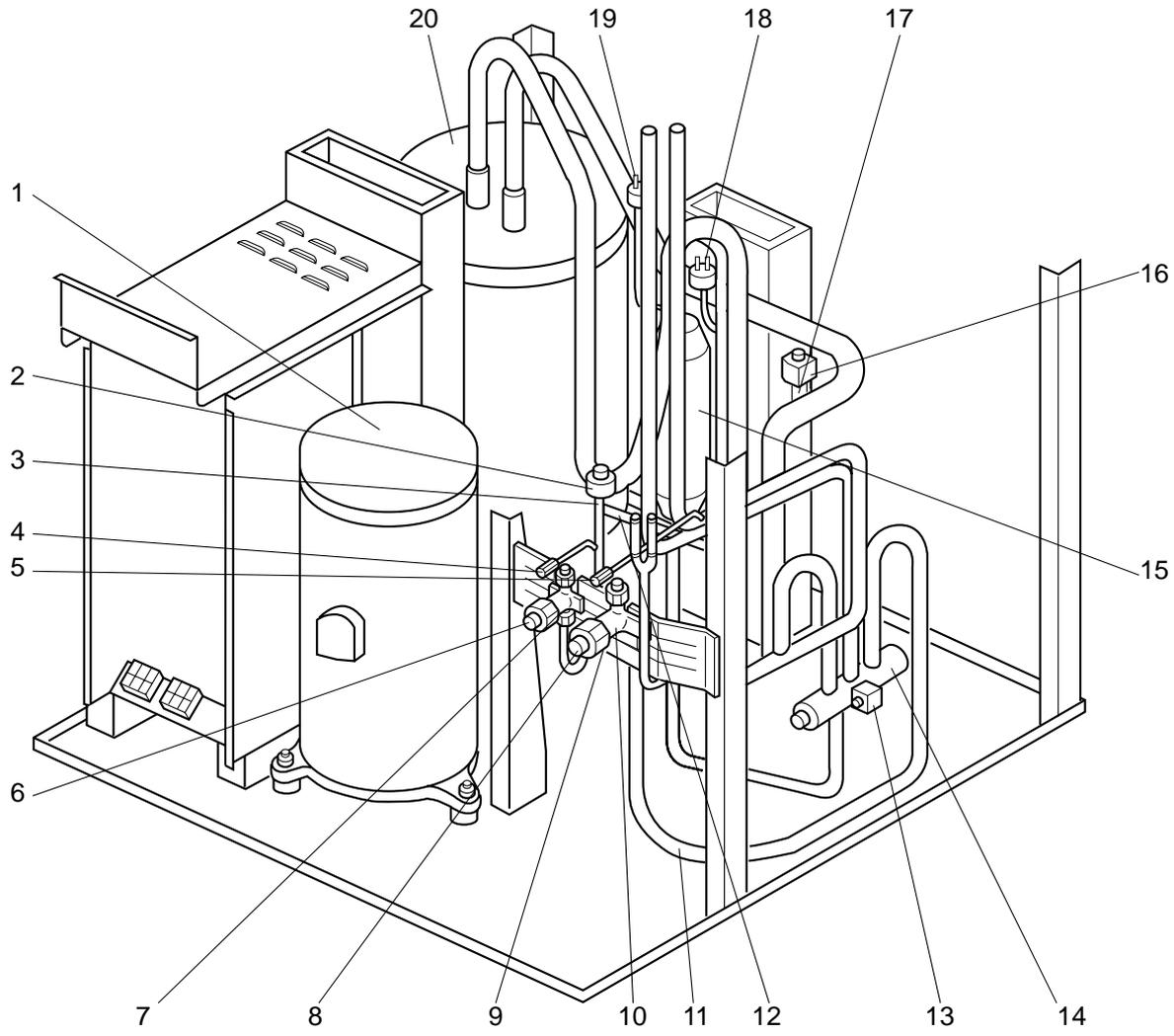


Part numbers that are circled are not shown in the figures.

| No. | Part No.    | Part Name                  | Specification | Q'ty/set       |                  | Remarks<br>(Drawing No.) | Wiring<br>Diagram<br>Symbol | Recom-<br>mended<br>Q'ty | Price |        |
|-----|-------------|----------------------------|---------------|----------------|------------------|--------------------------|-----------------------------|--------------------------|-------|--------|
|     |             |                            |               | PUHZ-RP200/250 |                  |                          |                             |                          | Unit  | Amount |
|     |             |                            |               | YHA            | YHA <sub>1</sub> |                          |                             |                          |       |        |
| 1   | R01 E01 675 | FAN GUARD                  |               | 1              | 1                |                          |                             |                          |       |        |
| 2   | R01 E05 662 | SIDE PANEL (L)             |               | 1              | 1                |                          |                             |                          |       |        |
| 3   | R01 E06 668 | FRONT PANEL                |               | 1              | 1                |                          |                             |                          |       |        |
| 4   | R01 E05 667 | SERVICE PANEL              |               | 1              | 1                |                          |                             |                          |       |        |
| 5   | R01 E06 658 | COVER PANEL                |               | 1              |                  |                          |                             |                          |       |        |
|     | R01 E07 658 | COVER PANEL                |               |                | 1                |                          |                             |                          |       |        |
| 6   | —           | SEPARATOR                  |               | 1              | 1                | (RG00N510G03)            |                             |                          |       |        |
| 7   | R01 H75 202 | THERMISTOR (OUTDOOR PIPE)  |               | 1              | 1                |                          | TH32                        |                          |       |        |
| 8   | —           | HEAT SINK DUCT             |               | 1              | 1                | (RG00T950G07)            |                             |                          |       |        |
| 9   | —           | BASE                       |               | 1              | 1                | (BG02Q044G08)            |                             |                          |       |        |
| 10  | —           | VALVE BED SUPPORT          |               | 1              | 1                | (BH02C038H01)            |                             |                          |       |        |
| 11  | R01 E00 808 | LEG                        |               | 2              | 2                |                          |                             |                          |       |        |
| 12  | —           | SUPPORT                    |               | 4              | 4                | (RG02N341H04)            |                             |                          |       |        |
| 13  | —           | VALVE BED                  |               | 1              | 1                | (RG02N340G05)            |                             |                          |       |        |
| 14  | —           | SEPARATOR SUPPORT          |               | 1              | 1                | (RG02T894H03)            |                             |                          |       |        |
| 15  | —           | DRAIN DUCT                 |               | 1              | 1                | (RG00T951G05)            |                             |                          |       |        |
| 16  | R01 E74 202 | THERMISTOR (OUTDOOR PIPE)  |               | 1              | 1                |                          | TH3                         |                          |       |        |
| 17  | R01 H76 202 | THERMISTOR (OUTDOOR)       |               | 1              | 1                |                          | TH6,TH7                     |                          |       |        |
| 18  | —           | HEAT EXCHANGER JOINT       |               | 1              | 1                | (RG02N346G10)            |                             |                          |       |        |
| 19  | R01 E10 661 | SIDE PANEL (R)             |               | 1              | 1                |                          |                             |                          |       |        |
| 20  | R01 E07 667 | REAR PANEL                 |               | 1              | 1                |                          |                             |                          |       |        |
| 21  | R01 E03 698 | REAR GUARD                 |               | 1              | 1                |                          |                             |                          |       |        |
| 22  | R01 E66 408 | HEAT EXCHANGER (1)         |               | 1              | 1                |                          |                             |                          |       |        |
| 23  | —           | COIL PLATE (1)             |               | 1              | 1                | (RG02N397H05)            |                             |                          |       |        |
| 24  | —           | COIL PLATE (2)             |               | 1              | 1                | (RG02N397K05)            |                             |                          |       |        |
| 25  | R01 E39 409 | HEAT EXCHANGER (2)         |               | 1              | 1                |                          |                             |                          |       |        |
| 26  | —           | TOP FRAME                  |               | 1              | 1                | (RG00N473G09)            |                             |                          |       |        |
| ②⑦  | —           | LABEL (MITSUBISHI)         |               | 1              | 1                | (DG79R130H01)            |                             |                          |       |        |
| ②⑧  | —           | LABEL (INVERTER)           |               | 1              | 1                | (BK79C208G02)            |                             |                          |       |        |
| ②⑨  | —           | ELECTRICAL PARTS BOX STAND |               | 1              | 1                | (RG02T748H04)            |                             |                          |       |        |
| ③⑩  | —           | SENSOR HOLDER              |               | 1              | 1                | (BG25V080H03)            |                             |                          |       |        |
| ③①  | —           | SEPARATOR CAP              |               | 2              | 2                | (RG02T749H04)            |                             |                          |       |        |



**FUNCTIONAL PARTS**  
**PUHZ-RP200YHA**  
**PUHZ-RP250YHA**  
**PUHZ-RP200YHA<sub>1</sub>**  
**PUHZ-RP250YHA<sub>1</sub>**



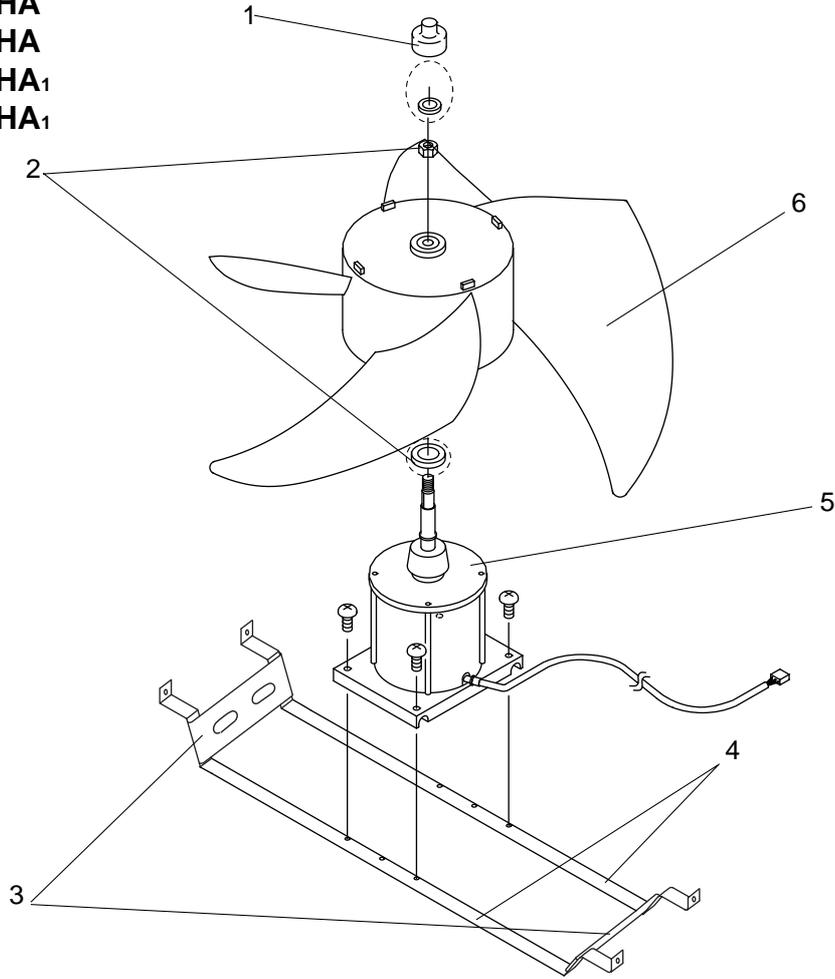


Part numbers that are circled are not shown in the figures.

| No. | Part No.    | Part Name                       | Specification | Q'ty/set |     |     |     | Remarks<br>(Drawing No.) | Wiring<br>Diagram<br>Symbol | Recom-<br>mended<br>Q'ty | Price |        |
|-----|-------------|---------------------------------|---------------|----------|-----|-----|-----|--------------------------|-----------------------------|--------------------------|-------|--------|
|     |             |                                 |               | PUHZ-RP  |     | YHA |     |                          |                             |                          | Unit  | Amount |
|     |             |                                 |               | 200      | 250 | 200 | 250 |                          |                             |                          |       |        |
| 1   | T97 410 741 | COMPRESSOR                      | ANV47FFBMT    | 1        | 1   | 1   | 1   |                          | MC                          |                          |       |        |
| 2   | R01 E20 242 | LINEAR EXPANSION VALVE COIL     |               | 1        | 1   | 1   | 1   |                          | LEV                         |                          |       |        |
| 3   | R01 E59 401 | LINEAR EXPANSION VALVE          |               | 1        | 1   | 1   | 1   |                          |                             |                          |       |        |
| 4   | R01 E06 413 | CHARGE PLUG                     |               | 1        | 1   | 1   | 1   |                          |                             |                          |       |        |
| 5   | R01 E05 413 | CHARGE PLUG                     |               | 1        | 1   | 1   | 1   |                          |                             |                          |       |        |
| 6   | R01 E09 410 | STOP VALVE                      | 3/8F          | 1        |     | 1   |     |                          |                             |                          |       |        |
|     | R01 E08 410 | STOP VALVE                      | 1/2F          |          | 1   |     |     |                          |                             |                          |       |        |
|     | R01 E11 410 | STOP VALVE                      | 1/2F          |          |     |     | 1   |                          |                             |                          |       |        |
| 7   | R01 E00 450 | STRAINER                        |               | 1        |     | 1   |     |                          |                             |                          |       |        |
|     | R01 30L 450 | STRAINER                        |               |          | 1   |     | 1   |                          |                             |                          |       |        |
| 8   | R01 E07 410 | STOP VALVE                      | 1F            | 1        | 1   | 1   | 1   |                          |                             |                          |       |        |
| 9   | R01 E00 570 | GASKET                          |               | 1        | 1   | 1   | 1   |                          |                             |                          |       |        |
| 10  | R01 E00 417 | FLANGE ASSY                     |               | 1        |     | 1   |     |                          |                             |                          |       |        |
|     | T7W E01 417 | FLANGE ASSY                     |               |          | 1   |     | 1   |                          |                             |                          |       |        |
| 11  | R01 E01 450 | STRAINER                        |               | 1        | 1   | 1   | 1   |                          |                             |                          |       |        |
| 12  | R01 E02 450 | STRAINER                        |               | 2        | 2   | 2   | 2   |                          |                             |                          |       |        |
| 13  | T7W E07 242 | SOLENOID COIL (FOUR-WAY VALVE)  |               | 1        | 1   |     |     |                          | 21S4                        |                          |       |        |
|     | T7W E26 242 | SOLENOID COIL (FOUR-WAY VALVE)  |               |          |     | 1   | 1   |                          | 21S4                        |                          |       |        |
| 14  | R01 E11 403 | SOLENOID VALVE (FOUR-WAY VALVE) |               | 1        | 1   |     |     |                          |                             |                          |       |        |
|     | R01 E12 403 | SOLENOID VALVE (FOUR-WAY VALVE) |               |          |     | 1   | 1   |                          |                             |                          |       |        |
| 15  | R01 E04 490 | OIL SEPARATOR                   |               | 1        | 1   | 1   | 1   |                          |                             |                          |       |        |
| 16  | T7W E06 242 | SOLENOID COIL (BYPASS VALVE)    |               | 1        | 1   |     |     |                          | SV                          |                          |       |        |
|     | T7W E27 242 | SOLENOID COIL (BYPASS VALVE)    |               |          |     | 1   | 1   |                          | SV                          |                          |       |        |
| 17  | R01 E03 428 | SOLENOID VALVE (BYPASS VALVE)   |               | 1        | 1   |     |     |                          |                             |                          |       |        |
|     | R01 E11 428 | SOLENOID VALVE (BYPASS VALVE)   |               |          |     | 1   | 1   |                          |                             |                          |       |        |
| 18  | T7W E03 208 | HIGH PRESSURE SWITCH            |               | 1        | 1   | 1   | 1   |                          | 63H                         |                          |       |        |
| 19  | R01 25T 209 | LOW PRESSURE SWITCH             |               | 1        | 1   | 1   | 1   |                          | 63L                         |                          |       |        |
| 20  | T7W E13 440 | ACCUMULATOR                     |               | 1        | 1   | 1   | 1   |                          |                             |                          |       |        |
| 21  | R01 E00 201 | THERMISTOR (DISCHARGE)          |               | 1        | 1   | 1   | 1   |                          | TH4                         |                          |       |        |
| 22  | —           | SOUND INSULATION                |               | 1        | 1   | 1   | 1   | (RG33N368G07)            |                             |                          |       |        |
| 23  | R01 E19 425 | CAPILLARY TUBE                  | 3.0×1.0×1000  | 1        | 1   | 1   | 1   |                          |                             |                          |       |        |
| 24  | R01 E20 425 | CAPILLARY TUBE                  | 3.0×1.0×300   | 1        | 1   | 1   | 1   |                          |                             |                          |       |        |

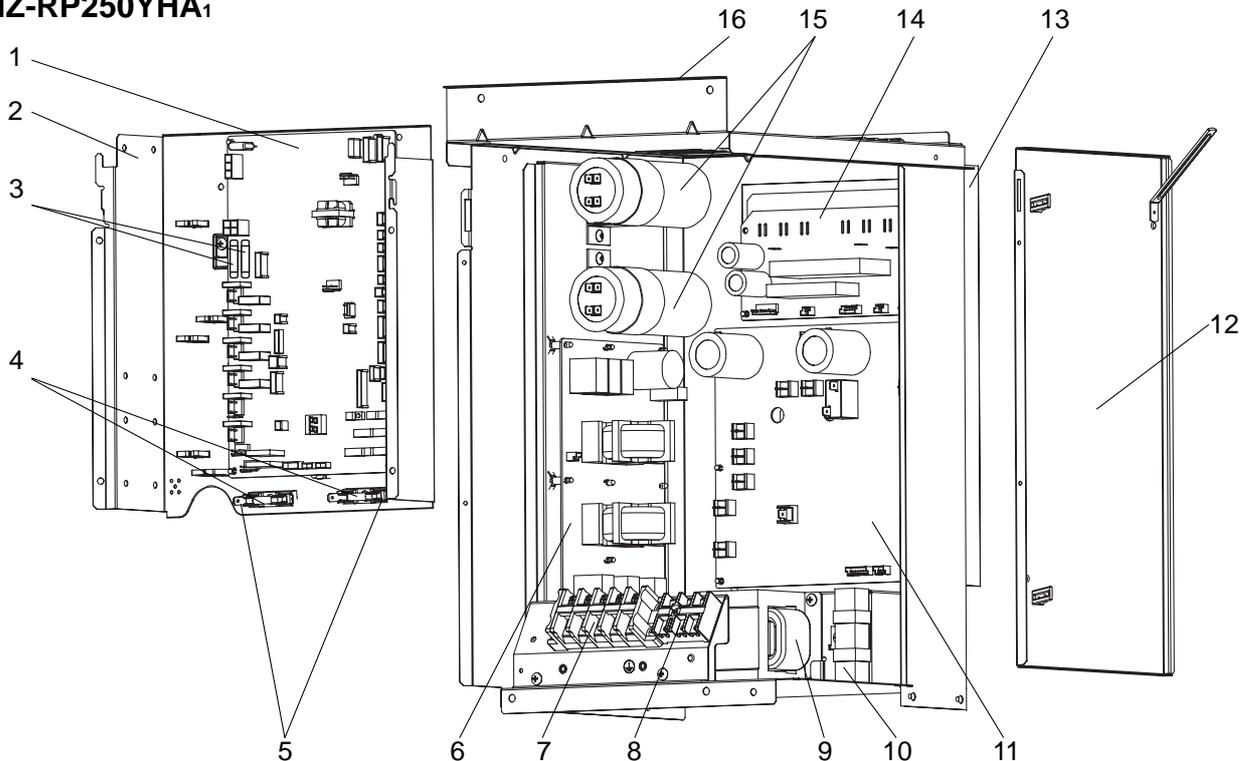
**FAN PARTS**

PUHZ-RP200YHA  
 PUHZ-RP250YHA  
 PUHZ-RP200YHA<sub>1</sub>  
 PUHZ-RP250YHA<sub>1</sub>



| No. | Part No.    | Part Name     | Specification | Q'ty/set       |                  | Remarks<br>(Drawing No.)    | Wiring<br>Diagram<br>Symbol | Recom-<br>mended<br>Q'ty | Price |        |
|-----|-------------|---------------|---------------|----------------|------------------|-----------------------------|-----------------------------|--------------------------|-------|--------|
|     |             |               |               | PUHZ-RP200/250 |                  |                             |                             |                          | Unit  | Amount |
|     |             |               |               | YHA            | YHA <sub>1</sub> |                             |                             |                          |       |        |
| 1   | R01 E01 122 | MOTOR CAP     |               | 1              | 1                |                             |                             |                          |       |        |
| 2   | R01 E05 097 | NUT M16       |               | 1              | 1                | Nut×1, washer×2<br>in a set |                             |                          |       |        |
| 3   | —           | SUPPORT       |               | 2              | 2                | (BG02U187H03)               |                             |                          |       |        |
| 4   | R01 E20 130 | MOTOR SUPPORT |               | 2              | 2                |                             |                             |                          |       |        |
| 5   | T7W E26 763 | FAN MOTOR     |               | 1              | 1                |                             | MF                          |                          |       |        |
| 6   | R01 E03 115 | PROPELLER     |               | 1              | 1                |                             |                             |                          |       |        |

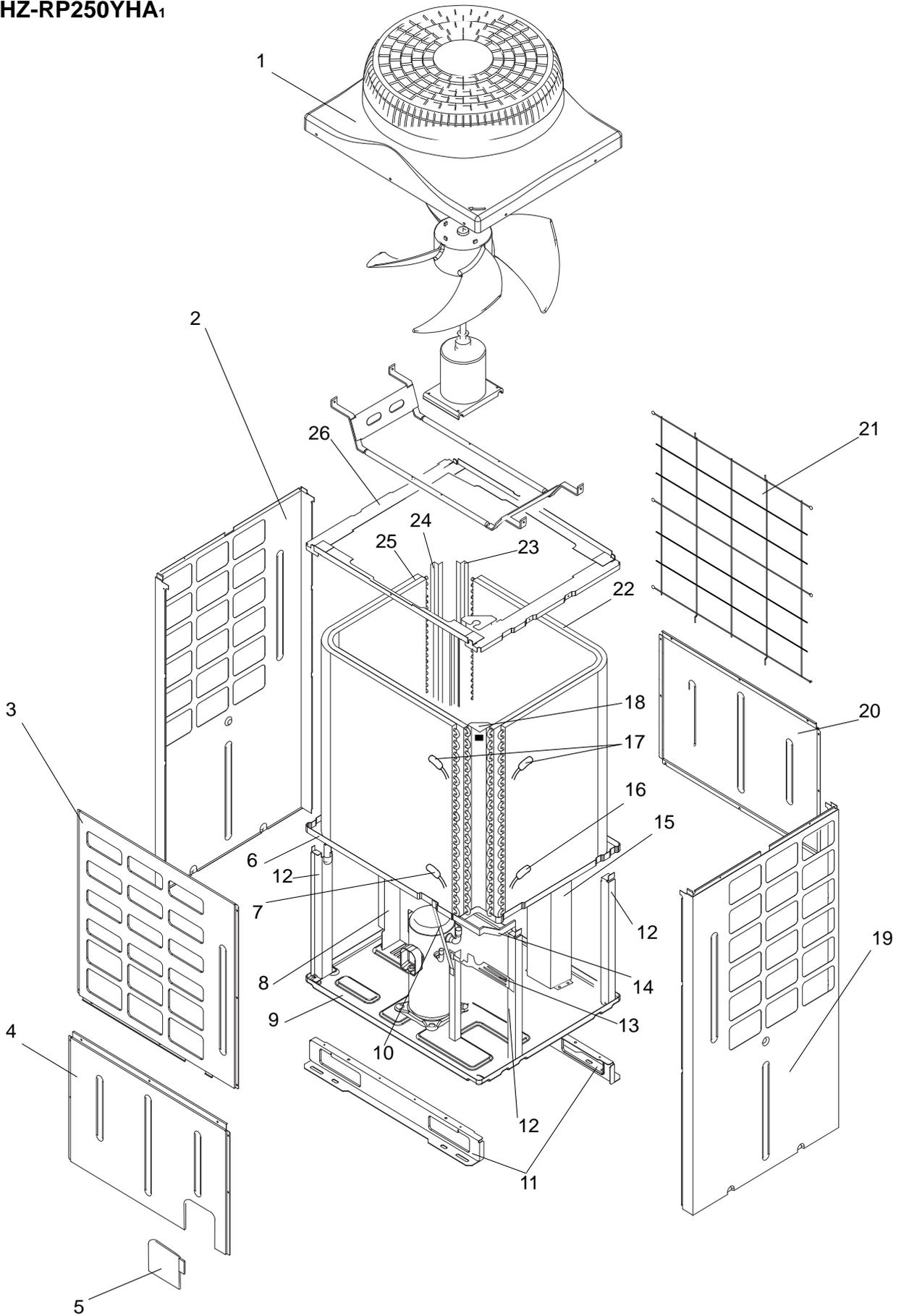
## ELECTRICAL PARTS

PUHZ-RP200YHA<sub>1</sub>PUHZ-RP250YHA<sub>1</sub>

Part number that is circled is not shown in the figures.

| No. | RoHS | Part No.    | Part Name                                 | Specification    | Q'ty/set                           | Remarks<br>(Drawing No.) | Wiring<br>Diagram<br>Symbol | Recom-<br>mended<br>Q'ty | Price |        |
|-----|------|-------------|---|------------------|------------------------------------|--------------------------|-----------------------------|--------------------------|-------|--------|
|     |      |             |   |                  | PUHZ-RP200/<br>250YHA <sub>1</sub> |                          |                             |                          | Unit  | Amount |
| 1   | G    | T7W E45 315 | CONTROLLER CIRCUIT BOARD                  |                  | 1                                  |                          | C.B.                        |                          |       |        |
| 2   | G    | —           | CIRCUIT BOARD SUPPORT PLATE               |                  | 1                                  | (RG02N450G10)            |                             |                          |       |        |
| 3   | G    | R01 E06 239 | FUSE                                      | 250V 6.3A        | 2                                  |                          | F 3,4                       |                          |       |        |
| 4   | G    | R01 E07 239 | FUSE                                      | 250V 15A         | 2                                  |                          | FUSE1,2                     |                          |       |        |
| 5   | G    | R01 30L 241 | FUSE HOLDER                               |                  | 2                                  |                          |                             |                          |       |        |
| 6   | G    | T7W E15 346 | NOISE FILTER CIRCUIT BOARD                |                  | 1                                  |                          | N.F.                        |                          |       |        |
| 7   | G    | T7W E30 716 | TERMINAL BLOCK (POWER SUPPLY)             | 5P(L1,L2,L3,N,Ⓞ) | 1                                  |                          | TB1                         |                          |       |        |
| 8   | G    | R01 E19 246 | TERMINAL BLOCK (INDOOR / OUTDOOR)         | 3P(S1,S2,S3)     | 1                                  |                          | TB2                         |                          |       |        |
| 9   | G    | T7W E13 259 | REACTOR                                   | 2.7mH 25A        | 1                                  |                          | DCL                         |                          |       |        |
| 10  | G    | R01 E10 233 | RUSH CURRENT PROTECT RESISTOR             | 16Ω              | 1                                  |                          | RS                          |                          |       |        |
| 11  | G    | T7W E33 313 | POWER CIRCUIT BOARD                       |                  | 1                                  |                          | P.B.                        |                          |       |        |
| 12  | G    | —           | ELECTRICAL PARTS BOX RIGHT SIDE PLATE     |                  | 1                                  | (RG02N349G06)            |                             |                          |       |        |
| 13  | G    | —           | HEAT SINK                                 |                  | 1                                  | (RG11N336G05)            |                             |                          |       |        |
| 14  | G    | T7W E49 310 | FAN CONTROLLER CIRCUIT BOARD              |                  | 1                                  |                          | F.C.                        |                          |       |        |
| 15  | G    | T7W E07 254 | MAIN SMOOTHING CAPACITOR                  |                  | 2                                  |                          | CB1,2                       |                          |       |        |
| 16  | G    | —           | ELECTRICAL PARTS BOX                      |                  | 1                                  | (RG00N768G02)            |                             |                          |       |        |
| 17  | G    | —           | WATERPROOF SHEET FOR THE ELECTRICAL PARTS |                  | 1                                  | (BH00C028G10)            |                             |                          |       |        |

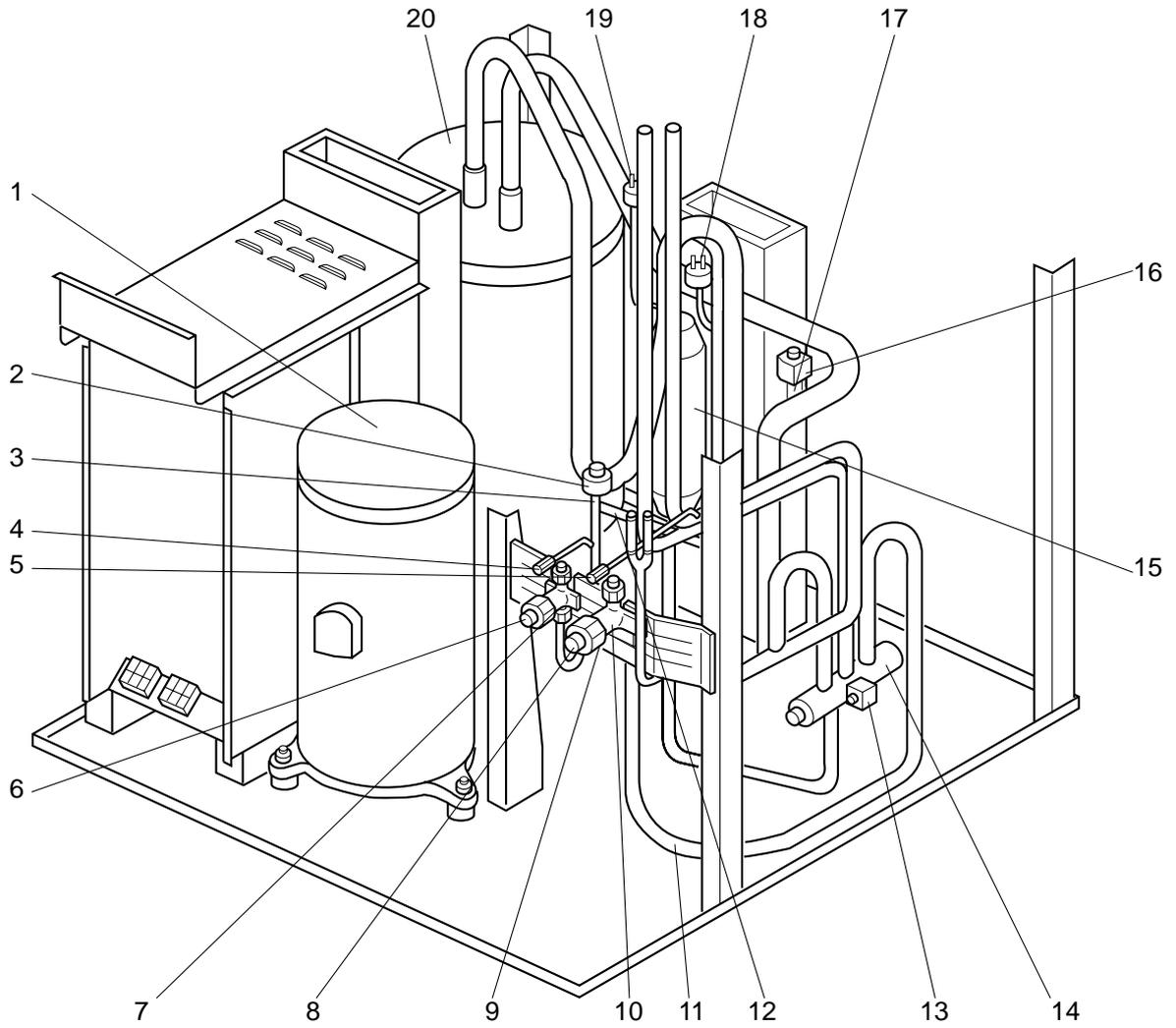
**STRUCTURAL PARTS**  
**PUHZ-RP200YHA<sub>1</sub>**  
**PUHZ-RP250YHA<sub>1</sub>**



Part numbers that are circled are not shown in the figures.

| No. | RoHS | Part No.    | Part Name                  | Specification | Q'ty/set                           | Remarks<br>(Drawing No.) | Wiring<br>Diagram<br>Symbol | Recom-<br>mended<br>Q'ty | Price |        |
|-----|------|-------------|----------------------------|---------------|------------------------------------|--------------------------|-----------------------------|--------------------------|-------|--------|
|     |      |             |                            |               | PUHZ-RP200/<br>250YHA <sub>1</sub> |                          |                             |                          | Unit  | Amount |
| 1   | G    | R01 E02 675 | FAN GUARD                  |               | 1                                  |                          |                             |                          |       |        |
| 2   | G    | R01 E17 662 | SIDE PANEL (L)             |               | 1                                  |                          |                             |                          |       |        |
| 3   | G    | R01 E10 668 | FRONT PANEL                |               | 1                                  |                          |                             |                          |       |        |
| 4   | G    | R01 E15 667 | SERVICE PANEL              |               | 1                                  |                          |                             |                          |       |        |
| 5   | G    | R01 E15 658 | COVER PANEL                |               | 1                                  |                          |                             |                          |       |        |
| 6   | G    | —           | SEPARATOR                  |               | 1                                  | (RG00N510G03)            |                             |                          |       |        |
| 7   | G    | R01 H04 202 | THERMISTOR (OUTDOOR PIPE)  |               | 1                                  |                          | TH32                        |                          |       |        |
| 8   | G    | —           | HEAT SINK DUCT             |               | 1                                  | (RG00T950G07)            |                             |                          |       |        |
| 9   | G    | —           | BASE                       |               | 1                                  | (BG02Q044G08)            |                             |                          |       |        |
| 10  | G    | —           | VALVE BED SUPPORT          |               | 1                                  | (BH02C038H01)            |                             |                          |       |        |
| 11  | G    | R01 E02 808 | LEG                        |               | 2                                  |                          |                             |                          |       |        |
| 12  | G    | —           | SUPPORT                    |               | 4                                  | (RG02N341H04)            |                             |                          |       |        |
| 13  | G    | —           | VALVE BED                  |               | 1                                  | (RG02N340G05)            |                             |                          |       |        |
| 14  | G    | —           | SEPARATOR SUPPORT          |               | 1                                  | (RG02T894H03)            |                             |                          |       |        |
| 15  | G    | —           | DRAIN DUCT                 |               | 1                                  | (RG00T951G05)            |                             |                          |       |        |
| 16  | G    | R01 H03 202 | THERMISTOR (OUTDOOR PIPE)  |               | 1                                  |                          | TH3                         |                          |       |        |
| 17  | G    | R01 H02 202 | THERMISTOR (OUTDOOR)       |               | 1                                  |                          | TH6,TH7                     |                          |       |        |
| 18  | G    | —           | HEAT EXCHANGER JOINT       |               | 1                                  | (RG02N346G10)            |                             |                          |       |        |
| 19  | G    | R01 E33 661 | SIDE PANEL (R)             |               | 1                                  |                          |                             |                          |       |        |
| 20  | G    | R01 E16 667 | REAR PANEL                 |               | 1                                  |                          |                             |                          |       |        |
| 21  | G    | R01 E08 698 | REAR GUARD                 |               | 1                                  |                          |                             |                          |       |        |
| 22  | G    | R01 E92 408 | HEAT EXCHANGER (1)         |               | 1                                  |                          |                             |                          |       |        |
| 23  | G    | —           | COIL PLATE (1)             |               | 1                                  | (RG02N397H05)            |                             |                          |       |        |
| 24  | G    | —           | COIL PLATE (2)             |               | 1                                  | (RG02N397K05)            |                             |                          |       |        |
| 25  | G    | R01 E41 409 | HEAT EXCHANGER (2)         |               | 1                                  |                          |                             |                          |       |        |
| 26  | G    | —           | TOP FRAME                  |               | 1                                  | (RG00N473G09)            |                             |                          |       |        |
| 27  | G    | —           | LABEL (MITSUBISHI)         |               | 1                                  | (DG79R130H01)            |                             |                          |       |        |
| 28  | G    | —           | LABEL (INVERTER)           |               | 1                                  | (BK79C208G02)            |                             |                          |       |        |
| 29  | G    | —           | ELECTRICAL PARTS BOX STAND |               | 1                                  | (RG02T748H04)            |                             |                          |       |        |
| 30  | G    | —           | SENSOR HOLDER              |               | 1                                  | (BG25V080H03)            |                             |                          |       |        |
| 31  | G    | —           | SEPARATOR CAP              |               | 2                                  | (RG02T749H04)            |                             |                          |       |        |

**FUNCTIONAL PARTS**  
**PUHZ-RP200YHA<sub>1</sub>**  
**PUHZ-RP250YHA<sub>1</sub>**

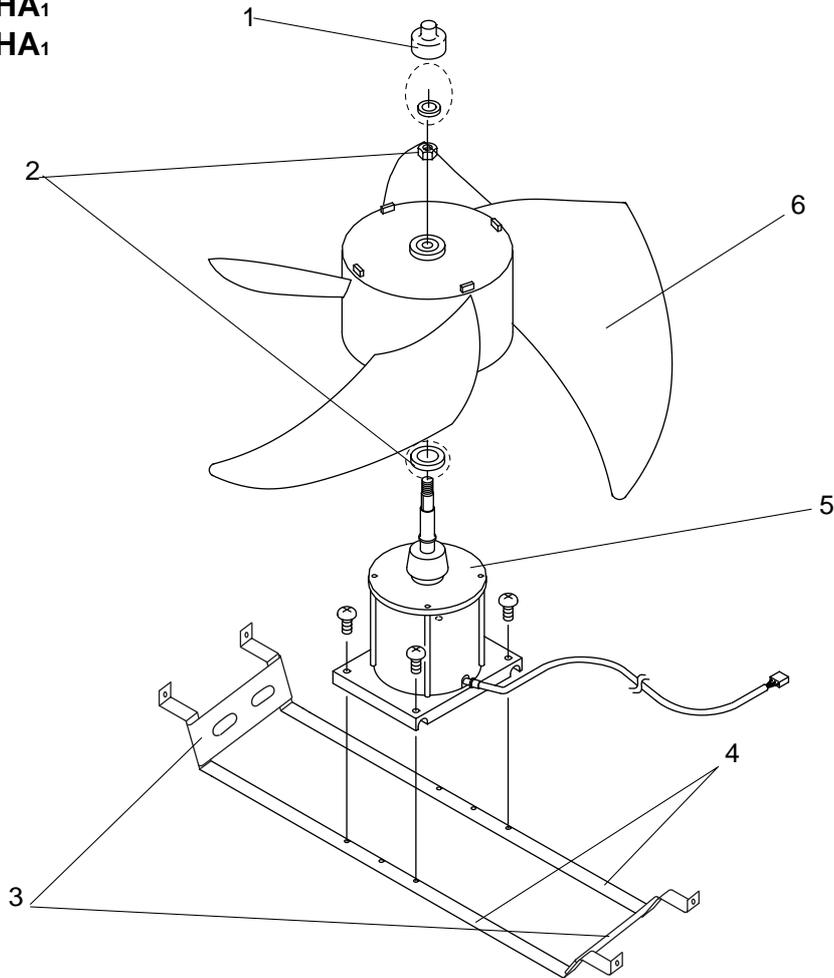




Part numbers that are circled are not shown in the figures.

| No. | RoHS | Part No.    | Part Name                       | Specification | Q'ty/set                 |     | Remarks<br>(Drawing No.) | Wiring<br>Diagram<br>Symbol | Recom-<br>mended<br>Q'ty | Price |        |
|-----|------|-------------|---------------------------------|---------------|--------------------------|-----|--------------------------|-----------------------------|--------------------------|-------|--------|
|     |      |             |                                 |               | PUHZ-RP-YHA <sub>1</sub> |     |                          |                             |                          | Unit  | Amount |
|     |      |             |                                 |               | 200                      | 250 |                          |                             |                          |       |        |
| 1   | G    | T97 415 741 | COMPRESSOR                      | ANV47FFBMT    | 1                        | 1   |                          | MC                          |                          |       |        |
| 2   | G    | R01 E35 242 | LINEAR EXPANSION VALVE COIL     |               | 1                        | 1   |                          | LEV                         |                          |       |        |
| 3   | G    | R01 E80 401 | LINEAR EXPANSION VALVE          |               | 1                        | 1   |                          |                             |                          |       |        |
| 4   | G    | R01 E25 413 | CHARGE PLUG                     |               | 1                        | 1   |                          |                             |                          |       |        |
| 5   | G    | R01 E14 413 | CHARGE PLUG                     |               | 1                        | 1   |                          |                             |                          |       |        |
| 6   | G    | R01 E13 410 | STOP VALVE                      | 3/8F          | 1                        |     |                          |                             |                          |       |        |
|     | G    | R01 E23 410 | STOP VALVE                      | 1/2F          |                          | 1   |                          |                             |                          |       |        |
| 7   | G    | R01 E08 450 | STRAINER                        |               | 1                        |     |                          |                             |                          |       |        |
|     | G    | R01 31L 450 | STRAINER                        |               |                          | 1   |                          |                             |                          |       |        |
| 8   | G    | R01 E14 410 | STOP VALVE                      | 1F            | 1                        | 1   |                          |                             |                          |       |        |
| 9   | G    | R01 E01 570 | GASKET                          |               | 1                        | 1   |                          |                             |                          |       |        |
| 10  | G    | R01 E01 417 | FLANGE ASSY                     |               | 1                        |     |                          |                             |                          |       |        |
|     | G    | T7W E02 417 | FLANGE ASSY                     |               |                          | 1   |                          |                             |                          |       |        |
| 11  | G    | R01 E09 450 | STRAINER                        |               | 1                        | 1   |                          |                             |                          |       |        |
| 12  | G    | R01 E07 450 | STRAINER                        |               | 2                        | 2   |                          |                             |                          |       |        |
| 13  | G    | T7W E26 242 | SOLENOID COIL (FOUR-WAY VALVE)  |               | 1                        | 1   |                          | 21S4                        |                          |       |        |
| 14  | G    | R01 E12 403 | SOLENOID VALVE (FOUR-WAY VALVE) |               | 1                        | 1   |                          |                             |                          |       |        |
| 15  | G    | R01 E13 490 | OIL SEPARATOR                   |               | 1                        | 1   |                          |                             |                          |       |        |
| 16  | G    | T7W E27 242 | SOLENOID COIL (BYPASS VALVE)    |               | 1                        | 1   |                          | SV                          |                          |       |        |
| 17  | G    | R01 E13 428 | SOLENOID VALVE (BYPASS VALVE)   |               | 1                        | 1   |                          |                             |                          |       |        |
| 18  | G    | T7W E06 208 | HIGH PRESSURE SWITCH            |               | 1                        | 1   |                          | 63H                         |                          |       |        |
| 19  | G    | R01 E00 209 | LOW PRESSURE SWITCH             |               | 1                        | 1   |                          | 63L                         |                          |       |        |
| 20  | G    | T7W E14 440 | ACCUMULATOR                     |               | 1                        | 1   |                          |                             |                          |       |        |
| ⑳   | G    | R01 E12 201 | THERMISTOR (DISCHARGE)          |               | 1                        | 1   |                          | TH4                         |                          |       |        |
| ㉑   | G    | —           | SOUND INSULATION                |               | 1                        | 1   | (RG33N368G07)            |                             |                          |       |        |
| ㉒   | G    | R01 E28 425 | CAPILLARY TUBE                  | 3.0×1.0×1000  | 1                        | 1   |                          |                             |                          |       |        |
| ㉓   | G    | R01 E29 425 | CAPILLARY TUBE                  | 3.0×1.0×300   | 1                        | 1   |                          |                             |                          |       |        |

**FAN PARTS**  
**PUHZ-RP200YHA<sub>1</sub>**  
**PUHZ-RP250YHA<sub>1</sub>**



| No. | RoHS | Part No.    | Part Name     | Specification | Q'ty/set                           | Remarks<br>(Drawing No.)    | Wiring<br>Diagram<br>Symbol | Recom-<br>mended<br>Q'ty | Price |        |
|-----|------|-------------|---------------|---------------|------------------------------------|-----------------------------|-----------------------------|--------------------------|-------|--------|
|     |      |             |               |               | PUHZ-RP200/<br>250YHA <sub>1</sub> |                             |                             |                          | Unit  | Amount |
| 1   | G    | R01 E02 122 | MOTOR CAP     |               | 1                                  |                             |                             |                          |       |        |
| 2   | G    | R01 E10 097 | NUT M16       |               | 1                                  | Nut×1, washer×2<br>in a set |                             |                          |       |        |
| 3   | G    | —           | SUPPORT       |               | 2                                  | (BG02U187H03)               |                             |                          |       |        |
| 4   | G    | R01 E31 130 | MOTOR SUPPORT |               | 2                                  |                             |                             |                          |       |        |
| 5   | G    | T7W E29 763 | FAN MOTOR     |               | 1                                  |                             | MF                          |                          |       |        |
| 6   | G    | R01 E09 115 | PROPELLER     |               | 1                                  |                             |                             |                          |       |        |

**MITSUBISHI ELECTRIC CORPORATION**

HEAD OFFICE : TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN